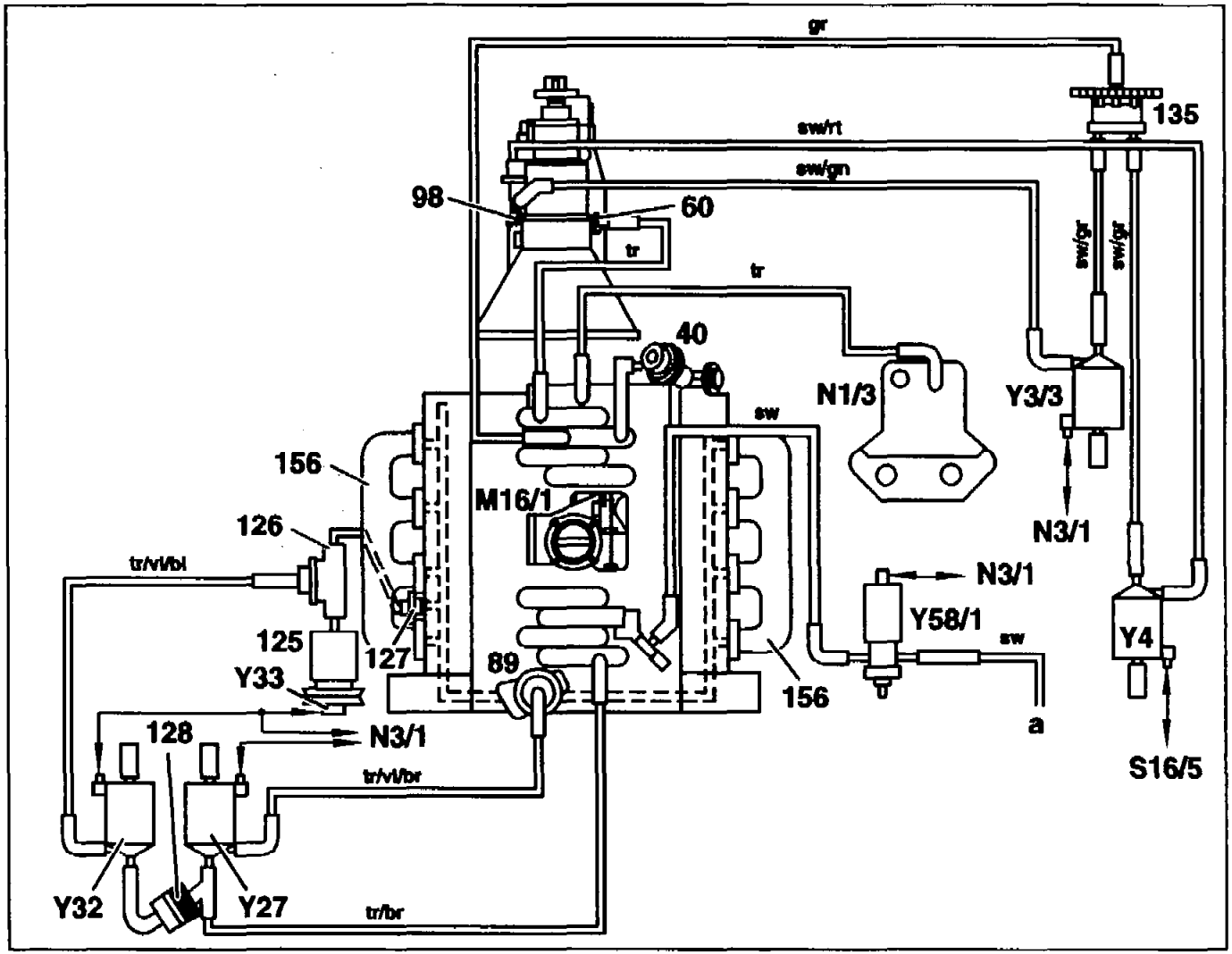
N15 AR09.20-P-1310-01E	Connection diagram of intake manifold		

Function diagram of vacuum supply
model 124, engine 119.974/975

40 Diaphragm pressure regulator
60 Modulating pressure vacuum unit
89 Exhaust gas recirculation valve
98 Vacuum element for upshift delay
125 Air pump
126 Air shut-off valve
127 Check valve (secondary injection air)
128 Check valve (vacuum)
135 Check valve (vacuum supply)
156 Exhaust manifold
M16/1 Electronic accelerator (EA) actuator
N1/3 DI/KSS ignition control unit
N3/1 Air hot wire (LH-SFI) control module
S16/5 Economy mode switch

