

GQB 80.1 – GQB 250.1
Explosion-proof version
Technical data Part-turn gearboxes

Valve		Gearbox									
Max. output torque	Valve attachment	Type	Reduction ratio	Factor ¹⁾	Turns for 90°	Max. input torque	Input mounting flange for multi-turn actuator	Input shaft Ø	Handwheel Ø	Max. manual force at hand-wheel	Weight ²⁾
to [Nm]	Flange according to EN ISO 5211					[Nm]		[mm]	[mm]	[N]	approx. [kg]
2,150	F12/F14/F16	GQB 80.1	54:1	16.7	14	128	Without	20	400	642	15
			225:1	64.2	56	34	F10	20	400	642	
			F07	16	200	335					
4,250	F14/F16/F25	GQB 100.1	52:1	17.2	13	248	Without	30	800	619	26
			217:1	65.8	54	65	F10	20	250	517	27
			903:1	245.6	226	17	F07	16	125	277	28
							F10	20	125	277	
8,500	F16/F25/F30	GQB 125.1	217:1	69.8	54	122	F14	30	400	609	48
			628:1	181.5	157	47	F10	20	400	609	
							F10	20	200	468	49
			903:1	253.3	226	34	F07	16	200	336	
							F10	20	200	336	
17,500	F25/F30/F35	GQB 160.1	218:1	72.2	55	242	F14	30	630	769	72
			563:1	175.0	141	100	F10	20	630	769	
							880:1	254.5	220	69	F10
			1,784:1	500.4	446	35	F10	20	250	550	
35,000	F30/F35/F40	GQB 200.1	214:1	72.9	54	480	F16	40	–	–	124
			552:1	169.0	138	207	F14	30	–	–	
							F14	30	500	829	129
			864:1	257.1	216	136	F10	20	400	681	
							F10	20	400	681	
70,000	F35/F40/F48	GQB 250.1	214:1	74.8	54	936	F25	50	–	–	240
							F16	40	–	–	
			F14	30	–	–					
			552:1	173.7	138	403	F14	30	–	–	252
							864:1	264.4	216	265	
			1,751:1	520.9	438	134	F14	30	400	672	
F10	20	400					672				

- 1) Conversion factor of output torque to input torque for actuator size definition. When new, the factor can fall short of the indicated value by up to 15 %.
2) Specified weight includes coupling (without bore) and grease filling in the gear housing

Max. permissible ambient temperatures and input speeds

Valve		Gearbox							
Max. output torque to [Nm]	Type	Reduction ratio	Max. input speed [rpm] / Max. ambient temperature for T3						216
			26.4	38.4	54	75.6	108	150	
2,150	GQB 80.1	54:1	80 °C			–			
		225:1	80 °C			–			
1800	GQB 80.1	54:1	80 °C			–			
		225:1	80 °C			–			
4,250	GQB 100.1	52:1	80 °C			–			
		217:1	80 °C			–			
		903:1	80 °C			–			
3500	GQB 100.1	52:1	80 °C			–			
		217:1	80 °C			–			
		903:1	80 °C			–			
8,500	GQB 125.1	217:1	80 °C			70 °C	65 °C	40 °C	
		628:1	80 °C			80 °C			
		903:1	80 °C			80 °C			
7,000	GQB 125.1	217:1	80 °C			70 °C		65 °C	
		628:1	80 °C			80 °C			
		903:1	80 °C			80 °C			

