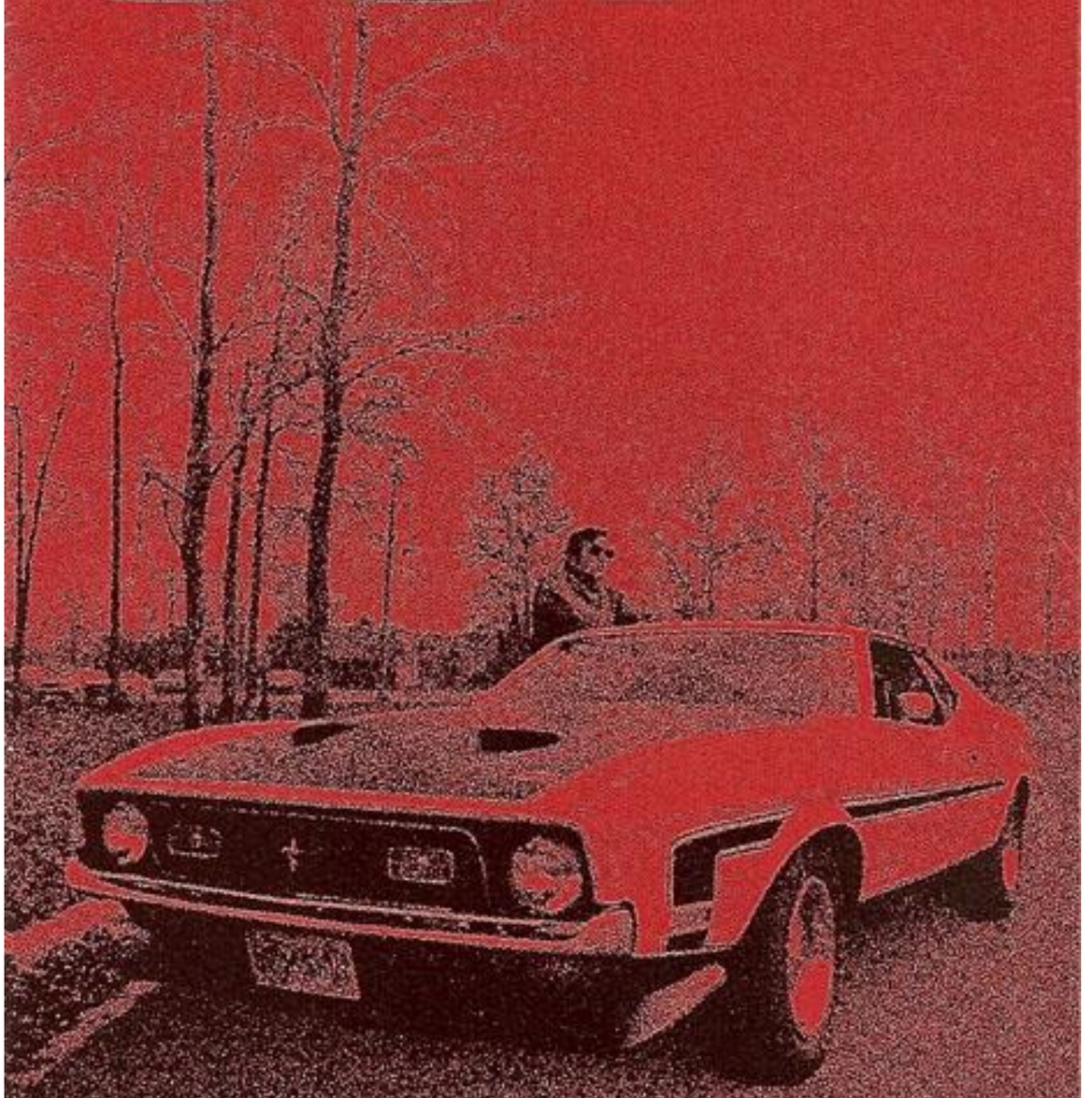
BOSS 351

MUSTANG



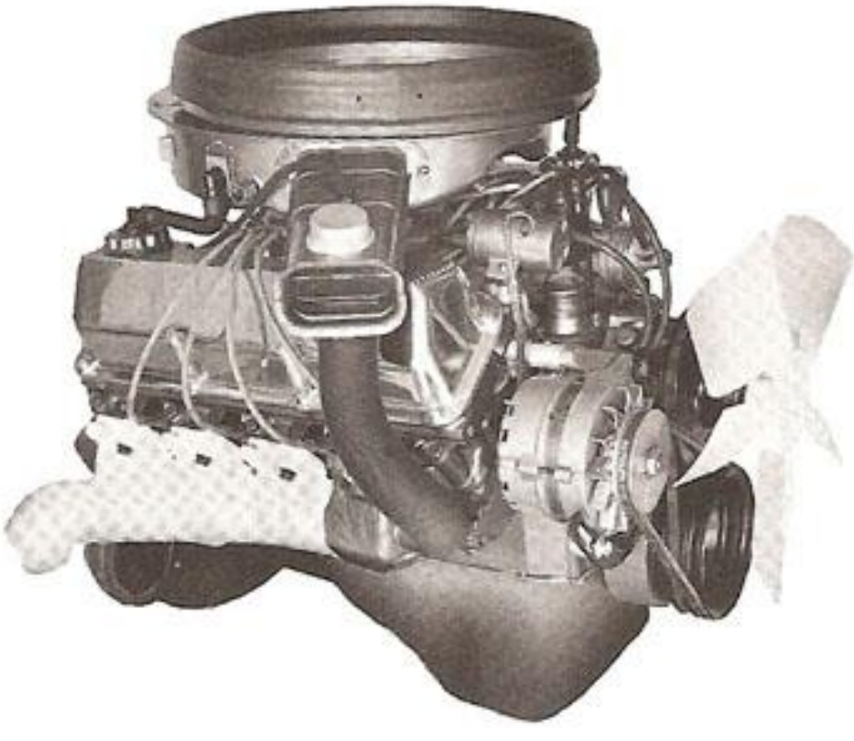
specifications and information

YOUR MUSTANG BOSS 351

Congratulations on your purchase of Ford's newest performance car. We hope it gives you many hours of driving pleasure.

Besides being good looking, your Mustang Boss 351 is built for the road – designed expressly for the man (or woman) who digs cars and the feel of driving a well handling, responsive machine. To provide these characteristics, many performance-type chassis components are standard. The heart of its performance, however, is the 351-4V HO (High Output) engine.

Developed especially for the Boss Mustang, the 351-4V HO is designed to rev high and hang together. It is a special version of Ford's latest engine design – the 351C (Cleveland) – which truly encompasses many of the lessons learned in world competition. Its most noteworthy feature is in the cylinder heads, which allow excellent performance potential. The carefully sized, smoothly contoured ports connect to large, angled valves, offering low resistance to the flow of intake and exhaust gases. The polyangular combustion chambers permit high compression ratios with efficient burning of the fuel/air mixture.



