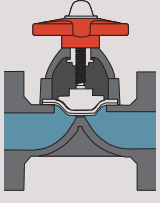
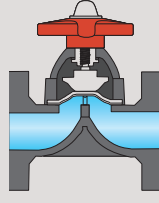

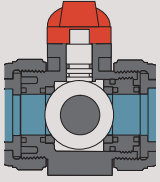
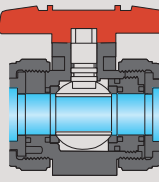

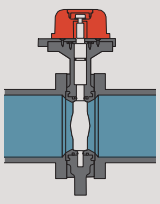
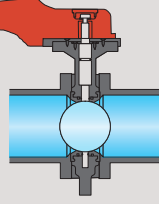

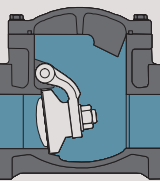
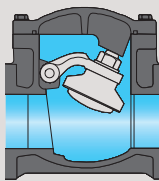
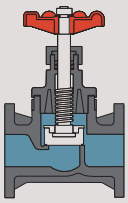
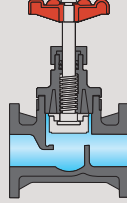

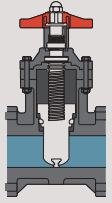
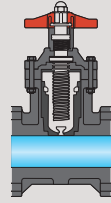


TYPES AND FEATURES OF MAJOR VALVES

Various other types of valves are also available.

	FULLY CLOSED STATE	FULLY OPEN STATE	INTENDED USE	MANUAL VALVE VALVE TYPE	USE AS AUTOMATIC VALVE
<p>DIAPHRAGM VALVE</p> <p>OPENS AND CLOSES THE GATE AT THE CENTER OF THE VALVE BY MOVING UP AND DOWN THE DIAPHRAGM.</p> <ul style="list-style-type: none"> • THE FLOW MAY BE EITHER FROM THE RIGHT OR LEFT. 			<ul style="list-style-type: none"> • INSULATES THE WETTED PART FROM LOW-CONTAMINATION GREASE AND METAL PARTS • FLOW RATE CONTROL • SLURRY FLUID 	ROUND HANDLE TYPE	
<p>BALL VALVE</p> <p>OPENS AND CLOSES THE FLOW PATH BY TURNING THE SPHERICAL VALVE ELEMENT 90°.</p> <ul style="list-style-type: none"> • IN PRINCIPLE, THE FLOW MAY BE EITHER FROM THE RIGHT OR LEFT. • THE FLOW IS STRAIGHT. 			<ul style="list-style-type: none"> • LOW PRESSURE LOSS • SWITCHING OF FLOW DIRECTION (3 WAY BALL VALVE) • ON-OFF 	LEVER TYPE	
<p>BUTTERFLY VALVE</p> <p>OPENS AND CLOSES THE FLOW PATH BY TURNING THE DISC VALVE ELEMENT 90°.</p> <ul style="list-style-type: none"> • THE FLOW MAY BE EITHER FROM THE RIGHT OR LEFT. • ALTHOUGH DIVIDED INTO TWO BY THE VALVE ELEMENT, THE FLOW IS ALMOST STRAIGHT. 			<ul style="list-style-type: none"> • LARGE FLOW RATE • SPACE SAVING • SLURRY FLUID • LOW PRESSURE LOSS • FLOW RATE CONTROL 	LEVER TYPE GEAR TYPE	
<p>SWING CHECK VALVE</p> <p>BACKWARD FLOW OF THE FLUID MAKES THE VALVE ELEMENT PRESSED ONTO THE VALVE SEAT, WHICH PREVENTS BACKFLOW.</p> <ul style="list-style-type: none"> • THE DIRECTION OF FLOW IS FIXED. • THE FLOW IS ALMOST STRAIGHT. 			<ul style="list-style-type: none"> • BACK-FLOW PREVENTION 	—	
<p>STOP VALVE (GLOBE VALVE)</p> <p>THE VALVE ELEMENT SHUTS OFF THE FLUID TO CONTROL OPEN AND CLOSE.</p> <ul style="list-style-type: none"> • THE DIRECTION OF FLOW IS FIXED. • THE FLOW FORMS AN S SHAPE. 			<ul style="list-style-type: none"> • HIGH ACCURACY CONTROL 	ROUND HANDLE TYPE	
<p>GATE VALVE</p> <p>THE VALVE ELEMENT BLOCKS THE FLUID PASSAGE PERPENDICULARLY TO CONTROL OPEN AND CLOSE.</p> <ul style="list-style-type: none"> • THE FLOW MAY BE EITHER FROM THE RIGHT OR LEFT. • THE FLOW IS STRAIGHT. 			<ul style="list-style-type: none"> • LOW PRESSURE LOSS • ON-OFF 	ROUND HANDLE TYPE CAP TYPE	

DIFFERENCES BETWEEN PNEUMATIC AND ELECTRIC TYPES OF AUTOMATIC VALVES



	ADVANTAGES	ACTUATOR TYPE		
PNEUMATIC	<ul style="list-style-type: none"> • LOWER PRICE THAN ELECTRIC TYPE. • SIMPLE STRUCTURE ALLOWING GOOD MAINTAINABILITY • QUICK OPENING AND CLOSING • FREELY ADJUSTABLE OPEN/CLOSE SPEED (OPTIONAL) • CONTROL IS ALSO AVAILABLE AT AN INTERMEDIATE OPENING POSITION (OPTIONAL) 	TYPE AN TYPE AP	TYPE AI TYPE AV	TYPE AD
		TYPE AA	TYPE TA	
ELECTRIC	<ul style="list-style-type: none"> • CAN BE INSTALLED MORE EASILY THAN PNEUMATIC TYPE (REQUIRING RELATIVELY SIMPLE INSTALLATION WORK) • EASY TO ASSEMBLE SEQUENCES • EASY TO OBTAIN HIGH OUTPUT BY CHANGING GEAR REDUCTION RATIO • CAN BE HOUSED IN THE ACTUATOR EVEN WITH OPTIONS. 	TYPE T	TYPE M	
		TYPE S	TYPE H	

TYPES OF PLASTIC AND RUBBER MATERIALS AND THE PARTS USING THEM

PLASTIC MATERIALS		WORKING TEMPERATURE RANGE	MAJOR USED PARTS
U-PVC	POLYVINYL CHLORIDE PLASTIC	0 ~ 60°C	BODY, VALVE ELEMENT, PIPE CONNECTION (MAINLY WETTED PARTS)
HI-PVC	HIGH-IMPACT POLYVINYL CHLORIDE PLASTIC	-10 ~ 60°C	
C-PVC (HT)	THERMAL-RESISTANT POLYVINYL CHLORIDE PLASTIC	0 ~ 90°C	
PP	POLYPROPYLENE	-20 ~ 90°C	
PVDF	VINYLDENE FLUORIDE PLASTIC	-40 ~ 120°C	BONNET
PPG	GLASSFIBER REINFORCED POLYPROPYLENE	-20 ~ 120°C	
RUBBER MATERIALS		HEAT-RESISTANT TEMPERATURE	MAJOR USED PARTS
EPDM	ETHYLENE PROPYLENE RUBBER	120°C	SEALING PARTS (DIAPHRAGMS AND O-RINGS)
FKM	FLUORORUBBER	180°C	
PTFE	POLY TETRA FLUORO ETHYLENE	300~350°C	



NOTE The working temperature range and heat-resistance temperature show the range in which the materials can be used, and therefore are not applicable to all the valves. The allowable temperature of each valve is determined according to its structure and sealing materials. See the catalogs for details.

CERTIFICATES

Certificates and copies of certificate may be delivered. Contact our sales representative for request.

Certificates	Copy of certificate	AS OF FEBRUARY 1, 2017
CE marking (PED:Pressure Equipment Directive) Declaration of Conformity	ISO9001 certificate	
Contained chemical substance investigation (RoHS, REACH, MSDSplus, etc.)	ISO14001 certificate	
Material certificate	NK (Nippon Kaiji Kyokai)	
SDS (MSDS)	ABS(American Bureau of Shipping)	
Test report / certificate according to Japanese Food Sanitation Act (Japanese only)	NSF certification (NSF/ANSI61 Drinking water components-health Effects)	
	JIS product certificate (Japanese only)	



PED



NK



ABS



NSF

For details of applicable products and certificates other than the above, contact us.

CHECK VALVE	MODEL	OPERATING SYSTEM	SIZE
CHECK VALVE	SWING CHECK VALVE	—	15mm — 200mm
	WAFFER CHECK VALVE	—	80mm — 300mm
	BALL CHECK VALVE	—	15mm — 100mm
	TRUE UNION BALL CHECK VALVE	—	15mm — 50mm
	BALL FOOT VALVE	—	15mm — 100mm

OTHERS	MODEL	OPERATING SYSTEM	SIZE
OTHERS	STOP VALVE (GLOBE VALVE)	MANUAL	15mm — 100mm
	CONSTANT FLOW VALVE	MANUAL	15mm — 100mm
	NEEDLE VALVE	MANUAL	15mm — 25mm
	SELF CONTROL VALVE PRESSURE REDUCING TYPE	—	15mm — 50mm
	SELF CONTROL VALVE PRESSURE RELIEF TYPE	—	15mm — 50mm
	SELF CONTROL VALVE PRESSURE RETAINING TYPE	—	15mm — 50mm
	GAUGE VALVE	MANUAL	20mm — 25mm
	SEDIMENT STRAINER (TYPE Y)	—	15mm — 100mm

WATER/WASTEWATER- AND AGRICULTURE-RELATED	MODEL	ACTUATION TYPE	OPERATING SYSTEM	SIZE
GATE VALVE (INSIDE SCREW TYPE)	STANDARD TYPE (TYPE P)	MANUAL	CAP TYPE	32mm — 350mm
			ROUND HANDLE TYPE	32mm — 350mm
	SOFT SEAL TYPE 66 (TYPE S) JWVA	MANUAL	CAP TYPE	32mm — 150mm
	SOFT SEAL (TYPE S) JWVA	MANUAL	CAP TYPE	65mm — 200mm
	SOFT SEAL (TYPE S)	MANUAL	CAP TYPE	65mm — 200mm
ROUND HANDLE TYPE			50mm — 200mm	
GATE VALVE (OUTSIDE SCREW TYPE)	SOFT SEAL (TYPE S)	MANUAL	ROUND HANDLE TYPE	32mm — 250mm
	OUTSIDE SCREW SECTION VALVE (FOR VACUUM SEWAGE)	MANUAL	CAP TYPE	100mm — 250mm
AIR RELEASE VALVE, ISOLATING VALVE	AIR RELEASE VALVE, ISOLATING VALVE	—	—	25mm — 200mm
AUTOMATIC WATER FEEDING VALVE	AUTOMATIC WATER FEEDING VALVE	—	—	50mm — 80mm
OTHERS	ALFALFA VALVE® TYPE 82	MANUAL	—	50mm — 100mm
	ROTARY ANGLE VALVE	MANUAL	—	50mm — 80mm
	ANGLE BUTTERFLY VALVE	MANUAL	—	80mm — 100mm

FLOW METER	SERIES	SIZE	
FLOW METER	ULTRASONIC-VORTEX FLOW METER	ASUSV SERIES	20mm — 100mm
	IMPELLER FLOW METER	ASIP80 SERIES	15mm — 150mm
		ASSPX SERIES	10mm — 25mm
	INSERTION ELECTROMAGNETIC FLOW METER	ASEX80 SERIES	25mm — 150mm
	ULTRASONIC FLOW METER	DOPPLER ULTRASONIC FLOW METER	—
		TIME DIFFERENCE ULTRASONIC FLOW METER	—

GATE VALVE STANDARD TYPE (TYPE P) INSIDE SCREW CAP TYPE

- FOR ALL THE WETTED PARTS, CORROSION-RESISTANT MATERIAL IS USED.
- LIGHTWEIGHT AND HIGHLY IMPACT RESISTANT.
- MADE OF ROBUST, LIGHTWEIGHT AND IMPACT-RESISTANT HARD VINYL CHLORIDE (HI-PVC), WITH A WEIGHT OF 1/3 TO 1/5 COMPARED TO METAL VALVES.
- COMPACT DESIGN ALLOWS FOR SHALLOW DEPTH MOUNTING (SIZE: 32 - 200 mm).

BASIC SPECIFICATIONS

VALVE TYPE ————— GATE VALVE STANDARD TYPE (TYPE P)
INSIDE SCREW CAP TYPE

SIZE ————— 32 mm—350 mm (1 1/4 inch—14 inch)

BODY MATERIAL ————— **HI-PVC**

SEAL MATERIAL / O RING ————— **EPDM** etc.

CONNECTION / FLANGED — JIS10K, DIN, ANSI
THREADED — Rc, Rp, NPT

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa(kgf/cm ²)			CONNECTION METHOD	
		32mm—200mm	250mm	300 mm—350 mm	FLANGED	THREADED
HI-PVC	-10℃~50℃	1.0 {10.2}	0.75 {7.7}	0.5 {5.1}	○	○

NOTES The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.

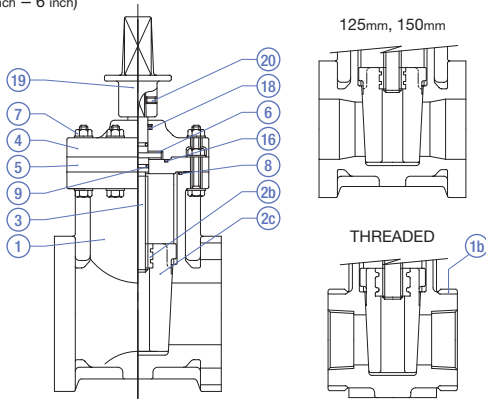
* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

MANUAL

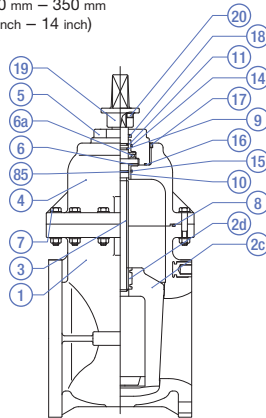


PARTS LIST MANUAL

32 mm – 150 mm
(1 1/4 inch – 6 inch)



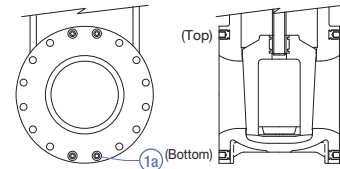
200 mm – 350 mm
(8 inch – 14 inch)



RIGHTWARD OPENING



DETAIL OF EMBEDDED BODY FITTING



PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL
① BODY	1	HI-PVC	⑥ THRUST RING ⁽³⁾	1 set / 1	PP	⑮ O-RING (F) ⁽¹⁾	1	EPDM, etc.
⑬ EMBEDDED BODY FITTING ⁽¹⁾	-	C3604	⑥a THRUST BEARING ⁽¹⁾	1	SUJ2	⑯ O-RING (D)	1	EPDM, etc.
⑬b RING ⁽²⁾	1 SET	STPG	⑦ BOLT/NUT	—	SUS304	⑰ SET SCREW (A) ⁽¹⁾	1	SUS304
⑳ GATE (BODY) (A)	1	PP	⑧ O-RING (B)	1	EPDM, etc.	⑱ DUST SEAL	1	EPDM
⑳ GATE (BODY) EMBEDDED FITTING (A)	1	BC6	⑨ O-RING (C)	2	EPDM, etc.	⑲ CAP (A)	1	FC200 (EPOXY RESIN POWDER COATING)
③ STEM	1	SUS403	⑩ BUSH (A) ⁽¹⁾	1	PP	⑳ SET SCREW (B)	1	SUS304
④ BONNET (LID) (A)	1	HI-PVC	⑪ BUSH (B) ⁽¹⁾	1	PP			
⑤ BONNET (LID) (B)	1	HI-PVC	⑬ O-RING (E) ⁽¹⁾	1	EPDM, etc.			

NOTES (1) is used for sizes of 200 mm or more (2) is used for threaded type (epoxy paint after unichrome plating).

(3) The quantity of use is 1 set (2 pieces) for 150 mm or less and 1 piece for 200 mm or more.

