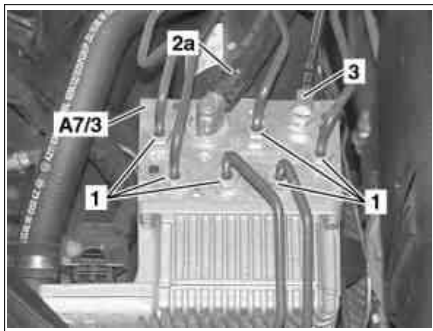


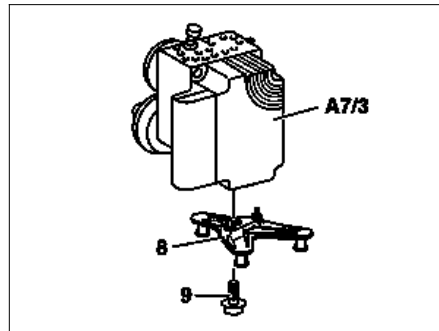
MODEL 211
with Sensotronic Brake Control (SBC)
MODEL 230 except CODE (P99) "AMG Black Series" special model

- 1 Hydraulic line
- 2a Suction hose
- 3 Return flow pipe
- 8 Retaining plate
- 9 Screw

A7/3 SBC hydraulic unit



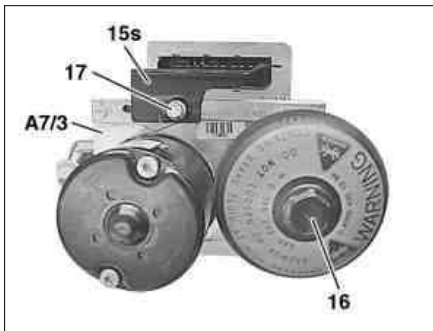
P42.46-2134-01



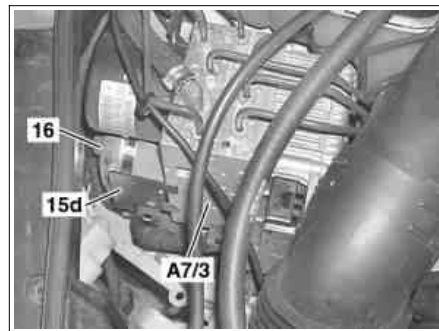
