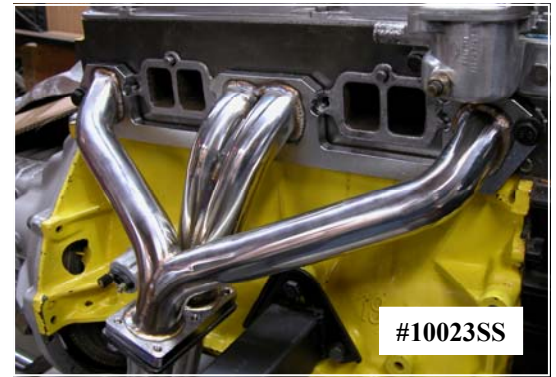


Opel Shorty Header: Notes and Views

Opel GT Source's hottest new product is a "Shorty" style exhaust header, which was specially designed to reduce heat, while improving drivability and performance of classic Opels.

The following notes will help explain why the Shorty header is now a necessary upgrade, and why it may also be the perfect Opel "gift" (*for yourself, or for any occasion*).



Why buy a Shorty Header?

The "Shorty" header design eliminates the square upper "hot spot" beneath the intake manifold. This greatly reduces exhaust heat radiation which causes fuel boiling and other drivability issues occurring within your carburetor (due to ethanol in gasoline).

The "Shorty" header also provides advantages previously available only in longer-tube header designs.

The cylinder head flange features individual ports to each of the 4 cylinders and provides separate and divided runner tubes from each cylinder until they near the bottom flange. This greatly reduces interference in exhaust pressure between cylinders, which helps your Opel engine "breathe" much better (and also run cooler as well)!

The "Shorty" style header provides a unique 4-2-1 "tri-y" exhaust system configuration, which is the best design for improvements in torque output during low-RPM driving (which is the most common street use of classic Opels).

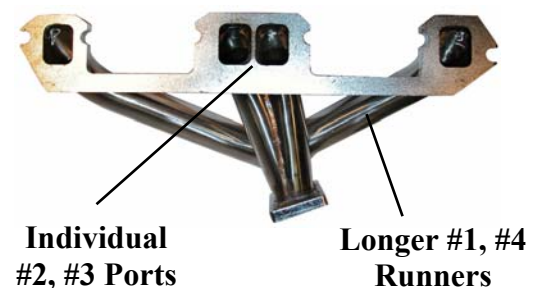
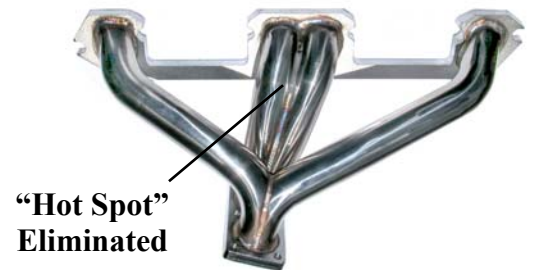
The "Shorty" header is strong but light, (6 lbs), less than 1/2 of original cast exhaust manifolds, reducing weight and vibration.

Installation Notes

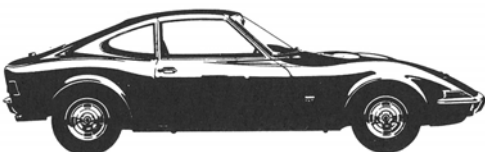
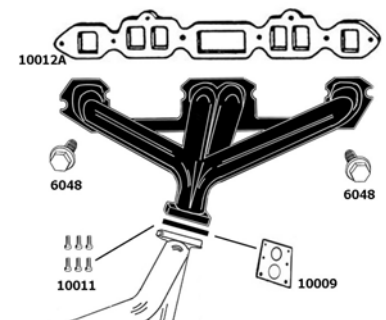
The OGTS "Shorty" style header will fit all Opel 1.9L models, including Opel GT, Manta, Ascona, and Kadett.

This is because its design replicates the dimensions and angles of the original exhaust manifold.

Using available OGTS parts and our supplied "tech notes," our Shorty header is a true "bolt-on" design that you can install at home.



Installation Hardware



Opel Shorty Header: Notes and Views

Original Compatibility

As mentioned, the Shorty header will fit all Opel GT, Manta, Ascona and Kadett models equipped with 1.9 engines.

A photo at right illustrates installation with an original intake.



Performance Applications

In addition to everyday street driving, the Shorty header can also be installed as a performance item.

Opel GT Source manufactured this header to also help provide a low-priced option for Kadett B and Manta A, Ascona A, and Wagon owners who wish to upgrade their vehicle performance (without having to resort to costly vintage-aftermarket or custom-made headers).