Special components of the 351-4V HO engine include – an extra large Autolite four-barrel carburetor with 750 CFM (cubic feet per minute) air flow – a camshaft with longer timing events and higher valve lift – high rpm adjustable mechanical valve lifters – high strength extruded aluminum pistons with pop-up domes – magnafluxed connecting rods with high

strength bolts and nuts – a crankshaft that receives special handling, inspection and hardness treatment – and high strength four-bolt main bearing caps. Compression ratio is 11.00 to 1, requiring the use of premium fuel.

351-4V HO ENGINE SPECIFICATIONS

Type	90° V, 8 cyl., OHV
Displacement (Cubic Inches)	351
Bore and Stroke (Inches)	4.00 x 3.50
Bore/Stroke Ratio	1.14 to 1
Bore Spacing (Inches)	4.38
Rod Length (Inches)	5.78
Maximum Horsepower @ RPM	330 @ 5400*
Maximum Torque @ RPM	370 @ 4000
Compression Ratio	11.0:1 Nom., 11.7:1 Max. 10.3:1 Min.
Piston Compression Height (Inches)	1.631
Carburetor	Autolite, 4-Venturi, Spread Bore, 750 CFM
Fuel	Premium
Valve Train	Mechanical
Valve Lash (Cold)	.022 Intake and Exhaust
Rocker Arm Ratio	1.73
Valve Lift (Inches)	.491 Intake and Exhaust
Cam Lift @ Timing Points	.010 Open and Closed
Valve Event	324° Intake and Exhaust
Exhaust Opens	102° BBC
Exhaust Closes	42° ATC
Intake Opens	50° BTC
Intake Closes	94° ABC
Intake Valve Diameter (Inches)	2.195
Exhaust Valve Diameter (Inches)	1.714

