

MOTION INDEX DRIVES

RIGHT ANGLE DRIVES
TG Series





MOTION INDEX DRIVES

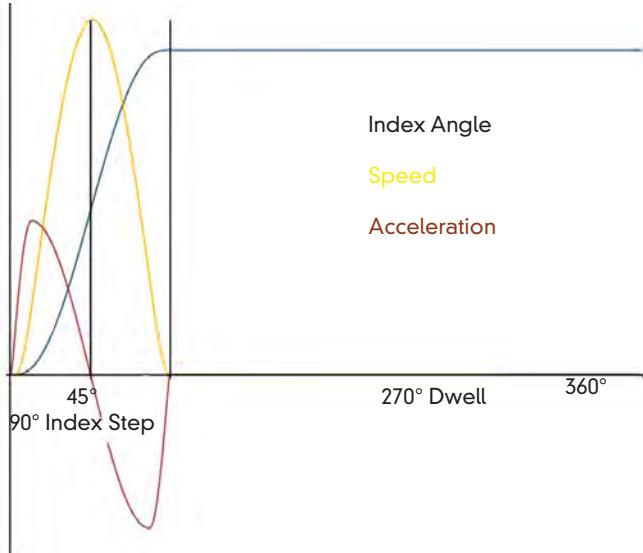


Right Angle Fixed Index Drives – TG Series

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 globoidal 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. Globoidal Cams are a cam design used in which the cam followers are mounted radially outward from the outside diameter of the output shaft. The input shaft is perpendicular to the output shaft. The diameter of the cam allows for very special index angles, which allows for a large variety of output angles, which is extremely beneficial in continuously running, mechanically synchronous machines. The globoidal cam also is beneficial for very high speed applications, as the internal inertia of the cam design is the lowest of all the different cam designs.

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 input shaft of the rotary index drive. This is firmly connected to the globoidal 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 set of tapered roller bearings, which is preloaded to eliminate any runout. The index drive is completely sealed to eliminate intrusion from foreign particulate.

