



SOLENOID VALVES & CONTROL VALVES

SOLENOID VALVES FOR REFRIGERANT 73
Type **TEV & VPV**

SOLENOID VALVES FOR REFRIGERANT 74–75
Type **RPV**

SOLENOID VALVES FOR REFRIGERANT 76–78
Type **REV & UEV**

SOLENOID VALVES FOR WATER 79
Type **WEV**

BI-FLOW SOLENOID VALVES 80
Type **BPV**

3-WAY SOLENOID VALVES 81
Type **IEV**

4-WAY REVERSING VALVES 82–84
Type **STF & VHV**

MOTORIZED BALL VALVES 85–86
Type **MJV**

DAMPER & VALVE MOTOR ACTUATORS 87–88
Type **EGK & WGK**

2-WAY & 3-WAY CONTROL VALVES 89–91
Type **NVK**

SOLENOID VALVES FOR REFRIGERANT

High Volume OEM Item

Type TEV & VPV



GENERAL DESCRIPTION

- Direct-operated, pilot operated, 2-way, normally closed valve. Normally open type is available.
- For use with non-corrosive refrigerant.
- Compactly designed for use in small appliances produced in quantity such as room air conditioners, dehumidifiers and ice making machines.
- Various piping configuration available.



Type VPV

Type TEV

SPECIFICATIONS

- Fluid temperature: -30 to 120°C
- Ambient temperature: -30 to 50°C

TYPE NUMBER SELECTION

Unit: MPa {kgf/cm²}

Catalog No.	Port Size (mm)	Cv Value	Connection		O.P.D.		Max. Working Pressure	Operation	Wt. (kg)	
			Copper Tube O.D.	Style	Min.	Max.				
TEV-S1220D	1.2	0.037	1/4"	Solder	0	3.6 {36.7}	4.3 {43.8}	Normal Close	0.025	
TEV-S1620D	1.6	0.07				2.75 {28}				
TEV-S1920D	1.9	0.1				2.06 {21}				
VPV-L202D	1.8	0.07	1/4"		0	2.06 {21}		Normal Open		0.06
VPV-603D	5.8	0.65	5/16"		0.005 {0.05}	3.6 {36.7}		Normal Close		0.08
VPV-803DQ50	7.8	1.5	3/8"		0.01 {0.1}	2.75 {28}				0.14
VPV-1204DQ50	11.0	3.0	1/2"	0.015 {0.15}	0.26					

• O.P.D.: Operating Pressure Differential (by air pressure)

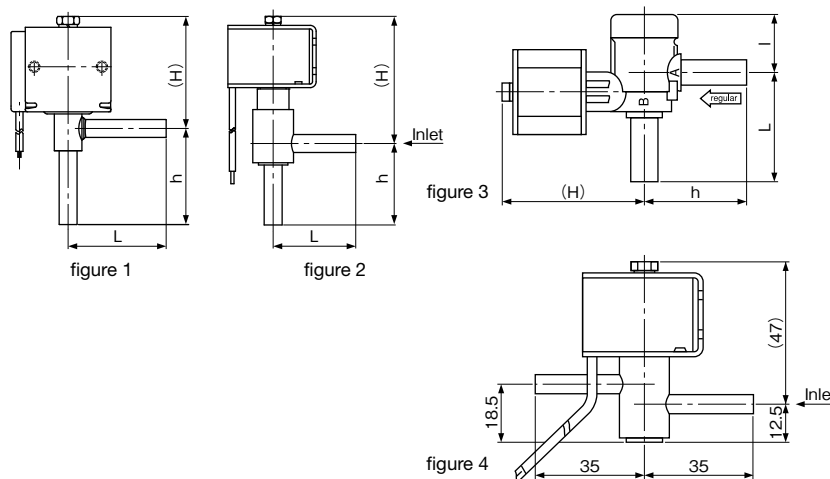
ELECTRICAL RATING OF SOLENOID COILS

Type	Rated Voltage	Tolerance (%)	Voltampere		Power Consumption (W)	Insulation Class	Wt. (kg)
			Running	Inrush			
TEV	24V. AC	50/60Hz	± 10	9/7	22/16	Class B Molded	0.1
	100V. AC						
110V. AC							
120V. AC							
VPV	208V. AC	13/10	36/30	8/7	8/7	0.14	
	220V. AC						
	230V. AC						
	240V. AC						

Current (A) = Voltampere / Rated Voltage

* IEC compliance

DIMENSIONS



Catalog No.	Unit: mm				Form
	L	H	h	l	
TEV-	S1220D	35	40	33	-
	S1620D				
	S1920D				
VPV-	603D	36.5	55	36	-
	803D	41.5	53.5	38.5	22.5
	1204D	61.5	57.5	61.5	28.5
	L202D	-	-	-	-

Unit: mm

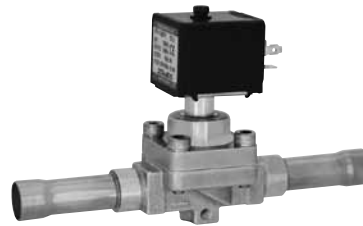
SOLENOID VALVES FOR REFRIGERANT

Type RPV

SAGInoMIYA

GENERAL DESCRIPTION

- New solenoid valves for refrigerant "High-pressure R410A standard"
- Various product line up (Body: 21 types, Coil: DIN plug type, Lead wire type)
- Low power consumption (6W at 50Hz / 4.5W at 60Hz)



Type RPV-D



Type RPV-B

SPECIFICATIONS

- Body test pressure: 6.5MPa (66.2kgf/cm²)
- Fluid temperature: -40 to 125°C
- Ambient temperature: -30 to 50°C

TYPE NUMBER SELECTION

Unit: MPa {kgf/cm²}

Catalog No.	Port Size (mm)	Cv Value	Nominal Capacity (Refrigerants in Liquid) (U.S.R.T.)			Connection		O.P.D.		Max. Working Pressure	Wt. (kg)			
			R410A	R134a	R22	Copper Tube O.D.	Style	Min.	Max.					
RPV-302BYF	3	0.27	1.2	1.1	1.2	1/4"	Flare	0	3.6 {36.7}	4.3 {43.8}	0.3			
RPV-303BYF		0.30	1.3	1.3	1.4	3/8"					0.3			
RPV-602BYF	6	0.60	2.6	2.5	2.7	1/4"		0.005 {0.05}			0.4			
RPV-603BYF		0.90	3.8	3.8	4.1	3/8"						0.4		
RPV-803BYF	8	1.2	5.1	5.1	5.4	3/8"		Solder			0	0.005 {0.05}	0.45	
RPV-804BYF		1.4	5.9	5.9	6.3	1/2"							0.45	
RPV-1004BYF	10	2.4	10	10	11	1/2"					0.005 {0.05}		0.6	
RPV-1005BYF		2.4	10	10	11	5/8"								0.6
RPV-1205BYF	12	3.6	15	15	16	5/8"					0		0.005 {0.05}	0.7
RPV-1606BYF	16	5.6	24	24	25	3/4"								1.1
RPV-302DYF	3	0.27	1.2	1.1	1.2	1/4"	Solder		0	0.005 {0.05}				0.3
RPV-303DYF		0.30	1.3	1.3	1.4	3/8"								0.3
RPV-602DYF	6	0.60	2.6	2.5	2.7	1/4"			0.005 {0.05}					0.4
RPV-603DYF		0.90	3.8	3.8	4.1	3/8"								
RPV-803DYF	8	1.2	5.1	5.1	5.4	3/8"		0.005 {0.05}	0.4					
RPV-804DYF		1.4	5.9	5.9	6.3	1/2"						0.4		
RPV-1004DYF	10	2.4	10	10	11	1/2"			0.6					
RPV-1005DYF		2.4	10	10	11	5/8"						0.6		
RPV-1205DYF	12	3.6	15	15	16	5/8"			0.7					
RPV-1606DYF	16	5.6	24	24	25	3/4"					1.1			
RPV-1607DYF	16	5.6	24	24	25	7/8"	1.1							

- Enclosure Lead wire direct: IP67 / DIN: IP65 (When DIN socket is used)
- Nominal capacities (R410A) are based on ΔP = 0.015 MPa, condensing temp. = 38°C and evaporating temp. = 5°C
- Weight includes a coil (Without Strainer, Flare nuts, Bracket).