The “Shorty” header will also fit on all European Opel 2.0, 2.2 and 2.4L CIH engines (when the vehicle is equipped with a standard-sized exhaust flange on the head pipe).

It also accommodates original-design Opel fuel injection intake manifolds, as well as the special OGTS #9096 “Angled” side draft intake manifold design. (*The OGTS #9072 “MIDI-Kit” will also fit, with some modifications*). Research and development into additional Opel SSD/DSD configurations will also continue as well.



Customer Reviews

We have received responses from very happy Opel GT Source customers who have received and installed the “Shorty” header.

They compliment their classic Opel’s improved drivability, particularly on warm days when idling at stoplights, and greater ease when restarting a car (after it has been parked for a few minutes).

We’ve also heard observations of improvements in performance, including climbing hills and passing acceleration.

Perhaps the most noticeable improvement is appreciation for an improved “tone” of their underhood and exhaust pipe sound, with note of a stronger “pulsation” heard and felt at the rear resonator of classic Opels.



OGTS #10023SS Shorty Header Tech Notes

Preparation

Prepare in advance, by spraying the 6 bolts which connect the exhaust pipe to the bottom of the exhaust manifold, and the 4 vertical bolts which connect the intake manifold to the exhaust manifold, with WD-40, PB Blaster, Kroil, or a similar penetrating spray. Repeat this step a few times a day, over 2 or 3 days, to give the chemicals time to “creep,” which increases the chances of easier removal of your bolts.

Manifold removal steps

1. Disconnect battery
2. Remove air cleaner
3. Disconnect throttle linkage at carburetor
Note: Remove wire clip retainer from the round socket, then use a flat-tip screwdriver to lever the round socket from the ball on carb linkage. (On Manta/1900 models, also disconnect the throttle cable end from pulley)
4. Disconnect vacuum advance hose at carburetor
5. Remove fuel line at carburetor, and plug the open end.
6. Remove hoses connected to valve cover
7. Remove thick hose which leads to the brake vacuum booster
8. On 1973-1974 Opels, disconnect EGR lines (if they are present).

Options for Intake Manifold separation

(1) You can unbolt the intake manifold while it is in place on the car. To do this, use a short-handled 12mm or 13mm wrench to remove the 4 nuts that secure the carburetor to the manifold, then remove the carburetor.

You then will need to remove the 4 intake manifold “serrated bit” connecting bolts (to the exhaust). On these, clean dirt and rust from interior section of each of the 4 bolt heads with a screwdriver tip.

Seat a 8mm serrated bit tool* in the bolt head:

A good idea is to start it, then tap it into place.

Use a ratchet and try turning the bit a little to see if bolt will move:

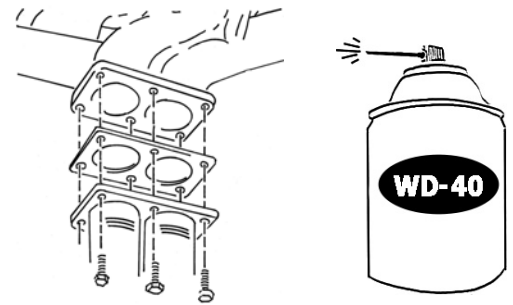
If it moves, work it back-and-forth slowly, to loosen corrosion from the threads, before removing bolt completely.

If a bolt won't move, or becomes stripped, its head can be drilled off. If a bolt breaks in the middle the manifold can still be lifted off and re-used (the bolts aren't needed with a header).

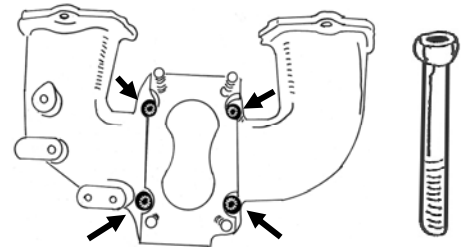
After removal, place rags in the top of the exhaust manifold, to prevent bolts from falling in it.

(2) Or, you can also remove the complete manifold as a unit, then separate the intake from the exhaust off the car.

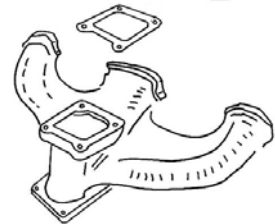
To do this, first disconnect the exhaust pipe (following notes on next page), then remove the six 15MM-head bolts which attach the manifold assembly to cylinder head.



