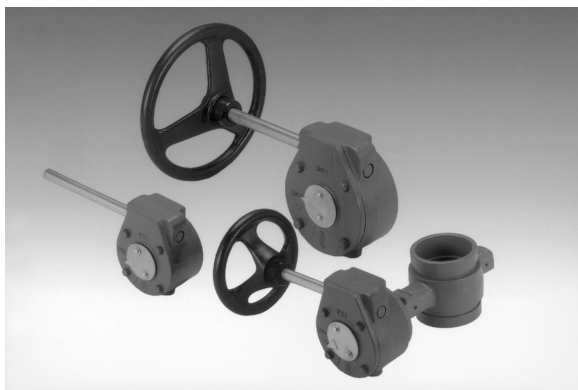


VALVE ACTUATOR *Metric/Inches*



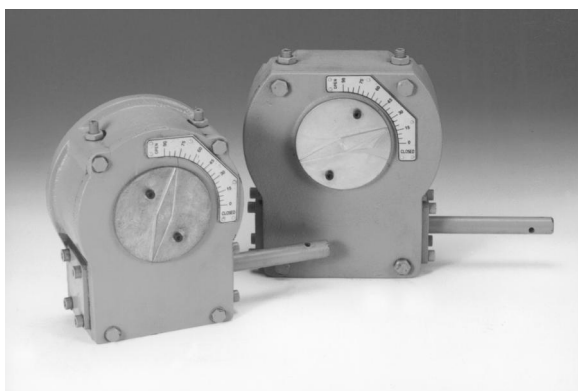
CG Series of Worm Operators

A kind of drive device at 90° turning, suitable for ball valve, butterfly valve, cock valve and other type valves. For big sizes spur gear reducing device should be installed to reduce manual operating force. There are two types: horizontal (H type) and vertical (V type). Allowable output torque range is
Metric:270~25000N.m
Inches:2390~221250IN.LB



CFP Series of Worm Operators

It is a product derived form CG series, a micro-active switch is fixed in the device body. Suitable for ball valve, butterfly valve, cock valve and other type valves, which are mainly used in the fire fighting field. Allowable output torque range is
Metric:270~700N.m
Inches:2390~6018IN.LB



CWG Series of Worm Operators

A kind of high efficiency device at 90° turning, the main parts includes gear body, cover are made of ductile iron. Bearings are installed inside the body and the output torque is larger than types. Suitable for ball valve, butterfly valve, cock valve and other type valves. Allowable output torque range is
Metric:450~16000N.m
Inches:4000~141600IN.LB

VALVE ACTUATOR *Metric/Inches*



BG Series of Bevel Gear Operators

This is a kind of multi-turning type drive device, suitable for gate valve, stop valve and other type valves. Stem and nut type connection with valve. There are two types: horizontal (H type) and vertical (V type). Allowable output torque is
Metric: 255-16200N.m
Inches: 1880-120000Ft.Lb



CBG Series of Bevel Gear Operators

This is a kind of multi-turning type drive device, suitable for gate valve, stop valve and other type valves. Tooth scarf-jointing type connection with valve. There is an auxiliary gear box in case it is needed. The material for the main parts is high quality ductile iron. Allowable output torque range is
Metric: 1010~6780N.m
Inches: 7500~50000Ft.Lb



CB Series of Bevel Gear Operators

This is a kind of multi-turning and economic type drive device, suitable for gate valve, stop valve and other type valves. Tooth scarf-jointing type connection with valve. The material of the main parts is grey cast iron. Allowable output torque range is
Metric: 1350~5400N.m
Inches: 9960~40000Ft.Lb

VALVE ACTUATOR

CG-Metric



CG Series of Worm Operators

- 90° -turning manual drive device, suitable for ball valve, butterfly valve, cock valve and other types valve.
- Allowable output torque range is 270~25000N.m.
- Handwheel can be installed on both sides, left and right.
- The dimensions connected with valve are designed according to ISO5211/ MSS SP-101.
- Loaded with grease inside gear body, shell sealed for waterproof, protection grade IP65, which are conditions for device used inside rooms or in the open air.
- An anti-wrong operation locking seat, a locking plate and an indication device which is used together with a limiter switch are provided for customers to choose.
- There are two types: Horizontal (Htype) and (V type).

CG valve Technical parameters of actuators

Model	CG24	CG30	CG50	CG80	CG200	CG300	CG320	CG330	CG410	CG520
Geat Ratio	24:1	30:1	50:1	80:1	200:1	291:1	319:1	330:1	407:1	518:1
Max Travel	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°
Rated Input N.m	80	120	120	150	100	50	100	240	—	—
Rated Output N.m	270	700	1200	2000	3000	3000	7000	12000	17000	25000
Efficiency %	14	19.44	20	16.66	15	20.6	21.94	15.15	—	—
Weight Kg	4.8/6.4	10.4	12	25	48	40.8	69.2	122	240	380
Max. Stem Dia. mm	26	30	45	54	54	54	66	100	100	100

VALVE ACTUATOR *CGA-Inches*



CGA Series of Worm Operators

- 90° -turning manual drive device, suitable for ball valve, butterfly valve, cock valve and other types valve.
- Allowable output torque range is 2390~221250IN.LB.
- Handwheel can be installed on both sides, left and right.
- The dimensions jointing with valve are designed according to ISO5211/MSS SP-101.
- Loaded with grease inside gear body, shell sealed for waterproof, protection grade IP65, which are conditions for device used inside rooms or in the open air.
- An anti-wrong operation locking seat, a locking plate and an indication device which is used together with a limiter switch are provided for customers to choose.
- There are two types: Horizontal (Htype) and (V type).

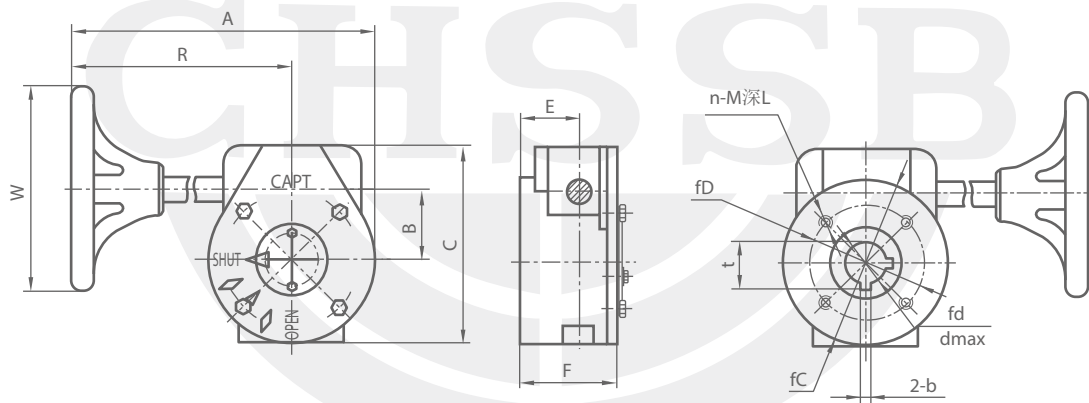
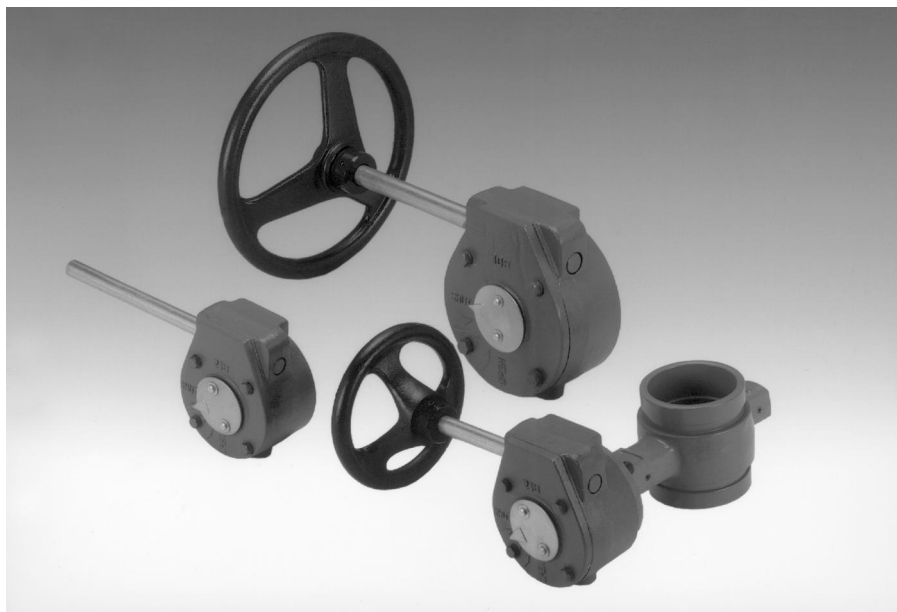
CGA valve Technical parameters of actuators

Model	CGA24	CGA30	CGA50	CGA80	CGA200	CGA300	CGA320	CGA330	CGA410	CGA520
Geat Ratio	24:1	30:1	50:1	80:1	200:1	291:1	319:1	330:1	407:1	518:1
Max Travel	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°
Rated Input in.lb	708	1062	1062	1328	885	443	885	2124	—	—
Rated Output in.lb	2390	6195	10620	17700	26550	26550	61950	106200	150450	221250
Efficiency	14	19.44	20	16.66	15	20.6	21.94	15.15	—	—
Weight lb	11/14	23	26	55	106	90	153	269	529	838
Max. Stem Dia. in	1.02	1.18	1.77	2.13	2.13	2.13	2.60	3.94	3.94	3.94

VALVE ACTUATOR

CG-Metric

CG one-step valve actuator-H type



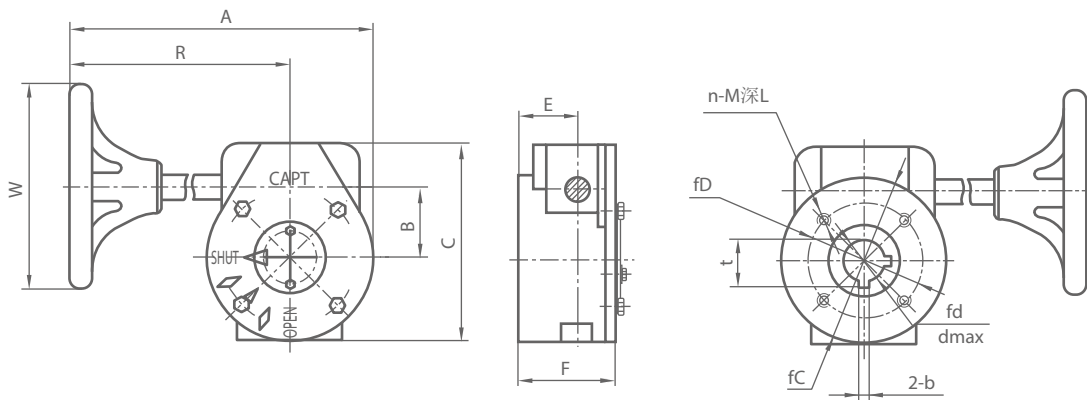
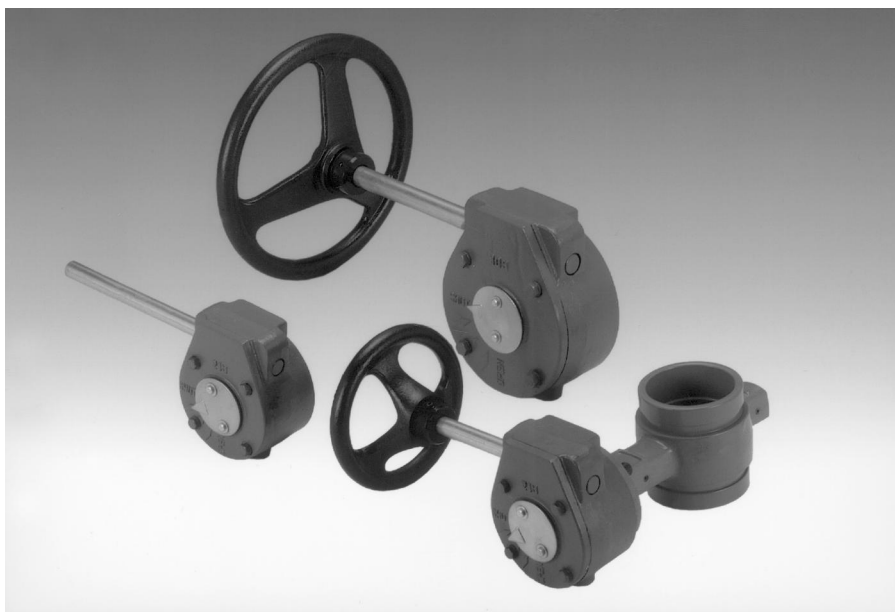
CG Dimension table of one-step valve actuator -H type

model	calibre dia DN	dmax	d	b	t	FG	FD	n-MxL	A	B	C	E	F	W optional	R optional
CG24	50~80	26	12.7	3.18	14.3	108	50	4-M6x10	248	45	128	38	64	105	194
	100		15.9	4.49	18.3		70	4-M8x13							
	125~150		19.05		21.4		296								
CG30	200	30	22.2	4.76	24.5	154	102	4-M10x15	369	63	176	44.5	75	250	292
	250	45	28.6	6.35	31.8			292	300					215	
CG50	300~350	45	31.8	6.35	35	140	102	4-M10x15	407	78	190	44.5	75	300	327
CG80	400	54	33.3	7.93	36.5	197	140	4-M16x24	470	120	260	55	98	300	345
	450		38.1		41.5			507	400					382	

VALVE ACTUATOR

CGA-Inches

CGA one-step valve actuator-H type



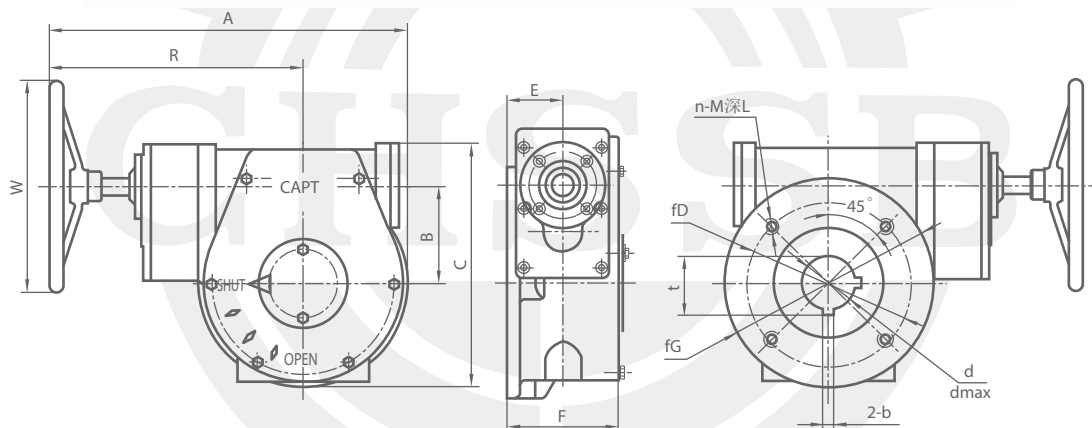
CGA Dimension table of one-step valve actuator -H type

model	calibre dia DN	dmax	d	b	t	FG	FD	n-MxL	A	B	C	E	F	W optional	R optional
CGA24	2"~3"	1.02	0.50	0.13	0.56	4.25	2.0	4-1/4-20UNCx0.40	9.76	1.77	5.04	1.50	2.52	6	7.64
	14"		0.63		0.72		2.75	4-5/16-18UNCx0.5							
	5"~6"		0.75		0.84										
CGA30	8"	1.18	0.87	0.19	0.96	6.06	4.0	4-3/8-16UNCx0.60	14.53	2.48	6.93	1.75	2.95	10	11.50
	10"	1.77	1.13	0.25	1.25									11.50	12
CGA50	12"~14"	1.77	1.25	0.25	1.38	5.51	4.0	4-3/8-16UNCx0.60	16.02	3.07	7.48	.75	2.95	12	12.87
CGA80	16"	2.13	1.31	0.31	1.44	7.76	5.5	4-5/8-11UNCx0.94	18.50	4.72	10.24	2.17	3.84	12	13.58
	18"		1.50		1.63										19.96

