



LABYRINTH CAGE TYPE LOW PRESSURE GLOBE VALVES

510D SERIES
150#, 300#, 600# class

KOSO

510D KOSO VECTOR™ D Trim 150#, 300#, 600# Class

GENERAL

This series provides control valves that meet low noise and anti-cavitation requirements by incorporating a disk-stack cage instead of the standard cages, in the 510G Series cage-guided control valves. All the parts fit the 501G Series accordingly.

STANDARD SPECIFICATIONS

BODY

Series	510D
Body size	1"~18" (25~450A)
Plug form	Pressure balanced plug type
Characteristics	Linear, Modify Linear, Modify EQ%
Trim materials Trim treatment	See Table. 1 and Fig. 1 for hardening treatment and operating pressure-temperature.
Body rating	JIS 10K, 20K, 30K, 40K ANSI (JPI) Class 150, 300, 600
Body connections	Flanged (RF, RTJ), Weld ends (SW : 2" and under, BW : 3" and over)
Face to Face dimension	See pages 14-25
Body & Bonnet Material	SCPH2/WCB, SCPH21/WC6, SCPH61/C5, SCPL1/LCB, SCS13A/CF8, SCS14A/CF8M, and other alloy steels.
Bonnet type	Standard type : -17~+230°C Fin-Extension type : -45~under -17°C or over +230°C Long-Extension type : -196~-45°C Note : The allowable operating pressure-temperature limitation for each material.
Gland packing	TFE V-ring, TFE carbon fiber, Grafoil, etc. See Fig. 3
Gasket packing	Spiral wound metal, with Grafoil or TFE filler. See Fig. 4
Painting color	Munsell N-6 (Epoxy resin group) is standard. In the case of stainless steel body, no painting is standard.

ACTUATOR

Type	Diaphragm type	Solid State Electronic type		Pneumatic Cylinder type
	5200LA	3500LC	3600LA	6300LA
Specification	Multi-spring type	DC Motor resolution : 0.3%	AC Motor resolution : 0.4%	Double acting type
Purpose	Modulation	Modulation		Modulation
Air supply or Power supply	Air supply (Spring range) 140 (20~100) kPaG 300 (80~200) kPaG 340 (80~200) kPaG 340 (120~300) kPaG	AC100V 50/60 Hz Power supply 4~20 mA DC Input signal		400~500 kPaG Air supply
Connection	Air connection : See pages 14-21	Conduit entries : See pages 24-25		Air connection : See pages 22-23
Direct action	Air to valve close	Signal increase to valve close		Valve open or close by air or electric signal.
Reverse action	Air to valve open	Signal increase to valve open		
Hysteresis	≦ 1% of FS with positioner	≦ 0.5% of FS	≦ 0.8% of FS	≦ 1.5% of FS with positioner
Linearity	≦ ± 2% of FS with positioner	≦ ± 1% of FS	≦ ± 1% of FS	≦ ± 2% of FS with positioner
Ambient Temp.	-10~+70°C	-10~+50°C		-20~+60°C
Painting	Munsell : N-6	Metallic blue		Munsell : N-6
Option	E/P•P/P-Positioner, Air-set, Solenoid valve, Limit switch, Speed controller, Lock valve, Lock-up valve, Manual handle, etc	Resolution : 0.1% Split range, Position transmitter	Over load unit	E/P•P/P-Positioner, Air-set, Solenoid valve, Limit switch, Speed controller, Lock valve, Lock-up valve, Manual handle, etc
		Space heater, Manual handle, Junction box, Explosion proof (Available for Casing size A only)		

PERFORMANCE

Cv Value	See Table 2-1~2-3
Flow characteristics	Linear, Modified Linear, Modified EQ%
Rangeability	20 : 1~100 : 1
Seat Leakage	See Table 1 (Option: ANSI CLAS V)
Allowable pressure drops	See Table 3

OPTIONAL SPECIAL SPECIFICATIONS (additional cost is required)

Special testing for Body	Material certificate, Liquid penetrant testing, Radiographic testing, Flow characteristic testing, Low temperature testing, Stem testing.
Special cleaning for Body	Oxygen clean, Oil-free, Water-free.
Special specification for Body and Actuator	Sand and Dust proof, Salty environment proof, Cold area proof, Tropical area proof, Not using copper alloy, Special piping and fitting, Vacuum service proof, Stainless bolt and nut for exposed parts, Non-standard painting.
Authorization	Japanese government authorization for high pressure gas.

Table 1 BODY/TRIM STANDARD MATERIAL COMBINATION, OPERATING TEMPERATURE AND SEAT LEAKAGE.

① Trim material/treatment vs operating temperature-pressure range : See Fig. 1

② When Class V for seat leakage is required, please consult with us.

- R.TFE : Reinforced TFE
- Hcr : Hard chrome plated
- PH : Precipitation hardening
- HT : Heat treatment
- SF : Stellite face
- SS : Stellite seat

Table 1-1 BODY MATERIAL : CARBON STEEL

Body material		SCPH2/A216-WCB, SCPH21/A217-WC6, SCPH61/A217-C5, SCPL1/A352-LCB			
Disk Stack	Material	410SS			INCONEL
	Treatment	HT			HT
Plug	Material	SUS410			SFVA F11A/A182-F11
	Treatment	HT			SF
Seat ring	Material	SUS316+R.TFE	SUS410		SFVA F11A/A182-F11
	Treatment	—	HT		SF
Balance seal	Material	R.TFE	R.TFE	Grafoil	Grafoil
	Back ring	SUS316	SUS316	—	—
Seat leakage	Class	VI	IV	IV	IV
	Rated Cv ×	bubble-tight	0.01%	0.01%	0.01%
Operating temperature °C	SCPH2 /WCB body	-5~+200	-5~+230	-5~+425	-5~+425
	SCPH21/WC6 body	-5~+200	-5~+230	-5~+425	-5~+538
	SCPH61/C5 body	-5~+200	-5~+230	-5~+425	-5~+538
	SCPL1/LCB body	-45~+200	-45~+230	-45~+350	-45~+350

Table 1-2 BODY MATERIAL : STAINLESS STEEL

Body material		SCS13A/A351-CF8 SCS14A/A351-CF8M				
Disc Stack	Material	SUS316				
	Treatment	—				
Plug	Material	SUS316	SUS316	SUS316	SUS316	SUS316
	Treatment	Hcr	Hcr+SS	SF	Hcr+SS	SF
Seat ring	Material	SUS316+R.TFE	SUS316	SUS316	SUS316	SUS316
	Treatment	—	SS	SF	SS	SF
Balance seal	Material	R.TFE	R.TFE	R.TFE	Grafoil	Grafoil
	Back ring	SUS316	SUS316	SUS316	—	—
Seat leakage	Class	VI	IV	IV	IV	IV
	Rated Cv	bubble-tight	0.01%	0.01%	0.01%	0.01%
Operating Temp. °C		-75~+200	-196~+230	-196~+230	-196~+538	-196~+538

When the fluid temperature is below -75°C the materials for the balance seal and the back ring will be Fluoroloy G and Elgiloy, respectively.

Fig. 1 OPERATING TEMPERATURE AND PRESSURE DROPS FOR TRIM MATERIAL COMBINATIONS

Fig. 1-1

Disk stack	410SS HT
Plug	SUS410 HT
Seat ring	SUS410 HT

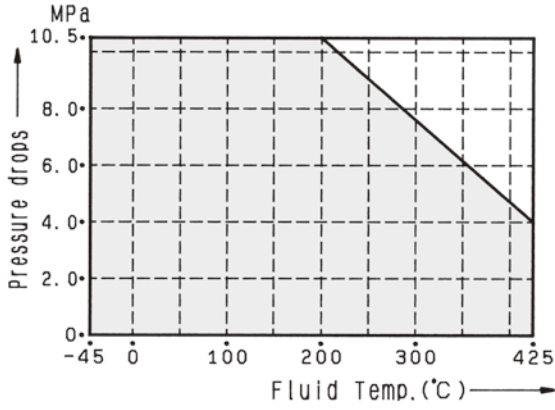


Fig. 1-2

Disk stack	INCONEL HT
Plug	A182-F11 SF
Seat ring	A182-F11 SF

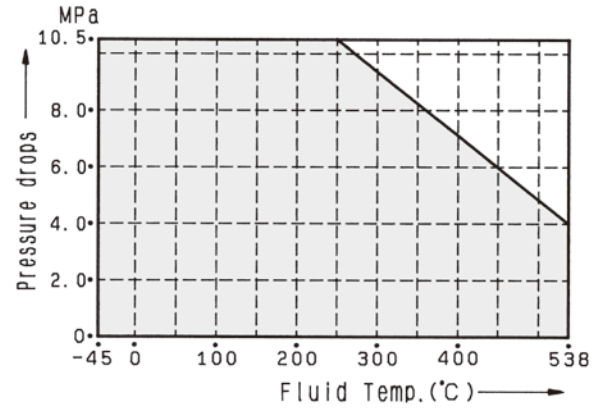


Fig. 1-3

Disk stack	SUS316	SUS316
Plug	SUS316 SF	SUS316 Hcr+SS
Seat ring	SUS316 SF	SUS316 SS

