

# 2016+ CAMARO SS

## HEADER INSTALLATION INSTRUCTIONS

Thanks for purchasing a Stainless Works Header system for your 2016+ Camaro SS. We have gone to great pains to make sure that our exhaust systems fit and sound great. Please follow these steps to ensure that your installation goes as planned. Stainless Works offers header systems with tailpipes which either contain valve deletes (mounting plates to attach servo motors in place of AFM valves in the tailpipes) or actual AFM valves, depending on which system you purchased.

If your car came with valves, the electrical motors are to be removed from the OEM tailpipes and mounted onto the Stainless Works valves (or valve deletes). If your car did not originally have provisions for valves and associated wiring, the valve deletes will not be utilized.

**a.** Stainless Works recommends the use of Hi-Temp RTV sensor safe silicon gasket maker as an option or in conjunction with the use of factory gaskets. The recommended Oxygen Sensor Safe RTV is either Valco All-in-One Aluminum or Permatex Copper P/N 101BR available at NAPA, Autozone and other retailers.

**b.** Disconnect the battery before starting work on the exhaust system for your vehicle. Reconnect the battery when the job is completed.

**c.** Your exhaust system can be installed by a weekend warrior but the use of a lift is recommended for ease of installation. If using a jack, the vehicle must be placed on a level hard surface and jack stands are required for safety reasons.

**d.** You will assemble the components together as specified below, but only snug the clamps as you move along from front to back. When placing the X-pipe into position, make certain that you push it fully forward and level it with the vehicle. After aligning all the components in the vehicle, you will tighten all the clamps working from front to back of the vehicle.



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Detail a

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### DISASSEMBLY

- 1.** Remove (2) 10mm nuts from right side 2-bolt flange after the primary catalytic converter and loosen the clamp on left side of the OEM exhaust system.
- 2.** Disconnect the exhaust valve electrical connectors (if there are any) in the tailpipes and tips.
- 3.** Disconnect and remove all (4) O2 sensors.
- 4.** Remove the exhaust from the rubber hangers. Remove (4) 10mm nuts, (2) per side, from the hanger to the car.
- 5.** Remove (5) 8mm bolts from the cross brace in the middle of the car.
- 6.** Remove exhaust from car.
- 7.** Remove (2) 8mm nuts and (2) 8mm bolts from the catalytic converter to the transmission bracket and remove.
- 8.** Remove (8) 10mm nuts (4 per side) from the catalytic converters to the manifolds and remove the catalytic converter pipes.
- 9.** Remove (4) 6mm bolts, (2) screws and (1) push clip from front the plastic valance to the aluminum sub frame under the engine. ZL1 models will have (13) screws and (6) 6mm bolts with (1) push clip.



Detail 7



Detail 9

#### 10.

Remove right and left splash shields (3) 6mm bolts, (2) screws and (1) push clip from each side and remove the shields.

#### 11.

Remove (12) 10mm bolts and (2) 10mm nuts from the aluminum sub frame and remove it. It needs to be lower in the rear so it will actually unhook from the tab on the front.

#### 12.

Mark steering shaft and remove (2) 8mm bolts from the steering shaft and remove it. Marking the shaft will assure that it is reinstalled the exact same way.

#### 13.

Unplug the mass air flow sensor, loosen the hose clamp on the air inlet tube and remove the air box (it will just pop out of the grommets in the body).

#### 14.

Unbolt (1) 6mm nut from coolant overflow tank. Either drain the tank or pinch off the hoses and disconnect and remove the overflow tank.

#### 15.

On the passenger side, remove the plastic cover on the engine that says "CAMARO" (not on ZL1 models).

#### 16.

Disconnect the valve cover vent hose by pushing in the gray release and gently pulling up on the hose.

#### 17.

Unbolt (2) screws from the passenger side coil cover and remove.

#### 18.

Remove spark plug wires and the plugs.

#### 19.

Remove (6) 6mm bolts from the driver side manifold heat shields and remove.

#### 20.

Remove (5) 6mm bolts from the passenger side manifold.

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**21.**  
Remove (5) 8mm bolts from driver side manifold and remove the manifold and lower it out of engine bay.