TG Series Right Angle Drive

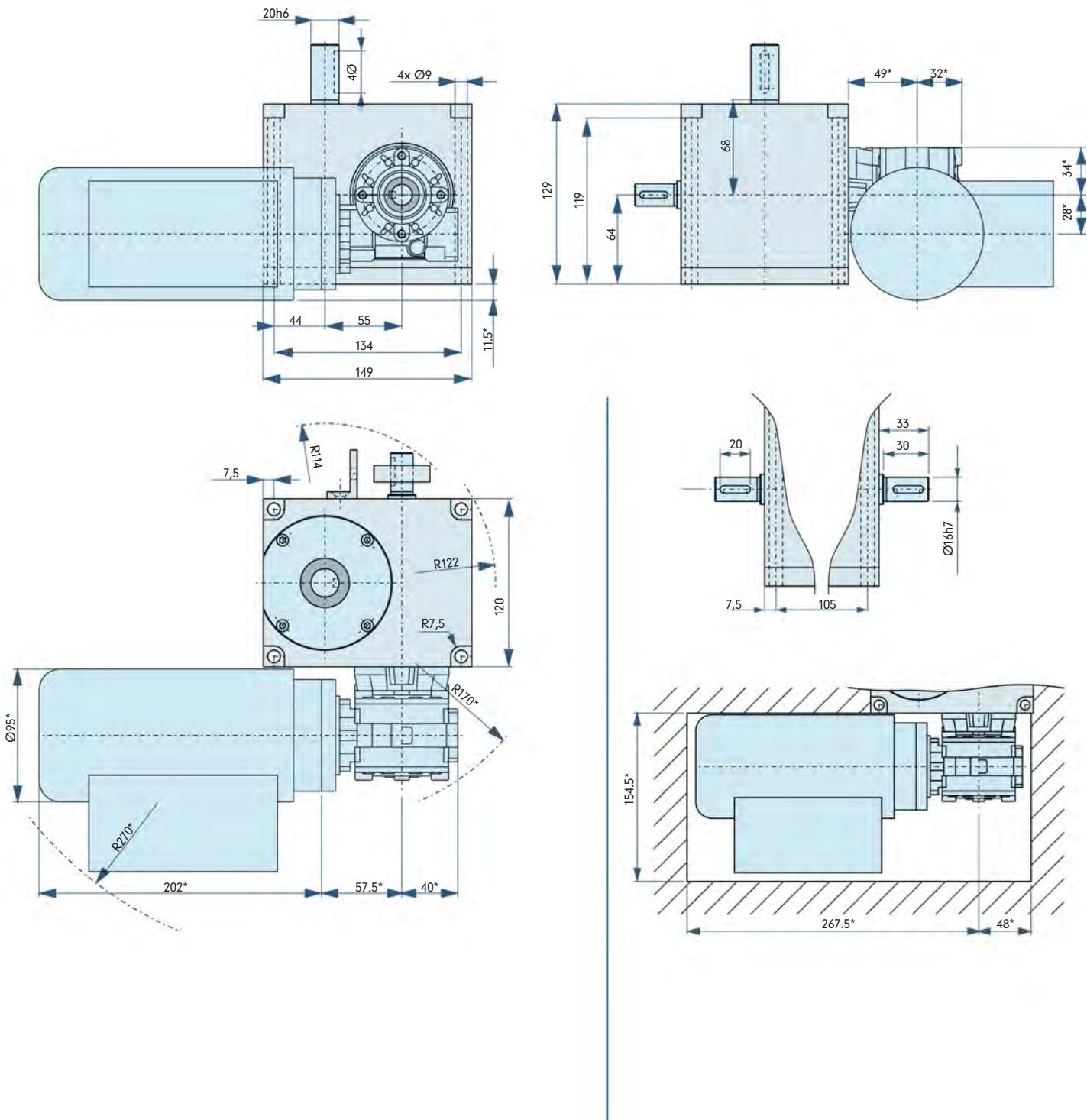


Advantages for design engineers and special machine builder

- Housing machined on all sides. Suitable for use in any mounting position required.
- Mounting holes identical on top and bottom.
- Smooth index angles and extended dwell enable continuous use.
- Globoidal design enables up to 100 cycles per minute.
- Simultaneously rotating input shaft extension.
- Optional synchronization of other mechanical modules.

Options for individual customer requirements

- Choice of drive units/gear motor. Units can be driven directly with gear motor or indirectly with customer timing belt/chain/shaft.
- Optional friction clutch on drive.
- Dwell and step angle can be tailored to requirements.
- Custom specified color at no extra charge.



TG055 Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing, shaft(s) and/or output flange to suit your needs. The drive shaft as well as the output shaft (if applicable) 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.



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

TG055 Load Table

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M _{AB} [Nm]			Moment of Inertia J [kgm ²]			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

¹⁾ Right angle 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⁾ Right angle 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.

