Ford

RACING

2009 PERFORMANCE PARTS

$5.00 USA

TABLE OF CONTENTS

TABLE OF CONTENTS

PERFORMANCE PACKS 32, 42-45, 52, 54-56, 65-66

ENGINE COMPONENTS 79-95, 118-163, 197-199, 205

TABLE OF CONTENTS

MOST FORD RACING PERFORMANCE PARTS AND VEHICLES ARE SOLD WITH NO WARRANTY.

FORD RACING PERFORMANCE PARTS AND VEHICLES ARE SOLD "AS IS," "WITH ALL FAULTS," "AS THEY STAND" AND WITHOUT ANY EXPRESS WARRANTY WHATSOEVER, **UNLESS OTHERWISE EXPRESSLY DESIGNATED HEREIN**. TO THE FULLEST EXTENT ALLOWED BY THE STATE AND FEDERAL LAW, FORD MOTOR COMPANY EXPRESSLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, EVEN IF A PARTICULAR PURPOSE IS MENTIONED HEREIN. FORD ALSO EXPRESSLY DISCLAIMS ALL LIABILITY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO, DAMAGE OR LOSS OF PROPERTY OR EQUIPMENT, LOSS OF PROFITS OR REVENUE, COST OF PURCHASE OR REPLACEMENT OF GOODS, OR CLAIMS OF CUSTOMERS OF THE PURCHASER THAT RESULT FROM THE USE OF ANY AND ALL PARTS OR VEHICLES CONTAINED IN THIS CATALOG. IN NO EVENT SHALL THE LIABILITY OF FORD MOTOR COMPANY, WHETHER IN TORT, CONTRACT OR OTHERWISE, EXCEED THE COST OF THE PART OR VEHICLE. HOWEVER, YOU MAY HAVE LEGAL RIGHTS WHICH VARY FROM STATE TO STATE.

SHOULD ANY PARTS OR VEHICLES CONTAINED WITHIN THIS CATALOG PROVE DEFECTIVE FOLLOWING THEIR PURCHASE, THE BUYER AND NOT THE MANUFACTURER, DISTRIBUTOR OR RETAILER, SHALL ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICING AND/OR REPAIR. THE ENTIRE RISK AS TO THE PERFORMANCE OF SUCH PARTS OR VEHICLES IS WITH THE BUYER.

NO VEHICLE IN THIS CATALOG OR OFFERING IS STREET LEGAL OR CERTIFIED UNDER FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND REGULATIONS UNLESS EXPRESSLY STATED TO THE CONTRARY HEREIN. VEHICLES THAT ARE NEITHER STREET LEGAL NOR CERTIFIED FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND REGULATIONS ARE NEITHER INTENDED NOR CERTIFIED FOR USE ON PUBLIC ROADS. SUCH RACE PARTS ARE NOT DESIGNED OR TESTED FOR CRASHWORTHINESS OR TO MEET THE SAFETY NEEDS OF THE MOTORING PUBLIC. INSTEAD, THESE PARTS ARE DESIGNED AND INTENDED FOR RACE VEHICLES ON RACE TRACKS WITH ENGINEERS SUPERVISING THE INSTALLATION AND USE OF THE RACE PARTS TO ENSURE THAT THE SAFETY NEEDS OF THE RACE DRIVER ARE MET. THE RACING PARTS COULD CONCEIVABLY BE COMBINED IN AN INFINITE COMBINATION, AND THE USE OF SOME PARTS ON SOME VEHICLES COULD ADVERSELY AFFECT THE PERFORMANCE OF THE VEHICLE OR OTHER RACE PARTS.

TO THE EXTENT THAT A PART CONTAINED WITHIN THIS CATALOG COMES WITH A WARRANTY FROM THE ORIGINAL MANUFACTURER, NOT FORD RACING PERFORMANCE PARTS OR FORD MOTOR COMPANY, THE BUYER SHOULD CONTACT THE ORIGINAL MANUFACTURER FOR ANY AND ALL WARRANTY REPAIR OR REPLACEMENT. TO DETERMINE WHICH PARTS COME WITH A WARRANTY FROM THE ORIGINAL MANUFACTURER, NOT FORD RACING PERFORMANCE PARTS, PLEASE CONTACT THE FORD RACING TECHLINE AT (800) FORD788 OR:

FORD RACING PERFORMANCE PARTS
P.O. BOX 51394
LIVONIA, MI 48151

Ford Racing Performance Parts is proud of the quality built into each and every product we sell. Automotive enthusiasts know that it's one thing for a manufacturer to make claims about quality, but quite another to back them up. FRPP is pleased to announce our Performance Crate Engines now carry a 12-month/12,000-mile limited warranty. It's your assurance that when you purchase a FRPP crate engine, you're buying Ford quality, backed by the Blue Oval. It's performance you can trust.

FORD RACING PERFORMANCE PARTS
PERFORMANCE ENGINE LIMITED WARRANTY

Ford Racing Performance Parts warrants to the original retail purchaser for 12 months or 12,000 miles, whichever occurs first, that it will repair or replace, at its option, using new or remanufactured parts, Ford Racing Performance Parts engine covered part that, after inspection, is found to have failed due to a defect in factory supplied material or workmanship.

Covered parts include the engine block and cylinder heads, all internally lubricated parts of the engine, including pistons, piston rings, piston pins, crankshaft and main bearings, connecting rods and rod bearings, camshaft and camshaft bearings, timing chain, timing chain gears, intake and exhaust valves, valve springs, oil pump, push rods, rocker arms, valve lash adjusters, hydraulic or mechanical lifters and valve stem seals, to the extent that the original engine contains the referenced warranted part. Parts that require normal manufacturers recommended replacement intervals are not covered under this warranty.

To the extent allowed by law, loss of time, inconvenience, loss of the use of the vehicle, commercial loss and incidental and consequential damages are not covered. There is no other express or implied warranty on these Ford Racing Performance Parts engines including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose.

This warranty does not cover:

- Parts which are replaced as part of normal maintenance.
- Installation or removal costs.
- Damage due to improper installation, negligence, alteration or accident, including use related to racing or competition, marine or motorcycle applications or for other non-vehicle usage.
- Engines where the vehicle odometer has been disconnected or the mileage has been altered.
- Damage caused by lack of proper maintenance, failure to follow maintenance schedule intervals or failure to use or maintain proper type and levels of fluids, fuel, oil and lubricants. Proof of proper maintenance is the owner's responsibility. Keep all receipts and be prepared to make them available if questions arise about maintenance.
- Towing, shipping, rental vehicles, loss of time, inconvenience, loss of use or other economic loss.
- Ford Racing Performance Parts engines installed in vehicles registered and/or normally operated outside the United States.

To obtain warranty repair or replacement, please contact Ford Racing Performance Parts at (800) FORD788 or:

Ford Racing Performance Parts
P.O. Box 490
Dearborn, MI 48121

FORD RACING LIMITED WARRANTY STATEMENT

Ford Motor Company, The American Road, Dearborn, MI 48025, provides a Limited Warranty on select Ford Racing performance parts when installed by a Ford, Lincoln or Mercury Dealer. This warranty replaces the existing manufacturer's warranty. This warranty is valid for the original retail purchaser of the vehicle and is transferable to subsequent owners. This Limited Warranty is valid only when proof of purchase is registered by the installing dealer by contacting the Ford Performance Call Center at (800) 367-3788.

WARNING NOTICE:
Ford Racing Parts are not Genuine Ford Parts. All Ford Racing Parts are aftermarket parts. **Therefore, they may not be used in any application that requires the use of Genuine Ford Parts.** The use of Ford Racing parts and components is likely to increase horsepower which may cause damage to the vehicle driveline and adversely affect other performance characteristics. Such damage is the sole responsibility of the consumer and **is not covered by this Limited Warranty**. Consumers are solely and completely responsible for evaluating their vehicle to ensure that the vehicle, and each part of that vehicle, is appropriate for this Ford Racing part or component. It is the consumer's sole responsibility to have the performance enhancement parts properly installed on their vehicle along with any modifications that are necessary for the proper performance of the vehicle.

Vehicle damage caused by a consumer's failure to modify the vehicle properly for use of one or more Ford Racing parts and components is not covered by this Limited Warranty and is the sole responsibility of the consumer. This Limited Warranty and/or the New Vehicle Limited Warranty on your vehicle may be voided, either in whole or in part, where the vehicle has been damaged due to a consumer's failure to modify the vehicle properly as necessary for use of Ford Racing parts and components.

Performance Packs (FR1 only), FR 400 hp SuperPack and FR SuperPack 600 – Note: Customers are required to use 91 or higher octane fuels at all times. Any failures associated with the non-use of premium 91 octane fuel will be ineligible for warranty repair.

Retail Customers: To obtain warranty service, please return your vehicle to any Ford, Lincoln or Mercury Dealership. Please have your original dated receipt for date and installation verification.

Warranty Coverages for Select Ford Racing Parts:

Performance Packs (M-FR1-MGT, M-2005-FR1, M-5251-R, M-2005-FR1A, M-2006-FR1, M-2007-FR1V6, M-2007-FR1SVT, M-7210-T1, M-7210-V, M-7210-B, M-9603-GTB, M-9603-GT05, M-9603-GT05A, M-9603-GT06, M-9603-V605, M-9603-SVT07 and M-2005-FR3, M-2007-FR3V6, M-2007-FR3SVT, M-5230-V6) found to be defective in factory-supplied material or workmanship for 3 years/36,000 miles (whichever occurs first) when installed on a new vehicle at the time of vehicle sale or 12 months/12,000 miles (whichever occurs first) when installed after the date of vehicle sale but prior to the expiration of the 3-year/36,000-mile coverage (whichever occurs first) under the New Vehicle Limited Warranty.

Performance Pack Registration – This limited warranty requires that parts must be purchased from an authorized Ford Racing Dealer and installed by a Ford, Lincoln or Mercury Dealer, or Shelby Automotive, Inc. Proof of purchase may be required for submission of warranty claims. Registration for this warranty must be submitted by a Ford, Lincoln or Mercury Dealer, or Shelby Automotive, Inc. through the Ford Performance Call Center (800) 367-3788 with P&A Code, the vehicle identification number (VIN), part installation repair order and date, Ford Racing part number and owner information.

Performance Packs (FR1 only) Note: Customers who purchase FR1 kits are required to use 91 or higher octane fuels at all times. Any failures associated with the non-use of premium 91 octane fuel will be ineligible for warranty repair.

Performance Packs (FR3) Note: The FR3 performance handling application is designed for "Track Day" limit ride and handling. Such performance standards suggest vehicle ride will be more indicative of race performance vehicles. Vehicle conditions including, but not limited to, squeaks, rattles and harsh ride are not subject to warranty repair. The FR3 Handling Pack requires the use of original equipment size wheels only. This performance handling application should be expected to accelerate tire wear. Premature tire degradation is not subject to warranty consideration. The front end alignment must be checked and adjusted as necessary after installation. Contact the Ford Performance Call Center (800) 367-3788 for front end alignment information.

Warranty Start Date – This limited warranty begins upon dealer installation and registration by the dealer of the Ford Racing Performance Pack(s) with Ford Racing and ends at either 3 years/36,000 miles (whichever occurs first) when installed on a new vehicle at the time of vehicle sale or 12 months/12,000 miles (whichever occurs first) for all installations occurring after the date of vehicle sale but prior to the expiration of the 3-year/36,000-mile coverage (whichever occurs first) under the New Vehicle Limited Warranty.

Warranty Coverages for Select Ford Racing Parts:

Superchargers – FR 400 hp SuperPack and FR SuperPack 600 – M-6066-M463V, M-6066-M463V7, M-6066-M463V8, M-6066-M463P, M-6066-M463P7, M-6066-M463P8, M-6066-SGT.

- The FR 400 hp SuperPack is warranted when Ford dealer-installed on Mustang GT 4.6L engines.
  (See Foot Note #1 below)
- The FR SuperPack 600 is warranted when installed on Shelby GT500s.
  (See Foot Note #1 below)

Foot Note #1: The FR 400 hp SuperPack and FR SuperPack 600 Superchargers are warranted for 12 months/12,000 miles from the time of installation when installed by a Ford, Lincoln or Mercury Dealer or Shelby Automotive, Inc. prior to the vehicle reaching either 36 months or 36,000 miles (whichever occurs first) from the vehicle warranty start date and found to be defective in factory-supplied material or workmanship. This warranty replaces the existing manufacturer's warranty for engine, driveline and suspension parts with a 12-month or 12,000-mile warranty.

Ford Racing total liability per qualified vehicle under this warranty is $8,000 (aggregate). Each covered component has its own aggregate value which, when combined, equals $8,000 in total parts repairs. Under this warranty policy, Ford Racing retains the right to replace any failed components with remanufactured parts for the life of the policy.

The following warranty coverage by component is outlined below:

Engine Assembly Coverage
- Total liability for failed engine parts will be $5,000.00

Transmission Assembly Coverage
- Total liability for failed transmission parts will be $1,500.00

Rear Axle Assemblies Coverage
- Total liability for failed rear axle parts will be $1,500.00

Warranty Start Date – This Limited Warranty begins on the date of dealer installation in a Mustang GT equipped with a 4.6L engine and registration by the dealer of the FR 400 hp SuperPack with Ford Racing remains in effect for 12 months/12,000 miles from the time of installation for all FR 400 hp SuperPacks installed on a Mustang GT equipped with a 4.6L engine, provided installation occurs during the period of 36 months or 36,000 miles.

Limitations to Warranty

The following limitations apply to the products covered by this Limited Warranty:

- The purchase invoice(s) may be required for submission of warranty claims.
- This warranty does not cover vehicles that are used in off-road racing activities.
- Where a warranted Ford Racing part is replaced under this Limited Warranty, the replacement Ford Racing part is warranted only for the time remaining in the original Limited Warranty.
- Should Ford Racing modify any currently released parts which apply to this warranty program, Ford Racing is not obligated to update any previously manufactured parts.
- To the extent allowed by law, this warranty does not cover towing, shipping, rental vehicles, storage, loss of time, commercial loss, loss of use of vehicle, inconvenience, incidental or consequential damages or other economic loss.
- This warranty does not cover Ford Racing Performance Parts products installed in vehicles registered and/or normally operated outside the United States.
- Ford Racing's warranty program does not cover:
  - o Damage or corrosion due to accident, misuse, negligence, lack of proper maintenance or failure to follow maintenance schedule intervals. Proof of proper maintenance is the owner's responsibility. Keep all receipts and be prepared to make them available if questions arise about maintenance.
  - o Damage or surface corrosion from the environment such as, but not limited to, acid rain, airborne fallout (chemicals, tree sap), stones, salt road hazards, wind storm, lightning, floods and other natural disasters.
  - o Normal wear, tear or deterioration such as discoloration, fading or blurring.
  - o Replacement parts or accessories installed on a Ford vehicle in which the odometer has been altered or on which the actual mileage cannot be readily determined.
  - o Replacement parts or accessories used in applications for which they are not designed.
  - o Non-Ford Racing parts or Ford Genuine replacement parts or accessories which Ford/Lincoln/Mercury Dealers may sell or install on your Ford vehicle.
  - o Misuse of a vehicle, such as driving over curbs, overloading, racing or using the vehicle as a stationary power source.
  - o Damage due to improper installation, alteration, including calibration, use related to racing or competition, marine or motorcycle applications or other non-vehicle usage.

NOTES:

Federal and many state laws prohibit the removal, modification or rendering inoperative of any part that affects emissions or safety on motor vehicles used on public streets or highways. Ford Racing customers are responsible for complying with applicable state and local environmental regulations. In the case of vehicles which are licensed in Green States, it is the responsibility of the customer to determine if their own modified vehicle meets their state's laws for operations over public highways.

- Questions or concerns relating to this warranty policy may be answered by calling the Ford Performance Call Center (800) 367-3788.
- For complete details on the Ford Racing Limited Warranty program, please go to www.fordracingparts.com

THIS LIMITED WARRANTY DOES NOT COVER PARTS REPLACED OR LABOR CHARGES INCURRED AS PART OF NORMAL VEHICLE MAINTENANCE. THIS LIMITED WARRANTY DOES NOT COVER ENGINE DAMAGE ASSOCIATED WITH CUSTOMERS USING LESS THAN 91 OCTANE FUELS. TO THE EXTENT ALLOWED BY LAW, LOSS OF TIME, INCONVENIENCE, LOSS OF THE USE OF THE VEHICLE, COMMERCIAL LOSS AND INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE NOT COVERED.

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE. THIS LIMITED WARRANTY IS THE ONLY EXPRESS WARRANTY APPLICABLE TO THIS PART. FORD RACING AND FORD MOTOR COMPANY ARE NOT RESPONSIBLE FOR ANY TIME FOR WHICH YOU MAY LOSE THE USE OF YOUR VEHICLE, ANY INCONVENIENCE YOU MIGHT BE CAUSED, THE LOSS OF YOUR TRANSPORTION OR ANY PART THEREOF OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES YOU MAY HAVE. YOU MAY HAVE SOME IMPLIED WARRANTIES UNDER STATE LAW, FOR EXAMPLE, THE IMPLIED WARRANTY OF MERCHANTABILITY OR THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

PERFORMANCE PARTS DESIGNATIONS

As one of the leading manufacturers of performance parts, Ford Motor Company recognizes a special responsibility regarding environmental concerns. Ford Racing Performance Parts is committed to a program of developing performance parts that allow motorsport enthusiasts to modify their vehicles and meet emission requirements.

Using guidelines established by the state of California for aftermarket parts used in vehicles driven on public highways, Ford engineers have developed a system for identifying parts that are acceptable for use on emission-controlled motor vehicles and those intended for competition purposes only.

This catalog lists more than 1,000 Ford Racing parts. For emission purposes, these parts are classified into three groups. Asterisks are used after the part number to identify the category to which the part belongs.

GROUP 1 –
PARTS WITH NO ASTERISK

- Indicates that the part does not affect emissions and is Street Legal.
- For marketing purposes, some Street Legal parts also are identified with a 50-States Street Legal logo.
- Typical parts include gauges, valve push rods, body and chassis components and engine dress-up items.

STREET LEGAL BY EXECUTIVE ORDER

- This special group of add-on or modified group of parts are Street Legal by Executive Order from the State of California, because Ford Racing has demonstrated through emission testing that they do not adversely affect vehicle emissions when used on emission-controlled vehicles.

GROUP 2 –
PARTS WITH 1 ASTERISK (*)

- Indicates that for emission considerations, the part is NOT Street Legal. The following footnote appears at the bottom of catalog pages describing these parts: *Not legal for sale or use on pollution-controlled motor vehicles.
- Part numbers with a single asterisk typically include off-road performance parts and parts that may affect original equipment emission function, such as cylinder heads, engine blocks and camshafts.

NOTE—GREEN STATES

Parts marked in this catalog with an asterisk and appropriately marked on their packaging may legally be used in Green States only on a racing vehicle which will never be operated on public roads.

GREEN STATES USING CALIFORNIA EMISSION STANDARDS:

AK, AZ, CA, CO, CT, IL, MD, MA, MN, NJ, NM, NY, OH, OR, PA, RI, VT and WI

GROUP 3 –
PARTS WITH 2 ASTERISKS (**)

- Indicates that the part is Street Legal as a Direct Replacement Part.
- Part numbers with two asterisks can improve performance and/or appearance—while still providing original equipment emission function.
- The following footnote appears at the bottom of pages describing these parts: **Direct replacement part.

FUTURE DEVELOPMENTS

Ford Racing is continuing the process of developing, analyzing and testing engine and powertrain parts which can be used on pollution-controlled vehicles. Many, of course, are all-out performance parts and have no application for cars driven on public highways. Ford's vision is to provide products meeting all of our various customers' needs while remaining environmentally responsible.

For more information on this program, call the Ford Racing Techline at (800) FORD788.

IMPORTANT NOTICE

This catalog primarily lists special performance parts and is intended only as a supplement to the published service manuals and parts catalogs of Ford Motor Company. Buyers of performance parts are warned that many of these parts are for off-highway use only and that the following provisions apply:

OFF-HIGHWAY OR RACING USE

Because U.S., Canadian, state or provincial laws and regulations may prohibit removal or modification of components that were installed on vehicles by Ford Motor Company to meet emission requirements or to comply with motor vehicle safety regulations applicable to vehicles manufactured for use on public roads, Ford Motor Company recommends that vehicles equipped with parts designated "for off-highway use" not be operated on public roads, and offers such parts only for track or off-highway competitive or performance use. Such parts have a special "warning" label (see next column).

WARNING:

This part has been designed and is intended for off-highway application only. Installation on a vehicle intended for use on public roads may violate U.S., Canadian, state or provincial laws and regulations including those relating to emission requirements and motor vehicle safety standards. (NOTE: In California this part may legally be used only on a racing vehicle which will never be operated on public roads.) In addition, installation of this part may adversely affect the warranty coverage on your vehicle.

A PERSONAL NOTE FROM JAMIE ALLISON FORD PERFORMANCE GROUP

Dear Ford Racing Dealers, Enthusiasts and Customers,

If there's one constant in the performance business, it is change. We had a change in the Ford Racing family with the retirement of Dan Davis as Director of Ford Racing Technology. In addition to leading Ford Racing programs on racetracks around the world, Dan was very involved in the Ford Racing Performance Parts business. He was instrumental in the growth of our racing modular crate engine program and the expansion of our parts offerings for the new Mustang. Under Dan's leadership, Ford Racing pioneered factory-engineered "Performance Packs" backed by a warranty—a groundbreaking effort that is sure to serve Ford Racing well into the future with a variety of new vehicles and powertrains.

Dan's on-track leadership also furthered Ford's winning motorsports tradition: Three NASCAR Sprint Cup titles; eight consecutive NHRA Funny Car titles; the launch of a successful and championship-winning Mustang FR500 series of race cars that compete in both North America and Europe; and the introduction of the new BOSS 500 nitro engine to NHRA Funny Car. These are all major accomplishments in today's highly competitive motorsports arena.

But perhaps even more notable, Dan led major safety initiatives in both Champ Car racing and NHRA, where use of Ford "Blue Box" data recorders is now mandatory. He also spearheaded the Clorox/Ford Women's Driver Development Program in USAC—the first partnership of a consumer sponsor and an auto manufacturer geared to develop women for professional racing. Dan also expanded Ford's grassroots racing programs. He helped start the USAC Ford Focus Midget Series, which has grown nationally as a cost-effective way for young people to enter racing. And he launched the new Ford Racing Mustang Challenge Series for the Miller Cup, giving homegrown spec racers a chance to compete in America's favorite performance car—the Mustang.

We'd like to dedicate this catalog full of performance parts, and photos of racers who are successfully running our parts, to Dan Davis and his passion for Ford Racing.

As we say farewell to Dan, I'd also like to introduce you to the new Director of Ford Racing, Brian Wolfe.

Brian is a true performance enthusiast and drag racer who brings the passion of a racing competitor to the job, along with a wealth of design and development experience from his 26 years with Ford Motor Company. As an experienced grassroots racer himself, Brian has pretty much "done it all"—from working on cars and building his own engines to hauling his race car to the track, and piloting his own quick-and-mean Fox-bodied Mustang down the track. As it relates to Ford Racing Performance Parts, Brian has been a long-time customer of the FR Catalog and, more recently, he helped us usher in the era of the Pro-Cal flasher, enabling the download of FR performance calibrations on our Performance Packs.

A Detroit-area native with bachelor's and master's degrees in Mechanical Engineering from the University of Michigan-Dearborn, Brian's previous position heading up all Ford Powertrain, Calibration and Emissions Programs will be invaluable as Ford Racing prepares for a future of new engine programs, technologies and governmental regulations. And the fact that his first car was a 1968 428 Cobra Jet Fairlane—a car that he still owns today—proves that high-performance passion remains alive and well all the way to the very top of Ford Racing. We welcome Brian Wolfe as our new leader as we continue to serve you and your passion for Ford.

NEW PARTS FOR 2009

8.8" 2005-09 MUSTANG AXLE BEARING KIT
M-1225-B1
page 166

2005-09 MUSTANG V6 BRAKE UPGRADE KIT
M-2300-D*
page 67

2008 8.8" 3.73 SPECIAL EDITION MUSTANG AXLE ASSEMBLY
M-4001-A373*
page 58

SPEED CHANGER FOR DBW
M-4209ADPT-2005A
page 168

MUSTANG MUFFLER KIT
M-5230-S
page 59

2005-09 MUSTANG GT AND 2007-09 SVT MUSTANG DRIVESHAFT LOOP KIT
M-5478-S197B
page 60

Part Number	Description	Page
M-2300-SVTF4**	2000-04 SVT FOCUS FRONT BRAKE KIT	202
M-2300-SVTF5**	2005-07 SVT FOCUS FRONT BRAKE KIT	202
M-2300-ZXR	2000-04 FOCUS RALLY FRONT BRAKE KIT	202
M-4209ADPT-9404A	SPEED CHANGER 1994-2004 MY	168
M-4210-B1	8.8" SVT RING & PINION INSTALLATION KIT	166
M-5300-P	2005-08 MUSTANG GT 1" LOWERING SPRINGS	56
M-5400-Z3R	2000-08 FOCUS REAR ANTI-ROLL BAR	200
M-6004-A464	4.6L 4V CAMSHAFT DRIVE KIT	92

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

NEW PARTS FOR 2009

521 CID 580 HP FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-521FT*

page 107

SUPERCHARGED 5.4L – ROMEO 605 FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-TVS*

page 82

302 CID – 390 HP PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-Z302Z*

page 98

4.6L 3V ALUMINUM SHORT BLOCK FOR SUPERCHARGED APPLICATIONS

M-6009-A463SC*

page 84

BOSS 302 BIG BORE ENGINE BLOCK

M-6010-B302BB*

page 113

ALUMINUM 5.4L WET SUMP BLOCK

M-6010-GTWS**

page 87

Part Number	Description	Page
M-6007-521RT*	521 CID 580 HP FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY	107
M-6007-A463NA*	4.6L 3V CRATE WITH CAMS AND BLUE VALVE COVERS	83
M-6009-463V*	4.6L 3V SHORT BLOCK ASSEMBLY	83
M-6009-C54SC2*	5.4L 2V IRON SHORT BLOCK FOR SUPERCHARGED APPLICATIONS	85
M-6009-C54SC4*	5.4L 4V IRON SHORT BLOCK FOR SUPERCHARGED APPLICATIONS	85
M-6010-CG351*	LIGHT-WEIGHT SIAMESE BORE DRY SUMP 9.2" DECK CYLINDER BLOCK	117
M-6010-SCJ*	FORD RACING 460 SCJ BLOCK	115
M-6017-463V*	CONTROLS PACK – 4.6L 3V	83
M-6017-54SC *	CONTROLS PACK – 5.4L 4V SUPERCHARGED	81

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

NEW PARTS FOR 2009

TURBO SWIRL ALUMINUM CYLINDER HEAD
M-6049-X306*
page 119

POLISHED BOSS VALVE COVER SET
M-6582-BOSSP**
page 144

2007-09 SVT MUSTANG BLACK SHIFT KNOB AND STICK
M-7213-J
page 44

WATER INLET/OIL FILTER ADAPTOR 05
M-6881-A5*
page 95

CLUTCH DISC 26-SPLINE
M-7550-B
page 187

ALUMINATOR ACCESSORY DRIVE KIT
M-8600-A46NA*
page 79

Part Number	Description	Page
M-6014-BOSS*	FORD RACING BOSS 302 CYLINDER HEAD STUD KIT	113
M-6049-DAC*	FR500C 4V RH CYLINDER HEAD	90
M-6050-DAC*	FR500C 4V LH CYLINDER HEAD	90
M-6049-N3VP*	CNC PORTED 3V RH CYLINDER HEAD ASSEMBLY	89
M-6050-N3VP*	CNC PORTED 3V LH CYLINDER HEAD ASSEMBLY	89
M-6067-3V50*	3V 5.0L HEAD CHANGING KIT	91
M-6600-E46*	4.6L HIGH PRESSURE OIL PUMP AND PICKUP	92
M-6881-C*	WATER INLET/REMOTE OIL FILTER ADAPTOR 1996-2004	95
M-9593-MU32*	32# FUEL INJECTOR SET	150

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

NEW PARTS FOR 2009

351 FORD RACING INTAKE
M-9424-BT58*
page 124

STREET ROD HEADER
M-9430-SR302*
page 181

FORD RACING PERFORMANCE INFO CENTER GAUGE
M-10898-CPIC
page 191

FORD RACING PERFORMANCE VACUUM/BOOST GAUGES
M-11622-BFSE
page 191

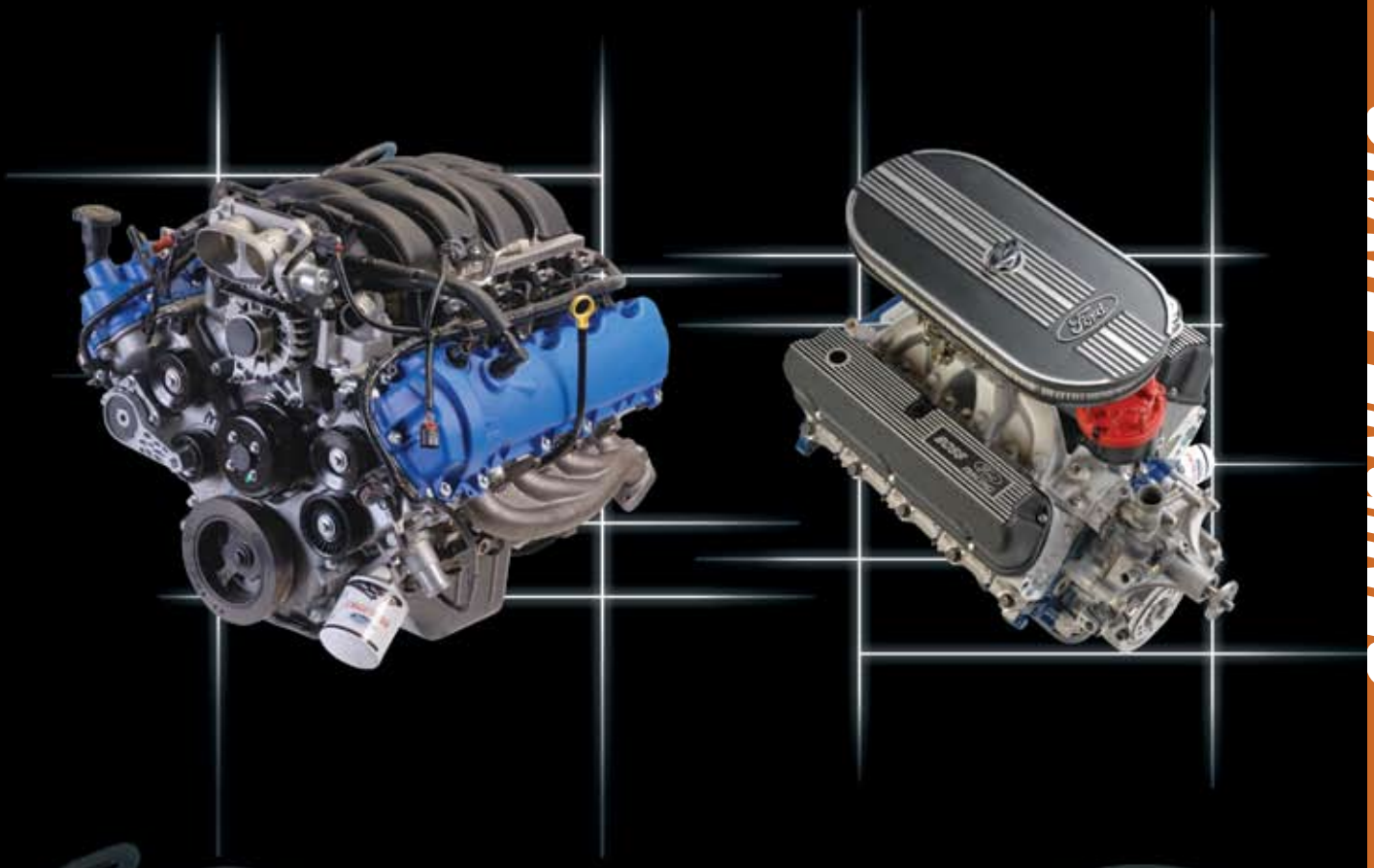
FORD RACING 3-3/8" PEDESTAL MOUNT TACH
M-17360-B
page 191

3V HEAT RANGE ONE 12 MM SPARK PLUG
M-12405-3V12MM
page 89

Part Number	Description	Page
M-9275-BFSE	FORD RACING PERFORMANCE FUEL PRESSURE GAUGE	191
M-9278-BFSE	FORD RACING PERFORMANCE OIL PRESSURE GAUGE	191
M-10883-BFSE	FORD RACING PERFORMANCE WATER TEMP GAUGE	191
M-10885-BFSE	FORD RACING PERFORMANCE PYROMETER GAUGE	191
M-9424-C58*	351 FORD RACING NASCAR INTAKE	124
M-9430-ZM7993*	1986-93 FOX Z HEAD SHORTY HEADER SET	180
M-9430-ZM7993C*	1986-93 CEARAMIC COATED FOX Z HEAD SHORTY HEADER SET	180
M-11000-MT164	HIGH-TORQUE MINI STARTER	160
M-77000-FR500S	2008 1:18 SCALE DIE CAST FR500S MUSTANG	22

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

CRATE ENGINES



When building a dream car, the engine is the heart of any vehicle project. Don't trust it to just anyone.

Ford Racing is the originator in Ford crate engines and we're still the best. From stock engine drops to modified big blocks, look no further than Ford Racing.

Our crate engines endure prove-out and quality control available through an original equipment manufacturer. Plus it's backed by the Ford Racing warranty.

PUSHROD CRATE ENGINES AND SHORT BLOCKS

CRATE ENGINE PART NUMBER	M-6007-X302E/X302B	M-6007-Z302Z	M-6007-Z347	M-6007-347NST	M-6007-D347SR	M-6009-Z347
Displacement (ci)	302	302	347	347	347	347
Horsepower (hp)	X302E 340 X302B 345	390	450	N/A	415	N/A
Torque (lb-ft)	310	360	400	N/A	400	N/A
Compression Ratio	9.0:1	10.0:1	9.7:1	10.0:1	10.0:1	N/A
Cylinder Heads	X306 GT-40	Z304DA	Z304DA High Flow	Z304DA	Z304DA	No Heads
Camshaft	X302E XE303 Hyd. Roller X302B B303 Hyd. Roller	Z303 Hyd. Roller	Crane Hyd. Roller Cam	F303 Hyd. Roller Cam	F303 Hyd. Roller Cam	No Cam
Crank	3.00" Stroke Forged	3.00" Stroke Forged	3.40" Stroke Forged	3.40" Stroke Forged	3.400" Forged	3.40"
Piston	4.00" Forged	4.00" Forged	4.030" Forged	4.030" Forged	4.030" Forged	4.030" Forged
Intake	No Intake	No Intake	Victor Jr.	Victor Jr.	Victor Jr.	No Intake
Distributor	No Distributor	No Distributor	Billet Distributor	Billet Distributor	Billet Distributor	No Distributor
Valve Cover	M-6582-BOSS302	M-6582-BOSS302	M-6582-BOSS	M-6582-R302	M-6582-R302	No Valve Covers
Oil Pan	Production	7qt. Rear Sump	7 qt. Rear Sump	7 qt. Rear Sump	7 qt. Rear Sump	No Oil Pan
Water Pump	Serpentine Belt	V Belt	V Belt	V Belt	V Belt	No Water Pump
Block	**M-6010-BOSS302**	**M-6010-BOSS302**	**M-6010-BOSS302**	**M-6010-BOSS302**	**M-6010-BOSS302**	**M-6010-BOSS302**

CRATE ENGINE PART NUMBER	M-6007-D351FT	M-6007-D351RT	M-6007-S58	M-6007-D392FT	M-6007-D392RT	M-6007-Z351SR
Displacement (ci)	351	351	351	392	392	351
Horsepower (hp)	385	385	250	430	430	400
Torque (lb-ft)	377	377	350	450	450	375
Compression Ratio	9.0:1	9.0:1	8.5:1	9.7:1	9.7:1	10.0:1
Cylinder Heads	X305 GT-40	X305 GT-40	Production Cast Iron	X303 GT-40	X303 GT-40	Z304DA
Camshaft	Z303 Hyd. Roller Cam	Z303 Hyd. Roller Cam	Standard Hyd. Cam	Crane Hyd. Roller Cam	Crane Hyd. Roller Cam	Hyd. Roller Cam
Crank	3.50" Stroke Cast	3.50" Stroke Cast	3.50" Stroke Cast	3.85" Stroke Cast	3.85" Stroke Cast	3.50" Forged
Piston	4.000" Forged	4.000" Forged	4.000" Hypereutectic	4.030" Forged	4.030" Forged	4.000" Forged
Intake	Victor Jr.	Victor Jr.	FRPP Dual Plane	Victor Jr.	Victor Jr.	Victor Jr.
Distributor	Billet Distributor	Billet Distributor	Ford Duraspark	Billet Distributor	Billet Distributor	No Distributor
Valve Cover	M-6582-E302P	M-6582-E302P	M-6582-E302P	M-6582-E302P	M-6582-E302P	M-6582-R302
Oil Pan	7 qt. Front Sump	7 qt. Rear Sump	Full Sump Production	7 qt. Front Sump	7 qt. Rear Sump	10 qt. Rear Sump
Water Pump	Both	Both	V Belt	Both	Both	V Belt
Block	**M-6010-C58**	**M-6010-C58**	**Production**	**M-6010-C58**	**M-6010-C58**	**M-6010-C58**

CRATE ENGINE PART NUMBER	M-6007-C392FT	M-6007-C392RT	M-6007-521FT	M-6007-521RT	M-6007-Z331P	427 WINDSOR
Displacement (ci)	392	392	521	521	331	427
Horsepower (hp)	475	475	580	580	500	N/A
Torque (lb-ft)	495	495	600	600	388	N/A
Compression Ratio	10.0:1	10.0:1	10.0:1	10.0:1	11.9:1	N/A
Cylinder Heads	Z304DA High Flow	Z304DA High Flow	SCJB	SCJB	Z304PA	Z304PA
Camshaft	Hyd. Roller Cam	Hyd. Roller Cam	Mech. Roller	Mech. Roller	Flat Tappet	N/A
Crank	3.85" Forged	3.85" Forged	4.30" Stroke Cast	4.30" Stroke Cast	3.10" Stroke Forged	4.00" Stroke Forged
Piston	4.030" Forged	4.030" Forged	4.390" Forged	4.390" Forged	4.125" Forged	4.125" Forged
Intake	Victor Jr.	Victor Jr.	Victor Jr.	Victor Jr.	No Intake	N/A
Distributor	Billet Distributor	Billet Distributor	Billet Distributor	Billet Distributor	No Distributor	N/A
Valve Cover	M-6582-E302P	M-6582-E302P	M-6582-C460	M-6582-C460	M-6582-BOSS	N/A
Oil Pan	7 qt. Front Sump	7 qt. Rear Sump	7qt. Front Sump	7qt. Rear Sump	7qt. Rear Sump	N/A
Water Pump	Both	Both	V Belt	V Belt	V Belt	N/A
Block	**M-6010-C58**	**M-6010-C58**	**M-6010-A460**	**M-6010-A460**	**M-6010-BOSS302**	**N/A**

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

4.6L 4V

ENGINE PART NUMBER	M-6007-A46NA	M-6009-A46NA	M-6007-A46SC	M-6009-A46SC	M-6009-A46SCB
Displacement	4.6L	4.6L	4.6L	4.6L	4.6L
Horsepower (hp)	N/A	N/A	N/A	N/A	N/A
Torque (lb-ft)	N/A	N/A	N/A	N/A	N/A
Compression Ratio	10.0:01	10.0:01	8.5:1	8.5:1	8.5:1
Combustion Chamber Volume (cc)	52.6 ± 0.5	N/A	52.6 ± 0.5	N/A	52.6 ± 0.5
Cylinder Heads	4V, 04 Cobra Production	N/A	4V, 04 Cobra Production	N/A	N/A
Camshafts	03/04 Cobra In: 10 mm Ex: 10 mm	N/A	03/04 Cobra In: 10 mm Ex: 10 mm	N/A	N/A
Crankshaft	Forged, 8-Bolt Flywheel	Forged, 8-Bolt Flywheel	Forged, 8-Bolt Flywheel	Forged, 8-Bolt Flywheel	Forged, 8-Bolt Flywheel
Connecting Rod	Forged Steel	Forged Steel	Forged Steel	Forged Steel	Forged Steel
Piston	Forged, Grafal coated skirts 0 cc dish	Forged, Grafal coated skirts 0 cc dish	Forged, Grafal coated skirts 16 cc dish	Forged, Grafal coated skirts 16 cc dish	Forged, Grafal coated skirts 16 cc dish
Intake Manifold	N/A	N/A	N/A	N/A	N/A
Ignition	N/A	N/A	N/A	N/A	N/A
Valve Cover	M-6582-A54	N/A	M-6582-A54	N/A	N/A
Oil Pan	XR3E-6675-DB	N/A	XR3E-6675-DB	N/A	N/A
Water Pump	5W7E-8501-AA	N/A	5W7E-8501-AA	N/A	N/A

5.4L 4V/2V

ENGINE PART NUMBER	M-6007-C54	M-6007-TVS	M-6009-C54SC2	M-6009-C54SC4
Displacement	5.4L	5.4L	5.4L	5.4L
Horsepower (hp)	500	605	N/A	N/A
Torque (lb-ft)	480	554	N/A	N/A
Compression Ratio	8.4:1	8.4:1	8.9:1 w/2V Lightning heads	8.1:1 w/2007-09 SVT heads
Combustion Chamber Volume (cc)	42.45-45.45	42.45-45.45	N/A	N/A
Cylinder Heads	4V GT500	4V GT500	N/A	N/A
Camshafts	In: 11.14 Ex: 11.93	In: 11.14 Ex: 11.93	N/A	N/A
Crankshaft	Forged, 8-Bolt Flywheel	Forged, 8-Bolt Flywheel	Forged, 8-Bolt Flywheel	Forged, 8-Bolt Flywheel
Connecting Rod	Sintered Steel	Sintered Steel	Forged, w/ARP 2000 bolts	Forged, w/ARP 2000 bolts
Piston	Forged	Forged	Forged, Grafal coated skirts 16 cc dish	Forged, Grafal coated skirts 16 cc dish
Intake Manifold	Supercharged	Ford Racing TVS Supercharger	N/A	N/A
Ignition	Coil on Plug	Coil on Plug	N/A	N/A
Valve Covers	Production with signature plate	M-6582-C with unique Ford Racing Signature Plate	N/A	N/A
Oil Pan	Production	Production	N/A	N/A
Water Pump	Production	Production	N/A	N/A
Exhaust Manifolds	Cast Iron	None	N/A	N/A

4.6L 3V

ENGINE PART NUMBER	M-6007-A463NA	M-6007-MC	M-6009-463V	M-6009-A463SC
Displacement	4.6L	4.6L	4.6L	4.6L
Horsepower (hp)	350	325	N/A	N/A
Torque (lb-ft)	330	330	N/A	N/A
Compression Ratio	9.8:1	9.8:1	9.8:1	8.7:1
Combustion Chamber Volume (cc)	49.6	49.6	N/A	N/A
Cylinder Heads	Production	Production	N/A	N/A
Camshafts	M-6550-3V	In: 11.1 Ex: 11.0	N/A	N/A
Crankshaft	Cast, 6-Bolt Flywheel	Cast, 6-Bolt Flywheel	Cast, 6-Bolt Flywheel	Forged, 8-Bolt Flywheel
Connecting Rods	Sintered Steel Cast, hard anodized ring grooves	Sintered Steel Cast, hard anodized ring grooves	Sintered Steel Cast, hard anodized ring grooves	Forged Steel
Piston	Grafal coated skirts	Grafal coated skirts	Grafal coated skirts	Forged, Grafal coated skirts 16cc dish
Intake Manifold	05-08 Mustang	05-08 Mustang	N/A	N/A
Ignition	Coil on plug	Coil on plug	N/A	N/A
Valve Covers	M-6582-3VB	Production	N/A	N/A
Oil Pan	Production	Production	Production	N/A
Water Pump	Production	Production	N/A	N/A
Exhaust Manifolds	Production	N/A	N/A	N/A

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

The crowded field of FR500S race cars at the start of the Ford Racing Mustang Challenge for the Miller Cup race at Mid Ohio

Race cars. The extreme expression of performance and the pride of all auto manufacturers—especially when the manufacturer designs, engineers and builds the race cars. And the cars win! Such is the case at Ford Racing, the only manufacturer to offer a diverse line of fully-engineered, turn-key, winning race cars for amateurs to the pros—the FR500 family.

The first of this family of Mustang race cars was the FR500C, a car designed to compete in the professional Grand-Am Cup series (now the KONI Challenge). The FR500C had a remarkable first season, winning the "triple crown"—the drivers', manufacturers' and team championships! The formula was so good that the car was taken to Europe where it stormed to the 2007 FIA GT4 championship.

With the success of the FR500C, Ford Racing embarked on an even more challenging effort—building race cars in Mustang's assembly plant. Through a collaboration involving Ford Racing, Miller Motorsports Park, Team Mustang and the team at the plant, the FR500S was born—and with it the Mustang Challenge for the Miller Cup, an all-new professional road racing series featuring the FR500S exclusively. With 21 entries at the series' opening race, all involved had much to cheer about.

And for 2009 the story continues. To celebrate the 40th anniversary of the original Cobra Jet Mustang, Ford Racing is returning to sportsman drag racing in a big way with the newest member of the FR500 family, the FR500CJ (Cobra Jet). This factory hot rod will be powered by the 5.4 Cobra Jet engine, and will benefit from the same factory design and engineering that went into its road racing brothers. Watch for it on drag strips throughout the 2009 season!

COMPETITION MUSTANGS

RACING MUSTANG	AMERICAN IRON	FR500S	FR500C
			
SERIES	AMERICAN IRON	MUSTANG CHALLENGE FOR THE MILLER CUP	GRAND AM KONI CHALLENGE SERIES (GS)
Primary Competition	Domestic "pony cars," Chevrolet Camaro, Pontiac Firebird	Spec Series Look for more information on www.fordracing.com.	BMW M3, Porsche 996/997, Nissan 350Z
Remarks	NASA Road Racing has created a venue for owners to race the muscle cars we have all grown to love. Whether you prefer your 65 Fastback or your 05 GT, American Iron creates a playground to race your Fast Fords. The Series offers three different classes under the American Iron banner. American Iron (AI), American Iron Extreme (AIX) and the Camaro Mustang Challenge (CMC). This allows owners to compete on track with a slightly mild Mustang to a full-out wild one. With multiple engine and suspension combinations allowed per the rules, American Iron Mustangs can easily be assembled by flipping through your Ford Racing parts catalog. Whether you are an amateur racer, or a weekend gear head, American Iron has a spot to put your Mustang on track.	Introduced at the 2007 SEMA Show, the Mustang FR500S is featured exclusively in the Ford Racing Mustang Challenge for the Miller Cup, a professional road racing series launched in 2008 by Ford Racing and Miller Motorsports Park (www.MustangChallenge.com). Manufactured at AutoAlliance International (Flat Rock, MI), with additional race-prep fabrication at Watson Engineering (Taylor, MI) and final race prep at Miller Motorsports Park in Tooele, UT, the FR500S is the first race car ever built by Ford Motor Company on a production line. The FR500S features a production 4.6L 3-valve V8 engine and a variety of Ford Racing performance parts, including a cold-air kit, high-capacity radiator, long tube headers, two-way adjustable dampers and springs and FR500C brakes. The turn-key race car can be ordered through Miller Motorsports Park or from your local Ford dealer and is delivered to the customer in race-ready condition, complete with roll cage built to Grand-Am specifications, racing seat and safety harnesses, an AIM data acquisition system and a timing and scoring transponder.	Road racing at the grassroots level has soared over the past few years, and for Ford enthusiasts, few vehicles make better race cars than a Mustang. For those looking to take their first step into professional road racing, Ford Racing can meet those needs with the Mustang FR500C. Code-named "Boy-Racer," this FR500C Mustang is a turn-key race-ready car. Ford Racing offers two ways to get a driver behind the wheel of a Grand Am Koni Challenge Series Mustang. The first is to purchase a Mustang FR500C race car ready to be driven to victory. The second is to take advantage of a number of race-ready parts available to the private builder. With its 5.0L "Cammer R50" engine, the FR500C is a proven winner, claiming the 2005 driver, team and manufacturer championships in its debut year in the Grand-Am series. In 2007, victory lane again became a familiar place for the vehicle as it won the first three events of the season. With an average of 11 Mustangs in any given Koni race, the FR500C is the car of choice for those looking to get behind the wheel of a proven competitive vehicle.
Where/How to Buy		Miller Motorsports Park	Available from Ford, Lincoln and Mercury Dealers Visit FordRacing.com for details

COMPETITION MUSTANGS

			
RACING MUSTANG	**SCCA**	**FR500GT4**	**FR500GT3 "COBRA"**
SERIES	**SCCA**	**GT4 EUROPEAN CUP**	**FIA GT3 EUROPEAN CHAMPIONSHIP**
Primary Competition		Maserati, Porsche, BMW, Aston Martin, Nissan	Ascari, Aston Martin, Dodge Viper, Corvette Z06, Ferrari 430, Lamborghini Gallardo, Lotus Exige, Maserati, Porsche 997
Remarks	The modern Mustang has a legacy of competing in SCCA's touring classes and Solo. Now trickle-down performance from the Grand-Am champion FR500C and FR500S can make any 2005+ Mustang GT an SCCA terror for the competition. Ford Racing's Handling Pack, Power Upgrade Package and brake kit were all put into production on the Shelby GT. Thanks to homologation of Ford Racing parts found on the Shelby GT, any Mustang GT can compete with Subaru WRX's, Mitsubishi Lancer EVO's and Pontiac GTO's in T2 competition. SCCA Solo racing is considered the most entry-level style of road racing. In this class of racing, a competitor can race any vehicle of any year that they choose. The Ford Mustang and Solo racing go hand in hand because both offer a huge bang-for-the-buck. Without requiring a roll cage or other expensive race-only parts, every Mustang owner has the opportunity to compete at 1,500 different events annually.	Based on the successful Mustang FR500C, the FR500GT4 is homologated for FIA GT4 European Cup competition and is powered by the 450+ hp Ford Racing 5.0L Cammer V8 engine. Competing against some of the world's most notable brands including Porsche and BMW, the Mustang FR500GT4 captured four race victories and eight podium finishes en route to winning the inaugural series championship in 2007. The FIA GT4 European Cup emphasizes reduced costs, reliability and the use of production parts. It is based on a technical formula that allows the development of street-legal cars for racing that provides a balanced level of performance for all competitors. Car modifications are focused on the braking and transmission systems, dampers and safety elements (cockpit, fuel tank, etc.). The engine is left largely in its original form. Furthermore, the original aerodynamics of a car must also be maintained; no wings or spoilers are permitted unless they are an integral part of the original bodywork of the basic model.	Homologated for the 2007 season, the Mustang FR500GT now competes in the FIA GT3 European Championship sports car racing series. The FR500GT3 boasts more than 500 hp with a Ford Racing 5.0L Cammer V8 engine. The GT3 series was launched in 2006 as a way to expand manufacturer involvement in motorsports as well as to help amateur drivers across Europe. It attempts to combine multiple one-make series into a larger event with a race within a race, teams competing not only to beat others in their own manufacturer cup but also to win the overall race. For the process of homologating the FR500GT3 in 2007, Ford partnered with Toronto-based Multimatic, which also assisted in preparing the Mustang FR500C for GT4 European Cup competition.
Where/How to Buy	Look through the FR Performance Packs, homologated for SCCA, available at your local Ford Dealer or Ford Racing performance distributor	Available through Matech, our exclusive European Distributor for all FIA homologated FR Mustangs Visit FordRacing.com for details	Available through Matech, our exclusive European Distributor for all FIA homologated FR Mustangs Visit FordRacing.com for details

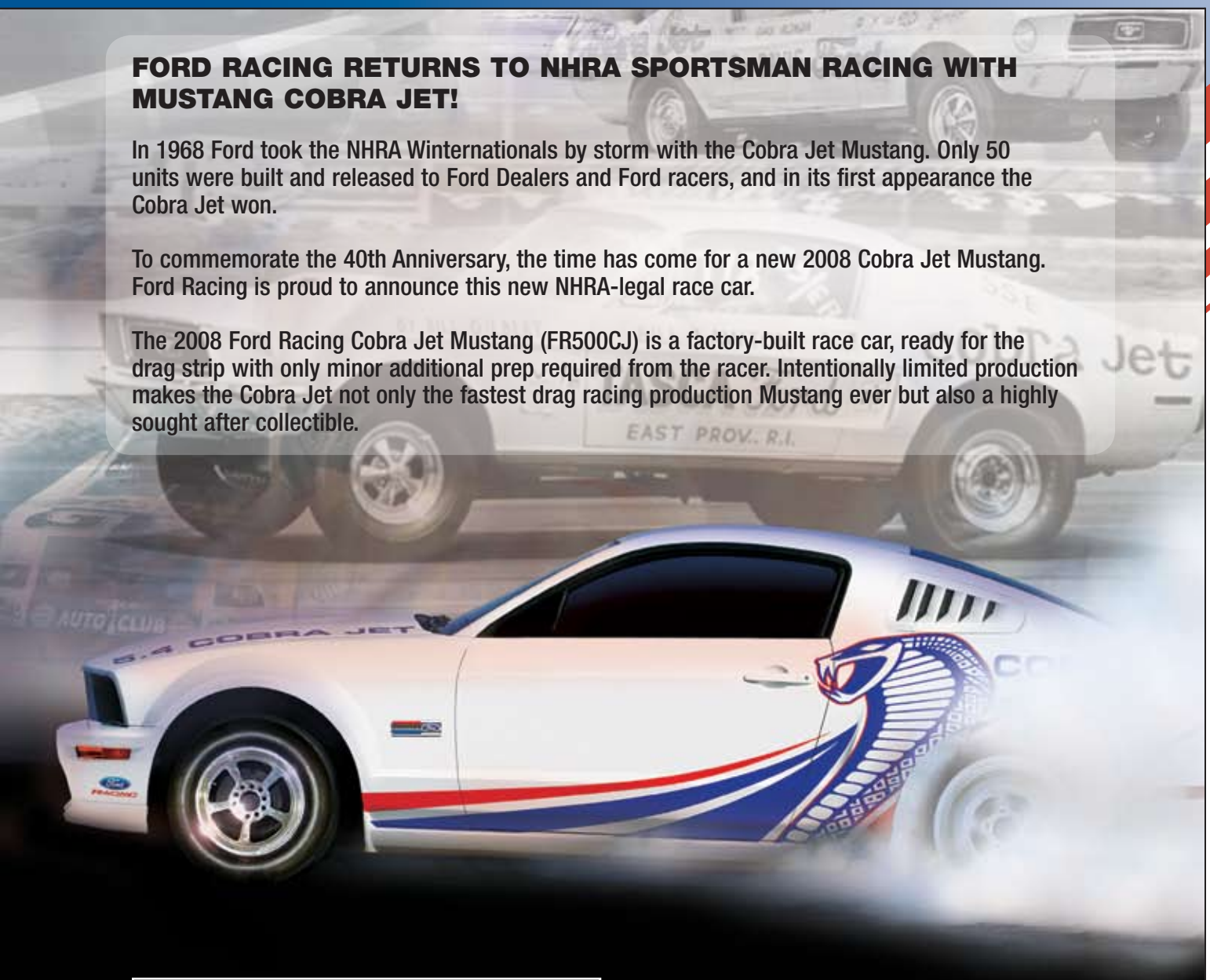
FR500CJ

FORD RACING RETURNS TO NHRA SPORTSMAN RACING WITH MUSTANG COBRA JET!

In 1968 Ford took the NHRA Winternationals by storm with the Cobra Jet Mustang. Only 50 units were built and released to Ford Dealers and Ford racers, and in its first appearance the Cobra Jet won.

To commemorate the 40th Anniversary, the time has come for a new 2008 Cobra Jet Mustang. Ford Racing is proud to announce this new NHRA-legal race car.

The 2008 Ford Racing Cobra Jet Mustang (FR500CJ) is a factory-built race car, ready for the drag strip with only minor additional prep required from the racer. Intentionally limited production makes the Cobra Jet not only the fastest drag racing production Mustang ever but also a highly sought after collectible.



FORD RACING PART NUMBER:
M-FR500-CJ

Program intent:
- Provide a Mustang that is a true A Stock competitor
- 50 units initial order
- Off-road only
- 2008MY designation
- Built in December 2008 vehicles will be delivered February 2009.

Vehicle content:
- 420 hp (est.) 5.4L DOHC Supercharged engine
- 6-speed manual transmission standard, automatic option
- NHRA legal to 10.00 second ets
- NHRA Stock Eliminator legal interior
- Light-weight – 3,200 lbs (est.)
- Unique trim and appearance package
- Drag race wheel/tire combination
- Cobra Jet graphics package

The Cobra Jet Mustang (M-FR500-CJ) joins Ford Racing's two successful road racing Mustangs, the M-FR500-C and M-FR500-S, as turn-key race cars available only from Ford Dealers. We encourage you to take advantage of this unique opportunity to help rewrite history by ordering and campaigning this new race car. Finally, while built to NHRA specs, this package will not be limited to NHRA competition.

FR500S

The Mustang FR500S is the newest addition to the Mustang FR500 race car family and the only car that is homologated for the Mustang Challenge for the Miller Cup—a new professional racing series that debuted in 2008.

Manufactured at AutoAlliance International in Flat Rock, MI—the same facility that builds street-legal Mustangs—the limited-edition FR500S is the first race car built by Ford Motor Company on a production line intended for sale to the public. The car features the 4.6L 3-valve production V8 engine and a variety of Ford Racing Performance Parts, including a cold air kit, high-capacity radiator and two-way adjustable dampers and springs. The car can be ordered through Miller Motorsports Park or your local Ford dealer and is delivered to the customer in race-ready condition, complete with a roll cage, racing seat and safety harnesses, an AIM data acquisition system and even a timing and scoring transponder.

The Mustang Challenge is an affordable, challenging platform for racers who want to compete in a V8-powered, rear-wheel-drive car on a level playing field that showcases driver ability. The series staged eight races in 2008 in support of major professional road racing events across North America.

MUSTANG FR500S RACE CAR

M-FR500S*

Mustang racing adds the all-new Mustang FR500S to its race car line-up, competing in the Ford Racing Mustang Challenge for the Miller Cup.

The Mustang FR500S features the following

- Factory-built and painted body shell with all sound deadening and seam sealer deleted
- Dyno-checked and sealed 4.6L 3-valve, fuel-injected V8
- Ford Racing/Brembo® 4-piston 14" front brakes with race pads front and rear; race ABS calibration

ENGINE

- 4.6L 3-valve, fuel-injected V8

STEERING

- Ford Racing rack and pinion
- Ford Hydraulic

FUEL SYSTEM

- Fuel Pumps: Ford Mustang GT stock
- Pressure Regulator: Ford Mustang GT stock

WHEELS

- 2008 SVT Mustang
- Size – Front: 18" x 9.5"
- Size – Rear: 18" x 9.5"

DRIVELINE

- 2008 SVT Mustang stock 6-speed manual transmission
- Upgraded clutch assembly
- Ford Racing short throw shifter

BRAKES

- Front: Brembo® 4-piston 14"
- Rear: Ford stock
- Master Cylinder: 2008 SVT Mustang stock
- ABS: Ford Racing

REAR SUSPENSION

- Dynamic Suspension – coil-over dampers
- Panhard Rod

FRONT SUSPENSION

- 2-way adjustable dampers with coil springs
- Adjustable anti-roll bar

ANCILLARIES

- Ford Racing high-capacity racing radiator
- Ford Racing Performance Parts exhaust system
- Ford Racing (08 Bullitt Based) 84 mm cold air intake

COCKPIT

- Ford Racing race seat
- Ford Racing 6-point safety harness
- Center mount console switches
- AIM MXL data acquisition system

2008 DIE-CAST FR500S MUSTANG

M-77000-FR500S

- Take home your own 1:18 scale limited edition FR500S Mustang race car
- This highly detailed model will enhance any car collection
- Small parts, not intended for young children

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FR500S

- **M-FR500-S*** Mustang FR500S Race Car
- **M-14A005-500S*** Main Body Harness
- **M-1007-S1895*** Wheels
- **M-1012-G*** Wheel Nut (5 Pack)
- **M-1104-A*** FR500S Hub Kit with ARP® Studs
- **M-1107-A*** FR500S Front Wheel Studs
- **M-1107-B*** FR500S Rear Wheel Studs
- **M-1125-D*** FR500S Rotor Kit 48 Vane
- **M-1125-E*** FR500S Front Rotor Hat Kit
- **M-1225-B1*** Bearing and Seal Kit
- **M-2078-A*** FR500S Brake Hose Kit
- **M-2100-R*** Front Brake Pads
- **M-2200-R*** Rear Disc Brake Pad
- **M-2300-J** FR500S Brake Kit
- **M-2320-D*** FR500S Brembo® Brake Caliper Kit
- **M-2353-A*** FR500S ABS Brake Module
- **M-2454-A*** FR500S Dead Pedal
- **M-3075-E** Lower Control Arm Kit
- **M-3130-R3*** High-Temp Tie Rod End
- **M-3200-R*** Steering Rack with Reduced Assist
- **M-3332-A** FR500S High-Temp Tie Rod End Seals
- **M-3746-A*** Power Steering Cooler
- **M-4001-A373*** Axle Assembly (Requires M-4033-G2, M-4204-T314, M-1107-B)
- **M-4033-G2*** Axle Girdle
- **M-4204-T31H*** FR500S Differential
- **M-4209-F373N*** Ring and Pinion
- **M-4210-B1** Ring & Pinion Installation Kit
- **M-5025-A** Lower A-Arm Brace
- **M-5230-S*** FR500S Special Edition Mufflers
- **M-5310-A*** FR500S Front Springs
- **M-5478-S197B** FR500S Driveshaft Loop Kit
- **M-5490-A** Anti-Roll Bar Kit
- **M-5560-A*** FR500S Rear Springs
- **M-6007-MC*** FR500S 4.6L 3-Valve Sealed Race Engine
- **M-6731-FL820** Oil Filter (Case)
- **M-7210-B*** Shifter
- **M-7213-J*** Shifter Stalk and Ball
- **M-7550-B*** Clutch Disc
- **M-8005-S197*** Radiator
- **M-8080-A*** Degas Bottle
- **M-8100-A*** Radiator Cap
- **M-8200-A*** Grill
- **M-8310-A*** Radiator Air Deflector
- **M-9430-MC*** 4.6L 3V Long Tube Headers
- **M-9601-B*** Air Filter
- **M-9603-GTB*** Cold Air Kit
- **M-16600-E*** FR500S Painted Rear Wing
- **M-16600-F*** FR500S Unpainted Rear Wing
- **M-16601-C*** Splitter Kit
- **M-16620-R*** Race Seat
- **M-17757-A*** Front Bumper Beam
- **M-17906-A*** Rear Bumper Beam
- **M-17954-A*** FR500S Tow Hook Loop Kit
- **M-18000-E*** FR500S Front and Rear Dampers
- **M-18000-EFL*** Damper L Front
- **M-18000-EFR*** Damper R Front
- **M-18000-ERL*** Damper L Rear
- **M-18000-ERR*** Damper R Rear
- **M-18183-B*** FR500S Camber Plate
- **M-18197-A*** FR500S Rear Shock Mount
- **M-19216-D46** AC Delete
- **M-20201-MC*** FR500S Strut Tower Brace
- **M-61108-R** 6-point Safety Harness
- **M-607100-R197A*** FR500S Caged Body in White
- **M-6342006-MC*** Windows, Rear Quarter

MUSTANG FR500S MUFFLERS

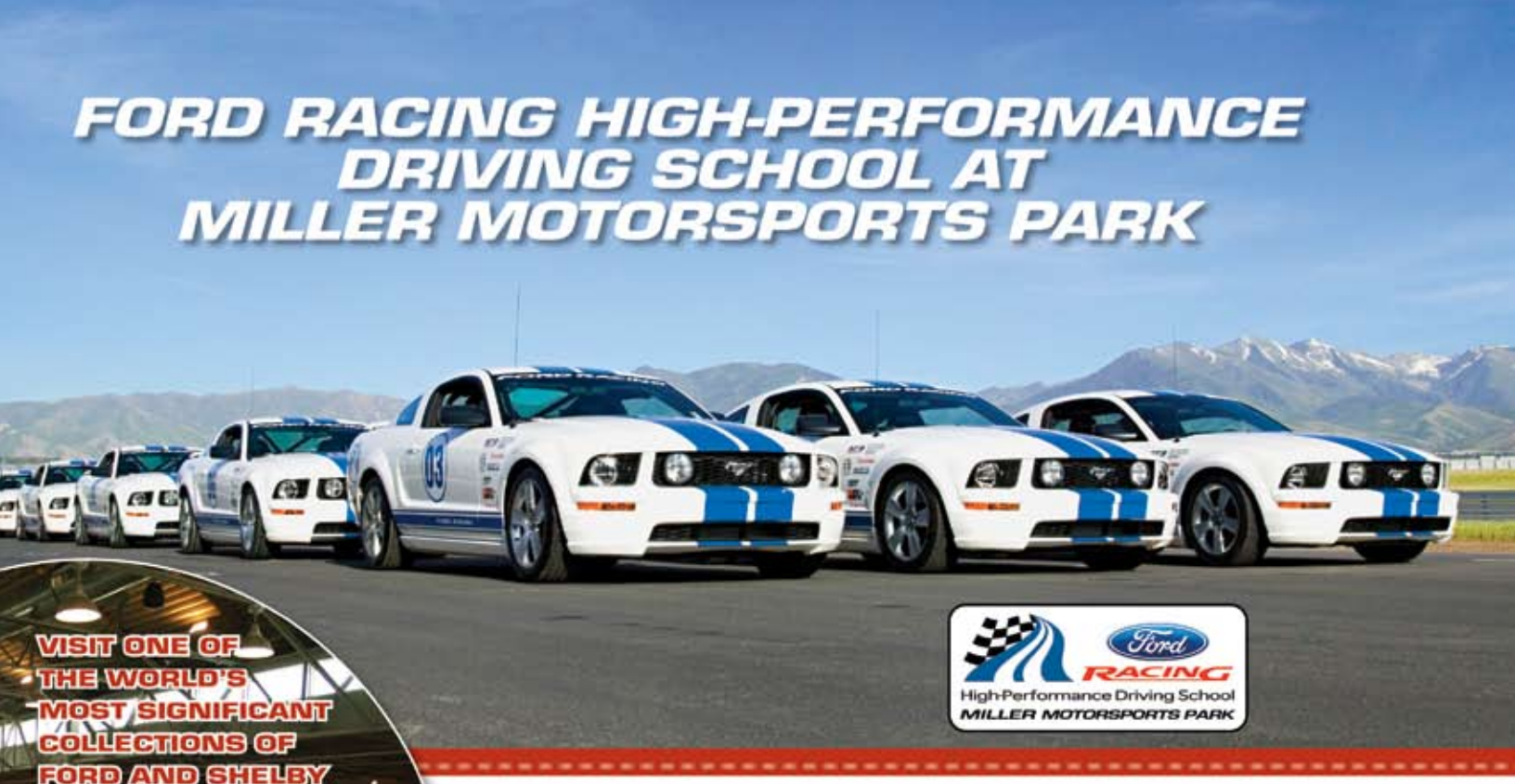
NEW

M-5230-S

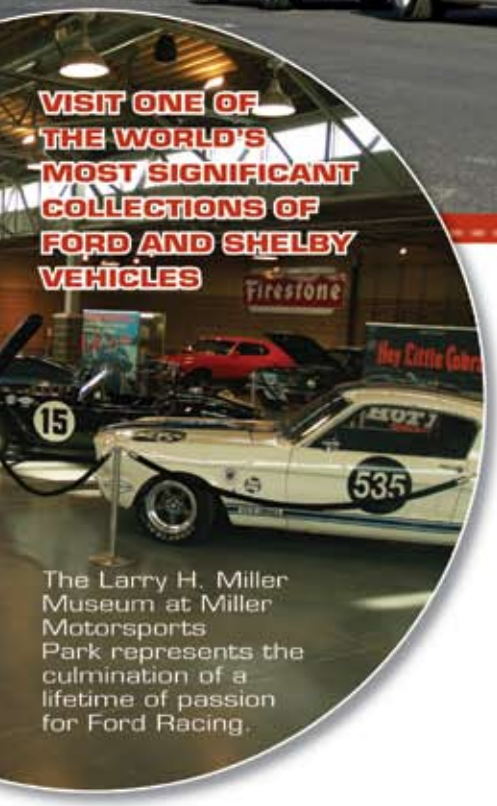
- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- Homologated for use on the Mustang FR500S
- Body of mufflers embossed with Ford Racing logo
- Aluminized 409 stainless steel corrosion-resistant body with polished 304 stainless 3.5" diameter tips
- Throatier exhaust note

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FORD RACING HIGH-PERFORMANCE DRIVING SCHOOL AT MILLER MOTORSPORTS PARK



Ford RACING
High-Performance Driving School
MILLER MOTORSPORTS PARK



The Larry H. Miller Museum at Miller Motorsports Park represents the culmination of a lifetime of passion for Ford Racing.

Miller Motorsports Park features an in-depth training center with the Ford Racing High-Performance Driving School, a Highway Survival Clinic, a teen driving academy, a Supermoto school, a karting school and many corporate programs.

PROGRAMS INCLUDE:

Miller Mustang GT Hot Laps

Miller Motorsports Park Mustang Experience

One, Two or Three Day
Ford Racing High-Performance Driving School

Our Signature Three Day Supercar Driving School

MILLER
MOTORSPORTS PARK

PERFORMANCE TRAINING CENTER:
435-27-SPEED
EVENT TICKETS OR INFORMATION:
435-277-RACE

MILLERMOTORSPORTSPARK.COM

Voted "Motorsports Facility of the Year" in 2006 by the Professional MotorSport World Expo
25 minutes west of the Salt Lake Airport in the beautiful Tooele Valley of Utah

M-0750-A2008 Printed in U.S.A.

MUSTANG CHALLENGE

SPEEDWORKS R&D

GO RACING THE HASSLE-FREE WAY!

Arrive at the Ford Racing Mustang Challenge for the Miller Cup events and have your race-prepared car waiting for you. Run with our crew, engineer and management assistance. Have no worries about race set-up, maintenance, transportation of the car, tires, fuel, etc.– you will have our dedicated professionals take care of this for you. Race weekends consist of two or more practice sessions, a thirty minute qualifying session, followed by one or two timed forty-five minute races.

SpeedWorks R&D is the official "arrive and drive" team for the Mustang Challenge series. Hayden Harris, Peter Parrott, Ron and Ronnie Johncox, are owners of SpeedWorks R&D and have many years of racing expertise in several racing venues. From Formula One to IndyCar to sprint car racing and midget racing, these men have excelled at every level.

If you are interested in running a race or two, or are interested in competing in a full season of the Mustang Challenge racing, the SpeedWorks R&D team will give you the finest in equipment, crew and engineering. Every crew member of the SpeedWorks R&D team is experienced and qualified to give you the highest and most professional racing results every weekend.

SERVICES

Our goal is to provide the best management, services, equipment, crew, and results to insure a successful event for our drivers and an enjoyable experience for their guests.

Our race car or yours, we offer a complete service package.

Basic Services Provided

- *Pre-race preparation of the race car*
- *Transportation to the race site in an enclosed transporter.*
- *Payment of track rental and entry fees*
- *Set up at the track and garage/race tent*
- *Race mechanics and engineering services*
- *One set of new tires per event*
- *Fuel and other necessary supplies*
- *Driver radio communication*
- *Live race car telemetry*
- *Complimentary meals by Miller Motorsports*
- *Coaching and assistance from our team manager, engineer and crew*
- *Complete maintenance of the race car at the event and at our Indianapolis race shop*

Items Available for an Extra Fee

- *Custom painted car*
- *Exposure on our transporter*
- *Driver promotional literature*
- *Professional driving coach*
- *Additional practice/test sessions*
- *Additional tires (as allowed by the Series).*
- *Extra on-track hospitality, garage tours, suite and grandstand seats for VIPs.*
- *Special media services including signage on the race car and crew uniforms*
- *Special crew apparel and other sponsor-related services*
- *Media coverage, PR and sponsor activation*

GETTING STARTED

First, you will need a Grand-Am competition license. If you don't have a license, here are a couple of easy ways to get one.

- *Enroll in the Miller Motorsports Park driving school*
- *This will lead to the issue of a Grand-Am license upon completion*

If you have a competition license from another racing organization

- *First get an overview of Grand-Am requirements by checking their web site: www.grand-am.com*
- *Next get your racing resume together*
- *Contact Fresha Myers at emyers@grand-am.com*

Once you have your license, contact SpeedWorks R&D for a competitive car at an afforadable price and let's go racing!

SPEEDWORKS R&D

877·609·6757

5700 West Minnesota Street • Building I-3
Indianapolis, Indiana 46241

SpeedWorksRD.com

FR500C

In a testament to Ford Racing engineering and durability, the FR500C has stormed the Grand American Road Racing GS Class. Right out of the box, 2005 proved to be a remarkable season for the FR500Cs as these factory-engineered race cars won 5 races on their way to garnering the "triple crown"—the drivers', manufacturers' and team championships! In 2007, the FR500C won 5 of 12 races in the Grand American Road Racing KONI Challenge Series, and the FR500GT4 won the inaugural championship in the GT4 European Cup!

As the saying goes, "nothing breeds success like success," and 2008 is further evidence of that. Based on their proven track records of 2005-07 and their undisputed value, the field of Mustangs competing continues to grow—with 31 cars currently being campaigned across America and now in Europe. Through July of 2008, the FR500C has tallied two victories in the KONI Challenge and has Ford on top of the Manufacturer Standings and the FR500GT4 is defending its GT4 title well, sitting first in the standings through two-thirds of the season. The FR500C—worthy heir to Mustang's unmatched racing heritage.

MUSTANG FR500C RACE CAR

M-FR500-C*

A turn-key ready-to-run steed for Grand Am Cup GS class!
The Mustang FR500C features the following:

- Seam-welded, pre-paint, production body, Grand Am spec roll cage, attachment points and enclosures specifically for racing.
- Ford Racing 5.0L "Cammer R50" engine—the heart of this purpose-built machine mated to our unique Tremec T-56 racing transmission.
- Ford Racing brake and suspension upgrades.
- Add driver...and look for victory lane!

ENGINE
- Type: 5.0L "Cammer R50"

STEERING
- Steering Rack: Ford Racing rack and pinion
- Power Steering: Ford Hydraulic

FUEL SYSTEM
- Fuel Cell: ATL custom dual dry break – 20 gallon
- Fuel Pumps: Walbro 255L/H
- Pressure Regulator: Ford – stock

WHEELS
- Manufacturer: Fikse
- Size – Front: 18" x 10.0"
- Size – Rear: 18" x 10.0"

DIMENSIONS
- Wheelbase: 107.1"
- Front Track: 62.8"
- Rear Track: 63.0"
- Dry Weight: 3200 lbs

DRIVELINE
- T-56 6-speed transmission
- Trac-Tech C-Locker
- Supercharged Cobra Clutch Kit

BRAKES
- Front: Brembo® 4-piston
- Rear: Ford – stock
- Master Cylinder: Ford Racing
- ABS: Ford Racing

CHASSIS
- Type: Uni-body full seam welded with integrated safety cage
- Structural Performance: Over 20,000 lb-ft/degree (torsional)
- Construction: Ford – modified stock steel

REAR SUSPENSION
- Dynamic Suspensions – coil-over dampers
- 3-way adjustable – high/low-speed compression rebound
- Ride height adjustable
- 3-link with panhard bar
- Urethane bushings

FRONT SUSPENSION
- Dynamic Suspensions – inverted struts
- 3-way adjustable – high/low-speed compression rebound
- Ride height adjustable coil over
- Urethane bushings
- Adjustable anti-roll bar

ANCILLARIES
- C&R aluminum radiator with integrated oil cooler
- Ford Racing Performance Parts exhaust system
- Ford Racing Performance Parts high-flow intake system
- SPARCO cable-activated extinguisher

COCKPIT
- SPARCO racing seat
- SPARCO 320 mm steering wheel – quick release
- SPARCO 6-point safety harness
- Center mount console switches
- AIM digital dash system – data logging and display

FORD RACING PARTS FOR PRIVATEER BUILDERS
- M-6007-R50 Engine
- 5.0L "Cammer R50" race engine. This is the only engine approved for Grand Am Cup racing in a 2005-09 Mustang. This is the same engine used in the Ford Racing Mustang FR500C race car

M-7003-T56R TRANSMISSION
- This is the only transmission approved for Grand Am Cup racing in a 2005-09 Mustang. This transmission was developed by Ford Racing and Tremec Transmission for use in the Ford Racing Mustang FR500C race car
- M-7003-T56R 6-speed transmission with low helix 4615 steel alloy gears, one-piece counter shaft, heavy-duty pads, slip yoke configuration
- Production 2005-09 throwout bearing which maintains hydraulic clutch actuation

2005 DIE-CAST FR500C

M-77000-GA

- Take home your own 1:18-scale limited edition FR500C Mustang race car
- This highly detailed model will enhance any car collection
- Small parts, not intended for young children

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FR500C

ADDITIONAL FORD RACING PERFORMANCE PARTS LEGAL FOR KONI CHALLENGE:

- **M-1007-F1810*** Wheel 18" x 10" Front
- **M-1007-F1810*** Wheel 18" x 10" Front
- **M-1007-F1810A*** Wheel 18" x 10" Rear
- **M-1124-R*** Rotor Hat
- **M-2001-R*** Front Brake Pads – Race Calipers Only
- **M-2005-A*** Brake Duct Kit
- **M-2005-R*** Brake Master/Booster Assembly
- **M-2134-R*** FR500C Front Brake Caliper Bracket
- **M-2200-R*** Rear Disc Brake Pad
- **M-2300-A*** Front Brake Kit
- **M-3052-R*** Caster Adjusters
- **M-3075-R*** Front Control Arms
- **M-3130-R2*** FR500C Tie Rod End
- **M-3200-R*** Steering Rack with Reduced Assist
- **M-3332-A** FR500C High-Temp Tie Rod End Seals
- **M-3601-R*** Steering Wheel
- **M-4033-G2*** Axle Girdle
- **M-4204-C31*** 8.8" Locker
- **M-4209-G355A*** 8.8," 3.55:1 Ring and Pinion
- **M-4602-J** Driveshaft
- **M-5230-R50*** FR500C Exhaust System
- **M-5649-R** Rear Lower Control Arms
- **M-6038-R*** Motor Mounts
- **M-6379-B** Flywheel Bolts
- **M-6397-A46** Clutch Bolt Kit
- **M-7213-B** Shift Knob
- **M-7277-B** Shift Boot
- **M-8005-R*** Radiator
- **M-9002-R*** Fuel Cell
- **M-9430-R50*** Headers
- **M-9432-A54*** Header Bolt Kit
- **M-12650-BR50*** Engine Control Unit
- **M-16620-R*** Race Seat
- **M-18120-RFL*** FR500C Race Damper Front Left
- **M-18120-RFR*** FR500C Race Damper Rear Right
- **M-18120-RRL*** FR500C Race Damper Rear Left
- **M-18120-RRR*** FR500C Race Damper Rear Right
- **M-18183-R*** Caster Adjuster Kit
- **M-18120-R*** Race Dampers
- **M-61108-R** 6-point Safety Harness
- **M-607100-R197*** Caged Body in White

MUSTANG FR500C KONI CHALLENGE ENGINE

M-6007-R50*

Must be used to compete in Grand Am Cup with a 2005-09 Mustang

MUSTANG FR500C TRANSMISSION

M-7003-T56R*

Service replacement for the Mustang FR500C race car

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

SPEC FOCUS

Spec Focus (SF) continues to grow as the class enters its fourth season of competition. With more and more enthusiasts driving a Ford lately, on-track competitors are becoming accustomed to seeing the blue oval in the winner's circle. With the limited amount of modifications allowed in SF, the hidden potential of the Focus platform has more than proved itself as a valid contender on track. With its superior vehicle dynamics, more than ample power and plain fun-to-drive character, SF is the best way to race on Sunday and drive to work on Monday without breaking the bank.

Nothing feels better than knowing there's power available with a push of your foot. The engine and drivetrain upgrades allowed in SF not only increase power but also help transfer it to the ground more effectively. Over the years the Focus has been offered with multiple different engine combinations. To resolve this, SF rules allow more modifications to some motors to help get the playing field equal.

More power is great, but getting that power to translate into the ultimate lap time needs a little help from the suspension and braking systems, SF has that covered as well. Our engineering staff created affordable brake and suspension packages that not only allow adjustment for aggressive track competition, but is also as well suited for you to enjoy a weekend cruise around your local getaways.

SF cars not only offer a budget-minded way to go racing, they also look good as they push the limit. The rule set also allows the use of approved SVT fascias as well as Ford's Street Appearance Package which keeps the Focus aesthetics right on par with today's top vehicles. Mount up four of the series spec tires on a set of 17" Ford Racing Wheels and you have yourself one of today's most affordable and well-balanced front wheel drive vehicles that's sure to put a grin on your face as you tear up tracks across the country.

SUSPENSION/BRAKE COMPONENTS

DESCRIPTION	YR/MODEL	PART #
Multimatic Suspension Kit	00-05	M-3000-ZXM
SVT Suspension Kit	00-05	M-3000-ZX3
06+ Focus Spring Kit	06+	M-5560-ZX3B
06+ Focus Damper Kit	06+	M-18000-ZX3B
Eibach Anti-Roll Bars	00-06+	M-5400-Z3
SVT Focus Brake Kit	00-05	M-2300-ZX3
Rally/15" Brake Kit	00-05	M-2300-ZX3R
Adjustable Rear Subframe	00-06+	M-5035-ZX3

ENGINE/DRIVETRAIN CONTENT

DESCRIPTION	YR/MODEL	PART #
CNC Ported Cylinder Head	Zetec	M-6049-ZX3P
CNC Ported Cylinder Head	2.0 Dura	M-6049-D23P
Performance Camshafts	Zetec	M-6252-A203
Adjustable Cam Gear	Zetec	M-6256-Z20
Performance Airbox/Snorkel	Zetec	M-9659-SVTF
Long Tube Header	Zetec	M-9430-ZX3L
Coated Long Tube Header	Zetec	M-9430-ZX3LC
Coated Long Tube Header	SVT	M-9430-SVTFC
Torsen Limited Slip Diff	00-06+	M-4204-F20
Torsen Limited Slip Diff	SVT	M-4204-SVTF
Centerforce Clutch Kit	Zetec	M-7563-Z3

EXTERIOR CONTENT

DESCRIPTION	YR/MODEL	PART #
SVT Front Fascia	00-04	M-17831-F
SVT Rear Fascia	00-06+	M-17835-F
SVT Spoiler	00-06+	M-17839-SVT
RS Spoiler	00-06+	M-17839-RS
SVT 17" Wheels	00-06+	M-1007-S177

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

ROADRACING

HISTORY – The Ford Focus was launched in Europe in 1998 in Valencia, Spain and Saarlouis, Germany and was voted the European Car of the Year in 1999. Shortly after, the same team that launched the Focus platform in Europe came across the pond to launch the Focus in North America and again the car was named North American Car of the Year for 2000. The European Focus has since moved to a larger and heavier platform with essentially the same chassis configuration, while the North American Focus has stayed with the relatively light-weight, responsive platform of the original European design.

OVERVIEW – Spec Focus is a roadracing class intended to provide affordable and close competition in a package that provides excellent performance with minimal setup time. Spec Focus runs nationwide and is sanctioned by the National Auto Sport Association (NASA), http://specfocus.drivenasa.com.

BODY STYLES – Various Focus body styles are allowed in Spec Focus which allows competitors to choose from 3- or 4-door hatchbacks, 4-door sedans and the new 2008, 2-door coupes.

SUSPENSION – The allowed suspension modifications in Spec Focus enhance the steering and handling characteristics that helped the car win both the European and North American Car of the Year awards without going to extremes with respect to either stiffness or setup complexity. The production style spring and damper package was developed specifically for this application and provides maximum performance out of the box without requiring extensive setup or testing.

BRAKE – The SVT Focus brake package is legal for Spec Focus and provides 12" front rotors that produce excellent brake feel combined with lots of stopping power. In addition, because the brake kit is production-based, spare parts can be obtained through any Ford dealer and racing-specific brake pads can be obtained from a variety of sources. The large diameter of the brake package requires fitment of the 17" wheels offered on SVT models, of which there are several different styles with the same physical dimensions.

ENGINE – The engine packages and allowances in Spec Focus were developed to allow the different engines offered in the Focus over the years to be competitive with each other without excessive penalties in terms of weight or power. All engines offered in the North American Ford Focus are legal for Spec Focus except for the 8-valve SPI engine. This includes: 2.0 Zetec (2000-04), 2.0 SVT Zetec with VVT (2002-04), 2.0 Duratec (2005+) and 2.3 Duratec (2003+). Engine modifications are specific for each engine variant and are designed to balance the combination of horsepower and torque to allow parity among all 4 engine variants on the track. Modifications range from minor bolt-ons allowed for the 2.3 Duratec to relatively extensive engine work for the 2.0 Zetec such as a ported cylinder head, more aggressive camshafts and performance intake and exhaust manifolds.

USAC Ford Focus Midget Series

So, you want to get started in racing? The USAC Ford Focus Midget Series may be the avenue for you.

The USAC Ford Focus Midget Series was designed to address the growing need for affordable, reliable, entry-level racing opportunities. USAC Midget racing has long been recognized as a preferred venue for the aspiring racer, and the USAC Ford Focus Midget Car Series is designed to give the aspiring racer a cost-effective avenue to pursue racing—and the proof is in the numbers. In 2008 alone, more than 170 Ford Focus Midgets have competed in more than 90 USAC Ford Focus Series Events.

The USAC Ford Focus Midget Series cars are based on a current USAC Midget car chassis and are powered by an internally production-stock, 2.0-liter Ford Focus Zetec engine. USAC competitors have enthusiastically received the Ford engine package for its power, drivability and reliability.

USAC FOCUS MIDGET ENGINE

M-6007-USAC*

- 2.0L Zetec race-ready engine
- Supplied with engine dress for power steering applications
- **Available from Beast Enterprises or call Ford Racing Techline (800) FORD788**

For inquiries about the USAC Ford Focus Midget Series, contact: USAC (317) 247-5151.

To order a new USAC Ford Focus Midget engine, contact:
Beast Enterprises
Phone: (317) 852-4411 or
Fax: (317) 852-4418
Email: beastcars@aol.com

To order a new USAC Ford Focus Midget engine or Ford Focus Midget engine rebuilds, contact:
Roush Yates Racing Engines
Special Projects Group
Phone: (704) 658-1540
Fax: (704) 658-1474
Email: specialprojects@roushyates.com

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

The “Beast”—750 hp Ford Racing Ford GT development car

Ford GT. The pace car for an entire company. This special car was designed, engineered and developed by a special team, the Ford Special Vehicle Team to be exact. It is the fastest, most exclusive and most significant car ever to come from that distinguished product development group. And, with its race car-inspired mid-engined design, 550 supercharged horsepower and track-bred suspension, its stunning performance is true to its Le Mans-winning heritage.

As impressive and exclusive as the Ford GT is, the parts bins at Ford Racing are stocked with parts that make this super car even more desirable. More desirable in show and more desirable in go. And who better to look to for Ford GT performance upgrades than the company that built the car? After all, a car developed in the spirit of a race car is best served by those who live and breathe racing.

FORD GT

FORD GT POWER UPGRADE PACKAGE
M-2005-GT
- Fits 2005-06 Ford GT
- Kit includes supercharger pulley and Pro-Cal tool with official Ford Racing calibration
- Approximately 100 hp increase
- Detailed instructions included
- E.O. #D-231-26

FORD GT FRONT WHEEL
M-1007-GTF*
- Forged front wheel available on 2005-06 Ford GT
- Open lug design
- 5-lug, 4.50" bolt circle
- 6.90" backspacing
- 50 mm offset
- 18" x 9" wide
- Includes Ford GT center cap

FORD GT REAR WHEEL
M-1007-GTR*
- Forged rear wheel available on 2005-06 Ford GT
- Open lug design
- 5-lug, 4.50" bolt circle
- 7.295" backspacing
- 40 mm offset
- 19" x 11.5" wide
- Includes Ford GT center cap

FORD GT SHORT THROW SHIFTER
M-7210-GT
- Fits Ford GT only
- Reduces throw and cross gate by approximately 25% compared to stock
- Anodized billet aluminum and stainless steel construction
- Bolts in stock location
- Includes hardware
- Maintains production ergonomics by not relocating shift knob

FORD GT ALUMINUM SHIFT KNOB
M-7213-GT
- Polished aluminum with GT logo and shift pattern
- Includes decorative sleeve for shift lever

FORD GT LICENSE PLATE FRAME
M-1828-GT Plain
M-1828-GTC Chrome
- Billet aluminum
- 12.625" wide x 6.125" tall x .355" thick
- Milled in "Ford GT" logo

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FORD GT PERFORMANCE MUFFLER KIT
M-5230-GT*

- Substantially louder than stock muffler
- Exits in stock location
- Mounts at all stock points
- Includes installation hardware
- OFF-ROAD ONLY! NOT STREET LEGAL!
- Strongly recommended if vehicle is equipped with M-9430-GT headers

FORD GT REAR EXIT HEADERS
M-9430-GTX*

- Replaces factory exhaust manifolds, cat pipe and mufflers
- Two-piece construction with race-style slip joint
- 1 3/4" primary tube size
- Includes collector-type race mufflers
- Includes installation hardware
- OFF-ROAD ONLY! NOT STREET LEGAL!
- Exits in stock location

FORD GT BILLET OIL FILL CAP
M-6766-GT

- Ford GT oil fill cap with billet cover
- Direct replacement for Ford GT oil fill cap
- Fits most 1986-2004 Mustang GTs
- GT logo machined into cap surface
- Chrome-plated

FORD GT TRANSAXLE COOLER KIT
M-7095-GT

- Kit includes cooler and all installation hardware, fittings, lines and brackets for Ford GT
- A must for aggressive driving and open-track events
- OEM fit
- Originally designed for production installation

FORD RACING COIL COVERS
M-6067-A

- Fits 4.6L/5.4L DOHC engines with coil on plug ignition
- Micro polished billet aluminum
- Features two-color Ford Racing ball milled logo

FORD GT LONG TUBE HEADERS
M-9430-GT*

- Replaces factory exhaust manifolds and cat pipe
- Two-piece construction with race-style slip joint
- 1 3/4" primary tube size
- Bolts to stock muffler or M-5230-GT muffler
- Includes installation hardware
- OFF-ROAD ONLY! NOT STREET LEGAL!

