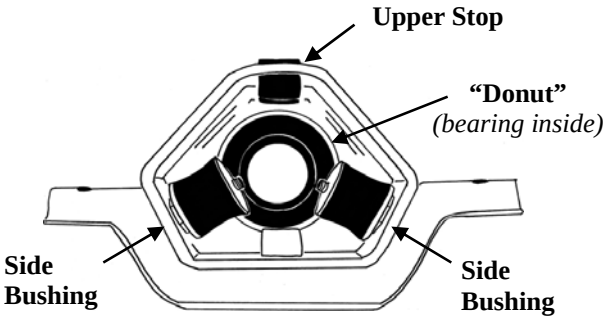
OPEL GT TECH NOTES: DRIVELINE

When a "thump" is heard and felt when accelerating, it's time to lift your car and have a close look at your Torque Tube assembly.

Components must be replaced when the "donut" develops deep cracks or when a bushing fails (such as when the rubber separates from its round metal end). Left unrepaired, metal fatigue can crack the bracket or allow wear on your pinion gear splines. Opel GT Source now offers a line of heavy-duty parts which can be installed for a more durable repair.



Torque Tube Assembly
(As seen from underside of car, looking forwards)

7006HD CENTER SUPPORT DAMPING RING
1.9L Torque tube donut, heavy duty stiffer style.
Cushions rear drive shaft in the center support assembly.

7008 CENTER SUPPORT BEARING
New Bearing fits inside the 1.9L torque tube donut in the center support assembly. Replacement helps achieve a thorough restoration of this critical joint. Comes with special installation instructions.

7010 UPPER STOP, HEAVY DUTY
Durable polyurethane replacement stop, to handle stress here. Once installed at inside top of bracket, it provides long-term service.

7011 U-JOINT LOCK PLATE
Replacement helps save your vulnerable rear u-joints from damage from overtorquing or loosening of the nuts. Two (2) required.

7018 PINION SEAL
Located between torque tube and rear differential.
Good item to replace when the torque tube is already removed.
Helps prevent failure of your valuable differential and axle bearings by controlling leakage of gear oil in the rear end.

7019 SUPPORT BUSHING, HEAVY DUTY
New. heavy-duty style, replaces the vulnerable original version. Two (2) required. New Opel parts. Also helps handle impacts from torque of higher-performance Opel drivetrain adaptations.

7035 BOLT
Torque tube to differential, allen head style.

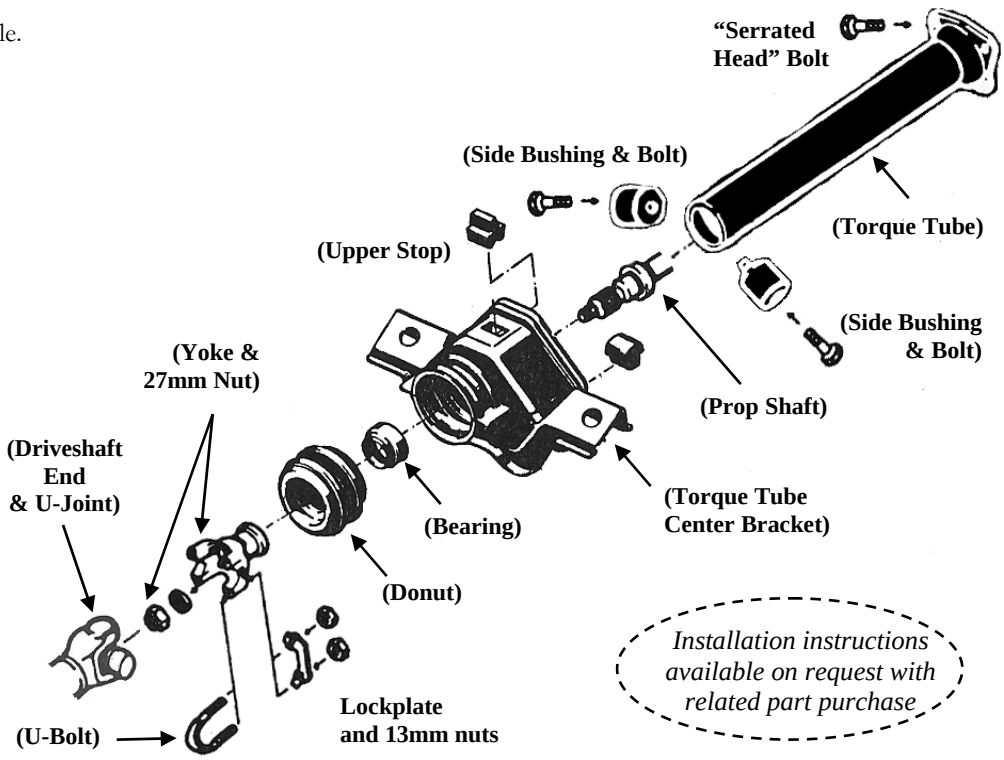
12013 SPECIAL TOOL
Unique bit, required to remove torque tube bolts (to rear axle).

