

DIY for Oil Cooler Leak:

<http://www.peachparts.com/shopforum/diesel-discussion/363973-journey-into-infamous-om642-oil-cooler-leak-2.html>

Here are the disassembly steps:

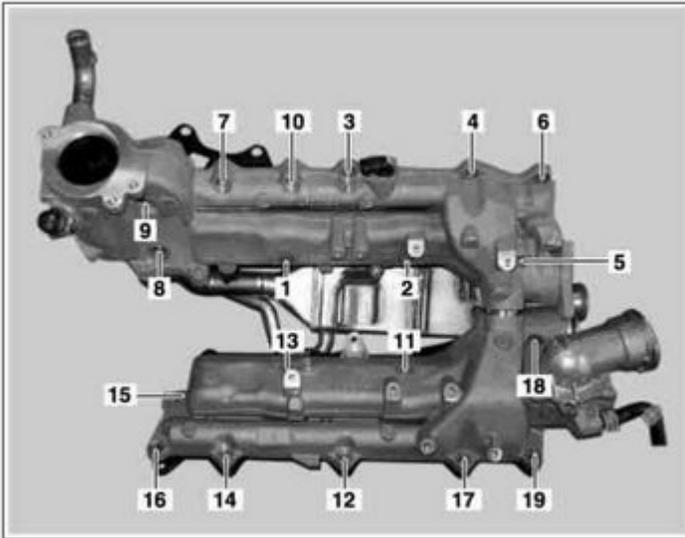
1. Remove the panel aero panels under the car.
2. Drain coolant.
3. Remove top cover and turbo shroud.
4. Remove both Air Filter enclosures.
5. Remove the left aft and center heat shield and insulation.
6. Remove the turbo and oil supply standoff.
7. Remove the left fuel rail and the crossover fuel line that goes from right to left. May have to undo the lines on 2 injectors to get the rail off.
8. Remove the EGR; Valve on the back left top of the manifold with a couple of coolant lines attached to it. Cheap set of hose clamp pliers worked well for these as they are in a tight spot.
9. Remove the front side air box. Plastic housing at front of motor. First pull the air baffle box. Then pull the glow plug relay and bracket. Disconnect the 2 screws that secure the assembly to the right forward engine bracket. You will also remove the dipstick bracket here as well.
10. Remove the turbo. The bolts to exhaust manifolds are tight as hell with not much room to work. Use swivel ratchets where possible, use 3/8 straight ratchet with a 3/4 deep well to give a better grip and a little added extension. Critical to make sure your Torx is seated to the shoulder and keep the ratchet square when turning.
11. Remove the turbo oil supply block.
12. Remove the charge air manifold. Undo 20 or so bolts (Look for the 2 left aft that are recessed).
13. Re-attach the fuel filter bracket so this can be pulled as a unit.
14. Leave the swirl motor attached, slide the assembly aft and then lift out. Work the intake out by some slight prying action to break it free from the cylinder heads.
15. The swirl motor will remain attached to the intake manifold when you remove it.
16. Once the intake is removed, pay particular attention to how the levers are attached to the intake flaps; take pictures prior to removing anything. It will basically be hanging on the manifold by the levers and the plastic ball clips.
17. Then remove the swirl motor and un-bolt the 2 halves of the manifold.
18. Order some new ball clips as they are basically two halves that press together but don't really snap fit when put together. They are secured when the swirl levers are installed to the swirl motor. Better to have a few on hand in case some of them break off.
19. Now the fun part. Parts Cleaner; solvent; tooth brush; baby bottle brushes; paper towels etc. Soak the manifold down, then power wash the hell out of it. Remove the EGR cooler assembly. It will be loaded with crud as well. Soak, Brush, power wash and flush.
20. Plastic front air assembly also will be loaded with crud. Soak, scrub and power wash.
When you see the intake holes on the cylinder head, you will wonder why you drive a Mercedes diesel. Clean it any way you can, like small jeweler's screwdriver, then shop vacuumed the crud out.

Reassembly Steps:

Oil cooler to engine T27 Torx bolts, 12 nm (8.9 Ft-Lb), there are 10 bolts total.

Intake manifold to cylinder head bolt 16 nm (11.8 Ft-Lb), there are 10 bolts on the left (driver side) intake manifold and 9 on the right (passenger side) intake manifold, total of 19 bolts to tighten in the pattern

shown below.



