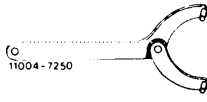
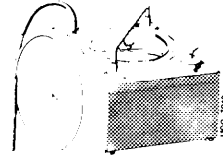
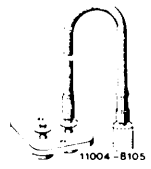


Model 116.1

Tightening torques	Nm
Slotted screw for pump cover	5
Slotted screw for closing cover	2.5
Hex. head screw in diaphragm rod	9

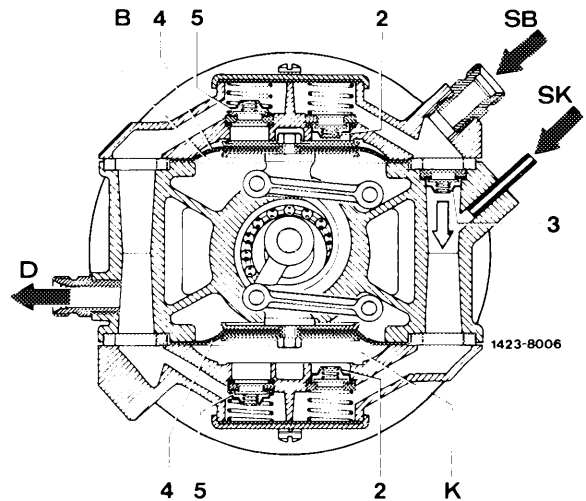
Special tools

Hinged pin spanner		000 589 00 05 00
Tester 0–1000 mbar for vacuum		116 589 25 21 00
Assembly cover for vacuum pump		617 589 03 63 00

Note

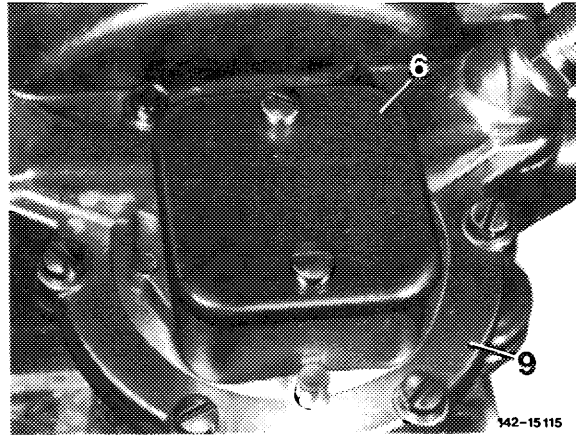
On this vacuum pump only the two diaphragms, the four disc valves and the check valve can be renewed. This requires the two repair kits 000 586 12 23 (valves) and 000 586 13 23 (diaphragms). Reconditioning of other components with general shop equipment is not possible. In such a case, the pump should be completely exchanged.

- 2 = Disc valve (suction side)
- 3 = Check valve
- 4 = Diaphragm
- 5 = Disc valve (pressure side)
- B = Brake circuit
- K = Comfort circuit
- SB = Suction connection (brake circuit)
- SK = Suction connection (comfort circuit)
- D = Pressure connection

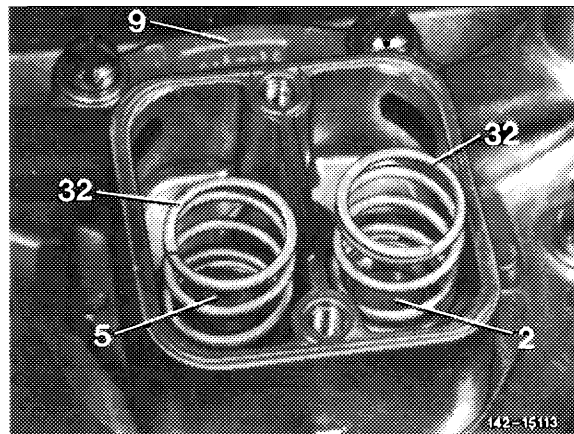


Disassembly

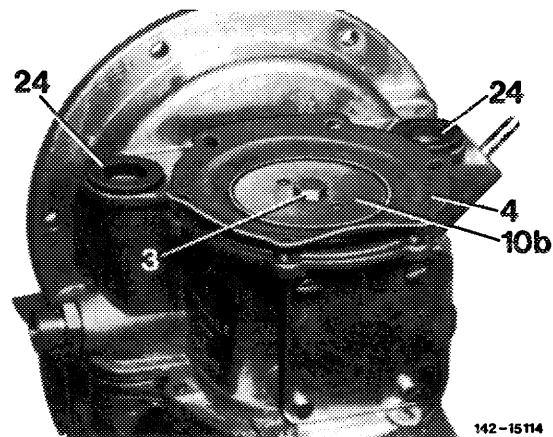
- 1 Clamp vacuum pump into a vice using aluminum jaws.
- 2 Unscrew slotted screws from closing cover (6) and remove cover.