Recommended Tools

Torque Tube Service is much easier when using these tools

#12013 Special Bit
Not a "Torx" style, but a 12-point bit used on torque tube bolts (to differential)

Seal Puller Tool
Use to remove pinion seal from differential



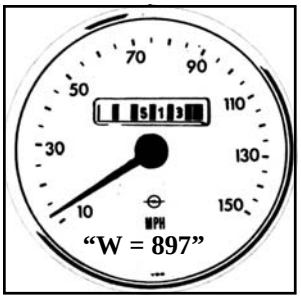
Installation instructions available on request with related part purchase

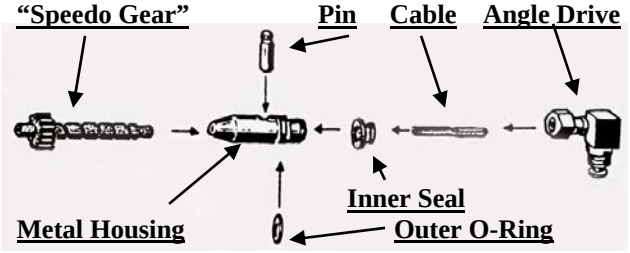
Opel Trans ID

Opel GT 4-Speed Transmission: "Early" Style 1968-1970:

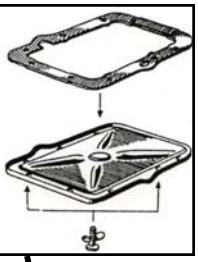
Speedometer face reads W=897 in lower center, on 1969-1970 GT's
(Note: Some early 1968-1969 speedometers, are marked on the rear only. Speedometers marked "W=1020" are calibrated for the 1.1 engine in the GT).

Driver's Side linkage pivot point is bolted to the transmission case
Clutch Return Spring is 4 1/2" long (connects around the reverse switch bracket)





Drain Pan
Remove to drain gear oil.
Ball/Spring pops out of Passenger side.



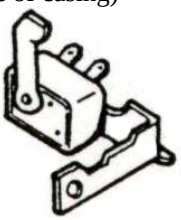
Speedometer Gear: Early Model (details above)

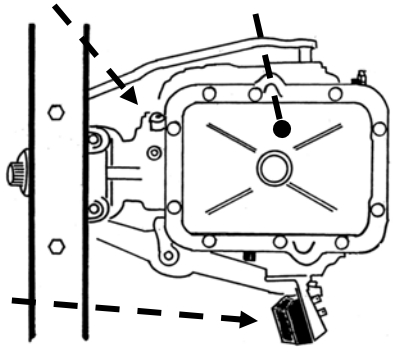
Located on passenger side of transmission
Speedometer Gear is plastic, and brown in color
(Note: Metal gear housing is held in with a metal pin. To remove, use a flat screwdriver blade to lever the head of that pin slowly straight away from casing, as the fragile head snaps off when twisted. Once the body is exposed, use smooth pliers to pull the rest of the body out. If stuck, use penetrating oil like WD40).

Speedometer cable attaches to gear via a metal "angle drive," which has a short internal cable piece (that can break).
The angle drive end can also loosen, causing the speedometer needle to "jump" up and down at speed on the road.

Replace inner seal & outer o-ring, when cable or "angle drive" leaks gear oil.

Reverse Switch
(Mounts on bracket, on driver's side of casing)

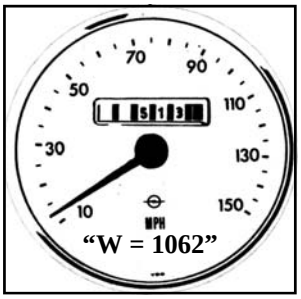




Opel GT 4-Speed Transmission: "Later" Style 1971-1973:

Speedometer face on 1971-1973 GT's reads W=1062 calibration
(Note: The "W=1062" calibrated speedometer was also originally installed on all 1968-1973 GT's with automatic transmissions, and adapts for the 5-speed GETRAG)