ELECTRICAL RATING OF SOLENOID COILS

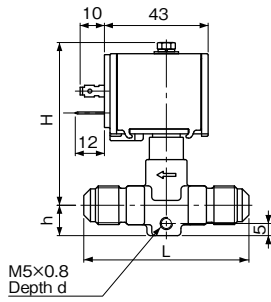
Rated Voltage		Tolerance (%)	Voltampere (VA)		Power Consumption (W)	*1 Insulation Class	Coil Style	
			Running	Inrush			Lead wire	*2 DIN plug
24V.AC	50/60Hz	±10	12.5/9.5	45/44	6/4.5	Class B Molded	○	—
100V.AC								
200V.AC								
220V.AC								
230V.AC								
240V.AC	60Hz	±10	9.5	44	4.5	○	○	
110V.AC								
220.AC-230V.AC								50Hz

Current (A) = Voltampere / Rated Voltage

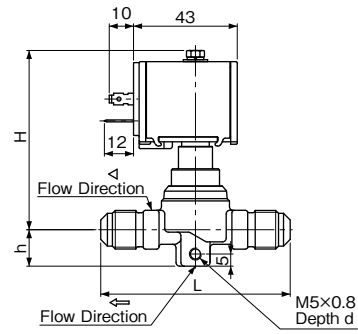
*1 IEC compliance
*2 EN 175301-803 (DIN 43650) / ISO 4400

DIMENSIONS

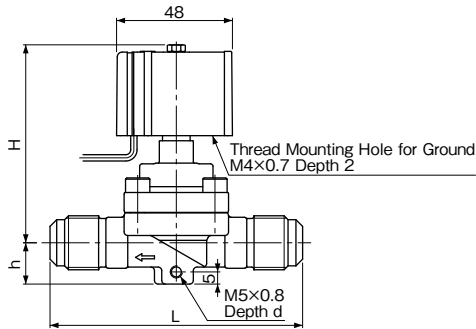
Type RPV-302BYF, 303BYF



Type RPV-602BYF to 804BYF

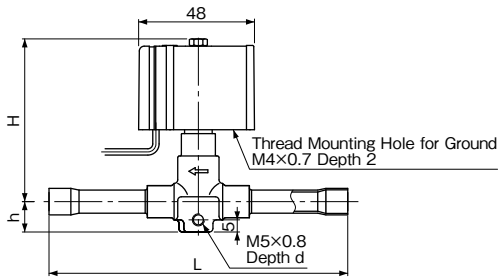


Type RPV-1004BYF to 1606BYF

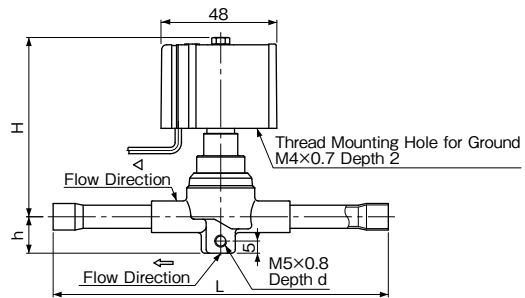


Catalog No.	Unit: mm			
	L	H	h	d
RPV-302BYF	64	67	12.5	12
RPV-303BYF	68	67	12.5	12
RPV-602BYF	71	74	15	12
RPV-603BYF	78	74	15	12
RPV-803BYF	84	75.5	15	14
RPV-804BYF	90	75.5	15	14
RPV-1004BYF	96	77	15.5	17
RPV-1005BYF	101	77	15.5	17
RPV-1205BYF	104	82	17	20
RPV-1606BYF	124	89	19	24

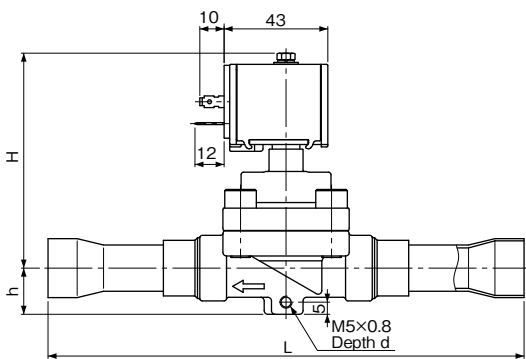
Type RPV-302DYF, 303DYF



Type RPV-602DYF to 804DYF



Type RPV-1004DYF to 1607DYF



Catalog No.	Unit: mm			
	L	H	h	d
RPV-302DYF	123	67	12.5	12
RPV-303DYF	123	67	12.5	12
RPV-602DYF	140	74	15	12
RPV-603DYF	138	74	15	12
RPV-803DYF	141	75.5	15	14
RPV-804DYF	139	75.5	15	14
RPV-1004DYF	158	77	15.5	17
RPV-1005DYF	168	77	15.5	17
RPV-1205DYF	171	82	17	20
RPV-1606DYF	196	89	19	24
RPV-1607DYF	196	89	19	24

Unit: mm

OPTIONAL PARTS

- DIN socket for DIN plug coil
- Flare Nut

SOLENOID VALVES FOR REFRIGERANT

Type REV & UEV

SAGInoMIYA

GENERAL DESCRIPTION

- Type REV: Pilot operated, 2-way, Normally closed valve.
Type UEV: Pilot operated, 2-way, Normally opened valve.
- For non-corrosive refrigerant (liquid or gas) in refrigeration, cooling, air conditioning systems.
- "Double plunger" construction provides reliable On/Off action.
- Compact molded coil commonly fits all valve sizes.
- Operates in any position ... can be conveniently located in horizontal or vertical line with coil on top.
- Manual Opening Stem ... On Flange connection models, supplied as standard. On Flare or Solder connection models, supplied upon request.



Type UEV-D



Type REV-D

SPECIFICATIONS

- Fluid temperature: -40 to 125°C (Type REV)
-40 to 120°C (Type UEV)
- Ambient temperature: -30 to 40°C

TYPE NUMBER SELECTION

Type REV – Normally closed valve (1)

Unit: MPa {kgf/cm²}

Catalog No.	Port Size (mm)	Cv Value	Connection			O.P.D.		Max. Working Pressure	Wt. (kg)		
			Copper Tube O.D.	Steel Tube O.D.	Style	Min.	Max.				
REV-703BXF	7	1.0	3/8"	-	Flare	0.007 {0.07}	2.45 {25}	2.94 {30}	0.6		
REV-1004BXF	10	2.0	1/2"						0.9		
REV-1205BXF	12	3.5	5/8"						1.1		
REV-1506BXF	15	5.3	3/4"						1.5		
REV-1003GXF	10	2.0	3/8"						Rc	1.0	
REV-1204GXF	12	3.5	1/2"							1.3	
REV-1506GXF	15	5.3	3/4"							1.7	
REV-703DXF	7	1.0	3/8"							Solder	0.5
REV-1004DXF	10	2.0	1/2"								0.8
REV-1205DXF	12	3.5	5/8"								0.9
REV-1506DXF	15	5.3	3/4"		1.1						
REV-2007DXF	20	9.0	7/8"		Flange				2.94 {30}		
REV-2010DXF			1"								1.6
REV-2011DXF			1-1/8"								2.2
REV-2511DXF	1-1/8"										
REV-2512DXF	1-1/4"										
REV-2513DXF	1-3/8"										
REV-3213DXF	1-3/8"										
REV-3214DXF	1-1/2"	3.2									
REV-3215DXF	1-5/8"										
REV-2006EXF	20	9.0	7/8"	1-1/8"		3/4"	5.1				
REV-2510EXF	25	13.8	1"	1-1/2"	1"	7.7					
REV-3212EXF	32	19.4	1-1/4"	1-5/8"	1-1/4"	8.9					
REV-4014EXF	40	32.0	1-1/2"	2"	1-1/2"	10.8					
REV-5020EXF	50	45.0	2"	2-1/2"	2"	16.3					
REV-6524EXF	65	74.0	2-1/2"	3"	2-1/2"	23.2					
REV-6530EXF			3"	3-1/2"	3"	26.6					