FORD GT COOLANT OVERFLOW CAP
M-8006-GT

- Ford GT coolant overflow cap with billet cover
- "GT" logo machined in cap surface
- Fits both coolant overflow and intercooler reservoir

FORD GT SEAT COVERS
M-6360004-GT

- Specifically designed for use in the Ford GT
- Black 100% cotton construction
- Features "Ford GT" embroidered in the headrest
- One LH and one RH seat cover

FORD GT TWO-PIECE FRONT ROTOR SET
M-1125-GT*

- Fits 2005-06 Ford GT
- Two-piece 355 mm diameter front rotors for track use
- Cross-drilled for improved cooling
- Aluminum hat reduces rotating and unsprung mass
- Sold in sets of two
- Fits with stock Ford GT calipers
- Weighs 22.1 lbs each

FORD GT TWO-PIECE REAR ROTOR SET
M-2026-GT*

- Fits 2005-06 Ford GT
- Two-piece 330 mm diameter rear rotors for track use
- Cross-drilled for improved cooling
- Aluminum hat reduces rotating and unsprung mass
- Sold in sets of two
- Fits with stock Ford GT calipers
- Weighs 20.05 lbs each

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

ProCal

Performance Calibrations

ProCal is included in select Ford Racing Cold Air Kits, Power Upgrade Packages, and Supercharger Kits.

Ford Racing Performance Calibrations are engineered to generate optimal horsepower and torque, while delivering:

-Engine Durability
-Exceptional Drivability
-50 State Emissions Compliancy

ProCal Tool - New and Improved!

- Enhanced Features: Now accepts input for axle ratio and tire size.
- Easy to read display.
- Step-by-Step calibration loading instructions.
- OBD II Diagnostic code display capability

Trust Ford Racing's ProCal to unlock your vehicle's potential without putting your powertrain at risk.

Ford RACING

www.fordracing.com

DYNAMOMETER TESTING AND FORD RACING CALIBRATIONS

A question we at Ford Racing Performance Parts are often asked is "Why do certain companies claim to make more power with their power upgrade kits than you do with your kits?" To address that question properly, it is necessary to understand some of the intricacies of chassis dynamometer testing as well as some of the compromises that must be made in order to simultaneously meet our standards for performance, emissions, durability and safety.

CHASSIS DYNAMOMETER TESTING

There are two main types of chassis dynamometers (dynos) in widespread use today.

- An inertia dyno uses a large spinning drum that is accelerated by the drive wheels of the test vehicle. Power is then computed by knowing the inertia of the drum and how quickly it was accelerated. Torque can then be calculated by knowing the speed of the drum.
- An eddy-current dyno absorbs and measures power by rotating a metallic disc through a magnetic field.

Without getting into which dyno is more "correct" under what conditions, and why, we will simply say that these two types of dynos typically do not always give the same result even with all else being equal. It is generally not possible to accurately compare numbers from one type of dyno with those from the other type of dyno. Each type of dyno has its own advantages and disadvantages, but as long as all the tuning work is done on the same type of dyno, it doesn't really matter which one is used.

With any dyno testing there is a need for correction factors that are applied to the raw numbers the dyno actually measures. These correction factors are an attempt to correct for varying atmospheric conditions such as humidity, barometric pressure and air temperature. The two most common standards are SAE J1349 and SAE J607 (sometimes known as "STD" on some dynos). How correction factors are calculated is given in the "Crate Engine" section of this catalog. For this article understand that these correction factors will give results that are different from each other, with SAE J1349 typically about 4% lower than SAE J607. OEMs will almost always quote J1349 corrected numbers when advertising horsepower and torque. Some "tuning" shops will report STD numbers because they are always higher than SAE. Be sure to ask which correction factor is being used when comparing dyno numbers!

Whenever comparing dyno results, always be sure that the numbers are corrected to the same standard. Despite these correction factors, atmospheric conditions can play an additional role in terms of ignition timing. The correction factors account only for the change in the density of the air due to atmospheric conditions and cannot account for things like engine borderline spark sensitivity. As inlet air temperature increases, the PCM will generally retard spark to prevent detonation using the particular octane of fuel for which it was calibrated. Correction factors cannot account for this because different engine designs can have different spark sensitivity and different

DYNAMOMETER TESTING AND FORD RACING CALIBRATIONS (continued...)

sensitivity of torque relative to ignition timing. Basically this means that the closer the actual conditions are to the SAE J1349 standard (77 deg F inlet air, 29.31 inHg barometric pressure), the more comparable the results are to those quoted by the manufacturer. Unless otherwise explicitly stated, **all horsepower numbers in the Ford Racing catalog have been determined by using the SAE J1349 standard.**

When testing a particular calibration or performance enhancing part by performing back-to-back dyno runs, it is critical to keep test conditions as similar as possible between the runs. This sounds obvious, but is very commonly overlooked by many aftermarket companies who frequently publish dyno charts depicting large gains, but fail to give all the necessary data to show the tests were run under similar conditions. In order to be certain that the test conditions are as similar as possible, the following data is mandatory and needs to be collected for each run:

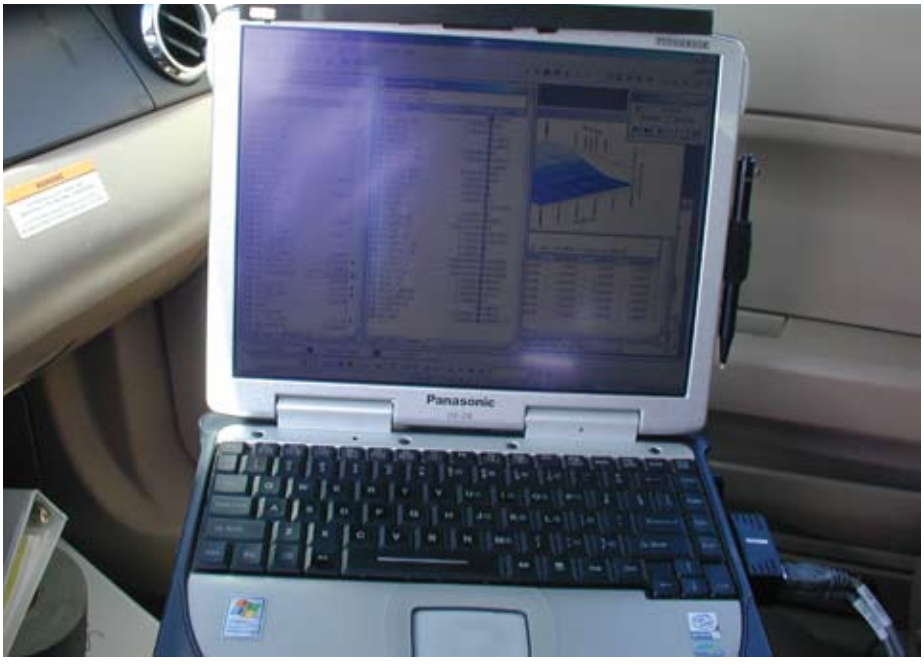
- Ambient air temperature
- Barometric pressure
- Inlet air temperature (on a forced-induction car, this is usually downstream of the power adder)
- Air/fuel (A/F) ratio (preferably upstream of any catalyst)

Truly meaningful power numbers cannot be collected without this data!

It is also a good idea to make sure the A/F ratio sensor (often called a “wideband” sensor) in use on the dyno has not been exposed to leaded fuel and has not been in service for an excessive period of time (greater than six months, depending on frequency of use). A/F ratio is the single most important parameter to measure accurately when doing any sort of dyno tuning, so it is critical the sensor is providing accurate information. When doing any PCM calibration on a dyno, **the resulting calibration will only be as good as the A/F sensor.**

These additional inputs should be used for ideal dyno testing and calibration:

- Air/fuel ratio and spark advance commanded by the PCM
- Fuel injector pulsewidth
- Fuel pump duty cycle (in the case of ERFS)
- MAF sensor voltage
- Fuel pressure
- Engine oil temperature
- Differential oil temperature



For Ford Racing calibrations, we use all of the data inputs listed both as mandatory and ideal.

How drivetrain affects wheel horsepower:
Most chassis dyno tests are performed using the "roll-on" method, where the vehicle's drive wheels are accelerated in a particular gear from a low speed to a high speed (generally to the rev limit of the engine) in one continuous sweep. Because of this constant acceleration, engine and transmission inertia, drive wheel inertia, tire characteristics, gear ratio and axle ratio can all affect the final measured horsepower. Generally a heavier wheel will take more torque to accelerate at the same rate as a lighter wheel, so heavier wheels will tend to reduce the measured wheel horsepower. Gear ratio comes into play because as the gear ratio strays from a 1:1, the efficiency drops and therefore the measured horsepower at the wheels also drops. This is why most dyno runs are run in the 1:1 gear (i.e., 4th gear in a 5-speed overdrive transmission) whenever possible. The same logic applies to axle ratio as well, which means that **changing nothing but axle ratio can have an effect on measured wheel horsepower**. Remember, this does NOT change brake (flywheel) horsepower, only the delivered wheel horsepower due to the change in drivetrain efficiency. When comparing dyno numbers, be sure the wheels, tires, gear ratio and gear, as well as all the other parameters previously mentioned, are the same from run to run!

How calibration can cause misleading dyno results:
Production calibrations have an inferred catalyst temperature protection model which constantly calculates the temperature in the hottest part of the hottest catalyst. This calculated temperature is based on many PCM parameters, such as engine speed, load, ingested air mass, time, inlet air temperature, EGR flow rate and many others.

When the catalyst model calculates that the catalyst temperature is about to exceed a level that is safe for the catalyst (generally around 1650 deg F), the PCM will richen the A/F mixture as necessary to lower the exhaust gas temperature and cool the catalyst. This richened A/F ratio will decrease power output, but is absolutely necessary to keep the catalyst from being permanently damaged. Unless A/F ratio is monitored during a dyno pull, the dyno operator will have no idea when catalyst temperature protection has been invoked and can make erroneous conclusions with regard to power output.

As a trivial example of how this can affect dyno testing, consider a supercharged production vehicle with production calibration performing back-to-back runs under identical conditions except as noted. The car is driven to a dyno facility and immediately put on the dyno and a run is performed, yielding a result of 420 hp. In this example, A/F ratio is not monitored. A part is swapped for another "high-performance" part and another dyno run is performed, resulting in 430 hp. The dyno operator concludes the "high-performance" part is worth 10 hp. This is not accurate because when the car was first dyno tested, its catalysts were sufficiently hot that catalyst temperature protection was invoked during the dyno pull which reduced power output by richening the A/F ratio. While the car was having the parts swapped, the catalysts cooled down enough that during the next dyno pull catalyst temperature protection was not invoked. The engine made more power on the second pull because it was running a leaner A/F ratio closer to optimal and not necessarily because of the "high-performance" part. If the dyno operator was monitoring A/F ratio, this would have been readily apparent.

If the operator was monitoring the A/F ratio *commanded by the PCM*, the activation of catalyst temperature protection would become self-evident. In this example, the erroneous conclusion that was reached suggested the "high-performance" part was worth 10 hp when it really wasn't, but the opposite can also occur quite easily. Without covering every possible scenario, it will suffice to say that dyno numbers are ONLY meaningful when supporting data such as A/F ratio, inlet air temperature and the others listed above are also provided.

There is also a model for oxygen sensor protection and exhaust valve protection that when not taken into account can cause misleading dyno data. In general, exhaust temperatures greater than about 1650 deg F can damage exhaust valves, and extreme care is taken in production calibrations to ensure that sustained engine operation beyond that temperature does not occur. This is rarely an instantaneous failure but rather one that over time "tulips" the exhaust valves and ultimately will fail the engine.

Aftermarket cold air kit manufacturers that claim to work without the need of a PCM recalibration are a common source of misleading dyno power claims. Some of the manufacturers of these kits claim enormous power gains using nothing but their kit and a production calibration. Most of these claims are not supported with A/F, inlet temperature or spark advance traces during the dyno pulls that are shown in their advertising. In some cases, the apparent increase in power is due to differing dyno test conditions as mentioned previously, while in other cases they can be due to the fact that the MAF sensor transfer function in the PCM is left stock. If the cold air kit flows more air and the MAF transfer function in the PCM is stock, it will not "know" about the extra air that's entering the engine. This will result in the engine running an A/F ratio that is leaner than it should be for engine durability. While this has the potential to produce more power, it can also be potentially damaging to catalysts, exhaust valves, piston rings and other engine components. The commanded spark advance can also be incorrect and result in detonation or pre-ignition with potentially catastrophic results. One should be very suspect if a particular cold air kit claims a huge power increase over stock at low engine rpm and without a calibration. Air inlet restrictions generally only become significant at higher airflows, so if a claim is made that a cold air kit increases torque at 2000 rpm without the aid of a calibration, you can be sure that varying dyno test conditions or a significant change in A/F ratio are the cause. **Ask for more supporting data!**

DYNAMOMETER TESTING AND FORD RACING CALIBRATIONS (continued...)

Similar misleading results can be caused by a failure to keep inlet air temperature constant between runs. The PCM will retard spark timing to prevent detonation as inlet air temperature increases, lowering power output. On a forced-induction car, the inlet air temperature is generally measured after the power adder (and after the intercooler, if applicable) and can be MUCH greater than ambient temperature. Careful monitoring of A/F ratio and inlet air temperature are critical to making accurate conclusions regarding the effectiveness of various high-performance parts.

Secondary factors that also affect measured wheel horsepower are engine oil temperature, differential oil temperature, humidity, etc. **It simply cannot be overstated that all conditions need to be as similar as possible between dyno runs in order to have a meaningful scientific conclusion, which requires the supporting data previously discussed.**

FORD RACING CALIBRATIONS

The calibrations that Ford Racing provides for our cold air and supercharger kits are done by Ford engineers who, in many cases, worked on the actual production vehicles. No one is more familiar with Ford engines and Ford control systems than Ford engineers. Extreme care is taken to provide as much power and torque as can be safely delivered, but also to deliver extremely high durability and exceptional drivability. Most of our kits are also 50-state emissions legal and many are now even offered with a warranty when dealer installed.

Most aftermarket tuners other than Ford Racing do a few "tricks" that we do NOT recommend such as:

- **Turning off the inferred catalyst, oxygen sensor and exhaust valve temperature protection logic** discussed in the previous section. This prevents the PCM from richening the A/F ratio to protect these components which can result in more power under certain conditions. The downside is **drastically** decreased durability of these expensive components, which can result in the check engine light coming on as well as increased exhaust emissions due to failed catalytic converters. Ford Racing does not compromise durability or emissions by turning off this calibration logic.
- They often advance spark timing to potentially unsafe levels. We test our calibrations in a wind tunnel and in hot dry weather to verify that

potentially damaging spark knock or catastrophic pre-ignition does not occur. We also do cold weather and altitude testing as well as extensive emissions and durability testing on several vehicles before we release a calibration to the customer. Most other companies do not have the time or the resources to do the same type of testing that we do. Some companies do not realize that they need to perform this type of testing in the first place!

Automatic transmission calibration is an area where Ford Racing sets itself apart from other "tuners." We generally make extensive calibration changes to not only improve shift quality and give the transmission a more performance-oriented feel, but take great care to ensure that durability is not compromised to levels we feel would be unacceptable to a customer. In development we monitor things like clutch slip times, slip energies, band temperatures and other variables to make calibration changes as appropriate so that the customer can be sure of a quality product that will continue to deliver improved performance in the long-term. As mentioned before, these changes are performed by the same engineers who designed and developed the vehicles in the first place, and who are more familiar than anyone with their performance and durability envelopes.

Many of our competitors develop their calibrations exclusively on a chassis dyno and go straight from there to the end customer. While dyno work is a critical part of the development process, it is only one piece of a very complex puzzle. Calibrating for wide open throttle (WOT) is generally simple, but the bulk of the calibration effort is getting the part (and closed) throttle drivability correct. Our calibrations are developed not only on the dyno, but also on the street for production (or better) quality drivability, and across many vehicles to allow for manufacturing tolerances. Varied driving conditions, constant data monitoring and long-term testing ensure consistent drivability and exceptional durability.

In recent years, cars and trucks have shifted toward electronic throttle control (ETC) or "drive-by-wire" systems for packaging, cost and enhanced calibration functions. Ford Racing calibrations for ETC vehicles take advantage of some of the increased functionality offered by these systems by changing the relationship between the pedal and the throttle for improved "performance feel." This allows us to provide substantial improvements in "performance feel" even on the kits where the peak horsepower increase might be considered modest by some. The peak power numbers do not always tell the whole story.

Why some companies claim to make more power:
Some claims are due to poor and misleading dynamometer test practices as well as a fundamental lack of understanding of the way Ford PCMs work. Others are genuine but at the expense of engine, catalyst or drivetrain durability and emissions.

Hopefully this article gives you the tools necessary to determine what is real dyno horsepower, manipulated false horsepower and temporary horsepower waiting to cause a failure. We are confident that as a potential customer you will agree that no one knows your car or truck better than the Ford engineers who designed it in the first place. Our kits offer the best blend of performance, durability and drivability that exist on the market today.

2007-09 SVT MUSTANG PERFORMANCE PACKS

The “Poster Child”—650 hp Ford Racing SVT Mustang development car

SVT and Mustang. Two names that have become synonymous with Ford performance. SVT engineers, working with Carroll Shelby’s team, have developed the SVT GT500, the most powerful Mustang ever produced by Ford. In only its third model year, this street burner has already become one of the most desirable Mustangs, both by collectors and racers alike. While collectors may be content to admire their investments in the garage, those who push their cars to the limit want one thing—to go even faster! And who better to look to for maximum performance out of this 500 hp production beast than the factory?

In this case, the factory is Ford Racing. Working hand-in-glove with the engineers at SVT, Ford Racing has developed performance packs that allow the SVT Mustang owner to take his car to the next step with confidence. After all, Ford Racing SVT Mustang performance packs are Ford-engineered as complete systems, and are the only SVT Mustang performance packs that are covered by a limited warranty from Ford (when dealer-installed). Whether you want to increase power with the Power Upgrade Package, improve acceleration with the Drag Pack, carve the corners with more control with the Handling Pack or take your 5.4L engine to an amazing 605 horsepower, you can do it with the SVT Mustang performance packs from Ford Racing.

Ford Racing Limited Warranty
2005-09 Model Year Mustang Parts, when Ford, Lincoln or Mercury Dealer or Shelby Automotive, Inc. Installed

Register for Warranty: To register a vehicle for Ford Racing limited warranty coverage, a Ford, Lincoln or Mercury Dealer or Shelby Automotive, Inc. must call the Ford Performance Call Center (800) 367-3788 with P&A Code, the vehicle identification number (VIN), part installation repair order number and date, Ford Racing part number and owner information.

Mustang Packs (and Select Parts if installed separately) Ford Racing Limited Warranty, when purchased from an Authorized Ford Racing Dealer and Ford, Lincoln or Mercury Dealer or Shelby Automotive, Inc. Installed

3-Year/36,000-Mile Limited Warranty Coverage/Eligibility: Ford Racing warrants the subject parts for 3 years/36,000 miles (whichever comes first) when purchased from an Authorized Ford Racing Dealer and installed by a Ford, Lincoln or Mercury Dealer or Shelby Automotive, Inc. on a new vehicle at the time of vehicle sale, or 12 months/12,000 miles (whichever occurs first) when installed after the date of vehicle sale but prior to the expiration of the 3-year/36,000-mile coverage (whichever occurs first) under the New Vehicle Limited Warranty.

Eligible Parts	Mustang V6	Mustang GT	SVT Mustang
FR1 Power Upgrade Package	M-2007-FR1V6	M-FR1-MGT	M-2007-FR1SVT
FR3 Handling Pack	M-2007-FR3V6	M-2005-FR3	M-2007-FR3SVT
Cold Air Kit (Included on Power Upgrade Package)	M-9603-V605	M-9603-GTB	M-9603-SVT07
V6 Cat-Back Dual Exhaust System with X Pipe	M-5230-V6	N/A	N/A
Short Throw Shifter	M-7210-V	M-7210-T1	M-7210-B
Mustang GT Exhaust X-Pipe	N/A	M-5251-R	N/A

Supercharger Ford Racing Limited Warranty, when purchased from an Authorized Ford Racing Dealer and Ford, Lincoln or Mercury Dealer or Shelby Automotive, Inc. Installed

12-Month/12,000-Mile Limited Warranty Coverage/Eligibility: Ford Racing warrants the subject parts for 12 months/12,000 miles from the time of installation when purchased from an Authorized Ford Racing Dealer and installed by a Ford, Lincoln or Mercury Dealer or Shelby Automotive, Inc. prior to the vehicle reaching either 36 months or 36,000 miles (whichever occurs first) from the vehicle warranty start date and found to be defective in Factory-supplied material or workmanship. This warranty replaces the existing manufacturer's warranty for engine, driveline and suspension parts with a 12-month or 12,000-mile warranty.

Eligible Parts	Mustang V6	Mustang GT	SVT Mustang
400 hp Twin Screw SC (Black) '05-'06 MY		M-6066-M463V	
400 hp Twin Screw SC (Polished) '05-'06 MY		M-6066-M463P	
400 hp Twin Screw SC (Black) '07 MY		M-6066-M463V7	
400 hp Twin Screw SC (Polished) '07 MY		M-6066-M463P7	
400 hp Twin Screw SC (Black) '08-'09 MY		M-6066-M463V8	
400 hp Twin Screw SC (Polished) '08-'09 MY		M-6066-M463P8	
605 hp SC Kit (Black) '07-'09 MY	N/A	N/A	M-6066-SGT

For complete details on the Ford Racing Limited Warranty Program, please go to www.fordracingparts.com

2007-09 SVT MUSTANG SUPER PACK

2007-09 SVT MUSTANG SUPERCHARGER UPGRADE KIT

M-6066-SGT Black Wrinkle Finish

- Fits 5.4L DOHC 2007-09 SVT Mustang
- 105 hp increase over stock (605 hp vs. 500 hp), 70 lb-ft increase in torque over stock (554 lb-ft vs. stock 480 lb-ft) using correction factor **SAE J1349**
- 2.3L Twin Vortices Series (TVS) Eaton supercharger features 4-lobe 160 degree twist rotors
- Includes open element cold air intake system
- Includes Pro-Cal tool voucher with kit
- Premium fuel required
- **Available as part of Shelby Super Snake Package**
- 2007 SVT Mustangs must use upgraded damper M-6312-SVT (see www.fordracingparts.com) to maintain warranty coverage
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- 50-States Street Legal E.O. #D-418-10 for 2007-08. 2009 pending

See www.fordracingparts.com for the most up-to-date warranty information.

ROMEO 605 ENGINE 5.4L 4V W/TVS SUPERCHARGER

M-6007-TVS*

Assembled at Ford Motor Company's Romeo Engine Plant Niche Assembly Line with Ford Racing's valve covers, coil covers and upgraded TVS Supercharger

- The Romeo 605 engine captures the essence of SVT by offering a production-based performance engine enhanced with Ford Racing parts for increased performance and upscale appearance
- The most powerful engine ever from a Ford production line!
- A combination of race engine shop performance and customization at production prices
- 605 hp, 554 lb-ft of torque
- Fully dressed including accessories and 2.3L Twin Vortices Series (TVS) Eaton 4-lobe 160 degree twist rotors supercharger M-6066-SGT
- Includes powdercoated blue valve covers M-6582-C, polished billet aluminum Ford Racing Coil Covers M-6067-A and Ford Racing oil filter M-6731-FL820
- Works with stock wiring or purchase Controls Pack M-6017-54SC sold separately
- Perfect for your high-end project!

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

POWER UPGRADE PACKAGE

For drivers who want to power up and still maintain mild street manners, the Power Upgrade Package offers a slightly throatier exhaust note and a new mass air meter with calibration. The result is approximately 40 horsepower! With the Power Upgrade Package's easy bolt-ons, it takes just an afternoon in the driveway to install. The Power Upgrade Package includes the Ford Racing Flash Tuner to ensure proper calibration.

2007-09 SVT MUSTANG POWER UPGRADE PACKAGE

M-2007-FR1SVT

Unlike the competition, Ford Racing Power Upgrade Packages are 50-States Street Legal and covered under WARRANTY when Ford, Lincoln or Mercury Dealer or Shelby Automotive, Inc. installed and certain conditions apply. See www.fordracingparts.com for warranty information.

- Don't settle for exaggerated dyno power or compromised durability. Bolt on a Ford Racing Power Upgrade Package and get repeatable, safe and SAE-proven horsepower!
- Improved throttle response and power under the entire curve
- Fits 2007-09 SVT Mustang
- 40 hp increase over stock per SAE J1349
- 113 mm Cold Air Kit M-9603-SVT07
- Muffler Kit M-5230-SVT1
- Performance Oil Filter
- Premium fuel only
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- Pro-Cal tool voucher included with kit
- 50-States Street Legal E.O. #D-418-9 for 2007-08. 2009 pending
- 540 hp @ 6250 rpm
- 510 lb-ft @ 4500 rpm

See www.fordracingparts.com for the most up-to-date warranty information.

2007-09 SVT MUSTANG MUFFLER SET 50 STATE

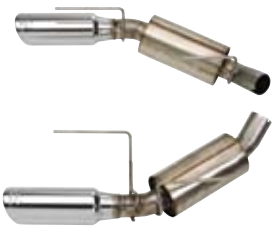
M-5230-SVT1

- Fits 2007-09 SVT Mustang
- T-304 stainless construction
- Deeper, throatier exhaust note
- Ford Racing embossed 3.5" polished exhaust tips
- 50-States drive-by noise legal

2007-09 SVT MUSTANG MUFFLER SET 49 STATE

M-5230-SGT

- Fits 2007-09 SVT Mustang
- T304 stainless construction
- Louder, throatier exhaust
- Includes mufflers with Ford Racing embossed 3.5" tips
- 49-States drive-by noise legal



2007-09 SVT MUSTANG 113 MM COLD AIR KIT

M-9603-SVT07

- Fits 2007-09 SVT Mustang
- Kit includes 113 mm Mass Air Meter
- Mounts in the stock location
- Premium fuel only
- 40 hp increase over stock using correction factor **SAE J1349**
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- 50-States Street Legal E.O. #D-418-9 for 2007-08. 2009 pending
- 540 hp @ 6250 rpm
- 510 lb-ft @ 4500 rpm

See www.fordracingparts.com for the most up-to-date warranty information.

FORD RACING HIGH-PERFORMANCE OIL FILTER

M-6731-FL820 (case of 12)

- Synthetic-Polymer/Cellulose-Fiber blend media
- Heavy-gauge base and canister for higher burst strength and impulse fatigue resistance
- High-quality silicone anti-drain back valve
- Non-stick sealing gasket for ease of installation and removal
- Long life with standard and synthetic motor oils
- Up to 50% more filtering capacity than standard filters
- Improved filtering efficiency
- This technology is only available through Ford Racing Performance Parts

REPLACEMENT AIR FILTER

M-9601-D

- Replacement air filter for the M-9603-SVT07 cold air kit and M-6066-SGT supercharger kit

DRAG PACK

2007-09 SVT MUSTANG DRAG PACK
M-2007-FR2SVT

With the Drag Pack, you'll launch harder and accelerate faster while maintaining drivability.

Drag racing should be conducted at dedicated facilities only.

- Fits 2007-09 SVT Mustang
- 40 hp increase over stock using correction factor **SAE J1349**
- 113 mm Cold Air Kit M-9603-SVT07
- 3.73 ratio Ring and Pinion M-4209-F373N
- Gear Installation Kit M-4210-A
- Shorty Headers M-9430-C54C
- Short Throw Shifter designed by Ford Racing and Hurst M-7210-B
- Performance Oil Filter
- Premium fuel only
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- 50-States Street Legal E.O. #D-308-12 for 2007-08. 2009 pending
- 540 hp @ 6250 rpm
- 510 lb-ft @ 4500 rpm

2007-09 SVT MUSTANG 113 MM COLD AIR KIT
M-9603-SVT07

50 States Street Legal

- Fits 2007-09 SVT Mustang
- Kit includes 113 mm Mass Air Meter
- Mounts in the stock location
- Premium fuel only
- 40 hp increase over stock using correction factor **SAE J1349**
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- 50-States Street Legal E.O. #D-418-9 for 2007-08. 2009 pending
- 540 hp @ 6250 rpm
- 510 lb-ft @ 4500 rpm

See www.fordracingparts.com for the most up-to-date warranty information.

MUSTANG 8.8" RING GEAR AND PINION SET

PART NUMBER	RATIO
M-4209-F373N*	3.73:1

2007-09 SVT MUSTANG SHORTY HEADERS
M-9430-C54C*

- Fits 2007-09 SVT Mustang
- 409 stainless steel tubes, 1 7/8" diameter with Jet-Hot® ceramic finish
- Machined flange
- 9 lbs lighter than cast iron manifolds
- Bolts to stock exhaust pipes
- Includes gaskets, bolts and studs

8.8" RING & PINION INSTALLATION KIT
M-4210-A

- Kit includes: pinion and carrier shims, crush sleeve, pinion seal, pinion nut, ring gear bolts and cover gasket
- Use for changing ring and pinion gear or differential
- Fits IRS

See page 166 for additional installation kits

FORD RACING HIGH-PERFORMANCE OIL FILTER
M-6731-FL820 (case of 12)

- Synthetic-Polymer/Cellulose-Fiber blend media
- Heavy-gauge base and canister for higher burst strength and impulse fatigue resistance
- High-quality silicone anti-drain back valve
- Non-stick sealing gasket for ease of installation and removal
- Long life with standard and synthetic motor oils
- Up to 50% more filtering capacity than standard filters
- Improved filtering efficiency
- This technology is only available through Ford Racing Performance Parts

2007-09 SVT MUSTANG SHIFTER
M-7210-B

- Fits 2007-09 SVT Mustang
- Urethane body vibration isolators
- 25% reduction in throw
- Bolts in stock location
- Requires reuse of production stick and knob or the Ford Racing exclusive M-7213-J Black knob and stick or M-7213-K White knob and stainless steel stick

See www.fordracingparts.com for the most up-to-date warranty information.

M-7210-B

M-7213-J

M-7213-K

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

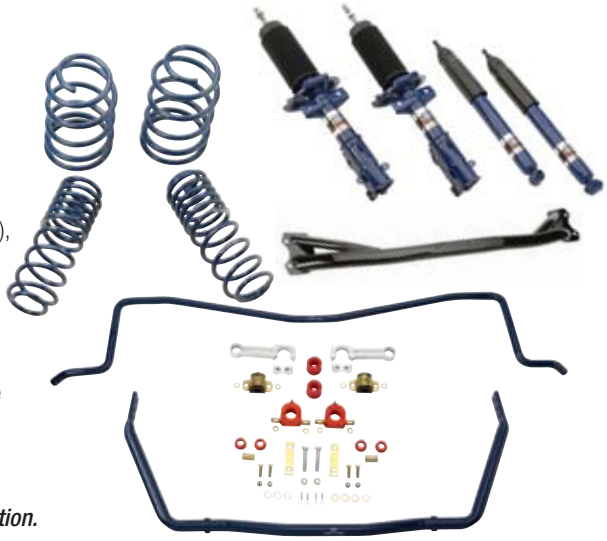
2007-09 SVT MUSTANG HANDLING PACK

HANDLING PACK

2007-09 SVT MUSTANG HANDLING PACK
M-2007-FR3SVT

- Make your SVT Mustang a corner-carving sidewinder with the added performance of the FR3 Handling Pack
- Uniquely tuned exclusively to fit 2007-09 SVT Mustang Coupe
- Handling Pack includes dampers (M-18000-C), lowering springs (M-5300-L), anti-roll bar kit (M-5490-B) and strut tower brace (M-20201-C)
- All components are designed to work together as a package
- Lowers car approximately 1.25"
- Dampers are adjustable and manufactured by Dynamic Suspensions (the same company that makes dampers for the FR500C race car)

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

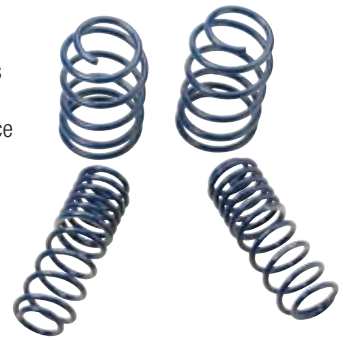


See www.fordracingparts.com for the most up-to-date warranty information.

2007-09 SVT MUSTANG LOWERING SPRINGS
M-5300-L

- Fits 2007-09 SVT Mustang coupe
- Lowers car approximately 1.25"
- Engineered specifically for improved handling on 2007-09 SVT Mustang
- Recommended for use with M-18000-C damper kit and M-5490-B anti-roll bar kit
- May cause slightly harsher ride compared to stock springs

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.



2007-09 SVT MUSTANG ANTI-ROLL BAR KIT
M-5490-B

- Anti-roll bar kit designed for increased handling and performance on 2007-09 SVT Mustang coupe
- Designed to be used with M-18000-C damper kit, M-5300-L spring kit and M-20201-C strut tower brace
- Includes all mouting hardware

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2007-09 SVT MUSTANG DAMPERS KIT
M-18000-C

- Fits 2007-09 SVT Mustang
- Engineered specifically for improved handing on the 2007-09 SVT Mustang
- Single adjustment with two-way response
- Tuned to work with both stock ride height and lowered 2007-09 SVT Mustangs
- Recommended for use with M-5300-L spring kit, M-5490-B anti-roll bar kit and M-20201-C strut tower brace

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2007-09 SVT MUSTANG STRUT TOWER BRACE
M-20201-C

- Fits 2007-09 SVT Mustang
- Black powder-coated with etched Ford Racing logo
- Single large diameter oval tube construction
- **Standard on Shelby GT500KR**

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

SVT MUSTANG

2007-09 SVT MUSTANG WHEEL
M-1007-S1895* ①

- Fits 2005-09 Mustang GT and the 2007-09 SVT Mustang
- 5-lug, 4.5" bolt circle
- 7.125" backspacing
- 45 mm offset
- 18" x 9.5" wide
- Includes SVT center cap
- Same as production 2007-08 SVT Mustang
- Fits M-2300-S brake kit

2007-09 SVT MUSTANG WHEEL BLACK
M-1007-S1895B* ①

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- 5-lug, 4.5" bolt circle
- 7.125" backspacing
- 45 mm offset
- 18" x 9.5" wide
- Includes SVT center cap
- Same as production 2007-09 SVT Mustang except wheel openings are gloss black
- Fits M-2300-S brake kit

2007-09 SVT MUSTANG BLACK WHEEL WITH MACHINED LIP
M-1007-S1895B1* ①

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- 5-lug, 4.5" bolt circle
- 7.125" backspacing
- 45 mm offset
- 18" x 9.5" wide
- Includes SVT center cap
- Same as production 2007-09 SVT Mustang except wheel face is gloss black with a machined lip
- Fits M-2300-S brake kit

2007-09 SVT MUSTANG FRONT STRUT MOUNT PAIR
M-18183-A

- Fits 2005-09 Mustang GT
- Original equipment on the 2007-09 SVT Mustang
- Increased durometer, 28% stiffer than Mustang GT

2007-09 SVT MUSTANG FRONT LOWER CONTROL ARM KIT
M-3075-E

- Fits 2005-09 Mustangs
- Original equipment on 2007-09 SVT Mustang
- Increased strength ball joints
- Kit contains 1 RH and 1 LH lower control arm assembly

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2007-09 SVT MUSTANG REAR LOWER CONTROL ARMS
M-5538-A

- Fits 2005-09 Mustang
- Original equipment on 2007-09 SVT Mustang
- Increased bushing durometer and stiffness for higher horsepower applications

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

BRAKE COOLING KIT
M-2004-A

- Fits 2007-09 SVT Mustang
- Fits 2005-08 Mustang GT with M-2300-S brake kit installed
- Includes backing plates with duct work
- Designed to direct air from the fascia to the rotor for improved brake and wheel bearing life

NOTE:
① For vehicles with 16" wheels from the factory: -installing 17" x 8" wheels, use steering stop 4R3Z-3932-BA -installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

For vehicles with 17" wheels from the factory: -installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2007-09 SVT MUSTANG COATED VALVE COVERS

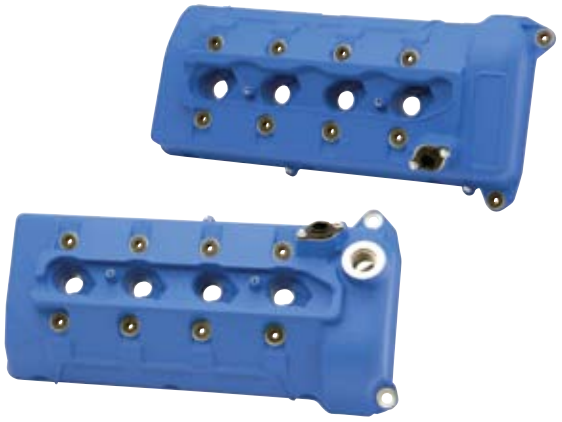
M-6582-CC**

- Fits 2007-09 SVT Mustang
- Original equipment valve cover powdercoated for chrome appearance
- Contains new gaskets and grommets for easy installation
- Can be used with factory coil covers or M-6067-A or M-6067-GT coil covers
- Also avaliable in blue, M-6582-C

2007-09 SVT MUSTANG BLUE COATED VALVE COVERS

M-6582-C**

- Fits 2007-09 SVT Mustang
- Original equipment valve cover powdercoated same blue as Ford GT
- Contains new gaskets and grommets for easy installation
- Can be used with factory coil covers or M-6067-A or M-6067-GT coil covers
- Also avaliable in smoked chrome appearance, M-6582-CC



FORD RACING COIL COVERS

M-6067-A

- Fits 4.6L/5.4L DOHC engines with coil on plug ignition
- Micro polished billet aluminum
- Features two-color Ford Racing ball milled logo

2007-09 SVT MUSTANG COIL COVERS

M-6067-C

- Original equipment on the 2007-09 SVT Mustang
- Fits most 4.6L/5.4L DOHC engines with coil on plug ignition

4.6L/5.4L "POWERED BY FORD" COIL COVERS

M-6067-GT

- Original equipment on the Ford GT 5.4L DOHC
- Fits most 4.6L/5.4L DOHC engines with coil on plug ignition

2007-09 SVT MUSTANG HIGH LIFT CAM SET

M-6550-GT*

- Original equipment camshafts for the Ford GT supercar
- Direct retrofit to the 2007-09 SVT Mustang
- Increases lift from the stock 10 mm to 11.14 mm intake and 11.36 mm exhaust
- Compatible with production springs, followers and lash adjusters
- May require calibration to achieve optimized performance

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

2007-09 SVT MUSTANG STEERING WHEEL
M-3600-C

- Fits 2005-09 Mustang
- Dark charcoal leather with red stitching
- Does not include air bag. Mustang air bag can be reused
- Uniquely contoured for performance driving!
- Original equipment on 2007-09 SVT Mustang

SVT BLACK STITCH WHEEL AND BOOT
M-3601-C

- Fits the 2005-09 Mustang and 2007-09 SVT Mustang
- Same as 2007-09 SVT Mustang dark charcoal leather but with black stitching
- Does not include air bag. Mustang air bag can be reused
- Steering wheel uniquely contoured for performance driving

2007-09 SVT MUSTANG HOOD
M-16612-C

- Original equipment on 2007-09 SVT Mustang
- Bolts to stock hood hinges and uses stock hood latch
- Includes two hood grill inserts
- Fits 2005-09 Mustang GT when used with 2007-09 SVT Mustang fascia. Front edge of SVT hood interferes with stock GT fascia
- Must be fitted and painted to match color of car

2007-09 SVT MUSTANG REAR SPOILER
M-16600-SVTC

- Fits 2005-09 Mustang GT
- Original equipment on 2007-09 SVT Mustang
- Fits into existing Mustang GT spoiler bolt holes
- No drilling required when installed on Mustang GT with factory spoiler
- Must be painted to match color of car

2007-09 SVT MUSTANG "COBRA" FENDER EMBLEMS
M-1447-C

- Original equipment on 2007-09 SVT Mustang
- Includes right and left side emblems
- 4.25" tall by 2.50" wide

FORD GT START BUTTON KIT FOR MUSTANG
M-11572-GT

Easy upgrade to enhance the appearance of your 2005-09 Mustang

- Fits in the existing Power Point located in the center of the dash
- Turn the key to the on position then press the button
- Includes special wire harness for easy installation

"COBRA" FAUX FUEL CAP
M-2301-S

- Fits 2005-09 Mustang
- Features the Cobra Snake
- Two-way tape for easy installation
- Unique Ford Racing offering

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2005-09 MUSTANG LIGHTED SVT SILL PLATES

M-13208-LSVT

- Fits 2005-09 Mustangs
- Improves appearance and protects vehicle entry area
- Black with brushed stainless steel insert with “SVT” logo
- SVT illuminates red
- Kit includes two sill plates, installation tape and instructions

2005-09 MUSTANG LIGHTED FORD RACING SILL PLATES

M-13208-LFR

- Fits 2005-09 Mustangs
- Improves appearance and protects vehicle entry area
- Black with brushed stainless steel insert with “Ford Racing” logo
- Ford illuminates blue, Racing illuminates red
- Kit includes two sill plates, installation tape and instructions

SUPERCHARGED 5.4L 2009 SVT MUSTANG ENGINE

M-6007-C54*

- Supercharged 5.4L DOHC engine
- Original equipment in the 2009 SVT Mustang
- 500 hp @ 6000 rpm, 480 lb-ft of torque @ 4500 rpm
- Fully dressed including accessories and supercharger
- Does not include vehicle wiring and PCM
- H.D. cast iron block
- Works with stock wiring or purchase Controls Pack M-6017-54SC sold separately. Perfect for your high-end project!
- Shipping weight approximately 837 lbs

See Also...
- Crate Engine Warranty
- Engine Tips & Specs

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

2005-09 MUSTANG GT PERFORMANCE PACKS

The “Orange Peel”—400 hp Ford Racing Mustang GT convertible development car

Mustang GT. Born to race, bred to win, this American automotive icon has its pedigree rooted in championship performance on the road course, on the drag strip and on the salt flats. Given its history, and the performance images the car evokes, it’s only natural for Mustang GT owners to want to take their car to the next performance level.

Enter Ford Racing. Ford Racing performance packs, the only performance packs for Mustang that are Ford-engineered as complete systems, are also the only Mustang performance packs that are covered by a limited warranty from Ford (when dealer-installed). Through the available Power Upgrade Package, Drag Pack, Handling Pack and Super Packs, all performance attributes of the Mustang GT are enhanced with factory-engineered solutions.

Ford Racing Limited Warranty
2005-09 Model Year Mustang Parts, when Ford, Lincoln or Mercury Dealer Installed

Register for Warranty: To register a vehicle for Ford Racing limited warranty coverage, a Ford, Lincoln or Mercury Dealer must call the Ford Performance Call Center (800) 367-3788 with P&A Code, the vehicle identification number (VIN), part installation repair order number and date, Ford Racing part number and owner information.

Mustang Packs (and Select Parts if installed separately) Ford Racing Limited Warranty, when purchased from an Authorized Ford Racing Dealer and Ford, Lincoln or Mercury Dealer Installed

3-Year/36,000-Mile Limited Warranty Coverage/Eligibility: Ford Racing warrants the subject parts for 3 years/36,000 miles (whichever comes first) when purchased from an Authorized Ford Racing Dealer and installed by a Ford, Lincoln or Mercury Dealer on a new vehicle at the time of vehicle sale, or 12 months/12,000 miles (whichever occurs first) when installed after the date of vehicle sale but prior to the expiration of the 3-year /36,000-mile coverage (whichever occurs first) under the New Vehicle Limited Warranty.

Eligible Parts	Mustang V6	Mustang GT	SVT Mustang
FR1 Power Upgrade Package	M-2007-FR1V6	M-FR1-MGT ①	M-2007-FR1SVT
FR3 Handling Pack	M-2007-FR3V6	M-2005-FR3	M-2007-FR3SVT
Cold Air Kit (Included on Power Upgrade Package)	M-9603-V605	M-9603-GTB ①	M-9603-SVT07
V6 Cat-Back Dual Exhaust System with X Pipe	M-5230-V6	N/A	N/A
Short Throw Shifter	M-7210-V	M-7210-T1	M-7210-B
Mustang GT Exhaust X-Pipe	N/A	M-5251-R	N/A

Supercharger Ford Racing Limited Warranty, when purchased from an Authorized Ford Racing Dealer and Ford, Lincoln or Mercury Dealer Installed

12-Month/12,000-Mile Limited Warranty Coverage/Eligibility: Ford Racing warrants the subject parts for 12-months/12,000-miles from the time of installation when purchased from an Authorized Ford Racing Dealer and installed by a Ford, Lincoln or Mercury Dealer prior to the vehicle reaching either 36 months or 36,000 miles (whichever occurs first) from the vehicle warranty start date and found to be defective in Factory-supplied material or workmanship. This warranty replaces the existing manufacturer's warranty for engine, driveline and suspension parts with a 12-month or 12,000-mile warranty.

Eligible Parts	Mustang V6	Mustang GT	SVT Mustang
400 hp Twin Screw SC (Black) '05-'06 MY		M-6066-M463V	
400 hp Twin Screw SC (Polished) '05-'06 MY		M-6066-M463P	
400 hp Twin Screw SC (Black) '07 MY		M-6066-M463V7 ①	
400 hp Twin Screw SC (Polished) '07 MY		M-6066-M463P7 ①	
400 hp Twin Screw SC (Black) '08-'09 MY		M-6066-M463V8	
400 hp Twin Screw SC (Polished) '08-'09 MY		M-6066-M463P8	
605 hp SC Kit (Black) '07-'09 MY	N/A	N/A	M-6066-SGT

For complete details on the Ford Racing Limited Warranty Program, please go to www.fordracingparts.com

① See www.fordracingparts.com for 2008 applications

2005-09 MUSTANG GT SUPER PACKS

400 HP MUSTANG GT SUPERCHARGER KITS

M-6066-M463V Black Wrinkle
M-6066-M463P Polished

- Fits 2005-06 Mustang GT with MANUAL or AUTOMATIC transmission
- Produces 400 hp with 93 octane at approximately 5 psi of boost
- Kit includes intake manifold supercharger, drive belt and all other accessories for installation of the supercharger
- Includes Pro-Cal tool voucher
- Premium fuel required
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- 50-States Street Legal E.O. #D-231-28 for 2005-06
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

NOTE: Superchargers are built to order. Please allow 7 days for assembly.
See www.fordracingparts.com for the most up-to-date warranty information.

M-6066-M463V7 Black Wrinkle, fits 2007 Mustang GT with MANUAL or AUTOMATIC transmission.
M-6066-M463P7 Polished, fits 2007 Mustang GT with MANUAL or AUTOMATIC transmission.
M-6066-M463V8 Black Wrinkle, fits 2008-09 Mustang GT with MANUAL or AUTOMATIC transmission. NEW
M-6066-M463P8 Polished, fits 2008-09 Mustang GT with MANUAL or AUTOMATIC transmission. NEW

- Produces 400 hp with 93 octane at approximately 5 psi of boost
- Kit includes intake manifold supercharger, drive belt and all other accessories for installation of the supercharger
- Includes Pro-Cal tool voucher
- Premium fuel required
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- 50-States Street Legal E.O. #D-231-28 for 2007-09
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

NOTE: Superchargers are built to order. Please allow 7 days for assembly.
See www.fordracingparts.com for the most up-to-date warranty information.

2005-06 MUSTANG 4.6L BIG BOOST KIT

M-9066-M11

- Big Boost kit converts M-6066-M463V/M463P from 400 hp to 500 hp
- Fits 2005-06 Mustang GT with MANUAL transmission ONLY
- Produces 500 hp at 5800 rpm with 93 octane at approximately 11 psi of boost!
- Kit includes intercooling system, M-9407-GT05 fuel pump kit and smaller pulley
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Includes Pro-Cal voucher with official Ford Racing calibration
- 50-States Street Legal E.O. #D-231-28 for 2005-06
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

2007 MUSTANG 4.6L BIG BOOST KIT

M-9066-M117

- Big Boost kit converts M-6066-M463V7/M463P7 from 400 hp to 500 hp
- Fits 2007 Mustang GT with MANUAL transmission ONLY. Does not fit 2008 Mustang GT
- Produces 500 hp at 5800 rpm with 93 octane at approximately 11 psi of boost!
- Kit includes intercooling system, M-9407-GT05 fuel pump kit and smaller pulley
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Includes Pro-Cal voucher with official Ford Racing calibration
- 50-States Street Legal E.O. #D-231-28 for 2007-09
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

M-9066-M117 shown

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

500 HP MUSTANG GT SUPERCHARGER KITS

M-6066-M11 Black Wrinkle
M-6066-M11P Polished

- Fits 2005-06 Mustang GT with MANUAL transmission ONLY
- Produces 500 hp at 5800 rpm with 93 octane at approximately 11 psi of boost!
- Produces 470 lb-ft of torque at 4200 rpm
- Kit includes intake manifold supercharger, drive belt and all other accessories for installation of the supercharger
- Includes Pro-Cal tool voucher with official Ford Racing calibration
- Premium fuel required
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Similar to 400 hp kit but with smaller pulley, complete air to liquid intercooler system and dual fuel pump, fuel pump driver and harness
- 50-States Street Legal E.O. #D-231-28 for 2005-06
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

NOTE: Superchargers are built to order. Please allow 7 days for assembly.

M-6066-M117* Black Finish, fits 2007 Mustang GT with MANUAL transmission ONLY. Does not fit 2008 Mustang GT. Produces 500 hp at 5800 rpm with 93 octane at approximately 11 psi of boost!

M-6066-M11P7 Polished, fits 2007 Mustang GT with MANUAL transmission ONLY. Does not fit 2008 Mustang GT. Produces 500 hp at 5800 rpm with 93 octane at approximately 11 psi of boost!

M-6066-M118 Black Wrinkle, fits 2008-09 Mustang GT with MANUAL transmission ONLY. Produces 550 hp at 5800 rpm with 93 octane at approximately 11 psi of boost!

NEW

M-6066-M11P8 Polished, fits 2008-09 Mustang GT with MANUAL transmission ONLY. Produces 550 hp at 5800 rpm with 93 octane at approximately 11 psi of boost!

NEW

- Produces 542 lb-ft of torque at 4400 rpm
- Kit includes intake manifold supercharger, drive belt and all other accessories for installation of the supercharger
- Includes Pro-Cal tool voucher with official Ford Racing calibration
- Premium fuel required
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Similar to 400 hp kit but with smaller pulley, complete air to liquid intercooler system and dual fuel pump, fuel pump driver and harness
- 50-States Street Legal E.O. #D-231-28 for 2007-09
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

NOTE: Superchargers are built to order. Please allow 7 days for assembly.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

POWER UPGRADE PACKAGES

For drivers who want to power up and still maintain mild street manners, the Power Upgrade Package offers a slightly throatier exhaust note and a new mass air meter with calibration. The result is approximately 20 horsepower! With the Power Upgrade Package's easy bolt-ons, it takes just an afternoon in the driveway to install. The Power Upgrade Package includes the Ford Racing Flash Tuner to ensure proper calibration.

MUSTANG GT POWER UPGRADE PACKAGE

M-FR1-MGT

NEW

- Fits 2005-09 Mustang GT with automatic or manual transmission
- Approximate increase of 20 horsepower over stock
- 85 mm Cold Air Kit M-9603-GTB
- Performance Muffler Kit
- Performance Oil Filter
- Premium fuel only
- Pro-Cal tool voucher included with kit
- Ford Racing Cold Air Kits utilize production quality components which mount in the stock location. The higher flowing molded plastic bucket features a painted Ford Racing logo with unique air tube providing an enhanced intake sound
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- 50-States Street Legal (E.O. #D-598-3)

50 States Street Legal

See www.fordracingparts.com for the most up-to-date warranty information.

FORD RACING HIGH-PERFORMANCE OIL FILTER

M-6731-FL820 (case of 12)

- Synthetic-Polymer/Cellulose-Fiber blend media
- Heavy-gauge base and canister for higher burst strength and impulse fatigue resistance
- High-quality silicone anti-drain back valve
- Non-stick sealing gasket for ease of installation and removal
- Long life with standard and synthetic motor oils
- Up to 50% more filtering capacity than standard filters
- Improved filtering efficiency
- This technology is only available through Ford Racing Performance Parts

2005-09 MUSTANG GT MUFFLER SET

M-5230-GTA

- 409 stainless body with highly polished 4.0" diameter tips
- Louder, throatier exhaust note
- 50-States drive-by noise legal

NOTE: 409 stainless exhaust material is titanium stabilized ferritic stainless steel. 409 stainless is used in applications where appearance is a secondary consideration to mechanical properties and corrosion resistance and where some weldability is required. An example of 409 stainless usage is catalytic converter assemblies. 409 stainless has excellent forming characteristics and is rust-through resistant. A surface rust will form in most instances. This rust retards further corrosion.

REPLACEMENT AIR FILTER

M-9601-B**

- Replacement air filter for M-9603-GTB and M-9603-V605 cold air kits
- Original equipment replacement air filter for 2008 Special Edition Mustang

85 MM COLD AIR KIT WITH PREMIUM CAL

M-9603-GTB

NEW

- Fits 2005-09 Mustang GT with manual or automatic transmission
- Approximate increase of 20 horsepower
- Ford Racing Cold Air Kits utilize production quality components which mount in the stock location. The higher flowing molded plastic bucket features a painted Ford Racing logo with unique air tube providing an enhanced intake sound
- Premium fuel only
- Kit includes 85 mm mass air meter and voucher for Pro-Cal tool with official Ford Racing calibration
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- 50-States Street Legal (E.O. #D-598-3)
- Replacement air filter element M-9601-B

See www.fordracingparts.com for the most up-to-date warranty information.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2005-09 MUSTANG GT DRAG PACK

85 MM COLD AIR KIT WITH PREMIUM CAL
M-9603-GTB

NEW

- Fits 2005-09 Mustang GT with manual or automatic transmission
- Approximate increase of 20 horsepower
- Ford Racing Cold Air Kits utilize production quality components which mount in the stock location. The higher flowing molded plastic bucket features a painted Ford Racing logo with unique air tube providing an enhanced intake sound
- Premium fuel only
- Kit includes 85 mm mass air meter and voucher for Pro-Cal tool with official Ford Racing calibration
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- 50-States Street Legal (E.O. #D-598-3)
- Replacement air filter element M-9601-B

See www.fordracingparts.com for the most up-to-date warranty information.

2005-09 MUSTANG GT SHORT THROW SHIFTER
M-7210-T1

- Designed by Ford Racing and Hurst
- Fits 2005-09 Mustang GT with 3650 transmission
- Spherical bearing with unique shifter rod and OE main stamping
- Comes with stick for stock shift knob and chrome stick with white shift knob
- Urethane body vibration isolators
- 32% reduction in throw
- **Standard on 2007-08 Shelby GT**

See www.fordracingparts.com for the most up-to-date warranty information.

2005-09 MUSTANG GT SHORTY HEADERS
M-9430-S197*
M-9430-S197C* Coated with Jet-Hot® Ceramic Finish

- Fits 2005-09 Mustang GT
- 409 stainless steel tubes
- Machined flange
- Bolts to stock exhaust pipes
- Includes gaskets, bolts and studs

FORD RACING HIGH-PERFORMANCE OIL FILTER
M-6731-FL820 (case of 12)

- Synthetic-Polymer/Cellulose-Fiber blend media
- Heavy-gauge base and canister for higher burst strength and impulse fatigue resistance
- High-quality silicone anti-drain back valve
- Non-stick sealing gasket for ease of installation and removal
- Long life with standard and synthetic motor oils
- Up to 50% more filtering capacity than standard filters
- Improved filtering efficiency
- This technology is only available through Ford Racing Performance Parts

MUSTANG 8.8" RING GEAR AND PINION SETS

PART NUMBER	RATIO
M-4209-F373N*	3.73:1
M-4209-G410A*	4.10:1

8.8" RING & PINION INSTALLATION KIT
M-4210-A

- Kit includes: pinion and carrier shims, crush sleeve, pinion seal, pinion nut, ring gear bolts and cover gasket
- Use for changing ring and pinion gear or differential
- Fits IRS

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

2005-09 MUSTANG GT HANDLING PACKS

HANDLING PACK

2005-09 MUSTANG GT COUPE HANDLING PACK

M-2005-FR3 Lowers car approximately 1.5"
M-23000-FR3A Lowers car approximately 1" NEW
Put a little "Road Race" into your street car!

- Fits 2005-09 Mustang GT Coupe
- Handling Pack includes Dampers M-18000-A, Lowering Springs M-5300-K, Sway Bars M-5490-A and Strut Tower Brace M-20201-S197. Strut Tower Brace does not clear 2007-09 with plastic engine cover
- All components are designed to work together as a package
- Dampers are manufactured by Dynamic Suspensions (the same company that makes dampers for the FR500C race car)
- **M-2005-FR3 standard on Shelby GT and GTH**

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

See www.fordracingparts.com for the most up-to-date warranty information.

2005-09 MUSTANG GT COUPE LOWERING SPRING KIT

M-5300-K Lowers 2005-09 Mustang GT approximately 1.5"
M-5300-P Lowers 2005-09 Mustang GT approximately 1" NEW

- Progressive spring, designed for increased handling and performance
- Use with M-18000-A and M-5490-A for optimum performance

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2005-09 MUSTANG GT COUPE ANTI-ROLL BAR KIT

M-5490-A

- Anti-roll bar kit designed for increased handling and performance on 2005-09 Mustang GT Coupe
- Best when used with M-18000-A dampers and M-5300-K springs
- Includes all mounting hardware

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2005-09 MUSTANG GT COUPE DYNAMIC DAMPER KIT

M-18000-A

- Engineered specifically for improved handling on the 2005-09 Mustang Coupe
- Dynamic Suspension dampers, same manufacturer as Mustang FR500C race car
- Unique FRPP performance tune
- Designed specifically for lowered vehicles
- Mustang GT Coupe owners: Use with M-5300-K and M-5490-A for optimum performance
- Mustang V6 Coupe owners: Use with M-5300-N and M-5490-C for optimum performance

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2005-09 MUSTANG STRUT TOWER BRACE

M-20201-S197

- Fits 2005-09 Mustang GT without plastic engine cover
- Parallel beam design for added rigidity
- Black powder-coated
- Stainless steel Ford Racing emblem
- Does not fit V6, supercharged GT or 2007-09 GT with intake shroud

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2007-09 SVT MUSTANG WHEEL
M-1007-S1895* ①

- Fits 2005-09 Mustang GT and the 2007-09 SVT Mustang
- 5-lug, 4.5" bolt circle
- 7.125" backspacing
- 45 mm offset
- 18" x 9.5" wide
- Includes SVT center cap
- Same as production 2007-09 SVT Mustang
- Fits M-2300-S brake kit

2007-09 SVT MUSTANG WHEEL BLACK
M-1007-S1895B* ①

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- 5-lug, 4.5" bolt circle
- 7.125" backspacing
- 45 mm offset
- 18" x 9.5" wide
- Includes SVT center cap
- Same as production 2007-09 SVT Mustang except wheel openings are gloss black
- Fits M-2300-S brake kit

2007-09 SVT MUSTANG BLACK WHEEL WITH MACHINED LIP
M-1007-S1895B1* ①

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- 5-lug, 4.5" bolt circle
- 7.125" backspacing
- 45 mm offset
- 18" x 9.5" wide
- Includes SVT center cap
- Same as production 2007-09 SVT Mustang except wheel face is gloss black with a machined lip
- Fits M-2300-S brake kit

2005-09 SILVER MUSTANG WHEEL
M-1007-S1885* ①

- Fits 2005-09 Mustang GT
- Silver painted finish
- Bullit style
- 5-lug, 4.5" bolt circle
- 6.82" backspacing
- 50 mm offset
- 18" x 8.5" wide
- Includes Mustang center cap
- Fits 2005-09 Mustang V6 with M-2300-D brake kit

2005-09 BLACK MUSTANG WHEEL
M-1007-S1885B* ①

- Fits 2005-09 Mustang GT
- Black painted finish
- 5-lug, 4.5" bolt circle
- 6.82" backspacing
- 50 mm offset
- 18" x 8.5" wide
- Includes Mustang center cap
- Fits 2005-09 Mustang V6 with M-2300-D brake kit

2005-09 CHROME MUSTANG WHEEL
M-1007-S1885C* ①

- Fits 2005-09 Mustang GT
- Chrome finish
- 5-lug, 4.5" bolt circle
- 6.82" backspacing
- 50 mm offset
- 18" x 8.5" wide
- Includes Mustang center cap
- Fits 2005-09 Mustang V6 with M-2300-D brake kit

2005-09 MUSTANG GT WHEEL
M-1007-U1885P* ①

- Optional wheel on 2006-09 Mustang GT
- Fits all 2005-09 Mustangs
- Polished aluminum finish
- 5-lug, 4.5" bolt circle
- 6.87" backspacing
- 50 mm offset
- 18" x 8.5" wide
- Includes Mustang center cap
- Fits M-2300-S brake kit

2005-09 MUSTANG GT WHEEL

WHILE SUPPLIES LAST Limited Quantity!!

M-1007-U1885* ①

- Fits all 2005-09 Mustangs
- Silver sparkle finish
- 5-lug, 4.5" bolt circle
- 6.87" backspacing
- 50 mm offset
- 18" x 8.5" wide
- Includes Mustang center cap
- Fits M-2300-S brake kit

NOTE:

① For vehicles with 16" wheels from the factory:
- installing 17" x 8" wheels, use steering stop 4R3Z-3932-BA
- installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

For vehicles with 17" wheels from the factory:
- installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

2005-09 MUSTANG SPECIAL EDITION WHEEL BLACK FINISH

M-1007-T178B* ①

- Fits 2005-09 Mustang GT
- 5-lug, 4.5" bolt circle
- 6.295" backspacing
- 45 mm offset
- 17" x 8" wide
- Includes center cap

2005-09 SILVER MUSTANG GT WHEEL

M-1007-T178S* ①

- Fits 2005-09 Mustang GT
- 5-lug, 4.5" bolt circle
- 6.295" backspacing
- 45 mm offset
- 17" x 8" wide
- Includes center cap

2005-09 POLISHED MUSTANG GT WHEEL

M-1007-T178P* ①

- Fits 2005-09 Mustang GT
- 5-lug, 4.5" bolt circle
- 6.295" backspacing
- 45 mm offset
- 17" x 8" wide
- Includes center cap

2005-09 CHROME MUSTANG GT WHEEL

M-1007-T178C* ①

- Fits 2005-09 Mustang GT
- 5-lug, 4.5" bolt circle
- 6.295" backspacing
- 45 mm offset
- 17" x 8" wide
- Includes center cap

MUSTANG GT INTAKE SHROUD

M-6949-3V

- Original equipment on 2007-09 Mustang GT
- Fits all 2005 and up Mustang GTs with 3-valve 4.6L engine
- May require 2007 Mustang throttle body studs (W712289 S437) and nuts (W520411 S437) from Ford Dealer
- Will not fit with Ford Racing strut tower brace M-20201-S197

FORD GT START BUTTON KIT FOR MUSTANG

M-11572-GT

Easy upgrade to enhance the appearance of your 2005-09 Mustang

- Fits in the existing Power Point located in the center of the dash
- Turn the key to the on position then press the button
- Includes special wire harness for easy installation

2005-09 8.8" MUSTANG GT AXLE ASSEMBLIES

M-4001-A355* 3.55 gear ratio
M-4001-A373* 3.73 gear ratio
axle assembly used as standard equipment on the 2008 Special Edition Mustang

NEW

- 31-spline axles and Traction-Lok differential
- Includes axle shafts

NOTE:

① For vehicles with 16" wheels from the factory:
- installing 17" x 8" wheels, use steering stop 4R3Z-3932-BA
- installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

For vehicles with 17" wheels from the factory:
- installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

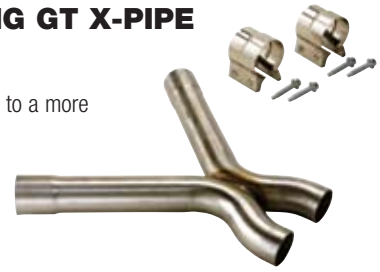
2005-09 MUSTANG GT EXHAUST KIT

M-5230-5GT*

- T-304 stainless construction
- Louder, throatier exhaust note
- 49-state drive-by noise legal (not legal in CA)
- Includes mufflers with Ford Racing embossed 3.5" exhaust tips

2005-08 MUSTANG GT X-PIPE

M-5251-R*



- T-409 stainless steel X-pipe
- Converts your factory H-pipe to a more efficient X-pipe
- Requires cutting of factory exhaust for installation
- Clamp-on installation—does not require welding!

2005-09 MUSTANG GT HIGH LIFT HOT ROD CAM SET

M-6550-3V*

NEW

- Give any 3-valve 4.6L or 5.4L a lopey idle reminiscent of 1960s muscle cars, no one will believe it's a modular engine
- The most powerful cams available that are safe with production valve train
- Currently being used in Rough Rider off-road race trucks
- Engineered by the same designers of the stock camshafts
- No other cam manufacturer has the aggressive sound and durability these cams offer
- Upgrade for the 2005-09 Mustang GT 4.6L 3V engine
- Increases lift from the stock 11 mm to 12 mm
- Duration at .050", intake 221 degrees, exhaust 240 degrees, lobe separation 110 degrees
- Compatible with production springs, followers and lash adjusters up to 6800 rpm
- 50 hp gain (SAE J1349) with the stock intake and M-6049-463P CNC heads at 6500 rpm. 30 hp gain without CNC heads (with long tube headers and M-9603-GTB cold air kit)
- Requires custom calibration to achieve optimized performance
- Featured in M-6007-A463NA crate engine

CNC PORTED 3-VALVE CYLINDER HEAD ASSEMBLY

M-6049-463P* RH
M-6050-463P* LH

- New production cylinder head castings
- CNC ported to increase flow and performance
- 50.3cc combustion chamber
- Intake flow increased approximately 20%
- Exhaust flow increased approximately 30%
- Assembled with production springs, valves, retainers, locks and seals
- Does not include camshaft, followers and hydraulic lash adjusters
- Minimize your vehicle down time waiting for a shop to port your heads. Get a brand new head for a little more than the price of exchange!
- No exchange required
- Requires 2005-08 "High Thread" design spark plugs. See page 89

2005-09 MUSTANG GT MUFFLER SET

M-5230-GTA

- 409 stainless body with highly polished 4.0" diameter tips
- Louder, throatier exhaust note
- 50-States drive-by noise legal

NOTE: 409 stainless exhaust material is titanium stabilized ferritic stainless steel. 409 stainless is used in applications where appearance is a secondary consideration to mechanical properties and corrosion resistance and where some weldability is required. An example of 409 stainless usage is catalytic converter assemblies. 409 stainless has excellent forming characteristics and is rust-through resistant. A surface rust will form in most instances. This rust retards further corrosion.

2008 SPECIAL EDITION MUSTANG MUFFLER

M-5230-GTB

NEW

- Fits 2005-09 Mustang GT
- Muffler used as standard equipment on the 2008 Mustang Bullitt
- Throatier exhaust note
- Aluminized 409 stainless steel corrosion-resistant body with a polished 304 stainless tip
- 50-States drive-by noise legal

MUSTANG FR500S MUFFLERS

M-5230-S

NEW

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- Homologated for use on the Mustang FR500S
- Body of mufflers embossed with Ford Racing logo
- Aluminized 409 stainless steel corrosion-resistant body with polished 304 stainless 3.5" diameter tips
- Throatier exhaust note

CNC PORTED 3-VALVE CYLINDER HEAD ASSEMBLIES

M-6049-N3VP* RH
M-6050-N3VP* LH

NEW

- New production cylinder head castings
- CNC ported to increase flow and performance
- 50.3cc combustion chamber
- Intake flow increased approximately 20%
- Exhaust flow increased approximately 30%
- Assembled with production springs, valves, retainers, locks and seals
- Does not include camshaft, followers and hydraulic lash adjusters
- Minimize your vehicle down time waiting for a shop to port your heads. Get a brand new head for a little more than the price of exchange!
- No exchange required
- Requires 2008-09 12 mm spark plugs
- Heads will fit early cars originally equipped with "High Thread" design spark plugs. Requires spark plug and ignition coil update

NOTE: Engines with late style 12 mm spark plugs can be identified by coil engineering number 8L3E. Engines with early style 16 mm "High Thread" design spark plugs can be identified by coil engineering number 3L3E.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

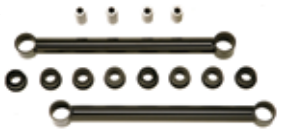
MUSTANG GT 14" BRAKE UPGRADE KIT
M-2300-S*

- Fits 2005-08 Mustang GT, see www.fordracingsports.com for additional applications
- Kit will upgrade the front brakes to 2007-08 SVT Mustang 14" rotors and 4-piston calipers
- Includes 2007 SVT Mustang rear pads for use in stock Mustang GT rear calipers
- Includes Goodridge® DOT four-piece hose kit and attaching parts
- Requires 18" M-1007-S1895, M-1007-S1895B wheel or equivalent for caliper clearance

BRAKE COOLING KIT
M-2004-A

- Fits 2007-09 SVT Mustang
- Fits 2005-08 Mustang GT with M-2300-S brake kit installed
- Includes backing plates with duct work
- Designed to direct air from the fascia to the rotor for improved brake and wheel bearing life

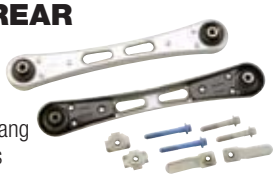
MUSTANG FR500C REAR LOWER CONTROL ARMS
M-5649-R



- Service replacement for the Mustang FR500C race car
- Higher durometer bushing enhances response of vehicle
- Will fit 2005-09 Mustang GT

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2007-09 SVT MUSTANG REAR LOWER CONTROL ARMS
M-5538-A



- Fits 2005-09 Mustang
- Original equipment on 2007-09 SVT Mustang
- Increased bushing durometer and stiffness for higher horsepower applications

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

MUSTANG FR500C REAR UPPER CONTROL ARM BUSHINGS
M-5638-R

- Service replacement for the Mustang FR500C race car
- Includes bushings and sleeve for upper rear control arm
- Increased durometer bushing for precise handling and control

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2005-08 MUSTANG FRONT LOWER A-ARM BRACE
M-5025-A*

- Fits 2005-08 Mustang GT coupe. See www.fordracingsports.com for additional applications
- Original equipment on convertible and 2007 SVT Mustang
- Increases chassis stiffness

2007-09 SVT MUSTANG FRONT LOWER CONTROL ARM KIT
M-3075-E

- Fits 2005-09 Mustang
- Original equipment on 2007-09 SVT Mustang
- Increased strength ball joints
- Kit contains 1 RH and 1 LH lower control arm assembly

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2005-09 MUSTANG GT AND 2007-09 SVT MUSTANG DRIVESHAFT LOOP KIT
M-5478-S197B

NEW

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- Must drill holes for installation
- Zinc plated
- Includes hardware
- Includes front and rear loops for production two-piece driveshaft
- Will work with short throw 6-speed shifter M-7210-B
- Used on the FR500S Mustang

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FR500S REAR WING AND FRONT SPLITTER FOR CLUB RACERS

M-16600-F Unpainted rear wing
M-16601-C Splitter kit

- Modifications to vehicle required for installation

2005-09 FORD RACING MUSTANG STRIPE KITS

M-1620001-FRBL Ford Racing Blue
M-1620001-FRBK Ford Racing Black
M-1620001-FRSL Ford Racing Silver

- As seen on Mustang FR500C race car
- 10" stripe width for over-the-body stripes
- Vintage look rocker molding stripes
- Ford Racing script in lower body side stripes (as pictured above)
- Professional installation required!

MUSTANG GT STYLING PACK

M-2784-M

- Fits 2005-09 Mustang GT
- Includes flat black front chin spoiler and rear decklid trim panel
- Chin spoiler is texture finished—not intended for paint
- Deck lid trim panel features horizontal ribs and FR500 badge
- No drilling required
- Not compatible with faux fuel door, must be removed

2005-09 MUSTANG C-PILLAR LOUVERS

M-1784-MS

- Fits 2005-09 Mustangs
- Urethane construction
- Primed for paint, MUST PAINT TO MATCH
- Comes with installation instructions
- Requires no drilling
- Use with M-2784-M to make your Mustang like the FR500!

MUSTANG FUEL FILL DOOR

M-2301-5M

- Improve the appearance of your 2005-09 Mustang
- Brushed aluminum finish
- Billet aircraft styling
- Easy installation

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

2007-09 SVT MUSTANG "COBRA" FENDER EMBLEMS

M-1447-C

- Original equipment on 2007-09 SVT Mustang
- Includes right and left side emblems
- 4.25" tall by 2.50" wide

FORD GT COOLANT OVERFLOW CAP

M-8006-GT

- Ford GT coolant overflow cap with billet cover
- "GT" logo machined in cap surface
- Fits both coolant overflow and intercooler reservoir

"COBRA" FAUX FUEL CAP

M-2301-S

- Fits 2005-09 Mustang
- Features the Cobra Snake
- Two-way tape for easy installation
- Unique Ford Racing offering

BILLET PAINTED OIL FILL CAP COVER FOR 4.6L/5.4L/6.8L

M-6766-MP46

- Fits all years modular engine
- Installs over factory plastic oil fill cap (not included)
- Features Ford Racing logo painted in blue and red
- Clear coated

2005-09 MUSTANG LIGHTED SVT SILL PLATES

M-13208-LSVT

- Fits 2005-09 Mustangs
- Improves appearance and protects vehicle entry area
- Black with brushed stainless steel insert with "SVT" logo
- SVT illuminates red
- Kit includes two sill plates, installation tape and instructions

2005-09 MUSTANG LIGHTED FORD RACING SILL PLATES

M-13208-LFR

- Fits 2005-09 Mustangs
- Improves appearance and protects vehicle entry area
- Black with brushed stainless steel insert with "Ford Racing" logo
- Ford illuminates blue, Racing illuminates red
- Kit includes two sill plates, installation tape and instructions

COATED 3-VALVE CAM COVERS 4.6L/5.4L

- Fits all 2005-09 3-valve 4.6L/5.4L engines
- Powdercoated finish

M-6582-C543V
Chrome appearance

M-6582-3VB
Blue

M-6582-3VBLK
Black Wrinkle

MUSTANG GT DUAL FUEL PUMP KIT

M-9407-GT05

- Fits 2005-09 Mustang GT
- Includes harness, dual fuel pumps, drop-in housing and fuel pump driver module from the 2007-09 SVT Mustang
- Includes all installation hardware
- Highly recommended for any application making over 400 hp
- Same fuel pump kit as used in the Mustang GT 500 hp supercharger kit

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

TRUE SPEED

Ford Racing congratulates Hajek Motorsports and Danny Thompson for hitting a top speed of 251.741 mph in their FR500C Mustang at the Bonneville Salt Flats in August, 2008. Powered by Ford Racing Performance Parts and engineering support, this effort was the best way to celebrate the 40th anniversary of Danny's father, Mickey, and Danny Ongais setting 295 speed and endurance records in the original Mustang Mach I.
Well done, team!

TRUE BLUE.

Real POWER.
Real PERFORMANCE.
Real SUBSTANCE.
Real VALUE.

Ford RACING

www.fordracing.com

Photos Courtesy of Patrick Quirk

2005-09 MUSTANG V6 PERFORMANCE PACKS

The “Deacon”—225 hp Ford Racing Mustang V6 development car

Mustang V6. Great looking and all-Mustang right out of the box. Add an attractive price, impressive fuel economy and appealing insurance premiums to this already balanced car and you have an all-American head-turner that’s a real value.

Leave it to Ford Racing to make a great car even better. Ford Racing performance packs, the only performance packs for Mustang that are Ford-engineered as complete systems, are also the only Mustang performance packs that are covered by a limited warranty from Ford (when dealer-installed). The available Power Upgrade Package (including a full dual exhaust) and the Handling Pack add real “go” to the V6’s good looks.

V6 POWER UPGRADE PACKAGE

For drivers who want to power up and still maintain mild street manners, the Power Upgrade Package offers a slightly throatier exhaust note and a new mass air meter with calibration. The result is approximately 12 horsepower! With the Power Upgrade Package's easy bolt-ons, it takes just an afternoon in the driveway to install. The Power Upgrade Package includes the Ford Racing Flash Tuner to ensure proper calibration.

2005-09 MUSTANG V6 POWER UPGRADE PACKAGE

M-2007-FR1V6

- Fits 2005-09 Mustang V6 with manual or automatic transmission
- 12 hp increase over stock
- Kit includes:
  85 mm Cold Air Kit M-9603-V605
  Dual Exhaust Kit with X-Pipe M-5230-V6
  Includes mufflers used as standard equipment on the 2008 Mustang Bullitt
  Performance Oil Filter
- Premium fuel only
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- Pro-Cal tool voucher included with kit
- Ford Racing Cold Air Kits utilize production quality components which mount in the stock location. The higher flowing molded plastic bucket features a painted Ford Racing logo with unique air tube providing an enhanced intake sound specific to the V6 Mustang
- 50-States Street Legal (E.O. #D-598-3)

50 States Street Legal

See www.fordracingparts.com for the most up-to-date warranty information.

Ford Racing Limited Warranty
2005-09 Model Year Mustang Parts, when Ford, Lincoln or Mercury Dealer Installed

Register for Warranty: To register a vehicle for Ford Racing limited warranty coverage, a Ford, Lincoln or Mercury Dealer must call the Ford Performance Call Center (800) 367-3788 with P&A Code, the vehicle identification number (VIN), part installation repair order number and date, Ford Racing part number and owner information.

Mustang Packs (and Select Parts if installed separately) Ford Racing Limited Warranty, when purchased from an Authorized Ford Racing Dealer and Ford, Lincoln or Mercury Dealer Installed

3-Year/36,000-Mile Limited Warranty Coverage/Eligibility: Ford Racing warrants the subject parts for 3 years/36,000 miles (whichever comes first) when purchased from an Authorized Ford Racing Dealer and installed by a Ford, Lincoln or Mercury Dealer on a new vehicle at the time of vehicle sale, or 12 months/12,000 miles (whichever occurs first) when installed after the date of vehicle sale but prior to the expiration of the 3-year/36,000-mile coverage (whichever occurs first) under the New Vehicle Limited Warranty.

Eligible Parts: M-2007-FR1V6 FR1 Power Upgrade Package; M-2007-FR3V6 FR3 Handling Pack; M-9603-V605 Cold Air Kit (Included on Power Upgrade Package); M-5230-V6 V6 Dual Exhaust System with X Pipe; M-7210-V Short Throw Shifter

2005-09 MUSTANG V6 DUAL EXHAUST KIT 50 STATE

M-5230-V6

- Fits 2005-09 Mustang V6
- Includes mufflers used as standard equipment on the 2008 Mustang Bullitt
- Aluminized 409 stainless body mufflers with polished 304 stainless 3.5" diameter tips
- Louder, throatier exhaust note
- Includes X-pipe
- Requires minor modification of rear bumper cover (template included in kit)
- 50-States drive-by street legal

50 States Street Legal

See www.fordracingparts.com for the most up-to-date warranty information.

NOTE: 409 stainless exhaust material is titanium stabilized ferritic stainless steel. 409 stainless is used in applications where appearance is a secondary consideration to mechanical properties and corrosion resistance and where some weldability is required. An example of 409 stainless usage is catalytic converter assemblies. 409 stainless has excellent forming characteristics and is rust-through resistant. A surface rust will form in most instances. This rust retards further corrosion.

FORD RACING HIGH-PERFORMANCE OIL FILTER

M-6731-FL820 (case of 12)

- Synthetic-Polymer/Cellulose-Fiber blend media
- Heavy-gauge base and canister for higher burst strength and impulse fatigue resistance
- High-quality silicone anti-drain back valve
- Non-stick sealing gasket for ease of installation and removal
- Long life with standard and synthetic motor oils
- Up to 50% more filtering capacity than standard filters
- Improved filtering efficiency
- This technology is only available through Ford Racing Performance Parts

2005-09 MUSTANG V6 85 MM COLD AIR KIT WITH PREMIUM CAL

M-9603-V605

- Fits 2005-09 Mustang V6 with manual or automatic transmission
- 12 hp increase over stock
- Ford Racing Cold Air Kits utilize production quality components which mount in the stock location. The higher flowing molded plastic bucket features a painted Ford Racing logo with unique air tube providing an enhanced intake sound specific to the V6 Mustang
- Premium fuel only
- Kit includes 85 mm mass air meter and voucher for Pro-Cal tool with official Ford Racing calibration
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only
- 50-States Street Legal (E.O. #D-598-3)

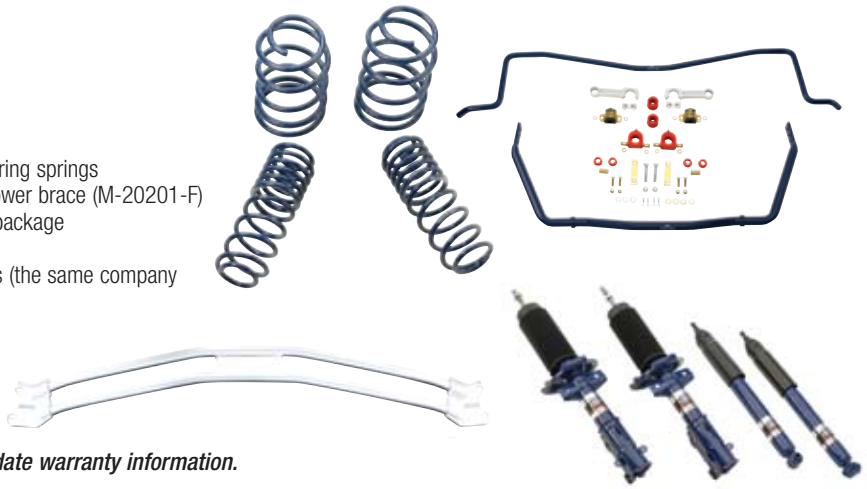
See www.fordracingparts.com for the most up-to-date warranty information.

V6 HANDLING PACK

2005-09 MUSTANG V6 COUPE HANDLING PACK
M-2007-FR3V6

- Fits 2005-09 Mustang V6 Coupe
- Handling Pack includes dampers (M-18000-A), lowering springs (M-5300-N), anti-roll bar kit (M-5490-C) and strut tower brace (M-20201-F)
- All components are designed to work together as a package
- Lowers car approximately 1.250"
- Dampers are manufactured by Dynamic Suspensions (the same company that makes dampers for the FR500C race car)

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

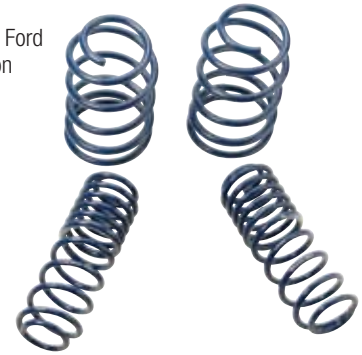


See www.fordracingparts.com for the most up-to-date warranty information.

2005-09 MUSTANG V6 COUPE SPRINGS
M-5300-N

- Engineered specifically for improved handling on the 2005-09 Mustang V6 Coupe
- Lowers car approximately 1.25"
- Designed to be used with M-18000-A and M-5490-C
- Gives a more aggressive looking stance as well as increased handling dynamics
- May cause slightly harsher ride compared to stock springs

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.



2005-09 MUSTANG V6 COUPE ANTI-ROLL BAR KIT
M-5490-C

- Anti-roll bar kit designed for increased handling and performance on the 2005-09 Mustang V6 Coupe
- Best when used with M-5300-N springs
- Includes all mouting hardware

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2005-09 MUSTANG GT COUPE DYNAMIC DAMPER KIT
M-18000-A

- Engineered specifically for improved handling on the 2005-09 Mustang Coupe
- Dynamic Suspension dampers, same manufacturer as Mustang FR500C race car
- Unique FRPP performance tune
- Designed specifically for lowered vehicles
- Mustang GT Coupe owners: Use with M-5300-K and M-5490-A for optimum performance
- Mustang V6 Coupe owners: Use with M-5300-N and M-5490-C for optimum performance

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

2005-09 MUSTANG V6 STRUT TOWER BRACE
M-20201-F

- Fits the 2005-09 Mustang V6
- Parallel beam construction for added rigidity

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2005-09 MUSTANG V6 BRAKE UPGRADE KIT

NEW

M-2300-D*

- Fits 2005-09 Mustang V6
- Upgrades Mustang V6 11.5" front rotors to the larger Mustang GT 12.4" rotors for increased stopping power
- Uses existing calipers and brake pads
- Easily installed, no bleeding required
- Requires 17" or larger 2005-09 Mustang wheels such as M-1007-T178C for caliper clearance
- Allows use of M-1007-S1885, M-1007-S1885B and M-1007-S1885C 18" style wheels on Mustang V6

2005-09 MUSTANG V6 MUFFLER KIT

M-5230-5V6

- T-304 stainless construction
- Louder, throatier exhaust note
- 50-States drive-by noise legal
- Includes muffler with Ford Racing embossed 3.5" exhaust tip

2005-09 V6 SHORT THROW SHIFTER

M-7210-V

- Designed by Ford Racing and Hurst
- Fits 2005-09 Mustang V6 with T-5 transmission
- Spherical bearing with unique shifter rod and OE main stamping
- Chrome stick with white shift knob
- Urethane body vibration isolators
- Reduced throw

See www.fordracingparts.com for the most up-to-date warranty information.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

"PUT A FORD ON YOUR FORD"

FRPP uses the Society of Automotive Engineers (SAE) and American Society for Testing and Materials (ASTM) standards: SAE J175 and J328 for impact and fatigue testing and ASTM B368 for chrome testing. These standards define a series of tests that ensure the safety and finish of a wheel.

THESE TESTS ARE THE MINIMUM STANDARD USED TO DEFINE THE ENDURANCE OF FRPP WHEELS.

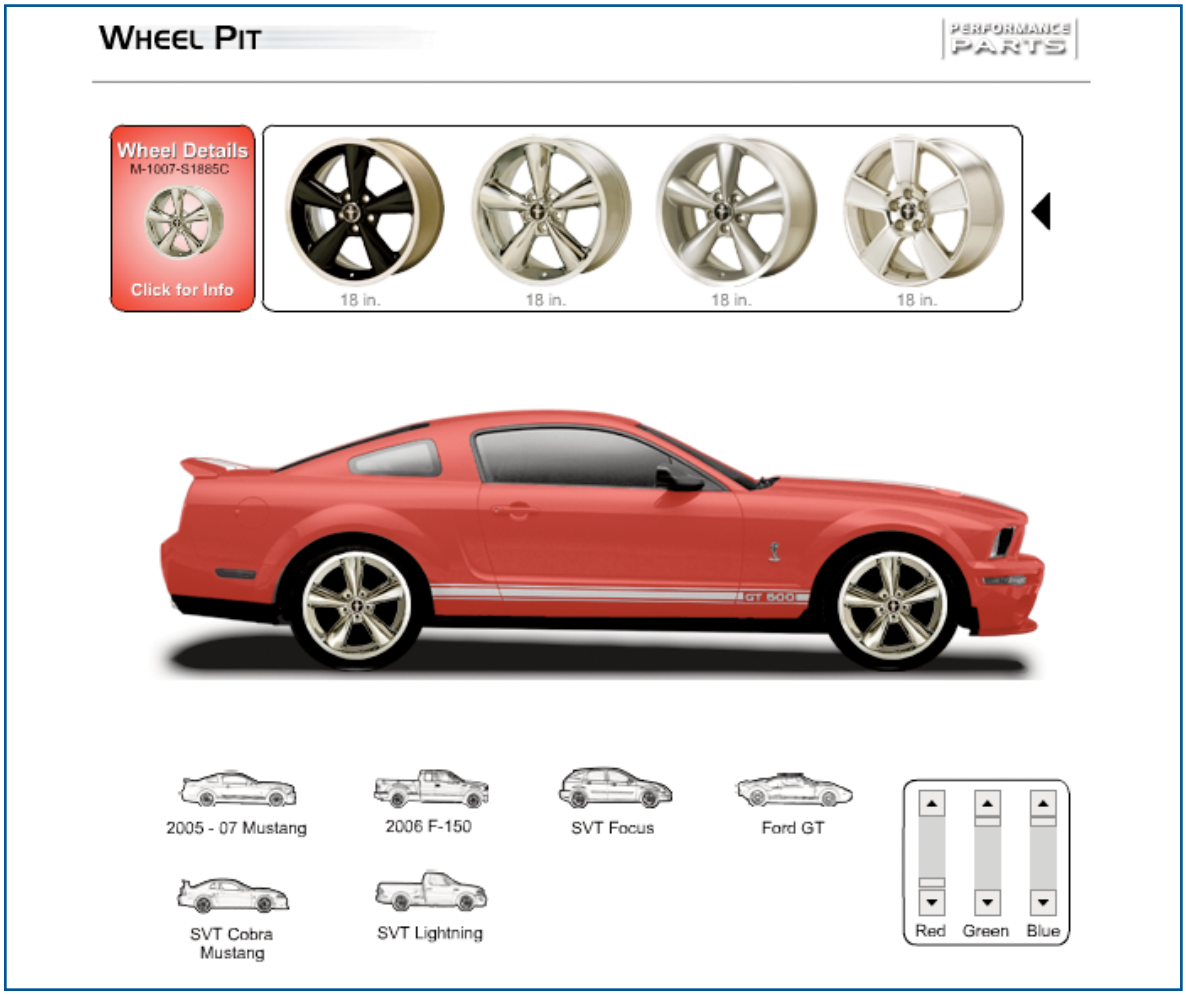
IMPACT TESTING
This test simulates a curb impact on the side of a tire/wheel assembly. During testing, a tire/wheel assembly is mounted at a 13-degree angle to a test fixture by the hub. A weight is dropped from 9 inches onto the assembly at the tire/wheel intersection. The mass of the weight is determined by a formula, using the vehicle weight.

DYNAMIC CORNERING FATIGUE TESTING
This test simulates lateral loads applied to a wheel by the vehicle. During testing, a wheel is clamped to a fixture by the front face and a constant bending moment is applied through the hub. A wheel of new design will run a minimum of 1,000,000 cycles before approved. The load applied is determined by a formula, using the vehicle weight.

DYNAMIC RADIAL FATIGUE TESTING
This test simulates axial loads applied to a wheel by the vehicle. During testing, a tire/wheel assembly is mounted to an axle by the hub. A large drum drives the assembly while a load is applied perpendicular to the tire patch. A wheel of new design will run a minimum of 5,000,000 cycles. The load applied is determined by a formula, using the vehicle weight.

CHROME QUALITY TESTING
Copper-accelerated acetic acid-salt spray, commonly known as CASS testing, is the standard method used to test the corrosive performance of copper/nickel/chromium-plated wheels. The test is performed in a sealed chamber with a highly acetic spray directed onto the wheel for a predetermined amount of time, usually 66 hours.

CHECK OUT THE FORD RACING WHEEL CHANGER AT FORDRACINGPARTS.COM. SEE HOW OUR WHEELS LOOK ON YOUR RIDE.



