



M-6049- X303/X305/Y303 GT-40 Aluminum Cylinder Head INSTALLATION INSTRUCTIONS

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Please visit www.fordracingparts.com for the most current instruction 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 RACING TECHLINE AT 1-800-367-3788 !!!

PARTS INCLUDED IN THIS KIT:

M-6049-Y303/X303/X305 Cylinder Head Assembly*

ADDITIONAL PARTS RECOMMENDED FOR INSTALLATION:

M-6051-A50	Head Gasket Kit
M-6051-B51	Head Gasket
M-9489-A50	Intake Manifold Gasket Kit (Street)
M-9439-A51	Intake Manifold Gasket Kit (Competition)
E3TZ-9448-A	Exhaust Manifold Gasket – available at your Ford dealer
F422-6E086A	Thermactor Thread Insert (2 required)

***Note: If you purchased bare heads M-6049-Y302 or X302, the use of Ford Racing valve kit M-6090-X302 is strongly recommended to complete your heads.**

INSTALLATION INSTRUCTIONS:

- STEP 1:** Remove valve covers and gaskets. Remove the rocker arms and pushrods in order. Remove drive belt, A/C compressor and P/S pump bracket and thermactor crossover tube at rear of cylinder head.
- STEP 2:** Remove, clean the intake manifold, engine block surface before installation of new gasket and heads.
- STEP 3:** Position the new cylinder head gasket over the guide dowels on the engine block. Installation of new guide dowels may be needed.
- STEP 4:** Install the GT-40 heads on engine block and install mounting bolts. Torque in 3 steps using the shown in Figure 1. **Use the appropriate torque specs for your application. NOTE: Ford Racing Kit (M-6051-A50) and late model production applications use torque to yield bolts.**
- | | | | |
|---------------------------|-------------------|-------------------|--|
| Torque to yield bolts: | 1) 35 ft./lbs. | 2) 55 ft./lbs. | 3) Torque and additional ¼ turn (85-90°) |
| Conventional 7/16" bolts: | 1) 20-30 ft./lbs. | 2) 45-55 ft./lbs. | 3) 65-72 ft./lbs. |
| Conventional ½" bolts | 1) 50 ft./lbs. | 2) 80 ft./lbs. | 3) 110 ft./lbs. |

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

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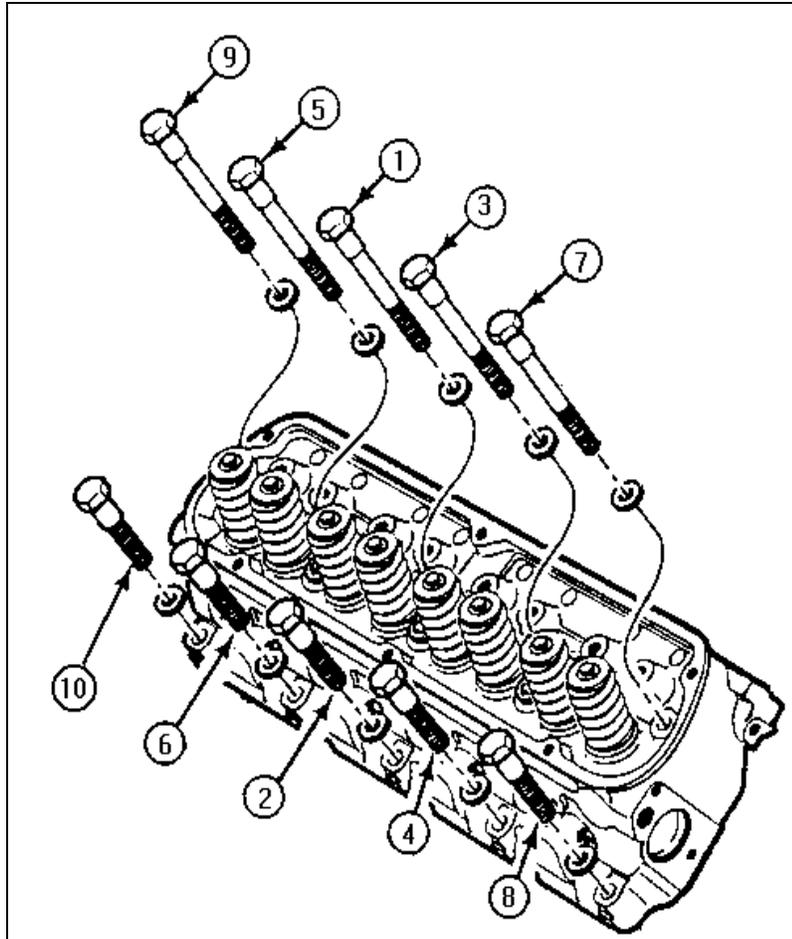


Figure 1 - Torque Sequence

- STEP 5:** Install pushrods with multi-purpose grease on both ends. Make sure the pushrods are installed in original mounting locations.
- STEP 6:** Install headers (new gaskets), rocker arms and valve covers (new gaskets). **NOTE: If using non-production rocker arms, verify collapsed tappet gap is within specifications. Information can be found in the appropriate shop manual.**
- STEP 7:** Install A/C compressor, drive belt, P/S pump bracket and thermactor crossover tube.
- STEP 8:** Install intake manifold gasket, intake manifold and related parts.
- STEP 9:** Torque intake manifold to specifications (16-18 ft./lbs.). Install all vacuum lines and electrical connections.



**M-6049- X303/X305/Y303
GT-40 Aluminum Cylinder Head
INSTALLATION INSTRUCTIONS**

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CYLINDER HEAD FEATURES/SPECIFICATIONS:

Cylinder Head Features:

- Light weight – approximately 22 lbs assembled with Ford Racing components
- Excellent out-of-the-box flow characteristics
- Excellent potential for improving flow with porting
- O.E. quality castings and machining
- Uses production rockers and pedestals
- Excellent cooling characteristics
- Excellent chamber combustion characteristics
- Integral spring seats
- Chrome/moly intake seats
- High tech trick contoured exhaust seats
- Excellent mechanical characteristics
- X303/X305 exhaust port seat short side transitions are CNC'd

Nominal Specifications:

	<u>Y303</u>	<u>X303</u>	<u>X305</u>
Combustion chamber volume	64cc	64cc	58cc
Intake port volume	166cc	178cc	178cc
Exhaust port volume	54cc	62cc	62cc
Intake valve OD – 1.94" (21-4N stainless steel) for all			
Exhaust valve OD – 1.54" (21-4N stainless steel) for all			

Typical Flows (@ 28" H₂O with Ford Racing Valves):

M-6049-Y303

<u>Intake lift</u>	<u>Flow CFM</u>	<u>Exhaust lift</u>	<u>Flow CFM</u>
0.100"	64.2	0.100"	52.3
0.200"	114.3	0.200"	97.7
0.300"	166.5	0.300"	128.0
0.400"	199.4	0.400"	136.5
0.500"	212.5	0.500"	134.1
0.600"	217.4		

M-6049-X303/X305

<u>Intake lift</u>	<u>Flow CFM</u>	<u>Exhaust lift</u>	<u>Flow CFM</u>
0.100"	63.9	0.100"	60.1
0.200"	129.8	0.200"	111.6
0.300"	183.6	0.300"	142.7
0.400"	219.9	0.400"	163.0
0.500"	237.6	0.500"	172.7
0.600"	249.0	0.650"	175.2

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