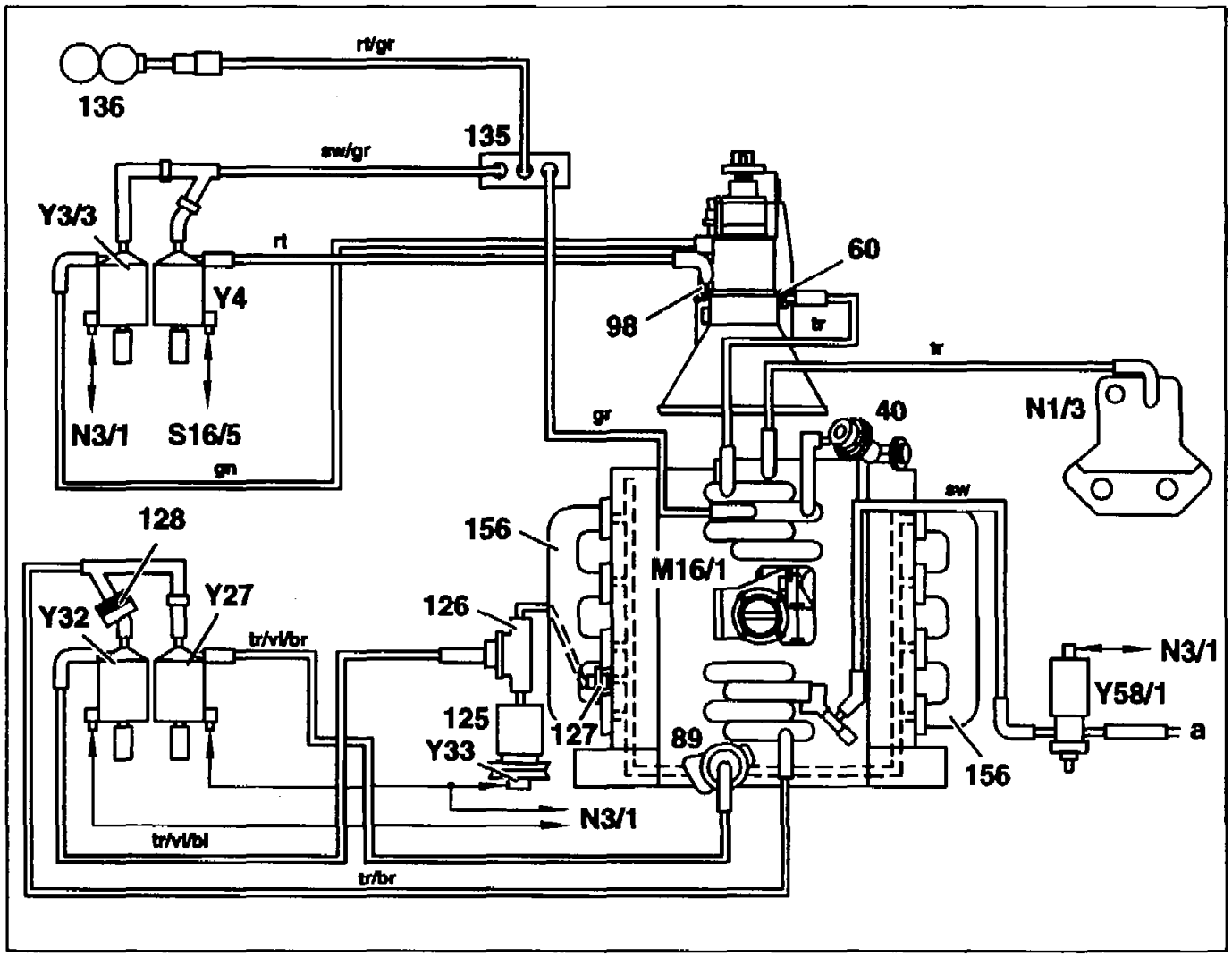


P09.20-0244-06

Y3/3 Upshift delay switchover valve
Y4 Economy mode switchover valve
Y27 EGR switchover valve
Y32 Air pump switchover valve
Y33 Air pump electromagnetic coupling
Y58/1 Purge control valve
a to activated charcoal filter

Function diagram of vacuum supply
model 129, engine 119.972

40 Diaphragm pressure regulator
60 Modulating pressure vacuum unit
89 Exhaust gas recirculation valve
98 Vacuum element for upshift delay
125 Air pump
126 Air shut-off valve
127 Check valve (secondary injection air)
128 Check valve (vacuum)
135 Check valve (vacuum supply)
136 Vacuum reservoir
156 Exhaust manifold
M16/1 Electronic accelerator (EA) actuator
N1/3 DI/KSS ignition control unit
N3/1 Air hot wire (LH-SFI) control module
S16/5 Economy mode switch

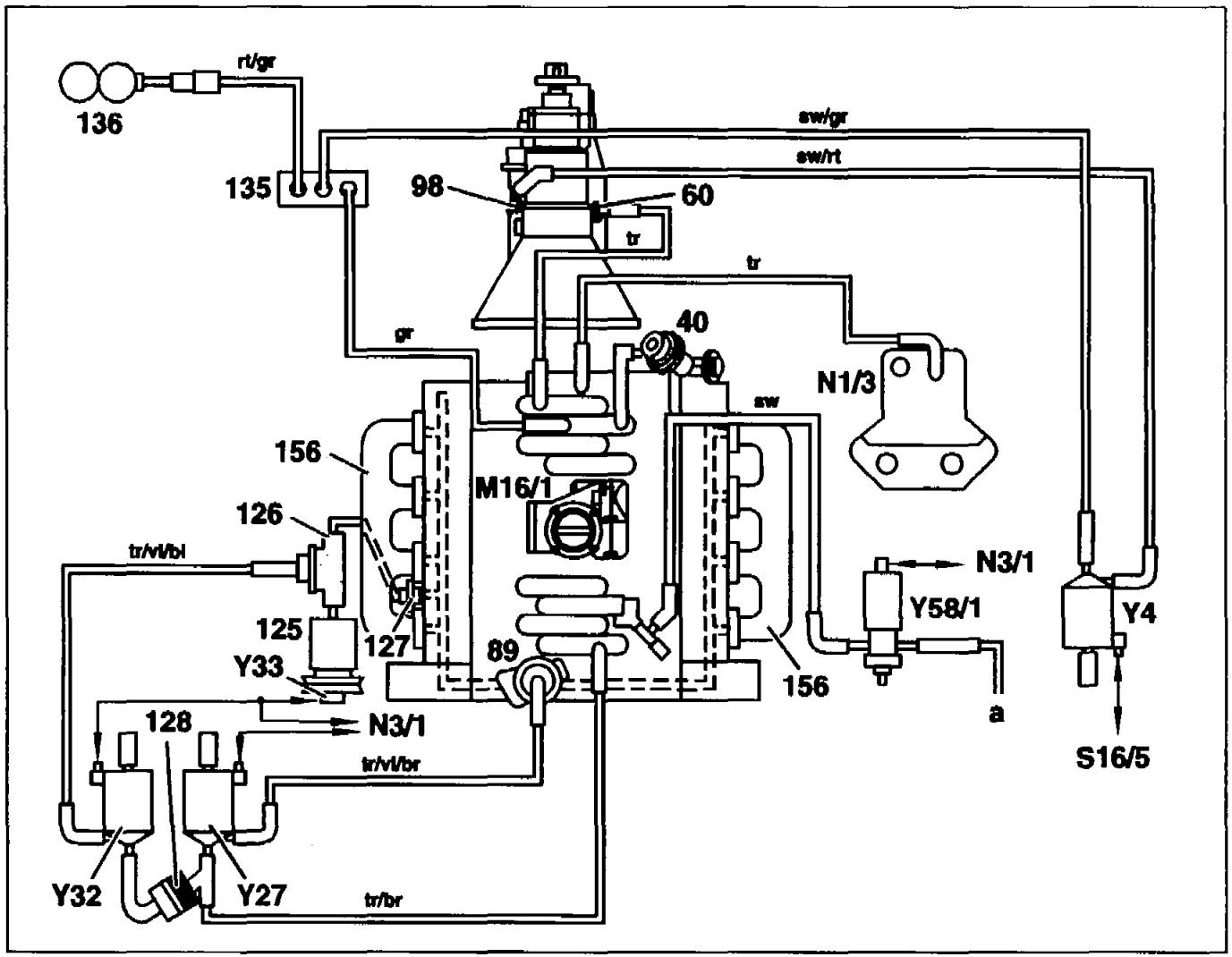


P09.20-0245-06

Y3/3 Upshift delay switchover valve
Y4 Economy mode switchover valve
Y27 EGR switchover valve
Y32 Air pump switchover valve
Y33 Air pump electromagnetic coupling
Y58/1 Purge control valve
a to activated charcoal filter

Function diagram of vacuum supply
model 140, engine 119.970/971
1st version up to 05/91

