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Slewing Bearings Technical Catalogue

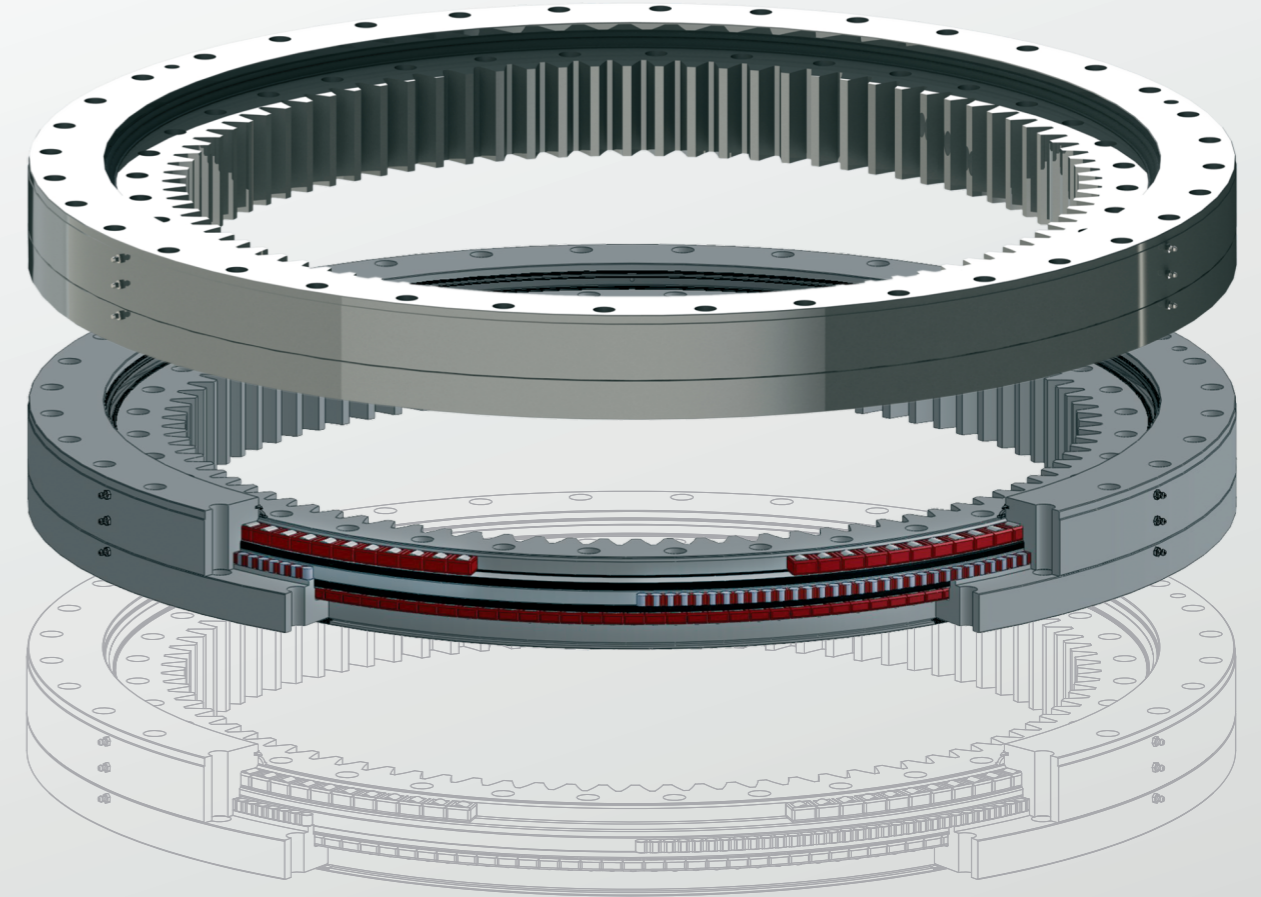


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Slewing Bearings

Technical Catalogue



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# Slewing Bearings

Technical Catalogue



## ABOUT US

Our company started its activities as Teknik Makina Company in 1965, which was founded by Halil HANTAL for machinery manufacturing in Hasköy-Istanbul.

In 1988, HAN Makina Sanayi Ticaret Ltd. Şti. was founded through the incorporation in the İmes Industrial zone in Dudullu-Istanbul and continued to manufacture machinery and spare parts.

Since 1997, the design, development, and production of bearings, rotation systems and related gear sets, which are our current production area, are continued in our company.

Our production activities still continue in our manufacturing plant in Sancaktepe-Istanbul, which was put into operation in 2009 and has a closed area of 2600m<sup>2</sup>.

In our new plant in Dilovası, our production will continue with increased manufacturing and stock capacities. This new plant has a closed area of 13.500m<sup>2</sup> and is ready to start manufacturing.

Regarding our company HAN Makina, all machines in our production line are computer-controlled and have the capability to meet the increased expectations of our customers. The positive feedback received from the comparative assessments of our HAN and equivalent products in the field, encourages us in our efforts to achieve much greater goals.

## OUR PRINCIPLES

It is our core principle to be the leading company owing to our advanced bearing design and product quality with the slewing bearings assembled by us.

In line with this principle, HAN Makina incorporates the cutting-edge engineering information and technical developments into its system. In addition to the provision of higher quality and working efficiency, the contribution of the creative ideas of our R&D and engineering team to the productivity of our customers cannot be underestimated.

Every day, we will continue to work to achieve greater successes and introduce more advanced designs with the help of our expanding team.

Today and in the future, HAN Makina will continue increasing its efforts on structuring and production capacity to produce more special bearings.



**1965-1988**

Our production as Teknik Makina Company has started in 1965 and HAN Makina was founded in 1988.



**1997**

The manufacturing area was defined as bearing production.



**2009**

The production capacity was increased and standards were improved with the introduction of the new manufacturing facility in Sancaktepe-Istanbul.



**2015**

Over the years, HAN Makina improved significantly its production quality throughout its investments.



**2018**

Depending on its experienced staff and company culture, HAN Makina achieved great success in the manufactured products and its customer portfolio has continuously expanded. These developments provided new investment opportunities to our company.

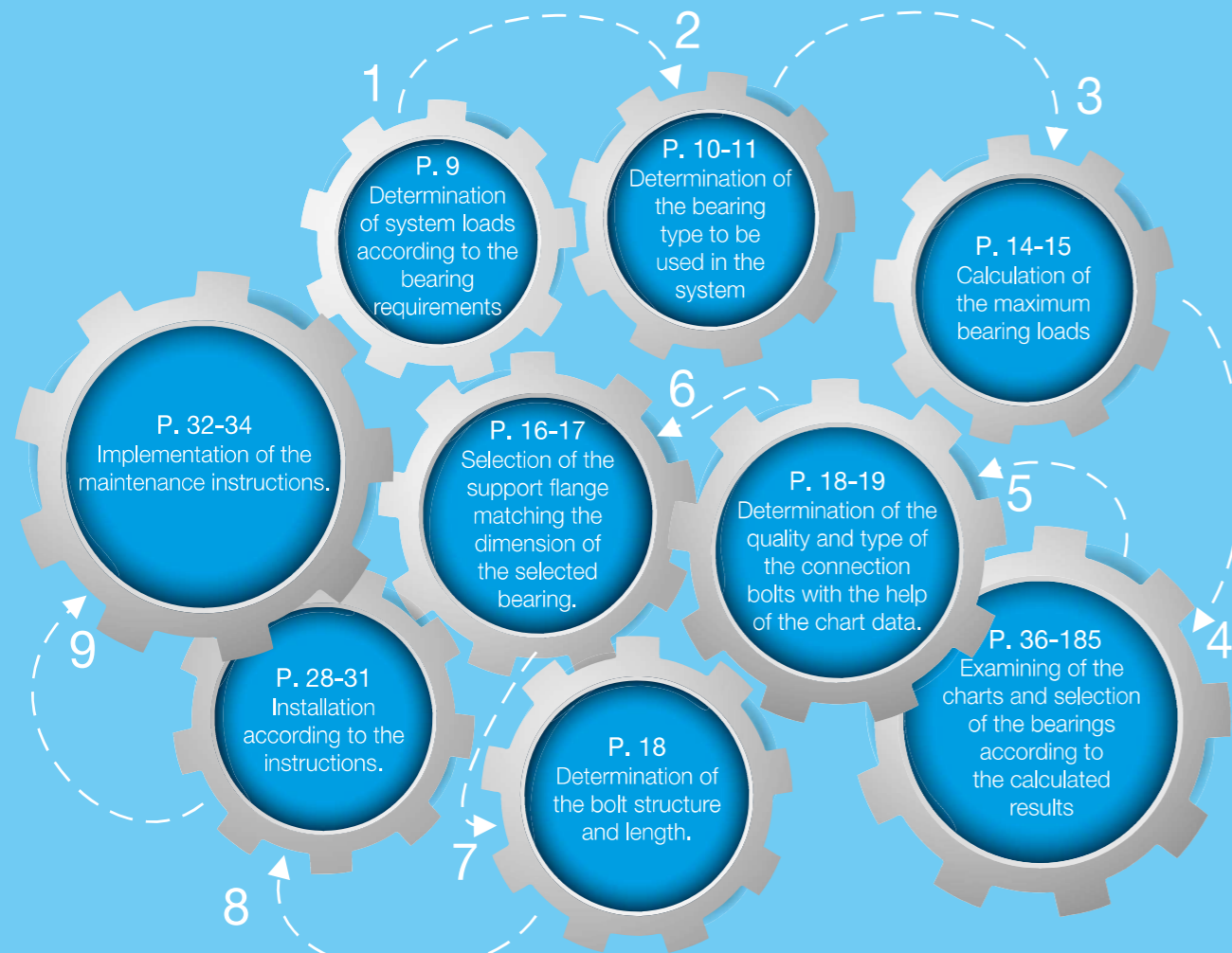


**2022**

As HAN Makina, in our new plant, we will soon start to produce more innovative and more advanced products for the whole world.



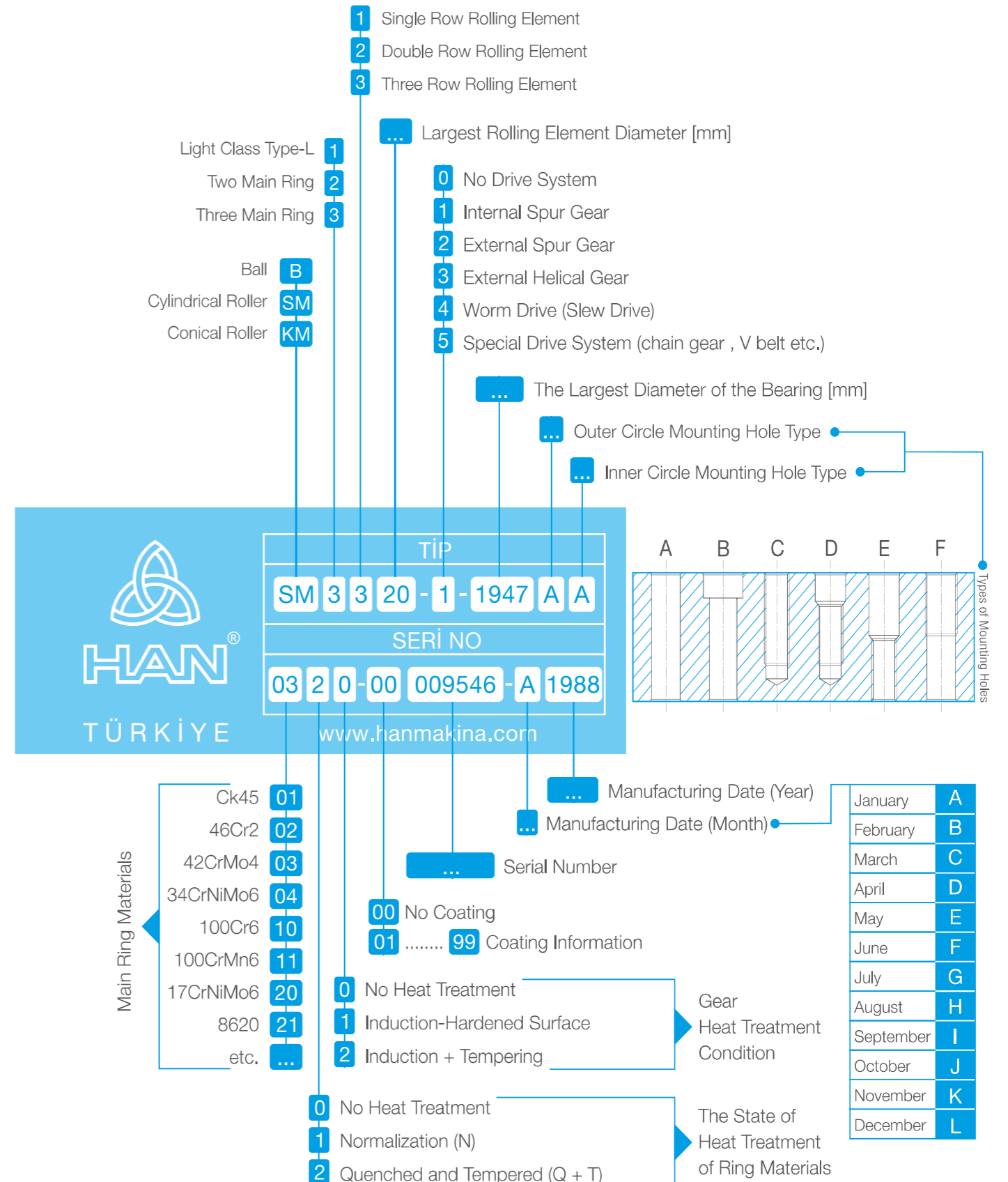
# Bearing Selection and Mounting Guide



## Slewing Bearings Application Areas

- Maintenance Platforms
- Robotics
- Concrete Pumps
- Excavators
- Filling and Bottling Facilities
- Wind Turbines
- Stackers
- Defense Industry
- Special Machine Equipments
- Tunnel Boring Machines (TBM)
- Mobile Cranes
- Harbor Cranes
- Tower Cranes
- Positioning Tables
- Rotation Platforms
- Amusement Park Equipments
- Conveyors
- Satellite Dishes
- Steelworks
- Radar Systems

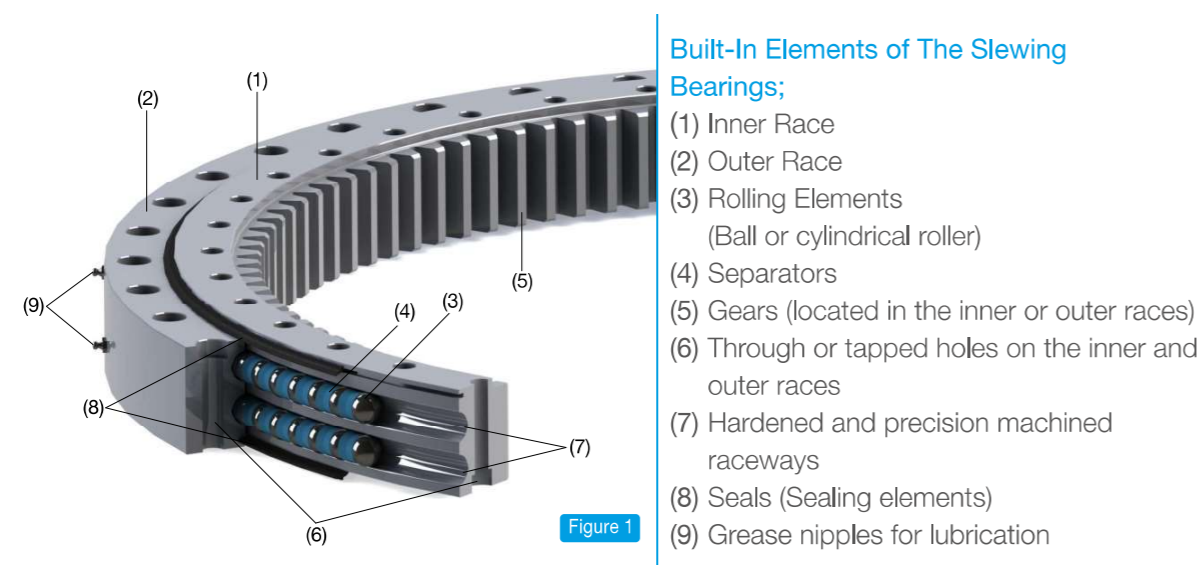
## Product Coding System



## Definition of The Slewing Bearings

Slewing bearings are machine elements with many types and sizes, which withstand alone the affecting axial and radial loads, tilting moment loads coming from any direction and system vibrations, and provide a rotary connection with the least volume.

In these bearings, the loads acting on the race through bolts are transferred to the other race of the bearing in the direction of the force line over the rolling elements. In brief, the slewing bearings provide a rotatable connection depending on the drive system built in its structure, while transferring the loads between two supporting parts.



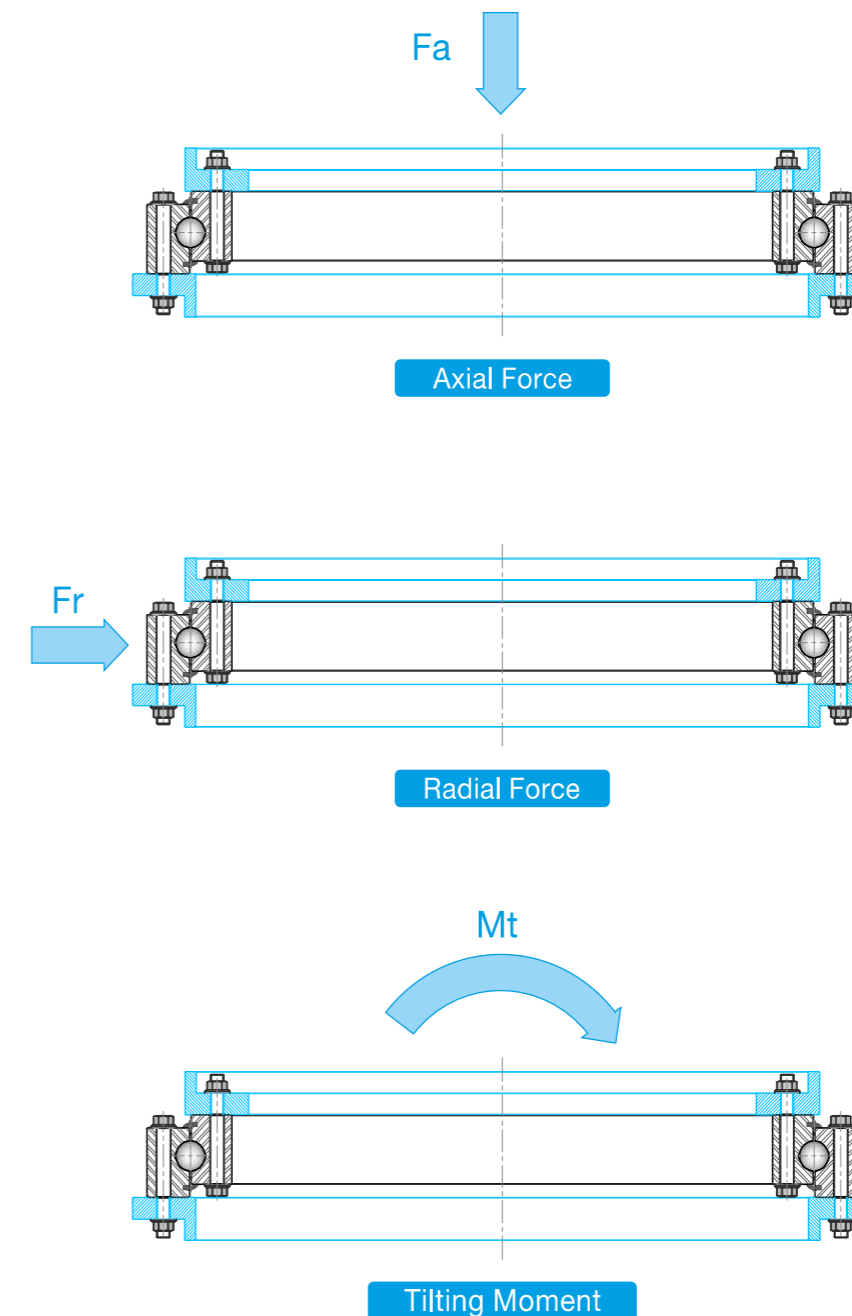
The installation of rotary table bearings is quite easy. These bearings need only evenly machined surfaces and mounting holes for the installation on the support surface. Thus, the slewing bearings have the advantage of economic and easy installation compared to the conventional friction bearing methods. Although these machine elements are designed for horizontal positions, they can also work successfully on vertical positions.

**Note:** The areas marked with the letter "S" on the surface of the slewing bearings indicate the start and endpoints of the hardening process with induction. In rings with plugs, the unhardened area of the raceway is plug's area. These areas are not hardened and the area with the letter "S" should be the area with the lowest load.

## Determination of Slewing Bearing Loads

The slewing bearings are designed to face the axial, radial, and tilting moment loads as shown below.

$F_a$  = Axial force  
 $F_r$  = Radial force  
 $M_t$  = Tilting (Bending) Moment



## Ball Bearings



## Cylindrical Roller Bearings



## Product Type Selection Assistant

Table 1

Bearing Types / Requirements	High Speed	Axial Load Carrying Capacity	Radial Load Carrying Capacity	Vibrating Ambient Conditions	Long Service Life	Cost
L-type Single-Row Ball Bearings (Light Series)	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
Single-Row Ball Bearings (Medium Series)	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
Double-Row Ball Bearings (Medium-Heavy Series)	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
Custom-Designed Ball Bearings	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
Single-Row Roller Bearings (Medium-Heavy Series)	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
Triple-Row Roller Bearings (Heavy Series)	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
Custom-Designed Roller Bearings	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■

# Selection of The Slewing Bearings And Calculations

## Determination of Bearing Size:

During the selection of the suitable bearing from the load diagram, the static safety factor “Sf” related to the working place of the bearing should be taken into consideration, in addition to the “Fa” Axial Force and “Mt” Tilting (Bending) Moment.

**Note:** If the slewing bearings will operate horizontally, the Radial Force “Fr” can be usually ignored. In the cases, where the Radial Force exceeds  $Fr/Fa=0.3$ , please contact HAN Technical Support Department.

Application Area	Static Safety Factor (Sf)
Vehicle Mounted Platforms	1.00
Amusement Park Equipment	2.40
Mobile Concrete Pumps	1.50
Vehicle Mounted Cranes	1.50
Rotary Tables and Welding Positioners	1.15
Mini-excavators	1.33
Excavators (Bucket Volume > 1.5m <sup>3</sup> )	1.50
Satellite Dish Antenna and Radar Systems	1.10
Tower Cranes (General)	1.25
Shipyards Cranes	1.25
Ship Loaders	1.25
Railway Cranes	1.10
Wind Turbines	1.65
Harbor Cranes	1.25
Robotic Automation Systems	1.65
Packaging and Filling Facilities	1.00
Overhead Cranes	1.65

Table 2

During the calculation, other loads, which may emerge in addition to the maximum loads, should be carefully evaluated, and included in the calculation. The static safety factors may fail to provide a satisfying result in rare cases.

Regarding the applications not included in the table, static safety factor values can be selected according to the similarity and sensitivity of the applications. To what extent these coefficients will be taken into consideration is related to the machine type, operation mode, operation requirements, service life, and safety.

Please note that this catalog cannot cover all criteria related to the bearing selection and enclose all applications. Nevertheless, it provides comprehensive information about bearing selection. Please contact our company for further information.

## Static Load Capacity:

The calculation examples given on pages 14 and 15 are implemented with the force value obtained after the calculation of the static load capacity, which is considered critical for bearing calculation.

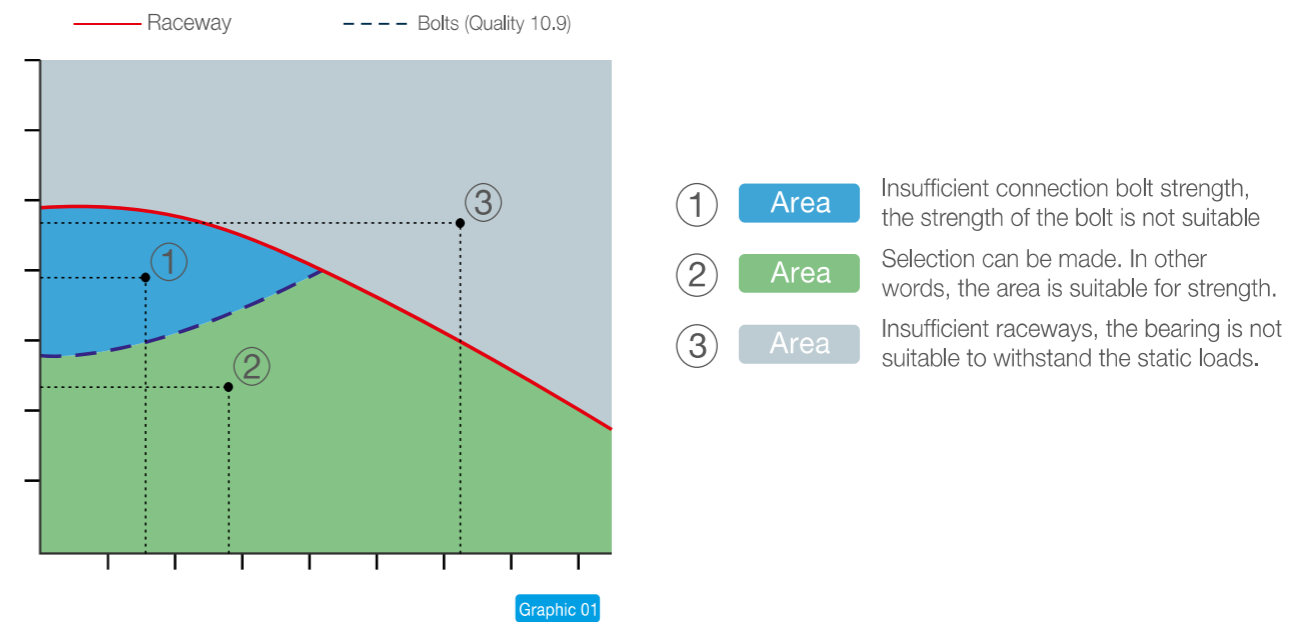
The loads involved in the operation and the length of these loads to the center of gravity should be expressed in kN and meters respectively. A Safety Factor (Sf) is selected from table 2 according to the application field of the designed system. The calculated Fa (Axial Force) and Mt (Tilting Moment) values are multiplied with the Sf (Safety Factor) respectively and the load diagrams in the catalog can be used for the determination of the suitable bearings according to the calculated values. During the selection of the suitable bearing, the projection intersection points of the values in this diagram should be below the static load limit curve and under the green zone of the chart.

**MFa** : Maximum Axial Force (kN)

**Mmt** : Maximum Tilting Moment (kNm)

After the calculation of the loads, the appropriate bearing size can be selected from the bearing load charts. If a service life longer than usual is desired, please note that the longer the service life of the bearing will be the further the raceways remain below the resistance curve in the charts. In other words, the smaller the system loads are than the maximum load values, which the bearing can withstand, the more it contributes to the longer service life of the bearing. However, it should be noted that an efficient selection in respect of system costs is also important.

In the charts, the connecting bolt curve is shown with a dashed blue line and the raceway resistance curve is shown with a straight red line. Your calculated values should be marked on the charts and please note that they should be definitively in the green area.





# Bearing Calculations

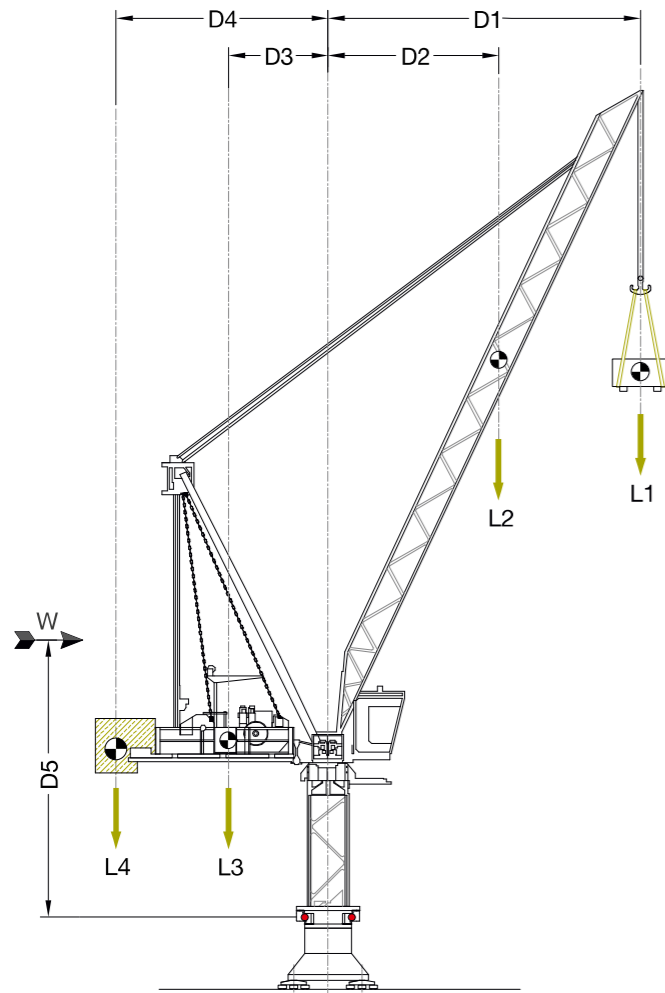


Figure 2

## Abbreviations 1:

- L1 = Load 1
- L2 = Load 2
- L3 = Load 3
- L4 = Load 4
- W = Wind
- D1 = Distance 1
- D2 = Distance 2
- D3 = Distance 3
- D4 = Distance 4
- D5 = Distance 5

## Abbreviations 2:

- Fa = Axial Load (kN)
- Mt = Tilting (Bending) Moment (kNm)
- MFa = Maximum Axial Load (force) (kN)
- MMt = Maximum Tilting Moment (kNm)
- Sf = Safety Factor
- L1 = Load to be Lifted (kN)
- L2 = Load Arm Weight (kN)
- L3 = Balance Arm Load (kN)
- L4 = Balance Load (kN)
- D1 = Distance between the Rotation Center and Load Center (m)
- D2 = Distance between the Rotation Center and the Weight Center of Load Arm (m)
- D3 = Distance between the Rotation Center and Balance Arm Weight Gravity Center (m)
- D4 = Distance between the Rotation Center and Balance Weight Gravity Center (m)

Load	Load (kN)	Distance
L1 = 40 ton	392.27 kN	D1 = 25 m
L2 = 9 ton	88.26 kN	D2 = 12 m
L3 = 20 ton	196.13 kN	D3 = 8 m
L4 = 50 ton	490.33 kN	D4 = 15 m
W = 3 ton	29,42 kN	D5 = 27 m

### 1. Maximum Working Loads Including Wind

#### Axial Load (Fa)

$$Fa = L1 + L2 + L3 + L4$$

$$= 392.27 \text{ kN} + 88.26 \text{ kN} + 196.13 \text{ kN} + 490.33 \text{ kN}$$

$$Fa = 1166.99 \text{ kN}$$

#### Tilting Moment (Mt)

$$Mt = (L1 \cdot D1 + L2 \cdot D2 + W \cdot D5) - (L3 \cdot D3 + L4 \cdot D4)$$

$$= (392.27 \text{ kN} \cdot 25\text{m} + 88.26 \text{ kN} \cdot 12\text{m} + 29.42 \text{ kN} \cdot 27\text{m}) - (196.13 \text{ kN} \cdot 8\text{m} + 490.33 \text{ kN} \cdot 15\text{m})$$

$$Mt = 2736.22 \text{ kNm}$$

### 2. Calculation of 25% More of the Maximum Working Load Excluding Wind

#### Axial Load (Fa)

$$Fa = L1 \cdot 1.25 + L2 + L3 + L4$$

$$= 490.34 \text{ kN} + 88.26 \text{ kN} + 196.13 \text{ kN} + 490.33 \text{ kN}$$

$$Fa = 1265.06 \text{ kN}$$

#### Tilting Moment (Mt)

$$Mt = (L1 \cdot 1.25 \cdot D1 + L2 \cdot D2) - (L3 \cdot D3 + L4 \cdot D4)$$

$$= (490.34 \text{ kN} \cdot 25\text{m} + 88.26 \text{ kN} \cdot 12\text{m}) - (196.13 \text{ kN} \cdot 8\text{m} + 490.33 \text{ kN} \cdot 15\text{m})$$

$$Mt = 4393.63 \text{ kNm}$$

### 3. Maximum Working Load Excluding Wind

#### Fa = 1166.99 kN - Axial load (1.1)

#### Tilting Moment (Mt)

$$Mt = (L1 \cdot D1 + L2 \cdot D2) - (L3 \cdot D3 + L4 \cdot D4)$$

$$= (392.27 \text{ kN} \cdot 25\text{m} + 88.26 \text{ kN} \cdot 12\text{m}) - (196.13 \cdot 8\text{m} + 490.33 \text{ kN} \cdot 15\text{m})$$

$$Mt = 1941.88 \text{ kNm}$$

Regarding all three load conditions, the largest of the calculated values gives us the required load value after multiplied with the safety factor. According to this;

The values in the load calculation 2 should be used for the static evaluation.

$$Fa = 1265.06 \text{ kN}$$

$$Mt = 4393.63 \text{ kNm}$$

$$Sf = 1.25 \text{ (taken from table 2 on page 12)}$$

$$\text{Maximum Axial Load (MFa)} = Fa \cdot Sf$$

$$= 1265.06 \text{ kN} \cdot 1.25 = 1581.32 \text{ kN}$$

$$\text{Maximum Tilting Moment (MMt)} = Mt \cdot Sf$$

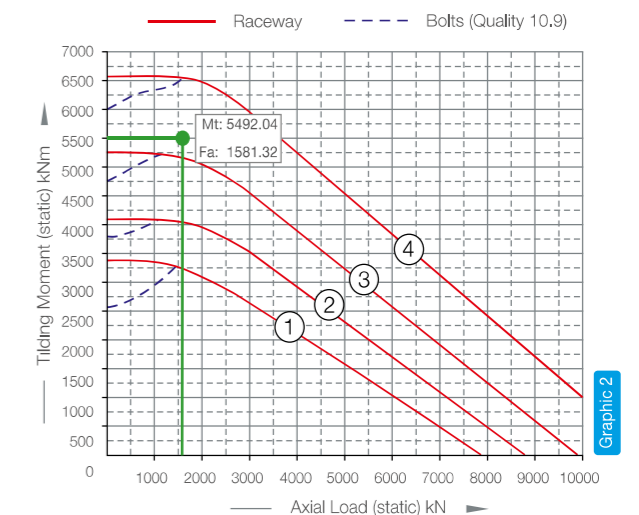
$$= 4393.63 \text{ kNm} \cdot 1.25 = 5492.04 \text{ kNm}$$

Bolt number and quality should be selected according to the calculated maximum value.

While controlling the abovementioned calculations, the values obtained from load calculation 2 should be below the bolt strength curve shown with a dashed blue line.

You can choose the slewing bearings suitable to the calculated values from pages 124-125 and 174-175 in our catalog.

B2240-2-2251AA / SM3332-1-2458AA



Static Margin Load Curve

Graphic 2



**Raceway Capacity:**

The raceway capacity defines the maximum static load capacity, which the slewing bearing can withstand without damage. The curve, which is shown with a red line in the load curve charts in the technical drawings (page 15, graphic 2) shows the raceway capacity.

**The Capacity of the Connecting Bolts:**

It defines the capacity, which is valid after the connecting of all holes on the bearing with 10.9 bolts, nuts, and washers to the support surface. The connecting bolt capacity is shown with a dashed blue line in the charts (page 15, graphic 2). All bolts, nuts, and washers should be lubricated with a thin oil and tightened according to the torque values given on page 19. Friction loss on the bolt heads and threads can impair torque value. This prevents the bolts from being tightened at the correct pretension. The utmost care should be taken during the tightening of the bolts and all rules should be followed. Please remember, that a correct tightening of the bolts will save you time and also money. **Note:** The demonstration of the connecting bearing capacities in the charts in the catalog (dashed blue line) is for the bearings connected on the support surface and working under supported loads. If the bearing will work under suspended loads, please contact HAN Technical Support Department.

## Applications of Slewing Bearings

The slewing bearings are machine elements that can withstand axial and radial loads, which can be only met with more than one bearing under normal conditions, in addition to the tilting moments arising from any direction safely and most economically depending on their special structure. The following rules should be taken into consideration to take full advantage of slewing bearings. The flange, to which these bearings will be connected, should be designed with a suitable thickness so that they provide full support to all circumference of the bearing ring surface and establish strong support on the surface. This robust infrastructure is essential to facilitate a flawless operation of the bearing and prolong the service life. The flatness values of this structure should remain within the defined limits. For the permitted flatness tolerances please refer to page 17, table 3.

Please note that the slewing bearings are used for the load transfer between two support surfaces. The upper and lower support structures should be compatible with the load-carrying capacity of the bearing in respect of strength and flatness. The connecting bolts should have a matching quality. Under normal conditions, 10.9 quality bolts are recommended. Please refer to pages 18 and 19 for detailed information.

**Support Structure:**

The support flanges should fully support the bearing rings along the width of the contact surface and should have a suitable thickness. The following calculation formula provides an easy calculation of the flange thickness.

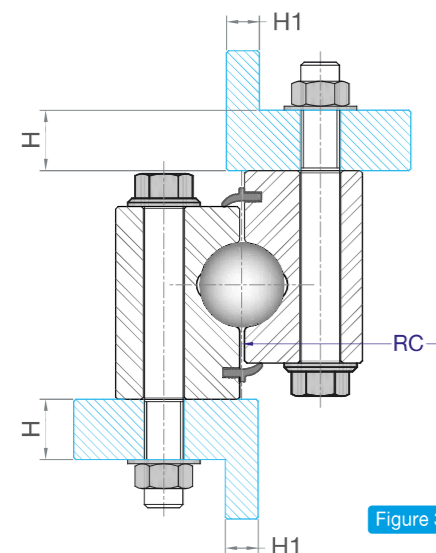


Figure 3

- H = Support Flange Thickness
- H1 = Side Wall Thickness supporting the Flange
- RC = Raceway Circle Diameter
- Slewing Bearings with  $RC \leq 500\text{mm}$ :  
 $H \geq 0,05 \cdot RC$
- $500\text{mm} < RC \leq 1000\text{mm}$  Slewing Bearings:  
 $H \geq 0,04 \cdot YD$
- $1000 \text{ mm} < RC$  Slewing Bearings:  
 $H \geq 0,03 \cdot YD$
- The Minimum Side Wall Thickness to be Used:  
 $H1 = 0,35 \cdot H$

**Support Surface:**

Compared to other bearings, which can do the same job, the slewing bearings have a smaller height and cross-section. As a result of this, they have lower rigidity and need strong support structures in the axial and radial directions.

For smoothly working slewing bearings with long service life, the following should be taken into consideration during the production of the connection flange.

- 1- All welding jobs on the rough machined connection flange should be completed.
- 2- Stress relieving treatment should be performed.
- 3- Flatness of the surfaces should be ensured with machining.

The surface roughness after processing should be between Ra 3.2 and Ra 6.3. Before the connection, protective oil, grease, dyes, rust, dirt and, burrs that may be on the surfaces should be cleaned and removed. Before connecting the slewing bearing on the support surfaces with bolts, the machined connection surfaces should be checked for flatness. A definitive result for the flatness of the support surface can be obtained with the help of a proper setup and dial gauge as shown in figure 4. This control process can be carried out at its simplest visually or with a feeler gauge after the placement of the slewing bearing on the support surface (before the bolts are tightened). Please compare this control process with the values given below in table 3.

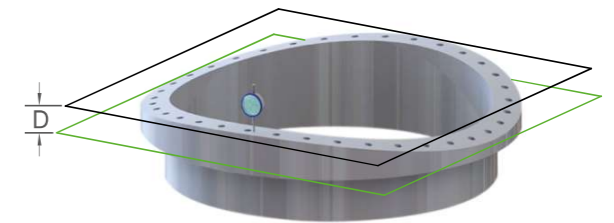


Figure 4

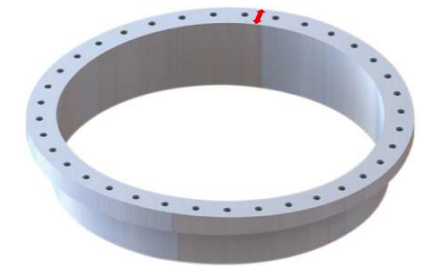


Figure 5

The maximum degree of flatness of radial direction permitted on the support surface can be calculated with the following formula:

$$E \leq G/1000$$

E = Maximum flatness measured in the radial direction  
G = Width of the support surface

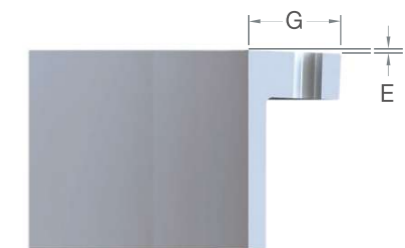


Figure 6

The abovementioned formula is used for the calculation of the maximum permitted value for the flatness in the radial direction on the support surfaces. Generally, table 3 can be used for the assessment of the support surfaces of all slewing bearings.

Raceway Circle Diameter (RC) (mm)		250	500	750	1000	1250	1500	1750	2000	2500	4000	6000
The Permissible Surface Flatness Tolerance (mm)	Single-Row Ball Bearings	0.08	0.10	0.13	0.15	0.17	0.19	0.21	0.22	0.25	0.30	0.40
	Two-Row Ball Bearings	0.12	0.15	0.17	0.20	0.22	0.25	0.27	0.30	0.35	0.40	0.50
	Cylindrical Roller Bearings	0.06	0.08	0.09	0.10	0.11	0.13	0.14	0.15	0.17	0.20	0.30

Table 3

**Note:** If the slewing bearings are not mounted according to the permitted tolerance values, the rotational torques of the slewing bearings can increase extremely. This may cause not only efficiency loss in the bearings but also may cause serious damages in the system and impair the service life of the bearing.

# Connection On The Support Surfaces

## Connection Bolts:

The load curves shown in the technical drawings of the slewing bearings are calculated in respect of the strength of 10.9 quality bolts. As shown in Figure 7, the required flexible compression force can be obtained with the use of a connection element with a length of at least 5 times the nominal diameter of the bolt. If necessary, we recommend increasing the length with special washers to provide a 5x-length.

$$L \geq 5 \times D$$

Only for the "L-section" rings of B1100 series slewing bearings, the bolt length of at least three times the hole diameter is sufficient.

$$L \geq 3 \times D$$

**Note:** It should be kept in mind that if short bolts are selected, the bolts may expand, loosen and crush.

## Connection of the Bolts:

Normally, the bolts are distributed equally upon the hole section ring. Although an irregular hole arrangement can be designed, the blank areas should be kept within reasonable limits. It must be known that increasing the bolt number will also increase the capacity and service life of bearings. Due to the excessive surface pressure, hardened washers with suitable thickness should be preferred to prevent the windings on the bolts and nuts. Never use flexible elements such as spring lock washers, etc.

Under normal conditions, the tensile values of the materials recommended in Table 5 will provide a safe connection between the slewing bearings and support flanges. We recommend bolts with higher traction resistance in combination with chemical stabilizers for heavier loads, impacts, and connections with more intensive vibrations.

## Minimum Tooth Size:

For the minimum gear tooth depth in bolts with the tolerance class "medium" you can refer to table 4.

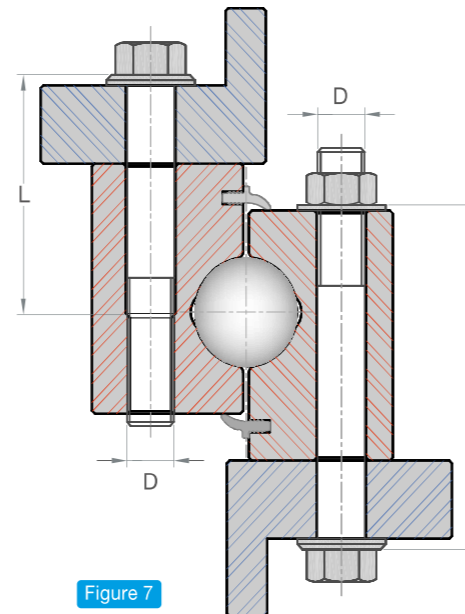


Figure 7

## Assembly Preload Forces For Bolts (Ref. VDI 2230 Document 1)

Metric ISO	8.8 Quality		10.9 Quality		12.9 Quality	
	Tensioning force [kN]	Maximum tightening torque [Nm]	Tensioning force [kN]	Maximum tightening torque [Nm]	Tensioning force [kN]	Maximum tightening torque [Nm]
M12	42	93	62	137	72	160
M14	58	148	84	218	99	255
M16	79	230	116	338	135	395
M18	99	329	141	469	165	549
M20	127	464	181	661	212	773
M22	158	634	225	904	264	1.057
M24	183	798	260	1.136	305	1.329
M27	240	1.176	342	1.675	400	1.959
M30	292	1.597	416	2.274	487	2.662
M33	363	2.161	517	3.078	605	3.601
M36	427	2.778	608	3.957	711	4.631
M39	512	3.597	729	5.123	853	5.994
M42	587	4.445*	836	6.331*	979	7.409*
M45	686	5.551*	978	7.906*	1.144	9.251*
M48	773	6.715*	1.101	9.565*	1.288	11.193*
M52	926	8.628*	1.319	12.289*	1.543	14.381*
M56	1.068	10.750*	1.522	15.311*	1.781	17.918*
M60	1.247	13.334*	1.776	18.991*	2.078	22.224*
M64	1.411	16.058*	2.010	22.871*	2.352	26.764*

Table 6

**Note:** For bolts larger than M42, attention should be paid to the tensions arising in bolts. During the preloading of the bolt, the pressure on the support surface caused by the bolt head or the nut should be taken into consideration.

## Surface Deformation Limits in Bolts

P = Calculated Pressure [N/mm<sup>2</sup>]

FS = Bolt Tightening Force, Suitable to the Bolt Diameter and Quality [N] (Table 6)

AT = Contact Area [mm<sup>2</sup>]

PL = Surface Pressure Limit of the Material [N/mm<sup>2</sup>]

D1 = External Diameter (of the bolt or nut) [mm]

D2 = Hole Diameter [mm]

$$P = \frac{FS}{AT} \leq PL \quad AT = \frac{\pi}{4} \times (D1^2 - D2^2)$$

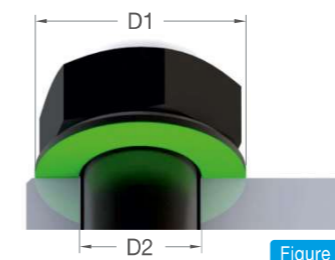


Figure 8

## Surface Pressure Limit of Bolt Heads (Ref. VDI 2230)

Material	Limit Pressure PL [N/mm <sup>2</sup> ]
St37 , C15N	260
St50 , C35N	420
GG 25	800
42CrMo4+QT, C45V	800
34CrNiMo6	1430

Table 7

**Note:** The abovementioned values are given based on the relevant standards. They are subject to change according to the complexity of the used system. If the calculated pressure limit exceed, there is a need to increase the contact area.

## Minimum Thread Length of Bolts Ref. VDI 2230

Applied Material	8.8		10.9		12.9
	<9	≥9	<9	≥9	<9
St37 , C15N	1.0 × d	1.25 × d	1.25 × d	1.4 × d	-
St50 , C35N	0.9 × d	1.0 × d	1.0 × d	1.2 × d	-
42CrMo4+QT, C45V	0.8 × d	0.9 × d	0.9 × d	1.0 × d	1.2 × d

Table 4

d = Bolt Nominal Diameter [mm] P = Pitch [mm]

## Mechanical Properties of the Bolts Ref. EN ISO 898-1

Strength Values	Strength Category 8.8		Strength Category 10.9	Strength Category 12.9
	D ≤ M16	D > M16		
Tensile Strength Rm	min. 800 N/mm <sup>2</sup>	min. 830 N/mm <sup>2</sup>	min. 1,040 N/mm <sup>2</sup>	min. 1,220 N/mm <sup>2</sup>
% 0.2 Yield Strength Rp 0,2	min. 660 N/mm <sup>2</sup>	min. 660 N/mm <sup>2</sup>	min. 940 N/mm <sup>2</sup>	min. 1,100 N/mm <sup>2</sup>

Table 5

# Gears

Gears, which are the most common machine elements providing movement and force transfer, can be produced in various sizes, structures, and types.

Although spur gears (straight-cut gears) are the most preferred gears in bearings, different gears can also be used depending on the requirements and place of use. The ring, in which a gear is used, varies according to the application.

In addition to the slewing bearing without gears, there are also bearings with gears in the inner or outer races. The ring, in which a gear is used, varies according to the application.



Figure 9

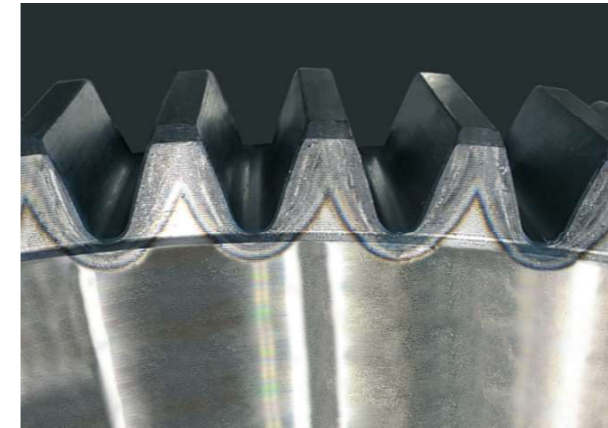


Figure 12

## Gear Hardening:

In gears exposed to high side stress, surface hardening with induction may be preferred to increase the load-carrying capacity, prevent the possible wearing on the gear surface, and prolong the service life. While gear hardening has these advantages, there are also certain disadvantages like the increase in tooth root land (the possibility of fracture if the load is greater than predicted) and additional cost. Therefore, the hardening process should be carefully assessed and the decision should be given accordingly.



Figure 10

## Correct Positioning:

Correct adjustment of the tooth backlash is important for the trouble-free operation of the gear. If sufficient clearance is not provided between the pinion gear (drive gear) and the main gear, thermal expansions and dimensional changes under load, which emerge during the operation, may cause gear abrasion. This shortens the service life of the system.

## Proper Working Clearance:

Sufficient clearance should be ensured during the mounting of the pinion gear in order to decrease the negative effects explained above.

The teeth marked with green in figure 10, are the top land of the ovality in the teeth. The clearance adjustment should be done in this region. With the help of the following formula, the appropriate clearance can be calculated:

$$Db = 0.03 \times \text{module} \text{ or } Db = 0.04 \times \text{module}$$

After final assembly and tightening of all fixing bolts, the gap should be checked.

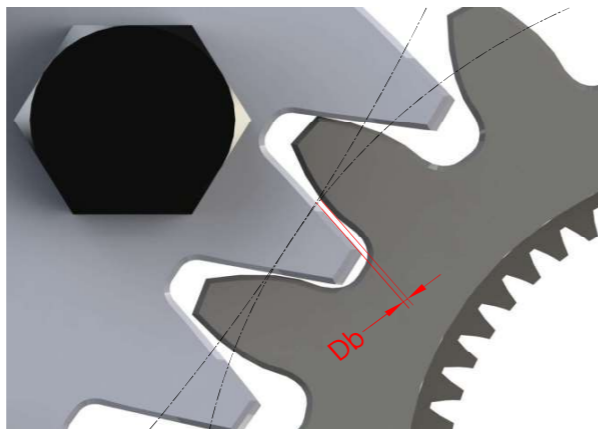


Figure 11

## Gear Grinding:

In gear applications requiring high speed and/or the precision, profile grinding can be performed. With grinding the tooth profile is shaped according to the requirements. The grinding of the teeth and coaxial adjustment with the ball raceways provide the advantages considering the speed, rotation sensitivity, and noise.

## Gear Lubrication:

A protective grease is applied on the surface of the produced bearings before delivery. This grease protects the bearings against the effects of air and water. After the mounting of the bearing to its place, the gears should be lubricated. Please refer to page 23 for the recommended lubricants.



Figure 13

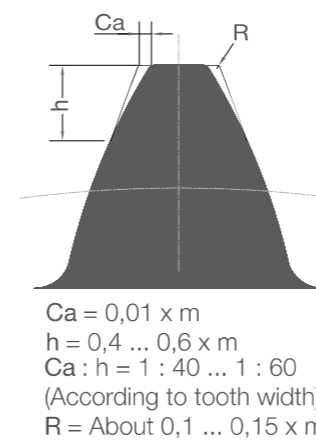


Figure 14

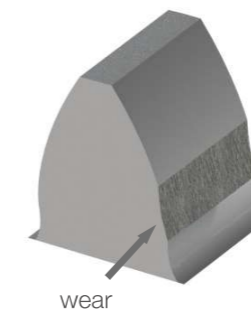


Figure 15

## Pinion Gears:

The most preferred pinion gears are the hardened gears. The pinion gear should be approx. 0.4 ... 0.6 x module long on both sides of main gear. If the pinion gear is hardened pinion gear's tooth and the main gears, which is driven by the pinion gear, is not hardened, pinion gear's tooth head rounding about 0.1 ... 0.15 x module can be carried out on the pinion gears to prevent dedendum wear on the tooth root of the main gear (figure 15). Tooth head rounding of the pinion gear will contribute to decrease wearing and noise.

Furthermore, curved thinning or appropriate conization between the roots of the pinion gears may be carried out to prevent the axial deviations and end-edge compressions, which may emerge as a result of the strain between the gears.

## Abbreviations 1:

m = Module

z = Number of Teeth

D = Gear Pitch Diameter

# Raceways

The raceways, which are the site of the rotation and are very important for the operation of the bearings, are hardened in the best possible way and processed in perfect form thanks to the Han Makina's experience improved and accumulated over the years.

The application of the most appropriate hardness depth to raceways during the hardening process may vary according to the place of use and bearing structure. The use of the rolling element with the appropriate tolerance, the contact angles, and contact coefficients of the rolling elements through raceways are developed and continue to be developed with the experience of our company depending on the results of the conducted tests and usage of the bearings in the field.



Figure 16



Figure 17

The raceway cross-section of a ball bearing and the induction hardness depth shown in the cross-section.

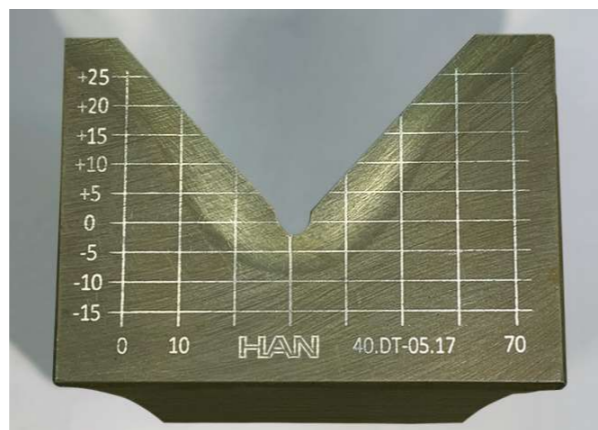


Figure 18

The raceway cross-section of a roller bearing and the induction hardness depth shown in the cross-section.

The raceways are hardened with induction at an appropriate depth. The finish machining provides a suitable contact between the raceway and rolling elements.

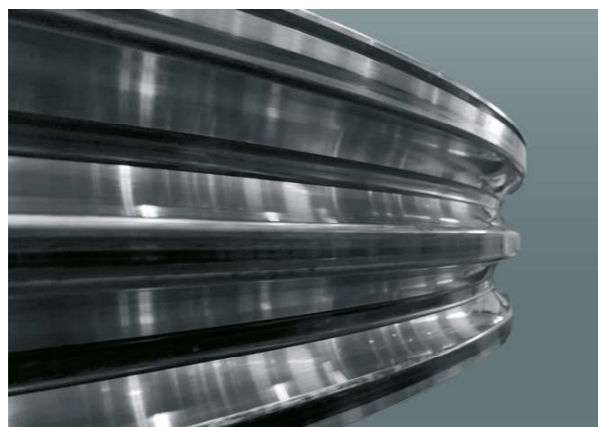


Figure 19

The ball raceway after the finish machining.

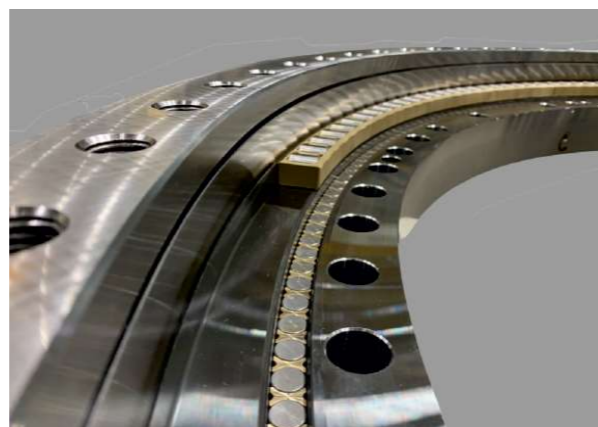


Figure 20

The roller raceway after the finish machining.

# Lubrication

Proper lubrication carried out with a suitable lubricant at regular intervals enables the slewing bearings to operate smoothly and have a long service life.

The main purpose of the lubricant used in the slewing bearings is to reduce the negative effects of the mechanic contact depending on the lubricant film created between the rolling elements and raceways. Similarly, wearing is minimized in gears as the metal-to-metal contact is prevented. Usually, greases are used for lubrication.

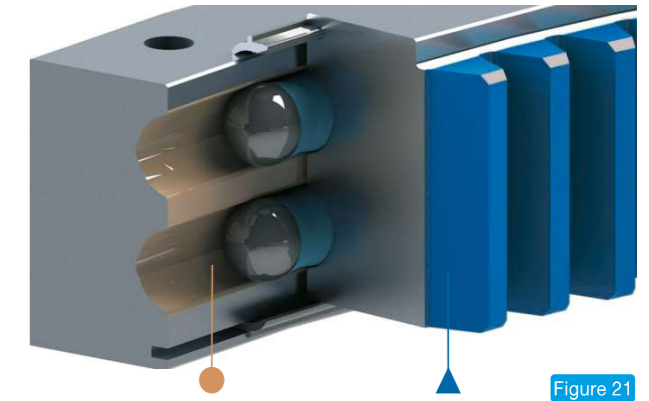


Figure 21

## Lubrication of the Raceways:

Han Makina uses EP2 grease in its standard slewing bearings, which contains mineral oil-based lithium soap and has outstanding anti-corrosion properties. Additionally, it also provides mechanical stability to the slewing bearings. It provides a reliable lubrication between temperatures of -25°C and +140°C. In specific conditions, for example in the case of the lower rotational force (torque), EP1 grease should be preferred. Before the delivery of the slewing bearings, our company fills the products with appropriate grease until it leaks from the sealing felts.

## Lubrication of the Gears:

The protective oil, which is applied on the bearing surface by our company before delivery, should be cleaned before the installation. The gear surface should be lubricated before the bearing is installed in the system.

We recommend a grease with the following properties:

- It should have good adhesive properties
- It should be resistant to washing with water
- Its viscosity should be a minimum of 500mm<sup>2</sup>/s at 40°C.








	The Way of Rolling ●	For Gear Surface ▲
	SuperGres EP2 (-12°C to +130°C)	-
	Gadus S2 V220 2 (-25°C to +130°C)	Gadus S2 OGH NLGI 0/00 (-10°C to +200°C)
	Mobilux EP2 (-20°C to +120°C)	Mobilgear OGL 461 (-20°C to +120°C)
	Energrease LS-EP2 (-25°C to +140°C)	Energrease LC2 (-30°C to +150°C)
	Spherol EPL2 (-20°C to +140°C)	Castrol Mollub Alby OG 9790/2500-0 (-20°C to +90°C)
	Centoplex EP2 (-20°C to +130°C)	Grafloscon C-SG 0 ultra (-30°C to +200°C)
	Multis ep2 (-25°C to +120°C)	Copal OGL 0 (-25°C to +150°C)

Table 8

## Bearing Rings

Most of the slewing bearings of Han Makina are made of alloy steels, which are quenched and tempered following forging and ring rolling (e.g. 42CrMo4 and 34CrNiMo6).

We may also utilize raw materials different from the standard production depending on customer orders, operation environment of the bearing, and other factors (100Cr6, 100CrMn6, CK45, Al6061, AISI 440C etc.).

The chemical composition and properties of most raw materials used in the production conform to the DIN/ISO requirements.

For safe usage, the mechanical and physical properties of the steel should meet the predicted working strength.

The operation conditions, thermal changes, sudden loads, and environmental effects may challenge the limits of the material. The material should provide the calculated initial values under all circumstances against the challenging factors. Therefore, our company prefers the first quality steel producers, with which we have good relations over the years.

Upon request, we can provide all documentation for the certification or classification of the slewing bearings.

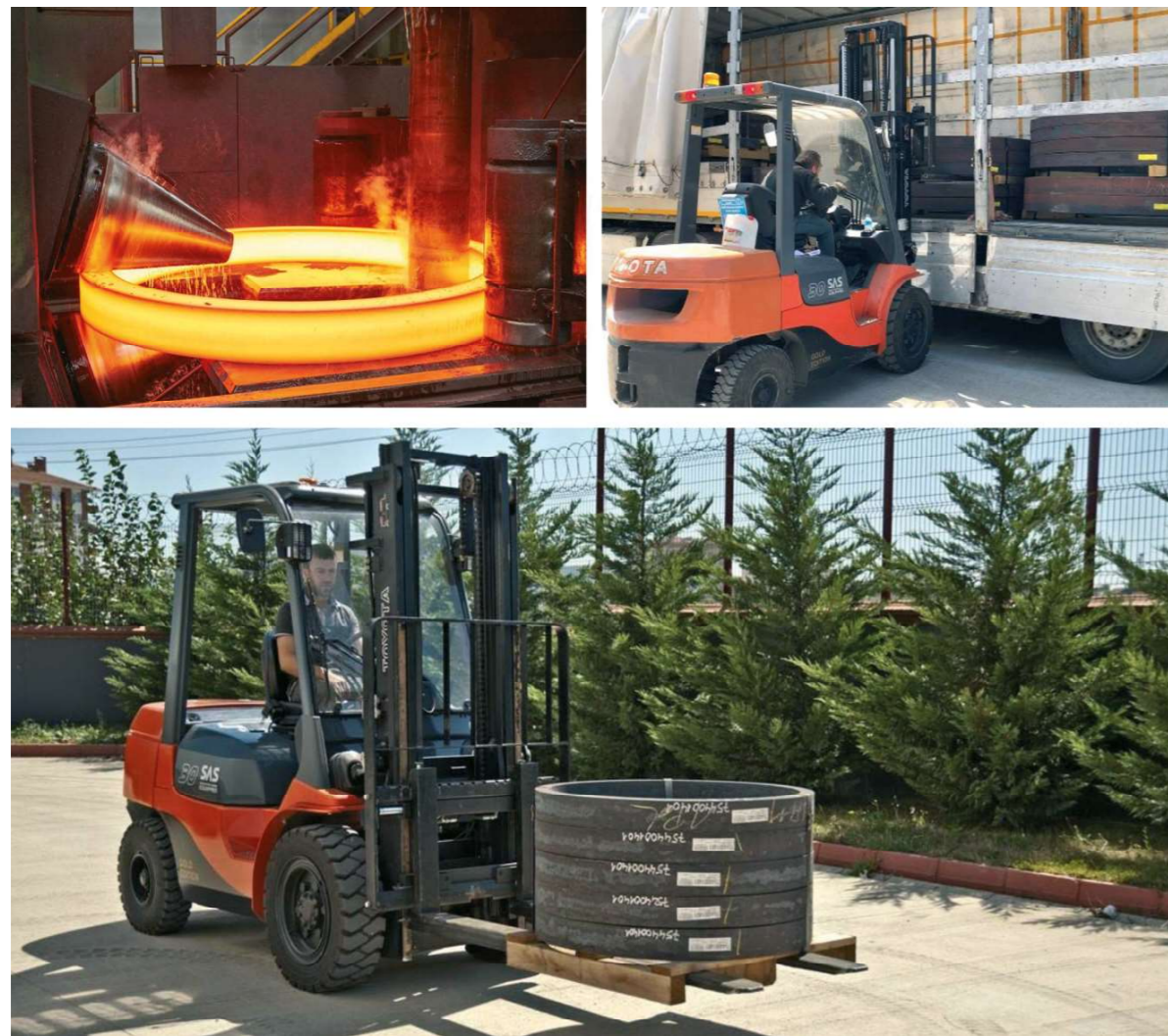


Figure 22

## Rolling Elements and Separators

### Separators:

In the slewing bearings, the separators are used to prevent the collision and rubbing of the rolling elements to each other, to spread the rolling elements homogeneously to the raceways, and to prevent the tilting of the rollers in the roller bearings. The separators of our company are made of several materials like bronze, brass, polyamide, steel etc. The product types and materials may vary depending on the type of the application. Some of the separators we use are shown in figure 23.

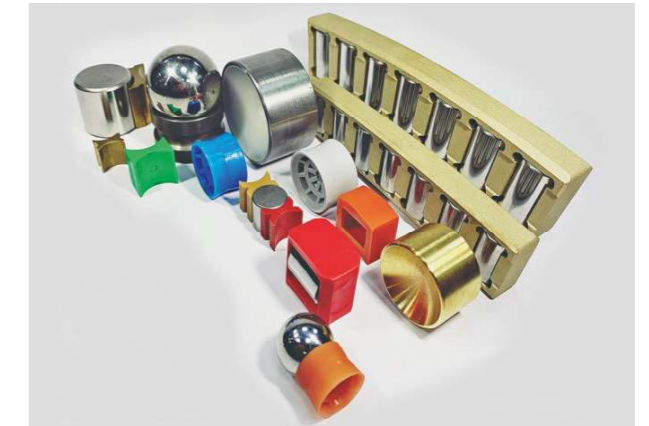


Figure 23

### Rolling Elements:

The rolling elements, which enable rotation, are the most critical parts of the bearings. Therefore, their quality has a direct effect on the service life of the bearing. Our company selects carefully the rolling elements used in the slewing bearings and conducts continuous quality control. Raceway elements, which are not within the proper tolerance interval, may shorten the service life of the bearing.

Cylindrical rollers and balls, which are made of hardened and precision grounded bearing steel within appropriate tolerance intervals, are used as rolling elements. In certain special applications, our company uses different materials like stainless steel balls (AISI 440C), heat-resistant ceramic balls, etc.

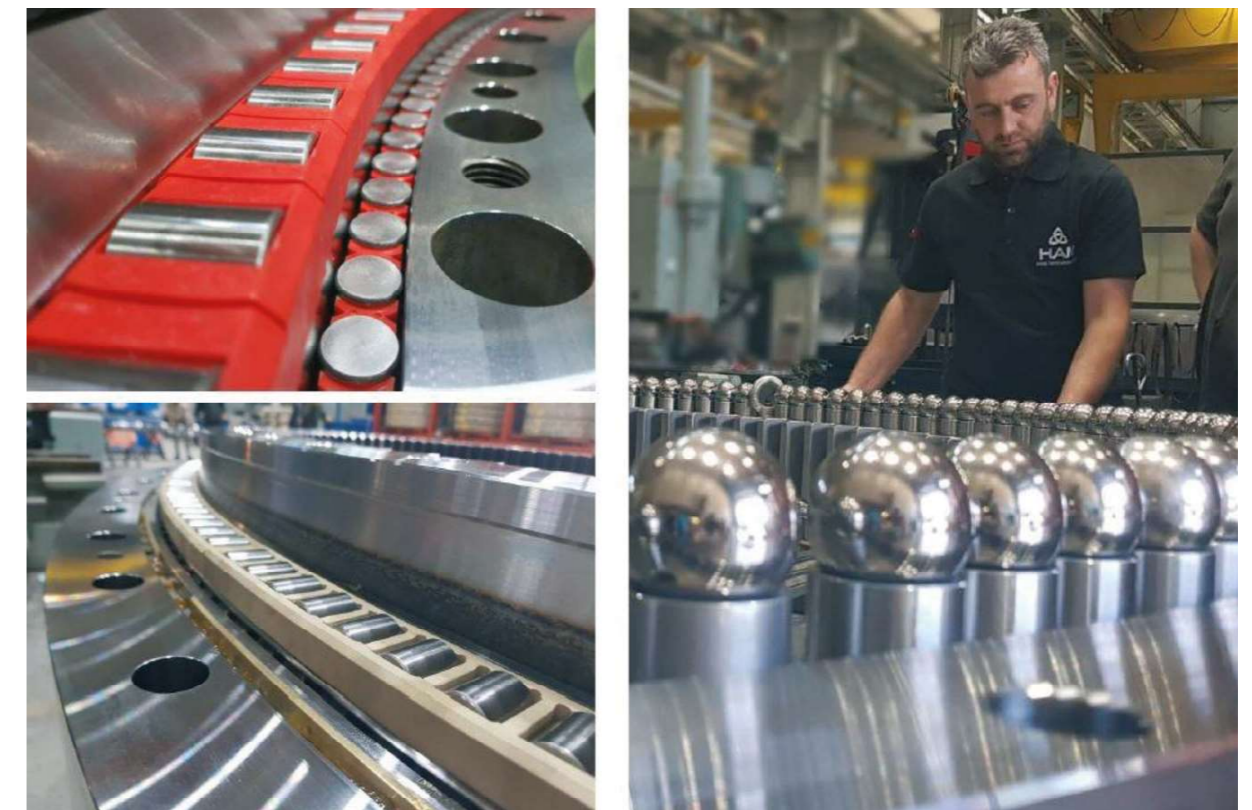


Figure 24

## Seals and Grease Nipple

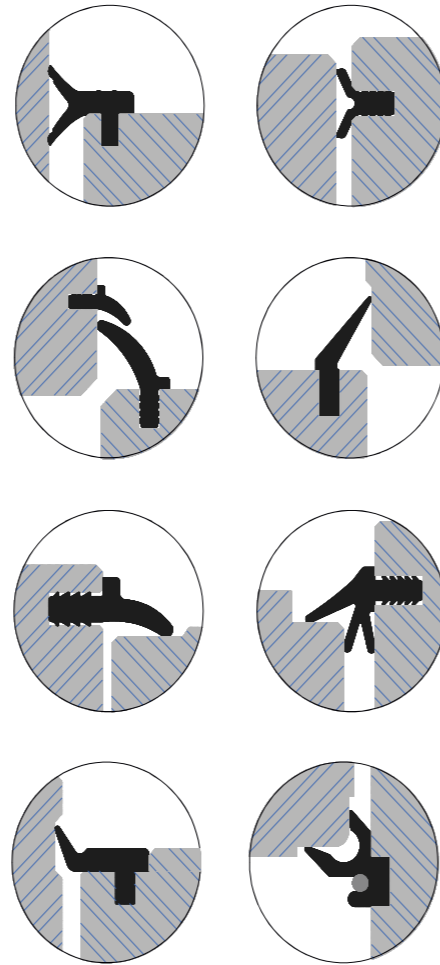
### Seals:

The majority of the slewing bearings have seals in the internal and external ring. There are two main tasks that dust seals have to fulfill:

- To prevent the direct penetration of moisture, dust, and other foreign substances into the raceway.
- To keep grease within the raceway as much as possible.

The service life of the slewing bearings with seals in their structure, is significantly longer. There are several types of seals and materials. The type and seal material may change according to the design, application, and environmental conditions of the operation site of the bearing. Our company uses the seal designs, which are developed according to the conducted tests and feedback obtained from the customers, in its products. Different sealing designs may be required for special applications. In such cases, we recommend contacting the HAN technical support department. The cross-sectional views of most dust seals produced by our company for the rotary table bearings are shown on the right side of the page.

The wearing and ruptures in the seals are caused by environmental factors. Seals that served for many years, hardened, cracked and cannot press sufficiently are common. Therefore, the seals should be checked regularly and should be replaced if needed. HAN examines the bearing in the operation conditions and implements additional mechanical measures to eliminate the losses caused by frequent changing of the seals.

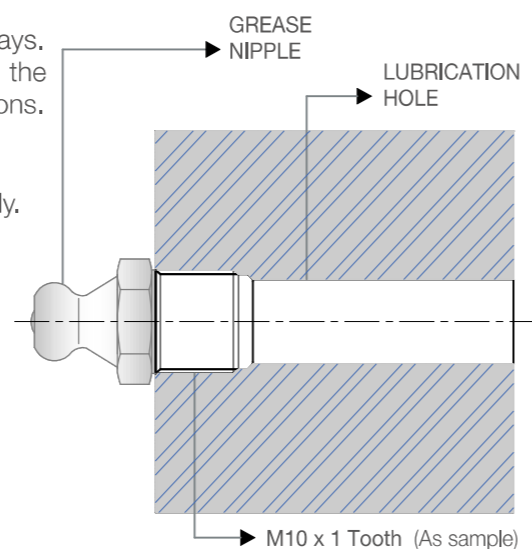


### Grease Nipple:

There are lubrication holes for the lubrication of the raceways. Depending on the location and condition of the raceways, the lubrication holes are designed in radial and/or axial directions.

The central lubrication systems can be used for the lubrication of the bearings but it can be done also manually. Grease nipples or continuous lubrication systems can be connected to the bearings.

The external part of our standard grease nipples has a conic shape and a rounded tip. The types and positions of these grease nipples, which are made of galvanized steel, can be adjusted according to the requirements.



## Packaging, Transportation and Storage

Before delivery to the customer, the outer surfaces of the bearings contacting air are oiled with corrosion-resistant protective oil. This oil minimizes the corrosion of the bearings during transportation and storage. This grease should be removed from the surface with an alkaline or acidic dissolvent (thinner etc.) before the installation.

