

402 Series Manual Valve Actuators

For quarter-turn application



Tianjin Beifang Valve Actuator Co., Ltd.

As the manufacturer of actuation products Beifang actuation equipments suit a wide range of many trades such as water treatment facility, oil field, electric power, chemical plant, and so on.

The company acquired the authentication of quality management system standards ISO9000 in 1998 for the strict quality control in all stages.

Beifang has built an enviable reputation over many years of development and an awareness of our customers' requirements.

Aggressive research and development is necessary to meet customers' requirements. We will treat consumers with good faith.

Where To Find Information

Construction	3-4
Structural Form	5
Technical parameter	6
Mounting Dimension	7
Overall Dimension	8-10





402 series manual actuators can provide a reliable position control of butterfly, ball valves, as well as similar ones.

402 series actuators have a wide torque range from 150Nm to 640000Nm and the fifteen base sizes can match different valves.

402 series actuators with design features of high strength, efficiency and watertightness (IP68 enclosure is accessible) can be applied to different kinds of working environment.

402 series manual actuators can be used as electric ones for quarter-turn valves when combining with 903 series electric actuators made by our company. (Please refer to publication YB903 for related data.)

402 series manual actuators with design of different mechanism can meet the consumers' requirement.

The limit switch and a potentiometer can be supplied for position transmitting.

Designation

4027 V : F30a-21

Connection code (please refer to page 7)

Separator

Structural code (please refer to page 5)

Base No. (please refer to page 6)



Adoption of carbon steel worm, ductile cast iron worm wheel and grey cast iron house provide 402 series manual actuators high strength and high reliability. Large sized actuators whose output torque is over 2500Nm have thrust ball bearings installed at both ends of the worm shaft, which provide high driving efficiency. Adoption of O-rings at all contacting portion can prevent from grease leakage, dust and water.

A

The pointer provides local monitoring of valve position.

B

Two adjustable mechanical stop bolts in open and close direction are provided for limiting the travel of valve.

C

The worm wheel with high strength and wear resistance is made of ductile cast iron.

D

The use of tin bronze bearing and thrust ball bearing improves the drive efficiency.

E

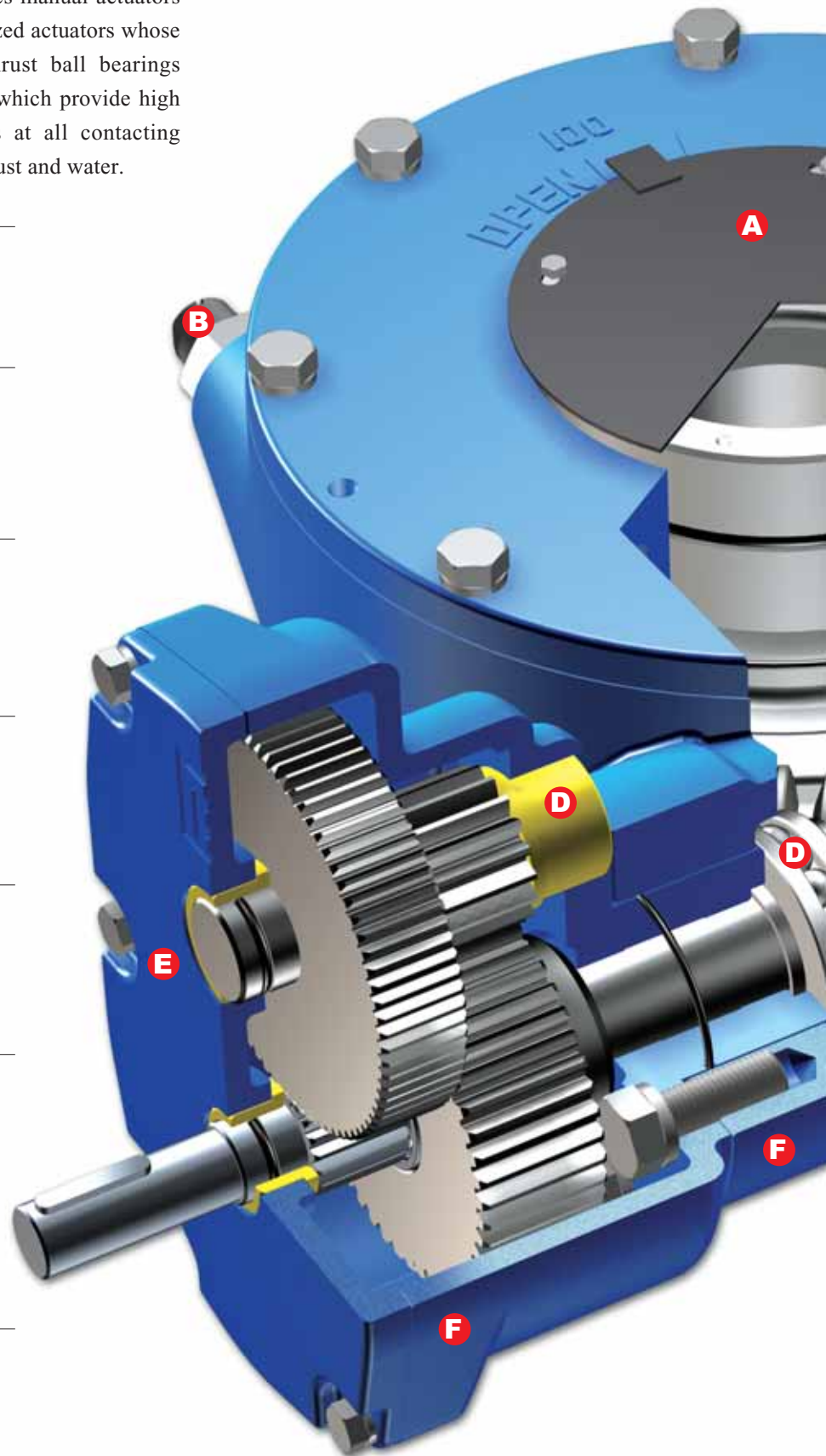
The actuators with the higher output torque are equipped with a gear reducer, so the user is laborsaving.

