

Removal and Installation of the Pulley on the Crankshaft

Job No.

03-1

The pulleys on the crankshaft are different on the engines of the individual types (see Figure 03-1/1 through 03-1/4 and 03-2/1).

The removal and installation, however, is essentially similar for all versions.

Removal:

Remove the V-belt or V-belts (see Job No. 20-6).

Unscrew the hexagon screw (8) with a box wrench size 27 mm and remove the pulley from the crankshaft (see Figure 03-1/1 through 03-1/4 and 03-2/1).

On engines which have in place of the hexagon screw (8) a starting-handle dog, the latter has to be unscrewed with the Wrench Part No. 136 589 0307.

On engines which are additionally equipped with an outer pulley (10), the outer pulley must be removed before unscrewing the hexagon screw (8) (see Figure 03-1/3 and 03-1/4).

Installation:

The installation must be executed in the reverse order.

Note: During the installation of the pulley make sure that the TDC-marking (OT) of the pulley, if present, corresponds to the timing needle at the crankcase while piston 1 and 4 are in top dead center position.

The hexagon screw (8) of the version shown in Figure 03-1/1 and 03-1/2 has to be tightened with a torque of **12 to 13 mkg** and of the version shown in Figure 03-1/3, 03-1/4 and 03-2/1 with a **torque of 18 mkg**.

1. The Belt pulley shown in Figure 03-1/1 is installed in the engines of the type

636. { 915
916
918
931
932 *
933 *
917/0
917/2
917/4
917/11
917/12
917/13

636. { 917/14
917/15
917/16
917/17
917/18
917/19
917/20
917/22
917/24
917/25
917/26
917/27
917-180
917-350

The former version of the Belt Pulley Part No. 136 200 02 05 has no marking for the adjusting of the feed beginning and the top dead center.

The engines of the type 636.915, 916, 918 and 931 have in place of the hexagon screw (8) a screw with pin (starting-handle dog).

* On the engines of the type 636.932 only up to the engine serial number 95 00 160. On the engines of the type 636.933 only up to the serial number 95 00 194.

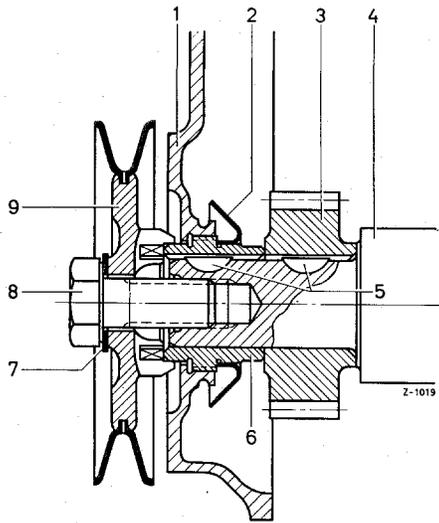


Figure 03-1/1

- | | |
|---|---|
| 1 Timing housing cover with collar | 9 Belt pulley Part No. 636 200 16 05 |
| 2 Oil deflector | Now furnished with OT- and FB-marking (TDC and feed beginning). The timing needle Part No. 636 032 00 15 corresponds to this pulley |
| 3 Crankshaft timing gear | |
| 4 Crankshaft | |
| 5 Woodruff key | |
| 6 Spacer | |
| 7 Spring washer | |
| 8 Hexagon screw M 18x1.5x40 DIN 960-8 G | |
| Torque of screw 12 to 13 mkg | |

2. The Belt Pulley according to Figure 03-1/2 is installed in the engines of the type

- | | |
|------------|--------------------------|
| 636. { 919 | 636.917- { 022 and/or/28 |
| { 930 | { 340 |
| { 934 | { 370 |
| { 935 | |

