

# Quarter-turn & Bevel

Gearboxes  
in AISI 316,  
Ductile Iron,  
Carbon Steel.

Suitable for the following  
Types of Valves:



BUTTERFLY



BALL



PLUG



GLOBE



GATE



**MECCFOR**  
MECHANICAL COMPONENTS SUPPLIES.

# About Meccfor

Meccfor is an expert, dynamic and professional Company operating in the supply of components and final products in addition to construction of parts manufactured according to the customer design.

Meccfor can meet all Customer's requests in terms of flexibility and technical competence.

Meccfor operates in the domestic market with one optimal ratio quality-service, able to satisfy the customer and create a partnership in order to provide a product which can satisfy the customer.

## Qualified Team

Quality of products, along with the experience's of a qualified technical staff, satisfies customer request.

## Production Process

Meccfor can supply a 360° service, from the initial idea to the final product, with the maximum attention in any phase of the production process.

## Fluid Management

Meccfor knows very well the market of fluid's movement and could supply products as valves, pumps, fans, gearbox for valves and fittings.

## Design

Meccfor could supply 2D and 3D drawings and technical consultants, support to the project, make prototypes and final pre-series, mainly for any type of valves and gearbox for valves.

## Gearbox for Valves

- Meccfor is specialized in supply of gearbox quarter turn devices for the operation of ball, butterfly and plug valves.
- 30 years of experience of our technicians assure a correct and reliable supply for a very important component for the correct function of the valve.
- Gearbox could be supplied with cast iron or stainless steel case.
- Assistance in the selection phase with the possibility to realize dedicated 2D and 3D drawings.



ISO 9001 Certification



**Quarter-turn**  
Gearboxes.

**MCF**  
Standard Series.

# Quarter-turn Gearboxes

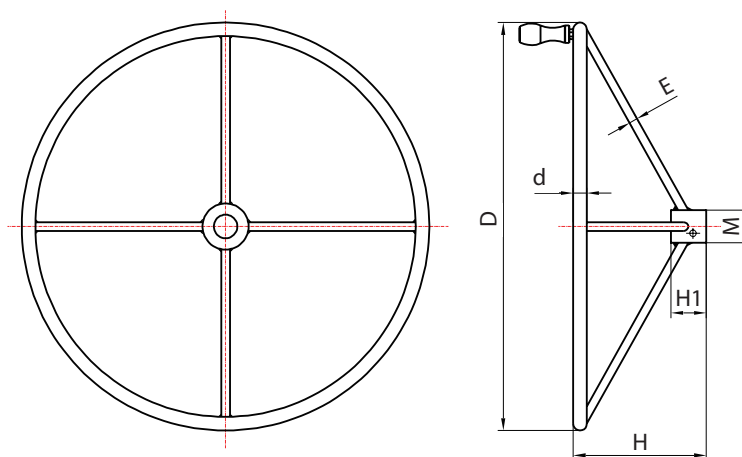
## EX Certification



# Formulas

- MECHANICAL ADVANTAGE = OUTPUT TORQUE / INPUT TORQUE  
= (GEAR RATIO X EFFICIENCY %) / 100
- EFFICIENCY (%) = OUTPUT TORQUE x 100 / INPUT TORQUE X GEAR RATIO
- OUTPUT TORQUE (N.m) = INPUT TORQUE X MECHANICAL ADVANTAGE
- INPUT TORQUE (N.m) = OUTPUT TORQUE / MECHANICAL ADVANTAGE
- NUMBER OF TURNS TO CLOSE = GEAR RATIO / 4
- HANDWHEEL RIM EFFORT (N) = INPUT TORQUE X 2 (N.m)  
/ HANDWHEEL DIAMETER (m)
- HANDWHEEL DIAMETER (m) = INPUT TORQUE X 2 (N.m)  
/ HANDWHEEL RIM EFFORT (N)
- OPERATING TIME (SEC) = (RATIO X 60 / RPM) / 4

## Handwheel Dimensions



D	d	E	H	H1	M
Ø700	28	16	150	50	50
Ø600	25	16	150	50	50
Ø500	25	16	150	45	40
Ø400	20	16	130	40	40
Ø350	20	16	115	40	40
Ø300	20	16	105	35	40
Ø200	16	16	80	35	30

# MCF Series Product Structure

1

The installation of pointer disk on the top of the worm gear can clearly indicate the opening and closing position of the valve

2

The worm gear made of Ductile iron QT500-7 has the characteristics of high strength and wear resistance

3

The mechanical limit screw is set in the open / close direction to accurately limit the valve stroke

4

High precision worm and bearing close fit, significantly improve the transmission efficiency

6

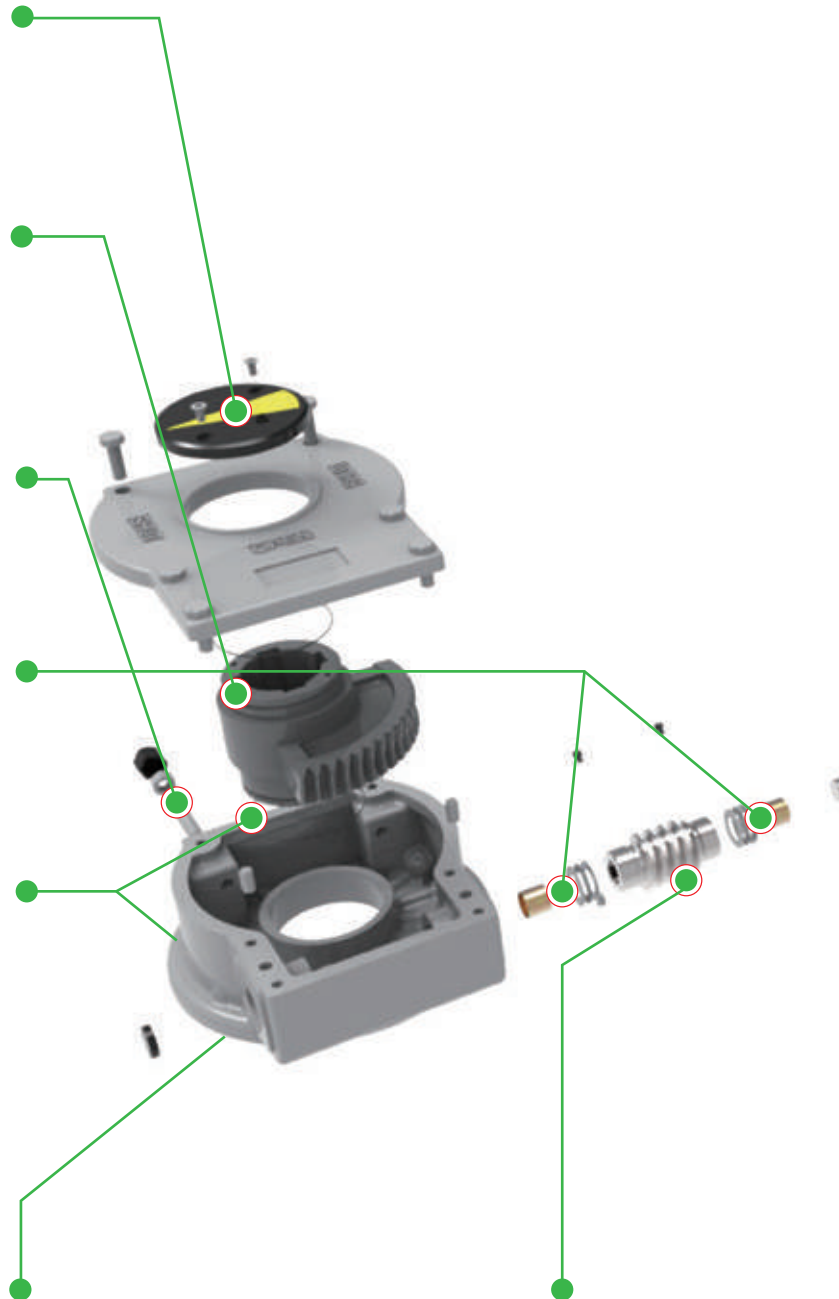
The cover of worm gear box and secondary reduction box are made of ductile iron, and the joint parts are sealed with O-ring or skeleton oil seal, and the waterproof grade reaches IP67.

7

The valve connection is designed according to ISO5211-2017 standard, which is convenient for users to match

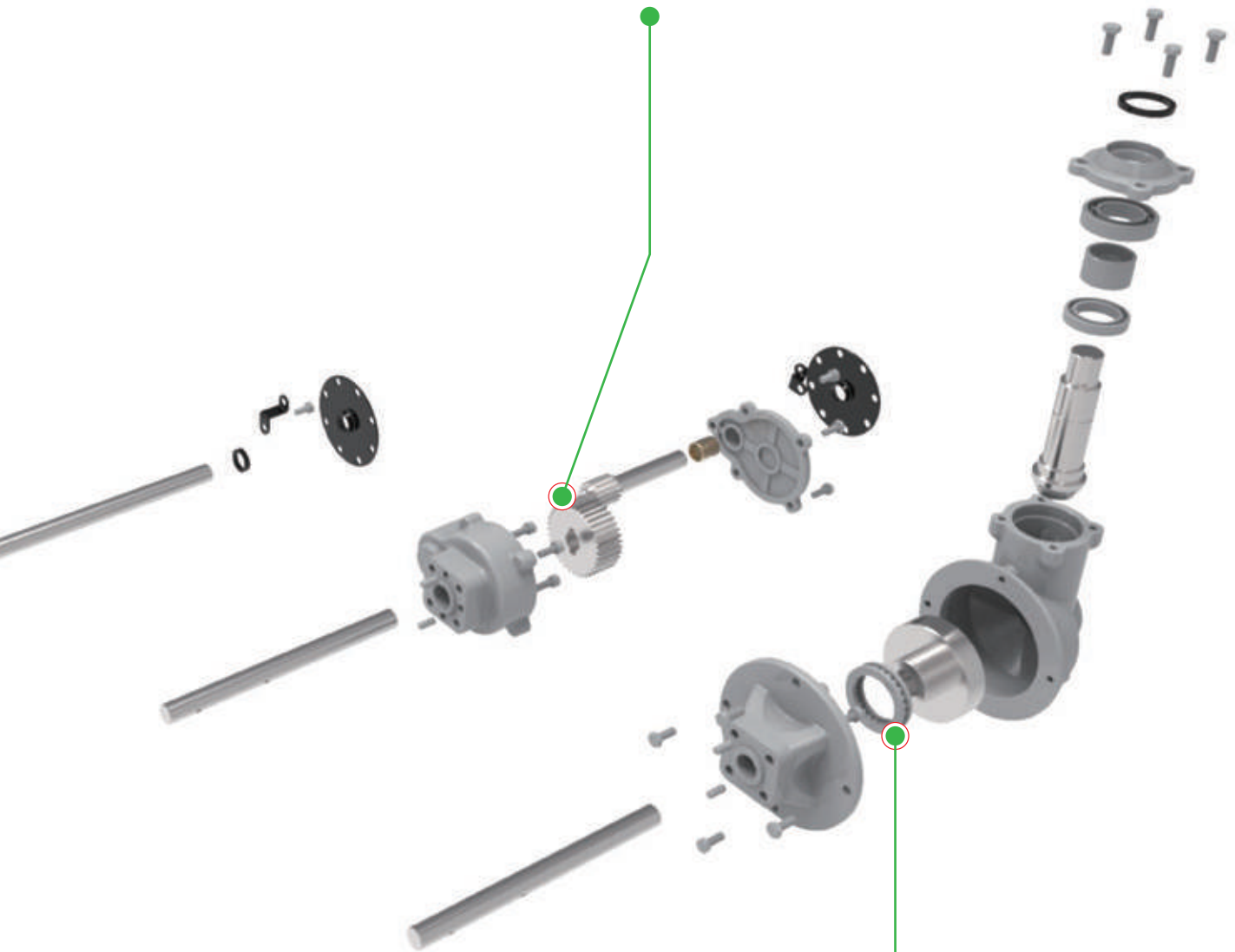
8

The worm is made of 20CrMnTi material, carburized, Quenched and grinded, which is highly efficient, firm and wear-resistant



5

For products with large operating torque, when used for manual operation, it is equipped with efficient spur gear / planetary gear to make the operation labor-saving and light



9

Bevel gears to change the input shaft direction by 90°

# MCF Standard Series Features

## Manual Gear Standard in Ductile Iron

- Housing in Ductile Iron
- Stem in Carbon Steel
- Handwheel in CS
- Locking device in CS
- Position Indicator in Aluminum/plastic
- 4 slots for key at 90°
- Protected by primer
- IP67 minimum

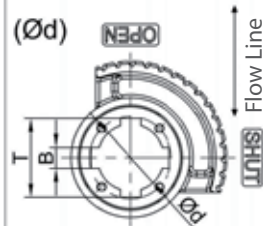
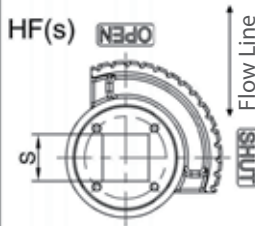
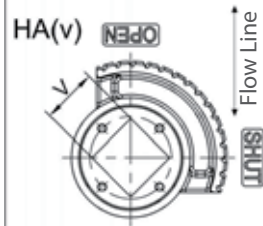
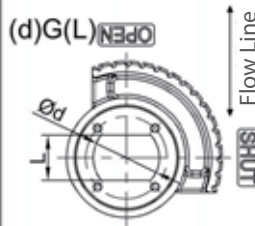
## Manual Gear in Ductile Iron - Marinized

- Housing in Ductile Iron
- Stem in SS316
- Handwheel in SS316
- Locking device SS316
- Position indicator in SS
- Stops in SS316
- Nipple grease SS316
- 4 slots for key at 90°
- IP67 minimum
- Protected by primer

## Manual Gear in SS316

- Housing in SS316
- Stem in SS316
- Handwheel in SS316
- Locking device in SS316
- Position Indicator in SS
- Stops in SS316
- Nipple grease in SS316
- Nameplate in SS316
- 4 slots
- Not painted
- IP67 minimum

**Note:** The Valve/Gearbox in the fully closed position.

Drive by key	Drive by parallel square head
	
Drive by diagonal square head	Drive by flat head
	

### 1. Left Input

CW input-CW output is common standard  
Operating Position "LC".



### 2. Left Input

CW input-CW output is common standard  
Operating Position "LCC".



### 3. Right Input

CW input-CW output is common standard  
Operating Position "RC".