VALVE ACTUATOR

CG-Metric

CG multi-steps valve actuator-H type



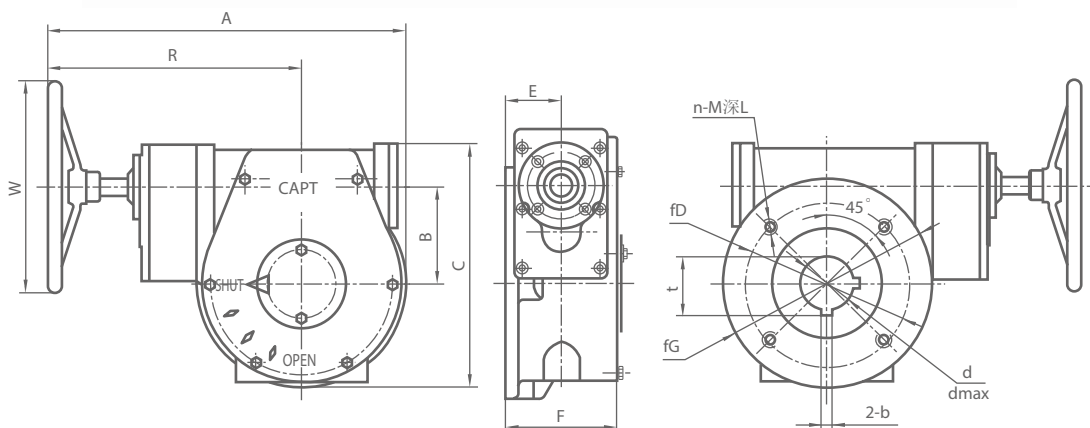
CG Dimension table of multi-steps valve actuator-H type

Model	Calibre Dia.	dmax	d	b	t	fG	fd	n-MxL	A	B	C	E	F	W optional	R optional
CG200	500	54	41.3	10	44.6	197	159	4-M18x27	476	120	313	—	154	300	338
	600		50.8	16	55.1	276	216	4-M20x30							
CG300	500	54	41.3	9.53	45.7	250	140	4-m16X25	585	105	290	60	120	300	460
	600		50.8	12.7	56.3		165	4-m20X30							
CG320	700~800	66	55	4-16	59.3	300	254	8-M16x25	530	140	350	70	142	300	380
CG330	900	100	75	4-20	79.9	300	254	8-M16x25	725	190	484	—	178	800	545
CG410	1050	100	110	4-25.5	121.2	440	298	8-M20x30	806	225	566	—	210	700	579
CG520	1200	100	130	4-32	137.4	540	356	8-M30x45	940	264	686	—	257	800	670

VALVE ACTUATOR

CGA-Inches

CGA multi-steps valve actuator-H type



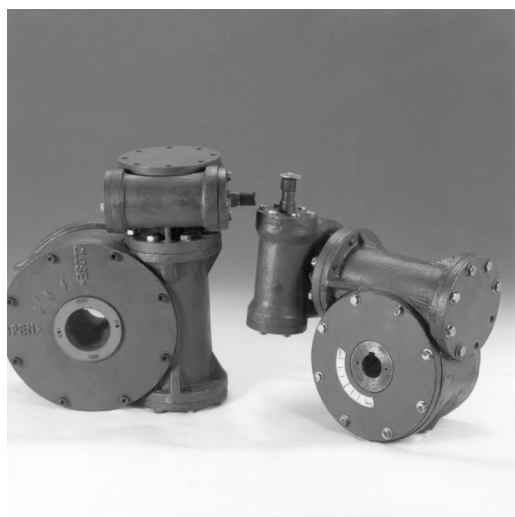
CGA Dimension table of multi-steps valve actuator-H type

Model	Calibre Dia.	dmax	d	b	t	fG	fD	n-MxL	A	B	C	E	F	W optional	R optional
CGA200	20"	2.13	1.63	0.39	1.76	7.76	6.25	4-5/8-11UNCx1.06	18.74	4.72	12.32	—	6.06	12	13.31
	24"		2.00	0.63	2.17	10.87	8.50	4-3/4-10UNCx1.18							
CGA300	20"	2.13	1.63	0.38	1.80	9.84	5.50	4-5/8-11UNCx0.98	23.03	4.13	11.42	2.36	4.72	12	18.11
	24"		2.00	0.50	2.22		6.50	4-3/4-10UNCx1.18							
CGA320	28"~ 32"	2.60	2.17	4-0.63	2.33	11.81	10	8-5/8-11UNCx0.98	20.87	5.51	13.78	2.76	5.59	12	14.96
CGA330	36"	3.94	2.95	4-0.79	3.15	11.81	10	8-5/8-11UNCx0.98	28.54	7.48	19.06	—	7.01	32	21.46
CGA410	42"	3.94	4.33	4-1.0	4.77	17.32	11.75	8-3/4-10UNCx1.18	31.73	8.86	22.28	—	8.27	28	22.80
CGA520	48"	3.94	5.12	4-1.26	5.41	21.26	14	8-1-8UNCx1.77	37.01	10.39	27.01	—	10.12	32	26.38

VALVE ACTUATOR

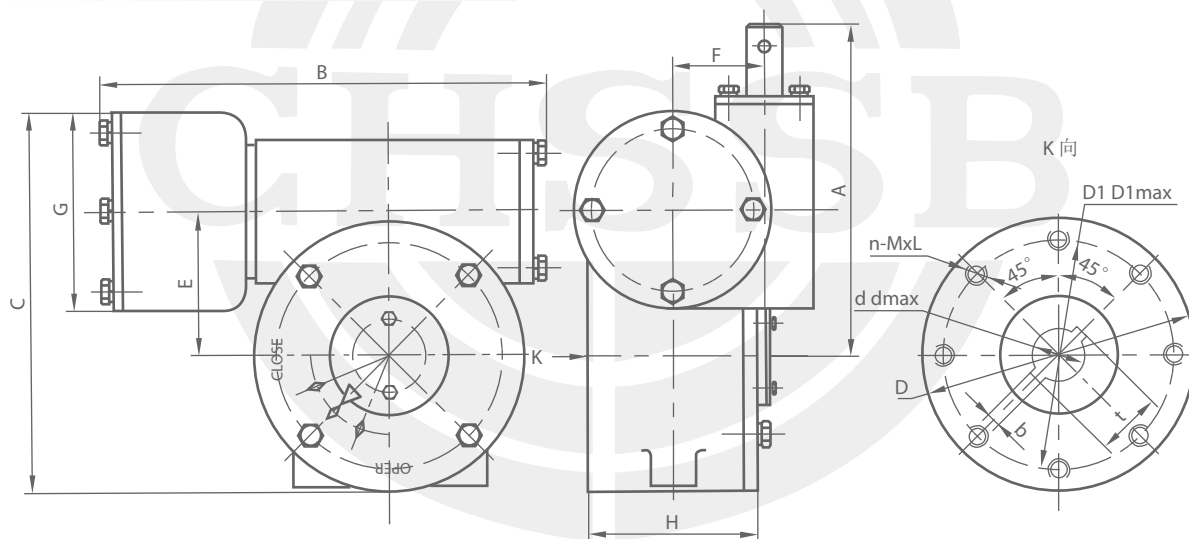
CG-Metric

CG two-steps valve actuator-V type



CG two-steps valve actuator-V type

model	CG350	CG120
gear ratio	352:1	416:1
max travel	90° ± 5°	90° ± 5°
rated input N.m	120	130
rated output N.m	7.1	7.39
efficiency %	42	55
weight kg	42	55
max stem dia mm	54	54



CG Dimension table of two-step valve actuator -V type

model	calibre dia DN	dmax	d	b	t	D	D1	S1max	n-MxL	A	B	C	E	F	G	H
CG350	450~500	54	41.3	9.53	46	230	158.75	165	4-M18x26	290	339	295	110	63	140	130
							165		4-M20x26							
CG420	600	54	50.8	12.7	56.8	255	165	216	8-M20x26	296	348	323	125			
							215.9									

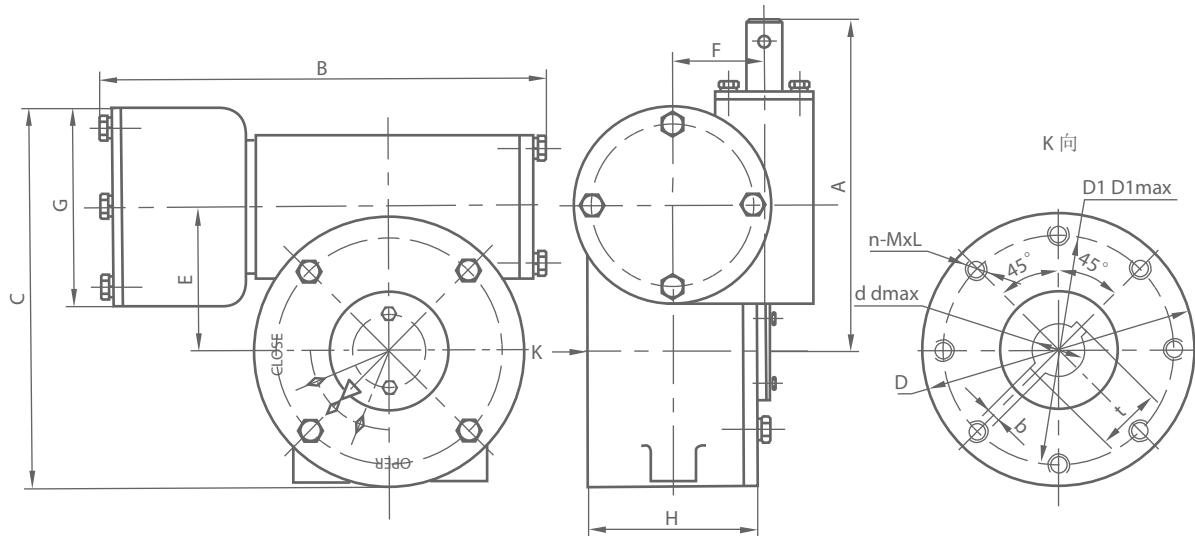
VALVE ACTUATOR *CGA-Inches*

CGA two-steps valve worm gear operator-V type



CGA two-steps valve worm gear operator-V type

model	CGA350	CGA120
gear ratio	352:1	416:1
max travel	90° ± 5°	90° ± 5°
rated input in.lb	1062	1150.5
rated output in.lb	26550	35400
efficiency %	7.1	7.39
weight lb	93	121
max stem dia in	2.13	2.13

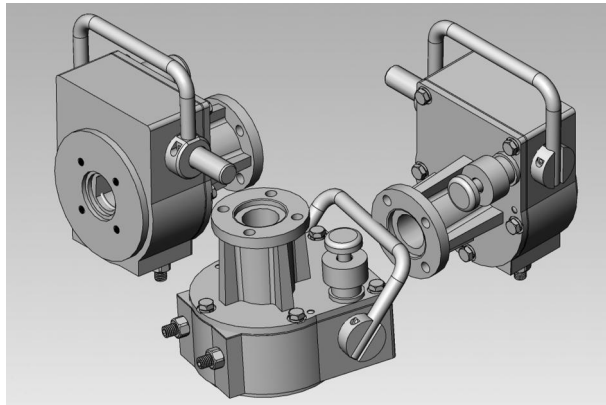


CGA Dimension table of two-step valve actuator -V type

model	calibre dia DN	dmax	d	b	t	D	D1	S1max	n-MxL	A	B	C	E	F	G	H
CGA350	18"~20"	2.13	1.63	0.38	1.81	9.06	6.25	6.50	4-5/8-11UNCx1.02	11.42	13.35	11.61	4.33	2.48	5.51	5.12
							6.50		4-3/4-10UNCx1.02							
CGA420	24"	2.13	2	0.5	2.24	10.04	6.50	8.50	8-3/4-10UNCx1.02	11.65	13.70	12.72	4.92			
							8.5									

VALVE ACTUATOR

CLG-Metric



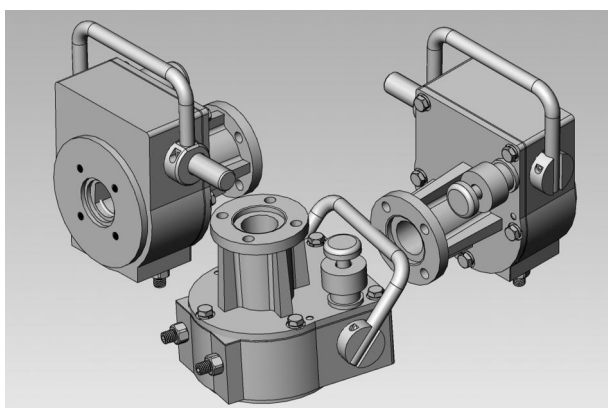
CLG Series of Worm Operator

- 90° -turning clutching type drive, can meet manual/pneumatic drive, suitable for ball valve, butterfly valve, cock valve and other type valves.
- Allowable output torque range is 147~15000N.m.
- The dimensions connected with valve designed and produced according to ISO5211/MSS SP-101.
- Loaded with grease inside device body, shell sealed for waterproof, protection grade IP65, which are conditions for device used inside rooms or in the open air.

CLG Technical parameters of valve actuators

Model	CLG-1	CLG-3	CLG-9	CLG-13	CLG-28	CLG-35	CLG-70	CLG-140
Geat Ratio	41:1	40:1	48:1	49:1	53:1	128:1	225:1	405:1
Max Travel	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°	90°±5°
Rated Output N.m	147	350	1040	1492	3164	3955	7910	15820
Weight Kg	5	8	12	23	52	55	110	235
Max. Stem Dia.mm	21	36	51	64	88	88	88	127

VALVE ACTUATOR *CLGA-Inches*



CLGA Series of Worm Operator

- 90° -turning clutching type drive, can meet manual/pneumatic drive, suitable for ball valve, butterfly valve, cock valve and other type valves.
- Allowable output torque range is 147~15000N.m.
- The dimensions connected with valve designed and produced according to ISO5211/MSS SP-101.
- Loaded with grease inside device body, shell sealed for waterproof, protection grade IP65, which are conditions for device used inside rooms or in the open air.

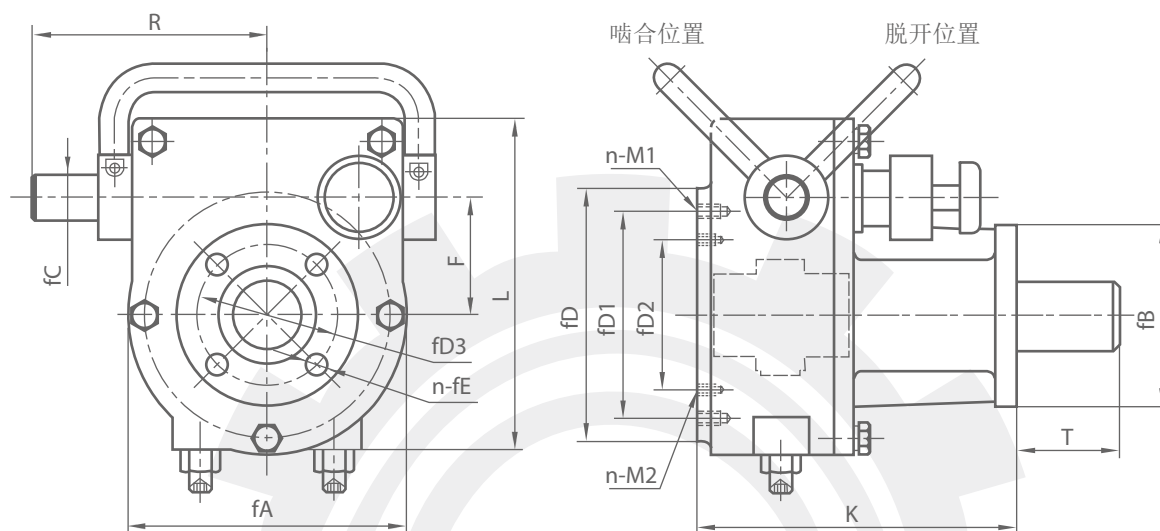
CLGA Technical parameters of valve actuators

Model	CLGA-1	CLGA-3	CLGA-9	CLGA-13	CLGA-28	CLGA-35	CLGA-70	CLGA-140
Geat Ratio	41:1	40:1	48:1	49:1	53:1	128:1	225:1	405:1
Max Travel	90° ±5°	90° ±5°	90° ±5°	90° ±5°	90° ±5°	90° ±5°	90° ±5°	90° ±5°
Rated Output in.lb	1301	3098	9204	13204	28001	35002	70004	140007
Weight Kg	11	18	26	51	115	121	243	518
Max. Stem Dia.in	0.83	1.42	2.01	2.52	3.47	3.47	3.47	5.00

