

RT Series

Rotary Indexer

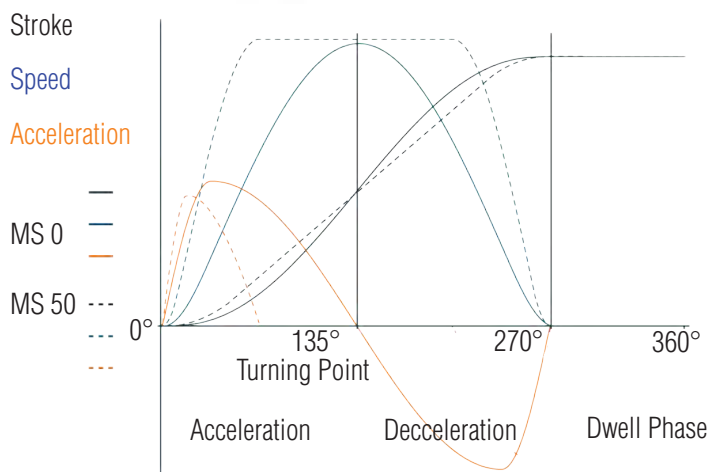
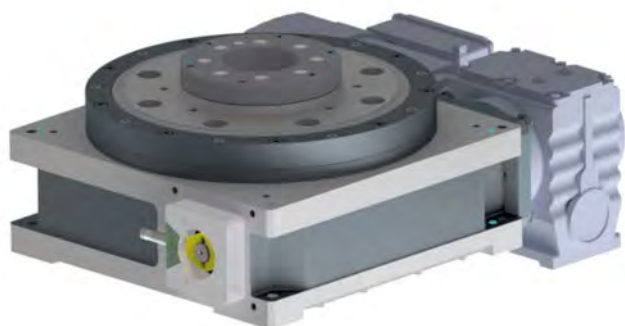




MOTION INDEX DRIVES

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 tailored 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

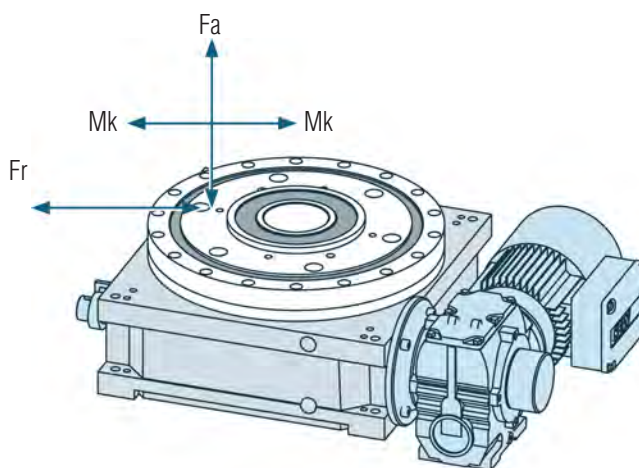
Axial force Fa [kN]	50
Radial force Fr [kN]	26
Tilting moment Mk [kNm]	10
Reinforced version	
Tilting moment Mk [kNm]	21

Load on central column

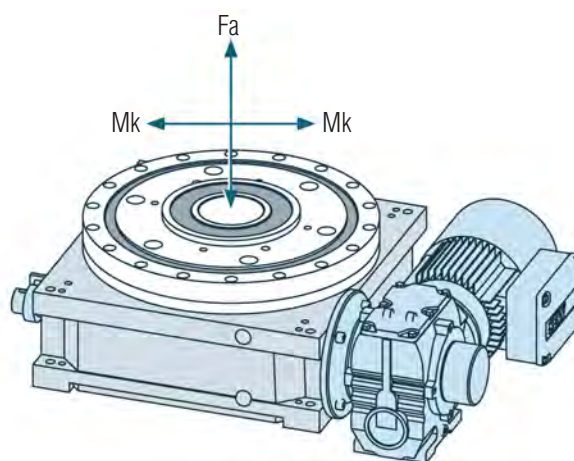
Axial force Fa [kN]	45
Tilting moment Mk [kNm]	5.5
Max. number of cycles [1/min]	145
Direction	clockwise, counterclockwise, oscillating
Mounting position	ANY

*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.

