



Work card 10 304A-01

Assembling hydraulic coupling flange (ODG – type)

Safety precautions	Man power	Tools
<ul style="list-style-type: none"> ● Engine stopped and blocked for start ● Propeller shaft locked for rotation ● Propeller shaft locked for axial movement ○ Shut-off stern tube lubricating oil system ○ Hydraulic power unit stopped and blocked 	Working time: 4 hours Capacity: 2 men	Hydraulic tools See plate: 3 4505 Lifting gear Key spanner Hexagonal spanner Eye bolt See plate 3 4510
Data		Replacement and wearing parts
Plant specific data: Chapter 3 05		Plate no: 3 1005

2003-03-03

Starting position: Check that O-ring for sealing flange are fitted and without damage.



Procedure

1. Clean thoroughly the whole of the locating and surrounding areas of the shaft and the inside surface of the coupling. All joining surfaces must be free of any lub oil.

The shaft may be lubricated with a mixture of 70% gas oil and 30% mineral oil.

Special care must be exercised when cleaning the shaft astern of the coupling to avoid any scoring which could possibly prevent future dismantling of the coupling.



Note

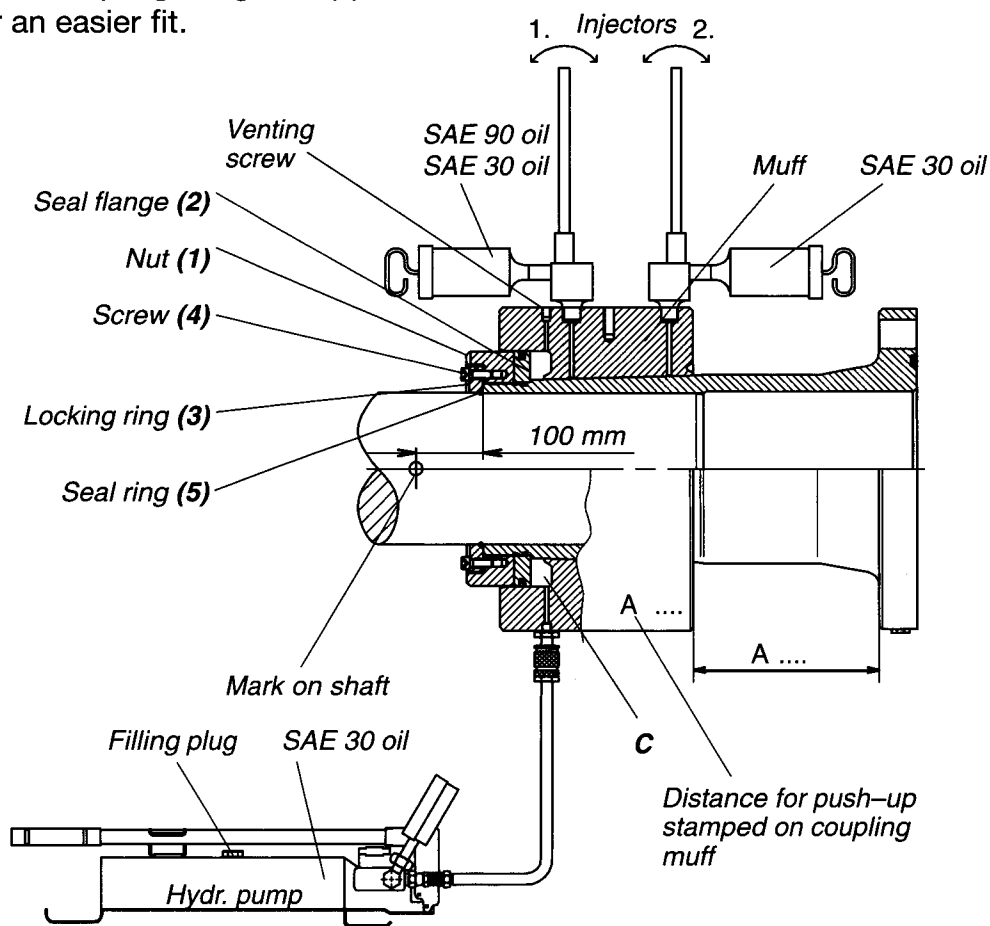
We strongly recommend that a lifting beam with carriage is fitted above the propeller so when the coupling flange is lifted, it is correctly aligned with the propeller shaft.

2. Fit the lifting gear on the coupling flange with the "0" mark in top and position the flange as shown in fig 10.15.

**Note**

Before lifting check that the weight does not exceed the SWL of the lifting gear/beam, see Plant specific data chapter 3 05.

