



SPORTSMAN II CYLINDER HEADS

Iron SBC Specifications and Instructions

Technical instructions for assembled & bare head part numbers:

011150	Bare, angle plug, 64cc chamber
011150 - 1	Hydraulic flat tappet camshaft, angle plug, 64cc chamber
011150 - 2	Mechanical flat tappet, hydraulic roller angle plug, 64cc chamber
011250	Bare, straight plug, 64cc chamber
011250 - 1	Hydraulic flat tappet camshaft, straight plug, 64cc chamber
011250 - 2	Mechanical flat tappet, hydraulic roller, straight plug, 64cc chamber
012150	Bare, angle plug, 72cc chamber
012150 - 1	Hydraulic flat tappet camshaft, angle plug, 72cc chamber
012150 - 2	Mechanical flat tappet, hydraulic roller, angle plug, 72cc chamber
012250	Bare, straight plug, 72cc chamber
012250 - 1	Hydraulic flat tappet camshaft, straight plug, 72cc chamber
012250 - 2	Mechanical flat tappet, hydraulic roller, straight plug, 72cc chamber

Specifications:

Valves: 2.02 Int. Replacement part # 830591 (For -1 Heads)
1.60 Exh. Replacement part # 830593 (For -1 Heads)
2.02 Int. Replacement part # 830605 (For -2 Heads)
1.60 Exh. Replacement part # 830615 (For -2 Heads)

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

Valve Seals: -1 & -2 Heads use an umbrella seal. Replacement part # 830405

Valve Springs & Retainers:

-1 Heads use a 1.250 diameter spring. Seat pressure 100 lbs. @ 1.810 Replacement part # 830105. Retainer part # 830210

-2 Heads use a 1.437 diameter spring. Seat pressure 125 lbs. @ 1.810 Replacement part # 830110. Retainer part # 830225

Pushrod Guide Plates: Replacement part # 830450. NOTE: Hardened pushrods MUST be used with guideplates. The plates MUST be adjusted to obtain proper rocker/ valve tip alignment.

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

Rocker Arms: Sportsman II 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: 64cc or 72cc. See cylinder head part number list for chamber size.

Intake Runners: 200cc

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: Sportsman II 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 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

Header Gaskets: Fel Pro 1404 or equivalent

Spark Plugs: Sportsman II heads: .460 reach, 5/8 hex plug, Accel 276. Sportsman II heads with angle plugs: Accel 276S for more clearance.

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 exhaust crossover passage is drilled, this activates EGR operation making this head 50 State emissions legal under E.O. # D-343-1. Then the included exemption sticker MUST be by law be placed next to your vehicle's emission sticker.

Before Final Assembly:

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. At this time install the cylinder head to the block with no head gasket and snug the bolts.

1. 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 head, grind the casting the needed amount. Clean the head after grinding then reinstall the head using the mock up procedure and recheck the clearance. Repeat the procedure as necessary until the desired clearance is achieved.
2. Once everything has been checked and all the desired clearances and specifications achieved, final assembly may begin.
3. 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.

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: 55 ft. lbs.

Machine Shop Specs:

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

Maximum Valve Diameter: 2.100 Intake & 1.625 Exhaust.

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

Maximum Spring Diameter: 1.550

Maximum Flat Mill: .040

Maximum Angle Mill: .175

Approximate Milling Guidelines: .0065 per 1cc

Brackets and Accessories:

1. The Sportsman II heads have accessory boltholes drilled in the factory locations.
2. The heads are drilled to accept either perimeter bolt valve cover or center bolt valve cover. However, because 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. When using Sportsman II heads with the angle plug location, it is best to use an exhaust header designed for angle plugs.

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.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

ALL SALES FOB RONKONKOMA, NEW YORK

WORLD PRODUCTS

51 Trade Zone Court · Ronkonkoma, NY 11779

(631) 981-1918 · Fax (631) 981-1712

www.worldcastings.com

WPL-1020

Rev 1/08