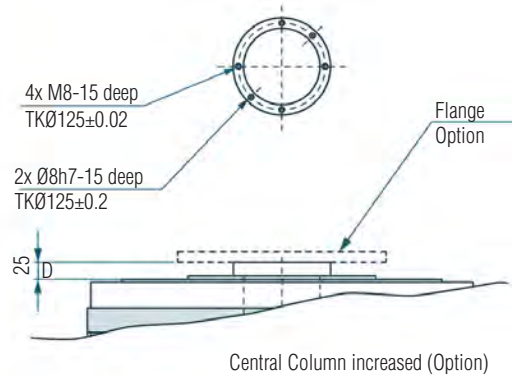
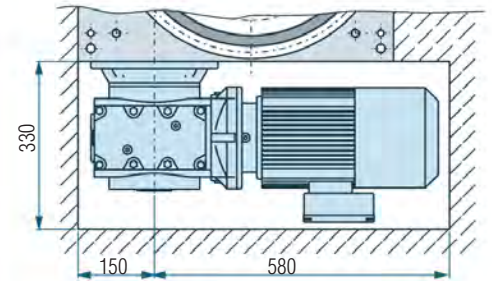
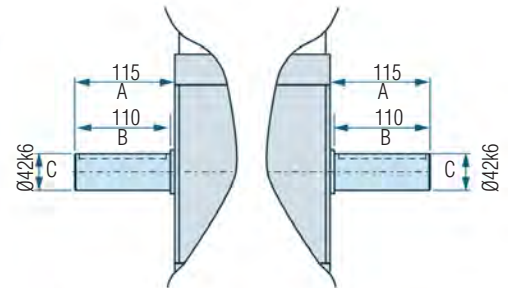
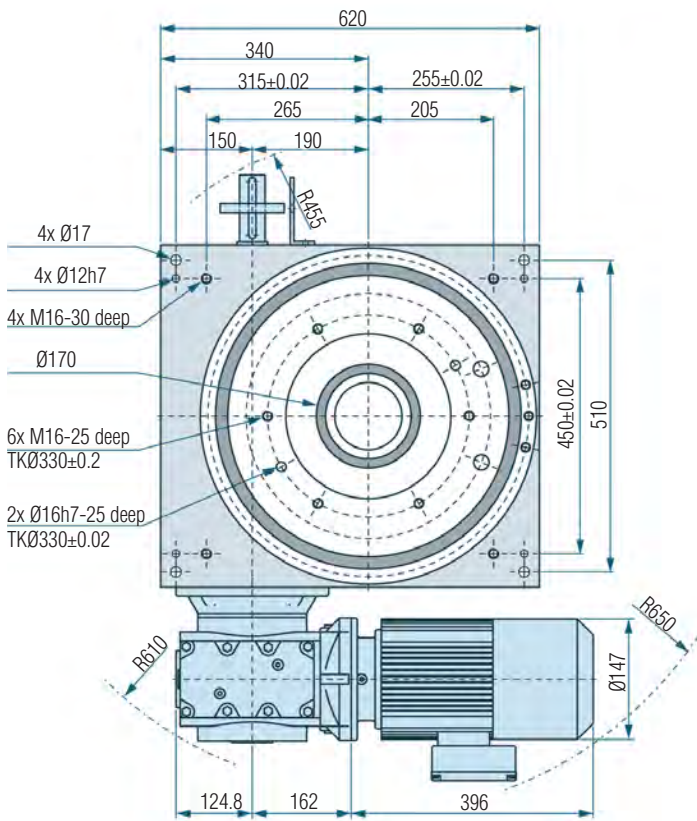
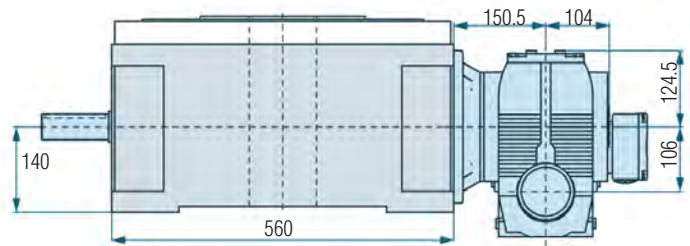
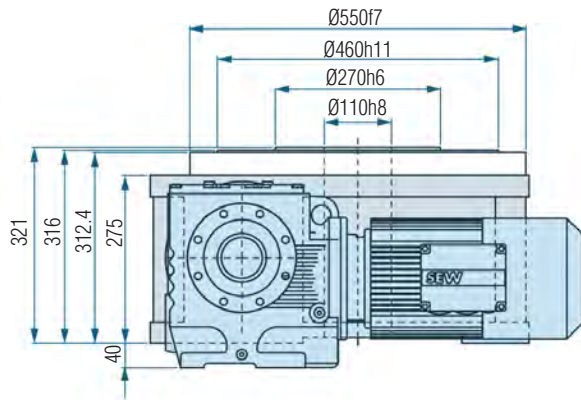
RT400



