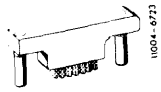
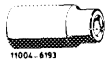
03–342 Removal and installation of hub, vibration damper and pulley

Data

Permissible deviation on vibration damper	radial runout	0.3
	axial runout	0.5

Tightening torques	Nm
Bolt to crankshaft	270–330
Bolts pulley to hub	35

Special tool

Detent		116 589 01 40 00
Torque wrench 3/4" square, 150–500 Nm		001 589 31 21 00
Socket 27 mm, 1/2" square		001 589 65 09 00

Conventional tool

Connection 3/4" square socket to 1/2" square head	e. g. Hazet, D-5630 Remscheid order no. 1058 RI

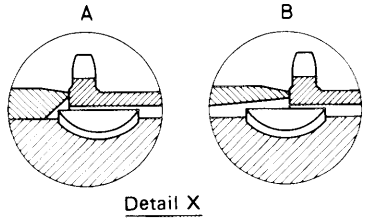
Note

Hub, vibration damper and pulley can be exchanged without balancing.

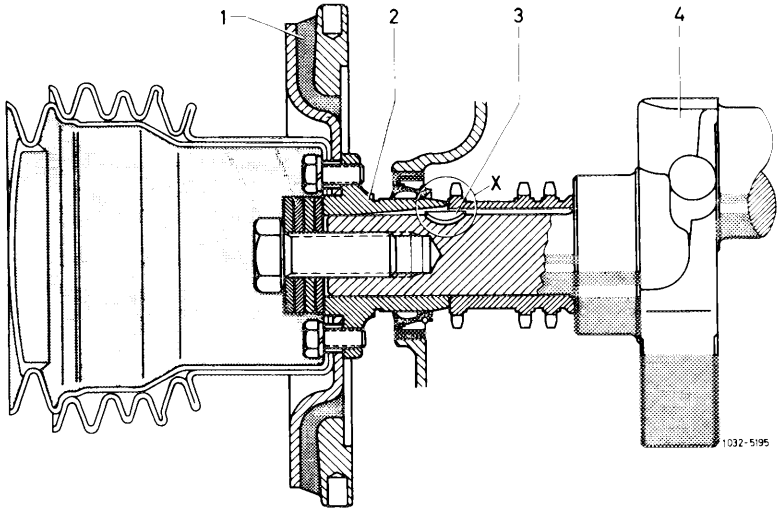
The vibration dampers of the different engines 116.98 and 117.98 are different in OD and in assigned frequency.

Pulleys of the different engines 116.98 and 117.98 are also different.

The crankshaft gear and hub (2) are located on front crankshaft journal, aligned by key (3). This assembly is pressed against crankshaft by the screw and the four disc springs. Vibration damper (1) and the pulley are screwed to hub (2) in a given position, since on of the six tapped holes is located off center.



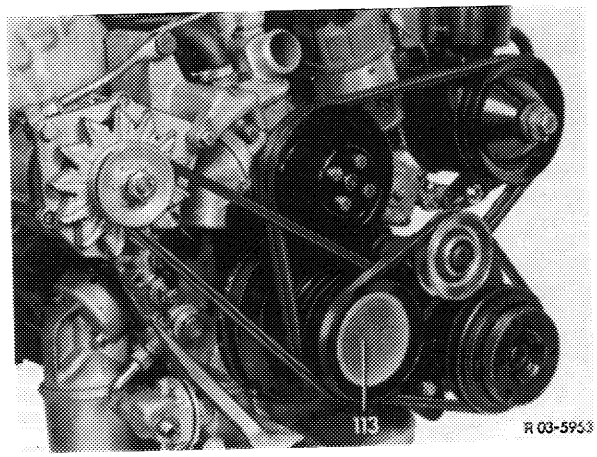
Detail X



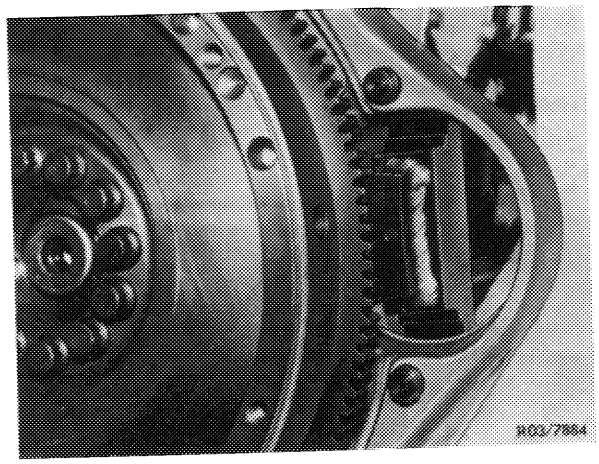
1 Vibration damper
2 Hub
3 Disc spring
4 Crankshaft
A 1st version
B 2nd version

Removal

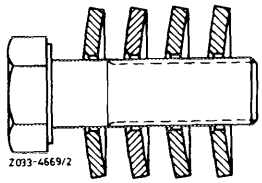
1 Remove radiator, fan and V-belt.