If the customer did not ask for a specific lubricant before the shipment, the raceways of the bearings are completely lubricated with grease in our company and the bearings are submitted to the customer as ready-to-use products.

After packaging, the bearings can be stored in warehouses, which may provide reasonable temperature changes and humidity rates (figure 27). If the bearings will be stored for a long time, this should be stated before the order. The bearings, which will be stored for a long period, a special packaging with longer protection properties will be considered (figure 28).

If the bearings will be delivered to a different continent, the products are specially packaged to minimize the effects of the external factors (figure 29).

Even though the bearings are covered with a protective oil and carefully packaged, they should be stored in a well-conditioned area.

The products should be always transported and stored in the horizontal position. Products stored in the vertical position for a long time may be damaged. The bearings should be transported carefully to avoid damaging impacts. Particularly impacts from the radial side may cause problems during the operation of the bearings.



Figure 25



Figure 26

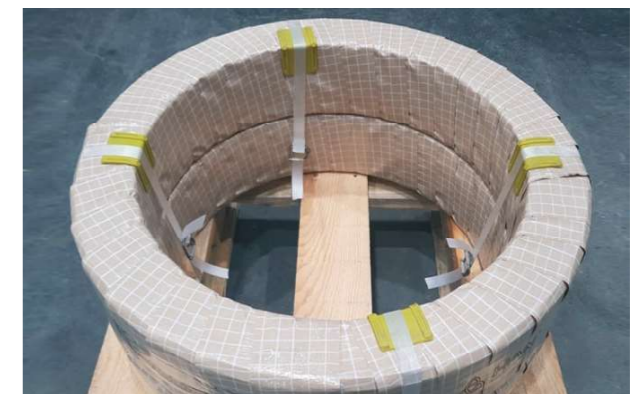


Figure 27



Figure 29



Figure 28

# Installation, Lubrication and Maintenance

## Installation:

There is general and basic information for the correct installation of the rotary table bearings, which are described as the following models.

Before the installation, all equipment required for the mounting should be prepared. If possible, the installation should be carried out in a closed place. If it is not possible, environmental factors should be kept under control to avoid an improper installation.

**Attention!** During the installation, never hit the bearing with a hard object like a hammer etc.

All safety measures should be in place during the installation. Otherwise material and fatal hazards may occur.

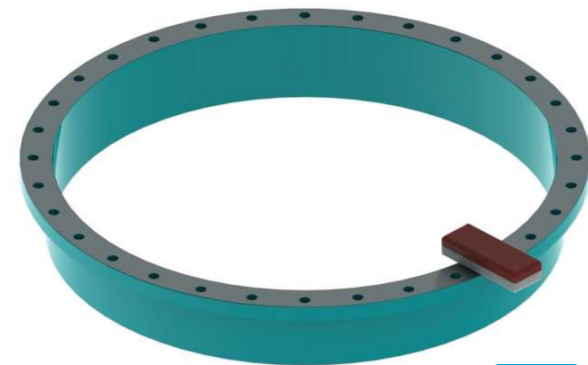


Figure 30

**1** Irregularities, rust, and protrusions should be removed with whetstone, sandpaper, or scraper.

**2** The support surfaces should be cleaned and dried with a brush or compressed air.

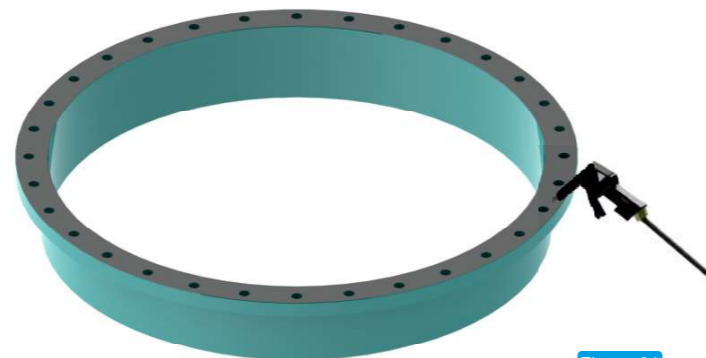


Figure 31

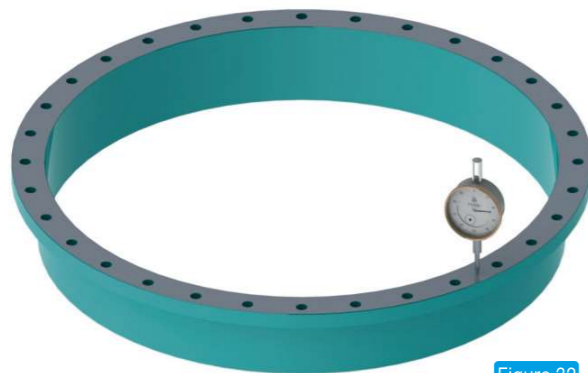


Figure 32

**3** The flatness of the support surfaces should be checked. If the surfaces are not flat, their tolerances should be modified according to the information in Table 3 on page 17.



Figure 33

**4** The protective anti-corrosion oil on the mounting surfaces of the bearings should be removed. The maximum load point should be positioned at an angle of 90° with the "S" point marked on the rotary table bearing (E.g: Positioning the "S" point with tower crane boom at an angle of 90°).

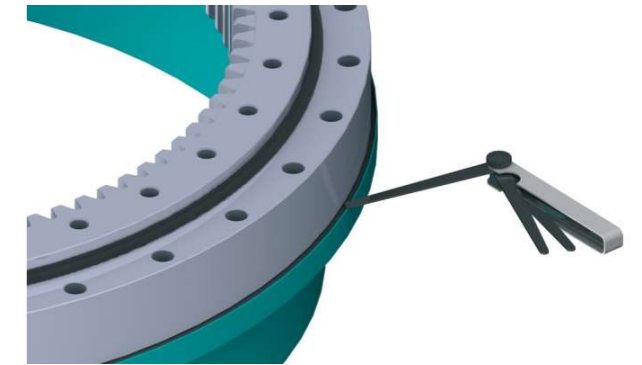


Figure 34

**5** The bolt holes on the slewing bearing should be aligned with the holes on the support surface. The contact space between the support surface and bearing surface should be inspected visually or with a feeler gauge to check whether the contact is correct or not.

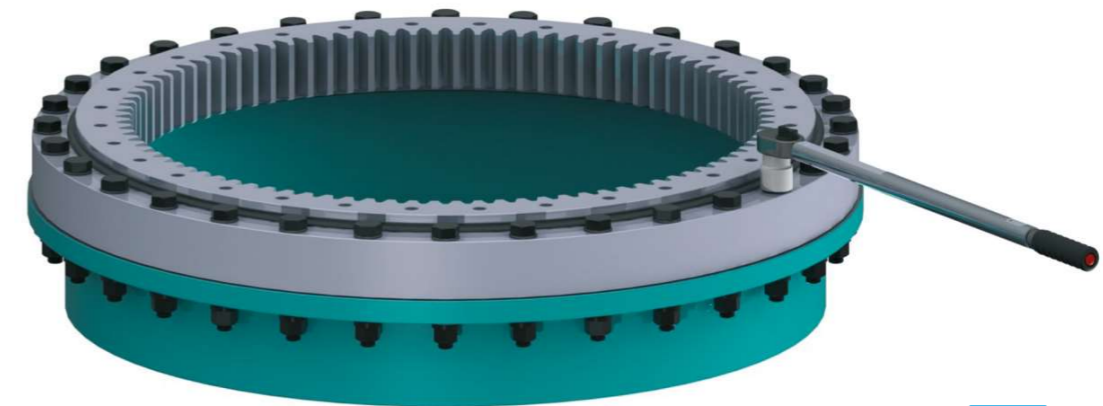


Figure 35

**6** The teeth of the bolt and/or stud should be lubricated with thin oil. Attach the bolts, nuts, and washers manually to the holes. The manual installation enables the operator to see the skews on the bolts or the misalignments in the holes. If the bolts are skewed and tightened by force, the rotational torque will increase due to the possible elliptical mounting.



# Installation, Lubrication and Maintenance

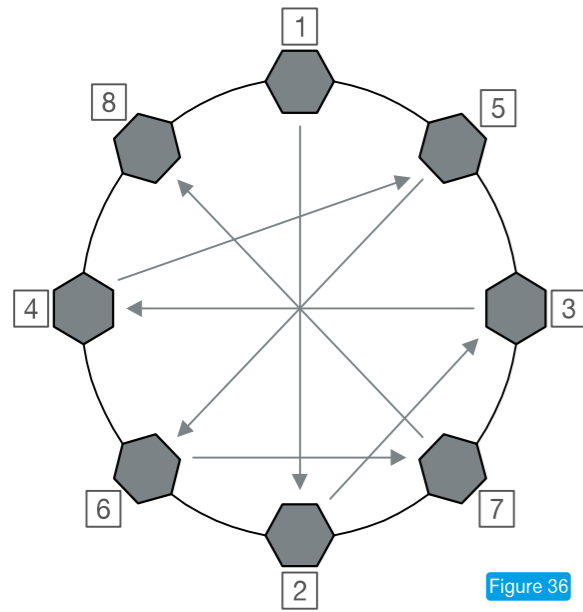


Figure 36

**7** During the first tightening process of the bolts and nuts, apply 50% of the tightening value indicated in table 6 on page 19. The complete tightening torque should be applied in the second round. The information in figure 36 should be followed for the tightening sequence of the bolts and nuts. The sequence given in figure 36 enables a tension-free installation.

**8** Please rotate the free ring to check the accuracy of the installation. If the bearing correctly installed, the rotational torque should not show any big difference.

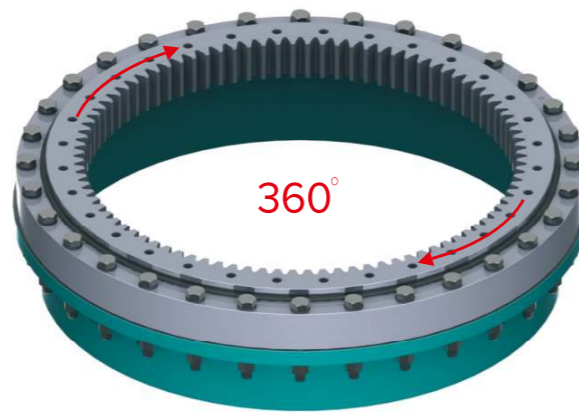


Figure 37



Figure 38

**9** After mounting the bearing to the first support structure, we recommend positioning the “S” marked point of the other (free) ring at an angle of 180° with the “S” point of the mounted (not free) ring.

**10** Align the holes of the support surface with the holes of the bearing ring.

**11** Oil the bolts, nuts, and washers for connecting.

**12** As described in figure 6 and 7 figure, carry out a 50% preload during the first round and during the second round tighten the bolts and nuts by applying the full tightening torque values given in the tables (table 6).

**13** Check the correctness of the installation by rotating the bearing. There should be no excessive rotational torque and no compressing regions should be observed during rotation.

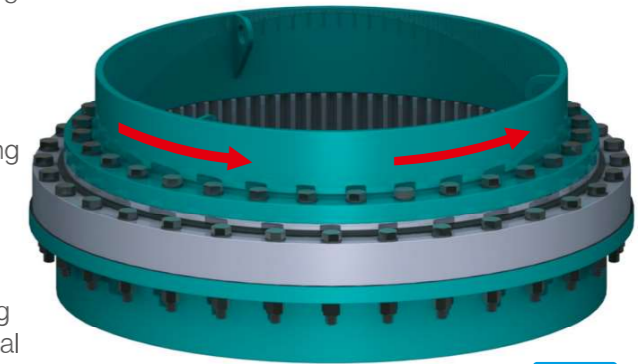


Figure 39

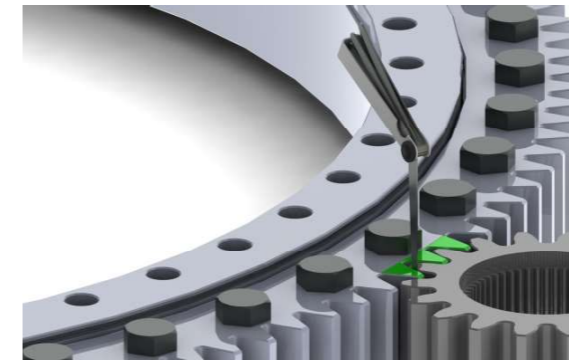


Figure 40

**14** During the installation of the pinion gear of the HAN slewing bearings with teeth, a positioning at any tooth of the pinion gear with the help of a feeler gauge is sufficient. An appropriate tooth space should be set to 0.03... 0.04 x modules as described on page 20.

In the case of induction-hardened bearing gears, the adjustment should be done over the green-colored teeth (figure 40).

**15** During the lubrication of the raceways of the slewing bearing, fill the bearing with the recommended grease by rotating the bearing smoothly until the grease starts to leak slightly from the bottom of the seals. If the bearing is produced by our company, the raceways are already filled with grease. If the system has automatic lubrication, you only need to attach the lubrication pipes to the grease holes.



Figure 41



Figure 42

**16** Lubricate the gears sufficiently with the recommended lubricant (page 23).

# Installation, Lubrication and Maintenance

## Bearing Maintenance and Controls

Like all other important machine parts, the slewing bearings should be cleaned and checked at regular intervals. These intervals depend completely on the environmental and operating conditions. If the rotary table bearings are under heavy operating conditions, these maintenance intervals should be planned more frequently. The controls of the clearances in the rotary table bearings are critical regarding the prevention of accidents and injuries.

### Checking the Tilting Clearance

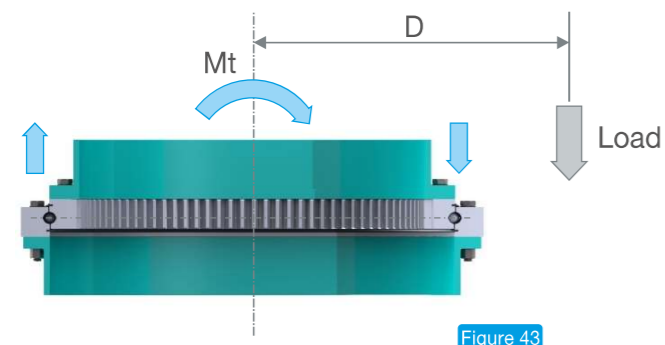


Figure 43

In order to be sure about the clearance tolerance of the slewing bearing, measure the unloaded and loaded clearance under real operation conditions with the help of a dial gauge as described in figure 44. The bearing should be rotated at 0°, 90°, 180° ve 270° and the changes in the dial gauge should be assessed. The result should be nearly close to zero. The amount of change should be recorded. The tilting clearance measured just after the installation is important for the comparison with the clearance checks performed later on.

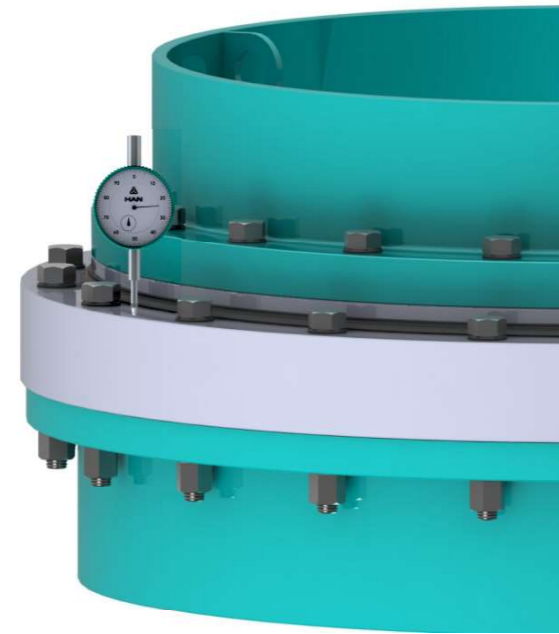


Figure 44

It is recommended by our company HAN Makina that the clearance in the slewing bearings should be checked and recorded at installation and once a year or every 2000 hours after the start of the operation. The wearing detected during the controls should be compared with the results of the previous controls and should be continuously monitored. The maximum bearing wearing clearance values given in tables 9, 10 and 11 should be taken into consideration.

## 4 Point Contact Slewing Bearing (B1100 Series - B2100 Series)

Raceway Circle Diameter	Rolling Element [mm]									
	20	22	25	30	35	40	45	50	60	70
1000	1.5	1.5	1.5	1.6	1.8	2.0	2.2	2.6		
1250	1.5	1.6	1.6	1.7	1.8	2.1	2.3	2.7	2.8	
1500	1.6	1.7	1.7	1.8	1.8	2.1	2.4	2.7	2.9	3.0
1750			1.8	1.8	1.9	2.2	2.4	2.8	3.0	3.1
2000			1.8	1.9	2.0	2.3	2.5	2.9	3.0	3.2
2250			1.9	2.0	2.1	2.4	2.6	3.0	3.1	3.3
2500			1.9	2.0	2.1	2.4	2.7	3.0	3.2	3.3
2750			2.0	2.1	2.2	2.5	2.7	3.1	3.3	3.4
3000					2.3	2.6	2.7	3.2	3.3	3.5
3250					2.4	2.7	2.9	3.3	3.4	3.6
3500						2.8	3.0	3.3	3.5	3.6
3750						2.9	3.1	3.4	3.6	3.7
4000							3.0	3.4	3.7	3.8
4500								3.6	3.9	4.0
5000								3.8	4.1	4.2
5500								4.0	4.3	4.4
6000								4.2	4.6	4.7

Table 09

## 8 Point Contact Slewing Bearing (B2200 Series)

Raceway Circle Diameter	Rolling Element [mm]										
	18	20	22	25	30	35	40	45	50	60	70
1000	1.9	1.9	2.0	2.0	2.1	2.2	2.6	2.9			
1250	2.0	2.0	2.1	2.1	2.2	2.3	2.7	3.0	3.5	3.7	
1500		2.0	2.2	2.2	2.3	2.4	2.7	3.0	3.5	3.7	
1750			2.3	2.3	2.4	2.5	2.9	3.1	3.6	3.8	4.1
2000				2.4	2.5	2.6	3.0	3.3	3.8	3.9	4.2
2250					2.6	2.7	3.1	3.4	3.9	4.0	4.3
2500						2.8	3.2	3.5	4.0	4.2	4.4
2750						2.9	3.3	3.6	4.1	4.3	4.5
3000							3.4	3.7	4.2	4.4	4.6
3250								3.5	3.8	4.3	4.5
3500								3.6	3.9	4.4	4.6
3750								3.6	3.9	4.5	4.7
4000									4.1	4.6	4.8
4500										5.0	5.2
5000										5.2	5.4
5500										5.4	5.6
6000										5.4	5.6

Table 10

## Cylindrical Roller Slewing Bearing (SM2100 Series - SM3300 Series)

Raceway Circle Diameter	Rolling Element [mm]										
	16	21	24	26	32	36	40	50	60	70	80
400	0.20	0.22	0.23	0.24							
500	0.21	0.23	0.24	0.25	0.28						
630	0.26	0.28	0.29	0.30	0.34	0.37	0.39				
800	0.26	0.28	0.29	0.30	0.34	0.37	0.39				
1000	0.31	0.33	0.34	0.35	0.39	0.42	0.44				
1250	0.41	0.43	0.44	0.45	0.49	0.52	0.54	0.61			
1500	0.51	0.53	0.54	0.55	0.59	0.62	0.64	0.71			
2000	0.60	0.63	0.64	0.65	0.69	0.72	0.74	0.81	0.91		
2500	0.66	0.70	0.72	0.74	0.79	0.82	0.84	0.91	1.01	1.11	1.21
3150	0.76	0.80		0.84	0.89	0.92	0.94	1.01	1.11	1.21	1.31
4000				0.94	0.99	1.02	1.04	1.11	1.21	1.31	1.41
5000					1.09		1.13	1.21	1.31		
6000					1.19		1.24	1.31	1.41		

Table 11

### Checking the axial clearance

The measurement are performed with the help of a depth gauge (figure 45) or a block with known thickness and feeler gauge (measurements should be done at least at 4 points). The measured value is compared with the first measurement to evaluate the change. If the acceleration of the amount of the clearance continues with an increasing pattern, the subsequent measurements should be performed more frequently.

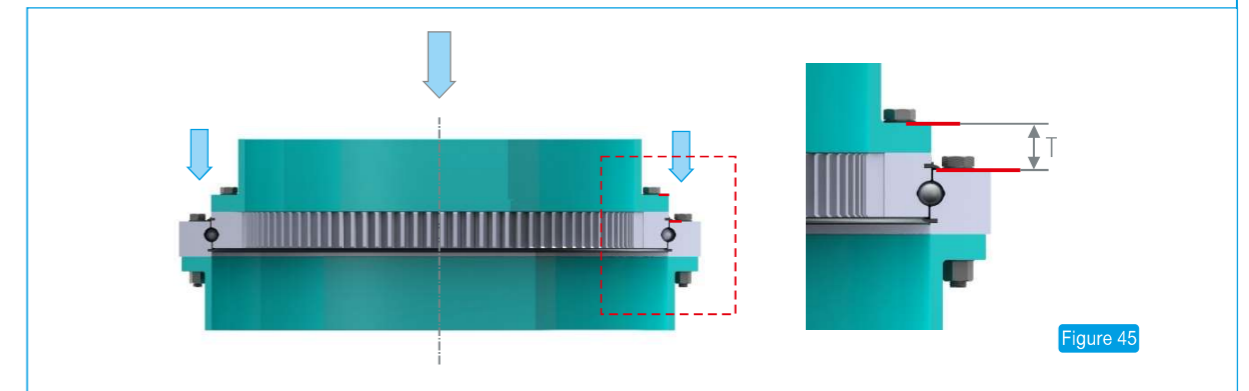


Figure 45

## Installation, Lubrication and Maintenance

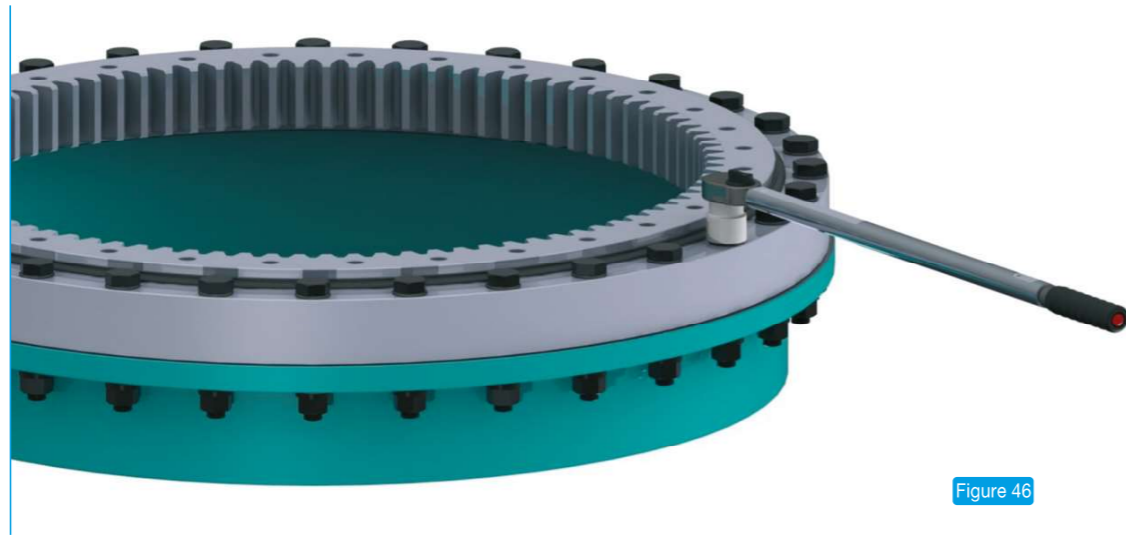
### Checking the Bolt Connections:

Particular attention should be given to the bolt connections in the slewing bearings, as any insufficient connection may lead to death, injuries, and irreversible damage to the system.

In the first and third months following the first start-up of the machine, all bolts and nuts should be checked for tightening. Later on, the bolt tightening torque should be checked once a year or every 2000 hours according to the values given in table 6 on page 19.

If the tension loss is more than 20% in a bolt, it should be replaced together with the neighboring bolts. If 20% of the bolts on a ring have a tension loss of more than 80%, all bolts should be replaced with bolts at least with the same quality of the initially used bolts.

During the replacement, bolts should be replaced according to the sequence used in the first installation without loosening more than one bolt at once.



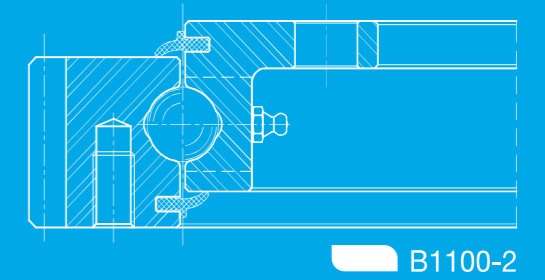
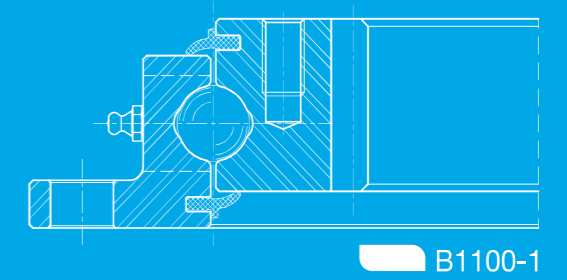
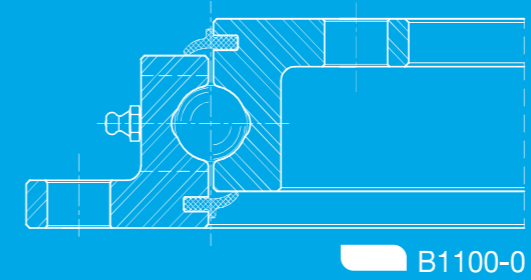
### Checking the Seals and Lubrication:

The sealing elements or seals should be checked at least once every six months and should be cleaned if needed. If any wearing or rupture is observed, it should be replaced to avoid the penetration of any wearing material in the bearing. Otherwise, the service life of the bearing may be shortened. Furthermore, the availability of adequate grease around the circumference of the bottom of the felt should be checked. It should not be forgotten that the grease reduces wearing significantly in the slewing bearings.

After grease is applied, excreted grease from the underside of the seals should be cleaned and checked if possible. If there are visible steel particles or foreign materials in grease discharged from the underside of the seal, a maintenance control of the bearing may be necessary. Our company provides also maintenance and repair service along with the production.

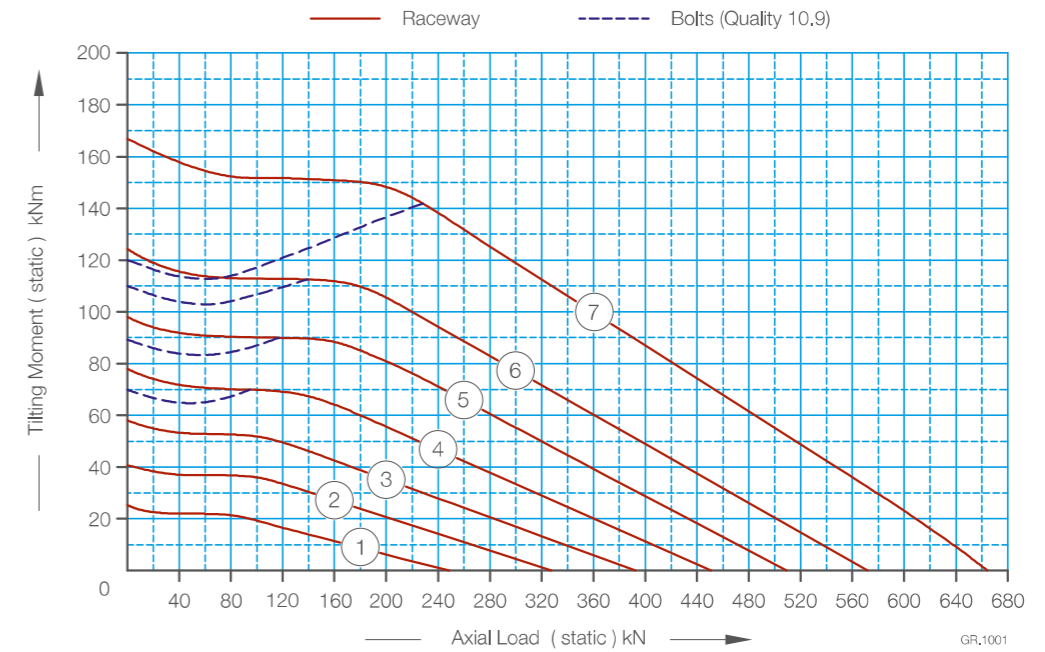
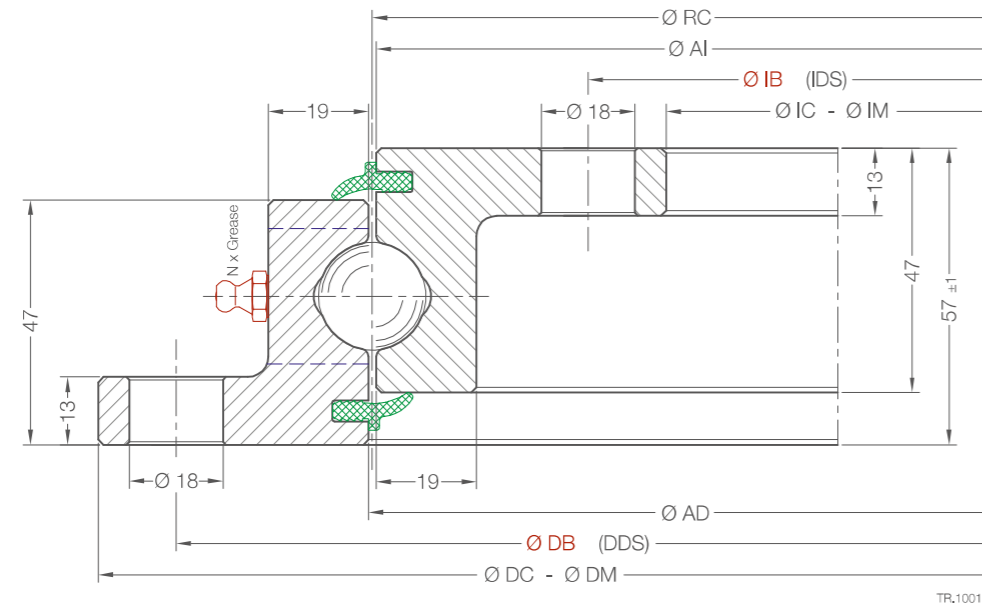
# B1100 SERIES

4 Point Contact Single-Row Ball Bearings  
("Type L" Light Series)



# B1120-0 SERIES

DESIGNED FOR LIGHT LOADS, UNGEARED SLEWING BEARING



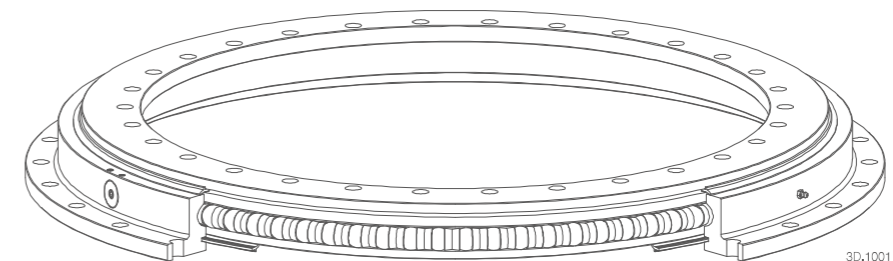
Drawing No	Item No	Weight kg	Geometry mm								N x Grease
			Dimensions								
			Ø RC	Ø DC	Ø DM	Ø IC	Ø IM	Ø AD	Ø AI		
B1120-0-0520AA	1	24	415	520	518 -0.17	302	304 +0.11	417	413	2 x M8x1	
B1120-0-0650AA	2	31.5	545	650	648 -0.20	432	434 +0.15	547	543	2 x M8x1	
B1120-0-0750AA	3	37	645	750	748 -0.20	532	534 +0.17	647	643	3 x M8x1	
B1120-0-0850AA	4	43.5	745	850	848 -0.23	632	634 +0.20	747	743	3 x M8x1	
B1120-0-0950AA	5	48.5	845	950	948 -0.23	732	734 +0.20	847	843	4 x M8x1	
B1120-0-1050AA	6	54	945	1050	1048 -0.26	832	834 +0.23	947	943	4 x M8x1	
B1120-0-1200AA	7	63	1095	1200	1198 -0.26	982	984 +0.23	1097	1093	4 x M8x1	

Connection Holes		Gear Data					Gear Tangential Force		Bearing Clearance				
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
490 ±0.2	16	332 ±0.18	24	-	-	-	-	-	-	-	-	≤0.027	≤0.027
620 ±0.22	20	462 ±0.2	28	-	-	-	-	-	-	-	-	≤0.032	≤0.032
720 ±0.25	24	562 ±0.22	32	-	-	-	-	-	-	-	-	≤0.036	≤0.036
820 ±0.28	24	662 ±0.25	32	-	-	-	-	-	-	-	-	≤0.036	≤0.036
920 ±0.28	28	762 ±0.25	36	-	-	-	-	-	-	-	-	≤0.040	≤0.040
1020 ±0.33	32	862 ±0.28	40	-	-	-	-	-	-	-	-	≤0.040	≤0.040
1170 ±0.33	32	1012 ±0.33	40	-	-	-	-	-	-	-	-	≤0.047	≤0.047

- In B1120-0 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M16	97	140	167	193	279	333

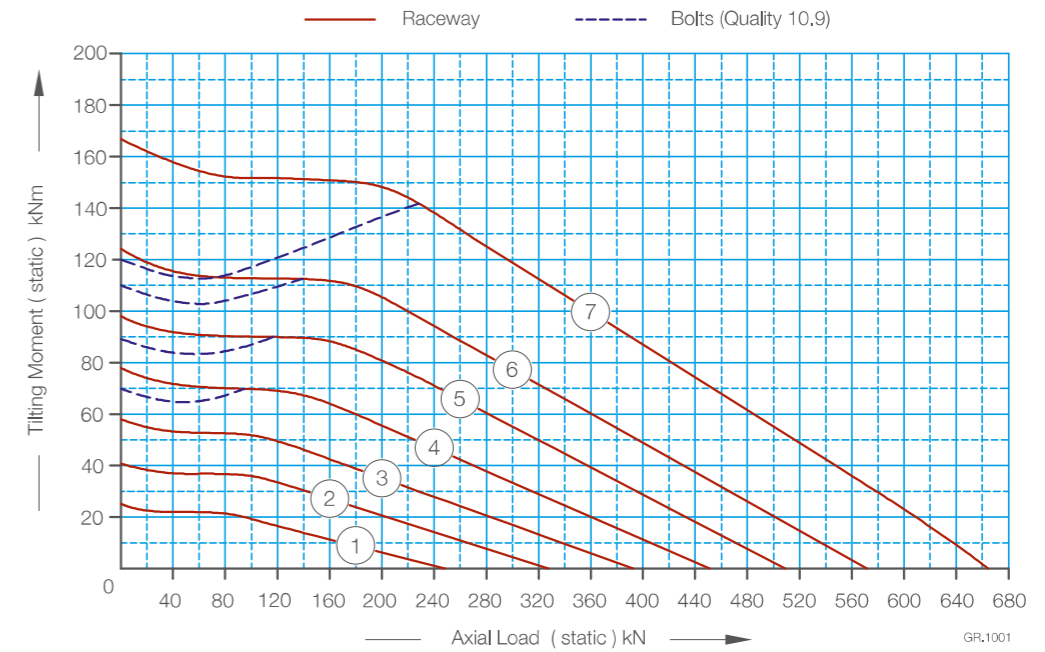
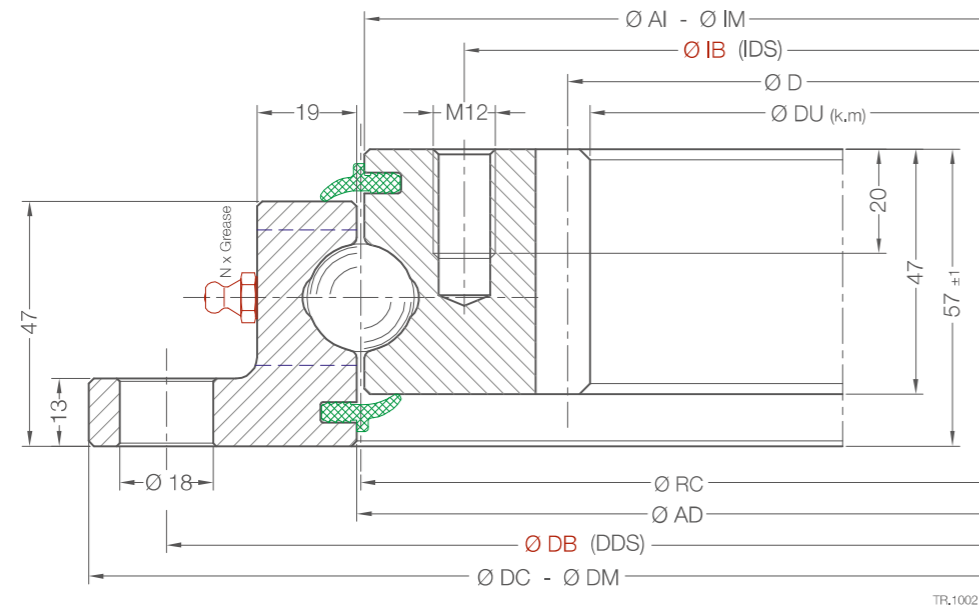
TB.1002



3D.1001

# B1120-1 SERIES

DESIGNED FOR LIGHT LOADS, INTERNAL GEAR SLEWING BEARING



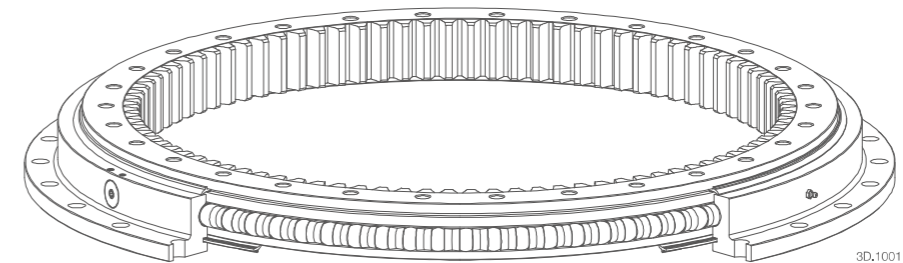
Drawing No	Item No	Weight kg	Geometry mm								N x Grease
			Dimensions								
			Ø RC	Ø DU	Ø DC	Ø DM	Ø AI	Ø IM	Ø AD		
B1120-1-0520AC	1	28	415	326.5	520	518 -0.17	413	412 -0.15	417	2 x M8x1	
B1120-1-0650AC	2	38	545	445.2	650	648 -0.20	543	542 -0.17	547	2 x M8x1	
B1120-1-0750AC	3	45	645	547.2	750	748 -0.20	643	642 -0.20	647	3 x M8x1	
B1120-1-0850AC	4	53	745	649.2	850	848 -0.23	743	742 -0.20	747	3 x M8x1	
B1120-1-0950AC	5	63.5	845	737.6	950	948 -0.23	843	842 -0.23	847	4 x M8x1	
B1120-1-1050AC	6	68	945	841.6	1050	1048 -0.26	943	942 -0.23	947	4 x M8x1	
B1120-1-1200AC	7	83	1095	985.6	1200	1198 -0.26	1093	1092 -0.26	1097	4 x M8x1	

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
490 ±0.2	16	375 ±0.18	12	335	5	67	-	-0.75	46	13.68	27.36	≤0.027	≤0.027
620 ±0.22	20	505 ±0.22	16	456	6	76	-	-0.6	46	16.17	32.34	≤0.032	≤0.032
720 ±0.25	24	605 ±0.22	18	558	6	93	-	-0.6	46	15.79	31.58	≤0.036	≤0.036
820 ±0.28	24	705 ±0.25	20	660	6	110	-	-0.6	46	15.48	30.96	≤0.036	≤0.036
920 ±0.28	28	805 ±0.28	20	752	8	94	-	-0.8	46	21.02	42.04	≤0.040	≤0.040
1020 ±0.33	32	905 ±0.28	22	856	8	107	-	-0.8	46	20.71	41.42	≤0.040	≤0.040
1170 ±0.33	32	1055 ±0.33	24	1000	8	125	-	-0.8	46	20.38	40.76	≤0.047	≤0.047

- In B1120-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M12	39	59	68	78	117	135
M16	97	140	167	193	279	333

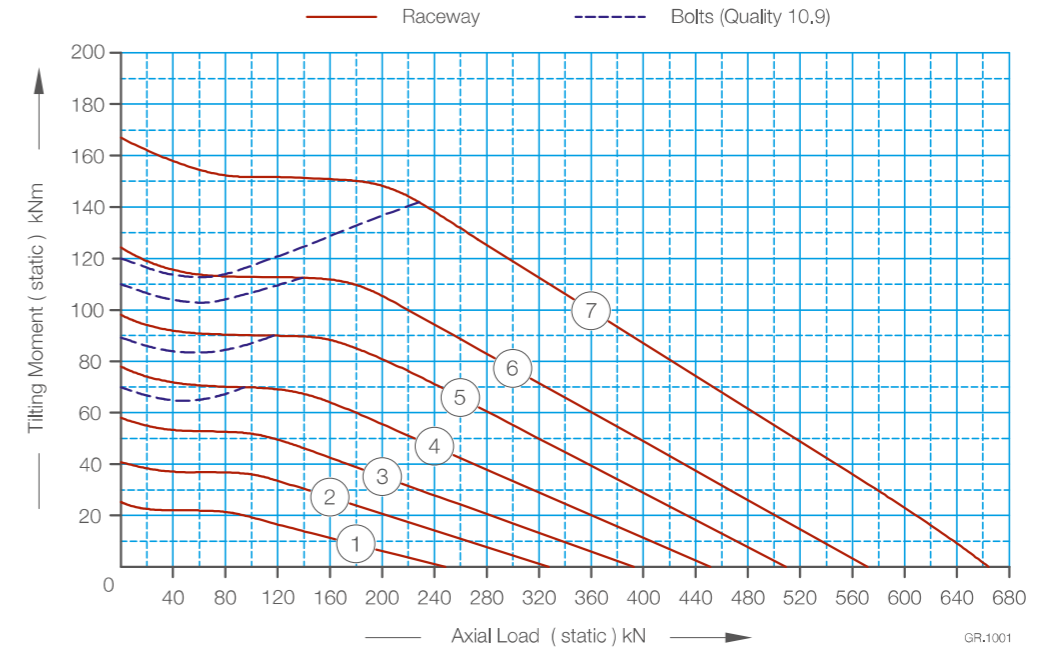
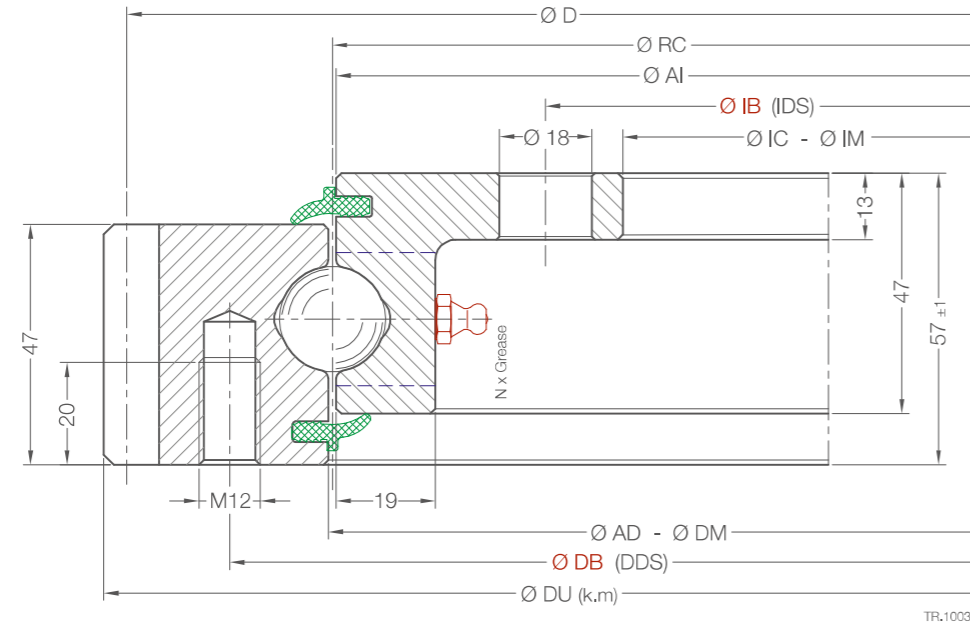
TB.1004



3D.1001

# B1120-2 SERIES

DESIGNED FOR LIGHT LOADS, EXTERNAL GEAR SLEWING BEARING

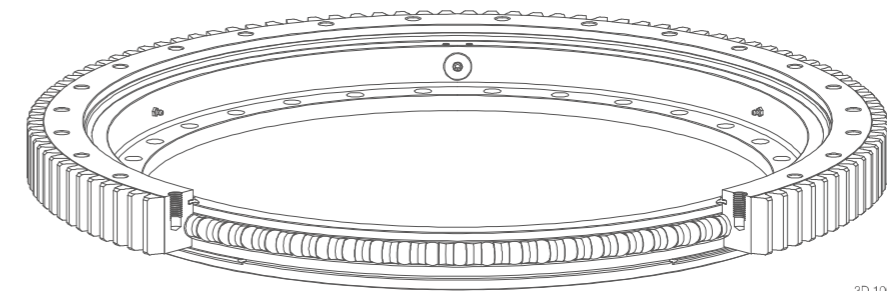


Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			Ø RC	Ø DU	Ø AD	Ø DM	Ø IC	Ø IM	Ø AI	N x Grease
B1120-2-0504CA	1	30.5	415	504	417	418 +0.15	302	304 +0.13	413	2 x M8x1
B1120-2-0641CA	2	41	545	640.8	547	548 +0.17	432	434 +0.15	543	2 x M8x1
B1120-2-0743CA	3	49	645	742.8	647	648 +0.20	532	534 +0.17	643	3 x M8x1
B1120-2-0839CA	4	55	745	838.8	747	748 +0.20	632	634 +0.20	743	3 x M8x1
B1120-2-0950CA	5	67	845	950.4	847	848 +0.23	732	734 +0.20	843	4 x M8x1
B1120-2-1046CA	6	71.5	945	1046.4	947	948 +0.23	832	834 +0.23	943	4 x M8x1
B1120-2-1198CA	7	85.5	1095	1198.4	1097	1098 +0.26	982	984 +0.23	1093	4 x M8x1

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
455 ±0.2	10	332 ±0.18	24	495	5	99	-	-0.5	46	11.87	23.74	≤0.027	≤0.027
585 ±0.22	14	462 ±0.18	28	630	6	105	-	-0.6	46	14.35	28.70	≤0.032	≤0.032
685 ±0.25	16	562 ±0.22	32	732	6	122	-	-0.6	46	14.35	28.70	≤0.036	≤0.036
785 ±0.25	18	662 ±0.25	32	828	6	138	-	-0.6	46	14.35	28.70	≤0.036	≤0.036
885 ±0.28	18	762 ±0.25	36	936	8	117	-	-0.8	46	19.13	38.26	≤0.040	≤0.040
985 ±0.28	20	862 ±0.28	40	1032	8	129	-	-0.8	46	19.13	38.26	≤0.040	≤0.040
1135 ±0.33	22	1012 ±0.33	40	1184	8	148	-	-0.8	46	19.13	38.26	≤0.047	≤0.047

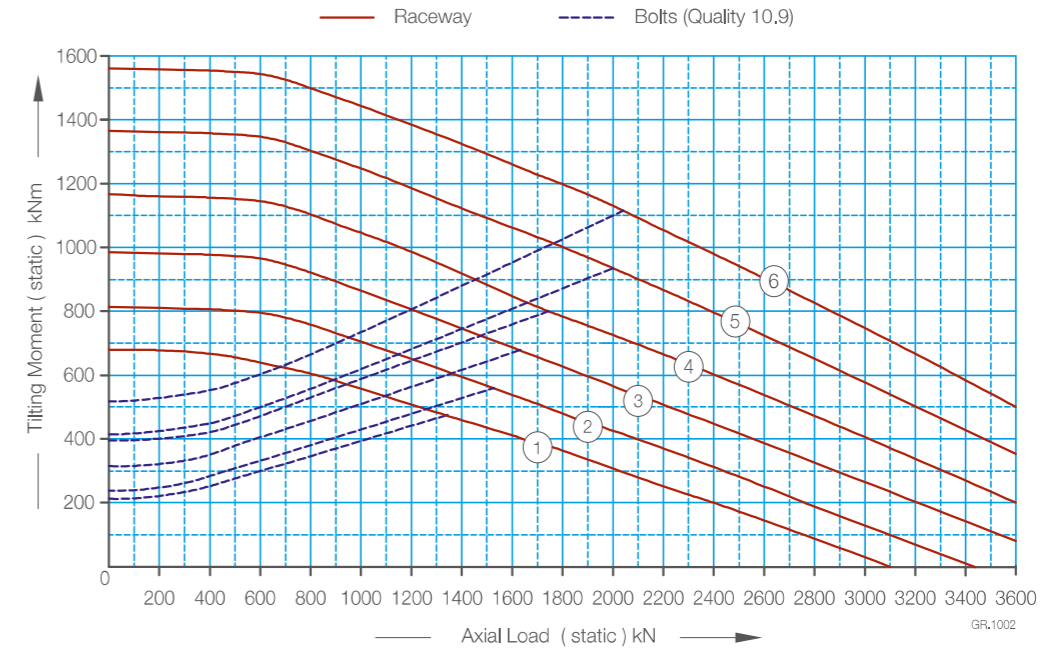
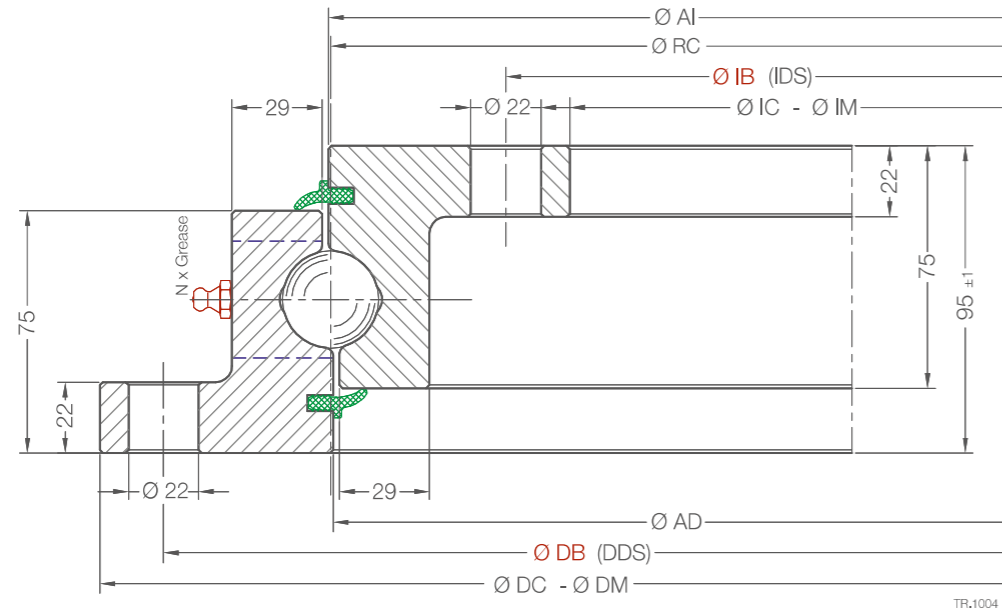
- In B1120-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M12	39	59	68	78	117	135
M16	97	140	167	193	279	333



# B1130-0 SERIES

DESIGNED FOR LIGHT LOADS, UNGEARED SLEWING BEARING

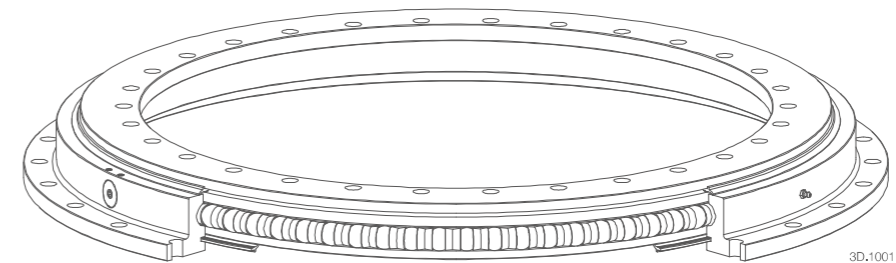


Drawing No	Item No	Weight kg	Geometry mm								
			Dimensions								
			Ø RC	Ø DC	Ø DM	Ø IC	Ø IM	Ø AD	Ø AI	N x Grease	
B1130-0-1100AA	1	136	955	1100	1098 -0.26	805	807 +0.23	954	956	3 x M10x1	
B1130-0-1200AA	2	151	1055	1200	1198 -0.26	905	907 +0.23	1054	1056	3 x M10x1	
B1130-0-1300AA	3	165	1155	1300	1298 -0.31	1005	1007 +0.26	1154	1156	4 x M10x1	
B1130-0-1400AA	4	180	1255	1400	1398 -0.31	1105	1107 +0.26	1254	1256	6 x M10x1	
B1130-0-1500AA	5	195	1355	1500	1498 -0.31	1205	1207 +0.26	1354	1356	6 x M10x1	
B1130-0-1600AA	6	210	1455	1600	1598 -0.31	1305	1307 +0.31	1454	1456	6 x M10x1	

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1060 ±0.33	30	845 ±0.28	30	-	-	-	-	-	-	-	-	≤0.040	≤0.040
1160 ±0.33	30	945 ±0.28	30	-	-	-	-	-	-	-	-	≤0.047	≤0.047
1260 ±0.39	36	1045 ±0.33	36	-	-	-	-	-	-	-	-	≤0.047	≤0.047
1360 ±0.39	42	1145 ±0.33	42	-	-	-	-	-	-	-	-	≤0.047	≤0.047
1460 ±0.39	42	1245 ±0.33	42	-	-	-	-	-	-	-	-	≤0.055	≤0.055
1560 ±0.39	48	1345 ±0.39	48	-	-	-	-	-	-	-	-	≤0.055	≤0.055

- In B1130-0 series Slewing Bearings, quenched and tempered steel is used as a standard material.

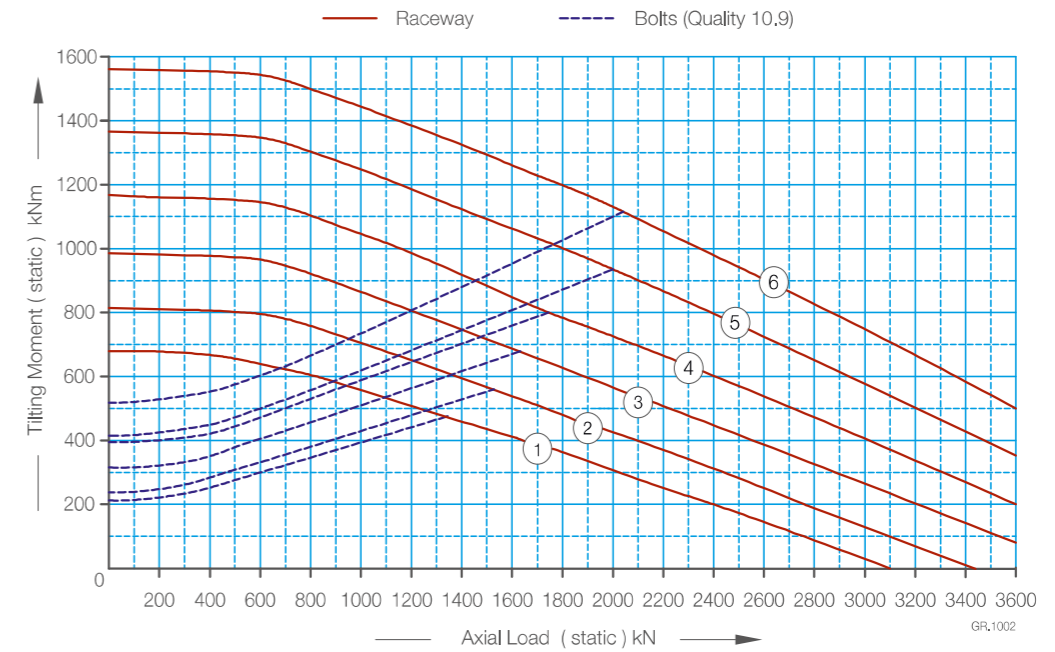
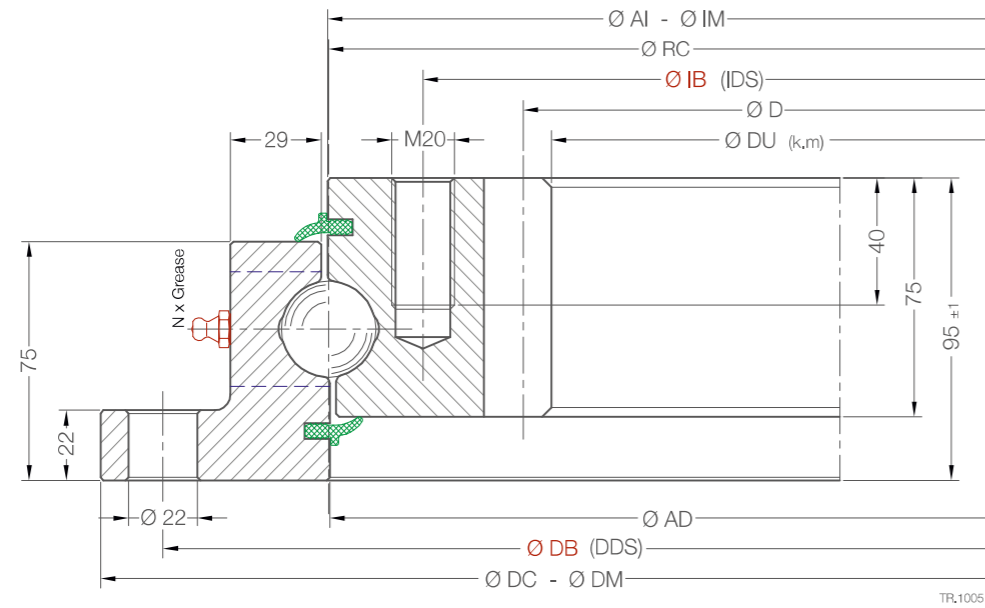
Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M20	194	279	324	387	558	648





# B1130-1 SERIES

DESIGNED FOR LIGHT LOADS, INTERNAL GEAR SLEWING BEARING



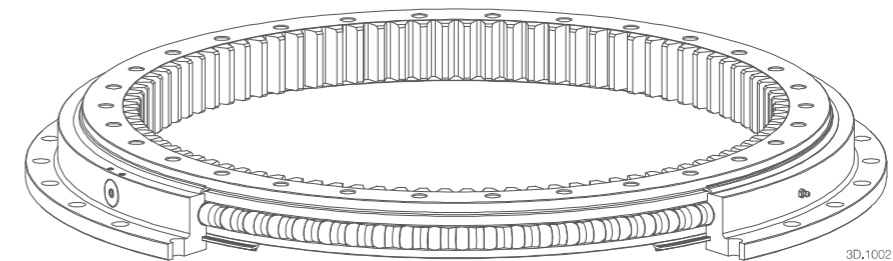
Drawing No	Item No	Weight kg	Geometry mm								
			Dimensions								
			Ø RC	Ø DU	Ø DC	Ø DM	Ø AI	Ø IM	Ø AD	N x Grease	
B1130-1-1100AC	1	166	955	812	1100	1098 -0.26	956	955 -0.23	954	3 x M10x1	
B1130-1-1200AC	2	184	1055	912	1200	1198 -0.26	1056	1055 -0.26	1054	3 x M10x1	
B1130-1-1300AC	3	201	1155	1012	1300	1298 -0.31	1156	1155 -0.26	1154	4 x M10x1	
B1130-1-1400AC	4	218	1255	1112	1400	1398 -0.31	1256	1255 -0.31	1254	6 x M10x1	
B1130-1-1500AC	5	237	1355	1212	1500	1498 -0.31	1356	1355 -0.31	1354	6 x M10x1	
B1130-1-1600AC	6	255	1455	1310	1600	1598 -0.31	1456	1455 -0.31	1454	6 x M10x1	

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1060 ±0.33	30	894 ±0.28	30	830	10	83	-	-1	74	42.31	84.62	≤0.040	≤0.040
1160 ±0.33	30	994 ±0.28	30	930	10	93	-	-1	74	41.75	83.50	≤0.047	≤0.047
1260 ±0.39	36	1094 ±0.33	36	1030	10	103	-	-1	74	41.25	82.50	≤0.047	≤0.047
1360 ±0.39	42	1194 ±0.33	42	1130	10	113	-	-1	74	40.83	81.66	≤0.047	≤0.047
1460 ±0.39	42	1294 ±0.39	42	1230	10	123	-	-1	74	40.47	80.94	≤0.055	≤0.055
1560 ±0.39	48	1394 ±0.39	48	1330	10	133	-	-	74	40.17	80.34	≤0.055	≤0.055

- In B1130-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M20	194	279	324	387	558	648

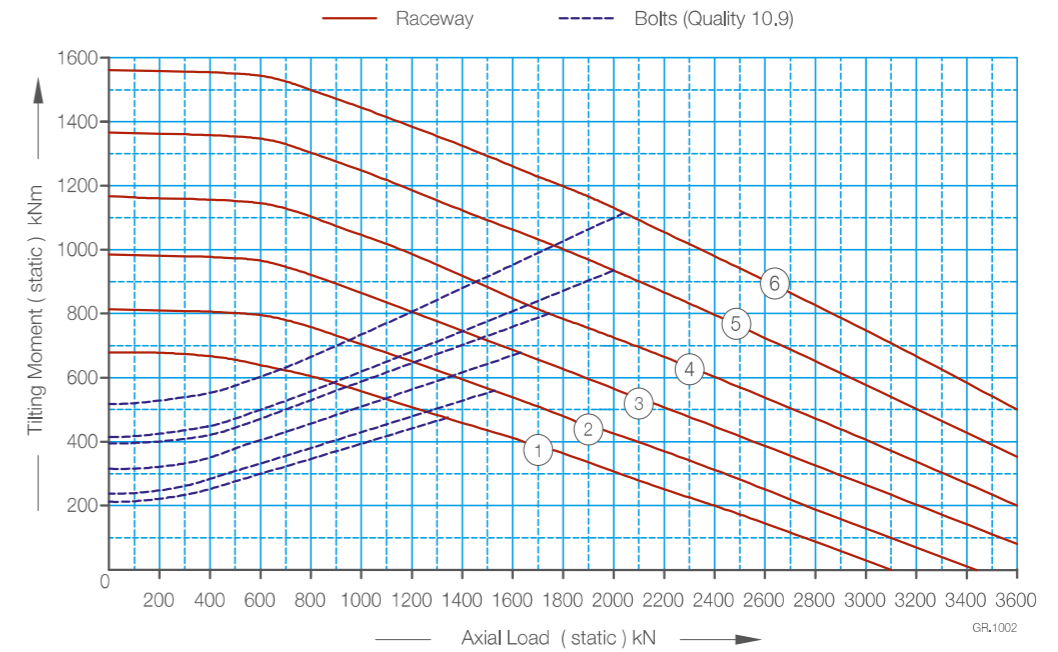
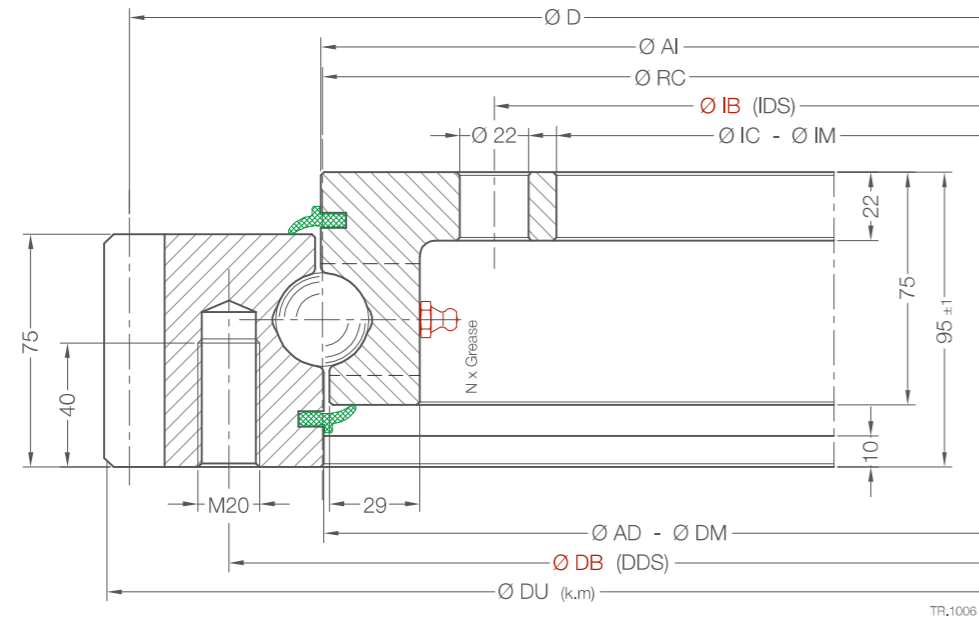
TB.1007



3D.1002

# B1130-2 SERIES

DESIGNED FOR LIGHT LOADS, EXTERNAL GEAR SLEWING BEARING



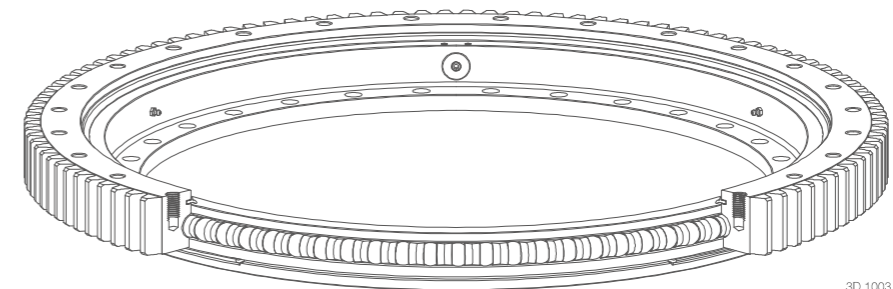
Drawing No	Item No	Weight kg	Geometry mm								
			Dimensions								
			$\varnothing RC$	$\varnothing DU$	$\varnothing AD$	$\varnothing DM$	$\varnothing IC$	$\varnothing IM$	$\varnothing AI$	N x Grease	
B1130-2-1096CA	1	172	955	1096.2	954	955 $\pm 0.23$	805	807 $\pm 0.23$	956	3 x M10x1	
B1130-2-1198CA	2	191	1055	1198	1054	1055 $\pm 0.26$	905	907 $\pm 0.23$	1056	3 x M10x1	
B1130-2-1298CA	3	209	1155	1298	1154	1155 $\pm 0.26$	1005	1007 $\pm 0.26$	1156	4 x M10x1	
B1130-2-1398CA	4	226	1255	1398	1254	1255 $\pm 0.31$	1105	1107 $\pm 0.26$	1256	6 x M10x1	
B1130-2-1498CA	5	245	1355	1498	1354	1355 $\pm 0.31$	1205	1207 $\pm 0.26$	1356	6 x M10x1	
B1130-2-1598CA	6	262	1455	1598	1454	1455 $\pm 0.31$	1305	1307 $\pm 0.31$	1456	6 x M10x1	

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1016 $\pm 0.33$	30	845 $\pm 0.28$	30	1080	9	120	-	-0.9	74	34.14	68.28	$\leq 0.040$	$\leq 0.040$
1116 $\pm 0.33$	30	945 $\pm 0.28$	30	1180	10	118	-	-1	74	37.93	75.86	$\leq 0.047$	$\leq 0.047$
1216 $\pm 0.33$	36	1045 $\pm 0.33$	36	1280	10	128	-	-1	74	37.93	75.86	$\leq 0.047$	$\leq 0.047$
1316 $\pm 0.39$	42	1145 $\pm 0.33$	42	1380	10	138	-	-1	74	37.93	75.86	$\leq 0.047$	$\leq 0.047$
1416 $\pm 0.39$	42	1245 $\pm 0.33$	42	1480	10	148	-	-1	74	37.93	75.86	$\leq 0.055$	$\leq 0.055$
1516 $\pm 0.39$	48	1345 $\pm 0.39$	48	1580	10	158	-	-1	74	37.93	75.86	$\leq 0.055$	$\leq 0.055$

- In B1130-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M20	194	279	324	387	558	648

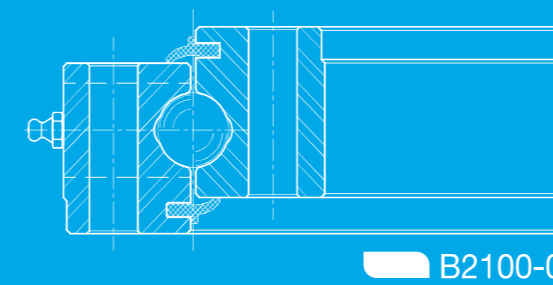
TB.1007



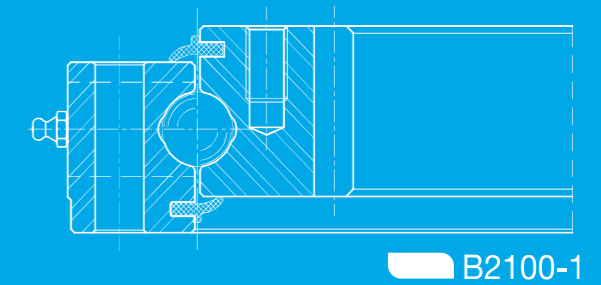
3D.1003

# B2100 SERIES

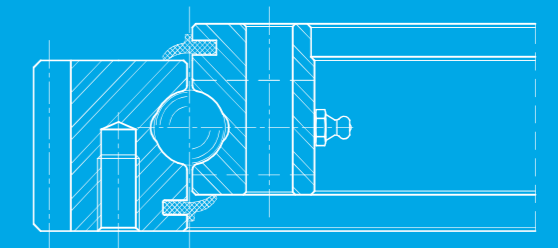
4 Point Contact Single-Row Ball Bearings



B2100-0



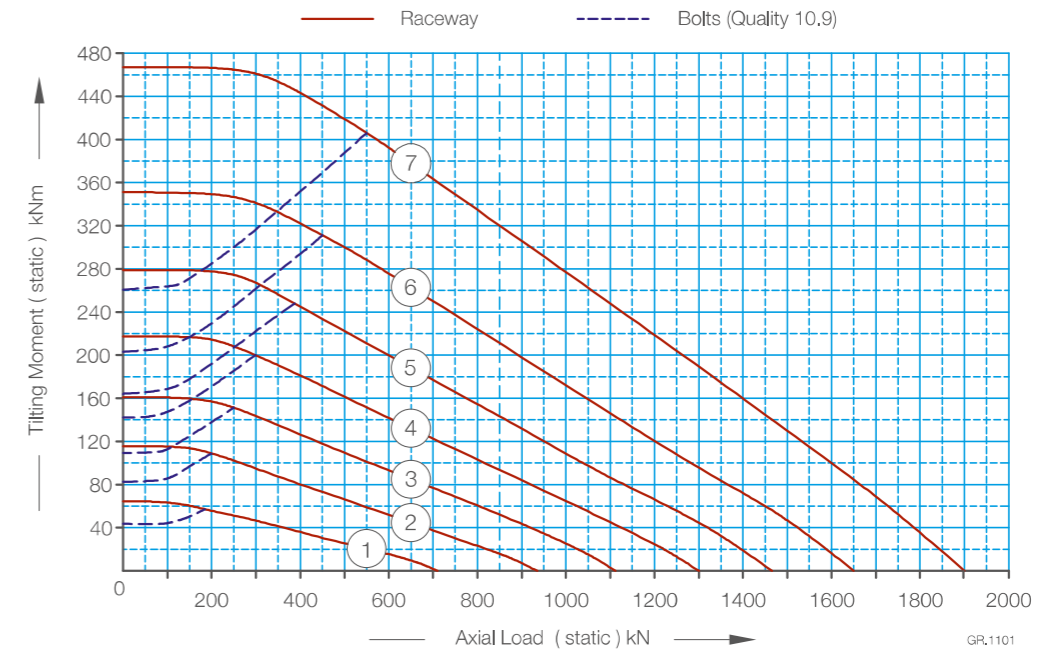
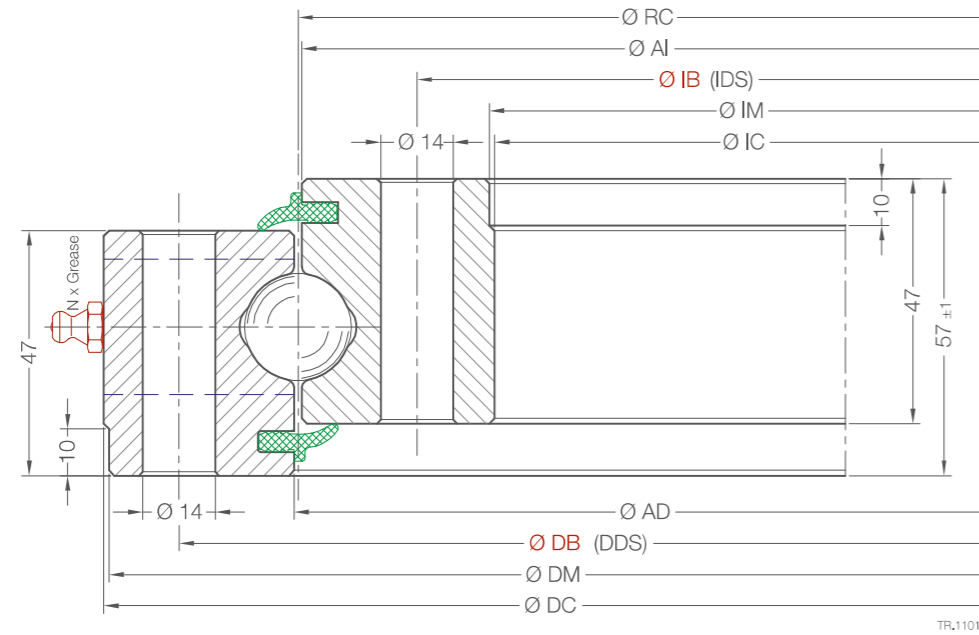
B2100-1



B2100-2

# B2120-0 SERIES

DESIGNED FOR MEDIUM LOADS, UNGEARED SLEWING BEARING



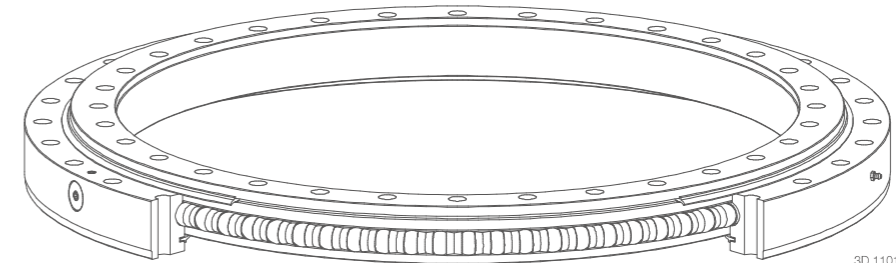
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			$\varnothing RC$	$\varnothing DC$	$\varnothing DM$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
B2120-0-0490AA	1	32	415	490	488 $-0.15$	340	342 $+0.14$	417	413	2 x M10x1
B2120-0-0620AA	2	39	545	620	618 $-0.17$	470	472 $+0.15$	547	543	2 x M10x1
B2120-0-0720AA	3	47	645	720	718 $-0.20$	570	572 $+0.17$	647	643	2 x M10x1
B2120-0-0820AA	4	55	745	820	818 $-0.23$	670	672 $+0.20$	747	743	3 x M10x1
B2120-0-0920AA	5	63	845	920	918 $-0.23$	770	772 $+0.20$	847	843	3 x M10x1
B2120-0-1020AA	6	71	945	1020	1018 $-0.26$	870	872 $+0.23$	947	943	4 x M10x1
B2120-0-1170AA	7	81	1095	1170	1168 $-0.26$	1020	1022 $+0.26$	1097	1093	4 x M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
460 $\pm 0.20$	24	368 $\pm 0.20$	24	-	-	-	-	-	-	-	-	$\leq 0.027$	$\leq 0.027$
590 $\pm 0.22$	32	498 $\pm 0.20$	32	-	-	-	-	-	-	-	-	$\leq 0.032$	$\leq 0.032$
690 $\pm 0.25$	36	598 $\pm 0.22$	36	-	-	-	-	-	-	-	-	$\leq 0.036$	$\leq 0.036$
790 $\pm 0.28$	40	698 $\pm 0.25$	40	-	-	-	-	-	-	-	-	$\leq 0.036$	$\leq 0.036$
890 $\pm 0.28$	40	798 $\pm 0.25$	40	-	-	-	-	-	-	-	-	$\leq 0.040$	$\leq 0.040$
990 $\pm 0.33$	44	898 $\pm 0.28$	44	-	-	-	-	-	-	-	-	$\leq 0.040$	$\leq 0.040$
1140 $\pm 0.33$	48	1048 $\pm 0.33$	48	-	-	-	-	-	-	-	-	$\leq 0.047$	$\leq 0.047$

- In B2120-0 series Slewing Bearings, quenched and tempered steel is used as a standard material.

