



# WARHAWK LS1X/LS7X CYLINDER HEADS

## Aluminum LS Chevrolet Specifications and Instructions

Technical instructions for assembled and bare head numbers:

### LS1X 15°

025150	Warhawk LS1X 235cc runner, 64cc chamber bare casting
025150 - 2	Warhawk LS1X 235cc runner, 64cc chamber flat tap or hyd. roller, 1.437 dual spring assembly
025150 - 3	Warhawk LS1X 235cc runner, 64cc chamber solid roller, 1.550 dual spring assembly
025250	Warhawk LS1X 235cc runner, 72cc chamber bare casting
025250 - 2	Warhawk LS1X 235cc runner, 72cc chamber flat tap or hyd. roller, 1.437 dual spring assembly
025250 - 3	Warhawk LS1X 235cc runner, 72cc chamber solid/roller, 1.550 dual spring assembly

### LS7X 12°

025350	Warhawk LS7X 285cc runner, 64cc chamber bare casting
025350 - 2	Warhawk LS7X 285cc runner, 64cc chamber flat tap or hyd. roller, 1.437 dual spring assembly
025350 - 3	Warhawk LS7X 285cc runner, 64cc chamber solid roller, 1.550 dual spring assembly
025400	Warhawk LS7X 285cc runner, 72cc chamber bare casting
025400 - 2	Warhawk LS7X 285cc runner, 72cc chamber flat tap or hyd. roller, 1.437 dual spring assembly
025400 - 3	Warhawk LS7X 285cc runner, 72cc chamber solid roller, 1.550 dual spring assembly

### Specifications:

#### Valves:

**LS1X:** 2.080 Intake, 5.300 OAL, 5/16, Racemaster, -2 replacement # 830500. -3 Severe Duty replacement # 830501.  
1.600 Exhaust, 5.330 OAL, 5/16, Racemaster, -2 replacement # 830510. -3 Severe Duty replacement # 830511.

**LS7X:** 2.250 Intake, 5.500 OAL, 5/16, Severe Duty, -2 & -3 replacement # 830505.  
1.625 Exhaust, 5.530 OAL, 5/16, Severe Duty, -2 & -3 replacement # 830515.

**Valve Locks:** 7° World # 830303 (-2 head), 10° World # 830304 (-3 head)

**Valve Seals:** 5/16 Umbrella type, World # 830403, (-2 head) 5/16 PC type, World # 830408 (-3 head)

#### Valve Springs & Retainers:

-2 Heads use a 1.437 diameter spring. Seat pressure 125 lbs. @ 1.825 Replacement part # 830110.

Retainer part # 830235

-3 Heads use a 1.550 diameter spring. Seat pressure 200 lbs. @ 1.950 Replacement part # 830115.

Retainer part # 830235.

**Valve Guides:** Intake: .3125, (+.0003, -.0000) Clearance, .0012-.0021.

Exhaust: .3130, (+.0003, -.0000) Clearance, .0017-.0026.

**Pushrod Guide Plates:** None

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

**Rocker Arms:** All OE and OE compatible designs

**Rocker Arm Studs:** None

**Combustion Chamber Volume:** LS1X and LS7X: 64 or 72cc.

**Intake Runners:** LS1X: 235cc, LS7X: 285cc.

#### Head Studs:

LS1X: World part # 832560 / 9.240 deck Warhawk block. Part # 832563 / 9.800 deck Warhawk block LS7X: Same as above with OPTIONAL additional stud kit for six stud attachment, part # 832561 / 9.240 deck Warhawk block. Part # 832564 / 9.800 deck Warhawk block. These are optional for Warhawk 6-bolt per cylinder attachment.

**Head Gaskets:** (025150 - 025250) OE standard for application. (025350 - 025400) FelPro # 1185

**Intake Gaskets:** OE standard for application

**Header Gaskets:** OE standard for application

**Spark Plugs:** Tapered seat, .750 reach, range depending on builder preference. Accel # P526S

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

### 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. 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 Warhawk LS7X 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.

**ATTENTION:**

THE EXHAUST, VALVE COVER, INTAKE AND ROCKER BOLTS MAY NEED SEALER APPLIED TO THEM AS SOME OF THEM MAYGO INTO WATER.

**Head Bolt 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.

**Machine Shop Specs:**

**Note:** Specs are for reference only. ALWAYS measure before machining. REMEMBER: MEASURE TWICE, CUT ONCE.

**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:** LS1X: 1.560 Int. / Exh. LS7X: 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 .005 - .007 per 1cc.

**Brackets and Accessories:** Warhawk heads have accessory bolt holes drilled in the factory locations.

**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.

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**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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