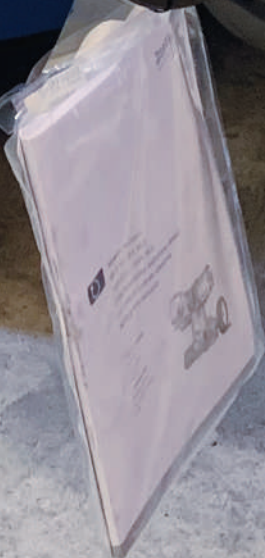
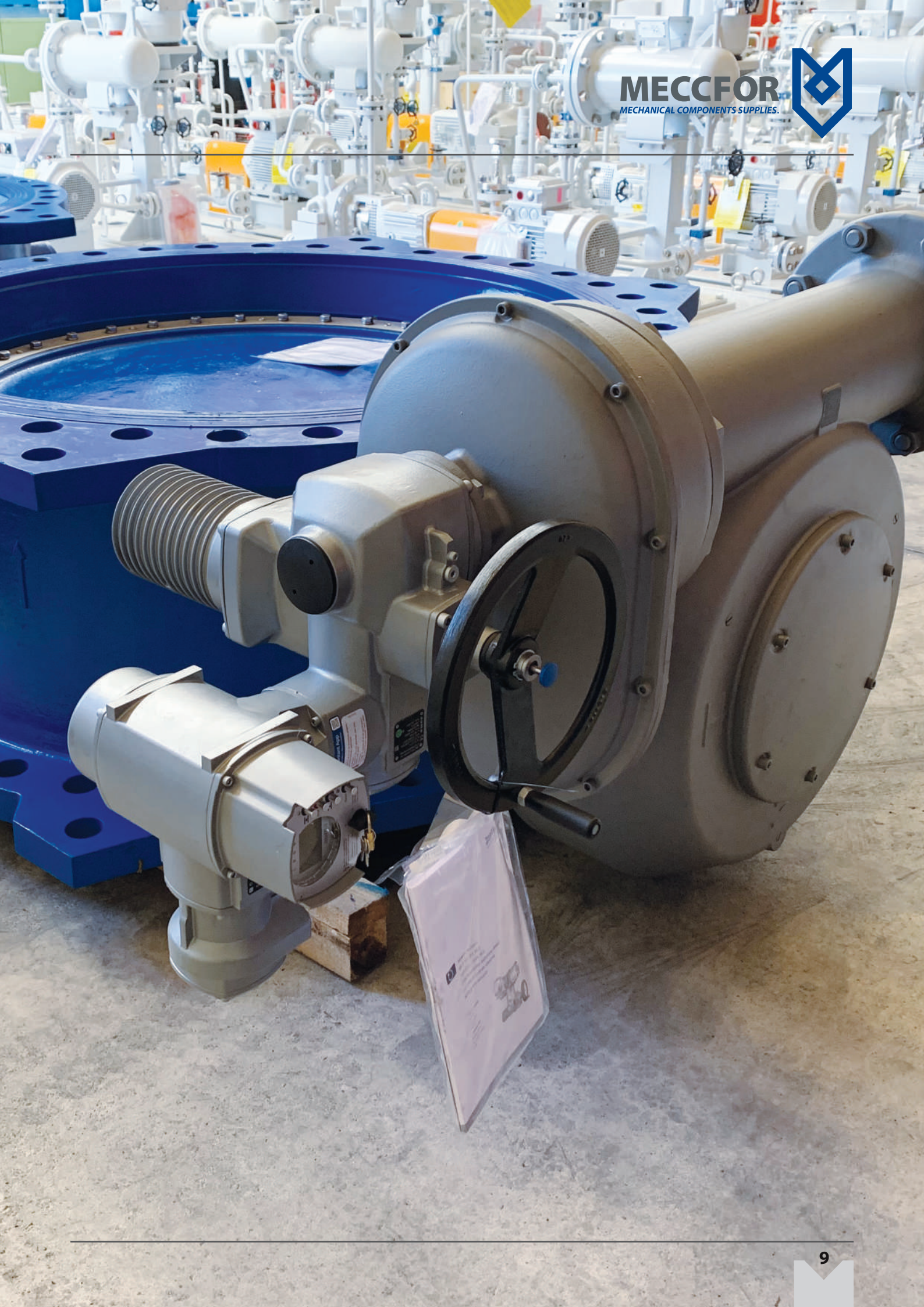
### 4. Right Input

CW input-CW output is common standard  
Operating Position "RCC".



**Note:** Additional features and options on demand.





# MCF Standard Series Parameter Chart

Model	N·m	Ratio	N· m	M.A.	Valve Connection
MCF10	350	29	40	8.70	F05/F07
MCF15	260	27	30	8,7	F05/F07
MCF20	520	37	47	11.10	F07/F10
MCF21	850	38	72	11.78	F10/F12/F14
MCF30	1350	40	109	12.40	F12/F14/F16
MCF55	2000	47	137	14.57	F14/F16
MCF66	2500	55	142	17.60	F14/F16/F20
MCF88	3000	61	159	18.91	F16/F20/F25
MCF99	3500	69	164	21.39	F20/F25
MCF88 -BR3 .2	4000	167	89	45.09	F16/F20/F25
MCF88-S32	4200	167	87	48,3	F14/F16/F20/F25
MCF99 -BR2 .5	4500	153	105	42.85	F20/F25
MCF100-S32	5500	178	107	52	F16/F20/F25
MCF195 -BR3 .5	6500	182	128	50.96	F16/F20/F25
MCF195 -S40	7500	208	124	61	F16/F20/F25
MCF280-S50	8500	280	105	81	F25/F30
MCF300-S50	9500	290	113	84	F25/F30
MCF300 -BR6	11000	348	117	93.96	F25/F30
MCF680 -BR8	16000	519	114	140.13	(F30/F25)
MCF700-BR10	18000	589	109	165	F25/F30/F35
MCF780-DS100	23000	587	135	170	F30/F35
MCF780 -BR11	23500	627	134	175.56	F30/F35
MCF980 -BR16	30000	959	116	258.93	F30/F35/F40
MCF1080 -BR21	36000	1110	116	310.80	(F30/F35)/F40
MCF1080-DS150	40000	1005	112	321	F30/F35/F40
MCF1180-DS200	46000	1167	115	448	F35/F40/F48
MCF1180 -PR29	55000	1658	123	447.66	F35/F40/F48
MCF1280-DS300	58000	1618	137	468	F35/F40/F48
MCF1190 -PR35	70000	2228	116	601.56	F40/F48
MCF1380-DS80	75000	2237	116	647	F40/F48
MCF1280 -PR53	90000	2769	120	747.63	F40/F48
MCF1380 -PR53	120000	3621	127	941.46	F48/F60
MCF1380 -PR54	150000	3655	152	986.85	F48/F60
MCF1480 -BR126	300000	7317	158	1902.42	F60/F48
MCF1580 -BR146	600000	9533	242	2478.58	F60/F80

Max. Bore d (mm)	Parallel square s (mm)	Diagonal square v (mm)	Handwheel diameter	RIM Effort(N)	Max. stem height (mm)	weight
20	13	18	200	402	57	2.3
20	19	18	200	300	55	2
28	20	26	200	468	57	3.6
36	26	34	300	481	63	6
45	33	43	350	622	85	12.5
50	36	51	400	686	91	13
55	43	54	500	568	89	14.5
65	47	59	500	635	105	23.7
70	55	66	500	655	106	28.5
65	47	59	500	355	105	27.4
65	47	59	500	347	105	28
70	55	66	500	420	106	35
72	56	67	500	423	110	36
80	54	68	600	425	117	37
80	54	68	700	350	115	38
90	63	75	600	349	136	57
95	70	82	600	376	145	61
95	70	82	600	390	145	64
110	88	103	600	381	148	90
120	98	111	600	363	159	92
125	100	113	700	386	157	93
130	98	117	600	446	175	126
140	101	119	700	331	178	169
145	115	137	700	331	180	220
150	118	140	700	356	180	235
180	125	152	700	293	225	257
180	125	152	700	351	205	276
160	120	143	800	309	225	290
200	147	173	700	332	210	365
190	133	161	800	290	235	370
210	163	186	700	344	225	430
260	217	234	700	364	257	530
260	217	234	700	434	257	750
310	219	239	800	394	312	1390
380	268	290	800	605	328	2500

# MCF Standard Series

## MCF Part-turn Gearbox Series

The Gears Series 'MCF' quarter-turn gear operators are rugged, industrial grade products manufactured with ductile iron.

## Applications

MCF series operator are quarter-turn devices intended for the operation of ball, plug and butterfly valves. The gearboxes are suitable for manual application.

## Features

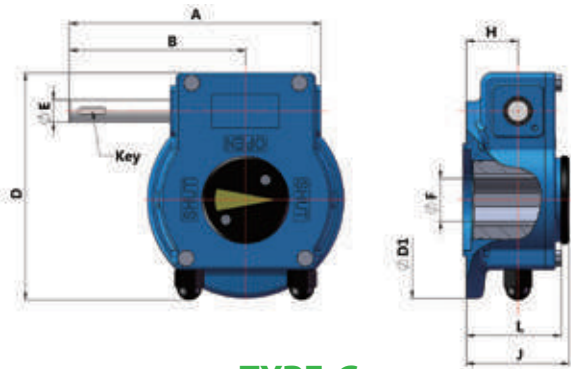
- Padlockable handwheels
- Protected steel input shaft (stainless steel optional)
- 25 models up to 600000Nm in output.
- Standard Enclosure: IP67
- Temperature: -20°C to +80°C
- Stroke: 0-90° ( $\pm 5^\circ$  adjustable)

## Option

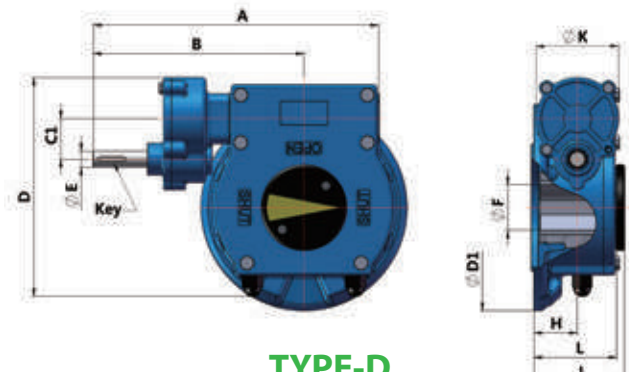
Available on demand:

- Stainless Steel AISI 316
- Stainless Steel AISI 304
- Carbon Steel

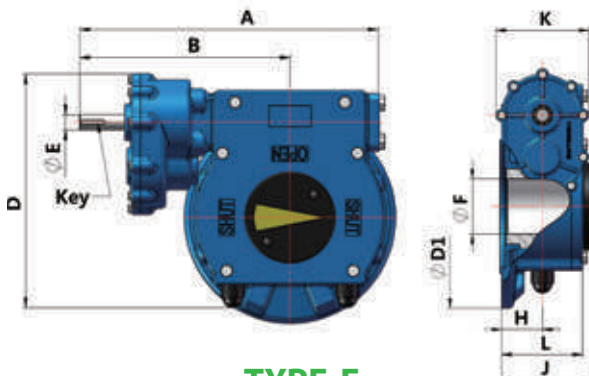
**TYPE-A**



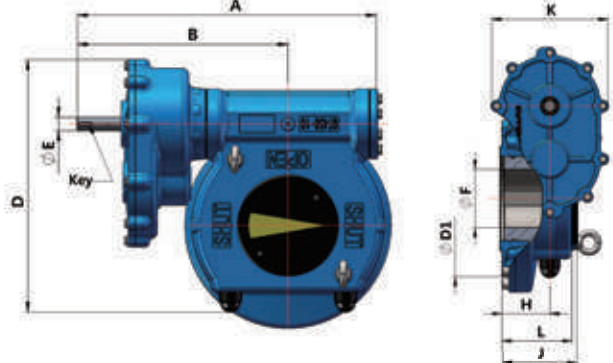
**TYPE-B**



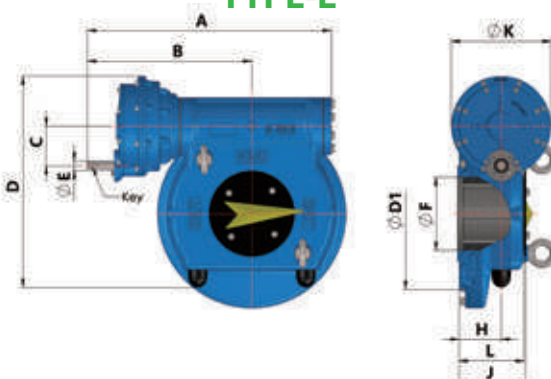
**TYPE-C**



**TYPE-D**



**TYPE-E**

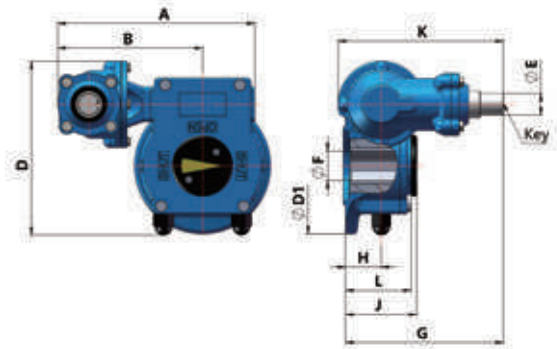


Type	Model	Valve Connection	D1	L <sub>max</sub>	A	B	C1	D	K	H	J	E	key	Handwheel
A	MCF10	F05	65	57	167	125	-	122	-	29	64	15	6*20	200
		F07	90	57	167	125	-	122	-	29	64	15	6*20	200
	MCF20	F07	90	57	185	134	-	140	-	29	64	15	6*20	200
		F10	125	57	185	134	-	140	-	29	64	15	6*20	200
	MCF21	F10	125	68	200	142	-	162	-	36	74	15	6*20	300
		F12	150	63	200	142	-	162	-	31	71	15	6*20	300
		F14	175	73	216	150	-	162	-	41	79	15	6*20	300
	MCF30	F12	150	85	219	152	-	202	-	46	93	20	6*30	350
		F14	175	85	219	152	-	202	-	46	93	20	6*30	350
		F16	210	85	235	160	-	202	-	46	93	20	6*30	350
	MCF55	F14	175	91	241	163	-	223	-	50	99	20	6*30	400
		F16	210	91	241	163	-	223	-	50	99	20	6*30	400
	MCF66	F14	175	89	248	170	-	237	-	51	97	20	6*30	500
		F16	210	89	248	170	-	237	-	51	97	20	6*30	500
		F20	260	89	248	170	-	237	-	51	97	20	6*30	500
	MCF88	F16	210	105	290	192	-	267	-	55	115	20	6*30	500
		F20	260	108	290	192	-	267	-	58	118	20	6*30	500
		F25	300	105	290	192	-	267	-	55	115	20	6*30	500
	MCF99	F20	260	106	300	202	-	290	-	55	113	20	6*30	500
		F25	300	106	300	202	-	290	-	55	113	20	6*30	500
B	MCF88-BR3.2	F16	210	105	367	269	51	276	104	55	115	20	6*25	500
		F20	260	108	367	269	51	276	104	58	118	20	6*25	500
		F25	300	105	367	269	51	276	104	55	115	20	6*25	500
	MCF99-BR2.5/3.2	F20	260	106	367	269	51	290	104	55	113	20	6*25	500
		F25	300	106	367	269	51	290	104	55	113	20	6*25	500
	MCF195-BR3.5	F16	210	117	387	277	72	326	142	62	125	20	6*25	600
		F20	260	117	387	277	72	326	142	62	125	20	6*25	600
		F25	300	117	387	277	72	326	142	62	125	20	6*25	600
	MCF295-BR5	F25	300	141	455	313	90	385	212	70	153	25	8*25	600
		F30	350	141	455	313	90	385	212	70	153	25	8*25	600
	MCF300-BR6	F25	300	145	500	351	-	385	160	70	153	25	8*25	600
		F30	350	145	500	351	-	385	160	70	153	25	8*25	600
MCF680-BR8	F30(F25)	350	148	563	383	-	424	160	71	156	25	8*25	600	
MCF780-BR11	F30	350	175	628	428	-	465	210	96	193	30	8*30	600	
	F35	415	175	628	428	-	465	210	96	193	30	8*30	600	
MCF980-BR16	F30	350	178	661	454	-	546	268	107	185	30	8*30	700	
	F35	415	184	661	454	-	546	268	107	191	30	8*30	700	
	F40	560	188	661	454	-	546	268	107	196	30	8*30	700	
D	MCF1080-BR21	F35(F30)	415	180	690	477	-	570	290	119	190	30	8*30	700
		F40	560	213	690	477	-	570	290	152	223	30	8*30	700
E	MCF1180-PR29	F35	415	205	768	518	-	650	314	133	221	30	8*30	700
		F40	475	205	768	518	-	650	314	133	221	30	8*30	700
		F48	560	205	768	518	-	650	314	133	211	30	8*30	700
MCF1190-PR35	F40	475	210	800	536	-	758	345	138	220	30	8*30	700	
	F48	560	210	800	536	-	758	345	138	220	30	8*30	700	
MCF1280-PR53	F40	475	225	860	575	-	780	407	138	231	30	8*30	700	
	F48	560	225	860	575	-	780	407	138	231	30	8*30	700	
MCF1380-PR53	F48	560	257	945	615	-	995	407	158	265	40	12*50	700	
	F60	686	257	945	615	-	995	407	158	265	40	12*50	700	
MCF1380-PR54	F48	560	257	1055	725	-	995	604	158	265	40	12*50	700	
	F60	686	257	1055	725	-	995	604	158	265	40	12*50	700	
MCF1480-BR126	F60	686	321	1450	970	240	1150	547	210	330	40	12*50	800	
	F80	900	321	1450	970	240	1150	547	210	330	40	12*50	800	
MCF1580-BR146	F60	686	416	1728	1148	360	1500	770	266	430	60	18*50	800	
	F80	900	416	1728	1148	360	1500	770	266	430	60	18*50	800	

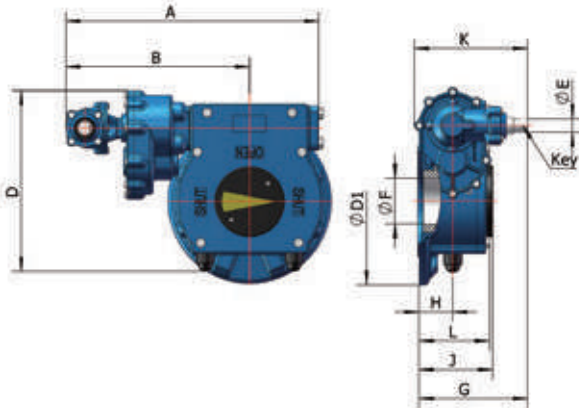
# MCF-G Series

- Buried Application
- Handwheel, T-bar operation
- are available, customized
- high
- The torque is the same as the MCF-G series up to 60000Nm for larger torque size, please consult Weber
- Gearbox IP67 Seal
- Temperature: -20°C to +80°C
- Stroke: 0-90° (±5° adjust)

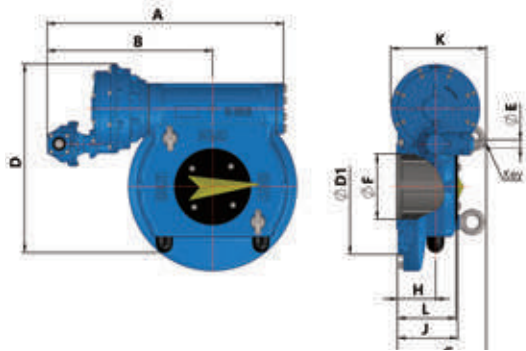
## TYPE-A



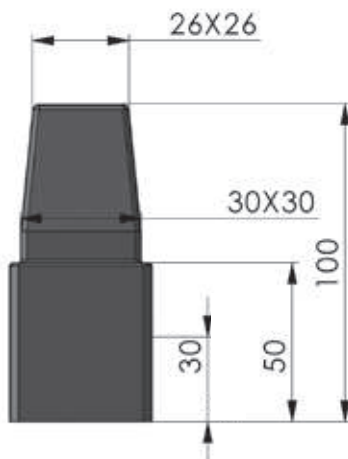
## TYPE-B



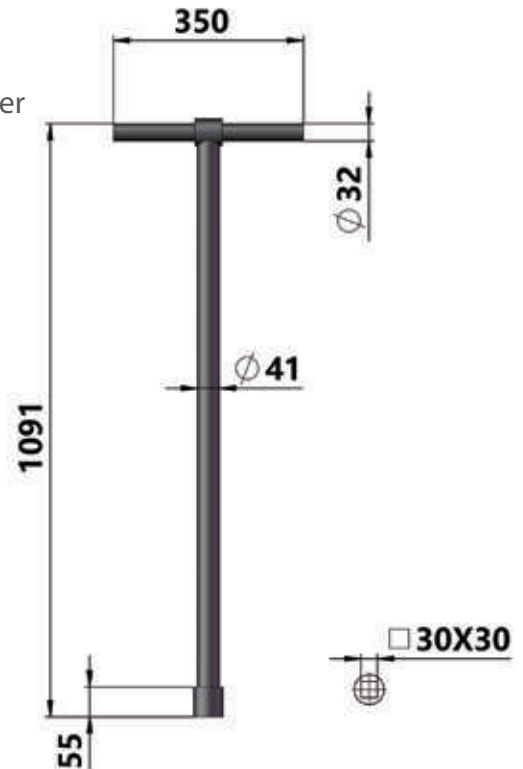
## TYPE-C



Pipe network connection  
square head



T-shaped lever



Type	Technical data						Dimensions												
	Model	ratio	Bore Max	Output	Input	M.A. ±10%	Valve Connection	D1	L max	A	B	D	E	H	J	G	K	key	Handwheel
A	MCF-G20-SR0.5	46:1	28	520	50	10	F07	90	57	185	134	167	20	29	64	160	180	6*20	200
							F10	125	57	185	134	167	20	29	64	160	180	6*20	200
	MCF-G21-SR0.5	47:1	36	850	75	11	F10	125	68	200	142	186	20	36	74	167	180	6*20	300
							F14	175	73	216	150	186	20	41	79	172	180	6*20	300
	MCF-G30-SR1	62:1	45	1350	90	15	F12	150	85	219	152	223	28	46	93	203	212	8*30	350
							F14	175	85	219	152	223	28	46	93	203	212	8*30	350
	MCF-G55-SR1	72:1	50	2000	115	17	F14	175	91	241	163	243	28	50	99	206	212	8*30	400
							F16	210	91	241	163	243	28	50	99	206	212	8*30	400
	MCF-G66-SR1	85:1	55	2500	125	20	F14	175	89	248	170	250	28	51	97	208	208	8*30	500
							F16	210	89	248	170	250	28	51	97	208	208	8*30	500
	MCF-G88-SR2	128:1	65	4000	150	27	F16	210	105	367	269	303	28	55	115	234	258	8*30	500
							F20	260	108	367	269	303	28	58	118	234	258	8*30	500
F25							300	105	367	269	303	28	55	115	234	258	8*30	500	
MCF-G99-SR2	143:1	70	5000	146	34	F20	260	106	377	279	325	28	95	113	234	258	8*30	500	
						F25	300	106	377	279	325	28	95	113	234	258	8*30	500	
MCF-G195-SR2	128:1	80	6500	241	27	F16	210	117	391	281	333	28	62	125	241	258	8*30	600	
						F20	260	117	391	281	333	28	62	125	241	258	8*30	600	
						F25	300	117	391	281	333	28	62	125	241	258	8*30	600	
MCF-G295-SR4	263:1	90	8500	135	63	F25	300	141	455	313	449	28	70	153	280	324	8*30	600	
						F30	350	141	455	313	449	28	70	153	280	324	8*30	600	
MCF-G300-SR4	232:1	95	9500	190	50	F25	300	145	500	351	420	28	70	153	280	324	8*30	600	
						F30	350	145	500	351	420	28	70	153	280	324	8*30	600	
B	MCF-G300-BR6-SR1	535:1	95	11000	79	139	F25	300	145	500	351	385	28	70	153	249	260	8*30	600
							F30	350	145	500	351	385	28	70	153	249	260	8*30	600
	MCF-G680-BR6-SR1	572:1	110	16000	99	162	F25	300	148	563	383	424	28	71	156	250	260	8*30	600
							F30	350	148	563	383	424	28	71	156	250	260	8*30	600
	MCF-G780-BR11-SR2	1093:1	130	23500	83	283	F30	350	175	666	475	474	28	96	193	275	284	8*30	600
							F35	415	175	666	475	474	28	96	193	275	284	8*30	600
	MCF-G980-BR16-SR2	1328:1	140	30000	81	370	F30	350	178	709	502	552	28	107	185	286	313	8*30	600
							F35	415	184	709	502	552	28	107	191	286	313	8*30	600
							F40	475	188	709	502	552	28	107	196	286	313	8*30	600
	MCF-G1080-BR21-SR2	1550:1	145	36000	86	419	F35(F30)	415	180	715	512	572	28	119	190	298	323	8*30	600
							F40	475	213	715	512	572	28	119	223	298	323	8*30	600
	MCF-G1180-PR29-SR2	2463:1	180	55000	86	640	F35	415	205	817	567	663	28	133	221	312	336	8*30	600
F40							475	205	817	567	663	28	133	221	312	336	8*30	600	
F48							560	205	817	567	663	28	133	211	312	336	8*30	600	
MCF-G1190-PR35-SR2	2692:1	200	70000	96	729	F40	475	210	837	585	758	28	138	220	317	351	8*30	600	
						F48	560	210	837	585	758	28	138	220	317	351	8*30	600	
MCF-G1280-PR53-SR2	4010:1	210	90000	80	1125	F40	475	225	909	624	787	28	138	231	317	382	8*30	600	
						F48	560	225	909	624	787	28	138	231	317	382	8*30	600	
MCF-G1380-PR53-SR2	5244:1	260	120000	85	1411	F48	560	257	816	626	995	28	158	265	337	481	8*30	600	
						F60	686	257	816	626	995	28	158	265	337	481	8*30	600	
MCF-G1380-PR54-SR2	5284:1	260	150000	105	1428	F48	560	257	1078	626	995	28	158	265	337	481	8*30	600	
						F60	686	257	1078	626	995	28	158	265	337	481	8*30	600	
MCF-G1480-BR126-SR2	10101:1	310	300000	110	2727	F48	560	321	1530	1020	1150	28	210	330	389	453	8*30	600	
						F60	686	321	1530	1020	1150	28	210	330	389	453	8*30	600	
MCF-G1580-BR146-SR2	18518:1	380	600000	120	5000	F60	686	416	1777	1200	1500	28	266	430	445	564	8*30	600	
						F80	900	416	1777	1200	1500	28	266	430	445	564	8*30	600	

# MCF-QG Series Product Structure

1

All series are equipped with steel indicator, strong and beautiful

2

Skeleton oil seal is more reliable and durable than O-ring

3

The worm gear made of ductile iron QT500-7 has the characteristics of high strength and wear resistance