*Dynamometer Rated

GENERAL MAINTENANCE INFORMATION

Valve Lash	Reset to .022 at 6000 mile intervals or at first indication of excessive noise.
Oil Fill	
Capacity	6 qts. total (including filter)
Type	Street Operation SAE 40W (above 32°F) SAE 20W-20 (below 32°F)
Spark Plug Gap	.032–.035
Distributor Point Gap	.021
Speed Limiter Setting	6150 RPM
Belt Tension	110–140 (Burrough's gage)
Idle Speed	1000 RPM
Spark Timing	6° BTC (all vacuum lines off) TDC (all vacuum lines on)
Spark Plug Type	Autolite ARF 42

FOR MORE GO–ON THE STRIP OR TRACK

Your Boss Mustang 351-4V HO engine is ready, willing and able to provide you with the degree of performance you desire. It is an engine that reflects the racing heritage of Ford products on the world's toughest race courses.

Because of this it is ideally suited for performance modifications by owners who wish to enter their Mustang in competition on the strip or track.

To increase its performance there are many parts available from Ford, as well as other manufacturers. However, the secret of success in competition centers on how well the total engine is prepared. If you plan to do extensive modifications we suggest you know exactly what is required, or obtain the services of an experienced high-performance engine mechanic. In addition, your Ford dealer has in stock, or can obtain several Autolite-Ford publications that provide helpful hints and parts information.

OIL COOLER

For Heavy-Duty operation, such as occurs in strip or track competition or during extended high-speed operation, it is recommended that an engine oil cooler be installed. The 1970 Boss 302 oil cooler parts can be obtained from your local Ford dealer. These parts are adaptable to the 1971 Boss 351 with minor modifications.

Part Number	Part Name
C9OZ-6A642-A	Cooler Assy. – Crankcase Oil
C9ZZ-6A715-C	Hose Assy. – Engine Oil Cooler Inlet
C9ZZ-6A715-D	Hose Assy. – Engine Oil Cooler Outlet
C9ZZ-6B634-A	Bracket Assy. – Oil Cooler Lower
C9ZZ-6B633-A	Bracket Assy. – Oil Cooler Upper
D0ZZ-6881-A	Adapter Assy. – Oil Cooler
—	Screw & Washer Assy. – 5/16-18 x .75 Hex. Hd.
—	Locknut – Hex. 5/16-18
—	Bolt – 5/16 x 18 x .88

VALVES

The stock valves in the 351-4V HO offer good performance with long life. For competition use Ford offers valves of lighter construction to prevent valve float at high rpm. The intake valve (DOZX 6507-A) is solid titanium with a moly coated stem. The lighter weight exhaust valve (DOZX 6505-A) is special alloy steel with an aluminized face coating. Both valves are identical in size to the stock valves, as oversize valves are not required for maximum performance.

(NOTE: Because of their special construction, the competition valves should never be lapped. In addition the titanium intake valve cannot be ground on standard grinding wheels. Use a Carborundum A-80-04-E10 wheel or equivalent.)

Lightweight Titanium Intake Valve (DOZX 6507-A) On Left, Lightweight Exhaust Valve (DOZX 6505-A) On Right.

SPRINGS

The stock 351-4V HO spring setup is shown in the left of the photo, along with a competition-type on the right. The stock spring is recommended for use only with the stock production cam or cams of comparable lift. With race-type high lift camshafts of over .500" lift, the DOZX 6A511-A competition only "Super Spring" assembly should be used. This assembly incorporates special aircraft quality outer and inner springs, and an interference fit damper. A stock retainer (or one similar with a .100" outer valve spring pilot) must be used to attain the proper installed height for the inner spring, as this spring is .100" shorter than the outer spring. A stock seat is used with this assembly.

