



Instruction Sheet

Manufacturer of the Highest Quality Engine Blocks, Heads & Manifolds.

WOR-076A/B

LS7 SERIES ALUMINUM HEADS

Technical Instructions for assembled and bare head part numbers:

025350 WOR-076 BMP LS 285cc runner, 64cc chamber bare casting (50° valve seat)

025350 - 2	BMP LS	285cc runner, 64cc chamber flat tap or hyd. roller, 1.437 dual spring assembly (50° valve seat)
025350 - 3	BMP LS	285cc runner, 64cc chamber solid roller, 1.550 dual spring assembly (50° valve seat)
025350 - 4	BMP LS	285cc runner, 64cc chamber solid roller, 1.640 dual spring assembly (50° valve seat)

025350C WOR-076 BMP LS 296cc runner, 64cc chamber bare casting, CNC Ported

025350C- 2	BMP LS	296cc runner, 64cc chamber flat tap or hyd. roller, 1.437 dual spring assembly (50° valve seat)
025350C- 3	BMP LS	296cc runner, 64cc chamber solid roller, 1.550 dual spring assembly (50° valve seat)
025350C- 4	BMP LS	296cc runner, 64cc chamber solid roller, 1.640 dual spring assembly (50° valve seat)

Specifications:

Port Dimensions: 025350	285cc: intake 2.375" x 1.370", Exhaust 1.760" x 1.895"
025350C	296cc: intake 2.400" x 1.400", Exhaust 1.800" x 1.900"

Combustion Chamber Volume: 64cc.

Valve Guides: Bronze Manganese

Valve Guide Spacing: LS7: 1.970"

Valve Seats: Intake and Exhaust seats, Durabond powdered metal

Valve Seats Dimensions: LS7 Intake 2.300"x 1.800"x .375" Exhaust 1.650"x 1.300"x .375"

Valve Seat Angles: LS7: Intake = 35°-(50°(.040))-60°-75° Exhaust = 38°(50°(.060))-500radius-75°

Intake Valves : 2.250"x 5.500 oal x 5/16 50° Severe Duty replacement # 702845SD5

Exhaust Valves : 1.625"x 5.530" oal x 5/16 50° Severe Duty replacement # 702720SD5

Valve Locks: 10° machined Steel Replacement # 702153-16

Valve Seals: 5/16" metal clad viton Seal Replacement # 702178

Valve Springs: -2 Heads use a 1.437 diameter spring. Seat pressure 125 lbs. @ 1.825 Replacement # 702204-16

-3 Heads use a 1.550 diameter spring. Seat pressure 200 lbs. @ 1.950 Replacement # 702106-16

-4 Heads use a 1.640 diameter spring. Seat pressure 275 lbs. @ 2.050 Replacement # 702212-16

Valve Spring Retainers: -2 & -3 Heads use a 1.437/1.550 diameter Retainer. Replacement # 702113-8

-4 Heads use a 1.640 diameter Titanium retainer. Replacement # 702126-8

Pushrod Guide Plates: N/A

Pushrods: To obtain proper rocker geometry, pushrod length will need to be determined by using an adjustable checking pushrod. Due to the larger ports and tremendous variables in Rocker arm sizes minor clearancing may be needed.

Rocker Arms: Machined for direct fit of T&D part # 2351 shaft rocker system

Rocker Arm Studs: N/A

Head Gaskets: FelPro # 1185 if using older Warhawk heads. New heads will require a std LS7 head gasket

Intake Manifold: LS7 compatible

Intake Gaskets: OE standard for application

Head Studs: BMP LS7 heads require a Std LS7 ARP# 234-4317.

World Products Warhawk LS head on BMP LS aluminum 9.240" block ARP # 134-4702

World Products Warhawk LS head on BMP LS aluminum 9.800" block ARP # 134-4703

Header Gaskets: OE standard for application

Pistons: OE standard for application with attention to the valve notch diameters

Spark Plugs: Tapered Style, .14mm .708 reach, recommended starting point.NGK# PZTR5A, AC DELCO P# 12567759

Emissions: All BMP LS heads are intended for pre-emission vehicles and off-road use.

