

How-To “Removing the supercharger”

Dear all,

Due to a failed knock sensor I decided to service the whole air intake system of my XJR (x308, MY2000) and replace neuralgic components such as seals, gaskets and coolant hoses which got in my way.

1.) **Disconnect battery**

Hot tip: Block the opening and closing mechanism of the trunk as the mechanism won't work without power.

2.) **Drain the coolant system**

Remove drain plug (position on the back of mark on figure 1), watch out to open the expansion tank so that air can be drawn in.

The cooling system of the supercharged vehicles contain ca. 12 liter of coolant. By draining via the radiator drain plug, you'll get around 6 liter out of the system.

Hot tip: remove the undertray and the wheels as it allows you to jack up the car as low as possible to drain as much coolant as possible. No need to remove the bumper as well, I did that for other reason). Another important plus for jacking up the car as low as possible is that your back will reward you with well-being as it is quite exhausting when working deep in the engine bay.

tools: no tools needed, drain plug can be removed manually



3.) **Remove air cleaner element and intake air duct**

remove whole assembly, disconnect MAF-sensor

tools: sockets, screwdriver

4.) **Remove throttle body**

disconnect accelerator cable, disconnect multiplugs (one on left-hand (LH) side, two right-hand (RH) side), remove two coolant pipes (the upper hose goes to the EGR-valve, lower hose comes from the coolant inflow, see figure 2); I cut the two coolant hoses as I replaced them anyway and it was way easier than trying to pull them off the ports; remove four bolts which attach the throttle body to the intake elbow, remove throttle body

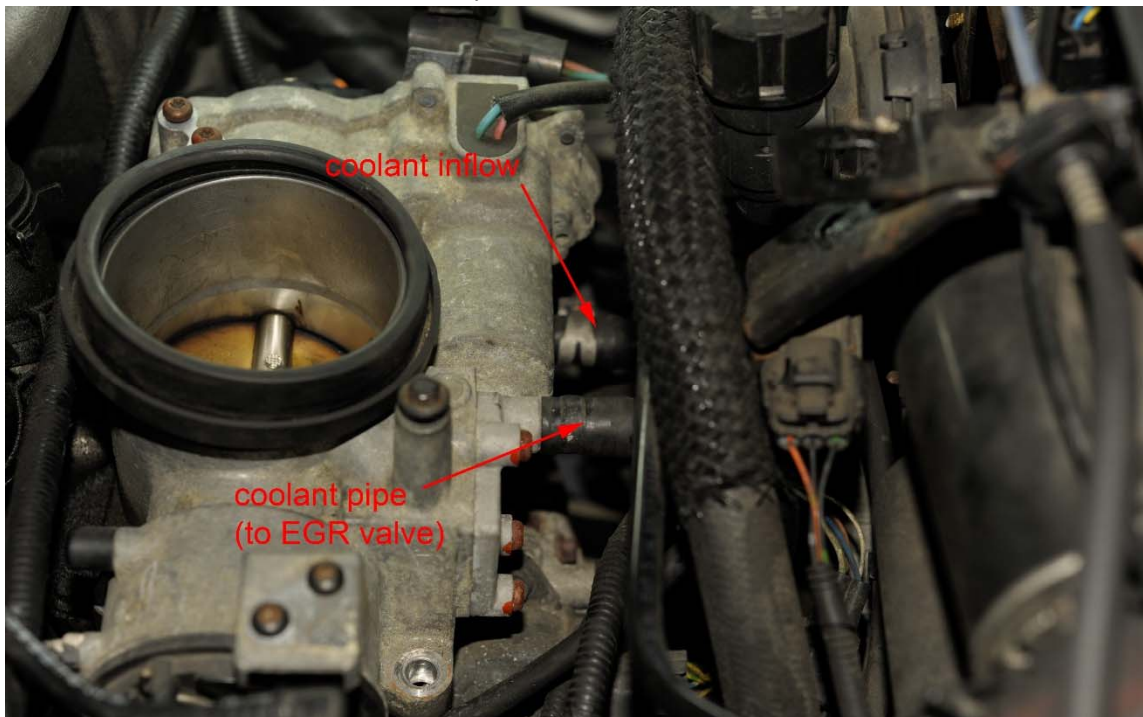
tools: sockets, torx bits, (pipe) wrench

replaced parts:

NNE3021AC throttle body gasket (to intake elbow)