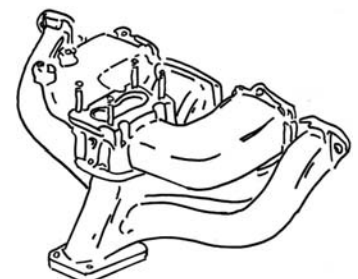
Prep bolts with penetrating liquids



Locations of 4 intake manifold connecting bolts (with 8mm “serrated bit” heads)



**OGTS #12013
(8mm bit tool)*



Disconnecting the Exhaust Pipe

Option #1:

The easiest way to do this, is to drive the car to a muffler shop. This is the preferable option, where a car has been exposed to damp or rainy climates, or if it has been parked outdoors for years.

There, a professional with a directional welding torch can heat up each of the 6 bolts which connect the head pipe to the bottom of the exhaust manifold, so that corrosion will not prevent the bolts from being removed.



Option #2:

If working at home, raise the car, and set the car securely on ramps (or on stands under the front end jacking points).

Use 13mm sockets** (6-point styles work best), a breaker bar, and extensions.

To work from the bottom, you may have to use u-joints or 13mm flex-head sockets to reach some of the inner bolts. Or you may reach around with a wrench from the top.

Go slowly, working a bolt to see if it will move 1/16th of a turn, "feeling" the metal for resistance, and carefully move it back-and-forth to loosen it up. Don't force out a bolt, instead be patient.

If a bolt will not move, consider cutting or grinding the head off (if you have sufficient access). Due to age, exposure and corrosion, there are bolts which will not move but will only break — if so, continue, by removing the other bolts.

(Once the exhaust manifold is removed from the car, a machinist can use a gas torch to remove any broken bolts, if you want to retain the original manifold)

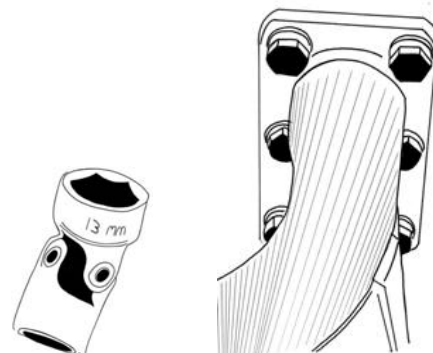
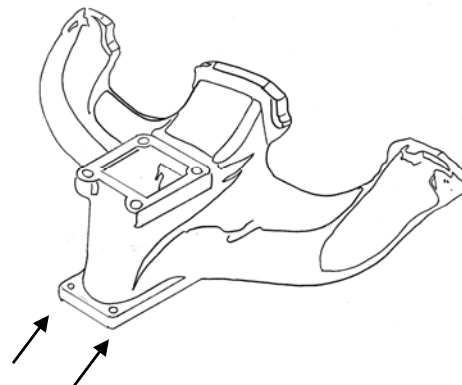
Carefully lower the front pipe, then remove the round rubber hangers supporting the rest of the exhaust system (at the middle and rear underbody of the car).

***Some replacement bolts here are more easily removed using 1/2" tools*

Disconnecting the Manifold from the Cylinder Head

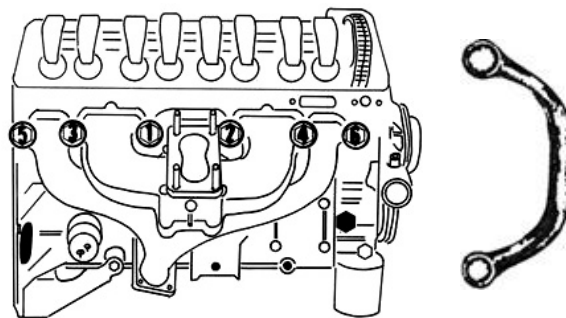
The outer 2 bolts are easily removed with a 15mm socket and ratchet.

The inner 4 bolts are best reached and turned using a "curved" or "s-shaped" 15mm "obstruction wrench."



"flex head"

Pipe Bolts



Access inner manifold to cylinder head bolts using a curved 15mm "obstruction" wrench
Torque sequence numbered in diagram: #1 to #6

Installation

Before installing parts, remove all traces of old gaskets and sealer. For safety, toss out old gasket pieces in sealed baggies. Clean surfaces of grease, using carburetor cleaner spray or another suitable solvent, so that new gaskets will adhere well.

Comparing the Intake Manifold

The shorty header is designed to work with original-design Opel intake manifolds and also with many aftermarket intake manifold designs. However, manufacturing variations and machining issues may require you to adjust or slightly alter the flange mount area for fitment.