4

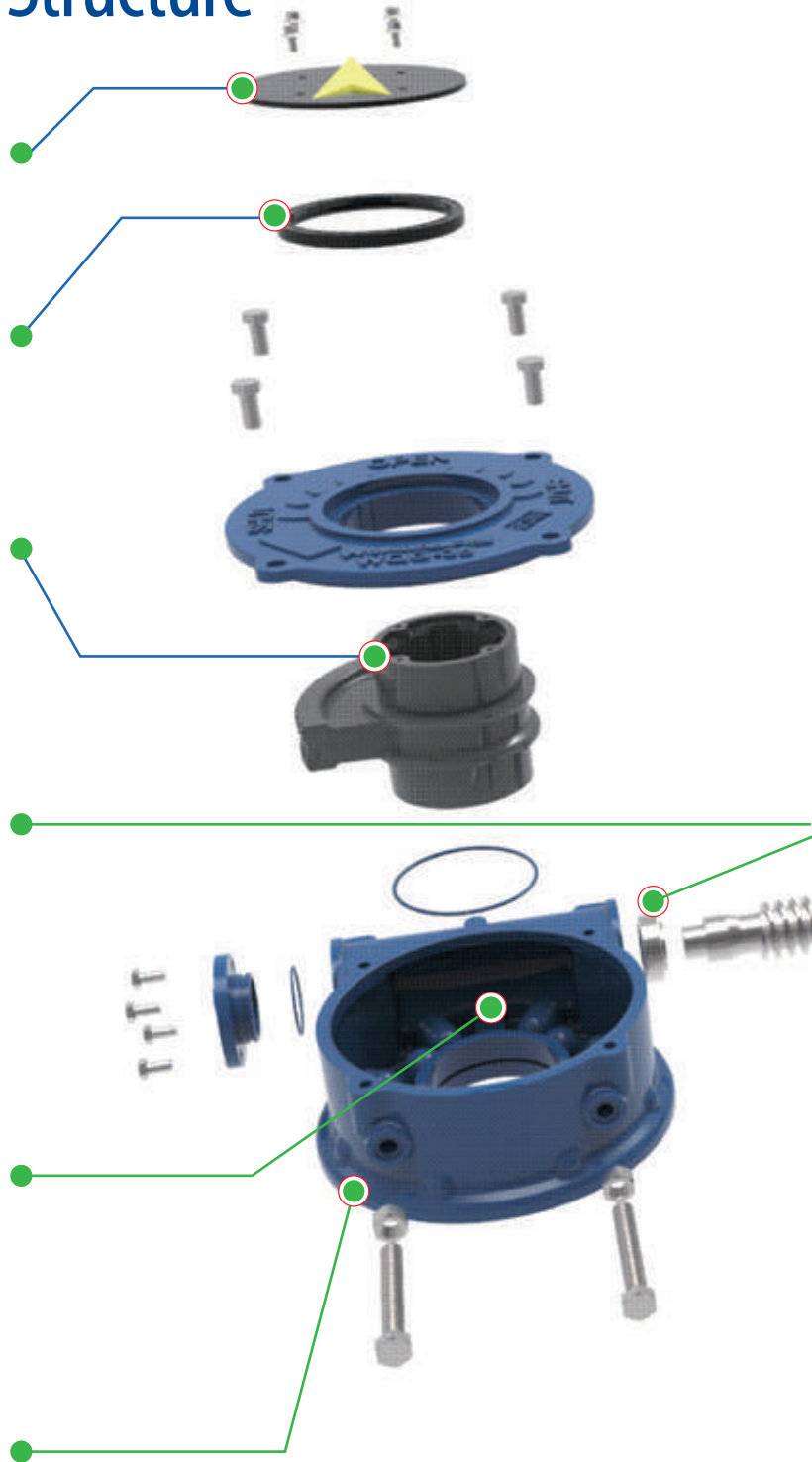
High precision grinding worm and tapered roller bearing are closely matched, which can significantly improve the transmission efficiency

6

The cover of the worm gear box and the secondary reduction box is made of cast steel, and each joint part is sealed with O-ring or skeleton oil seal, and sealed to IP67

7

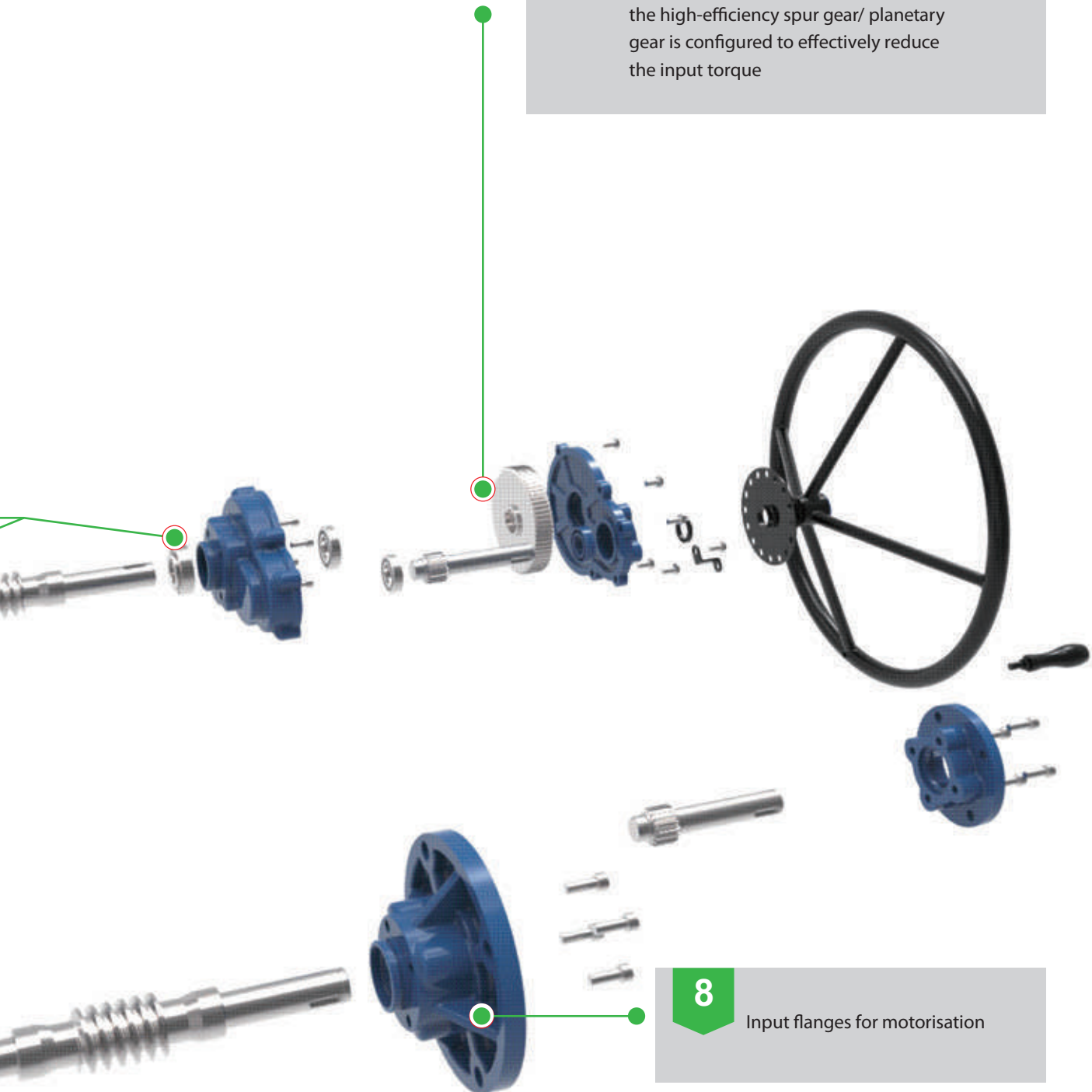
The valve connection is designed according to ISO5211-2017 standard, which is convenient for users to match





5

For the products with large operating torque the high-efficiency spur gear/ planetary gear is configured to effectively reduce the input torque



8

Input flanges for motorisation

# MCF-QG Series

## WQG Part-turn Gearbox Series

MCF-QG series gear box, cast steel box, solid structure, meet the requirements of industrial grade.

The products use high performance tapered roller bearings, which are suitable for chemical industry, power plants, water plants, heating equipment and most industrial fields.

## Applications

MCF-QG series gearboxes provide a variety of connection flange options, suitable for ball valves, butterfly valves, plug valves.

## Features

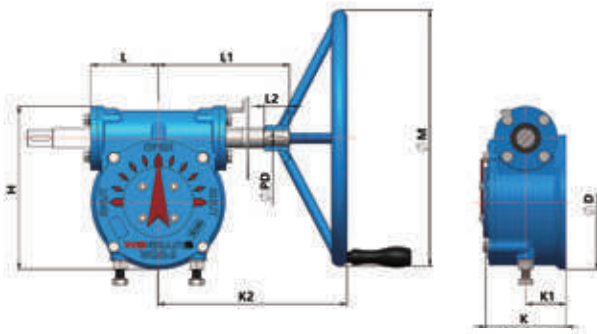
- Totally enclosed gear transmission
- Worm supported by round chain roller bearings
- 16 models up to 120000Nm.
- Standard Enclosure: IP67
- Temperature: -20°C to +80°C
- Stroke: 0-90° ( $\pm 5^\circ$  adjustable)

## Option

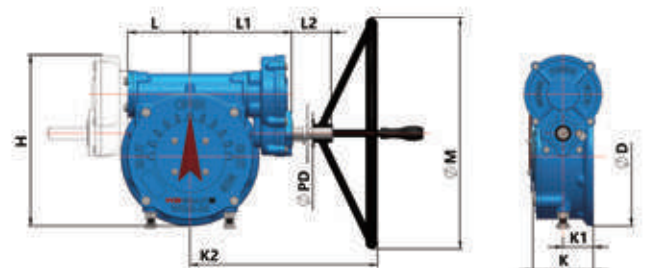
Available on demand:

- Stainless Steel AISI 316
- Stainless Steel AISI 304
- Carbon Steel

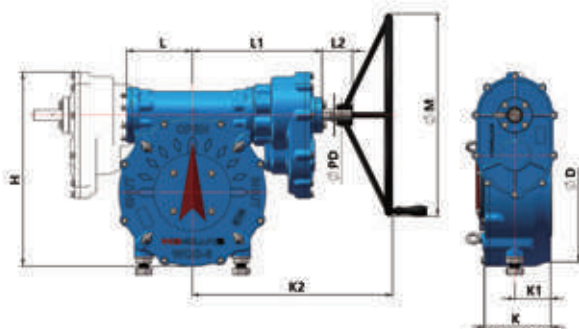
**TYPE-A**



**TYPE-B**



**TYPE-C**



Type	Technical parameter						Dimensions											
	Model	ratio	BoreMax	Output	Input	M.A. ±10%	Valve Connection	D	H	K max	K1	K2	L	L1	L2	PD	Key	Handwheel
				Nm														
A	MCF-QG-00	38:1	40	1500	127	12	F12(F10)	150	190	95	46	250	86	170	35	20	6	350
	MCF-QG-1	44:1	50	2000	146	14	F14(F12)	175	212	106	55	270	96	180	35	20	6	400
	MCF-QG-2	52:1	60	2600	156	16	F16(F14)	210	255	125	63	306	107	206	40	25	8	500
B	MCF-QG-2S	158:1	60	3500	76	46	F16(F14)	210	286	125	63	361	107	191	80	25	8	400
	MCF-QG-3	164:1	75	4500	100	46	F20(F16)	260	331	122	59	386	122	206	80	25	8	500
	MCF-QG-3S	224:1	80	6500	100	65	F25(F20-F16)	300	369	131	66	400	136	220	80	25	8	500
C	MCF-QG-4	340:1	100	10500	106	99	F25(F20-F16)	300	401	153	72	469	150	284	80	25	8	600
	MCF-QG-5	420:1	115	15000	123	122	F30(F25)	350	450	160	77	491	172	306	80	25	8	600
	MCF-QG-5S	855:1	125	23500	123	250	F30(F25)	350	515	163	79	548	182	356	87	30	8	600
							F35	415										
	MCF-QG-6	892:1	140	32000	128	260	F35(F30)	415	576	204	107	576	196	387	87	30	8	600
							F40	475										
	MCF-QG-6S	1064:1	140	40000	133	299	F35(F30)	415	576	204	107	576	196	387	87	30	8	600
							F40	475										
	MCF-QG-7	1360:1	180	51000	134	383	F40(F35)	560	710	224	122	632	233	445	87	30	10	700
	MCF-QG-7S	1765:1	190	64000	134	574	F40	560	788	235	122	705	248	491	90	30	10	700
MCF-QG-8	2128:1	210	81000	140	574	F48(F40)	686	855	257	140	734	290	547	87	30	10	800	
MCF-QG-8S	2634:1	210	100000	140	714	F48(F40)	686	855	257	140	734	290	547	87	30	10	800	
MCF-QG-9	2941:1	250	120000	151	764	F48	560	925	268	135	766	332	579	87	30	10	800	
						F60	686											

# MCF-QG-D Series

MCF-QG-D series gear box, used with electric actuator, cast steel box, solid structure, meet the requirements of industrial grade. The products use high performance tapered roller bearings, which are suitable for chemical industry, power plants, water plants, heating equipment and most industrial fields.



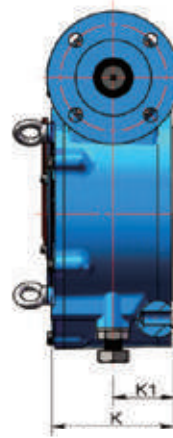
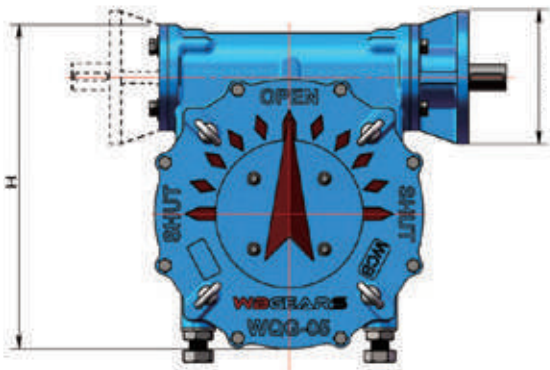
## Applications

MCF-QG-D series gearboxes provide a variety of connection flange options, suitable for Ball valve, butterfly valve, plug valve

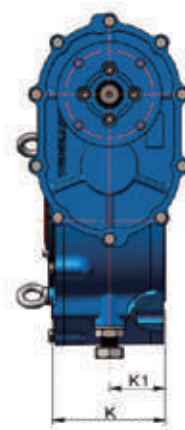
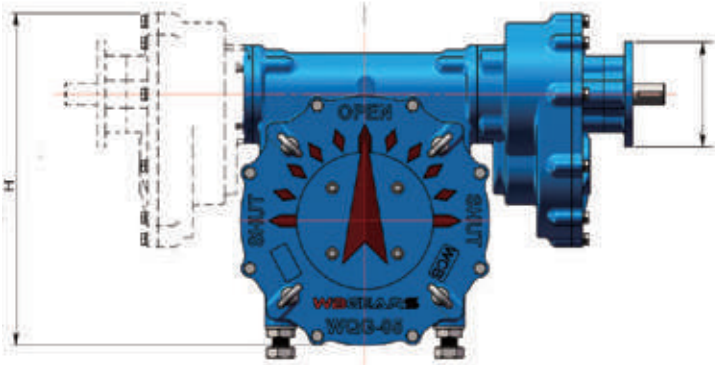
## Features

- With different spur gear reducers to achieve different Ratio
- Input flanges are available
- 16 models up to 120000Nm.
- Standard Enclosure: IP67
- Temperature: -20°C to +80°C
- Stroke: 0-90° (±5° adjustable)