F

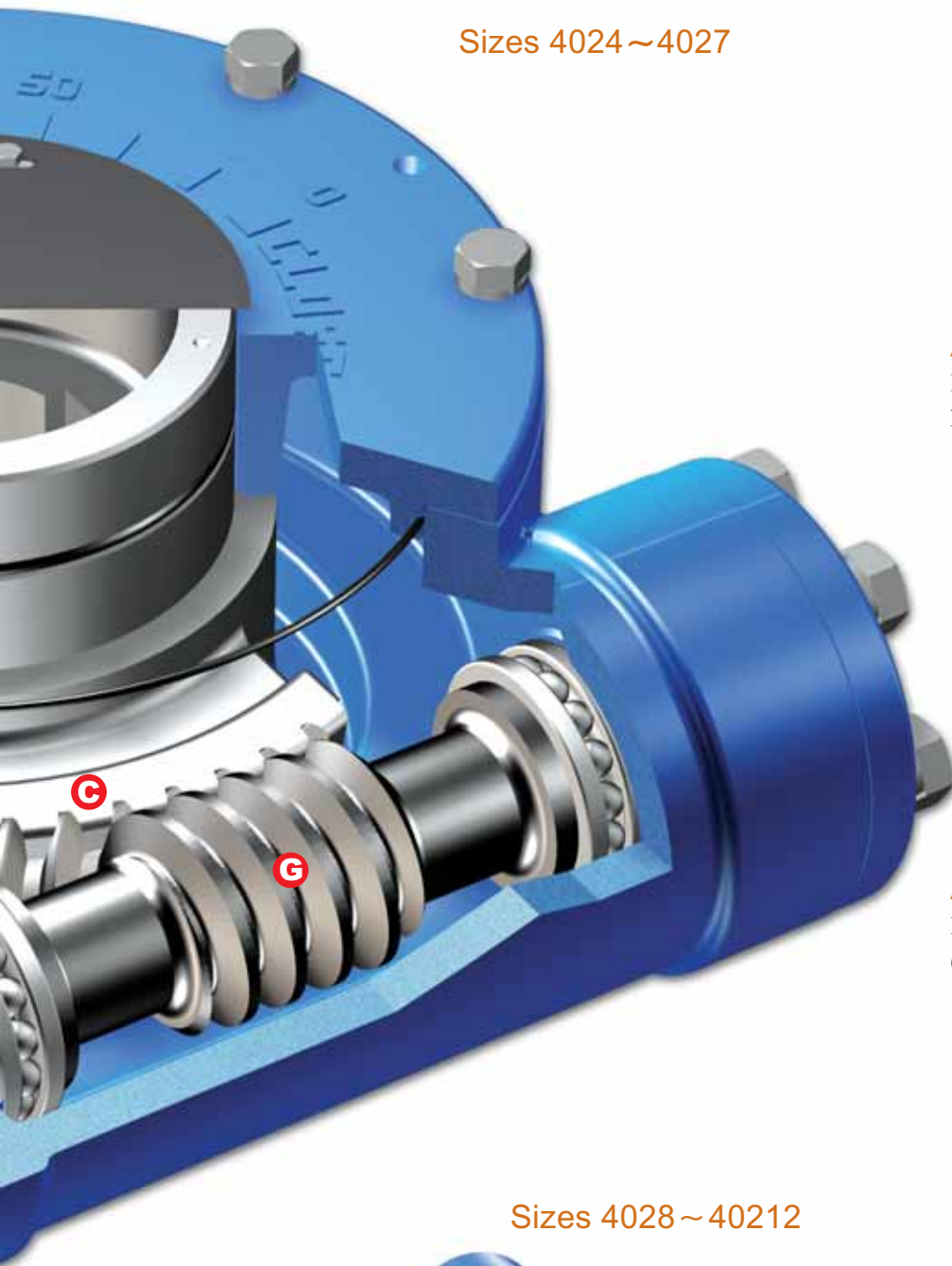
Both the worm and gear box are made of grey cast iron. There are O-rings at all contacting portion. The main house is fully filled with gear lubricating grease and it is not need to refresh the grease periodically.

G

The worm shaft with high frequency hardening tooth is made of quality carbon steel.