Before installing, check the width of the flange of the engine-mounting surface of the intake manifold to verify it is about 7/16" and matches the width of the flange of the header. Also test the fit of the intake within the header flange and against the tubes. If there is an issue, consider adding thin shims at the mount bolt areas and/or slight machining (of aftermarket manifolds), to provide proper mounting and clearance.

Also consider cleaning the bolt holes and threads of your bolts using metric taps and dies. (Cylinder head holes use 9mm x 1.25 pitch, and lower exhaust manifold holes use a 8mm x 1.25 pitch). Make sure to correctly insert a tap (rotate counter-clockwise, until it seats) before fully starting and tapping a hole.

Installing the Header

For best results, handle the header only with clean hands or gloves.

Fit a new Opel header gasket onto the 2 dowel pins on the side of the cylinder head, then hold the header into position and start the 2 side bolts finger-tight into the head. Do not tighten bolts yet, instead mount manifold only loosely to the cylinder head.

When assembling the head pipe to the lower surface of the header, first remove the rubber "donut" hangers from the exhaust system (at the rear of the car), so you can more easily maneuver the pipe.

Place the rectangular gasket into position and insert 2 or 3 bolts only finger-tight. If a "side bracket" is to be installed, make sure it is in position as well (its lower bolt is mounted to a bolt on the side of the lower engine block). Re-check the fitment of the rectangular gasket (make sure holes are aligned), before adding the other bolts.

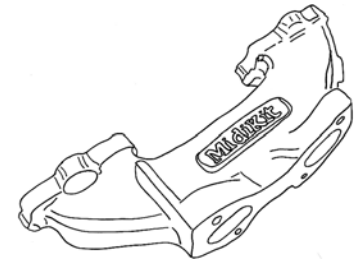
Note: Install the intake manifold (per steps described on next page) before torquing exhaust bolts into final position.

Clearance Note:

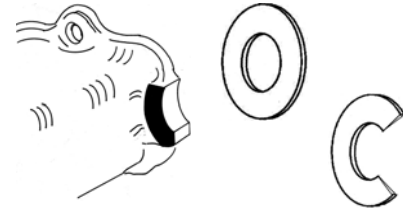
Note: The GT underhood area, in particular, is a snug area with the engine and drivetrain mounted in the car.

Bolts should only be inserted finger-tight, so you can maneuver the parts together, until you are ready for a final installation.

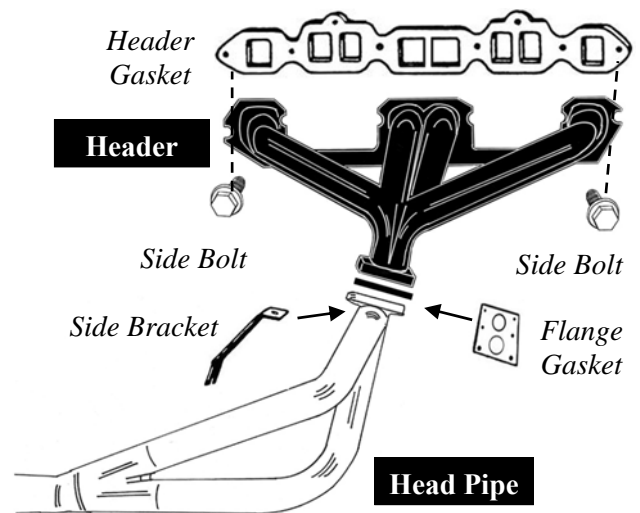
Only after the head pipe and header are bolted into place, should pipe fitment be checked (between the edge of the transmission's bellhousing and the edge of the underbody).



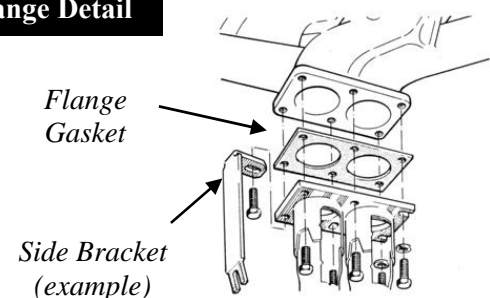
Verify fitment, when installing aftermarket manifolds



If necessary, create shims from ordinary washers, for even mounting



Flange Detail



Options for Intake Manifold installation

(1) You can bolt the intake manifold itself to the cylinder head, by holding the intake manifold in place, while starting each of the 4 center 15mm-head bolts (part #6048) into the head. (You can also consider adding “lock-tite” to bolt threads, if desired).