VALVE ACTUATOR

CLG-Metric

CLG valve actuators

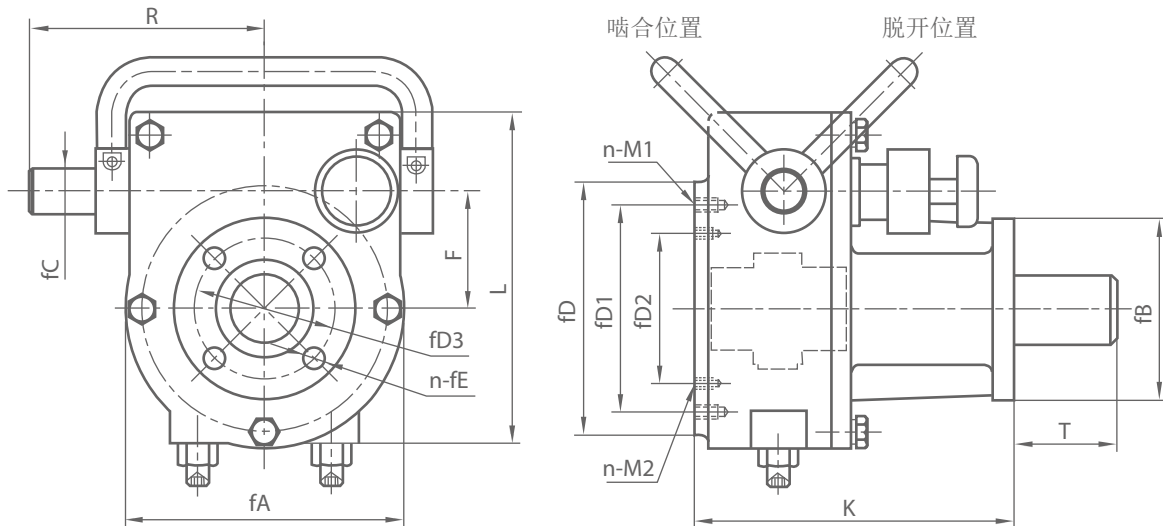


CLG Dimension table of valve actuators (mm)

model	ISO	FA	FB	FC	FD	FD1	n-M1	FD2	nxM2	FD3	n-FE	F	K	L	R	T
CLG-1	F05	100	64	15	90	50	4-M6	—	—	50	4-F8	45	115	114	89	18
CLG-3	F07/F10	128	90	15	128	102	4-M10	70	4-M8	70	4-F10	57	122	152	111	25
CLG-9	F10/F12	160	125	20	151	125	4-M12	—	—	125	4-F11	82	138	190	128	28
CLG-13	F12	178	150	22	150	125	4-M12	—	—	140	4-F14	92	162	208	162	45
CLG-28	F14	275	175	25	275	140	4-M16	—	—	140	4-F18	136	181	300	218	48
CLG-35	F16	210	210	26	210	165	4-M20	—	—	165	4-F22	142	240	298	356	80
CLG-70	F16/F25	300	305	26	300	254	8-M16	165	4-M20	254	8-F17	152	254	396	330	80
CLG-140	F25/F30	350	350	26	350	298	8-M20	254	8-M16	298	8-F22	183	350	381	368	80

VALVE ACTUATOR *CLGA-Inches*

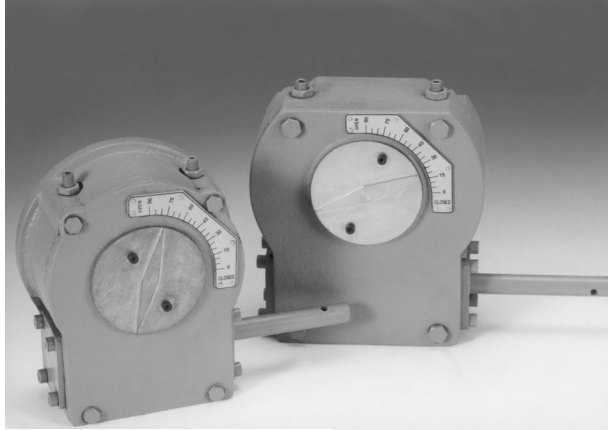
CLGA valve actuators



CLGA Dimension table of valve actuators (in)

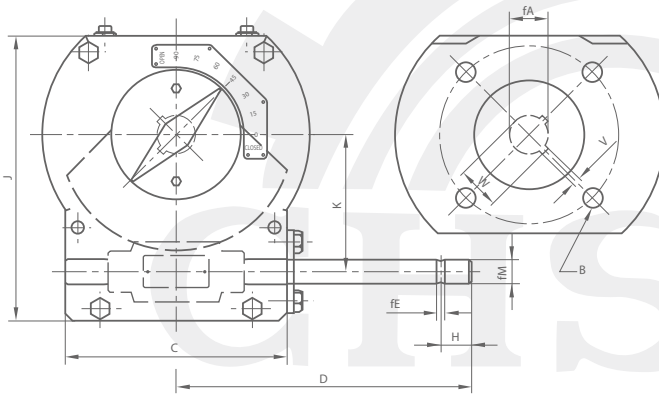
model	ISO	FA	FB	FC	FD	FD1	n-M1	FD2	nxM2	FD3	n-FE	F	K	L	R	T
CLGA-1	FA05	3.94	2.52	0.59	3.54	2	4-1/4-20UNC	-	-	2	4-F0.32	1.77	4.53	4.49	3.50	0.71
CLGA-3	FA07/FA10	5.04	3.54	0.59	5.04	4	4-3/8-16UNC	2.75	4-5/16-18UNC	2.75	4-F0.39	2.24	4.80	5.98	4.37	0.98
CLGA-9	FA10/FA12	6.30	4.92	0.79	5.94	4.95	4-1/2-13UNC	4	4-3/8-16UNC	4	4-F0.43	3.23	5.43	7.48	5.04	1.10
CLGA-13	FA12	7.01	5.91	0.87	5.91	4.95	4-1/2-13UNC	-	-	4.95	4-F0.55	3.62	6.38	8.19	6.38	1.77
CLGA-28	FA14	10.83	6.89	0.98	10.83	5.5	4-5/8-11UNC	-	-	5.5	4-F0.71	5.35	7.13	11.81	8.58	1.89
CLGA-35	FA16	8.27	8.27	1.02	8.27	6.5	4-3/4-10UNC	-	-	6.5	4-F0.87	5.59	9.45	11.73	14.02	3.15
CLGA-70	FA16/FA25	11.81	12.01	1.02	11.81	10	8-5/8-11UNC	6.5	4-3/4-10UNC	10	8-F0.67	5.98	10	15.59	12.99	3.14
CLGA-140	FA25/FA30	13.78	13.78	1.02	13.78	11.75	8-3/4-10UNC	10	8-5/8-11UNC	11.75	8-F0.87	7.20	13.78	15.00	14.19	3.15

VALVE ACTUATOR *CWG-Metric*



CWG Series of Worm gear Operators

- 90° -turning manual operating device suitable for connecting butterfly valve, cock valve and other types valve.
- Permitted output torque range is 2390~221250IN.LB.
- Handwheel can be equipped from two sides - left and right.
- Dimension jointing with valve designed according to standard ISO5211/MSS SP-101.
- Loaded with grease inside device body, shell sealed for waterproof, protection grade IP65, which are conditions for device used inside or outside room.
- The casting parts as device body and cover are made of ductile iron of high efficiency. Two ends of worm are equipped with bearings for which are of good mechanical efficiency.



CWG valve Technical parameters of actuators

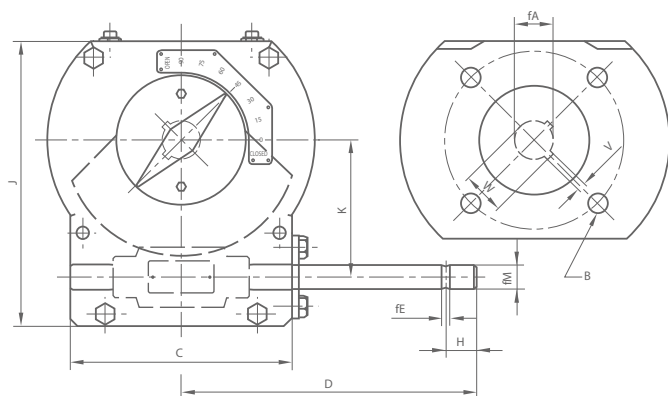
Model	ISO	B	C	D	E	H	J	K	M	A	V	W	Gear ratio	Max output torque N.m	Weight Kg
CWG4	F10	4-M10x15 MM 102BCD	130	171.5	6.35	23.9	184.8	73.025	19.05	20.65	4.775	22.89	34:1	452	12
CWG10	F12	4-M12x18MM 125 BCD	148	195	6.35	23.9	217	85.725	19.05	47.625	12.7	51.66	38:1	1130	13.7
CWG18	F14	4-M16x24MM 140 BCD	173	231	6.35	23.9	225	107.95	19.05	27	6.35	29.92	55:1	2034	20
CWG32	F16	4-M20x30MM 165 BCD	205	189.6	6.35	28.2	276.1	133.35	24.9	41.275	9.525	45.62	52:1	4336	34
CWG65	F25	8-M16x24MM 254 BCD	308	258.8	6.35	28.2	391	193.67	25	63.5	15.875	68.17	78:1	8807	79
CWG120	F30	8-M20x30MM 298 BCD	308	387	6.35	28.2	391	193.67	19.05	82.55	22.225	92.25	312:1	16259	90

VALVE ACTUATOR *CWGA-Inches*



CWGA Series of Worm gear Operators

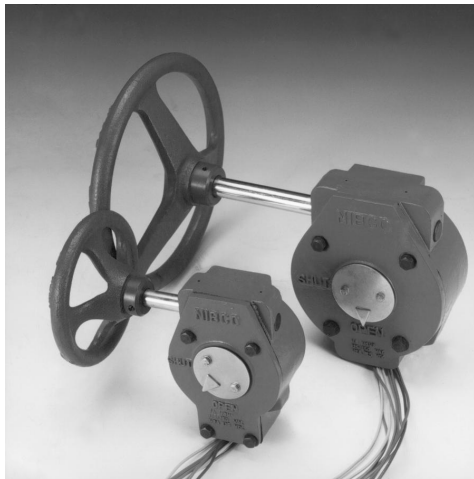
- 90° -turning manual operating device suitable for connecting with butterfly valve, ball valve and cock valve ect.
- Permitted output torque range is 4000~141600IN.LB.
- Handwheel can be equipped from two sides - left and right.
- Dimension jointing with valves designed according to standard ISO5211/MSS SP-101.
- Loaded with grease inside device body, shell sealed for waterproof, protection grade IP65, which are conditions for device used inside or outside room.
- The casting parts as device body and cover are made of ductile iron of high efficiency. Two ends of worm are equipped with bearings for which are of good mechanical efficiency.



CWGA Technical parameters of valve actuators(in)

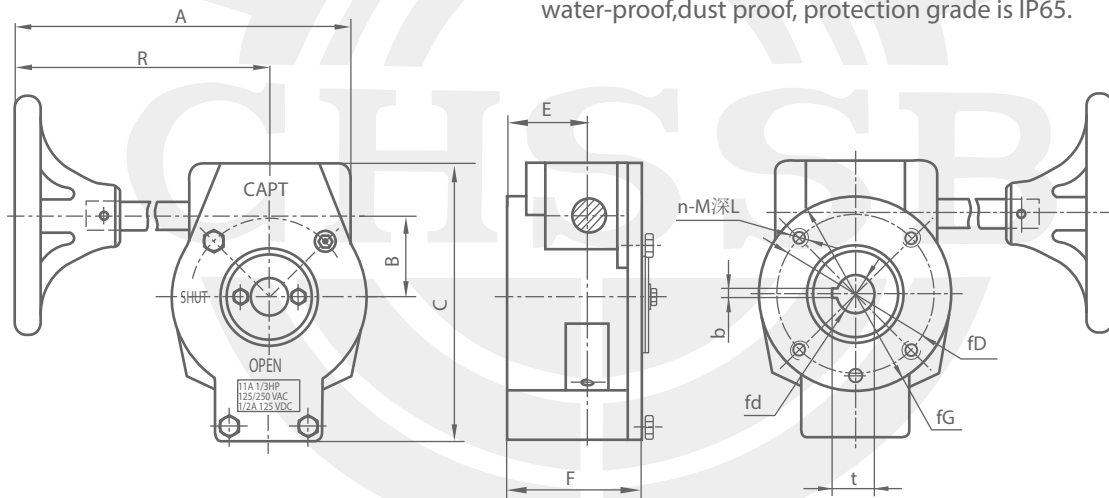
Model	ISO	B	C	D	E	H	J	K	M	A	V	W	Gear ratio	Max output torque in.lb	Weight Kg
CWGA4	F10	4-3/8-16UNCx0.6 4.00 BCD	5.12	6.75	0.25	0.94	7.27	2.88	0.75	0.81	0.19	0.90	34:1	4000	27
CWGA10	F12	4-1/2-13UNCx0.71 4.95 BCD	5.83	7.68	0.25	0.94	8.54	3.38	0.75	1.88	0.50	2.03	38:1	100001	31
CWGA18	F14	4-5/8-11UNCx0.94 5.50 BCD	6.81	9.09	0.25	0.94	8.86	4.25	0.75	1.06	0.25	1.18	55:1	18001	44
CWGA32	F16	4-3/4-10UNCx1.18 6.50 BCD	8.07	7.46	0.25	1.11	10.87	5.25	0.98	1.63	0.38	1.80	52:1	38374	75
CWGA65	F25	8-5/8-11UNCx0.63 10.00 BCD	12.13	10.19	0.25	1.11	15.39	7.63	0.98	2.50	0.63	2.68	78:1	77942	175
CWGA120	F30	8-3/4-10UNCx1.18 11.75 BCD	12.13	15.24	0.25	1.11	15.39	7.63	0.75	3.25	0.88	3.63	312:1	141600	199

VALVE ACTUATOR *CFP-Metric*



CFP Series (with electrical signal) of worm gear operators

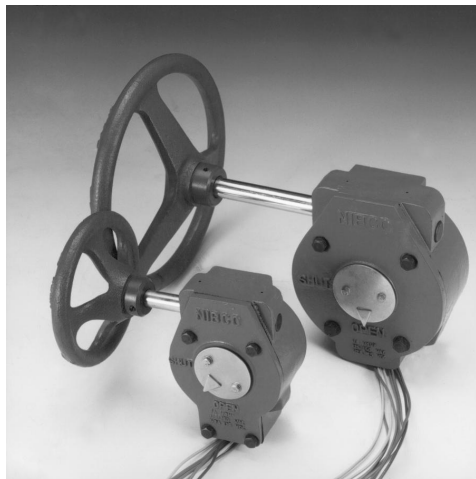
- 90° turning manual operating device with micro-active switch installed inside, suitable for connecting with ball valve, butterfly valve etc. which used in fire extinguishing field.
- Permitted output torque range is 270~700N.m
- Handwheel can be equipped form two sides-left and right.
- Dimension connecting with valves designed according to standard ISO5211/MSS SP-101
- Loaded with grease inside device body, shell sealed, water-proof,dust proof, protection grade is IP65.



CFP Technical parameters of (with electrical signal)valve actuator

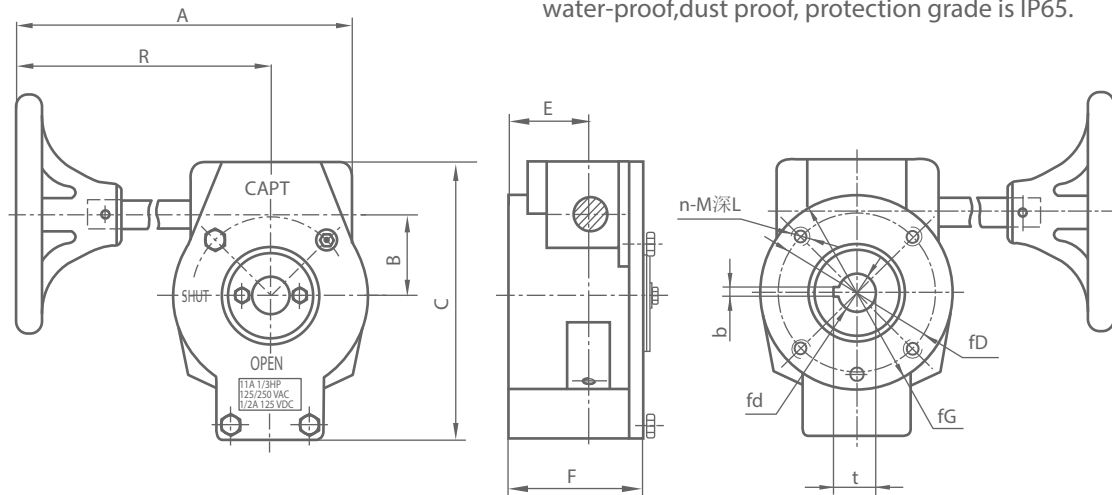
model	calibre dia DN	dmax	d	b	t	G	FD	n-MxL	A	B	C	E	F	R	W Optional	Output torque N.m	Effici- ency %	Weight Kg
CFP24	50~80	26	12.7	3.18	14.3	108	50	4-M6x10	249	45	164	38	64	195	150	270	14	5.5
	100		15.9	18.3	70		4-M8x13											
	125~150		19.05	47.6	21.4		238											
CFP30	200	30	22.2	6.35	24.5	154	102	4-M10x15	318	63	200	44.5	75	241	300	680	18.9	11.9
	250	45	28.6		31.8													

VALVE ACTUATOR *CFPA-Inches*



CFPA Series (with electrical signal) of worm gear operators

- 90° turning manual operating device with micro-active switch installed inside, suitable for connecting with ball valve, butterfly valve etc. which used in fire extinguishing field.
- Permitted output torque range is 2390~6018 IN.LB
- Handwheel can be equipped form two sides-left and right.
- Dimension connecting with valves designed according to standard ISO5211/MSS SP-101
- Loaded with grease inside device body, shell sealed, water-proof,dust proof, protection grade is IP65.



