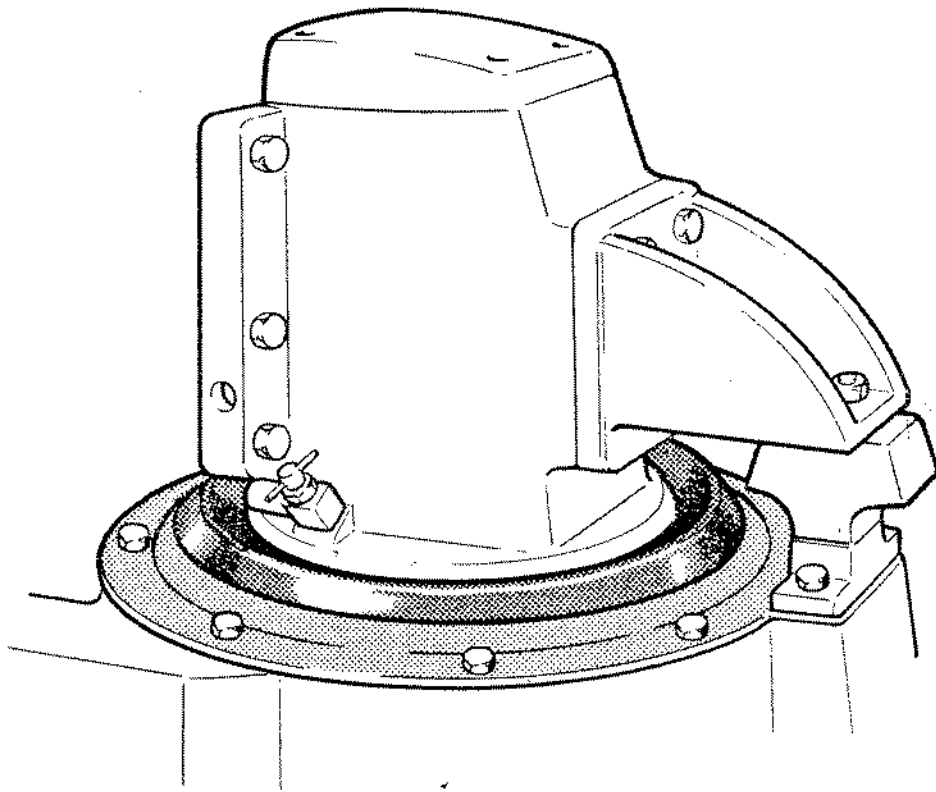


# Replacing the rubber membrane

110S



**VOLVO PENTA**

# Replacing the rubber membrane, 110S

THE RUBBER MEMBRANE BETWEEN THE S-DRIVE AND THE ENGINE BED MUST BE REPLACED AFTER 7 YEARS. BEFORE EACH LAUNCHING THE RUBBER MEMBRANE SHOULD ALWAYS BE INSPECTED FOR WEAR, AGING AND CRACKS. The illustrated instruction follows the complete procedure step by step. As an incorrectly fitted rubber membrane is a potential hazard to the buoyancy of the boat it is important that the work is carried out with the greatest of care. As a supplement to the illustrations some additional comments regarding the work operations follow here.

After the propeller has been removed it should be cleaned thoroughly. If the corrosion protectors are worn down by 50 % or more they must be replaced.

After the propeller gear has been drawn out (5) the inside of the housing and the propeller gear must be protected by e.g. clean rags.

How much equipment that must be removed from the engine and S-drive is dependant on how small the engine room is. Corroded bolts (9) must be replaced by new ones. Support the engine so that it stands stable and cannot tip forward when it is pulled forward a little. If possible it is best to hang the engine in a block and tackle. The rubber coupling must be inspected and replaced if damaged.

The removed rubber membrane (14) and the O-ring (15) must be replaced by new ones. Carefully wipe clean the groove (16). The groove must be absolutely clean with no remains left.

When fitting the membrane no sealant is to be applied to the groove (17). Fit the new O-ring. Smear with "Permatex" or similar of non-drying type. Place the splined sleeve

on the lower gear's vertical shaft. Place the rubber membrane in the groove and tighten the bolts. They must be tightened diagonally (18) and torqued to 40 Nm (4 kpm) (29 lbf.ft). Mount new clamping (19) or when necessary adjust the existing one.

The refitting of the drive is made more easy if the engine is supported according to fig. 21.

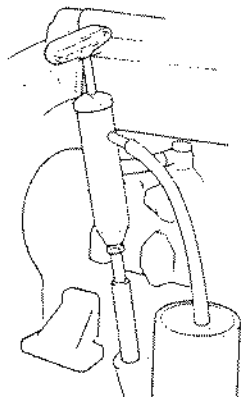
Fit the rubber coupling (24). Engage "reverse" (26). Push the engine back at the same time the flywheel is rocked from left to right (27).

Fit a new O-ring on the propeller gear (33) and fasten the gear into the housing. Torque 31 Nm (3 kpm) (22 lbf.ft):

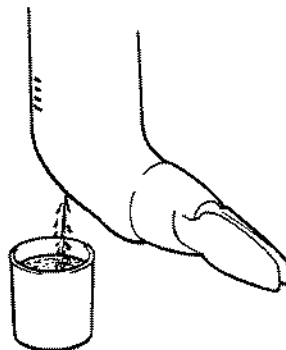
When refitting the propeller it is important that all moving parts such as the pivots, cog segments and the propeller shaft are coated with special grease. Use Volvo Penta grease sachet (828250). Fill the engine and drive with oil. Check after launching that no leakage occurs around the rubber membrane and that the engine and components are functioning normally.