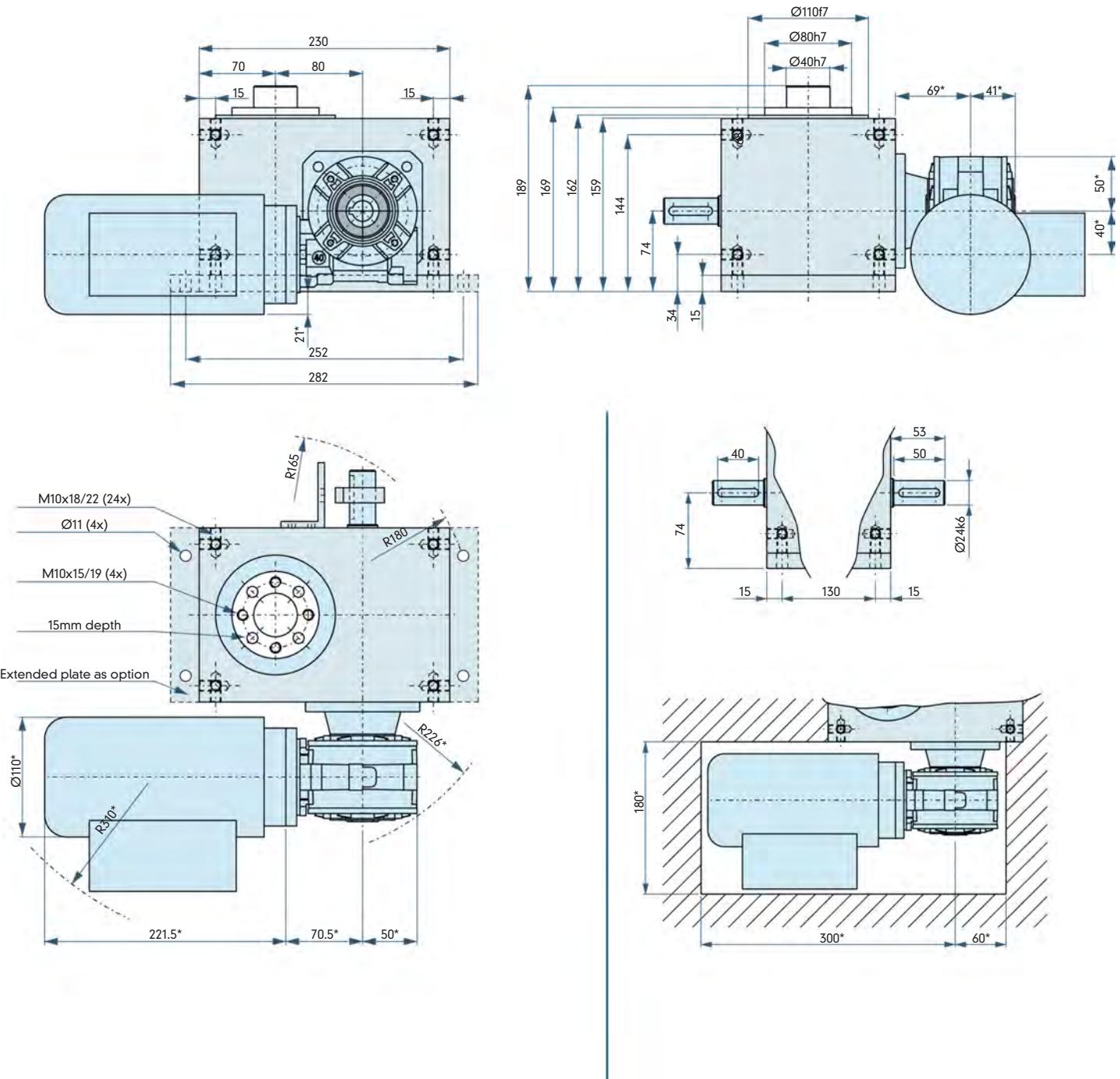
³⁾ The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Main Dimensions

Shaft distance [mm]	55
Weight without drive [kg]	10
Switching angle [°]	see Load Table
(other switching 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 Input Shaft	See Load Table
Load rating dynamic [kN]	N/A
Load rating static [kN]	N/A
Output Shaft	
Load rating dynamic [kN]	N/A
Load rating static [kN]	N/A



TG080 Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing, shaft(s) and/or output flange to suit your needs. The drive shaft as well as the output shaft (if applicable) 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.



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

TG080 Load Table

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M _{AB} [Nm]			Moment of Inertia J [kgm ²]			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

¹⁾ Right angle 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⁾ Right angle 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.