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.

RT400

Load Table

Scenarios

		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
	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
	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
	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	
	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	
	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	
	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		
	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		
	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		
	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		
	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		
	J		215	397	860	1180	1470	1910	2760	3550		
30	t		0.34	0.48	0.67		0.88	1	1.22	1.4		
	J		275	550	1080		1850	2420	3490	4580		
36	t			0.32	0.45		0.59	0.67	0.82	0.93	1.32	
	J			292	582		990	1290	1840	2410	4820	

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

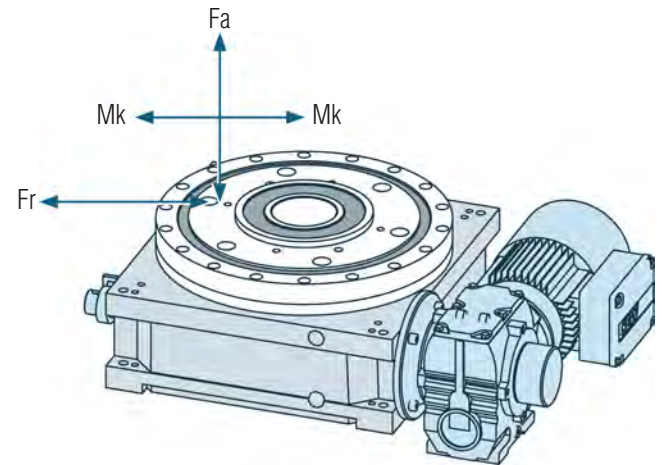
Axial force Fa [kN]	84
Radial force Fr [kN]	49
Tilting moment Mk [kNm]	22
Reinforced version	
Tilting moment Mk [kNm]	40

Load on central column

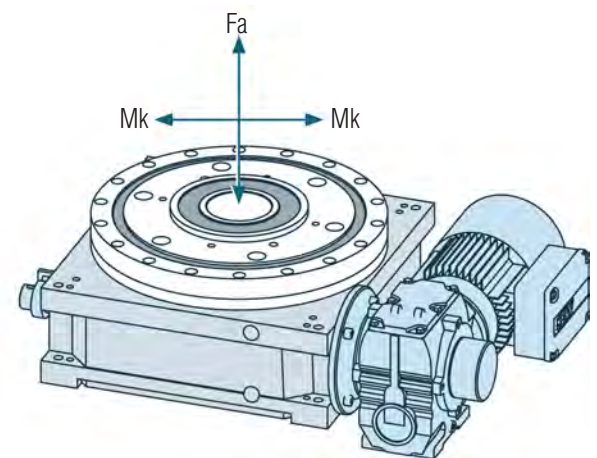
Axial force Fa [kN]	60
Tilting moment Mk [kNm] Max.	7.8
number of cycles [1/min]	105
Direction	clockwise, counterclockwise, oscillating
Mounting position	ANY