NNE3246BA coolant hose (from inflow to throttle body)

NNE3247BA coolant hose (throttle body to EGR-valve)



Location: view from bank b (LH side)

Figure 2

5.) **Remove EGR-valve (figure 3)**

disconnect one multiplug; unbolt EGR valve tube (unbolt either at the cat or at the valve itself), remove two coolant hoses (upper hose comes from the throttle body, lower hose goes to the coolant outflow); remove two bolts which attach the EGR valve to the intake elbow, withdraw EGR valve; check valve tube for cracks, they're known to fail sometimes

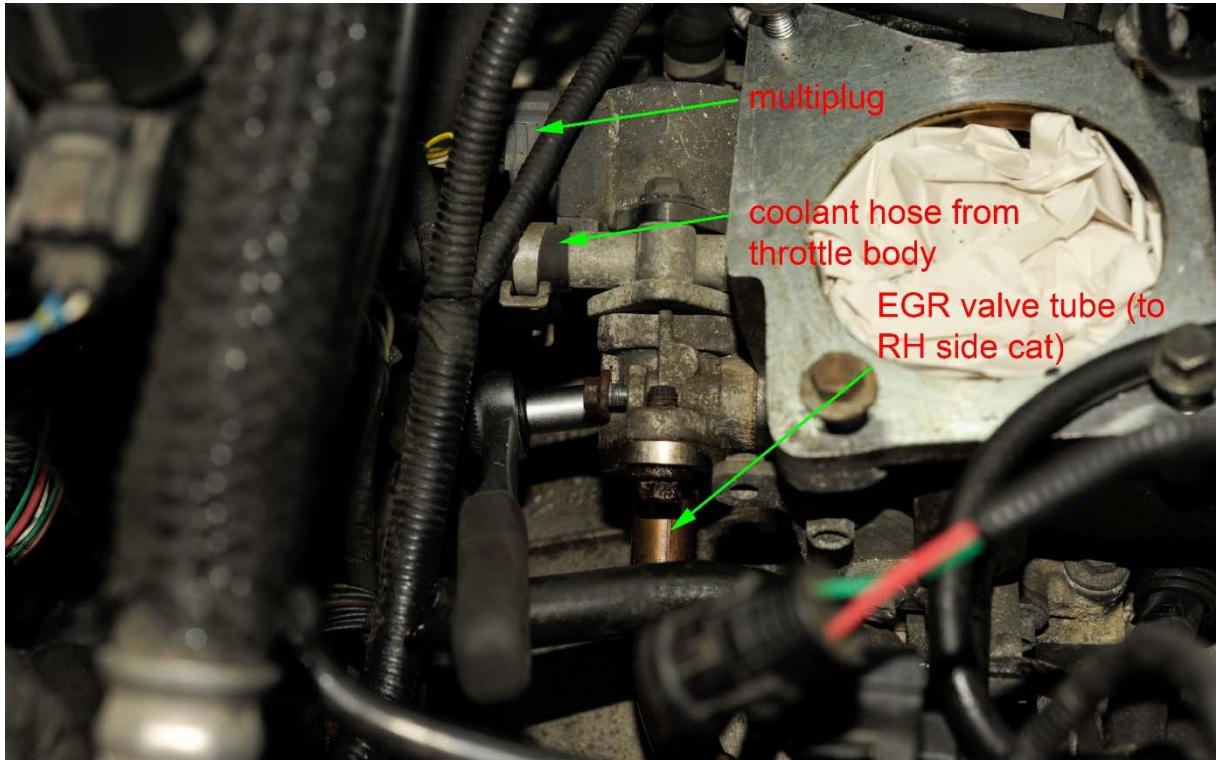
tools: sockets, wrench

replaced parts:

AJ88560 gasket (EGR-valve to intake elbow)

NCA4771DA gasket (EGR valve tube to RH cat)

AJ85559 gasket (EGR valve body to EGR valve tube)



Location: view from bank A

Figure 3

6.) **Remove intake elbow (figure 4, 5)**

For better handling, I did remove both support brackets from the right and left bottom end of the elbow; disconnect hoses and vacuum lines at the LH side; I couldn't manage to remove the vacuum booster line coming from the master brake cylinder, so I left it in place.