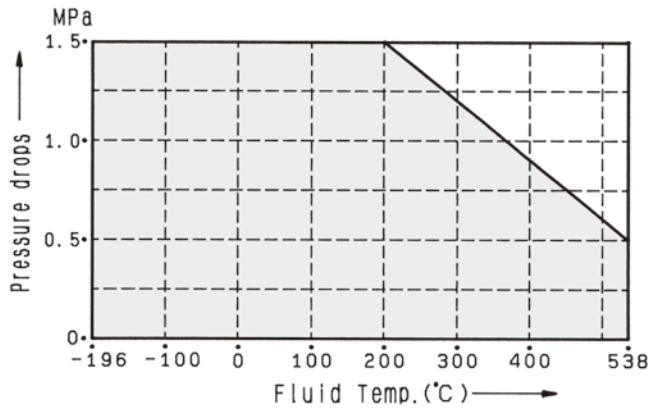


Fig. 1-4

Disk stack	410SS	SUS316
Plug	SUS410	SUS316 Hcr
Seat ring	Reinforced TFE	

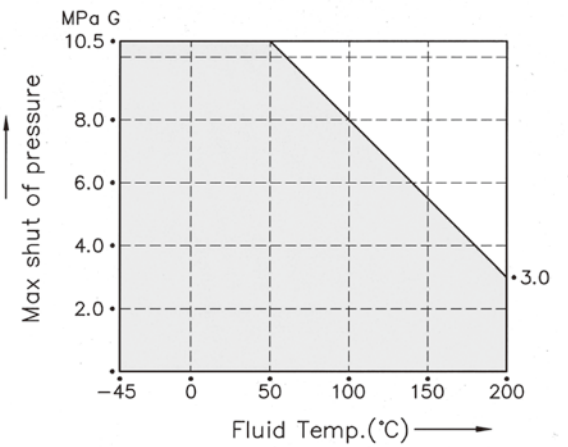


Fig. 2 BALANCE SEAL PRESSURE-TEMPERATURE RATINGS

Fig. 2-1 REINFORCED TFE/SUS316

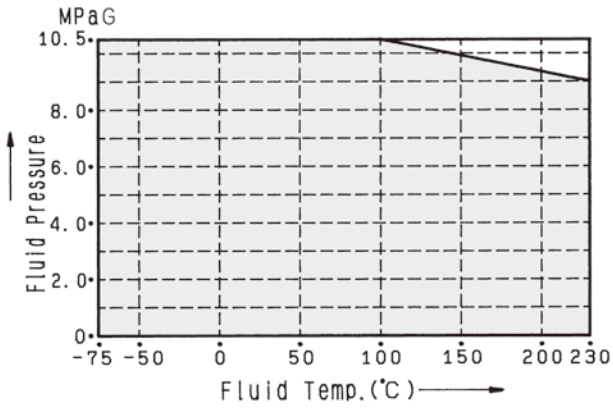


Fig. 2-2 GRAFOIL

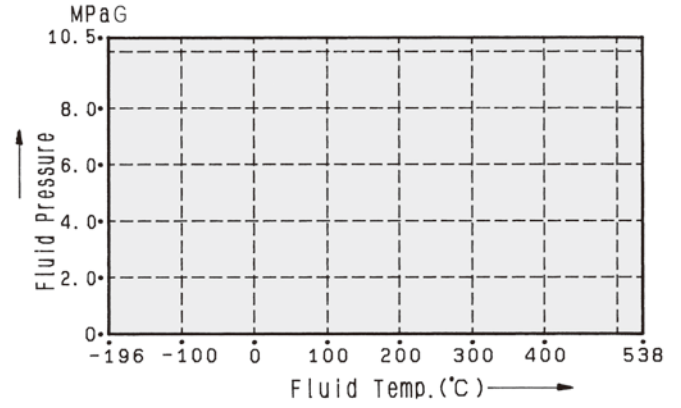


Fig. 2-3 FLUOROLOY G/ELGILOY

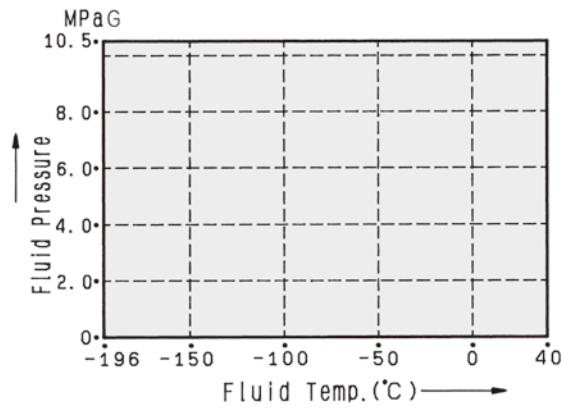


Fig. 3 GLAND PACKING PRESSURE-TEMPERATURE RATINGS

Fig. 3-1 REINFORCED TFE V-RING

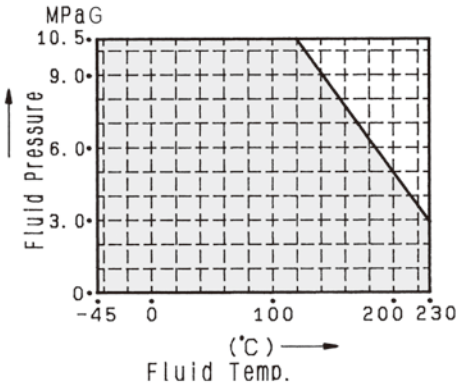


Fig. 3-2 TFE CARBON FIBER

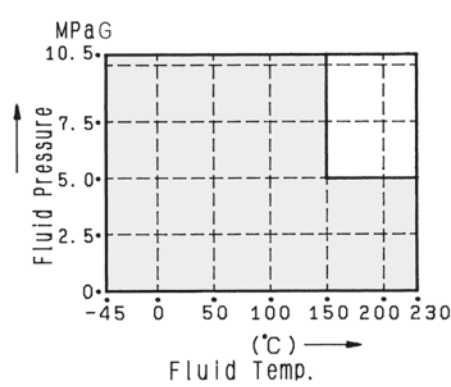


Fig. 3-3 GRAFOIL

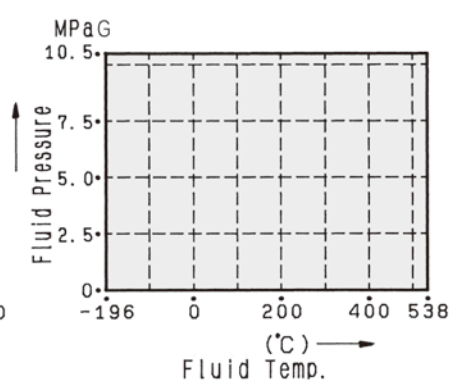


Fig. 4 GASKET PACKING PRESSURE-TEMPERATURE RATINGS

Fig. 4-1 GRAFOIL/SUS316

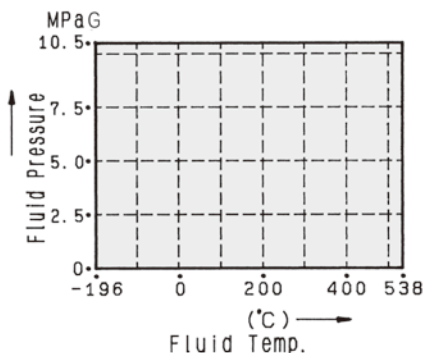


Fig. 4-2 TFE/SUS316

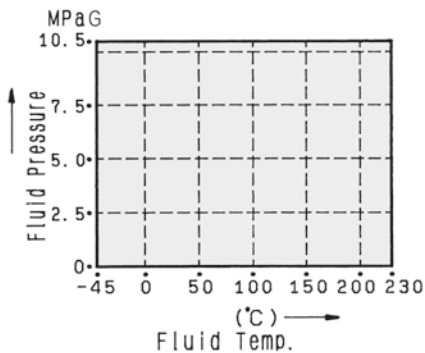


Table 2-1 Cv VALUE AND STROKE: Linear/410SS

	Disk Stack Material	Body size inch (mm)	Plug size inch (mm)	Stroke mm	Cv				
					No. of Turn				
					0	2	4	6	8
FLOW TO CLOSE (OVER PLUG FLOW)	410SS	1 (25)	5/8 (20)	20	6.2	4.9	4.1	3.4	2.9
				25	6.3	5.2	4.5	3.8	3.3
		1 1/2 (40)	1 (25)	20	17	12	9.2	7.5	5.2
				25	18	14	11	9.1	6.4
		2 (50)	1 1/2 (40)	25	40	19	16	13	9.8
				30	43	23	19	15	12
		3 (80)	2 (50)	30	75	49	41	33	24
				40	82	59	50	42	31
		4(100)	3 (80)	40	158	85	68	58	43
				50	169	102	83	71	53
		6(150)	4(100)	50	258	146	115	96	77
				60	274	168	135	113	91
		8(200)	6(150)	60	471	231	185	147	113
				80	534	304	247	199	155
		10(250)	8(200)	90	833	428	341	287	237
		12(300)	10(250)	100	1160	590	483	386	344
14(350)	12(300)	130	1782	842	682	564	482		
16(400)	14(350)	150	2246	1088	876	722	615		
18(450)	16(400)	150	2526	1183	974	799	678		
FLOW TO OPEN (UNDER PLUG FLOW)	410SS	1 (25)	5/8 (20)	20	—	5.2	4.8	4.2	3.9
				25	—	5.5	5.1	4.6	4.3
		1 1/2 (40)	1 (25)	20	—	12	9.8	9.1	8.4
				25	—	14	12	11	10
		2 (50)	1 1/2 (40)	25	—	27	21	16	14
				30	—	31	24	19	16
		3 (80)	2 (50)	30	—	59	47	37	31
				40	—	68	57	47	40
		4(100)	3 (80)	40	—	109	79	64	55
				50	—	126	94	77	68
		6(150)	4(100)	50	—	179	137	111	92
				60	—	202	158	130	109
		8(200)	6(150)	60	—	292	218	175	144
				80	—	371	288	234	196
		10(250)	8(200)	90	—	526	407	328	272
		12(300)	10(250)	100	—	764	574	478	396
14(350)	12(300)	130	—	1076	826	664	549		
16(400)	14(350)	150	—	1384	1040	837	692		
18(450)	16(400)	150	—	1524	1141	938	775		

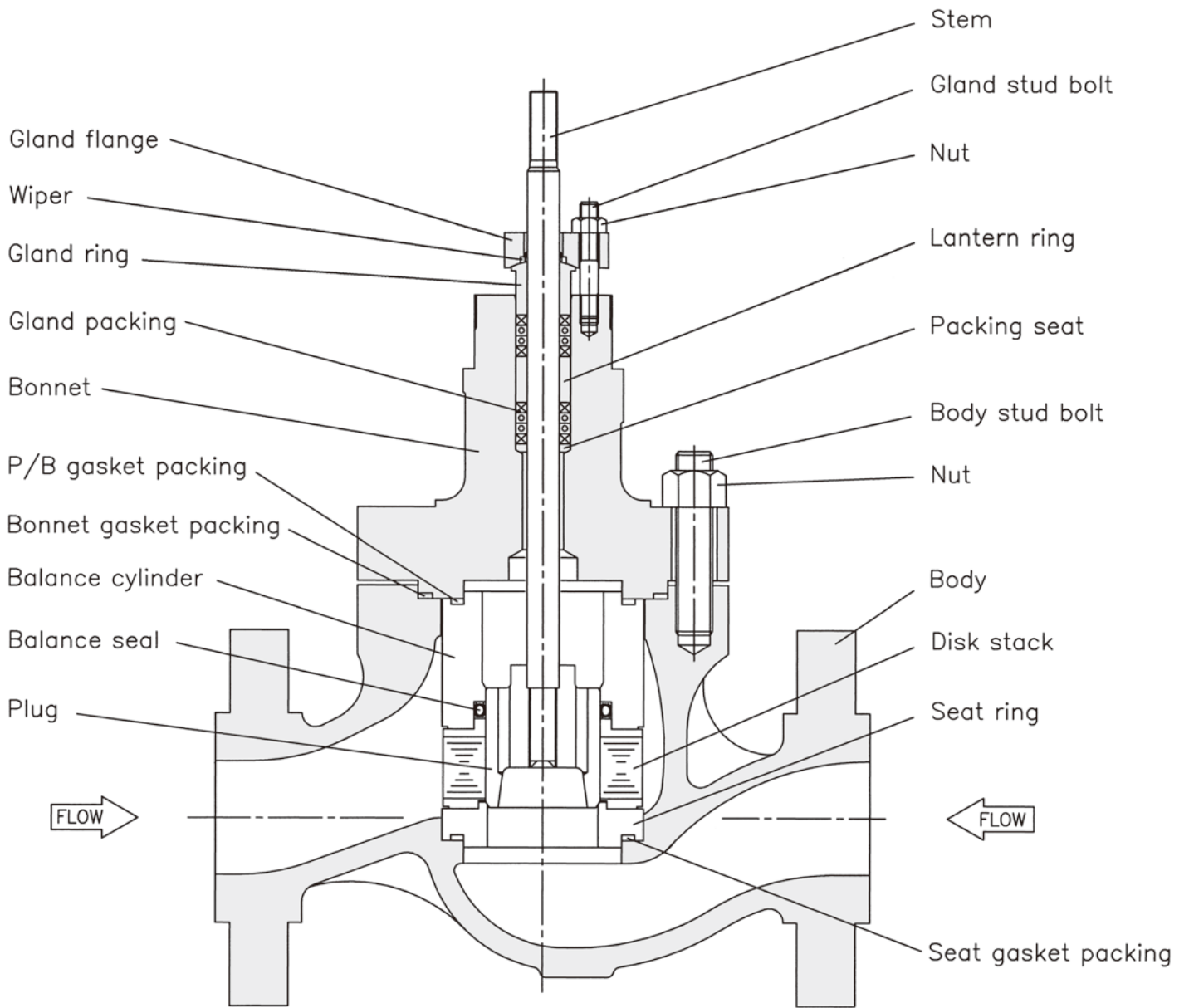
Table 2-2 Cv VALUE AND STROKE: Linear/Inconel

	Disk Stack Material	Body size inch (mm)	Plug size inch (mm)	Stroke mm	Cv				
					No. of Turn				
					0	2	4	6	8
FLOW TO CLOSE (OVER PLUG FLOW)	Inconel	1 (25)	5/8 (20)	20	6.2	4.9	4.1	3.4	2.9
				25	6.3	5.2	4.5	3.8	3.3
		1½ (40)	1 (25)	20	17	11	8.5	7.5	5.2
				25	18	13	10	9.1	6.4
		2 (50)	1½ (40)	25	40	19	15	12	9.2
				30	43	23	18	14	11
		3 (80)	2 (50)	30	75	46	39	31	22
				40	82	56	49	40	29
		4(100)	3 (80)	40	158	85	65	58	40
				50	169	102	79	71	50
		6(150)	4(100)	50	258	146	115	96	77
				60	274	168	135	113	91
		8(200)	6(150)	60	471	231	185	147	113
				80	534	304	247	199	155
		10(250)	8(200)	90	833	428	341	287	237
		12(300)	10(250)	100	1160	590	483	386	344
14(350)	12(300)	130	1782	842	682	564	482		
16(400)	14(350)	150	2246	1088	876	722	615		
18(450)	16(400)	150	2526	1183	974	799	678		
FLOW TO OPEN (UNDER PLUG FLOW)	Inconel	1 (25)	5/8 (20)	20	—	5.2	4.8	4.2	3.6
				25	—	5.5	5.1	4.6	4
		1½ (40)	1 (25)	20	—	12	9.8	9.1	7.5
				25	—	14	12	11	9.1
		2 (50)	1½ (40)	25	—	26	20	15	13
				30	—	30	23	18	15
		3 (80)	2 (50)	30	—	56	46	35	29
				40	—	66	56	44	38
		4(100)	3 (80)	40	—	105	79	64	53
				50	—	122	94	77	65
		6(150)	4(100)	50	—	179	137	111	92
				60	—	202	158	130	109
		8(200)	6(150)	60	—	292	218	175	144
				80	—	371	288	234	196
		10(250)	8(200)	90	—	526	407	328	272
		12(300)	10(250)	100	—	764	574	478	396
14(350)	12(300)	130	—	1076	826	664	549		
16(400)	14(350)	150	—	1384	1040	837	692		
18(450)	16(400)	150	—	1524	1141	938	775		

Table 2-3 Cv VALUE AND STROKE: Linear/SUS316

	Disk Stack Material	Body size inch (mm)	Plug size inch (mm)	Stroke mm	Cv				
					No. of Turn				
					0	2	4	6	8
FLOW TO CLOSE (OVER PLUG FLOW)	SUS316	1 (25)	5/8 (20)	20	6	4.6	3.7	3.1	2.6
				25	6.3	5.1	4.3	3.7	3.1
		1 1/2 (40)	1 (25)	20	16	11	8.2	6.7	4.6
				25	18	13	10	8.6	6
		2 (50)	1 1/2 (40)	25	38	18	15	12	9.2
				30	42	21	18	14	11
		3 (80)	2 (50)	30	76	50	41	34	24
				40	82	59	50	42	31
		4(100)	3 (80)	40	157	85	68	58	43
				50	168	100	81	69	52
		6(150)	4(100)	50	256	143	113	94	75
				60	272	164	131	110	88
		8(200)	6(150)	60	464	225	179	143	110
				80	526	293	238	191	148
		10(250)	8(200)	90	817	410	326	273	226
		12(300)	10(250)	100	1133	563	460	367	327
		14(350)	12(300)	130	1756	815	659	545	465
		16(400)	14(350)	150	2226	1067	858	707	602
18(450)	16(400)	150	2502	1160	954	782	663		
FLOW TO OPEN (UNDER PLUG FLOW)	SUS316	1 (25)	5/8 (20)	20	—	4.9	4.5	3.9	3.6
				25	—	5.4	5	4.4	4.2
		1 1/2 (40)	1 (25)	20	—	11	8.8	8.1	7.5
				25	—	14	11	10	9.5
		2 (50)	1 1/2 (40)	25	—	26	20	15	13
				30	—	30	23	18	15
		3 (80)	2 (50)	30	—	59	48	38	32
				40	—	68	57	46	39
		4(100)	3 (80)	40	—	108	78	63	55
				50	—	124	93	76	66
		6(150)	4(100)	50	—	177	134	109	90
				60	—	198	154	126	106
		8(200)	6(150)	60	—	285	212	169	140
				80	—	360	277	225	187
		10(250)	8(200)	90	—	506	389	313	259
		12(300)	10(250)	100	—	733	548	455	377
		14(350)	12(300)	130	—	1045	800	642	530
		16(400)	14(350)	150	—	1360	1020	819	678
18(450)	16(400)	150	—	1497	1118	918	759		

