



FORD PERFORMANCE

M-6049-Z304DA

Model Fits 302/351 Windsor engines

Product Name "Z-HEAD" ALUMINUM HEAD - ASSEMBLED 63CC

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PRIOR TO INSTALLATION READ THESE INSTRUCTION COMPETELY
For questions, Call the FORD PERFORMANCE Techline 1-800-367-3788

Please visit https://www.performanceparts.ford.com for warranty information

OVERVIEW:

This instruction sheet contains important information regarding dimensions and specifications of the M-6049-Z304DA cylinder heads. These cylinder heads have different valve centerlines and are set up for larger than stock valves, therefore piston to valve clearance must be checked. This check includes both radial and depth clearance checks. Radial clearance .060" minimum, depth on intake .080" and .120" on exhaust. These heads use stud mounted rocker arms, rocker arm to valve cover clearance must also be checked. These heads require .150" offset intake rocker arms. Check intake manifold port alignment, not all intake manifolds will fit due to the size and location of the intake ports. These instructions should be reviewed by all engine builders, due to minor changes that could impact the engine assembly process.

CONTENTS/BILL OF MATERIALS:

Table with 3 columns: PART #, DESCRIPTION, QUANTITY. Lists parts like VALVE KEEPER SET, VALVE RETAINER, EXHAUST VALVE, INTAKE VALVE, PUSHROD GUIDE PLATE, etc.

FEATURES AND SPECIFICATIONS:

Table with 2 columns: Feature, Specification. Lists features like Head material (A356 aluminum), Intake port location (Raised .100" from stock), Intake port volume (204 cc), etc.

Ford Factory Shop Manual purchase options www.motorcraftservice.com



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Valve spring locator	4705F-1
Valve springs	PAC-1219X
Valve spring installed height	1.800"
Valve spring closed pressure	145# (+/- 7) @ 1.800"
Valve spring open pressure	349# (+/- 20) @ 1.200"
Retainer	PAC-R310
Valve lock	PAC-L8027
Valve lock angle	10 deg.
Valve stem seal	VS-530V
Valve guide clearance intake	.0012-.0022"
Valve guide clearance exhaust	.0016-.0026"
Weight	Approximately 31#

**TYPICAL AIR FLOW**

Lift (in)	Intake Flow (SCFM)	Exhaust Flow (SCFM)
.050	31.1	26.4
.100	64.6	55.8
.150	103.0	84.6
.200	135.5	113.3
.250	167.0	146.8
.300	199.0	171.6
.350	227.2	190.2
.400	245.2	200.4
.450	259.8	207.2
.500	271.9	212.8
.550	277.3	218.1

**RECOMMENDED PARTS**

Intake valve part number	M-6507-A304
Exhaust valve part number	M-6505-B304
Intake gasket	M-9439-A50
Exhaust gasket	Fel-Pro 1487
Head gaskets	M-6051-CP331, M-6051-S331, M-6051-R351
Rocker arms	Crower 72813-8 (Exhaust) Crower 72813X1-8 (Intake)
Valve covers	M-6582-LE302BK
Engine block	M-6010-BOSS302, M-6010-B302BB, M-6010-BOSS35195, M-6010-BOSS35192, M-6010-BOSS351BB, M-6010-B35192BB
Pushrod guide plates	M-6566-Z304D
Timing chain set	M-6268-A302
Spark plugs	AGSP32C
Valve cover gasket	Fel-Pro VS13264T

**RECOMMENDED TORQUE VALUES**

Head bolt	1/2-13 UNC Head bolt torque is 100 lb*ft, torque in steps 35/65/100 lb*ft
Intake manifold	18 lb*ft
Exhaust manifold	35 lb*ft
Valve cover	8-10 lb*ft
Rocker studs	65 lb*ft
Spark plugs	10-12 lb*ft

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