Parts description	Part No.
Rubber membrane	850265-0
O-ring (intermediate housing)	960238-4
O-ring (propeller housing)	925257-8 (2 pcs)
Clampring	850079-5
Propeller shaft grease	828250
Zinc ring	875812-0
Zinc plug	852018-1
Slit pin	949807-2
Screw, clampring	946730 (6 pcs)
Screw, clampring	963583 (2 pcs)

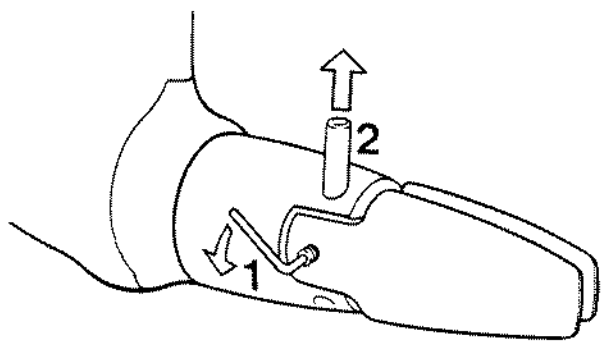
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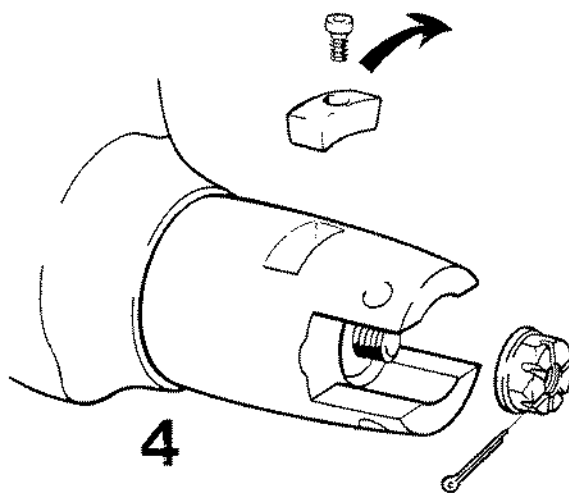