P42.46-2090-01

- 15d Bracket
- 15s Bracket
- 16 Pressure reservoir
- 17 Screw

A7/3 SBC hydraulic unit

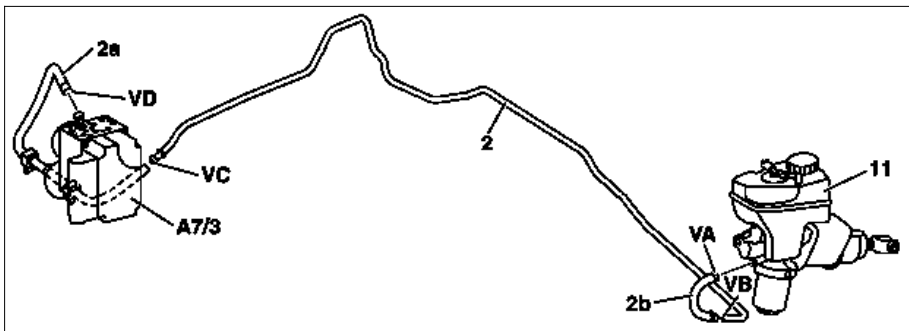


P42.46-2132-01

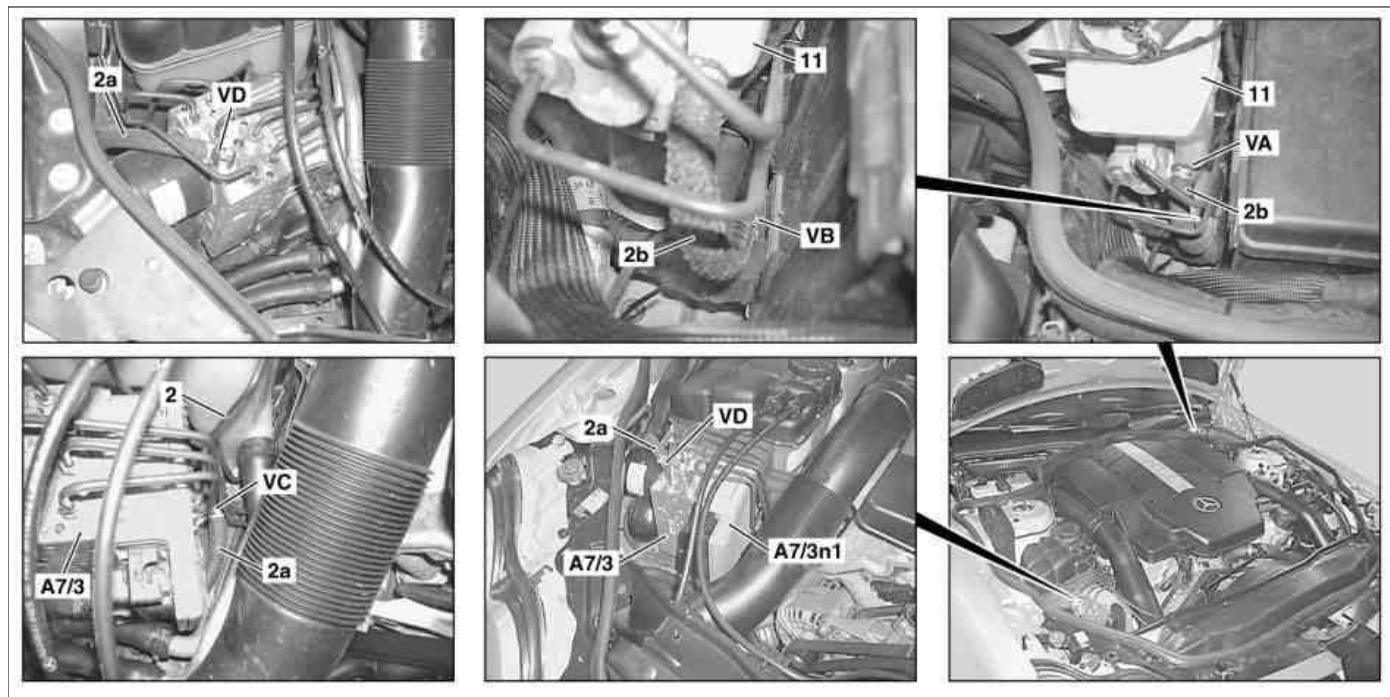


P42.46-2133-01

Line diagram, model 230



P42.46-2138-04



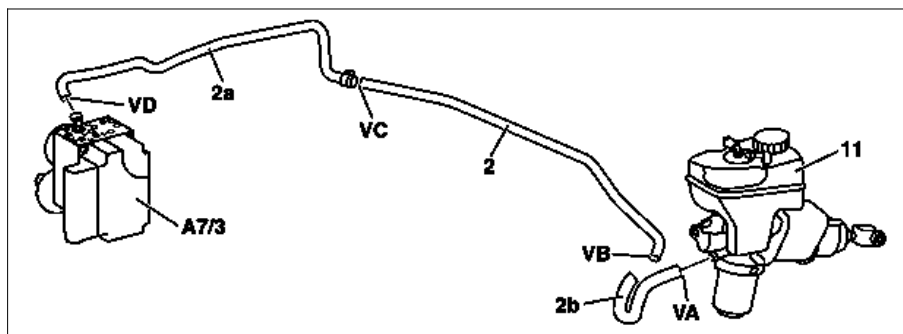
P42.46-2135-09

Model 230 VB Suction hose connecting point (2b) to suction line (2)

