OVERVIEW:
This instruction sheet contains important information regarding dimensions and specifications of the M-6049-Z304DA7 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.

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<th>QUANTITY</th>
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<td>7MM VALVE KEEPER SET</td>
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<tr>
<td>PAC-R310</td>
<td>VALVE RETAINER</td>
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<tr>
<td>M-6505-D3047</td>
<td>EXHAUST VALVE</td>
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<td>INTAKE VALVE</td>
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<td>M-6566-Z304D</td>
<td>PUSHROD GUIDE PLATE</td>
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<td>DRP154</td>
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<td>SPRING SEAT</td>
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<td>VALVE SPRINGS</td>
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<td>VALVE STEM SEAL</td>
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FEATURES AND SPECIFICATIONS:

- Head material: A356 aluminum
- Intake port location: Raised .100” from stock
- Intake port volume: 204 cc
- Intake valve part number: M-6507-D3047
- Intake valve head diameter: 2.020”
- Intake valve length: 5.340”
- Intake valve material: Stainless steel
- Intake guide material: Manganese-bronze
- Intake valve stem diameter: 7mm
- Intake valve seat material: Ductile iron
- Exhaust port location: Raised, may require custom headers
- Exhaust port volume: 64 cc
- Exhaust valve part number: M-6505-D3047
- Exhaust valve head diameter: 1.600”
- Exhaust valve length: 5.364”
- Exhaust valve material: Stainless steel
- Exhaust guide material: Manganese-bronze
- Exhaust valve stem diameter: 7mm
- Exhaust valve seat material: Ductile iron
- Combustion chamber volume: 64 cc

Please visit [https://www.performanceparts.ford.com](https://www.performanceparts.ford.com) for warranty information.
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-L8081
Valve lock angle 10 deg.
Valve stem seal VS-7433
Valve guide clearance intake .0012-.0022"
Valve guide clearance exhaust .0016-.0026"
Weight Approximately 31#

TYPICAL AIR FLOW

<table>
<thead>
<tr>
<th>Lift (in)</th>
<th>Intake Flow (SCFM)</th>
<th>Exhaust Flow (SCFM)</th>
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<tbody>
<tr>
<td>.050</td>
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<tr>
<td>.100</td>
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<tr>
<td>.550</td>
<td>277.3</td>
<td>218.1</td>
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</tbody>
</table>

RECOMMENDED PARTS

Intake valve part number M-6507-D3047
Exhaust valve part number M-6505-D3047
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

Ford Factory Shop Manual purchase options www.motorcraftservice.com