

Technical data Part-turn gearboxes and primary reduction gearings, version with worm wheel made of spheroidal castiron														GW60-GW(S)600 GW(S)1080-GW(S)3900 Spheroidal castiron			
Application																	
Manual operation and motor operation of valves (e.g. butterfly valves and ball valves).																	
For special applications, please consult kiket																	
Worm gearboxes GW60 – GW 600 with primary reduction gearings GWS																	
Valve			Gearboxes														
Max.	Valve attachment		Gearbox/ prim. red. gearing	Reduction ratio	Turns for 90°	Factor	Input Shaft ²⁾	Max. input Torques ³⁾	Weight ⁴⁾								
permissible																	
valve torque ¹⁾																	
	Flange	Max.								GW/GWS							
	acc. to	shaft															
in Nm	EN ISO	diameter															
up to	5211	in mm					mm	in Nm	kg								
600	F10 ⁵⁾ F12	45	GW60	51:1	12.75	15.3	20	70	13								
1600	F12 ⁵⁾ F14	60	GW160	53:1	13.25	15.9	20	120	18								
			GWS160	106:1	26.5	31.8			18								
2700	F14 ⁵⁾ F16	80	GW270	60:1	15	18	20	120	47								
			GWS270	120:1	30	36			65								
				144:1	36	43.2			65								
				168:1	42	50.4			65								
				180:1	45	54			65								
				240:1	60	72			65								
				300:1	75	90			65								
				6000	F16 ⁵⁾ F25	90			GW600	60:1	15	18	20/30	300	66		
GWS600	90:1	22.5	27				84										
	102:1	25.5	30.6				84										
	120:1	30	36				84										
	156:1	39	46.8				84										
	180:1	45	54				84										
	204:1	51	61.2				84										
	240:1	60	72				84										
	300:1	75	90				84										
	Possible combinations with multi-turn actuators											Multi-turn actuator Actuator for max. input torque	Flange ²⁾ for mounting of multi-turn actuator		Max. Weight ⁷⁾		
Gearboxes/ prim. red gearing	Operating times for 50 Hz ⁶⁾ in seconds for 90° at actuator speed in rpm															GW/GWS+SM+SC max. kg	
	9	11	18	22	35	45	70	90	105	135	140				180		
GW60	–	70	–	35	–	17	–	–	–	–	–	–	SM04 SM07	F07	–	38	
	–	70	–	35	–	17	–	–	–	–	–	–		F10	G0	41	
GW160	89	73	45	37	23	18	–	–	–	–	–	–	SM07 SM12	F10	G0	46	
GWS160	177	145	89	73	45	36	23	18	–	–	–	–					
GW270	100	82	49	41	26	20	–	–	–	–	–	–	SM07 SM12	F10	G0	79	
GWS270	200	164	98	82	52	40	26	20	–	–	–	–					
	240	197	118	99	63	48	31	24	21	16	–	–				94	
	280	230	138	115	73	56	36	28	24	19	–	–				99	
	300	246	147	123	78	60	39	30	26	20	19	15 ⁸⁾					
	400	328	196	164	104	80	52	40	35	27	26	20 ⁸⁾					
	500	410	245	205	130	100	65	50	43	34	33	25 ⁸⁾					
GW600	100	82	49	41	26	20	–	–	–	–	–	–	SM07 SM12 SM30	F10 F14	G0 G1/2	122	
GWS600	150	123	75	62	39	30	20	15	–	–	–	–					
	170	140	84	70	45	34	22	17	–	–	–	–					
	200	164	98	82	52	40	26	20	–	–	–	–				212	
	260	214	128	107	68	52	34	26	23	18	–	–				217	
	300	246	147	123	78	60	39	30	26	20	19	15 ⁸⁾				140	
	342	281	168	141	89	69	44	34	30	23	22	17 ⁸⁾					
	400	328	196	164	104	80	52	40	35	27	26	20 ⁸⁾					
	500	410	245	205	130	100	65	50	43	34	33	25 ⁸⁾					

1) For ball valve applications, sizing up to 80 % of the maximum permissible valve torque

2) Depending on the required input torque

3) In new condition approx. 15 % higher input torque required

4) With coupling (without bore) and grease filling in the gear housing

5) Observe the maximum torques of the mounting flanges in accordance with EN ISO 5211

6) Standard values at 50 Hz; at 60 Hz, the indicated operating time is reduced by 17 %.