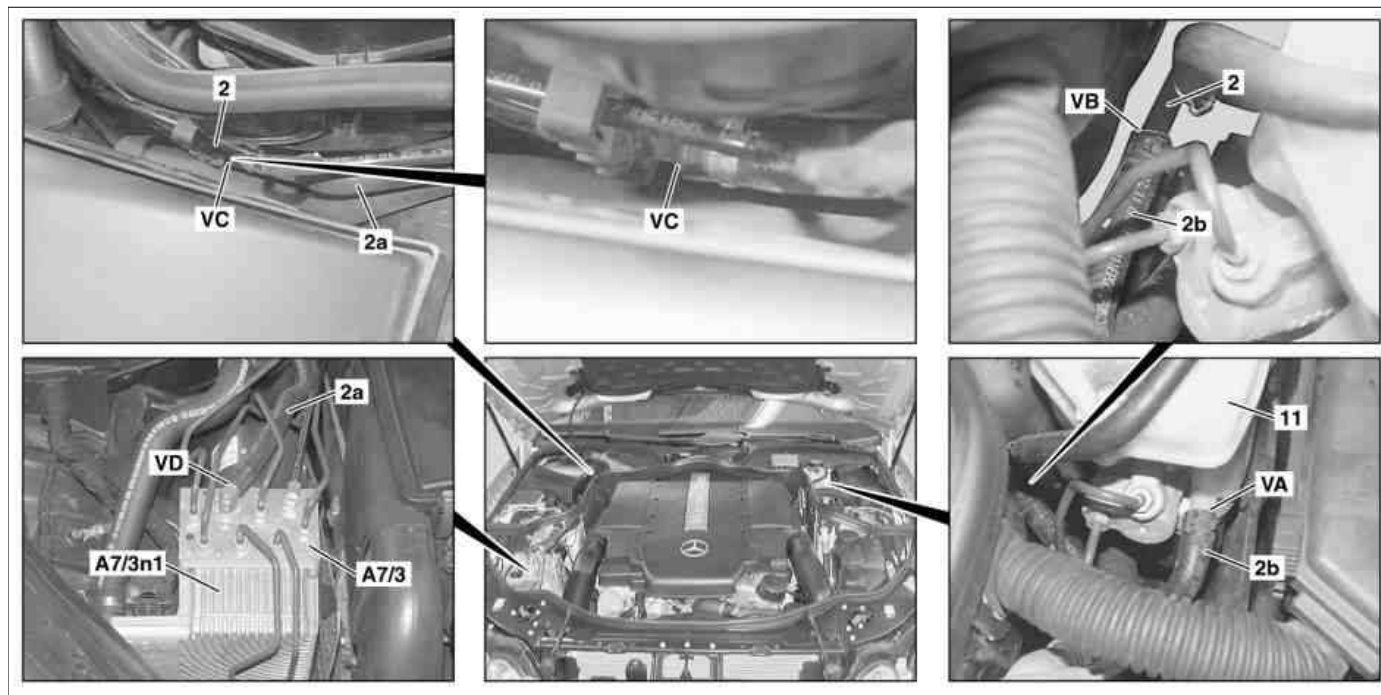
- 2 Suction pipe
- 2a Suction hose
- 2b Suction hose
- 11 Expansion reservoir
- VA Suction hose connecting point (2b) to expansion reservoir (11)

- VC Suction hose connecting point (2a) to suction line (2)
- VD Suction hose connecting point (2a) to SBC hydraulic unit (A7/3)
- A7/3 SBC hydraulic unit
- A7/3n1 SBC control unit

Line diagram, model 211



P42.46-2137-04



P42.46-2136-09

Model 211

- 2 Suction pipe
- 2a Suction hose
- 2b Suction hose
- 11 Expansion reservoir
- VA Suction hose connecting point (2b) to expansion reservoir (11)

- VB Suction hose connecting point (2b) to suction line (2)
- VC Suction hose connecting point (2a) to suction line (2)
- VD Suction hose connecting point (2a) to SBC hydraulic unit (A7/3)
- A7/3 SBC hydraulic unit
- A7/3n1 SBC control unit

Modification notes

25.5.11	Replace ground wiring harness when the hydraulic unit is changed has been deleted	Operation step 6	
	Replace ground wiring harness according to repair instructions in STAR DIAGNOSIS only, added	Operation step 7	

