GEARS

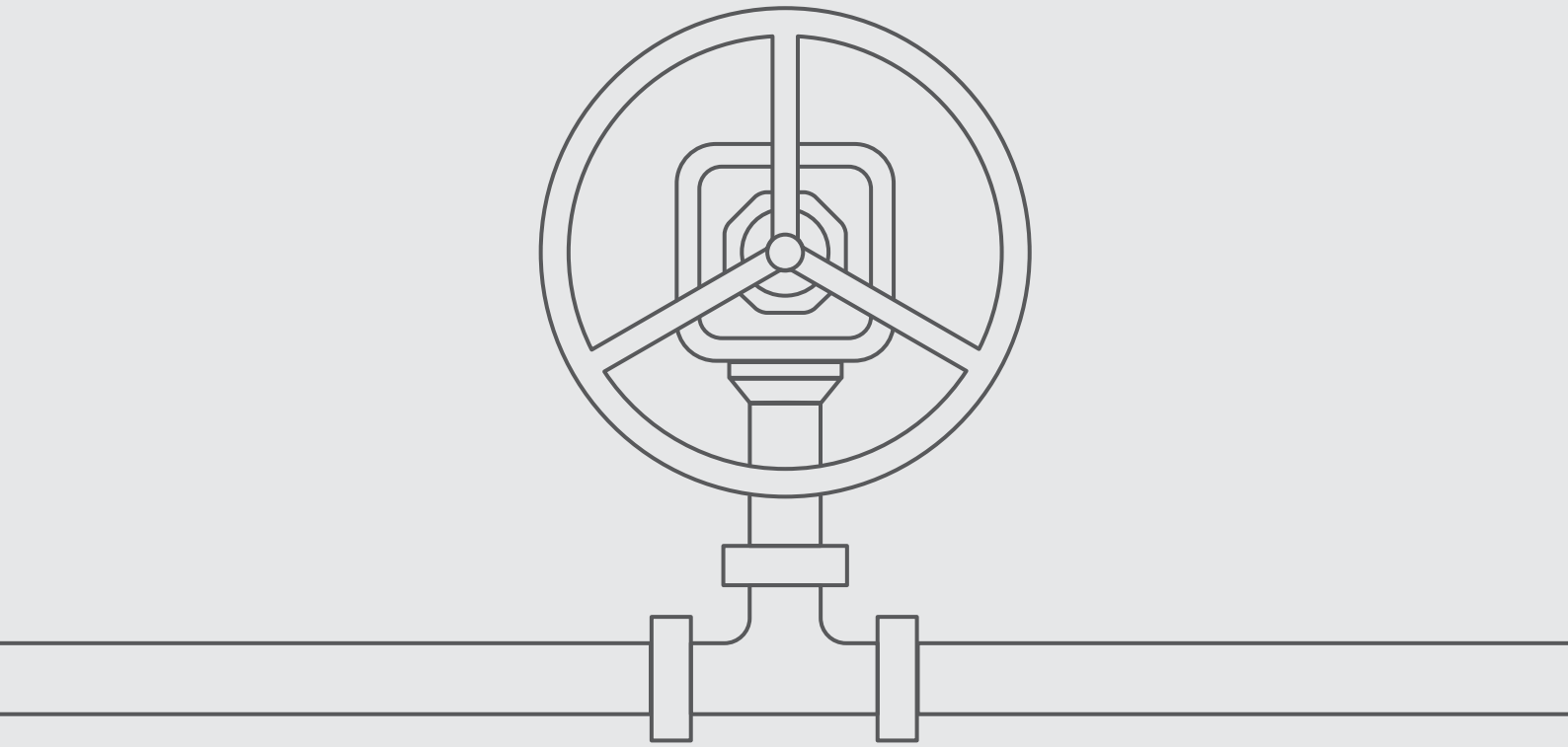
PRODUCT CATALOGUE

HABONIM
An ITT Company

PERFORMING IN DEMANDING APPLICATIONS

VALVE AUTOMATION

GEARS



GEARS

GEARS

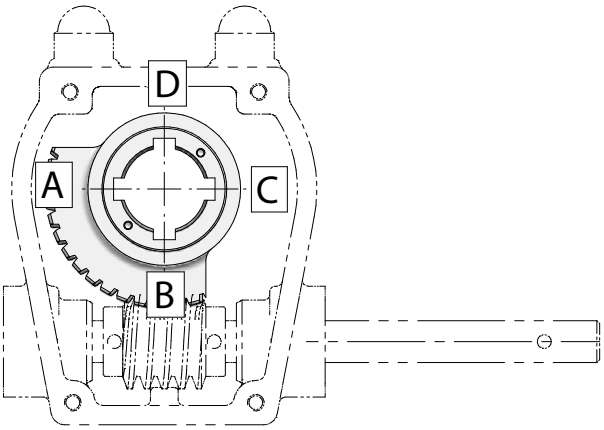
General

Habonim Gears offer Mechanical and Heavy-Duty families that include 7 of the manual quarter-turn based Worm Gearboxes. Our high-end gears, uncompromised quality, serviceability and innovation to create solutions for the most demanding applications,Habonim has gained a long track record of proven success. Habonim's gears line supports extreme cold to extreme heat systems. The gears comply to the ISO 5211 international standard. We strive to develop to meet our valve packages higher demands.

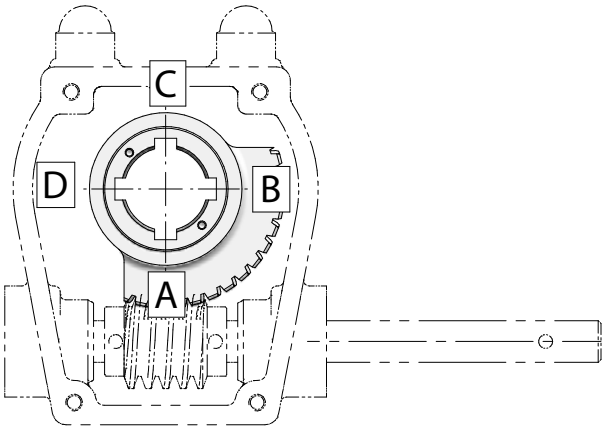
Habonim Gears Characteristics

- Precision casting cast, ductile iron, or stainless-steel housing.
- Ingress protection lever IP67 or IP68.
- Highly efficient needle roller bearing.
- High strength steel or stainless-steel input shaft.
- Stroke 0°-90° (Adjustable stopper ±5°).
- Compact, rock-solid structure.
- Grease filled for longer life.
- Perfect sealing performance.
- Optional coating for extreme working and marine environments.

Keyway Orientation



C Top view keyway position quadrant in **CLOSED** position

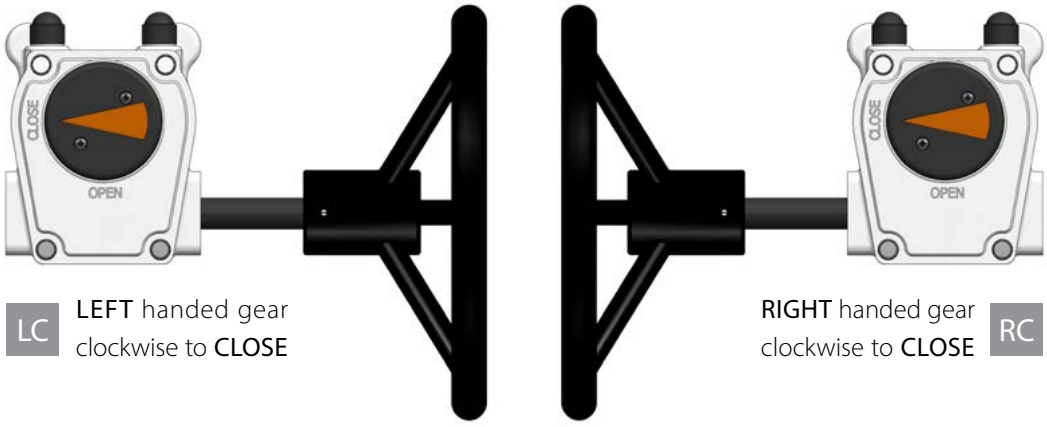


O Top view keyway position quadrant in **OPEN** position

Gearbox Quick Selection Table

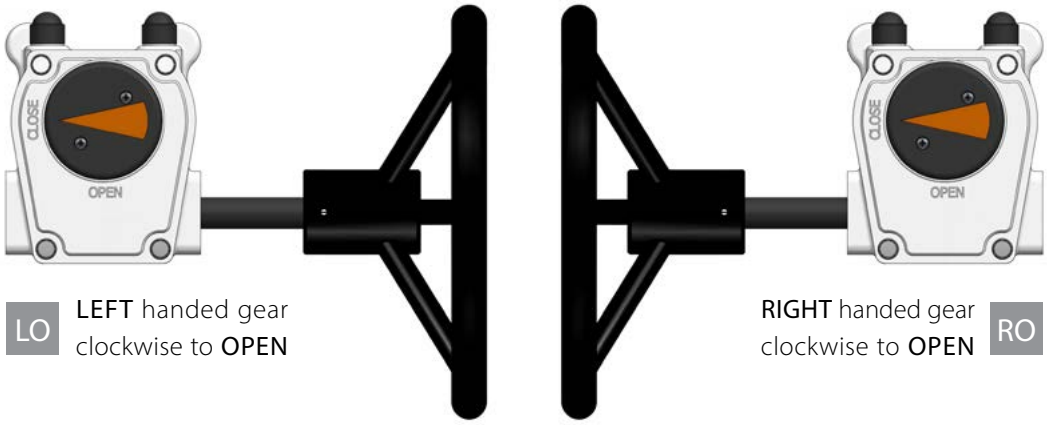
	Series								Max. Torque value	
	GAE	GAS	GAW	GAV	GAO	GJE	GJW	GJO		
Temp. C Range F	-20° to +120° -4° to +250°	-45° to +150° -49° to +302°	-45° to +150° -49° to +302°	-50° to +150° -58° to +302°	-45° to +150° -49° to +302°	-40° to +120° -40° to +250°	-40° to +120° -40° to +250°	-40° to +120° -40° to +250°		
Body Material	Cast Iron	Ductile Iron	Ductile Iron	Stainless Steel	Ductile Iron	Cast Iron	Ductile Iron	Ductile Iron		
Operation Method	Gear Operator	Gear Operator	Gear Operator	Gear Operator	Declutchable Gear	Gear Operator	Gear Operator	Declutchable Gear	Nm	in-lb
									1,400	12,390
									4,500	39,830
									8,500	75,230
									11,000	97,360
									19,000	168,165
									32,000	283,220
									85,000	752,310