Sizes 4024 ~ 4027



Attachment : Valve position indicator

It could be independently mounted on the handwheel shaft end.



Attachment; Switch box

It can feed back the position signal of valve (exclude sizes 4020 ~ 4023).

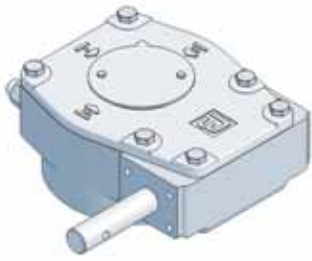
Sizes 4028 ~ 40212



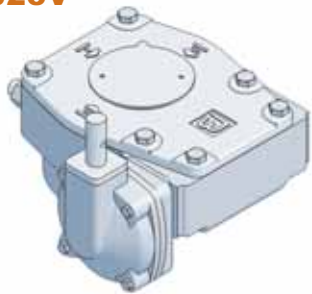
Sizes 4020 ~ 4023



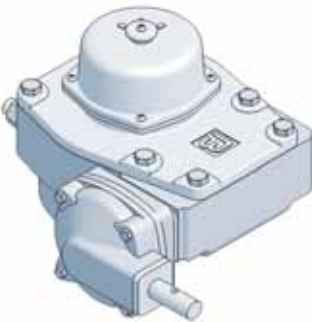
4023



4023V



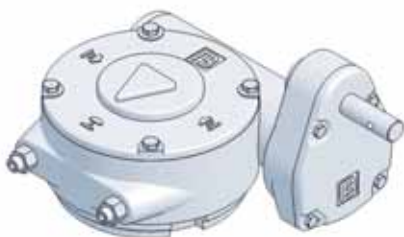
4023KVB



4029VB



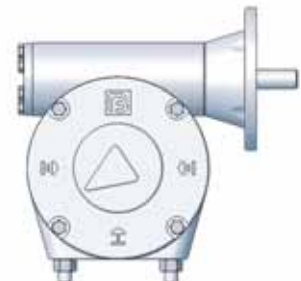
4024



4024GB



4024G



Structural Form	Code	Suitable Base No.
Direct hand operation		4020, 4021, 4022, 4023
With spur gear box		4024, 4025, 4026, 4027
With bevel gear box	Vertical Lateral	V VB
With worm gear box	Vertical Lateral	V VB
Combining with multi-turn electric actuators	G GB	4024, 4025, 4026, 4027, 4028, 4028.5, 4029, 4029.5, 40210, 40211, 40212
Output electric signal: Two microswitches supply contacts of full open/close position of valve	Direct hand operation With spur gear box With bevel gear box	K K KV KVB
	With worm gear box	KV KVB
Output electric signal: Two microswitches supply contacts of full open/close position of valve.	Direct hand operation With spur gear box	KW KW
A potentiometer feed back the position signal of valve (percent)	With bevel gear box With worm gear box	LV LVB LV LVB
		4020, 4021, 4022, 4023 4024, 4025, 4026, 4027 4022, 4023 4024, 4025, 4026, 4027, 4028, 4028.5, 4029, 4029.5, 40210, 40211, 40212 4020, 4021, 4022, 4023 4024, 4025, 4026, 4027 4022, 4023 4024, 4025, 4026, 4027, 4028, 4028.5, 4029, 4029.5, 40210, 40211, 40212

