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HAN Slew Drives

Project based
special solutions

Real time
delivery guarantee



“Design To
Production”

www.hanmakina.com

HMB 17 -EN

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 2600m².

In our new plant in Dilovası, our production will continue with increased manufacturing and stock capacities. This new plant has a closed area of 13.500m² 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.

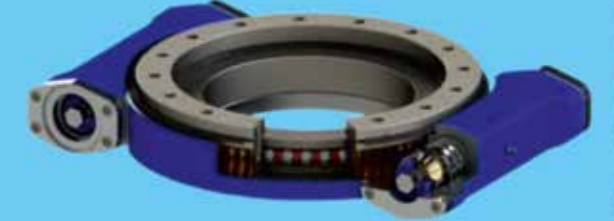
Today and in the future, HAN Makina will continue increasing its efforts on structuring and production capacity to produce more special bearings.

Slew Drives

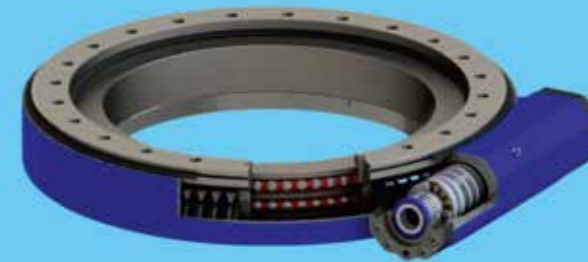
▶ Single Worm Drive
One Row Ball



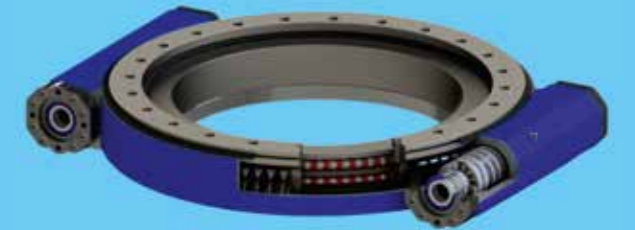
Double Worm Drive ◀
One Row Ball



▶ Single Worm Drive
Two Row Ball



Double Worm Drive ◀
Two Row Ball



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

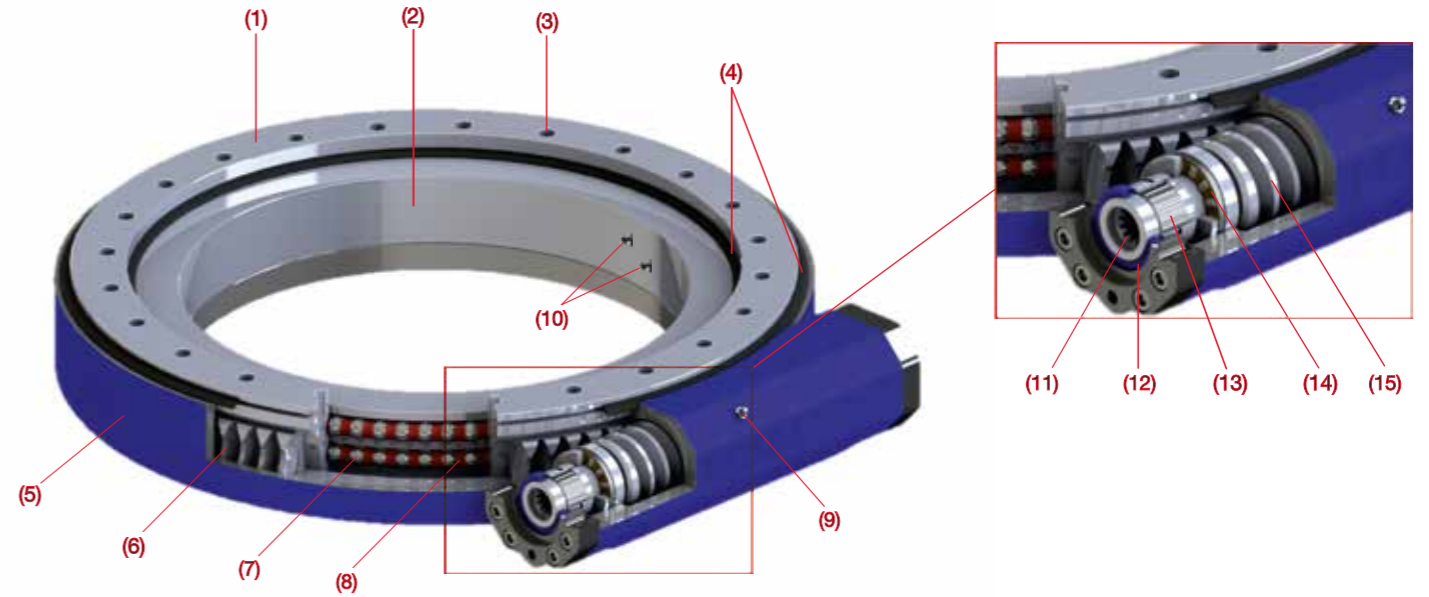
Depending on its experienced staff and company culture, HAN Makina achieved great success in the manufactured products and its customer portfolio has continuously expanded. These developments provided new investment opportunities to our company.



2022

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

- Thanks to its high proportion, there is no need for an additional of a gear box and a pinion gear.
- Since it is a close circuit system, it is completely isolated off the exterior conditions.
- While it provides a powerful torque, it does not require an additional brake since itself a self-brake system.
- It serves the operator an easy maintenance and lubricating.
- This could be actuated directly by a hydromotor or an electrical motor. There is no requirement for a chassis to carry the actuator.
- In case of a requirement or a failure, manually operated.
- It has a low-cost of assemblance, very easily mounted. Such bearings only require smooth surfaces and mounting holes so that they can be easily mounted onto the supporting surfaces.
- The actuator and the bearing unit stand on the same body and plane, enabling a great advantage for the operator in terms of less space.



Structure of Slew Drives;

- (1) Outer ring
- (2) Inner ring
- (3) Holes with thread on the bearing rings
- (4) Seals (sealing elements)
- (5) Housing
- (6) Worm gear
- (7) Rolling elements (ball, roller)
- (8) Separators
- (9) Grease nipple (for driving)
- (10) Grease nipple (for bearing)
- (11) Motor connection
- (12) Seal (worm side)
- (13) Needle bearing
- (14) Thrust bearing
- (15) Worm shaft

Single Row Rolling Element 1 ... Largest Rolling Element Diameter [mm]
 Double Row Rolling Element 2
 Three Row Rolling Element 3

Light Class Type-L 1
 Two Main Ring 2
 Three Main Ring 3

Ball B
 Cylindrical Roller SM
 Conical Roller KM

2 External Spur Gear
 3 External Helical Gear
 4 One Worm Drive
 5 Two Worm Drive

... The Largest Diameter of the Bearing [mm]
 ... Outer Circle Mounting Hole Type
 ... Inner Circle Mounting Hole Type

TIP
 SV - B 2 2 22 - 4 - 0550 C D
 SERİ NO
 A 3 2 0 - 00 009546 - A 1988

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Housing Material
 Steel A
 Aluminium B
 Sphero C
 Other D

Main Ring Material
 Ck45 01
 46Cr2 02
 42CrMo4 03
 34CrNiMo6 04
 100Cr6 10
 100CrMn6 11
 17CrNiMo6 20
 8620 21
 vb. ...