40 Diaphragm pressure regulator
60 Modulating pressure vacuum unit
89 Exhaust gas recirculation valve
98 Vacuum element for upshift delay
125 Air pump
126 Air shut-off valve
127 Check valve (secondary injection air)
128 Check valve (vacuum)
135 Check valve (vacuum supply)
136 Vacuum reservoir
156 Exhaust manifold
M16/1 Electronic accelerator (EA) actuator
N1/3 DI/KSS ignition control unit
N3/1 Air hot wire (LH-SFI) control module
S16/5 Economy mode switch

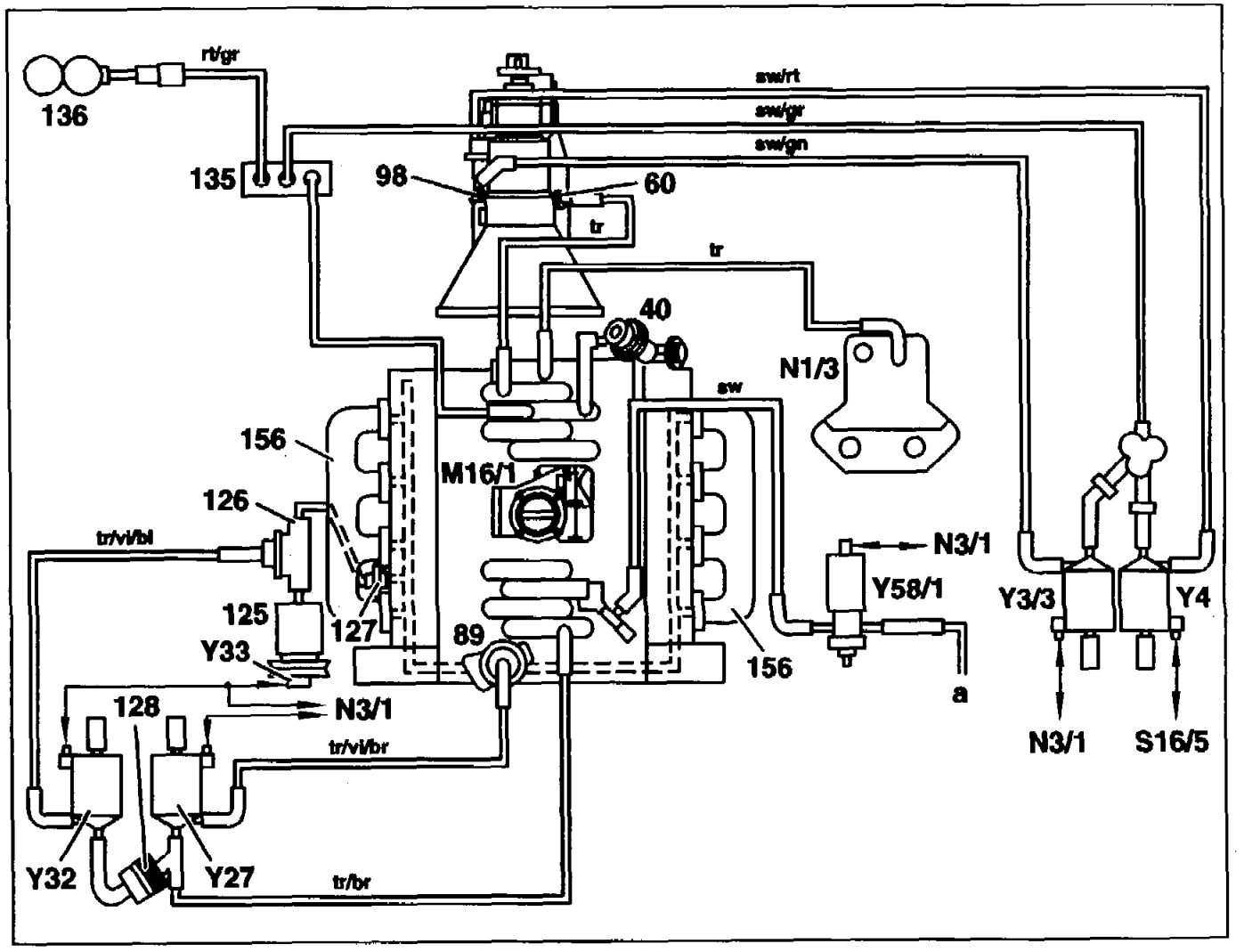


P09.20-0246-06

Y4 Economy mode switchover valve
Y27 EGR switchover valve
Y32 Air pump switchover valve
Y33 Air pump electromagnetic coupling
Y58/1 Purge control valve
a to activated charcoal filter

Function diagram of vacuum supply
model 140, engine 119.970/971
2nd version as of 06/91

40 Diaphragm pressure regulator
60 Modulating pressure vacuum unit
89 Exhaust gas recirculation valve
98 Vacuum element for upshift delay
125 Air pump
126 Air shut-off valve
127 Check valve (secondary injection air)
128 Check valve (vacuum)
135 Check valve (vacuum supply)
136 Vacuum reservoir
156 Exhaust manifold
M16/1 Electronic accelerator (EA) actuator
N1/3 DI/KSS ignition control unit
N3/1 Air hot wire (LH-SFI) control module
S16/5 Economy mode switch