**TYPE-A**



**TYPE-B**

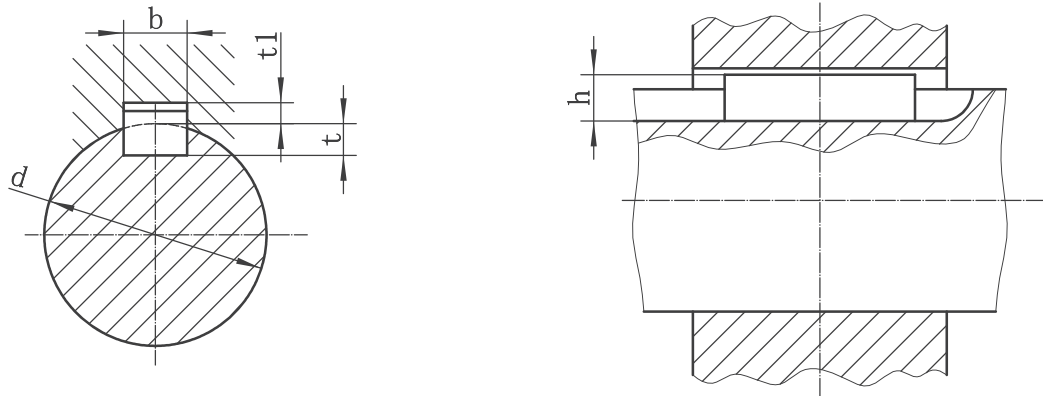


Type	Model	Valve Connection	Max. Stem Value	Ratio	Motorised Selection				
					Input (N.m)	Output (N.m)	M.A. (±15%)	JB2920	ISO5210
A	MCF-QG-D - 00D	F12 [F10]	40	38:1	150	1500	10	Z10	F10
B	MCF-QG-D - 00SD			76:1	68	1500	22	Z10	F10
				99:1	48	1350	28	Z10	F10
A	MCF-QG-D - 1D	F14 [F12]	50	44:1	150	2000	13	Z15	F14
B	MCF-QG-D - 1SD			88:1	81	2000	25	Z10	F10
				114:1	68	2000	29	Z10	F10
A	MCF-QG-D - 2D	F16 [F14]	60	52:1	200	3000	15	Z20	F14
B	MCF-QG-D - 2SD			106:1	100	3000	30	Z10	F10
				125:1	100	3500	35	Z10	F10
				158:1	81	3500	43	Z10	F10
				208:1	60	3500	58	Z10	F10
				260:1	48	3500	73	Z10	F10
				312:1	40	3500	88	Z10	F10
A	MCF-QG-D - 3D	F20 [F16]	75	54:1	300	4500	15	Z30	F14
B	MCF-QG-D - 3SD			110:1	150	4500	30	Z15	F14
				130:1	125	4500	36	Z15	F14
				164:1	100	4500	45	Z10	F10
				216:1	81	4500	56	Z10	F10
				234:1	68	4500	66	Z10	F10
				270:1	60	4500	75	Z10	F10
				324:1	48	4500	94	Z10	F10
A	MCF-QG-D - 3SD	F25 [F20 - F16]	80	56:1	450	7000	16	Z45	F14 / F16
B	MCF-QG-D - 35SD			114:1	200	6500	33	Z20	F14
				135:1	176	6500	37	Z20	F14
				160:1	150	6500	43	Z15	F14
				170:1	150	7000	47	Z15	F14
				208:1	108	6500	60	Z10	F10
				224:1	100	6500	65	Z10	F10
				243:1	100	6500	65	Z10	F10
				280:1	81	6500	80	Z10	F10
				336:1	68	6500	96	Z10	F10
A	MCF-QG-D - 4D	F25 [F20 - F16]	100	56:1	600	10000	17	Z60	F16
C	MCF-QG-D - 4SD			126:1	300	10500	35	Z30	F14
				167:1	200	9500	48	Z20	F14
				179:1	200	10500	53	Z20	F14
				196:1	150	8500	57	Z15	F14
				243:1	150	10500	70	Z15	F14
				340:1	108	10500	97	Z10	F10
				392:1	100	10500	105	Z10	F10
				429:1	81	10500	130	Z10	F10
				672:1	48	9000	188	Z10	F10
A	MCF-QG-D - 5D	F30 [F25]	115	60:1	900	15000	17	Z90	F25
C	MCF-QG-D - 5SD			118:1	450	15000	33	Z45	F14
				145:1	400	15000	38	Z30	F14
				179:1	300	15000	50	Z30	F14
				223:1	250	15000	60	Z30	F14



Type	Model	Valve Connection	Max.Bore	Ratio	Motorised selection								
					Input(N.m)	Output (N.m)	M.A.(±10%)	JB2920	ISO5210				
C	MCF-QG-D - 55D	F30[F25]	115	242:1	230	15000	65	Z30	F14				
				260:1	200	15000	75	Z20	F14				
				302:1	180	15000	83	Z20	F14				
				420:1	130	15000	115	Z15	F14				
				495:1	100	14000	140	Z10	F10				
A	MCF-QG-D - 55D	F30[F25]/F35	125	57:1	1200	20500	17	Z120	F25				
C	MCF-QG-D - 55SD			148:1	600	23500	39	Z60	F16				
				170:1	450	21500	48	Z45	F16				
				197:1	450	23500	52	Z45	F16				
				229:1	300	20000	67	Z30	F14				
				247:1	300	21000	70	Z30	F14				
				285:1	300	23500	78	Z30	F14				
				310:1	250	22000	88	Z30	F14				
				345:1	200	20000	100	Z20	F14				
				392:1	200	22000	110	Z20	F14				
				430:1	200	23500	118	Z20	F14				
				475:1	150	20000	133	Z15	F14				
				556:1	150	23500	157	Z15	F14				
				855:1	100	23500	235	Z10	F10				
				A	MCF-QG-D - 6D	F35[F30]/F40	140	64:1	1800	32000	18	Z180	F30
C	MCF-QG-D - 6SD	128:1	900	32000	36			Z90	F25				
		163:1	700	32000	46			Z90	F25				
		224:1	500	32000	64			Z60	F16				
		256:1	450	32000	71			Z45	F16				
		320:1	300	27000	90			Z30	F14				
		399:1	300	32000	107			Z30	F14				
		576:1	200	32000	160			Z20	F14				
		661:1	150	28000	187			Z15	F14				
		703:1	150	30000	200			Z15	F14				
		778:1	150	32000	213			Z15	F14				
		892:1	125	32000	256			Z15	F14				
		1021:1	108	32000	296			Z15	F10				
		A	MCF-QG-D - 65D	F35[F30]/F40	140			54:1	2500	40000	16	Z250	F30
		C	MCF-QG-D - 65SD					122:1	1200	40000	33	Z120	F25
166:1	900					40000	44	Z90	F25				
216:1	600					36000	60	Z60	F25				
248:1	600					40000	67	Z60	F16				
337:1	450					40000	89	Z45	F16				
354:1	400					40000	100	Z45	F16				
486:1	300					40000	133	Z30	F14				
558:1	244					38000	156	Z30	F14				
656:1	203					37000	182	Z20	F14				
753:1	176					37000	210	Z20	F14				
861:1	150					36000	240	Z20	F14				
A	MCF-QG-D - 7D					F40[F35]	180	68:1	2500	51000	20	Z250	F30
C	MCF-QG-D - 7SD							105:1	1800	51000	28	Z180	F25
								154:1	1200	51000	43	Z120	F25

Type	Model	Valve Connection	Max.Bore	Ratio	Motorised selection						
					Input (N.m)	Output (N.m)	M.A. (±10%)	JB2920	ISO5210		
C	MCF-QG-D - 75D	F40[F35]	180	154:1	1200	51000	43	Z120	F25		
				209:1	900	51000	57	Z90	F25		
				223:1	600	38000	63	Z90	F16		
				272:1	600	46000	77	Z60	F16		
				313:1	600	51000	85	Z60	F16		
				354:1	450	45000	100	Z45	F16		
				415:1	450	51000	113	Z45	F16		
				578:1	300	48000	160	Z30	F14		
				605:1	300	51000	170	Z30	F14		
				735:1	250	51000	204	Z30	F14		
				911:1	200	51000	255	Z20	F14		
				1360:1	108	41000	380	Z10	F10		
				1541:1	108	47000	435	Z10	F10		
A	MCF-QG-D - 75D	F40	190	65:1	3500	64000	18	Z350	F30		
				129:1	1800	64000	36	Z180	F25		
193:1	1200			64000	53	Z120	F25				
259:1	900			64000	71	Z90	F25				
338:1	600			57000	95	Z60	F16				
380:1	600			64000	107	Z60	F16				
453:1	450			57000	127	Z45	F16				
515:1	450			64000	142	Z45	F16				
788:1	300			64000	213	Z30	F14				
1181:1	200			64000	320	Z20	F14				
1340:1	176			64000	364	Z15	F14				
1570:1	150			64000	427	Z15	F14				
1765:1	130			64000	492	Z15	F14				
A	MCF-QG-D - 8D	F48[F40]	210	62:1	3500	65000	19	Z350	F30		
				240:1	1200	81000	68	Z120	F25		
322:1	900			81000	90	Z90	F25				
496:1	600			81000	135	Z60	F16				
635:1	450			81000	180	Z45	F16				
948:1	300			81000	270	Z30	F14				
1460:1	200			81000	405	Z20	F14				
1991:1	150			81000	540	Z15	F14				
2128:1	135			81000	600	Z15	F14				
A	MCF-QG-D - 85D			F48[F40]	210	55:1	5000	83000	17	Z500	F30
						194:1	1800	98000	54	Z180	F30
301:1	1200					100000	83	Z120	F25		
393:1	900					100000	111	Z90	F25		
602:1	600	100000	167			Z60	F16				
824:1	450	100000	222			Z45	F16				
1220:1	300	100000	333			Z30	F14				
1767:1	200	100000	500			Z20	F14				
1888:1	190	100000	526			Z20	F14				
A	MCF-QG-D - 9D	F60[F48]	250			64:1	5000	96000	19	Z500	F30
						365:1	1200	125000	104	Z120	F25
486:1	900					125000	139	Z90	F25		
576:1	750					120000	160	Z90	F16		
770:1	600			125000	208	Z60	F16				
1010:1	450			125000	278	Z45	F16				
2280:1	200			125000	625	Z20	F14				
2941:1	150			125000	833	Z15	F14				



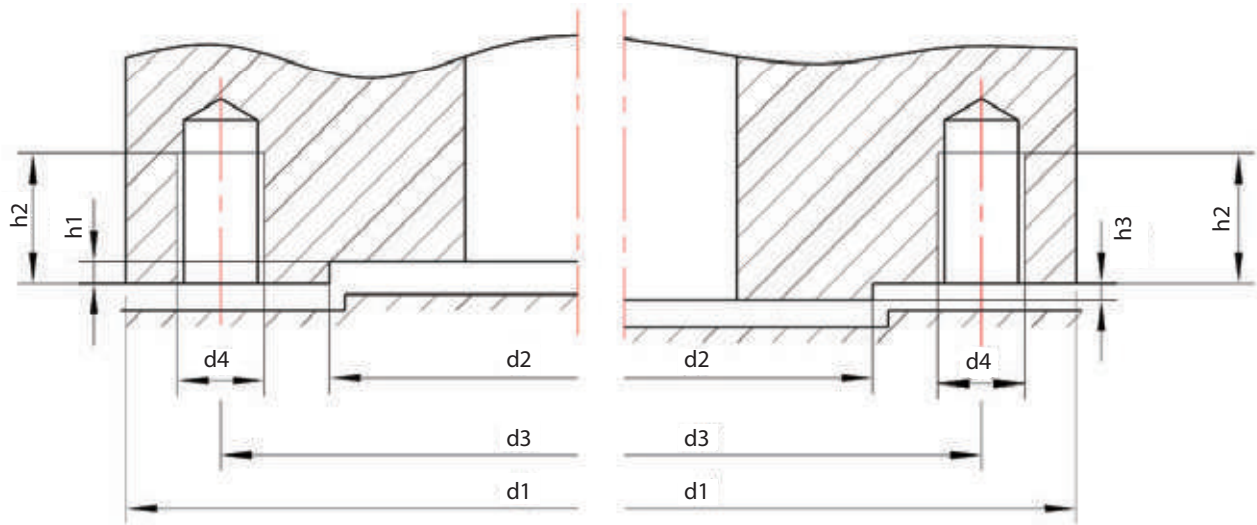
Shaft diameter	Key	keyway												
		Nominal diameter	bxh	b					Axis		t1		r	
				H9	D10	N8	JS9	F9						
6~8	2x2	2	0.03	0.06	-0.004	±	-0.006	1.2		1				
>8~10	3x3	3	0	0.02	-0.029	0.0125	-0.031	1.8		1.4		0.08	0.25	
>10~12	4x4	4	0.03	0.08	0	±0.015	-0.012	2.5	0.1 0	1.8	0.1 0	0.08	0.25	
>12~17	5x5	5												0
>17~22	6x6	6	0	0.03	-0.03	±0.018	-0.042	3.5		2.8		0.16	0.25	
>22~30	8x7	8	0.04	0.1	0	±0.018	-0.015	4		3.3		0.25	0.4	
>30~38	10x8	10	0	0.04	-0.036		-0.051	5	3.3					
>38~44	12x8	12						5		3.3				
>44~50	14x9	14	0.04	0.12	0	±	-0.018	5.5		3.8		0.25	0.4	
>50~58	16x10	16	0	0.05	-0.043	0.0215	-0.061	6		4.3		0.4	0.6	
>58~65	18x11	18						7	0.2 0	4.4	0.2 0			
>65~75	20x12	20				±0.0026	0.03	7.5		4.9		0.4	0.6	
>75~85	22x14	22	0.05	0.15	0			9	5.4					
>85~95	25x14	25	0	0.07	-0.052		0	9		5.4		0.4	0.6	
>95~110	28x16	28						10		6.4				
>110~130	32x18	32						11		7.4				
>130~150	36x20	36	0.06	0.18	0	±0.031	-0.026	12		8.4		0.7	1	
>150~170	40x22	40						0	0.08	-0.062	-0.088			13
>170~200	45x25	45						15		10.4				
>200~230	50x28	50						17		11.4				
>230~260	56x32	56						20	0.3 0	12.4	0.3 0	1.2	1.6	
>260~290	63x32	63	0.07	0.22	0	±0.037	0.032	20		12.4				
>290~330	70x36	70	0	0.1	-0.074		0.106	22		14.4				
>330~380	80x40	80						25		15.4				
>380~440	90x45	90	0.09	0.26	0	±	-0.037	28		17.4		2	2.5	
>440~500	100x50	100	0	0.12	-0.087	0.0135	-0.124	31		19.5				