- Weight includes a coil.
- Enclosure IP34 (REV-W: Drip proof model)

TYPE NUMBER SELECTION

Type REV – Normally closed valve (2)

Unit: MPa {kgf/cm²}

Catalog No.	Port Size (mm)	Cv Value	Connection		O.P.D.		Max. Working Pressure	Wt. (kg)						
			Copper Tube O.D.	Style	Min.	Max.								
REV-703BYF	7	1.0	3/8"	Flare	0.007 {0.07}	2.45 {25}	4.2 {42}	0.6						
REV-1004BYF	10	2.0	1/2"					0.9						
REV-1205BYF	12	3.5	5/8"					1.1						
REV-1506BYF	15	5.3	3/4"					1.5						
REV-1003GYF	10	2.0	3/8"	Rc				0.007 {0.07}	2.45 {25}	4.2 {42}	1.0			
REV-1204GYF	12	3.5	1/2"								1.3			
REV-1506GYF	15	5.3	3/4"								1.7			
REV-703DYF	7	1.0	3/8"	Solder							0.007 {0.07}	2.45 {25}	4.2 {42}	0.5
REV-1004DYF	10	2.0	1/2"											0.8
REV-1205DYF	12	3.5	5/8"											0.9
REV-1506DYF	15	5.3	3/4"											1.1
REV-2007DYF	20	9.0	7/8"											1.6
REV-2010DYF			1"											
REV-2011DYF			1-1/8"											

- Weight includes a coil.
- Enclosure IP34 (REV-W: Drip proof model)

TYPE NUMBER SELECTION

Type UEV – Normally opened valve

Unit: MPa {kgf/cm²}

Catalog No.	Port Size (mm)	Cv Value	Connection		O.P.D.		Max. Working Pressure	Wt. (kg)						
			Copper Tube O.D.	Style	Min.	Max.								
UEV-1004BXF	10	2.0	1/2"	Flare	0.007 {0.07}	1.96 {20}	2.94 {30}	0.9						
UEV-1205BXF	12	3.5	5/8"					1.1						
UEV-1506BXF	15	5.3	3/4"					1.5						
UEV-1003GXF	10	2.0	3/8"	Rc				0.007 {0.07}	1.96 {20}	2.94 {30}	1.0			
UEV-1204GXF	12	3.5	1/2"								1.3			
UEV-1506GXF	15	5.3	3/4"								1.7			
UEV-2010GXF	20	9.0	1"	Solder							0.007 {0.07}	1.96 {20}	2.94 {30}	1.9
UEV-1004DXF	10	2.0	1/2"											0.8
UEV-1205DXF	12	3.5	5/8"											0.9
UEV-1506DXF	15	5.3	3/4"											1.1
UEV-2007DXF	20	9.0	7/8"											1.6
UEV-2010DXF			1"											
UEV-2011DXF			1-1/8"											

- Weight includes a coil.
- Enclosure IP34 (UEV-W: Drip proof model)

ELECTRICAL RATING OF SOLENOID COILS

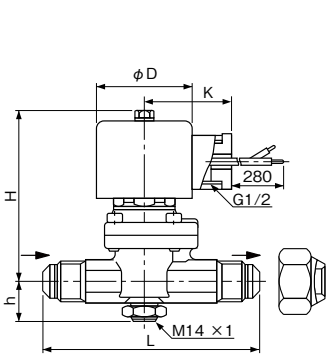
Type	Rated Voltage	Tolerance (%)	Voltampere (VA)		Power Consumption (W)	Insulation Class	
			Running	Inrush			
REV	24V.AC, 100V.AC, 110V.AC 200V.AC, 220V.AC, 240V.AC	50/60Hz	+10 -15	17/14	43/35	8/7	*
	12V.DC, 24V.DC 48V.DC, 100V.DC	—	±10	—	—	10	Class B Molded
UEV	24V.AC, 100V.AC, 110V.AC 200V.AC, 220V.AC, 240V.AC	50/60Hz	+10 -15	17/14	43/35	8/7	

Current (A) = Voltampere / Rated Voltage

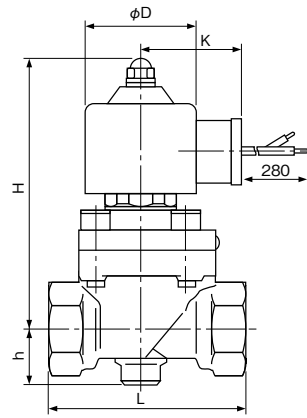
* IEC compliance

DIMENSIONS

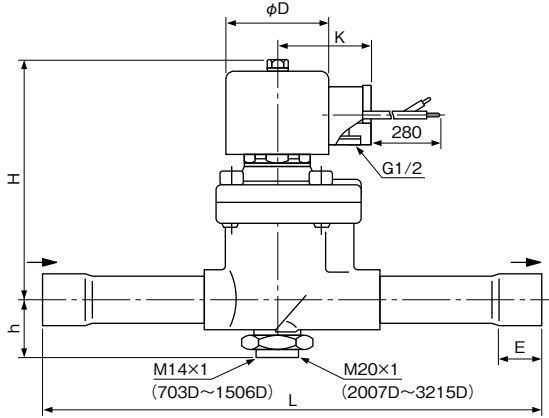
Type REV-B, UEV-BX



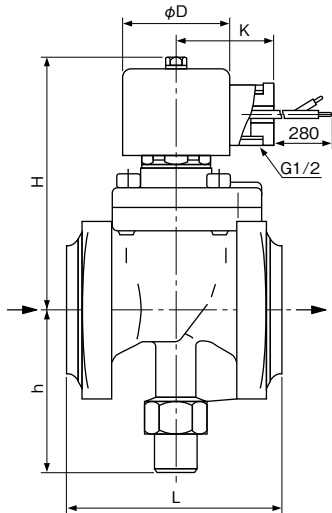
Type REV-G, UEV-GX



Type REV-D, UEV-DX



Type REV-EX



Unit: mm

Catalog No.	Unit: mm								
	L	H	h	E	φD	K			
703BX [Y]	90	70 [73]	19	-	48	44			
1004BX [Y]	105	88 [90]	21						
1205BX [Y]	115	90 [92]	22						
1506BX [Y]	135	96 [99]	25						
1003GX [Y]	65	89 [91]	20						
1204GX [Y]	75	94 [96]	21						
1506GX [Y]	85	99 [102]	24						
703DX [Y]	150	70 [73]	19				10		
1004DX [Y]	160	88 [90]	21				13		
1205DX [Y]	180	90 [92]	22				16		
1506DX [Y]	190	96 [99]	25	19					
2007DX [Y]	230	112 [116]	29	20	48	44			
2010DX [Y]									
2011DX [Y]									
2511DX	240	123	31	23					
2512DX									
2513DX									
3213DX									
3214DX	260	126	35	26					
3215DX									
2006EX	95	112	73	-			48	44	
2510EX	110	123	78						
3212EX	120	126	87						
4014EX	130	133	92						
5020EX	170	149	115						
6524EX	200	169	129						
6530EX	210								
1004BX	105	108	21		-	48			44
1205BX	115	110	22						
1506BX	135	116	25						
1003GX	65	109	20						
1204GX	75	112	21						
1506GX	85	119	24						
2010GX	100	133	33						
1004DX	160	108	21	13					
1205DX	180	110	22	16					
1506DX	190	116	25	19					
2007DX	230	132	29	20					
2010DX									
2011DX									

SOLENOID VALVES FOR WATER

Type WEV

SAGINOMIYA

GENERAL DESCRIPTION

- Pilot operated, 2-way, normally closed valve.
- For water in refrigeration, cooling, air conditioning systems, and general industrial plant.
- Valves for non-corrosive brine are available. To order, specify catalog No. with "B"
Example: WEV-1504GLW for water
WEV-1504GLB for glycol, warm water
- Compact molded coil commonly fits all valve sizes.
- Operates in any position ... can be conveniently located in horizontal or vertical line with coil on top.



