



# ITALPLANT

PRECISION TRANSFER SYSTEMS



## SAFETY INDEXERS



SX - Slimdex | REV - Revomotion | SP - Stationary Plate | MK2 - High Speed Indexer |  
TIG - Toroidal Indexer

Catalogue **2026**

62

42,5

60°

30°

ITALP

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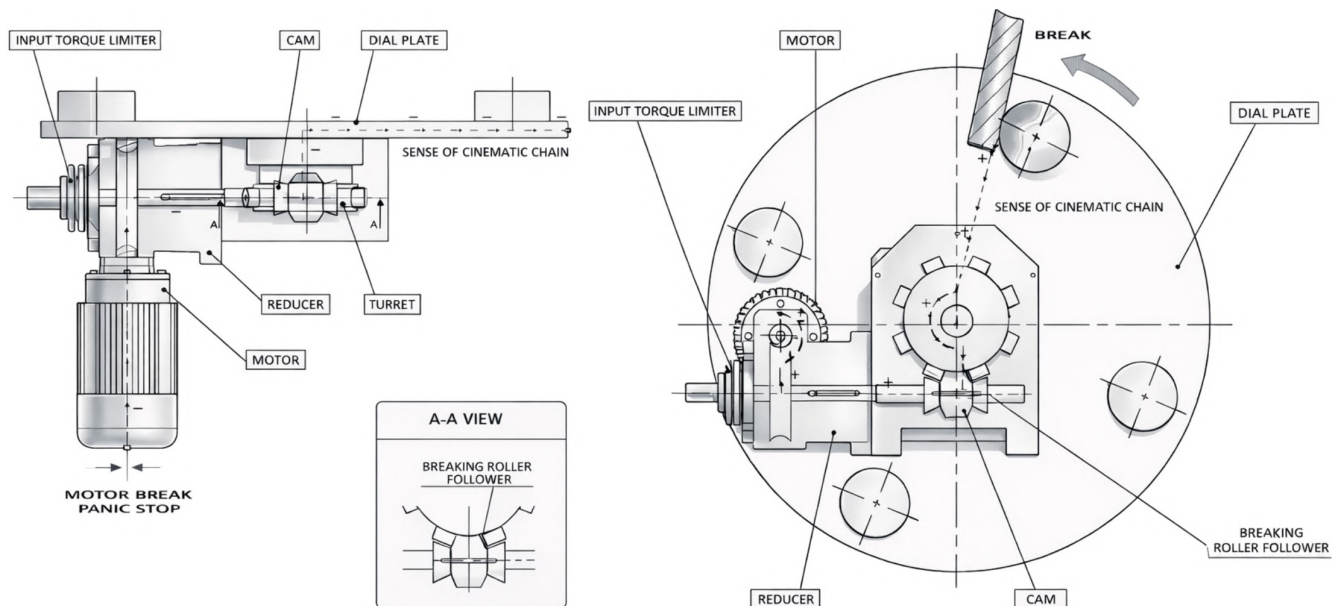
# INTRODUCTION

## Introduction

Italplant represents the perfect choice for your rotary indexing needs. Our units are designed using positive cam driven motion systems.

The new SAFETY INDEXER integrates our patented Adjustable Transmission Torque. It protects both the machine and the indexer from dial plate or nest jamming, while keeping the same overall dimensions as a standard indexer.

A gearbox-input torque limiter (SITL) mainly protects the transmission, especially the indexer and its cam followers, but because it is upstream it does not protect the stations or prevent contact during a jam. This is clear from the kinematic chains: it can mitigate stresses from a motor emergency stop (left image), while a station jam (right image) generates overload where the input torque limiter cannot decouple the dial plate from the indexer. The SAFETY INDEXER acts at the indexer output: if torque exceeds the set value due to a jam or contact, it disengages the drive, decouples the dial plate, and stops the machine to reduce further movement and accident risk. We always suggest using the SITL and strongly recommend the SAFETY INDEXER when there is a potential jamming inside the machine that can cause a damage and a production stop. With this unique configuration, the warranty is extended from 2 to 5 Years.

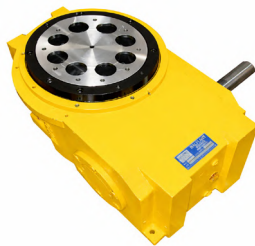


## The product you need

In reference to your application, you can choose between four types of **Italplant globoidal indexers**:



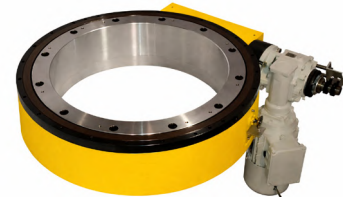
ITALPLANT Slimdex SX - Revomotion REV



ITALPLANT Stationary Plate SP



ITALPLANT Mark 2 MK2



ITALPLANT Toroidal Indexer TIG

The Slimdex **SX** series is suitable for low profile dial applications with large output flange and through hole or center post for services like passing of cable or support of fixed centered dial.

The Stationary Plate **SP** is an high capacity series with location diameter and mounting face for stationary tooling plate.

The Mark 2 **MK2** is a series very rigid in construction, suitable for fast applications thanks for the low inertia of the internal turret and the possibility to fit a twin dwell cam. Its special design minimises the effect of roller reversal and results in a long life.

The Toroidal Indexer **TIG** is a series suitable for an application that requires a large though hole or accurate positioning at a big diameter of the positioning of the stations. The **SAFETY TIG** is the only toroidal rotary table with a synchronous clutch that protects the mechanism in case of output jamming on the dial.

## SAFETY INDEXERS PRODUCT RANGE

### **SX-REV**

(pag. 11)

SX 40 HD

SX 60 HD

SX 60 HHD

SX 95 HD

SX 95 HHD

REV 600

### **SP**

(pag. 17)

SP 805 HD

SP 1205 HD

SP 1205 HHD

SP 1705 HD

SP 1705 HHD

### **MK2**

(pag. 21)

MK2 425 HD

MK2 500 HD

MK2 650 HD

MK2 800 HD

MK2 1100 HD

### **TIG**

(pag. 27)

TIG 800 HD

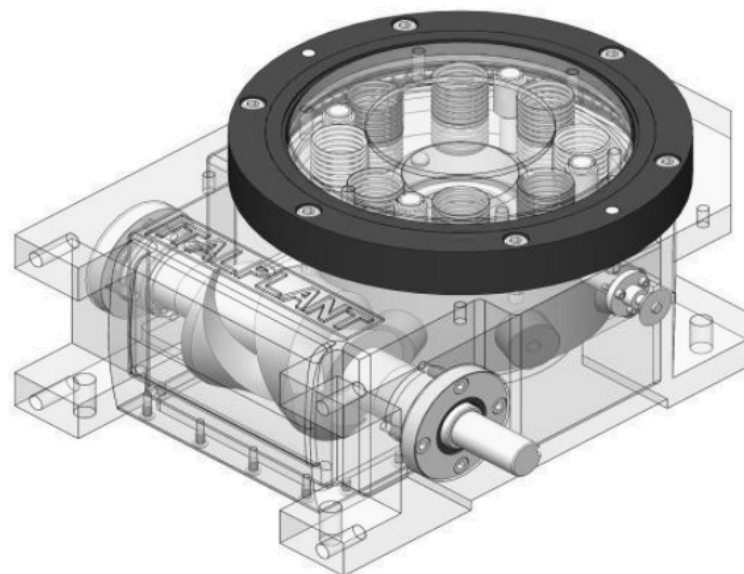
TIG 800 HHD

TIG 1200 HD

TIG 1200 HHD

TIG 1600 HD

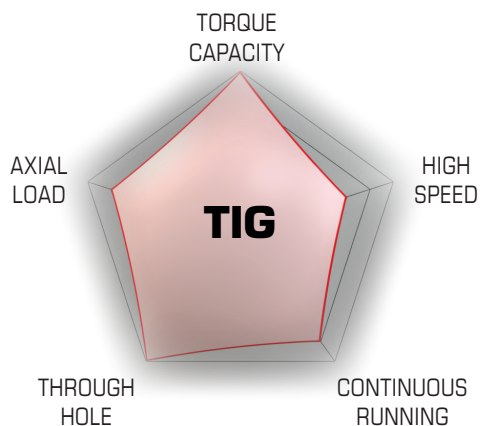
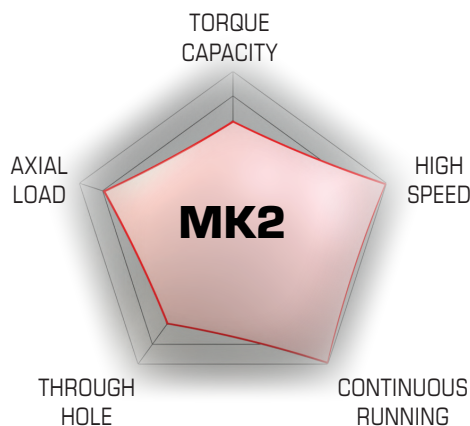
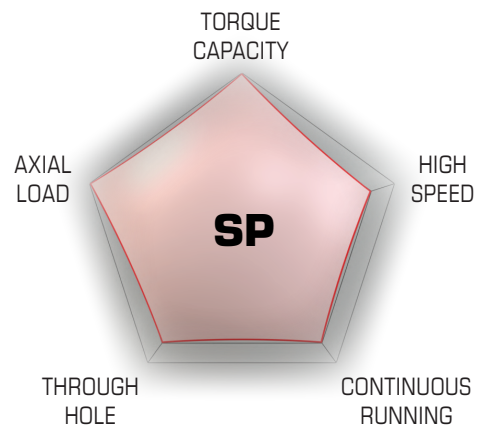
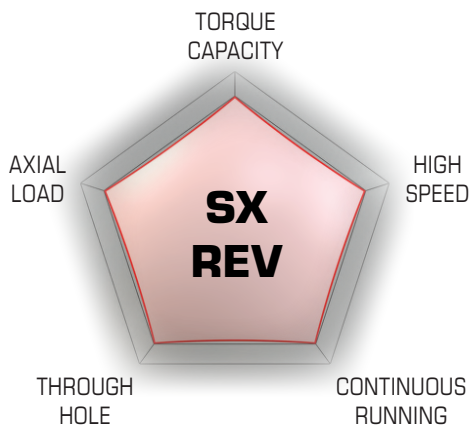
TIG 1600 HHD



## STEP 1: CHOOSE YOUR INDEXER BY FEATURES

### The indexer you need

Italplant globoidal Safety Indexers are suitable for all the applications you need, say in case of mounting a dial plate, shaft or to move a linear conveyor. These diagrams indicating the main features of every serie, to help you to select your preferred choice.



## STEP 2: CHOOSE THE FIXING FACE

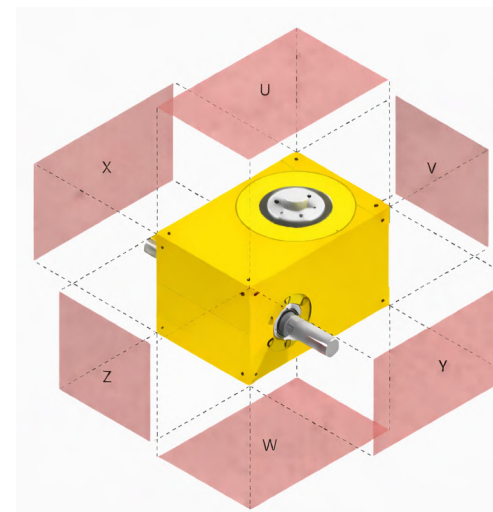
### How to fix the indexer

The choosing of the face used for the connection on the indexer to your base frame needs to be defined in order to use its attachments holes for a rigid positioning and for optimal reading of the oil sight glass.

In reference to the indexer type, is possible to use or not all the faces of the next image.

