



S / R Cast Iron Cylinder Heads

Technical Instructions for assembled & bare head part numbers:

043600- Bare (Straight Plug, 76 cc Chamber, Cast Iron)

043600-1 Hydraulic Flat Tappet Camshaft (Straight Plug, 76 cc Chamber, Cast Iron)

043600-2 Mechanical Flat Tappet, Hydraulic Roller (Straight Plug, 76 cc Chamber, Cast Iron)

043610 – Bare (Straight Plug, 67 cc Chamber, Cast Iron)

043610-1 Hydraulic Flat Tappet Camshaft (Straight Plug, 67 cc Chamber, Cast Iron)

043610-2 Mechanical Flat Tappet, Hydraulic Roller (Straight Plug, 67 cc Chamber, Cast Iron)

043640– Bare (Straight Plug, 76 cc Chamber, Cast Iron 1987 & Later Intake Face, Center Bolt Valve Covers only)

043640-1 Hydraulic Flat Tappet Camshaft (Straight Plug, 76 cc Chamber, Cast Iron)

043640-2 Mechanical Flat Tappet, Hydraulic Roller (Straight Plug, 76 cc Chamber, Cast Iron)

043650 – Bare (Straight Plug, 67 cc Chamber, Cast Iron 1987 & Later Intake Face, Center Bolt Valve Covers only)

043650-1 Hydraulic Flat Tappet Camshaft (Straight Plug, 67 cc Chamber, Cast Iron)

043650-2 Mechanical Flat Tappet, Hydraulic Roller (Straight Plug, 67 cc Chamber, Cast Iron)

043700 – Bare (Straight Plug, 67 cc Chamber, Cast Iron, 1987 & Later Intake Face, Center Bolt Valve Covers only)

043700-1 Hydraulic Flat Tappet Camshaft (Straight Plug, 67 cc Chamber, Cast Iron, 1987 & Later Intake Face, Center Bolt Valve Covers Only)

043700-2 Mechanical Flat Tappet, Hydraulic Roller (Straight Plug, 67 cc Chamber, Cast Iron, Center Bolt Valve Covers Only)

Specifications:

Valves: 1.94Int. Replacement part # 830600 (For -1 & -2 Heads, 4.911 overall length)
1.50 Exh. Replacement part # 830610 (For -1 & -2 Heads, 4.911 overall length)

Valve Locks: -1 & -2 Heads have 7 degree locks. Replacement part # 830305

Valve Seals: -1 & -2 Heads use a Nitril seal. Replacement part # 830405

Valve Springs & Retainers: -1 Heads use a 1.250 diameter spring. Seat pressure 100 lbs. @ 1.825 Replacement part # 830105. Retainer part # 830205
-2 Heads use a 1.440 diameter spring. Seat pressure 125 lbs. @ 1.825 Replacement part # 830110. Retainer part # 830220

Pushrod Guide Plates: S/R cylinder heads **DO NOT** come with guideplates. If guideplates are desired, the rocker arm mounting boss **MUST** be milled down the thickness of the guideplate being used. Example: If the guideplate measures .125 thick, then the rocker stud boss will need to be milled down .125. Suggested guide plate part # to be used is a World Products part # 830450. **Note:** When converting to guideplates, hardened pushrods **MUST** be used. The guideplates **MUST** be adjusted to obtain proper rocker tip to valve tip alignment. For additional info regarding rocker tip alignment procedure, refer to World Products Tech Sheet **WPP-TB1**.

Pushrods: To obtain proper rocker arm geometry, pushrod length will need to be determined by using an adjustable checking pushrod. For info regarding on how to check for proper pushrod length, refer to World Products Tech Sheet **WPP-TB1**.

Rocker Arms: S/R heads utilize a standard offset rocker designed for the Small Block Chevy.

Special Note: When using rocker arms greater than a 1.5 ratio, it may be necessary to elongate the pushrod guide holes in the cylinder head.

Rocker Arm Studs: -1 & -2 Cylinder heads use a 3/8 rocker arm stud. Replacement part # 830475

Combustion Chamber Volume: 67 or 76 cc. See cylinder head part number list for chamber size.