Hot tip: try not fiddling with the booster line as it can cause a vacuum leak and is quite expensive to replace, so just put it aside ;-)

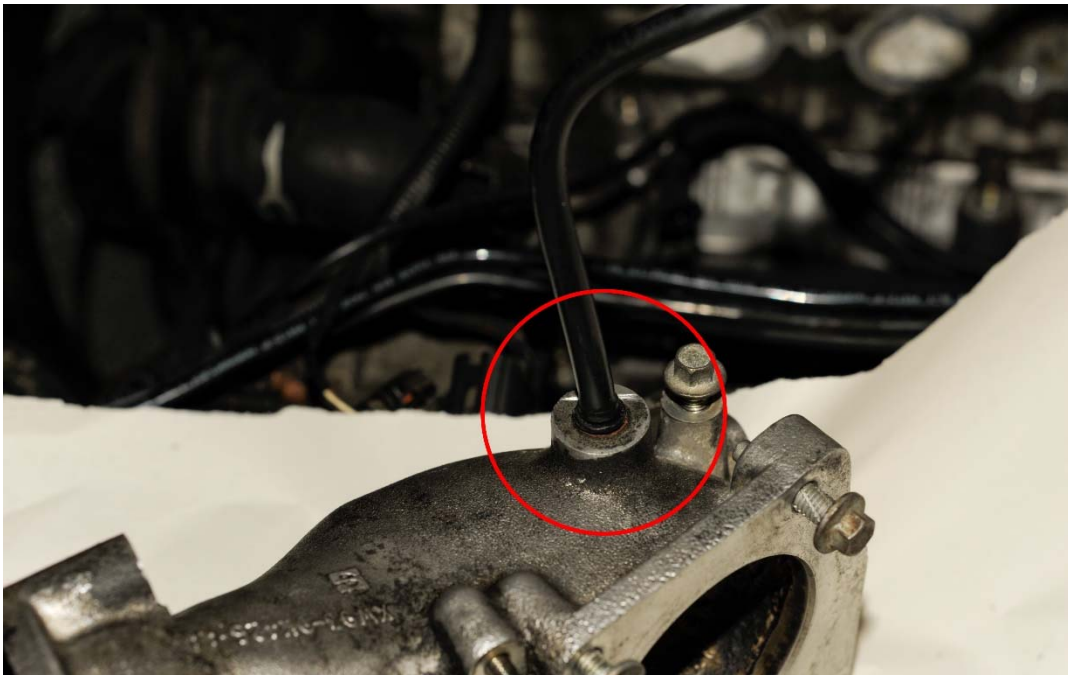
Unbolt the intake elbow from the supercharger (4 bolts), it's quite tricky to de-clamp the rubber ducts, but with a particular emphasis it works out.

tools: sockets, wrench

replaced parts:

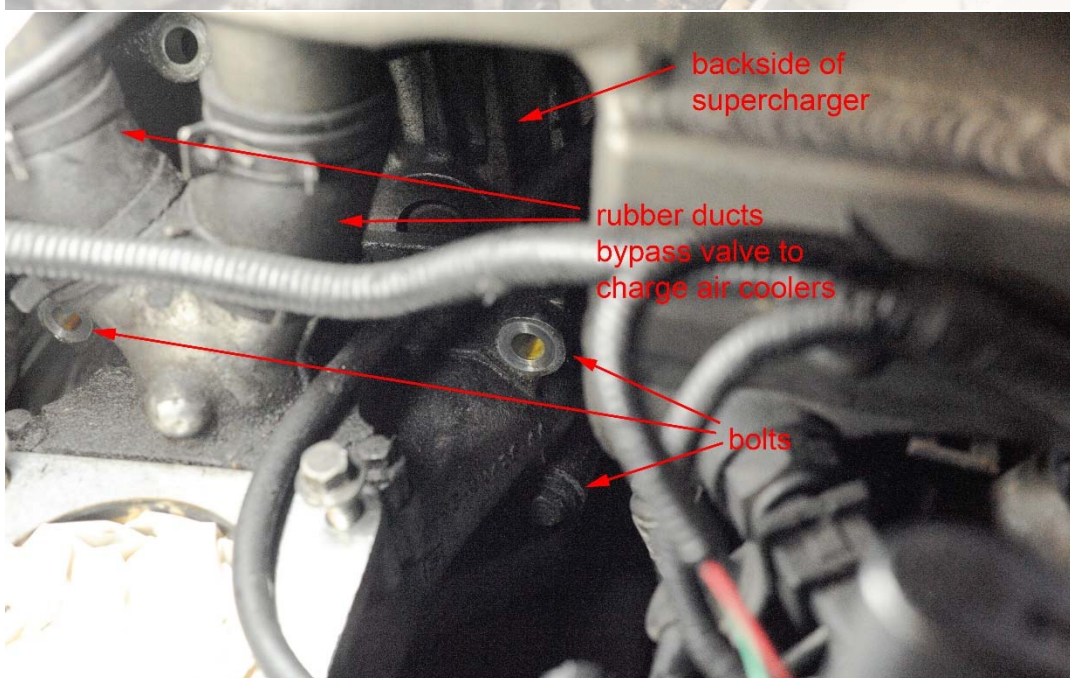
NCC7754BA gasket (intake elbow to supercharger)