Available mounting faces:

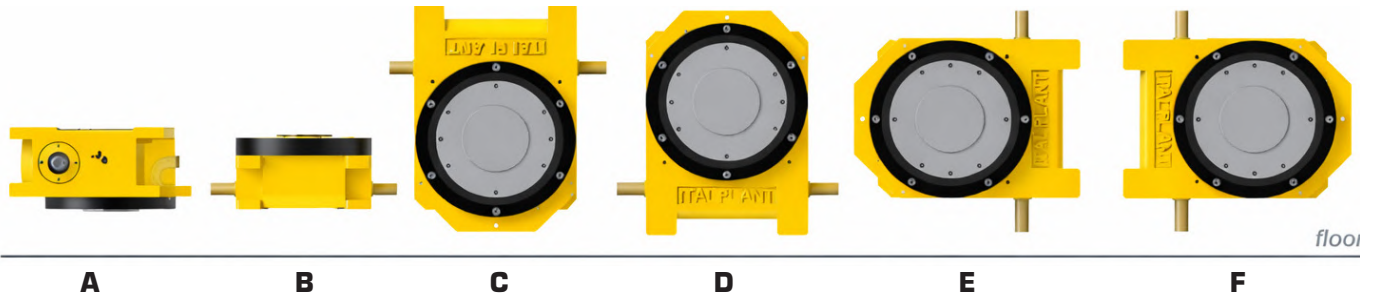
- **MK2 (ALL MODELS): W - U - X - Y - Z - V**
- **REV 600 - SP 805 - SP 1705: W - U - Z - V**
- **SX 40 - SX 60 - SX 95: W - U - X - Y - Z**
- **SP 1205: W - U - Z**
- **TIG (ALL MODELS): W - U**



## STEP 3: CHOOSE THE MOUNTING POSITION

### SAFETY INDEXER mounting position

The first parameter to define it's the indexer position. After that, the input shaft where is fitted the motoreducer (if requested) and its orientation.

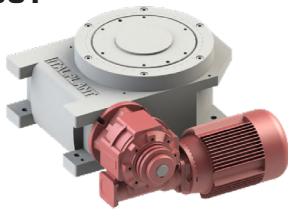


### DRIVE mounting position

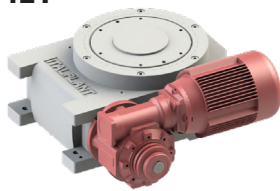
INPUT SHAFT 1

INPUT SHAFT 2

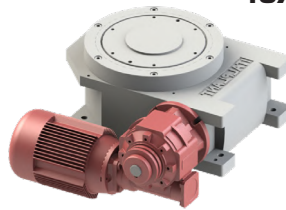
5CY



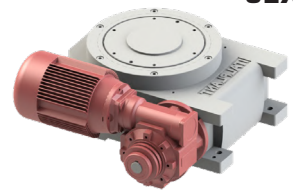
4EY



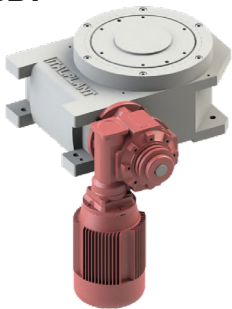
4CX



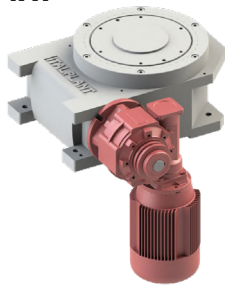
5EX



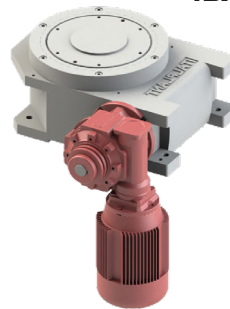
5BY



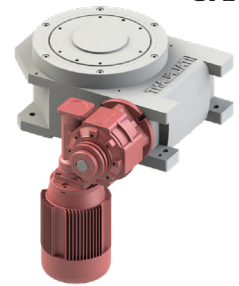
4AY



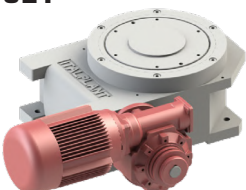
4BX



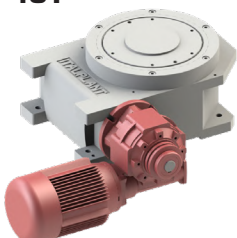
5AX



5EY



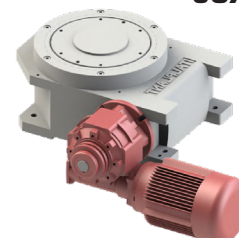
4CY



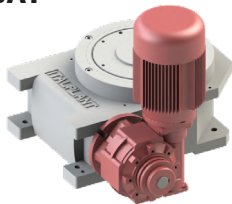
4EX



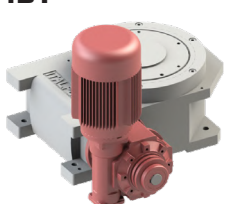
5CX



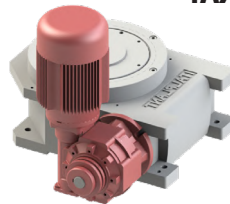
5AY



4BY



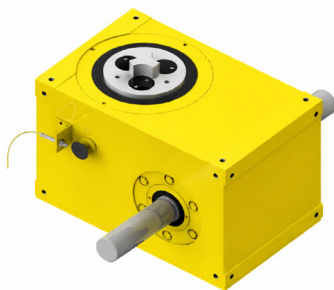
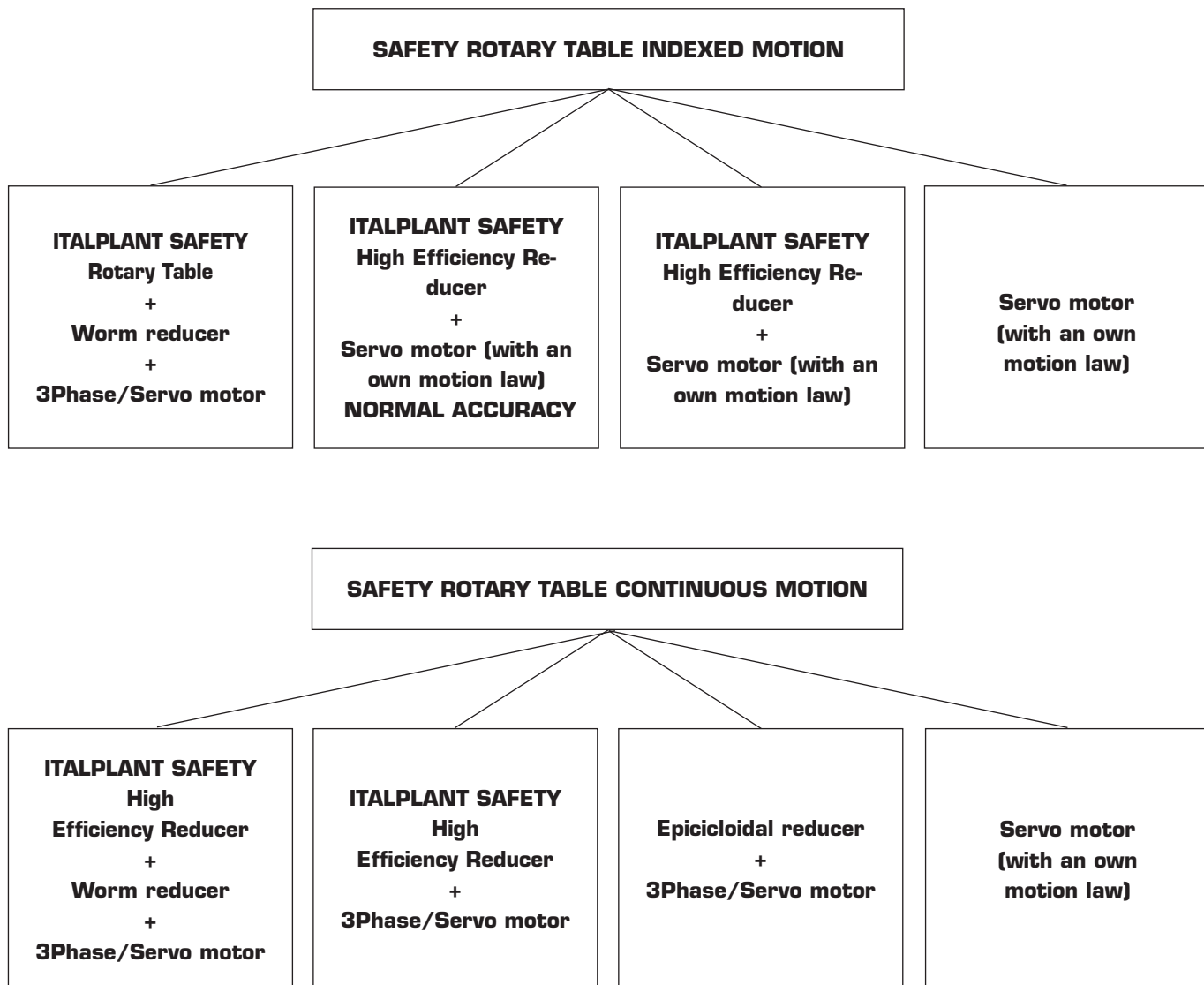
4AX



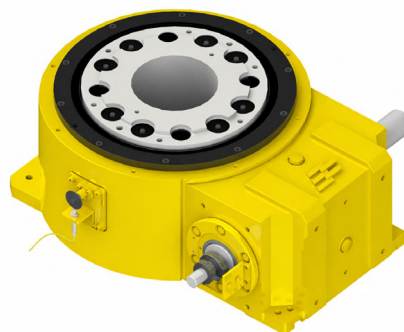
5BX



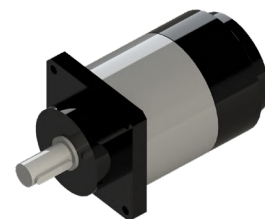
## STEP 4: CHOOSE THE MOTORIZATION



ITLPLANT SAFETY Globoidal Rotary Table



ITLPLANT SAFETY High Efficiency Reducer



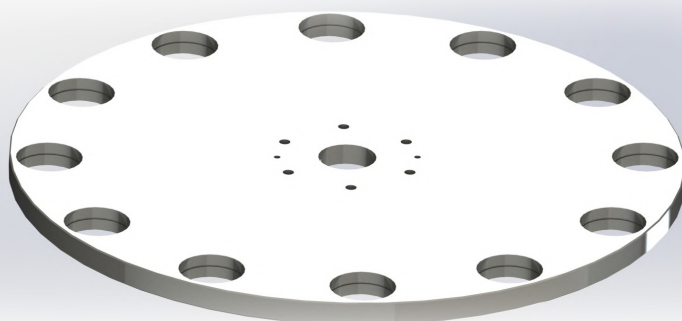
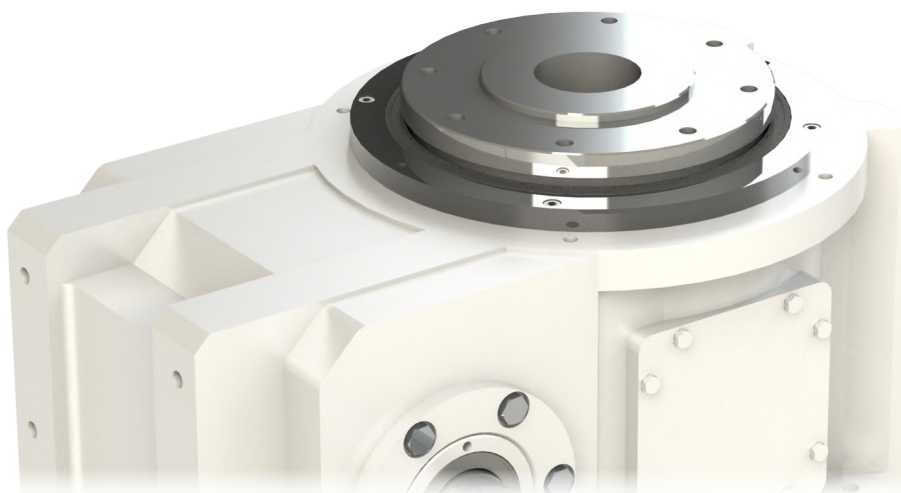
Epicicloidai reducer

## OPTIONAL FEATURES

### CENTER THROUGH HOLE - STATIONARY CENTER POST

The ITALPLANT SAFETY globoidal indexers can be provided with two features:

- The Center Through Hole, in the middle of the output turret. Useful to pass electrical cables or pneumatic pipes, ready to be distributed on the upper dial plate. It's possible to ask for this hole in tolerance, in case the customer needs to connect a central rotating shaft.
- The Stationary Center Post, a shaft that gives a fixed point of attachments for upper customer's components. It's possible to ask for a passing through hole, in tolerance on request



### DIAL PLATE

To support the piece's fixtures, for most of the indexer applications is used a dial plate.

Made in aluminum or steel, it becomes the most important component after the rotary table. In fact, thanks to a finely machined dial plate all the stations will be positioned with the accuracy of hundredths of a millimeter.

ITALPLANT can provide custom size dial plates, with screws holes, centering hole pins holes and special openings to reduce the weight.