00 No Coating
 01 99 Coating Information

0 No Heat Treatment
 1 Induction-Hardened Surface
 2 Induction + Tempering

0 No Heat Treatment
 1 Normalization (N)
 2 Quenched and Tempered (Q + T)

... Manufacturing Date (Year)
 ... Manufacturing Date (Month)

... Serial Number

January	A
February	B
March	C
April	D
May	E
June	F
July	G
August	H
September	I
October	J
November	K
December	L

Types of Mounting Holes
 A B C D E F



Easy Operation and Maintenance

- ▶ Longer maintenance intervals
- ▶ Not necessary a maintenance in some applications
- ▶ Easy lubrication solutions

Application Areas

- ▶ Freight Platforms
- ▶ Forklift Attachments
- ▶ Human Platforms
- ▶ On-Board Platforms
- ▶ Concrete Pumps
- ▶ Cranes
- ▶ Satellite Dishes



Definition

Existing in various types and sizes, Worm shaft actuated slewing bearings are the elements, which require maintenance rarely, ensure smooth start-up in operation mode. Such bearings have an entrance-exit rotational rate and withstand axial and radial forces, moment forces while it has a rotational connection of min. volume. Such type of slewing bearings are preferred for the sensitive positioning, high rate of torque as well as high accuracy of rotation. This compact design is cost-effective. Hydraulic and electrical motor are directly linked to the actuator, therefore the additional gear boxes and pinion gears or brake system can be ignored.



Some Applications

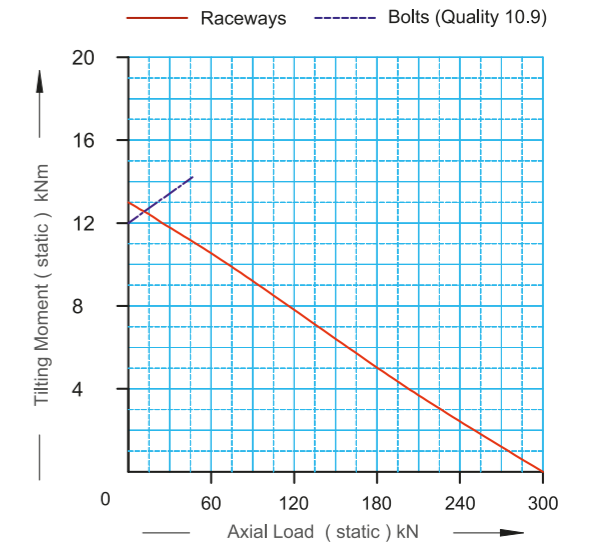
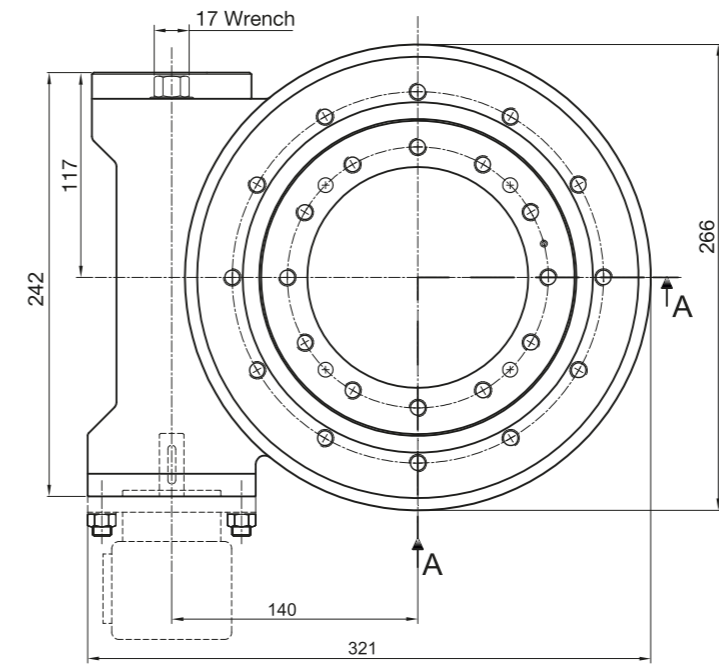
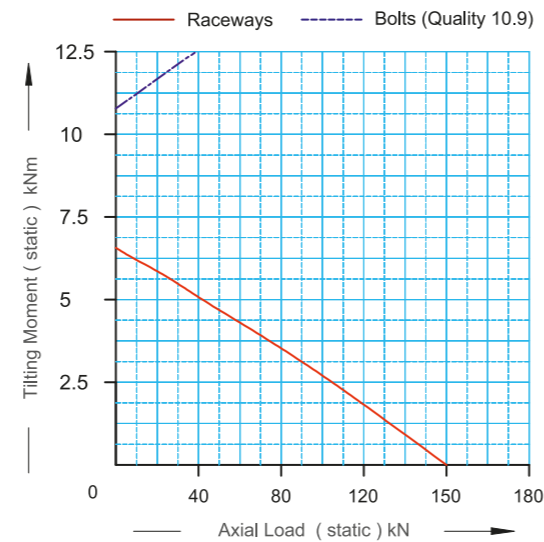
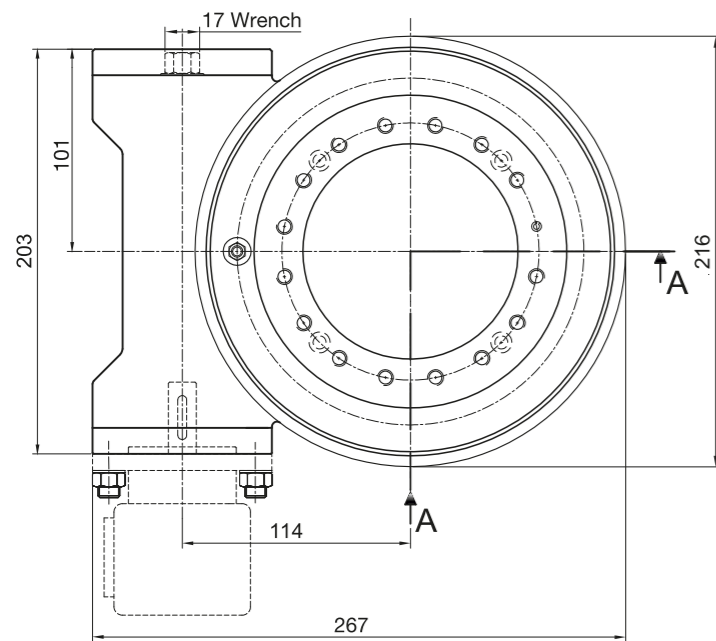
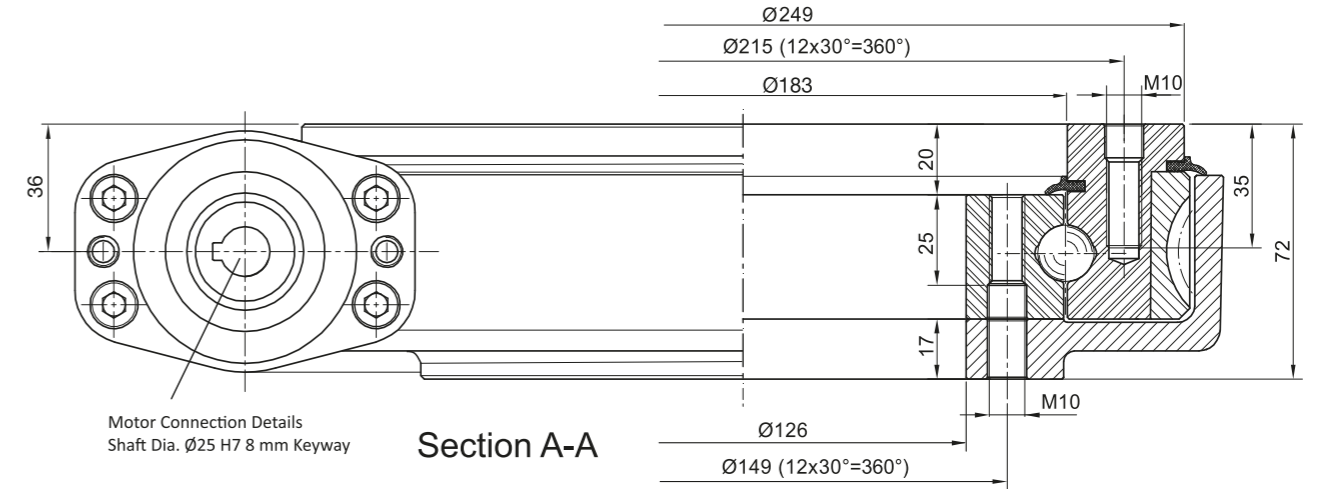
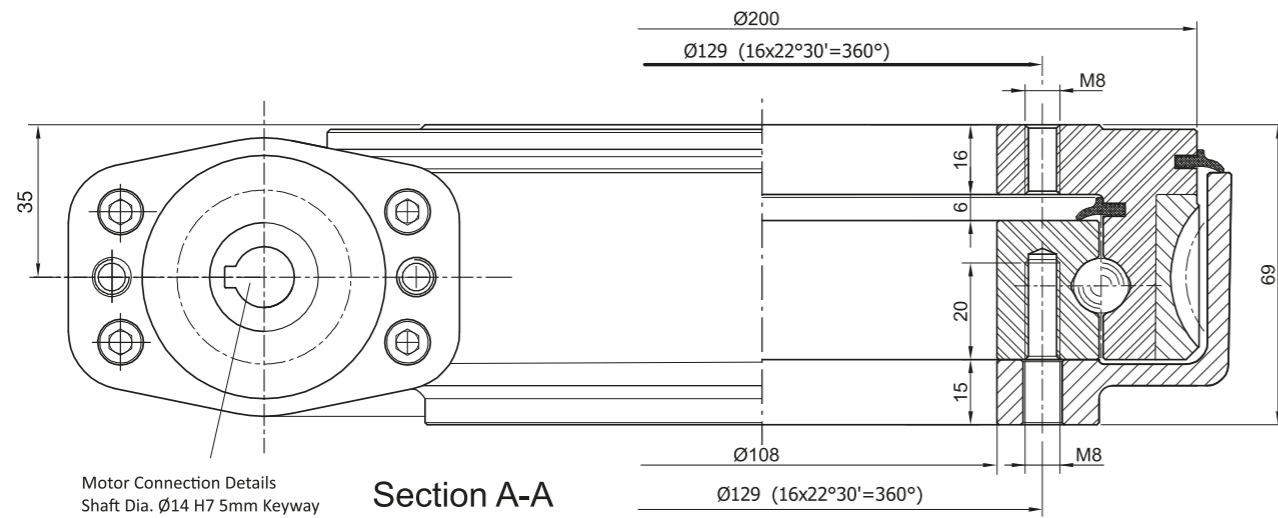


