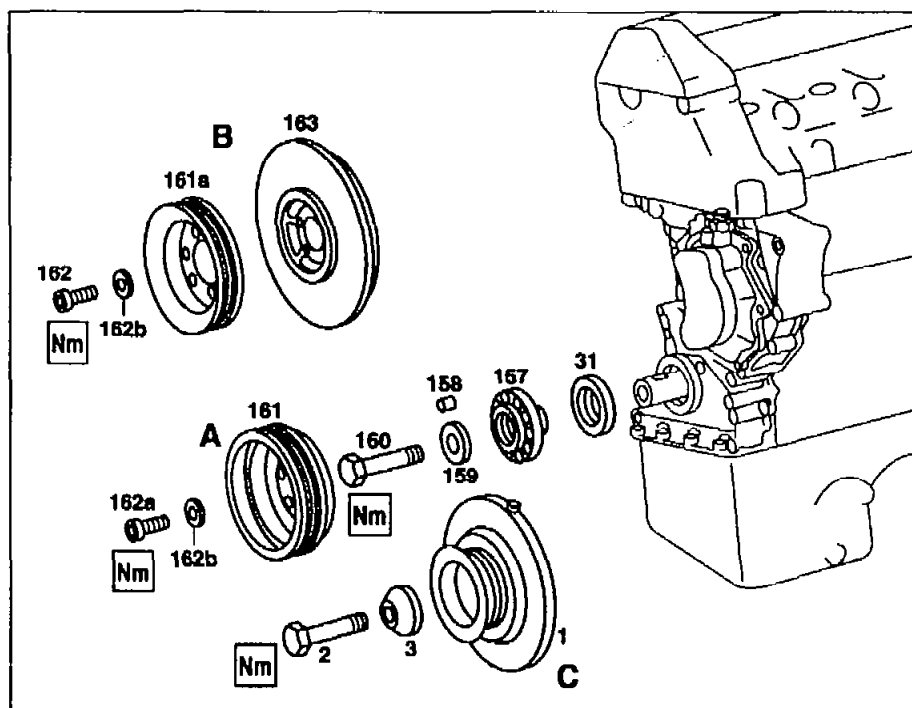


ENGINE 601, 602, 603 (except, 602.982)

- A** Engines 601.911/921 and engine 601.912, 1st version
- B** Engine 601.912, 2nd version as of 10/85 and engines 602, 603
- C** Engine 601.912 in model 124 as of 09/94



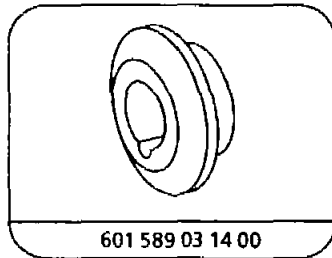
P03.30-2008-06

Modification notes

1.11.97	Crankshaft radial seal modified	see step 5	AR03.20-P-3000HW
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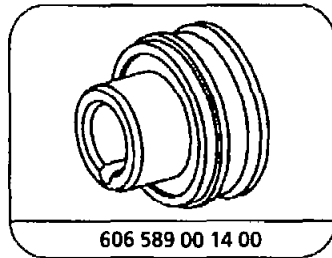
	Removing, installing		
1	Remove radiator	Engine 601, 602 in model 124, 201 Engine 603 in model 124, 126, 140	AR20.20-P-3865HW
2	Remove poly V-belt		AR13.22-P-1202HW
3	Remove belt pulley/vibration damper		AR03.30-P-1600HW AR03.30-P-1600HW
4	Remove crankshaft radial seal	Use a screwdriver to press out, do not damage mounting hole, use clean cloth as a base.	
BT	Crankshaft radial seal at front with reduced radial compressive stress Replace crankshaft radial seal (31)	Engines with radial seal, 1st version, engine 601.91/92, 602.91, 603.961/962/970 Engines with radial seal, 2nd version, engine 602.961/962/982, 603.960/963/971 	BT03.20-P-0002-01A AR03.20-P-3000-01AW AR03.20-P-3000HW/2 AR03.20-P-3000-01AX AR03.20-P-3000HW/3 601 589 03 14 00 606 589 00 14 00 611 589 00 14 00
6	Install in the reverse order		

<p>⚠ Danger!</p> <p>7</p>	<p>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.</p> <p>Run engine and inspect for leaks</p>	<p>Secure vehicle to prevent it starting off. Wear closed and close-fitting work clothes. Do not grasp hot or rotating parts.</p>	<p>A500.00-Z-0005-01A AR03.20-P-3000HW/3</p>
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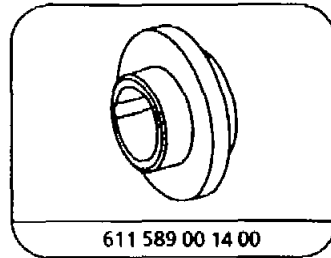
601 589 03 14 00