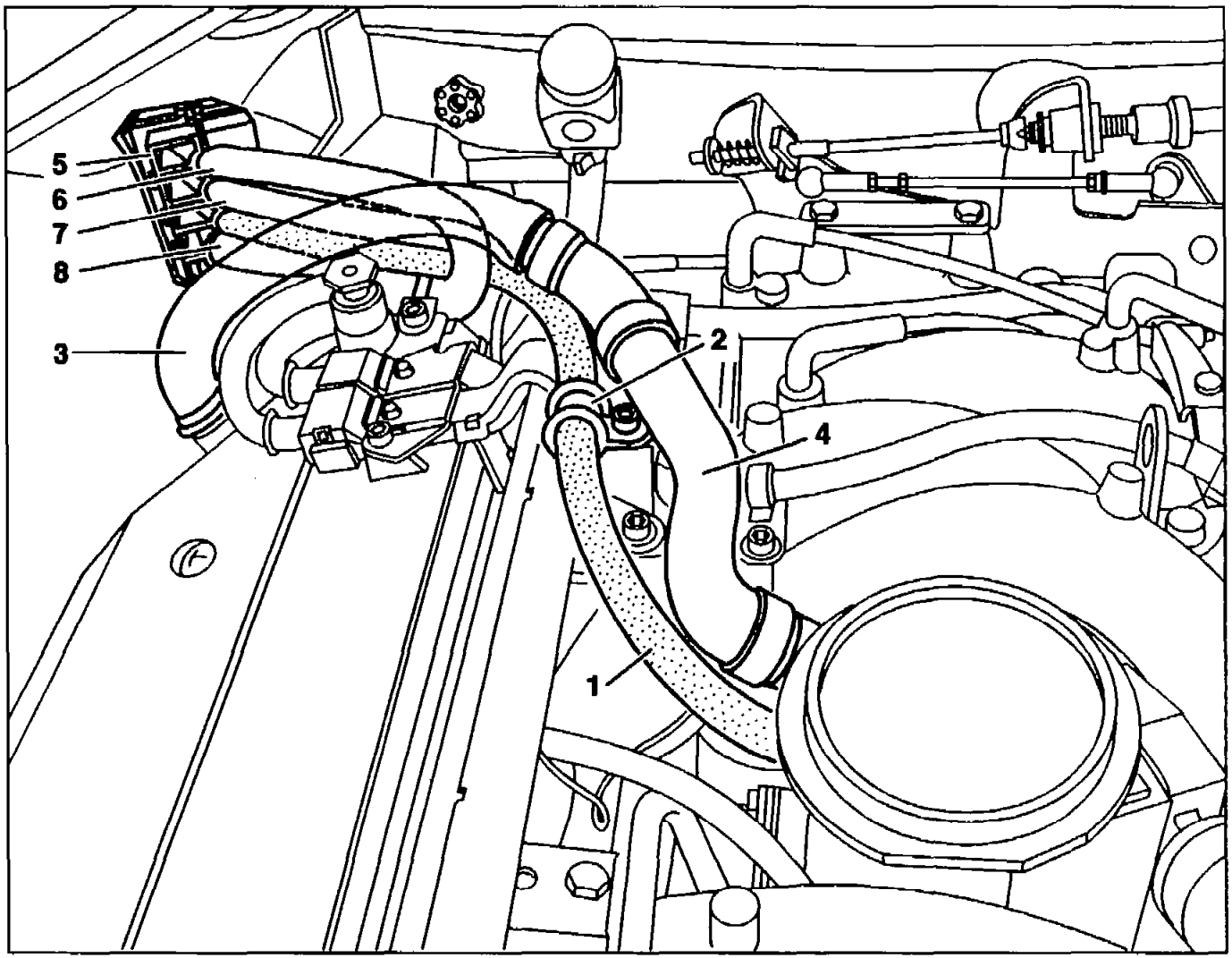


P09.20-0247-06

Y3/3 Upshift delay switchover valve
Y4 Economy mode switchover valve
Y27 EGR switchover valve
Y32 Air pump switchover valve
Y33 Air pump electromagnetic coupling
Y58/1 Purge control valve
a to activated charcoal filter

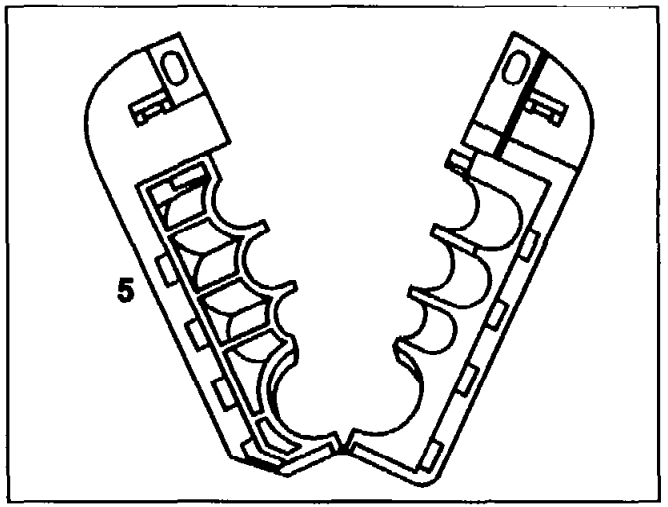
B16 AR30.20-P-1262-01A	Routing of cable of electronic accelerator	Model 124.036 up to 06/93	
BT	Routing of cable of electronic accelerator modified	Model 124.036	BT30.20-P-0001-01A

1 Electric cable of electronic accelerator
2 Securing clip
3 Shaped hose
4 Shaped hose
5 Scissors-type bush
6 Electric cable
7 Electric cable
8 Coolant pipe of heating water return



P30.20-0203-06

1 Remove scissors-type bush (5) from the component compartment wall, install. Fold open scissors-type bush (5) and pull out cables.



P30.20-0204-01

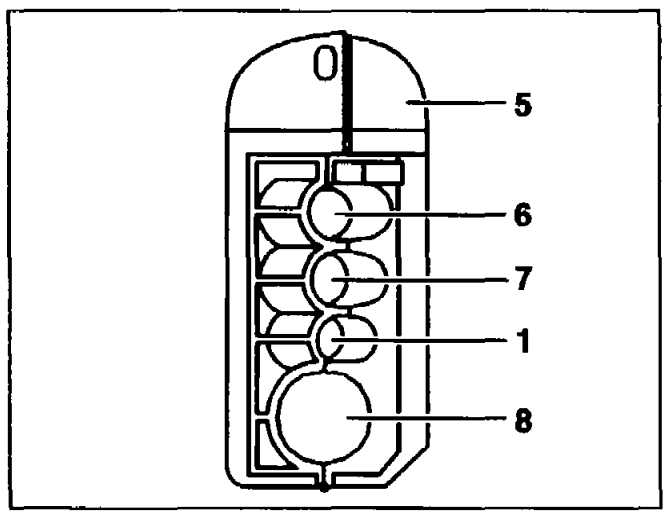
2 On models up to engine ident no. 001910 replace shaped hoses (3, 4) for the crankcase ventilation and route as shown in the illustration.
Shaped hose (3), part no. 119 094 6282
Shaped hose (4), part no. 119 094 5582

3 Electric cable (1) of accelerator pedal actuator and also the securing clip (2) must be installed as shown in the illustration.

i The white marking (arrow) must be installed within the securing clip (2). The markings which are otherwise provided all round are identified on this cable as a white rectangle.

4 Route all the electric cables (1, 6, 7) and also the coolant pipe of the heating water return (8) through the holes (6, 7, 1, 8) of the scissors-type bush (5). Press scissors-type bush together.

i It is absolutely essential to keep to the order for routing the cables and pipes through the holes of the scissor-type bush.