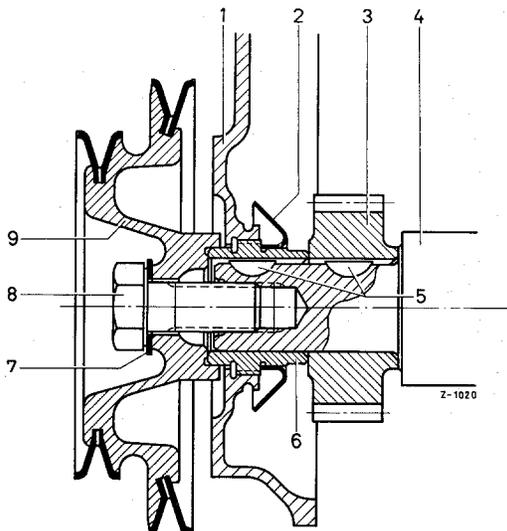


Figure 03-1/2

- | | |
|------------------------------------|---|
| 1 Timing housing cover with collar | 8 Hexagon screw M 18x1.5x40 DIN 960-8 G (12-13 mkg) |
| 2 Oil deflector | 9 Double pulley Part No. 181 200 17 05 with TDC-marking and graduation to adjust feed beginning (see Fig. 00-6/1) |
| 3 Crankshaft timing gear | |
| 4 Crankshaft | |
| 5 Woodruff key | |
| 6 Spacer | |
| 7 Spring washer B 18 DIN 137 | |

3. The belt pulley according to Figure 03-1/3 is installed in the engines of the type 636.914 up to the Engine No. 636.9147500569 and in the engines of the type

- | | |
|--------|-----------------------|
| 636. { | 917/10 |
| | 917/21 |
| | 917/23 |
| | 917/29 and/or 917-222 |
| | 917-223 |

The belt pulley Part No. 6362060110 is now furnished with an OT- and FB-marking (TDC and feed beginning). The Timing Needle Part No. 636 032 00 15 corresponds to this pulley.

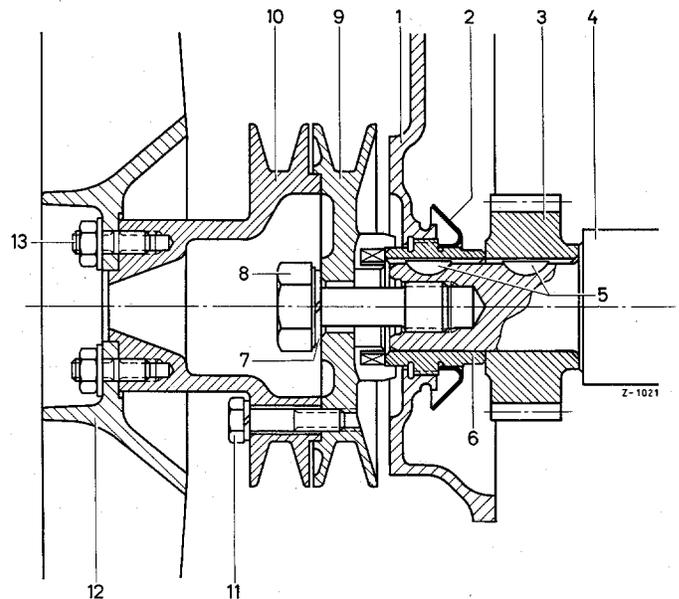


Figure 03-1/3

- | | |
|---|---|
| 1 Timing housing cover with collar | 9 Inner pulley Part No. 636 206 01 10 to drive generator and water pump |
| 2 Oil deflector | 10 Outer pulley Part No. 636 200 00 05 to drive supercharger |
| 3 Crankshaft timing gear | 11 Hexagon screw |
| 4 Crankshaft | 12 Fan |
| 5 Woodruff key | 13 Hex nut |
| 6 Spacer | |
| 7 Spring washer | |
| 8 Necked-down bolt Part No. 636 031 00 71 (torque 18 mkg) | |

In this design the inner pulley (9) and the spacer (6) are two separate parts.

The oil deflector (2) is forced onto the spacer (6) by pressing.