KSC137624 o-ring bypass valve



Location: vacuum booster line

Figure 4



Location: view from bank a (RH side)

Figure 5

7.) **Remove supercharger outlet duct (figure 6)**

remove coolant lines from the charge air coolers and the outlet duct, unbolt three bolts holding the charge air cooler inlet assembly to the outlet duct, unbolt the outlet duct from the supercharger (4 bolts), remove the vacuum line (RH side) and withdraw the outlet duct; unbolt and remove the charge air cooler inlet assembly from the air coolers (not necessary, but good opportunity to clean it)

tools: sockets, wrench

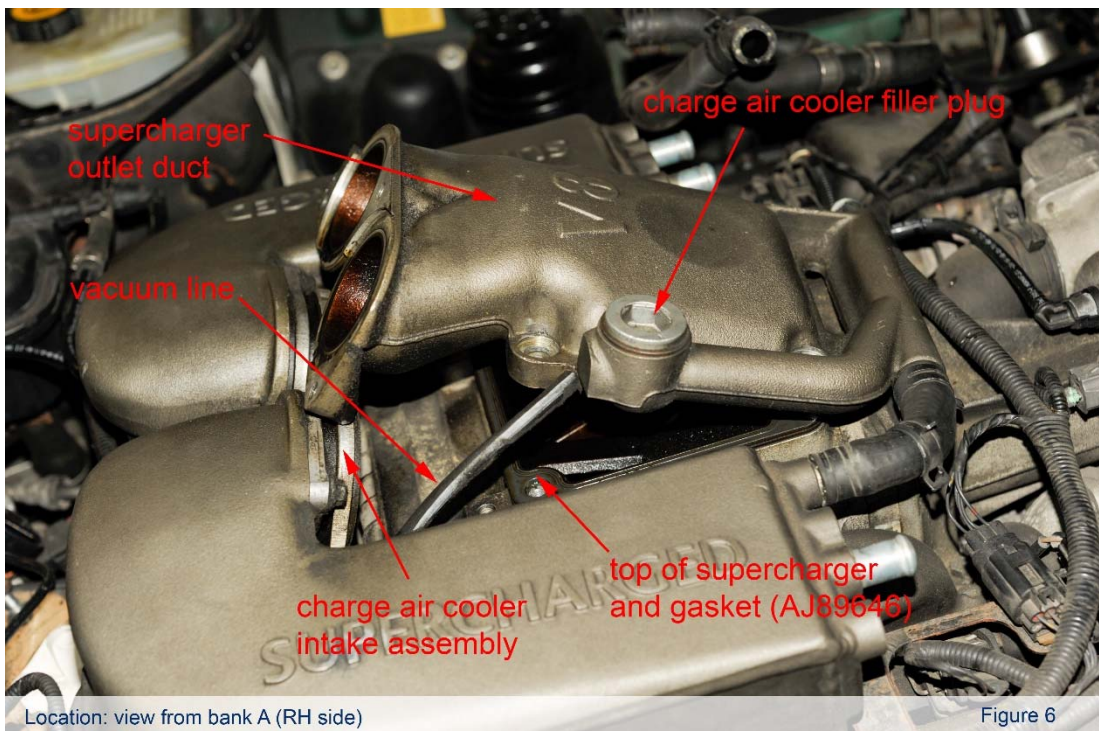
replaced parts:

AJ89646 gasket (supercharger outlet duct to supercharger)

4x **AJ810511** seal screw (outlet duct to supercharger)

AJ89646 sealing washer (@plug charge air cooler fill point)

top tip: If you intend to replace the charge air cooler inlet assembly on the basis of TSB 303-57, you have to order the updated versions of the aluminium plates as well, not only the rubber ducts