Fig. 5 BODY SECTION VIEW



FLOW TO CLOSE
(Over Plug Flow) : (Liquid)

FLOW TO OPEN
(Under Plug Flow) : (Steam or Gas)

Table 3 ALLOWABLE PRESSURE DROPS (UNIT : MPa)

DA : Direct action (Air to valve shut)

RA : Reverse action (Air to valve open)

Table 3-1 DIAPHRAGM ACTUATOR (5200LA)/PACKING : REINFORCED TFE V-RING, TFE CARBON FIBER

Actuator size	Air supply (Off balance) kPaG	Spring range kPaG	Seat ring	Balance seal : Reinforced TFE/SUS316										
				Plug size (inch)										
				5/8	1	1½	2	3	4	6	8	10		
218	140(20)	DA & RA 20~100	Metal Seat	0.36										
			Soft Seat	0.36										
	300(80)	DA & RA 80~200	Metal Seat	6.95	6.66									
			Soft Seat	6.95	6.66									
	340(120)	DA : 80~200 RA : 120~300	Metal Seat	9.89	9.89									
			Soft Seat	9.89	9.89									
270	140(20)	DA & RA 20~100	Metal Seat	2.05	0.57	—	—							
			Soft Seat	2.05	0.57	—	—							
	300(80)	DA & RA 80~200	Metal Seat	9.89	9.89	8.82	6.27							
			Soft Seat	9.89	9.89	8.82	6.27							
	340(120)	DA : 80~200 RA : 120~300	Metal Seat	9.89	9.89	9.89	9.89							
			Soft Seat	9.89	9.89	9.89	9.89							
350	140(20)	DA & RA 20~100	Metal Seat	4.99	4.60	1.17	—							
			Soft Seat	4.99	4.60	1.17	—							
	300(80)	DA & RA 80~200	Metal Seat	9.89	9.89	9.89	9.89							
			Soft Seat	9.89	9.89	9.89	9.89							
450	140(20)	DA & RA 20~100	Metal Seat			5.39	3.52	—	—	—				
			Soft Seat			5.39	3.52	—	—	—				
	300(80)	DA & RA 80~200	Metal Seat			9.89	9.89	9.89	9.89	9.89	7.64			
			Soft Seat			9.89	9.89	9.89	9.89	9.89	7.64			
650	300(80)	DA & RA 80~200	Metal Seat							9.89	9.89	9.89	9.89	
			Soft Seat								9.89	9.89	9.89	9.89

Table 3-2 DIAPHRAGM ACTUATOR (5200LA)/PACKING : GRAFOIL

Actuator size	Air supply (Off balance) kPaG	Spring range kPaG	Seat ring	Balance seal : GRAFOIL									
				Plug size (inch)									
				5/8	1	1½	2	3	4	6	8	10	
270	140(20)	DA & RA 20~100	Metal Seat	—									
			Soft Seat	—									
	300(80)	DA & RA 80~200	Metal Seat	8.33									
			Soft Seat	8.33									
	340(120)	DA : 80~200 RA : 120~300	Metal Seat	8.33									
			Soft Seat	8.33									
350	140(20)	DA & RA 20~100	Metal Seat	—	—	—	—						
			Soft Seat	—	—	—	—						
	300(80)	DA & RA 80~200	Metal Seat	8.33	8.33	8.33	8.33						
			Soft Seat	8.33	8.33	8.33	8.33						
450	140(20)	DA & RA 20~100	Metal Seat			—	—	—	—				
			Soft Seat			—	—	—	—				
	300(80)	DA & RA 80~200	Metal Seat			8.33	8.33	8.33	7.85				
			Soft Seat			8.33	8.33	8.33	7.85				
650	300(80)	DA & RA 80~200	Metal Seat							8.33	8.33	8.33	5.15
			Soft Seat								8.33	8.33	8.33

Table 3-3 DOUBLE ACTING CYLINDER ACTUATOR/PACKING : REINFORCED TFE V-RING, TFE CARBON FIBER

Actuator size	Air supply kPaG	Seat ring	Balance seal : Reinforced TFE/SUS316							
			Plug size (inch)							
			4	6	8	10	12	14	16	
200	400	Metal Seat	9.89	9.89						
		Soft Seat	9.89	9.89						
	500	Metal Seat	9.89	9.89						
		Soft Seat	9.89	9.89						
300	400	Metal Seat	9.89	9.89	9.89	9.89				
		Soft Seat	9.89	9.89	9.89	9.89				
	500	Metal Seat	9.89	9.89	9.89	9.89				
		Soft Seat	9.89	9.89	9.89	9.89				
450	400	Metal Seat		9.89	9.89	9.89	9.89	9.89	9.89	9.89
		Soft Seat		9.89	9.89	9.89	9.89	9.89	9.89	9.89
	500	Metal Seat		9.89	9.89	9.89	9.89	9.89	9.89	9.89
		Soft Seat		9.89	9.89	9.89	9.89	9.89	9.89	9.89
600	400	Metal Seat				9.89	9.89	9.89	9.89	
		Soft Seat				9.89	9.89	9.89	9.89	
	500	Metal Seat				9.89	9.89	9.89	9.89	
		Soft Seat				9.89	9.89	9.89	9.89	

Table 3-4 DOUBLE ACTING CYLINDER ACTUATOR/PACKING : GRAFOIL

Actuator size	Air supply kPaG	Seat ring	Balance seal : GRAFOIL							
			Plug size (inch)							
			4	6	8	10	12	14	16	
300	400	Metal Seat	8.33							
		Soft Seat	8.33							
	500	Metal Seat	8.33							
		Soft Seat	8.33							
450	400	Metal Seat		8.33	8.33	8.33	8.33	8.33	8.33	8.33
		Soft Seat		8.33	8.33	8.33	8.33	8.33	8.33	8.33
	500	Metal Seat		8.33	8.33	8.33	8.33	8.33	8.33	8.33
		Soft Seat		8.33	8.33	8.33	8.33	8.33	8.33	8.33
600	400	Metal Seat				8.33	8.33	8.33	8.33	
		Soft Seat				8.33	8.33	8.33	8.33	
	500	Metal Seat				8.33	8.33	8.33	8.33	
		Soft Seat				8.33	8.33	8.33	8.33	

Table 3-5 SOLID STATE ELECTRONIC ACTUATOR (3500LC, 3600LA)/PACKING : REINFORCED TFE V-RING, TFE CARBON FIBER

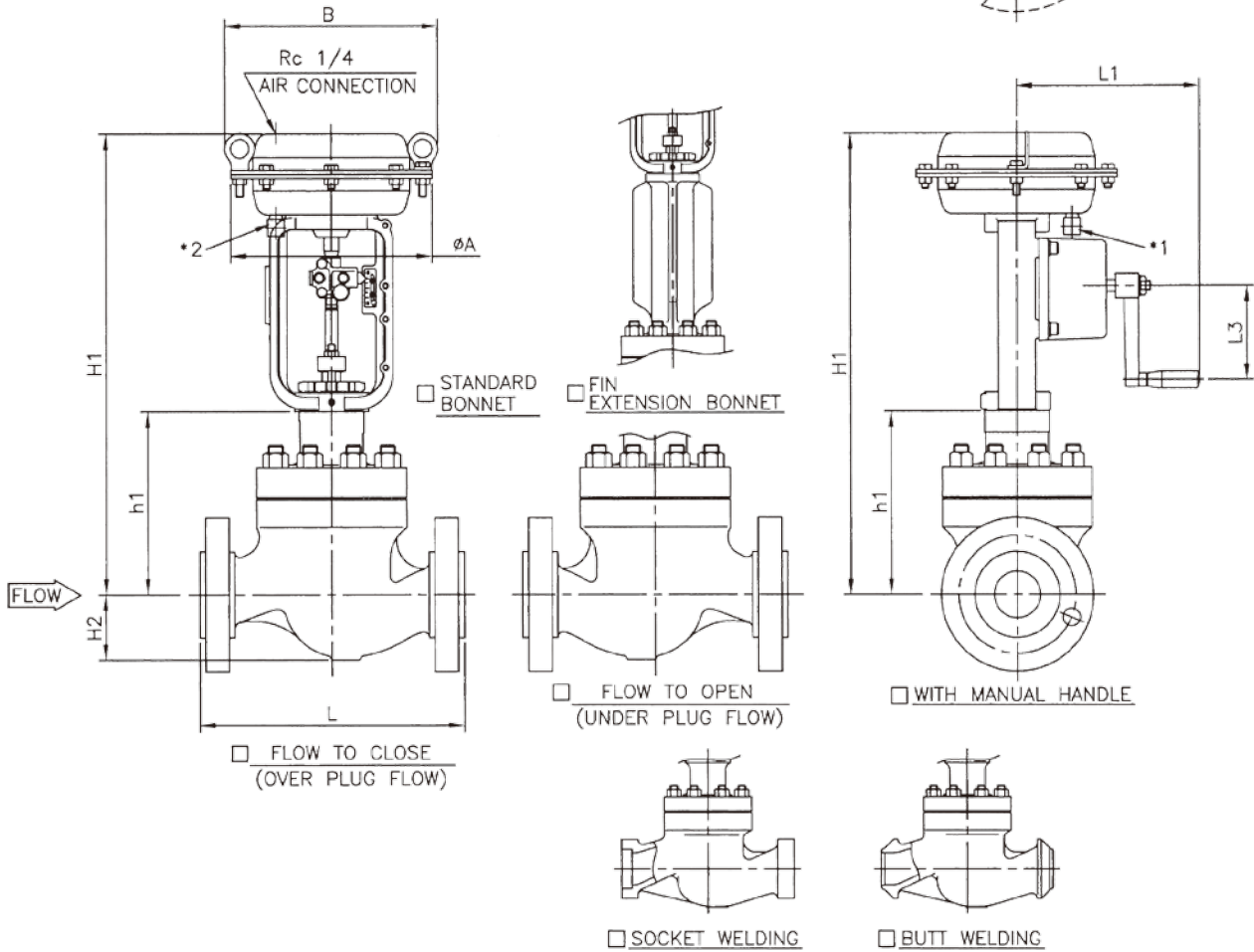
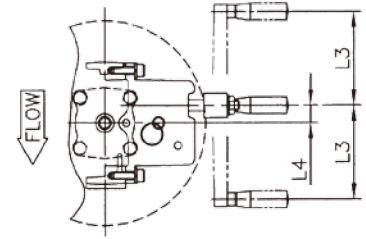
Actuator size	Seat ring	Balance seal : Reinforced TFE/SUS316								
		Plug size (inch)								
		5/8	1	1½	2	3	4	6	8	10
35A2LC 36A2LA	Metal Seat	9.01	8.63	5.39	3.23					
	Soft Seat	9.01	8.63	5.39	3.23					
35B1LC 36B1LA	Metal Seat	9.89	9.89	9.89	8.33					
	Soft Seat	9.89	9.89	9.89	8.33					
35B2LC 36B2LA	Metal Seat				9.89	9.89	7.25			
	Soft Seat				9.89	9.89	7.25			
36C1LA	Metal Seat					9.89	9.89			
	Soft Seat					9.89	9.89			
36C2LA	Metal Seat						9.89	9.89	7.74	5.59
	Soft Seat						9.89	9.89	7.74	5.59

Table 3-6 SOLID STATE ELECTRONIC ACTUATOR (3500LC, 3600LA)/GLAND PACKING : GRAFOIL

Actuator size	Seat ring	Balance seal : GRAFOIL									
		Plug size (inch)									
		5/8	1	1½	2	3	4	6	8	10	12
35B1LC 36B1LA	Metal Seat	8.33	8.33	0.66							
	Soft Seat	8.33	8.33	0.66							
35B2LC 36B2LA	Metal Seat			8.33	8.33	1.07					
	Soft Seat			8.33	8.33	1.07					
36C1LA	Metal Seat				9.89	7.25	2.45				
	Soft Seat				9.89	7.25	2.45				
36C2LA	Metal Seat						8.33	0.79	—	—	—
	Soft Seat						8.33	0.79	—	—	—

GLOBE VALVE 510D DIRECT ACTION

*1 AIR EXHAUST POSITION FOR $\phi 218$ & $\phi 270$.
 *2 AIR EXHAUST POSITION FOR $\phi 350$ & $\phi 450$.