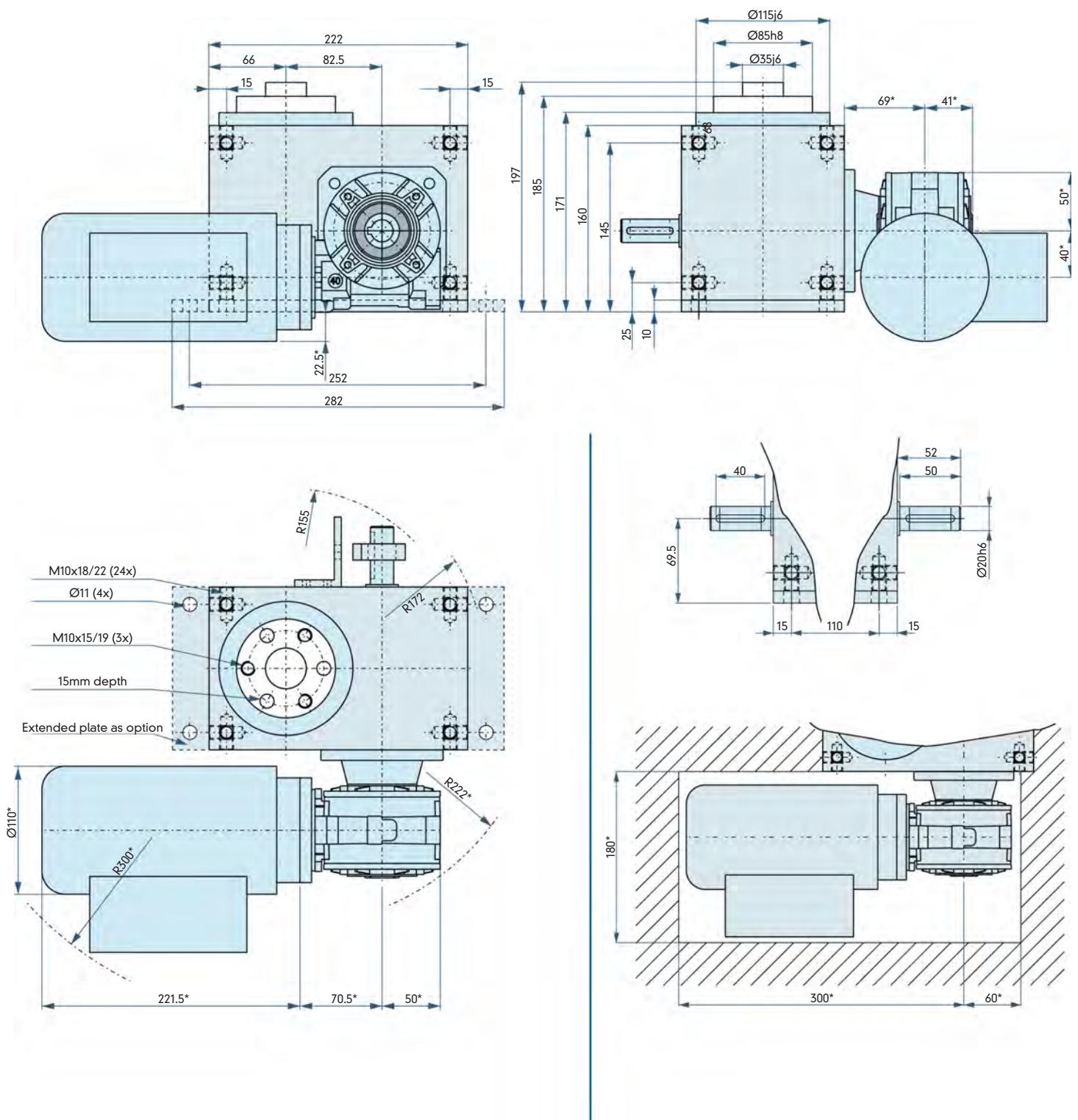
³⁾ The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Main Dimensions

Shaft distance [mm]	40
Weight without drive [kg]	20
Switching angle [°]	see Load Table
(other switching 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 Input Shaft	See Load Table
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



TG082 Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing, shaft(s) and/or output flange to suit your needs. The drive shaft as well as the output shaft (if applicable) 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.



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

TG082 Load Table

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M _{AB} [Nm]			Moment of Inertia J [kgm ²]			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

¹⁾ Right angle 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⁾ Right angle 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.