PRODUCT MODEL CODE LIST	ACTUATION	TYPE	OPERATING SYSTEM	STEM MATERIAL / OPEN DIRECTION	BODY MATERIAL	SEAL MATERIAL	CONNECTION / STANDARD	SIZE
MANUAL	V	CG	C	*	I	E	*	***
	V MANUAL VALVE	CG STANDARD TYPE	C TOP CAP	R SUS, RIGHT L SUS, LEFT	I HI-PVC	E EPDM	F1 FLANGED, 10K FD FLANGED, DIN FW FLANGED, WATERWORKS FA FLANGED, ANSI NJ THREADED, JIS ND THREADED, DIN NA THREADED, ANSI	032 32mm ? 350 350mm

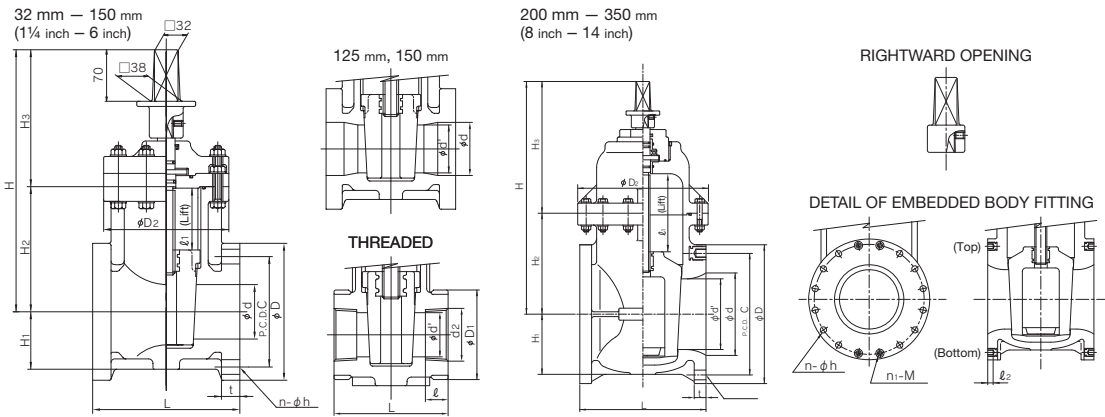
NOTES

- Tapping type is the standard for all the cases.
- The price above is the set price for the valve, full-face gaskets (2 pcs), and SUS plain washer.
- The product model code of size 80 mm compatible with the waterworks standard is "075".
- For those compatible with the waterworks standard, size 32 mm and 65 mm are not available.

MANUAL

GATE VALVE STANDARD TYPE (TYPE P) INSIDE SCREW CAP TYPE

TYPE—VCGC
CONNECTION / FLANGED—JIS, DIN, ANSI THREADED—Rc, Rp, NPT



■ JIS, DIN (Unit: mm)

mm	d	d'	D ₂	ℓ ₁	H	H ₁	H ₂	H ₃	JIS																			
									FLANGED								THREADED											
									JIS 10K				WATERWORKS				D ₁				d ₂							
32	40	30	120	49	268	50	107	161	D	C	n	h	m	M	L	t	D	C	n	h	m	M	L	t	D ₁	d ₂	ℓ	L
40	40	—	120	49	268	50	107	161	135	100	4	19	—	—	165	22	—	—	—	—	—	—	—	—	90	Rc 1 1/4	22	115
50	50	—	130	60	299	58	134	165	140	105	4	19	—	—	165	22	—	—	—	—	—	—	—	—	90	Rc 1 1/2	25	115
65	65	—	155	75	321	68	152	169	155	120	4	19	—	—	180	23	—	—	—	—	—	—	—	—	102	Rc 2	28	130
75(80)	75	—	170	85	357	77	170	187	175	140	4	19	—	—	190	24	—	—	—	—	—	—	—	—	—	—	—	—
100	100	—	195	110	396	89	207	189	185	150	8	19	—	—	200	25	—	—	—	—	—	—	—	—	—	—	—	—
125	125	110	235	117	427	89	227	200	210	175	8	19	—	—	230	27	—	—	—	—	—	—	—	—	—	—	—	—
150	150	130	270	138	466	102	263	203	250	210	8	23	—	—	260	27	—	—	—	—	—	—	—	—	—	—	—	—
200	196	168	310	180	555	143	240	315	280	240	8	23	—	—	270	28	—	—	—	—	—	—	—	—	—	—	—	—
250	247	210	360	226	675	175	270	405	330	290	10	23	2	M20	290	28	—	—	—	—	—	—	—	—	—	—	—	—
300	298	255	410	273	772	195	320	452	400	355	12	25	—	—	380	30	—	—	—	—	—	—	—	—	—	—	—	—
350	348	297	440	319	875	230	310	565	445	400	14	25	2	M22	400	31	—	—	—	—	—	—	—	—	—	—	—	—
									490	445	12	25	4	M22	430	32	—	—	—	—	—	—	—	—	—	—	—	—

■ DIN

mm	FLANGED								THREADED				
	DIN PN10								D ₁	d ₂	ℓ	L	
32	—	—	—	—	—	—	—	—	—	—	—	—	
40	150	110	4	18	—	—	—	165	22	90	Rp 1 1/2	25	115
50	165	125	4	18	—	—	—	180	23	90	Rp 2	28	130
65	185	145	4	18	—	—	—	210	24	—	—	—	—
75(80)	200	160	8	18	—	—	—	240	25	—	—	—	—
100	220	180	8	18	—	—	—	250	27	—	—	—	—
125	250	210	8	18	—	—	—	260	27	—	—	—	—
150	285	240	8	22	—	—	—	280	27	—	—	—	—
200	340	295	6	22	2	M20	—	300	28	—	—	—	—
250	395	350	12	22	—	—	—	380	30	—	—	—	—
300	445	400	10	22	2	—	—	400	31	—	—	—	—
350	505	460	12	22	4	—	—	430	32	—	—	—	—

■ ANSI (Unit: inch)

inch	mm	d	d'	D ₂	ℓ ₁	H	H ₁	H ₂	H ₃	ANSI											
										FLANGED						THREADED					
										ANSI CLASS150						d ₂					
1 1/2	40	1.57	—	4.72	1.93	10.55	1.97	4.21	6.34	D	C	n	h	m	M	L	t	1 1/2-11 1/2 NPT	0.98	4.53	
2	50	1.97	—	5.12	2.36	11.77	2.28	5.28	6.50	6.00	4.75	4	0.75	—	—	7.00	0.91	2-11 1/2 NPT	1.10	5.12	
2 1/2	65	2.56	—	6.10	2.95	12.64	2.68	5.98	6.65	7.00	5.50	4	0.75	—	—	7.50	0.94	—	—	—	
3	75(80)	2.95	—	6.69	3.35	14.06	3.03	6.69	7.36	7.00	6.00	4	0.75	—	—	8.00	0.98	—	—	—	
4	100	3.94	—	7.68	4.33	15.59	3.50	8.15	7.44	9.00	7.50	8	0.75	—	—	9.00	1.06	—	—	—	
5	125	4.92	4.33	9.25	4.61	16.81	3.50	8.94	7.87	10.00	8.50	8	0.88	—	—	10.24	1.06	—	—	—	
6	150	5.91	5.12	10.63	5.43	18.35	4.02	10.35	7.99	11.00	9.50	8	0.88	—	—	10.50	1.06	—	—	—	
8	200	7.72	6.61	12.20	7.09	21.85	5.63	9.45	12.40	13.50	11.75	6	0.88	2	W 3/4	11.50	1.30	—	—	—	
10	250	9.72	8.27	14.17	8.90	26.57	6.89	10.63	15.94	16.00	14.25	12	1.00	—	—	14.96	1.18	—	—	—	
12	300	11.73	10.04	16.14	10.75	30.39	7.68	12.60	17.80	19.00	17.00	10	1.00	2	W 7/8	15.75	1.22	—	—	—	
14	350	13.70	11.69	17.32	12.56	34.45	9.06	12.20	22.24	21.00	18.75	8	1.12	4	W 1	16.93	1.26	—	—	—	

GATE VALVE STANDARD TYPE (TYPE P) INSIDE SCREW ROUND HANDLE TYPE

- EQUIPPED WITH OPENING INDICATOR UNDER THE HANDLE TO ALLOW FOR EASY CHECK OF OPENING DEGREE OF THE VALVE.
- FOR ALL THE WETTED PARTS, CORROSION-RESISTANT MATERIAL IS USED.
- MADE OF ROBUST, LIGHTWEIGHT AND IMPACT-RESISTANT HARD VINYL CHLORIDE (HI-PVC), WITH A WEIGHT OF 1/3 TO 1/5 COMPARED TO METAL VALVES.

NOTES (1) For the round handle type, directly hold the round handle when opening or closing the valve. If a turning bar or similar tool is used to open or close the valve, the handle will be broken.
(2) Concerning the flanged type compatible with the waterworks and JIS10K standards, the products of sizes of 40 to 150 mm are registered as valves certified by the Quality Certification Center, Japan Water Works Association.

BASIC SPECIFICATIONS

VALVE TYPE ————— GATE VALVE STANDARD TYPE (TYPE P)
INSIDE SCREW ROUND HANDLE TYPE

SIZE ————— 32 mm—350 mm (1 1/4 inch—14 inch)

BODY MATERIAL ————— **HI-PVC**

SEAL MATERIAL / O-RING ————— **EPDM** etc.

CONNECTION / FLANGED — JIS5K, JIS10K, DIN, ANSI

THREADED — Rc, Rp, NPT

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa(kgf/cm ²)			CONNECTION METHOD	
		32mm—200mm	250mm	300 mm—350 mm	FLANGED	THREADED
HI-PVC	-10°C~50°C	1.0 {10.2}	0.75 {7.7}	0.5 {5.1}	○	○

NOTES The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.

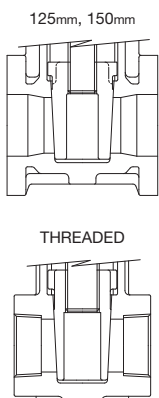
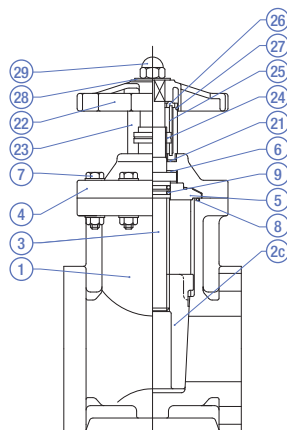
* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

MANUAL

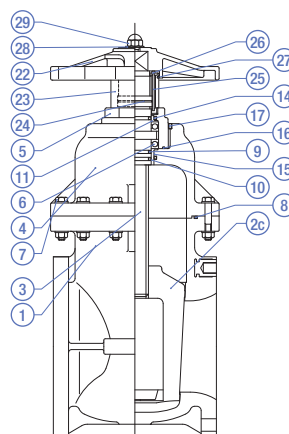


PARTS LIST MANUAL

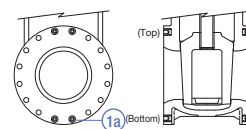
32 mm – 150mm (1 1/4 inch – 6 inch) <Stem: U-PVC>



200 mm – 350 mm (8 inch – 14 inch) <Stem: U-PVC>



DETAIL OF EMBEDDED BODY FITTING



PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL
1 BODY	1	HI-PVC	8 O-RING (B)	1	EPDM, etc.	22 HANDLE	1	PP
1a EMBEDDED BODY FITTING (1)	—	C3604	9 O-RING (C)(3)	2-3	EPDM, etc.	23 OPENING COVER	1	PC
2c GATE (BODY) (A)	1	PP	10 BUSH (A)(1)	1	PP	24 OPENING RING	1	U-PVC
3 STEM	1	U-PVC	11 BUSH (B)(1)	1	PP	25 GUIDE PIN	1	SUS304
4 BONNET (LID) (A)	1	HI-PVC	14 O-RING (E)(1)	1	EPDM, etc.	26 GUIDE PIN SUPPORT PLATE	1	U-PVC
5 BONNET (LID) (B)	1	HI-PVC	15 O-RING (F)(1)	1	EPDM, etc.	27 O-RING (G)	1	EPDM
6 THRUST RING 2)	1 SET	PP	16 O-RING (D)(1)	1	EPDM, etc.	28 WASHER	1	U-PVC
6a THRUST BEARING(1)	1 SET	SUJ2	17 SET SCREW (A)(1)	1	SUS304	29 UNION NUT	1	SUS304
7 BOLT/NUT	—	SUS304	21 PACKING	1	EPDM			

NOTES (1) is used for sizes of 200 mm or more (2) is used for sizes of 150 mm or less. (3) The quantity of use is 2 pieces for 150 mm or less and 3 pieces for 200 mm or more.

* The parts list above is applicable when the stem is made of U-PVC.

PRODUCT MODEL CODE LIST

MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	STEM MATERIAL / OPEN DIRECTION	BODY MATERIAL	SEAL MATERIAL	CONNECTION / STANDARD	SIZE
V	CG	M	*	I	E	*	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
V MANUAL VALVE	CG GATE	M ROUND HANDLE	J RESIN, LEFT R SUS, RIGHT	I HI-PVC	E EPDM	F1 FLANGED, 10K FD FLANGED, DIN FA FLANGED, ANSI NJ THREADED	032 32mm 350 350mm

NOTES

- The SUS stem type opens only rightward. The resin stem type opens only leftward.
- For 200 to 350 mm, tapping type is the standard.
- The price above is the set price for the valve, full-face gaskets (2 pcs), and SUS plain washer.
- The product model code of size 80 mm compatible with the waterworks standard is "075".
- For the round handle type, resin stems compatible with JISSK are also available. (40 mm to 150 mm)
- For those compatible with the waterworks standard, size 32 mm and 65 mm are not available.

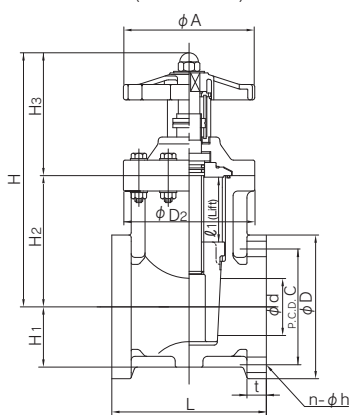
MANUAL

GATE VALVE STANDARD TYPE (TYPE P) INSIDE SCREW ROUND HANDLE TYPE

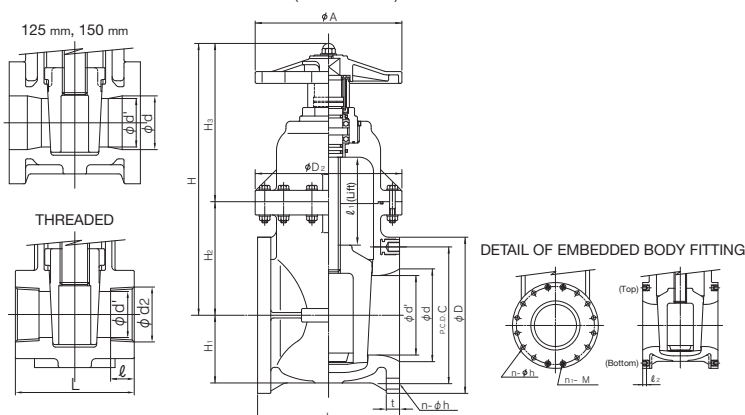
TYPE—VCGM

CONNECTION / FLANGED—JIS, DIN, ANSI THREADED—Rc, Rp, NPT

32 mm – 150 mm (1 1/4 inch – 6 inch) <Stem: U-PVC>



200 mm – 350 mm (8 inch – 14 inch) <Stem: U-PVC>



■ JIS, DIN (Unit: mm)

mm	d	d'	D2	ℓ1	H	H1	H2	H3	A	JIS																		
										FLANGED						THREADED												
										JIS 5K			JIS 10K			WATERWORKS						THREADED						
32	40	30	120	49	239	50	107	132	120	D	C	n	h	t	D	C	n	h	m	L	t	d2	ℓ	L				
40	40	—	120	49	239	50	107	132	120	—	—	—	—	—	135	100	4	19	—	—	165	22	—	—	Rc 1 1/4	22	115	
50	50	—	130	60	270	58	134	136	130	120	95	4	15	165	22	140	105	4	19	—	—	165	22	—	—	Rc 1 1/2	25	115
65	65	—	155	75	302	68	152	150	155	155	130	4	15	170	24	175	140	4	19	—	—	190	24	—	—	Rc 2	28	130
75(80)	75	—	170	85	325	77	170	155	170	180	145	4	19	200	25	185	150	8	19	—	—	200	25	—	—	—	—	—
100	100	—	195	110	370	89	207	163	195	200	165	8	19	230	27	210	175	8	19	—	—	230	27	—	—	—	—	—
125	125	110	235	117	407	89	227	180	235	235	200	8	19	260	27	250	210	8	23	—	—	260	27	—	—	—	—	—
150	150	130	270	138	445	102	263	182	270	265	230	8	19	270	28	280	240	8	23	—	—	270	28	—	—	—	—	—
200	196	168	310	180	577	143	240	337	310	—	—	—	—	—	330	290	10	23	2	M20	290	28	—	—	—	—	—	—
250	247	210	360	226	690	175	270	420	360	—	—	—	—	—	400	355	12	25	—	—	380	30	—	—	—	—	—	—
300	298	255	410	273	800	195	320	480	410	—	—	—	—	—	445	400	14	25	2	M22	400	31	—	—	—	—	—	—
350	348	297	440	319	910	230	310	600	455	—	—	—	—	—	490	445	12	25	4	M22	430	32	—	—	—	—	—	—

mm	DIN											
	FLANGED					THREADED						
	DIN PN10											
	D	C	n	h	n1	M	L	t	D1	d2	ℓ	L
32	—	—	—	—	—	—	—	—	—	—	—	—
40	150	110	4	18	—	—	165	22	90	Rp 1 1/2	25	115
50	165	125	4	18	—	—	180	23	90	Rp 2	28	130
65	185	145	4	18	—	—	210	24	—	—	—	—
75(80)	200	160	8	18	—	—	240	25	—	—	—	—
100	220	180	8	18	—	—	250	27	—	—	—	—
125	250	210	8	18	—	—	260	27	—	—	—	—
150	285	240	8	22	—	—	280	27	—	—	—	—
200	340	295	6	22	2	M20	300	28	—	—	—	—
250	395	350	12	22	—	—	380	30	—	—	—	—
300	445	400	10	22	2	—	400	31	—	—	—	—
350	505	460	12	22	4	—	430	32	—	—	—	—

