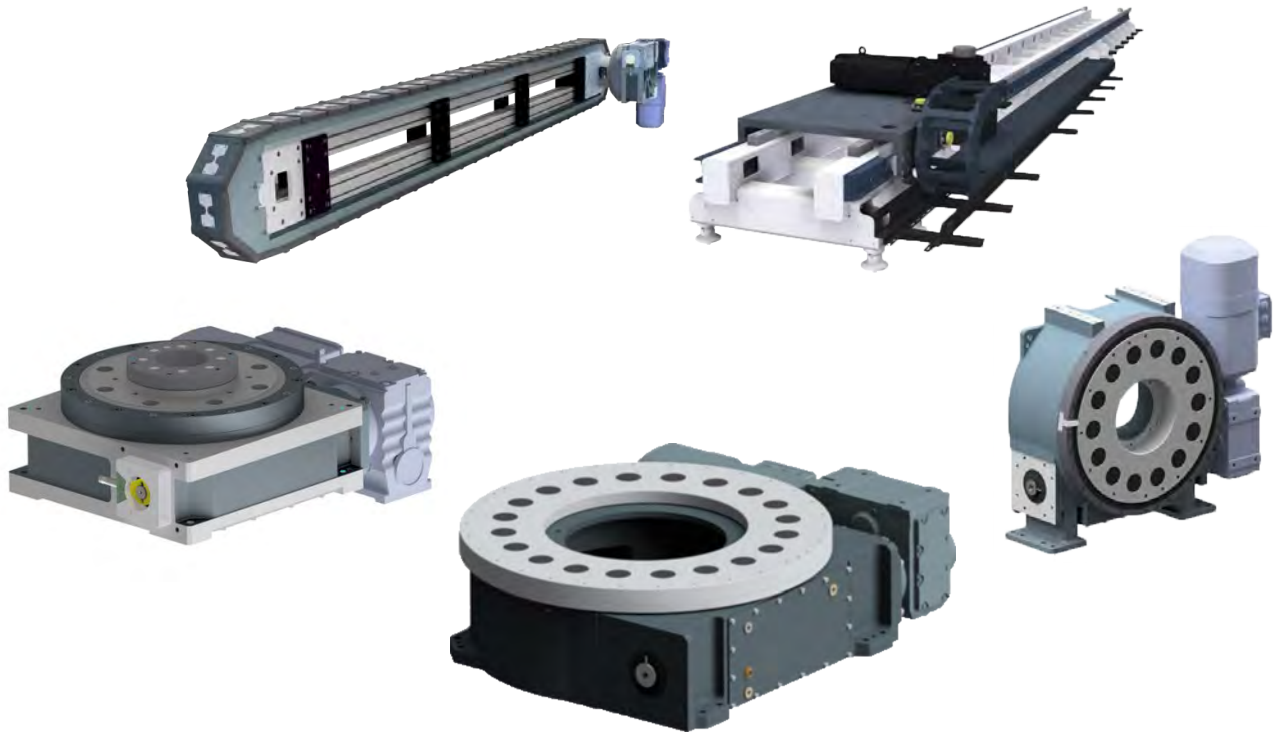# MOTION
INDEX DRIVES

PRODUCT CATALOG

Rotary Index Tables
Linear Transfer Systems
Trunnion Solutions
Custom Applications

TABLE OF CONTENTS

Motion Index Drives, Inc. has built a tradition of excellence in the engineering, designing and manufacturing of cam-driven indexers. This tradition has translated into a reputation for the most robust and reliable indexers available: a reputation we will continue to build upon. Not only are our products more precise than our competitors, we also have higher load capacities, consume less energy and last years longer. Motion Index Drives is your reliable partner for industrial automation and responds to the challenges of multiple industries with customized solutions. For over 50 years, Motion Index Drives has produced customer-oriented and high quality products and solutions for the automation industry (e. g. bevel gear, rotary tables, rotary indexers, parallel gears or cam mechanism).

CUSTOMER ORIENTATION

This long standing experience and customer focus makes our company one of the world's leading manufacturer of handling and drive technology. At Motion Index Drives, our goal is to build the highest quality indexers so that you may manufacture the highest quality product possible. Motion Index Drives products not only convince through innovation, but also with first-class quality. Motion Index Drives is flexible and highly individual, since it focuses on its own strengths. Fast internal processes ensure the shortest delivery times. Consistent customer orientation as our corporate philosophy is the key to our success. Know that whatever automation challenge you may be facing, Motion Index Drives' engineers can produce a solution to complete the task.

VARIETY

Motion Index Drives offers a wide product portfolio based on all the drive systems currently available on the market: barrel cams, disk cams, globoidal cams and servo technology. Naturally, Motion Index Drives also designs individual drive solutions that are not included in its catalog program, so that customers can always access optimum solutions from a single source.

QUALITY ASSURANCE

Thanks to our 100 percent parts monitoring, all components produced by Motion Index Drives meet the highest requirements for consistent quality and precision. All these components are manufactured in-house. Motion Index Drives is certified in accordance with ISO 9001:2015. With the maintenance-free "Motion Index Drives hardening quality" at fair prices, we are making great strides in terms of precision and reliability on the market. Long-term load tests and satisfied customers are proof of this.

COMPETITVE EDGE

Motion Index Drives is committed to achieving the technologically feasible through continuous research projects and many years of experience with vehicle manufacturers. The integration of research and science in the development process,as well as the continual optimization of quality and the patents for Motion Index Drives in-house developments all exemplify the innovative power of the company.

PRESENCE
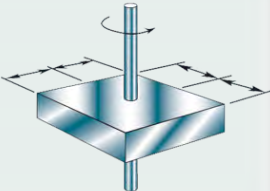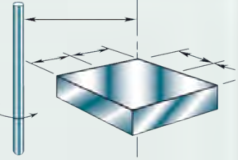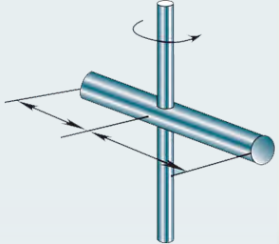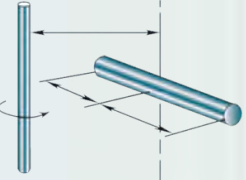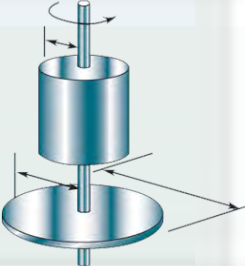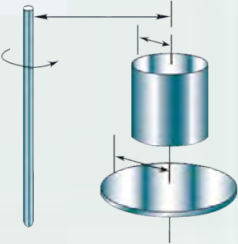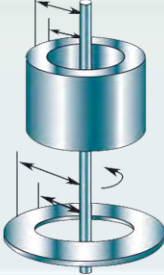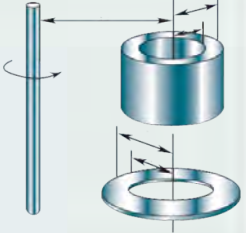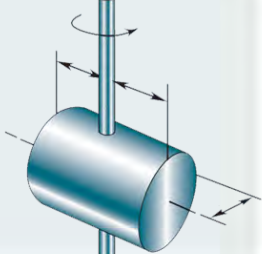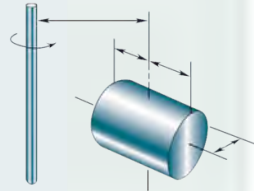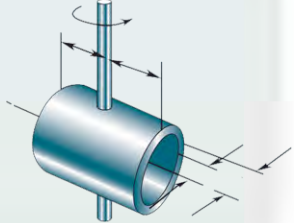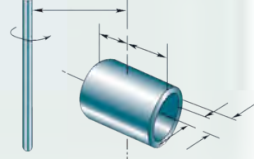
Through a strong international focus and an extensive network of sales offices, Motion Index Drives goes the extra mile to meet its customers. The field service has sound technical knowledge and is the "first developer" for our customers. Alongside valuable experience and a highly motivated team, Motion Index Drives also has the necessary drive to spur projects on and ensure they are completed quickly. That is why our commitment is reflected in our slogan and company culture: passion for automation.

Benedict Talan,
President

INERTIA CALCULATIONS

Body With Central Axis of Rotation	K^2	Body With Offset Axis of Rotation	K^2
Rectangular prism or plate rotating about its central perpendicular axis	$\dfrac{A^2 + B^2}{3}$	Rectangular prism or plate rotating about a perpendicular offset axis	$\dfrac{A^2 + B^2}{3} + H^2$
Long thin rod of any cross section rotating about its central perpendicular axis	$\dfrac{L^2}{3}$	Long thin rod of any cross section rotating about a perpendicular offset axis	$\dfrac{L^2}{3} + H^2$
Solid cylinder or disc rotating about its own axis	$\dfrac{R^2}{2}$ or $\dfrac{D^2}{8}$	Solid cylinder or disc rotating about an offset parallel axis	$\dfrac{R^2}{2} + H^2$
Hollow cylinder or flat ring rotating about its own axis	$\dfrac{R^2 + r^2}{2}$	Hollow cylinder or flat ring rotating about an offset parallel axis	$\dfrac{R^2 + r^2}{2} + H^2$
Solid cylinder rotating about its diameter at mid-length	$\dfrac{L^2}{3} + \dfrac{R^2}{4}$	Solid cylinder rotating about an offset axis parallel to its diameter	$\dfrac{L^2}{3} + \dfrac{R^2}{4} + H^2$
Hollow cylinder rotating about its diameter at mid-length	$\dfrac{L^2}{3} + \dfrac{R^2 + r^2}{4}$	Hollow cylinder rotating about an offset axis parallel to its diameter	$\dfrac{L^2}{3} + \dfrac{R^2 + r^2}{4} + H^2$

TMF Series

Rotary Indexer

MOTION
INDEX DRIVES
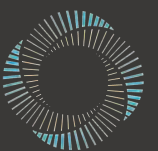
The New Standard for 100% Programmable / Servo Indexing

The TMF Series of index drives was engineered to satisfy the needs of the 21st century industrial manufacturing environment: fast, strong, reliable, high quality and cost effective.

The TMF Series features a cast housing that is compact and has all the characteristics a manufacterer looks for: large center thru-hole for running utilities and mounting equipment; very low profile to eliminate the need for large A-frame type tooling or operator riser platforms; and a large rotating diameter for increased mounting surface.

In order to increase the strength of the index table, the TMF Series was designed to be a completely flexible solution. This allows for a minimum of 4 oversized cam followers to be engaged with the barrel cam at all times. The indexer is driven directly via a gear motor that can utilize either an AC motor with encoder or servo. Both options provide very high accuracy (less than 10 arc seconds) and allow for the indexer to be driven via a dedicated or robot drive.

Loading capabilities are multiplied significantly in this line of indexers through the design of the barrel cam and cam followers. This unique design allows for unprecedented inertial load capability. The TMF Series also utilizes the same high quality bearing configuration as our standard index drives to ensure high mass loading capabilities.

Programmable Index Drives

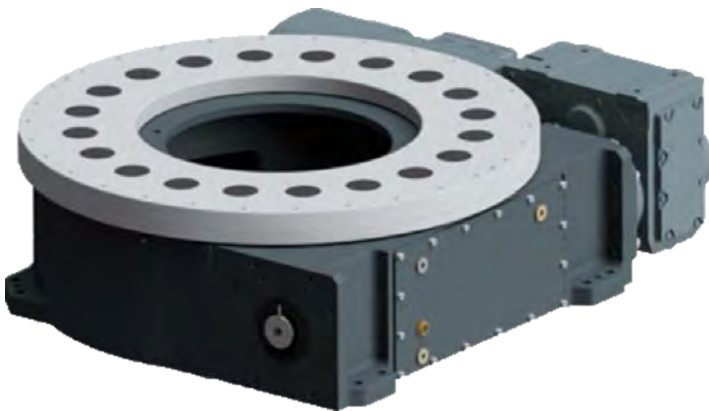The rotary index table transforms a constant input drive motion into a constant output drive motion. The drive motion occurs by means of a hardened and high-accuracy constant lead barrel cam. The use of mathematical laws of motion along with a properly programmed motor profile guarantee a soft, shock proof, and jerk free movement that has been optimally designed for its intended purpose. The design allows for accurate and secure mounting to the output dial. The preload of the cam to the cam followers in dwell ensures the top dial is backlash free. No additional adjustment of the output dial is necessary.

The power to rotate the index drive is provided either by means of a three phase AC motor with encoder, coupled to a gear reducer, or a servo motor coupled to a gear reducer. The gear reducer is connected to the input shaft which is firmly connected to the internal barrel cam with no further internal gearing. The barrel cam in turn rotates the top dial through the cam followers with a zero backlash internal design. The output dial is mounted to a wire bearing assembly (4 point contact bearing), which is preloaded to eliminate any runout. The index drive is completely sealed to eliminate intrusion from foreign particulate.

Advantages for design engineers and special machine builders

- Large center thru-hole which is large enough to feed entire shafts through, and not just small wiring looms
- Dowel holes in housing and in output flange
- Recessed center column. No obstruction. Lengthened and machined to customer requirements
- Simultaneously rotating input shaft extension. Optional synchronization of other mechanical modules

Allowance for individual customer requirements

- Choice of drive
- Reinforced output flange bearing for higher tilting moment
- Optional friction clutch on drive
- Custom specified color at no extra charge technical

Technical benefits for users

- High reliability and long service life
- Robust method of construction
- Hardened cams: smaller sizes for higher load factors
- Cam followers and roller bearings fully immersed in oil bath
- Cam followers are extractable from top

TMF1000

Dimensions

Diameter output flange	380 mm
Overall height (mounting surface dial)	195 mm
Center thru-hole	165 mm
Maximum recommended swing diameter	3000 mm
Weight	130 kg

Load Ratings

Axial	213,000 N
Radial	100,000 N
Tilting	19,000 Nm
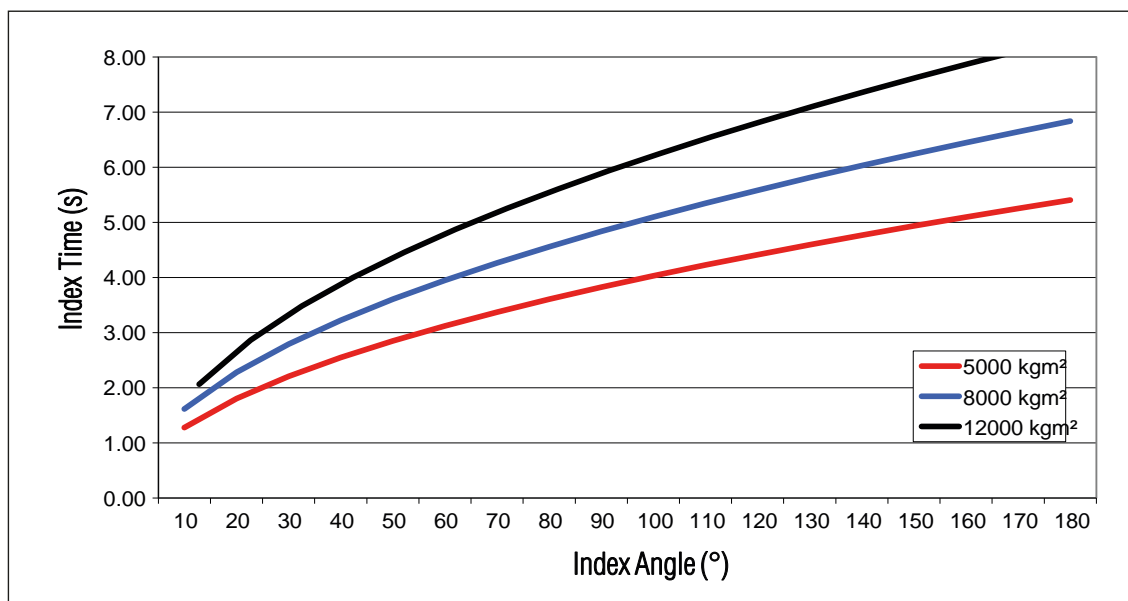
* Please note, the load chart shown can be affected by user programming required, including acceleration rates, deceleration rates, velocity profiles, e-stop times required, etc. For validation of sizing, please verify all loading with Motion Index Drives, Inc.

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to   your specifications. The central column can also be designed as a flange. Should you wish to drill a dditional holes, please consult us with regard to acceptable drilling depth.

TMF1000
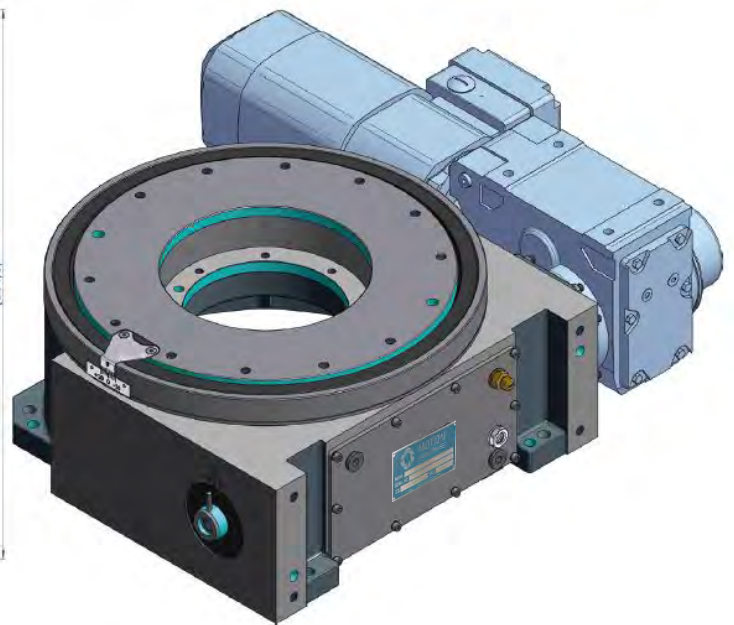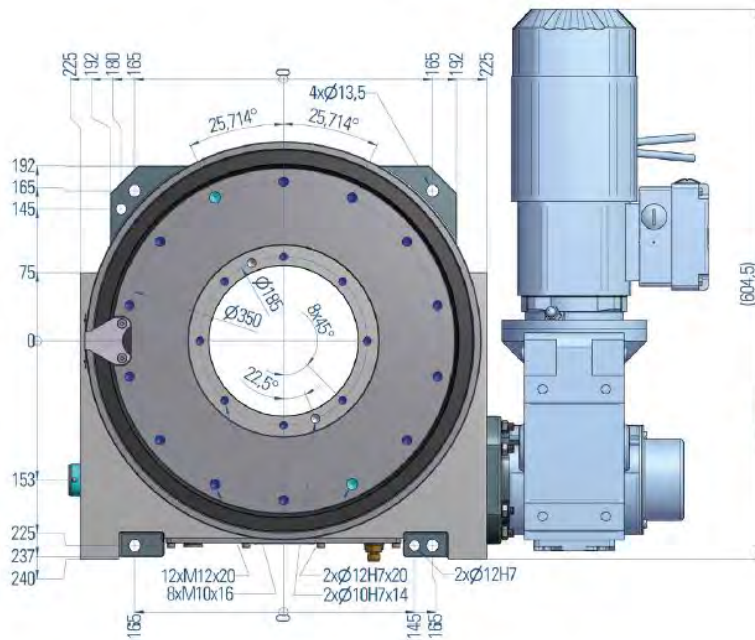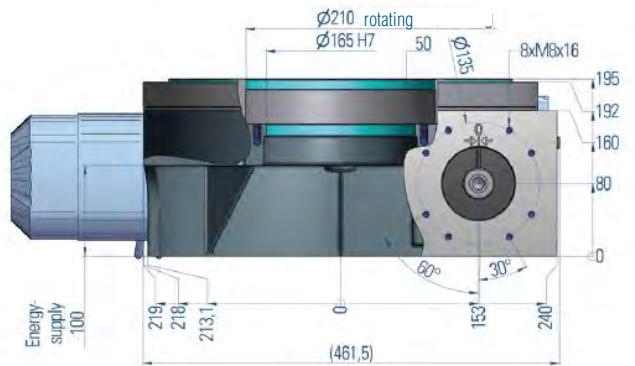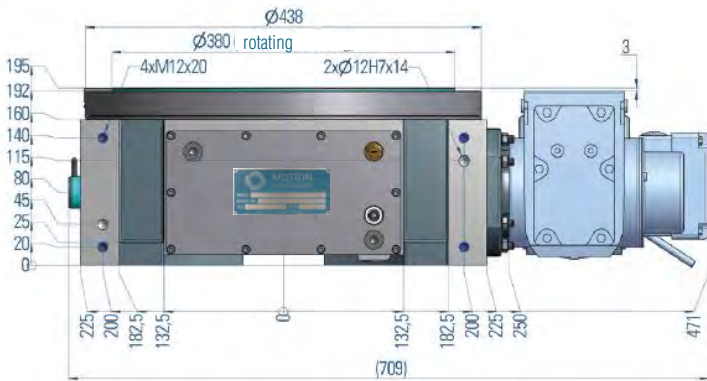
The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

TMF2000

Dimensions

Diameter output flange	560 mm
Overall height (mounting surface dial)	285 mm
Center thru-hole	190 mm
Maximum recommended swing diameter	3,500 mm
Weight	440 kg

Load Ratings

Axial	753,000 N
Radial	353,000 N
Tilting	207,500 Nm
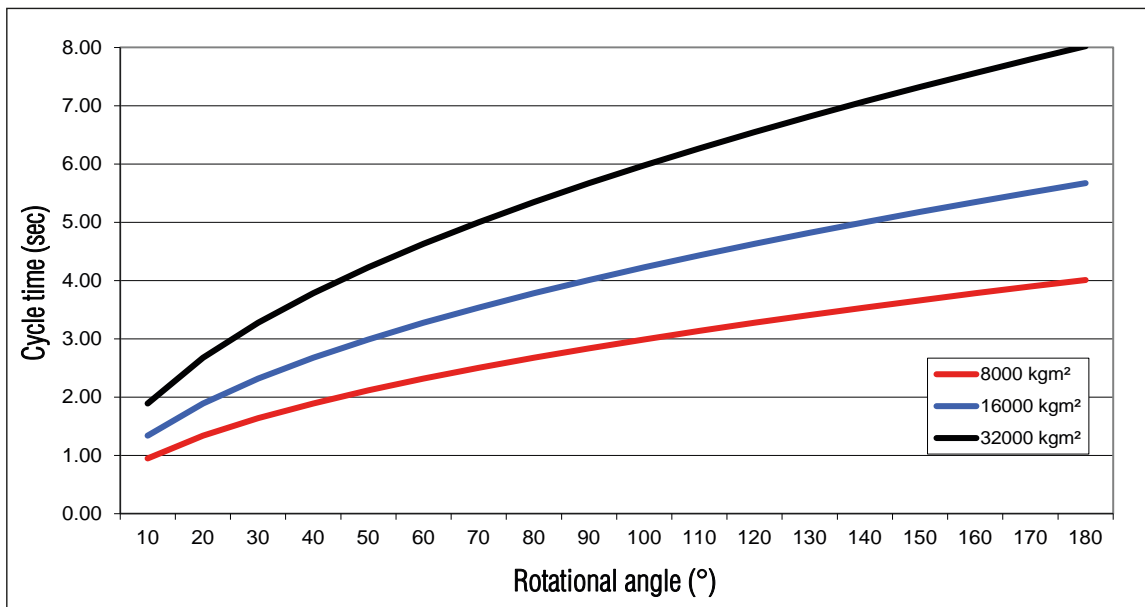
* Please note, the load chart shown can be affected by user programming required, including acceleration rates, deceleration rates, velocity profiles, e-stop times required, etc. For validation of sizing, please verify all loading with Motion Index Drives, Inc.

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill a dditional holes, please consult us with regard to acceptable drilling depth.

TMF2000
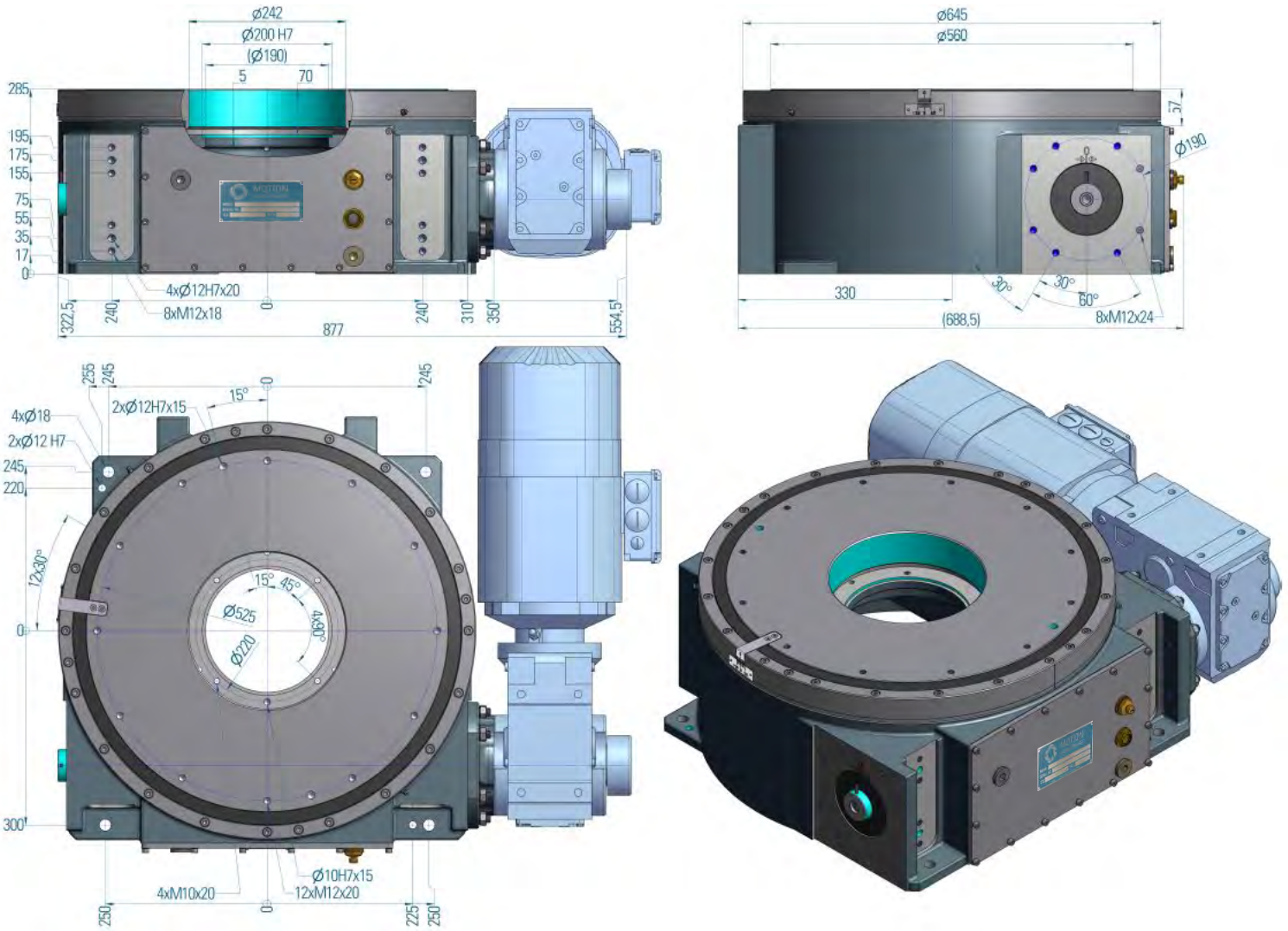
The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

TMF3000

Dimensions

Diameter output flange	800 mm
Overall height (mounting surface dial)	330 mm
Center thru-hole	280 mm
Maximum recommended swing diameter	4,500 mm
Weight	520 kg

Load Ratings

Axial	965,000 N
Radial	454,000 N
Tilting	357,000 Nm
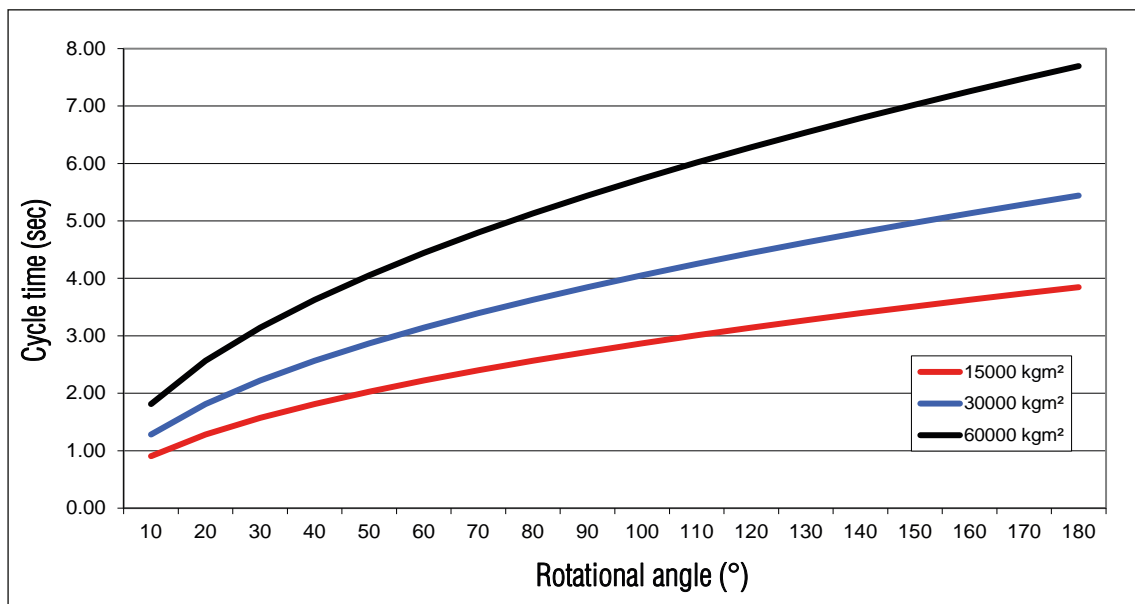
* Please note, the load chart shown can be affected by user programming required, including acceleration rates, deceleration rates, velocity profiles, e-stop times required, etc. For validation of sizing, please verify all loading with Motion Index Drives, Inc.

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill a dditional holes, please consult us with regard to acceptable drilling depth.

TMF3000
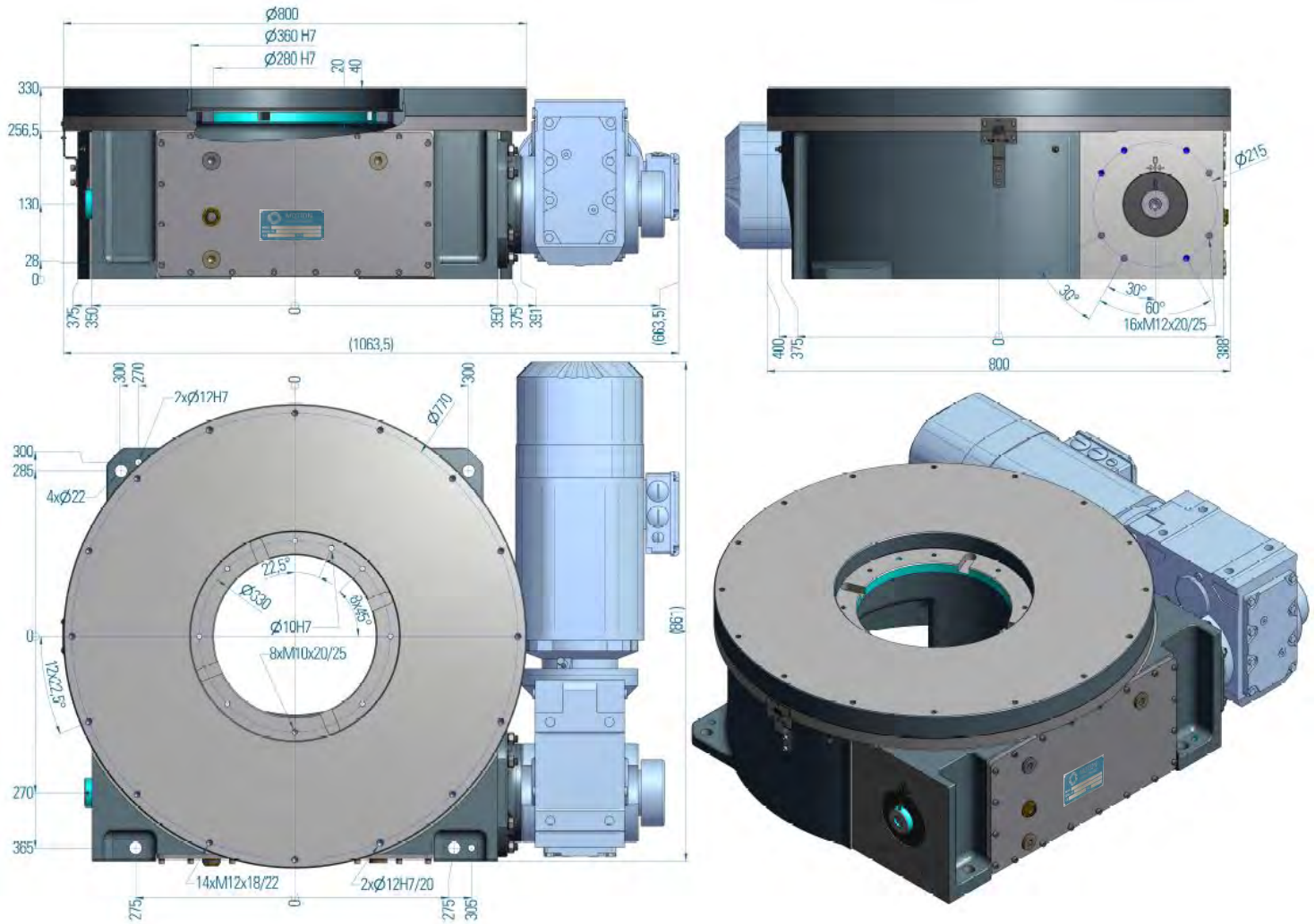
The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

TMF4000

Dimensions

Diameter output flange	1,050 mm
Overall height (mounting surface dial)	365mm
Center thru-hole	450 mm
Maximum recommended swing diameter	6,500 mm
Weight	910 kg

Load Ratings

|	
Axial	1,185,000 N
Radial	590,000 N
Tilting	525,000 Nm
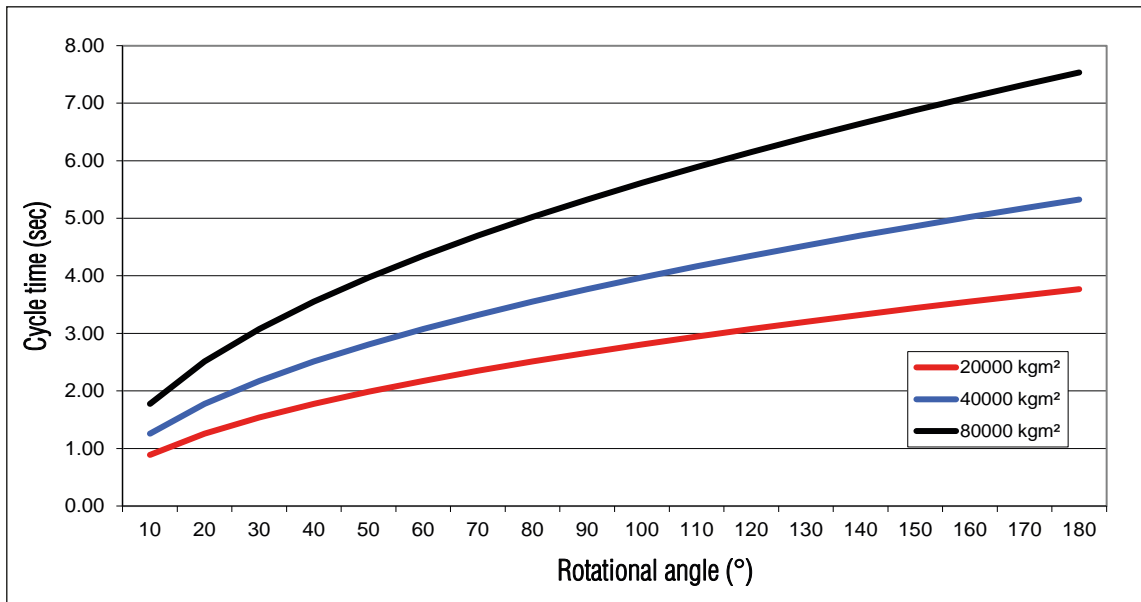
* Please note, the load chart shown can be affected by user programming required, including acceleration rates, deceleration rates, velocity profiles, e-stop times required, etc. For validation of sizing, please verify all loading with Motion Index Drives, Inc.

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill a dditional holes, please consult us with regard to acceptable drilling depth.

TMF4000
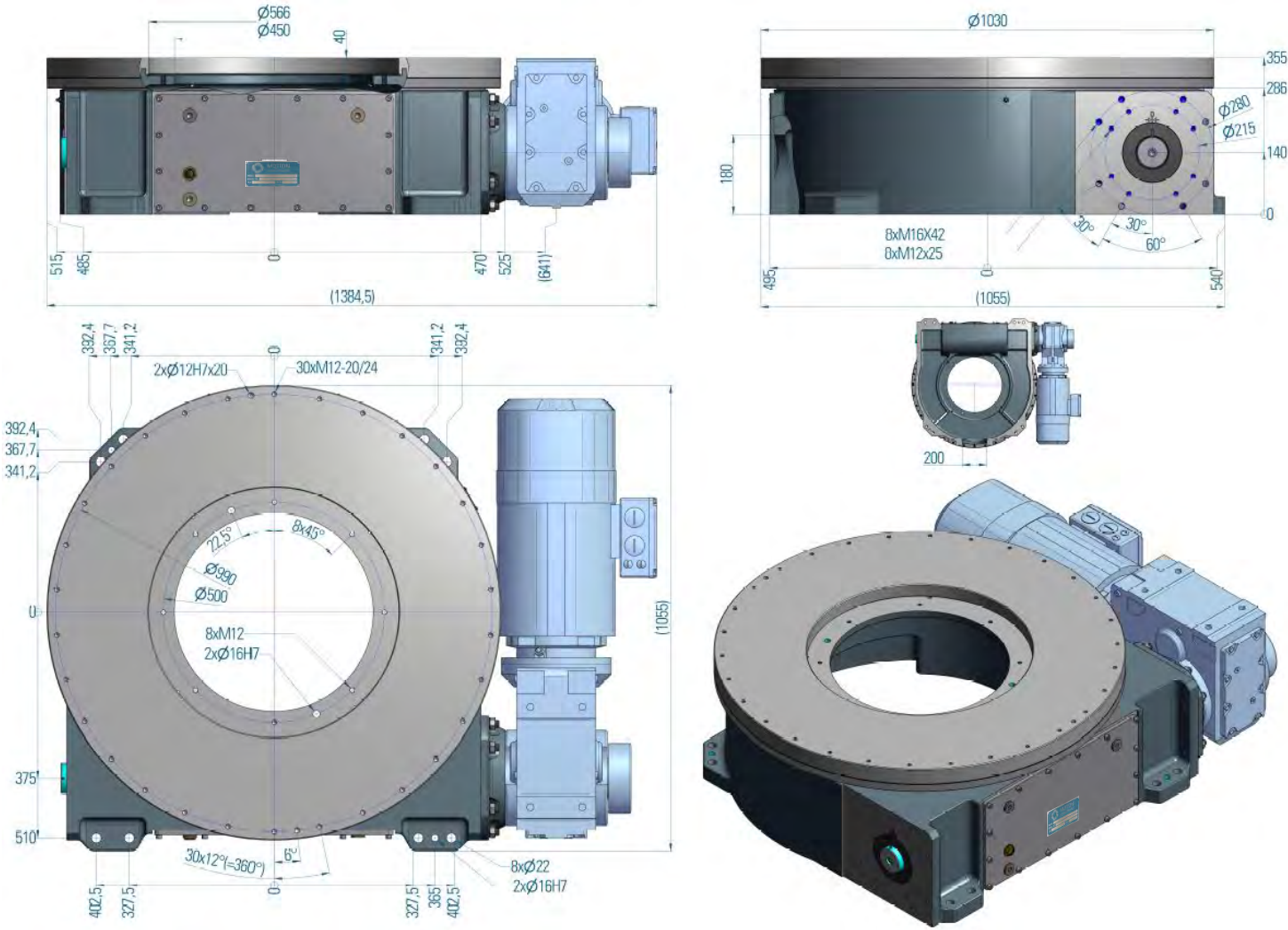
The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.
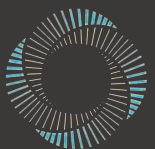
TMF5000

Dimensions

Diameter output flange	1,360 mm
Overall height (mounting surface dial)	405
Center thru-hole	750 mm
Maximum recommended swing diameter	10,000 mm
Weight	1,470 kg

Load Ratings

|	
Axial	1,649,000 N
Radial	776,000 N
Tilting	1,063,500 Nm
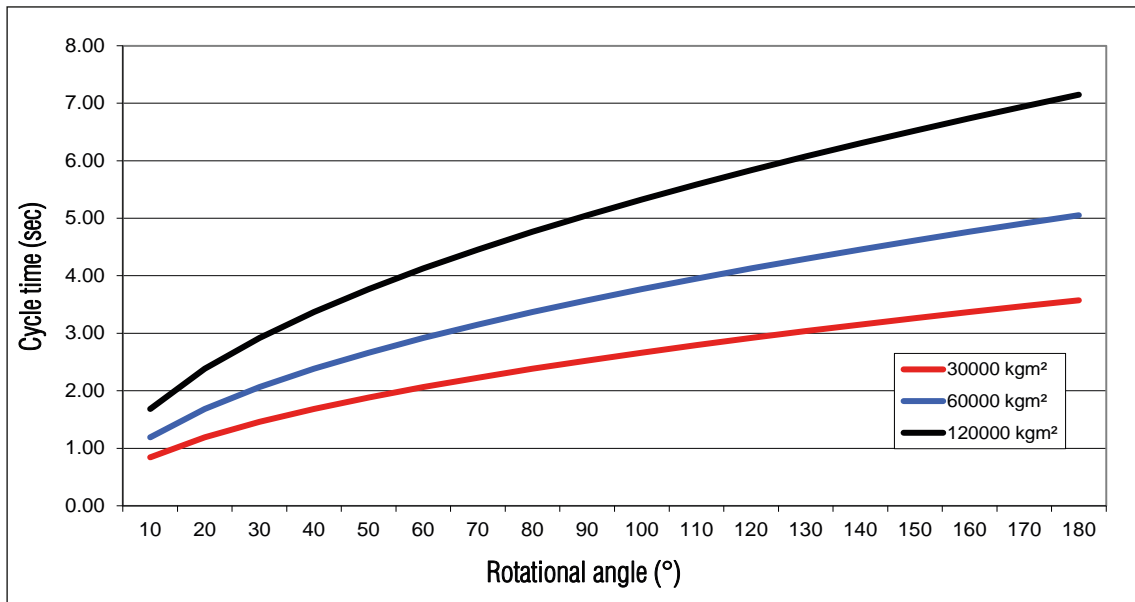
* Please note, the load chart shown can be affected by user programming required, including acceleration rates, deceleration rates, velocity profiles, e-stop times required, etc. For validation of sizing, please verify all loading with Motion Index Drives, Inc.

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill a dditional holes, please consult us with regard to acceptable drilling depth.

TMF5000
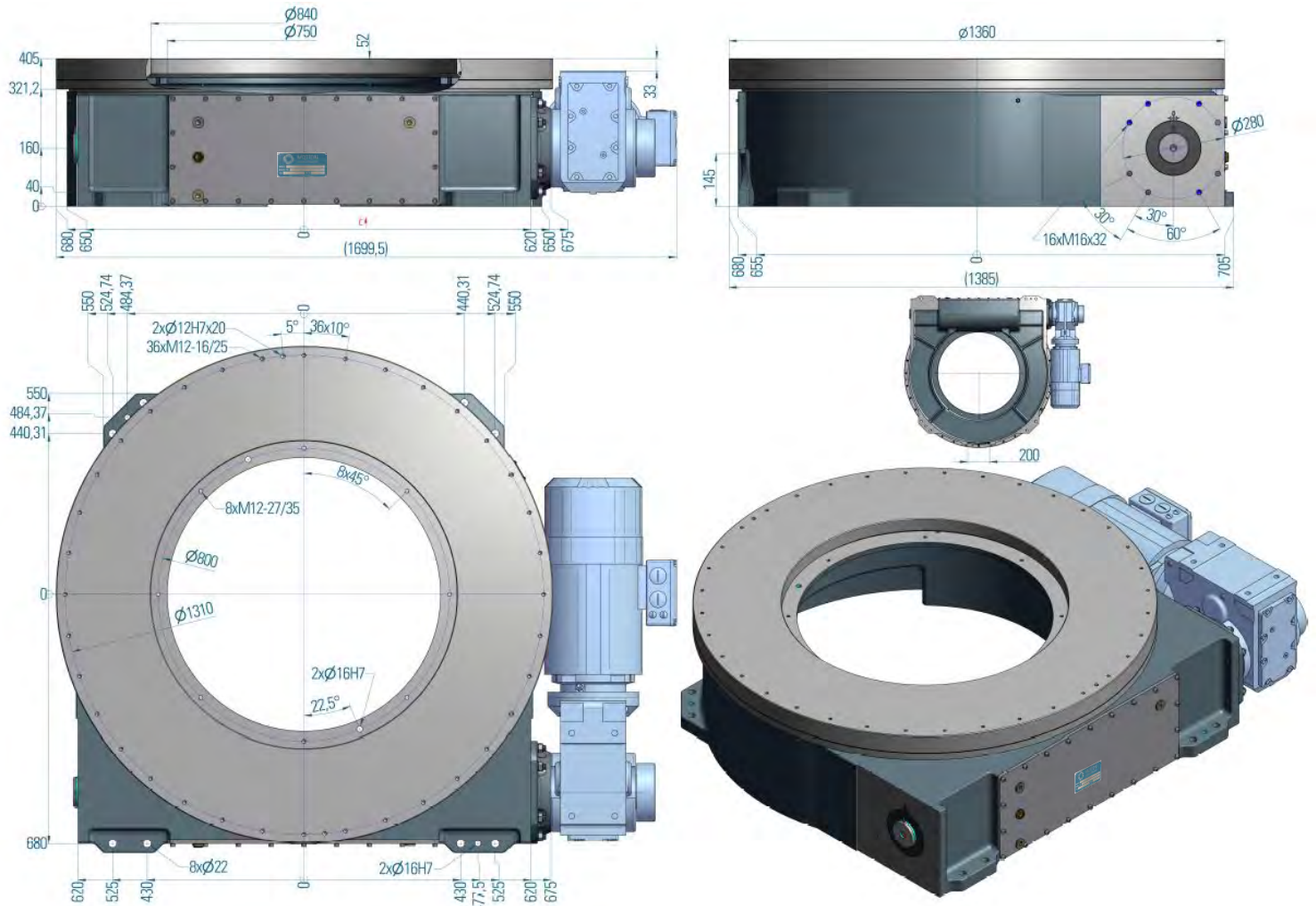
The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

TMF8000

Dimensions

Diameter output flange	2,300 mm
Overall height (mounting surface dial)	440 mm
Center thru-hole	1,520 mm
Maximum recommended swing diameter	16,000 mm
Weight	3,800 kg

Load Ratings

|	
Axial	4,280,000 N
Radial	1,000,000 N
Tilting	1,850,000 Nm
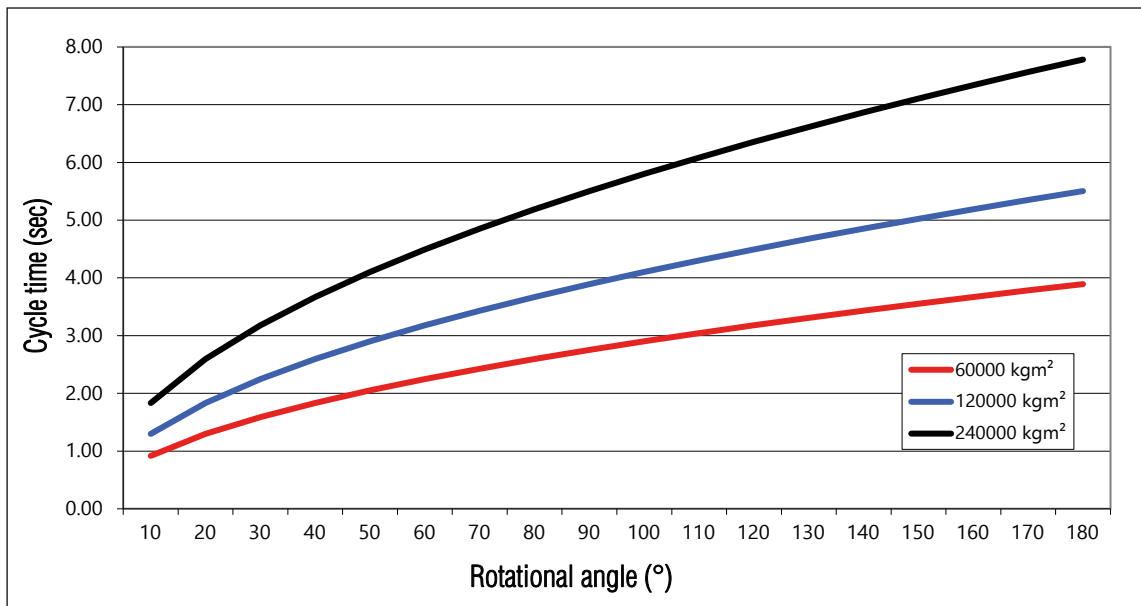
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The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill a dditional holes, please consult us with regard to acceptable drilling depth.

TMF8000
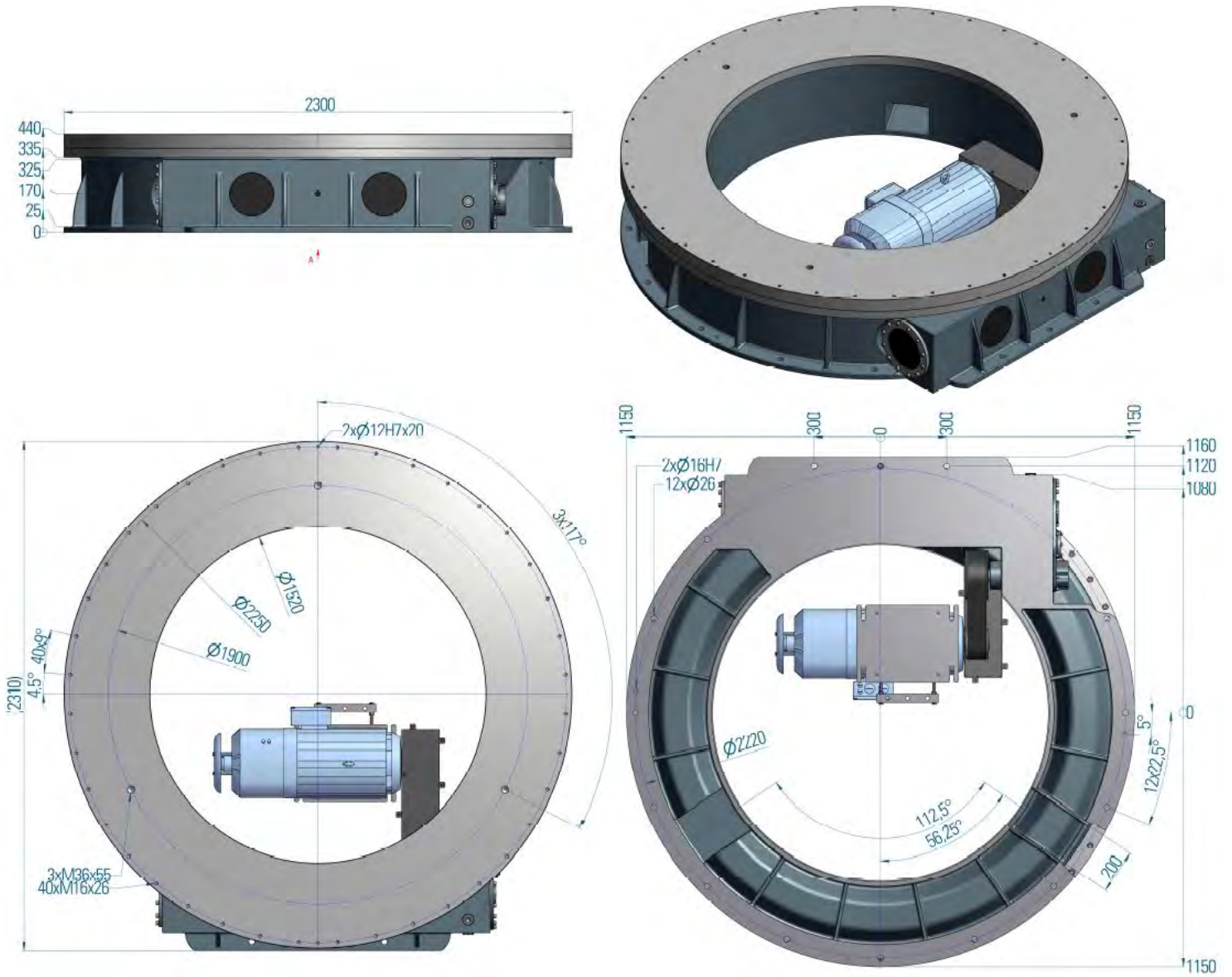
The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

RTX

Rotary Indexers

RTX350

Main dimensions

Ø145
Ø105
90
36
137*
11.5*
47*
152.5

Ø18 H11
30
164
20

2xØ5H7x8 | Ø30 ±0.02
6xM5x10 | Ø30

2xØ6H7x12 | Ø65 ±0.02
6xM6x12 | Ø65

6x60°
30°

343.5*
R180*
32*
49*
17*
4xØ9
R135
40
40
72
132
60
116
130 ± 0.02
52± 0.02
2xØ6H7x20
R310*

DIN 332 - DR M5
DIN 6885 -
A - 5 x 5 x 32
Ø16 h6
Ø16 h6
40
41
40
41

50°
48°
6x60°
2xØ5H7x8 | Ø43 ±0.02
6xM5x10 | Ø43

Ø18 H11
Ø51.6
16
106
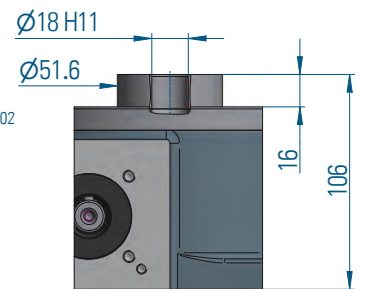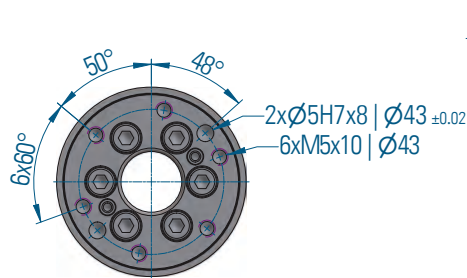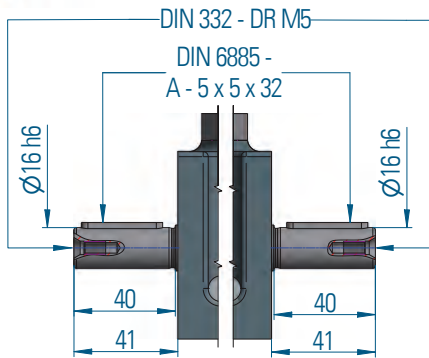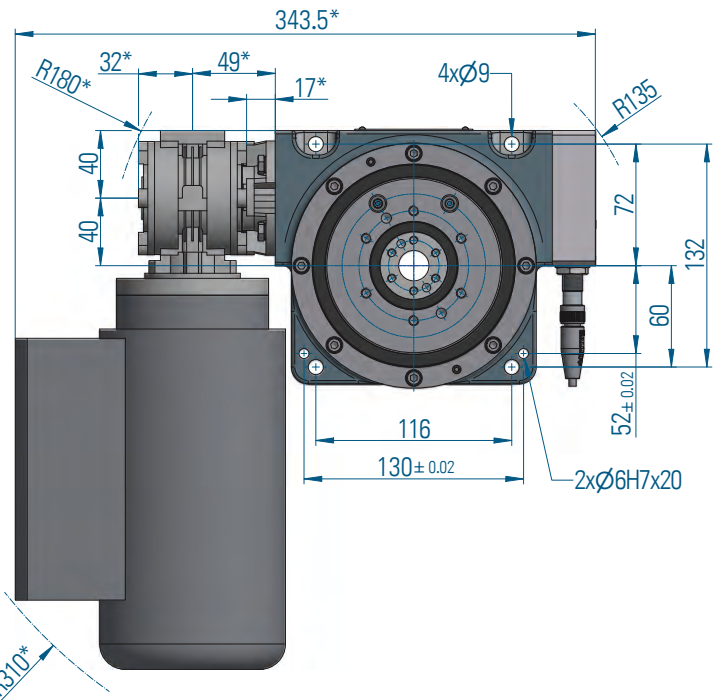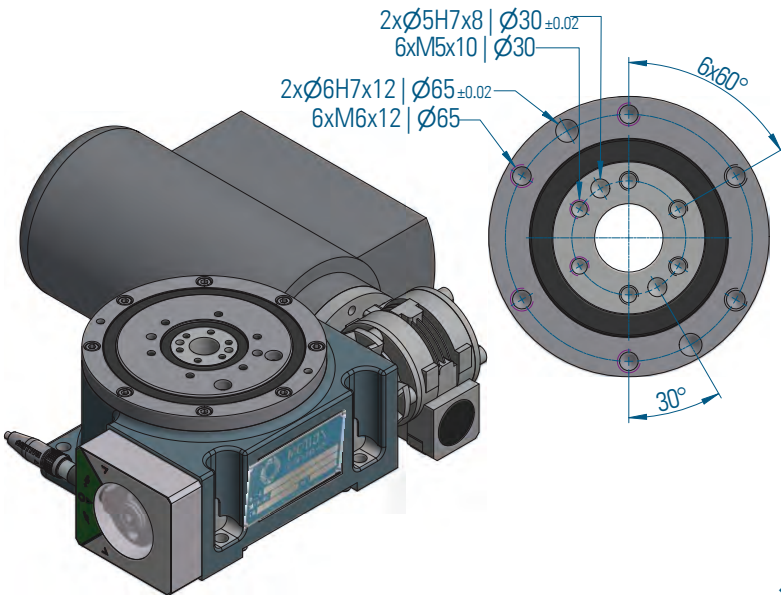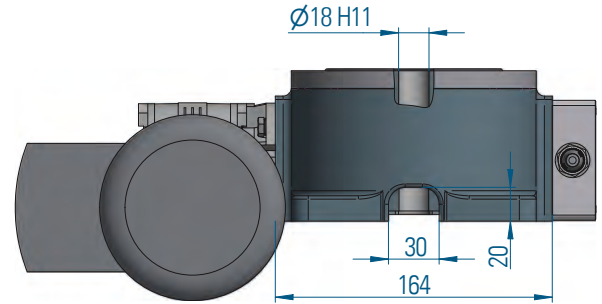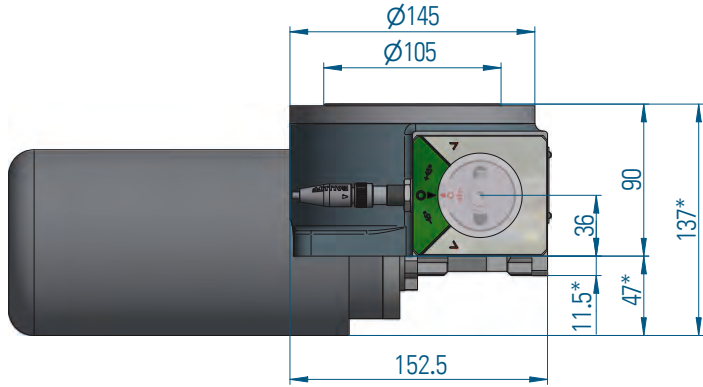
RTX350

Fitting position
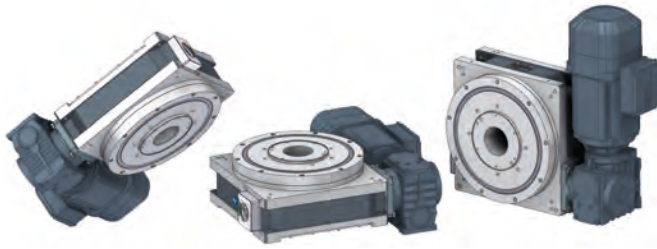
upside down | horizontal | vertical

Load on output flange

Radial force F_{rA} [kN] 10   Axial force F_{aA} [kN] 11   Torque on output
flange [Nm] 376

Tilting moment M_{kA} [kNm] 0.6

Load on central column

Radial force F_{rM} [kN] 1.5   Axial force F_{aM} [kN] 7   Torque on output
flange [Nm] 10

Tilting moment M_{kM} [kNm] 0.1

Precision

Axial runout on the output flange ø [mm]	0.01
Runout on the output flange ø [mm]	0.01
Indexing accuracy * in angular seconds ["]	± 45

* Increased indexing accuracy accessible through selected components
  From division 16, the division error due to multi-point locks
  on the drive cam is larger by a factor of 1.5"

Combined loads and possible process forces must be
confirmed by Motion Index Drives.