Type WEV-G



Type WEV-F

TYPE NUMBER SELECTION (SPECIFICATIONS)

Unit: MPa {kgf/cm²}

Catalog No.			Port Size (mm)	Cv Value	Connection		O.P.D.		Max. Working Pressure	Wt. (kg)
Type	Model	Fluid			Steel Tube O.D.	Style	Min.	Max.		
WEV-	1504GL	W (Water)	15	4.3	1/2"	Rc	0.015 {0.15}	0.98 {10}	0.98 {10}	0.6
	2006GL		20	7.8	3/4"					0.8
	2510GL		25	10.4	1"					1.1
	3212GL		32	17.6	1-1/4"					1.6
	4014GL		40	26	1-1/2"					2.4
	5020GL		50	42	2"					3.6
	1504FL	B (glycol, Warm Water)	15	4.3	1/2"	* Flange (Round Type)	0.015 {0.15}	0.98 {10}	0.98 {10}	2.0
	2006FL		20	7.8	3/4"					2.6
	2510FL		25	10.4	1"					3.7
	3212FL		32	17.6	1-1/4"					5.0
	4014FL		40	26	1-1/2"					5.7
	5020FL		50	42	2"					7.7
	6524FL		65	65	2-1/2"					12.8
	8030FL		80	100	3"					16.5

- * Without companion flange (Weight without companion flange and bolts)
- O.P.D.: Operating Pressure Differential (by water pressure)
- Ambient temperature: -30 to 50°C, allowable fluid temperature: 0 to 60°C (Type W), -35 to 90°C (Type B)
- Apparent power: 16VA
- Use of a strainer 80 to 100 mesh at the valve inlet is recommended.
- Weight includes a coil
- Enclosure IP34 (WEV-W: Drip proof model)

ELECTRICAL RATING OF SOLENOID COILS

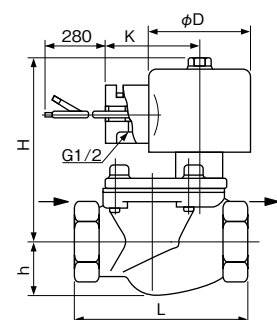
Rated Voltage	Tolerance (%)	Voltampere (VA)		Power Consumption (W)	Insulation Class
		Running	Inrush		
24V.AC, 100V.AC, 110V.AC 200V.AC, 220V.AC, 240V.AC	±10	18/14	57/47	9/8	* Class B Molded
12V.DC, 24V.DC 48V.DC, 100V.DC		-	-	11	

Specify voltage & frequency when order.

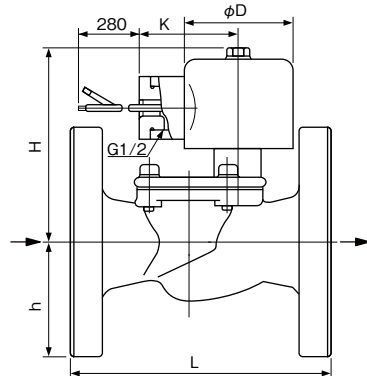
* IEC compliance

DIMENSIONS

Type WEV-G



Type WEV-F



Unit: mm

Catalog No.	Unit: mm				
	L	H	h	φD	K
1504GL	65	82	19	48	44
2006GL	80	86	25		
2510GL	90	91	29		
3212GL	105	97	36		
4014GL	120	103	47		
5020GL	140	126	55		
1504FL	105	82	48		
2006FL	115	86	50		
2510FL	125	91	63		
3212FL	140	97	68		
4014FL	150	103	70		
5020FL	160	126	78		
6524FL	200	138	88		
8030FL	240	152	93		

BI-FLOW SOLENOID VALVES

High Volume OEM Item

Type BPV



GENERAL DESCRIPTION

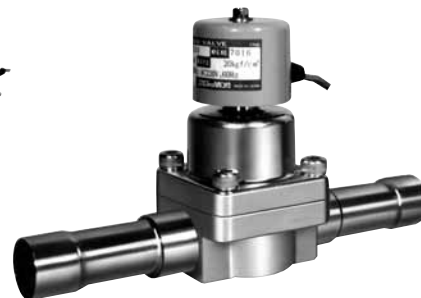
- Bi-flow controlling applicable. Developed for the purpose of simplification of complicated refrigeration circuit.
- Not only for ordinary refrigeration circuit, suitable for flow change of heat exchanger on multi type heat pump air conditioner.

SPECIFICATIONS

- Fluid temperature: - 30 to 120°C
- Ambient temperature: - 20 to 60°C



Type BPV-A



Type BPV-D

TYPE NUMBER SELECTION

Catalog No.	* Fluid	Port Size (mm)	Cv Value	Bleed Cv Value B → A	Connection		Operation Pressure Differential (MPa)		Max. Working Pressure (MPa)	Wt. (kg)	
					Style	Copper Tube O.D.	Min.	Max.			
BPV-	Refrigerant	803ADY	7.8	1.5	Less Than 0.01	Solder	3/8"	0.01	2	4.2	0.31
		1204ADY	11	2.9			1/2"				0.45
		1706ADY	17	6.6	Less Than 0.013		3/4"	0.015	3.0	0.9	
		1706D		4.4						Less Than 0.015	1.3
		2210D	22	8.6	Less Than 0.02		1"	2.2			
		2514D	(25)	12			1-1/2"	3.5			

* Gas line only

- Bleeding will be happen when pressure of B side is higher than A side.
- Weight includes a coil

ELECTRICAL RATING OF SOLENOID COILS

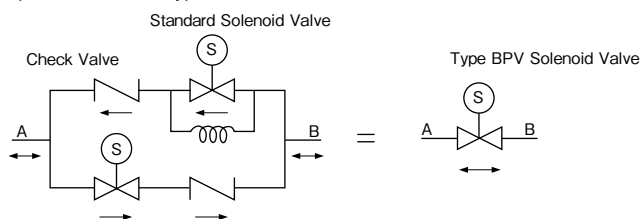
Port Size (mm)	Rated Voltage	Tolerance (%)	Voltampere (VA)		Power Consumption (W)	Insulation Class
			Running	Inrush		
7.8, 11	100V.AC, 200V.AC	± 10	12/10	36/30	6/5	* Class B Molded
17, 22 (25)	220V.AC, 240V.AC		17/14	51/42	7.5/6	

• Current (A)=Voltampere / Rated Voltage

* IEC compliance

Function of Bi-flow Solenoid Valve

Equivalent circuit of type BPV Bi-flow Solenoid Valve is as follow.



