ASSEMBLY AND MAINTENANCE PROCEDURE FOR BONDURA ® 36.36

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.

1 Preparations

1.1 Check for burr. Clean the fastenings.

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).**Do not use a hammer directly on the bolt, you may damage the threads.**

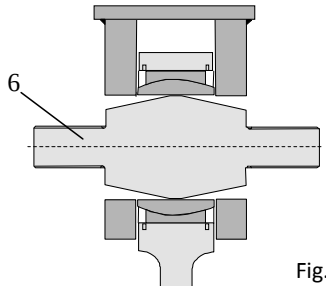


Fig. 1

2 Fitting the bolt

2.1 Unscrew all the parts on the Bondura bolt and insert the bolt (6) into the link. The conical end of the bolt should be in line with the outside of the attachment as shown on Fig. 1.

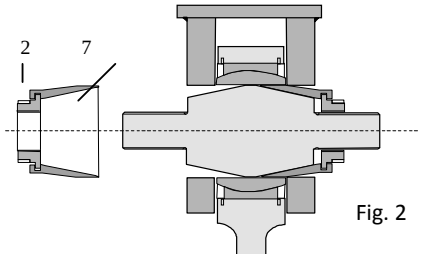


Fig. 2

3 Preparing for the Locking devise

3.1 Fit the locking plate (1) on both ends of the bolt (6). Turn the bolt to the best position, and screw the Locking device (8) onto the equipment (see Fig.3 and 4). Use M16x45mm umbraco. Socket spanner: 14mm.

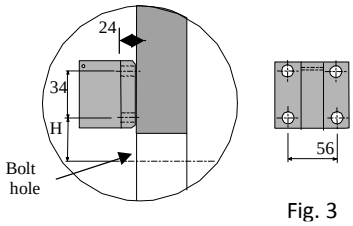


Fig. 3

4 Fitting of inner cones

4.1 Mount the inner cone (7) and tighten nut (2) on both side. Use high torch tools and tighten until specified torque. Tighten alternately on both sides to avoid the bolt (6) moving sideways. To prevent further expansion of the inner cone when tightening the outer cone, please remember: **When reached torque, turn the nut un-clock-wise exactly one turn.** The bolt is now locked to the midle section (see Fig.2).

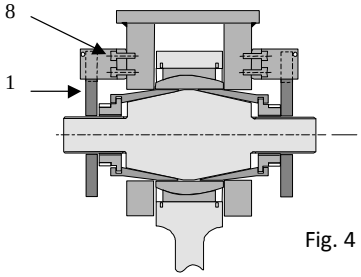


Fig. 4

5 Fitting outer cones

5.1 Mount the outer cones (4) on both sides (see Fig.5).

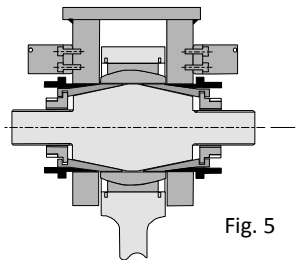


Fig. 5

6 Tightening outer nut

6.1 Fit the locking plate 1 again and put the nut (3) on the bolt ends. Use high torch tools and tighten until specified torque.

6.2 Tighten alternately on both sides to avoid the bolt (6) moving sideways. The bolt is now locked to the outer section (see Fig.6).

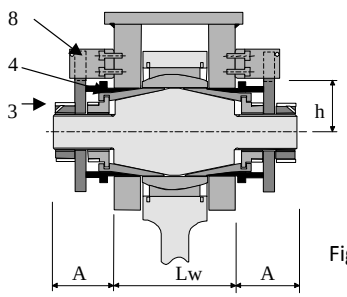


Fig 6

7 Retightening

7.1 After a few hours of work repeat the procedure from point 4 again until torque is reached.

Maintenance of the Bondura Bolt consists of two elements:
It always takes some time before the bolt and the support is "broken in". The resulting "play" must be absorbed by retightening the screws that holds the taper sleeves in place. When they are retightened, the taper sleeves expand and also absorb wear and ovality in the bolt supports.

a) Inspection.
Establish inspection procedures, e.g. every time the bolts are lubricated.

- That locking plates, taper sleeves and screws are in place.
- That the bolt cannot rotate (intact anti-rotation lock).
- That the wire safety is intact.
- Check that the bolt has not shifted to one side.

b) Retightening/inspection:
Establish retightening/inspection procedures annually.

8 Secure for falling device

8.1 Put wire through the hole in nut 3 and the clamping device. Put wire through the hole in the clamping device and the equipment.

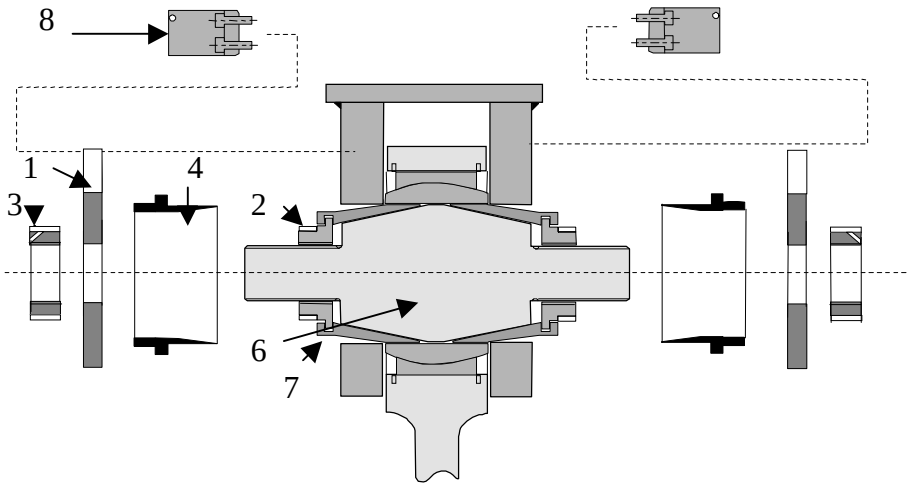
9 Lubrications

9.1 Follow the suppliers instructions on the use of lubrications grease and lubrications intervals.

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

Bolt (6) Dia. mm	Dimension A h H	Tools for torque	Outer Nut (3)	Torque Outer Nut (3) Nm	Inner Nut (2)	Torque Inne Nut (2) Nm
Ø76 -90	77 86 -	46mm socket spanner Min.55mm deep	M30x2	1000	M30x2	1000
Ø133	125 89 109	75mm socket spanner Min.85mm deep	M56 x 2	1000	M56 x 2	1000
Ø160 Ø200	98 111 129	105mm socket spanner Min.70mm deep	M80x3 Tools dimen-tion105mm)	*2000	M80x3 (105)	*1000

* Torque for nut is reduced



Descriptions

1	Locking plate
2	Nut for inner cone
3	Nut outer
4	Outer cone
6	Bolt
7	Inner cone
8	Locking device 8 x M16x45 Umb

DISMOUNTING PROCEDURA FOR BONDURA 36.36

1.1 Dismount the Locking Plate.
2.1 Dismount the outer cone.
3.1 Unscrew the inner nut to dismount the inner cone.

Bolt Norge AS is producing a special tool for dismounting both inner and outer cone at the same time. A special treaded casing can be mounted in the outer cone, and both cones will loosen when unscrewing the nut.