Dimensions

Output flange ø	[mm]	105
Overall height (output flange screw-on suface)	[mm]	90
Center opening ø	[mm]	18
Recommended max. size of rotating plate ø	[mm]	600
Index table weight	[kg]	15
Number of indexes Other numbers on request	n	2, 3, 4, 6, 8, 10, 12, 16, 20, 24, 30, 36

Standard drive

Motor size		IEC56
Gear size (Center distance)		28
Voltage (other voltages on request)	[V]	230 / 400
Power	[kW]	0.06 - 0.18

RTX350 Load table

n = Number of stops / 360° revolution of output flange

t = Step time in [s]

J_{Max} = Mass moment of inertia (base plate + fixtures and parts) in [Kgm²] Without motor and lifetime

J_L = Mass moment of inertia by life time (base plate + fixtures and parts) in [Kgm²]

J = Mass moment of inertia with motor (base plate + fixtures and parts) in [Kgm²]

From n=16 The output flange steps 2 times per cam revolution

From n=36 The output flange steps 3 times per cam revolution

Speed	Step	1	2	3	4	5	6	7	8	9	10	11	12	13
n	n													
2	t			0.38	0.57	0.76	1.07	1.52	1.87	2.18	2.73	3.11		
	J_{Max}			2.50	5.63	10.02	19.65	40.11	60.20	82.11	128.30	167.57		
	J_L			0.75	1.91	3.70	8.04	18.26	29.13	41.63	69.56	94.57		
	J			0.09	0.39	0.34	0.99	3.10	5.47	4.48	8.11	12.79		
3	t			0.38	0.57	0.76	1.07	1.52	1.87	2.18	2.73	3.11		
	J_{Max}			4.16	9.37	16.66	32.66	66.66	100.04	136.45	213.21	278.48		
	J_L			1.44	3.67	7.11	15.43	35.06	55.92	79.91	133.50	181.50		
	J			0.24	0.91	0.83	2.33	7.20	12.62	10.53	18.93	29.67		
4	t			0.36	0.54	0.71	1.00	1.43	1.75	2.04	2.56	2.92		
	J_{Max}			4.98	11.22	19.95	39.11	79.83	119.80	163.41	255.33	333.49		
	J_L			1.95	4.97	9.65	20.92	47.53	75.80	108.33	180.98	246.05		
	J			0.37	1.38	1.29	3.56	10.84	18.93	16.02	28.65	44.66		
5	t			0.36	0.54	0.71	1.00	1.43	1.75	2.04	2.56	2.92		
	J_{Max}			5.36	12.08	21.48	42.11	85.94	128.97	175.92	274.88	359.02		
	J_L			2.52	6.42	12.44	26.99	61.31	97.78	139.73	233.45	317.38		
	J			0.58	2.13	2.04	5.53	16.64	28.94	24.80	44.18	68.54		
6	t			0.36	0.54	0.71	1.00	1.43	1.75	2.04	2.56	2.92		
	J_{Max}			8.21	18.49	32.88	64.46	131.55	197.42	269.27	420.74	549.54		
	J_L			3.60	9.15	17.74	38.48	87.41	139.40	199.20	332.81	452.46		
	J			0.85	3.09	3.02	8.08	24.08	41.77	36.18	64.22	99.24		
8	t			0.36	0.54	0.71	1.00	1.43	1.75	2.04	2.56	2.92		
	J_{Max}			11.02	24.81	44.12	86.48	176.50	264.86	361.26	564.48	737.28		
	J_L			5.36	13.62	26.41	57.26	130.07	207.45	296.44	495.26	673.31		
	J			1.62	5.73	5.76	15.15	44.39	76.64	67.56	119.23	183.02		
10	t			0.36	0.54	0.71	1.00	1.43	1.75	2.04	2.56	2.92		
	J_{Max}			13.82	31.10	55.29	108.38	221.19	331.92	452.73	707.40	923.95		
	J_L			7.25	18.43	35.72	77.46	175.94	280.60	400.97	669.89	910.73		
	J			2.67	9.25	9.54	24.71	71.49	122.93	109.91	193.08	294.83		
12	t			0.36	0.54	0.71	1.00	1.43	1.75	2.04	2.56	2.92		
	J_{Max}			16.60	37.37	66.44	130.23	265.78	398.84	544.00	850.00	1110.20		
	J_L			8.90	22.64	43.88	95.16	216.14	344.71	492.58	822.95	1110.20		
	J			4.01	13.68	14.38	36.84	105.51	180.86	163.51	286.21	435.24		
16	t	0.16	0.24	0.33	0.46	0.64	0.79	0.92	1.15	1.31				
	J_{Max}	4.45	10.02	18.62	36.50	71.33	107.05	146.01	228.14	297.99				
	J_L	3.39	8.64	17.61	36.50	71.33	107.05	146.01	228.14	297.99				
	J	0.68	2.28	2.64	6.67	17.60	30.05	27.60	48.07	72.67				
20	t	0.16	0.24	0.33	0.46	0.64	0.79	0.92	1.15	1.31				
	J_{Max}	5.58	12.57	23.35	45.78	89.47	134.26	183.13	286.14	373.73				
	J_L	4.60	11.69	23.35	45.78	89.47	134.26	183.13	286.14	373.73				
	J	1.11	3.67	4.31	10.78	28.21	48.00	44.55	77.34	116.47				
24	t	0.16	0.24	0.33	0.46	0.64	0.79	0.92	1.15	1.31				
	J_{Max}	6.71	15.12	28.07	55.03	107.56	161.41	220.15	344.00	449.30				
	J_L	5.65	14.36	28.07	55.03	107.56	161.41	220.15	344.00	449.30				
	J	1.64	5.39	6.40	15.89	41.34	70.20	65.63	113.68	170.72				
30	t	0.16	0.24	0.33	0.46	0.64	0.79	0.92	1.15	1.31				
	J_{Max}	3.89	8.76	16.27	31.90	62.35	93.56	127.62	199.41	260.46				
	J_L	3.36	8.55	16.27	31.90	62.35	93.56	127.62	199.41	260.46				
	J	2.64	8.55	10.29	25.39	62.35	93.56	104.78	181.10	260.46				
36	t	0.16	0.22	0.31	0.44	0.61	0.77	0.88						
	J_{Max}	10.08	18.71	36.68	74.87	146.76	229.31	299.51						
	J_L	10.08	18.71	36.68	74.87	146.76	229.31	299.51						
	J	3.67	4.43	10.91	30.03	45.00	77.68	116.21						

RTX450

Main dimensions

Ø180
Ø125
44
80
112
117
153*
36*
195

Ø70 h6
Ø22 H11
184

6xM6x12 | Ø56
2xØ6H7x12 | Ø56 ±0.02
2xØ8H7x16 | Ø85 ±0.02
4xM8x16 | Ø85

4x90°
45°
6x60°

413.5*
65.5*
72*
18
10*
4xM8
4xM6x10
R243*
R148
53
50
80.5
95 ±0.02
69.5
84 ±0.02
R370*
2xØ8H7
134± 0.02
150
165

149.5
118 ± 0.02
2xØ6H7x10
4xM6x10
6.25
73.75

DIN 332 - DR M6
DIN 6885 -
A - 6 x 6 x 32
Ø19 h6
Ø19 h6
40
41
40
41

Ø22 H11
Ø68
21
133

RTX450

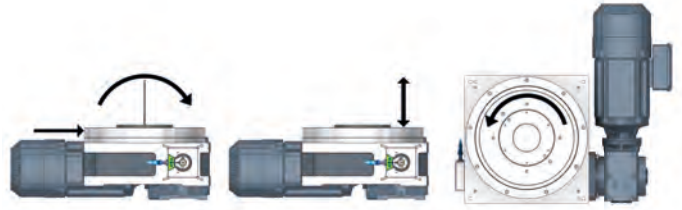## Fitting position

upside down   horizontal   vertical
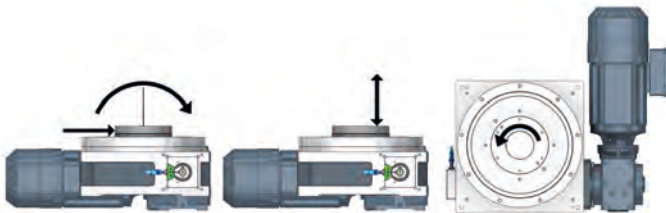
Load on output flange
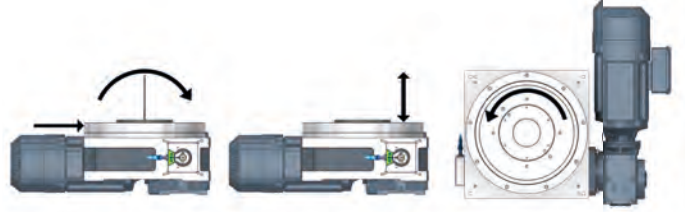
Radial force F_{rA} [N] 17.5   Axial force F_{aA} [kN] 20   Torque on output flange [Nm] 322

Tilting moment M_{kA} [kNm] 1.3

Load on central column
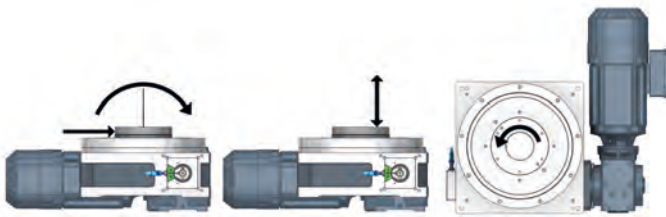
Radial force F_{rM} [kN] 2.7   Axial force F_{aM} [kN] 18   Torque on output flange [Nm] 77

Tilting moment M_{kM} [kNm] 0.36

Precision

Axial runout on the output flange ø [mm]	0.01
Runout on the output flange ø [mm]	0.01
Indexing accuracy * in angular seconds ["]	± 35

* Increased indexing accuracy accessible through selected components
  From division 16, the division error due to multi-point locks on the
  drive cam is larger by a factor of 1.5"

Combined loads and possible process forces must be
confirmed by Motion Index Drives.

Dimensions

Output flange ø	[mm]	125
Overall height (output flange screw-on suface)	[mm]	112
Center opening ø	[mm]	22
Recommended max. size of rotating plate ø	[mm]	800
Index table weight	[kg]	30
Number of indexes Other numbers on request	n	2, 3, 4, 6, 8, 10, 12, 16, 20, 24, 30, 36

Standard drive

Motor size		IEC63-71
Gear size (Center distance)		37 / 19
Voltage (other voltages on request)	[V]	230 / 400
Power	[kW]	0.12 – 1.5

RTX450 Load table

n = Number of stops / 360° revolution of output flange

t = Step time in [s]

J_{Max} = Mass moment of inertia (base plate + fixtures and parts) in [Kgm²] Without motor and lifetime

J_L = Mass moment of inertia by life time (base plate + fixtures and parts) in [Kgm²]

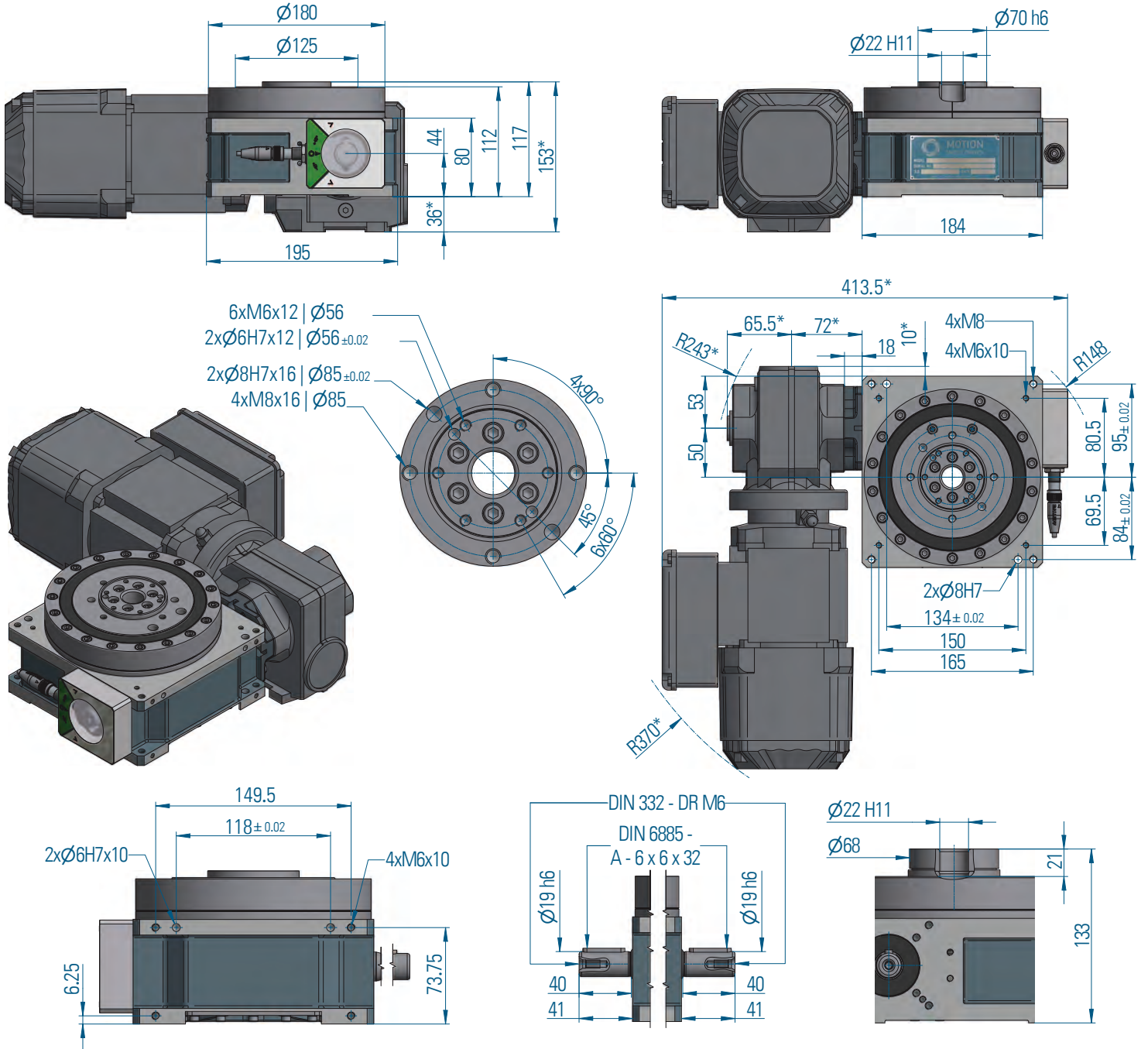J = Mass moment of inertia with motor (base plate + fixtures and parts) in [Kgm²]

Speed	Step	1	2	3	4	5	6	7	8	9	10	11	12	13
n	n													
2	t		0.25	0.38	0.55	0.75	1.04	1.52	1.79	2.21	2.45	2.89	3.32	4.28
	J_{Max}		0.81	1.96	4.13	7.68	14.88	31.78	44.09	66.96	82.25	114.40	151.48	251.87
	J_L		0.21	0.59	1.4	2.86	6.14	14.7	21.41	34.63	43.87	64.11	88.55	158.9
	J		0.06	0.59	0.58	1.55	4.05	8.93	21.41	33.11	43.87	51.06	88.55	158.90
3	t		0.252	0.35	0.55	0.71	1.00	1.44	1.77	2.07	2.21	2.60	3.27	3.99
	J_{Max}		1.32	2.62	6.33	10.54	20.81	43.56	65.44	90.27	102.48	141.84	224.84	334.85
	J_L		0.43	0.94	2.61	4.69	10.26	24.01	38.33	55.49	64.21	93.31	158.5	250.58
	J		0.42	0.86	1.36	4.69	10.26	2.,01	32.48	53.63	64.21	93.31	158.50	250.58
4	t		0.22	0.33	0.49	0.66	0.92	1.27	1.58	1.68	2.04	2.44	2.75	3.58
	J_{Max}		1.76	4.03	8.64	16.04	31.06	59.42	92.02	103.70	152.76	217.99	277.40	470.84
	J_L		0.59	1.53	3.68	7.51	16.07	33.89	56.04	64.3	100.39	151.11	199.37	366.34
	J		0.47	1.22	2.52	6.77	16.07	33.89	56.04	64.30	72.44	151.11	199.37	243.26
5	t		0.22	0.33	0.48	0.66	0.87	1.33	1.68	1.86	2.04	2.44	2.93	3.58
	J_{Max}		1.97	4.49	9.42	17.87	30.65	72.35	115.53	141.42	170.19	242.87	352.23	524.58
	J_L		0.67	1.75	4.1	8.57	15.94	42.81	73.33	92.53	114.49	172.34	264.28	417.83
	J		0.67	1.75	2.40	8.57	14.35	38.00	73.33	92.53	114.25	172.34	210.43	383.36
6	t		0.22	0.33	0.48	0.66	0.87	1.27	1.58	1.68	2.04	2.59	2.93	3.58
	J_{Max}		2.67	6.09	12.77	24.22	41.54	89.72	138.95	156.58	230.66	371.71	477.38	710.95
	J_L		1.04	2.69	6.3	13.16	24.47	59.33	98.11	11.,56	175.74	304.21	405.64	641.3
	J		1.04	2.69	3.54	13.16	20.92	59.33	98.11	112.56	165.94	207.30	305.94	556.39
8	t	0.19	0.22	0.33	0.48	0.66	0.87	1.33	1.58	1.86	2.03	2.59	2.93	3.58
	J_{Max}	2.58	3.57	7.91	17.07	32.36	55.50	131.02	185.65	256.08	304.39	496.63	637.81	949.88
	J_L	1.05	1.53	3.83	9.29	19.39	36.07	96.85	144.6	209.31	255.34	448.34	597.81	945.12
	J	1.05	1.53	3.22	6.53	19.39	36.07	96.85	106.72	176.21	223.92	375.48	552.82	945.12
10	t	0.19	0.22	0.28	0.48	0.60	0.87	1.33	1.58	1.86	2.03	2.59	2.93	
	J_{Max}	3.16	4.38	7.00	21.36	33.08	69.44	163.93	232.28	320.40	380.84	621.36	798.00	
	J_L	1.38	2.02	3.46	12.51	20.7	48.57	130.42	194.71	281.86	343.83	603.71	798	
	J	1.38	2.02	3.46	10.53	20.70	48.57	130.42	170.20	280.10	343.83	595.92	798.00	
12	t	0.20	0.22	0.33	0.48	0.60	0.92	1.27	1.58	1.86	2.03	2.59	2.93	
	J_{Max}	3.74	4.76	10.54	22.75	35.23	83.52	159.75	247.41	341.26	405.64	661.82	849.97	
	J_L	1.66	2.19	5.47	13.26	21.93	59.19	124.78	206.36	298.71	364.38	639.8	849.97	
	J	1.54	2.19	5.47	13.26	21.93	47.15	124.78	206.36	298.71	364.38	639.80	849.97	
16	t			0.16	0.23	0.32	0.44	0.64	0.75	0.92	1.03	1.24	1.41	
	J_{Max}			3.60	7.95	15.57	28.58	61.05	82.13	124.73	157.96	226.51	293.74	
	J_L			2.79	6.95	15.06	28.58	61.05	82.13	124.73	157.96	226.51	293.74	
	J			0.98	3.30	3.91	20.66	45.31	71.13	112.56	157.96	226.51	254.11	
20	t			0.16	0.23	0.32	0.44	0.64	0.84	0.91	1.03	1.24	1.41	
	J_{Max}			4.51	9.95	19.49	35.77	76.41	129.73	154.20	197.71	283.51	367.66	
	J_L			3.76	9.36	19.49	35.77	76.41	129.73	154.2	197.71	283.51	367.66	
	J			1.58	5.28	6.35	32.72	71.72	106.69	135.00	162.11	283,51	367.66	
24	t			0.16	0.23	0.32	0.44	0.61	0.76	0.91	1.03	1.22	1.41	
	J_{Max}			4.80	10.60	20.77	38.11	74.47	112.90	164.27	210,.62	292.94	391.66	
	J_L			3.99	9.9	20.77	38.11	74.47	112.9	164.27	210.62	292.94	391.66	
	J			2.34	7.74	9.40	38.11	63.28	112.90	164.27	210.62	292.94	391.66	
30	t			0.16	0.23	0.32	0.43	0.64	0.76	0.91	1.03	1.24	1.40	
	J_{Max}			6.01	13.26	25.97	46.23	101.80	141.19	205.44	263.40	377.71	485.08	
	J_L			5.35	13.26	25.97	46.23	101.8	141.19	205.44	263.4	377.71	485.08	
	J			3.75	1.,29	15.05	46.23	101.80	141.19	205.44	263.40	377.71	485.08	
36	t			0.16	0.21	0.29	0.43	0.56	0.61	0.65	0.82	0.93		
	J_{Max}			7.96	14.34	28.64	61.17	103.86	124.99	139.12	226.99	291.52		
	J_L			7.96	14.34	28.64	61.17	103.86	124.99	139.12	226.99	291.52		
	J			5.25	9.03	28.64	61.17	103.86	124.99	139.12	226.99	291.52		

From n=16 The output flange steps 2 times per cam revolution

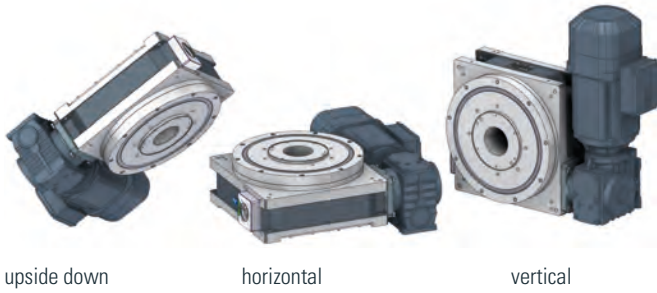From n=36 The output flange steps 3 times per cam revolution

RTX550

Basic Version

2xØ8H7x15 | Ø130 ±0.02
4xM8x15 | Ø130

2xØ8H7x20

70.5 ± 0.02
35.5 ± 0.02
170 ± 0.02

469.5*
65.5*
92*
38
R274*
R182
8xM6x10
72
63
90.93
120
52.5
52.5
85
90.93
105
170
18196

Fixed
Rotation

R382*

Distance (fixed version)

140
110 ± 0.02
2xØ8H7x12
4xM8x16
15
95

DIN 332 - DR M10
DIN 6885 -
A - 8 x 7 x 25
Ø25 h6
Ø25 h6
33
35
33
35

30°
6x60°
2xØ6H7x15 | Ø64 ±0.02
6xM6x12 | Ø64
Ø25 H11

Stationary
Rotating
141
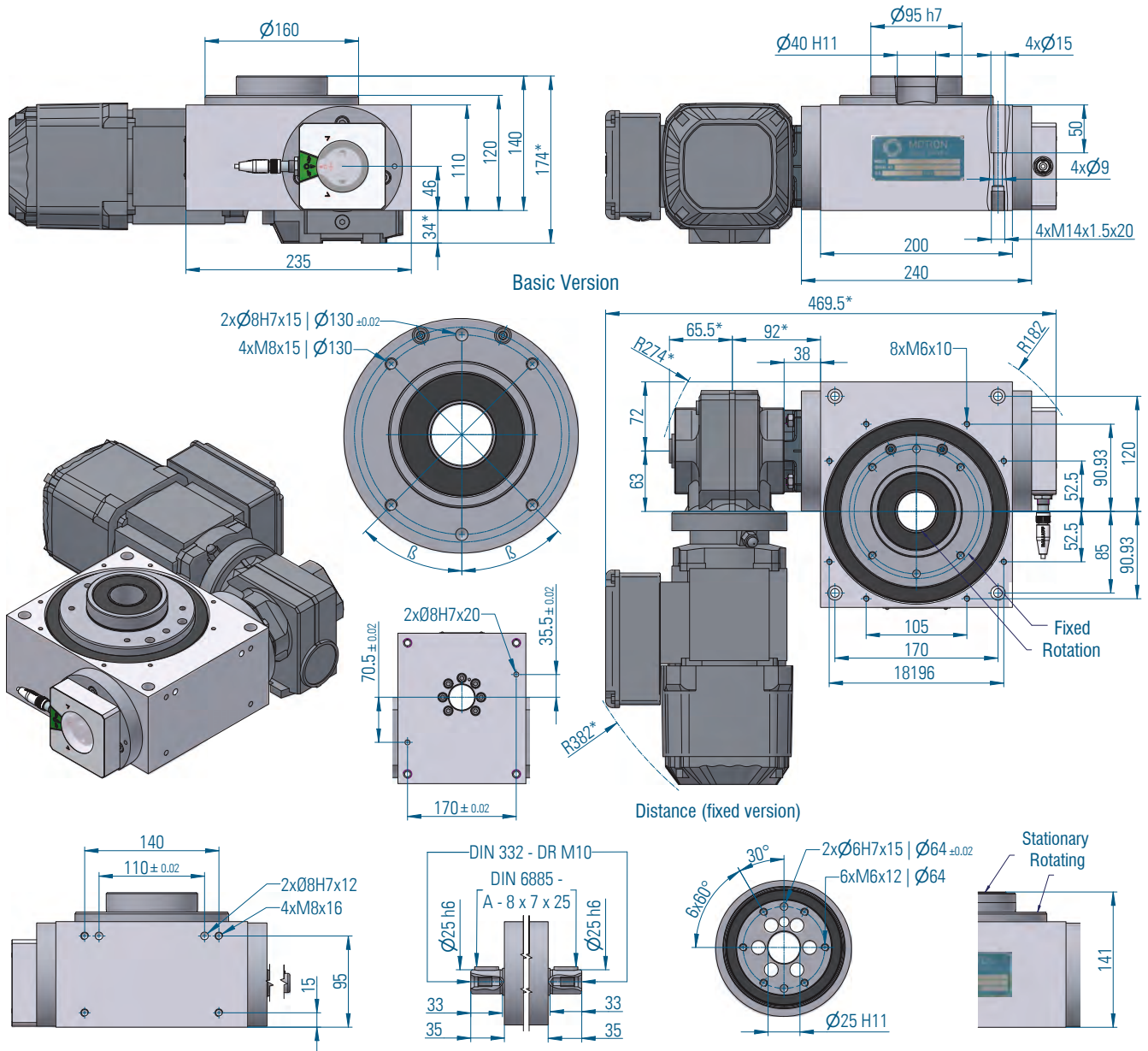
Position of the hole pattern in the output flange

Stop number	Quantity bolts	Angle ß	Torsion fitting holes
2; 4; 6; 8; 16	6-8	45°	–
3	9	30°	one-sided 10°CCW
5; 10	10	36°	–
12; 36	12	30°	–

Further stop numbers you can find in the RTF/RTX550 dimension sheet at our website.

* Dimensions depend on the used drive

RTX550

Fitting position
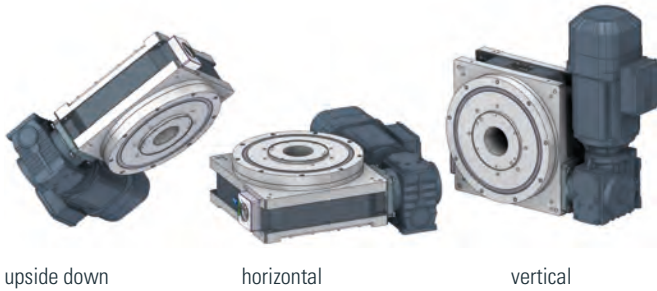
upside down   horizontal   vertical

Load on output flange
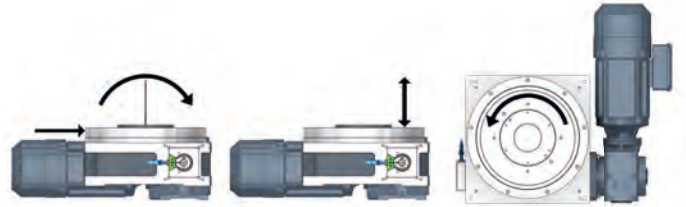
Radial force F_{rA} [kN] 23   Axial force F_{aA} [N] 18.4   Torque on output flange [Nm] 508

Tilting moment M_{kA} [kNm] 1.0

Load on central column
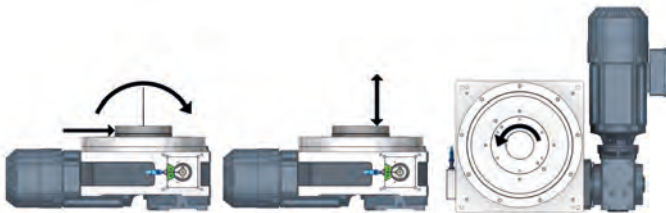
Radial force F_{rM} [kN] 2.7   Axial force F_{aM} [kN] 18   Torque on output flange [Nm] 77

Tilting moment M_{kM} [kNm] 0.36

Precision

Axial runout on the output flange ø [mm]	0.015
Runout on the output flange ø [mm]	0.015
Indexing accuracy * in angular seconds ["]	± 30

* Increased indexing accuracy accessible through selected components
 From division 16, the division error due to multi-point locks on the
 drive cam is larger by a factor of 1.5"

**Combined loads and possible process forces must be
confirmed by Motion Index Drives.**

Dimensions

Output flange ø	[mm]	160
Overall height (output flange screw-on suface)	[mm]	120
Center opening ø	[mm]	40
Recommended max. size of rotating plate ø	[mm]	1000
Index table weight	[kg]	24
Number of indexes Other numbers on request	n	2, 3, 4, 6, 8, 10, 12, 16, 20, 24, 30, 36

Standard drive

Motor size		IEC63 - 71
Gear size (Center distance)		37 / 19
Voltage (other voltages on request)	[V]	230 / 400
Power	[kW]	0.12 – 1.5

RTX550 Load table

n = Number of stops / 360° revolution of output flange

t = Step time in [s]

J_{Max} = Mass moment of inertia (base plate + fixtures and parts) in [Kgm²] Without motor and lifetime

J_L = Mass moment of inertia by life time (base plate + fixtures and parts) in [Kgm²]

J = Mass moment of inertia with motor (base plate + fixtures and parts) in [Kgm²]

From n=16 The output flange steps 2 times per cam revolution

From n=36 The output flange steps 3 times per cam revolution

Speed	Step	1	2	3	4	5	6	7	8	9	10	11	12	13
n														
2	t			0.55	0.77	1.04	1.52	1.79	2.11	2.30	2.89	3.32		
	J_{Max}			5.46	10.70	19.66	42.00	58.26	80.37	95.54	151.19	200.20		
	J_L			1.71	3.73	7.51	18.01	26.25	38.00	46.37	78.62	108.58		
	J			0.36	2.28	3.30	7.33	19.76	31.58	41.58	45.47	105.27		
3	t			0.54	0.72	1.00	1.44	1.77	1.98	2.21	2.89			
	J_{Max}			8.89	15.55	30.13	63.09	94.78	119.62	148.42	253.57			
	J_L			3.00	5.72	12.26	28.70	45.83	59.90	76.78	142.15			
	J			0.32	5.72	12.26	21.42	26.52	59.90	64.55	98.52			
4	t		0.36	0.52	0.73	0.98	1.43	1.68	1.97	2.30	2.75			
	J_{Max}		5.38	11.33	22.45	40.76	87.08	120.79	166.61	225.34	323.14			
	J_L		2.20	5.20	11.42	22.69	54.34	79.16	114.60	162.18	245.49			
	J		2.01	1.45	2.43	11.69	25.86	67.45	107.25	162.18	239.92			
5	t		0.36	0.56	0.72	0.98	1.45	1.68	2.12	2.30	2.75			
	J_{Max}		6.76	16.99	27.89	51.19	112.73	151.66	241.19	282.94	405.73			
	J_L		3.00	8.69	15.37	30.91	76.64	107.79	183.79	220.82	334.25			
	J		3.00	5.83	12.80	18.82	67.79	106.98	149.62	220.82	334.25			
6	t		0.36	0.56	0.72	0.98	1.43	1.68	2.07	2.30	2.75			
	J_{Max}		11.02	27.69	45.43	83.37	178.07	246.99	375.13	460.77	660.73			
	J_L		5.15	14.86	26.28	52.83	126.45	184.21	297.88	377.35	571.17			
	J		4.48	8.15	17.75	26.23	57.87	147.27	222.49	377.35	520.14			
8	t		0.36	0.52	0.73	0.98	1.43	1.68	2.07					
	J_{Max}		14.74	31.01	61.42	111.48	238.11	330.26	501.59					
	J_L		7.62	17.93	39.35	78.12	186.97	272.37	440.44					
	J		7.62	6.81	11.75	48.72	107.33	267.99	404.90					
10	t		0.31	0.48	0.60	0.87	1.27	1.58	1.86					
	J_{Max}		14.34	33.72	52.23	109.66	236.85	366.81	505.97					
	J_L		7.69	20.57	34.03	79.87	193.64	320.23	463.55					
	J		7.69	8.71	18.39	54.47	73.29	150.52	252.95					
12	t		0.33	0.48	0.60	0.87	1.27	1.58						
	J_{Max}		15.01	32.40	50.18	105.35	227.55	352.40						
	J_L		8.12	19.69	32.57	76.44	185.32	306.47						
	J		6.61	13.35	27.72	76.44	111.12	225.39						
16	t	0.23	0.32	0.44	0.64	0.76	0.89	1.03						
	J_{Max}	12.54	24.57	45.10	96.33	133.62	18431	249.28						
	J_L	11.41	24.57	45.10	96.33	133.62	184.31	249.28						
	J	3.00	12.91	19.61	43.08	102.90	161.35	249.28						
20	t	0.23	0.32	0.44	0.64	0.84	0.92	1.03						
	J_{Max}	12.56	23.32	45.18	96.51	163.86	197.20	249.74						
	J_L	11.54	23.32	45.18	96.51	163.86	197.20	249.74						
	J	4.96	12.49	31.56	69.27	102.54	172.78	249.74						
24	t	0.23	0.32	0.44	0.64	0.76	0.91	1.03						
	J_{Max}	15.09	28.02	54.27	115.92	160.79	233.95	299.96						
	J_L	14.71	28.02	54.27	115.92	160.79	233.95	299.96						
	J	7.40	18.48	46.38	101.73	160.79	191.29	299.96						
30	t	0.23	0.32	0.44	0.61	0.71	0.88	1.03						
	J_{Max}	18.88	35.05	67.89	132.67	178.48	271.08	375.21						
	J_L	18.88	35.05	67.89	132.67	178.48	271.08	375.21						
	J	11.98	29.62	67.89	98.10	148.04	234.82	366.41						
36	t	0.15	0.21	0.29	0.43	0.50	0.61	0.65	0.82					
	J_{Max}	9.75	18.11	36.17	77.28	107.19	155.97	175.76	286.77					
	J_L	9.75	18.11	36.17	77.28	107.19	155.97	175.76	286.77					
	J	3.38	8.88	31.69	69.46	107.19	130.89	175.76	286.77					

RTX650

Main dimensions

Ø245
Ø185
140
145
162*
108
63
17*
260

Ø100 h6
Ø50 H11
250

2xØ6H7x12 | Ø80 ±0.02
6xM6x12 | Ø80
2xØ8H7x16 | Ø120 ±0.02
4xM8x16 | Ø120

4x90°
45°
67.5°

479.5*
R285*
65.5*
72*
18
5*
4xØ8.5
4xM8-15
R194
58
77
100
125±0.02
100
110±0.02
2xØ8H7
196±0.02
200
220
R378*

180
150±0.02
2xØ8H7x12
4xM8x15
10
98

DIN 332 - DR M6
DIN 6885 -
A - 8 x 7 x 40
Ø24 h6
Ø24 h6
50
52
50
52

Ø50 H11
Ø98
26
166
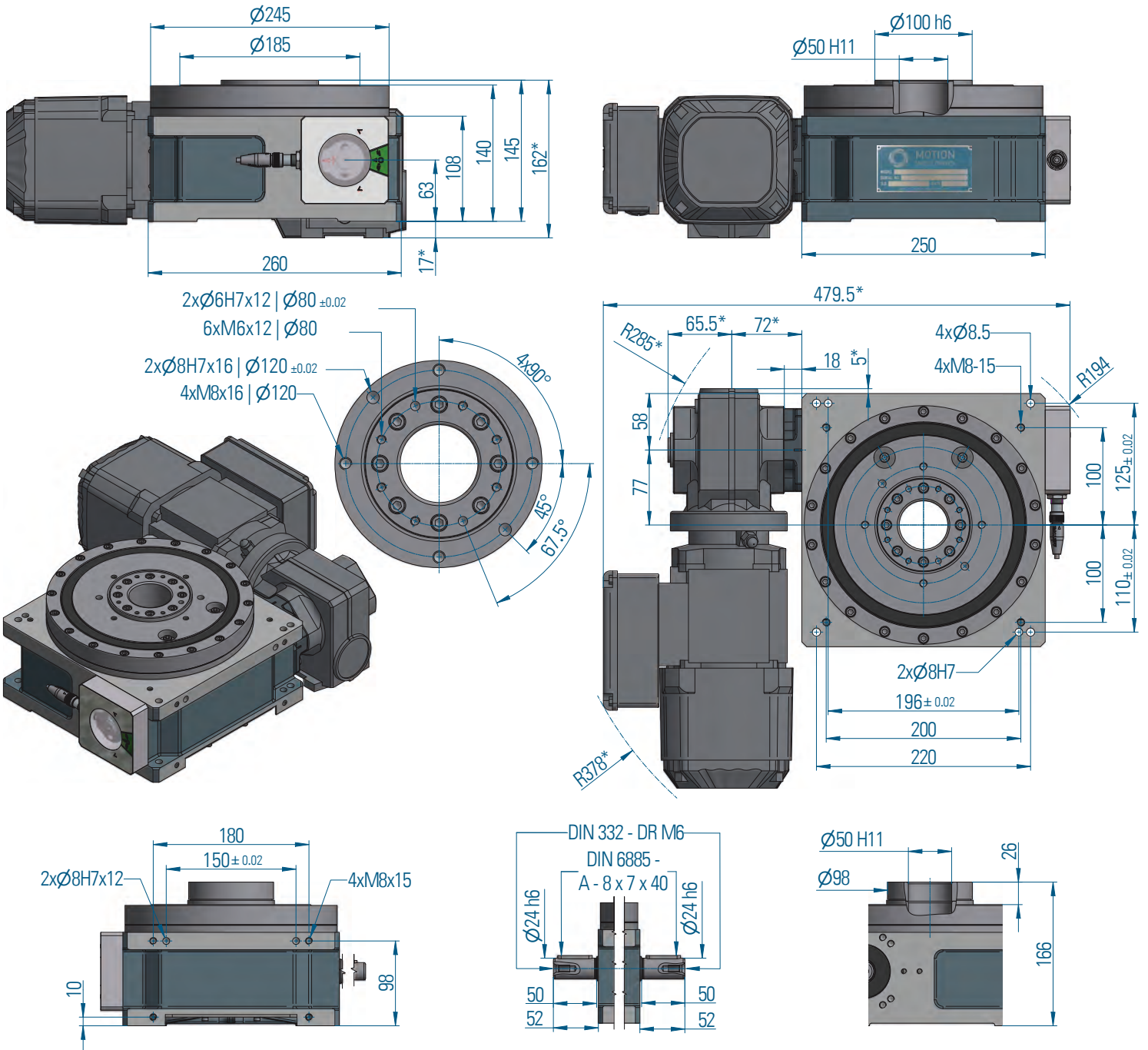
RTX650

Fitting position

upside down   horizontal   vertical

Load on output flange
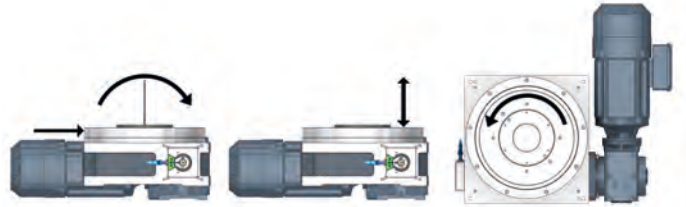
Radial force F_{rA} [kN] 20   Axial force F_{aA} [kN] 22.5   Torque on output flange [Nm] 833

Tilting moment M_{kA} [kNm] 2.3

Load on central column
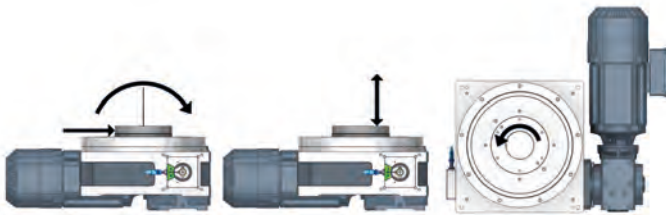
Radial force F_{rM} [kN] 4,1   Axial force F_{aM} [kN] 14   Torque on output flange [Nm] 170

Tilting moment M_{kM} [kNm] 0.85

Precision

Axial runout on the output flange ø [mm]	0.01
Runout on the output flange ø [mm]	0.01
Indexing accuracy * in angular seconds ["]	± 25

* Increased indexing accuracy accessible through selected components
  From division 16, the division error due to multi-point locks on the
  drive cam is larger by a factor of 1.5"

**Combined loads and possible process forces must be
confirmed by Motion Index Drives.**

Dimensions

Output flange ø	[mm]	185
Overall height (output flange screw-on suface)	[mm]	140
Center opening ø	[mm]	50
Recommended max. size of rotating plate ø	[mm]	1300
Index table weight	[kg]	38
Number of indexes Other numbers on request	n	2, 3, 4, 6, 8, 10, 12, 16, 20, 24, 30, 36

Standard drive

Motor size		IEC71 / 80
Gear size (Center distance)		37 / 19
Voltage (other voltages on request)	[V]	230 / 400
Power	[kW]	0.12 – 1.5

RTX650 Load table

n = Number of stops / 360° revolution of output flange

t = Step time in [s]

J_{Max} = Mass moment of inertia (base plate + fixtures and parts) in [Kgm²] Without motor and lifetime

J_L = Mass moment of inertia by life time (base plate + fixtures and parts) in [Kgm²]

J = Mass moment of inertia with motor (base plate + fixtures and parts) in [Kgm²]

From n=16 The output flange steps 2 times per cam revolution

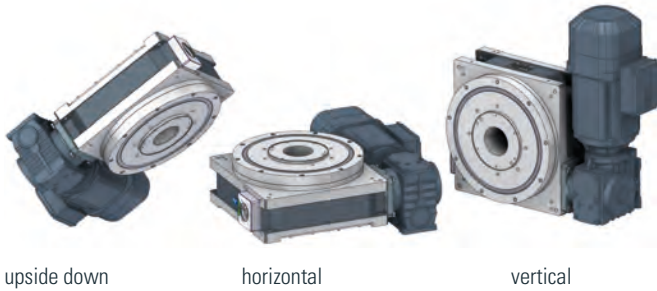From n=36 The output flange steps 3 times per cam revolution

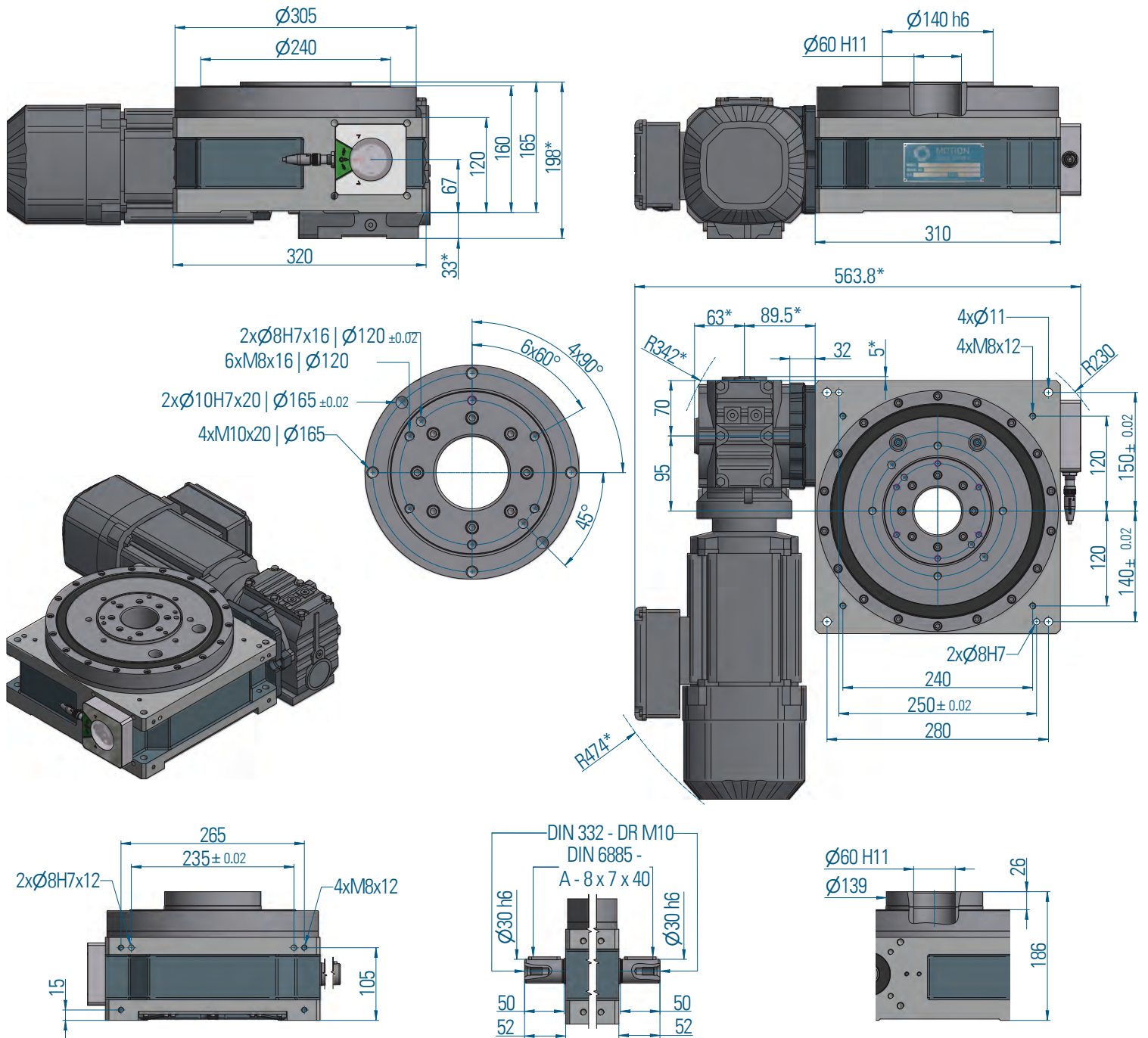| Speed	Step	1	2	3	4	5	6	7	8	9	10	11	12	13
n														
2	t		0.25	0.38	0.55	0.75	1.04	1.52	1.79	2.08	2.45	2.93	3.32	4.28
	J_{Max}		2.23	5.20	10.98	20.52	39.56	84.52	117.24	158.02	218.73	313.67	402.85	669.83
	J_L		0.65	1.77	4.22	8.68	18.49	44.31	64.56	91.01	132.28	200.24	267.00	479.16
	J		0.19	0.51	0.30	3.05	3.03	6.77	18.59	38.56	63.19	67.10	99.76	140.48
3	t		0.23	0.35	0.55	0.71	1.00	1.42	1.77	1.98	2.26	2.76	3.13	4.05
	J_{Max}		3.53	8.26	19.98	33.25	65.66	133.35	206.53	260.65	338.64	505.51	649.23	1089.56
	J_L		1.09	2.94	8.16	14.68	32.13	72.59	120.06	156.90	212.02	336.11	448.18	812.91
	J		0.40	0.63	0.83	8.91	17.97	13.74	27.40	95.60	61.93	51.41	78.82	426.00
4	t		0.22	0.31	0.49	0.66	0.92	1.33	1.66	1.94	2.12	2.44	2.93	3.58
	J_{Max}		3.05	6.23	15.01	28.18	54.04	113.00	175.02	241.42	286.97	379.36	550.19	819.40
	J_L		1.08	2.48	6.84	14.14	29.92	69.91	115.63	167.40	204.21	281.49	431.67	682.47
	J		0.35	1.27	2.03	13.24	15.60	20.89	41.29	69.98	92.59	171.50	119.05	224,80
5	t		0.22	0.31	0.49	0.66	0.92	1.33	1.66	1.94	2.12	2.44	2.75	3.58
	J_{Max}		4.16	8.48	21.02	37.91	73.43	153.55	237.82	328.05	389.94	515.47	655.96	1113.38
	J_L		1.48	3.39	9.66	19.06	40.78	95.28	157.59	228.13	278.29	383.61	506.13	930.03
	J		0.56	1.95	5.68	9.14	23.49	31.80	62.43	105.30	139.01	256.13	354.02	338.58
6	t		0.22	0.33	0.49	0.67	0.92	1.27	1.58	1.86	2.03	2.59	2.93	3.58
	J_{Max}		5.01	11.13	24.57	46.98	88.38	169.06	261.84	361.18	429.32	700.48	899.62	1339.79
	J_L		1.91	4.82	12.01	25.33	52.41	110.53	182.80	264.62	322.81	566.83	755.81	1194.93
	J		0.86	1.22	4.73	22.60	34.48	21.71	46.97	81.12	104.56	176.32	266.16	497.17
8	t	0.20	0.22	0.33	0.49	0.66	0.92	1.33	1.66	1.94	2.07	2.44	3.07	
	J_{Max}	5.27	6.71	14.89	32.86	61.00	118.15	247.03	382.58	527.71	599.07	829.19	1314.39	
	J_L	2.15	2.84	7.13	17.74	36.16	77.36	180.67	298.80	432.53	500.44	727.30	1235.35	
	J	0.33	1.67	2.45	8.98	25.08	63.31	87.98	169.95	283.51	400.91	677.60	895.26	
10	t	0.20	0.23	0.33	0.48	0.66	0.87	1.27	1.58	1.86	2.03	2.59	2.93	
	J_{Max}	6.61	9.16	18.64	40.26	76.35	130.95	282.85	438.05	604.24	718.23	1171.84	1504.97	
	J_L	2.90	4.24	9.62	23.34	48.74	90.64	219.77	363.45	526.11	641.80	1126.91	1502.62	
	J	0.65	1.21	4.19	8.42	40.55	53.55	71.32	147.48	248.76	318.30	535.18	797.63	
12	t	0.20	0.22	0.33	0.49	0.66	0.92	1.33	1.66	1.94	2.12	2.40	2.93	
	J_{Max}	7.94	10.11	22.39	49.39	91.69	177.55	371.20	574.88	792.97	942.58	1208.51	1807.03	
	J_L	3.71	4.90	12.26	30.48	62.09	132.77	310.07	512.77	742.26	905.46	1205.02	1807.03	
	J	1.09	4.19	6.44	22.18	60.04	132.77	212.45	404.82	668.83	874.78	1048.87	1180.64	
16	t			0.17	0.23	0.32	0.47	0.64	0.76	0.89	1.03	1.24	1.40	
	J_{Max}			7.73	14.96	29.34	61.38	115.06	159.60	220.15	297.75	426.98	548.37	
	J_L			6.05	12.94	28.06	61.38	115.06	159.60	220.15	297.75	426.98	548.37	
	J			1.60	2.94	12.81	36.93	42.74	102.43	160.70	297.75	355.27	519,99	
20	t			0.16	0.23	0.32	0.44	0.64	0.76	0.89	0.97	1.22	1.40	
	J_{Max}			8.48	18.74	34.81	67.44	144.06	199.83	275.64	327.65	518.51	686.57	
	J_L			7.01	17.44	34.81	67.44	144.06	199.83	275.64	327.65	518.51	686.57	
	J			1.39	4.89	12.39	31.37	68.88	162.95	255.10	327.65	381.81	686.57	
24	t			0.16	0.23	0.32	0.44	0.64	0.76	0.91	0.97	1.22	1.41	
	J_{Max}			10.20	22.52	44.13	81.00	173.02	239.99	349.20	393.50	622.72	832.59	
	J_L			8.93	22.21	44.13	81.00	173.02	239.99	349.20	393.50	622.72	832.59	
	J			2.14	7.34	30.18	46.19	101.33	237.62	190.50	393.50	557.49	568.89	
30	t			0.16	0.23	0.32	0.44	0.64	0.76	0.91	0.97	1.22	1.38	
	J_{Max}			12.76	28.17	55.20	101.32	216.42	300.18	436.77	492.19	778.89	1000.32	
	J_L			12.00	28.17	55.20	101.32	216.42	300.18	436.77	492.19	778.89	1000.32	
	J			3.56	11.91	48.01	73.73	161.64	300.18	304.31	492.19	778.89	1000.32	
36	t				0.16	0.21	0.29	0.44	0.50	0.59	0.69	0.82	0.93	1.21
	J_{Max}				15.00	27.87	53.99	118.92	160.00	220.71	298.50	428.05	549.75	914.08
	J_L				15.00	27.87	53.99	118.92	160.00	220.71	298.50	428.05	549.75	914.08
	J				5.14	12.70	31.63	104.04	160.00	220.71	157.11	428.05	549.75	914.08

RTX750

Main dimensions

Ø305
Ø240
160
165
198*
120
67
320
33*

Ø140 h6
Ø60 H11
310

2xØ8H7x16 | Ø120 ±0.02
6xM8x16 | Ø120
2xØ10H7x20 | Ø165 ±0.02
4xM10x20 | Ø165

6x60°
4x90°
45°

563.8*
63*
89.5*
32
5*
4xØ11
4xM8x12
R342*
R230
70
95
120
150 ± 0.02
120
140 ± 0.02
2xØ8H7
240
250 ± 0.02
280
R474*