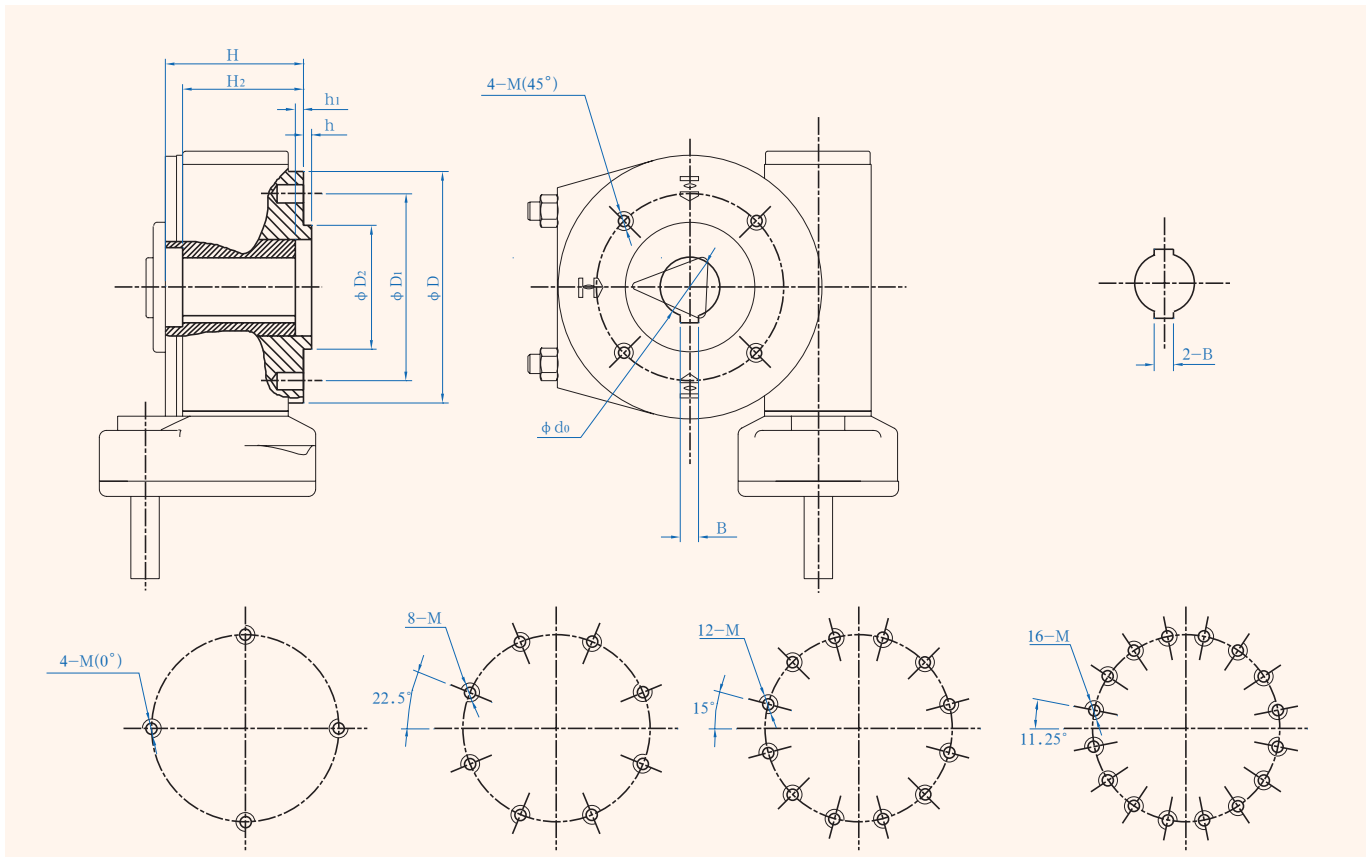
Base No.	Output Torque Range Rated-Max.	Structural Form	Total Efficiency	Reduction Ratio ⁰⁾			Hand-wheel Turns	Hand-wheel torque ¹⁾	Dia. Of Hand-wheel	Weight ²⁾
				Worm-wheel	Gear-box	Total Ratio				
	Nm							Nm	mm	kg
4020	150-225		0.3	30	-	30	7.5	17	φ 120	5
4021	300-450		0.3	48	-	48	12	21	φ 220	7
4022	600-1250	V •	0.3	56	-	56	14	36	φ 320	11
			0.27	56	3.75	210	52.5	11	φ 320	14
4023	1200-2600	V •	0.3	56	-	56	14	72	φ 400	18
			0.27	56	3.75	210	52.5	21	φ 320	21
4024	2500-4100	V •	0.27	58	2.5	145	36	64	φ 400	40
			0.11	58	14	812	203	28	φ 320	38
			0.3	58	-	-	-	-	-	-
4025	5000-8300	V •	0.27	56	6.33	354.5	89	62	φ 400	71
			0.11	56	17	952	238	48	φ 400	68
			0.3	56	-	-	-	-	-	-
4026	10000-15000	V •	0.27	56	6.49	363.4	91	102	φ 500	124
			0.12	56	20	1120	280	75	φ 400	118
			0.3	56	-	-	-	-	-	-
4027	20000-26000	V •	0.27	56	9.91	555	139	134	φ 500	199
			0.12	56	23	1288	322	130	φ 500	190
			0.3	56	-	-	-	-	-	-
4028	40000-52000	V •	0.10	50	24	1200	300	334	φ 500	405
		G •	0.28	50	-	-	-	-	-	334
4028.5	60000-78000	V •	0.12	52	27	1404	351	356	φ 600	507
		G •	0.28	52	-	-	-	-	-	421
4029	80000-100000	V •	0.12	52	27	1404	351	475	φ 600	599
		G •	0.28	52	-	-	-	-	-	503
4029.5	120000-156000	V •	0.12	56	25.5	1428	357	700	φ 800	844
		G •	0.28	56	-	-	-	-	-	717
40210	160000-180000	V •	0.12	58	30	1470	435	766	φ 800	1123
		G •	0.28	58	-	-	-	-	-	964
40211 ³⁾	320000-360000	V •								
		G •	0.26	66	-	-	-	-	-	2186
40212 ³⁾	640000-700000	V •								
		G •	0.26	72	-	-	-	-	-	3712

0) If special reduction ratio is required, please contact us.

1) The handwheel torque will be the value in above table when the output torque is the rated value.

2) The weight of the handwheel is not included. In addition, the value may alter with different mounting dimensions.

3) The technical data of sizes 40211 and 40212 could be arranged with the consumer.