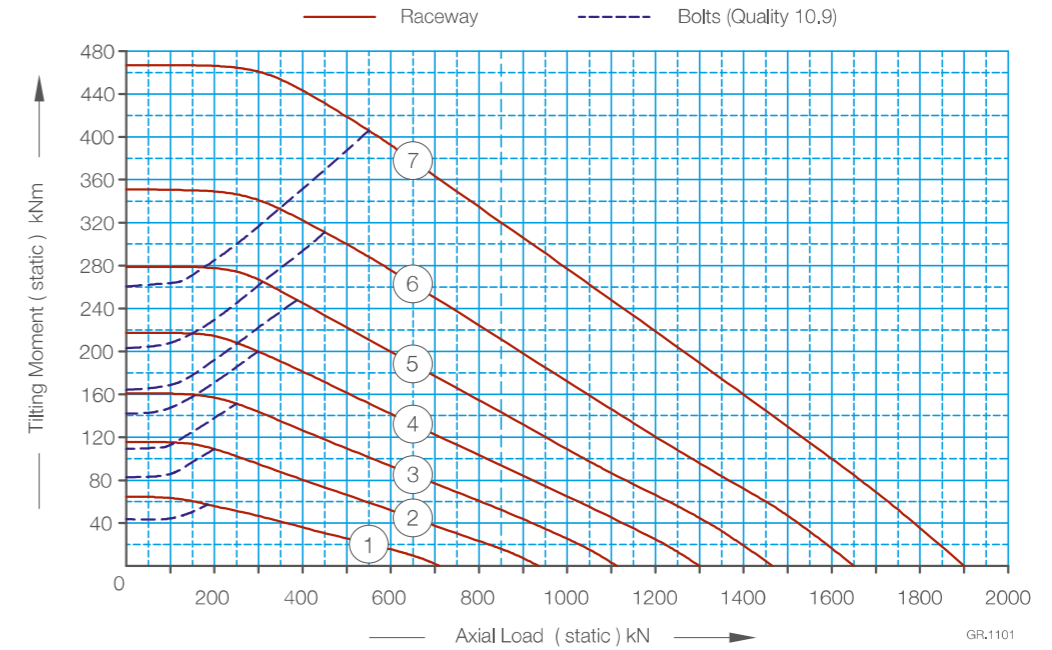
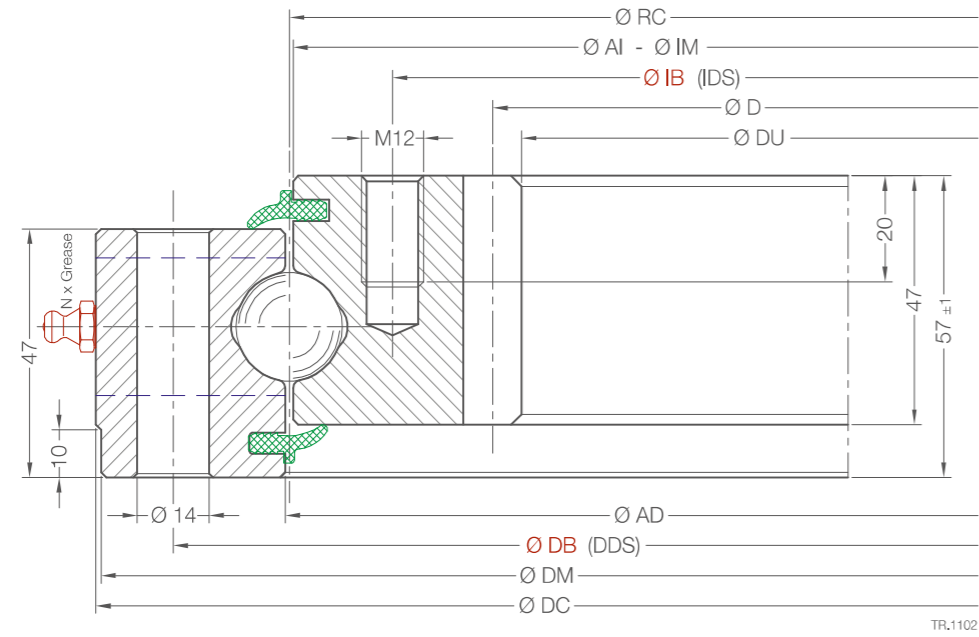
Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M12	39	59	68	78	117	135

TB.1102



# B2120-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING



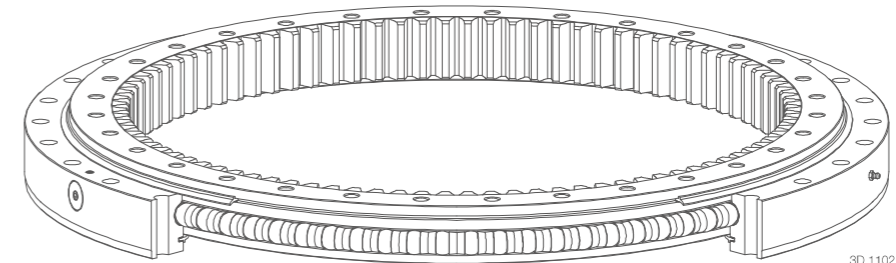
Drawing No	Item No	Weight kg	Geometry mm								N x Grease
			Dimensions								
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing IM$	$\varnothing AD$		
B2120-1-0490AC	1	33	415	325	490	488 -0.15	413	412 -0.15	417	2 x M10x1	
B2120-1-0620AC	2	44	545	444	620	618 -0.17	543	542 -0.17	547	2 x M10x1	
B2120-1-0720AC	3	53	645	546	720	718 -0.20	643	642 -0.20	647	2 x M10x1	
B2120-1-0820AC	4	61	745	648	820	818 -0.23	743	742 -0.20	747	3 x M10x1	
B2120-1-0920AC	5	73	845	736	920	918 -0.23	843	842 -0.23	847	3 x M10x1	
B2120-1-1020AC	6	80	945	840	1020	1018 -0.26	943	942 -0.23	947	4 x M10x1	
B2120-1-1170AC	7	95	1095	984	1170	1168 -0.26	1093	1092 -0.17	1097	4 x M10x1	

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
460 $\pm 0.20$	24	375 $\pm 0.18$	24	335	5	67	-	-	46	13.68	27.36	$\leq 0.027$	$\leq 0.027$
590 $\pm 0.22$	32	505 $\pm 0.22$	32	456	6	76	-	-	46	16.17	32.34	$\leq 0.032$	$\leq 0.032$
690 $\pm 0.25$	36	605 $\pm 0.22$	36	558	6	93	-	-	46	15.79	31.58	$\leq 0.036$	$\leq 0.036$
790 $\pm 0.28$	40	705 $\pm 0.25$	40	660	6	110	-	-	46	15.48	30.96	$\leq 0.036$	$\leq 0.036$
890 $\pm 0.28$	40	805 $\pm 0.25$	40	752	8	94	-	-	46	21.02	42.04	$\leq 0.040$	$\leq 0.040$
990 $\pm 0.33$	44	905 $\pm 0.28$	44	856	8	107	-	-	46	20.71	41.42	$\leq 0.040$	$\leq 0.040$
1140 $\pm 0.33$	48	1055 $\pm 0.33$	48	1000	8	125	-	-	46	20.38	40.76	$\leq 0.047$	$\leq 0.047$

- In B2120-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M12	39	59	68	78	117	135

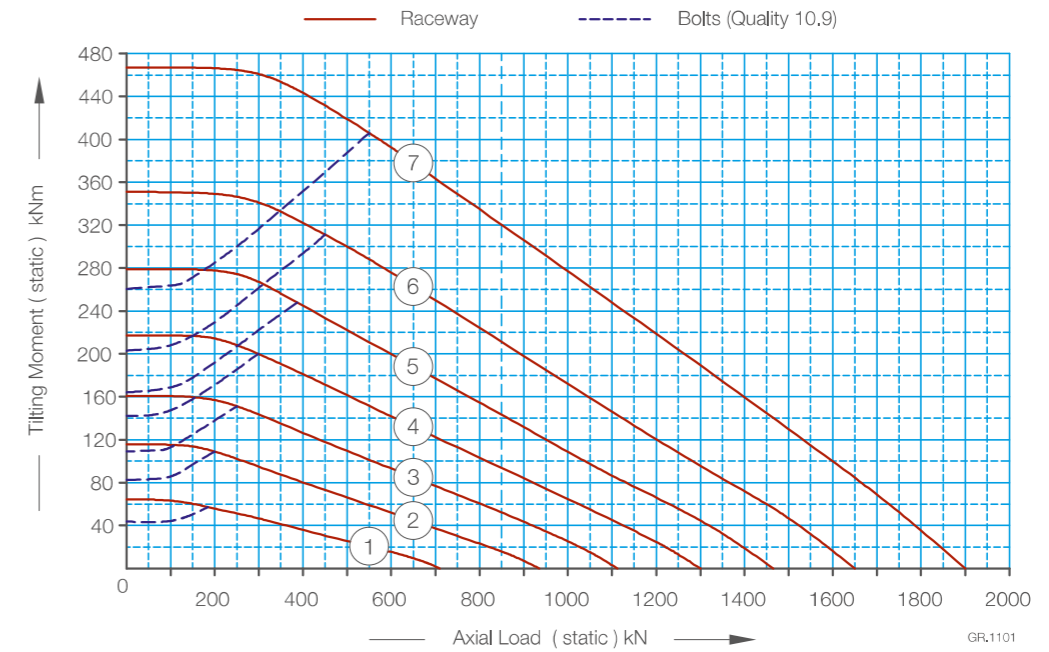
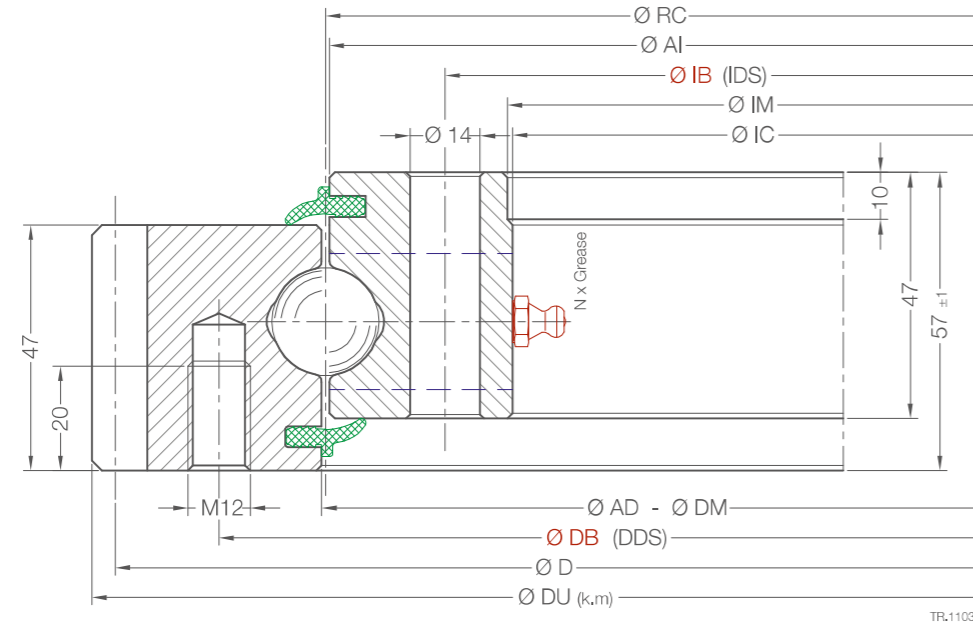
TB.1102



3D.1102

# B2120-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



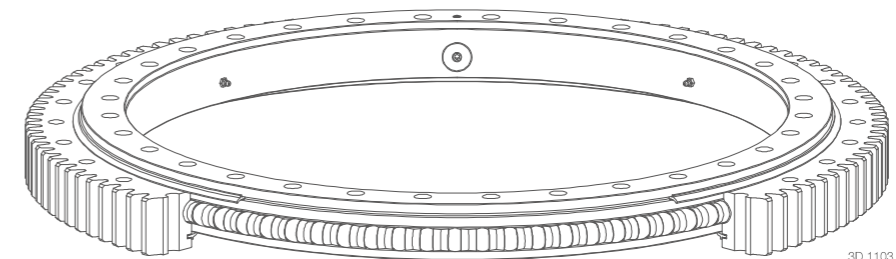
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing AD$	$\varnothing DM$	$\varnothing IC$	$\varnothing IM$	$\varnothing AI$	N x Grease
B2120-2-0503CA	1	33	415	503.3	417	418 +0.15	340	342 +0.14	413	2 x M10x1
B2120-2-0640CA	2	45	545	640.3	547	548 +0.17	470	472 +0.15	543	2 x M10x1
B2120-2-0742CA	3	55	645	742.3	647	648 +0.20	570	572 +0.17	643	2 x M10x1
B2120-2-0838CA	4	62	745	838.1	747	748 +0.20	670	672 +0.20	743	3 x M10x1
B2120-2-0950CA	5	74	845	950.1	847	842 +0.23	770	772 +0.20	843	3 x M10x1
B2120-2-1046CA	6	80	945	1046.1	947	948 +0.23	870	872 +0.23	943	4 x M10x1
B2120-2-1198CA	7	94	1095	1198.1	1097	1098 +0.26	1020	1022 +0.26	1093	4 x M10x1

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
455 ±0.20	20	368 ±0.18	24	495	5	99	-	-0.85	46	11.87	23.74	≤0.027	≤0.027
585 ±0.22	28	498 ±0.20	32	630	6	105	-	-0.85	46	14.35	28.70	≤0.032	≤0.032
685 ±0.25	32	598 ±0.22	36	732	6	122	-	-0.85	46	14.35	28.70	≤0.036	≤0.036
785 ±0.28	36	698 ±0.25	40	828	6	138	-	-0.95	46	14.35	28.70	≤0.036	≤0.036
885 ±0.28	36	798 ±0.25	40	936	8	117	-	-0.95	46	18.72	37.44	≤0.040	≤0.040
985 ±0.33	40	898 ±0.28	44	1032	8	129	-	-0.95	46	18.72	37.44	≤0.040	≤0.040
1135 ±0.33	44	1048 ±0.33	48	1184	8	148	-	-0.95	46	18.72	37.44	≤0.047	≤0.047

- In B2120-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M12	39	59	68	78	117	135

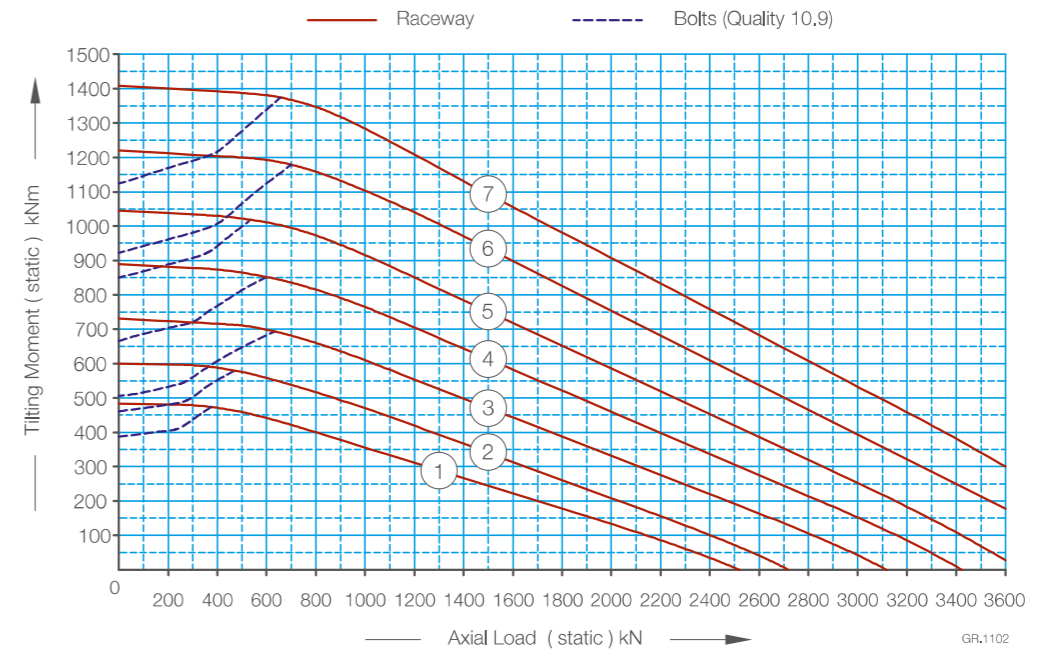
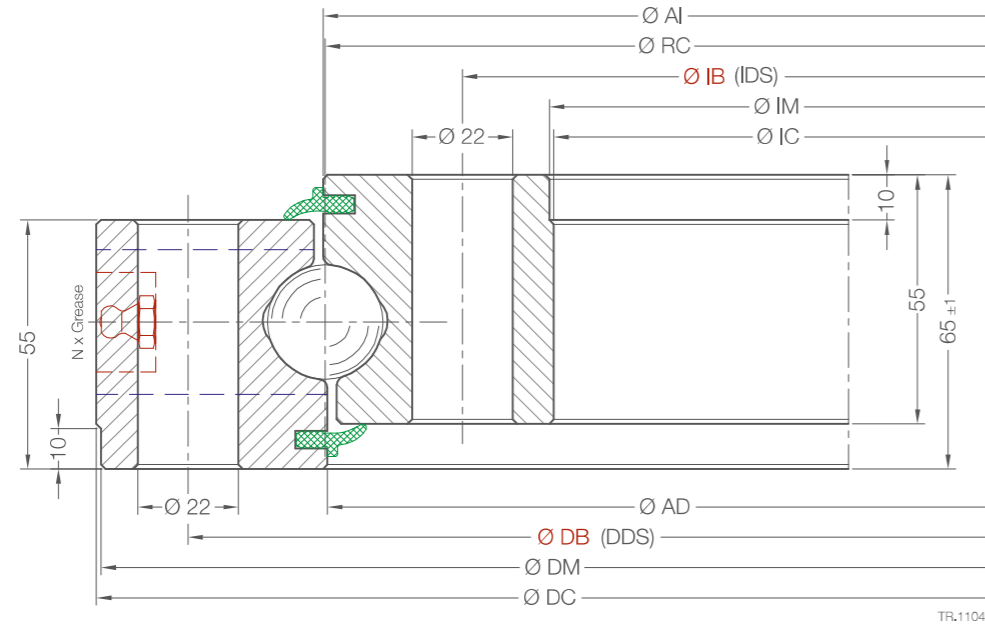
TB.1106



TB.1104

# B2125-0 SERIES

DESIGNED FOR MEDIUM LOADS, UNGEARED GEAR SLEWING BEARING



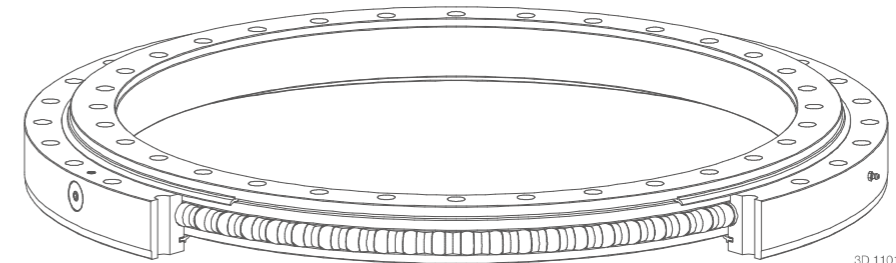
Drawing No	Item No	Weight kg	Geometry mm								
			Dimensions								
			Ø RC	Ø DC	Ø DM	Ø IC	Ø IM	Ø AD	Ø AI	N x Grease	
B2125-0-0955AA	1	105	855	955	953 -0.23	755	757 +0.23	854	856	3 x M10x1	
B2125-0-1055AA	2	118	955	1055	1053 -0.26	855	857 +0.23	954	956	3 x M10x1	
B2125-0-1155AA	3	128	1055	1155	1153 -0.26	955	957 +0.23	1054	1056	3 x M10x1	
B2125-0-1255AA	4	143	1155	1255	1253 -0.31	1055	1057 +0.26	1154	1156	3 x M10x1	
B2125-0-1355AA	5	153	1255	1355	1353 -0.31	1155	1157 +0.26	1254	1256	3 x M10x1	
B2125-0-1455AA	6	166	1355	1455	1453 -0.31	1255	1257 +0.26	1354	1356	3 x M10x1	
B2125-0-1555AA	7	178	1455	1555	1553 -0.31	1355	1357 +0.26	1454	1456	4 x M10x1	

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
915 ±0.28	28	795 ±0.25	28	-	-	-	-	-	-	-	-	≤0.040	≤0.040
1015 ±0.33	30	895 ±0.28	30	-	-	-	-	-	-	-	-	≤0.040	≤0.040
1115 ±0.33	30	995 ±0.28	30	-	-	-	-	-	-	-	-	≤0.047	≤0.047
1215 ±0.33	36	1095 ±0.33	36	-	-	-	-	-	-	-	-	≤0.047	≤0.047
1315 ±0.39	42	1195 ±0.33	42	-	-	-	-	-	-	-	-	≤0.055	≤0.055
1415 ±0.39	42	1295 ±0.39	42	-	-	-	-	-	-	-	-	≤0.055	≤0.055
1515 ±0.39	48	1395 ±0.39	48	-	-	-	-	-	-	-	-	≤0.055	≤0.055

- In B2125-0 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M20	194	279	324	387	558	648

TB.1106



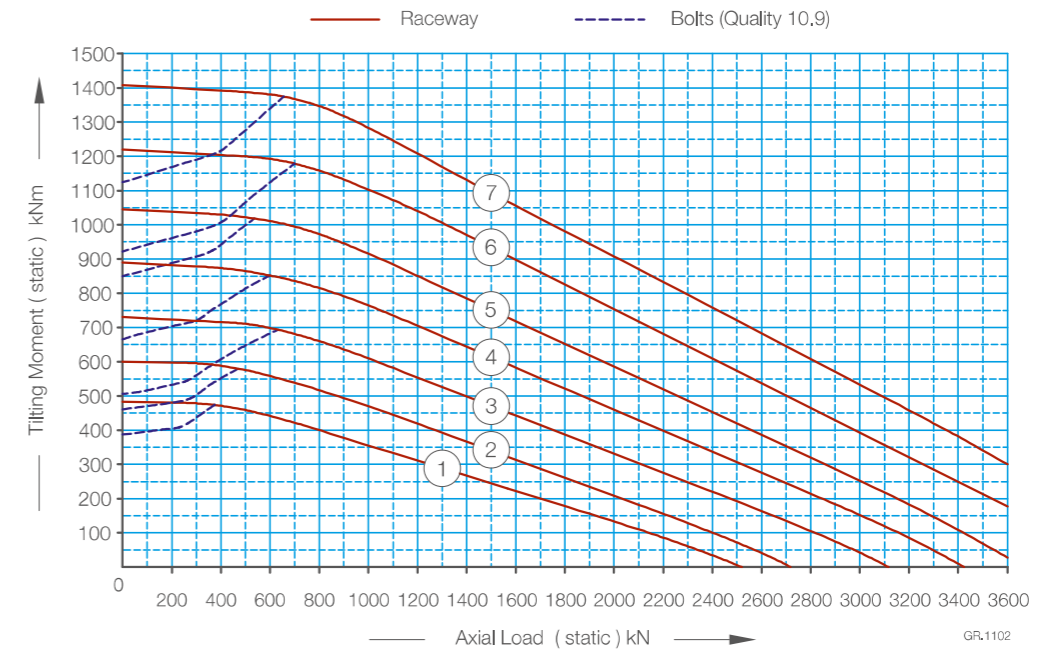
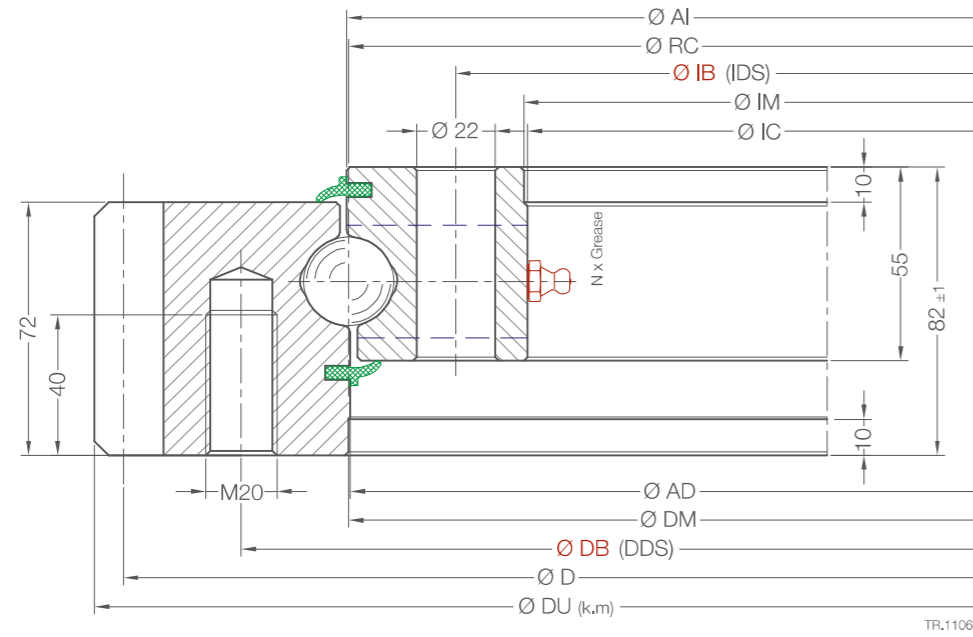
3D 1101





# B2125-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



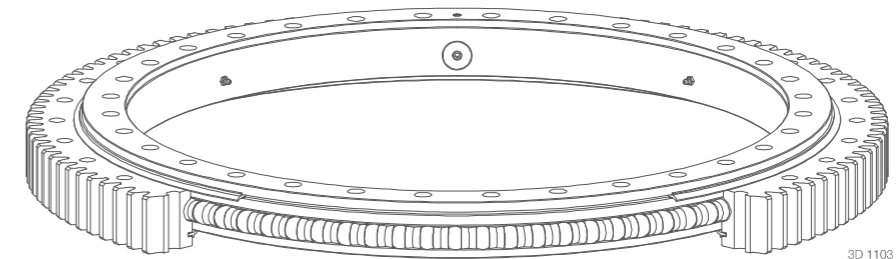
Drawing No	Item No	Weight kg	Geometry mm								N x Grease
			Dimensions								
			Ø RC	Ø DU	Ø AD	Ø DM	Ø IC	Ø IM	Ø AI		
B2125-2-0997CA	1	144	855	997	854	855 +0.23	755	757 +0.20	856	3 x M10x1	
B2125-2-1096CA	2	161	955	1096	954	955 +0.23	855	857 +0.23	956	3 x M10x1	
B2125-2-1198CA	3	176	1055	1198	1054	1055 +0.26	955	957 +0.23	1056	3 x M10x1	
B2125-2-1298CA	4	194	1155	1298	1154	1155 +0.26	1055	1057 +0.26	1156	3 x M10x1	
B2125-2-1398CA	5	209	1255	1398	1254	1255 +0.31	1155	1157 +0.26	1256	3 x M10x1	
B2125-2-1498CA	6	227	1355	1498	1354	1355 +0.31	1255	1257 +0.31	1356	3 x M10x1	
B2125-2-1598CA	7	242	1455	1598	1454	1455 +0.31	1355	1357 +0.31	1456	4 x M10x1	

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
916 ±0.28	28	795 ±0.25	28	981	9	109	-	-1.0	71	33.23	66.46	≤0.040	≤0.040
1016 ±0.33	30	895 ±0.28	30	1080	9	120	-	-1.0	71	33.23	66.46	≤0.040	≤0.040
1116 ±0.33	30	995 ±0.28	30	1180	10	118	-	-1.0	71	36.92	73.84	≤0.047	≤0.047
1216 ±0.33	36	1095 ±0.33	36	1280	10	128	-	-1.0	71	36.92	73.84	≤0.047	≤0.047
1316 ±0.39	42	1195 ±0.33	42	1380	10	138	-	-1.0	71	36.92	73.84	≤0.055	≤0.055
1416 ±0.39	42	1295 ±0.39	42	1480	10	148	-	-1.0	71	36.92	73.84	≤0.055	≤0.055
1516 ±0.39	48	1395 ±0.39	48	1580	10	158	-	-1.0	71	36.92	73.84	≤0.055	≤0.055

- In B2125-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M20	194	279	324	387	558	648

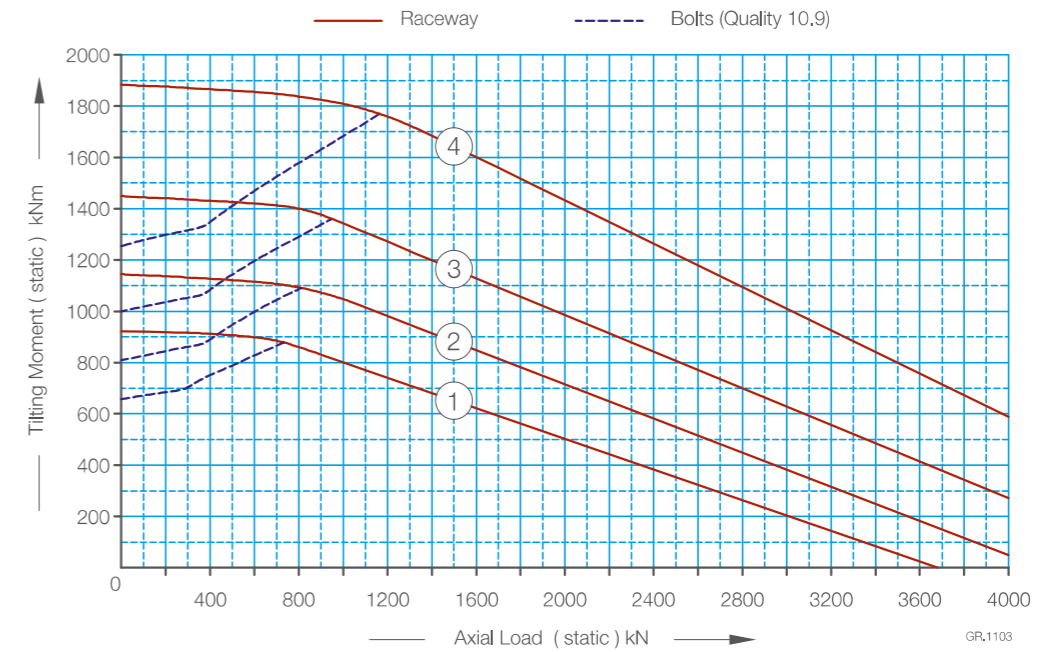
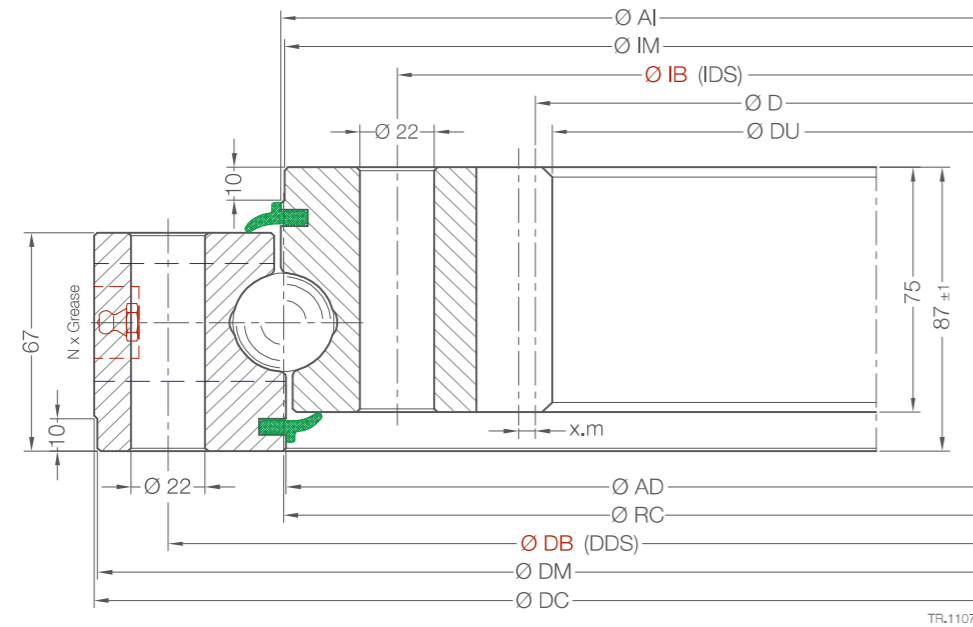
TB.1106



3D 1103

# B2130-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING



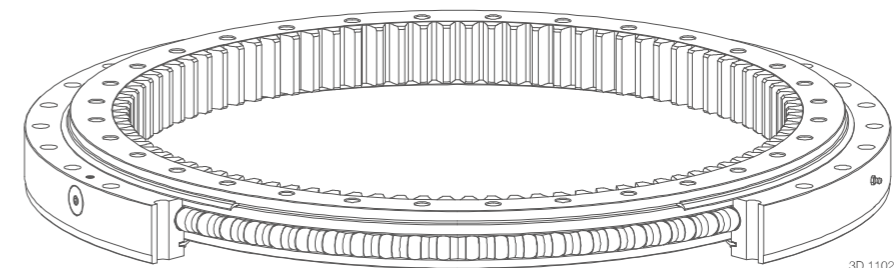
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			Ø RC	Ø DU	Ø DC	Ø DM	Ø AD	Ø AI	N x Grease
B2130-1-1232AA	1	220	1120	960	1232	1230 -0.26	1118	1122	3 x M10x1
B2130-1-1362AA	2	247	1250	1090	1362	1360 -0.31	1248	1252	3 x M10x1
B2130-1-1512AA	3	296	1400	1224	1512	1510 -0.31	1398	1402	3 x M10x1
B2130-1-1712AA	4	334	1600	1428	1712	1710 -0.37	1598	1602	4 x M10x1

Connection Holes			Gear Data					Gear Tangential Force		Bearing Clearance			
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1188 ±0.33	36	1052 ±0.33	36	970	10	97	-5.0	-	74	71.5	143	≤0.047	≤0.047
1318 ±0.39	40	1182 ±0.33	40	1100	10	110	-5.0	-	74	71.5	143	≤0.047	≤0.047
1468 ±0.39	44	1332 ±0.39	44	1236	12	103	-6.0	-	74	93.3	186.6	≤0.055	≤0.055
1668 ±0.46	48	1532 ±0.39	48	1440	12	120	-6.0	-	74	93.3	186.6	≤0.055	≤0.055

- In B2130-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M20	194	279	324	387	558	648

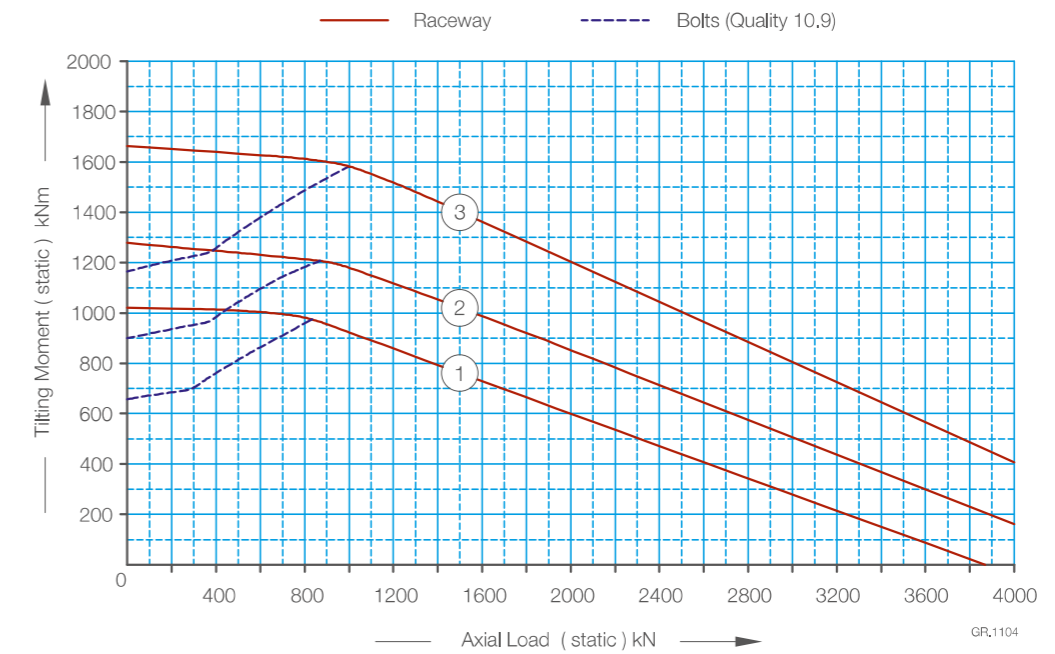
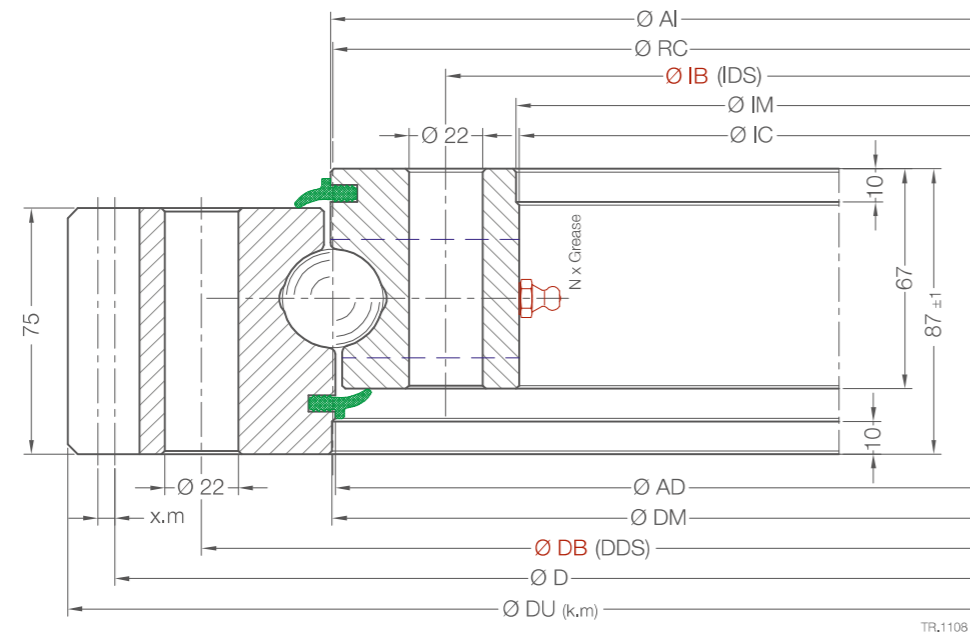
TB.1106



3D.1102

# B2130-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



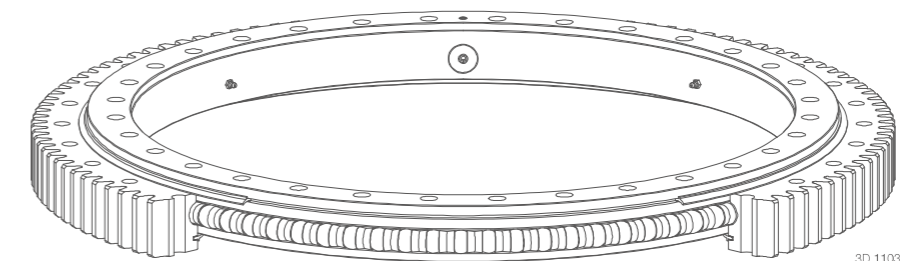
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			Ø RC	Ø DU	Ø AD	Ø DM	Ø AI	Ø IC	Ø IM	N x Grease
B2130-2-1338AA	1	242	1180	1338	1178	1180 +0,26	1181	1068	1070 +0,26	3 x M10x1
B2130-2-1498AA	2	298	1320	1497.6	1318	1320 +0,31	1321	1208	1210 +0,26	3 x M10x1
B2130-2-1678AA	3	338	1500	1677.6	1498	1500 +0,31	1501	1388	1390 +0,31	4 x M10x1

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1248 ±0,33	36	1112 ±0,33	36	1310	10	131	+5.0	-1.0	74	67.92	135.84	≤0,047	≤0,047
1388 ±0,39	42	1252 ±0,39	42	1464	12	122	+6.0	-1.2	74	93.32	186.64	≤0,055	≤0,055
1568 ±0,39	48	1432 ±0,39	48	1644	12	137	+6.0	-1.2	74	93.32	186.64	≤0,055	≤0,055

- In B2130-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

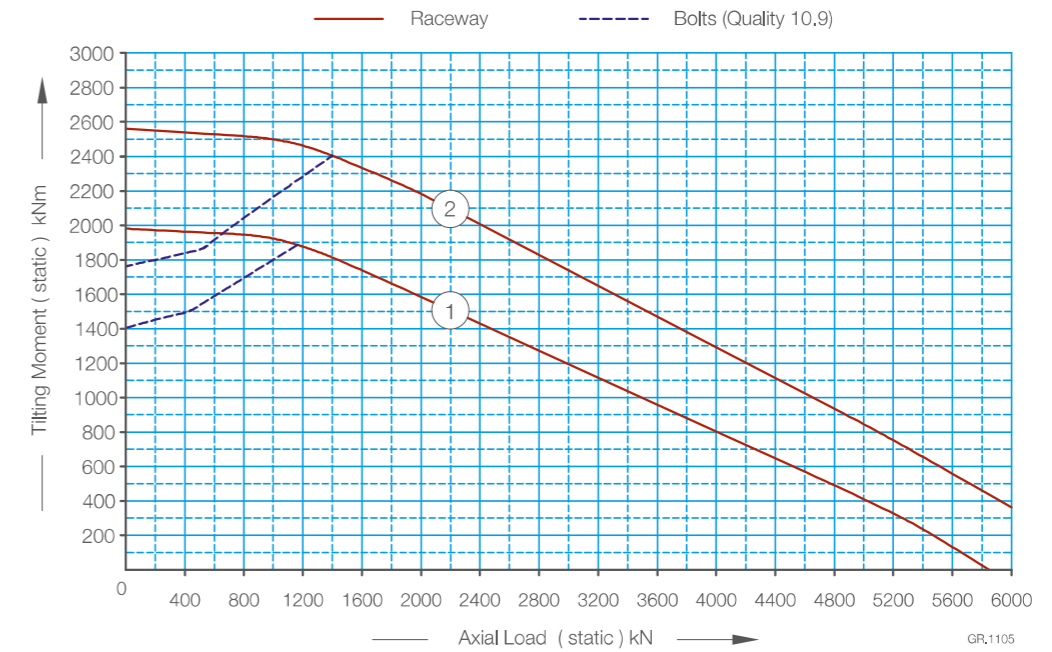
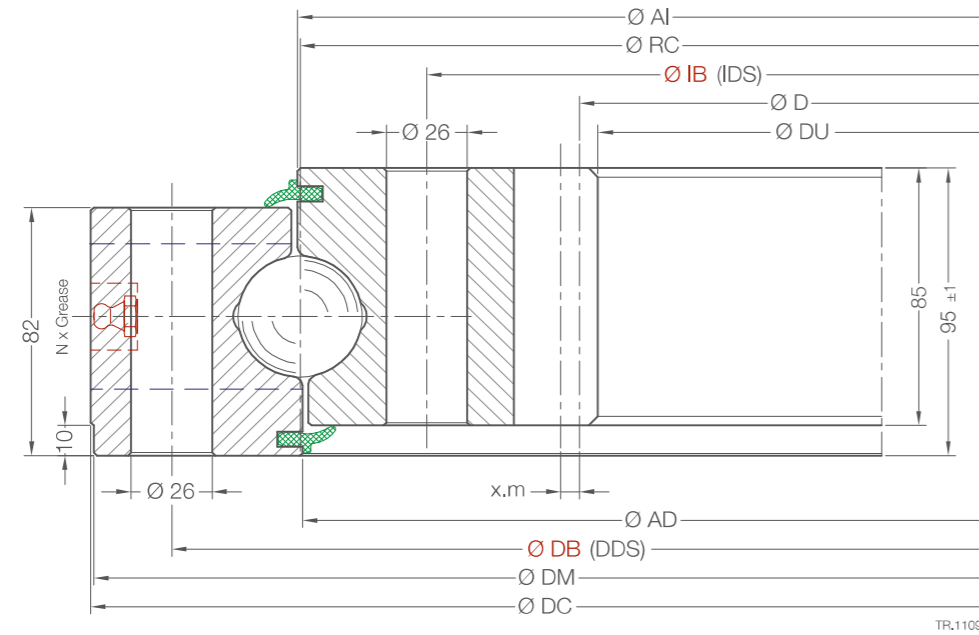
Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M20	194	279	324	387	558	648

TB,1106



# B2140-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING



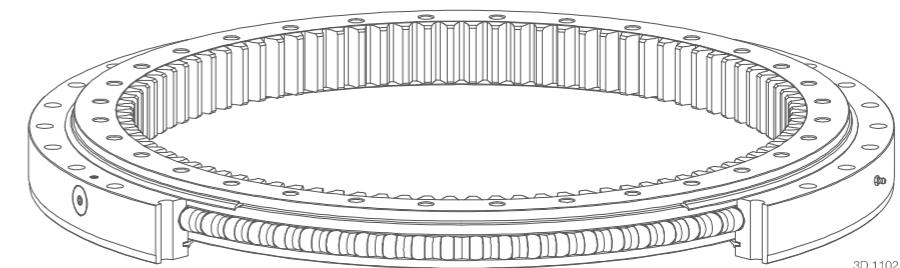
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	N x Grease
B2140-1-1634AA	1	412	1500	1308	1634	1632 $-0.37$	1502	1498	4 x M10x1
B2140-1-1834AA	2	478	1700	1498	1834	1832 $-0.37$	1702	1698	4 x M10x1

Connection Holes		Gear Data					Gear Tangential Force		Bearing Clearance				
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1582 $\pm 0.39$	40	1418 $\pm 0.39$	40	1320	12	110	-6.0	-	84	92.5	185	$\leq 0.055$	$\leq 0.055$
1782 $\pm 0.46$	44	1618 $\pm 0.46$	44	1512	14	108	-7.0	-	84	107.92	215.84	$\leq 0.065$	$\leq 0.065$

- In B2140-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M24	333	477	558	666	954	1116

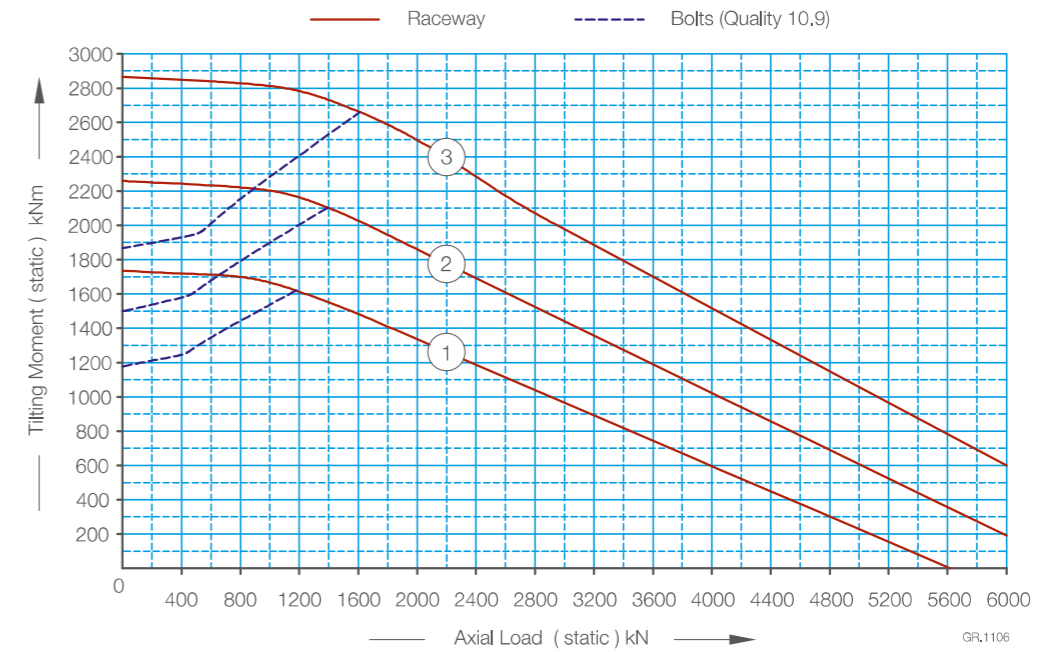
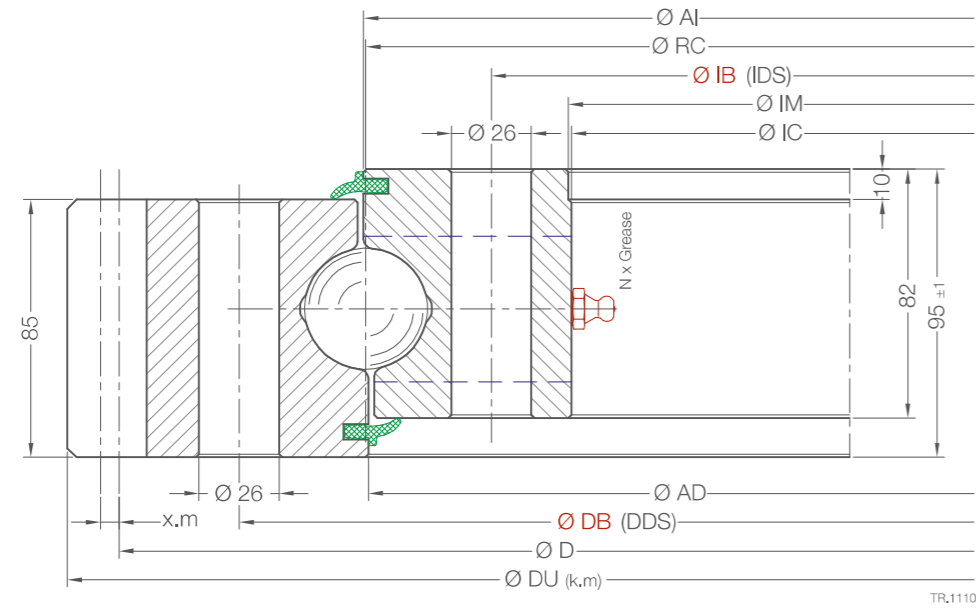
TB.1112



3D.1102

# B2140-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



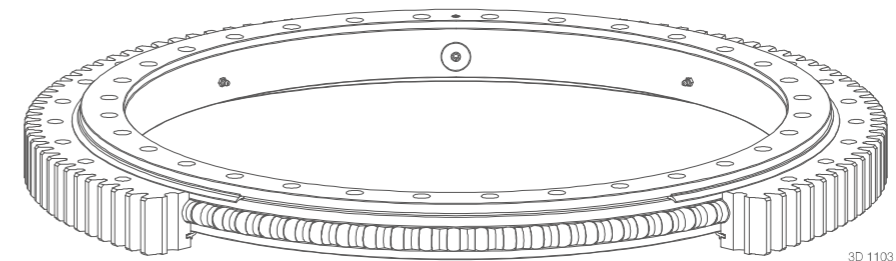
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing AD$	$\varnothing AI$	$\varnothing IC$	$\varnothing IM$	N x Grease
B2140-2-1594AA	1	406	1400	1593.6	1398	1402	1266	1268 +0.31	4 x M10x1
B2140-2-1803AA	2	482	1600	1803.2	1598	1602	1466	1468 +0.31	4 x M10x1
B2140-2-1999AA	3	535	1800	1999.2	1798	1802	1666	1668 +0.37	4 x M10x1

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1482 $\pm 0.39$	36	1318 $\pm 0.39$	36	1560	12	130	+6.0	-1.2	84	92.52	185.04	$\leq 0.055$	$\leq 0.055$
1682 $\pm 0.46$	40	1518 $\pm 0.39$	40	1764	14	126	+7.0	-1.4	84	107.94	215.88	$\leq 0.055$	$\leq 0.055$
1882 $\pm 0.46$	44	1718 $\pm 0.46$	44	1960	14	140	+7.0	-1.4	84	107.94	215.88	$\leq 0.065$	$\leq 0.065$

- In B2140-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M24	333	477	558	666	954	1116

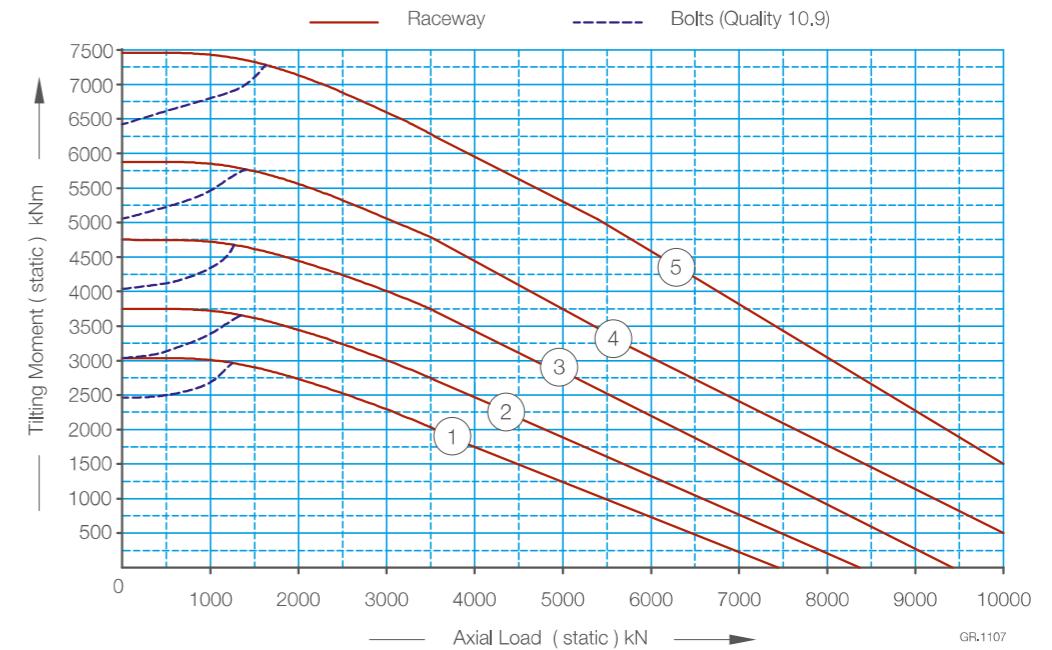
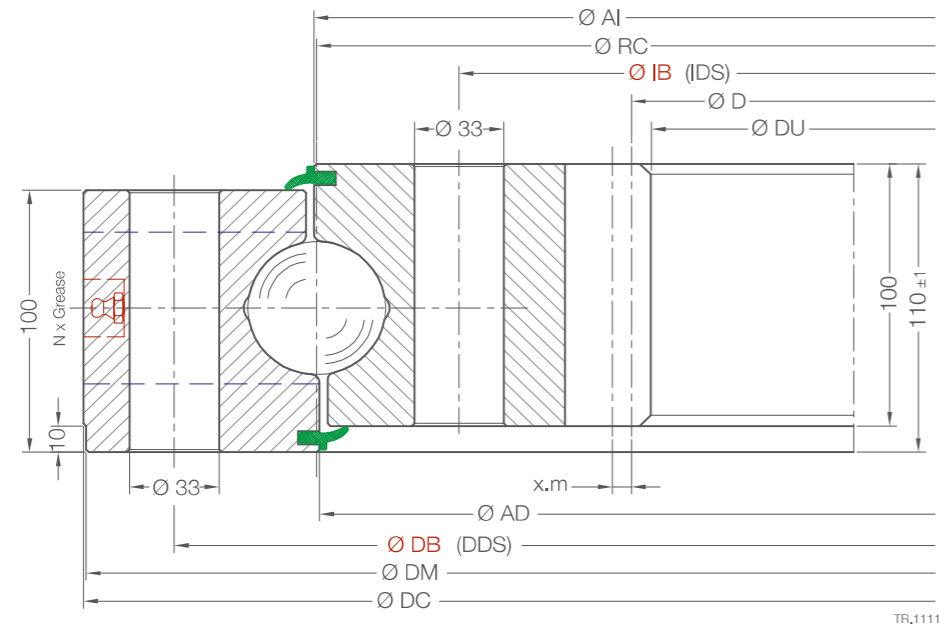
TB.1112



3D 1103

# B2150-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING

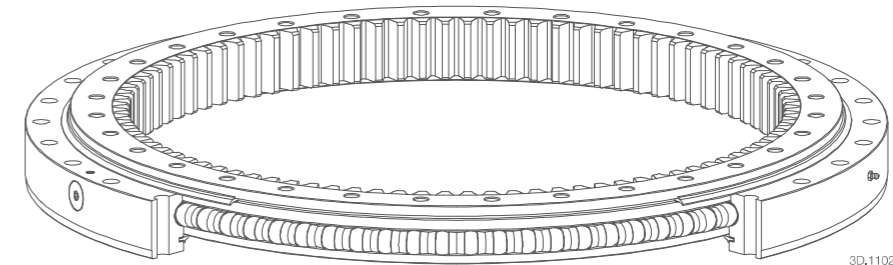


Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			Ø RC	Ø DU	Ø DC	Ø DM	Ø AI	Ø AD	N x Grease
B2150-1-1972AA	1	764	1800	1554	1972	1970 -0.37	1802	1798	4 x M10x1
B2150-1-2172AA	2	848	2000	1764	2172	2170 -0.44	2002	1998	4 x M10x1
B2150-1-2412AA	3	966	2240	1984	2412	2410 -0.44	2242	2238	4 x M10x1
B2150-1-2662AA	4	1059	2490	2240	2662	2660 -0.54	2492	2488	6 x M10x1
B2150-1-2972AA	5	1211	2800	2544	2972	2970 -0.54	2802	2798	6 x M10x1

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1905 ±0.46	36	1695 ±0.46	36	1568	14	112	-7.0	-	99	127.22	254.44	≤0.065	≤0.065
2105 ±0.55	40	1895 ±0.46	40	1778	14	127	-7.0	-	99	127.22	254.44	≤0.065	≤0.065
2345 ±0.55	48	2135 ±0.55	48	2000	16	125	-8.0	-	99	145.66	290.66	≤0.065	≤0.075
2595 ±0.67	54	2385 ±0.55	54	2256	16	141	-8.0	-	99	145.66	290.66	≤0.065	≤0.075
2905 ±0.67	60	2695 ±0.67	60	2560	16	160	-8.0	-	99	145.66	290.66	≤0.065	≤0.085

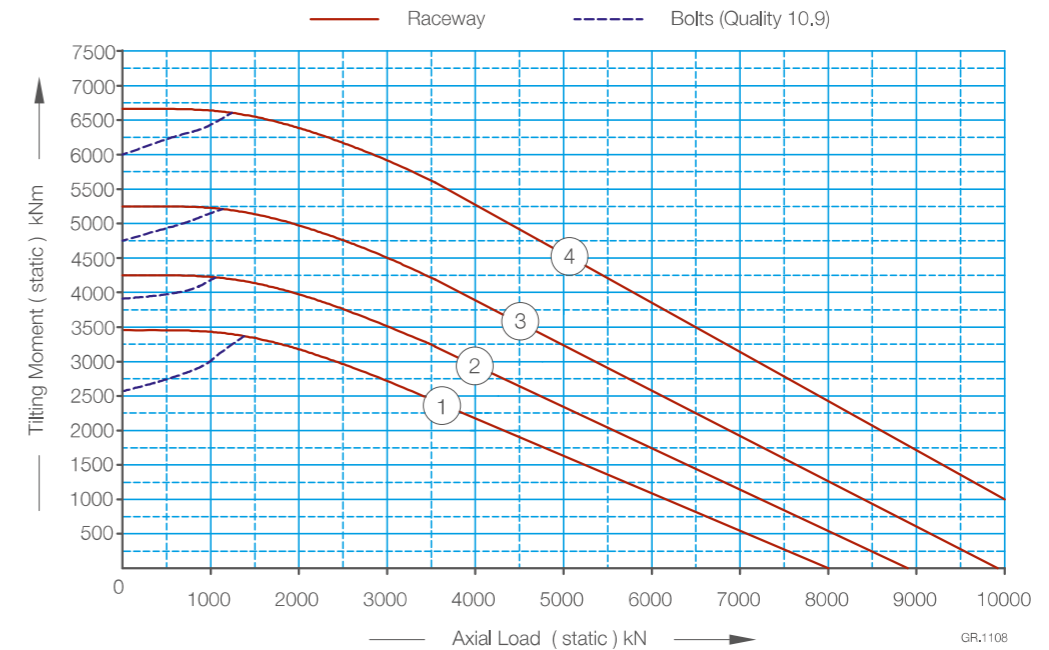
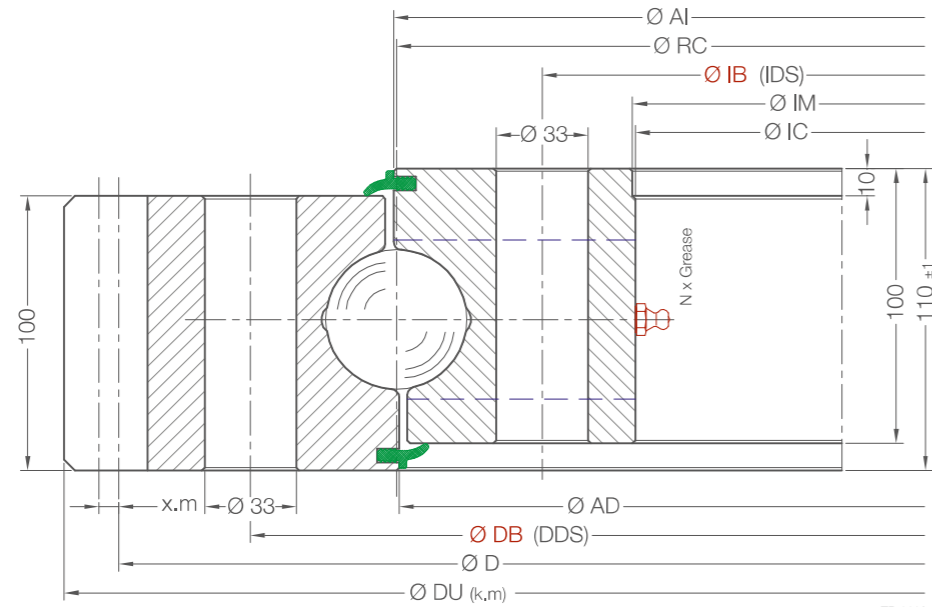
- In B2150-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M30	675	945	1125	1350	1890	2250



# B2150-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



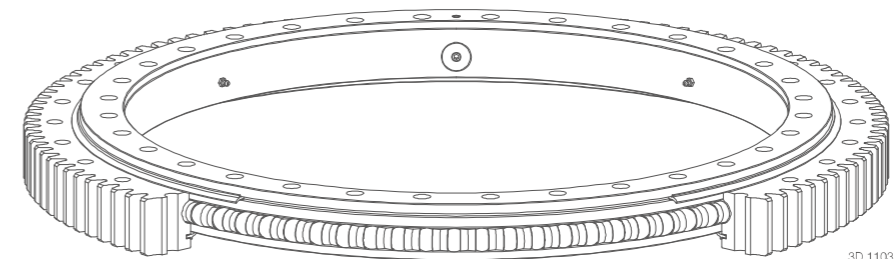
Drawing No	Item No	Weight kg	Geometry mm							N x Grease
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing AD$	$\varnothing AI$	$\varnothing IC$	$\varnothing IM$		
B2150-2-2139AA	1	825	1900	2139.2	1898	1902	1728	1730 -0.37	4 x M10x1	
B2150-2-2381AA	2	936	2130	2380.8	2128	2132	1958	1960 -0.37	4 x M10x1	
B2150-2-2609AA	3	1030	2355	2604.8	2353	2357	2183	2185 -0.44	6 x M10x1	
B2150-2-2893AA	4	1148	2645	2892.8	2643	2647	2473	2475 -0.44	6 x M10x1	

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2005 $\pm 0.55$	36	1795 $\pm 0.46$	36	2100	14	150	+7.0	-1.4	99	127.22	254.43	$\leq 0.065$	$\leq 0.065$
2235 $\pm 0.55$	48	2025 $\pm 0.55$	48	2336	16	146	+8.0	-1.6	99	145.39	290.78	$\leq 0.065$	$\leq 0.065$
2460 $\pm 0.55$	54	2250 $\pm 0.55$	54	2560	16	160	+8.0	-1.6	99	145.39	290.78	$\leq 0.075$	$\leq 0.075$
2750 $\pm 0.67$	60	2540 $\pm 0.67$	60	2848	16	178	+8.0	-1.6	99	145.39	290.78	$\leq 0.075$	$\leq 0.075$

- In B2150-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

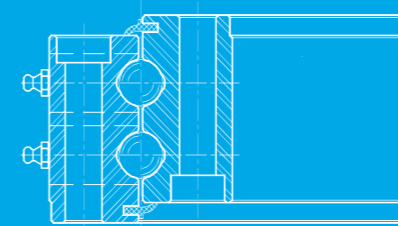
Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M30	675	945	1125	1350	1890	2250

TB.1115

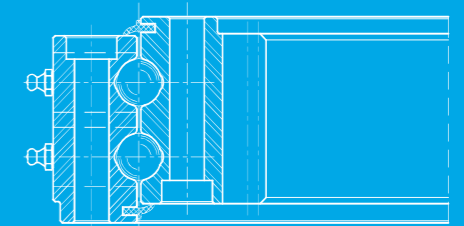


# B2200 SERIES

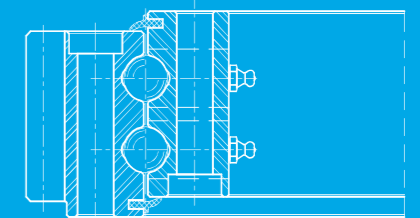
8 Point Contact T-Row Ball Bearings



B2200-0



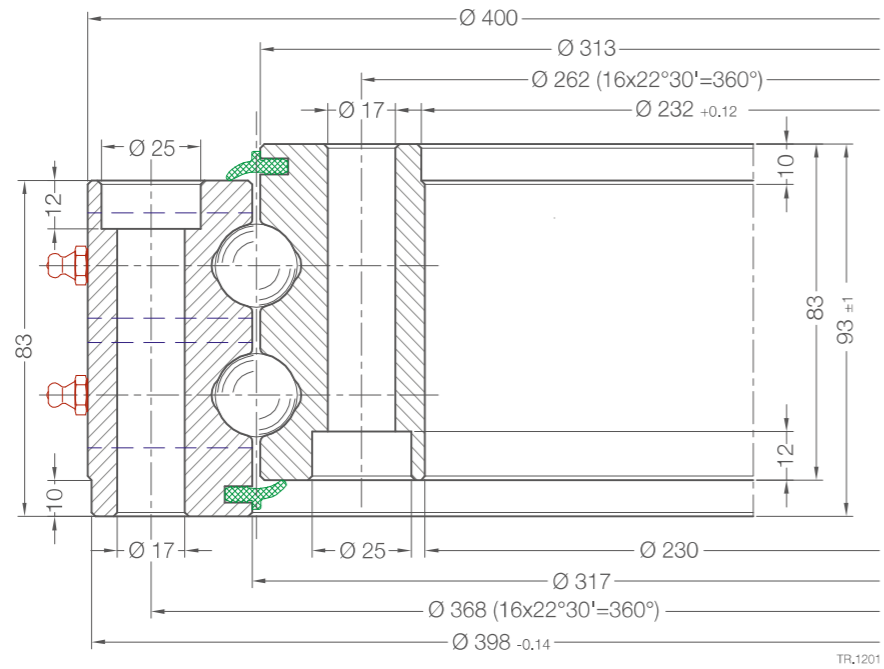
B2200-1



B2200-2

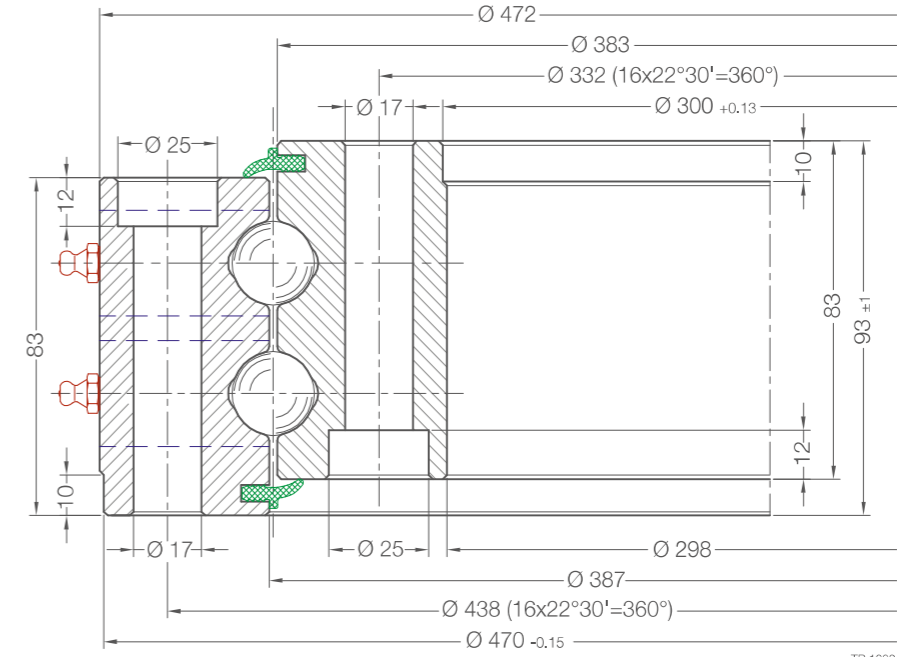


# B2220-0-0400BB

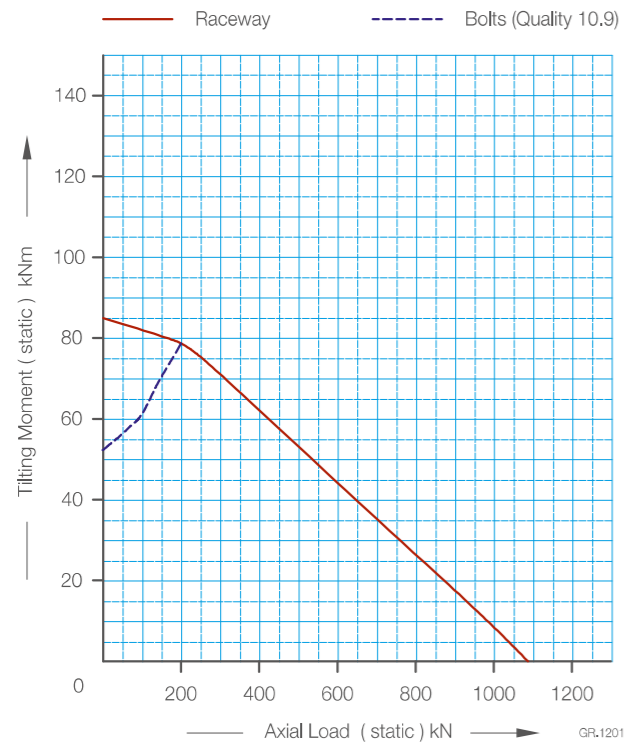


TR.1201

# B2220-0-0472BB



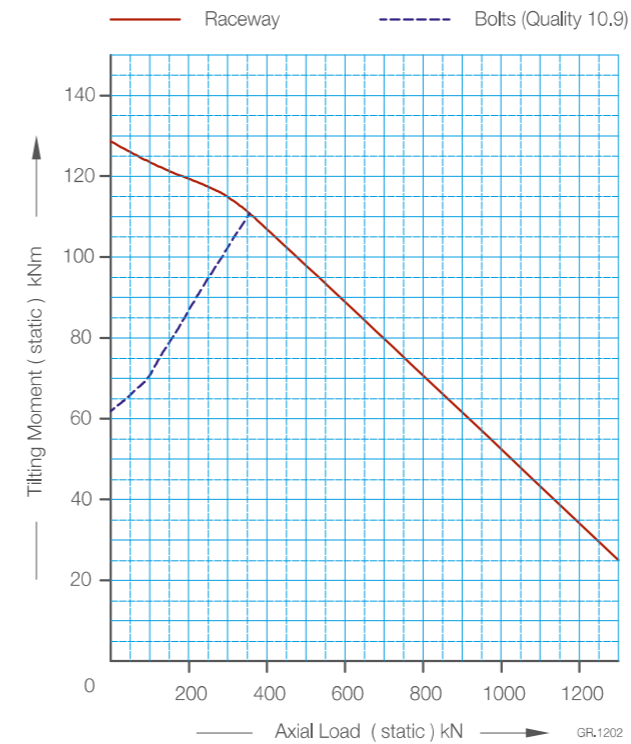
TR.1202



Gear Standard	-
Module (m)	-
Number of Teeth (Z)	-
Pressure Angle (α)	-
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	-
Gear Tangential Forces - F max (kN)	-
Bearing Internal Clearance (Radial)	≤0.023
Bearing Internal Clearance (Axial)	≤0.023
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 16
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 16
M16 (10.9) Bolt Tightening Torque (Nm)	*140   279
M16 (12.9) Bolt Tightening Torque (Nm)	*167   333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	46