265
235 ± 0.02
2xØ8H7x12
4xM8x12
15
105

DIN 332 - DR M10
DIN 6885 -
A - 8 x 7 x 40
Ø30 h6
Ø30 h6
50
50
52
52

Ø60 H11
Ø139
26
186

RTX750

Fitting position

upside down   horizontal   vertical

Load on output flange
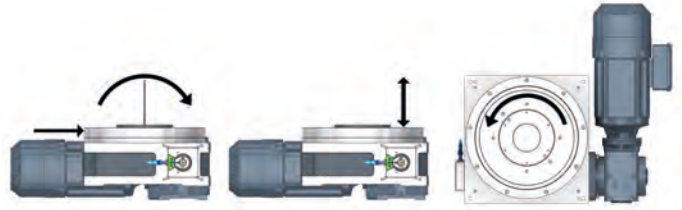
Radial force F_{rA} [kN] 20   Axial force F_{aA} [kN] 25   Torque on output flange [Nm] 1063

Tilting moment M_{kA} [kNm] 2.9

Load on central column

Radial force F_{rM} [kN] 3.8   Axial force F_{aM} [kN] 15   Torque on output flange [Nm] 200

Tilting moment M_{kM} [kNm] 0.95

Precision

Axial runout on the output flange ø [mm]	0.01
Runout on the output flange ø [mm]	0.01
Indexing accuracy * in angular seconds ["]	± 20

* Increased indexing accuracy accessible through selected components
  From division 16, the division error due to multi-point locks on the
  drive cam is larger by a factor of 1.5"

**Combined loads and possible process forces must be
confirmed by Motion Index Drives.**

Dimensions

Output flange ø	[mm]	240
Overall height (output flange screw-on suface)	[mm]	160
Center opening ø	[mm]	60
Recommended max. size of rotating plate ø	[mm]	1800
Index table weight	[kg]	85
Number of indexes Other numbers on request	n	2, 3, 4, 6, 8, 10, 12, 16, 20, 24, 30, 36

Standard drive

Motor size		IEC71 / 80
Gear size (Center distance)		47 / 57
Voltage (other voltages on request)	[V]	230 / 400
Power	[kW]	0.18 – 2.2

RTX750 Load table

Speed	Step	1	2	3	4	5	6	7	8	9	10	11	12	13
n	n													
2	t			0.34	0.60	0.71	1.06	1.42	1.76	2.10	2.37	3.12	3.55	4.17
	J_{Max}			6.03	19.07	26.67	59.37	105.44	162.73	231.33	295.91	513.05	661.92	916.99
	J_L			1.66	6.47	9.55	24.08	46.68	76.94	115.33	153.09	288.31	386.48	562.26
	J			0.22	3.73	8.70	20.65	32.97	43.89	89.27	108.55	210.89	198.33	329.68
3	t			0.34	0.52	0.71	1.06	1.42	1.75	2.03	2.41	2.70	3.19	4.17
	J_{Max}			9.57	22.47	42.06	93.55	166.08	254.51	341.13	479.26	606.17	842.74	1443.88
	J_L			3.17	8.58	17.73	44.55	86.26	140.96	197.45	291.93	382.49	558.73	1037.84
	J			0.68	5.49	17.73	44.55	75.10	139.70	154.13	167.76	203.45	212.79	748.53
4	t			0.32	0.49	0.67	0.86	1.36	1.57	1.68	1.97	2.45	2.93	3.91
	J_{Max}			12.25	28.73	53.75	88.99	222.85	298.19	341.48	465.30	724.09	1031.78	1844.05
	J_L			4.26	11.47	23.64	42.27	121.59	169.99	198.68	283.59	471.62	708.72	1381.96
	J			1.05	7.76	23.64	27.21	30.17	48.30	60.40	282.02	296.01	665.27	1042.05
5	t			0.32	0.49	0.61	0.86	1.33	1.54	1.90	1.97	2.45	2.93	3.91
	J_{Max}			15.02	36.21	56.67	112.11	269.08	360.05	548.79	586.07	912.02	1299.55	2322.60
	J_L			5.68	15.76	26.42	57.97	158.75	221.93	360.36	388.66	646.32	971.21	1893.77
	J			4.42	12.38	15.84	43.16	118.23	181.14	338.61	388.66	467.27	971.21	1640.19
6	t			0.32	0.49	0.67	0.86	1.33	1.54	1.90	1.97	2.45	2.97	3.91
	J_{Max}			18.26	43.63	82.27	135.04	321.85	433.65	660.95	705.85	1098.40	1609.68	2797.22
	J_L			7.41	20.30	42.16	74.59	202.58	285.46	463.50	499.89	831.27	1290.10	2435.62
	J			4.51	18.12	42.16	62.98	202.58	263.35	463.50	499.89	679.15	1031.46	2377.78
8	t			0.32	0.50	0.62	0.90	1.36	1.61	1.72	1.99	2.44	2.99	3.94
	J_{Max}			25.16	60.05	94.63	198.18	452.28	631.86	723.57	963.02	1459.38	2184.00	3795.20
	J_L			11.36	31.01	52.35	122.57	316.65	465.14	543.60	755.20	1218.09	1936.54	3656.01
	J			3.41	14.90	18.82	20.70	134.09	148.00	184.92	285.13	444.50	1258.35	2867.23
10	t			0.32	0.50	0.62	0.88	1.18	1.61	1.72	1.99	2.44	2,99	
	J_{Max}			31.52	77.34	118.48	237.62	426.68	790.98	905.79	1205.53	1826.86	2733.93	
	J_L			15.35	43.20	70.59	157.20	308.23	626.85	732.58	1017.73	1641.50	2609.67	
	J			5.83	15.76	31.11	55.54	90.66	242.26	301.53	462.25	719.86	2004.02	
12	t			0.33	0.43	0.62	0.90	1.18	1.61	1.72	1.99	2.44	2.99	
	J_{Max}			39.52	67.05	142.31	297.97	512.43	949.92	1087.79	1447.75	2193.91	3283.21	
	J_L			20.57	37.82	89.95	210.46	392.63	798.47	933.14	1296.34	2090.86	3283.21	
	J			2.72	13.75	46.84	55.81	137.74	362.13	449.40	685.85	1067.19	2931.55	
16	t	0.17	0.23	0.33	0.46	0.63	0.77	0.89	1.02	1.34	1.50	2.04		
	J_{Max}	13.88	26.39	51.64	105.19	190.98	292.65	389.52	509.6	871.03	1092.65	2025.85		
	J_L	10.35	21.69	46.96	105.19	190.98	292.65	389.52	509.60	871.03	1092.65	2025.85		
	J	2.58	1.7	7.96	22.47	39.45	76.01	115.32	249.13	701.43	973.6	2025.85		
20	t	0.17	0.26	0.33	0.48	0.63	0.77	0.89	1.04	1.35	1.50	2.04		
	J_{Max}	17.42	42.42	64.7	137.6	239.22	363.92	484.37	661.64	1106.57	1368.56	2537.37		
	J_L	13.99	38.97	63.32	137.60	239.22	363.92	484.37	661.64	1106.57	1368.56	2537.37		
	J	4.3	6.95	13.24	26.75	64.43	76.6	116.31	196.99	767.59	1368.56	2537.37		
24	t	0.17	0.23	0.33	0.47	0.62	0.77	0.89	1.04	1.35	1.51	2.04		
	J_{Max}	20.94	39.48	77.75	164.13	285.32	437.2	581.89	794.85	1329.33	1667.55	3048.14		
	J_L	17.84	37.01	77.75	164.13	285.32	437.20	581.89	794.85	1329.33	1667.55	3048.14		
	J	6.45	3.01	19.87	27.01	59.93	114.59	173.16	291.39	1118.22	1526.05	3048.14		
30	t	0.15	0.23	0.33	0.48	0.62	0.77	0.89	1.04	1.32	1.51	2.04		
	J_{Max}	20.84	49.42	97.29	206.84	356.95	546.94	727.94	994.33	1594.13	2086.02	3813.07		
	J_L	18.41	49.42	97.29	206.84	356.95	546.94	727.94	994.33	1594.13	2086.02	3813.07		
	J	1.96	5.36	32.27	65.3	97.94	185.59	279.26	467.15	1594.13	2086.02	3813.07		
36	t	0.12	0.16	0.32	0.42	0.51	0.59	0.69	0.78	0.92	1.20	2.01		
	J_{Max}	15.18	26.47	109.38	190.18	291.43	387.89	529.87	675.06	925.29	1596.33	4446.48		
	J_L	15.18	26.47	109.38	190.18	291.43	387.89	529.87	675.06	925.29	1596.33	4446.48		
	J	1.46	3.61	19.5	42.53	80.27	120.54	201.03	353.4	550.44	802.71	3629.7		

RTX900

Main dimensions

Ø365
Ø285
174
182
223.5*
130
70.5
41.5*
385

Ø170 h6
Ø80 H11
375
650.5*

2xØ8H7x16 | Ø150± 0.02
6xM8x16 | Ø150
2xØ10H7x20 | Ø200 ± 0.02
4xM10x20 | Ø200

6x60°
4x90°
45°

78*
100*
28
4xØ11
4xM10x18
R270
R401*
82.5
115
160
182.5± 0.02
150
167.5± 0.02
2xØ8H7
310± 0.02
340
R534*

270
240± 0.02
2xØ8H7x8
4xM8x15
15
115

DIN 332 - DR M10
DIN 6885 -
A - 8 x 7 x 40
Ø30 h6
Ø30 h6
50
53
50
53

Ø80 H11
Ø168
31
205
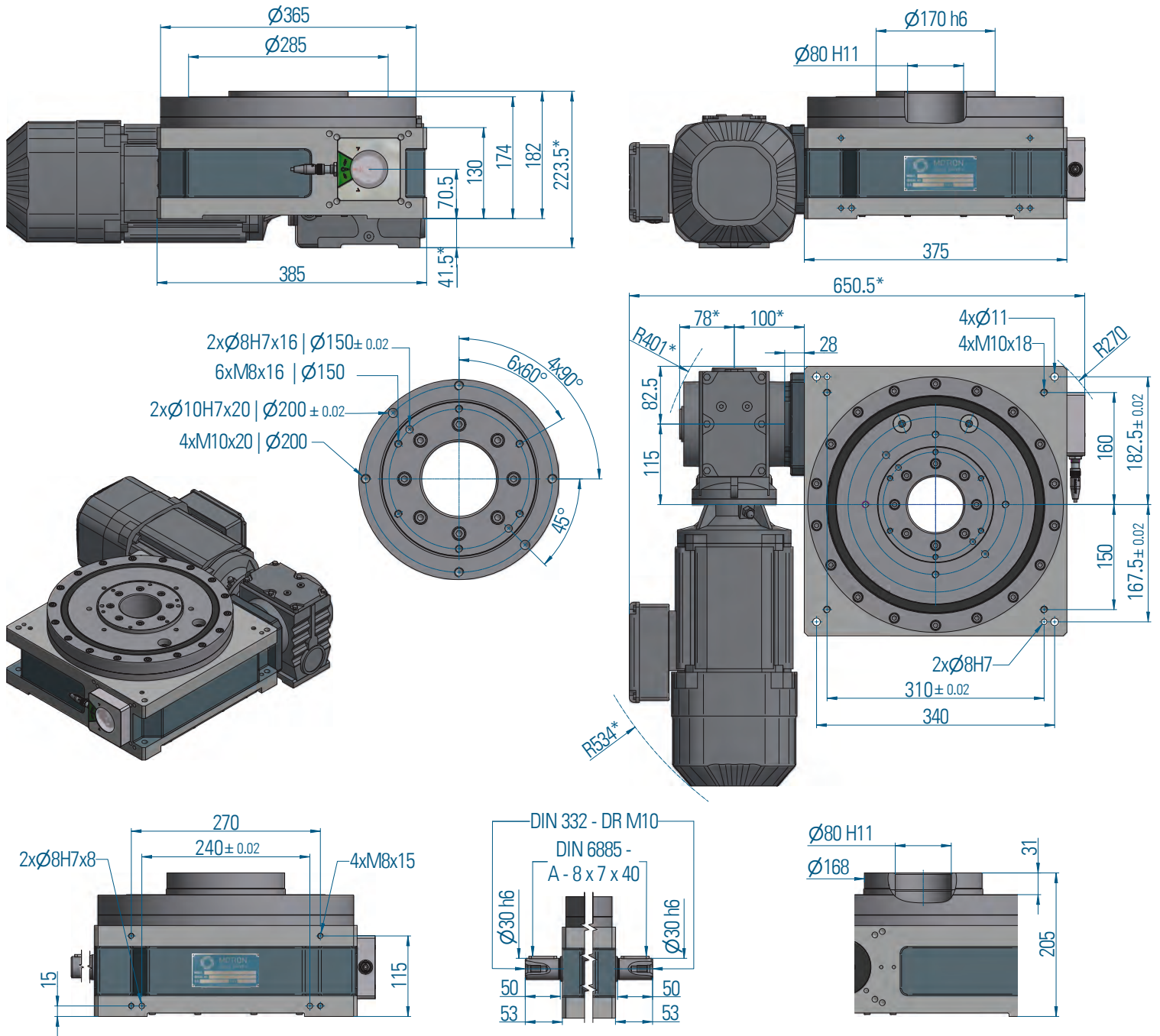
RTX900

Fitting position
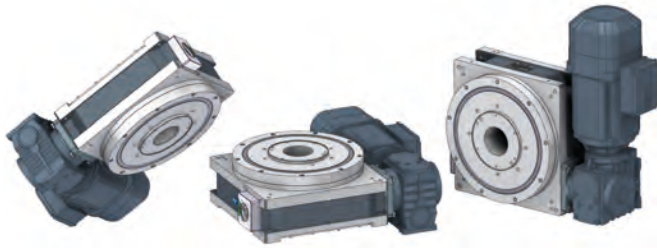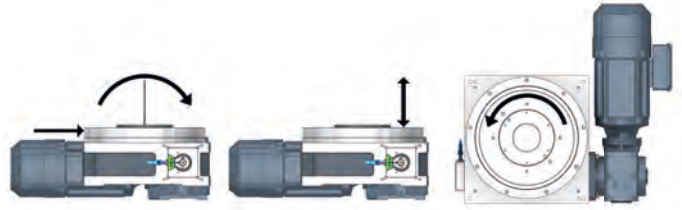

upside down   horizontal   vertical

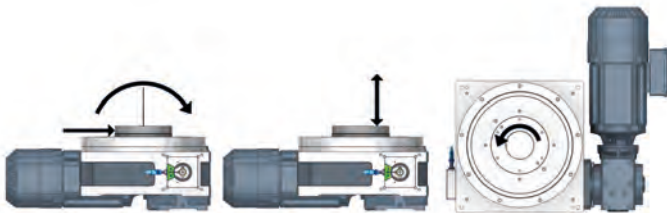## Load on output flange

Radial force F_{rA} [kN] 22   Axial force F_{aA} [kN] 25   Torque on output flange [Nm] 1572

Tilting moment M_{kA} [kNm] 3.5

Load on central column

Radial force F_{rM} [kN] 7   Axial force F_{aM} [kN] 25   Torque on output flange [Nm] 450

Tilting moment M_{kM} [kNm] 2.2

Precision

Axial runout on the output flange ø [mm]	0.01
Runout on the output flange ø [mm]	0.01
Indexing accuracy * in angular seconds ["]	± 16

* Increased indexing accuracy accessible through selected components
  From division 16, the division error due to multi-point locks on the
  drive cam is larger by a factor of 1.5"

**Combined loads and possible process forces must be
confirmed by Motion Index Drives.**

Dimensions

Output flange ø	[mm]	285
Overall height (output flange screw-on suface)	[mm]	174
Center opening ø	[mm]	80
Recommended max. size of rotating plate ø	[mm]	2200
Index table weight	[kg]	125
Number of indexes Other numbers on request	n	2, 3, 4, 6, 8, 10, 12, 16, 20, 24, 30, 36

Standard drive

Motor size		IEC71 / 90
Gear size (Center distance)		47 / 57
Voltage (other voltages on request)	[V]	230 / 400
Power	[kW]	0.25 – 3

RTX900 Load table

n = Number of stops / 360° revolution of output flange

t = Step time in [s]

J_{Max} = Mass moment of inertia (base plate + fixtures and parts) in [Kgm²] Without motor and lifetime

J_L = Mass moment of inertia by life time (base plate + fixtures and parts) in [Kgm²]

J = Mass moment of inertia with motor (base plate + fixtures and parts) in [Kgm²]

From n=16 The output flange steps 2 times per cam revolution

From n=36 The output flange steps 3 times per cam revolution

| Speed	Step	1	2	3	4	5	6	7	8	9	10	11	12	13
n														
2	t	0.48	0.56	0.75	1.07	1.50	1.86	2.14	2.46	3.11	3.48	4.34		
	J_{Max}	14.22	19.78	35.40	73.78	143.96	220.69	293.78	389.02	620.71	778.67	1209.43		
	J_L	4.27	6.31	12.47	29.20	63.15	103.29	143.57	198.34	339.51	440.68	731.27		
	J	0.14	0.61	6.58	12.60	25.14	49.80	76.57	198.34	284.24	390.54	539.37		
3	t	0.48	0.53	0.69	0.97	1.48	1.71	2.11	2.47	2.68	3.11	4.10		
	J_{Max}	22.93	28.38	48.88	96.83	224.32	300.20	457.63	625.16	739.55	995.41	1729.88		
	J_L	8.17	10.48	19.71	43.42	114.30	159.84	259.63	371.71	450.96	634.68	1198.38		
	J	0.72	2.63	4.28	13.66	31.27	51.61	102.68	173.68	224.32	634.68	1198.38		
4	t	0.32	0.49	0.61	0.91	1.33	1.63	1.74	2.01	2.47	2.92	4.01		
	J_{Max}	15.55	36.57	57.29	127.22	270.58	405.97	464.92	618.83	937.86	1307.20	2473.53		
	J_L	6.50	17.60	29.57	74.17	176.78	281.92	329.51	457.83	738.55	1081.99	2252.94		
	J	0.59	7.01	8.85	20.74	104.72	136.37	169.34	258.87	405.35	947.13	1081.23		
5	t	0.32	0.49	0.65	0.90	1.25	1.60	1.71	1.98	2.45	2.76	3.62		
	J_{Max}	22.74	54.45	93.63	179.92	348.82	573.92	657.24	874.78	1346.56	1703.12	2928.34		
	J_L	9.16	25.22	47.15	100.07	214.38	380.14	444.28	617.28	1013.74	1328.17	2477.09		
	J	1.12	6.59	10.60	17.03	28.68	118.41	148.04	232.18	276.64	333.49	794.00		
6	t	0.32	0.45	0.64	0.90	1.25	1.68	1.79	1.98	2.45	2.67	3.62		
	J_{Max}	27.47	53.14	109.68	216.98	420.62	756.37	866.17	1054.76	1623.57	1920.58	3530.68		
	J_L	11.89	25.54	58.91	129.22	276.74	543.50	635.19	796.70	1308.35	1587.20	3196.86		
	J	1.89	3.82	7.73	25.97	44.02	71.69	92.06	340.98	408.53	554.55	1165.34		
8	t	0.32	0.45	0.64	0.90	1.25	1.68	1.79	2.07	2.42	2.76	3.56		
	J_{Max}	36.20	71.22	146.93	290.59	563.25	1012.81	1159.82	1543.65	2108.54	2749.52	4585.24		
	J_L	17.37	37.96	87.43	191.66	410.34	805.79	941.71	1308.30	1872.65	2541.12	4575,57		
	J	2.14	7.99	16.05	50.55	86.57	142.25	180.58	285.15	490.78	916.40	1343.44		
10	t	0.32	0.45	0.64	0.89	1.25	1.68	1.82	1.98	2.45	2.76			
	J_{Max}	45.39	89.24	184.04	359.76	705.36	1268.30	1497.43	1768.57	2722.26	3443.02			
	J_L	23.53	51.34	118.14	255.46	554.15	1088.12	1317.11	1594.93	2619.06	3431.29			
	J	4.16	13.98	28.00	44.85	146.11	241.64	476.55	1006.27	1225.58	1484.27			
12	t	0.32	0.45	0.64	0.89	1.25	1.60	1.71	2.10	2.45	2.76			
	J_{Max}	54.56	107.24	221.10	432,18	847.29	1393.85	1596.16	2393.90	3269.89	4135.63			
	J_L	30.07	65.53	150.72	325.84	706.76	1252.83	1464.14	2333.56	3269.89	4135.63			
	J	6.93	21.88	43.82	71.31	223.47	777.15	961.41	1142.81	1815.01	2200.78			
16	t		0.25	0.31	0.45	0.65	0.81	0.93	1.09	1.24	1.39			
	J_{Max}		43.57	71.04	147.82	305.98	468.90	624.13	852.57	1111.79	1392.40			
	J_L		38.93	68.32	147.82	305.98	468.90	624.13	852.57	1111.79	1392.40			
	J		2.52	36.17	69.49	41.39	81.30	124.48	206.76	369.77	1172.11			
20	t		0.24	0.33	0.43	0.65	0.75	0.95	1.17	1.19	1.39			
	J_{Max}		53.00	99.04	165.84	383.46	513.12	806,38	1236.32	1272,96	1744.82			
	J_L		50.83	99.04	165.84	383.46	513.12	806.38	1236.32	1272.96	1744.82			
	J		2.94	20.97	27.74	69.59	108.70	311.54	751.28	1204.99	1744.82			
24	t		0.24	0.33	0.43	0.65	0.77	0.93	1.09	1.24	1.45			
	J_{Max}		63.73	119.05	199.31	460.81	635.74	939.85	1283.82	1674.11	2294.65			
	J_L		63.73	119.05	199.31	460.81	635.74	939.85	1283.82	1674.11	2294.65			
	J		5.01	8.01	42.17	105.20	240.76	304.40	498.33	875.07	1347.35			
30	t		0.24	0.32	0.45	0.63	0.78	0.89	1.04	1.24	1.43			
	J_{Max}		79.80	136,84	278.70	543.22	832.38	1075.99	1469.77	2094.81	2784.90			
	J_L		79.80	136.84	278.70	543.22	832.38	1075.99	1469.77	2094.81	2784.90			
	J		8.99	93.20	257.40	507.50	832.38	915.02	1469.77	1394.57	1530.10			
36	t			0.21	0.30	0.43	0.54	0.59	0.69	0.79	0.93	1.20		
	J_{Max}			72.80	148.38	307.13	470.67	573.16	782.97	1019.66	1397.65	2358.96		
	J_L			72.80	148.38	307.13	470.67	573.16	782.97	1019.66	1397.65	2358.96		
	J			39.84	109.95	74.69	141.04	391.48	634.29	1019.66	1397.65	2358.96		

RTF Series

Rotary Indexer

Reliable, robust, and freely programmable

The RTF rotary indexing table series stands out for its excellent flexibility.

The freely programmable RTF combines flexible movement processes with a robust design, durability, and high torque levels. It differs from the RTX series thanks to a customer supplied AC servo motor which can be attached to the interface of the worm gear.

In addition, the RTF has a drive curve with constant gradient. This allows it to position large loads dynamically, with a freely selectable angle. The drive angle and acceleration can be freely selected along with other parameters, allowing them to be adapted specifically to current loads.
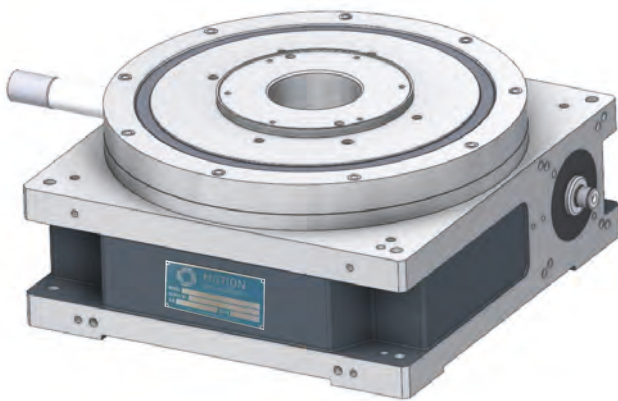
All RTFs are freely programmable, and can be used in almost any application in the production industry, from the small gear sector to heavy-duty applications. They can control any number of stations with the highest level of precision.

Thanks to this flexibility, RTF rotary indexing tables are especially well suited for automated production processes where it is necessary to change the motion sequence (such as in the automotive industry). Currently, RTFs are available in five different sizes.
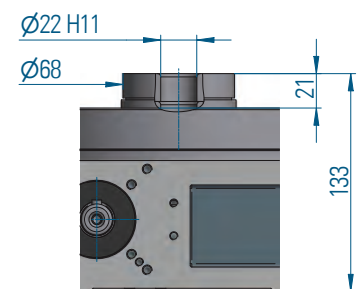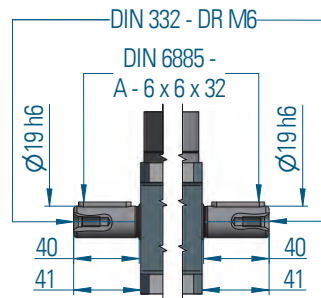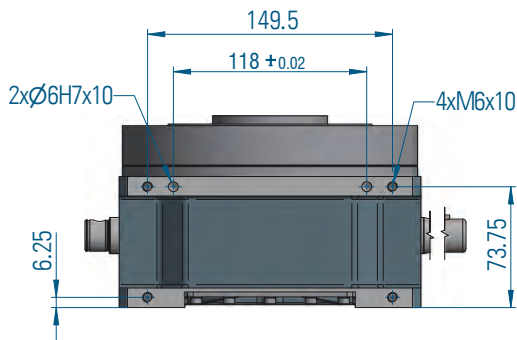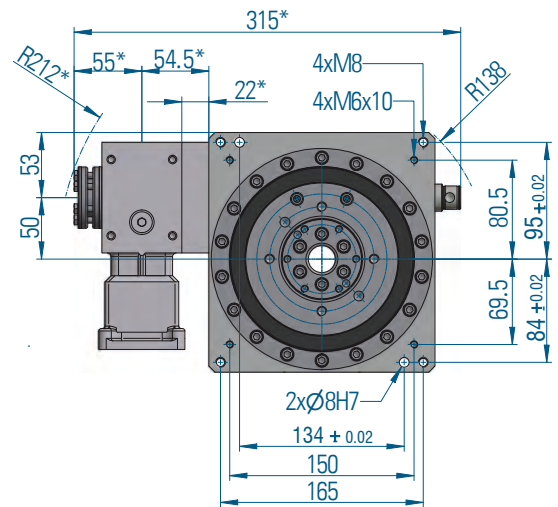
Advantages of the RTF series:

- Reliable, robust barrel cam rotary table for all applications
- Setup diameter 100 mm – 285 mm
- Freely programmable
- High flexibility thanks to NC technology
- Mechanical interface on the worm gear with freely selectable connection for customer servo motor
- Large, vertical continuous hollow shaft

Technical benefits for users

- High torques
- Ideally suited for high loads
- High precision with and without an absolute encoder (optional)
- Four-point support on the exterior diameter of the star mount
- Low-maintenance thanks to oil-bath lubrication
- Any installation position possible

RTF450

Main dimensions
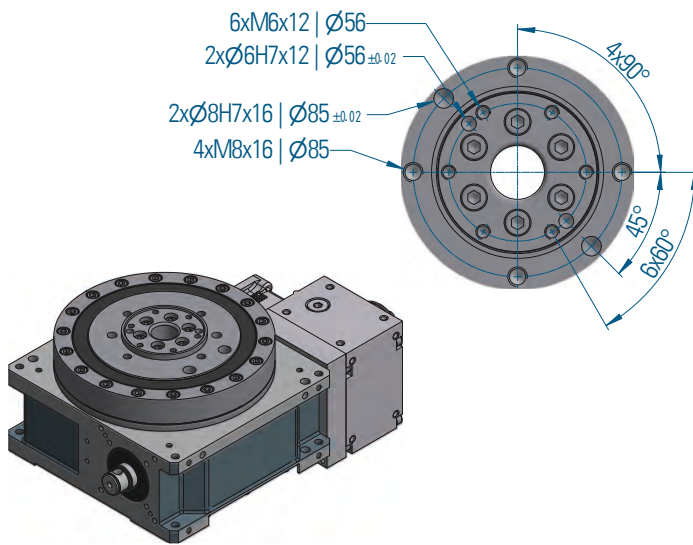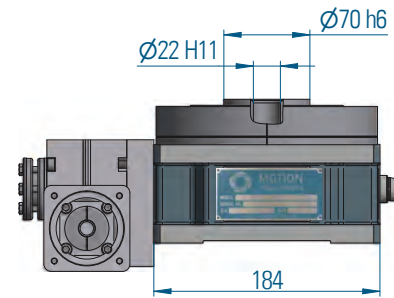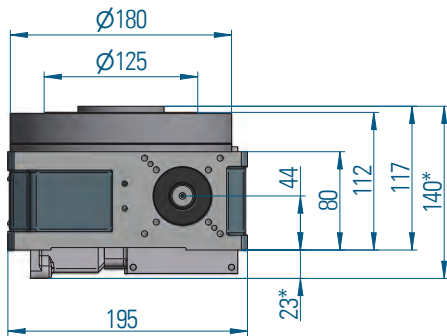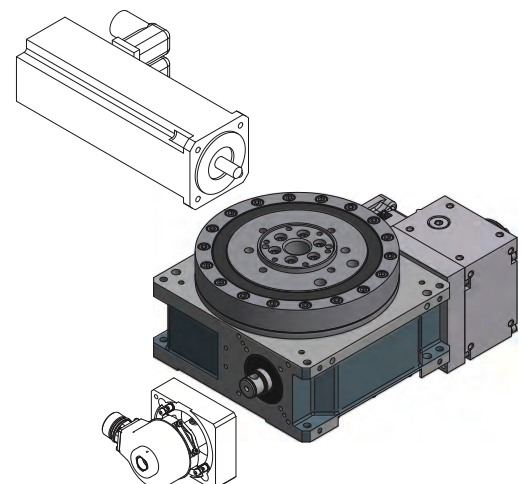
Ø180
Ø125
44
80
112
117
140*
195
23*

Ø22 H11
Ø70 h6
184

6xM6x12 | Ø56
2xØ6H7x12 | Ø56 ±0.02
2xØ8H7x16 | Ø85 ±0.02
4xM8x16 | Ø85
4x90°
45°
6x60°

315*
R212*
55*
54.5*
22*
4xM8
4xM6x10
R138
53
50
80.5
95 +0.02
69.5
84 +0.02
2xØ8H7
134 + 0.02
150
165

149.5
118 +0.02
2xØ6H7x10
4xM6x10
6.25
73.75

DIN 332 - DR M6
DIN 6885 - A - 6 x 6 x 32
Ø19 h6
Ø19 h6
40
41
40
41

Ø22 H11
Ø68
21
133

* Dimensions depend on the used drive

Fitting position

upside down   horizontal   vertical

Load on output flange
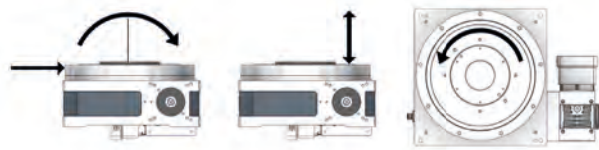
Radial force F_{rA} [kN] 17.5   Axial force F_{aA} [kN] 20   Torque on output
flange [Nm] 322

Tilting moment M_{kA} [kNm] 1.3

Load on central column
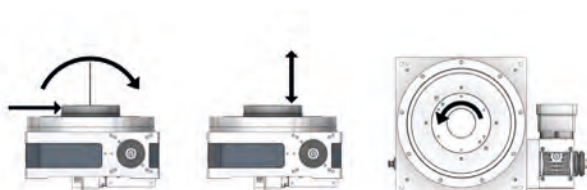
Radial force F_{rM} [kN] 2.7   Axial force F_{aM} [kN] 18   Torque on output
flange [Nm] 77

Tilting moment M_{kM} [kNm] 0.36

Precision

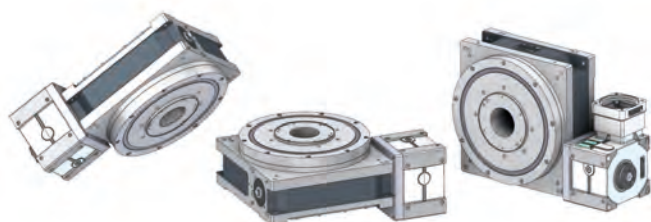|	
Axial runout on the output flange ø [mm]	0.01
Runout on the output flange ø [mm]	0.01
Indexing accuracy* in angular seconds ["] without encoder	± 47
Indexing accuracy* in angular seconds ["] with encoder	± 18

Combined loads and possible process forces must be
confirmed by Motion Index Drives.

Dimensions

Output flange ø	[mm]	125
Overall height (output flange screw-on suface)	[mm]	112
Center opening ø	[mm]	22
Recommended max. size of rotating plate ø	[mm]	800
Index table weight	[kg]	30
Internal gear ratio	[i]	10

Load diagram

50 kgm²   30 kgm²   15 kgm²   5 kgm²

RTF550

Main dimensions

Ø160
110
120
140
193*
46
53*
235

Ø95 h7
Ø40 H11
4xØ15
50
4xØ9
4xM14x1.5x20
200
240

2xØ8H7x15 | Ø130±0.02
4xM8x15 | Ø130
ß   ß

417*
71*   105*
55*
8xM6x10
R292*   R175
72
63
90.93   120
52.5
52.5
85   90.93
105
170
181.96

2xØ8H7x20
70.5   35.5±0.02
170±0.02

140
110±0.02
2xØ8H7x12
4xM8x16
15   95

DIN 332 - DR M10
DIN 6885 -
A - 8 x 7 x 25
Ø25 h6   Ø25 h6
33   33
35   35

2xØ6H7x15 | Ø64±0.02
6xM6x12 | Ø64
30°
6x60°
Ø25 H11

141

* Dimensions depend on the used drive

Fitting position

upside down   horizontal   vertical

Load on output flange

Radial force F_{rA} [kN] 23

Tilting moment M_{kA} [kNm] 1.0

Axial force F_{aA} [kN] 18.4 Torque on output flange [Nm] 508

Load on central column

Radial force F_{rM}[kN] 2.7   Axial force F_{aM} [kN] 18   Torque on output flange [Nm] 77
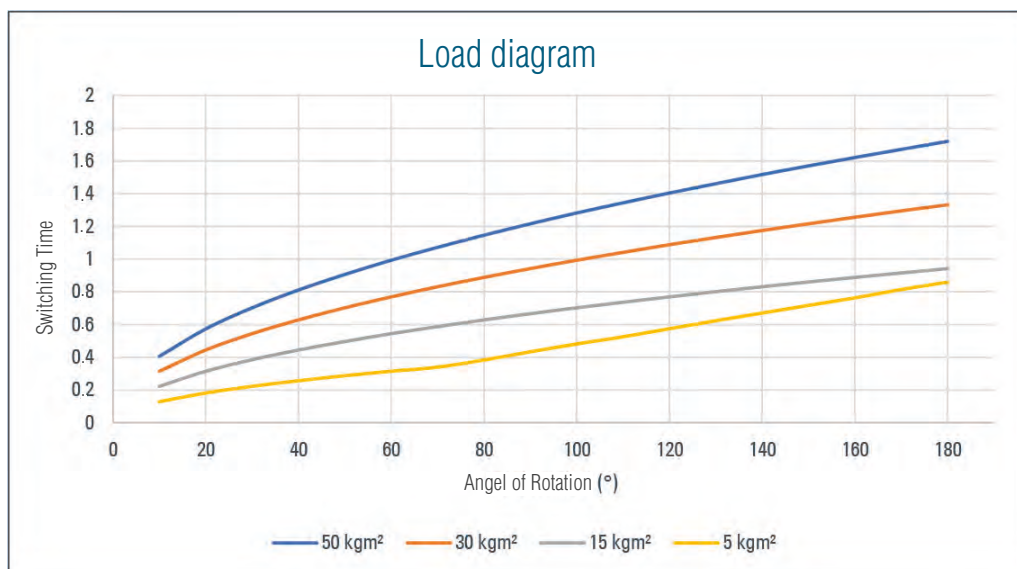
Tilting moment M_{kM} [kNm] 0.36

Precision

Axial runout on the output flange ø [mm]	0.015
Runout on the output flange ø [mm]	0.015
Indexing accuracy* in angular seconds ["] without encoder	± 43
Indexing accuracy* in angular seconds ["] with encoder	± 16

Combined loads and possible process forces must be confirmed by Motion Index Drives.
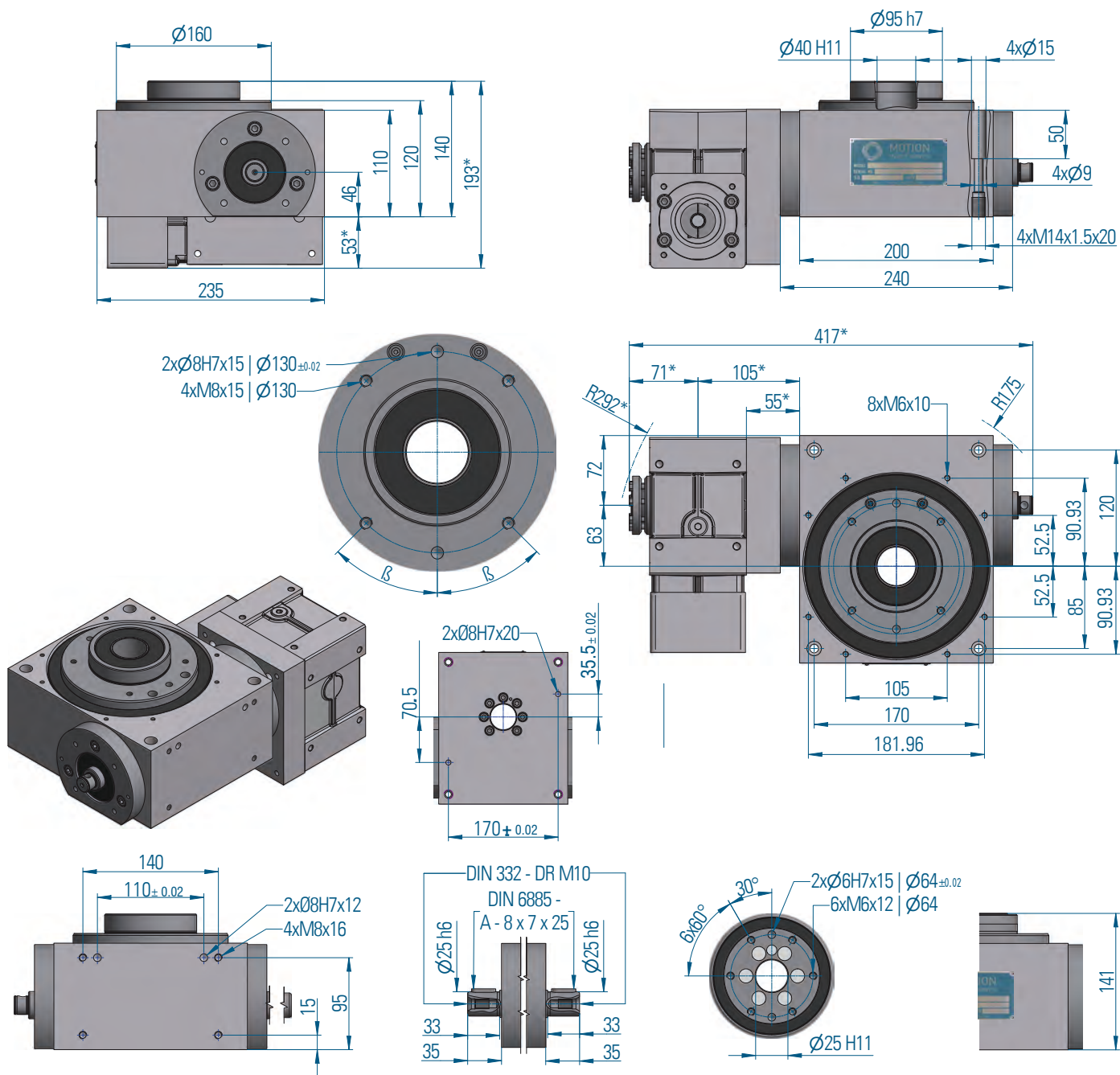
Dimensions

Output flange ø	[mm]	160
Overall height (output flange screw-on suface)	[mm]	120
Center opening ø	[mm]	40
Recommended max. size of rotating plate ø	[mm]	1000
Index table weight	[kg]	24
Internal gear ratio	[i]	10

Load diagram

RTF650

Main dimensions

Ø245
Ø185
140
145
181 *
108
63
36 *
260

Ø50 H11
Ø100 h6
250

2xØ6H7x12 | Ø80 ±0.02
6xM6x12 | Ø80
2xØ8H7x16 | Ø120 ±0.02
4xM8x16 | Ø120

4x90°
45°
67.5°

430*
R300*
74*
85*
35
12*
4xØ8.5
4xM8-15
R182
58
77
100
125 ±0.02
100
110 ± 0.02
2xØ8H7
196 ± 0.02
200
220

180
150 ±0.02
2xØ8H7x12
4xM8x15
10
98

DIN 332 - DR M6
DIN 6885 -
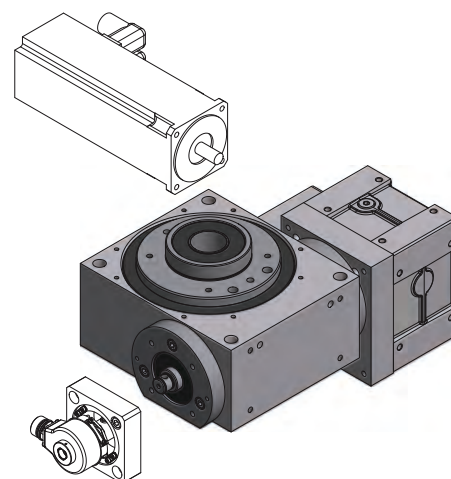A - 8 x 7 x 40
Ø24 h6
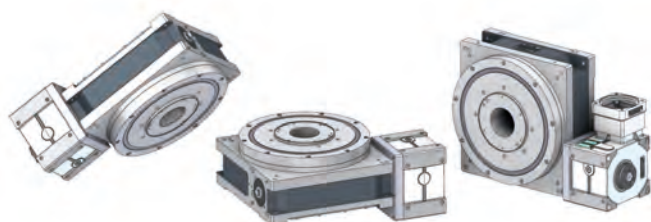Ø24 h6
50
52
50
52

Ø50 H11
Ø98
26
166

* Dimensions depend on the used drive

Fitting position

| upside down | horizontal | vertical |

Load on output flange

Radial force F_{rA} [kN] 20

Tilting moment M_{kA} [kNm] 2.3

Axial force F_{aA} [kN] 22.5 Torque on output flange [Nm] 833

Load on central column

Radial force F_{rM}[kN] 4.1   Axial force F_{aaM} [kN] 14   Torque on output
Tilting moment MkM [kNm] 0.85   flange[Nm]170
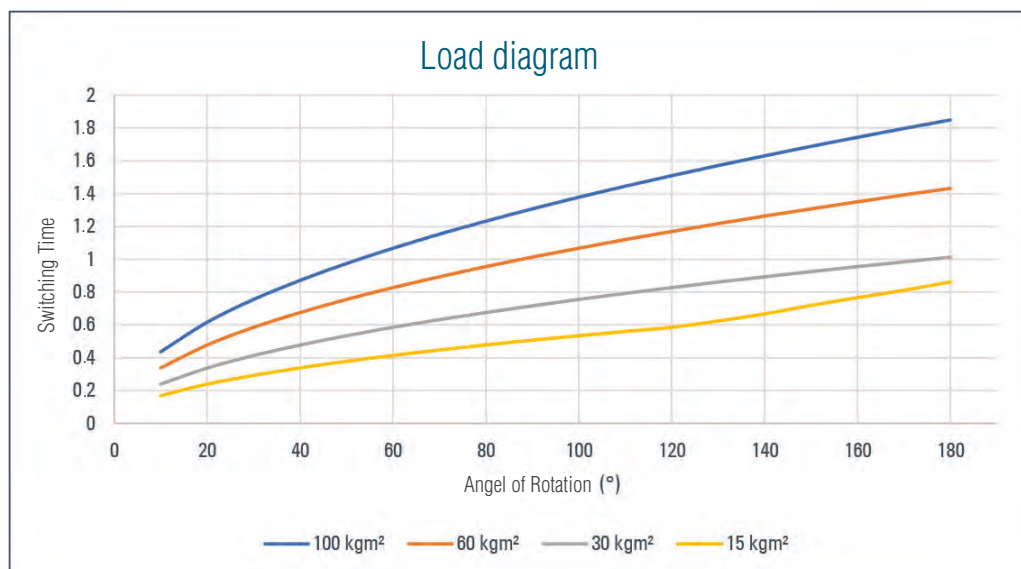
Precision

Axial runout on the output flange ø [mm]	0.01
Runout on the output flange ø [mm]	0.01
Indexing accuracy* in angular seconds ["] without encoder	± 39
Indexing accuracy* in angular seconds ["] with encoder	± 14

Combined loads and possible process forces must be confirmed by Motion Index Drives.

Dimensions

Output flange ø	[mm]	185
Overall height (output flange screw-on suface)	[mm]	140
Center opening ø	[mm]	50
Recommended max. size of rotating plate ø	[mm]	1300
Index table weight	[kg]	38
Internal gear ratio	[i]	10

Load diagram

RTF750

Main dimensions

Ø305
Ø240
160
165
219*
120
67
54*
320

Ø60 H11
Ø140 h6
310

2xØ8H7x16 | Ø120 ±0.02
6xM8x16 | Ø120
2xØ10H7x20 | Ø165 ±0.02
4xM10x20 | Ø165
6x60°
4x90°
45°

507*
86*
90*
25
15*
4xØ11
4xM8x12
R360*
R225
70
95
120
150 ±0.02
120
140 ±0.02
2xØ8H7
240
250 ±0.02
280

265
235 ±0.02
2xØ8H7x12
4xM8x12
15
105

DIN 332 - DR M10
DIN 6885 -
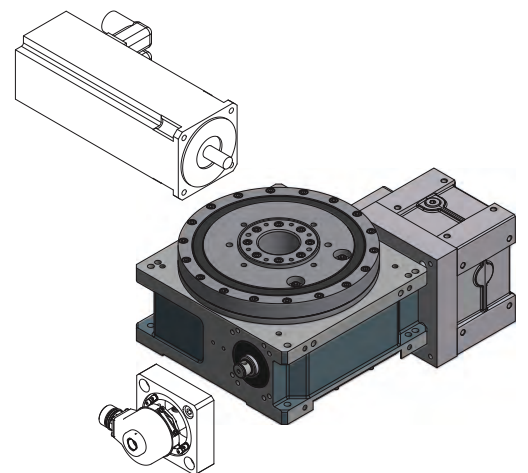A - 8 x 7 x 40
Ø30 h6
Ø30 h6
50
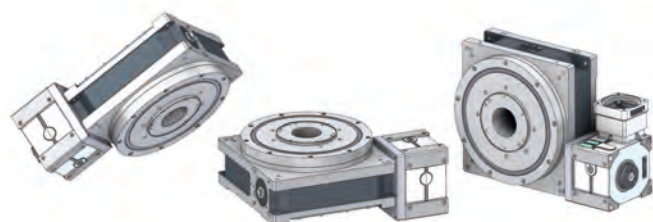52
50
52

Ø60 H11
Ø139
26
186

* Dimensions depend on the used drive

Fitting position

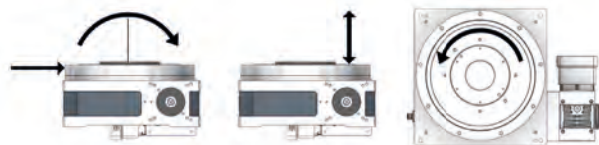

upside down   horizontal   vertical
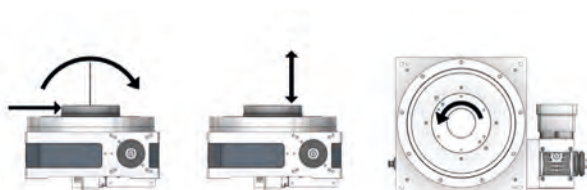
Load on output flange
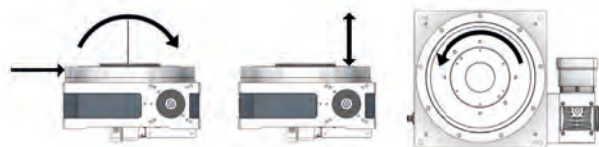
Radial force F_{rA} [kN] 20   Axial force F_{aA} [kN] 25   Torque on output flange [Nm] 1063

Tilting moment M_{kA} [kNm] 2.9

Load on central column
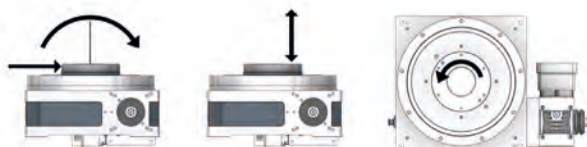
Radial force F_{rM}[kN] 3.8   Axial force F_{aM} [kN] 15   Torque on output flange [Nm] 200

Tilting moment M_{kM} [kNm] 0.95

Precision

Axial runout on the output flange ø [mm]	0.01
Runout on the output flange ø [mm]	0.01
Indexing accuracy* in angular seconds ["] without encoder	± 35
Indexing accuracy* in angular seconds ["] with encoder	± 12

Combined loads and possible process forces must be confirmed by Motion Index Drives.

Dimensions

Output flange ø	[mm]	240
Overall height (output flange screw-on suface)	[mm]	160
Center opening ø	[mm]	60
Recommended max. size of rotating plate ø	[mm]	1800
Index table weight	[kg]	85
Internal gear ratio	[i]	10
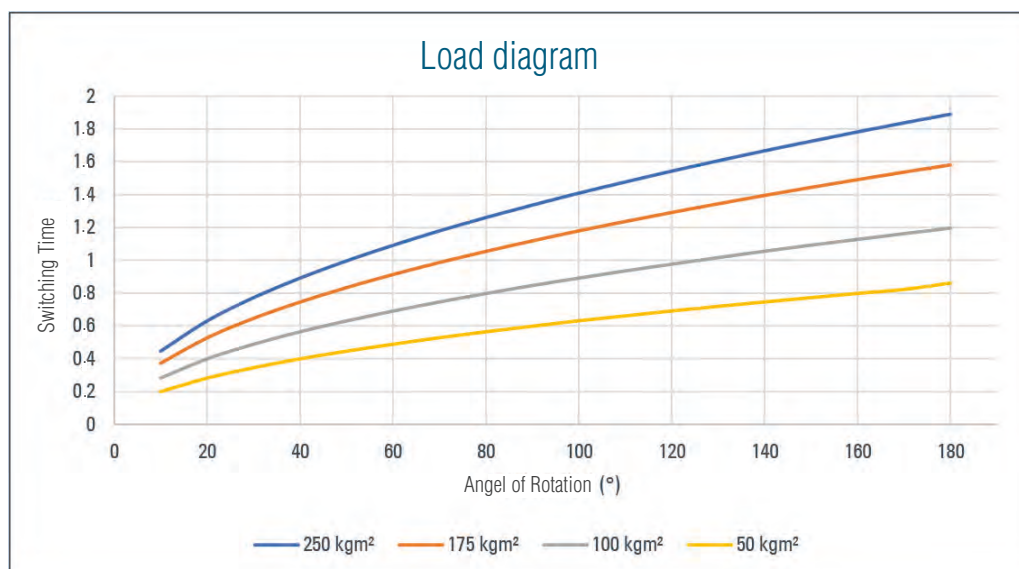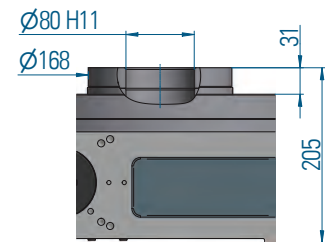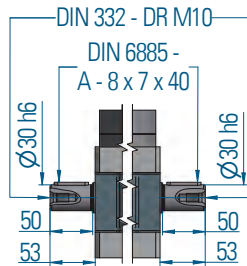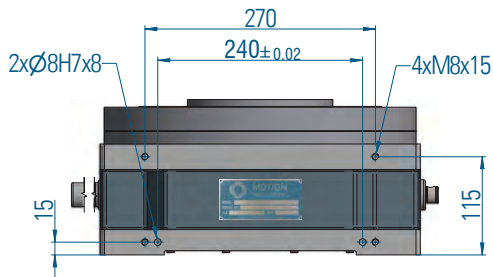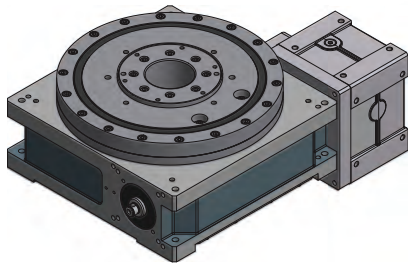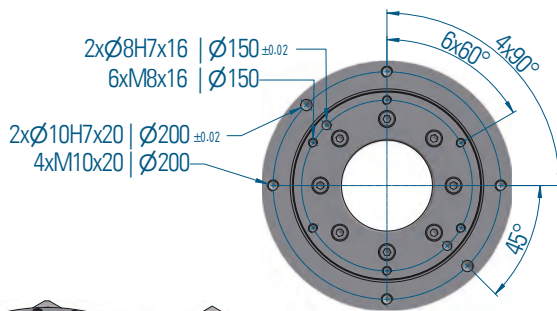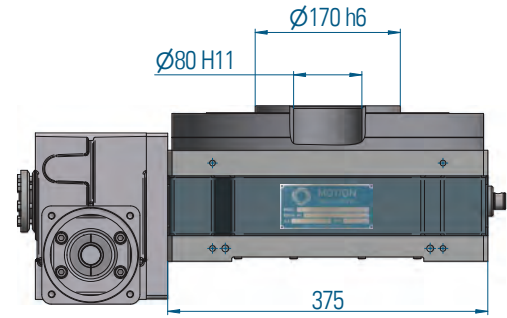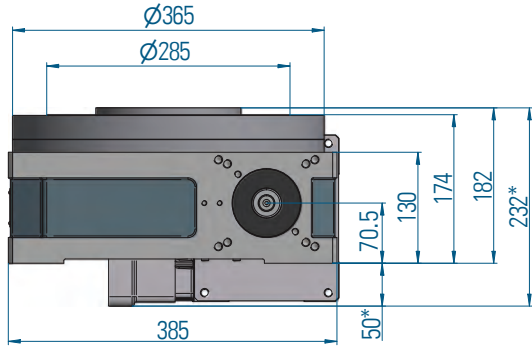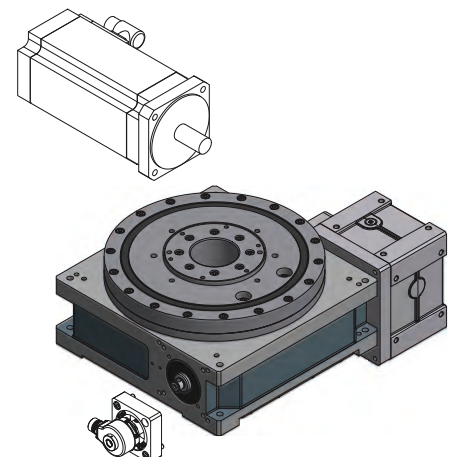
Load diagram

250 kgm²   175 kgm²   100 kgm²   50 kgm²

RTF900

Main dimensions

Ø365
Ø285
174
182
232*
130
70.5
50*
385

Ø170 h6
Ø80 H11
375

2xØ8H7x16 | Ø150 ±0.02
6xM8x16 | Ø150
2xØ10H7x20 | Ø200 ±0.02
4xM10x20 | Ø200

6x60°
4x90°
45°

572*
R400*
86*
90*
25
2.5*
4xØ11
4xM10x18
R270
82.5
115
160
182.5 ± 0.02
150
167.5 ± 0.02
2xØ8H7
310 ± 0.02
340

270
240 ± 0.02
2xØ8H7x8
4xM8x15
15
115

DIN 332 - DR M10
DIN 6885 -
A - 8 x 7 x 40
Ø30 h6
Ø30 h6
50
53
50
53

Ø80 H11
Ø168
31
205

* Dimensions depend on the used drive

Fitting position

upside down   horizontal   vertical

Load on output flange
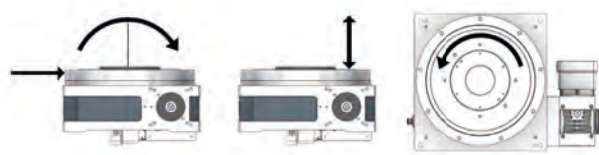
Radial force F_{rA} [kN] 22.5   Axial force F_{aA} [kN] 25   Torque on output flange[Nm]1572

Tilting moment M_{kA} [kNm] 3.5

Load on central column
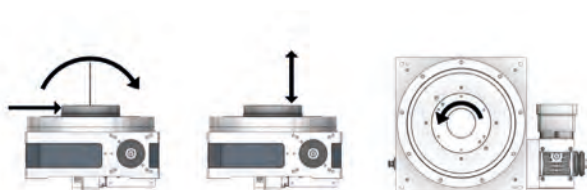
Radial force F_{rM} [kN] 7   Axial force F_{aM} [kN] 25   Torque on output flange [Nm] 450
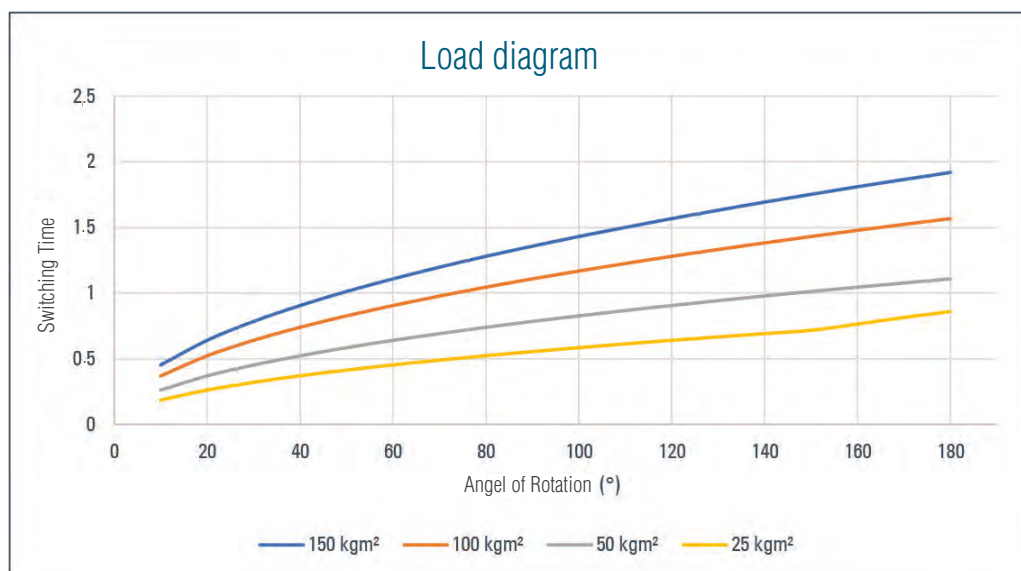
Tilting moment M_{kM} [kNm] 2.2

Precision

Axial runout on the output flange ø [mm]	0.01
Runout on the output flange ø [mm]	0.01
Indexing accuracy* in angular seconds ["] without encoder	± 32
Indexing accuracy* in angular seconds ["] with encoder	± 10

Combined loads and possible process forces must be confirmed by Motion Index Drives.
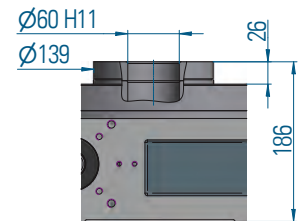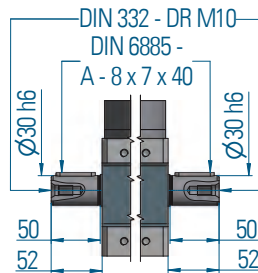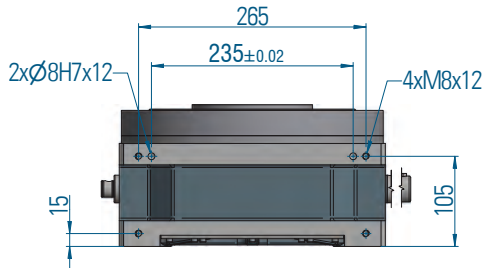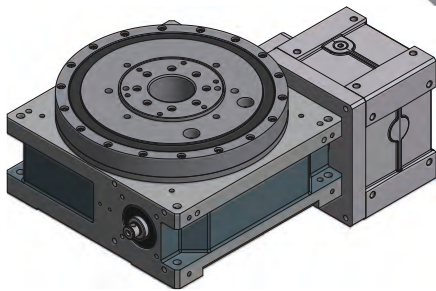
Dimensions

Output flange ø	[mm]	285
Overall height (output flange screw-on suface)	[mm]	174
Center opening ø	[mm]	80
Recommended max. size of rotating plate ø	[mm]	2200
Index table weight	[kg]	125
Internal gear ratio	[i]	10

Load diagram

Switching Time vs Angel of Rotation (°)

— 450 kgm²   — 300 kgm²   — 150 kgm²   — 75 kgm²

RT Series

Rotary Indexer

MOTION
INDEX DRIVES

Programmable Index Drives

The rotary index table transforms a constant input drive motion into a constant output drive motion. The drive motion occurs by means of a hardened and high-accuracy constant lead barrel cam. The use of mathematical laws of motion along with a properly programmed motor profile guarantee a soft, shock proof, and jerk free movement that has been optimally designed for its intended purpose. The design allows for accurate and secure mounting to the output dial. The preload of the cam to the cam followers in dwell ensures the top dial is backlash free. No additional adjustment of the output dial is necessary. The power to rotate the index drive is provided either by means of a three phase AC motor with encoder, coupled to a gear reducer, or a servo motor coupled to a gear reducer. The gear reducer is connected to the input shaft which is firmly connected to the internal barrel cam with no further internal gearing. The barrel cam in turn rotates the top dial through the cam followers with a zero backlash internal design. The output dial is mounted to a wire bearing assembly (4 point contact bearing), which is preloaded to eliminate any runout. The index drive is completely sealed to eliminate intrusion from foreign particulate.