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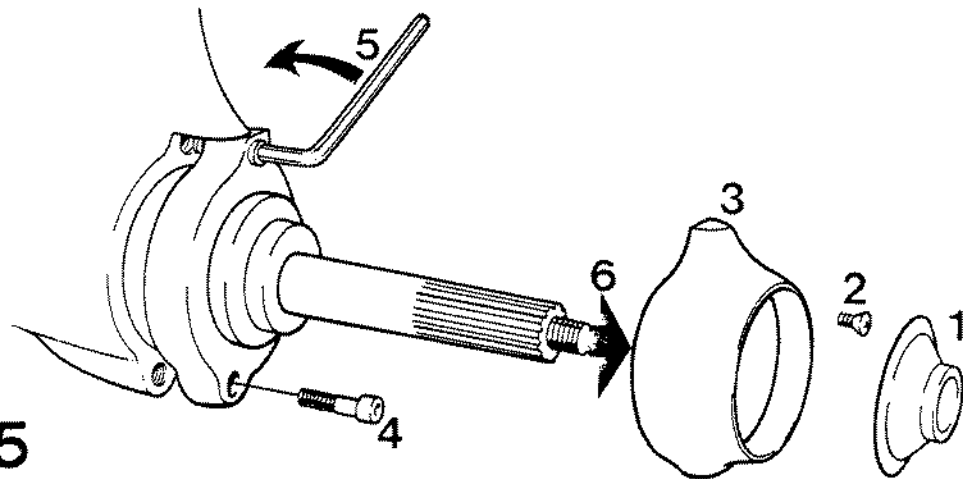
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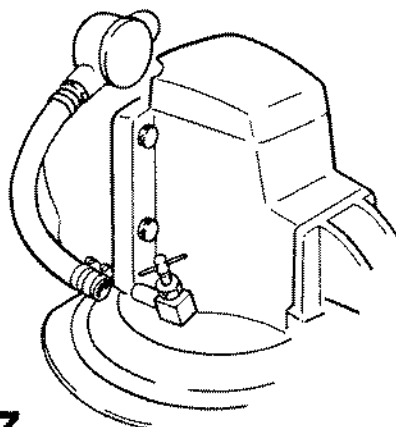
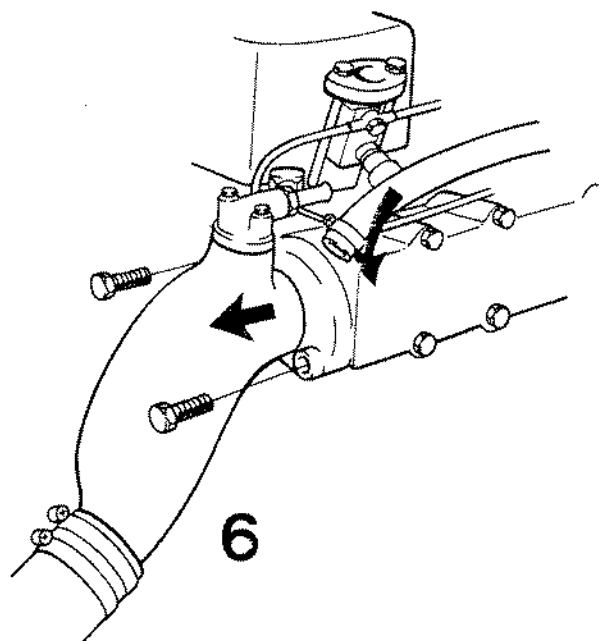
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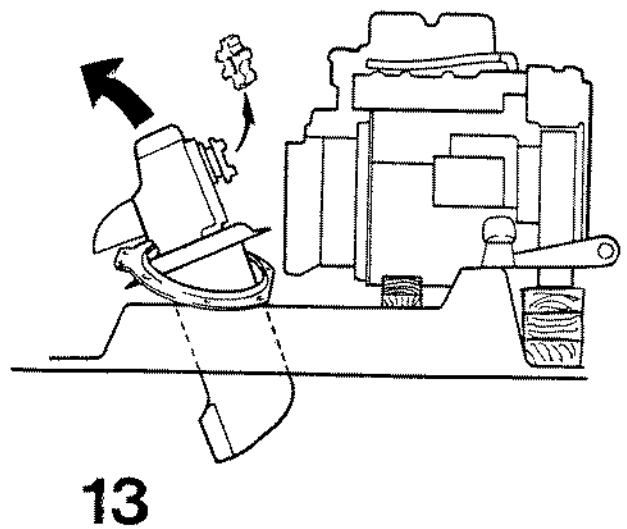
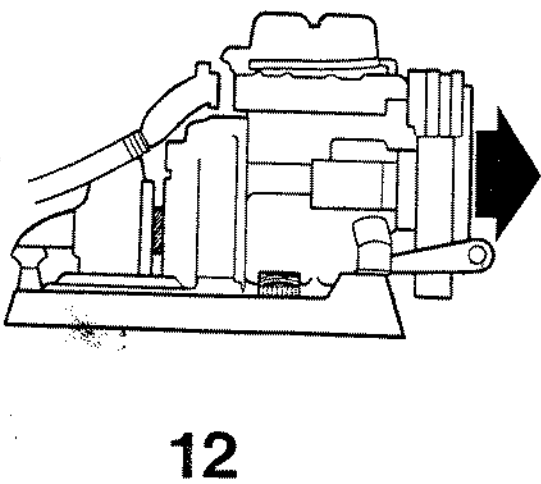
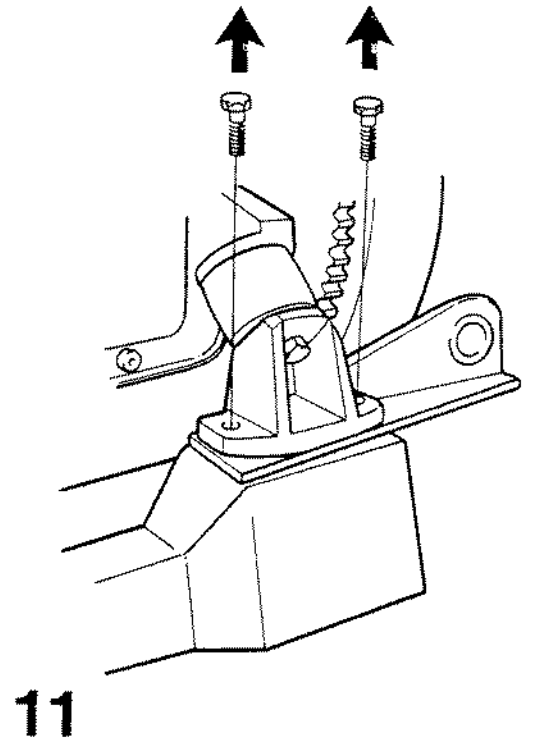
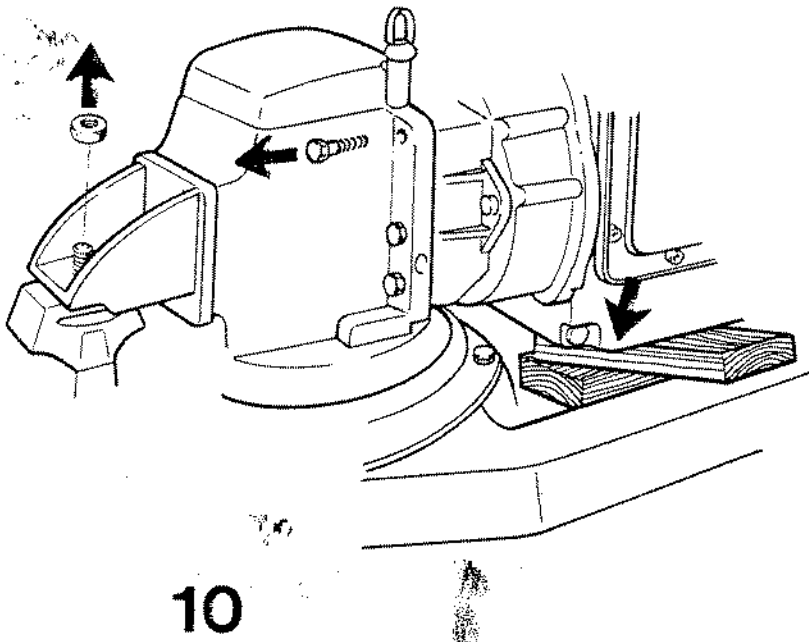
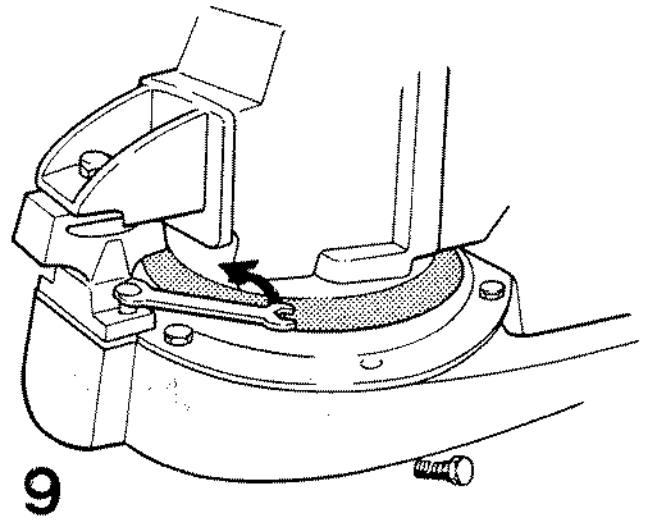
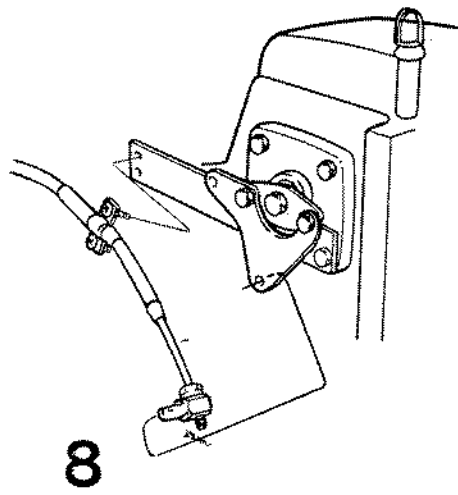