Once all 6 bolts are in place (including the 2 outer bolts which hold the header in place), then use a ratchet or a curved “obstruction wrench” to snug them in a cross-wise fashion. Start with the center 2 bolts, then tighten the outer 4 bolts. Factory specification for final torque is 33 foot pounds.

(2) Or, on original-style manifolds, you can assemble the hardware (carburetor, gasket(s), new intake studs, etc), then bolt the complete assembly to the cylinder head. This is also the best time to install new replacement parts (including a new #9017 Weber carburetor, #9004 and #9018 gaskets, plus a #9034W intake stud kit, a #9073 heat shield, or a #4041 vacuum booster hose), and perform maintenance as needed, to your intake manifold.

Refer to tech notes, such as diagrams within Opel GT Source catalogs, or those supplied with other related parts, for details on assembling hardware to the intake manifold.

Once an intake is complete, follow step (1) above to install.

Final Connection

Verify all bolts are tight, re-install the exhaust system hangers, and verify that the exhaust system is in proper position and has underbody clearance.

Variables that should also be checked include condition of the transmission and motor mounts, and correct orientation of their mounting brackets. Also monitor clearance fan blades within the fan shroud (if equipped). Hopefully, no alternations were made to the angles of the head pipe (usually by muffler shops), as that may require a re-weld for a precise fit.

Reinstall items #8 to #1, as listed in “Manifold Removal Steps” (EGR lines, brake booster hose, valve cover hoses, fuel line, vacuum advance hose to carb, throttle linkage to carb, air cleaner and battery).

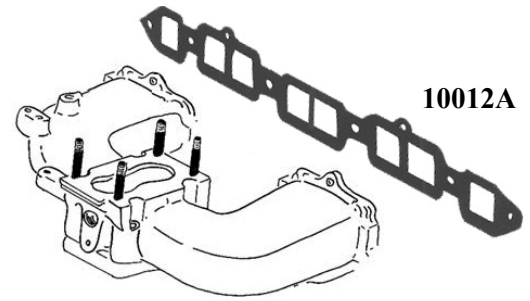
Start-Up

Start your vehicle and nudge and hold the accelerator pedal for the first 30 to 45 seconds, to allow the intake to warm up a bit, before the engine will continue on its own. Allow it to idle until it is warm. During this time, a short “burn off” at the pipes and gaskets will occur, this is expected and normal.

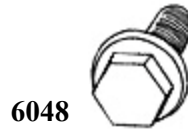
When you accelerate, you will notice a change in the tone and volume of your exhaust. This is based on improved flow characteristics of the new-design header into your exhaust system. Before finishing, recheck your work and re-adjust the tuning of your carburetor as needed.

On the road, you will also experience a decrease in issues when sitting at a warm idle, and should also experience easier re-starts (after a vehicle is parked for a few minutes). You can also consider up-grading the rest of your Opel’s exhaust system, using available Opel GT Source parts.

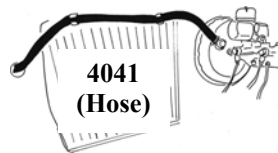
Enjoy your improved vehicle operation!



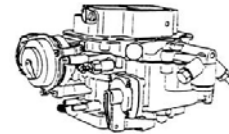
10012A



6048



4041
(Hose)



9017



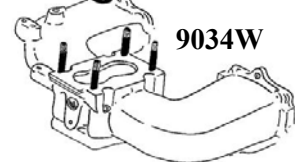
9004



9073

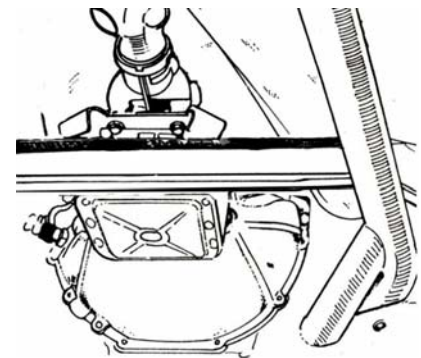


9018

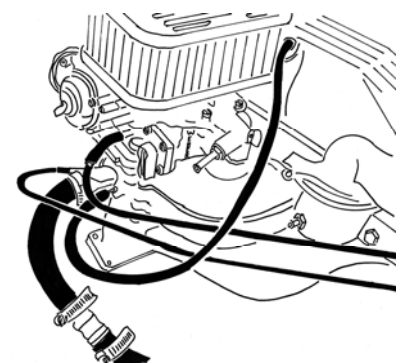


9034W

**Intake
Manifold
Hardware**



Clearance Area Detail



Installed View (typical)