7) With coupling (without bore) and grease filling in the gear housing, multi-turn actuator kiket with 3-phase AC motor, standard electrical connection, output drive type B3 and handwheel

8) Observe max. output torque of the multi-turn actuator

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Application															
Manual operation and motor operation of valves (e.g. butterfly valves and ball valves).															
For special applications, please consult kiket															
Worm gearboxes GW60 – GW 600 with primary reduction gearings GWS															
Valve			Gearboxes												
Max.	Valve attachment		Gearbox/ prim. red. gearing	Reduction ratio	Turns for 90°	Factor	Input Shaft ²⁾	Max. input Torques ³⁾	Weight ⁴⁾ GW/GWS						
permissible															
valve torque ¹⁾															
	Flange acc. to	Max. shaft diameter													
in Nm	EN ISO														
up to	5211	in mm					mm	in Nm	kg						
10800	F25 ⁵⁾ F30	100	GW1080	60:1	15	18	20/30	500	121						
			GWS1080	90:1	22.5	27			151						
				102:1	25.5	30.6			151						
				120:1	30	36			151						
				156:1	39	46.8			151						
				180:1	45	54			151						
				204:1	51	61.2			151						
				240:1	60	72			151						
				300:1	75	90			151						
				360:1	90	108			151						
				420:1	105	126			151						
				19500	F30 ⁵⁾ F35	125			GW1950	55:1	13.75	17.6	20/30/40	1000	197
GWS1950	83:1	20.75	26.56				255								
	110:1	27.5	35.2				255								
	132:1	33	42.24				255								
	165:1	41.25	52.8				255								
	187:1	46.75	59.84				255								
	220:1	55	70.4				255								
	275:1	68.75	88				255								
	330:1	82.5	105.6				255								
	385:1	96.25	123.2				255								
	440:1	110	140.8				255								
	480:1	120	153.6				255								
	550:1	137.5	176				255								
	638:1	159.5	204.16				255								
	688:1	172	220.16				255								
	748:1	187	239.36				255								
	811:1	202.75	259.52				255								
	880:1	220	281.6				255								
	39000	F35 ⁵⁾ F40	160				GW3900	55:1	13.75	17.6	20/30/40	1000			288
							GWS3900	83:1	20.75	26.56					368
110:1				27.5	35.2	368									
132:1				33	42.24	368									
165:1				41.25	52.8	368									
187:1				46.75	59.84	368									
220:1				55	70.4	368									
275:1				68.75	88	368									
330:1				82.5	105.6	368									
385:1				96.25	123.2	368									
440:1				110	140.8	368									
480:1				120	153.6	368									
550:1				137.5	176	368									
638:1				159.5	204.16	368									
688:1				172	220.16	368									
748:1				187	239.36	368									
811:1				202.75	259.52	368									
880:1				220	281.6	368									

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2) Depending on the required input torque

3) In new condition approx. 15 % higher input torque required

4) With coupling (without bore) and grease filling in the gear housing

5) Observe the maximum torques of the mounting flanges in accordance with EN ISO 5211