Max. permissible ambient temperatures and input speeds

Valve Max. output torque to [Nm]	Type	Reduction ra- tio	Gearbox							
			Max. input speed [rpm] / Max. ambient temperature for T3							
			26.4	38.4	54	75.6	108	150	216	
17,500	GQB 160.1	218:1	80 °C	70 °C	65 °C	40 °C	40 °C	–		
		563:1	80 °C			70 °C	40 °C			
		880:1	80 °C				70 °C	65 °C		
		1,784:1	80 °C							
14,000	GQB 160.1	218:1	80 °C		70 °C	65 °C	40 °C	–		
		563:1	80 °C			70 °C	65 °C			
		880:1	80 °C				70 °C			
		1,784:1	80 °C							
35,000	GQB 200.1	214:1	80 °C	70 °C	65 °C	40 °C		–		
		552:1	80 °C			70 °C	65 °C	40 °C		
		864:1	80 °C				70 °C	65 °C		
		1,751:1	80 °C							
28,000	GQB 200.1	214:1	80 °C		70 °C	65 °C	40 °C	–		
		552:1	80 °C			70 °C	65 °C			
		864:1	80 °C				70 °C			
		1,751:1	80 °C							
70,000	GQB 250.1	214:1	65 °C	80 °C		40 °C	70 °C		40 °C	–
		552:1	80 °C			70 °C	40 °C		–	
		864:1	80 °C				65 °C	40 °C		
		1,751:1	80 °C					70 °C		
56,000	GQB 250.1	214:1	80 °C	70 °C	65 °C	40 °C		–		
		552:1	80 °C			70 °C	40 °C			
		864:1	80 °C				70 °C	65 °C		
		1,751:1	80 °C							

Additional information on weight:

For an additional extension flange, the weight adds up as follows:

Type	GQB 80.1		GQB 100.1		GQB 125.1		GQB 160.1		GQB 200.1		GQB 250.1	
Extension flange	F14	F16	F25	F25	F25	F30	F30	F35	F35	F40	F40	F48
Additional weight [kg]	0.3	3	0.1	4	4	7	3	15	6	17	7	20

General information

Part-turn gearboxes are suitable for manual and motor operation of industrial valves.

GQB part-turn gearboxes are not suitable for:

- Hydraulic steel structures & hydropower
- Nuclear applications
- Buried service
- Automation of special valves (e.g. louvre dampers, stack dampers, diverters with toggle arm, guillotine isolators)

Features and functions

Explosion protection	Standard:	II 2G Ex h IIC T3 Gb II 2D Ex h IIIC T190 °C Db
	Options:	Available on request <ul style="list-style-type: none"> • Explosion-proof temperature class T4/130 °C • Higher ambient temperatures • Applications with load spectrum other than load spectrum EN 15714-2 and ISO/DIS 22109
Type of duty	Class A according to EN 15714-2: OPEN-CLOSE / max. 3 subsequent strokes (90°), cooling down is then required Class B according to EN 15714-2: Inching/positioning or positioning duty For nominal voltage and +40 °C ambient temperature and at run torque load.	
End stops	End positions OPEN and CLOSED can be set individually.	
Swing angle	90° ± 5°	
Direction of rotation	Standard:	Suitable for clockwise closing valves
	Option:	Suitable for counterclockwise closing valves
Lifetime	Lifetime according to EN 15714-2 and ISO/DIS 22109	
Worm wheel material	Spheroidal cast iron (EN-GJS)	
Housing material	Cast iron (EN-GJL)	

Features and functions

Self-locking	The gearboxes are self-locking when at standstill under normal service conditions; strong vibration may cancel the self-locking effect. While in motion, safe braking is not guaranteed. If this is required, a separate brake must be used.
Statistical safety factor	<ul style="list-style-type: none"> Sized with double safety, in relation to maximum torques With overload protection to prevent housing damage

Service conditions

Use	Indoor and outdoor use permissible		
Ambient temperature	Min. -40 °C		
Humidity	Up to 100 % relative humidity		
Enclosure protection according to EN 60529	IP67		
Vibration resistance according to EN 60068-2-6	1g, 5 to 200 Hz at input mounting flange for actuator		
Corrosion protection	Standard:	KN	Suitable for installation in industrial units, in water or power plants with a low pollutant concentration.
	Option:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
Coating	Double layer powder coating		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Available colours on request	

Further information

EU Directives	ATEX Directive: (2014/34/EU) Machinery Directive: (2006/42/EC)		
Standard	EN 80079-36		
Reference documents	Dimensions GQB 160.1 – GQB 250.1 Dimensions Extensions for input shaft Mounting position – Mounting of actuators		