1.1 Slewing ring - Gear – Backlash inspection (rotational clearance)

Gear wear leads to increased rotational backlash. Therefore, it is necessary to check the rotational backlash after 500 operation hours or at the latest after 6 months. The values for rotation tolerance given below must not be exceeded.

On the assembly it is important to ensure the clearance between the flanks at the 3 teeth marked in green. This clearance should be between 0.03-0.04 times the module. After the bearing has been tightened definitively, the flank clearance must be checked again along the entire circumference. *“Figure 1. Clearance measurement between flanks”*

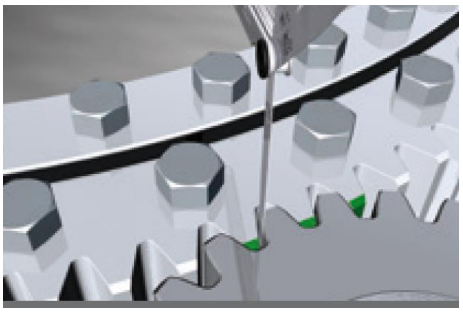

Figure 1. Clearance measurement between flanks

Follow the procedure below:

- Determine and permanently mark the measuring point in the main load zone.
- The set rotational clearance is used as a reference for comparison after further inspections.
- Bring the gearing towards the contact on one side.
- Use a gauge to measure the gap between the two teeth "*Figure 1. Clearance measurement between flanks*”

All subsequent checks shall be carried out at the same measuring point, at the same position. All measured values must be recorded.

The wear must not exceed "0.3 x module". This value is marked as a reference limit. Depending on the type of application and loads, a greater margin can be left.

1.2 Screw worm - slewing ring – Backlash inspection (rotational clearance)

Gear wear leads to increased rotational backlash. Therefore, it is necessary to check the rotational backlash after 700 operation hours or at the latest after 6 months. The values for rotation tolerance given below must not be exceeded.

Follow the procedure below:

- Switch off the system and protect it against restarting.
- Determine the measuring point in the main load zone, either on the housing, worm gear or ring gear and mark these points permanently.
- Disassemble the unit so that the worm shaft can be moved freely and easily by hand. It may be necessary to remove the motor and/or brake, if applicable.
- Determine the circumferential backlash angle of the worm shaft in the area where the worm shaft engages most of the time. The measured value determined serves as a comparison value with the initial (factory) value and for subsequent checks.
- Record and document the measured values. All subsequent measurements must be carried out at the same measuring point.
- If the difference between the initial backlash value and the new measurement is greater than that given in "*Table 1. Limit values for backlash increase*", it is recommended to replace the slew drive.
- The inspection interval should be reduced by 200h if the detected clearance is approximately 75% of the allowable clearance.
- If further increases are detected after 75% of the permissible clearance has been reached, the inspection hours should be reduced by 50-100h.

The following table shows the limit values for the increase of the backlash. The table allows to work in degrees or in mm, specifically in the outer ring hole position (this is the one used in the factory to check the backlash).

Serie	Model	Permissible increase	
		Degrees [º]	Holes OR [mm]
TE TO TGE TGO	160	0,55	0,63
	236	0,48	0,85
	314	0,56	1,32
	400	0,44	1,37
	435	0,40	1,37
	523	0,33	1,40
	639	0,27	1,39
	760	0,23	1,34
	920	0,19	1,44
	1050	0,23	1,99
BE LBE BO	100	0,63	0,45
	130	0,55	0,48
	236	0,78	1,29
	314	0,56	1,32
	435	0,40	1,37
	500	0,37	1,36
	523	0,33	1,39
	600	0,37	1,69
	639	0,28	1,41
	700	0,34	1,97
	702	0,28	1,66
GE LGE	236	0,74	1,27
	314	0,56	1,32
	435	0,40	1,37

Table 1. Limit values for backlash increase.