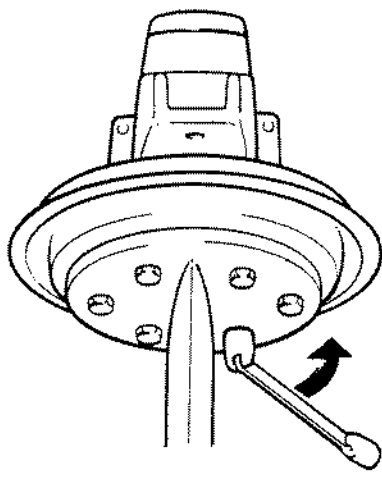
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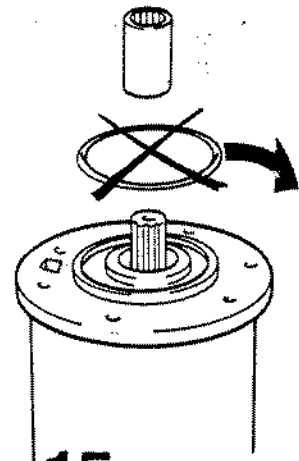
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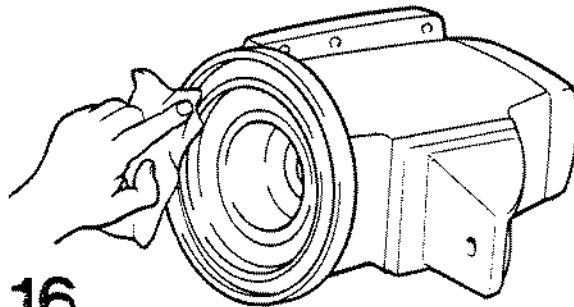




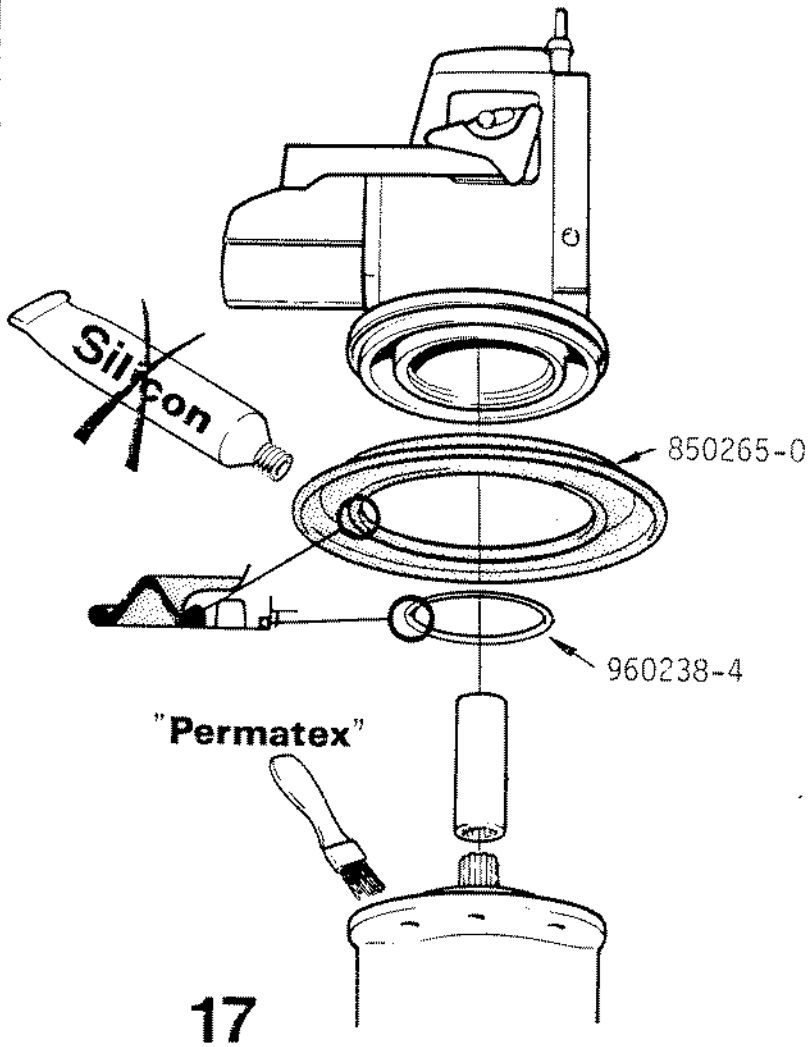
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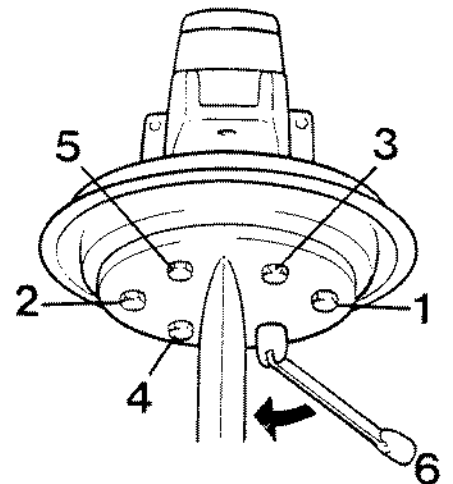
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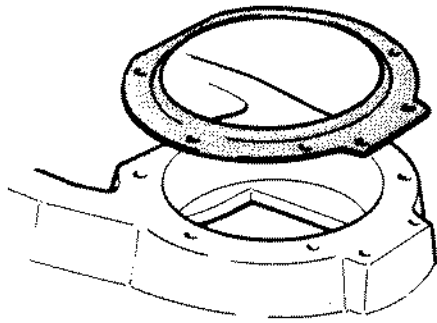
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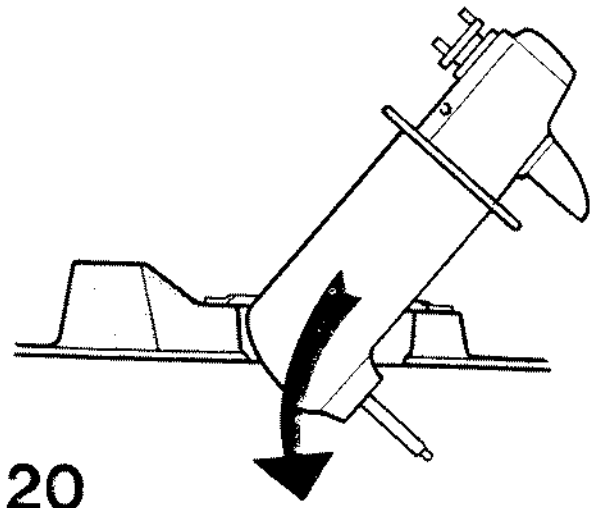
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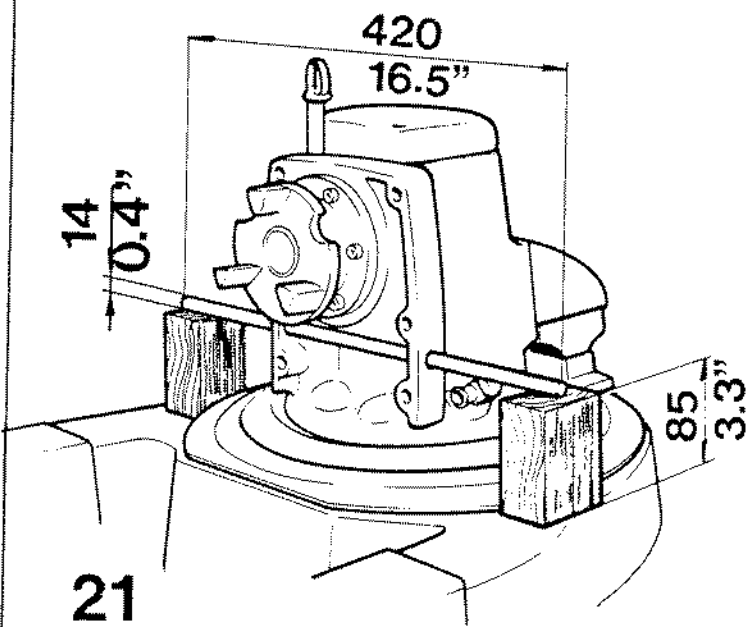
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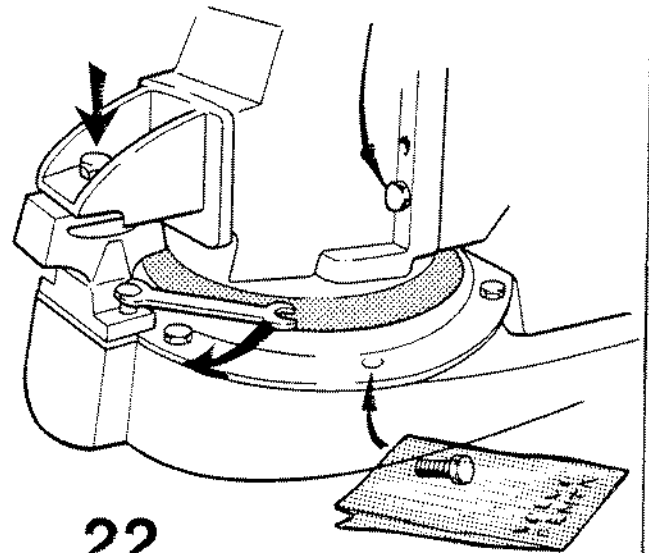