*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2007-09 SVT MUSTANG WHEEL
M-1007-S1895* ①

- Fits 2005-09 Mustang GT and the 2007-09 SVT Mustang
- 5-lug, 4.50" bolt circle
- 7.125" backspacing
- 45 mm offset
- 18" x 9.5" wide
- Includes SVT center cap
- Same as production 2007-09 SVT Mustang
- Fits M-2300-S brake kit

2007-09 SVT MUSTANG WHEEL BLACK
M-1007-S1895B* ①

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- 5-lug, 4.5" bolt circle
- 7.125" backspacing
- 45 mm offset
- 18" x 9.5" wide
- Includes SVT center cap
- Same as production 2007-09 SVT Mustang except wheel openings are gloss black
- Fits M-2300-S brake kit

2007-09 SVT MUSTANG BLACK WHEEL WITH MACHINED LIP
M-1007-S1895B1* ①

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- 5-lug, 4.5" bolt circle
- 7.125" backspacing
- 45 mm offset
- 18" x 9.5" wide
- Includes SVT center cap
- Same as production 2007-09 SVT Mustang except wheel face is gloss black with a machined lip
- Fits M-2300-S brake kit

2005-09 BLACK MUSTANG WHEEL
M-1007-S1885B* ①

- Fits 2005-09 Mustang GT
- Black painted finish
- 5-lug, 4.5" bolt circle
- 6.82" backspacing
- 50 mm offset
- 18" x 8.5" wide
- Includes Mustang center cap
- Fits 2005-09 Mustang V6 with M-2300-D brake kit

2005-09 CHROME MUSTANG WHEEL
M-1007-S1885C* ①

- Fits 2005-09 Mustang GT
- Chrome finish
- 5-lug, 4.5" bolt circle
- 6.82" backspacing
- 50 mm offset
- 18" x 8.5" wide
- Includes Mustang center cap
- Fits 2005-09 Mustang V6 with M-2300-D brake kit

2005-09 SILVER MUSTANG WHEEL
M-1007-S1885* ①

- Fits 2005-09 Mustang GT
- Silver painted finish
- Bullit style
- 5-lug, 4.5" bolt circle
- 6.82" backspacing
- 50 mm offset
- 18" x 8.5" wide
- Includes Mustang center cap
- Fits 2005-09 Mustang V6 with M-2300-D brake kit

NOTE:

① For vehicles with 16" wheels from the factory:
- installing 17" x 8" wheels, use steering stop 4R3Z-3932-BA
- installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

For vehicles with 17" wheels from the factory:
- installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

PERFORMANCE WHEELS

2005-09 MUSTANG GT WHEEL
M-1007-U1885P* ①
- Optional wheel on 2006-09 Mustang GT
- Fits all 2005-09 Mustangs
- Polished aluminum finish
- 5-lug, 4.5" bolt circle
- 6.87" backspacing
- 50 mm offset
- 18" x 8.5" wide
- Includes Mustang center cap
- Fits M-2300-S brake kit

2005-09 MUSTANG SPECIAL EDITION WHEEL BLACK FINISH
M-1007-T178B* ①
- Fits 2005-09 Mustang GT
- 5-lug, 4.5" bolt circle
- 6.295" backspacing
- 45 mm offset
- 17" x 8" wide
- Includes center cap

2005-09 SILVER MUSTANG GT WHEEL
M-1007-T178S* ①
- Fits 2005-09 Mustang GT
- 5-lug, 4.5" bolt circle
- 6.295" backspacing
- 45 mm offset
- 17" x 8" wide
- Includes center cap

2005-09 POLISHED MUSTANG GT WHEEL
M-1007-T178P* ①
- Fits 2005-09 Mustang GT
- 5-lug, 4.5" bolt circle
- 6.295" backspacing
- 45 mm offset
- 17" x 8" wide
- Includes center cap

2005-09 CHROME MUSTANG GT WHEEL
M-1007-T178C* ①
- Fits 2005-09 Mustang GT
- 5-lug, 4.5" bolt circle
- 6.295" backspacing
- 45 mm offset
- 17" x 8" wide
- Includes center cap

MUSTANG SPINNER CAP
M-1096-B
Fits 2005-09: 16" aluminum, 17" base GT wheels.

NOTE:
① For vehicles with 16" wheels from the factory:
- installing 17" x 8" wheels, use steering stop 4R3Z-3932-BA
- installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

For vehicles with 17" wheels from the factory:
- installing 18" x 8.5" or 18" x 9.5" wheels, use steering stop 6R3Z-3932-CA

Check out the Ford Racing Wheel Changer at fordracingparts.com. See how our wheels look on your ride.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

PERFORMANCE WHEELS

2003 SILVER MUSTANG COBRA WHEEL

M-1007-S179*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 6.12" backspacing
- 26 mm offset
- 17" x 9" wide
- Includes center cap

2003 CHROME MUSTANG COBRA WHEEL

M-1007-S179C*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 6.12" backspacing
- 26 mm offset
- 17" x 9" wide
- Includes center cap

10TH ANNIVERSARY MUSTANG COBRA WHEEL

M-1007-A179*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 6.12" backspacing
- 26 mm offset
- 17" x 9" wide
- Charcoal metallic finish
- Includes center cap

1999 POLISHED MUSTANG COBRA WHEEL

M-1007-G178*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.72" backspacing
- 30 mm offset
- 17" x 8" wide
- Includes center cap

1995 SILVER MUSTANG COBRA "R" WHEEL

M-1007-R58*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.98" backspacing
- 24 mm offset
- 17" x 9" wide
- Includes center cap
- Will clear M-2300-K disc brakes
- Same wheel used on 1995 SVT Mustang Cobra "R"

CHROME MUSTANG COBRA "R" WHEEL

M-1007-C58*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.98" backspacing
- 24 mm offset
- 17" x 9" wide
- Includes center cap
- Will clear M-2300-K disc brakes

Check out the Ford Racing Wheel Changer at fordracingparts.com. See how our wheels look on your ride.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

2003 CHARCOAL GRAY SPECIAL EDITION MUSTANG GT WHEEL

M-1007-J178*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.72" backspacing
- 30 mm offset
- 17" x 8" wide
- Includes center cap

NOTE: Charcoal gray does not match 2001-02 production Mustang.

2001 CHROME SPECIAL EDITION MUSTANG GT WHEEL

M-1007-B178C*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.72" backspacing
- 30 mm offset
- 17" x 8" wide
- Includes center cap

2001 BLACK SPECIAL EDITION MUSTANG GT WHEEL

M-1007-K178*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.72" backspacing
- 30 mm offset
- 17" x 8" wide
- Includes center cap

1998 SILVER MUSTANG COBRA WHEEL

M-1007-D178*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.72" backspacing
- 30 mm offset
- 17" x 8" wide
- Includes center cap

2003 MACH 1 MAGNUM 500 MUSTANG WHEEL

M-1007-M178*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.72" backspacing
- 30 mm offset
- 17" x 8" wide
- Includes center cap

NOTE: Wheel openings production dark metallic gray.

Check out the Ford Racing Wheel Changer at fordracingparts.com. See how our wheels look on your ride.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2000 SILVER MUSTANG COBRA "R" WHEEL

M-1007-R189*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 6.12" backspacing
- 20 mm offset
- 18" x 9.5" wide
- Includes center cap

2000 CHROME MUSTANG COBRA "R" WHEEL

M-1007-R189C*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 6.12" backspacing
- 20 mm offset
- 18" x 9.5" wide
- Includes center cap

SILVER FORD RACING MUSTANG COBRA "R" WHEEL

M-1007-R54*

- Fits 1979-93
- 4-lug, 4.25" bolt circle
- 5.15" backspacing
- 15 mm offset
- 17" x 8" wide
- Includes center cap

CHROME FORD RACING MUSTANG COBRA "R" WHEEL

M-1007-R54C*

- Fits 1979-93
- 4-lug, 4.25" bolt circle
- 5.15" backspacing
- 15 mm offset
- 17" x 8" wide
- Includes center cap

Check out the Ford Racing Wheel Changer at fordracingparts.com. See how our wheels look on your ride.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

SILVER FORD RACING MUSTANG WHEEL

M-1007-F500*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.98" backspacing
- 24 mm offset
- 18" x 9" wide
- Includes Ford Racing center cap
- Cast-in Ford Racing logo

CHROME FORD RACING MUSTANG WHEEL

M-1007-F500C*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.98" backspacing
- 24 mm offset
- 18" x 9" wide
- Includes Ford Racing center cap
- Cast-in Ford Racing logo

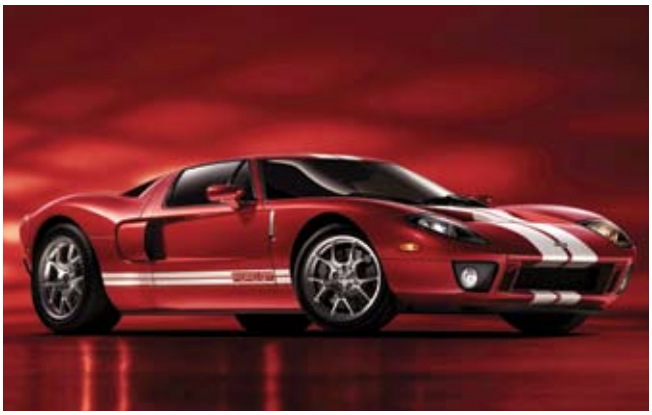
BLACK FORD RACING MUSTANG WHEEL

M-1007-F500B*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.98" backspacing
- 24 mm offset
- 18" x 9" wide
- Includes Ford Racing center cap
- Cast-in Ford Racing logo

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.



FORD GT FRONT WHEEL
M-1007-GTF*

- Forged front wheel available on 2005-06 Ford GT
- Open lug design
- 5-lug, 4.5" bolt circle
- 6.90" backspacing
- 50 mm offset
- 18" x 9" wide
- Includes Ford GT center cap

FORD GT REAR WHEEL
M-1007-GTR*

- Forged rear wheel available on 2005-06 Ford GT
- Open lug design
- 5-lug, 4.5" bolt circle
- 7.295" backspacing
- 40 mm offset
- 19" x 11.5" wide
- Includes Ford GT center cap

2004-09 F-150 LIGHTNING WHEEL
M-1007-L2085*

- Ford Racing exclusive. Styled after the proposed wheel for the never produced Lightning
- Fits all 2004-09 F-150 2WD and 4WD
- Fits 2002-08 Expeditions
- Does not fit 2004 F-150 Heritage
- Sparkle silver painted finish, with machined face
- 6-lug, 135 mm bolt circle
- 6.56" backspacing
- 44 mm offset
- 20" x 8.5" wide
- Includes Ford Racing center cap

2004-09 F-150 LIGHTNING WHEEL
M-1007-L2010*

- Ford Racing exclusive. Proposed wheel for the never produced Lightning
- Fits all 2004-09 F-150 4WD only
- Does not fit 2004 F-150 Heritage
- Sparkle silver painted finish, with machined face
- 6-lug, 135 mm bolt circle
- 7.125" backspacing
- 44 mm offset
- 20" x 10" wide
- Includes Ford Racing center cap

2004-09 F-150 LIGHTNING WHEEL
M-1007-L2010P*

- Ford Racing exclusive. Proposed wheel for the never produced Lightning
- Fits all 2004-09 F-150 4WD only
- Does not fit 2004 F-150 Heritage
- Polished aluminum finish, with machined face
- 6-lug, 135 mm bolt circle
- 7.125" backspacing
- 44 mm offset
- 20" x 10" wide
- Includes Ford Racing center cap

2004-09 F-150 LIGHTNING WHEEL
M-1007-L2085P*

- Ford Racing exclusive. Styled after the proposed wheel for the never produced Lightning
- Fits all 2004-09 F-150 2WD and 4WD
- Fits 2002-08 Expeditions
- Does not fit 2004 F-150 Heritage
- Polished aluminum finish, with machined face
- 6-lug, 135 mm bolt circle
- 6.56" backspacing
- 44 mm offset
- 20" x 8.5" wide
- Includes Ford Racing center cap

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

PERFORMANCE WHEELS

2002-03 SILVER SVT FOCUS WHEEL
M-1007-S177*

- Fits 2000-09
- 4-lug, 108 mm bolt circle
- 5.94" backspacing
- 49 mm offset
- 17" x 7" wide
- Includes SVT center cap
- Original equipment on the 2003 SVT Focus

2004 SVT FOCUS WHEEL
M-1007-S177A*

- Fits 2000-07
- 4-lug, 108 mm bolt circle
- 5.94" backspacing
- 49 mm offset
- 17" x 7" wide
- Includes SVT center cap
- Original equipment on the 2003-04 SVT Focus

2003 DARK ARGENT SVT FOCUS EUROPEAN APPEARANCE PACKAGE 15-SPOKE WHEEL
M-1007-S177E*

- Fits 2000-09
- 4-lug, 108 mm bolt circle
- 5.94" backspacing
- 49 mm offset
- 17" x 7" wide
- Includes SVT center cap
- Original equipment on the 2003 SVT Focus

FORD RACING FOCUS RALLY WHEEL
M-1007-S177B*

- Fits 2000-09
- 4-lug, 108 mm bolt circle
- 5.94" backspacing
- 49 mm offset
- 17" x 7" wide
- Includes Ford Racing center cap
- Same as M-1007-S177E except painted black

MCGARD® LOCKING LUG NUT KIT
M-1012-K

- (16) 1/2"-20 thread chrome cone seat lug nuts
- (4) chrome locking lugs
- (4) chrome valve stems, pull-through style
- Uses 13/16" lug wrench (not included)
- Fits most wheel applications same as Lug Nut Kit M-1012-A listed in chart on page 77

TIRE INFLATOR KIT
M-19543-C

- Get back on the road without having to jack up the car
- Less weight than a spare tire
- Consists of an air compressor and sealing compound
- Seals punctures smaller than 1/4"
- Seal is temporary. 120 miles at maximum speed of 50 mph
- Standard equipment in the 2007-08 SVT Mustang

WHILE SUPPLIES LAST
Limited Quantity!!

Check out the Ford Racing Wheel Changer at fordracingparts.com. See how our wheels look on your ride.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FORD RACING LUG NUTS AND CENTER CAPS

	CENTER CAPS											LUG NUTS
WHEEL PART NUMBER	M-1096-A	M-1096-B	M-1096-CA	M-1096-D	M-1096-FR	M-1096-FR1	M-1096-H	M-1096-J	M-1096-K	M-1096-M	M-1096-N	LUG NUT PART NUMBER
M-1007-A179			O		O			O	O		X	M-1012-A M-1012-K
M-1007-B178C			O		O			O	X		O	M-1012-A M-1012-K
M-1007-C178							X					M-1012-A M-1012-K
M-1007-C58										X		M-1012-A M-1012-K
M-1007-D178			O		O			O	O		O	M-1012-A M-1012-K
M-1007-F1810												NA
M-1007-F500			O		X			O	O		O	M-1012-A M-1012-K
M-1007-F500B			O		X			O	O		O	M-1012-A M-1012-K
M-1007-F500C			O		X			O	O		O	M-1012-A M-1012-K
M-1007-G178			O		O						O	M-1012-A M-1012-K
M-1007-GTF												NA
M-1007-GTR												NA
M-1007-J178			O		O			O	X		O	M-1012-A M-1012-K
M-1007-K178			O		O			O	X		O	M-1012-A M-1012-K
M-1007-L2010												NA
M-1007-L2010P												NA
M-1007-L2085												NA
M-1007-L2085P												NA
M-1007-M167							X					M-1012-A M-1012-K
M-1007-M178			O		O			O	X		O	M-1012-A M-1012-K
M-1007-N167				X								M-1012-A M-1012-K
M-1007-R189								X	O			M-1012-A M-1012-K
M-1007-R54										X		M-1012-A M-1012-K
M-1007-R54C										X		M-1012-A M-1012-K
M-1007-R58										X		M-1012-A M-1012-K
M-1007-R189	O	O	O		O			X			O	M-1012-A M-1012-K
M-1007-R189C	O	O	O		O			X			O	M-1012-A M-1012-K
M-1007-S177	O	O	O		O				O			NA
M-1007-S177A			O		O						X	NA
M-1007-S177B	O	O	O		O			O			X	NA
M-1007-S177E			O		O						X	NA
M-1007-S179			O		O						X	M-1012-A M-1012-K
M-1007-S179C			O		O						X	M-1012-A M-1012-K
M-1007-S1885	X	O				O						M-1012-A M-1012-K
M-1007-S1885B	X	O				O						M-1012-A M-1012-K
M-1007-S1885C	X	O				O						M-1012-A M-1012-K
M-1007-S1895	O	O	O		O			O			X	M-1012-A M-1012-K
M-1007-S1895B	O	O	O		O			O			X	M-1012-A M-1012-K
M-1007-S1895B1	O	O	O		O			O			X	M-1012-A M-1012-K
M-1007-T178B	X	O										M-1012-A M-1012-K
M-1007-T178C	X	O										M-1012-A M-1012-K
M-1007-T178P	X	O										M-1012-A M-1012-K
M-1007-T178S	X	O										M-1012-A M-1012-K
M-1007-U1885	X	O										M-1012-A M-1012-K
M-1007-U1885P	X	O										M-1012-A M-1012-K
AS DELIVERED	X											
OPTIONS	O											

M-1096-CA

M-1096-FR

M-1096-FR1

M-1096-K

M-1096-A

M-1096-N

M-1096-J

M-1096-M

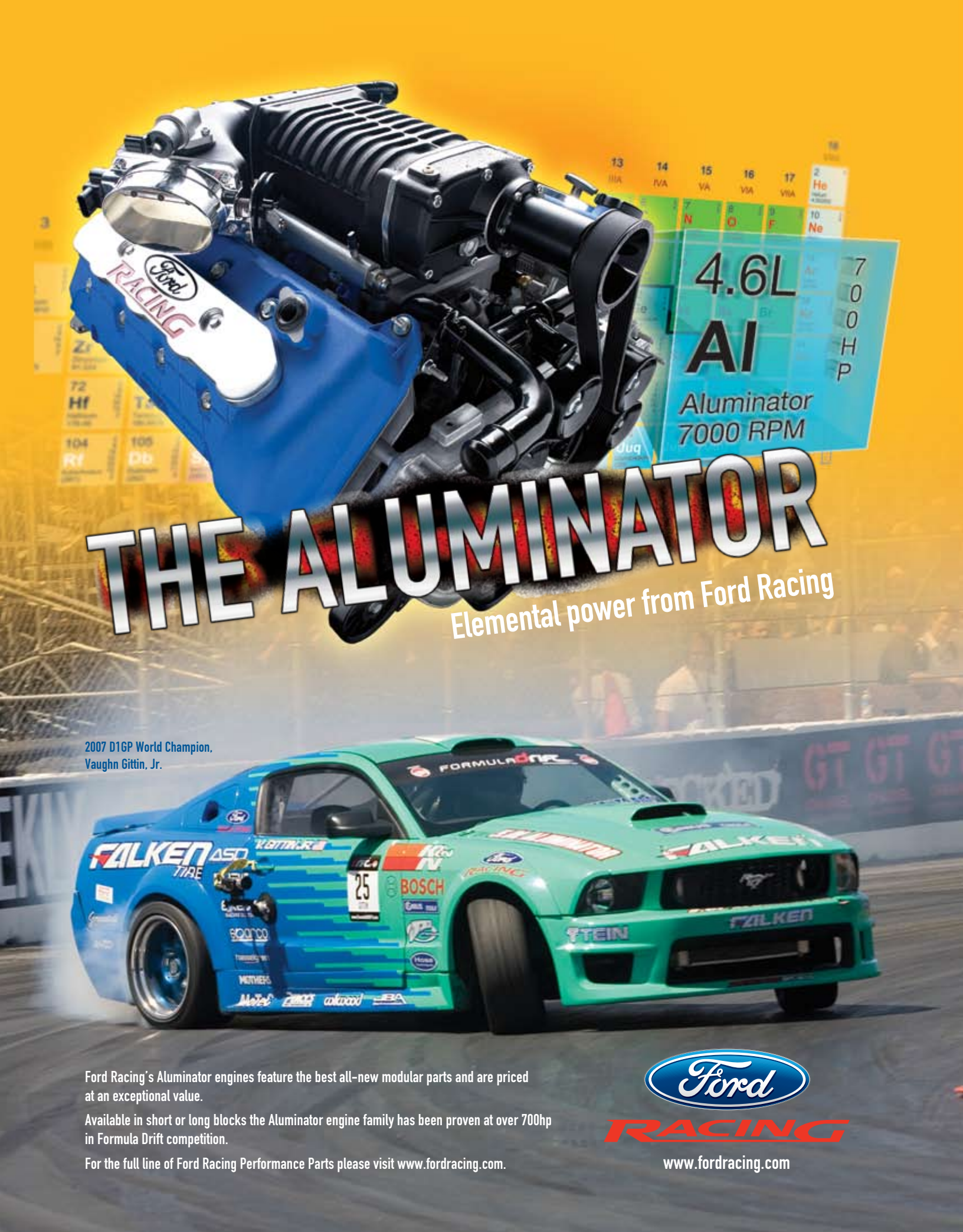
M-1096-D

M-1096-H

M-1096-B

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.



Ford Racing's Aluminator engines feature the best all-new modular parts and are priced at an exceptional value.

Available in short or long blocks the Aluminator engine family has been proven at over 700hp in Formula Drift competition.

For the full line of Ford Racing Performance Parts please visit www.fordracing.com.

Ford RACING

www.fordracing.com

4.6L ALUMINATOR CRATE ENGINE

ALUMINATOR 4.6L DOHC LONG BLOCK NATURALLY ASPIRATED

M-6007-A46NA*

- 4.6L (281 cubic inches)
- 10.0:1 compression ratio (nominal)
- Forged pistons
- Forged H-beam connecting rods
- Forged steel crankshaft
- Aluminum block M-6010-A46NA
- Blue cam covers M-6582-A54
- Assembled long block with 2003-04 Mustang Cobra cylinder heads and camshafts
- Includes 2003-04 Mach 1 timing chain cover, water pump, Cobra windage tray and oil pan
- Fits 1999-2001 Mustang Cobra and 2003-04 Mach 1 with manual transmission
- 1999-2001 Cobra may require timing cover change
- Built with all **NEW PARTS**
- Does not include oil cooler/oil filter adapter
- Built with current available parts. Photos and specs may vary
- Shipping weight approximately 500 lbs
- Shown with coil covers M-6067-A, sold separately

See Also...

- Crate Engine Warranty
- Engine Tips & Specs

ALUMINATOR ACCESSORY DRIVE KIT

NEW

M-8600-A46NA*

- The easy way to dress our Aluminator short blocks or long blocks! Take the cost and guess work out of finding the correct accessories!
- Complete front end accessory drive to dress the naturally aspirated Aluminator long block M-6007-A46NA
- Designed for use on M-6007-A46NA, parts and routing derived from 2004 Mustang Mach 1
- Includes alternator, power steering pump, A/C eliminator, all pulleys and fasteners and belt
- Tensioner and crankshaft damper included on long block, NOT included in kit
- Will work on some 1999-present 2-valve 4.6L applications if FEAD routing is same as 2004 Mustang Mach 1

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

4.6L ALUMINATOR CRATE ENGINE

ALUMINATOR 4.6L DOHC LONG BLOCK SUPERCHARGED

M-6007-A46SC*

- 4.6L (281 cubic inches)
- 8.5:1 compression ratio (nominal)
- Forged pistons
- Forged H-beam connecting rods
- Forged steel crankshaft
- Aluminum block M-6010-A46SC
- Blue cam covers M-6582-A54
- Assembled long block with 2003-04 Mustang Cobra cylinder heads and camshafts
- Includes 2003-04 Mustang Cobra timing chain cover, water pump, Cobra windage tray and oil pan
- Fits 2003-04 Mustang Cobra
- Built with all **NEW PARTS**
- Does not include oil cooler/oil filter adapter
- Built with current available parts. Photos and specs may vary
- Shipping weight approximately 500 lbs
- Shown with coil covers M-6067-A, sold separately

See Also...
- Crate Engine Warranty
- Engine Tips & Specs

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

5.4L CRATE ENGINES

SUPERCHARGED 5.4L 2009 SVT MUSTANG ENGINE

M-6007-C54*

- Supercharged 5.4L DOHC engine
- Original equipment in the 2009 SVT Mustang
- 500 hp @ 6000 rpm, 480 lb-ft of torque @ 4500 rpm
- Fully dressed including accessories and supercharger
- Does not include vehicle wiring and PCM
- H.D. cast iron block
- Works with stock wiring or purchase Controls Pack M-6017-54SC sold separately
- Perfect for your high-end project!
- Shipping weight approximately 837 lbs

See Also...

- Crate Engine Warranty
- Engine Tips & Specs

CONTROLS PACK-5.4L 4V SUPERCHARGED

NEW

M-6017-54SC*

- Take the complexity and mystery out of wiring a late model 5.4L 4V supercharged engine!
- Designed to run M-6007-C54 and M-6007-TVS 5.4L supercharged crate engines
- Includes PCM with Ford Racing calibration
- Includes Ford Racing cold air kit M-9603-SVT07
- Includes Electronic Throttle Control accelerator pedal. Eliminates throttle cable routing problems
- Unique body harness replaces stock body harness and is designed for street rod installation
- Features OBD-II diagnostic port
- Includes unique downsized power distribution module, inlet tube, MAF sensor with bolts and thermostat housing with hoses
- PCM with Ford Racing calibration requires return type fuel system, will not work with returnless fuel system

NOTE: Installation of this PCM in a 2007-09 SVT Mustang will result in a no-start condition. See "Tip sheets" for more tech tips about E.F.I.

Photo may vary, M-6017-463V shown

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

5.4L CRATE ENGINES

ROMEO 605 ENGINE 5.4L 4V W/TVS SUPERCHARGER

NEW

M-6007-TVS*

Assembled at Ford Motor Company's Romeo Engine Plant Niche Assembly Line with Ford Racing's valve covers, coil covers and upgraded TVS Supercharger

- The Romeo 605 engine captures the essence of SVT by offering a production-based performance engine enhanced with Ford Racing parts for increased performance and upscale appearance
- The most powerful engine ever from a Ford production line!
- A combination of race engine shop performance and customization at production prices
- 605 hp
- 554 lb-ft of torque
- Fully dressed including accessories and 2.3L Twin Vortices Series (TVS) Eaton 4-lobe 160 degree twist rotors supercharger M-6066-SGT
- Includes powdercoated blue valve covers M-6582-C, polished billet aluminum Ford Racing Coil Covers M-6067-A and Ford Racing oil filter M-6731-FL820
- Works with stock wiring or purchase Controls Pack M-6017-54SC sold separately
- Perfect for your high-end project!

See Also...

- Crate Engine Warranty
- Engine Tips & Specs

CONTROLS PACK-5.4L 4V SUPERCHARGED

NEW

M-6017-54SC*

- Take the complexity and mystery out of wiring a late model 5.4L 4V supercharged engine!
- Designed to run M-6007-C54 and M-6007-TVS 5.4L supercharged crate engines
- Includes PCM with Ford Racing calibration
- Includes Ford Racing cold air kit M-9603-SVT07
- Includes Electronic Throttle Control accelerator pedal. Eliminates throttle cable routing problems
- Unique body harness replaces stock body harness and is designed for street rod installation
- Features OBD-II diagnostic port
- Includes unique downsized power distribution module, inlet tube, MAF sensor with bolts and thermostat housing with hoses
- PCM with Ford Racing calibration requires return type fuel system, will not work with returnless fuel system

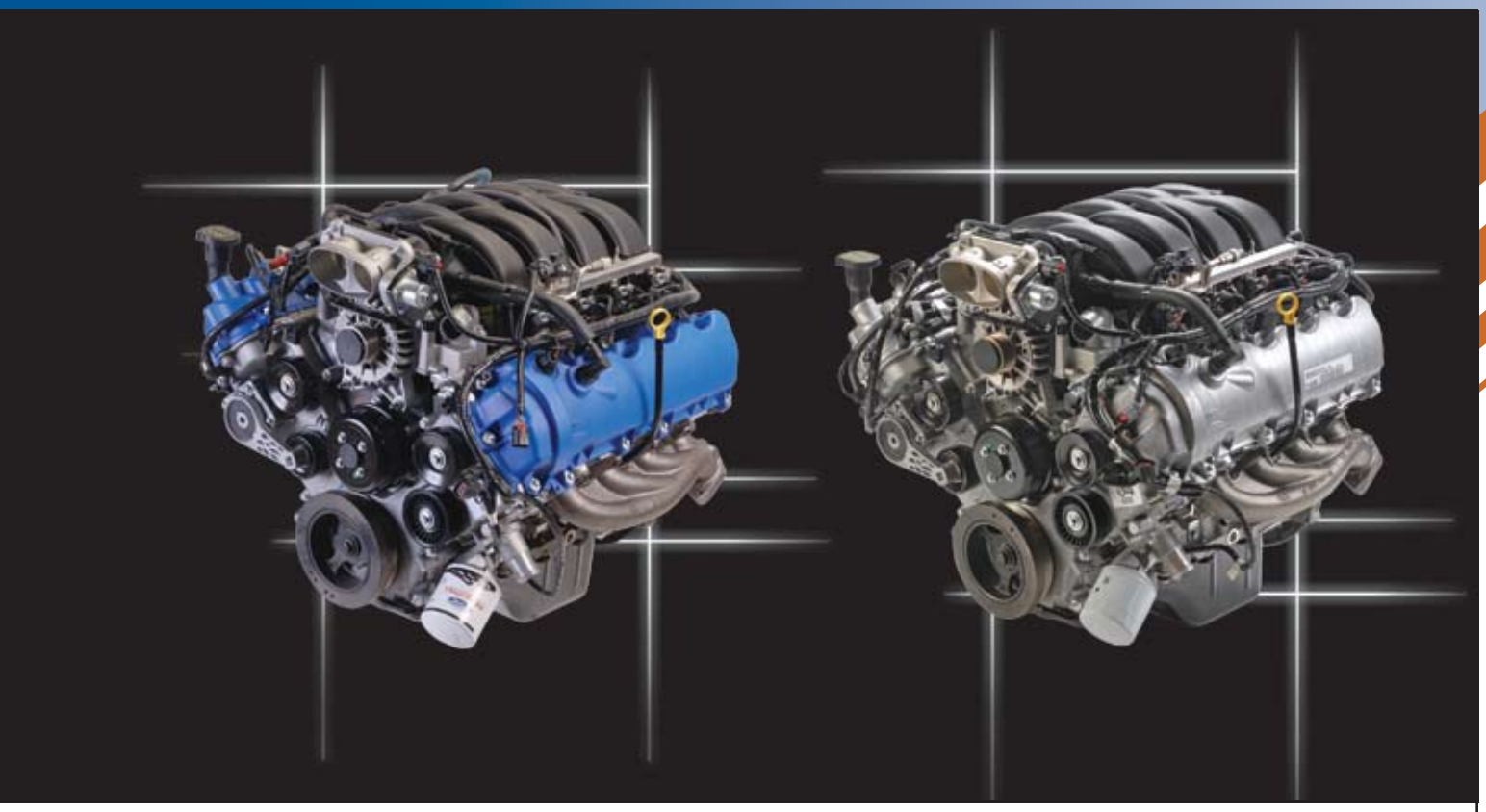
NOTE: Installation of this PCM in a 2007-09 SVT Mustang will result in a no-start condition. See "Tip sheets" for more tech tips about E.F.I.

Photo may vary, M-6017-463V shown

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

4.6L CRATE ENGINES



HOT ROD 4.6L 3-VALVE ENGINE
M-6007-A463NA*

NEW

- Look no further for the ultimate Ford "hot rod" engine, perfect for your street rod or kit car!
- Features our throaty Hot Rod 3V camshafts, M-6550-3V
- Weighs in at only 400 lbs dressed!
- Use our new wiring and installation kit for easy install in any body style (see web for details)
- Complete 3-valve 4.6L Mustang engine assembly
- 350 hp @ 6200 rpm, 330 lb-ft of torque @ 4500 rpm
- Aluminum block and cylinder heads
- Composite intake manifold for light weight and intake charge temp reduction
- Vehicle harnesses and computer not included
- Includes manual transmission engine harness and flywheel

CONTROLS PACK-4.6L 3V
M-6017-463V*

NEW

- Take the complexity and mystery out of wiring a late model 4.6L 3V engine!
- Designed to run M-6007-A463NA and M-6007-3V46 crate engines
- Includes PCM with Ford Racing calibration
- Includes Ford Racing cold air kit M-9603-GTB
- Includes Electronic Throttle Control accelerator pedal, eliminates throttle cable routing problems
- Unique body harness replaces stock body harness and is designed for street rod installation
- Features OBD-II diagnostic port
- Includes unique downsized power distribution module, inlet tube, MAF sensor with bolts and thermostat housing with hoses
- PCM with Ford Racing calibration requires return type fuel system, will not work with returnless fuel system

NOTE: Installation of this PCM in a 2005-09 Mustang GT will result in a no-start condition. See "Tip sheets" for more tech tips about E.F.I.

4.6L 3V MUSTANG GT ENGINE
M-6007-3V46*

- Complete 3V 4.6L Mustang engine assembly
- 300 hp @ 5750 rpm, 320 lb-ft of torque @ 4500 rpm
- Aluminum block and cylinder heads
- Composite intake manifold for light weight and intake charge temp reduction
- Vehicle harnesses and PCM not included
- Works with stock wiring or purchase Controls Pack M-6017-463V sold separately
- Includes manual transmission engine harness and flywheel

4.6L 3V SHORT BLOCK ASSEMBLY
M-6009-463V*

NEW

- New production Mustang 4.6L 3V short block assembled in Ford Motor Company's Romeo Engine Plant
- Aluminum block with cast iron crankshaft
- Production connecting rods
- Production hypereutectic pistons
- Includes oil pump, pickup tube and oil pan
- 9.8:1 compression with 3V 50.3cc cylinder heads

M-6017-463V shown

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

ALUMINATOR SHORT BLOCKS

ALUMINATOR 4.6L 2V/4V FORGED NATURALLY ASPIRATED SHORT BLOCK

M-6009-A46NA*

- Cobra rotating assembly with forged steel 8-bolt crank
- Forged H-beam connecting rods
- Forged flat top pistons
- Uses M-6010-A46NA block
- Approximately 10.0:1 compression ratio when used with 50cc heads
- Includes 1996-2004 Mustang GT, 1996-2001 Cobra and 2003-04 Mach 1 front timing cover
- Fits 1996-2004 Mustang GT, 1996-2001 Cobra and 2003-04 Mach 1
- Built with all **NEW PARTS**
- Modifications may be necessary in some applications
- Requires 8-bolt flywheel

ALUMINATOR 4.6L 4V FORGED SUPERCHARGER SHORT BLOCK

M-6009-A46SC*

- Cobra rotating assembly with forged 8-bolt crank
- Forged H-beam connecting rods
- Forged pistons with 16cc dish
- Uses M-6010-A46SC block
- Approximately 8.5:1 compression ratio when used with 50cc heads
- Direct bolt-in for 2003-04 Mustang Cobras
- Built with all **NEW PARTS**

ALUMINATOR 4.6L 3V FORGED SUPERCHARGER SHORT BLOCK

M-6009-A463SC*

- Fits 2005-09 Mustang GT
- Forged steel 8-bolt crankshaft
- Forged steel H-beam connecting rods
- Forged aluminum 16cc dish 3V pistons
- Uses M-6010-A46NA block
- Approximately 8.7:1 compression ratio when used with 50.3cc 3V heads
- Lower compression for supercharged applications
- Built with all **NEW PARTS**
- Will accept 3V cylinder heads
- Will not work with 2V or 4V cylinder heads
- 8-bolt flywheel required (not included)

ALUMINATOR 4.6L 2V/4V FORGED SUPERCHARGER SHORT BLOCK

M-6009-A46SCB*

- 4.6L (281 cubic inch)
- Forged pistons with 13.5cc dish
- Forged steel crankshaft
- H-beam connecting rods
- Uses M-6010-A46NA aluminum block
- Approximately 8.5:1 compression ratio with 50cc heads
- Fits 1996-2004 Mustang GT, 1996-2001 Cobra and 2003-04 Mach 1
- Built with all **NEW PARTS**
- Modifications may be necessary in some applications
- Low compression for supercharged applications
- Requires 8-bolt flywheel

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

5.4L SHORT BLOCKS

IRON 5.4L 2V FORGED SUPERCHARGER SHORT BLOCK
M-6009-C54SC2*

- Fits 1999-2004 Lightning
- 5.4L cast iron block M-6010-M54
- Forged steel 8-bolt crankshaft M-6303-M54
- Forged steel H-beam connecting rods
- Forged aluminum 16cc dish pistons
- Approximately 8.9:1 compression ratio when used with Lightning 2V 43.9cc heads
- Built with all **NEW PARTS**
- Will accept 2V and 4V cylinder heads
- Will not work with 3V cylinder heads
- Block configured for use with 1999-2004 Lightning water pump

No photo available at printing.
See www.fordracingparts.com for further information.

IRON 5.4L 4V FORGED SUPERCHARGER SHORT BLOCK
M-6009-C54SC4*

- Fits 2007-09 SVT Mustang
- 5.4L cast iron block
- Forged steel 8-bolt crankshaft M-6303-M54
- Forged steel H-beam connecting rods
- Forged aluminum 16cc dish pistons
- Approximately 8.1:1 compression ratio when used with SVT Mustang 4V 5.4L 52.7cc heads
- Built with all **NEW PARTS**
- Will accept 2V and 4V cylinder heads
- Will not work with 3V cylinder heads
- Block configured for use with 2007-09 SVT Mustang water pump

No photo available at printing.
See www.fordracingparts.com for further information.

Aeromotive Car
Best ET: 6.47 at 222 mph
NHRA Comp Eliminator
NMCA Pro Street and Pro Mod

FRPP Content:
M-6010-GT
M-6049/6099-GT
M-6582-A54
M-6067-GT
M-9593-E303

Accufab Car
John Mihovetz 2002 Cougar
Best ET: 6.335 at 224.18 mph
NHRA Comp Eliminator
PSCA Pro Street

FRPP Content:
M-6010-A46NA
M-6049/6050-464V
M-6303-D46

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

4.6L ENGINE BLOCKS

ALUMINUM 5.0L BLOCK
M-6010-T50*

- Big bore 4.6L aluminum block with cast iron liners
- 94 mm (3.70") cylinder bore size. Stock cylinder bore size 90.2 mm (3.552")
- 227 mm (8.9370") deck height (same as 4.6L)
- Produces 5.0L displacement when used with a 4.6L stock stroke crankshaft, stock length connecting rods and custom 94 mm-diameter pistons
- Cross bolted main bearing caps
- Same block that is used in the 5.0L "Cammer" crate engine
- Replacement sleeve M-6055-B

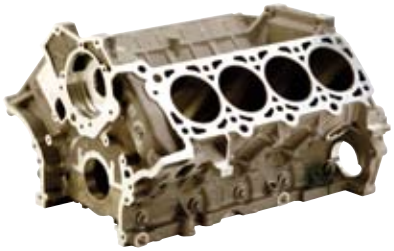
CAST IRON 5.0L BLOCK
M-6010-BOSS50*

The Boss 5.0 block is a 4.6L deck height 94 mm cylinder bore cast iron block. Cast in Ford's Cleveland plant, it uses a proprietary iron mix to yield the strongest possible casting strength with least porosity and greatest consistency.

- Siamese 94 mm bore
- 4-bolt main with interference fit nodular iron machined caps
- Approximately 165 lbs

ALUMINATOR 4.6L BLOCK
M-6010-A46NA*

- Latest generation aluminum 4.6L block
- Features chilled bulkhead casting process for a stronger main web and bulkheads
- Round main web windows reduce stress areas for potential failure
- Ball burnished 17 mm-thick main caps for strength and rigidity
- Works with most production 4.6L aluminum block front dress

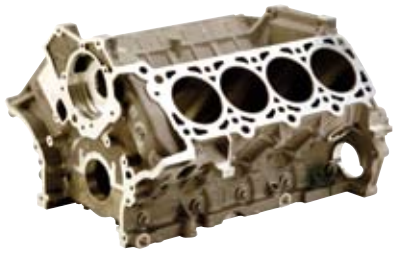


PRODUCTION CAST IRON 4.6L BLOCK
M-6010-D46** Romeo Engine Plant

- Production replacement 4.6L SOHC 2V cylinder block
- Great for custom engine builds
- Fully machined

ALUMINATOR 4.6L BLOCK FOR SUPERCHARGER
M-6010-A46SC*

- Latest generation aluminum 4.6L block
- Features chilled bulkhead casting process for a stronger main web and bulkheads
- Round main web windows reduce stress areas for potential failure
- Ball burnished 17 mm-thick main caps for strength and rigidity
- Machined for 2003-04 Cobra front dress, will also fit some 2-valve front dress from iron 4.6L blocks
- Knock sensor mounting bosses eliminated for use with supercharger applications



Did you know...

The Ford GT head is a derivative of the 2000 Cobra "R" head. Those same heads have been used on the Rough Rider off-road racing program to make nearly 700 hp out of 6 liters naturally aspirated!

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

5.4L ENGINE BLOCKS

ALUMINUM 5.4L BLOCK
M-6010-GT**

- Original equipment for the 2005 Ford GT supercar
- 356-T6 aluminum casting with cast iron sleeves
- 90.2 mm bore
- Dry sump machined, can be machined for wet sump
- Enhanced bulkhead and main webbing strength compared to production 4.6L aluminum block
- Machined for piston oil squirters
- Block modifications required for starter in non-GT applications
- Weight: 110 lbs

ALUMINUM 5.4L WET SUMP BLOCK
M-6010-GTWS**

NEW

- Machined for wet sump block mount modular oil pump, modular wet sump oil pan, dipstick, torque converter access and starter mounting pocket
- 356-T6 aluminum casting with cast iron sleeves
- 90.2 mm bore
- Enhanced bulkhead and main webbing strength compared to production 4.6L aluminum block
- Machined for piston oil squirters, includes block off plugs. Oil squirters not included
- Block modifications required for starter in non-GT applications
- Weight: 110 lbs

CAST IRON 5.4L BLOCK
M-6010-M54**

- Production 5.4L block
- Windsor-style main cap locators
- 90.2 mm bore size
- Newer casting design features lower-end improvements to minimize noise, vibration and harshness

Sutton Car
2008 NMRA Renegade National Championship
Sutton Ford's 2008 Bullitt Mustang
Best ET: 8.486 at 162.2 mph
First Modular-Powered Renegade Champion

FRPP Content:
M-6010-BOSS50
M-6049/6099-GT
M-4209-G410A
M-6600-D46
M-3601-R

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

4.6L 2V POWER IMPROVEMENT (PI) CYLINDER HEADS

M-6049-P46** RH 2V
M-6050-P46** LH 2V

- Current production 4.6L SOHC 2V Romeo engine aluminum cylinder heads
- Fully machined and assembled with production Mustang GT valve train and camshaft
- Great for custom engine builds
- Less expensive than replacing valve train and remachining a used cylinder head
- Less expensive alternative to aftermarket performance heads
- Can be used on 1996-98 engines with additional modifications and parts
- 43.9 ± 1.5cc combustion chamber
- Raises compression on 1996-98 engines to 10:1

NOTE: Requires installation of oil galley plugs (not included).

M-6049-P46 shown

M-6050-P46 shown

4.6L 2V HIGH-PERFORMANCE CYLINDER HEAD

M-6049-D46 Complete 1996-98 Only

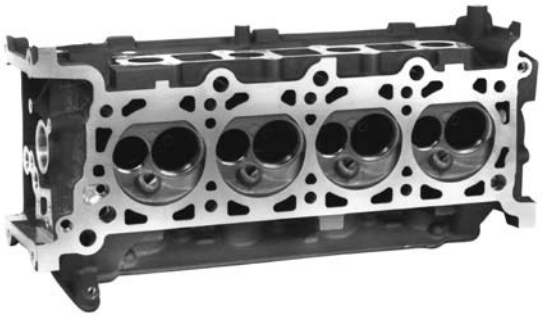
ADDS 35 HP!

Add approximately 35 hp over production 4.6L SOHC heads. This cylinder head assembly is considered to be the basic cornerstone for increased performance of the naturally aspirated engine. The primary design goal for the head is to provide increased airflow capability resulting in significant horsepower gain. Specific design features include:

- Bolt-on interchangeability with the production head. All head faces (cam cover, intake manifold, exhaust manifold and deck face) are identical to production. The head can be used with production or Ford Racing intake and exhaust manifolds, and all other accessories in production position
- Larger inlet and exhaust valve size. Intake valve M-6507-D461 diameter has increased from 44.5 mm to 46.83 mm. Exhaust valve M-6505-D461 diameter has increased from 34.0 mm to 35.88 mm. Extensive flow development was done to optimize port contours to take advantage of these changes. Final test results show approximate airflow increases over production of 27% (intake) and 44% (exhaust). The above results are at maximum production valve lift (12 mm)
- Intake valve centerline has been moved 2.0 mm closer to chamber centerline. This has the effect of unshrouding the intake valve, and making better use of the increased valve size
- Potential for high-lift camshafts, larger valve springs and additional racing port work at customer discretion
- Excellent quality chamber and port finish, 356-T6 aluminum casting
- Performance calibration recommended
- 51cc combustion chamber
- Uses spark plug AGSF-32C

NOTE: Use of M-6067-D46 head changing kit recommended.

WHILE SUPPLIES LAST Limited Quantity!!



*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

CNC PORTED 3-VALVE CYLINDER HEAD ASSEMBLIES

M-6049-N3VP* RH CNC Ported
M-6050-N3VP* LH CNC Ported

NEW

- New production cylinder head castings
- CNC ported to increase flow and performance
- 50.3cc combustion chamber
- Intake flow increased approximately 20%
- Exhaust flow increased approximately 30%
- Assembled with production springs, valves, retainers, locks and seals
- Does not include camshaft, followers and hydraulic lash adjusters
- Minimize your vehicle down time waiting for a shop to port your heads. Get a brand new head for a little more than the price of exchange!
- No exchange required
- Requires 2008-09 12 mm spark plugs
- Heads will fit early cars originally equipped with "High Thread" design spark plugs. Requires spark plug and ignition coil update

NOTE: Engines with late style 12 mm spark plugs can be identified by coil engineering number 8L3E. Engines with early style 16 mm "High Thread" design spark plugs can be identified by coil engineering number 3L3E.

M-6050-463P shown

M-6049-463P shown

CNC PORTED 3-VALVE CYLINDER HEAD ASSEMBLIES

M-6049-463P* RH CNC Ported
M-6050-463P* LH CNC Ported

- New production cylinder head castings
- CNC ported to increase flow and performance
- 50.3cc combustion chamber
- Intake flow increased approximately 20%
- Exhaust flow increased approximately 30%
- Assembled with production springs, valves, retainers, locks and seals
- Does not include camshaft, followers and hydraulic lash adjusters
- Minimize your vehicle down time waiting for a shop to port your heads. Get a brand new head for a little more than the price of exchange!
- No exchange required
- Requires 2005-08 "High Thread" design spark plugs

NOTE: Engines with late style 12 mm spark plugs can be identified by coil engineering number 8L3E. Engines with early style 16 mm "High Thread" design spark plugs can be identified by coil engineering number 3L3E.

M-6050-463P shown

M-6049-463P shown

3V HEAT RANGE ZERO 16 MM SPARK PLUG

M-12405-3V0*

- For use in engines with higher than stock cylinder combustion pressures
- Unique design is proprietary to Ford 3V engines
- One heat range colder than the stock Mustang GT plug
- Two heat ranges colder than the stock 5.4L truck 3V engine
- Sold in engine sets of 8
- Fits 3V heads requiring "High Thread" design spark plugs

NOTE: Engines with late style 12 mm spark plugs can be identified by coil engineering number 8L3E. Engines with early style 16 mm "High Thread" design spark plugs can be identified by coil engineering number 3L3E.

3V HEAT RANGE ONE 12 MM SPARK PLUG

M-12405-3V12MM

NEW

- For use in engines with higher than stock cylinder combustion pressures or sustained high rpm
- One heat range colder than the Mustang GT and 5.4L truck 3V engine spark plugs
- Sold in engine sets of 8
- Fits all late style 3V heads requiring 12 mm design spark plugs
- Use M-12405-3V0 spark plugs for early style 3V heads

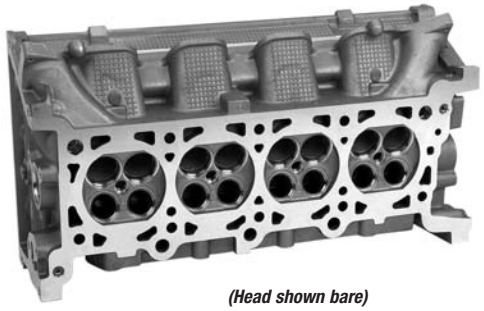
NOTE: Engines with late style 12 mm spark plugs can be identified by coil engineering number 8L3E. Engines with early style 16 mm "High Thread" design spark plugs can be identified by coil engineering number 3L3E.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FORD GT CYLINDER HEAD AND CAM ASSEMBLIES

M-6049-GT** RH
M-6099-GT** LH

- Ford GT heads feature a reduced-size lash adjuster allowing for a raised intake port, creating a more direct intake path
- These heads are the final revision of the 2000 Cobra "R" heads
- The most durable highest-flowing modular engine cylinder heads available
- Same casting used on M-6007-R50 Grand Am cup race engine
- Fully loaded assembly
- 37 mm intake valves, 32 mm exhaust valves
- Intake valve lift: 11.14 mm, exhaust valve lift: 11.36 mm
- 52.7 ± 1.5cc combustion chambers



(Head shown bare)

CNC PORTED 4V CYLINDER HEAD ASSEMBLIES

M-6049-464P* RH CNC Ported
M-6050-464P* LH CNC Ported

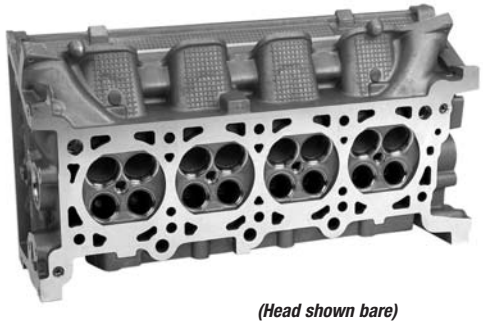
- New production cylinder head castings
- Fits 1999-2004 DOHC 4.6L Mustangs
- 52cc combustion chambers
- CNC ported to increase flow and performance
- Intake flow increased approximately 15%
- Exhaust flow increased approximately 29%
- Assembled with 2004 Cobra production springs, valves, retainers, locks and seals
- Does not include camshafts, followers and hydraulic lash adjusters
- Minimize your vehicle down time waiting for a shop to port your heads. Get a brand new head for a little more than the price of exchange!
- No exchange required

FR500C 4V CYLINDER HEADS

NEW

M-6049-DAC*
M-6050-DAC*

- Ford GT heads feature a raised intake port, creating a more direct intake path
- These heads are the final revision of the 2000 Cobra "R" heads
- The highest-flowing modular engine cylinder heads available
- Used on M-6007-R50 Grand Am cup race engine
- Same as production Ford GT heads but with bronze guides and Beryllium Copper valve seats
- 52.7 ± 1.5cc combustion chambers



(Head shown bare)

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

CYLINDER HEAD CHANGING KITS

M-6067-D46** SOHC 2V
M-6067-T46** DOHC 4V①

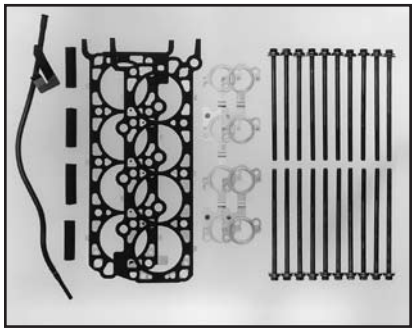
Contains all components necessary for changing cylinder heads on 1996-2004 4.6L Mustang. Includes several parts that make this task significantly easier. Highly recommended when installing M-6049-D46/P46/T46 cylinder heads.

NOTE: ① Except supercharged engines.

3V 5.0L HEAD CHANGING KIT

M-6067-3V50* NEW

- Designed for 5.0L modular engine with 94 mm bore and 3V heads
- Contains multi-layer steel head gaskets and torque to yield head bolts
- Compatible with M-6010-BOSS50 or M-6010-T50 blocks with 3V cylinder heads



M-6067-D46 shown

4V HIGH LIFT CAMSHAFT KIT

M-6550-T46*

- Fits 1999-2004 production 4V DOHC 4.6L cylinder heads
- Excellent power to 7000 rpm
- 12 mm lift, 258 degrees intake and 254 degrees exhaust, 109 center line
- Kit includes cams, valves, valve springs, valve seals and followers
- May require calibration to achieve optimum performance

HIGH LIFT 4.6L VALVE SPRINGS

M-6513-T46* Sold in sets of 32

- Replacement springs for the M-6550-T46 high-lift cam kit
- Recommended install height 39.45 mm

4.6L DOHC 4V FRPP VALVE

M-6505-T46* Exhaust
M-6507-T46* Intake

- Same valves used in the M-6550-T46 Camshaft Kit
- Exhaust valve head diameter 30.0 mm, total length 116.2 mm, tip length 7.5 mm
- Intake valve head diameter 37.0 mm, total length 135.7 mm, tip length 12.7 mm

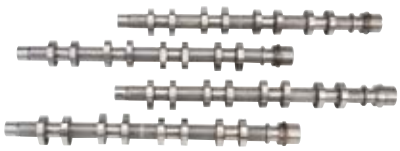
M-6505-T46 shown

M-6507-T46 shown

2007 SVT MUSTANG HIGH LIFT CAM SET

M-6550-GT*

- Original equipment camshafts for the Ford GT supercar
- Direct retrofit to the 2007-08 SVT Mustang
- Increases lift from the stock 10 mm to 11.14 mm intake and 11.36 mm exhaust
- Compatible with production springs, followers and lash adjusters
- May require calibration to achieve optimized performance



2005-09 MUSTANG GT HIGH LIFT HOT ROD CAM SET

M-6550-3V*

NEW

- Give any 3-valve 4.6L or 5.4L a lopey idle reminiscent of 1960s muscle cars, no one will believe it's a modular engine
- The most powerful cams available that are safe with production valve train
- Currently being used in Rough Rider off-road race trucks
- Engineered by the same designers of the stock camshafts
- No other cam manufacturer has the aggressive sound and durability these cams offer
- Upgrade for the 2005-09 Mustang GT 4.6L 3V engine
- Increases lift from the stock 11 mm to 12 mm
- Duration at .050", intake 221 degrees, exhaust 240 degrees, lobe separation 110 degrees
- Compatible with production springs, followers and lash adjusters up to 6800 rpm
- 50 hp gain (SAE J1349) with the stock intake and M-6049-463P CNC heads at 6500 rpm. 30 hp gain without CNC heads (with long tube headers and M-9603-GTB cold air kit)
- Requires custom calibration to achieve optimized performance
- Featured in M-6007-A463NA crate engine

4.6L PERFORMANCE IMPROVEMENT (PI) INTAKE MANIFOLD

M-9424-P46**

- Current production plastic intake manifold used on 2001-04 4.6L SOHC 2V Mustang GT
- Less expensive alternative to aftermarket performance intake manifolds for PI head swaps
- Manifold fits 1999-2004 Power Improvement head ports
- Great for custom engine builds
- Can be used on 1996-98 engines with Performance Improvement (PI) heads
- Additional modifications and parts required

HI-FLOW 70 MM THROTTLE BODY

M-9926-D462* 1996-2004 Mustang

- Bolts to stock intake manifold
- Significant power increase

THROTTLE BODY GASKET

M-9933-D462* 1996-2004 Mustang

- Replacement gasket for M-9926-D462 throttle body

HIGH-VOLUME OIL PUMP

M-6600-D46

- Original equipment on 4.6L 4V
- Increases flow on 4.6L 2V engines

4.6L HIGH PRESSURE OIL PUMP AND PICKUP

NEW

M-6600-E46*

- Fits 2005-09 Mustang 4.6L and 2007-09 SVT Mustang 5.4L
- Stock replacement for 2007-09 SVT Mustang 5.4L
- Highest volume and pressure production pump available for modular engines
- Recommended for applications requiring higher volume and pressure
- Pump can be used with 3V and 4V pickup tubes

4.6L 4V CAMSHAFT DRIVE KIT

NEW

M-6004-A464

Camshaft drive kit for the 4.6L 4V with aluminum block kit includes production:

- Tensioner arms
- Chain guides
- Cover gaskets and seal
- Primary and secondary timing chain
- Secondary and chain tensioners
- Camshaft sprockets, spacer and washer
- Crankshaft sprocket
- Trigger wheel
- Fasteners
- Recommended for use with Aluminator

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

COATED DOHC CAM COVERS 4.6L/5.4L
M-6582-C464
- Fits 32V 4.6L/5.4L engines with coil on plug (except Ford GT and 2007-09 SVT Mustang, see M-6582-CC)
- Powdercoated for chrome appearance

BLUE DOHC CAM COVERS 4.6L/5.4L
M-6582-A54
- Fits all 1997-present 32V 4.6L/5.4L engines with coil on plug (except Ford GT and 2007-09 SVT Mustang)
- Painted Ford GT blue
- Shown with coil cover M-6067-A (sold separately)
- For 2007-09 SVT Mustang, see M-6582-C

FORD RACING COIL COVERS
M-6067-A
- Fits most 4.6L/5.4L DOHC engines with coil on plug ignition
- Micro polished billet aluminum
- Features two-color Ford Racing ball milled logo

COATED 3-VALVE CAM COVERS 4.6L/5.4L
M-6582-C543V Powdercoated for chrome appearance
M-6582-3VB Blue
M-6582-3VBLK Black Wrinkle
- Fits all 2005-09 3-valve 4.6L/5.4L engines
- Powdercoated finish

4.6L/5.4L "POWERED BY FORD" COIL COVERS
M-6067-GT
- Original equipment on the Ford GT 5.4L DOHC
- Fits most 4.6L/5.4L DOHC engines with coil on plug ignition

2007-09 SVT MUSTANG COIL COVERS
M-6067-C
- Original equipment on the 2007-09 SVT Mustang
- Fits most 4.6L/5.4L DOHC engines with coil on plug ignition

A.C. ELIMINATOR KIT
M-19216-D46
- Fits 1996-2009 Mustang with 4.6L engine SOHC/DOHC
- Cast aluminum idler pulley bracket replaces the air conditioning compressor
- Removes weight from the front of car for better weight transfer when racing
- Bolts included
- Uses stock belt

STEEL 4.6L COBRA CRANKSHAFT
M-6303-D46**

- Original equipment replacement crankshaft for 1996-2001 4.6L DOHC Cobra engine
- Can be used in 4.6L SOHC engines if 8-bolt flywheel is used
- May require minor block modifications for counterweight clearance

STEEL 5.4L LIGHTNING CRANKSHAFT
M-6303-M54**

- Original equipment for the 1999-2004 SVT Lightning 5.4L
- Forged steel
- 106 mm stroke
- Standard journal diameters
- 8-bolt flywheel

DEEP SUMP 5.4L TRUCK OIL PAN
M-6675-L54

- Fits all 1996-2003 5.4L F-150s
- Increased capacity and baffling over stock pans for better oil control
- Requires oil pump pickup tube (sold separately)

WHILE SUPPLIES LAST Limited Quantity!!

MUSTANG 4.6L OIL PAN
M-6675-D46**

- Production 4.6L Mustang oil pan core
- Fits 1996-2004 4.6L SOHC 2V and DOHC 4V
- Unpainted
- Does not include pickup tube
- Works with oil pump and pickup kit M-6600-D46
- Can be used to build custom oil pan

Need Ford technical information on Performance Parts?

Call the Techline (800) FORD788 or visit our website at www.fordracingparts.com

Ford RACING

MUSTANG PERFORMANCE FLYWHEELS

The manual transmission flywheels listed below fit 4.6L SOHC/DOHC and Cobra engine applications. They are dimensionally the same as stock and have the same zero-balance specification as stock flywheels. The nodular iron units are stronger and have increased rpm capability. The billet steel units have even higher rpm capability and meet SFI specification 1.1.

NODULAR IRON FLYWHEEL
M-6375-D46[1][2]

- 164-tooth
- 0 oz.-in.
- 4.6L SOHC Mustang. Has increased rpm capability over stock cast iron flywheel. Fits 10.5" clutch

BILLET STEEL FLYWHEELS
M-6375-F46[1][2]

- 164-tooth
- 0 oz.-in.
- 4.6L SOHC Mustang. Has increased rpm capability over stock cast iron or M-6475-D46 nodular iron flywheel. Fits 10.5" and 11" clutch. Meets SFI 1.1

M-6375-G46[1][2]

- 164-tooth
- 0 oz.-in.
- 4.6L SOHC Mustang GT/DOHC Cobra Mustang. Has increased rpm capability over stock Cobra flywheel. Fits 10.5" and 11" clutch. Meets SFI 1.1

ALUMINUM FLYWHEEL
M-6375-R00[1][2]

- 164-tooth
- 0 oz.-in.
- Used on the 2000 Cobra "R" Mustang. Fits Cobra 4.6L/5.4L DOHC 4-valve engines and other Mustangs with 8-bolt crank. Reduced rotating mass for faster engine acceleration in race applications. Fits 10.5" and 11" clutch. Meets SFI 1.1

NOTES:

[1] Diaphragm clutch uses metric bolts and dowel pins. Requires metric pressure plate bolts N602549-S51M and alignment dowel pins D1FZ-6397-B. Ford Racing kit M-6397-A302.

[2] 4.6L engines may have 6 or 8 bolts to attach to the crankshaft. Check the engine code before ordering. Romeo built engines have 6 bolts and Windsor built engines have 8 bolts. All Cobra engines have 8 bolts. The 8th character in the VIN is (X) for Windsor engine plant or (W) for Romeo engine plant.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

SHORTY HEADERS

FEATURES:

STAINLESS STEEL

409 stainless exhaust material is titanium stabilized ferritic stainless steel. 409 stainless is used in applications where appearance is a secondary consideration to properties and corrosion resistance and where some weldability is required. An example of stainless usage is catalytic converter assemblies. 409 stainless has excellent forming characteristics and is rust-through resistant. A surface rust will form in most instances. This rust retards further corrosion.

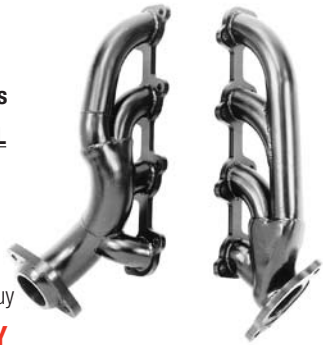
PART NUMBER	TYPE	APPLICATION
M-9430-C54*	Stainless Steel	2007-09 SVT Mustang
M-9430-C54C*	Ceramic Coated	2007-09 SVT Mustang
M-9430-E462*	Stainless Steel	1996-04 Mustang GT 4.6L SOHC
M-9430-E463*	Ceramic Coated	1996-04 Mustang GT 4.6L SOHC
M-9430-E464*	Stainless Steel	1996-02 4.6L Cobra DOHC ①
M-9430-E465*	Ceramic Coated	1996-02 4.6L Cobra DOHC ①
M-9430-S197*	Stainless Steel	2005-09 Mustang GT
M-9430-S197C*	Ceramic Coated	2005-09 Mustang GT

NOTE: ① Does not fit 2003 and up.

- **409 stainless steel tubes**
- **Machined flange**
- **Bolts to stock exhaust pipes**
- **Includes gaskets, bolts and studs**

CERAMIC COATED STAINLESS STEEL

- Identical to stainless steel header, but with Jet-Hot® ceramic finish
- Stain and rust resistant
- Super-premium quality
- Lifetime Warranty
- Finest short tube headers you can buy



JET-HOT® LIMITED WARRANTY

This limited warranty becomes void if the product shows evidence of bending or mutilating of parts or burnout resulting from improper tuning. Warranty covers rust-through only and does not cover cosmetic rust or discoloration of material. This limited warranty shall be limited to the repair, adjustment or replacement of defective parts only. Does not cover any labor claims. Ask your dealer for a copy of this "Jet-Hot" limited warranty.

REPLACEMENT HEADER GASKETS

(SOLD IN PAIRS)

PART NUMBER	CYLINDER HEAD APPLICATION
M-9448-A462*	4.6L SOHC
M-9448-A464*	4.6L DOHC
M-9448-3V*	4.6L/5.4L 3V (sold in package of 12 sets only)

M-9448-A464 shown

WATER INLET/OIL FILTER ADAPTOR 2005-09

NEW

M-6881-A5*

- Fits 2005-09 4.6L aluminum block engines and Ford Racing Aluminator engines
- Requires 2" lower hose
- Significant improvement in engine cooling by reducing the pressure drop to the water pump
- 7/8"-14 AN straight thread O-ring fittings for oil inlet/outlet
- 1/4"-18 NPFS fittings for oil temp./pressure
- Requires remote oil filter lines, fittings and filter adapter for installation (not included)

MODULAR 4.6L WATER PUMP 1999-2004 "LONG"

NEW

M-8501-E46**

- Production 4.6L water pump
- New, not remanufactured
- Fits 1999-2004 SOHC "Tall Housing" (87 mm from front of pulley flange to block)
- Fits 1999-2001 DOHC Cobra, and 2003-04 DOHC Mach 1

WATER INLET/REMOTE FILTER ADAPTOR 1996-2004

NEW

M-6881-C*

- Fits 1996-2004 4.6L/5.4L cast iron block engines
- Requires 2" lower hose
- Significant improvement in engine cooling by reducing the pressure drop to the water pump
- 7/8"-14 AN straight thread O-ring fittings for oil inlet/outlet
- 1/4"-18 NPFS fittings for oil temp./pressure
- Requires remote oil filter lines, fittings and filter adapter for installation (not included)

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

The Boss 302 block is the cornerstone of the new Ford Racing Performance Parts 302 crate engines. This new Boss family of engines will replace some existing crate engines. You can expect the same level of quality now with an even stronger 4-bolt engine block.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

BOSS 302 CID CRATE ENGINES

5.0L/302 – 340 HP GT-40 ALUMINUM HEAD FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-X302B* B303 Camshaft - Manual transmission
M-6007-X302E* E303 Camshaft - Auto or Manual Transmission

- 302 cubic inch
- 345 hp with M-6250-B303, 340 hp with M-6250-E303 camshaft, headers and 65 mm throttle body not included
- 9.0:1 compression ratio (nominal)
- Forged pistons
- Forged steel connecting rods
- **BOSS 4-bolt main block M-6010-BOSS302**
- Hydraulic roller camshaft M-6250-B303, .480" lift intake and exhaust, duration at .050" is 224 degrees intake and exhaust
- Hydraulic roller camshaft M-6250-E303, .498" lift intake and exhaust, duration at .050" is 220 degrees intake and exhaust
- Double roller timing chain set M-6268-A302
- Forged steel crankshaft
- Rear sump pan fits most Fox body cars
- Ford Racing aluminum GT-40 cylinder heads M-6049-X306 with 1.94" intake valves and 1.54" exhaust valves
- Roller rocker arms M-6564-B351
- Built with all new parts
- Can be used in kit cars, street rods, Mustangs, Fox-bodied cars and trucks
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required. See installation notes

See Also...
- Crate Engine Warranty
- Engine Tips & Specs

INSTALLATION NOTES:
See engine installation and tuning tips on page 109.
Some or all of the following items may need to be changed from your original engine or modified for proper installation:

- This engine has a rear sump oil pan and pickup, regular rotation timing cover and reverse rotation water pump and non-EFI valve covers.
- A different performance oil pan and pickup may be required for your application. Call the Techline at (800) FORD788 for more information.
- The timing chain cover will work with most regular rotation water pumps.
- Fuel pump eccentric M-6287-B302 installed, allows use of mechanical fuel pump.
- A reverse rotation water pump is installed on the engine. Other applications may require different water pumps and timing chain covers found on pages 139-140.
- The valve covers (M-6582-BOSS302) should fit most non-EFI applications, optional valve covers (sold separately) are available on pages 144-147.
- The damper assembly M-6316-C351 (counterweight removed) may require a spacer for pulley alignment, see page 142.
- The flywheel included (M-6375-D302) should work for most 157-tooth manual transmission applications. For other transmission applications use the proper "0" balance flywheel, see pages 188-189.
- Firing order 1-3-7-2-6-5-4-8 (5.0L HO and 351W order).
- Built with current available parts. Photo and specs may vary.
- Shipping weight approximately 425 lbs.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

302 CID CRATE ENGINE

302 CID - 390 HP PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-Z302Z*

- High-revving, high-efficiency small block holds true to 302 cid designation
- Utilizes long rod geometry and beehive valve springs for increased high rpm durability
- Perfect for light-weight vehicles and customer looking for the performance feel and sound achieved by smaller displacement high-powerband engines
- 302 cubic inch
- 390 hp
- 360 lb-ft of torque @ 5000 rpm
- 10.0:1 compression ratio (nominal)
- **BOSS 4-bolt main block M-6010-BOSS302**
- Forged pistons
- Forged steel connecting rods
- Hydraulic roller camshaft M-6250-Z303, .569" lift intake and exhaust, duration at .050" is 228 degrees intake and exhaust
- Double roller timing chain M-6268-A302
- Forged steel crankshaft
- Rear sump pan fits most Fox body cars
- Ford Racing aluminum "Z" cylinder heads M-6049-Z304DA with 2.02" intake valves and 1.60" exhaust valves
- Roller rocker arms M-6564-F351
- New block, oil and water pumps, oil pan and high-performance harmonic damper
- Can be used in kit cars, street rods, Mustangs, Fox-bodied cars and trucks
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required. See installation notes

See Also...
- Crate Engine Warranty
- Engine Tips & Specs

INSTALLATION NOTES:

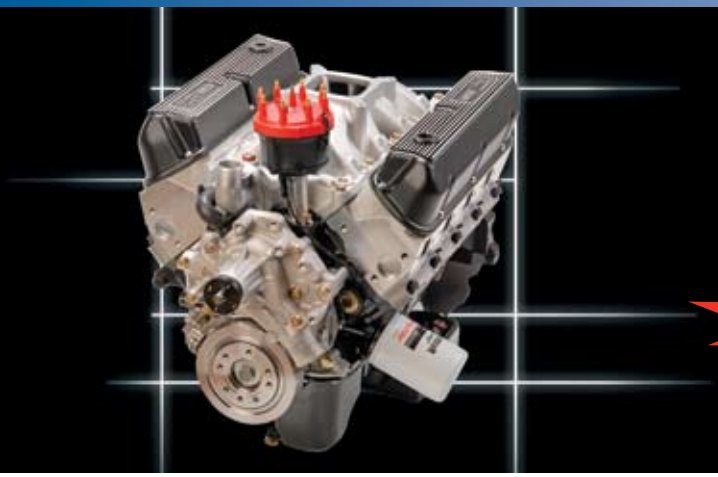
See engine installation and tuning tips on page 109. Some or all of the following items may need to be changed from your original engine or modified for proper installation:

- This engine has a rear sump oil pan and pickup, timing cover, regular rotation water pump and non-EFI valve covers.
- A different performance oil pan and pickup may be required for your application. Call the Techline at (800) FORD788 for more information.
- The timing chain cover will work with most regular rotation water pumps.
- Fuel pump eccentric M-6287-B302 installed, allows use of mechanical fuel pump.
- A standard rotation water pump is installed on the engine. Other applications may require different water pumps and timing chain covers found on pages 139-140.
- The valve covers (M-6582-R302) should fit most non-EFI applications, optional valve covers (sold separately) are available on pages 144-147.
- The damper assembly M-6316-C351 (counterweight removed) may require a spacer for pulley alignment, see page 142.
- The flywheel (M-6375-D302) should work for most 157-tooth manual transmission applications. For other transmission applications use the proper "0" balance flywheel, see pages 188-189.
- Firing order 1-3-7-2-6-5-4-8 (5.0L HO and 351W order).
- Built with current available parts. Photo and specs may vary.
- Shipping weight approximately 405 lbs.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

347 CID CRATE ENGINE



12/12 WARRANTY
See page 4 for details.

5.0L/302-347 CID SMALL BLOCK 450 HP "Z" HEAD FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-Z347*

- 347 cubic inch
- 450 hp @ 6000 rpm (with headers, and a 650 CFM Holley carburetor not included)
- 400 lb-ft of torque @ 4900 rpm
- 9.7:1 compression ratio (nominal)
- Forged pistons
- Forged steel cap screw connecting rods
- Hydraulic roller camshaft, .580" lift intake .602" exhaust, duration at .050" is 232 degrees intake and 240 degrees exhaust
- Double roller timing chain set M-6268-A302
- Forged steel crankshaft
- **BOSS 4-bolt main block M-6010-BOSS302**
- High-performance rear T-sump oil pan
- Rear sump pan fits most Fox body cars
- MSD billet distributor
- Ford Racing aluminum "Z" cylinder heads M-6049-Z304DA with 2.02" intake valves and 1.60" exhaust valves
- Roller rocker arms M-6564-F351
- Single plane "Victor Jr." intake manifold M-9424-D302
- New heavy-duty block, oil and water pumps, performance oil pan and high-performance harmonic balancer
- Can be used in kit cars, street rods, Mustangs, Fox-bodied cars and trucks
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required. See installation notes

See Also...
- Crate Engine Warranty
- Engine Tips & Specs

INSTALLATION NOTES:
See engine installation and tuning tips on page 109.
Some or all of the following items may need to be changed from your original engine or modified for proper installation:
- This engine has a rear T-sump performance oil pan and pickup, regular rotation timing cover and regular rotation water pump and non-EFI valve covers.
- A different performance oil pan and pickup may be required for your application. Call the Techline at (800) FORD788 for more information.
- The timing chain cover will work with most regular rotation water pumps.
- Fuel pump eccentric M-6287-B302 installed, allows use of mechanical fuel pump.
- A standard rotation water pump is installed on the engine. Other applications may require different water pumps and timing chain covers found on pages 139-140.
- The valve covers (M-6582-BOSS) should fit most non-EFI applications, optional valve covers (sold separately) are available on pages 144-147.
- The damper M-6316-C351 may require a spacer for pulley alignment, see page 142.
- The flywheel (M-6375-A302) not included should work for most 157-tooth manual transmission applications. For other transmission applications use the proper 28 oz. flywheel, see pages 188-189.
- Firing order 1-3-7-2-6-5-4-8 (5.0L HO and 351W order).
- Built with current available parts. Photo and specs may vary.
- Shipping weight approximately 465 lbs.

347 CID FORD RACING STROKER SHORT BLOCK ENGINE ASSEMBLY

M-6009-Z347*

- 347 CID
- **BOSS 4-bolt main block M-6010-BOSS302**
- Forged aluminum .030" overbore pistons with valve reliefs for Z304, X306, X307, N351, GT-40 and other inline valve Windsor cylinder heads. Valve notches approximately 4cc. Check valve to piston clearance for valve lift over .500". Piston to deck .000" (nominal)
- 3.40 stroke forged steel stroker crank
- Forged steel connecting rods
- Hydraulic roller camshaft compatible
- Balanced for 28.2 in./oz. damper and flywheel
- Assembled and ready for your heads, cam and timing chain set
- Requires head gaskets M-6051-CP331 or M-6051-S331 or equivalent
- Photo and specs may vary

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

331 CID CRATE ENGINE

Photo may vary
M-6007-Z302Z shown

5.0L/302–331 CID SMALL BLOCK 500 HP "Z" HEAD FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY

NEW

M-6007-Z331P

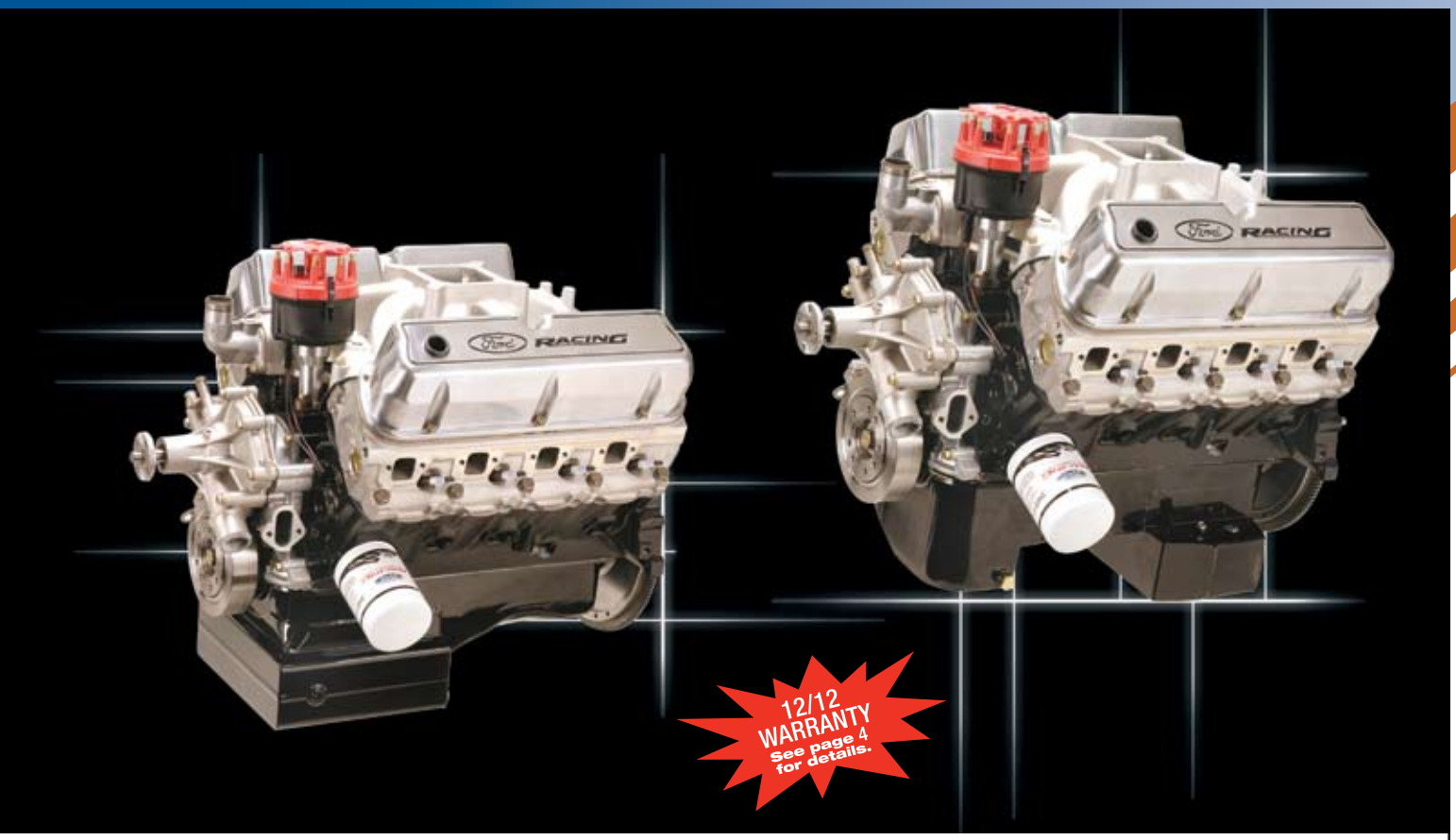
- 331 cubic inch
- 500 hp @ 7200 rpm (with 1 7/8" headers, a 750 CFM Holley carburetor and custom intake not included)
- 388 lb-ft @ 5500 rpm
- 11.9:1 compression ratio (nominal), requires minimum 104 octane fuel
- Forged pistons
- Forged steel cap screw connecting rods
- **BOSS 4-bolt main block M-6010-BOSS302**
- Mechanical flat tappet camshaft, .604" lift intake and exhaust, duration @ .050" 260 degrees intake and exhaust. Requires race type engine oil with zinc additive for flat tappet cams or premature lifter/lobe wear may occur
- Double roller timing chain set M-6268-A302
- Forged steel crankshaft
- High-performance rear T-sump oil pan
- Ford Racing "Z" cylinder heads M-6049-Z304PA with 2.08" intake valves and 1.60" exhaust valves
- Roller rockers, M-6564-F351
- Built with all **NEW PARTS**
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required. See installation notes

See Also...
- Crate Engine Warranty
- Engine Tips & Specs

INSTALLATION NOTES:
See engine installation and tuning tips on page 109.
Some or all of the following items may need to be changed from your original engine or modified for proper installation:
- This engine has a rear T-sump performance oil pan and pickup, regular rotation timing cover and regular rotation water pump and non-EFI valve covers.
- A different performance oil pan and pickup may be required for your application. Call the Techline at (800) FORD788 for more information.
- The timing chain cover will work with most regular rotation water pumps.
- Fuel pump eccentric M-6287-B302 installed, allows use of mechanical fuel pump.
- A standard rotation water pump is installed on the engine. Other applications may require different water pumps and timing chain covers found on pages 139-140.
- The valve covers (M-6582-BOSS) should fit most non-EFI applications, optional valve covers (sold separately) are available on pages 144-147.
- The damper M-6316-C351 (counterweight removed) may require a spacer for pulley alignment, see page 142.
- The flywheel (M-6375-D302) included should work for most 157-tooth manual transmission applications. For other transmission applications use the proper "0" balance flywheel, see pages 188-189.
- Firing order 1-5-4-2-6-3-7-8.
- Built with current available parts. Photo and specs may vary.
- Shipping weight approximately 465 lbs.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

351 CID CRATE ENGINES



5.8L/351–385 HP GT-40 ALUMINUM HEAD FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-D351FT* Front Sump T-pan (Manual Transmission)
M-6007-D351RT* Rear Sump T-pan (Manual Transmission)

- 351 cubic inch
- 385 hp (with headers, and a 650 CFM Holley carburetor not included)
- 377 lb-ft of torque @ 4500 rpm
- 9.0:1 compression ratio (nominal)
- Forged pistons
- Forged steel cap screw connecting rods
- Hydraulic roller camshaft M-6250-Z303, .552" lift intake and exhaust, duration at .050" is 228 degrees intake and exhaust
- Double roller timing chain set M-6268-A302
- Nodular iron crankshaft
- High-performance T-sump oil pan
- Front sump fits most passenger cars that came factory equipped with front sump pan
- Rear sump pan fits most Fox body cars
- MSD billet distributor
- Ford Racing aluminum GT-40 cylinder heads M-6049-X305 with 1.94" intake valves and 1.54" exhaust valves
- Roller rocker arms M-6564-B351
- Single plane "Victor Jr." intake manifold M-9424-V351
- New heavy-duty 5.8L "Sportsman" block, oil and water pumps, performance oil pan, steel billet flywheel and high-performance harmonic balancer
- Can be used in kit cars, street rods, Mustangs, Fox-bodied cars and trucks
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required. See installation notes

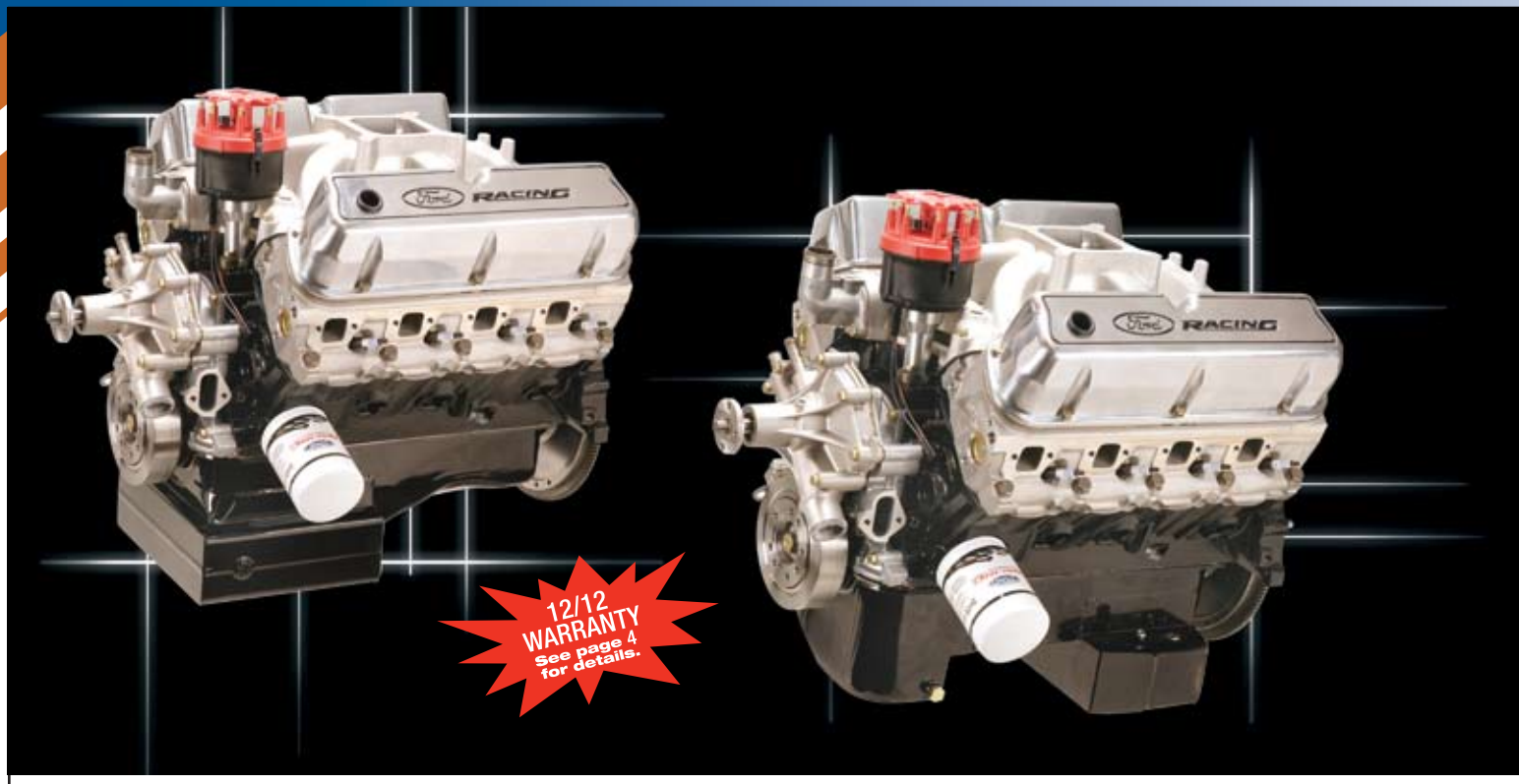
See Also...
- Crate Engine Warranty
- Engine Tips & Specs

INSTALLATION NOTES:
See engine installation and tuning tips on page 109.
Some or all of the following items may need to be changed from your original engine or modified for proper installation:

- This engine has a T-sump performance oil pan and pickup, regular rotation timing cover and both regular (installed) and reverse rotation water pumps and non-EFI valve covers.
- A different performance oil pan and pickup may be required for your application. Call the Techline at (800) FORD788 for more information.
- The timing chain cover will work with most regular rotation water pumps.
- Fuel pump eccentric M-6287-B302 installed, allows use of mechanical fuel pump.
- A standard rotation water pump is installed on the engine and a reverse rotation is included loose in the box. Other applications may require different water pumps and timing chain covers found on pages 139-140.
- The valve covers (M-6582-R302) should fit most non-EFI applications, optional valve covers (sold separately) are available on pages 144-147.
- The damper assembly M-6316-C351 may require a spacer for pulley alignment, see page 142.
- The flywheel included (M-6375-A302) should work for most 157-tooth manual transmission applications. For other transmission applications use the proper 28 oz. flywheel, see pages 188-189.
- Firing order 1-3-7-2-6-5-4-8 (5.0L HO and 351W order).
- Built with current available parts. Photo and specs may vary.
- Shipping weight approximately 545 lbs.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

392 CID CRATE ENGINES



5.8L/351–392 CID SMALL BLOCK 430 HP GT-40 HEAD FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-D392FT* Front Sump T-pan (Manual Transmission)
M-6007-D392RT* Rear Sump T-pan (Manual Transmission)

- 392 cubic inch
- 430 hp @ 5500 rpm (with headers, and a 750 CFM Holley carburetor not included)
- 450 lb-ft of torque @ 4000 rpm
- 9.7:1 compression ratio (nominal)
- Forged pistons
- Forged steel connecting rods
- Hydraulic roller camshaft with .563" lift intake and 584" lift exhaust, duration at .050" is 232 degrees intake and 240 degrees exhaust
- Double roller timing chain set M-6268-A302
- Nodular iron crankshaft
- High-performance T-sump oil pan
- Front sump fits most passenger cars that came factory equipped with front sump pan
- Rear sump pan fits most Fox body cars
- MSD billet distributor
- Ford Racing aluminum GT-40 cylinder heads M-6049-X303 with 1.94" intake valves and 1.54" exhaust valves
- Roller rocker arms M-6564-B351
- Single plane "Victor Jr." intake manifold M-9424-V351
- New heavy-duty 5.8L "Sportsman" block, oil and water pumps, performance oil pan, steel billet flywheel and high-performance harmonic balancer
- Can be used in kit cars, street rods, Mustangs, Fox-bodied cars and trucks
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required. See installation notes

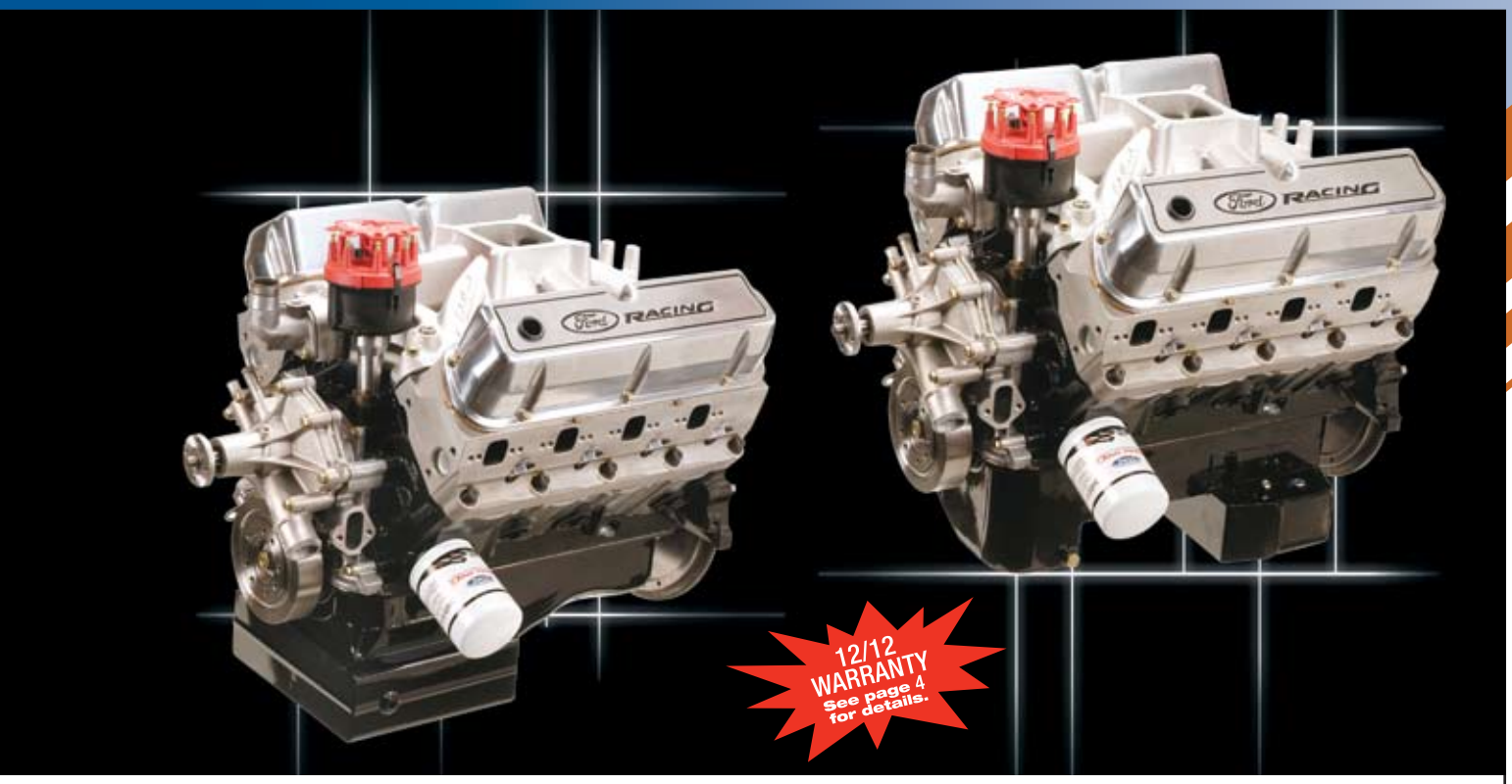
See Also...
- Crate Engine Warranty
- Engine Tips & Specs

INSTALLATION NOTES:
See engine installation and tuning tips on page 109.
Some or all of the following items may need to be changed from your original engine or modified for proper installation:

- This engine has a T-sump performance oil pan and pickup, regular rotation timing cover and both regular (installed) and reverse rotation water pumps and non-EFI valve covers.
- A different performance oil pan and pickup may be required for your application. Call the Techline at (800) FORD788 for more information.
- The timing chain cover will work with most regular rotation water pumps.
- Fuel pump eccentric M-6287-B302 installed, allows use of mechanical fuel pump.
- A standard rotation water pump is installed on the engine and a reverse rotation is included loose in the box. Other applications may require different water pumps and timing chain covers found on pages 139-140.
- The valve covers (M-6582-R302) should fit most non-EFI applications, optional valve covers (sold separately) are available on pages 144-147.
- The damper assembly M-6316-C351 may require a spacer for pulley alignment, see page 142.
- The flywheel included (M-6375-A302) should work for most 157-tooth manual transmission applications. For other transmission applications use the proper 28 oz. flywheel, see pages 188-189.
- Firing order 1-3-7-2-6-5-4-8 (5.0L HO and 351W order).
- Built with current available parts. Photo and specs may vary.
- Shipping weight approximately 545 lbs.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

392 CID CRATE ENGINES



5.8L/351–392 CID SMALL BLOCK 475 HP "Z" ALUMINUM HEAD FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-C392FT* Front Sump T-pan (Manual Transmission)
M-6007-C392RT* Rear Sump T-pan (Manual Transmission)

- 392 cubic inch
- 475 hp @ 5600 rpm (with headers, and a 750 CFM Holley carburetor not included)
- 495 lb-ft of torque @ 4400 rpm
- 10.0:1 compression ratio (nominal)
- Forged pistons
- Forged steel cap screw connecting rods
- Hydraulic roller camshaft, .580" lift intake and .602" lift exhaust, duration at .050" is 232 degrees intake and 240 degrees exhaust
- Double roller timing chain set M-6268-A302
- Forged steel crankshaft
- High-performance T-sump oil pan
- Front sump fits most passenger cars that came factory equipped with front sump pan
- Rear sump pan fits most Fox body cars
- MSD billet distributor
- Ford Racing aluminum "Z" cylinder heads M-6049-Z304DA with 2.02" intake valves and 1.60" exhaust valves
- Roller rocker arms M-6564-F351
- Single plane "Victor Jr." intake manifold M-9424-V351
- New heavy-duty 5.8L "Sportsman" block, oil and water pumps, performance oil pan, steel billet flywheel and high-performance harmonic balancer
- Can be used in kit cars, street rods, Mustangs, Fox-bodied cars and trucks
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required. See installation notes

See Also...
- Crate Engine Warranty
- Engine Tips & Specs

INSTALLATION NOTES:
See engine installation and tuning tips on page 109.
Some or all of the following items may need to be changed from your original engine or modified for proper installation:

- This engine has a T-sump performance oil pan and pickup, regular rotation timing cover and both regular (installed) and reverse rotation water pumps and non-EFI valve covers.
- A different performance oil pan and pickup may be required for your application. Call the Techline at (800) FORD788 for more information.
- The timing chain cover will work with most regular rotation water pumps.
- Fuel pump eccentric M-6287-B302 installed, allows use of mechanical fuel pump.
- A standard rotation water pump is installed on the engine and a reverse rotation is included loose in the box. Other applications may require different water pumps and timing chain covers found on pages 139-140.
- The valve covers (M-6582-R302) should fit most non-EFI applications, optional valve covers (sold separately) are available on pages 144-147.
- The damper assembly M-6316-C351 may require a spacer for pulley alignment, see page 142.
- The flywheel included (M-6375-A302) should work for most 157-tooth manual transmission applications. For other transmission applications use the proper 28 oz. flywheel, see pages 188-189.
- Firing order 1-3-7-2-6-5-4-8 (5.0L HO and 351W order).
- Built with current available parts. Photo and specs may vary.
- Shipping weight approximately 545 lbs.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

427 CID CRATE ENGINE

COMING SOON!