DIMENSIONS

UNIT : mm

CODE NO.	BODY SIZE	FACE TO FACE :L							H2	STANDARD BONNET		FIN EXTENSION BONNET		ACTUATOR					
		ANSI 150#RF JPI 150#RF JIS 10k RF	ANSI 300#RF JPI 300#RF JIS 20k RF 30k RF	ANSI 600#RF JPI 600#RF JIS 40k RF	ANSI 300#SW JPI 300#SW JIS 300#BW	ANSI 300#RTJ JPI 300#RTJ	ANSI 600#SW JPI 600#SW JIS 600#BW	ANSI 600#RTJ JPI 600#RTJ		h1	H1	h1	H1	SIZE		WITH MANUAL HANDLE			CODE NO.
		A	B	L1	L3	L4													
01	1" (25A)	184	197	210	210	210	210	210	47	157	455	257	555	218	231	196	65	18.5	5221LA
											555		655	270	283	230	100	27.5	5227LA
												590		690	350	367	230	100	27.5
93	1 1/2" (40A)	222	235	251	251	248	251	251	60	175	475	325	720	218	231	196	65	18.5	5221LA
											570		720	270	283	230	100	27.5	5227LA
												605		755	350	367	230	100	27.5
02	2" (50A)	254	267	286	286	283	286	289	70	196	595	346	745	270	283	230	100	27.5	5227LA
											630		780	350	367	230	100	27.5	5235LA
												695		845	450	472	336	160	32
03	3" (80A)	298	317	337	317	333	337	340	98	201	600	351	750	270	283	230	100	27.5	5227LA
											635		785	350	367	230	100	27.5	5235LA
												700		850	450	472	336	160	32
04	4" (100A)	352	368	394	368	384	394	397	113	275	770	425	920	450	472	336	160	32	524SLA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

E-510D-5200LA-D-N
S

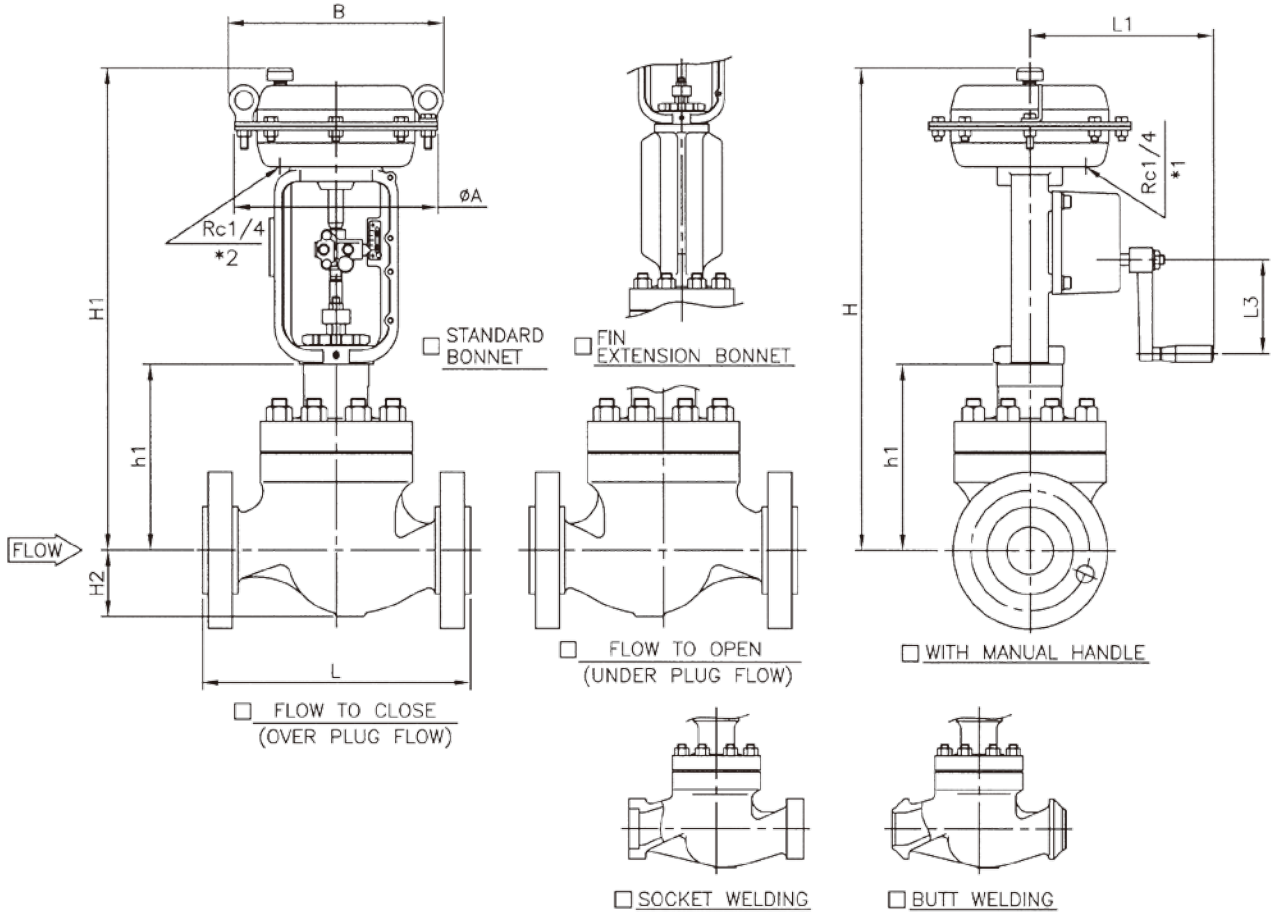
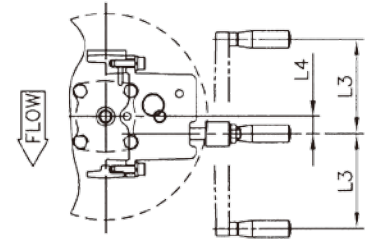
REV.

D

KOSO

GLOBE VALVE 510D REVERSE ACTION

*1 AIR CONNECTION POSITION FOR $\phi 218$ & $\phi 270$.
 *2 AIR CONNECTION POSITION FOR $\phi 350$ & $\phi 450$.



DIMENSIONS

UNIT : mm

CODE NO.	BODY SIZE	FACE TO FACE :L							H2	STANDARD BONNET		FIN EXTENSION BONNET		ACTUATOR					CODE NO.
		ANSI 150#RF JPI 150#RF JIS 10k RF	ANSI 300#RF JPI 300#RF JIS 20k RF 30k RF	ANSI 600#RF JPI 600#RF JIS 40k RF	ANSI 300#SW JPI 300#BW 300#BW	ANSI 300#RTJ JPI 300#RTJ	ANSI 600#SW JPI 600#BW 600#BW	ANSI 600#RTJ JPI 600#RTJ		h1	H1	h1	H1	SIZE		WITH MANUAL HANDLE			
		A	B	L1	L3	L4	A	B		L1	L3	L4							
01	1" (25A)	184	197	210	210	210	210	47	157	495	595	695	730	218	231	196	65	18.5	5221LA
		222	235	251	251	248	251	60	175	610	715	760	795	270	283	230	100	27.5	5227LA
		254	267	286	286	283	286	70	196	635	735	785	820	350	367	230	100	27.5	5235LA
93	1 1/2" (40A)	222	235	251	251	248	251	60	175	515	665	715	760	218	231	196	65	18.5	5221LA
		254	267	286	286	283	286	70	196	610	715	760	795	270	283	230	100	27.5	5227LA
		298	317	337	337	333	337	98	201	645	745	795	825	350	367	230	100	27.5	5235LA
02	2" (50A)	222	235	251	251	248	251	60	175	635	785	820	885	270	283	230	100	27.5	5227LA
		254	267	286	286	283	286	70	196	670	770	820	885	350	367	230	100	27.5	5235LA
		298	317	337	337	333	337	98	201	735	835	885	890	450	472	336	160	32	524SLA
03	3" (80A)	298	317	337	337	333	337	98	201	640	790	825	890	270	283	230	100	27.5	5227LA
		352	368	394	394	384	394	113	275	675	825	890	960	350	367	230	100	27.5	5235LA
		394	410	430	430	420	430	133	315	740	890	960	1030	450	472	336	160	32	524SLA
04	4" (100A)	352	368	394	394	384	394	113	275	810	960	1030	1100	450	472	336	160	32	524SLA
		410	426	452	452	442	452	133	315	845	995	1060	1130	450	472	336	160	32	524SLA
		452	468	494	494	484	494	153	355	880	1030	1100	1170	450	472	336	160	32	524SLA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

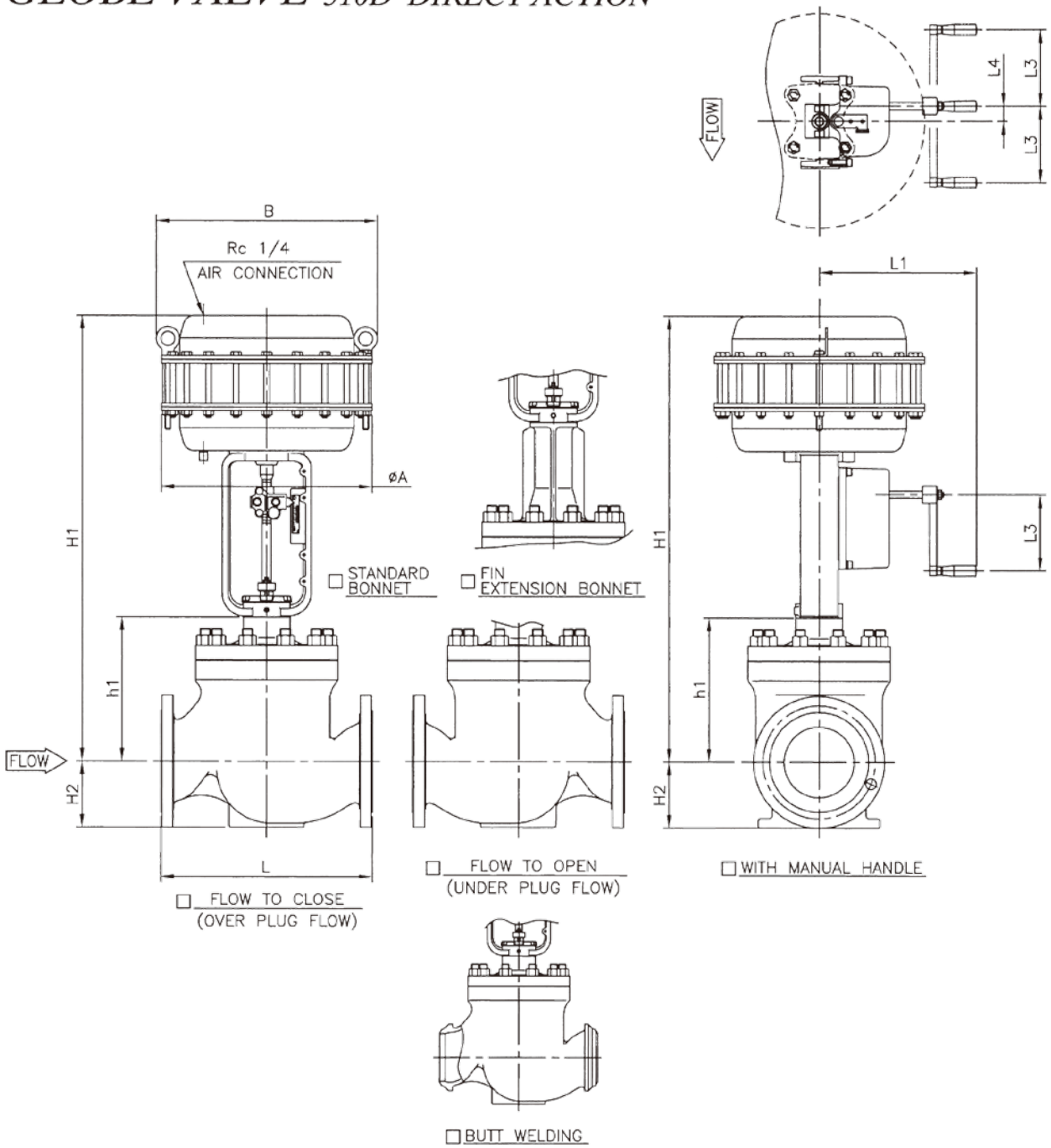
E-510D-5200LA-R-N
S

REV.

D

KOSO

GLOBE VALVE 510D DIRECT ACTION



DIMENSIONS

UNIT : mm

BODY SIZE	FACE TO FACE :L								STANDARD BONNET		FIN EXTENSION BONNET		ACTUATOR					CODE NO.
	ANSI 150#RF JPI 150#RF JIS 10k RF	ANSI 300#RF JPI 300#RF 20k RF JIS 30k RF	ANSI 600#RF JPI 600#RF 40k RF	ANSI 300#BW JPI 300#BW	ANSI 300#RTJ JPI 300#RTJ	ANSI 600#BW JPI 600#BW	ANSI 600#RTJ JPI 600#RTJ	H2	h1	H1	h1	H1	SIZE	WITH MANUAL HANDLE				
	A	B	L1	L3	L4													
06 6" (150A)	451	473	508	473	489	508	511	144	305	940	455	1090	450	472	336	160	32	524LLA
08 8" (200A)	543	568	610	568	584	610	613	185	365	1020	515	1170	450	472	336	160	32	524LLA
10 10" (250A)	673	708	752	708	724	752	756	225	420	1075	570	1225	450	472	336	160	32	524LLA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

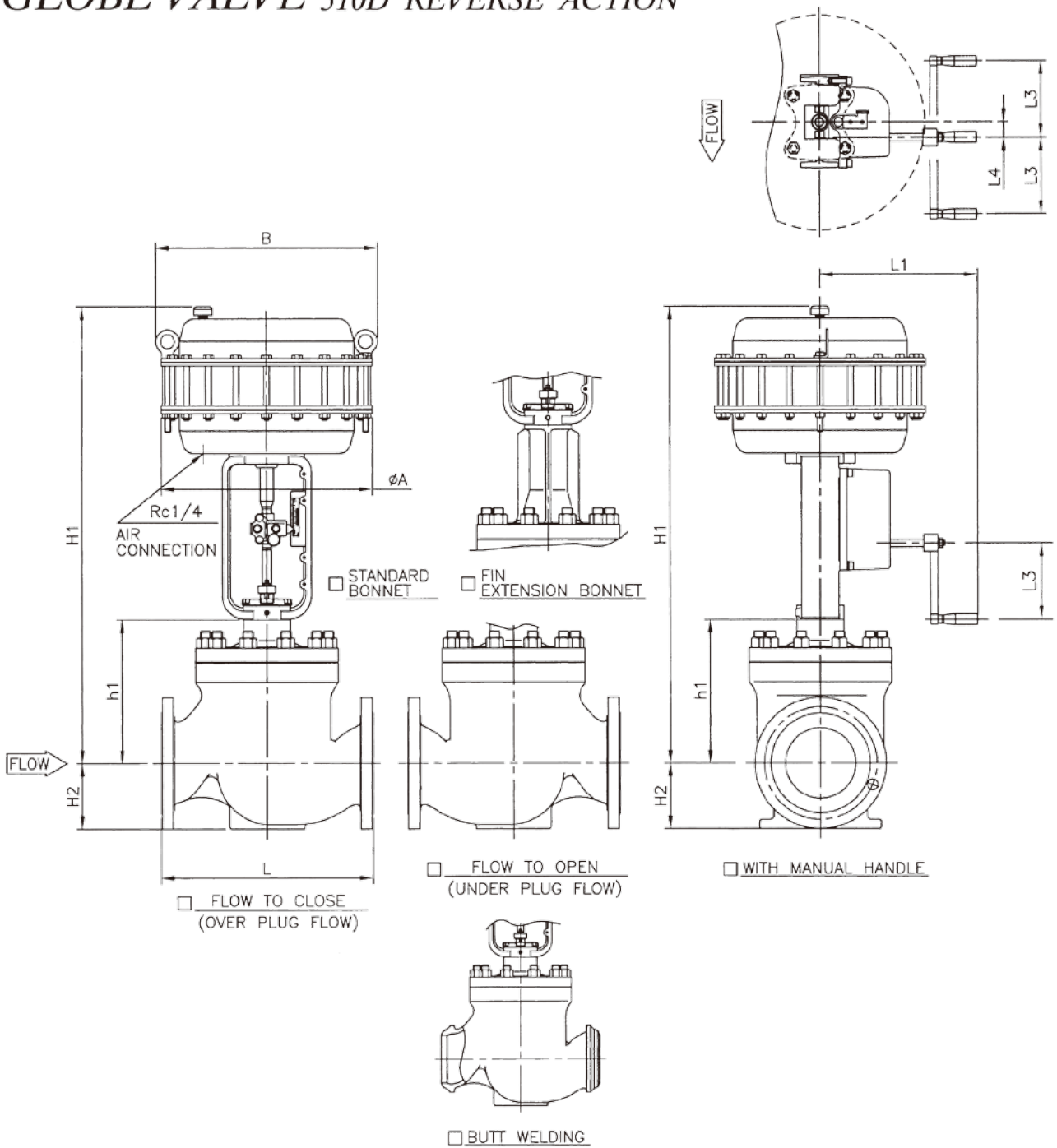
E-510D-524LLA-D-^N/_S

REV.