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Turbo oil feed Pedestal: bolts 12 nm (8.9 Ft-Lb), and there are 4 bolts.



Fuel Rail to valve cover mounting, 9nm (6.6 Ft-Lb), 2 bolts.

Tightening the fuel rail:

1. Make sure that your fuel rail is bolted down.
2. Hand Tighten All Nuts on the fuel line! MAKE SURE the nut is not slipping, miss-threading, overlapping or stripping!
3. Tighten all nuts to 20nm (14.8 Ft-Lb).
4. Mark a straight line from the rail to the nut.

5. Turn nut 60° Angle.
6. Check for leaks (after starting engine)

Turbo:

T45 Torx bolts for the oil feed pedestal to turbocharger.

Stage 1 30 nm (22 Ft-Lb). Stage 2 50 nm (37 Ft-Lb).

Bolt the turbo bracket on to the engine, Torque spec 16nm (11.8 Ft-Lb).

Turbo exhaust collection pipe bolting:

Attach your exhaust to your turbo. The exhaust are quite flexible so there's a lot of free play adjust as needed. You will also need 6 new copper bolts as they're stretch bolts.

Stage 1 20nm (14.8 Ft-Lb). Followed by Stage 2 90° angle or 1/4 turn.

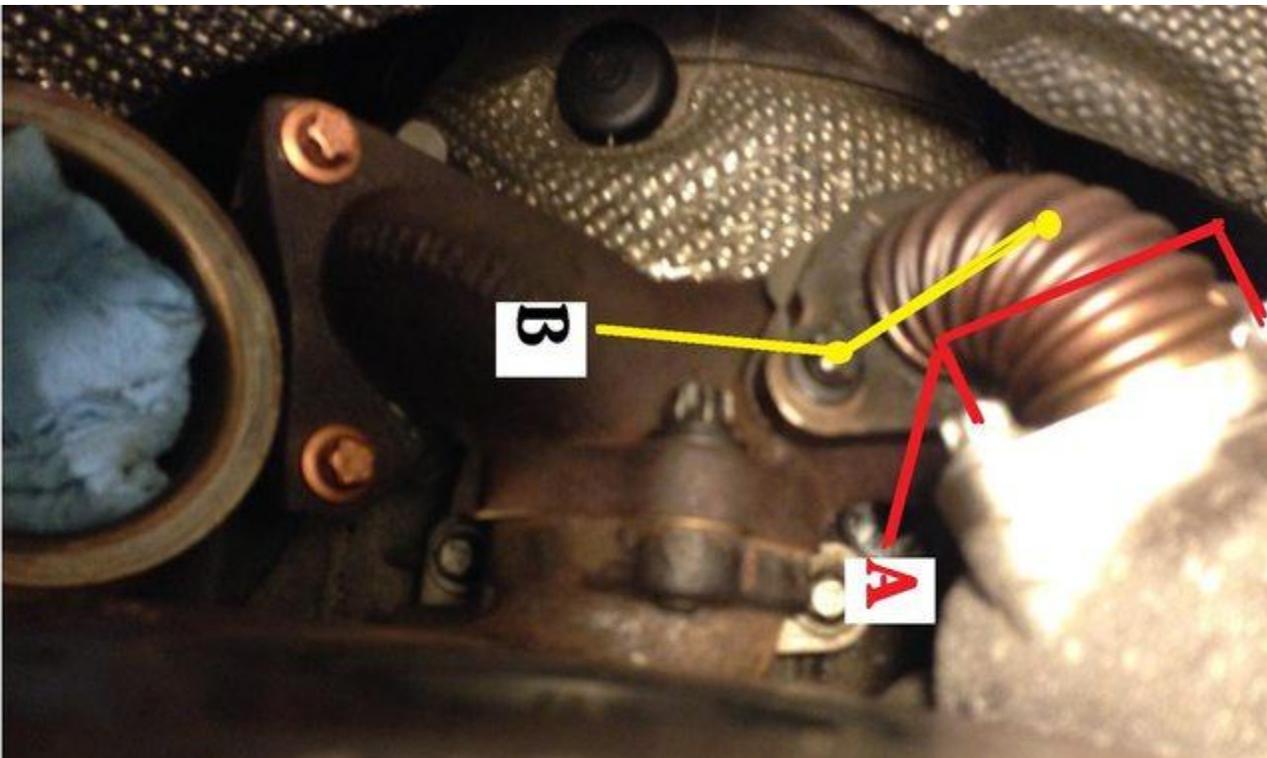
Be sure that your socket is sitting on the bolt as flush as possible!