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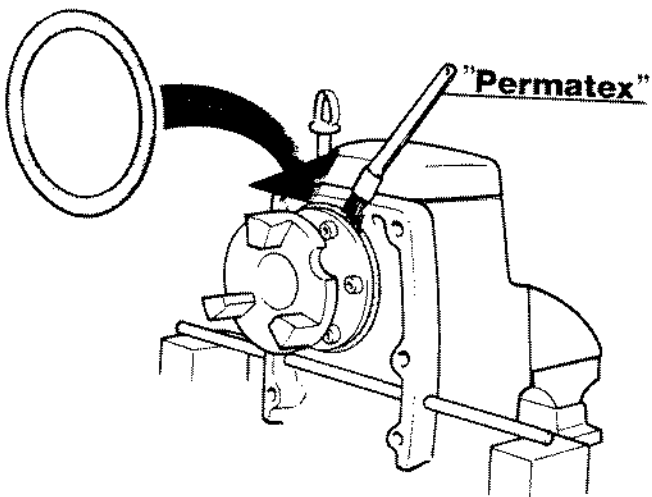


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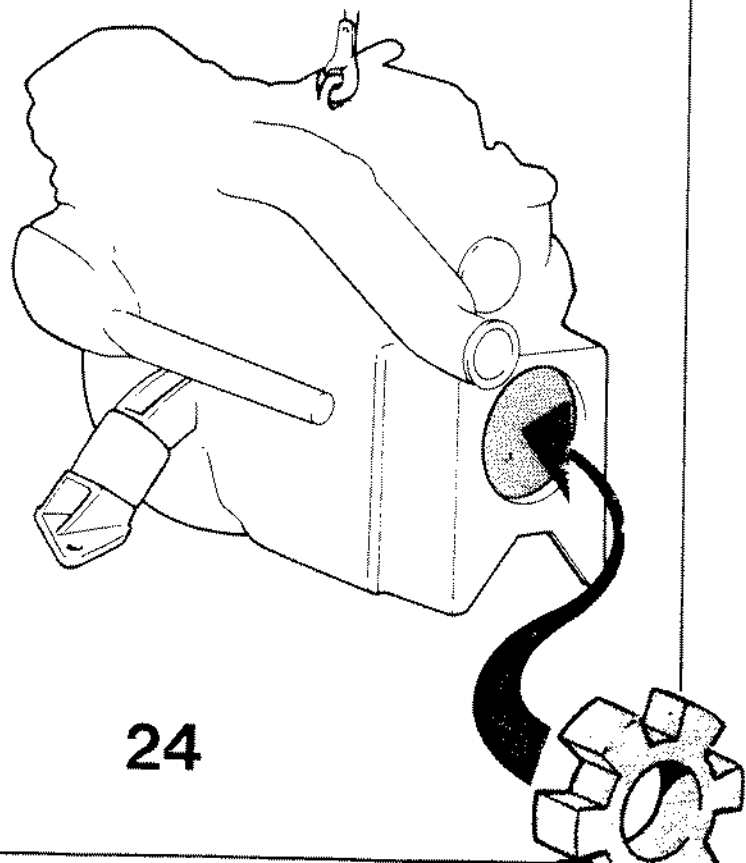
40Nm (4kpm)



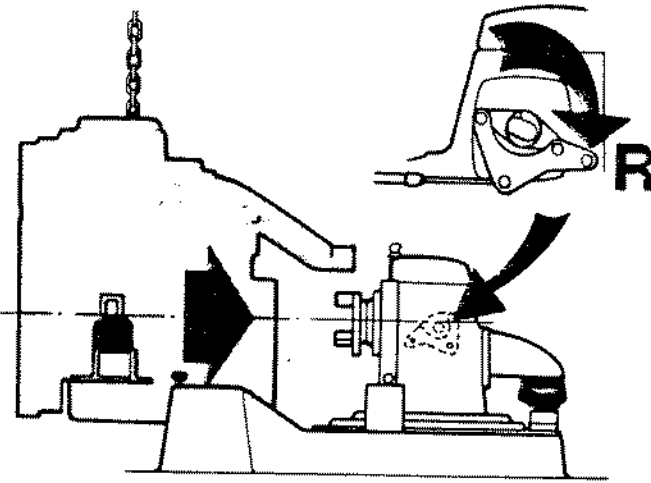
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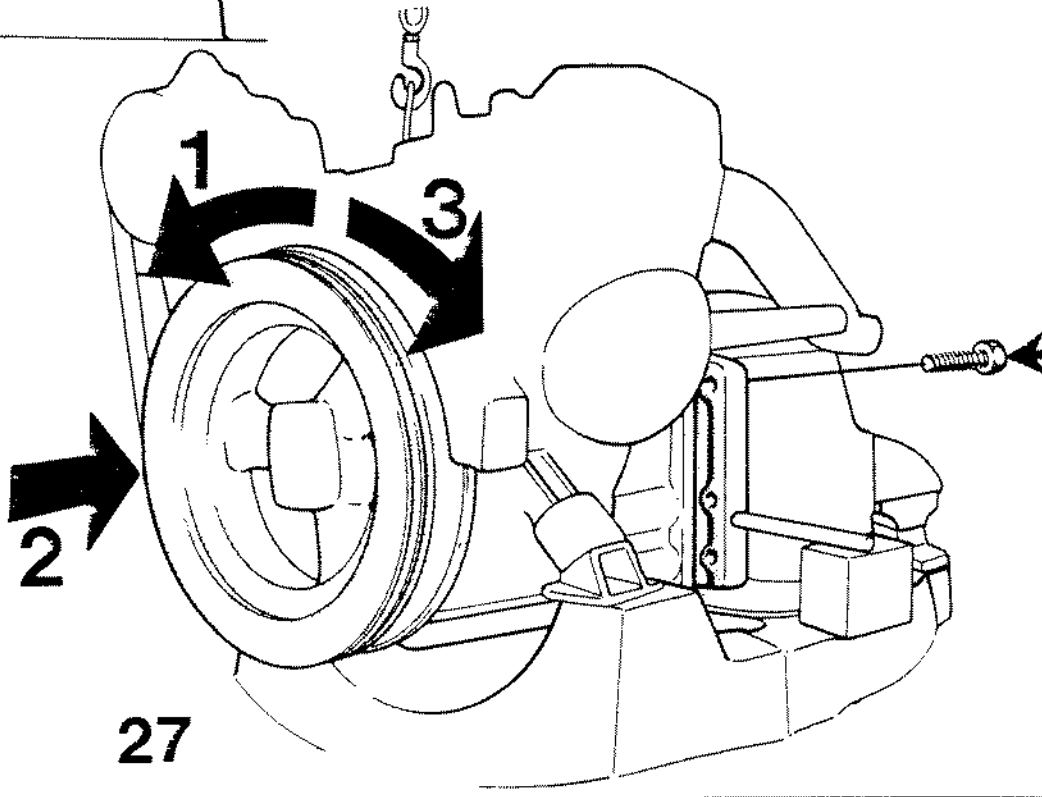