3. Use the lifting arrangement to take the weight off the coupling flange before attempting to move the coupling flange along the shaft. See fig 10.16.
4. Loosen and remove the screws (4) and remove the locking ring (3), and the O-ring (5) from the coupling flange, see fig 10.15.
5. Place the locking ring and the O-ring on the shaft.
6. Align the coupling flange with the shaft, see fig 10.16.
7. At low temperatures it is advisable to heat the coupling flange to approx 20°C for an easier fit.
8. Slide the coupling flange over the shaft as far as necessary to make space enough to assemble the servo oil pipes. Regarding this subject, see page 10-17.
9. Slide the coupling flange in direction ahead, while the lifting gear is carrying the weight of the coupling flange, until the aft of the coupling flange is 100 mm ahead of the mark in the propeller shaft, or to make contact with the flange on the gearbox or intermediate shaft, see fig 10.15.
10. Fit a number of coupling bolts to make full contact between the flanges.
11. Remove the plug screws for chamber "C" and for the injectors. Connect the hydraulic pump to chamber "C" and install the injector (1) fig 10.15.

Fig 10.15**Fitting hydraulic coupling flange**

2003-03-03

10 303A-01

**Note**

Coupling flanges for shafts larger than 350 mm diameter have additional venting screws located between the injectors. In this case both injectors and vent screws must be used for pumping and venting.

**Warning**

Wear safety glasses when using high pressure hydraulics.

12. Use the hydraulic pump to fill chamber "C" with SAE 30 oil. Plug the venting hole in top of chamber "C" when oil without air comes out of the hole and raise the pressure to about 80 bars.
13. Fill the oil container for injector (1), fig 10.15, with SAE 90 oil and operate the injector until all air has been pressed out in the front of the muff and oil comes out of the hole for injector (2), fig 10.15.
14. Install injector (2) and fill the oil container with SAE 30 oil. Fill the oil container for injector (1) with SAE 30 oil.
15. By operating both injectors, increase the pressure until the muff is floating on the coupling flange. The maximum pressure is not to exceed 3000 bar. The pressure in chamber "C" is not allowed to exceed 300 bars

**Warning**

During the entire push-up process the injectors are to be continuously operated to maintain the oil film between the muff and flange.

16. The correct distance "A" for push up is stamped on the muff, see fig 10.15.
17. When the muff has reached the right position the pressures in the two injectors are to be released. The pressure

in chamber "C" is maintained another 20 to 30 minutes to ensure that the muff will remain in the position it has been brought to. Check that the muff keeps position when the pressure in chamber "C" is released.

18. Remove the injectors and disconnect the hydraulic pumps. Fit the plug screws.
19. Install the remaining coupling bolts.
20. Check the tightening of the nut (1), fig 10.15. It must be tightened hard against the seal flange (2), fig 10.15.

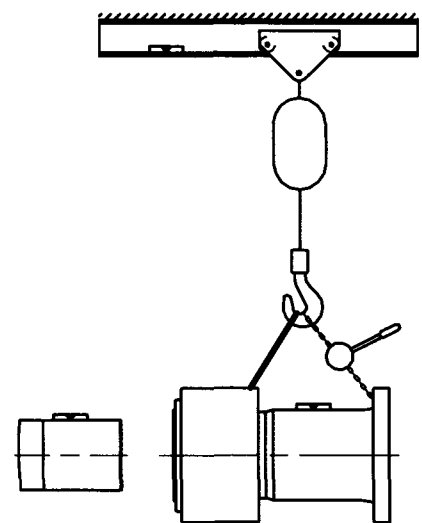
**Note**

There must be a clearance between nut (1) and locking ring item (3).

**Warning**

Keep well clear of the coupling flange and at no time stand in the vicinity astern of the coupling when applying hydraulic pressure to remove the muff.

21. Push the O-ring on the propeller shaft against the coupling flange and fit the locking ring with the screws (4), fig 10.15.

Fig 10.16**Lifting arrangement for coupling flange**

22. Protect the coupling flange and propeller shaft with anti-corrosive oil or equivalent. The corrosion prevention must be maintained to ensure easy dismantling of the coupling in the future. Furthermore, the screw plugs in the muff must be fitted waterproof and the threads of the nut (1), fig 10.15, must be treated with anti-corrosive oil.

**Note**

During shop test and later assembly of the coupling flange the muff is pushed up to the final specific distance.

When returning the muff to its original position some small impression lines may appear because of the high grip factor.

This is quite normal and has no effect on the functionality of the component.

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