**22.**  
Unbolt (1) 6mm bolt for the dipstick tube (Dipstick tube needs to be removed with manifold.)

**23.**  
Remove (5) 8mm bolts from the passenger side manifold and remove the dipstick tube and the manifold. The manifold comes out of the top of the engine bay.

**24.**  
Install 12" long driver side front O2 extension at this time, P/N 105652 into the collector O2 wiring.

**25.**  
Support engine and remove the loom clamp (1) 6mm bolt from the passenger side engine mount.

**26.**  
Remove (5) 10mm bolts from passenger side engine mount. (3 Bolts hold it to engine and (2) bolts hold it to the frame).

**27.**  
Raise the engine and remove the mount. It will take some bit of manipulation to get it out.



*Detail 25*



*Detail 26*

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### ASSEMBLY

**28.**  
Run a small bead (3/16" – 1/4" dia.) around the exhaust ports and install the headers from bottom using 8 mm bolts supplies (5) per side, and tighten to OEM specs.

**29.**  
Reinstall the dipstick tube.

**30.**  
Reinstall the engine mount and lower the engine.

**31.**  
Reinstall all other components removed at this time. For the middle cross brace, (5) 1/4" thick SS spacers are supplied if needed to assure adequate clearance to the larger exhaust.

**32.**  
Install the 24" long rear O2 extensions to both sides, P/N 105653.

**33.**  
Install the catalytic converters or off road pipes onto the header collectors using (2) 3" clamps.

**34.**  
Install the lead pipes onto the catalytic converters or off road pipes using (2) 3" clamps.

**35.**  
Reinstall the (4) O2 sensors and secure the wires out of the way of the exhaust.

**36.**  
Install the X-pipe using (2) 3" clamps. Push it all the way forward and make it level in the tunnel.



*Detail 34*



*Detail 36*

#### 37.

Install tailpipes using (2) 3" clamps and reinstall valve electrical motors (if provided on the car originally) onto the valves (or valve deletes). When purchasing a Stainless Works system with valve deletes on a car originally having valves, the electrical motors need to be bolted on the new exhaust system so they are grounded and do not throw a Check Engine Light (CEL).

#### 38.

To connect the valve wires back up to the electrical motors, the wires must be extended by removing them from the looms holding them to the chassis.

#### 39.

If connecting to the factory muffler you must use the 6" long tube adaptors (included) and (2) 3" clamps and (2) 2-3/4" clamps. If connecting up to a Performance Connect Stainless Works axleback, the adaptors and 2-3/4" dia. clamps are not needed.

#### 40.

##### **IF USING THE FACTORY MUFFLER:**

On the floor measure and mark the factory exhaust pipes 9" forward of the muffler.

#### 41.

##### **IF USING THE FACTORY MUFFLER:**

Deburr the cut tubes on the muffler assemblies and reinstall the muffler. The inlets may have to be rounded up with a table vice or large vice grip to allow them to slip into the tailpipes.

#### 42.

If connecting to the Stainless Works Performance Connect mufflers, no adaptors are used and you shall simply install the mufflers using (2) 3" clamps. (See Axleback Installation Instructions.)



*Detail 40*



*Detail 41*

#### 43.

Align the system components and only snug all of the clamps. Make certain that the hangers at the end of the exhaust have at least  $\frac{3}{4}$ " of clearance to the bumper and anything toward the back of the car. The exhaust will grow over  $\frac{1}{2}$ " in length and can possibly damage the bumper. If the end of the hangers are too close to the bumper, then you must make sure that you have everything pushed forward onto the slip fit joints more fully, starting with the converters or offroad pipes after the headers.

#### 44.

Tighten all of the clamps.

#### 45.

Reconnect the battery.

#### 46.

Be sure to have adequate clearance around all wires, hoses and lines. If anything is in contact with the exhaust system, it will melt. Make sure to have at least  $\frac{1}{2}$ " of clearance and wrap any suspect areas with DEI thermal barrier wrap.

#### 47.

After double checking for clearance and making sure all lines, wires and hoses are secured, drive the car for 10-20 miles and re-check all clamps and clearances. Your system may be tack welded at the joints/ clamps to reduce shifting of the system during heating and cooling cycles. Make certain to disconnect the battery before performing any welding.