\* Bolt Pre-Tightening Torque (%50)

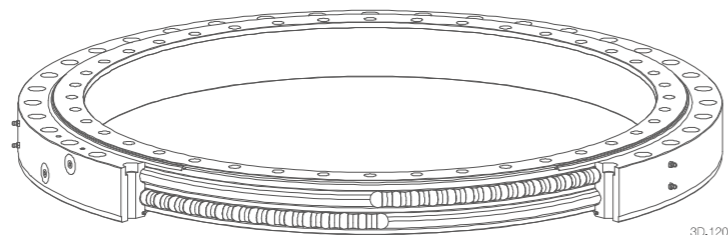
GR.1201



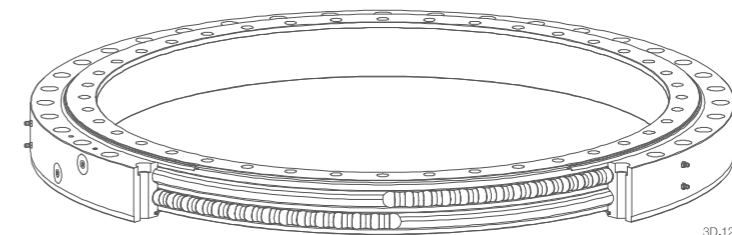
Gear Standard	-
Module (m)	-
Number of Teeth (Z)	-
Pressure Angle (α)	-
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	-
Gear Tangential Forces - F max (kN)	-
Bearing Internal Clearance (Radial)	≤0.025
Bearing Internal Clearance (Axial)	≤0.025
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 16
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 16
M16 (10.9) Bolt Tightening Torque (Nm)	*140   279
M16 (12.9) Bolt Tightening Torque (Nm)	*167   333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	58

\* Bolt Pre-Tightening Torque (%50)

GR.1202

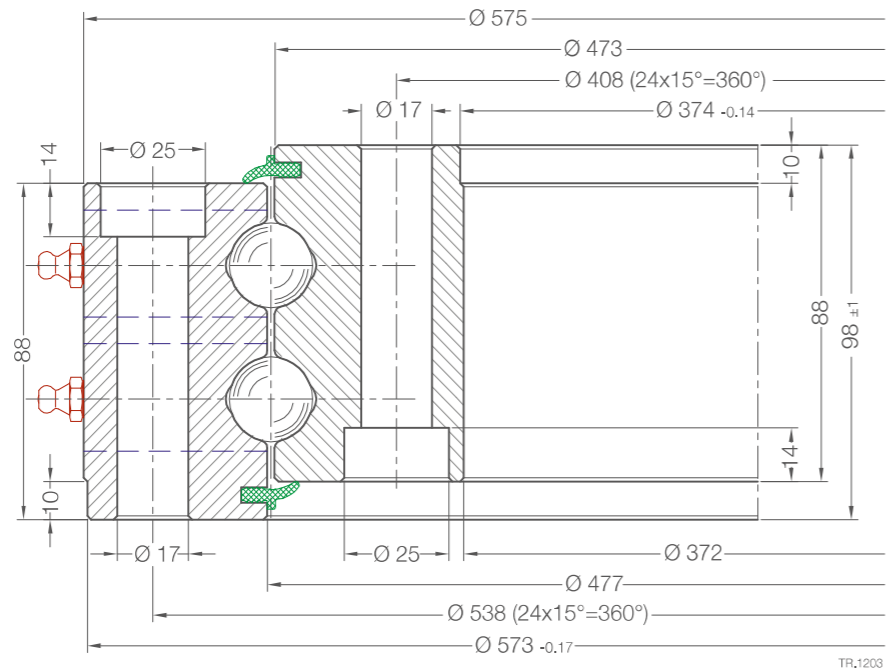


3D.1201



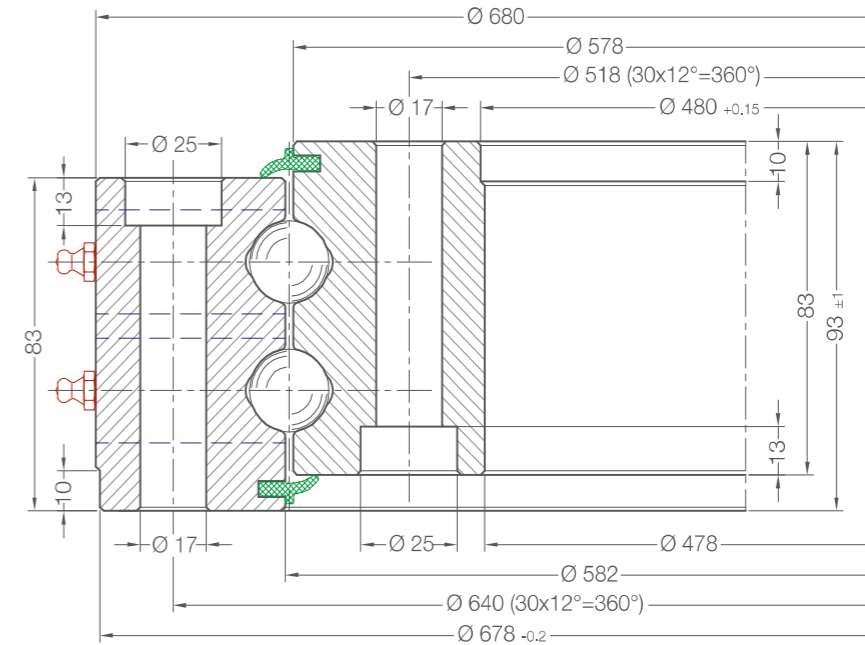
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# B2222-0-0575BB

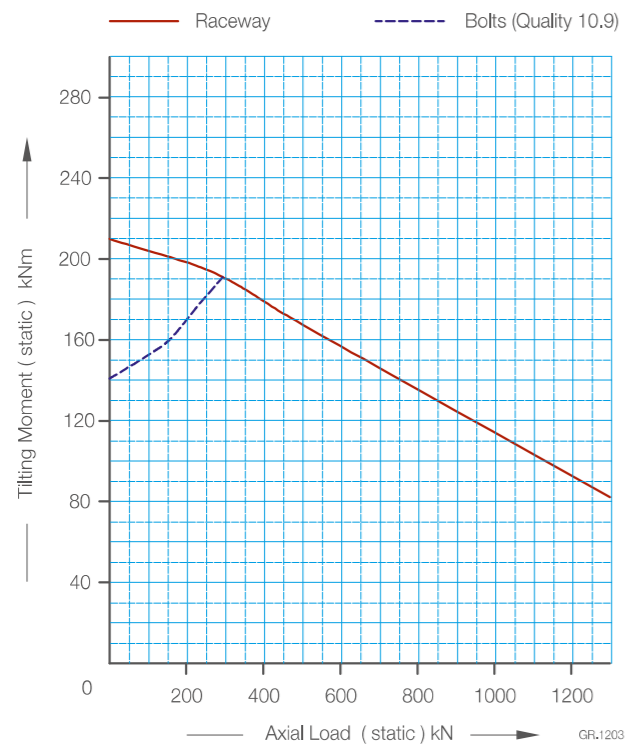


TR.1203

# B2220-0-0680BB



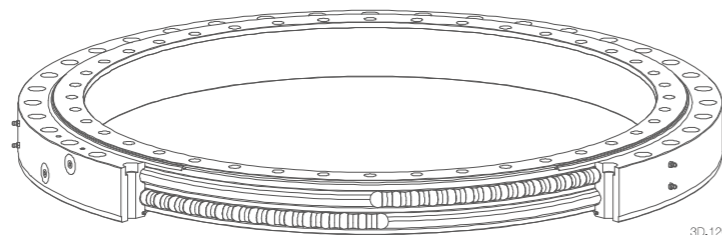
TR.1204



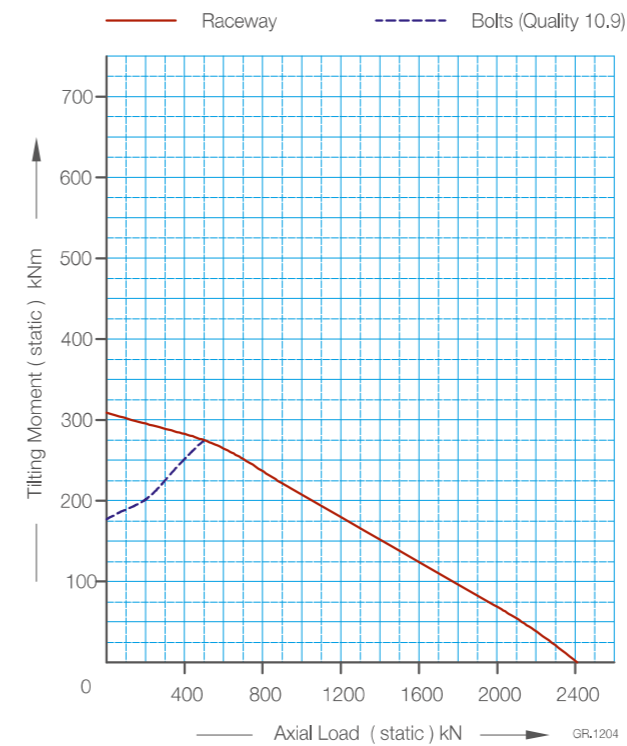
Gear Standard	-
Module (m)	-
Number of Teeth (Z)	-
Pressure Angle (α)	-
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	-
Gear Tangential Forces - F max (kN)	-
Bearing Internal Clearance (Radial)	≤0.027
Bearing Internal Clearance (Axial)	≤0.027
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 24
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 24
M16 (10.9) Bolt Tightening Torque (Nm)	*140 279
M16 (12.9) Bolt Tightening Torque (Nm)	*167 333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	92

\* Bolt Pre-Tightening Torque (%50)

GR.1203



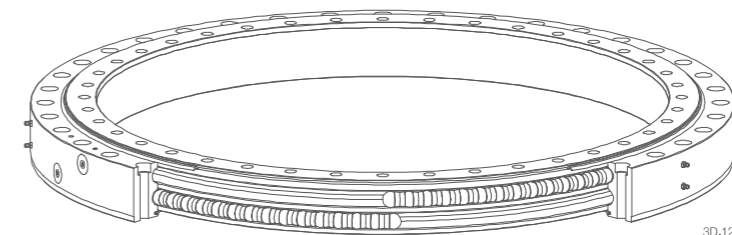
3D.1201



Gear Standard	-
Module (m)	-
Number of Teeth (Z)	-
Pressure Angle (α)	-
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	-
Gear Tangential Forces - F max (kN)	-
Bearing Internal Clearance (Radial)	≤0.032
Bearing Internal Clearance (Axial)	≤0.032
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 30
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 30
M16 (10.9) Bolt Tightening Torque (Nm)	*140 279
M16 (12.9) Bolt Tightening Torque (Nm)	*167 333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	105

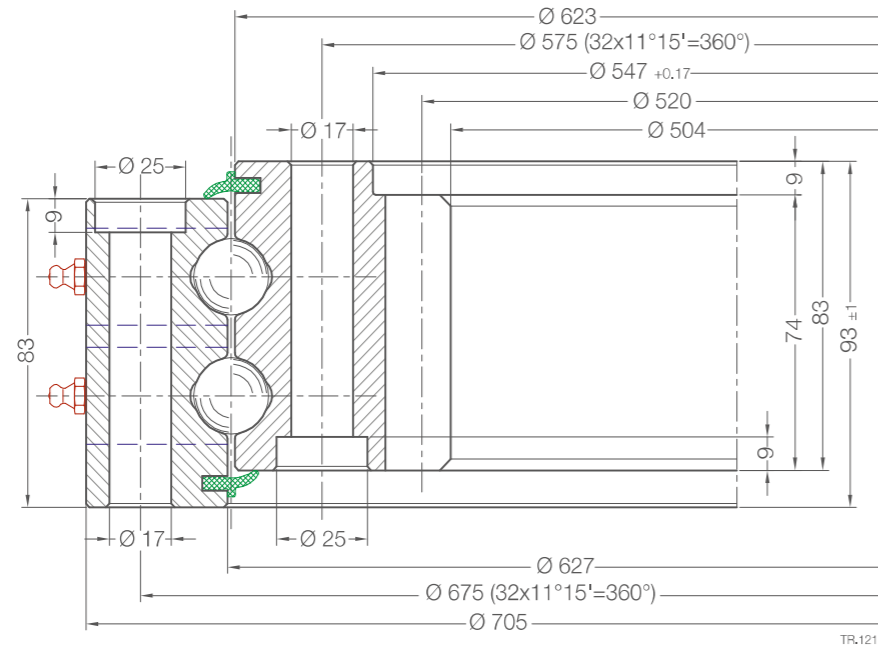
\* Bolt Pre-Tightening Torque (%50)

GR.1204



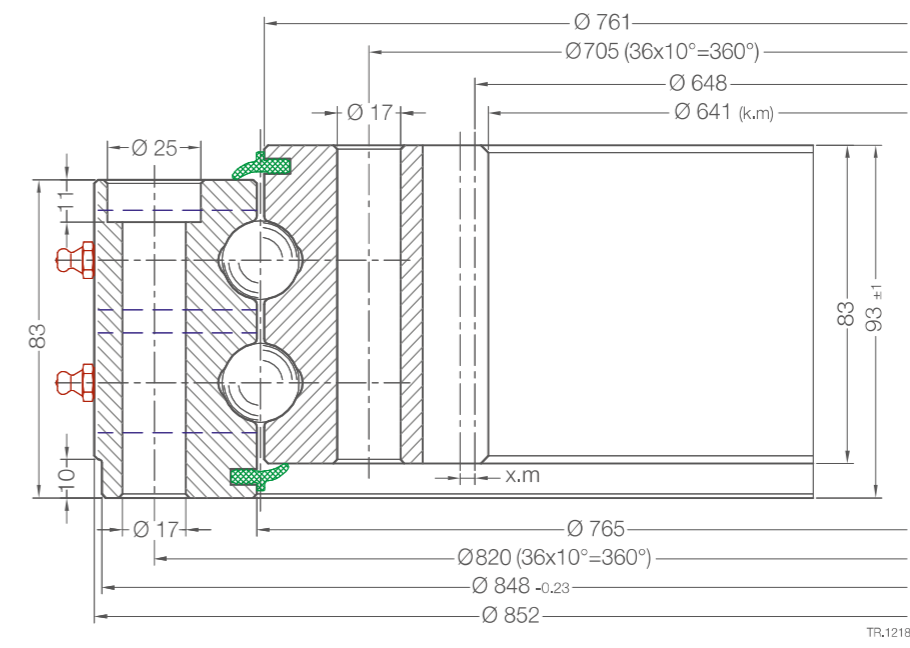
3D.1201

# B2220-1-0705BB

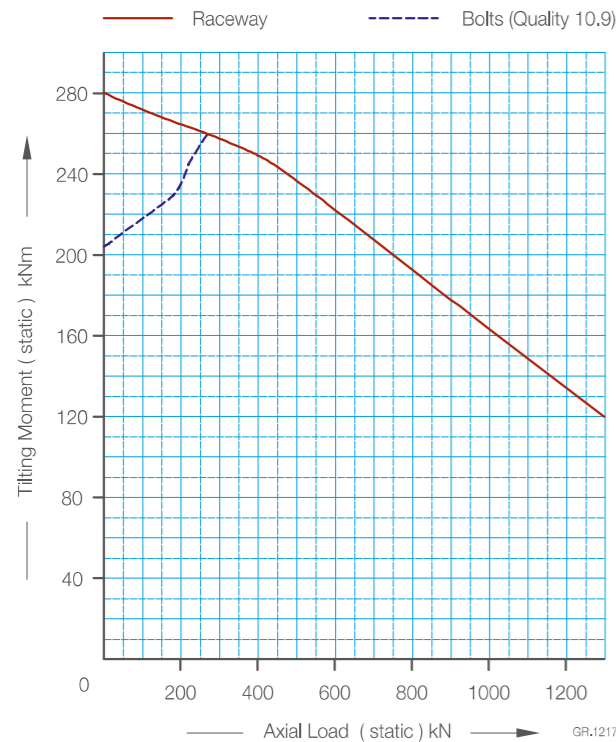


TR.1217

# B2220-1-0852BA



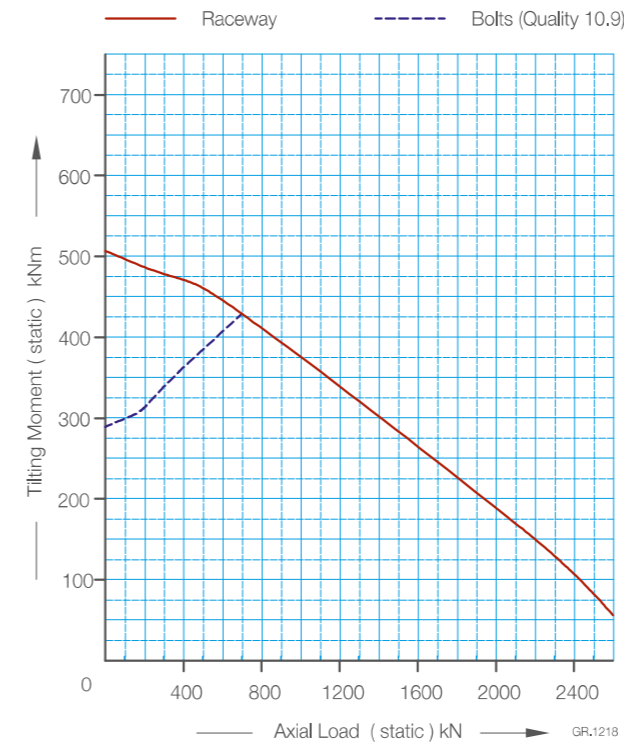
TR.1218



Gear Standard	DIN 3972
Module (m)	8
Number of Teeth (Z)	65
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	46.3
Gear Tangential Forces - F max (kN)	92.6
Bearing Internal Clearance (Radial)	≤0.032
Bearing Internal Clearance (Axial)	≤0.032
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 36
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 36
M16 (10.9) Bolt Tightening Torque (Nm)	*140   279
M16 (12.9) Bolt Tightening Torque (Nm)	*167   333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	95

\* Bolt Pre-Tightening Torque (%50)

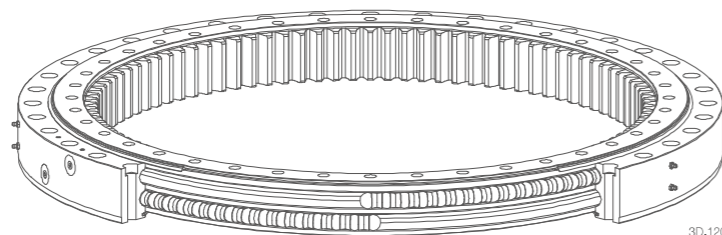
GR.1217



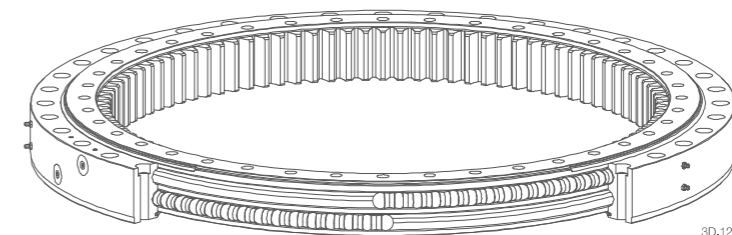
Gear Standard	DIN 3972
Module (m)	8
Number of Teeth (Z)	81
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-4
Modification of Tip Diameter (k.m)	0.5
Gear Tangential Forces - F nominal (kN)	55.7
Gear Tangential Forces - F max (kN)	111.4
Bearing Internal Clearance (Radial)	≤0.036
Bearing Internal Clearance (Axial)	≤0.036
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 36
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 36
M16 (10.9) Bolt Tightening Torque (Nm)	*140   279
M16 (12.9) Bolt Tightening Torque (Nm)	*167   333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	128

\* Bolt Pre-Tightening Torque (%50)

TR.1218

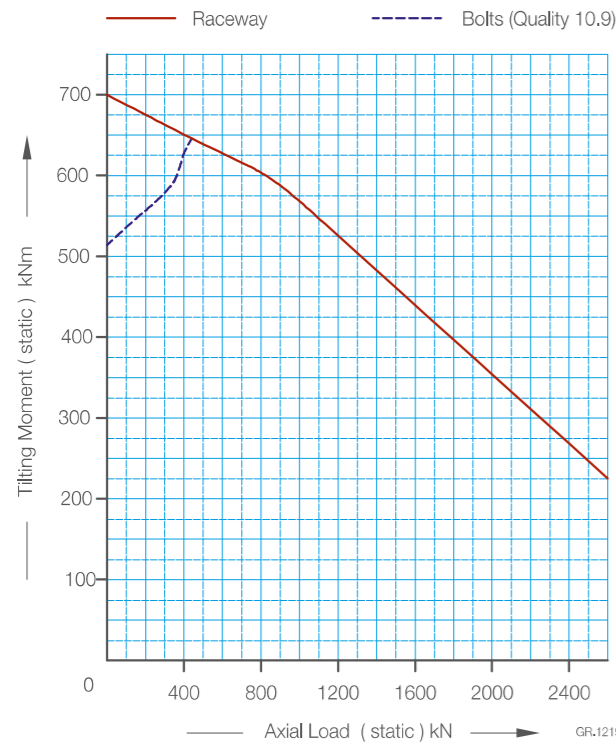
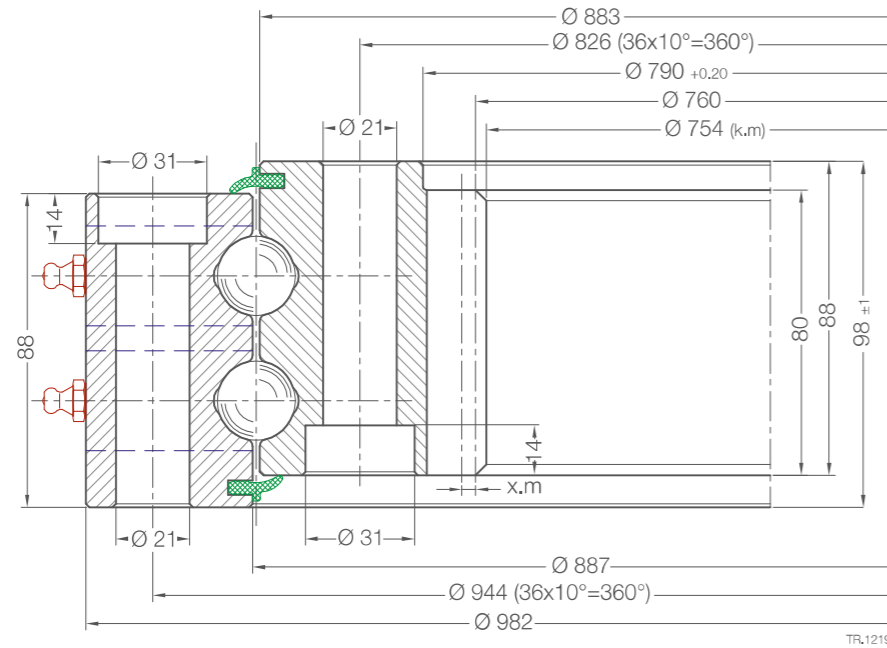


3D.1202



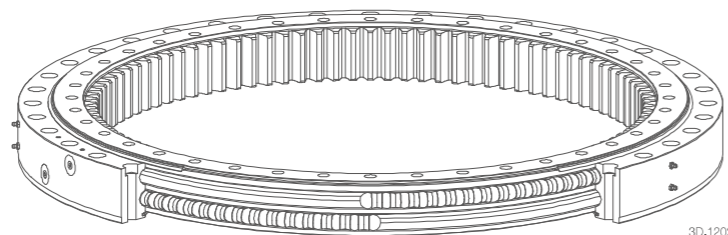
3D.1202

# B2222-1-0982BB

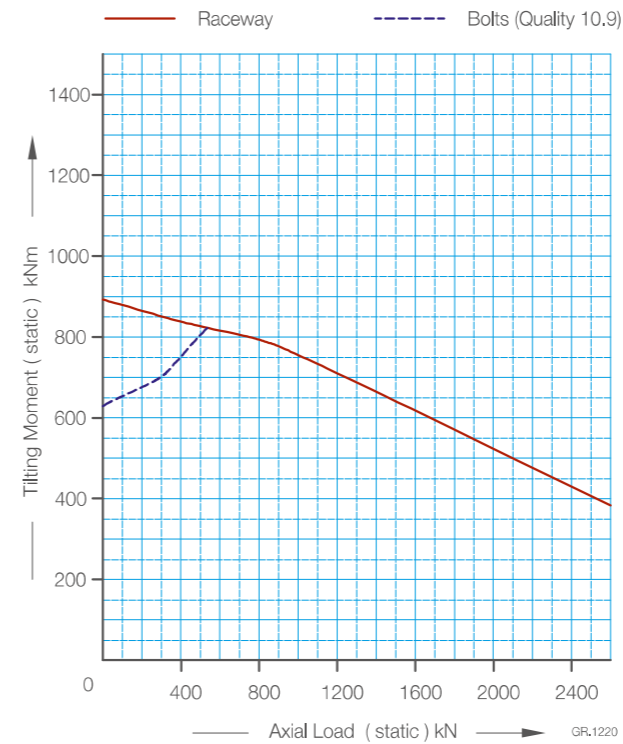
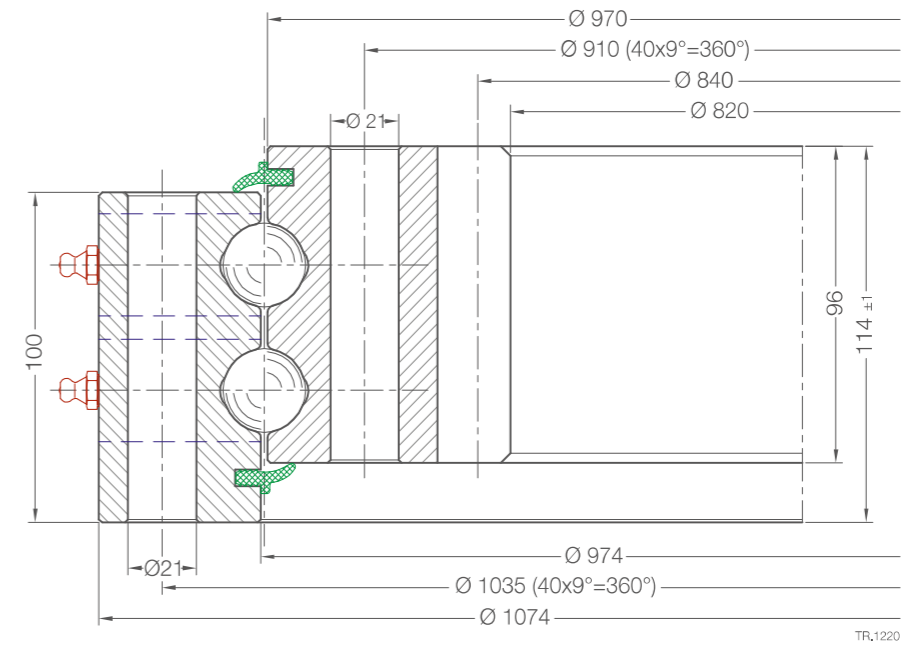


Gear Standard	DIN 3972
Module (m)	8
Number of Teeth (Z)	95
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-4
Modification of Tip Diameter (k.m)	1
Gear Tangential Forces - F nominal (kN)	55.7
Gear Tangential Forces - F max (kN)	111.4
Bearing Internal Clearance (Radial)	≤0.040
Bearing Internal Clearance (Axial)	≤0.010
Fixing Bolts of The Outer Ring (10.9) x Quantity	M20 x 36
Fixing Bolts of The Inner Ring (10.9) x Quantity	M20 x 36
M16 (10.9) Bolt Tightening Torque (Nm)	*279 558
M16 (12.9) Bolt Tightening Torque (Nm)	*324 648
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	170

\* Bolt Pre-Tightening Torque (%50)

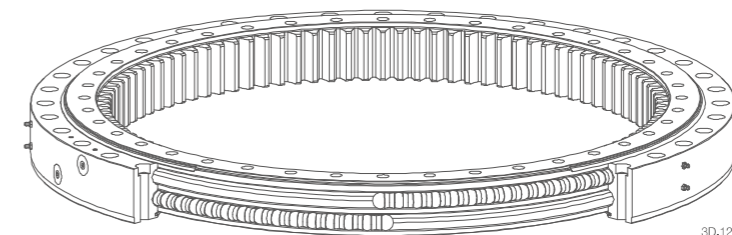


# B2225-1-1074AA

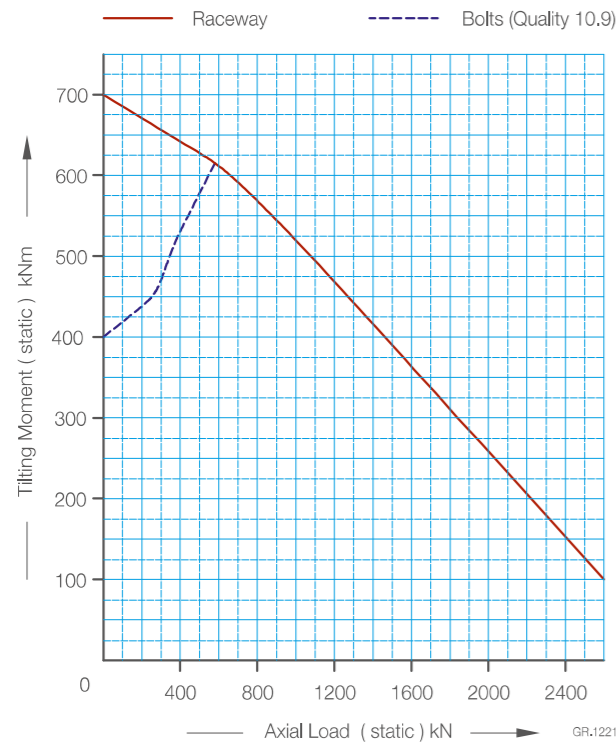
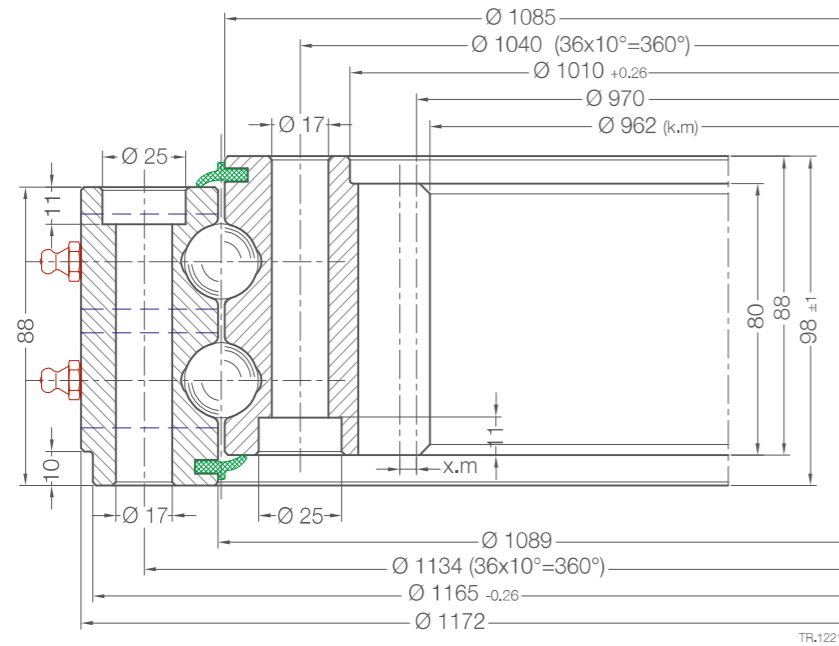


Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	84
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	75.1
Gear Tangential Forces - F max (kN)	150.2
Bearing Internal Clearance (Radial)	≤0.040
Bearing Internal Clearance (Axial)	≤0.040
Fixing Bolts of The Outer Ring (10.9) x Quantity	M20 x 40
Fixing Bolts of The Inner Ring (10.9) x Quantity	M20 x 40
M16 (10.9) Bolt Tightening Torque (Nm)	*279 558
M16 (12.9) Bolt Tightening Torque (Nm)	*324 648
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	234

\* Bolt Pre-Tightening Torque (%50)

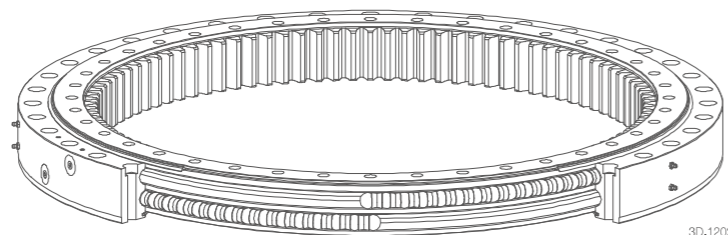


# B2222-1-1172BB



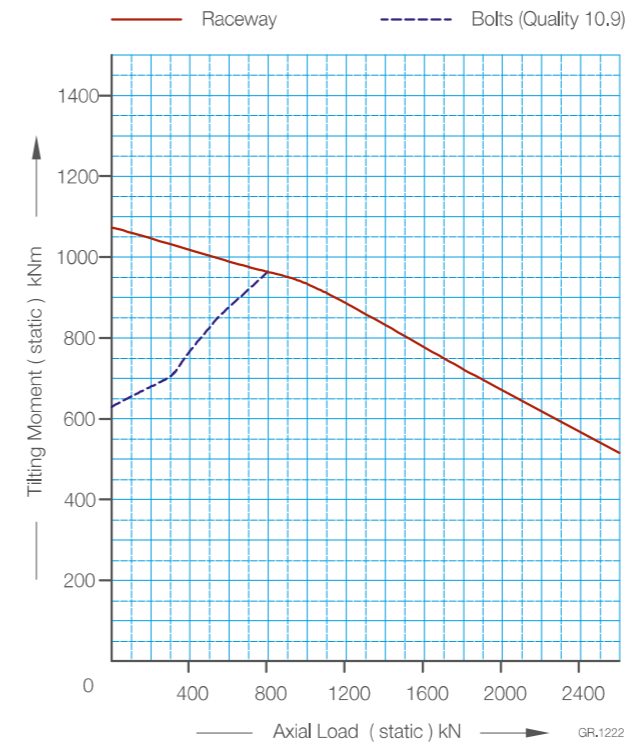
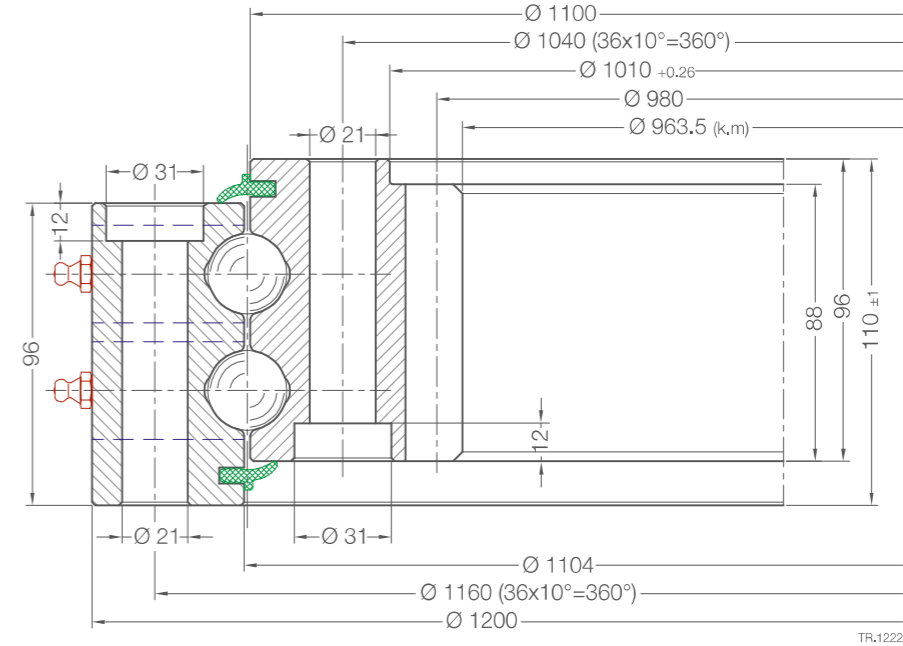
Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	97
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-5
Modification of Tip Diameter (k.m)	1
Gear Tangential Forces - F nominal (kN)	69.6
Gear Tangential Forces - F max (kN)	139.2
Bearing Internal Clearance (Radial)	≤0.047
Bearing Internal Clearance (Axial)	≤0.047
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 36
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 36
M16 (10.9) Bolt Tightening Torque (Nm)	*140   279
M16 (12.9) Bolt Tightening Torque (Nm)	*167   333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	193

\* Bolt Pre-Tightening Torque (%50)



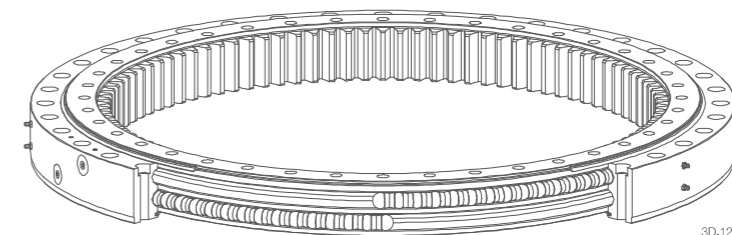
3D.1202

# B2225-1-1200BB



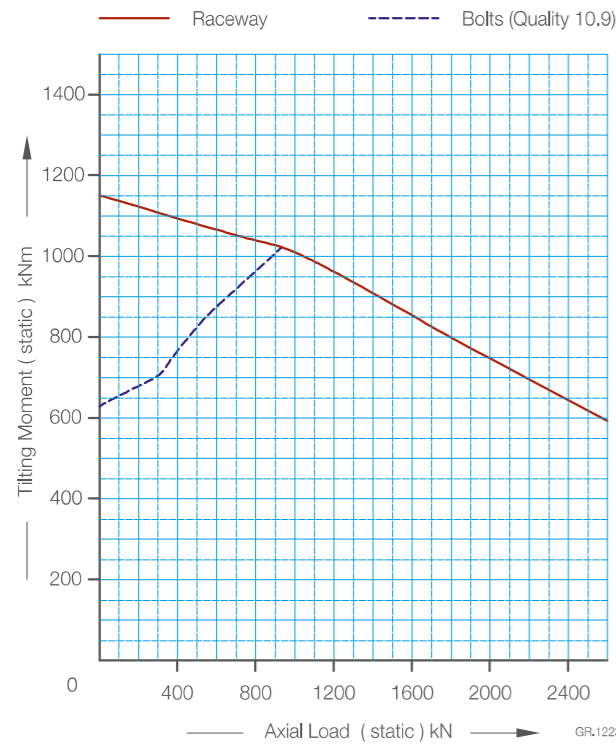
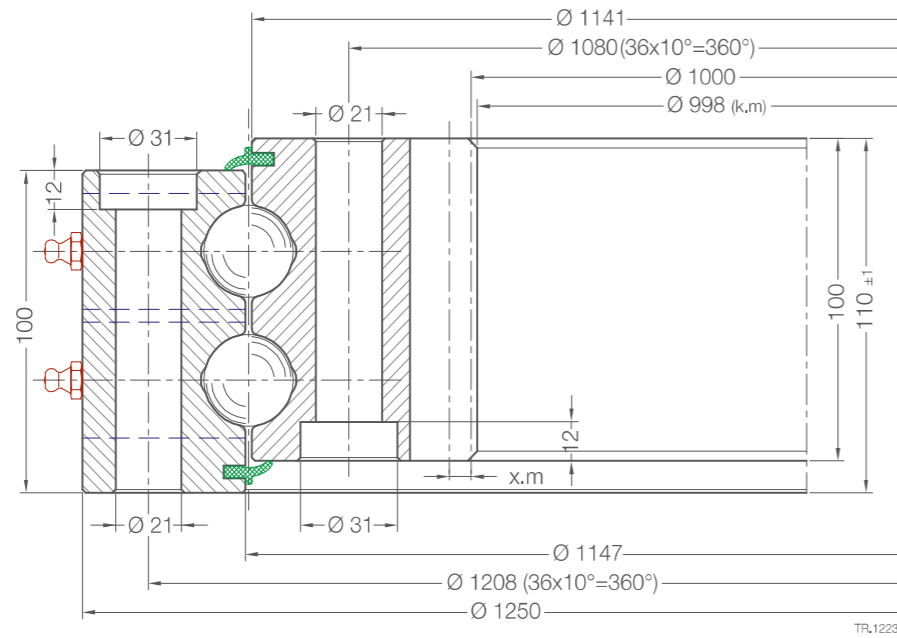
Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	98
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	1.75
Gear Tangential Forces - F nominal (kN)	68.9
Gear Tangential Forces - F max (kN)	137.8
Bearing Internal Clearance (Radial)	≤0.047
Bearing Internal Clearance (Axial)	≤0.047
Fixing Bolts of The Outer Ring (10.9) x Quantity	M20 x 36
Fixing Bolts of The Inner Ring (10.9) x Quantity	M20 x 36
M16 (10.9) Bolt Tightening Torque (Nm)	*279   558
M16 (12.9) Bolt Tightening Torque (Nm)	*324   648
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	239

\* Bolt Pre-Tightening Torque (%50)



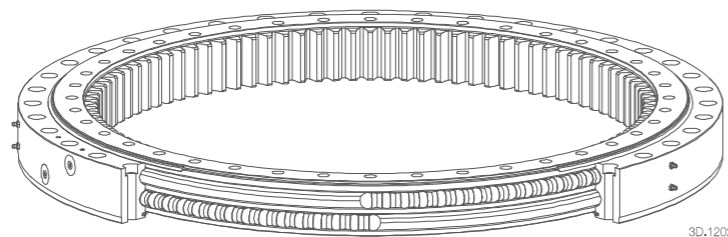
3D.1202

# B2228-1-1250BB

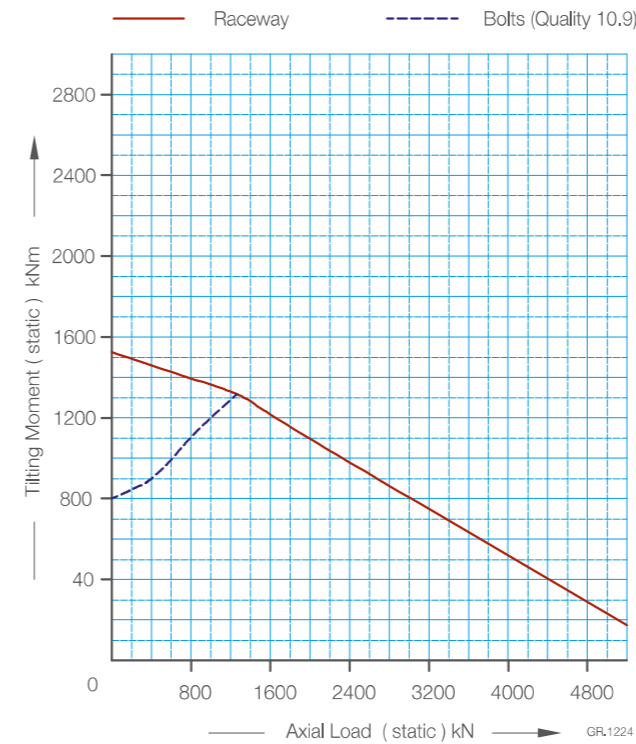
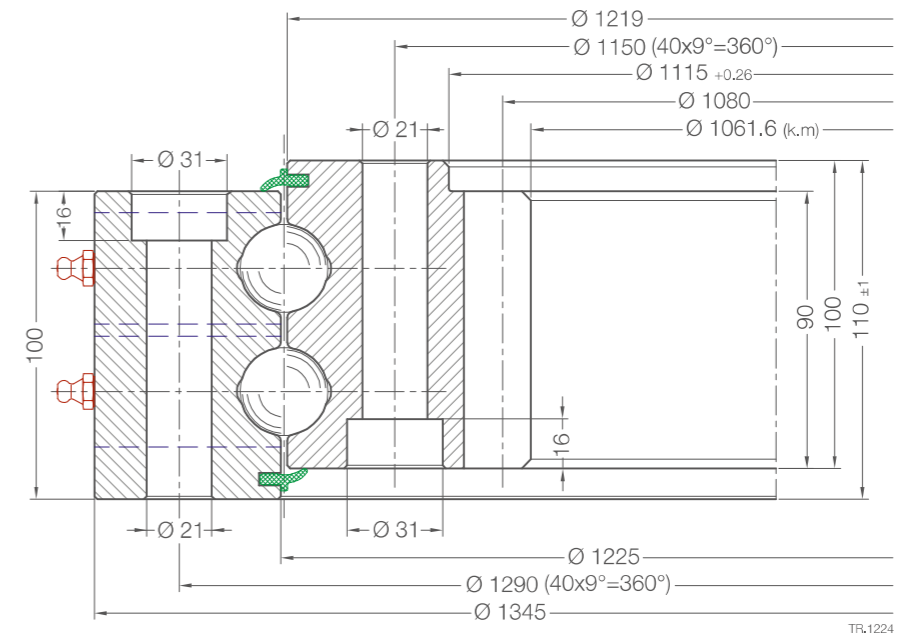


Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	100
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-8
Modification of Tip Diameter (k.m)	1
Gear Tangential Forces - F nominal (kN)	86.5
Gear Tangential Forces - F max (kN)	173
Bearing Internal Clearance (Radial)	≤0.047
Bearing Internal Clearance (Axial)	≤0.047
Fixing Bolts of The Outer Ring (10.9) x Quantity	M20 x 36
Fixing Bolts of The Inner Ring (10.9) x Quantity	M20 x 36
M16 (10.9) Bolt Tightening Torque (Nm)	*279 558
M16 (12.9) Bolt Tightening Torque (Nm)	*324 648
Grease Nipple Dimension and Quantity	M10x1 (2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	277

\* Bolt Pre-Tightening Torque (%50)

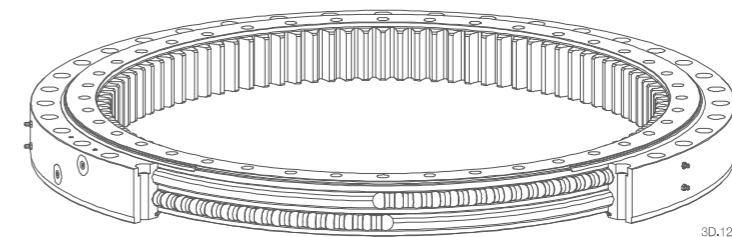


# B2228-1-1345BB

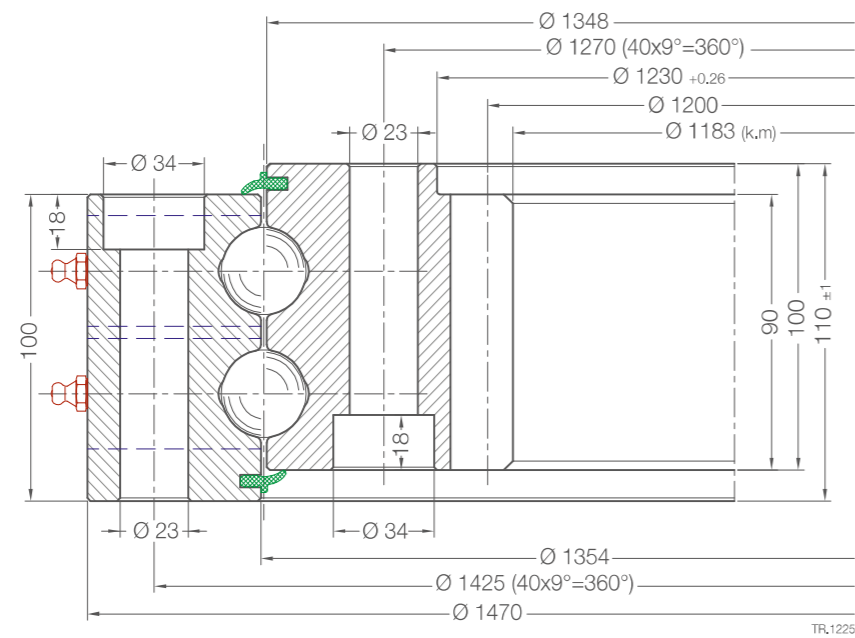


Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	108
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	0.8
Gear Tangential Forces - F nominal (kN)	68.9
Gear Tangential Forces - F max (kN)	137.8
Bearing Internal Clearance (Radial)	≤0.047
Bearing Internal Clearance (Axial)	≤0.047
Fixing Bolts of The Outer Ring (10.9) x Quantity	M20 x 40
Fixing Bolts of The Inner Ring (10.9) x Quantity	M20 x 40
M16 (10.9) Bolt Tightening Torque (Nm)	*279 558
M16 (12.9) Bolt Tightening Torque (Nm)	*324 648
Grease Nipple Dimension and Quantity	M10x1 (2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	338

\* Bolt Pre-Tightening Torque (%50)

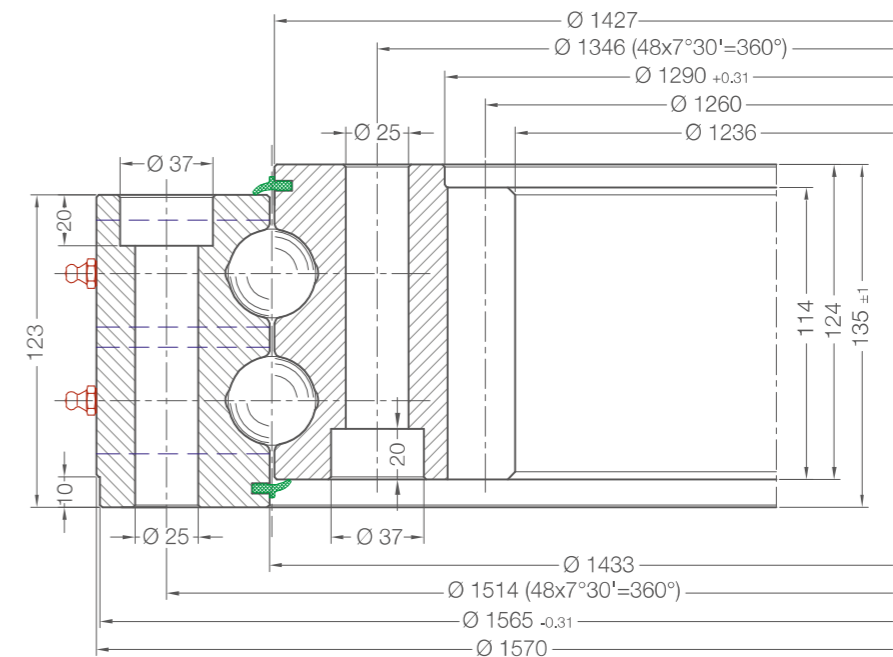


# B2228-1-1470BB

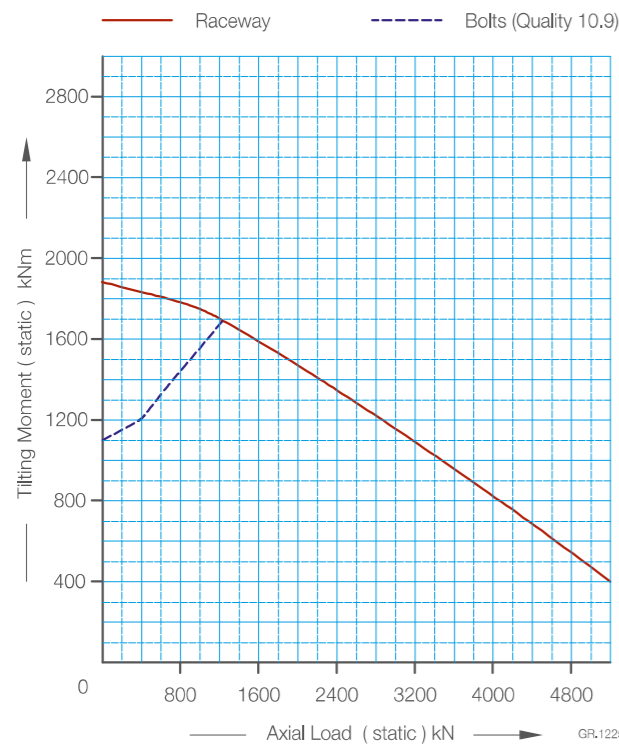


TR.1225

# B2235-1-1570BB



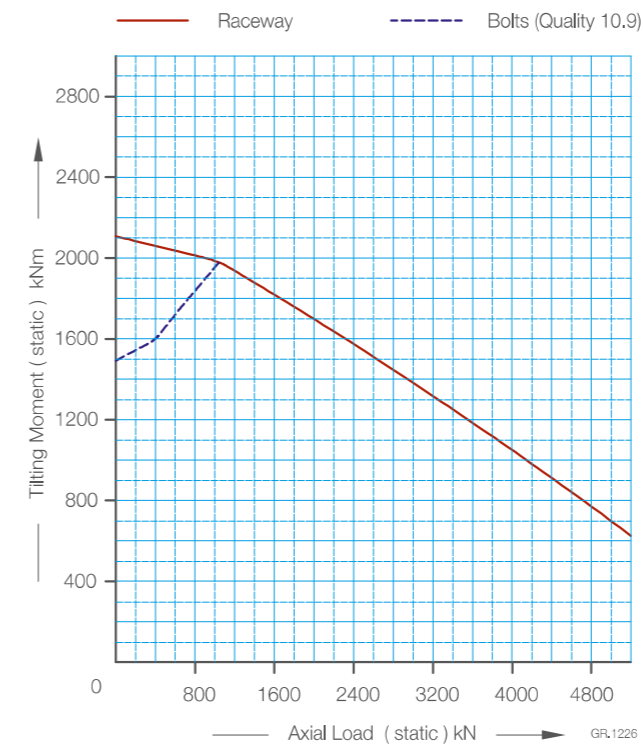
TR.1226



Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	120
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	1.5
Gear Tangential Forces - F nominal (kN)	70.4
Gear Tangential Forces - F max (kN)	140.8
Bearing Internal Clearance (Radial)	≤0.055
Bearing Internal Clearance (Axial)	≤0.055
Fixing Bolts of The Outer Ring (10.9) x Quantity	M22 x 40
Fixing Bolts of The Inner Ring (10.9) x Quantity	M22 x 40
M16 (10.9) Bolt Tightening Torque (Nm)	*374 747
M16 (12.9) Bolt Tightening Torque (Nm)	*437 873
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	379

\* Bolt Pre-Tightening Torque (%50)

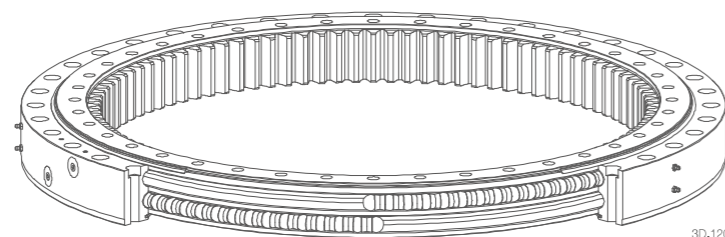
GR.1225



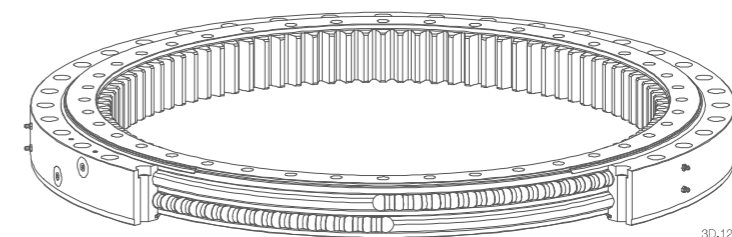
Gear Standard	DIN 3972
Module (m)	12
Number of Teeth (Z)	105
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	107.4
Gear Tangential Forces - F max (kN)	214.8
Bearing Internal Clearance (Radial)	≤0.055
Bearing Internal Clearance (Axial)	≤0.055
Fixing Bolts of The Outer Ring (10.9) x Quantity	M24 x 48
Fixing Bolts of The Inner Ring (10.9) x Quantity	M24 x 48
M16 (10.9) Bolt Tightening Torque (Nm)	*477 954
M16 (12.9) Bolt Tightening Torque (Nm)	*558 1116
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	590

\* Bolt Pre-Tightening Torque (%50)

GR.1226

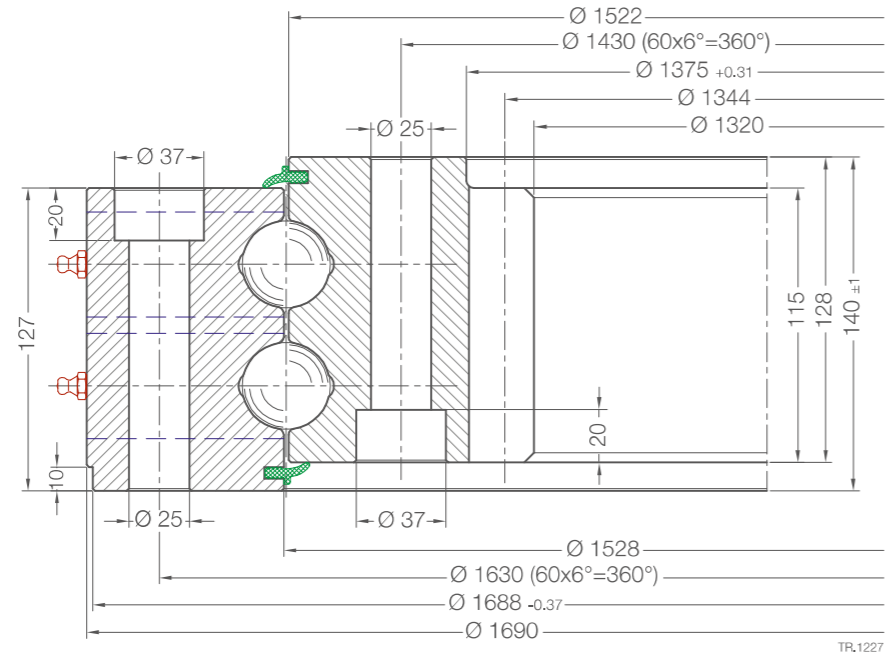


3D.1202

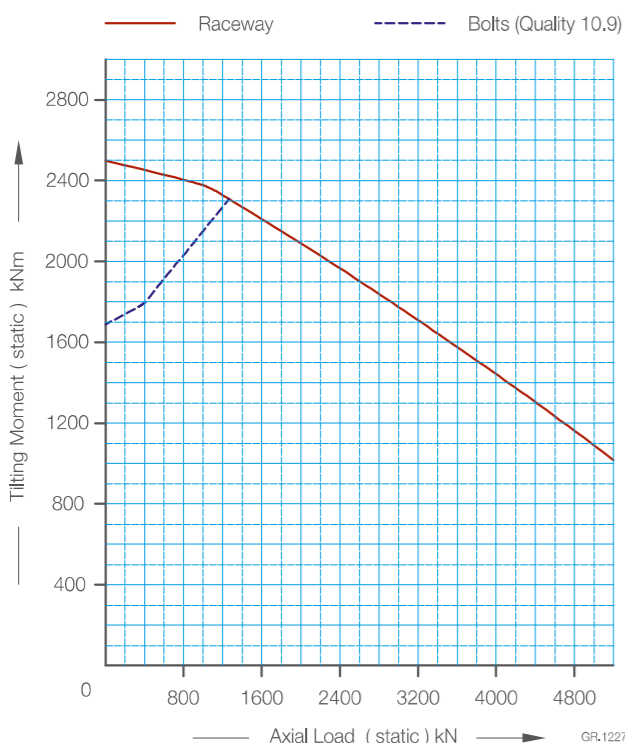
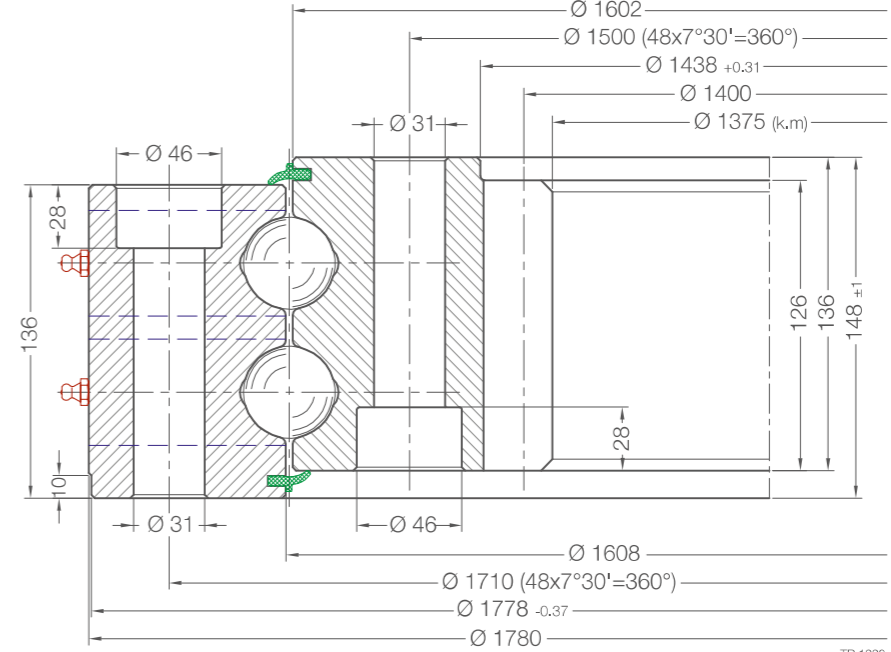


3D.1202

# B2236-1-1690BB

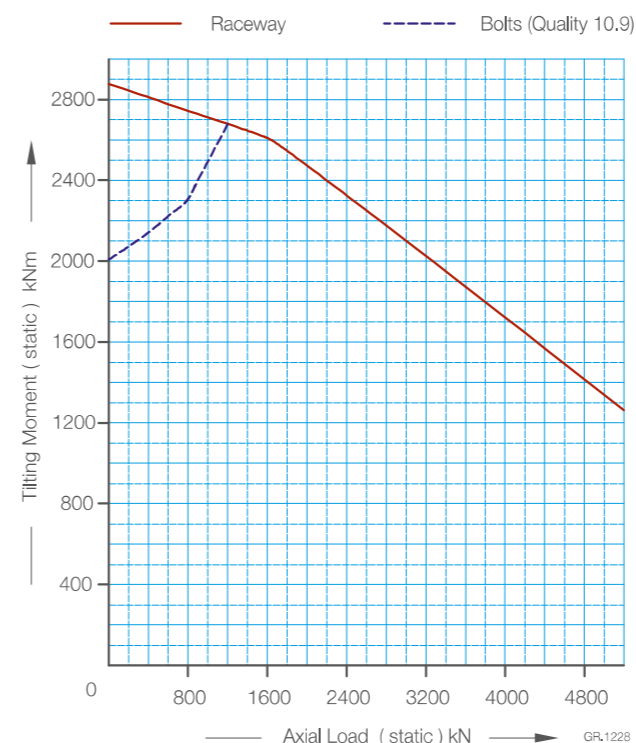


# B2240-1-1780BB



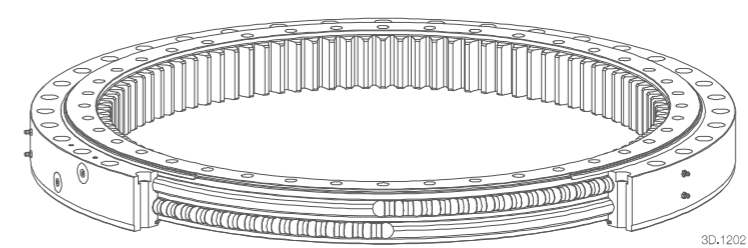
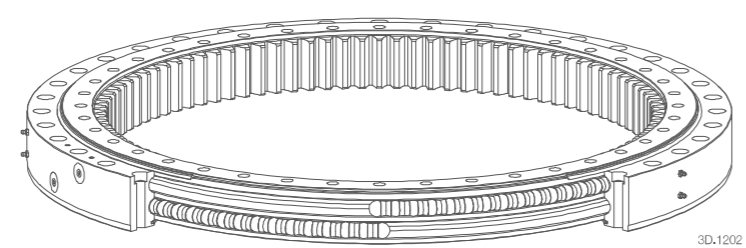
Gear Standard	DIN 3972
Module (m)	12
Number of Teeth (Z)	112
Pressure Angle ( $\alpha$ )	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	108.3
Gear Tangential Forces - F max (kN)	216.6
Bearing Internal Clearance (Radial)	$\leq 0.055$
Bearing Internal Clearance (Axial)	$\leq 0.055$
Fixing Bolts of The Outer Ring (10.9) x Quantity	M24 x 60
Fixing Bolts of The Inner Ring (10.9) x Quantity	M24 x 60
M16 (10.9) Bolt Tightening Torque (Nm)	*477   954
M16 (12.9) Bolt Tightening Torque (Nm)	*558   1116
Grease Nipple Dimension and Quantity	M10x1 (2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	726

\* Bolt Pre-Tightening Torque (%50)



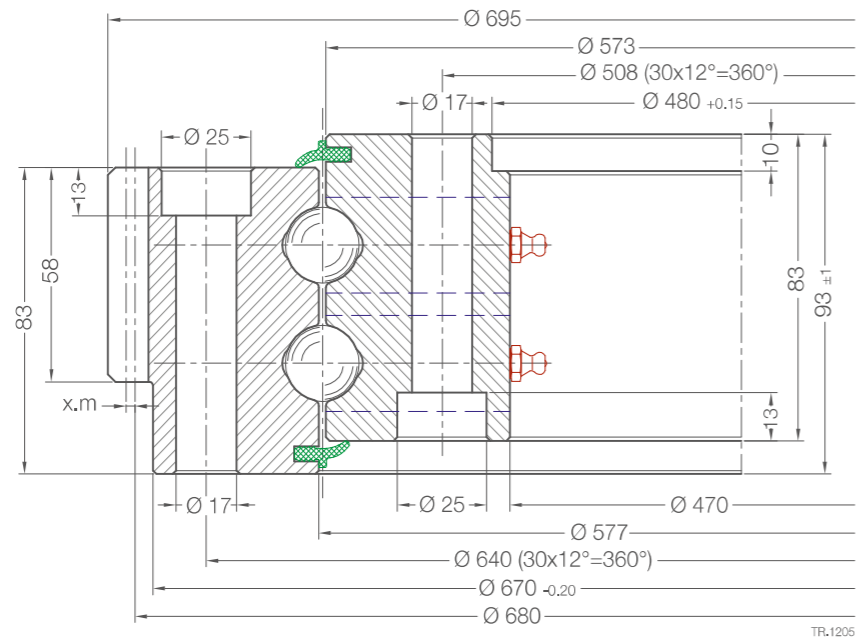
Gear Standard	DIN 3972
Module (m)	14
Number of Teeth (Z)	100
Pressure Angle ( $\alpha$ )	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	1.5
Gear Tangential Forces - F nominal (kN)	138.1
Gear Tangential Forces - F max (kN)	276.2
Bearing Internal Clearance (Radial)	$\leq 0.065$
Bearing Internal Clearance (Axial)	$\leq 0.065$
Fixing Bolts of The Outer Ring (10.9) x Quantity	M30 x 48
Fixing Bolts of The Inner Ring (10.9) x Quantity	M30 x 48
M16 (10.9) Bolt Tightening Torque (Nm)	*945   1890
M16 (12.9) Bolt Tightening Torque (Nm)	*1125   2250
Grease Nipple Dimension and Quantity	M10x1 (2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	850

\* Bolt Pre-Tightening Torque (%50)

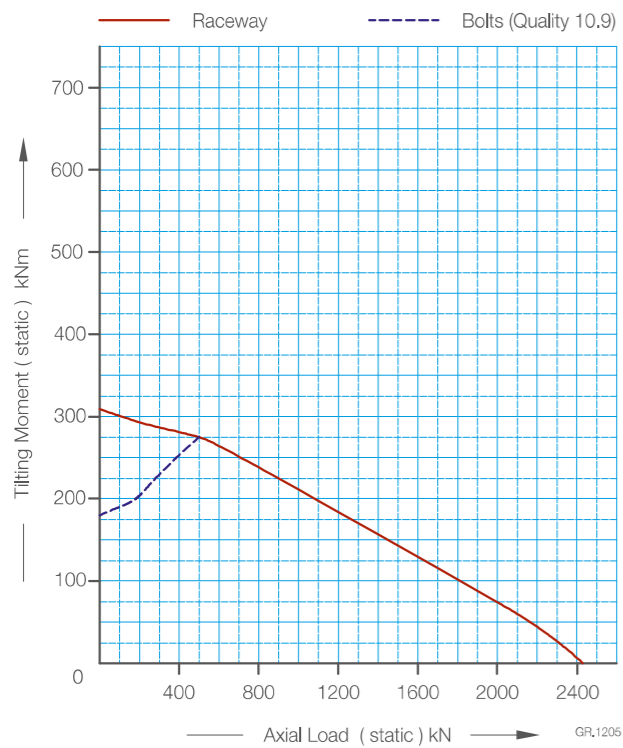
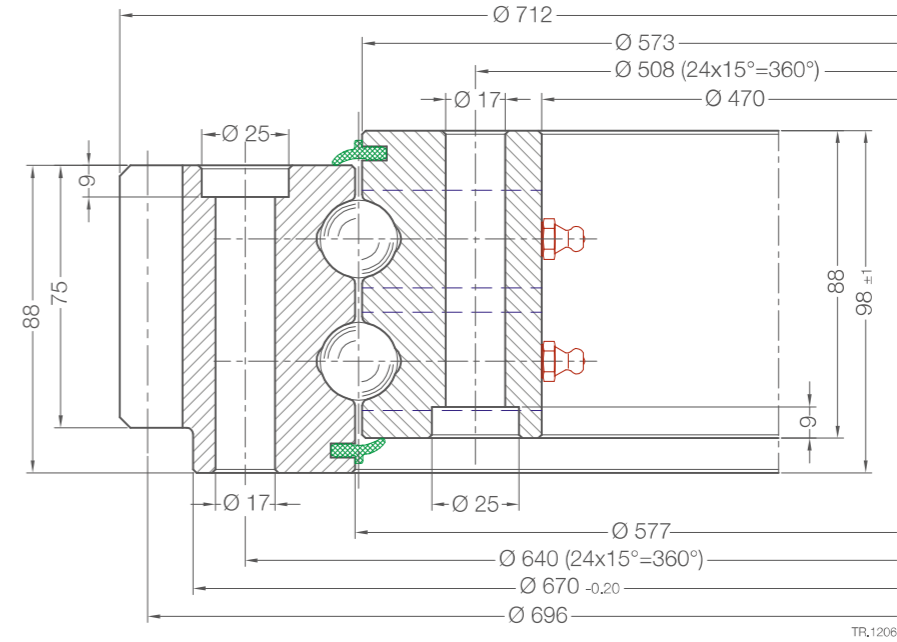