C

KOSO

GLOBE VALVE 510D REVERSE ACTION



DIMENSIONS

UNIT : mm

BODY SIZE	FACE TO FACE :L								STANDARD BONNET		FIN EXTENSION BONNET		ACTUATOR					
	ANSI 150#RF	ANSI 300#RF	ANSI 600#RF	ANSI 300#BW	ANSI 300#RTJ	ANSI 600#BW	ANSI 600#RTJ	H2	h1	H1	h1	H1	SIZE		WITH MANUAL HANDLE			CODE NO.
	JPI 150#RF	JPI 300#RF	JPI 600#RF	JPI 300#BW	JPI 300#RTJ	JPI 600#BW	JPI 600#RTJ						A	B	L1	L3	L4	
06 □ 6" (150A)	451	473	508	473	489	508	511	144	305	980	455	1130	450	472	336	160	32	524LLA
08 □ 8" (200A)	543	568	610	568	584	610	613	185	365	1060	515	1210	450	472	336	160	32	524LLA
10 □ 10" (250A)	673	708	752	708	724	752	756	225	420	1115	570	1265	450	472	336	160	32	524LLA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

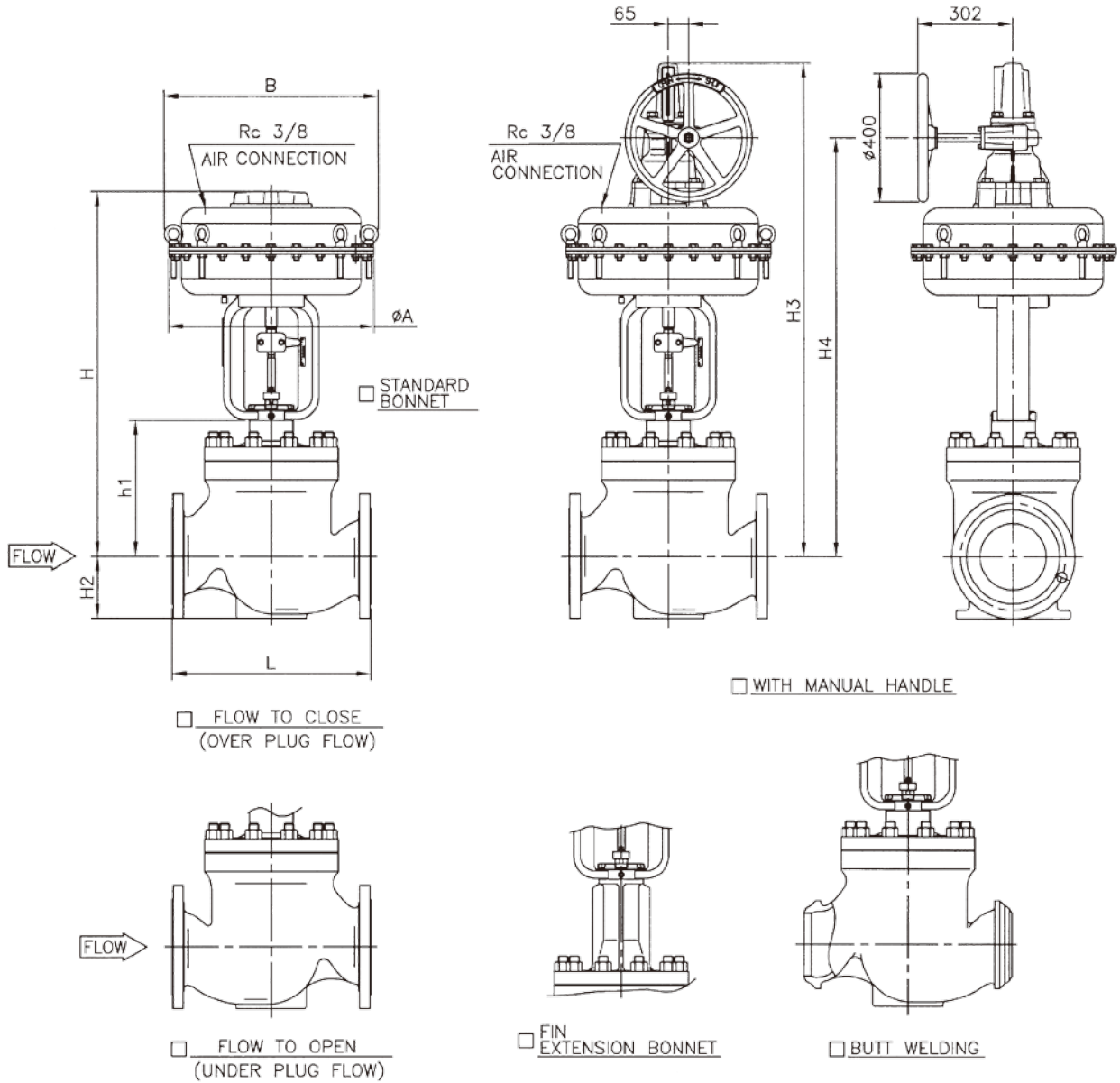
E-510D-524LLA-R-^N/_S

REV.

C

KOSO

GLOBE VALVE 510D DIRECT ACTION



DIMENSIONS

UNIT : mm

CODE NO.	BODY SIZE	FACE TO FACE :L								STANDARD BONNET		FIN EXTENSION BONNET		ACTUATOR								CODE NO.
		ANSI 150#RF	ANSI 300#RF	ANSI 600#RF	ANSI 300#BW	ANSI 300#RTJ	ANSI 600#BW	ANSI 600#RTJ	ANSI 150#RF					ANSI 300#RF	ANSI 600#RF	ANSI 300#BW	ANSI 300#RTJ	ANSI 600#BW	ANSI 600#RTJ	WITH MANUAL HANDLE		
		JPI	JPI	JPI	JPI	JPI	JPI	JPI	JPI	JPI	JPI	JPI	JPI	JPI	JPI	JPI	ST,D BONNET					
		10k RF	20k RF	40k RF	300#BW	300#RTJ	600#BW	600#RTJ	300#BW	300#RTJ	600#BW	600#RTJ	600#BW	600#RTJ	H3	H4	H3	H4				
06	6" (150A)	451	473	508	473	489	508	511	144	327	1045	477	1195	650	678	1445	1215	1595	1365	526SLA		
08	8" (200A)	543	568	610	568	584	610	613	185	365	1085	515	1235	650	678	1485	1250	1635	1400	526SLA		

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

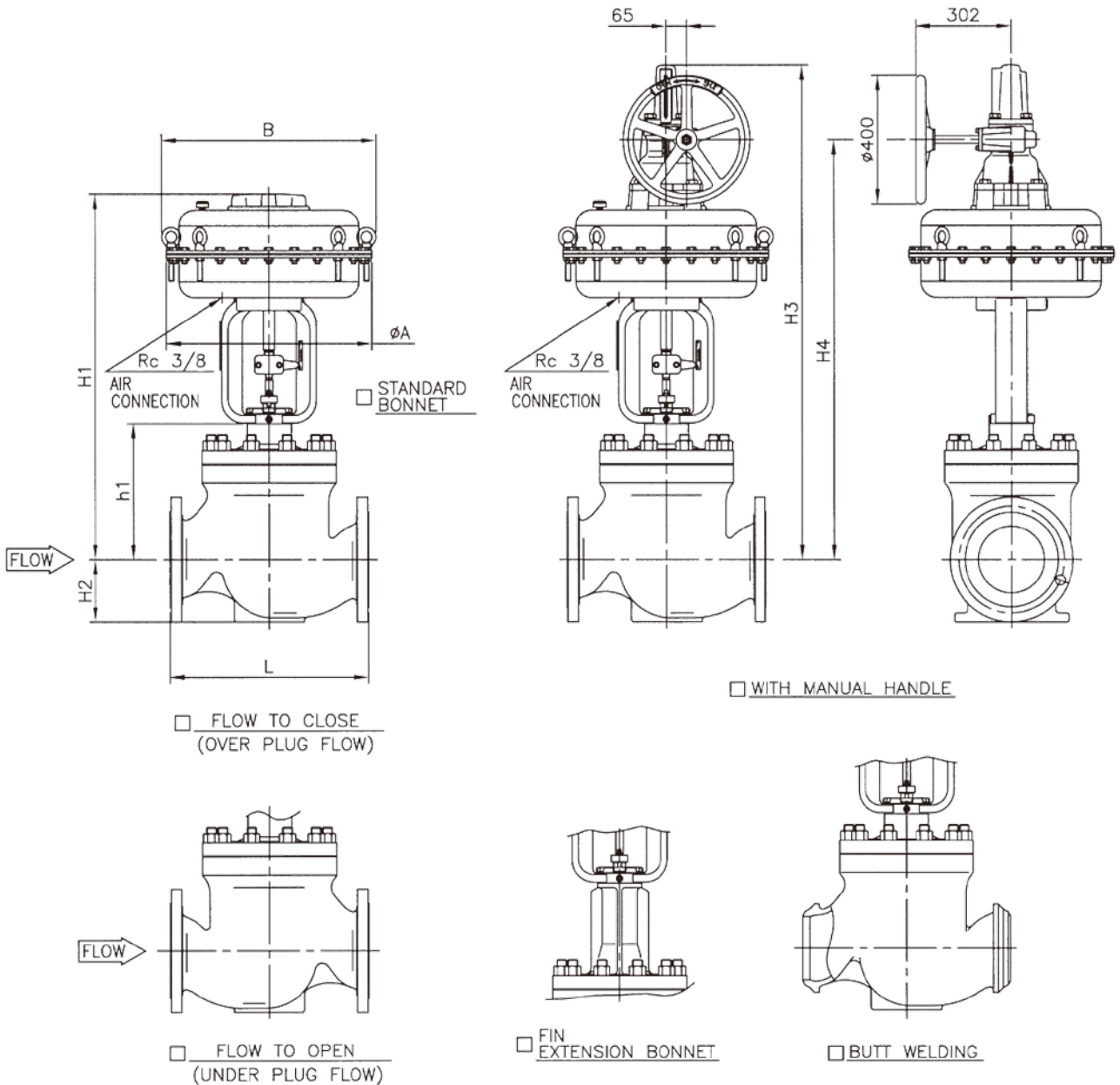
E-510D-526SLA-D-N
H

REV.