**GB/T1096**

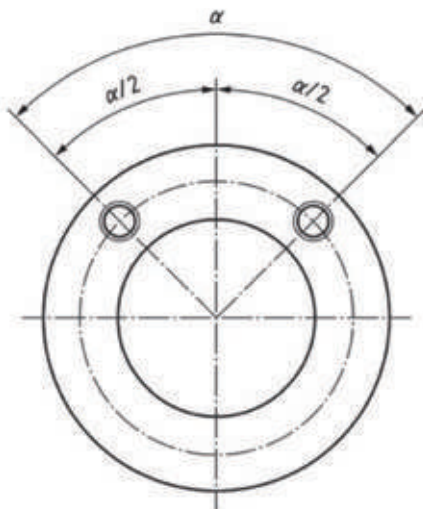
**GB/T1097**

**GB/T1184  
-1996**

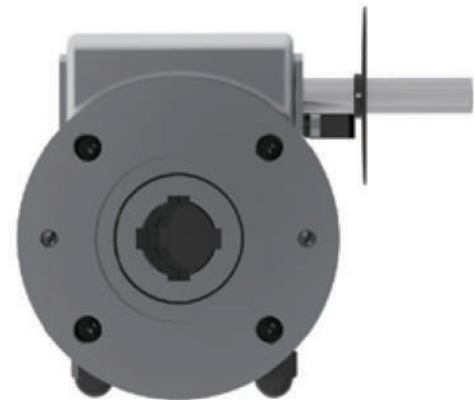




MCF GEARS Connection-size								
Flange	d1	d2	d3	h3	h1	d4	h2	Dowel pin
F05	65	35	50	2.5	3	4-M6	9	-
F07	90	55	70	2.5	3	4-M8	12	-
F10	125	70	102	2.5	3	4-M10	15	10-8
F12	150	85	125	2.5	3	4-M12	18	10-8
F14	175	100	140	3	4	4-M16	24	12-9
F16	210	130	165	3	5	4-M20	30	12-9
F20	260	160	200 (225)	3	5	8-M16	24	12-9
F25	300	200	254	3	5	8-M16	24	16-13
F30	350	230	298	3	5	8-M20	30	20-13
F35	415	260	356	3	5	8-M30	45	25-13
F40	475	300	406	5	8	8-M36	54	25-13
F48	560	370	483	5	8	12-M36	54	25-13
F60	686	470	603	5	8	20-M36	54	30-15
F80	900	670	813	8	10	20-M42	63	30-15
F100	1200	870	1042	8	10	32-M42	63	35-20

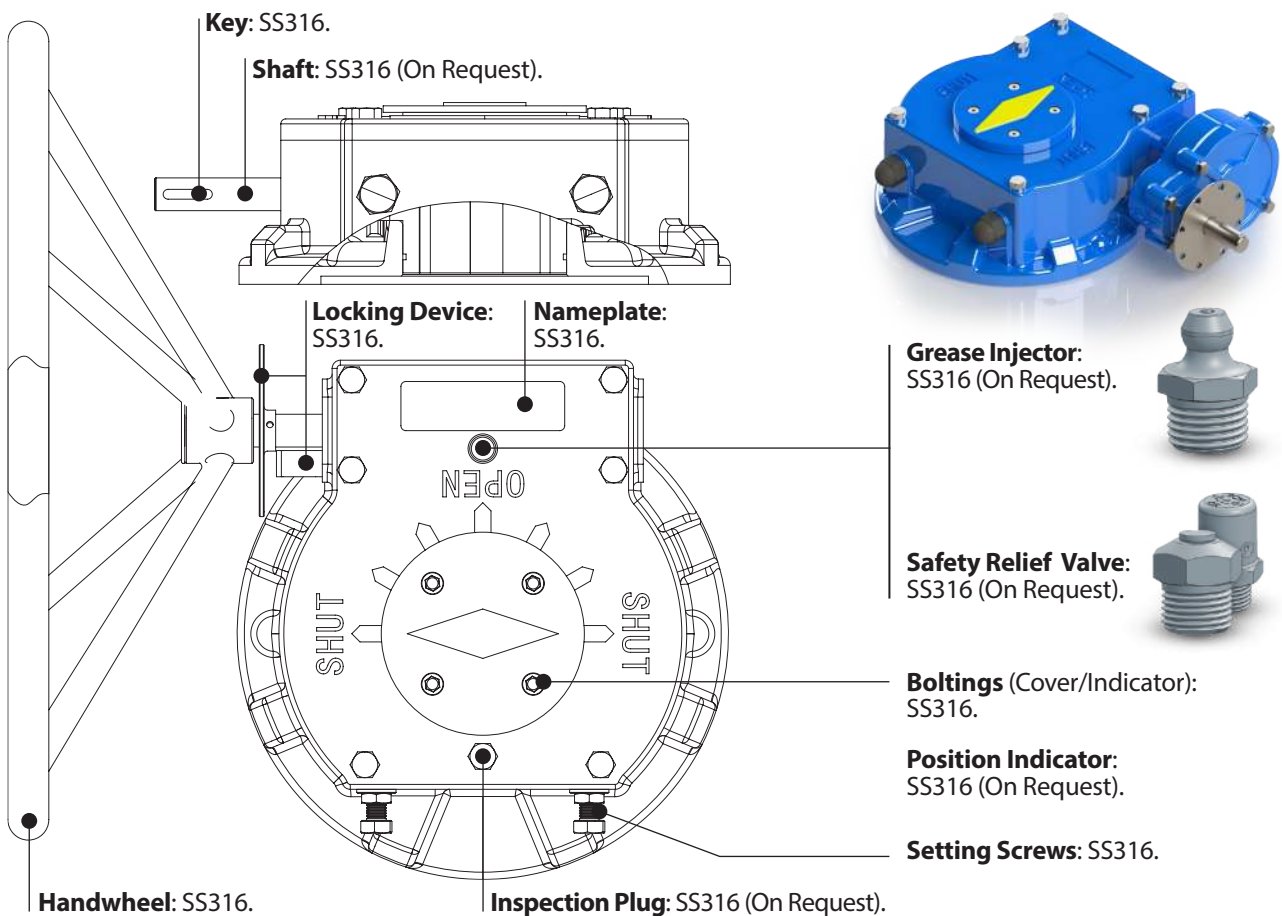


Flange type	$\alpha/2$
F05-F16	45°
F25-F40	22.5°
F48	15°
F60-F80	9°
F100	5.625°

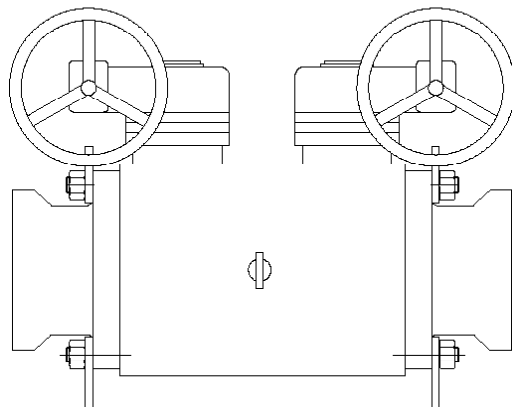
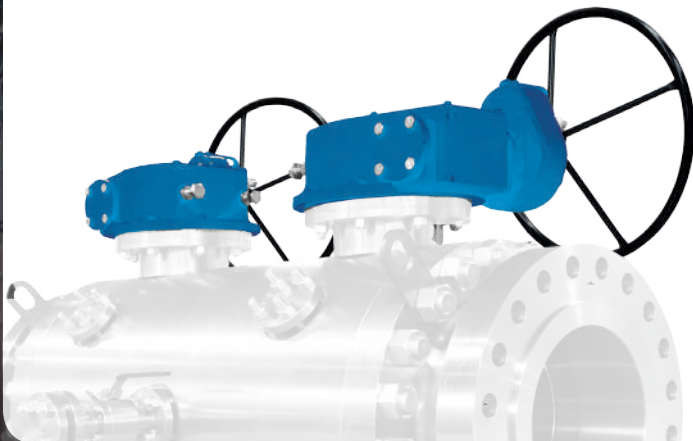


MCF series is limited to 2 locating pin holes in the figure

# Marinized Gearbox Features Materials



## Gearbox Suitable for DBB Valve to Meet Client Specification



# **MCF-Y & Bevel Series**

Gearboxes  
in AISI 316,  
Ductile Iron,  
Carbon Steel.



# MCF-Y - 1S Series

This series of products is quarter turn manual gear actuator. Suit to be used in ball valves, butterfly valves, plug valves, rotary ball valves etc. The housing made by precise casting, new design, nice appearance. It transmitted by worm gear and worm.

The worm gear with self-locking. With tapered roller bearing, so the gearboxes can be operated more flexibly and have higher efficiency.

Two connection types for choose: stem and key connection and removable nut type. The mounting flange adapts to ISO 5211.

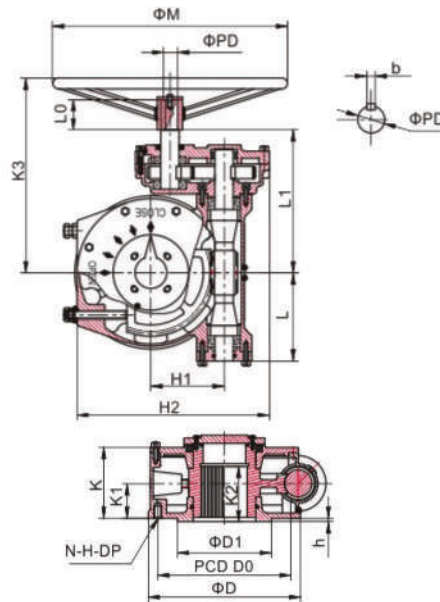
So the gearboxes installed on the valve are very convenient. General products protection grade is IP65.

For special environment can be done IP68 and immersion.

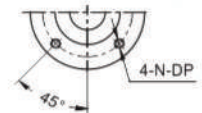
### Option

Available on demand:

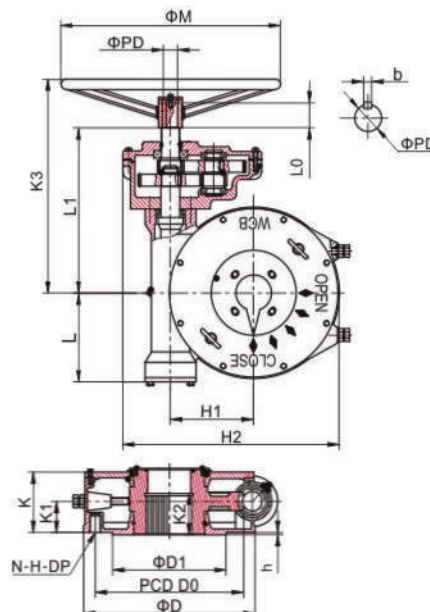
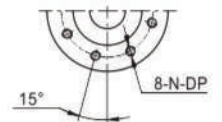
- Stainless Steel AISI 316
- Stainless Steel AISI 304
- Carbon Steel.



Position for the 4 bolt



Position for the 8 bolt



Position for the 8 bolt



Position for the 12 bolt



Position for the 20 bolt



Model	MCF Y0-1S	MCF Y1-1S	MCF Y2-1S	MCF Y3-1S	MCF Y4-1S	MCF Y4-1SZ	MCF Y5-1S	MCF Y5-1SZ	MCF Y6-1S	MCF Y6-1SZ	MCF Y7-1SZ	MCF Y8-1SZ	MCF Y6-1SZ	MCF Y10-1SZ	
TECHNICAL-PARAMETERS															
Ratio	72:1	85:1	122:1	187:1	190:1	335:1	273:1	625:1	408:1	952:1	1040:1	2940:1	3140:1	3275:1	
Max-torque	N-m	1000	1850	3000	4500	6500	8000	10000	15000	15000	18000	40000	53000	130000	170000
	kgf-M	102	188	306	408	663	816	1020	1530	1531	1836	2857	5408	8163	8163
Input torque N.m	63	103	122	120	175	120	185	120	185	100	170	220	230	305	
Weight Kg	13	16	33	41	60	65	110	135	150	170	213	295	520	650	
CONNECTION-SIZE															
Flange	F12	F14	F16	(F20)	F25	F25	F30	F30	F35	F35	F40	F48	F60	F60	
(D)	150	175	210	250	300	300	350	350	415	415	475	560	686	686	
PCD	D0	125	140	165	205	254	254	298	298	356	356	406	483	603	603
	N-H-DP	4-M12-18	4-M16-24	4-M20-30	8-M16-24	8-M16-24	8-M16-24	8-M20-30	8-M20-30	8-M30-45	8-M30-45	8-M36-54	12-M36-54	20-M36-54	20-M36-54
Convex (D1×h)	85×3	100×4	130×5	140×5	200×5	200×5	230×5	230×5	260×5	260×5	300×8	370×8	470×8	470×8	
Max-Stem-Diameter	38	45	55	65	80	80	105	105	115	115	140	155	180	200	
	12×8	14×9	16×10	20×12	22×14	22×14	28×16	28×16	32×18	32×18	36×20	40×22	45×25	50×28	
APPEARANCE-SIZE															
H1	66	75	92	111	145	145	160	160	200	200	225	270	315	355	
H2	196	221	283	322	388	388	404	404	510	510	582	670	740	765	
K	89	89	108	110	140	140	140	140	179	179	188	203	230	240	
K1	47	45	63	57	80	80	70	70	90	90	100	100	117	125	
K2	47	58	62	60	100	100	102	102	112	112	140	155	176	200	
K3	230	260	308	360	455	455	515	515	534	534	593	653	720	920	
L	83	92	113	125	155	155	197	197	230	230	264	300	368	370	
L1	161	170	198	211	260	295	294	325	338	359	413	453	520	655	
handwheel	PD	15	21	21	28	28	28	28	28	32	32	38	45	45	45
	(b)key	5	6	6	8	8	8	8	8	10	10	10	12	12	12
	L0	30	35	35	40	40	40	40	40	50	50	50	50	50	50
	M	300	350	400	450	500	500	600	600	650	650	700	750	800	800

# MCF-YS Series

This series of products is quarter turn manual gear actuator. Suit to be used in ball valves, butterfly valves, plug valves, rotary ball valves etc. The housing made by precise casting, new design, nice appearance. It transmitted by worm gear and worm. The worm gear with self-looking. With tapered roller bearing, so the gearboxes can be operated more flexibly and have higher efficiency.

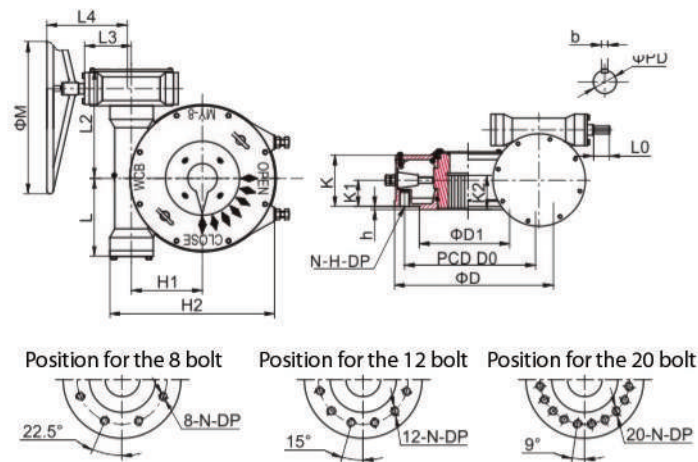
Two connection types for choose: stem and key connection and removable nut type. The mounting flange adapts to ISO 5211.