# B2220-2-0695BB

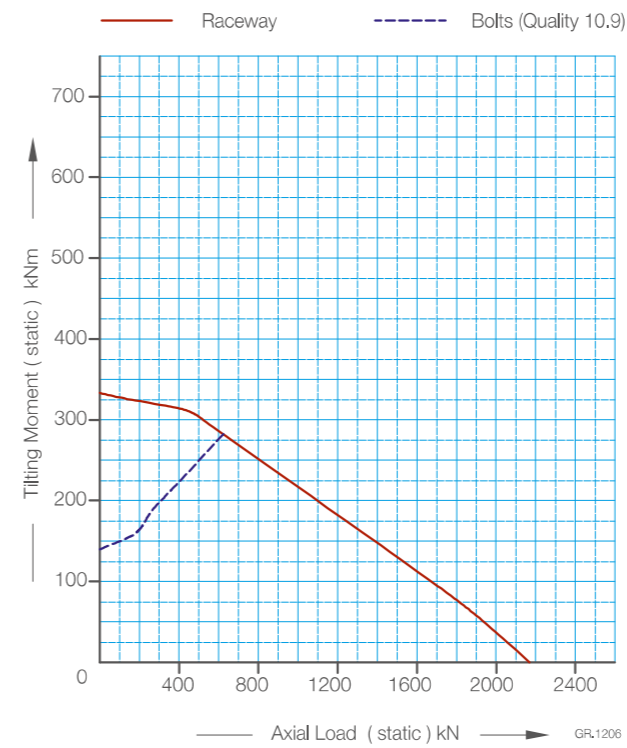


# B2222-2-0712BB



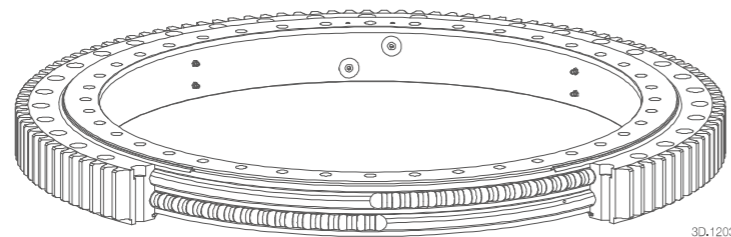
Gear Standard	DIN 3972
Module (m)	5
Number of Teeth (Z)	136
Pressure Angle (α)	20°
Modification of Addendum (x.m)	+2.5
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	21.7
Gear Tangential Forces - F max (kN)	43.4
Bearing Internal Clearance (Radial)	≤0.032
Bearing Internal Clearance (Axial)	≤0.032
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 30
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 30
M16 (10.9) Bolt Tightening Torque (Nm)	*140   279
M16 (12.9) Bolt Tightening Torque (Nm)	*167   333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	104

\* Bolt Pre-Tightening Torque (%50)

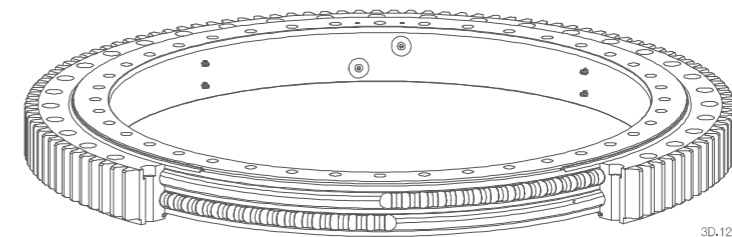


Gear Standard	DIN 3972
Module (m)	8
Number of Teeth (Z)	87
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	46.9
Gear Tangential Forces - F max (kN)	93.8
Bearing Internal Clearance (Radial)	≤0.032
Bearing Internal Clearance (Axial)	≤0.032
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 24
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 24
M16 (10.9) Bolt Tightening Torque (Nm)	*140   279
M16 (12.9) Bolt Tightening Torque (Nm)	*167   333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	123

\* Bolt Pre-Tightening Torque (%50)

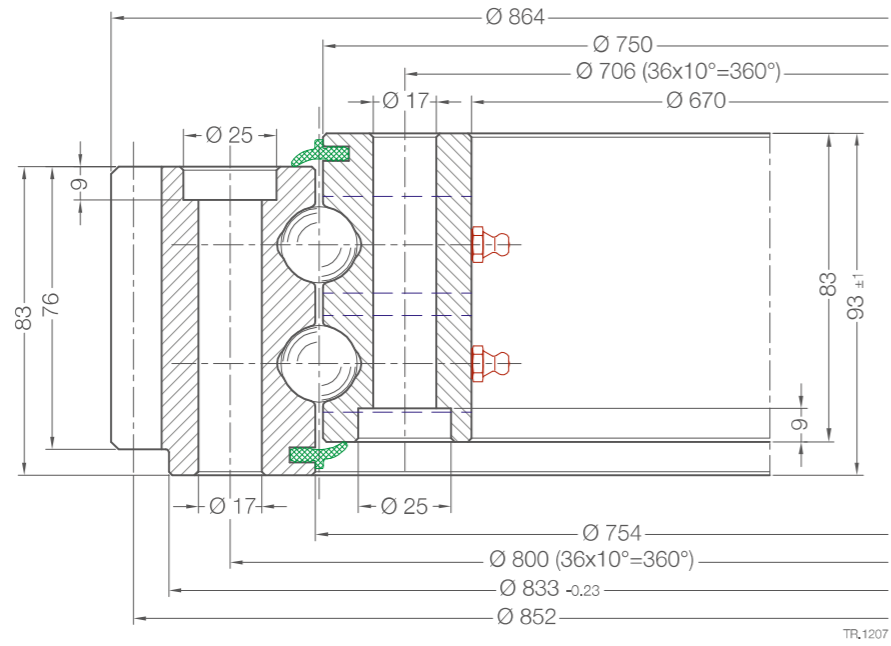


3D.1203

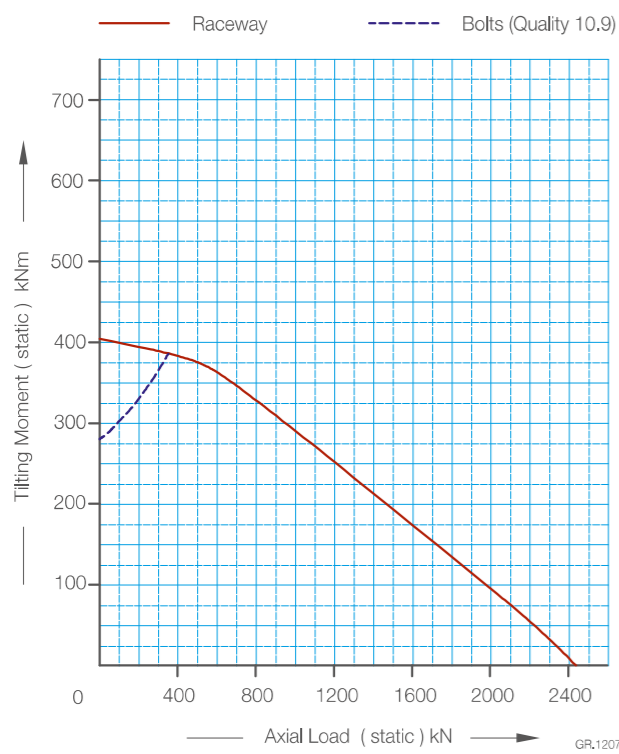
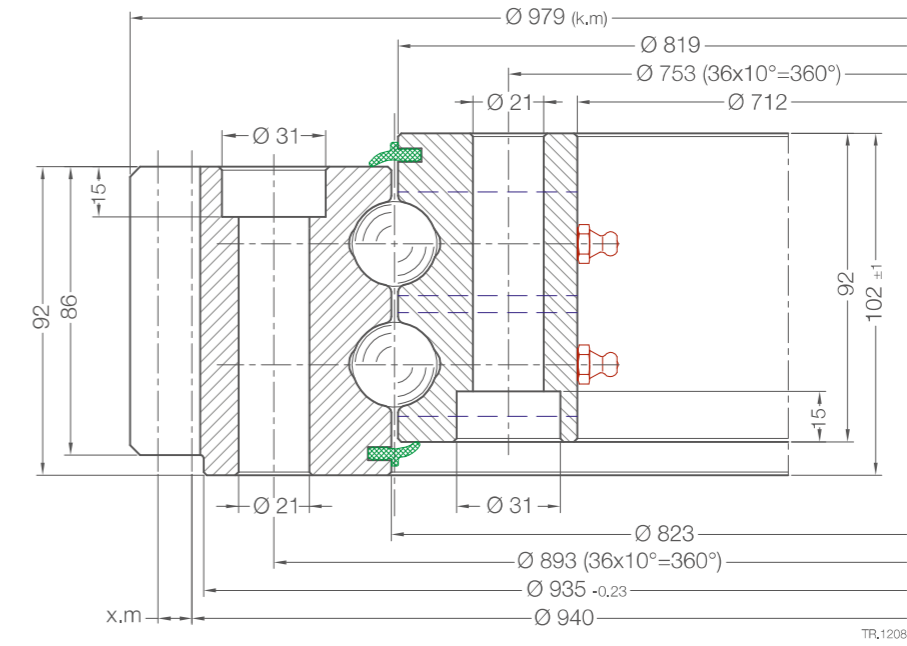


3D.1203

# B2220-2-0864BB

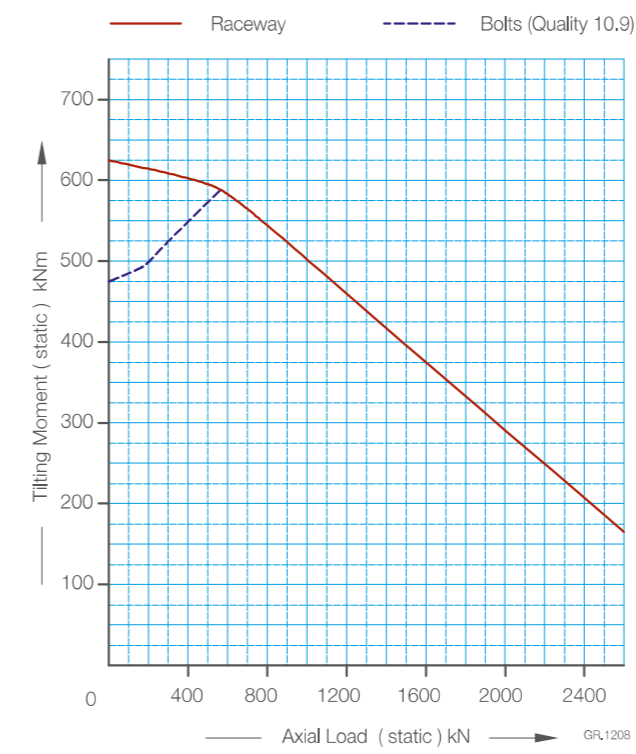
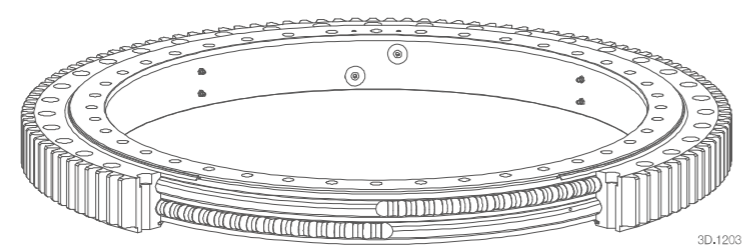


# B2225-2-0979BB



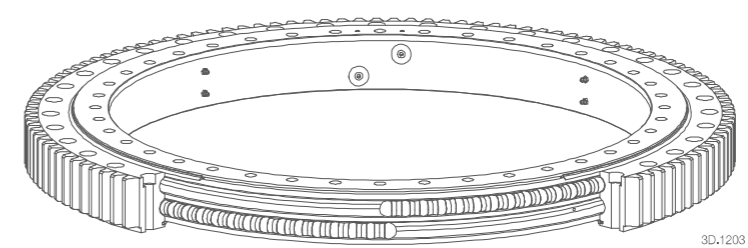
Gear Standard	DIN 3972
Module (m)	6
Number of Teeth (Z)	142
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	35.6
Gear Tangential Forces - F max (kN)	71.2
Bearing Internal Clearance (Radial)	≤0.032
Bearing Internal Clearance (Axial)	≤0.032
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 30
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 30
M16 (10.9) Bolt Tightening Torque (Nm)	*140 279
M16 (12.9) Bolt Tightening Torque (Nm)	*167 333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	118

\* Bolt Pre-Tightening Torque (%50)

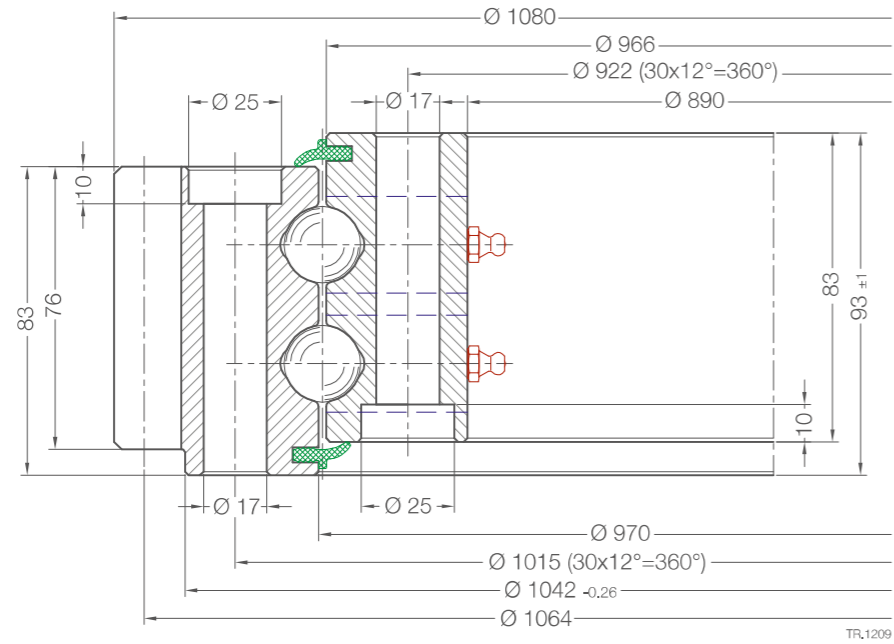


Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	94
Pressure Angle (α)	20°
Modification of Addendum (x.m)	+11
Modification of Tip Diameter (k.m)	1.5
Gear Tangential Forces - F nominal (kN)	67.2
Gear Tangential Forces - F max (kN)	134.4
Bearing Internal Clearance (Radial)	≤0.040
Bearing Internal Clearance (Axial)	≤0.040
Fixing Bolts of The Outer Ring (10.9) x Quantity	M20 x 36
Fixing Bolts of The Inner Ring (10.9) x Quantity	M20 x 36
M16 (10.9) Bolt Tightening Torque (Nm)	*279 558
M16 (12.9) Bolt Tightening Torque (Nm)	*324 648
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	197

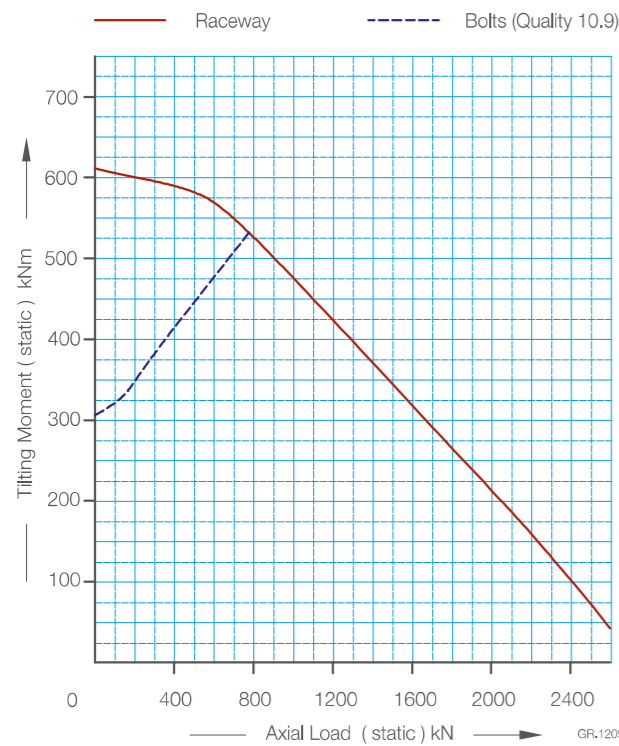
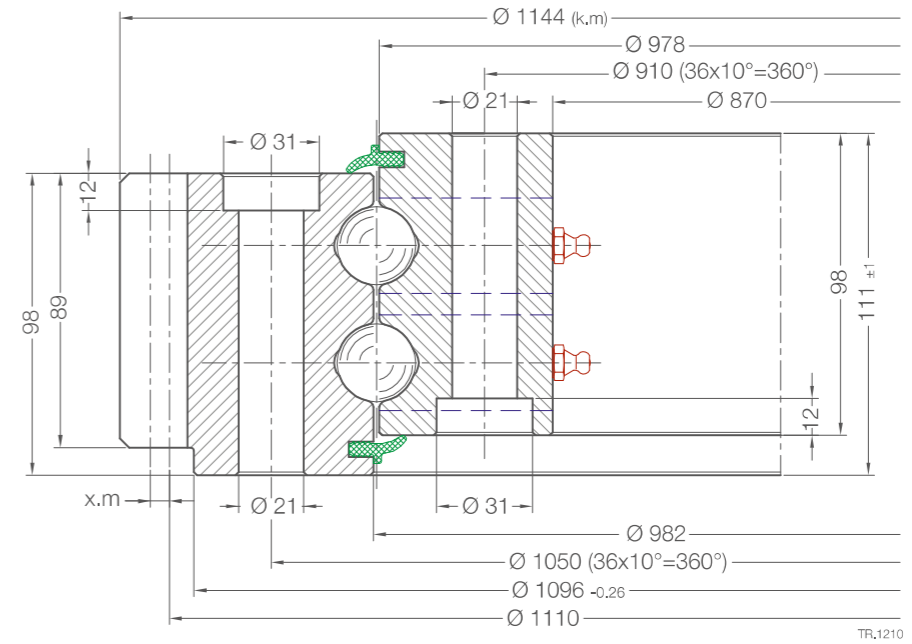
\* Bolt Pre-Tightening Torque (%50)



# B2220-2-1080BB

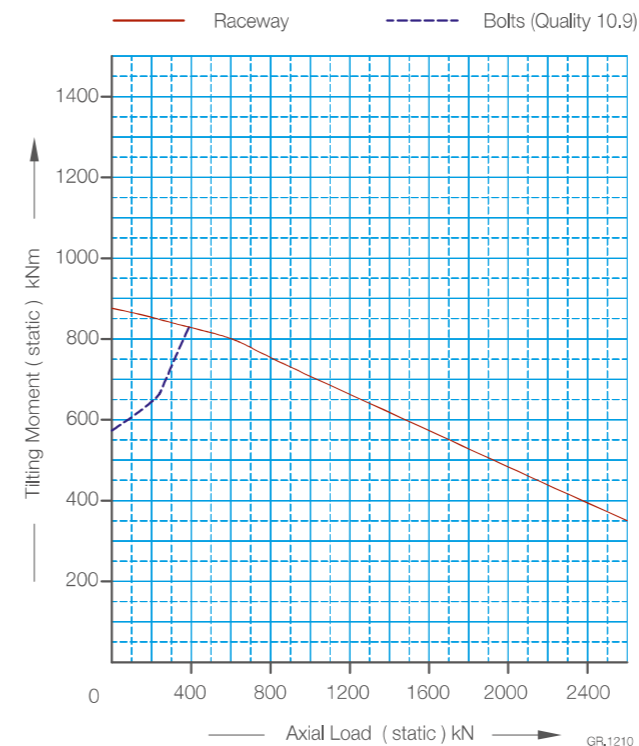


# B2225-2-1144BB



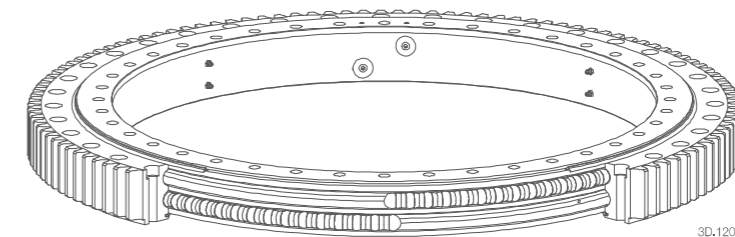
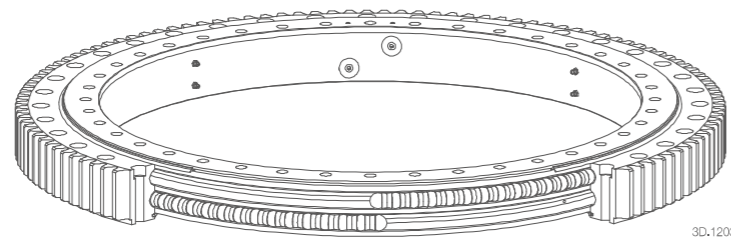
Gear Standard	DIN 3972
Module (m)	8
Number of Teeth (Z)	133
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	47.5
Gear Tangential Forces - F max (kN)	95
Bearing Internal Clearance (Radial)	≤0.040
Bearing Internal Clearance (Axial)	≤0.040
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 30
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 30
M16 (10.9) Bolt Tightening Torque (Nm)	*140   279
M16 (12.9) Bolt Tightening Torque (Nm)	*167   333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	150

\* Bolt Pre-Tightening Torque (%50)

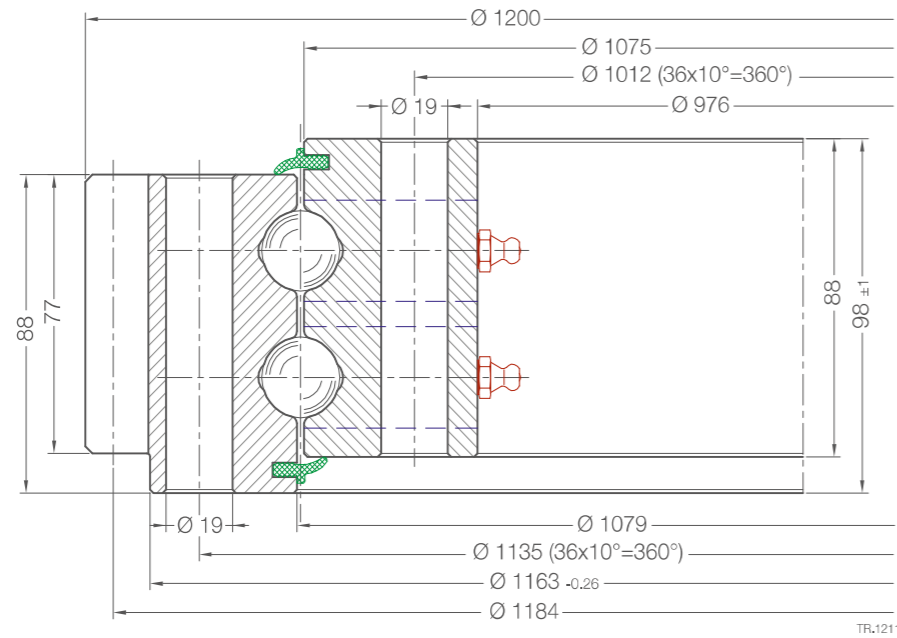


Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	111
Pressure Angle (α)	20°
Modification of Addendum (x.m)	+8
Modification of Tip Diameter (k.m)	1
Gear Tangential Forces - F nominal (kN)	76.5
Gear Tangential Forces - F max (kN)	153
Bearing Internal Clearance (Radial)	≤0.040
Bearing Internal Clearance (Axial)	≤0.040
Fixing Bolts of The Outer Ring (10.9) x Quantity	M16 x 36
Fixing Bolts of The Inner Ring (10.9) x Quantity	M16 x 36
M16 (10.9) Bolt Tightening Torque (Nm)	*140   279
M16 (12.9) Bolt Tightening Torque (Nm)	*167   333
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	268

\* Bolt Pre-Tightening Torque (%50)

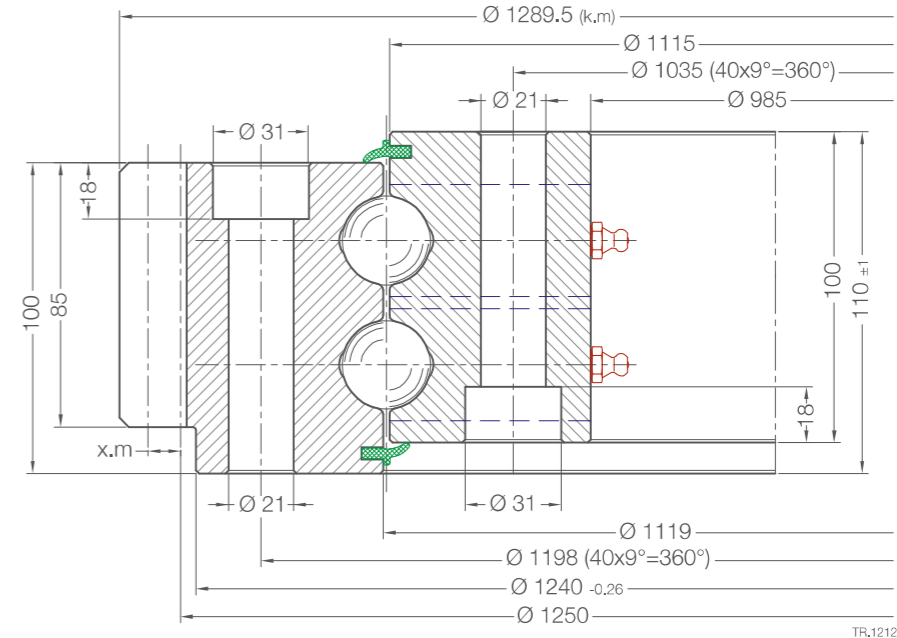


# B2222-2-1200AA

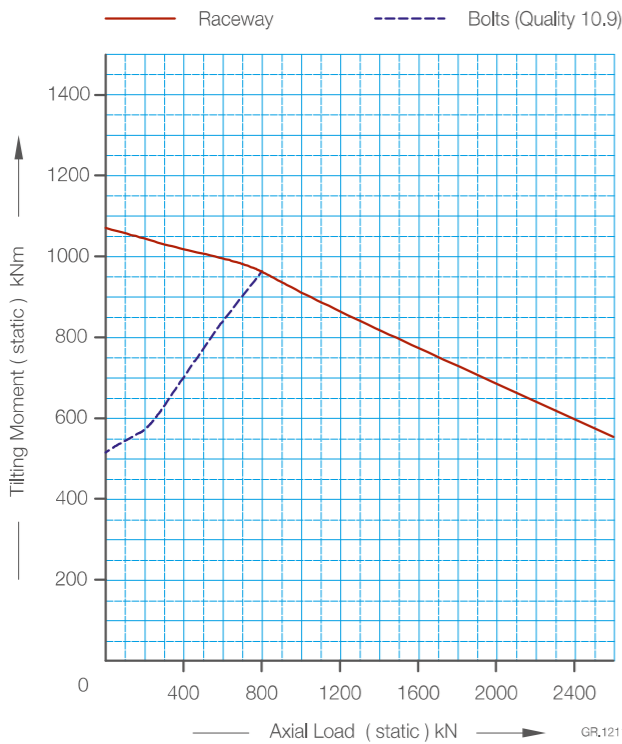


TR.1211

# B2228-2-1290BB



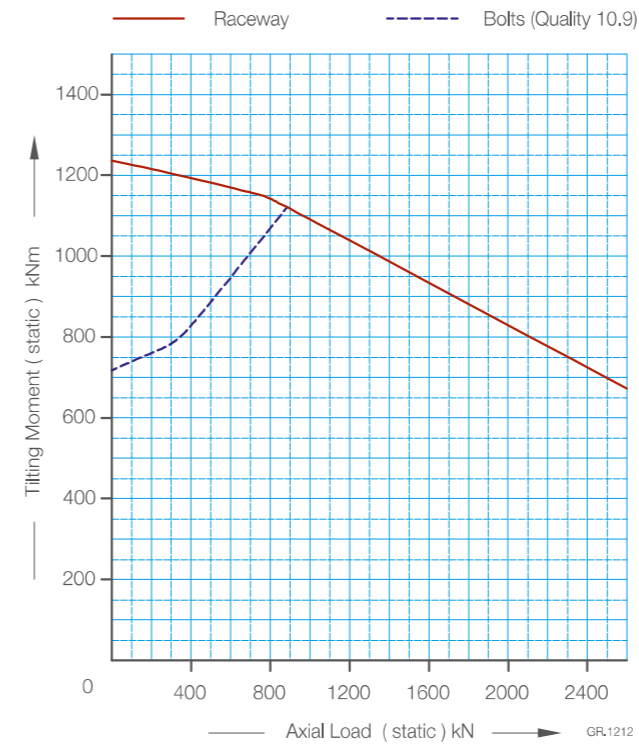
TR.1212



Gear Standard	DIN 3972
Module (m)	8
Number of Teeth (Z)	148
Pressure Angle (α)	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	48.1
Gear Tangential Forces - F max (kN)	96.2
Bearing Internal Clearance (Radial)	≤0.047
Bearing Internal Clearance (Axial)	≤0.047
Fixing Bolts of The Outer Ring (10.9) x Quantity	M18 x 36
Fixing Bolts of The Inner Ring (10.9) x Quantity	M18 x 36
M16 (10.9) Bolt Tightening Torque (Nm)	*194 337
M16 (12.9) Bolt Tightening Torque (Nm)	*230 459
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	210

\* Bolt Pre-Tightening Torque (%50)

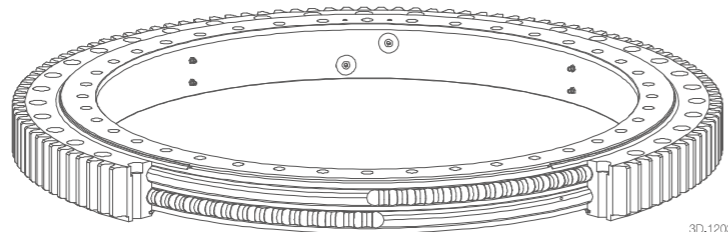
GR.1211



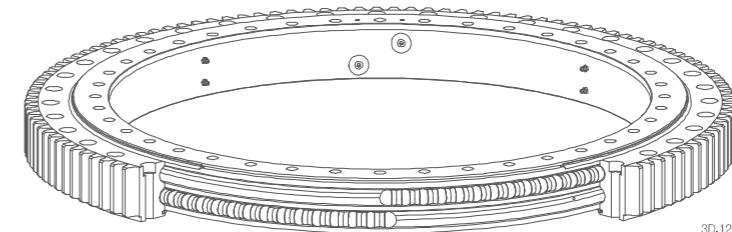
Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	125
Pressure Angle (α)	20°
Modification of Addendum (x.m)	+10.5
Modification of Tip Diameter (k.m)	0.75
Gear Tangential Forces - F nominal (kN)	72.2
Gear Tangential Forces - F max (kN)	144.4
Bearing Internal Clearance (Radial)	≤0.047
Bearing Internal Clearance (Axial)	≤0.047
Fixing Bolts of The Outer Ring (10.9) x Quantity	M20 x 40
Fixing Bolts of The Inner Ring (10.9) x Quantity	M20 x 40
M16 (10.9) Bolt Tightening Torque (Nm)	*279 558
M16 (12.9) Bolt Tightening Torque (Nm)	*324 648
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	338

\* Bolt Pre-Tightening Torque (%50)

GR.1212

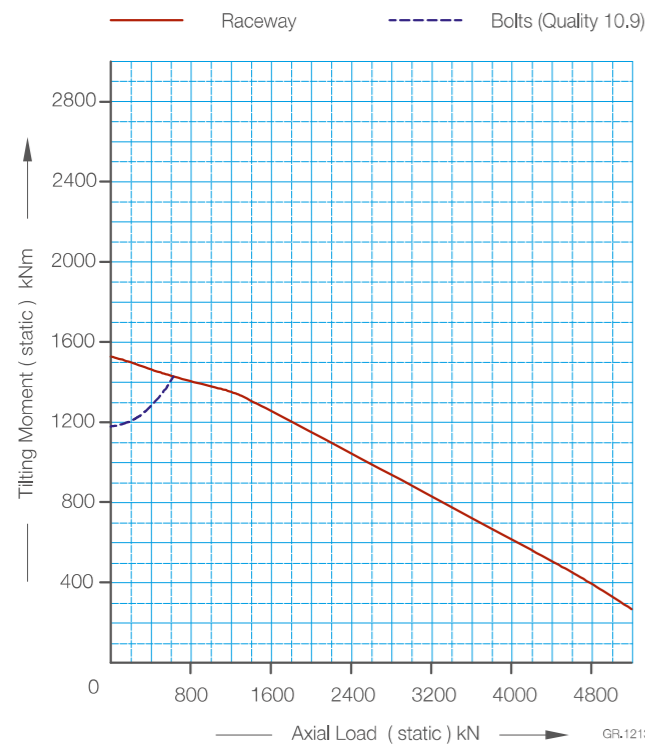
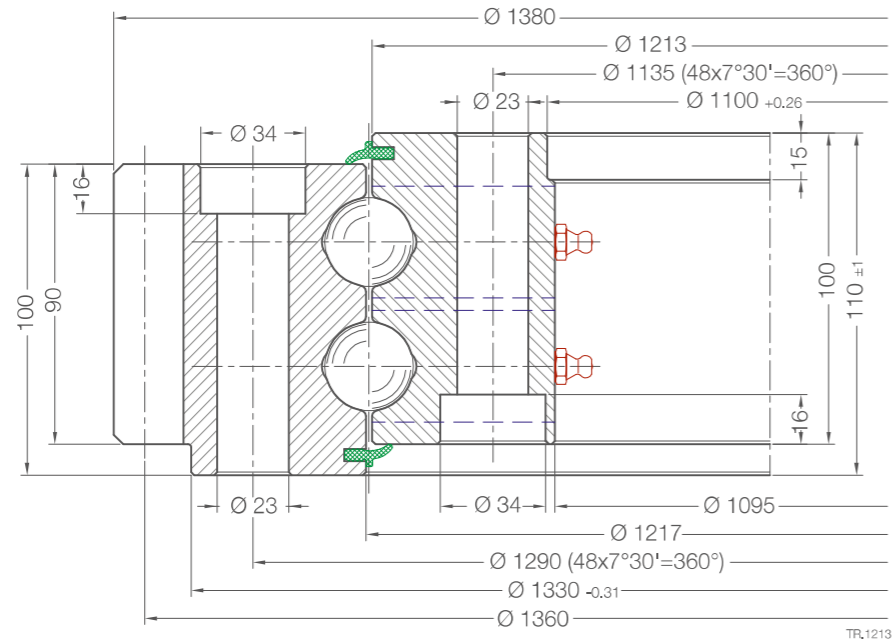


3D.1203



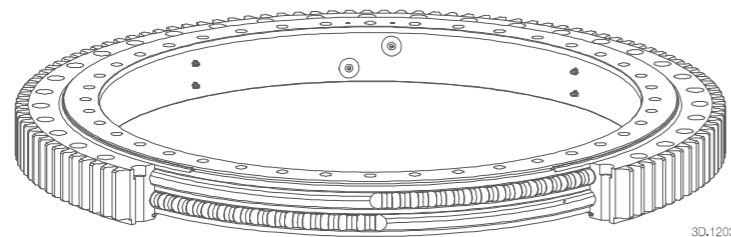
3D.1203

# B2228-2-1380BB

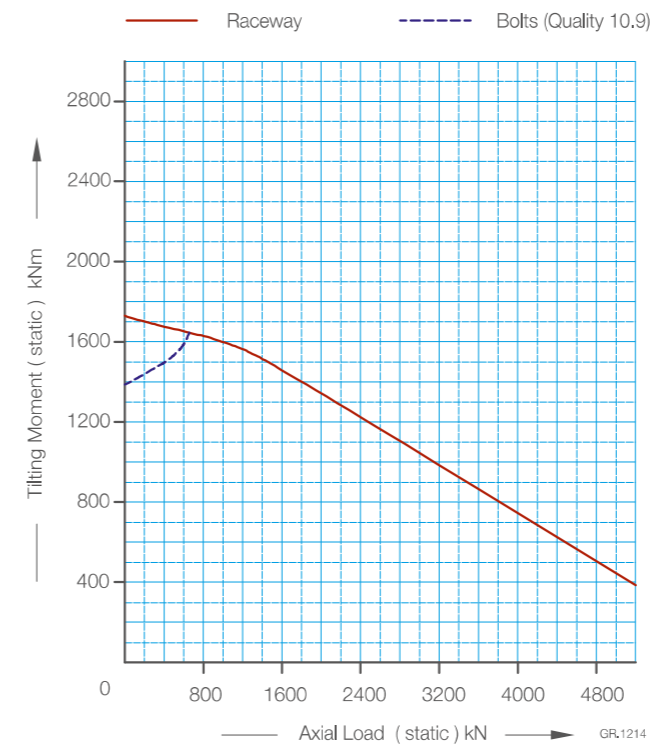
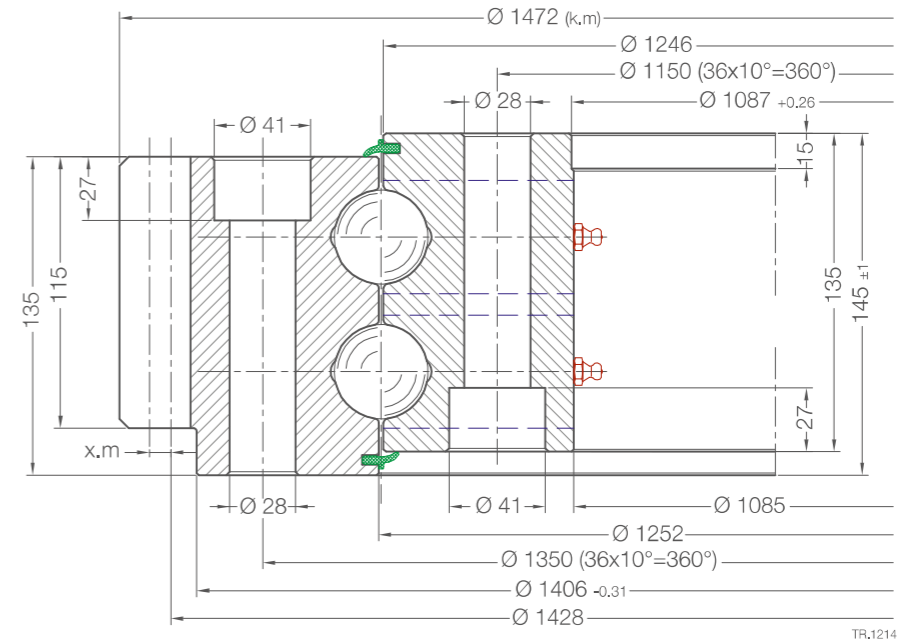


Gear Standard	DIN 3972
Module (m)	10
Number of Teeth (Z)	136
Pressure Angle ( $\alpha$ )	20°
Modification of Addendum (x.m)	-
Modification of Tip Diameter (k.m)	-
Gear Tangential Forces - F nominal (kN)	64.8
Gear Tangential Forces - F max (kN)	129.6
Bearing Internal Clearance (Radial)	$\leq 0.047$
Bearing Internal Clearance (Axial)	$\leq 0.047$
Fixing Bolts of The Outer Ring (10.9) x Quantity	M22 x 48
Fixing Bolts of The Inner Ring (10.9) x Quantity	M22 x 48
M16 (10.9) Bolt Tightening Torque (Nm)	*374   747
M16 (12.9) Bolt Tightening Torque (Nm)	*437   873
Grease Nipple Dimension and Quantity	M10x1 (2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	332

\* Bolt Pre-Tightening Torque (%50)

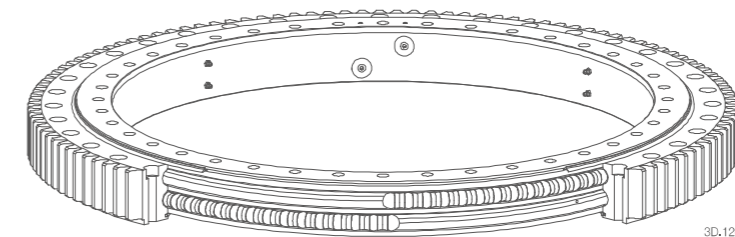


# B2240-2-1472BB

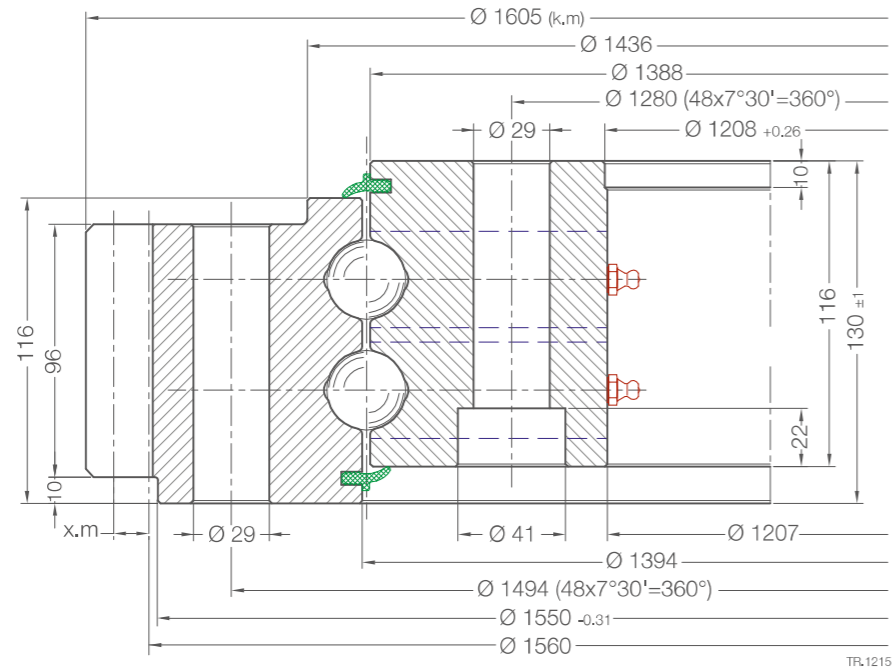


Gear Standard	DIN 3972
Module (m)	14
Number of Teeth (Z)	102
Pressure Angle ( $\alpha$ )	20°
Modification of Addendum (x.m)	+9.1
Modification of Tip Diameter (k.m)	1.1
Gear Tangential Forces - F nominal (kN)	140
Gear Tangential Forces - F max (kN)	280
Bearing Internal Clearance (Radial)	$\leq 0.047$
Bearing Internal Clearance (Axial)	$\leq 0.047$
Fixing Bolts of The Outer Ring (10.9) x Quantity	M27 x 48
Fixing Bolts of The Inner Ring (10.9) x Quantity	M27 x 48
M16 (10.9) Bolt Tightening Torque (Nm)	*698   1395
M16 (12.9) Bolt Tightening Torque (Nm)	*833   1665
Grease Nipple Dimension and Quantity	M10x1 (2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	645

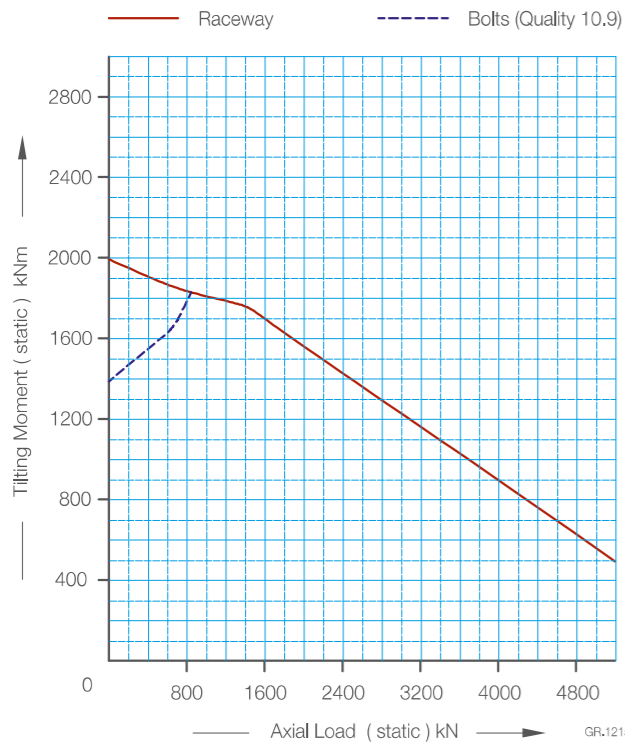
\* Bolt Pre-Tightening Torque (%50)



# B2230-2-1605AB



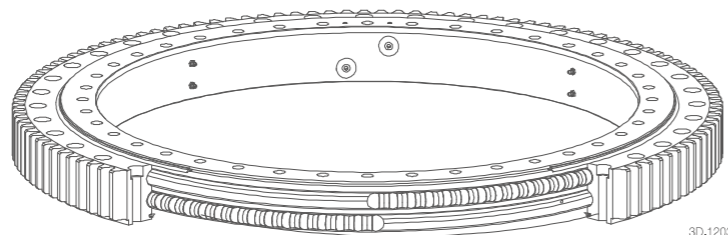
TR.1215



Gear Standard	DIN 3972
Module (m)	12
Number of Teeth (Z)	130
Pressure Angle ( $\alpha$ )	20°
Modification of Addendum (x.m)	+12
Modification of Tip Diameter (k.m)	1.5
Gear Tangential Forces - F nominal (kN)	100.2
Gear Tangential Forces - F max (kN)	200.4
Bearing Internal Clearance (Radial)	$\leq 0.055$
Bearing Internal Clearance (Axial)	$\leq 0.055$
Fixing Bolts of The Outer Ring (10.9) x Quantity	M27 x 48
Fixing Bolts of The Inner Ring (10.9) x Quantity	M27 x 48
M16 (10.9) Bolt Tightening Torque (Nm)	*698   1395
M16 (12.9) Bolt Tightening Torque (Nm)	*833   1665
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	623

\* Bolt Pre-Tightening Torque (%50)

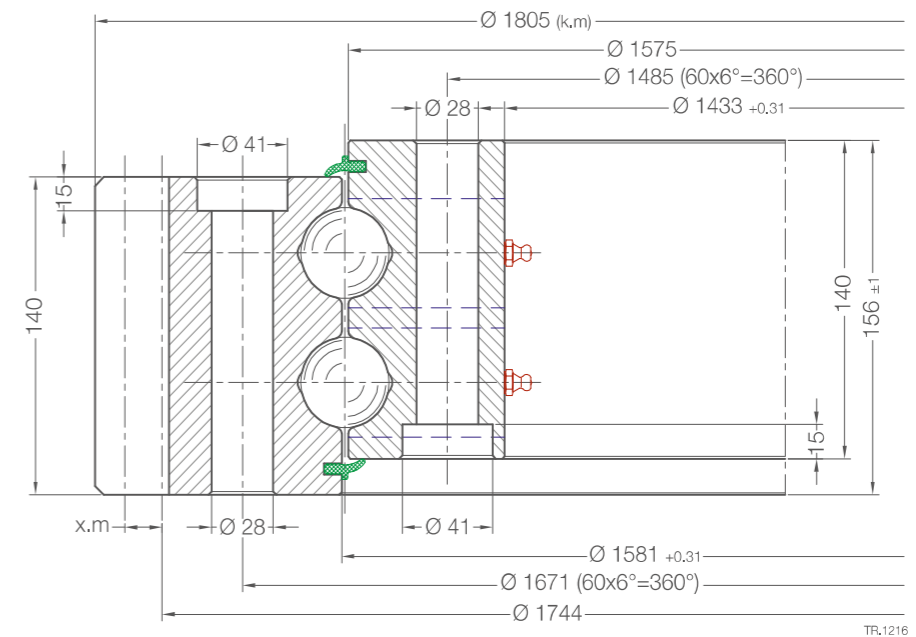
GR.1215



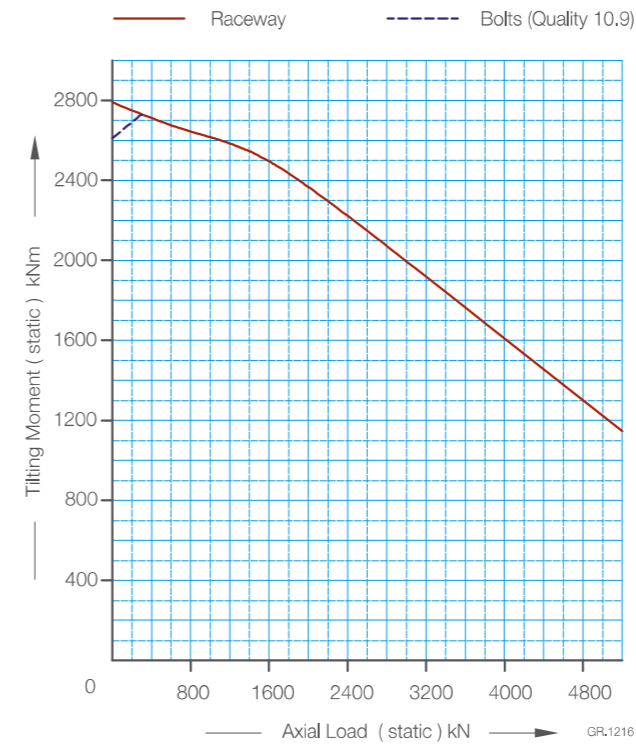
3D.1203



# B2240-2-1805BB



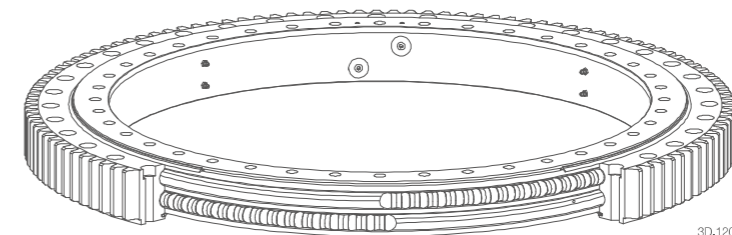
TR.1216



Gear Standard	DIN 3972
Module (m)	16
Number of Teeth (Z)	109
Pressure Angle ( $\alpha$ )	20°
Modification of Addendum (x.m)	+16.912
Modification of Tip Diameter (k.m)	2.41
Gear Tangential Forces - F nominal (kN)	194.8
Gear Tangential Forces - F max (kN)	389.6
Bearing Internal Clearance (Radial)	$\leq 0.055$
Bearing Internal Clearance (Axial)	$\leq 0.055$
Fixing Bolts of The Outer Ring (10.9) x Quantity	M27 x 48
Fixing Bolts of The Inner Ring (10.9) x Quantity	M27 x 48
M16 (10.9) Bolt Tightening Torque (Nm)	*698   1395
M16 (12.9) Bolt Tightening Torque (Nm)	*833   1665
Grease Nipple Dimension and Quantity	M10x1(2x180°)
Ring Material	42CrMo4 Q+T
Weight (kg)	810

\* Bolt Pre-Tightening Torque (%50)

GR.1216

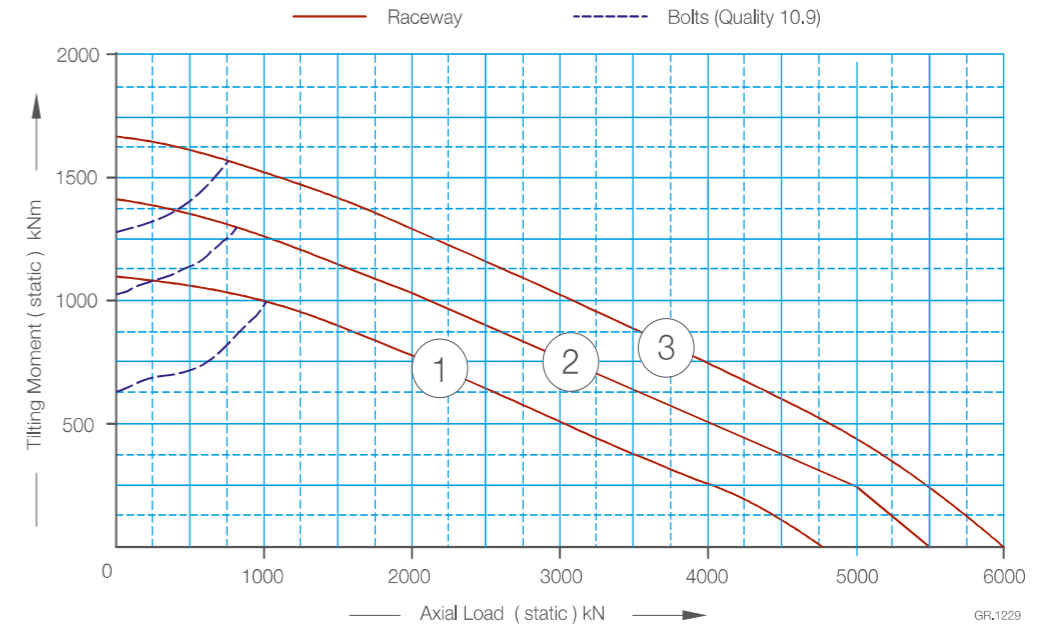
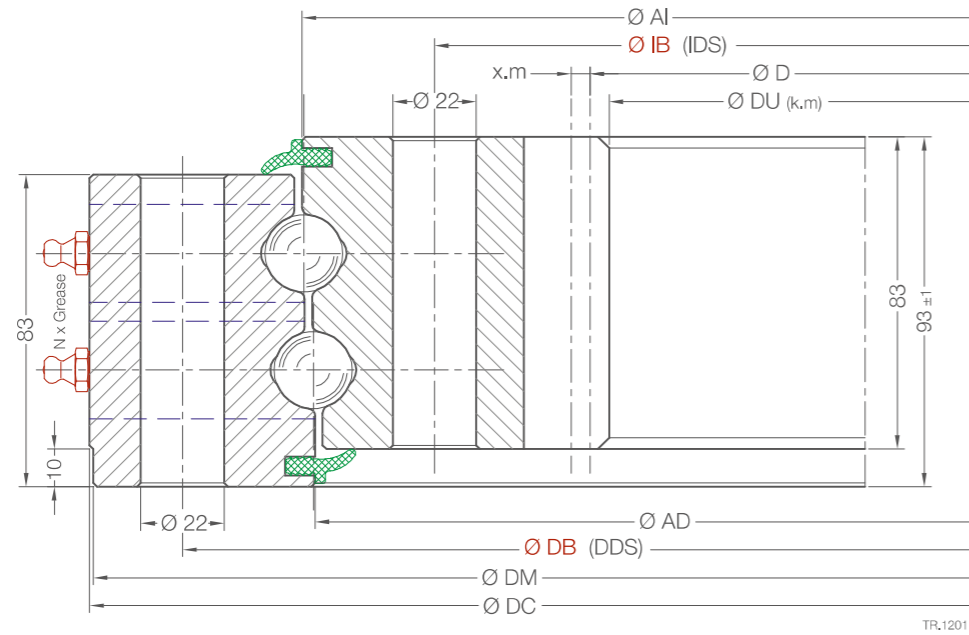


3D.1203



# B2220-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING



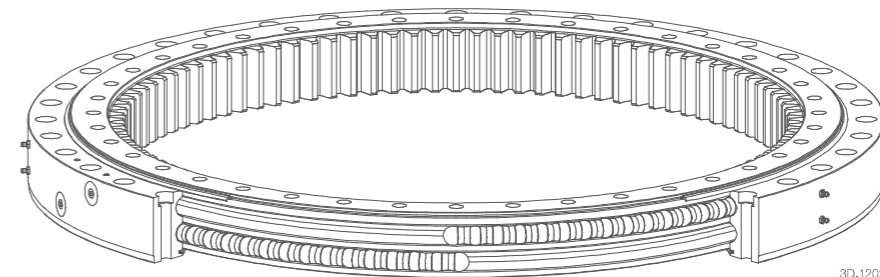
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	N x Grease
B2220-1-1124AA	1	233	1006	850	1124	1122 $-0.26$	1012	1005	4x2 X M10x1
B2220-1-1264AA	2	259	1146	990	1264	1262 $-0.31$	1152	1145	4x2 X M10x1
B2220-1-1364AA	3	281	1246	1090	1364	1362 $-0.31$	1252	1245	4x2 X M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1075 $\pm 0.33$	40	942 $\pm 0.28$	40	860	10	86	-5	-	82	51.5	103.0	$\leq 0.047$	$\leq 0.047$
1215 $\pm 0.33$	56	1082 $\pm 0.33$	56	1000	10	100	-5	-	82	51.5	103.0	$\leq 0.047$	$\leq 0.047$
1315 $\pm 0.39$	64	1182 $\pm 0.33$	64	1100	10	110	-5	-	82	51.5	103.0	$\leq 0.055$	$\leq 0.055$

- In B2220-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M20	194	279	324	387	558	648

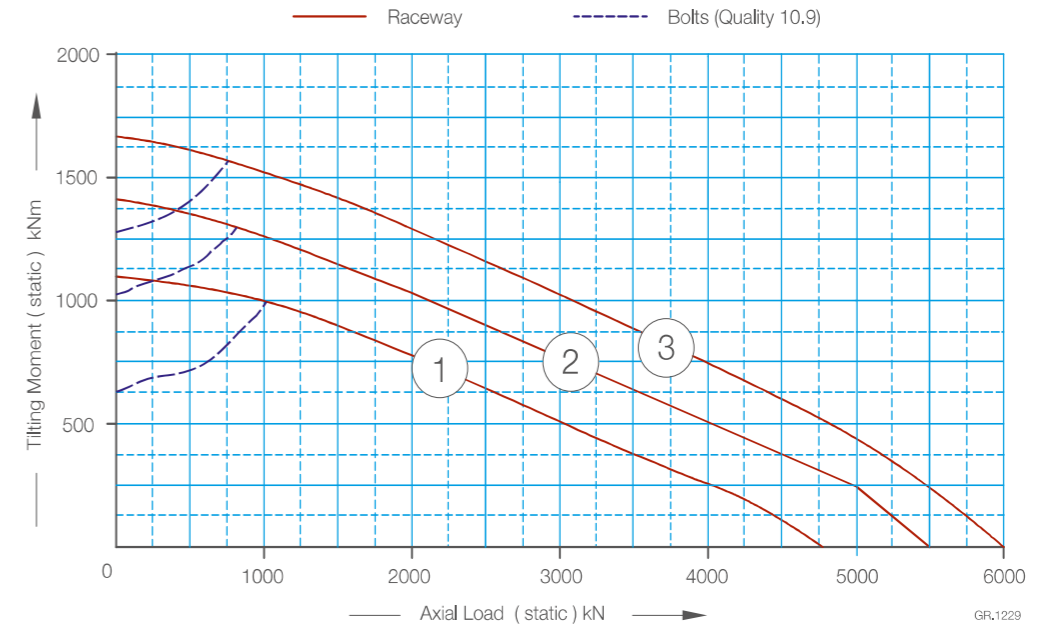
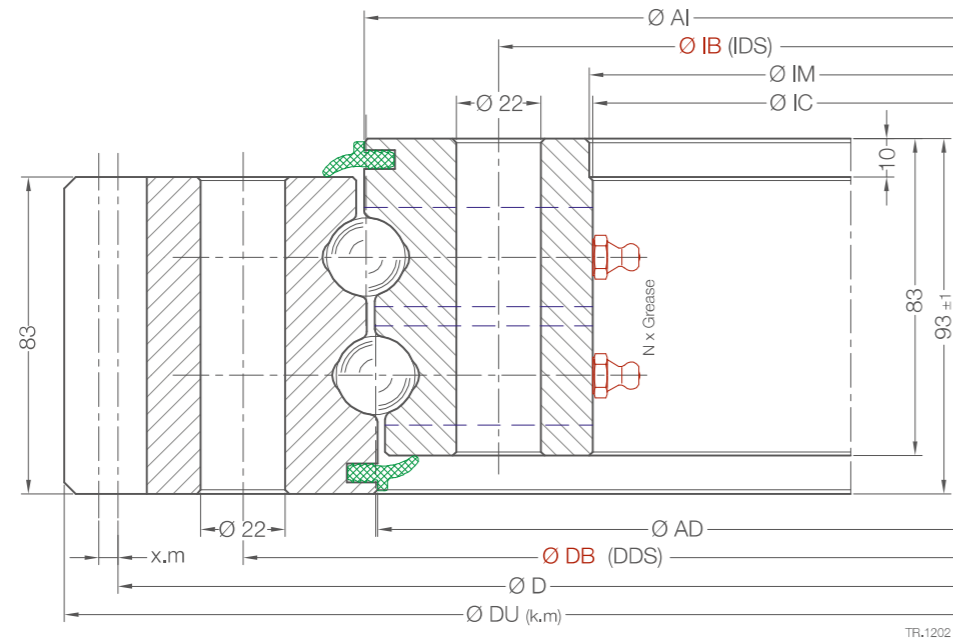
TB.1106



3D.1202

# B2220-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



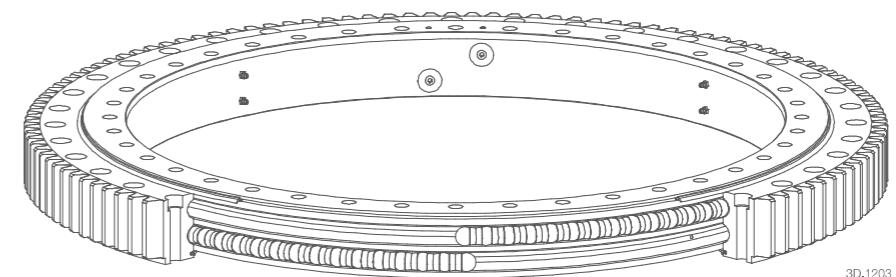
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
B2220-2-1168AA	1	242	1006	1168	893	895 $\pm 0.23$	1005	1012	4x2 X M10x1
B2220-2-1308AA	2	270	1146	1308	1033	1035 $\pm 0.26$	1145	1152	4x2 X M10x1
B2220-2-1408AA	3	288	1246	1408	1133	1135 $\pm 0.26$	1245	1252	4x2 X M10x1

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1075 $\pm 0.33$	40	942 $\pm 0.28$	40	1140	10	114	+5	-1.0	82	51.5	103.0	$\leq 0.047$	$\leq 0.047$
1215 $\pm 0.33$	56	1082 $\pm 0.33$	56	1280	10	128	+5	-1.0	82	51.5	103.0	$\leq 0.047$	$\leq 0.047$
1315 $\pm 0.39$	64	1182 $\pm 0.33$	64	1380	10	138	+5	-1.0	82	51.5	103.0	$\leq 0.055$	$\leq 0.055$

- In B2220-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M20	194	279	324	387	558	658

TB.1202

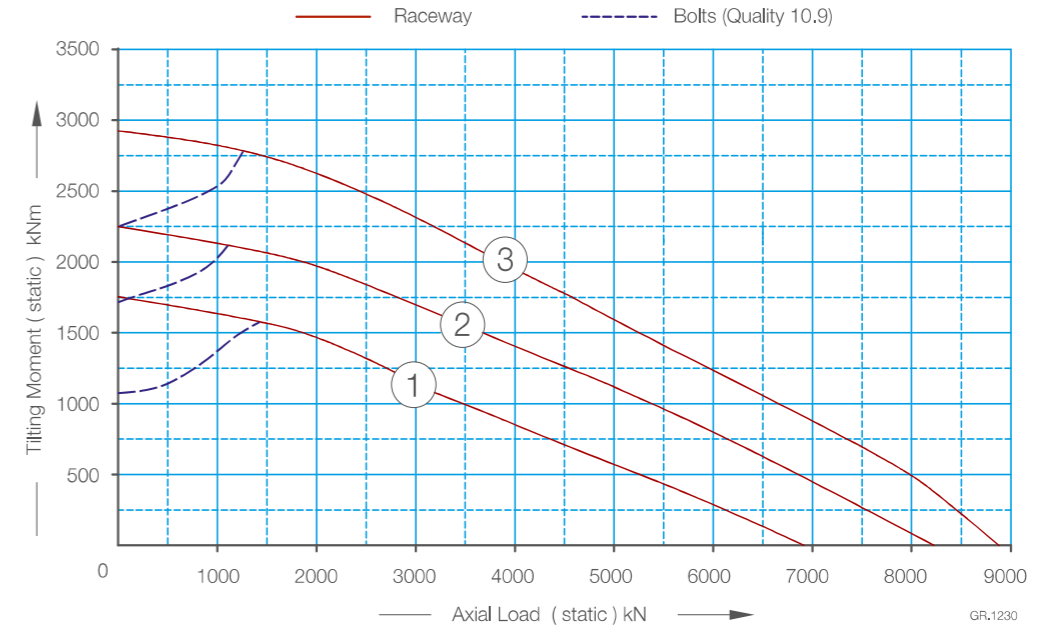
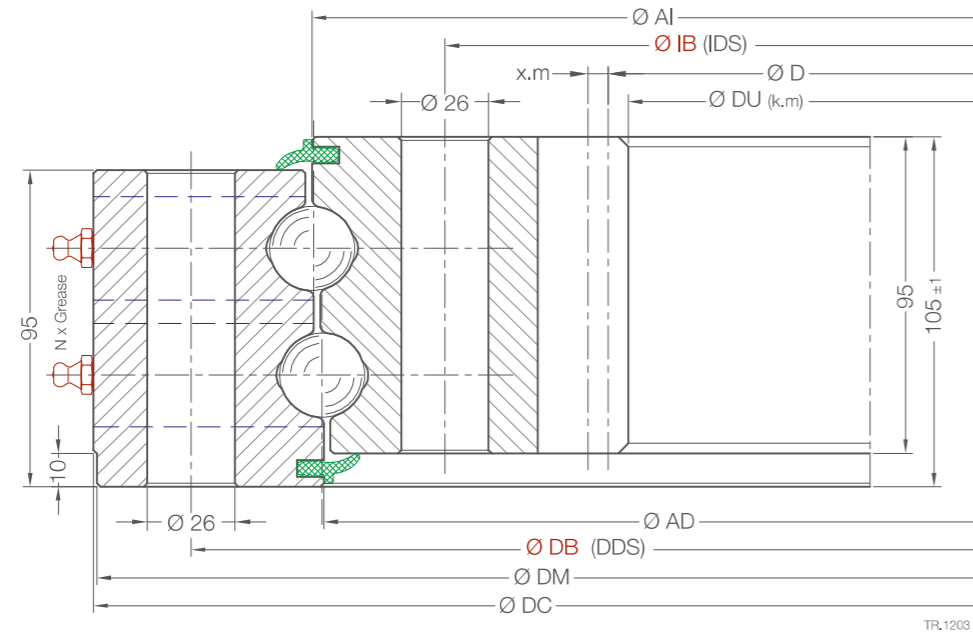


3D.1203



# B2225-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING



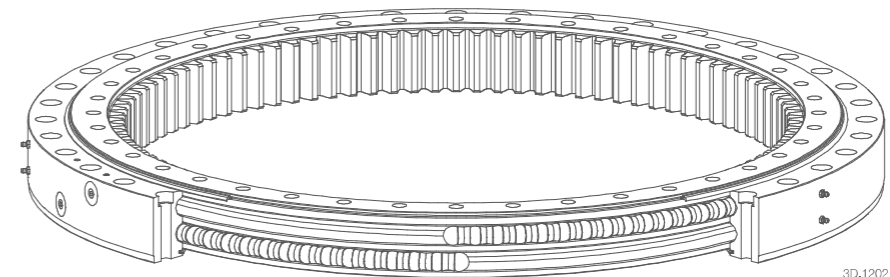
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	N x Grease
B2225-1-1290AA	1	351	1154	972	1290	1288 $-0.31$	1160	1153	4x2 X M10x1
B2225-1-1446AA	2	389	1310	1128	1446	1444 $-0.31$	1316	1309	4x2 X M10x1
B2225-1-1638AA	3	446	1502	1320	1638	1636 $-0.37$	1508	1501	4x2 X M10x1

Connection Holes			Gear Data					Gear Tangential Force		Bearing Clearance			
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1232 $\pm 0.33$	40	1081 $\pm 0.33$	40	984	12	82	-6	-	94	70.84	141.68	$\leq 0.047$	$\leq 0.047$
1388 $\pm 0.39$	56	1237 $\pm 0.39$	56	1140	12	95	-6	-	94	70.84	141.68	$\leq 0.055$	$\leq 0.055$
1580 $\pm 0.39$	64	1429 $\pm 0.39$	64	1332	12	111	-6	-	94	70.84	141.68	$\leq 0.055$	$\leq 0.055$

- In B2225-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M24	333	477	558	666	954	1116

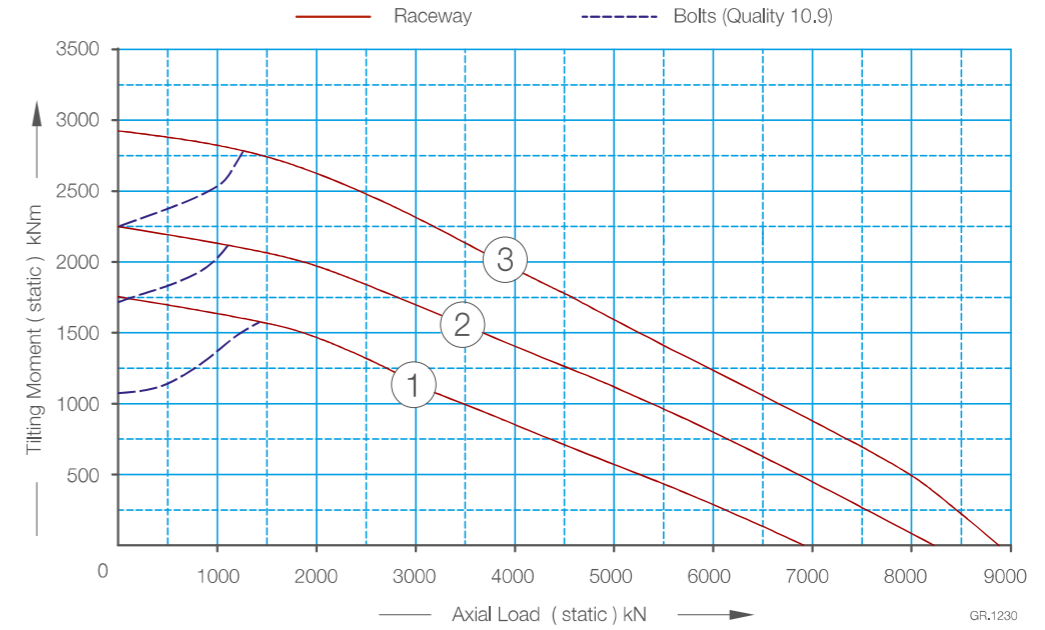
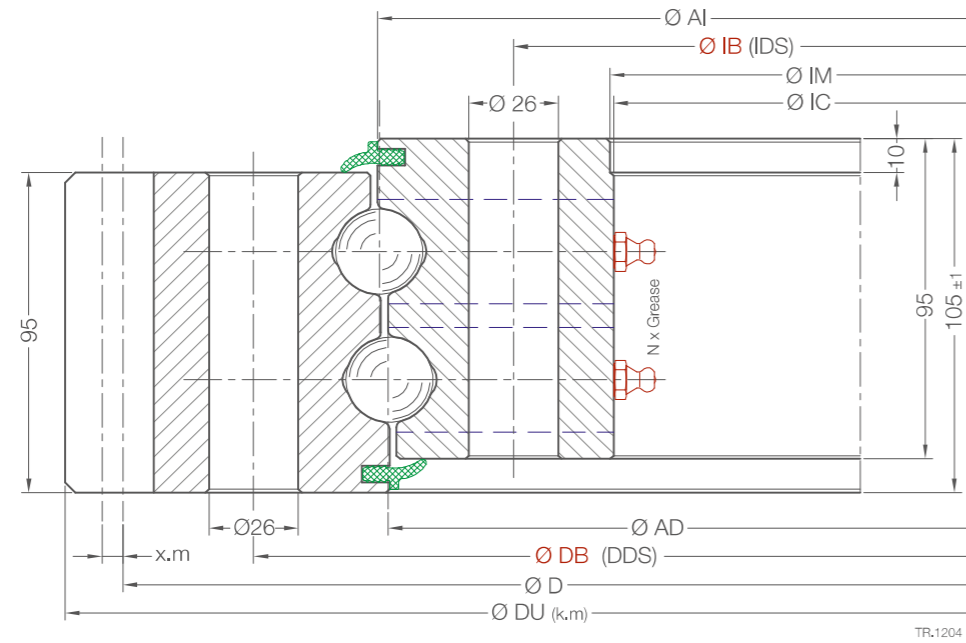
TB.1205



3D.1202

# B2225-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



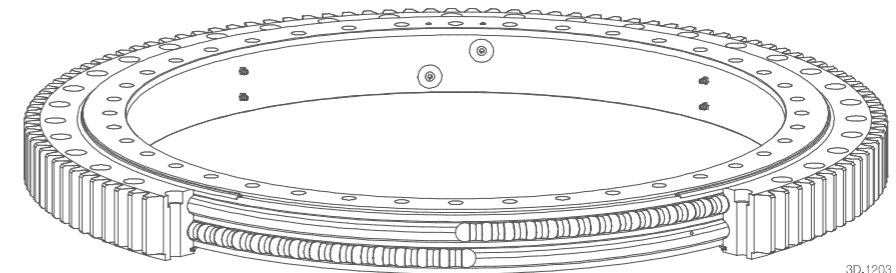
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
B2225-2-1342AA	1	364	1154	1341.6	1023	1025 +0.26	1153	1160	4x2 X M10x1
B2225-2-1498AA	2	400	1310	1497.6	1179	1181 +0.26	1309	1316	4x2 X M10x1
B2225-2-1690AA	3	461	1502	1689.6	1371	1373 +0.31	1501	1508	4x2 X M10x1