DIMENSIONS

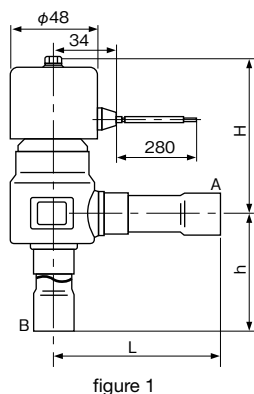


figure 1

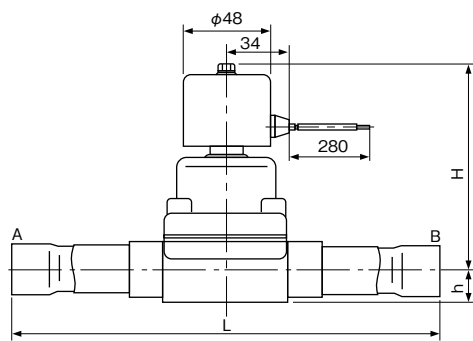


figure 2

Unit: mm

Catalog No.	Unit: mm			Form	
	L	H	h		
BPV-	803ADY	48	76	48	figure 1
	1204ADY	61	77	60	
	1706ADY	91	85	82	
BPV-	1706D	185	100	13	figure 2
	2210D	230	111.5	17.5	
BPV-	2514D	260	116.5	21.5	

3-WAY SOLENOID VALVES

Type IEV

SAGINOMIYA

GENERAL DESCRIPTION

- For non-corrosive refrigerant (gas) in refrigeration units or air.
- Pilot operated, 3-way Distributing valve and Selector valve.

CE mark applicable (available upon request)



Type IEV-B



Type IEV-C

TYPE NUMBER SELECTION (SPECIFICATIONS)

Catalog No.	Port Size (mm)	Cv Value	* Nominal Capacity (Refrigerants in Liquid) (U.S.R.T.)		Connection		O.P.D.		Max. Working Press.	Body Test Press.	Fluid Temp. (°C)	Ambient Temp. (°C)	Operation	Wt. (kg)					
			R134a	R22	Copper pipe (O.D.)	Style	Min.	Max.											
IEV-B1505DXF	18	6.3	16	20	5/8"	Solder	0.49	2.25	2.94	4.41	-20 to 120	-20 to 50	branched	0.95					
IEV-B2007DXF	20	9.0	23	29	7/8"		{5.0}	{22.9}						1.0					
IEV-B3211DXF	30	25	65	79	1-1/8"		{0.29}	2.06						{30}	{45}	-20 to 125	-20 to 50	switched	2.6
IEV-B3212DXF					1-1/4"														
IEV-B3213DXF					1-3/8"														
IEV-C3211DXF			1-1/8"																
IEV-C3212DXF			1-1/4"																
IEV-C3213DXF	1-3/8"																		

* Nominal capacities are based on $\Delta P = 0.014710 \text{ MPa}$ (0.15 kgf/cm²), condensing temp. = 38°C and evaporating temp. = 5°C.

• O.P.D.: Operating Pressure Differential (by air pressure)

• Weight includes a coil

ELECTRICAL RATING OF SOLENOID COILS

Port Size (mm)	Rated Voltage		Tolerance (%)	Voltampere (VA)		Power Consumption (W)	Insulation Class
	50/60Hz			Running	Inrush		
18, 20	100V.AC, 110V.AC	50/60Hz	±10	11/9	33/27	6/5	* Class B Molded
30	200V.AC, 220V.AC			16/13	40/33	8/7	

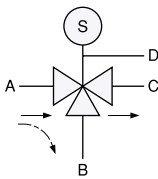
Current (A) = Voltampere / Rated Voltage

* IEC compliance

OPERATION

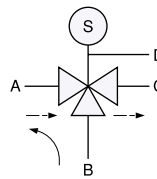
Type IEV-B

Energized: A→C
non Energized: A→B



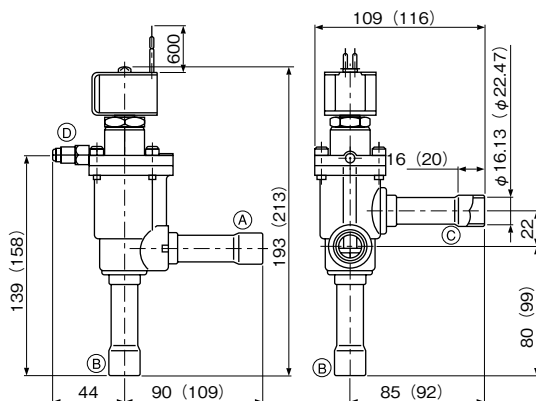
Type IEV-C

Energized: B→A
non Energized: A→C

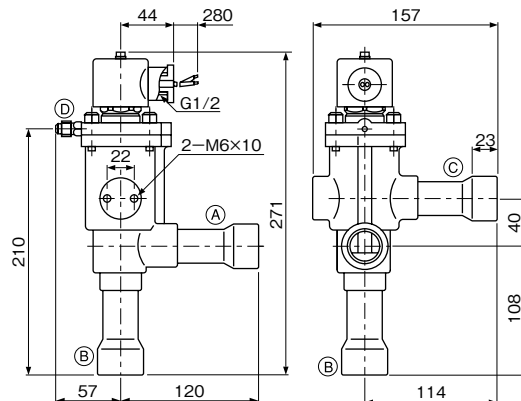


DIMENSIONS

Type IEV-B1505DXF (B2007DXF)



Type IEV-B3211DXF to B3213DXF, C3211DXF to C3213DXF



Unit: mm

4-WAY REVERSING VALVES

High Volume OEM Item (Type STF)

Type **STF & VHV**



GENERAL DESCRIPTION

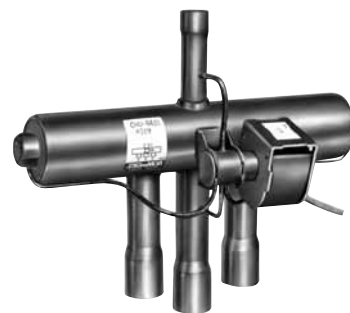
- Pilot operated 4-way reversing valves are suitable for heat pump applications on unitary, split system and window type air conditioners, etc.
- 4-way pilot valve adoption has an advantage on reliable changeover operations.
- Designed to lower the minimum operating pressure difference between high and low side. Pressure drop and valve leakage are minimized.

CE mark applicable (available upon request)

UL listed (available upon request)



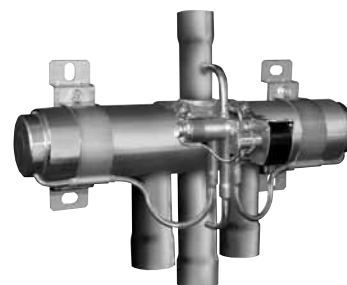
Type STF-H01, H02



Type STF-H04, H07

TYPE NUMBER SELECTION (SPECIFICATIONS)

- Max. working pressure: 4.2MPa {42.8kgf/cm²} (Type STF-H****)
4.15MPa {42.3kgf/cm²} (Type VHV, STF-****G)
- Ambient temperature: - 20 to 55°C
- Allowable fluid temperature: - 20 to 120°C (STF-H0104 to STF-1511G)
- 20 to 130°C (STF-2011G to 5001G, VHV-6001)
- Ambient humidity: Less than 95% R.H.