Fixed Index Drives

The rotary index table transforms a constant input drive motion into an intermittent output drive motion. The intermittent drive motion occurs by means of a hardened and high accuracy barrel cam. The use of mathematical laws of motion guarantees a soft, shock-proof, and jerk free movement that has been optimally designed for its intended purpose. The design allows for accurate and secure mounting to the output dial. The preload of the cam to the cam followers in dwell ensures the top dial is backlash free. No additional adjustment of the output dial is necessary.

The power is provided either by means of a three-phase motor via a gear reducer or by means of a timing chain/belt on the drive shaft of the rotary index table. This is firmly connected to the barrel cam without any further internal gear sets, and it turns the cam followers and subsequently the output flange. The output dial is mounted to a wire bearing assembly (4 point contact bearing), which is preloaded to eliminate any runout. The index drive is completely sealed to eliminate intrusion from foreign particulate.

Advantages for design engineers and special machine builder

- Housing machined on all sides. Suitable for use in any mounting position required.
- Mounting holes identical on top and bottom.
- Large center thru-hole which is large enough to feed entire shafts through, and not just small wiring looms.
- Dowel holes in housing and in output flange.
- Recessed center column. No obstruction. Lengthened and machined to customer requirements.
- Simultaneously rotating input shaft extension. Optional synchronization of other mechanical modules.

Options for individual customer requirements

- Choice of drive unit/gear motor.
- Reinforced output flange bearing for higher tilting moment.
- Optional friction clutch on drive.
- Dwell and index angle can be taiilored to requirements.
- All sizes also available as programmable index tables.
- Custom specified color at no extra charge.

Technical benefits for users

- High reliability and long service life.
- Robust method of construction.
- Hardened cams: smaller sizes for higher load factors.
- Bearings fully immersed in oil bath.
- Cam followers self lubricating through oil bath.
- No wear. Completely maintenance-free*.

* The top bearing on the RT400, RT500, RT630 and RT900 needs to be lubricated at maintenance intervals (see operating manual)

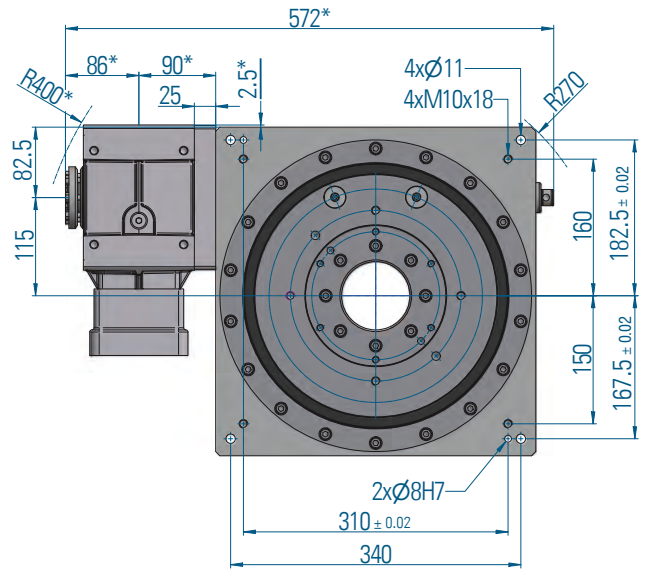# RT400

Technical specifications

Main dimensions

Output flange Ø [mm]	460
Overall height (output flange screw-on surface) [mm]	316
Center opening Ø [mm]	110H8
Recommended max. size of rotating plate Ø [mm]	3500
Index table weight [kg]	325
Number of indexes	2,3,4,6,8,10,12,16,20, 24,30,36
Other numbers on request	

Standard drives

Motor	SEW
Gear unit	SEW
Motor size	71-132
Voltage[V]	ANY
Power [kW]	0.18-3.7

Precision*

Index precision	
In radian measure on cam follower Ø [mm]	±0.017
In angular seconds on cam follower Ø ["]	±18
Axial runout on cam follower Ø [mm]	0.01
Concentricity on cam follower Ø [mm]	0.01

Load on output flange

Axial force Fa [kN]	50
Radial force Fr [kN]	26
Tilting moment Mk [kNm]	10
Reinforced version	
Tilting moment Mk [kNm]	21

Load on central column

Axial force Fa [kN]	45
Tilting moment Mk [kNm]	5.5
Max. number of cycles [1/min]	145
Direction	clockwise, counterclockwise, oscillating
Mounting position	ANY

*All RT Series tables available in fixed or programmable formats.

Load on output flange
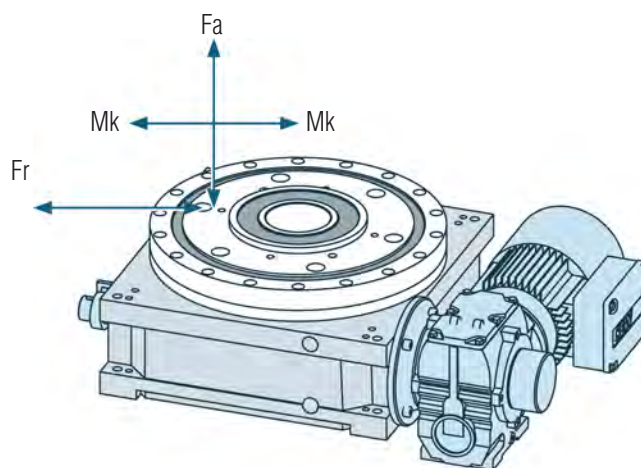
Load on central column
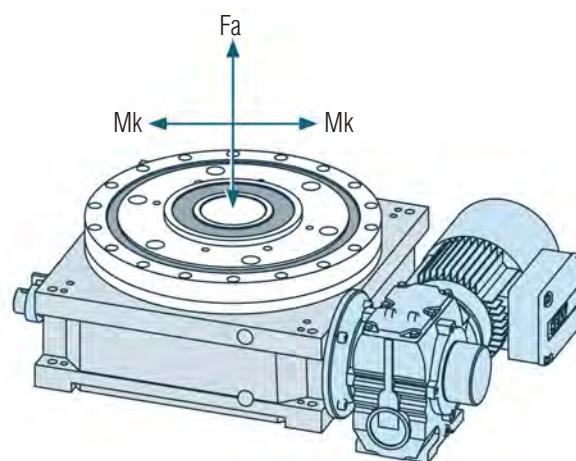
* The precision is 5 - 8 angular seconds greater at 16 or more indexes due to multiple dwell on the drive cam.

* If required, higher accuracy can be achieved upon request.

RT400

Dimensions

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill additional holes, please consult us with regard to acceptable drilling depth.

A = Length of input shaft
B = Length of shaft to collar
C = Diameter of input shaft
D = Height of central column to supporting surface on output flange

⚠ The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

Central Column increased (Option)

RT400

Load Table

Scenarios

# of Stops		1	2	3	4	5	6	7	8	9	10	11
2	t	0.57	0.78	1.06	1.56	1.88	2.13	2.37	2.84	3.22	4.08	5.64
2	J	15.7	30	67	178	275	334	445	655	910	1480	2310
3	t	0.54	0.74	1	1.45	1.74	2	2.22	2.67	3.02	4	5.29
3	J	29.9	60.5	123	315	430	590	810	1230	1650	2830	5890
4	t	0.48	0.67	0.9	1.31	1.58	1.8	2	2.4	3.02	3.82	4.73
4	J	38.5	81	168	395	570	765	1060	1520	2350	3950	6480
5	t	0.48	0.67	0.9	1.31	1.58	1.8	2	2.4	3.02	3.82	
5	J	50	104	204	503	772	1075	1210	2025	3300	2150	
6	t	0.48	0.64	0.9	1.31	1.58	1.8	2	2.4	3.02	3.82	
6	J	62	133	271	652	987	1300	1740	2645	3700	7250	
8	t	0.48	0.64	0.9	1.29	1.58	1.8	2	2.49	3.02	3.82	
8	J	92	197	398	952	1472	2015	2580	3490	5800	9150	
10	t	0.49	0.64	0.9	1.34	1.58		2	2.49	3.02		
10	J	135	281	565	1365	1980		3200	4980	6850		
12	t	0.49	0.64	0.9	1.34	1.58		2	2.49	3.04		
12	J	172	358	705	1730	2410		3810	5900	8700		
16	t		0.33	0.46	0.66	0.79	0.91	1	1.24	1.37		
16	J		141	206	560	790	1005	1300	1730	2360		
20	t		0.32	0.46	0.66	0.79	0.9	1	1.24	1.37		
20	J		178	335	670	990	1320	1590	2480	2970		
24	t		0.32	0.45	0.66	0.79	0.87	1	1.2	1.37		
24	J		215	397	860	1180	1470	1910	2760	3550		
30	t		0.34	0.48	0.67		0.88	1	1.22	1.4		
30	J		275	550	1080		1850	2420	3490	4580		
36	t			0.32	0.45		0.59	0.67	0.82	0.93	1.32	
36	J			292	582		990	1290	1840	2410	4820	

(Left axis label: # of Stops)

J = Mass moment of inertia in Kgm²

t = Mechanical index time in seconds (does not include dwell)

All RT Series tables available in servo programmable versions.

*For mounted accessories up to Ø 3500mm. Applications in assembly facilities with large and heavy parts: welding, riveting, assembling, and printing/labeling.

RT500

Technical Specifications

Main dimensions

Output flange Ø [mm]	560
Overall height (output flange screw-on surface) [mm]	420
Center opening Ø [mm]	140H8
Recommended max. size of rotating plate Ø [mm]	4500
Index table weight [kg]	600
Number of indexes	2,3,4,6,8,10,12,16,20, 24,30,36
Other numbers on request	

Standard drives

Motor	SEW
Gear unit	SEW
Motor size	71-132
Voltage[V]	ANY
Power [kW]	0.18-3.7

Precision*

Index precision	
In radian measure on cam follower Ø [mm]	±0.018
In angular seconds on cam follower Ø ["]	±15
Axial runout on cam follower Ø [mm]	0.01
Concentricity on cam follower Ø [mm]	0.01

Load on output flange

Axial force Fa [kN]	84
Radial force Fr [kN]	49
Tilting moment Mk [kNm]	22
Reinforced version	
Tilting moment Mk [kNm]	40

Load on central column

Axial force Fa [kN]	60
Tilting moment Mk [kNm] Max.	7.8
number of cycles [1/min]	105
Direction	clockwise, counterclockwise, oscillating
Mounting position	ANY

All RT Series tables available in fixed or programmable formats.

Load on output flange
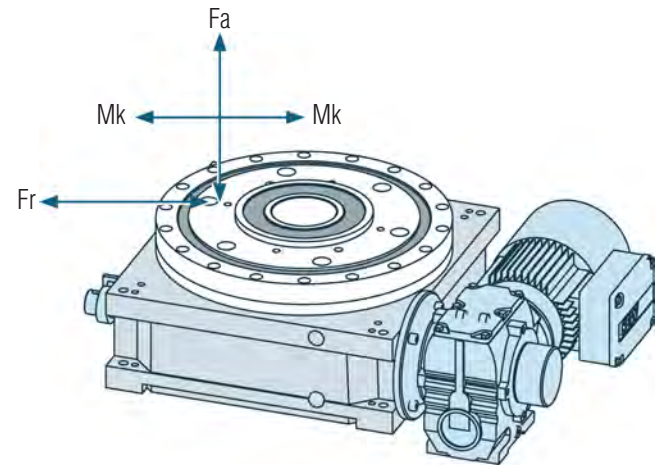
Load on central column
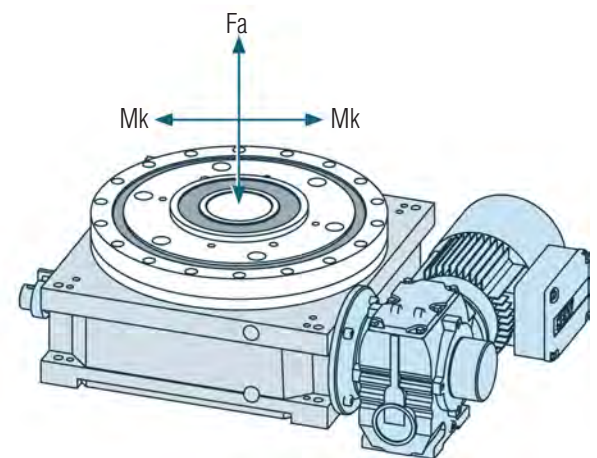
* The precision is 5 - 8 angular seconds greater at 16 or more indexes due to multiple dwell on the drive cam.

* If required, higher accuracy can be achieved upon request.

RT500

Dimensions

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill additional holes, please consult us with regard to acceptable drilling depth.

A = Length of input shaft

B = Length of shaft to collar

C = Diameter of input shaft

D = Height of central column to supporting surface on output flange

Ø690f7
Ø560h11
Ø340h6
Ø140h8

425
420
417
370

150   104
124.5
106
185
700

780
430
400±0.02
320±0.02
330
260
190
240
R545

4x Ø22
4x Ø16h7
4x M20-30 deep
Ø210
6x M20-30 deep
TKØ420±0.2
2x Ø20h7-25 deep
TKØ420±0.02

560±0.02
640

R610
R650
Ø197
124.8   162   396

115   115
110   110
Ø42k6   Ø42k6

4x M12-20 deep
TKØ125±0.02
2x Ø12h7-20 deep
TKØ160±0.2

Flange Option
25
Central Column increased (Option)

⚠ The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

RT500

Load Table

Scenarios

# of Stops		1	2	3	4	5	6	7	8	9	10	11	12	13
2	t			1.07	1.52	1.87	2.13	2.37	2.90	3.33	4.27	5.73	6.84	9.7
	J			199.5	407.14	614.03	798	985.18	1479.57	1948.23	3191.99	5766.54	8197.7	16487.53
3	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
	J			378.28	772	1164.3	1513.12	1868.05	2805.49	3694.15	6052.49	10934.23	15544.07	31262.85
4	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
	J			586.43	1196.8	1804.96	2345.73	2895.96	4349.23	5726.87	9382.91	16950.86	24097.3	48465.44
5	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
	J			858.29	1751.61	2641.7	3433.16	4238.47	6365.44	8381.73	13732.63	24808.91	35268.29	70932.99
6	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
	J			1107.97	2261.17	3410.2	4431.89	5471.47	8217.2	10820.05	17727.56	32026.03	45528.13	91567.99
8	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
	J			1608.38	3282.41	4950.39	6433.53	7942.63	11928.44	15706.85	25734.11	46490.39	66090.63	132924.1
10	t			0.9	1.29	1.58	1.8	2	2.45	2.81	3.6	4.84	5.77	8.18
	J			1670.8	3409.8	5142.51	6683.21	8250.88	12391.38	16316.43	26732.84	48294.67	68655.59	138082.85
12	t			0.9	1.29	1.58	1.8	2	2.45	2.81	3.6	4.84	5.77	8.18
	J			2068.58	4221.58	6366.81	8274.31	10215.19	15341.44	20200.94	33097.23	59792.36	85000.68	170956.75
16	t		0.64	0.9	1	1.23	1.41	1.8	2.42	2.88	4.09			
	J		1293.71	1951.12	2535.67	3130.46	4701.41	6190.61	10142.7	18323.47	26048.6			
20	t	0.45	0.64	0.9	1	1.23	1.41	1.8	2.42	2.88	4.09			
	J	835.4	1704.9	3341.61	4125.44	6195.69	8158.22	13366.42	24147.34	34327.8	69041.43			
24	t	0.45	0.64	0.9	1	1.23	1.41	1.8	2.42	2.88	4.09			
	J	1034.29	2110.79	4137.15	5107.6	7670.72	10100.47	16548.61	29896.18	42500.34	85478.37			
30	t	0.45	0.64	0.9	1	1.23	1.41	1.8	2.42	2.88	4.09			
	J	1328.37	2710.95	5313.46	6559.83	9851.72	12972.32	21253.85	38396.5	54584.38	109782.27			
36	t	0.43	0.53	0.6	0.67	0.82	0.94	1.2	1.61	1.92	2.73			
	J	1407.19	2122.27	2758.1	3405.06	5113.81	6733.65	11032.41	19930.79	28333.56	56985.85			

J = Mass moment of inertia in Kgm²

t = Mechanical index time in seconds (does not include dwell)

All RT Series tables available in servo programmable versions.

*For mounted accessories up to Ø 4500mm. Applications in assembly facilities with large and heavy parts: welding, riveting, assembling, and printing/labeling.

RT630

Technical specifications

Main dimensions

Output flange Ø [mm]	778
Overall height (output flange screw-on surface) [mm]	560
Center opening Ø [mm]	250H8
Recommended max. size of rotating plate Ø [mm]	6000
Index table weight [kg]	1600
Number of indexes	2,3,4,6,8,10,12,16,20, 24,30,36
Other numbers on request	

Standard drives

Motor	SEW
Gear unit	SEW
Motor size	71-132
Voltage[V]	ANY
Power [kW]	0.18-7.5

Precision*

Index precision	
In radian measure on cam follower Ø [mm]	±0.023
In angular seconds on cam follower Ø ["]	±15
Axial runout on cam follower Ø [mm]	0.01
Concentricity on cam follower Ø [mm]	0.01

Load on output flange

Axial force Fa [kN]	145
Radial force Fr [kN]	86
Tilting moment Mk [kNm]	41
Reinforced version	
Tilting moment Mk [kNm]	72

Load on central column

Axial force Fa [kN]	80
Tilting moment Mk [kNm]	9
Max. number of cycles [1/min]	105
Direction	clockwise, counterclockwise, oscillating
Mounting position	ANY

All RT Series tables available in fixed or programmable formats.

Load on output flange
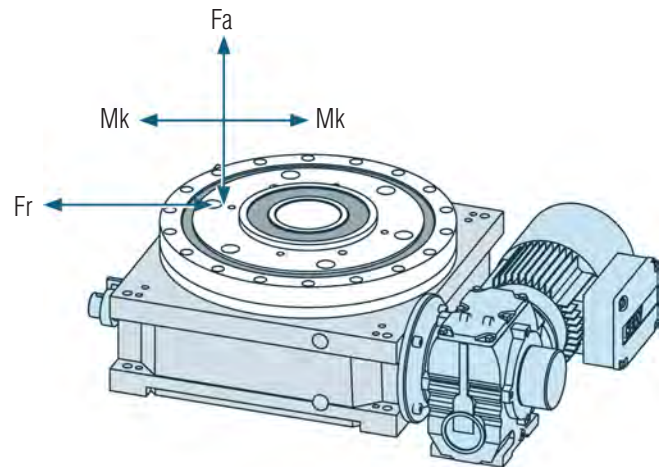
Load on central column
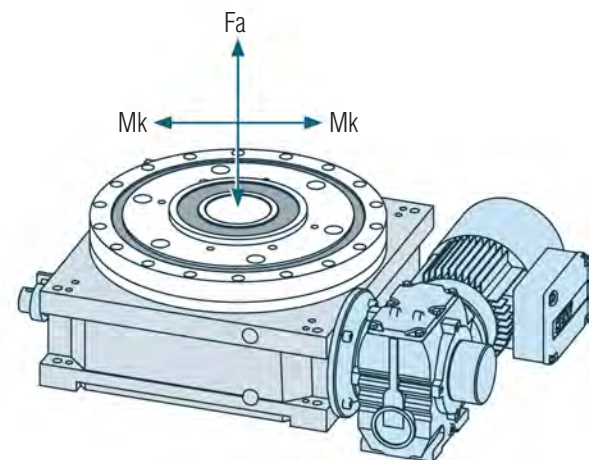
* The precision is 5 - 8 angular seconds greater at 16 or more indexes due to multiple dwell on the drive cam.

* If required, higher accuracy can be achieved upon request.

RT630

Dimensions

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill additional holes, please consult us with regard to acceptable drilling depth.

A = Length of input shaft

B = Length of shaft to collar

C = Diameter of input shaft

D = Height of central column to supporting surface on output flange

Central Column increased (Option)

⚠ The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

RT630

Load Table

Scenarios

# of Stops		1	2	3	4	5	6	7	8	9	10	11	12	13
2	t			1.07	1.52	1.87	2.13	2.37	2.9	3.33	4.27	5.73	6.84	9.7
2	J			256	523	789	1026	1266	1900	2504	4102	7411	10535	21189
3	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
3	J			485	989	1492	1939	2394	3595	4734	7756	14011	19918	40060
4	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
4	J			793.91	1620.22	2443.55	3175.63	3920.53	5887.96	7753.01	12702.53	22947.98	32622.79	65612.25
5	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
5	J			1162.81	2373.09	3578.99	4651.25	5742.29	8623.92	11355.6	18605.02	33611.21	47781.62	96100.3
6	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
6	J			1514	3089.79	4659.89	6055.99	7476.54	11228.46	14785.14	24223.98	43762.25	62212.3	125123.85
8	t			1	1.43	1.75	2	2.22	2.72	3.13	4	5.38	6.41	9.09
8	J			2496.54	5094.98	7684.02	9986.15	12328.58	18515.39	24380.25	39944.61	72162.62	102586.21	206325.45
10	t			0.9	1.29	1.58	1.8	2	2.45	2.81	3.6	4.84	5.77	8.18
10	J			2551.05	5206.22	7851.79	10204.18	12597.76	18919.64	24912.56	4.816.74	73738.18	104826.02	210830.25
12	t			0.9	1.29	1.58	1.8	2	2.45	2.81	3.6	4.84	5.77	8.18
12	J			3094.4	6315.1	9524.15	12377.59	15280.97	22949.37	30218.72	49510.35	89443.78	127153.06	255735.29
16	t		0.64	0.9	1	1.23	1.41	1.8	2.42	2.88	4.09			
16	J		2128.19	4171.25	5149.7	7733.95	10183.73	16685.02	30142.61	42850.66	86182.95			
20	t	0.45	0.64	0.9	1	1.23	1.41	1.8	2.42	2.88	4.09			
20	J	1310.24	2673.97	5240.97	6470.34	9717.32	12795.34	20963.89	30142.61	42850.66	86162.95			
24	t	0.45	0.64	0.9	1	1.23	1.41	1.8	2.42	2.88	4.09			
24	J	1576.73	3217.81	6306.92	7786.32	11693.69	15397.74	25227.66	45575.47	64789.98	130308.18			
30	t	0.45	0.64	0.9	1	1.23	1.41	1.8	2.42	2.88	4.09			
30	J	1975.48	4031.6	7901.94	9755.48	14651.03	19291.84	31607.75	57101.52	81175.39	163263.17			
36	t	0.43	0.53	0.6	0.67	0.82	0.94	1.2	1.61	1.92	2.73			
36	J	21155.62	3251.01	4225.01	5216.06	7833.62	10314.94	16900.05	30531.08	43402.91	87293.64			

J = Mass moment of inertia in Kgm²

t = Mechanical index time in seconds (does not include dwell)

All RT Series tables available in servo programmable versions.

*For mounted accessories up to Ø 6000mm. Applications in assembly facilities with large and heavy parts: welding, riveting, assembling, and printing/labeling.

RT900

Technical specifications

Main dimensions

Output flange Ø [mm]	1400
Overall height (output flange screw-on surface) [mm]	611
Center opening Ø [mm]	400H8
Recommended max. size of rotating plate Ø [mm]	9500
Index table weight [kg]	2230
Number of indexes	2,3,4,6,8,10,12,16,20, 24,30,36
Other numbers on request	

Standard drives

Motor	SEW
Gear unit	SEW
Motor size	132-160
Voltage[V]	ANY
Power [kW]	5.5-11

Precision*

Index precision	
In radian measure on cam follower Ø [mm]	N/A
In angular seconds on cam follower Ø ["]	N/A
Axial runout on cam follower Ø [mm]	N/A
Concentricity on cam follower Ø [mm]	N/A

Load on output flange

Axial force Fa [kN]	N/A
Radial force Fr [kN]	N/A
Tilting moment Mk [kNm]	N/A
Reinforced version	N/A
Tilting moment Mk [kNm]	N/A

Load on central column

Axial force Fa [kN]	N/A
Tilting moment Mk [kNm]	N/A
Max. number of cycles [1/min]	N/A
Direction	clockwise, counterclockwise, oscillating
Mounting position	ANY

*All RT Series tables available in fixed or programmable formats.

Load on output flange
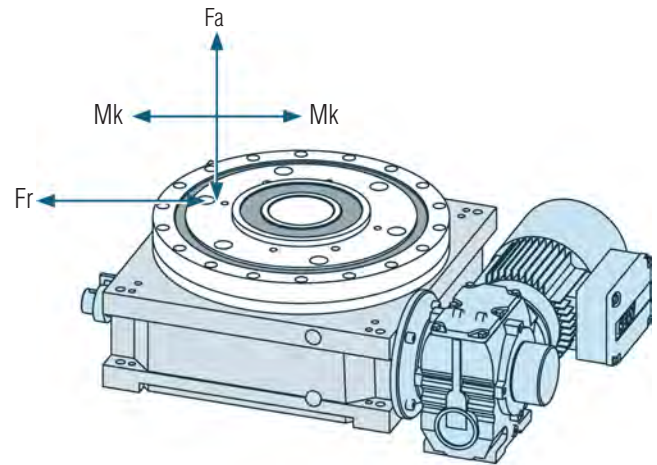
Load on central column
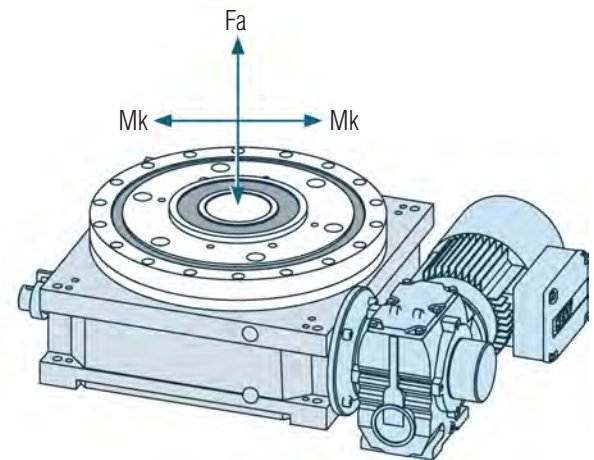
* The precision is 5 - 8 angular seconds greater at 16 or more indexes due to multiple dwell on the drive cam.

* If required, higher accuracy can be achieved upon request.

RT900

Dimensions

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your speci-fications. The central column can also be designed as a flange. Should you wish to drill additional holes, please consult us with regard to acceptable drilling depth.

⚠ The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

TT Series

Rotary Indexer

ROTARY INDEX DRIVES - TT Series

Programmable Index Drives

The rotary index table transforms a constant input drive motion into a constant output drive motion. The drive motion occurs by means of a hardened and high-accuracy constant lead barrel cam. The use of mathematical laws of motion along with a properly programmed motor profile guarantee a soft, shock proof, and jerk free movement that has been optimally designed for its intended purpose. The design allows for accurate and secure mounting to the output dial. The preload of the cam to the cam followers in dwell ensures the top dial is backlash free. No additional adjustment of the output dial is necessary. The power to rotate the index drive is provided either by means of a three phase AC motor with encoder, coupled to a gear reducer, or a servo motor coupled to a gear reducer. The gear reducer is connected to the input shaft which is firmly connected to the internal barrel cam with no further internal gearing. The barrel cam in turn rotates the top dial through the cam followers with a zero backlash internal design. The output dial is mounted to a wire bearing assembly (4 point contact bearing), which is preloaded to eliminate any runout. The index drive is completely sealed to eliminate intrusion from foreign particulate.

Fixed Index Drives

The rotary index table transforms a constant input drive motion into an intermittent output drive motion. The intermittent drive motion occurs by means of a hardened and high accuracy barrel cam. The use of mathematical laws of motion guarantees a soft, shock-proof, and jerk free movement that has been optimally designed for its intended purpose. The design allows for accurate and secure mounting to the output dial. The preload of the cam to the cam followers in dwell ensures the top dial is backlash free. No additional adjustment of the output dial is necessary.

The power is provided either by means of a three-phase motor via a gear reducer or by means of a timing chain/belt on the drive shaft of the rotary index table. This is firmly connected to the barrel cam without any further internal gear sets, and it turns the cam followers and subsequently the output flange. The output dial is mounted to a wire bearing assembly (4 point contact bearing), which is preloaded to eliminate any runout. The index drive is completely sealed to eliminate intrusion from foreign particulate.

Advantages for design engineers and special machine builder

- Housing machined on all sides. Suitable for use in any mounting position required.
- Mounting holes identical on top and bottom.
- Large center thru-hole which is large enough to feed entire shafts through, and not just small wiring looms.
- Dowel holes in housing and in output flange.
- Recessed center column. No obstruction. Lengthened and machined to customer requirements.
- Simultaneously rotating input shaft extension. Optional synchronization of other mechanical modules.

Options for individual customer requirements

- Choice of drive unit/gear motor.
- Reinforced output flange bearing for higher tilting moment.
- Optional friction clutch on drive
- Dwell and index angle can be taiilored to requirements.
- All sizes also available as programmable index tables.
- Custom specified color at no extra charge.

Technical benefits for users

- High reliability and long service life.
- Robust method of construction.
- Hardened cams: smaller sizes for higher load factors.
- Bearings fully immersed in oil bath. Cam followers self lubricating through oil bath.
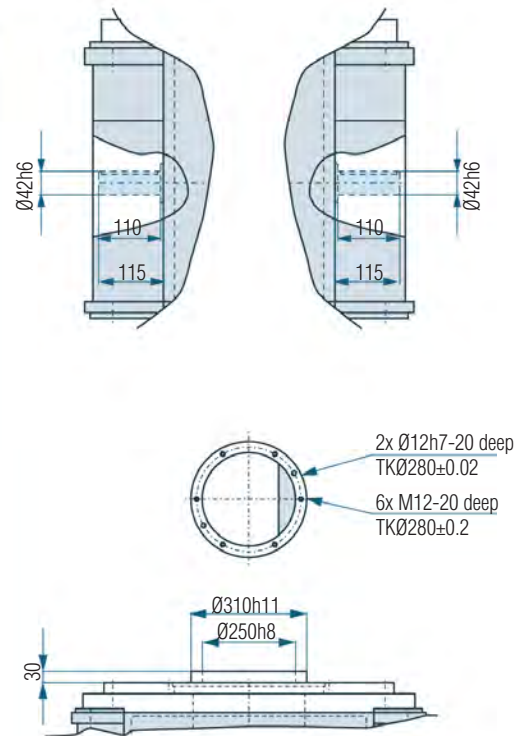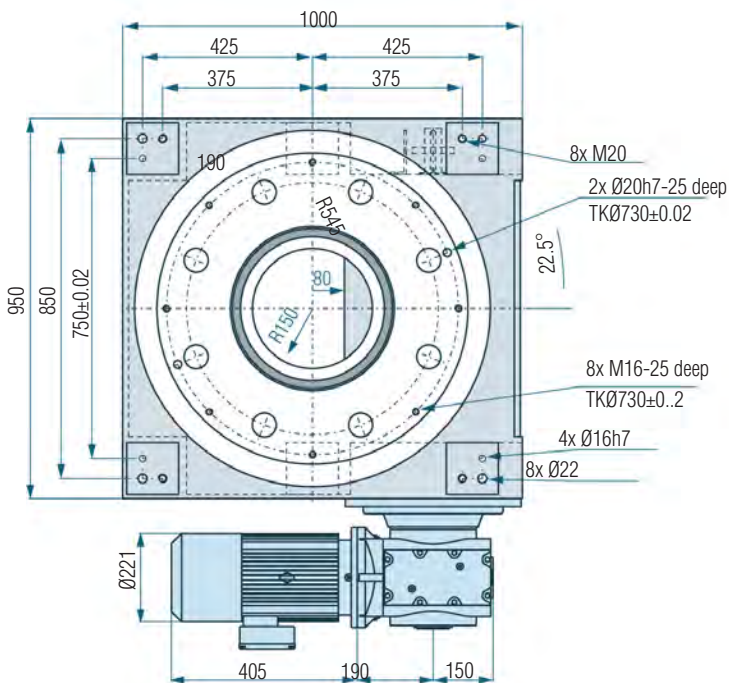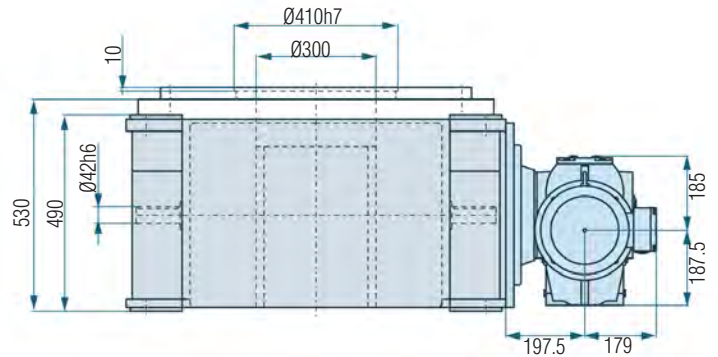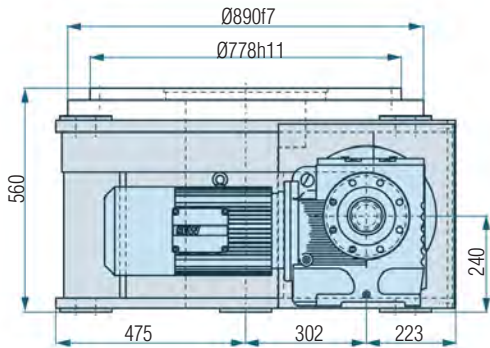- No wear. Completely maintenance-free.

TT250

Dimensions

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill additional holes, please consult us with regard to acceptable drilling depth.

*All TT Series tables available in fixed or programmable formats.

A = Length of input shaft

B = Length of shaft to collar

C = Diameter of input shaft

D = Height of central column to supporting surface on output flange, standard is -0.5mm

E = Flange plate as an option
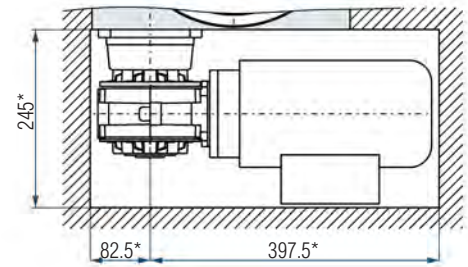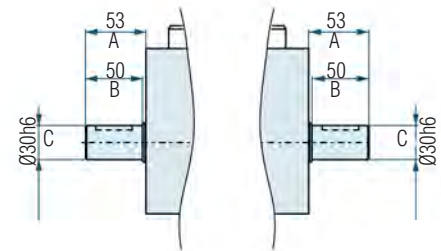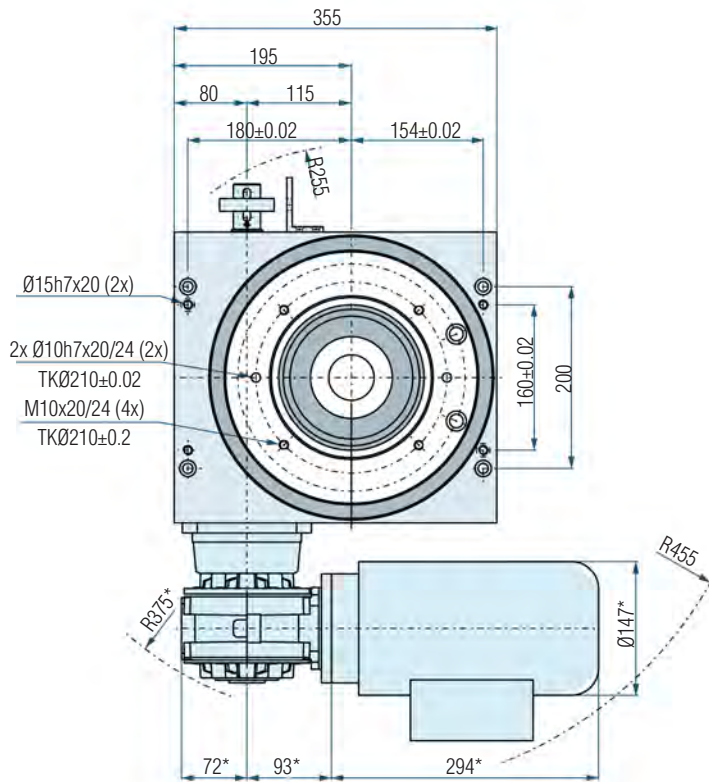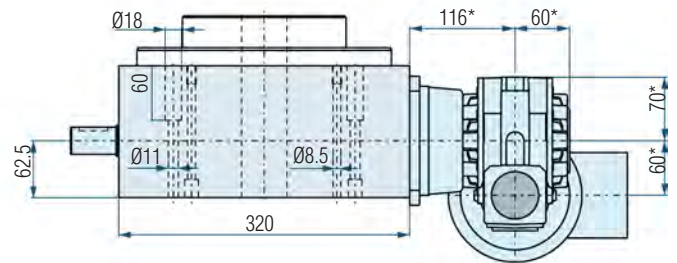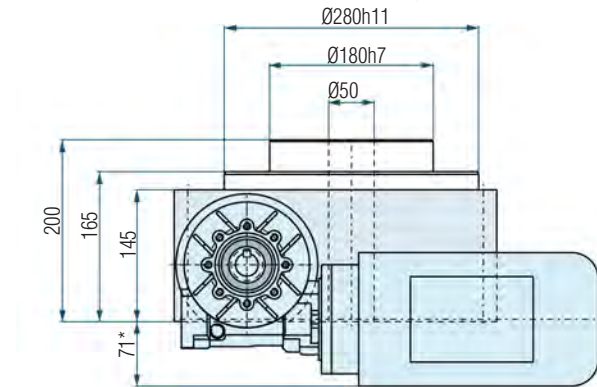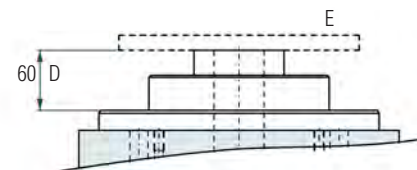
The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

TT250

Load Table

Scenarios

# of Stops		1	2	3	4	5	6	7	8	9	10	11	12
2	t			0.57	0.76	1.07	1.52	1.87	2.13	2.37	2.9	3.33	4.27
	J			3.9	4.78	9.38	19.14	28.86	37.51	46.31	69.55	91.58	150.05
3	t			0.54	0.71	1	1.43	1.75	2	2.22	2.72	3.13	
	J			6.8	10.39	20.37	41.58	62.7	81.49	100.61	151.09	198.95	
4	t		0.32	0.48	0.64	0.9	1.29	1.58	1.8	2	2.45	2.81	
	J		3.42	7.71	11.78	23.09	47.12	71.06	92.35	114.01	171.22	225.45	
5	t		0.32	0.48	0.64	0.9	1.29	1.58	1.8	2	2.45	2.81	
	J		4.33	9.75	17.32	33.94	69.27	104.47	135.77	167.62	251.73	331.47	
6	t		0.32	0.48	0.64	0.9	1.29	1.58	1.8	2	2.45		
	J		5.9	13.29	23.61	46.28	94.44	142.44	185.11	228.53	343.21		
8	t		0.32	0.48	0.64	0.9	1.29	1.58	1.8				
	J		9.34	21.02	37.34	73.19	149.37	225.27	292.76				
10	t		0.32	0.48	0.64	0.9	1.29	1.58	1.8				
	J		12.95	29.16	51.81	101.55	207.24	312.56	406.2				
12	t		0.32	0.48	0.64	0.9	1.29	1.58	1.8				
	J		16.63	37.44	66.51	130.35	266.03	401.21	521.41				
16	t	0.24	0.32	0.45	0.64	0.79	0.9	1	1.23				
	J	10.51	18.67	36.59	74.68	112.63	146.38	180.71	271.4				
20	t	0.24	0.32	0.45	0.64	0.79	0.9	1	1.23				
	J	14.58	25.91	50.77	103.62	156.28	203.1	250.74	376.57				
24	t	0.24	0.32	0.45	0.64	0.79	0.9	1	1.23				
	J	18.72	33.25	65.18	133.01	200.61	260.71	321.86	483.38				
30	t	0.24	0.32	0.45	0.64	0.79	0.9	1					
	J	24.91	44.26	86.75	177.04	267.01	347	428.4					
36	t	0.16	0.21	0.3	0.43	0.53	0.6	0.67	0.82	0.94			
	J	12.48	22.17	43.45	88.68	133.74	173.8	214.57	322.25	424.33			

Technical Specifications

Main Dimensions

Output Flange Ø [mm]	280
Overall Height [mm]	165
Center Opening Ø [mm]	50
Max. size of rotating plate Ø [mm]	2000
# of indexes	2,3,4,6,8,10,12,16,20,24,30,36
(other numbers on request)	
Index Table weight [kg]	77
Direction	CW, CCW, oscillating
Mounting Position	ANY

Load on output flange

Axial force [kN]	23
Radial force [kN]	24
Tilting moment [kNm]	2

Load on Central column

Axial force [kN]	12
Tilting moment [kNm]	2

Precision

Index precision ["]	±25
Axial Runout [mm] Radial	±0.01
Runout [mm]	±0.01

Standard Drive

Motor	SEW
Gear unit	SEW
Motor size	71-90
Voltage [V]	ANY
Power [kW]	0.18-1.5

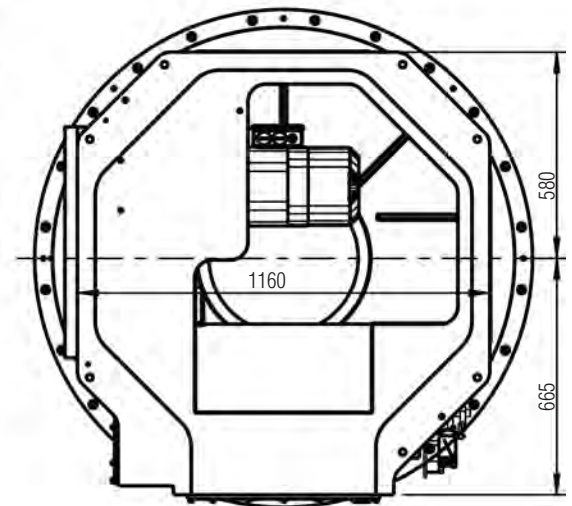* The precision is 5 - 8 angular seconds greater at 16 or more indexes due to multiple dwell positions on the drive cam.
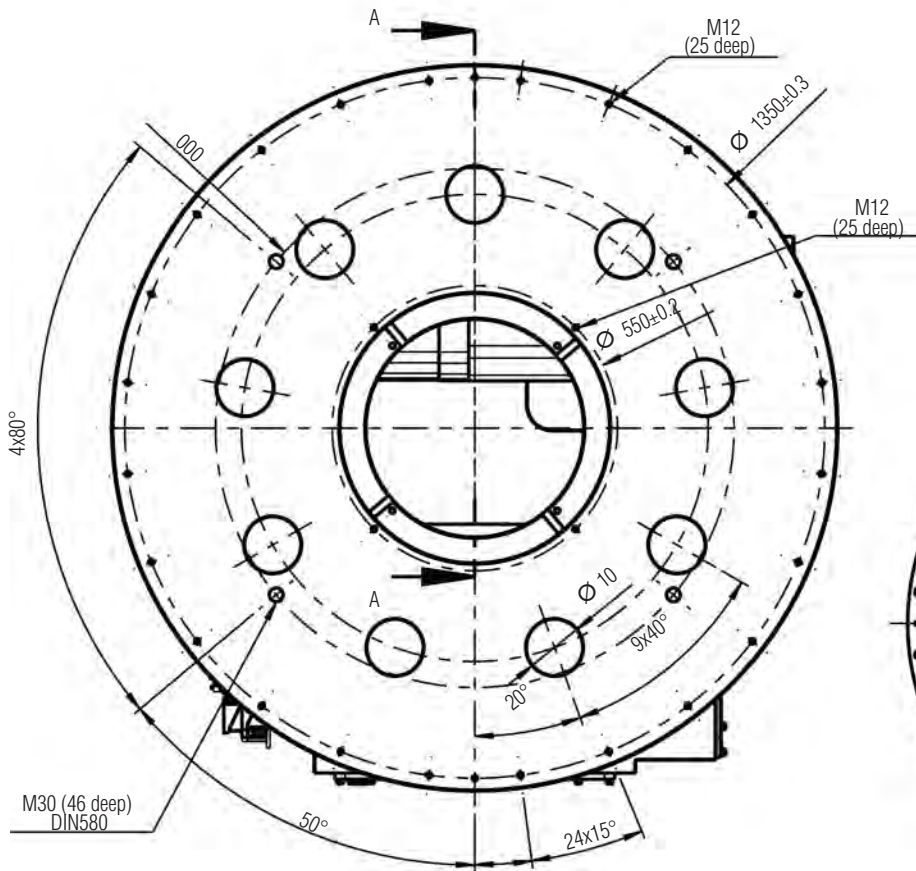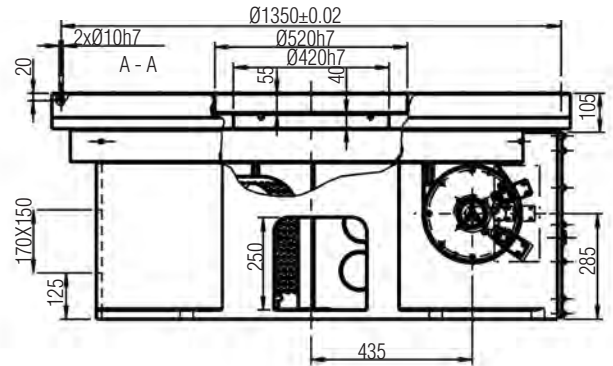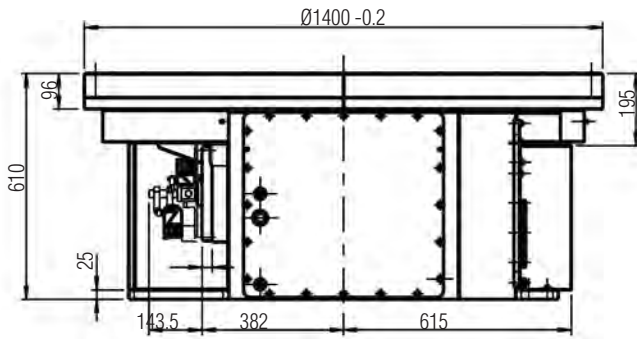
TT315

Dimensions

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill a dditional holes, please consult us with regard to acceptable drilling depth.

A = Length of input shaft

B = Length of shaft to collar

C = Diameter of input shaft

D = Height of central column to supporting surface on output flange, standard is -0.5mm

E = Flange plate as an option

All TT Series tables available in fixed or programmable formats.