■ ANSI (Unit: inch)

inch	mm	d	d'	D2	ℓ1	H	H1	H2	H3	A	ANSI											
											FLANGED						THREADED					
											ANSI Class150											
	D	C	n	h	n1	M	L	t	d2	ℓ	L											
1 1/2	40	1.57	—	4.72	1.93	9.41	1.97	4.21	5.20	4.72	5.00	3.88	4	0.62	—	—	6.50	0.87	1 1/2-11 1/2 NPT	0.98	4.53	
2	50	1.97	—	5.12	2.36	10.63	2.28	5.28	5.35	5.12	6.00	4.75	4	0.75	—	—	7.00	0.91	2-11 1/2 NPT	1.10	5.12	
2 1/2	65	2.56	—	6.10	2.95	11.89	2.68	5.98	5.91	6.10	7.00	5.50	4	0.75	—	—	7.50	0.94	—	—	—	
3	75(80)	2.95	—	6.69	3.35	12.80	3.03	6.69	6.10	6.69	7.00	6.00	4	0.75	—	—	8.00	0.98	—	—	—	
4	100	3.94	—	7.68	4.33	14.57	3.50	8.15	6.42	7.68	9.00	7.50	8	0.75	—	—	9.00	1.06	—	—	—	
5	125	4.92	4.33	9.25	4.61	16.02	3.50	8.94	7.09	9.25	10.00	8.50	8	0.88	—	—	10.24	1.06	—	—	—	
6	150	5.91	5.12	10.63	5.43	17.52	4.02	10.35	7.17	10.63	11.00	9.50	8	0.88	—	—	10.50	1.06	—	—	—	
8	200	7.72	6.61	12.20	7.09	22.72	5.63	9.45	13.27	12.20	13.50	11.75	6	0.88	2	W 3/4	11.50	1.30	—	—	—	
10	250	9.72	8.27	14.17	8.90	27.17	6.89	10.63	16.54	14.17	16.00	14.25	12	1.00	—	—	14.96	1.18	—	—	—	
12	300	11.73	10.04	16.14	10.75	31.50	7.68	12.60	18.90	16.14	19.00	17.00	10	1.00	2	W 7/8	15.75	1.22	—	—	—	
14	350	13.70	11.69	17.32	12.66	35.83	9.06	12.20	23.62	17.91	21.00	18.75	8	1.12	4	W 1	16.93	1.26	—	—	—	

GATE VALVE SOFT SEAL TYPE (TYPE S) TYPE 66

- COMPATIBLE WITH THE JAPAN WATER WORKS ASSOCIATION STANDARD (JWWA B125 SYNTHETIC RESIN SOFT SEAL SLUICE VALVE), THE VALVE CAN BE SAFELY USED FOR WATER DISTRIBUTION/SUPPLY. (SIZE: 50 mm, 75 mm, 100 mm, 150 mm)
- EQUIPPED WITH OVER-TIGHTENING PREVENTION MECHANISM TO PREVENT ACCIDENTS DUE TO EXCESSIVE TIGHTENING.
- THE CHANNEL SURFACE FREE FROM IRREGULARITIES ALLOWS FOR SMOOTH FLOW. THE RUBBER SOFT SEAL ENSURES EXCELLENT WATER TIGHTNESS.
- COMPACT DESIGN ALLOWS FOR SHALLOW DEPTH MOUNTING.

BASIC SPECIFICATIONS

VALVE TYPE ————— GATE VALVE SOFT SEAL TYPE (TYPE S)
SOFT SEAL VALVE TYPE 66

SIZE ————— 32 mm–150 mm (1 1/4 inch–6 inch)

BODY MATERIAL ————— HI-PVC

SEAL MATERIAL / SEAT ————— SBR NBR

O-RING ————— EPDM

CONNECTION / FLANGED — JIS10K, DIN, ANSI

THREADED — Rc, Rp, NPT

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa(kgf/cm ²)	CONNECTION METHOD	
			FLANGED	THREADED
HI-PVC	-10°C ~ 50°C	1.0 (10.2)	○	○

NOTES (1) The products of a size of 40 mm are registered as valves certified by the Quality Certification Center, Japan Water Works Association. (2) The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use. (3) 32 mm type is processed from 40 mm.

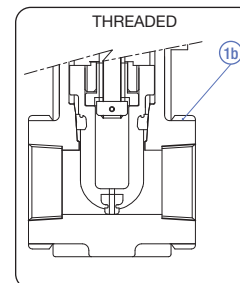
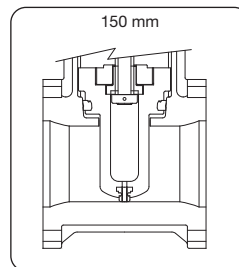
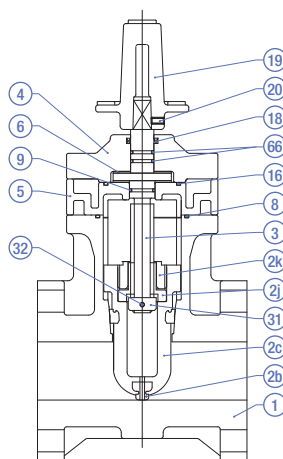
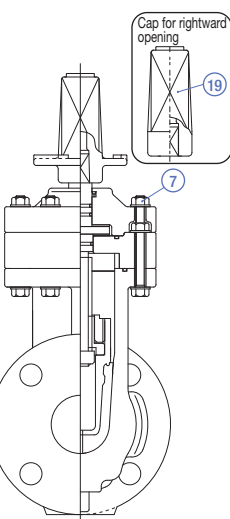
* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.



MANUAL



PARTS LIST



PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL
① BODY	1	HI-PVC	④ BONNET (LID) (A)	1	HI-PVC	⑱ DUST SEAL	1	EPDM
①b RING	1 SET	STPG	⑤ BONNET (LID) (B)	1	HI-PVC	⑲ CAP (A)	1	FCD450
②b SEAT	1	SBR, NBR	⑥ THRUST RING	1 SET	PP	⑳ SET SCREW (B)	1	SUS304
②c GATE (BODY) (A)	1	U-PVC, HI-PVC	⑦ BOLT/NUT (A)	—	SUS304	㉑ STOPPER	1	SUS304
② INTERNAL THREAD DEFLECTOR	1	C3604	⑧ O-RING (B)	1	SBR, NBR	㉒ PIN (A)	1	SUS304
②k DEFLECTOR RETAINER	1	HI-PVC	⑨ O-RING (C)	1	SBR, NBR	⑳ O-RING (H)	1 SET	EPDM
③ STEM	1	SUS304	⑱ O-RING (D)	1	EPDM			

NOTES For 30 mm and 40 mm, the cap (A) is coated with epoxy powder (white).

PRODUCT MODEL CODE LIST

MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	STEM MATERIAL / OPEN DIRECTION	BODY MATERIAL	SEAL MATERIAL	CONNECTION / STANDARD	SIZE
V	S6	C	*	I	S	*	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
V MANUAL VALVE	S6 TYPE 66	C TOP CAP	R SUS, RIGHT L SUS, LEFT	I HI-PVC	S SBR	F1 FLANGED, 10K FD FLANGED, DIN FA FLANGED, ANSI NJ THREADED, JIS ND THREADED, DIN NA THREADED, ANSI	032 32mm ? 150 150mm

NOTES

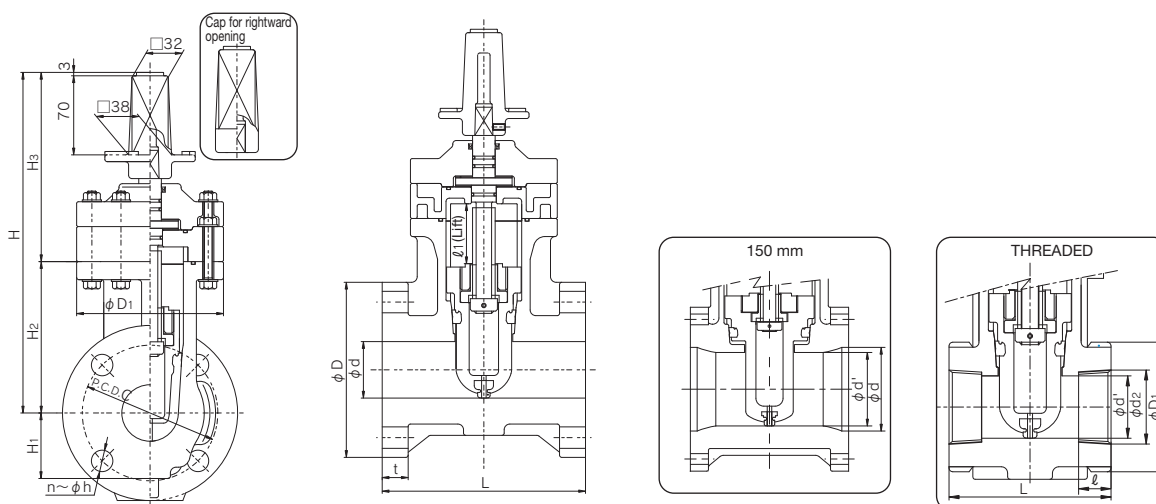
- Tapping type is the standard for all the cases.
- For those compatible with the waterworks standard, size 32 mm, 65 mm and 125 mm are not available.
- The product model code of size 80 mm compatible with the waterworks standard is "075".

MANUAL

GATE VALVE SOFT SEAL TYPE (TYPE S) SOFT SEAL VALVE TYPE 66

TYPE—VS6C

CONNECTION / FLANGED—JIS, DIN, ANSI THREADED—Rc, Rp, NPT



■ JIS, DIN (Unit: mm)

mm	d	d'	D1	LIFT ℓ	H	H1	H2	H3	JIS																
									FLANGED						THREADED										
									JIS 10K						WATERWORKS						D1	d2	ℓ	L	
32	40	30	120	42	268	50	107	161	D	C	n	h	L	t	D	C	n	h	L	t	90	Rc 1 1/4	22	115	
40	40	—	120	42	268	50	107	161	140	105	4	19	165	22	—	—	—	—	—	—	—	90	Rc 1 1/2	25	115
50	50	—	130	53	300	58	134	166	155	120	4	19	180	23	—	—	—	—	—	—	—	102	Rc 2	28	130
75(80)	75	—	170	77	361	77	170	191	185	150	8	19	200	25	—	—	—	—	—	—	—	—	—	—	—
100	100	—	195	102	414	89	207	207	210	175	8	19	230	27	—	—	—	—	—	—	—	—	—	—	—
150	150	130	270	132	496.5	102	263	233.5	280	240	8	23	270	28	—	—	—	—	—	—	—	—	—	—	—

DIN

mm	FLANGED										THREADED			
	DIN PN10										D1	d2	ℓ	L
	D	C	n	h	n1	M	L	t						
32	—	—	—	—	—	—	—	—	—	—	—	—	—	—
40	150	110	4	18	—	—	165	22	90	Rp 1 1/2	25	115	—	—
50	165	125	4	18	—	—	180	23	90	Rp 2	28	130	—	—
75(80)	200	160	8	18	—	—	240	25	—	—	—	—	—	—
100	220	180	8	18	—	—	250	27	—	—	—	—	—	—
150	285	240	8	22	—	—	280	27	—	—	—	—	—	—

■ ANSI (Unit: inch)

inch	mm	d	d'	D1	LIFT ℓ	H	H1	H2	H3	ANSI												
										FLANGED						THREADED						
										ANSI Class150						d2	ℓ	L				
1 1/2	40	1.57	1.18	4.72	1.65	10.55	1.97	4.21	6.34	D	C	n	h	n1	M				L	t	2-11 1/2NPT	0.98
2	50	1.57	—	4.72	1.65	10.55	1.97	4.21	6.34	6.00	4.75	4	0.75	—	—	7.00	0.91	2-11 1/2NPT	1.10	5.12		
3	75(80)	1.97	—	5.12	2.09	11.81	2.28	5.28	6.54	7.00	6.00	4	0.75	—	—	8.00	0.98	—	—	—		
4	100	2.95	—	6.69	3.03	14.21	3.03	6.69	7.52	9.00	7.50	8	0.75	—	—	9.00	1.06	—	—	—		
6	150	3.94	—	7.68	4.02	16.30	3.50	8.15	8.15	11.00	9.50	8	0.88	—	—	10.50	1.06	—	—	—		

GATE VALVE SOFT SEAL TYPE (TYPE S) INSIDE SCREW CAP TYPE

- COMPATIBLE WITH THE JAPAN WATER WORKS ASSOCIATION STANDARD (JWWA B125 SYNTHETIC RESIN SOFT SEAL SLUICE VALVE), THE VALVE CAN BE SAFELY USED FOR WATER DISTRIBUTION/SUPPLY. (SIZE: 125 mm)
- THE CHANNEL SURFACE FREE FROM IRREGULARITIES ALLOWS FOR SMOOTH FLOW. THE RUBBER SOFT SEAL ENSURES EXCELLENT WATER TIGHTNESS.
- COMPACT DESIGN ALLOWS FOR SHALLOW DEPTH MOUNTING.

BASIC SPECIFICATIONS

VALVE TYPE ————— GATE VALVE SOFT SEAL TYPE (TYPE S)
INSIDE SCREW CAP TYPE

SIZE ————— 65 mm, 125 mm, 200 mm
(2 1/2 inch, 5 inch, 8 inch)

BODY MATERIAL ————— **HI-PVC**

SEAL MATERIAL / SEAT ————— **SBR** **NBR**

O-RING ————— **EPDM**

CONNECTION / FLANGED — JIS10K, DIN, ANSI

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa(kgf/cm ²)	CONNECTION METHOD
HI-PVC	-10°C ~ 50°C	1.0 {10.2}	○

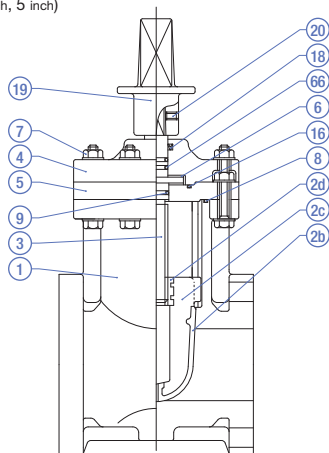
NOTES The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.
* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

MANUAL

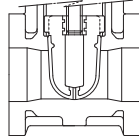


PARTS LIST **MANUAL**

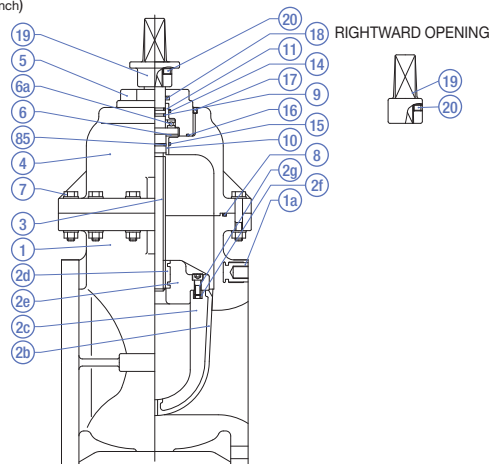
65 mm, 125 mm
(2 1/2 inch, 5 inch)



125 mm



200 mm
(8 inch)



PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL
① BODY	1	HI-PVC	④ BONNET (LID) (A)	1	HI-PVC	⑩ O-RING (D)	1	EPDM, SBR4, NBR
①a EMBEDDED BODY FITTING (1)	4	C3604	⑤ BONNET (LID) (B)	1	HI-PVC	⑪ BUSH (A)(2)	1	PP
②b SEAT	1	SBR, NBR	⑥ THRUST RING(5)	1 set / 1	PP	⑫ BUSH (B)(2)	1	PP
②c GATE (BODY) (A)	1	C-PVC	⑥a THRUST BEARING (2)	1	SUU2	⑬ SCREW	1	SUS304
②d GATE (BODY) EMBEDDED FITTING (A)	1	BC6	⑦ BOLT/NUT	—	SUS304	⑭ DUST SEAL	1	EPDM
②e GATE (BODY) (B)(2)	1	PP	⑧ O-RING (B)	1	EPDM, SBR4, NBR	⑮ CAP (A)	1	FC200 (EPOXY POWDER COATING)
②f GATE (BODY) EMBEDDED FITTING (B)	4	C3604	⑨ O-RING (C)(3)	1-2	EPDM, SBR4, NBR	⑯ SET SCREW (B)	1	SUS304
③ BOLT (A) (2)	4	SUS304	⑬ O-RING (E)(2)	2	EPDM, SBR4, NBR	⑰ O-RING (H)	2	EPDM
③ STEM	1	SUS304	⑮ O-RING (F)(2)	1	EPDM, SBR4, NBR	⑱ O-RING (F)(2)	1	EPDM, SBR4, NBR

NOTES (1) is used only for 10K 200 mm. (2) is used only for 200 mm. (3) The quantity of use is 1 piece for 65 mm and 125 mm and 2 pieces for 200 mm. (4) Only 200 mm is available.