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1232 ±0.33	40	1081 ±0.33	40	1308	12	109	+6	-1.2	94	70.84	141.68	≤0.055	≤0.055
1388 ±0.39	56	1237 ±0.33	56	1464	12	122	+6	-1.2	94	70.84	141.68	≤0.055	≤0.055
1580 ±0.39	64	1429 ±0.39	64	1656	12	138	+6	-1.2	94	70.84	141.68	≤0.055	≤0.055

- In B2225-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M24	333	477	558	666	954	1116

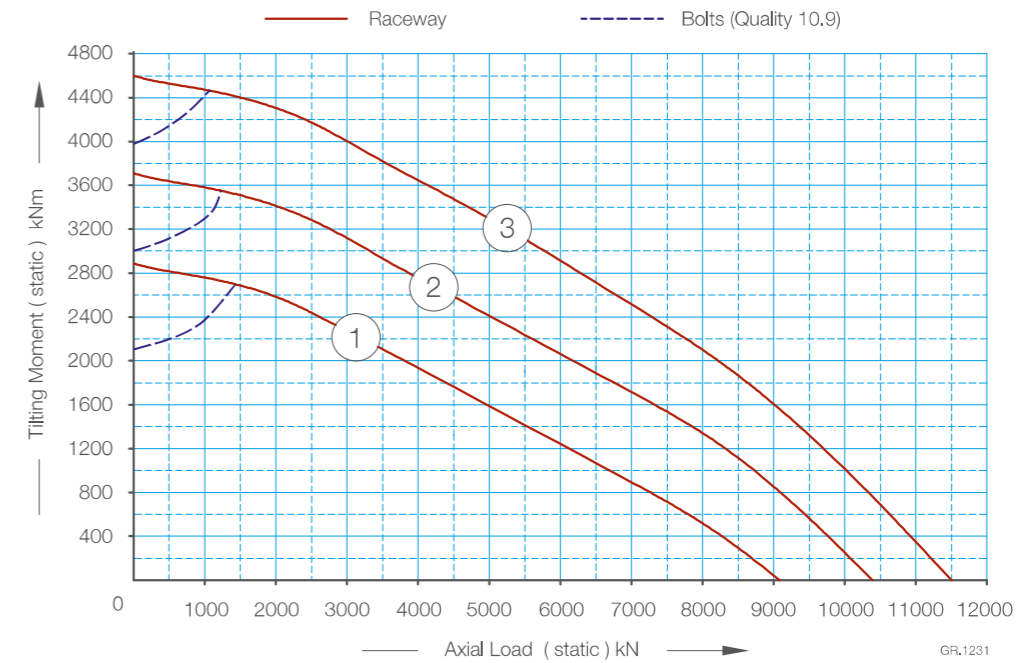
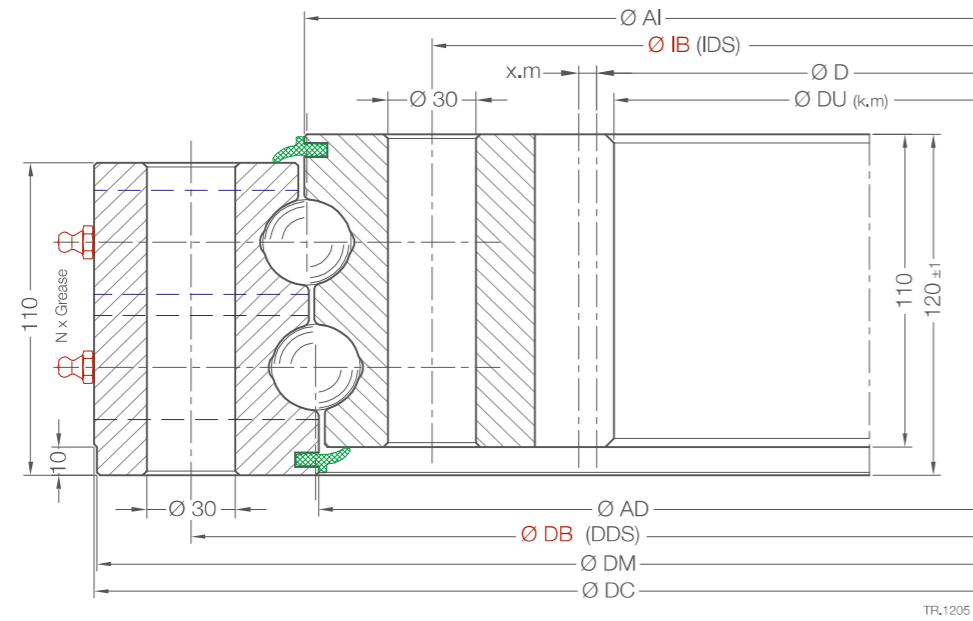
TB.1205



3D.1203

# B2230-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING



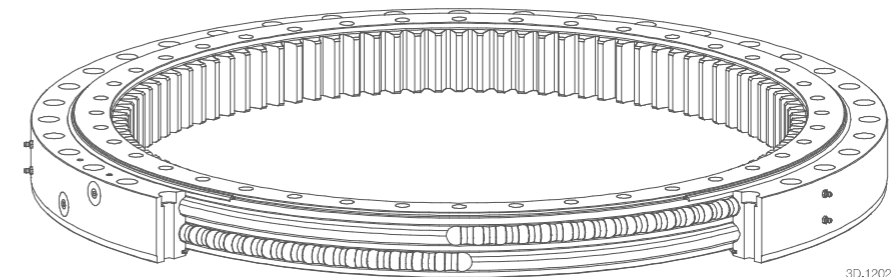
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	N x Grease
B2230-1-1566AA	1	546	1415	1212	1566	1564 +0.31	1423	1413	6x2 X M10x1
B2230-1-1758AA	2	613	1607	1404	1758	1756 +0.37	1615	1605	6x2 X M10x1
B2230-1-1950AA	3	682	1799	1596	1950	1948 +0.37	1807	1797	6x2 X M10x1

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1500 ±0.39	48	1336 ±0.39	48	1224	12	102	-6	-	109	82.14	164.28	≤0.055	≤0.055
1692 ±0.46	60	1528 ±0.39	60	1416	12	118	-6	-	109	82.14	164.28	≤0.055	≤0.055
1884 ±0.46	72	1720 ±0.46	72	1608	12	134	-6	-	109	82.14	164.28	≤0.065	≤0.065

- In B2230-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M27	499	711	832	998	1422	1664

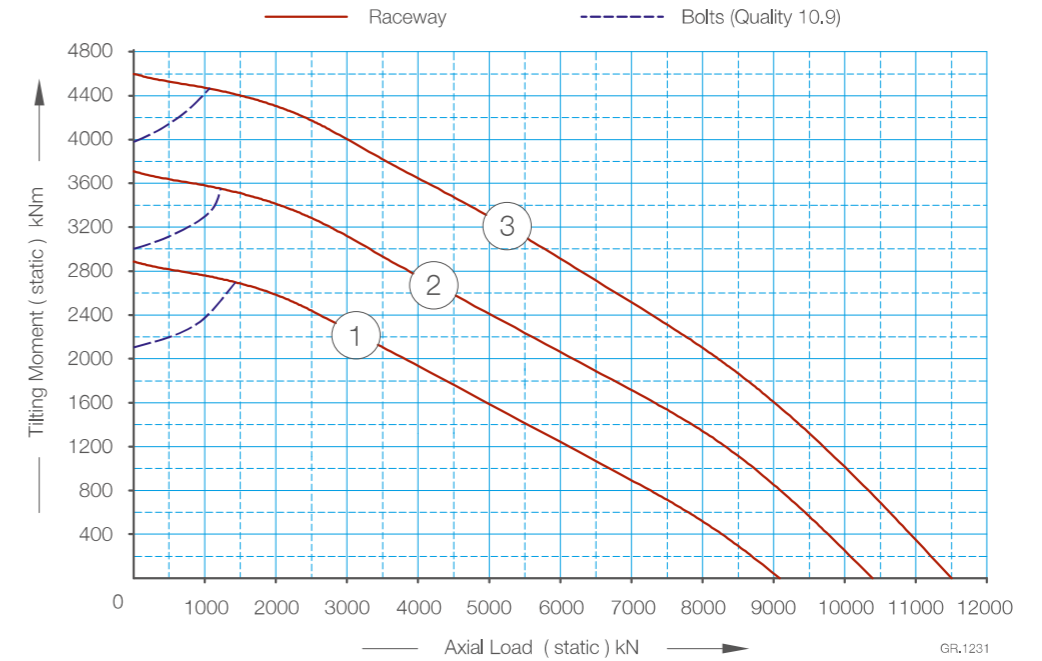
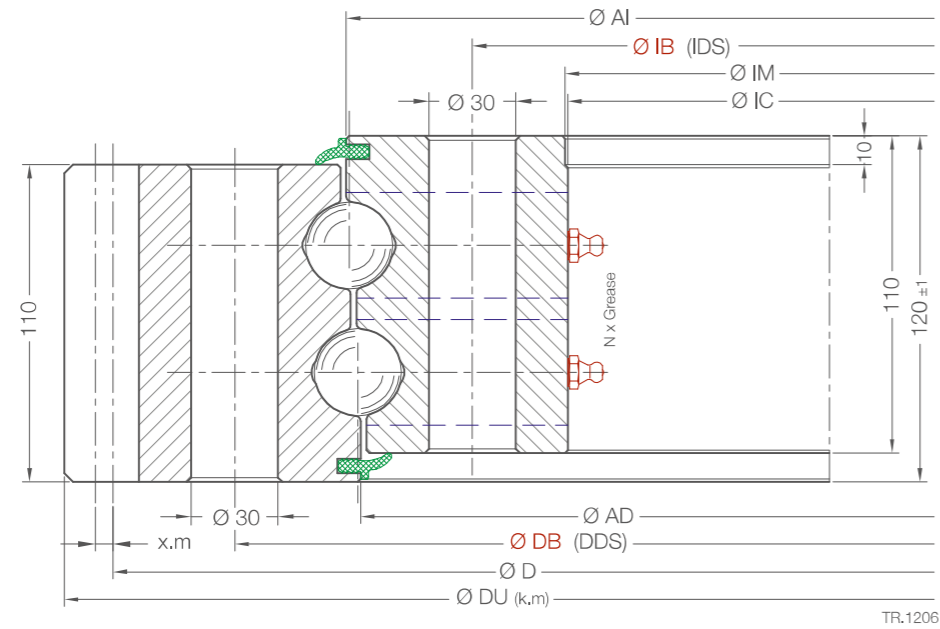
TB.1208



3D.1202

# B2230-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



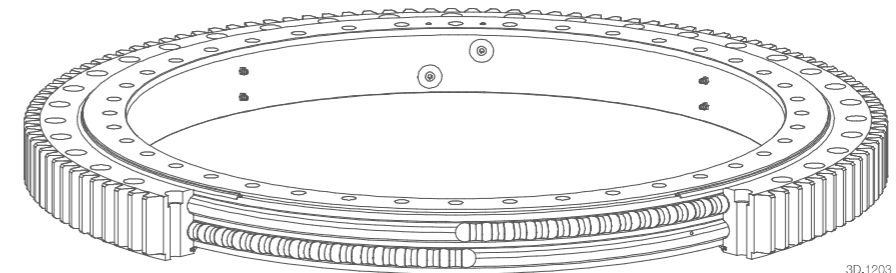
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
B2230-2-1618AA	1	552	1415	1617.6	1270	1272 $\pm 0.31$	1413	1423	6x2 X M10x1
B2230-2-1810AA	2	619	1607	1809.6	1462	1464 $\pm 0.31$	1605	1615	6x2 X M10x1
B2230-2-2002AA	3	685	1799	2001.6	1654	1656 $\pm 0.37$	1797	1807	8x2 X M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1500 $\pm 0.39$	48	1336 $\pm 0.39$	48	1584	12	132	+6	-1.2	109	82.14	164.28	$\leq 0.055$	$\leq 0.055$
1692 $\pm 0.46$	60	1528 $\pm 0.39$	60	1776	12	148	+6	-1.2	109	82.14	164.28	$\leq 0.065$	$\leq 0.065$
1884 $\pm 0.46$	72	1720 $\pm 0.46$	72	1968	12	164	+6	-1.2	109	82.14	164.28	$\leq 0.065$	$\leq 0.065$

- In B2230-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M27	499	711	832	998	1422	1664

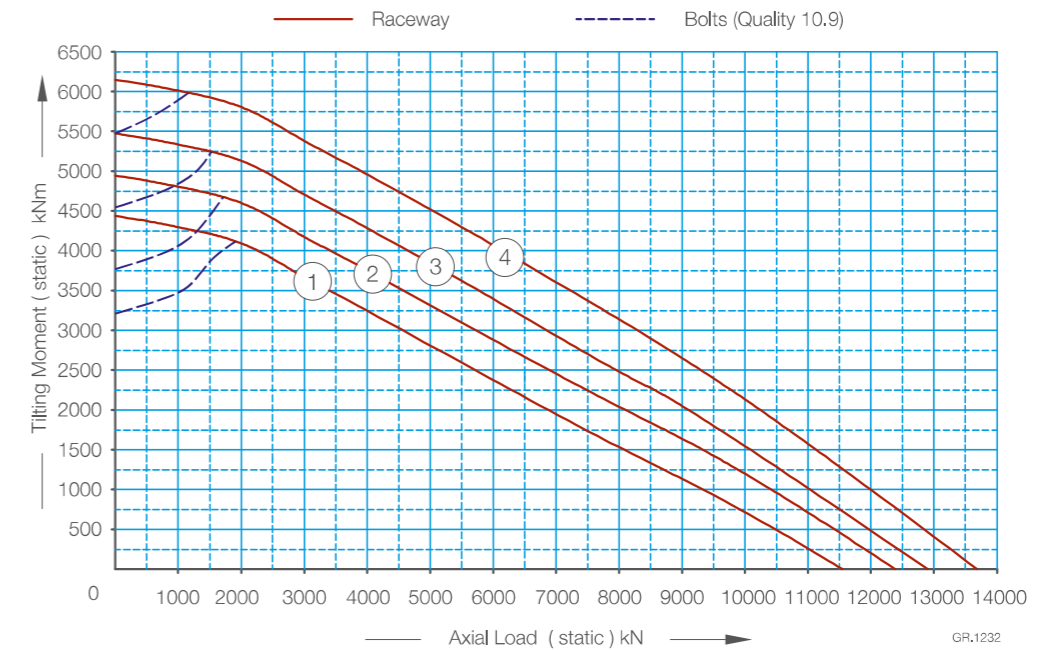
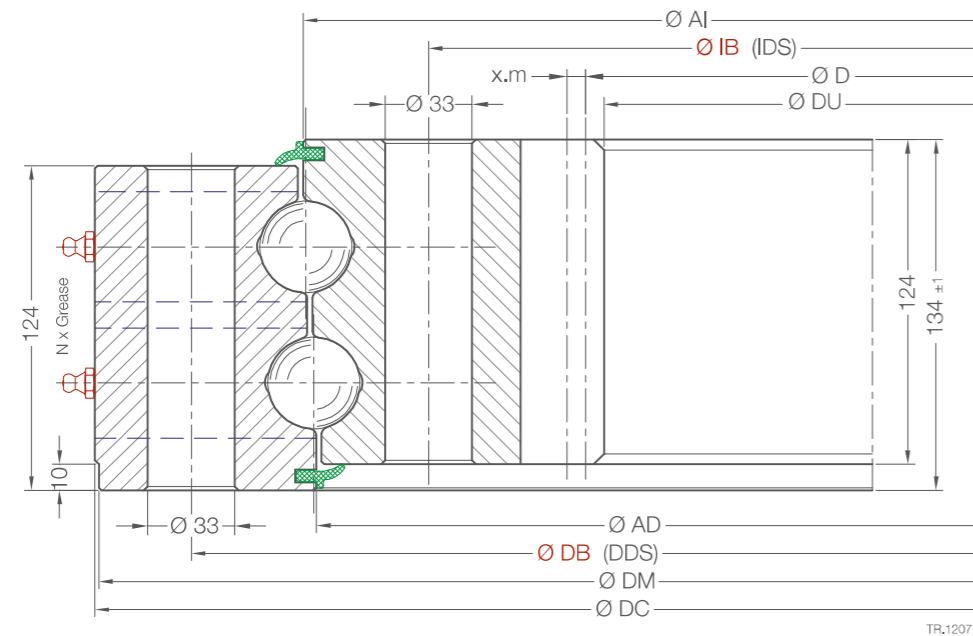
TB.1208



3D.1203

# B2235-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING



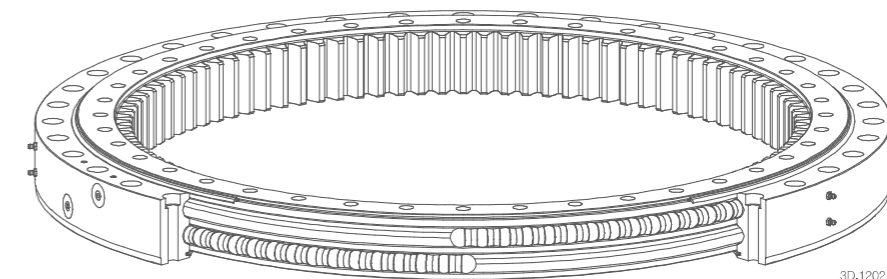
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	N x Grease
B2235-1-1870AA	1	805	1704	1484	1870	1867 -0.37	1712	1702	5x2 X M10x1
B2235-1-1968AA	2	847	1802	1582	1968	1965 -0.37	1810	1800	7x2 X M10x1
B2235-1-2066AA	3	884	1900	1680	2066	2063 -0.44	1908	1898	8x2 X M10x1
B2235-1-2178AA	4	929	2012	1792	2178	2175 -0.44	2020	2010	8x2 X M10x1

Connection Holes		Gear Data					Gear Tangential Force		Bearing Clearance				
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1797 ±0.46	50	1617 ±0.46	50	1498	14	107	-7	-	123	108.14	216.28	≤0.065	≤0.065
1895 ±0.46	56	1715 ±0.46	56	1596	14	114	-7	-	123	108.14	216.28	≤0.065	≤0.065
1993 ±0.46	64	1813 ±0.46	64	1694	14	121	-7	-	123	108.14	216.28	≤0.065	≤0.065
2105 ±0.55	72	1925 ±0.46	72	1806	14	129	-7	-	123	108.14	216.28	≤0.065	≤0.065

- In B2235-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

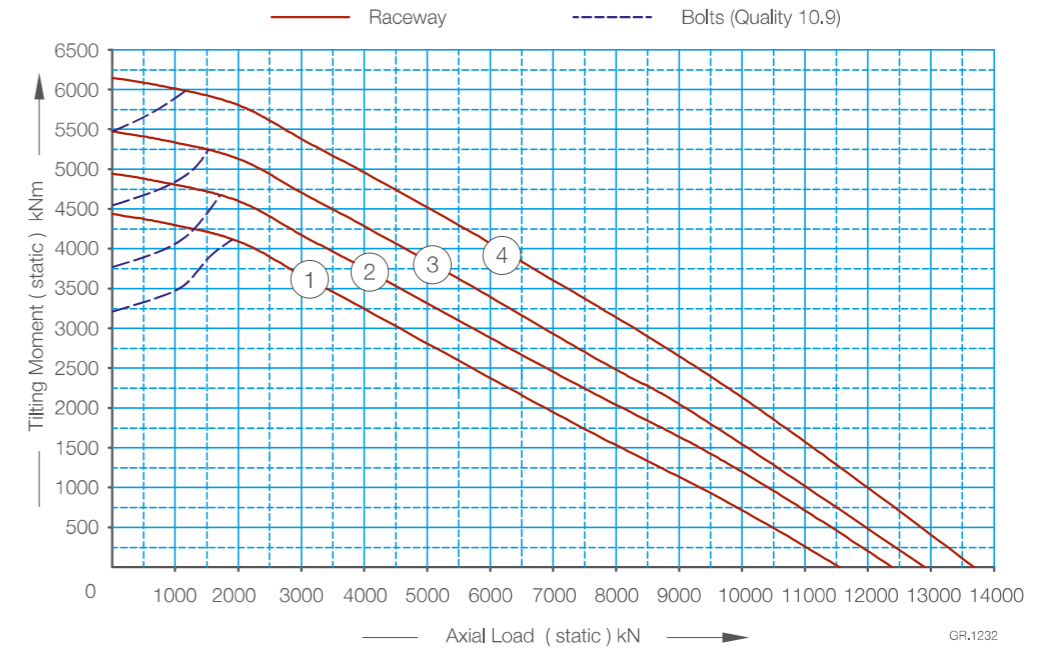
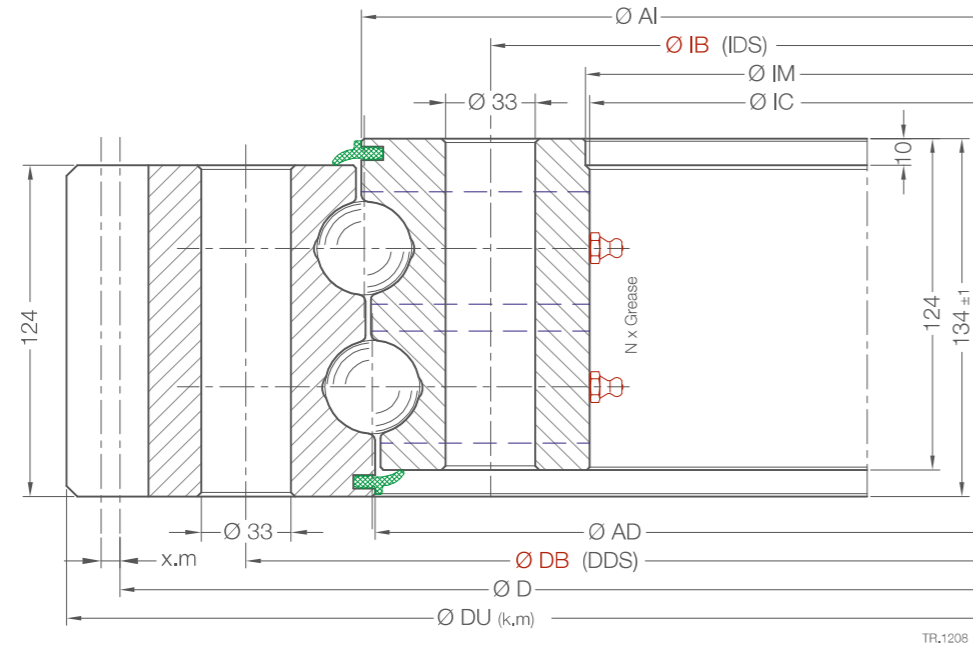
Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M30	675	945	1125	1350	1890	2250

TB.1211



# B2235-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



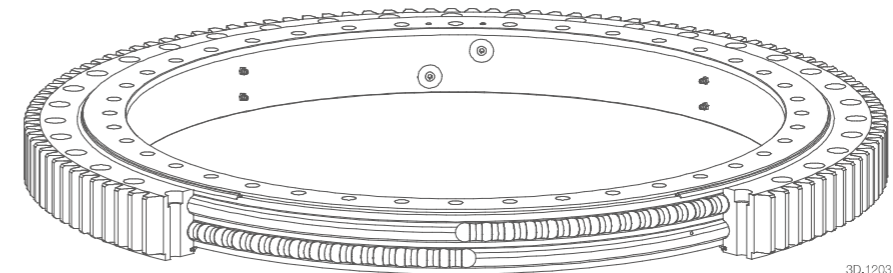
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
B2235-2-1929AA	1	828	1704	1929.2	1544	1547 +0.31	1702	1712	5x2 X M10x1
B2235-2-2027AA	2	870	1802	2027.2	1642	1645 +0.37	1800	1810	7x2 X M10x1
B2235-2-2125AA	3	908	1900	2125.2	1740	1743 +0.37	1898	1908	8x2 X M10x1
B2235-2-2237AA	4	954	2012	2237.2	1852	1855 +0.37	2010	2020	8x2 X M10x1

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1797 ±0.46	50	1617 ±0.46	50	1890	14	135	+7	-1.4	123	108.14	216.28	≤0.065	≤0.065
1895 ±0.46	56	1715 ±0.46	56	1988	14	142	+7	-1.4	123	108.14	216.28	≤0.065	≤0.065
1993 ±0.46	64	1813 ±0.46	64	2086	14	149	+7	-1.4	123	108.14	216.28	≤0.065	≤0.065
2105 ±0.55	72	1925 ±0.46	72	2198	14	157	+7	-1.4	123	108.14	216.28	≤0.065	≤0.065

- In B2235-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M30	675	945	1125	1350	1890	2250

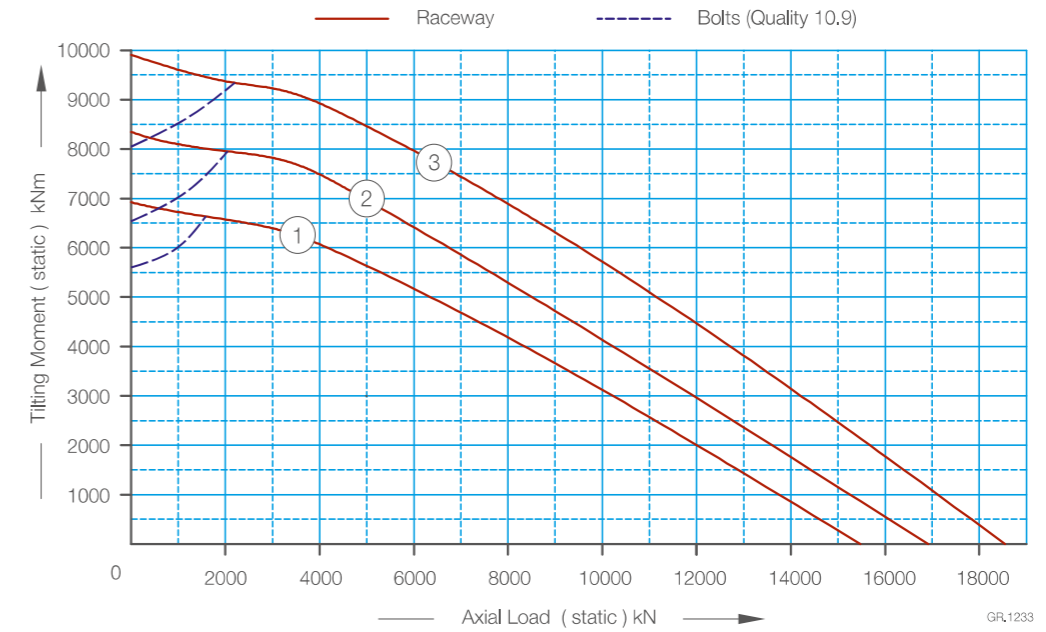
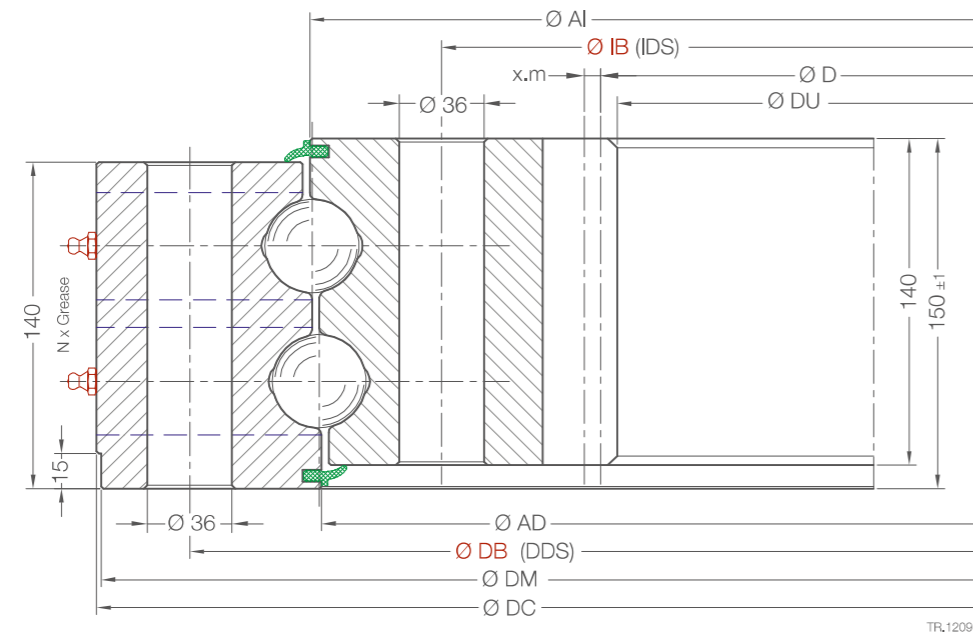
TB.1211



3D.1203

# B2240-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING



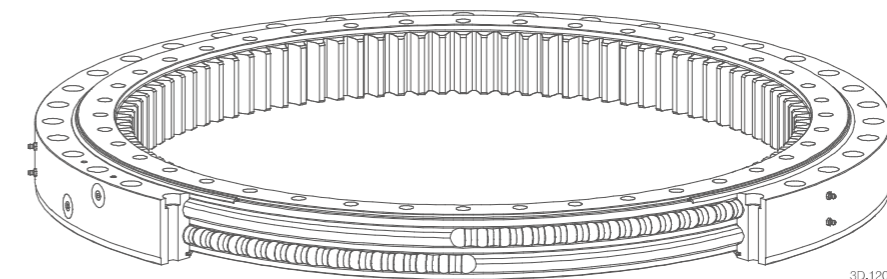
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	$N \times$ Grease
B2240-1-2192AA	1	1229	2003	1750	2192	2188 -0,44	2011	2001	6x2 X M10x1
B2240-1-2388AA	2	1368	2199	1946	2388	2384 -0,44	2207	2197	8x2 X M10x1
B2240-1-2584AA	3	1490	2395	2142	2584	2580 -0,54	2403	2393	9x2 X M10x1

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2113 $\pm 0,55$	60	1899 $\pm 0,46$	60	1764	14	126	-7	-	139	122.21	244.42	$\leq 0,065$	$\leq 0,065$
2309 $\pm 0,55$	64	2095 $\pm 0,55$	64	1960	14	140	-7	-	139	122.21	244.42	$\leq 0,075$	$\leq 0,075$
2505 $\pm 0,68$	72	2291 $\pm 0,55$	72	2156	14	154	-7	-	139	122.21	244.42	$\leq 0,075$	$\leq 0,075$

- In B2240-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)				
Bolt Size	Pre-Tightening %50		Tightening Torque	
	10.9	12.9	10.9	12.9
M33	1308	1530	2616	3060

TB.1214



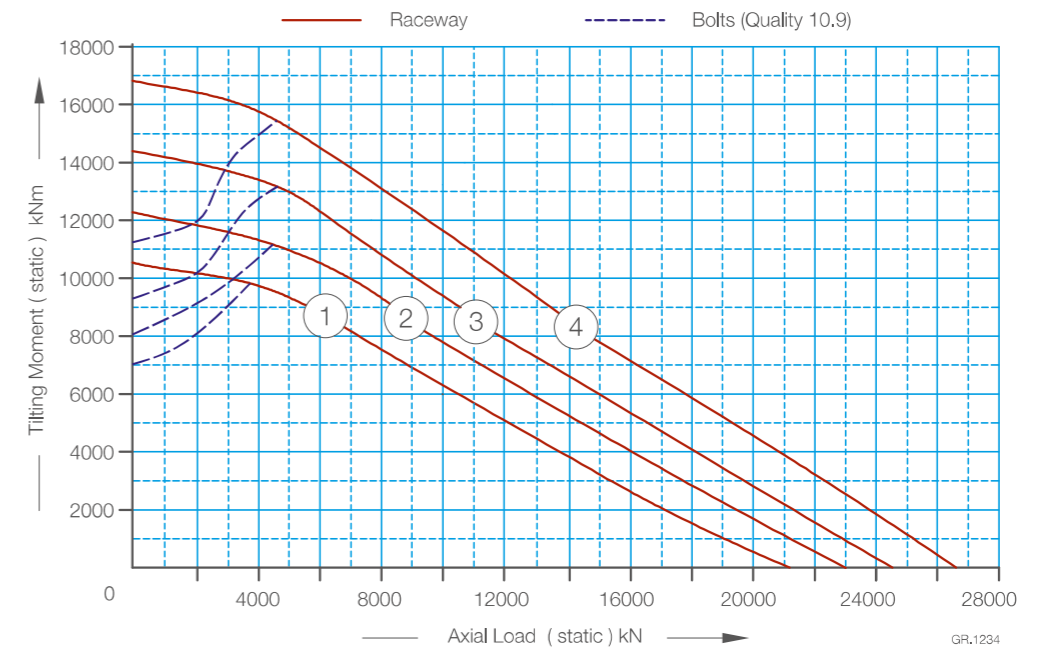
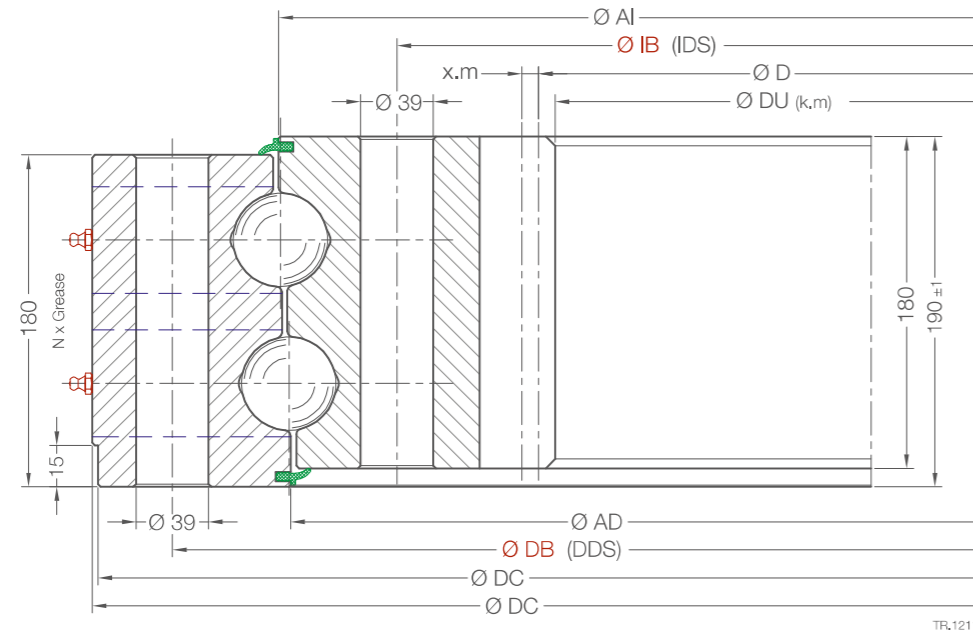
3D.1202





# B2250-1 SERIES

DESIGNED FOR MEDIUM LOADS, INTERNAL GEAR SLEWING BEARING



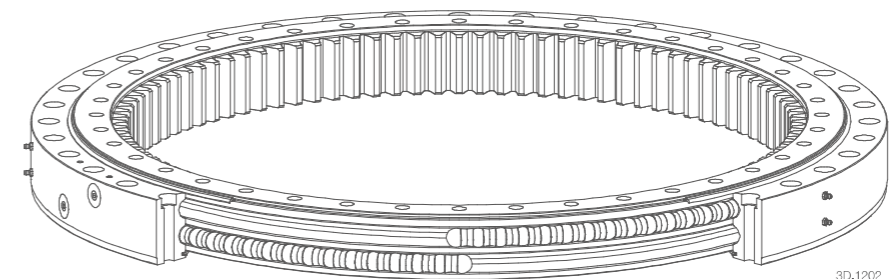
Drawing No	Item No	Weight kg	Geometry mm							N x Grease
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$		
B2250-1-2477AA	1	2011	2266	1980	2477	2473 -0.44	2277	2264	8x2 X M10x1	
B2250-1-2657AA	2	2173	2446	2160	2657	2653 -0.54	2457	2444	6x2 X M10x1	
B2250-1-2855AA	3	2353	2644	2358	2855	2851 -0.54	2655	2642	8x2 X M10x1	
B2250-1-3053AA	4	2518	2842	2556	3053	3049 -0.54	2853	2840	9x2 X M10x1	

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2391 ±0.55	56	2150 ±0.55	56	1998	18	111	-9	-	179	280.17	560.34	≤0.085	≤0.085
2571 ±0.68	60	2330 ±0.55	60	2178	18	121	-9	-	179	280.17	560.34	≤0.085	≤0.085
2769 ±0.68	64	2528 ±0.68	64	2376	18	132	-9	-	179	280.17	560.34	≤0.095	≤0.095
2967 ±0.68	72	2726 ±0.68	72	2574	18	143	-9	-	179	280.17	560.34	≤0.095	≤0.095

- In B2250-1 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)				
Bolt Size	Pre-Tightening %50		Tightening Torque	
	10.9	12.9	10.9	12.9
M36	1682	1968	3364	3936

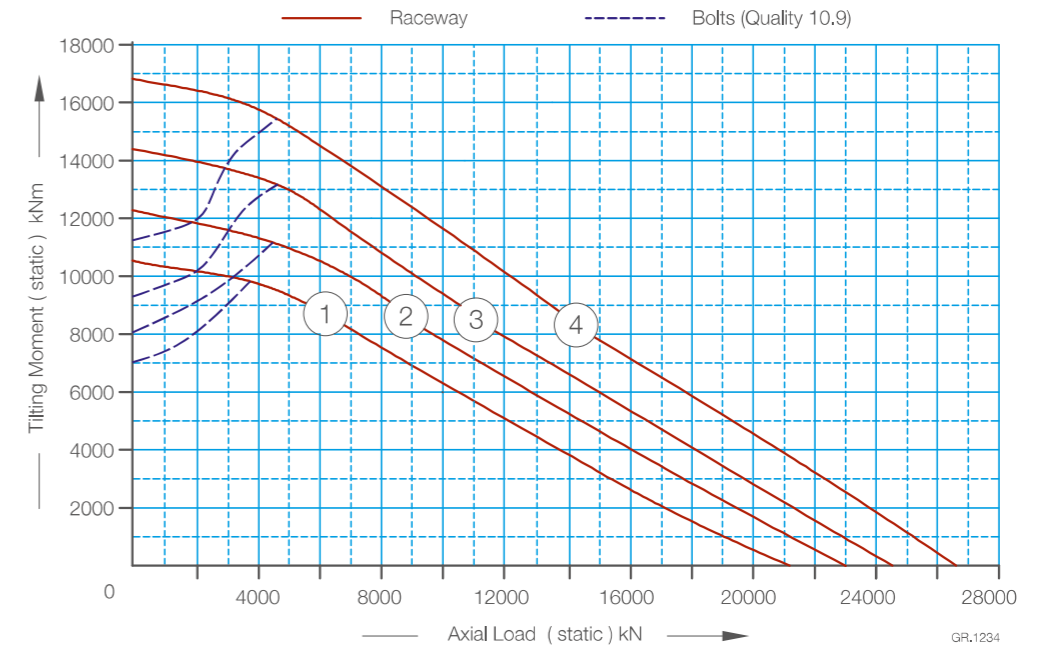
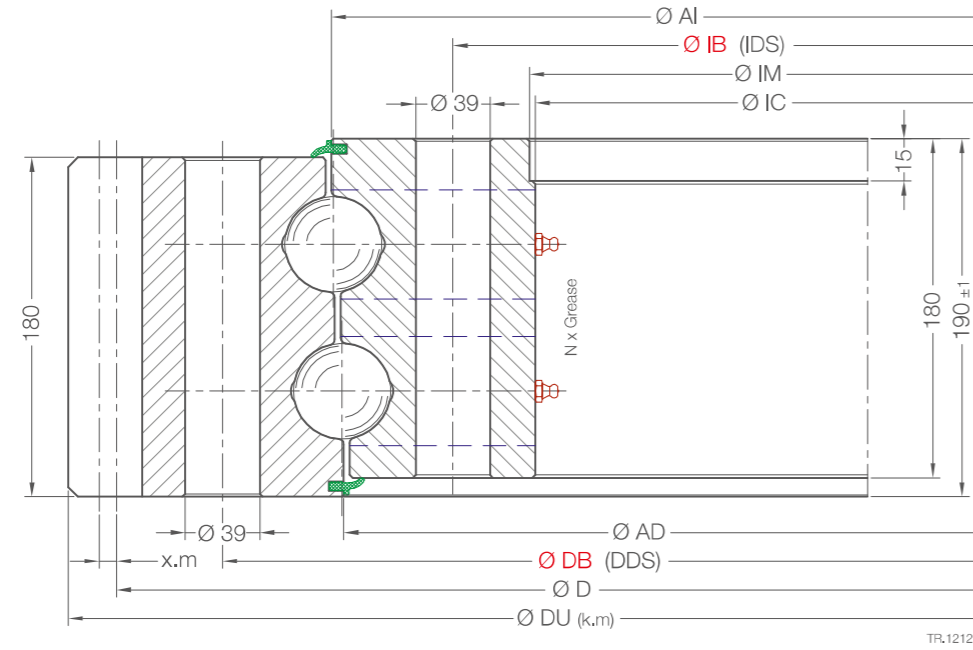
TB.1217



3D.1202

# B2250-2 SERIES

DESIGNED FOR MEDIUM LOADS, EXTERNAL GEAR SLEWING BEARING



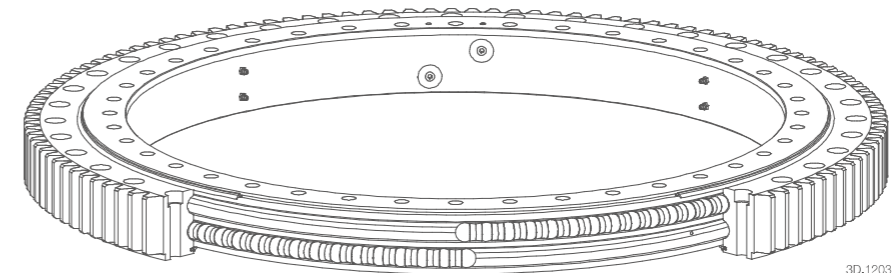
Drawing No	Item No	Weight kg	Geometry mm							N x Grease
			Dimensions							
			Ø RC	Ø DU	Ø IC	Ø IM	Ø AD	Ø AI		
B2250-2-2552AA	1	2031	2266	2552.4	2064	2068 +0.44	2264	2277	8x2 X M10x1	
B2250-2-2732AA	2	2191	2446	2732.4	2244	2248 +0.44	2444	2457	6x2 X M10x1	
B2250-2-2930AA	3	2370	2644	2930.4	2442	2446 +0.44	2642	2655	8x2 X M10x1	
B2250-2-3128AA	4	2533	2842	3128.4	2640	2644 +0.54	2840	2853	9x2 X M10x1	

Connection Holes		Gear Data					Gear Tangential Force		Bearing Clearance				
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2391 ±0.55	56	2150 ±0.55	56	2502	18	139	+9	-1.8	179	280.17	560.34	≤0.085	≤0.085
2571 ±0.68	60	2330 ±0.55	60	2682	18	149	+9	-1.8	179	280.17	560.34	≤0.085	≤0.085
2769 ±0.68	64	2528 ±0.68	64	2880	18	160	+9	-1.8	179	280.17	560.34	≤0.095	≤0.095
2967 ±0.68	72	2726 ±0.68	72	3078	18	171	+9	-1.8	179	280.17	560.34	≤0.095	≤0.095

- In B2250-2 series Slewing Bearings, quenched and tempered steel is used as a standard material.

Bolt tightening torques (Nm)				
Bolt Size	Pre-Tightening %50		Tightening Torque	
	10.9	12.9	10.9	12.9
M36	1682	1968	3364	3936

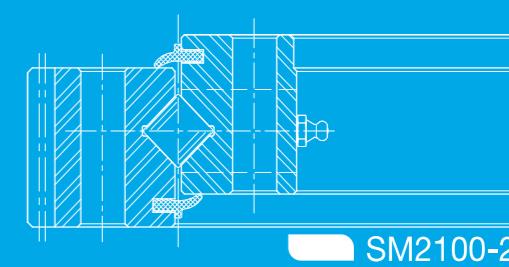
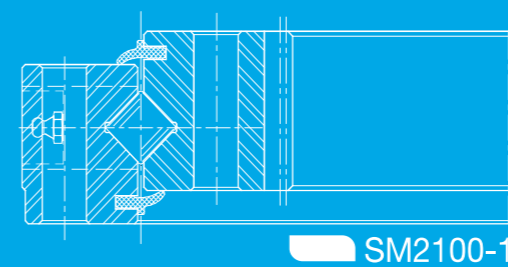
TB.1217



3D.1203

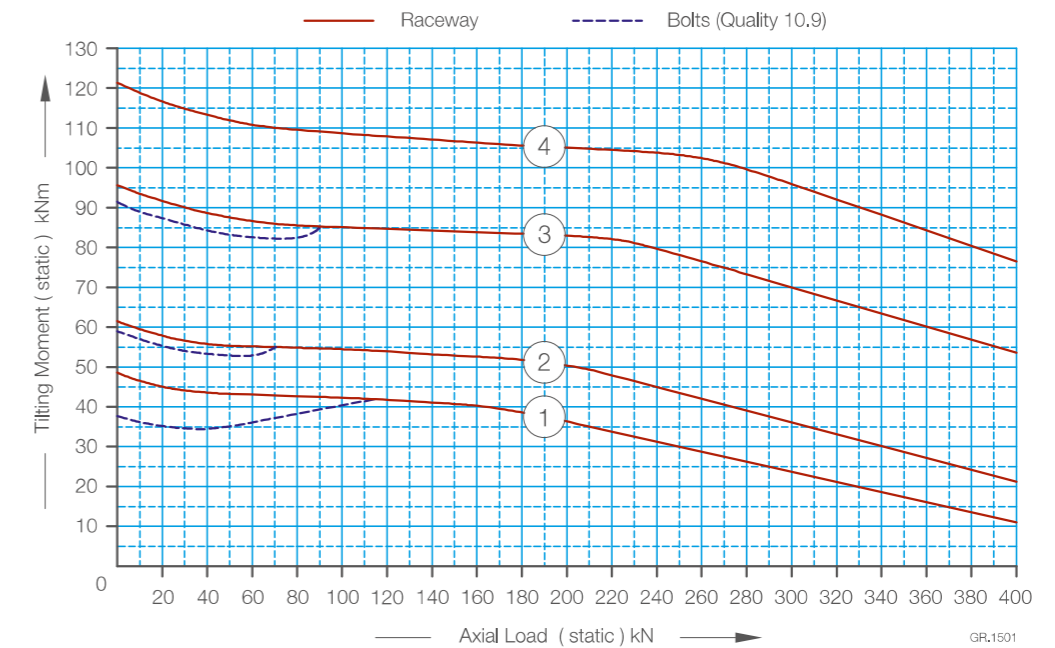
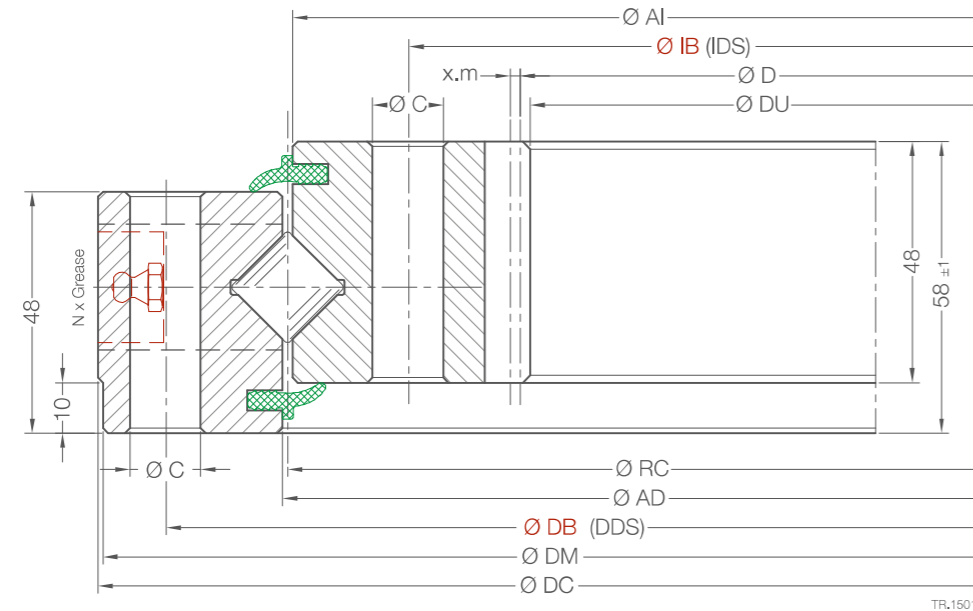
# SM2100 SERIES

Single-Row Cylindrical Roller Bearings



# SM2116-1 SERIES

FOR MEDIUM-HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



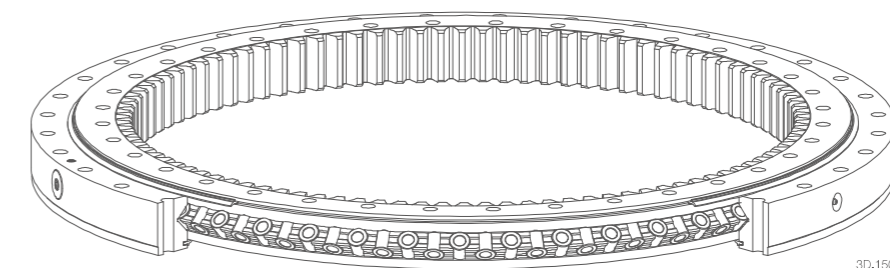
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AD$	$\varnothing AI$	N x Grease	$\varnothing C$
SM2116-1-0475AA	1	32	400	304	475	474 -0.15	402	398	2 x M8x1	13
SM2116-1-0531AA	2	42	450	345	531	530 -0.17	452	448	2 x M8x1	15
SM2116-1-0641AA	3	51	560	455	641	640 -0.20	562	558	4 x M8x1	15
SM2116-1-0717AA	4	62	630	516	717	716 -0.20	632	628	4 x M8x1	17

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
448 ±0.20	16	352 ±0.15	16	308	4	77	-2.0	-	47	18.1	36.2	≤0.018	≤0.018
500 ±0.20	16	400 ±0.20	16	350	5	70	-2.5	-	47	22.7	45.4	≤0.020	≤0.020
610 ±0.22	20	510 ±0.22	20	460	5	92	-2.5	-	47	22.7	45.4	≤0.022	≤0.022
682 ±0.25	20	578 ±0.25	20	522	6	87	-3.0	-	47	27.2	54.4	≤0.022	≤0.022

- In SM2116-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

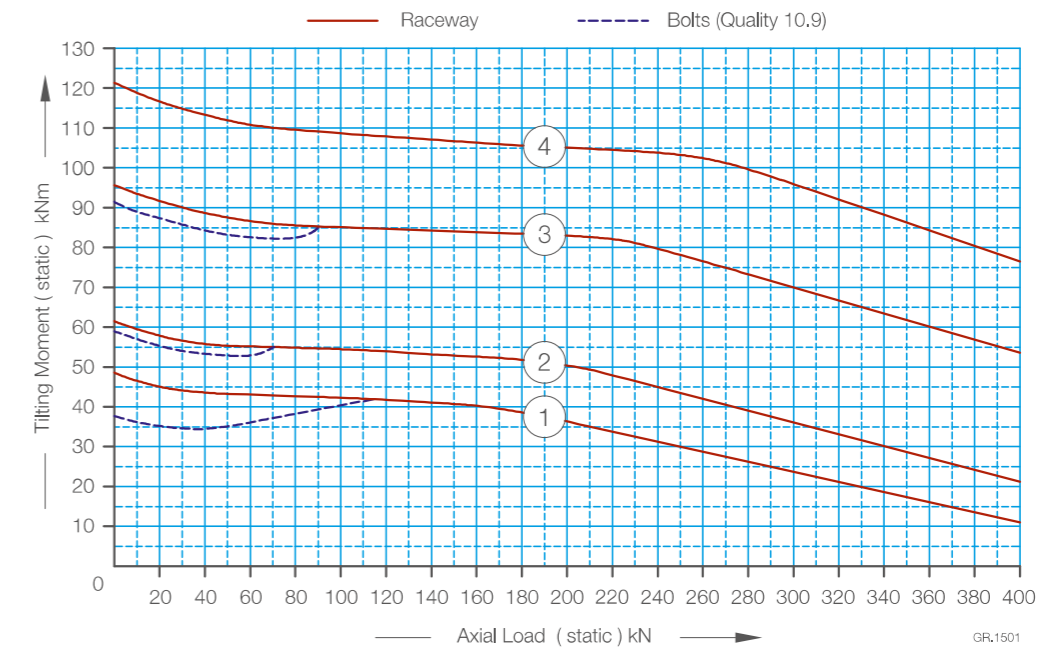
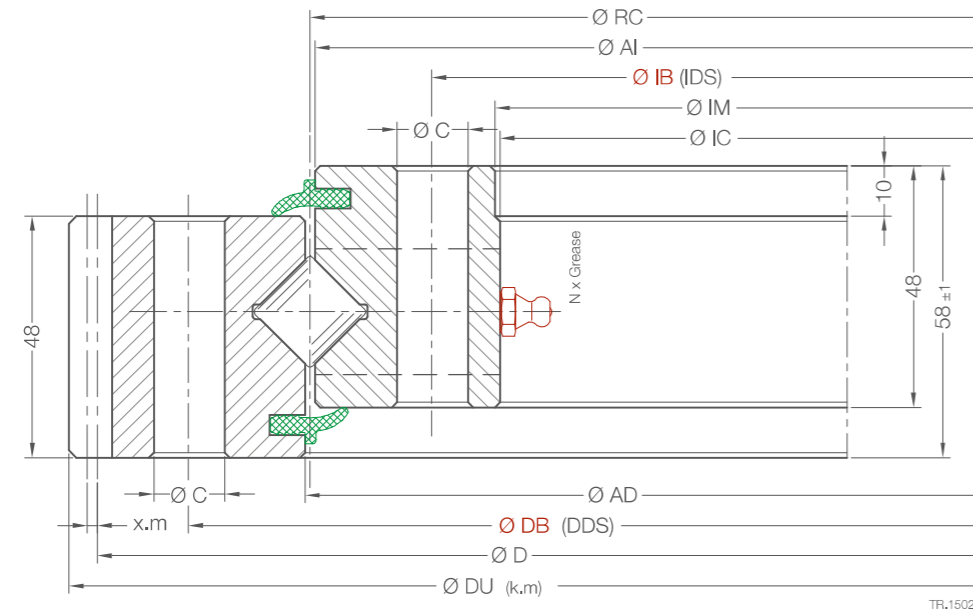
Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M12	39	59	68	78	117	135
M14	63	92	108	126	184	216
M16	97	140	167	193	279	333

TB.1502



# SM2116-2 SERIES

FOR MEDIUM-HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



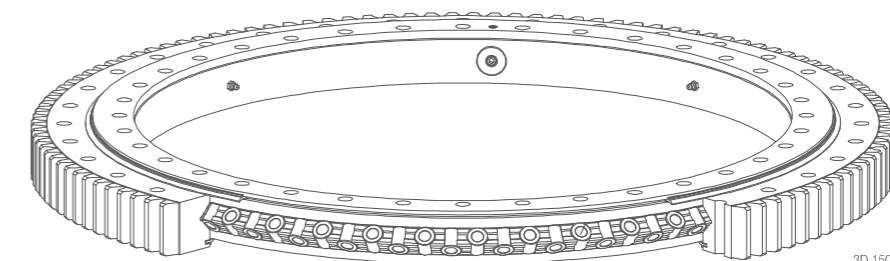
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease	$\varnothing C$
SM2116-2-0495AA	1	34	400	495.2	325	326 +0.10	402	398	2 x M8x1	13
SM2116-2-0554AA	2	43	450	554	369	370 +0.10	452	448	2 x M8x1	15
SM2116-2-0664AA	3	52	560	664	479	480 +0.15	562	558	4 x M8x1	15
SM2116-2-0743AA	4	64	630	742.8	543	544 +0.17	632	628	4 x M8x1	17

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
448 ±0.20	16	352 ±0.15	16	484	4	121	+2.0	-0.4	47	18.1	36.2	≤0.025	≤0.025
500 ±0.20	16	400 ±0.20	16	540	5	108	+2.5	-0.5	47	22.7	45.4	≤0.027	≤0.027
610 ±0.22	20	510 ±0.22	20	650	5	130	+2.5	-0.5	47	22.7	45.4	≤0.032	≤0.032
682 ±0.25	20	578 ±0.25	20	726	6	121	+3.0	-0.6	47	27.2	54.4	≤0.036	≤0.036

- In SM2116-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M12	39	59	68	78	117	135
M14	63	92	108	126	184	216
M16	97	140	167	193	279	333

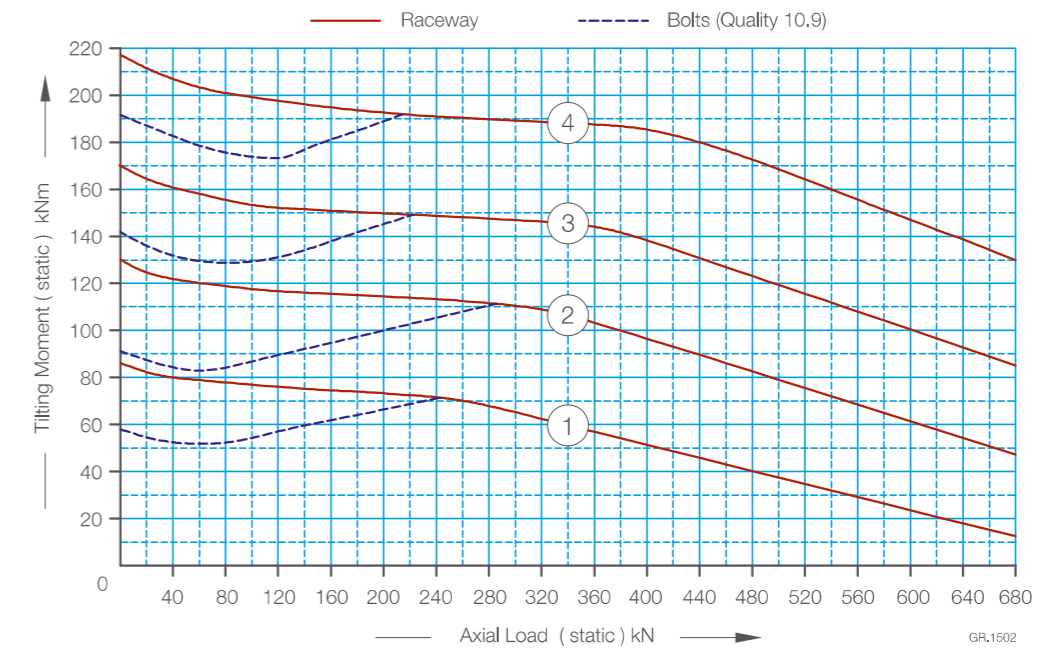
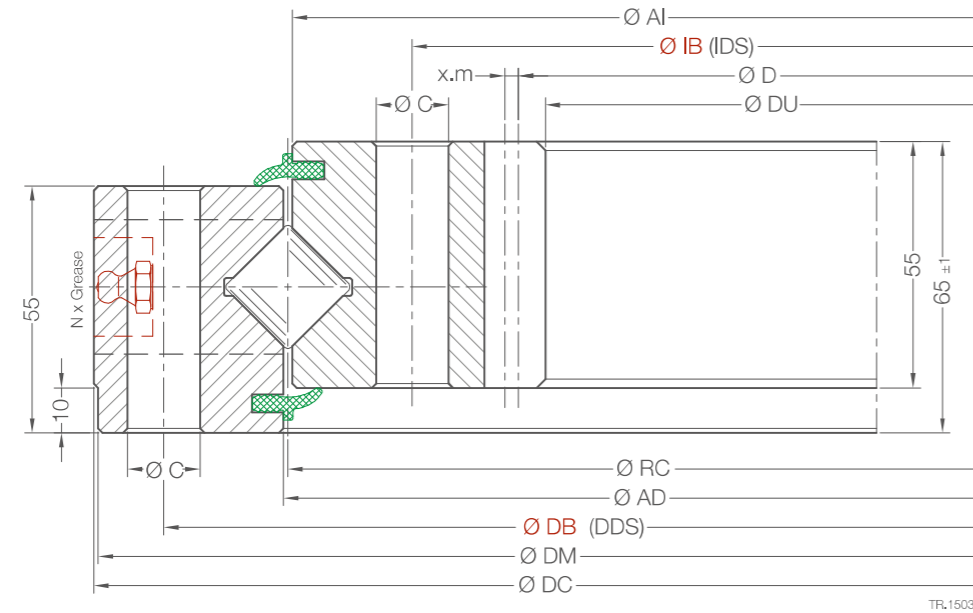
TB.1502



3D.1502

# SM2120-1 SERIES

FOR MEDIUM-HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



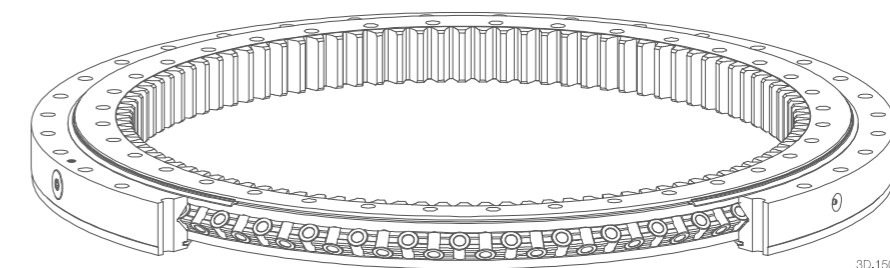
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AD$	$\varnothing AI$	N x Grease	$\varnothing C$
SM2120-1-0536AA	1	50	450	336	536	535 -0.17	452	448	2 x M10x1	15
SM2120-1-0646AA	2	62	560	444	646	645 -0.20	562	558	4 x M10x1	15
SM2120-1-0722AA	3	78	630	496	722	720 -0.20	632	628	4 x M10x1	17
SM2120-1-0802AA	4	87	710	576	802	800 -0.20	712	708	4 x M10x1	17

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
505 ±0.22	16	395 ±0.20	16	342	6	57	-3.0	-	54	31.3	62.6	≤0.027	≤0.027
615 ±0.22	20	505 ±0.22	20	450	6	75	-3.0	-	54	31.3	62.6	≤0.032	≤0.032
687 ±0.25	20	573 ±0.22	20	504	8	63	-4.0	-	54	41.7	83.4	≤0.032	≤0.032
767 ±0.25	24	653 ±0.25	24	584	8	73	-4.0	-	54	41.7	83.4	≤0.036	≤0.036

- In SM2120-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

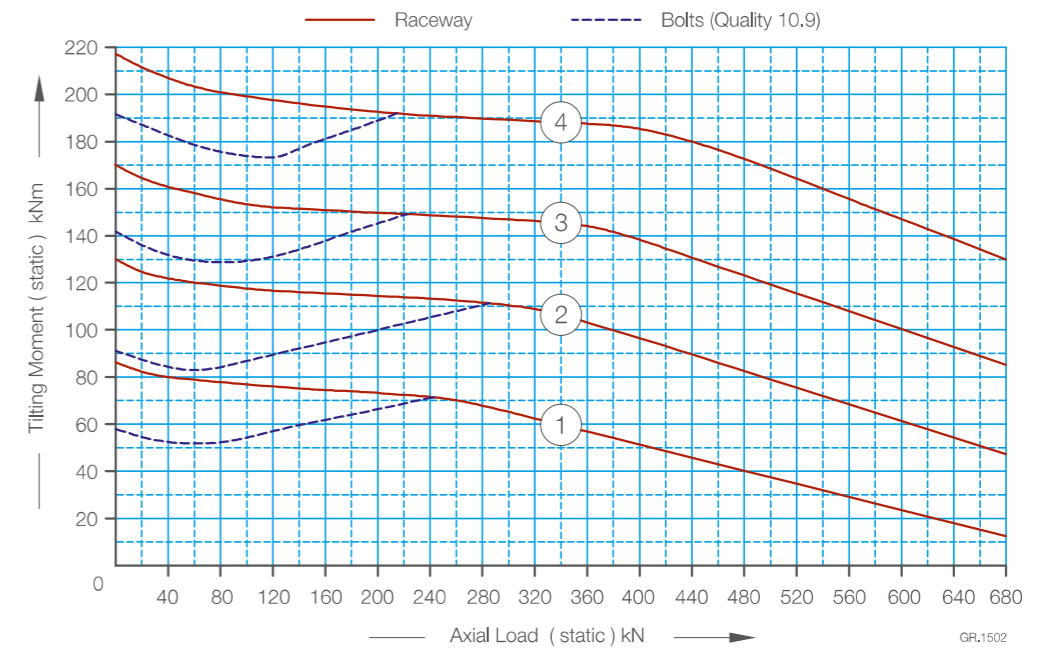
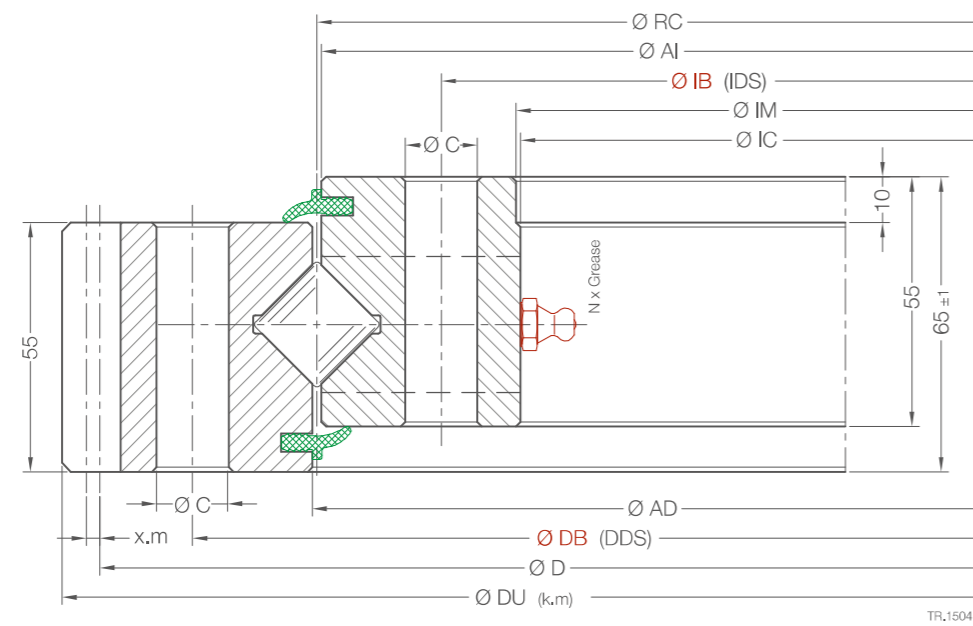
Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M14	63	92	108	126	184	216
M16	97	140	167	193	279	333

TB.1502



# SM2120-2 SERIES

FOR MEDIUM-HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



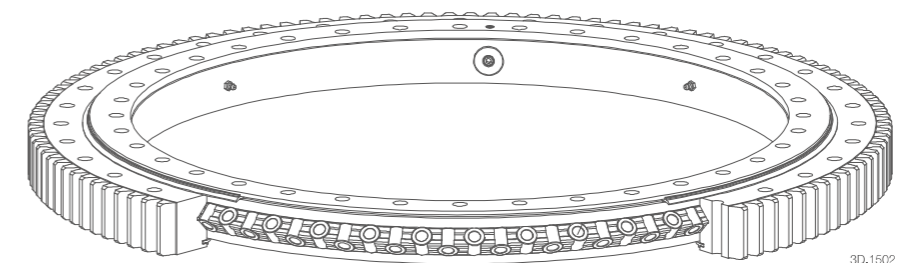
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			Ø RC	Ø DU	Ø IC	Ø IM	Ø AD	Ø AI	N x Grease	Ø C
SM2120-2-0563AA	1	51	450	562.8	364	365 +0.12	452	448	2 x M10x1	15
SM2120-2-0677AA	2	64	560	676.8	474	475 +0.15	562	558	4 x M10x1	15
SM2120-2-0758AA	3	79	630	758.4	538	540 +0.17	632	628	4 x M10x1	17
SM2120-2-0838AA	4	88	710	838.4	618	620 +0.17	712	708	4 x M10x1	17

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
505 ±0.22	16	395 ±0.20	16	546	6	91	+3.0	-0.6	54	31.3	62.6	≤0.027	≤0.027
615 ±0.22	20	505 ±0.22	20	660	6	110	+3.0	-0.6	54	31.3	62.6	≤0.032	≤0.032
687 ±0.25	20	573 ±0.22	20	736	8	92	+4.0	-0.8	54	41.7	83.4	≤0.032	≤0.032
767 ±0.25	24	653 ±0.25	24	816	8	102	+4.0	-0.8	54	41.7	83.4	≤0.036	≤0.036

- In SM2120-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M14	63	92	108	126	184	216
M16	97	140	167	193	279	333

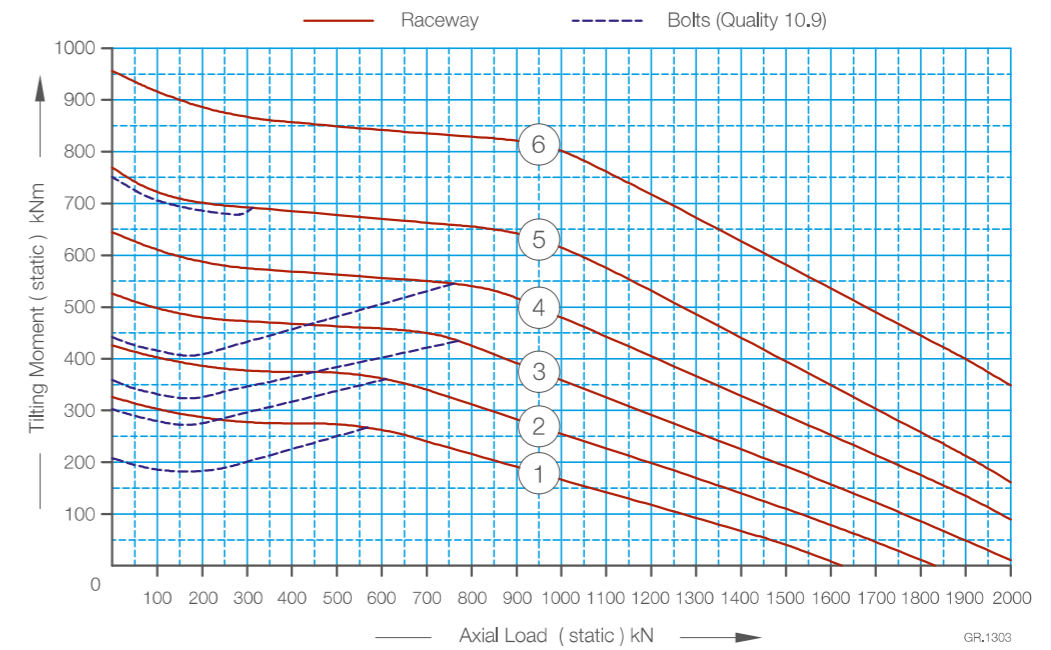
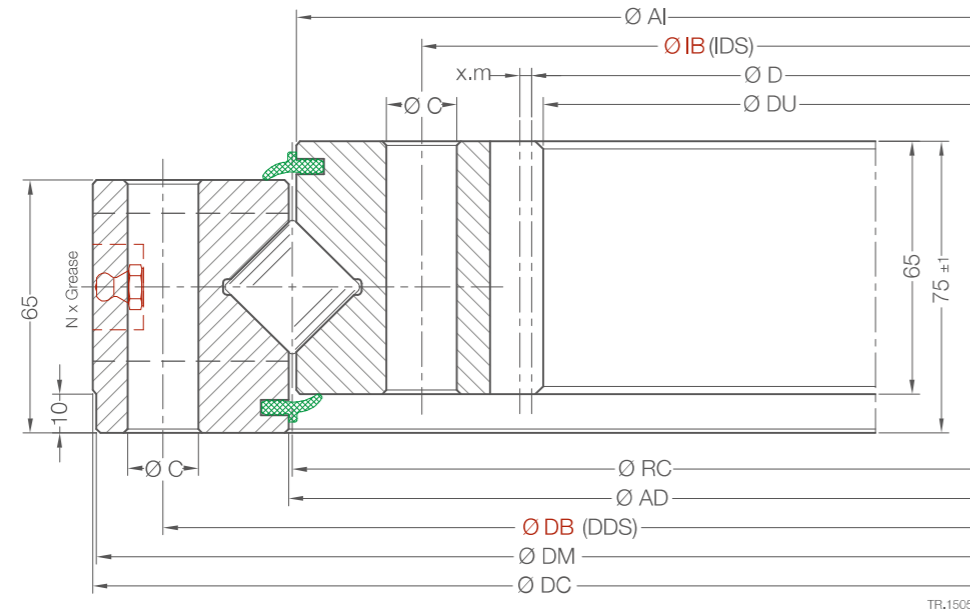
TB.1505