Head Stud Torque Specs: Torque all head studs to OEM sequence and specs. Before torquing, coat the head studs and rocker bolts with ARP Thread Sealing Paste. NOTE: Refer to the factory service manual for proper head bolt tightening sequence.

Maximum Valve Diameter: Per builder discretion

Maximum Spring Seat Depth: Spring seat is cut to accept a 1.550 spring. IT IS NOT RECOMMENDED TO CUT THE SPRING SEAT DEEPER.

Maximum Spring Diameter: 1.650 Int. / Exh. : 1.650 Int. / Exh.

Maximum Flat Mill: Approximately .050. Deck is approximately .600 thick, depending on chamber, builder's discretion.

Maximum Angle Mill: Approximately .180. Builder's discretion.

Approximate Milling Guidelines: Approximately -.065" per 1cc.

Brackets and Accessories:

BMP LS heads have accessory bolt holes drilled in the factory locations.

Before Final Assembly:

1. Please inspect castings for defects or damage prior to modification, assembly or installation. Cylinder heads that have been modified, installed or used ARE NOT RETURNABLE.
2. At this time install the cylinder head to the block with head gasket and snug the bolts. Determine the proper pushrod length and rocker tip to valve tip alignment.
3. Due to different ratio rockers and different deck height blocks, now is the time to check for pushrod to cylinder head interference. If the pushrod has interference with the cylinder head, remove the cylinder head, grind the casting the needed amount, clean the head after grinding, reinstall the cylinder head using the mock up procedure and recheck the clearance. Repeat the procedure as necessary until the desired clearance is achieved.
4. The BMP LS heads use a 2.250 diameter intake valve. Because of the larger diameter intake valve it is VERY IMPORTANT to check piston to valve and valve to valve pocket clearance.
5. Once everything has been checked and all the desired clearances and specifications achieved, final assembly may begin.
6. If a new flat tappet camshaft is being installed with a -2 cylinder head, it is HIGHLY RECOMMENDED to remove the inner valve spring during the camshaft break in procedure. After the cam is broken in, reinstall the inner valve spring.
7. If you bought bare castings then remember, you must wash the heads before assembly.

This assembly should be checked to assure that all components are compatible with your combination before assembling your engine. There is no warranty on valve springs of any type.

WARRANTY TERMS:

No warranties of any nature (expressed, implied, fitness of usage or merchantability) are given on these products. Seller undertakes no responsibility for any product sold. Additional disclaimers are within and are binding upon this contract. Due to the intended usage of products offered, all products are sold on an "as-is" basis, and no warranties of any kind, whether written or oral are made by Bill Mitchell Products, its agents or employees. All implied warranties, including the implied warranties of merchantability and fitness are expressly excluded, and the buyer bears the entire risk as to quality performance and use of these products. Bill Mitchell Products will assume no responsibility of personal injury, labor or other injury arising out of the usage of high performance racing parts or products. Any defective part will be handled between the original manufacturer and the buyer. Bill Mitchell Products reserves the right to change specifications, prices and discontinue parts without notice. Installation of Bill Mitchell Products heads may adversely affect the vehicle manufacturer's warranties, and may violate State and Federal laws when vehicles so equipped are operated other than strictly off-highway. Bill Mitchell Products reserves the right to discontinue any product at its sole discretion and without any liability with respect to similar products already in the field. Some parts are not legal for sale or use on pollution controlled motor vehicles.

While our products are used in many applications using super-chargers, Turbos or Nitrous successfully, please be aware that there is a greater potential for engine damage due to the possibility of tuning errors.

PLEASE DO NOT CALL THE DEALER FROM WHICH YOU PURCHASED YOUR PARTS. If you have any questions, please contact BMP customer service at 631-737-0372 (Fax 631-737-0467).

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
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