

ASSEMBLY AND MAINTENANCE PROCEDURE FOR BONDURA® 66.66

Read the instructions carefully! Bolt Norge AS does not guarantee the product if the assembly and maintenance procedures are not followed. The Bondura bolt is Type Approval Certificated by DNV, and follow the guiding lines by API Specifications 8c, DNV Rules for Lifting Appliances, FEM Rules for Heavy Lifting Appliances, NS 5514 crane standard.

ASSEMBLY PROCEDURE

1. Preparations

- 1.1 Remove any burr. Clean the support.
- 1.2 Align the bolt hole. Use a *ruler* all around inn the hole to be sure the centre link and both support are on line (see Fig.1).

NB! Unload the connecting link, and line up the middle centre link before mounting the bolt. Use a jack or hoists at all heavy cylinders and jib to line the link properly to the support on both side.

This is to prevent the outer cone sleeves for slanting with consequence that the Bondura can be partially loose after short time (see Fig. 9a-9b).

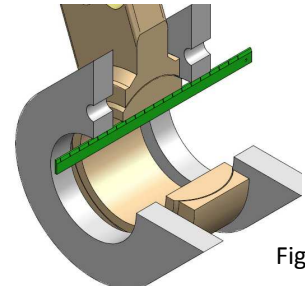


Fig. 1

2. Fitting the bolt

- 2.1 Unscrew the locking plates and remove the outer cone/ sleeves(16) on the Bondura bolt.
- 2.2 Fit The bolt in the joint with the inner cone (27) still mounted (see Fig. 2).
- 2.3 Line it up in the joint axial so that the bolt's inner cone is equal outside of the support on both side (see Fig. 3).

NB! The pin screws (26c) are already position fixed to the inner position to prevent undesirable effect of expansion on the inner cone sleeves (27) while inserting the Bondura bolt (see Fig.4). Do not dismount the pin screw (26c) or inner cone (27), before inserting the bolt.

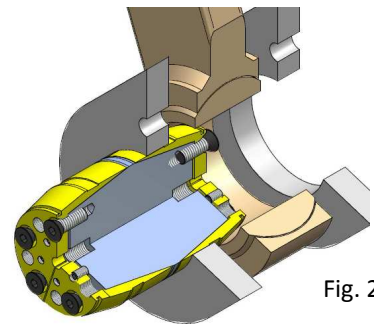


Fig. 2

3. Tightening the inner cones

When the bolt has been mounted,

- 3.1 Unscrew all "pin screws (26c) as shown in Fig.5, and tighten the inner cone screws (26b) for expanding the inner cones (27). Tighten alternately on both sides to avoid the Bondura bolt moving sideways. Tighten until specified torque (see table 1).
- 3.2 To prevent further expansion on the inner cone sleeves (27) mount all the pin screws (26c) again as shown in Fig 2 (use Locktite), and tighten up with specified torque (see table).

It is important to tighten the pin screws (26c) to prevent too much expansion force in the inner bearing when tightening up the outer cone. The bolt is now locked to the middle section bearing.

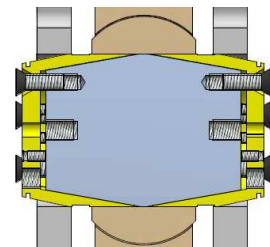


Fig. 3

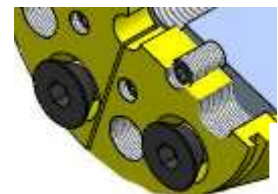


Fig. 4

4. Preparing for the Locking devise

Before mounting the outer taper sleeves,

- 4.1 Line up the Bondura bolt radial for the anti rotation screw to fit the holes in both ends of the support (see Fig 7). See in the table, for the dimension and location of the screws.

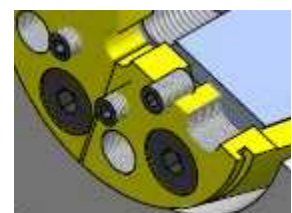


Fig. 5

5. Fitting the outer cones

5.1 Mount the outer cones/sleeves (16) (see Fig.6) on both sides and fit the locking plates (20).

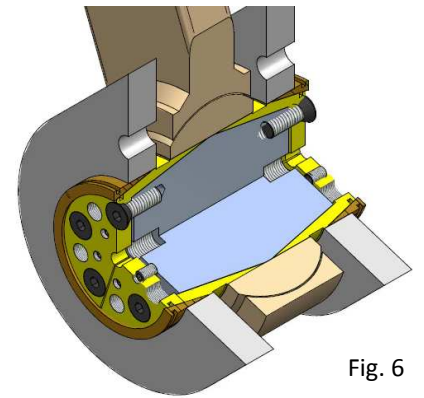


Fig. 6

6. Tightening the outer cone screws

- 6.1 Tighten the screws (26) on the bolt ends until specified torque. Remember to tighten alternately on both sides to avoid the bolt (4) moving sideways.
- 6.2 Knock with a heavy hammer all around the plate, to be sure that the cone sleeves have expanded properly (see Fig.7).
- 6.3 Tighten all screws again with specified torque.
- 6.4 Repeat 6.2 and 6.3 twice.

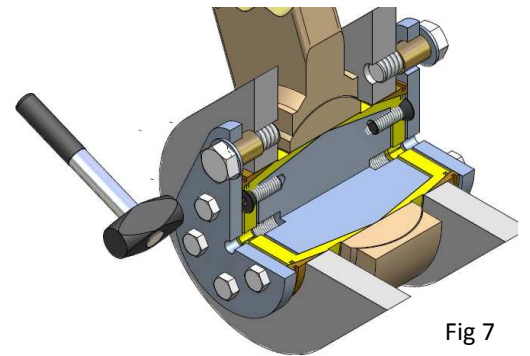


Fig 7

7. Locking of the Bondura Bolt

The Bondura does not rotate because the taper sleeves expand and result in a "wedging force" between the bolt and support.