The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.
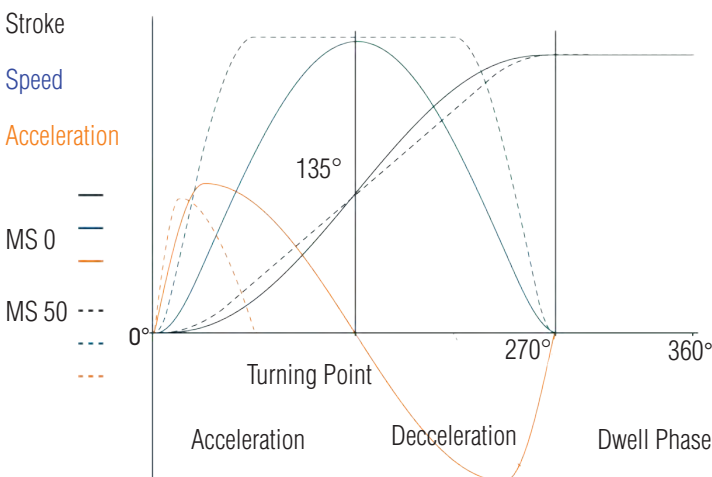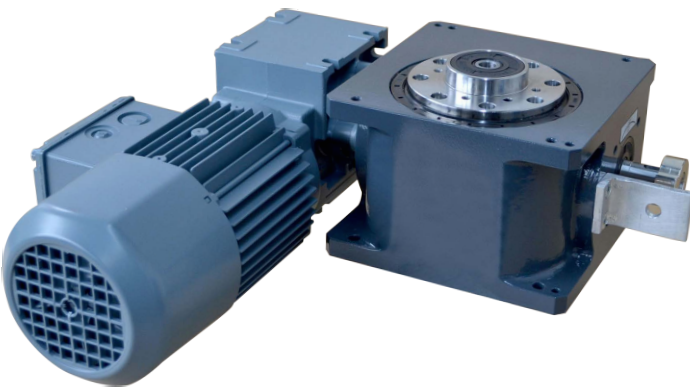
TT315

Load Table

# of Stops		1	2	3	4	5	6	7	8	9	10	11	12
2	t		0.38	0.59	0.78	1.13	1.56	1.77	2.06	2.38	2.97	3.27	4.13
	J		2.65	9.8	16.5	45	89	115	180	210	348	463	630
3	t		0.36	0.54	0.73	1	1.49	1.65	1.94	2.23	2.79	3.07	3.87
	J		5.3	20	33	92	175	238	365	427	698	940	1270
4	t	0.24	0.32	0.5	0.65	0.95	1.34	1.48	1.75	2	2.51	2.76	3.48
	J	2.95	7	23	42	102	225	295	420	552	920	1190	1650
5	t	0.24	0.32	0.5	0.65	0.95	1.34	1.48	1.75	2	2.51	2.76	3.48
	J	4.4	10.5	33	61	152	325	415	598	825	1370	1720	2450
6	t	0.24	0.32	0.5	0.65	0.95	1.34	1.48	1.75	2	2.51	2.76	3.48
	J	6.45	14.5	46	81.5	178	440	550	790	1095	1850	2320	3520
8	t	0.24	0.32	0.5	0.65	0.95	1.35	1.48	1.75	2	2.45	2.8	
	J	11.5	23.5	67	123	295	660	815	1220	1650	2610	3560	
10	t	0.24	0.32	0.5	0.65	0.95	1.35	1.48	1.78	2.05	2.45	2.84	
	J	16.5	33.2	90.5	167	395	890	1130	1570	2300	3460	4850	
12	t	0.24	0.32	0.5	0.65	0.95	1.35	1.51	1.78	2.17	2.48		
	J	22.1	42.5	110	216	510	1100	1420	2170	3025	4400		
16	t			0.25	0.33	0.47	0.67	0.74	0.88	1	1.21		
	J			47	81	206	375	455	645	720	1250		
20	t			0.25	0.33	0.47	0.67	0.74	0.89	1	1.24		
	J			64	110	230	460	570	760	1065	1520		
24	t			0.25	0.33	0.47	0.67	0.76	0.91	1.1	1.37		
	J			78	133	257	560	710	995	1340	2310		
30	t			0.25	0.33	0.47	0.72	0.78	0.9	1.1	1.37		
	J			95	163	345	790	940	1270	1910	2880		
36	t			0.25	0.37	0.5	0.71	0.93	1.18	1.48			
	J			113	253	451	940	1610	2380	4190			

Technical Specifications

Main Dimensions

Output Flange Ø [mm]	360
Overall Height [mm]	243.5
Center Opening Ø [mm]	90
Max. size of rotating plate Ø [mm]	2800
# of indexes	2,3,4,6,8,10,12,16,20,24,30,36
(other numbers on request)	
Index Table weight [kg]	193
Direction	CW, CCW, oscillating
Mounting Position	ANY

Load on output flange

Axial force [kN]	32
Radial force [kN]	17
Tilting moment [kNm]	5

Load on Central column

Axial force [kN]	28
Tilting moment [kNm]	4

Precision

Index precision ["]	±23
Axial Runout [mm]	±0.01
Radial Runout [mm]	±0.01

Standard Drive

Motor	SEW
Gear unit	SEW
Motor size	71-100
Voltage [V]	ANY
Power [kW]	0.37-2.2

* The precision is 5 - 8 angular seconds greater at 16 or more indexes due to multiple dwell positions on the drive cam.
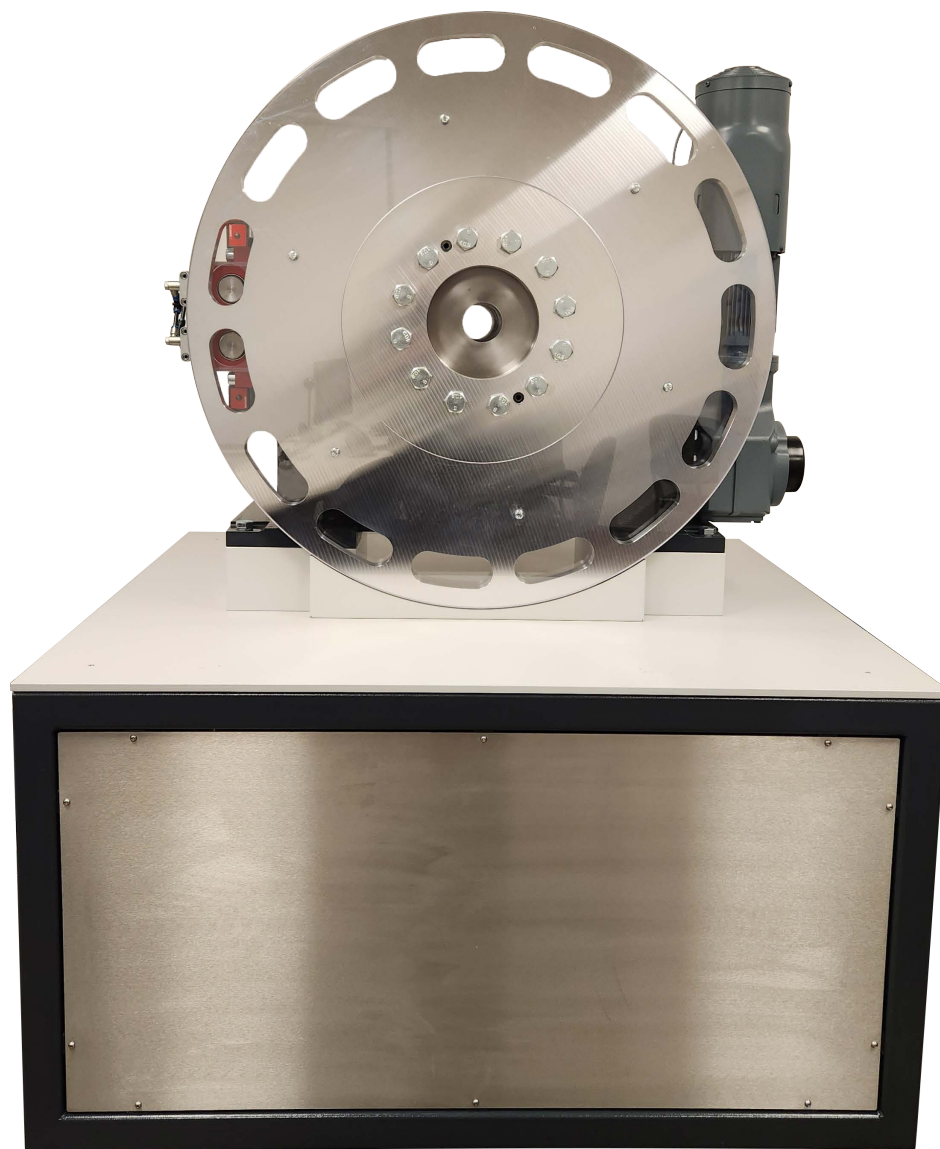
VTMF Series

Trunnion

VTMF1010

Ø210H7
Ø165H7
12
50
195
0
55
80
150
175
200
0
200

647
180
165
165
0
2xØ12H7=z
2xØ12H7-15=x
432
405
385
315
240
87
15
0
22.5°
Ø185
4xØ13.5
10xM12x20
Ø350
8xM10-16
Ø135
60°
30°
x
12xM12-20
2xØ10H7-14
16xM8-16
296
254
212
170
87
0

225
165
0
145
165
225
z
2xØ12H7-14
8x45°=360°
22,5°
14x25.714°=360°

195
175
123
115
71
35
0

25
(195)
Ø438
670
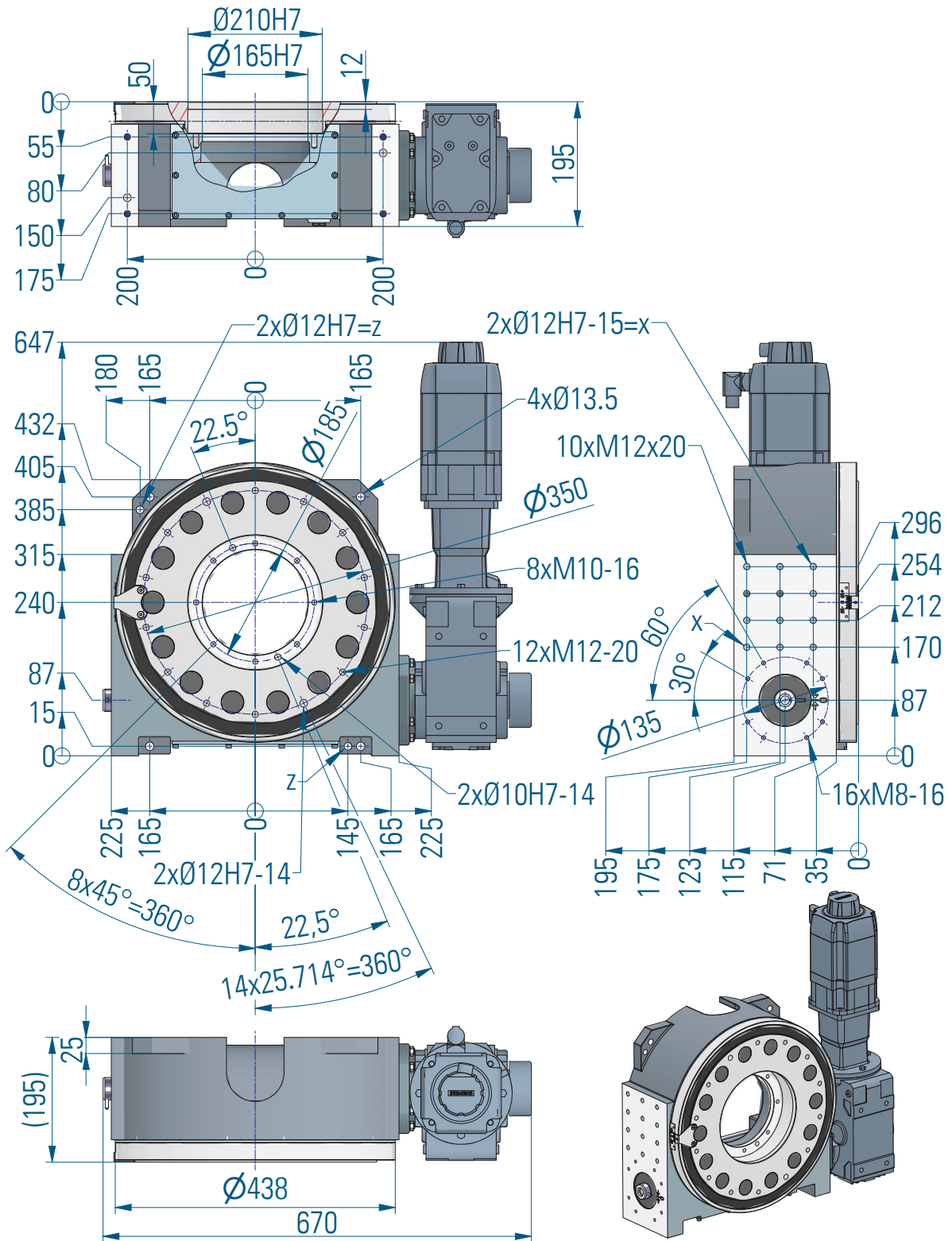
VTMF1010 Technical Data

Main dimensions

Output flange Ø [mm]	380
Height rotation center [mm]	240
Center hole Ø [mm]	165
Approx. weight of rotary indexing table with drive [kg]	165
Gear ratio	14
Positioning accuracy ["]	±30
Repeat accuracy ["]	±10
Wobble at the roll star Ø [mm]	0.02
Concentricity at the roll star Ø [mm]	0.02

Load on output flange

max. vertical force Ca [kN] dyn	20
max. vertical force C0a [kN] stat	213
max. radial force Cr [kN] dyn	29
max. radial force C0r [kN] stat	100
max. tilting moment C0m [kNm]	19

These are maximum values for individual acting forces occurring. If there are several acting forces in total, please get in contact with us to help you create a calculation with the maximum permissible acting forces, moments and life cycle.

VTMF2010

Ø242H7
Ø200H7
Ø190
75
(285)
x
0
55
75
97.5
120
220
242.5
265
285
315
2xØ12H7=x
8xM18
315

270
255
245
170
120
120
170
245
270
2xØ12H7
4xØ18
836
723
643
618
15° 12x30°=360°
Ø525
285
398
Ø220
17
4xM10
15°
Ø645
190
Ø10H7-15
20
0
60°
30°
Ø190
16xM12-24
340
310
190
190
340
608
285
170
55
12xM16-32/38
2xØ16H7-25

270
250
230
190
150
110
90
70
0
2xØ12H7-15=z
12xM12-25
(285)
z
145
145

67
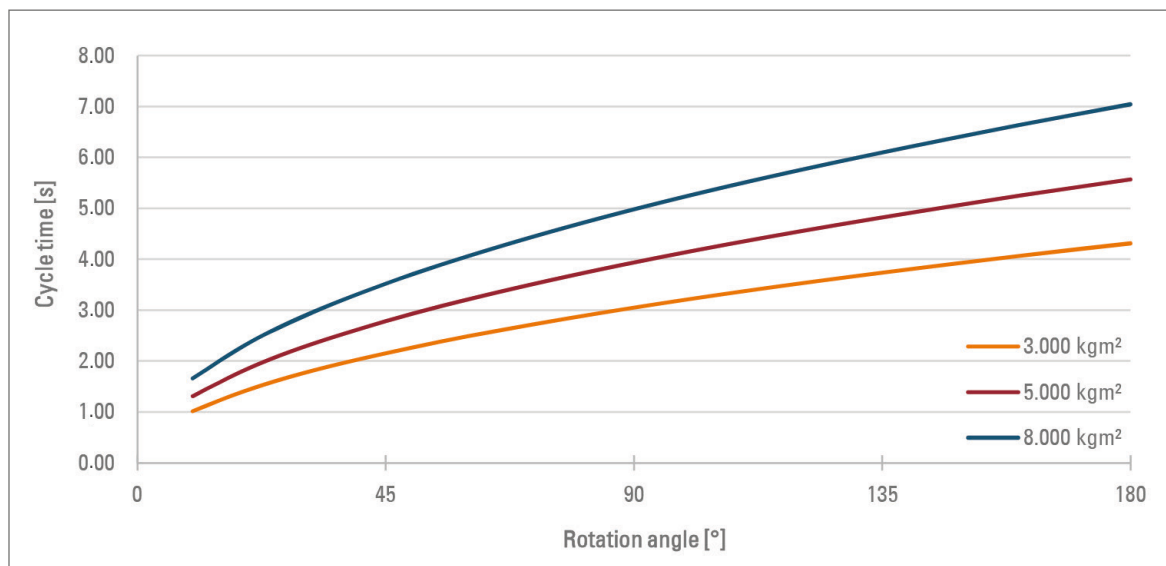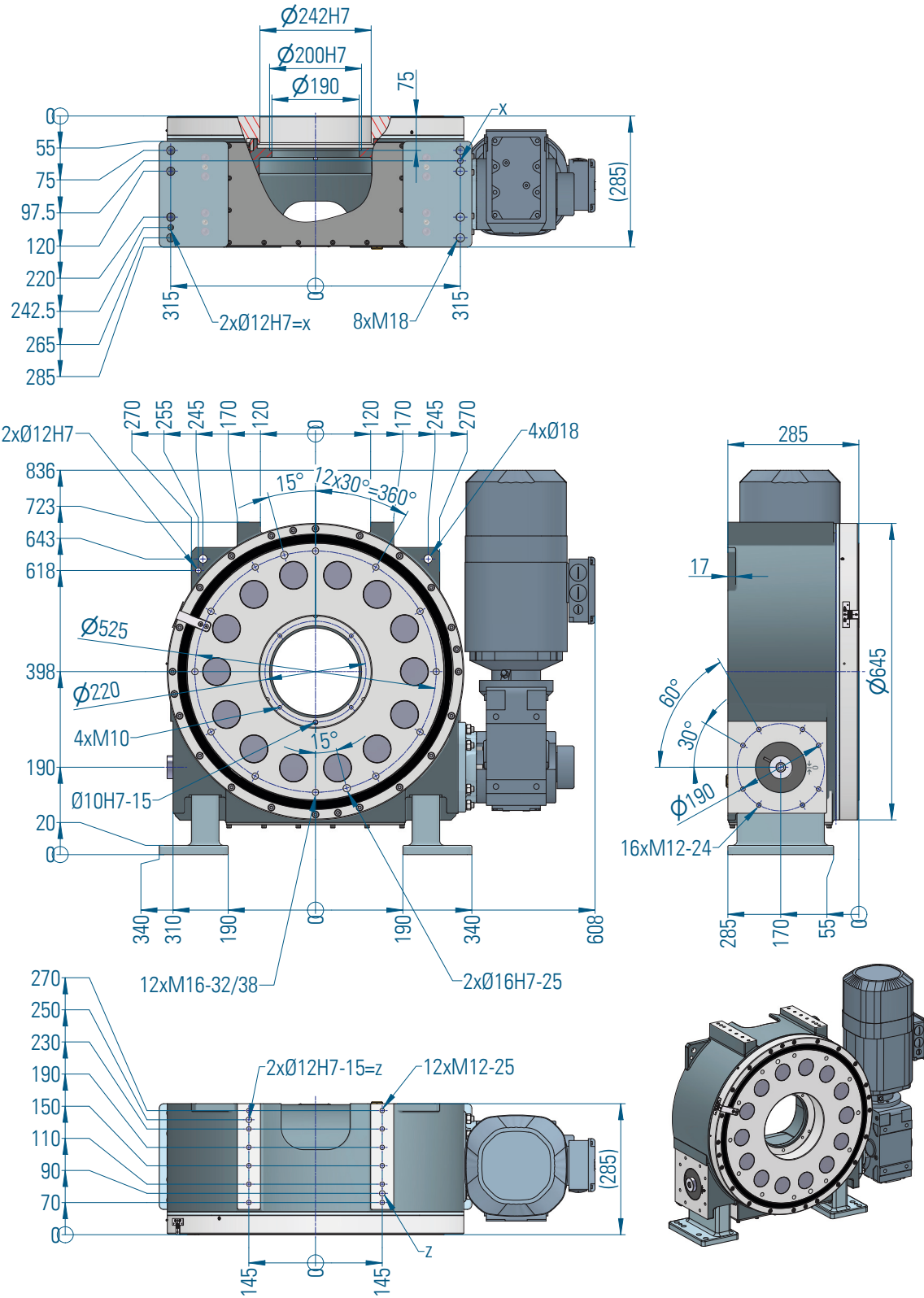
VTMF2010 Technical Data

Main dimensions

Output flange Ø [mm]	560
Height rotation center [mm]	398
Center hole Ø [mm]	190
Approx. weight of rotary indexing table with drive [kg]	420
Gear ratio	14
Positioning accuracy ["]	±30
Repeat accuracy ["]	±10
Wobble at the roll star Ø [mm]	0.02
Concentricity at the roll star Ø [mm]	0.02

Load on output flange

max. vertical force Ca [kN] dyn	75
max. vertical force C0a [kN] stat	744
max. radial force Cr [kN] dyn	64
max. radial force C0r [kN] stat	350
max. tilting moment C0m [kNm]	100

These are maximum values for individual acting forces occurring. If there are several acting forces in total, please get in contact with us to help you create a calculation with the maximum permissible acting forces, moments and life cycle.
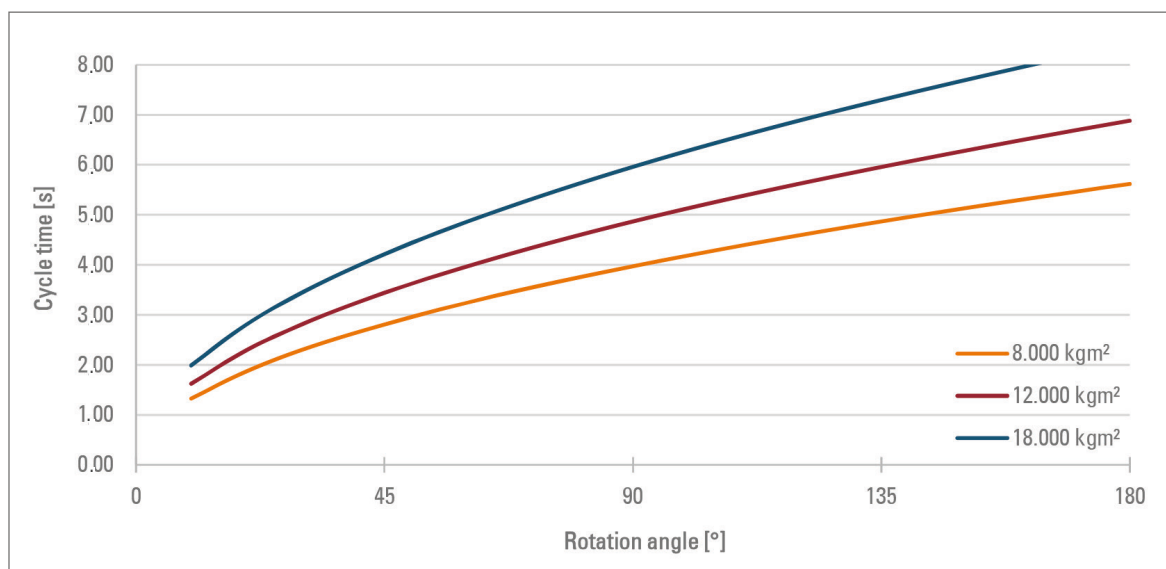
VTMF3010
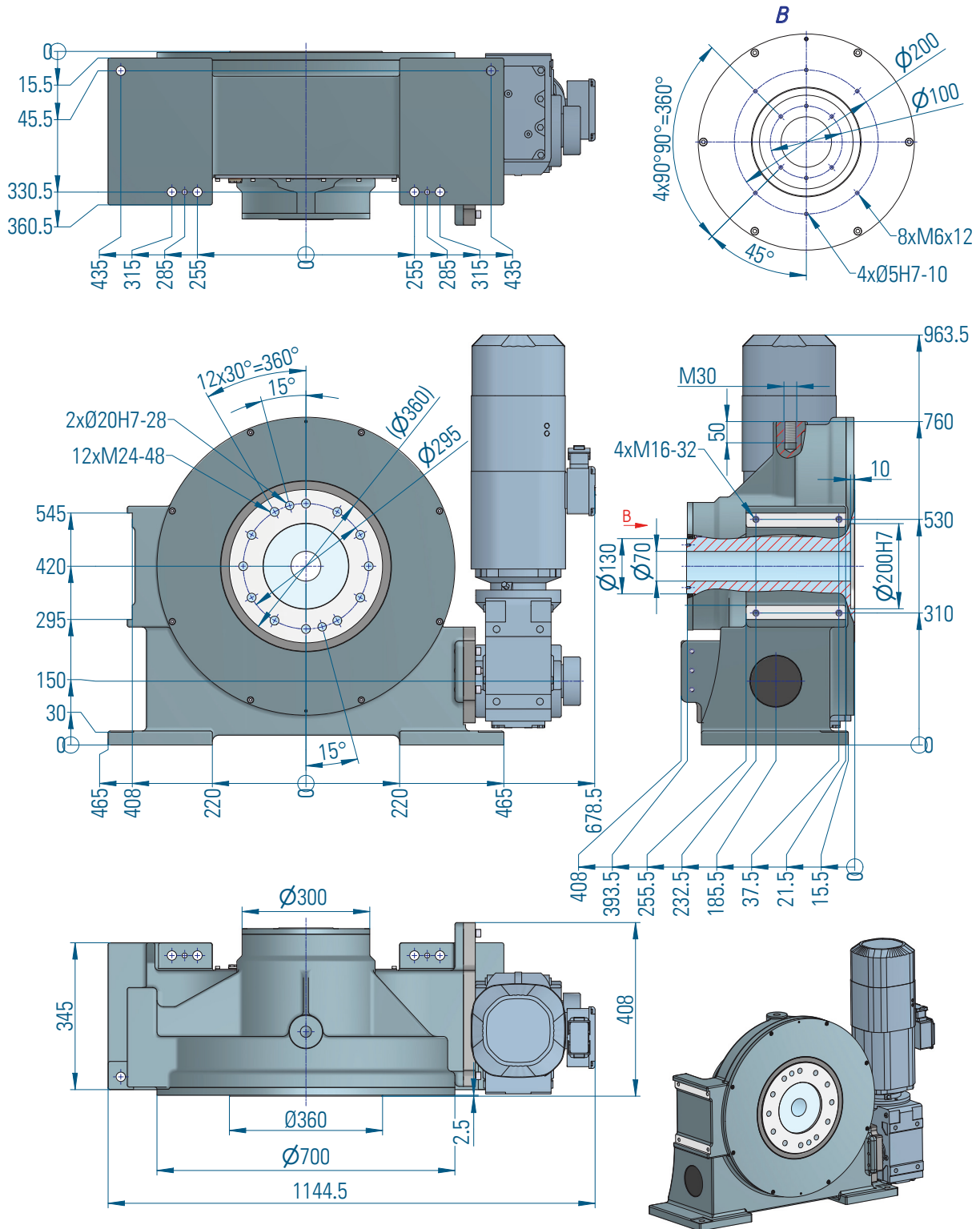
VTMF3010 Technical Data

Main dimensions

Output flange Ø [mm]	360
Height rotation center [mm]	420
Center hole Ø [mm]	80
Approx. weight of rotary indexing table with drive [kg]	810
Gear ratio	18
Positioning accuracy ["]	±30
Repeat accuracy ["]	±10
Wobble at the roll star Ø [mm]	0.02
Concentricity at the roll star Ø [mm]	0.02

Load on output flange

max. vertical force Ca [kN] dyn	80
max. vertical force C0a [kN] stat	887
max. radial force Cr [kN] dyn	85
max. radial force C0r [kN] stat	543
max. tilting moment C0m [kNm]	108

These are maximum values for individual acting forces occurring. If there are several acting forces in total, please get in contact with us to help you create a calculation with the maximum permissible acting forces, moments and life cycle.
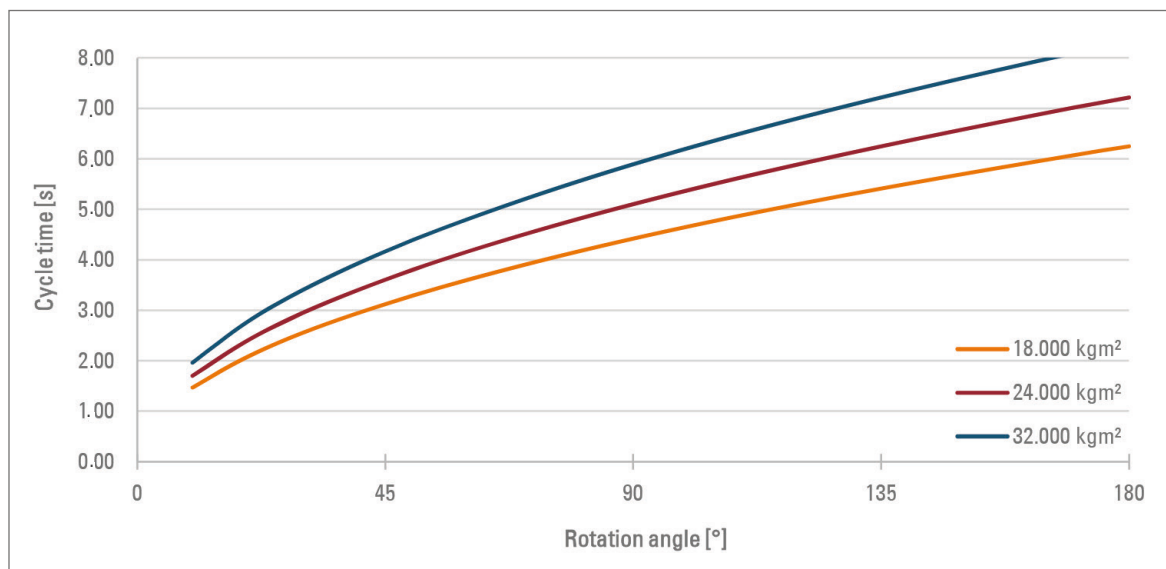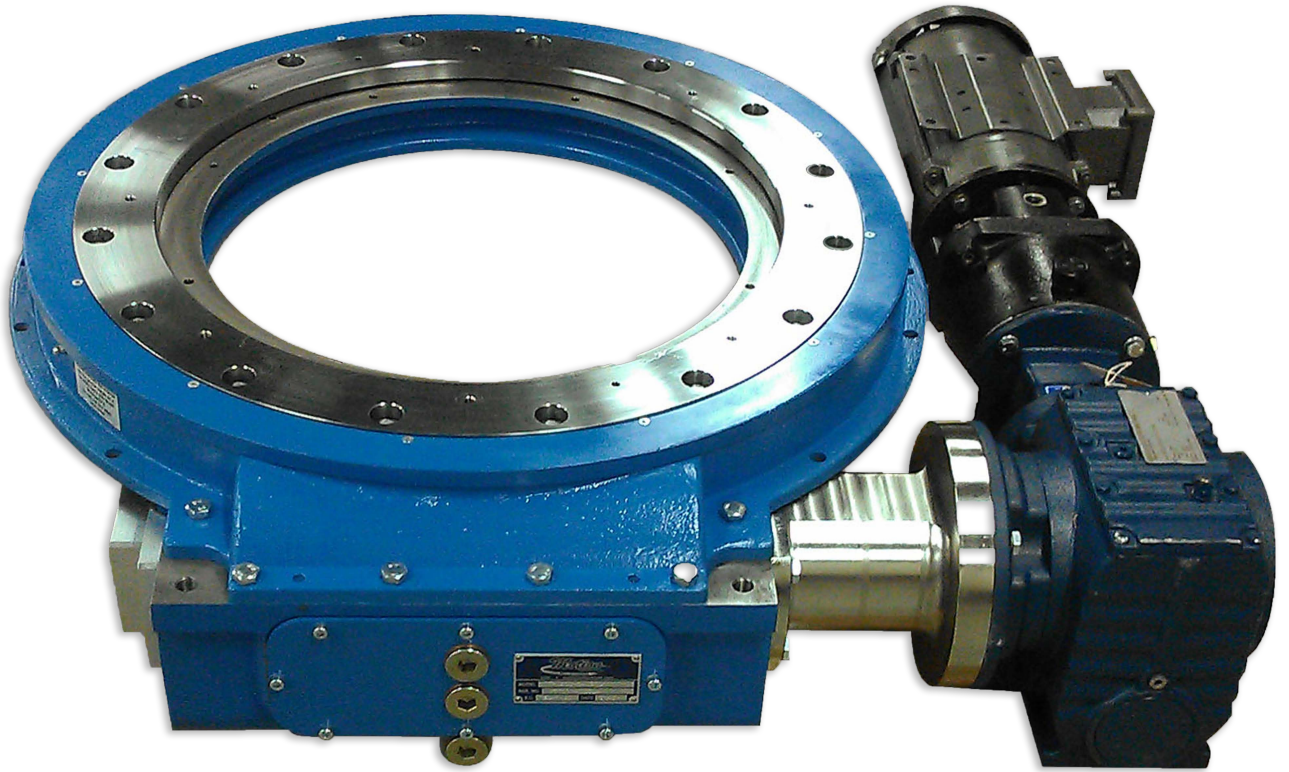
TSR Series

Ring Index Drives - Circular Indexing

MOTION
INDEX DRIVES

RING INDEX DRIVES – TSR Series

The Motion Index Drives TSR Series Rotary Indexing Ring Table encompasses a range of sizes that offer solutions for many applications. Four different models are available in our standard line: TSR600, TSR1000, TSR1400 and the TSR1900. Our Rotary Ring Index Drive are ideal for applications that require large, open center accessibility for tooling and other devices. The Rotary Indexing Ring Table can be manufactured with a fixed number of stations or as a flexible turntable with a servo motor or standard AC brake motor with encoder.
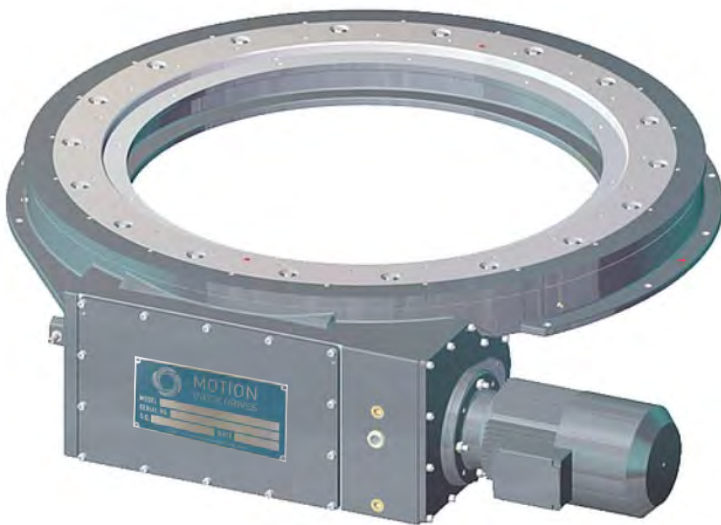
Advantages for design engineers and special machine builder

- Easy synchronization of other mechanical devices
- Open center for mounting equipment
- Tooling designs can be up to 20' (6 meters) in diameter
- Oscillation indexing operation capabilities are standard

Options for individual customer requirements

- Extremely reliable with long service lives
- Flame hardened cams and cam followers
- Internal components immersed in oil bath
- Accuracies of up to ±0.023 mm (0.0009″)
- 4-Point contact bearing increases load capacities
- 2 to 96 station indexing step capability
- Custom indexing and dwell periods available for synchronization.

Technical benefits for users

- Custom riser base weldments
- Custom top dials
- User-controlled stations
- Clean room ready
- Extremely high accuracy applications
- More Options

Variable drive concept

Page 2

Page 1
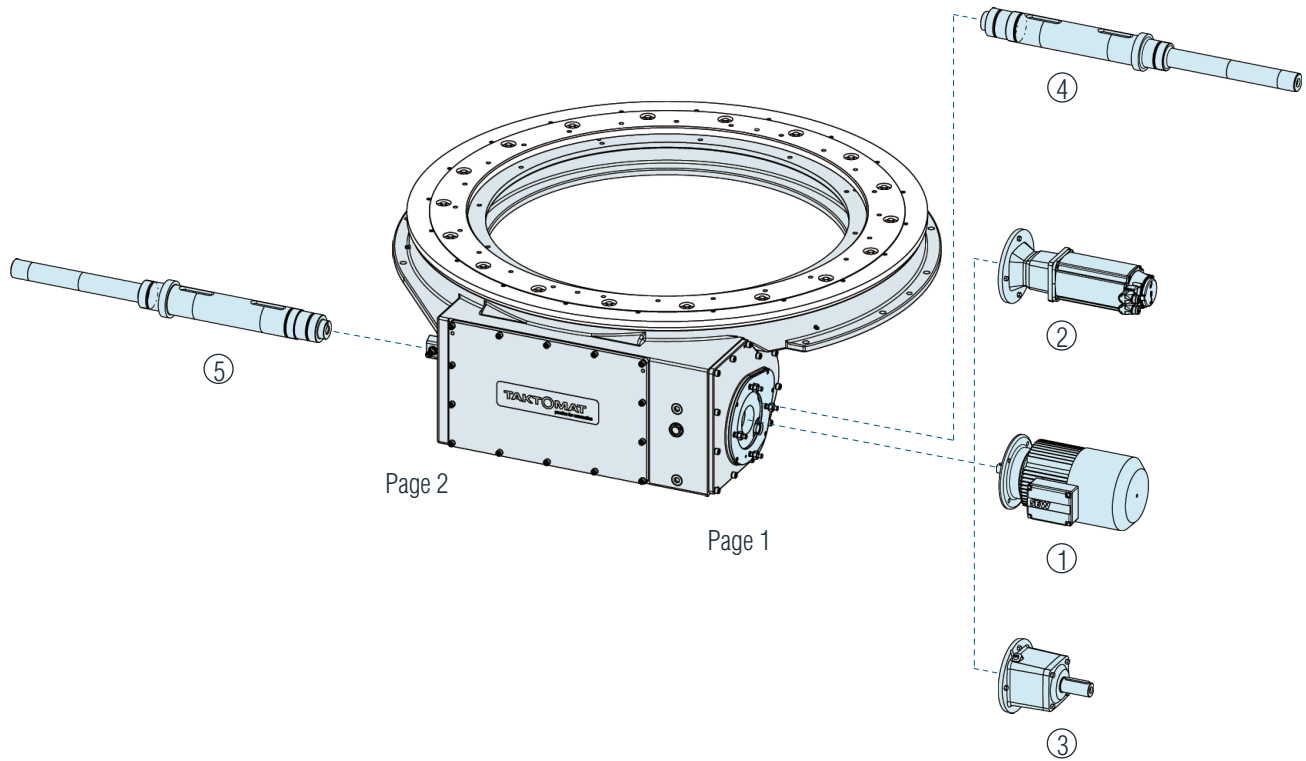
	Drive	Positional query	Internal translation
①	Three-phase brake motor (standard)	Inductive sensor on side 2	Internal spur gear with a total of 11 different transmission possibilities (non-finite pitch ratio).
②	Adapter for servo motor	Angle measurement system on side 2	
③	Adapter with input shaft for external drive	Inductive sensor or angle measurement system on side 2	
④	Free shaft for external drive (side 1)		Direct drive, one revolution of the free input shaft = one revolution of the drive curve = one step on the ring
⑤	Free shaft for external ttdrive (side 2)	Inductive sensor or angle measurement system on side 2	
		Inductive sensor or angle measurement system on side 1	

TSR600
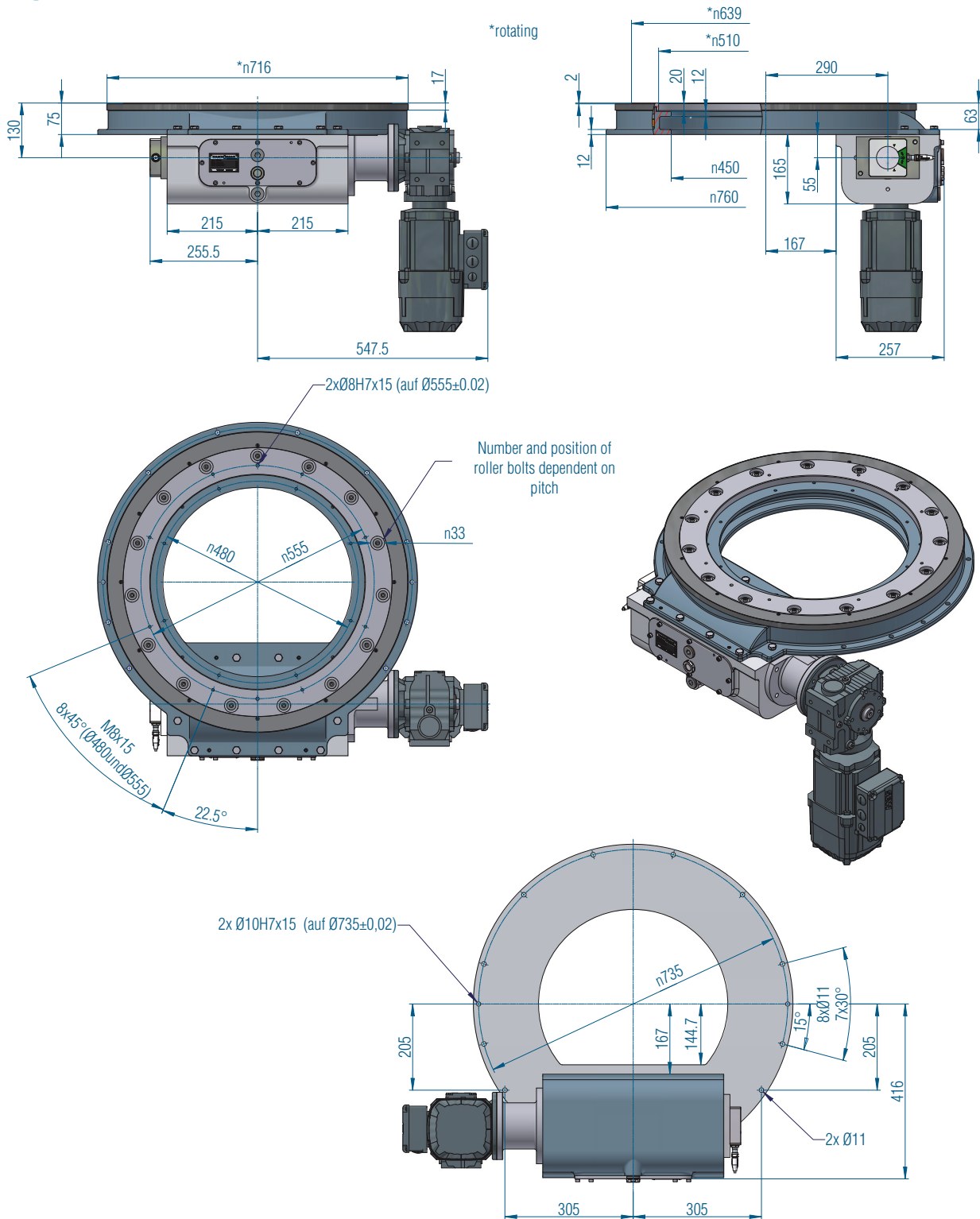
*rotating

*n716

130 · 75 · 17

215 · 215

255.5

547.5

2 · 12 · 20 · 12

*n639

*n510

290

63

n450

n760

165 · 55

167

257

2xØ8H7x15 (auf Ø555±0.02)

Number and position of roller bolts dependent on pitch

n33

n480 · n555

8x45° M8x15 (Ø480undØ555)

22.5°

2x Ø10H7x15 (auf Ø735±0,02)

n735

205

167 · 144.7

15° · 8xØ11 7x30°

205

416

2x Ø11

305 · 305

The drive unit shown is an SEW brake motor of size IEC 90

Dimensions

The dimensions shown here indicate the standard. Of course, we are happy to machine the output ring according to your specifications. The drive can also be designed with a servo motor or free shaft upon request.

If you would like to install the TSR vertically or in a different position, please inform us so that we can make the necessary changes.

Attention! Never drill through the housing or the output ring.
Attention! Depending on the drive size used, the dimensions for the motor may vary.

Load table TSR600

Stage		1	2	3	4	5	6	7	8	9	10	11	12
n													
4	t				0.71	1.00	1.43	1.75	2,00	2.22	2.72	3.13	4.00
	J				33	69	146	224	296	370	562	749	1243
6	t			0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	4.00
	J			56	104	209	435	665	875	1092	1658	2207	4568
8	t			0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	
	J			76	141	284	589	900	1183	1476	2242	2983	
10	t		0,36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	
	J		41	100	184	369	765	1168	1535	1915	2908	3869	
12	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	
	J	27	51	123	227	453	938	1432	1882	2348	3565	4743	
16	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72		
	J	38	70	215	393	783	1275	1945	2556	3189	4841		
20	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22			
	J	49	90	215	393	783	1618	2468	3242	4045			
24	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22			
	J	59	110	260	475	945	1954	2979	3914	4883			
30	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22			
	J	40	75	179	327	652	1348	2056	2702	3371			
36	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22			
	J	49	90	215	394	785	1622	2474	3250	4056			

n = pitch (number of stops/360° output drive rotation)
J = Mass moment of inertia (body plate + devices and steps) in kgm²

t = step time in seconds Step = Step speed

Intermittent mode
In the standard version (load table), the switching angle of the curve is 300°. The bosh angle is 60°. The TSR has its own drive.

Continuous mode
In fast-running machines, the TSR is often connected rigidly to other mechanical systems via a free drive shaft. In order to achieve a certain ratio between the switching and bosh phases, the switching and bosh angles of the drive curve can be adjusted over a wide range.

Approach any angle
With a special drive cam, servo motor and measurement system, it is possible to drive any angle, speed and acceleration shape with the output ring. In this case, the TSR behaves like an NC axis.

Technical data

Main dimensions
Output ring outer/inner Ø [mm]	639/ 510
Height (clamping surface to output ring)	75
Centre bore Ø [mm]	450*
Recommended max. body size Ø [mm]	2400
Stop numbers 4, 6, 8, 10, 12, 16, 20, 24, 30, 36 (other stop numbers upon request)	
Rotary table weight [kg]	235
Rotational direction	right, left, oscillating
Mounting position	horizontal **

Load output ring
Axial force [kN]	561
Radial force [kN]	264
Tilting torque [kNm]	81.1

Accuracy
Pitch accuracy ["]	±20***
Axial runout at output flange [mm]	±0.03
Radial runout at output flange [mm]	±0.03

Standard drive
Motor	SEW
Series size	IEC71-90
Voltage [V]	230/400
Rating [kW]	0.37-1.5

* Pay attention to the interference contour of the gearbox!
** When using additional lubrication systems, any installation position is possible.
*** Increased pitch accuracy < 5" is possible upon request.

TSR1000

*n1146   * drehend   *n1049   490
17   2   *n900
95   80
15   80   80
n820   376
n1210
305.5   389
325   337
691

2xØ8H7x12 (auf Ø950±0.02)

Number and position of
roller bolts dependant
on pitch

2xØ10H7x15
(auf Ø860±0.02)

n950   n860

n33

M10x15
12x30°
(Ø950undØ860)
15°

Leave min. Ø70mm
free from underside for
roller bolt

123xØ1
1x22.54°
11.25°

n1180

2xØ10H7x15
(aufØ1180±0.02)

389   280

500
325
655
25.5

The drive unit shown is an SEW brake
motor of size IEC 90

Dimensions

The dimensions shown here indicate the standard. Of course, we are happy to machine the output ring according to your specifications. The drive can also be designed with a servo motor or free shaft upon request.

If you would like to install the TSR vertically or in a different position, please inform us so that we can make the necessary changes.

⚠ Attention! Never drill through the housing or the output ring.

⚠ Attention! Depending on the drive size used, the dimensions for the motor may vary.

Load table TSR1000

Stage		1	2	3	4	5	6	7	8	9	10	11	12
n													
6	t			0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	4.00
	J			98	199	420	895	1378	1817	2273	3463	4615	9572
8	t			0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	
	J			149	292	603	1272	1953	2573	3216	4894	6518	
10	t		0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	
	J		70	198	380	779	1635	2506	3299	4122	6267	8345	
12	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	
	J	39	91	246	468	953	1993	3051	4016	5016	7624	10150	
16	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72		
	J	62	132	341	641	1296	2702	4132	5435	6786	10310		
20	t	0.28	0,36	0,54	0.71	1.00	1.43	1.75	2.00	2.22			
	J	84	172	436	814	1639	3408	5208	6848	8549			
24	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22			
	J	107	213	531	985	1977	4106	6272	8245	10291			
30	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22			
	J	140	273	670	1238	2479	5141	7849	10316	12875			
36	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00				
	J	132	259	637	1178	2360	4896	7476	9826				

n = pitch (number of stops/360° output drive rotation)
J = Mass moment of inertia (body plate + devices and steps) in kgm²

t = step time in seconds Step = Step speed

Intermittent mode
In the standard version (load table), the switching angle of the curve is 300°. The bosh angle is 60°. The TSR has its own drive.

Continuous mode
In fast-running machines, the TSR is often connected rigidly to other mechanical systems via a free drive shaft. In order to achieve a certain ratio between the switching and bosh phases, the switching and bosh angles of the drive curve can be adjusted over a wide range.

Approach any angle
With a special drive cam, servo motor and measurement system, it is possible to drive any angle, speed and acceleration shape with the output ring. In this case, the TSR behaves like an NC axis.

Load table TSR1000

Main dimensions

Output ring outer/inner Ø [mm]	1049/ 900
Overall height (clamping surface to output ring)	95
Centre bore Ø [mm]	820*
Recommended max. body size Ø	4000
Stop numbers 4, 6, 8, 10, 12, 16, 20, 24, 30, 36 (other stop numbers upon request)	
Rotary table weight [kg]	575
Rotational direction	right, left, oscillating **

Load output ring

Axial force [kN]	1130
Radial force [kN]	531
Tilting torque [kNm]	281.2

Accuracy

Pitch accuracy ["]	±20***	*
Axial runout at output flange [mm]	±0.03	**
Radial runout at output flange [mm]	±0.03	

Standard drive

Motor	SEW
Series size	IEC71-90
Voltage [V]	230/400
Rating [kW]	0.37-1.5

Pay attention to the interference contour of the gearbox!
* When using additional lubrication systems, any mounting position is possible.
Increased pitch accuracy < 5" possible on request.

TSR1401

99.5 Ø1580 18.5 204 315.5 275 290 857

*rotating 1.5 *n1499 *n1320 700 74.5 25 n1270 n1620 286 510 380

Ø10H7x18
(at Ø1460±0.02)

n1460 n1400 n1350

Ø10H7x18
(at Ø1350±0.02)

Number and position of
roller pins depending
on pitch

M10x16
16x22.5°

Leave min. Ø70mm free
from underside for
roller bolt

2xØ12H7
(at Ø1600±0.02)

n1600

5°

915 485 17.5° 2xn14 11xØ14 10x22.5° 17.5° 700

290 275 275 40.75

Dimensions

The dimensions shown here indicate the standard. Of course, we are happy to machine the output ring according to your specifications. The drive can also be designed with a servo motor or free shaft upon request.

If you would like to install the TSR vertically or in a different position, please inform us so that we can make the necessary changes.

⚠ Attention! Never drill through the housing or the output ring.

⚠ Attention! Depending on the drive size used, the dimensions for the motor may vary.

Load table TSR1401

Stage		1	2	3	4	5	6	7	8	9	10	11	12
n													
6	t			0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	4.00
	J			76	195	455	1013	1581	2098	2635	4034	5389	11219
8	t			0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	4.00
	J			144	320	702	1522	2356	3117	3905	5961	7953	19162
10	t		0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	4.00
	J		57	227	469	997	2132	3286	4337	5428	8271	11026	26528
12	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	4.00
	J	18	87	297	596	1249	2652	4078	5378	6726	10241	13646	32808
16	t	0.28	0.36	0.54	0.71	1,00	1.43	1.75	2.00	2.22	2.72	3.13	
	J	51	147	436	849	1750	3684	5652	7445	9305	14154	18851	
20	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	
	J	82	204	568	1088	2225	4664	7146	9406	11751	17866	23788	
24	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	
	J	114	260	698	1325	2695	5633	8622	11345	14170	21536	28671	
30	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72	3.13	
	J	161	345	897	1686	3409	7107	10869	14297	17851	27122	36101	
36	t	0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22	2.72		
	J	208	430	1094	2043	4117	8568	13096	17220	21498	32656		

n = pitch (number of stops/360° output drive rotation)
J = Mass moment of inertia (body plate + devices and steps) in kgm²

t = step time in seconds Step = Step speed

Intermittent mode
In the standard version (load table), the switching angle of the curve is 300°. The bosh angle is 60°. The TSR has its own drive.

Continuous mode
In fast-running machines, the TSR is often connected rigidly to other mechanical systems via a free drive shaft. In order to achieve a certain ratio between the switching and bosh phases, the switching and bosh angles of the drive curve can be adjusted over a wide range.

Approach any angle
With a special drive cam, servo motor and measurement system, it is possible to drive any angle, speed and acceleration shape with the output ring. In this case, the TSR behaves like an NC axis.

Technical data

Main dimensions
Output ring outer/inner Ø [mm]	1499/ 1320
Overall height (clamping surface to output ring)	99.5
centre bore Ø [mm]	1270*
Recommended max. body size Ø	6000
Stop numbers	4, 6, 8, 10, 12, 16, 20, 24, 30, 36
(other stop numbers upon request)	
Rotary table weight [kg]	1225
Rotational direction	right, left, oscillating **

Load output ring
Axial force [kN]	1552
Radial force [kN]	730
Tilting torque [kNm]	540.3

Accuracy
Pitch accuracy ["]	±20***
Axial runout at output flange [mm]	±0.03
Radial runout at output flange [mm]	±0.03

Standard drive
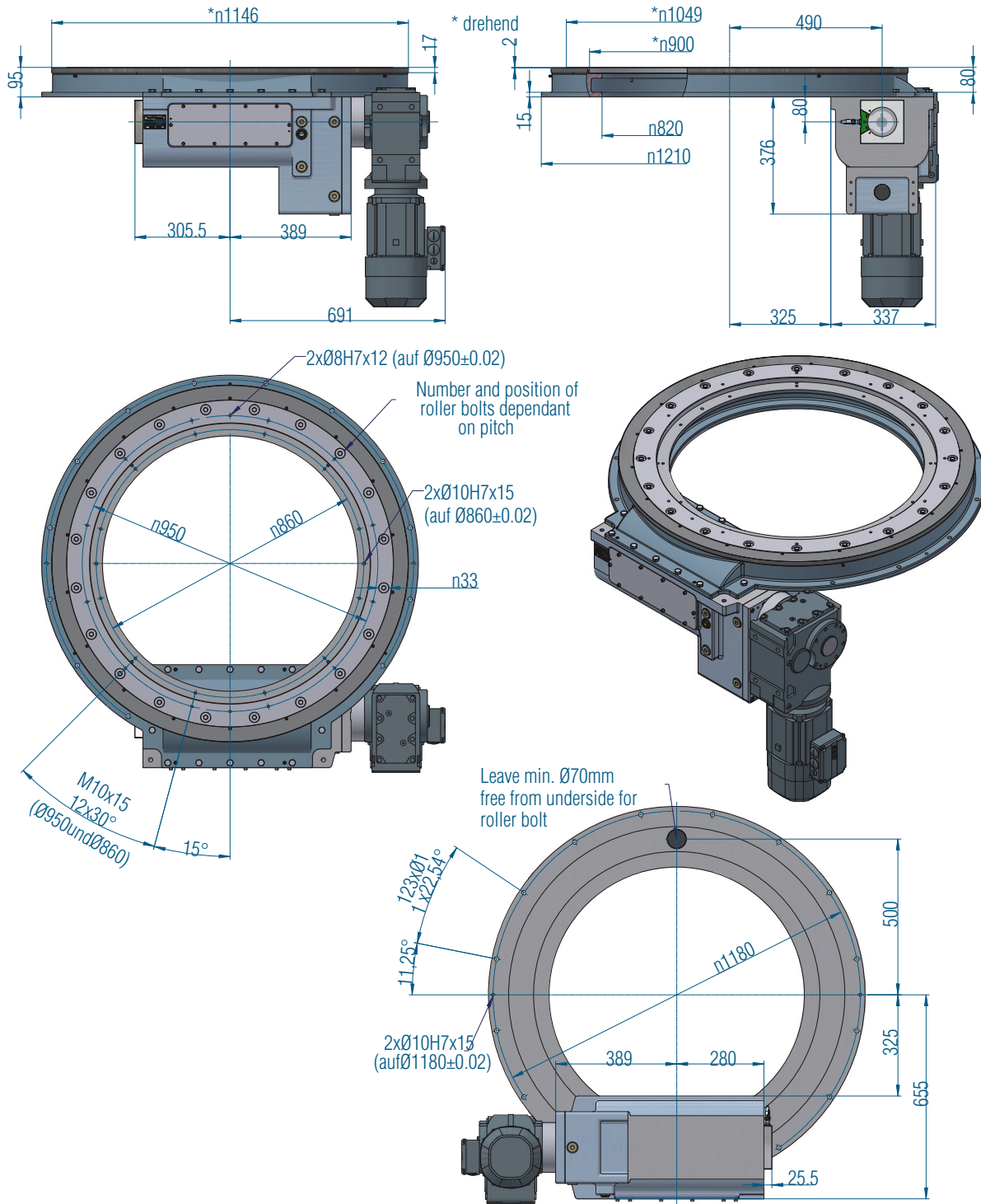|	
Motor	SEW
Series size	IEC71-90
Voltage [V]	230/400
Rating [kW]	0.37-1.5

* Pay attention to the interference contour of the gearbox!
** When using additional lubrication systems, any mounting position is possible.
*** Increased pitch accuracy < 5" possible on request.

TSR1900

*rotating

*n2060

110

402 515

844.5

*n1959
*n1790

935

65

20

n1710
n2130

375
120

1107.5

652.9

481

Number and position of roller bolts dependent on

n1840

n1750

n38

2xØ8H7x12
(auf Ø1840 ±0.02)

M2410x15
x15°
(Ø1750Ø1840)7.5°

Leave min. Ø70mm free from underside for roller bolt

1176xØ14
x18°

9°

n2090

n2100

950

730

1125

653

515 355

2xØ8H7
(auf Ø2100±0.02)

47
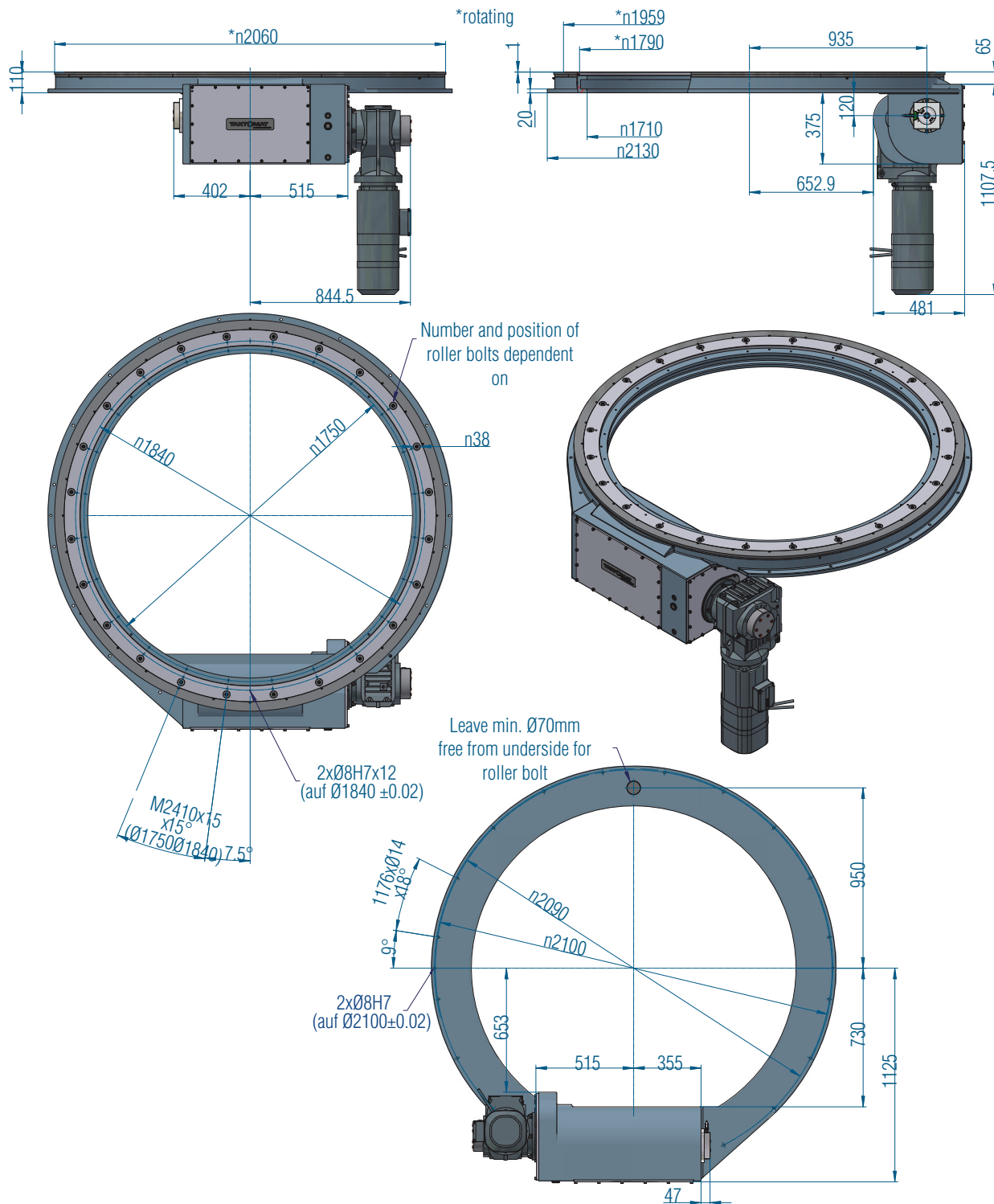
The drive unit shown is an SEW brake motor of size IEC 112

Dimensions

The dimensions shown here indicate the standard. Of course, we are happy to machine the output ring according to your specifications. The drive can also be designed with a servo motor or free shaft upon request.

If you would like to install the TSR vertically or in a different position, please inform us so that we can make the necessary changes.

⚠ Attention! Never drill through the housing or the output ring.

⚠ Attention! Depending on the drive size used, the dimensions for the motor may vary.