(5) The quantity of use is 1 set (2 pieces) for 65 mm and 125 mm and 1 piece for 200 mm.

* For 65 mm and 200 mm, the cap (A) is coated with epoxy powder (white).

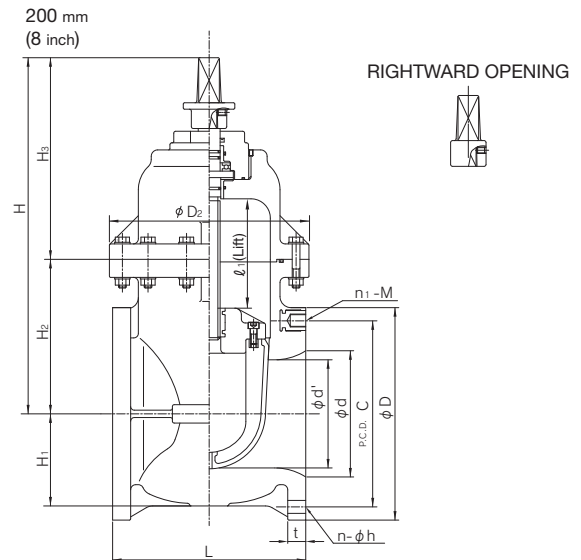
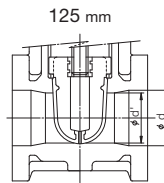
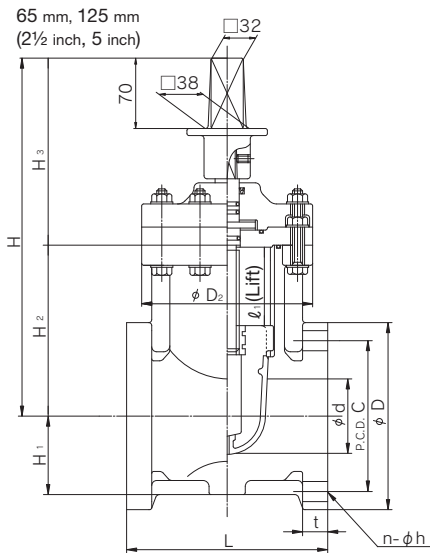
PRODUCT MODEL CODE LIST
[MANUAL](#)

ACTUATION	TYPE	OPERATING SYSTEM	STEM MATERIAL / OPEN DIRECTION	BODY MATERIAL	SEAL MATERIAL	CONNECTION / STANDARD	SIZE
V	SG	C	*	I	S	*	***
V MANUAL VALVE	SG CONVENTIONAL TYPE	C TOP CAP	R SUS, RIGHT L SUS, LEFT	I HI-PVC	S SBR	F1 FLANGED, 10K FW — FD FLANGED, DIN FA FLANGED, ANSI	065 65mm 125 125mm 200 200mm

- NOTES**
- Tapping type is the standard for all the cases.
 - The price above is the set price for the valve, full-face gaskets (2 pcs), and SUS plain washer.
 - For those compatible with the waterworks standard, size 65 mm is not available.

MANUAL

GATE VALVE SOFT SEAL TYPE (TYPE S) INSIDE SCREW CAP TYPE
 TYPE—VSGC
 CONNECTION / FLANGED—JIS, DIN, ANSI



■ JIS, DIN (Unit: mm)

mm	d	d'	D ₂	ℓ ₁	H ₁	H ₂	H ₃	H	JIS													
									FLANGED						WATERWORKS							
									D	C	n	h	n ₁	M	L	t	D	C	n	h	L	t
65	65	—	155	67	68	152	169	321	175	140	4	19	—	—	190	24	—	—	—	—	—	—
125	125	110	235	112	89	227	200	427	250	210	8	23	—	—	260	27	—	—	—	—	—	—
200	196	168	310	175	143	240	315	555	330	290	10	23	2	M20	290	28	—	—	—	—	—	—

mm	DIN											
	FLANGED DIN PN10					THREADED						
	D	C	n	h	n ₁	M	L	t	D ₁	d ₂	ℓ	L
65	185	145	4	18	—	—	210	24	—	—	—	—
125	250	210	8	18	—	—	260	27	—	—	—	—
200	340	295	6	22	2	M20	300	28	—	—	—	—

■ ANSI (Unit: inch)

inch	mm	d	d'	D ₂	ℓ ₁	H ₁	H ₂	H ₃	H	ANSI										
										FLANGED						THREADED				
										ANSI Class150						d ₂	ℓ	L		
										D	C	n	h	n ₁	M	L	t			
2 1/2	65	2.56	—	6.10	2.64	2.68	5.98	6.65	12.64	7.00	5.50	4	0.75	—	—	7.50	0.94	—	—	—
5	125	4.92	4.33	9.25	4.41	3.50	8.94	7.87	16.81	10.00	8.50	8	0.88	—	—	10.24	1.06	—	—	—
8	200	7.72	6.61	12.20	6.89	5.63	9.45	12.40	21.85	13.50	11.75	6	0.88	2	W 3/4	11.50	1.30	—	—	—

GATE VALVE SOFT SEAL TYPE (TYPE S) INSIDE SCREW ROUND HANDLE TYPE

- EQUIPPED WITH OPENING INDICATOR UNDER THE HANDLE TO ALLOW FOR EASY CHECK OF OPENING DEGREE OF THE VALVE.
- FOR ALL THE WETTED PARTS, CORROSION-RESISTANT MATERIAL IS USED.
- THE CHANNEL SURFACE FREE FROM IRREGULARITIES ALLOWS FOR SMOOTH FLOW. THE RUBBER SOFT SEAL ENSURES EXCELLENT WATER TIGHTNESS.
- MADE OF ROBUST, LIGHTWEIGHT AND IMPACT-RESISTANT HARD VINYL CHLORIDE (HI-PVC), WITH A WEIGHT OF 1/3 TO 1/5 COMPARED TO METAL VALVES.

NOTES For the round handle type, directly hold the round handle when opening or closing the valve. If a turning bar or similar tool is used to open or close the valve, the handle will be broken.

BASIC SPECIFICATIONS

VALVE TYPE ————— GATE VALVE SOFT SEAL TYPE (TYPE S)
INSIDE SCREW ROUND HANDLE TYPE

SIZE ————— 50 mm—200 mm (2 inch—8 inch)

BODY MATERIAL ————— HI-PVC

SEAL MATERIAL / SEAT ————— SBR NBR

O-RING ————— EPDM

CONNECTION / FLANGED — JIS10K, DIN, ANSI

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa(kg/cm ²)	CONNECTION METHOD FLANGED
HI-PVC	-10°C ~ 50°C	1.0 {10.2}	○

NOTES The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.

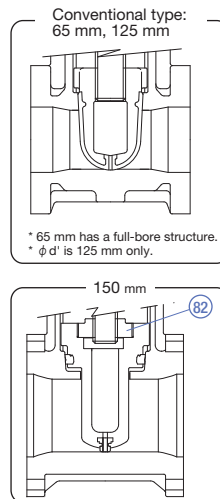
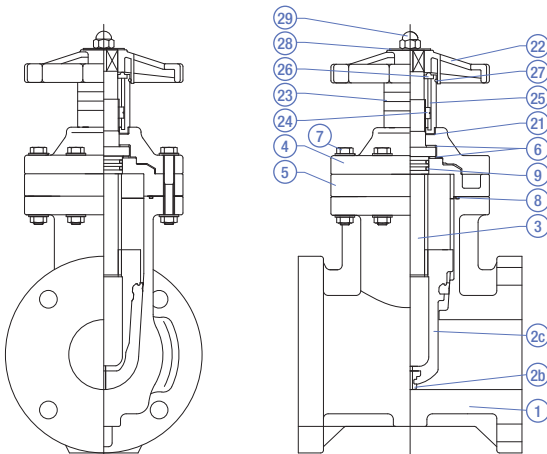
* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

MANUAL

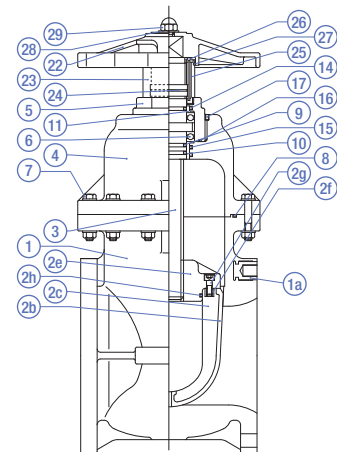


PARTS LIST MANUAL

50 mm – 150 mm (2 inch – 6 inch) <Stem: U-PVC>



200 mm (8 inch) <Stem: U-PVC>



PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL
1 BODY	1	HI-PVC	68 THRUST RING ⁽²⁾	1 SET	SUJ2	21 PACKING	1	EPDM
1a EMBEDDED BODY FITTING ⁽¹⁾	4	C3604	7 BOLT/NUT	—	SUS304	22 HANDLE	1	PP
2 SEAT	1	SBR, NBR	7h O-RING (A) ⁽²⁾	1	EPDM, NBR	23 OPENING COVER	1	PC
2c GATE (BODY) (A)	1	HI-PVC, C-PVC	8 O-RING (B)	1	EPDM, NBR	24 OPENING RING	1	U-PVC
26 GATE (BODY) (B) ⁽²⁾	1	PP	9 O-RING (C) ⁽³⁾	2-3	EPDM, NBR	25 GUIDE PIN	1	SUS304
27 GATE (BODY) EMBEDDED FITTING (B) ⁽²⁾	4	C3604	15 O-RING (F) ⁽²⁾	1	EPDM, NBR	26 GUIDE PIN SUPPORT PLATE	1	U-PVC
29 BOLT (A) ⁽²⁾	4	SUS304	16 O-RING (D) ⁽²⁾	1	EPDM, NBR	27 O-RING (G)	1	EPDM
3 STEM	1	U-PVC	10 BUSH (A) ⁽²⁾	1	PP	28 WASHER	1	U-PVC
4 BONNET (LID) (A)	1	HI-PVC	11 BUSH (B) ⁽²⁾	1	PP	29 UNION NUT	1	SUS304
5 BONNET (LID) (B)	1	HI-PVC	17 SET SCREW (A) ⁽²⁾	1	SUS304	82 SCREW HOLDER	1	U-PVC *For 150 mm.
6 THRUST RING ⁽⁴⁾	2	PP						

NOTES (1) is used only for 10K 200 mm. (2) is used only for 200 mm. (3) The quantity of use is 3 pieces for 150 mm or less and 2 pieces for 200 mm. (4) is used for sizes of 150 mm or less.

* The parts list above is applicable when the stem is made of U-PVC.

GATE VALVE SOFT SEAL TYPE (TYPE S) OUTSIDE SCREW ROUND HANDLE TYPE

- MADE OF ROBUST, LIGHTWEIGHT AND IMPACT-RESISTANT HARD VINYL CHLORIDE (HI-PVC).
- THE CHANNEL SURFACE FREE FROM IRREGULARITIES ALLOWS FOR SMOOTH FLOW. THE RUBBER SOFT SEAL ENSURES EXCELLENT WATER TIGHTNESS.
- THE STEM SCREW IS NOT EXPOSED TO THE FLUID, NO FOREIGN OBJECT DOES NOT ENTER.

NOTES For the round handle type, directly hold the round handle when opening or closing the valve. If a turning bar or similar tool is used to open or close the valve, the handle will be broken.

BASIC SPECIFICATIONS

VALVE TYPE — GATE VALVE SOFT SEAL TYPE (TYPE S)
OUTSIDE SCREW ROUND HANDLE TYPE

SIZE — 32 mm—250 mm (1 1/4 inch—10 inch)

BODY MATERIAL — HI-PVC

SEAL MATERIAL / SEAT — SBR NBR

O-RING — EPDM

CONNECTION / FLANGED — JIS10K, DIN, ANSI

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) (MPa(kgf/cm ²))	CONNECTION METHOD
HI-PVC	-10°C ~ 50°C	1.0 {10.2} 0.75 {7.7}	FLANGED

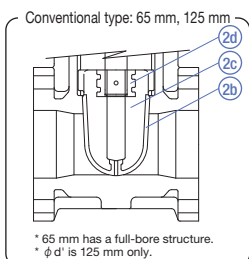
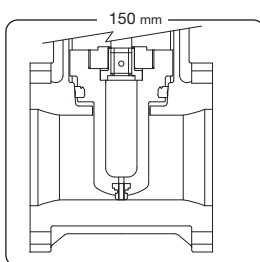
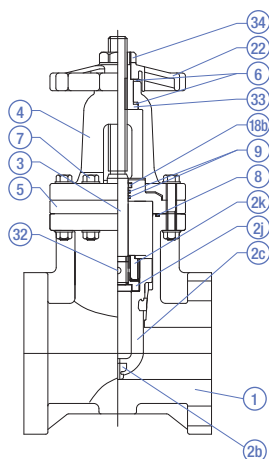
NOTES The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.
* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

MANUAL

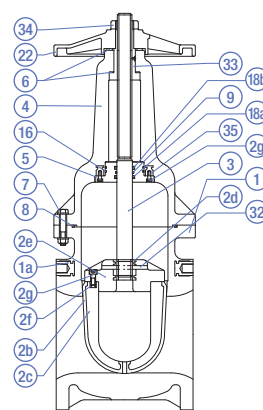
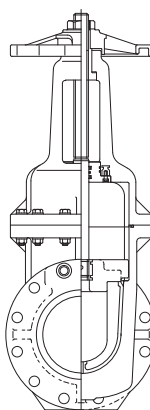


PARTS LIST MANUAL

32 mm – 150 mm (1 1/4 inch – 6 inch)



200 mm – 250 mm (8 inch – 10 inch)



PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL
1 BODY	1	HI-PVC	2k DEFLECTOR RETAINER ⁽²⁾	1	HI-PVC	18a DUST SEAL (A)	1	EPDM, NBR
1a EMBEDDED BODY FITTING ⁽¹⁾	4	C3604	3 STEM	1	SUS304	18b DUST SEAL (B)	1	NBR
2b SEAT	1	SBR, NBR	4 BONNET (LID) (A)	1	HI-PVC	22 HANDLE	1	PP
2c GATE (BODY) (A)	1	HI-PVC, C-PVC	5 BONNET (LID) (B)	1	HI-PVC, PP	32 PIN (A)	1	SUS304
2d GATE (BODY) EMBEDDED FITTING (A)	1	BC6	6 THRUST RING (A)	2	PP	33 SLEEVE	1	C3604, BC6
2e GATE (BODY) (B) ⁽¹⁾	1	HI-PVC	7 BOLT/NUT	—	SUS304	34 NUT	1	C3604, BC6
2f GATE (BODY) EMBEDDED FITTING (B) ⁽¹⁾	4	C3604	8 O-RING (B)	1	EPDM, NBR	35 EMBEDDED LID FITTING ⁽¹⁾	4	C3604
2g BOLT (A) ⁽¹⁾	4	SUS304	9 O-RING (C)	2-1	EPDM, NBR			
2i INTERNAL THREAD DEFLECTOR ⁽²⁾	4	BC6	16 O-RING (D) ⁽¹⁾	2	EPDM, NBR			

NOTES (1) is used only for 200 mm and 250 mm. (2) is used for sizes other than 65 mm, 125 mm, 200 mm and 250 mm.

PRODUCT MODEL CODE LIST

MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	STEM MATERIAL / OPEN DIRECTION	BODY MATERIAL	SEAL MATERIAL	CONNECTION / STANDARD	SIZE
V	**	M	L	I	S	F1	***
V MANUAL VALVE	SR CONVENTIONAL TYPE TR T-SHAPED RUBBER	M ROUND HANDLE	L SUS, LEFT	I HI-PVC	S SBR	F1 FLANGED, 10K FD FLANGED, DIN FA FLANGED, ANSI	032 32mm 250 250mm

NOTES

- The type of size 65 mm, 125 mm, 200 mm and 250 mm is "conventional". The type of other sizes is "T-shaped rubber".
- The price above is the set price for the valve, full-face gaskets (2 pcs), and SUS plain washer.
- For the seal material NBR, contact us.