8.) **Remove coolant outlet pipe (figure 7)**

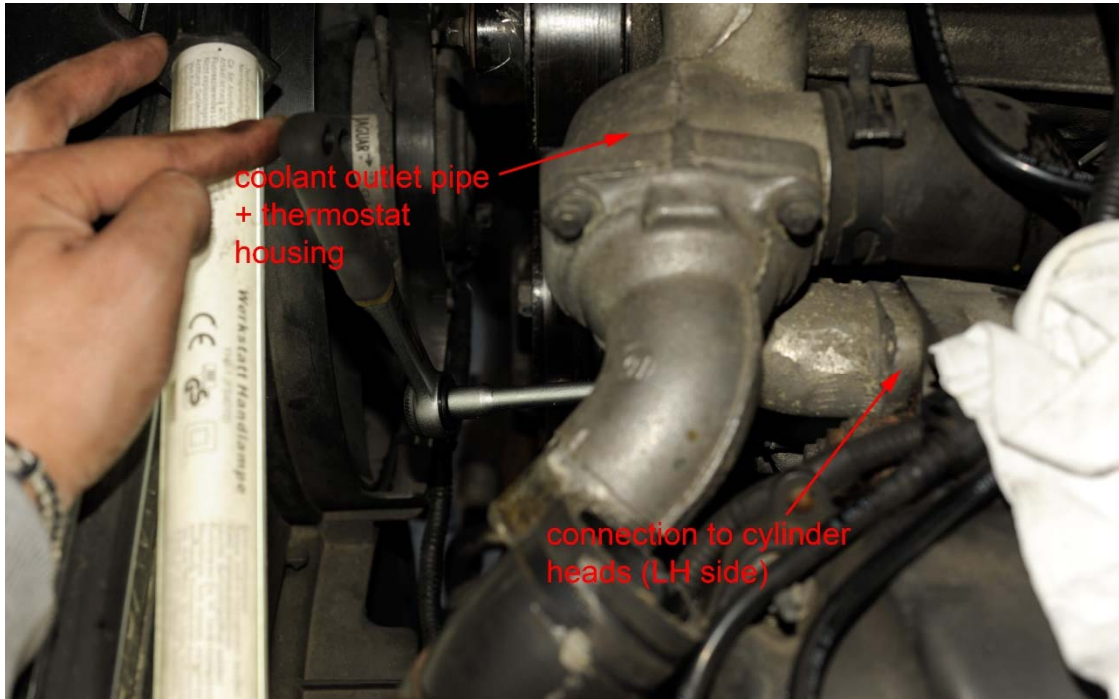
pull off the coolant lines; disconnect multiplug of the temperature sensor and release breather pipe; remove the four bolts which attach the coolant outlet pipe to the cylinder heads

top tip: the coolant line coming which connects from below the supercharger (RH side) is one of the two lines which should be replaced when the supercharger is off anyway. So for removing it's easier to cut it.

tools: sockets, wrench

replaced parts:

2x **C2C11477** seal (coolant outlet pipe to cylinder head)



Location: view from bank B (LH side)

Figure 7

9.) **Disconnect supercharger belt**

using a big breaker bar (e.g. 1/2 inch drive, square aperture on front face of belt tensioner) push the tensioner from RH to LH side (against spring tension) and remove belt from the pulley