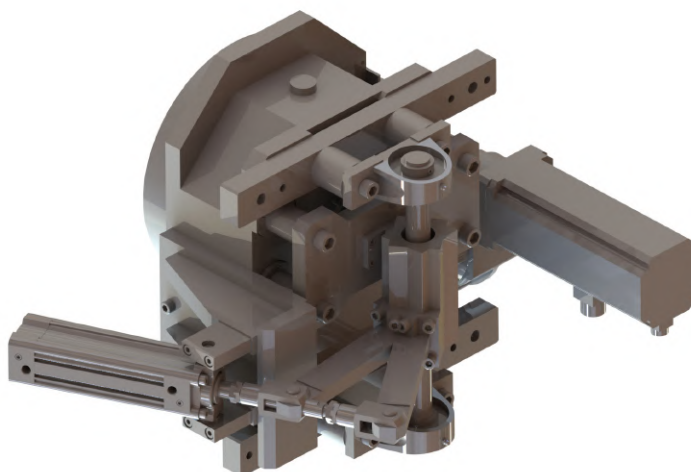
### TIMING DEVICE (PATENTED)

This patented system has been developed by ITALPLANT for all the applications where it's necessary to change the support of fixtures on each dial plate station, for batch change.

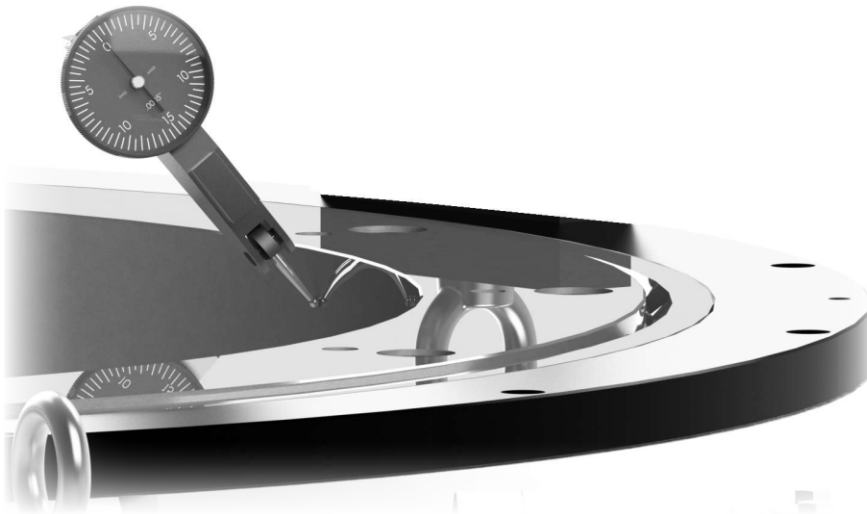
Usually, this operation requires much time and technicians to work on it. With this automating phasing system, without any disassembly, can be done in less than one minute.

It's only necessary (for example for three types of pieces), to assemble the fixtures in this way: A-B-C-A-B-C-A-B. During the rephasing, automatically the indexer will change the work position from A to B or C.

An important note is that this is a mechanical system, that eliminates any mistakes, which otherwise can be caused by electronically controlled systems.



## OPTIONAL FEATURES



### EXTRA ACCURACY

The range of globoidal indexer allows the customers to choose between a wide range of angular positioning accuracy.

If the value indicated is not enough, thanks to his know how and fine selection for the components, ITALPLANT can grant extra accuracy to certain kind of rotary tables.

Feel free to ask our Tech Dept. an extra accuracy customization, by indicating the type of indexer chosen and the minimum value of accuracy required on every station, in arcsec measured from the center of the indexer.

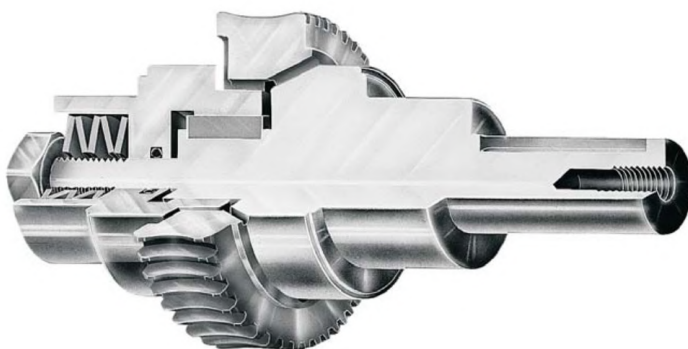
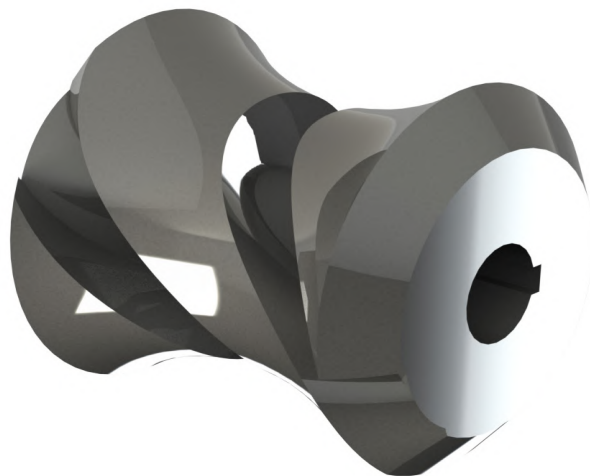
By request, a test report will be provided before the delivery, to prove the real value of the indexer's accuracy.

### HIGH SPEED INDEXERS

The most suitable indexer version for the high speed is the Globoidal MK2, thanks to its reduced internal inertia and double conical bearings.

However, also the other globoidal versions can run faster, thanks to a special ITALPLANT kind of cam, born for that.

Please feel free to indicate the desired index time to our Tech Dept. that will verify the feasibility and will size the correct cam.



### SITL

This system protects the rotary table in case of safety panic stops operated on the motor.

It's composed by friction that in case of over-torque generated by the motor, is able to cut the cinematic motion in this direction. It allows also a smooth machine stop.

With this system, the weakest components of the indexer, the roller followers, are protected and the life of the indexer is increased.



# GLOBALOIDAL SAFETY SLIMDEX INDEXER

The Globoidal Safety Slimdex series SX - REV is ideally suited for slim rotary table applications.

These low profile units feature Globoidal cam controlled movement for speed, accuracy and reliability at prices competitive with other air and hydraulic devices.

All Slimdex AND REVomotion models are available with a high performance drive package including indexer, worm reducer (with or without the integral slipping clutch, AC or DC motors and enclosed proximity switch).

#### Options:

- Center through hole, for the passage of electrically/hydraulic equipment cables
- Stationary center-post, available with center thru hole
- Choice of motor/worm reducer positions
- Available as indexer alone, without reduced or motor

#### Features:

- Low profile compact package
- Solid state speed controller with start on demand, auto-stop and dynamic breaking
- Enclosed cycle control switch for cycle-on-demand applications
- High accurate roller followers for smooth motion and accurate indexing
- Fully ground cam profile
- Removable handwheel for easy set-up



#### Available model sizes

**SX40 - SX60 - SX95 - REV600**

# SAFETY SX 40

**Load capacity:**

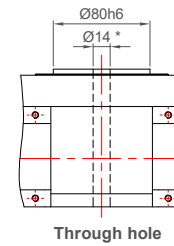
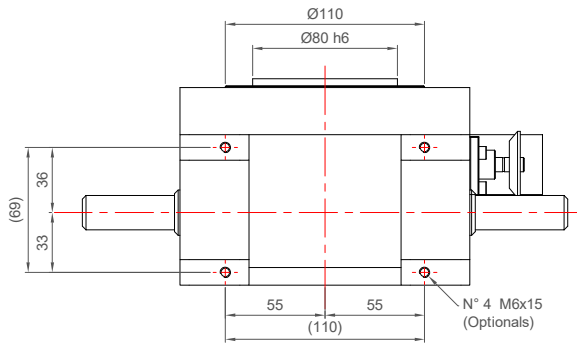
- **Axial load:** 1750 daN
- **Tilting moment:** 95 daNm

**Indexing precision:**

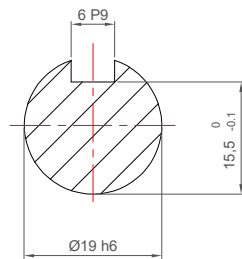
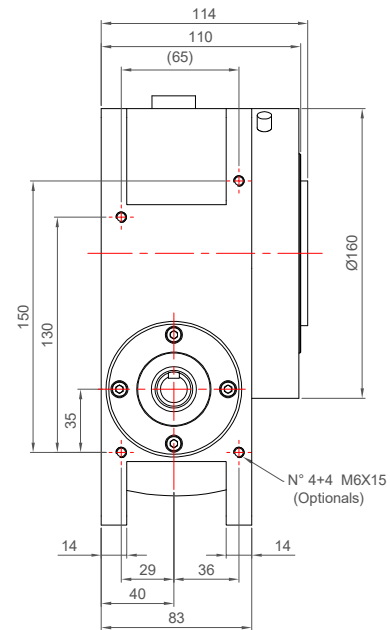
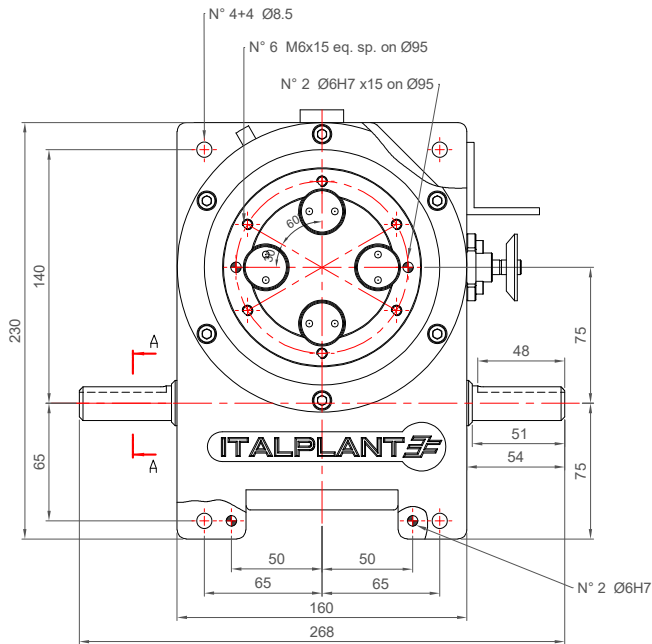
- **2-12 Index:** ± 33" (arcsec)
  - **16-32 Index:** ± 45" (arcsec)
- Values improvable on request

**Dimensional info:**

- **Centre distance:** 75 mm
- **Size:** 160 x 230 x 114 (H) mm
- **Weight:** 25 kg



\*Tolerance on demand



SEZ. A-A  
INPUT SHAFT



Available stops	Centre distance	Denomination
2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD VERSION - 75 mm	SX 40 HD

# SAFETY SX 60

## Load capacity:

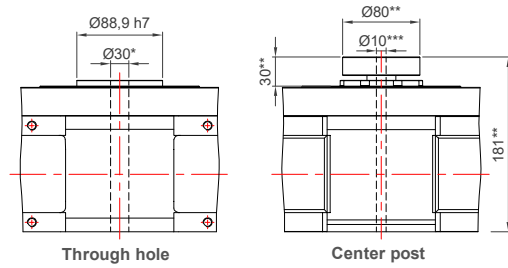
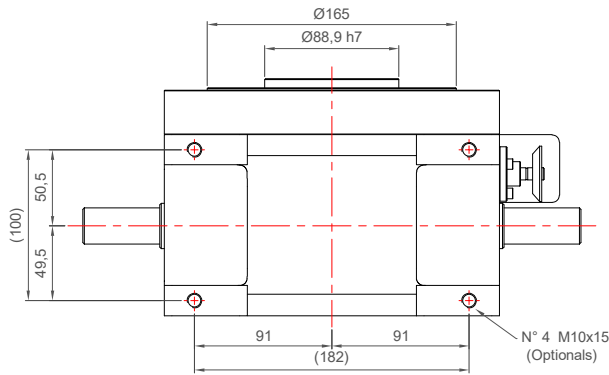
- **Axial load:** 1900 daN
- **Tilting moment:** 165 daNm

