

## Mouting Procedure

Before assembling it is necessary to clean all surfaces thoroughly from burrs, paint residues, etc. Seating surfaces should be dry, without lubricant. Furthermore it is necessary to inspect flatness of the seating surfaces. Feeler gauges are used to check slewing ring adaptation.

The unhardened area of the non rotating ring should be mounted so that it is positioned in the least loaded zone - i.e. in the plane perpendicular to the main load plane.

The unhardened area is marked on the respective ring non-functional surface with symbol "X" by stamping or with a red line.

When assembling a geared slewing ring it is important to adjust the backlash in the gear correctly. It is adjusted with a feeler gauge or with another suitable method in the zone of maximum radial gear runout. The extent of the backlash should be in the range of (0.035-0.04).m, where "m" means the gear module. The backlash should be inspected again after the slewing ring is finally fixed on the machine. The zone of the maximum radial gear runout is marked with a blue line in the gap between teeth.

Slewing rings are fixed on the machine with pre-stressed bolts. Before assembly the mounting bolts should be coated slightly with oil. The necessary tightening torque for corresponding bolt size and material is indicated in Table 1.

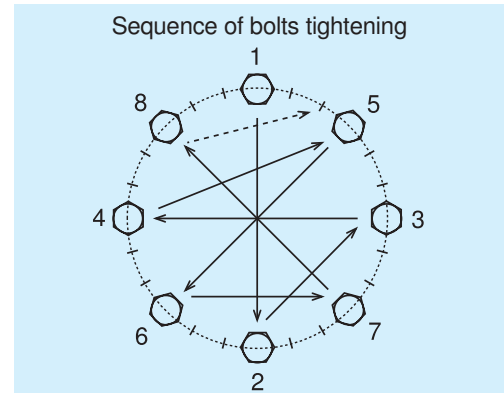
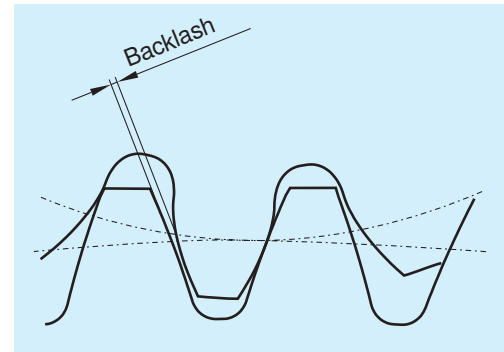


Table 1

| Bolt Thread Size | Bore Diameter [mm]<br>DIN/ISO 273 | Tightening torque at $\mu = 0.14$ [Nm] |                             |
|------------------|-----------------------------------|--|-----------------------------|
|                  |                                   | Rigidity Class of Bolt 8.8             | Rigidity Class of Bolt 10.9 |
| M 12             | 14                                | 78                                     | 117                         |
| M 14             | 16                                | 126                                    | 184                         |
| M 16             | 17.5                              | 193                                    | 279                         |
| M 18             | 20                                | 270                                    | 387                         |
| M 20             | 22                                | 387                                    | 558                         |
| M 24             | 26                                | 666                                    | 954                         |
| M 27             | 30                                | 990                                    | 1395                        |
| M 30             | 33                                | 1350                                   | 1890                        |
|                  |                                   | Grade 5                                | Grade 8                     |
| UNC 5/8"-11      | 18                                | 180                                    | 260                         |
| UNC 3/4"-10      | 21                                | 320                                    | 460                         |
| UNC 7/8"-9       | 25                                | 520                                    | 730                         |
| UNC 1"-8         | 27.5                              | 770                                    | 1100                        |
| UNC 1 1/8"-7     | 32                                | 970                                    | 1560                        |
| UNC 1 1/4"-7     | 35                                | 1370                                   | 2190                        |
|                  |                                   | Grade 5                                | Grade 8                     |
| UNF 5/8"-18      | 18                                | 210                                    | 290                         |
| UNF 3/4"-16      | 21                                | 360                                    | 510                         |
| UNF 7/8"-14      | 25                                | 580                                    | 820                         |
| UNF 1"-12        | 27.5                              | 860                                    | 1210                        |
| UNF 1 1/8"-12    | 32                                | 1100                                   | 1760                        |
| UNF 1 1/4"-12    | 35                                | 1520                                   | 2440                        |

## Slewing Ring Inspection in Operation

During service it is necessary to regularly recheck the fixing bolts torque at the in recommended intervals. Individual inspection intervals vary according to machine operation conditions.