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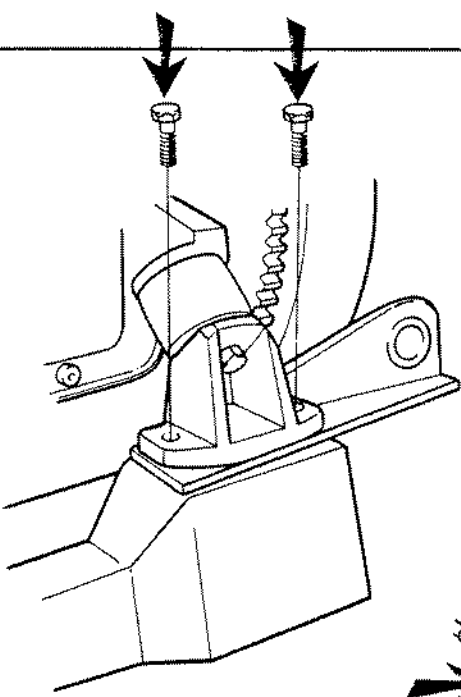
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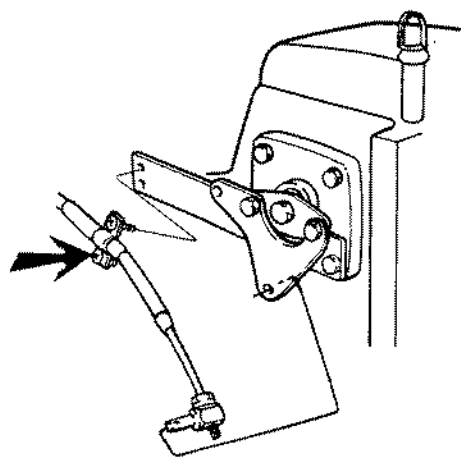
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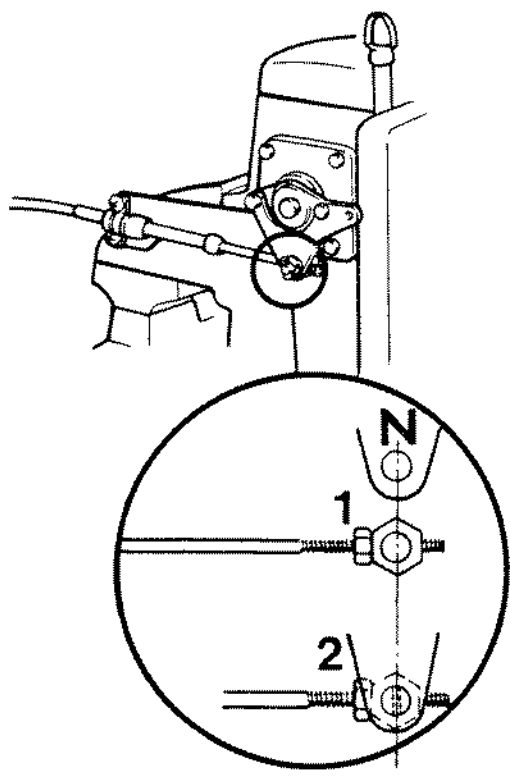
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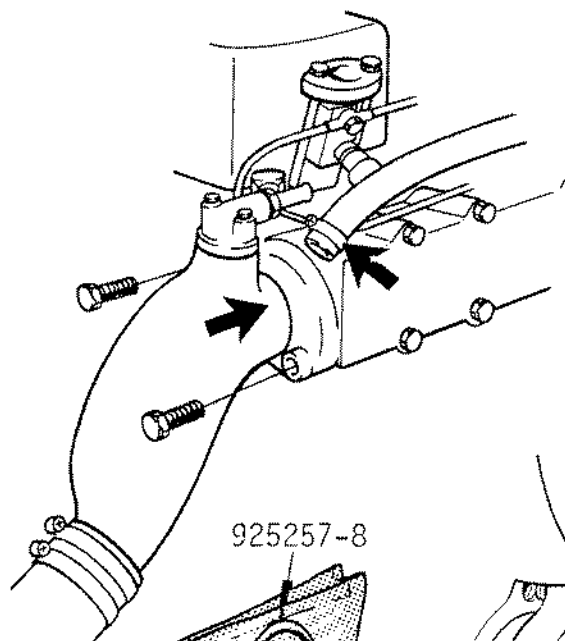