427 CID

Any Ford performance enthusiast knows the magic in certain numbers. 302, 351, 429 and, perhaps the most iconic number in all of Ford history, the 427!

The 427 was the ultimate performance big block for its time. Powering Shelby Cobras to unprecedented performance in road racing and dominating drag racing with overhead cam heads, the 427 was the engine to beat!

Now the 427 displacement can be achieved in a smaller, highly durable package based off the 351 Windsor platform. The ultimate Ford small block!

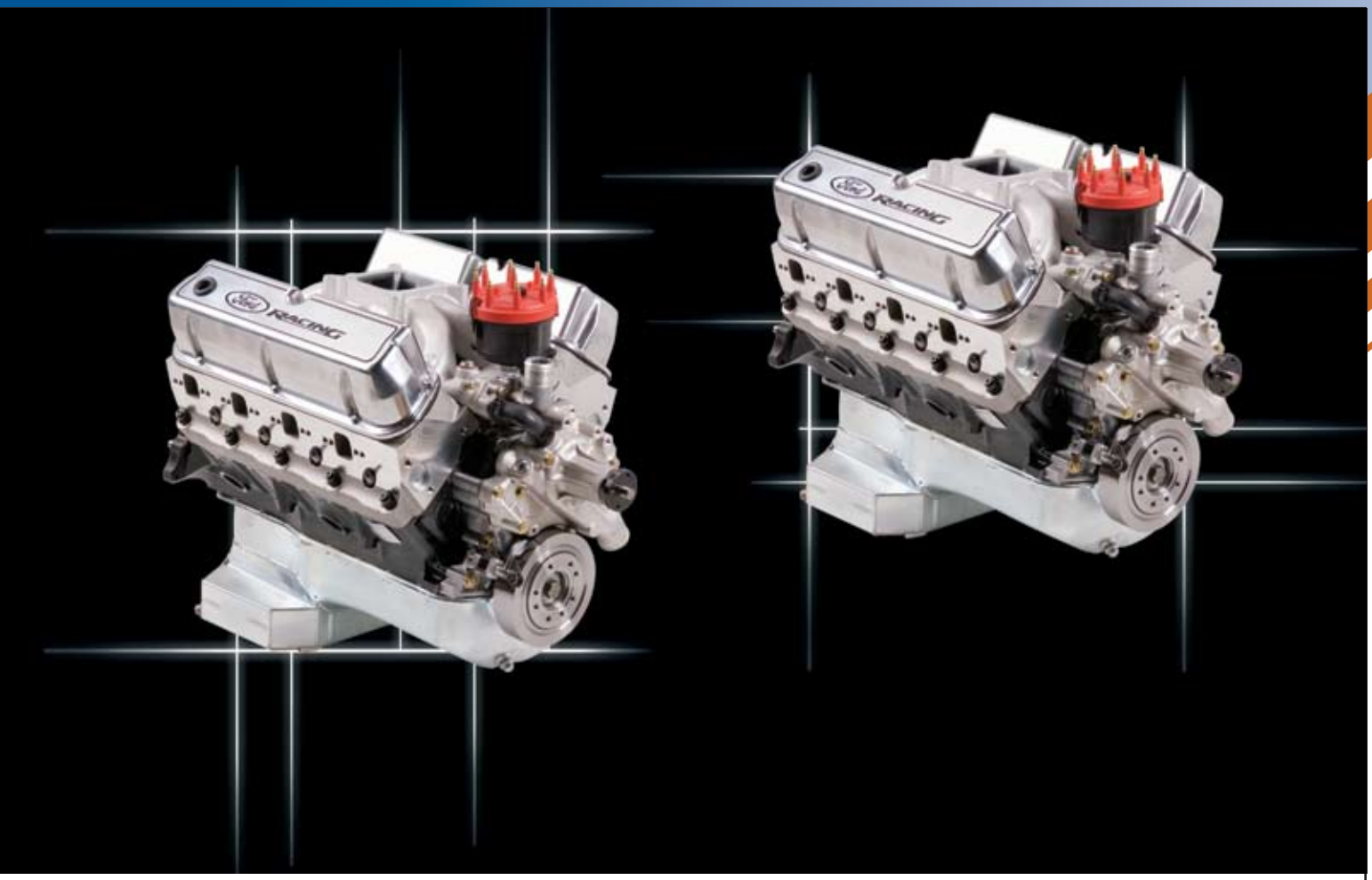
The new 427 engine from Ford Racing takes the ultimate small block to the next level. Built on our new aluminum 351 block with all the highest quality components, the Ford Racing 427 is ideal for street rods, kit cars and any vehicle looking for True Blue Ford Racing performance.

Final specs and horsepower will be available by the time you receive this, so check www.fordracingparts.com for the most up-to-date information.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

347 CID SEALED CRATE ENGINES



347 CID SMALL BLOCK 415 HP SEALED CRATE ENGINE ASSEMBLY

M-6007-D347SR*

- 347 cubic inch
- 415 hp @ 6000 rpm (with headers, and a 650 CFM Holley carburetor not included)
- 400 lb-ft of torque @ 4900 rpm
- 10.0:1 compression ratio (nominal)
- Forged pistons
- Forged steel cap screw connecting rods
- Hydraulic roller camshaft M-6250-F303, .523" lift intake and exhaust, duration at .050" is 226 degrees intake and exhaust
- Double roller timing chain set M-6268-A302
- Forged steel crankshaft
- High-performance rear sump circle track oil pan
- MSD billet distributor
- Ford Racing aluminum "Z" cylinder heads M-6049-Z304DA with 2.02" intake valves and 1.60" exhaust valves
- Roller rocker arms M-6564-F351
- Single plane "Victor Jr." intake manifold M-9424-D302
- New heavy-duty race block, oil and water pumps, performance oil pan and high-performance harmonic damper
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required
- Engine is sealed for circle track competition where rules allow
- Engine is internally balanced, "0" balance flywheel required
- Flywheel is not included

See Also...
- Engine Tips & Specs

347 CID SMALL BLOCK 405 HP SEALED CRATE ENGINE ASSEMBLY

M-6007-347NST*

- 347 cubic inch
- 405 hp @ 6000 rpm (with headers, and a 650 CFM Holley carburetor not included)
- 10.0:1 compression ratio (nominal)
- Forged pistons
- Forged steel cap screw connecting rods
- Hydraulic roller camshaft M-6250-F303, .528 lift intake and exhaust, duration at .050 is 226 degrees intake and exhaust
- Double roller timing chain set M-6268-A302
- High-performance rear sump circle track oil pan
- Forged steel crankshaft
- MSD billet distributor
- Ford Racing aluminum "Z" cylinder heads M-6049-Z304DA with 2.02 intake valves and 1.60 exhaust valves
- Roller rocker arms M-6564-F351
- Single plane "Victor Jr." intake manifold M-9424-D302
- New heavy-duty race block, oil and water pumps, performance oil pan and high-performance harmonic damper
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required. See installation notes
- Engine is sealed for circle track competition where rules allow
- Engine is internally balanced, "0" balance flywheel required
- Flywheel is not included
- Designed for use in NASCAR Late Model Series
- Same as M-6007-D347SR except cam timing change to conform with NASCAR rules

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

351 CID SEALED CRATE ENGINE

351 SEALED RACE ENGINE
M-6007-Z351SR

- 351 cubic inch
- 400 hp @ 5800 rpm (with headers and 650 CFM Holley carburetor)
- 375 lb-ft @ 4700 rpm
- 10.0:1 compression ratio (nominal)
- Forged pistons
- Forged steel connecting rods
- Hydraulic roller camshaft, .513" lift intake and .526" lift exhaust, duration at .050" is 226 degrees intake and 228 degrees exhaust
- Double roller timing chain set M-6268-A302
- Forged steel crankshaft
- High-performance rear sump circle track oil pan
- MSD distributor
- Ford Racing aluminum "Z" cylinder heads M-6049-Z304DA with 2.02" intake valves and 1.60" exhaust valves
- Roller rocker arms M-6564-F351
- Single plane "Victor Jr." intake manifold M-9424-V351
- New heavy-duty 351 race block, oil and water pumps and a high-performance harmonic damper
- Depending on your application, a different timing cover, water pump, performance oil pan and pickup may be required. See installation notes
- Engine is sealed for circle track competition where rules allow
- Engine is internally balanced, "0" balance flywheel required
- Flywheel is not included

See Also...
- Engine Tips & Specs

INSTALLATION NOTES:
See engine installation and tuning tips on page 109.
Some or all of the following items may need to be changed from your original engine or modified for proper installation:

- This engine has a rear sump performance oil pan and pickup, regular rotation timing cover and regular rotation water pump and non-EFI valve covers.
- A different performance oil pan and pickup may be required for your application. Call the Techline at (800) FORD788 for more information.
- The timing chain cover will work with most regular rotation water pumps.
- Fuel pump eccentric M-6287-B302 installed, allows use of mechanical fuel pump
- A standard rotation water pump is installed on the engine. Other applications may require different water pumps and timing chain covers found on pages 139-140.
- The valve covers (M-6582-R302) should fit most non-EFI applications, optional valve covers (sold separately) are available on pages 144-147.
- The damper M-6316-C351 with counterweight removed, may require a spacer for pulley alignment, see page 142.
- The flywheel (M-6375-D302) not included should work for most 157-tooth manual transmission applications. For other transmission applications use the proper "0" balance flywheel, see pages 188-189.
- Firing order 1-3-7-2-6-5-4-8 (5.0L HO and 351W order).
- Built with current available parts. Photo and specs may vary.
- Shipping weight approximately 545 lbs.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

521 CID CRATE ENGINES

521 CUBIC INCH 580 HP FORD RACING PERFORMANCE CRATE ENGINE ASSEMBLY

M-6007-521FT* Front Sump T-pan
M-6007-521RT* Rear Sump Pan

NEW

- 580 hp @ 5750 rpm
- 600 lb-ft of torque @ 4500 rpm
- 10.0:1 compression ratio (nominal)
- Forged aluminum dished pistons
- Forged H-beam connecting rods, M-6200-C514
- Mechanical roller camshaft, M-6250-A514 (mechanical roller camshafts not recommended for street use; contact Techline for more details). Provides significant horsepower increases above 3500 rpm and good low-end torque. Valve lift is .640" intake and exhaust. Duration at .050" is 254 degrees intake and 258 degrees exhaust
- High-performance oil pan
- MSD Distributor with M-12390-H Bronze Gear
- Cast nodular iron crankshaft M-6303-A514
- New heavy-duty 4-bolt main siamese bore race block M-6010-A460
- "Super Cobra Jet" aluminum cylinder heads M-6049-SCJB
- "Victor" single plane intake manifold M-9424-H429 (requires Dominator carb)

See Also...
- Engine Tips & Specs

INSTALLATION NOTES:
See engine installation and tuning tips on page 109. Some or all of the following items may need to be changed from your original engine or modified for proper installation:

- A different performance oil pan and pickup tube may be required for your application. Call the Techline at (800) FORD788 for more information.
- The water pump will work for most 7.5L standard rotation applications.
- The valve covers (Ford Racing) should work for most applications, optional valve covers (sold separately) are available on pages 144-147.
- The auto transmission flywheel should work for most C-6 automatic transmission applications. For manual transmission applications use flywheel M-6375-Z460 (see below).
- If a mechanical fuel pump is to be used, the front cover must be changed, and a fuel pump eccentric added to the front of the camshaft.
- Firing order 1-5-4-2-6-3-7-8.
- Built with current available parts. Photo and specs may vary.
- Shipping weight approximately 670 lbs.

FOR MORE INFORMATION CALL THE TECHLINE AT (800) FORD788.

460 FOX ENGINE SWAP MOUNTS

M-6038-A460*

Use in 1979-95 Mustang and other Fox-chassis cars to mount 429/460 engines. Our rubber insulated mount kit is designed to work with M-6675-A460 rear sump oil pan kit and custom headers.
NOTE: Does not fit I-6 cylinder front crossmember.

FLYWHEEL

M-6375-Z460

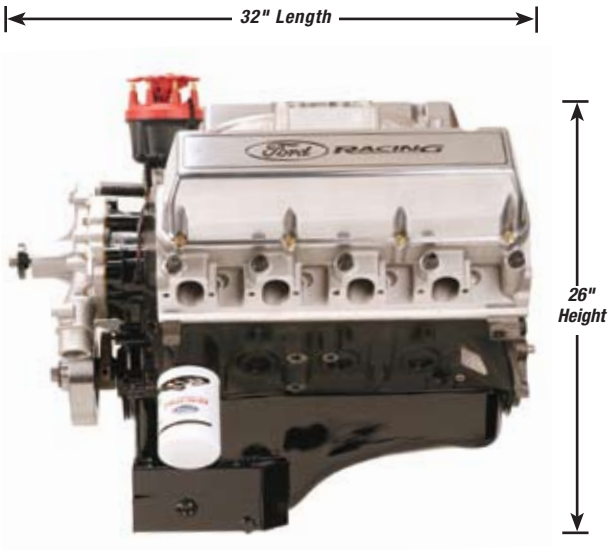
- Fits 1979-97 460 and 460/521 Ford Racing crate engines with external balance
- For external balance only
- 11" long or diaphragm-style clutch with 5/16" holes
- 11.5" and 12" long or diaphragm-style clutch
- 11" diaphragm Ford Trucks even pattern
- Meets SFI 1.1

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

ENGINE SWAP SIZE CHART

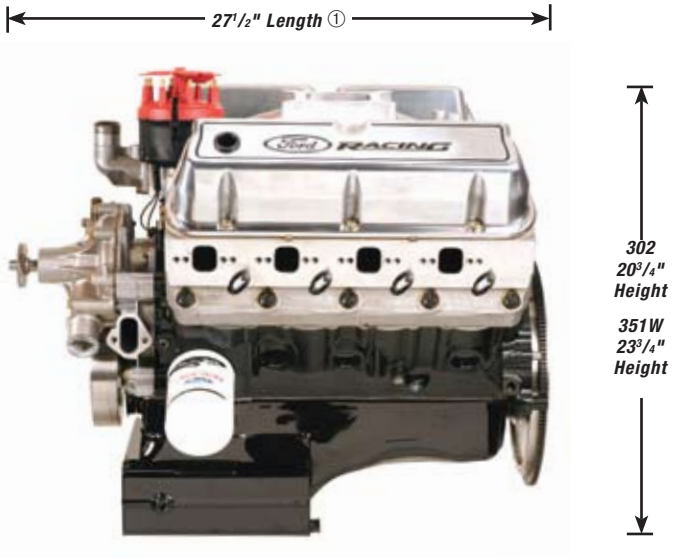
(SEE INDIVIDUAL ENGINE INSTALLATION NOTES PAGES 97-107 FOR WEIGHTS)

460 ENGINE



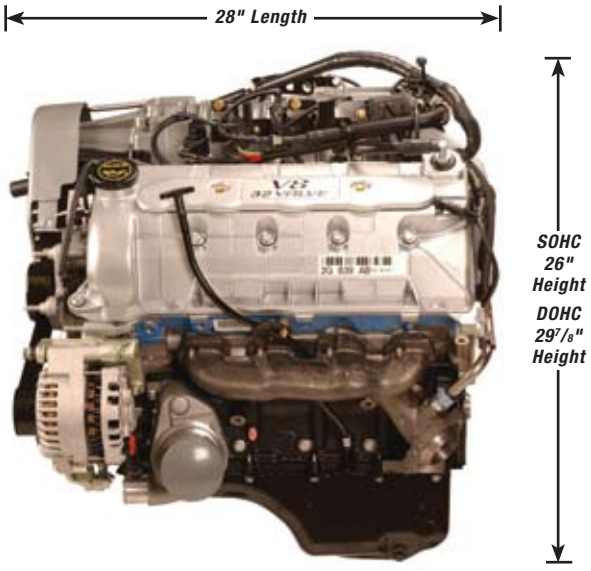
NOTE: 26" Width

302/351W ENGINE



NOTE: 302 – 18 3/4" Width / 351W – 21" Width.
NOTE: ① With short serpentine water pump M-8501-A50.

4.6L MODULAR ENGINE



NOTE: SOHC – 25 5/8" Width / DOHC – 30" Width.

Did you know…
That an aluminum 4.6L block weighs approximately 85 lbs while the iron versions weigh approximately 155 lbs.

Did you know…
The 3-valve 4.6L engine in the 2005-09 Mustang weighs only 420 lbs dressed.

Did you know…
5.4L blocks received more material in 2002 for Noise Vibration and Harshness (NVH) control. Pre-2002 blocks weighed 185 lbs, later blocks weigh 200 lbs.

Did you know…
You can easily distinguish Romeo vs. Windsor 4.6 liter iron blocks by the main caps. Windsor blocks have dowels to locate the main caps while Romeo blocks use jack screws to locate the main caps.

Did you know…
All 5.4L iron blocks are made with the Windsor main cap style, even those that go into engines coming out of Romeo engine plant.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

ENGINE INSTALLATION AND TUNING TIPS

Performance engine durability is dependent on several supporting systems including the cooling system, fuel delivery system, ignition system and oiling system. If the support systems are not adequate, poor engine performance and possible engine failure could result.

OILING SYSTEM CONSIDERATIONS/ COMMON PROBLEMS

- Priming the oiling system before starting a new engine is crucial to engine life. This is important on initial start-up of a new engine and if a used engine has not been run for extended periods of time.
- Does the oil pan have adequate capacity? Most performance vehicles require a 7 qt. minimum capacity. All engines will benefit from increased oil pan capacity.
- Does the oil pan have proper oil control baffling for the vehicle's braking, acceleration and cornering capabilities? Road race cars need oil control in four directions: braking, acceleration, LH cornering and RH cornering. Drag race cars need oil control in two directions: braking and acceleration. Baffles must be designed to keep oil over the pickup screen at all times.
- Is the pickup screen the proper distance from the bottom of the oil pan? If the oil pickup screen is too close to the bottom of the oil pan, it can cause cavitation. If it is too far away, it will cause the pump to draw air and minimize lubrication capacity. The pickup screen should be located .250" to .375" from the bottom of the pan. Does the design of the screen on the pickup tube create restrictions? We have seen some pickup tube screen designs that restrict oil flow as much as 75%. Wire mesh is good. Perforated metal is usually restrictive. Measure the wire size and calculate the flow area. Most aftermarket screens have less flow area than stock screens.
- If using a remote oil filter mount or oil cooler, make sure that all of the components are large enough to eliminate any restrictions to oil flow. Many Cobra replica kit cars use components that are too restrictive.
- Undersize oil lines commonly restrict oil flow.
- The more bends/turns in an oiling system, the more restrictions are created.
- Poorly designed remote filter mounts and adapters can create restrictions.
- Be sure that the oil cooler flows enough oil to meet the engine's requirements.
- Never reuse a used oil cooler. Debris gets trapped and cannot be cleaned out.
- Poorly designed oil filters can cause a restriction.
- Many oil systems only flow one way. Connecting the remote oil filter or oil cooler lines backwards can cause engine damage/failure.

IGNITION SYSTEM CONSIDERATIONS/ COMMON PROBLEMS

- The ignition system must deliver a properly timed spark. There are a lot of factors that determine when the spark should be delivered. The most common factors include: compression ratio, fuel quality, fuel octane rating, combustion chamber design, engine operating temperature, power adders such as NOS or supercharger, inlet air temp, altitude and load.
- Avoid too much or too little timing for your engine combination.
- Avoid hooking up the vacuum advance to intake manifold vacuum instead of ported vacuum.
- Avoid inductive crossfire created by improper plug wire routing. Separate plug wires on cylinders that fire in sequence.
- Improper timing can damage pistons, rod bearings, head gaskets and many other engine parts.
- Typical total mechanical advance timing at 4000 rpm for Ford Racing Performance Parts crate engines: 5.0L: 36° to 38°, 347/351: 34° to 36°, 392/460/514: 30° to 32°.

FUEL DELIVERY CONSIDERATIONS

- Size of fuel pump, size of fuel line, fuel pump placement, fuel filter placement, fuel filter size, injector size, fuel rail size, fuel pressure, jet size and baffling in the fuel tank.
- Does the fuel system maintain full pressure at peak engine horsepower in high gear?

Altitude, air temperature and fuel characteristics including quality, specific gravity and octane rating will affect your jetting requirements. Engine efficiency and Brake Specific Fuel Consumption (BSFC) also have an effect. Here are some examples of a Holley 750 CFM 4V.

Octane	Temp.	Altitude	Jetting Front	Jetting Rear
94	80 F	0 ft.	81	86
Aviation 100LL	80 F	0 ft.	81	84
110 Race	80 F	0 ft.	78	83
94	80 F	3000 ft.	76	81
94	80 F	6000 ft.	73	77
94	40 F	0 ft.	84	89
94	120 F	0 ft.	78	83

As you can see by these examples, jet requirements can vary a lot depending on fuel, altitude and temperature. Oxygenated fuels are available in some states and can dramatically affect your jetting requirements. Make sure you get your jetting correct. Aviation fuel is lighter and will require richening an engine in relationship to its requirement with pump gas. We have found in the dyno testing of our crate engines that 1 point richer on air/fuel ratio equals only a few percent less power. Running an engine as lean as possible produces the best power but also increases combustion temperatures and the chances of engine damage.

COMMON PROBLEMS WITH FUEL DELIVERY SYSTEMS

- Do not mount an EFI electric fuel pump so it has to draw fuel from the tank. This creates negative pressure in the fuel line allowing the fuel to boil at a lower temperature.
- The pump must be mounted in the tank or in a location so that it is gravity fed.
- If the fuel rail is too small and you have large injectors, this can create a pulse in the fuel rail allowing fuel starvation on some cylinders.
- Fuel should be pushed through the fuel filter. Pulling fuel through a filter can cause cavitation. If a filter is to be used on the inlet of a rail-mounted fuel pump, a filter rating of 160 microns MINIMUM should be used.
- It takes approx. 1/2 lb of gasoline to support 1 hp. This is commonly referred to as a .5 BSFC. You should always err in the safe direction of larger when sizing your injectors and fuel pump.

COOLING SYSTEM CONSIDERATIONS/ COMMON PROBLEMS

- Higher horsepower requires more cooling capacity.
- When the fill point of the cooling system is not the highest point, air pockets are created. The air pockets then create hot spots, and the hot spots promote improper combustion, which can cause engine failure.
- Improper pulley size makes the fan and water pump turn too slow or too fast. Production water pumps are normally run at 20% over engine speed and do not perform well over 5000 engine rpm. Underdrive pulleys generally reduce water pump speed to 85% of engine rpm and may not provide enough water flow to cool the engine.
- The radiator must have enough area to dissipate the heat being generated by the engine.
- If the fan size is too small, it will not move enough air across the radiator so it can properly dissipate the heat being generated. Fan shrouds increase the effectiveness of the fan significantly.
- Radiator location can affect airflow through the radiator at different vehicle speeds.

FLYWHEEL, CONVERTER AND TRANSMISSION PROBLEMS

- Installing the wrong flywheel for the balance factor of the engine will cause vibration and eventually damage the engine.
- Wrong length input shaft or "stack-up height" can force the crank forward, damaging the engine thrust bearing.
- Improperly installing the torque converter can force the crank forward, damaging the engine thrust bearing. This is most commonly caused by improperly locating the torque convertor drain plug in the flexplate.
- If the torque converter balloons, it can force the crank forward, damaging the engine thrust bearing and the transmission. Most high-performance torque converters have anti-ballooning features.
- Damage to the thrust bearing can happen in seconds!

MISCELLANEOUS PROBLEMS THAT CAN DAMAGE AN ENGINE

- Dropping nuts, bolts, washers or foreign materials down the intake. We have seen this more than once.
- Reusing an intake off an engine that had broken parts in a cylinder. The parts can get bounced up into the intake manifold, carburetor or air cleaner (pieces of piston or piston rings, etc.). When you put your used intake on your new engine and start it, the pieces are drawn in and damage your engine.
- Bead-blasting an EFI intake. You will NEVER get all of the blasting media out. When the engine is started, it draws the blasting media into the cylinders, destroying the engine.
- Improperly torquing fasteners when installing new parts to your engine. Over-torquing of the intake manifold bolts to the cylinder head on 302 and 351W engines can cause head gasket sealing problems.
- Installing distributor gears at the incorrect height, or using gears made of the wrong material. We have seen this a lot on remanufactured distributors as well as popular aftermarket manufacturers of distributor assemblies. Use cast iron gears for cast iron flat tappet cams, and steel gears for steel hydraulic roller cams.

ENGINE DYNAMOMETER TESTING BASICS

TYPES OF ENGINE DYNAMOMETERS

There are many types of dynamometers for testing engines: Water Brake, Eddy-Current, Electric…just to name a few. Depending on availability and engine application, Ford Racing utilizes any of those mentioned. The basic function of each of these dynamometers (referred to as dynos from this point forward) is the same. Each applies a different method to absorb the energy output of the engine. The engine output is measured as torque (work) and power is calculated. The energy produced by the engine is absorbed by the dyno and eventually dissipated as heat. Dynos measure this engine output over a range of engine conditions that vary with speed and load. Temperature, pressures, air fuel ratio, water, oil, fuel and airflow measurements are elements of the test cell. The accurate measurement of these parameters is just as vital to good testing as the dyno itself. The test cell that houses a dyno can vary widely. Conditioned airflow, exhaust evacuation and fuel delivery must be adequate for the power level of the engine tested. Shortfalls in any of these areas can impact the integrity of the test.

Ford Racing tests our crate engine offerings on any of the above-mentioned types of dynos. The type depends on test cell availability and type of engine application (street, sealed circle track, etc.). The engine is directly coupled to the dyno via a prop shaft. This type of testing yields brake power and torque. Test results are brake because measurements are taken directly from the crankshaft output.

Water brake dynos absorb energy by pumping water through various orifices. Speed and load are controlled through a feedback loop of inlet and outlet valves. Water brake dynos are typically capable of absorbing very high engine outputs and rpm.

Eddy-current dynos rotate a disc through a magnetic field. This magnetic field can be varied in strength to control the rpm of the disc. These dynos are desirable for engine development due to very good rpm control.

Electric dynos rotate a generator to absorb engine output; this yields an electric output that can be accurately measured. Typically, electric dynos can be used to spin a non-firing engine and measure pumping losses and friction. Those types of losses are difficult to ascertain in conventional dyno testing.

METHODS OF TESTING

Once the engine is installed in a test cell, and all desired operating parameters are instrumented, testing can begin. The dyno is capable of absorbing an infinite number of operating conditions ranging from idle to WOT (wide open throttle) and idle rpm to rpm's beyond peak horsepower. In cases where the dyno is operated manually, the operator will set the rpm value via a controller. The operator then opens the throttle via a throttle actuator and applies load to the dyno. As the throttle is opened further, the dyno will control the rpm to the set point and the load will increase until full throttle is reached. Many types of testing exist for evaluating engine performance. Crate engine testing consists of power development, durability, idle stability, etc.

POWER TESTING

Methods for performing power tests or power runs, vary by dyno facility and engine application. Acceleration tests (sometimes referred to as ramp tests) are controlled completely by dyno software through the dyno controller and throttle actuator. The rpm and transient times are programmed by the operator, and, once set, the controller takes the engine through the test. These tests typically do not let the engine stabilize at any given speed and data is collected throughout the ramp. For example: The test would begin at idle. Slowly the throttle will be opened and rpm controlled to the first chosen rpm test point. Eventually the throttle will reach WOT. From then, the rpm will increase at a given rate of rpm/time until the maximum test rpm is reached. Test data is recorded throughout the entire run. Finally the controller will close the throttle and return the engine to idle.

Another method of power testing is the step method. This can be controlled manually or by an automated test where the dyno software controls the engine operation. The dyno controller is set to the first rpm test point and the throttle actuator is slowly opened to the full throttle point. The controller will maintain the rpm of the engine to the set point. In the manual mode, the operator will observe the data until stable and then record. In automated mode, the dyno will hold the throttle and rpm for a set period of time and automatically record the data. In either case, this testing provides good steady readings and makes for good repeatable runs. The above procedure will be repeated for all desired rpm test points.

Results of power testing are used in the design of crate engine packages and for marketing/sales. For further information on interpreting results see article on "Correction Factors, Observed and Corrected Horsepower and Torque."

DURABILITY TESTING

Durability testing varies by engine application and configuration. The type of engine and where it will be used can influence the type of durability testing greatly. For example, durability testing criteria for a sealed circle track crate engine will be determined by minimum and maximum track conditions. Durability testing for a street application crate engine will be determined by peak torque and horsepower for the given components. Testing conditions are typically WOT or high-load conditions and variable rpm to cover as wide of a range as possible. In short, durability testing criteria vary, but the goal is the same. The goal is to produce an accelerated wear condition that exceeds the normal application of the engine as designed.

CORRECTION FACTORS, OBSERVED AND CORRECTED HORSEPOWER AND TORQUE

THE NEED FOR CORRECTED TEST RESULTS

The main reason for a correction factor is the ability to compare testing performed under different atmospheric conditions. The correction factor will contain a temperature, barometric pressure and an efficiency percentage. The temperature and barometric pressure have significant impact on the performance of an engine. Also, to a lesser degree, humidity can affect the performance. Some dyno facilities have controlled atmospheric chambers to condition air to a desired temperature, humidity and barometric pressure. These test cells are very sophisticated and usually booked with production, emission, cold start and hot test work. The test cells with these chambers can easily cost several hundred thousand. Considering these challenges, it becomes evident that there is a need to be able to test engines under observed operating conditions and correct the results to a standard set of conditions.

SOME DEFINITIONS

Observed Operating Conditions are measured near the entry of the carburetor or inlet air system of the engine. These conditions include inlet air temperature, wet bulb temperature and actual barometric pressure.
Observed Torque is the measured torque value while the engine is running. It typically uses a calibrated load cell. This load cell measures the work the engine is doing in real time. The observed torque value is then used in calculating the observed horsepower value.
Observed Horsepower represents how fast the work (generated by the engine) is being done. This is calculated by the following formula: (observed torque * rpm)/5252.
Observed Barometric Pressure is atmospheric pressure measured near the engine air inlet.
Observed Inlet Air Temperature is self-explanatory.
Wet Bulb Temperature is the temperature achieved by evaporating water into the observed inlet air. This is accomplished by using a wick with one end in a vessel containing water and the other connected to a thermometer or thermocouple. This reading is used in calculating vapor pressure, humidity and, ultimately, correction factor.
Corrected Torque is the measured torque times the correction factor.
Corrected Horsepower is the measured horsepower times the correction factor.
Corrected Barometric Pressure is the observed barometric pressure minus the corrected vapor pressure.
Standard Barometric Pressure is stated in the definition of the correction factor.
Load Cell is an electronic device capable of measuring force.
Brake Horsepower is useful power determined from the engine (no other power train losses); can be observed or corrected.

BASIC ENGINE PERFORMANCE AND ATMOSPHERIC CONDITIONS

Engines utilize fuel and air, and apply a form of combustion to convert the power stored in fuel into usable work. The air contains oxygen; this is the element that supports the combustion process. Cool dry air contains more oxygen molecules within a constant volume and pressure. As barometric pressure increases, additional oxygen molecules are present (maintaining a constant volume).

For example, if an engine was tested on a cool January day where the barometric pressure was relatively high, observed engine performance will be better than the same engine tested on a hot, muggy August day when a storm was coming in. Also, engine tests performed in higher altitudes have lower observed barometric pressure and engine performance is lower.

CORRECTION FACTORS

Several correction factors exist and this article will deal with two of them.

(1) SAE J1349, June 1990 Data corrected to 77° F and 29.31 in Hg 85% efficiency.
(2) SAE J607, Data corrected to 60° F and 29.92 in Hg.

SAE J1349

This formula utilizes the observed inlet air temperature and wet bulb readings to calculate saturated, current and corrected vapor pressure. The corrected vapor pressure is subtracted from the observed barometric pressure. It is subtracted because this pressure is due to water vapor in the air. This yields corrected barometric pressure.

The conditions for correction are 77° F and barometric pressure of 29.31 inches of mercury. Once the corrected barometric pressure is calculated and the observed inlet air temperature is known, those values are plugged into the following formula. The correction factor formula is:

C.F. = 1.18 #[(29.31/Corrected Barometric Pressure) * {(Observed Inlet Air Temp+460)/(537)} ^.5]-.18

SAE J607

This formula utilizes the observed inlet air temperature and wet bulb readings to calculate saturated, current and corrected vapor pressure. The corrected vapor pressure is subtracted from the observed barometric pressure. It is subtracted because the pressure is due to water vapor in the air. This yields corrected barometric pressure. The conditions for correction are 60° F and barometric pressure of 29.92 inches of mercury. Once the corrected barometric pressure is calculated and the observed inlet air temperature is known, those values are plugged into the following formula. The correction factor formula is:

C.F. = [(29.92/Corrected Barometric Pressure) ^1.2 * {(Observed Inlet Air Temp+460)/(520)} ^.6]

SUMMARY

Once a correction factor is calculated, the observed numbers are multiplied by it. These are the "corrected values." Undoubtedly, the best scenario is to test under the exact same conditions each time. If that is not achievable, a good rule of thumb is that engines corrected to the SAE J607 standard will yield corrected torque and power numbers approximately 4% higher than those corrected to SAE J1349. Unfortunately, SAE J607 conditions are not very realistic. The most commonly accepted standard is the SAE J1349. This corrects to a more practical set of atmospheric conditions and utilizes coefficients to compensate for an 85% mechanical efficiency. Please note temperature is converted Rankin degrees in both formulas.

STOCK 302

1969-70 BOSS 302

FR BOSS 302

	STOCK 302	1969-70 BOSS 302	FR BOSS 302
Main caps	2-bolt cast iron	4-bolt cast iron (2,3,4)	4-bolt nodular iron machined splayed (2,3,4)
Siamese bore	No	No	Yes with engineered cross drilling
Freeze plugs	Press	Screw in tapered pipe thread	Screw in O-ring sealed straight thread
Material	Cast iron	Cast iron	Diesel grade heat treated cast iron
Head bolts	7/16"	7/16"	1/2"
Recommended Max. Bore	4.030"	4.030"	4.125"
Front oil crossover for lifter galley	No	No	Yes
Main bolts	7/16"	7/16" (all) 3/8" outer (2,3,4)	1/2" (all) 3/8" outer (2,3,4)
Oil galley plugs	Pipe thread and press in	Pipe thread	Screw in O-ring sealed straight thread
Hydraulic roller compatible	Yes	No	Yes
Clutch cross shaft pivot hole	No	Yes	Yes
Rear main seal	1-piece	2-piece	1-piece
CID capacity	347	347	363

Did you know...

The BOSS 302 block features cylinder bores designed for stroker applications without additional clearancing. Durability tested up to 3.400" stroke, some racers have run as much as 3.500" stroke and 9.00 ets!

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

ENGINE BLOCKS

BOSS 302 CYLINDER BLOCKS

NEW

M-6010-BOSS302* Finished at 3.990" to 3.995" rough bore
M-6010-B302BB* Finished at 4.115" rough bore

The legend is reborn with these all-new 302 blocks! Stronger than the original!

- 4.125" bore capacity
- 8.2" deck height, finished at 8.200" plus .010" to .015"
- Maximum recommended stroke 3.400"
- Splayed 4-bolt main on 2, 3, 4, main caps
- 2-bolt main on first and fifth main caps
- Main bearing bores finished to low limit
- Finished lifter bores
- Machined to accept factory roller lifter guides and lifter guide retainer
- Fits factory Mustang oil pan with custom oil pickup tube
- Revised oiling and cooling system passageways
- Siamese bore with drilled coolant crossover holes (except on M-6010-B302BB)
- Increased bulkhead material
- Threaded core and galley plugs (straight thread port plugs with O-ring)
- Requires special length ½" head bolts M-6065-BOSS or head studs M-6014-BOSS recommended with M-6049-X306/X307/Z304DA heads
- Uses common OD cam bearings M-6261-J351/R351
- Unique cam plug M-6026-S351 included
- M-6051-S331 or M-6051-CP331 head gasket recommended
- Weighs approximately 175 lbs
- Great price and value
- The foundation for 8.2" deck projects

BOSS 302 FASTENERS

NEW

M-6014-BOSS* Cylinder Head Stud Kit

- Use when installing M-6049-X306/X307 heads on M-6010-BOSS302 block
- .500" diameter studs with 12 point nuts and hardened washers
- Sold in engine sets

NOTE: Check header to head stud and nut for clearance.

M-6065-BOSS Cylinder Head Bolt Set

- 1/2" cylinder head bolts required for installation of the Ford Racing M-6049-X306/X307/Z304DA heads onto the M-6010-BOSS302 block
- Packaged in engine sets

BOSS 302 OIL PICKUP TUBE

M-6622-BOSS302*

- For use with M-6010-BOSS302 block
- Clears 4-bolt main caps
- Fits stock Fox body Mustang pans
- Fits FISE pans used on 1991-95 Mustangs

351 ALUMINUM RACE BLOCK

M-6010-C451* Billet Steel Main Caps

- 4" to 4.125" bore capacity
- Centrifugally cast liners
- All aluminum water jacket and oil galley plugs
- 9.2" deck height
- 4-bolt main journals one through five
- Dry sump design
- 2.750" main bearing journals
- Enclosed cam tunnel
- Light-weight at only 92 lbs
- Recommended for Dirt late model, Sprint, 410 Sprint
- Use with M-6701-B351 crankshaft seal, M-6269-C450 cam thrust retainer, M-6268-C450 timing chain and gear set, M-6059-C450 timing cover and M-6261-C450 cam bearings

OIL GALLERY RESTRICTOR KITS

M-6799-A302* 289/302/351W
M-6799-R351* 351 Ford Racing M-6010-R351/R352/ S351/V351/W351

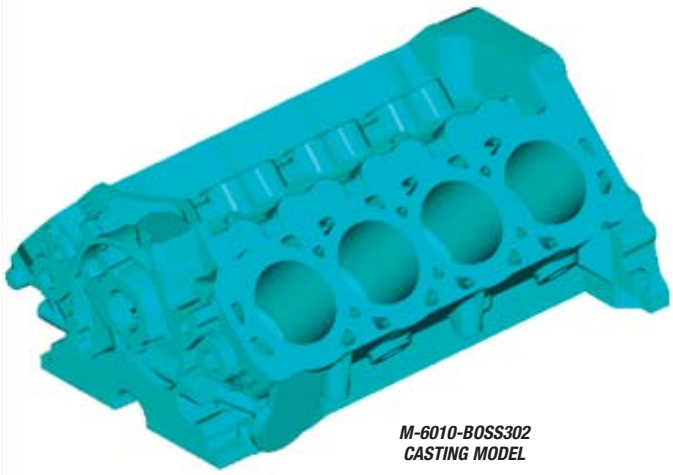
Increases oil flow to main bearings by reducing oil to valve train.

M-6799-A302 shown

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

BLOCK CASTING TECH

Ford Racing Performance Parts engineers create cylinder blocks and heads using the latest processes in computer modeling, high-speed machining and casting simulation. These processes were developed while creating components for the NASCAR racing series. These high-tech processes deliver high-quality components for the track and the street.

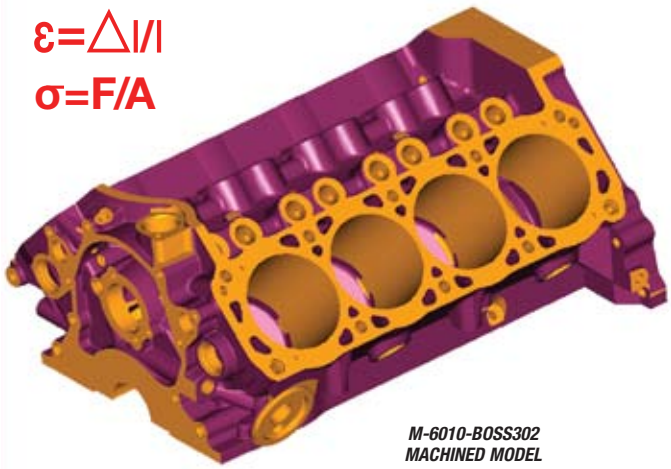


M-6010-BOSS302 CASTING MODEL

$v^2=2gh$

$\varepsilon=\triangle l/l$

$\sigma=F/A$

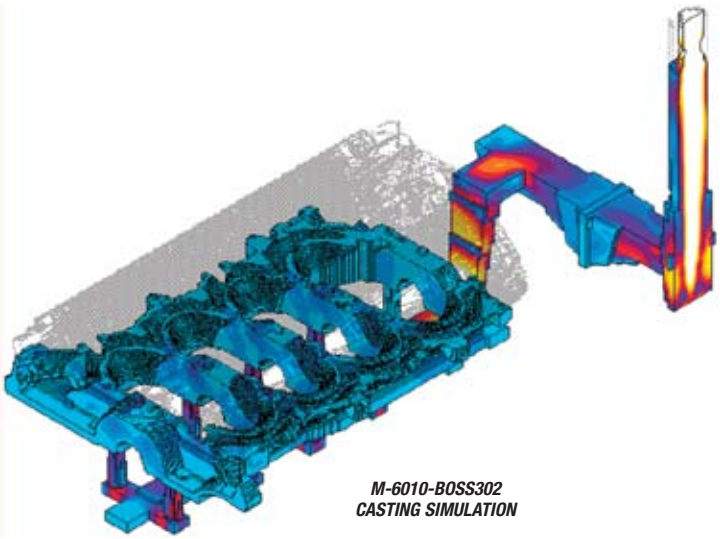


M-6010-BOSS302 MACHINED MODEL

The art of making a high-quality casting involves proper metal filtering, keeping metal velocities low and directional solidification. All of this can be done in the virtual casting world with simulation software.

The final step in creating a new cast engine component is machining the molds. The molds are high-speed machined on CNC (computer numerically controlled) machines. The same CAD model that was used for the previous simulations is used for the machining, creating an exact copy of the virtual part. Liquefied metal is poured into sand cores made from the molds. After cooling, the sand cores are broken off leaving the high-quality FRPP component.

Every new major component at Ford Racing starts out as a detailed solid CAD (computer aided design) model of the casting. The next step is to add the final machining to the model. Once the virtual machining is added to the model, it's ready to be used to determine the mass of the component and to perform CAE (computer aided engineering) analysis. CAE analysis is performed to insure the component isn't over-designed which would create unnecessary weight. The analysis is also used to insure that the component has the required strength and durability for high-performance applications. After the CAE analysis is complete and the results are acceptable, the next step is to insure the component is feasible for casting. This is done with casting simulation software.



M-6010-BOSS302 CASTING SIMULATION

NEW

FORD RACING 460 SCJ BLOCK

M-6010-SCJ* 10.322" Deck Height

- Cast iron block with 4-bolt main caps on journals 2, 3 and 4
- Nodular iron main caps
- Can be bored/stroked to produce 605 cu. in.
- Siamese cylinder bores
- Bore range from 4.360-4.625"
- Wet sump oiling design
- Priority oiling to the mains
- Threaded core and galley plugs (straight thread port plugs with O-ring)
- 3.000" main journal diameter
- Weight, TBD
- High-strength block for professional competition (Circle Track, Drag Racing)

NOTE: Siamese blocks are solid casting between the cylinder bores. There are no water passages between them. This is done to increase the strength of the block.

	STOCK 429	1970-71 429 SCJ	FR SCJ
Main caps	2-bolt cast iron	4-bolt cast iron (2,3,4)	4-bolt main nodular (2,3,4)
Siamese bore	No	No	Yes
Freeze plugs	Press fit	Press fit	Screw in O-ring sealed straight thread
Material	Cast iron	Cast iron	Diesel grade heat treated cast iron
Head bolts	9/16"	9/16"	9/16"
Recommended Max. Bore	4.390"	4.390"	4.625"
Priority oiling to the mains	No	No	Yes
Main bolts	1/2"	1/2" (all) 3/8" outer (2,3,4)	1/2" (all) 1/2" outer (2,3,4)
Oil galley plugs	Pipe thread and modified locking	Pipe thread and modified locking	Screw in O-ring sealed straight thread
CID capacity	545	545	605

STOCK 429

1970-71 429 SCJ

M-6010-SCJ

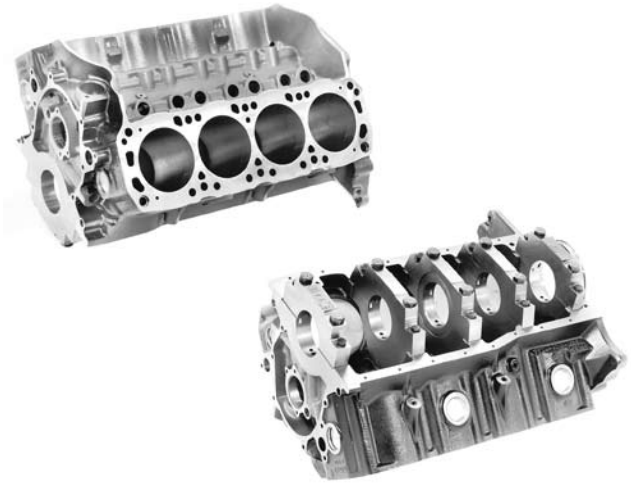
*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

ENGINE BLOCKS

351 SIAMESE BORE WET SUMP BLOCK

M-6010-V351* 9.200" Deck Height

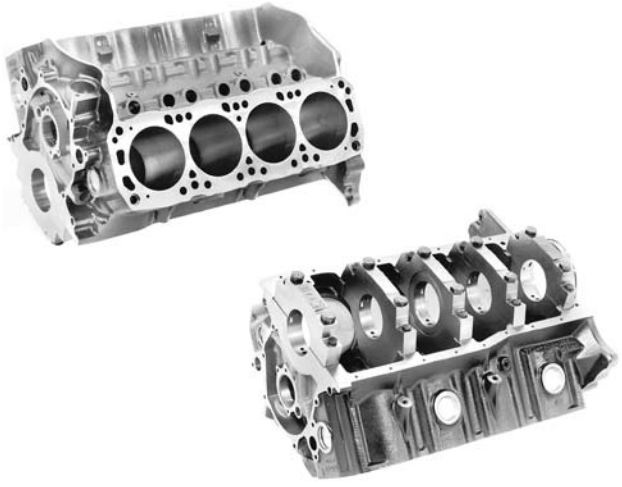
- Cast iron block with 4-bolt main caps on journals 2, 3, 4, 5 and strengthened structural sections
- Nodular iron main caps
- Can be bored/stroked to produce 427 cu. in.
- Siamese cylinder bores
- Bore range from 4.000-4.125"
- Wet sump oiling design
- 2.749" main journal diameter (stock 351C size)
- Weighs approximately 190 lbs
- For professional competition (Circle Track, Drag Racing)
- Semi-finished lifter bores and main bearing bores—must be honed to fit
- Uses common OD cam bearings M-6261-J351/R351. See page 118
- Requires cam plug M-6026-S351 included



351 SIAMESE BORE DRY SUMP BLOCK

M-6010-R452* 9.200" Deck Height

- 4.180" overbore capacity
- Cast iron block with 4-bolt main caps and strengthened structural sections
- Nodular iron main caps
- Can be bored/stroked to produce 434 cu. in.
- Siamese cylinder bores
- Bore range from 4.000-4.180"
- Dry sump oiling design
- 2.248" main journal diameter (stock 302 size)
- Weighs approximately 190 lbs
- For professional competition (NASCAR)
- Semi-finished lifter bores and main bearing bores—must be honed to fit
- Uses common OD cam bearings M-6261-J351/R351. See page 118
- Requires cam plug M-6026-S351 included



351 SIAMESE BORE WET SUMP BLOCK

M-6010-W351* 9.500" Deck Height

- Cast iron block with 4-bolt main caps on journals 2, 3, 4, 5 and strengthened structural sections
- Nodular iron main caps
- Can be bored/stroked to produce 454 cu. in.
- Siamese cylinder bores
- Bore range from 4.000-4.125"
- Wet sump oiling design
- 2.749" main journal diameter (stock 351C size)
- Weighs approximately 205 lbs
- For professional competition (Circle Track, Drag Racing)
- Semi-finished lifter bores and main bearing bores—must be honed to fit
- Uses common OD cam bearings M-6261-J351/R351. See page 118
- Requires cam plug M-6026-S351 included

NOTE: Siamese blocks are solid casting between the cylinder bores. There are no water passages between them. This is done to increase the strength of the block.

351 "SPORTSMAN" WET SUMP BLOCK

M-6010-C58*

- Cast iron block with nodular iron 2-bolt main caps
- Can be bored/stroked to produce 427 cu. in.
- Siamese cylinder bores—cross drilled for cooling
- Bore range from 4.000-4.030"
- Wet sump oiling design
- 3.000" main journal diameter
- Weighs approximately 200 lbs
- Uses common OD cam bearings M-6261-J351/R351. See page 118
- Requires cam plug M-6026-S351 included

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

ENGINE BLOCKS

460 PRO STOCK BLOCK

M-6010-A500* 9.300" Deck Height

- Cast iron block with 4-bolt main caps
- Billet steel main caps
- Can be bored/stroked to produce 500 cu. in.
- Siamese cylinder bores
- Bore range from 4.360-4.625"
- Dry sump oiling design
- 2.749" main journal diameter
- High-strength block for professional competition (built specifically for Pro Stock Drag Racing)
- Semi-finished block

351 LIGHT-WEIGHT SIAMESE BORE DRY SUMP BLOCK

NEW

M-6010-CG452* 9.125" Deck Height

- 4.180" max bore capacity
- Compacted graphite cast iron material—stronger than gray iron
- 4-bolt main caps and strengthened structural section
- Billet main caps of 4140 steel
- Can be bored and stroked to produce 434 cu. in.
- Siamese cylinder bores
- Bore range from 4.000-4.180"
- Dry sump oiling design
- 2.248" main journal diameters (stock 302 size)
- Weighs approximately 157 lbs (33 lbs lighter than gray iron version)
- For professional competition
- Semi-finished lifter bores and main bearing bores—must be honed to fit
- Uses common OD cam bearings M-6261-J351/R351
- Requires cam plug M-6026-S351
- "O" ringed—threaded core and galley plugs included

Partial machined block shown

351 FORD RACING NON-SIAMESE BORE WET OR DRY SUMP BLOCK

M-6010-M351* 9.200" Deck Height

- Cast iron block with 4-bolt main caps on journals 2, 3 and 4
- Nodular iron main caps
- Can be bored/stroked to produce 408 cu. in.
- Non-Siamese cylinder bores
- Bore range from 4.000-4.030"
- Wet sump oiling design
- 2.749" main journal diameter
- Weighs approximately 200 lbs
- High-strength block for professional competition (Circle Track, Drag Racing)
- Semi-finished main bearing bores and lifter bores—must be honed to fit
- Uses common OD cam bearings M-6261-J351/R351. See page 118

WHILE SUPPLIES LAST Limited Quantity!!

351 FORD RACING NON-SIAMESE BORE WET OR DRY SUMP BLOCK

M-6010-N351* 9.500" Deck Height

- Cast iron block with 4-bolt main caps on journals 2, 3 and 4
- Nodular iron main caps
- Can be bored/stroked to produce 434 cu. in.
- Non-Siamese cylinder bores
- Bore range from 4.000-4.030"
- Wet sump oiling design
- 2.749" main journal diameter
- Weighs approximately 205 lbs
- High-strength block for professional competition (Circle Track, Drag Racing)
- Semi-finished main bearing bores and lifter bores—must be honed to fit
- Uses common OD cam bearings M-6261-J351/R351. See page 118

WHILE SUPPLIES LAST Limited Quantity!!

NOTE: Siamese blocks are solid casting between the cylinder bores. There are no water passages between them. This is done to increase the strength of the block.

ENGINE BLOCKS

ENGINE GROUP PART NUMBER	302 FORD M-6010-BOSS302*	351 FORD M-6010-C451*	351 FORD M-6010-C58*	351 FORD M-6010-M351*	351 FORD M-6010-N351*
Description/Intended Usage	Professional Competition	Professional Competition	Amateur Competition	Professional Competition	Professional Competition
Block Material	Cast Iron	Aluminum	Cast Iron	Cast Iron	Cast Iron
Nominal Deck Height	8.206"	9.200"	9.500"	9.200"	9.500"
CID Capacity	363	427	408	408	434
Cylinder Design	Siamese	Siamese	Siamese	Non-Siamese	Non-Siamese
Cylinder Bore Range	4.000-4.125"	4.000-4.125"	4.000-4.030"	4.000-4.030"	4.000-4.030"
Oil Sump Design	Wet	Dry	Wet	Wet	Wet
Crankshaft Journal Diameter	2.2480"	2.750"	3.000"	2.749"	2.749"
Main Cap Bolts	Four on 2,3,4	Four	Two	Four on 2,3,4	Four on 2,3,4
Bearing Cap Material	Nodular Iron	Billet Steel	Nodular Iron	Nodular Iron	Nodular Iron
Recommended Max. Stroke	3.400"	4.00"	4.000"	4.000"	4.250"
Rear Crankshaft Seal Type	One Piece	One Piece	One Piece	One Piece	One Piece
Cam Bearing Design	M-6261-R351 Common Journal Dia. Cam Req'd. M-6261-J351 Standard Cam	M-6261-C450 Common Journal Dia. Cam Req'd.	M-6261-R351 Common Journal Dia. Cam Req'd. M-6261-J351 Standard Cam	Std.	Std.
Oil Filter Mount	Block	Remote	Block	Block	Block
Hyd. Roller Cam. Compatible	Yes	No	Yes	–	–
Cam Plug	M-6026-S351	–	M-6026-S351	–	–

ENGINE GROUP PART NUMBER	351 FORD M-6010-R452*	351 FORD M-6010-V351*	351 FORD M-6010-W351*	460 FORD M-6010-SCJ*	460 FORD M-6010-A500*
Description/Intended Usage	Professional Competition	Professional Competition	Professional Competition	Professional Competition	Professional Competition
Block Material	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Nominal Deck Height	9.200"	9.200"	9.500"	10.322"	9.300"
CID Capacity	427	427	454	598	537
Cylinder Design	Siamese	Siamese	Siamese	Siamese	Siamese Sleeves
Cylinder Bore Range	4.000-4.180"	4.000-4.125"	4.000-4.125"	4.360-4.625"	4.360-4.625"
Oil Sump Design	Dry	Wet	Wet	Wet	Dry
Crankshaft Journal Diameter	2.248"	2.749"	2.749"	3.000"	2.749"
Main Cap Bolts	Four	Four on 2,3,4,5	Four on 2,3,4,5	Four on 2,3,4	Four
Bearing Cap Material	Nodular Iron	Nodular Iron	Nodular Iron	Nodular Iron	Billet Steel
Recommended Max. Stroke	4.000"	4.000"	4.250"	4.500"	4.000"
Rear Crankshaft Seal Type	One Piece	One Piece	One Piece	Two Piece	Two Piece
Cam Bearing Design	M-6261-R351 Common Journal Dia. Cam Req'd. M-6261-J351 Standard Cam	M-6261-R351 Common Journal Dia. Cam Req'd. M-6261-J351 Standard Cam	M-6261-R351 Common Journal Dia. Cam Req'd. M-6261-J351 Standard Cam	Std.	Roller
Oil Filter Mount	Remote	Remote	Remote	Block	Remote
Hyd. Roller Cam Compatible	Yes	Yes	Yes	–	–
Cam Plug	M-6026-S351	M-6026-S351	M-6026-S351	Std.	–

CAMSHAFT BEARINGS

M-6261-R351* 351 Ford Racing Blocks
Common outer and inner diameter replacement cam bearings for use in M-6010-R302/S302/R351/R352/S351/V351/W351/R451/R452/R453/C58/BOSS302. Use with custom ground common OD camshaft.

M-6261-J351*
Common outer diameter service replacement cam bearings for Ford Racing 302 and 351 aluminum cylinder blocks and M-6010-R302/S302/R351/R352/S351/V351/W351/R451/R452/R453/C58/BOSS302 cast iron blocks. Use with standard camshaft.

M-6261-R351 shown

CAMSHAFT BEARINGS – ROLLER
(SOLD IN ENGINE SETS)

These low-friction, roller camshaft bearings only require oil "splash" lubrication. Oil feed holes can be totally blocked off, to reduce oil aeration and windage losses. Engine block must be machined to accept bearing size shown in chart.

NOTE: The 351 cam journals are NOT production dimensions. The 429-460 dimensions are production. These roller bearings require an SAE 8620 steel camshaft.

PART NUMBER	APPLICATION	OD DESCRIPTION	ID DESCRIPTION	LENGTH
M-6261-C351*	302/351W 351 Ford Racing	2.283"	2.051"	0.625"
M-6261-A460*	429/460 Wedge	2.500"	2.125"	0.625"
M-6261-D351* ①	351 Ford	(1-4) 2.48" (5) 2.28"	(1-4) 2.165" (5) 1.969"	0.787"

NOTES: ① Requires special camshaft retainer plate sold separately.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

"TURBO-SWIRL" ALUMINUM CYLINDER HEADS

M-6049-X306*
Complete Head (64 cc Chamber)
M-6049-X307*
Complete Head (58 cc Chamber)



THE FAST, EASY WAY TO BOLT ON 65 HORSEPOWER! TRUE BOLT-ON PERFORMANCE

- For use on 289/302/351 Windsor-style engines
- Improved air flow over original GT-40 aluminum heads
- Intake flows approximately 240 CFM at .550" lift (at 28" of H_20)
- Exhaust flows approximately 170 CFM at .500" lift (at 28" of H_20)
- Machined for 1.94" intake and 1.54" exhaust valve diameters
- Unlike some aftermarket heads our GT-40 heads use either GT-40 or aftermarket performance: intake manifolds, headers and valve covers
- Intake port volume 178cc, exhaust port volume 62cc
- High temperature exhaust valve seats. Thick deck for improved sealing, increased section thickness in critical areas for porting and webbed rocker bosses for improved strength. Designed for bolt-on rocker arms, machined for tapered seat spark plug or gasketed. Compatible with Ford Racing intakes, headers and valve train components. Can be machined for diagonal exhaust header flange mounting
- High-quality original equipment style 356-T6 aluminum castings, machining and components
- Each aluminum head weighs approximately 22 lbs – approximately 25 lbs lighter than each cast iron GT-40 head
- These GT-40 style heads use AGSF-32C spark plugs
- Each GT-40X head is leak tested prior to assembly
- Assembled with M-6507-J302 intake valves, M-6505-G302 exhaust valves, M-6513-A50 valve springs. The valve springs are compatible with all Ford Racing roller camshafts
- Designed to be used on the M-6010-BOSS302 block with head gasket M-6051-CP331

INSTALLATION NOTES

- Will not fit 1986 5.0L with flat-top pistons unless pistons are notched for valve relief
- Must use head bolt kit M-6065-D289 to install cylinder heads on 289/302 blocks or head bolt and head gasket kit M-6051-A50 and intake gasket M-9439-A50/A51
- Check rocker arm clearance to valve springs with production rocker arms
- Check your intake manifold for port match; not all intakes are compatible due to the tall high-flow ports
- Must use M-9439-A50 intake gasket

FORD RACING PERFORMANCE PARTS "Z" ALUMINUM HEAD

M-6049-Z304D* Bare Head
M-6049-Z304DA* Complete Head
M-6049-Z304P* CNC Ported Head



BARE HEAD FEATURES

- This cylinder head was designed using Solid Modeling Technology
- Cast from prime A356 T6 aluminum
- Fits 5.0L/5.8L Windsor engines
- Heads are cast with high-flow ports
- 20 degree inline valves
- Suggested valve sizes: 2.02" intake and 1.60" exhaust
- Requires competition valve job and bowl blending
- Steel alloy intake and exhaust valve seats installed (no valve job)
- Manganese-bronze valve guides installed with semi-finished ID
- 63cc CNC'd combustion chamber
- Intake port volume as cast: 204cc
- Exhaust port volume as cast: 85cc
- Bare head weighs 27 lbs
- Accepts both tapered seat and gasket style 14 mm spark plugs (Motorcraft AGSP-32-PP, Autolite 3924, 3925)
- Requires guide plate M-6566-Z304D (not included)
- Requires 7/16" screw-in studs (not included)
- Requires M-6564-F351 roller rocker arms (not included)
- Uses M-6505-B304 exhaust valve and M-6507-A304 intake valve (not included)
- Raised exhaust port exit, custom headers may be required

ASSEMBLED HEAD FEATURES

- Premium stainless steel 2.02" intake M-6507-A304 and 1.60" M-6505-B304 exhaust valves
- Uses M-6513-BH Beehive style valve springs with machined retainers and machined valve locks. Most hydraulic cams can be used with these springs. 130 lbs @ 1.800", 293 lbs @ 1.200" and CB @ 1.085"
- Includes laser cut guide plates M-6566-Z304D for use with 5/16" pushrods and 7/16" rocker studs
- Requires M-6564-F351 roller rocker arms (not included)
- Check piston to valve clearance including radial valve clearance before installing these cylinder heads on your engine
- Cork valve cover gasket recommended

PORTED HEAD FEATURES

- CNC ported version of M-6049-Z304D cylinder head to increase flow on intake and exhaust
- Intake and exhaust airflow increased approximately 10%
- Bare casting

TYPICAL AIRFLOW (@ 28" OF H_2O DEPRESSION) WITH 2.02 INTAKE VALVE, 1.60 EXHAUST VALVE AND COMPETITION VALVE JOB

LIFT	INTAKE AS CAST	FLOW CNC	EXHAUST AS CAST	FLOW CNC
.050	31.1	34.4	26.4	30.5
.100	64.6	68.7	55.8	61.0
.150	103.0	108.7	84.6	85.7
.200	135.3	148.7	113.3	110.4
.250	167.0	187.0	146.8	134.6
.300	199.0	225.3	171.6	158.8
.350	227.2	251.7	190.2	175.2
.400	245.2	278.1	200.4	191.7
.450	259.8	296.1	207.2	206.6
.500	271.9	314.1	212.8	221.5
.550	277.3	319.7	218.1	227.7

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FORD RACING "SPORTSMAN" SHORT TRACK CAST IRON CYLINDER HEADS

M-6049-N351* Bare Head (64cc Chamber)

- For use in NASCAR Late Model Stock, I.M.C.A., D.I.R.T. and most other stock car sanctioning groups on 351W engines
- Machined for 2.02" intake and 1.60" exhaust valve diameters
- Intake and exhaust valves have been moved .070" to unshroud the intake valve
- Valve angle changed from 20° to 10° to further improve air flow
- Accepts stud girdle M-6569-C351
- Thick deck and reinforced structure for improved sealing, increased section thickness in critical areas and webbed rocker bosses for improved strength. Designed for stud mount rocker arms. Compatible with stock and Ford Racing intakes
- These heads use .708" reach tapered seat spark plugs depending on application

INSTALLATION NOTES

- Requires M-6564-F351 roller rocker arms with .150" offset intake valve pushrod cup
- Unique header flange required
- Must use head bolt kit M-6065-C351 to install cylinder heads

Parts to assemble M-6049-N351*:

M-6566-D351*	Pushrod guideplate (pkg. of 8)
M-6527-C311	Rocker arm studs (pkg. of 16)
M-6505-A351*	High-flow stainless steel exhaust valve
M-6507-A351*	High-flow stainless steel intake valve
M-6514-A50	Retainers (pkg. of 16)

HIGH-PORT HEAD

M-6049-SC1*

- Unfinished combustion chambers, typical finished volumes range from 40cc to 70cc
- Raised intake and exhaust runners for better airflow and greater power
- Fits 302 and 351 Ford Racing blocks
- Used for Drag, Sprint Car and Circle Track Racing
- Intake and exhaust runner raised .400" over "Yates" C3 head for better flow characteristics
- Intake valves up to 2.180" diameter, 5.685" long
- Exhaust valves up to 1.625" diameter, 5.565" long
- Redesigned integral rocker pad for greater stiffness
- Uses M-9424-W352 intake manifold with 9.200" deck block
- Uses Motorcraft AGS-Series spark plugs
- Cylinder head comes semi-finished. Machining does not include valve seat bores
- Must be ported
- Bronze guides and valve seats included

HIGH-PORT NASCAR HEAD

M-6049-D3*

M-6049-D35* Without seats, guides or pushrod holes

- Fits 5.0L and 5.8L Ford Racing blocks
- Raised intake and exhaust ports
- Used primarily in NASCAR and ARCA racing
- Intake and exhaust runners raised .400" over "Yates" C3 head
- Capable of 400 CFM intake, 267 CFM exhaust
- Accepts intake valves up to 2.180" diameter, exhaust valves up to 1.625" diameter
- Integral rocker pad for greater stiffness
- Cylinder head comes semi-finished. Combustion chamber and ports, unfinished
- Bronze guides and valve seat inserts included (not installed)
- Intake manifold mounting bolt holes 90° to mounting flange
- Use with M-9424-D451 or D452 intake manifold

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

CYLINDER HEADS

SUPER COBRA JET CYLINDER HEADS

M-6049-SCJ* Bare Head
M-6049-SCJA* Assembled Head for 429-460 Engines
M-6049-SCJB* Assembled Head for 514 Engines

- Revised valve angles and locations to reduce cylinder wall shrouding and improve flow
- Redesigned combustion chambers to accommodate the more centrally located valves
- Uses same valves, valve springs, retainers and standard 7/16" stud mounted roller rockers as Ford Racing 429 Cobra Jet cylinder heads. Requires new pushrod guide plates (M-6566-SCJ) and new pushrods, M-6565-P460 or R460
- Standard Cobra Jet intake and exhaust manifolds bolt on
- Current valve covers fit
- 2.200" intake valve, 1.76" exhaust valve
- Flows approximately 330 CFM intake and 225 CFM exhaust
- 72cc combustion chambers
- 290cc intake runner, 148cc exhaust runner
- 25-50 hp increase over Ford Racing aluminum Cobra Jet heads depending on displacement and camshaft
- The best street/strip Ford big block cylinder head on the market today!
- Uses Motorcraft AGSP series spark plugs

NOTE: If replacing Ford Racing or production Cobra Jet heads, new intake valve notches are required.

VALVE TRAIN COMPONENTS INSTALLED IN M-6049-B429/SCJA* "COBRA JET" AND "SUPER COBRA JET" CYLINDER HEADS

PART NUMBER	DESCRIPTION	NOTES
M-6507-B429*	Intake Valve	Stainless Steel (2.20" dia.)
M-6505-A429*	Exhaust Valve	Stainless Steel (1.76" dia.)
M-6536-E351	Valve Spring Seat for CJ	1.460" OD springs
M-6513-A351	Valve Springs ①	For use with Ford Racing hydraulic camshaft M-6250-A443. Spring load: 130 lbs–closed, 375 lbs–open. For other camshafts, follow manufacturer's recommendations.
M-6514-A50	Valve Spring Retainers	7° Retainers
M-6518-B351	Valve Spring Keepers	Use with 7° retainers.
M-6527-C311	Rocker Arm Studs	7/16" with or without stud girdle. (Engine Set)
M-6566-SCJ*	Pushrod Guide Plates for SCJ	Flat design for .375" dia. pushrods. (Engine Set)
M-6536-SCJ	Valve Spring Seat for SCJ	Spring OD 1.550", Cup OD 1.680", Cup ID .577", Material machined steel, Thickness .062"

NOTE: ① CJ cylinder head accepts valve springs with up to 1.625" OD and installed height of 1.900".

2.3L ALUMINUM CYLINDER HEAD

M-6049-A230* Competition only aluminum cylinder head
M-6049-E23A* D-Port aluminum head
Available from: Esslinger Engineering
1930 Doreen Ave.
South El Monte, CA 91733
Telephone: (626) 444-4919

4.9L 6-CYLINDER RACE HEAD

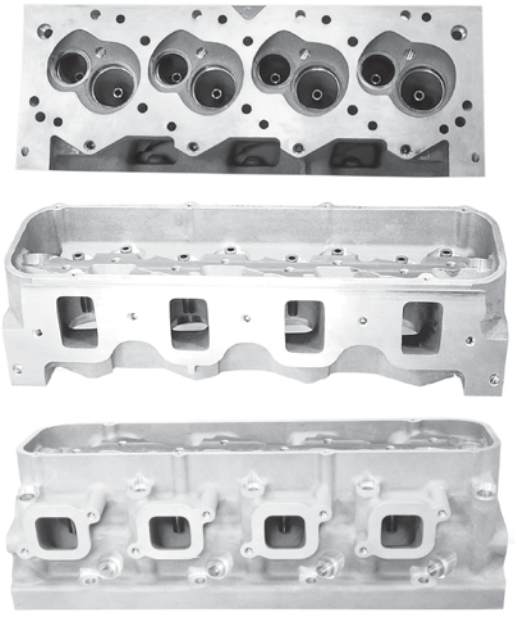
M-6049-I49*
High-flow aluminum drag race only cylinder head for 4.9L inline 6-cylinder. No water passages in cylinder head. NHRA accepted for Competition Eliminator as OEM generally available.
Order through Alan Johnson Cylinder Heads (805) 922-1202.

CYLINDER HEADS

FORD RACING 460 "SPORTSMAN" WEDGE-STYLE CYLINDER HEADS

M-6049-C460*

- For use with M-6010-A460 Ford Racing cylinder block
- Used for professional competition and serious "Sportsman" racers
- Made from 356-T6 aluminum, with bronze valve guides and a premium valve seat insert material compatible with titanium valves
- Valve angles are 7.5˚ intake, 8.0˚ exhaust with no side cant
- Raised intake and exhaust ports
- 65cc wedge-style combustion chamber
- 4.600" recommended bore size (4.500" minimum)
- 2.450" intake, 1.900" exhaust recommended diameters
- Port and combustion chamber design based on Ford Racing 351 "Yates" cylinder head



NHRA PRO STOCK CYLINDER HEAD

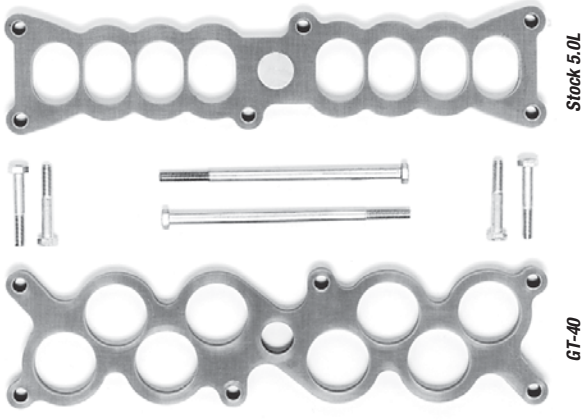
M-6049-E460*

- Made from 356-T6 aluminum
- Raw casting

EFI HEAT SPACER

M-9486-A51* Stock 5.0L Manifold – .5"
M-9486-A52* GT-40 Manifold – .5"
M-9486-A53* GT-40 Manifold – 1" thick
for clearance with M-6582-E302P Valve Covers

New and improved quality, made in the USA. CNC machined from Westinghouse. Type C phenolic material fits between the upper and lower manifolds to help dissipate heat and significantly increase performance. Includes longer bolts.



EFI UPPER-TO-LOWER INTAKE MANIFOLD GASKET

M-9486-A50*

GT-40 upper-to-lower gasket. Fits M-9424-Z51 or M-9424-Z51P intake manifold.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

COBRA EFI INTAKE MANIFOLD "REPLICA"
M-9424-Z51P*

- Replica of the production 1993 Cobra intake manifold
- Airflow is good up to 350+ horsepower
- Kit includes upper intake manifold and lower intake manifold
- Fits 1986-93 5.0L Mustangs
- Polished version of the M-9424-Z51

COBRA EFI INTAKE MANIFOLD "REPLICA"
M-9424-Z51*

- Replica of the production 1993 Cobra intake manifold
- Airflow is good up to 350+ horsepower
- Kit includes upper intake manifold and lower intake manifold
- Fits 1986-93 5.0L Mustangs

HI-FLOW 70 MM THROTTLE BODY
M-9926-D462* 1996-2004 Mustang

- Bolts to stock intake manifold
- Significant power increase

EFI HI-FLOW POLISHED THROTTLE BODY FOR 1994-95 MUSTANG

WHILE SUPPLIES LAST Limited Quantity!!

SALE

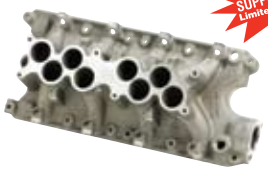
- **M-9926-P65L*** 65 mm
- **M-9926-P70L*** 70 mm
- Fits 1994-95 5.0L Mustangs
- Requires no changes to cables, wiring or connectors
- Throttle position sensor not included
- Requires minor modification to production upper intake manifold to achieve optimum results

M-9926-P65L shown

OFF-ROAD GT-40 INTAKE MANIFOLD
M-9461-B50*

WHILE SUPPLIES LAST Limited Quantity!!

- Off-road use only
- No provisions for 1986-93 EGR
- Number three runner drilled and tapped for air charge sensor
- Lower manifold only



429/460 DUAL PLANE INTAKE MANIFOLD
M-9424-J429*

WHILE SUPPLIES LAST Limited Quantity!!

SALE

- For use with 10.322" deck height block and production or Ford Racing CJ/SCJ heads
- 5.84" carburetor pad height
- Dual plane "Performer RPM" style intake with standard Holley carburetor flange
- 1500-6500 rpm range

289/302 POLISHED DUAL PLANE INTAKE MANIFOLD
M-9424-A302P

WHILE SUPPLIES LAST Limited Quantity!!

SALE

- Fully polished for that show car look
- For use with standard 302 cylinder blocks and heads
- 4.20" at the front of the carb pad, 5.50" at the rear
- Dual plane intake 1500-6500 rpm range
- Great for street rods, mild race engines and any mid-rpm 289-302 application

351W DUAL PLANE "PERFORMER RPM" INTAKE MANIFOLD
M-9424-Z351*

WHILE SUPPLIES LAST Limited Quantity!!

SALE

- For use with 9.500" deck height block and inline valve heads
- 4.30" at the front of the carburetor pad, 5.30" at the rear
- Dual plane "Performer RPM" style intake
- 1500-6500 rpm range
- For use with any mid-rpm small block application, great for street cars and mild race engines

CHROME APPEARANCE 289/302 "PERFORMER RPM" INTAKE
M-9424-E302C*

WHILE SUPPLIES LAST Limited Quantity!!

SALE

- Same as M-9424-E302 with powdercoat for chrome appearance
- For use with 8.206" deck height block and inline valve heads
- 4.30" at the front of the carburetor pad, 5.50" at the rear
- Dual plane "Performer RPM" style intake
- 1500-6500 rpm range
- For use with mid-rpm small block application, great for street cars and mild race engines

EFI HI-FLOW THROTTLE BODY
M-9926-B50* 1994-95 Mustang

WHILE SUPPLIES LAST Limited Quantity!!

This hi-flow throttle body is a replacement for the production throttle body used on 1994-95 Mustangs. Requires no changes to cables, wiring, connectors or other components.

- Includes throttle position sensor and ISC

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

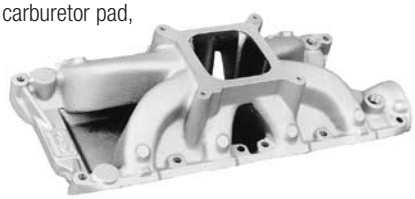
INTAKE MANIFOLDS

460/460 FORD RACING SINGLE PLANE INTAKE MANIFOLD
M-9424-C460*

- For use with 10.322" deck height block and M-6049-C460 "wedge" race heads
- 8.64" carburetor pad height
- High-rpm power
- For use on drag race engines

289/302 SINGLE PLANE "VICTOR JR." INTAKE MANIFOLD
M-9424-D302*

- For use with 8.206" deck height block and inline valve heads
- 5.35" at the front of the carburetor pad, 5.42" at the rear
- Single plane "Victor Jr." style intake 3500-8000 rpm range
- For use with high-rpm small block application



289/302 DUAL PLANE INTAKE MANIFOLD
M-9424-F302*

- For use with 8.206" deck height block and inline valve heads
- 4.375" at the front of the carburetor pad, 5.25" at the rear
- Dual plane intake
- 1500-6000 rpm range
- For use with mid-rpm small block application, great for street cars and mild race engines
- Excellent fuel distribution
- Does not fit "Z" or the GT-40 "X" heads

429/460 SINGLE PLANE "VICTOR JR." INTAKE MANIFOLD
M-9424-G429*

- For use with 10.322" deck height block and production or Ford Racing CJ/SCJ heads
- 6.30" carburetor pad
- Single plane "Victor Jr." style intake 3500-8000 rpm range
- For use with high-rpm big block application

429/460 SINGLE PLANE DOMINATOR FLANGE INTAKE MANIFOLD
M-9424-H429*

- For use with 10.322" deck height block and production and Ford Racing CJ/SCJ heads
- 6.30" carburetor pad
- Single plane "Victor" style intake 3500-8000 rpm range with Dominator carburetor flange
- For use with high-rpm big block application

351W SINGLE PLANE "VICTOR JR." INTAKE MANIFOLD
M-9424-V351*

- For use with 9.500" deck height block and inline valve heads
- 5.75" carburetor pad
- Single plane "Victor Jr." style intake 3500-7500 rpm range
- For use with high-rpm small block application

351 FORD RACING INTAKE
NEW
M-9424-BT58*

- The latest intake manifold for NASCAR
- Fits 9.200" deck height blocks with M-6049-D3/D35 heads
- Generous wall thickness for custom porting
- 4.00" depth, carb. flange to plenum floor
- Tuned for substantial power improvement over 8500 rpm compared to other aftermarket intakes
- Does not have valley tray (for weight reductions)
- Accommodates Nationwide and Truck tuning ranges

351 FORD RACING NASCAR INTAKE
NEW
M-9424-C58*

- The latest intake manifold for NASCAR
- Fits 9.200" deck height blocks with M-6049-D3/D35 heads
- Generous wall thickness for custom porting
- 4.00" depth, carb. flange to plenum floor
- Tuned for substantial power improvement over 8500 rpm compared to other aftermarket manifolds
- Does not have a valley tray (for weight reductions)

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

351 FORD RACING SINGLE PLANE D3 NASCAR RESTRICTOR INTAKE

M-9424-D451*

- For use with 9.200" deck height block and M-6049-D3 heads and restrictor plate
- 6.40" carburetor pad
- Single plane intake used for NASCAR restrictor plate rule
- With extra material for runner modification

351 FORD RACING SINGLE PLANE INTAKE MANIFOLD

M-9424-D452*

- The latest intake manifold for NASCAR
- Fits 9.200" deck height blocks with M-6049-D3/D35 heads
- Weighs 19 lbs with generous wall thickness for custom porting
- 4.00" depth, carb. flange to plenum floor
- Tuned for substantial power improvement over 8500 rpm compared to other aftermarket manifolds
- Does not have a valley tray (for weight reductions)
- Replaces M-9424-W351

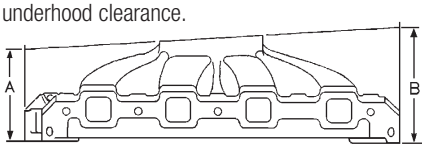
351 FORD RACING SINGLE PLANE INTAKE MANIFOLD

M-9424-D453*

- The latest intake manifold for NASCAR
- Fits 9.200" deck height blocks with M-6049-D3/D35 heads
- Weighs 19 lbs with generous wall thickness for custom porting
- 4.00" depth, carb. flange to plenum floor
- Tuned for substantial power improvement over 8500 rpm compared to other aftermarket intakes
- Does not have valley tray (for weight reductions)
- Accommodates Busch and Truck tuning ranges

INTAKE MANIFOLD – ALUMINUM WITH HOLLEY 4V BOLT PATTERN

Ford Racing offers 4V single plane and dual plane intake manifolds in low and high designs. Note that the 351 Ford Racing engine block is available in two deck heights (9.200" and 9.500"). The carburetor pad dimensions are listed to assist in calculating underhood clearance.



Front *Carburetor Pad Dimensions*

PART NUMBER	ENGINE BLOCK	DECK HEIGHT	CYLINDER HEADS	CARBURETOR PAD DIMENSIONS "A"	"B"	TYPE/NOTES
M-9424-C460*	Ford Racing 460	10.322"	M-6049-C460	8.64"	8.64"	Single plane single 4V
M-9424-A302P	289/302	8.206"	Production	4.20"	5.50"	Dual plane single 4V 1500-6500 rpm range
M-9424-D302*	289/302	8.206"	Inline Valves	5.35"	5.42"	Single plane, "Victor Jr." 3500-8000 rpm range
M-9424-E302C	289/302	8.206"	M-6049-X306/X307 M-6049-Z304D/DA/P	4.30"	5.50"	Dual plane single 4V "Performer RPM" 1500-6500 rpm range
M-9424-F302*	302	8.206"	Inline Valves	4.375"	5.25"	Dual plane intake manifold 1500-6000 rpm range
M-9424-G429*	429/460	10.322"	Production & M-6049-A429/B429/SCJ/SCJA/SCJB	6.30"	6.30"	Single plane, "Victor"
M-9424-H429*	429/460	10.322"	Production & M-6049-A429/B429/SCJ/SCJA/SCJB	6.30"	6.30"	Single plane, Dominator Flange
M-9424-V351*	351W	9.500"	Inline Valves	5.75"	5.75"	Single plane, "Victor Jr." 3500-7500 rpm range
M-9424-Z351	351W	9.500"	M-6049-X306/X307 M-6049-Z304D/DA/P	4.30"	5.30"	Dual plane single 4V "Performer RPM" 1500-6500 rpm range
M-9424-BT58*	351	9.200"	M-6049-D3/D35	—	—	Single plane single 4V NASCAR
M-9424-C58*	351	9.200"	M-6049-D3/D35	—	—	Single plane single 4V NASCAR
M-9424-D451*	351	9.200"	M-6049-D3/D35	6.40"	6.40"	Single plane single 4V NASCAR
M-9424-D452*	351	9.200"	M-6049-D3/D35	—	—	Single plane single 4V NASCAR
M-9424-D453*	351	9.200"	M-6049-D3/D35	—	—	Single plane single 4V NASCAR

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FORD RACING CAMSHAFTS

The Ford Racing Camshaft Specification chart describes individual cams currently available from Ford Racing.
Refer to page 216 for performance characteristics and usage guidelines. See page 115 for valve springs.

FORD RACING CAMSHAFT SPECIFICATIONS

PART NUMBER	ENGINE	ROCKER RATIO	INTAKE EVENTS (0.050")		EXHAUST EVENTS (0.050")		DURATION (SAE)		LIFT (INCHES)		LOBE CENTER	
			OPEN	CLOSE	OPEN	CLOSE	INT.	EXH.	LOBE	VALVE	INT.	EXH.
M-6250-B303* ① ② ③ ⑥	1985 and Later 302 Roller Cam	1.60	5° BTC	39° ABC	49° BBC	5° BTC	284°	284°	.300 I	.480 I	107°	117°
							224°	224°	.300 E	.480 E		
M-6250-E303 ① ② ③ ⑥ ⑦	1985 and Later 302 Roller Cam	1.60	0° BTC	40° ABC	40° BBC	0° BTC	282°	282°	.311 I	.498 I	110°	110°
							220°	220°	.311 E	.498 E		
M-6250-F303* ① ② ③ ④ ⑥ ⑧	1985 and Later 302 Roller Cam	1.60	4° BTC	42° ABC	52° BBC	6° BTC	288°	288°	.320 I	.512 I	109°	119°
							226°	226°	.320 E	.512 E		
M-6250-X303* ① ② ③ ④ ⑥ ⑨	1985 and Later 302 Roller Cam	1.60	5° BTC	39° ABC	49° BBC	5° BTC	286°	286°	.339 I	.542 I	107°	117°
							224°	224°	.339 E	.542 E		
M-6250-Z303* ① ② ③ ④ ⑤ ⑥ ⑩	1985 and Later 302 Roller Cam	1.60	7° BTC	41° ABC	51° BBC	3° ATC	290°	290°	.345 I	.552 I	107°	117°
							228°	228°	.345 E	.552 E		

NOTE:
Camshaft intake and exhaust valve events are measured at 0.050" tappet lift. The duration figures in the shaded area are taken at 0.050" tappet lift. This is useful to check the cam with a degree wheel during installation. The solid color is advertised duration. For comparison purposes, add intake and exhaust lobe centers and divide by 2 to calculate "camshaft centerline" specification for Ford Racing camshafts.

NOTES:
① On EFI engines, performance camshafts work only with mass air induction systems. Will not work with Explorer EEC-V EFI.
② Also fits 1994-97 351W with factory roller cam when used with mass air EFI.
③ Stock 5.0L HO cam advertised specs are 266°/266° duration, 0.444"/0.444" lift.
④ May require piston modification for piston-to-valve clearance. Valve clearance should be checked.
⑤ May require longer pushrods.
⑥ Hi-stall torque converter recommended for automatic trans.
⑦ Emissions legal with 5-speed manual trans. E.O. #D-225-16.
⑧ Great for superchargers. Manual transmission recommended.
⑨ Good torque and power up to 6200 rpm. Manual transmission recommended.
⑩ Good torque and power up to 6500 rpm. Manual transmission recommended.

CAM LUBE

M-19579-A12

- Highest quality cam lube for camshaft replacement and engine assembly
- Recommended for use with all Ford Racing flat tappet camshafts
- Distributed in cases of 12
- Single bottles may be available from your Ford Racing Distributor part number CM-19579-A1
- Use engine oil on roller camshafts

SALE

WHILE SUPPLIES LAST! Limited Quantity!!