When inspecting, the following method can be used (approximately valid for crane operation):

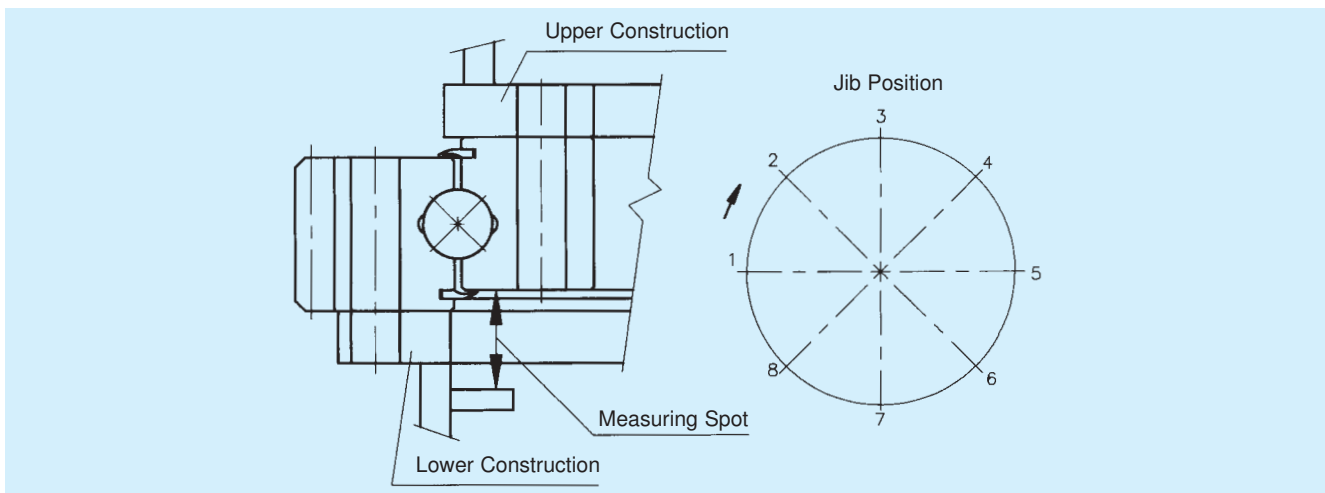
| Inspection No. | Number of Operating Hours | Inspecting Action  |
|----------------|---------------------------|--|
| 1.             | About 200 Hours           | - inspection of all bolts torque<br>- if more than 10% of bolts are loose, another inspection is necessary after about 200 operating hours   |
| 2.             | About 600 Hours           | - inspection of all bolts torque   |
| 3. and further | After about 2 000 Hours   | - if one or more bolts are loose to less than 80% of the prescribed torque, these and both adjoining bolts must be replaced by new ones<br>- if 20% of all bolts have less than 80% of prescribed torque, all bolts must be replaced by new ones |
|                | Each 12 000 Hours         | - replace all bolts by new ones  |

Note: Specified inspection intervals must be shortened by 1/2 up to 1/3 for machines loaded more heavily by vibrations or dynamically.

In addition to the fixing bolts check, raceway wear checking is also carried out in operation ( mainly at significant important rotary connections) using the measurement method "tilting clearance". The tilting clearance is the difference of the mutual ring displacement in axial direction measured under load by minimum and maximum tilting moment. In the operation register of the equipment the initial tilting clearance is recorded (in the jib position 1 to 8) and its enlargement is then followed in certain time intervals. The principle of the tilting clearance measurement and an example of the measuring record are shown in Figure 3.

More detailed technical information concerning slewing ring checking can be provided by the experts of PSL, Technical Consultancy Department.

Figure 3



## Slewing Ring Tables

The following Tables (pages 14 - 27) show the standard PSL slewing rings whose cross-section corresponds to the figure above the Table. Any deviations are specified in the notes.

Further Tables (pages 28 - 30) show special slewing rings whose cross-section does not correspond to the figures over the Tables, or they differ from the standard design (e.g. they have irregular spacing of the fastening holes, special gear, higher tolerance class, are non-sealed from one or both sides, or have non-standard shape of the rings, etc.). More detailed information concerning these slewing rings can be provided by the experts of the PSL Technical Consultancy Department, address - see page 2.

The tables of the special slewing rings show some types designated by the designation PSL 912-... They are slewing rings of the old three-ring design (one ring is split).