3D.1502

# SM2125-1 SERIES

FOR MEDIUM-HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



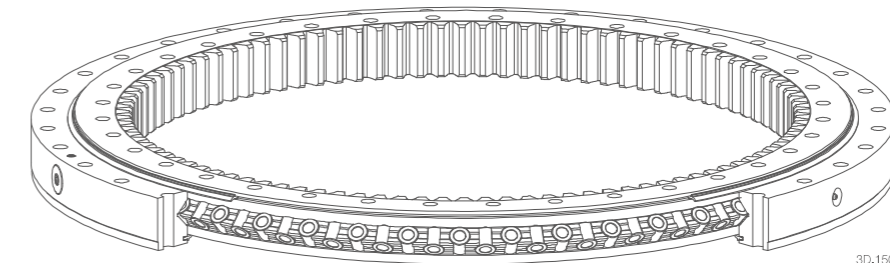
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AD$	$\varnothing AI$	N x Grease	$\varnothing C$
SM2125-1-0866AA	1	115	764	636	866	864 -0.23	766	762	3 x M10x1	17.5
SM2125-1-0988AA	2	140	886	744	988	986 -0.23	888	884	3 x M10x1	17.5
SM2125-1-1082AA	3	154	980	840	1082	1080 -0.26	982	978	3 x M10x1	17.5
SM2125-1-1179AA	4	180	1077	920	1179	1177 -0.26	1079	1075	4 x M10x1	17.5
SM2125-1-1292AA	5	205	1180	1020	1292	1290 -0.31	1182	1178	4 x M10x1	22
SM2125-1-1432AA	6	244	1320	1140	1432	1430 -0.31	1322	1318	4 x M10x1	22

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
830 ±0.28	24	698 ±0.25	24	642	6	107	-3.0	-	64	37.1	74.2	≤0.036	≤0.036
952 ±0.28	30	820 ±0.28	30	752	8	94	-4.0	-	64	49.4	98.8	≤0.040	≤0.040
1046 ±0.33	30	914 ±0.28	30	848	8	106	-4.0	-	64	49.4	98.8	≤0.040	≤0.040
1143 ±0.33	36	1011 ±0.33	36	930	10	93	-5.0	-	64	61.8	123.6	≤0.047	≤0.047
1248 ±0.33	36	1112 ±0.33	36	1030	10	103	-5.0	-	64	61.8	123.6	≤0.047	≤0.047
1388 ±0.39	40	1252 ±0.33	40	1152	12	96	-6.0	-	64	74.2	148.4	≤0.055	≤0.055

- In SM2125-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M16	97	140	167	193	279	333
M20	194	279	324	387	558	648

TB.1514

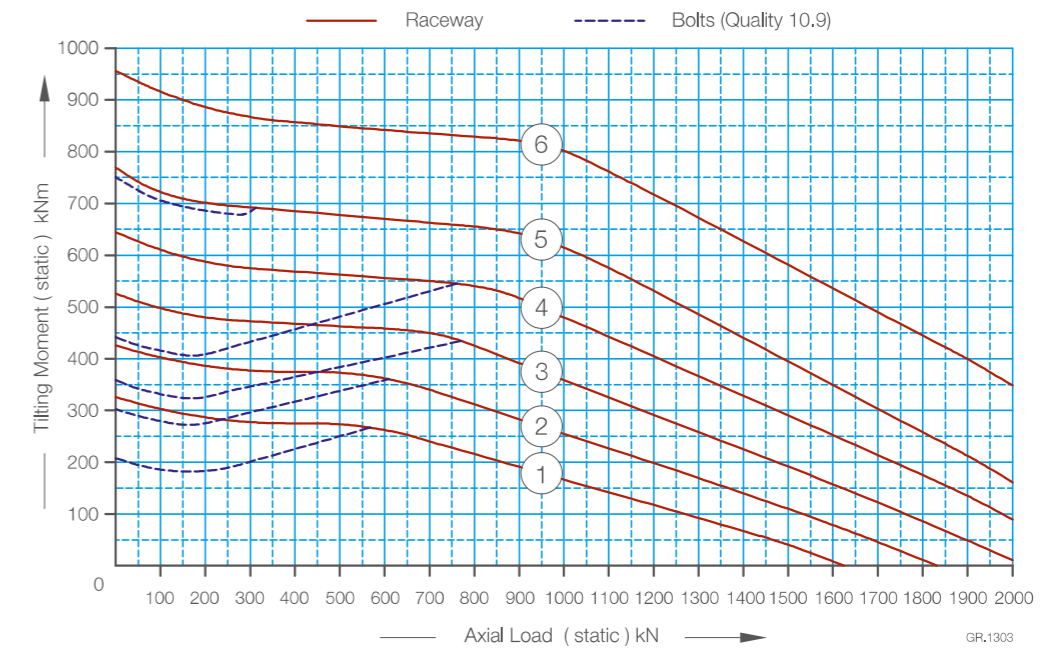
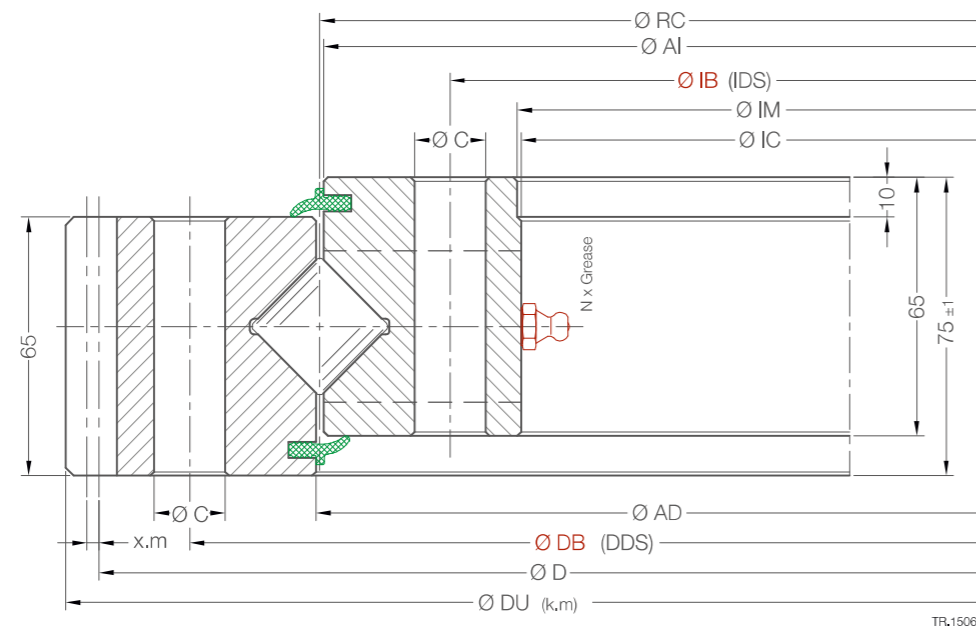


3D.1501



# SM2125-2 SERIES

FOR MEDIUM-HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING

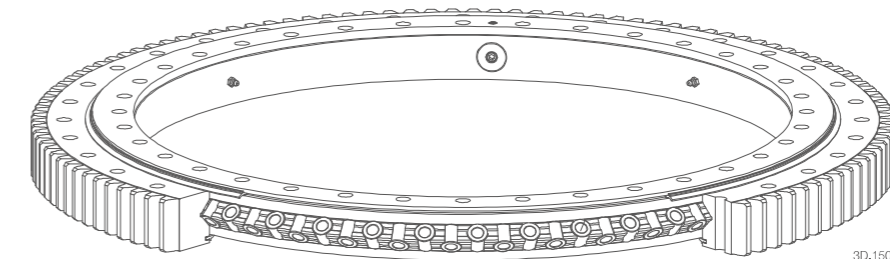


Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			Ø RC	Ø DU	Ø IC	Ø IM	Ø AD	Ø AI	N x Grease	Ø C
SM2125-2-0893AA	1	118	764	892.8	662	664 +0.20	766	762	3 x M10x1	17.5
SM2125-2-1030AA	2	146	886	1030.4	784	786 +0.20	888	884	3 x M10x1	17.5
SM2125-2-1118AA	3	157	980	1118.4	878	880 +0.23	982	978	3 x M10x1	17.5
SM2125-2-1228AA	4	181	1077	1228	975	977 +0.23	1079	1075	4 x M10x1	17.5
SM2125-2-1338AA	5	209	1180	1338	1068	1070 +0.26	1182	1178	4 x M10x1	22
SM2125-2-1498AA	6	251	1320	1497.6	1208	1210 +0.26	1322	1318	4 x M10x1	22

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
830 ±0.28	24	698 ±0.25	24	876	6	146	+3.0	-0.6	64	37.1	74.2	≤0.036	≤0.036
952 ±0.28	30	820 ±0.28	30	1008	8	126	+4.0	-0.8	64	49.4	98.8	≤0.040	≤0.040
1046 ±0.33	30	914 ±0.28	30	1096	8	137	+4.0	-0.8	64	49.4	98.8	≤0.040	≤0.040
1143 ±0.33	36	1011 ±0.33	36	1200	10	120	+5.0	-1.0	64	61.8	123.6	≤0.047	≤0.047
1248 ±0.33	36	1112 ±0.33	36	1310	10	131	+5.0	-1.0	64	61.8	123.6	≤0.047	≤0.047
1388 ±0.39	42	1252 ±0.33	42	1464	12	122	+6.0	-1.2	64	74.2	148.4	≤0.055	≤0.055

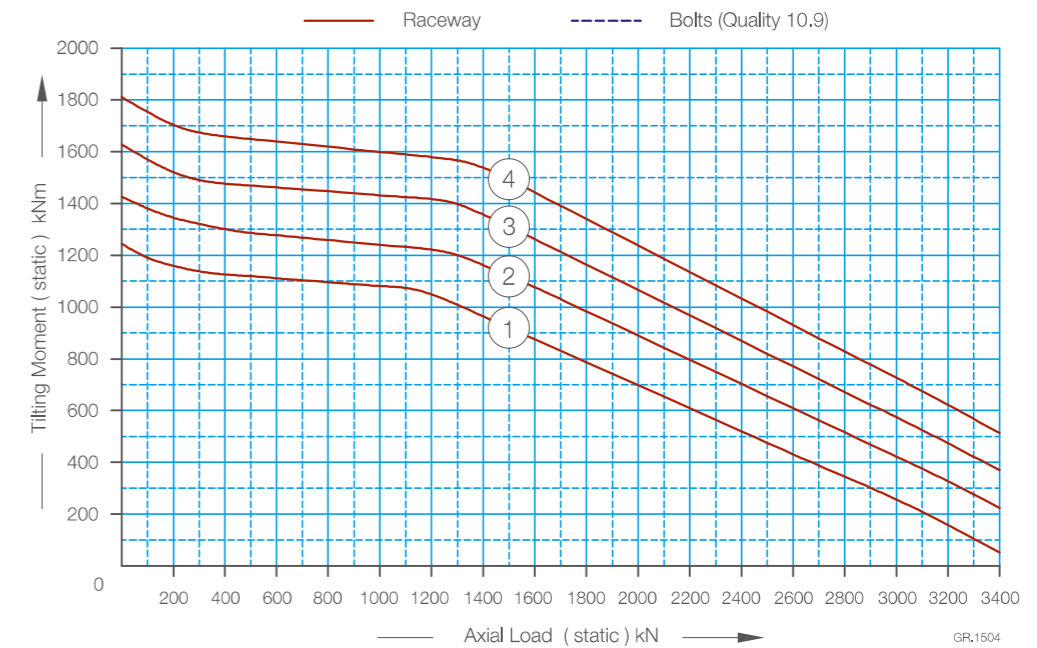
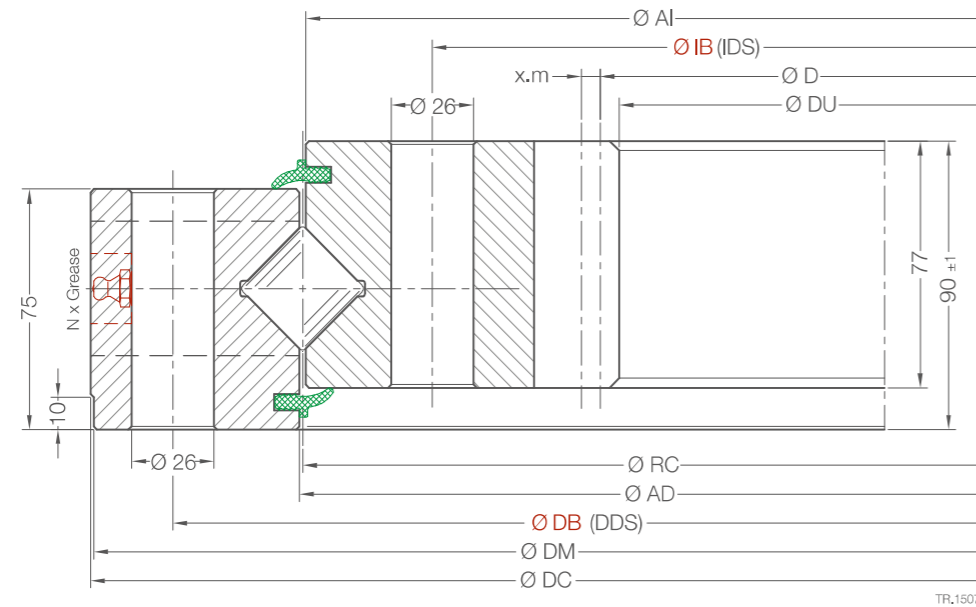
- In SM2125-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M16	145	209	250	193	279	333
M20	290	418	486	387	558	648



# SM2130-1 SERIES

FOR MEDIUM-HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



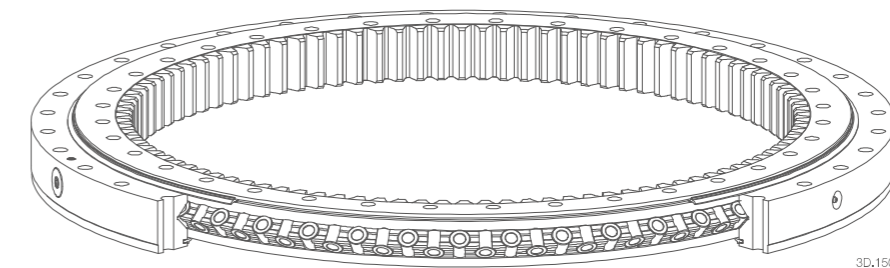
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM2130-1-1534AA	1	353	1400	1200	1534	1532 $-0.31$	1402	1398	4 x M10x1
SM2130-1-1634AA	2	367	1500	1308	1634	1632 $-0.37$	1502	1498	4 x M10x1
SM2130-1-1734AA	3	418	1600	1386	1734	1732 $-0.37$	1602	1598	4 x M10x1
SM2130-1-1834AA	4	426	1700	1498	1834	1832 $-0.37$	1702	1698	4 x M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1482 $\pm 0.39$	36	1318 $\pm 0.39$	36	1212	12	101	-6.0	-	76	83.7	167.4	$\leq 0.055$	$\leq 0.055$
1582 $\pm 0.39$	40	1418 $\pm 0.39$	40	1320	12	110	-6.0	-	76	83.7	167.4	$\leq 0.055$	$\leq 0.055$
1682 $\pm 0.46$	40	1518 $\pm 0.39$	40	1400	14	100	-7.0	-	76	97.6	195.2	$\leq 0.055$	$\leq 0.055$
1782 $\pm 0.46$	44	1618 $\pm 0.46$	44	1512	14	108	-7.0	-	76	97.6	195.2	$\leq 0.065$	$\leq 0.065$

- In SM2130-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M24	333	477	558	666	954	1116

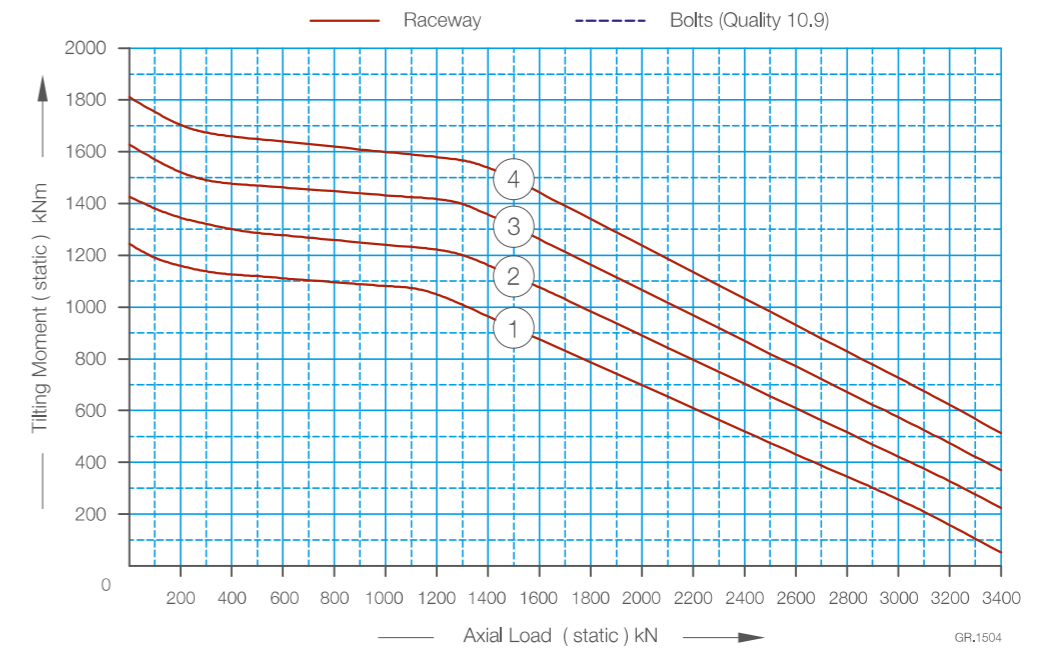
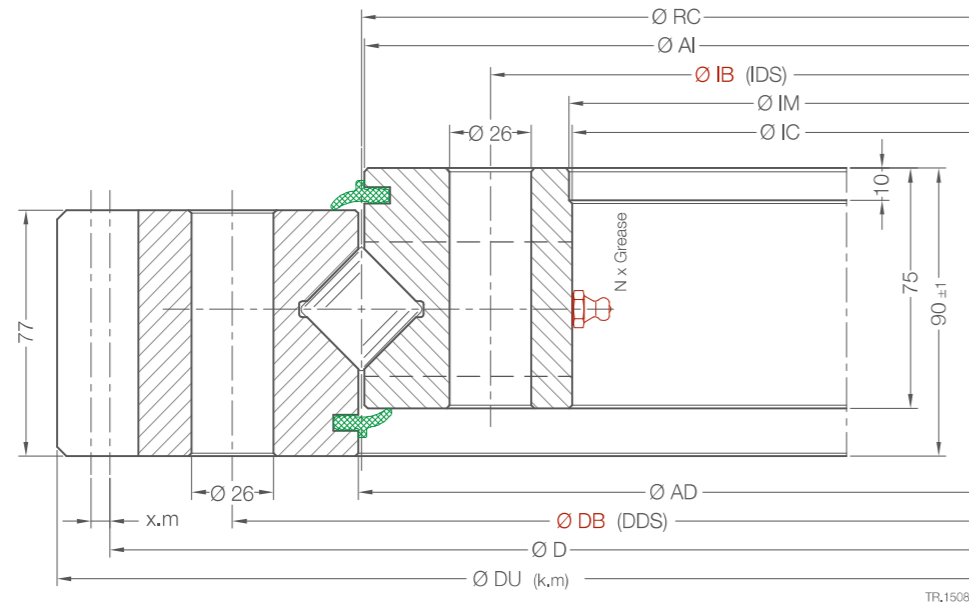
TB.1511



3D.1501

# SM2130-2 SERIES

FOR MEDIUM-HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



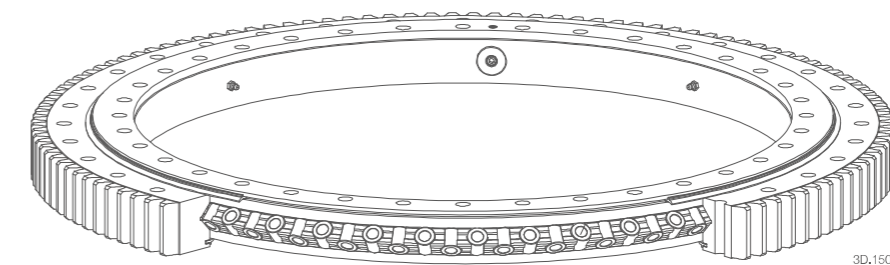
Drawing No	Item No	Weight kg	Geometry mm							N x Grease
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$		
SM2130-2-1594AA	1	350	1400	1593.6	1266	1268 $\pm 0.31$	1402	1398	4 x M10x1	
SM2130-2-1690AA	2	369	1500	1689.6	1366	1368 $\pm 0.31$	1502	1498	4 x M10x1	
SM2130-2-1803AA	3	410	1600	1803.2	1466	1468 $\pm 0.31$	1602	1598	4 x M10x1	
SM2130-2-1915AA	4	455	1700	1915.2	1566	1568 $\pm 0.31$	1702	1698	4 x M10x1	

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1482 $\pm 0.39$	36	1318 $\pm 0.39$	36	1560	12	130	+6.0	-1.2	76	83.7	167.4	$\leq 0.055$	$\leq 0.055$
1582 $\pm 0.39$	40	1418 $\pm 0.39$	40	1656	12	138	+6.0	-1.2	76	83.7	167.4	$\leq 0.055$	$\leq 0.055$
1682 $\pm 0.46$	40	1518 $\pm 0.39$	40	1764	14	126	+7.0	-1.4	76	97.6	195.2	$\leq 0.055$	$\leq 0.055$
1782 $\pm 0.46$	44	1618 $\pm 0.46$	44	1876	14	134	+7.0	-1.4	76	97.6	195.2	$\leq 0.065$	$\leq 0.065$

- In SM2130-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

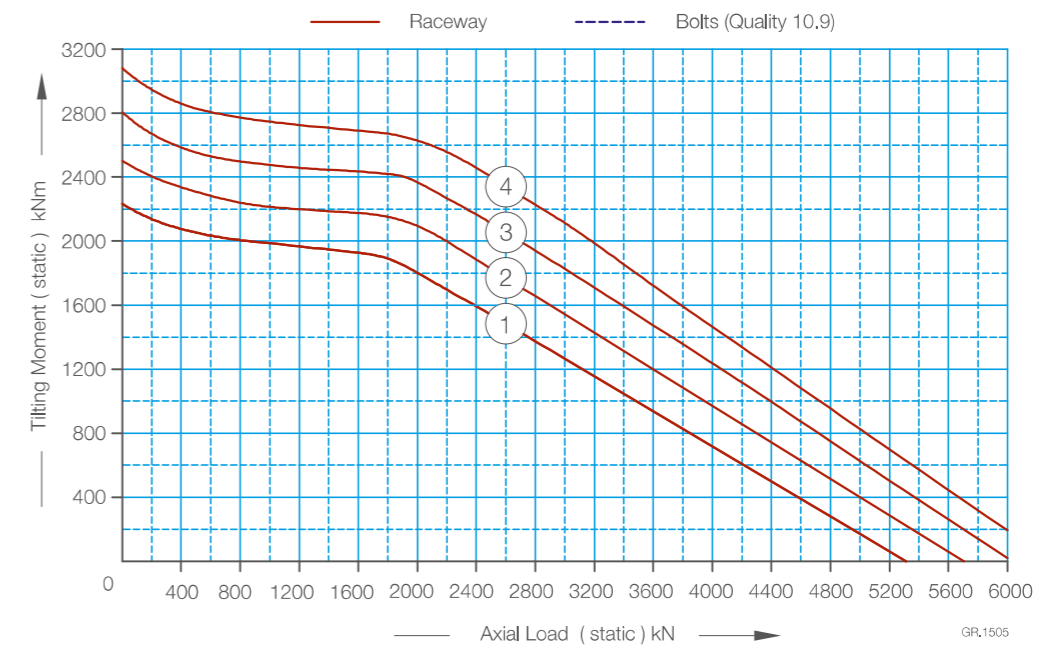
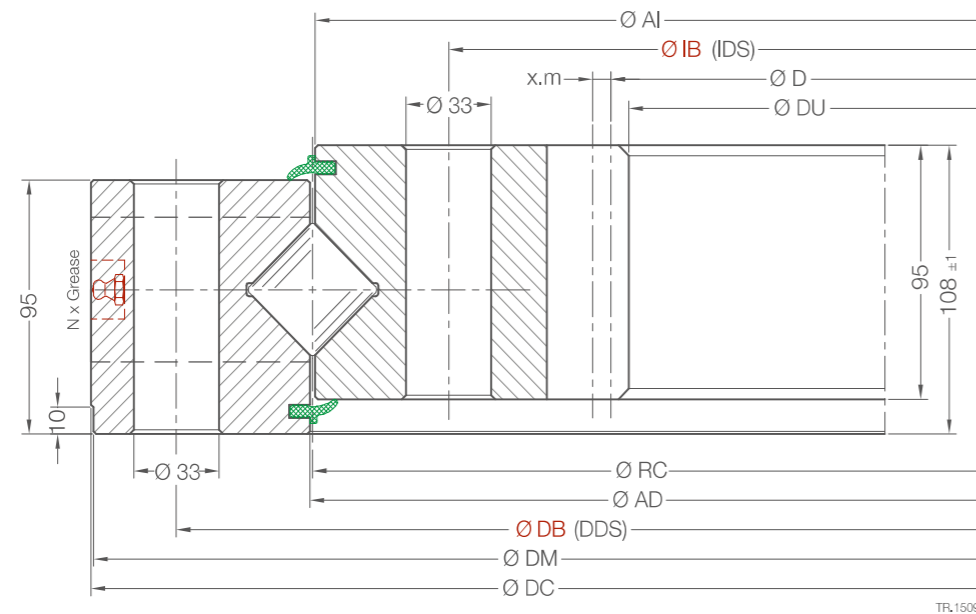
Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M24	333	477	558	666	954	1116

TB.1511



# SM2136-1 SERIES

FOR MEDIUM-HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



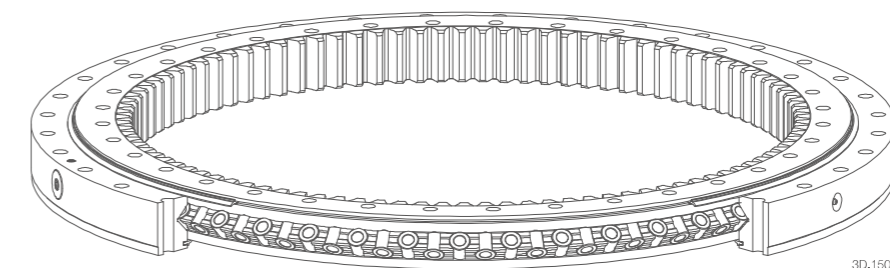
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			Ø RC	Ø DU	Ø DC	Ø DM	Ø AD	Ø AI	N x Grease
SM2136-1-1872AA	1	672	1700	1456	1872	1870 -0,37	1702	1698	4 x M10x1
SM2136-1-1972AA	2	713	1800	1554	1972	1970 -0,37	1802	1798	6 x M10x1
SM2136-1-2072AA	3	761	1900	1652	2072	2070 -0,44	1902	1898	6 x M10x1
SM2136-1-2172AA	4	772	2000	1764	2172	2170 -0,44	2002	1998	8 x M10x1

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1805 ±0,46	32	1595 ±0,39	32	1470	14	105	-7.0	-	94	121.6	243.2	≤0.065	≤0.065
1905 ±0,46	36	1695 ±0,46	36	1568	14	112	-7.0	-	94	121.6	243.2	≤0.065	≤0.065
2005 ±0,55	36	1795 ±0,46	36	1666	14	119	-7.0	-	94	121.6	243.2	≤0.065	≤0.065
2105 ±0,55	40	1895 ±0,46	40	1778	14	127	-7.0	-	94	121.6	243.2	≤0.065	≤0.065

- In SM2136-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M30	675	945	1125	1350	1890	2250

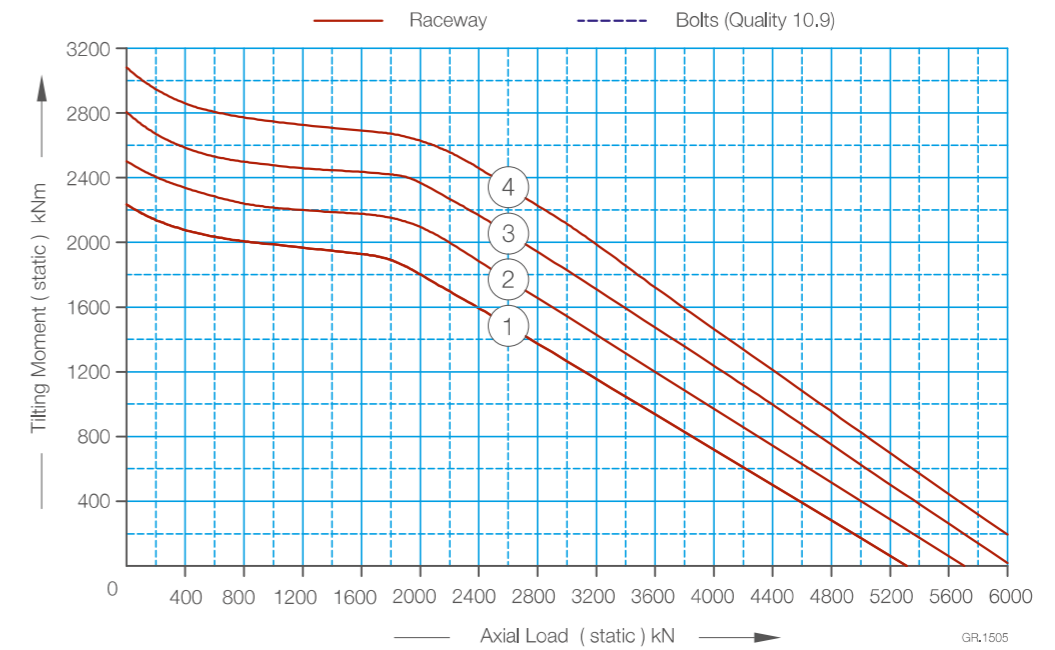
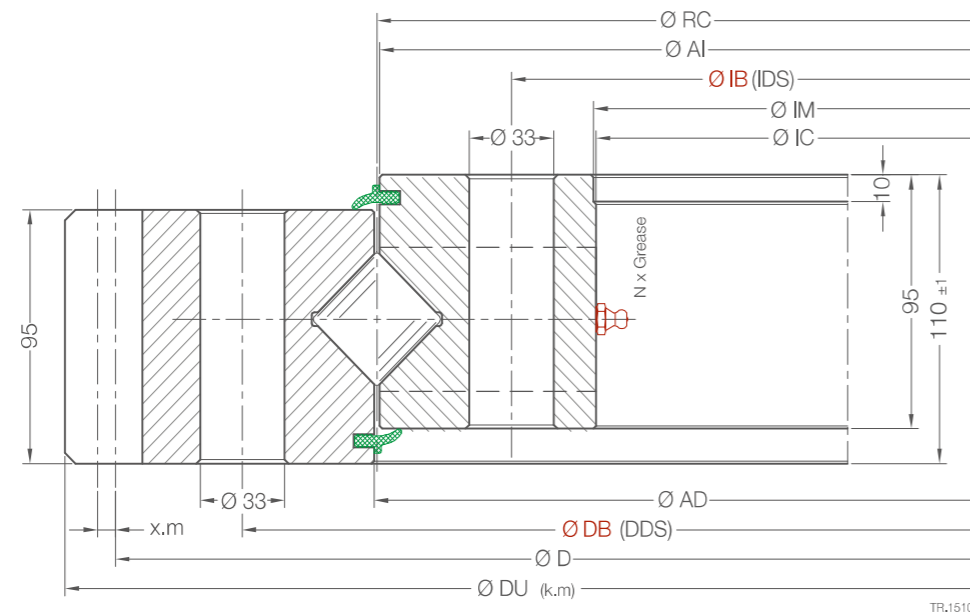
TB.1514



3D.1501

# SM2136-2 SERIES

FOR MEDIUM-HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



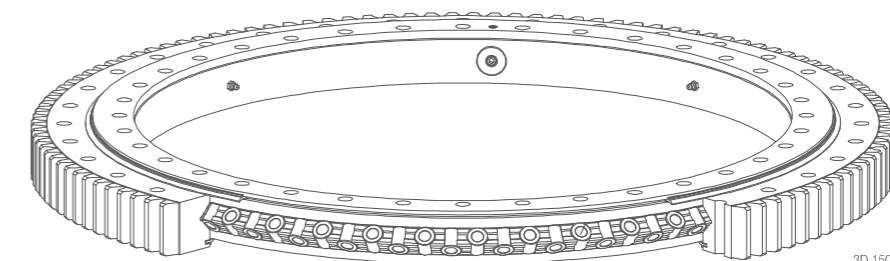
Drawing No	Item No	Weight kg	Geometry mm							N x Grease
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$		
SM2136-2-1943AA	1	689	1700	1943.2	1528	1530 +0.31	1702	1698	4 x M10x1	
SM2136-2-2041AA	2	712	1800	2041.2	1628	1630 +0.37	1802	1798	6 x M10x1	
SM2136-2-2139AA	3	761	1900	2139.2	1728	1730 +0.37	1902	1898	6 x M10x1	
SM2136-2-2237AA	4	790	2000	2237.2	1828	1830 +0.37	2002	1998	8 x M10x1	

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1805 ±0.46	32	1595 ±0.39	32	1904	14	136	+7.0	-1.4	94	121.6	243.2	≤0.065	≤0.065
1905 ±0.46	36	1695 ±0.46	36	2002	14	143	+7.0	-1.4	94	121.6	243.2	≤0.065	≤0.065
2005 ±0.55	36	1795 ±0.46	36	2100	14	150	+7.0	-1.4	94	121.6	243.2	≤0.065	≤0.065
2105 ±0.55	40	1895 ±0.46	40	2198	14	157	+7.0	-1.4	94	121.6	243.2	≤0.065	≤0.065

- In SM2136-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

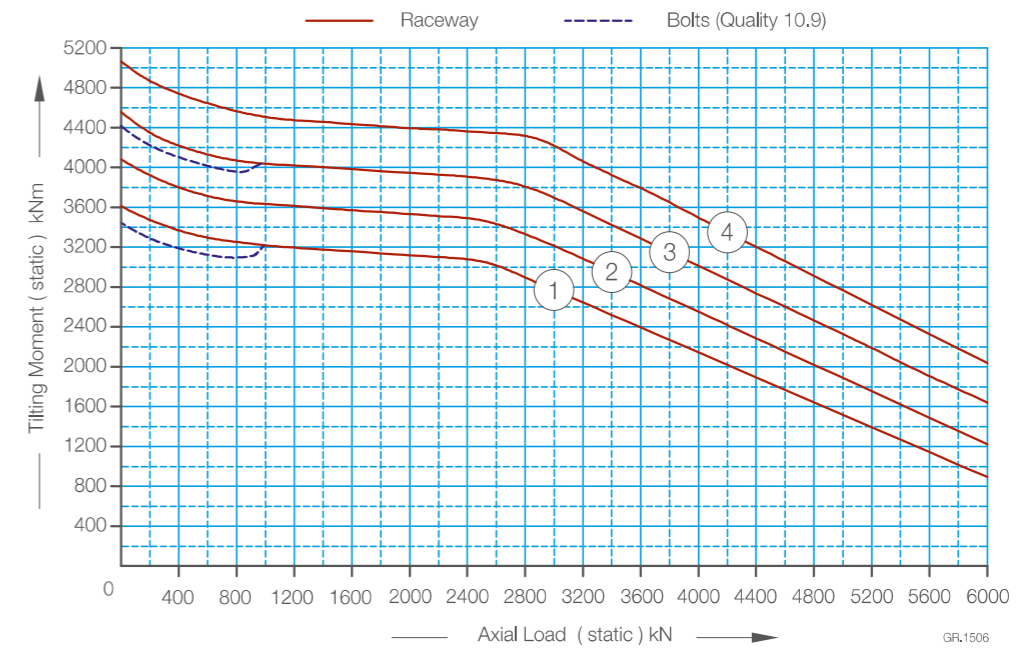
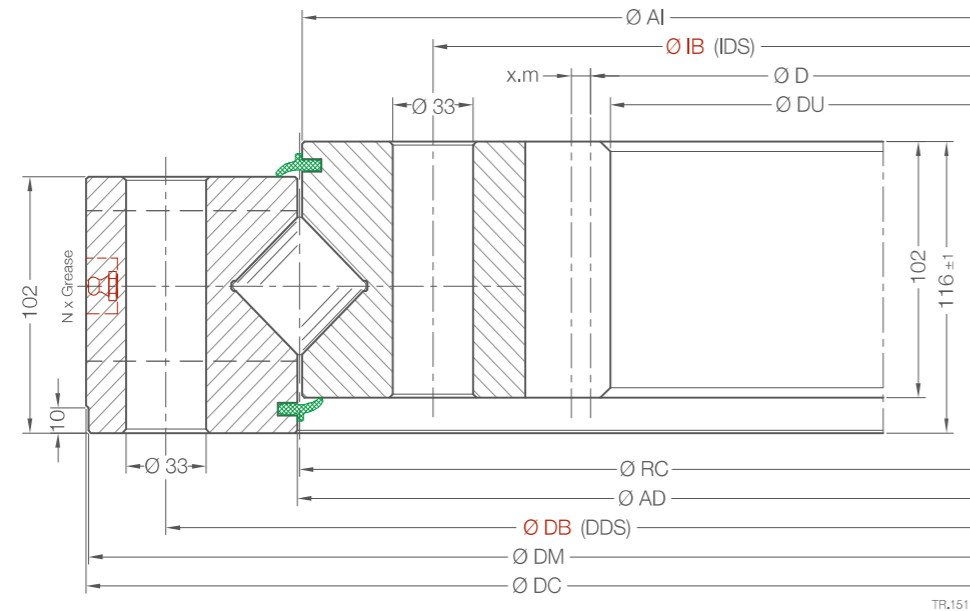
Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M30	675	945	1125	1350	1890	2250

TB.1514



# SM2140-1 SERIES

FOR MEDIUM-HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



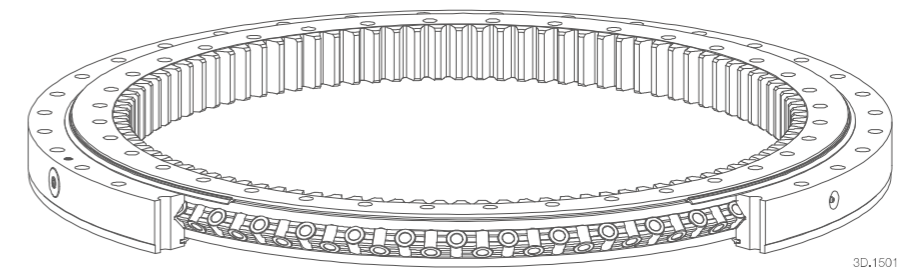
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AD$	$\varnothing AI$	$N \times$ Grease	
SM2140-1-2176AA	1	866	2000	1744	2176	2174 -0,44	2003	1997	6 x M10x1	
SM2140-1-2304AA	2	918	2128	1872	2304	2302 -0,44	2131	2125	6 x M10x1	
SM2140-1-2416AA	3	970	2240	1984	2416	2414 -0,44	2243	2237	6 x M10x1	
SM2140-1-2544AA	4	1020	2368	2112	2544	2542 -0,54	2371	2365	8 x M10x1	

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2110 $\pm 0,55$	42	1890 $\pm 0,46$	42	1760	16	110	-8.0	-	101	148.3	296.6	$\leq 0,078$	$\leq 0,078$
2238 $\pm 0,55$	48	2018 $\pm 0,55$	48	1888	16	118	-8.0	-	101	148.3	296.6	$\leq 0,078$	$\leq 0,078$
2350 $\pm 0,55$	48	2130 $\pm 0,55$	48	2000	16	125	-8.0	-	101	148.3	296.6	$\leq 0,078$	$\leq 0,078$
2478 $\pm 0,55$	56	2258 $\pm 0,55$	56	2128	16	133	-8.0	-	101	148.3	296.6	$\leq 0,078$	$\leq 0,078$

- In SM2140-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

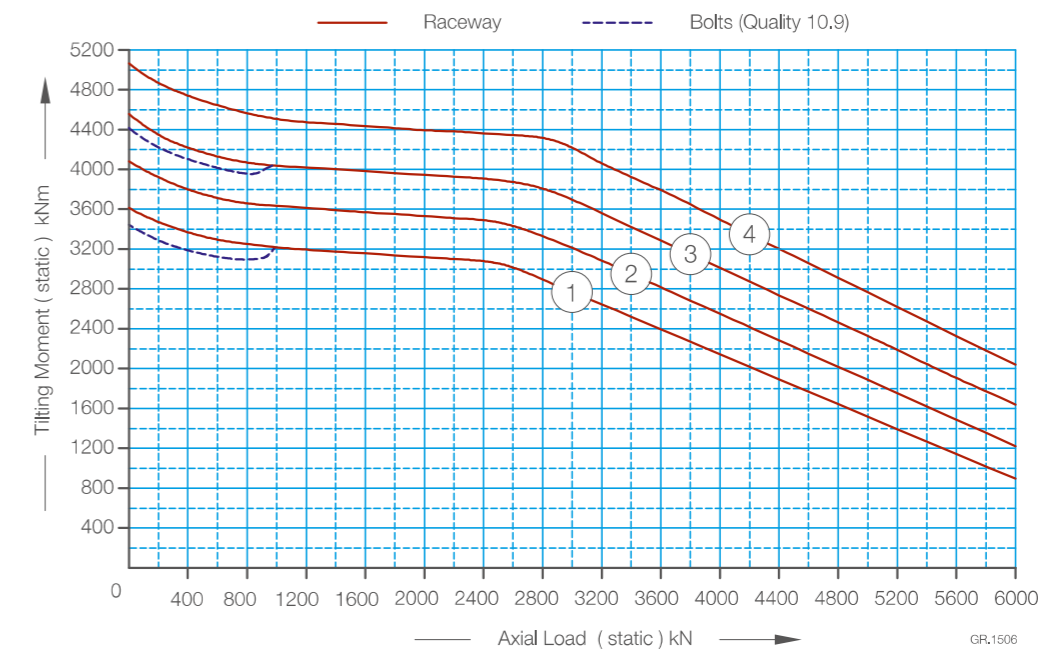
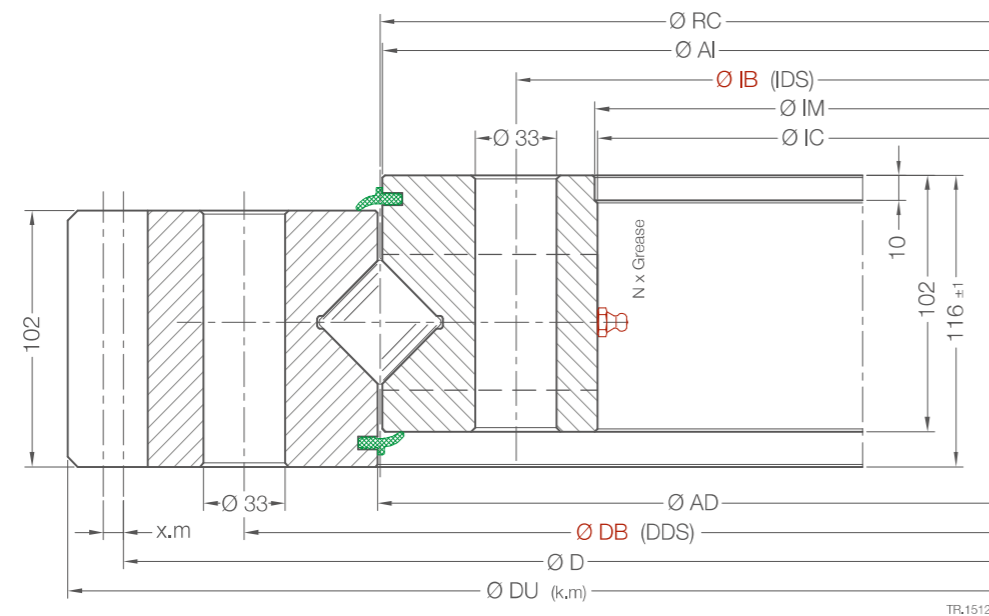
Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M30	675	945	1125	1350	1890	2250

TB.1514



# SM2140-2 SERIES

FOR MEDIUM-HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



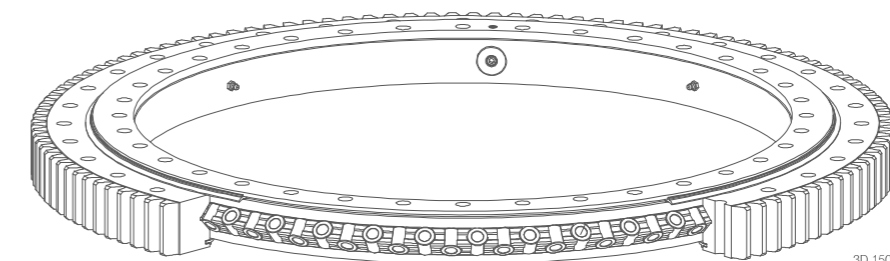
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM2140-2-2253AA	1	882	2000	2252.8	1824	1826 $+0.37$	2003	1997	6 x M10x1
SM2140-2-2381AA	2	933	2128	2380.8	1952	1954 $+0.37$	2131	2125	6 x M10x1
SM2140-2-2493AA	3	984	2240	2492.8	2064	2066 $+0.44$	2243	2237	6 x M10x1
SM2140-2-2621AA	4	1033	2368	2620.8	2192	2194 $+0.44$	2371	2365	8 x M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2110 $\pm 0.55$	42	1890 $\pm 0.46$	42	2208	16	138	+8.0	-1.6	101	148.3	296.6	$\leq 0.078$	$\leq 0.078$
2238 $\pm 0.55$	48	2018 $\pm 0.55$	48	2336	16	146	+8.0	-1.6	101	148.3	296.6	$\leq 0.078$	$\leq 0.078$
2350 $\pm 0.55$	48	2130 $\pm 0.55$	48	2448	16	153	+8.0	-1.6	101	148.3	296.6	$\leq 0.078$	$\leq 0.078$
2478 $\pm 0.55$	56	2258 $\pm 0.55$	56	2576	16	161	+8.0	-1.6	101	148.3	296.6	$\leq 0.078$	$\leq 0.078$

- In SM2140-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M30	675	945	1125	1350	1890	2250

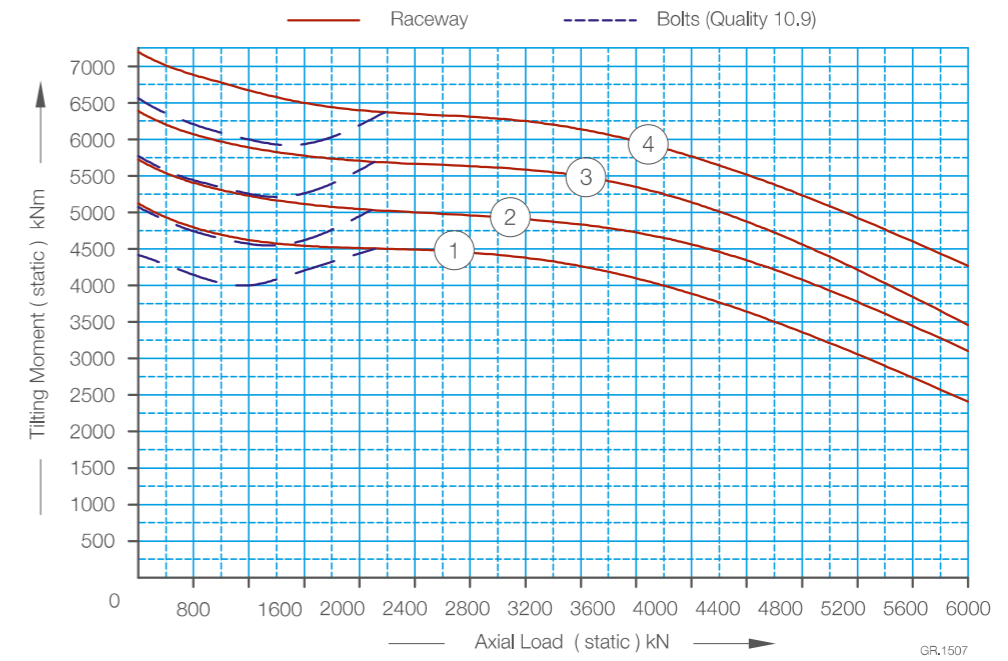
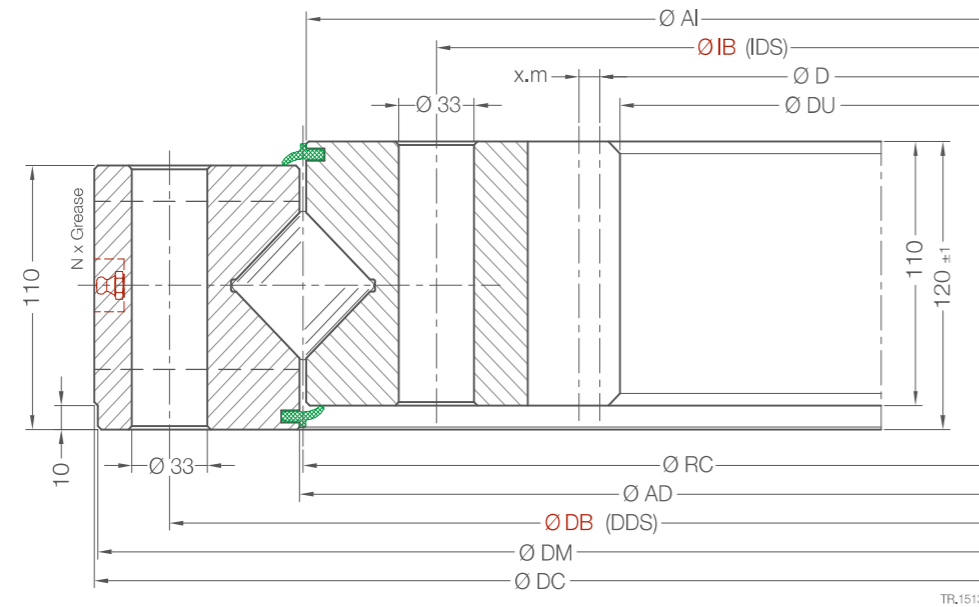
TB.1514



3D.1502

# SM2145-1 SERIES

FOR MEDIUM-HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



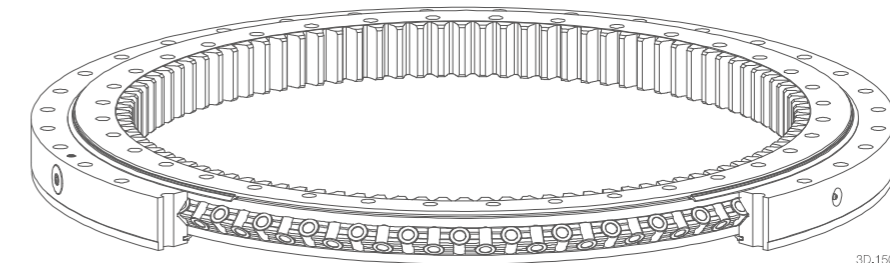
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM2145-1-2423AA	1	1110	2240	1962	2423	2420 $-0.44$	2243	2237	8 x M10x1
SM2145-1-2549AA	2	1170	2366	2088	2549	2546 $-0.54$	2369	2363	9 x M10x1
SM2145-1-2693AA	3	1242	2510	2232	2693	2690 $-0.54$	2513	2507	8 x M10x1
SM2145-1-2837AA	4	1313	2654	2376	2837	2834 $-0.54$	2657	2651	10 x M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2357 $\pm 0.55$	48	2123 $\pm 0.55$	48	1980	18	110	-9.0	-	109	180.0	360.0	$\leq 0.085$	$\leq 0.085$
2483 $\pm 0.55$	52	2249 $\pm 0.55$	52	2106	18	117	-9.0	-	109	180.0	360.0	$\leq 0.085$	$\leq 0.085$
2627 $\pm 0.68$	56	2393 $\pm 0.55$	56	2250	18	125	-9.0	-	109	180.0	360.0	$\leq 0.085$	$\leq 0.085$
2771 $\pm 0.68$	60	2537 $\pm 0.68$	60	2394	18	133	-9.0	-	109	180.0	360.0	$\leq 0.085$	$\leq 0.085$

- In SM2145-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M30	675	945	1125	1350	1890	2250

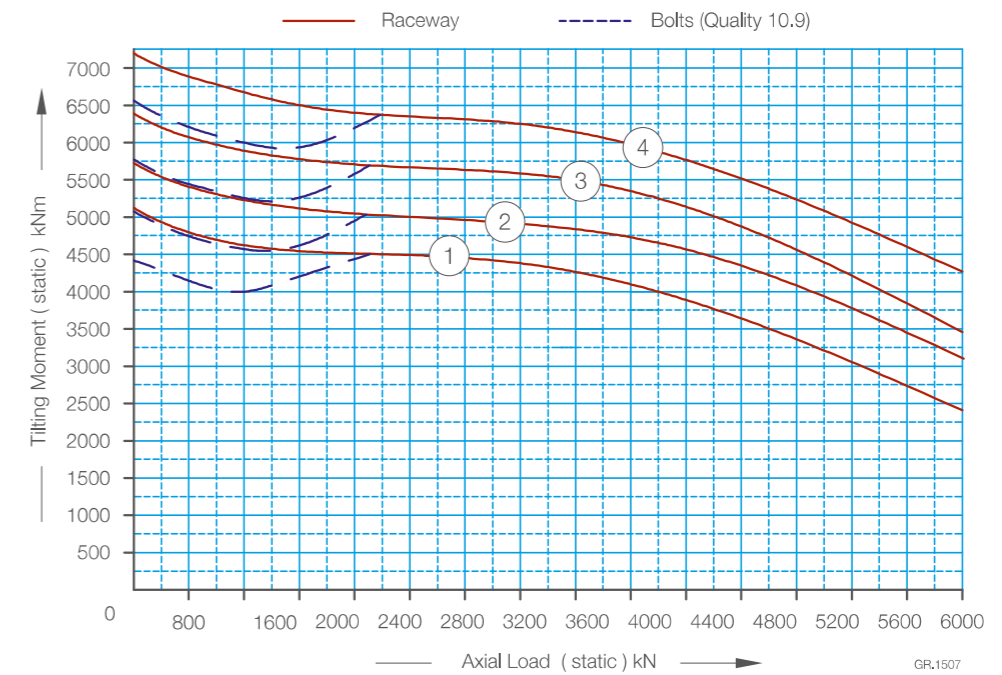
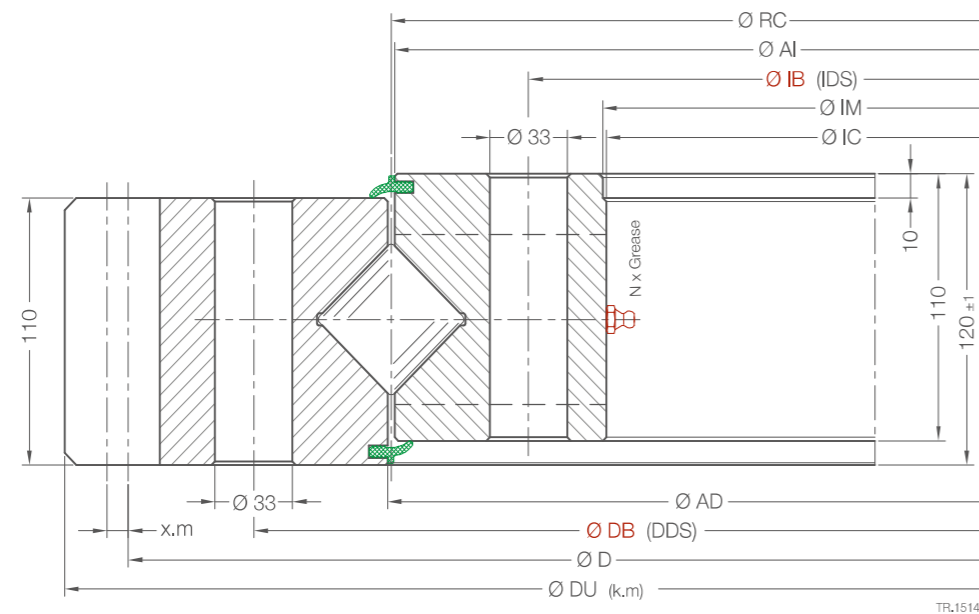
TB.1514





# SM2145-2 SERIES

FOR MEDIUM-HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



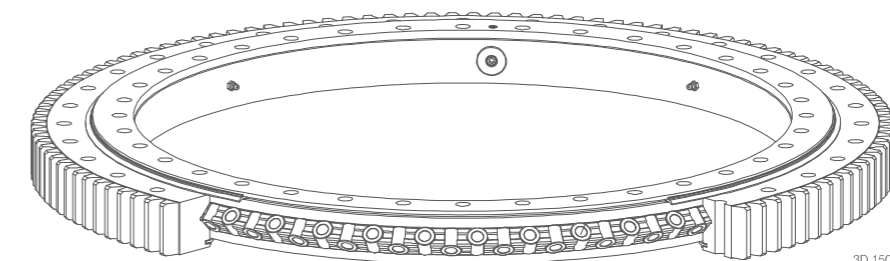
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM2145-2-2516AA	1	1132	2240	2516.4	2057	2060 +0.44	2243	2237	8 x M10x1
SM2145-2-2642AA	2	1192	2366	2642.4	2183	2186 +0.54	2369	2363	9 x M10x1
SM2145-2-2786AA	3	1269	2510	2786.4	2327	2330 +0.54	2513	2507	8 x M10x1
SM2145-2-2930AA	4	1341	2654	2930.4	2471	2474 +0.54	2657	2651	10 x M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2357 $\pm$ 0.55	48	2123 $\pm$ 0.55	48	2466	18	137	+9.0	-1.8	109	180.0	360.0	$\leq$ 0.085	$\leq$ 0.085
2483 $\pm$ 0.55	52	2249 $\pm$ 0.55	52	2592	18	144	+9.0	-1.8	109	180.0	360.0	$\leq$ 0.085	$\leq$ 0.085
2627 $\pm$ 0.68	56	2393 $\pm$ 0.55	56	2736	18	152	+9.0	-1.8	109	180.0	360.0	$\leq$ 0.085	$\leq$ 0.085
2771 $\pm$ 0.68	60	2537 $\pm$ 0.68	60	2880	18	160	+9.0	-1.8	109	180.0	360.0	$\leq$ 0.085	$\leq$ 0.085

- In SM2145-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

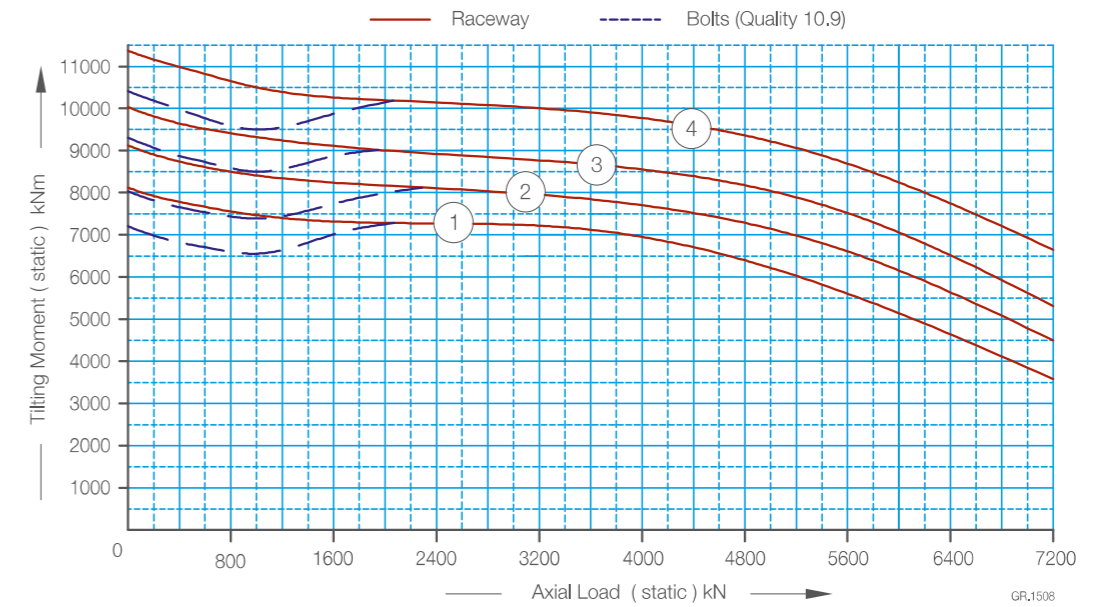
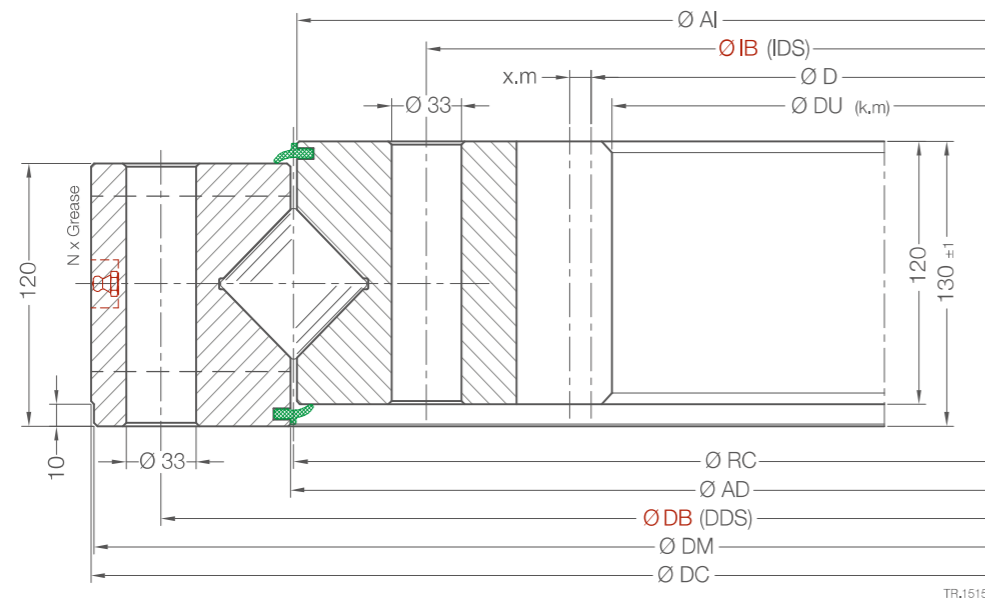
Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M30	675	945	1125	1350	1890	2250

TB.1514



# SM2150-1 SERIES

FOR MEDIUM-HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



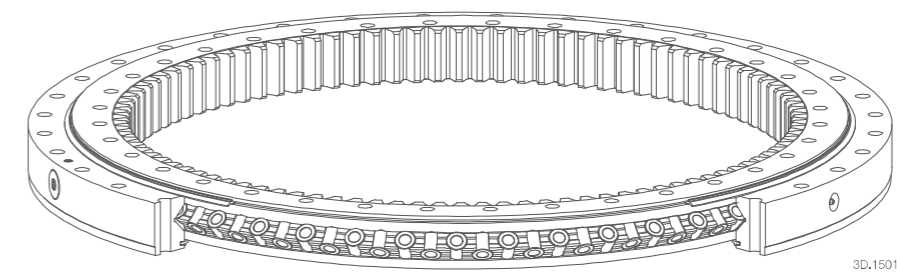
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			Ø RC	Ø DU	Ø DC	Ø DM	Ø AD	Ø AI	N x Grease	
SM2150-1-2691AA	1	1423	2500	2200	2691	2688 -0.54	2503	2497	10 x M10x1	
SM2150-1-2851AA	2	1515	2660	2360	2851	2848 -0.54	2663	2657	12 x M10x1	
SM2150-1-2991AA	3	1588	2800	2500	2991	2988 -0.54	2803	2797	12 x M10x1	
SM2150-1-3191AA	4	1706	3000	2700	3191	3188 -0.65	3003	2997	14 x M10x1	

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2625 ±0.68	60	2375 ±0.55	60	2220	20	111	-10.0	-	119	206.8	413.6	≤0.095	≤0.095
2785 ±0.68	64	2535 ±0.68	64	2380	20	119	-10.0	-	119	206.8	413.6	≤0.095	≤0.095
2925 ±0.68	72	2675 ±0.68	72	2520	20	126	-10.0	-	119	206.8	413.6	≤0.095	≤0.095
3125 ±0.68	76	2875 ±0.68	76	2720	20	136	-10.0	-	119	206.8	413.6	≤0.095	≤0.095

- In SM2150-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M30	675	945	1125	1350	1890	2250

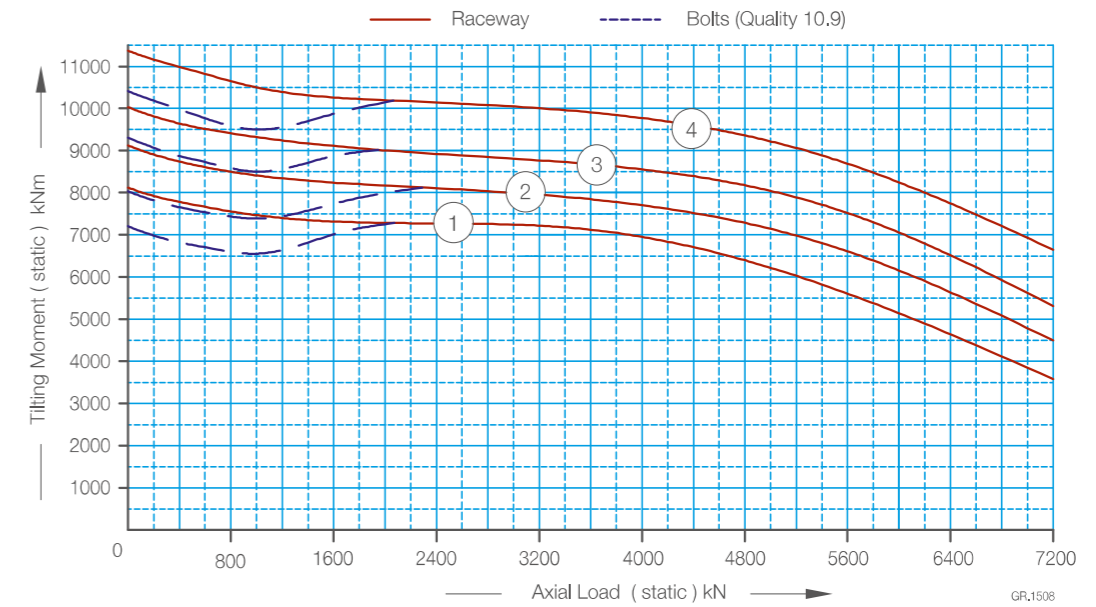
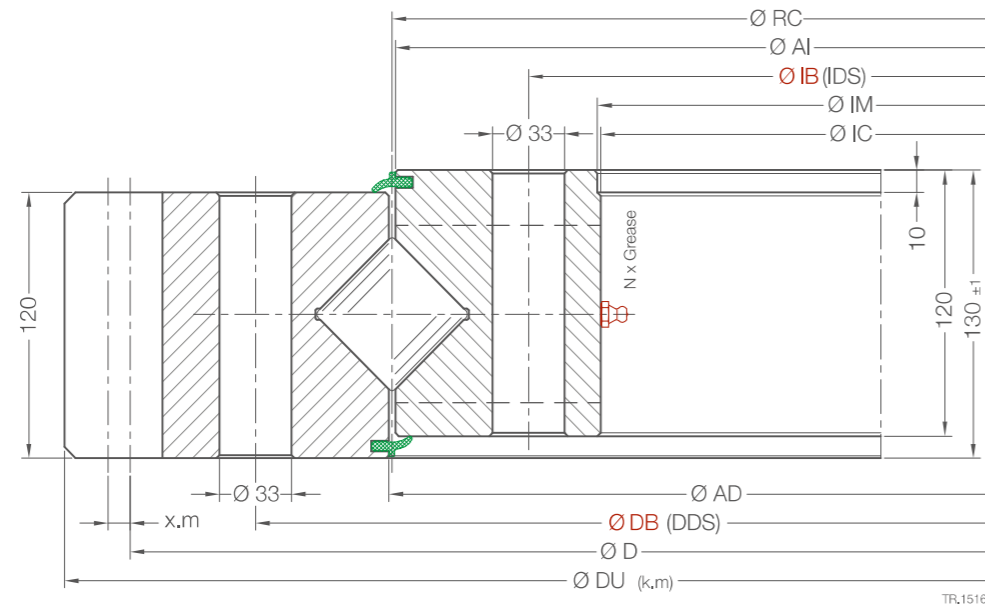
TB.1514



3D.1501

# SM2150-2 SERIES

FOR MEDIUM-HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



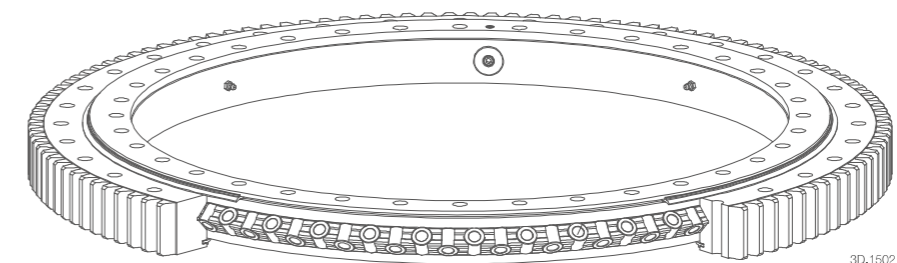
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing DM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM2150-2-2796AA	1	1453	2500	2796	2309	2306 +0.44	2503	2497	10 x M10x1
SM2150-2-2956AA	2	1544	2660	2956	2469	2466 +0.44	2663	2657	12 x M10x1
SM2150-2-3096AA	3	1616	2800	3096	2609	2606 +0.54	2803	2797	12 x M10x1
SM2150-2-3296AA	4	1733	3000	3296	2809	2806 +0.54	3003	2997	14 x M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2625 ±0.55	60	2375 ±0.55	60	2740	20	137	+10.0	-2.0	119	206.8	413.6	≤0.095	≤0.095
2785 ±0.68	64	2535 ±0.68	64	2900	20	145	+10.0	-2.0	119	206.8	413.6	≤0.095	≤0.095
2925 ±0.68	72	2675 ±0.68	72	3040	20	152	+10.0	-2.0	119	206.8	413.6	≤0.095	≤0.095
3125 ±0.68	76	2875 ±0.68	76	3240	20	162	+10.0	-2.0	119	206.8	413.6	≤0.095	≤0.095

- In SM2150-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

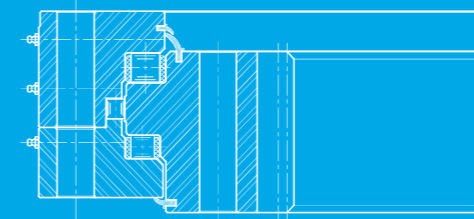
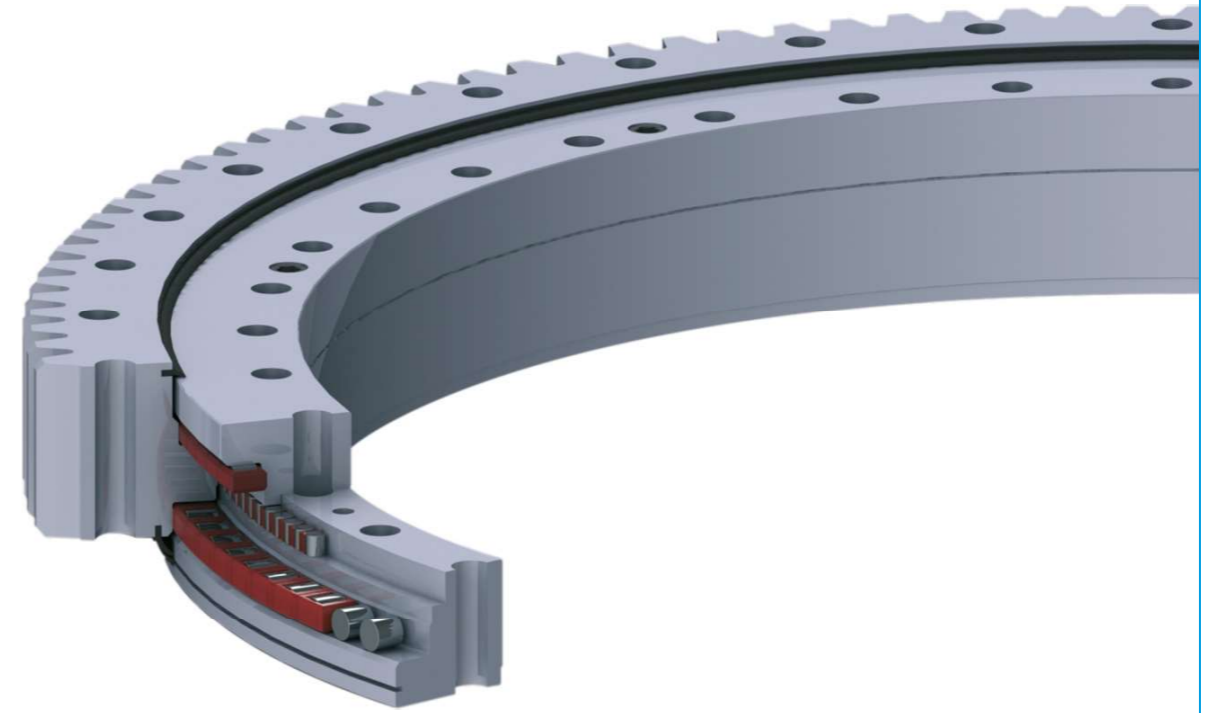
Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M30	675	945	1125	1350	1890	2250