The timing housing cover is furnished with a collar similar to the versions shown in Figure 03-1/1 and 03-1/2 (also see Figure 01-16/2).

The engines of the type

636. $\left\{ \begin{array}{l} 917/21 \\ 917/29 \text{ and/or } 917-222 \\ \text{---} \\ 917-223 \end{array} \right.$

are delivered ex works without the outer belt pulley (10) and the fan (12) (also see Figure 03-1/3).

4. The belt pulley similar to Figure 03-1/4 is installed in the engines of the type

636.917-	$\left\{ \begin{array}{l} 00 \\ 040 \\ 090 \\ 120 \\ 190 \\ 240 \\ 251 \\ 252 \\ 253 \\ 260 \end{array} \right.$	636.917-	$\left\{ \begin{array}{l} 270 \\ 271 \\ 272 \\ 280 \\ 290 \\ 300 \\ 310 \\ 320 \\ 330 \\ 360 \end{array} \right.$
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and the engines of the type 636.932 starting engine serial number 95 00 161, 636.933 starting engine serial number 95 00 195

The belt pulley Part No. 636.2060610 is now furnished with OT- and FB-markings (TDC and feed beginning). The Timing Needle Part No. 636 032 00 15 goes with this pulley.

For the engines of the type

636.917/33 and/or 917-023
917/23 and/or 917-221

the belt pulley is supplied by the respective customer and installed by DB.

Only the engines of the type 636.914 and 636.917/13 and/or 917-120 are equipped with the outer belt pulley (10) ex works. The engines of the types 636.917 - 120 only up to engine No. 636.917-120-95071 68.

In the design according to Figure 03-1/4 the belt pulley (9) and the spacer consist of one single piece. The oil deflector (2) is a separate part and is pressed against the crankshaft timing gear (3) by the pulley. The timing housing cover is without collar (a), so that the pulley can be removed without removal of the timing housing cover (also see Figure 01-16/2).

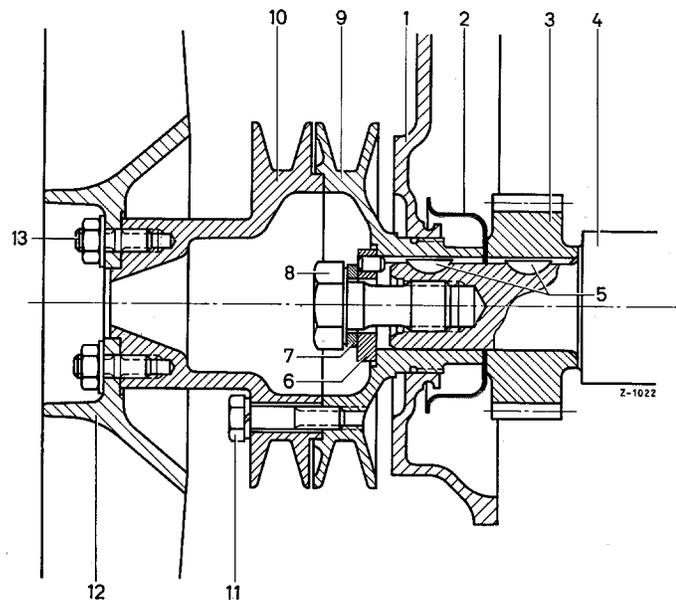


Figure 03-1/4

- | | |
|--|--|
| 1 Timing housing cover without collar | 9 Belt Pulley Part No. 636 206 06 10 to drive generator and water pump |
| 2 Oil deflector | 10 Belt Pulley Part No. 636 200 00 05 to drive supercharger |
| 3 Crankshaft timing gear | 11 Hexagon screw |
| 4 Crankshaft | 12 Fan |
| 5 Woodruff key | 13 Hex nut |
| 6 Washer with pin | |
| 7 Spring washer | |
| 8 Necked-down bolt Part No. 636 031 01 71 (Torque: 18 mkg) | |