HAN Slew Drives

SV-B2113-4-0201FD

HAN Slew Drives

SV-B2116-4-0252DD



Module (m)	3
Number of starts of the worm	1
Gear ratio	1:65
Maximum torque	1500 Nm
Static Load, Radial	25 kN
Static Load, Axial	150 kN
Backlash (between worm drive and worm gear)	<0.01°
Gear Material	Bronze

Worm gear material	Case Hardening Steel
Outer ring clamping bolts (10.9) x Quantity	M8 x 16
Inner ring clamping bolts (10.9) x Quantity	M8 x 16
M10 (10.9) Bolt tightening torque (Nm)	* 17.5 35
M10 (12.9) Bolt tightening torque (Nm)	* 21.15 42.3
Grease nipple / Quantity	M6 / 2
Weight (kg)	11

* Bolt Pre-tightening Torque (%50)

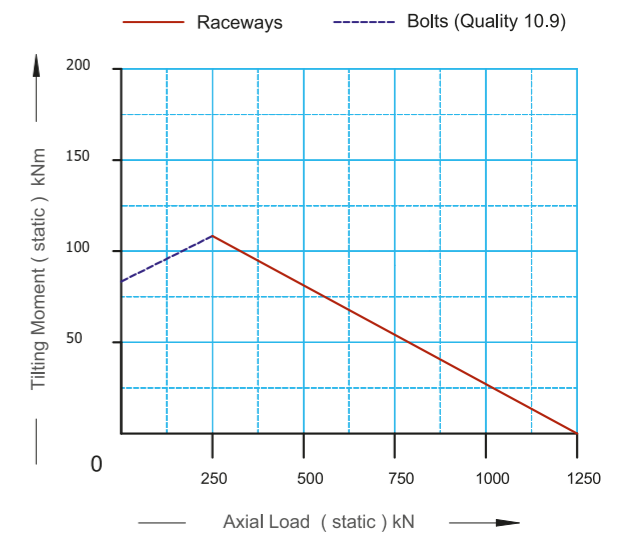
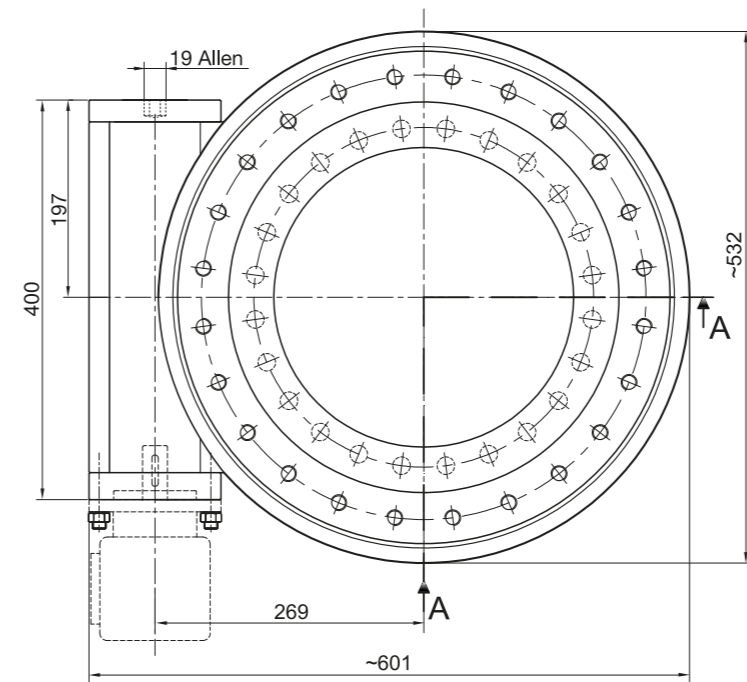
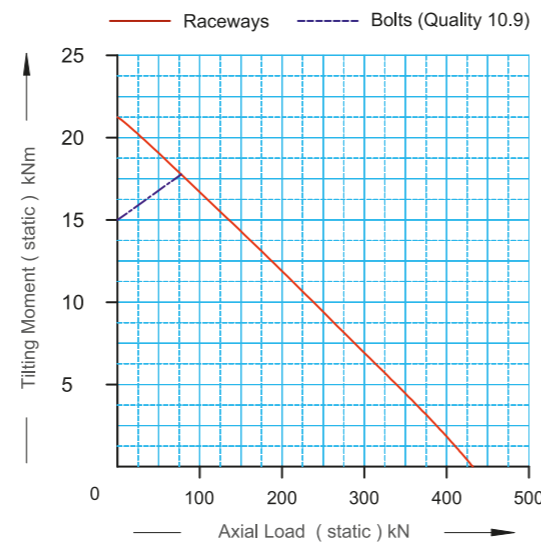
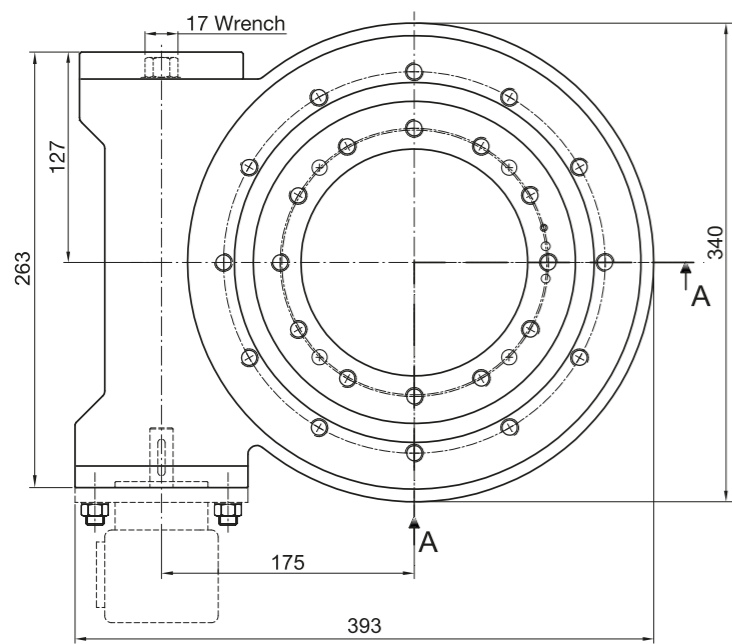
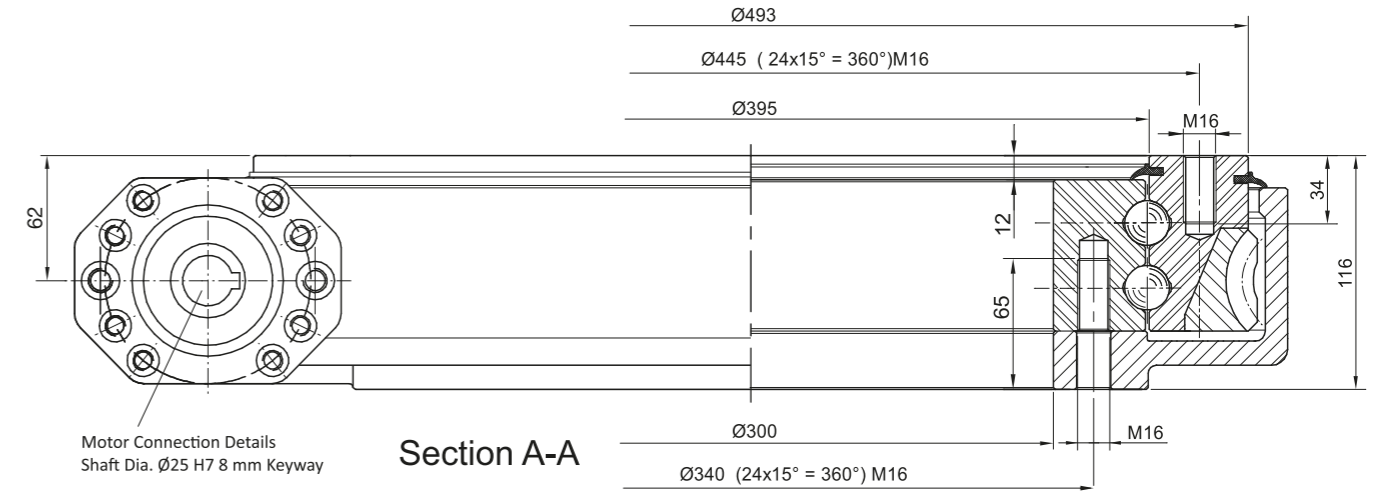
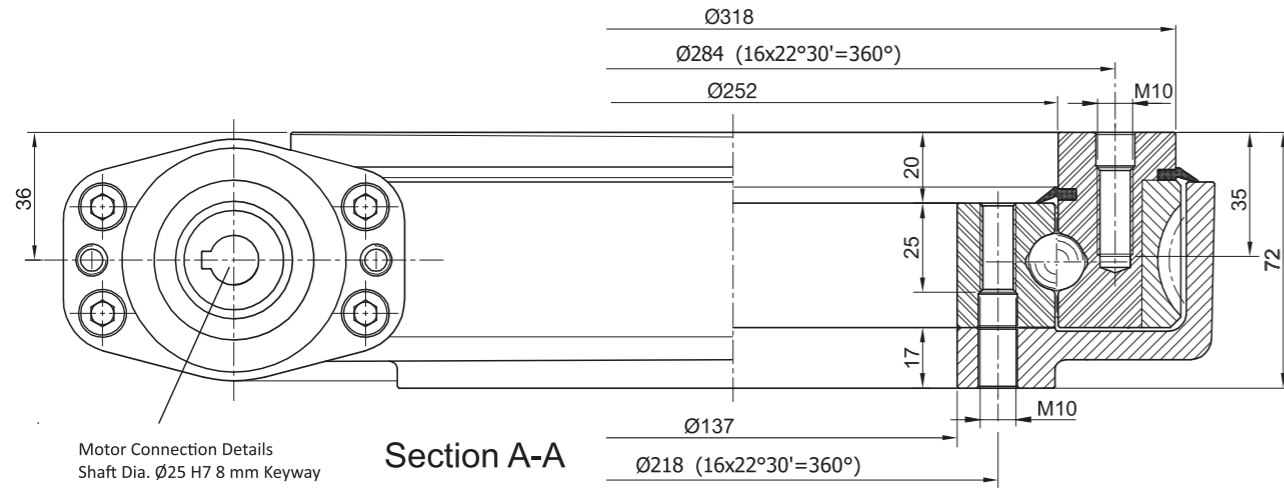
Module (m)	3
Number of starts of the worm	1
Gear ratio	1:82
Maximum torque	1840 Nm
Static Load, Radial	42 kN
Static Load, Axial	250 kN
Backlash (between worm drive and worm gear)	<0.01°
Gear Material	Bronze