	Removing		
	Danger!	Risk of injury caused by body parts being jammed or crushed. Risk of injury to skin and eyes caused by brake fluid spraying out at high pressure when working on the SBC brake system	Deactivate SBC brake system using STAR DIAGNOSIS. AS42.46-Z-0001-01A

 Danger!	Risk of poisoning caused by swallowing brake fluid. Risk of injury caused by brake fluid coming into contact with skin and eyes.	Only pour brake fluid into suitable and appropriately marked containers. Wear protective clothing and eye protection when handling brake fluid.	AS42.50-Z-0001-01A
	Information on preventing damage to electronic components due to electrostatic discharge		AH54.00-P-0001-01A
	Notes on repairs to brake system		AH42.00-P-0003-01A
1	Deactivate SBC brake system using STAR DIAGNOSIS.	 The following steps should be run through in STAR DIAGNOSIS: Select menu item "SBC Sensotronic Brake Control"/"Deactivate 'SBC' system". Then process all the individual steps from top to bottom.	
2	Switch ignition off, remove ignition key (transmitter key)	 On vehicles with code (889) Keyless Go: Press keyless go start/stop button repeatedly until ignition is switched off. Remove Keyless Go transmitter card or transmitter key from the vehicle and store beyond transmitter range (min. 2 m).	
3.1	Remove right-hand intake air duct	Model 211 with engine 112, 113 except model 211.076/ 276, Model 230 except with engine 275	
3.2	Remove air filter housing	Model 211 with engine 646.9, 647, 648 Model 211.076 / 276 Model 230 with engine 275	AR09.10-P-1150T AR09.10-P-1150SVK AR09.10-P-1150LA
4.1	Remove bolt (17) and remove bracket (15s) with electrical SBC wiring harness	 Due to the risk of damage, only cut through the cable strap on the electrical SBC wiring harness when replacing the bracket (15s).  When installing a new SBC hydraulic unit (A7/3), attach the old bracket (15s) to the new SBC hydraulic unit (A7/3) as new SBC hydraulic units (A7/3) are supplied without a bracket (15s).  Installation: Install new bolt (17).  Installation: If the thread for bolt (17) in the SBC hydraulic unit (A7/3) is damaged, the bracket (15d) that is to be attached to the pressure reservoir (16) must be used.  	*BA42.46-P-1005-01A *BA42.46-P-1006-01A
4.2	Detach bracket (15d) with electrical SBC wiring harness from pressure reservoir (16)	 Due to the risk of damage, only cut through the cable strap on the electrical SBC wiring harness when replacing the bracket (15d).  When installing a new SBC hydraulic unit (A7/3), attach the old bracket (15d) to the new pressure reservoir (16) as new SBC hydraulic units (A7/3) are supplied without a bracket (15d). 	*BA42.46-P-1006-01A
5	Release and detach connector of electrical SBC wiring harness on SBC control unit (A7/3n1)	 Place connector in a safe place.	
6	Detach electrical SBC wiring harness from bracket (15d, 15s) by cutting through cable strap	 Only when replacing the ground wiring harness or when replacing the bracket (15d, 15s).  Exercise extreme caution when cutting the cable strap. The electrical SBC wiring harness must not be damaged!  Installation: When attaching the electrical SBC wiring harness to the bracket (15d, 15s), always ensure that the electrical SBC wiring harness contacts the bracket (15d, 15s) and is secured there free of tension. After the electrical SBC wiring harness has been secured, it should no longer be possible to push it in a longitudinal direction toward the bracket (15d, 15s).	