Type STF-25, 30, 40, 50
VHV-60

Catalog No.	Port Size (mm)	Capacity (R410A)		O.P.D. (MPa) {kgf/cm ² }		Connection (O.D.)		Wt. (kg)
		(kW)	(U.S.R.T.)	Max.	Min.	Discharge	Suction & Coils	
STF-H0104	8	1.8 to 6.4	0.51 to 1.82	3.1 {31.6}	0.3 {3.1}	5/16"	3/8"	0.2
STF-H0202	11.1	2.0 to 11.4	0.57 to 3.24			3/8"	1/2"	0.32
STF-H0301	11.5	5.3 to 14.6	1.50 to 4.15			1/2"	5/8"	0.37
STF-H0404	16	8.3 to 33	2.36 to 9.39			3/4"	3/4"	0.77
STF-H0712	20	21 to 53	5.97 to 15.0			3/4"	7/8"	1.32
STF-1511G	23	39 to 59	11.1 to 16.7			7/8"	1-1/8"	1.55
STF-2011G	24	39 to 74	11.1 to 21.0			1"	1-1/4"	3.4
STF-2501G	28	52 to 94	14.8 to 26.7			1-1/4"	1-1/2"	4.7
STF-3001G	34	65 to 124	18.5 to 35.2			1-1/2"	1-3/4"	9.1
STF-4001G	40	115 to 188	32.7 to 53.4			1-1/2"	2-1/8"	9.4
STF-5001G	50	145 to 225	41.2 to 63.9			I.D. 1-5/8"	2-5/8"	20.0
VHV-6001	60	230 to 360	65.4 to 102					

• O.P.D.: Operating Pressure Differential (with air)

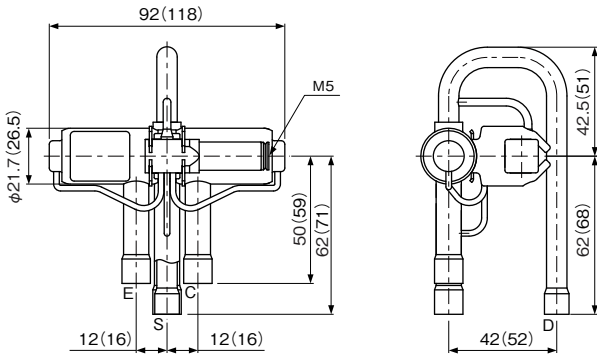
ELECTRICAL RATING OF SOLENOID COILS

Catalog No.	Rated Voltage		Tolerance (%)	Voltampere(VA)		Power Consumption (W)	Insulation Class
				Running	Inrush		
STF-H****	100V. AC	50/60Hz	+10 -15	10/8	30/24	6/5	* Class B Molded
	200V. AC						
	110V. AC 220V. AC						
STF-****G VHV	230V. AC 240V. AC	50/60Hz	+10 -10	11/9	33/27	7/6	
	100V. AC 200V. AC						
	110V. AC 220V. AC						
	230V. AC 240V. AC		+10 -10	11/9	33/27	6/5	

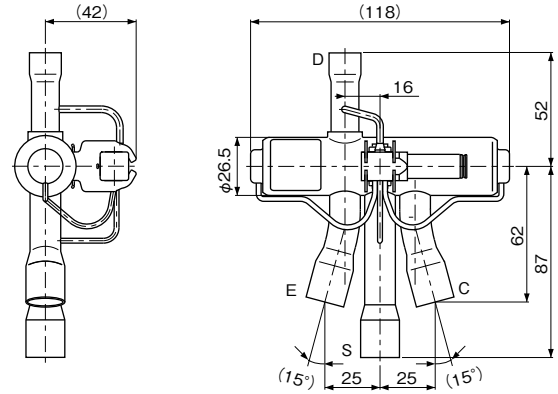
* IEC compliance

DIMENSIONS

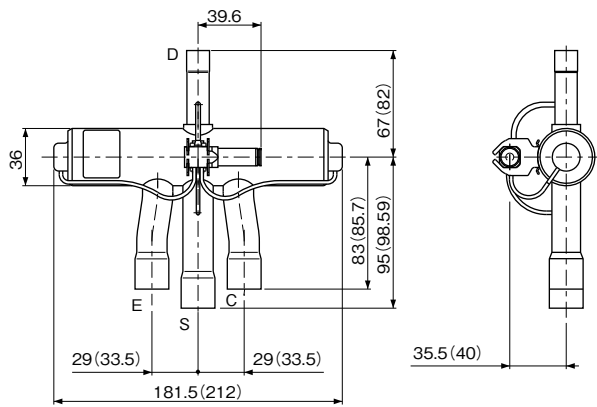
Type STF-H0104 (-H0202)



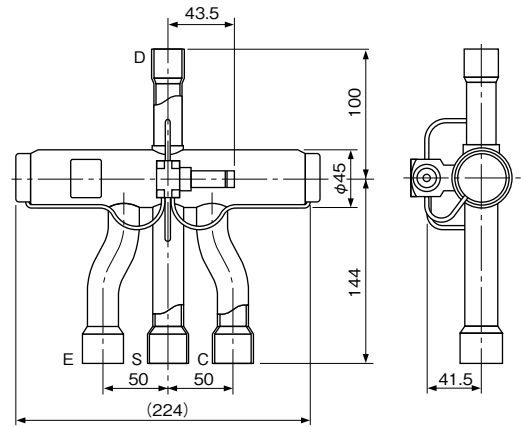
Type STF-H0301



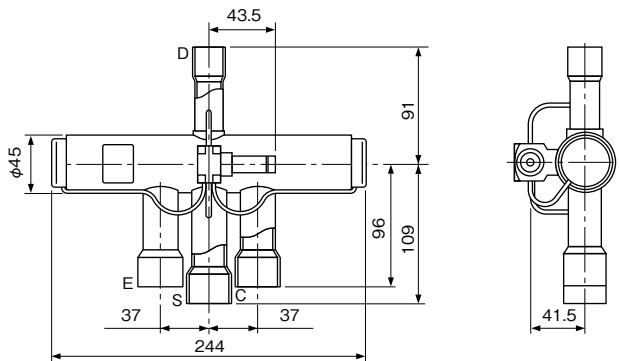
Type STF-H0404 (-H0712G)