B

KOSO

GLOBE VALVE 510D REVERSE ACTION



DIMENSIONS

UNIT : mm

BODY SIZE	FACE TO FACE :L							STANDARD BONNET		FIN EXTENSION BONNET		ACTUATOR				CODE NO.			
	ANSI 150#RF	ANSI 300#RF	ANSI 600#RF	ANSI 300#BW	ANSI 300#RTJ	ANSI 600#BW	ANSI 600#RTJ	H2	h1	H1	h1	H1	WITH MANUAL HANDLE		CODE NO.				
	JPI	JPI	JPI	JPI	JPI	JPI	JPI						JPI	JPI			JPI	ST,D BONNET	FIN/EXT BONNET
150#RF	300#RF	600#RF	300#BW	300#RTJ	600#BW	600#RTJ							H3	H4	H3	H4			
06 (150A)	451	473	508	473	489	508	511	144	327	1045	477	1195	650	678	1445	1215	1595	1365	526SLA
08 (200A)	543	568	610	568	584	610	613	185	365	1085	515	1235	650	678	1485	1250	1635	1400	526SLA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

E-510D-526SLA-R-N
H

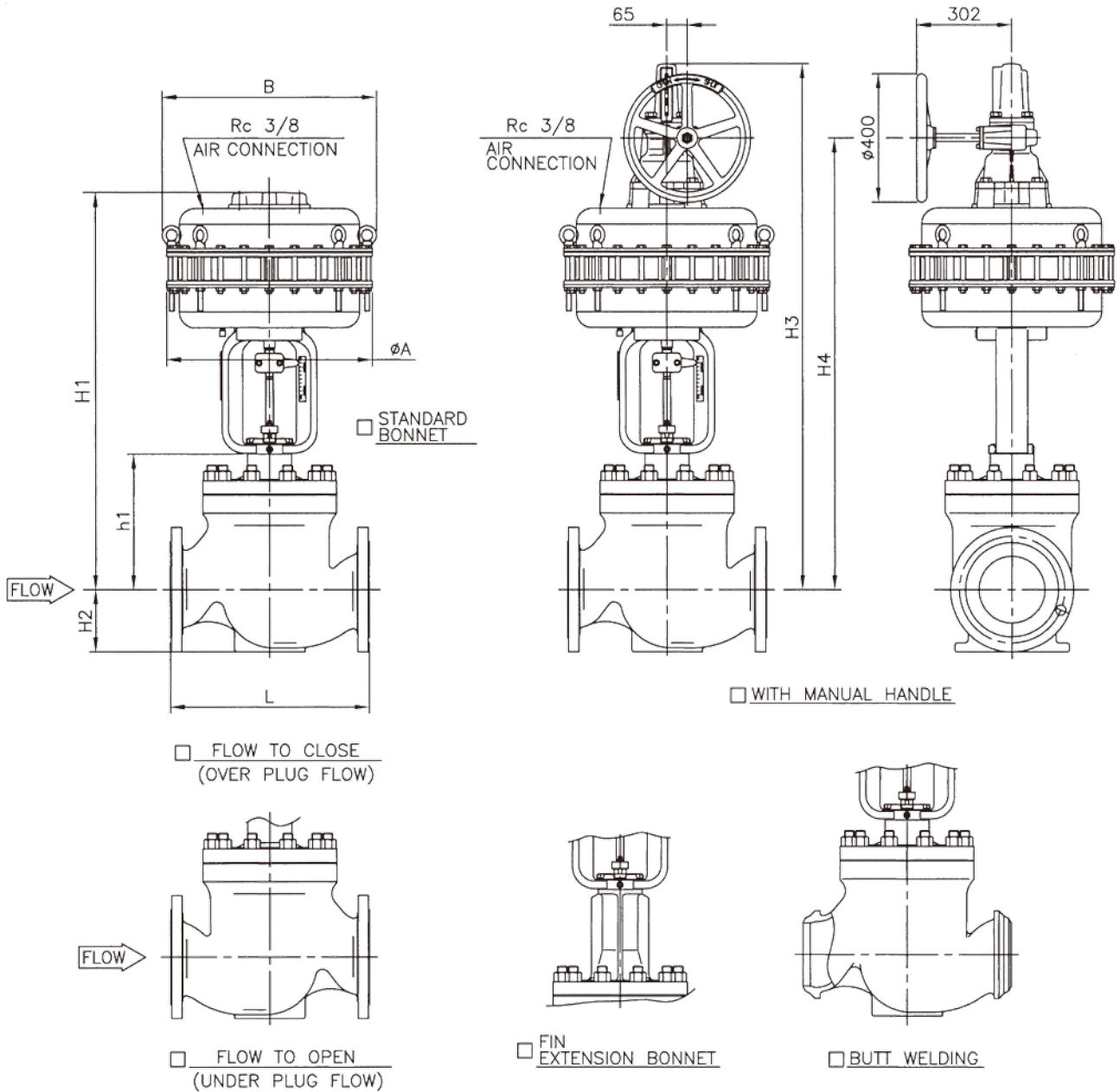
REV.

B

KOSO

ED-01B

GLOBE VALVE 510D DIRECT ACTION



DIMENSIONS

UNIT : mm

BODY SIZE	FACE TO FACE :L								STANDARD BONNET		FIN EXTENSION BONNET		ACTUATOR				CODE NO.			
	ANSI 150#RF	ANSI 300#RF	ANSI 600#RF	ANSI 300#BW	ANSI 300#RTJ	ANSI 600#BW	ANSI 600#RTJ	H2	h1	H1	h1	H1	WITH MANUAL HANDLE		CODE NO.					
	JPI 150#RF	JPI 300#RF	JPI 600#RF	JPI 300#BW	JPI 300#RTJ	JPI 600#BW	JPI 600#RTJ						ST.D BONNET	FIN/EXT BONNET						
CODE NO.	10k RF	20k RF	40k RF	300#BW	300#RTJ	600#BW	600#RTJ					A	B	H3	H4	H3	H4			
10	<input type="checkbox"/> 10" (250A)	673	708	752	708	724	752	756	225	420	1240	570	1390	650	678	1640	1405	1790	1555	526LLA
12	<input type="checkbox"/> 12" (300A)	737	775	819	775	791	819	822	260	480	1300	630	1450	650	678	1700	1465	1850	1615	526LLA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

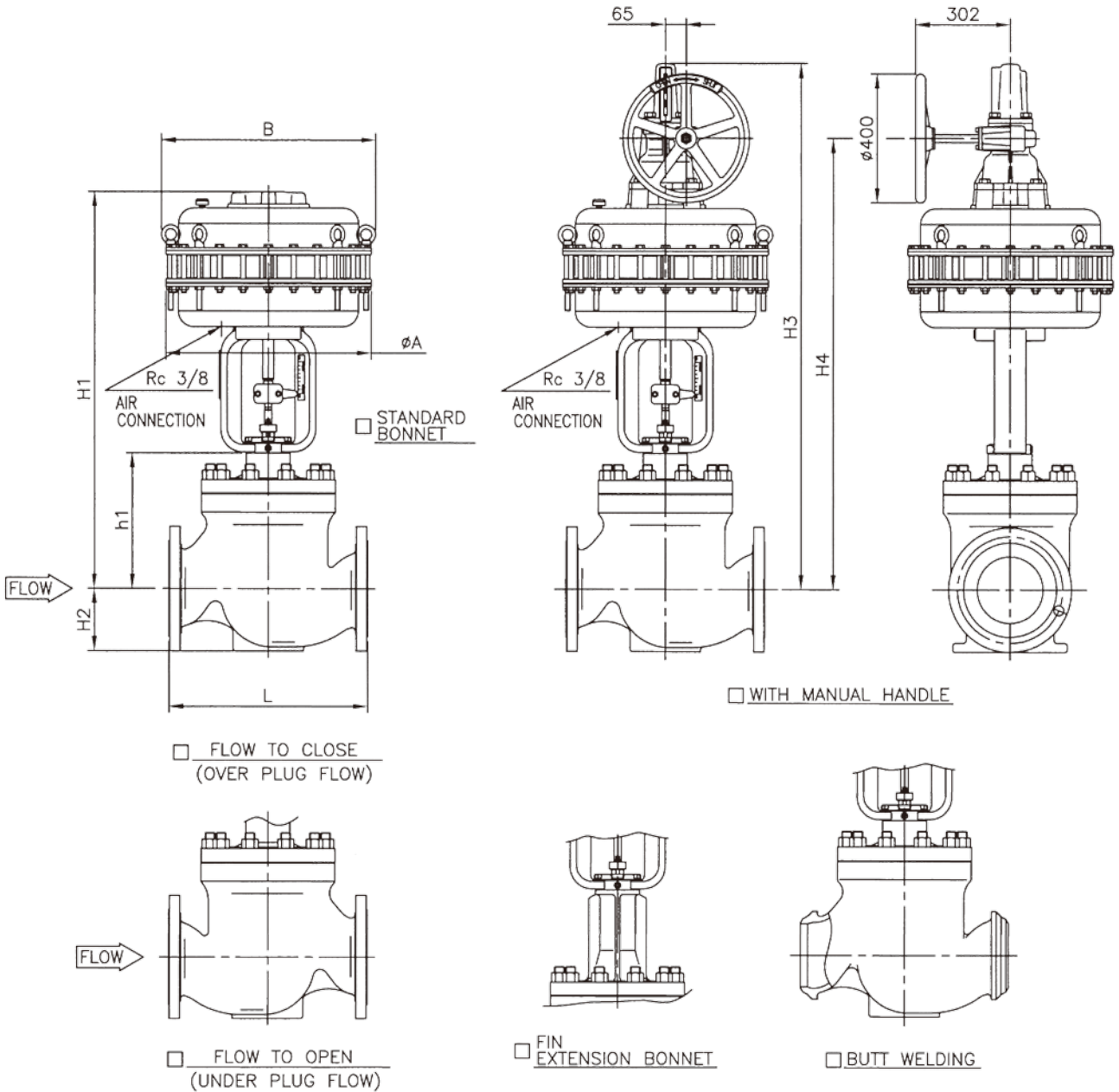
E-510D-526LLA-D-NH

REV.

B

KOSO

GLOBE VALVE 510D REVERSE ACTION



DIMENSIONS

UNIT : mm

BODY SIZE	FACE TO FACE :L							H2	ACTUATOR				SIZE		WITH MANUAL HANDLE				CODE NO.
	<input type="checkbox"/> ANSI 150#RF	<input type="checkbox"/> ANSI 300#RF	<input type="checkbox"/> ANSI 600#RF	<input type="checkbox"/> ANSI 300#BW	<input type="checkbox"/> ANSI 300#RTJ	<input type="checkbox"/> ANSI 600#BW	<input type="checkbox"/> ANSI 600#RTJ		<input type="checkbox"/> STANDARD BONNET	<input type="checkbox"/> FIN EXTENSION BONNET		A	B	<input type="checkbox"/> ST,D BONNET		<input type="checkbox"/> FIN/EXT BONNET			
	<input type="checkbox"/> JPI 150#RF	<input type="checkbox"/> JPI 300#RF	<input type="checkbox"/> JPI 600#RF	<input type="checkbox"/> JPI 300#BW	<input type="checkbox"/> JPI 300#RTJ	<input type="checkbox"/> JPI 600#BW	<input type="checkbox"/> JPI 600#RTJ		h1	H1	h1	H1			H3	H4	H3	H4	
10 <input type="checkbox"/> 10" (250A)	673	708	752	708	724	752	756	225	420	1240	570	1390	650	678	1640	1405	1790	1555	526LLA
12 <input type="checkbox"/> 12" (300A)	737	775	819	775	791	819	822	260	480	1300	630	1450	650	678	1700	1465	1850	1615	526LLA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

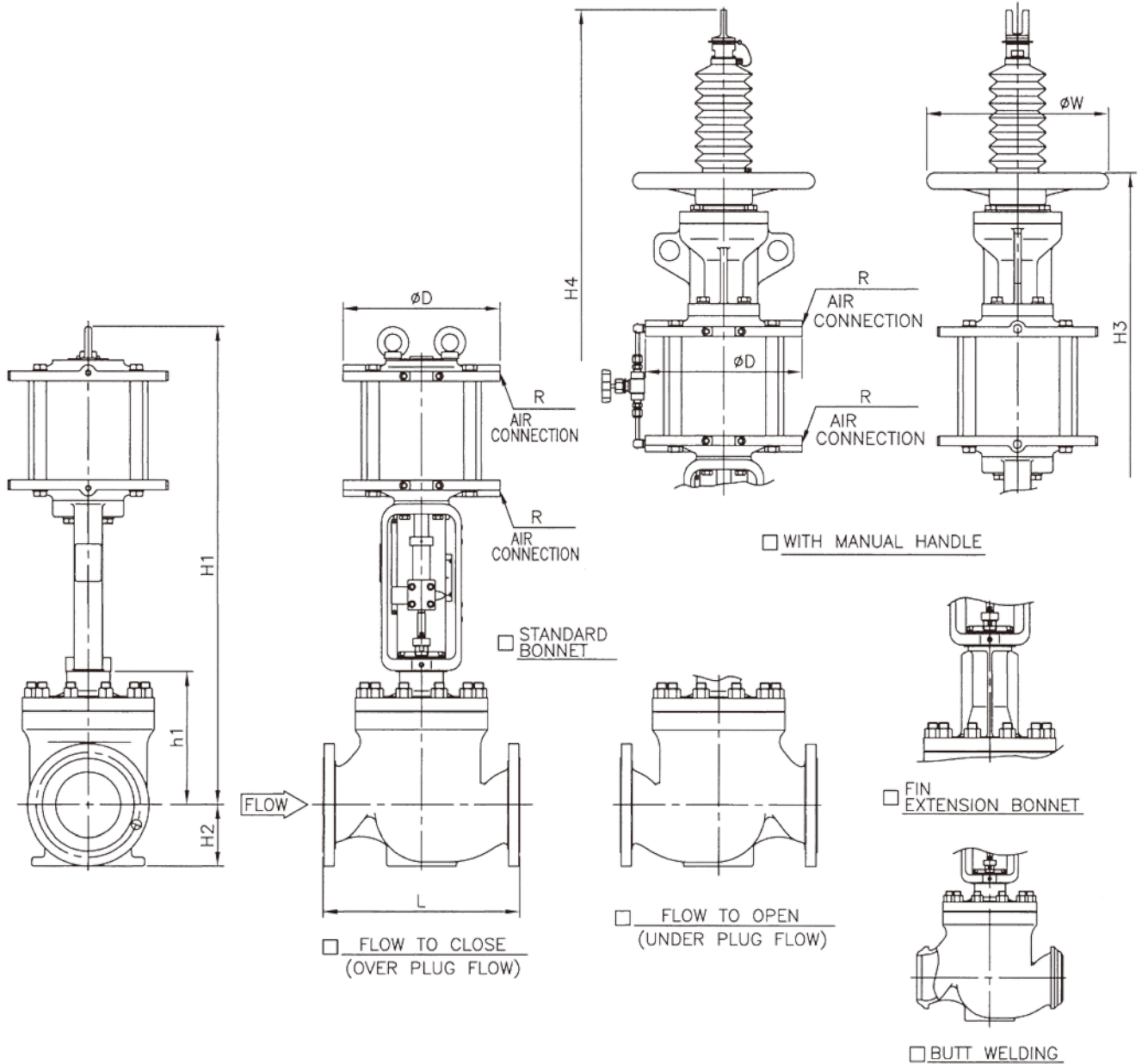
E-510D-526LLA-R-N
H

REV.