		i Installation: Always secure the electrical SBC wiring harness to the bracket (15d, 15s) free of tension using cable tie pliers and with a tightening force of 150 N to 170 N. Observe the various settings on the cable tie pliers for the specified tightening force: ● Panduit cable tie pliers: Setting HVY 5 ● Hellermann cable tie pliers: Setting STD 3 	*352589023700
7	Replace ground wiring harness of electrical SBC wiring harness	i Only if the SBC control unit (A7/3n1) cannot be programmed, and replacement is stipulated in the STAR DIAGNOSIS repair instructions. i Open connector housing of electrical SBC wiring harness and secondary lock of contact strip. Press ground line plug contact out of pin 37 and pin 44 using  blade holder with clamping pliers and  blade MCP 2.8/ FI. 2.8/ JPT/ SPT. Remove ground lines. ! To remove the ground line plug contact from the connector housing solely  using blade holder with clamping pliers and  blade MCP 2.8/ FI. 2.8/ JPT/ SPT. Otherwise damage may occur to the connector housing, which would then make it necessary to replace the complete electrical SBC wiring harness! i Installation: Make sure that the longer ground line of the ground line wiring harness is inserted into pin 44 and the shorter ground line into pin 37 of the connector housing. i Installation: Make sure that there is no contact between the ground point of the vehicle longitudinal member and any water hose or other lines. ! Important: Only the ground line of the electrical SBC wiring harness should be connected to the ground point of the vehicle longitudinal member, Otherwise the SBC system may suffer malfunctions.  	*220589019950 *000589139930
	Clean		
8	SBC hydraulic unit (A7/3) and area around connecting points should be cleaned thoroughly before SBC system is opened	! Even the smallest particles of dirt, introduced into the hydraulic components, can lead to malfunctions of the SBC system. Cleaner from package	*BR00.45-Z-1028-04A
9	Mark hydraulic lines (1)		
10	Detach hydraulic lines (1) from the SBC hydraulic unit (A7/3)	! Seal all hydraulic lines (1) and connections on the SBC hydraulic unit (A7/3) immediately with stop plugs to prevent air from entering. Air in the SBC system reduces braking power and can lead to malfunctions in the SBC system. i When installing a new SBC hydraulic unit (A7/3), use the stop plugs supplied with the new SBC hydraulic unit (A7/3) to seal the old SBC hydraulic unit (A7/3). i If the SBC hydraulic unit (A7/3) is to be reused, observe the ordering information for stop plugs: 129 589 00 91 06 (7 each) 129 589 00 91 05 (1 each) i Installation: Observe markings to avoid swapping the hydraulic lines (1)! When routing the hydraulic lines (1), take extra care to ensure that the hydraulic lines (1) are not resting against other components, are not under stress and are not twisted. When tightening the hydraulic lines (1), always observe the torque value and make sure that the hydraulic lines (1) are not twisted. i Installation: The sound level of the SBC system will be louder if the hydraulic lines (1) rest against other components, are under stress or are twisted.	

	Brake fluid notes	     	AH42.50-P-0001-01A *BA42.46-P-1001-01A *129589009100 *000589750300 *001589872100 *001589001600 *140589000300
11	Detach suction hose (2a) from SBC hydraulic unit (A7/3)	 Seal the suction hose (2a) and connection on the SBC hydraulic unit (A7/3) immediately with stop plugs to prevent air entering. Air in the SBC system reduces braking power and can lead to malfunctions in the SBC system . 	*601589076300
12	Detach return line (3) from SBC hydraulic unit (A7/3)	 Seal the return line (3) and connection on the SBC hydraulic unit (A7/3) immediately with stop plugs to prevent air entering. Air in the SBC system reduces braking power and can lead to malfunctions in the SBC system .  Check the return line (3) for damage (kinks, external damage, etc.) and replace if necessary.	
13	Remove SBC hydraulic unit (A7/3) complete with retaining plate (8)		
14	Remove bolt (9) and remove retaining plate (8) from SBC hydraulic unit (A7/3) which has been removed.	 When installing a new SBC hydraulic unit (A7/3).  Attach the old retaining plate (8) to the new SBC hydraulic unit (A7/3) because the new SBC hydraulic unit (A7/3) is supplied without retaining plate (8).  Installation: Install new bolt (9). 	*BA42.46-P-1004-01A
	Install		
15	Install in the reverse order	Operation steps 14 to 12	
16	Remove stop plugs and attach return line (3) to SBC hydraulic unit (A7/3)	 When routing the return line (3), take extra care to ensure that it does not rest against other components and is not installed under stress. When tightening the return line (3) it is essential to maintain the torque and to ensure that the return line (3) is not twisted.  The operating noise of the SBC system will be louder if the return line (3) rests against other components, is under stress or is twisted. 	*BA42.46-P-1002-01A
17	Replace suction hose (2a)	Only model 211 with intake hose 15.5 mm outside diameter (old version)  Intake hose with 14 mm outside diameter (new version), only replace if damaged.  Observe different variants of intake hose (2a). ● If a pulsation damper was not fitted in the intake hose (2a) , install new intake hose (2a) without pulsation damper. ● If a pulsation damper was fitted in the intake hose (2a), install new intake hose (2a) with pulsation damper.  Never use a screwdriver or pointed, sharp-edged tools to pry off the suction hose (2a), otherwise the suction line (2) will be damaged and air can enter. Immediately seal suction line (2) with stop plugs to prevent air from entering. Air in the SBC system reduces braking power and can lead to malfunctions in the SBC system .  Replace hose clamps! Mount new suction hose (2a) on suction line (2) losing as little brake fluid as possible. Fill suction hose (2a) with brake fluid before mounting on SBC hydraulic unit (A7/3): ↓	