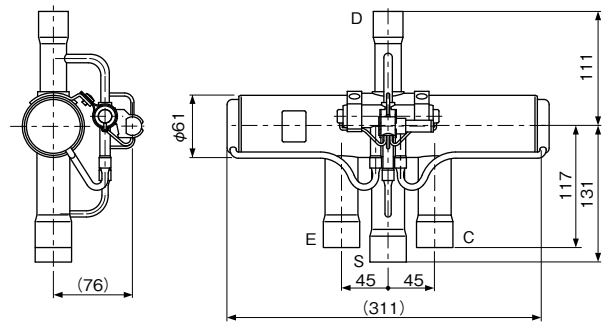
Type STF-1511G



Type STF-2011G

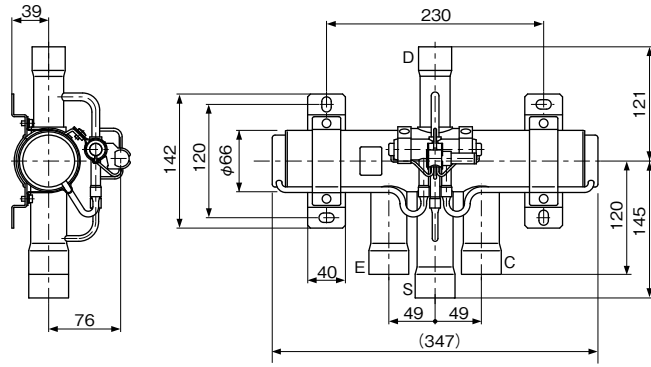


Type STF-2501G

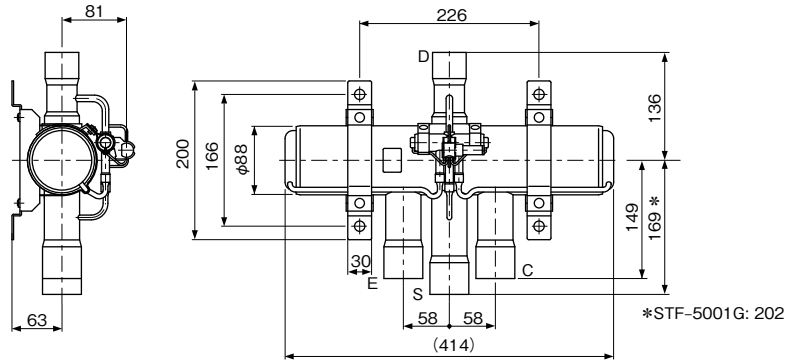


Unit: mm

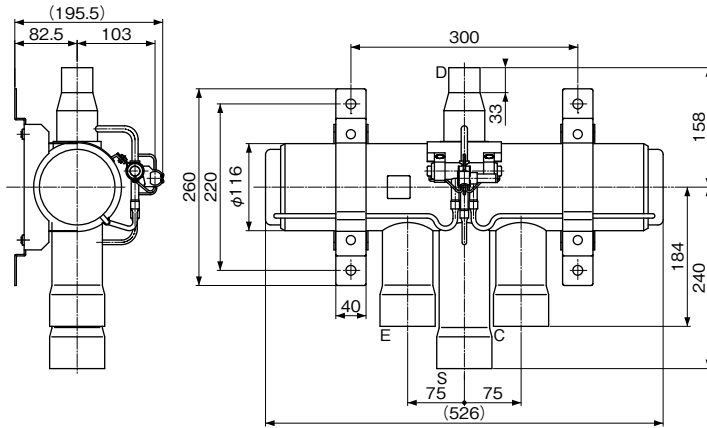
Type STF-3001G



Type STF-4001G, -5001G



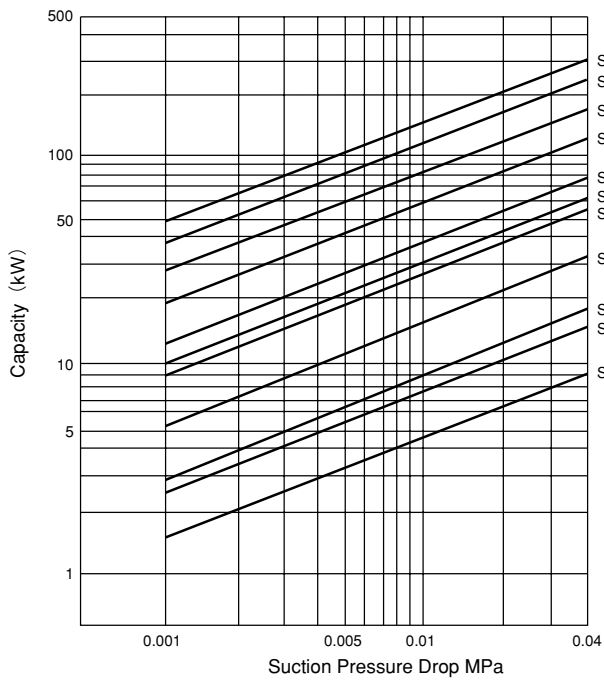
Type VHV-6001



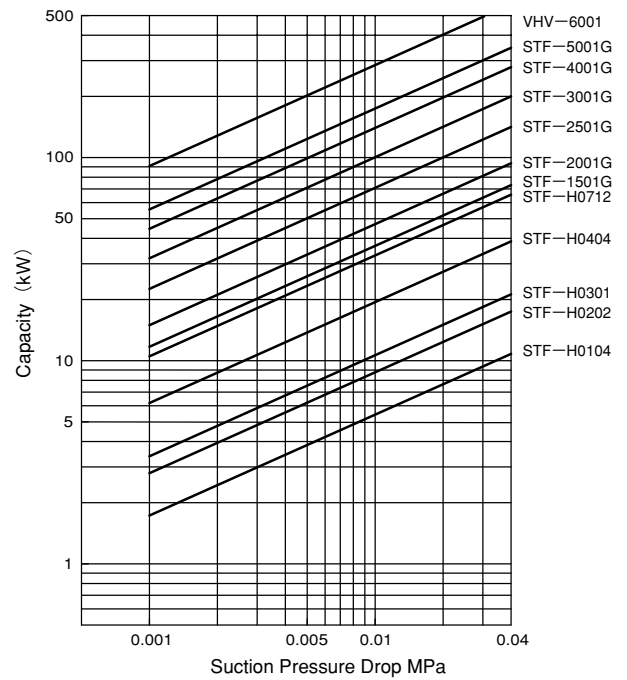
Unit: mm

FLOW RATE (Capacity)

Refrigerant: R22,R407C



Refrigerant: R410A



* Flow Rate Conditions Condensing temp.: 38°C
Evaporator temp.: 5°C
Superheat temp.: 5°C

MOTORIZED BALL VALVES

Type MJV

SAGINOMIYA

GENERAL DESCRIPTION

- Proportional Control valve for hot or chilled water, industrial water and steam circuit.
- Compact & Light weight design, manual operation is also available.
- Various types of water supply Equipments
- Air Handling Units
- Ice Strage Units



Type MJV

SPECIFICATIONS

Valve Type		Two-way Valve	Two-way Valve for Steam	Three-way Valve	
VALVE PART	Water Test Pressure	1.6MPa			
	Air Tight Pressure	1.6MPa			
	Max. Working Pressure	1.6MPa (0.2MPa for Steam)	1.6MPa (0.5MPa for Steam)	1.6MPa	
	Fluid	Non-corrosive water and Steam (Hot water and Three-way Valve are not available.)			
	Fluid Temperature	0 to 120°C	0 to 160°C	0 to 90°C	
	Flow Characteristics	Equal Percentage		Corrected Linear	
	Valve Leakage	Cv: 0.1% or less		—	
	Material	Body: Bronze Casting, Seat Ring: Fluoro-resin, O-ring: Fluoro rubber, Spindle: Stainless Steel, Plug: Stainless Steel			
MOTOR PART	Power Supply Voltage	24V.AC±10%, 50/60Hz			
	Max. power Consumption	12VA			
	Housing Construction	Rain-Proof (JIS C 0920 IP53)			
	Ambient Temperature	Operating Temp.: -10 to 50°C, Storage Temp.: -20 to 70°C			
	Timing	Approx. 52 sec.			
	INPUT SIGNAL	Resistance Input	0 to 135Ω		
		Current Input	DC 4 to 20mA (Input Impedance 250Ω)		
		Voltage Input	DC 1 to 5V (Input Impedance 100kΩ), DC 0 to 10V (Input Impedance 250kΩ)		
	Material	Case: PPS Resin, Cover: ABS Resin			
	Manual Operation	Yes			
Flow Display	O: Open, S: Close		O: C→A Open, S: C→A Close		
Movement of Valve	Input Signal 135Ω·4mA·1V·0V:Close		Input Signal 135Ω·4mA·1V·0V: C→A Close		

TYPE NUMBER SELECTION

Two-way Valve

Catalog No.			Connection Rc (O.D.)	Cv Value	Max. Operation Press. Differential (MPa)	Connection Fastening Torque (N·m)	Dimension			Wt. (kg)
Type	Model	Input Signal					H	L	D	
MJV-	1504GQ1	70 (Resistance 0 to 135Ω)	1/2	1	1	34.3	152	56	32	1.5
	1504GQ2			2						
	1504G			3.5						
	2006G	71 (4 to 20 mA)	3/4	6.5	49	155	69	42	1.7	
	2510G	72 (1 to 5 VDC)	1	12	58.8	159	82	50	1.9	
	3212G	73 (0 to 10 VDC)	1-1/4	20	78.5	165	97	60	2.6	
	4014G		1-1/2	30	83.4	178	106	71	3.2	
	5020G		2	45	98.1	185	128	84	4.6	

