



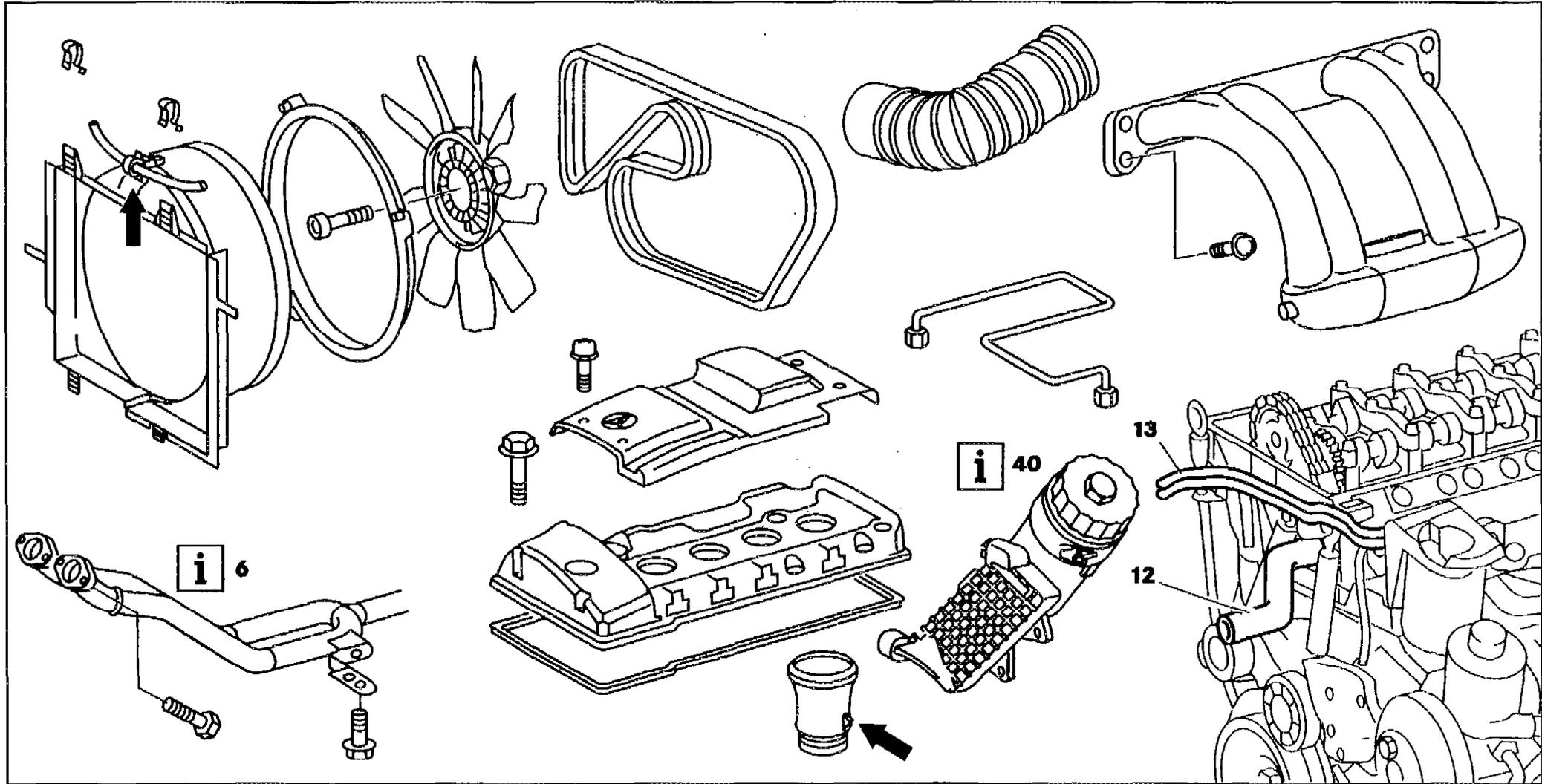
P5	AR01.30-P-5800HA	Removing, installing cylinder head	2.4.93