Base No.	Connection Code 1)	ϕD	$\phi D1$	-M	$\phi D2(f8)$	h	h1	$\phi d0(F9)$	B	H	H2
4020	F07a-03a	90	70	4-M10(0°)	-	-	4	19	5	70	42
4021	J09-04a	115	89	4-M12(0°)	-	-	6	22.2	5	70	50
4022	J10a-06a	140	108	4-M12(0°)	-	-	5	31.7	8	70	55
4023	F14b-07a	175	140	4-M16(45°)	-	-	7	38	10	93	67
4024	F16a-10a	210	165	4-M20(45°)	-	-	6	50.7	16	118	79
4025	F25a-11	300	254	8-M16	200	-5	8	55	2-16	148	94
4026	F25a-17	300	254	8-M16	200	-6	8	85	2-22	180	130
4027	F30a-21	350	298	8-M20	230	-6	9	105	2-28	213	160
4028	F40-28	475	406	8-M36	300	5	9	140	2-36	275	230
4028.5	F40-32	475	406	8-M36	300	5	9	160	2-40	310	270
4029	F48-38	560	483	12-M36	370	5	11	190	2-45	310	270
4029.5	F48-42	560	483	12-M36	370	5	11	210	2-50	340	300
40210	J70-48	800	700	16-M36	560	5	11	240	2-56	375	350
40211	2)										
40212	2)										

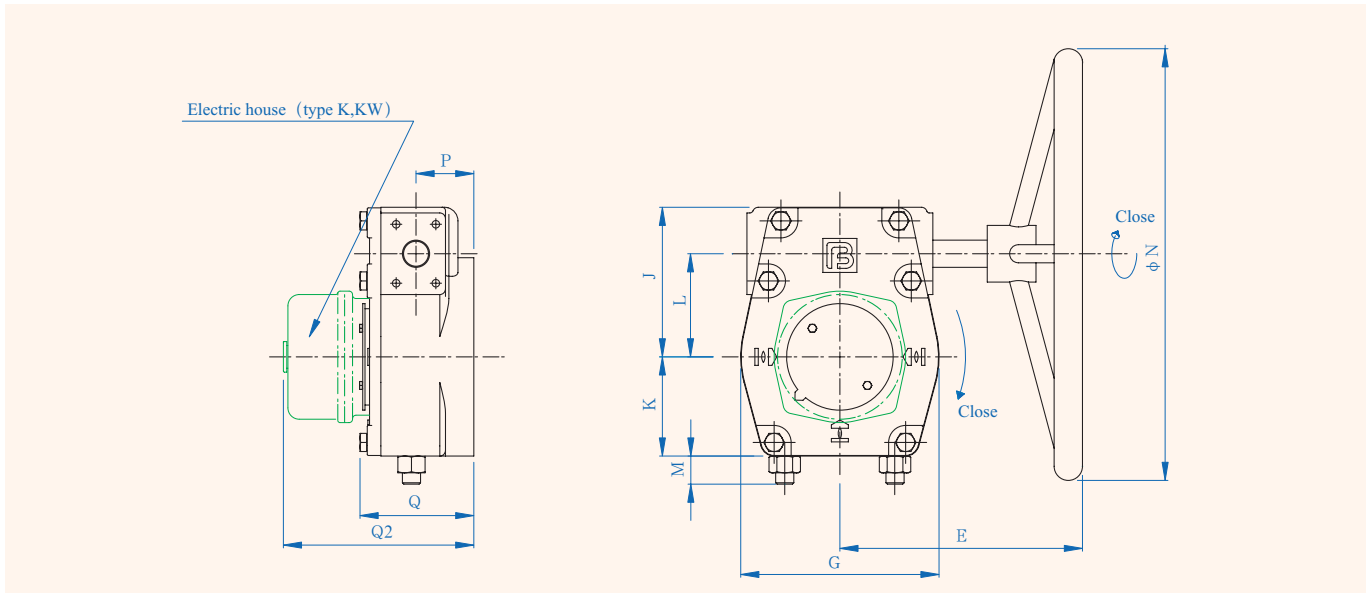
1) If special mounting dimensions are required, please contact us.

2) The mounting dimension of sizes 40211 and 40212 could be arranged with the consumer.

Max. Diameter of Stem

4020	4021	4022	4023	4024	4025	4026	4027	4028	4028.5	4029	4029.5	40210	40211	40212
22	34	48	58	75	95	120	150	190	190	195	240	250	305	380

