

Technical Data sheet for Part-turn Worm Gearboxes

TECHNICAL DATA FOR PART-TURN WORM GEARBOXES (FOOT MOUNTED) AND PRIMARY REDUCTION GEARS				GF 63.2 - GF 125.2			
Output torque for manual operation ¹⁾ max.	Nm	850	1400	2800		5600	
	lbs. ft.	625	1030	2060		4120	
Output torque for motor operation ²⁾ T _N	Nm	600	1000	2000		4000	
	lbs. ft.	440	750	1500		3000	
Operator	Type	GF 63.2	GF 80.2	GF 100.2		GF 125.2	
Reduction	Type	—	—	—	VZ 4	—	VZ 4
Total reduction ratio	GF(+VZ4)i=	39:1	40:1	40:1	157:1	52:1	204:1
Input torque at max. output torque ¹⁾	Nm	51	81	162	48	250	74
	lbs. ft.	38	60	120	35	184	54
Input torque at nominal output torque ²⁾	Nm	36	58	116	34	178	53
	lbs. ft.	26	43	85	25	131	39
Mechanical advantage ³⁾		16.7	17.3	17.3	58.5	22.5	75.5
Tums for 90°		9.75	10	10	39	13	51
Input shaft diameter	max. mm	20	20	20	20	30	20
	max. inch	0.787	0.787	0.787	0.787	1.181	0.787
Handwheel diameter ⁴⁾	mm	250/300	300/350	350/400	250/300	400/500	300/350
	inch	10/12	12/14	14/16	12/14	16/20	12/14
Weight (without handwheel)	kg	19	26	48	54	57	61
	lbs.	42	57	105	120	115	128
Mounting flange for actuator	DIN 3210	G0	G0	G0	G0	G½	G0
	ISO 5210	F10	F10	F10	F10	F14	F10
Suitable actuator (with output drive type E) Type		SA 6	SA 6	SA 12	SA 6	SA 25	SA 6
Max. permissible weight of actuator	kg	30	30	30	30	70	30
	lbs.	66	66	66	66	155	66
Operating time in sec. for 90° at actuator speed ⁵⁾ Operating times shorter than indicated (13-17 sec) only after consultation with factory	8	73	75	75	296	98	384
	11	53	55	55	216	70	274
	16	36	38	38	148	49	192
	22	27	27	27	108	35	137
	32	18	19	19	74	24	96
	45	13	14	14	54	17	69
	63	—	—	—	37	—	48
90	—	—	—	27	—	35	
Ambient temperature range				Type of enclosure IP 67 dust proof and water tight IP 68 enclosure on request			
GF	−20° C — +80° C	−4° F — +176° F					
1) For rare operation, based on a service life of min. 2000 cycles of 90° 2) Nominal torque for frequent operation, based on a service life of min 15000 operating cycles of 90° 3) Conversion factor output torque to input torque 4) Recommendation, based on an usual manual effort for most of the travel and a permissible higher force in order to fully close or break open the valve 5) The operating times mentioned are approximate for service at 50 Hz, at 60 Hz the speeds increase by 20% and the operating times reduce to 83% of the stated values							
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TECHNICAL DATA FOR PART-TURN FOR WORM GEARBOXES (FLANGE MOUNTED) AND PRIMARY REDUCTION GEARS							GF 160 - GF 250					
Output torque for manual operation ¹⁾ max	Nm	11250				22500				45000		
	lbs. ft.	8300				16600				33200		
Output torque for motor operation ²⁾ T _N	Nm	8000				16000				32000		
	lbs. ft.	5900				11800				23600		
Operator	Type	GF 160				GF 200				GF 250		
Reduction	Type		GZ 14				GZ 16				GZ 25	
Reduction ratio	GFi =	54:1	54:1	54:1	53:1	53:1	53:1	53:1	52:1	52:1	52:1	52:1
Reduction ratio	GZi =	—	4:1	8:1	—	4:1	8:1	16:1	—	4:1	8:1	16:1
Total reduction ratio	GF+GZi =	—	216:1	432:1	—	212:1	424:1	848:1	—	208:1	416:1	832:1
Input torque at max. output torque ¹⁾	Nm	465	138	69	940	276	138	69	1923	560	280	140
	lbs. ft.	343	102	51	694	204	102	51	1420	414	207	104
Input torque at nominal output ²⁾	Nm	330	98	49	670	196	98	50	1370	400	200	100
	lbs. ft.	243	72	36	495	145	72	37	1010	295	148	74
Mechanical advantage ³⁾		24.2	82	164	23.9	82	163	320	23.4	80	160	320
Tums for 90°		13.5	54	108	13.25	53	106	212	13	52	104	208
Weight	kg	175	195	195	320	350	350	350	490	525	525	525
	lbs.	385	429	429	704	770	770	770	1078	1155	1155	1155
Handwheel diameter ⁴⁾	mm	640/800	400	300	—	500/640	400	300	—	800	500/640	400
	inch	25/32	16	12	—	20/25	16	12	—	32	20/25	16
Mounting flange for multi-turn actuator ⁵⁾	ISO 5210	F 14	F 10	F 10	F 16	F 14	F 10	F 10	F 25	F 14	F 14	F 10
	DIN 3210	—	G0	G0	—	G ₂	G0	G0	—	G ₂	G ₂	G0
Suitable multi-turn actuator (with output drive)		SA 50	SA 12	SA 6	SA 100	SA 25	SA 12	SA 6	—	SA 50	SA 25	SA 12
Max. permissible weight of multi-turn actuator	kg	100	60	60	160	80	60	60	300	100	80	60
	lbs.	220	135	135	350	180	135	135	660	220	180	135
Operating time in sec. ⁶⁾ for 90° at actuator speed x Operating times shorter than indicated (18-25 sec) only after consultation with factory	16 1/min	51	204	—	50	200	—	—	49	196	392	—
	22 1/min	37	148	296	36	144	288	—	35	140	280	—
	32 1/min	25	102	204	25	100	200	—	24	98	196	392
	45 1/min	18	72	144	18	72	144	288	X	70	140	280
	63 1/min	X	51	102	X	50	100	200	X	49	98	196
	90 1/min	X	36	72	X	36	72	144	X	35	70	140
	125 1/min	X	25	51	X	25	50	100	X	24	49	98
180 1/min	X	18	36	X	18	36	72	X	17	35	70	
Ambient temperature range												
GF		-20° C – +80° C			-4° F – +176° F			Type of enclosure IP 67 dust proof and water tight IP 68 enclosure on request				
1) For rare operation, based on a service life of min. 2000 cycles of 90°						4) Observing the permissible effort at handwheel						
2) Nominal torque for frequent operation, based on a service life of min 15000 operating cycles of 90°						5) Flanges at GF and GZ according to ISO 5210 are standard						
3) Conversion factor output torque to input torque						6) The operating times mentioned are approximate for service at 50 Hz, at 60Hz, the speeds increase by 20% and the operating times reduce to 83% of the stated values						
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TECHNICAL DATA FOR PART-TURN WORM GEARBOXES (FOOT MOUNTED) AND PRIMARY REDUCTION GEARS