Worm gear material	Case Hardening Steel
Outer ring clamping bolts (10.9) x Quantity	M10 x 30
Inner ring clamping bolts (10.9) x Quantity	M10 x 30
M10 (10.9) Bolt tightening torque (Nm)	* 34.5 69
M10 (12.9) Bolt tightening torque (Nm)	* 41.75 83.5
Grease nipple / Quantity	M6 / 2
Weight (kg)	17.5

* Bolt Pre-tightening Torque (%50)

HAN Slew Drives SV-B2116-4-0321DD

HAN Slew Drives SV-B2222-4-0500CD



Module (m)	3
Number of starts of the worm	1
Gear ratio	1:105
Maximum torque	2300 Nm
Static Load, Radial	70 kN
Static Load, Axial	430 kN
Backlash (between worm drive and worm gear)	<0.01°
Gear Material	Bronze

Worm gear material	Case Hardening Steel
Outer ring clamping bolts (10.9) x Quantity	M10 x 16
Inner ring clamping bolts (10.9) x Quantity	M10 x 16
M10 (10.9) Bolt tightening torque (Nm)	* 34.5 69
M10 (12.9) Bolt tightening torque (Nm)	* 41.75 83.5
Grease nipple / Quantity	M6 / 2
Weight (kg)	23

* Bolt Pre-tightening Torque (%50)

Module (m)	6
Number of starts of the worm	1
Gear ratio	1:81
Maximum torque	20250 Nm
Static Load, Radial	450 kN
Static Load, Axial	1250 kN
Dynamic Load, Radial	297 kN

Dynamic Load, Axial	376 kN
Outer ring clamping bolts (10.9) x Quantity	M16 x 24
Inner ring clamping bolts (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 / Quantity	M10x1 / 5
Weight (kg)	118

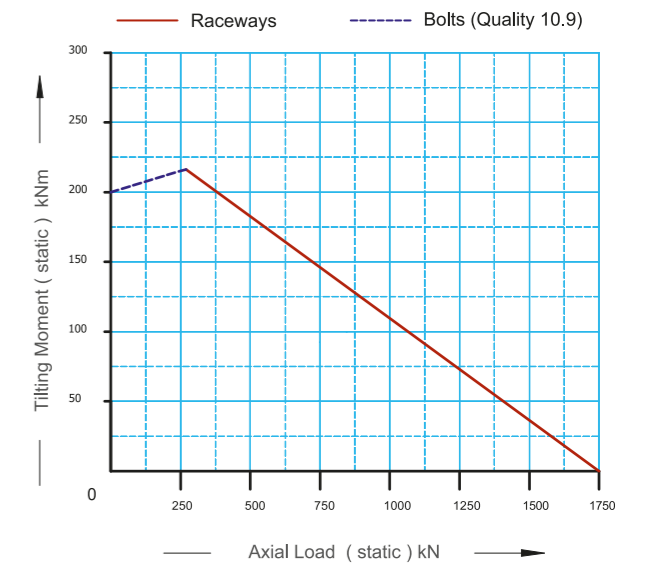
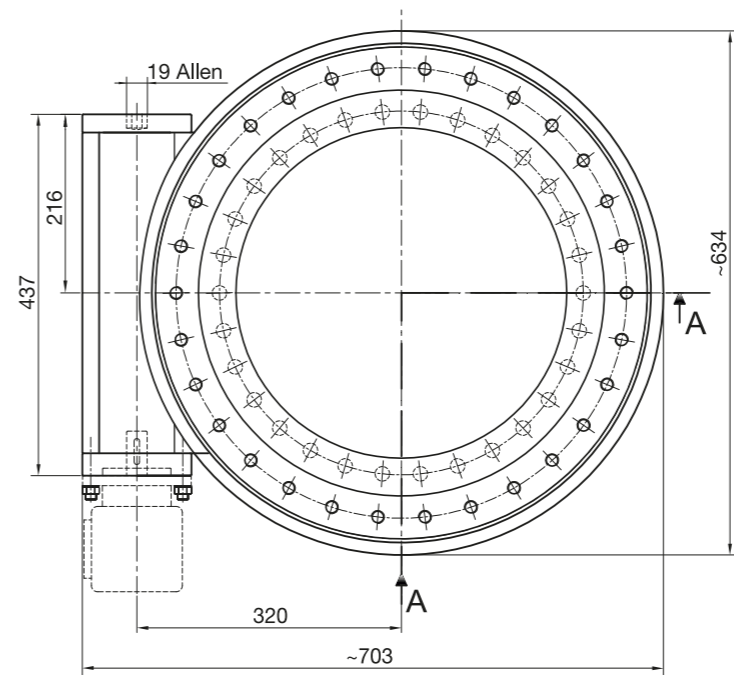
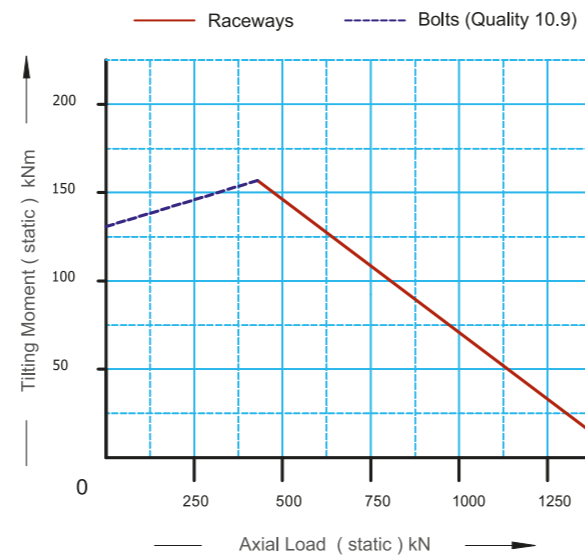
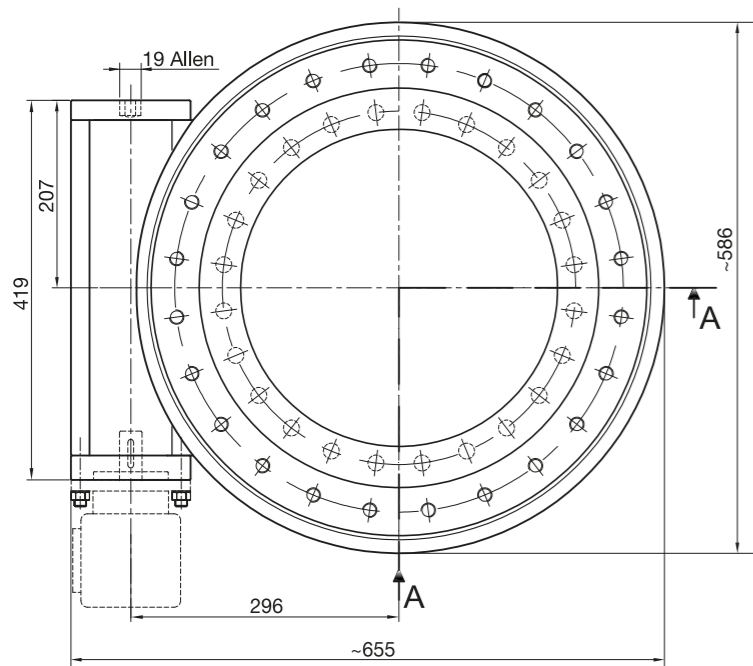
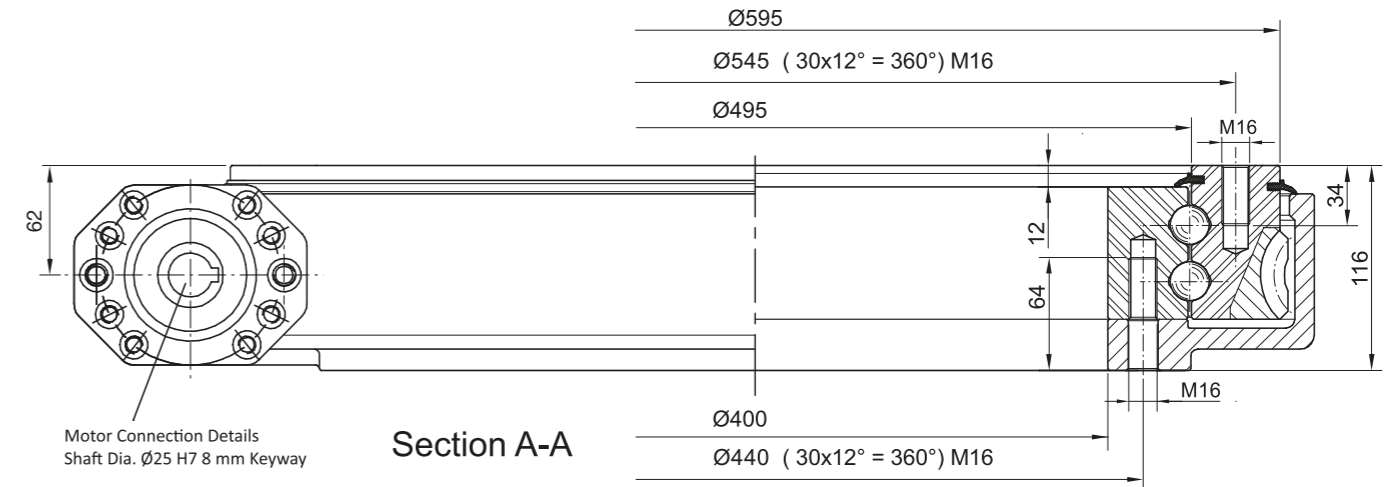
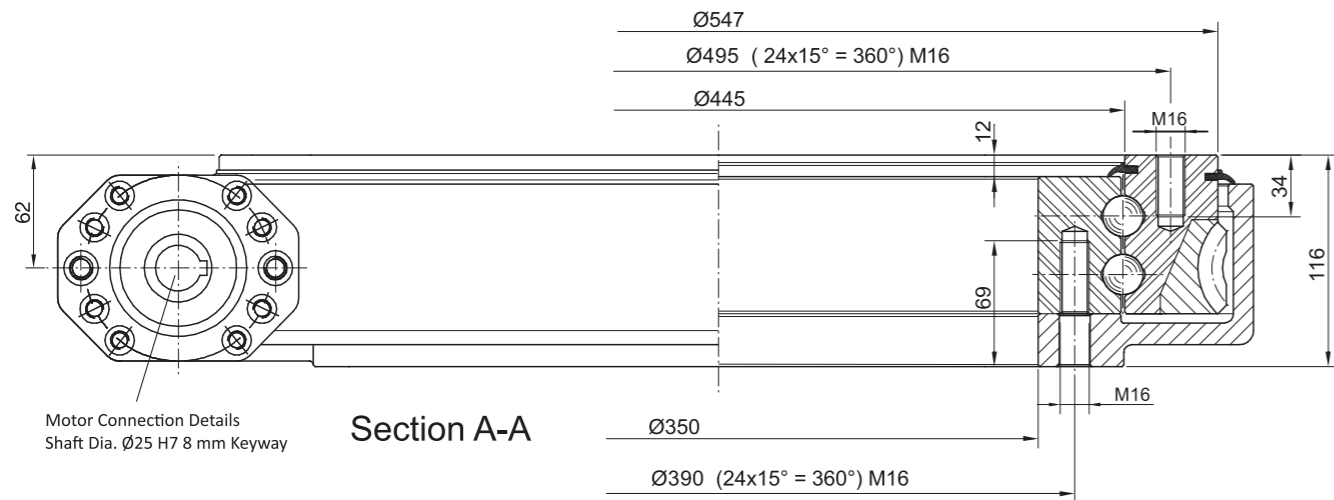
* Bolt Pre-tightening Torque (%50)