Sleeve



606 589 00 14 00

Sleeve

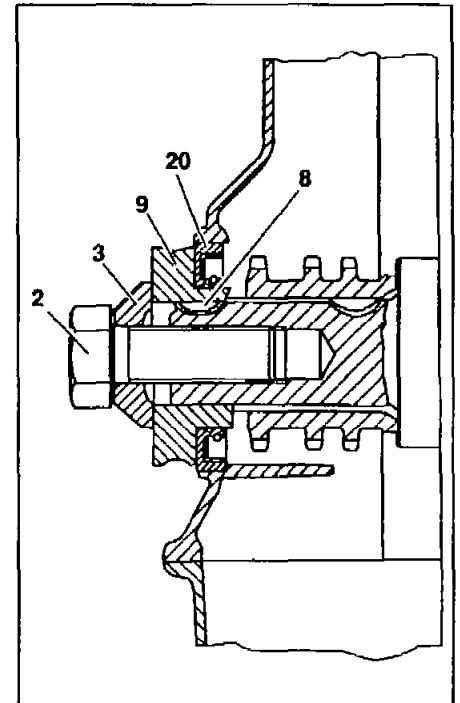


611 589 00 14 00

Insertion tool

<p>AR03.20-P-3000-01AW</p>	<p>Installing front crankshaft radial seal</p>	<p>Engines with radial seal, 1st version, engine 601.91/92, 602.91, 603.961/962/970</p> <p><input checked="" type="checkbox"/> 606 589 00 14 00 Sleeve</p> <p><input checked="" type="checkbox"/> 601 589 03 14 00 Sleeve</p>	
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- 1 Inspect edge of mounting hole for the radial seal and debur, if necessary.
- 2 Oil sealing lip of the radial seal.
 - ⓑ Do not use grease. Grease prevents the inclined webs on the sealing lip from transporting back the engine oil.
- 3 Fit radial seal (20) onto the insertion sleeve (9).
 - ① If a wear groove from the old radial seal can be felt at the hub of the belt pulley/vibration damper, use insertion sleeve with larger insertion depth (repair position).
- 4 Align parallel key (8) on the crankshaft.
- 5 Push insertion sleeve (9) onto the crankshaft. Turn to ensure that the groove of the insertion sleeve is aligned with the parallel key (8) in the crankshaft.
- 6 Draw in insertion sleeve (9) with central bolt (2) and washer (3) or dished washers as far as the stop.
 - ⓑ The radial seal should be positioned at right angles to the crank journal, otherwise proper sealing is not assured.

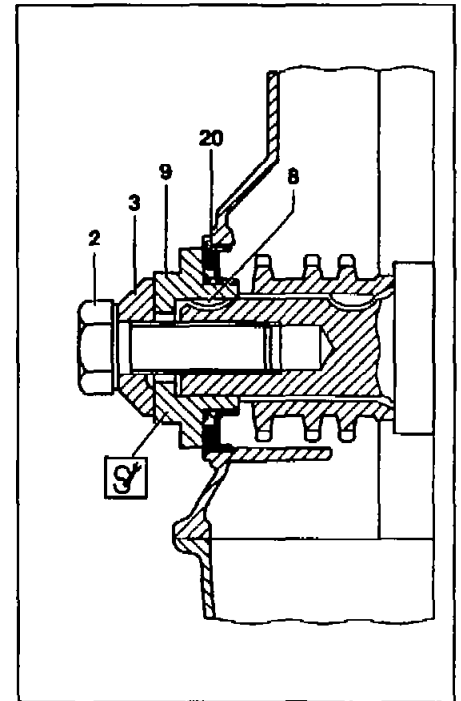


P03.20-0208-03



AR03.20-P-3000-01AX	Installing front crankshaft radial seal	611 589 00 14 00 Insertion tool	
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- 1 Inspect edge of mounting hole for the radial seal and remove any burrs.
- 2 Fit radial seal (20) onto the insertion sleeve (9).
 - i** Install radial seal dry (do not use oil or grease). The radial seal also provides a seal in the case of wear groove at hub of vibration damper.
- 3 Align dished washer (8) on the crankshaft.
- 4 Push insertion sleeve (9) onto the crankshaft.
Turn to ensure that the groove of the insertion sleeve is aligned with the dished washer (8) in the crankshaft.
- 5 Draw in insertion sleeve (9) as far as the stop with the central bolt (2) and washer (3).
 - ⓘ** The radial seal should be positioned at right angles to the crank journal otherwise a proper seal will not be achieved.



P03.20-0293-03

AS00.00-Z-0005-01A	Risk of accident as a result of vehicle starting off when engine is 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 from moving off. Wear closed and close-fitting work clothes. Do not grasp hot or rotating parts.	⚠ Danger!
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Possible dangers

Risk of accident

from vehicle starting off during starting operation (e.g. when testing compression pressure) as a result of gear engaged or when engine running and vehicles with automatic transmission as a result of selector lever position "P" or "N" not engaged (exception: some vehicles do not have a selector lever position "P").

Risk of injury

Severe injuries may be caused by freely rotating parts in the area of the running engine. The heat produced by the engine when it is operating can result in severe burns if contact is made with individual, unshielded parts.

Rules of conduct / Protective measures

- As a general rule, carry out work on the running engine only if this is absolutely essential.
- Before starting the engine, apply parking brake.
- On models with manual transmission, move gearshift lever into Neutral position.
- On models with automatic transmission, move selector lever into position "P" or "N" (exception: some vehicles do not have a selector lever position "P").
- On models which do not have selector lever position "P", secure selector lever to prevent it from being operated unintentionally.
- Wear closed and close-fitting work clothes.
- Take off any jewelry, such as chains, rings etc.
- If you have long hair, wear a suitable head cover.
- Before commencing work on the running engine, check to obtain a general picture of the positioning of parts which may be hot.
- When carrying out work when starting the engine or when engine is running, do not touch any hot and rotating parts.



First aid measures in the event of burns

- Do not rub the skin areas affected; flush with plenty of cold water and cover skin with sterile bandages.
- Immediately consult a physician.