Load table TSR1900

Stage		1	2	3	4	5	6	7	8	9	10	11	12
n													
12	t					0.71	1.00	1.43	1.75	2.00	2.22		
	J					670	1562	3478	5426	7202	9043		
16	t				0.54	0.71	1.00	1.43	1.75	2.00	2.22		
	J				440	994	2206	4805	7449	9858	12356		
20	t			0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22		
	J			130	622	1325	2862	6158	9512	12567	15735		
24	t			0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22		
	J			208	803	1654	3512	7500	11557	15252	19086		
30	t			0.36	0.54	0.71	1.00	1.43	1.75	2.00	2.22		
	J			323	1072	2143	4482	9500	14606	19257	24082		
36	t		0.28	0.36	0.54	0.71	1.00	1.43	1.75	2.00			
	J		138	440	1344	2636	5458	11513	17674	23287			
48	t		0.28	0.36	0.54	0.71	1.00	1.43	1.75				
	J		265	669	1876	3603	7375	15467	23701				

n = pitch (number of stops/360° output drive rotation)
J = Mass moment of inertia (body plate + devices and steps) in kgm²

t = step time in seconds Step = Step speed

Intermittent mode
In the standard version (load table), the switching angle of the curve is 300°. The bosh angle is 60°. The TSR has its own drive.

Continuous mode
In fast-running machines, the TSR is often connected rigidly to other mechanical systems via a free drive shaft. In order to achieve a certain ratio between the switching and bosh phases, the switching and bosh angles of the drive curve can be adjusted over a wide range.

Approach any angle
With a special drive cam, servo motor and measurement system, it is possible to drive any angle, speed and acceleration shape with the output ring. In this case, the TSR behaves like an NC axis.

Technical data

Main dimensions
Output ring outer/inner Ø [mm]	1959/ 1790
Overall height (clamping surface to output ring)	110
Centre bore Ø [mm]	1710*
Recommended max. body size Ø [mm]	7800
Stop numbers	4, 6, 8, 10, 12, 16, 20, 24, 30, 36
(other stop numbers on request)	
Rotary table weight [kg]	3300
Direction of rotation	right, left, oscillating
Mounting position	horizontal **

Load output ring
Axial force [kN]	2088.2
Radial force [kN]	982
Tilting torque [kNm]	977

Accuracy
Pitch accuracy ["]	±20***
Axial runout at output flange [mm]	±0.03
Radial runout at output flange [mm]	±0.03

Standard drive
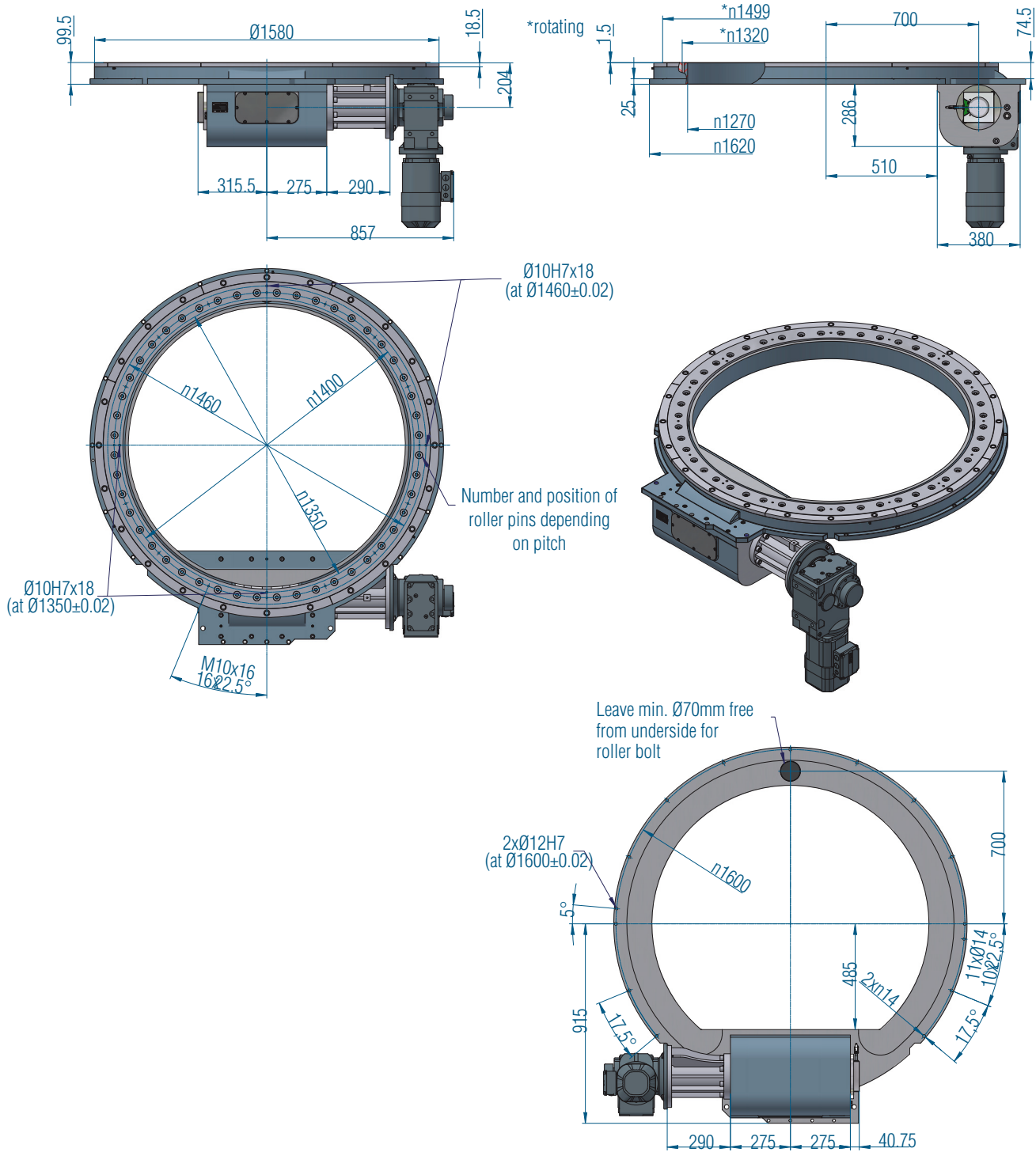|	
Motor	SEW
Series size	IEC71-90
Voltage [V]	230/400
Rating [kW]	0.37-1.5

* Pay attention to the interference contour of the gearbox!
** When using additional lubrication systems, any in-stallation position is possible.
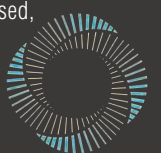*** Increased pitch accuracy < 5" is possible upon request.
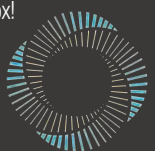
Accessories: Universal control type TIC

Properties and user benefits

A rotary indexing table can be controlled in many different ways. With this universal control, we would like to provide you with a tool with which you can optimally operate the rotary table without much effort.

- Cycle time optimisation through exact stopping of the drive in the bosh phase

- Minimisation of the costs of installation and hardware

- Simple integration through fieldbus connection (ProfiNet, EtherCAT, Ethernet/IP) and aids for integration (step-by-step instructions and video tutorials)

- Motor protection switches and mechanical or electronic contactors can be omitted. Only line protection is necessary.

- Fast, gear-protecting braking during emergency stop

- Safety functions STO, SS1, SLS for max. PL e (SIL 3) with STO

- Smooth restart from intermediate positions or after emergency stop

- Machine-friendly jogging operation possible even with large tables

- Oscillation or reversal of direction of rotation possible with no additional hardware

- Easy to change the speed

- No brake wear, the brake only closes after emergency stop

- Monitoring of the engine temperature

- Compact, space-saving design

Frequent fields of application

The universal control TIC is optimally suited for all three-phase motor-driven indexing gearboxes:

- Rotary tables type RTX and RTF

- TSR circular tables

- TG globoidal gearboxes

- XT and TP stepper gears

- Timing chains type LFA
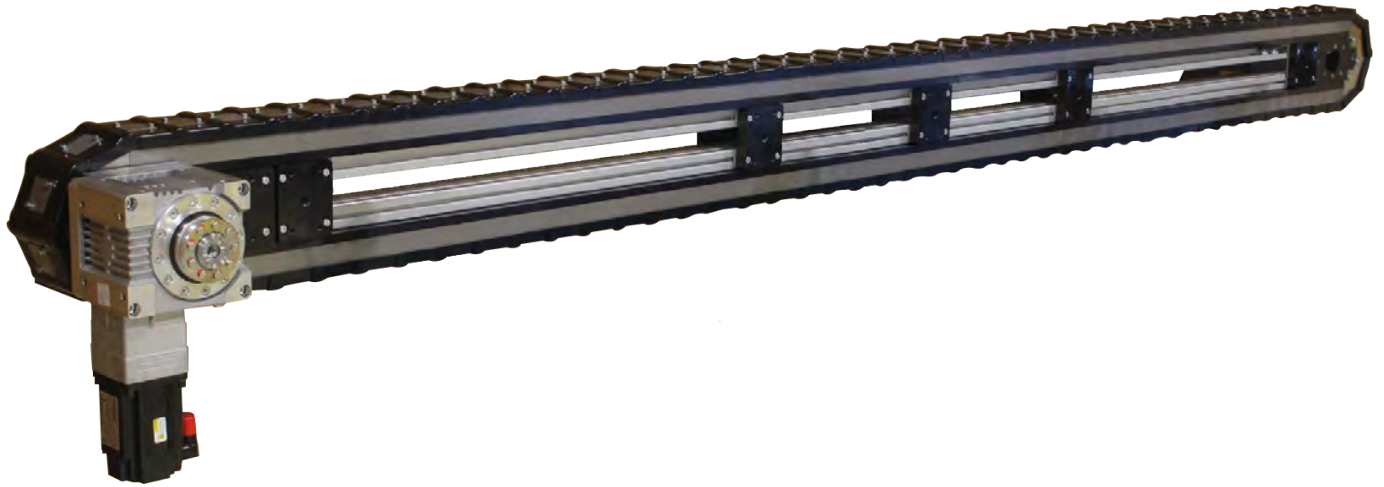
LFA Precision Conveyor

Fast Linear Transfer System

MOTION
INDEX DRIVES

Precision Link Conveyor LFA – Design and mode of operation

The main component is a continuous chain manufactured from highly precise aluminum links. Per link four cam followers for the vertical guidance roll by a hardened and fine-milled guide rail. Two ball bearings provide at a hard bar for the horizontal adjustment. The links are connected by bolts and needle bearings.

The main frame is made from aluminum profile and steel plates. The conveyor can be mounted at the aluminum profile or at the steel plates. Additional external stations can also be fixed there.

The chain is moved by a hardened step wheel, driven by a standard indexer or any other custom specified drive. At the other end a hard 180° cam guides the chain. This cam is preloaded, so there is no backlash at the links. The linear stroke of the chain depends on the diameter of the step wheel. One cycle of the indexer means a Advantages for design engineers and linear stroke of one, two or three links.
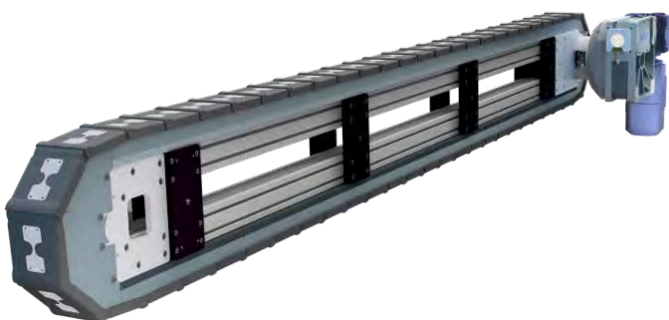
Special Machine Builders

- Vertical assembly - saves room. The empty carriers travel through the bottom of the machine
- Horizontal assembly - in an oval formation. Both sides of the machine can be used for assembly
- The free drive shaft of the indexer can be used for a synchronously rotating parallel shaft to drive other units
- The aluminum profile system can be used to mount other external stations fast and easily

Allowance for Individual Customer Requirements

- Custom specified drives are available
- Optional overload protection
- Dwell- and index angle can be customized in a large range
- Non standard links and linear strokes are possible
- The chain can be designed in metric or english
- Customized color without additional cost
- Stainless steel, nickel plating or other special
- surfaces are available

Technical Benefits for Users

- High reliability and long lifetime
- Robust method of construction
- Proven to last many years
- Needle or ball bearings rolling in oil bath or on clean, dry and hard surfaces
- Low maintenance (only once a year check and adjust the pre-loading of the chain)
- Wear-free by using TIC (Motion Index Drives Indexing Controller)

The sky is the limit for the Motion Index Drives product line. Flexible, made-to-order custom designs which are not featured in the product catalog have long been embedded in our corporate philosophy.

Our drives meet the highest standards regarding quality and precision. Our cams are manufactured in a different manner with regards to our competition, therefore it is often possible to use smaller rotary table sizes supplied by Motion Index Drives instead of larger ones supplied by our competitors.

Our extensive design expertise enables us to meet customer requirements down to the last detail. We can combine the advantages of different forms of drives to create new value-added solutions which fit the bill completely. This is the added value which we have been offering to our customers in different sectors for many years.
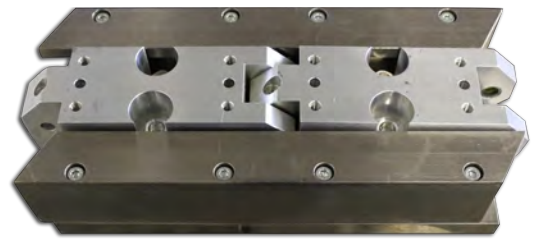
Main fields

Assembly Industry, Medical Technology, Cosmetics, Electronic Industry

- Fast assembly of small parts - up to 150 cycles per minute
- Transportation and manufacturing of wires or similar parts
- Mechanical and optical investigations
- Welding, Tumbling, Riveting, Bending, Marking, Filling ...

LFA080

Dimensions

The dimensions shown here are the standard dimensions. Dimension „A" depends on the number of links. Motion Index Drives LFA Conveyors can either be mounted on the extruded aluminum „F" or on the steel plates „C". The links and the steel plates can be machined to your specifications.

The dimensions marked with * depend on the size of the used drive. The conveyor can be delivered without drive or the drive can be a servo. Special dust covers or rubber lips between the links are available.

⚠ Caution! Allow spaces on side of the index wheel for adjusting the pre-load!

A = Distance between U-Turns
D = Index wheel
E = The 180° cam
F = Aluminum Profile System 8-80x120

LFA080

Load Table

s [mm]	t [s]	n_L= 12 ; n_T= 32 A= 960mm				n_L= 18 ; n_T= 44 A= 1440mm				n_L= 24 ; n_T= 56 A= 1920mm				n_L= 30 ; n_T= 68 A= 2400mm				n_L= 36 ; n_T= 80 A= 2880mm			
		m [kg]				m [kg]				m [kg]				m [kg]				m [kg]			
		0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2
80[1]	t=	0.16	0.19	0.22	0.25	0.18	0.22	0.26	0.29	0.21	0.25	0.3	0.23	0.23	0.28	0.33	0.37	0.25	0.30	0.35	0.4
160[2]	t=	0.24	0.29	0.34	0.38	0.28	0.34	0.40	0.45	0.31	0.39	0.45	0.35	0.35	0.43	0.50	0.56	0.38	0.46	0.54	0.61
240[3]	t=	0.32	0.40	0.46	0.52	0.38	0.47	0.54	0.61	0.43	0.53	0.61	0.47	0.47	0.58	0.68	0.76	0.51	0.63	0.74	0.83
320[4]	t=	0.40	0.48	0.52	0.6	0.48	0.59	0.70	0.76	0.54	0.64	0.75	0.81	0.59	0.73	0.86	0.96	0.64	0.80	0.94	1.04

s [mm]	t [s]	n_L= 42 ; n_T= 92 A= 3360mm				n_L= 48 ; n_T= 104 A= 3840mm				n_L= 54 ; n_T= 116 A= 4320mm				n_L= 60 ; n_T= 128 A=4800mm				n_L= 66 ; n_T= 140 A=5280mm			
		m [kg]				m [kg]				m [kg]				m [kg]				m [kg]			
		0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2
80[1]	t=	0.27	0.33	0.38	0.43	0.28	0.35	0.41	0.46	0.60	0.37	0.43	0.49	0.31	0.39	0.45	0.51	0.33	0.41	0.48	0.54
160[2]	t=	0.40	0.50	0.58	0.66	0.43	0.53	0.62	0.70	0.45	0.56	0.66	0.74	0.48	0.59	0.69	0.78	0.50	0.62	0.73	0.82
240[3]	t=	0.55	0.68	0.79	0.90	0.59	0.73	0.85	0.96	0.62	0.77	0.90	1.01	0.65	0.81	0.95	1.07	0.68	0.85	0.99	1.12
320[4]	t=	0.70	0.86	1.00	1.14	0.76	0.93	1.08	1.16	0.79	0.98	1.14	1.21	0.83	1.01	1.19	1.25	0.87	1.04	1.24	1.30

** Other distances „A", strokes or stroke times on request

s = Stroke [mm]
t = Stroke Time [s]

n_L = Number of links in line
n_T = Number of links total

m = Weight per link [kg]
A = Distance between U-Turns

[1] The chain moves one link with each index.

[2] The chain moves two links with each index.

[3] The chain moves three links with each index.

[4] The chain moves four links with each index.

Technical specifications

Main dimensions
Distance** [mm]
Weight at A=2000
[kg] Stroke time** [s]
Stroke** [mm]
Direction

in steps of 480 300
see Load Table 80,
160, 240 or 320 right, left

Loadings
per static link

Force vertical [N]	700
Force horizontal [N]	2600
Tilting moment [Nm]	80
Pull force at the chain [N]	3000

Standard Drive
RT160 with 81, 42, 8/33 or 2 Indexes

Precision

in feed direction* at the drive [mm]	±0.04
opposite the drive [mm]	±0.07
Transverse to feed direction [mm]	±0.05
vertical runout [mm]	±0.03

* for the first and the last link in line we can not guarantee this precision.

LFA100
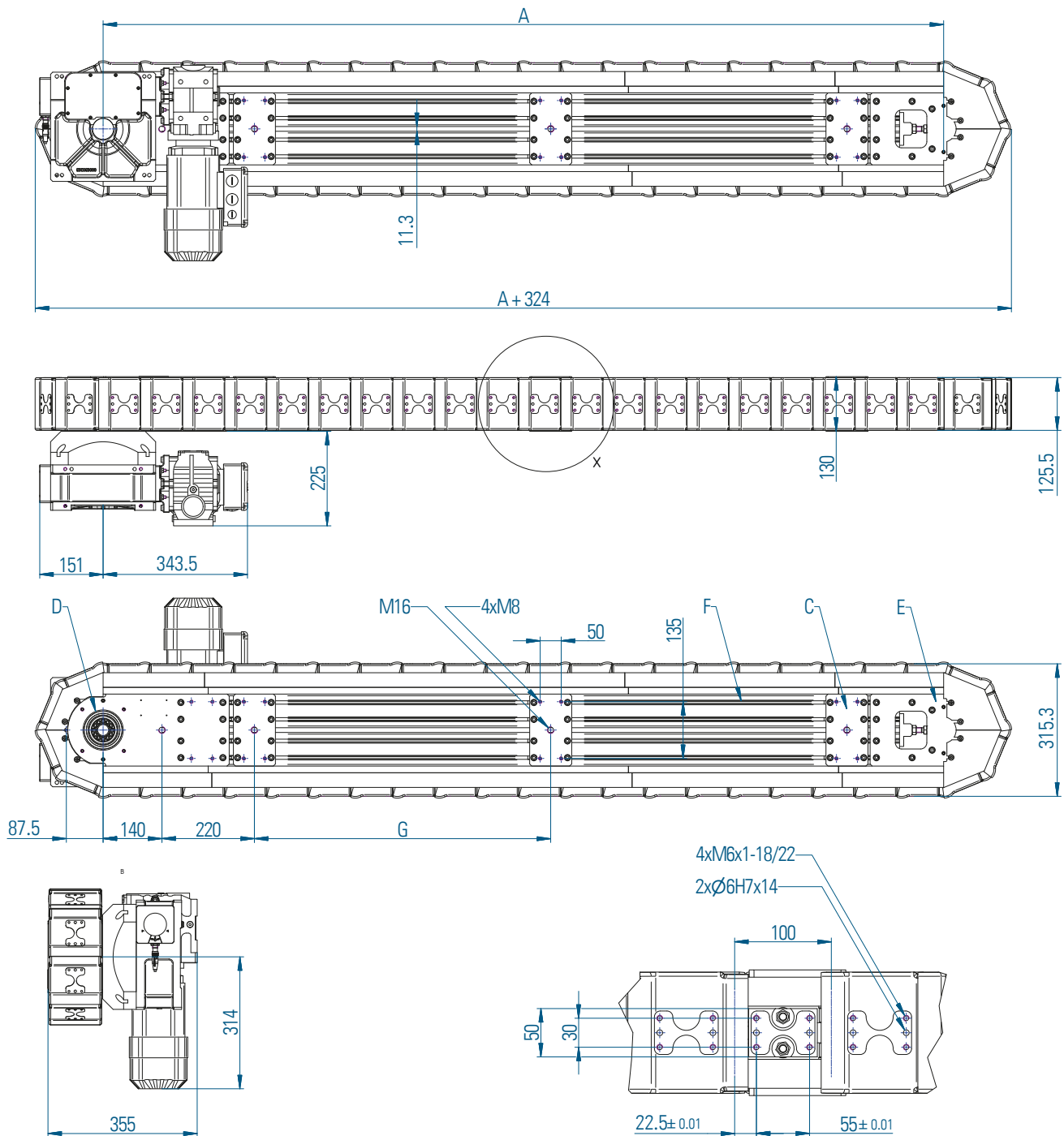
Dimensions

The dimensions shown here are the standard dimensions. Dimension „A" depends on the number of links. Motion Index Drives LFA Conveyors can either be mounted on the extruded aluminum „F" or on the steel plates „C". The links and the steel plates can be machined to your specifications.

The dimensions marked with * depend on the size of the used drive. The conveyor can be delivered without drive or the drive can be a servo. Special dust covers or rubber lips between the links are available.

⚠ Caution! Allow spaces on side of the index wheel for adjusting the pre-load!

A = Distance between U-Turns
D = Index wheel
E = The 180° cam
F = Aluminum Profile System 2x 8-80x80

LFA100

Load Table

s [mm]	t [s]	n_L= 10 ; n_T= 28 A= 1000mm				n_L= 15 ; n_T= 38 A= 1500mm				n_L= 20 ; n_T= 48 A= 2000mm				n_L= 25 ; n_T= 58 A= 2500mm				n_L= 30 ; n_T= 68 A= 3000mm			
		m [kg]				m [kg]				m [kg]				m [kg]				m [kg]			
		0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2
100[1]	t=	0.16	0.19	0.22	0.24	0.18	0.22	0.26	0.29	0.21	0.25	0.29	0.32	0.23	0.28	0.32	0.36	0.25	0.30	0.34	0.39
200[2]	t=	0.24	0.29	0.33	0.37	0.28	0.34	0.39	0.44	0.31	0.38	0.44	0.49	0.35	0.42	0.48	0.54	0.38	0.46	0.52	0.59
300[3]	t=	0.33	0.40	0.46	0.51	0.38	0.46	0.53	0.60	0.43	0.52	0.60	0.67	0.47	0.57	0.66	0.74	0.51	0.62	0.72	0.80
400[4]	t=	0.40	0.51	0.59	0.65	0.45	0.57	0.68	0.74	0.50	0.63	0.75	0.81	0.55	068	0.81	0.89	0.60	0.73	0.87	0.95

s [mm]	t [s]	n_L= 35 ; n_T= 78 A= 3500mm				n_L= 40 ; n_T= 88 A= 4000mm				n_L= 45 ; n_T= 98 A= 4500mm				n_L= 50 ; n_T= 108 A=5000mm				n_L= 55 ; n_T= 118 A=5500mm			
		m [kg]				m [kg]				m [kg]				m [kg]				m [kg]			
		0.5	1	1.5	2	0,5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2
100[1]	t=	0.26	0.32	0.37	0.41	0.28	0.34	0.39	0.44	0.30	0.36	0.42	0.47	0.31	0.38	0.44	0.49	0.33	0.40	0.46	0.52
200[2]	t=	0.40	0.49	0.56	0.63	0.43	0.52	0.60	0.67	0.45	0.55	0.63	0.71	0.47	0.58	0.67	0.75	0.50	0.60	0.70	0.79
300[3]	t=	0.55	0.67	0.77	0.86	0.58	0.71	0.82	0.92	0.62	0.75	0.87	0.97	0.65	0.79	0.91	1.02	0.68	0.83	0.96	1.07
400[4]	t=	0.65	0.78	0.92	1.02	0.68	0.82	0.97	1.08	0.72	0.86	1.02	1.14	0.75	0.90	1.06	1.19	0.79	0.95	1.12	1.25

** Other distances „A", strokes or stroke times on request

s = Stroke [mm]
t = Stroke Time [s]
α = Switching angle on the drive [°]

n_L = Number of links in line
n_T = Number of links total

m = Weight per link [kg]
A = Distance between U-Turns

[1] The chain moves one link with each index.

[2] The chain moves two links with each index.

[3] The chain moves three links with each index.

[4] The chain moves four links with each index.

Technical specifications

Main dimensions

Distance** [mm]	in steps of 500
Weight at A=2000 [kg]	350
Stroke time** [s]	see Load Table
Stroke** [mm]	100, 200, 300 or 400
Direction	right, left

Loadings

per static link

Force vertical [N]	700
Force horizontal [N]	2600
Tilting moment [Nm] Pull	80
force at the chain [N]	3000

Standard Drive
RT160 with 81, 42, 8/33 or 2 Indexes

Precision

in feed direction*

at the drive [mm]	±0.04
opposite the drive [mm]	±0.07
Transverse to feed direction [mm]	±0.05
vertical runout [mm]	±0.03

* for the first and the last link in line we can not guarantee this precision.

LFA125

A

A + 325

76.6

250

181   405

130   125.5

X

D   M16   4xM8   60   190   F   C   E

376.6

88   235   125   G

B

390

380

4xM6x1-18/22
2xØ6H7x14

125

30

50

22.5 ± 0.01   80 ± 0.01

Dimensions

The dimensions shown here are the standard dimensions. Dimension „A" depends on the number of links. Motion index Drives LFA Conveyors can either be mounted on the extruded aluminum „F" or on the steel plates „C". The links and the steel plates can be machined to your specifications. The dimensions

marked with * depend on the size of the used drive. The conveyor can be delivered without drive or the drive can be a servo. Special dust covers or rubber lips between the links are available.

⚠ Caution! Allow spaces on side of the index wheel for adjusting the pre-load!

A = Distance between U-Turns
D = Index wheel
E = The 180° cam
F = Aluminum Profile System 8-80x120

LFA125

Load Table

s [mm]	t [s]	n_L= 8 ; n_T= 24 A= 1000mm m [kg]				n_L= 12 ; n_T= 32 A= 1500mm m [kg]				n_L= 16 ; n_T= 40 A= 2000mm m [kg]				n_L= 20 ; n_T= 48 A= 2500mm m [kg]				n_L= 24 ; n_T= 56 A= 3000mm m [kg]			
		0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2
125[1]	t=	0.17	0.20	0.23	0.25	0.19	0.23	0.26	0.29	0.22	0.26	0.29	0.32	0.24	0.28	0.32	0.36	0.26	0.30	0.35	0.39
250[2]	t=	0.25	0.30	0.34	0.38	0.29	0.35	0.40	0.44	0.33	0.39	0.45	0.49	0.36	0.43	0.49	0.54	0.39	0.46	0.53	0.59
375[3]	t=	0.35	0.41	0.47	0.52	0.40	0.48	0.54	0.60	0.45	0.53	0.61	0.68	0.49	0.59	0.67	0.74	0.53	0.63	0.72	0.80
500[4]	t=	0.45	0.52	0.59	0.66	0.50	0.59	0.66	0.74	0.55	0.71	0.75	0.82	0.60	0.77	0.82	0.87	0.64	0.81	0.87	0.93

s [mm]	t [s]	n_L= 28 ; n_T= 64 A= 3500mm m [kg]				n_L= 32 ; n_T= 72 A= 4000mm m [kg]				n_L= 36 ; n_T= 80 A= 4500mm m [kg]				n_L= 40 ; n_T= 88 A=5000mm m [kg]				n_L= 44 ; n_T= 96 A=5500mm m [kg]			
		0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2
125[1]	t=	0.27	0.33	0.37	0.41	0.29	0.35	0.40	0.44	0.31	0.37	0.42	0.46	0.32	0.38	0.44	0.49	0.34	0.40	0.46	0.51
250[2]	t=	0.42	0.50	0.57	0.63	0.44	0.53	0.60	0.67	0.47	0.56	0.64	0.71	0.49	0.58	0.67	0.74	0.51	0.61	0.70	0.78
375[3]	t=	0.57	0.68	0.77	0.86	0.60	0.72	0.82	0.92	0.64	0.76	0.87	0.97	0.67	0.80	0.91	1.02	0.70	0.83	0.95	1.06
500[4]	t=	0.69	0.86	0.93	1.00	0.72	0.91	0.98	1.06	0.76	0.95	1.04	1.11	0.80	1.00	1.09	1.15	0.84	1.03	1.13	1.19

** Other distances „A", strokes or **stroke times on request**

s = Stroke [mm]
t = Stroke Time [s]
α = Switching angle on the drive [°]

n_L = Number of links in line
n_T = Number of links total

m = Weight per link [kg]
A = Distance between U-Turns

[1] The chain moves one link with each index.

[2] The chain moves two links with each index.

[3] The chain moves three links with each index.

[4] The chain moves four links with each index.

Technical specifications

Main dimensions

Distance** [mm]	in steps of 500
Weight at A=2000 [kg]	400
Stroke time** [s]	see Load Table
Stroke** [mm]	125, 250, 375 or 500
Direction	right, left

Loadings

per static link

Force vertical [N]	700
Force horizontal [N]	2600
Tilting moment [Nm]	80
Pull force at the chain [N]	3000

Standard Drive

RT160 with 81, 42, 8/33 or 2 Indexes

Precision

in feed direction*

at the drive [mm]	±0.04
opposite the drive [mm]	±0.07
Transverse to feed direction [mm]	±0.05
vertical runout [mm]	±0.03

* for the first and the last link in line we can
  not guarantee this precision.

LFA150

Dimensions

The dimensions shown here are the standard dimensions. Dimension „A" depends on the number of links. Motion Index Drives LFA Conveyors can either be mounted on the extruded aluminum „F" or on the steel plates „C". The links and the steel plates can be machined to your specifications. The dimensions

marked with * depend on the size of the used drive. The conveyor can be delivered without drive or the drive can be a servo. Special dust covers or rubber lips between the links are available.

⚠ Caution! Allow spaces on side of the index wheel for adjusting the pre-load!

A = Distance between U-Turns
D = Index wheel
E = The 180° cam
F = Aluminum Profile System 8-80x120

LFA150

Load Table

s [mm]	t [s]	n_L= 7 ; n_T= 22 A= 1050mm m [kg]				n_L= 12 ; n_T= 32 A= 1800mm m [kg]				n_L= 16 ; n_T= 40 A= 2400mm m [kg]				n_L= 20 ; n_T= 48 A= 3000mm m [kg]				n_L= 24 ; n_T= 56 A= 3600mm m [kg]			
		0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2
150[1]	t=	0.28	0.30	0.32	0.34	0.30	0.33	0.35	0.38	0.32	0.35	0.38	0.41	0.34	0.37	0.40	0.44	0.35	0.39	0.43	0.46
300[2]	t=	0.39	0.42	0.46	0.48	0.42	0.46	0.50	0.53	0.45	0.49	0.54	0.57	0.48	0.53	0.57	0.62	0.50	0.56	0.61	0.65
450[3]	t=	0.52	0.56	0.60	0.64	0.56	0.61	0.66	0.70	0.59	0.65	0.71	0.76	0.63	0.69	0.75	0.81	0.66	0.73	0.80	0.86
600[4]	t=	0.66	0.70	0.74	0.80	0.70	0.75	0.80	0.86	0.73	0.79	0.85	0.92	0.77	0.83	0.89	0.97	0.80	0.87	0.94	1.02

s [mm]	t [s]	n_L= 28 ; n_T= 64 A= 4200mm m [kg]				n_L= 32 ; n_T= 72 A= 4800mm m [kg]				n_L= 36 ; n_T= 80 A= 5400mm m [kg]				n_L= 40 ; n_T= 88 A=6000mm m [kg]				n_L= 44 ; n_T= 96 A=6600mm m [kg]			
		0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2	0.5	1	1.5	2
150[1]	t=	0.37	0.41	0.45	0.49	0.39	0.43	0.47	0.51	0.40	0.45	0.50	0.54	0.42	0.47	0.52	0.56	0.43	0.49	0.54	0.58
300[2]	t=	0.52	0.58	0.64	0.69	0.55	0.61	0.67	0.73	0.57	0.64	0.70	0.76	0.59	0.66	0.73	0.79	0.61	0.69	0.76	0.82
450[3]	t=	0.69	0.77	0.84	0.91	0.72	0.81	0.88	0.96	0.75	0.84	0.92	1.00	0.78	0.87	0.96	1.04	0.81	0.91	1.00	1.09
600[4]	t=	0.86	0.96	1.04	1.13	0.89	1.00	1.08	1.18	0.92	1.03	1.12	1.22	0.95	1.06	1.16	1.26	0.98	1.10	1.20	1.30

** Other distances „A", strokes or stroke times on request

s = Stroke [mm] t
= Stroke Time [s]
α= Switching angle on the drive [°]

n_L = Number of links in line n_T = Number of links total

m = Weight per link [kg]
A = Distance between U-Turns

[1] The chain moves one link with each index.

[2] The chain moves two links with each index.

[3] The chain moves three links with each index.

[4] The chain moves four links with each index.

Technical specifications

Main dimensions

Distance** [mm]	in steps of 600
Weight at A=2000 [kg]	800
Stroke time** [s]	see Load Table
Stroke** [mm]	150, 300, 450 or 600
Direction	right, left

Loadings

per static link

Force vertical [N]	1250
Force horizontal [N]	2600
Tilting moment [Nm]	120
Pull force at the chain [N]	6000

Standard Drive

RT250 with 121, 62, 43 or 2 Indexes

Precision

in feed direction*

at the drive [mm]	±0.04
opposite the drive [mm]	±0.07
Transverse to feed direction [mm]	±0.05
vertical runout [mm]	±0.03

* for the first and the last link in line we can not guarantee this precision.

XP Parallel Index Drives

Rotary Indexer

Calculations

J = moment of inertia

$$M_B = c_a \times n \quad \frac{2\pi}{n \times t^2}$$

$$M_R = \mu \times g \times R \times m$$

$$M_{AB} = M_B + M_R + (M_{ST})^*$$

$$M_{ST} = m \times g \times R$$

$$M_{AN} = ((M_B \times c_m) + (M_{ST} \times C_V)) \times \frac{360^\circ}{n \times a}$$

$$P + \frac{M_{AN} \times f_a}{9550 \times n}$$

*with one-sided lifting of loads

J = moment of inertia [kgm^2]
M_B = acceleration torque [Nm]
M_R = friction torque [Nm]
M_{AB} = indexer torque [Nm]
M_{ST} = static torque [Nm]
M_{AN} = drive torque [Nm]
μ = friction coefficient
g = acceleration of gravity = 9,81m/s^2
R = radius m = mass [kg]
a = switching angle [°]
t_S = index time [s]
n = number of stops
i = ratio
P = drive power [kW]
n = efficiency worm gear
f_a = drive speed [1/min]

MS = ACCELERATION	MSO	MS30	M250
c_a = acceleration coefficient c_m = performance coefficient c_V = speed coefficient	5.53 0.99 1.76	6.41 0.81 1.43	8.01 0.72 1.27

Sorting and Isolation

$$M_{AB} = M_B + M_{ST}$$

a becomes a'
b will be removed

a b a a b a b   a' a' a' a'
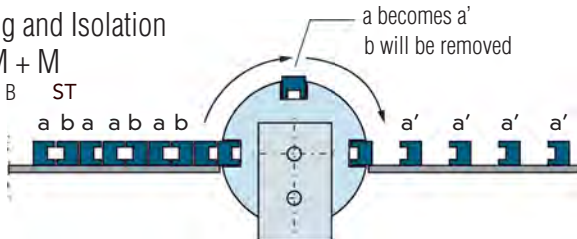
Direct driven belt/chain M_{AB}
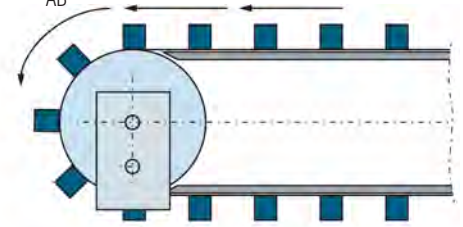
$$M_{AB} = M_B + M_B$$

Indirect driven belt/chain M_{AB}

$$M_{AB} = \frac{M_B}{i^2} + \frac{M_R}{i}$$
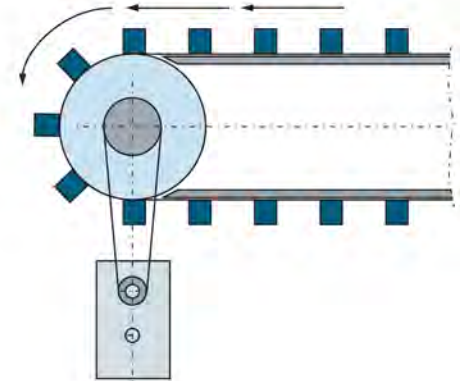
Arm

$$M_{AB} = M_B + M_{ST}$$
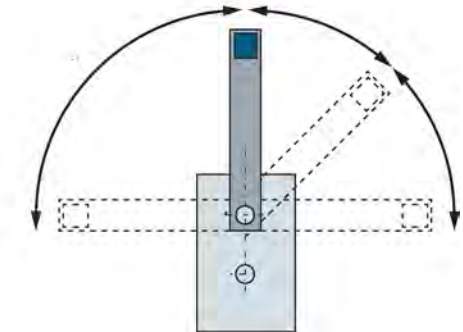
Transducer of rotations in horizontal movement

$$M_{AB} = M_R + M_B$$
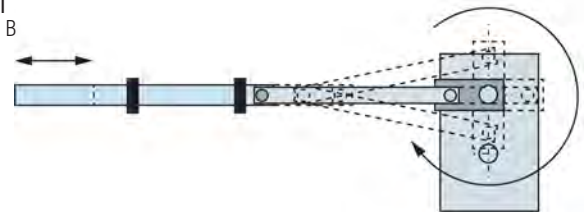
Rotate part

$$M_{AB} = M_R^B$$
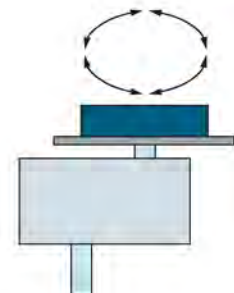
XP030

Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without a keyway. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive shaft   B = Output shaft

Output shaft and cam follower carrier

Input shaft and index disks
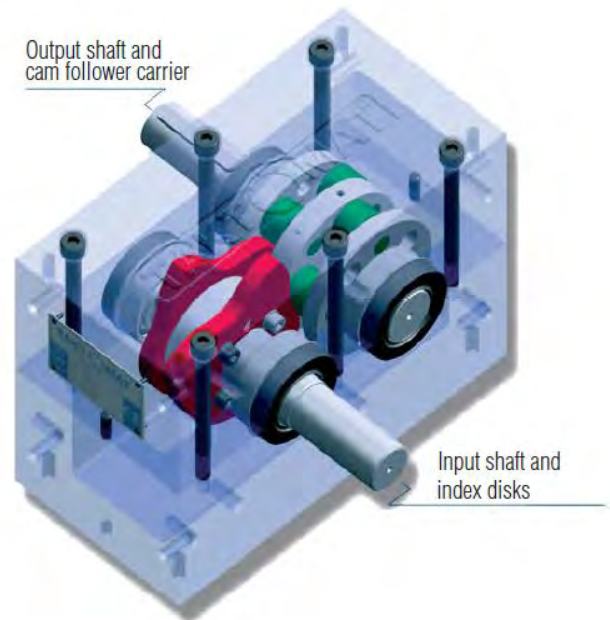
Configuration of all parallel drives
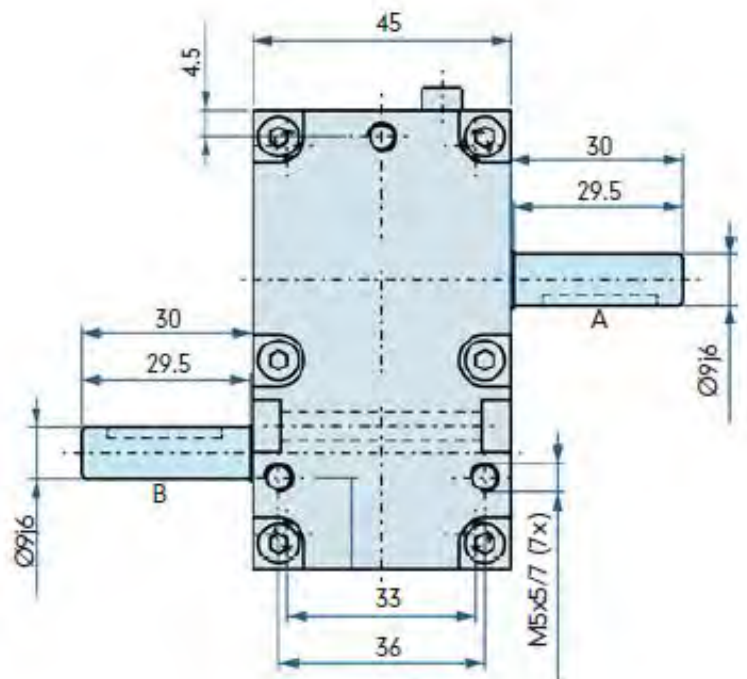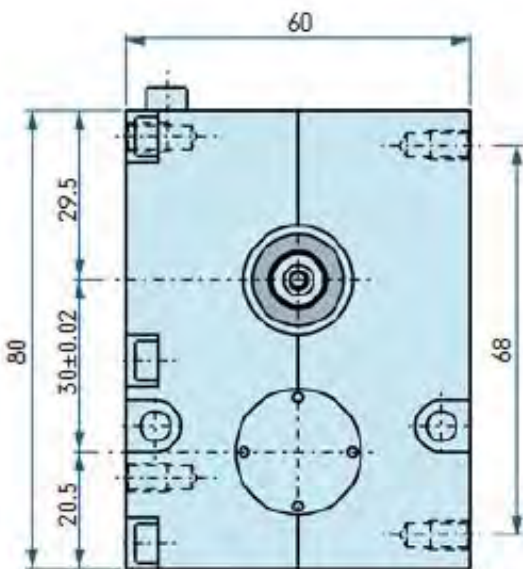
The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

XP030

Load Table

1) Parallel drives with stop numbers 6, 8 and 10 are designed as a double index, i.e. with each full rotation of the drive shaft, two indexes occur in the output.

2) Parallel drives with 12 stops are designed as a four step index, i.e. with each full rotation of the drive shaft, four indexes occur in the output.

3) The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB}[Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S[S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	13	10	9	0.25	0.05	0.01	1.1	0.55	0.28
		300	MS50	13	10	9	0.26	0.05	0.01	1	0.5	0.25
180°	2	270	MS0	13	11	9	0.42	0.09	0.02	0.9	0.45	0.23
		210	MS30	13	10	8	0.29	0.06	0.01	0.7	0.35	0.18
		150	MS50	13	10	8	0.1	0.02	0	0.5	0.25	0.13
120°	3	270	MS0	17	14	12	0.95	0.2	0.04	0.9	0.45	0.23
		210	MS30	17	14	12	0.5	0.1	0.02	0.7	0.32	0.18
		150	MS30	16	13	11	0.24	0.05	0.01	0.5	0.25	0.13
		120	MS30	16	13	11	0.15	0.03	0.01	0.4	0.2	0.1
90°	4	270	MS0	13	13	11	0.97	0.24	0.05	0.9	0.45	0.23
		210	MS0	13	13	11	0.59	0.15	0.03	0.7	0.35	0.18
		150	MS30	12	12	10	0.24	0.06	0.01	0.5	0.25	0.13
		90	MS30	11	11	9	0.08	0.02	0	0.3	0.15	0.08
72°	5	270	MS0	13	13	11	1.21	0.3	0.06	0.9	0.45	0.23
		210	MS0	13	13	11	0.73	0.18	0.04	0.7	0.35	0.18
		150	MS30	12	12	10	0.3	0.07	0.02	0.5	0.25	0.13
		90	MS30	11	11	9	0.1	0.02	0.01	0.3	0.15	0.08
60°	6[1]	270	MS0	16	16	12	1.79	0.45	0.08	0.9	0.45	0.23
		240	MS0	16	16	12	1.42	0.35	0.07	0.8	0.4	0.2
		180	MS30	15	15	11	0.64	0.16	0.03	0.6	0.3	0.15
		120	MS30	13	13	10	0.25	0.06	0.01	0.4	0.2	0.1
45°	8[1]	270	MS0	12	12	11	1.79	0.45	0.1	0.9	0.45	0.23
		240	MS0	12	12	11	1.42	0.35	0.08	0.8	0.4	0.2
		180	MS30	12	12	11	0.69	0.17	0.04	0.6	0.3	0.15
		120	MS30	11	11	10	0.28	0.07	0.02	0.4	0.2	0.1

Main Dimensions

Shaft distance [mm]	30
Weight without drive [kg]	0.7
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	1.38
Load rating static [kN]	0.58
Output Shaft	
Load rating dynamic [kN]	1.38

XP040

Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without keyways. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive Shaft   B = Output Shaft

⚠ The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

XP040

Load Table

[1]) Parallel drives with stop numbers 6, 8 and 10 are designed as a double index, i.e. with each full rotation of the drive shaft, two indexes occur in the output.

[2]) Parallel drives with 12 stops are designed as a four step index, i.e. with each full rotation of the drive shaft, four indexes occur in the output.

[3]) The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB} [Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S [S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	29	25	21	0.56	0.12	0.03	1.1	0.55	0.28
		300	MS50	28	24	20	0.56	0.12	0.02	1	0.5	0.25
180°	2	270	MS0	32	27	24	1.03	0.22	0.05	0.9	0.45	0.23
		210	MS30	26	24	21	0.59	0.14	0.03	0.7	0.35	0.18
		150	MS50	25	23	20	0.2	0.05	0.01	0.5	0.25	0.13
120°	3	270	MS0	39	33	26	2.18	0.46	0.09	0.9	0.45	0.23
		210	MS30	29	33	26	1.14	0.24	0.05	0.7	0.35	0.18
		150	MS30	33	27	23	0.49	0.1	0.02	0.5	0.25	0.13
		120	MS30	30	25	20	0.29	0.06	0.01	0.4	0.2	0.1
90°	4	270	MS0	36	30	24	2.69	0.56	0.11	0.9	0.45	0.23
		210	MS0	36	30	24	1.63	0.34	0.07	0.7	0.35	0.18
		150	MS30	35	29	23	0.7	0.14	0.03	0.5	0.25	0.13
		90	MS30	32	28	21	0.23	0.05	0.01	0.3	0.15	0.08
72°	5	270	MS0	36	30	24	3.36	0.7	0.14	0.9	0.45	0.23
		210	MS0	36	30	24	2.03	0.42	0.08	0.7	0.35	0.18
		150	MS30	35	29	23	0.87	0.18	0.04	0.5	0.25	0.13
		90	MS30	32	28	21	0.29	0.06	0.01	0.3	0.15	0.08
60°	6[1]	270	MS0	42	34	28	4.7	0.95	0.2	0.9	0.45	0.23
		240	MS0	42	34	28	3.72	0.75	0.15	0.8	0.4	0.2
		180	MS30	40	32	25	1.72	0.34	0.07	0.6	0.3	0.15
		120	MS30	36	29	22	0.69	0.14	0.03	0.4	0.2	0.1
45°	8[1]	270	MS0	42	34	28	6.27	1.27	0.26	0.9	0.45	0.23
		240	MS0	42	34	28	4.95	1	0.21	0.8	0.4	0.2
		180	MS30	40	32	25	2.29	0.46	0.09	0.6	0.3	0.15
		120	MS30	36	29	22	0.92	0.18	0.03	0.4	0.2	0.1
36°	10[1]	270	MS0	42	34	28	7.84	1.59	0.33	0.9	0.45	0.23
		240	MS0	42	34	28	6.19	1.25	0.26	0.8	0.4	0.2
		180	MS30	40	32	25	2.86	0.57	0.11	0.6	0.3	0.15
		120	MS30	36	29	22	1.14	0.23	0.04	0.4	0.2	0.1

Main Dimensions

Shaft distance [mm]	20
Weight without drive [kg]	2
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8,10
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

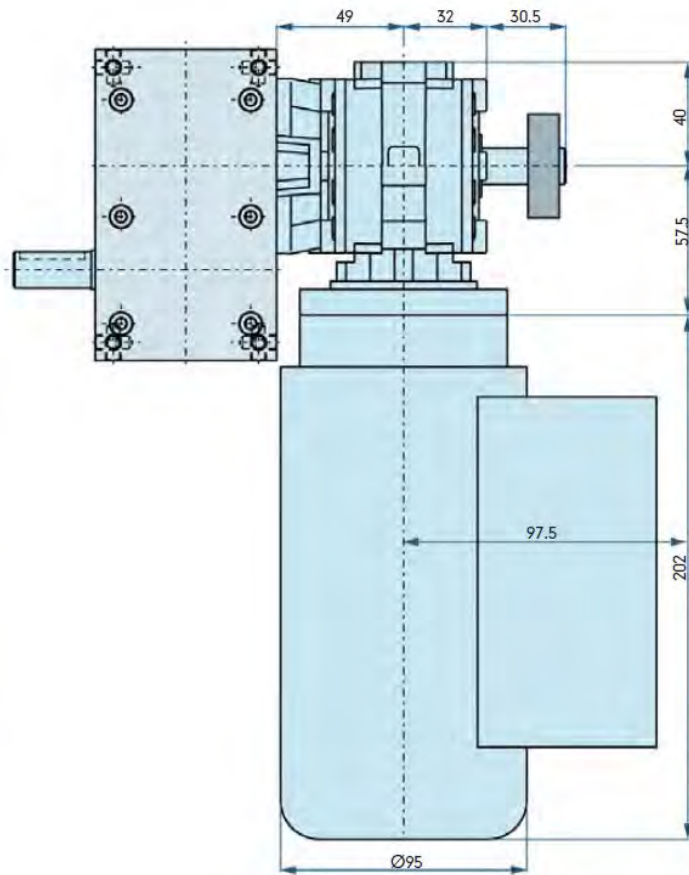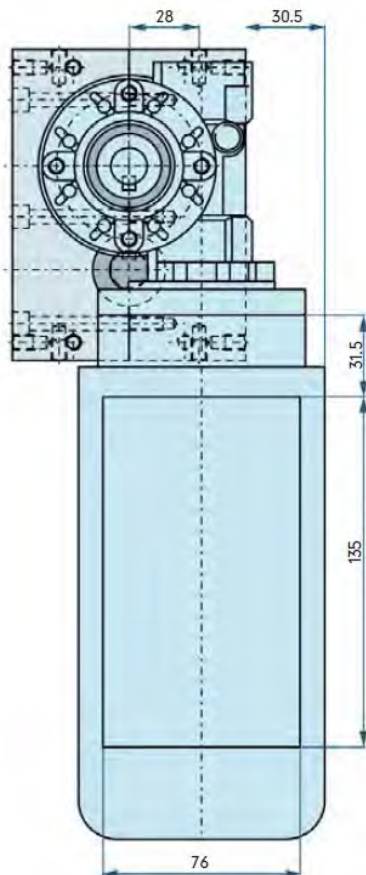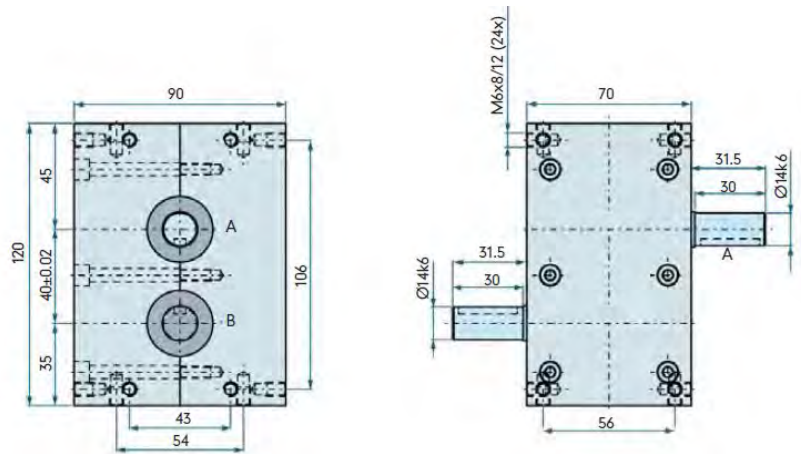|	
Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	4.36
Load rating static [kN]	2.24
Output Shaft	
Load rating dynamic [kN]	4.36
Load rating static [kN]	2.24

XP050

Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without keyways. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive Shaft   B = Output Shaft

XP050

Load Table

[1]) Parallel drives with stop numbers 6, 8 and 10 are designed as a double index, i.e. with each full rotation of the drive shaft, two indexes occur in the output.

[2]) Parallel drives with 12 stops are designed as a four step index, i.e. with each full rotation of the drive shaft, four indexes occur in the output.

[3]) The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB} [Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S [S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	41	34	29	0.79	0.16	0.03	1.1	0.55	0.28
		300	MS50	41	34	29	0.81	0.17	0.04	1	0.5	0.25
180°	2	270	MS0	51	43	37	1.64	0.35	0.07	0.9	0.45	0.23
		210	MS30	49	42	36	1.11	0.24	0.05	0.7	0.35	0.18
		150	MS50	42	37	34	0.33	0.07	0.02	0.5	0.25	0.13
120°	3	270	MS0	54	49	43	3.02	0.69	0.15	0.9	0.45	0.23
		210	MS30	52	47	42	1.52	0.34	0.08	0.7	0.35	0.18
		150	MS30	45	40	33	0.67	0.15	0.03	0.5	0.25	0.13
		120	MS30	43	37	31	0.41	0.09	0.02	0.4	0.2	0.1
90°	4	270	MS0	47	43	38	3.51	0.8	0.18	0.9	0.45	0.23
		210	MS0	45	41	35	2.54	0.58	0.12	0.7	0.35	0.18
		150	MS30	41	37	31	1.02	0.23	0.05	0.5	0.25	0.13
		90	MS30	37	31	26	0.26	0.06	0.01	0.3	0.15	0.08
72°	5	270	MS0	47	43	38	4.38	1	0.22	0.9	0.45	0.23
		210	MS0	45	41	35	2.54	0.58	0.12	0.7	0.35	0.18
		150	MS30	41	37	31	1.02	0.23	0.05	0.5	0.25	0.13
		90	MS30	37	31	26	0.33	0.07	0.01	0.3	0.15	0.08
60°	6[1]	270	MS0	59	57	53	6.61	1.6	0.37	0.9	0.45	0.23
		240	MS0	58	54	50	5.13	1.19	0.28	0.8	0.4	0.2
		180	MS30	50	46	41	2.15	0.49	0.11	0.6	0.3	0.15
		120	MS30	47	41	38	0.9	0.2	0.05	0.4	0.2	0.1
45°	8[1]	270	MS0	59	57	53	8.81	2.13	0.49	0.9	0.45	0.23
		240	MS0	58	54	50	6.84	1.59	0.37	0.8	0.4	0.2
		180	MS30	50	46	41	2.86	0.66	0.15	0.6	0.3	0.15
		120	MS30	47	41	38	1.2	0.26	0.06	0.4	0.2	0.1
36°	10[1]	270	MS0	59	57	53	11.01	2.66	0.62	0.9	0.45	0.23
		240	MS0	58	54	50	8.55	1.99	0.46	0.8	0.4	0.2
		180	MS30	50	46	41	3.58	0.82	0.18	0.6	0.3	0.15
		120	MS30	47	41	38	1.49	0.33	0.08	0.4	0.2	0.1
30°	12[2]	240	MS0	41	38	31	7.25	1.68	0.34	0.8	0.4	0.2

Main Dimensions

Shaft distance [mm]	50
Weight without drive [kg]	2.5
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8,10, 12
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

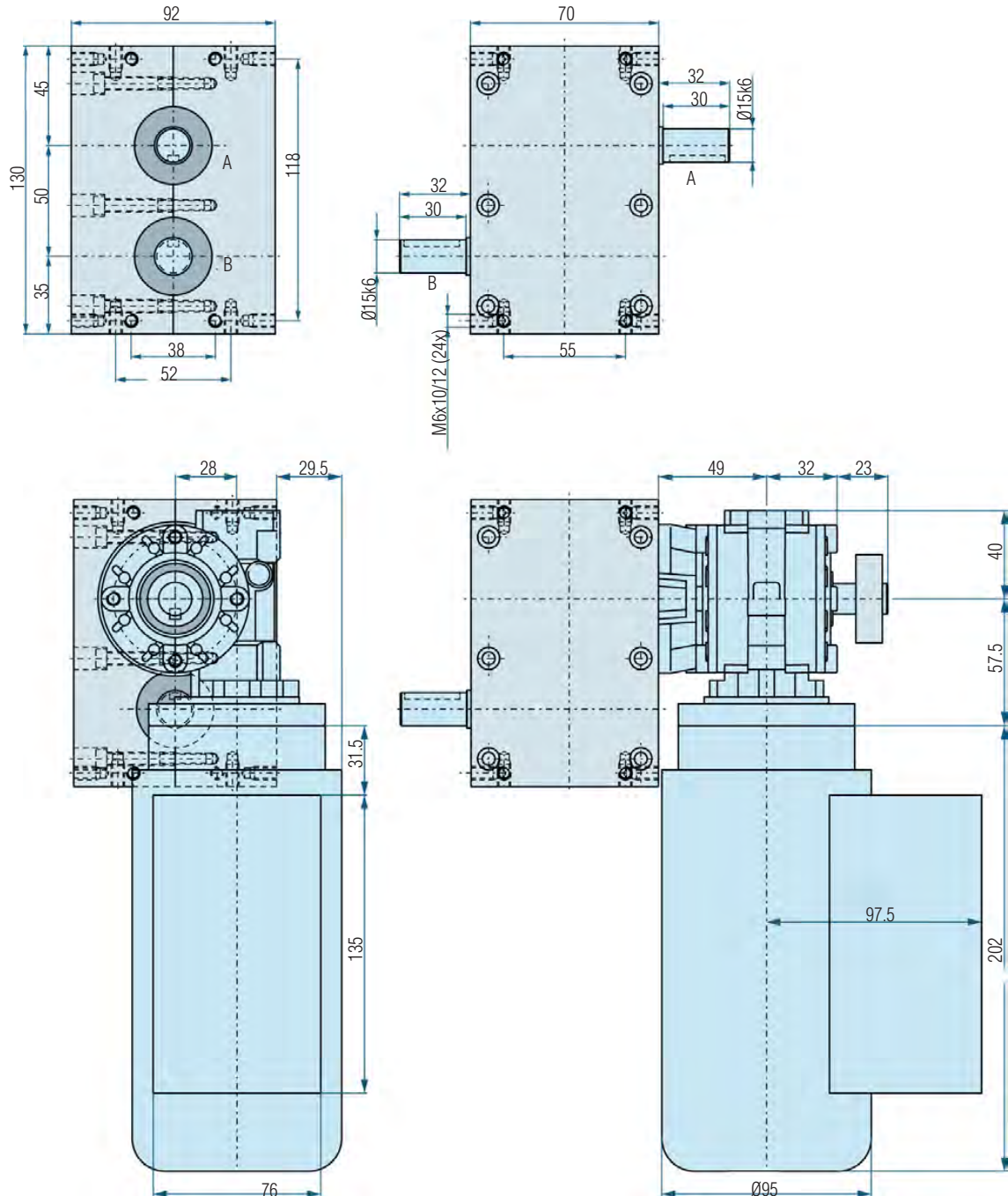|	
Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	6.37
Load rating static [kN]	3.25
Output Shaft	
Load rating dynamic [kN]	6.37
Load rating static [kN]	3.24

XP065

Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without keyways. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive Shaft   B = Output Shaft

XP065

Load Table

[1]) Parallel drives with stop numbers 6, 8 and 10 are designed as a double index, i.e. with each full rotation of the drive shaft, two indexes occur in the output.