Driver's side linkage pivot point is part of the transmission case
Clutch Return Spring is 10 1/2" long (from clutch arm, to hole in trans mount bracket)

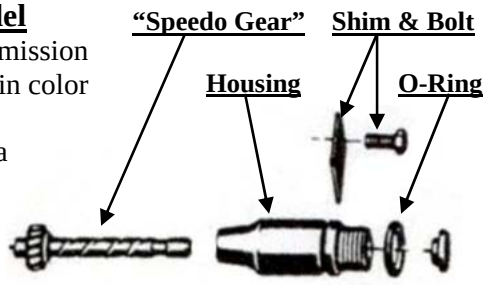


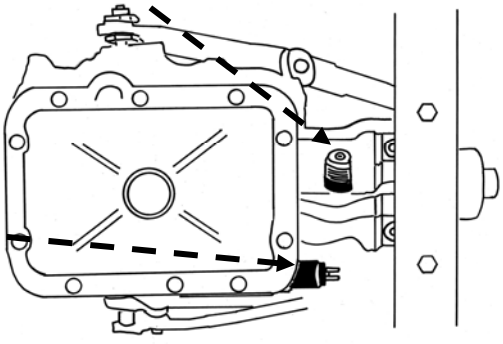
Speedometer Gear: Late Model

Located on Driver's Side of Transmission
Speedometer Gear is Plastic, blue in color

Metal gear housing is retained by a Shim held with a 10mm bolt.

Cable attaches to end of gear.



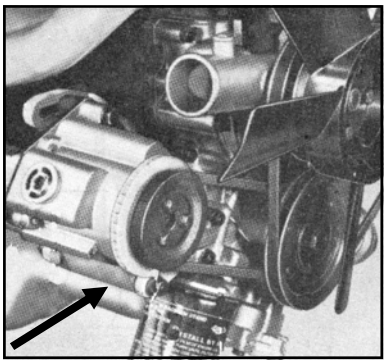


Reverse Switch

Screws into the rear of the transmission
Replace if gear oil leaks from switch.
(Use a 22mm wrench to remove this switch, to easily drain gear oil out of transmission)

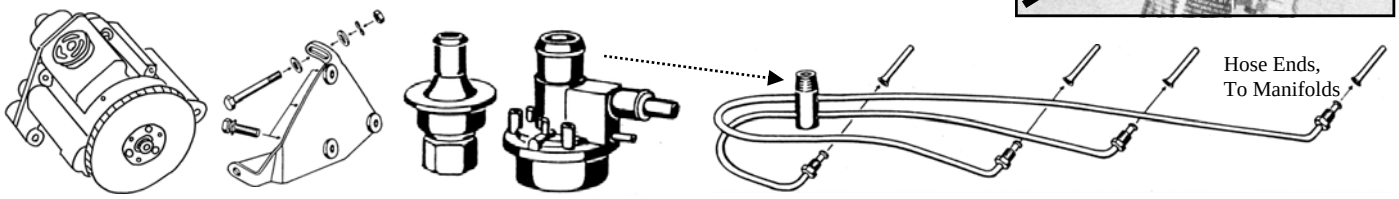
Opel GT External Engine Hardware: Emission Controls

1969 "Air Injection Reactor" Pump, Valves and Hoses:



Required years ago to be operational on a registered 1969 Opel GT, they're now very rare. The belt-driven pump drove air through a pair of valves then into the exhaust manifold (to more fully combust unburned fuel),. But in real-life the horsepower-robbing pump often froze, and the metal hoses rusted solid at the manifold ports (mechanics sawed these off).

If the vehicle has an original A.I.R. pump and manifold hose installation, carefully unbolt and disconnect the pump (leave the valves on the pipe assembly) to remove your engine. Many early 1.9 engines (up to serial #19S-262029) retained the double-grooved crank pulley (the inner pulley had a small-diameter), and the lower engine side pump mount brackets can be adapted to custom-mount an air conditioner compressor.



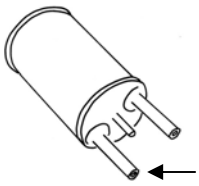
1970-1973 Evaporative Canister:

The most common system, the sideways-mounted canister near the battery, passively captures and filters fuel tank and carburetor fuel bowl vapor emissions.

Gas Tank: Connected to the center canister port, one hose output helps to prevent a buildup of internal tank pressure. If the vent hoses are disconnected, crack or otherwise leak, a strong gas smell will be noticeable inside the car when the tank is half or more full of fuel.