Handwheel Orientation



LC **LEFT** handed gear clockwise to **CLOSE**

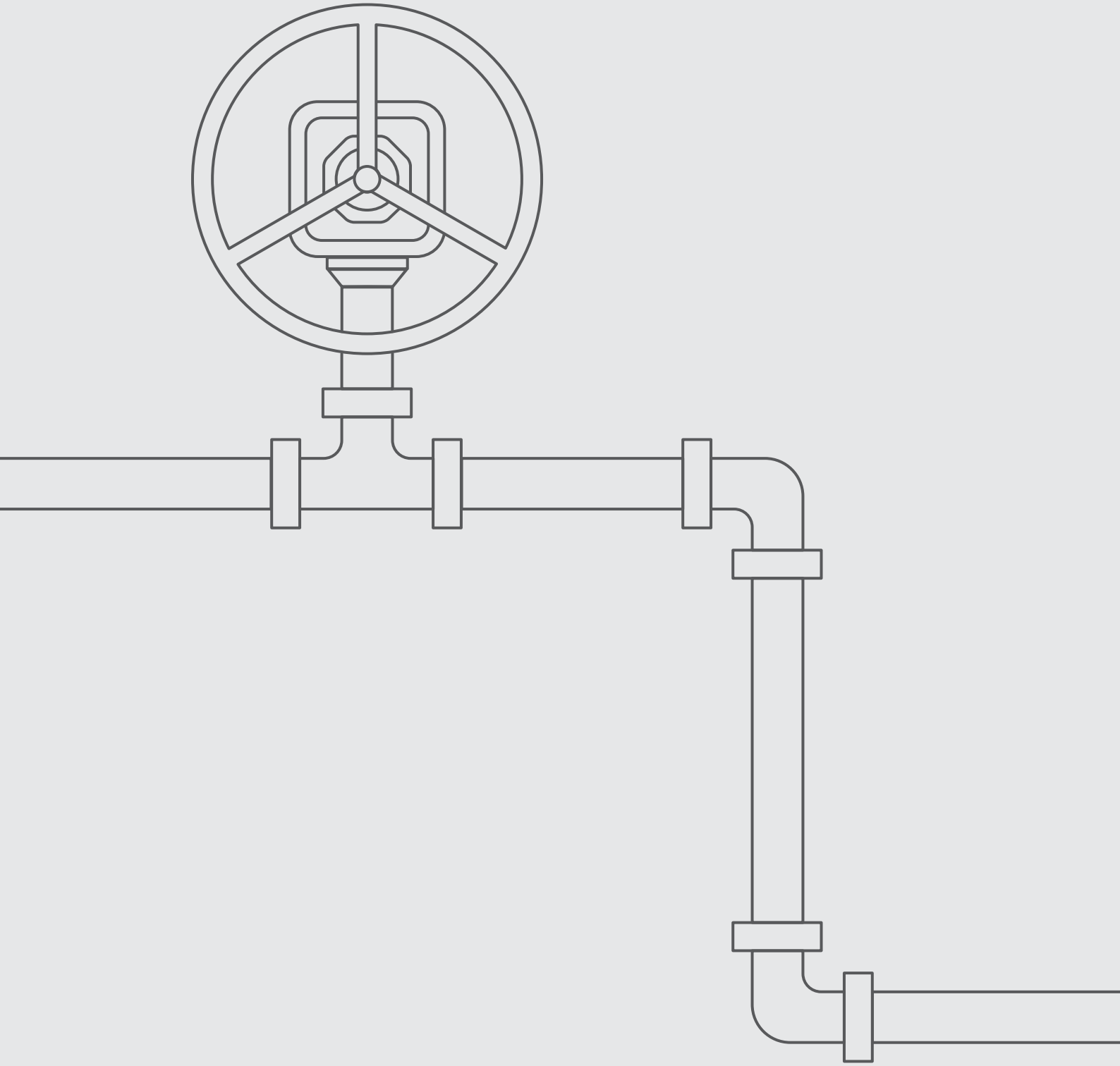
RIGHT handed gear clockwise to **CLOSE** RC



LO **LEFT** handed gear clockwise to **OPEN**

RIGHT handed gear clockwise to **OPEN** RO

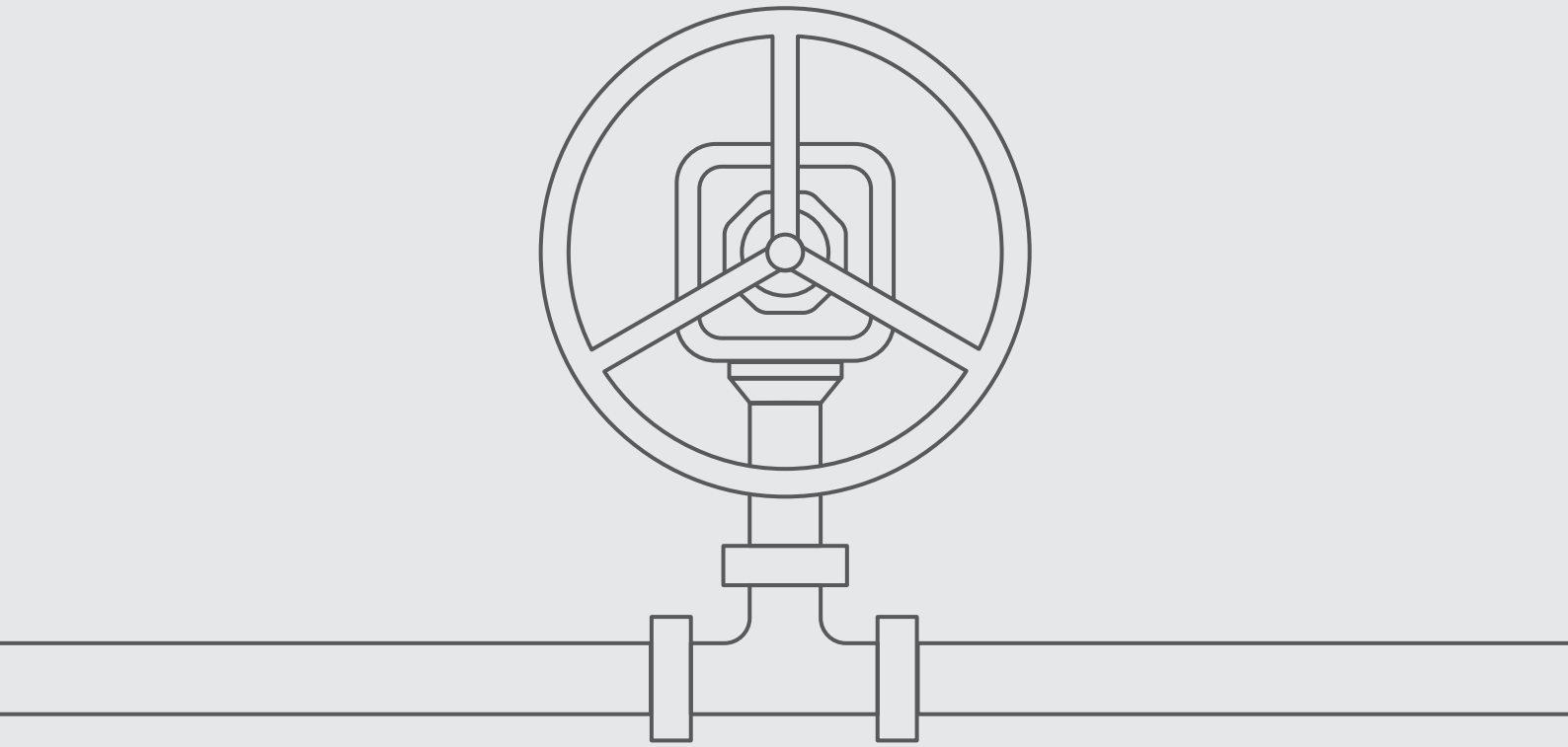
* Handwheel sizes can be changed for special space or torque requirements.



GAE GAS GAW GAV GAO

Valve Automation – Gears

HEAVY DUTY GEARS



HEAVY DUTY GEARS

General

The Heavy-duty family torque ranges are up to 32,000 Nm. These gearboxes are conformed to IP67 or IP68 enclosures, including a ductile iron worm gear, a heat treated ground worm, and a stainless steel shaft. The bushings are an oil impregnated copper nickel steel alloy with Buna-N rubber seals. Comes with an AF 120 gasket, stainless steel hardware, with a minimum input torque and a rugged construction.

Features

- The flange connection to the valve is according to EN ISO 5211.
- Enclosure IP67 or IP68.
- Working temperature: from -50°C to +150°C (-58°F to +302°F).
- Made in Western Europe.

Heavy-Duty Gearbox Quick Selection Table

	Series					Max. Torque value	
	GAE	GAS	GAW	GAV	GAO		
Temp. C Range F	-20° to +120° -4° to +250°	-45° to +150° -49° to +302°	-45° to +150° -49° to +302°	-50° to +150° -58° to +302°	-45° to +150° -49° to +302°		
Body Material	Cast Iron	Ductile Iron	Ductile Iron	Stainless Steel	Ductile Iron		
Operation Method	Gear Operator	Gear Operator	Gear Operator	Gear Operator	Declutchable Gear	Nm	in-lb
Model	120	250		350	150	120	1,060
	250					150	1,330
					350	250	2,210
	350	350				350	3,100
	550	550		550	750	550	4,870
	01K	01K		01K		750	6,640
					02K	1,000	8,850
	02K	02K		02K		2,000	17,700
	3K5	3K5		3K5	3K5	3,500	30,980
	4K5	4K5		07K	5K5	4,500	39,830
			07K			5,500	48,680
					8K5	7,000	61,955
			09K	09K		8,500	75,230
			17K	11K		9,000	79,655
						11,000	97,360
			26K			17,000	150,460
			32K			26,000	230,120
						32,000	283,225

General

Robust General-purpose series quarter-turn Gearbox. Cast iron GG25 body, suitable for ball, butterfly and plug valves. Standard IP67 enclosure and available in 8 sizes up to 4,500 Nm.

Features

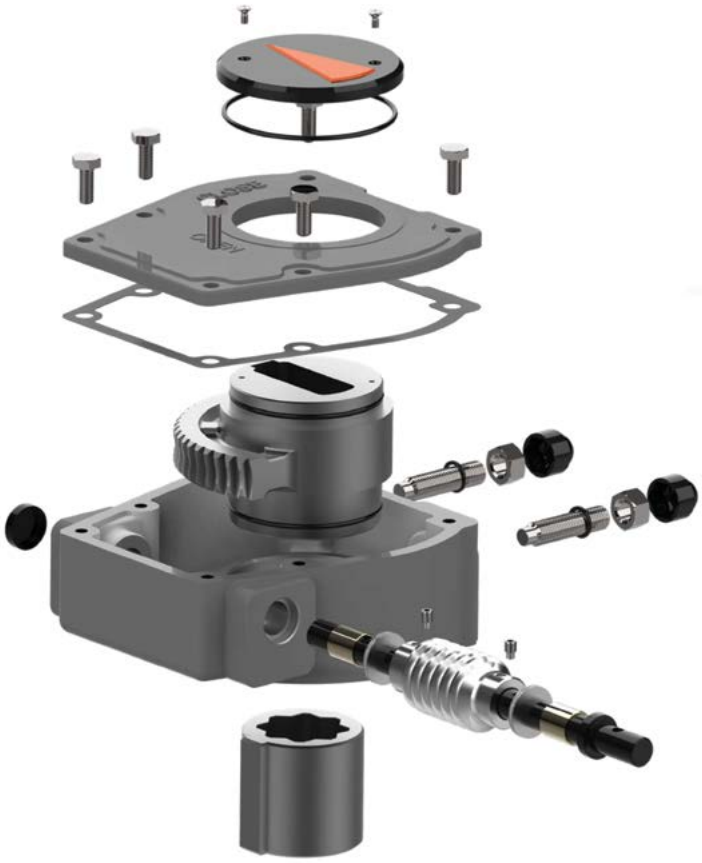
- 8 Sizes up to 4,500 Nm.
- Enclosure IP67.
- Working temperature: -20°C to +120°C (-4°F to +250°F).