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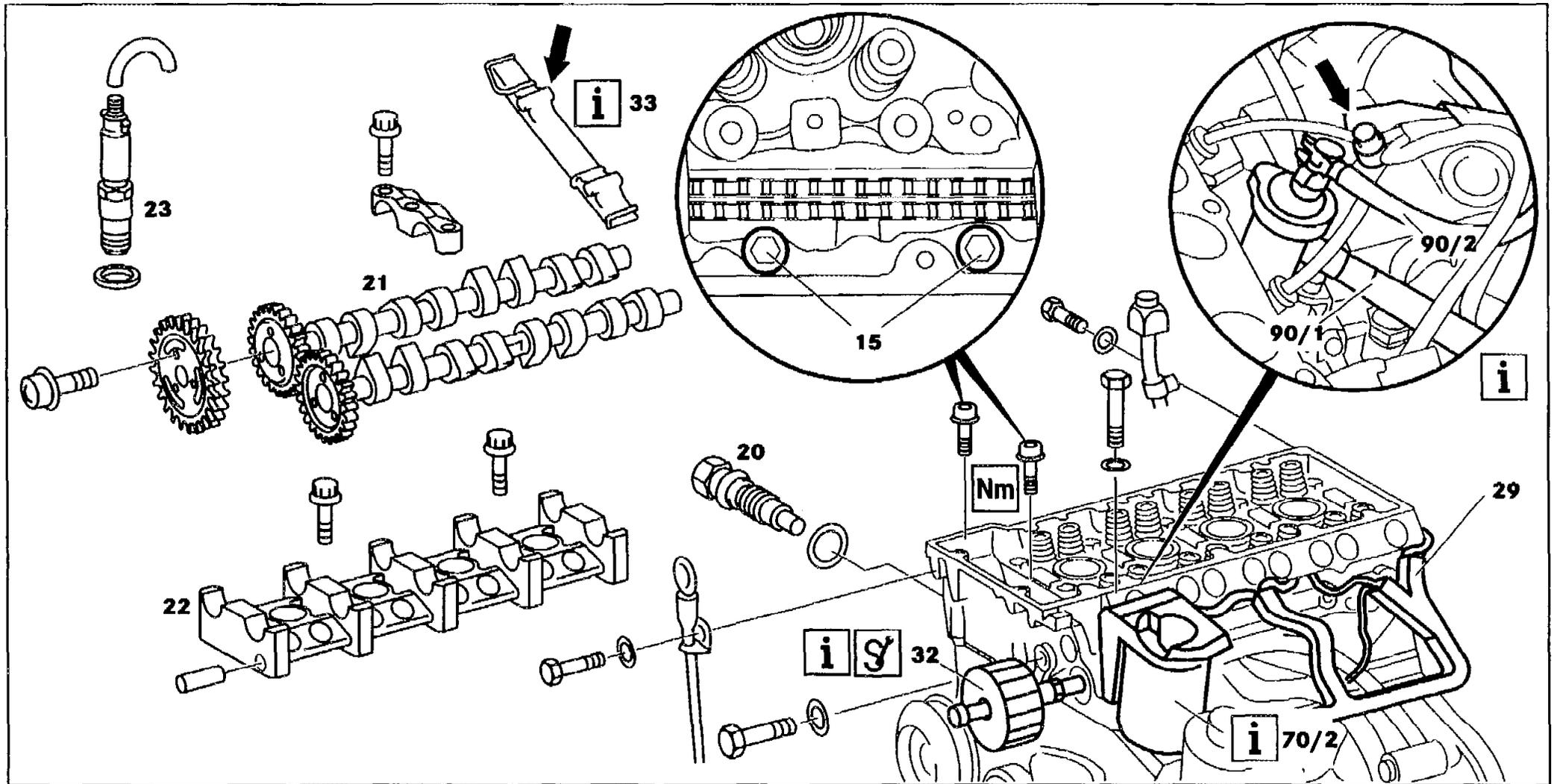
ENGINE 605, 606 in MODEL 124