## Indexing precision:

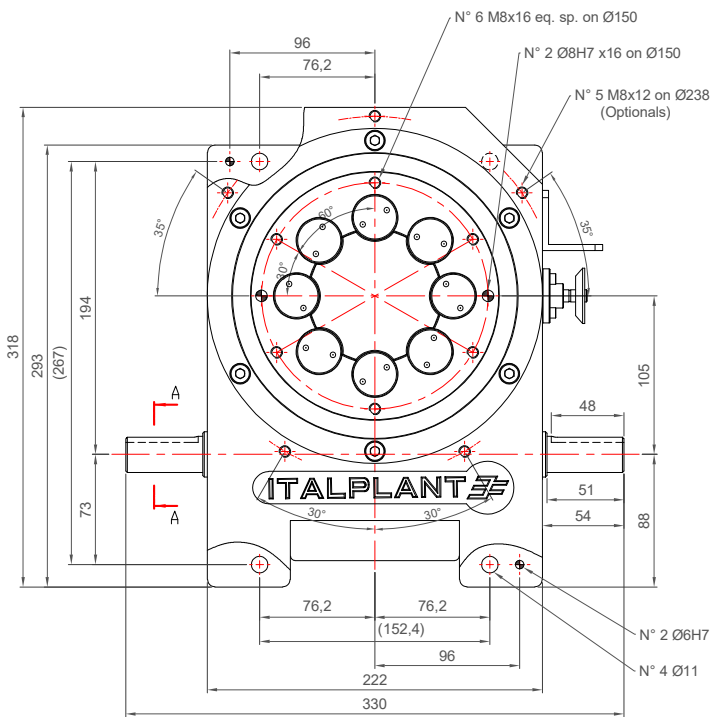
- **2-12 Index:** ± 22" (arcsec)
  - **16-32 Index:** ± 34" (arcsec)
- Values improvable on request

## Dimensional info:

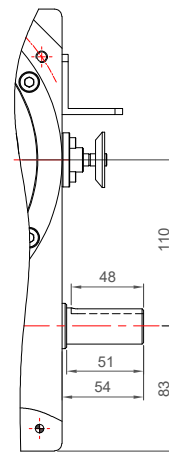
- **Centre distance:** 105/110 mm (HHD)
- **Size:** 222 x 318 x 157 (H) mm
- **Weight:** 40 kg



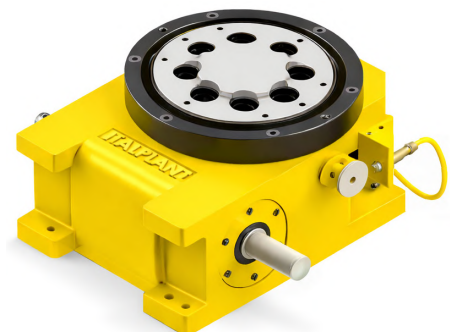
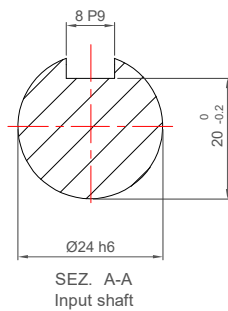
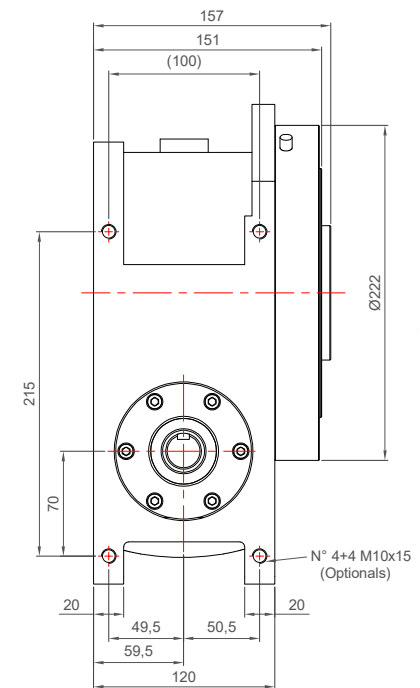
\*Tolerance on demand  
\*\*Fixed holes and height of Center post can change on demand  
\*\*\*Max diameter



SX 60 HD Version



SX 60 HHD Version



## Available stops

2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32

## Centre distance

HD VERSION - 105 mm / HHD - 110 mm

## Denomination

SX 60 HD / HHD







# GLOBOIDAL SAFETY STATIONARY PLATE INDEXER

The Safety Stationary Plate series for globoidal index units comprises a range of special shape high strength cast iron housing designed to provide features which can allow them to be used as the base of a rotary or linear machine. The housing has a large location diameter onto which a stationary plate can be attached. This may be used for the tooling assembly such as drilling heads, load/unload devices etc. A large bore in the output shaft is provided as standard, through which services such as air and/or liquids can be passed.

In addition, a stationary centre post can be fitted, onto which a second plate can be mounted. A full range of stops, index angles and cam laws is available. For cycle-on-demand applications, index angles up to 330 degrees are available.

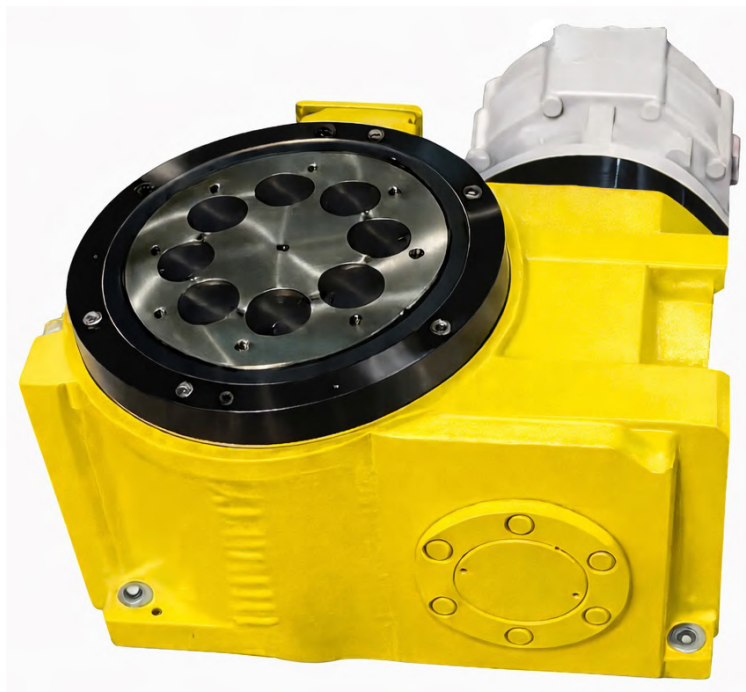
The SP range of units can also be mounted with the output shaft vertical/horizontal for use in linear applications.

#### Options:

- Center through hole, for the passage of electrically/hydraulic equipment cables
- Stationary center-post, available with center through hole
- Choice of motor/worm reducer positions
- Available as indexer only without reducer or motor

#### Features:

- Rigid cast iron housing
- Large diameter pre-loaded taper roller bearings
- Location diameter and mounting face for stationary tooling plate
- High accurate roller followers for smooth motion and accurate indexing
- Fully ground cam profile



#### Available model sizes

SP 805 - SP 1205 - SP 1705

# SAFETY SP 805

**Load capacity:**

- **Axial load:** 4500 daN
- **Tilting moment:** 1600 daNm

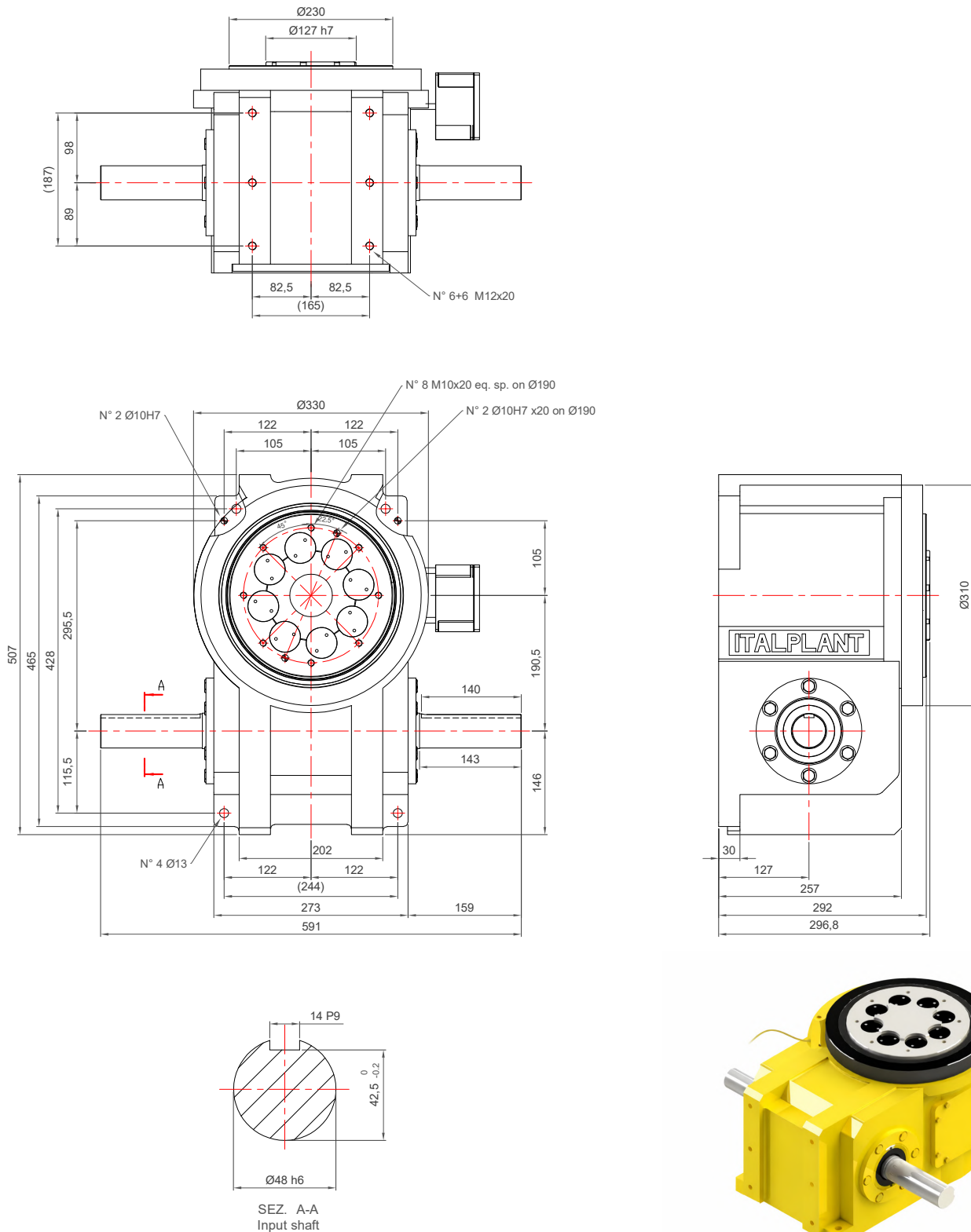
**Indexing precision:**

- **1-16 Index:** ± 18" (arcsec)
- **24-32 Index:** ± 24" (arcsec)

Values improvable on request

**Dimensional info:**

- **Centre distance:** 190.5 mm
- **Size:** 330 x 507 x 296.8 (H) mm
- **Weight:** 200 kg



Available stops	Centre distance	Denomination
1 - 2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD VERSION - 190.5 mm	SP 805 HD