Product Range

Model	Torque (Nm)	Ratio	MA ± 15%	Weight (Kg)
GAE120	120	1:41	10	1.5
GAE250	250	1:42	9.8	2.4
GAE350	350	1:42	11.8	2.9
GAE550	550	1:40	12	4.9
GAE01K	1,000	1:34	13	10.8
GAE02K	2,000	1:38	13.6	15.6
GAE3K5	3,500	1:55	20	19.4
GAE4K5	4,500	1:52	20	34

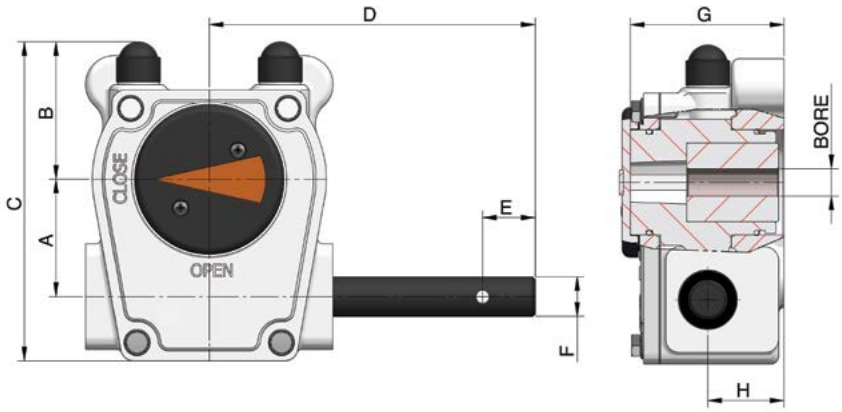
Components & Materials

Description	Material	Spec/Standard
Body	Grey Cast Iron	GG25
Cover	Grey Cast Iron	GG25
Position Indicator	Polypropylene	PP
Quadrant	Ductile Cast Iron	GGG40
Worm	Carbon Steel	C45
Shaft	Carbon Steel	C45 Black Oxide
Gasket	Nitrile	NBR70
O-rings	Nitrile	NBR70
Grease	Lithium	EP2
Fasteners	Stainless Steel	A2
Axial Needle Bearing	Steel	AS/AXK



GAE General Purpose Gears | Torque Range up to 4,500 Nm

Gear Dimensions



Model	A	B	C	D	E	F	G	H	Recommended handwheel size	Valve shaft size Max. Bore/Key	Square	ISO 5211			
GAE120	37	45	104	100	15	Ø10	48	24	125	Ø22/6	14	F05	F07		
GAE250	45	52	121	124	18	Ø12	59	29	150	Ø25/8	17	F05	F07		
GAE350	45	52	121	124	20	Ø15	59	29	200	Ø25/8	17	F07	F10		
GAE550	55	68	153	157	20	Ø15	68	36	250	Ø30/10	22	F07	F10	F12	
GAE01K	71	90	203	201	24	Ø20	89	48	300	Ø45/14	27	F10	F12	F14	
GAE02K	86	101	237	224	24	Ø20	96	51	400	Ø56/16	36	F10	F12	F14	F16
GAE3K5	105	110	262	230	24	Ø20	100	55	500	Ø70/20	46	F12	F14	F16	
GAE4K5	130	135	320	260	24	Ø20	115	57	600	Ø75/22	46	F14	F16	F25	

Ordering Code

"Mandatory option" options are marked with green background | "Standard offer" options are marked with light green background

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
G	A	E	1	2	0	-	G	C	1	2	L	0	-	0	5	S	2	2	-			
Accessory type	Model		Max. torque				Operation method	Body material	Gear handwheel diameter		Gear orientation			Valve connection		Valve shaft type	Valve shaft size			Options		

Accessory type (1)	
G	Accessory type

Model (2-3)	
AE	Heavy-Duty General Purpose up to 4,500 Nm

Max. torque (4-6)*	
Code	(Nm)
120	120
250	250
350	350
550	550
01K	1000
02K	2000
3K5	3500
4K5	4500

Operation method (8)	
G	Gear operator

Body material (9)	
C	Grey cast iron

Gear handwheel diameter (10-11)*	
Code	(mm)
12	125
15	150
20	200
25	250
30	300
40	400
50	500
60	600

Gear orientation (12-13)	
Handwheel orientation	
Code	Description
R	Right handle wheel normally close
L	Left handle wheel normally close
E	Right handle wheel normally open
K	Left handle wheel normally open

Key orientation			
Code	Description	Code	Description
0	No key	D	D
A	A	AC	E
B	B	BD	F
C	C		

Valve connection ISO 5211 (15-16)*			
05	F05	06	F05 & F07
07	F07	09	F07 & F10
10	F10	11	F10 & F12
12	F12	14	F14
16	F16	17	F16 & F25
25	F25	26	F25 & F30
30	F30	35	F35
40	F40		

Valve shaft type (17)			
O	Star	S	Square
K	Key	E	Square 45°

Valve shaft size (18-19)*			
Code	(mm)	Code	(mm)
14	14	17	17
22	22	25	25
27	27	30	30
36	36	45	45
46	46	56	56
70	70	75	75

Options (21-23)	
Blank	None
P	Steel coated padlock system
K	SS 316 Padlock system

* Available option per model see table above

GAS High Performance gears | Torque Range up to 4,500 Nm

General

Heavy duty ductile cast iron (GGG40) quarter-turn gearbox range. Standard IP68 enclosure and available in 7 sizes up to 4,500 Nm. Optional with heavy duty Marine paint systems, including C3, C4 and C5M coatings.

Features

- 7 Sizes up to 4,500 Nm.
- Enclosure IP68.
- Working temperature: -20°C to +120°C (-4°F to +250°F). options for High -20°C to +150°C (-4°F to +302°F). and Low temperature -45°C to +120°C (-49°F to +250°F).

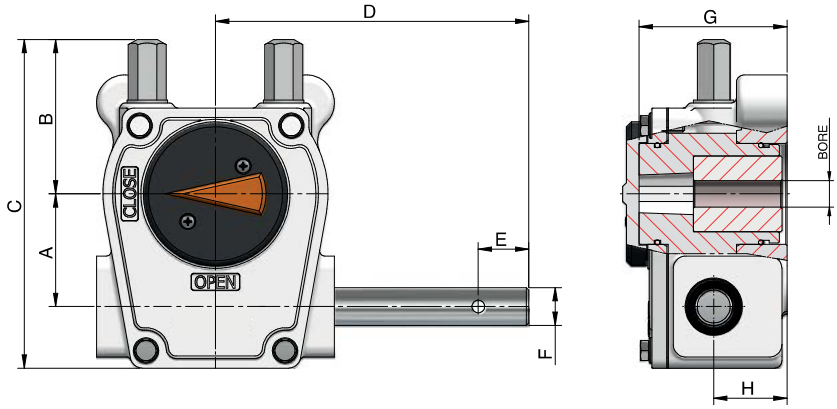
Product Range

Model	Torque (Nm)	Ratio	MA ± 15%	Weight (Kg)
GAS250	250	1:42	9.8	2.4
GAS350	350	1:42	11.8	2.9
GAS550	550	1:40	12	4.9
GAS01K	1,000	1:34	13	10.8
GAS02K	2,000	1:38	13.6	15.6
GAS3K5	3,500	1:55	20	19.4
GAS4K5	4,500	1:52	20	34

Components & Materials

Description	Material	Spec/Standard
Body	Ductile Cast Iron	GGG40
Cover	Ductile Cast Iron	GGG40
Position Indicator	Ductile Cast Iron	GGG40
Quadrant	Ductile Cast Iron	GGG40
Worm	Carbon Steel	C45
Shaft	Stainless Steel	SS316
Gasket	Nitrile	NBR70
O-rings	Nitrile	NBR70
Grease	Lithium	EP2
Fasteners	Stainless Steel	A2
Axial Needle Bearing	Steel	AS/AXK

Gear Dimensions



Model	A	B	C	D	E	F	G	H	Recommended handwheel size	Valve shaft size Max. Bore/Key	Square	ISO 5211			
GAS250	45	61	130	124	18	Ø12	59	29	150	Ø25/8	17	F05	F07		
GAS350	45	61	130	124	20	Ø15	59	29	200	Ø25/8	17	F07	F10		
GAS550	55	78	164	157	20	Ø15	68	36	250	Ø32/10	22	F07	F10	F12	
GAS01K	71	104	217	201	24	Ø20	89	48	300	Ø45/14	27	F10	F12	F14	
GAS02K	86	115	251	224	24	Ø20	97	51	400	Ø56/16	36	F10	F12	F14	F16
GAS3K5	105	129	281	230	24	Ø20	100	55	500	Ø70/20	46	F12	F14	F16	
GAS4K5	130	143	328	260	24	Ø20	115	57	600	Ø75/22	46	F14	F16	F25	

Ordering Code

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
G	A	S	2	5	0	-	G	D	1	5	L	0	-	0	6	S	2	2	-			
Accessory type	Model		Max. torque				Operation method	Body material	Gear handwheel diameter		Gear orientation			Valve connection		Valve shaft type	Valve shaft size			Options		

Accessory type (1)	
G	Gear

Model (2-3)	
AS	Heavy-Duty High Performance up to 4,500 Nm

Max. torque (4-6)*	
Code	(Nm)
250	250
350	350
550	550
01K	1000
02K	2000
3K5	3500
4K5	4500

Operation method (8)	
G	Gear operator

Body material (9)	
D	Ductile Cast Iron

Gear handwheel diameter (10-11)*	
Code	(mm)
15	150
20	200
25	250
30	300
40	400
50	500
60	600

Gear orientation (12-13)			
Handwheel orientation			
Code	Description		
R	Right handle wheel normally close		
L	Left handle wheel normally close		
E	Right handle wheel normally open		
K	Left handle wheel normally open		
Key orientation			
Code	Description	Code	Description
0	No key	D	D
A	A	AC	E
B	B	BD	F
C	C		

Valve connection ISO 5211 (15-16)*			
05	F05	06	F05 & F07
07	F07	09	F07 & F10
10	F10	11	F10 & F12
12	F12	14	F14
16	F16	17	F16 & F25
25	F25	26	F25 & F30
30	F30	35	F35
40	F40		

Valve shaft type (17)			
O	Star	S	Square
K	Key	E	Square 45°

Valve shaft size (18-19)			
Code	(mm)	Code	(mm)
17	17	22	22
25	25	27	27
32	32	36	36
45	45	46	46
56	56	70	70
75	75		

Options (21-23)	
Blank	None
P	Steel coated padlock system
K	SS 316 Padlock system
C3	Coating C3 (160Mu)
C4	Coating C4 (200Mu)
C5	Coating C5 (320Mu)
S	SS 316 Shaft
L	Low Temperature (-45° to +120°)
H	High Temperature (-20° to +150°)

* Available option per model see table above

GAW High Perfomance Gears | Torque Range 7,000 Nm - 32,000 Nm

General

Heavy duty ductile cast iron (GGG40) quarter turn gearbox range. Standard IP68 enclosure and available in 6 sizes up to 32,000 Nm. Optional with heavy duty Marine paint systems, including C3, C4 and C5M coatings.

