



FORD PERFORMANCE

## M-6049-Z2 Ford Performance Aluminum SB Cylinder Head

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF FORD PERFORMANCE PARTS

Please visit [www.performanceparts.ford.com](http://www.performanceparts.ford.com) for the most current instruction and warranty information.

**PLEASE READ ALL OF THE FOLLOWING INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION. AT ANY TIME YOU DO NOT UNDERSTAND THE INSTRUCTIONS, PLEASE CALL THE FORD PERFORMANCE TECHLINE AT 1-800-367-3788**

### Overview:

This sheet contains important information regarding dimensions and specifications of the M-6049-Z2 cylinder head(s). These cylinder heads are equipped with larger than stock valves, therefore piston to valve clearance **must** be checked. This includes both radial and depth clearance checks. These heads require stud mount rocker arms, and rocker arm to valve cover clearance also **must** be checked. If there are any questions contact the Techline @ [www.fordracingparts.com](http://www.fordracingparts.com). These instructions should be reviewed by all engine builders, due to minor changes that could impact the engine assembly process.

### Contents/Bill of Materials:

PAC-1219X	Valve Spring, Outer Beehive
PAC-L8025	Valve Retainer Locks
PAC-R310	Retainer, Valve Spring
M-6566-Z2 REV1	Guide Plate
M-6505-Z2	Exhaust Valve, 1.600" dia. x 5.080"
M-6507-Z2	Intake Valve, 2.050" dia. x 5.080"
VS-530V	Valve Seal
4705F-1	Valve Spring Seat/Locator
RRS-3H	Rocker Stud, 7/16" dia. x 1.900"

### Features and Specifications:

Head material	Aluminum
Intake port location	Raised .125" from stock
Intake port volume	208 cc's
Intake valve part number	M-6507-Z2
Intake Valve Head Diameter	2.050"
Intake valve length	5.080"
Intake valve material	Stainless steel
Intake valve stem diameter	11/32"
Intake guide material	Manganese-bronze
Intake valve seat material	Ductile Iron
Exhaust port location	Raised .125" from Stock
Exhaust port volume	75 cc's

Factory Ford shop manuals are available from Helm Publications, 1-800-782-4356



**FORD PERFORMANCE**

## M-6049-Z2 Ford Performance Aluminum SB Cylinder Head

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF FORD PERFORMANCE PARTS

### Features and Specifications (continued):

Exhaust valve part number	M-6505-Z2
Exhaust valve head diameter	1.600"
Exhaust valve length	5.080"
Exhaust valve material	Stainless steel
Exhaust valve stem diameter	11/32"
Exhaust valve guide material	Manganese-bronze
Exhaust seat material	Ductile Iron
Combustion chamber volume	63.0ccs
Valve spring locator part number	4705F-1
Valve spring part number	PAC-1219X
Valve spring installed height	1.800"
Valve spring closed pressure	145 lbs.
Valve spring open pressure	358 lbs. @ 1.175"
Retainer part number	PAC-R310
Retainer manufacturer	PAC
Valve lock angle	10°
Valve lock part number	PAC-L8025
Valve stem seal part number	VS-530V
Rocker stud part number	RRS-3H
Pushrod guide plate part number	M-6566-Z2
Valve guide clearance intake	.0012"-.0022"
Valve guide clearance exhaust	.0016"-.0026"
Weight	30 lbs.

### Typical Air Flow:

Flowed at 28" inches of water

Bore size	4.000	
Lift	Intake CFM	Exhaust CFM
0.100	66.2	52.2
0.200	133.4	102.7
0.300	191.6	270.7
0.400	246.5	159.6
0.500	271.8	170.6
0.600	274.7	172.2

Factory Ford shop manuals are available from Helm Publications, 1-800-782-4356



**FORD PERFORMANCE**

## M-6049-Z2 Ford Performance Aluminum SB Cylinder Head

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF FORD PERFORMANCE PARTS

### Recommended accessories:

Intake gasket	M-9439-A50
Exhaust gasket	Fel-Pro 1415
Head gasket	M-6051-A302, M-6051-S331, M-6051-CP331, M-6051-R351
Head bolts-studs	M-6065-BOSS, M-6014-Z304, M-6014-BOSS
Valve Covers	All Ford Performance 302/351 valve covers
Spark plugs	Motorcraft AGSP-32PP, Autolite® 3924,3925
Valve Cover Gasket	Fel-Pro® VS13264T
Rocker Arms	302/351 Ford with 7/16 stud

### Assembly Notes:

Torque Specifications - Use light oil on threads except where noted,  
Cylinder Head – see photo below for sequence