- 7.1 As an extra precaution, the locking plate must be fastened with a locking screw (1) to the equipment. Use the clamping screw protector to ensure that the locking plate is not bent when tightening the locking screw (see Fig. 7). An alternative is to use a locking bracket instead of the screw. This is fastened to the equipment by 4 ea M16x50 mm screws (see Fig 8).
- 7.2 If requirements from the employer, the screws may be fastened by using a wire through the hole of the screw heads.

8. Retightening after testing

8.1 After a few hours of work repeat the procedure from point 6.1 to 6.3 until torque is reached.

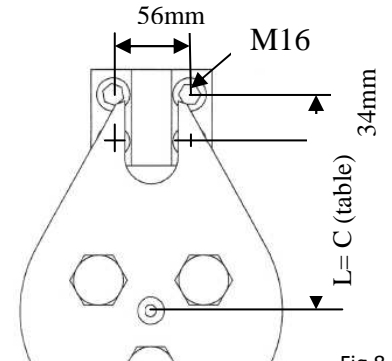


Fig.8

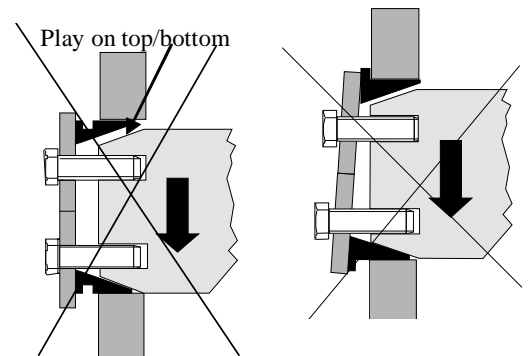


Fig.9a
The centre link and both support are not on line.

Fig.9b
The outer cone sleeves are slanting.

All torque value in dry condition. For lubricate value- reduce with 10%. 1Nm =0,737 ft*lb

BOLT DIA Ø	Lock screw (1)			PIN SCREW (26c)			SCREW INNER CONE (26b)			SCREW OUTER CONE (26)		
	C mm	Dim mm	Torq ue Nm	Dim mm	Qty	Torque Nm	Dim mm	Qty	Torque Nm	Dim mm	Qty	Torque Nm
160	120	M30x80	170	M12x20	8	10	M20x45	6	190	M24x100	6	650
180-200	120	M30x80	500	M16x26	8	10	M24x50	6	190	M24x90	6	650
220-250	160	M36x90	500	M16x25	8	10	M24x50	8	190	M24x90	8	650
260-280	190	M36x90	500	M20x25	8	10	M24x50	10	190	M30x100	10	1000
300-320	190	M36x90	500	M20x30	8	10	M24x50	10	190	M30x100	10	1000

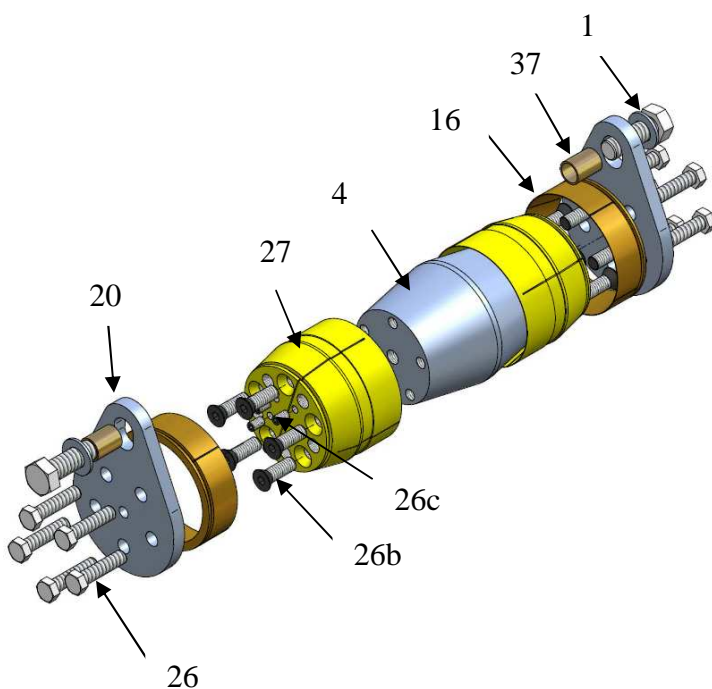
DISMOUNTING PROCEDURE

1. Preparations

- 1.1 Unload all heavy cylinders or jib before dismantling the bolt.
- 1.2 Align the bolt hole. The middle centre link must line up with the support on each side. Use a jack or hoists to line the link properly.

2. Dismounting of inner and outer cone

- 2.1 Dismount the Locking plate (20).
- 2.2 Dismount the outer cone (16). If the outer cone is tight, use Bondura "dismounting tools" for remove it.
- 2.3 Dismount the inner cone (27). Dismount it with tighten the pin screw 26c. See Fig 3. If the outer cone is tight, use Bondura "dismounting tools" to remove it.



Descriptions

- | | |
|-----|--------------------------|
| 1 | Locking screw |
| 4 | Bolt |
| 16 | Outer cone |
| 20 | Locking plate |
| 26 | Outer cone screw |
| 26b | Inner cone screw |
| 26c | Pin screw |
| 27 | Inner cone |
| 37 | Clamping screw protector |