B

KOSO

GLOBE VALVE 510D Double acting cylinder



DIMENSIONS

UNIT : mm

BODY SIZE	FACE TO FACE :L							STANDARD BONNET		FIN EXTENSION BONNET				ACTUATOR							
	ANSI 150#RF JPI 150#RF JIS 10k RF	ANSI 300#RF JPI 300#RF JIS 20k RF JIS 30k RF	ANSI 600#RF JPI 600#RF JIS 40k RF	ANSI 300#BW JPI 300#BW JIS 300#BW	ANSI 300#RTJ JPI 300#RTJ JIS 300#RTJ	ANSI 600#BW JPI 600#BW JIS 600#BW	ANSI 600#RTJ JPI 600#RTJ JIS 600#RTJ	H2	h1	H1	H3	H4	h1	H1	H3	H4	Cylinder SIZE	D	R	WITH MANUAL HANDLE	CODE NO.
06 □ 6" (150A)	451	473	508	473	489	508	511	144	327	1040	1230	1505	477	1190	1380	1655	200	272	Rc3/8	320	6320LA
08 □ 8" (200A)	543	568	610	568	584	610	613	185	365	1075	1265	1540	515	1225	1415	1690	200	272	Rc3/8	320	6320LA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

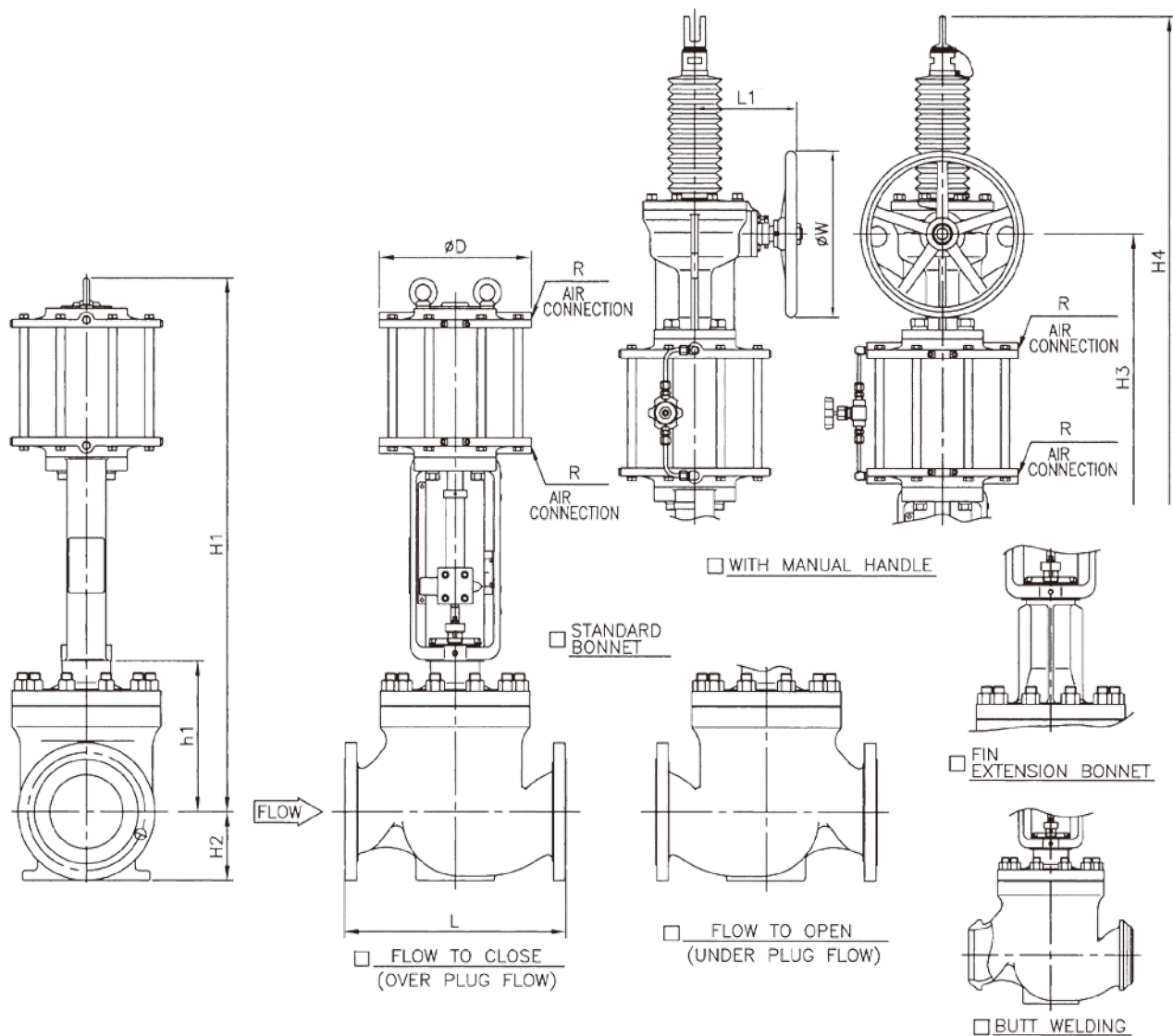
E-510D-6320LA-W-N
T

REV.

B

KOSO

GLOBE VALVE 510D Double acting cylinder



DIMENSIONS

UNIT : mm

BODY SIZE	FACE TO FACE :L								STANDARD BONNET		FIN EXTENSION BONNET				ACTUATOR							
	ANSI 150#RF	ANSI 300#RF	ANSI 600#RF	ANSI 300#BW	ANSI 300#RTJ	ANSI 600#BW	ANSI 600#RTJ	ANSI 150#RF							ANSI 300#RF	ANSI 600#RF	ANSI 300#BW	ANSI 300#RTJ	ANSI 600#BW	ANSI 600#RTJ	Cylinder SIZE	D
	JPI 150#RF	JPI 300#RF	JPI 600#RF	JPI 300#BW	JPI 300#RTJ	JPI 600#BW	JPI 600#RTJ	JIS 10k RF	JIS 20k RF	JIS 40k RF	JIS 30k RF	H2	h1	H1	H3	H4	h1	H1	H3	H4		
06 (150A)	451	473	508	473	489	508	511	144	327	1100	1255	1715	477	1250	1405	1865	300	382	Rc1/2	260	400	6330LA
08 (200A)	543	568	610	568	584	610	613	185	365	1135	1290	1750	515	1285	1440	1900	300	382	Rc1/2	260	400	6330LA
										1315	1525	2080		1465	1675	2230	450	555	Rc1/2	330	500	6345LA
10 (250A)	673	708	752	708	724	752	756	225	420	1190	1345	1805	570	1340	1495	1955	300	382	Rc1/2	260	400	6330LA
										1370	1580	2135		1520	1730	2285	450	555	Rc1/2	330	500	6345LA
12 (300A)	737	775	819	775	791	819	822	260	480	1250	1405	1865	630	1400	1555	2015	300	382	Rc1/2	260	400	6330LA
										1430	1640	2195		1585	1790	2345	450	555	Rc1/2	330	500	6345LA
14 (350A)	889	927	972	927	943	972	975	320	625	1565	1770	2435	775	1715	1920	2585	600	730	Rc3/4	445	630	6360LA
										1775	1985	2640		1925	2135	2790	450	555	Rc1/2	330	500	6345LA
16 (400A)	1016	1057	1108	1057	1073	1108	1111	370	720	1910	2115	2880	870	2060	2265	3030	600	730	Rc3/4	445	630	6360LA
										1870	2080	2735		2020	2230	2885	450	555	Rc1/2	330	500	6345LA
18 (450A)	1140	1181	1239	1181	1197	1239	1242	420	815	2005	2210	2975	965	2155	2360	3125	600	730	Rc3/4	445	630	6360LA
										1965	2175	2830		2115	2325	2980	450	555	Rc1/2	330	500	6345LA
										2100	2305	3070		2250	2455	3220	600	730	Rc3/4	445	630	6360LA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

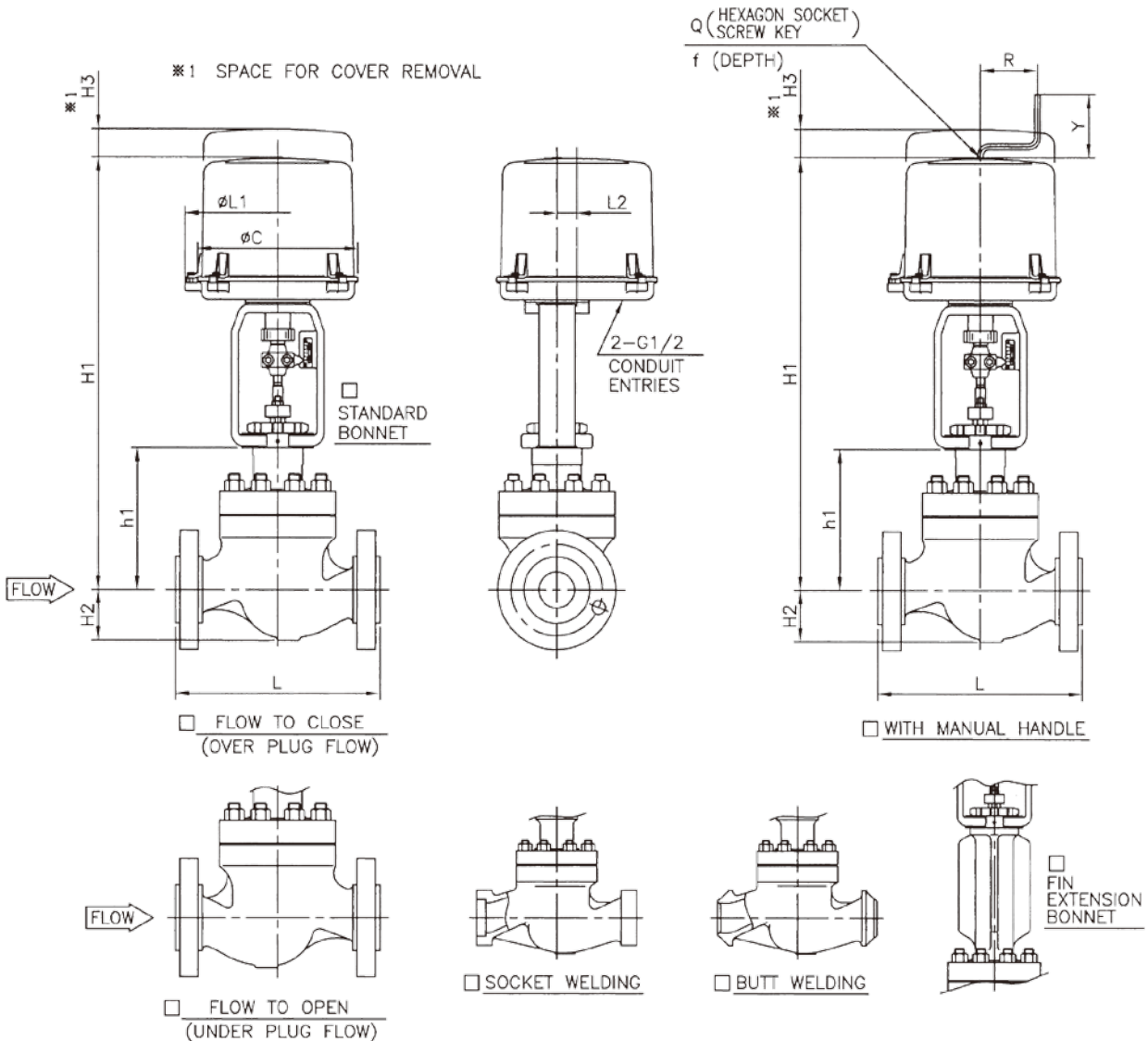
E-510D-6300LA-W-N
H

REV.

B

KOSO

GLOBE VALVE 510D Motorized Actuator 3500LC 3600LA



DIMENSIONS

UNIT : mm

BODY SIZE	FACE TO FACE :L								STANDARD BONNET		FIN EXTENSION BONNET		ACTUATOR										
	ANSI 150#RF JPI 150#RF JIS 10k RF	ANSI 300#RF JPI 300#RF JIS 20k RF 30k RF	ANSI 600#RF JPI 600#RF JIS 40k RF	ANSI 300#SW JPI 300#SW JIS 300#BW	ANSI 300#RTJ JPI 300#RTJ	ANSI 600#SW JPI 600#SW JIS 600#BW	ANSI 600#RTJ JPI 600#RTJ	ANSI 600#SW JPI 600#SW JIS 600#BW	H2	h1	H1	h1	H1	H3	ØL1	L2	ØC	WITH MANUAL HANDLE			SIZE CODE NO.		
01 1" (25A)	184	197	210	210	210	210	210	47	157	560 690	257	660	205	260	28	225	80	87	6-12	35A2LC	36A2LA	35B1LC	36B1LA
93 1½" (40A)	222	235	251	251	248	251	251	60	175	580 705	325	730	205	260	28	225	80	87	6-12	35A2LC	36A2LA	35B1LC	36B1LA
02 2" (50A)	254	267	286	286	283	286	289	70	196	600 730 780	346	880	205	260	28	225	80	87	6-12	35A2LC	36A2LA	35B1LC	36B1LA
03 3" (80A)	298	317	337	317	333	337	340	98	201	605 735 785	351	930	260	290	45	255	160	90	8-15	35A2LC	36A2LA	35B1LC	36B1LA
04 4" (100A)	352	368	394	368	384	394	397	113	275	755	351	885	260	290	45	255	160	90	8-15	35B2LC	36B2LA	35B2LC	36B2LA
06 6" (150A)	451	473	508	473	489	508	511	144	305	1005	425	1035	260	290	45	255	160	90	8-15	35B2LC	36B2LA	35B2LC	36B2LA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