VALVE PUSH RODS 289 THRU 460

(SOLD IN PKG. OF 16)

PART NUMBER	YEAR	ENGINE	DIAMETER	GAUGE LENGTH	TYPE
M-6565-C347*	—	302 ①	.312	7.300"	"Ball and Ball"
M-6565-M460*	—	514 roller cam replacement ①	.375	8.550"	"Ball and Ball"
M-6565-N460*	—	429/460 CJ aluminum heads ①	.375	8.725"	"Ball and Ball"
M-6565-P460*	—	460 w/SCJ aluminum heads with hydraulic cams ①	.375	8.800" Intake 9.150" Exhaust	"Ball and Ball"

Notes: ① Premium grade hardened and ground for use with guide plate.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

CHECKING CAMSHAFT TIMING

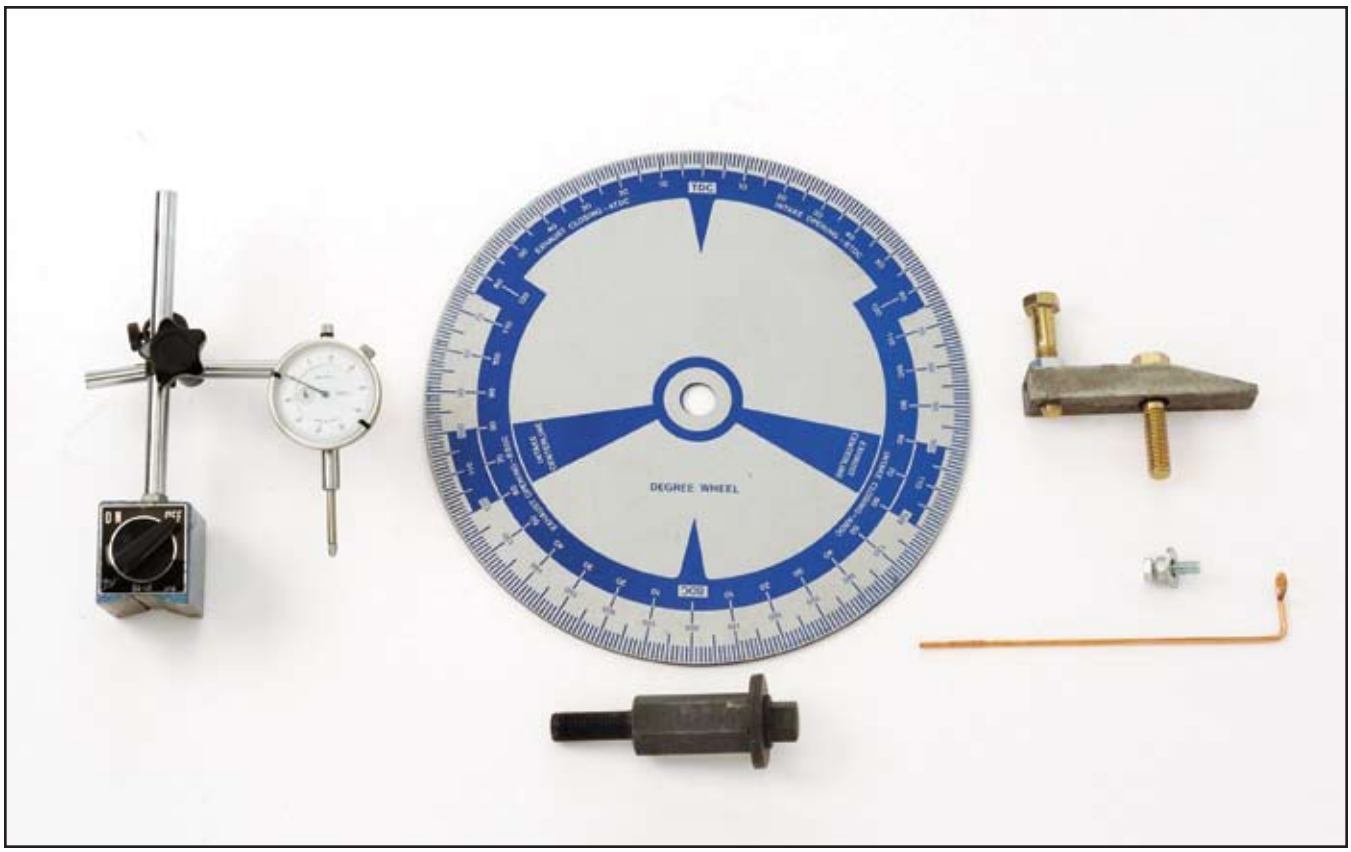
In order to check cam timing, you will need some specialty tools. You will need a degree wheel, dial indicator with magnetic base and a heavy wire for a timing pointer. Choose a large diameter wheel as they are easier to read and more durable. Some manufacturers sell kits with a rigid, adjustable pointer that mounts easily to the front of the engine. The other option is a heavy wire that is mounted to the block and bent into position.

Start with placing the dial indicator and stand on the right side block deck to measure travel of the CENTER of piston number 1 (passenger side, front). Bring number 1 to TDC (Top Dead Center) by observing when the dial indicator stops moving. Bolt the degree wheel to the front of the crankshaft, and attach the pointer to the front of the block so that the pointer is positioned at the zero degree reading on the wheel. To find exact TDC, first set the dial indicator to zero at the point of highest piston travel. Next, turn the crankshaft counterclockwise about 90 degrees. Then, slowly rotate the crankshaft clockwise (the normal direction of engine rotation) until the indicator is .030" below the TDC (zero) setting. Note the reading of the degree wheel at this point. Then, continue turning the crankshaft clockwise past the TDC about 90 degrees. Slowly rotate the crankshaft backwards counterclockwise until the same .030" below TDC is seen on the dial indicator. Again, note the degree wheel reading. Next, rotate the degree wheel so the pointer falls at the AVERAGE of the two observed readings. Lastly, relocate the pointer exactly over the zero reading of the degree wheel, and you will have perfectly dialed in TDC. Redo the procedure to satisfy yourself that the setting is correct, and then proceed to measure cam timing.

Install the number 1 cylinder intake lifter in the proper lifter bore. Position the dial indicator so the tip is on the edge of the lifter or in the center of the lifter. Extensions for the dial indicator may be necessary. Carefully line up the dial indicator so the travel of the indicator is linear to the lifter. Rotate the engine and observe the action of the lifter. Make sure the fully open and fully closed positions of the lifter are within the travel range of the dial indicator. Rotate the crankshaft until the lifter is at the highest point of its travel, and set the dial indicator to zero. Continue rotating the engine clockwise until the lifter starts to travel up again. Slowly continue until the lifter is .030" below the point of maximum travel, and note the reading of the degree wheel. Start rotating the crank again until the lifter is .030" below the maximum travel on the closing side of the cam lobe. Note the degree wheel reading. The AVERAGE of the two readings taken is the location of maximum intake lift ATDC (After Top Dead Center).

Compare this to the installation recommendation of the cam manufacturer, as it should be relatively close. The timing should be within one degree of the recommended setting. If there is a need to adjust the timing, FRPP has multi-index timing chain sets which have nine keyways to adjust cam timing.

NOTE: Many cam manufacturers provide .050" lift cam timing information. To check this, reset the dial indicator to zero with the lifter at zero lift. Then rotate the crank in the clockwise direction until .050" lift is shown on the indicator. Note the intake open degrees. Then proceed clockwise until the intake closing at .050" lift is reached. Compare the readings to the cam card. Together with the maximum lift information, this data will tell you where the cam is degreed. Once corrections are made, measure the cam timing once more to verify the fix was correct.



VALVE LASH AND LIFTER PRE-LOAD

Valve lash and lifter pre-load are commonly referred to as "setting the valves." This critical assembly process is a key operation for all engine builders and technicians. Setting the valves provides the camshaft lobe profiles to be transferred into valve motion. To attain the performance features designed into the camshaft, the lash or pre-load must be properly set.

Lash vs. Pre-Load

Lash

Valve lash by definition is the gap between the rocker arm and the tip of the valve stem. The rocker arm may have ground radius or a steel roller, and the valve tip is ground perpendicular to the valve stem. This gap is usually measured with feeler gauges and is adjusted by threaded nut. The adjuster nut is locked in position with a set screw. Each valve is adjusted individually.

Valve train systems that have a lash setting must utilize a solid tappet. This tappet can be a solid roller tappet or a solid flat tappet. Solid tappets do not allow any movement within the tappet itself. The system must also provide a means for fine-tuning the lash, in most cases a threaded adjuster and locking device.

Pre-Load

Lifter pre-load by definition is the distance the plunger, inside the tappet, is depressed from the fully extended position. This movement takes place inside the tappet itself. Both hydraulic flat and hydraulic roller tappets contain components that meter and retain a small reservoir of oil. This pre-load correctly positions the plunger into the working range of the tappet body. Total plunger travel is approximately .140".

For hydraulic valve train systems, the lifter pre-load can be adjusted by using a threaded adjuster and locking device, by shimming the rocker arm pedestal and by pushrod length.

Setting Lash and Pre-Load

Both lash and pre-load are set when the camshaft is on the base circle. Knowing when the cam is on the base circle is the key to setting the valves correctly. There is one bulletproof way for determining when the lifter is on the base circle and it is displayed on the graph below. A trick for remembering the sequence is to use "I.C.E." I.C.E. stands for: INTAKE (valve) CLOSES – (lash) EXHAUST. By looking at the chart, it becomes clear that the exhaust must be on the base circle when the intake valve closes. Conversely, for insuring the intake is on the base circle, this condition occurs when the exhaust valve opens. This works for every single cam no matter how high the lift or long the duration.

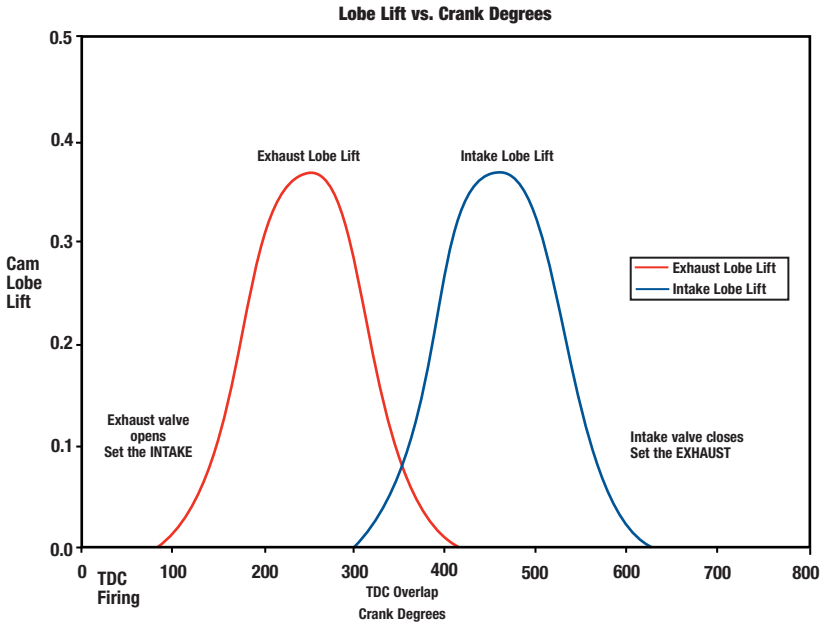
In summary, always remember "I.C.E."

Intake valve closes (I.C.E.)	Set the ***EXHAUST VALVE***
Exhaust valve opens	Set the ***INTAKE VALVE***

For example:

- Bring cylinder #1 to TDC (FIRING)
- Rotate engine clockwise until the exhaust lifter (or pushrod tip) begins to open
- Set the lash or pre-load on the INTAKE valve for cylinder #1
- Rotate the engine clockwise until the intake valve opens and just closes
- Set the lash or pre-load on the EXHAUST valve for cylinder #1
- Repeat for the rest of the engine

When setting or checking lash and pre-load, don't be in a hurry; for initial engine builds, put one rocker on at a time. If you are checking lash, do one cylinder at a time and mark each valve checked on the corresponding rocker arm with a marker.



TIMING CHAIN AND SPROCKET SETS

PART NUMBER	APPLICATION	DESCRIPTION
M-6268-A302*	289/302/351W/351	Full roller chain with 9-position multi-index crank sprocket. Ford Racing includes thrust plate. Cam sprocket is made from cast iron.
M-6268-B302*	289/302/351W/ 351 Ford Racing	Same as M-6268-A302, except cam sprocket is made from steel for maximum competition engines. Use with hardened thrust plate M-6269-A351.
M-6268-A351*	351C/351M/400	Full roller chain with 9-position multi-index crank sprocket.
M-6268-A390*	390/427/428	Does not fit 1961-63 camshafts. Full roller chain with 9-position multi-index crank sprocket.
M-6268-B429*	429/429 BOSS/460	Cast iron cam sprocket. Full roller chain with 9-position multi-index crank sprocket.
M-6268-A460*	429/429 BOSS/460	Steel cam sprocket for maximum competition engines. Full roller chain with 9-position multi-index crank sprocket.
M-6287-B302*	289/302/351W/ 351 Ford Racing	Eccentric for M-6268-B302 and A302 kits—Mechanical fuel pump drive, with 3/8" bolt.
M-6287-C302*	289/302/351W/ 351 Ford Racing	Eccentric for M-6268-B302 and A302 kits—Mechanical fuel pump drive, with 7/16" bolt.

Full Roller Timing Chain and Sprocket Set

CAMSHAFT THRUST PLATE

PART NUMBER	APPLICATION	DESCRIPTION
M-6269-A351	302/351 Ford Racing	Steel replacement for production cast iron thrust plate for severe service. Use with steel timing chain sprocket.
M-6269-A460	429/460	Low-friction roller bearing camshaft thrust plate. Requires machining of camshaft sprocket thrust surface.

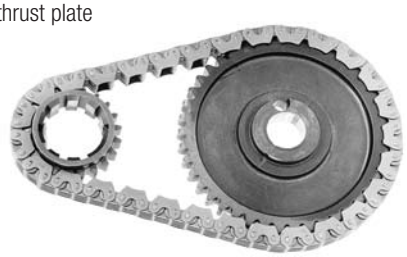
M-6269-A460 *M-6269-A351*

HY-VO® TIMING CHAIN AND GEAR SET

M-6268-F302* 302/351W Ford Racing

Roush Industries, Borg-Warner Automotive and Morse Tec combined efforts to develop this new generation of a multi-indexing timing chain set. Now with improved tolerances for reduced backlash, the chain is twice as strong as a standard roller chain and three times as strong as a timing belt. It gained 2 horsepower @ 7000 rpm. Use with hardened thrust plate M-6269-A351.

M-6268-G302*
Replacement Hy-Vo® Timing Chain



*HY-VO® Timing Chain and Gear Set M-6268-F302**

EARLY BLOCK HYDRAULIC ROLLER LIFTER SET

M-6500-S58* Sold in engine sets

Use to install hydraulic roller lifter camshaft in a "non-roller" block. Fits 289/302/351W/351C.

NOTE: May require custom pushrods and minor clearancing.

VALVE TAPPETS (SOLD IN ENGINE SETS OF 16)

PART NUMBER	APPLICATION	TYPE/DESCRIPTION
M-6500-B303** Replaces A303	289/302/351/429/460	Hydraulic. OEM replacement.
M-6500-R302**	302 (5.0L) EFI Small block	Hydraulic. Roller tappet OEM replacement.

Hydraulic Roller Tappet M-6500-R302 shown *Flat Tappet*

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

ROLLER ROCKER ARMS

PERFORMANCE FEATURES:

- Reduces friction and horsepower loss
- Increases high-rpm train stability

DESIGN FEATURES:

- High-strength trunnion supported by needle roller bearings
- Grade 8 adjusting nuts
- Precision machined from 2024 high-tensile strength aircraft alloy extrusions

PART NUMBER PACKAGE OF 16	APPLICATIONS	DESCRIPTION RATIO	MOUNTING	VALVE TYPE	NOTES
M-6564-A351*	289/302/351W and Ford Racing aluminum cylinder heads M-6049-J302	1.60:1	Stud	Inline	Requires 3/8" stud, push rod guide plates and hardened push rods. Cast iron cylinder heads require pedestal machining.
M-6564-D351*		1.70:1	Stud	Inline	
M-6564-K351*	289/302/351 Ford Racing aluminum cylinder head M-6049-Z304 (Does not fit M-6049-Z304D, M-6049-Z304DA)	1.60:1	Stud	Inline	Requires 7/16" stud, push rod guide plates and hardened push rods. Cast iron cylinder heads require pedestal machining.
M-6564-B351* ①②	302/351W – 1978 and later with production heads Cast iron and aluminum GT-40 heads	1.60:1	Bolt On	Inline	For stock production cast iron cylinder heads with hydraulic non-adjustable valve train. Does not require guide plates, hardened push rods or pedestal machining. Includes pedestal inserts and bolts.
M-6564-A50* ①②	302/351W – 1978 and later with production heads Cast iron and aluminum GT-40 heads	1.70:1	Bolt On	Inline	Same as "Cobra" 5.0L Mustang. These rocker arms have beefy trunnions for extra long life. Die-cast aluminum construction.
M-6564-F351*	M-6049-N351/N352 "Sportsman" head, M-6049-Z304D, M-6049-Z304DA	1.65:1	Stud	Inline	7/16" stud mount intake rocker with .150" offset push rod cup (pkg. of 16).
M-6564-C351*	351C/351M/400 1973 and later 429/460 production cylinder heads	1.73:1	Bolt On	Canted	For stock production canted valve cylinder heads with hydraulic non-adjustable valve train. Does not require guide plates, hardened push rods or pedestal machining. Includes pedestal inserts and bolts.
M-6564-A460*	351C/351M/400 302 BOSS/429/460, 429 CJ/SCJ and Ford Racing high-port aluminum cylinder heads	1.73:1	Stud	Canted	For canted valve cylinder heads. Requires 7/16" stud, push rod guide plates and hardened push rods. Some cast iron cylinder heads require pedestal machining.

NOTES: ① The M-6564-B351 and -A50 bolt-on roller rocker arms will not clear the stamped rocker cover on standard 5.0L EFI engines. "Taller" valve covers, such as the production 5.0L EFI HO die-cast aluminum cover or Ford Racing chrome cover M-6582-D302, can be used if the baffle is modified in the RH cover. The M-6582-E302 polished aluminum valve cover will clear all rocker arms and stud girdles, but will not fit under the EFI manifold unless a 1" spacer M-9486-A53 is used between the upper and lower sections of the intake. M-6582-E302 will not fit 1994-95 Mustang or 1990-93 T-Bird.

② Rocker channels not included.

"Cobra" Roller Rocker

Bolt-On Type Roller Rocker Arm Assembly

Stud-Mounted Type

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

STUDS AND SHIMS

VALVE ROCKER ARM STUD (SOLD IN PKG. OF 16)

Requires head to be tapped for threaded rocker arm stud. See page 230 for instructions.

PART NUMBER	APPLICATION	DESCRIPTION
M-6527-C311	302 BOSS/351C BOSS, 429/460 Wedge	7/16" dia. shoulder with 7/16" dia. threads. ① Mounting length is 1.850". For use with stud girdles.
M-6527-D311	289/302/351W	3/8" dia. shoulder with 7/16" dia. threads. ① Mounting length is 1.850".

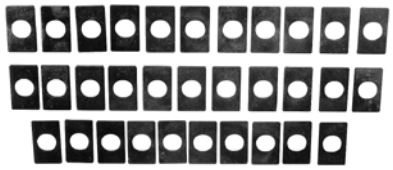
Rocker Arm Stud M-6527-C311 shown

NOTE: ① Mounting length is from face of head to top of the stud.

VALVE ROCKER ARM PEDESTAL SHIM KIT

M-6529-A302* All Small Block and 429/460 Wedge

Use with bolt-on roller rocker arms M-6564-A50, M-6564-B351, -C351 and -E351 to obtain correct lifter pre-load. Shim kit includes 16 thin and 16 thick shims, which can be used to reduce lifter pre-load by 0.030" (thin shim), 0.060" (thick shim) or 0.090" (thin plus thick shim).



ROCKER CHANNEL KIT

M-6588-A50** Engine Set

- Fits 5.0L/5.8L production heads and GT-40 heads
- For production stamped steel and Ford Racing bolt-on roller rockers
- Ties two rocker arms together for proper alignment

ROLLER CAM CONVERSION KIT

M-6253-A50**

- This kit is designed to help engine builders assemble our short blocks to complete engines
- Kit includes 8 hydraulic roller lifter powdered metal tie bars, 1 retainer plate and 2 bolts
- Fits 1985-2001 302, 1994-97 351W, 1996-2004 M-6010-BOSS302/B302BB/C58/R351/R352/S351/V351/W351 race blocks
- For production non-roller cam blocks use M-6500-S58 lifters

VALVE SPRING SEAT (SOLD IN PKG. OF 16)

For use with aluminum cylinder heads to prevent damage to valve spring seat area.

PART NUMBER	CYLINDER HEAD USAGE	SPRING O.D.	O.D. CUP	I.D. CUP	SEAT DESCRIPTION MATERIAL	SEAT DESCRIPTION THICKNESS
M-6536-E351	M-6049-B429	1.460"	1.590"	0.568"	Machined Steel	0.062"
M-6536-SCJ	M-6049-SCJB	1.550"	1.680"	0.577"	Machined Steel	0.062"
M-6536-BH	M-6513-BH	1.290"	1.300"	0.880"	Machined Steel	0.060"

WHILE SUPPLIES LAST Limited Quantity!

VALVE SPRING RETAINERS (SOLD IN PKG. OF 16)

See pages 228-229 for valve spring and retainer information.

PART NUMBER	APPLICATION VALVE	APPLICATION SPRING	DESCRIPTION	SPRING O.D.	RETAINER O.D.	STEP DIMENSIONS 1ST STEP	STEP DIMENSIONS 2ND STEP
M-6514-A50	Single lock groove. 11/32" dia. stem.	M-6513-A50/B351 M-6049-N351 and all GT-40 ①②	7° Machined Steel	1.500"	1.375"	1.060"	0.675"
M-6514-B50 ①	Single lock groove. 11/32" dia. stem.	M-6513-A50 ②	7° Machined Steel	1.500"	1.375"	1.060"	0.675"
M-6514-BH	Single lock groove. 11/32" dia. stem.	M-6513-BH	10° Machined Steel	1.055"	1.045"	0.640"	

NOTES: ① Use of M-6514-B50 retainers on 1979-95 production valves of 5.0L (302) HO and production GT-40 engines eliminates exhaust rotators and will result in 1.800" intake and exhaust spring "installed height." ② With Ford Racing stainless steel valves.

VALVE SPRING KEEPERS (SOLD IN ENGINE SET PKG. OF 16)

PART NUMBER	TYPE AND USAGE RECOMMENDATIONS
M-6518-B351	Machined and hardened. 7° design with single lock groove. For all-out competition and use with titanium valves.
M-6518-BH	Machined and hardened. 10° design with single lock groove. For use with M-6514-BH retainers only!

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

VALVE TRAIN COMPONENTS

INTAKE VALVES — SINGLE GROOVE (SOLD INDIVIDUALLY)

PART NUMBER	APPLICATION	HEAD DIAMETER	TIP LENGTH	TOTAL LENGTH	DESCRIPTION
M-6507-J302*	GT-40 Head Aluminum M-6049-Y302/X302/X304/ X305/X306/X307	1.940"	0.383"	5.078"	Premium stainless steel, swirl polished, under-cut stem
M-6507-A304*	M-6049-Z304/Z304D/ Z304DA	2.02"	0.290"	5.340"	Premium stainless steel
M-6507-A351*	M-6049-N351	2.020"	0.250"	5.140"	Premium stainless steel
M-6507-B429*	429/460 Wedge CJ Aluminum, SCJ Aluminum	2.20"	0.250"	5.265"	Premium stainless steel
M-6507-D461*	M-6049-D46	46.83 mm	Std.	117.6 mm	Premium stainless steel

Intake Valve

EXHAUST VALVES — SINGLE GROOVE (SOLD INDIVIDUALLY)

PART NUMBER	APPLICATION	HEAD DIAMETER	TIP LENGTH	TOTAL LENGTH	DESCRIPTION
M-6505-A351*	M-6049-N351	1.600"	0.250"	5.140"	Premium stainless steel
M-6505-A429*	429/460 Wedge CJ Aluminum, SCJ Aluminum	1.76"	0.250"	5.050"	Premium stainless steel
M-6505-B304*	M-6049-Z304DA	1.600"	0.290"	5.365"	Premium stainless steel
M-6505-D461*	M-6049-D46	35.88 mm	Std.	117.6 mm	Premium stainless steel
M-6505-G302*	GT-40 Head C.I. M-6049-L302 Aluminum M-6049-Y302/X302/X304/ X305/X306/X307	1.540"	0.383"	5.078"	Premium stainless steel, swirl polished, under-cut stem

Exhaust Valve

VALVE SPRINGS ①②

PART NUMBER	APPLICATION	TYPE	ID	OD	MINIMUM LOADS – NEW SPRINGS CLOSED	OPEN
M-6513-A50	289/302/351W with Ford Racing, GT-40 cylinder heads (pkg. of 16) ⑤⑥⑦	Single ③	1.006"	1.500"	110 lbs @ 1.820"	240 lbs @ 1.400"
M-6513-A351	289/302/351W/460 ⑥	Dual ④	0.800"	1.460"	135 lbs @ 1.850"	394 lbs @ 1.175"
M-6513-BH	M-6049-Z304DA Ford Racing cylinder heads	Single Beehive™ Conical	0.656" 0.885"	1.055" 1.290"	130 lbs @ 1.800"	313 lbs @ 1.175"

Valve Spring with Damper

VALVE SPRING NOTES:

① Valve springs with the same load rating (but with different color-coded stripes) may be packaged together.
② 1977 and later 302 engines have different installed heights for intake and exhaust valves.
③ With damper. ④ Requires nylon valve stem seal.
⑤ For use on production heads (see page 131) valve spring retainer chart and notes.
⑥ Sold in pkg. of 16. ⑦ Not recommended with stock rocker arm, may have interference.

VALVE GUIDE KIT

M-6510-Y303 Sold in sets of 4
Replacement valve guides for M-6049-Y302/Y303/X302/ X303/X304/X305/X306/X307

- .300" inside diameter (undersize)
- .557" outside diameter (standard)

VALVE STEM SEALS POSITIVE-TYPE, GUIDE-MOUNTED SEAL

PART NUMBER	TYPE	APPLICATION NOTES	PACKAGING
M-6571-A50** Fits most production 0.550-0.570" diameter guides.	Rubber	GT-40 cylinder heads. No machining required	Pkg. of 8 intake and 8 exhaust seals

VALVE PUSH ROD GUIDE PLATE (SOLD IN PKG. OF 8)

See page 228 for installation instructions. Use with mechanical cams, threaded stud, adjustable (non-rail) rocker arms and hardened push rods. May require modification for use with roller rocker arms.

PART NUMBER	CYLINDER HEAD	PUSH ROD DIAMETER
M-6566-D311	289/302/351W	.3125"
M-6566-D351	M-6049-N351/N352	.3125"
M-6566-SCJ	M-6049-SCJ/SCJA/SCJB	.375"
M-6566-Z304D	M-6049-Z304D/Z304DA	.3125"

M-6566-D311 shown

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FORD RACING HIGH-PERFORMANCE OIL FILTERS

SOLD AS CASE OF 12

- Synthetic-Polymer/Cellulose-Fiber blend media
- Heavy-gauge base and canister for higher burst strength and impulse fatigue resistance
- High-quality silicone anti-drain back valve
- Non-stick sealing gasket for ease of installation and removal
- Long life with standard and synthetic motor oils
- Up to 50% more filtering capacity than standard filters
- Improved filtering efficiency
- This technology is only available through Ford Racing Performance Parts

MOTORCRAFT PART NUMBER	PERFORMANCE FILTER	PART NUMBER
FL1A	CM-6731-FL1A (Each) ①	**M-6731-FL1A** (Case of 12)
FL820S	CM-6731-FL820 (Each) ①	**M-6731-FL820** (Case of 12)
FL784	CM-6731-FL784 (Each) ①	**M-6731-FL784** (Case of 12)

NOTE: ① Check Ford Racing Distributors for single filter part numbers.

OIL PUMP DRIVE SHAFTS

M-6605-A302 289-302 Non-EFI ①
M-6605-B302 289-302 EFI and Non-EFI
M-6605-A351 351C
M-6605-A341 351W/All 351 Ford Racing ①
M-6605-A429 429/429 BOSS/460
Heavy duty. Chrome moly steel. Centerless ground.
NOTE: ① Will not fit EEC-IV equipped engines.

90° OIL FILTER ADAPTER

M-6880-A50

- Screws into block and rotates filter toward front of engine to provide clearance for engine swaps and chassis modifications
- Fits most Ford engines that use Motorcraft FL-1A oil filter (filter sold separately)

429/460 Oil Pump

289/302 Oil Pump

OIL PUMPS

M-6600-M50 289/302 Standard Volume
Requires bolt-on pickup (not included)

M-6600-D2 289/302 High Volume
Requires bolt-on pickup (not included)

M-6600-B3 351W High Volume
Requires bolt-on pickup (not included)

M-6600-A460 429/460 Wedge High Volume
Fits rear sump Ford truck oil pan. Bolt-on style pickup (not included). Does not fit 429 Cobra Jet

NOTE: High-volume pumps may require minor modification of oil pan.

ENGINE OIL COOLER KIT HEAVY-DUTY SELF-REGULATING TYPE

M-6642-S101

Unique patented "stacked-plate" design provides efficiency improvement of 35% over "fin-and-tube" coolers. This 8" x 11" x 1.5" unit has a heat rejection rate of 20,500 BTUs per hour. The self-regulating feature bypasses cold engine oil automatically (without thermostats or valves) until oil viscosity decreases and allows oil to flow through the main body of the cooler. Kit includes all fittings, attaching hardware and instructions. Use on engines with FL-1A filters.

REMOTE-MODIFIED OIL FILTER ADAPTER KIT

M-6881-C100

All engines with 3/4"-16 thread filter and 2.435" diameter O-ring. This kit contains all necessary parts to mount the oil filter off the engine, including block adapter, oil filter mount, hose and attaching parts. Not recommended for performance engines. Use M-6880-S.

OIL PAN CONVERSION KITS

SERPENTINE 1979-93 FOX CONVERSION KIT

M-6670-A50**

This kit is intended for customers that purchase one of our 5.0L long block crate engines and plan to install it in a 1979-93 Mustang or other Fox chassis vehicle. This kit includes: dual sump oil pan, oil pump pickup tube, dipstick, dipstick tube, crankshaft damper, timing pointer, M-8501-C50 reverse rotation serpentine water pump and M-6059-D351 timing chain cover.

NOTE: Does not have provision for low oil sender. Fasteners not included.

BOSS 302 OIL PICKUP TUBE

M-6622-BOSS302*

- For use with M-6010-BOSS302 block
- Clears 4-bolt main caps
- Fits stock Fox body Mustang pans
- Fits FISE pans used on 1991-95 Mustangs

OIL PAN WINDAGE TRAY KIT 289-302

M-6687-A302 289/302

Kit consists of windage tray and attaching bolts originally designed for the 1969-70 302 BOSS engine with front sump oil pan. Requires modification if used with rack-and-pinion steering or oil pan for 302 Ford Racing blocks.

OIL PAN WINDAGE TRAY (351W)

WHILE SUPPLIES LAST! Limited Quantity!!

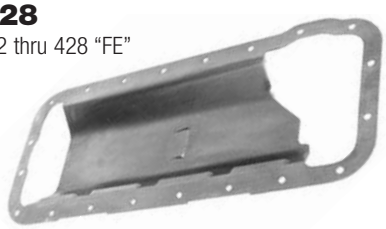
M-6687-A351 351W Production

Kit includes windage tray and main cap bolts for installation. Fits front sump and double hump oil pans on 351W 2-bolt production and "Sportsman" blocks. Will not fit 351 Ford Racing blocks.

OIL PAN WINDAGE TRAY KIT 352 THRU 428

M-6687-A390 352 thru 428 "FE"

V8 engines
Consists of windage tray and 2 gaskets.



ENGINE SWAP OIL PAN KITS

PART NUMBER	SUMP	CAPACITY	FINISH	APPLICATION/DESCRIPTION
M-6675-A50**	Rear	5-quart	Unplated	5.0L oil pan kit. Includes rear sump oil pan, dipstick, dipstick tube, pickup and main cap stud. Ideal for engine swaps. Fits 1979-95 Mustangs and Fox chassis vehicles. Fits 1983-2001 production blocks and M-6010-A50/B50 blocks. NOTE: Does not have provision for low oil sender. Fasteners not included.
M-6675-A58*	Rear	5-quart	Unplated	351W/5.8L oil pan kit. Includes rear sump oil pan, dipstick, dipstick tube, pickup and main cap stud. Ideal for engine swaps. Fits 1979-95 Mustangs and Fox chassis vehicles. Fits 1969-2004 production blocks and M-6010-A351/A58/B58/C58 blocks. Fasteners not included.
M-6675-A460*	Rear	6-quart	Unplated	429/460/7.5L oil pan kit. Includes rear sump oil pan, dipstick, dipstick tube, pickup and main cap stud. Ideal for engine swaps. Fits 1979-95 Mustangs and Fox chassis vehicles. Fits 1969-97 production blocks. Fasteners not included.

M-6675-A50

M-6675-A58

M-6675-A460

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

HEAD BOLT KIT

M-6065-D289* 351W type heads on 289/302 block

Use when installing stock 351W, Ford Racing cast iron (M-6049-L302/L303) or Ford Racing aluminum head (M-6049-Y302/Y303/X302/X303/X304/X305/X306/X307) on 289/302 blocks. Kit features 20 ARP® cylinder head bolts with .4375" diameter thread. Includes 20 special stepped washers. Services two heads.

C460 "SPORTSMAN" HEAD STUD KIT

M-6014-G500*

- Fits M-6049-C460 heads on M-6010-A460 block
- Sold in engine sets, includes studs, nuts and washer
- Manufactured by ARP® exclusively for Ford Racing

CAMSHAFT PLUG

M-6026-S351* 302/351

Ford Racing blocks camshaft plugs to service M-6010-R302/S302/R351/R352/R353/R354/R355/S351/V351/W351/BOSS302 blocks. Package of 10.

PLUG AND DOWEL KITS

M-6026-A302** 289/302/351W

Necessary dowels, cup plugs and pipe plugs for rebuilding production V8 blocks.

M-6026-R351* 351 Ford Racing

Necessary dowels, cup plugs and pipe plugs for rebuilding Ford blocks: M-6010-R302/R351/R352/R353/R354/R355/S302/S351/V351/W351.

M-6026-A460*

Use with M-6010-A460 cylinder block. Kit includes cam plug, oil gallery plugs, transmission dowels and head dowels.

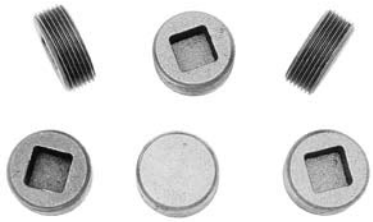
M-6026-A58*

- Replacement plugs and dowel kit for M-6010-A58/B58 blocks
- Includes all special cup plugs and dowels

M-6026-A302 shown

M-6026-B302*

Threaded freeze plug (1.25" NPT) kit. Does not include dowels.



REPLACEMENT PARTS FOR M-6010-C302/J351/K351 ALUMINUM BLOCKS

M-6012-A351*

Service replacement cylinder bore sleeve for Ford Racing 302 and 351 aluminum cylinder blocks. Sleeve ID is 3.98". Length is 5.820". The length can be trimmed to fit.

M-6012-B351*

Same as M-6012-A351 except OD is .010" oversize.

M-6012-C351*

NEW

- Replacement sleeves for the M-6010-Z351 block
- Standard size O.D. and 3.990" I.D.
- Sold in set of 8

BOSS 302 FASTENERS

NEW

M-6014-BOSS*

Cylinder Head Stud Kit

- Use when installing M-6049-X306/X307 heads on M-6010-BOSS302 block
- .500" diameter studs with 12 point nuts and hardened washers
- Sold in engine sets

NOTE: Check header to head stud and nut for clearance.

M-6065-BOSS Block Head Bolt Set

- 1/2" cylinder head bolts required for installation of the Ford Racing M-6049-X306/X307/Z304DA heads onto the M-6010-BOSS302 block
- Packaged in engine sets

"STAGE 8" LOCKING HEADER BOLT SYSTEMS

These kits fit most V8 and many other engines. Includes 16 bolts and locking hardware.

PART NUMBER	SIZE	FITS
M-9432-A50	3/8"-16 x .75" ①	Most Headers
M-9432-A51	3/8"-16 x 1" ①	Ford Racing Shorty Headers
M-9432-A54	8 mm-1.25 x 22 mm	4.6L/5.4L Modular V8 Engines

- Header fasteners positively will not back out. Eliminates need to monitor and tighten bolts regularly
- Grade 8 aircraft quality bolts made in U.S.A. Duplex nickel-plated
- Manufacturer's Lifetime Warranty

NOTE: ① Will not fit 4.6L/5.4L modular V8.

CYLINDER HEAD STUD KIT

M-6014-Z304*

- Use when installing M-6049-Z304/Z304A/Z304D/Z304DA heads on a 351W block
- .500" diameter studs with 12 point nuts and hardened washers

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

INTAKE MANIFOLD GASKETS (SOLD IN PKG. OF 2)

NOTE: None of the following race-quality gasket kits include rubber end seals. Use RTV sealer or production end seals.

Intake Manifold Gasket M-9439-B302 with Print-O-Seal®

PART NUMBER	MANIFOLD APPLICATION	CYLINDER HEAD APPLICATION	PRINT-O-SEAL®	GASKET THICKNESS ± .004
M-9439-A302*	M-9424-A321	289/302/351W, M-6049-J302/K302/L302/L303/Y302/Y303 no EGR	Yes	0.050"
M-9439-B302**	All	289/302/351W, M-6049-J302/K302/L302/L303/Y302/Y303 with EGR	Yes	0.050"
M-9439-A50*	All	M-6049-L302/L303/X302/X303/X304/X305/Y302/Y303/X306/X307/Z304/Z304A/Z304D/Z304DA with or without EGR ①②③	Yes	0.070"
M-9439-G460*	M-9424-C460	M-6049-C460/D460	No	0.060"
M-9439-H460*	M-9424-C460	M-6049-C460/D460	No	0.125"
M-9439-R352*	M-9424-W352	M-6049-C3H	No	0.050"

NOTES: ① Synthetic rubber Print-O-Seal® (Fel Pro Inc.) bead around ports provides improved sealing.
② Redesigned for improved port location and allows mild porting.
③ Teflon coated, steel reinforced.

CRANKSHAFT REAR OIL SEAL

M-6701-A460** 429/460 two-piece, split-lip design

M-6701-B351** 351W from 7/11/83, Ford Racing one-piece seal. Use on Ford Racing 351W blocks manufactured after 6/1/93.

High-temperature resistant Viton® material. Viton® is a registered trademark of Dupont Performance Elastomers.

NOTE: Use E5ZZ-6701-A one-piece seal for 1983 and later 2.3L OHC models. Available at your Ford, Lincoln and Mercury dealer.

50 States Street Legal

REAR MAIN SEAL

M-6701-B302**

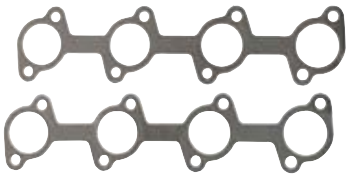
- Direct replacement one-piece crankshaft rear main seal for 1983-2002 5.0L/302 blocks
- Also fits Ford Racing blocks M-6010-R302, M-6010-A50, M-6010-B50 and M-6010-BOSS302

50 States Street Legal

REPLACEMENT HEADER GASKETS

PART NUMBER	CYLINDER HEAD APPLICATION
M-9448-A351*	"Sportsman" head M-6049-N351
M-9448-B302**	Production 289/302/351W, M-6049-Y303/L302
M-9448-A462*	4.6L SOHC
M-9448-A464*	4.6L DOHC
M-9448-3V*	4.6L/5.4L 3V (sold in pkg. of 12)

M-9448-B302 shown



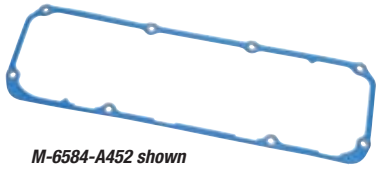
M-9448-A462 shown

NOTE: Header flanges available from Hedman headers. Contact local distributor.

VALVE ROCKER ARM COVER GASKETS (SOLD IN PAIRS)

PART NUMBER	APPLICATION	DESCRIPTION/NOTES
M-6584-A50**	5.0L/302/351W	Production-type design featuring metal gasket with bonded O-ring. Part of high-performance 5.0L gasket kit M-6051-A50 (see page 138). Designed for valve covers without a gasket lip.
M-6584-A460*	429/460 Wedge	Competition-quality gasket set. Cork-rubber material is laminated to a steel core to produce superior strength and resistance to distortion and creep. Recommended for use with M-6582-C460/R460 die-cast rocker arm cover.
M-6584-A452*	351C/351M/400 and M-6049C3L/SCI/C3H/D3 Heads	Precision edge-molded silicone rubber sealing beads on a rigid carrier to resist high heat and high vacuum. Built-in torque limiters prevent over-compression and gasket splitting. Great for on-again/off-again applications.

M-6584-A50 shown



M-6584-A452 shown

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

CYLINDER HEAD GASKETS (SOLD IN PAIRS) ①

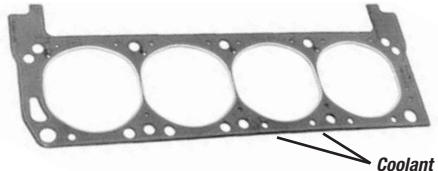
PART NUMBER	CYLINDER BORE APPLICATION	BORE DIAMETER	GASKET DIAMETER	COMPRESSED THICKNESS	COMPRESSED VOLUME	DESCRIPTION
M-6051-A302** 50 States Street Legal	289/302/351W Production-Type Cast Iron and Aluminum Heads	4.00"	4.100"	0.042"	9.1cc	4.00" standard bore "competition" gasket for cast iron or aluminum cylinder heads on 302 and 351W production blocks. Features solid metallic core with wire-encased combustion chamber seal for applications. Surfaces are Teflon coated.
M-6051-B51** 50 States Street Legal	302 Production	4.00"	4.100"	0.040"	8.8cc	4.00" standard bore expanded graphite gasket for high-performance applications. Part of M-6051-A50 5.0L gasket kit described on page 121. Requires torque-to-yield cylinder head bolts (available from Ford, Lincoln and Mercury dealers).
M-6051-S331*	302/351	4.00"	4.100"	0.040"	8.8cc	Pre-flattened steel wire combustion ring. Exhaust side is straight to accommodate FRPP block water passages.
M-6051-CP331*	302/351	4.00"	4.100"	0.040"	8.8cc	Pre-flattened copper wire combustion ring. Exhaust side is straight to accommodate FRPP block water passages.
M-6051-B341*	Big Bore 351 Ford Racing Blocks	4.125"	4.160"	0.040"	9.1cc	4.125" overbore "competition" gasket. Designed for Ford Racing blocks with larger 4.125" overbore. Bore flange valve pockets have been added to unshroud intake and exhaust valves. Set includes unique RH and LH gaskets!
M-6051-R351*	302/351 Ford Racing	Up to 4.125"	4.160"	0.040"	9.0cc	For use on M-6010-R351/R352/R451/R452.
M-6051-A427*	All "FE" V-8	4.230"	4.400"	0.040"	9.7cc	Race-quality gasket with steel wire combustion ring and stainless steel armor.
M-6051-A441** 50 States Street Legal	429/460 Wedge	4.360" Std.	4.500"	0.0425"	11.2cc	Race-quality "competition" gasket. Features solid metal core and wire-encased combustion chamber seal.
M-6051-B460*	429/460 Wedge	Up to 4.625"	4.670"	0.038"	10.7cc	Competition gasket with round water openings to match M-6010-A460 engine blocks.

NOTES:

① Several different water hole patterns have been used on 302 and 351W Ford Racing cylinder blocks and heads since their introduction. Engine assemblers should lay the head gasket on the block and the cylinder head (with front of gasket toward the front of the engine) to make sure there is a path for coolant flow from the block into the head. In some cases, holes may have to be drilled in the block or head, or punched in the gasket.

M-6051-S331

M-6051-B460



Coolant Water Holes

Cylinder Head Gasket M-6051-B341

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

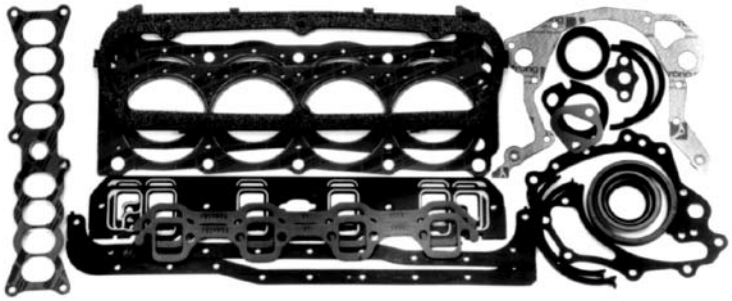
See pages 3-9 for important safety, emissions and warranty information.

ENGINE GASKETS

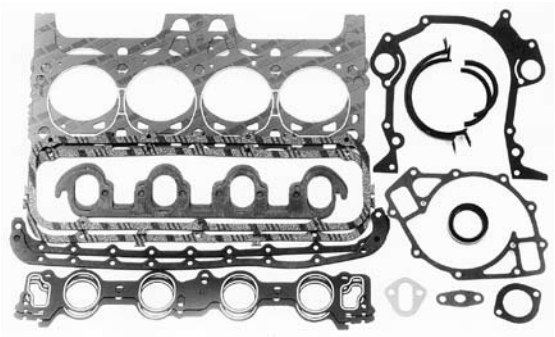
HIGH-PERFORMANCE ENGINE GASKET SETS

Ford Racing introduces three complete overhaul gasket sets. Manufactured to Ford's specs by Fel Pro®. The kits include race-quality head gaskets and Print-O-Seal® intakes, oil pan and valve cover gaskets. They also include front and rear oil seals plus all gaskets for a complete rebuild. These high-performance gasket sets are a must when rebuilding.

M-6003-A50** ① Fits 289/302/351W (1963-2001)



M-6003-A429** Fits 429/460 (1968-87)



NOTE: ① Does not include one-piece rear main for 351W, use M-6701-B351.

HIGH-PERFORMANCE GASKET KIT FOR 5.0L ENGINE

50 States Street Legal

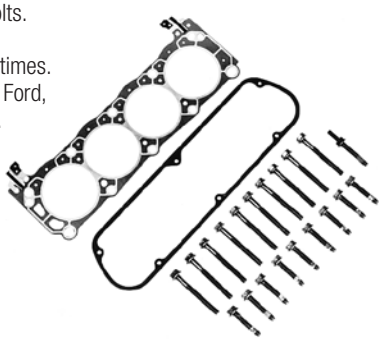
M-6051-A50** ①②

Recommended for high-performance applications and with Ford Racing supercharger kits. This gasket kit really works and will eliminate sealing issues associated with 5.0L engines for most applications. The kit includes: 2 expanded graphite head gaskets (M-6051-B51), 2 high-tech metal with bonded O-ring rocker cover gaskets (M-6584-A50) and 1 engine set of torque-to-yield cylinder head bolts.

NOTES:

① The bolts can be used three times. New bolts are available from Ford, Lincoln and Mercury dealers. Same parts as used on production 1993-2001 5.0L.

② Do not use kit with "lipped" valve covers.



ONE-PIECE RUBBER OIL PAN GASKETS

50 States Street Legal

M-6710-A50** 5.0L

Designed for use with smooth rail oil pans. One-piece design, rubberbonded on steel reinforcement. Fits 1983-2001 block/oil pans with dipstick in the block.

M-6710-A351** 351/5.8L

Designed for use with smooth rail oil pans. One-piece design, rubberbonded on steel reinforcement.

M-6710-A460** 429/460

Designed for use with smooth rail oil pans. One-piece design, rubberbonded on steel reinforcement.

CYLINDER HEAD CHANGING KITS

M-6067-D46** SOHC 2V

M-6067-T46** DOHC 4V ①

Contains all components necessary for changing cylinder heads on 1996-2004 4.6L Mustang. Includes several parts that make this task significantly easier. Highly recommended when installing M-6049-D46/P46/T46 cylinder heads.

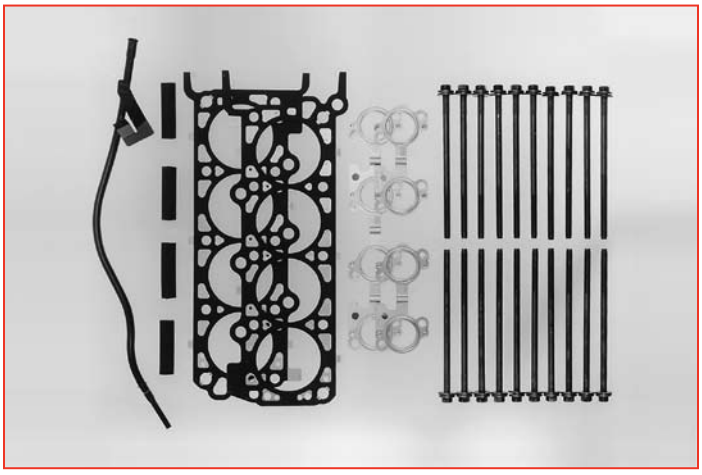
NOTE: ① Except supercharged engines.

3V 5.0L HEAD CHANGING KIT

NEW

M-6067-3V50*

- Designed for 5.0L modular engine with 94 mm bore and 3V heads
- Contains multi-layer steel head gaskets and torque to yield head bolts
- Compatible with M-6010-BOSS50 or M-6010-T50 blocks with 3V cylinder heads



M-6067-D46 shown

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

WATER PUMPS

351 FORD RACE WATER PUMP AND HOUSING

M-8501-R351* Water Pump – Use with housing M-8501-R352

M-8501-R352* Water Pump Housing

Designed to meet the durability requirements of NASCAR race engines, this new pump has many impressive features.

- Improved efficiency, requires 2.5 hp less than our present pump to drive the pump at 8000 pump shaft rpm. A 40% reduction
- Pumps 53 gallons per minute at 8000 pump shaft rpm
- Removable pump assembly for easy service, making rebuilds unnecessary
- Improved housing with extended inlet port
- Bolts directly onto "Yates" belt drive front cover. Production front cover requires adapter plates included in the kit
- Improved reliability, no rear cover plate to leak

MAXIMUM FLOW 429-460 ALUMINUM WATER PUMP

M-8501-C460 Fits 429-460 big blocks

Premium quality aluminum casting. Driver-side water inlet. Maximum flow capacity. Accepts stock brackets and pulleys for most 1970 and newer V-belt engines. Standard rotation.

NOTE: Now used on 460 and 514 crate motors.

Did you know…

1968-80 302 engines were built with a 28-ounce imbalance factor.

1981-2001 302 engines were built with a 50-ounce imbalance factor.

1969-97 351W engines were built with a 28-ounce imbalance factor.

1970-74 351C engines were built with a 28-ounce imbalance factor.

NOTE: Severe engine damage will result if you use the wrong flywheel or damper on your engine.

STOCK FLOW REPLACEMENT WATER PUMPS

M-8501-C50

- Reverse rotation serpentine belt aluminum water pump for 1986-93 5.0L/5.8L engines
- Standard shaft and bearing with stamped impeller
- Provides good flow and pressure for engines that operate below 6000 rpm
- Can be used on 1979-85 with minor modifications

M-8501-G351**

- Standard rotation V-belt aluminum water pump for 5.0L/5.8L engines stamped impeller
- Standard shaft and bearing with stamped impeller
- Provides good flow and pressure for engines that operate below 6000 rpm
- Can be used with M-6059-D351 timing chain cover or stock V-belt timing cover

MODULAR 4.6L WATER PUMP 1999-2004 "LONG"

M-8501-E46**

- Production 4.6L water pump
- New, not remanufactured
- Fits 1999-2004 SOHC "Tall Housing" (87 mm from front of pulley flange to block)
- Fits 1999-2001 DOHC Cobra, and 2003-04 DOHC Mach 1

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

TIMING COVERS AND WATER PUMPS

REPLACEMENT FRONT TIMING CHAIN COVER

M-6059-D351**

- Aluminum replacement with fuel pump boss
- Fits 289/302/351W
- For standard rotation pump or M-8501-B50 reverse rotation pump
- Has dipstick tube hole

FUEL PUMP BLOCK-OFF PLATE

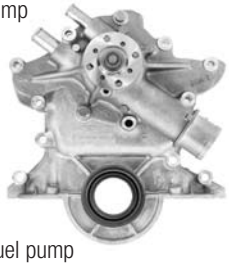
M-9351-A302

- All V8 except 351C/351M/400

SHORT SERPENTINE BELT WATER PUMP KIT

M-8501-A50* Fits 289/302/351W

- Engine overall length from front of water pump to back of block is 27"
- Serpentine belt, reverse rotation, approx. 1.75" shorter than old style pumps
- Kit includes special timing chain cover with short water pump and gaskets. Driver-side radiator hose inlet



- Meets OEM specifications for water flow
- A V8 water pump for a V8 engine. Must use electric fuel pump

NOTE: Requires pulleys listed below:

M-8509-M*

Special 3-piece aluminum pulley kit. Includes water pump, crankshaft and alternator pulley for M-8501-A50 water pump kit.

SHORT SERPENTINE BELT WATER PUMP

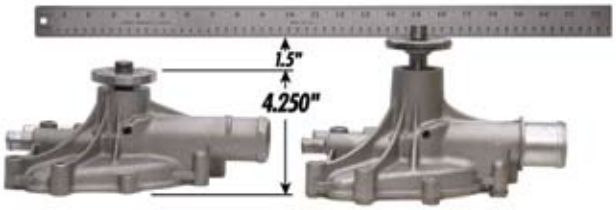
M-8501-D50**

- Same water pump used in short serpentine water pump kit, M-8501-A50
- Direct replacement for 1994-95 Mustang 5.0L/302
- Can be used with the Explorer timing chain cover found on M-6007-B50/B51/XE3/XB3 crate engines
- A new water pump for the price of a remanufactured pump

STREET ROD SHORT V-BELT WATER PUMP

M-8501-E351S* Fits 289/302/351W

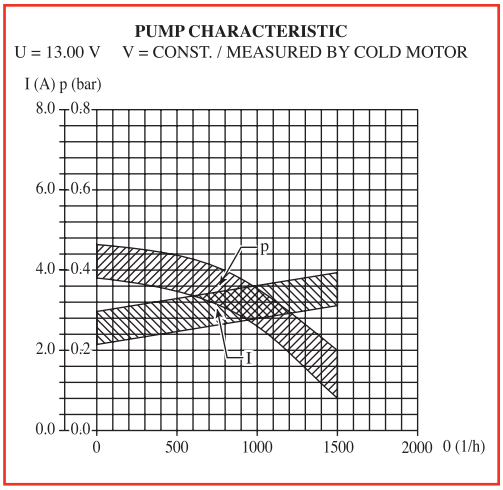
- Driver-side radiator hose inlet
- Provides approx. 1.5" of space at the front of the engine allowing for more radiator-to-fan clearance without a recessed fire wall
- Must use with long style (3.950") 4-bolt damper. Can also use M-6316-A50 or M-6316-C351 with appropriate spacer. See page 142
- .750" pulley pilot shaft
- Fits M-6059-D351 timing chain cover



ELECTRIC WATER PUMP

M-8501-L54**

- Production 2003 F-150 Lightning intercooler coolant circulation pump
- Inlet and outlet hose connection diameter is 19 mm/3/4"
- Can be used in many coolant pumping applications



CHROME APPEARANCE MAXIMUM FLOW ALUMINUM WATER PUMP

M-8501-B50C*

- Same as M-8501-B50 with powdercoat for chrome appearance
- Premium reverse rotation serpentine belt aluminum water pump for 1986-93 5.0L engines
- Features HD 3/4" roller ball bearing, CNC machined curved vane impeller and billet steel hub
- Provides maximum flow, maximum pressure and equal distribution to both sides of the block

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

A.C. ELIMINATOR KITS

M-19216-A50 Fits 1994-95 Mustang and 1991-93 Thunderbird with 5.0L engine

M-19216-D46 Fits 1996-2009 Mustang with 4.6L engine SOHC/DOHC

- Cast aluminum idler pulley bracket replaces the air conditioning compressor
- Removes weight from the front of car for better weight transfer when racing
- Bolts included
- Uses stock belt

A.C. ELIMINATOR KIT

M-8511-A50*

Bracket conversion kit to remove air conditioning compressor for racing applications. This two-piece bracket kit moves the power steering pump up to where the A.C. compressor was. Fits 1985-93 Mustang. Requires new belt (not included). Hardware included.

OFF-ROAD IDLER BRACKET (1979-93 MUSTANG)

M-8604-A50*

Competition air pump idler bracket for off-road use only, where air pump is not necessary. This idler is a direct bolt-on replacement for stock air pumps and uses a standard serpentine belt. Fits 302/351 Mustang applications when catalytic converters are not used. Uses stock belt.

351W ENGINE SWAP ACCESSORY DRIVE KITS (1985-93 MUSTANG)

M-8511-A351 Power steering bracket only

M-8511-B351 Power steering and air conditioning bracket

These brackets allow use of your 5.0L front-end accessory drive components when swapping to a 351W (5.8L) engine. Simply replace production bracket with the new bracket using all existing bolts and hardware. Serpentine belt selection will vary, depending on whether or not you choose to use optional underdrive pulleys.

M-8511-B351 *M-8511-A351*

Ashley Force
John Force Racing
2007 NHRA's "Rookie of the Year" award winner

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

SERPENTINE BELT HORSEPOWER PULLEY KITS – MUSTANG 5.0L

M-8509-A50* 1987-93 5.0L Mustang with serpentine drive belt, A/C and power steering
M-8509-A51* 1994-95 Mustang with serpentine belt drive, A/C and power steering
M-8509-A50* Truck 5.0L/302–1987-96 and 5.8L/351–1988-96
Contains steel crankshaft, water pump and alternator pulleys, plus bolts and installation instructions. Reduces accessory drive rpm by: (water pump–14%) and (alternator–22%) …and significantly improves performance! Pulleys are manufactured on state-of-the-art CNC machines and have an awesome blue finish over zinc plating.
Pulleys use production serpentine belt.
WARNING: Engine cooling will be reduced.

Serpentine Belt Horsepower Pulley Kit M-8509-A50 shown

1965-69 MUSTANG BILLET SINGLE GROOVE PULLEY SET

M-8509-CM*

- Fits 1965-69 Mustang with 289/302/351W
- 3-bolt crank pulley
- Single groove crank pulley
- Single groove water pump pulley

1970-78 MUSTANG BILLET SINGLE GROOVE PULLEY SET

M-8509-DM*

- Fits 1970-78 Mustang with 302/351W/351C
- 4-bolt crank pulley
- Single groove crank pulley
- Single groove water pump pulley

1970-78 MUSTANG BILLET DUAL GROOVE PULLEY SET

M-8509-EM*

- Fits 1970-78 Mustang with 289/302/351W/351C
- 4-bolt crank pulley
- Dual groove crank pulley
- Single groove water pump pulley

CRANKSHAFT PULLEY SPACERS

Use these crankshaft pulley spacers with Ford Racing M-6316-C351 crank damper to achieve proper belt alignment on past model 5.0L and 5.8L Windsor engines.

PART NUMBER	ENGINE	YEAR	CRANK PULLEY BOLT PATTERN	SPACER THICKNESS
M-8510-A351	351W	1979 and earlier	4	0.350"
M-8510-B351	302	1980 and later	4	0.950"
	351W		4	0.950"
M-8510-C351	302 ①	1980 and later	4	0.875"
	351W ①	All	4	0.875"
	351 Ford Racing ①		4	0.875"

Crankshaft Pulley Spacer M-8510-A351

NOTE:
① With 0.917" Ford Racing crank sprocket.

INSTALLATION NOTES
1979 and earlier 351W with 0.917" Ford Racing crank sprocket can use spacer M-8510-A351 if 0.070" is machined from the rear of the damper hub. Early 3-bolt crank pulleys generally bolt directly to the damper (damper is drilled for 3- and 4-bolt patterns). However, sheave alignment should be checked and the pulley shimmed as necessary to correct any misalignment.

460/514 CRANKSHAFT DAMPER SPACER

M-6359-D460

- Spacer with counterweight for 1979-97 external balanced 460 engines
- Used on Ford Racing crate engines
- Same as discontinued production service part D9TZ-6359-A

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

DAMPERS AND TIMING POINTERS

5.0L DAMPER KIT
M-6316-M50**

- New stock replacement damper for most 1981-95 5.0L engines
- 50 oz.-in. balance factor
- Kit includes E4TZ-A damper and FITZ-A timing pointer
- Can be used on M-6007-B50/B51/XB3/XE3 crate motors (included with M-6670-A50)
- 3.950" overall length

CRANKSHAFT DAMPERS

M-6316-A460

M-6316-A50/M-6316-C351

M-6316-A50

PART NUMBER	ENGINE	BALANCE	NOTES	MASS (LBS)
M-6316-A50**	302 (1981-93)	50 oz.-in. ①	Meets SFI 18-1 ②	12.1 ③
M-6316-C351*	302/351 HO	28.2 oz.-in. ①	Meets SFI 18-1 ②	11.5 ③
M-6316-A460*	429/460	Neutral	Meets SFI 18-1	10.1

NOTES: ① Damper has removable weight that allows use as a neutral balance unit for internally balanced crankshafts. 1994-2001 Mustang and Explorer require modification.
② Does not clear early timing chain cover with rear installed seal.
③ 3.000" overall length.

302/351W BILLET TIMING POINTERS

M-6023-B351

- Billet aluminum, adjustable timing pointer for 302/351W engines
- The pointer is contoured to fit with minimum clearance to the damper for reduced parallax effect when checking timing
- It is designed for an 11 o'clock TDC location with considerable adjustment range for accurate positioning
- Ball milled Ford Racing logo
- The machine-finished and clear anodized pointer includes fasteners, perfect for Street Rods

M-6023-C351

- Billet aluminum, adjustable timing pointer for 302/351W engines
- The pointer is contoured to fit with minimum clearance to the damper for reduced parallax effect when checking timing
- It is designed for a 10 o'clock TDC location with considerable adjustment range for accurate positioning
- Ball milled Ford Racing logo
- The machine-finished and clear anodized pointer includes fasteners, perfect for Street Rods

302/351W CRANKSHAFT DAMPER KIT
M-6316-K351**

- New stock replacement damper for most 302/351W engines with left-hand water pump inlet
- Fits 1970-80 302, 1970-97 351W crankshafts with external balance, 28.2 oz.-in. balance factor
- 4-bolt pulley pattern
- 3.950" overall length
- Includes E8TZ-B damper and F1TZ-A timing pointer

429/460 BILLET TIMING POINTER
M-6023-A460

- Billet aluminum adjustable timing pointer for 429/460/514 engines
- The pointer is contoured to fit with minimum clearance to the damper for reduced parallax effect when checking timing
- Fits 5"-7" diameter crank dampers
- Offers up to 30 degrees of pointer adjustments
- Ball milled Ford Racing logo
- The machine-finished and clear anodized pointer includes fasteners, perfect for Street Rods

Did you know…

1968-80 302 engines were built with a 28-ounce imbalance factor.

1981-2001 302 engines were built with a 50-ounce imbalance factor.

1969-97 351W engines were built with a 28-ounce imbalance factor.

1970-74 351C engines were built with a 28-ounce imbalance factor.

NOTE: Severe engine damage will result if you use the wrong flywheel or damper on your engine.

BOSS VALVE COVER SET

M-6582-BOSS** Black wrinkle finish
M-6582-BOSSP** Polished (shown)

NEW

- BOSS 302 style valve covers that fit 289/302/351W cylinder heads
- Used on Ford Racing BOSS 302 block-based crate engines
- Cast aluminum
- Fits most 289/302/351W cylinder heads and rocker arm combinations
- With PCV and breather grommets
- 50-States Street Legal when installed with appropriate closed PCV hardware
- Does not fit EFI

50 States Street Legal

BOSS 302 VALVE COVER SET

M-6582-BOSS302

- Boss 302 style valve covers that fit 289/302/351W cylinder heads
- Used on the Ford Racing BOSS 302 engine
- Cast aluminum with black wrinkle finish
- Fits most 289/302/351W cylinder head and rocker arm combinations
- With PVC and breather grommets
- 50-States Street Legal when installed with appropriate closed PVC hardware
- Does not fit EFI

50 States Street Legal

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

CUSTOM VALVE COVERS

Give your Ford that fast, furious look with custom-designed Ford Racing valve covers. All are baffled, and you can choose from a variety of finishes and distinctive logos. "Tall" Ford Racing valve covers M-6582-E302P/R302/T351/Z351/R351/C460/R460 are designed to clear roller rocker arms and polylock nuts. None of the other valve covers can be used with roller rockers without modifications. None of the valve covers on pages 144, 145 and 147 can be used on engines with electronic fuel injection, except M-6582-D302. See page 146 for EFI valve covers.

Most of the valve covers on pages 144-147 are "50-States Street Legal" when installed with appropriate closed PCV hardware (included in package).

50 States Street Legal

BLACK SATIN VALVE COVERS
M-6582-A**
For 289/302/351W

BLACK SATIN VALVE COVERS
M-6582-A301R**
For 289/302/351W

POLISHED ALUMINUM VALVE COVERS
M-6582-A302R**
For 289/302/351W

BLACK SATIN VALVE COVERS
M-6582-B301**
For 289/302/351W

POLISHED ALUMINUM VALVE COVERS
M-6582-F301**
For 289/302/351W

BLACK SATIN VALVE COVERS
M-6582-F302**
For 289/302/351W
(Original open letter Cobra)

POLISHED ALUMINUM VALVE COVERS
M-6582-F303**
For 289/351W (Original open letter Cobra)

POLISHED ALUMINUM VALVE COVERS
M-6582-E302P* 3.75" Tall with black letters

CHROME ALUMINUM VALVE COVERS
M-6582-R302* 3.75" Tall with black letters
For 289/302/351W
(Will clear stud girdle and roller rocker arms)

CHROME STAMPED STEEL VALVE COVERS
M-6582-B303R**
For 289/302/351W

BLACK VALVE COVERS
M-6582-L302* 3.75" Tall with red letters
For 302/351W

CHROME (DIE-CAST) VALVE COVERS
M-6582-D302** 1986-93
For 302 EFI

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

EFI VALVE COVERS

You can choose from a unique selection of Ford Racing valve covers, specially designed to provide clearance for EFI intake manifolds. None of the other valve covers can be used with roller rockers without modifications. M-6582-D302 for 5.0L/302 EFI engines consists of a pair of valve covers only, featuring a lustrous chrome finish. The valve covers are available in either black satin or polished aluminum, and include a pair of valve covers and an oil filler cap.

You can equip your 5.0L/302 EFI engine with three different styles ("Cobra," "Mustang" or "Ford Racing"). Only one style ("Ford Racing") is available for the 5.0L/302 EFI and 5.8L/351 EFI truck engine.

50 States Street Legal

BLACK SATIN VALVE COVERS

M-6000-C302** 1986-93
For 5.0L/302 EFI
(Original open letter Cobra)

POLISHED ALUMINUM VALVE COVERS

M-6000-D302** 1986-93
For 5.0L/302 EFI
(Original open letter Cobra)

BLACK SATIN VALVE COVERS

M-6000-E302** 1986-93
For 5.0L/302 EFI

POLISHED ALUMINUM VALVE COVERS

M-6000-F302** 1986-93
For 5.0L/302 EFI

POLISHED ALUMINUM VALVE COVERS

M-6000-K302R** 1986-93
For 5.0L/302 EFI

BLACK SATIN VALVE COVERS

M-6000-J302R** 1986-93
For 5.0L/302 EFI

EFI TRUCK VALVE COVERS

M-6582-A351R** Black Satin

- Fits 5.0L EFI and 5.8L EFI engines
- Die-cast aluminum with raised "Ford Racing" logo
- Includes chrome oil filler tube and cap

DISTRIBUTOR HOLD-DOWN CLAMP

M-12270-A302
2.3L HSC, V-6 & V-8 exc. "FE"

IGNITION COIL BRACKET

M-12044-A2

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

VALVE COVERS

BLACK SATIN VALVE COVERS
M-6582-A341R**
For 302 BOSS/351C/351M/400

POLISHED ALUMINUM VALVE COVERS
M-6582-A342R**
For 302 BOSS/351C/351M/400

CHROME STAMPED STEEL VALVE COVERS
M-6582-C351R**
For 302 BOSS/351C/351M/400

CHROME STAMPED STEEL VALVE COVERS
M-6582-A390R**
For 352/360/390/427/428

POLISHED ALUMINUM VALVE COVERS
M-6582-A427**
For 352/360/390/427/428

CHROME STAMPED STEEL VALVE COVERS
M-6582-A429R**
For 429/460

POLISHED ALUMINUM VALVE COVERS
M-6582-Z351* 4" Tall
For 302 BOSS/351C/351M/400 with new logo
(Will clear stud girdle and roller rocker arms)

CHROME ALUMINUM VALVE COVERS
M-6582-R351* 4" Tall
For 302 BOSS/351C/351M/400 with new logo
(Will clear stud girdle and roller rocker arms)

BLACK SATIN VALVE COVERS
M-6582-B**
For 352/360/390/427/428

POLISHED ALUMINUM VALVE COVERS
M-6582-C460* 4.5" Tall
For 429/460 with new logo
(Will clear stud girdle and roller rocker arm)

CHROME ALUMINUM VALVE COVERS
M-6582-R460* 4.5" Tall
For 429/460 with new logo
(Will clear stud girdle and roller rocker arm)

COATED 3-VALVE CAM COVERS 4.6L/5.4L
M-6582-C543V
M-6582-3VB
M-6582-3VBLK

- Fits all 2005-09 3-valve 4.6L/5.4L engines
- Powdercoated finish

M-6582-C543V
Chrome appearance

M-6582-3VB
Blue

M-6582-3VBLK
Black Wrinkle

Coated 4-Valve Cam Covers 4.6L/5.4L (see page 47)

M-6582-CC

M-6582-C

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

BREATHER CAPS

M-6766-A302*
Twist Type

M-6766-B302*
Push-In Type

M-6766-G302**
Push-In Type

M-6766-F302**
Screw-In Type

M-6766-A302*
Open Crankcase

M-6766-B302*
Open Crankcase

M-6766-G302**
Closed Crankcase

M-6766-F302**
Closed Crankcase

UNIVERSAL VALVE COVER BREATHER CAP GROMMETS
M-6892-F

- Kit includes one (1) grommet for push-in breather cap and one (1) for a PCV valve
- Grommets fit all Ford Racing valve covers for pushrod engines
- Converts twist-in breather valve cover to push-in style breather

BILLET PAINTED OIL FILL CAP COVER FOR 4.6L/5.4L/6.8L
M-6766-MP46

- Fits all years of modular engine
- Installs over factory plastic oil fill cap (not included)
- Features Ford Racing logo painted in blue and red
- Clear coated

WASHABLE BREATHER CAPS
M-6766-K302* Shielded push-in type for 1.25" dia. hole
M-6766-H302* Non-shielded push-in type for 1.25" dia. hole

M-6766-K302 shown

FORD GT BILLET OIL FILL CAP
M-6766-GT

- Ford GT oil fill cap with billet cover
- Direct replacement for Ford GT oil fill cap, fits most 1986-2004 Mustang GTs
- GT logo machined into cap surface
- Chrome plated

FUEL PUMP BLOCK-OFF PLATE
M-9351-A302

- All V8 except 351C/351M/400

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

ENGINE DRESS-UP COMPONENTS

Show off your engine compartment with this dazzling, head-turning collection of Ford Racing accessories. Many are unique items. All give your car a personal touch.

BILLET ALUMINUM FORD AIR CLEANER NUT

M-9697-E

- CNC machined billet aluminum construction
- Features the Ford oval in blue paint

OVAL AIR CLEANER ASSEMBLY

M-9600-C302* Cobra logo
M-9600-K302* Mustang logo

- For single 4V carburetors
- Assembly height is 2.5"

BILLET ALUMINUM FORD RACING AIR CLEANER NUT

M-9697-F

- CNC machined billet aluminum construction
- Features the "Ford Racing" logo in red and blue paint

AIR CLEANER WING NUTS

M-9697-A Ford Logo
M-9697-C Mustang Logo

CHROME VALVE COVER NUTS

M-6680-A (Sold in pkg. of 4)

- 1/4"-20 thread most V8s
- With Ford oval logo

A.T. DIPSTICK/TUBE

M-6750-D303 C-4
M-6750-E303 C-6

AIR CLEANER ASSEMBLY

M-9600-A302R* 13" diameter

- Fits 2V and 4V
- Uses Motorcraft Element PN FA-612

ROCKER ARM COVER WING BOLTS

M-6680-A302 All V8 Chrome with Ford logo ① (Sold in pairs)

- For fast removal of rocker covers
- With Ford oval logo

NOTE: ① Except FE (1/4"-20 thread)

ENGINE OIL DIPSTICK/TUBE WITH KNURLED HANDLE

M-6750-B302 1962-78 only
For 289/302/351W

ENGINE OIL DIPSTICK/TUBE

M-6750-A302 1962-78 only
For 289/302/351W

M-6750-C303 Curved
For 1983-93 5.0L Mustang

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FUEL INJECTORS AND ADAPTERS

HIGH-FLOW RATE FUEL INJECTOR SETS

PCM calibration data for each model of injector is available on our website.

PART NUMBER (SETS OF 8)	FLOW RATE	BODY STYLE	IMPEDANCE	LENGTH	CONNECTOR
M-9593-C302*	19 lb/hr	EV1	11-18 ohms	L	Jetronic/Minitimer
M-9593-M23*	23 lb/hr	EV6	11-18 ohms	L	USCAR
M-9593-AA302* NEW	24 lb/hr	EV6	11-18 ohms	L	Jetronic/Minitimer
M-9593-BB302* NEW	30 lb/hr	EV6	11-18 ohms	L	Jetronic/Minitimer
M-9593-MU32* NEW	32 lb/hr	EV14	11-12 ohms	M	USCAR
M-9593-M39*	39 lb/hr	EV6	11-18 ohms	L	USCAR
M-9593-F302*	42 lb/hr	EV1	11-18 ohms	L	Jetronic/Minitimer
M-9593-G302*	47 lb/hr	EV14	11-18 ohms	M	USCAR
M-9593-LU60*	60 lb/hr	EV6	11-12 ohms	L	USCAR

All injector flow rates are quoted at a delta pressure of 39.15 psi. To convert to a delta pressure of 43.5 psi, multiply flow rate by 1.054.

INJECTOR ADAPTER KITS

M-14464-A8*

- Adapts Jetronic/Minitimer style harness to USCAR style injector
- Packaged in sets of (8)

M-14464-A8 shown

INJECTOR ADAPTER KITS

M-14464-U2J NEW

- Adapts USCAR style harness to Jetronic/Minitimer style injector
- Packaged in sets of (8)

BODY STYLE

EV1

EV6

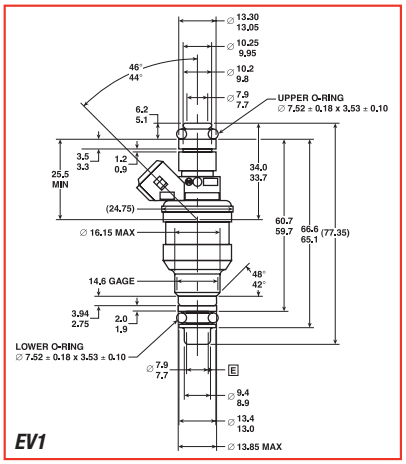
EV14

CONNECTORS

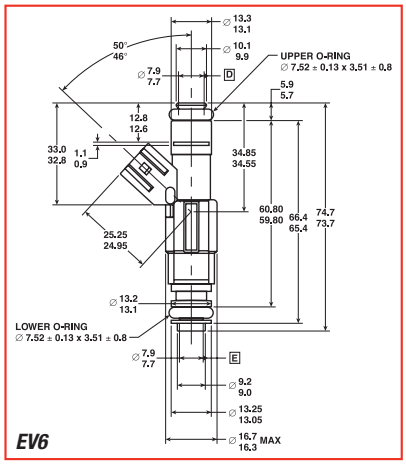
Jetronic/ Minitimer

USCAR

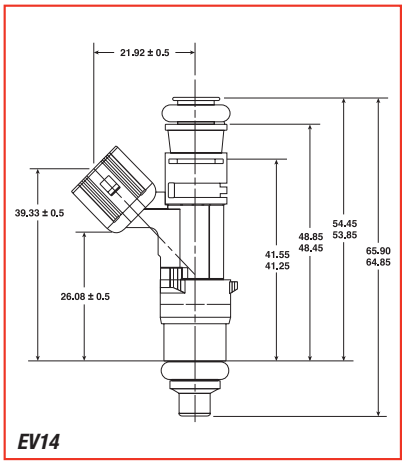
LENGTH



Long



Long



Medium

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

PROPERLY SELECTING ELECTRONIC FUEL INJECTION COMPONENTS

One of the more commonly misunderstood aspects of Electronic Fuel Injection (EFI) is how to select the correct size fuel injectors, fuel pump and Mass Air Flow (MAF) sensor for a particular engine horsepower output. The following information is intended to offer a very brief tutorial on properly selecting the most common EFI components.

FUEL INJECTORS

First and foremost, adding larger fuel injectors alone will NOT create extra horsepower! The purchase of larger fuel injectors should only be considered when your engine has exceeded the horsepower capacity of the existing fuel injectors, at which point larger injectors are then required to SUPPORT the additional horsepower. If you add larger-than-stock injectors to an otherwise stock engine, you should not expect any horsepower increase whatsoever.

The nominal injection pressure for most Ford EFI systems is 39.15 psi (270 kPa) "across the injector." The term "across the injector" takes manifold pressure and fuel rail pressure into account, and is usually referred to as "delta pressure." (See "Measuring Fuel Pressure" below for more details.) Ford Racing's fuel injectors are always rated at 39.15 psi delta, so the fuel injector sizing discussions found below will assume a fuel pressure of at least 39.15 psi delta.

There are some exceptions to the above-mentioned nominal injection pressure. In relatively recent years, emissions regulations have become so stringent that the government is now regulating the emissions output that gasoline vehicles are allowed to produce even when the engine is not running! This is referred to as "evaporative emissions" and results from unburned hydrocarbons (raw fuel) emitting into the atmosphere from the fuel tank, fuel lines, injector leakage, intake manifold, etc. when the engine is shut off. This is the fundamental purpose of the charcoal canister (and hydrocarbon trap in the air-box on many vehicles) and is also the reason that Ford switched to the Returnless Fuel Systems (RFS) found in production vehicles today. These systems have only a fuel supply line from the tank to the engine, with no return line. The primary reason for these systems is that evaporative emissions increase as the temperature of the fuel in the tank increases. On a conventional return system, the fuel is sent to the engine through the supply line, and the excess is returned (via the mechanical fuel pressure regulator) to the tank through the return line. Since the engine is hot, this process heats up the fuel and thus increases evaporative emissions. To combat this, the returnless fuel systems were invented. Currently, Ford uses 2 primary types of RFS which are called Electronic Returnless Fuel System (ERFS) and Mechanical Returnless Fuel System (MRFS). The latter is the simpler of the two systems and controls the fuel rail to a constant pressure via a regulator in the tank, which is typically set to around 60 psi. The powertrain control module (PCM) then calculates the pressure across the injector either by inferring or measuring manifold pressure and subtracting from what it knows is the rail pressure set-point. ERFS, on the other hand, has no mechanical regulator at all, but instead has a Fuel Rail Pressure Transducer (FRPT) mounted on the fuel rail that measures fuel rail pressure relative to manifold pressure and feeds that information back to the PCM. The PCM then controls the Fuel Pump Driver Module (FPDM) which in turn varies the voltage to the fuel pump (or pumps) in the tank to supply the correct pressure and flow rate to the injectors. Most of the time this pressure is maintained at 39.15 psi delta, but when the fuel temperature rises, this pressure can be boosted in order to delay the onset of boiling the fuel. Some vehicles also boost the pressure under some conditions in order to get away with using smaller flow-rate fuel injectors for various reasons beyond the scope of this tutorial. Both V6 and V8 Mustangs have used ERFS since the 1999 model year and continue to do so today. The purpose of going into all this detail is to convey the message that if you choose your fuel injectors based on a pressure of 39.15 psi delta (which is the pressure at which Ford Racing specifies the flow rate), the injectors will be correctly sized regardless of which fuel system you actually have, and also to show you that fuel pressure on ERFS vehicles can change based on a number of conditions. These concepts will be important in the rest of this tutorial.

If you are trying to compare injector flow rates and you have flow data at one delta pressure, you can easily calculate the flow rate at a different delta pressure as follows:

Flow rate at new delta pressure = (flow rate at old pressure) x √(new pressure/old pressure)

Example: What is the flow rate for an injector at 43.5 psi if it is rated at 60 lb/hr at 39.15 psi?
Flow rate at 43.5 psi delta = 60 * √(43.5/39.15) = **63.2 lb/hr**

You can use the following information to properly determine what size injectors are needed for various applications. For this example, we will use a naturally aspirated 5.0L V8 engine making 300 hp. Keep in mind that this is FLYWHEEL (also known as brake) horsepower, NOT wheel horsepower.

Engines require a certain fuel flow rate that is generally measured in lb/hr (pounds per hour) and can be calculated via knowledge of their Brake Specific Fuel Consumption (BSFC). By definition, BSFC represents how much fuel (in lb) is required per hour per each brake horsepower the engine produces. Most naturally aspirated production gasoline engines generally operate on a 0.42 to 0.52 lb/hp-hr BSFC at wide open throttle (WOT). High-performance gasoline and race engines (12.5:1 compression ratio and higher) which tend to be extremely efficient can sometimes have a BSFC as low as 0.38 to 0.42. More clearly stated, this means that if you have a gasoline engine that makes 300 brake horsepower, its total maximum fuel requirement in lb/hr can be calculated as follows:

Fuel flow requirement = (brake horsepower) x (BSFC)

Example: A 300 hp naturally aspirated gasoline-powered V8 requires what size fuel injector?

First, assume a BSFC of 0.50 lb/hr and injection pressure of 39.15 psi across the injector.

300 hp x 0.50 lb/hp-hr = 150 lb/hr maximum total fuel flow requirement

Since this is the total fuel flow requirement to the engine, we must now divide this by the number of injectors being used to determine the flow rate necessary for each injector so that you can select the correct size injector from this catalog. In this example, we have an 8-cylinder engine using 1 injector per cylinder, which gives: **150 lb/hr/8 injectors = 18.8 lb/hr per cylinder**

PROPERLY SELECTING ELECTRONIC FUEL INJECTION COMPONENTS (continued...)

So, technically, the engine only needs a 19 lb/hr fuel injector to support 300 hp, but this will require that the injector is at nearly a 100% duty cycle in order to achieve this horsepower level. Duty cycle refers to how long the injector needs to be open (flowing fuel) in order to supply the required amount of fuel. If the injector needs a 100% duty cycle at a particular engine speed and load to inject enough fuel, that means it is open all the time. Under most conditions, fuel is injected when the intake valves are closed, which helps with fuel atomization and efficiency. If the injectors need to be on 100% of the time to supply enough fuel, this means that some fuel is being injected while the intake valves are open. Depending on the overlap of the cam in the engine, some of this unburned fuel can be blown right past the exhaust valve, or be poorly atomized, which makes for a less efficient combustion process. Perhaps more importantly, operating a fuel injector between roughly 85% and 99% duty cycle does not give the injector sufficient time to close before it is commanded to open again. This can cause extreme variability in the amount of fuel actually injected, which can sometimes result in a rich condition. Similar issues exist at the low end of the flow region at extremely low duty cycles, but this is highly dependent on the type and flow rate of each model of injector. In this case the injector does not have enough time to fully open before it is commanded to close again, which causes extreme variability that can result in a lean condition. For these reasons, we generally recommended selecting an injector with a flow rate sufficiently high that it will not be required to exceed an 85% duty cycle. So to figure out what size fuel injector will result in an 85% duty cycle, divide the original result by 0.85: **18.75 lb/hr/0.85 = 22 .1 lb/hr requirement**.

Since the next popular injector size available is 24 lb/hr, this is the correct size injector that you should choose for this particular application. Keep in mind that this discussion assumes your fuel pump, lines, regulator, etc. are sufficient to be able to maintain at least 39.15 psi across the injector at all engine speeds and loads (even under boost, if applicable). Now that you have selected an injector, the calibration (or "tune") in the PCM must either be changed or a different MAF must be used. (See "Mass Airflow Sensors" below for more details.)

This calculation can also be reversed to give the maximum safe hp a set of injectors can support, which gives:

max safe hp = [(injector size) x (total # of injectors) x (max duty cycle)]/BSFC

Example: The following guide is a general rule of thumb for sizing fuel injectors on an **8-cylinder engine** using a BSFC of 0.50. Forced-induction engines typically range from a BSFC of 0.55 to 0.65, with the latter value arising from the fuel enrichment necessary to keep exhaust temperatures below 1650 deg F and catalyst temperatures below 1700 deg F.

Naturally Aspirated: (19 lb x 8 x .85)/.50 = 258.4 or approx 258 hp @ 85% duty cycle
Forced Induction @ 0.55: (19 lb x 8 x .85)/.55 = 234.9 or approx 235 hp @ 85% duty cycle
Forced Induction @ 0.65: (19 lb x 8 x .85)/.65 = 198.8 or approx 199 hp @ 85% duty cycle

Inj Flow Rate (@ 40 psid)	Naturally Aspirated hp (@ 0.50)	Forced-Induction hp (@ 0.65)
19 lb/hr	258 hp @ 85% Duty Cycle	199 hp @ 85% Duty Cycle
24 lb/hr	326 hp @ 85% Duty Cycle	251 hp @ 85% Duty Cycle
30 lb/hr	408 hp @ 85% Duty Cycle	314 hp @ 85% Duty Cycle
32 lb/hr	435 hp @ 85% Duty Cycle	335 hp @ 85% Duty Cycle
39 lb/hr	530 hp @ 85% Duty Cycle	408 hp @ 85% Duty Cycle
42 lb/hr	571 hp @ 85% Duty Cycle	439 hp @ 85% Duty Cycle
47 lb/hr	639 hp @ 85% Duty Cycle	492 hp @ 85% Duty Cycle
60 lb/hr	816 hp @ 85% Duty Cycle	628 hp @ 85% Duty Cycle

Remember, the above calculations assume a fuel pressure of 39.15 psid. If you can raise fuel pressure and still be sure that your fuel pump can supply the desired flow rate, then these maximum horsepower numbers will increase.

FUEL PUMPS

Most EFI fuel pumps are rated for flow at 12 volts @ 40 psi. Most vehicle charging systems operate anywhere from 13.2 V to 14.4 V. Within limits, the more voltage you feed a pump (for a given current), the faster it spins, resulting in a higher output of fuel from the same fuel pump. Rating a fuel pump at 12 V should offer a fairly conservative fuel flow rating allowing you to safely determine the pump's ability to supply an adequate amount of fuel for a particular application, assuming the gauge of wire feeding power to the pump is sufficient to carry the current required.

As previously mentioned, engines actually require a certain ***mass*** of fuel, NOT a certain ***volume*** of fuel per hour per horsepower. This can offer a bit of confusion since most fuel pumps are rated by volume, and not by mass. To determine the proper fuel pump required, a few mathematical conversions will need to be performed using the following information. There are 3.785 liters in 1 U.S. gallon and 1 gallon of gasoline (0.72 specific gravity @ 65° F) weighs 6.009 lb.

An additional fact to consider regarding the BSFC is that the specific gravity of the fuel that you are using is very important. The fuel that you put in your car should only be obtained from a source which supplies fuel intended for an automobile. Some people make the mistake of using aviation fuel (sometimes referred to as "Av Gas") thinking that the higher octane of this fuel may offer a performance gain. The problem is that TRUE aviation fuel has a much lower specific gravity (commonly as low as 0.62 to 0.65) than automotive grade fuel (0.72 to 0.76). Herein lies the problem: as previously stated, an engine requires a certain **mass** of fuel per hour per horsepower, and 1 gallon of aviation gasoline has a lower mass than 1 gallon of automotive gasoline. Since the specific gravity of aviation gasoline is only about 90% that of automotive gasoline, all other things being equal, your engine will run approximately 10% lean by using aviation gasoline. Be sure to take the specific gravity and stoichiometric ratio of your desired fuel into consideration when sizing the fuel pump and injectors.

PROPERLY SELECTING ELECTRONIC FUEL INJECTION COMPONENTS (continued...)

It is always a good idea to apply a safety factor to account for things such as pump-to-pump variability, voltage loss between the pump and the battery, etc., so we recommend you multiply the final output of the fuel pump by 0.90 to determine the capacity of the fuel pump at 90% output to be on the safe side.

To determine the overall capacity of a fuel pump rated in liters per hour (L/hr), use the following additional conversions:

Do:	*To Get:*
(L/hr)/3.785	→ U.S. gallons/hr
Multiply above by 6.009 lb/gallon	→ lb/hr
Multiply above by 0.9	→ Capacity in lb/hr at 90%
Divide above by BSFC	→ "Horsepower Capacity" (flywheel)

So for a fuel pump rated at 110 L/hr for example, supplying a naturally aspirated engine:

110/3.785	= 29.06 U.S. gallons/hr
29.06 x 6.009	= 174.62 lb/hr
174.62 x 0.9	= 157 lb/hr @ 90% capacity
157/0.50	= 314 hp safe naturally aspirated "Horsepower Capacity"

Safe "Horsepower Capacity" @ 40 psi with 12 V assuming 0.5 lb/hp-hr BSFC

60 L/hr pump = 95 lb/hr X 0.90 = 86 lb/hr, safe for up to 170 naturally aspirated flywheel hp
88 L/hr pump = 140 lb/hr X 0.90 = 126 lb/hr, safe for up to 250 naturally aspirated flywheel hp
110 L/hr pump = 175 lb/hr X 0.90 = 157 lb/hr, safe for up to 310 naturally aspirated flywheel hp
155 L/hr pump = 246 lb/hr X 0.90 = 221 lb/hr, safe for up to 440 naturally aspirated flywheel hp
190 L/hr pump = 302 lb/hr X 0.90 = 271 lb/hr, safe for up to 540 naturally aspirated flywheel hp
255 L/hr pump = 405 lb/hr X 0.90 = 364 lb/hr, safe for up to 720 naturally aspirated flywheel hp

Very Important Note: For any type of forced-induction engine, the above maximum power levels will be reduced because as the boost pressure increases, the fuel pressure required from the pump also increases, creating an additional load to the fuel pump, which results in a decreased fuel flow rate at the higher pressure. In order to do proper fuel pump sizing for these applications, a fuel pump map is required, which shows flow rate versus delivery pressure for a given voltage. For example, a 255 L/hr pump at 40 psi may only supply 200 L/hr at 58 psi (40 psi plus 18 lb of boost). Additionally, if you use a fuel supply line that is not large enough, this can result in decreased fuel flow due to the pressure drop. For example, a 255 L/hr at the pump may only result in 220 L/hr at the fuel rail because as the required pressure increases (due to the pressure loss from the supply line restriction), the maximum flow rate of the pump decreases. Figure 1 shows an example fuel pump map for a pump assembly at a supply voltage of 13 V.