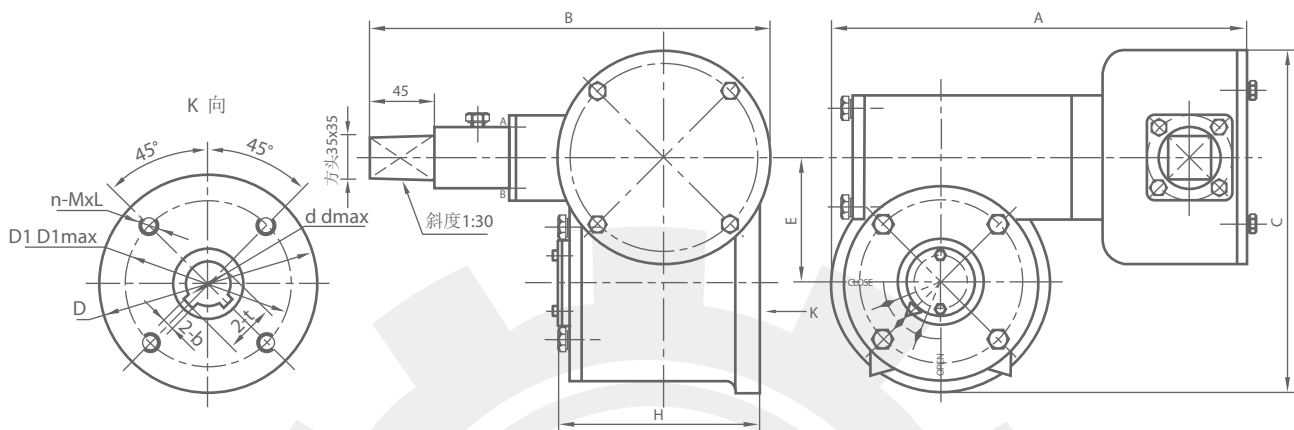
CFPA Technical parameters of (with electrical signal)valve actuator

model	calibre dia DN	dmax	d	b	t	G	FD	n-MxL	A	B	C	E	F	R	W Optional	Output torque in.lb	Effici- ency %	Weight lb				
CFPA24	2"~3"	—	0.5	0.13	0.56	4.25	2	4-1/4-20UNCx0.40	9.80	1.77	6.46	1.50	2.50	7.68	6	2390	14	12				
	4"	1.02	0.63	0.19	0.72		2.75	4-5/16-18UNCx0.51											9.37	7.24	10	16
	5"~6"		0.75		0.84																	
CFPA30	8"	1.18	0.87	0.25	0.96	6.06	4	4-3/8-16UNCx0.06	12.52	2.48	7.87	1.75	2.95	9.49	12	6018	18.9	26				
	10"	1.77	1.13		1.25																	

VALVE ACTUATOR

CDG-Metric

CDG series of worm gear operators-for underground use



CDG Technical parameters of valve actuators

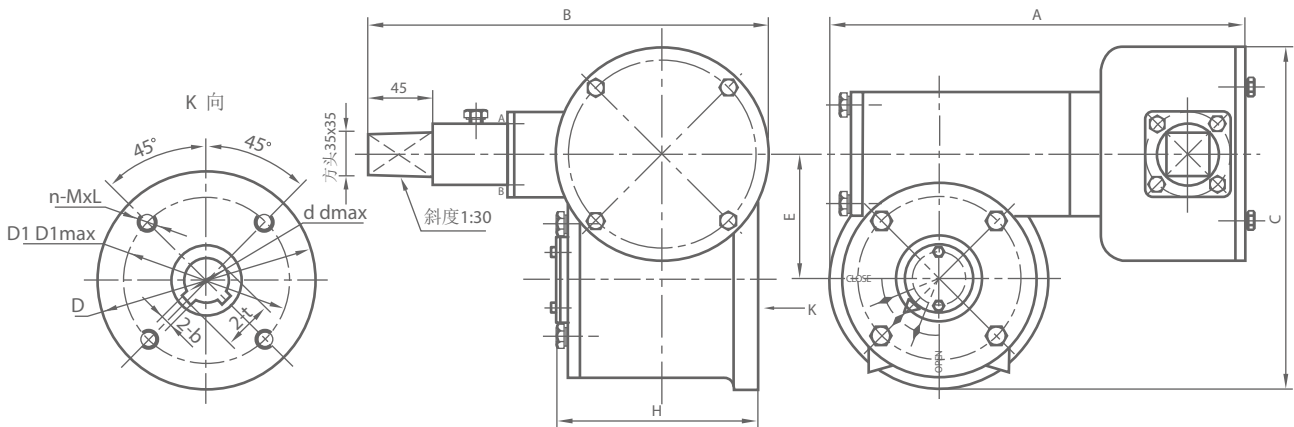
model	CDG24	CDG30	CDG80	CDG140	CDG200	CDG300	CDG360
gear ratio	27:1	34:1	80:1	140:1	200:1	300:1	360:1
rated output torque N. m	170	670	1200	2000	4000	7000	16000
weight Kg	7.5	14.5	16.5	36	51	80.5	105

CDG Dimension table of CDG valve actuator (mm)

model	calibre dia DN	d	dmax	b	t	D	D1	Dmax	n-MxL	A	B	C	E	H
CDG24	50~60	12.7	26	3	14.2	77	57	70	4-M6x13	182	205	144	45	87
	100	15.9		5	18.2	92	70		4-M8x13					
	125~150	19.1			21.4									
CDG30	200	22.2	30	5	24.5	115	89	90	4-M12x15	207	227	185	63	92
	250	28.6		8	31.9									
CDG80	300~350	31.8	45	8	35	140	108	108	4-M12x18	241	203	204	78	89
CDG140	400	33.3	54	10	41.5	36.6	158.75	170	4-M18x26	325	232	306	120	125
	450	38.1				197								
CDG200	500	41.3	54	10	44.6	197	158.75	216	4-M18x28	377	296	339	120	152.6
	600	50.8							16					
CDG300	700~800	55.0	66	4-16	59.3	300	254	254	4-M16x25	422	377	420	152	163
CDG360	900~1050	75	100	4-20	79.9	360	254	298	4-M16x25	454	395	547	190	178

VALVE ACTUATOR **CDGA-Inches**

CDGA series of worm gear operators-for underground use



CDGA Technical parameters of valve actuators

model	CDG24	CDGA30	CDGA80	CDGA140	CDGA200	CDGA300	CDGA360
gear ratio	27:1	34:1	80:1	140:1	200:1	300:1	360:1
rated output torque in.lb	1505	5930	10620	17700	35400	61950	141600
weight lb	17	32	37	80	113	178	323

CDGA Dimension table of CDG valve actuator (in)

model	calibre dia DN	d	dmax	b	t	D	D1	Dmax	n-MxL	A	B	C	E	H
CDGA24	2"~3"	0.5	10.2	0.12	0.56	3.03	2.24	2.76	4-1/4-20UNCx0.51	7.17	8.07	5.67	1.77	3.43
	4"	0.63		0.2	0.72	3.62	2.76		4-5/16-18UNCx0.51					
	5"~6"	0.75		0.84										
CDGA30	8"	0.87	1.18	0.2	0.96	4.53	3.5	3.54	4-1/2-13UNCx0.59	8.15	8.94	7.28	2.48	3.62
	10"	1.13		0.31	1.26									
CDGA80	12"~14"	1.25	1.77	0.31	1.38	5.51	4.25	4.25	4-1/2-13UNCx0.71	9.49	7.99	8.03	3.07	3.50
CDGA140	16"	1.31	2.13	0.39	1.44	7.76	6.25	6.69	4-5/8-11UNCx1.02	12.80	9.13	12.05	4.72	4.92
	18"	1.5			1.63									
CDGA200	20"	1.63	2.13	0.39	1.76	7.76	6.25	8.50	4-5/8-11UNCx1.1	14.84	11.65	13.35	4.72	6.01
	24"	2		0.63	2.71				10.87					
CDGA300	28"~32"	2.17	2.60	4-0.63	2.33	11.81	10	10	4-5/8-11UNCx21	16.61	14.84	16.54	5.98	6.42
CDGA360	36"~42"	2.95	3.94	4-0.79	3.15	14.17	10	11.73	4-5/8-11UNCx1	17.87	15.55	21.54	7.48	7.01

VALVE ACTUATOR

BG-Metric

BG Series of bevel gear operators



- Total turning manual operating device suitable for jointing with gate valve, stop valve ect.
- Permitted output torque range is 255~16230N.m.
- Jointing with valve by guide screw and nut, flange jointing is designed according to standard ISO 5211/MSS SP-01.
- The casting parts as device body and cover are made of ductile iron of high efficiency. two ends of worm are equipped with bearings for which are good mechanical efficiency.
- Horizontal (H type) and Vertically (V type).

BG Technical parameters of one-step valve actuators-H type

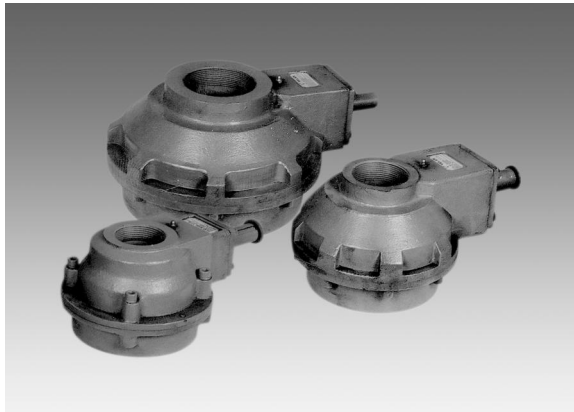
Model	BG05	BG08	BG10	BG20	BG30	BG40	BG50
Geat ratio	2.9:1	3:1	3:1	4:1	6:1	6:1	8:1
Maximum output torque Nm	255	354	845	1017	1695	4068	6780
Maximum pushing force Kn	75	113	178	178	356	445	668
Maximum stem diameter Mm	26	34	456	51	60	79	102
Weight Kg	9	10.5	21	23	40	74	114
Efficiency	0.9	0.9	0.90	0.90	0.90	0.90	0.90

BG Technical parameters of multi-step valve actuators-H type

Model	BG30B	BG40B	BG50B	BG60	BG70	BG100
Geat ratio	30.0:1	30.0:1	40.0:1	43.0:1/81.8:1	44.2:1/84.1:1	44.2:1/84.1:1
Maximum output torque Nm	1695	4068	6780	10850	10850	16230
Maximum pushing force Kn	356	445	668	890	1335	1335
Maximum stem diameter Mm	60	79	102	114	114	140
Weight Kg	57	92	132	190	240	455
Efficiency	0.80	0.80	0.80	0.70	0.70	0.70

VALVE ACTUATOR *BGA-Inches*

BGA Series of bevel gear operators



- Total turning manual operating device suitable for jointing with gate valve, stop valve ect.
- Permitted output torque range is 188~12000IN.LB.
- Jointing with valve by guide screw and nut, flange jointing is designed according to standard ISO 5211/MSS SP-01.
The casting parts as device body and cover
- are made of ductile iron of high efficiency. two ends of worm are equipped with bearings for which are good mechanical efficiency.
Horizontal (H type) and Vertically (V type).

BG Technical parameters of one-step valve actuators-H type

Model	BG05	BG08	BG10	BG20	BG30	BG40	BG50
Geat ratio	2.9:1	3:1	3:1	4:1	6:1	6:1	8:1
Maximum output torque ft.lb	188	261	623	750	1250	3000	5000
Maximum pushing force lb	16872	25420	40000	40000	80000	100000	150000
Maximum stem diameter in	1.02	1.34	1.81	2.00	2.38	3.13	4.00
Weight lb	20	23	46	50	88	163	250
Efficiency	0.9	0.9	0.90	0.90	0.90	0.90	0.90

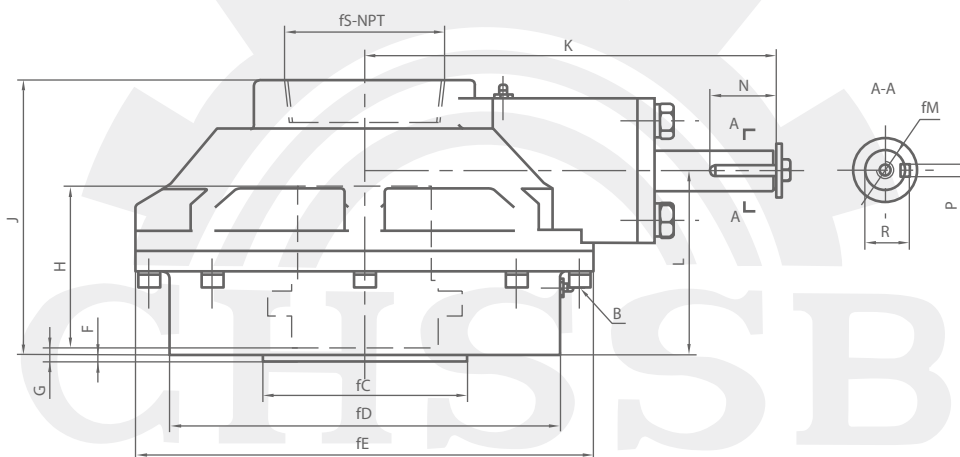
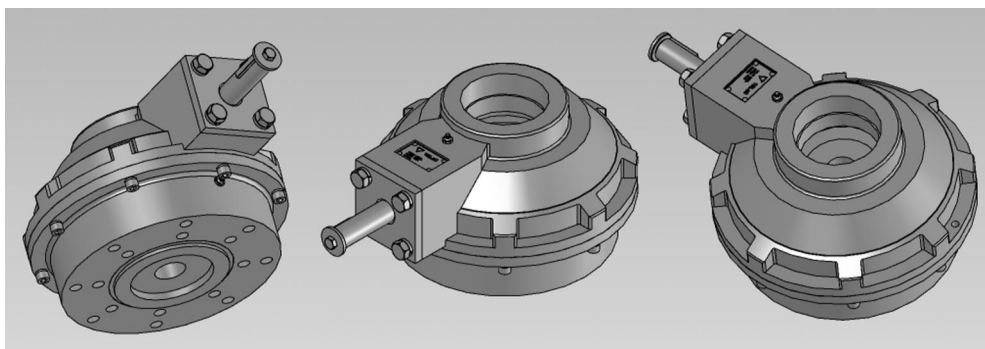
BG Technical parameters of multi-step valve actuators-H type

Model	BG30B	BG40B	BG50B	BG60	BG70	BG100
Geat ratio	30.0:1	30.0:1	40.0:1	43.0:1/81.8:1	44.2:1/84.1:1	44.2:1/84.1:1
Maximum output torque ft.lb	1250	3000	5000	8000	8000	12000
Maximum pushing force lb	80000	100000	150000	200000	300000	300000
Maximum stem diameter in	2.38	3.13	4.00	4.50	4.50	5.50
Weight lb	125	203	290	419	529	1000
Efficiency	0.80	0.80	0.80	0.70	0.70	0.70