		Hold suction hose (2a) as vertical as possible and fill with brake fluid using a small funnel or syringe. The funnel or syringe must be absolutely clean and must not have come into contact with mineral oil (engine oil etc.) previously. Push suction hose (2a) on to the intake connection fitting of the SBC hydraulic unit (A7/3) losing as little brake fluid as possible. The intake hose (2a) must be routed unstressed and must not contact the hydraulic lines (1) or return line (3).	
18	Install in the reverse order	Operation steps 10, 9 and 6 to 3	
19	Use water to rinse off any escaped brake fluid		
20	Bleed brake system with STAR DIAGNOSIS	When performing the bleeding operation always observe the instructions in the document "Bleeding brake system using STAR DIAGNOSIS". The following steps should be run through in STAR DIAGNOSIS: Select menu item "Initial startup after repair" / "Exchanging the hydraulic unit". Then process all the individual steps from top to bottom.	AR42.10-P-0012R
	Checking		
21	Check connecting points of hydraulic lines (1), suction hoses (2a, 2b) and return line (3) for leaks	Connect filling unit and allow the maximum filling pressure of the filling unit (2.5 to 3.0 bar) to be applied statically for 10 minutes. Then check the connecting points of the hydraulic lines (1), suction hoses (2a, 2b) and return line (3) for leaks. Even the smallest drops of brake fluid are a sign of leakage! Warning! In particular, the connecting points (VA, VB, VC, VD) of the suction hoses (2a, 2b) must be checked very carefully (tissue paper or similar): ● VA: Suction hose connecting point (2b) to expansion reservoir (11), ● VB: Suction hose connecting point (2b) to suction line (2), ● VC: Suction hose connecting point (2a) to suction line (2) and ● VD: Suction hose connecting point (2a) to SBC hydraulic unit (A7/3). Visual inspection is not enough as even minimal leakage which is not detectable at first glance can lead to malfunctions of the SBC system. Finish "SBC" diagnosis after leaktightness test.	
22	Check fluid level in brake fluid reservoir, and correct if necessary.		AP42.10-P-4210Z
			*BA42.50-P-1001-01D
Danger!	Risk of death caused by limbs being caught or crushed by rotating parts when performing tests on the brake test stand	Never leave the vehicle unattended on the rollers except in an emergency. Ensure that no one is under the vehicle or near rotating parts during testing. In case of emergency, use the EMERGENCY STOP switch to shut down test stand.	AS42.00-Z-0001-01A
23	Carry out brake test on the test stand		AP42.00-P-4290BA