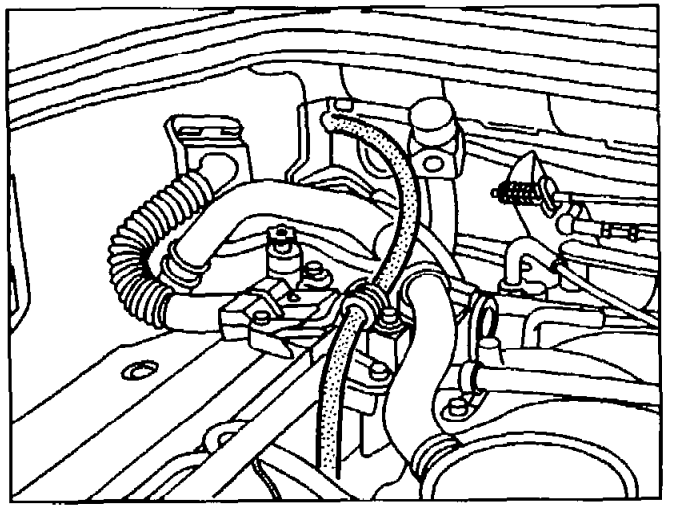


P30.20-0205-01

1 Electric cable of electronic accelerator
5 Scissors-type bush
6 Engine wiring harness
7 Starter wiring harness
8 Coolant pipe of heating water return

D16 AR30.20-P-1262-01B	Routing of cable of electronic accelerator	Model 124.034	

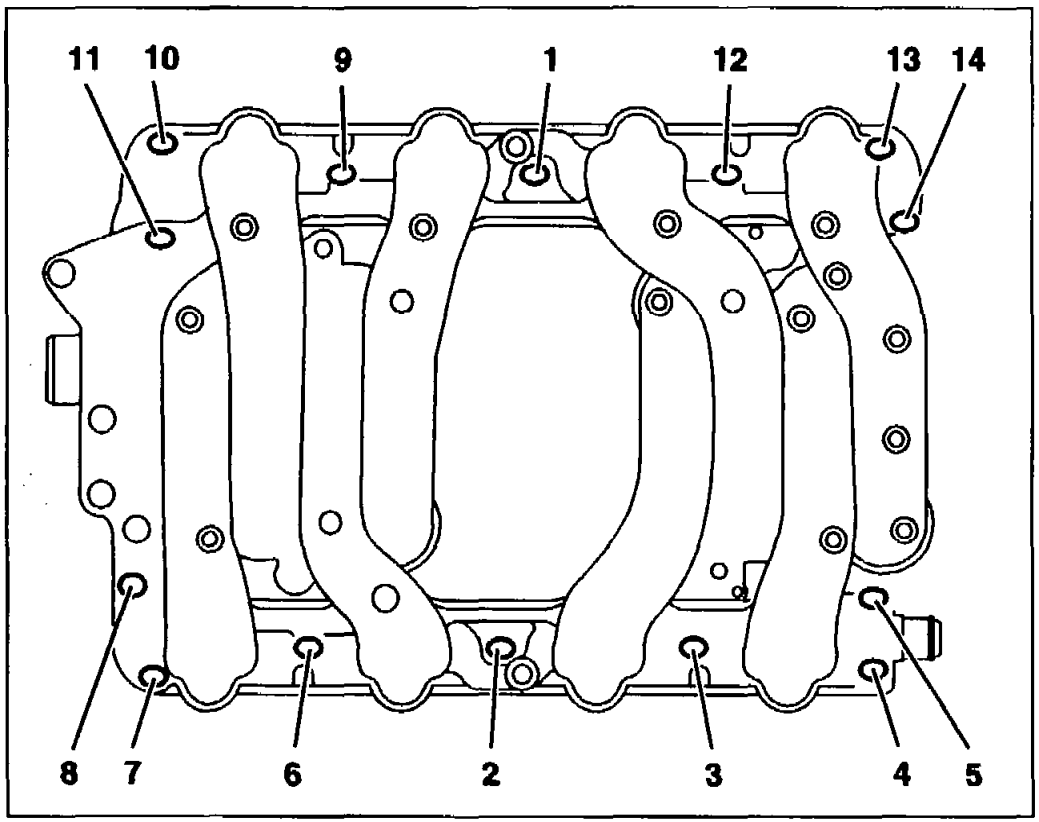
i Pay attention to routing of cable.



P30.20-0206-01

E16 AR09.20-P-1310-03E	Tightening diagram for attaching intake manifold		

Tightening diagram for attaching intake manifold



P09.20-0248-11

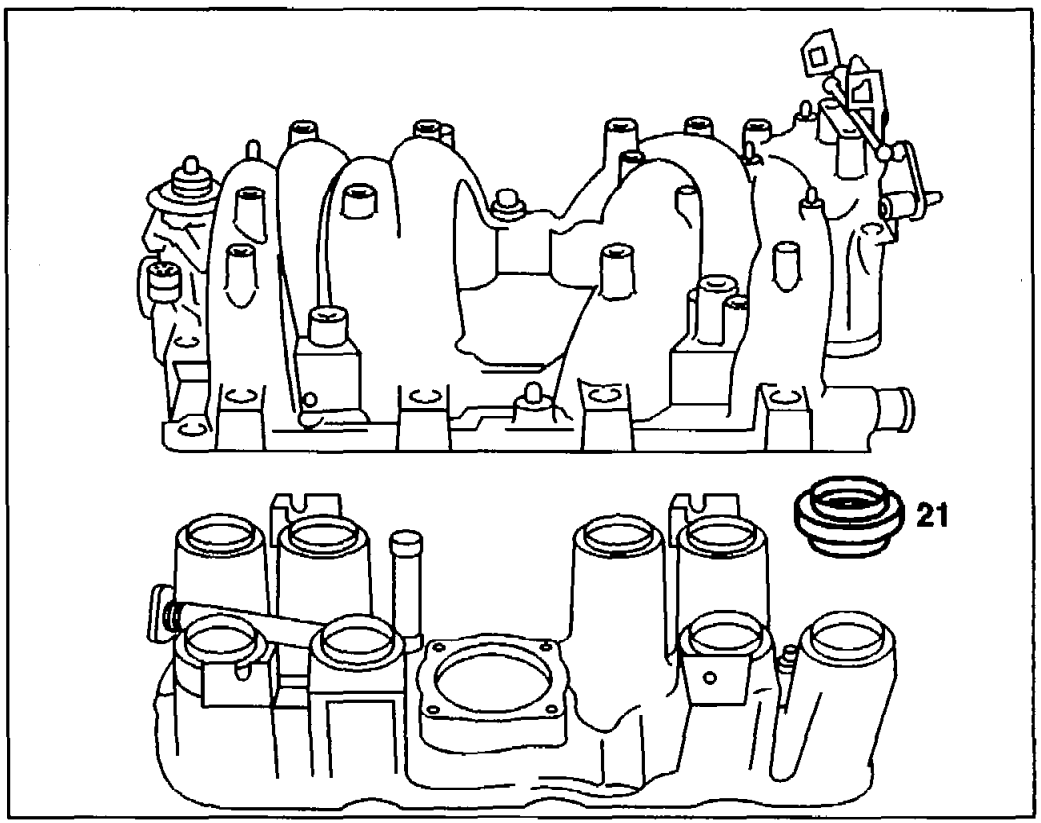
F16 AR09.20-P-1310-04E	Replacing intake manifold		

Nm Intake manifold

Number	Designation		Engine 119
BA09.20-P-1003-01C	Bolt of top part of intake manifold to bottom part of intake manifold	Nm	25

Take off all the parts attached to the removed intake manifold and fit on to the new intake manifold.

i Fit new rubber pieces (21).