EGR Pipe:

Replace 2 gaskets and the 2 bottom copper bolts.

Torque spec for A (Top) 20 nm (14.8 Ft-Lb).

Torque Spec for B (Bottom) Stage 1 = 10nm (7.4 Ft-Lb). Stage 2. 90° Angle or 1/4 turn.

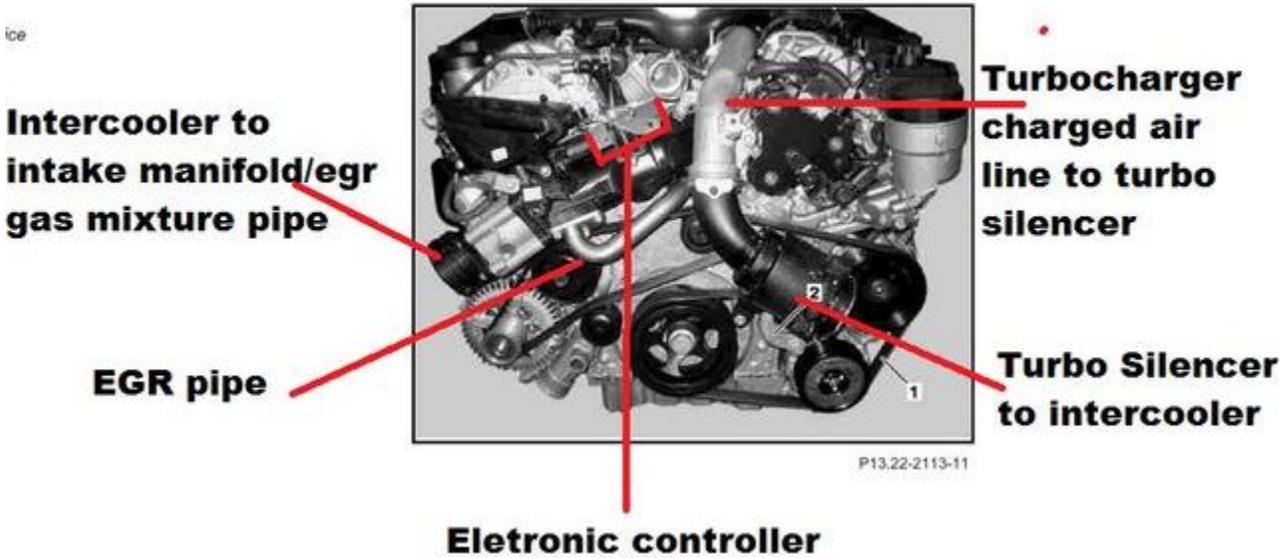


Turbo Exhaust Pipe: 3 new bolts, Torque spec 20 nm (14.8 Ft-Lb).