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

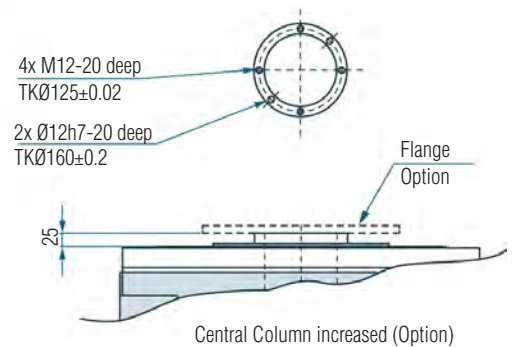
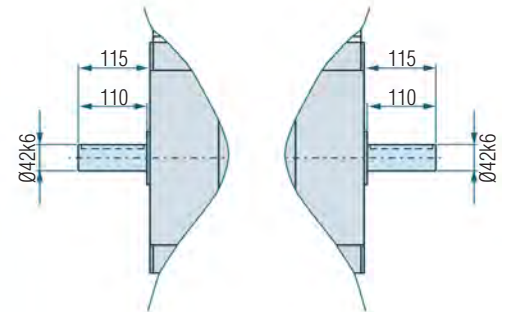
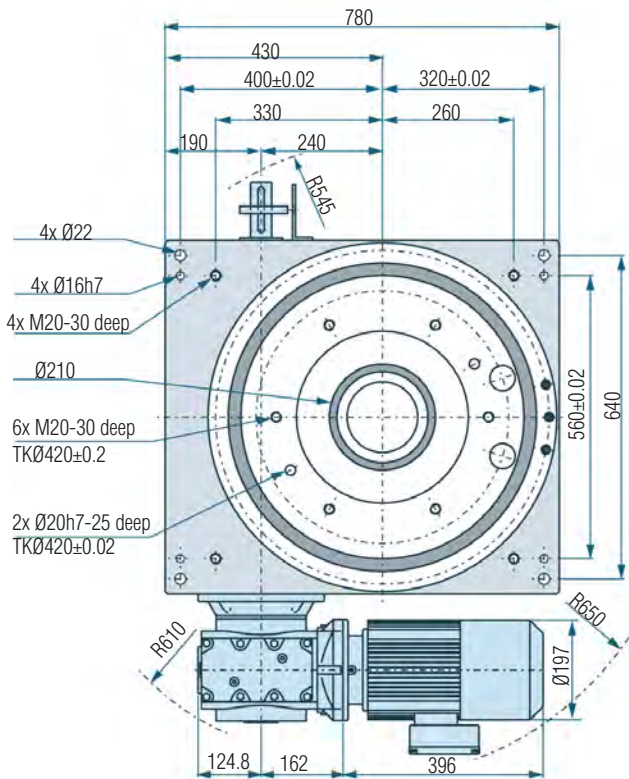
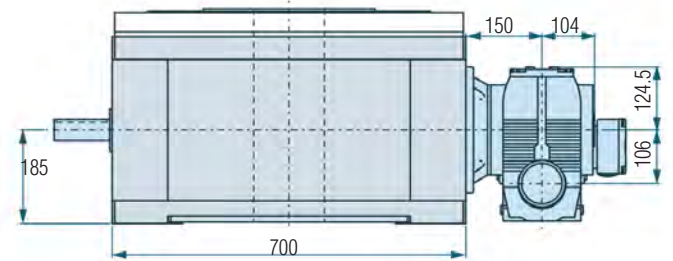
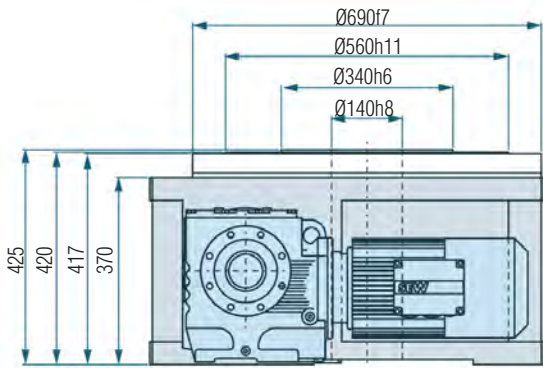
The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill additional holes, please consult us with regard to acceptable drilling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