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Technical data Part-turn gearboxes and primary reduction gearings, version with worm wheel made of spheroidal castiron													GW 60 – GW 600/GWS GW 1080 – GW 3900/GWS Spheroidal castiron			
	Possible combinations with multi-turn actuators												Multi-turn actuator Actuator for max. input torque	Flange ²⁾ for mounting of multi-turn actuator		Max. Weight ⁷⁾
Gearboxes/ prim. red gearing	Operating times for 50 Hz ⁶⁾ in seconds for 90° at actuator speed in rpm													EN ISO 5210	DIN 3210	GW/GWS+SM+SC max. kg
	9	11	18	22	35	45	70	90	105	135	140	180				
GW1080	100	82	49	41	26	20	–	–	–	–	–	–	SM07 SM12	F10	G0	153
GWS1080	150	123	75	62	39	30	20	15	–	–	–	–				
	170	140	84	70	45	34	22	17	–	–	–	–				
	200	164	98	82	52	40	26	20	–	–	–	–				
	260	214	128	107	68	52	34	26	23	18	–	–				179
	300	246	147	123	78	60	39	30	26	20	19	–				183
	342	281	168	141	89	69	44	34	30	23	22	17 ⁸⁾				
	400	328	196	164	104	80	52	40	35	27	26	20 ⁸⁾				
	500	410	245	205	130	100	65	50	43	34	33	25 ⁸⁾				
	600	491	300	246	155	120	78	60	52	40	39	30 ⁸⁾				
–	573	350	286	180	140	90	70	60	47	45	35 ⁸⁾					
GW1950	92	75	46	38	24	19	–	–	–	–	–	–	SM07 SM12 SM30 SM50	F10 F14	G0 G1/2	258
GWS1950	139	114	70	57	36	28	18	–	–	–	–	–				
	184	150	92	75	48	37	24	19	–	–	–	–				
	220	180	110	90	57	44	29	22	19	–	–	–				
	275	225	138	113	71	55	36	28	24	19	–	–				
	312	255	156	128	81	63	41	32	27	21	20	–				
	367	300	184	150	95	74	48	37	32	25	24	19 ⁸⁾				
	459	375	230	188	118	92	59	46	40	31	30	23 ⁸⁾				283
	550	450	275	225	142	110	71	55	48	37	36	28 ⁸⁾				288
	642	525	321	263	165	129	83	65	55	43	42	33 ⁸⁾				311
	–	600	367	300	189	147	95	74	63	49	48	37 ⁸⁾				316
	–	–	400	328	206	160	103	80	69	54	53	40 ⁸⁾				
	–	–	459	375	236	184	118	92	79	62	59	46 ⁸⁾				
	–	–	532	435	274	213	137	107	92	71	69	54 ⁸⁾				
	–	–	574	470	295	230	148	115	99	77	74	58 ⁸⁾				
	–	–	624	510	321	249	161	125	107	84	81	63 ⁸⁾				
	–	–	–	553	348	271	174	136	116	91	87	68 ⁸⁾				
	–	–	–	600	378	294	189	147	126	98	95	74 ⁸⁾				
GW3900	92	75	46	38	24	19	–	–	–	–	–	–	SM07 SM12 SM30 SM50 SM100	F10 F14 F16	G0 G1/2 G3	376
GWS3900	139	114	70	57	36	28	18	–	–	–	–	–				
	184	150	92	75	48	37	24	19	–	–	–	–				
	220	180	110	90	57	44	29	22	19	–	–	–				
	275	225	138	113	71	55	36	28	24	19	–	–				
	312	255	156	128	81	63	41	32	27	21	20	–				
	367	300	184	150	95	74	48	37	32	25	24	19 ⁸⁾				396
	459	375	230	188	118	92	59	46	40	31	30	23 ⁸⁾				400
	550	450	275	225	142	110	71	55	48	37	36	28 ⁸⁾				412
	642	525	321	263	165	129	83	65	55	43	42	33 ⁸⁾				417
	–	600	367	300	189	147	95	74	63	49	48	37 ⁸⁾				434
	–	–	400	328	206	160	103	80	69	54	53	40 ⁸⁾				
	–	–	459	375	236	184	118	92	79	62	59	46 ⁸⁾				
	–	–	532	435	274	213	137	107	92	71	69	54 ⁸⁾				
	–	–	574	470	295	230	148	115	99	77	74	58 ⁸⁾				
	–	–	624	510	321	249	161	125	107	84	81	63 ⁸⁾				
	–	–	–	553	348	271	174	136	116	91	87	68 ⁸⁾				
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4) With coupling (without bore) and grease filling in the gear housing

5) Observe the maximum torques of the mounting flanges in accordance with EN ISO 5211

6) Standard values at 50 Hz; at 60 Hz, the indicated operating time is reduced by 17 %.