2 Lock crankshaft with detent against rotation.

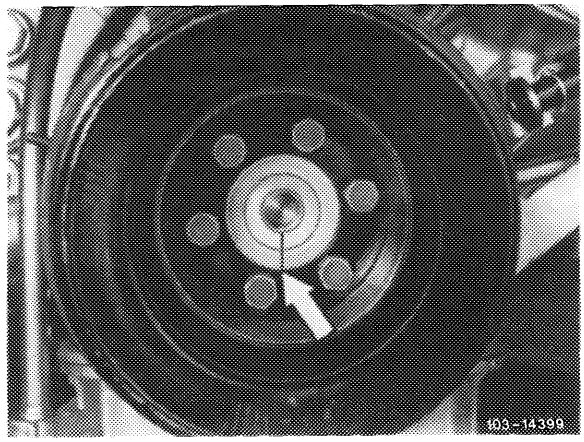


3 Unscrew crankshaft bolt.



4 Mark crankshaft and hub in relation to each other with a chisel (arrow), so that the groove of the hub will be in alignment with Woodruff key during assembly.

5 Pull off manually vibration damper (1) together with pulley and hub (2 , if necessary knock from crankshaft by means of a plastic hammer.



Installation

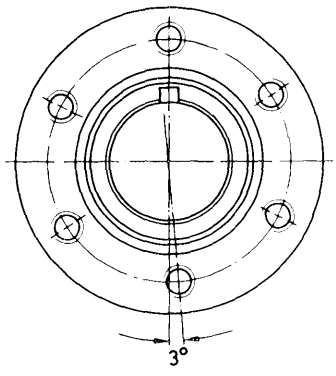
6 Mount vibration damper (1), pulley and hub (2) in screwed-together condition.

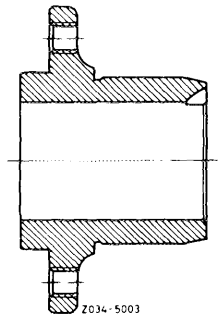
7 For this purpose, heat hub to approx. 50° C for easy sliding on crankshaft. When sliding on crankshaft, check whether groove of hub is in alignment with Woodruff key by light turning motions.

Attention!
The vibration damper, the pulley and the hub must be screwed together in a given position.

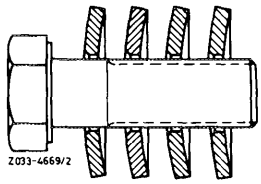
One of the 6 bores is located off center. The hole patterns must be accurately in alignment.

Different from light alloy engine, the 6 screws M 8 x 22 for fastening pulley and vibration damper are mounted with snap rings.





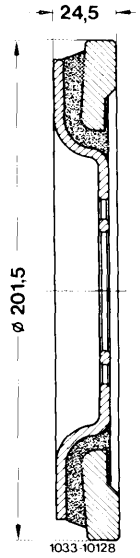
8 Mount the four disc springs with convex surface (crown) toward screw head.



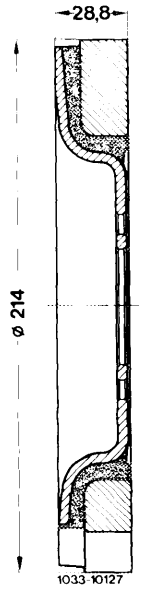
Mount screw M 18 x 1.5 x 45 with 4 disc springs (on light alloy engines with 3 disc springs) and tighten to 270–330 Nm.

Attention!
If the vibration damper has been replaced, the TDC transmitter must be newly set (03–345).

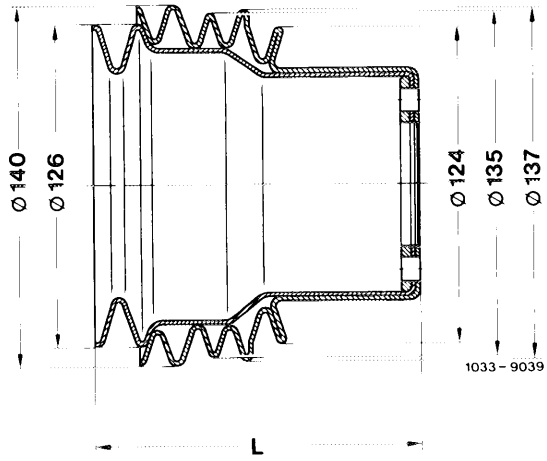
The difference between pulleys and vibration dampers is shown by the following drawings.



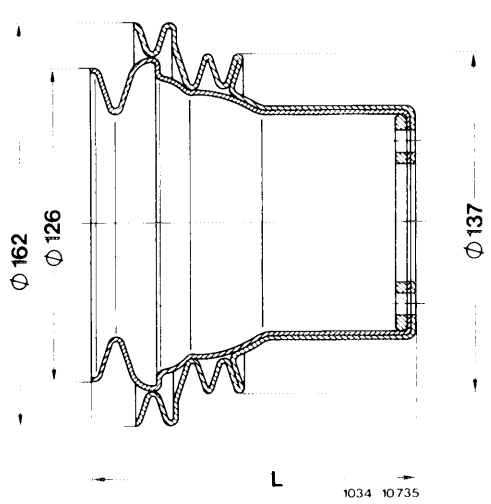
Vibration damper engine 116.98



Vibration damper engine 117.98



Engine 116.98, 117.982, 117.983
L = 128.5 mm



Engine 117.985, 117.986
L = 128.5 mm