Features

- 6 Sizes up to 32,000 Nm.
- Enclosure IP68.
- Working temperature: -20°C to +120°C (-4°F to +250°F). options for High -20°C to +150°C (-4°F to +302°F). and Low temperature -45°C to +120°C (-49°F to +250°F).

Product Range

Model	Torque (Nm)	Ratio	MA ± 15%	Weight (Kg)
GAW07K	7,000	1:312	65	41
GAW09K	9,000	1:279	80	48
GAW11K	11,000	1:372	105	48
GAW17K	17,000	1:468	138	74
GAW26K	26,000	1:660	208	142
GAW32K	32,000	1:798	224	194

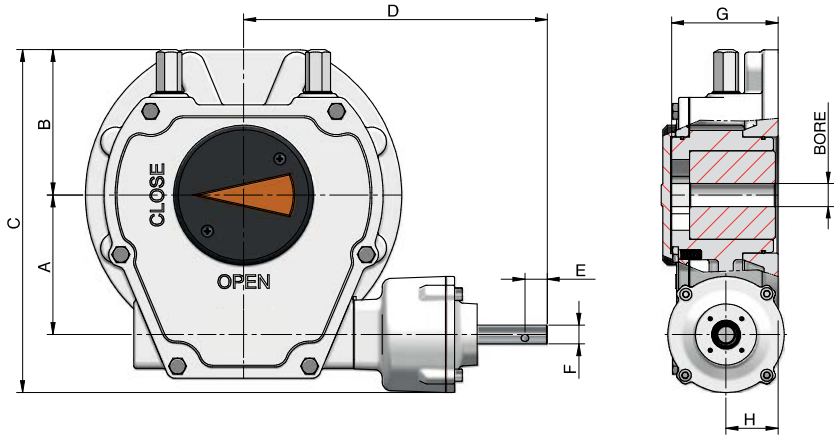
Components & Materials

Description	Material	Spec/Standard
Body	Ductile Cast Iron	GGG40
Cover	Ductile Cast Iron	GGG40
Position Indicator	Ductile Cast Iron	GGG40
Quadrant	Ductile Cast Iron	GGG40
Worm	Carbon Steel	C45
Shaft	Stainless Steel	SS316
Gasket	Nitrile	NBR70
O-rings	Nitrile	NBR70
Grease	Lithium	EP2
Fasteners	Stainless Steel	A2
Axial Needle Bearing	Steel	AS/AXK

GAW

High Perrfomance Gears
Torque Range 7,000 Nm - 32,000 Nm

Gear Dimensions



Model	A	B	C	D	E	F	G	H	Recommended handwheel size	Valve shaft size Max.Bore/Key	ISO 5211			
GAW07K	130	143	335	310	24	Ø20	115	57	500	Ø75/22	F14	F16	F25	
GAW09K	150	156	369	327	24	Ø20	115	56	500	Ø86/25	F16	F25	F30	
GAW11K	150	156	369	327	24	Ø20	115	56	600	Ø86/25	F16	F25	F30	
GAW17K	182	190	435	358	24	Ø20	125	63	600	Ø120/32	F25	F30	F35	
GAW26K	215	195	540	419	24	Ø20	175	85	700	Ø150/40	F25	F30	F35	
GAW32K	256	220	606	449	24	Ø20	183	96	800	Ø160/40	F25	F30	F35	F40

Ordering Code

"Mandatory option" options are marked with green background | "Standard offer" options are marked with light green background

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
G	A	W	0	7	K	-	G	D	5	0	L	B	-	1	7	K	7	5	-			
Accessory type	Model		Max. torque				Operation method	Body material	Gear handwheel diameter		Gear orientation			Valve connection		Valve shaft type	Valve shaft size			Options		

Accessory type (1)	
G	Gear

Model (2-3)	
AW	Heavy-Duty High Perfomance gears up to 32,000 Nm

Max. torque (4-6)*	
Code	(Nm)
07K	7000
09K	9000
11K	11000
17K	17000
26K	26000
32K	32000

Operation method (8)	
G	Gear operator

Body material (9)	
D	Ductile Cast Iron

Gear handwheel diameter (10-11)	
Code	(mm)
50	500
60	600
70	700
80	800

Gear orientation (12-13)	
Handwheel orientation	
Code	Description
R	Right handle wheel normally close
L	Left handle wheel normally close
E	Right handle wheel normally open
K	Left handle wheel normally open

Key orientation			
Code	Description	Code	Description
0	No key	D	D
A	A	AC	E
B	B	BD	F
C	C		

Valve connection ISO 5211 (15-16)*			
11	F10 & F12	16	F16
17	F16 & F25	25	F25
26	F25 & F30	27	F25 & F30 & F35
30	F30	31	F30 & F35
35	F35	40	F40

Valve shaft type (17)			
O	Star	S	Square
K	Key	E	Square 45°

Valve shaft size (18-19)			
Code	(mm)	Code	(mm)
75	75	86	86
A2	120	A5	150
A6	160		

Options (21-23)	
Blank	None
P	Steel coated Padlock system
K	SS 316 Padlock system
C3	Coating C3 (160Mu)
C4	Coating C4 (200Mu)
C5	Coating C5 (320Mu)
S	SS 316 Shaft
L	Low Temperature (-45° to +120°)
H	High Temperature (-20° to +150°)

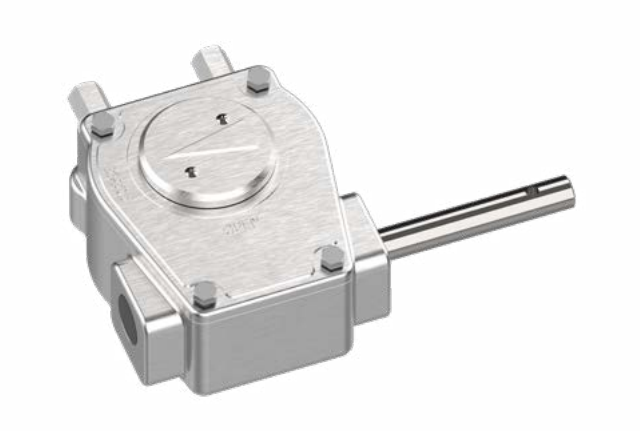
* Available option per model see table above

General

The Habonim VA series quarter-turn gearboxes are manufactured with a stainless steel 316 (1.4408) housing, cover plate, input shaft and an aluminum bronze (C95400) quadrant. The handwheel is also made of stainless steel 316. Standard IP68 enclosure and available in 8 sizes up to 11,000 Nm.

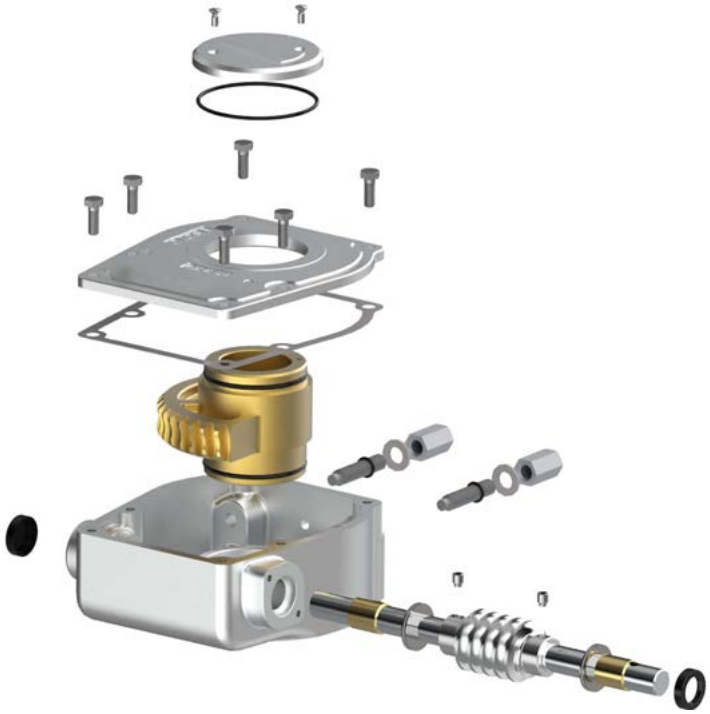
Features

- 8 Sizes up to 11,000 Nm.
- Enclosure IP68.
- Working temperature: -50°C to +150°C (-58°F to +302°F).



Product Range

Model	Torque (Nm)	Ratio	MA ± 15%	Weight (Kg)
GAV350	350	1:42	10	2.5
GAV550	550	1:40	9.8	4.5
GAV01K	1,000	1:34	11.8	9.5
GAV02K	2,000	1:38	12	13.8
GAV3K5	3,500	1:55	13	24
GAV07K	7,000	1:312	13.6	38
GAV09K	9,000	1:259	20	47
GAV11K	11,000	1:272	20	68

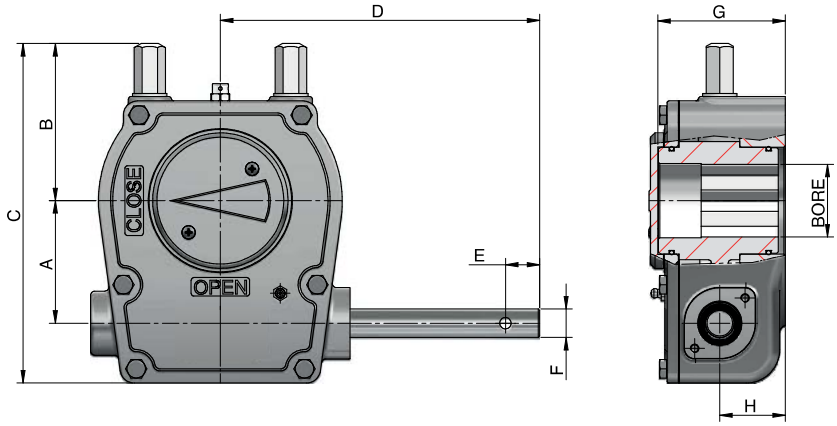


Components & Materials

Description	Material	Spec/Standard
Body	Stainless Steel	SS316
Cover	Stainless Steel	SS316
Position Indicator	Stainless Steel	SS316
Quadrant	Alu-Bronze	AB
Worm	Carbon Steel	C45
Shaft	Stainless Steel	SS316
Gasket	Nitrile	NBR70
O-rings	Nitrile	NBR70
Grease	Lithium	EP2
Fasteners	Stainless Steel	A4