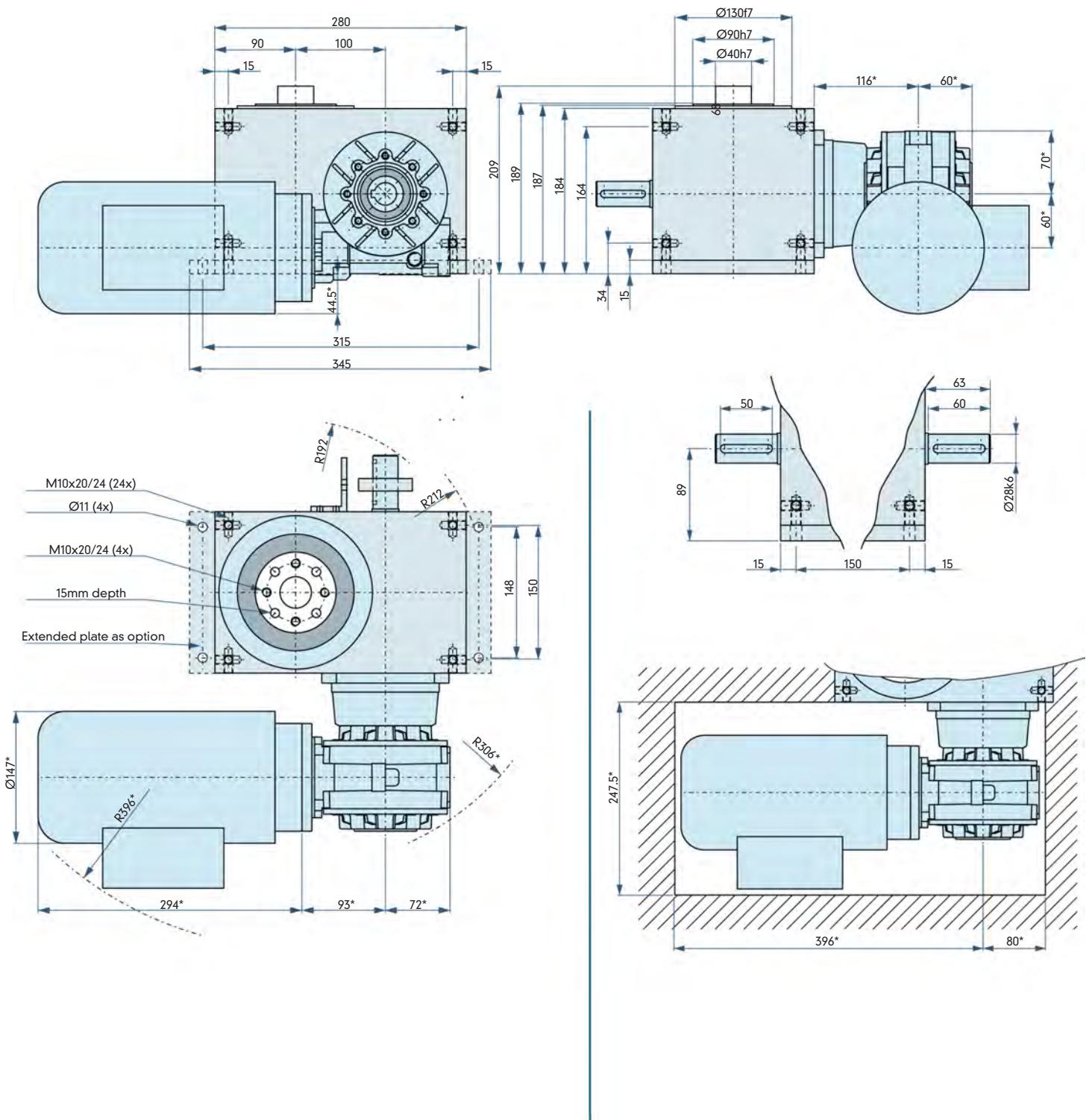
³⁾ The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Main Dimensions

Shaft distance [mm]	50
Weight without drive [kg]	25
Switching angle [°]	see Load Table
(other switching 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 Input Shaft	See Load Table
Load rating dynamic [kN]	6.37
Load rating static [kN]	3.25
Output Shaft	
Load rating dynamic [kN]	6.37
Load rating static [kN]	3.25



TG100 Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing, shaft(s) and/or output flange to suit your needs. The drive shaft as well as the output shaft (if applicable) 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.



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

TG100 Load Table

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M _{AB} [Nm]			Moment of Inertia J [kgm ²]			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

¹⁾ Right angle 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⁾ Right angle 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.