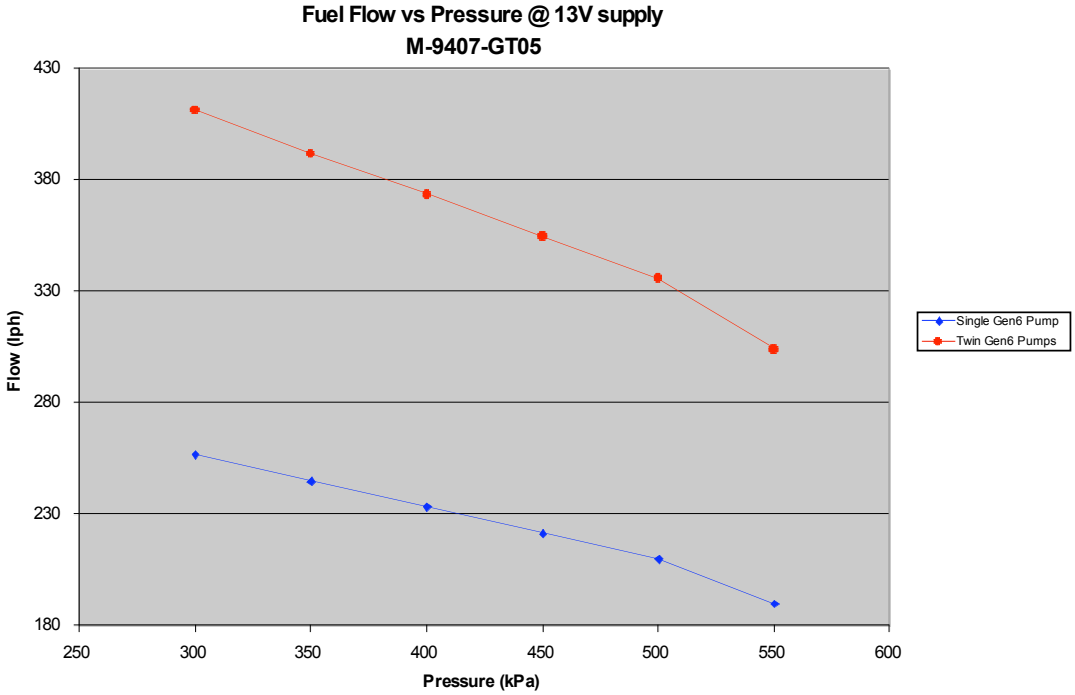


Figure 1

MEASURING FUEL PRESSURE

The above fuel pump sizing information should be regarded as a **guideline** in selecting the size of pump you need. Once installed in the car, you still need to **verify** that adequate fuel pressure (at least 39.15 psi across the injector) is maintained at all engine speeds and loads. Do not skip this fuel pressure verification step, as failure to maintain adequate fuel pressure can cause issues ranging from calibration difficulty to engine failure due to running lean.

PROPERLY SELECTING ELECTRONIC FUEL INJECTION COMPONENTS (continued...)

As mentioned earlier, all injector flow rates published in this catalog have been determined at a pressure of 39.15 psi (270 kPa) across the injector, but what does the phrase "across the injector" mean? To understand this fully, we first need to discuss three different methods of measuring pressure.

The first is called ***absolute*** pressure. This is defined as the pressure relative to a complete vacuum, such as would be found in outer space. For instance, atmospheric pressure (the air we breathe) is typically around 14.7 psi absolute (29.93 inHg) at sea level, depending on temperature and weather conditions. An engine that has a vacuum signal of 12 "inches" simply means that the absolute pressure in the intake manifold is 12 inHg less than the atmospheric pressure. When you subtract the 12 inHg from the atmospheric pressure of 29.93 inHg, you are left with a positive pressure of 17.93 inHg, or roughly 9 psi absolute as compared to a complete vacuum. Sometimes you will see absolute pressure in psi written as "psia."

The second is called ***gauge*** pressure, which is pressure relative to atmospheric pressure. Gauge pressure is what everyone is most familiar with because it is what you measure when you check the air in your tires or when you connect a fuel pressure gauge to the fuel rail. An engine which makes 6 psi of boost at sea level is actually equivalent to 20.7 psi absolute (14.7 + 6 = 20.7). Sometimes you will see gauge pressure in psi written as "psig."

The third is called ***delta*** pressure and is very much like gauge pressure, but instead of being relative to atmospheric, it can be relative to any other pressure, such as the pressure in the intake manifold. Sometimes you will see delta pressure in psi written as "psid."

When we quote pressure "across the injector," what we really mean is the *delta* pressure (or difference) between the fuel rail and the intake manifold. On most EFI systems (non-MRFS), this is the pressure that the system controls, either by use of a mechanical regulator referenced to the intake manifold (in a traditional or "return" system), or by the use of the FRPT and the PCM (in ERFS). This means that if you connect a fuel rail pressure gauge to the fuel rail on one of these systems, you will see fuel pressure vary depending on intake manifold pressure. This is because the gauge is measuring gauge pressure, which is relative to atmospheric, but the EFI system is controlling the fuel rail pressure relative to intake manifold pressure which is changing depending on engine load (your right foot) among other things. On a naturally aspirated engine, the manifold pressure at idle is typically around 10 psia, and the manifold pressure at Wide Open Throttle (WOT) will be atmospheric, so typically at the fuel rail you will see approximately 30 psig at idle and at least 39.15 psig at WOT, depending on whether or not you have ERFS and whether or not it is boosting pressure for one of the reasons mentioned in the previous section. On a forced-induction engine, the highest manifold pressure that the engine can reach will be atmospheric *plus* the maximum boost your configuration can obtain. This means that to keep 39.15 psid across the injector, the gauge pressure will have to increase by the same amount as the maximum boost. A couple of examples should make these concepts more clear. First, consider a naturally aspirated conventional (non-ERFS, non-MRFS) EFI system with a mechanical regulator set at the stock pressure setting. The system will try to keep the pressure across the injector at 39.15 psid regardless of engine load, so if you have a fuel pressure gauge attached to the fuel rail, you will see a maximum pressure of 39.15 psig at WOT if the system is doing its job properly. Now consider a forced-induction engine making a maximum of 10 psig boost, also with a conventional EFI system and mechanical regulator set to the stock pressure setting. The system will still try to keep the pressure across the injector at 39.15 psi, so this time your fuel pressure gauge attached to the rail should read a maximum of 39.15 + 10 = 49.15 psig. If it never gets to 49.15 psig at WOT, your fuel system is inadequate for your engine. You will need to either increase the capacity of the pump, minimize the voltage loss between the pump and the battery or decrease the pressure loss between the pump and the engine through the use of larger lines, etc., and re-test. Do NOT try to "tune around" this type of fuel delivery problem. It will bite you in the long run, and can result in hard-to-diagnose problems at best, all the way to engine failure at worst. Note that at WOT, the fuel pump in the forced-induction engine must supply fuel at a higher pressure than in the naturally aspirated engine. As mentioned in the previous section, this means that the fuel pump supplying the forced-induction engine will have a lower maximum flow rate capability than the fuel pump supplying the naturally aspirated engine. This is a critical concept to grasp because it means that in general, **for engines with equal brake horsepower, the fuel pump supplying the forced-induction engine will need to have more capacity than the fuel pump supplying the naturally aspirated engine!**

MASS AIRFLOW SENSORS

On EFI systems that use a MAF sensor, this is the single most important sensor on the engine for determining a proper air/fuel (A/F) ratio. Unfortunately, it is also one of the most misunderstood sensors on the engine as well. The engine's air/fuel ratio and spark advance are determined by the PCM primarily from the input received from the MAF sensor. This is also why it is of critical importance that there are no air leaks (defined as air entering the intake stream between the MAF and the combustion chamber) in a MAF-based system. Air leaks can cause a check-engine light, rough idling, stalling, spark knock, drivability issues and, in extreme cases, complete engine failure, depending on their magnitude.

PROPERLY SELECTING ELECTRONIC FUEL INJECTION COMPONENTS (continued...)

As with fuel injectors, changing the MAF alone will not result in more horsepower on an otherwise stock engine. A different MAF sensor should only be considered after engine modification which either causes the stock sensor to become a flow restriction or when the stock MAF sensor electronics are insufficient to measure the airflow that the modified engine is capable of ingesting. This latter point is critical in understanding when a MAF needs to be replaced. It is possible to have 2 MAF sensors that are equal in size, but capable of different maximum power levels. This is because the electronics in each MAF are different and are capable of measuring different maximum airflow, despite the fact that the size of the MAF housing is the same. For example, you can have 2 different 90 mm MAF sensors but one will be capable of measuring 60 lb/min of air, while the other can measure, say, 100 lb/min of air. They both present the same airflow restriction (which is dictated primarily by their physical size) but they are definitely NOT interchangeable. So how do you know how much air your MAF needs to be capable of measuring? If you have an approximation of the engine's BSFC at WOT, as well as a target air/fuel ratio in mind, then the amount of air that your MAF sensor needs to be capable of measuring (in lb/hr) can be calculated as follows. Note that this formula includes a safety factor of 10%.

Max airflow = 1.10 * (Power * BSFC * A/F Ratio)

Example: What is the max airflow a naturally aspirated 300 hp gasoline engine will ingest?

First, assume a BSFC of 0.50 lb/hp-hr and A/F ratio of 12:1.

Max airflow = 1.1 * (300 * 0.50 * 12) = **1980 lb/hr**

Now that we know the minimum size fuel injector and MAF that we need, we have to consider what the PCM will do with this new hardware. The two main methods of dealing with the installation of a new MAF and injectors are to either "trick" the PCM by careful selection of injectors and a "matched" MAF, or by changing the calibration in the PCM to match the MAF and injectors that you selected.

The first method requires a MAF sensor that has been "curved" to a certain flow rate of injector. For instance, let's say your engine originally came with 19 lb/hr injectors and you replaced them with 39 lb/hr injectors. To use this method, you will need a MAF with electronics that have been modified such that it will output a signal proportional to an airflow that is 19/39 times as great as the stock MAF would measure. This will result in the PCM delivering the correct amount of fuel despite the fact that the injector size has been increased from 19 lb/hr to 39 lb/hr. The downside of this method is that many other variables such as spark advance are determined from the MAF sensor through a parameter called "load." For a given engine rpm, as load increases, required spark advance decreases. Since, by using this method, the MAF outputs a signal that is lower than the stock MAF, the calculated load will also be lower. This means that commanded spark advance will be higher than it should be, which can potentially result in spark knock, and other concerns. While this method works quite well on less sophisticated electronics, such as the EEC-IV found in Fox body Mustangs, it is not recommended for newer vehicles which have a much higher dependency on the calculated value of load.

The second, and preferred method requires the ability to alter the calibration inside the PCM, generally through the use of one of the aftermarket tools available. When using this method, the actual flow data for the injector (available on our website for all FRPP injectors), as well as the "transfer function" for the MAF are entered into the calibration in the PCM. Generally, it is recommended to test the new calibration on a dynamometer to ensure that the engine receives the correct A/F ratio at all speeds and loads. Provided this is performed by a competent and experienced tuner using proper equipment, this is by far the best method and will result in the best part-throttle drivability and idle, and the least amount of trouble with check-engine lights, returnless fuel, electronic throttle monitors, transmission shifting, etc.

Prior to tuning on a dyno, you should be absolutely certain that the ground circuits for the EFI system are in pristine condition. Doing so will help to ensure that the calibration you and your tuner develop on the dyno will also work when you leave. It can't be overstated that prior to the vehicle being tuned in any way, all vacuum leaks, electrical issues, etc., need to be resolved. Fixing them before you go to the dyno will always be cheaper than paying for dyno time while you're wrenching on your car.

As a *general rule of thumb*, the following stock Ford MAF sensors will safely support the corresponding horsepower:

MAF Sensor	Approximate Max hp
55 mm (Stock 88-93 Mustang)	275 hp
70 mm (Stock 94-95 Mustang)	350 hp
80 mm (Stock Ford)	425 hp
90 mm (M-12579-54)	540 hp

If you have a specific question not addressed in this tutorial, please contact the Ford Racing technical hotline at 1-800-FORD788 and we will be happy to assist you.

MUSTANG GT DUAL FUEL PUMP KIT
M-9407-GT05

- Fits 2005-09 Mustang GT
- Includes harness, dual fuel pumps, drop-in housing and fuel pump driver module from the 2007-09 SVT Mustang
- Includes all installation hardware
- Highly recommended for any application making over 400 hp
- Same fuel pump kit as used in the Mustang GT 500 hp supercharger kit

2003-04 MUSTANG COBRA FUEL PUMP
M-9407-C46

- Stock replacement fuel pump assembly
- Fits 2003-04 Mustang Cobra

EFI MUSTANG FUEL PUMP
M-9407-C50 (190 L/hr) 1986-97

This high-flow, fuel tank-mounted fuel pump eliminates top-end fuel starvation on modified 5.0L EFI HO engines. Production flow rates of 88 L/hr (1988-93, 1994 and up 110 L/hr) will be increased to a whopping 190 L/hr @ 40 psi with M-9407-C50.

LIGHTNING MASS AIR METER
M-12579-L54**

- Stock replacement 90 mm 2001-04 F-150 Lightning Mass Air Meter
- Requires recalibration for use on other vehicles

FORD GT START BUTTON KIT FOR MUSTANG
M-11572-GT

Easy upgrade to enhance the appearance of your 2005-09 Mustang

- Fits in the existing Power Point located in the center of the dash
- Turn the key to the on position then press the button
- Includes special wire harness for easy installation

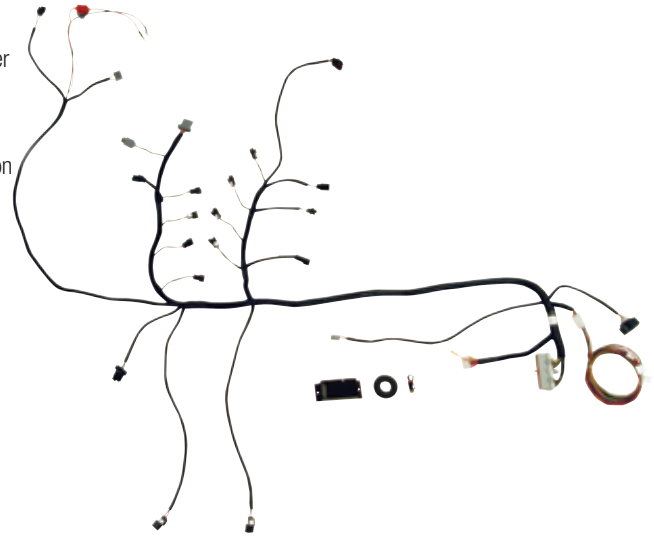
*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

MULTIPORT EFI WIRING HARNESS
M-12071-A50*

Complete Harness from PCM to Injectors!

Our technical support staff travels the country to dozens of various events and takes thousands of phone calls every year. One of the most common requests regarding the Electronic Fuel Injection Wiring Harness has come from Performance Enthusiasts requesting a cleaner appearing harness and a simpler method to make connections. YOUR VOICE HAS BEEN HEARD! Ford Racing is committed to customer satisfaction and to meeting the demands and requests of its customers. We have tried to be as thorough as possible in developing a product which will provide you with the cleanest and simplest wiring harness on the market.



Some of the many new features of the Multiport EFI Wiring Harness include:
- Revised for simplified installation; uses a single connector for all required connections
- Kit consists of a single harness with integral connections for injectors and O_2 sensors
- Fully loomed, from PCM to all sensors and injectors, to save time on installation
- Typical installation takes less than 1 hour
- Direct fit on 1986-93 302 H.O. engines
- Can be easily adapted to many other Ford V8 pushrod engines
- Requires PCM (not included) from 1989-93 Mustang 5.0L H.O.
- Compatible with engines using both H.O. and non-H.O. firing orders
- Provisions for electric fan control output
- Kit includes compact fuse and relay box, “Check Engine” light and all necessary grommets
- For a detailed list of harness support parts, see harness instruction sheet at fordracingparts.com

MAIN HARNESS
M-12071-C302*

The foundation of Ford Racing’s Multiport EFI Wiring Harness system, this harness connects the mass airflow computer to the engine, sensors and relays. 26-page instruction book included with main harness. Contains very detailed instructions, helpful hints and lots of illustrations for easy hook-up; must be used with integral thick-film ignition module distributor.

ENGINE HARNESSES AND CONTROLS PACKAGE
M-12071-L302*
- Harness and sensor package to be used with the M-12071-C302 main harness
- Kit contains injector and HEGO harness
- Includes Engine Coolant Temperature (ECT), Exhaust Gas Recirculation (EGR) sensor and valve
- Use with 351W firing order
- Can be used with production 1992-93 5.0L Mustang main harness

SENSOR AND RELAY PACKAGE
M-12071-K302*

Sensors for use with the M-12071-A50 and M-12071-C302 wiring harness. Kit contains dual-oxygen sensors; EGR solenoid, TAD and TAB solenoids; fuel, air-conditioning and EEC power relays. Engine-mounted and BAP sensors NOT included.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

EFI SYSTEM TIPS

Always remember to disconnect the battery before doing any wiring on your vehicle!

ELECTRICAL GROUNDS

The single leading cause of most electrical problems is poor grounds.

Ideally, the ground for the fuel injection system should connect directly to the battery at the negative post. Using the steel chassis or engine block as a ground can create excessive resistance causing the Powertrain Control Module (PCM) to function improperly.

An example of how a high ground or connection resistance can have very serious effects is as follows. This particular case applies to a 2005 Mustang GT, but can easily be extended to any electronically controlled Ford vehicle: consider the case where a PCM is reading a MAF sensor signal of 4.1 V (due to a high ground or connection resistance) when it should really be reading 4.3 V. This equates to a difference in measured air mass of 13%. That is, the MAF will be telling the PCM that there is 13% less air entering the engine than there really is. Let's say this happens at WOT, where air/fuel ratio is critical not only to performance, but also to engine durability. The result is that the actual air/fuel ratio can go from a safe 12.5:1 to a potentially damaging 14.1:1, just from a 0.2 V change in the MAF return signal!

All PCM sensors, not just the MAF, are affected in a similar fashion, so it is absolutely critical that all electrical connections are solid and that the grounds are reliable. The potential penalty for a bad ground can range from strange drivability issues that are difficult to diagnose all the way to a damaged engine, as in the above example.

All resistance tests should be done with the ignition key in the off position. Having voltage going through the system can return a false reading of excessive resistance. Additionally, it is possible to have a ground that tests OK when the engine is cold, but not when the engine is hot. Heat increases resistance, so these tests should be performed on a warm engine when possible.

To test for an adequate ground circuit in the EFI system for a 1986 to 1993 5.0L Mustang, use a Volt/Ohm meter to check the resistance of the following circuits:

- **To verify a proper ground to the PCM**, check the resistance from pin 40 and pin 60 DIRECTLY to the negative side of the battery. Resistance should be no greater than 0.2 ohms.
- **To verify a proper ground to the main PCM harness**, check the resistance from the MAF sensor at pin 'B' DIRECTLY to the negative side of the battery. Resistance should be no greater than 0.2 ohms.
- **To verify a proper ground to the engine harness**, check the resistance from the black wire at the Throttle Position Sensor (TPS) DIRECTLY to the negative side of the battery. Resistance should be no greater than 0.3 ohms.

Note that while 0.2 ohms or less is desirable, a resistance as high as 0.5 ohms is considered acceptable. Greater than 0.5 ohms is excessive and could result in drivability concerns.

A weak ground connection can also cause the PCM's internal reference voltage regulator to function incorrectly. This can be checked at the Throttle Position Sensor (TPS) by checking voltage between the black ground wire and the orange reference voltage wire. With the key on, this voltage signal should be somewhere between 4.7 V and 5.3 V.

GENERAL TIPS

- Whenever possible, the PCM should be mounted inside the vehicle to protect it from water damage. The PCM should also be mounted with the electrical connectors at the bottom to avoid trapping water. Some PCM's on newer model cars are mounted under the hood, but they are sealed against moisture and designed to operate in such an environment. When in doubt, mount the PCM inside the vehicle.

EFI SYSTEM TIPS (continued...)

- When setting the voltage at the TPS, you should check the voltage between the black and green wires (1986-1993 5.0L Mustang). This voltage should be somewhere between 0.96 V and 0.98 V. If the key is on while the engine is off, set the voltage at 0.96 V. If the engine is running, set it at 0.98 V. The TPS can be set by loosening the mounting screws and slightly rotating the sensor. If you are unable to achieve the proper setting, you may need to elongate the TPS mounting holes.

- If you ever need to lengthen any harness leads for your specific application, it is strongly advised that you lengthen only one wire at a time, which will help to avoid making mistakes.

- If you are using long tube headers, and need to lengthen the leads of the harness to reach the Heated Exhaust Gas Oxygen (HEGO, also known as O_2 or oxygen) sensors, NEVER lengthen the wires of the O_2 sensor itself. These wires are made up of a unique material and you will disrupt the signal coming from the O_2 sensor **even if they are soldered correctly!** If you must increase the length of the leads to the O_2 sensor, always lengthen the wires on the wiring harness side of the O_2 sensor. Many aftermarket companies offer HEGO sensor extensions that work quite well and are a quick and easy solution to this problem.

- When soldering two or more wires together, you should "tin" the bare ends to be soldered. This will prevent cold solder joints and make the process easier. "Crimp" style or "solder-less" connectors are not recommended. Over time, these have a tendency to loosen and permit corrosion. Additionally, these connectors can commonly allow short circuits to develop within the connection. Many of these problems within the harness can be difficult to locate. Always use weather-tight heat shrink over all soldered joints.

- If the factory coolant tubes are not used, the Engine Coolant Temperature (ECT) sensor should be installed directly into the threaded boss in the intake manifold near the thermostat, if applicable. This is a coolant passage.

- The ACT sensor should generally not be moved from the stock location. Some aftermarket companies offer ACT relocation kits while making false claims of increased horsepower by reading cooler air. While it is true that a cooler air can result in more power, this "trick" is not cooling the incoming air, but instead is merely reading the temperature from a different location. This can have a negative effect on overall engine performance and drivability because the PCM was calibrated under the assumption that the ACT sensor was in the stock design location. On a forced-induction engine, it is generally preferable to have the ACT sensor located after the power adder and after the intercooler, if applicable, which will simplify the calibration ("tuning") process. Some of our FRPP supercharger kits leave the ACT sensor in the stock location upstream of the supercharger, but this was accounted for in the calibration and should not be changed.

- Protect the air filter element from turbulence created by the engine cooling fan. This is commonly referred to as "fan wash." If you are using an open element air filter on the end of the MAF sensor, it is strongly advised that you use a shield to reduce the effects of the turbulence.

- It's best if the air filter gets cold air from in front of the radiator. If the filter is located in the engine compartment, as in many street rod applications, the inlet air temperature can be up to 60 degrees hotter than ambient which can result in a 5% torque loss from the air density decrease. The PCM will also retard ignition timing for the hotter air which can result in an additional 5-10% torque loss. Colder air is always better.

- An improperly functioning charging system can cause engine running problems. Under-drive pulleys spin the accessories slower meaning that they consume less power from the engine. This results in a greater net horsepower available at the flywheel, but at a cost. Normally this is not a problem, but some systems may not perform properly if you under-drive the alternator excessively, especially if you've increased the electrical load on the system through the use of bigger cooling fans, high-capacity fuel pump, stereo system, etc. If the alternator does not generate enough voltage to keep the system adequately charged, it can have an adverse effect on the EFI system and result in a variety of drivability issues.

- The inside diameter of the fuel return line should be at least 75% of the size of the inside diameter of the fuel supply line.

FUEL PUMP LOCATION

A common and often overlooked problem is the location of the fuel pump or pumps. Optimally, the fuel pump should be mounted IN THE TANK to reduce the possibility of pump cavitation. Cavitation is essentially localized boiling caused by a reduction in pressure, generally occurring on the inlet side of a pump. This localized boiling results in fuel vapor bubbles which will reduce the volume of fuel the pump is capable of delivering to the engine. Any reduction in pressure or increase in temperature at the inlet side of the pump increases the chances that cavitation will occur. For this reason, it is always best to either have the pump inside the tank immersed in fuel or (in the case of an external pump) gravity fed, which will increase the pressure on the inlet side of the pump. If the fuel pump has to "pull" the fuel, this will result in a reduction in pressure at the fuel pump inlet potentially allowing cavitation and, thus, vapor bubbles to develop. These vapor bubbles are then drawn into the fuel pump and exit the high-pressure side of the fuel pump as compressed vapor. They travel the entire length of the fuel system and are expelled through the fuel injector. This can cause issues ranging from stumbles and hesitations to engine damage due to insufficient fuel delivery and lean A/F ratios. Sometimes this problem can characterize itself by only appearing when the weather gets warmer, which can confound the diagnosis of the issue. In certain cases, it may seem to only develop when driving on certain surfaces, because pavement reflects more heat than an off-road 4x4 trail. Remember, more heat and lower pressure on the inlet side of the pump means a greater chance of cavitation, which is to be avoided whenever possible.

If you are using an external mounted fuel pump, you should run a very coarse (typically around 100 micron) filter on the inlet side of the fuel pump, and a finer (typically around 10 micron) filter on the outlet side of the pump. A paper filter is NOT recommended on the inlet of the fuel pump because it can cause a restriction in fuel flow which, as mentioned previously, can lead to cavitation.

DISTRIBUTOR CAP AND ROTOR KIT
M-12106-A302**

- Fits all 1957-93 V8 distributors (except EEC). High-performance replacement for high-energy OEM rotor and cap on 1977-93 V8 distributors. Installation on 1957-76 distributor (which had smaller diameter cap) reduces possibility of crossfire between terminals at high rpm's
- Compatible with Ford Racing ignition wire sets
- Aluminum terminals

50 States Street Legal

MINI STARTER – SMALL BLOCK
M-11000-B51 1.4 kw Super High-Torque Starter

- Small diameter mini-starter—great for additional header clearance
- Weighs approximately 5 lbs less than pre-1989 production starters, yet provides more cranking power
- Comes with special battery cables and instructions. Must use fenderwell solenoid
- Fits most 289/302/351W/351C engines except 164-tooth manual transmission

V8 DISTRIBUTOR CAP AND ROTOR KIT
M-12106-B302**

- Fits 1986-96 EEC/TFI distributors
- Compatible with Ford Racing "wire-wound" ignition wire sets
- Aluminum terminals

50 States Street Legal

HIGH-TORQUE MINI STARTER
NEW

M-11000-MT164 1.6 kw High-Torque Starter

- Small diameter mini-starter—great for additional header clearance
- Weighs approximately 5 lbs less than pre-1989 production starters, yet provides more cranking power
- Comes with special battery cables and instructions. Must use firewall solenoid
- Fits most 289/302/351W/351C engines with 164-tooth manual transmission flywheel

Rick Riccardi from Downs' Ford 1981 Capri
Engine built by B&B Performance Machine and Dave Jack Cylinder Heads
NMRA Hot Street

FRPP Content:
M-6010-W351
Photo courtesy of Muscle Mustangs & Fast Fords

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

SPARK PLUG WIRES

9 MM SPARK PLUG WIRE SETS – "FORD RACING"

Wire-wound custom ignition wire sets feature low resistance for minimum spark loss. Silicone insulation and boots withstand high temperatures and voltage loss for minimum crossfire and are highly resistant to fuels, oils and solvents. Long-life, tough stainless steel terminals for "post"-type distributor caps. Includes coil wire for socket-type coil and "Ford Racing" identification.
Cylinder number appears on each wire.

NEW AND IMPROVED

Spark plug wires feature high-quality 9 mm wire available in 4 colors: blue, black, yellow and red.

M-12259-C462/Mustang 4.6L SOHC 9 mm Wire Set

PART NUMBER	APPLICATION	WIRE COLOR	END CONFIG.
M-12259-C301**	5.0/5.8L V8 Engine	Blue	45º Boot
M-12259-R301**	5.0/5.8L V8 Engine	Red	45º Boot
M-12259-M301**	5.0/5.8L V8 Engine	Black	45º Boot
M-12259-Y301**	5.0/5.8L V8 Engine	Yellow	45º Boot
M-12259-C460**	7.0/7.5L V8 Engine	Blue	45º Boot
M-12259-R460**	7.0/7.5L V8 Engine	Red	45º Boot
M-12259-C302**	V6 & V8 Universal	Blue	45º Boot
M-12259-M302**	V6 & V8 Universal	Black	45º Boot
M-12259-C462**	4.6L 2V Mustang	Blue	45º Long Boot
M-12259-R462**	4.6L 2V Mustang	Red	45º Long Boot
M-12259-C464**	4.6L 4V Mustang	Blue	45º Long Boot
M-12259-R464**	4.6L 4V Mustang	Red	45º Long Boot
M-12259-T462**	4.6L 2V F-150 Truck	Blue	45º Long Boot

NOTES:

- Universal sets can be cut to length with a crimping tool. Includes terminals for "post"- and socket-type coils, plus easy-to-follow instructions.
- Wire sets M-12259-C301/R301/M301/Y301/C302/M302 do not fit distributorless ignition system (DIS) 5.0L/302 Explorer engines. The universal wire sets do not fit distributorless ignition system (DIS).

SPARK PLUG WIRE DIVIDERS

- Complete your engine dress-up with distinctive "Ford" wire dividers
- Position between loom holders to keep wires neatly routed
- Packaged in sets of 4 dividers each
- Fits 8 mm wire

PART NUMBER	APPLICATION	WIRE COLOR	FITS
M-12297-B02	2-Wire Divider	Blue	8-10 mm
M-12297-B03	3-Wire Divider	Blue	8-10 mm
M-12297-B04	4-Wire Divider	Blue	8-10 mm

SPARK PLUG WIRE LOOM HOLDER

- For 289/302/351W
- Dress up your engine with distinctive "Ford Racing" spark plug wire loom holders that keep wires from hot exhaust manifold
- Vertical-style available in "bright" chrome
- 5/16" diameter bolt hole
- Packaged in sets of 2 holders each
- Hold 4 wires each

PART NUMBER	APPLICATION	WIRE COLOR	FITS
M-12297-B14	Wire Loom Holder	Blue	8-10 mm

CUSTOM BILLET WIRE LOOMS

M-12297-L900 With Ford Oval
M-12297-L901 With V8 Logo
M-12297-L903 With Mustang Logo
All new billet aluminum spark plug wire looms with ball milled logos. Fits 8 mm and 9 mm wire. Keeps all wires neat and away from headers. Adjustable brackets fit all big and small block engines except FE V8.
Use universal spark plug wires (see above).

DISTRIBUTOR GEARS

DISTRIBUTOR GEARS

PART NUMBER	MATERIAL	COLOR	DIAMETER OUTSIDE	DIAMETER INSIDE	APPLICATION
M-12390-B	Steel	None	1.249"	0.467"	302 with steel billet and production roller camshaft with point-type or Duraspark distributors. ①
M-12390-F	Steel	Yellow	1.249"	0.531"	All 302/351W hydraulic roller tappet engines with EFI and 351W Duraspark distributors. ①
M-12390-H	Bronze	Bronze with Green Stripe	1.421"	0.531"	All 351C/351M/400/429/460 engines. ①
M-12390-K	Polymer	None	1.249"	0.467"	289/302 all camshafts with point or Duraspark distributors.
M-12390-L	Polymer	None	1.249"	0.531"	302 EFI/all 351W all camshafts.

MATERIAL SELECTION NOTES:

- Cast iron gears are compatible with cast iron camshafts (hydraulic or solid flat tappet type).
- Steel gears are compatible with billet steel camshafts (hydraulic roller tappet type).
- Bronze gears can be used with either cast iron or billet steel camshafts. They are usually recommended by manufacturers of aftermarket billet steel solid roller tappet camshafts. Since the bronze is softer than cast iron or steel, it will wear at a faster rate.
- Polymer gears are compatible with all camshafts.

IMPORTANT INSTALLATION NOTE:
① Distributor gears do not have pre-drilled holes. See instructions included with part, call the Techline (800) FORD788 for a faxed copy, or visit fordracingparts.com or see page 163.

STEEL DISTRIBUTOR GEAR FOR 289/302
M-12390-B

- Fits 289/302 point and Duraspark distributors with .467" diameter shaft
- Compatible with billet steel hydraulic roller camshafts

NOTE: Distributor gears do not have pre-drilled holes, see Distributor Gear Installation page 163.

STEEL DISTRIBUTOR GEAR FOR 302/351W
M-12390-F

- Fits 302 EFI, 351W EFI, point and Duraspark distributors with .531" diameter shaft
- Compatible with billet steel hydraulic roller camshafts

NOTE: Distributor gears do not have pre-drilled holes, see Distributor Gear Installation page 163.

BRONZE DISTRIBUTOR GEAR FOR 351C/351M/400/429/460
M-12390-H

- Fits 351C/351M/400/429/460 point, Duraspark and EFI distributors with .531" diameter shaft
- Recommended for billet steel mechanical roller camshafts
- Bronze is softer than cast iron or steel, it will wear at a faster rate

NOTE: Distributor gears do not have pre-drilled holes, see Distributor Gear Installation page 163.

POLYMER DISTRIBUTOR GEAR FOR 289/302
M-12390-K

- Fits 289/302 point and Duraspark distributors with .467" diameter shaft
- Compatible with cast iron and billet steel camshafts
- For "Extreme duty" race engines
- Excellent wear characteristics

NOTE: Distributor gears do not have pre-drilled holes, see Distributor Gear Installation page 163.

POLYMER DISTRIBUTOR GEAR FOR 302/351W
M-12390-L

- Fits 302 EFI, 351W EFI, point and Duraspark distributors with .531" diameter shaft
- Compatible with cast iron and billet steel camshafts
- For "Extreme duty" race engines
- Excellent wear characteristics

NOTE: Distributor gears do not have pre-drilled holes, see Distributor Gear Installation page 163.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

DISTRIBUTOR GEAR INSTALLATION

The following information covers the installation of a new distributor gear onto an existing distributor. When replacing the distributor gear, it is important that you choose the appropriate gear for your application. If you have questions regarding your gear selection, please contact the Ford Racing Techline at (800) FORD788. Failure to use the correct gear will lead to premature gear failure. Premature gear failure may also be attributed to improper meshing of the gear teeth between the camshaft and distributor. For that reason, we recommend that you install a new distributor gear when installing a new camshaft.

INSTALLATION INSTRUCTIONS:

STEP 1: Remove roll pin from distributor gear and shaft. Save pin for re-assembly.

STEP 2: Verify that the shaft endplay is .024" to .035". Modify collar if necessary. Some aftermarket distributors may be constructed in a manner that does not allow you to achieve .024" to .035" of endplay. See "Alternative method of verifying correct distributor gear installation" if your distributor does not have .024" to .035" endplay.

STEP 3: Press original distributor gear off shaft.

STEP 4: Mark location of original roll pinhole on the shaft by drawing a vertical line along the shaft that intersects the hole. Measure from the centerline of the roll pinhole to a fixed point above it. Note that dimension.

STEP 5: Press new distributor gear onto shaft.
NOTE: Replacement distributor gear does not have roll pinhole.

STEP 6: Pull distributor shaft out of distributor housing to eliminate endplay (see Figure 1).

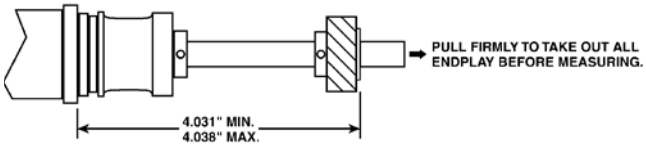
STEP 7: Check location of distributor gear on distributor shaft (see Figure 1). If it is not in the correct location, use a press to move the gear to the correct location.

STEP 8: Using the vertical line on the distributor shaft and the noted dimension (see **STEP 4**), roughly plot where the original roll pinhole is located. Drill a new .125" hole 90˚ from the original hole, above or below it, through the gear and the shaft.
NOTE: It is important that the dimensions called out in Figure 1 are maintained while drilling.

STEP 9: Insert roll pin and check dimensions (see Figure 1).

WARNING: If the distributor gear is installed incorrectly, it may be forced down against the support in the block or may be held up away from the support in the block. Both conditions will cause damage to the block and or the block and gears. When the gear is properly installed, the cut on the gears and the direction of rotation will pull the distributor gear down against the support (distributor gear thrust face) in the block.

FIGURE 1



ALTERNATIVE METHOD OF VERIFYING CORRECT DISTRIBUTOR GEAR INSTALLATION:

After **STEP 7**, install distributor assembly in the block you are using. Timing chain set and camshaft must be removed. With the aluminum distributor housing fully seated against the block, verify that the distributor gear can be lifted off the support in the block at least .005". Next pull the distributor gear down against the support in the block and hold it there. Pull up on the aluminum distributor housing and verify that you can lift it up at least .005" while holding the gear against the support in the block. This procedure will confirm that the gear is not being forced down against the support and not being held up off the support in the block.

Continue with **STEP 8**.

COMMON DISTRIBUTOR PROBLEMS:

Distributors with very little or no shaft endplay. This has been found with new and remanufactured distributors. Improper endplay may force the gear against the support in the block or hold it up off the support, causing damage.

Distributors that have a different material gear than advertised. It is important to run the correct distributor gear for the camshaft that you are using. Consult the manufacturer of the camshaft you are using for gear recommendation.

Some heavy-duty oil pump drive shafts may not allow an EFI distributor to slide down far enough over the oil pump drive shaft. EFI distributors have a longer shaft below the gear.

Running an HV oil pump with production bearing clearances can cause abnormally high oil pressure and possible premature distributor gear wear.

Gears on camshafts with a very poor finish. This could cause premature distributor gear wear.

New and remanufactured distributors with the gear installed at the wrong height.

CARRIERS

Ford Racing offers a variety of nodular iron, steel and aluminum carriers for the popular 9" axle.

M-4141-B shown

M-4141-D shown

PART NUMBER	MATERIAL CARRIER	BRG. CAP	APPROX. WEIGHT	BRG. CAP I.D.	ADJUSTER NUT	DIFF. BRG.	DIFF. RACE	AXLE SHAFT COMPATIBILITY	NOTES
M-4141-B	Nodular	4130 Steel	26#	2.892" Steel	Stamped Steel	LM-102949	LM-102910	28/31/33 Spline	Heavy Duty
M-4141-D	Aluminum	Aluminum	14#	3.0625"	Machined Steel	LM-603049	LM-603011	28/31/33 Spline	Heavy Duty
M-4141-E	Nodular	4130 Steel	26#	3.0625" Steel	Machined Steel	LM-603049	LM-603011	28/31/33 Spline	Heavy Duty
M-4141-H	Nodular Iron	4130 Steel	26#	3.250"	Machined Steel	LM-104949	LM-104911	31/35/40 Spline	Heavy Duty Light-weight
M-4141-J WHILE SUPPLIES LAST Limited Quantities	Nodular Iron	4130 Steel	26#	2.9528"	Machined Steel	2MM9109W1 Ball Bearings	—	31 Spline	Heavy Duty

9" STEEL DIFFERENTIAL CARRIER

M-4141-HS

- Developed using Finite Element Analysis (FEA) to withstand the demands of NASCAR racing. Finite Element Analysis is a method for predicting the response of a geometric structure due to the environment it is being designed to function in. The process starts by creating a geometric model. The model is then subdivided, or meshed into many small geometric pieces, or elements of basic geometric shape. These basic shapes can easily give results for stress and strain where the larger geometric structure cannot
- Steel casting has nearly double the tensile and yield strength and enlongation vs. cast iron
- Case investment cast from 8620 steel
- Bearing caps machined from 4130 steel
- ARP® bolts
- 3.250" differential bearing diameter
- Approximate weight: 21 lbs

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

SMALL PARTS KIT
M-4663-A100

Kit includes:
- Pinion nut
- O-ring
- Collapsible spacer
- Gear marking compound
- Brush
- Shims to set pinion gear depth

DIFFERENTIAL BEARING ADJUSTER LOCK AND BOLT KIT
M-4144-B

Kit includes 2 locks and 2 bolts to secure differential bearing adjusting nuts on 9" nodular carriers produced after November 1989.

8" & 9" FORD TRACTION-LOK DIFFERENTIAL BOLT KIT
M-4216-B Sold in pkg. of 10
- Fits 8" and 9" Ford Traction-Lok differentials
- Attaches ring gear to differential

SPECIAL U-JOINT KIT
M-4635-A
- Kit consists of a hybrid 1310/1330 series cross, plus (4) 1.0625" OD and (2) 1.125" OD caps and locking clips
- Allows small and large Ford drivetrain components to be interchanged

BRAKE BACKING PLATE T-BOLT AND NUT KIT
M-4002-B
- Use to attach brake backing plates to 9" axle housings
- 3/8-24 x 1.3" T-bolts and locking nuts
- Sold in axle sets of 8 bolts and nuts

BOLT – RING GEAR TO DIFFERENTIAL CASE
M-4216-A200 Sold in pkg. of 100
M-4216-A210 Sold in pkg. of 10

The most popular 9" ring gear bolt, for use on open differentials, Detroit Lockers and spools.
NOTE: Will NOT fit Traction-Lok differentials.
Same as flywheel bolts, see page 188.

UNIVERSAL PINION NUT
M-4213-A Sold in pkg. of 100
- Universal-design 3/4-20 hex flange pinion lock nut
- Fits 6.75", 7.5", 8.8" and 9" axle assemblies

"DAYTONA" PINION BEARING RETAINER
M-4614-A High-strength Aluminum (206T6)
M-4614-B Nodular Iron

Both pinion bearing retainers are a direct fit and functional replacement for the C3AZ-4614-B unit, which is no longer serviced by Ford Customer Service Division. Each comes complete with large rear cup (TBAA-4616-A) or (HM89410) and small front cup (B7A-4614-A) or (M88010).

NOTE: Use large rear bearing TBAA-4621-A (HM-89443) and small front bearing B7A-4621-A (M-88048) with these retainers.

NASCAR BEARING SUPPORT
M-4614-BR

Race-prepared "Daytona" pinion bearing retainer. Deburred and prepped for build-up of your 9" carrier assembly.

"BENDA" PINION SEAL (9" AXLE)
M-4676-A111

This premium Viton® oil seal was developed for high-speed, high-temperature applications by Dave Benda, Materials Control Supervisor, Ford Sterling Plant. Viton® is a registered trademark of Dupont Performance Elastomers.

8.8" RING & PINION INSTALLATION KIT
M-4210-A
- Kit includes: pinion and carrier shims, crush sleeve, pinion seal, pinion nut, ring gear bolts and cover gasket
- Use for changing ring and pinion gear or differential
- Fits IRS

8.8" RING & PINION INSTALLATION KIT
M-4210-C
- Includes everything that M-4210-B has and axle shaft bearings and axle shaft seals
- Use for changing ring and pinion gear or differential
- Fits 1986-2004 Mustang for non-IRS axles

8.8" RING & PINION INSTALLATION KIT
M-4210-B
- Includes everything that M-4210-A has and pinion gear and carrier bearings
- Use for changing ring and pinion gear or differential
- Fits IRS

8.8" AXLE BEARING AND SEAL KIT
M-1225-B
- 8.8" axle shaft bearing and seal kit for non-IRS axles
- Kit contains 2 outer axle shaft bearings and seals
- 2.256" O.D. bearing
- Fits 1986-2004 Mustang

8.8" AXLE BEARING AND SEAL KIT NEW
M-1225-B1
- Fits the 2005-09 Mustang GT and 2007-09 SVT Mustang
- 8.8" axle shaft bearing and seal kit
- Kit contains 2 outer axle shaft bearings and seals
- 2.5308/2.5315" O.D. bearing
- 1.6189/1.6194" I.D. bearing

8.8" SVT RING & PINION INSTALLATION KIT NEW
M-4210-B1
- Fits 2007-09 SVT Mustang and 2008 Special Edition Mustang
- Includes everything that M-4210-A has and carrier bearings and high-torque pinion bearing
- High-torque pinion bearing used in 2007-09 SVT Mustang and 2008 Special Edition Mustang
- Use for changing ring and pinion gear or differential

8.8" IRS BEARING AND SEAL KIT
M-4413-A
- For use in rebuild 8.8" IRS differentials
- Kit includes 2 stub shaft pilot bearings and 2 stub shaft pilot bearing housing seals

8.8" TRACTION-LOK REBUILD KIT
M-4700-B
- Kit includes clutch pack, shims, friction modifier and instruction sheet
- Fits all 8.8" Traction-Lok differentials

8.8" TRACTION-LOK REBUILD KIT WITH CARBON DISCS
M-4700-C
- Kit includes carbon fiber clutch pack, shims, S-spring and instruction sheet
- Fits all 8.8" Traction-Lok differentials
- Carbon fiber discs designed for higher torque usage
- Used in 2003-09 SVT Mustangs

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

AXLE COMPONENTS

8.8" TRACTION-LOK LIMITED SLIP DIFFERENTIALS

M-4204-F288 28 Spline
M-4204-F318 31 Spline

- 8.8" differential
- Features plate-type clutches
- Will accept anti-lock exciter ring
- Requires 4 ounces of CM-19546-A1 friction modifier with initial fill

8.8" TRACTION-LOK LIMITED SLIP DIFFERENTIAL

M-4204-F318C

- 8.8" differential
- Fits 31-spline axles
- Fits solid or independent rear suspension
- Carbon fiber clutch plates for increased durability
- Will accept anti-lock exciter ring
- Requires 4 ounces of CM-19546-A1 friction modifier with initial fill
- Original equipment in 2003-04 Mustang Cobra

8.8" T-2 TORSEN™ DIFFERENTIALS

M-4204-T28 28 spline
M-4204-T31 31 spline

- 8.8" differential
- Torsen T-2 type differential
- Features full-time torque-sensing, torque-biasing
- M-4204-T28 fits 1999 Cobra/Thunderbird/ Mark VII with IRS (2000-04 Cobra has 31 spline)

7.5" TRACTION-LOK LIMITED SLIP DIFFERENTIAL

M-4204-C75

- 7.5" differential
- Fits 28-spline axles
- Features plate-type clutches
- Will accept anti-lock exciter ring
- Requires 4 ounces of CM-19546-A1 friction modifier with initial fill

8.8" DIFFERENTIAL

M-4204-F3180

- 8.8" differential
- Fits 31-spline axles
- Open type differential
- Will accept anti-lock exciter ring

FRICTION MODIFIER FOR CLUTCH-TYPE LIMITED SLIP DIFFERENTIALS

M-19546-A12 Case of 12 (Single bottles CM-19546-A1 sold in cases of 12 only)

Specially formulated additive to provide smooth operation of clutch-type limited slip differentials.

9" TRAC-LOK LIMITED SLIP DIFFERENTIAL

M-4204-F28A

- 9" differential
- 28 spline
- 4-spring aggressive torque bias
- Street/strip application
- 1536 steel billet case caps
- Cast high-strength nodular iron case
- OEM profile gears made of high-manganese, high-chromium alloy steel
- Rebuildable

9" TRAC-LOK LIMITED SLIP DIFFERENTIAL

M-4204-F31A

- 9" differential
- 31 spline
- 4-spring aggressive torque bias
- Street/strip application
- 1536 steel billet case caps
- Cast high-strength nodular iron case
- OEM profile gears made of high-manganese, high-chromium alloy steel
- Rebuildable

Did you know…
The 2005-08 Mustang GT axles are 31 spline.

8.8" AUBURN™ HD LIMITED SLIP DIFFERENTIAL

WHILE SUPPLIES LAST Limited Quantity!!

M-4204-A28 28 spline

- 8.8" differential
- Features cone-type clutches
- Will accept anti-lock exciter ring
- Requires 4 ounces of CM-19546-A1 friction modifier with initial fill
- Recommended for street use only

STERLING AXLE "TRUE TRAC"™ LIMITED SLIP DIFFERENTIAL

WHILE SUPPLIES LAST Limited Quantity!!

M-4204-TT312

- Torque-sensing differential applies torque to wheel with best traction
- Refined enough for street use, stout enough for rigorous off-road duty
- 35 spline fits all Sterling axle 10.25" and 10.5" gears
- Full floating axles only, will not work with C-clip axles

AXLE GIRDLE

M-4033-G1 8.8" Ford

- Light-weight 356T6 aluminum casting replaces rear cover on 8.8"
- Load bolts provide additional support for differential bearing caps
- Increase ring and pinion gear life
- Will not fit IRS

NOTES: Check exterior clearance to chassis/suspension. Will not fit 2005 Mustang.

AXLE GIRDLE 2005-08 MUSTANG

M-4033-G2

- Low Profile design to fit 2005-08 Mustang GT and 2007-08 SVT Mustang
- Light-weight 356T6 aluminum casting replaces rear cover on 8.8"
- Load bolts provide additional support for differential bearing caps
- Increase ring and pinion gear life

NOTE: Check exterior clearance to chassis/suspension.

Tom Covert's 1985 Mustang GT
Best ET: 10.35 at 125.85 mph
IHRA Modified ET

FRPP Content:
M-6049-J302
M-4209-G456
M-6268-B302
M-6500-R302
M-9351-A302
M-6059-D351
M-6750-B302

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

AXLE COMPONENTS

28-SPLINE 8.8" TRACTION-LOK REAR AXLE ASSEMBLIES
(LESS BRAKES AND SHAFTS)

WHILE SUPPLIES LAST Limited Quantity!!

M-4006-B373 shown

FEATURES…
- Approximately 35% stronger than the production 7.5" axle
- Units are fully assembled with housing (including all applicable brackets), gearset and 28-spline Traction-Lok differential
- Bolts into the Fox vehicles listed with each part number that were originally equipped with 7.5" axle
- Axle assembly uses vehicle's 28-spline axle shafts and rear drum brakes

PART NUMBER	RATIO	VEHICLE APPLICATION	
M-4006-B373*	3.73:1	1979-98 Mustang ①	1981-82 Granada/Monarch
		1979-86 Capri	1983-85 LTD/Marquis
		1978-82 Fairmont/Zephyr	

NOTE: ① 1986-95 Mustang 5.0L vehicles are factory-equipped with 28-spline 8.8" axle assembly.

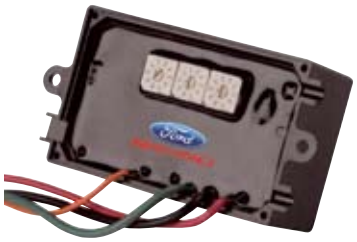
8.8" MUSTANG AXLE KIT
M-4006-S197*

- Factory 8.8" axle housing kit for 2005-09 Mustang
- Perfect for building a custom axle!
- Allows you to customize your gearset and differential
- Includes:
  - Axle housing
  - Housing vent
  - Left and right 31-spline production axle shafts
  - 2005-09 Mustang pinion flange
  - 2003-04 Cobra 1350 pinion flange
  - Cover bolts
  - Pinion washer
  - C-locks
  - M-4210-B ring and pinion installation kit
  - M-1126-C shim kit

SPEEDOMETER RECALIBRATORS
NEW

M-4209ADPT-2005A
- Fits 2005-09 Mustang GT, automatic or manual transmission and 2007-09 SVT Mustang
- Corrects speedometer, transmission shift points and other speed-related errors affected by gear ratio or tire size changes
- Easy to install 4-wire hook-up
- Provides a Stable Signal Compatible with FORD Automatic Transmission Systems
- Easy to re-adjust if changes are made after installation

NOTE: Gear ratio change on automatic-equipped vehicles is limited to 2 steps higher or lower than original factory-equipped ratio.
NOTE: Tire size change is limited on automatic-equipped vehicles to the equivalent of 2 steps higher or lower gear ratio change.



M-4209ADPT-2005A shown

M-4209ADPT-9404A NEW
- Fits 1994-2004 Mustang GT, automatic or manual transmission
- Corrects speedometer, transmission shift points and other speed-related errors affected by gear ratio or tire size changes
- Easy-to-install 4-wire hook-up
- Provides a Stable Signal Compatible with FORD Automatic Transmission Systems
- Easy to re-adjust if changes are made after installation

2005-09 8.8" MUSTANG GT AXLE ASSEMBLIES
M-4001-A355* 3.55 gear ratio
M-4001-A373* 3.73 gear ratio axle assembly used as standard equipment on the 2008 Special Edition Mustang NEW
- 31-spline axles and Traction-Lok differential
- Includes axle shafts

8.8" AXLE INSTALLATION KIT
M-4050-B 1979-2004 non-IRS
This kit consists of 2 bushings, 2 C-locks and 1 4-ounce bottle of friction modifier. These parts are included with every Ford Racing 8.8" axle assembly. Now available separately in this kit in response to requests from racers and fabricators.

2003-04 COBRA PINION FLANGE
M-4851-B
- Original equipment on 2003-04 Mustang Cobra
- Designed for use with 1350 U-joint flange
- 4.25" bolt circle
- Fits all 8.8" rear drive pinions

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

RING GEARS AND PINIONS

8.8" RING GEAR AND PINION SETS

PART NUMBER	RATIO	AXLE
MUSTANG/RANGER/F-150		
M-4209-F308*	3.08:1	8.8"
M-4209-F327*	3.27:1	8.8"
M-4209-G355A*	3.55:1	8.8"
M-4209-F373N*	3.73:1 ②	8.8"
M-4209-G410A*	4.10:1	8.8"
M-4209-G410M*	4.10:1	8.8"
M-4209-G430M*	4.30:1	8.8"
M-4209-G456*	4.56:1	8.8"

M-4209-F308 shown

NOTES:
① These ring and pinions have been developed to increase towing capability of 5.4L Expeditions.
② Replaces our popular M-4209-F373. New manufacturing technology utilizing a Face Hob Process which features a single-pass pinion tooth machining operation compared to a conventional three-pass process for machining. CNC cut and lapped gear teeth. Higher strength and better quality gears are produced with the Face Hob Process. **NOTE:** These new gears look a little different, the gear teeth are cut on a different angle and the ring gear has a bevel on the back of the gear.

SPEEDOMETER GEAR USAGE CHART — 7.5" AND 8.8" AXLE

The chart specifies the driven gear recommended to obtain approximately correct mph readings when the listed Ford Racing ring and pinion gear sets are used in conjunction with the indicated speedometer drive gear and Mustang original equipment. 15"/16"/17" tires (800-815 revolutions/mile). A dash in the chart indicates that particular combination cannot be obtained. If you are using oversize/undersize tires, obtain the revolutions/mile information from the tire manufacturer and plug it into the formula below. The part numbers of the various speedometer drive and driven gears are shown in the charts. The gears can be obtained from any Ford and Lincoln-Mercury dealer. They are not available from Ford Racing. The drive gears on T-5/T-45/SROD/Tremec manual transmissions can be changed. The drive gear on Ford rear-wheel automatic transmissions is machined into the output shaft. Changing the drive gear is impractical since it requires a new output shaft and transmission teardown. Most have 7 or 8 teeth.

SPEEDOMETER DRIVEN GEAR TEETH			
	DRIVE GEAR TEETH		
AXLE RATIO	6T	7T ①	8T ②
3.08	–	18	20
3.27	16	19	21
3.45/3.55	17	20	–
3.73	18	21	–
4.10	20	–	–
4.30	21	–	–

NOTES: ① Used in most vehicles with V8 and T-5 transmissions from 1983-89 and 1996-98 Cobra with T-45 transmissions.
② Used on 1990-95 Mustang V8 with T-5 transmissions and 1996-98 Mustang GT with T-45 transmissions.
③ Discontinued.

T-5 MANUAL TRANS. DRIVE GEARS (17285)			MANUAL TRANS. DRIVEN GEARS (17271)			AUTO TRANS. DRIVEN GEARS (17271)		
NUMBER OF TEETH	COLOR	SERVICE PART NUMBER	NUMBER OF TEETH	COLOR	SERVICE PART NUMBER	NUMBER OF TEETH	COLOR	SERVICE PART NUMBER
6	Black	E3ZZ-B	16	Wine	C0DZ-A	16	Blue	D0AZ-A ③
7	Yellow	E3ZZ-A	17	White	C3DZ-C	17	Green	C7SZ-A
8	Green	F0ZZ-A	18	Yellow	C0DD-B	18	Gray	C7SZ-B ③
T-45 MANUAL TRANS. DRIVE GEARS (17285)			19	Pink	C0DZ-B	19	Tan	C7VY-A
			20	Black	C1DZ-A	20	Orange	C8SZ-B
7		F6ZZ-AA	21	Red	C4OZ-A	21	Purple	D0OZ-B
8		F6ZZ-BA						

SPECIAL APPLICATIONS DRIVEN GEAR CALCULATION EXAMPLE

STEP 1
If your axle/tire combination is not in the above charts, you can calculate the number of teeth required on the driven gear by using this formula:

STEP 2
- T-5 Trans.
- Drive Gear Teeth = 7
- Axle Ratio = 3.73
- Tire Rev. Per Mile = 815 (225/60 VR15)

STEP 3
You would select driven gear with closest whole number of teeth, which would be the 21-tooth C4OZ-17271-A part.

$$\text{Driven Gear Teeth} = \frac{\text{Drive Gear Teeth} \times \text{Axle Ratio} \times \text{Tire Rev. Per Mile}}{1000} = \frac{7 \times 3.73 \times 815}{1000} = 21.3 \text{ (driven gear teeth)}$$

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

2005-09 MUSTANG GT AND 2007-09 SVT MUSTANG DRIVESHAFT LOOP KIT

NEW

M-5478-S197B

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- Must drill holes for installation
- Zinc plated
- Includes hardware
- Includes front and rear loops for production two-piece driveshaft
- Will work with short throw 6-speed shifter M-7210-B
- Used on the FR500S Mustang

MUSTANG DRIVESHAFT SAFETY LOOP

M-5478-C2

- Bolts to the floor pan of all 1979-2004 Mustangs
- Must drill holes for installation
- Zinc plated
- Includes hardware
- Designed to fit with 3.5" aluminum driveshafts

HD ALUMINUM DRIVESHAFT ASSEMBLY

M-4602-G Fits 1979-95 Mustang/Capri 5.0L vehicles with T-5/SROD/C-4/A0D, 1979-93 with Tremec transmissions and 7.5" or 8.8" axles. 28-spline yoke

M-4602-J Fits 1996-2004 Mustang and 1996-98 Cobra 4.6L with manual transmission. 31-spline yoke

- High strength, 3.5" diameter 0.114" wall thickness 6061-RT62 aluminum seamless drawn tube
- 1330 U-joints 45.5" long (CL to CL of U-joints)
- Will not fit 1999-2004 Cobra

5-LUG REAR BRAKE DRUM/AXLE SHAFT KITS 1979-93 MUSTANG/CAPRI

M-1126-A* 28-spline Differential

This kit includes 1 pair of 9" x 1-3/4" brake drums with 5 mounting holes on a 4.5" diameter circle—and 1 pair of 28-spline axle shafts with mating 5-lug bolt pattern. Permits owners of 1979-93 Mustang/Capri vehicles with 9" rear brakes and 8.8" rear axle with 28-spline differential to fit 5-hole, 4.5" diameter bolt circle wheels to them.

HEAVY-DUTY 8.8" 4-LUG 31-SPLINE MUSTANG AXLE SHAFT

M-4235-B* 1979-93 Mustang

- 1979-93 Mustang with 8.8" axle
- Heavy-duty 31-spline axle shaft (29.16" long) for applications using 31-spline differentials
- 4-lug, 4.25" bolt circle

HEAVY-DUTY 8.8" 5-LUG 31-SPLINE MUSTANG AXLE SETS

(SOLD IN PAIRS)

M-4235-E* 1999-2004 Mustang

M-4235-D* 1994-98 Mustang

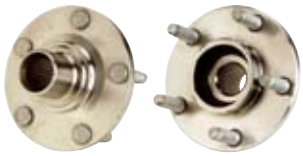
M-4235-F* 1979-93 Mustang

- Heavy-duty SAE 1550 steel
- Studs and O-rings included
- 31-spline
- 5-lug, 4.5" bolt circle

KIT CAR IRS HUB

M-1109-A

- 5 x 4.5" bolt circle, 2.775" wheel pilot hub for popular Mustang size wheels
- Should be used with IRS knuckle M-5970-A
- Original equipment on 1999-2004 Mustang Cobra



KIT CAR 8.8" IRS HOUSING KIT

M-4010-A88

- Aluminum IRS differential housing, rear cover, rear cover bolts, oil slinger and vent tube
- Does not include gear set, gear installation kit or IRS compatible differential
- Original equipment on 1989-97 T-Bird, 1993-98 Mark VIII, 1999-2004 Mustang Cobra with 8.8"

KIT CAR IRS BEARING

M-1215-A

- For use with kit car IRS hub M-1109-A
- Original equipment on 1993-98 Mark VIII, 1989-97 Thunderbird, and 1999-2004 Cobra

KIT CAR IRS KNUCKLE SET

M-5970-A

- Knuckles for use in kit car IRS systems
- Hub not included! Use with M-1109-A. Sold separately
- Includes M-1215-A
- Original equipment on 1989-97 Thunderbird and 1993-98 Mark VIII

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2005-08 MUSTANG GT 14" BRAKE UPGRADE KIT

M-2300-S*

- Fits 2005-08 Mustang GT, see www.fordracingparts.com for additional applications
- Kit will upgrade the front brakes to 2007-08 SVT Mustang 14" rotors and 4-piston calipers
- Includes 2007 SVT Mustang rear pads for use in stock Mustang GT rear calipers
- Includes Goodridge® DOT four-piece hose kit and attaching parts
- Requires 18" M-1007-S1895, M-1007-S1895B wheel or equivalent for caliper clearance

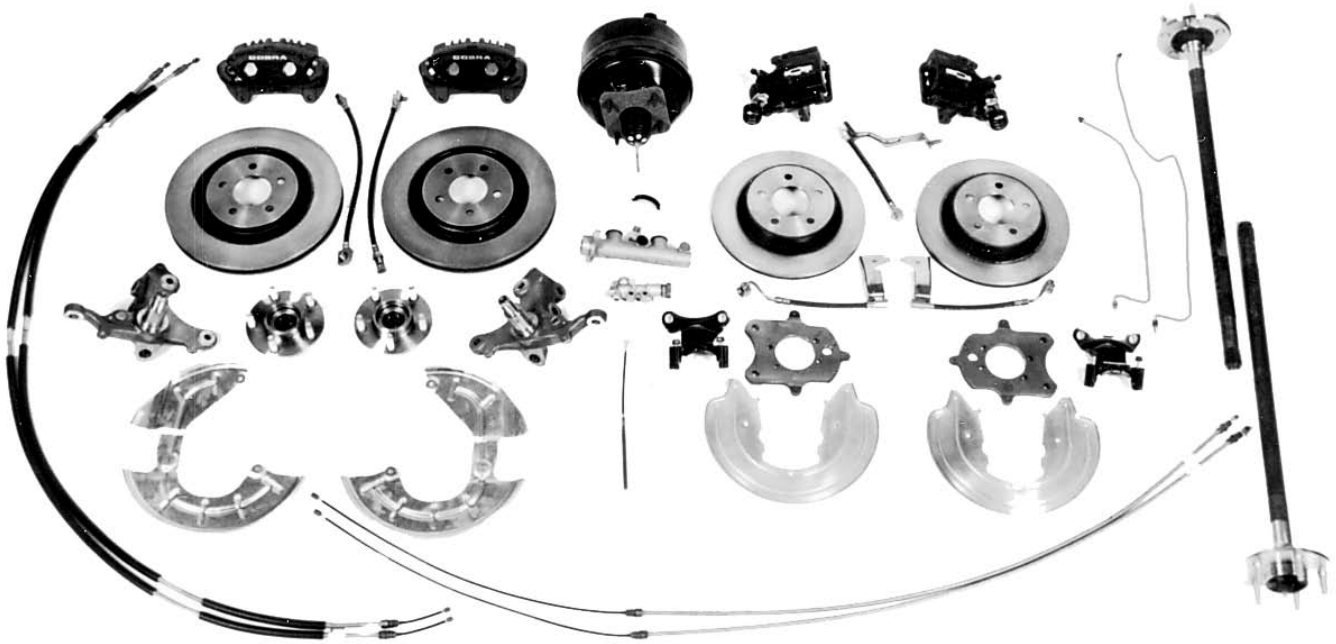
5-LUG FRONT/REAR SUPER HEAVY-DUTY "COBRA" DISC BRAKE CONVERSION KIT

1987-93 MUSTANG

M-2300-K*

This kit permits owners of 1987-93 Mustang GTs and LXs with V8 to upgrade their vehicle braking system to 1993 Cobra "R"/1994 Cobra specs. The kit features massive 13.0" front and 11.65" rear rotors, plus spindles, axle shafts, hubs, calipers, mounting brackets, Cobra brake booster and master cylinder, adjustable proportioning valve, hoses, tubes, attaching hardware, instructions and more.

Installation is a virtual bolt-on, requiring only one flared connection. Requires use of 17" x 8" wheels (not included in kit) with 5-hole, 4.5" diameter mounting pattern and 5.75" backspacing. Rear inner fender lips should be "rolled" for tire clearance. Some vehicles may also require front fender wheel well modifications, depending on tire size and ride height.



*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

BRAKE KITS

5-LUG LOW-COST REAR DISC BRAKE KIT LATE FORD 9" AND 8.8" TRUCK AXLE HOUSING

NOTE: Does not fit Mustang 8.8" axle.

M-2300-G*

This rear disc brake kit may be low buck, but it really works! Kit includes 11" rotors, calipers, mounting brackets and attaching hardware. The rotors have the popular 5-hole, 4.5" diameter passenger car bolt pattern. Caliper mounting brackets fit the popular 8.8" Truck/9" Late Ford axle housings with 2" x 3.56" pattern and big 3.15" diameter bearing. This kit is designed for vehicle installations with a 2.5" brake gap (housing flange-to-axle shaft flange).

NOTE: Hoses, tubes, parking brake cables and wheels are NOT included in this kit. Additional parts and machining may be required. For more information, call the Techline at (800) FORD788.

REAR BRAKE BRACKET KIT

M-2300-M*

- Used to install Mustang Cobra, Mach 1 or Special Edition rear calipers on a 1994-2004 Mustang GT
- Kit includes production 11.65" rotors, caliper mounting brackets, moan braces, dust shields and dust shield bolts

COBRA "R" FRONT BRAKE KIT

M-2300-X*

- Original equipment on 2000 Cobra "R"
- Kit includes Brembo® 4-piston calipers, brake lines, hardware and "upgraded" slotted rotors
- This kit can be used to upgrade the front brakes on 1994-2004 GT and 1994-2004 Cobra
- May require larger wheels like M-1007-R189/R189C/F500/F500C

NOTE: 1994-95 GT requires 1994 Cobra master cylinder.

COBRA BRAKE KIT

M-2300-Q Fits 1994-95 Mustang GT ①
M-2300-R Fits 1996-2004 Mustang GT

- These kits will upgrade the front brakes to 1994-2004 Cobra 13" rotors and calipers
- Use with stock rear disc brakes
- Includes hoses and attaching parts
- Requires 17" wheels such as M-1007-C58, M-1007-C178, M-1007-R58 or equivalent

NOTE: ① Includes master cylinder.

M-2300-Q shown

SEVERE DUTY BRAKE KIT

M-2400-C

Designed as an upgrade for M-2300-K brake kits. This kit includes 2 improved-strength brake hoses and 2 Cobra 13" brake rotors. Can also be used to upgrade the braking performance of 1994-98 Mustang Cobras. Highly recommended for the above vehicles used in open track events.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

BRAKE KITS

SPECIAL EDITION MUSTANG FRONT CALIPERS
M-2320-F
- Same calipers as used on the 2001 Special Edition Mustang Bullitt. Similar to 2001 Mustang Cobra except painted red with running horse in place of Cobra logo
- Fits 1994-2004 Mustang with M-2300-Q/R upgrade kit and 1987-93 Mustangs with M-2300-K brake kit
- Kit includes left and right front calipers and brake pads

10TH ANNIVERSARY COBRA CALIPER SET
M-2320-AF
- Replacement front calipers with brake pads
- Fits 1994-2004 Mustang Cobra, Special Edition and Mach 1 Mustangs
- Can be used on M-2300-K SHD brake kit with the use of M-2321-A hardware kit

COBRA CALIPER SET
M-2320-C
- Replacement front calipers and brake pads for 1994-2004 Mustang Cobra with 13" rotors
- Same calipers and pads used in the M-2300-K SHD brake kit for 1987-93 Mustangs

SPECIAL EDITION MUSTANG REAR CALIPERS
M-2320-R
- Same calipers as used on the 2001 Special Edition Mustang Bullitt. Similar to 2001 Mustang Cobra except calipers are painted red
- Fits 1994-2004 Mustang Cobra and 1987-93 Mustangs with M-2300-K brake kit
- Kit includes left and right rear calipers and Special Edition Mustang brake pads
- Use M-2300-M bracket kit to install caliper on 1994-2004 Mustang GT

10TH ANNIVERSARY COBRA CALIPER KIT
M-2320-A
- Replacement front and rear calipers with brake pads
- Fits 1994-2004 Mustang Cobra, Special Edition and Mach 1 Mustangs
- Original equipment on 10th Anniversary Mustang Cobra
- Can be used on M-2300-K SHD Brake kit with the use of M-2321-A hardware kit

COBRA REAR CALIPER
M-2320-CR
- Replacement rear calipers and brake pads for 1994-2004 Mustang Cobra with 11.65" rotors
- Same calipers and pads used in the M-2300-K SHD brake kit for 1987-93 Mustang GT

UNIQUE SERVICE PARTS FOR M-2300-C, M-2300-F AND M-2300-K

The following components from the M-2300-C, -F, -K kits are not serviced through Ford and Lincoln-Mercury dealer parts department. These parts are only available from Ford Racing to service M-2300-C, -F, -K kits when replacement parts are required.

PART NUMBER	DESCRIPTION	SERVICE KIT
M-2450-A*	Plug, Fixed Proportioning Valve	C/F/K
M-2809-A*	Parking Brake Cable	C/F/K
M-2810-A*	Parking Brake Cable (Front)	F/K

CALIPER HARDWARE KIT
M-2321-A
- Includes 2 coarse-thread banjo bolts and 4 washers
- Used to install front calipers M-2320-A and M-2320-AF

Need Ford technical information on Performance Parts?

Call the Techline (800) FORD788 or visit our website at www.fordracingparts.com

Ford RACING

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

DRUM BRAKE BACKING PLATE KIT
M-2209-B*

- Fits Brake Drum M-1126-B
- 11" x 2.25" brakes for late model 9" axle housing
- 3.150" center pilot hole
- .381 attaching bolt holes
- 3.56" x 2" attaching bolt pattern
- Kit includes 2 new assembled backing plates with brake shoes, wheel cylinder, self-adjuster, parking brake and springs
- Sold in pairs

11" X 2.25" BRAKE DRUM
M-1126-B*

- Brake drum for backing plate kit M-2209-B
- 5 on 4.5" bolt circle
- Axle center pilot hole 2.780"
- Sold individually

BRAKE PROPORTIONING VALVE
M-2328-C

Compact, light-weight (.5 lb) aluminum brake proportioning valve. "Kneepoint" is adjustable from 100 to 1000 psi. Inlet and outlet ports have 1/8"-27 NPT threads for maximum installation flexibility.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

HD REAR UPPER CONTROL ARM KIT
M-5500-A

Kit contains 2 upper control arms with bushings that are approximately twice as stiff as current production bushings. Significantly improves traction and handling when fitted to 1979-98 Mustang and 1993-98 Cobra V8 models.

FRONT LOWER CONTROL ARM KIT
M-3075-D

This kit enables owners of 1994-2004 Mustangs to upgrade to 2003 Cobra Mustang control arms. The kit features 2 front lower control arm assemblies with 50% stiffer front bushings and low-friction ball joints. This control arm has a redesigned stamping to improve the turning circle approximately 10% on 1994-98 Mustangs.

FRONT LOWER CONTROL ARM KIT
M-3075-A

This kit enables owners of 1979-93 Mustang/Capri vehicles to upgrade them to 1996 levels with low-friction ball joints and improved inner bushings. Dramatically improves impact harshness qualities of vehicle and is recommended when heavy-duty suspension components are added.

NOTE: The ball joints in the kit have been upgraded. They have an improved nylon bearing to further reduce impact harshness. (Since no measurable wear could be detected after 250,000 miles of fleet testing, the wear detectors were eliminated.) Kit includes LH and RH lower control arm assemblies.

2007-09 SVT MUSTANG FRONT LOWER CONTROL ARM KIT
M-3075-E

- Fits 2005-09 Mustang
- Original equipment on 2007-09 SVT Mustang
- Increased strength ball joints
- Kit contains 1 RH and 1 LH lower control arm assembly

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

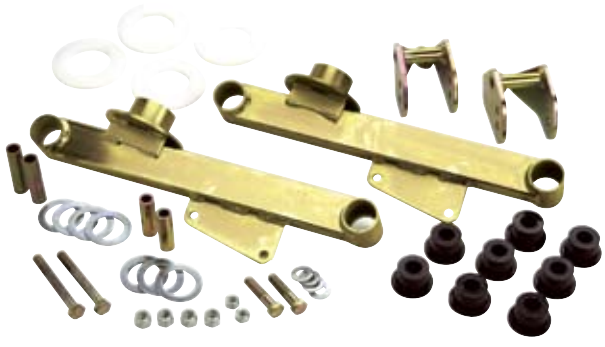
2007-09 SVT MUSTANG REAR LOWER CONTROL ARMS
M-5538-A

- Fits 2005-09 Mustang
- Original equipment on 2007-09 SVT Mustang
- Increased bushing durometer and stiffness for higher horsepower applications

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

MUSTANG REAR LOWER CONTROL ARMS
M-5649-H Fits 1979-98
M-5649-H1 Fits 1999-2004

- This lower control arm relocates control arm mounting points to alter rear suspension geometry
- Traction under acceleration and braking is dramatically improved
- Dual control arm mounting points allow anti-squat and anti-dive adjustment for differing traction conditions
- Both ends of control arms are equipped with fluted polyurethane bushing



LIGHTNING LOWERING KIT
M-3000-L

This kit lowers all 1999-2004 F-150 Lightning/F-150 Harley-Davidson models 30 mm (1.181") in all four corners. A simple front coil/jounce bumper replacement and rear shackle replacement are the only items necessary to enhance positive control. Both vehicles retain very good ride/launch characteristics.

2004-06 F-150 REAR LOWERING KIT
M-3000-G

- Lowers rear of vehicle
- 2" drop
- Contains all installation hardware

LOWERING KIT, 1997-2003 F-150, 2WD
M-3000-T1

This kit lowers 1997-2003 F-150 standard cab, SuperCab and SuperCrew with V6 or V8, approx. 2" front and 4" rear. Includes new front coil springs, rear shackles and hangers and 4 specially tuned high-pressure gas shocks. Fits vehicles with V6 or V8 engines in standard cab (long and short bed) and SuperCab (short bed). Improves appearance and handling with very acceptable ride characteristics.

NOTE: Not recommended for 1999-2003 SVT F-150 Lightning. When used on 2001 SuperCab with 6' box and 5" dia. driveshaft, the driveshaft may hit the crossmember on hard bumps. 2WD only.

2004-08 2WD F-150 LOWERING KIT
M-3000-T3

- Lowers truck 2" in the front, 5" in the back
- Includes front drop coil springs, rear flip kit, rear shocks, bump stops and hardware
- Fits all 2WD models
- Lowers vehicle roll center for better handling
- Does not fit 2004 F-150 Heritage

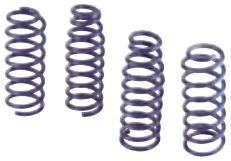
*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2006-08 FUSION SPRINGS
M-5300-M

- Engineered specifically for improved handling on the 2006-08 Fusion and Milan
- Front wheel drive only
- Lowers car approximately 1.5"
- Gives a more aggressive looking stance as well as increased handling dynamics
- May cause firmer ride than stock springs

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.



DRAG RACE SUSPENSION
M-3000-D

This kit consists of specific rate front and rear coil springs to improve the launch characteristics of your 1979-2004 Mustang (except 1999-2004 Cobra). An airbag is also included for installation inside the right rear coil spring. Fine tuning of the air pressure in the airbag will help neutralize the axle torque reaction. Recommended for serious Drag Racers. Spring rates F-300/465, LH 180, RR 180/350.

1979-04 PRODUCTION SPRING RATES (LB/IN)

YEAR	MUSTANG V8	COBRA	COBRA "R"
1979	F395 R160		
1980-81	F370 R160		
1982	F395 R160		
1983-84	F410 R160		
1984½-93	F425/525 R200/300		
1993	F425/525 R200/300	F425/525 R160	F750/850 R240/260
1994	F400/500 R165/265	F400 R160	
1995	F400/500 R165/265	F400 R160	F700/850 R200/260
1996-98	F400/500 R165/265	F400 R160	
1999	F450 R210	F500 R470	
2000	F450 R210		F800 R750
2001-02	F450 R210	F500 R470	
2003	F450 R210	F600* R600*	
2004	F450 R210		
*Convertible	F500 R470		

STRUT TOWER BRACES
M-20201-A50 ① 1979-93 Mustang

These high-quality steel strut tower braces stiffen 1979-93 Fox Mustangs and are designed to clear all production and many aftermarket components and accessories. These braces come complete with all necessary fasteners and instructions. Braces are "E" coated and painted for corrosion resistance. These kits are extremely competitively priced.

NOTE:
① Will not fit 1979-85 Mustang with dual snorkel air cleaner. Must use Ford Racing M-9600-A302 air cleaner, or equivalent.

2005-09 MUSTANG STRUT TOWER BRACE
M-20201-S197

- Fits 2005-09 Mustang GT without plastic engine cover
- Parallel beam design for added rigidity
- Black powder-coated
- Stainless steel Ford Racing emblem
- Does not fit V6, supercharged GT or 2007-08 GT with intake shroud

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

1979-2004 MUSTANG FRONT/REAR SPRING KITS

These spring kits have been designed to lower your Mustang and improve its handling. There will be some deterioration in ride quality.
NOTE: The height on some cars will vary.

PART NUMBER	MODEL YEAR	AMOUNT LOWERED (V8) FRONT	AMOUNT LOWERED (V8) REAR	SPRING RATES (LB/IN) FRONT	SPRING RATES (LB/IN) REAR
M-5300-B ⑥	1979-04 ⑤	.875" ①	.5" ②	425/530	200/300
M-5300-C ⑥	1979-04 ⑤	.875" ①	.5" ②	650	200/300
M-5300-F ③⑥	1979-04 ⑤	1.2"	1.0"	460/570	170/310
M-5300-G ④⑥	1979-04 ⑤	1.2"	1.2"	500/570	170/310

NOTES:
① 1994-2004 models – 1-1/8".
② 1994-2004 models – 3/4".
③ Coupe only.
④ Convertible only.
⑤ Will not fit 1999-2004 Cobra.
⑥ Due to vehicle assembly tolerances, these specifications may vary.

M-5300-F shown

1994-2004 MUSTANG HANDLING KIT
M-5400-A

- Kit includes increased-rate Mustang springs, anti-roll bars, shocks and struts tuned for use with this package
- Spring rates: front 600 lb-in and rear 250 lb-in
- Lowers 1994-98 vehicles 1" and 1999-2004 vehicles .75"
- Will not fit 1999-2004 Cobra
- Due to vehicle assembly tolerances, amount lowered may vary

2003-04 MUSTANG COBRA PARTS

10TH ANNIVERSARY MUSTANG COBRA WHEEL
M-1007-A179*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 6.12" backspacing
- 26 mm offset
- 17" x 9" wide
- Charcoal metallic finish
- Includes center cap

2003 SILVER MUSTANG COBRA WHEEL
M-1007-S179*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 6.12" backspacing
- 26 mm offset
- 17" x 9" wide
- Includes center cap

2003 MUSTANG COBRA SUPERCHARGER PULLEY COVER
M-2301-J

WHILE SUPPLIES LAST Limited Quantity!!

- Dress up your 2003-04 Mustang Cobra with this brushed stainless steel pulley cover
- Features a laser-cut Cobra snake for a striking appearance!
- Easy to install, direct replacement for production pulley cover

2003-04 MUSTANG COBRA UPGRADED SUPERCHARGER KIT
M-6066-CT46*

ALSO AVAILABLE POLISHED AS M-6066-CT46P

- **DESIGNED FOR USE WITH FACTORY TWIN-BORE THROTTLE BODY!**
- Kit includes supercharger, supercharger inlet, manifold adapter plate and hardware kit
- Does not require PCM, fuel pump or MAF meter upgrades
- Simple bolt-on increase at the rear wheels of 85 horsepower and 50 lb-ft of torque
- Installation of this kit will void your new vehicle engine warranty

NOTE: Superchargers are built to order. Please allow 7 days for assembly.

2003-04 MUSTANG COBRA UPGRADED POLISHED SUPERCHARGER KIT
M-6066-CT46P*

- Same as M-6066-CT46, but polished
- **DESIGNED FOR USE WITH FACTORY TWIN-BORE THROTTLE BODY!**
- Kit includes polished supercharger and supercharger inlet, manifold adapter plate and hardware kit
- Does not require PCM, fuel pump or MAF meter upgrades
- Simple bolt-on increase at the rear wheels of 85 horsepower and 50 lb-ft of torque
- Installation of this kit will void your new vehicle engine warranty

NOTE: Superchargers are built to order. Please allow 7 days for assembly.

10TH ANNIVERSARY MUSTANG COBRA SHIFT BOOT
M-7277-B

WHILE SUPPLIES LAST Limited Quantity!!

- Embossed leather, simulated carbon fiber shift boot
- Fits 1994-2004 Mustangs with manual transmission
- Attaching glue not included

ALUMINUM MUSTANG COBRA RADIATOR
M-8005-C03**

- Original equipment on the 2003 Mustang Cobra
- Easy bolt-in installation
- Fits 1997-2003 V8 Mustangs with manual transmission

NOTE: Will fit 1996 Cobra that has factory cooling system update.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

MUSTANG COBRA "R" PARTS

2000 SILVER MUSTANG COBRA "R" WHEEL
M-1007-R189*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 6.12" backspacing
- 20 mm offset
- 18" x 9.5" wide
- Includes center cap

2000 CHROME MUSTANG COBRA "R" WHEEL
M-1007-R189C*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 6.12" backspacing
- 20 mm offset
- 18" x 9.5" wide
- Includes center cap

1995 SILVER MUSTANG COBRA "R" WHEEL
M-1007-R58*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.98" backspacing
- 24 mm offset
- 17" x 9" wide
- Includes center cap
- Will clear M-2300-K disc brakes
- Same wheel used on 1995 SVT Mustang Cobra "R"

CHROME MUSTANG COBRA "R" WHEEL
M-1007-C58*

- Fits 1994-2004
- 5-lug, 4.5" bolt circle
- 5.98" backspacing
- 24 mm offset
- 17" x 9" wide
- Includes center cap
- Will clear M-2300-K disc brakes

MUSTANG COBRA "R" PRODUCTION NUMBERS

- 1993 - 107 units
- 1995 - 250 units
- 2000 - 300 units

2000 MUSTANG COBRA "R" HOOD
M-16612-R00

- Similar to the original 2000 Cobra "R" hood except manufactured from steel-reinforced fiberglass
- Top-quality hand-laminated fiberglass
- Bolts to stock hood hinges and uses stock hood latch
- Fits 1999-2004 Mustang and 1999-2001 Cobra
- 12 lbs lighter than production Cobra "R" model hood
- Must be fitted and painted to match color of car

COBRA "R" HOOD
M-16612-R58

- Fits 1994-98 Mustang
- Fiberglass, steel-reinforced
- Bolt to stock hinges and hood latch
- Top quality, hand laminated
- Must be fitted and painted to match color of car

COBRA "R" FRONT BRAKE KIT
M-2300-X*

- Original equipment on 2000 Cobra "R"
- Kit includes Brembo® 4-piston calipers, brake lines, hardware and "upgraded" slotted rotors
- This kit can be used to upgrade the front brakes on 1994-2004 GT and 1994-2004 Cobra
- May require larger wheels like M-1007-R189/R189C/F500/F500C

NOTE: 1994-95 GT requires 1994 Cobra master cylinder.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

SHORTY HEADERS
AVAILABLE IN STAINLESS STEEL OR CERAMIC COATED STAINLESS STEEL

M-9430-P50 shown

M-9430-E462 shown

PART NUMBER	TYPE	APPLICATION	Tube Diameter
M-9430-P50*	Stainless Steel	1986-93 Mustang 5.0L ①③⑤⑥	1.625"
M-9430-P51*	Ceramic Coated	1986-93 Mustang 5.0L ①②③⑤⑦	1.625"
M-9430-E462*	Stainless Steel	1996-04 Mustang GT 4.6L SOHC	1.625"
M-9430-E463*	Ceramic Coated	1996-04 Mustang GT 4.6L SOHC ②	1.625"
M-9430-E464*	Stainless Steel	1996-02 4.6L Cobra DOHC ⑧	1.625"
M-9430-E465*	Ceramic Coated	1996-02 4.6L Cobra DOHC ②⑧	1.625"
M-9430-T50*	Stainless Steel	1990-95 F-Series Truck and E-Series Van with 5.0L engine ③	1.625"
M-9430-T58*	Stainless Steel	1990-96 F-Series Truck and E-Series Van with 5.8L engine ③	1.625"
M-9430-F542C*	Ceramic Coated	1999-03 F-150 5.4L 2V ② NEW	1.625"
M-9430-F543*	Stainless Steel	2004-05 F-150 5.4L 3V NEW	1.625"
M-9430-SD682*	Stainless Steel	2004 F-250 6.8L V10 2V NEW	1.625"
M-9430-SD682C*	Ceramic Coated	2004 F-250 6.8L V10 2V ② NEW	1.625"
M-9430-SD683*	Stainless Steel	2005 F-250 6.8L V10 3V NEW	1.625"
M-9430-SD683C*	Ceramic Coated	2005 F-250 6.8L V10 3V ② NEW	1.625"
M-9430-C54*	Stainless Steel	2007-09 SVT Mustang 5.4L DOHC	1.875"
M-9430-C54C*	Ceramic Coated	2007-09 SVT Mustang 5.4L DOHC	1.875"
M-9430-S197*	Stainless Steel	2005-09 Mustang GT 4.6L 3V	1.625"
M-9430-S197C*	Ceramic Coated	2005-09 Mustang GT 4.6L 3V ②	1.625"
M-9430-SVTFC*	Ceramic Coated	2002-04 SVT Focus ②	1.500"
M-9430-ZX3L*	Stainless Steel	2000-04 Focus 2.0L Zetec	1.500"
M-9430-ZX3LC*	Ceramic Coated	2000-04 Focus 2.0L Zetec ②	1.500"
M-9430-ZM7993*	Stainless Steel	1986-93 Mustang with 302 and "Z" heads NEW	1.750"
M-9430-ZM7993C*	Ceramic Coated	1986-93 Mustang with 302 and "Z" heads NEW	1.750"

NOTES: ① Also fits early Fox vehicles with modifications.
② Jet-Hot® Lifetime Warranty.
③ Fits base production head and GT-40, GT-40 "Y" and GT-40 "X" heads.
⑤ Finally a header that fits the new angled spark plug 5.0L GT-40 "P" cylinder head. Fits 1986-93 Mustangs with stock or aftermarket H-pipe. Also fits 1979-85 Mustangs and other Fox chassis with minor modification.
⑥ M-9430-P50 replaces M-9430-SSC.
⑦ M-9430-P51 replaces M-9430-C50.
⑧ 4.6L does not fit 2004 exhaust flange.

FEATURES:

STAINLESS STEEL

409 stainless exhaust material is titanium stabilized ferritic stainless steel. 409 stainless is used in applications where appearance is a secondary consideration to properties and corrosion resistance and where some weldability is required. An example of stainless usage is catalytic converter assemblies. 409 stainless has excellent forming characteristics and is rust-through resistant. A surface rust will form in most instances. This rust retards further corrosion.

- **409 stainless steel tubes**
- **Machined flange**
- **Bolts to stock exhaust pipes**
- **Includes gaskets, bolts and studs**

CERAMIC COATED STAINLESS STEEL

- Identical to stainless steel header, but with Jet-Hot® ceramic finish
- Stain and rust resistant
- Super-premium quality
- Lifetime Warranty
- Finest short tube headers you can buy

JET-HOT® LIMITED WARRANTY

This limited warranty becomes void if the product shows evidence of bending or mutilating of parts or burnout resulting from improper tuning. Warranty covers rust-through only and does not cover cosmetic rust or discoloration of material. This limited warranty shall be limited to the repair, adjustment or replacement of defective parts only. Does not cover any labor claims. Ask your dealer for a copy of this Jet-Hot® limited warranty.

REPLACEMENT HEADER GASKETS

M-9448-A462*	Fits 4.6L SOHC
M-9448-A464*	Fits 4.6L DOHC
M-9448-B302**	Fits 5.0L/302
M-9448-3V*	Fits 4.6L/5.4L 3V (sold in package of 12 sets only)

"STAGE 8" LOCKING HEADER BOLT SYSTEMS

These kits fit most V8 and many other engines. Includes 16 bolts and locking hardware.

PART NUMBER	SIZE	FITS
M-9432-A50	3/8"-16 x .75"①	Most Headers
M-9432-A51	3/8"-16 x 1"①	Ford Racing Shorty Headers
M-9432-A54	8 mm-1.25 x 22 mm	4.6L/5.4L Modular V8 Engines

- Header fasteners positively will not back out. Eliminates need to monitor and tighten bolts regularly
- Grade 8 aircraft quality bolts made in U.S.A. Duplex nickel-plated
- Manufacturer's Lifetime Warranty

NOTE: ① Will not fit 4.6L/5.4L modular V8.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

2005-09 MUSTANG GT EXHAUST KIT
M-5230-5GT

- T-304 stainless construction
- Louder, throatier exhaust note
- 49-state drive-by noise legal (not legal in CA)
- Includes mufflers with Ford Racing embossed 3.5" exhaust tips

2005-09 MUSTANG V6 MUFFLER KIT
M-5230-5V6

- T-304 stainless construction
- Louder, throatier exhaust note
- 50-States drive-by noise legal
- Includes muffler with Ford Racing embossed 3.5" exhaust tip

2005-09 MUSTANG GT MUFFLER SET
M-5230-GTA

- 409 stainless body with highly polished 4.0" diameter tips
- Louder, throatier exhaust note
- 50-States drive-by noise legal

NOTE: 409 stainless exhaust material is titanium stabilized ferritic stainless steel. 409 stainless is used in applications where appearance is a secondary consideration to mechanical properties and corrosion resistance and where some weldability is required. An example of 409 stainless usage is catalytic converter assemblies. 409 stainless has excellent forming characteristics and is rust-through resistant. A surface rust will form in most instances. This rust retards further corrosion.

FUSION I4 EXHAUST TIPS
M-5230-FT

- Fits 2006-08 Fusion with 4-cylinder engine
- Chrome-plated 409 stainless steel
- Kit includes 2 tips and 2 clamps
- 3" exit diameter
- No cutting or welding required, easy clamp-on installation

MUSTANG FR500S MUFFLERS
M-5230-S

NEW

- Fits 2005-09 Mustang GT and 2007-09 SVT Mustang
- Homologated for use on the Mustang FR500S
- Body of mufflers embossed with Ford Racing logo
- Aluminized 409 stainless steel corrosion-resistant body with polished 304 stainless 3.5" diameter tips
- Throatier exhaust note

2008 SPECIAL EDITION MUSTANG MUFFLER
M-5230-GTB

NEW

- Fits 2005-09 Mustang GT
- Muffler used as standard equipment on the 2008 Mustang Bullitt
- Throatier exhaust note
- Aluminized 409 stainless steel corrosion-resistant body with a polished 304 stainless tip
- 50-States drive-by noise legal

2005-09 MUSTANG V6 DUAL EXHAUST KIT 50 STATE
M-5230-V6

50 States Street Legal

- Fits 2005-09 Mustang V6
- Includes mufflers used as standard equipment on the 2008 Mustang Bullitt
- Aluminized 409 stainless body mufflers with polished 304 stainless 3.5" diameter tips
- Louder, throatier exhaust note
- Includes X-pipe
- Requires minor modification of rear bumper cover (template included in kit)
- 50-States drive-by street legal

See www.fordracingparts.com for the most up-to-date warranty information.