[2]) Parallel drives with 12 stops are designed as a four step index, i.e. with each full rotation of the drive shaft, four indexes occur in the output.

[3]) The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB}[Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S[S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	52	43	36	1	0.2	0.04	1.1	0.55	0.28
		300	MS50	48	39	30	1	0.2	0.04	1	0.5	0.25
180°	2	270	MS0	58	51	43	1.9	0.4	0.09	0.9	0.45	0.23
		210	MS30	48	46	41	1.1	0.3	0.06	0.7	0.35	0.18
		150	MS50	42	40	39	0.3	0.1	0.02	0.5	0.25	0.13
120°	3	270	MS0	74	68	59	4.1	1	0.21	0.9	0.45	0.23
		210	MS30	73	67	57	2.1	0.5	0.1	0.7	0.35	0.18
		150	MS30	61	53	46	0.9	0.2	0.04	0.5	0.25	0.13
		120	MS30	60	52	43	0.6	0.1	0.03	0.4	0.2	0.1
90°	4	270	MS0	68	61	53	5.1	1.1	0.25	0.9	0.45	0.23
		210	MS0	66	59	51	3	0.7	0.14	0.7	0.35	0.18
		150	MS30	64	57	49	1.3	0.3	0.06	0.5	0.25	0.13
		90	MS30	64	57	49	0.5	0.1	0.02	0.3	0.15	0.08
72°	5	270	MS0	68	61	53	6.3	1.4	0.31	0.9	0.45	0.23
		210	MS0	66	59	51	3.7	0.8	0.18	0.7	0.35	0.18
		150	MS30	64	57	49	1.6	0.4	0.08	0.5	0.25	0.13
		90	MS30	64	57	49	0.6	0.1	0.03	0.3	0.15	0.08
60°	6[1]	270	MS0	86	71	56	9.6	2	0.39	0.9	0.45	0.23
		240	MS0	83	69	54	7.3	1.5	0.3	0.8	0.4	0.2
		180	MS30	79	65	51	3.4	0.7	0.14	0.6	0.3	0.15
		120	MS30	75	61	46	1.4	0.3	0.05	0.4	0.2	0.1
45°	8[1]	270	MS0	86	71	56	12.8	2.6	0.52	0.9	0.45	0.23
		240	MS0	83	69	54	9.8	2	0.4	0.8	0.4	0.2
		180	MS30	79	65	51	4.5	0.9	0.18	0.6	0.3	0.15
		120	MS30	75	61	46	1.9	0.4	0.07	0.4	0.2	0.1
36°	10[1]	270	MS0	86	71	56	16	3.3	0.65	0.9	0.45	0.23
		240	MS0	83	69	54	12.2	2.5	0.5	0.8	0.4	0.2
		180	MS30	79	65	51	5.7	1.2	0.23	0.6	0.3	0.15
		120	MS30	75	61	46	2.4	0.5	0.09	0.4	0.2	0.1
30°	12[2]	240	MS0	62	51	39	11	2.3	0.43	0.8	0.4	0.2

Main Dimensions

Shaft distance [mm]	63
Weight without drive [kg]	8
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8,10, 12
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

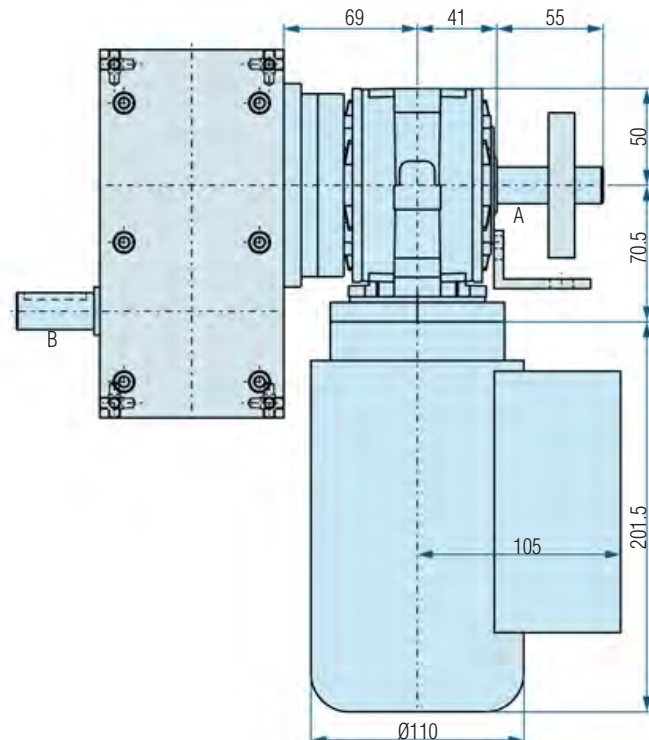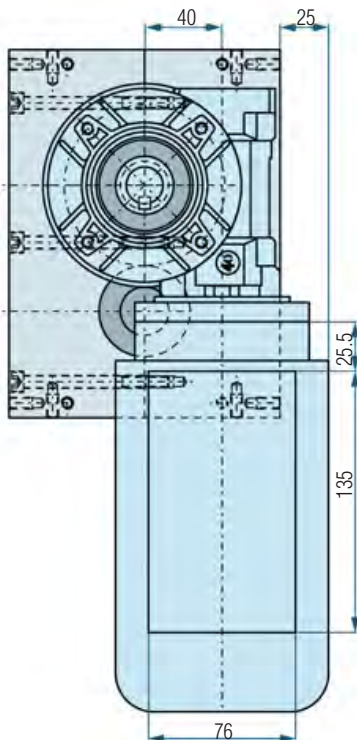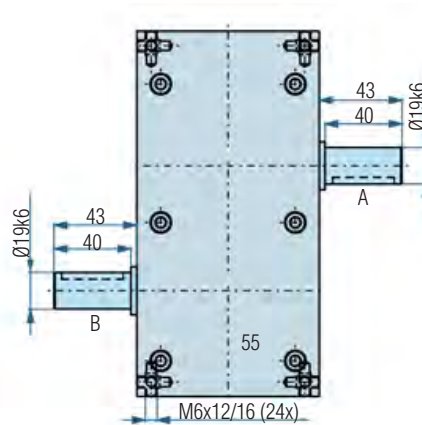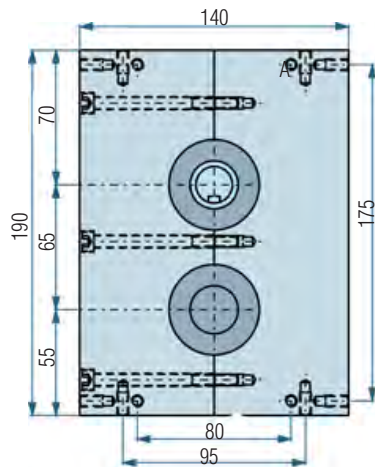|	
Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	11.9
Load rating static [kN]	6.55
Output Shaft	
Load rating dynamic [kN]	8.06
Load rating static [kN]	4.75

XP080

Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without keyways. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive Shaft   B = Output Shaft

XP080

Load Table

[1]) Parallel drives with stop numbers 6, 8 and 10 are designed as a double index, i.e. with each full rotation of the drive shaft, two indexes occur in the output.

[2]) Parallel drives with 12 stops are designed as a four step index, i.e. with each full rotation of the drive shaft, four indexes occur in the output.

[3]) The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB} [Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S [S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	124	102	81	2.4	0.5	0.1	1.1	0.55	0.28
		300	MS50	123	101	79	2.4	0.5	0.1	1	0.5	0.25
180°	2	270	MS0	132	107	93	4.2	0.9	0.19	0.9	0.45	0.23
		210	MS30	131	107	93	3	0.6	0.13	0.7	0.35	0.18
		150	MS50	103	96	89	0.8	0.2	0.04	0.5	0.25	0.13
120°	3	270	MS0	159	137	112	8.9	1.9	0.39	0.9	0.45	0.23
		210	MS30	152	129	101	4.4	0.9	0.18	0.7	0.35	0.18
		150	MS30	127	103	83	1.9	0.4	0.08	0.5	0.25	0.13
		120	MS30	119	97	78	1.1	0.2	0.05	0.4	0.2	0.1
90°	4	270	MS0	157	132	109	11.7	2.5	0.51	0.9	0.45	0.23
		210	MS0	151	126	96	6.8	1.4	0.27	0.7	0.35	0.18
		150	MS30	138	112	88	2.7	0.6	0.11	0.5	0.25	0.13
		90	MS30	118	92	76	0.8	0.2	0.03	0.3	0.15	0.08
72°	5	270	MS0	157	132	109	14.6	3.1	0.64	0.9	0.45	0.23
		210	MS0	151	126	96	8.5	1.8	0.34	0.7	0.35	0.18
		150	MS30	138	112	88	3.4	0.7	0.14	0.5	0.25	0.13
		90	MS30	118	92	76	1.1	0.2	0.04	0.3	0.15	0.08
60°	6[1]	270	MS0	186	149	124	20.8	4.2	0.87	0.9	0.45	0.23
		240	MS0	174	146	120	15.4	3.2	0.66	0.8	0.4	0.2
		180	MS30	160	122	96	6.9	1.3	0.26	0.6	0.3	0.15
		120	MS30	132	105	81	2.5	0.5	0.1	0.4	0.2	0.1
45°	8[1]	270	MS0	186	149	124	27.8	5.6	1.16	0.9	0.45	0.23
		240	MS0	174	146	120	20.5	4.3	0.88	0.8	0.4	0.2
		180	MS30	160	122	96	9.2	1.7	0.34	0.6	0.3	0.15
		120	MS30	132	105	81	3.4	0.7	0.13	0.4	0.2	0.1
36°	10[1]	270	MS0	186	149	124	34.7	7	1.45	0.9	0.45	0.23
		240	MS0	174	146	120	25.7	5.4	1.11	0.8	0.4	0.2
		180	MS30	160	122	96	11.4	2.2	0.43	0.6	0.3	0.15
		120	MS30	132	105	81	4.2	0.8	0.16	0.4	0.2	0.1
30°	12[2]	240	MS0	110	95	76	19.5	4.2	0.84	0.8	0.4	0.2

Main Dimensions

Shaft distance [mm]	80
Weight without drive [kg]	12
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8,10, 12
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

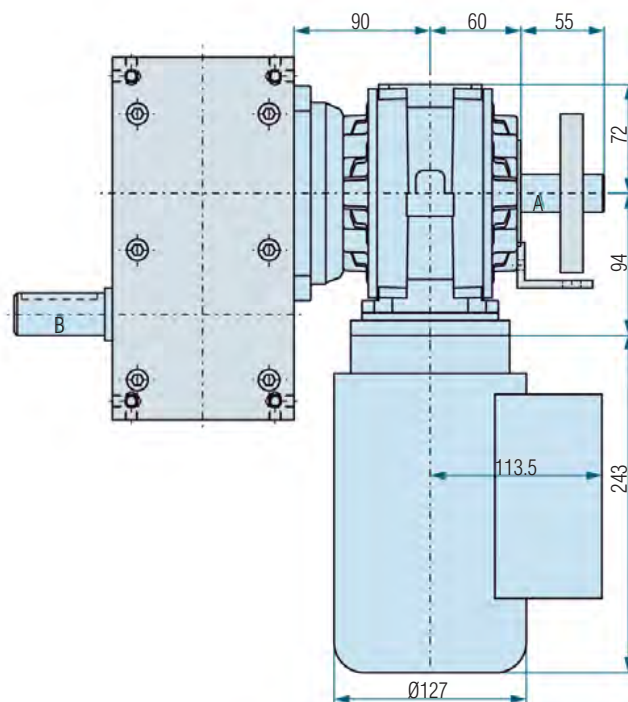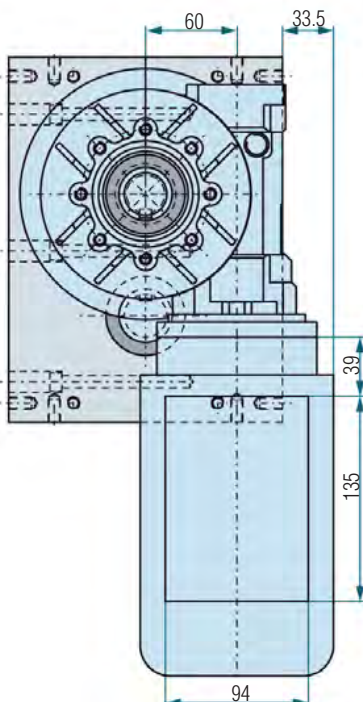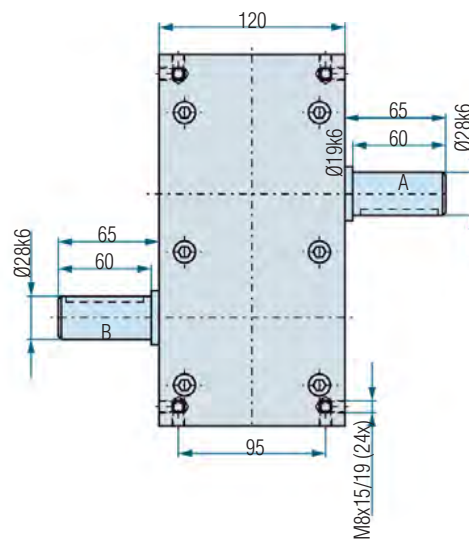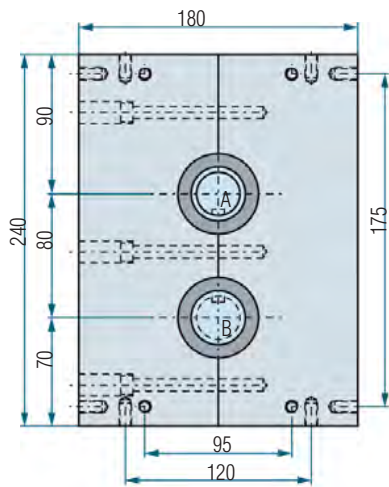|	
Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	13.8
Load rating static [kN]	8.3
Output Shaft	
Load rating dynamic [kN]	13.8
Load rating static [kN]	8.3

XP105

Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without keyways. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive Shaft   B = Output Shaft

The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

XP105

Load Table

[1]) Parallel drives with stop numbers 6, 8 and 10 are designed as a double index, i.e. with each full rotation of the drive shaft, two indexes occur in the output.

[2]) Parallel drives with 12 stops are designed as a four step index, i.e. with each full rotation of the drive shaft, four indexes occur in the output.

[3]) The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB} [Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S [S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	216	175	138	4.2	0.8	0.2	1.1	0.55	0.28
		300	MS50	208	171	132	4.1	0.8	0.2	1	0.5	0.25
180°	2	270	MS0	297	265	230	9.6	2.1	0.5	0.9	0.45	0.23
		210	MS30	285	251	221	6.4	1.4	0.3	0.7	0.35	0.18
		150	MS50	254	204	155	2	0.4	0.1	0.5	0.25	0.13
120°	3	270	MS0	361	319	278	20.2	4.5	1	0.9	0.45	0.23
		210	MS30	350	312	270	10.2	2.3	0.5	0.7	0.35	0.18
		150	MS30	344	306	261	5.1	1.1	0.2	0.5	0.25	0.13
		120	MS30	340	301	256	3.2	0.7	0.2	0.4	0.2	0.1
90°	4	270	MS0	341	298	245	25.5	5.6	1.1	0.9	0.45	0.23
		210	MS0	330	291	238	14.9	3.3	0.7	0.7	0.35	0.18
		150	MS30	318	279	226	6.3	1.4	0.3	0.5	0.25	0.13
		90	MS30	292	269	221	2.1	0.5	0.1	0.3	0.15	0.08
72°	5	270	MS0	341	298	245	31.8	7	1.4	0.9	0.45	0.23
		210	MS0	330	291	238	18.6	4.1	0.8	0.7	0.35	0.18
		150	MS30	318	279	226	7.9	1.7	0.4	0.5	0.25	0.13
		90	MS30	292	269	221	2.6	0.6	0.1	0.3	0.15	0.08
60°	6[1]	270	MS0	391	351	298	43.8	9.8	2.1	0.9	0.45	0.23
		240	MS0	377	339	286	33.3	7.5	1.6	0.8	0.4	0.2
		180	MS30	305	260	202	13.1	2.8	0.5	0.6	0.3	0.15
		120	MS30	281	239	180	5.4	1.1	0.2	0.4	0.2	0.1
45°	8[1]	270	MS0	391	351	298	58.4	13.1	2.8	0.9	0.45	0.23
		240	MS0	377	339	286	44.5	1.	2.1	0.8	0.4	0.2
		180	MS30	305	260	202	17.5	3.7	0.7	0.6	0.3	0.15
		120	MS30	281	239	180	7.1	1.5	0.3	0.4	0.2	0.1
36°	10[1]	270	MS0	391	351	298	73	16.4	3.5	0.9	0.45	0.23
		240	MS0	377	339	286	55.6	12.5	2.6	0.8	0.4	0.2
		180	MS30	3.5	260	202	21.8	4.7	0.9	0.6	0.3	0.15
		120	MS30	281	239	180	8.9	1.9	0.4	0.4	0.2	0.1
30°	12[2]	240	MS0	270	220	170	47.8	9.7	1.9	0.8	0.4	0.2

Main Dimensions

Shaft distance [mm]	105
Weight without drive [kg]	32
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8,10, 12
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

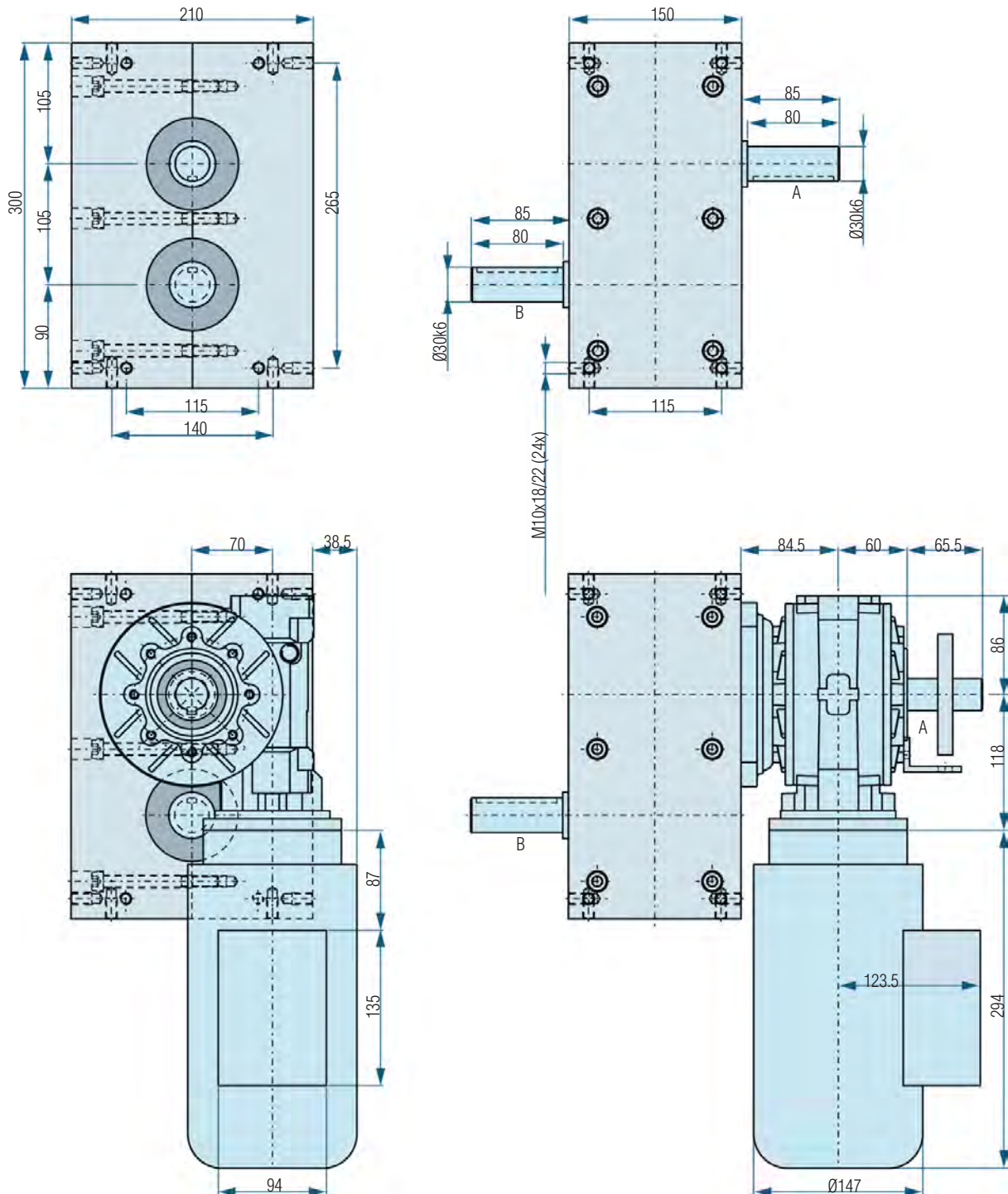|	
Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	30.7
Load rating static [kN]	19
Output Shaft	
Load rating dynamic [kN]	30.7
Load rating static [kN]	19

XP130

Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without keyways. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive Shaft   B = Output Shaft

The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

XP130

Load Table

[1]) Parallel drives with stop numbers 6, 8 and 10 are designed as a double index, i.e. with each full rotation of the drive shaft, two indexes occur in the output.

[2]) Parallel drives with 12 stops are designed as a four step index, i.e. with each full rotation of the drive shaft, four indexes occur in the output.

[3]) The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB} [Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S [S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	359	290	227	6.9	1.4	0.3	1.1	0.55	0.28
		300	MS50	350	278	210	7	1.4	0.3	1	0.5	0.25
180°	2	270	MS0	449	370	302	14.5	3	0.6	0.9	0.45	0.23
		210	MS30	372	283	213	8.4	1.6	0.3	0.7	0.35	0.18
		150	MS50	310	228	165	2.5	0.5	0.1	0.5	0.25	0.13
120°	3	270	MS0	554	460	375	31	6.4	1.3	0.9	0.45	0.23
		210	MS30	520	436	360	15.2	3.2	0.7	0.7	0.35	0.18
		150	MS30	415	330	240	6.2	1.2	0.2	0.5	0.25	0.13
		120	MS30	390	285	210	3.7	0.7	0.1	0.4	0.2	0.1
90°	4	270	MS0	540	455	360	40.3	8.5	1.7	0.9	0.45	0.23
		210	MS0	501	413	325	22.6	4.7	0.9	0.7	0.35	0.18
		150	MS30	480	390	294	9.5	1.9	0.4	0.5	0.25	0.13
		90	MS30	440	346	263	3.1	0.6	0.1	0.3	0.15	0.08
72°	5	270	MS0	540	455	360	50.4	10.6	2.1	0.9	0.45	0.23
		210	MS0	501	413	325	28.3	5.8	1.1	0.7	0.35	0.18
		150	MS30	480	390	294	11.9	2.4	0.5	0.5	0.25	0.13
		90	MS30	440	346	263	3.9	0.8	0.1	0.3	0.15	0.08
60°	6[1]	270	MS0	615	537	442	68.9	15	3.1	0.9	0.45	0.23
		240	MS0	576	483	390	51	10.7	2.2	0.8	0.4	0.2
		180	MS30	445	368	280	19.1	3.9	0.8	0.6	0.3	0.15
		120	MS30	395	320	239	7.5	1.5	0.3	0.4	0.2	0.1
45°	8[1]	270	MS0	615	537	442	91.8	20	4.1	0.9	0.45	0.23
		240	MS0	576	483	390	67.9	14.2	2.9	0.8	0.4	0.2
		180	MS30	445	368	280	25.5	5.3	1	0.6	0.3	0.15
		120	MS30	395	320	239	10	2	0.4	0.4	0.2	0.1
36°	10[1]	270	MS0	615	537	442	114.8	25	5.2	0.9	0.45	0.23
		240	MS0	576	483	390	84.9	17.8	3.6	0.8	0.4	0.2
		180	MS30	445	368	280	31.8	6.6	1.3	0.6	0.3	0.15
		120	MS30	395	320	239	12.6	2.5	0.5	0.4	0.2	0.1
30°	12[2]	240	MS0	360	290	230	63.7	12.8	2.5	0.8	0.4	0.2

Main Dimensions

Shaft distance [mm]	130
Weight without drive [kg]	45
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8,10, 12
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

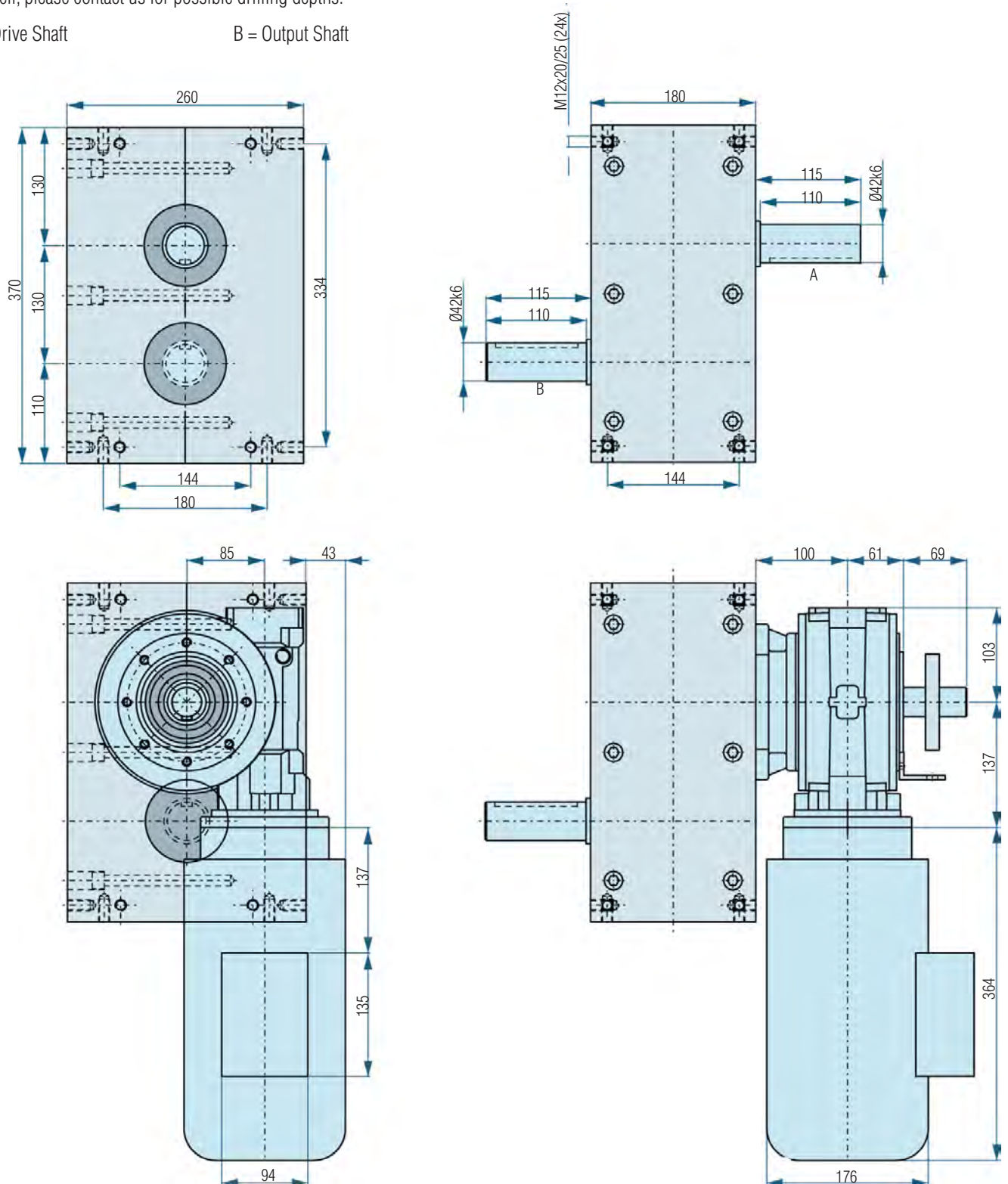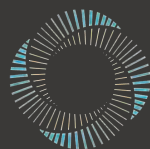|	
Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	51
Load rating static [kN]	39
Output Shaft	
Load rating dynamic [kN]	51
Load rating static [kN]	39

XP165

Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without keyways. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive Shaft   B = Output Shaft

XP165

Load Table

2) Parallel drives with 12 stops are designed as a four step index, i.e. with each full rotation of the drive shaft, four indexes occur in the output.

3) The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB}[Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S [S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	920	760	615	17.7	3.7	0.7	1.1	0.55	0.28
		300	MS50	890	735	580	17.7	3.7	0.7	1	0.5	0.25
180°	2	270	MS0	930	840	680	29.9	6.8	1.4	0.9	0.45	0.23
		210	MS30	805	780	630	18.2	4.4	0.9	0.7	0.35	0.18
		150	MS50	790	740	600	6.3	1.5	0.3	0.5	0.25	0.13
120°	3	270	MS0	950	920	680	53.2	12.9	2.4	0.9	0.45	0.23
		210	MS30	840	810	590	24.5	5.9	1.1	0.7	0.35	0.18
		150	MS30	820	790	570	12.2	2.9	0.5	0.5	0.25	0.13
		120	MS30	805	770	540	7.7	1.8	0.3	0.4	0.2	0.1
90°	4	270	MS0	950	920	680	70.9	17.2	3.2	0.9	0.45	0.23
		210	MS0	840	810	590	37.9	9.1	1.7	0.7	0.35	0.18
		150	MS30	820	790	570	16.3	3.9	0.7	0.5	0.25	0.13
		90	MS30	805	770	540	5.8	1.4	0.2	0.3	0.15	0.08
72°	5	270	MS0	950	920	680	88.6	21.5	4	0.9	0.45	0.23
		210	MS0	840	810	590	47.4	11.4	2.1	0.7	0.35	0.18
		150	MS30	820	790	570	20.4	4.9	0.9	0.5	0.25	0.13
		90	MS30	805	770	540	7.2	1.7	0.3	0.3	0.15	0.08
60°	6[1]	270	MS0	930	920	890	104.1	25.7	6.2	0.9	0.45	0.23
		240	MS0	910	900	870	80.5	19.9	4.8	0.8	0.4	0.2
		180	MS30	890	880	850	38.2	9.4	2.3	0.6	0.3	0.15
		120	MS30	860	840	820	16.4	4	1	0.4	0.2	0.1
45°	8[1]	270	MS0	790	770	750	117.9	28.7	7	0.9	0.45	0.23
		240	MS0	770	750	730	90.8	22.1	5.4	0.8	0.4	0.2
		180	MS30	760	740	710	43.5	10.6	1.1	0.6	0.3	0.15
		120	MS30	750	730	720	19.1	4.6	1.1	0.4	0.2	0.1
36°	10[1]	270	MS0	790	770	750	147.4	35.9	8.7	0.9	0.45	0.23
		240	MS0	770	750	730	113.5	27.6	6.7	0.8	0.4	0.2
		180	MS30	760	750	730	113.5	27.6	6.7	0.6	0.3	0.15
		120	MS30	750	730	720	23.8	5.8	1.4	0.4	0.2	0.1
30°	12[2]	240	MS0	730	720	700	129.1	31.8	7.7	0.8	0.4	0.2

Main Dimensions

Shaft distance [mm]	165
Weight without drive [kg]	120
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8,10, 12
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

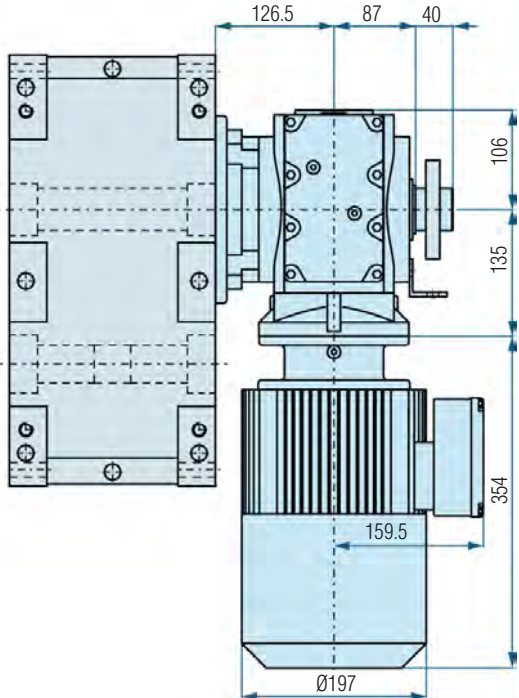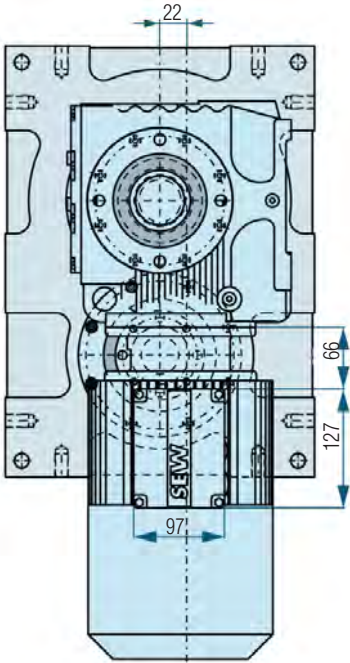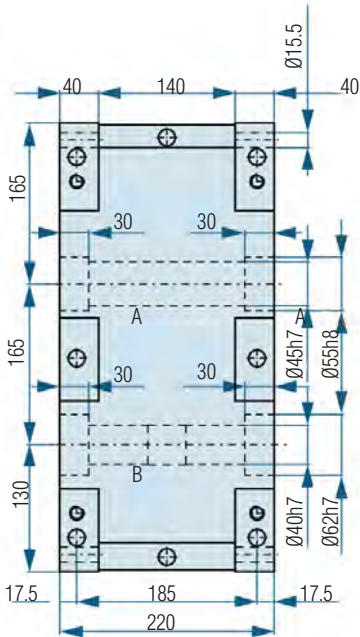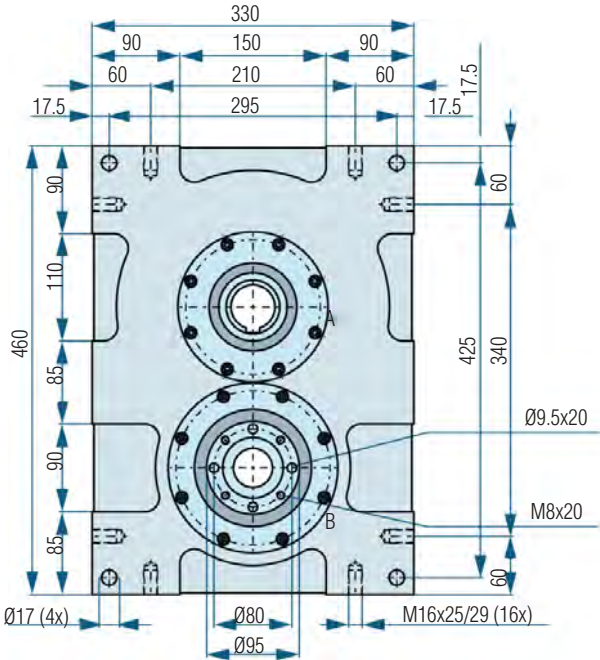|	
Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	116
Load rating static [kN]	153
Output Shaft	
Load rating dynamic [kN]	168
Load rating static [kN]	270

XP200

Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without keyways. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive Shaft   B = Output Shaft

⚠ The dimensions for the gearmotor may change based on the gearmotor size and options required for the application.

XP200

Load Table

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB} [Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S [S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	1530	1255	1004	29	6	1.2	1.1	0.55	0.28
		300	MS50	1450	1190	950	29	5.9	1.2	1	0.5	0.25
180°	2	270	MS0	1590	1305	1040	51	10.5	2.1	0.9	0.45	0.23
		210	MS30	1460	1200	960	33	6.8	1.4	0.7	0.35	0.18
		150	MS50	1390	1140	910	11	2.3	0.5	0.5	0.25	0.13
120°	3	270	MS0	1680	1380	1100	94	19.3	3.8	0.9	0.45	0.23
		210	MS30	1590	1305	1045	46	9.5	1.9	0.7	0.35	0.18
		150	MS30	1490	1220	980	22	4.5	0.9	0.5	0.25	0.13
		120	MS30	1480	1215	970	14	2.9	0.6	0.4	0.2	0.1
90°	4	270	MS0	1470	1205	965	110	22.5	4.5	0.9	0.45	0.23
		210	MS0	1440	1181	945	65	13.3	2.7	0.7	0.35	0.18
		150	MS30	1390	1140	910	28	5.7	1.1	0.5	0.25	0.13
		90	MS30	1370	1120	900	10	2	0.4	0.3	0.15	0.08
72°	5	270	MS0	1470	1205	965	137	28.1	5.6	0.9	0.45	0.23
		210	MS0	1440	1180	945	81	16.8	3.3	0.7	0.35	0.18
		150	MS30	1390	1140	910	35	7.1	1.34	0.5	0.25	0.13
		90	MS30	1370	1125	900	12	2.5	0.5	0.3	0.15	0.08
60°	6[1]	270	MS0	1520	1430	1340	170	40	9.4	0.9	0.45	0.23
		240	MS0	1490	1220	980	132	27	5.4	0.8	0.4	0.2
		180	MS30	1460	1370	1270	63	14.7	3.4	0.6	0.3	0.15
		120	MS30	1420	1335	1240	27	6.4	1.5	0.4	0.2	0.1
45°	8[1]	270	MS0	1290	1210	1140	193	45.2	10.6	0.9	0.45	0.23
		240	MS0	1270	1195	1120	150	35.2	8.3	0.8	0.4	0.2
		180	MS30	1260	1180	1110	72	16.9	4	0.6	0.3	0.15
		120	MS30	1240	1166	1100	32	7.4	1.7	0.4	0.2	0.1
36°	10[1]	270	MS0	1290	1210	1140	241	56.4	13.3	0.9	0.45	0.23
		240	MS0	1270	1195	1120	187	44	10.3	0.8	0.4	0.2
		180	MS30	1260	1180	1110	90	21.1	5	0.6	0.3	0.15
		120	MS30	1240	1166	1100	39	9.3	2.2	0.4	0.2	0.1
30°	12[2]	240	MS0	1190	1140	1090	211	50.4	12.1	0.8	0.4	0.2

Main Dimensions

Shaft distance [mm]	200
Weight without drive [kg]	220
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8,10, 12
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

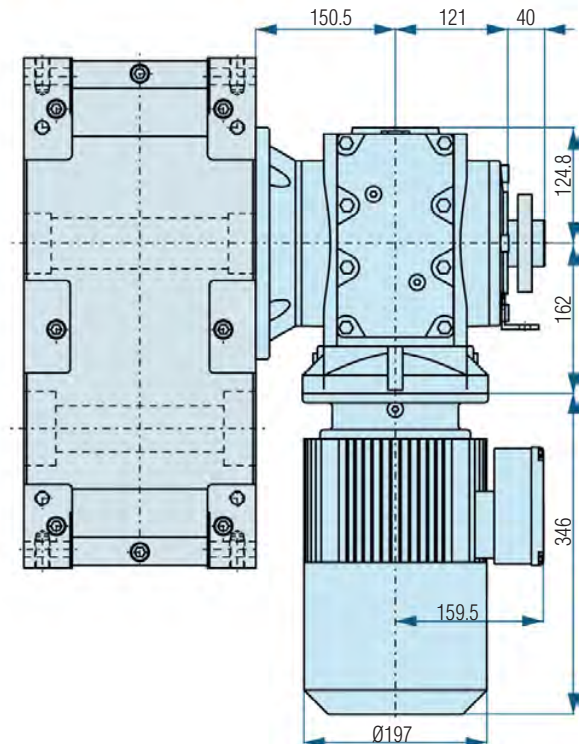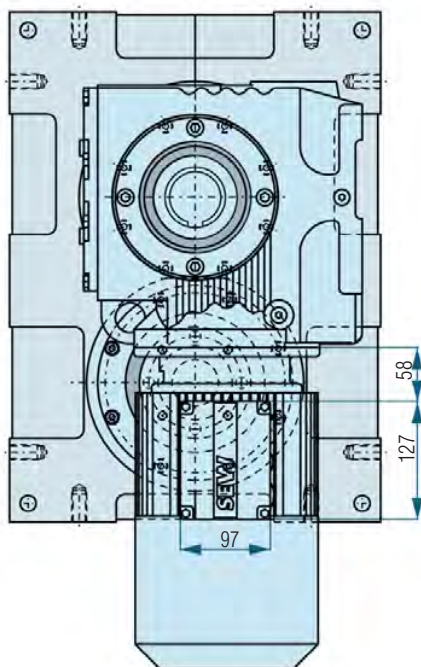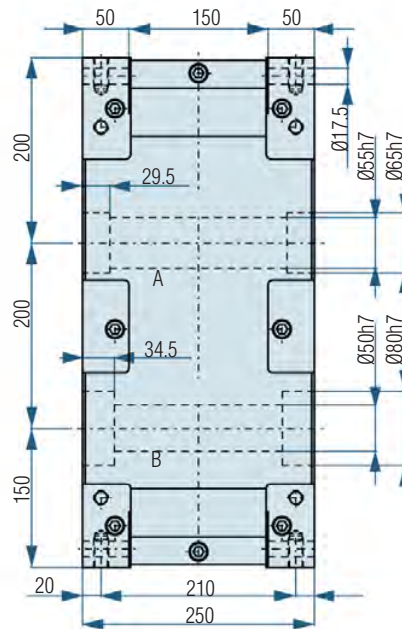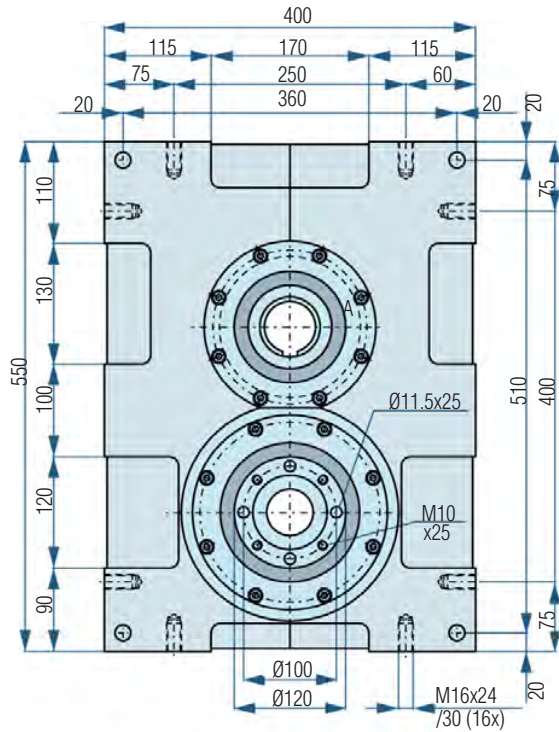|	
Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	168
Load rating static [kN]	270
Output Shaft	
Load rating dynamic [kN]	242
Load rating static [kN]	415

XP250

Dimensions
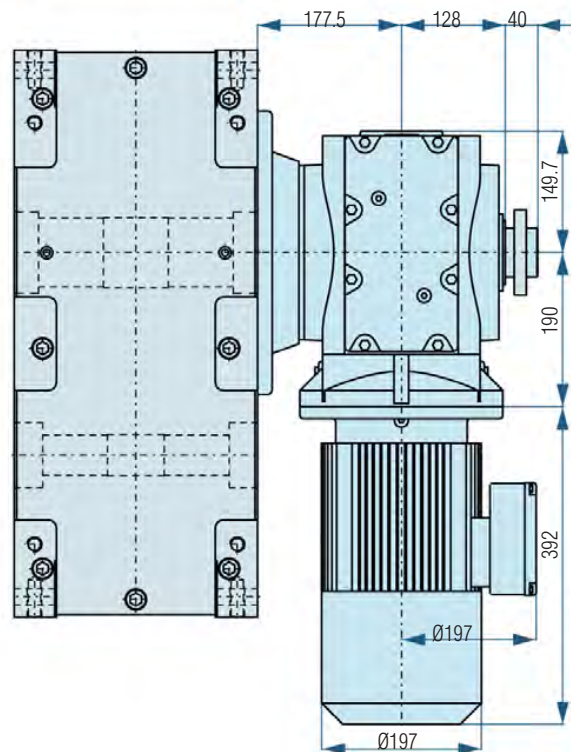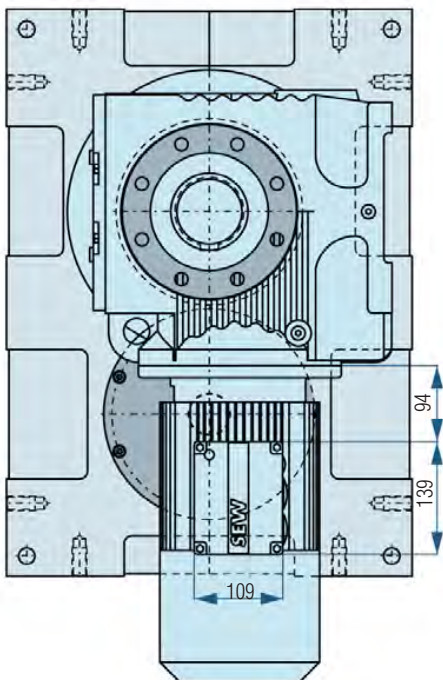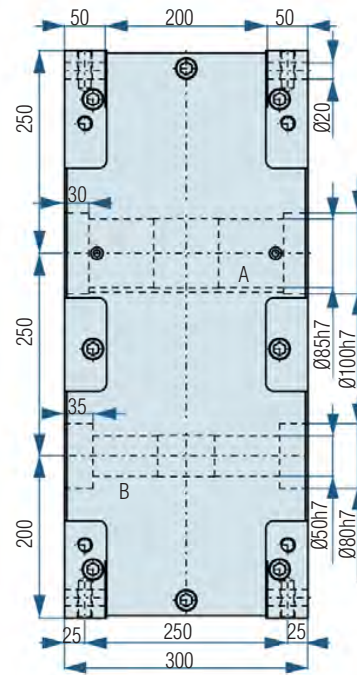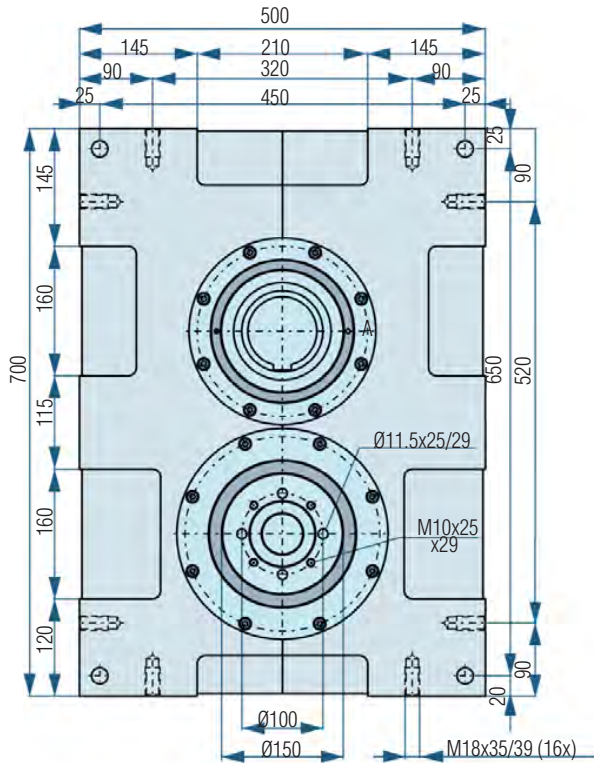
The measurements shown here illustrate the standard unit. We will gladly customize the housing and or shaft(s) to suit your needs. The drive shaft as well as the output shaft are available as double sided shafts with and without keyways. If you would like to add additional holes into the housing yourself, please contact us for possible drilling depths.

A = Drive Shaft

B = Output Shaft

XP250

Load Table

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M_{AB} [Nm]			Moment of Inertia J [kgm²]			Mechanical Index Time t_S [S]		
				n=50	n=100	n=200	n=50	n=100	n=200	n=50	n=100	n=200
360°	1	330	MS30	2750	2255	1827	53	10.9	2.2	1.1	0.55	0.28
		300	MS50	2680	2020	1635	53	10	2	1	0.5	0.25
180°	2	270	MS0	2710	2300	1860	90	18.5	3.7	0.9	0.45	0.23
		210	MS30	2480	2035	1650	56	11.5	2.3	0.7	0.35	0.18
		150	MS50	2430	1990	1610	19	4	0.8	0.5	0.25	0.13
120°	3	270	MS0	2870	2350	1905	161	32.9	6.7	0.9	0.45	0.23
		210	MS30	2690	2200	1780	79	16.1	3.3	0.7	0.35	0.18
		150	MS30	2510	2060	1665	37	7.7	1.6	0.5	0.25	0.13
		120	MS30	2490	2040	1655	24	4.9	1	0.4	0.2	0.1
90°	4	270	MS0	2690	2205	1790	201	41.1	8.3	0.9	0.45	0.23
		210	MS0	2670	2189	1773	121	24.7	5	0.7	0.35	0.18
		150	MS30	2570	2110	1710	52	10.6	2.2	0.5	0.25	0.13
		90	MS30	2570	2110	1710	18	3.8	0.8	0.3	0.15	0.08
72°	5	270	MS0	2690	2205	1790	251	51.4	10.4	0.9	0.45	0.23
		210	MS0	2370	2189	1773	151	30.9	6.3	0.7	0.35	0.18
		150	MS30	2610	2140	1734	65	13.3	2.7	0.5	0.25	0.13
		90	MS30	2570	2110	1710	23	4.7	1	0.3	0.15	0.08
60°	6[1]	270	MS0	2810	2700	2570	315	75.6	18	0.9	0.45	0.23
		240	MS0	2730	2630	2510	241	58.2	13.9	0.8	0.4	0.2
		180	MS30	2590	2490	2310	111	26.7	6.2	0.6	0.3	0.15
		120	MS30	2540	2410	2260	48	11.5	2.7	0.4	0.2	0.1
45°	8[1]	270	MS0	2530	2400	2290	378	89.6	21.4	0.9	0.45	0.23
		240	MS0	2470	2370	2210	291	69.9	16.3	0.8	0.4	0.2
		180	MS30	2410	2300	2180	138	32.9	7.8	0.6	0.3	0.15
		120	MS30	2380	2270	2150	61	14.4	3.4	0.4	0.2	0.1
36°	10[1]	270	MS0	2530	2400	2290	472	112	26.7	0.9	0.45	0.23
		240	MS0	2470	2370	2210	364	87.4	20.4	0.8	0.4	0.2
		180	MS30	2410	2300	2180	172	41.1	9.7	0.6	0.3	0.15
		120	MS30	2380	2270	2150	76	18	4.3	0.4	0.2	0.1
30°	12[2]	240	MS0	2250	2120	1990	398	93.8	22	0.8	0.4	0.2

Main Dimensions

Shaft distance [mm]	250
Weight without drive [kg]	350
Index angle [°]	see Load Table
(other index angles upon request)	
Number of stops	1,2,3,4,5,6,8,10, 12
(other numbers of stops upon request)	
Rotating direction	right, left, oscillating
Mounting position	ANY

Capacities

Max. Output torque	see Load Table
Input Shaft	
Load rating dynamic [kN]	242
Load rating static [kN]	415
Output Shaft	
Load rating dynamic [kN]	365
Load rating static [kN]	655

Pick and Place Unit

Rotary Indexer

Pick and Place Units

Available Courses of Motion

Pick and Place Unit Drive: Indexes in one direction

Series GH

- Single drive for pick and place
- Right angle cam for rotation
- Flat cam for lift
- The relationship between lift and rotation can be customized
- Compact, durable unit
- Optional thru-hole

GH 100

Vertical stroke [mm]	55°
Rotation	80°
Pendulum	90°

Pendulum Pick and Place Unit Drive: Indexes in one direction

Series RT + VP

- Standard indexer for rotating
- Pneumatic cylinder for lifting
- Pick and placing are independently controlled from each other
- Compact, durable unit
- Optional thru-hole

RT100 + VT30

Vertical stroke [mm]	30°
Rotation	180°
Pendulum	90°

* larger pendulum angle by changing the rotating direction of the drive

Pick and Place Unit
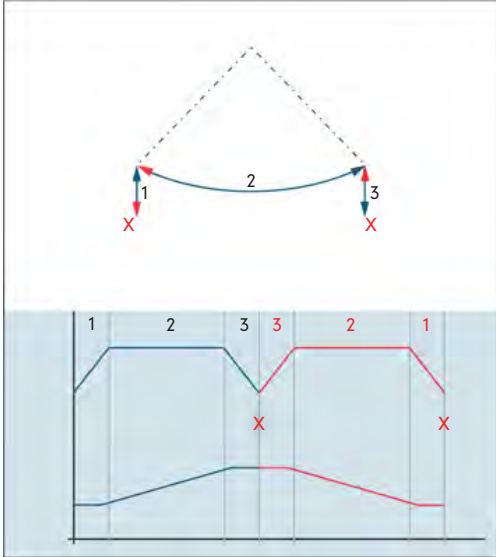
Series RH

- Single drive for pick and place
- Barrel cam for rotation
- Flat cam for lift
- Compact, durable unit
- Optional thru-hole
- Maintenance-free lubrication

RH 100

Vertical stroke [mm]	30°
Rotation	90°
Pendulum	60°

Series PH

- Single drive for pick and place
- Barrel cam for lift
- Large torque with use of flat cam
- Flat cam for rotation
- Compact, durable unit
- Optional thru-hole
- Maintenance-free lubrication

PH 065

Vertical stroke[mm]	40°
Rotation	180°
Pendulum	90°

*All units are customized based on the requirements of each application. With the combination options of cylinder, disk cam, disc groove, globoid, pneumatics and servo technology results in a large variety of pick and place solutions.