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

RT500

Load Table

Scenarios

		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

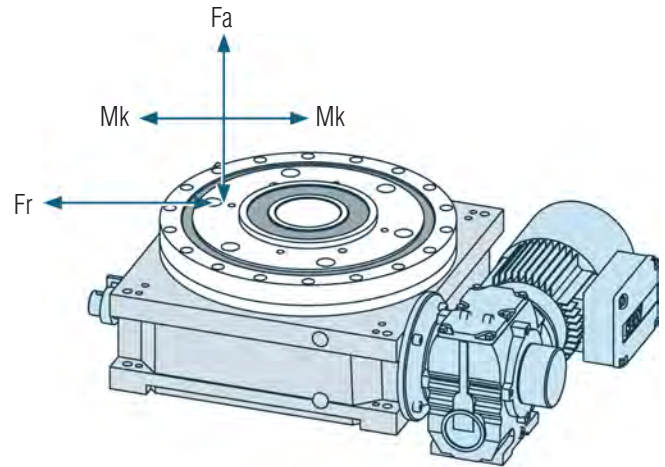
Axial force Fa [kN]	145
Radial force Fr [kN]	86
Tilting moment Mk [kNm]	41
Reinforced version	
Tilting moment Mk [kNm]	72

Load on central column

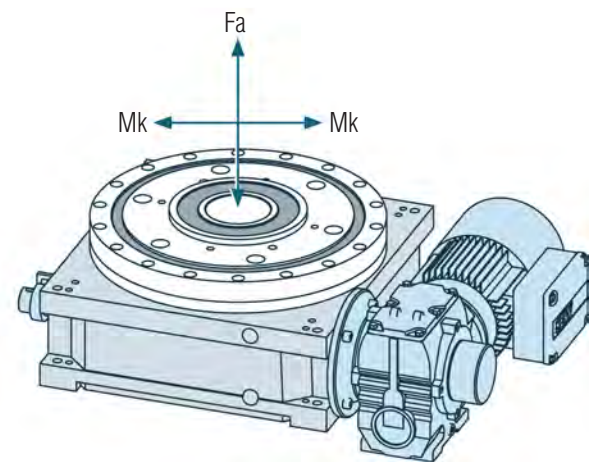
Axial force Fa [kN]	80
Tilting moment Mk [kNm]	9
Max. number of cycles [1/min]	105
Direction	clockwise, counterclockwise, oscillating
Mounting position	ANY