ENGINE 606.961 in MODEL 140

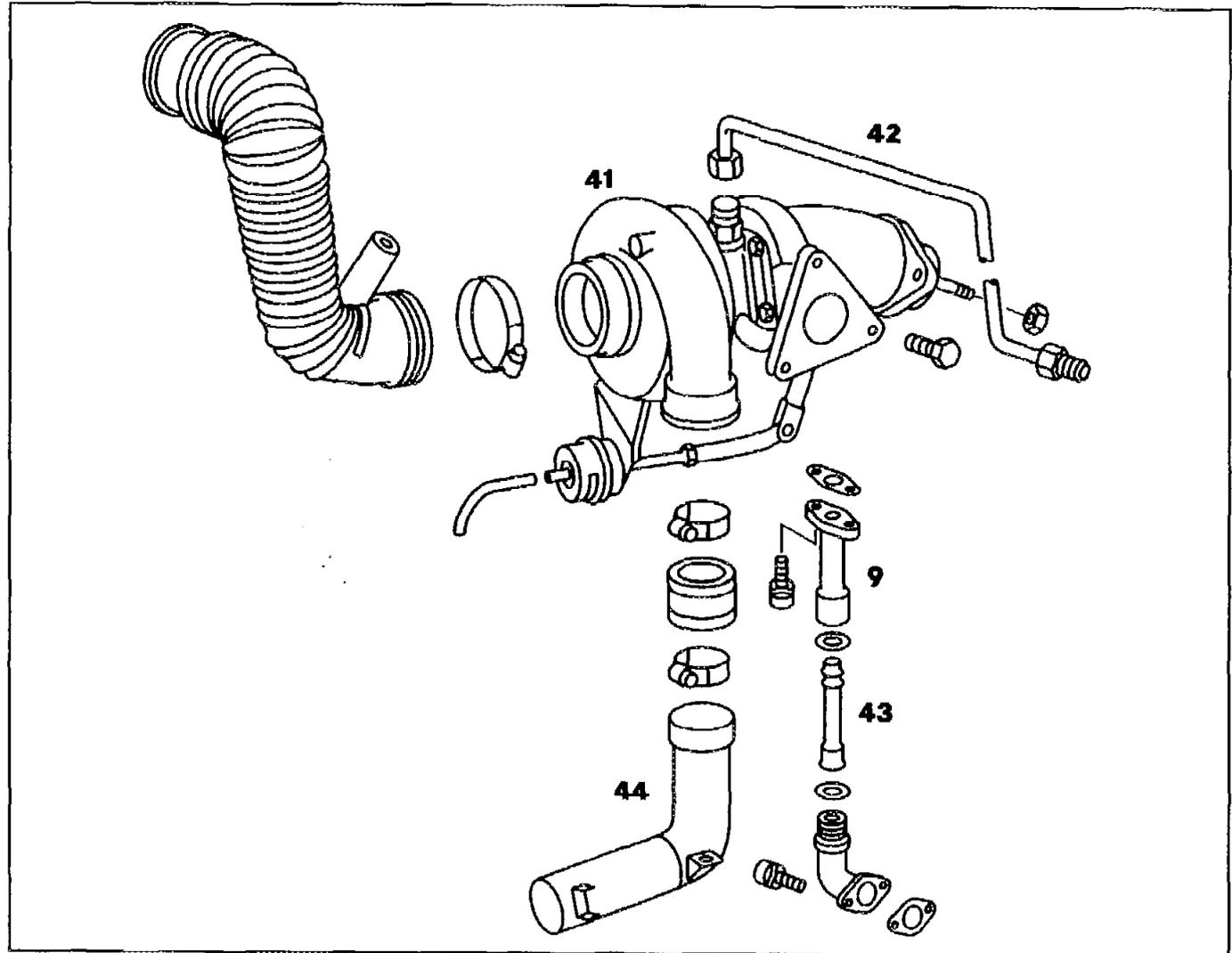
ENGINE 604, 605 in MODEL 202

ENGINE 604, 605, 606.912 /962 in MODEL 210

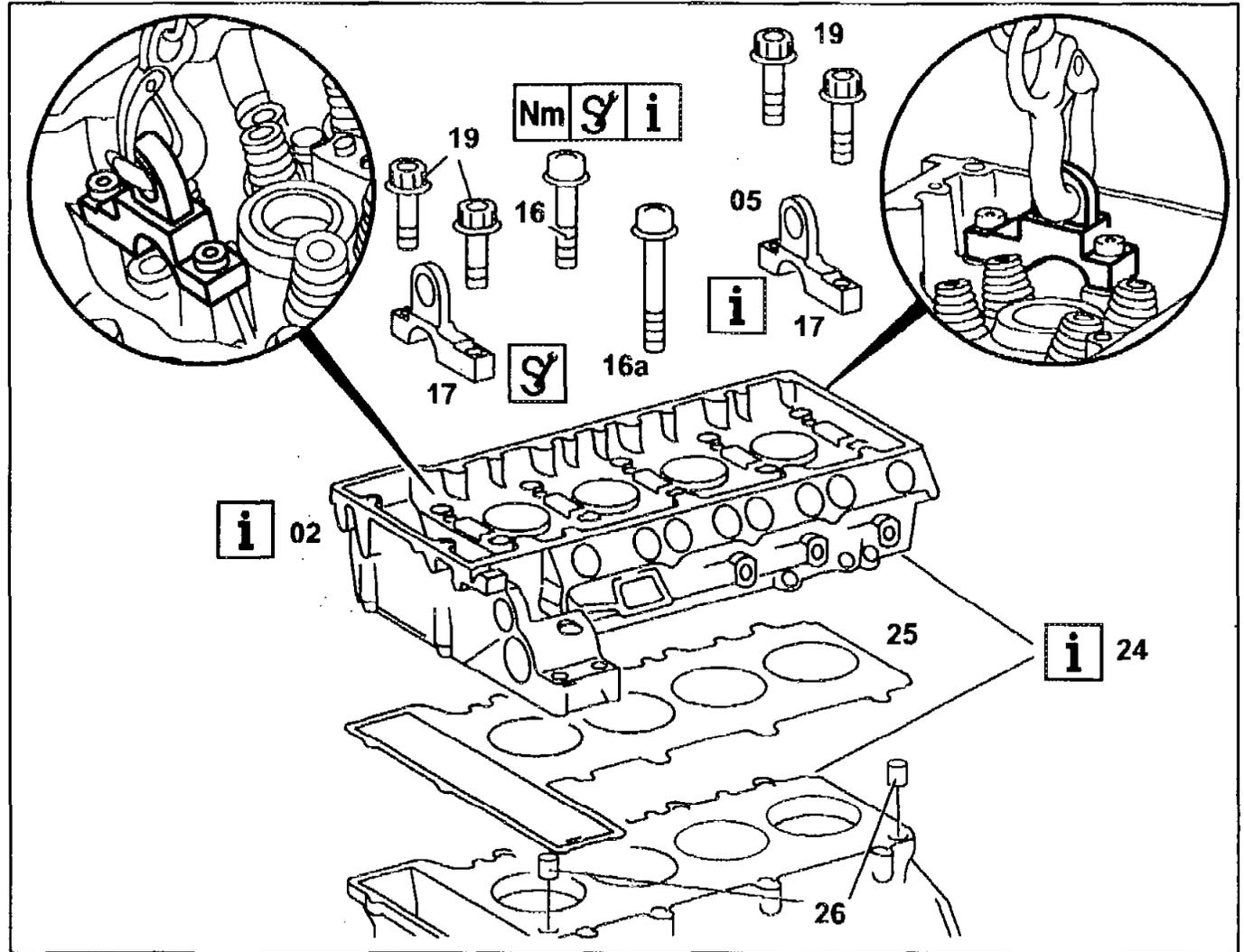




- 41 Turbocharger engine 605.960/962
606.961/962
- 42 Pressurized oil line
- 43 Oil return flow line
- 44 Charge air pipe



- 02 Cylinder head
- 16 Collar bolt M10×102
- 16a Collar bolt M10×115
- 17  Bracket
- 19 Collar bolts M7x35 for attaching the brackets
- 24 Contact surfaces of cylinder head
- 25 Cylinder head gasket
- 26 Dowel sleeves



Modification notes

1.3.95	Technical modification: Bolts for attaching camshaft housing discontinued. The camshaft housing has to be bolted to the cylinder head when performing repairs.	Step 13	BT05.20-P-0001-01A N17
1.10.96	Technical modification to cylinder head gasket Soft material gasket is replaced by a metal layer gasket	Step 26	BT01.30-P-0001-01A P17

 	Removing, installing		
1	Disconnect ground cable of battery		AR54.10-P-0003A
2	Remove engine compartment trim panel		
3	Drain coolant, pour in		AR20.00-P-1142HW
4.1	Remove radiator	Engine 606.962	AR20.20-P-3865HB
5	Remove poly V-belt		AR13.22-P-1202HA
6	Remove cylinder head cover		AR01.20-P-5014HA J5
7.1	Remove intake manifold	Engine 604, 605.910/912, 606.910/912	AR09.20-P-1310H
8.2	Remove resonance intake manifold	Engine 606.912	AR09.20-P-1961H
9.3	Remove charge air distribution pipe	Engine 605.960/962 Engine 606.961/962	AR09.41-P-1310H AR09.41-P-1310HA
10	Detach coolant hoses (12) at cylinder head	 Inspect condition of hose clips and hoses, replace if necessary.	WH58.30-Z-1001-06A