TB.1514

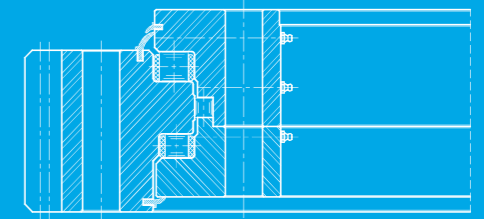


# SM3300 SERIES

Three-Row Cylindrical Roller Bearings



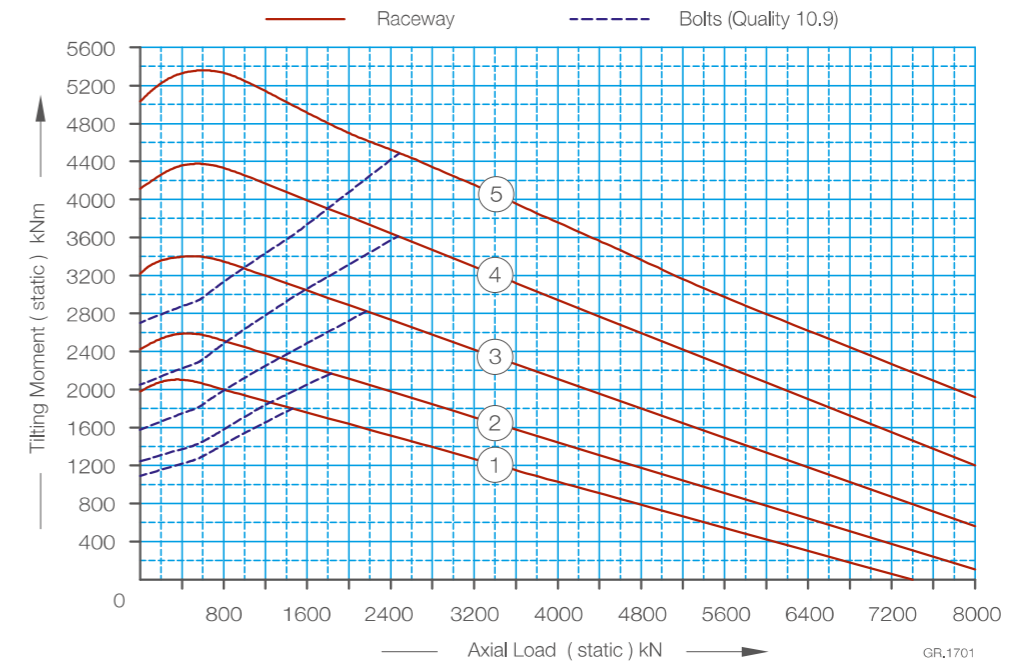
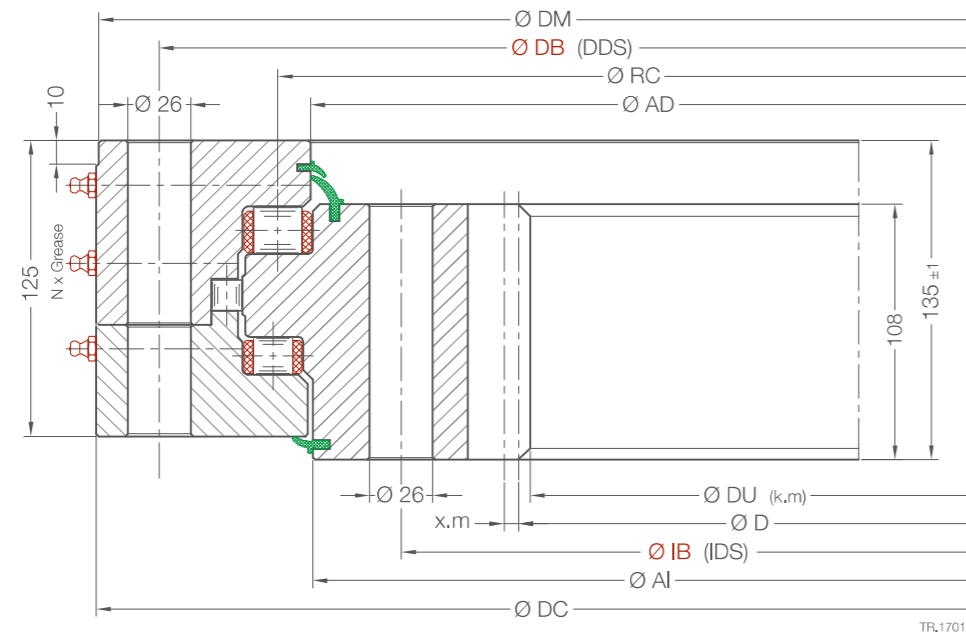
SM3300-1



SM3300-2

# SM3320-1 SERIES

DESIGNED FOR HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



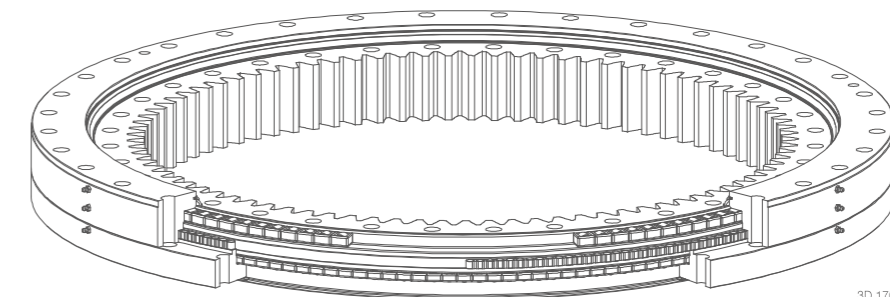
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	N x Grease
SM3320-1-1397AA	1	548	1250	1032	1397	1395 $-0.31$	1218	1219	3x3 X M10x1
SM3320-1-1547AA	2	639	1400	1162	1547	1545 $-0.31$	1368	1369	3x3 X M10x1
SM3320-1-1747AA	3	716	1600	1372	1747	1745 $-0.37$	1568	1569	4x3 X M10x1
SM3320-1-1947AA	4	840	1800	1552	1947	1945 $-0.37$	1768	1769	5x3 X M10x1
SM3320-1-2147AA	5	915	2000	1760	2147	2145 $-0.44$	1968	1969	5x3 X M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1345 $\pm 0.39$	36	1145 $\pm 0.33$	36	1044	12	87	-6	-	107	117.8	235.6	$\leq 0.04$	$\leq 0.08$
1495 $\pm 0.39$	36	1295 $\pm 0.39$	36	1176	14	84	-7	-	107	137.5	275	$\leq 0.04$	$\leq 0.08$
1695 $\pm 0.46$	40	1495 $\pm 0.39$	40	1386	14	99	-7	-	107	137.5	275	$\leq 0.04$	$\leq 0.08$
1895 $\pm 0.46$	46	1695 $\pm 0.46$	46	1568	16	98	-8	-	107	157.1	314.2	$\leq 0.04$	$\leq 0.08$
2095 $\pm 0.55$	54	1895 $\pm 0.46$	54	1776	16	111	-8	-	107	157.1	314.2	$\leq 0.04$	$\leq 0.08$

- In SM3320-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

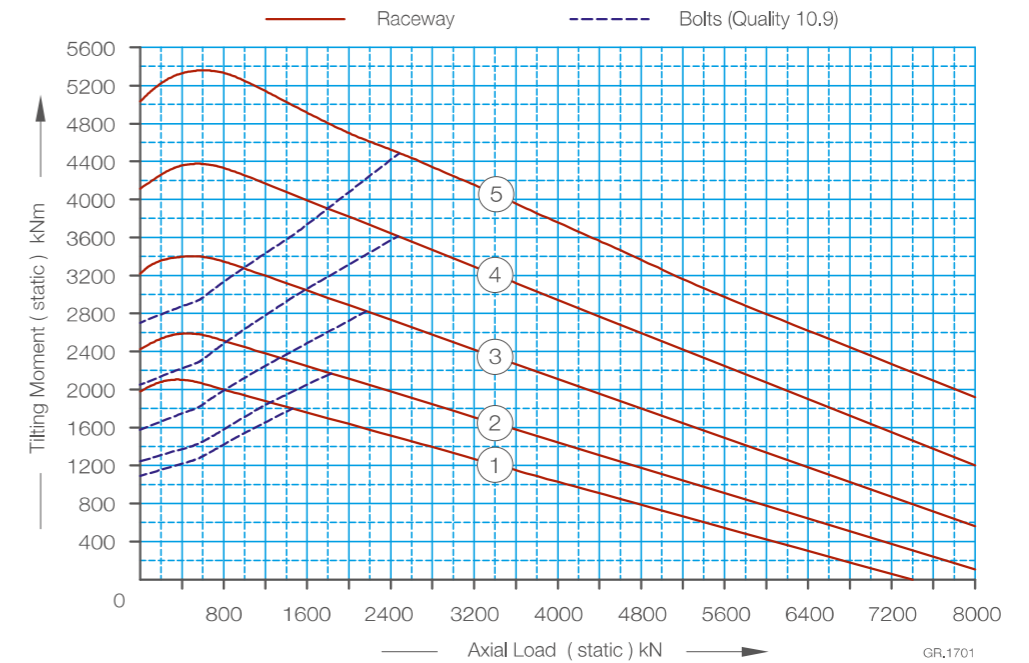
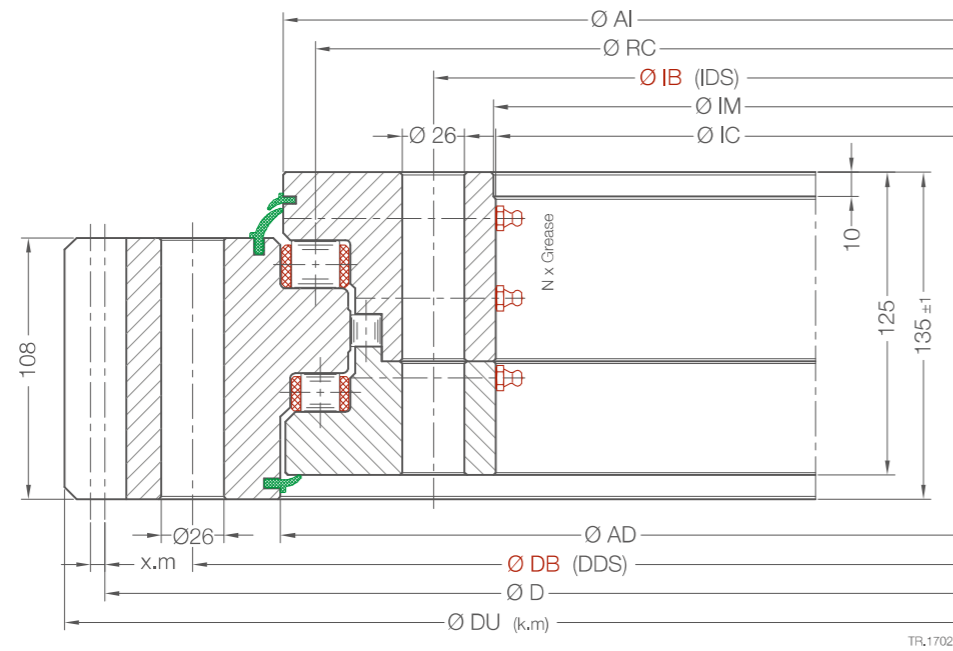
Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M24	333	477	558	666	954	1116

TB.1702



# SM3320-2 SERIES

DESIGNED FOR HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM3320-2-1462AA	1	550	1250	1461.6	1103	1105 +0.26	1282	1280	3x3 X M10x1
SM3320-2-1635AA	2	655	1400	1635.2	1253	1255 +0.31	1432	1430	3x3 X M10x1
SM3320-2-1831AA	3	740	1600	1831.2	1453	1455 +0.31	1632	1630	4x3 X M10x1
SM3320-2-2045AA	4	855	1800	2044.8	1653	1655 +0.37	1832	1830	5x3 X M10x1
SM3320-2-2237AA	5	925	2000	2236.8	1853	1855 +0.37	2032	2030	5x3 X M10x1

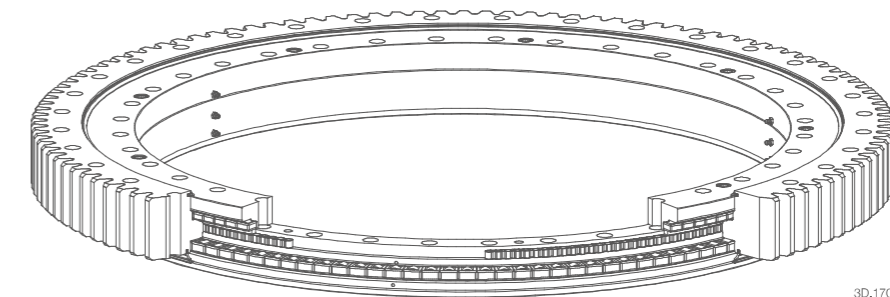
Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1355 ±0.39	36	1155 ±0.33	36	1428	12	119	+6	-1.2	107	117.8	235.6	≤0.04	≤0.08
1505 ±0.39	36	1305 ±0.39	36	1596	14	114	+7	-1.4	107	137.5	275	≤0.04	≤0.08
1705 ±0.46	40	1505 ±0.39	40	1792	14	128	+7	-1.4	107	137.5	275	≤0.04	≤0.08
1905 ±0.46	46	1705 ±0.46	46	2000	16	125	+8	-1.6	107	157.1	314.2	≤0.04	≤0.08
2105 ±0.55	54	1905 ±0.46	54	2192	16	137	+8	-1.6	107	157.1	314.2	≤0.04	≤0.08

- In SM3320-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M24	333	477	558	666	954	1116

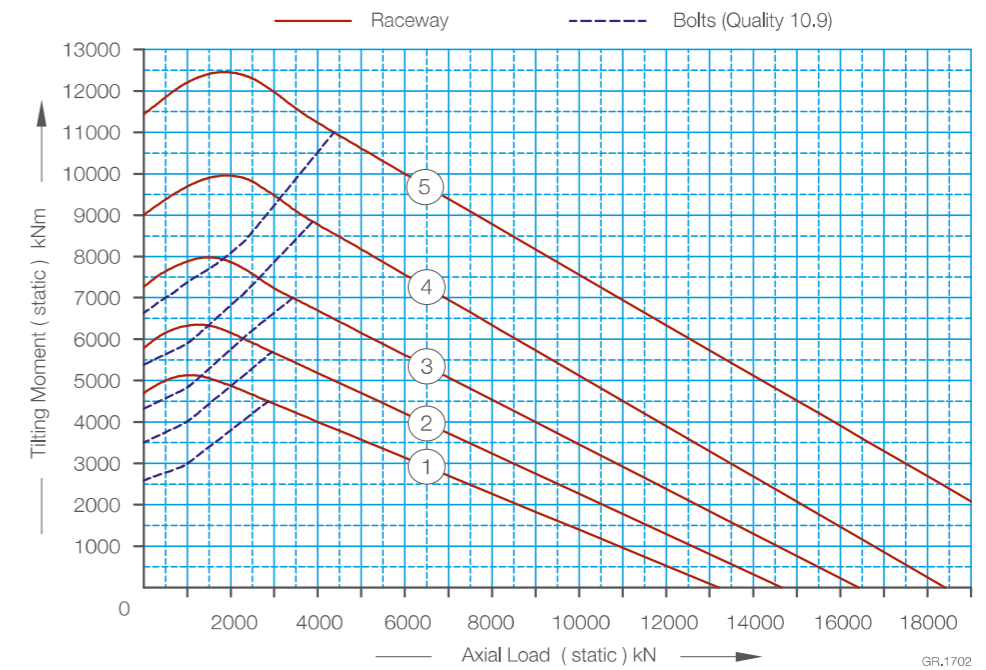
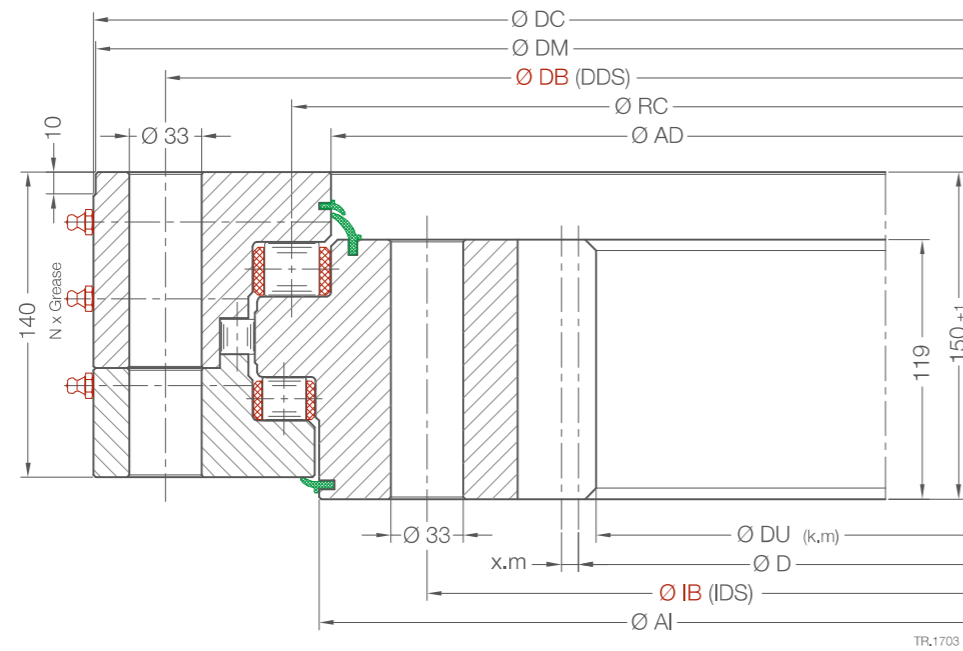
TB.1702

TB.1603



# SM3325-1 SERIES

DESIGNED FOR HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



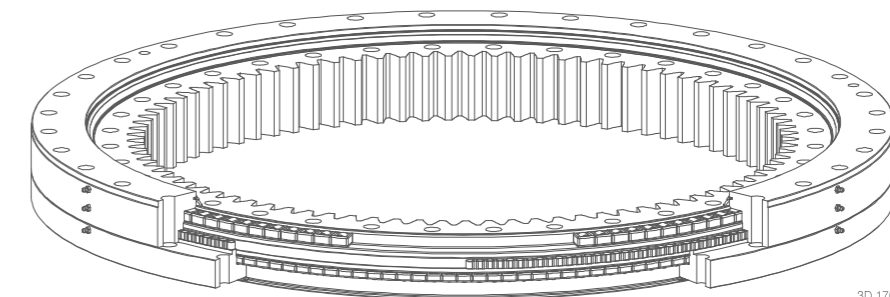
Drawing No	Item No	Weight kg	Geometry mm							
			Dimensions							
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	$N \times$ Grease	
SM3325-1-1981AA	1	1118	1800	1520	1981	1980 -0.37	1774	1763	6x3 X M10x1	
SM3325-1-2181AA	2	1220	2000	1728	2181	2180 -0.44	1974	1963	7x3 X M10x1	
SM3325-1-2421AA	3	1428	2240	1944	2421	2420 -0.44	2214	2203	8x3 X M10x1	
SM3325-1-2681AA	4	1569	2500	2214	2681	2680 -0.54	2474	2463	9x3 X M10x1	
SM3325-1-2981AA	5	1795	2800	2500	2981	2980 -0.54	2774	2763	10x3 X M10x1	

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1915 $\pm 0.46$	36	1675 $\pm 0.46$	36	1536	16	96	-8	-	118	164.1	328.2	$\leq 0.04$	$\leq 0.08$
2115 $\pm 0.55$	44	1875 $\pm 0.46$	44	1744	16	109	-8	-	118	164.1	328.2	$\leq 0.04$	$\leq 0.08$
2355 $\pm 0.55$	48	2115 $\pm 0.55$	48	1962	18	109	-9	-	118	184.7	369.4	$\leq 0.04$	$\leq 0.08$
2615 $\pm 0.67$	54	2375 $\pm 0.55$	54	2232	18	124	-9	-	118	184.7	369.4	$\leq 0.04$	$\leq 0.08$
2915 $\pm 0.67$	60	2675 $\pm 0.67$	60	2520	20	126	-10	-	118	205.1	410.2	$\leq 0.04$	$\leq 0.08$

- In SM3325-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

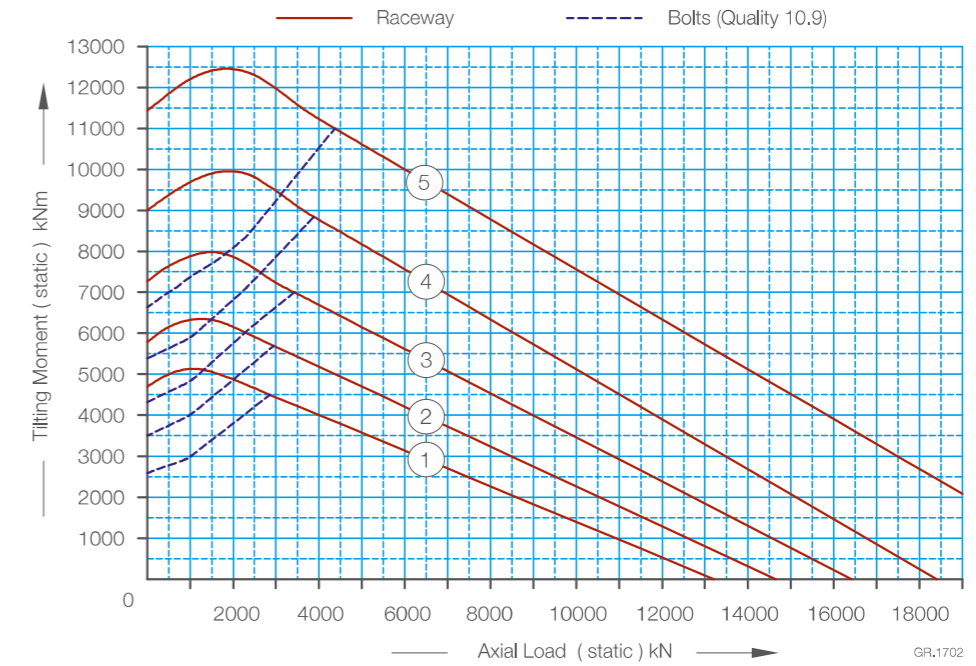
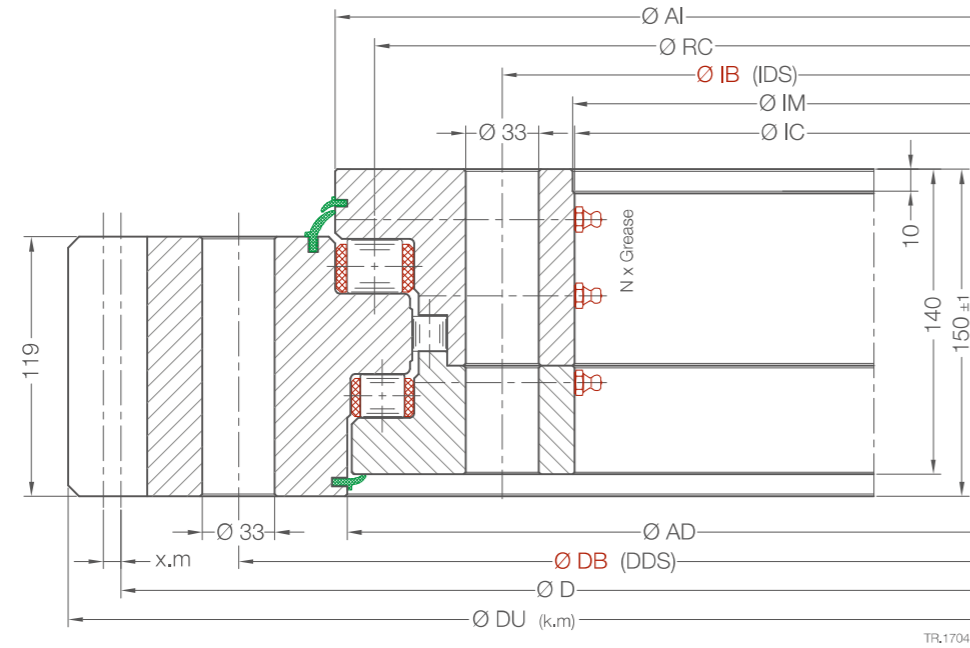
Bolt tightening torques (Nm)						
Bolt Size	Pre-Tightening %50			Tightening Torque		
	8,8	10,9	12,9	8,8	10,9	12,9
M30	675	1417	1688	1350	1890	2250

TB.1705



# SM3325-2 SERIES

DESIGNED FOR HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



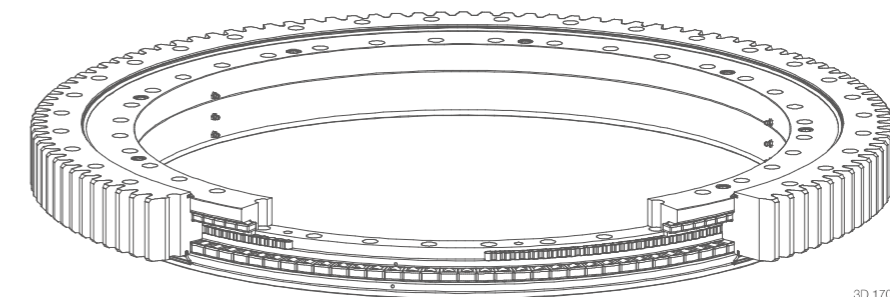
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM3325-2-2077AA	1	1143	1800	2076.8	1618	1620 +0.37	1826	1837	6x3 X M10x1
SM3325-2-2269AA	2	1235	2000	2268.8	1818	1820 +0.37	2026	2037	7x3 X M10x1
SM3325-2-2516AA	3	1399	2240	2516.4	2058	2060 +0.44	2266	2277	8x3 X M10x1
SM3325-2-2786AA	4	1591	2500	2786.4	2318	2320 +0.44	2526	2537	9x3 X M10x1
SM3325-2-3096AA	5	1813	2800	3096	2618	2620 +0.44	2826	2837	10x3 X M10x1

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
1925 ±0.46	36	1685 ±0.46	36	2032	16	127	+8	-1.6	118	164.1	328.2	≤0.06	≤0.12
2125 ±0.55	44	1885 ±0.46	44	2224	16	139	+8	-1.6	118	164.1	328.2	≤0.06	≤0.12
2366 ±0.55	48	2125 ±0.55	48	2466	18	137	+9	-1.8	118	184.7	369.4	≤0.06	≤0.12
2625 ±0.67	54	2385 ±0.55	54	2736	18	152	+9	-1.8	118	184.7	369.4	≤0.06	≤0.12
2925 ±0.67	60	2685 ±0.67	60	3040	20	152	+10	-2.0	118	205.1	410.2	≤0.06	≤0.12

- In SM3325-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt Size	Bolt tightening torques (Nm)					
	Pre-Tightening %50			Tightening Torque		
	8.8	10.9	12.9	8.8	10.9	12.9
M30	675	1417	1688	1350	1890	2250

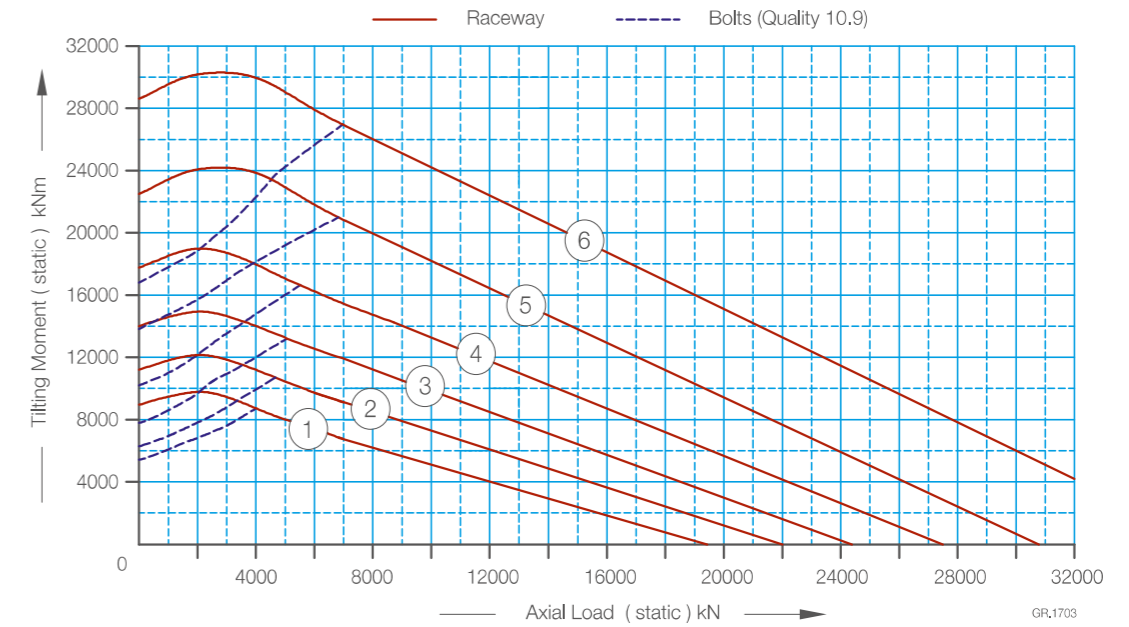
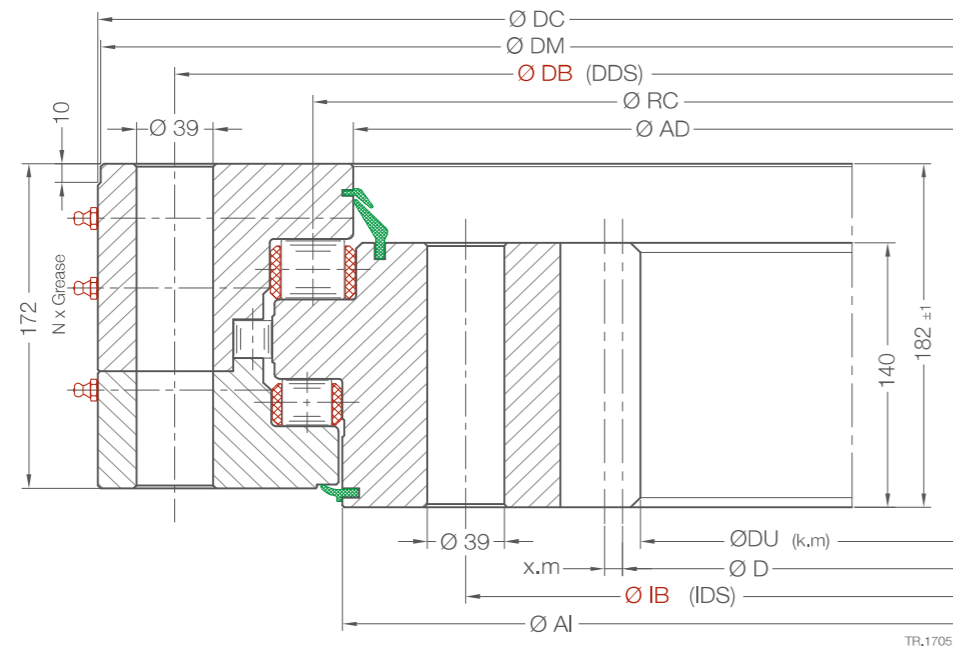
TB.1705





# SM3332-1 SERIES

DESIGNED FOR HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



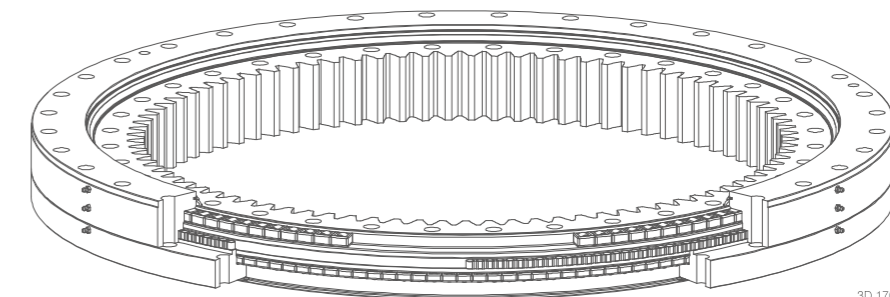
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			Ø RC	Ø DU	Ø DC	Ø DM	Ø AI	Ø AD	N x Grease
SM3332-1-2458AA	1	2016	2240	1908	2458	2455 -0.44	2210	2199	8x3 X M10x1
SM3332-1-2718AA	2	2217	2500	2178	2718	2715 -0.54	2470	2459	7x3 X M10x1
SM3332-1-3018AA	3	2550	2800	2460	3018	3015 -0.54	2770	2759	8x3 X M10x1
SM3332-1-3368AA	4	2816	3150	2820	3368	3365 -0.65	3120	3109	7x3 X M10x1
SM3332-1-3768AA	5	3312	3550	3190	3768	3765 -0.65	3520	3509	8x3 X M10x1
SM3332-1-4218AA	6	3675	4000	3652	4218	4215 -0.80	3970	3959	9x3 X M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
Ø DB	DDS	Ø IB	IDS	Ø D	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2380 ±0.55	40	2085 ±0.55	40	1926	18	107	-9	-	139	217.5	435	≤0.08	≤0.16
2640 ±0.67	44	2345 ±0.55	44	2196	18	122	-9	-	139	217.5	435	≤0.08	≤0.16
2940 ±0.67	48	2645 ±0.67	48	2480	20	124	-10	-	139	241.7	483.4	≤0.08	≤0.16
3290 ±0.83	56	2995 ±0.67	56	2840	20	142	-10	-	139	241.7	483.4	≤0.08	≤0.16
3690 ±0.83	66	3395 ±0.83	66	3212	22	146	-11	-	139	265.9	531.8	≤0.08	≤0.16
4140 ±1.01	72	3845 ±0.83	72	3674	22	167	-11	-	139	265.9	531.8	≤0.08	≤0.16

- In SM3332-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt tightening torques (Nm)				
Bolt Size	Pre-Tightening %50		Tightening Torque	
	10.9	12.9	10.9	12.9
M36	1682	1968	3364	3964

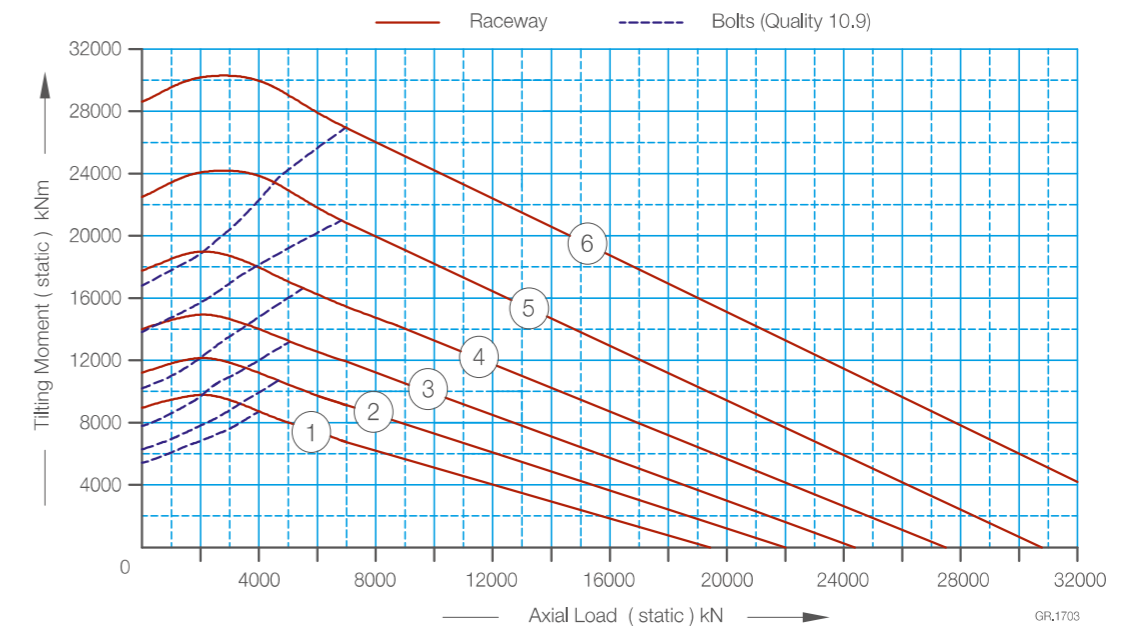
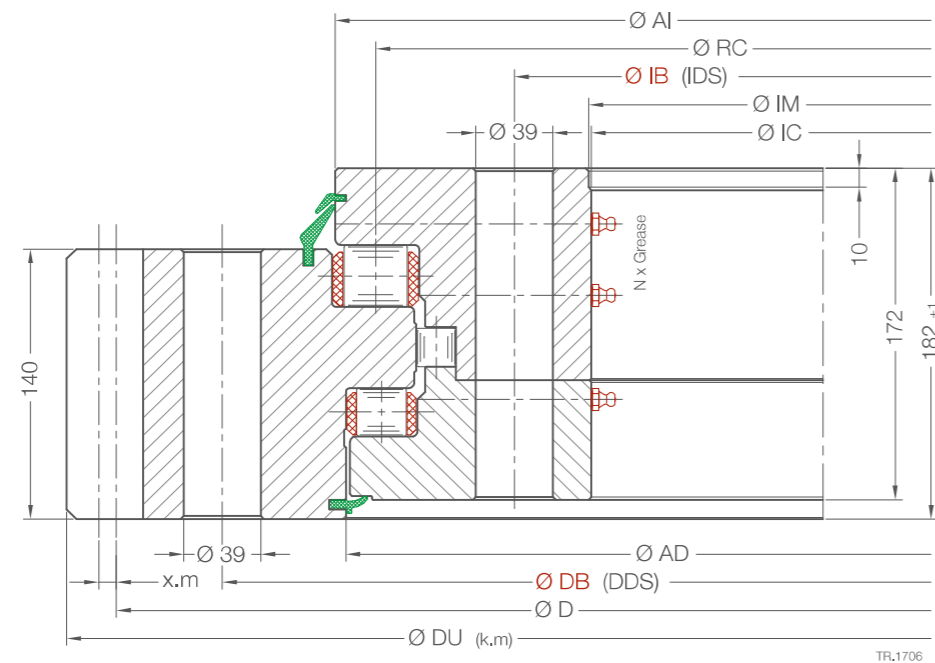
TB.1708



3D.1701

# SM3332-2 SERIES

DESIGNED FOR HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



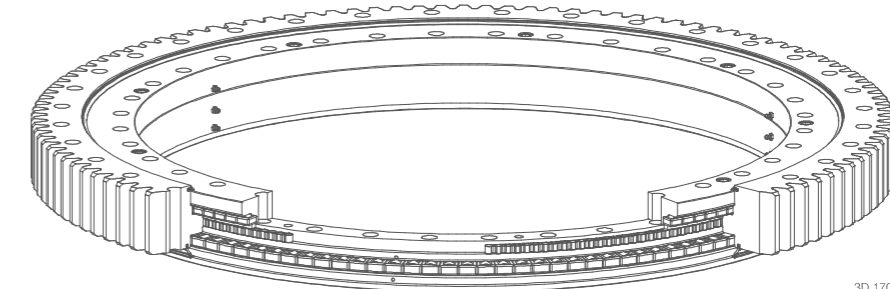
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM3332-2-2552AA	1	1981	2240	2552.4	2022	2025 +0.44	2270	2281	8x3 X M10x1
SM3332-2-2822AA	2	2267	2500	2822.4	2282	2285 +0.44	2530	2541	7x3 X M10x1
SM3332-2-3136AA	3	2584	2800	3136	2582	2585 +0.54	2830	2841	8x3 X M10x1
SM3332-2-3476AA	4	2837	3150	3476	2932	2935 +0.54	3180	3191	7x3 X M10x1
SM3332-2-3890AA	5	3259	3550	3889.6	3332	3335 +0.65	3580	3591	8x3 X M10x1
SM3332-2-4352AA	6	3763	4000	4351.6	3782	3785 +0.65	4030	4041	9x3 X M10x1

Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2395 ±0.55	40	2100 ±0.55	40	2502	18	139	+9	-1.8	139	217.5	435	≤0.08	≤0.16
2655 ±0.67	44	2360 ±0.55	44	2772	18	154	+9	-1.8	139	217.5	435	≤0.08	≤0.16
2955 ±0.67	48	2660 ±0.67	48	3080	20	154	+10	-2.0	139	241.7	483.4	≤0.08	≤0.16
3305 ±0.83	56	3010 ±0.67	56	3420	20	171	+10	-2.0	139	241.7	483.4	≤0.08	≤0.16
3705 ±0.83	66	3410 ±0.83	66	3828	22	174	+11	-2.2	139	265.9	531.8	≤0.08	≤0.16
4155 ±1.01	72	3860 ±0.83	72	4290	22	195	+11	-2.2	139	265.9	531.8	≤0.08	≤0.16

- In SM3332-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

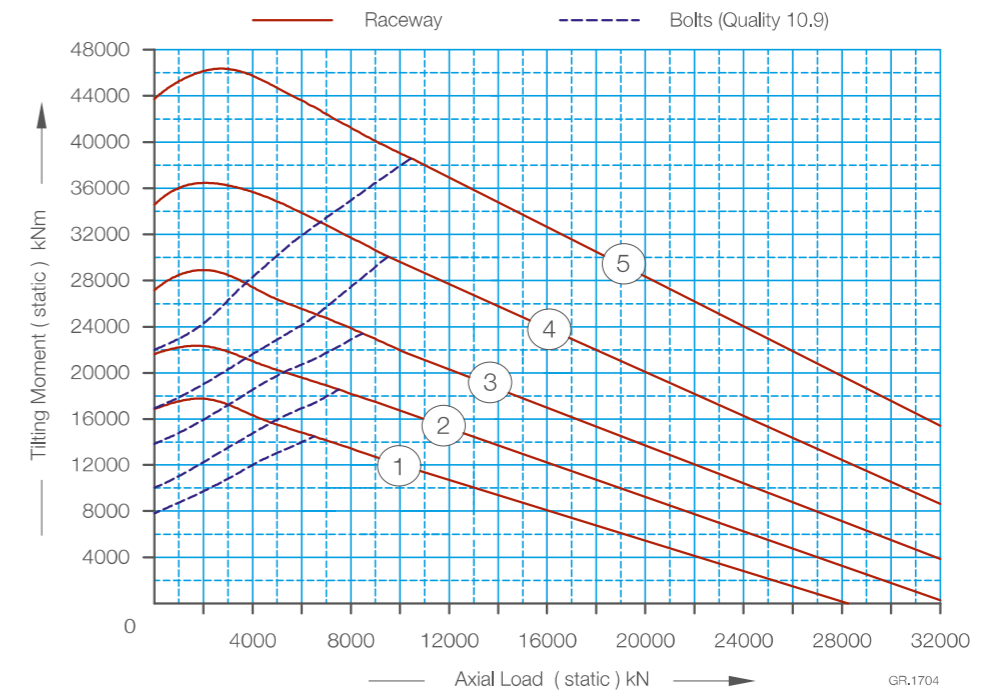
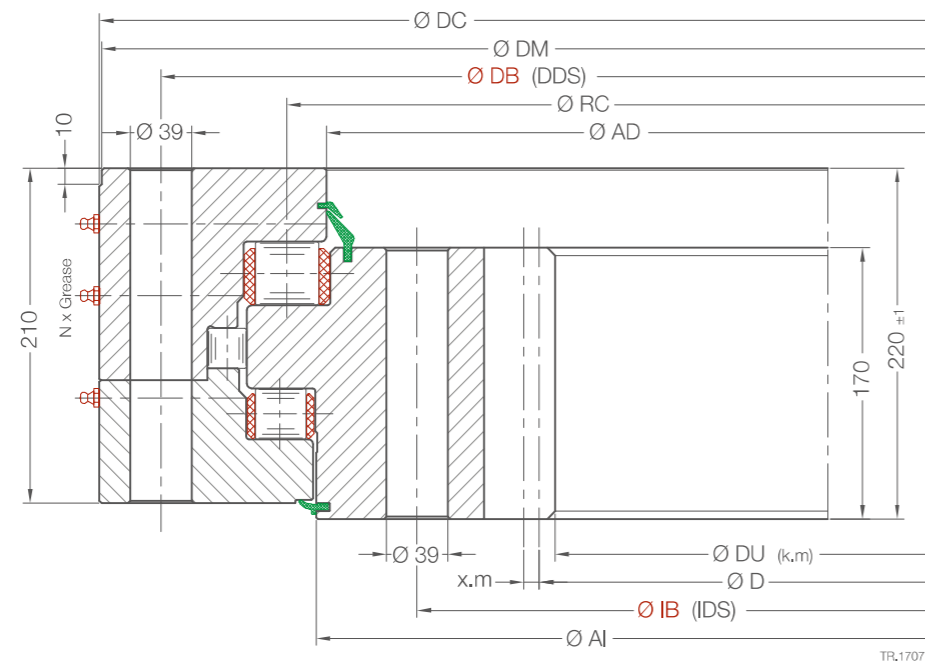
Bolt tightening torques (Nm)				
Bolt Size	Pre-Tightening %50		Tightening Torque	
	10.9	12.9	10.9	12.9
M36	1682	1968	3364	3964

TR.1708



# SM3340-1 SERIES

DESIGNED FOR HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



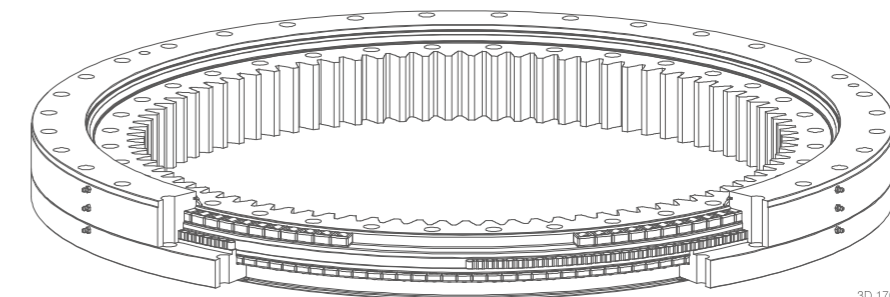
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	N x Grease
SM3340-1-3038AA	1	3213	2800	2460	3038	3035 -0.54	2763	2750	8x3 X M10x1
SM3340-1-3388AA	2	3683	3150	2794	3388	3385 -0.65	3113	3100	7x3 X M10x1
SM3340-1-3788AA	3	4171	3550	3190	3788	3785 -0.65	3513	3500	8x3 X M10x1
SM3340-1-4238AA	4	4810	4000	3624	4238	4235 -0.80	3963	3950	9x3 X M10x1
SM3340-1-4738AA	5	5367	4500	4128	4738	4735 -0.80	4463	4450	14x3 X M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2960 $\pm 0.67$	48	2635 $\pm 0.67$	48	2480	20	124	-10	-	169	293.9	587.8	$\leq 0.10$	$\leq 0.20$
3310 $\pm 0.83$	56	2985 $\pm 0.67$	56	2816	22	128	-11	-	169	323.3	646.6	$\leq 0.10$	$\leq 0.20$
3710 $\pm 0.83$	66	3385 $\pm 0.83$	66	3212	22	146	-11	-	169	323.3	646.6	$\leq 0.10$	$\leq 0.20$
4160 $\pm 1.01$	72	3835 $\pm 0.83$	72	3648	24	152	-12	-	169	352.7	705.4	$\leq 0.10$	$\leq 0.20$
4660 $\pm 1.01$	84	4335 $\pm 1.01$	84	4152	24	173	-12	-	169	352.7	705.4	$\leq 0.10$	$\leq 0.20$

- In SM3340-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

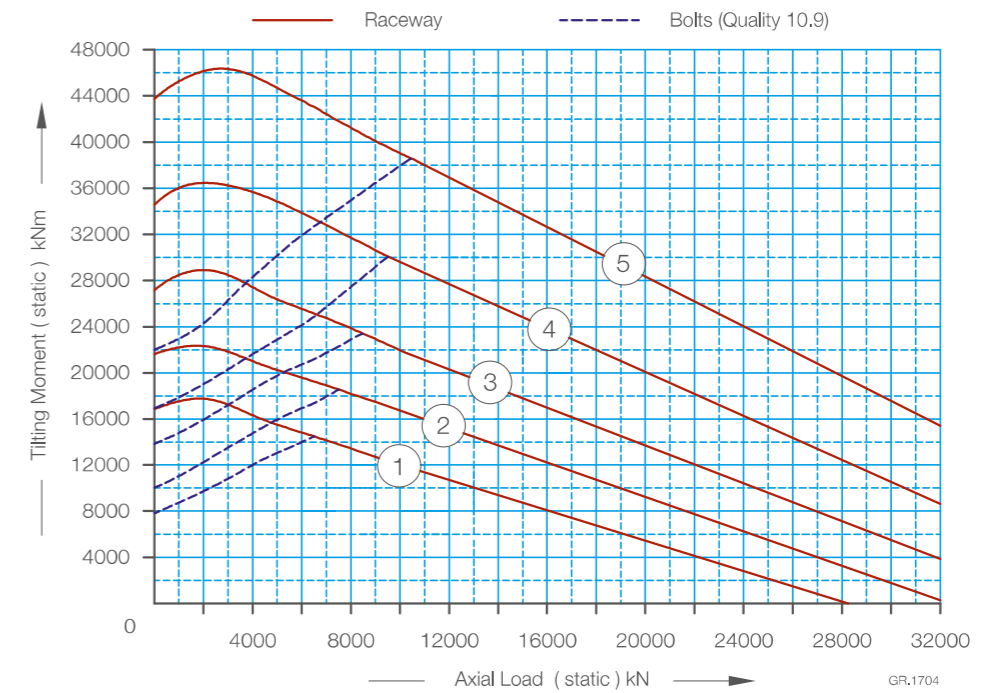
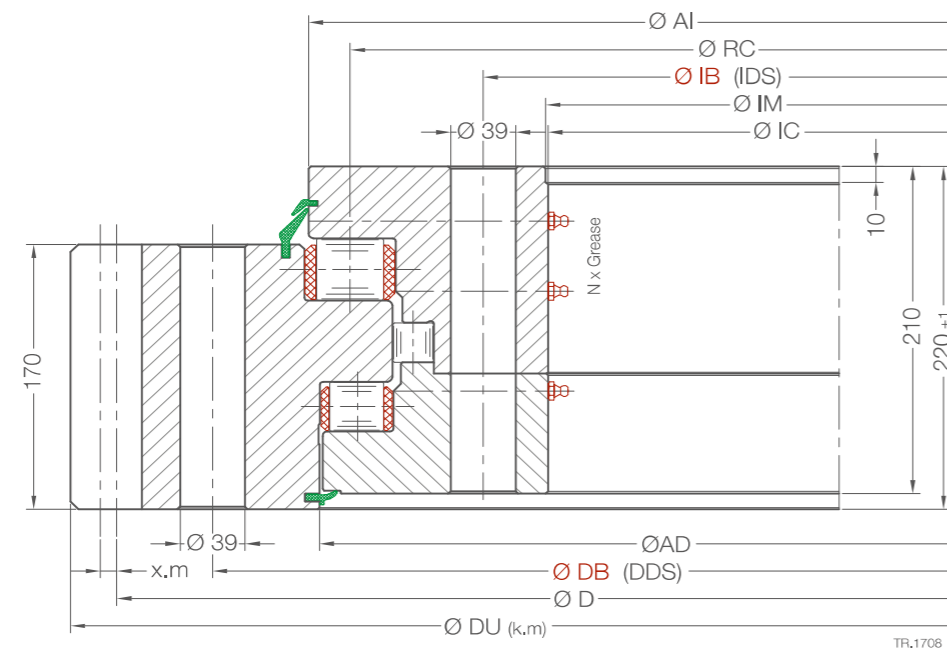
Bolt tightening torques (Nm)				
Bolt Size	Pre-Tightening %50		Tightening Torque	
	10,9	12,9	10,9	12,9
M36	1682	1968	3364	3964

TB.1708



# SM3340-2 SERIES

DESIGNED FOR HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM3340-2-3136AA	1	3267	2800	3136	2562	2565 +0.54	2837	2850	8x3 X M10x1
SM3340-2-3516AA	2	3812	3150	3515.6	2912	2915 +0.65	3187	3200	7x3 X M10x1
SM3340-2-3912AA	3	4255	3550	3911.6	3312	3315 +0.65	3587	3600	8x3 X M10x1
SM3340-2-4363AA	4	4805	4000	4363.2	3762	4262 +0.80	4037	4050	9x3 X M10x1
SM3340-2-4867AA	5	5410	4500	4867.2	4762	4765 +0.80	4537	4550	14x3 X M10x1

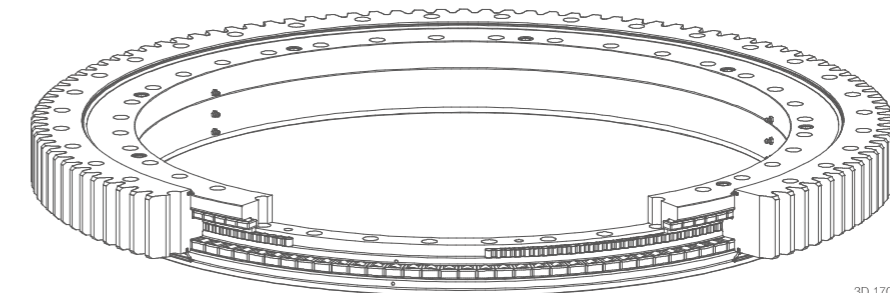
Connection Holes				Gear Data					Gear Tangential Force		Bearing Clearance		
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
2965 ±0.67	48	2640 ±0.67	48	3080	20	154	+10	-2.0	169	293.9	587.8	≤0.10	≤0.20
3315 ±0.83	56	2990 ±0.67	56	3454	22	157	+11	-2.2	169	323.3	646.6	≤0.10	≤0.20
3715 ±0.83	66	3390 ±0.83	66	3850	22	175	+11	-2.2	169	323.3	646.6	≤0.10	≤0.20
4165 ±1.01	72	3840 ±0.83	72	4296	24	179	+12	-2.4	169	352.7	705.4	≤0.10	≤0.20
4665 ±1.01	84	4340 ±1.01	84	4800	24	200	+12	-2.4	169	352.7	705.4	≤0.10	≤0.20

- In SM3340-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt tightening torques (Nm)				
Bolt Size	Pre-Tightening %50		Tightening Torque	
	10.9	12.9	10.9	12.9
M36	1682	1968	3364	3964

TB.1708

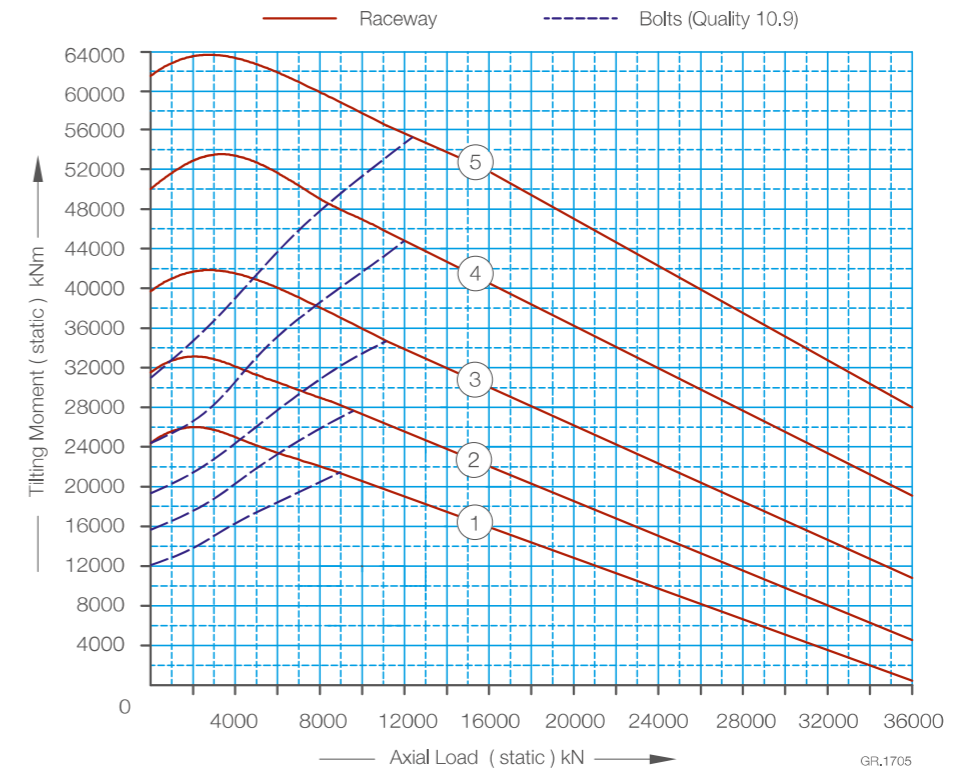
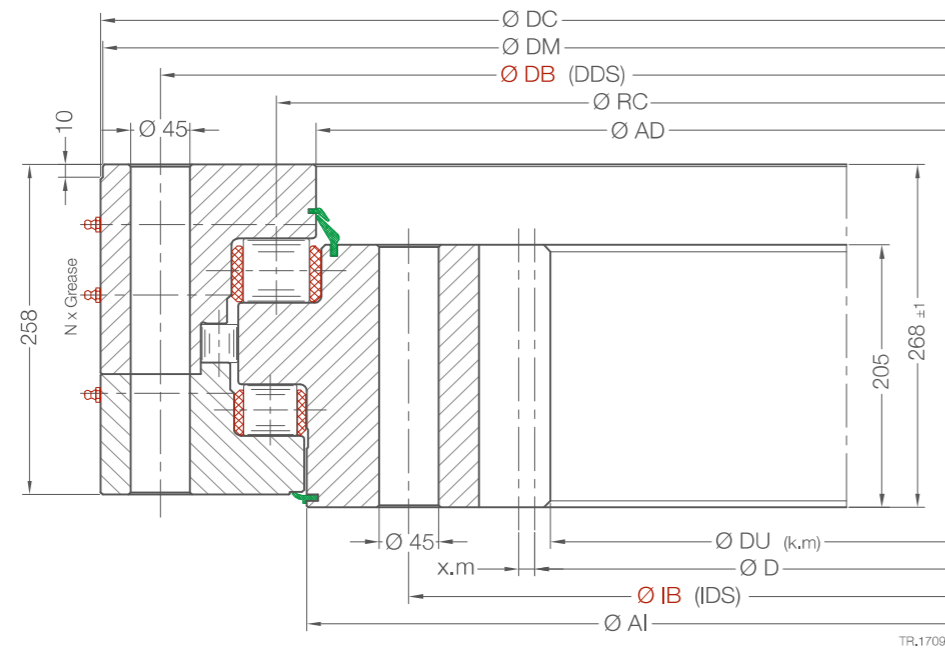
TB.1711



3D.1702

# SM3350-1 SERIES

DESIGNED FOR HEAVY LOADS, INTERNAL GEAR SLEWING BEARING



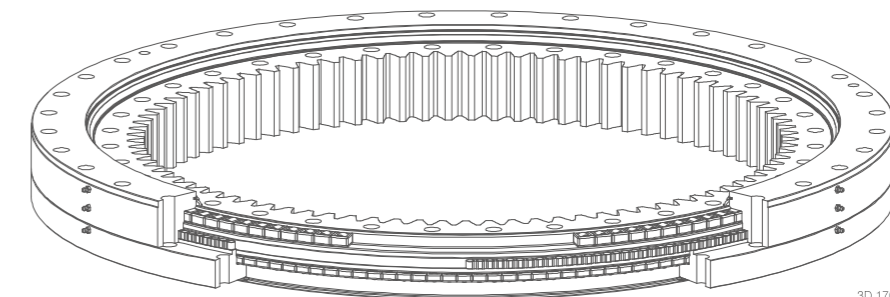
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing DC$	$\varnothing DM$	$\varnothing AI$	$\varnothing AD$	N x Grease
SM3350-1-3415AA	1	5150	3150	2736	3415	3412 -0.54	3104	3090	8x3 X M10x1
SM3350-1-3815AA	2	5946	3550	3120	3815	3812 -0.65	3504	3490	9x3 X M10x1
SM3350-1-4265AA	3	6661	4000	3576	4265	4262 -0.65	3954	3940	10x3 X M10x1
SM3350-1-4765AA	4	7473	4500	4080	4765	4762 -0.80	4454	4440	11x3 X M10x1
SM3350-1-5265AA	5	8236	5000	4584	5265	5262 -0.90	4954	4940	13x3 X M10x1

Connection Holes				Gear Data						Gear Tangential Force		Bearing Clearance	
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x.m	k.m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
3325 ±0.83	48	2950 ±0.67	48	2760	24	115	-12	-	204	425.7	851.4	≤0.12	≤0.24
3725 ±0.83	54	3350 ±0.83	54	3144	24	131	-12	-	204	425.7	851.4	≤0.12	≤0.24
4175 ±1.01	60	3800 ±0.83	60	3600	24	150	-12	-	204	425.7	851.4	≤0.12	≤0.24
4675 ±1.01	68	4300 ±1.01	68	4104	24	171	-12	-	204	425.7	851.4	≤0.12	≤0.24
5175 ±1.24	78	4800 ±1.01	78	4608	24	192	-12	-	204	425.7	851.4	≤0.12	≤0.24

- In SM3350-1 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt tightening torques (Nm)				
Bolt Size	Pre-Tightening %50		Tightening Torque	
	10.9	12.9	10.9	12.9
M42	2690	5380	3149	6298

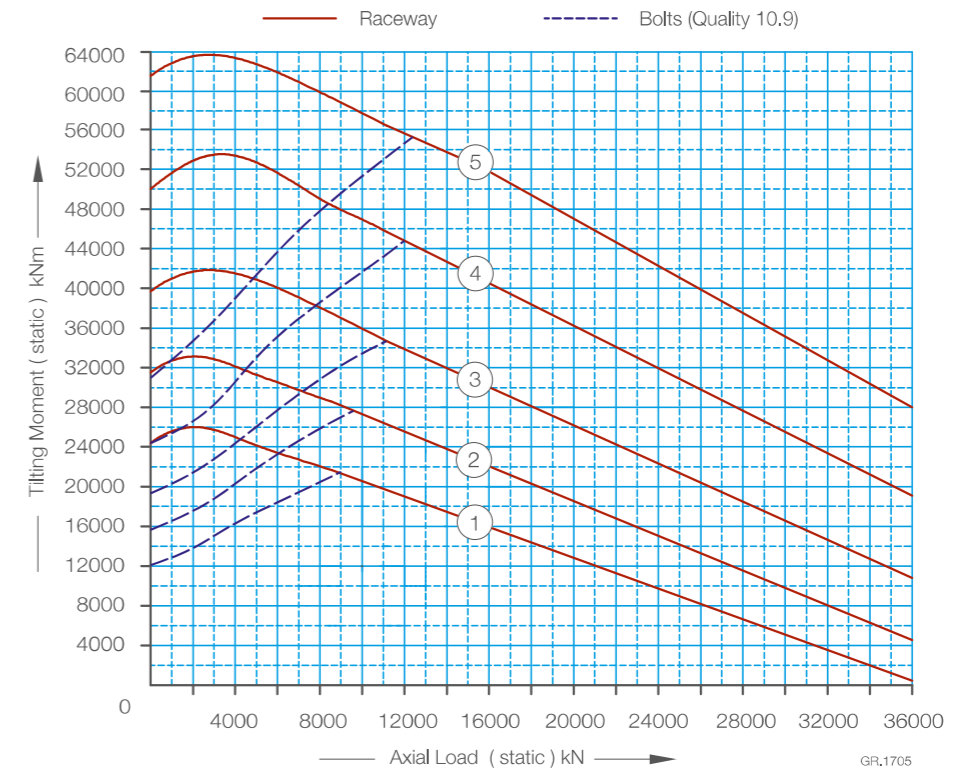
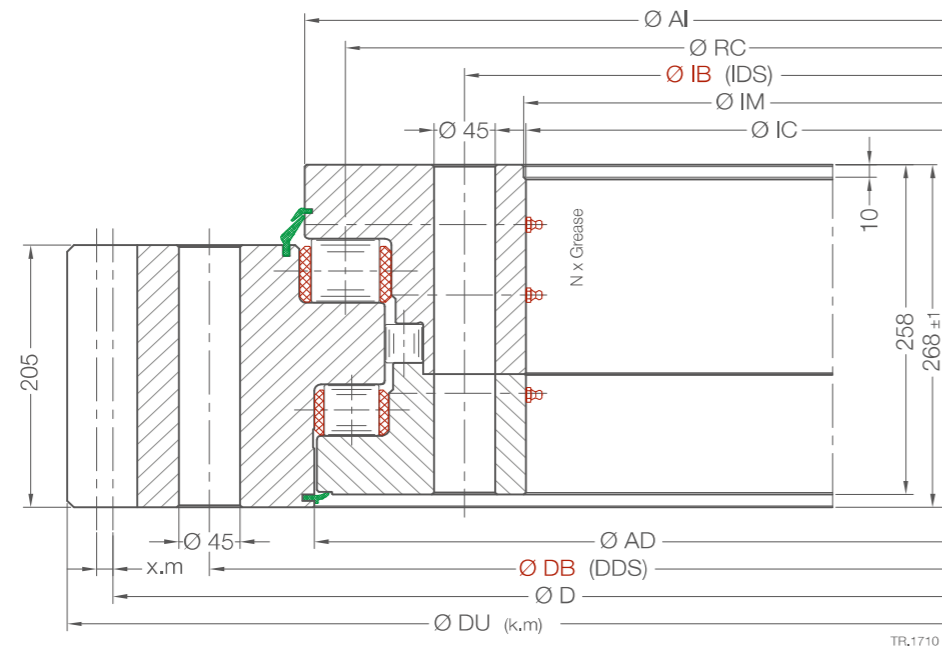
TB.1713



3D.1701

# SM3350-2 SERIES

DESIGNED FOR HEAVY LOADS, EXTERNAL GEAR SLEWING BEARING



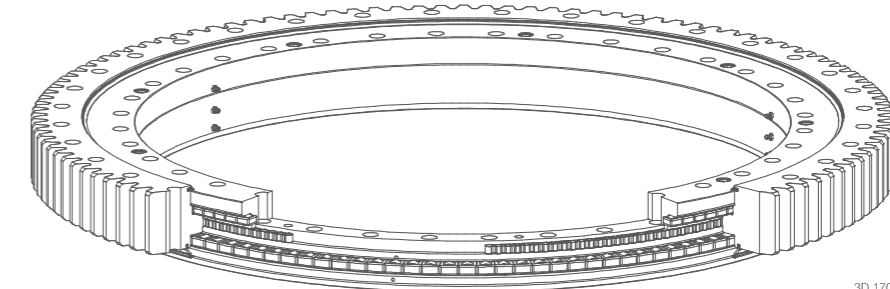
Drawing No	Item No	Weight kg	Geometry mm						
			Dimensions						
			$\varnothing RC$	$\varnothing DU$	$\varnothing IC$	$\varnothing IM$	$\varnothing AD$	$\varnothing AI$	N x Grease
SM3350-2-3571AA	1	5320	3150	3571.2	2885	2888 +0.54	3196	3210	8x3 X M10x1
SM3350-2-3955AA	2	5860	3550	3955.2	3285	3288 +0.65	3596	3610	9x3 X M10x1
SM3350-2-4411AA	3	6616	4000	4411.2	3735	3738 +0.65	4046	4060	10x3 X M10x1
SM3350-2-4915AA	4	7502	4500	4915.2	4235	4238 +0.80	4546	4560	11x3 X M10x1
SM3350-2-5419AA	5	8313	5000	5419.2	4735	4738 +0.80	5046	5060	13x3 X M10x1

Connection Holes		Gear Data				Gear Tangential Force		Bearing Clearance					
$\varnothing DB$	DDS	$\varnothing IB$	IDS	$\varnothing D$	m	Z	x,m	k,m	Gear Ht.	Nominal kN	Max. kN	Axial mm	Radial mm
3350 ±0.83	48	2975 ±0.67	48	3504	24	146	+12	-2.4	204	425.7	851.4	≤0.12	≤0.24
3750 ±0.83	54	3375 ±0.83	54	3888	24	162	+12	-2.4	204	425.7	851.4	≤0.12	≤0.24
4200 ±1.01	60	3825 ±0.83	60	4344	24	181	+12	-2.4	204	425.7	851.4	≤0.12	≤0.24
4700 ±1.01	68	4325 ±1.01	68	4848	24	202	+12	-2.4	204	425.7	851.4	≤0.12	≤0.24
5200 ±1.24	78	4825 ±1.01	78	5328	24	222	+12	-2.4	204	425.7	851.4	≤0.12	≤0.24

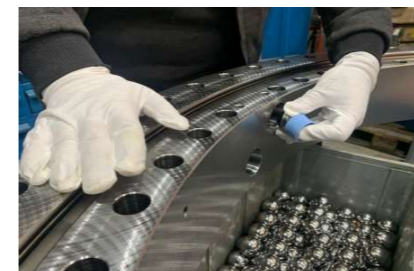
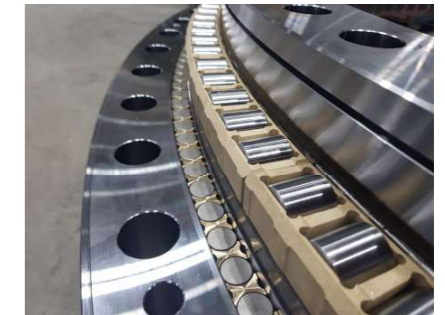
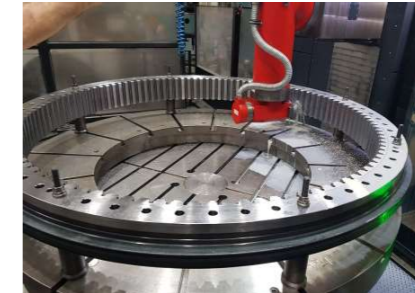
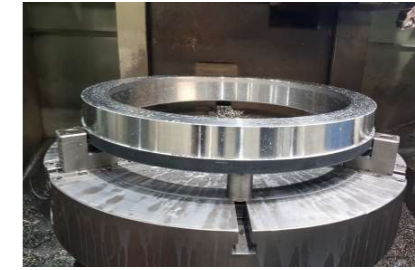
- In SM3350-2 series Slewing Bearings,  
as a standard material, highly qualified steel which is quenched and tempered is used.

Bolt tightening torques (Nm)				
Bolt Size	Pre-Tightening %50		Tightening Torque	
	10,9	12,9	10,9	12,9
M42	2690	5380	3149	6298

TB.1713

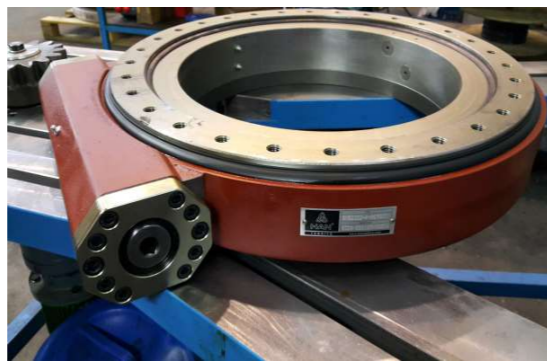


3D.1702

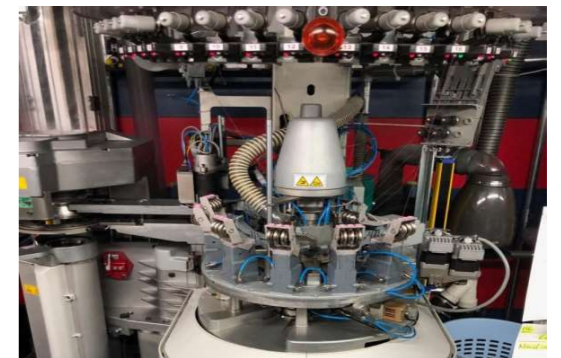
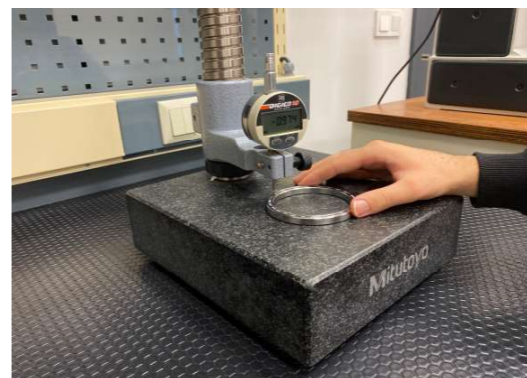
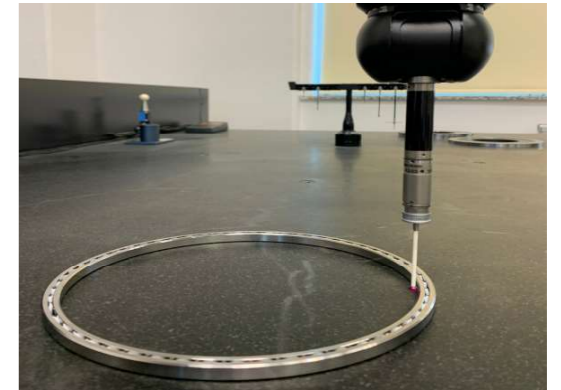




Slew Drive



HANSISKA® Thin Section Bearing





## Abbreviations On The Technical Pages

### Diameter Dimensions

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DU	Diameter on Tooth
DC	Outer Diameter
IC	Inner Diameter
RC	Raceway diameter
AD	Outer Circle Inner Diameter
AI	Inner Circle Outer Diameter
IM	Inner Circle Centering Diameter
DM	Outer Circle Centering Diameter

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### Gear Information

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D	Gear Circle Diameter
m	Module
Z	Number of Teeth
x.m	Addendum Modification
k.m	Topping adjustment

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### Hole Information

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DB	Outside Hole Circle Diameter
IB	Inside Hole Circle Diameter
DDS	Number of Holes On Outside
IDS	Number of Holes On Inside
C	Hole Diameter

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### Other Information

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kg	Weight
N x Gres	Grease Nipple Quantity and Size

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