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

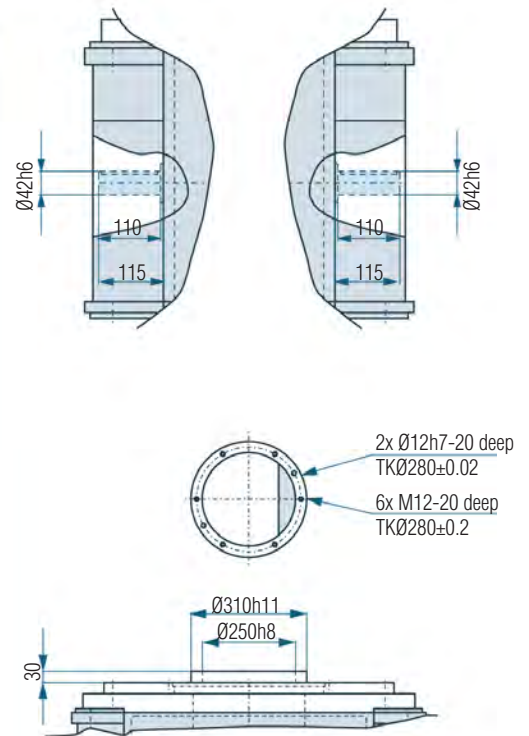
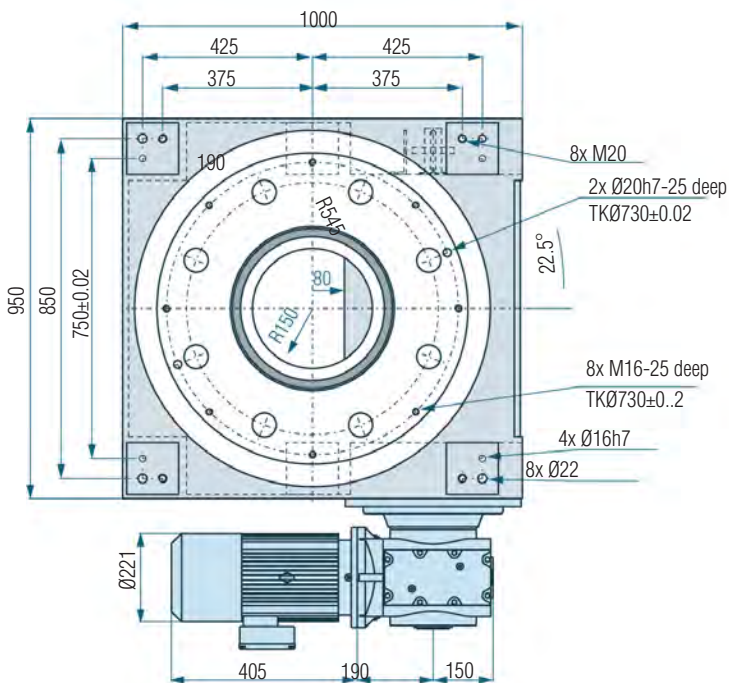
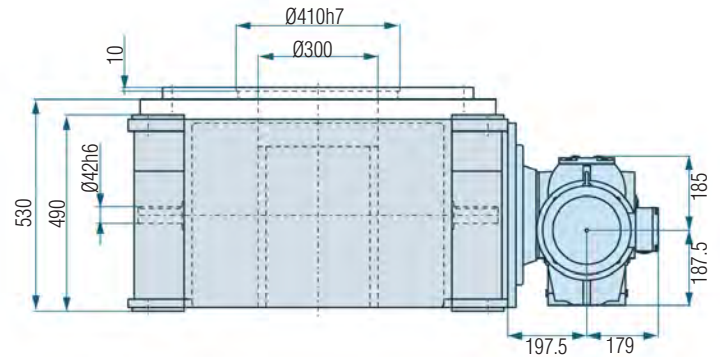
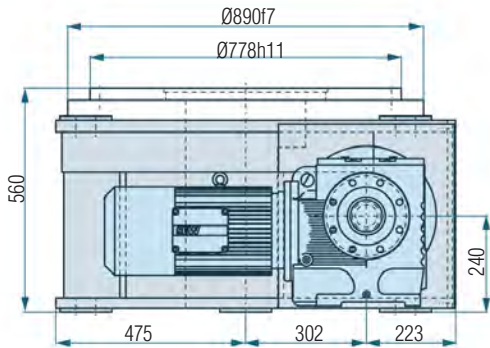
The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your specifications. The central column can also be designed as a flange. Should you wish to drill additional holes, please consult us with regard to acceptable drilling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

		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
	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
	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
	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
	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
	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
	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
	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
	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			
	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			
	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			
	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			
	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			
	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