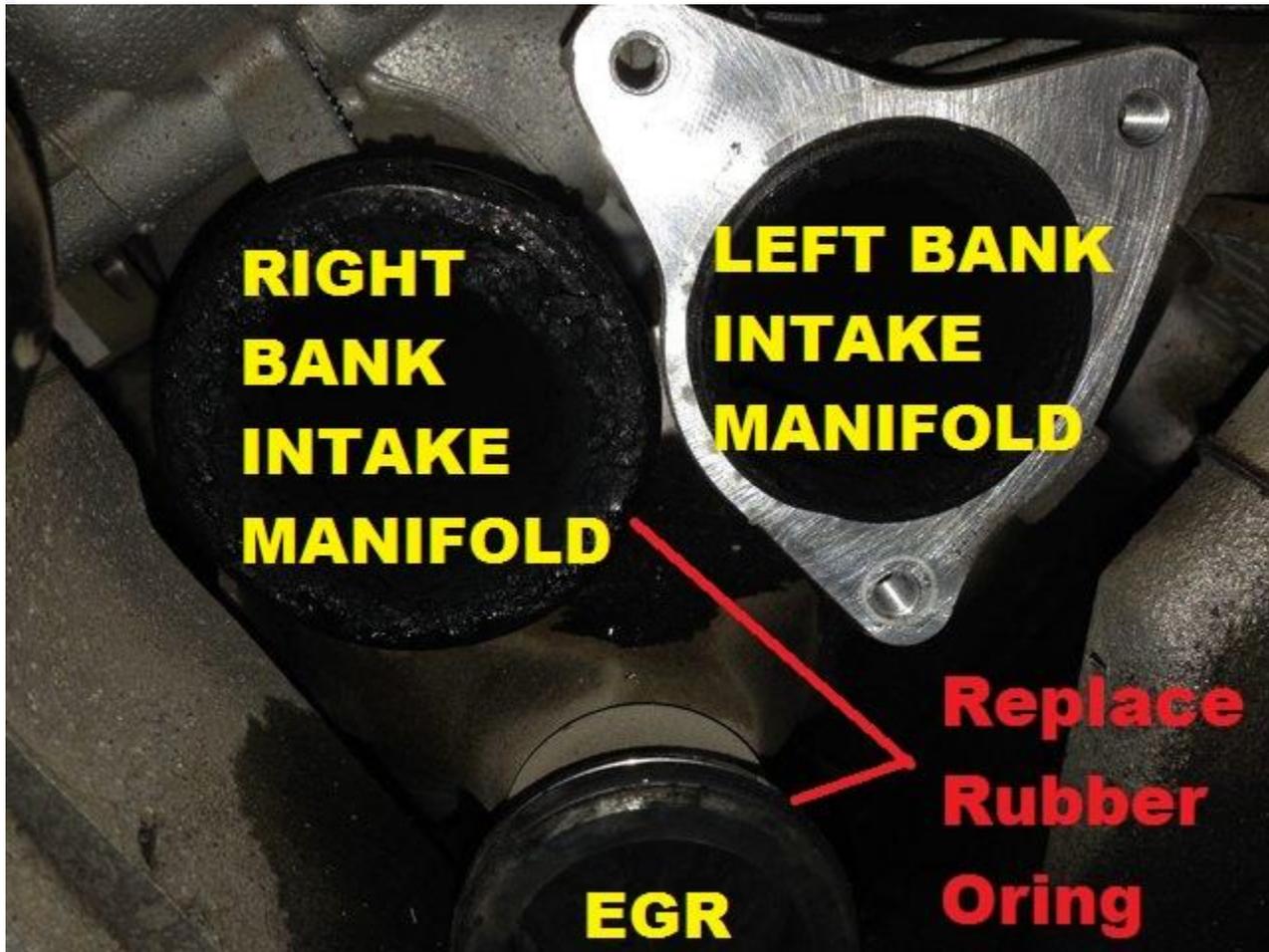
Crankcase oil/vapor separator installation: 3 bolts and 1 bracket, the bracket is holding a plug that is connected to an exhaust temp probe located in the turbo charger exhaust side turbine, hand tighten the bolts as the crankcase oil/vapor separator is made of plastic!

Component Identification

ice



Here's the intake manifold, replace the O rings, important to prevent boost leaks.



Here's the EGR, attach this end on to the Black pipe, there's also a rubber gasket on the EGR pipe replace to prevent boots leak, 3 bolts 15 nm (11 Ft-Lb).



Now that you have the EGR pipe attached (simulated EGR image) on to the plastic, replace the gasket to prevent boost leak, then attach charged air pipe to intake manifold intercooler. You have to push in and make sure that the left intake manifold and the EGR pipe are seated properly and flush, there's 3 bolts holding on the intake manifold torque to 20nm (14.8 Ft-Lb).



Thermostat, replace the gasket on it and attach to the intake manifold torque to 20mn (14.8 Ft-Lb).



Install the electronic controller for the throttle body, it sits on top the charged air hose to intake manifold,

connect the connectors.



Then install the bracket for the electronic controller for the throttle body, it's a clamp style bracket, 2 bolts and 2 nuts, 5nm (3.7 Ft-Lb) torque.



Install the resonator pod. Inspect the o ring on it, and then give it a good push, it should pop right in and 1 bolt to secure from the charge air to intake manifold 5 nm (3.7 Ft-Lb) torque.



Now install the turbo silencer. One end (silver pipe) attaches to the outlet of the turbo where there's an O ring that slides on the turbo outlet - MAKE SURE IT'S THERE, or no boost!
The other end (see picture) is the silencer, this part attaches to the intercooler, and there's 1 bolt, a very long bolt. 10 nm (7.4 Ft-Lb).