HAN Slew Drives

SV-B2222-4-0550CD

HAN Slew Drives

SV-B2222-4-0600CD



Module (m)	6
Number of starts of the worm	1
Gear ratio	1:89
Maximum torque	22800 Nm
Static Load, Radial	525 kN
Static Load, Axial	1475 kN
Dynamic Load, Radial	321 kN

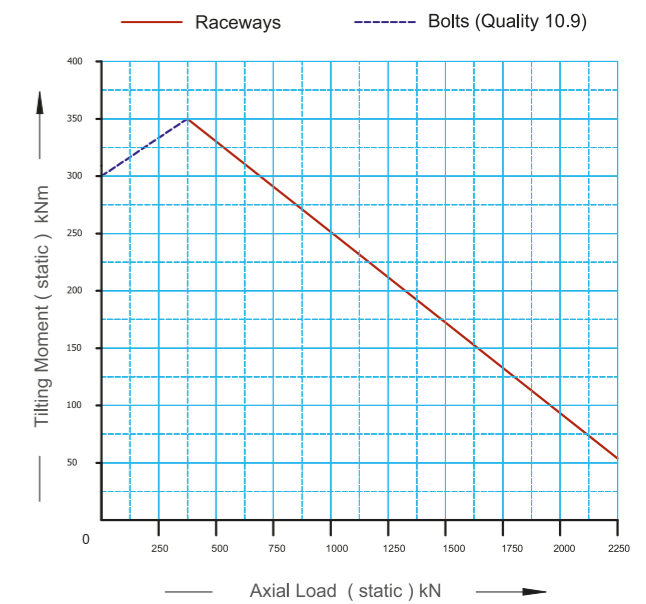
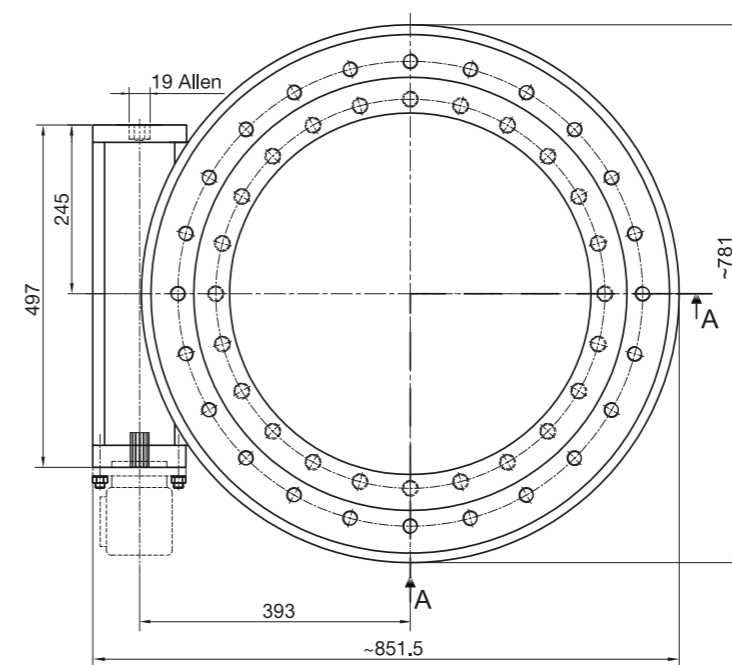
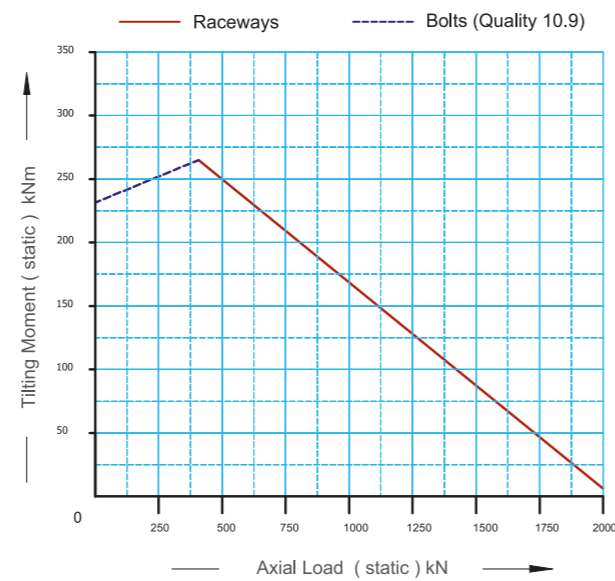
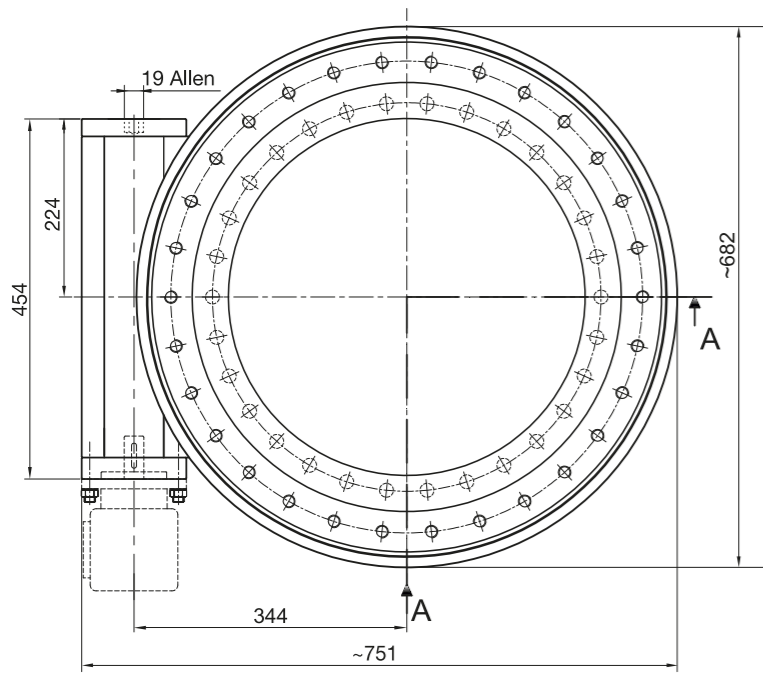
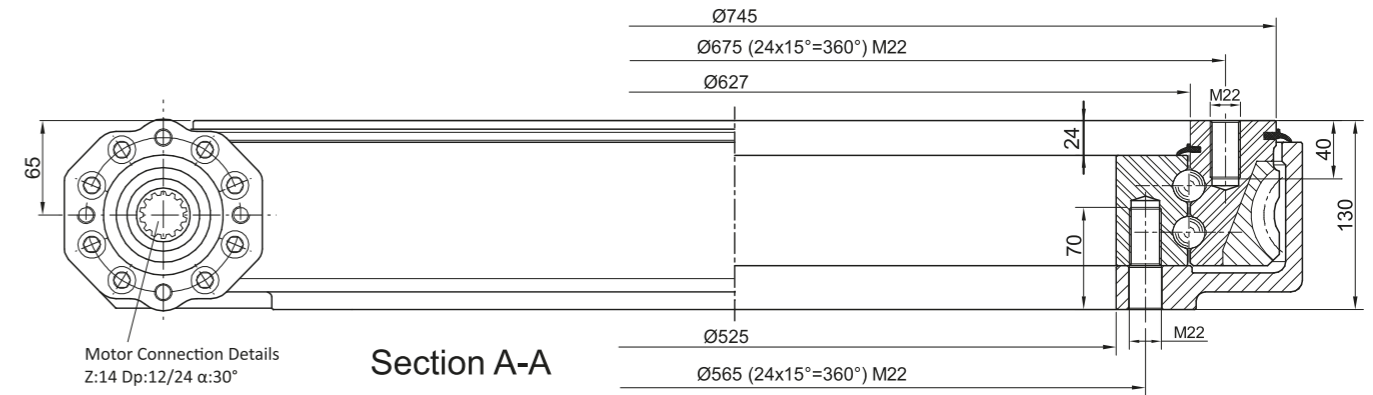
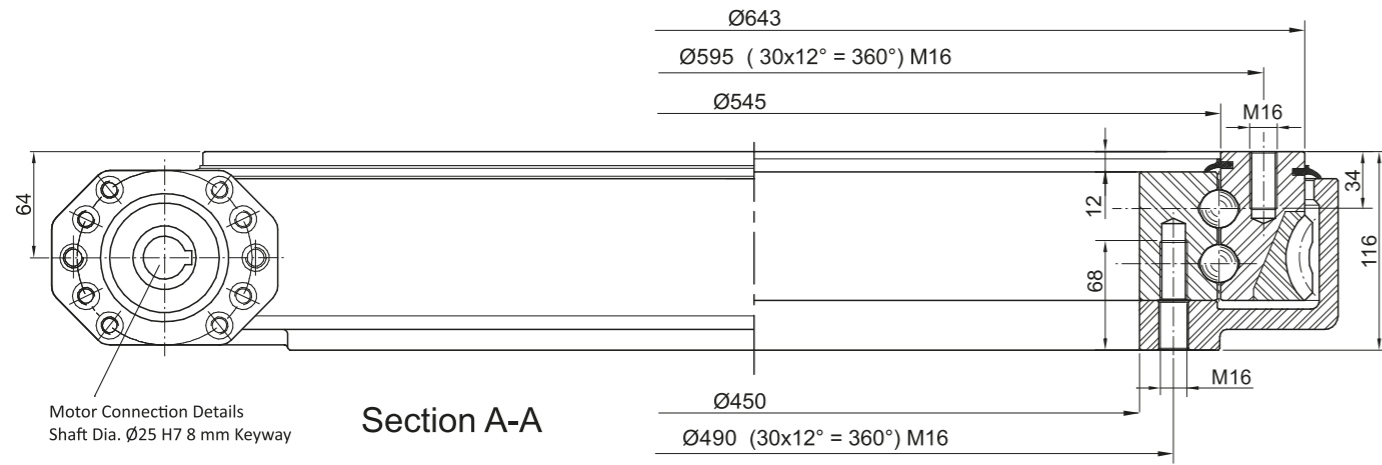
Dynamic Load, Axial	400 kN
Outer ring clamping bolts (10.9) x Quantity	M16 x 24
Inner ring clamping bolts (10.9) x Quantity	M16 x 24
M16 (10.9) Bolt tightening torque (Nm)	* 140 279
M16 (12.9) Bolt tightening torque (Nm)	* 167 333
Grease nipple / Quantity	M10x1 / 5
Weight (kg)	129