GAV Stainless Steel Gears | Torque Range up to 11,000 Nm

Gear Dimensions



Model	A	B	C	D	E	F	G	H	Recommended handwheel size	Valve shaft size Max.Bore/Key	Max. Square	ISO 5211			
GAV350	45	61	130	124	20	Ø15	58	29	200	Ø22	17	F05	F07		
GAV550	55	78	164	157	20	Ø15	64	34	250	Ø32	22	F07	F10	F12	
GAV01K	71	99	212	201	24	Ø20	84	43	300	Ø40	27	F10	F12	F14	
GAV02K	86	110	238	224	24	Ø20	89	46	400	Ø54	38	F10	F12	F14	
GAV3K5	105	126	278	230	24	Ø20	90	55	O/R	Ø65	45	F10	F12	F14	F16
GAV07K	130	150	342	307	24	Ø20	105	57	O/R	Ø80	56	F12	F14	F16	F25
GAV09K	150	158	370	327	24	Ø20	120	59	O/R	Ø100	70	F16	F25		
GAV11K	150	158	370	327	24	Ø20	120	59	O/R	Ø100	70	F16	F25		

Ordering Code

"Mandatory option" options are marked with green background | "Standard offer" options are marked with light green background

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
G	A	V	3	5	0	-	G	S	2	0	L	0	-	0	6	S	1	7	-			
Accessory type	Model		Max. torque				Operation method	Body material	Gear handwheel diameter		Gear orientation			Valve connection		Valve shaft type	Valve shaft size			Options		

Accessory type (1)	
G	Gear

Model (2-3)	
AV	Heavy-Duty Stainless Steel up to 11,000 Nm

Max. torque (4-6)*	
Code	(Nm)
350	350
550	550
01K	1000
02K	2000
3K5	3500
07K	7000
09K	9000
11K	11000

Operation method (8)	
G	Gear operator

Body material (9)	
S	Stainless steel

Gear handwheel diameter (10-11)*	
Code	(mm)
20	200
25	250
30	300
40	400
50	500
60	600

Gear orientation (12-13)			
Handwheel orientation			
Code	Description		
R	Right handle wheel normally close		
L	Left handle wheel normally close		
E	Right handle wheel normally open		
K	Left handle wheel normally open		
Key orientation			
Code	Description	Code	Description
0	No key	D	D
A	A	AC	E
B	B	BD	F
C	C		

Valve connection ISO 5211 (15-16)*			
05	F05	06	F05 & F07
07	F07	09	F07 & F10
10	F10	11	F10 & F12
12	F12	14	F14
16	F16	17	F16 & F25
25	F25	26	F25 & F30
30	F30	35	F35
40	F40		

Valve shaft type (17)			
O	Star	S	Square
K	Key	E	Square 45°

Valve shaft size (18-19)*			
Code	(mm)	Code	(mm)
17	17	22	22
27	27	32	32
38	38	40	40
45	45	54	54
56	56	65	65
70	70	80	80
AO	100		

Options (21-23)	
Blank	None
K	SS 316 Padlock system

* Available option per model see table above

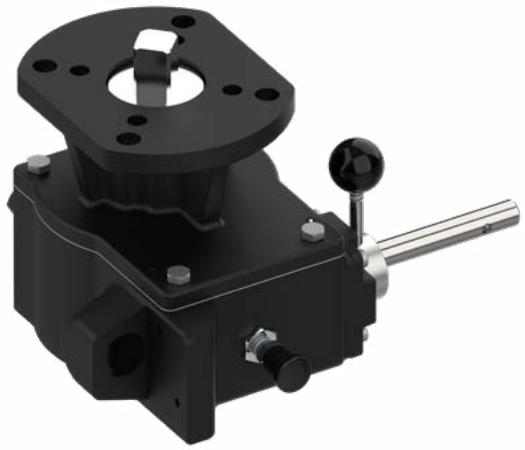
GAO Declutchable Manual Override Gears | Torque Range up to 8,500 Nm

General

Manual override quarter-turn gearbox range especially suitable for our dual operated valves, for mounting between a double or single acting actuator and a valve. Standard IP67 enclosure and available in 7 sizes up to 8,500 Nm.

Features

- 7 Sizes up to 8,500 Nm.
- Enclosure IP67.
- Working temperature: -20°C to +120°C (-4°F to +250°F). options for High -20°C to +150°C (-4°F to +302°F). and Low temperature -45°C to +120°C (-49°F to +250°F).



Product Range

Model	Torque (Nm)	Ratio	MA ± 15%	Weight (Kg)
GAO150	150	1:40	12.1	3.5
GAO350	350	1:44	11.4	6.5
GAO750	750	1:52	15	16
GAO02K	2,000	1:38	13.6	15.6
GAO3K5	3,500	1:55	20	19.4
GAO5K5	5,500	1:306	80	62
GAO8K5	8,500	1:408	95.6	64

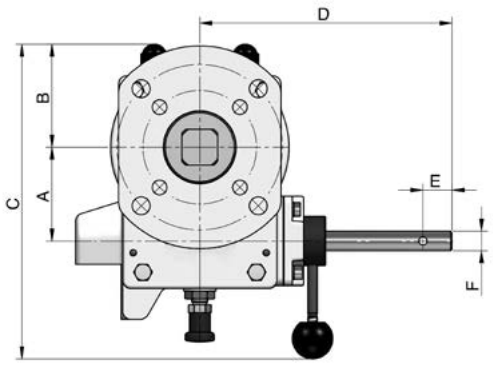
Components & Materials

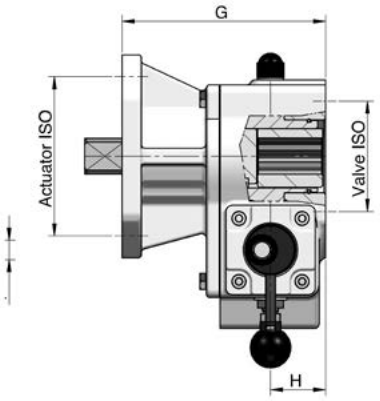
Description	Material	Spec/Standard
Body	Ductile Cast Iron	GGG40
Cover	Ductile Cast Iron	GGG40
Worm Rack	Ductile Cast Iron	GGG40
Cover/Rack	Ductile Cast Iron	GGG40
Quadrant	Ductile Cast Iron	GGG40
Worm	Carbon Steel	C45
Shaft	Stainless Steel	SS304
Coupling	Carbon Steel	C45
Gasket	Nitrile	NBR70
O-rings	Nitrile	NBR70
Grease	Lithium	EP2
Fasteners	Stainless Steel	A2
Axial Bearing	Steel	AS/AXK

GAO

Declutchable Manual Override Gears
Torque Range up to 8,500 Nm

Gear Dimensions





Model	A	B	C	D	E	F	G	H	Recommended handwheel size	Valve ISO 5211			Actuator ISO 5211		
GAO150	48	53	167	122	18	Ø12	103	29	150	F05	F07		F05	F07	
GAO350	58	63	193	156	18	Ø12	126	34	150	F07	F10		F07	F10	
GAO750	75	86	239	165	20	Ø15	131	41	250	F10	F12		F12	F14	
GAO02K	92	105	280	203	24	Ø20	161	46	300	F10	F12	F14	F12	F14	F16
GAO3K5	134	115	333	250	24	Ø20	185	54	400	F14	F16		F14	F16	
GAO5K5	148	145	414	365	24	Ø20	197	66	500	F16	F25		F16	F25	
GAO8K5	148	145	414	365	24	Ø20	197	66	600	F16	F25		F16	F25	

Ordering Code

"Mandatory option" options are marked with green background | "Standard offer" options are marked with light green background

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
G	A	O	1	5	0	-	D	D	1	5	L	0	-	0	6	S	1	7	0	6	S	1	7	-			
Accessory type	Model	Max. Torque					Operation method	Body material	Gear handwheel diameter		Gear orientation			Valve Connection		Valve shaft type	Valve shaft size		Actuator Connection		Acuator shaft type	Acuator shaft size			Options		

Accessory type (1)	
G	Gear

Model (2-3)	
AO	Heavy-Duty Declutchable gears up to 8,500 Nm

Max. torque (4-6)*			
Code	(Nm)	Code	(Nm)
150	150	3K5	3500
350	350	5K5	5500
750	750	8K5	8500
02K	2000		

Operation method (8)	
D	Declutchable gear connection

Body material (9)	
D	Ductile Cast Iron

Gear handwheel diameter (10-11)			
Code	(mm)	Code	(mm)
15	150	40	400
25	250	50	500
30	300	60	600

Gear orientation (12-13)	
Handwheel orientation	
Code	Description
R	Right handle wheel normally close
L	Left handle wheel normally close
E	Right handle wheel normally open
K	Left handle wheel normally open
Key orientation	
Code	Description
0	No key
A	A
B	B
C	C
D	D
AC	E
BD	F

Valve connection ISO 5211 (15-16)*			
05	F05	06	F05 & F07
07	F07	09	F07 & F10
10	F10	11	F10 & F12
12	F12	13	F12 & F14
14	F14	16	F16
17	F16 & F25	26	F25 & F30
25	F25	30	F30
35	F35	40	F40

Valve shaft type (17)			
O	Star	S	Square
K	Key	E	Square 45°

Valve shaft size (18-19)			
Code	(mm)	Code	(mm)
17	17	19	19
22	22	34	34
42	42	55	55