# SAFETY SP 1205

### Load capacity:

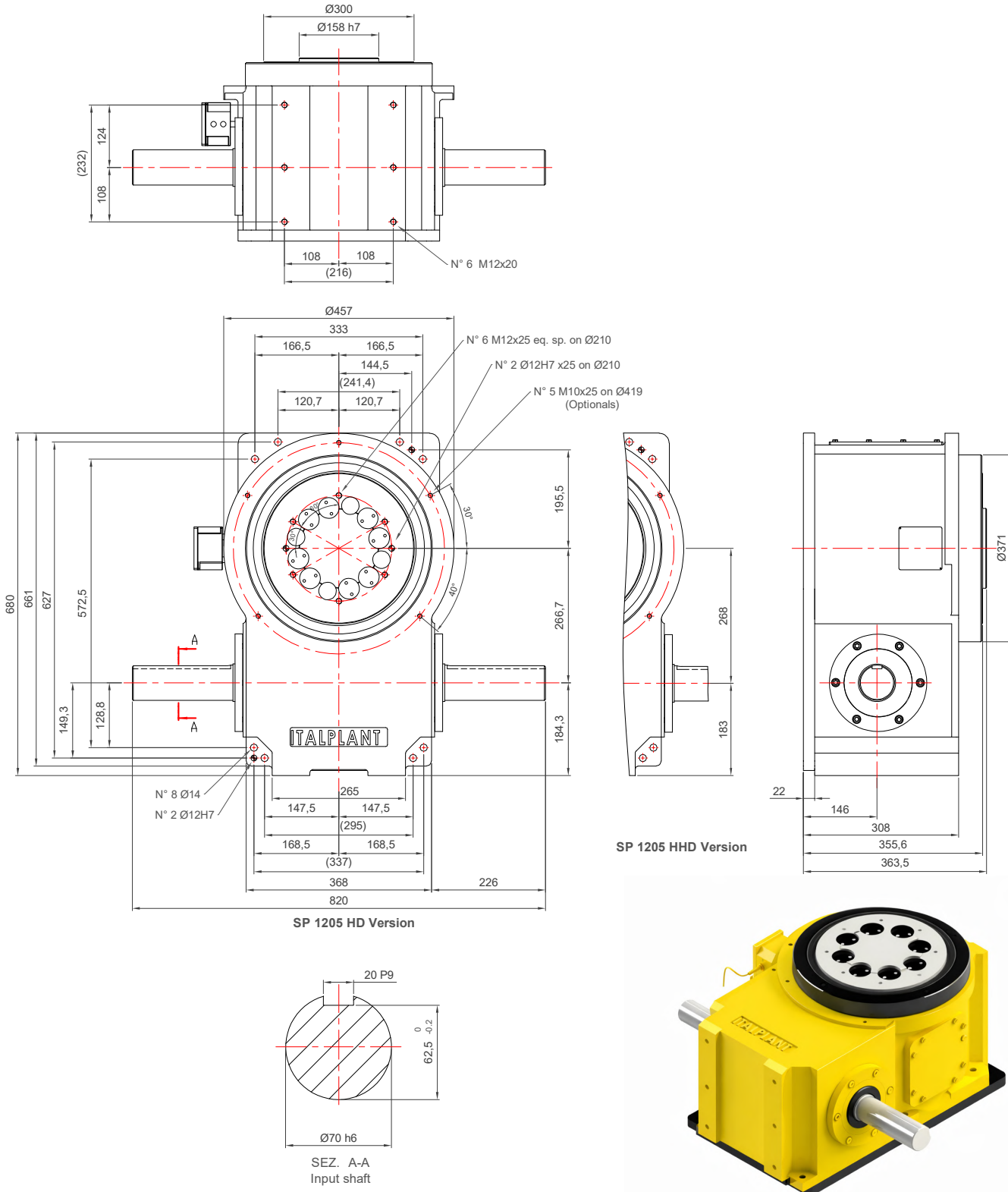
- **Axial load:** 7800 daN
- **Tilting moment:** 2690 daNm

### Indexing precision:

- **2-12 Index:** ± 15" (arcsec)
  - **16-32 Index:** ± 19" (arcsec)
- Values improvable on request

### Dimensional info:

- **Centre distance:** 266.7/268 mm (HHD)
- **Size:** 457 x 680 x 363.5 (H) mm
- **Weight:** 330 kg



Available stops	Centre distance	Denomination
2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD VERSION - 266.7 mm / HHD - 268 mm	SP 1205 HD / HHD

# SAFETY SP 1705

**Load capacity:**

- **Axial load:** 14900 daN
- **Tilting moment:** 4500 daNm

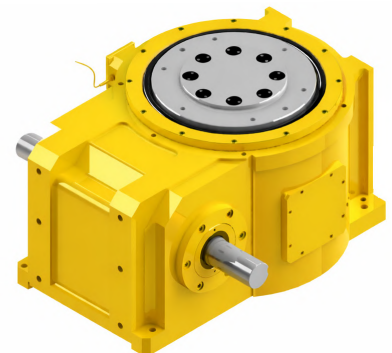
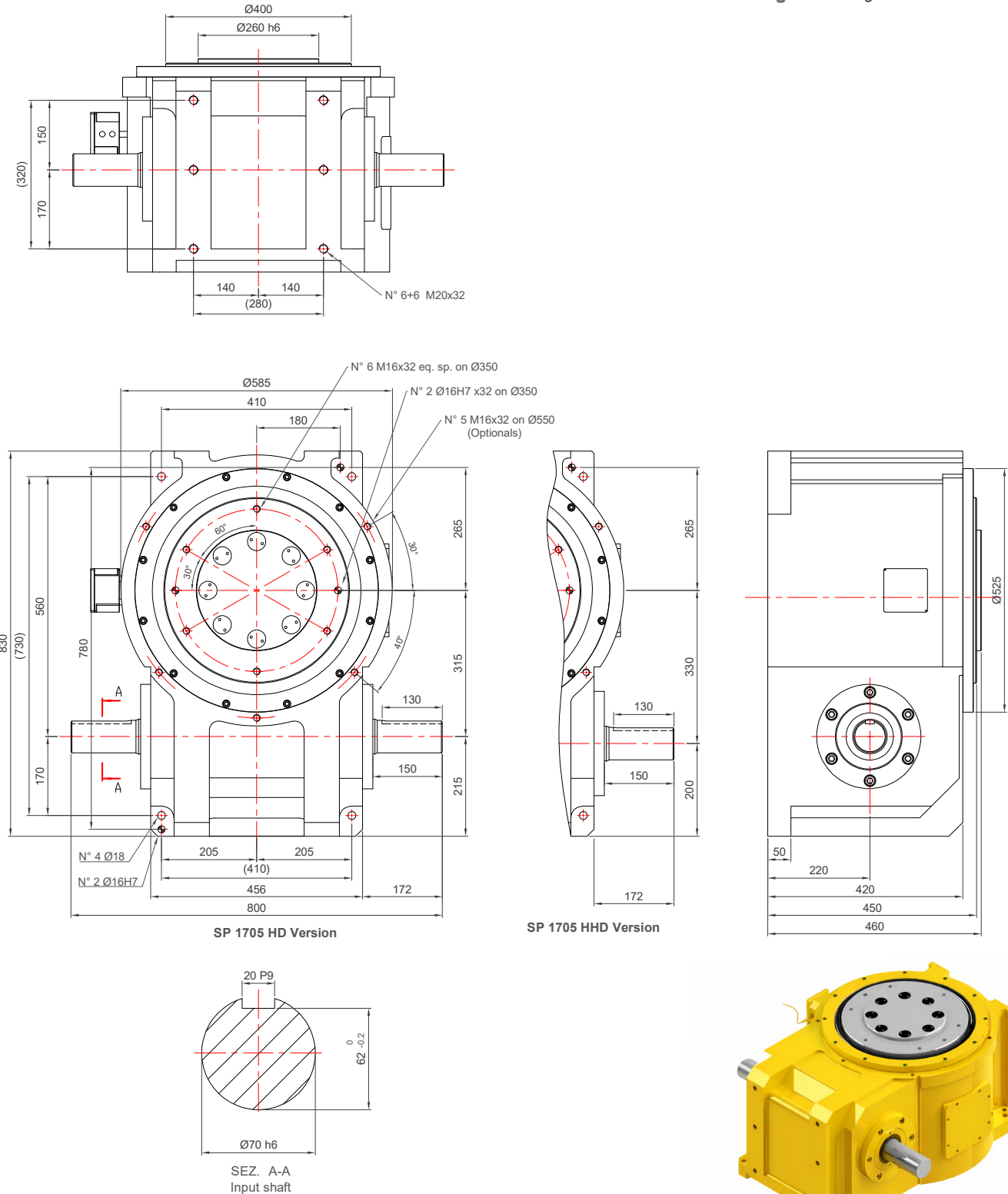
**Indexing precision:**

- **2-12 Index:** ± 10" (arcsec)
- **16-32 Index:** ± 15" (arcsec)

Values improvable on request

**Dimensional info:**

- **Centre distance:** 315/330 mm (HHD)
- **Size:** 585 x 830 x 460 (H) mm
- **Weight:** 450 kg



Available stops	Centre distance	Denomination
2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD VERSION - 315 mm / HHD - 330 mm	SP 1705 HD / HHD

# GLOBALOIDAL SAFETY HIGH SPEED INDEXER

Indexing units with orthogonal axes Safety MK2, high accuracy, no backlash. Twin dwell cams and various other cam laws. Available from 1 to 32 stops (more on request) with high value of dynamic capacities and various values of center distance.

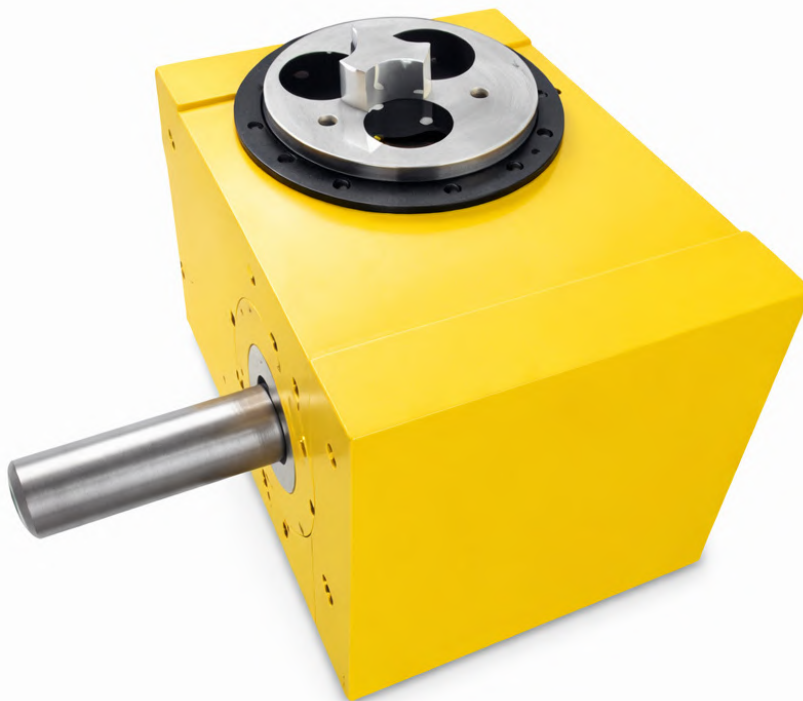
Most of these mechanisms can be supplied with the high speed special cams.

#### Options:

- Choice of motor/worm reducer positions
- Available as indexer only without reduced or motor

#### Features:

- Hardened & ground steel cam
- High precision heavy duty cam followers
- Rigid cast iron housing
- Largest range of stops & index periods
- Pre-loaded taper roller bearings
- Optimum motion law
- Special Italplant cam for extra high speeds