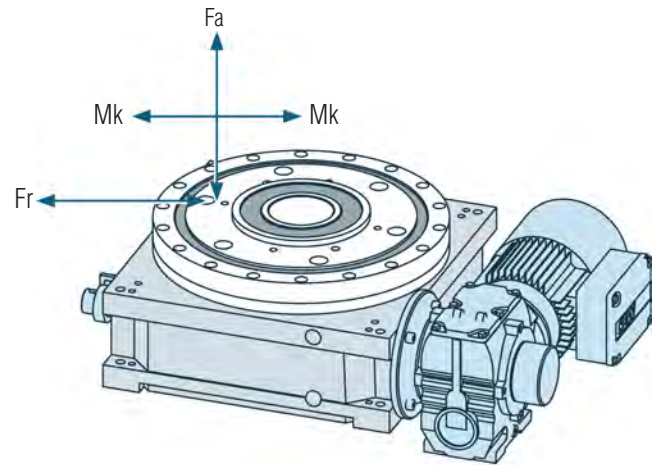
Axial force Fa [kN]	N/A
Radial force Fr [kN]	N/A
Tilting moment Mk [kNm]	N/A
Reinforced version	N/A
Tilting moment Mk [kNm]	N/A

Load on central column

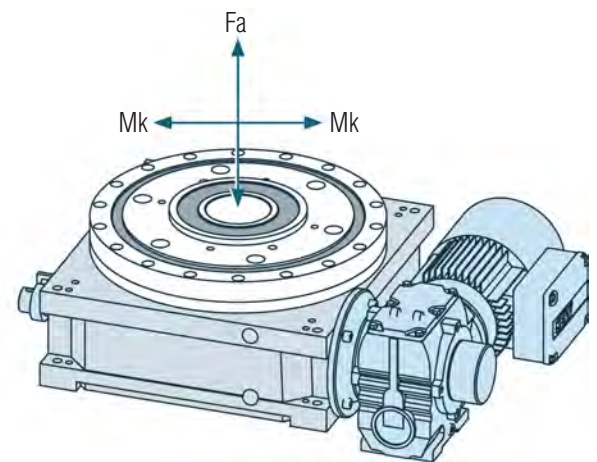
Axial force Fa [kN]	N/A
Tilting moment Mk [kNm]	N/A
Max. number of cycles [1/min]	N/A
Direction	clockwise, counterclockwise, oscillating
Mounting position	ANY

*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.