			WH58.30-Z-1002-06A
11.1	Detach vacuum lines (13) at cylinder head, mark if necessary	except 606.961/962	
12	Unbolt exhaust system (6) at exhaust manifold or turbocharger	i Exhaust manifold remains attached to cylinder head	
13	Remove chain tensioner (20)		AR05.10-P-7800HA
14	Remove guide rail (33) in cylinder head	i Installation: install guide rail so that the two mounting holes for the guide rail pins face up (arrow) and the open side of the guide rail is facing in opposite direction of travel.	AR05.10-P-8432HA
15  BT	Remove camshaft housing (22) Bolts for attaching camshaft housing to cylinder head discontinued		AR05.20-P-6995HA BT05.20-P-0001-01A N17
16.1	Remove injection nozzles (23)	i If cylinder head replaced	AR07.03-P-6830H
 Danger!	Risk of explosion as a result of fuel vapors igniting. Risk of poisoning as a result of inhaling fuel vapors. Risk of injury as a result of fuel coming into contact with skin and eyes.	No fire, naked flame or smoking. Pour fuels only into suitable and appropriate marked containers. Wear protective clothing when handling fuel.	AS47.00-Z-0001-01A L17

17	Disconnect fuel lines	<p>i Open fuel filler cap.</p> <p>Model 202: Disconnect fuel lines 90/1, 90/2 at fuel preheater.</p> <p>Models 124, 140, 210: Disconnect the feed lines at the body side and connect with a section of hose.</p>	
18	Disconnect engine wiring harness (29) at cylinder head		
19.1	Remove oil filter (40)	<p>i On models with oil-water heat exchanger at oil filter</p>	AR18.20-P-3471HA
20	Unbolt fuel filter (70/2) at cylinder head	<p>i Place fuel filter to the side with lines connected.</p>	
21	Unscrew bolts (15) of cylinder head at timing case cover	Nm	BA01.40-P-1002-01A
22	Disconnect pressurized oil line (42), oil return flow line (43), charge air pipe (44) at turbocharger (41)	<p>Engine 605.960/962, 606.961/962</p> <p>Ⓢ Installation: replace gaskets and O-rings.</p>	
23	Slacken cylinder head bolts (16, 16a) in stages, remove	<p>Ⓢ Slacken cylinder head bolts in reverse order of tightening diagram once engine has cooled down.</p> <p>Ⓢ</p> <p>Tightening diagram of cylinder head bolts</p>	<p>601 589 00 10 00</p> <p>AR01.30-P-5800-01HA D15</p>



		<p>i Installation: it is not necessary to retighten the cylinder head bolts.</p> <p>⌚ Oil thread and head contact surface of cylinder head bolts, insert and tighten in stages.</p> <p>Nm</p>	BA01.30-P-1002-01A
24	Inspect cylinder head bolts (16, 16a)		AR01.30-P-5800-03HA F15 BE01.30-P-1001-04A
25	Attach bracket (17) for removing cylinder head	<p>i Bolt bracket to first and last camshaft bearings (exhaust side) with M7x35 bolts (19).</p> <p>⌚</p>	119 589 01 40 00
26	Remove cylinder head (02)	<p>⌚ Installation: fit new cylinder head gasket (25) onto the crankcase.</p> <p>i When fitting on, pay attention to dowel sleeves (26) for locating the cylinder head.</p> <p>⌚ If the crankcase has been faced, it is then necessary to install a repair size cylinder head gasket with a thickness of 1.85 mm, if necessary ↓</p> <p>measure piston projection</p>	AR03.10-P-7041-01A H15