#### Available model sizes

**MK2 425 - MK2 500 - MK2 650 - MK2 800 - MK2 1100**

# SAFETY MK2 425

**Load capacity:**

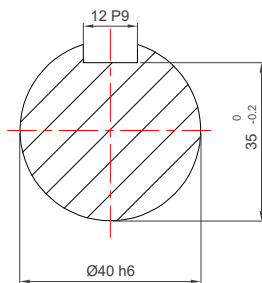
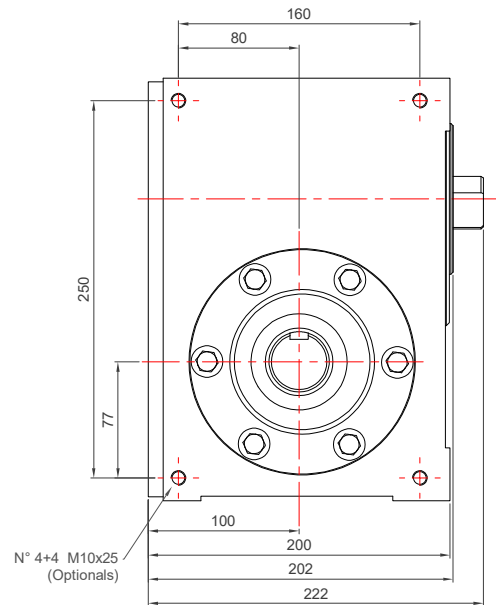
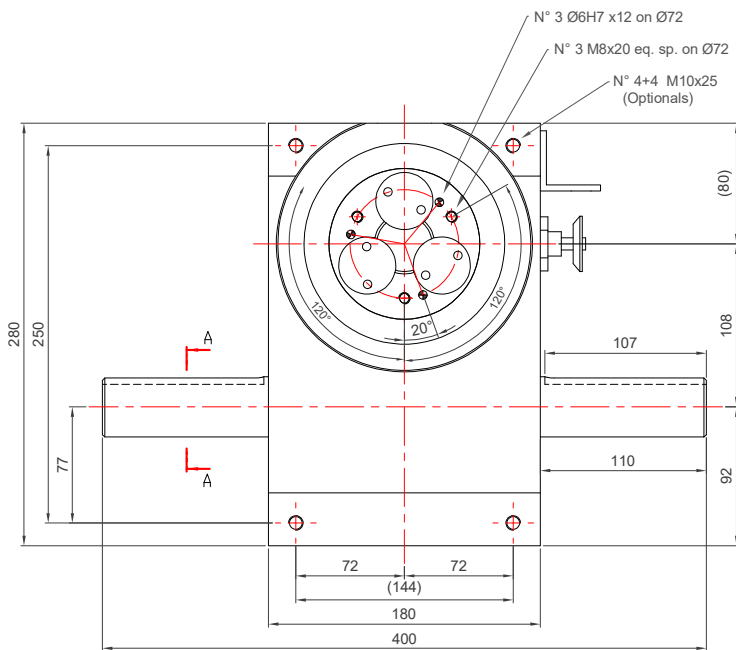
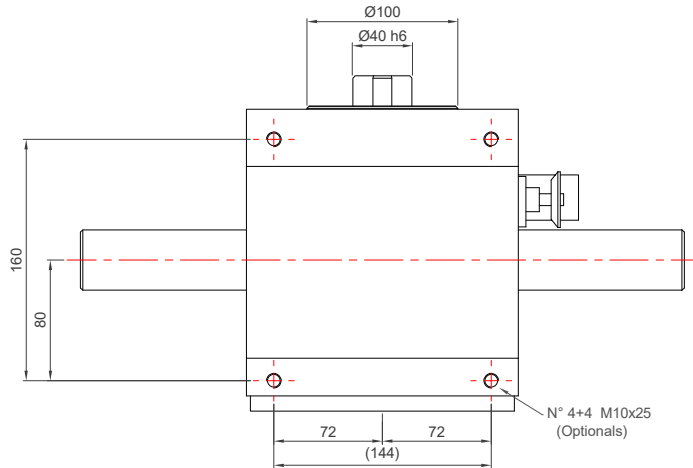
- **Axial load:** 1900 daN
- **Tilting moment:** 460 daNm

**Indexing precision:**

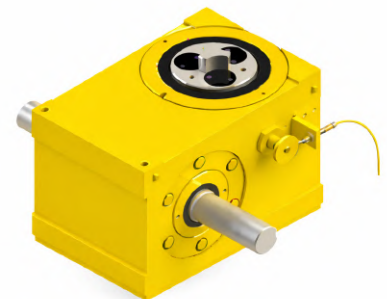
- **1-12 Index:** ± 27" (arcsec)
  - **16-32 Index:** ± 40" (arcsec)
- Values improvable on request

**Dimensional info:**

- **Centre distance:** 108 mm
- **Size:** 180 x 280x 222 (H) mm
- **Weight:** 50 kg



SEZ. A-A  
Input shaft



Available stops	Centre distance	Denomination
1 - 2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD VERSION - 108 mm	MK2 425 HD

# SAFETY MK2 500

**Load capacity:**

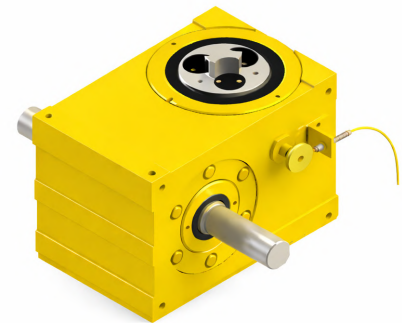
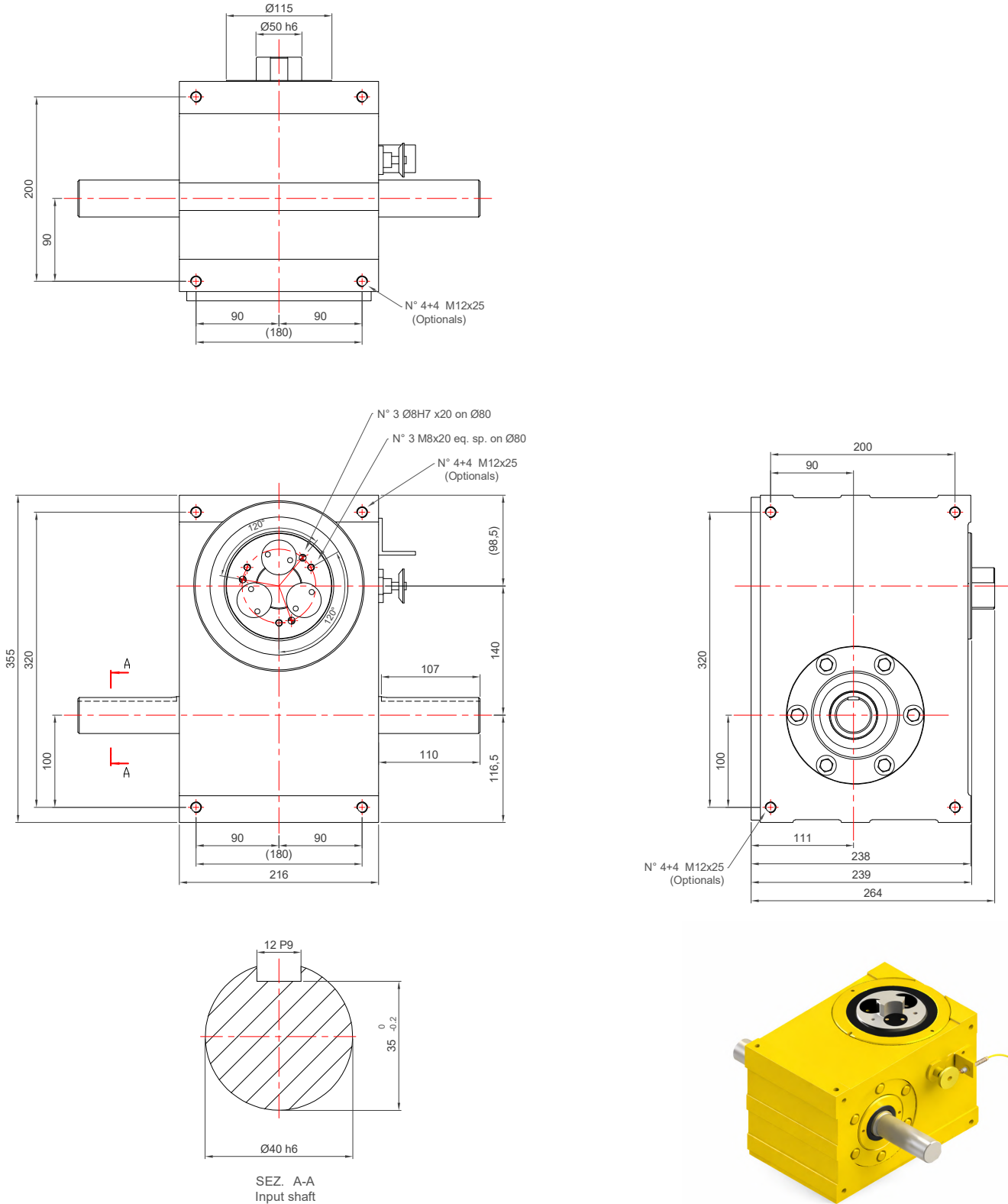
- **Axial load:** 2800 daN
- **Tilting moment:** 980 daNm

**Indexing precision:**

- **1-12 Index:** ± 24" (arcsec)
  - **16-32 Index:** ± 35" (arcsec)
- Values improvable on request

**Dimensional info:**

- **Centre distance:** 140 mm
- **Size:** 216 x 355 x 264 (H) mm
- **Weight:** 80 kg



Available stops	Centre distance	Denomination
1 - 2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD VERSION - 140 mm	MK2 500 HD

# SAFETY MK2 650

### Load capacity:

- **Axial load:** 4100 daN
- **Tilting moment:** 1520 daNm

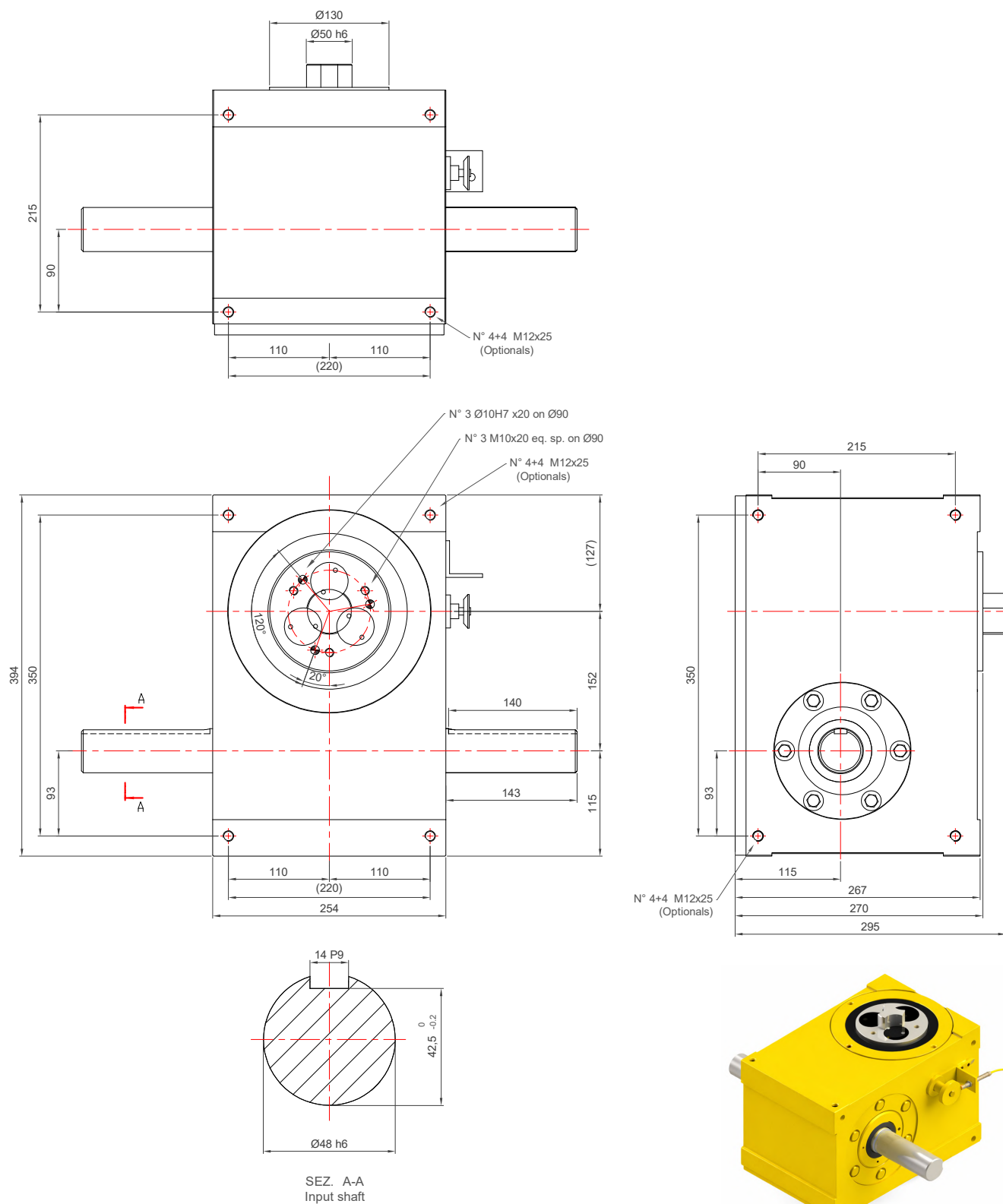
### Indexing precision:

- **1-12 Index:** ± 19" (arcsec)
- **16-32 Index:** ± 27" (arcsec)

Values improvable on request

### Dimensional info:

- **Centre distance:** 152 mm
- **Size:** 254 x 394 x 295 (H) mm
- **Weight:** 110 kg



Available stops	Centre distance	Denomination
1 - 2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD VERSION - 152 mm	MK2 650 HD