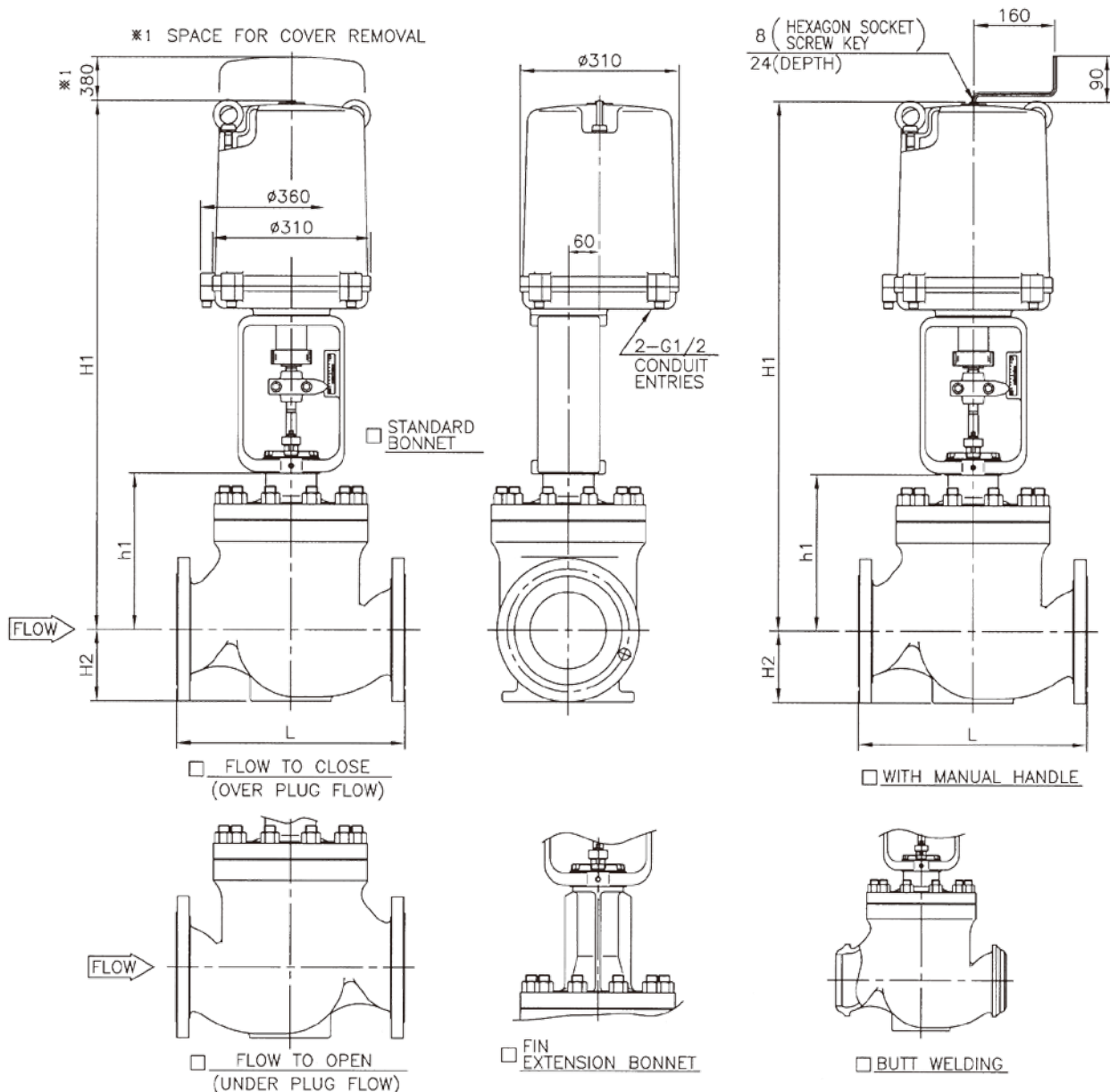
E-510D-3500LC-B-N
3600LA-T

REV.

B

KOSO

GLOBE VALVE 510D Motorized Actuator 36C0LA



DIMENSIONS

UNIT : mm

BODY SIZE	FACE TO FACE :L								STANDARD BONNET		FIN EXTENSION BONNET		ACTUATOR SIZE CODE NO.
	ANSI 150#RF JPI 150#RF JIS 10k RF	ANSI 300#RF JPI 300#RF JIS 20k RF 30k RF	ANSI 600#RF JPI 600#RF JIS 40k RF	ANSI 300#BW JPI 300#BW	ANSI 300#RTJ JPI 300#RTJ	ANSI 600#BW JPI 600#BW	ANSI 800#RTJ JPI 800#RTJ	H2	h1	H1	h1	H1	
03 3" (80A)	298	317	337	317	333	337	340	98	201	930	351	1080	36C1LA
04 4" (100A)	352	368	394	368	384	394	397	113	275	1000	425	1150	36C1LA
06 6" (150A)	451	473	508	473	489	508	511	144	305 327	1030 1115	455 477	1180 1265	36C1LA 36C2LA
08 8" (200A)	543	568	610	568	584	610	613	185	365	1150	515	1300	36C2LA
10 10" (250A)	673	708	752	708	724	752	756	225	420	1205	570	1355	36C2LA
12 12" (300A)	737	775	819	775	791	819	822	260	480	1265	630	1415	36C2LA

* FLANGE IS ACCORDING TO THE STANDARD WHICH IS DESCRIBED ON SPECIFICATION SHEET.

NOTE:

DRAWING No.

E-510D-36C0LA-B-N
T

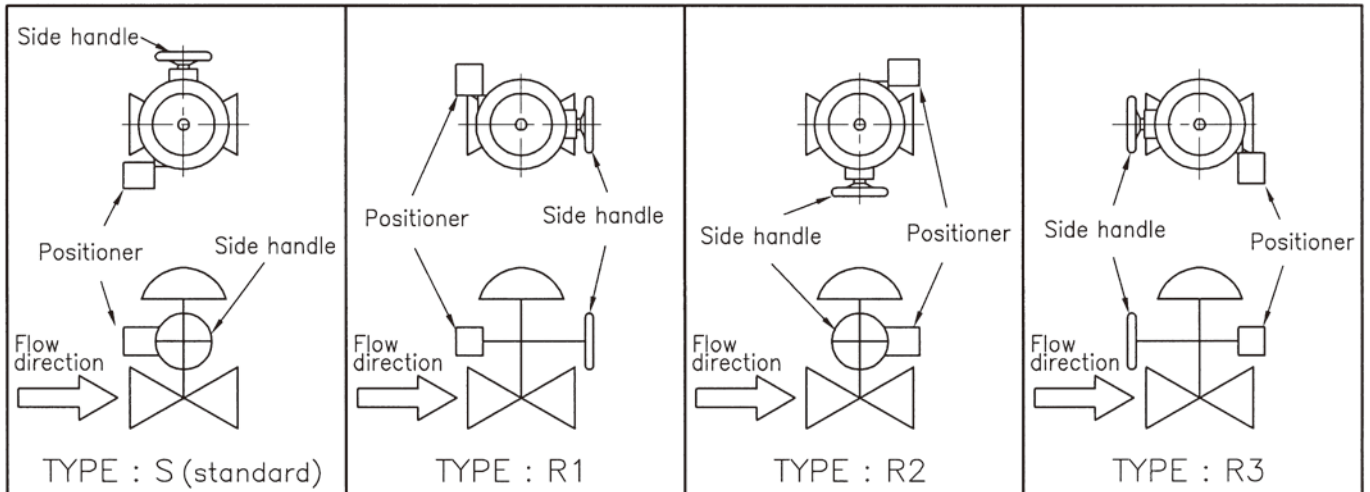
REV.

B

KOSO

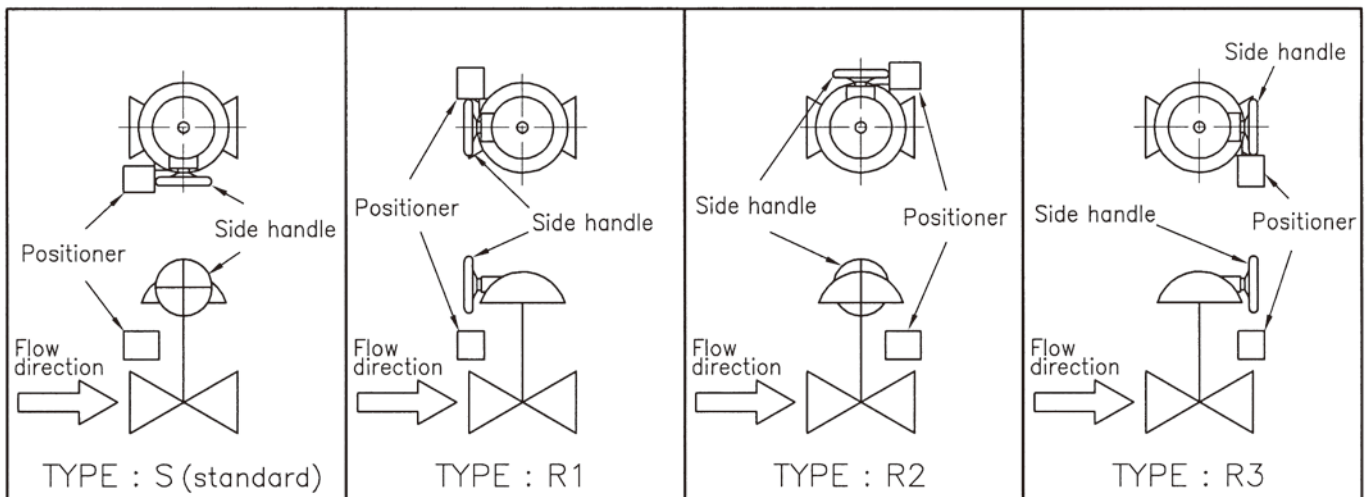
Fig. 7 ACTUATOR MOUNTING FORMS FOR 5200LA

Fig. 7-1 ACTUATOR SIZE : 218~450



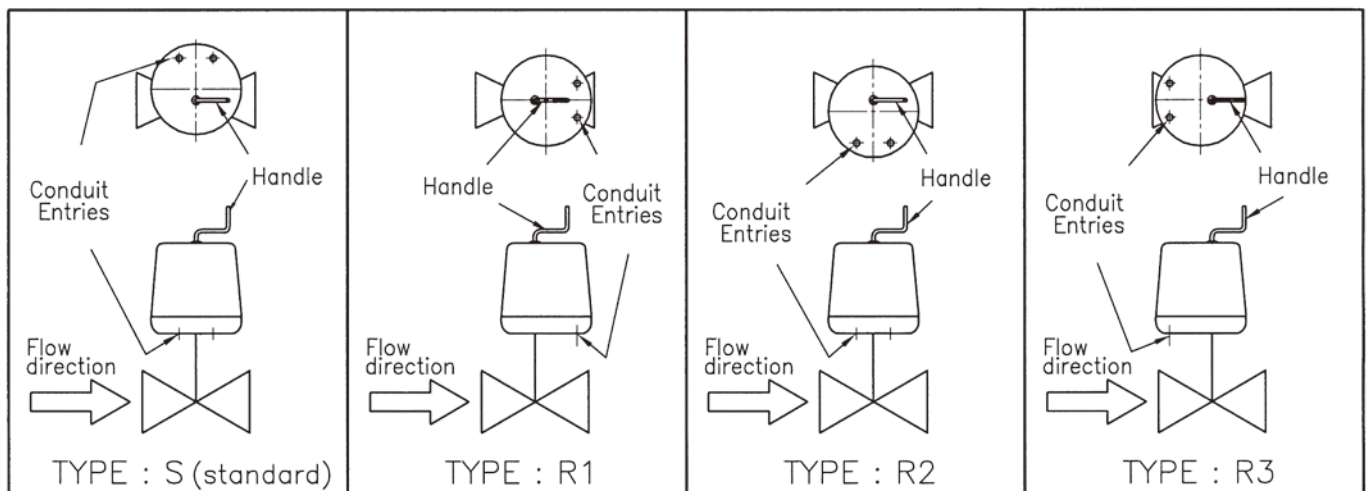
Note: Type S is automatically applied, unless otherwise specified.

Fig. 7-2 ACTUATOR SIZE : 650



Note: Type S is automatically applied, unless otherwise specified.

Fig. 8 ACTUATOR MOUNTING FORMS FOR 3500LC · 3600LA



Note : Type S is automatically applied, unless otherwise specified.

Table 4 NET WEIGHT OF STANDARD VALVE AND ACTUATOR COMBINED (UNIT : kg)

Only standard types are represented. Weights of accessories, a handwheel and the like are not included.

Body size inch(mm)	Body rating class ANSI JIS		Diaphragm actuator size							Double acting Cylinder actuator size					Electronic Actuator size		
			5200LA							6300LA					35A2LC	35B1LC	36C1LA
			218	270	350	450S	450L	650S	650L	150	200	300	450	600	36A2LA	35B2LC 36B1LA 36B2LA	36C2LA
1 (25)	150	10K	18	24	40										16	22	
	300	20, 30K	19	25	41										17	23	
	600	40K	20	26	42										18	24	
1½ (40)	150	10K	29	36	52										28	34	
	300	20, 30K	34	41	57										33	39	
	600	40K	39	46	62										38	44	
2 (50)	150	10K		41	57	92									33	39	
	300	20, 30K		46	62	97									38	44	
	600	40K		51	67	102									43	49	
3 (80)	150	10K		56	72	107									48	54	90
	300	20, 30K		66	82	117									58	64	100
	600	40K		91	107	142									83	89	125
4 (100)	150	10K				115										64	100
	300	20, 30K				130										79	115
	600	40K				175										124	160
6 (150)	150	10K					200	322				185	220			144	180
	300	20, 30K					230	352				215	250			174	210
	600	40K					280	402				275	310			224	260
8 (200)	150	10K					280	402				285	320	426			260
	300	20, 30K					330	452				295	330	436			310
	600	40K					450	572				405	440	546			430
10 (250)	150	10K					470		603				460	566			428
	300	20, 30K					550		683				540	646			508
	600	40K					790		923				780	886			748
12 (300)	150	10K							773				630	736	838		598
	300	20, 30K							853				710	816	918		678
	600	40K							1143				1000	1106	1208		968
14 (350)	150	10K											1070	1190			
	300	20, 30K											1230	1350			
	600	40K											1730	1850			
16 (400)	150	10K											1530	1650			
	300	20, 30K											1930	2050			
	600	40K											2730	2850			
18 (450)	150	10K											2230	2350			
	300	20, 30K											2930	3050			
	600	40K											4230	4350			



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