



# S/R & S/R TORQUER CYLINDER HEADS

## Iron SBC Specifications and Instructions

Technical instructions for assembled & bare head part numbers:

<b>S/R</b>	
043600	Bare, straight plug, 76cc chamber
043600 - 1	Hydraulic flat tappet camshaft, straight plug, 76cc chamber
043610	Bare, straight plug, 67cc chamber
043610 - 1	Hydraulic flat tappet camshaft, straight plug, 67cc chamber
043640	Bare, straight plug, 76cc chamber, (1987 & later intake face, center bolt valve covers only)
043640 - 1	Hydraulic flat tappet camshaft, straight plug, 76cc chamber
043650	Bare, straight plug, 67cc chamber, (1987 & later intake face, center bolt valve covers only)
043650 - 1	Hydraulic flat tappet camshaft, straight plug, 67cc chamber
042650	Bare, straight plug, 58cc chamber (305 Chevy replacement)
042650 - 1	Hydraulic flat tappet camshaft, straight plug, 58cc chamber (305 Chevy replacement)
042750	Bare, straight plug, 58cc chamber (305 Chevy replacement with 1987 & later intake face)
042750 - 1	Hydraulic flat tappet camshaft, straight plug, 58cc chamber (305 Chevy replacement with 1987 & later intake face)
<b>S/R TORQUER</b>	
042660	Bare, straight plug, 67cc chamber
042660 - 1	Hydraulic flat tappet camshaft, straight plug, 67cc chamber
042670	Bare, straight plug, 76cc chamber
042670 - 1	Hydraulic flat tappet camshaft, straight plug, 76cc chamber
042770	Bare, straight plug, 76cc chamber (1987 & later intake face)
042770 - 1	Hydraulic flat tappet camshaft, straight plug, 76 cc chamber (1987 & later intake face)

### Specifications:

**Valves: FOR HEAD PART #'s:** 043600-1, 043610-1, 043640-1, 043650-1, 042650-1, AND 042750-1:

1.940 Int. Replacement part # 830590

1.500 Exh. Replacement part # 830592

**FOR HEAD PART #'s:** 042660-1, 042670-1, AND 042770-1:

2.02 Int. Replacement part # 830591

1.60 Exh. Replacement part # 830593

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

**Valve Seals:** -1 Heads use an umbrella seal. Replacement part # 830405

**Valve Springs & Retainers:** -1 Heads use a 1.250 dia. spring. Seat pressure 100 lbs. @ 1.810 Part # 830105. Retainer part # 830210.

**Pushrod Guide Plates:** All 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 plate being used. Example: If the plate 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 plates, hardened pushrods MUST be used. The plates MUST be adjusted to obtain proper rocker/ valve tip alignment.

**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:** All S/R heads utilize a standard 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 Cylinder heads use a 3/8 rocker arm stud. Replacement part # 830475

**Combustion Chamber Volume:** 58cc, 67cc or 76cc. See cylinder head part number list for chamber size.

**Intake Runners:** 170cc

**Head Bolts:** ARP bolts 134-3601

**Head Studs:** ARP studs 134-4001

**Head Gaskets:** Fel Pro 1003. If steam holes are needed for 400 engines, use a 1014 gasket. NOTE: All 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.

**Intake Gaskets:** Mr. Gasket 5821 or equivalent

**Spark Plugs:** All S/R heads use a .460 reach, 5/8 hex plug such as an Accel 276 or equivalent.

**Emissions:** To activate for emissions, the cylinder head will need to be disassembled, then you will need a 6 inch long, 1/4 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 part #'s:** 333882, 460703, 462624, 468642, 3911032, 3927186, 3927187, 3932141, 3946813, 3947041, 3970126, 3973414, 3973493, 3974387, 3981598, 3986339, 3998920, 3998991, 3998993, 3998997, 14020516, 14020517, 14020556, 14071114 & 14079261.

**World part # 043610 replaces the following GM part #'s:** 3795896, 3814482, 3827185, 3884520, 3890462, 3911032, 3917290, 3917291, 3927186, 3932441, 3946813, 3973370 & 3998993 When the exhaust crossover passage is drilled, this activates EGR operation making these heads 50 State emissions legal under E.O. # D-343-1. The included exemption sticker MUST by law be placed next to your vehicle's emission sticker.

### 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.

**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:** Torque all head bolts to 75 ft. lbs. Before torquing, coat the head bolts and rocker studs with a thread sealing paste.

**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. REMEMBER: MEASURE TWICE, CUT ONCE.

**Maximum Valve Diameter:** 2.02 Intake & 1.600 Exhaust

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

**Maximum Spring Diameter:** 1.550

**Maximum Flat Mill:** .020

**Approximate Milling Guidelines:** .007 per 1cc

**Brackets and Accessories:**

1. ALL S/R heads have accessory bolt holes drilled in the factory locations and seven exhaust bolt holes 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. 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 1/2 NPT thread. If this is the case, the S/R cylinder head will need to be drilled and tapped for 1/2 NPT. This procedure MUST be done prior to installation.

**WARRANTY TERMS:**

World Products Inc. (World) manufactures parts to meet QS 9000 specifications. In addition, all parts go through several inspection procedures before shipping. However, YOU ARE THE FINAL INSPECTOR. Please note: Inspect all parts before doing any machine work or assembly. Remember the saying "measure twice and cut once." If any defects are found or suspected, call World before proceeding. World will replace or repair at its option any defective part which has not been modified or misused within one year of INVOICE purchase date. Any modification or marine use of parts will void all warranties.

WORLD MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, REGARDING PARTS. THIS WARRANTY IS EXCLUSIVE AND IT IS EXPRESSLY MADE IN LIEU OF, AND WORLD HEREBY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED, IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.

World's sole and exclusive obligation and liability with respect to parts sold is expressly limited to repair or replacement, at World's option, of parts. In no event will World be liable for any claim of any kind for direct or indirect incidental, consequential or special damages, whether known or unknown, including without limitation, cost of labor, installation, disassembly, lost revenues and profits, loss of property, production, or injury to persons and/or property. The maximum liability of World for any and all damages with respect to any part is limited to an amount not to exceed the original purchase price of the part. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. DO NOT CALL THE DEALER FROM WHICH YOU PURCHASED YOUR PARTS. If you have any questions, please contact Customer Service, World Products 631-981-1918 (Fax 631-734-0467).

**WARRANTY CLAIMS:**

Contact Customer Service to obtain a Return Material Authorization number directly from World Products for any warranty return. DO NOT CONTACT YOUR DEALER. DO NOT RETURN PARTS WITHOUT AUTHORIZATION. Returned product must be shipped prepaid. Collect shipments will be refused. Returned parts must have RMA number on the outside of the package, a copy of original bill of sale inside and a written explanation of the suspected defect. If the item is found defective, World Products will repair or replace it at its discretion and return it freight prepaid. No additional labor claims will be paid. There will be no exceptions to this rule.

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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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