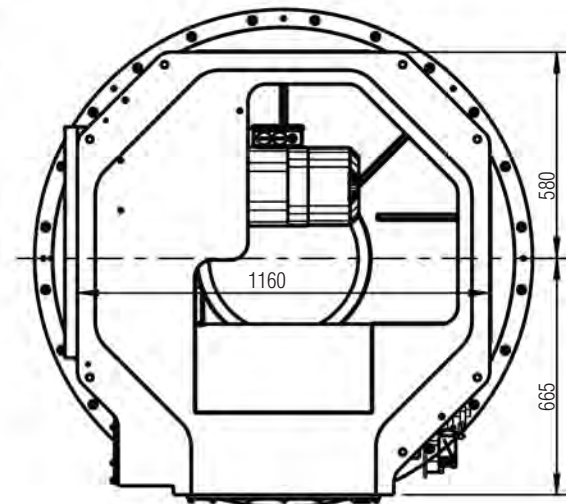
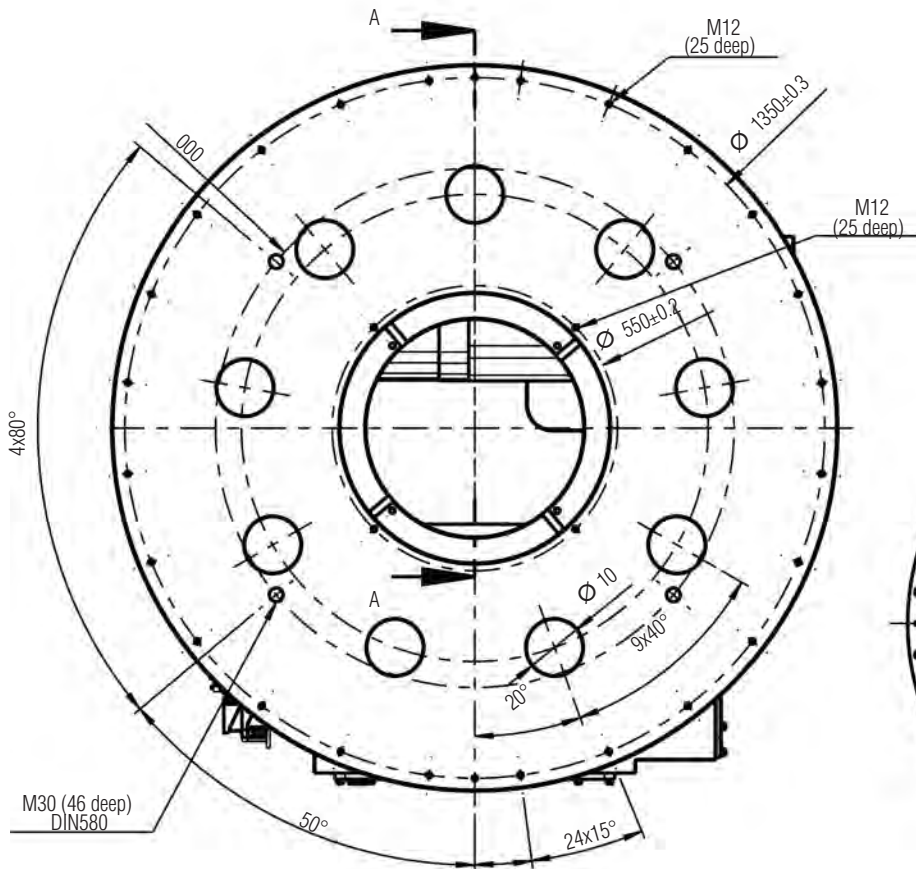
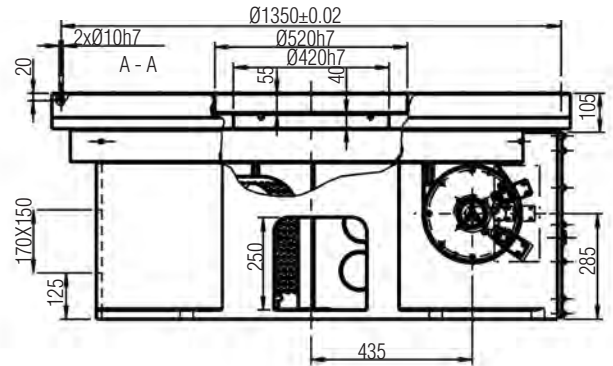
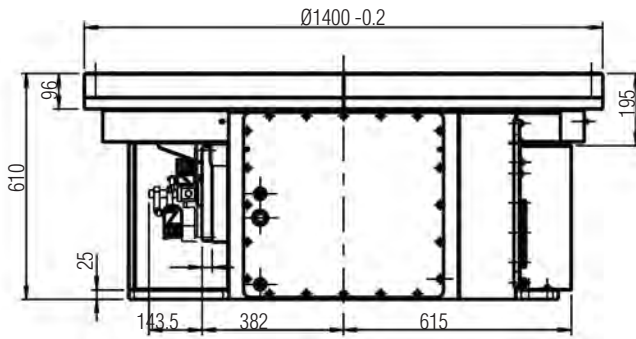



RT900

Dimensions

The dimensions shown here are the standard dimensions. The output flange, central column, housing and input shafts can be machined to your 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.

*For mounted accessories up to $\varnothing 9500\text{mm}$. Applications in assembly facilities with large and heavy parts: welding, riveting, assembly, and printing/labeling.



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



MOTION
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