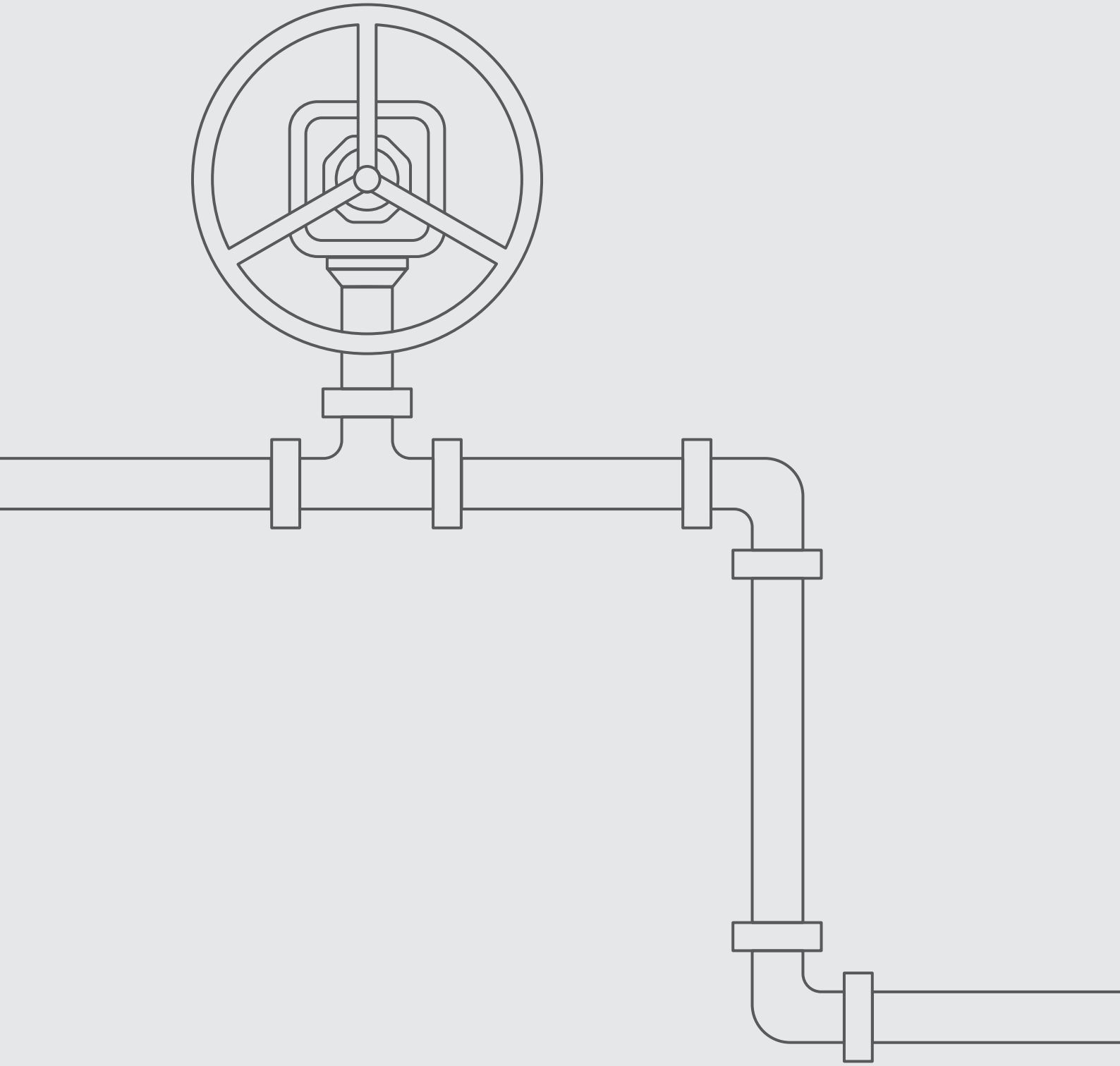
Actuator connection ISO 5211 (20-21)			
05	F05	06	F05 & F07
07	F07	09	F07 & F10
10	F10	11	F10 & F12
12	F12	14	F14
16	F16	17	F16 & F25
25	F25	26	F25 & F30
30	F30	35	F35
40	F40		

Valve shaft type (22)			
O	Star	S	Square
K	Key	E	Square 45°

Acuator shaft size (23-24)	
17	17
19	19
22	22
34	34
42	42
55	55

Options (26-28)	
Blank	None
C3	Coating C3 (160Mu)
C4	Coating C4 (200Mu)
C5	Coating C5 (320Mu)
L	Low Temperature (-45° to +120°)
H	High Temperature (-20° to +150°)

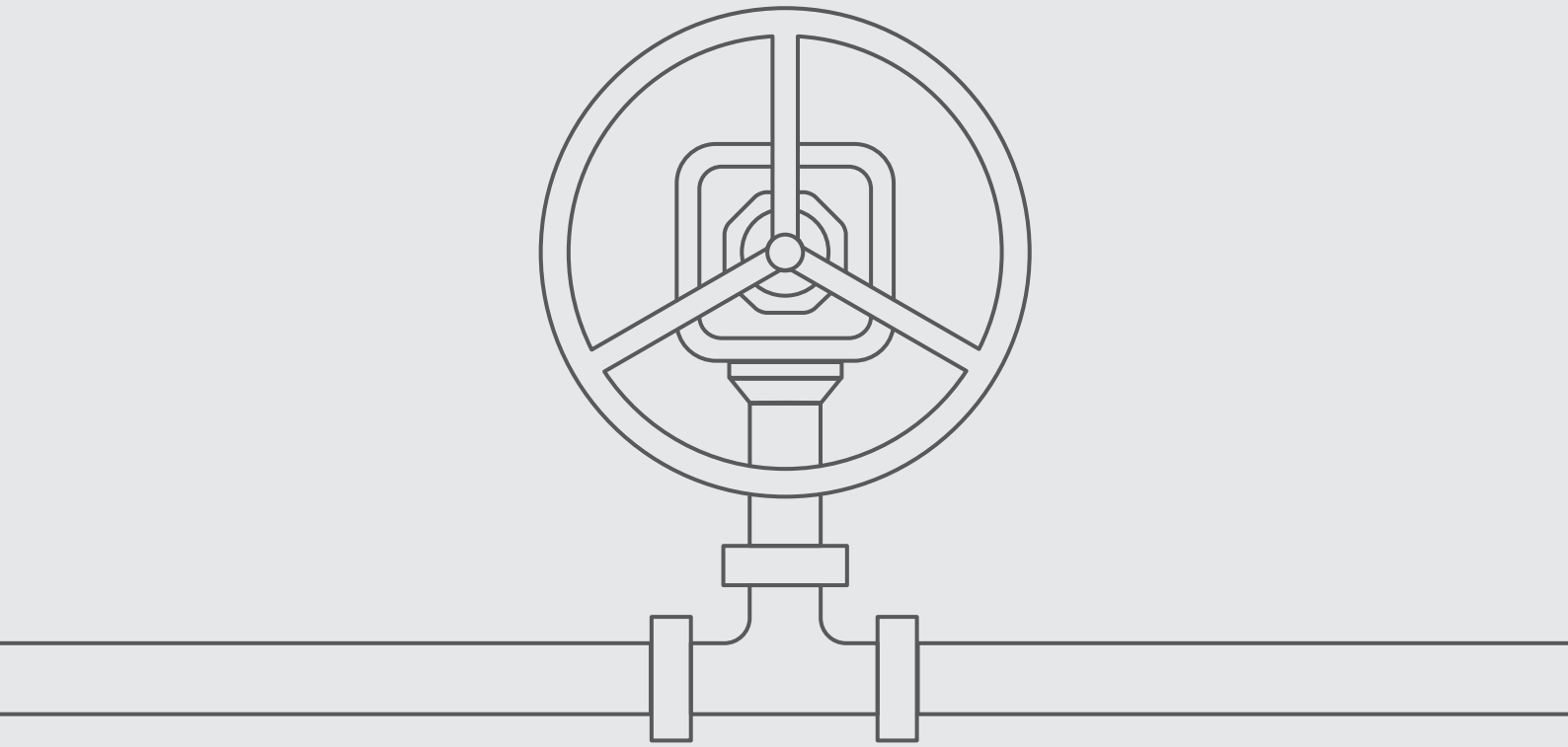
* Available option per model see table above



GJE GJW GJO

Valve Automation – Gears

MACHINERY GEARS



MACHINERY GEARS

General

The Machinery family torque ranges are up to 85,000 Nm. These gearboxes are conformed to IP67 or IP68 enclosure, carbon steel or stainless-steel worm gear, cast or ductile iron ground worm with option for stainless steel, alloy steel or stainless-steel shaft. The bushings are brass alloy. Asbestos-free Sealing Material gasket, minimum input torque, rugged construction.

Features

- The flange connection to valve is according to EN ISO 5211.
- Enclosure IP67 or IP68.
- Working temperature: -40°C to +120°C (-40°F to +250°F).

Machinery Gearbox Quick Selection Table

	Series			Torque	
	GJE	GJW	GJO		
Temp. C Range F	-40° to +120° -40° to +250°	-40° to +120° -40° to +250°	-40° to +120° -40° to +250°		
Body Material	Cast Iron	Ductile Iron	Ductile Iron		
Operation Method	Gear Operator	Gear Operator	Declutchable Gear	Nm	in-lb
Model	255		155	155	1,370
			350	255	2,255
	570			350	3,100
			550	550	4,870
				570	5,045
	930		1K2	930	8,230
				1,200	10,620
	1K4			1,400	12,390
			2K1	2,100	18,590
		2K6		2,600	23,010
			2K8	2,800	24,780
		5K2		4,000	35,400
			04K	5,200	46,025
		08K	08K	8,000	70,805
		16K		16,000	141,610
			19K	19,000	168,165
		21K		21,000	185,865
		32K		32,000	283,225
		40K		40,000	354,030
		54K		54,000	477,940
		85K		85,000	752,315

General

Wide range low torque General-purpose series quarter turn Gearbox. Cast iron body, suitable for ball, butterfly and plug valves. Standard IP67 enclosure and available in 4 sizes up to 1,400 Nm. They are widely used in chemical, industrial, power plant, waterworks, HVAC equipment and most industrial fields.

Features

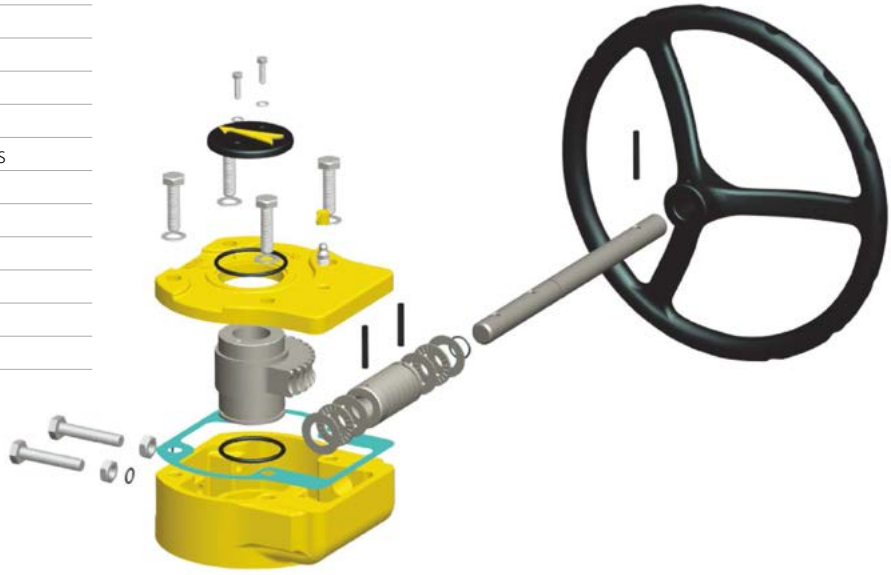
- 4 Sizes up to 1,400 Nm.
- Enclosure IP67 (option for IP68).
- Working temperature: -20°C to +80°C (-4°F to +180°F). options for High -20°C to +120°C (-4°F to +250°F). and Low temperature -40°C to +80°C (-40°F to +180°F).