Pick and Place Units

Series RT + VP

- Standard indexer for rotating

- Pneumatic cylinder for lifting

- Lifting and rotating are independently controlled from each other

- Compact, durable unit

- Optional thru-hole

RT100 + VP300

Vertical stroke [mm]	300°
Rotation	180°
Pendulum	90°

Series HDM

- Two different servo drives for lift and rotate

- Vertical stroke and rotating angle are fully programmable

- Customized servo drives are optional

- Course of motion controlled by servo

- Maintenance-free lubrication

- Optional thru-hole

HDM 30

Vertical stroke [mm]	55°
Rotation	free

Linear Units - Available course of motion

U-Form
horizontal on top

U-Form
horizontal at bottom

L-Form
horizontal on top

L-Form
horizontal at bottom

O-Form
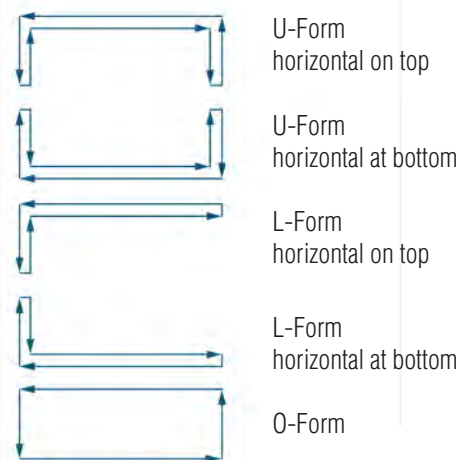
Series AL

- Common drive for lift and rotation

- Flat cam for rotation

- Flat cam for lift

- Vertical stroke protected by a spring

- Compact, durable unit

- Many available courses of motion

- Multiple units can be connected using a common shaft

AL 80

Vertical stroke [mm]	35°
Horizontal stroke [mm]	80°

* larger pendulum angle by changing the rotating direction of the drive
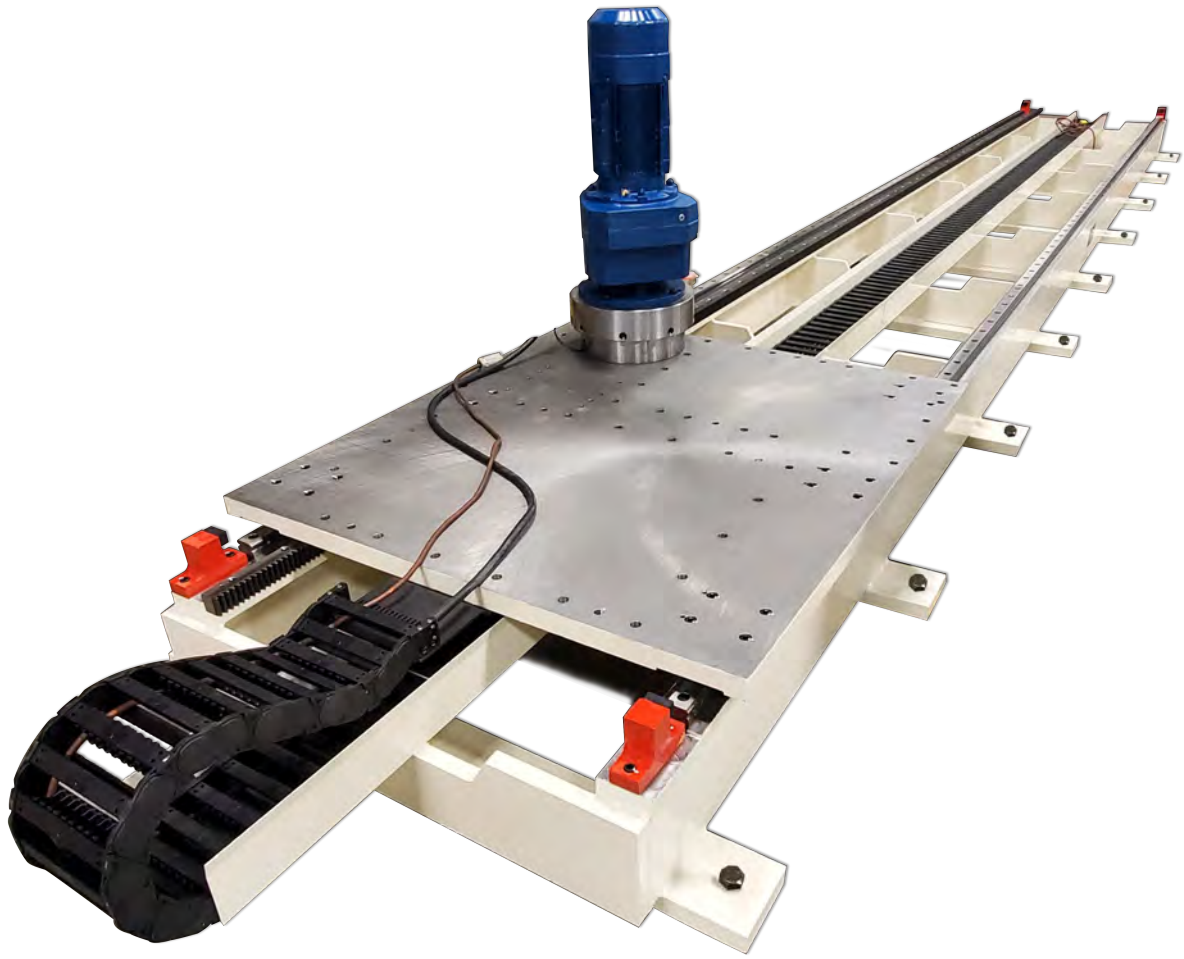
Robot Transfer Unit

MOTION
INDEX DRIVES

Motion Index Drives' Robot Transfer Unit offers the highest precision guard rails, rack and pinnion system and closed loop motor control system so you can manufacture the best product possible. Motion Index Drives will manufacture our 7th Axis Slide to accommodate any robot servo motor brand that our customer is utilizing for their automation project. Our robot transfer units can be used for material handling jobs or any type of welding or dispensing application.

Options Available

- Length – not limited to standard incremental lengths
- Self lubricated linear guide system with scrappers
- Self lubricating system for rack and pinion
- Extremely high accuracy above standard offering
- Most robot motor brands
- Cable Tray Location
- Different cable management system options
- Protective covers for linear bearings
- Color

Key Features and Benefits

- Can be manufactured to accept any robot brand motor
- Complete application study on loads and speed are provided
- High Precision linear rails/guide ways with blocks
- Cable management and cable management tray (to be mounted externally or internally by Motion Index Drives)
- Hard stops on each end of transfer for over travel
- Leveling bolts, weld brackets and leveling plates
- Special coating to reduce friction and eliminate external lubing
- Installation support by Motion Index Drives at customer facility & if required at the customer site during install

Unit Capabilities

- Transfer times of 1.5 meters per second
- Standard accuracy – DIN 6 on gear rack +/-0.0003"/ft
- Heavy duty linear bearings offer high tilting moments
- Optional armoloy coating on gear rack for lube free operation
- Low backlash Gear Reducer

Advantages for Design Engineers and Special Machine Builder

- 7th Axis Slide utilizes a direct drive gear reducer and gear rack, we achieve higher accuracy and better performance with less components.
- The robust tubular steel construction "Made in USA" is designed for easy maintenance and accessibility.
- Over-sized linear bearings guide ways enable it to handle more mass
- Oversized rack and pinion system for greater safety factors

MOTION
INDEX DRIVES

Lift and Carry transfer systems are designed to transfer large products down a linear path, usually through various positions for production. Since the products need to be lifted over obstacles or a system by which they could be transfered via the ground would interfere with production, Lift and Carry Systems can be found in the majority of assembly lines working on large items.

Motion Index Drives' Lift and Carry Systems have been placed in a large number of North America's automotive production facilities. These applications are among the most demanding in the world, proving a testament to the strength and reliabilty of Motion Index Drives quality. This is also, however, the only existing industry-wide application of Lift and Carry Systems.

Lift and Carry Systems can be applied to high-production facilities that manufacture products large in physical dimensions. Motion Index Drives has worked to integrate LIft and Carry Systems in industries including defense manufacturing and off-highway haevy machinery, but current industry systems aren't configured in a fashion that can easily accept a Lift and Carry System.

Smaller scale, lightweight systems can be handled by products such as our AL series Walking Beam.

Lift and Carry Systems

Motion Index Drives, Inc. is a leading provider of heavy-duty Lift and Carry Machines. Our Lift and Carry Systems operate with minimal motor power and are capable of lifting and transferring an average of 10 complete underbody structures (2,000 lbs. each) over an average linear distance of 19 feet at once. From transferring full length truck frames to engine box and underbody lines, Motion Index Drives has a high-precision engineered solution for your application.

Key Features and Benefits

- Smooth lift and lowering motion

- Hydraulic compensation system to assist on lift strokes

- Special tooling inserts with customer specified hole patterns

- High-quality extruded steel rails available in many sizes

- Hardened gear rack and pinions for transfers

- Pevolan and Vulkollan transfer rollers for noise reduction and increased life of shuttle rails

- Many different standard and custom lift and transfer shuttle options available
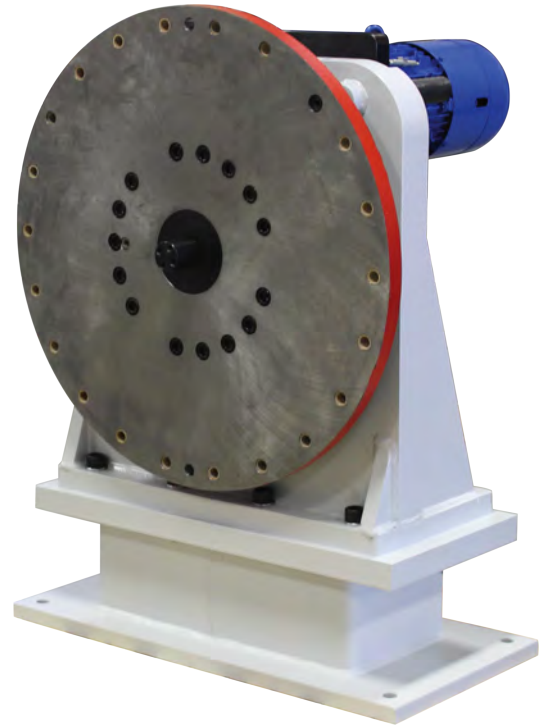
TR Series

Headstock / Tailstock
Flexible Positioning System

MOTION
INDEX DRIVES

An alternative to the extremely high precision and zero backlash TMF and RT series trunnion indexing systems, the TR Series offers a lower cost alternative to applications that require such high standards. Offered in complete head and tail stock standard sets, you have the option to purchase a complete trunnion solution from Motion Index Drives that includes heavy duty constructed base frame, HS/TS riser bases, and fixture backbones.

The TR series is ideal for rollover applications in the aerospace, automotive, defense, construction and mining equipment, alternative energy and railroad transportation manufacturing environments. The TR Series was manufactured to be suited for laser, spot, mig and tig welding applications.

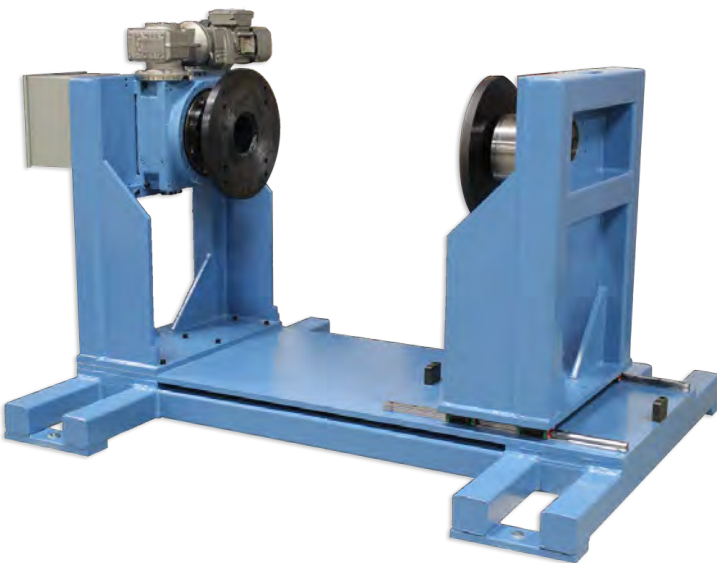Incorporating the TR series into to your weld cells can be relatively easy by indicating what robot manufacturer you are implementing and the TR Trunnion can be adapted to accept virtually every robot brand.

TR Series

Motion Index Drives' TR series headstock / tailstock trunnion sets utilize a high precision (less than 1 arc minute) planetary gear system mounted in a vertical position complete with mounting plates. TR series Trunnion Index Drives are ideal for moving large masses with smaller units and minimizing your equipment's footprint on the floor. All TR series trunnion units can be ordered with standard or custom frames fully equipped with head and tailstock supports and one piece base weldments.

Technical benefits for end users

- Long service lives.
- Large thru hole on tailstock for running utilities to fixtures.
- Requires less power than leading competitors.
- Oversized bearings on tailstock for support.
- Directly mount to gear head system mounting plate which eliminates the need for additional pillow blocks.

Options Available

- Special hole patterns in mounting plates on headstock and tailstock.
- Clockwise, counter-clockwise and oscillating index modes of operation.
- Can be ordered as complete assembly with headstock, tailstock and base frame.
- Various gear ratios.
- Variety of encoder or positioning devices.

TRUNNIONS

Assembly Number	Headstock	Tailstock	Ratio	Fanuc Motor	Kuka Motor
TRxxx-xxx-xxxxx	250mm	250mm	171mm	Alpha IF08/3000	MG180
TRxxx-xxx-xxxxx	250mm	250mm	171mm	Alpha IS08/4000	MG110
TRxxx-xxx-xxxxx	300mm	300mm	185mm	Alpha IF12/3000	MG180
TRxxx-xxx-xxxxx	300mm	300mm	185mm	Alpha	MG180
TRxxx-xxx-xxxxx	365mm	365mm	192mm	Alpha IF22/3000	MG360
TRxxx-xxx-xxxxx	365mm	365mm	192mm	Alpha IF30/3000	MG180
TRxxx-xxx-xxxxx	900mm	900mm	250mm	Alpha IF30/3000	MG480

TRXXX-XXX-XXX-XXXX
Table Class
Headstock Class
Tailstock Class
Trunnion Ratio Motor

MID HEADSTOCK/TAILSTOCK SPECIFICATIONS W/FANUC MOTOR

Class	Model #	Amplifier	180° Index Time (sec)	Payload (Kg)	Peak RPM	Accel/Decel (sec)	Max CG Off-Set (mm)	Max Envelope Diameter	Max Moment of Inertia (kgm)
250	TR250-171-a8iF	aiSV-40	3	110	17.54	1.3	101	2250	538
	TR250-171-a8iS	aiSV-80	2	1000	23.39	0.72	101	1500	237
300	TR300-185-a12iF	aiSV-80	3	1900	16.22	1.15	101	2700	1302
	TR300-185-a12iS	aiSV-80	2	1900	21.62	0.61	101	1800	620
365	TR365-192-a22iF	aiSV-80	3	2500	15.63	1.08	101	2400	1377
	TR365-192-a30iF	aiSV-160	3	5000	15.63	1.08	101	2500	2969
900	TR900-250-a30iF	aiSV-160	3.5	6700	11.98	1	101	3150	6132
	TR300-250-a30iS	aiSV-160	3	5500	15.98	1.12	101	2800	4043
	TR900-250-a30iF	aiSV-160	5	6700	11.98	2.5	101	3700	8321

MID HEADSTOCK/TAILSTOCK SPECIFICATIONS W/KUKA MOTOR

Class	Model #	Amplifier	180° Index Time (sec)	Payload (Kg)	Peak RPM	Accel/Decel (sec)	Max CG Off-Set (mm)	Max Envelope Diameter	Max Moment of Inertia (kgm)
250	TR250-171-MG180	KSD32	2	1000	23.39	0.72	101	1500	284
	TR250-171-MG110	KSD16	3	1100	17.54	1.3	101	2250	587
300	TR300-185-MG180	KSD48	2.25	1900	18.51	0.6	101	1800	620
	TR300-185-MG180	KSD32	3	1900	16.22	1.15	101	2700	1302
365	TR365-192-MG360	KSD64	3.25	5000	13.02	0.95	101	2500	2969
	TR365-192-MG180	KSD32	3	2500	15.63	1.08	101	2400	1377
900	TR900-250-MG360	KSD64	4	6700	9.99	1	101	3150	6132
	TR300-250-MG480	KSD64	5	6700	8.79	1.59	101	3700	8321

DR-TR Series

Flexible Positioning System

MOTION
INDEX DRIVES

Flexible Positioning System

Motion Index Drives programmable index drives all feature extremely high accuracy with high quality manufacturing and over-sized components. All programmable index drives feature flame hardened constant lead barrel cams, which provide no backlash between top rotating dial and the cam itself, through the multiple cam followers engaged into the cam at all times. The large number of cam followers engaged in the cam allows for increased inertial loading capabilities along with the ability for very fast index times and very long life. The programmable index tables can be driven with either a 3 phase AC motor with encoder, or with a servo motor of choice. The encoder on the motor provides the position feedback of the index drive, and in many cases, an additional axis for a robot can be used to control the index table while utilizing the same brand servo as the robot. Programmable index tables provide infinite positioning while maintaining the same high quality and reliability of Motion Index Drives traditional fixed index drives.

Motion Index Drives DR-TR Trunnion system is a complete 3 axis machine, designed and engineered to provide superior performance in demand-ing industrial automation environments. The DR-TR System is comprised of a base index drive, which can be either a fixed number of station index drive, or a programmable drive, which rotates a steel weldment. On this weldment are mounted two trunnion assemblies, each consisting of a head stock and tail stock. The system provides a superior accuracy, index time, and flexibility to meet the demands of modern automation systems. As each system is built for our customers needs, all dimensions can be adjusted to fit the application requirement.

Key Features and Benefits

- Infinite positioning and index angle is possible

- Multiple oversized cam followers engaged in cam at all times

- Minimal maintenance

- Can utilize any motor required (AC motor with encoder, servo, etc.)

- Range in all sizes of index drives

- Capable of both high speed applications and high load

- Extremely compact relative to inertial load capability

DUAL TRUNNIONS

Assembly Number	Axis 1	Trunnion	Trunnion Ratio	CI Height	Faceplate Width
TMF3000-TR250-171-750-2000-X	TMF3000	250mm	171mm	750mm	2000mm
TMF3000-TR250-171-750-2500-X	TMF3000	250mm	171mm	750mm	2500mm
TMF3000-TR250-171-750-3000-X	TMF3000	250mm	171mm	750mm	3000mm
TMF3000-TR250-171-900-2000-X	TMF3000	250mm	171mm	900mm	2000mm
TMF3000-TR250-171-900-2500-X	TMF3000	250mm	171mm	900mm	2500mm
TMF3000-TR250-171-900-3000-X	TMF3000	250mm	171mm	900mm	3000mm
TMF3000-TR300-185-750-2000-X	TMF3000	300mm	185mm	750mm	2000mm
TMF3000-TR300-185-750-2500-X	TMF3000	300mm	185mm	750mm	2500mm
TMF3000-TR300-185-750-3000-X	TMF3000	300mm	185mm	750mm	3000mm
TMF3000-TR300-185-900-2000-X	TMF3000	300mm	185mm	900mm	2000mm
TMF3000-TR300-185-900-2500-X	TMF3000	300mm	185mm	900mm	2500mm
TMF3000-TR300-185-900-3000-X	TMF3000	300mm	185mm	900mm	3000mm

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TMF3000-TRXXX-XXX-XXX-XXXX

Table Class
Trunnion Class
Trunnion Ratio
CI Height
Faceplate Width

Standard Double Trunnion with Kuka Motors (other servo motors can be used)

| CLASS	MODEL #	EXCHANGE AXIS MOTOR	EXCHANGE AXIS AMPLIFIER	TRUNNION AXIS MOTORS	TRUNNION AXIS DUAL AMPLIFIER	EXCHANGE 180° INDEX TIME	TRUNNION 180° INDEX TIME	EACH TRUNNION PAYLOAD	MAX TRUNNION ENVELOPE	MAX TRUNNION INERTIA	TRUNNION CENTER-LINE TO FLOOR DISTANCE	DISTANCE BETWEEN FACE PLATES
250	TMF3000-TR250-171-750-2000-X	MG360	KSD64	MG180	KSD32	4.5	2	1000	1400	237	750	2000
	TMF3000-TR250-171-750-2500-X	MG360	KSD64	MG180	KSD32	4.5	2	1000	1400	237	750	2500
	TMF3000-TR250-171-750-3000-X	MG480	KSD64	MG180	KSD32	4.5	2	1000	1400	237	750	3000
	TMF3000-TR250-171-900-2000-X	MG360	KSD64	MG180	KSD32	4.5	2	1000	1400	237	900	2000
	TMF3000-TR250-171-900-2500-X	MG360	KSD64	MG180	KSD32	4.5	2	1000	1400	237	900	2500
	TMF3000-TR250-171-900-3000-X	MG480	KSD64	MG180	KSD32	4.5	2	1000	1400	237	900	3000
300	TMF3000-TR300-185-750-2000-X	MG360	KSD64	MG180	KSD48	5	2	1818	1400	620	750	2000
	TMF3000-TR300-185-750-2500-X	MG360	KSD64	MG180	KSD48	5	2	1818	1400	620	750	2500
	TMF3000-TR300-185-750-3000-X	MG360	KSD64	MG180	KSD48	5	2	1818	1400	620	750	3000
	TMF3000-TR300-185-900-2000-X	MG360	KSD64	MG180	KSD48	5	2	1818	1400	620	900	2000
	TMF3000-TR300-185-900-2500-X	MG360	KSD64	MG180	KSD48	5	2	1818	1400	620	900	2500
	TMF3000-TR300-185-900-3000-X	MG360	KSD64	MG180	KSD48	5	2	1818	1400	620	900	3000

Standard Double Trunnion with Fanuc Motors (other servo motors can be used)

CLASS	MODEL #	EXCHANGE AXIS MOTOR	EXCHANGE AXIS AMPLIFIER	TRUNNION AXIS MOTORS	TRUNNION AXIS DUAL AMPLIFIER	EXCHANGE 180° INDEX TIME	TRUNNION 180° INDEX TIME	EACH TRUNNION PAYLOAD	MAX TRUNNION ENVELOPE	MAX TRUNNION INERTIA	TRUNNION CENTER-LINE TO FLOOR DISTANCE	DISTANCE BETWEEN FACE PLATES
250	TMF3000-TR250-171-750-2000-X	A22IF	AISV-80	A8IS	AISV-80/80	4.5	2	1000	1400	237	750	2000
	TMF3000-TR250-171-750-2500-X	A22IF	AISV-80	A8IS	AISV-80/80	4.5	2	1000	1400	237	750	2500
	TMF3000-TR250-171-750-3000-X	A30IF	AISV-80	A8IS	AISV-80/80	4.5	2	1000	1400	237	750	3000
	TMF3000-TR250-171-900-2000-X	A22IF	AISV-80	A8IS	AISV-80/80	4.5	2	1000	1400	237	900	2000
	TMF3000-TR250-171-900-2500-X	A22IF	AISV-80	A8IS	AISV-80/80	4.5	2	1000	1400	237	900	2500
	TMF3000-TR250-171-900-3000-X	A22IF	AISV-80	A8IS	AISV-80/80	4.5	2	1000	1400	237	900	3000
300	TMF3000-TR300-185-750-2000-X	A22IF	AISV-80	A12IS	AISV-80/80	5	2	1818	1400	620	750	2000
	TMF3000-TR300-185-750-2500-X	A22IF	AISV-80	A12IS	AISV-80/80	5	2	1818	1400	620	750	2500
	TMF3000-TR300-185-750-3000-X	A22IF	AISV-80	A12IS	AISV-80/80	5	2	1818	1400	620	750	3000
	TMF3000-TR300-185-900-2000-X	A22IF	AISV-80	A12IS	AISV-80/80	5	2	1818	1400	620	900	2000
	TMF3000-TR300-185-900-2500-X	A22IF	AISV-80	A12IS	AISV-80/80	5	2	1818	1400	620	900	2500
	TMF3000-TR300-185-900-3000-X	A22IF	AISV-80	A12IS	AISV-80/80	5	2	1818	1400	620	900	3000
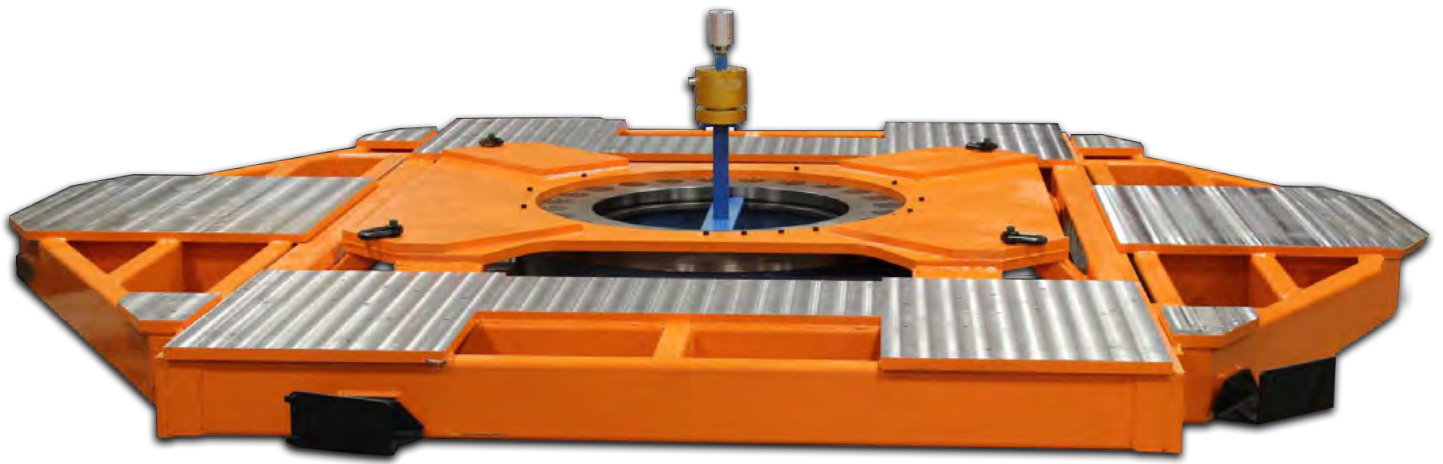
ADDITIONAL PRODUCTS
AND SERVICES
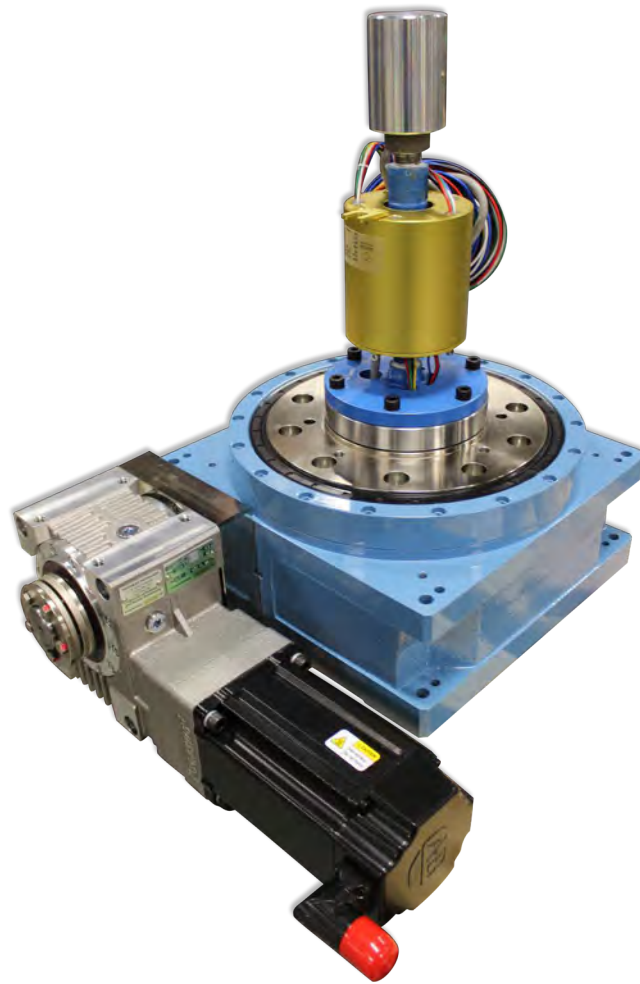
MX Slip Ring Series

150
230
470

MOTION
INDEX DRIVES

Motion Index Drives offers many standard rotary slip rings with a variety of options for communication, power and air requirements for rotary index table applications.

Our MX series Slip Ring Rotary Union assembly can be manufactured to our customer's specification. These can be delivered complete with our index drives, to allow for a simpler installation.

*May vary between series

AIR UNION SPECIFICATIONS	
Air Pressure	150 PSI
Air Temp	250 F
Hydraulic Temp	250 F
Max Speed	1500 RPM
Vacuum Pressure	28 InHG
Vacuum Temp	250 F

| GENERAL SPECIFICATIONS			
Rings	2~96(see next page)	Current	Signal(2A),10A
Voltage	600 VDC/VAC	Max speed	1000RPM
Through Bore Size	38.1mm(1.5")	Overall diameter	99mm(3.9")
Housing Material	Aluminium Alloy	Torque	0.05N.m;+0.03N.m/6rings
Working Life	Depends on speed	Contact material	Precious Metal:Gold-Gold
Electrical Noise	<5 mOhm	Contact Resistance	<2mOhm
Dielectric Strength	800VDC@50Hz	Lead Wire	UL Teflon® Awg22,Awg16
Insulation Resistance	1000MΩ@600VDC	Lead Lengths	300mm(12")
Operating Temp.	-40°C to 80°C	Protection	IP51
Mechanical Vibratio	MIL-SID-810E	Humidity	10% to 85% RH
Materials	Lead Free,RoHS compliant	Certified	YES

MX150

MX150 series provides a long life, fiber brush contact technology for ultimate performance in many challenging applications. MX150 series are standard, color-coded lead wires are used on both the stator and rotor for simplified electrical connections. It can transmit signal (2A), 10A current at max 600 VAC/VDC.

Air unions are available in 1/2 inch 3/4 inch and 1 inch, please specify when ordering. Please verify indexer model for correct mounting bracket which is included.

PARTS LIST
Please note: 10A rings parallel can be used as multiple 10A current.
For Example: 2 rings parallel could be used as 1 wire 20A.
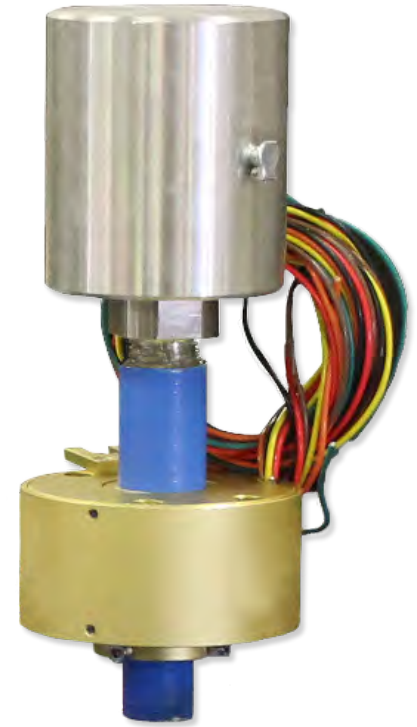
MX150-02-0200					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-02-0200	2	0	MX150-02-0002	0	2

MX150-03-0300					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-03-0300	3	0	MX150-03-0003	0	3
MX150-03-0102	1	2	MX150-03-0201	2	1

MX150-06-0600					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-06-0600	6	0	MX150-06-0006	0	6
MX150-06-0204	2	4	MX150-06-0402	4	2

MX150-12-1200					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-12-1200	12	0	MX150-12-0012	0	12
MX150-12-0210	2	10	MX150-12-0408	4	8
MX150-12-0606	6	6	MX150-12-0804	8	4
MX150-12-1002	10	2			

MX150-18-1800					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-18-1800	18	0	MX150-18-0018	0	18
MX150-18-0216	2	16	MX150-18-0414	4	14
MX150-18-0612	6	12	MX150-18-0810	8	10
MX150-18-1008	10	8	MX150-18-1206	12	6
MX150-18-1404	14	4	MX150-18-1602	16	2

MX150-42-4200					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-42-4200	42	0	MX150-42-0042	0	42
MX150-42-0636	6	36	MX150-42-1230	12	30
MX150-42-1824	18	24	MX150-42-2418	24	18
MX150-42-3012	30	12	MX150-42-3606	36	6

MX150-36-3600					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-36-3600	36	0	MX150-36-0036	0	36
MX150-36-0630	6	30	MX150-36-1224	12	24
MX150-36-1818	18	18	MX150-36-2412	24	12
MX150-36-3006	30	6			

MX150-48-4800					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-48-4800	48	0	MX150-48-0048	0	48
MX150-48-0642	6	42	MX150-48-1236	12	36
MX150-48-1830	18	30	MX150-48-2424	24	24
MX150-48-3018	30	18	MX150-48-3612	36	12
MX150-48-4206	42	6			

MX150-56-5600					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-56-5600	56	0	MX150-56-0056	0	56
MX150-56-0650	6	50	MX150-56-1244	12	44
MX150-36-1838	18	38	MX150-56-2432	24	32
MX150-36-3620	36	20	MX150-56-4808	48	8

MX150-72-7200					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-72-7200	72	0	MX150-72-0072	0	72
MX150-72-1260	12	60	MX150-72-2448	24	48
MX150-72-3042	30	42	MX150-72-3636	36	36
MX150-72-4824	48	24	MX150-72-6012	60	12

MX150-96-9600					
Parts #	Power 10A	Signal/2A	Parts #	Power 10A	Signal/2A
MX150-96-9600	96	0	MX150-96-0096	0	96
MX150-96-1284	12	84	MX150-96-2472	24	72
MX150-96-3660	36	60	MX150-96-4848	48	48
MX150-96-6036	60	36	MX150-96-7224	72	24

MX230

MX230 series provides a long life, fiber brush contact technology for ultimate performance in many challenging applications. Dedicated flying leads with specific communication connectors for easy install. MX230 series are standard with flying leads of 72 inches. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. It can transmit signal (2A), 10A current at max 600VAC/VDC.

PARTS LIST
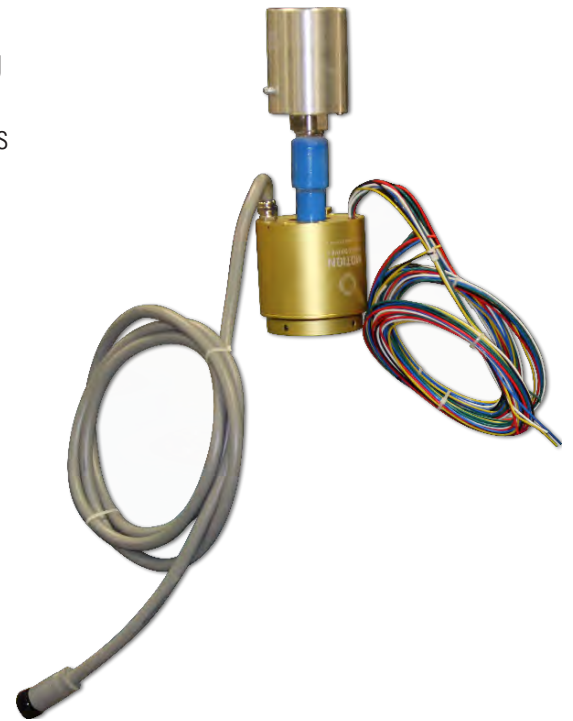
ETHERNET CONNECTOR				
Part #	#Circuits	AMP	Comm. Ports	Communication
MX230-02	6	10	1	Ethernet RJ45
MX230-03	12	10	1	Ethernet RJ45
MX230-04	18	10	1	Ethernet RJ45
MX230-05	24	10	1	Ethernet RJ45

DEVICE NET				
Part #	#Circuits	AMP	Comm. Ports	Connector
MX230-12	6	10	1	Device Net 5 pin Micro
MX230-13	12	10	1	Device Net 5 pin Micro
MX230-14	18	10	1	Device Net 5 pin Micro
MX230-15	24	10	1	Device Net 5 pin Micro

CANBUS				
Part #	#Circuits	AMP	Comm. Ports	Connector
MX230-17	6	10	1	Canbus 9 pin D-sub
MX230-18	12	10	1	Canbus 9 pin D-sub
MX230-19	18	10	1	Canbus 9 pin D-sub
MX230-20	24	10	1	Canbus 9 pin D-sub

PROFIBUS				
Part #	#Circuits	AMP	Comm. Ports	Connector
MX230-07	6	10	1	Profibus 9 pin D-sub
MX230-08	12	10	1	Profibus 9 pin D Sub
MX230-09	18	10	1	Profibus 9 pin D Sub
MX230-10	24	10	1	Profibus 9 pin D Sub

*Please note that all listed voltage and current ratings refern to individual channel/pins only. The overall ampacity of the system is defined by the number of channels in the system.

*As a rule of thumb a 10 channel system has a conversion factor of about 0.5, meaning while each channel can handle for example 10A, the total amperage on all channel should not exceed 50A to prevent overheating. On a 20 channel system the conversion factor reduces to about 0.4, meaning the total amerage should not exceed 20 (channel) x 10A (per channel x 0.4 (conversion factor) = 80A. The mentioned convertion factor are worst case estimates when operating the slip ring above 50 deg C (122 deg F) and in a closed and tight enviroment without any airflow and no chance for the heat to escape.

MX470

MX470 series provides easy installation with plug in connectors. Each unit is tested for communication response times and connectivity. With ratings of IP56 on most units you will be getting maximum protection level for most applications. High quality gold plated internal components offer high conductivity. Standard air unions are also, available in 1/2 inch 3/4 inch and 1 inch, please specify when ordering. Please verify indexer model for correct mounting bracket which is included.

PARTS LIST

MX470-01				
Connectors	Stator	Rotor	Communication	Power Rating
Turck RSF578	1	1	Device Net	N/A
Turck RSFL56	0	1	N/A	600 V 9 AMP
Turck RKFL56	1	0	N/A	600 V 9 AMP

MX470-02				
Connectors	Stator	Rotor	Communication	Power Rating
Turck FKW5L	1	1	Profinet	N/A
Turck RSFL56	0	1	N/A	600 V 9 AMP
Turck RKFL56	1	0	N/A	600 V 9 AMP

MX470-03				
Connectors	Stator	Rotor	Communication	Power Rating
Turck FKF DDV-440	2	2	Ethernet	N/A
Turck RSF461	0	1	N/A	600 V 10 AMP
Turck RKFL461	1	0	N/A	600 V 10 AMP

MX470-04				
Connectors	Stator	Rotor	Communication	Power Rating
Turck FKF DDV-440	1	1	Ethernet	N/A
Turck RSF34	0	1	N/A	600 V 10 AMP
Turck RKF34	1	0	N/A	600 V 10 AMP
Turck RSF44	0	1	N/A	600 V 15 AMP
Turck RKF44	1	0	N/A	600 V 10 AMP
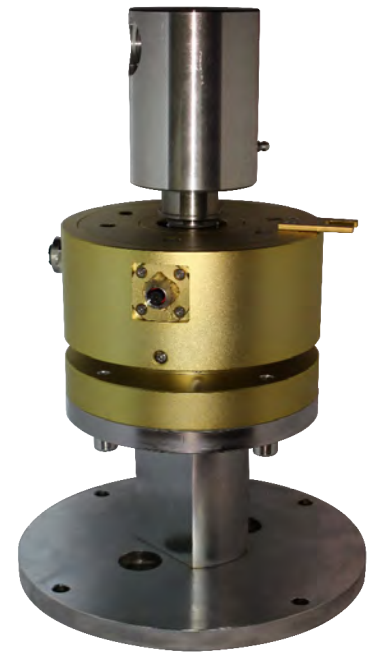
MX470-05				
Connectors	Stator	Rotor	Communication	Power Rating
Hirschmann J224TPESTP	1	1	Ethernet	N/A
Turck RSF126	0	1	N/A	600V 7 AMP
Turck 126	1	0	N/A	600V 7 AMP

MX470-06				
Connectors	Stator	Rotor	Communication	Power Rating
Hirschmann J224TPESTP	1	1	Ethernet	N/A
Turck RSF34	0	1	N/A	600 V 10 AMP
Turck RKF34	1	0	N/A	600 V 10 AMP
Turck RSF44	0	1	N/A	600 V 15 AMP
Turck RKF44	1	0	N/A	600 V 15 AMP

MX470-07				
Connectors	Stator	Rotor	Communication	Power Rating
Turck RSF578	4	4	Device Net	N/A
Turck CSFD-64-6	0	1	N/A	300 V 15 AMP
Turck CKFD-64-6	1	0	N/A	300 V 15 AMP

*Please note that all listed voltage and current ratings refern to individual channel/pins only. The overall ampacity of the system is defined by the number of channels in the system.

*As a rule of thumb a 10 channel system has a conversion factor of about 0.5, meaning while each channel can handle for example 10A, the total amperage on all channel should not exceed 50A to prevent overheating. On a 20 channel system the conversion factor reduces to about 0.4, meaning the total amerage should not exceed 20 (channel) x 10A (per channel x 0.4 (conversion factor) = 80A. The mentioned convertion factor are worst case estimates when operating the slip ring above 50 deg C (122 deg F) and in a closed and tight enviroment without any airflow and zhno chance for the heat to escape.

TRUNNION SOLUTIONS

Motion can provide in addition to the trunnion headstock drive a complete trunnion assembly. The complete trunnion solutions we provide utilize our standard, high-reliability and precise indexing equipment with custom weldments that exceed our customers' expectations.

Features

- Headstock (RT, TR, and TMF Series)

- Tailstock (bearing assembly or thru-hole bearing housing)

- Center Frame (custom length and weldment design)

- Optional Controls Drive for Motor

- Optional Micarta isolation kits

- Customer specified paint finish on all stationary components

- Black oxide head and tailstock flanges

Benefits

- Purchase multiple components from one source reducing purchasing management time

- Reduce project management time by utilizing Motion to order necessary components

- Minimize your design time by utilizing our standard designs that are readily available

- Minimize assembly time while decreasing your required man hours on your projects

- We will mount customer supplied motors and other

- Minimize shipping and handling cost by purchasing from one source
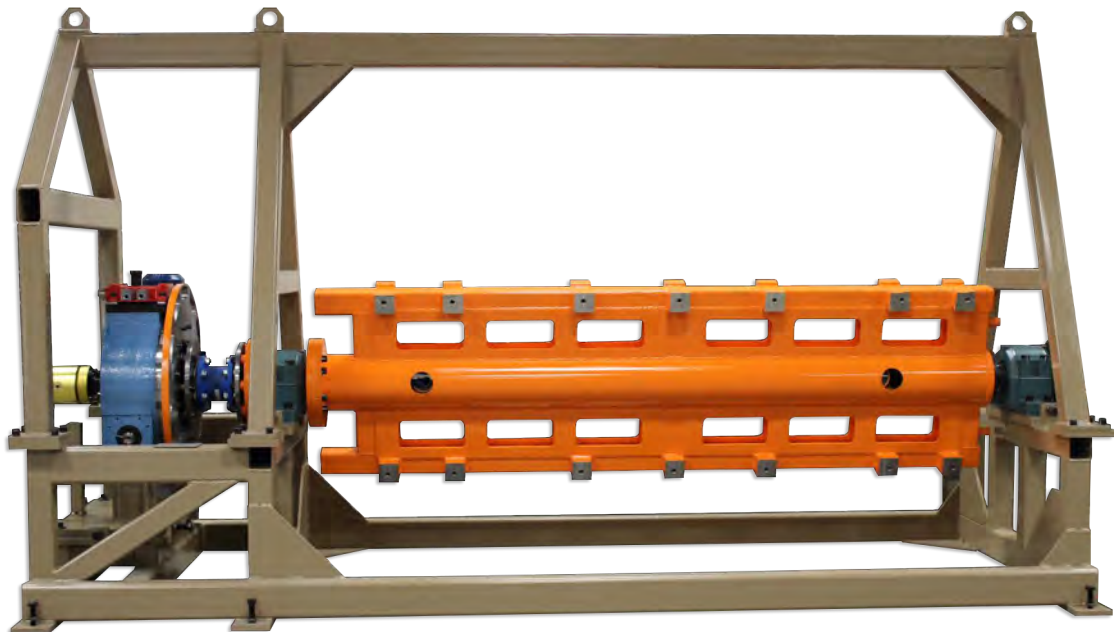
TOOLING FRAMES

Tooling frames and weldments can be manufactured to our customers print. These can be delivered complete with our index drives, to allow for a simpler installation. Weldments can be manufactured to your drawings and can be offered upon receipt of the drawing for quoting.

Features

- Available in extremely low profile designs

- A-Frame, H-Frame welded structures to meet ergonomic load requirements

- FEA studies completed by Motion based on your tooling/fixture loads

- Reduce mass moment of inertia by utilizing our design experience

- Machine enamel, Epoxy or Powder Coating to customers color spec.

- Frames manufactured to allow customer to simply bolt on tooling and fixtures

Benefits

- Purchase multiple components from one source reducing purchasing management time

- Reduce project management time by utilizing Motion to order necessary components

- Minimize your design time by utilizing our standard designs that are readily available

- Minimize assembly time while decreasing your required man hours on your projects

- We will mount customer supplied motors and other

- Minimize shipping and handling cost by purchasing from one source

DIAL PLATES

Motion Index Drives can supply any dial plate required, made from nearly any material, including steel, aluminum, and plastics. Simply specify the thickness, diameter, material and special coatings (if required) of the plate and we will supply this with the index drive complete. We can also have the dial plate machined to your drawing, allowing for less work for our customers.

Features

- Round, rectangle, triangle or custom shape

- Machining to your print

- Special tolerances

- Bushings

- Thread inserts

- Anodizing

- Nickel plating

- Stainless steel

- Black oxide

- Teflon

Benefits

- Purchase multiple components from one source reducing purchasing management time

- Reduce project management time by utilizing Motion to order necessary components

- Minimize your design time by utilizing our standard designs that are readily available

- Minimize assembly time while decreasing your required man hours on your projects

- We will mount customer supplied motors and other

- Minimize shipping and handling cost by purchasing from one source
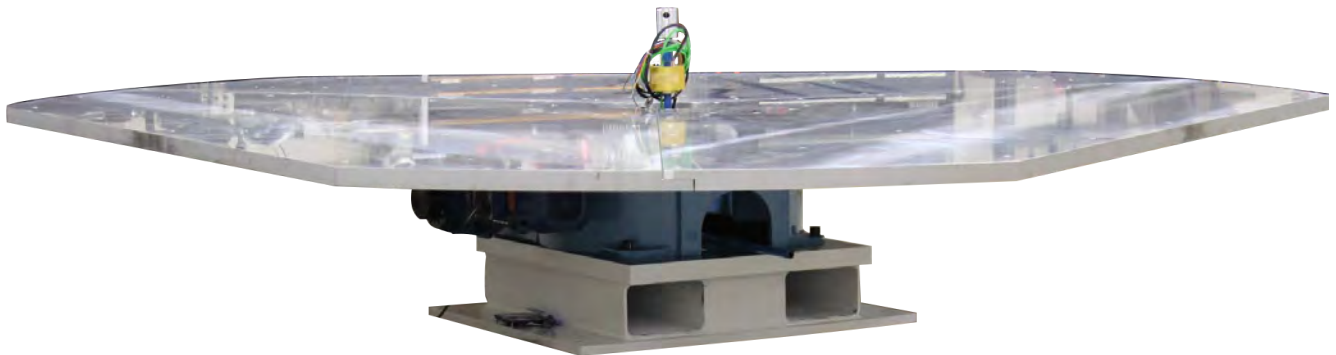
MACHINE BASES

Machine bases can be manufactured to our customers print or we can recommend a standard base to fit. These can be delivered complete with our index drives, to allow for a simpler installation. Bases can be manufactured to your drawings and can be offered upon receipt of the drawing for quoting.

Features

- Many different hollow structural tubular frame choice

- Aluminum Anodized and Stainless Steel Top Plates

- Steel top plates

- Nickel, Black Oxide or other finishing available

- Surface ground for precision

- Leveling and tie down foot pads

- Casters for mobility if required

- Machine enamel, Epoxy or Powder Coating to customers color spec.

Benefits

- Purchase multiple components from one source reducing purchasing management time

- Reduce project management time by utilizing Motion to order necessary components

- Minimize your design time by utilizing our standard designs that are readily available

- Minimize assembly time while decreasing your required man hours on your projects

- We will mount customer supplied motors and other

- Minimize shipping and handling cost by purchasing from one source
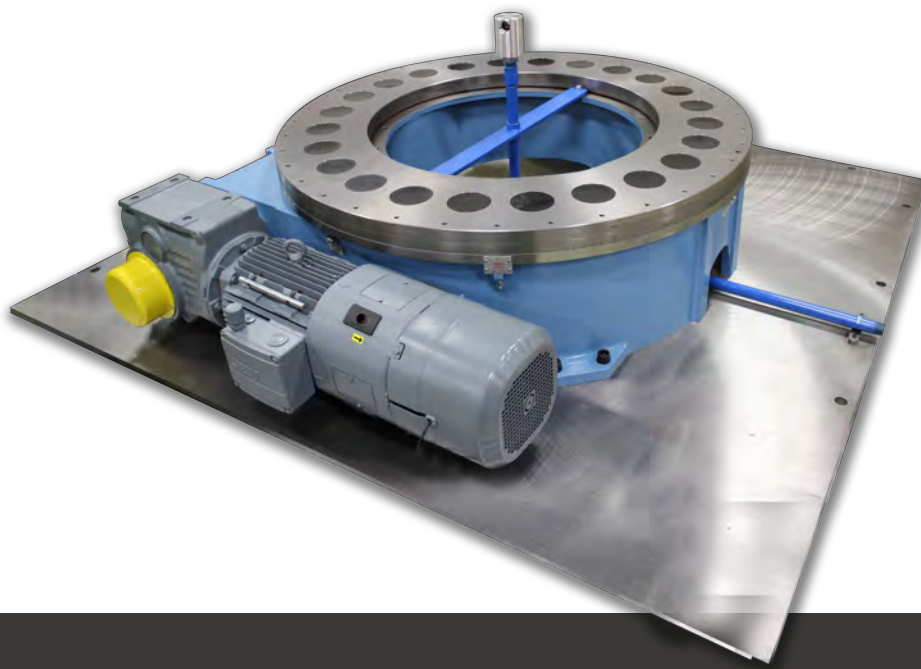
TRIPLEDEX INDEXER

Motion's Multidex Indexer solution provides one large base rotary index table with smaller satellite indexers. This allows the tooling or part to be rotated on one end of the work cell while the other end can be safely interfaced or rotated to allow for different access. The standard units include a base rotary index table with 2, 3 or 4 satellite indexers. The base and satellite indexers can have either a fixed or flexible number of stations. Multidex units come complete with baseplate or base frame ready to be mounted in your cell.

Features

- Utilizes high precision TMF or RT series rotary index tables

- Complete with high voltage slip ring to power satellite indexers

- Large through hole on base indexer in the housing and in the center

- Through holes enable you to run utilities at ground level

- Absolute encoder on satellite indexer input shaft for high accuracy

- Special sealing on all indexers for harsh environments

Benefits

- Purchase multiple components from one source reducing purchasing management time

- Reduce project management time by utilizing Motion to order necessary components

- Minimize your design time by utilizing our standard designs that are readily available

- Minimize assembly time while decreasing your required man hours on your projects

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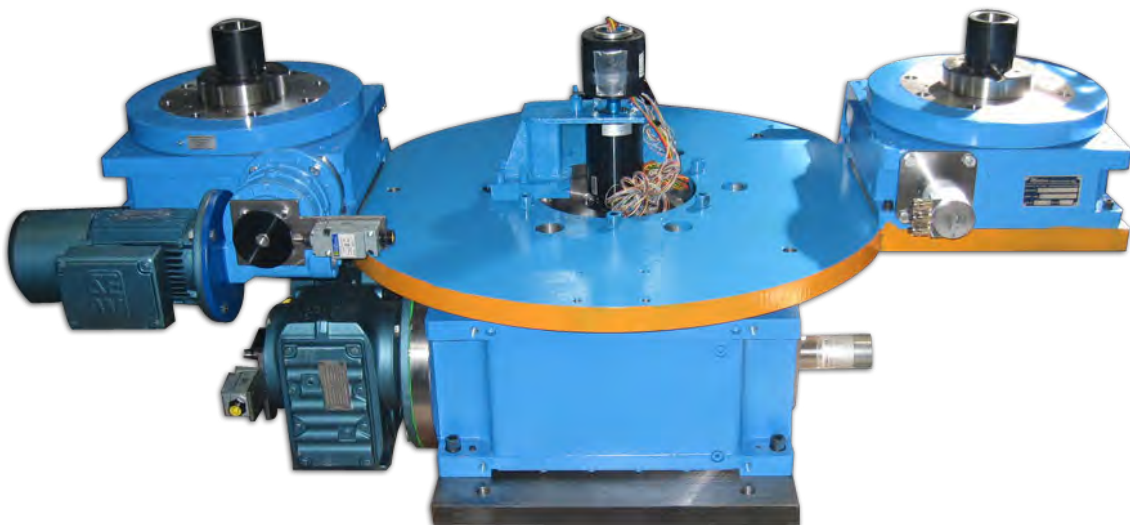
OTHER COMPLEMENTARY COMPONENTS

Switch Packages

- Encoders

- Proximity Switches

- Mechanical Switches

Motors and Reducers

- Explosion-Proof Motors

- Servo Motors

- Stainless Steel Motors

- Low-Backlash Gear Reducers

Custom Coatings

- Powder Coatings

- Nickel Plating

- Anodizing

- Stainless Steel

- Black Oxide

Tooling and Accessories

- Adapter Plates

- Dial Plates

- Base Plates

- Trunnion Riser Weldments

- Pillow Blocks for Trunnion Mounting

- Mechanical Safety Lock-Outs

- Satellite Index Drive Machines

- Partially Built Indexer Cells

Custom Cams

- Custom Auxiliary Cam operations

- Custom Cams to implement into existing operation

Controls

- VFD's

- Servo Drives

- Complete Integrated Index Drive Control Panel

SERVICES

Motion Index Drives offers extensive support for new startup and existing products. If you are in search of product information regarding installation, CAD drawings and/or maintenance manuals, please visit our website downloads section.

- **On-Site Support**
  - Repairs
  - Installs

- **Refurbishing**
  - Customers can send their units back to Motion and have certified technicians refurbish their equipment back to new

- **Retrofitting**
- **Training and certification courses for large projects implementation**
- **Replacement motors**
- **Recycling of old turntables**

ON-SITE

All on site service is performed by a certified Motion Index Drives technician with minimum 5 years of experience. Our customers will benefit from a full warranty on refurbished units. Any parts needing to be replaced will have 100% Motion Index Manufactured components used where applicable. All components will be adjusted to original manufactured specifications when applicable. Our technicians can provide preventative maintenance programs. All of our technicians are available for 24 hour emergency breakdowns. To schedule a service call to your facility please contact Motion Index Drives at 1-248-743-9999.

AT FACILITY

Our technicians can perform a full disassembly to inspect all major components. Any components that are replaced will be adjusted to original manufacturing specifications, all units we be re-tested before leaving our facility. Our customer receives full warranty on repaired units. Motion Index Drives can also arrange pickup and delivery of equipment. Please contact Motion Index Drives at 1-248-743-9999.

SPARE PARTS

When calling to order spare parts, please have our shop order number available to give to our Service and Parts Department to ensure that you will be getting the correct parts for your specific unit. The shop order number can be found on our nameplate located on each unit. Spare parts are very important for our customers to have on hand. In the event a customer has a "crash" (robot crashing into tooling) internal components could have unnecessary forces applied to them and may become damaged. This could then cause down time to your line. When customers stock our spare parts the down time is kept to a minimum. The most common spare parts to have on hand are cam followers, seals, and bearings for your specific unit.

CLEAN ROOM SOLUTIONS

Clean room environments place the very highest demands on equipment, protection of people, assets and processes due to the high-risk substances, cross-contamination risks and very stringent regulatory requirements. At Motion Index Drives we have not only met but continuously exceed these demands to produce the highest quality clean room ready indexing devices on the market. The Motion Index Drives MEDEX line brings a variety of solutions to all of Motion's standard products. The MEDEX line is ready to be placed in clean room environments, such as manufacturing settings for medical equipment, pharmaceuticals, microelectronics and food processing. Our complete line of indexing equipment can be ordered to exceed all clean room requirements.

Advantages for Designers and Machine Builders

- Oscillating index operation capabilities

- Easy synchronization of other mechanical devices

- Large center thru-hole to feed pneumatic, electrical and other lines

- Housing machined on all sides for use in any mounting position

Technical Benefits for End Users

- Utilizes the same reliable and high-quality technologies as our standard line of indexing equipment

- Meets the requirements for clean room environments

- Stainless steel, nickel plating, or other

- Sealed with medically-approved seals

- Paint and aluminum treatments on the index drive and gear motor
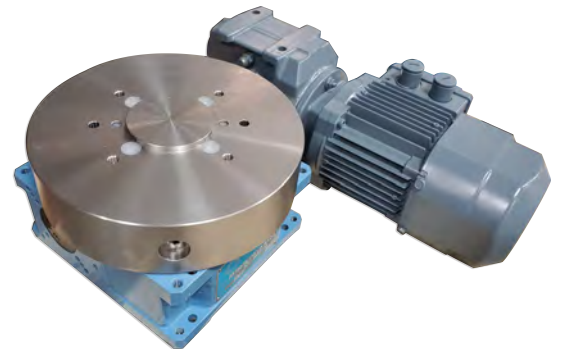
Options Available

- Custom index and dwell angles

- Specified motors and reducers (TEFC, Motor Coatings, special oil filled reducers)

- User-controlled stations and timing with the MOTION Flex line

- More Options

MOTION
INDEX DRIVES