Carburetor: Original Solex carbs had 2 output hoses to this canister, (which should be detached when engine is removed).

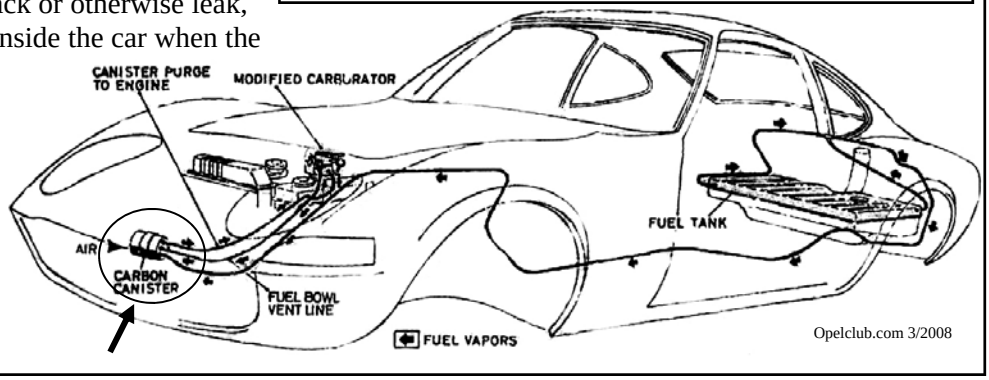
Some Weber DGV-Series carbs have a port for 1 hose. When not in use, either or both the upper and lower canister ports can be capped.



Carbon Canister:

Round outer foam filter should be replaced to retain internal charcoal pellets. Center port to vacuum on carb, and upper side port to float bowl on carburetor, aren't required for operation & can be capped.

Lower side port to fuel tank should always be attached and intact.



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1973 Exhaust Gas Recirculation ("EGR") Valve:

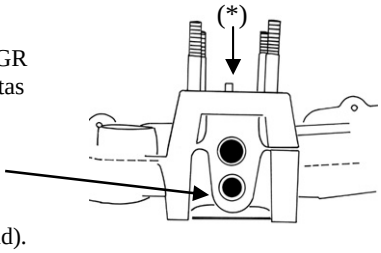
The EGR valve was vacuum-driven, to redirect inert gas into the combustion chamber via a threaded port on top of the exhaust head pipe, back into the intake manifold (to lower unburnt gas/NOx emissions) In practice, EGR valves clogged with carbon particulates and were rendered inoperative. The metal pipe also vibrated, deforming the threaded port on the intake manifold, causing vacuum leaks there too (on 1973 engines, that already had low power output).

When a visual inspection of emissions equipment was required for registration, some mechanics blocked the attached metal hoses with a glob of fast-setting JB weld. When removing the engine, unscrew steel tube fitting at intake manifold and disconnect vacuum hose.

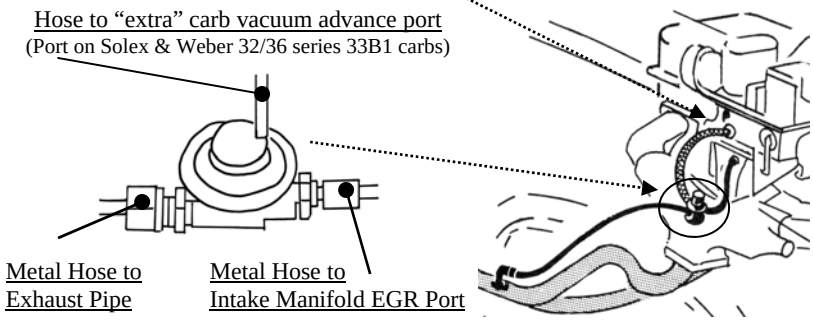
Threaded Intake Manifold Port:

Unique to manifolds for Opels with EGR valves (1973-1974). (Some 1974 Mantas had a "double" valve style EGR).

~9/16" diameter Ported Gas Fitting (fits 1/4" PIPE thread)
(*Port for hose to valve cover, was relocated to the engine side of manifold).