tools: ½ inch ratchet or breaker bar or similar

10.) **Remove supercharger**

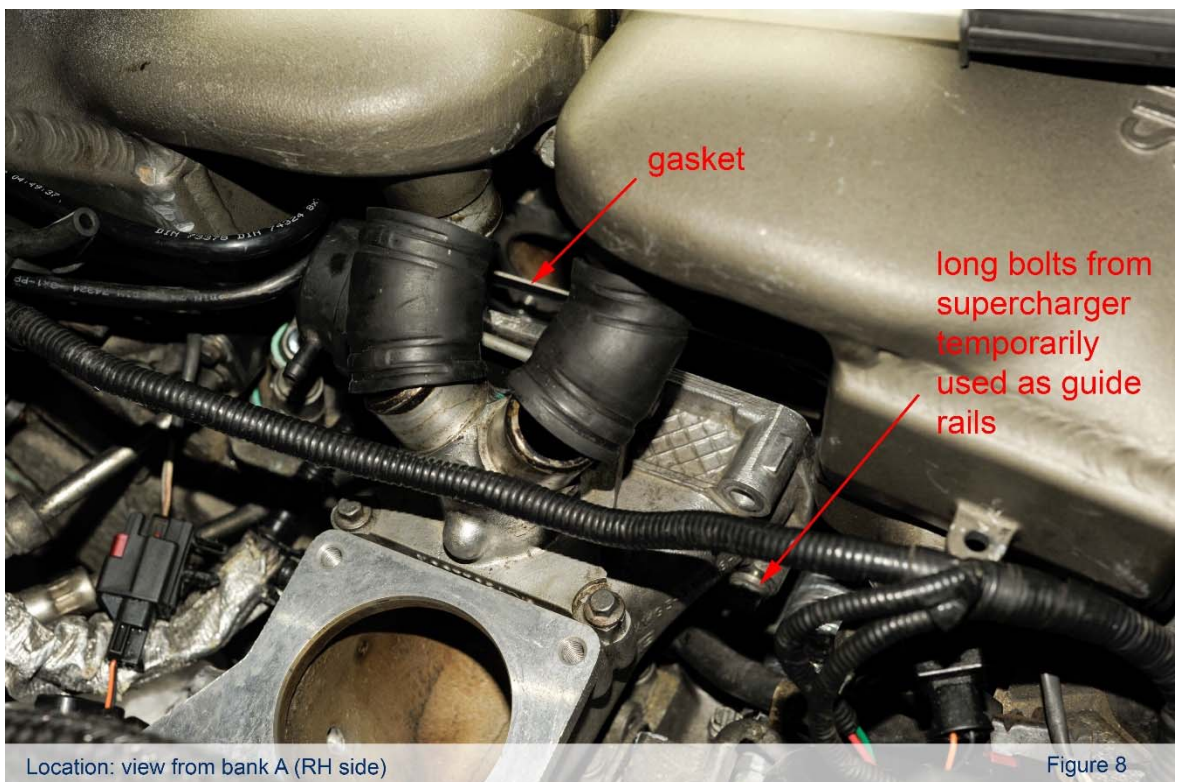
Unbolt (3 bolts) and remove supercharger from engine block

General information:

- Torque for knock sensors AJ27 engines (see below): 20 Nm



- For re-attaching the intake elbow to the supercharger, I used the two long bolts from the supercharger as guide rails to slide the elbow back in position. Doing this had two advantages: First, the bolts hold the gasket in position (which would otherwise fall in between the elbow and the supercharger). Second, it helps to put the rubber ducts back between bypass valve and air charge coolers (I applied a small amount of grease to make them little bit more slippery). When you position the ducts as shown in figure 8, they'll slide in position as you push the elbow on the „guide rails“ forward. I discarded the original spring clamps and replaced them with standard stainless steel hose clamps – way easier to attach after re-assembling).



Piece list:

Britishparts.co.uk:

2 x LNE1692AA	Knock Sensor	£69.83	2	£139.66
2 x NCC3018AB	Gasket Inlet Manifold	£4.78	2	£9.56
2 x NCC3020AA	Gasket Inlet Manifold	£9.18	2	£18.36
2 x C2C11477	Seal	£2.73	2	£5.46
NCC7754BA	Gasket Induction Elbow	£12.87	1	£12.87
NNE3021AC	Gasket Throttle Body Adaptor	£9.80	1	£9.80
NCC7735BA	Seal Supercharger	£9.40	1	£9.40

Jaguar dealer:

4	AJ810511 Verbindungselement - Nockenwellenabdichtung	€2,10	€8,40
1	JHC301720 .Schlauchselle	€1,88	€1,88
1	AJ87634 Heizungszulaufschlauch	€8,73	€8,73
1	NNE3946CA Rücklaufschlauch - Heizung	€15,78	€15,78
1	KSC137624 ..O-Ring	€2,20	€2,20
4	JHC301621 .Schlauchselle	€1,59	€6,36
1	NCA4771DA Dichtring - Abgasrückführungsleitung	€3,31	€3,31
1	AJ88560 Dichtring - Abgasrückführungsventil	€5,26	€5,26
1	AJ89646 Dichtungsscheibe	€1,92	€1,92

PS: I removed the air charge coolers and the injector rails as well for replacing the inlet manifold gaskets as well. That's why you'll notice various additional parts on the piece list.