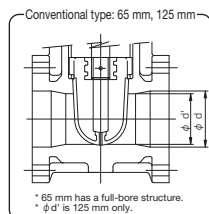
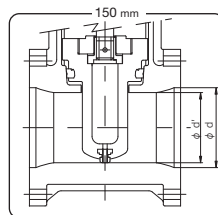
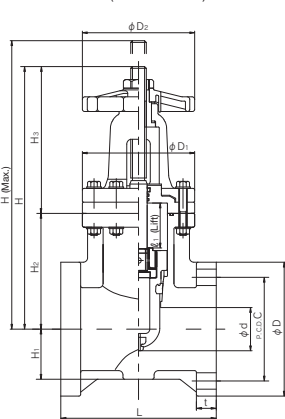
MANUAL

GATE VALVE SOFT SEAL TYPE (TYPE S) OUTSIDE SCREW ROUND HANDLE TYPE

TYPE—VSRM, VTRM

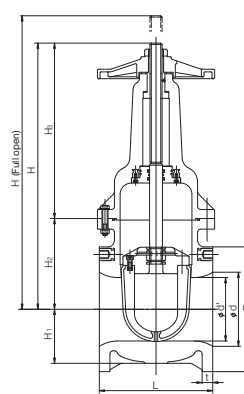
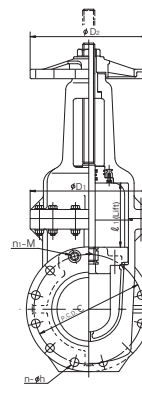
CONNECTION / FLANGED—JIS, DIN, ANSI

32 mm – 150 mm (1 1/4 inch – 6 inch)



* 65 mm has a full-bore structure.
* φd is 125 mm only.

200 mm – 250 mm (8 inch – 10 inch)



■ JIS, DIN (Unit: mm)

mm	d	d'	D ₁	D ₂	ℓ ₁	H	(Max.) H	H ₁	H ₂	H ₃	JIS FLANGED JIS 10K							
											D	C	n	h	n ₁	M	L	t
											32	40	30	120	120	37	269	311
40	40	—	120	120	42	264	306	50	107	157	140	105	4	19	—	—	165	22
50	50	—	130	130	52	304	356	58	134	170	155	120	4	19	—	—	180	23
65	65	—	155	155	67	340	407	68	152	188	175	140	4	19	—	—	190	24
75(80)	75	—	170	170	77	398	476	77	170	228	185	150	8	19	—	—	200	25
100	100	—	195	195	102	502	604	89	207	295	210	175	8	19	—	—	230	27
125	125	110	235	235	112	481	593	89	227	254	250	210	8	23	—	—	260	27
150	150	130	270	270	132	600	732	102	263	337	280	240	8	23	—	—	270	28
200	196	168	310	310	175	702	877	143	240	462	330	290	10	23	2	M20	290	28
250	247	210	360	360	219	856	1075	175	270	586	400	355	12	25	—	—	380	30

mm	DIN FLANGED DIN PN10							
	D	C	n	h	n ₁	M	L	t
	32	—	—	—	—	—	—	—
40	150	110	4	18	—	—	165	22
50	165	125	4	18	—	—	180	23
65	185	145	4	18	—	—	210	24
75(80)	200	160	8	18	—	—	240	25
100	220	180	8	18	—	—	250	27
125	250	210	8	18	—	—	260	27
150	285	240	8	22	—	—	280	27
200	340	295	6	22	2	M20	300	28
250	395	350	12	22	—	—	380	30

■ ANSI (Unit: inch)

inch	mm	d	d'	D ₁	D ₂	ℓ ₁	H	(Max.) H	H ₁	H ₂	H ₃	ANSI FLANGED ANSI CLASS150							
												D	C	n	h	n ₁	M	L	t
												1 1/2	40	1.57	—	4.72	4.72	1.65	10.39
2	50	1.97	—	5.12	5.12	2.05	11.97	14.02	2.28	5.28	6.69	6.00	4.75	4	0.75	—	—	7.00	0.91
2 1/2	65	2.56	—	6.10	6.10	2.64	13.39	16.02	2.68	5.98	7.40	7.00	5.50	4	0.75	—	—	7.50	0.94
3	75(80)	2.95	—	6.69	6.69	3.03	15.67	18.74	3.03	6.69	8.98	7.00	6.00	4	0.75	—	—	8.00	0.98
4	100	3.94	—	7.68	7.68	4.02	19.76	23.78	3.50	8.15	11.61	9.00	7.50	8	0.75	—	—	9.00	1.06
5	125	4.92	4.33	9.25	9.25	4.41	18.94	23.35	3.50	8.94	10.00	10.00	8.50	8	0.88	—	—	10.24	1.06
6	150	5.91	5.12	10.63	10.63	5.20	23.62	28.82	4.02	10.35	13.27	11.00	9.50	8	0.88	—	—	10.50	1.06
8	200	7.72	6.61	12.20	12.20	6.89	27.64	34.53	5.63	9.45	18.19	13.50	11.75	6	0.88	2	W 3/4	11.50	1.30
10	250	9.72	8.27	14.17	14.17	8.62	33.70	42.32	6.89	10.63	23.07	16.00	14.25	12	1.00	—	—	14.96	1.18

GATE VALVE OUTSIDE SCREW SECTION VALVE (FOR VACUUM SEWAGE)

- THE CHANNEL SURFACE FREE FROM IRREGULARITIES ALLOWS FOR SMOOTH FLOW. THE RUBBER SOFT SEAL ENSURES EXCELLENT WATER TIGHTNESS.
- THE STEM SCREW IS NOT EXPOSED TO THE FLUID, NO FOREIGN OBJECT DOES NOT ENTER.
- COMPACT DESIGN ALLOWS FOR SHALLOW DEPTH MOUNTING.

MANUAL

(Size 100 mm, 150 mm — Applicable to a burial depth of 600 mm.
Size 200 mm — Applicable to a burial depth of 700 mm.
Size 250 mm — Applicable to a burial depth of 800 mm.)

BASIC SPECIFICATIONS

VALVE TYPE — GATE VALVE OUTSIDE SCREW SECTION VALVE (FOR VACUUM SEWAGE)
SIZE — 100 mm, 150 mm, 200 mm, 250 mm (4 inch, 6 inch, 8 inch, 10 inch)
BODY MATERIAL — HI-PVC
SEAL MATERIAL / SEAT — SBR
O-RING — EPDM
CONNECTION / FLANGED — JIS10K

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa(kgf/cm ²)		CONNECTION METHOD
		100mm-200mm	250mm	
HI-PVC	-10°C ~ 50°C	1.0 {10.2}	0.75 {7.7}	○

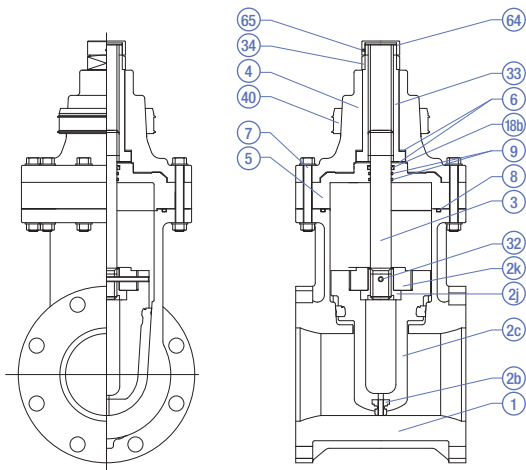
NOTES The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.
 * Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.



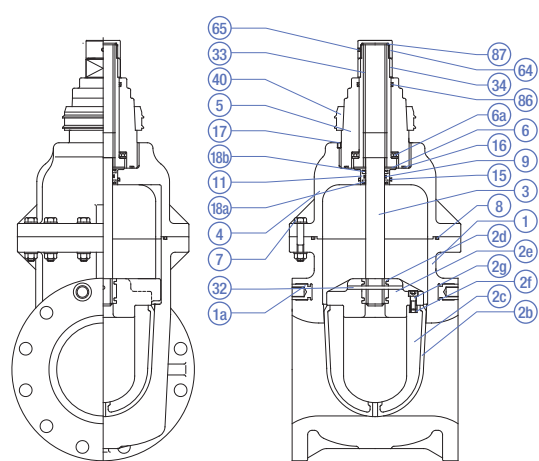
PRODUCT MODEL CODE LIST	ACTUATION	TYPE	OPERATING SYSTEM	STEM MATERIAL, OPERATING DIRECTION	BODY MATERIAL	SEAL MATERIAL	CONNECTION	SIZE
MANUAL	V	**	C	L	I	S	F1	***
	V MANUAL VALVE	TR T-STYLE(RUBBER) SR REGULAR	C TOP-CAP	L STAINLESS STEEL, LEFT	I HI-PVC	S SBR	F1 JIS10K	100 100mm 250 250mm

PARTS LIST **MANUAL**

100 mm – 150 mm (4 inch – 6 inch)



200 mm – 250 mm (8 inch – 10 inch)

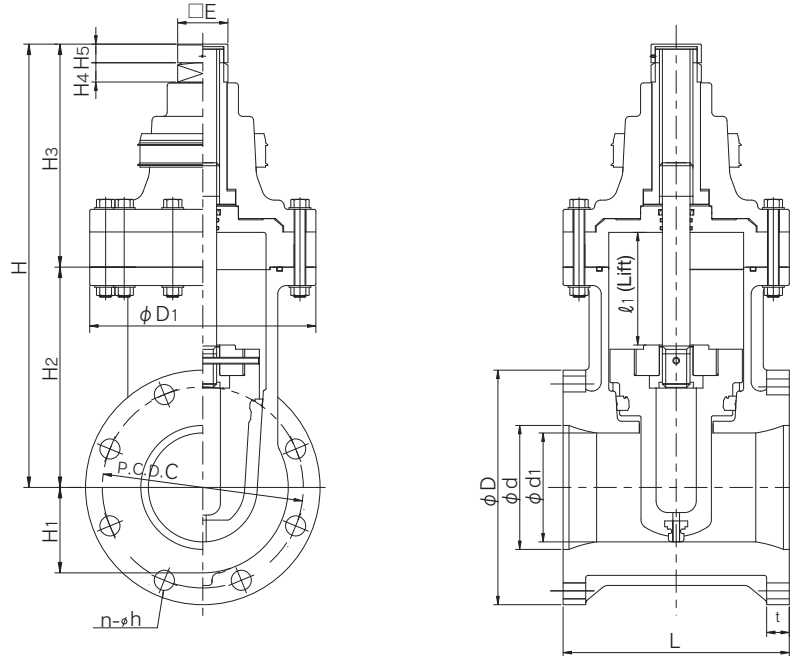


PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL
1 BODY	1	HI-PVC	4 BONNET (LID) (A)	1	HI-PVC	18b DUST SEAL (B)	1	NBR
1a EMBEDDED BODY FITTING (5)	4	C3604	5 BONNET (LID) (B)	1	HI-PVC, U-PVC	32 PIN (A)	1	SUS304
2b SEAT	1	SBR	6 THRUST RING (4)	2	PP	33 SLEEVE	1	C3604
2c GATE (BODY) (A)	1	HI-PVC, C-PVC	6a THRUST BEARING (5)	1	SUJ2	34 NUT (3)	1	SUS403
2d GATE (BODY) EMBEDDED FITTING (A) (1)	1	SUS303	7 BOLT, NUT, WASHER	—	SUS304	40 ADAPTER	1	NBR
2e GATE (BODY) (B) (1)	1	HI-PVC	8 O-RING (B)	1	EPDM	64 CAP (D)	1	SUS304
2f GATE (BODY) EMBEDDED FITTING (B) (1)	4	SUS304	9 O-RING (C)	2-1	EPDM	65 SET SCREW (C)	1	SUS304
2g BOLT (A) (1)	4	SUS304	11 BUSH (B) (1)	1	PP	66 O-RING (NJ) (1)	1	EPDM
2h INTERNAL THREAD DEFLECTOR (2)	1	SUS304	16 O-RING (D) (1)	2	EPDM	67 O-RING (O) (1)	1	EPDM
2k DEFLECTOR RETAINER (2)	1	HI-PVC	17 SET SCREW (A) (1)	1	SUS304			
3 STEM	1	SUS304	18a DUST SEAL (A) (1)	1	EPDM			

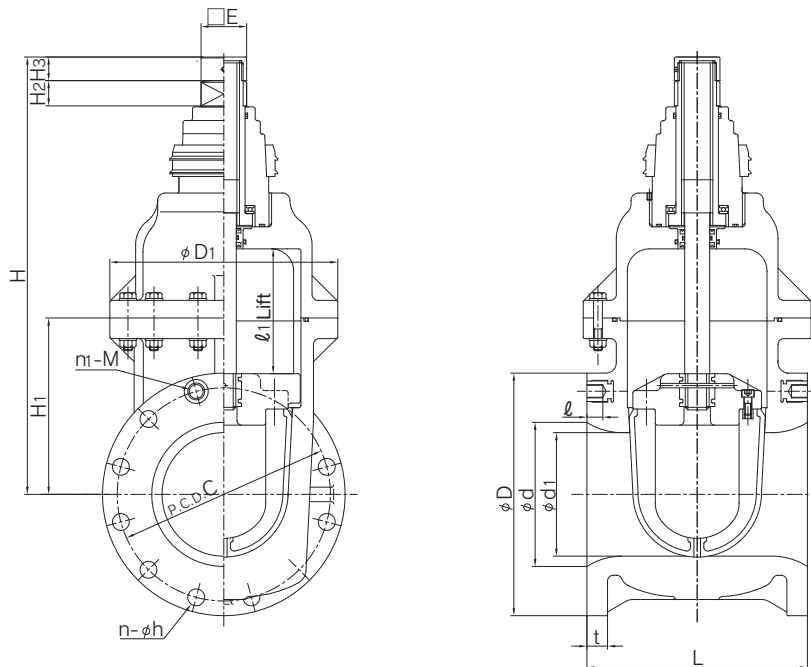
NOTES (1) is used for sizes of 200 mm or more. (2) is used for sizes of 150 mm or less. (3) is used for sizes of 200 mm or less. (4) is used in a quantity of 1 piece for 200 and 250 mm.
 (5) is used only for 200 mm.

GATE VALVE OUTSIDE SCREW SECTION VALVE (FOR VACUUM SEWAGE)
CONNECTION / FLANGED—JIS

100 mm – 150 mm (4 inch – 6 inch)



200 mm – 250 mm (8 inch – 10 inch)



■ JIS (Unit: mm)

													JIS10K							
mm	d	d'	D ₁	ℓ ₁	E	H ₁	H ₂	H ₃	H ₄	H ₅	H	D	C	n	h	n ₁	M	ℓ	L	t
100	100	—	195	102	60	89	207	223	23	26	430	210	175	8	19	—	—	—	230	27
150	150	130	270	132	60	102	263	267	23	26	530	280	240	8	23	—	—	—	270	28
200	196	168	310	175	60	240	39	27	—	—	607	330	290	10	23	2	M20	20	290	28
250	247	210	360	219	60	270	44	27	—	—	743	400	355	12	25	—	—	—	380	30

AIR RELEASE VALVE, ISOLATING VALVE APPLICABLE FOR SHALLOW LAYER BURIAL <MADE OF PDCPD>

- LIGHTWEIGHT AND COMPACT SYNTHETIC RESIN QUICK AIR RELEASE VALVE WITH ADEQUATE MEASURES TO DEAL WITH FOREIGN SUBSTANCE.
- EXCELLENT CUTOFF PERFORMANCE AT LOW PRESSURE (4.9 kPa)
- DISCHARGES AIR AT A HIGH RATE AND REDUCES THE TIME FOR WATER FILLING/RELEASE.
- THE ISOLATING VALVE IS EQUIPPED WITH A PRESSURE GAUGE MOUNTING TAP AS STANDARD (75 - 200 mm).

MANUAL



AIR RELEASE VALVE, ISOLATING VALVE FOR AGRICULTURE

BASIC SPECIFICATIONS

VALVE TYPE	AIR RELEASE VALVE, ISOLATING VALVE APPLICABLE FOR SHALLOW LAYER BURIAL <MADE OF PDCPD>
SIZE	25 mm, 75 mm—200 mm (1 inch, 3 inch—8 inch)
BODY MATERIAL	PDCPD
SEAL MATERIAL	EPDM SBR
CONNECTION / FLANGED	JIS7.5K, JIS10K, JIS16K
	THREADED—R

NOTES The maximum working pressure is the value including the water hammer pressure. The 25 mm type is equipped with a cock (body material: brass). The 75 mm to 200 mm isolating valves are butterfly valves.