# SAFETY MK2 800

## Load capacity:

- **Axial load:** 4900 daN
- **Tilting moment:** 1700 daNm

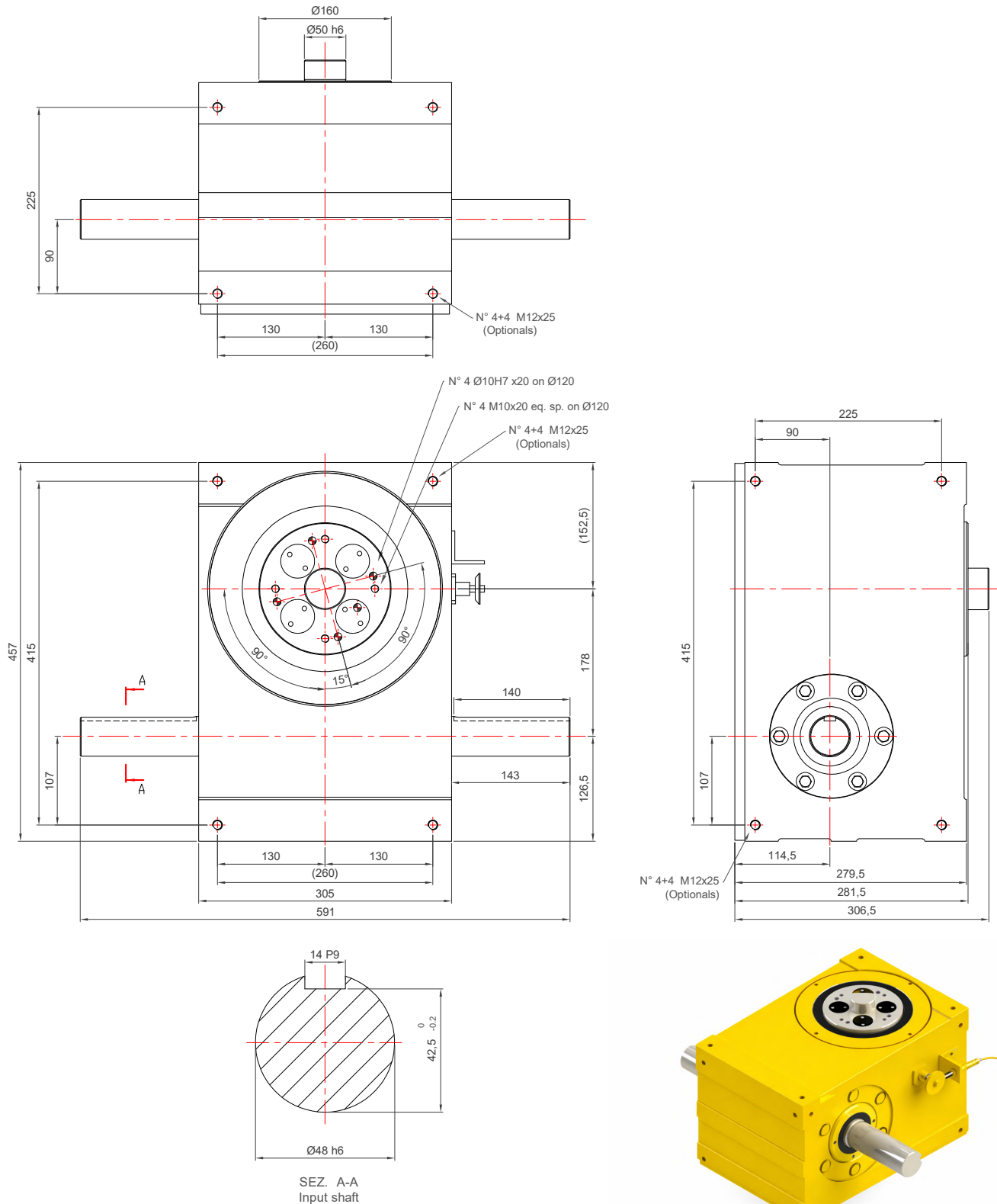
## Indexing precision:

- **1-12 Index:** ± 18" (arcsec)
- **16-32 Index:** ± 24" (arcsec)

Values improvable on request

## Dimensional info:

- **Centre distance:** 178 mm
- **Size:** 305 x 457 x 306.5 (H) mm
- **Weight:** 160 kg



Available stops	Centre distance	Denomination
1 - 2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD VERSION - 178 mm	MK2 800 HD

# SAFETY MK2 1100

### Load capacity:

- **Axial load:** 6500 daN
- **Tilting moment:** 2800 daNm

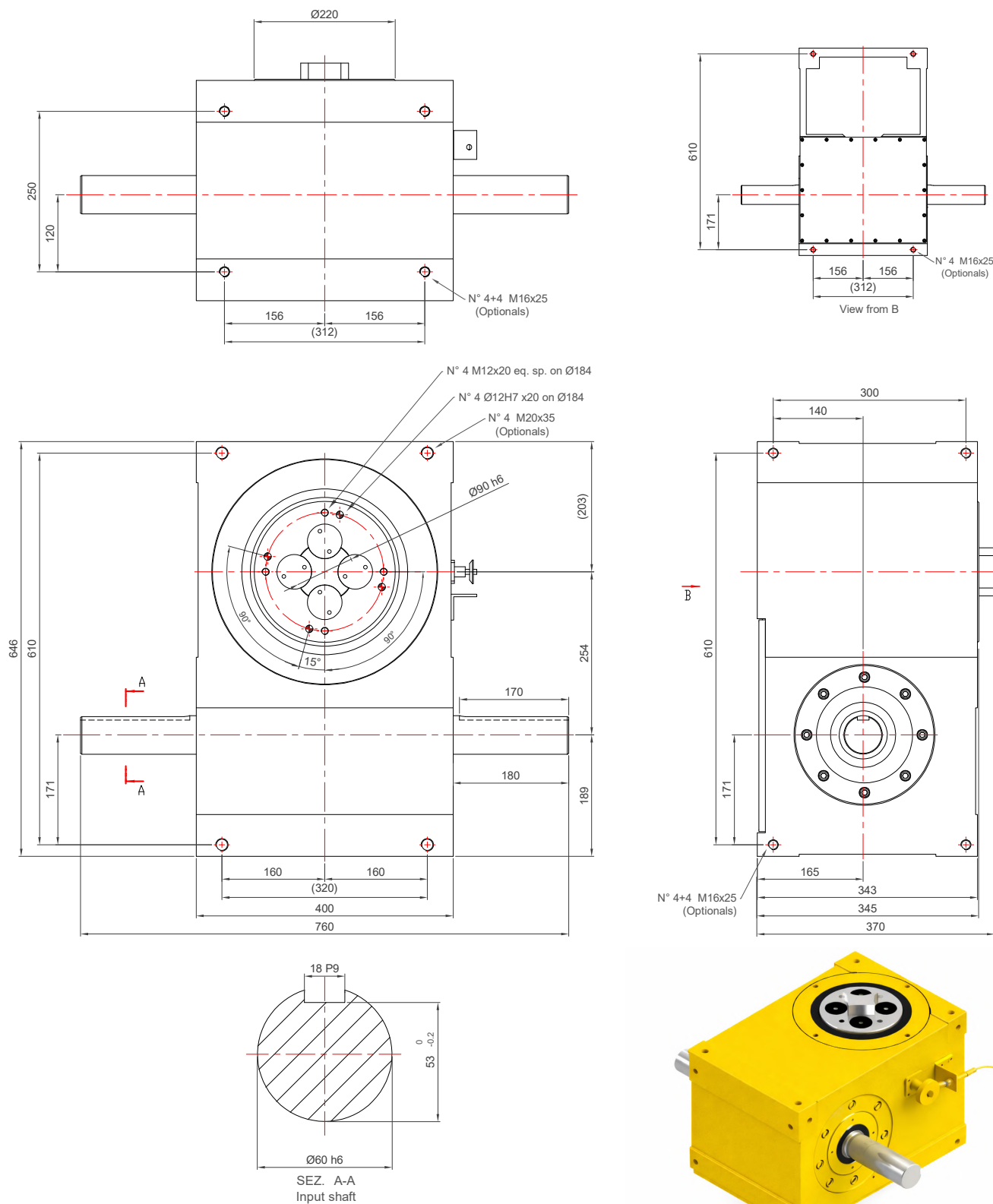
### Indexing precision:

- **1-12 Index:**  $\pm 12''$  (arcsec)
- **16-32 Index:**  $\pm 17''$  (arcsec)

Values improvable on request

### Dimensional info:

- **Centre distance:** 254 mm
- **Size:** 400 x 646 x 370 (H) mm
- **Weight:** 350 kg



Available stops	Centre distance	Denomination
1 - 2 - 3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD VERSION - 254 mm	MK2 1100 HD

# GLOBALOIDAL SAFETY TOROIDAL INDEXER

The Italplant toroidal indexers Safety TIG are large and slim globoidal cam mechanisms with similar functioning to the other rotary table of our production. The difference with these is that turn a ring instead of the dial plate.

The toroidal shape is particularly useful in case you need a lot of space in the central area. This space allows, in addition to the passage of cables, the placing of assembly stations, pick and place, robots and any other types of equipment that would otherwise be located outside, taking away valuable space.

The result is a compact indexer, with performance and load capacity superior to its competitors, due to the roller follower by Italplant design, which enhances the mechanical properties.

#### Options:

- Choice of motor/worm reducer positions
- Available as indexer only without reduced or motor

#### Features:

- High speed for continuous motion running
- Enormous inner hole
- Compact design
- Optimum accuracy
- Mechanism with globoidal cam
- Low number of stops available



#### Available model sizes

TIG 800 - TIG 1200 - TIG 1600



# SAFETY TIG 1200

## Load capacity:

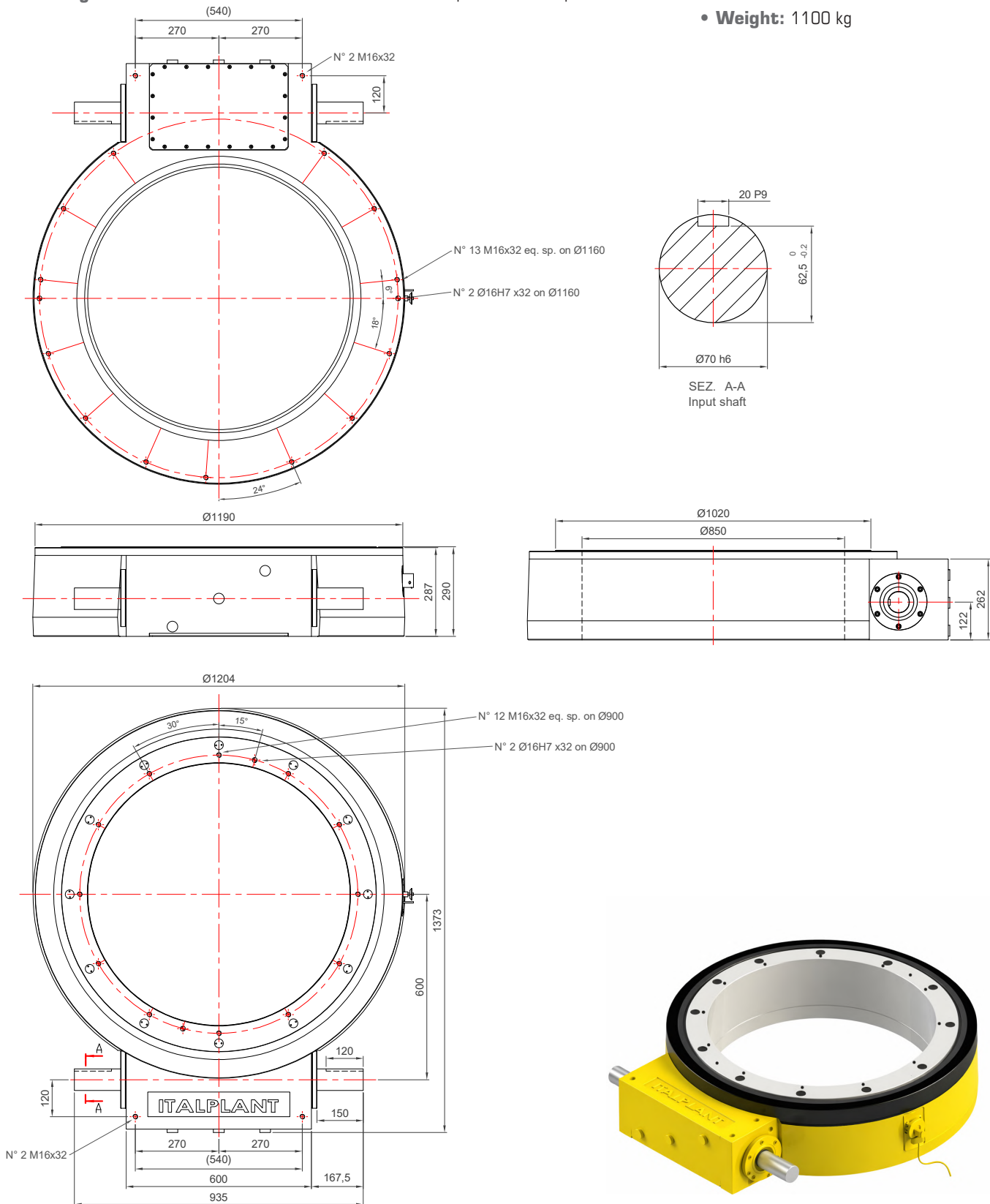
- **Axial load:** 7200 daN
- **Tilting moment:** 3100 daNm