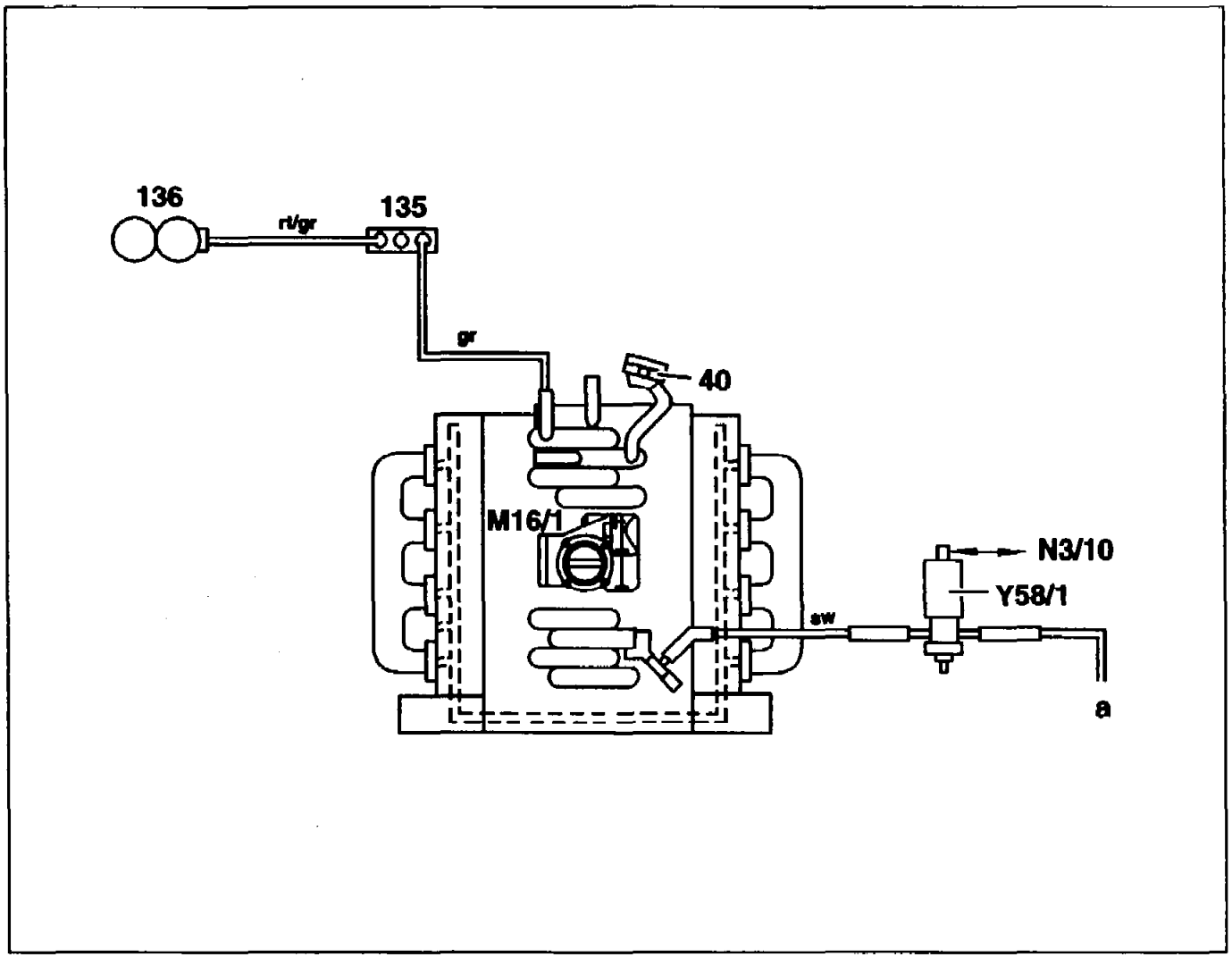


P09.20-0249-11

G16 AR09.20-P-1310-01EA	Connection diagram of intake manifold		

Function diagram of vacuum supply (except (USA))

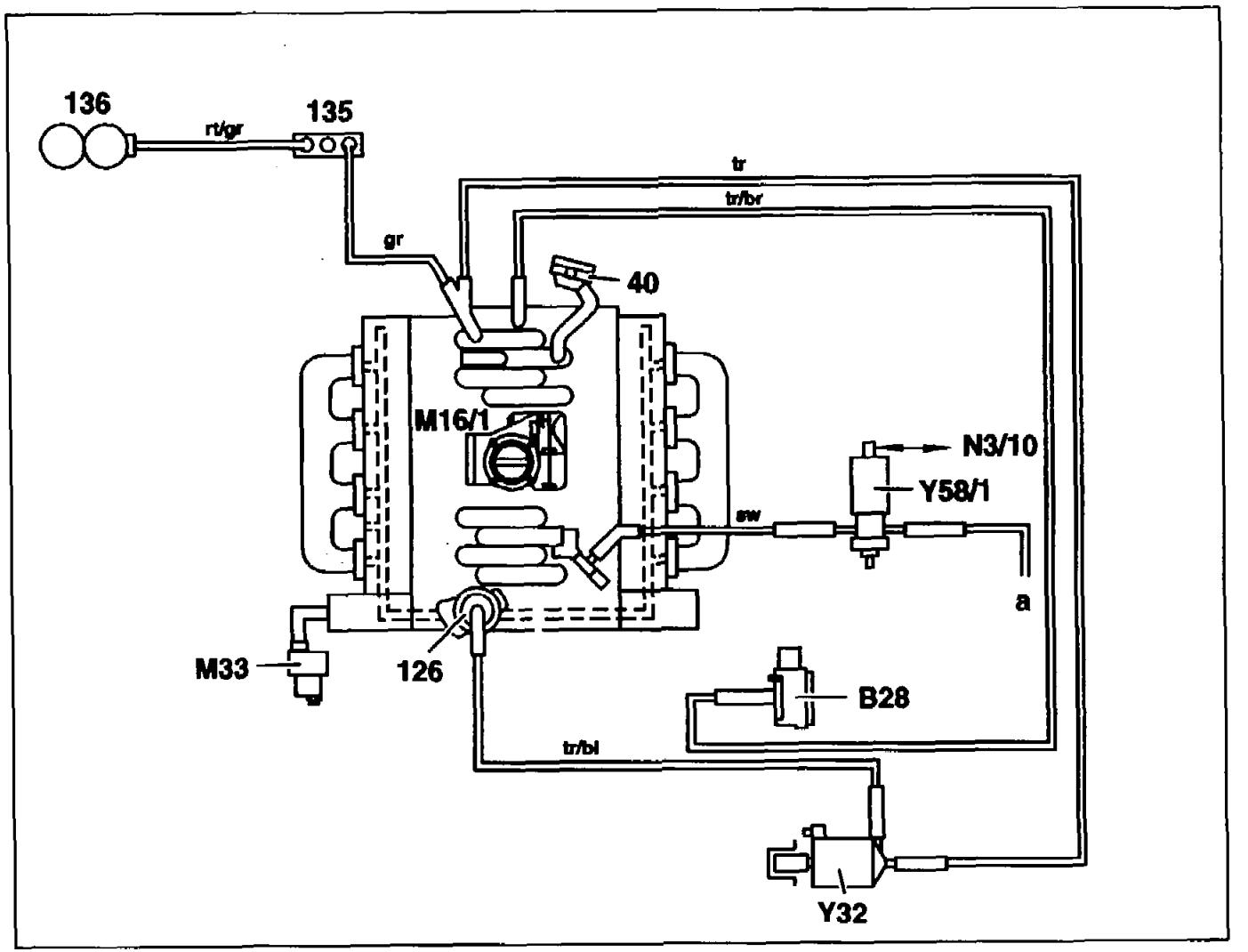
40	*Diaphragm pressure regulator*
135	*Check valve (vacuum supply)*
136	*Vacuum reservoir*
M16/1	*Electronic accelerator (EA) actuator*
N3/10	*Motor electronics (ME) control module*
Y58/1	*Purge control valve*
a	*to activated charcoal filter*