SPECIFICATIONS AND PRODUCT LINEUP

NOMINAL PRESSURE	WORKING PRESSURE (NORMAL TEMP.) MPa	Max. Working Pressure MPa	CONNECTION	SIZE				
				25	75	100	150	200
7.5k	0.75	1.3	THREADED (TYPE A)	○	—	—	—	—
			FLANGED (TYPE B)	○	—	—	—	—
10k	1.0	1.4	THREADED (TYPE A)	○	—	—	—	—
			FLANGED (TYPE B)	○	○	○	○	○
16k	1.6	2.2	THREADED (TYPE A)	○	—	—	—	—
			FLANGED (TYPE B)	○	○	○	—	—

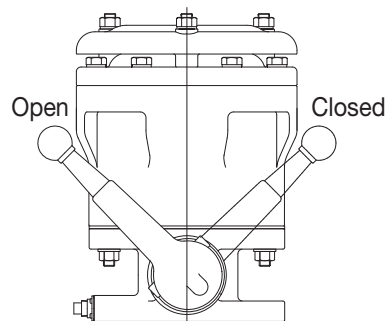
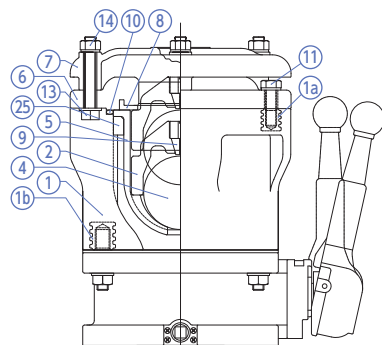
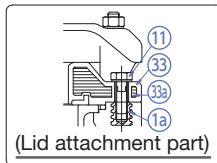
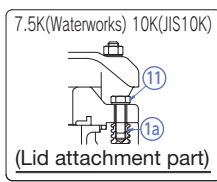


AIR RELEASE VALVE AND ISOLATING VALVE FOR WATERWORKS

PRODUCT MODEL CODE LIST

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	SIZE
V	**	**	*	*	**	***
V MANUAL VALVE	RW IW AR IS	LV ZZ	D I	S E	NR F1 FW F6	025 25mm 200 200mm

PARTS LIST MANUAL



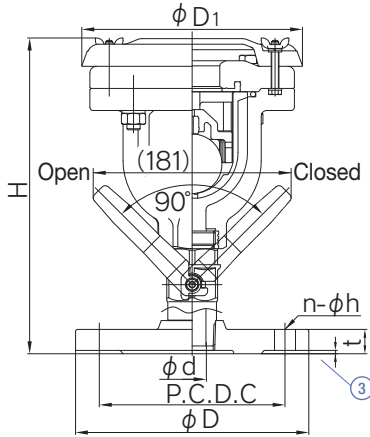
PART NO. / NAME	QTY	MATERIAL
① BODY	1	PDCPD
⑬ EMBEDDED FITTING (A)	—	C3604
⑭ EMBEDDED FITTING (B)	—	C3604
② MOVING VALVE BODY	1	PP
④ FLOAT VALVE BODY	1	PP
⑤ GUIDE	1	25mm~150mm—HI-PVC, 200mm—PDCPD
⑥ LID	1	PDCPD

PART NO. / NAME	QTY	MATERIAL
⑦ COVER	1	PDCPD
⑧ LARGE AIR HOLE VALVE SEAT	1	EPDM (SBR FOR WATERWORKS)
⑨ SMALL AIR HOLE VALVE SEAT	1	EPDM (SBR FOR WATERWORKS)
⑩ O-RING	1	EPDM (SBR FOR WATERWORKS)
⑪ BOLT, WASHER (A)	—	SUS304
⑬ BOLT, WASHER (B)	—	SUS304
⑭ NUT (B)	—	SUS304
⑲ EYE NUT	2	SUS304
⑳ INSERT	1	S45C

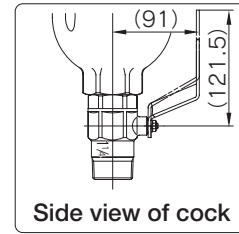
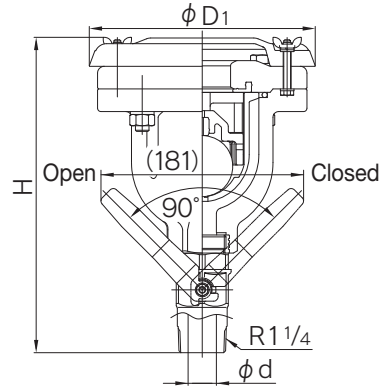
AIR RELEASE VALVE, ISOLATING VALVE

APPLICABLE FOR SHALLOW LAYER BURIAL <MADE OF PDCPD>
 CONNECTION / FLANGED—JIS THREADED—R

25 mm (1 inch)
FLANGED (Type B)



25 mm (1 inch)
THREADED (Type A)



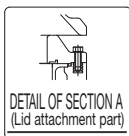
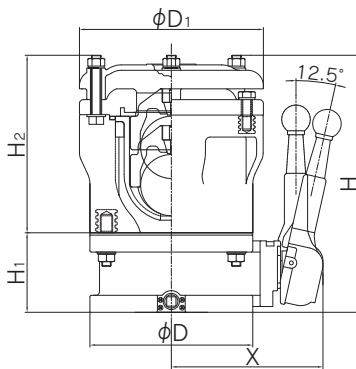
■ 25 mm flanged (Type B) JIS (Unit: mm)

mm	NOMINAL PRESSURE	D ₁	H	d	7.5k (Waterworks)				10K (JIS10K), 16K (JIS16K)			
					D	C	n-h	t	D	C	n-h	t
25	7.5k 10k 16k	200	286	25	-	-	-	-	185	150	8-φ19	22

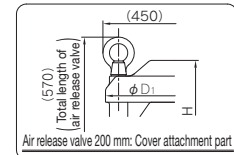
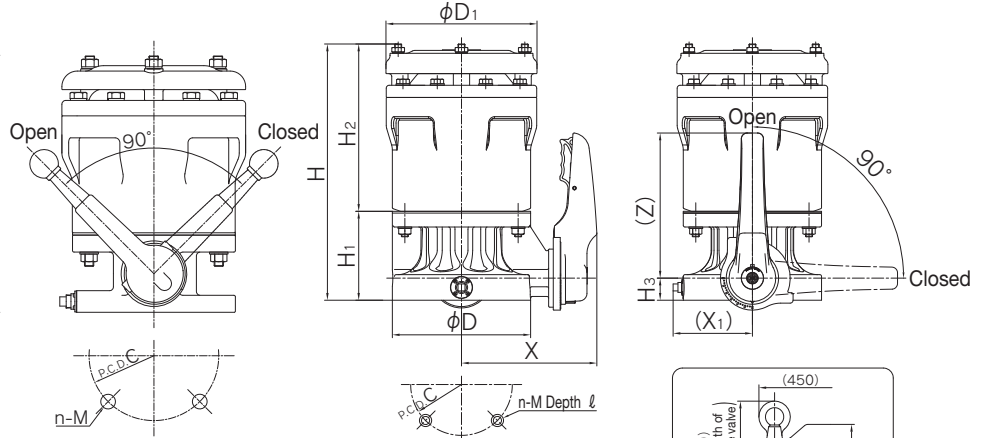
■ 25 mm threaded (Type A) JIS (Unit: mm)

mm	NOMINAL PRESSURE	D ₁	H	d
25	7.5k 10k 16k	200	279	25

75 mm (3 inch)
FLANGED



100 mm – 200 mm (4 inch – 8 inch)
FLANGED



■ 75mm—200mm
JIS (Unit: mm)

mm	NOMINAL PRESSURE	D ₁	7.5k (Waterworks)			10K (JIS10K), 16K (JIS16K)			D ₁	H	H ₁	H ₂	H ₃	X	Z
			C	n-M	ℓ	C	n-M	ℓ							
75		211	-	-	-	150	8-φ19	-	238	333	103	230	50	197	219
100	7.5k 10k 16k	238	-	-	-	175	8-M16	22	260	411	123	288	38	233	250
150		290	-	-	-	240	8-M20	30	341	596	203	393	70	282	320
200		342	-	-	-	290	12-M20	30	440	729	203	526	70	322	400

AUTOMATIC WATER FEEDING VALVE

- SIGNIFICANTLY SAVES WATER AND ENERGY BY SUPPLYING ONLY NECESSARY AMOUNT OF WATER ACCORDING TO THE SET WATER LEVEL.
- CAN ALSO BE USED FOR OTHER APPLICATIONS BY MANUAL OPERATION, BY CONNECTING A HOSE TO THE DISCHARGE PORT.
- FACILITATES INTERMITTENT IRRIGATION AND PREVENTS COLD-WEATHER DAMAGE.
- DOES NOT REQUIRE ELECTRICITY OR OTHER ENERGY SINCE IT DIRECTLY USES WATER PRESSURE IN THE PIPE LINE.
- PREVENTS FERTILIZER OR CHEMICAL AGENTS FROM FLOWING OUT DUE TO GRAVITY FED IRRIGATION AND PREVENTS WATER QUALITY DEGRADATION.

BASIC SPECIFICATIONS

VALVE TYPE ————— AUTOMATIC WATER FEEDING VALVE

SIZE ————— 50 mm–80 mm (2 inch–3 inch)

BODY MATERIAL ————— **HI-PVC**

SENSOR MATERIAL ————— **ABS**

CONNECTION / FLANGED — JIS10K

SOCKET — JIS

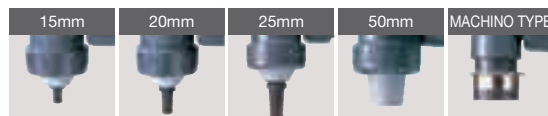
THREADED—Rc

	OPERATING DIFF. PRESSURE MPa(kg/cm ²)	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa(kg/cm ²)	WATER LEVEL ADJUSTMENT
SIZE- 50 mm	0.02~0.75 {0.2~7.7}	1.0 {10.2}	-6cm }
SIZE- 80 mm	TYPE A: 0.015 - 0.5 {0.15 - 5.1} TYPE B: 0.03 - 0.75 {0.3 - 7.7}	TYPE A: 0.5 {5.1} TYPE B: 1.0 {10.2}	12cm



MANUAL

ATTACHMENT TYPES



80-mm attachment

15 mm, 20 mm, 25 mm,
50 mm, Machino type

50-mm attachment

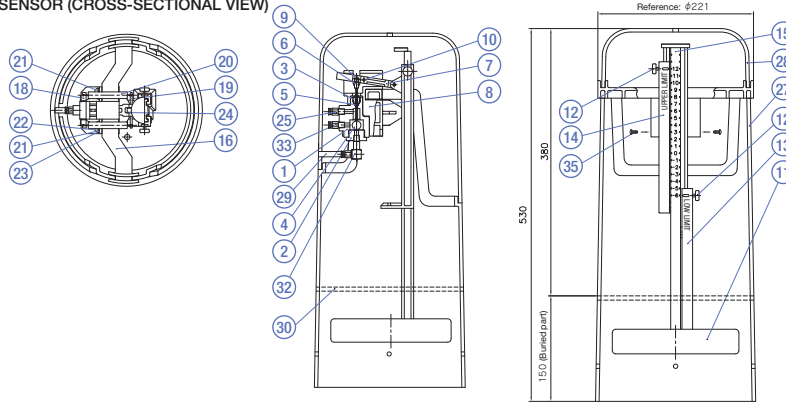
15 mm, 20 mm, 25 mm,
Machino type

PRODUCT MODEL CODE LIST	ACTUATION	TYPE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	SIZE
	AAW	**	I	E	**	** *
	⋮	⋮	⋮	⋮	⋮	⋮
	AAW AUTOMATIC WATER FEEDING VALVE	ZZ AUTOMATIC WATER FEEDING VALVE(50mm) AT TYPE A(TYPE-A) BT TYPE B(TYPE-B)	I HI-PVC	E EPDM	F1 JIS10K NJ THREADED SJ SOCKET	050 50mm } 080 80mm

PRODUCT MODEL CODE LIST	TYPE	TYPE	MATERIAL	BODY SIZE	ATTACHMENT SIZE
	S	AW	AH	** *	** *
	⋮	⋮	⋮	⋮	⋮
	S PARTS SET	AW ATTACHMENT FOR ELBOW WITH SCREW EXTERNAL	AH ATTACHMENT (U-PVC)	050 50mm } 080 80mm	016 15mm } 050 50mm

PARTS LIST **MANUAL**

■ SENSOR (CROSS-SECTIONAL VIEW)



PART NO. / NAME	QTY	MATERIAL	MEMO
1 AUTOMATIC SWITCHING VALVE BODY	1	HI-PVC	
2 AUTOMATIC SWITCHING VALVE LOWER CAP	1	HI-PVC	
3 AUTOMATIC SWITCHING VALVE UPPER CAP	1	HI-PVC	
4 AUTOMATIC SWITCHING VALVE BODY	1	EPDM+SUS304	
5 O-RING	1	EPDM	
6 COUPLING	1	SUS304	P3
7 SENSOR ARM	1	ABS	
8 SENSOR BODY	1	ABS	
9 PARALLEL PIN (A)	1	SUS304	PARALLEL PIN (A TYPE), $\phi 2$, L6
10 PARALLEL PIN (B)	1	SUS304	PARALLEL PIN (A TYPE), $\phi 3$, L28
11 FLOAT	1	PP FOAM	
12 WATER LEVEL ADJUSTING TAB	1	SUS304	DECORATIVE SCREW, M6, L10
13 LOW LIMIT STOPPER	1	ABS	
14 UPPER LIMIT STOPPER	1	ABS	
15 DIAL PLATE	1	ABS	
16 FIXING ARM	1	ABS	

PART NO. / NAME	QTY	MATERIAL	MEMO
18 SPRING HOOK (A)	1	SUS304	
19 SPRING HOOK (B)	1	SUS304	
20 TENSION SPRING	2	SUS304	COIL SPRING BY SHOWA SPRING (SH08-15)
21 SCREW (B)	2	SUS304	CROSS RECESSED PAN HEAD SCREW, M5, L15
22 SPRING WASHER	2	SUS304	M5
23 WASHER (A)	2	SUS304	M5
24 WASHER (B)	2	SUS304	
25 QUICK-RELEASE JOINT, HALF UNION (A)	2	C3604	Plated
27 SENSOR CASE BODY	1	ABS	
28 SENSOR CASE LID	1	ABS	
29 TUBE	1	Nylon 11	
30 TAPE	1	U-PVC	By SUMITOMO 3M
32 QUICK ELBOW JOINT	1	C3604	Plated
33 QUICK-RELEASE JOINT, HALF UNION (B)	1	C3604	Not plated
35 TAPPING SCREW (A)	2	SUS304	CROSS RECESSED PAN HEAD TAPPING SCREW, M5, L15

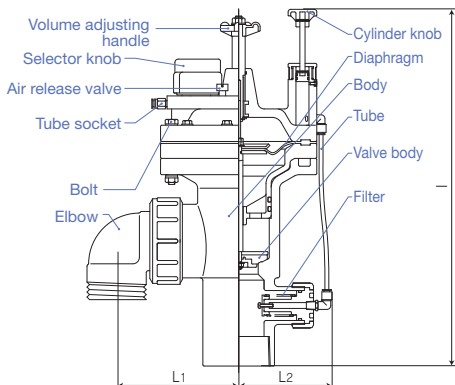
NOTES (1) is used for the semiautomatic type.

MANUAL

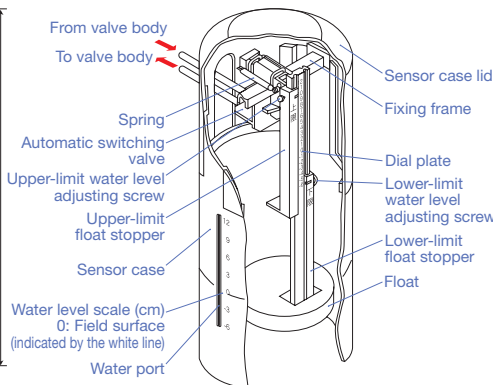
AUTOMATIC WATER FEEDING VALVE

CONNECTION / FLANGED—JIS SOCKET—JIS THREADED—Rc

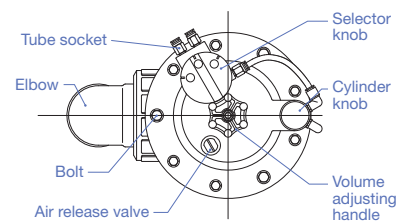
■ WATER PLUG BODY (CROSS-SECTIONAL VIEW)



■ SENSOR



■ WATER PLUG BODY (PLAN VIEW)



■ JIS (Unit: mm)

VALVE CONNECTION	mm	L ₁	L ₁	ℓ
SOCKET, THREADED	50	143	117	470
SOCKET, THREADED	80	187.5	137	548
FLANGED, 10K	50	143	117	541
FLANGED, 10K	80	187.5	134	621
FLANGED	50	143	117	541
FLANGED	80	187.5	134	622

ALFALFA VALVE® TYPE 82

- DESIGNED TO ACHIEVE EXCELLENT STRENGTH IN ADDITION TO ENSURING APPEARANCE AND SEALING PERFORMANCE.
- DESIGNED TO REDUCE SCATTERING OF WATER AND PREVENT HARMFUL EFFECTS ON SURROUNDING PADDY FIELDS.
- THE SMALL NUMBER OF PARTS FACILITATES DISASSEMBLY. THE COVER CAN BE REMOVED WITHOUT STOPPING THE PUMP.