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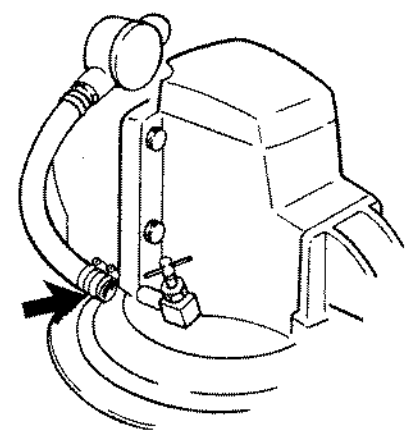


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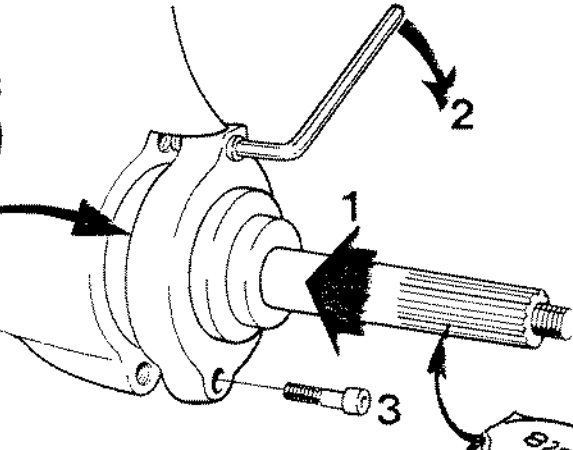
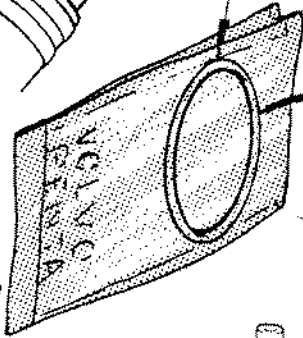


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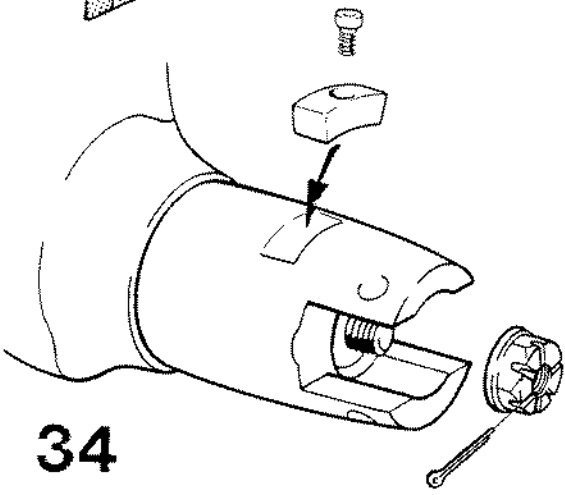