Product Range

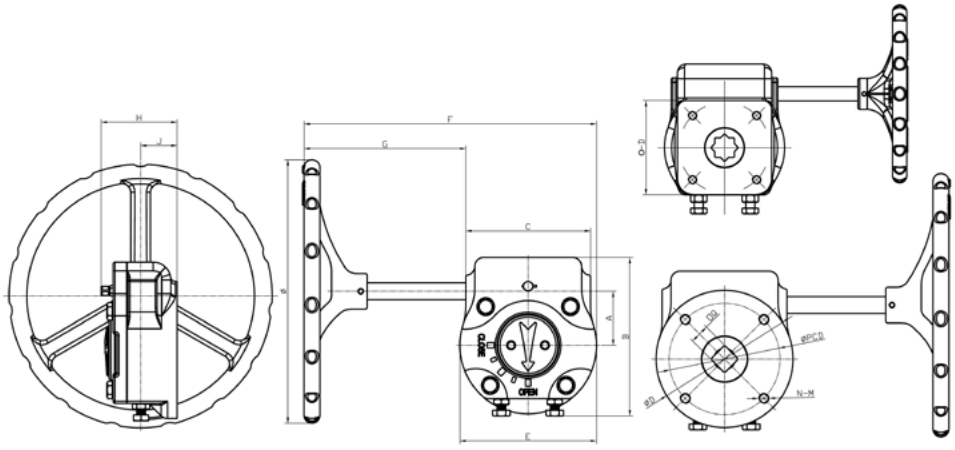
Model	Max. Out Torque (Nm)	Ratio	Max. Input Torque (Nm)	Weight (Kg)
GJE225	255	1:40	25	3.4
GJE570	570	1:36	60	7.5
GJE930	930	1:36	90	10
GJE1K4	1400	1:50	110	18.3

Components & Materials

	Description	Material
1	Housing	Cast Iron
2	Gasket	Asbestos-free Seaking Material
3	O-ring	NBR
4	Worm Wheel	Ductile Iron
5	Cover Plate	Cast Iron
6	Position Indicator	Cast Iron
7	Pin	Spring Steel
8	Grease Nipple	Stainless Steel
9	Nipple Cap	Engineering Plastics
10	Worm	Alloy Steel
11	Thrust Needle Roller Bearing	Bearing Steel
12	Worm Shaft	Alloy Steel
13	Handwheel	Cast Iron
14	Limit Screw	Cast Iron
15	Limit Nut	Cast Iron



Gear Dimensions



Model	A	B	C	E	F	G	H	J	Ø	Valve shaft size Max. Square	ISO 5211		
GJE255	42	127	86	95	218	122	70	35	Ø150	14	F05	F07	F10
GJE570	60	168	120	135	271	145	84	41	Ø200	22	F07	F10	
GJE930	60	178	140	155	330	196	85	41	Ø300	27	F10	F12	
GJE1K4	78.5	228	160	190	426	251	109	51	Ø350	36	F14		

Ordering Code

"Mandatory option" options are marked with green background | "Standard offer" options are marked with light green background

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
G	J	E	2	5	5	-	G	C	1	5	L	0	-	0	6	O	1	4	-			
Accessory type	Model		Max. torque				Operation method	Body material	Gear handweel diameter		Gear orientation			Valve connection		Valve shaft type	Valve shaft size			Options		

Accessory type (1)

G	Gear

Model (2-3)

JE	Machinery - General purpose gears up to 1,400 Nm

Max. torque (4-6)*

Code	(Nm)
255	255
570	570
930	930
1K4	1400

Operation method (8)

G	Gear operator

Body material (9)

C	Cast Iron

Gear handweel diameter (10-11)*

Code	(mm)
15	150
20	200
30	300
35	350

Gear orientation (12-13)

Handwheel orientation

Code	Description
R	Right handle wheel normally close
L	Left handle wheel normally close
E	Right handle wheel normally open
K	Left handle wheel normally open

Key orientation

Code	Description	Code	Description
0	No key	D	D
A	A	AC	E
B	B	BD	F
C	C		

Valve connection ISO 5211 (15-16)*

06	F05 & F07	09	F07 & F10
11	F10 & F12	14	F14

Valve shaft type (17)

O	Octagon	S	Square
K	Key	E	Square 45°

Valve shaft size (18-19)

Code	(mm)	Code	(mm)
14	14	22	22
27	27	36	36

Options (21-23)

Blank	None
P	Locking pad
S	SS 304 Fasten and worm shaft
L	Low Temperature (-40° to +80°)
H	High Temperature (-20° to +120°)

* Available option per model see table above

General

Wide range middle-high torque General-purpose series quarter turn Gearbox. Ductile iron body, suitable for ball, butterfly and plug valves. Standard IP67 enclosure and available in 9 sizes up to 85,000 Nm. They are widely used in chemical, industrial, power plant, waterworks, HVAC equipment and most industrial fields.

Features

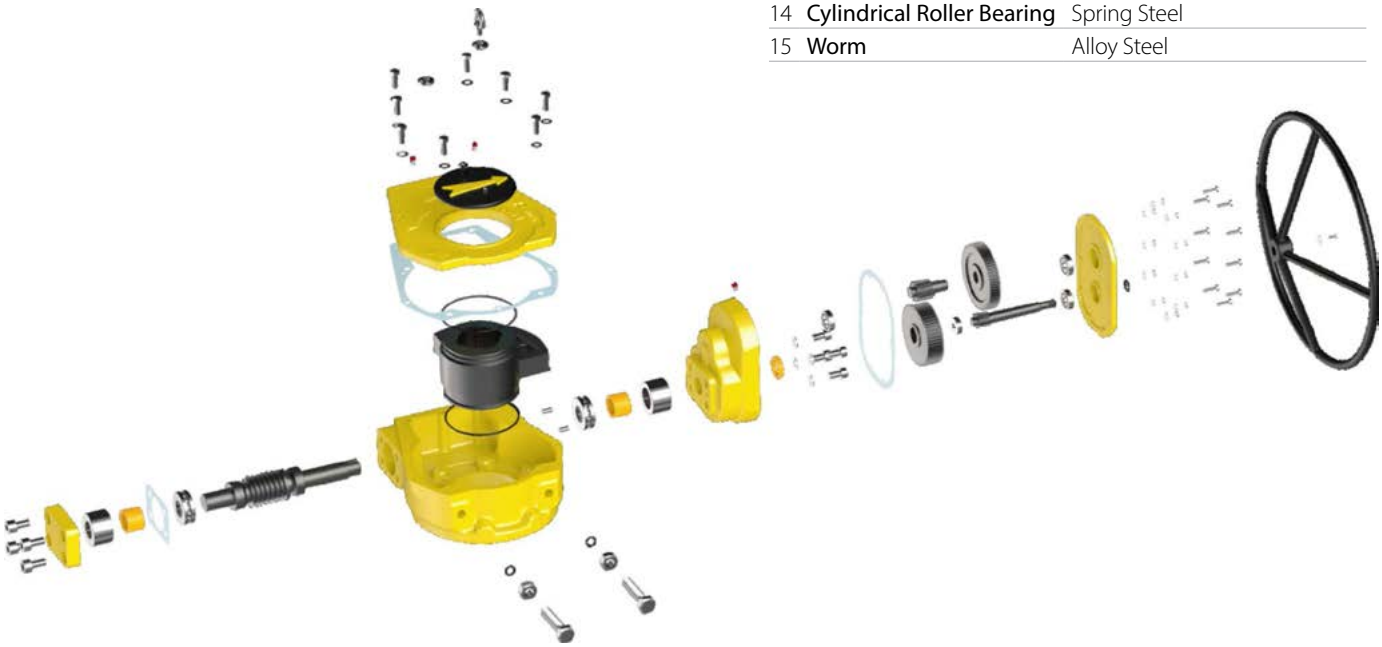
- 9 Sizes up to 85,000 Nm.
- Enclosure IP67 (option for IP68).
- Working temperature: -20°C to +80°C (-4°F to +180°F). options for High -20°C to +120°C (-4°F to +250°F). and Low temperature -40°C to +80°C (-40°F to +180°F).

Product Range

Model	Max. Out Torque (Nm)	Ratio	Max. Input Torque (Nm)	Weight (Kg)
GJW2K6	2,600	1:70	150	27
GJW5K2	5,200	1:140	150	33
GJW08K	8,000	1:207	155	65
GJW16K	16,000	1:495	147	105
GJW21K	21,000	1:495	180	110
GJW32K	32,000	1:1200	135	220
GJW40K	40,000	1:1200	165	240
GJW54K	54,000	1:1530	195	340
GJW85K	85,000	1:2448	195	410

Components & Materials

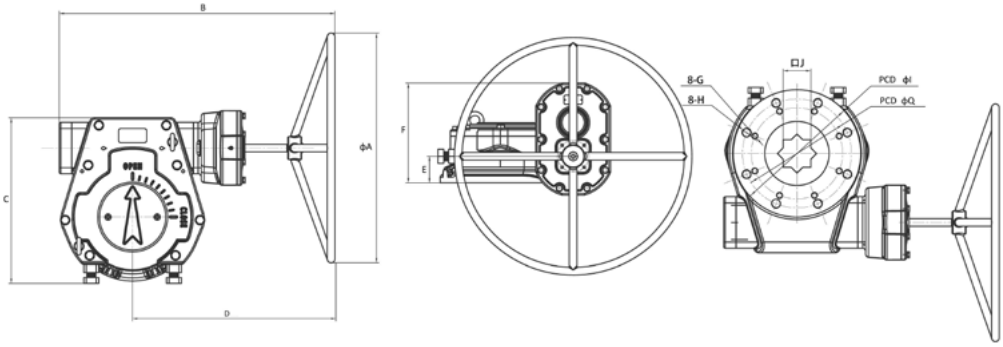
	Description	Material
1	Position Indicator	Cast Iron
2	Cover Plate	Ductile Iron
3	Gasket	Asbestos-free Seaking Material
4	Worm Wheel	Ductile Iron
5	Main Housing	Ductile Iron
6	Bearing	Brass Alloy
7	Side Housing	Ductile Iron
8	Bushing	Brass Alloy
9	Gasket	Asbestos-free Seaking Material
10	Shaft	Alloy Steel
11	Side Housing Cover	Ductile Iron
12	Thrust Bushing	Alloy Steel
13	Gasket	Asbestos-free Seaking Material
14	Cylindrical Roller Bearing	Spring Steel
15	Worm	Alloy Steel



GJW

General Purpose Gears
Torque Range 2,600 Nm to 85,000 Nm

Gear Dimensions



Model	ØA	B	C	D	E	F	Valve shaft size J	ISO 5211	
GJW2K6	400	450	273	326	55	119	46	F16	
GJW5K2	400	435	273	310	55	119	46	F16	
GJW08K	400	548	380	370	145	138	55	F25	
GJW16K	600	738.6	423.5	540.9	94	250	75	F25	F30
GJW21K	750	801.7	423.5	604	94	250	75	F25	F30
GJW32K	600	835.9	540	596.9	87	317	Ø120-Ø150	F30	F35
GJW40K	750	899	540	660	87	317	Ø120-Ø150	F30	F35
GJW54K	750	1028	602.5	733	207	349	Ø100-Ø140	F40	
GJW85K	800	1095	662	785	214	425	Ø120-Ø160	F40	