NOTE: 409 stainless exhaust material is titanium stabilized ferritic stainless steel. 409 stainless is used in applications where appearance is a secondary consideration to mechanical properties and corrosion resistance and where some weldability is required. An example of 409 stainless usage is catalytic converter assemblies. 409 stainless has excellent forming characteristics and is rust-through resistant. A surface rust will form in most instances. This rust retards further corrosion.

STREET ROD HEADER
M-9430-SR302*

NEW

- Put a Ford in your Ford with this compact 4-into-1 clamshell-design street rod header
- Fits most 289/302/351W applications
- Ceramic coated 409 stainless steel
- 1-5/8" primary tubes with 2-1/4" ball style collector for easy exhaust pipe connection
- Includes short outlet pipes with O_2 sensor fittings
- Will also fit "GT-40P" heads
- Designed for maximum clearance in the narrow frames of early Fords

FEATURES:

STAINLESS STEEL

409 stainless is a blend of stainless and mild steel. This type of stainless is used to make production catalytic converter assemblies that have a 100,000-mile durability requirement. 409 stainless has excellent forming characteristics and is rust-through resistant. 409 stainless will develop a light surface rust.

- **409 stainless steel tubes**
- **1.625" diameter tubes**
- **Machined flange**
- **Bolts to stock exhaust pipes**
- **Includes gaskets, bolts and studs**
- **Designed by Ford Racing engineers**

CERAMIC COATED STAINLESS STEEL

- Identical to stainless steel header, but with Jet-Hot® ceramic finish
- Stain and rust resistant
- Super-premium quality

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

SHIFTERS

1979-2004 MUSTANG HURST T-5/T-45 SHIFTER
M-7210-M

- Fits T-5 and T-45 transmission. Does not fit Tremec 3650 transmission, 2001 and newer Mustang Cobra, Mustang Bullitt and Mustang GT (3650 transmission has the drain plug in the bottom of the case)
- One-piece 6061-T6 aluminum CNC machined base
- Positive stops to prevent over-travel
- Super short throw
- Chrome stick and white Hurst knob
- Fits 1979-95 V8 Mustang with T-5 transmission
- Fits 1994-2004 V6 Mustang with T-5 transmission

SHORT THROW T-5/T-45 SHIFTER
M-7210-N

- Fits 1983-2001 Mustang with T-5 or T-45 transmission
- Adjustable positive stops prevent over-shifting and damaging the transmission
- Two-position adjustable height
- Compact tower is CNC machined from billet 6061 T-6 aluminum
- Accepts stock and most aftermarket shift knobs

T-56 CHROME SHIFTER
M-7210-T56

- Shifter fits most Ford T-56 variants
- Features a chrome stick and a white knob
- Does not fit 2005 and newer Mustangs

2005-09 V6 SHORT THROW SHIFTER
M-7210-V

- Designed by Ford Racing and Hurst
- Fits 2005-09 Mustang V6 with T-5 transmission
- Spherical bearing with unique shifter rod and OE main stamping
- Chrome stick with white shift knob
- Urethane body vibration isolators
- Reduced throw

See www.fordracingparts.com for the most up-to-date warranty information.

2007-09 SVT MUSTANG SHIFTER
M-7210-B

- Fits 2007-09 SVT Mustang
- Urethane body vibration isolators
- 25% reduction in throw
- Bolts in stock location
- Requires reuse of production handle and knob or see page 44

See www.fordracingparts.com for the most up-to-date warranty information.

2005-09 MUSTANG GT SHORT THROW SHIFTER
M-7210-T1

- Designed by Ford Racing and Hurst
- Fits 2005-09 Mustang GT with 3650 transmission
- Spherical bearing with unique shifter rod and OE main stamping
- Comes with stick for stock shift knob and chrome stick with white shift knob
- Urethane body vibration isolators
- 32% reduction in throw
- **Standard on 2007-08 Shelby GT**

See www.fordracingparts.com for the most up-to-date warranty information.

T-5 LEATHER SHIFT KNOB
M-7213-A

A leather shift knob similar to the unit found in the Mustang SVO, except has M12 x 1.75 thread, which is compatible with all Mustang/Capri vehicles with screw-on T-5 shift handles.

NOTE: This knob will NOT fit M-7210-J/K Hurst T-5 shifter.

T-56 SHIFT KNOB
M-7213-B

- Black leather shift knob with brushed aluminum insert on top, inscribed with 6-speed pattern
- Fits 2003-04 Mustang Cobra and most FRPP T-56 transmissions
- Does not fit 2005 and newer Mustangs

SHIFT KNOB 5-SPEED
M-7213-D

WHILE SUPPLIES LAST Limited Quantity!!

- Embossed leather, simulated carbon fiber with brushed aluminum insert on the top, inscribed with 5-speed pattern
- Fits 1983-2004 Mustang with 5-speed transmissions

SHIFT KNOB
M-7213-E

WHILE SUPPLIES LAST Limited Quantity!!

- Embossed leather, simulated carbon fiber shift knob, no shift pattern logo
- Fits 1983-2004 manual transmission Mustang with 5- or 6-speed

SHIFT KNOB 5-SPEED
M-7213-G

- Black leather shift knob with brushed aluminum insert on the top, inscribed with 5-speed pattern
- Fits 1983-2004 Mustang with 5-speed transmission

SHIFT KNOB 5-SPEED
M-7213-H

- 2003 Mustang Mach 1 production manual transmission shift knob
- Aluminum finish inscribed with 5-speed pattern
- Fits 1983-2004 Mustang with 5-speed transmission

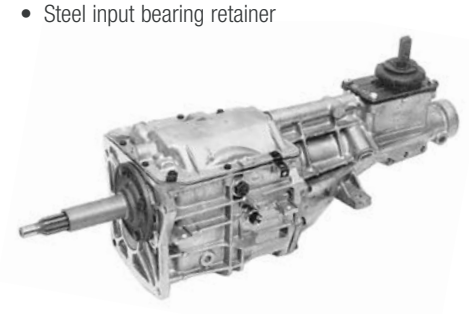
*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

UPGRADED SUPER-DUTY T-5 TRANSMISSION

M-7003-Z* 1979-93 V8 only

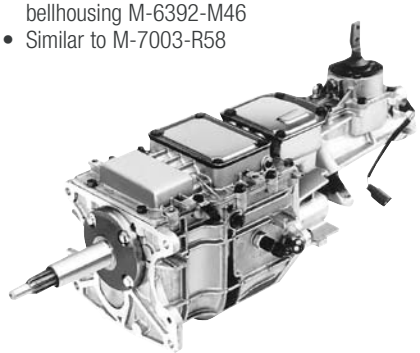
- Heavy-duty "World Class" T-5 5-speed manual transmission with short-throw shifter
- 300 lb-ft torque capacity
- Gear ratios: 1st 2.95; 2nd 1.94; 3rd 1.34; 4th 1.00; 5th 0.63
- Double-moly 2nd speed, 3rd speed and countershaft cluster gears
- Carbon-fiber 3-4 blocker rings
- Improved synchronizers and bearings
- 1.0625" diameter 10-spline input shaft
- Output shaft is 28 spline
- 7-tooth speedometer drive gear
- Cobra-style pocket bearing
- Steel input bearing retainer



TREMEC 5-SPEED HD TRANSMISSION

M-7003-R58W* (Wide Ratio)

- Replaces M-7003-R58
- Gear ratios: 1st 3.27; 2nd 1.98; 3rd 1.34; 4th 1.00; 5th 0.68
- Features improved shift forks, one-piece countershaft, gears made of 4615 steel which increases the torque capacity over that of the M-7003-R58 model
- Input shaft is 10 spline 1.0625 and the output shaft is 31 spline
- Requires a unique bellhousing M-6392-R58 to install in a 1979-95 Mustang
- To fit in a 1979-93 Mustang, use M-5059-A crossmember
- To fit in 1994-95 Mustang, modify vehicle crossmember, lengthen driveshaft .625" and use clutch fork E6ZZ-7515-A
- 31-spline driveshaft yoke required
- Can be used in 4.6L applications with bellhousing M-6392-M46
- Similar to M-7003-R58



SERVICE REPLACEMENT PARTS

T-5 BEARING RETAINER

M-7050-A Fits 1983-93 V8 applications
M-7050-B Fits 1994-95 V8 applications

- Replacement T-5 bearing retainer with steel throwout bearing sleeve
- Fits production and Ford Racing T-5 transmissions

T-5 LEATHER SHIFT BOOT

M-7277-A

This upgraded leather shift boot fits all 1983-96 Mustang vehicles equipped with T-5 transmissions, and can be adapted to others. Similar to leather boot in 1984-86 Mustang SVO.

10TH ANNIVERSARY MUSTANG COBRA SHIFT BOOT

WHILE SUPPLIES LAST Limited Quantity!!

M-7277-B

- Embossed leather, simulated carbon fiber shift boot
- Fits 1994-2004 Mustangs with manual transmission
- Attaching glue not included

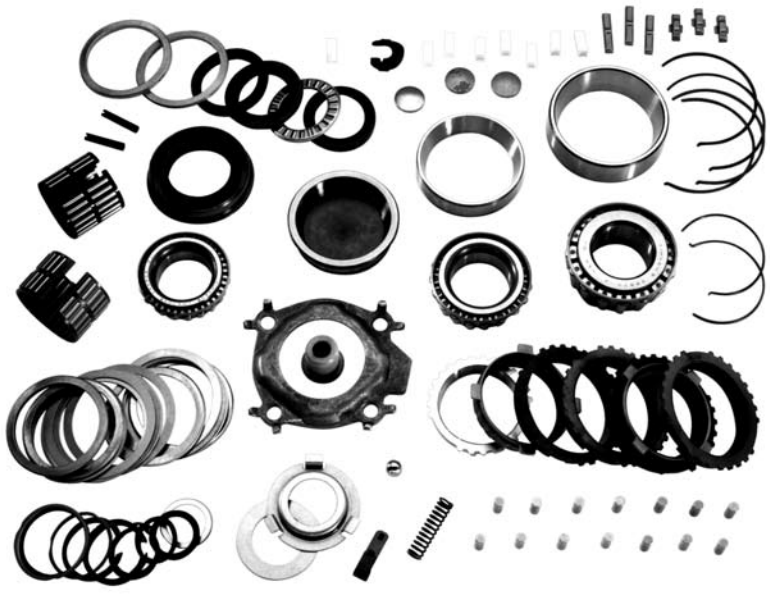
T-5 REBUILD KIT

M-7000-A*

This 94-piece world class T-5 transmission rebuild kit can be used on all of the following T-5 applications:

- M-7003-A/X/Z
- 1985-95 5.0L Mustang
- 1985-93 ① 2.3L Mustang
- 1985-86 2.3L SVO Mustang
- 1985-88 ① 2.3L Thunderbird Turbo Coupe
- 1994-00 3.8L Mustang

NOTE:
① 1987-93 models will require additional input bearing and race. See your Ford, Lincoln or Mercury dealer.

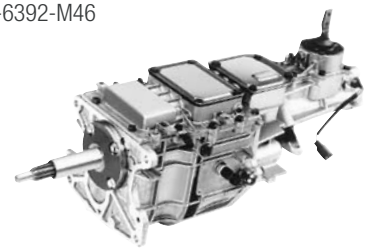


*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

TREMEC 5-SPEED EXTRA HD TRANSMISSION

M-7003-R58C* (Close Ratio)

- 600 lb-ft torque capacity
- Gear ratios: 1st 2.87; 2nd 1.90; 3rd 1.34; 4th 1.00; 5th 0.82
- Features improved shift forks, one-piece countershaft, gears made of 4615 steel which increases the torque capacity over that of the M-7003-R58 model
- Input shaft is 26 spline and output shaft is 31 spline
- Requires a unique bellhousing M-6392-R58 to install in a 1979-95 Mustang
- To fit in a 1979-93 Mustang, use M-5059-A crossmember
- To fit in a 1994-95 Mustang, modify vehicle crossmember, lengthen driveshaft .625" and use clutch fork E6ZZ-7515-A
- 31-spline driveshaft yoke required
- Unique clutch disc designed for 26-spline input must be used
- Can be used in 4.6L applications with bellhousing M-6392-M46



TREMEC 5-SPEED EXTRA HD TRANSMISSION

M-7003-R58H*

- Close ratio 1st through 4th
- 600 lb-ft torque capacity
- Gear ratios: 1st 2.87; 2nd 1.90; 3rd 1.34; 4th 1.00; 5th 0.68
- Features improved shift forks, one-piece countershaft, gears made of 4615 steel which increases the torque capacity over that of the M-7003-R58 model
- Input shaft is 26 spline; output shaft is 31 spline
- Requires bellhousing M-6392-R58 to install in a 1979-95 Mustang
- For 1979-93 Mustang applications, use M-5059-A crossmember (1979-81 will require modification)
- For 1994-95 Mustang applications, modify vehicle crossmember, lengthen driveshaft .625 and use clutch fork E6ZZ-7515-A
- 31-spline driveshaft yoke required, M-4841-A recommended
- Requires unique clutch disc M-7550-T302 (10.5) designed for use with 26-spline input
- Can be used in 4.6L applications with bellhousing M-6392-M46 and Clutch Kit M-7560-T46 (11)

ADJUSTABLE #3 CROSSMEMBER (TRANSMISSION MOUNT)

M-5059-A

This crossmember is a “double hump” design that simplifies installation of dual exhaust systems on Fox vehicles. The outer tubes are not welded to the center support, and thus can be adjusted to fit most engine/transmission combinations. It directly fits all Fox vehicles with a 4.5" dimension between the crossmember mounting brackets. It can be used on Fox vehicles with a 2.75" mounting dimension by relocating the brackets. It does not fit 1982 and later Continental or 1984 and later Mark VII, because they have a unique crossmember.

4.5" MOUNTING DIMENSION	
YEAR	FOX VEHICLE
1980-88	T-Bird/Cougar
1982-93	Mustang/Capri
1982	Fairmont/Zephyr
1983 and later	LTD/Marquis

2.75" MOUNTING DIMENSION	
YEAR	FOX VEHICLE
1978-81	Fairmont/Zephyr
1979-81	Mustang/Capri
1981-82	Granada/Monarch

TREMEC 6-SPEED HD TRANSMISSIONS

T-56 TRANSMISSION WITH ELECTRONIC SPEEDOMETER

M-7003-F*

M-7003-F shown

- This is the same Tremec HD 6-speed manual transmission used in the 2000 Cobra “R” and the Ford Racing FR500 Mustang
- Fits 4.6L SOHC/DOHC engines
- Can be used in 1999-2004 Mustangs and Cobras
- May require shorter driveshaft, modified crossmember/transmission mount and other minor modifications
- 440 lb-ft torque capacity
- Gear ratios: 1st 2.97; 2nd 2.07; 3rd 1.43; 4th 1.00; 5th .80; 6th .62
- Does not have mechanical speedometer connection needed for use in earlier Mustangs
- 10-spline input, 31-spline output
- 2003-04 Cobras require changing 28-spline yoke to 31-spline

T-56 TRANSMISSION WITH MECHANICAL SPEEDOMETER

M-7003-G*

- Has mechanical speedometer drive for 1998 and older modular engine applications
- Fits 4.6L SOHC/DOHC engines
- 440 lb-ft torque capacity
- Gear ratios: 1st 2.97; 2nd 2.07; 3rd 1.43; 4th 1.00; 5th .80; 6th .62
- 7-tooth speedometer gear
- 10-spline input, 31-spline output

T-56 TRANSMISSION 5.0L

M-7003-H*

- For 5.0L/5.8L engine applications
- 440 lb-ft torque capacity
- Gear ratios: 1st 2.97; 2nd 2.07; 3rd 1.43; 4th 1.00; 5th .80; 6th .62
- 7-tooth speedometer gear
- 10-spline input, 31-spline output

T-56 CROSSMEMBER

M-5059-B*

- Production crossmember from the 2003-04 Cobra Mustang
- Fits 1999-2004 Mustang when changing to a T-56 6-speed transmission
- Includes transmission mount

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

BELLHOUSINGS

M-6392-E 1979-93 5.0L T-5 Bellhousing

- Can be used as a replacement part or for building a kit car or street rod
- Cast aluminum, produced from the original production tooling

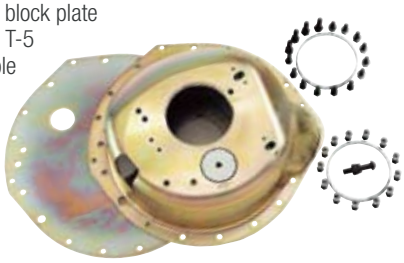
M-6392-M46 4.6L/5.4L Tremec 3550 Cobra "R" Bellhousing

- Use to mate the Tremec 3550 transmission to the 4.6L/5.4L modular engines
- Minor modification is required for transmission clearance and mounting in some applications
- Cast aluminum production style bellhousing

UNIVERSAL SAFETY BELLHOUSING

M-6392-C

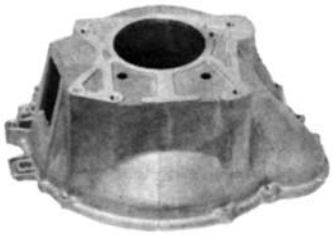
- Steel safety bellhousing with block plate
- Fits 1979-93 Mustangs with T-5 or Tremec 5-speeds and cable operated clutch linkage
- Will not work with long-style pressure plate
- May interfere with long tube headers



BELLHOUSING

M-6392-R58

- Unique clutch housing required for Tremec 5-speed transmission used in the 1995 Mustang Cobra "R" models with 351W
- Will also fit 289/302/351C engines
- Requires diaphragm-type clutch



TECH TIPS

CLUTCH/TRANSMISSION INSTALLATION TIPS

1986 and newer V8 Mustangs

The flywheel to crankshaft bolts must be hand-torqued to 75-85 lb-ft (302/351W) and 54-64 lb-ft (4.6L).

The 10.5" pressure plate bolts must be torqued to 12-24 lb-ft and 11" pressure plate bolts to 33 lb-ft + 1/4 turn.

Be sure to use the alignment dowels in the flywheels.

Pressure plate bolts and alignment dowels for the 10.5" clutch can be purchased using PN M-6397-A302. Pressure plate bolts N808969-S100 and alignment dowels PN D1FZ-6397-B are for the 11" pressure plate.

Evenly tighten bolts in a circular direction one turn at a time.

Bellhousing alignment is crucial for proper clutch and transmission function.

Due to production tolerances of engine blocks and bellhousings, it is possible for the transmission centerline and crankshaft centerline to be misaligned. Misalignment can cause transmission gear wear, transmission jumping out of gear, driveline vibration, clutch pedal vibration, pilot bearing noise, release bearing noise or excessive clutch spin time. It may also damage the pilot bearing, transmission mainshaft bearing and clutch hub. It will also cause harsh shifting.

Before installing the bellhousing, check the block mounting surface and bellhousing surfaces for nicks, dents, paint debris, etc. These are some things that could affect the accuracy of your measurements.

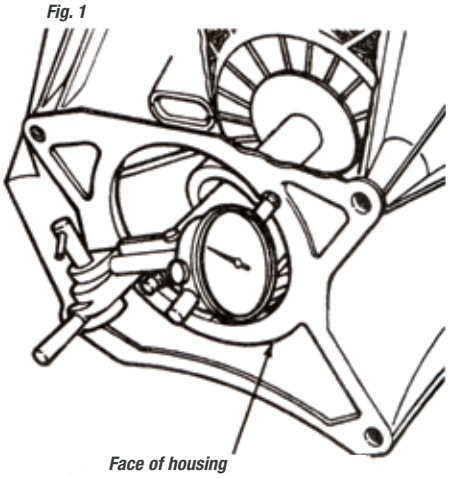
HOW TO CHECK BELLHOUSING ALIGNMENT

The first step is to check bellhousing face runout. You are checking for parallelism of the back of the bellhousing to the back of the block. Install the dial indicator (as shown in Fig.1). Rotate the crankshaft and mark down the reading. Be sure to push the crankshaft against the thrust bearing for an accurate reading. Maximum runout is .010. The next step is checking bellhousing bore runout. You are checking to see if the bellhousing bore centerline is aligned with crankshaft centerline. Reposition the dial indicator in the bellhousing bore (as shown in Fig. 2). Rotate the crankshaft and mark down the readings. Maximum out of concentricity is .015. If the bore runout is out of spec, install appropriate offset dowels.

Offset alignment dowels can be purchased from Lakewood.

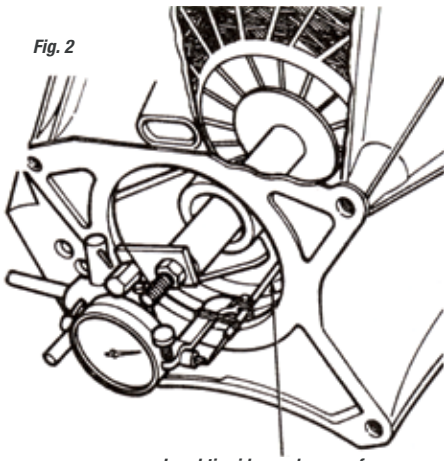
.007 PN 15950
.014 PN 15960
.021 PN 15970

Fig. 1



Face of housing (must be clean and free of nicks, burrs or foreign material).

Fig. 2



Level tip rides on bore surface. This surface must be clean and free of nicks, burrs or foreign material.

V8 MUSTANG CLUTCH LINKAGE UPGRADE KIT
M-7553-A302

This kit consists of a beefed-up clutch release fork and heavy-duty, self-adjusting Teflon-lined clutch cable. Fits 1979-93 Mustang.

NOTES:

① 1984 and later cars have heavy-duty cable as original equipment.
② 1986 and later cars have beefed-up clutch release fork as original equipment.
③ To install this kit in 1979-81 vehicles with manual adjustment clutch mechanisms, the 1982 and later self-adjusting quadrant mechanism must be purchased from Ford, Lincoln and Mercury dealers.

V8 MUSTANG ADJUSTABLE CLUTCH LINKAGE KITS

M-7553-B302 Cable and Quadrant 1982-95
M-7553-C302 Service Cable 1982-95
M-7553-D302 Cable and Quadrant 1996-2004
M-7553-E302 Service Cable 1996-2004

- Includes all parts required to convert stock non-adjustable clutch cable to fully adjustable type
- Now you can adjust clutch pedal travel to your driving habits

TOPSIDE CLUTCH ADJUSTER
M-7554-A

- Allows you to adjust clutch engagement without going under the car
- Eliminates the rubber bushing at the engine compartment bulkhead for more precise clutch action
- Fits 1979-2004 V6 and V8 Mustang

DOUBLE-HOOK CLUTCH QUADRANT
M-7583-A

- Fits 1982-2004 V8 Mustang
- Double-hook design lets you use an adjustable clutch cable or Topside Clutch Adjuster and stock cable
- CNC machined from billet aluminum

MUSTANG SN95 CLUTCH LEVER
M-7515-A

- Stock replacement clutch lever
- Fits 1996-2004 V8 Mustang

HD THROWOUT BEARING
M-7548-A

- Fits 1979-2004 Mustangs with manual transmission and V8 engine
- Self-centering bearing design
- Heavy-duty design lasts longer than most aftermarket bearings

ROLLER PILOT BEARING
M-7600-A

- Production roller pilot bearing fits 289, 302, 351C and 351W crankshafts
- Designed for .669" diameter input shaft

NOTE: Pre-greased—do not add extra grease. Clutch and bearing damage may occur.

ROLLER PILOT BEARING
M-7600-B

- Production roller pilot bearing fits 4.6L/5.4L modular engines

NOTE: Pre-greased—do not add extra grease. Clutch and bearing damage may occur.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

CLUTCHES

PART NUMBER	DESCRIPTION	ENGINE	DIAMETER	TECHNICAL INFORMATION
M-7550-A302N ①②③	Disc	V8	10.5"	HD organic lining. Component of M-7560-A302/C302 kits.
M-7550-B NEW ①	Disc	V8	11"	HD disc with dual segmented carbon/composite lining. Designed for use with 26-spline input shaft. Replacement for FR500S.
M-7550-X302 ①②③	Disc	V8	10.5"	HD disc with carbon/copper lining on flywheel side and carbon lining on pressure plate side.
M-7550-T302 ①	Disc	V8	10.5"	HD disc with carbon/copper lining on flywheel side and carbon lining on pressure plate side. Designed for 26-spline shaft on M-7003-R58C, M-7003-R58W and M-7003-R58H transmissions. Will work with M-7563-A/B/C/D302 pressure plates.
M-7563-A302N ①③④	Pressure Plate	V8	10.5"	HD diaphragm type with approx. 40% more capacity than stock Mustang unit. Nodular iron plate.
M-7563-B302 ①③④	Pressure Plate	V8	10.5"	HD diaphragm type with centrifugal assist. Has approx. 25% more capacity than stock Mustang unit. Cast iron plate.
M-7563-C302N ①③④	Pressure Plate	V8	10.5"	HD "King Cobra" diaphragm type. Same capacity as M-7563-A302N above, but stronger cover and revised internal geometry reduce clutch pedal effort by 10%. Nodular iron plate.
M-7560-A302N ①②③④	Mustang HD Clutch Kit	V8	10.5"	Consists of M-7550-A302N disc, M-7563-A302N pressure plate and D9ZZ-7548-A throwout bearing.
M-7560-C302N ①②③④	Mustang HD "King Cobra" Clutch Kit	V8	10.5"	Consists of M-7550-A302N disc, M-7563-C302N pressure plate and D9ZZ-7548-A throwout bearing.
M-7560-T46 ①	11" Clutch Kit	4.6L	11"	Kit contains 11" clutch disc with 26-spline hub and pressure plate. Clutch disc with carbon/copper lining on flywheel side and carbon lining on pressure plate side. Centrifugal assist design pressure plate with 25% more torque capacity than production Cobra. Used when installing M-7003-R58C and M-7003-R58H transmission into 1996-2004 4.6L Mustangs with production 11" flywheel or Ford Racing flywheels M-6375-F46, M-6375-G46 or M-6375-R00.
M-7560-D46 ①	11" Clutch Kit	V8	11"	Kit increases clutch capacity of the 1996-98 Mustang Cobra 4.6L DOHC 4V by 10% and increases clutch disc burst speed 10% over 1999-2001 Cobra. Kit contains 2003 Cobra 11" pressure plate and 11" clutch disc.
M-7060-A54 ①		5.4 DOHC	215 mm	Original equipment on 2007 SVT Mustang. Dual clutch disc decreases clutch diameter and reduced rotating mass for faster engine acceleration. Designed for use with 26-spline input shaft and 8-bolt crankshaft.

NOTES: ① Clutches have NO warranty!
② All clutch discs have 1.0625"-10 spline hub.
③ Fits all 1986-2001 Mustang GT, 1993-98 Cobra with T-5 or T-45 Transmissions. 2001-04 Mustang GT with 3650 transmission and 1999-2003 Cobra use an 11" clutch. OK to mix and match Ford Racing clutch discs and pressure plates, but do NOT install a FRPP pressure plate with a stock disc or vice-versa as disengagement problems may occur. Installation of 10.5" clutch assemblies on 1979-85 vehicles equipped with 10" clutch requires new flywheel (see page 188). Metric fasteners and dowel pins must be used with 10.5" clutches.
④ Requires metric pressure plate bolts N602549-S51M and alignment dowel pins D1FZ-6397-B. Ford Racing kit M-6397-A302 (see page 188).

M/T FLYWHEELS

MANUAL TRANSMISSION FLYWHEEL

PART NUMBER	MATERIAL	RING GEAR	UNBALANCE	APPLICATION
M-6375-A302 ①③	Billet Steel	157-Tooth	28.2 oz.-in.	Pre-1981 302 engines and 351 engines using 157T flywheels. Meets SFI 1.1.
M-6375-A302A ①③	Aluminum	157-Tooth	28.2 oz.-in.	Pre-1981 302 engines and 351 engines using 157T flywheels. Reduced rotating mass for faster engine acceleration in race applications. Meets SFI 1.1.
M-6375-B302 ①	Cast Iron	157-Tooth	50.0 oz.-in.	1981 and later 302 engines. Exact replacement for 1986-95 Mustang stock unit.
M-6375-C302 ①③	Billet Steel	157-Tooth	50.0 oz.-in.	1981 and later 302 engines. Meets SFI 1.1.
M-6375-C302A ①③	Aluminum	157-Tooth	50.0 oz.-in.	1981 and later 5.0L/302 engines. Reduced rotating mass for faster engine acceleration in race applications. Meets SFI 1.1.
M-6375-D302 ①	Billet Steel	157-Tooth	0 oz.-in.	All small blocks with 0 unbalance rotating assemblies. Meets SFI 1.1.
M-6375-D46 (6 bolt) ①②	Nodular Iron	164-Tooth	0 oz.-in.	4.6L SOHC Mustang. Has increased rpm capability over stock cast iron flywheel. Fits 10.5" clutch.
M-6375-F46 (6-bolt) ①②	Billet Steel	164-Tooth	0 oz.-in.	4.6L SOHC Mustang. Has increased rpm capability over stock cast iron or M-6475-D46 nodular iron flywheel. Fits 10.5" and 11" clutch. Meets SFI 1.1.
M-6375-G46 (8-bolt) ①②	Billet Steel	164-Tooth	0 oz.-in.	4.6L SOHC Mustang GT/DOHC Cobra Mustang. Has increased rpm capability over stock Cobra flywheel. Fits 10.5" and 11" clutch. Meets SFI 1.1.
M-6375-Z460	Billet Steel	176-Tooth	24.2 oz.-in.	Fits 1979-97 460 including M-6007-C460/D460/A514. For external balance only. Long style clutch. Meets SFI 1.1.
M-6375-R00 ①②	Aluminum	164-Tooth	0 oz.-in.	Used on the 2000 Cobra "R" Mustang. Fits Cobra 4.6L/5.4L DOHC 4-valve engines and other Mustangs with 8-bolt crank. Reduced rotating mass for faster engine acceleration in race applications. Fits 10.5" and 11" clutch. Meets SFI 1.1.

NOTES:

① Diaphragm clutch uses metric bolts and dowel pins. Requires metric pressure plate bolts N602549-S51M and alignment dowel pins D1FZ-6397-B. Ford Racing kit M-6397-A302, see below.

② 4.6L engines may have 6 or 8 bolts to attach to the crankshaft. Check the engine code before ordering. Romeo built engines have 6 bolts and Windsor built engines have 8 bolts. All Cobra engines have 8 bolts.

③ Has bolt-on counterweight 4" long for A302, 7.2" long for C302.

M-6375-A302 shown

11" CLUTCH BOLT KIT

M-6397-A46

- Use with Ford Racing flywheels to align and attach the 11" diaphragm-style clutch and pressure plate to the flywheel
- This kit includes 3 dowel pins that are necessary to align and stiffen the pressure plate shell. **NOTE:** If the dowels are not used, the clutch may chatter and the engine vibrate
- Includes pressure plate bolts and dowel pins for use with 11" modular flywheel

PRESSURE PLATE BOLT AND DOWEL KIT

M-6397-A302

- Use with Ford Racing flywheels to align and attach the 10.5" diaphragm-style clutch pressure plate to the flywheel
- This kit includes 3 dowel pins that are necessary to align and stiffen the pressure plate shell. **NOTE:** If these dowels are not used, the clutch may chatter
- This kit includes 6 bolts (8 mm) with integral lock washers. **NOTE:** Ford Racing and production flywheels have metric bolt holes for diaphragm-style clutches. Ford Racing billet steel flywheels also have 5/16"-18 SAE bolt holes for long style clutches

MANUAL TRANSMISSION FLYWHEEL BOLTS

M-4216-A200 Sold in pkg. of 100
M-4216-A210 Sold in pkg. of 10
7/16"-20 x .9375" bolt

4.6L MANUAL FLYWHEEL BOLTS

M-6379-B

- Fits 4.6L modular engines with manual transmission flywheels
- M10 x 1 x 26.5 bolt
- Package of 8

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

A/T FLYWHEELS

M-6375-H46

M-6375-E302

M-6375-G302

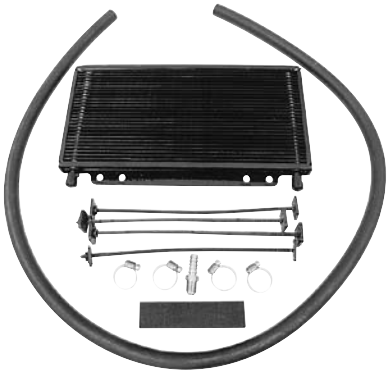
AUTOMATIC TRANSMISSION FLYWHEEL

PART NUMBER	MATERIAL	RING GEAR	UNBALANCE	APPLICATION
M-6375-A50	Stamped Steel	164-Tooth	50 oz.-in.	Fits 1981-01 5.0L engine with AOD or C-4 trans. with large bellhousing. Will not Fit C-6.
M-6375-G302	Stamped Steel	164-Tooth	28 oz.-in.	Fits 289/302/351W,C,M with large bellhousing C-4 trans. and AOD.
M-6375-H46	Stamped Steel	164-Tooth	0 Balance	Fits 4.6L/5.4L 8-bolt crankshaft with HP 11.25" 4R70W torque converter.
M-6375-E302	Stamped Steel	157-Tooth	50 oz.-in.	Fits 1981-01 5.0L with small bellhousing C-4 trans. 13-1/4" diameter/ 10-1/2" bolt circle.

HD TRANSMISSION OIL COOLER KIT (SELF-REGULATING)

M-7095-SR

Unique patented "stacked-plate" design offers 35% improvement in efficiency over fin-and-tube coolers. The .75" x 7.25" x 11" unit weighs only 2.5 lbs, but has a full 18,000 lbs GVW rating. The self-regulating design feature bypasses cold transmission fluid automatically (without thermostats or valves) until its viscosity decreases and allows fluid to flow through the main body of the cooler. SAE thread fittings.



DRIVESHAFT YOKE 31 SPLINE

M-4841-A

- Fits 31-spline output shafts
- Uses 1330 U-joints
- Use with M-7003-R58C, M-7003-R58W, M-7003-R58H, M-7003-F, M-7003-G, M-7003-H and production T-45, C-6 and 3650 transmissions

AUTOMATIC TRANSMISSION FLYWHEEL BOLTS

M-4216-A300

- 7/16"-20 x .875" bolts
- Set of 10 bolts
- Can also be used for automatic transmission flywheels

28-SPLINE DRIVESHAFT SLIP YOKE

M-4841-B

- For replacement use or custom driveshaft construction
- Fits C-4, AOD and T-5 transmissions
- Designed for 1330 U-joint

4.6L AUTOMATIC TRANSMISSION FLYWHEEL BOLTS

M-6379-A

WHILE SUPPLIES LAST Limited Quantity!!

- Fits 4.6L modular engines with automatic transmission flywheels
- M10 x 1 x 20.5 bolt
- Package of 6

MASTERPIECE GAUGE COLLECTION

CHROME BEZEL SERIES (KIT) ①
M-19017-B961

Oil Pressure Gauge | *Water Temperature Gauge* | *Speedometer* | *Fuel Level Gauge* | *Battery Voltage Gauge*

- Bezel embossed with Ford emblem
- Luxurious chrome design with white background, gray sweep zone, black graphics and needle-style pointer
- Includes all components necessary to install
- All gauges are electric operation. Case diameter is 3-1/8" (Speedometer) and 2-1/16" (Water, Oil, Fuel & Battery)
- Speedometer (3), Oil Pressure Gauge and Sender, Water Temperature Gauge and Sender, Fuel Level Gauge and Sender and Battery Voltage Gauge
- Fuel-level sender compatibility is 240 OHM empty, 33 OHM full – 12 volt (Available separately M-10871-A962)
- Fuel-level sender is adjustable from 6" to 23"

CHROME TACHOMETER ②③
M-17360-B961

- Not included in kit
- Case diameter is 3-1/8"
- 4,6,8 cylinder

NOTES:
① 5-gauge kit includes: speedometer, oil pressure gauge and sender, water temperature gauge and sender, fuel level gauge and sender and battery voltage gauge.
② Tachometer is not included in 5-gauge kit. Only available individually.
③ Needles do not zero.

Factory Five '33 Hot Rod
FRPP Content: M-6007-A463NA

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FORD RACING COMPETITION GAUGES

Ford Racing is proud to introduce our new line of through-the-dial LED competition-style gauges and gauge pods. These new, high-quality, full-sweep gauges, available in 2-1/16" diameter along with our new 3-3/8" tachometer with shift light, all sport the new red and blue Ford Racing logo on a black background with white numerals.

M-9275-BFSE NEW
2-1/16" Electric
Fuel Pressure Gauge
0-100 psi

M-9278-BFSE NEW
2-1/16" Electric
Oil Pressure Gauge
0-100 psi

M-10883-BFSE NEW
2-1/16" Electric
Water Temperature Gauge
100º-260º

M-10885-BFSE NEW
2-1/16" Electric
Pyrometer measures
from 0-1600º F.
Includes K-type
thermocouple

M-11622-BFSE NEW
2-1/16" Electric
Vacuum/Boost
Pressure Gauge
30" hg/30 psi

M-10898-CPIC NEW
2-1/16" Electric
Dynamic Performance
Information Center Gauge
(7-digit LED display)

M-17360-B NEW
3-3/8" Electric
Pedestal Mount
Shift Light Tachometer
10,000 rpm

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

HIGH-TEMPERATURE BLUE SILICONE RADIATOR HOSE KIT

M-6052-B Fits 1986-93 5.0L Mustang

Six high-quality molded hoses for upper and lower radiator, thermostat bypass, three heater core hoses for A/C equipped Mustangs. Original equipment on police package Mustangs. Fits better than the other kits with unmolded hoses. Includes 12 special hose clamps with inner band for silicone hoses.

2005-09 MUSTANG HIGH-PERFORMANCE RADIATOR

M-8005-S197*

- Fits 2005-09 Mustang GT
- Thermally efficient up to 700 horsepower
- Uses OEM fan and mounting points
- 2.25" Core thickness
- All-aluminum construction
- Replacement for FR500S

FORD GT COOLANT OVERFLOW CAP

M-8006-GT

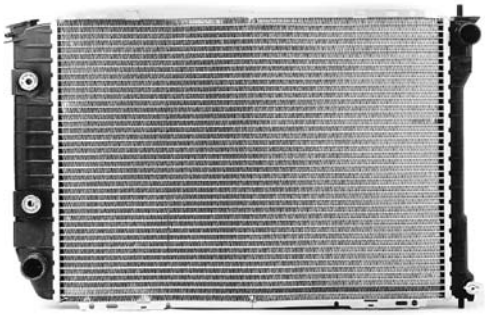
- Ford GT coolant overflow cap with billet cover
- "GT" logo machined in cap surface
- Fits both coolant overflow and intercooler reservoir

ALUMINUM RADIATOR

M-8005-C* 1979-93 Mustang

- Fits 1979-93 V8 Mustang applications
- Improves cooling, better than a 3-core copper/brass radiator
- Saves weight on the front end
- Has cooler for auto transmission or power steering
- Easily installed, modification required

Call the Techline for a fax copy of the instruction sheet.



ALUMINUM MUSTANG COBRA RADIATOR

M-8005-C03**

- Original equipment on the 2003 Mustang Cobra
- Easy bolt-in installation
- Fits 1997-2004 V8 Mustangs with manual transmission

NOTE: Will fit 1996 Cobra that has factory cooling system update.

Did you know…

1968-80 302 engines were built with a 28-ounce imbalance factor.

1981-2001 302 engines were built with a 50-ounce imbalance factor.

1969-97 351W engines were built with a 28-ounce imbalance factor.

1970-74 351C engines were built with a 28-ounce imbalance factor.

NOTE: Severe engine damage will result if you use the wrong flywheel or damper on your engine.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

1999-2001 COBRA INTAKE PLAQUE
M-1447-F46
- "Cobra" intake plaque from 1999-2001 Cobra upper intake manifold
- Design in the shape of the "Cobra" snake
- High-quality embossed Cobra snake
- Blue inlay on brushed aluminum background
- Two-way tape for easy installation

MACH 1 DECK LID EMBLEM
M-1447-M1
- Original equipment on 2003 Mustang Mach 1
- Similar font and graphics to vintage Mustang Mach 1
- Two-way tape for easy installation

COBRA SNAKE FENDER EMBLEMS
M-1447-SR
- Original equipment on 1994-2004 SVT Mustang Cobra
- Includes right and left side emblems
- Two-way tape for easy installation

SVT DECK LID EMBLEM
M-1447-SVT
- Original equipment on SVT Mustang Cobra and SVT Contour
- Similar to SVT emblem used on SVT Focus
- Two-way tape for easy installation

1996-98 COBRA INTAKE PLAQUE
M-1447-D46
- "Cobra" intake plaque from 1996-98 Cobra upper intake manifold
- Design in the shape of the "Cobra" snake
- High-quality embossed Cobra snake
- Blue inlay on brushed aluminum background
- Two-way tape for easy installation

ALUMINUM FUEL DOOR
M-2301-E 2001 Special Edition Mustang Aluminum Fuel Door
- Original equipment on 2001 Special Edition Mustang
- Manufactured by the OEM supplier, not a reproduction part
- Fits 1999-2004 Mustang
- Fits 1997-2003 F-150 with round fuel door
- Fits 2000-05 Focus with modifications to the fuel filler neck plastic box
- 6.250" diameter

ALUMINUM AND URETHANE SPECIAL EDITION MUSTANG PEDAL COVERS
M-2301-A Accelerator Pedal
M-2301-B Brake or Clutch Pedal Cover (1 per package)
M-2301-C Left Foot Dead Pedal
- Direct replacement for stock pedals and pedal covers
- Easy to install, no drilling required
- Brushed aluminum finish with urethane knobs for better grip
- Custom styling for the muscle car enthusiasts
- Fits 1994-2004 Mustang

CHROME V8 BADGE
M-7843-V8
- Two-way tape for easy installation
- 2.5" tall, 1.5" wide

STAINLESS STEEL FORD RACING LICENSE PLATE
M-1828-SS304B

NEW

- Dress up your vehicle with this high-quality license plate frame
- Brushed 304 stainless steel with black laser-etched Ford Racing logo

FORD OVAL LICENSE PLATES (12/PK.)
M-1828-F
- This license plate has a blue Ford Oval on white background
- Sold in packs of 12
- Check with your Ford Racing distributor for single plates CM-1828-FCM

FORD RACING LICENSE PLATES (12/PK.)
M-1828-FR
- This license plate has a blue Ford Oval with red Racing logo on white background
- Sold in packs of 12
- Check with your Ford Racing distributor for single plates CM-1828-FRCM

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FORD RACING FLOOR MATS

M-13086-B 1994-2004 Mustang
M-13086-C 2005-08 Mustang

- Constructed with 18 oz. nylon with PVC backing
- Factory-style anti-slide hook hole and bottom grip knobs
- Black mats with 3-color Ford Racing logo
- Kit contains 1 pair front floor mats

E-Z UP® INSTANT SHELTERS®

Ford Racing E-Z UP® Instant Shelter® includes: top, frame and cover bag; blue with white logo.

PART NUMBER	SIZE
M-1827-T10	10' x 10'
M-1827-T15	10' x 15'
M-1827-T20	10' x 20'

ACCESSORIES

Ford Racing E-Z UP® Instant Shelter® Sidewall with large Ford logo; blue with white logo.

PART NUMBER	SIZE
M-1827-W10	10' Sidewall
M-1827-W15	15' Sidewall
M-1827-W10	(2) 10' Sidewalls*

**Two 10' sidewalls are required to cover a 20' section.*

ORDER THESE PRODUCTS FROM ANY FORD RACING DEALER. NO RETURN ON SPECIAL ORDERS.

"FORD RACING" BANNER

M-1827-A1 "Ford Racing" (68" x 28")

- Strut your stuff with these multi-purpose banners
- Ideal for races, car shows, car clubs, promotions, garage or den
- White with blue lettering on heavy gauge plastic
- Has 5 brass grommets and tie straps

"FORD RACING" 50-FT. PENNANT STRING

M-1827-P1

- Ideal for races, car shows, car clubs, promotions, garage or den
- White with blue lettering on heavy gauge plastic

"FORD RACING" DECALS

WHILE SUPPLIES LAST Limited Quantity!!

Pkg. of 10

M-1820-A2 Medium 7" x 3-3/4"
"Ford Racing" decals with adhesive backing that easily peels off for fast application.

"FORD RACING" MINI-DECALS

WHILE SUPPLIES LAST Limited Quantity!!

Pkg. of 25

M-1820-B1

Single sheet of "peel-off" vinyl decals. Includes 4 small, 1 medium and 1 large decal. Overall size of group—approximately 6" x 1-3/4". White with blue "Ford" and red "Racing."

"FORD" OVAL DECALS

Pkg. of 12

M-20000-D101 5.5"
M-20000-D102 8.5"

Pressure-sensitive OEM-quality, hi-gloss, cast-vinyl material. Blue background with white "Ford" script.

"FORD RACING" VINYL DIE-CUT 15" DECAL

M-1820-FR15

- 15" Ford Racing logo decal red and black
- Die-cut decals are cut around the letters and logos within the decal to make it appear to be printed directly onto surface after it is applied
- Sold in package of 10

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

HIGHWAY SAFETY KIT
M-19515-A

- Remember safety is always first at Ford Racing!
- Silkscreened with Ford Racing logo
- Includes flares, first aid kit and emergency triangle reflectors

WHILE SUPPLIES LAST Limited Quantity!!

HOOD LATCH & PIN KIT
M-16700-A

- That "competition look" you've always wanted is available from Ford Racing
- This is similar to the original hood pin kit used on early Mustangs and Fairlanes
- Can be used with most original and aftermarket hoods
- This part is not designed to fit on the 2005-08 Mustang

"FORD RACING" FENDER COVER
M-1822-A2 Blue

Protect that beautiful paint job from scratches, chemicals and oil with this strong, sturdy and slip-resistant "Ford Racing" fender cover. Measures 27" x 36" and is acid- and grease-resistant. Features handy "ridged" area in which to place small tools and parts.

FORD RACING MUSTANG STEERING WHEEL
M-3601-B Fits 1994-2004 Mustang V6, GT and Cobra.

Features thicker, racing-style rim section, covered in perforated and smooth black leather. Uses OE airbag and cruise control switches (not included). Direct replacement for OE steering wheel.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

Focus RS8—425 hp Ford Racing RWD Focus development car

Ford Focus. Some consider it a cheap and cheerful grocery-getter. Ford Racing sees it as a wolf in sheep's clothing. Untapped potential. A car whose performance heritage is based on world class driving dynamics and handling, delivered by a chassis that continues to earn its stripes by winning on Europe's most challenging road courses and on the world's most demanding rally stages. A car that's much more than simply competitive. It's a champion.

And the fun doesn't need to stay on the other side of the ocean. Here in the U.S., Focus distinguished itself on the street with the SVT Focus, and Focus continues building on its performance legacy in autocrossing, track days, club racing in NASA Spec Focus and even powering all entries in the USAC Ford Focus Midget Series. With such performance in its blood, it's no surprise Ford Racing is there with factory-engineered parts to help Focus racers—those on the street, track, strip and ovals—wring the most out of their cars. From power upgrades to performance-tuned suspension systems to enhanced brakes, Ford Racing has what it takes to support Focus drivers upholding their cars' performance reputations. And have fun doing so—all with confidence.

FOCUS SUPERCHARGER

FOCUS ZETEC SUPERCHARGER KIT
M-6066-ZX3BB*

- Designed in conjunction with Jackson Racing exclusively for Ford Racing Performance Parts
- Uses Ford calibration and electronics, no fuel or electronics add-ons
- Includes new air meter, injectors, air box, calibration, intake manifold, supercharger and belt
- All installation hardware included
- Revised calibration and Roots style blower results in instant response and a flat torque curve
- Requires shipping of stock PCM for reflash
- Increases power by approximately 45 hp and 45 lb-ft AT THE WHEELS!
- Includes all components in Big Boost Kit **M-9000-ZX3**
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

FORD RACING EXCLUSIVE

WHILE SUPPLIES LAST Limited Quantity!!

FOCUS PERFORMANCE AIRBOX AND SNORKEL
M-9659-SVTF**

WHILE SUPPLIES LAST Limited Quantity!!

- SVT Focus airbox and snorkel kit
- Fits any model year Focus equipped with 2.0L Zetec engine
- Increased airflow over stock non-SVT airbox
- Insulates incoming air charge from under hood—heat more efficiently than the open element design
- MAF sensor not included

SVT BOOST UPGRADE FOR JACKSON RACING SUPERCHARGER
M-9000-SVTF*

WHILE SUPPLIES LAST Limited Quantity!!

- For use with M-6066-20SVT to increase boost
- Kit includes processor reflash, new pulley, serpentine belt and 42 lb injectors
- Stock processor must be shipped for reflash
- Ford calibration ensures instant throttle response and a flatter torque curve
- Produces approximately 10 psi of boost
- Works on all 2002-04 SVT Focus models

BOOST UPGRADE FOR JACKSON RACING SUPERCHARGER KIT
M-9000-ZX3*

WHILE SUPPLIES LAST Limited Quantity!!

- For use with M-6066-ZX3 to increase boost
- Kit includes processor reflash, airbox and snorkel, new pulley, serpentine belt and 30 lb injectors
- Stock processor must be shipped for reflash
- Ford calibration ensures instant throttle response and a flatter torque curve
- Produces approximately 10 psi of boost

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FOCUS CYLINDER HEADS

FOCUS ZX3 2.0L ZETEC CNC'D ALUMINUM HEAD

M-6049-ZX3P* Assemble

- Fits 2000-04 Focus ZX3 2
- CNC'd for flow improvement and includes 3-angle valve job
- Cast from prime 319 aluminum
- Assembled with 21-4N stainless steel intake and exhaust valves, production valve springs and retainers (tappets, cams and cam seals not included)
- Intake valve diameter: 33 mm, Exhaust valve diameter: 30 mm
- Chamber volume 47.7cc (nominal)
- Bare head weighs 28.3 lbs
- Production intake and exhaust manifolds bolt on

TYPICAL AIRFLOW (@ 28" OF H_2O DEPRESSION) AS DELIVERED

LIFT	INTAKE FLOW (SCFM)	EXHAUST FLOW (SCFM)
.050	38.0	32.8
.100	80.7	74.9
.150	119.1	109.1
.200	153.7	144.6
.250	181.0	167.9
.300	193.0	186.0
.350	204.8	188.5
.400	214.0	193.1
.550	220.3	195.2

ZETEC HIGH LIFT VALVESPRING SET

M-6513-ZX3E*

- Springs will work with most cams up to .450" lift
- Works with most high lift aftermarket Zetec cams
- Can be changed on vehicle, NO MACHINING REQUIRED
- Includes valve springs and retainers

ZETEC 4-CYLINDER DOHC 2.0L 16V STREET PERFORMANCE CAMSHAFTS

M-6252-A203*

- Radical Street/Strip profile
- Manual transmission with headers
- CNC ported head with port matched intake
- Increased compression recommended: 10.5:1-12.0:1
- Excellent power naturally aspirated PLUS super nitrous cam or with supercharger
- RPM range: 3,000-8,000

VALVE LIFT		DURATION @ .050"		ADVERTISED DURATION		LOBE SEPARATION
INT.	EXT.	INT.	EXT.	INT.	EXT.	
9.9 mm (.390")	9.9 mm (.390")	218°	218°	240°	240°	110°

CNC PORTED 2.3L DURATEC CYLINDER HEAD

M-6049-D23P*

- High-Flow Duratec cylinder head casting from 2.3L Duratec engine
- CNC porting increases flow approximately 15% on intake and exhaust
- Accepts stock valve train
- Fits 2003-06 Focus with 2.0L/2.3L Duratec engine
- Valves, springs and retainers installed; no cams

2.0L ZETEC INTAKE AND EXHAUST VALVES

Swirl polished, 21.4N premium stainless steel intake and exhaust valves for high-performance cylinder head applications. Requires cylinder head to be modified to accept bigger valves; will not work in production heads.

M-6505-ZX3* Exhaust Valve

- Service replacement for the CNC'd Ford Racing Zetec cylinder head M-6049-ZX3P
- 30 mm diameter

M-6507-ZX3* Intake Valve

- Service replacement for the CNC'd Ford Racing Zetec cylinder head M-6049-ZX3P
- 33 mm diameter

FOCUS 2.0L ZETEC ENGINE ASSEMBLY

M-6007-ZX3** Complete Engine

WHILE SUPPLIES LAST Limited Quantity!!

- 2.0L (121 cu. in.) 4-cylinder DOHC
- 130 hp @ 5,750 rpm
- 127 lb-ft of torque @ 4,250 rpm
- 9.6:1 compression ratio
- Fits Focus ZX3 and ZX5. Complete engine assembly throttle body to oil pan including exhaust manifold, flywheels and engine injector harness
- Does not include computer or other wiring
- Shipping weight approximately 370 lbs

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FOCUS ENGINE AND BODY COMPONENTS

PERFORMANCE ZETEC INTAKE MANIFOLD
M-9424-ZX3R*

- Inspired by the intake on the FR200 show car
- Bolts in to stock location with all fittings and EGR
- Requires M-9926-ZX3R throttle body
- Increased flow makes this the best manifold on the market for forced-induction or high-revving Zetec engines
- Fits 2000-04 2.0L Zetec equipped ZX3/4/5/W

ZETEC ALTERNATOR BRACKET
M-10039-ZX3R*

NEW

- This bracket is designed to lower the alternator and allows the Zetec Intake Manifold M-9424-ZX3R to fit without interference

SVT FOCUS FRONT FASCIA
M-17831-F**

WHILE SUPPLIES LAST Limited Quantity!!

- Fits all 2000-04 Focus ZX3 and ZX5
- Complete with driving lights, lower grill insert, lower valance, side marker lights and SVT horn
- Must be painted to match color of car
- Original equipment on the 2003 SVT Focus

70 MM THROTTLE BODY FOR PERFORMANCE ZETEC INTAKE MANIFOLD
M-9926-ZX3R*

Designed to be used with performance manifold M-9424-ZX3R.

SVT FOCUS REAR FASCIA
M-17835-F**

WHILE SUPPLIES LAST Limited Quantity!!

- Fits 2000-05 Focus ZX3 and ZX5
- Complete with honeycomb insert
- Must be painted to match color of car
- Original equipment on the 2003 SVT Focus

FOCUS LONG TUBE HEADER KIT
M-9430-ZX3L*
M-9430-ZX3LC* Coated

The 2000-04 Focus 2.0L Zetec long tube header kit includes a modified SVT Focus long tube 409 stainless steel header, modified SVT heat shields (uncoated header only), revised EGR tube, SVT dipstick and tube. Use with production SVT Focus catalyst part number 2M5Z-5E212-AA and flex pipe part number 2M5Z-5G203-AA, sold separately.
For maximum performance use with aftermarket catback exhaust system.

SVT FOCUS CENTER EXHAUST DIFFUSER INSERT
M-17835-F1*

WHILE SUPPLIES LAST Limited Quantity!!

- This center insert is required when installing M-5200-ZXC or M-5200-D23C center exhaust
- Insert fits SVT Focus rear fascia (M-17835-F) only

COATED LONG TUBE SVT FOCUS HEADER
M-9430-SVTFC*

- Original equipment header, ceramic coated for heat resistance and durability
- 4-2-1 design is engineered to correctly collect the exhaust pulses resulting in maximum torque and horsepower
- T-409 stainless steel construction
- Fits 2002-04 2.0L SVT Focus ZX3/5

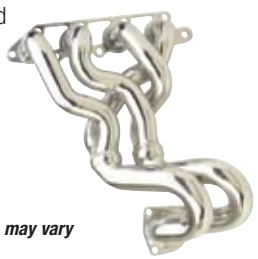


Photo may vary

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FOCUS DRIVELINE & SUSPENSION

ALUMINUM FUEL DOOR
M-2301-E

2001 Special Edition Mustang Aluminum Fuel Door

- Original equipment on 2001 Special Edition Mustang
- Manufactured by the OEM supplier, not a reproduction part
- Fits 1999-2004 Mustang
- Fits 1997-2003 F-150 with round fuel door
- Fits 2000-05 Focus with modifications to the fuel filler neck plastic box
- 6.250" diameter

FOCUS TORSEN DIFFERENTIALS
M-4204-F20 MTX-75 transaxle
M-4204-SVTF 2002-04 SVT

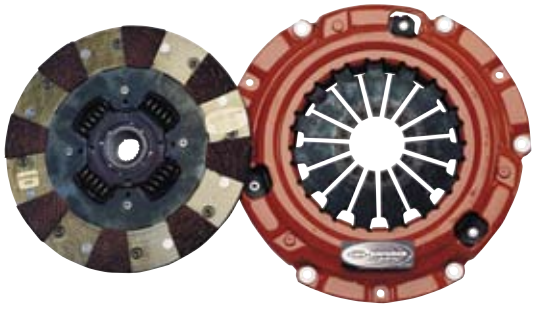
- Torsen T-2 type differential
- Features full-time torque-sensing, torque-biasing
- Responds immediately to variable driving conditions
- Provides better traction, acceleration and handling than the factory open differential

2000-08 FOCUS REAR ANTI-ROLL BAR
M-5400-Z3R

- Fits 2000-08 ZX3/ZX4/ZX5 Focus
- Recommended with M-3000-ZX3A suspension kit
- Blue powder-coat finish
- Designed to increase handling and performance
- May require Adjustable Rear Subframe M-5035-ZX3 and additional hardware if not equipped with a factory rear sway bar

CENTERFORCE CLUTCH KIT
M-7563-Z3 Focus ZX3 and ZX5

- Centerforce "Dual Friction" clutch system improves clamping force by more than 90%
- Improves clutch feel while maintaining easy pedal effort
- Includes clutch disc and pressure plate
- Fits 2000-04 2.0L Zetec Focus ZX3/4/5, not applicable to SVT



FOCUS ZX3 ANTI-ROLL BAR KIT
M-5400-Z3

- Complete your suspension update with a tuned anti-roll bar kit
- Add stability and cornering grip
- Red powder-coat finish
- 22-mm-diameter front bar and 25-mm-diameter rear bar
- May require M-5035-ZX3 if not equipped with a factory rear sway bar
- Fits 2000-07 ZX3/4/5

FOCUS ADJUSTABLE REAR SUBFRAME
M-5035-ZX3

- Fits 2000-07 Focus ZX3/4/5
- Allows easy camber adjustment
- Features anti-sway bar mounts
- May be required to mount rear stabilizer bar (M-5400-Z3) on 2005-07 Focus

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FOCUS SUSPENSION COMPONENTS

FOCUS PERFORMANCE SPRING KIT

M-5560-ZXM* 2000-05 Focus except wagon
M-5560-ZXM1* 2006-07 Focus except wagon

- Lowers vehicle approximately 1.5"
- Gives a more aggressive looking stance as well as increased handling dynamics
- May cause slightly harsher ride compared to stock springs
- May require M-5035-ZX3 (rear) and aftermarket camber plates (front) to achieve desired alignment

NOTE: Some factory fasteners are one-time use. Please reference Ford service manual for reuse information and correct torque specifications.

FOCUS DYNAMIC DAMPER KIT

M-18000-ZXM* 2000-05 Focus except wagon
M-18000-ZXM1* 2006-08 Focus except wagon

- Tuned for track
- Dynamic dampers—same manufacturer as those on the Mustang FR500C race car
- Kit includes front struts and rear shocks

FOCUS PERFORMANCE SPRING KIT

M-5560-ZX3B

- Improves handling
- Fits 2006-07 Focus except wagon
- Lowers vehicle approximately 1.5"
- Includes front and rear springs
- May require M-5035-ZX3 (rear) and aftermarket camber plates (front) to achieve desired alignment

FOCUS DAMPER KIT

M-18000-ZX3 Fits 2000-05 Focus except wagon
M-18000-ZX3B Fits 2006-07 Focus except wagon

- Improves handling
- Includes front dampers with mounts, spring seats and rear dampers

SVT FOCUS SUSPENSION KIT

M-3000-ZX3

- Fits 2000-05 ZX3, ZX4 and ZX5 Focus
- Original equipment on SVT Focus
- Upgrades your stock Focus suspension to SVT Focus
- Improved handling characteristics without ride degradation
- Reduced ride height approximately .5"

ESCORT ZX2 TOKICO STRUT KIT

M-18000-Z2

Heavy-duty Tokico struts performance tuned to match M-5560-Z2 Eibach® spring kit for ZX2 suspension. Provides improved body control with a firmer ride. Kit includes front and rear struts.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

FOCUS BRAKES

2000-04 FOCUS SVT FRONT BRAKE KIT
M-2300-SVTF4**

NEW

- Complete kit to install SVT Focus front brakes on the 2000-04 ZX3/4/5 Focus
- Includes 300 mm front rotors
- Includes all calipers and mounting hardware for front brakes
- Includes front knuckles

2005-07 SVT FOCUS FRONT BRAKE KIT
M-2300-SVTF5**

NEW

- Complete kit to install SVT Focus front brakes on the 2005-07 ZX3/4/5 Focus
- Includes 300 mm front rotors
- Includes all calipers and mounting hardware for the front brakes

2000-04 FRONT FOCUS RALLY BRAKE KIT
M-2300-ZXR

NEW

- Complete kit to put larger front brakes on 2000-04 ZX3/4/5 Focus
- Fits inside 15" wheels
- Includes 278 mm front rotors
- Includes calipers and mounting hardware
- Includes front knuckles
- Designed for the Spec Rally Focus

SVT FOCUS REAR BRAKE KIT
M-2300-SVTR**

NEW

- Complete kit to install SVT Focus rear brakes on the 2000-08 ZX3/4/5 Focus
- 280 mm rear disk brake kit
- Includes rear calipers, knuckles and mounting hardware

SVT FOCUS SUSPENSION KIT
M-3000-ZX3A

- Fits 2000-05 ZX3, ZX4 and ZX5 Focus
- Original equipment on SVT Focus suspension
- Upgrades your stock Focus suspension to SVT Focus
- Improved handling characteristics without ride degradation
- Reduced ride height approximately .5"
- Front struts come assembled with upper strut mounts and springs installed
- Kit does not include front or rear anti-roll bars, rear Anti-Roll Bar M-5400-Z3R recommended
- Additional hardware may be required for rear anti-roll bar installation
- Cars without factory rear stabilizer bar may require Adjustable Rear Subframe M-5035-ZX3

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FOCUS WHEELS

2002-03 SILVER SVT FOCUS WHEEL

M-1007-S177*

- Fits 2000-09
- 4-lug, 108 mm bolt circle
- 5.94" backspacing
- 49 mm offset
- 17" x 7" wide
- Includes SVT center cap
- Original equipment on the 2003 SVT Focus

2004 SVT FOCUS WHEEL

M-1007-S177A*

- Fits 2000-07
- 4-lug, 108 mm bolt circle
- 5.94" backspacing
- 49 mm offset
- 17" x 7" wide
- Includes SVT center cap
- Original equipment on the 2003-04 SVT Focus

2003 DARK ARGENT SVT FOCUS EUROPEAN APPEARANCE PACKAGE 15-SPOKE WHEEL

M-1007-S177E*

- Fits 2000-09
- 4-lug, 108 mm bolt circle
- 5.94" backspacing
- 49 mm offset
- 17" x 7" wide
- Includes SVT center cap
- Original equipment on the 2003 SVT Focus

FORD RACING FOCUS RALLY WHEEL

M-1007-S177B*

- Fits 2000-09
- 4-lug, 108 mm bolt circle
- 5.94" backspacing
- 49 mm offset
- 17" x 7" wide
- Includes Ford Racing center cap
- Same as M-1007-S177E except painted black

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

"Thunder"—460 hp Ford Racing F-150 development vehicle

Ford F-150 and toughness. A relationship that is as old as the Ford truck itself, and a reputation that has been earned the hard way. Through Ford trucks' many wins in desert racing, where the conditions and demands conquer lesser vehicles. Through serving America's commercial needs daily, both on and off pavement. No question about it, Ford trucks are "Built Ford Tough."

Well, "Built Ford Tough" meet "Built Ford Racing Fast"! With performance upgrades ranging from wheels and lowering kits to exhaust systems, headers, rear gears and superchargers, Ford Racing is the place to go for Ford truck go-fast parts that are designed, developed and validated by the factory. In this case, the factory is Ford Racing, the guys who live and breathe performance.

2004 F-150 SUPERCHARGER KIT

M-6066-F104 Black Wrinkle Finish
M-6066-F104P Polished Finish

- Fits all 2004 F-150 with 5.4L 3-valve engine
- Complete kit contains all hardware and detailed instructions
- Intercooled system
- Premium fuel only
- Designed for use with factory throttle body
- 90 mm mass air meter
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Pro-Cal tool voucher included with kit
- Simple bolt-on rear wheel increase of approximately 160 horsepower and 160 lb-ft of torque
- Installation of this kit will void your new vehicle powertrain warranty
- E.O. #D-231-24
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

NOTE: Superchargers are built to order. Please allow 7 days for assembly.

M-6066-F104P shown

2005-07 F-150 SUPERCHARGER KIT

M-6066-F105 Black Wrinkle Finish
M-6066-F105P Polished Finish

- Fits all 2005-08 F-150 with 5.4L 3-valve engine
- Complete kit contains all hardware and detailed instructions
- Intercooled system
- Premium fuel only
- Designed for use with factory throttle body
- 90 mm mass air meter
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Pro-Cal tool voucher included with kit
- Simple bolt-on rear wheel increase of approximately 160 horsepower and 160 lb-ft of torque
- Installation of this kit will void your new vehicle powertrain warranty
- E.O. #D-231-24
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

NOTE: Due to calibration complexity this supercharger will not fit 2007-08 Expedition or the 2008 F-150.
NOTE: Superchargers are built to order. Please allow 7 days for assembly.

M-6066-F105P shown

1999-2000 LIGHTNING SUPERCHARGER UPGRADE KIT

M-6066-L90 Black Wrinkle Finish
M-6066-L90P Polished Finish

- Fits 1999-2000 F-150 Lightning
- Complete kit contains all hardware and detailed instructions
- Premium fuel only
- Designed for use with factory twin bore throttle body
- 90 mm mass air meter
- **DUETO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Pro-Cal tool voucher included with kit
- Simple bolt-on increase of approximately 80 horsepower and 80 lb-ft of torque
- Installation of this kit will void your new vehicle powertrain warranty
- E.O. #D-231-24
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

NOTE: Superchargers are built to order. Please allow 7 days for assembly.

M-6066-L90P shown

2001-04 LIGHTNING SUPERCHARGER UPGRADE KIT

M-6066-LR Black Wrinkle Finish
M-6066-LRP Polished Finish

- Fits 2001-04 F-150 Lightning
- Complete kit contains all hardware and detailed instructions
- Premium fuel only
- Designed for use with factory twin bore throttle body
- **DUE TO MULTIPLE CALIBRATIONS, ONLINE REGISTRATION IS REQUIRED TO RECEIVE PRO-CAL TOOL AFTER PURCHASE**
- Pro-Cal tool voucher included with kit
- Simple bolt-on increase of approximately 80 horsepower and 80 lb-ft of torque
- Installation of this kit will void your new vehicle powertrain warranty
- E.O. #D-231-24
- Engine calibrations are developed and supported for U.S. and Canadian vehicles only

NOTE: Superchargers are built to order. Please allow 7 days for assembly.

M-6066-LRP shown

EXPEDITION SUPERCHARGER CONVERSION KIT

M-6066-E05

- This conversion kit is required to install M-6066-F105 supercharger on 2005-06 Expeditions with 5.4L 3V engine
- Separate purchase of the M-6066-F105 supercharger kit is required
- See M-6066-F105 for additional details
- Premium fuel required
- E.O. #D-231-24

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

2004-09 F-150 LIGHTNING WHEEL
M-1007-L2010*

- Ford Racing exclusive. Proposed wheel for the never produced Lightning
- Fits all 2004-09 F-150 4WD only
- Does not fit 2004 F-150 Heritage
- Sparkle silver painted finish, with machined face
- 6-lug, 135 mm bolt circle
- 7.125" backspacing
- 44 mm offset
- 20" x 10" wide
- Includes Ford Racing center cap

2004-09 F-150 LIGHTNING WHEEL
M-1007-L2010P*

- Ford Racing exclusive. Proposed wheel for the never produced Lightning
- Fits all 2004-09 F-150 4WD only
- Does not fit 2004 F-150 Heritage
- Polished aluminum finish, with machined face
- 6-lug, 135 mm bolt circle
- 7.125" backspacing
- 44 mm offset
- 20" x 10" wide
- Includes Ford Racing center cap

2004-09 F-150 LIGHTNING WHEEL
M-1007-L2085*

- Ford Racing exclusive. Styled after the proposed wheel for the never produced Lightning
- Fits all 2004-09 F-150 2WD and 4WD
- Fits 2002-08 Expeditions
- Does not fit 2004 F-150 Heritage
- Sparkle silver painted finish, with machined face
- 6-lug, 135 mm bolt circle
- 6.56" backspacing
- 44 mm offset
- 20" x 8.5" wide
- Includes Ford Racing center cap

2004-09 F-150 LIGHTNING WHEEL
M-1007-L2085P*

- Ford Racing exclusive. Styled after the proposed wheel for the never produced Lightning
- Fits all 2004-09 F-150 2WD and 4WD
- Fits 2002-08 Expeditions
- Does not fit 2004 F-150 Heritage
- Polished aluminum finish, with machined face
- 6-lug, 135 mm bolt circle
- 6.56" backspacing
- 44 mm offset
- 20" x 8.5" wide
- Includes Ford Racing center cap

LIGHTNING LOWERING KIT
M-3000-L

This kit lowers all 1999-2004 F-150 Lightning/F-150 Harley-Davidson models 30 mm (1.181") in all four corners. A simple front coil/jounce bumper replacement and rear shackle replacement are the only items necessary to enhance positive control. Both vehicles retain very good ride/launch characteristics.

LOWERING KIT, 1997-2003 F-150, 2WD
M-3000-T1

This kit lowers 1997-2003 F-150 standard cab, SuperCab and SuperCrew with V6 or V8, approx. 2" front and 4" rear. Includes new front coil springs, rear shackles and hangers and 4 specially tuned high-pressure gas shocks. Fits vehicles with V6 or V8 engines in standard cab (long and short bed) and SuperCab (short bed). Improves appearance and handling with very acceptable ride characteristics.

NOTE: Not recommended for 1999-2003 SVT F-150 Lightning. When used on 2001 SuperCab with 6' box and 5" dia. driveshaft; the driveshaft may hit the crossmember on hard bumps. 2WD only.

2004-08 2WD F-150 LOWERING KIT
M-3000-T3

- Lowers truck 2" in the front, 5" in the back
- Includes front drop coil springs, rear flip kit, rear shocks, bump stops and hardware
- Fits all 2WD models
- Lowers vehicle roll center for better handling
- Does not fit 2004 F-150 Heritage

2004-06 F-150 REAR LOWERING KIT
M-3000-G

- Lowers rear of vehicle
- 2" drop
- Contains all installation hardware

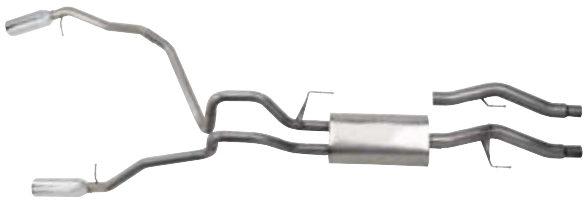
*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

F-150 SPLIT REAR EXHAUST SYSTEM

M-5230-SR*

- Fits 2004-07 NEW F-150 2WD and 4WD, Super Crew with short bed
- Made of high-quality T-304 stainless steel
- 4.6L and 5.4L compatible
- Unique polished tips with Ford Racing logo
- Will not fit 2004 F-150 Heritage



F-150 LIGHTNING STYLE EXHAUST SYSTEM

M-5230-L*

- Fits 2004-05 F-150 2WD (will not fit 2004 Heritage or Lightning models)
- SVT Lightning inspired styling
- Unique tips
- Made of high-quality T-304 stainless steel
- Additional lengths to fit all wheelbases included in the kit

F-150 LIGHTNING EXHAUST SYSTEM

M-5230-L2*

- Replacement for 1999-2004 Lightning
- Side exit exhaust
- Made of high-quality T-304 stainless steel
- Unique tips

F-150 LIGHTNING STYLE EXHAUST

M-5230-L06EC*

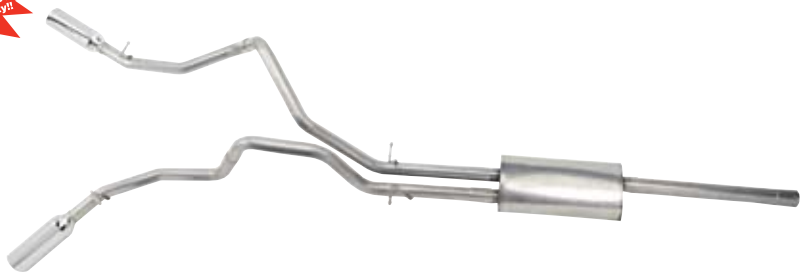
- Fits 2006-08 F-150 2WD
- SVT Lightning inspired styling
- Unique tips
- Made of high-quality T-304 stainless steel
- Fits extended cab and crew cab

F-150 HARLEY-DAVIDSON SPLIT REAR EXHAUST SYSTEM

M-5230-HDSR*

WHILE SUPPLIES LAST Limited Quantity!!

- Fits 2001-03 F-150 Harley-Davidson pickup
- Made of high-quality T-304 stainless steel
- Unique tips



*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

STAINLESS STEEL SHORTY HEADERS

PART NUMBER	TYPE	APPLICATION	Tube Diameter
M-9430-T50*	Stainless Steel	1990-95 F-Series Truck and E-Series Van with 5.0L engine ②	1.625"
M-9430-T58*	Stainless Steel	1990-96 F-Series Truck and E-Series Van with 5.8L engine ②	1.625"
M-9430-F542C*	Ceramic Coated	1999-03 F-150 5.4L 2V ①	1.625"
M-9430-F543*	Stainless Steel	2004-05 F-150 5.4L 3V	1.625"
M-9430-SD682*	Stainless Steel	2004 F-250 6.8L V10 2V	1.625"
M-9430-SD682C*	Ceramic Coated	2004 F-250 6.8L V10 2V ①	1.625"
M-9430-SD683*	Stainless Steel	2005 F-250 6.8L V10 3V	1.625"
M-9430-SD683C*	Ceramic Coated	2005 F-250 6.8L V10 3V ①	1.625"

NOTES:
① Jet-Hot® Lifetime Warranty.
② Production and GT-40 heads, except GT-40 "P."

JET-HOT® LIMITED WARRANTY
This limited warranty becomes void if the product shows evidence of bending or mutilating of parts or burnout resulting from improper tuning. Warranty covers rust-through only and does not cover cosmetic rust or discoloration of material. This limited warranty shall be limited to the repair, adjustment or replacement of defective parts only. Does not cover any labor claims. Ask your dealer for a copy of this Jet-Hot® limited warranty.

M-9430-SD683 shown

FEATURES:
STAINLESS STEEL
409 stainless exhaust material is titanium stabilized ferritic stainless steel. 409 stainless is used in applications where appearance is a secondary consideration to properties and corrosion resistance and where some weldability is required. An example of stainless usage is catalytic converter assemblies. 409 stainless has excellent forming characteristics and is rust-through resistant. A surface rust will form in most instances. This rust retards further corrosion.

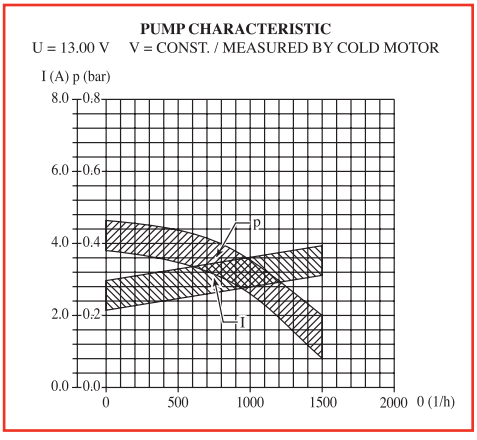
- **409 stainless steel tubes**
- **Machined flange**
- **Bolts to stock exhaust pipes**
- **Includes gaskets, bolts and studs**

CERAMIC COATED STAINLESS STEEL
- Identical to stainless steel header, but with Jet-Hot® ceramic finish
- Stain and rust resistant
- Super-premium quality
- Lifetime Warranty
- Finest short tube headers you can buy

2004-06 F-150 HIGH-PERFORMANCE RADIATOR
M-8005-P221*
- All-aluminum construction
- Recommended for high-performance applications
- Thermally efficient up to 700 horsepower
- Uses OEM fan and mounting points
- Will not fit 2004 F-150 Heritage

F-150 LIGHTNING DUAL FUEL PUMP KIT
M-9407-L54
- Dual 130 liters per hour fuel pumps from the 1999-2004 Lightning
- Fits 1996-2004 F-150 models with PN96 body
- Kit includes jumper wire for non-Lightning applications

ELECTRIC WATER PUMP
M-8501-L54**
- Production 2003 F-150 Lightning intercooler coolant circulation pump
- Inlet and outlet hose connection diameter is 19 mm/3/4"
- Can be used in many coolant pumping applications



*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.
See pages 3-9 for important safety, emissions and warranty information.

AXLE GIRDLE

M-4033-G1 8.8" Ford

- Light-weight 356T6 aluminum casting replaces rear cover on 8.8"
- Load bolts provide additional support for differential bearing caps
- Increase ring and pinion gear life
- Will not fit IRS

NOTE: Check exterior clearance to chassis/suspension.
NOTE: Will not fit 2005 Mustang.

8.8" DIFFERENTIALS

M-4204-F318 shown

PART NUMBER	AXLE	SPLINE	DESCRIPTION
M-4204-F318 ①②	8.8"	31 spline	Traction-Lok
M-4204-T31 ③	8.8"	31 spline	T-2 Torsen™ Differential

NOTES:
① Will accept anti-lock exciter ring.
② Requires 4 ounces of CM-19546-A1 friction modifier with initial fill.
③ M-4204-T28 fits 1999 Cobra/Thunderbird/Mark VII with IRS (2000-04 Cobra has 31 spline).
④ Recommended for street use only.

8.8" RING GEAR AND PINION SETS

PART NUMBER	RATIO	AXLE
MUSTANG/RANGER/F-150		
M-4209-F308*	3.08:1	8.8"
M-4209-F327*	3.27:1	8.8"
M-4209-G355A*	3.55:1	8.8"
M-4209-F373N*	3.73:1 ①	8.8"
M-4209-G410A*	4.10:1	8.8"
M-4209-G410M*	4.10:1	8.8"
M-4209-G430M*	4.30:1	8.8"
M-4209-G456*	4.56:1	8.8"

NOTES:
① Replaces our popular M-4209-F373. New manufacturing technology utilizing a Face Hob Process which features a single-pass pinion tooth machining operation compared to a conventional three-pass process for machining. CNC cut and lapped gear teeth. Higher strength and better quality gears are produced with the Face Hob Process.
NOTE: These new gears look a little different; the gear teeth are cut on a different angle and the ring gear has a bevel on the back of the gear.

STERLING AXLE "TRUE TRAC"™ LIMITED SLIP DIFFERENTIAL

WHILE SUPPLIES LAST Limited Quantity!!

M-4204-TT312

- Torque-sensing differential applies torque to wheel with best traction
- Refined enough for street use, stout enough for rigorous off-road duty
- 35 spline fits all Sterling axle 10.25" and 10.5" gears
- Full floating axles only, will not work with C-clip axles

F-150 BILLET ALUMINUM GRILL INSERTS

M-7843-A Ford Oval Logo

WHILE SUPPLIES LAST! Limited Quantity!!

- Fits F-150 1996-2003 and 2004 Heritage
- Can be used as a grill or tailgate insert
- 7.25" wide
- Polished aluminum with painted logo
- Includes mounting hardware

2004-06 F-150 BILLET FORD OVAL LOGO

M-7843-C

WHILE SUPPLIES LAST! Limited Quantity!!

- Fits 2004-06 F-150
- 9" long, machined from billet aluminum
- Polished with blue paint
- Will not fit 2004 F-150 Heritage

COATED 3-VALVE CAM COVERS 4.6L/5.4L

M-6582-C543V Powdercoated for chrome appearance
M-6582-3VB Blue
M-6582-3VBLK Black Wrinkle

- Fits 2005-09 3-valve 4.6L/5.4L engines
- Powdercoated finish

LIGHTNING MASS AIR METER

M-12579-L54**

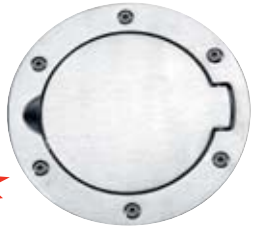
- Stock replacement 90 mm 2001-04 F-150 Lightning Mass Air Meter
- Requires recalibration for use on other vehicles

ALUMINUM FUEL DOOR

M-2301-E 2001 Special Edition Mustang Aluminum Fuel Door

- Original equipment on 2001 Special Edition Mustang
- Manufactured by the OEM supplier, not a reproduction part
- Fits 1999-2004 Mustang
- Fits 1997-2003 F-150 with round fuel door
- Fits 2000-05 Focus with modifications to the fuel filler neck plastic box
- 6.250" diameter

FITS F-150



F-150 ALUMINUM FUEL DOOR

M-2301-F150

- Improve the appearance of your 2004-07 F-150
- Brushed aluminum finish
- Billet aircraft styling
- Does not fit 2004 Heritage
- Easy installation

EFI TRUCK VALVE COVERS

M-6582-A351R** Black Satin

- Fits 5.0L EFI and 5.8L EFI engines
- Die-cast aluminum with raised "Ford Racing" logo
- Includes chrome oil filler tube and cap

NOTE: Find more valve covers on pages 144-147.

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

FORDRACING.COM

Your Inside Access to Ford Racing News

www.FordRacing.com is the online source for the latest information on Ford Racing teams, products and news.

Since 1999, www.fordracing.com has been the place where even professional racers go for an inside look at what's happening on the track, in the garage and on the streets. It offers the fastest Ford performance news anywhere. The site is updated daily with the latest Ford driver quotes, news and audio podcasts, and it's illustrated with award-winning race photography.

Been gone for awhile? Visit today and see expanded coverage, including the Ford Racing Performance Parts catalog and technical specifications.

In addition to the latest Ford Racing news, the site also offers Ford enthusiasts hot deals on race tickets, apparel and a long list of special offers.

Join us at

www.fordracing.com

and experience all things Ford. Fast.

custom accessories

WHEELS

20" polished aluminum wheel

»» Step into the WOW factory.

Grab some attention with Ford Custom Accessories.
Visit fordaccessories.com and explore over 2,000 accessories for your car, truck or SUV. Genuine Ford Accessories from Ford Custom Accessories are the only accessories designed and tested exclusively by Ford for your Ford, Lincoln and Mercury vehicle. Plus, all Ford Licensed Accessories are manufactured and backed by top companies, assuring you quality. Make a statement on the road and order your Ford Custom Accessories today.

APPEARANCE

Body Kit by ASC®/Saleen®* and Exterior Vinyl Graphics

ELECTRONICS

Dual DVD Headrests by INViSiON®*

*Ford Licensed Accessories.
Genuine Ford Accessories will be warranted for whichever provides you the greatest benefit: 12 months or 12,000 miles (whichever occurs first), or the remainder of your Bumper-to-Bumper 36-month/36,000-mile New Vehicle Limited Warranty. Contact your local dealer for details and a copy of the limited warranty. Ford Licensed Accessories (FLA) are warranted by the accessory manufacturer's warranty. Contact your dealer for details regarding the manufacturer's limited warranty and/or a copy of the FLA product limited warranty offered by the accessory manufacturer.

WHEELS

17" chrome aluminum wheel with orange cleat

APPEARANCE

Katzkin® Leather seat covers*

ELECTRONICS

Illuminated front sill plates

FORD RACING APPAREL

CHECKERED FLAG POLO
Men's pique polo with two-button placket, jacquard collar with checkered accent, raglan sleeves and hemmed cuffs. 60/40 cotton/polyester. Imported. Red/Molten, Red/Black/White. Sizes M-XXL.
A. S87115

JUNIORS' LONG-SLEEVE POCKET TEE
Sizes S-XL.
B. S87123

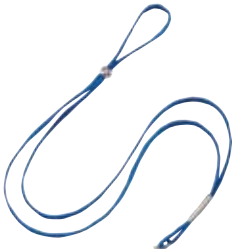
FORD RACING HOODED SWEATSHIRT
Sizes M-XXL.
C. S87118

CREDENTIAL HOLDER
Credential holder is made of clear plastic with Royal Blue neck lanyard. 4 1/2" x 8 1/2".
D. S57051

RACE DAY BACKPACK
Gusseted cinch backpack. Polyester. Blue. 15" x 17" x 6".
E. S87128

A.

B.



D.

C.

E.

Order toll free 1.888.380.6901 for apparel and accessories

FORD RACING APPAREL

A.

B.

C.

D.

ADULT FORD RACING TEES

100% cotton tees with the ever-recognizable Ford Racing logo screened across the front.
Sizes M-XXL.
A. S9819 Navy
B. S8016P White

LADIES' FORD RACING TEE

100% cotton. Imported. Chocolate Brown.
Sizes S-XL.
C. S87125

LADIES' WHITE FORD RACING TEE

Trendy Ford Racing side-seam print tissue tee, sexy fit and longer length—perfect for layering. Imported.
Sizes S-XL.
D. S77030

SPORT WATCH

Plastic casing, rubber strap, three-hand movement and large numbered face. Water resistant to 3 ATMs. Black. One size fits most.
E. S87131

GOLF UMBRELLA

68"-arc golf umbrella with wind-resistant vented construction. Includes automatic open, heavy-duty fiberglass shaft/ribs, reflective binding and cushion grip with black spray rubber finish. Comes with nylon/canopy case. Approximately 41 3/4" when closed. Black/White.
F. S77014

E.

F.

FORD RACING APPAREL

LADIES' FLEECE JACKET
Sizes S-XL.
A. S87142

MEN'S FLEECE JACKET
Sizes M-XXL.
B. S87121

CHECKERED FLAG JACKET
Men's mid-length jacket featuring raglan sleeves, reflective zipper tape, auto-lock zipper pulls, shock cord drawstring at hem and elasticized cuffs. Polyester. Imported. Royal Cobalt/Black.
Sizes M-XXL.
C. S87119B

FORD RACING TWILL JACKET
Men's twill jacket with Ford Racing embroidery on entire jacket. 100% cotton. Imported. Navy.
Sizes M-XXL.
D. S87116

Order toll free 1.888.380.6901 for apparel and accessories

FORD RACING HEADWEAR

You'll always be noticed in these bright and flashy Ford Racing caps. 100% cotton twill with adjustable backstrap closures. Imported. One size fits most.

A. S47010 Silver Flame
B. S77002 Reverb
C. S77113 BOSS Is Back
D. S57019 Camouflage
E. S87100 Distressed

A.

B.

C.

D.

E.

FORD RACING ACCESSORIES

COLLAPSIBLE KOOZIE®
A collapsible beverage holder that insulates drinks, travels with ease and is ideal for mailings. Fabric exterior. Black.
A. S47035

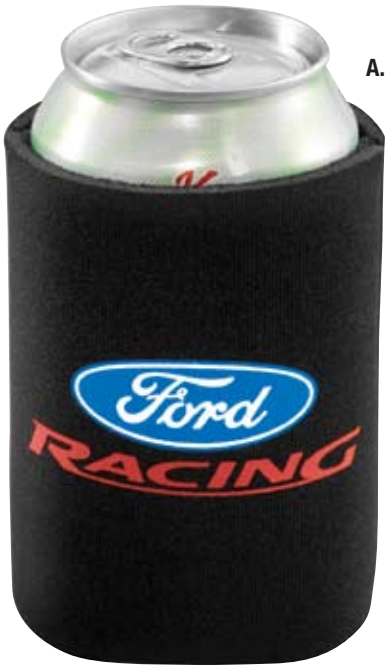
CHECKERED FLAG PEN
Sleek roller ball pen features silver upper barrel and racing checkerboard design on lower barrel. Topped with spinning tire cap.
B. S77010

TUMBLER
Chrome-lined tumbler with spill-resistant "S" lid. Blue/White. 16 oz. Fits standard vehicle cup-holders.
C. S87133

TWIST ACTION PEN
Black ink metal pen with brass cap, patterned barrel and chrome accents. Silver.
D. S87129

FORD RACING KEYCHAIN
Round key holder with simulated leather backing. Black.
1 3/16" diameter.
E. S87132

A.



B.

C.

D.

E.

FORD RACING ACCESSORIES

FORD RACING FLAG
Traditional Ford Racing flag made of durable nylon with grommets for hanging. 3' x 5'.
A. S9694

UTILITY MAT
Perfect for small projects such as assembly or cleaning small parts. Made of durable, chemical-resistant PVC material. Colors fully molded-in, will not fade or wear away. Easily cleans with soap and water. Features a “high brim” border to hold spills, molded-in conversion table, angle measurements and “pour spout” to channel spills out of the mat. 16" x 24".
B. S69064

WORK STATION MAT
Perfect in front of any work station where standing is a necessity. Made of durable, chemical-resistant PVC material. Colors fully molded-in, will not fade or wear away. Easily cleans with soap and water. 19" x 30".
C. S69063

BINOCULARS
Compact Binoculars with Ford Racing logo imprinted on the case and the side of the binoculars. 8" x 21" in 372' field of view at 1000 yards. Imported.
D. S77110

FORD RACING NEON CLOCK
E. S87134Blue/S87134Pink

A.

B.

C.

D.

E.