So the gearboxes installed on the valve are very convenient. General products protection grade is IP65.

### Option

Available on demand:

- Stainless Steel AISI 316
- Stainless Steel AISI 304
- Carbon Steel.



Model	MCF-Y4S	MCF-Y5S	MCF-Y6S	MCF-Y7S	MCF-Y8S	MCF-Y9S	
<b>TECHNICAL-PARAMETERS</b>							
Ratio	1170:1	1426:1	1541:1	1593:1	2250:1	2550:1	
Max-torque	N-m	8000	15000	18000	28000	53000	100000
	kgf-M	816	1530	1836	2857	5408	8163
Mechanical efficiency M.A.±10%	105.3	128.3	138.7	143.4	202.5	229.5	
Weight Kg	70	93	103	167	221	440	
<b>CONNECTION-SIZE</b>							
Flange (D)	F25	F30	F35	F40	F48	F60	
PCD	D0	254	298	356	406	483	603
	N-H-DP	8-M16-24	8-M20-30	8-M30-45	8-M36-54	12-M36-54	20-M36-54
Convex (D1×h)	200×5	230×5	260×5	300×8	370×8	470×8	
Max-Stem-Diameter	80	105	115	140	155	180	
	22×14	28×16	32×18	36×20	40×22	45×25	
<b>APPEARANCE-SIZE</b>							
H1	145	160	200	225	270	335	
H2	344	390	465	540	632	740	
K	140	140	179	188	203	215	
K1	80	70	90	100	100	117	
L	155	197	230	264	300	368	
L2	244	286	319	372	410	508	
L3	83	92	92	113	125	155	
L4	230	285	285	330	380	430	
handwheel	PD	21	21	21	28	28	28
	(b)key	6	6	6	8	8	8
	L0	35	35	35	40	40	40
	M	300	350	400	450	500	600

# MCF-Y Series

This series of products is quarter turn manual gear actuator. Suit to be used in ball valves, butterfly valves, plug valves, rotary ball valves etc. The housing made by precise casting, new design, nice appearance. It transmitted by worm gear and worm.

The worm gear with self-locking. With tapered roller bearing, so the gearboxes can be operated more flexibly and have higher efficiency.

Two connection types for choose: stem and key connection and removable nut type. The mounting flange adapts to ISO 5211.

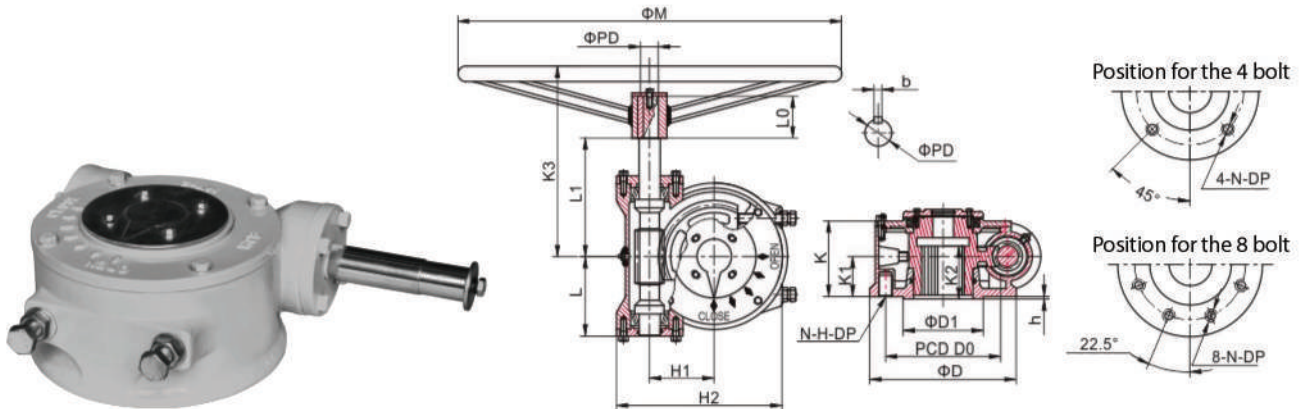
So the gearboxes installed on the valve are very convenient. General products protection grade is IP65.

For special environment can be done IP68 and immersion.

### Option

Available on demand:

- Stainless Steel AISI 316
- Stainless Steel AISI 304
- Carbon Steel.

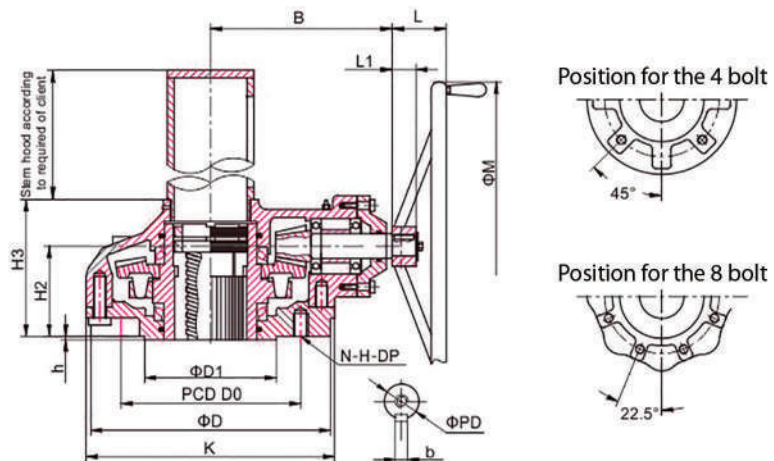


Model	MCF-Y000	MCF-Y00	MCF-Y0	MCF-Y1	MCF-Y2	MCF-Y3	MCF-Y4	MCF-Y5	MCF-Y6	
TECHNICAL-PARAMETERS										
Ratio	24:1	33:1	39:1	46:1	49:1	53:1	60:1	62:1	68:1	
Max-torque	N-m	300	500	980	1600	2700	4200	5600	7000	8500
	kgf-M	31	51	100	143	255	478	617	714	867
Input torque N.m	41	50	85	115	185	255	315	380	425	
CONNECTION-SIZE										
FLANGE	F07	F10	F12	F14	F16	(F20)	F25	F30	F35	
(D)	90	125	150	175	210	250	300	350	415	
PCD	D0	70	102	125	140	165	205	254	298	356
	N-H-DP	4-M8-15	4-M10-15	4-M12-18	4-M16-24	4-M20-30	8-M16-24	8-M16-24	8-M20-30	8-M30-45
Convex (D1×h)	55×3	70×3	85×3	100×4	130×5	140×5	200×5	230×5	260×5	
Max-Stem-Diameter	20	30	38	45	55	65	80	105	115	
	6×6	8×7	10×8	14×9	16×10	20×12	22×14	28×16	32×18	
APPEARANCE-SIZE										
H1	41	55	66	75	92	111	145	160	200	
H2	124	151	208	230	270	303	373	420	495	
K	75	70	89	89	108	110	140	140	179	
K1	40	43	51	52	63	61	85	87	110	
K2		42	47	58	62	60	100	102	112	
K3	185	200	230	285	330	380	430	465	530	
L	65	70	83	92	113	125	160	197	230	
L1	105	102	135	145	192	213	256	265	340	
handwheel	PD	15	15	21	21	28	28	45	45	
	(b)key	5	5	6	6	8	8	12	12	
	L0	30	30	30	35	40	40	50	50	
	M	250	250	300	350	450	500	600	650	700

# MCF-BA Series

This bevel gearbox can be installed directly on the gate valves, butterfly valves, plug valves, globe valves and other valves. By using spiral bevel gears and thrust ball bearing, this series actuator can run smoothly, and has high output torque, low noise and high efficiency. It can avoid from water in and grease out.

Protection grade is IP65. For special environment can be done IP68 and immersion. Handwheel and stem cover can be customized. For different valves and requirement, there are single stage gearboxes with input flange, two stage gearboxes with input flange, two stage manual gearboxes and so on.



Model	MCF-BA000	MCF-BA00	MCF-BA0	MCF-BA1	MCF-BA2	MCF-BA3	MCF-BAA3
<b>TECHNICAL-PARAMETERS</b>							
Ratio	2.35:1	3:1	3.6:1	4.5:1	5.2:1	5.6:1	23:1
Max-torque Nm	360	480	735	1470	2940	4000	6000
Max-thrust N	43000	64000	98000	196000	340000	490000	630000
Max-stem dia.mm Copper-nut	25	30	40	52	70	90	110
Gate-valve DN	50	80-100	150-200	250-400	450-700	800-1000	1200
Globe-valve DN	50	80	100-150	200-250	300-350	400-500	550-650
Weight Kg	15	22	28	54	110	198	320
<b>CONNECTION-SIZE</b>							
Flange	F12	F14	F16	F25	F30	F35	F35
(D)	150	175	210	300	350	415	415
PCD	D0	125	140	165	254	298	356
	N-H-DP	4-M12-18	4-M16-24	4-M20-30	8-M16-24	8-M20-30	8-M30-45
Convex(D1xh)	85×3	100×4	130×5	200×5	230×5	260×5	260×5
<b>APPEARANCE-SIZE</b>							
B	150	150	170	233	306	370	395
H2	80	80	85	97	142	160	178
H3	125	125	155	175	210	280	290
L	40	75	92	107	107	118	118
K	155	180	210	285	390	410	510
handwheel	PD	26	28	28	32	32	38
	(b)key	8×7	8×7	8×7	10×8	10×8	10×8
	L1	40	40	40	50	55	55
	M	300	300	400	460	520	600



# MCF-BA Series

## BA Stem Nut Dimension

User could machining the limit stem nut hole according to this drawing. When you machining hole d, please pay attention to coaxality with reference A.

Stem nut material: brass H62, bronze H94, ductile iron, D-2 and so on. You can choose it depends on your demand.



This chart types are:  
BA-00  
BA-0  
BA-1  
BA-2

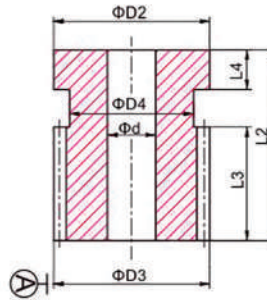


Figure in the hole  $\Phi d$  processing, the customer needed to change But can not exceed the  $\Phi d_{max}$  size,  $\Phi d_{max}$  see page 21.



This chart types are:  
BA-3  
BAA-3

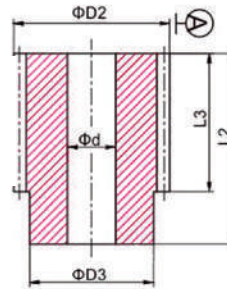


Figure in the hole  $\Phi d$  processing, the customer needed to change But can not exceed the  $\Phi d_{max}$  size,  $\Phi d_{max}$  see page 21.

Size \ Model	Model						
	MCF-BA000	MCF-BA00	MCF-BA0	MCF-BA1	MCF-BA2	MCF-BA3	MCF-BAA3
<b>d</b>	10	20	25	30	35	45	60
<b>D3</b>	50	57	64	74	94	108	132
<b>D2</b>	50	57	65	78	98	118	147
<b>L4</b>	12	15	15	22	31		
<b>L3</b>	25	25	37	46	55	80	108
<b>L2</b>	46	55	65	78	98	120	145
<b>D4</b>	42	50	58	68	86		

# MCF-Y-V Series

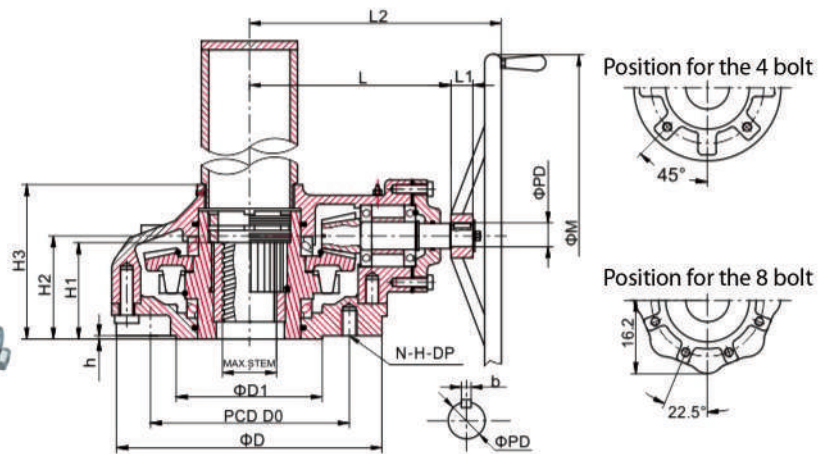
This bevel gearbox can be installed directly on the gate valves, butterfly valves, plug valves, globe valves and other valves. By using spiral bevel gears and thrust ball bearing, this series actuator can run smoothly, and has high output torque, low noise and high efficiency. It can avoid from water in and grease out.

Protection grade is IP65. For special environment can be done IP68 and immersion. Handwheel and stem cover can be customized. For different valves and requirement, there are single stage gearboxes with input flange, two stage gearboxes with input flange, two stage manual gearboxes and so on.

### Option

Available on demand:

- Stainless Steel AISI 316
- Stainless Steel AISI 304
- Carbon Steel.