* Bolt Pre-tightening Torque (%50)

Module (m)	6
Number of starts of the worm	1
Gear ratio	1:97
Maximum torque	24980 Nm
Static Load, Radial	625 kN
Static Load, Axial	1750 kN
Dynamic Load, Radial	370 kN

Dynamic Load, Axial	442 kN
Outer ring clamping bolts (10.9) x Quantity	M16 x 30
Inner ring clamping bolts (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 / Quantity	M10x1 / 5
Weight (kg)	141

* Bolt Pre-tightening Torque (%50)



Module (m)	6
Number of starts of the worm	1
Gear ratio	1:106
Maximum torque	27220 Nm
Static Load, Radial	730 kN
Static Load, Axial	2050 kN
Dynamic Load, Radial	395 kN

Dynamic Load, Axial	470 kN
Outer ring clamping bolts (10.9) x Quantity	M16 x 30
Inner ring clamping bolts (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 / Quantity	M10x1 / 5
Weight (kg)	160

* Bolt Pre-tightening Torque (%50)

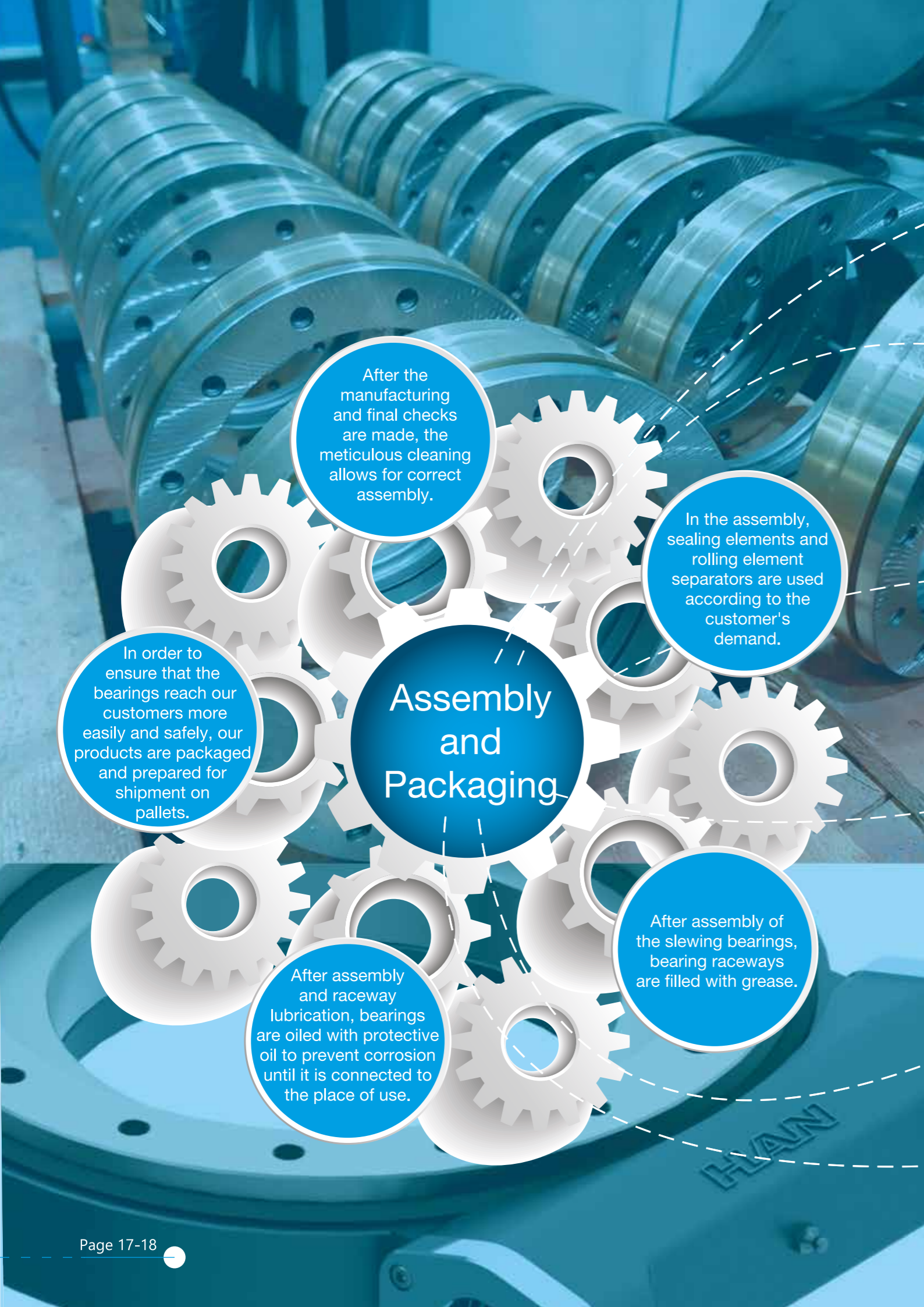
Module (m)	7
Number of starts of the worm	1
Gear ratio	1:104
Maximum torque	42500 Nm
Static Load, Radial	1000 kN
Static Load, Axial	2800 kN
Dynamic Load, Radial	420 kN

Dynamic Load, Axial	505 kN
Outer ring clamping bolts (10.9) x Quantity	M22 x 24
Inner ring clamping bolts (10.9) x Quantity	M22 x 24
M16 (10.9) Bolt tightening torque (Nm)	* 374 747
M16 (12.9) Bolt tightening torque (Nm)	* 437 873
Grease nipple / Quantity	M10x1 / 5
Weight (kg)	220

* Bolt Pre-tightening Torque (%50)



PRODUCTION



After the manufacturing and final checks are made, the meticulous cleaning allows for correct assembly.

In the assembly, sealing elements and rolling element separators are used according to the customer's demand.

In order to ensure that the bearings reach our customers more easily and safely, our products are packaged and prepared for shipment on pallets.

Assembly and Packaging

After assembly and raceway lubrication, bearings are oiled with protective oil to prevent corrosion until it is connected to the place of use.

After assembly of the slewing bearings, bearing raceways are filled with grease.