7) With coupling (without bore) and grease filling in the gear housing, multi-turn actuator kikitwith 3-phase AC motor, standard electrical connection, output drive type B3 and handwheel

8) Observe max. output torque of the multi-turn actuator

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8) Observe max. output torque of the multi-turn actuator

Technical data Part-turn gearboxes and primary reduction gearings, version with worm wheel made of spheroidal cast iron					GW 60 – GW 600/GWS GW 1080 – GW 3900/GWS Spheroidal cast iron								
Features and functions													
Version		Standard: Clockwise RR, counterclockwise LL, option: RL or LR											
Housing material		Standard: cast iron (GJL-250), option: spheroidal cast iron (GJS-400-15)											
Self-locking		The gearboxes are self-locking when at stand-still under normal service conditions; strong vibration may cancel the self-locking effect. While in motion, safe breaking is not guaranteed. If this is required, a separate brake must be used.											
End stops		Positive for both end positions by travelling nut, sensitive adjustment											
Strength of end stop		Guaranteed strength of end stop (in Nm) for input side operation											
		Type	GW 60	GW160	GWS160	GWS270			GWS600				
		Nm	250 ⁹⁾	450	450	500			500				
		Type	GWS1080			GWS1950			GWS3900				
		Nm	500			500			500				
Swing angle GW 60 – GW 600		Standard: Fixed swing angle between 10° and max. 100°; set in the factory to 92° unless ordered otherwise.											
		Options: Adjustable in steps: 10° – 35°, 35° – 60°, 60° – 80°, 80° – 100°, 100° – 125°, 125° – 150°, 150° – 170°, 170° – 190° Swing angle > 190°, see Technical data with worm wheel made of bronze											
Swing angle GW 1080 – GW 3900		Standard: Adjustable 80° – 100°; set in the factory to 92° unless ordered otherwise.											
		Options: Adjustable in steps: 0° – 20°, 20° – 40°, 40° – 60°, 60° – 80°, 90° – 110°, 110° – 130°, 130° – 150°, 150° – 170°, 170° – 190° Swing angle > 190°, see Technical data with worm wheel made of bronze											
Mechanical position indicator		Standard: Pointer cover for continuous position indication Options: Sealed pointer cover for horizontal outdoor installation ¹⁰⁾ Protection cover for buried service instead of pointer cover											
Input shaft		Cylindrical with parallel key according to DIN 6885.1 (refer to tables page 1 and page 2)											
Operation													
Motor operation		With electric multi-turn actuator, directly or through primary reduction gearing GWS Flanges for mounting of multi-turn actuator (refer to tables page 1 and page 2).											
Type of duty		Short-time duty S2 - 15 min (open-close duty) Push-to-run operation permissible, max. 10 steps in one direction and max. of 30 starts per hour											
Manual operation		Via handwheel in aluminium, directly or through primary reduction gearing GWS Available handwheel diameters, selection according to the output torque:											
		Type	GW 60 – GW 160		GWS 160	GWS 270			GWS 600				
		Handwheel Ø mm	160 200 250	250 315	315 400	400 500	315 400	315 400	250 315	500 630 800	400 500	400 500	315 400
		Type	GWS 1080			GWS 1950			GWS 3900				
		Handwheel Ø mm	630 800	400	315	–	500 630	400	315	–	800	500 630	400
		Standard: Without ball handle Options: - With ball handle - Handwheel material GJL-200											
Primary reduction gearing													
Primary reduction gearing		- Types GWS as planetary gear with various reduction ratios for reducing the input torques (refer to tables page 1 and page 2). - Combination with GB bevel gearbox directly on GW or on GWS possible											
Valve attachment													
Valve attachment		Dimensions according to EN ISO 5211 (refer to tables page 1 and page 2): Observe the maximum torques of the mounting flanges in accordance with EN ISO 5211. Standard: GW 60– GW 600: without spigot GW 1080 – GW 3900: with spigot Options: GW 60 – GW 600: with spigot GW 1080 – GW 3900: without spigot											
Splined coupling for connection to the valve shaft		Standard: Without bore or pilot bore from GW 1080 Worm gearbox can be repositioned 4 x 90° on coupling Options: Machined with bore and keyway, square bore or bore with two-flats including grub screw for fixing to valve shaft											
9) Not qualified in accordance with AWWA 10) For gas applications with sealed pointer cover, an air vent in the pointer cover or venting keyways in the valve mounting flange must be provided.													