Intake Runners: 170 cc

Head Bolts: ARP bolts 134-3601

Head Studs: ARP studs 134-4001

Head Gaskets: Fel Pro 7733PT-2 or Fel Pro 1003. If steam holes are needed for 400 engines, use a 1014 gasket.

Note: S/R cylinder heads are not drilled for steam holes. If steam holes are desired, it is necessary to drill six 1/8 steam holes. To drill, invert the cylinder head with the deck side up. Using a head gasket as a template, center punch the head where the steam holes will be drilled. The three steam holes closest to the intake side of the head must be drilled at a 30 degree angle toward the exhaust side of the head. The remaining three steam holes that are closest to the exhaust side will be drilled straight down.

(over)

Intake Gaskets: Fel Pro 1204, 1256 or equivalent

Head Gaskets: Fel Pro 7733PT-2 or Fel Pro 1003. If steam holes are needed for 400 engines, use a 1014 gasket.

Spark Plugs: S/R heads use a 5/8 reach plug such as an Accell 276 or equivalent

Emissions:

To activate for emissions, the cylinder head will need to be disassembled, then you will need a 6 inch long, ¼ diameter drill bit to drill through the heat crossover passage (found in the center of the intake flange) to the exhaust bowl. When the crossover passage is drilled, this activates EGR operation making this head an emission legal direct replacement for the following GM part numbers:

World part # 043600 replaces the following GM parts: 333882, 460703, 462624, 468642, 3911032, 3927186, 3927187, 3932141, 3946813, 3947041, 3970126, 3973414, 3973493, 3974387, 3981598, 3986339, 3998920, 3998991, 3998993, 3998997, 14020516, 14020517, 14020556, 1407114 & 14079261

World part # 043610 replaces the following GM parts: 3795896, 3814482, 3827185, 3884520, 3890462, 3911032, 3917290, 3917291, 3927186, 3932441, 3946813, 3973370 & 3998993

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. Refer to the World Products Tech Sheet **WPP-TB1** for info regarding 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. Once everything has been checked and all the desired clearances and specifications achieved, final assembly may begin.
5. 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 broke in, reinstall the inner valve spring.

Head Bolt Torque Specs:

Torque all head bolts to 65 ft. lbs. Before torquing, coat the head bolts and rocker studs with a thread sealing paste available from ARP.

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

Rocker Arm Studs: 50 ft. lbs.

Machine Shop Specs:

Note: Specs are for reference only. **Always** measure before machining.

Maximum Valve Diameter: 2.02 Intake & 1.600 Exhaust

Maximum Spring Seat Depth: Spring seat is cut to accept a 1.440 spring. **IT IS NOT RECOMMENDED TO CUT THE SPRING SEAT DEEPER OR OR TO ENLARGE THE SEAT FOR A SPRING DIAMETER OVER 1.550.**

Maximum Spring Diameter: 1.550

Maximum Flat Mill: .020

Approximate Milling Guidelines: .007 per lcc

Brackets and Accessories:

1. The S/R heads have accessory bolt holes drilled in the factory locations and seven exhaust boltholes for use with newer style factory exhaust manifolds.
2. The S/R heads (043600 & 043640 series) are drilled to accept either perimeter bolt valve cover or center bolt valve cover. However, because of the larger diameter of the valve springs used on –2 heads, there may be interference with the bolt supports when using centerbolt valve covers. It is **Highly Recommended** to use the perimeter bolt style valve cover to eliminate clearance issues.
3. Before installing center bolt valve covers, the perimeter bolt valve cover bosses must be machined down on the **inside** of the valve cover rail. **DO NOT MACHINE THE VALVE COVER RAIL!** The two valve cover mounting bosses on the intake side must be machined .220 down from the valve cover rail & the bosses on the exhaust side of the rail must be machined down to a depth of .180.
4. The temperature sensor hole on the S/R cylinder heads is 3/8 NPT. Some applications require the use of a temperature sensor with a ½ NPT thread. If this is the case, the S/R cylinder head will need to be drilled and tapped for ½ NPT. **This procedure MUST be done prior to installation.**

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