- 3 Remove both compression springs (32), disc valves (2 and 5) and the two sealing rings. Unscrew slotted screws from pump cover (9) and remove pump cover. Clean pump cover.

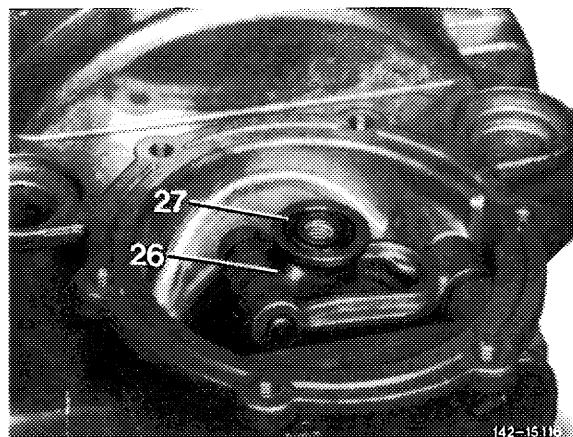


- 4 Unscrew hex. screws (3) from diaphragm rod and remove diaphragm (4) together with both diaphragm discs (10 b). Also remove sealing ring (24).



Assembly

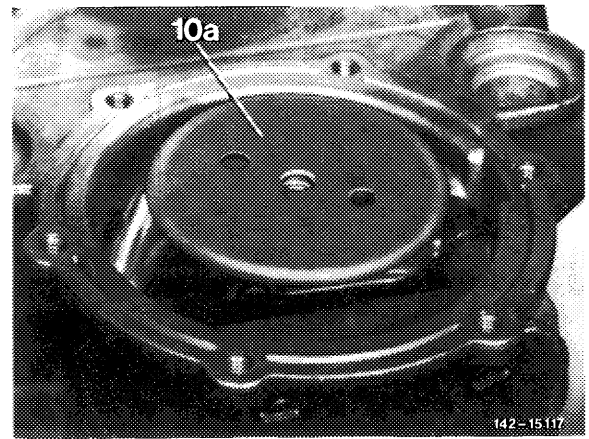
- 5 Make female threads in diaphragm rod (26) free of grease. Renew O-ring (27).



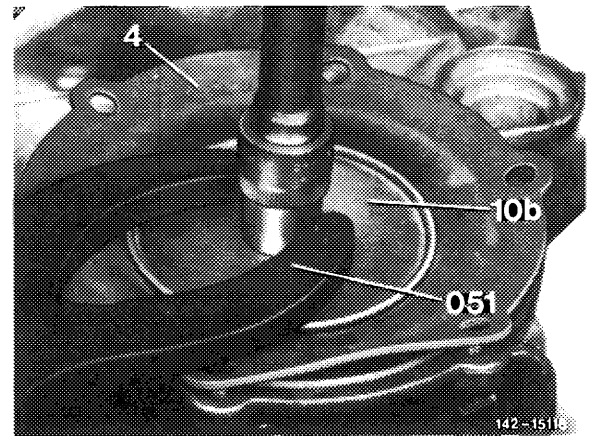
6 Place lower diaphragm disc (10 a) with beaded edge in downward direction, and then diaphragm with lettered or raised section in upward direction, and upper diaphragm disc with beaded edge in upward direction on diaphragm rod.

Attention!

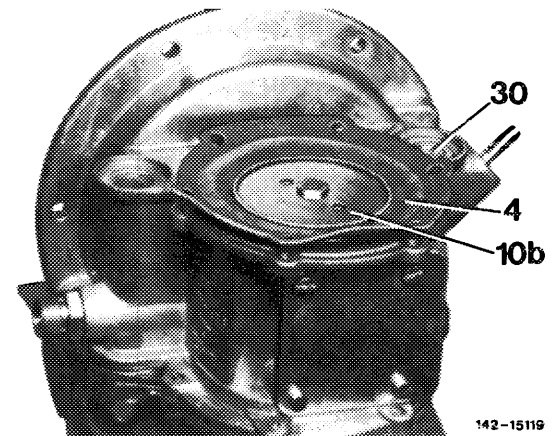
Only the grey-green diaphragms from repair kit may be installed, simultaneously using the new diaphragm discs, because the removed diaphragm discs are permanently distorted.



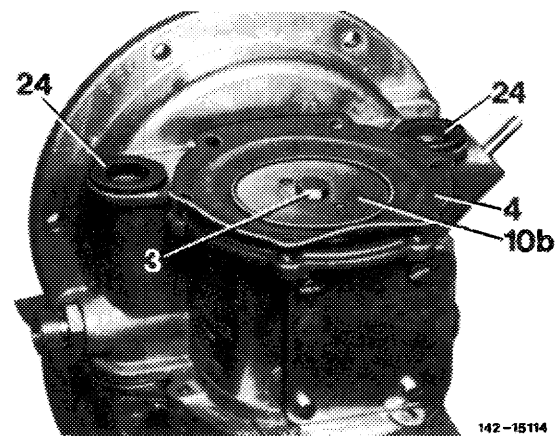
7 Coat threads of hex. screw with Loctite, screw into diaphragm rod and tighten to 9 Nm. Apply counterhold to diaphragm disc (10 b) with hinged pin spanner (051) and make sure that diaphragm (4) faces engine screw-on flange with its flat side.