GF 315
with
GZ 30

Worm gearboxes GF 315 with primary reduction gearing GZ 30

Type	Output torques (Nm)		Suitable primary reduction gearing				Input torques (Nm)		Turns for 90°	Mechanical advantage ³⁾	Hand wheel Diameter ⁴⁾ Ø mm	Weight	
	Output Torque for manual operation ¹⁾ Max. Nm	Output Torque for motor operation ²⁾ T _N Nm	Reduction ratio (i)			Input Torque at max. ¹⁾ output torque Nm	Input Torque at nominal ²⁾ output torque Nm	kg				lbs.	
			Type	GF	GZ								GF+GZ
GF 315	90000	63000	-	53:1	-	53:1	3766	2640	13.25	23.9	-	800	1763
			GZ 30	53:1	8:1	424:1	556	388	106	162	800	910	2006
				53:1	16:1	848:1	277	194	212	325	500 /640	910	2006
				53:1	32:1	1696:1	138	97	424	650	400	910	2006

Possible combinations with multi-turn actuators

Gearbox Type	Primary reduction gearing Type	Flange ⁵⁾ for mounting of actuator		Suitable AUMA multi-turn actuator (with output drive)	Max. permissible actuator weight		Operating times for Sec. ⁶⁾ for 90° at actuator speed in x Operating times shorter than indicated (18-25 sce) only after consultation with factory							
		EN ISO 5210	DIN 3210		Kg	Lbs.	16	22	32	45	63	90	125	180
GF 315	-	F30	-	-	400	880	50	36	25	-	-	-	-	-
	GZ30 (8:1)	F14	G½	SA50	100	220	-	288	200	144	100	72	50	36
	GZ30 (16:1)	F14	G½	SA25	80	180	-	-	-	288	200	144	100	72
	GZ30 (32:1)	F10	G0	SA12	60	135	-	-	-	-	-	288	200	144

Ambient temperature range

GF	-20°C - +80°C	-4°F - +176°F
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Type of enclosure IP 67 dust proof and watertight IP 68 enclosure on request

- 1) For rare operation, based on a service life of min. 2000 cycles of 90°.
- 2) Nominal torque for frequent operation, based on a service life of min. 15000 operating cycles of 90°.
- 3) Conversion factor output torques to input torque
- 4) Observing the permissible effort at hand wheel.
- 5) Flanges at GF and GZ according to ISO 5210 are standard.
- 6) The operating times mentioned are approximate for service at 50 Hz, at 60 Hz, the speeds increase by 20% and the operating times reduce to 83% of the stated values.

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