## Indexing precision:

- **3-32 Index:**  $\pm 9''$  (arcsec)
- Values improvable on request

## Dimensional info:

- **Centre distance:** 600 mm (HD/HHD)
- **Size:** 1204 x 1373 x 262 (H) mm
- **Weight:** 1100 kg



## Available stops

3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32

## Centre distance

HD / HHD VERSION - 600 mm

## Denomination

TIG 1200 HD / HHD

# SAFETY TIG 1600

**Load capacity:**

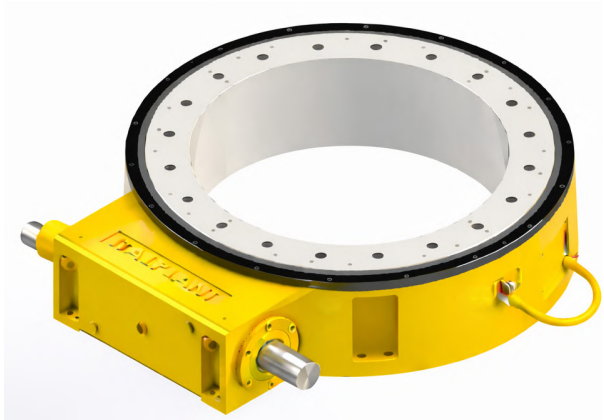
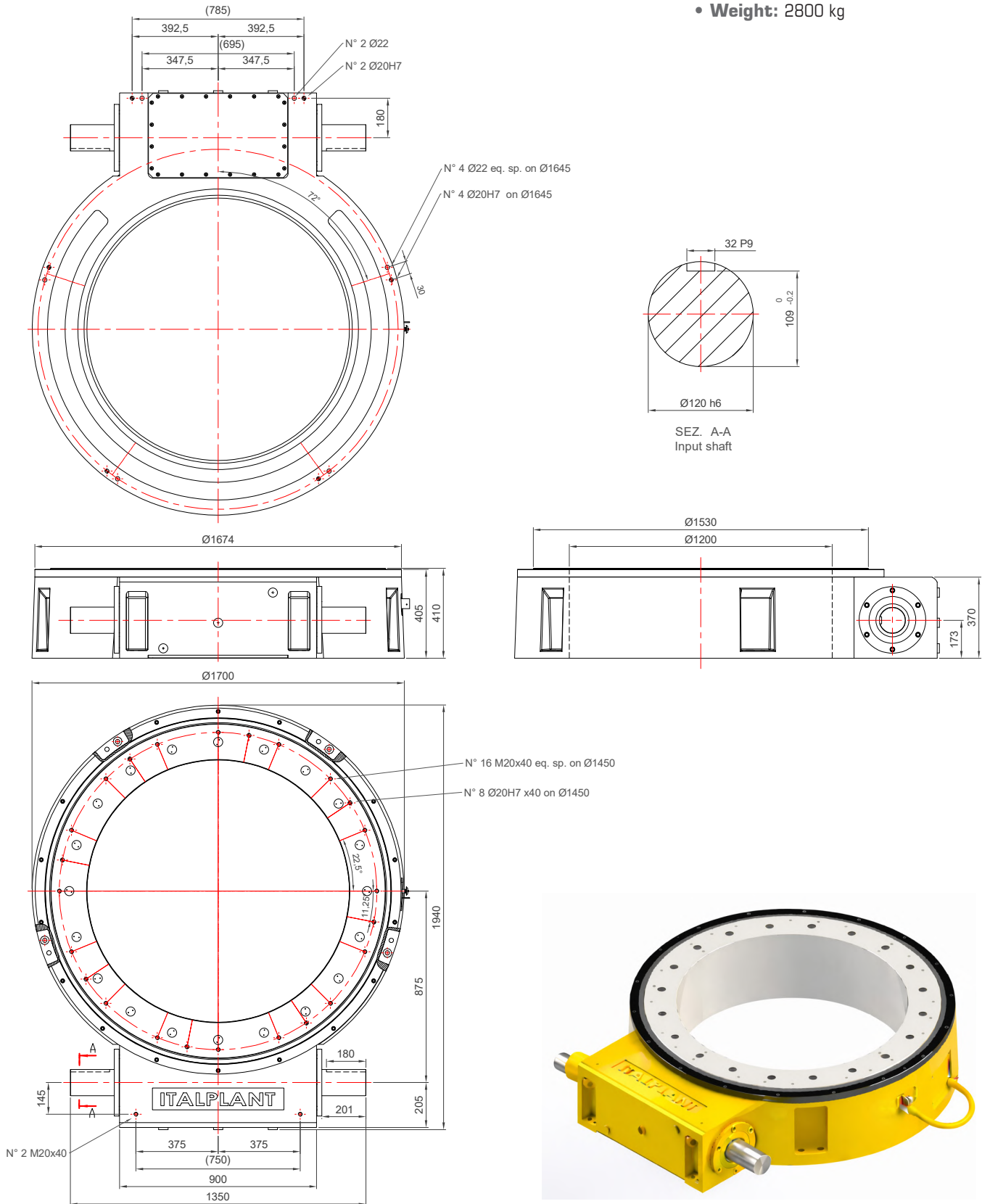
- **Axial load:** 9500 daN
- **Tilting moment:** 6500 daNm

**Indexing precision:**

- **3-32 Index:**  $\pm 6''$  (arcsec)
- Values improvable on request

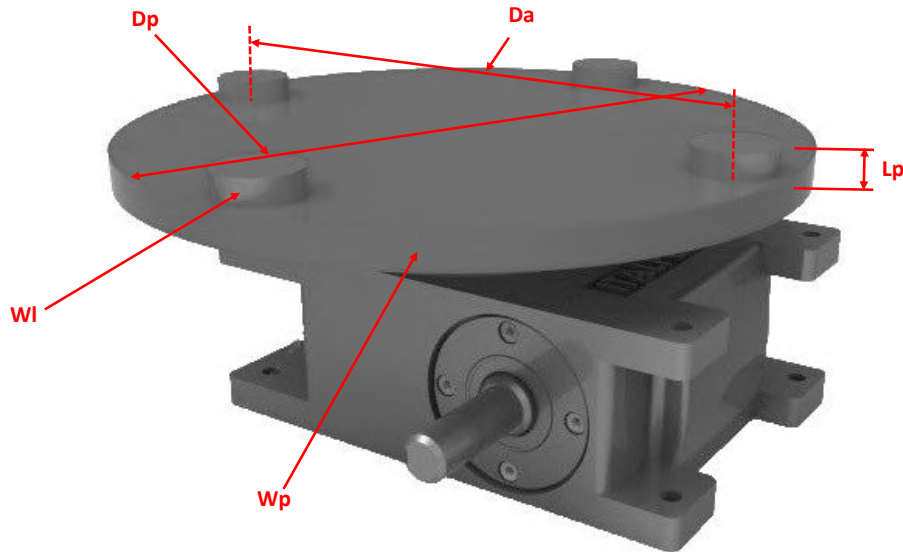
**Dimensional info:**

- **Centre distance:** 875 mm (HD/HHD)
- **Size:** 1700 x 1940 x 370 (H) mm
- **Weight:** 2800 kg



Available stops	Centre distance	Denomination
3 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 24 - 32	HD / HHD VERSION - 875 mm	TIG 1600 HD / HHD

## DATA SHEET



Total Inertia [kg*m <sup>2</sup> ]	<b>It =</b>
Weight plate [kg]	<b>Wp =</b>
Diameter plate [mm]	<b>Dp =</b>
or	
Diameter plate [mm]	<b>Dp =</b>
Thickness plate [mm]	<b>Lp =</b>
Material plate	<b>Mat =</b>
N° of station	<b>N° =</b>
Weight station [kg]	<b>WI =</b>
Diameter of application [mm]	<b>Da =</b>
Additional forces ⊥ [N]	<b>F<sub>1</sub> =</b>
Additional forces // [N]	<b>F<sub>2</sub> =</b>

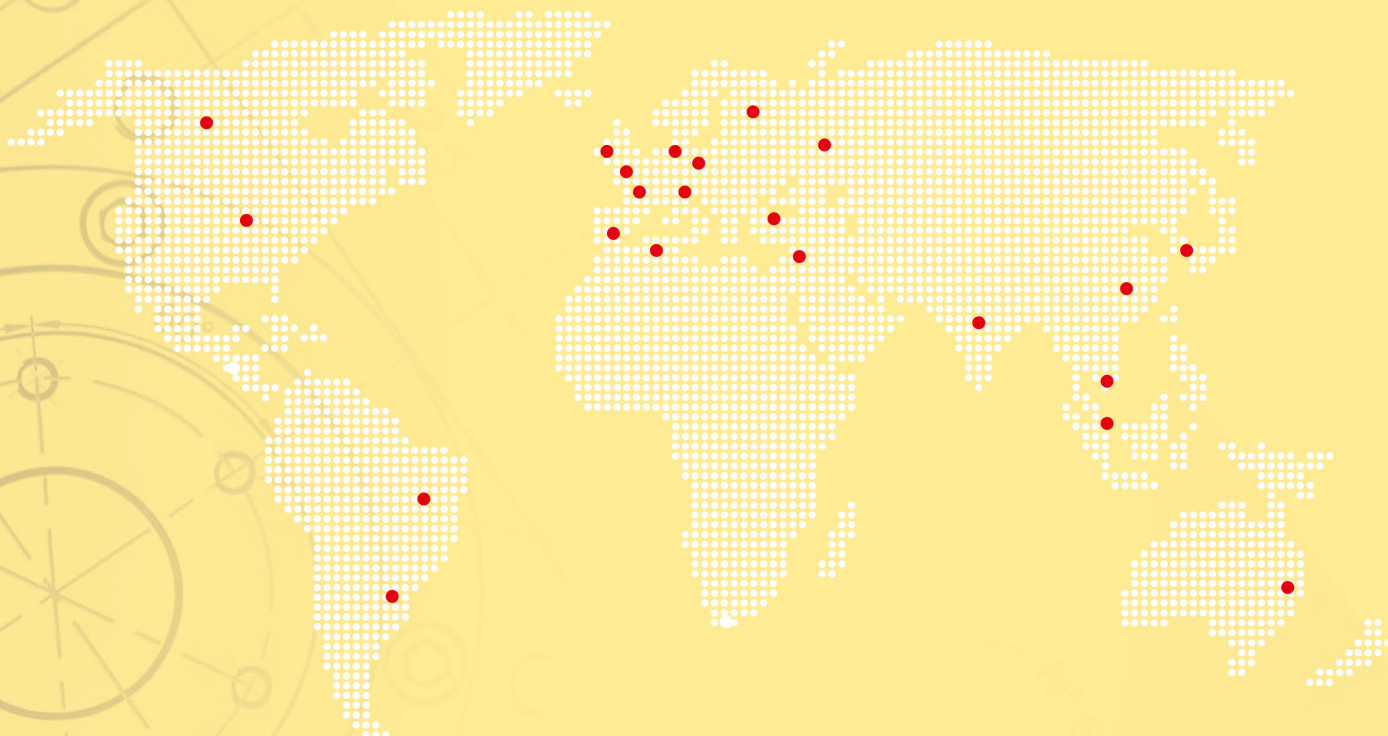
Indexer	Oscillator
or	
High Efficiency Reducer	
Continuous motion	Indexed motion (servo)
Cycle on Demand	
or	
Continuous running	
t. index [s]	<b>ti =</b>
t. dwell [s]	<b>td =</b>
t. cycle [s]	<b>tc =</b>
Frequency of cycle (Cam angle) [°]	<b>Cyc/min =</b> <b>α =</b>

### Notes for the loads


### Notes for the cycle


Name	Company	Rif.	
Address			
Email (in capital letters)			

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