BASIC ENGINE DIMENSIONS (INCHES)

Out-of-Production Gasoline Engines

DISPLACEMENT	YEARS	BORE	STROKE	BORE SPACING	MAIN JOURNAL DIA.	ROD JOURNAL DIA.	CON ROD LENGTH (MEAN)	DECK HEIGHT	PISTON COMP HT
1.6L Kent	1971-73	3.188	3.056	3.78	2.1253	1.9372	4.928	8.2272	—
1.6L CVH	1981-85	3.150	3.130	3.614	2.383	1.886	5.195	8.212	1.451
1.9L CVH	1985-87	3.230	3.465	3.614	2.383	1.886	5.195	8.378	1.451
1.9L CVH	1988-96	3.230	3.465	3.614	2.383	1.728	5.195	8.378	1.451
1.8L ZETEC DOHC	1991-96	3.270	3.350	3.583	1.966	1.771	5.230	8.130	1.108
2.0L CVH	1997-98	3.339	3.465	3.614	2.383	1.728	5.195	8.378	1.451
2.0L OHC ①	1971-74	3.575	3.029	4.016	2.244	2.047	4.982	8.146	1.595 ⑤
2.0L OHC ②	1983-87	3.520	3.126	4.173	2.399	2.047	5.205	8.368	1.583
2.0L ZETEC	1995-04	3.339	3.465	3.614	2.283	1.847	5.3618 ⑦	8.378	1.3012 ⑧
2.0L V6	2001-04	3.215	2.631	4.016	2.479	1.967	5.686	8.189	1.181
2.2L Probe	1988-92	3.390	3.700	3.810	2.360	2.006	6.200	9.500	1.450
2.3L OHC	1974-97	3.780	3.126	4.173	2.399	2.047	5.205	8.368	1.583
2.5L OHC	1998	3.780	3.401	4.173	2.399	2.047	5.457	8.368	1.211
2.3L HSC	1984-94	3.680	3.300	4.080	2.249	2.124	5.457	8.700	1.520
2.5L HSC	1986-91	3.680	3.583	4.080	2.249	2.124	5.990	9.400	1.579
2.5L V6 Duratec	1995-99	3.245	3.130	4.016	2.480	1.968	5.437	8.189	1.181
2.6L V6	1972-73	3.545	2.630	4.760	2.244	2.127	—	8.084	1.546
2.8L V6	1974-80	3.650	2.700	4.760	2.244	2.127	5.140	8.084	1.539
2.9L V6	1986-92	3.661	2.835	4.760	2.244	2.126	5.140	8.858	1.461
3.0L V6 SHO	1989-95	3.500	3.150	4.330	2.516	2.047	5.780	8.660	1.307
3.2L V6 SHO	1993-95	3.620	3.150	4.330	2.516	2.047	5.780	8.660	1.307
3.4L V8 SHO	1996	3.245	3.130	4.016	2.480	1.968	5.437	8.189	1.181
3.8L V6	1982-95	3.810	3.390	4.193	2.5194 ④	2.311	5.914	9.232	1.602
3.8L V6	1997-03	3.810	3.390	4.193	2.519	2.311	6.091	9.232	1.450
4.0L V6	1990-00	3.950	3.320	4.760	2.244	2.126	5.748	8.858	1.442
4.5L Ford Racing	③	4.080	3.500	4.469	2.749	2.100	6.088	9.232	③
200 I-6	1963-83	3.680	3.126	4.080	2.249	2.124	4.715	7.808	1.511
250 I-6	1969-80	3.680	3.910	4.080	2.399	2.124	5.880	7.808	—
240 I-6	1965-72	4.000	3.180	4.480	2.399	2.123	6.795	10.000	1.605
300 I-6	1965-96	4.000	3.980	4.480	2.399	2.123	6.210	10.000	1.757
221 V8	1962-63	3.500	2.870	4.380	2.249	2.123	5.155	8.206	1.595
255 V8	1979-82	3.680	3.000	4.380	2.249	2.123	5.155	8.206	1.600
260 V8	1962-64	3.800	2.870	4.380	2.249	2.123	5.155	8.206	1.600
289	1963-68	4.000	2.870	4.380	2.249	2.123	5.155	8.206	1.605
302	1968-96	4.000	3.000	4.380	2.249	2.123	5.090	8.206	1.605
302 BOSS	1969-70	4.000	3.000	4.380	2.249	2.123	5.150	8.201-8.21	1.530
302 Ford Racing	③	4.000	3.000	4.380	2.249	2.123	5.150	8.201-8.21	③
351W	1969-70	4.000	3.500	4.380	3.000	2.311	5.956	9.480	1.769
351W	1971-96	4.000	3.500	4.380	3.000	2.311	5.956	9.503	1.769
351 Ford Racing	③	4.000	3.500	4.380	2.749	2.311	5.956	9.503	③
351 Ford Racing	③	4.000	3.500	4.380	2.249	2.311	5.780	9.206	③
351C * BOSS	1970-74	4.000	3.500	4.380	2.749	2.311	5.780	9.206	1.647
351M	1975-85	4.000	3.500	4.380	3.000	2.311	6.580	10.297	1.947
400	1971-81	4.000	4.000	4.380	3.000	2.311	6.580	10.292-10.302	1.647
352	1960-66	4.000	3.500	4.630	2.749	2.438	6.540	10.170	1.825
390	1961-71	4.050	3.780	4.630	2.749	2.438	6.489	10.170	1.775
406	1962-63	4.130	3.780	4.630	2.749	2.438	6.489	10.170	1.745
410	1966-67	4.050	3.980	4.630	2.749	2.438	6.489	10.170	1.674
427	1963-68	4.230	3.780	4.630	2.749	2.438	6.489	10.170	1.752
428	1966-70	4.130	3.980	4.630	2.749	2.438	6.489	10.170	1.674
429 STD	1968-73	4.360	3.590	4.900	3.000	2.500	6.605	10.300 (1968-70)	1.890
429 STD	1968-73	4.360	3.590	4.900	3.000	2.500	6.605	10.310 (1970½-71)	1.890
429 CJ/SCJ	1969-70	4.360	3.590	4.900	3.000	2.500	6.605	10.322 (1972-73)	1.890
429 BOSS (S)	1969	4.360	3.590	4.900	3.000	2.500	6.549	10.300	1.926
429 BOSS (T)	1969-70	4.360	3.590	4.900	3.000	2.500	6.605	10.300	1.870
460/460 Ford Racing	1969-96	4.360	3.850	4.900	3.000	2.500	6.605	10.322 (1972-96)	1.756

① Car (EAO)
② Ranger/Bronco II
③ Non-production blocks. Dimensions for reference.
④ 3.8L SC #1-2-3 – 2.5190", #4 – 2.5096"
⑤ Sport 2000 – 1.6395"
⑦ 1997 – 5.482"
⑧ 1997 – 1.181"

NOTES:
- All 4-cylinder (except 1.6L Kent) and all V6 engines are metric. Dimensions shown in inches.
- 3.9L V8 used in the Thunderbird & Lincoln LS is based on the Jaguar V8 design.
- 6.0L V8, 6.4L V8 and 7.3L V8 – ITEC Powerstroke

BASIC ENGINE DIMENSIONS (INCHES)
Current Production Gasoline Engines

DISPLACEMENT	YEARS	BORE	STROKE	BORE SPACING	MAIN JOURNAL DIA.	ROD JOURNAL DIA.	CON ROD LENGTH (MEAN)	DECK HEIGHT	PISTON COMP HT
2.0L I-4 Duratec	2005-TBD	3.445	3.272	3.780	2.047	1.850	5.758	8.540	1.122
2.3L I-4 Duratec	2001-07	3.445	3.701	3.780	2.047	1.968	6.094	9.094	1.122
2.5L V6 Duratec	1999-07	3.215	3.130	4.016	2.480	1.968	5.437	8.189	1.181
3.0L V6	1986-07	3.504	3.150	4.330	2.519	2.126	5.532	8.661	1.535
3.0L V6 Duratec	1997-07	3.504	3.130	4.016	2.480	1.968	5.437	8.189	1.181
3.5L V6 Duratec	2006-07	3.642	3.413	4.173	2.658	2.205	6.011	8.970	1.240
3.9L V6	2004-07	3.810	3.465	4.193	2.519	2.311	6.091	9.232	1.411
3.9L V8 (1)	2000-02	3.386	3.346	3.858	2.441	2.205	6.115	8.880	1.211
3.9L V8 (1)	2002-07	3.386	3.346	3.858	2.441	2.087	6.115	8.880	1.211
4.0L V6	1997-07	3.950	3.320	4.760	2.244	2.126	5.748	8.858	1.440
4.2L V6	1997-07	3.810	3.740	4.193	2.519	2.311	6.091	9.232	1.273
4.6L V8	1991-07	3.552	3.543	3.937	2.657	2.086	5.933	8.937	1.221
5.0L V8	(2)	3.700	3.543	3.937	2.657	2.086	5.933	8.937	1.221
5.4L V8	1997-07	3.552	4.165	3.937	2.657	2.086	6.658	10.079	—
6.8L V10	1997-07	3.552	4.165	3.937	2.657	2.086	6.657	10.079	1.221
6.0L V12	1999-07	3.504	3.130	4.016	2.657	1.968	5.437	8.189	1.181

(1) 3.9L V8 used in the Thunderbird & Lincoln LS is based on the Jaguar V8 design.
(2) Aftermarket from Ford Racing

BASIC ENGINE DIMENSIONS (INCHES)
North American Diesel Engines

DISPLACEMENT	YEARS	BORE	STROKE	BORE SPACING	MAIN JOURNAL DIA.	ROD JOURNAL DIA.	CON ROD LENGTH (MEAN)	DECK HEIGHT	PISTON COMP HT
6.0L V8 (1)	2003-07	3.740	4.134	4.567	3.122	2.717	7.130	11.024	2.0669
6.4L V8 (1)	2008	3.878	4.134	4.567	3.189	2.835	7.130	11.024	2.0669
7.3L V8 (1)	1999-03	4.11	4.18	5.236	3.543	2.499	7.130	11.40	2.1417

(1) ITEC Powerstroke

1.6L KENT/1.6L/1.9L CVH/2.0L/2.3L OHC/2.3L/2.5L HSC

1.6L "KENT" ENGINE

This is a proven overhead valve design. The combustion face of the head is virtually flat. Most of the combustion chamber is in a dished piston. Camshafts are mechanical with solid tappets. Parts for this engine are identified as 1.6L Kent. You'll find it under the hood of many Ford models, including Pinto, Capri, Fiesta and the English-built Cortina. A "GT" performance version is the basis for an amateur class of racing…Formula Ford. Only production-type parts are normally legal in "formula" competition. Check with your racing association for the latest rules.

1.6L "CVH" AND 1.9L "CVH" ENGINES

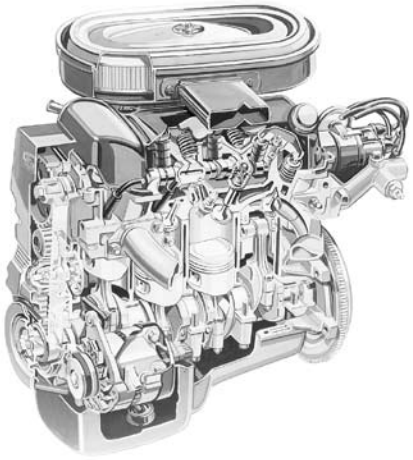
The 1.6L CVH engine was introduced in 1981 for the Escort, Lynx, EXP and LN7 car line. Parts for this engine are identified as 1.6L CVH. It has a canted valve head (CVH) with the valve angles to match the hemispherical combustion chambers. Reliefs are cut into its domed pistons to match valve and combustion chamber configuration. A hydraulic camshaft is used in production. A performance version was introduced in 1984 with electronic fuel injection and a turbocharger. A 1.9L CVH was introduced on 19851/2 models. It has a 4.250 mm higher deck height to achieve a longer stroke. Some 1.6L/1.9L CVH parts are interchangeable.

1.6L/1.8L/2.0L DOHC ENGINE

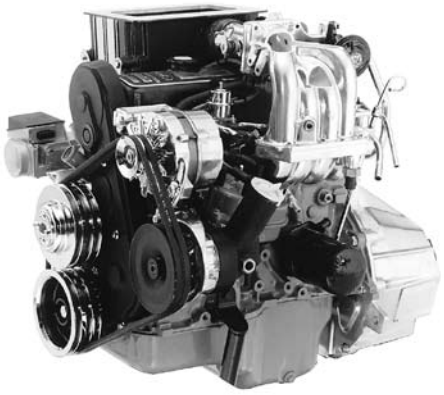
Ford currently offers four double overhead cam (DOHC) 4-cylinder engines. The 1.6L DOHC was introduced on 1991 Capri, the 1.8L DOHC on 1991 Escort GT/Tracer LTS, a 2.0L DOHC on 1993 Probe and a second 2.0L DOHC design on the 1995 Contour/Mystique. These engines feature four valves per cylinder and a centrally located spark plug in a "pentroof" combustion chamber for efficient air flow and combustion. Ford Racing parts have not been developed for these production double overhead cam engines.

2.0L/2.3L/2.3L OHC ENGINES

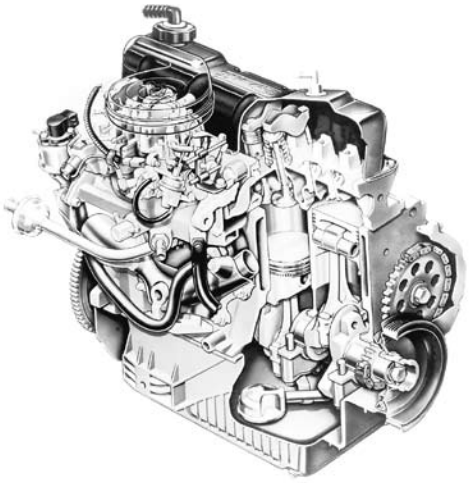
Design-wise, these metric engines are very similar and have a belt-driven overhead camshaft. Dimensionally, however, they are very different in terms of bore, stroke, bore spacing, block deck height and crankshaft journal diameters. The European (EAO) 2.0L was produced in 1971-74 cars. The 2.3L OHC is widely found on 1974-95 models…including a high-tech version that powered the Thunderbird/Cougar Turbo Coupe. A two spark plug per cylinder design with distributorless ignition was introduced on 1989 Ranger and 1991 Mustang models. Parts for these engines are identified as 2.0L EAO and 2.3L OHC respectively. In 1983, a 2.0L version of the 2.3L OHC engine was introduced on Ranger and Aerostar trucks. The only basic difference is in bore diameter, as shown in the chart on page 200, thus most parts interchange. Parts shown for the 2.3L OHC can be used in the 2.0L truck engine, except those relating to bore diameter (pistons, etc.). In 1998 the Ranger engine grows to 2.5L with increased stroke.



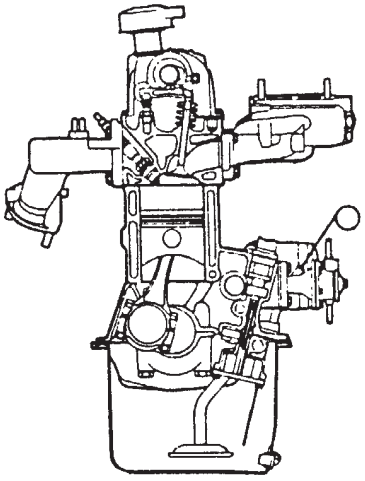
1.6L/1.9L CVH



2.3L OHC (Turbo-Intercooled)



2.3L/2.5L HSC



2.0L OHC

2.2L PROBE ENGINE

Ford introduced a new fuel injected 2.2L engine (in naturally aspirated and turbo versions) for 1989 Probe models. It's an overhead camshaft design with shaft-mounted rocker arms and three valves per cylinder (2 intake, 1 exhaust). The cylinder head is cast from aluminum and features dome-shaped combustion chambers with dual squish areas and centrally located spark plug for fast burn combustion. Parts are not interchangeable with other 4-cylinder engines. Ford Racing parts have not yet been developed for the 2.2L engine.

2.3L/2.5L "HSC" ENGINES

The 2.3L HSC was introduced in 1984 Tempo/Topaz models. Except for displacement, it bears no resemblance to the 2.3L OHC. The 2.3L HSC is a conventional cam-in-block in-line design—much like a 6-cylinder with two bores chopped off. HSC refers to its swirl combustion chamber that's achieved by shrouding the valves and other minor head work. In 1986, a larger displacement (8mm longer stroke) 2.5L HSC was introduced, with electronic fuel injection.

289/302/351W/351C/351M/400

SIX WAYS TO BUILD A WINNER

Ford has manufactured millions of small block V8s over the past 30 years, and Ford Racing parts are available for many of them. You have a choice of six engines to modify (eight, if you count two high-performance BOSS versions). So, you've got great flexibility working for you, whether you begin with a complete engine assembly or a bare block. All have four-inch bores, but there are differences that affect parts interchange. For example, the water passages described on page 224. Here's a brief description of Ford small blocks.

289/302

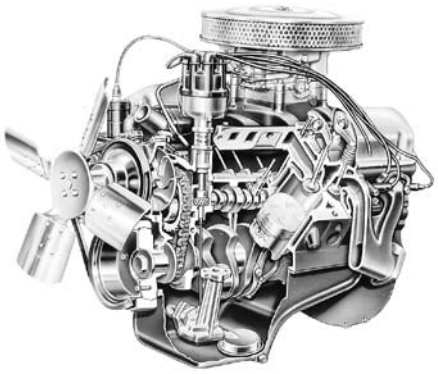
The 289 was produced from 1963 through 1968, and the 302 from 1968 to the current model year. They're very similar, except for stroke. Of special interest is the 289-4V Hi-Performance engine (1963-67) with mechanical camshaft, threaded rocker arm stud (adjustable) and a recessed spring seat. Most other 289/302 (1968-76) engines use a press-in stud. 1978 and later 302 engines use a modified pedestal as shown on page 230. Many 289/302 parts fit earlier 221/260 engines (which had smaller bores). They also had less metal around the bores, so you can't overbore to come up with a 289. The 1985 model Mustang GT introduced a new high-output 302 with roller tappet camshaft. Electronic fuel injection was added in 1986.

302 BOSS

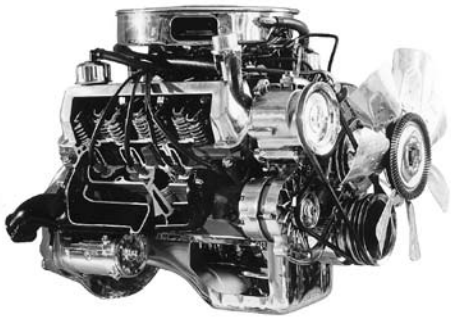
This is certainly one of Ford's all-time super engines. The 302 BOSS (1969-70) proved to be very competitive in 5 liter TransAm racing. It featured big breathing heads with canted valves, mechanical cam, stamped rocker arms with a threaded adjustable stud, push rod guide plates, forged crankshaft, 4-bolt main caps (#2, #3 and #4 journals), beefy con rod with spot-face for .375" bolt and forged pistons.

351W (WINDSOR)

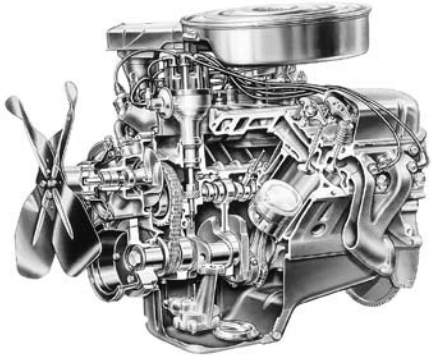
The Windsor engine plant builds this engine; hence the name. Normally, this isn't important. But another engine, the 351C (for Cleveland engine plant), has the same displacement. That's about all they have in common. So, it's always important to differentiate between the two. The 351W is a beefier block than the 289/302, but has the same bore spacing (4.38") and bore diameter (4.00"), so heads retrofit. A higher deck height requires a unique intake manifold. Main journals (3.00") are larger than the 289/302 (2.25"). Camshafts interchange, but the 351W has a different firing order: (1-3-7-2-6-5-4-8) vs. (1-5-4-2-6-3-7-8) for the 289/302, except 1982 and later 302 HO which use the 351W firing order. The 351W has been used from 1969 to the current year.



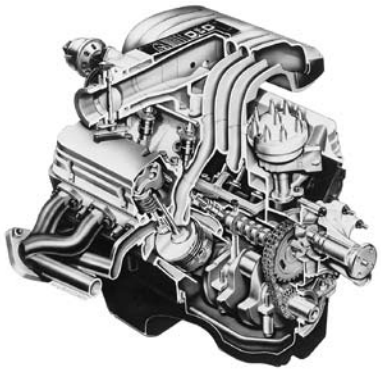
289 Hi-Per



302 BOSS



351W



5.0L H.O. (SEFI)

MODULAR V8 ENGINES

4.6L SOHC, 4.6L DOHC, 5.4L SOHC

In 1991, Ford unleashed a new era of muscle, one that is propelling us into the future. The Modular engine focuses on low friction, excellent sealing and increased block stiffness. The design results in an extremely smooth-running engine using aluminum heads and having all accessories rigidly mounted to the engine. Both the engine block and head are machined to close tolerances to produce a very precise assembly. The head bolts of modular engines actually extend past the cylinder bores into the bearing webs, eliminating bore distortion and providing a better head gasket seal. The sophisticated overhead cam design uses roller finger followers to lower friction and increase the rpm potential of the engine. On the bottom end, the deep skirt engine block and cross-bolted main caps contribute to a highly rigid assembly. Two engine plants manufacture Modular engines; Romeo produces all passenger car versions and Windsor produces the Modular Truck engines. Here's a brief description of Modular V8 engines.

4.6L SOHC

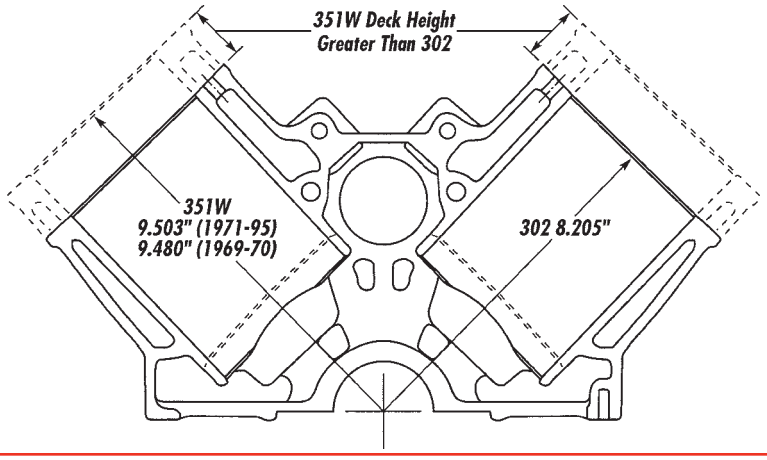
The 4.6L SOHC (2V) was first introduced in 1991. This engine is the basis for all modular engines and is used in passenger cars as well as the trucks. The block is cast iron with a nodular crankshaft, while the heads are aluminum using an in-line valve design with 1 intake and 1 exhaust valve per cylinder. All passenger cars have press fit piston pins, while all truck engines have full floating piston pins to improve durability.

4.6L DOHC

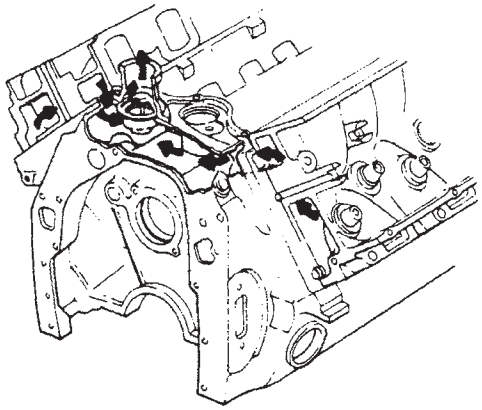
The 4.6L DOHC (4V) was first introduced in the Mark VIII; however, in 1996 a similar version of this engine found its calling: the Mustang Cobra. The aluminum block and four-valve head make for a powerful combination producing 305 hp @ 7000 rpm. Internally, the 4-bolt, cross-bolted main bearing caps provide the support necessary to easily handle the high rpm potential of the forged steel crankshaft. This engine uses hypereutectic pistons with full floating piston pins and upgraded connecting rod assemblies to improve durability.

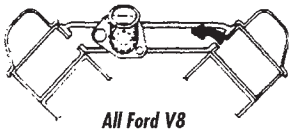
5.4L SOHC

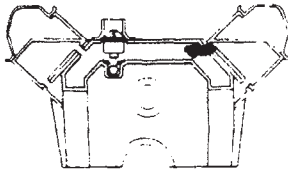
The 5.4L SOHC (2V) "Triton" engine released in trucks for 1997 is producing favorable reactions. This engine has a cast iron block, forged steel crankshaft, full floating piston pins and special 6000 rpm connecting rods. It is the 5.8L pushrod engine replacement.

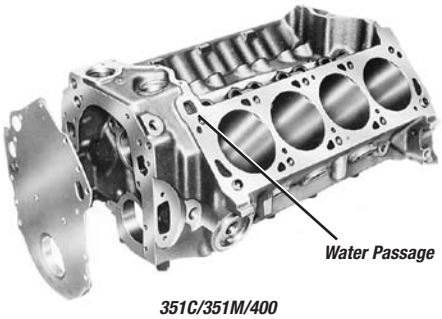



289/302/351W




All Ford V8
Except 351C/351M/400


351C/351M/400



351C/351M/400

351C (CLEVELAND)

The 351C entered the scene in 1970 and was produced until 1974. It has canted valves with multi-groove keepers, hydraulic cam, pedestal-mounted rocker arms with "sled" fulcrum seats that are retained with cap bolts. Heads for 2V induction have open chambers with rounded ports, while 4V heads have "quench" combustion chambers with larger rounded intake and exhaust ports. A 351C Cobra Jet appeared in 1971 with 4-bolt main caps, which was carried over in 1972 as the 351C-4V with open chamber heads.

351C BOSS

The 351C BOSS also appeared in 1971. It had 4-bolt main caps and the 4V type quench chamber head with pedestals machined to accept a 302 BOSS type valve train and mechanical cam. The con rod featured a 180,000 psi .375" bolt. In 1972, open chamber heads were used with a flat-top piston, and the name changed to 351C HO.

351M (MODIFIED) AND 400

The 351M and 400 are similar in design to the 351C, but there are subtle differences. Both the 351M and 400 blocks are 1.100" taller and have larger main journal diameters. Engine mounts are unique. Bell housing pattern is the 429/460 design.

WINDSOR VS. CLEVELAND WATER PASSAGES

289/302/351W engines use a front cover and water exits the intake manifold face of the cylinder head through the intake manifold to radiator. 351C/351M/400 engines do not use a front cover. The block is extended and covered with a flat stamping. Water exits the combustion face of the head and into the block, and then to the radiator. Windsor and Cleveland heads physically interchange, but some modification is required to accommodate the differences in water passages. See page 230 and above for details.

FORD RACING 302/351 FORD RACING WATER PASSAGES

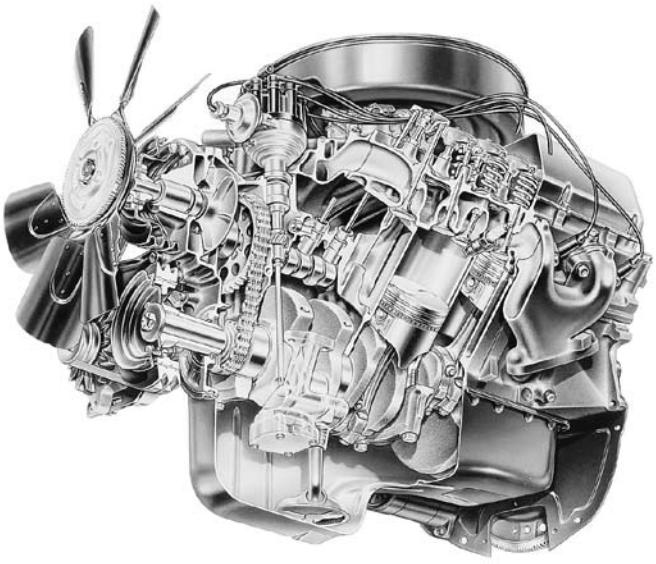
Several different water passage hole patterns have been used on 302 Ford Racing and 351 Ford Racing cylinder blocks and heads since their introduction. Engine assemblers should lay the head gasket on the block and the cylinder head (with front of the gasket toward the front of the engine) to make sure there is a path for coolant flow from the block into the head. In some cases, holes may have to be drilled in the block or head, or punched in the gasket. Current Ford Racing cylinder head gaskets are listed on page 137.

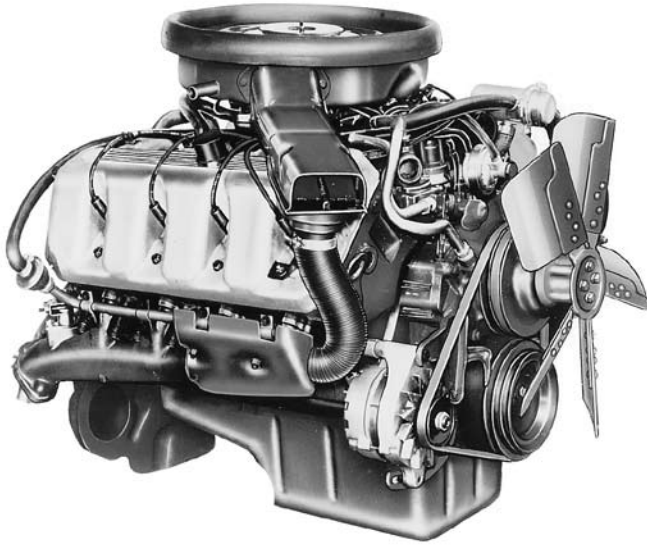
FORD RACING 302/351 "FORD RACING" ENGINE BLOCKS

Ford Racing has designed several "Ford Racing" blocks for maximum performance competition. They're designed for small block engine builders who want to use existing 302/351C or 351W components. 302/351 Ford Racing engines constructed with Ford Racing block and Ford Racing cylinder heads are not available as complete assemblies.

When ordering parts, consider these key points:

- 302 Ford Racing Block (M-6010-R302)—can be used with all 289/302/302 BOSS applications.
- 351 Ford Racing Blocks (M-6010-E351 thru M-6010-W351)—can be used with all production 351W applications, except those relating to crankshaft main bearing diameter. The 351 Ford Racing block is machined for the smaller 351C type bearings. Ford Racing crankshafts feature the smaller 351C main journals that are compatible with these blocks. The block is available in two deck heights (9.500" and 9.200"), so either Windsor or Cleveland components can be used topside. Requires 289/302/351W type camshaft.
- If 302/351 Ford Racing heads are used on 302/351 Ford Racing blocks, the Ford Racing type intake manifolds are required.





429/429CJ/429SCJ/429 BOSS/460

During The Golden Age of Muscle, high-performance versions of 429/460 engines flashed on the scene like a firefly. The glow was brief—from 1969 to 1971. The memory lingers on. All of those cubic inches! Never again available directly from the factory ready for competition. Luckily, engines and pieces are still around. There are several ways to go, depending on the performance level you want, be it simply a Bracket Drag Racer, or something more potent, like an offshore power boat, big torquing engine for truck pulls or a Pro Stock drag machine. Here's a brief description of production engines to give you an idea of part interchangeability and general performance level.

429/460

The 429 "Thunder Jet" was introduced in 1968. It's your basic passenger car "wedge" engine design with hydraulic cam, 2-bolt main caps and either 2V or 4V carburetor. Cast iron "rail" rocker arms are mounted on non-adjustable, positive stop studs (1968-72). 1973 and later 429/460 engines use pedestal-mount rocker arms as described for 351C engines on page 224. The 460 is a stroked version of the 429. With modifications, these engines can be used for most competition, except offshore boats or with a supercharger.

429CJ (COBRA JET)

Take a base 429, then add a hotter hydraulic cam, larger CFM carburetor, heads with bigger ports and valves, plus a few other items and you have a 429CJ. 1970 engines had 2-bolt mains; 1971 models 4-bolts. Engines built before 11/1/69 use an adjustable, non-positive stop rocker arm stud, so a mechanical cam is easily installed.

429SCJ (SUPER COBRA JET)

Now, we're talking about an engine you can modify for serious competition. The 429SCJ has 4-bolt main caps (#2, #3 and #4 journals), mechanical cam, adjustable non-positive stop rocker arm studs, stamped rocker arms and push rod guide plates. The pistons are forged aluminum and con rod bolt seats are spot faced. As with the CJ, production ended in 1971.

429 BOSS

This is an all-out competition design with aluminum heads and hemi combustion chambers (technically, they're "crescent-shaped"). The first few hundred in 1969 for NASCAR competition were called "S" engines; the later street version is a "T" engine. "T" engine con rods are spot faced for a .375" bolt and hex nut. "S" engine con rods are beefier, 0.056" shorter, have wider bearing journals and use a .5" bolt with 12-point nut.

WE THOUGHT YOU OUGHT TO KNOW

This is not a how-to book. It's basically a listing of currently available Ford Racing Performance Parts. The pieces can be bought by professionals, professional amateurs, weekend hobbyists or rank beginners. A certain amount of automotive skill is assumed in presenting the parts. Modifying an engine, be it a complete assembly or a bare block, requires experience and know-how. If you don't know, ask someone who does. Read up and find out all you can **before** putting down your bucks for those long dreamed of pieces. And if at all possible, consult an experienced engine builder. You may find it to your advantage to have him do a portion or all of the heavy machining and wrenching.

What we have here are just a few of the key bits of information and specs. The idea is to help keep midnight thrashing to a minimum, because parts don't go together right, or there's more to a job than you imagined.

COMPRESSION RATIO

Increasing the compression ratio (CR) is often one of the first engine performance modifications. Squeezing the air-fuel mixture into a smaller space increases its temperature and ease of ignition; thus the rate at which heat is extracted from the fuel. Engineers call it "thermal efficiency." Simply put, it means that increasing the compression ratio increases horsepower.

Henry Ford's Model "T" has a CR of 3.6:1. High-performance engines operate in the area of 12.5:1. Most of today's stock production engines are about 8.5:1.

NOTE: Turbocharged engines typically have a **lower** CR than normally aspirated engines. Thus, if you add a turbo, you may want to **lower** the CR, depending on performance level.

DETONATION

Increasing the CR changes the rate at which fuel burns. Spark knock (detonation) will occur if certain modifications are not performed. Here are two of the most important:

Ignition Spark Timing—Increasing the CR requires installation of new distributor springs to change advance curve.

Fuel Octane Rating—Increasing the CR requires gasoline with a high octane rating (with anti-knock components to control detonation). This is not a problem with engines that burn alcohol, because it has a naturally high octane number. Engines that run on alcohol require a high CR to compensate for the fact that it generates less heat.

MODIFICATION TECHNIQUES

Common techniques to increase CR include:

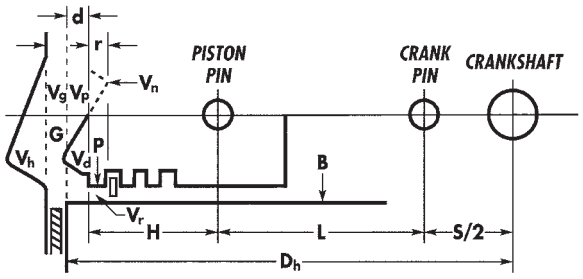
(1) Installation of a thinner head gasket.

(2) Installation of "domed" or "pop-up" pistons. Check for adequate "piston-to-valve" clearance at TDC. Camshafts with more overlap require more clearance. A good rule of thumb is 0.080" for intakes and 0.100" for exhausts.

(3) Removal of metal from deck face of block or cylinder head. You can safely mill off 0.010" to 0.040" (0.050" max.) from most engines. The precise amount is limited by block deck height, casting thickness, valve-to-piston clearance, etc.

NOTE: Also modify the intake manifold to maintain port alignment.

COMPRESSION RATIO CALCULATION



SYMBOL	DIMENSION	VALUE	REMARKS
B	Bore	4.000 in	B^2 = 4.000 x 4.000 = 16.000
G	Gasket Bore	4.100 in	G^2 = 4.100 x 4.100 = 16.810
P	Piston Top Land Diameter	3.965 in	P^2 = 3.965 x 3.965 = 15.721
S	Stroke	3.500 in	
S/2	Crank Throw	1.750 in	
L	Con Rod Length	6.000 in	
H	Compression Height	1.440 in	
D_h	Deck Height	9.200 in	
r	Ring-to-Top Piston	0.250 in	
d	Piston to Deck	0.010 in	$D_h - H - I - S/2$
t	Gasket Thickness	0.040 in	
V	Cylinder Volume	720.7cc	$\pi/4 \times B^2 \times S \times 16.387$
V_t	Volume Above Top Ring	.9cc	$\pi/4 \times (B^2 - P^2) \times r \times 16.387$
V_n	Valve Notches Volume	4.0cc	
V_d	Dome Volume	10.4cc	
V_p	Piston-to-Deck Volume	2.1cc	$\pi/4 \times B^2 \times d \times 16.387$
Vg	Gasket Volume	8.7cc	$\pi/4 \times G^2 \times t \times 16.387$
Vh	Volume Head	60.2cc	
V_{cl}	Volume Clearance	65.5cc	$V_t + V_n + V_p + V_g + V_h - V_d$
CR	Compression Ratio	12.0	$\frac{V + V_{cl}}{V_{cl}}$

NOTE: 1) Math reduction; $\pi/4 \times 16.387 = 12.87$

COMPUTING COMPRESSION RATIO

Compression ratio is defined as the ratio between the Total Volume (Cylinder Volume plus Clearance Volume) above the piston at BDC and the Clearance Volume above it at TDC. Calculations for a 351 CID engine are illustrated. The formula is: $CR = \frac{V + V_{cl}}{V_{cl}}$

Pay particular attention to the following points:

Clearance Volume (V_{cl})—This is the volume above the piston (actually above top piston ring) at TDC. It consists of several small volumes.

Cylinder (Swept) Volume (V)—Determined by cylinder bore and stroke (indicated by movement of piston from TDC to BDC).

Cylinder Head (Combustion Chamber) Volume (V_h)—The irregular shape of the combustion chamber requires measurement (popularly called "cc"ing) with a glass burette and colored liquid, such as A.T. fluid. This catalog lists "nominal" values for Ford Racing heads.

Valve Notches Volume (V_n)—Fill notches with soft clay and make level with top of piston. Remove clay with small knife and drop into graduated cylinder (filled with liquid to convenient point). Note change in level of liquid (indicating volume of notches made by clay).

Domed Piston Volume (V_d)—Dome values are combination "net" values of V_d and V_n. For compression ratio calculations, they should be used as follows:

- **Pop-Up** pistons have a "positive" dome value, which reduces the volume above the piston and thus must be subtracted (see example above).
- **Dished pistons** have a "negative" dome value. It must be added to compute clearance volume.

MAKE ALL CALCULATIONS WITH ACCURATE MEASUREMENTS OF ACTUAL PARTS. CATALOG VALUES ARE "NOMINAL" SPECIFICATIONS AND MAY VARY FROM ACTUAL SIZE.

VALVE TRAIN

When modifying production engines for performance, here are a few things to keep in mind.

CAMSHAFTS

- When replacing a cam, it's a good practice to install new related components such as a distributor gear, tappets, springs, retainers, etc. It's especially important that new tappets be installed.
- Never use hydraulic lifters with a mechanical cam or solid tappets with a hydraulic cam. The ramps are not compatible.
- Be sure your valve train can handle the timing events and lobe lift of your performance cam. Check for adequate piston-to-valve clearance, spring bind and retainer-to-valve clearance, spring bind and retainer-to-valve seal clearance.
- Be sure to use camshaft and lifter prelube when installing the cam, to prevent scoring the lobes during break-in. Engine oil by itself (regardless of quality or viscosity) is not enough! See page 228 for description of Ford Racing prelube M-19579-A12.
- Mechanical cams require lash adjustment. If production head is designed for hydraulic cam, modification is usually required.
- Many design changes have occurred over the years, which affect the front of the block—especially the small V8s. Be sure you check items such as the cam thrust plate, cam spacers, cam gear, fuel pump eccentric, timing chain, cam gear alignment and front cover clearance.
- Refer to the Ford Racing "Camshaft Usage" chart for performance characteristics of cams based on their duration.
- Refer to the "Camshaft Specifications" chart (page 126) for detailed data on Ford Racing camshafts.

FORD RACING CAMSHAFT USAGE

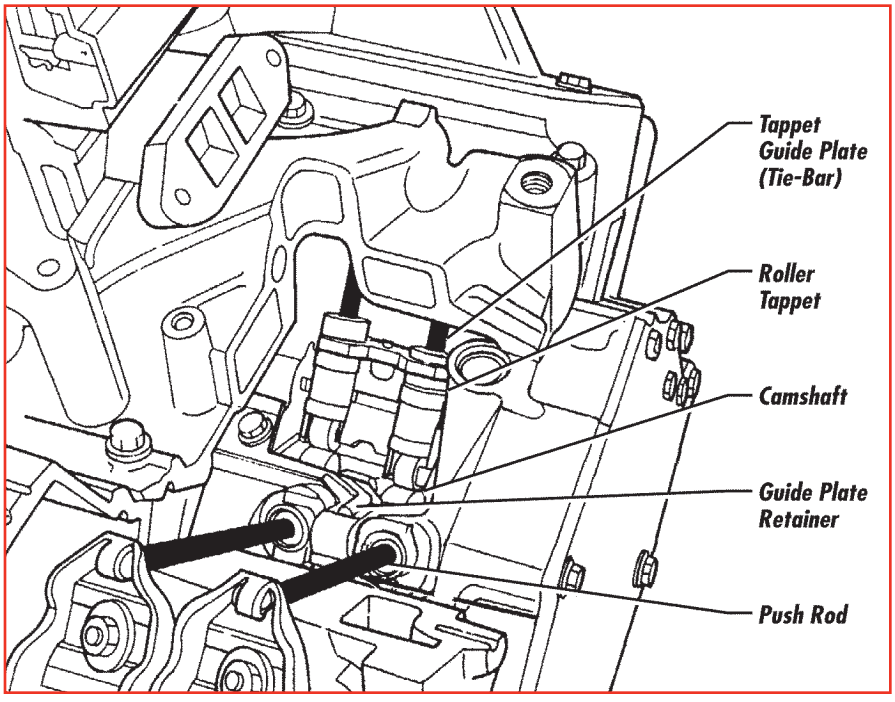
The durations shown in this chart are S.A.E. durations. The descriptions within each group of cams show performance characteristics and basic modification recommendations required to achieve desired performance.

DURATION (SAE)	PERFORMANCE CHARACTERISTICS	ENGINE/VEHICLE USAGE AND MODIFICATIONS
270-290	Good idle quality and low rpm torque.	Use with stock or slightly modified engine, stock axle gears and with A.T. or M.T.
290-300	Fair idle quality. Good low-to-mid-range torque and horsepower.	Will work with stock or modified engine. Can use stock axle gears and with A.T. or M.T.
300-320	Rough idle quality. Good mid-to-high rpm torque and horsepower.	Use with M.T. or high stall A.T. Requires improved carburetion, ignition and exhaust systems. Engine will have lower vacuum than stock.
320-340	Rough idle quality. Good mid-to-high rpm torque and horsepower. For all-out competition only.	Use with M.T. or very high stall A.T. Requires improved carburetion, ignition and exhaust systems. Engine will not provide enough vacuum for accessories. Axle gear ratios must be properly selected.

ROLLER TAPPET CAMSHAFT

Most engines are designed with hydraulic or mechanical flat tappet camshafts, which meet the needs of regular production engines that seldom see 6000 rpm. Flat tappet cams are more than adequate for many competition engines. For ultra-high performance applications where durability and high rpm capability are paramount, however, roller tappet camshafts are very popular. As the name implies, a cylindrical roller "rolls" over the cam lobe, instead of "sliding" as does a conventional flat tappet. This not only allows a roller tappet to follow a more radical cam lobe profile, but it reduces friction and lessens tappet scuffing of the cam lobes.

Ford introduced hydraulic roller tappet camshafts on 1985 Mustang (and Mark VII LSC) with 302 (5.0L) High Output engine. Here is a brief description of components.



Roller Tappet—Longer than flat tappet, because of roller. Hydraulic portion functions like a standard flat tappet.

Roller Tappet Camshaft—Machined from steel, instead of typical iron used for flat tappet cam. Cam lobes specially ground and hardened to withstand loads of roller tappets. Do not attempt to use with flat tappets!

Roller Tappet Block—Longer, production 5.0L hydraulic roller tappet requires higher tappet boss than block for flat tappet cam. Thus, 5.0L hydraulic roller tappet cam cannot be used in block designed for flat tappet cam. However, flat tappet camshafts can be used in roller tappet blocks.

Roller Tappet Distributor Gear—Machined from steel and specially hardened to be compatible with billet-steel roller camshaft. Do not attempt to use cast iron gears designed for flat tappet cams.

Roller Tappet Push Rod—Push rods are shorter than those designed for flat tappet cam engine, because of longer roller tappet. Rocker arm end has hardened ball that is copper plated to resist wear by rocker arms rubbing on push rod (which don't rotate). A small bracket encircles one end of push rod as reminder to install that end upward (on 1985-86 models only).

Roller Tappet Guide Plate—Holds roller tappets in alignment with camshaft lobes (flat tappets rotate). Must be installed with "UP" marking upward.

Roller Tappet Guide Plate Retainer—Made of spring steel. Fits in valley cover area to hold guide plates in position.

ROLLER ROCKER ARMS

Most production engines use stamped steel or cast iron rocker arms, as described on page 229. As the push rod moves one end upward—the rocker arm pivots on a ball or sled-type fulcrum—and the other end pushes the valve downward. Although "sliding" friction exists at each point, this design is okay for street engines and even many performance applications.

ROLLER ROCKER ARMS

(Continued from page 227)

Light-weight aluminum roller rocker arms, however, provide many advantages for continuous high rpm operation. They're mounted on needle bearings and feature a cylindrical roller that "rolls" over the valve tip to move it downward. This reduces friction, heat and wear, and only requires about half the horsepower to operate the valve train. And valve train stability is greatly increased. Roller rockers reduce valve stem wear and valve guide wear to an absolute minimum, because the roller doesn't push the valve from side to side as it is opened, as occurs with standard rocker arms, as they "slide" over the valve tip.

Ford Racing offers roller rocker arms in several ratios for the Ford Racing V6, small block V8s and big block 429/460 V8s.

FORD RACING ROLLER TAPPET CAMSHAFTS

Ford Racing offers roller tappet camshafts for the following engines:

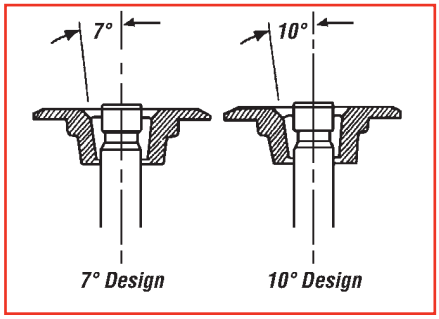
5.0L (302) HO

M-6250-B303* Roller Camshaft only
M-6250-E303* Roller Camshaft only
M-6250-F303* Roller Camshaft only
M-6250-X303* Roller Camshaft only
M-6250-Z303* Roller Camshaft only

VALVE SPRING RETAINERS AND KEEPERS

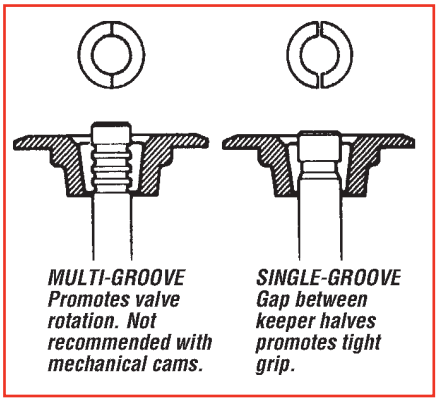
Currently Ford Racing only offers retainers and single-lock groove keepers in a 7-degree design. They are compatible with all Ford Racing valve springs for the Ford Racing V6, small block V8s and big block 429/460 V8s. 10-degree retainers/keepers are available from aftermarket suppliers. Do not attempt to interchange 7-degree retainers with 10-degree keepers and vice versa.

Single-lock groove keepers are recommended for high-performance engines. Production 351C (except BOSS and HO) 351M and 400 engines use multi-groove keepers (to promote valve rotation). If you modify for any extended high-revving performance, replace the valves, retainers and keepers with a single-lock groove design.



POSITIVE-TYPE OIL SEALS

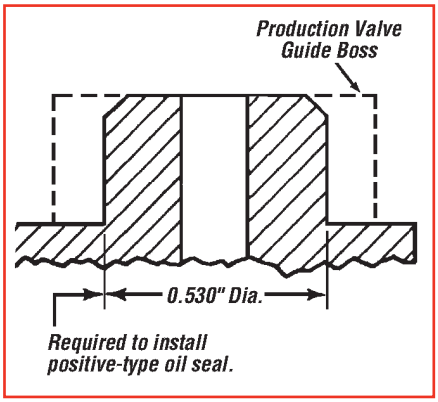
Positive-type oil seals are recommended on OHV performance engines to prevent oil from running down the valve past the valve guide and into the combustion chamber and contaminating the air-fuel mixture. The cylinder head must be machined as illustrated to accept the oil seal.



VALVE PUSH RODS

Hardened push rods are required on valve trains that use a guide plate (because they rub against the plate). Do not use non-hardened push rods.

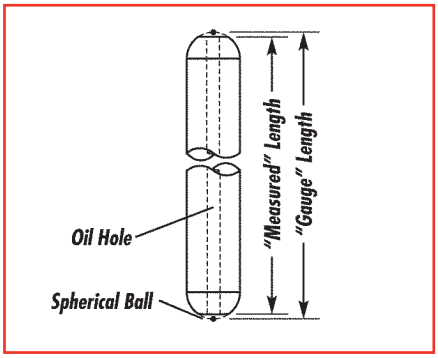
Push rod length is important to maintain correct valve train geometry. The process of drilling an oil hole down the center removes some material from the spherical ball at each end. Push rods are described by "Gauge length" (the distance between the ends before drilling the oil hole). The actual "Measured" length is usually about 0.025" shorter than the gauge length.



CAMSHAFT TIMING DEGREE WHEEL

No camshaft installation is complete without checking camshaft timing events. Use a timing degree wheel to check for correct camshaft installation.

For modular engines, use camshaft timing kit M-6266-D46.



CAMSHAFT AND LIFTER PRELUBE M-19579-A12

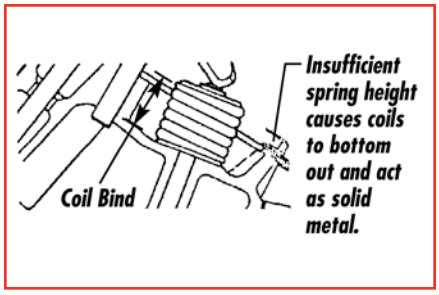
- Highest-quality cam lube for camshaft replacement and engine assembly
- Recommended for use with all Ford Racing flat tappet camshafts
- Distributed in cases of 12
- Single bottles may be available from your Ford Racing Distributor part number CM-19579-A1
- Use engine oil on roller camshafts

*Not legal for sale or use on pollution-controlled motor vehicles. **Direct replacement part.

See pages 3-9 for important safety, emissions and warranty information.

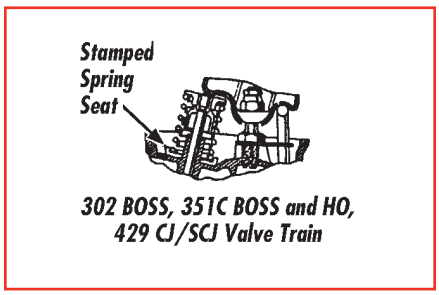
VALVE SPRINGS AND THINGS

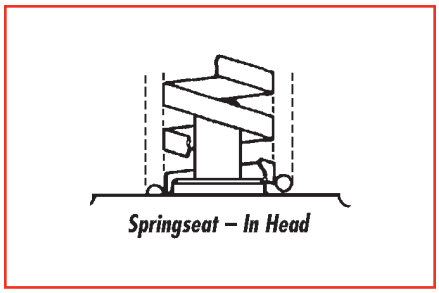
Valve springs are a critical part of valve train operation. They're designed to exert a specific load at a specific installed height, thus spring selection and installation are important. A single spring is generally used for stock engines. Dual or triple springs are often necessary for performance applications to increase the load for a given installed height. If installed height isn't sufficient to handle camshaft lobe lift, coil bind may occur.



Installed spring height is the distance from the spring seat to the bottom of the valve retainer. Shims can be used under the spring to change spring height. If installed under stamped seat, shims and seat must have same outside diameter. Spring seats on most production engines consist of a boss machined in the head, on which the spring pilots. On stock performance engines (302 BOSS, 351C BOSS and HO, 429 CJ/SCJ and BOSS) the head is flat and the spring sits in stamped spring seat.

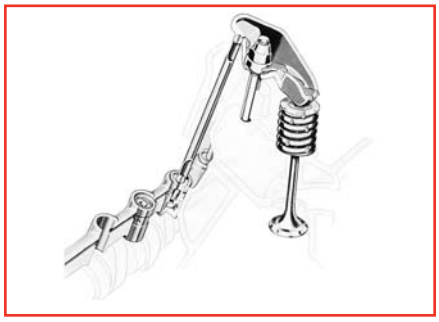
Ford Racing offers spring seats for use with Ford Racing aluminum cylinder heads to prevent damage to the spring seat area.





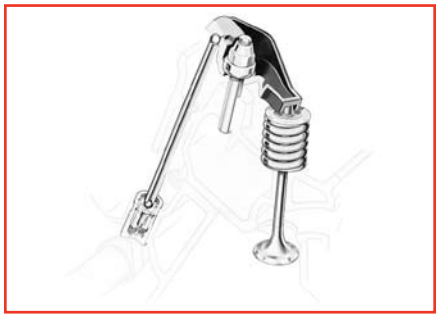
ROCKER ARMS AND STUDS

429 BOSS, FE engines and some 4-cylinder rocker arms are shaft-mounted, while others are individually mounted (in several ways), as shown in the illustration. A non-adjustable stud is used in production engines with hydraulic cams. Mechanical camshafts require rocker arm adjustment to set valve lash (hydraulic cams with anti pump-up lifters also require adjustment).



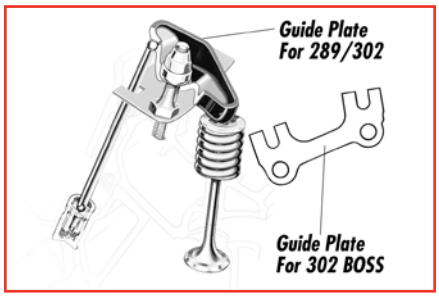
This is a conventional rocker arm with close-tolerance slot in head to guide push rods and maintain rocker arm alignment. Can be used with mechanical or hydraulic camshafts.

USAGE: All 289 high-performance and 1963-66½ standard 289



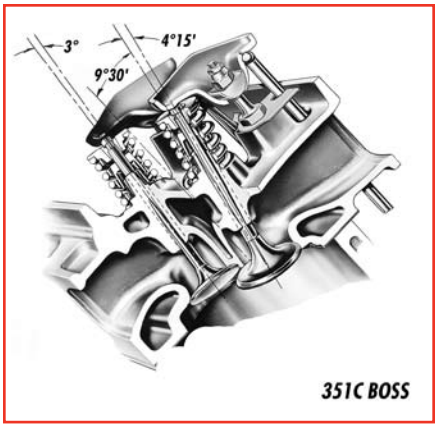
Shown here is a "rail" rocker arm with "loose-fit" hole in cylinder head for push rods. The U-shaped rocker arms maintain alignment. Can only be used with hydraulic camshafts.

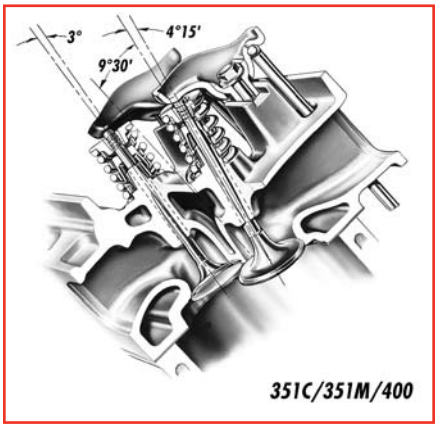
USAGE: 1966½-1968 standard 289
1968-76 302 and 351W



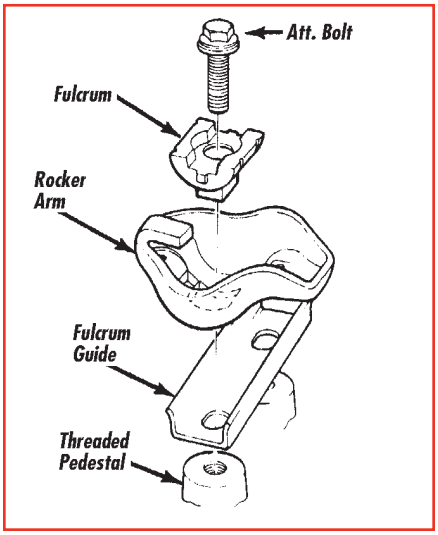
Here is a modified valve train to convert rail rocker arm design for mechanical cam. Requires conventional rocker arms, guide plates, hardened pushrods (they rub on plates) and threaded adjustable rocker studs. Requires different guide plate than the one used with a similar 302 BOSS setup.

USAGE: 289/302/351W with mechanical camshaft.



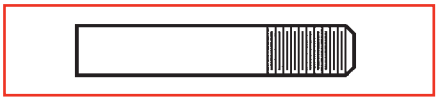


The illustration above is typical of 351C-351M-400 canted valve engines (429-460 engines are similar). The rocker arm is mounted on a slotted pedestal, moves on a "sled" fulcrum and is retained by a bolt. 351C BOSS engines use the 302 BOSS type valve train (also used on 429 CJ/SCJ), 1968-72 429/460 with hydraulic camshafts use a screw-in positive stop stud. 1973 and later 429/460 have the 351C-type slotted pedestal.



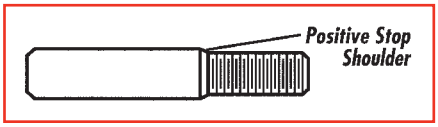
A modified pedestal is used on 1978 and later 302/351W engines. A stamped fulcrum guide is used with each pair of rocker arms.

ROCKER STUD COMPARISON



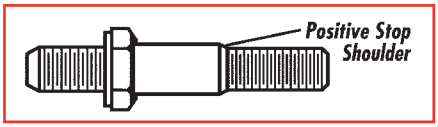
Press-in stud with adjustable rocker nut.
NOT recommended with mechanical camshafts.

USAGE: Standard 289 and 1968 302



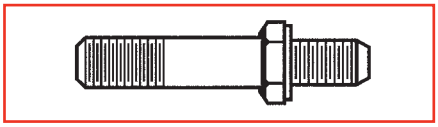
Press-in positive stop stud. Cannot be adjusted to set lash with mechanical camshaft.

USAGE: 1969-76 302/351W



Screw-in, positive stop stud.

USAGE: 1968-72 429 with hydraulic camshaft



Screw-in, adjustable stud. Required for mechanical camshaft (and hydraulic with anti-pump-up lifters).

USAGE: 289 Hi-Performance, 302 BOSS, 351C BOSS and HO and 429 CJ/SCJ

CYLINDER HEAD WATER PASSAGE MODIFICATION

As described on this page, cylinder heads for 351C/351M/400 engines have a water outlet passage in the combustion face, whereas 289/302/351W heads have a water outlet passage in the intake manifold face of the head. Heads can be interchanged, if provision is made for appropriate water passages.

TO INSTALL CLEVELAND-TYPE HEADS (351C/351M/400) ON A WINDSOR-TYPE BLOCK (289/302/302 BOSS/351W)

1. Drill a 0.800" diameter hole in the intake manifold face of the head as illustrated.
2. Plug square hole in cylinder head. Install heads with Cleveland-type head gasket.
3. Use intake manifold gasket to match intake manifold.

NOTE: If BOSS-type heads (302 or 351C) are used in either procedure, remember they have larger rounded ports than conventional heads; thus a unique BOSS-type intake manifold gasket is required.

...AND IF YOU HAVE 302/351 FORD RACING ALUMINUM HEADS ①

These heads come with a tapped .75" pipe thread hole in the combustion face, but no hole in the intake manifold face.

If your application requires external water outlets, see diagram below.

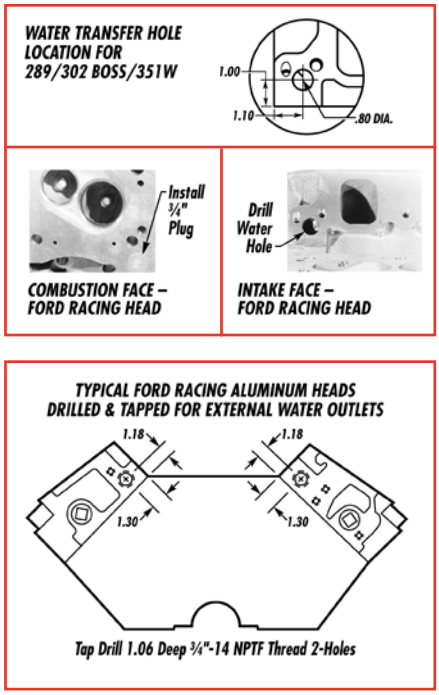
TO INSTALL ON WINDSOR-TYPE BLOCK (289/302/302 BOSS/351W)

1. Install pipe plug in hole. Finish so it doesn't protrude above head face.
2. Drill a 0.800" diameter hole in the intake face as shown or use the .75" pipe thread external water outlet valve provided in the front and rear ends of Ford Racing heads produced after July, 1984.

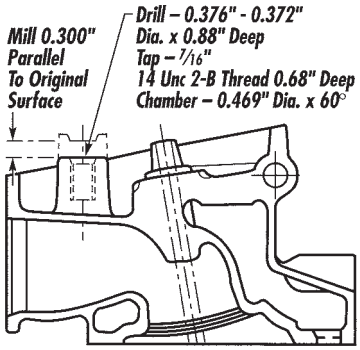
TO INSTALL ON CLEVELAND-TYPE BLOCK (351C/351M/400)

1. Requires no special head work.

NOTE: ① Heads produced after 6/1/85 do not have .75" pipe threads at front and rear of head face and must be drilled and tapped as shown in illustration.

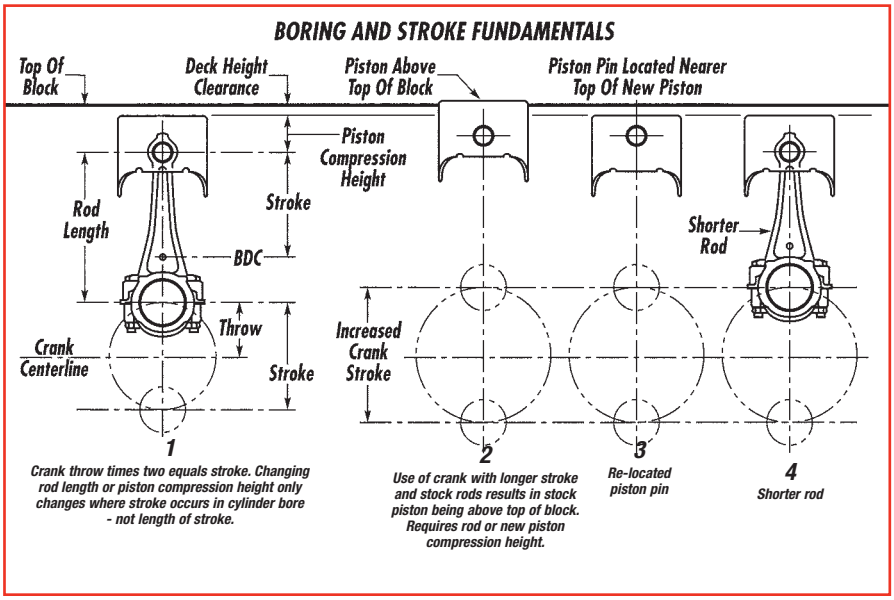


HEAD MODIFICATION FOR MECHANICAL CAM



Pedestal type cylinder heads for hydraulic cams can be modified to accept a mechanical cam (351C/351M/400 shown). Machine at right angles to the existing hole—not the bottom of the head. The valves operate at compound angles. With 302/351W type pedestals, measure from the top of the pedestal.

All 302/351W	.230"
All 351C/351M/400	.300"
1973-95 429/460	.300"
1968-72 429/460	.230"



DEALER LIST

CODES:
- **LS = LOCAL SALES**
- **MO = MAIL ORDER**
- **EB = ENGINE BUILDER**
- **IN = INSTALLATION**
- **WH = WHOLESALE**

ARIZONA

AMP PERFORMANCE
PHOENIX, AZ 85034
602-437-2727
LS, MO, EB, IN, WH

BELL FORD
PHOENIX, AZ 85023
602-564-3123
LS, MO, IN, WH

FIVE STAR FORD
SCOTTSDALE, AZ 85257
480-946-3900
LS, MO, IN, WH

FORD OF NORTH SCOTTSDALE
SCOTTSDALE, AZ 85260
800-537-8332
LS, MO, WH

HOLMES TUTTLE FORD
TUCSON, AZ 85705
520-292-3661
LS, MO, WH

JIM CLICK FORD LINCOLN MERCURY
TUCSON, AZ 85711
800-362-7002
LS, MO, IN, WH

SANDERSON FORD/ SPECIALTY PARTS
GLENDALE, AZ 85301
888-364-3673
LS, MO, WH

ARKANSAS

KEITH CRAFT RACING
ARKADELPHIA, AR 71923
870-246-7460
MO, EB

CALIFORNIA

AUTOCARS/SPEEDSHOP DIRECT
ATASCADERO, CA 93422
877-SPEED BY
LS, MO, WH

BROTHERS PERFORMANCE WAREHOUSE
CORONA, CA 92880
951-735-8880
LS, MO, IN, WH

CAL-STATE AUTO PARTS, INC.
SAN DIEGO, CA 92123
858-292-1622
WH

CALIFORNIA MUSTANG PARTS & ACCESSORIES
CITY OF INDUSTRY, CA 91748
800-775-0101
MO

FAIRVIEW FORD SALES, INC.
SAN BERNARDINO, CA 92412
909-386-0220
LS, IN, WH

FAIRWAY FORD SPORT & PERFORMANCE
PLACENTIA, CA 92870
714-528-4670
LS, MO, IN, WH

FRONTIER FORD
SANTA CLARA, CA 95051
408-247-6583
LS, WH

GALPIN AUTO SPORTS
VAN NUYS, CA 91406
818-922-3800

HARROLD FORD
SACRAMENTO, CA 95825
916-922-1535
WH

HAWAII RACING
SIMI VALLEY, CA 93065
805-583-8880
LS, MO, EB, WH

KEN GRODY FORD
BUENA PARK, CA 90621
888-288-7830

MOSS MOTORS
GOLETA, CA 93117
800-667-7872
MO

MOSSY FORD
SAN DIEGO, CA 92109
858-273-7500
LS, MO, IN, WH

MUSCLE MOTORS PERFORMANCE INC.
CANOGA PARK, CA 91304
818-341-7223
LS, MO, EB, IN, WH

MUSTANGS PLUS
STOCKTON, CA 95205
800-999-4289
LS, MO

PERFORMANCE AUTOMOTIVE WAREHOUSE
CHATSWORTH, CA 91311
818-678-3000
LS, MO, EB

PERFORMANCE IMPORTS
ORANGE, CA 92867
714-633-6220

R & E RACING
LANCASTER, CA 93534
661-948-7622

RACEWAY FORD
RIVERSIDE, CA 92507
909-784-1000
LS, IN, WH

SACRAMENTO MUSTANG
SACRAMENTO, CA 95841
916-484-3434
LS, MO, IN

SANTA MARGARITA FORD
RANCHO SANTA MARGARITA, CA 92688
949-888-4344
LS, WH

SENATOR FORD
SACRAMENTO, CA 95823
800-957-3673
LS, MO, IN, WH

SERRAMONTE FORD
COLMA, CA 94014
800-762-9664
LS, WH

SPEED WAREHOUSE, INC.
HAYWARD, CA 94541
510-786-3555
LS, WH

T.O.E. PERFORMANCE PRODUCTS
SUISUN CITY, CA 94585
707-425-2996
LS, MO, EB, IN, WH

TC MOTORSPORTS (TUTTLE-CLICK FORD)
IRVINE, CA 92618
949-472-5230
LS, IN, WH

TEAM C, INC.
BELLFLOWER, CA 90706
562-866-3887

WEST COAST DIFFERENTIALS
RANCHO CORDOVA, CA 95742
800-642-0950
WH

COLORADO

COLORADO MUSTANG SPECIALISTS
AURORA, CO 80010
303-343-7024
LS, MO, IN, WH

LONGMONT FORD
LONGMONT, CO 80501
303-776-3600
LS, IN, WH

O'MEARA FORD CENTER
NORTHGLENN, CO 80234
800-332-0401
LS, IN, WH

PHIL LONG FORD OF DENVER
DENVER, CO 80123
303-933-5664
LS, IN, WH

SPRADLEY BARICKMAN FORD LINCOLN-MERCURY
PUEBLO, CO 81008
719-543-6710

CONNECTICUT

FORD OF BRANFORD
BRANFORD, CT 06405
203-488-8325
LS, MO, IN, WH

FLORIDA

BRANDON FORD
TAMPA, FL 33619
813-621-7759
LS, WH

DELRAY LINCOLN MERCURY
DELRAY BEACH, FL 33483
800-433-0018
WH

GARY YEOMANS FORD
DAYTONA BEACH, FL 32124
800-231-6172
LS, MO, IN, WH

GREENWAY FORD
ORLANDO, FL 32817
407-249-3270
LS, WH

MAROONE FORD
FORT LAUDERDALE, FL 33304
954-564-3221

MURRAY'S SPEED & CUSTOM
NORTH MIAMI, FL 33169
305-687-7297
LS, WH

DEALER LIST

NATIONAL PERFORMANCE WAREHOUSE
MIAMI, FL 33014
800-344-0368
WH

PALM COAST FORD
PALM COAST, FL 32137
386-446-1762
LS, MO, IN, WH

POWERED BY FORD
ORLANDO, FL 32805
407-843-3673
LS, MO, EB, IN, WH

RACER WALSH, INC.
JACKSONVILLE, FL 32216
800-334-0151
LS, MO, EB, WH

SAM'S CUSTOM SHOP
FORT MYERS, FL 33907
239-274-2400
LS, MO, EB, IN, WH

SPEED UNLIMITED
PENSACOLA, FL 32506
850-455-1341
LS, MO, EB, WH

STEEDA AUTOSPORTS
POMPANO BEACH, FL 33069
954-960-0774
LS, MO, IN

WAYNE AKERS FORD INC.
LAKE WORTH, FL 33461
561-540-9651
LS, MO, IN, WH

GEORGIA

ALLAN VIGIL FORD
MORROW, GA 30260
770-960-1208
LS, MO, IN, WH

AMERICAN PERFORMANCE PARTS WAREHOUSE, INC.
ATLANTA, GA 30318
404-355-8711
WH

BARNETT PERFORMANCE
ATLANTA, GA 30312
800-533-1320
LS, MO, WH

GENE EVANS TEAM FORD
UNION CITY, GA 30291
770-964-8604
LS, MO, IN, WH

GWINNETT PLACE FORD
DULUTH, GA 30096
800-684-1704
LS, MO, WH

JACKY JONES FORD, INC.
CLEVELAND, GA 30528
770-532-0211

JOHN BLEAKLEY FORD, INC.
LITHIA SPRINGS, GA 30122
770-941-5300
LS, MO, IN, WH

JON KAASE RACING, INC.
WINDER, GA 30680
770-307-0241

MUSTANGS UNLIMITED, INC.
LAWRENCEVILLE, GA 30043
770-446-1965
LS, MO, WH

PARKWAY FORD SALES, INC.
ADAIRSVILLE, GA 30103
770-773-3673
LS, MO

PIONEER FORD – MERCURY
BREMEN, GA 30110
770-537-2373

HAWAII

CUTTER FORD, INC.
AIEA, HI 96701
808-564-9271

HONOLULU FORD, INC.
HONOLULU, HI 96813
808-532-1770

ILLINOIS

ANDERSON FORD MOTORSPORT
CLINTON, IL 61727
217-935-2076
LS, MO, IN, WH

BILL KAY FORD
MIDLOTHIAN, IL 60445
708-388-3000
LS, MO, IN, WH

D.S.S. COMPETITION ENGINES
ST. CHARLES, IL 60174
630-587-1169
LS, MO, EB, WH

MIDWEST TRUCK & AUTO PARTS, INC.
CHICAGO, IL 60609-2517
773-579-3785

ROD BAKER FORD SALES
PLAINFIELD, IL 60586
815-436-5681
LS, IN, WH

SESSLER FORD
LIBERTYVILLE, IL 60048
847-362-4550
LS, MO, EB, IN, WH

SUTTON HIGH PERFORMANCE/ SUTTON FORD
MATTESON, IL 60443
708-720-8500
LS, MO, EB, IN, WH

VICTOR FORD
WAUCONDA, IL 60084
847-526-5541

WEIR FORD – MERCURY
RED BUD, IL 62278
866-712-2388
LS, MO, EB, IN, WH

WINNER'S CIRCLE SPEED & CUSTOM
JOLIET, IL 60431
815-727-6331
LS, MO, EB, IN, WH

INDIANA

DEALERS ENGINE SALES, INC.
INDIANAPOLIS, IN 46227
317-781-9373
LS

THE TIRE RACK
SOUTH BEND, IN 46628-8422
888-541-1777

VEHICLE SPECIALTIES, INC.
HAMMOND, IN 46323
800-424-8741
WH

KANSAS

RUSTY ECK FORD
WICHITA, KS 67207
800-999-2760
LS, WH

KENTUCKY

B.F. EVANS FORD, INC.
LIVERMORE, KY 42352
270-278-2376
LS, WH

MODULAR DEPOT
SOUTHGATE, KY 41071
877-234-5551
LS, MO, IN, WH

MARYLAND

PACKER NORRIS PARTS
BALTIMORE, MD 21221
410-574-8300
LS, MO, WH

PLAZA FORD, INC.
BEL AIR, MD 21014
410-879-9033
LS, IN, WH

SPEED UNLIMITED PERFORMANCE CENTER
MORNINGSIDE, MD 20746
301-420-2727
LS, MO, WH

MASSACHUSETTS

FORTE PARTS CONNECTION
FRAMINGHAM, MA 01702
508-875-0016
LS, MO, EB, IN, WH

IMPERIALCARS.COM
MENDON, MA 01756
508-473-2800
LS, MO, IN, WH

MICHIGAN

DIVERSIFIED PRODUCTS MARKETING, INC.
PLYMOUTH, MI 48170
734-459-0130
MO, WH

DTS/DRIVE TRAIN SPECIALISTS
WARREN, MI 48089
800-521-0628
LS, MO, IN

JACK DEMMER FORD, INC.
WAYNE, MI 48184
734-721-2550
LS, WH

LASCO FORD-MERCURY
FENTON, MI 48430
810-629-2255

LEO CAPALDI RACING, INC.
LENOX TWP, MI 48050
586-727-4834
LS, MO, IN, WH

LIVERNOIS MOTORSPORTS
DEARBORN, MI 48125
313-561-5500
LS, MO, EB, IN, WH

MOTOR STATE DISTRIBUTING
WATERVLIET, MI 49098
269-463-4113
WH

ROUSH INDUSTRIES
LIVONIA, MI 48150
734-779-7000

TOTAL PERFORMANCE
CLINTON TOWNSHIP, MI 48036-1108
586-468-3673
LS, MO, EB, IN, WH

VARSITY FORD INC.
ANN ARBOR, MI 48106
734-996-2300 EXT 271
LS, MO, IN, WH

DEALER LIST

VILLAGE FORD
DEARBORN, MI 48124
313-565-6799
LS

MINNESOTA

APPLE VALLEY FORD
APPLE VALLEY, MN 55124
952-431-5900
LS, MO, EB, IN, WH

TOUSLEY FORD
WHITE BEAR LAKE, MN 55110
612-484-7231
LS, MO, WH

MISSISSIPPI

B B & T RACING
SOUTHAVEN, MS 38671
662-280-7600
LS, MO, EB, IN, WH

MISSOURI

PETE & JAKE'S HOT ROD PARTS
PECULIAR, MO 64078
800-334-7240

SUNSET AUTO COMPANY
ST. LOUIS, MO 63127
314-843-4431
LS, MO, IN, WH

NEBRASKA

SPEEDWAY MOTORS
LINCOLN, NE 68528
402-323-3210

NEVADA

TEAM FORD
LAS VEGAS, NV 89130
702-395-5100
LS, MO, IN, WH

NEW JERSEY

DOWNS FORD, INC.
TOMS RIVER, NJ 08753
732-349-2240 EXT 958
LS, MO, EB, IN, WH

JOE HECK RACING
LAKEWOOD, NJ 08701
732-370-4325
LS, MO, EB, IN, WH

NEW YORK

HASSETT FORD LINCOLN MERCURY SALES INC.
WANTAGH, NY 11793
516-785-7200
LS, MO, EB, IN, WH

NORTHCOAST PERFORMANCE
ONTARIO, NY 14519
585-216-1210
LS, MO, WH

R V ENGINES
ALEXANDER, NY 14005
585-344-0784
LS, EB, IN

S-K SPEED RACING EQUIPMENT
ROCKVILLE CENTRE, NY 11570
516-766-2225
LS, MO, EB, WH

NORTH CAROLINA

CAROLINA MUSTANG, INC.
CARY, NC 27511
919-467-2900

DEACON JONES FORD LINCOLN MERCURY INC.
GOLDSBORO, NC 27534
919-736-3387

G-FORCE SOUTH
ASHBORO, NC 27205
336-625-3844

HARRIS MUSTANG SUPPLY
CHARLOTTE, NC 28269
704-598-1412

HILBISH MOTOR CO.
KANNAPOLIS, NC 28083
800-849-0233
LS, MO, EB, IN, WH

HOLCOMB MOTORSPORTS, INC.
LUMBERTON, NC 28358
800-475-7223
LS, MO, EB, WH

ROUSH & YATES RACING ENGINES, LLC
MOORESVILLE, NC 28117
704-662-6982
LS, MO, EB

TEX RACING ENTERPRISES
ETHER, NC 27247
910-428-9522
LS, MO, IN, WH

YOUNG FORD INC.
CHARLOTTE, NC 28213
704-598-2599
LS, IN

OHIO

GEORGE'S SPEED SHOP
DAYTON, OH 45404
937-233-0353
LS, EB, WH

JEG'S HIGH PERFORMANCE
DELAWARE, OH 43015
800-345-4545
LS, MO, WH

LLOYD-MANWELL FORD
AVON LAKE, OH 44012
440-933-3291
LS, MO, IN, WH

MATHEWS FORD
OREGON, OH 43616
800-225-8210
LS, MO, IN, WH

SUMMIT RACING EQUIPMENT
TALLMADGE, OH 44278
800-230-3030
MO

WHITEY'S AUTO GROUP
MANSFIELD, OH 44906
800-248-3788
LS, MO, IN, WH

OREGON

ALDRIDGE MOTORSPORTS ENGINEERING
PORTLAND, OR 97213
503-284-8484
LS, MO, EB, IN, WH

BAXTER AUTO PARTS
PORTLAND, OR 97217
503-417-5300
LS, WH

LANDMARK FORD
TIGARD, OR 97223
503-639-1131
LS, MO, WH

PENNSYLVANIA

CARL BEASLEY FORD, INC.
YORK, PA 17402
717-755-2911
LS, MO, IN, WH

CJ PONY PARTS, INC.
HARRISBURG, PA 17112
800-888-6473
LS, MO, IN, WH

FRED BEANS FORD OF BOYERTOWN
BOYERTOWN, PA 19512
610-367-6981
LS, MO, EB, WH

K&G SPEED ASSOCIATES, INC.
BROOMALL, PA 19008
610-359-1616

KEYSTONE AUTOMOTIVE OPERATIONS, INC.
EXETER, PA 18643
570-655-4514

MCNEW
DILLSBURG, PA 17019
717-432-9503

SPRINGFIELD FORD
SPRINGFIELD, PA 19064
610-544-3778
LS, MO, EB, IN, WH

RHODE ISLAND

RACERS EQUIPMENT WAREHOUSE
WARWICK, RI 02886
800-556-2864
LS, MO, EB, WH

TASCA AUTOMOTIVE GROUP
CRANSTON, RI 02920
401-681-1300

SOUTH DAKOTA

PARKER FORD, INC.
PARKER, SD 57053
605-297-4851

TENNESSEE

H.P. SALES, INC./HOT ROD BARN
KNOXVILLE, TN 37917
865-688-6031

TENNESSEE SPEED SPORT
GOODLETTSVILLE, TN 37072
615-851-4070
LS, WH

TEXAS

CASA FORD
EL PASO, TX 79925
800-394-2785

DALLAS MUSTANG PARTS
DALLAS, TX 75238
800-MUSTANG
LS, MO, EB, IN, WH

LATEMODEL RESTORATION SUPPLY INC.
HEWITT, TX 76643
254-296-6500
LS, MO, WH

LEIF JOHNSON FORD
AUSTIN, TX 78751
800-274-3673
LS, MO, IN, WH

LONE STAR PERFORMANCE
GARLAND, TX 75042
972-205-9100
LS, MO, EB, IN, WH

MAC HAIK FORD LTD.
HOUSTON, TX 77024
713-932-5050
LS, MO, EB, IN, WH

DEALER LIST

NORTH PARK LINCOLN MERCURY
SAN ANTONIO, TX 78216
210-341-8841
LS, MO, WH

NORTHSIDE FORD
SAN ANTONIO, TX 78216
800-542-9912
LS, IN, WH

SAMES MOTOR COMPANY
LAREDO, TX 78041
956-721-4700
LS, MO, IN, WH

SCOGGIN-DICKEY PARTS CENTER
LUBBOCK, TX 79424
800-456-0211
LS, MO, EB, WH

SOUTHWEST FORD, INC.
WEATHERFORD, TX 76086
800-256-7933
LS, MO, WH

TOMMIE VAUGHN MOTORS
HOUSTON, TX 77007
713-869-4755
LS, MO, WH

TOWN EAST
MESQUITE, TX 75150
972-682-1285
LS, WH

UTAH

CHAMPION FORD
SANDY, UT 84070
801-563-4060
LS, WH

WESTLAND FORD
OGDEN, UT 84401
877-629-5567
LS, MO, IN, WH

VIRGINIA

B & W MACHINE & TOOL
SALEM, VA 24153
540-387-3854
LS, MO, EB

COWLES FORD
WOODBRIDGE, VA 22193
800-730-8417
LS, IN, WH

EASTSIDE AUTO & MACHINE
WAYNESBORO, VA 22980
540-943-2583
LS, MO, EB, WH

KIMNACH FORD
NORFOLK, VA 23502
800-542-3512
LS, MO, WH

KOONS STERLING FORD
STERLING, VA 20164
800-966-7078
LS, MO, IN, WH

POMOCO LINCOLN-MERCURY OF NEWPORT NEWS
NEWPORT NEWS, VA 23602
888-833-4949
LS, WH

PURVIS FORD, INC.
FREDERICKSBURG, VA 22408
540-898-3000
LS, WH

TED BRITT FORD SALES
FAIRFAX, VA 22030
703-591-8484
LS, MO, IN, WH

WASHINGTON

BICKFORD FORD
SNOHOMISH, WA 98290
800-527-1101
LS, IN, WH

FORD POWERTRAIN APPLICATIONS
PUYALLUP, WA 98371
253-848-9503
LS, MO, EB

RANDY'S RING & PINION
EVERETT, WA 98204
800-347-1188
LS, MO, IN, WH

WISCONSIN

BELL FORD
ARLINGTON, WI 53911
800-236-4384
LS, MO, WH

GORDIE BOUCHER FORD
MENOMONEE FALLS, WI 53051
262-250-9838
LS, MO, IN, WH

PERFORMANCE PLUS, INC.
MADISON, WI 53719
608-277-8161
LS, IN

PUERTO RICO

FAJARDO FORD
ROAD #3 KM 41.8, FAJARDO
00738-7005
787-355-5555
LS, IN

CANADA

Central Region

CAMPBELL FORD SALES, LTD.
OTTAWA, ON K1Z 0A3
613-725-3611
LS, MO, IN, WH

DIXIE FORD SALES
MISSISSAUGA, ON L4W 1E6
905-629-1711
LS, IN, WH

KARBELT SPEED & CUSTOM
AJAX, ON L1S 4N8
905-619-6660
WH

R.C.O. ENTERPRISES INC.
AYLMER, ON N5H 2S1
519-393-6665
MO, WH

SEAN HYLAND MOTORSPORT
WOODSTOCK, ON N4V 1B7
519-421-2291
LS, MO, EB, IN

SUMMIT FORD SALES LTD.
REXDALE, ON M9V 2C1
416-741-5581
LS, MO, IN, WH

Eastern Region

FORMULE FORD INC.
GRANBY, QC J2G 8C8
450-777-1777
LS, MO, IN, WH

Pacific Region

BROWN BROS. FORD SALES
VANCOUVER, BC V5X 2S6
604-324-7504
LS, IN, WH

MOPAC AUTO SUPPLY LTD.
LANGLEY, BC V2Y 3C2
604-881-4900
LS, MO, EB, IN, WH

Western Region

DIX PERFORMANCE NORTH, LTD.
EDMONTON, AB T6E 5E8
780-462-5153
WH

FREEDOM FORD SALES
EDMONTON, AB T6C 4H8
780-462-7575

METRO FORD SALES, LTD.
CALGARY, AB T2P 3K9
800-661-1210
LS, MO, EB, IN, WH

MGM FORD - LINCOLN SALES LTD
RED DEER, AB T4R 1M5
403-346-6621
LS, MO, EB, IN, WH

AUSTRALIA

EAGLE AUTO SPARES
DANDENONG, VICT 3175
011-61-3-8710-3000
LS, MO, WH

METRO FORD PARTS DISTRIBUTION CENTRE
BRISBANE, QLD 4009
61-7-3000-7166
LS, MO, WH

RACEPARTS AUSTRALIA PTY LTD.
LOGANHOLME, QLD 4129
011-61-7-3807-6870
LS, MO, WH

NEW ZEALAND

STA PARTS (SEGEDIN TRUCK & AUTO PARTS LTD)
AIRPORT OAKS, AUCK
011-649-256-1120
LS, MO, WH

EUROPEAN COUNTRIES

MATECH CONCEPTS FIA SERIES
CONTACT: VALÉRIE GUILLON
GENÈVE, SWITZERLAND CH-1208
41 22 830 16 40

POWER TORQUE ENGINEERING LTD.
BINLEY, COVENTRY CV3 2RQ
0046 02476 635757
MO, WH

REAL STEEL
COWLEY, MIDD UB8-2JP
44-1895-440505
LS, MO, EB, WH

US-PARTS/FINN-AM OY
HELSINKI, FINLAND SF00810
358-9-251-31999

PARTS INDEX

PARTS INDEX

PARTS INDEX

PARTS INDEX

PARTS INDEX

PARTS INDEX

GENERAL INFORMATION
AND TECHNICAL ASSISTANCE

Ford Racing Performance Parts are available through Ford, Lincoln and Mercury dealers and selected independent automotive specialty/ performance outlets.

Ford Motor Company reserves the right to change, without notice or obligation, its products, prices, specifications and materials.

GENERAL INQUIRIES AND TECHNICAL QUESTIONS ON PRODUCTS SHOULD BE ADDRESSED TO:

Ford Racing Performance Parts
P.O. Box 490
Dearborn, MI 48121

For official Ford Motor Company Shop Manuals and wiring diagrams, call Helm Publications at 1-800-782-4356.

TECHNICAL ASSISTANCE TECHLINE
Telephone (800) FORD788
(FOR FORD RACING PARTS ONLY)

When you need fast, reliable, up-to-date information about Ford Racing Performance Parts equipment, call the Ford Racing Techline. You'll reach staff with a huge database of specifications and automotive know-how. The staff includes long-time racers and performance experts with many years of hands-on Ford experience and the database includes everything from the Ford Racing Performance Parts parts catalog to an extensive library of high-performance reference materials. You can call the Techline with questions about Ford Racing Performance Parts at (800) FORD788 from 10:00 a.m. to 6:00 p.m. Eastern Standard Time. If you need more in-depth information, write to Ford Racing Performance Parts.

For correct assistance, be sure to include the following information:

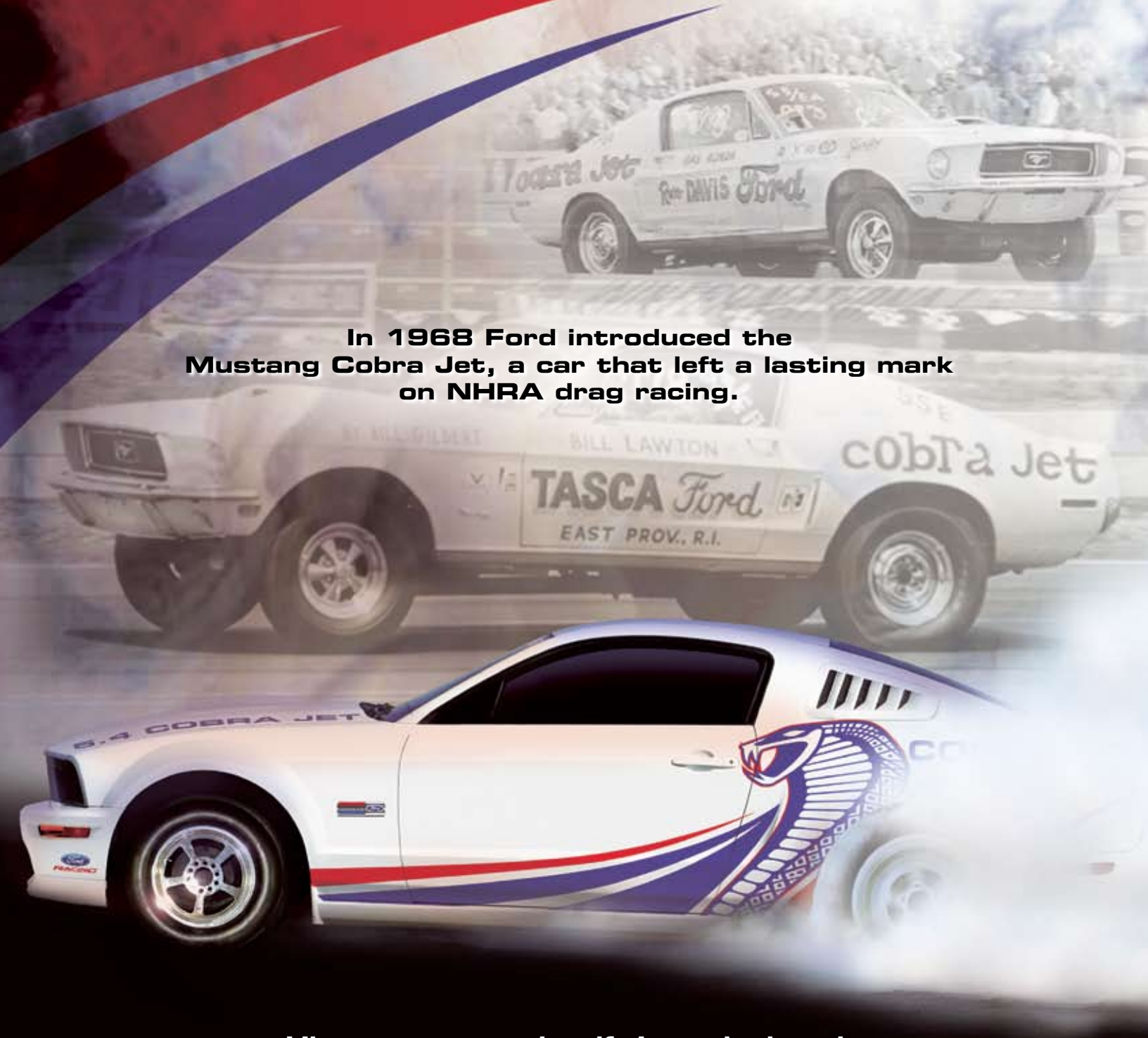
- Name and address
- Day and evening phone number
- Year/make/model of vehicle
- Original factory engine CID, transmission type and axle ratio
- Proposed modification changes

If you cannot find Ford Racing Performance Parts parts locally, call the Techline for purchase assistance.

See our website at
www.fordracingparts.com

NEW for 2009
Product information, dealer list and more!

Twenty-Seventh Edition—2009



In 1968 Ford introduced the Mustang Cobra Jet, a car that left a lasting mark on NHRA drag racing.

History repeats itself. Introducing the 2008 Mustang Cobra Jet (FR500CJ), ready to race and available from your local Ford dealer.

Ford

RACING

www.fordracing.com

M-0750-A2009 *Printed in U.S.A.*