VALVE ACTUATOR

BG-Metric

BG one-step valve actuators-H type

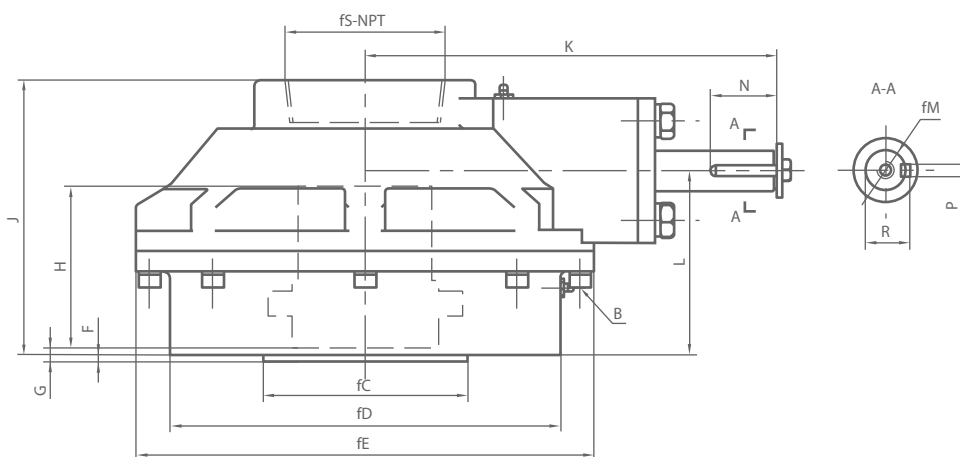
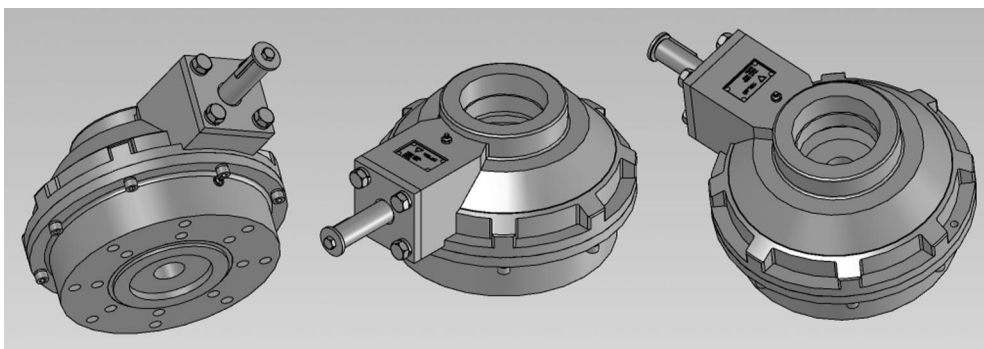


BG Dimension table of BG valve actuators-H type

UNIT	ISO	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S
BG05	F10	4-M10x15MM 12 BCD	70	135	140	3	3	44	98	150	50	21	25	6	23.5	1.50
BG08	F12	4-M12x15MM 12 BCD	85	160	170	3	3	50	113	180	60	26	35	8	29	2
BG10	F14	4-M16x28MM 140 BCD	95.25	176	200	4	4	60	122	212	79	30	49	8	34	2.50
BG20	F14	4-M16x35MM 140 BCD	95.25	176	210	4	8	76	154	213	102	30	49	8	34	2.50
BG30	F16	4-M20x45MM 165 BCD	127	203	250	5	12	102	179	249	121	30	49	8	34	3.00
BG40	F25	8-M16x35MM 254 BCD	152	290	340	5	12	121	205	279	138	30	49	8	34	4.00
BC50	F30	8-M20x45MM 298 BCD	178	346	400	5	6	152	222	340	160	30	49	8	34	4.00

VALVE ACTUATOR *BGA-Inches*

BGA one-step valve actuators-H type



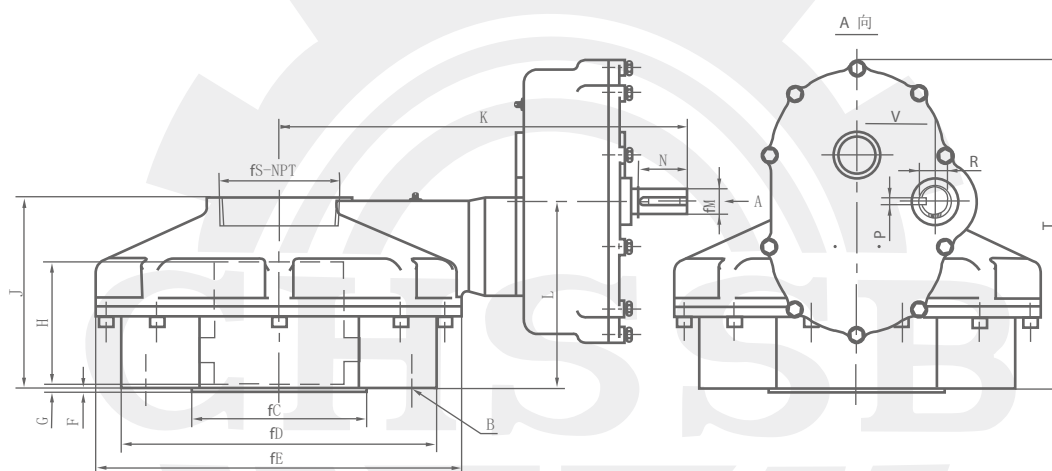
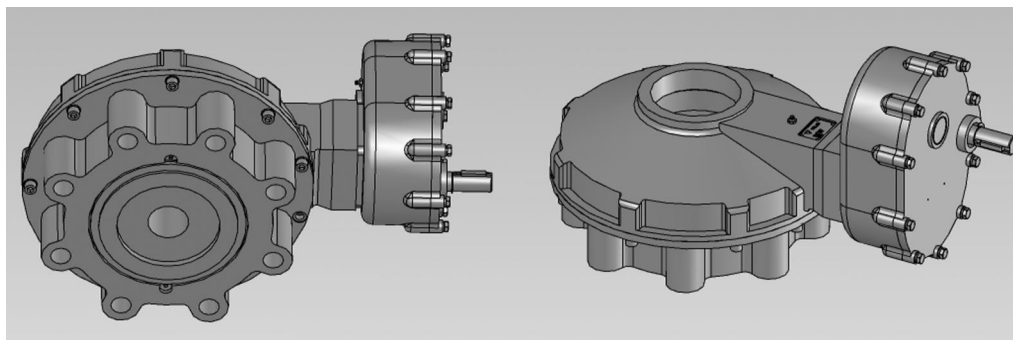
BGA Dimension table of BGA valve actuators-H type

UNIT	ISO	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S
BGA05	FA10	4-3/8-16UNCx0.6 4.00 BCD	2.76	5.31	5.51	0.12	0.12	1.73	3.86	5.91	1.97	0.83	0.98	0.24	0.093	0.06
BGA08	FA12	4-1/2-13UNCx1.1 4.95 BCD	3.35	6.30	6.69	0.12	0.12	1.97	4.45	7.09	2.36	1.02	1.38	0.31	1.14	0.08
BGA10	FA14	4-5/8-11uncX1.1 5.50 BCD	3.75	6.93	7.87	0.16	0.16	2.36	4.80	8.35	3.11	1.18	1.93	0.31	1.34	0.1
BGA20	FA14	4-5/8-11uncX1.38 5.50 BCD	3.75	6.93	8.27	0.16	0.31	2.99	6.06	8.39	4.02	1.18	1.93	0.31	1.34	0.1
BGA30	FA16	4-3-4-10uncX1.77 6.50 BCD	5	7.99	9.84	0.20	0.47	4.02	7.05	9.8	4.76	1.18	1.93	0.31	1.34	0.12
BGA40	FA25	4-5/8-11uncX1.38 10.00 BCD	5.98	11.42	13.39	0.20	0.47	4.76	8.07	10.97	5.43	1.18	1.93	0.31	1.34	0.16
BCA50	FA30	4-3/4-10uncX1.77 11.75 BCD	7.01	13.62	15.75	0.20	0.24	5.98	8.74	13.39	6.30	1.18	1.93	0.31	1.34	0.16

VALVE ACTUATOR

BG-Metric

BG multi-step valve actuators-H type

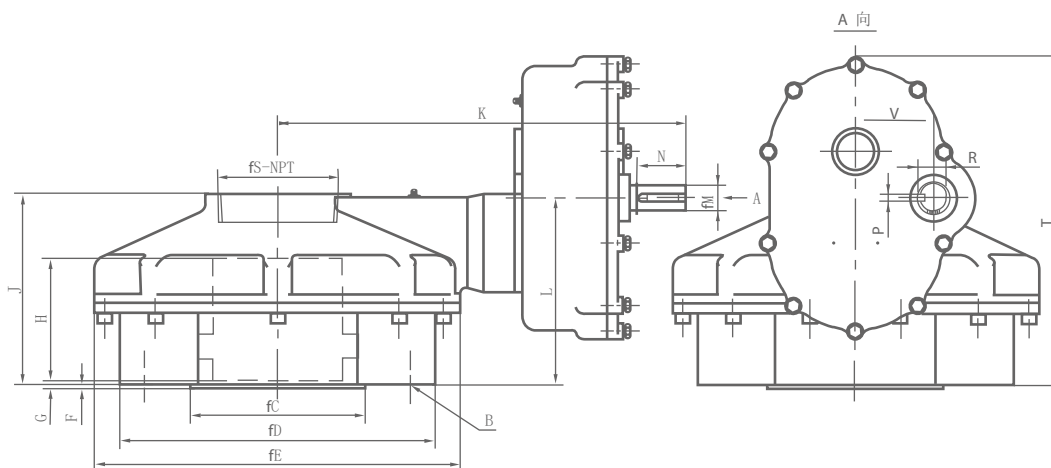
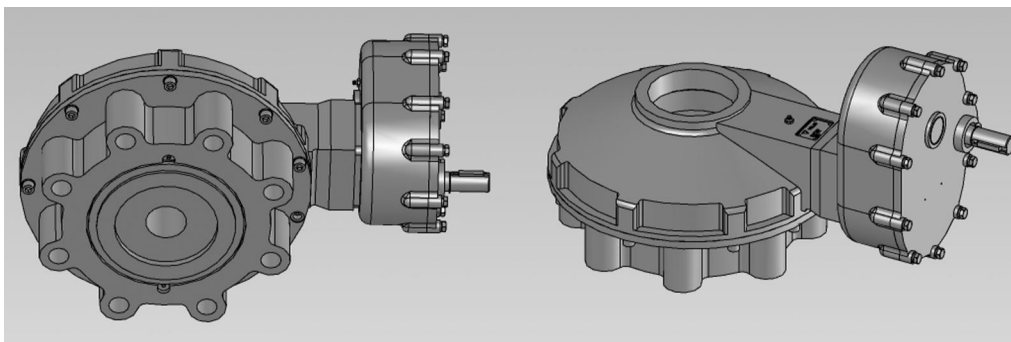


BG Dimension table of BG multi-step valve actuators-H type

UNIT	ISO	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	V
BG30B	F16	4-M20x45MM 165 BCD	127	203	250	5	12	102	179	341	242	30	49	8	34	3.00	283	N/A
BG40B	F25	8-M16x35MM 254 BCD	152	290	340	5	12	121	205	346	260	30	49	8	34	4.00	284	N/A
BG50B	F30	8-M20x45MM 298 BCD	178	346	400	5	6	152	222	406	242	30	49	8	34	4.00	283	N/A
BG60	F35	8-M30x45MM 356 BCD	216	416	451	5	10	151	235	503	231	30	60	8	34	5.00	405	95
BG70	—	8-M36x54MM 356 BCD	216	432	451	5	—	238	325	503	320	30	60	8	34	5.00	494	95
BG100	F48	12-M36x54MM 483BCD	370	559	—	9.6	7.6	203	471	487	451	30	60	8	34	6.00	626	95

VALVE ACTUATOR *BGA-Inches*

BGA multi-step valve actuators-H type



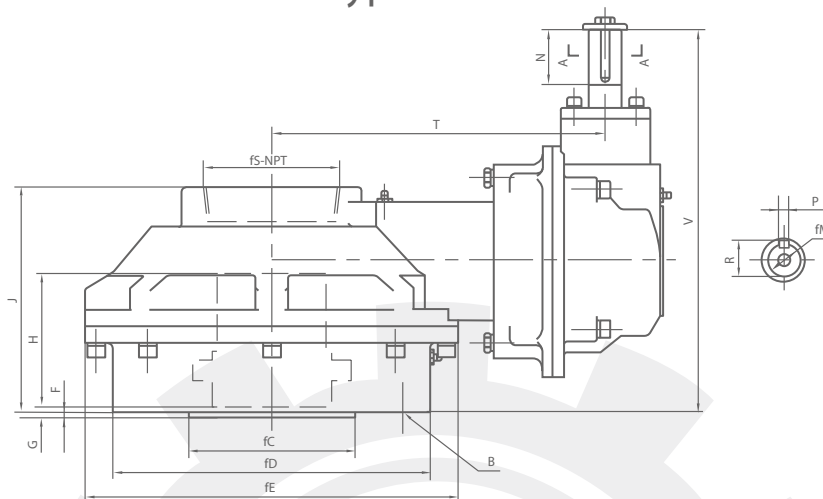
BGA Dimension table of BGA multi-step valve actuators-H type

UNIT	ISO	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	V
BGA30B	F16	4-3/4-10UNCx1.75 6.50 BCD	5	7.99	9.84	0.20	0.47	4.02	7.05	13.43	9.53	1.18	1.93	0.31	1.34	0.12	11.14	N/A
BGA40B	F25	8-5/8-11UNCx1.38 10.00 BCD	5.98	11.42	13.39	0.20	0.47	4.76	8.07	13.62	10.24	1.18	1.93	0.31	1.34	0.16	11.18	N/A
BGA50B	F30	8-3/4-10UNCx1.75 11.75 BCD	7.01	13.62	15.75	0.20	0.24	5.98	8.74	15.98	9.53	1.18	1.93	0.31	1.34	0.16	11.14	N/A
BGA60	F35	8-1 1/4-7UNCx2.75 14.00 BCD	8.50	16.38	17.76	0.20	0.39	5.94	9.25	19.80	9.09	1.18	2.36	0.31	1.34	0.20	15.94	3.74
BGA70	—	8-1 1/2-8UNCx3.00 14.00 BCD	8.50	17.01	17.76	0.20	—	9.37	12.80	19.80	12.60	1.18	2.36	0.31	1.34	0.20	19.45	3.74
BGA100	F48	12-1 1/2-8UNCx2.63 19.00 BCD	14.57	22.01	—	0.38	0.30	7.99	18.54	19.17	17.76	1.18	2.36	0.31	1.34	0.24	24.65	3.74

VALVE ACTUATOR

BGS valve actuators-V type

BGS-Metric



BGS Technical parameters of valve actuators-V type

Model	BGS08	BGS10	BGS20	BGS30	BGS40	BGS50
Geat ratio	9:1	9:1	16:1	24:1	24:1	32:1
Max. output torque Nm	354	845	1017	1695	4068	6780
Max. thrust Kn	113	178	178	356	445	668
Max. stem dia. Mm	34	46	51	60	79	102
Weight Kg	18	20	45	61	91	114
Efficiency	0.9	0.90	0.80	0.80	0.80	0.80

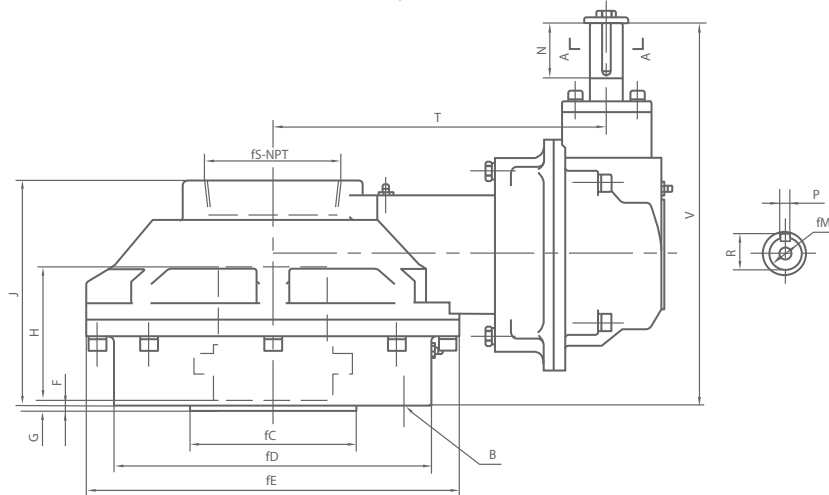
BGS Dimension table of BGS valve actuators-V type

Model	ISO	B	C	D	E	F	G	H	J	M	N	P	R	S	T	V
BGS08	F12	4-M12x15MM	85	160	170	3	3	50	113	26	35	8	29	2	195	220
		125 BCD														
BGS10	F14	4-M16x28MM	95.25	176	200	4	4	60	122	30	49	8	34	2.50	210	270
		140 BCD														
BGS20	F14	4-M16x35MM	100	176	210	4	8	76	154	30	49	8	34	2.50	229	314
		140 BCD														
BGS30	F16	4-M20x45MM	127	203	250	5	12	102	179	30	49	8	34	3.00	270	334
		165 BCD														
BGS40	F25	8-M16x35MM	152	290	340	5	12	121	205	30	49	8	34	4.00	303	351
		254 BCD														
BGS50	F30	8-M20x45MM	178	346	400	5	6	152	222	30	49	8	3	4.00	363	334
		298 BCD														