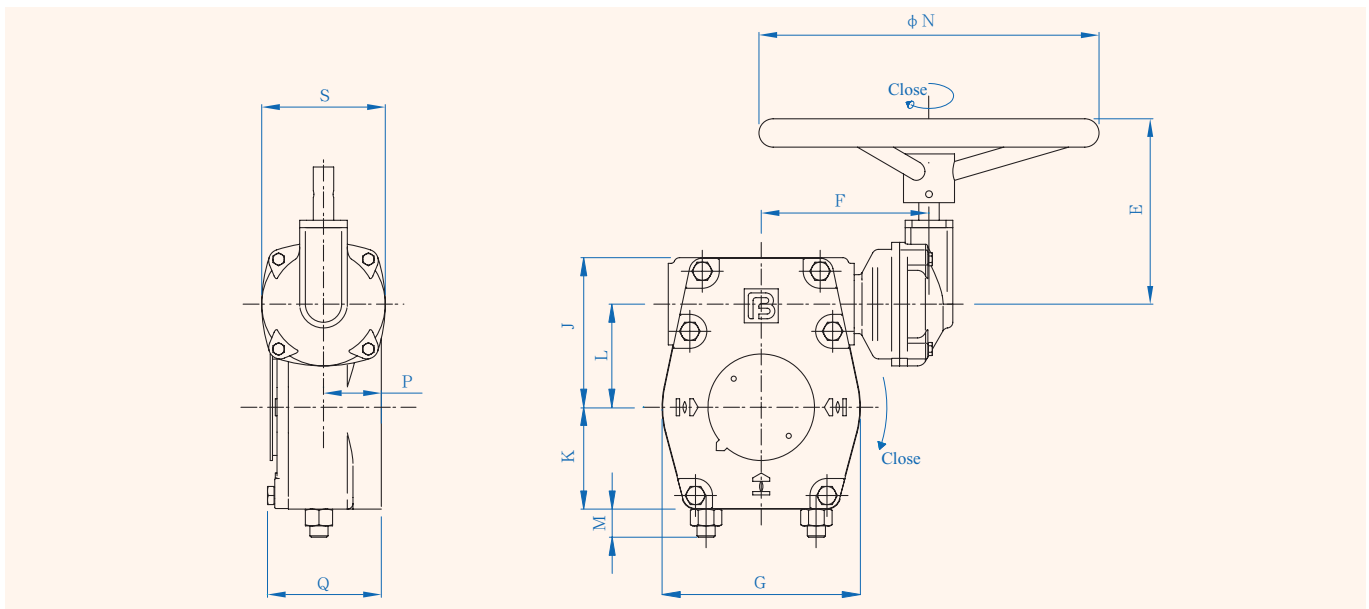
4020 ~ 4023



	E	G	J	K	L	M*	N	P	Q	Q2
4020	117	90	65	45	41	12	120	35	77	150
4021	154	125	95	63	63	12	220	40	78	150
4022	167	150	107	75	72	20	320	43	84	157
4023	188	175	132	88	91	22	400	55	105	175

* The value depends on the final position.

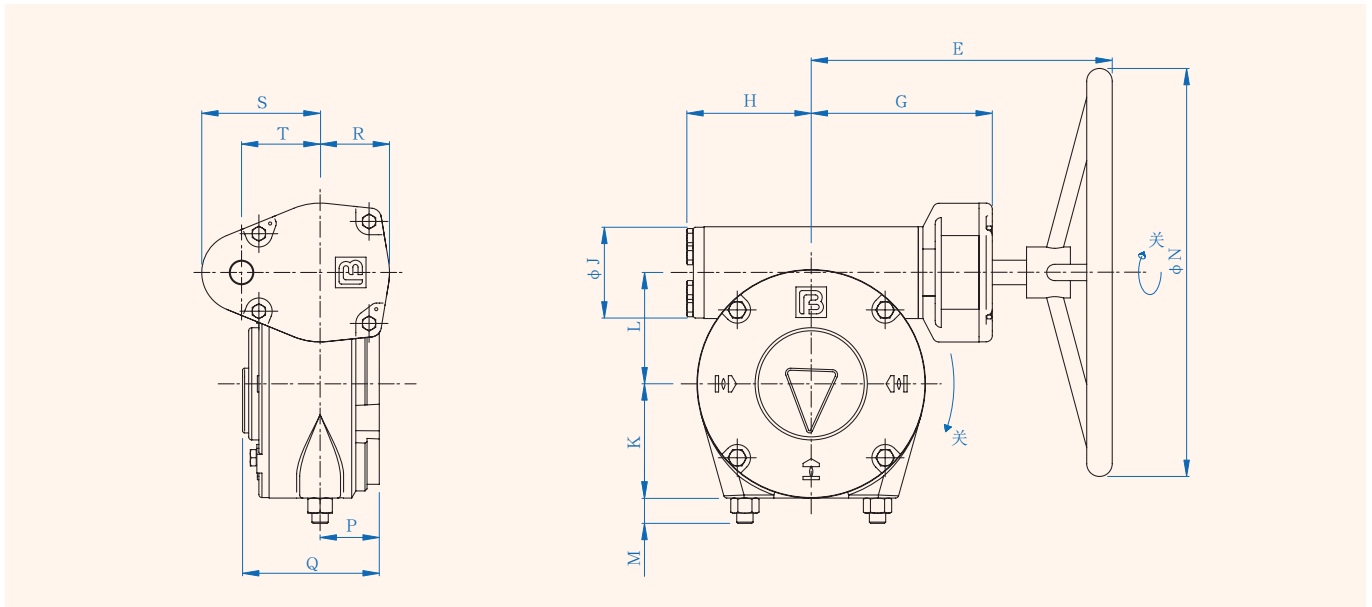
4022VB ~ 4023VB



	E	F	G	J	K	L	M*	N	P	Q	S
4022	164	137	150	107	75	72	20	320	43	84	110
4023	164	148	175	132	88	91	22	320	55	105	110

* The value depends on the final position.