1. 7/16-14 (stock block) early reusable grade 8 bolts with ARP 200-8598 head bolt bushings. (apply Loctite® 567 or 565 thread sealant) (2) steps: 1) 50 lb\*ft  
2) 70 lb\*ft
2. 7/16-14(stock block) torque to yield bolts (apply Loctite® 567 or 565 thread sealant) (3) steps: 1) 35 lb\*ft 2) 55 lb\*ft 3) ¼ turn (90°)
3. 1/2-13 (performance block) grade 8 bolts (2) steps: 1) 55 lb\*ft 2) 100 lb\*ft

Intake Manifold – (2) steps:

- 1) 10 lb\*ft
- 2) 18 lb\*ft

Consult Ford Performance Parts Intake Manifold Installation booklet for details,  
available at <http://performanceparts.ford.com>

Rocker Stud – (Note apply Loctite® 567 or 565 on intake rocker studs) 50lb\*ft

Header/Exhaust Manifold – 35 lb\*ft

Valve Cover – 9 lb\*ft (Note check for rocker arm to valve cover clearance)

Pushrods – Check for clearance between the head and pushrod. The guide plates are designed to allow for slight adjustment due to tolerance stack up. Loosen and adjust if necessary.

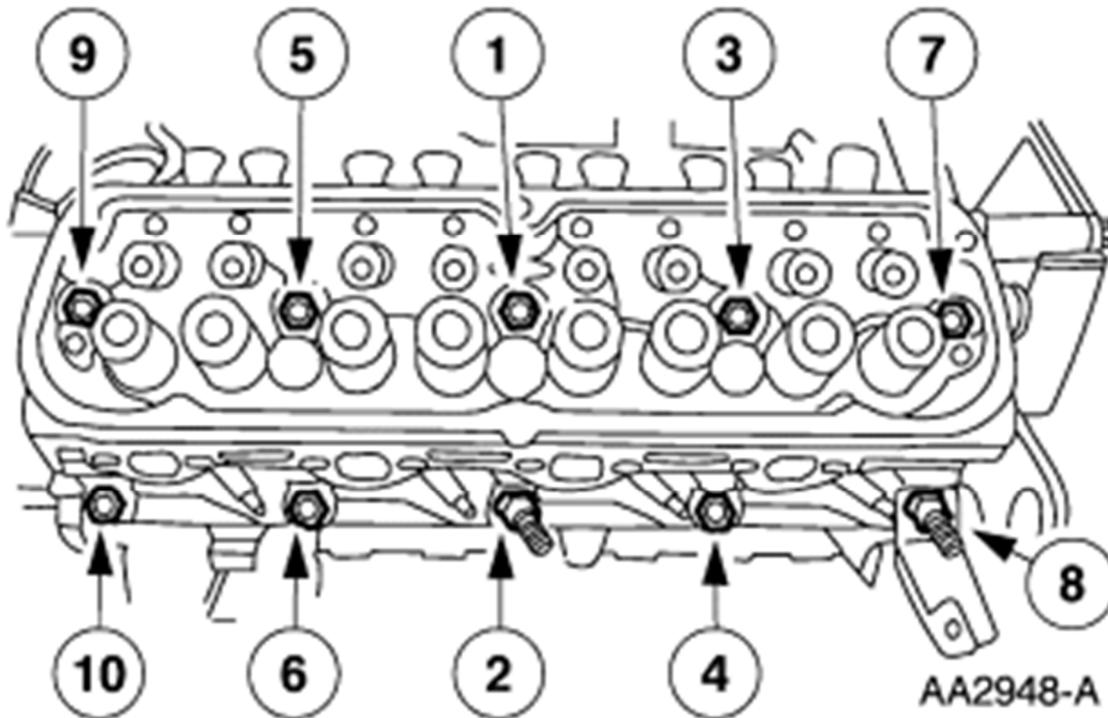
Factory Ford shop manuals are available from Helm Publications, 1-800-782-4356



FORD PERFORMANCE

## M-6049-Z2 Ford Performance Aluminum SB Cylinder Head

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF FORD PERFORMANCE PARTS



### Assembly Notes (continued):

Accessory drive bolt holes are in stock locations and stock brackets will fit.  
Exhaust flange location and bolt pattern- The exhaust manifold plane is in the stock location. The exhaust is configured with the stock "narrow" 2.00" bolt spacing.  
Spark plug installation – a small amount of nickel or copper based anti-seize is recommended on the spark plug threads. Be cautious not to get any near the electrode or ground strap. Remember a little goes a long way with anti-seize.

Factory Ford shop manuals are available from Helm Publications, 1-800-782-4356