 BT	Technical modification cylinder head gasket	<p> If timing case cover and cylinder head are also removed, this alters the setting of the injection pump; check start of delivery and set if necessary ↓</p> <p>Model 124 Model 140, 202, 210</p> 	RA07.8300 AD07.00-P-1464B WH58.30-Z-1001-07A BT01.30-P-0001-01A P17
27	Clean contact surfaces (24) and threaded holes	<p> Blow out threaded holes, free of oil and water; inspect contact surfaces, if necessary ↓</p> <p>face contact surface of crankcase</p> <p>Inspect contact surface of cylinder head, face</p>	AR01.40-P-9133B C9 AR01.30-P-7162B O6
28.1	Remove oil in cooling and heating system	If oil present in cooling and heating system	AR20.00-P-1250A
29	Install in the reverse order		
30	Inspect cooling system for leaks		AR20.00-P-1010HA
 Danger!	Risk of accident as a result of vehicle starting off when engine running. Risk of injury as a result of bruises and burns if you insert your hands into engine when it is being started or when it is running.	Secure vehicle to prevent it starting off. Wear closed and close-fitting work clothes. Do not grasp hot or rotating parts.	AS00.00-Z-0005-01A J17



31	Run engine and inspect for leaks		
32	Read fault memory, erase.	Stored faults which may be caused by disconnecting cables or by simulation when carrying out removal and installation or test work, have to be processed and erased in the fault memories after completing the work.	AD00.00-P-1000AZ

Cylinder head/cylinder head bolts

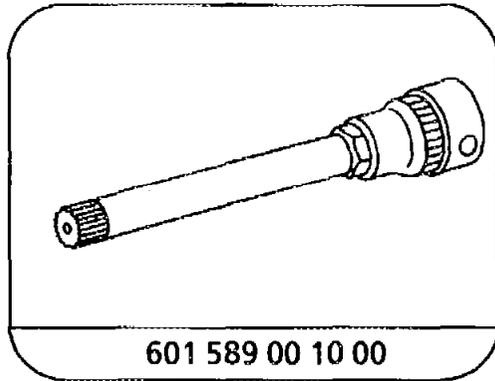
Number	Designation	Engine 604, 605, 606	
BE01.30-P-1001-04A	Cylinder head bolt	Thread diameter	M 10
		Length (L) when new	mm 102/115
		Max. length (L)	mm 104/117
		Fig. see	AR01.30-P-5800-03HA

**Nm** Tightening torques of cylinder head

Number	Designation	Engine 604, 605, 606	
BA01.30-P-1002-01A	Cylinder head bolt M10	1st stage	Nm 15
		2nd stage	Nm 35
		3rd stage	∠° 90
		Settling time	min 10
		4th stage	∠° 90
		Fig. see	AR01.30-P-5800-01HA

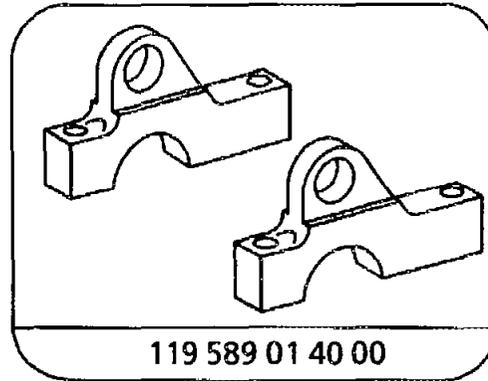
Nm Crankcase, timing case cover, end cover

Number	Designation	Engine 604, 605, 606	
BA01.40-P-1002-01A	Bolt of cylinder head to timing case cover	Nm	25



601 589 00 10 00

Screwdriver bit



119 589 01 40 00

Retaining arm

Commercially available tools

Number	Designation	Make (e.g.)	Order number
WH58.30-Z-1001-06A	6 mm wrench hexagon on flexible shaft for hose clips with worm drive	Hazet Güldenwerther Bahnhofstraße 25-28 D-42857 Remscheid	426-6
WH58.30-Z-1002-06A	7 mm wrench hexagon on flexible shaft for hose clips with worm drive	Hazet Güldenwerther Bahnhofstraße 25-28 D-42857 Remscheid	426-7
WH58.30-Z-1001-07A	Engine hoist (self-locking)	Bäcker Herderstraße D-42853 Remscheid	3188

**Repair products**

Number	Designation	Order number
BR00.45-Z-1010-01A	Loctite 574 sealant (50 ml)	001 989 89 20 10
BR00.45-Z-1014-01A	Omnifit FD 3041 sealant (50 ml)	002 989 47 20 10