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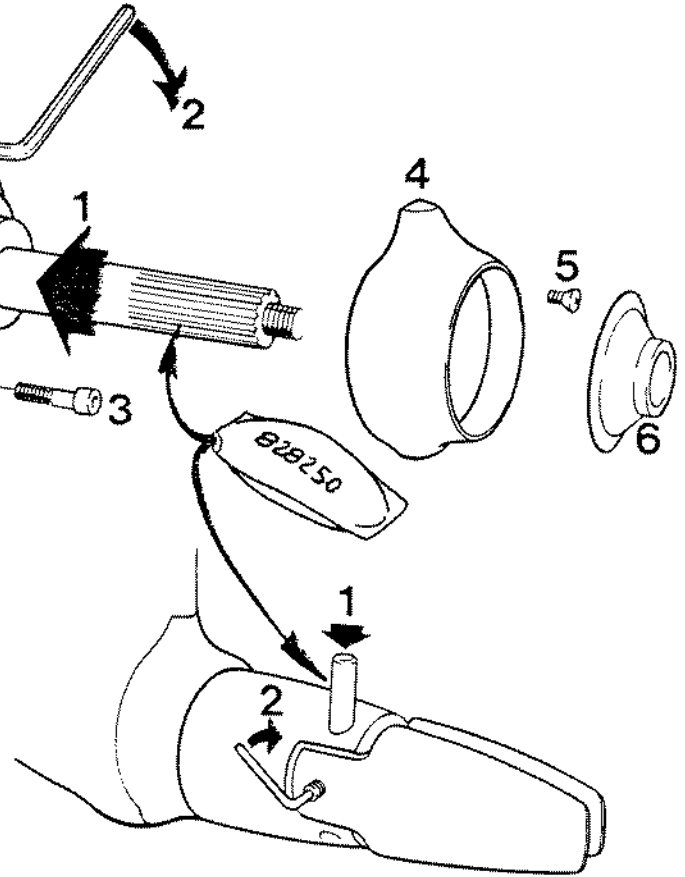
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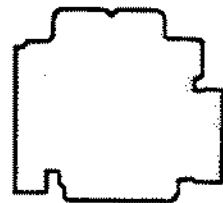
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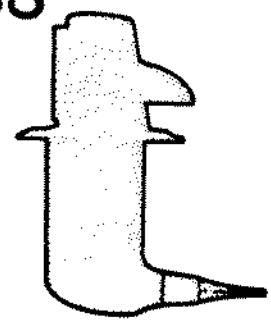
36



37



38



OIL QUALITY: CD (API)  
 VISCOSITY:

> +10° C     SAE 20W/30  
 < +10° C     SAE 10W

	dm <sup>3</sup>	US qts
MD 5	2.1	2.2
MD 7	3.0	3.2
MD 11	2.9	3.1
MD 17	4.5	4.8

	dm <sup>3</sup>	US qts
110 S	1.8	1.9

ENG

1. Remove the oil dipstick (1) and the drain plug (2) and drain the oil from the drive. Unscrew the six screws (3) which hold the upper and lower gear housing together and split the drive. Take care of the spline sleeve (4).
2. Remove the O-ring (5) and rubber seal and carefully clean the dividing surface of the gear housing. Then place a new O-ring (5) on the lower gear housing and fit the new rubber seal (6).  
**NOTE!** The rubber seal is marked "UP". This side should be fitted facing the upper gear housing so that this marking can be read easily.
3. Fit the upper gear housing and tighten the six screws (3). Tightening torque 40 Nm (4 kpm).
4. Top up with oil. Refer to the instruction book for oil quantity and quality. Then fit the oil dipstick.
5. When fitting the rubber seal in the boat it is important to ensure that the outer bead (7) is well supported against the engine bed and the clamping grooves fit well over the bead. Then tighten the clamp ring by means of the six screws. Tightening torque 20 Nm (2 kpm).

 **WARNING!** NO KIND of sealant must be used on the rubber seal.

 **IMPORTANT!** After launching, check that no leakage occurs.

GER

1. Ölmeßstab (1) und Ablaßstopfen (2) herausziehen und das Öl aus dem Antrieb ablassen. Die sechs Halteschrauben (3) zwischen oberem und unterem Getriebegehäuse ausbauen und den Antrieb teilen. Die Keilnutenhülse (4) aufbewahren.
2. O-ring (5) und Gummidichtung (6) entfernen und die Teilungsfläche der Getriebegehäuse säubern. Danach die Keilnutenhülse (4) auf die senkrechte Welle setzen und einen neuen O-ring (5) auf das untere Getriebegehäuse legen. Die neue Gummidichtung (6) auflegen.  
**ACHTUNG!** Die Gummidichtung ist mit "UP" bezeichnet. Diese Seite ist in Richtung oberes Gehäuse einzubauen, so daß die Kennzeichnung leicht abgelesen werden kann.
3. Das obere Getriebegehäuse aufsetzen und die sechs Schrauben (3) festziehen. Anzugsmoment 40 Nm (4 kpm).
4. Öl einfüllen. Bezüglich Ölmenge und Ölqualität, siehe Betriebsanleitung. Danach den Ölmeßstab einbauen.
5. Beim Einbau der Gummidichtung in das Boot ist es wichtig, daß der äußere Wulst (7) gut gegen das Motorbett abstützt, und daß die Nut des Klemmringes gut über den Wulst paßt. Danach den Klemmring mit den sechs Schrauben anziehen. Anzugsmoment 20 Nm (2 kpm).

 **WARNUNG!** Auf der Gummidichtung darf **KEIN** Dichtungsmittel angewendet werden.

 **WARNUNG!** Nach dem Zuwasserlassen prüfen, dass keine Leckage vorliegt.