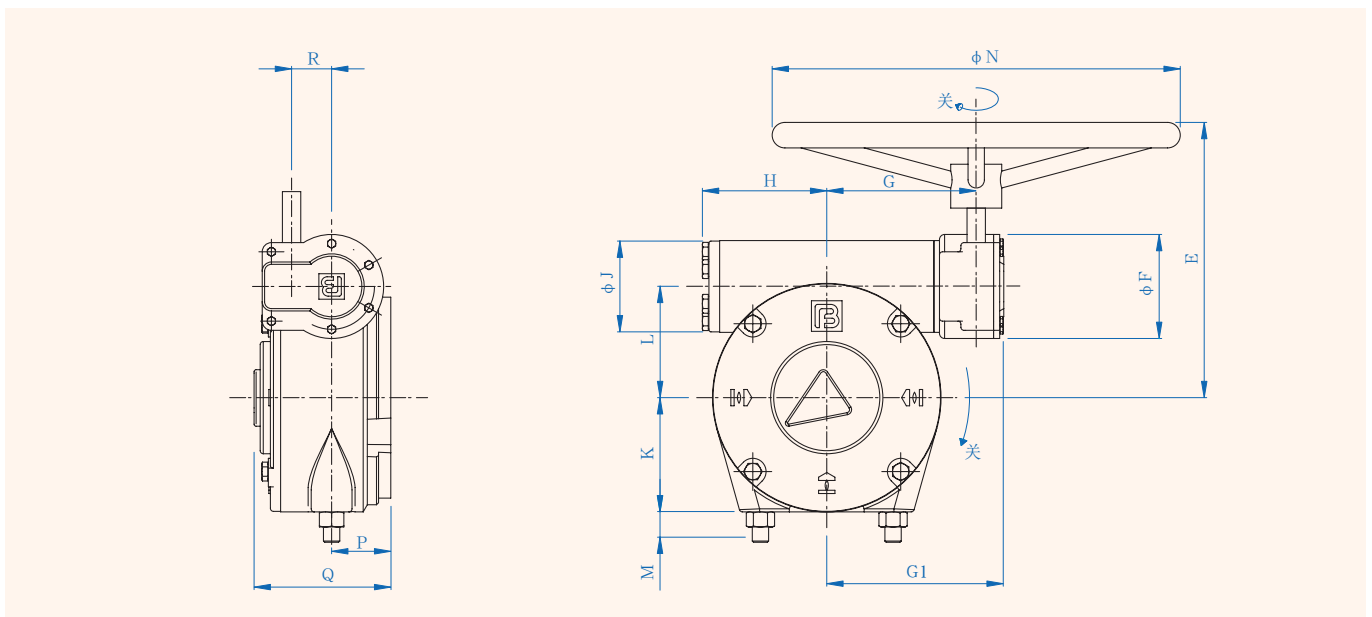
4024 ~ 4027



	E	G	H	J	K	L	M*	N	P	Q	R	S	T
4024	283	184	126	90	112	109	38	400	58	130	72	116	77
4025	344	252	154	108	140	138	40	400	72	160	70	139	0
4026	418	299	188	140	175	170	55	500	85	196	83	165	0
4027	489	358	232	166	207	202	48	500	105	230	100	199	0

* The value depends on the final position.