BASIC SPECIFICATIONS

VALVE TYPE — ALFALFA VALVE® TYPE 82
 SIZE — 50 mm, 80 mm, 100 mm
 (2 inch, 3 inch, 4 inch)
 BODY MATERIAL — U-PVC
 SEAL MATERIAL — EPDM
 CONNECTION / FLANGED — JIS10K
 SOCKET — JIS

U-PVC	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa(kgf/cm ²)	CONNECTION METHOD	
	0°C ~ 50°C	1.0 {10.2}	FLANGED	SOCKET

NOTES The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.
 * Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

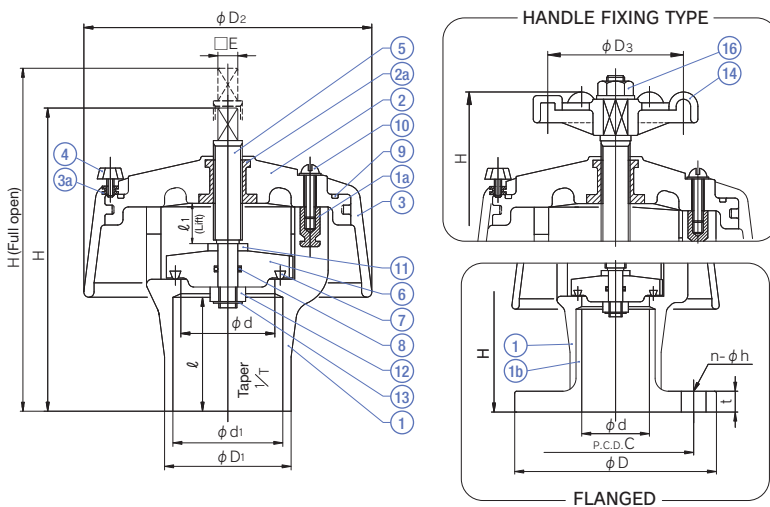


PRODUCT MODEL CODE LIST	ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	SIZE
	V	AF	**	U	E	**	** *
	⋮	⋮	⋮	⋮	⋮	⋮	⋮
	V MANUAL VALVE	AF ALFALFA VALVE	TH T-SHAPED HANDLE TYPE MH HANDLE FIXING TYPE	U U-PVC	E EPDM	SJ SOCKET F1 JIS10K	050 50mm ? 125 125mm

MANUAL

ALFALFA VALVE® TYPE 82

CONNECTION / FLANGED, SOCKET — JIS



PART NO. / NAME	QTY	MATERIAL	MEMO
① BODY	1	U-PVC	
1a EMBEDDED BODY FITTING	4	C3604	
1b FLANGE	1	U-PVC	Used for flanged type.
② BONNET	1	PP	
2a EMBEDDED BONNET FITTING	1	C3604	
③ COVER	1	PP	
3a EMBEDDED COVER FITTING	1	C3604	
④ BUTTERFLY BOLT	1	SUS304	
⑤ STEM	1	SUS303	
⑥ DISC	1	U-PVC	
⑦ PACKING (A)	1	NIPOL ⁽¹⁾	
⑧ O-RING	1	EPDM	
⑨ PACKING (B)	1	EPDM	
10 ROUND HEAD SCREW	4	SUS304	
11 WASHER (A)	1	SUS304	
12 NUT (A)	1	SUS304	
13 E-SHAPED STOP RING	1	SUS304	
14 HANDLE	1	PP	Used when the handle is provided.
16 HEX NUT (B)	1	U-PVC	Used when the handle is provided.

NOTES (1) NIPOL is a registered trademark of Zeon Corporation.

■ JIS (Unit: mm)		FLANGED				SOCKET				H				H (FULL OPEN)								
mm	d	JIS 10K				t	d ₁	1/T	ℓ	D ₁	D ₂	D ₃	E	ℓ ₁	SOCKET		FLANGED		SOCKET		FLANGED	
		D	C	n	h										T-SHAPED HANDLE TYPE	HANDLE FIXING TYPE	T-SHAPED HANDLE TYPE	HANDLE FIXING TYPE	T-SHAPED HANDLE TYPE	HANDLE FIXING TYPE	T-SHAPED HANDLE TYPE	HANDLE FIXING TYPE
		D	C	n	h										T-SHAPED HANDLE TYPE	HANDLE FIXING TYPE	T-SHAPED HANDLE TYPE	HANDLE FIXING TYPE	T-SHAPED HANDLE TYPE	HANDLE FIXING TYPE	T-SHAPED HANDLE TYPE	HANDLE FIXING TYPE
50	52	155	120	4	19	16	60.80	1/37	63	70	160	75	11	25	162	163	178	179	187	188	203	204
80	78	185	150	8	19	18	89.80	1/43	72	101	190	110	11	35	196	209	214	227	231	244	249	262
100	100	210	175	8	19	18	115.00	1/44	92	129	220	110	11	45	246	261	264	279	291	306	309	324

ROTARY ANGLE VALVE

- MACHINO, SPECIAL ELBOW AND HOSE JOINT TYPE ARE AVAILABLE AS THE CONNECTION SOCKET, ALLOWING FOR INSTALLATION IN THE NARROW VALVE BOX.
- CAN BE USED FOR BOTH RICE AND VEGETABLE FIELDS BY CHANGING THE ATTACHMENT.

BASIC SPECIFICATIONS

VALVE TYPE ————— **ROTARY ANGLE VALVE**
SIZE ————— **50 mm, 80 mm (2 inch, 3 inch)**
BODY MATERIAL ————— **U-PVC**
SEAL MATERIAL ————— **EPDM**
CONNECTION / FLANGED — **JIS10K**
SOCKET — **JIS**
THREADED — **Rc**

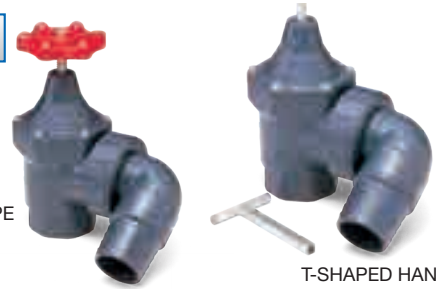
	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa(kgf/cm ²)	CONNECTION METHOD		
			FLANGED	SOCKET	THREADED
U-PVC	0°C ~ 50°C	1.0 (10.2)	○	○	○

NOTES The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.

* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

MANUAL

HANDLE
FIXING TYPE



T-SHAPED HANDLE TYPE

* For the T-shaped handle type, the handle is sold separately.
 Handle (long): 470ℓ
 Handle (short): 150ℓ

MACHINO TYPE

EXTERNAL THREAD ELBOW

ATTACHMENT FOR EXTERNAL THREAD ELBOW

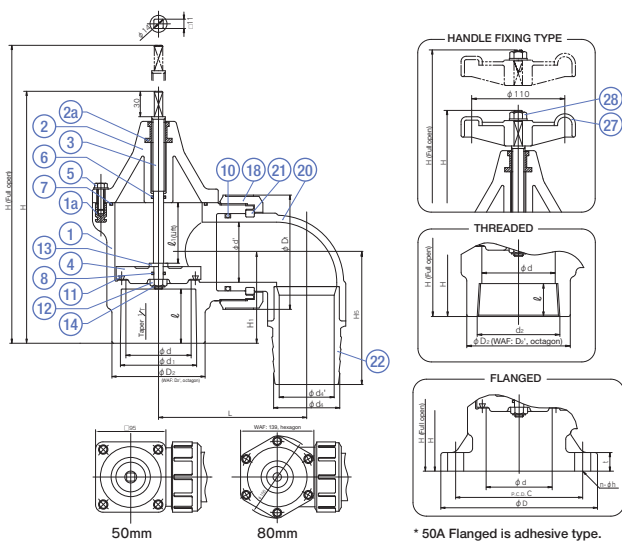


PRODUCT MODEL CODE LIST	ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	SIZE	ATTACHMENT
		V	AG	**	U	E	**	** *
	V MANUAL VALVE	AG ANGLE VALVE	TH T-SHAPED HANDLE TYPE MH HANDLE FIXING TYPE	U U-PVC	E EPDM	SJ SOCKET NJ THREADED F1 JIS10K	050 50mm ? 125 125mm	011 ELBOW HOSE 012 ELBOW MACHINO 05Y EXTERNAL THREAD ELBOW

MANUAL

ROTARY ANGLE VALVE

CONNECTION / FLANGED, SOCKET — JIS THREADED — Rc



PART NO. / NAME	QTY	MATERIAL	PART NO. / NAME	QTY	MATERIAL
① BODY	1	U-PVC	⑪ PACKING	1	NIPOL ⁽¹⁾
⑱ EMBEDDED BODY FITTING	4(50mm) 6(80mm)	C3604	⑫ NUT (A)	1	SUS304
② BONNET	1	U-PVC	⑬ WASHER	1	SUS304
⑳ EMBEDDED BONNET FITTING	1	C3604	⑭ E-SHAPED STOP RING	1	SUS304
③ STEM	1	SUS304	⑮ UNION NUT	1	U-PVC
④ DISC	1	U-PVC	⑯ ELBOW (A)	1	U-PVC
⑤ BOLT	4(50mm) 6(80mm)	SUS304	⑰ STOP RING (B)	1	PVDF
⑥ O-RING (A)	1	EPDM	⑱ HOSE SOCKET	1	U-PVC
⑦ O-RING (B)	1	EPDM	⑳ HANDLE	1	PP
⑧ O-RING (C)	1	EPDM	(Used for the handle fixing type.)		
⑩ O-RING (E)	1	EPDM	㉘ NUT (B)	1	SUS304
			(Used for the handle fixing type.)		

NOTES (1) NIPOL is a registered trademark of Zeon Corporation.

■ JIS (Unit: mm)

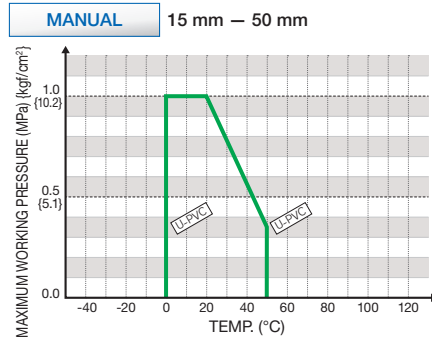
mm	T-SHAPED HANDLE TYPE							HANDLE FIXING TYPE							FLANGED					SOCKET			THREADED										
	FLANGED			SOCKET				FLANGED			SOCKET				JIS 10K																		
	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	D	C	n	h	t	d ₁	1/T	ℓ	d ₂	ℓ	d ₄	d ₄ '					
	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	H	H (FULL OPEN)	D	C	n	h	t	d ₁	1/T	ℓ	d ₂	ℓ	d ₄	d ₄ '					
50	263	308	247	292	247	292	275	320	259	304	259	304	100	129	52	51	96	80	77.5	147	45	155	120	4	19	20	60.8	1/37	63	Rc2	28	52	40
80	307	379	297	369	297	369	319	391	309	381	309	381	118.5	154	78	70	133	110	105	172.5	72	185	150	8	19	22	89.6	1/49	64	Rc3	35	77	65

WORKING PRESSURE VS. TEMPERATURE

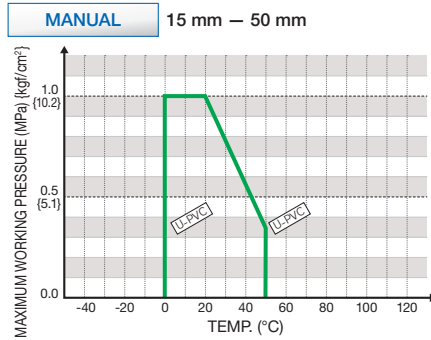


NOTE Make sure that the temperature and pressure are within the working range during operation. (If the tolerance range is exceeded during use, the valve may be damaged.)

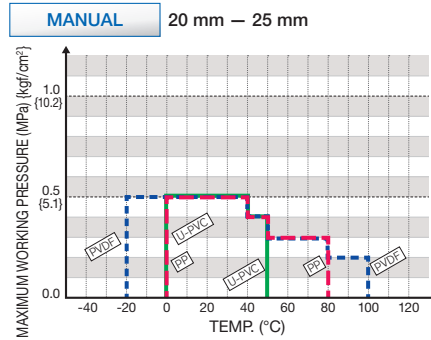
SELF CONTROL VALVE PRESSURE REDUCING TYPE



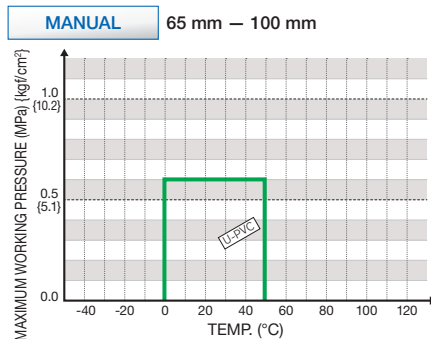
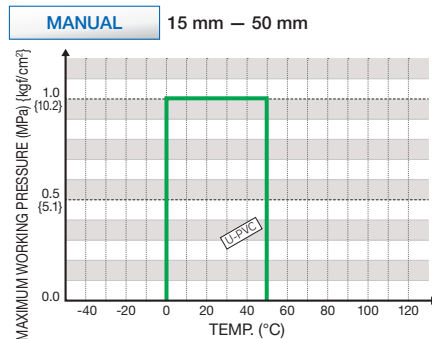
SELF CONTROL VALVE PRESSURE RELIEF TYPE / PRESSURE RETAINING TYPE



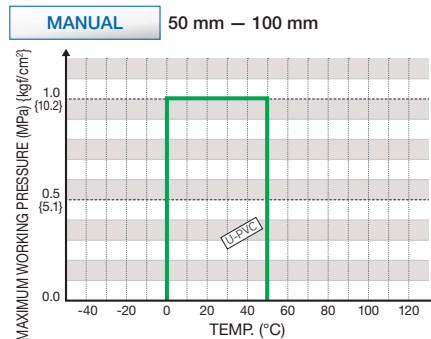
GAUGE VALVE



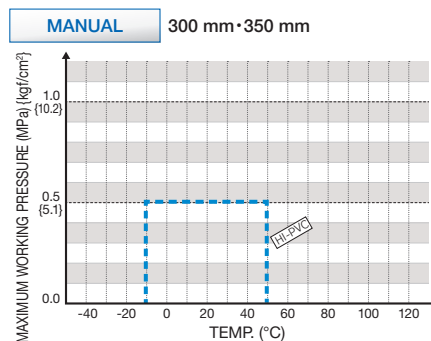
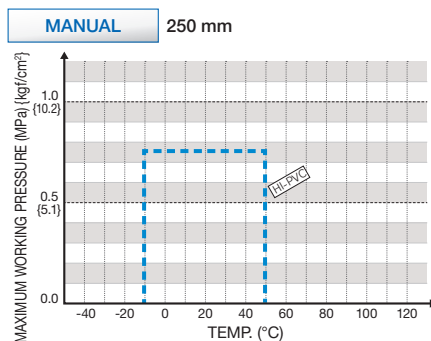
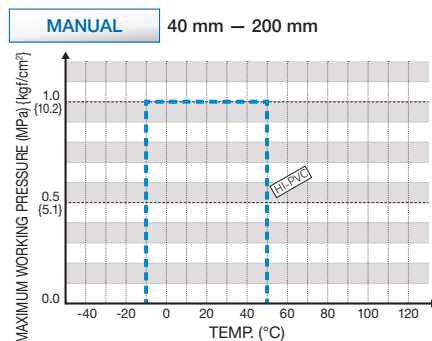
SEDIMENT STRAINER (TYPE Y)



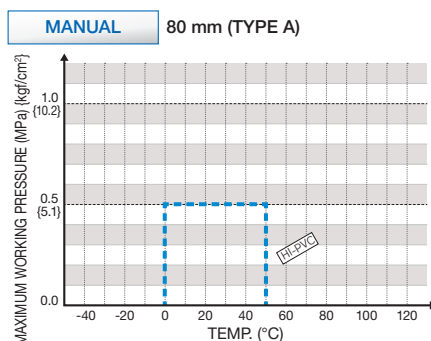
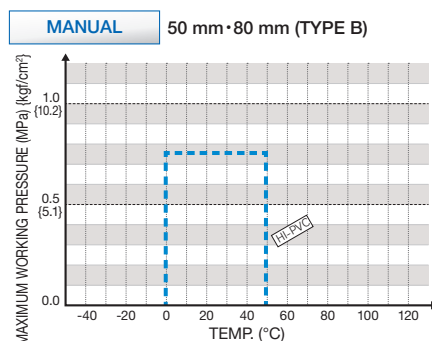
ALFALFA VALVE® TYPE 82



