



MANO'WAR 10° CYLINDER HEADS

Aluminum SBF Specifications and Instructions

Technical Instructions for assembled & bare head part numbers:

As Cast

023012	275cc intake ports, 64cc chambers, bare	023015	285cc intake ports, 64cc chambers, bare
023012-3	275cc intake ports, 64cc chambers, solid roller	023015-3	285cc intake ports, 64cc chambers, solid roller
023012-4	275cc intake ports, 64cc chambers, race roller	023015-4	285cc intake ports, 64cc chambers, race roller

CNC Ported

023015C	310cc intake ports, 72cc chambers, bare
023015C-3	310cc intake ports, 72cc chambers, solid roller
023015C-4	310cc intake ports, 72cc chambers, race roller

Specifications:

Valves:

2.200" intake, replacement part #830506 (for -3 heads, 5.600" OAL)

1.600" exhaust, replacement part #830516 (for -3 heads, 5.630" OAL)

Valve locks: 10 degree locks. Replacement part # 830304.

Valve Springs & Retainers:

-3 heads use a 1.550" diameter spring, with seat pressure of 200lbs. @ 1.900", replacement part #830115. Retainer replacement part # 830235

-4 heads use a 1.640" Nextek spring, with seat pressure of 250lbs. @ 2.000", replacement part #830140. Titanium retainer part #830250

Valve Seals -3 heads use a metal clad Viton seal part # 830408

Pushrods: To obtain proper rocker arm geometry, pushrod length will need to be determined by using an adjustable checking pushrod.

Rocker Arms: Shaft mount system required, JESEL part #KPS371149

Combustion Chamber Volume: 64cc as cast, 72cc CNC ported

Intake Runners: 275cc (part #023012), 285cc (part #023015), 310cc (part #023015C)

Head Bolts: Stock or ARP equivalent. 289/302 stock blocks use a 7/16 thread bolt and 351W and SVO blocks use a 1/2 thread bolt. Head studs may be substituted for head bolts.

Head Gaskets: Cometic #H2879040S

Intake Gaskets: Fel Pro LS gasket #12082 or 12083 with slight modification

Header Gaskets: Contact SPD at (916) 635-8108

Spark Plugs: 14mm x .750 reach plug such as an Accel 416.

Emissions: These heads designed for off-road use only.

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 no head gasket and snug the bolts.
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. Then 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 Man O'War cylinder head has larger than stock valves. It is VERY IMPORTANT to check piston to valve clearance.

ATTENTION:

ALL EXHAUST, VALVE COVER, INTAKE AND ROCKER, STUDS AND/OR BOLTS MUST HAVE SEALER APPLIED TO THEM AS SOME OF THEM GO INTO WATER.

Head Bolt Torque Specs (with oil) 289 - 302: Upper row 80 lb-ft. Lower row 70 lb-ft. 351W: All bolts 100 ft. lbs.

NOTE: Refer to the factory service manual for proper head bolt tightening sequence.

Machine Shop Specs:

NOTE: Specs are for reference only. Always measure before machining. REMEMBER: MEASURE TWICE, CUT ONCE.

Maximum Valve Diameter: 2.250" (intake) and 1.625" (exhaust)

Maximum Spring Seat Depth: Spring seats may be cut for a 1.640" diameter spring but NO DEEPER THAN CASTING SEAT.

Maximum Spring Diameter: 1.640"

Approximate Milling Guidelines: .007" per 1cc

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