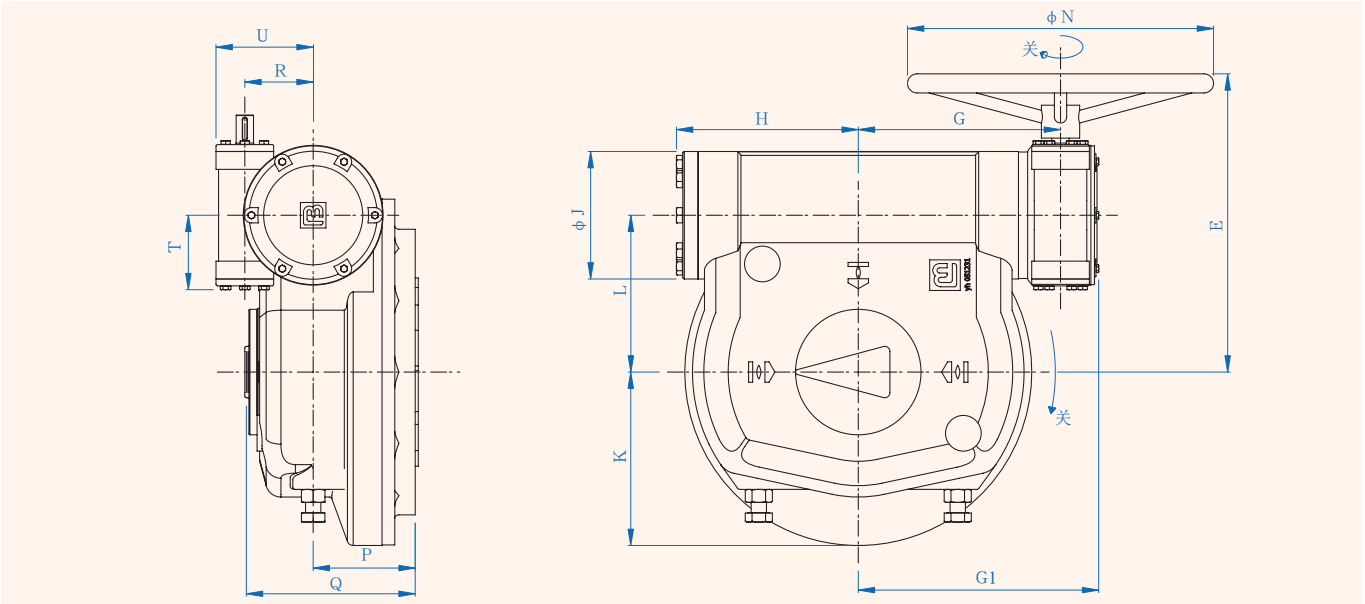
4024VB ~ 4027VB



	E	F	G	G1	H	J	K	L	M*	N	P	Q	R
4024	294	102	147	174	126	90	112	109	38	320	58	130	42
4025	328	122	179	212	154	108	140	138	40	400	72	160	50
4026	379	160	217	255	188	140	175	170	55	400	85	196	68.5
4027	417	200	262	306	236	166	207	202	48	500	105	237	91

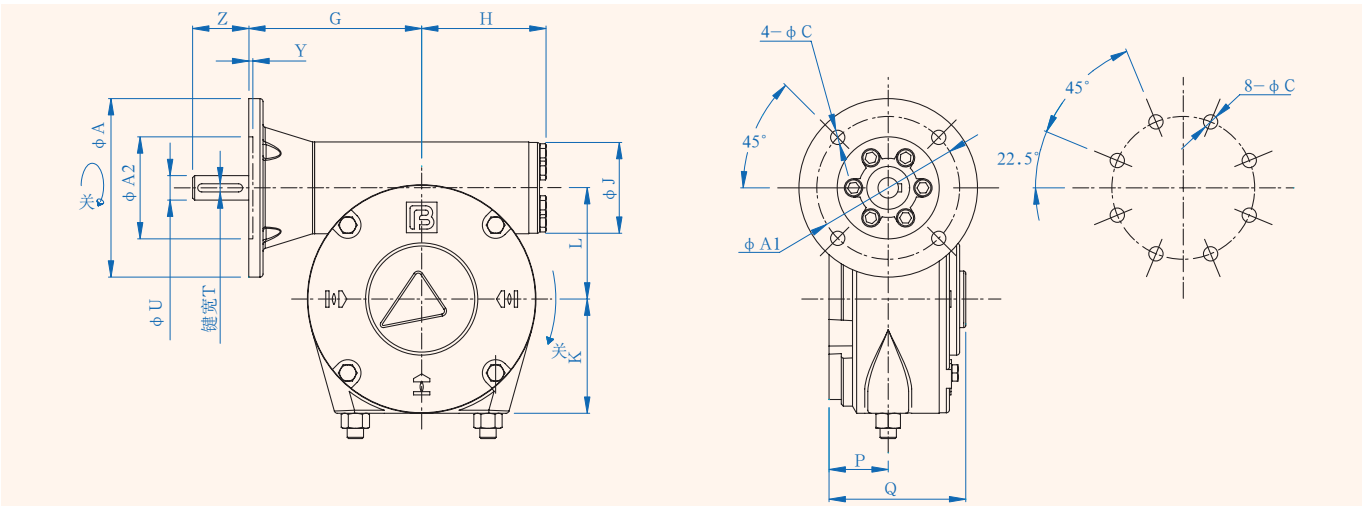
* The value depends on the final position.

4028~40210



	E	G	G1	H	J	K	L	N	P	Q	R	T	U
4028	506	334	402	300	216	280	238	500	181	296	118.5	130	170
4028.5	568	357	429	319	240	305	281	600	191	311	134	149	191
4029	590	397	469	361	250	339	307.5	600	206	334	134	149	191
4029.5	674	436	515	386	282	385	365.5	800	215	355	157	166	219
40210	726	476	576	426	320	430	410.5	800	170	420	180	189	250

4024GB~40212GB



	A	A1	A2	C	G	H	J	K	L	P	Q	T	U	Y	Z
4024	145	120	75	8-9	135	126	90	112	109	58	130	8	25	-3.5	45
4025	175	140	100	4-18	217	154	108	140	138	72	160	8	30	5	45
4026	225	184	134	4-22	230	188	140	175	170	85	196	10	38	-4	55
4027	300	254	200	8-18	280	232	166	207	202	105	230	14	45	6	65
4028	350	298	230	8-22	320	300	226	280	238	135	290	18	62	-6	108
4028.5	350	298	230	8-22	390	319	240	305	281	140	324	18	65	7	108
4029	415	356	260	8-32	395	361	250	339	308	150	328	2-20	75	7	108
4029.5	415	356	260	8-32	460	386	282	385	365.5	162	371	2-22	80	7	135
40210	415	356	260	8-32	540	426.5	320	430	410.5	170	425	2-22	85	7	135
40211	475	406	300	8-39	620	534	406	535	462	216	520	2-28	100	10	165
40212	475	406	300	8-39	810	690	520	695	576	270	600	2-32	120	10	165



Tianjin Beifang Valve Actuator Co., Ltd.

Address: YI XING FU Science & Technology Area Beichen
District, Tianjin 300402, China

Tel: (022) 26309159 26308907

Fax:(022) 26300975

Http://www.tj-beifang.com

E-mail: bf @ tj-beifang.com