VALVE ACTUATOR

BGSA-Inches

BGSA valve actuators-V type



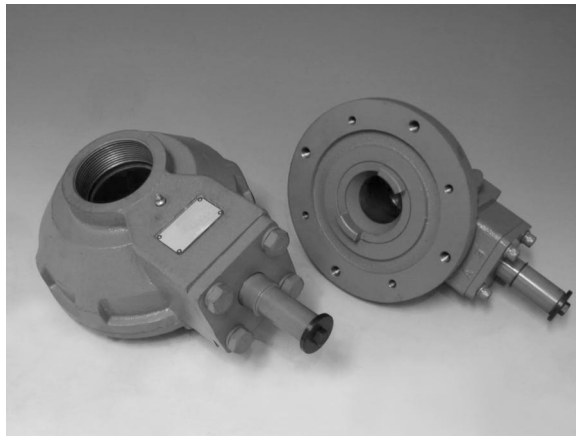
BGSA Technical parameters of valve actuators-V type

Model	BGS08	BGS10	BGS20	BGS30	BGS40	BGS50
Geat ratio	9:1	9:1	16:1	24:1	24:1	32:1
Max. output torque ft,lb	216	623	750	1250	3000	5000
Max. thrust lb	25420	40000	40000	80000	100000	150000
Max. stem dia. in	1.34	1.81	2.00	2.38	3.13	4.00
Weight lb	40	44	100	135	200	250
Efficiency	0.9	0.90	0.80	0.80	0.80	0.80

BGSA Dimension table of BGSA valve actuators-V type

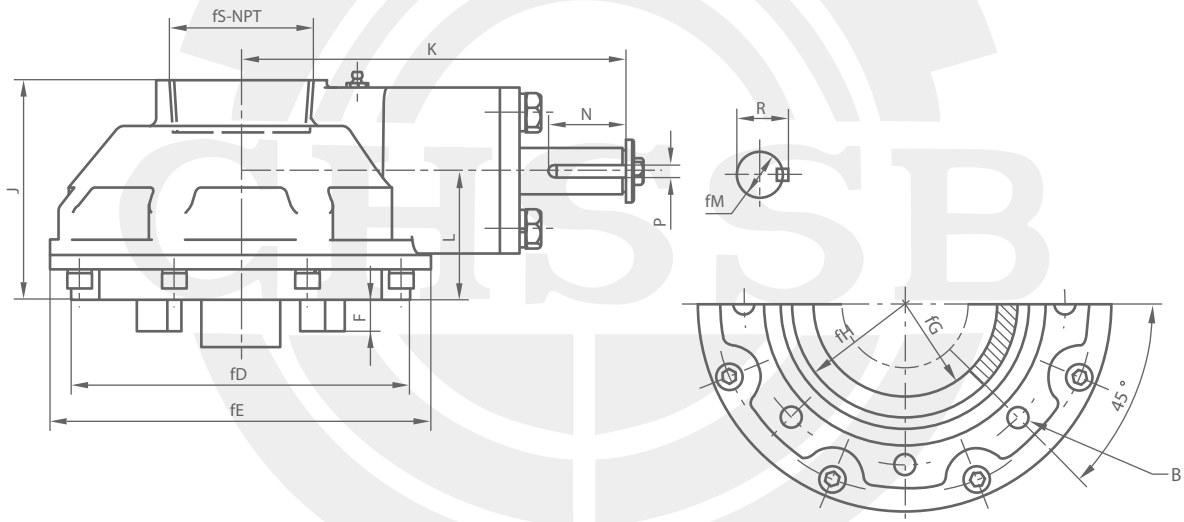
Model	ISO	B	C	D	E	F	G	H	J	M	N	P	R	S	T	V
BGSA08	F12	4-1/2-13UNCx0.6	3.35	6.30	6.69	0.12	0.12	1.97	4.45	1.02	1.38	0.31	1.14	0.08	7.68	8.66
		4.95 BCD														
BGSA10	F14	4-5/8-11UNCx1.1	3.75	6.93	7.87	0.16	0.16	2.36	4.80	1.18	1.93	0.31	1.34	0.1	8.27	10.63
		5.50 BCD														
BGSA20	F14	4-5/8-11UNCx1.38	3.94	6.93	8.27	0.16	0.31	2.99	6.06	1.18	1.93	0.31	1.34	0.1	9.02	12.36
		5.50 BCD														
BGSA30	F16	4-3/4-10UNCx1.77	5	7.99	9.84	0.2	0.47	4.02	7.05	1.18	1.93	0.31	1.34	0.12	10.63	13.15
		6.50 BCD														
BGSA40	F25	8-5/8-11UNCx1.38	5.98	11.42	13.39	0.2	0.47	4.76	8.07	1.18	1.93	0.31	1.34	0.16	11.93	13.82
		10.00 BCD														
BGSA50	F30	8-3/4-10UNCx1.77	7.01	13.62	15.75	0.2	0.24	5.98	8.74	1.18	1.93	0.31	1.34	0.16	14.29	13.15
		11.75 BCD														

VALVE ACTUATOR **CBG-Metric**



CBG Series of bevel gear operators

- Multi-turning type manual drive device, suitable for gate valve, stop valve, and other type valves.
- Allowable output torque range: 1017~6780N.m
- Tooth scarfjointing type connection with valve, flange connection should be designed and produced according to ISO5211/MSS SP-101
- Material for gear body and cover etc. cast iron parts is high capability ductile iron



CBG Technical parameters of CBG valve actuators

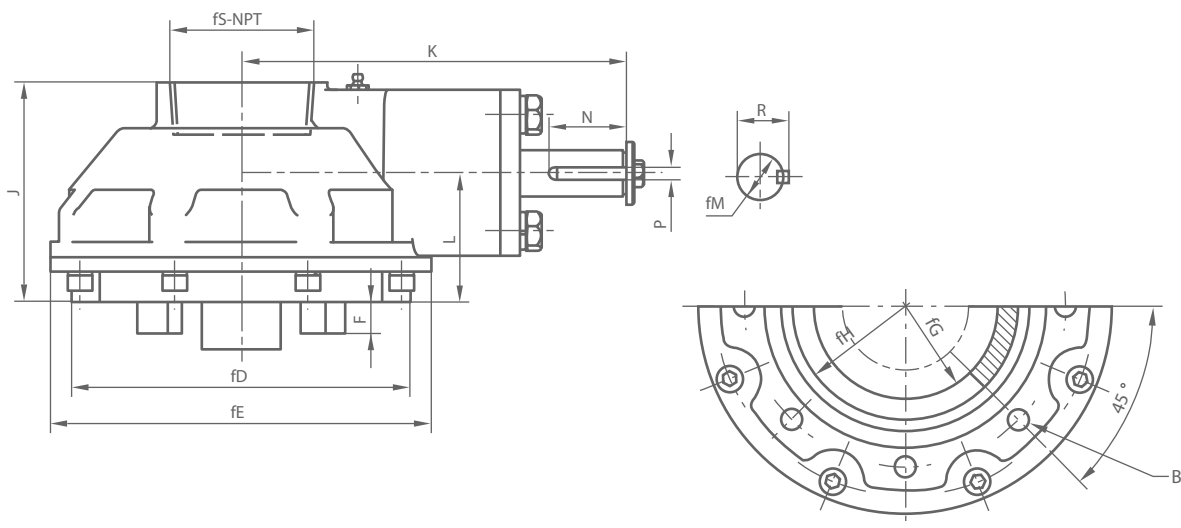
model	ISO	B	D	E	F	G	H	J	K	L	M	N	P	R	S	Gear ratio	Max.output torque N.m	Efficiency	Max.stem Dia mm	Weight Kg
CBG20	—	4-M12x18 MM 193.7 BCD	—	220	12.5	70	89	125	213	73	30	49	8	34	2.50	4:1	1017	0.90	52	20
CBG30	—	8-M2118 MM 193.7 BCD	222	250	21	111	137	144	262	86	30	49	8	34	3.00	6:1	1695	0.90	76	30
CDG40	—	8-M12x18 MM 193.7 BCD	222	340	17	111	137	165	279	98	30	49	8	34	4.00	6:1	4068	0.90	102	45
CDG50	F30	8-M20x30 MM 298 BCD	337	400	-	111	146	164	340	102	30	49	8	34	4.00	8:1	6780	0.90	108	91

VALVE ACTUATOR **CBGA-Inches**



CBGA Series of bevel gear operators

- Multi-turning type manual drive device, suitable for gate valve, stop valve, and other type valves.
- Allowable output torque range: 750~ 5000 ft.lb
- Tooth scarfjointing type connection with valve, flange connection should be designed and produced according to ISO5211/MSS SP-101
- Material for gear body and cover etc. cast iron parts is high capability ductile iron



CBGA Technical parameters of CBGA valve actuators

model	MSS	B	D	E	F	G	H	J	K	L	M	N	P	R	S	Gear ratio	Max.output torque ft.lb	Efficiency	Max.stem Dia mm	Weight lb
CBGA20	—	4-1/2-13UNCx0.75 7.63 BCD	—	8.66	0.49	2.76	3.50	4.92	8.39	2.87	1.18	1.93	0.31	1.34	0.98	4:1	750	0.90	2.06	45
CBGA30	—	8-1/2-13UNCx0.75 7.63 BCD	8.74	9.84	0.83	4.37	5.39	5.67	10.31	3.39	1.18	1.93	0.31	1.34	0.12	6:1	1250	0.90	3.00	65
CBGA40	—	8-1/2-13UNCx0.75 7.63 BCD	8.74	13.39	0.67	4.37	5.39	6.50	10.98	3.86	1.18	1.93	0.31	1.34	0.16	6:1	3000	0.90	4.00	100
CBGA50	FA30	8-3/4-10UNCx1.75 11.75 BCD	13.27	15.75	—	4.37	5.75	6.46	13.39	4.02	1.18	1.93	0.31	1.34	0.16	8:1	5000	0.90	4.25	200

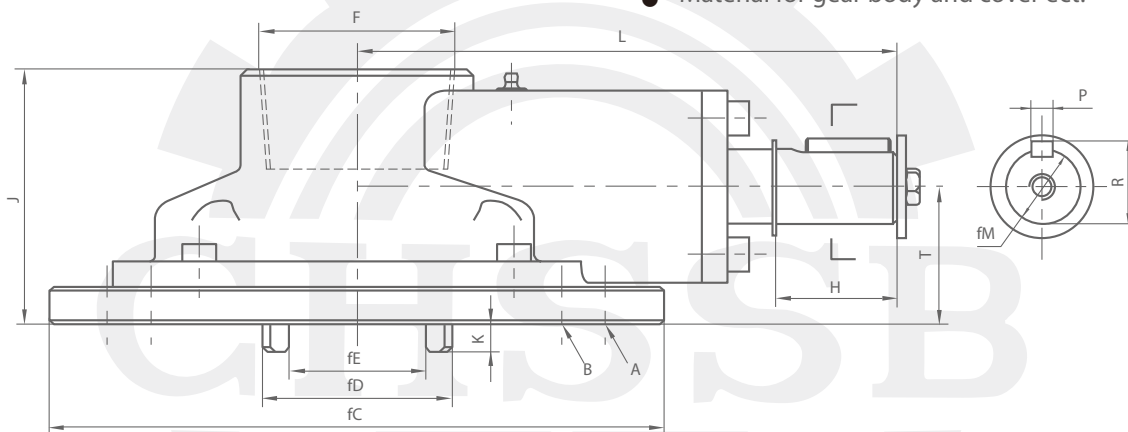
VALVE ACTUATOR

CB-Metric



CB Series of bevel operators

- Multi-turning type drive device, suitable for gate valve, stop valve, and other type valves.
- Allowable output torque range is 1350~5400N.m.
- Tooth scarf jointing type connection valve, flange connection should be designed and produced according to ISO52100/MSS SP-101.
- Material for gear body and cover ect.



CB Technical parameters of CB valve actuators

Model	gear ratio	Max. output torque N.m	Max. stem Dia. mm	Weight Kg
CB107	2.92:1	1350	67	20
CB207	4.07:1	2700	100	34.6
CB307	6:1	5400	100	76.4

CB Dimension table of CB valve actuators(mm)

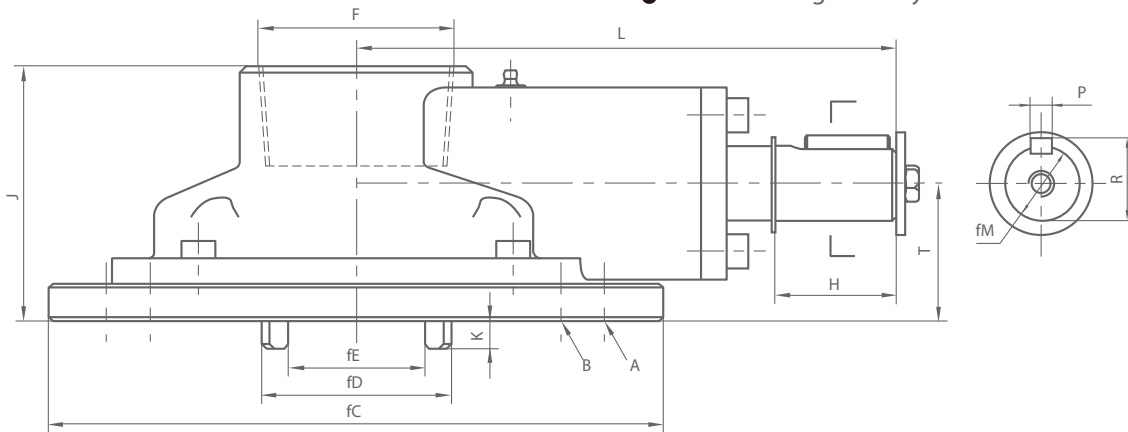
Model	A	B	C	D	E	F	H	J	K	L	T	M	P	R
CB107	8-M16 254 BCD	4-M12 193.7 BCD	290	89	70	M90x3	57	120	13	273.5	65	35	12.7	39.7
CB207	8-M20 298 BCD	8-M12 193.7 BCD	342	133	105	M110x3	57	138	20	288.5	70			
CB307	8-M30 356 BCD	8-M12 193.7 BCD	412	137	110M	110x3	57	168	20	428.5	90			

VALVE ACTUATOR *CBA-Inches*



CBA Series of bevel operators

- Multi-turning type drive device, suitable for gate valve, stop valve, and other type valves.
- Allowable output torque range 996~4000ft.lb.
- Tooth scarf jointing type connection valve, flange connection should be designed and produced according to ISO52100/MSS SP-101.
- Material for gear body and cover ect.