Model	MCF-Y-VS10	MCF-Y-VS20	MCF-Y-V0	MCF-Y-V1	MCF-Y-V2	MCF-Y-V3	MCF-Y-V35	MCF-Y-V4	MCF-Y-V5	MCF-Y-V6	
<b>TECHNICAL-PARAMETERS</b>											
Ratio	2.3:1	2.35:1	3.1:1	3.6:1	4:1	4.1:1	5:1	6:1	6.3:1	7.1:1	
Max-torque	N-m	216	363	589	932	1491	2296	3404	4000	4500	7250
	kgf-M	22	37	60	95	152	234	347	408	459	740
Max-stem dia. mm	20	25	35	40	52	60	70	90	100	120	
Weight Kg	10	12	21.5	28	35	50	95.5	160	190	288	
<b>CONNECTION-SIZE</b>											
Flange	F10	F12	F14	F16	(F20)	F25	F30	F35	F35	F40	
(D)	125	150	175	210	250	300	350	415	415	475	
PCD	D0	102	125	140	165	205	254	298	356	406	
	N-H-DP	4-M10-15	4-M12-18	4-M16-24	4-M20-30	8-M16-24	8-M16-24	8-M20-30	8-M30-45	8-M30-45	8-M36-54
Convex (D1×h)	70×3	85×3	100×4	130×4	140×5	200×5	230×5	260×5	260×5	300×8	
<b>APPEARANCE-SIZE</b>											
H1	38	46	55	62	75	85	105	145	145	165	
H2	65	70	70	75	90	100	140	160	155	210	
H3	110	125	128	145	160	170	225	280	280	335	
L	120	135	160	180	200	225	280	353	355	365	
L2	215	230	260	320	340	365	420	445	515	565	
handwheel	PD	28	28	28	28	32	32	32	38	38	50
	(b)key	8×7	8×7	8×7	8×7	10×8	10×8	10×8	10×8	10×8	2-16×10
	L1	40	40	40	40	50	50	50	50	50	55
	M	300	300	300	400	460	460	520	600	600	800

# MCF-Y-V-1S Series

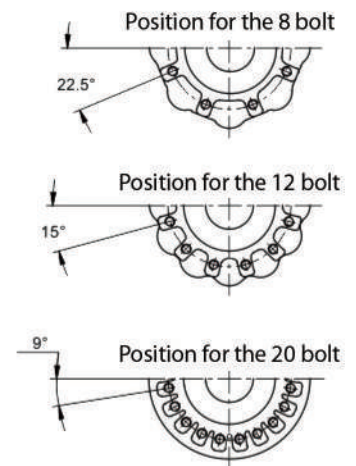
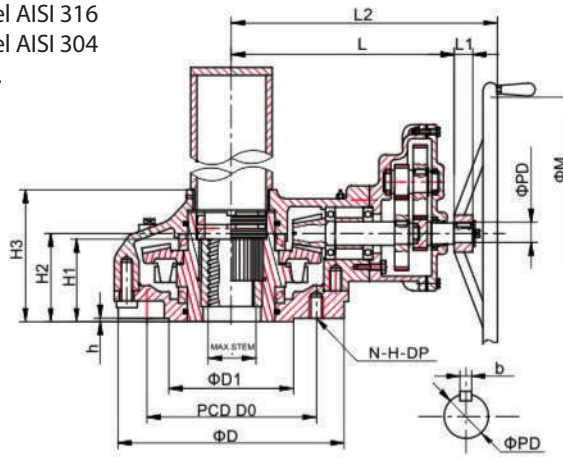
This bevel gearbox can be installed directly on the gate valves, butterfly valves, plug valves, globe valves and other valves. By using spiral bevel gears and thrust ball bearing, this series actuator can run smoothly, and has high output torque, low noise and high efficiency. It can avoid from water in and grease out.

Protection grade is IP65. For special environment can be done IP68 and immersion. Handwheel and stem cover can be customized. For different valves and requirement, there are single stage gearboxes with input flange, two stage gearboxes with input flange, two stage manual gearboxes and so on.

### Option

Available on demand:

- Stainless Steel AISI 316
- Stainless Steel AISI 304
- Carbon Steel.



Model	MCF-YV2-1S	MCF-YV3-1S	MCF-YV35-1S	MCF-YV4-1S	MCF-YV5-1S	MCF-YV6-1S	MCF-YV7-1S	MCF-YV8-1S	MCF-YV9-1S	MCF-YV10-1S	
<b>TECHNICAL-PARAMETERS</b>											
Ratio	12.2:1	18.1:1	23:1	42:1	42:1	46:1	94.4:1	115.5:1	126:1	200:1	
Max-torque	N-m	2500	3500	4000	6800	8200	14500	18600	26100	65000	100000
	kgf-M	255	357	510	693	836	1479	1897	2662	6632	10204
Max-stem dia. mm	52	60	70	90	100	120	130	150	180	200	
Weight Kg	52	70	119	180	265	328	470	645	1300	1700	
<b>CONNECTION-SIZE</b>											
Flange	(F20)	F25	F30	F35	F35	F40	F48	F60	F60	F80	
(D)	250	300	350	415	415	475	560	686	686	900	
PCD	D0	205	254	298	356	356	406	483	603	813	
	N-H-DP	8-M16-24	8-M16-24	8-M20-35	8-M30-45	8-M30-45	8-M36-54	12-M36-54	20-M36-54	20-M36-54	20-M42-65
Convex (D1×h)	140×5	200×5	230×5	260×5	260×5	300×8	370×8	470×8	470×8	670×10	
<b>APPEARANCE-SIZE</b>											
H1	75	85	105	120	145	165	195	200	200	200	
H2	90	100	140	160	155	210	220	250	330	330	
H3	160	170	225	280	280	335	331	346	409	540.5	
L	305	330	390	480	480	500	550	610	817	964	
L2	445	470	550	595	655	675	750	810	1020	1190	
handwheel	PD	28	28	28	38	38	38	45	45	50	50
	(b)key	8×7	8×7	8×7	10×8	10×8	10×8	12×8	12×8	14×9	14×9
	L1	40	40	40	50	50	50	50	50	50	60
	M	400	500	600	650	650	700	800	900	1000	1000

# MCF-RK Series

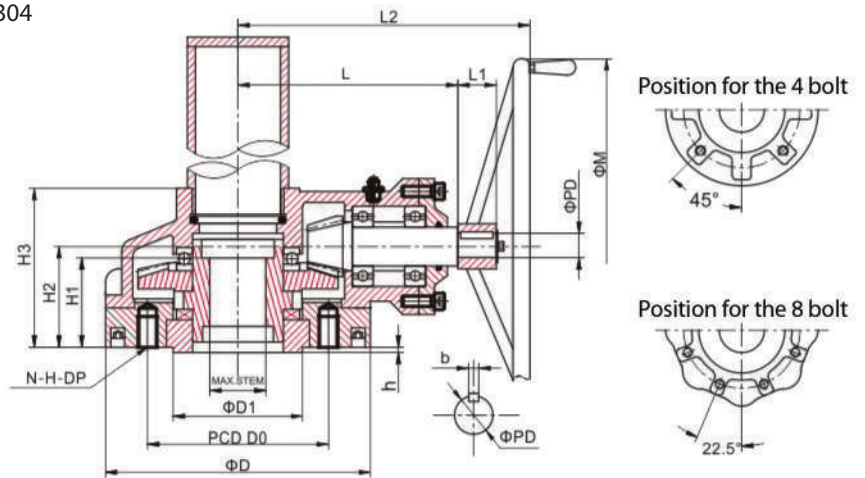
This bevel gearbox can be installed directly on the gate valves, butterfly valves, plug valves, globe valves and other valves. By using spiral bevel gears and thrust ball bearing, this series actuator can run smoothly, and has high output torque, low noise and high efficiency. It can avoid from water in and grease out.

Protection grade is IP65. For special environment can be done IP68 and immersion. Handwheel and stem cover can be customized. For different valves and requirement, there are single stage gearboxes with input flange, two stage gearboxes with input flange, two stage manual gearboxes and so on.

### Option

Available on demand:

- Stainless Steel AISI 316
- Stainless Steel AISI 304
- Carbon Steel.



Model	MCF-RK03	MCF-RK05	MCF-RK1	MCF-2CK2	MCF-2CK3	MCF-2CK5	MCF-2CK8	MCF-2CK10	
TECHNICAL-PARAMETERS									
Ratio	2.6:1	3:1	3.6:1	4.2:1	4.2:1	5:1	6.3:1	7.1:1	
Max-thrust	N-m	90000	135000	180000	250000	280000	370000	650000	880000
	kgf-M	9184	13776	18367	25510	28571	37755	66327	89796
Max-torque	N-m	350	550	900	1500	2000	2800	4500	6800
	kgf-M	36	56	92	153	204	286	459	694
Max-stem dia. mm	42	52	60	70	80	95	110	130	
Weight Kg	18	25	28	33	48	92.5	190	280	
CONNECTION-SIZE									
Flange (D)	F12	F14	F16	(F20)	F25	F30	F35	F40	
PCD	D0	125	140	165	205	254	298	356	406
	N-H-DP	4-M12-18	4-M16-24	4-M20-30	8-M16-24	8-M16-24	8-M20-30	8-M30-45	8-M36-54
Convex (D1×h)	85×3	100×4	130×4	140×5	200×5	230×5	260×5	300×8	
APPEARANCE-SIZE									
H1	45	69	76	89	97	120	150	176	
H2	65	69	78	91	94.5	112	140	214	
H3	101	114	125	144	158	188	235	338.5	
L	152	170	180	202	226	280	355	365	
L2	275	350	370	342	366	440	515	675	
handwheel	PD	28	28	28	32	32	32	38	50
	(b)key	8×7	8×7	8×7	10×8	10×8	10×8	10×8	2-16×10
	L1	40	40	40	50	50	38	50	50
	M	300	400	500	550	600	700	800	800

# MCF-CK-1S Series

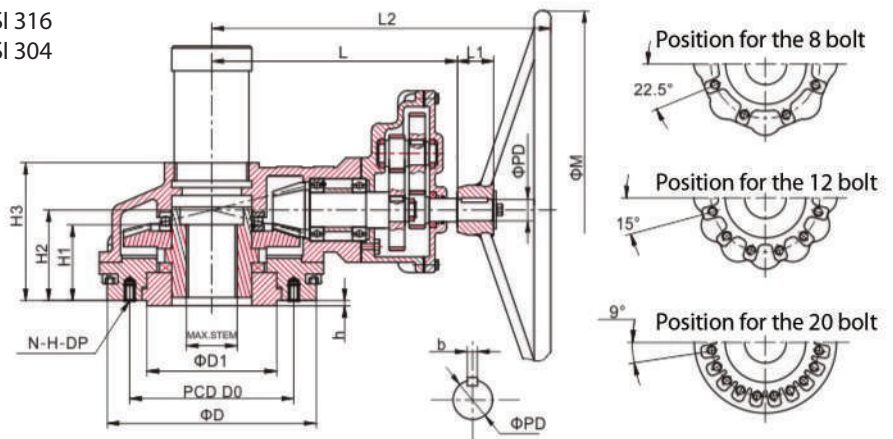
This bevel gearbox can be installed directly on the gate valves, butterfly valves, plug valves, globe valves and other valves. By using spiral bevel gears and thrust ball bearing, this series actuator can run smoothly, and has high output torque, low noise and high efficiency. It can avoid from water in and grease out.

Protection grade is IP65. For special environment can be done IP68 and immersion. Handwheel and stem cover can be customized. For different valves and requirement, there are single stage gearboxes with input flange, two stage gearboxes with input flange, two stage manual gearboxes and so on.

### Option

Available on demand:

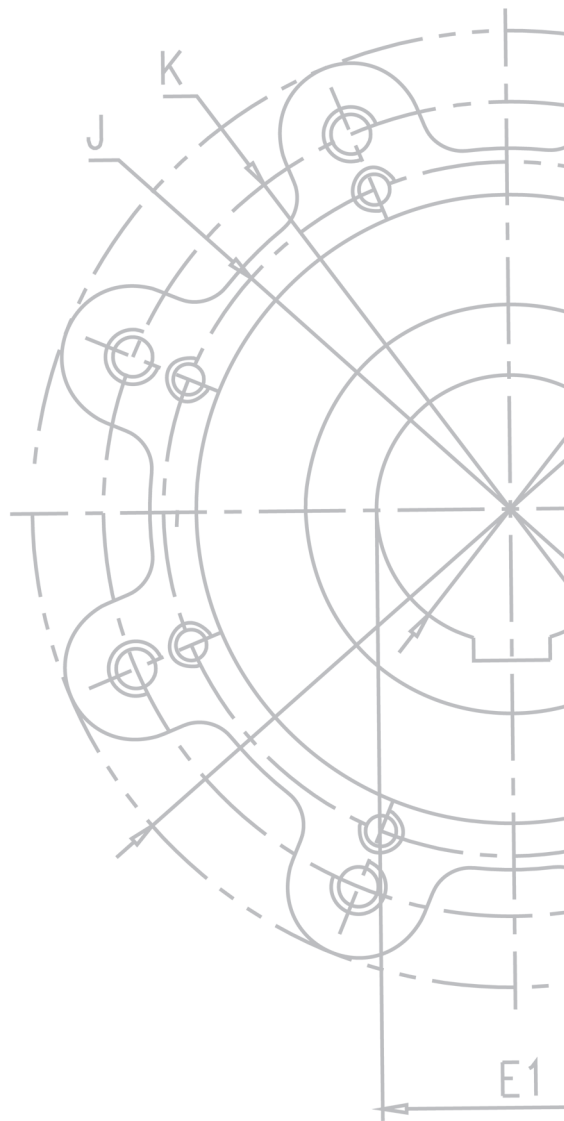
- Stainless Steel AISI 316
- Stainless Steel AISI 304
- Carbon Steel.



Model	MCF-2CK2-1S	MCF-2CK3-1S	MCF-2CK5-1S	MCF-2CK8-1S	MCF-2CK10-1S	MCF-2CK15-1S	MCF-2CK18-1S	
<b>TECHNICAL-PARAMETERS</b>								
Ratio	13.6:1	17.6:1	22:1	42.5:1	48:1	94.4:1	115.5:1	
Max-thrust	N-m	290000	400000	500000	800000	1100000	1250000	1500000
	kgf-M	29592	408163	510204	81633	112244	127551	153061
Max-torque	N-m	2350	3200	5600	8500	13500	18500	26000
	kgf-M	240	327	398	714	1020	1582	2245
Max-stem dia. mm	70	80	95	110	130	150	160	
Weight Kg	52	70	115	256	316	470	645	
<b>CONNECTION-SIZE</b>								
Flange (D)	(F20)	F25	F30	F35	F40	F48	F60	
PCD	D0	205	254	298	356	406	483	603
	N-H-DP	8-M16-24	8-M16-24	8-M20-35	8-M30-45	8-M36-54	12-M36-54	20-M36-54
Convex (D1×h)	140×5	200×5	2300×5	260×5	300×8	370×8	470×8	
<b>APPEARANCE-SIZE</b>								
H1	89	97	120	152	176	188	230	
H2	91	94.5	112	140	214	227	231	
H3	144	158	188	235	338.5	331	346	
L	305	330	390	480	500	550	610	
L2	400	470	530	640	660	750	810	
handwheel	PD	28	28	32	38	38	45	45
	(b)key	8×7	8×7	8×7	10×8	10×8	12×8	12×8
	L1	40	40	50	50	50	50	50
	M	500	550	600	700	750	800	850







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