It is important that valve springs be adjusted to give spring loads which are adequate to control valve float, yet not so high that they cause rapid cam wear. Valve spring heights should be matched to give identical readings and shims added, if necessary, to bring springs up to specifications.

Valve Springs For the 351-4V HO. Stock Spring on left. Super Spring Assembly (DOZX 6A511-A) on right.

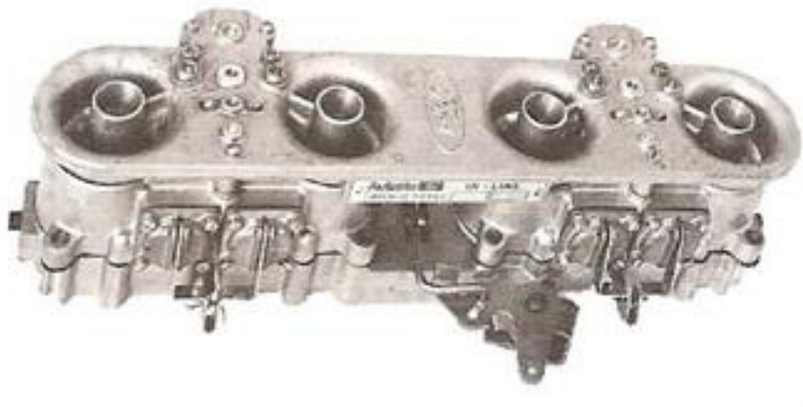
ROCKER ARMS

The two types of rocker fulcrums available for use are shown in the photo. The stock rocker fulcrum on the left will do a good job in many racing applications, but should not be used under sustained high rpm operation. The stock rocker arm should be Tuftrided to pre-stress it for strength. The rocker arm set-up in the center uses the Ford needle bearing fulcrum assembly, DOZX 6A585-A, and the Tuftrided stock rocker arm. This is a competition only part and will perform well in high rpm usage where high lift cams are used. When installing these rockers and fulcrums, blue the valve stem pad of the rocker and check for a full contact pattern on the valve stem tip, through the lift cycle. If you do not get a full contact pattern, interchange fulcrum components with adjoining assemblies until you achieve a full pattern on all rocker pads. The Allen head set screw should be torqued to 15-20 lb.-ft.

Stock Rocker Arm Assembly On Left. Ford Competition Rocker Arm Assembly (DOZX 6A585-A) On Right.

CARBURETOR

There are many types and sizes of carburetors available for use on the 351-4V HO engine from various manufacturers. Carburetor selection depends on the type of competition and the rules applied. Stock carburetor uses a unique manifold. The manifold for the Holley carburetor is D1ZZ 9424-G.
The latest Ford development is the Autolite 4V inline carburetor shown in the photo. This carburetor is available in two throttle bore sizes – 1-11/16" (850 CFM) for oval track competition and 2-1/4" (1400 CFM) for unlimited competition classes such as Formula A and modified drag. Single 4V inline or dual 4V inline carburetors also can be used. Order Parts Nos. DOZX 9510-A (1-11/16") or DOZX 9510-B (2-1/4"). Doug Nash Racing Enterprises of Wayne, Michigan manufactures and sells a manifold to fit the Autolite inline carburetor.



Autolite 4V Inline Carburetor

warranty

Your Boss 351 is protected under the terms of the Ford passenger car warranty. Consult the Warranty Facts Book in the glove compartment. If you intend to modify it for competition use, neither Ford Marketing Corporation, Ford Motor Company, nor any of its operating divisions can continue to offer you the same protection afforded a vehicle used for normal, everyday transportation only. For this reason, your regular new car warranty does not apply to any vehicle used in a Competitive Event. Competitive Events are defined in the warranty as "... formal or informal time trials, competition with any other vehicle, or any abnormal application of stress to the vehicle or components thereof in a competitive situation."

In addition, certain states prohibit highway operation of a car or truck unless it has properly installed and operating emission control systems and also prohibit the removal or modification of such systems. Check the law of your home state.

BOSS 351 MODIFICATION INFORMATION

Complete Boss 351 engine modification information will be included in the Autolite-Ford Muscle Parts Catalog, Supplement No. 4. This catalog will be available from your Ford dealer on or about March 1, 1971.

FORD DIVISION
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