CBA Technical parameters of CBA valve actuators

Model	gear ratio	Max. output torque ft.lb	Max. stem Dia. in	Weight lb
CBA107	2.92:1	996	2.64	44
CBA207	4.07:1	1991	3.94	76
CBA307	6:1	4000	3.94	168

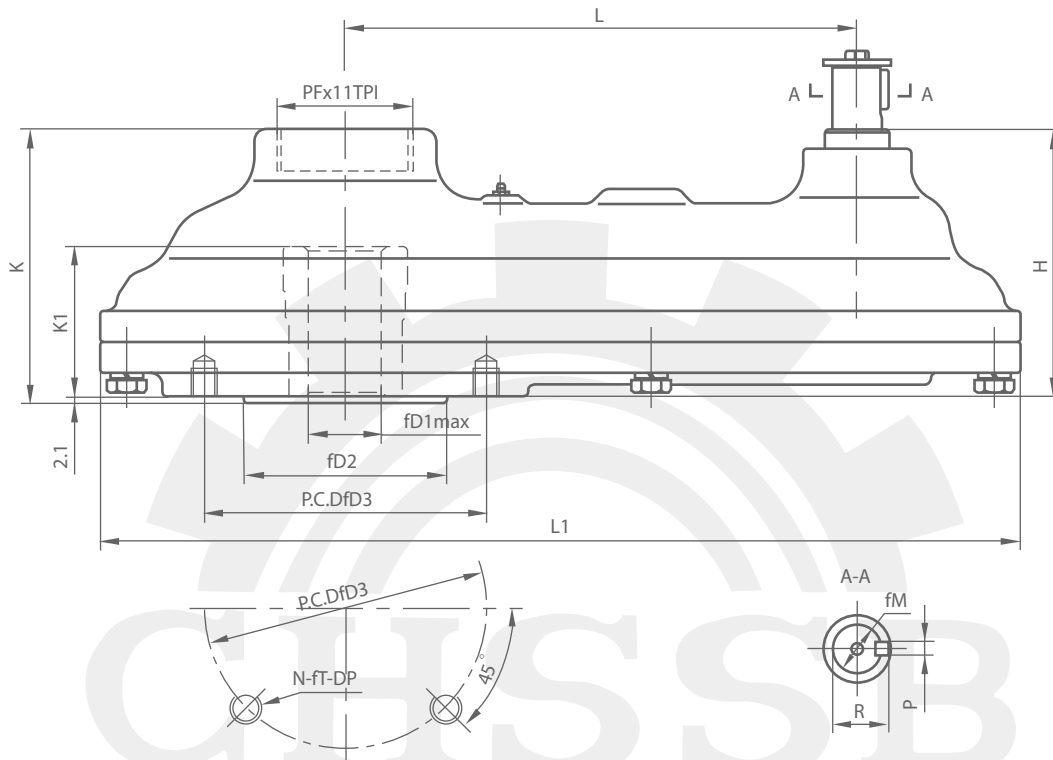
CBA Dimension table of CBA valve actuators(in)

Model	A	B	C	D	E	F	H	J	K	L	T	M	P	R
CBA107	8-5/8-11UNC 10.00 BCD	4-1/2-13UNC 7.63 BCD	11.42	3.50	2.76	3NPT	2.24	4.72	0.51	10.77	2.56	1.38	0.5	1.56
CBA207	8-3/4-10UNC 11.75 BCD	8-1/2-13UNC 7.63 BCD	13.46	5.24	4.13	4NPT	2.24	5.43	0.79	11.36	2.76			
CBA307	8-1-8UNC 14.00 BCD	8-1/2-13UNC 7.63 BCD	16.22	5.39	4.33	4-8NPSM	2.24	6.61	0.79	16.87	3.54			

VALVE ACTUATOR

CSR-Metric

CSR series of spur gear operators-Multi-turning type



CSR Technical parameters of CSR valve actuators

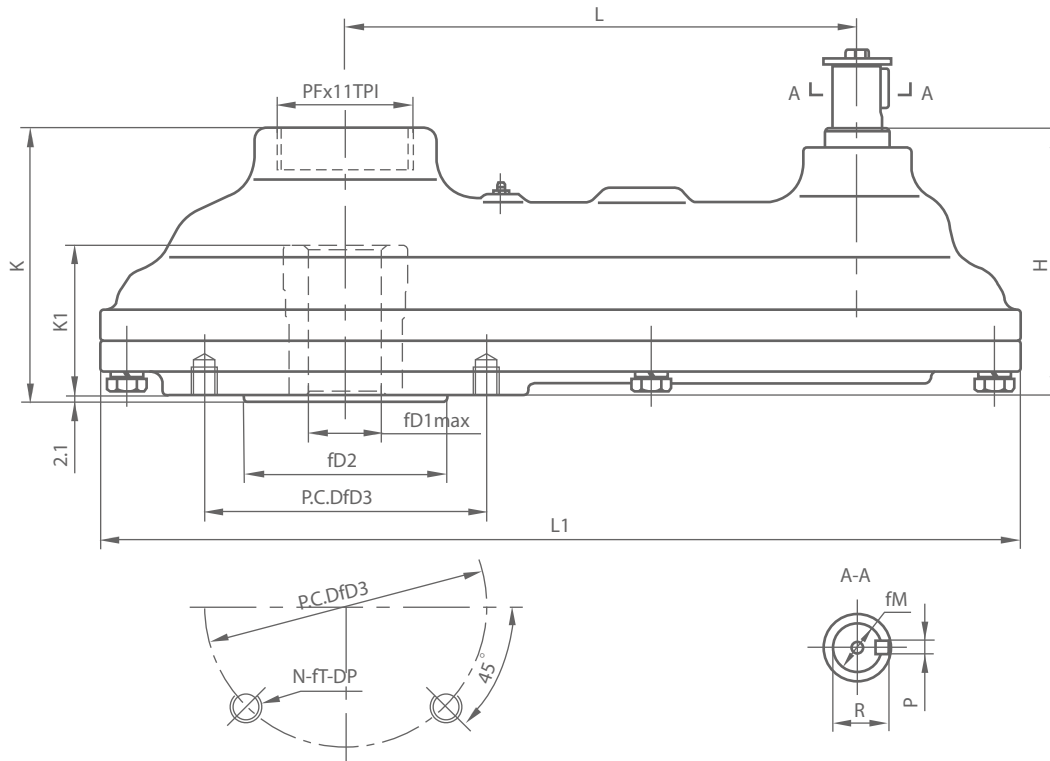
Model	Gear ratio	Rated output torque N.m	Max. thrust Kn	Weight Kg
CSR10	2.5:1	480	140	60
CSR20	4.0:1	1750	300	110

CSR Dimension table of CSR valve actuator (mm)

Model	ISO	D1	D2	D3	H	K	K1	L	L1	PF	N-FT-DP	M	P	R
CSR10	F14	50	100	140	126	139	44	252	452	2 1/2"	4-M16-20	30	8	34
CSR20	F16	66	130	165	180	180	88	340	632	4"	4-M20-25			

VALVE ACTUATOR *CSRA-Inches*

CSRA series of spur gear operators-Multi-turning type



CSRA Technical parameters of CSR valve actuators

Model	Gear ratio	Rated output torque in.lb	Max. thrust lb	Weight lb
CSRA10	2.5:1	6018	31494	132
CSRA20	4.0:1	15488	67487	243

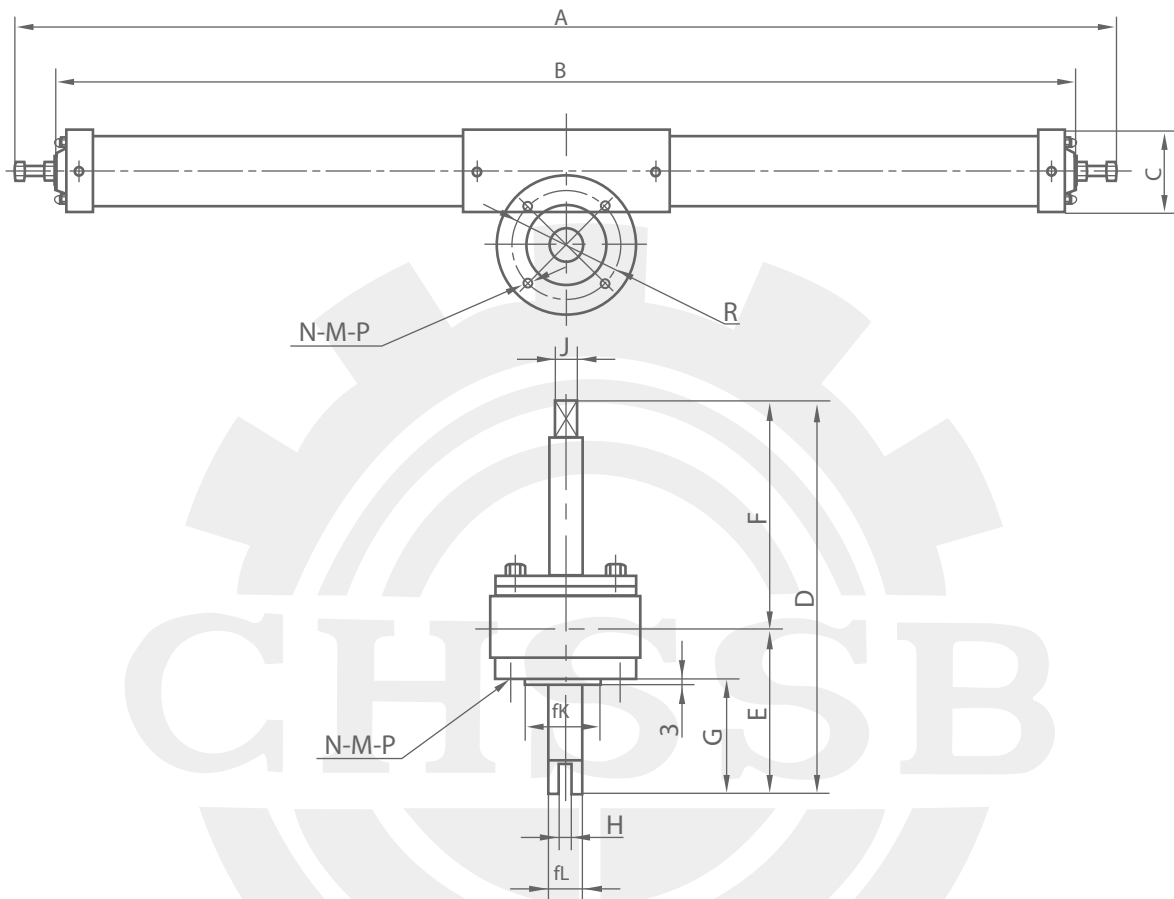
CSRA Dimension table of CSRA valve actuator (mm)

Model	MSS	D1	D2	D3	H	K	K1	L	L1	PF	N-FT-DP	M	P	R
CSRA10	FA14	1.97	3.94	5.5	4.96	5.47	1.73	9.92	17.80	2 1/2	4-5/8-11UNC-0.79	1.18	0.31	1.34
CSRA20	FA16	2.60	5.12	6.5	7.09	7.09	3.46	13.39	24.88	4	4-3/4-10UNC-0.89			

VALVE ACTUATOR

CAR-Metric

CAR series of rack operators-135° rotation pneumatic drive device

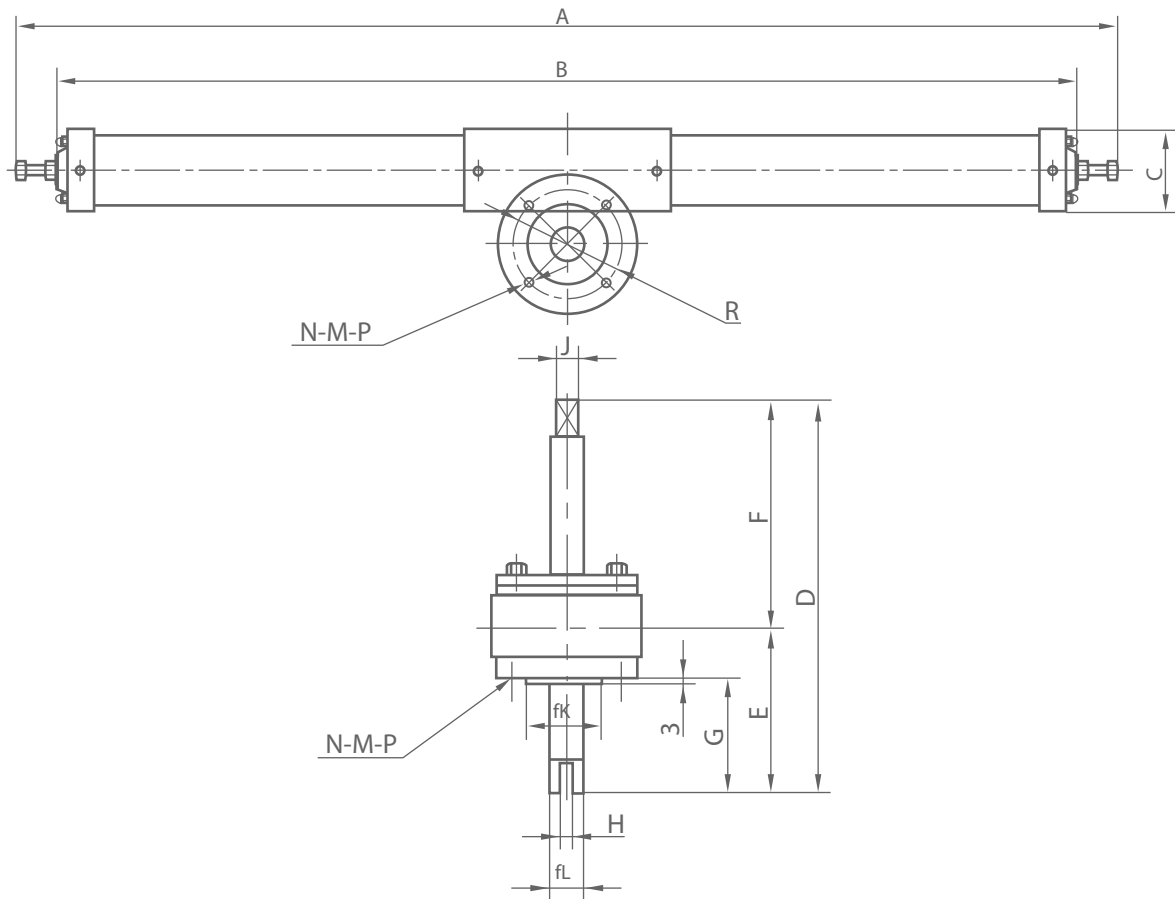


CAR Technical parameters of valve actuators

Model	ISO	A	B	C	D	E	F	G	H	L	J	K	N-M-P	R
CAR07	F07	385	324	68	195	66	129	23	12	20	15	56	4-M8-5	70
CAR10	F10	560	476	107	304	118	186	50	16	34	21	90	4-M10-18	102
CAR12	F12	655	353	155	365	163	202	70	16	39	25	90	4-M12-20	125
CAR12-1	F12	580	606	175	382	170	212	68	16	39	25	85	4-M12-20	125
CAR12-2	F12	820	704	216	415	205	210	93	16	39	25	85	4-M12-20	125
CAR14	F14	1170	1050	277	393	172	221	66	20	49	33	100	4-M16-23	140

VALVE ACTUATOR *CARA-Inches*

CARA series of rack operators-135° rotation pneumatic drive device



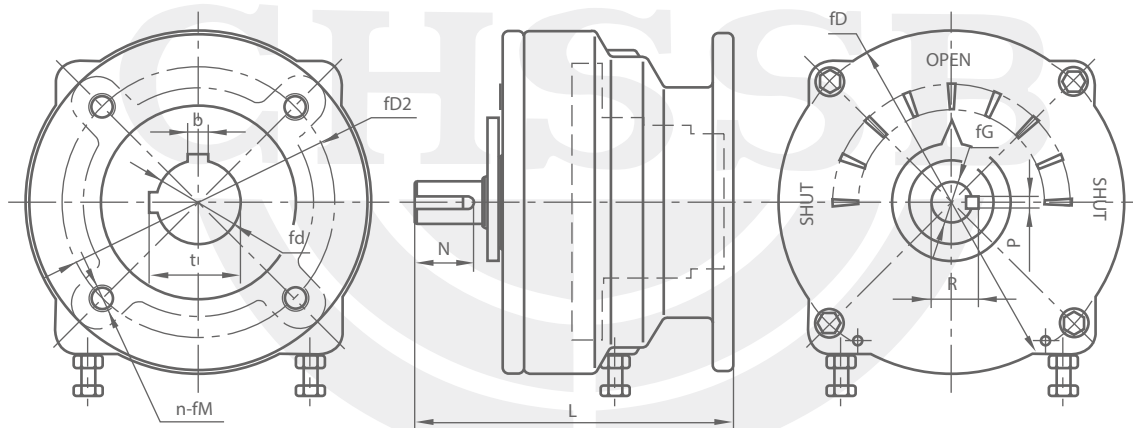
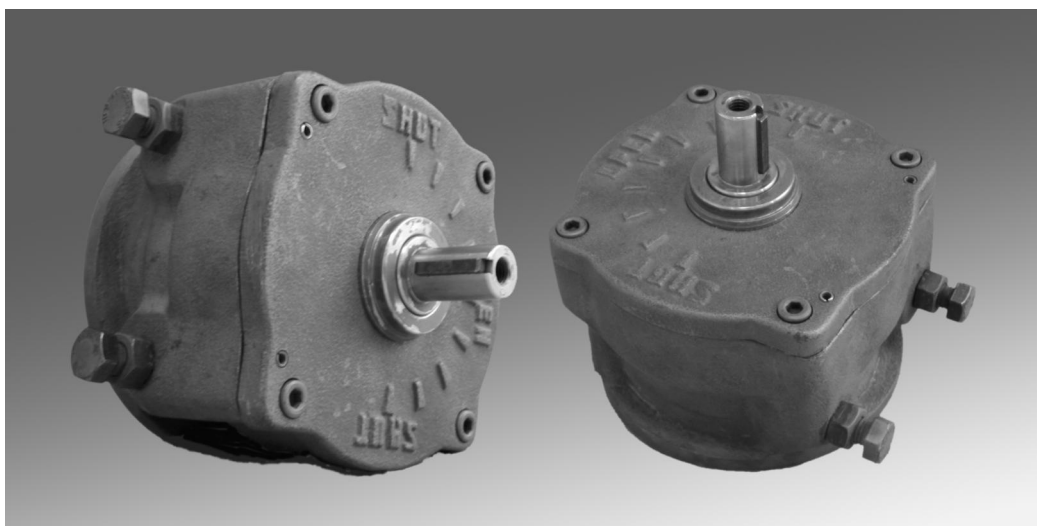
CARA Technical parameters of valve actuators