Attach all hoses, Intercooler, Coolant, Air intake, bat wing, air filter, fuel filter, fill with coolant (1/2 coolant – ½ distilled water).

Since you've removed the fuel rail and fuel filter, it's best to cycle the key 2-4 times so that the fuel filter is primed by the electric fuel pump, then start it up. It will take 2-3 start/cranking cycles for the car to actually start because it's purging air and building pressure in the fuel rails and the lines. Once fuel pressure is sufficient the car will fire right up.

Check for leaks.

Drive for a week without bottom panels to monitor leaks.

If no leaks, replace panels.

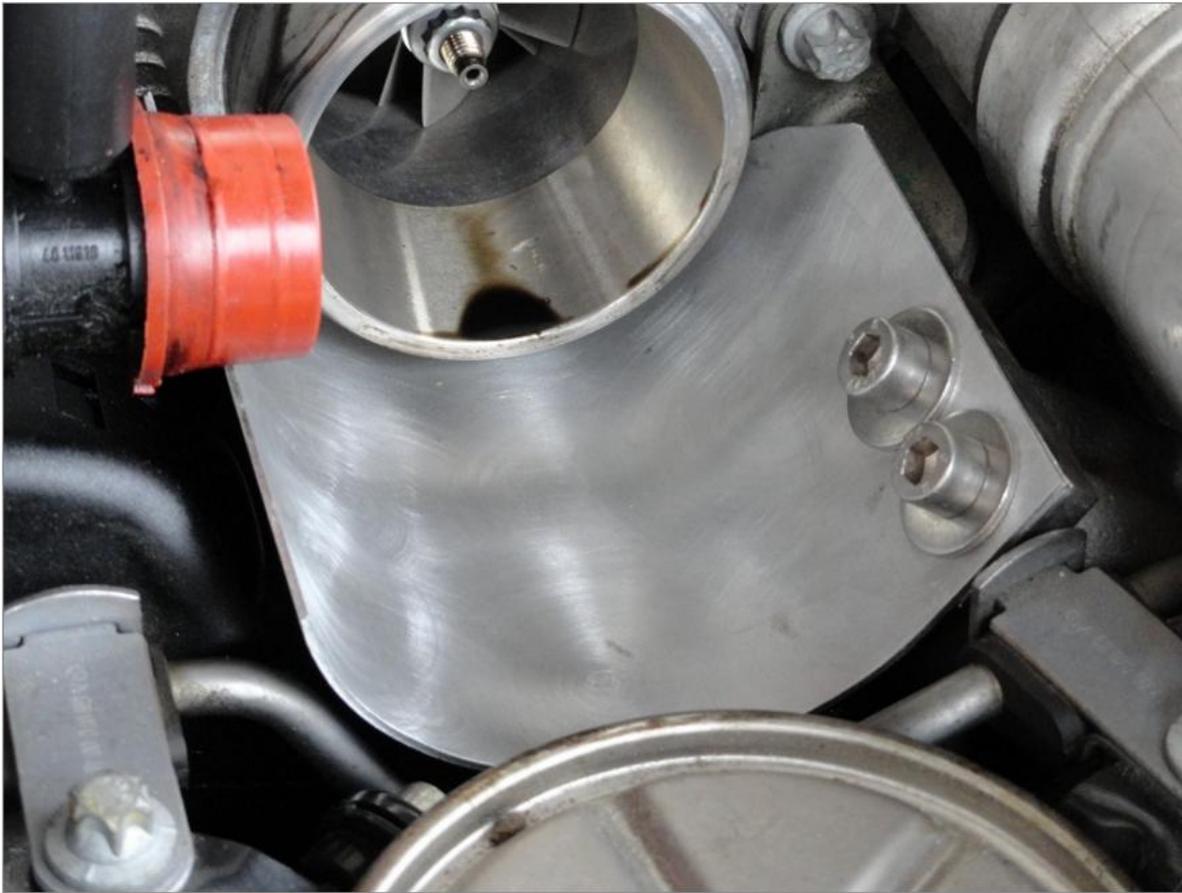
See below the list with the parts I replaced for oil cooler seals ML350 BlueTEC:

Part Number	Part Description	Quantity	Price	Total
6421420681	GASKET 1	1	\$2.40	\$2.40
6421420781	GASKET 1	1	\$2.56	\$2.56
6421421880	GASKET 2	2	\$2.80	\$5.60
6421410580	fuel system, fuel induction, intake, manifold gasket	2	\$5.20	\$10.40
6421423180	MULTI-HOLE S	1	\$4.60	\$4.60
6421423280	MULTI-HOLE S	1	\$4.60	\$4.60
6420980037	INTAKE PIPE	1	\$7.60	\$7.60
6420910050	BUSHING	2	\$2.72	\$5.44
0139970045	SEAL RING	1	\$4.80	\$4.80
6421880480	ELASTOMER,MOLDED SEA	2	\$3.60	\$7.20
2194920080	Converter and pipe Gasket	1	\$9.20	\$9.20

6422010780 ELASTOMER,MOLDED SEA 1	\$5.20	\$5.20
6420980180 GASKET 1	\$10.80	\$10.80
0139972345 O-RING 1	\$2.80	\$2.80
0289974548 CONSOLE 2	\$3.36	\$6.72
0149976445 O-RING 1	\$4.20	\$4.20
0269974348 SEALRING 1	\$3.52	\$3.52
0009906803 SCREW 6	\$1.60	\$9.60
000000001159 SCREW 10	\$1.60	\$16.00
0219976545 PROFILE SEA 2	\$13.20	\$26.40
6421410080 GASKET 1	\$5.40	\$5.40
0009906903 SCREW 4	\$1.76	\$7.04
Sub Total		\$162.08
Shipping method - UPS Ground Shipping	\$10.99	
Total		\$173.07

No.	Dam...	Item no.	Part number	ES1	ES2	Designation/description	Quantity	Qty o...	Price	Warra...
1		39	A 642 188 04 80			ELASTOMER-MOLDED SEAL OIL COOLER TO CYLINDER CRANKCASE	2			
2		15	A 013 997 00 45			SEALING RING	1			
3		20	A 642 141 05 80			GASKET	2			
4		40	A 642 098 00 37			INTAKE PIPE SOCKET WITH SEALING RINGS	2			
6		20	A 642 142 32 80			MULTI-HOLE SEAL TURBOCHARGER AT EXHAUST COLLECTOR PIPE, RIGHT	1			
7		20	A 642 142 31 80			MULTI-HOLE SEAL TURBOCHARGER AT EXHAUST COLLECTOR PIPE, LEFT	1			
8		33	A 000 990 68 03			BOLT TURBOCHARGER TO RIGHT EXHAUST MANIFOLD	6			
9		70	A 219 492 00 80			FLANGE GASKET TO EXHAUST GAS TURBOCHARGER	1			
10		45	A 642 142 18 80			GASKET	2			
13		30	A 642 201 07 80			ELASTOMER-MOLDED SEAL	1			
14		145	A 642 098 01 80			GASKET TUBE AT CHARGE AIR DISTRIBUTOR LINE	1			
15		495	A 000 990 67 03			BOLT TO EXHAUST GAS TURBOCHARGER M8X20	3			
16		30	A 028 997 45 48			SEAL RING TO CHARGE AIR COOLER HOSE LEFT REAR	2			
17		25	A 028 997 47 48			SEAL RING TO CHARGE AIR COOLER HOSE LEFT FRONT 1 X 2.4	2			
18		15	A 026 997 67 45			O-RING COOLING WATER HOSE TO RADIATOR	1			
19		50	A 003 997 17 89			SEALING RING COOLING WATER HOSE TO ENGINE 6.3 MM	1			
20		60	A 642 142 07 81			METAL SEAL STAY TO CYLINDER HEAD	1			
21		80	A 642 142 06 81			GASKET	1			
22		42	N 000000 001159			HEXALOBULAR BOLT OIL COOLER TO CYLINDER CRANKCASE M6X19	10			
23		50	A 014 997 64 45			O-RING	1			
24		50	A 000 990 69 03			SCREW W RND. HEXAL. HEAD M6X16	2			
25		15	A 026 997 43 48			SEAL RING TO EXHAUST GAS HEAT EXCHANGER	1			

Servo motor heat and oil shield:



Swirl Motor mod

(if required): <http://www.jeepforum.com/forum/f67/swirl-motor-resistor-mod-1397852/>

<https://www.300cforums.com/forums/crd-intake-swirl-turbo/97281-swirl-motor-cheap-replacement-solution-pennies.html>

<https://www.300cforums.com/forums/crd-intake-swirl-turbo/97281-swirl-motor-cheap-replacement-solution-pennies-5.html#post1092838>