P09.20-0258-06

Function diagram of vacuum supply (USA)

40	*Diaphragm pressure regulator*
126	*Air shut-off valve*
135	*Check valve (vacuum supply)*
136	*Vacuum reservoir*
B28	*Pressure sensor*
M33	*Air pump*
M16/1	*Electronic accelerator (EA) actuator*
N3/10	*Motor electronics (ME) control module*
Y58/1	*Purge control valve*
Y32	*Air pump switchover valve*
a	*to activated charcoal filter*



P09.20-0257-06

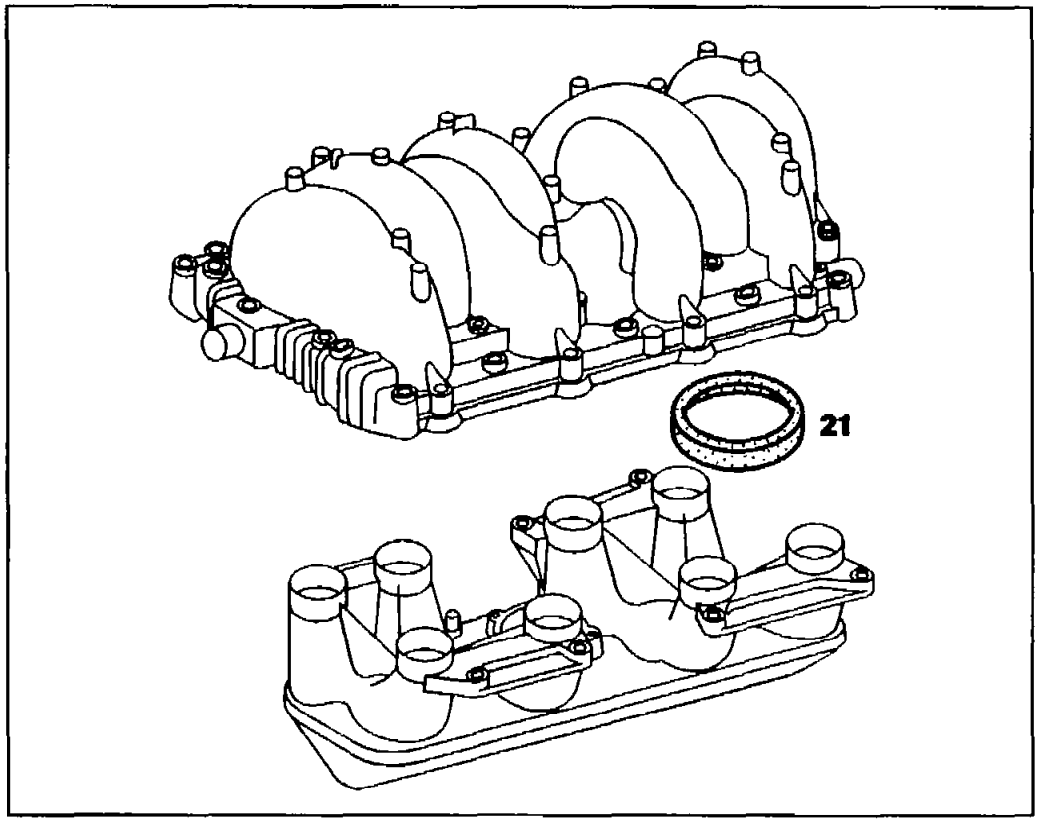
J16 AR09.20-P-1310-04EA	Replacing intake manifold		

Nm Intake manifold

Number	Designation		Engine 119
BA09.20-P-1003-01C	Bolt of top part of intake manifold to bottom part of intake manifold	Nm	25

Take off all the parts attached to the removed intake manifold and fit on to the new intake manifoild.

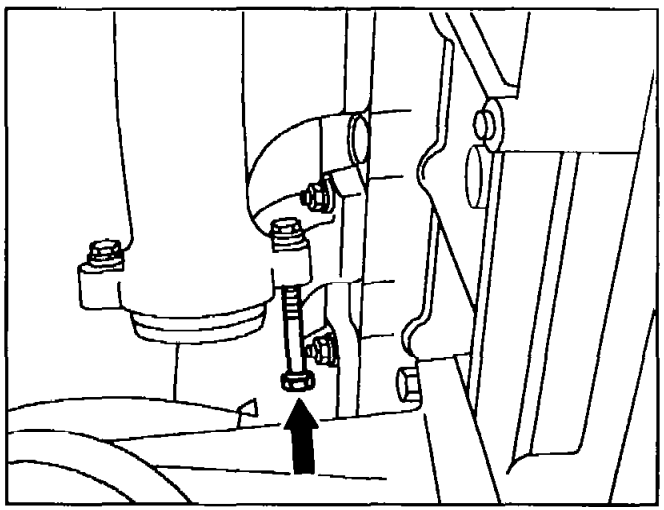
i Fit new rubber pieces (21).