Model	MSS	A	B	C	D	E	F	G	H	L	J	K	N-M-P	R
CARA07	FA07	15.16	12.76	2.68	7.68	2.60	5.08	0.91	0.47	0.79	0.59	2.20	4-5/16-18UNCx0.47	2.75
CARA10	FA10	22.05	18.75	4.21	11.97	4.65	7.32	1.79	0.63	1.34	0.83	3.54	4-3/8-16uncX0.6	4
CARA12	FA12	25.79	22.17	6.10	14.37	6.42	7.95	2.76	0.63	1.54	0.698	3.54	4-1/2-13uncX0.71	4.95
CARA12-1	FA12	22.83	23.86	6.89	15.04	6.69	8.35	2.68	0.63	1.54	0.98	3.35	4-1/2-13uncX0.71	4.95
CARA12-2	FA12	32.28	27.72	8.50	16.34	8.07	8.27	3.66	0.63	1.54	0.98	3.35	4-1/2-13uncX0.71	4.95
CARA14	FA14	46.06	41.34	10.91	15.47	6.77	8.70	2.60	0.79	1.93	1.30	3.94	4-5/8-11uncX0.94	5.5

VALVE ACTUATOR

CPR-Metric

CPR series of pinion gear operators-90° Turning

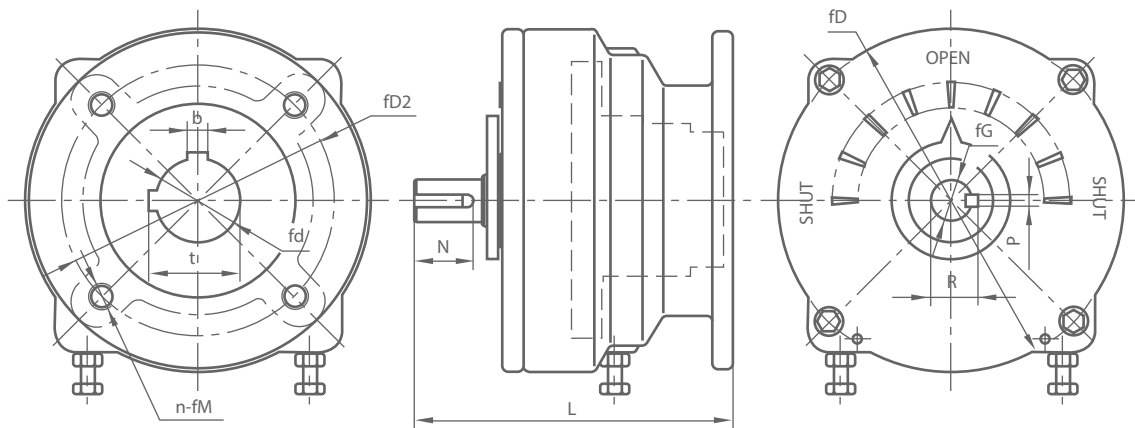
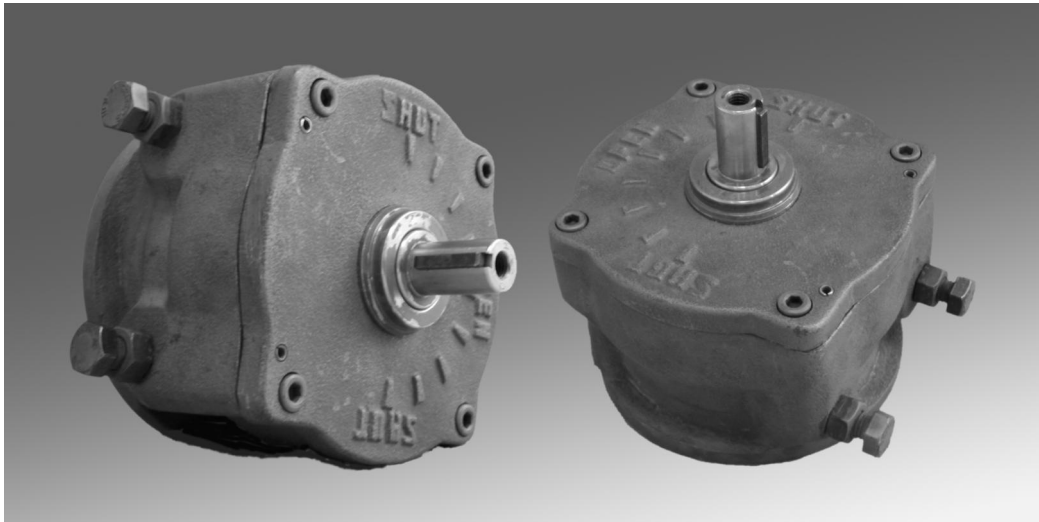


CPR Dimension table of series of pinion gear operators(mm)

Model	ISO	d	b	t	D	D1	n-M	L	N	K	E	G	P	R
CPR10	F16	50	2-12	53.5	203	165	4-M20	187	40	70	5	25	8	28
CPR20	F30	100	28	106.4	350	298	8-M20	483	50	190	5	30	10	33

VALVE ACTUATOR *CPRA-Inches*

CPRA series of pinion gear operators-90° Turning

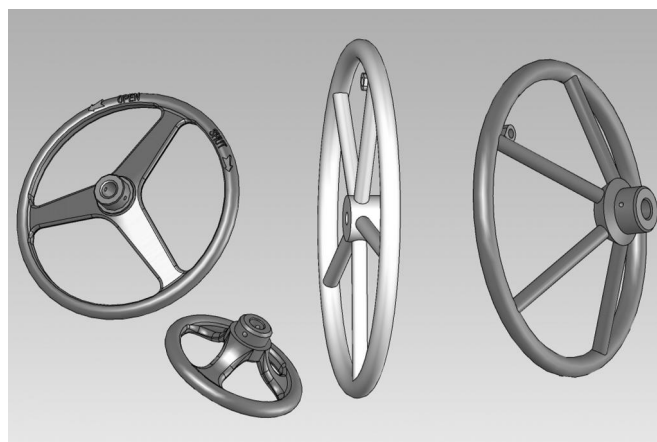


CPRA Dimension table of series of pinion gear operators(in)

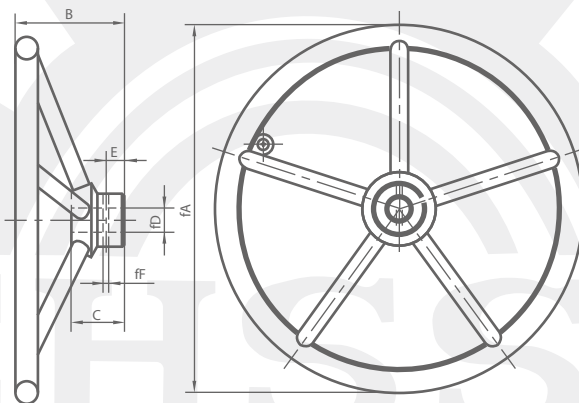
Model	MSS	d	b	t	D	D1	n-M	L	N	K	E	G	P	R
CPRA10	FA16	1.97	2-0.47	2.11	7.99	6.50	4-3/4-10UNC	7.36	1.57	2.76	0.2	0.98	0.31	1.1
CPRA20	FA30	3.94	1.1	4.19	13.78	11.75	8-3/4-10UNC	19.02	1.97	7.48	0.2	1.18	0.39	1.30

VALVE ACTUATOR

HW



Metric

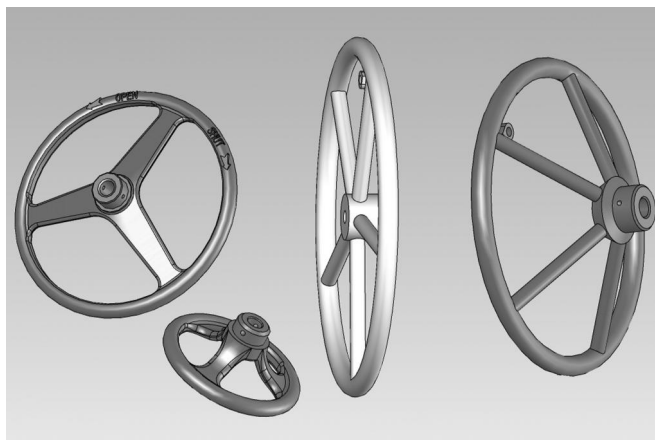


HW Dimension table of HW hand wheel (mm)

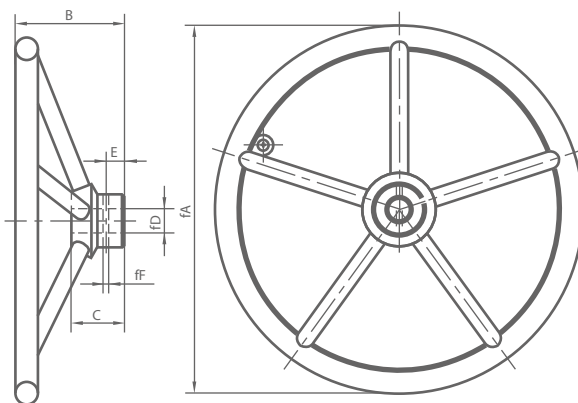
Model	Spec	A	B	C	D	E	F	Weight Kg	Mat
HW6	6"	150	64	27	16	8	5.2	1.2	HT250
HW8	8"	200	50	32	20	10	5.2	1.6	HT200
HW10-16	10"	250	73	47	16	10	5.2	3	HT200
HW10-20					20				
HW12-16	12"	300	73	47	16	10	5.2	3.2	HT200
HW12-20					20		6.2		
HW12-24					24				
HW16	16"	400	120	58	24	20	6.2	3.3	wldding finish
HW18-16	18"	450	—	58	16	20	5.2	3.4	wldding finish
HW18-20			156.7		20		62		
HW18-24			—		24				
HW20	20"	500	170.5	58	24	20	6.2	4.6	wldding finish
HW24	24"	600	175	58	24	20	6.2	4.6	wldding finish
			120						
HW30	30"	750	210	58	24	20	6.2	4.6	wldding finish
HW36	36"	900	245	58	24	20	6.2	4.6	wldding finish

VALVE ACTUATOR

HWA



Inches

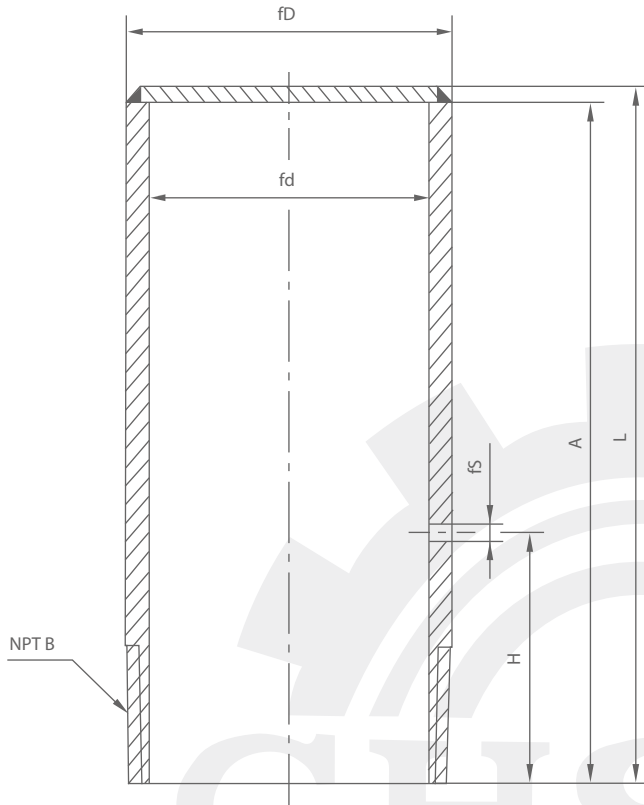


HWA Dimension table of HW hand wheel (in)

Model	Spec	A	B	C	D	E	F	Weight lb	Mat
HWA6	6"	6"	2.52	1.06	0.63	0.31	0.20	2.7	HT250
HWA8	8"	8"	1.97	1.26	0.79	0.39	0.20	3.6	HT200
HWA10-16	10"	10"	2.87	1.85	0.63	0.39	0.20	6.7	HT200
HWA10-20					0.79				
HWA12-16	12"	12"	2.87	1.85	0.63	0.39	0.20	7.1	HT200
HWA12-20					0.79				
HWA12-24					0.94		0.24		
HWA16	16"	16"	4.72	2.28	0.94	0.79	0.24	7.3	wldding finish
HWA18-16	18"	18"	—	2.28	0.63	0.79	0.20	7.5	wldding finish
HWA18-20			6.17		0.79				
HWA18-24			—		0.94		0.24		
HWA20	20"	20"	6.71	2.28	0.94	0.79	0.24	10.2	wldding finish
HWA24	24"	24"	6.89	2.28	0.94	0.79	0.24	10.2	wldding finish
			4.72						
HWA30	30"	30"	8.27	2.28	0.94	0.79	0.24	10.2	wldding finish
HWA36	36"	36"	9.65	2.28	0.94	0.79	0.24	10.2	wldding finish

VALVE ACTUATOR

SH-Metric



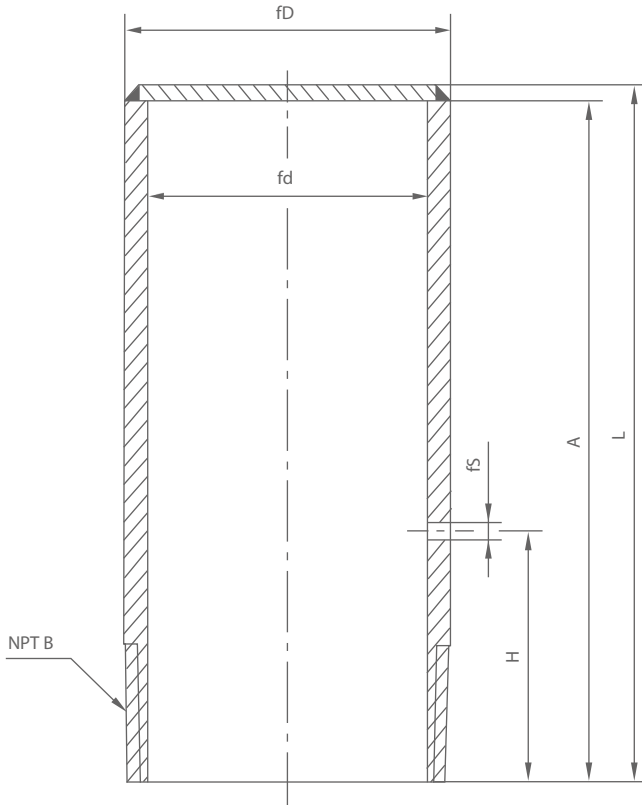
SH Series of shield

- Designed for CSR, CB, BG, CBG series of operators.
- Shaped by steel pipe welding and finished with surface anti-rust treatment.
- Optional materials and dimensions acceptable according to customer's special needs.

SH Dimension table of SH series(mm)

Model	steel pipe	B	A	fd	fD	H	fs	L
SH2-4	2-1/2"	2-1/2"	102	63	73	50.8	3.2	105
SH2-8			203					206
SH2-12			305					308
SH2-16			406					409
SH2-20			508					511
SH3-4	3"	3"	102	78	90	50.8	3.2	105
SH3-8			203					206
SH3-12			305					308
SH3-16			406					409
SH3-24			610					613
SH4-8	4"	4"	203	102	114	50.8	3.2	206
SH4-12			305					308
SH4-20			508					511
SH4-24			610					613
SH4-28			711					714

VALVE ACTUATOR *SHA-Inches*



SHA Series of shield

- Designed for CSR, CB, BG, CBG series of operators.
- Shaped by steel pipe welding and finished with surface anti-rust treatment.
- Optional materials and dimensions acceptable according to customer's special needs.

SHA Dimension table of SH series(in)

Model	steel pipe	B	A	fd	fD	H	fs	L		
SHA2-4	2-1/2"	2-1/2"	4	2.48	2.87	2	0.13	4.13		
SHA2-8			8					8.11		
SHA2-12			12					12.13		
SHA2-16			16					16.10		
SHA2-20			20					20.12		
SHA3-4	3"	3"	4	3.07	3.54			2	0.13	4.13
SHA3-8			8							8.11
SHA3-12			12							12.13
SHA3-16			16							16.10
SHA3-24			24							24.13
SHA4-8	4"	4"	8	4.02	4.49	2	0.13			8.11
SHA4-12			12							12.13
SHA4-20			20							20.12
SHA4-24			24							24.13
SHA4-28			28							28.11