Ordering Code

"Mandatory option" options are marked with green background | "Standard offer" options are marked with light green background

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
G	J	W	2	K	6	-	G	D	4	0	L	0	-	1	6	S	4	6	-			
Accessory type	Model		Max. torque				Operation method	Body material	Gear handwheel diameter		Gear orientation			Valve connection		Valve shaft type	Valve shaft size			Options		

Accessory type (1)	
G	Gear

Model (2-3)	
JW	Machinery - General purpose gears up to 85,000 Nm

Max. torque (4-6)*	
Code	(Nm)
2K6	2,600
5K2	5,200
08K	8,000
16K	16,000
21K	21,000
32K	32,000
40K	40,000
54K	54,000
85K	85,000

Operation method (8)	
G	Gear operator

Body material (9)	
D	Ductile Cast Iron

Gear handwheel diameter (10-11)*	
Code	(mm)
40	400
60	600
75	750
80	800

Gear orientation (12-13)	
Handwheel orientation	
Code	Description
R	Right handle wheel normally close
L	Left handle wheel normally close
E	Right handle wheel normally open
K	Left handle wheel normally open

Key orientation			
Code	Description	Code	Description
0	No key	D	D
A	A	AC	E
B	B	BD	F
C	C		

Valve connection ISO 5211 (15-16)*			
16	F16	17	F16 & F25
25	F25	26	F25 & F30
27	F25 & F30 & F35	30	F30
31	F30 & F35	35	F35
40	F40		

Valve shaft type (17)			
O	Star	S	Square
K	Key	E	Square 45°

Valve shaft size (18-19)			
Code	(mm)	Code	(mm)
46	46	55	55
75	75	A0	100
A2	120	A4	140
A5	150	A6	160

Options (21-23)	
Blank	None
P	Locking pad
S	SS 304 Fasten and worm shaft
L	Low Temperature (-40° to +80°)
H	High Temperature (-20° to +120°)

* Available option per model see table above

General

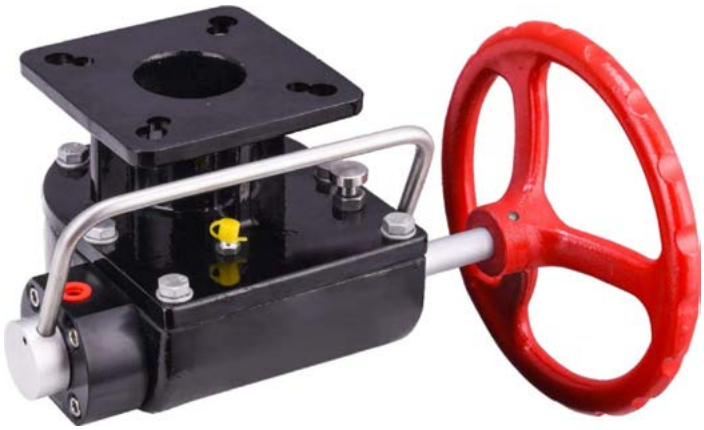
GJO series declutchable manual override is "Sandwich" mounted between a pneumatic quarter-turn, actuator and a ball, butterfly, plug valves or dampers. This rugged device allows for manual operation during installation or system testing or in the event of an air supply failure. And the output torques cover a broad range. JHM series comply to ISO5211 standard.

Features

- 9 Sizes up to 1,400 Nm.
- Enclosure IP67 (option for IP68).
- Working temperature: -20°C to +80°C (-4°F to +180°F). options for High -20°C to +120°C (-4°F to +250°F). and Low temperature -40°C to +80°C (-40°F to +180°F).

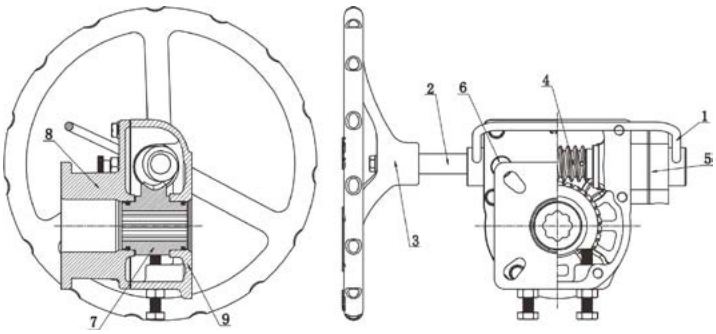
Product Range

Model	Max. Out Torque (Nm)	Ratio	Max. Input Torque (Nm)	Weight (Kg)
GJO155	155	1:40	15	3.7
GJO350	350	1:28	50	8.2
GJO550	550	1:32	80	9.9
GJO1K2	1,200	1:50	95	13.3
GJO2K1	2,100	1:62	130	18.7
GJO2K8	2,800	1:70	150	33.8
GJO04K	4,000	1:85	190	44.4
GJO08K	8,000	1:210	160	91
GJO19K	19,000	1:495	160	140



Components & Materials

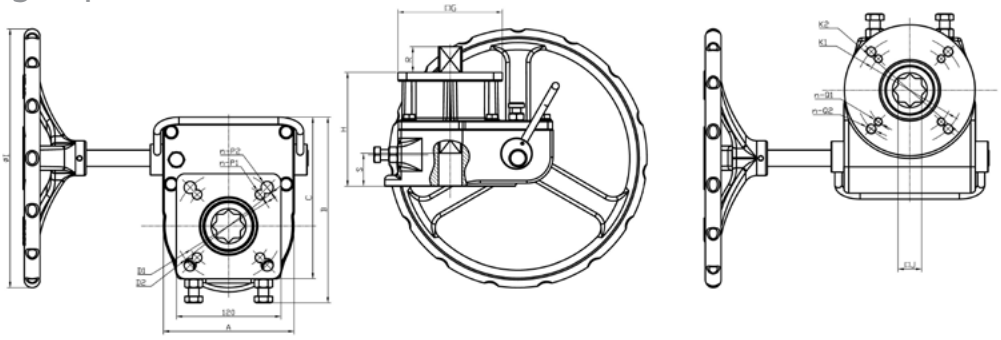
	Description	Material
1	Handle	Stainless Steel
2	Worm Shaft	Carbon Steel
3	Handwheel	Ductile Iron
4	Worm	Carbon Steel
5	Safety valve	Aliuminum Alloy
6	Position Lock Pin	Stainless Steel
7	Worm Wheel	Ductile Iron
8	Cover Plate	Ductile Iron
9	Housing	Ductile Iron



GJO

Declutchable Manual Override Gears
Torque Range up to 19,000 Nm

Gear Dimensions



Model	A	B	C	E	F	G	H	ØI	R	S	Valve shaft size	Actuator shaft size			Valve ISO 5211		Actuator ISO 5211	
GJO155	85	129	116	146	55	70	98	150	-	26	17	11	14	17	F05	F07	F05	F07
GJO350	112	173	146	187	77	100	114	200	-	35	22	14	17	22	F07		F07	F10
GJO550	138	193	160	193	85	120	124	200	-	36	22	22	27		F07	F10	F10	F12
GJO1K2	150	213	185	235	90	120	131	300	-	38	27	27			F10	F12	F10	F12
GJO2K1	175	252	219	291	100	160	134	350	-	40	36	36			F14		F14	F16
GJO2K8	247	321	286	324	111	160	189	400	-	50	46	36	46		F16		F14	F16
GJO04K	292	315	300	332	146	200	196	600	43	79	46	46			F16		F16	
GJO08K	306	375	409	494	186	Ø300	253	600	44	102	55	46			F16	F25	F16	F25
GJO19K	355	410	451	497	203	Ø352	271	600	59	92	75	46	55		F25		F25	

Ordering Code

"Mandatory option" options are marked with green background | "Standard offer" options are marked with light green background

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
G	J	O	1	5	5	-	D	D	1	5	L	0	-	0	6	S	1	7	0	6	S	1	7	-			
Accessory type	Model	Max. Torque					Operation method	Body material	Gear handwheel diameter		Gear orientation			Valve Connection		Valve shaft type	Valve shaft size		Actuator Connection		Acuator shaft type	Acuator shaft size			Options		

Accessory type (1)	
G	Gear

Model (2-3)	
JO	Machinery - Declutchable gears up to 19,000 Nm

Max. torque (4-6)*			
Code	(Nm)	Code	(Nm)
155	155	2K8	2800
350	350	04K	4000
550	550	08K	8000
1K2	1200	19K	19000
2K1	2100		

Operation method (8)	
D	Declutchable gear connection

Body material (9)	
D	Ductile Cast Iron

Gear handwheel diameter (10-11)*			
Code	(mm)	Code	(mm)
15	150	35	350
20	200	40	400
30	300	60	600

Gear orientation (12-13)	
Handwheel orientation	
Code	Description
R	Right handle wheel normally close
L	Left handle wheel normally close
E	Right handle wheel normally open
K	Left handle wheel normally open

Key orientation			
Code	Description	Code	Description
0	No key	D	D
A	A	AC	E
B	B	BD	F
C	C		

Valve connection ISO 5211 (15-16)*			
05	F05	06	F05 & F07
07	F07	09	F07 & F10
10	F10	11	F10 & F12
12	F12	14	F14
16	F16	17	F16 & F25
25	F25	26	F25 & F30

Valve shaft type (17)			
O	Star	S	Square
K	Key	E	Square 45°

Valve shaft size (18-19)*			
Code	(mm)	Code	(mm)
17	17	22	22
27	27	36	36
46	46	55	55
75	75		

Actuator connection ISO 5211 (20-21)*			
05	F05	06	F05 & F07
07	F07	09	F07 & F10
10	F10	11	F10 & F12
12	F12	14	F14
15	F14 & F16	16	F16
17	F16 & F25	25	F25
26	F25 & F30		

Valve shaft type (22)			
O	Star	S	Square
K	Key	E	Square 45°

Acuator shaft size (23-24)*	
17	17
19	19
22	22
34	34
42	42
55	55

Options (26-28)	
Blank	None
S	SS 304 Fasteners and worm shaft
A	SS 316 Fasteners and worm shaft
L	Low Temperature (-40° to +80°)
H	High Temperature (-20° to +120°)

D=100mm Extension for handwheel assembly

* Available option per model see table above

YP0009806 CAT-GEARS_ver01_290625

About Habonim

Ball Valves & Actuators for the most demanding, challenging and hazardous applications are our passion and profession for the last 70 years.

We believe in designing, manufacturing and supplying control and shutoff components and solutions that improves the overall safety, integrity and sustainability of the systems they are installed in.

Designed, manufactured and tested according to the highest standards, our products allow us to partner within systems that flow and control varied gases and liquids in diverse markets especially where extreme temperatures and pressures are involved, hazardous materials are used and system performances are critical.

We are leading in cryogenic ball valve-based control solutions, emergency shutoff and specially designed solutions.

Believing that supplying and developing the most effective, safe and reliable products for the global leaders in the LNG and Gas distribution market continually challenges us to improve our capabilities and products.

Best coping with our prestigious customers' most challenging requirements technically, operationally and commercially is our promise fulfilled for decades.

Performing in Demanding Applications

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