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Service conditions								
Mounting position	Any position							
Enclosure protection according to EN 60529 ¹¹⁾	Standard: IP 68-3, dust and water tight up to max 3 m head of water Options: IP 68-6, dust and water tight up to max. 6 m head of water IP 68-10, dust and water tight up to max 10 m head of water IP 68-20, dust and water tight up to max 20 m head of water							
Corrosion protection	Standard: KN Suitable for installation in industrial units, in water or power plants with a low pollutant concentration Options: KS Suitable for installation in occasionally or permanently aggressive atmosphere with a moderate pollutant concentration (e.g. in wastewater treatment plants, chemical industry) KX Suitable for installation in extremely aggressive atmosphere with high humidity and high pollutant concentration							
Paint	Standard: GW 60– GW 600: Two component iron mica combination GW 1080 – GW 3900: Primer coating Option: GW 1080 – GW 3900: Two component iron mica combination							
Colour	Standard: silver-grey Option: Other colours on request							
Ambient temperature	–40 °C to +80 °C							
Lifetime	Lifetime for 90° rotary movement							
	Gearbox size	GW 60	GW 160/GWS/ GW 270/GWS	GW 600/GWS – GW 1950/GWS	GW 3900/GWS			
	No. of cycles ¹²⁾ for max. torque	10000	5000	2500	1000			
Accessories								
Valve position indicators	WSG valve position indicator for signalling intermediate and end positions for precise and low-backlash feedback of swing angles ranging from 82° – 98°(refer to separate data sheet)							
Limit switching device	WSH limit switching device for manually operated valves. For signalling intermediate and end positions (refer to separate data sheet)							
Special features for use in potentially explosive atmospheres								
Explosion protection according to ATEX 94/9/EC	Standard: II2G c IIC T4 II2D c T130 ° Options: II2G c IIC T3 II2D c T190 °C IM2 c							
Type of duty ¹³⁾	Short-time duty S2 - 15 min, maximum of 3 cycles (OPEN-CLOSE-OPEN); 90° with the following average output torques							
	Gearbox size	GW 60	GW 160	GW 270	GW 600	GW 1080	GW 1950	GW 3900
	Average output torque in Nm	600	1600	2700	6000	10800	19500	39000
then cooling down to ambient temperature								
Ambient temperature	–40 °C to +60 °C (II2G c IIC T4; II2D c T130 °C)							
Output speeds	Standard: 50 Hz, refer to tables on pages 1 and 3 Option: 60 Hz with adapted output speed of the multi-turn actuator							
Further information								
EU directives	ATEX directive: (94/9/EC) Machinery directive: (2006/42/EC)							
Lever gearboxes	Refer to separate documents							
11) Refer to information sheet “Enclosure protection IP 68 (submersible) for worm gearboxes and primary reduction gearings”. 12) Number of cycles according to standard EN 15714-2 13) The type of duty must not be exceeded.								

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