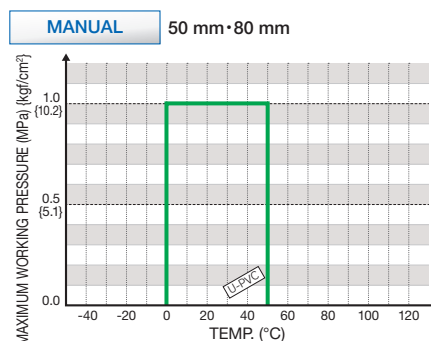
GATE VALVE (TYPE P / TYPE S)



AUTOMATIC WATER FEEDING VALVE

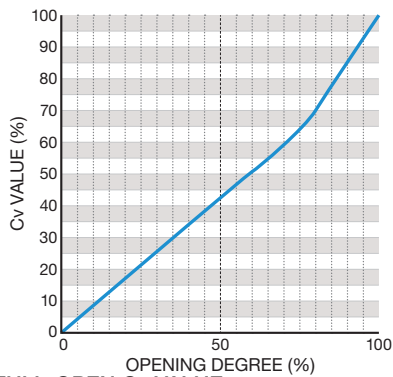


ROTARY ANGLE VALVE

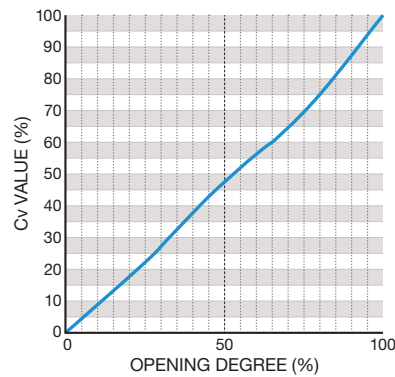


NEEDLE VALVE

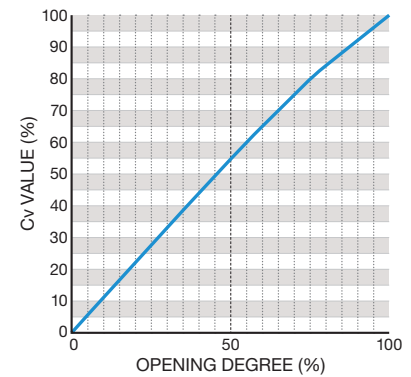
15 mm · 20 mm · 25 mm



15 mm · 20 mm (PORT SIZE 15 mm)



25 mm (PORT SIZE 15 mm)

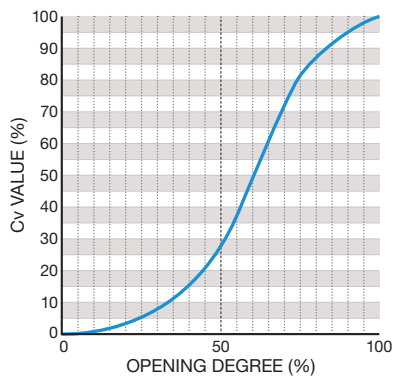


FULL-OPEN Cv VALUE

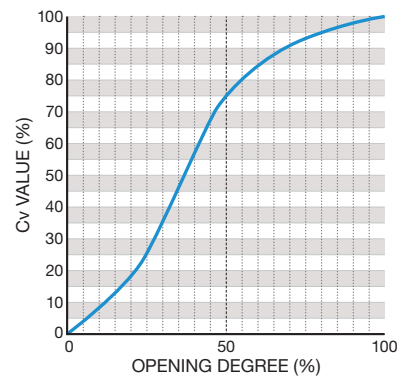
mm	15, 20		25	
inch	1/2, 3/4		1	
PORT SIZE (mm)	6	15	6	15
FULL-OPEN Cv VALUE	0.7	4.5	0.7	6.0

GATE VALVE

TYPE P: 40 mm – 350 mm



TYPE S: 40 mm – 200 mm

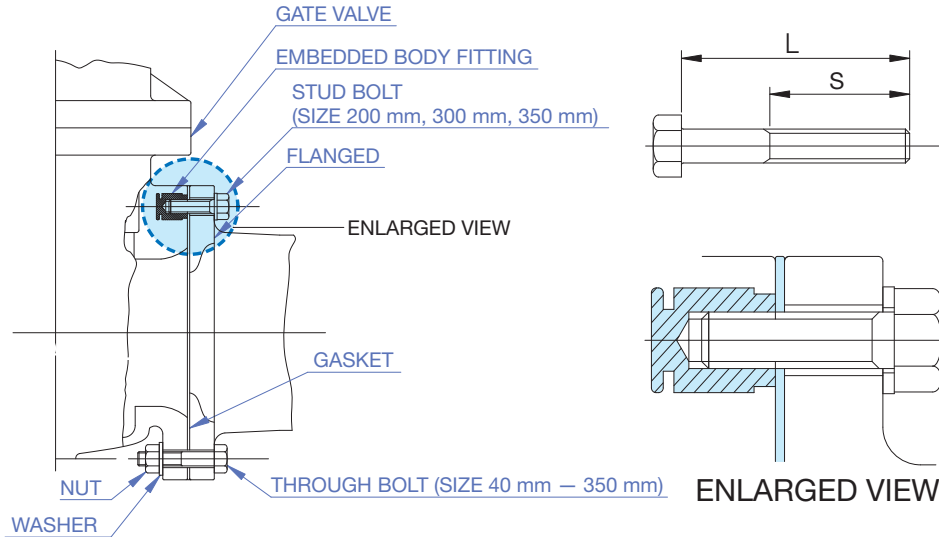


FULL-OPEN Cv VALUE

mm	40	50	65	80	100	125	150	200	250	300	350	
inch	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
Full open Cv VALUE	GATE VALVE (TYPE P)	130	180	415	470	690	1,000	1,400	2,900	3,700	5,200	7,000
	GATE VALVE (TYPE S)	130	180	415	470	690	1,000	1,400	2,900	—	—	—

GATE VALVE

PIPE BOLT DIMENSIONS

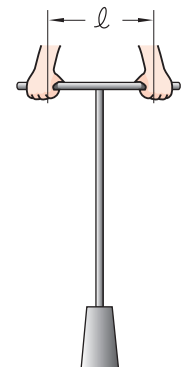


mm	STANDARD																
	WATERWORKS STANDARD AV TS FLANGE				WATERWORKS STANDARD / IRON FLANGE JIS G5527				JIS 10K STANDARD AV TS FLANGE				JIS 10K STANDARD / IRON FLANGE JIS B2212				
	BOLT NUT SIZE	WASHER SIZE	L	S	BOLT NUT SIZE	WASHER SIZE	L	S	BOLT NUT SIZE	WASHER SIZE	L	S	BOLT NUT SIZE	WASHER SIZE	L	S	
THROUGH BOLT	32	—	—	—	—	—	—	—	—	M16	16	70	38	M16	16	70	38
	40	—	—	—	—	—	—	—	—	M16	16	70	38	M16	16	70	38
	50	M16	16	75	38	M16	16	70	38	M16	16	75	38	M16	16	70	38
	65	—	—	—	—	—	—	—	—	M16	16	75	38	M16	16	75	38
	75(80)	M16	16	80	38	M16	16	80	38	M16	16	80	38	M16	16	75	38
	100	M16	16	85	38	M16	16	80	38	M16	16	80	38	M16	16	75	38
	125	M16	16	85	38	M16	16	85	38	M20	20	85	46	M20	20	85	46
	150	M16	16	85	38	M16	16	85	38	M20	20	90	46	M20	20	85	46
	200	M16	16	90	38	M16	16	90	38	M20	20	90	46	M20	20	85	46
	250	M20	20	95	46	M20	20	90	46	M22	22	100	50	M22	22	90	50
300	M20	20	95	46	M20	20	95	46	M22	22	100	50	M22	22	90	50	
350	—	—	—	—	M22	22	95	50	M22	22	110	50	M22	22	95	50	
STUD BOLT	200	—	—	—	—	—	—	—	—	M20	20	50	46	M20	20	45	45
	250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	300	—	—	—	—	—	—	—	—	M22	22	55	50	M22	22	50	50
	350	—	—	—	—	M22	22	50	50	M22	22	60	50	M22	22	50	50

2. LENGTH OF T-SHAPED HANDLE OF AV GATE VALVE (CAP TYPE)

The close-off torque (torque required for complete closure) and the length of T-shaped handle handgrip are as follows:

mm	CLOSE-OFF TORQUE N·m {kgf·cm}	T-SHAPED HANDLE ℓ (mm) [REFERENCE]	mm	CLOSE-OFF TORQUE N·m {kgf·cm}	T-SHAPED HANDLE ℓ (mm) [REFERENCE]
32·40	15 {153}	200	150	60 {612}	350
50	15 {153}	200	200	100 {1020}	550
65	23 {235}	200	250	110 {1122}	550
75(80)	25 {255}	200	300	130 {1327}	700
100	30 {306}	200	350	150 {1531}	700
125	40 {408}	300			



- NOTES**
- (1) When turning the T-shaped handle, do not insert a pipe or similar object. Do not turn it with two people either.
 - (2) When the shaft is too long, adjust the ℓ dimension using the handgrip.
 - (3) The length of handle handgrip, ℓ, is set so that the operating force (one hand) is approximately 150N to 200N {15kgf to 20kgf}.
 - (4) Contact us when using an outside screw section valve (for vacuum sewage) because a special turning bar is required.

OTHERS

CONSTANT FLOW VALVE **MANUAL** UNIT: kg

mm	
15	1.4
20	1.5
25	1.5
50	5.0
80	8.5
100	16.5

NEEDLE VALVE **MANUAL** UNIT: kg

mm	
15	1.4
20	1.5
25	1.6

SEDIMENT STRAINER (TYPE Y) **MANUAL** UNIT: kg

mm	FLANGED			SOCKET			THREADED		
15	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
20	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
25	1.2	0.7	0.8	0.8	0.8	0.8	0.8	0.8	
32	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
40	2.2	1.5	1.6	1.6	1.6	1.6	1.6	1.6	
50	2.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	
65	6.3	5.4	5.3	5.3	5.3	5.3	5.3	5.3	
80	6.5	5.4	6.0	6.0	6.0	6.0	6.0	6.0	
100	20.5	18.0	19.5	19.5	19.5	19.5	19.5	19.5	

SELF CONTROL VALVE **MANUAL**

UNIT: kg

mm	PRESSURE REDUCING TYPE			PRESSURE RELIEF TYPE			PRESSURE RETAINING TYPE		
	FLANGED	SOCKET	THREADED	FLANGED	SOCKET	THREADED	FLANGED	SOCKET	THREADED
15	1.0	0.8	0.8	1.0	0.6	0.7	0.7	0.5	0.5
20	1.8	1.5	1.5	1.2	0.8	0.8	0.9	0.6	0.6
25	2.4	1.9	1.9	2.5	1.7	1.7	2.0	1.5	1.5
32	4.0	3.4	3.4	2.9	1.9	2.0	2.2	1.6	1.6
40	4.4	3.7	3.7	8.6	7.6	7.6	7.8	7.1	7.2
50	6.8	6.1	6.1	9.1	7.9	8.0	8.1	7.4	7.4

GATE VALVE

GATE VALVE — FLANGED **MANUAL**

UNIT: kg

mm	TYPE P				TYPE S			
	INSIDE SCREW		INSIDE SCREW		OUTSIDE SCREW			
	ROUND HANDLE TYPE	CAP TYPE	ROUND HANDLE TYPE	CAP TYPE	ROUND HANDLE TYPE	CAP TYPE*		
40	2.5	3.5	3.0	4.0	3.2	—	—	—
50	3.5	4.5	4.0	5.0	4.5	—	—	—
65	5.5	6.0	5.5	6.0	7.5	—	—	—
75(80)	7.0	8.0	8.0	9.0	8.3	—	—	—
100	8.5	9.5	12.5	13.0	12.6	13.0	—	—
125	13.5	14.5	15.0	15.5	24.0	—	—	—
150	19.5	20.0	22.5	23.0	24.8	25.7	—	—
200	29.5	30.0	31.5	32.0	44.5	35.0	—	—
250	42.0	43.0	—	—	71.0	60.0	—	—
300	68.0	68.5	—	—	—	—	—	—
350	81.5	82.0	—	—	—	—	—	—

AIR RELEASE VALVE **MANUAL** UNIT: kg

mm	FLANGED	THREADED
25	8.8	3.8
75	6.9	—
100	10.0	—
150	21.0	—
200	41.0	—

ISOLATING VALVE **MANUAL** UNIT: kg

mm	
75	3.3
100	6.5
150	9.5
200	14.0

NOTES (1) The above values are the estimated weight of flange type.

(2) The asterisk indicates the weight of section valves (applicable for shallow layer burial).

ALFALFA VALVE® TYPE 82 **MANUAL** UNIT: kg

mm	FLANGED	SOCKET
50	1.3	1.0
80	2.0	1.6
100	3.3	2.7

ROTARY ANGLE VALVE **MANUAL** UNIT: kg

mm	HANDLE FIXING	T-SHAPED HANDLE
50	3.0	3.0
75	4.5	4.5

ANGLE BUTTERFLY VALVE **MANUAL** UNIT: kg

mm	HANDLE FIXING
80	5.4
100	10.0

PRODUCT CERTIFICATION TARGET LIST

ITEM	NSF/ANSI61		ABS (American Bureau of Shipping)		NK (Nippon Kaiji Kyokai)
	MATERIAL	SIZE	MATERIAL	SIZE or STANDARD	PRODUCT GROUP
3 WAY BALL VALVE TYPE 23	PVC/EPDM	15 — 100mm			
	PVC/FKM	15 — 100mm			
BALL VALVE TYPE 21 α	PVC/EPDM	15 — 50mm	PVC/EPDM	15 — 50mm	
	PVC/FKM	15 — 50mm	PVC/FKM	15 — 50mm	
			C-PVC/EPDM	15 — 50mm	
			C-PVC/FKM	15 — 50mm	
BALL VALVE TYPE 21	PVC/EPDM	65 — 100mm	PVC/EPDM	65 — 100mm	
	PVC/FKM	65 — 100mm	PVC/FKM	65 — 100mm	
			C-PVC/EPDM	65 — 100mm	
			C-PVC/FKM	65 — 100mm	
COMPACT BALL VALVE TYPE 27	PVC/EPDM	13 — 50mm			
LAB COCK	PVC/EPDM	—			
GATE VALVE TYPE P	PVC/PP/EPDM	40 — 350mm			
SEDIMENT STRAINER (TYPE Y)	PVC/EPDM	15 — 100mm			
	PVC/FKM	15 — 100mm			
BALL CHECK VALVE	PVC/EPDM	80 — 100mm			
	PVC/FKM	80 — 100mm			
TRUE UNION BALL CHECK VALVE	PVC/EPDM	15 — 50mm			
	PVC/FKM	15 — 50mm			
BUTTERFLY VALVE TYPE 57	BODY: PVC	40 — 350mm	BODY: PVC, PP	50 — 300mm	
	DISC: PP		DISC: PVC, PP, PVDF		
	SHEET: EPDM		SHEET: EPDM, FKM		
PIPE			U-PVC	JIS K 6741	
			U-PVC	JIS K 6742	
			C-PVC	JIS K 6776	
FITTING			U-PVC	JIS K 6743	
			C-PVC	JIS K 6777	
TS FLANGE			U-PVC	JIS 10K 13 — 150mm	
			U-PVC	JIS 5K 13 — 150mm	
			C-PVC	JIS 10K 13 — 50mm	
			C-PVC	JIS 5K 13 — 50mm	

AV Vinyl pipes
AV HI Vinyl Pipes
AV Super Pipes(HT)
AV Vinyl Fittings
AV HI Vinyl Fittings
AV Super Fittings(HT)
AV Vinyl Valves AV
AV HI Vinyl Valves
AV Super Valves
AV TS Flanges
AV HI TS Flanges
AV Super TS Flanges(HT)

* Above products are comply with NK approval, and are adequate for their service conditions may be used for following (1).

(1) Drinking water pipes, domestic waterpipes (including hot water pipes) and sanitary pipes located within accommodation spaces and engine rooms as well as deck scuppers located within spaces.

For details of applicable products and intended use as well as certificates other than the above, please contact us.



KASKO DEMİRÇELİK MAKİNE VE İNŞAAT SANAYİ TİCARET LİMİTED ŞİRKETİ

**Güzelyurt Mah. Mehmet Akif Ersoy Cad. No: 38 Gökdemir Plaza Kat: 3 Ofis: 24 Zip Code:
34524 Esenyurt / İSTANBUL**

Tel: +90 850 441 25 67

Cell: +90 541 699 01 34

info@kaskomakine.com

kaskomakine.com