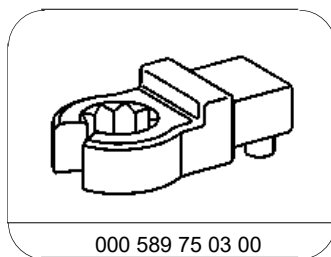
Sensotronic Brake Control (SBC)

Number	Designation		Model 211	Model 230
BA42.46-P-1001-01A	Brake line to SBC hydraulic unit	Nm	16	16
BA42.46-P-1002-01A	Return line to SBC hydraulic unit	Nm	16	16
BA42.46-P-1004-01A	Bolt, hydraulic unit to support plate	Nm	20	30

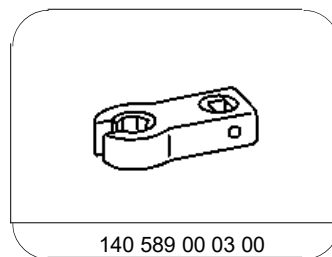
BA42.46-P-1005-01A	Bolt, bracket of electrical lines to SBC hydraulic unit	Nm	7	7
BA42.46-P-1006-01A	Hose clamp for bracket of electrical lines to SBC pressure reservoir	Nm	5	5

Brake system hydraulics

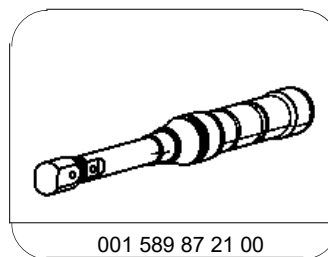
Number	Designation	Model
		211, 230, 240
BA42.50-P-1001-01D	Cap to brake fluid expansion reservoir	Nm ≈ 2



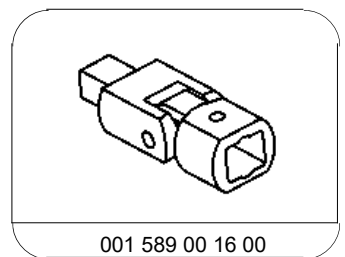
Box wrench bit



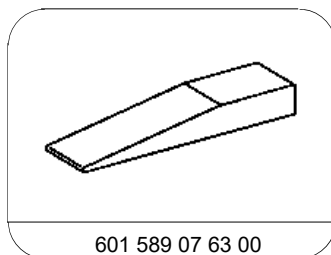
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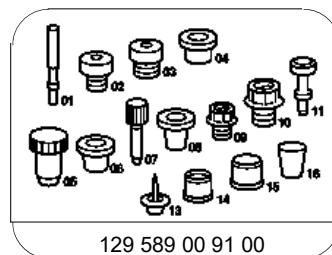
Torque wrench



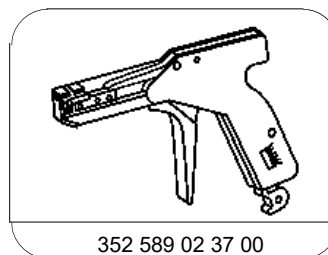
Plug-in joint adapter



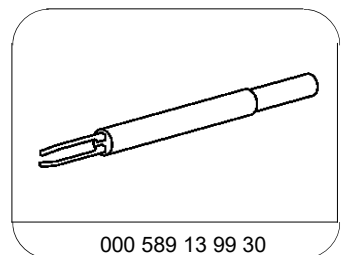
Wedge



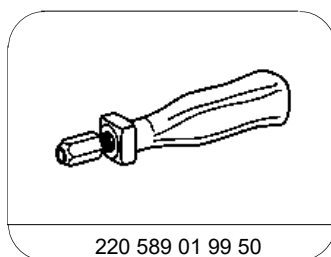
Set of stop plugs



Pliers



MCP 2.8 / FI blade. 2.8 / JPT / SPT



Blade holder with clamping pliers

Repair materials

Number	Designation	Order number
BR00.45-Z-1028-04A	Cleaner from package	Adolf Würth GmbH & Co. KG Reinhold-Würth-Str. 12-17 74653 Künzelsau-Gaisbach Germany Tel. +49 7940 15-0 Fax +49 7940 15-1000 www.wuerth.de