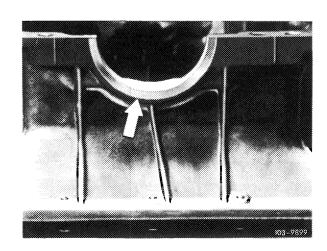
Tightening torques		Nm	(kpm)	
Bolt M 18 x 1.5 x 45 to crankshaft		270-330	(2733)	
Bolts M 8 x 20		35	(3.5)	
Special tools				
Torque wrench, 3/4'' drive, 150—500 Nm (15—50 kpm)	1100-1704	001 589 3	1 21 00	
Puller for balance plate		116 589 10 33 00		
Supporting lock	1100-614	110 589 0	110 589 00 40 00	
Socket 27 mm	11204-893	001 589 6	001 589 65 09 00	
Puller for spacing ring	11:00 6:10	616 589 0	616 589 00 33 00	
Installer for radial seal	11004 6222	130 589 0	0 61 00	
Commercially available tool				
Adapter, 3/4" female to 1/2" male drive	e. g. Hazet, 5630 Remscheid, order No. 1058 R-1			

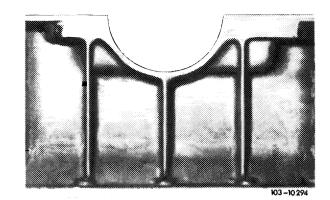
Note:

These engines feature oil pans with and without machined faces around the radial seal mounting hole (arrow).

Oil pans with plain faces always require radial seals with half shoulders, whereas oil pans with machined faces accept both half and full shoulders.



Oil pan with machined face



Oil pan with plain face

Combined radial seals are available for repair purposes.

They consist of two different materials and have a sectional outer ring.

Inside: Silicone (white) Outside: Polyacrylic (black)

> Radial seal with half shoulder Radial seal with full shoulder

These combined radial seals (black outside, white inside) must only be used in conjunction with hard chromeplated placing rings (26), part No. 615 031 01 51.

In contrast, the combined radial seals which are black outside and green inside may also be used with spacing rings not having chrome-plating.

Materials:

Inside: Viton (green) Outside: Acrylic (black)

Removal

- 1 Remove radiator and fan.
- 2 Remove pulley (19a), vibration damper (20) and balance plate (24) (03-340).

Engines 615, 616

Bolt M 18 x 1.5 x 45

Disk springs Bolts M 8 x 20

Washer

Thrust washer

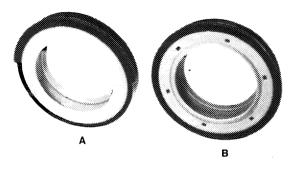
19a Pulley 23 Dowel pins 8 x 8 Balance plate Radial seal

24 25 26 27

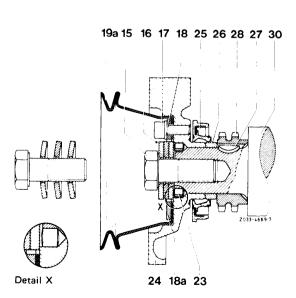
Spacing ring Woodruff key

Crankshaft sprocket

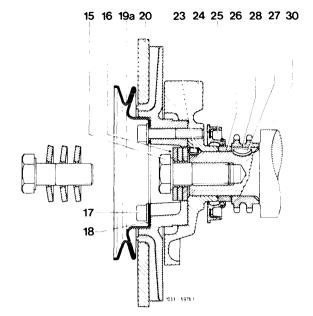
Crankshaft



103-9897



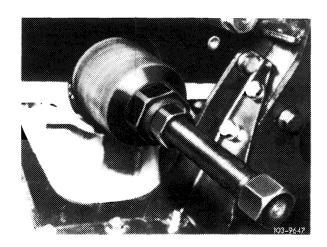
3 Prise out radial seal, using screwdriver. Be sure not to damage crankshaft journal or mounting hole.



Engine 617

- 15 Bolt M 18 x 1.5 x 45
- Disk spring Bolt M 8 x 45 16
- 18 Washer
- 19a Pulley20 Vibration damper
- Dowel pin 8 x 8 Balance plate Radial seal
- Spacing ring Woodruff key
- 26 27 28 30 Crankshaft sprocket
- Crankshaft

4 If spacing ring feels worn, remove with aid of puller.



Installation

5 Deburr and clean radial seal mounting hole.

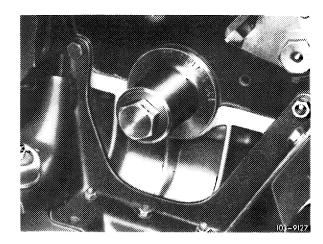
Note: If removed radial seal showed signs of leakage at outer shoulder, coat new radial seal with sealant, part No. 001 989 29 20 or part No. 001 989 46 20, prior to insertion; apply sealant to outer shoulder in region of joints.

6 Install new spacing ring (26).

7 Moisten sealing lip of new radial seal with oil and fit using installer.

Caution:

Radial seal must be exactly at right-angles to crankshaft journal because it may otherwise leak.



- 8 Install balance plate, vibration damper and pulley (03–340).
- 9 Install fan and radiator.