P09.20-0262-11

K16 AR49.10-P-5531-01DA	Replacing rivet nuts in exhaust manifold	103 589 01 39 00 Caulking screw	

1 Use a suitable bolt (arrow) to knock rivet nuts out of the holes in the exhaust manifold.

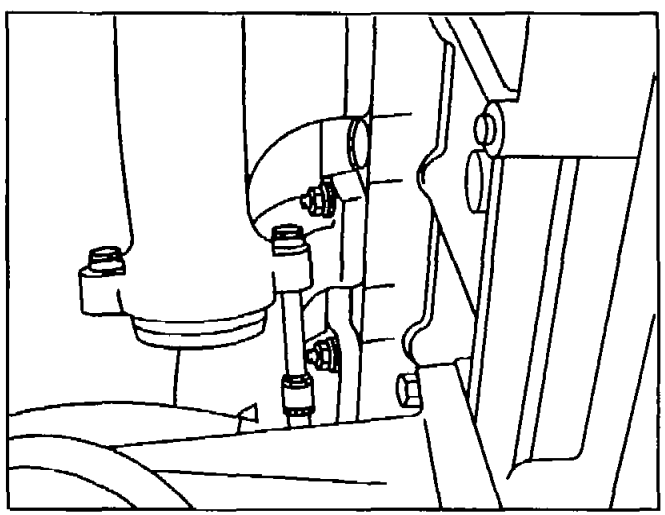


P49.10-0209-01

i Screw in bolt by hand only.

2 Insert new rivet nut into hole of the exhaust manifold.

3 Screw in caulking bolt and tighten to about 30 Nm.

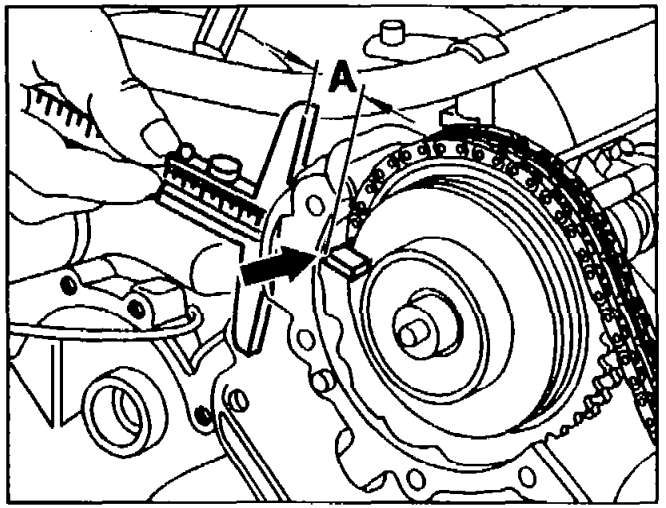


P49.10-0210-01

L16 AR15.12-P-2143-01A	Checking, adjusting clearance of camshaft position sensor/camshaft sprocket segment		

Adjusting

1 Position crankshaft to 25° CKA before ignition TDC of cylinder 1.



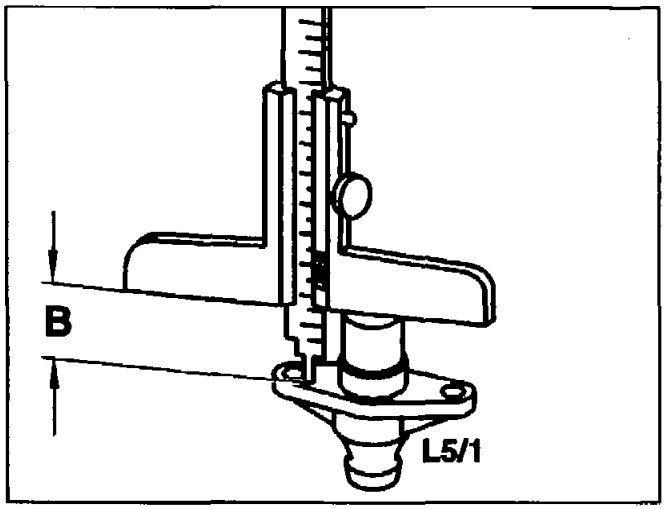
P15.12-0245-01

Measuring

2 Use a depth slide gauge to measure size "A" from the plane face of the camshaft position sensor (L5/1) at the cylinder head to the segment (arrow) on the camshaft sprocket.

i Enter size "A" in table (see calculation example).

3 Use depth slide gauge to measure size "B" at camshaft position sensor (L5/1) without shim from the contact surface to the position sensor.



P15.12-0246-01

ⓘ Enter size "B" in table (see calculation example).

4 Calculate difference "D". D is the difference between A and B (D = A – B).

ⓘ Specification "W" is 0.4 – 0.6 mm (aim for average of 0.5 mm).

5 Calculate thickness of shims "S" (S = W – D).

⚠ If the result for "D" is a negative value, the amount of "D" must be added to the specified value (0.5 mm) (S = W – (–D) = W + D). Otherwise, the camshaft position sensor would be damaged because of its projection.
Shims (10) are available as replacement parts in 1/10 graduations from 0.1 – 1.0 mm.

Calculation examples

	Example 1 Size "A" ≥ Size "B"	Example 2 Size "A" < Size "B"
Size "A"	24.1 mm	23.8 mm
Size "B"	– 23.8 mm	– 24.1 mm
Difference "D"	0.3 mm	– 0.3 mm
Specification "W"	0.5 mm	0.5 mm

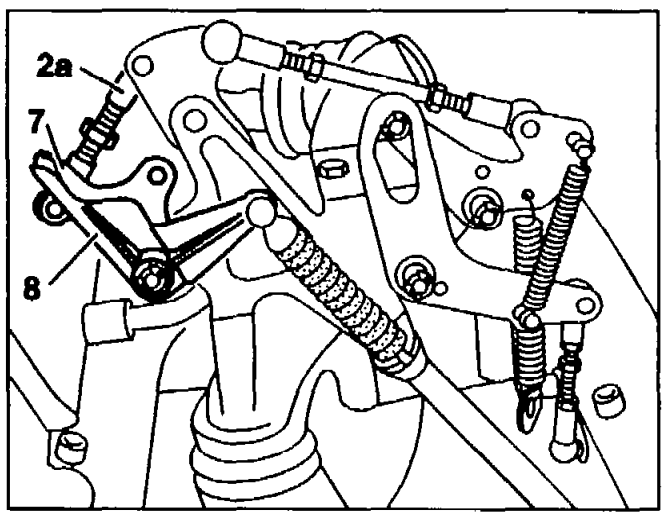
	Example 1 Size "A" ≥ Size "B"	Example 2 Size "A" < Size "B"
Difference "D"	– 0.3 mm	+ 0.3 mm
Thickness of shim "S"	**0.2 mm**	**0.8 mm**

O16 AR30.10-P-1010-01E BT	Turning connecting rod Bell crank of right-hand steering/left-hand steering standardized		BT30.10-P-0001-01A

Test data of accelerator control

Number	Designation		Engine 119.97
BE30.10-P-1002-01C	Length of connecting rod (RHS)	mm	66

On models with right-hand steering, turn connecting rod (2a) until the tips at the bell crank (8) and lever (7) are exactly opposite each other when the control pressure bowden cable is attached.



P30.10-0230-01