Installation of a new slewing ring

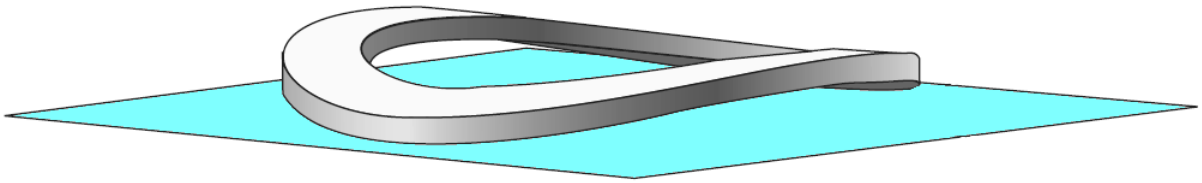
When mounting a new slewing ring it is important to check a couple of things before starting to use it.

Flatness of the mounting surfaces.

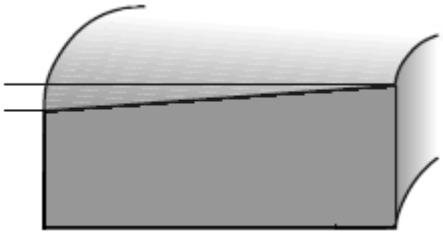
To ensure the slewing ring can turn well after installation it is important to check on the flatness deviation of the mounting surfaces. Because if the deviation is too big you could deform the slewing ring when tightening the bolts which can lead to a slewing ring that doesn't turn well.

Bearing track diameter in ø mm	Permissible flatness deviation of the mounting surface (mm)		
	Double row ball bearing	Single row ball bearing	Roller bearing
> 500	0,15	0,10	0,07
> 1000	0,20	0,15	0,10
> 1500	0,25	0,19	0,12
> 2000	0,30	0,22	0,15
> 2500	0,35	0,25	0,17
> 4000	0,40	0,30	0,20
> 6000	0,50	0,40	0,30

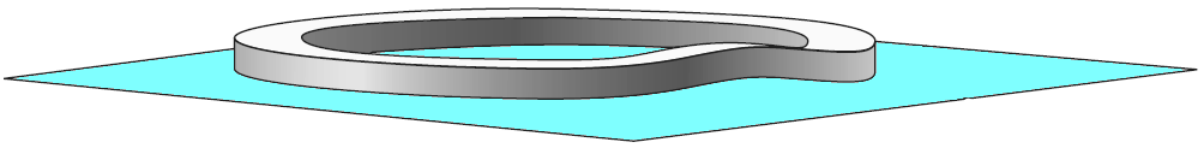
You can check this in several ways. The simplest way is by turning the slewing ring by hand before installing it and then it should turn just as easy when the bolts are tightened. If the slewing ring is turning less easy something was deformed when tightening the bolts. Also you can use feeler gauges to measure the space between the surface of the slewing ring and the mounting surface on the machine. The best and most reliable method is by laser measurement. If you wish, we can offer this service to you. The mounting surfaces on the machine will be visualised by our laser equipment and all deviations will be accurately measured.



You also need to check the perpendicular deviations which cannot exceed ¼ of the values written in the above table



And in case of a very short deviation it is even more important, then you can also not exceed ¼ of the values written in the table



When the inspection shows that the deviation in the mounting surfaces is exceeded you can choose to have them machined. If the deviation is not way too big you can also mount the slewing ring using a 2 component casting system to fill any flatness deviation.

Ovalization of the separate rings of the slewing ring.

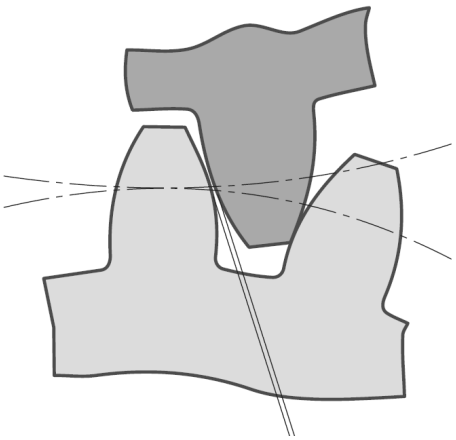
The separate rings of a slewing ring are never 100% round, this is debt to the production process. A couple hundreds of mm difference can occur which can cause a spot where the slewing ring turns less easy or even block. To ensure that this doesn't cause any problems, best is to turn the slewing ring to this tight spot and tighten the bolts in that position. That ensures that the slewing ring will always be able to turn free. If you would not do it that way, there is a chance that the slewing ring will block at the tight spot.

Positioning of the soft zone

The raceway tracks of a slewing ring are hardened, the process of hardening these has a beginning an a end as the hardening may not overlap there is a small gap where there is no hardening. That is the so called soft zone of the slewing ring. This position is marked on the outside of every slewing ring. Make sure, if possible, that this spot is positioned so that it will stay out of the maximum load while working with the slewing ring. That way the longest possible life expectation is ensured.

Checking the tooth flank clearance

To ensure that the gear Works optimal it is important to check the clearance between the tooth flanks of the slewing ring and drive pinion. Because of the ovalization of the separate slewing ring segments it is important to check the clearance at the position where the pinion is closest to the gear of the slewing ring. With internal gear that is where the smallest inner diameter is and with external gear where the largest outer diameter is. On a new slewing ring this position is marked by colouring a few teeth in a row. When the right position is determined the clearance can be checked with a gauge. This clearance should be between 0.03 mm and 0.05 mm times the module of the gear.



Lubrification

After installation the slewing ring will have to be greased. Let the slewing ring turn while pumping grease into it, continue until grease comes out from underneath the seals all around. During the use of the slewing ring it also needs to be greased, make sure that there will always be grease coming out from underneath the seals.

Clearance

During the life time of the slewing ring the clearance on the bearing can increase. Only if the initial clearance is measured after installation the increase in clearance can be monitored. How to measure the clearance en to check the allowed values for increase in clearance please check our document "checking the tilting clearance".