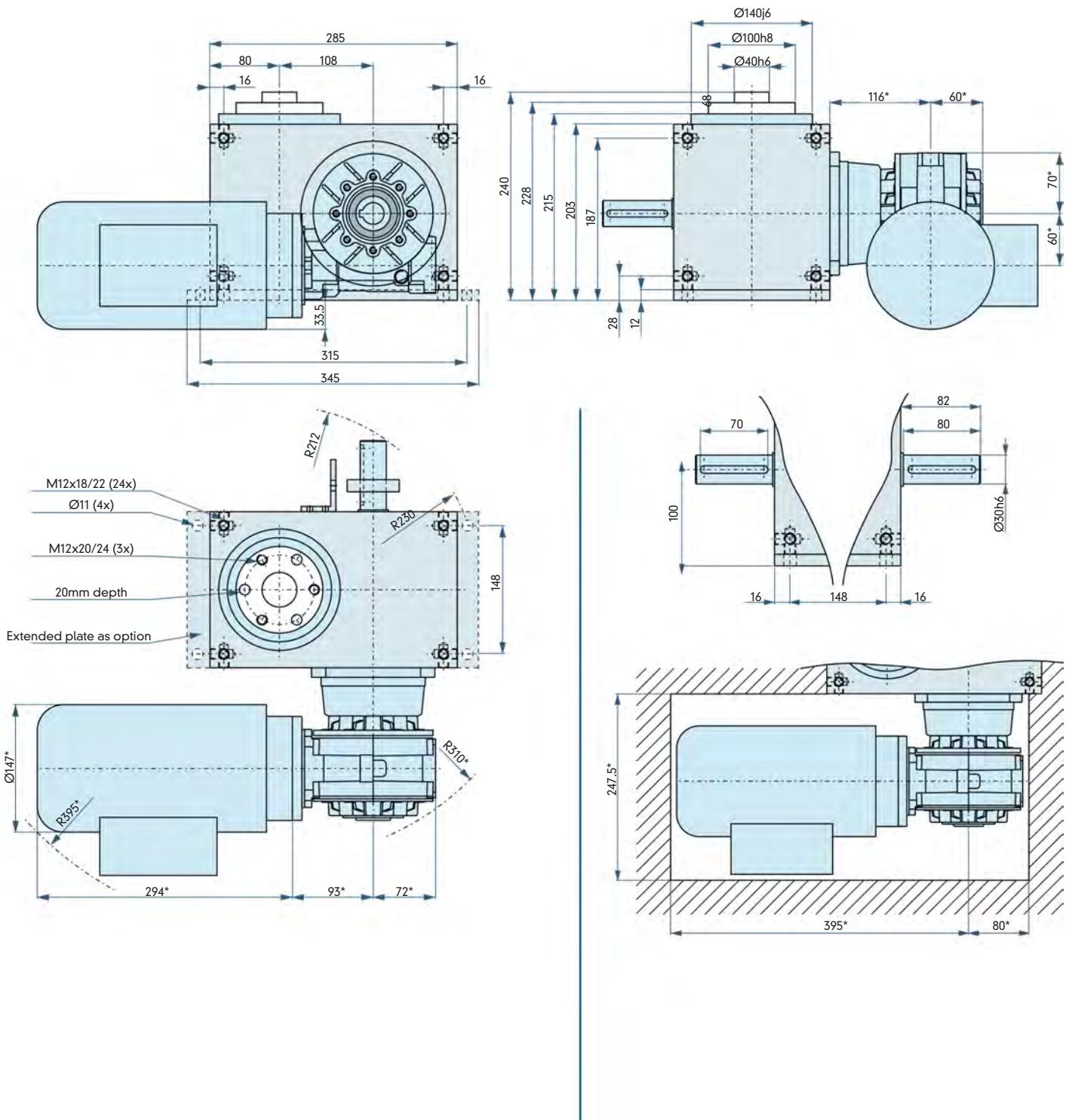
³⁾ The additional load occurring with chains and belts due to friction is not taken into consideration here and must be calculated separately.

Main Dimensions

Shaft distance [mm]	65
Weight without drive [kg]	80
Switching angle [°]	see Load Table
(other switching 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 Input Shaft	See Load Table
Load rating dynamic [kN]	11.9
Load rating static [kN]	6.55
Output Shaft	
Load rating dynamic [kN]	11.9



TG108 Dimensions

The measurements shown here illustrate the standard unit. We will gladly customize the housing, shaft(s) and/or output flange to suit your needs. The drive shaft as well as the output shaft (if applicable) 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.



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

TG108 Load Table

Angle on Output Shaft [°]	Number of Stops n	Index Angle [°]	Acceleration Form MS	Indexer Torque M _{AB} [Nm]			Moment of Inertia J [kgm ²]			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

¹⁾ Right angle 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⁾ Right angle 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.

Main Dimensions

Shaft distance [mm]	80
Weight without drive [kg]	120
Switching angle [°]	see Load Table
(other switching 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 Input Shaft	See Load Table
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