Note: When renewing diaphragm in system circuit B, simultaneously change check valve (30).



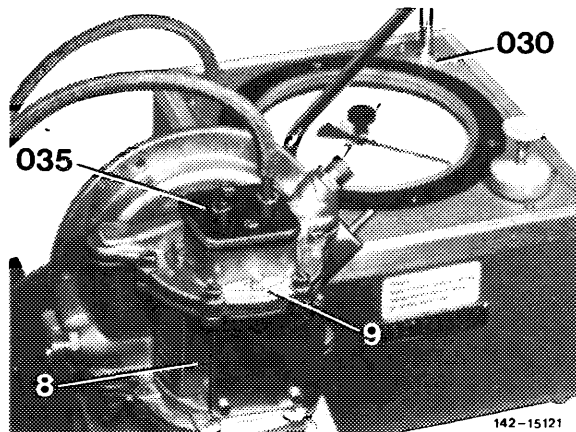
8 Upon installation of check valve (30), place new sealing rings (24) into pump housing.



Note: To prevent damage to diaphragms, install diaphragm under light preload. For this purpose, use assembly cover for vacuum pump.

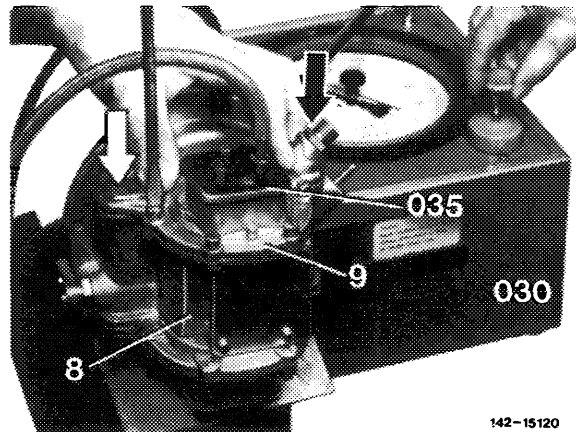
9 Place pump cover (9) on housing (8). Screw-in slotted screws of pump cover for 2–3 threads. Place sealing rings for valves into valve housing.

10 Fasten assembly cover (035) to pump cover (9). Then connect vacuum hose to tester (030).



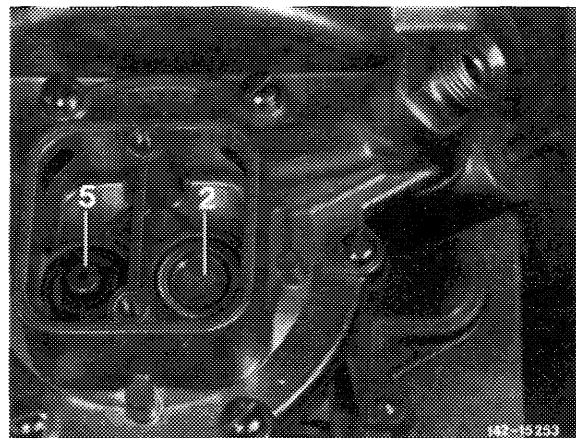
11 Push pump cover (9) against housing (8) at spots indicated by the arrows. Establish a vacuum of min. 0.5 bar in tester (030) by means of hand pump. As soon as the vacuum remains constant without actuating hand pump, tighten slotted screws in pump cover to specified torque of 5 Nm.

Note: Other, suitable units may also be used to attain the required vacuum.



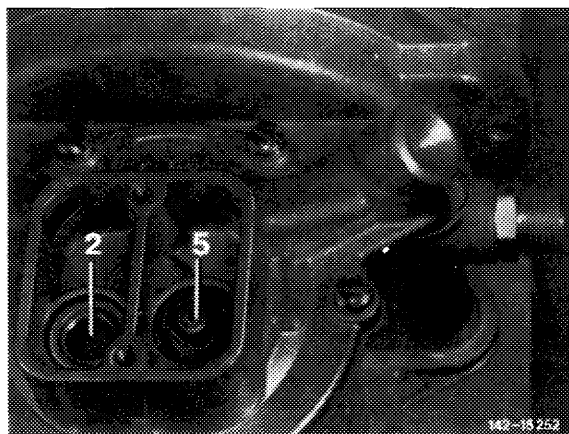
12 Remove assembly cover from pump cover.

13 Insert disc valves (2 and 5) into valve seats as follows:



Layout of disc valves in system circuit B. Cover with screw connection

Layout of disc valves in system circuit K. Cover **without** screw connection



14 Insert compression springs (32) and attach closing cover to pump cover using a new gasket.