Hose to "extra" carb vacuum advance port
(Port on Solex & Weber 32/36 series 33B1 carbs)



Metal Hose to Exhaust Pipe

Metal Hose to Intake Manifold EGR Port

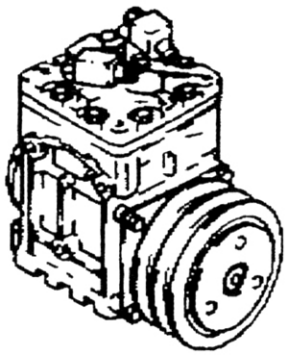
Opel GT External Engine Hardware: Air Conditioning

There was no factory-installed air conditioning originally made for the Opel GT. But when 1969 GT's were selling well, aftermarket air-conditioning manufacturer "A.R.A" (of Grand Prairie, Texas) adapted their kit for the 1969 Kadett 1.9 to fit the 1970 model-year Opel GT. The discontinuation of the 1969-only "A.I.R." emission control system, left available space on the passenger side of the engine for mounts and a compressor. Significant Buick dealer sales of ARA units for 1970 GT's, led to GM's development of their own air conditioner system for the 1971 model-year GT.

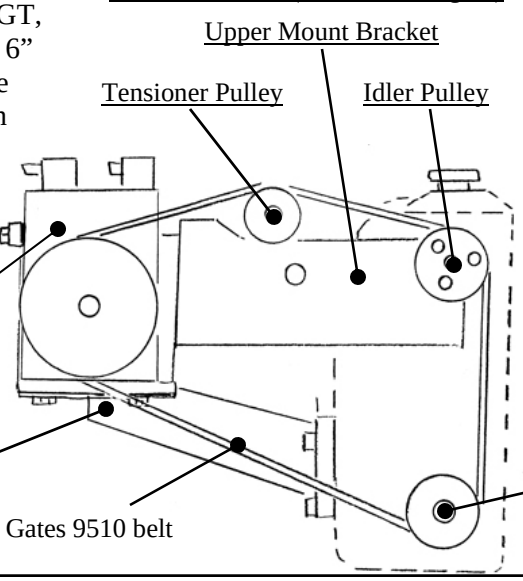
When removing cylinder heads or complete engines with a/c installed, it's important to detach the belt, remove adjustable idler arm/pulley, and unbolt the compressor. Unless you have a R-12 refrigerant recovery system on the premises, do NOT twist or disconnect the pressurized hoses. Instead, wrap compressor with a spare towel and securely set it aside. (*More Opel GT A/C system information, including ARA installation diagrams, was printed in May 1995 OMC Blitz)

"A.R.A." Air Conditioning System:*

Visual identification of an A.R.A. system on a GT, is by the square gray "box" (York F206R; their 6" "mini" compressor) on the passenger side of the engine. Another distinct difference is the design of the center console (around the shift lever) for the vehicle interior.



Schematic View (at Front of Engine):



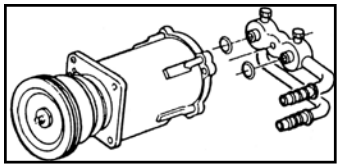
Some hardware (like a metal fan blade and bracket designs), varied between 1970-72 & 1973 year kits.

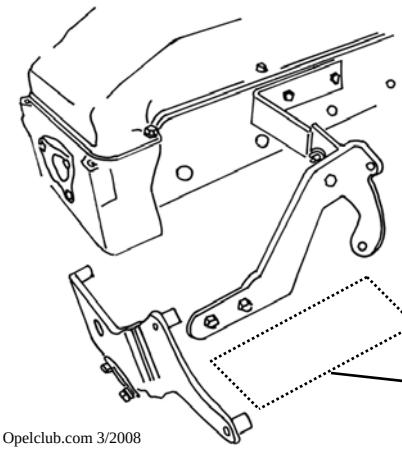
Crank Pulley (AC on inner groove of 2-groove pulley design)

"G.M." (Frigidaire) Air Conditioning System:*

Originally dealer-installed as an option on 1971-1973 GT's. Visual identification is by the large, heavy (40 lbs.) black cylinder (model A6), and unusual brackets (which cracked and required welding), on the driver's side of the engine, as well as the wedge-shaped "peak" of the console on the passenger-side interior (and blower borrowed from the GMC Suburban).

A complete guide to GM A/C for the GT, is in the 1973 Opel Factory Service Manual.





Customized Air Conditioning Systems:

As original Opel GT systems are heavy, inefficient, and rely on outdated (and expensive) R-12 refrigerant, more GT owners are retrofitting with later-model air conditioner systems. Using Sanden compressors (from compact Geo Metros), custom mount brackets are usually installed on the lower passenger side of the engine. Other equipment frequently includes condensers (mounted in front of the radiator), thermostatically-controlled electric fans, and aftermarket R-134 compatible parts. Generic parts from aftermarket suppliers like Vintage Air, are added for modern interior installations.