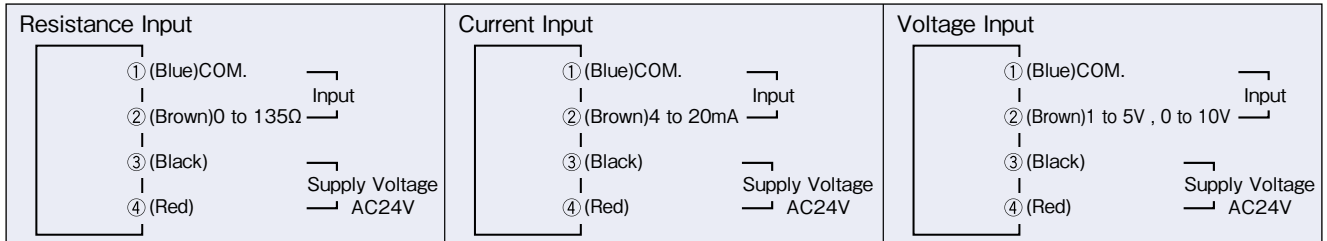
Two-way Valve for Steam

Catalog No.			Connection Rc (O.D.)	Cv Value	Max. Operation Press. Differential (MPa)	Connection Fastening Torque (N·m)	Dimension			Wt. (kg)
Type	Model	Input Signal					H	L	D	
MJV-	H1504GQ1	70 (Resistance 0 to 135Ω)	1/2	1	1	34.3	202	56	32	1.8
	H1504GQ2			2						
	H1504G			3.5						
	H2006G	71 (4 to 20 mA)	3/4	6.5	49	205	69	42	2.0	
	H2510G	72 (1 to 5 VDC) 73 (0 to 10 VDC)	1	12	58.8	209	82	50	2.2	

Three-way Valve

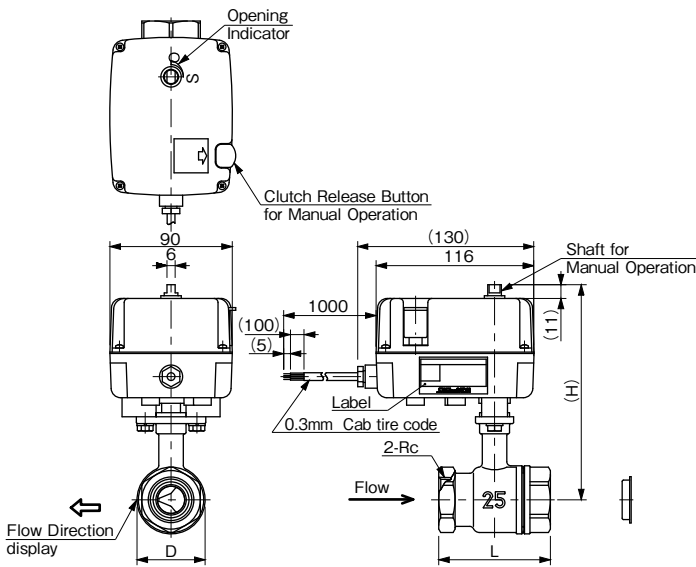
Catalog No.			Connection Rc (O.D.)	Cv Value	Max. Operation Press. Differential (MPa)	Connection Fastening Torque (N·m)	Dimension				Wt. (kg)
Type	Model	Input Signal					H1	H2	H2	L	
MJV-	M1504G	70	1/2	3.5	0.1	34.3	152	30	56	32	1.6
	M2006G	(Resistance 0 to 135Ω)	3/4	6.5		49	155	37	69	42	1.8
	M2510G	71	1	12		58.8	159	44	82	50	2.1
	M3212G	(4 to 20 mA)	1-1/4	20		78.5	165	51	97	60	2.8
	M4014G	72	1-1/2	30		83.4	178	57	106	71	3.5
	M5020G	(1 to 5 VDC)	2	45		98.1	185	67	128	84	5.0
		73									
		(0 to 10 VDC)									

Wiring

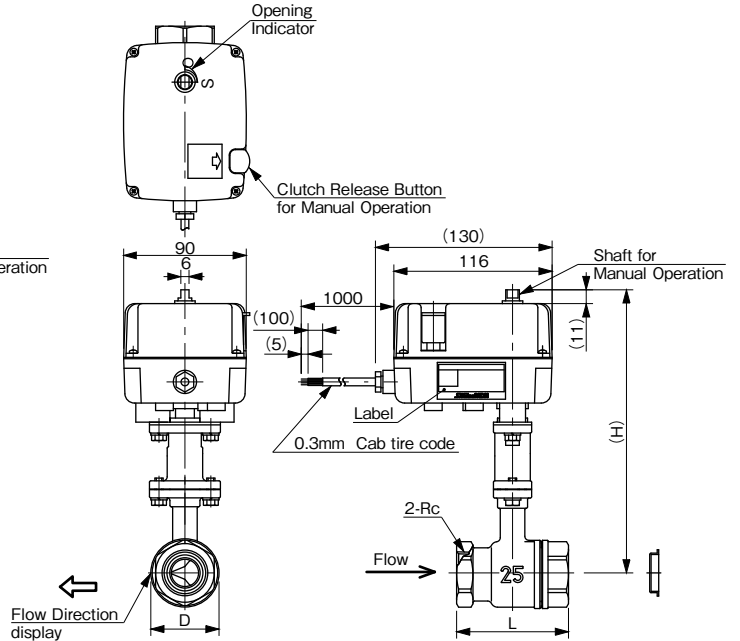


DIMENSIONS

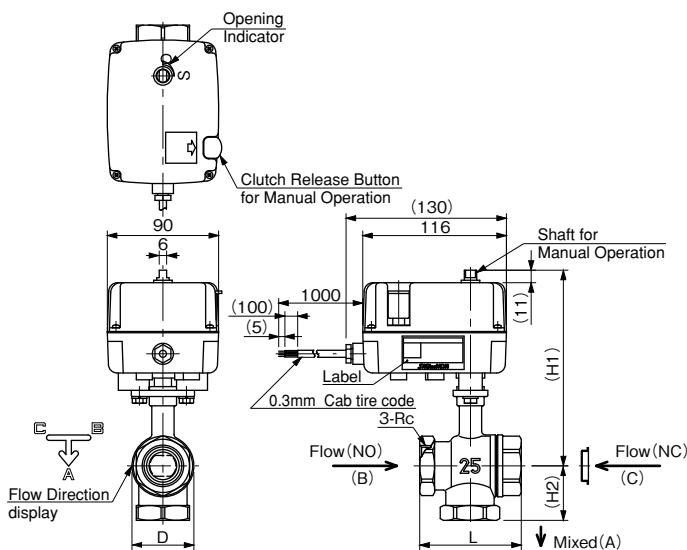
Two-way Valve



Two-way Valve for Steam



Three-way Valve

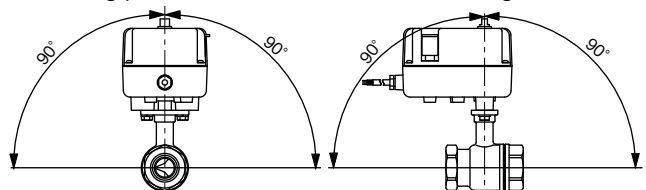


Manual Operation

- Use a spanner at Manual Operation shaft (Torque:3N·m), with pushing a Clutch Release Button. Manual operation can be carried out by rotating the shaft. Don't operate in energized position for the safty. -- please do not operate it by any means.

Mounting Position

Mounting position should be in the below range.



Opening Indicator: O...Open, S...Close

Unit: mm

DAMPER & VALVE MOTOR ACTUATORS

Type **EGK & WGK**

SAGInoMIYA

GENERAL DESCRIPTION

- Series GK motor actuator can provide On-Off, proportional or floating control of damper, valve or other controlling devices.
- Balancing relay without contact causes no burn-out.
- Type EGK is for damper.
Type WGK is for valve.

TYPE NUMBER SELECTION (SPECIFICATIONS)

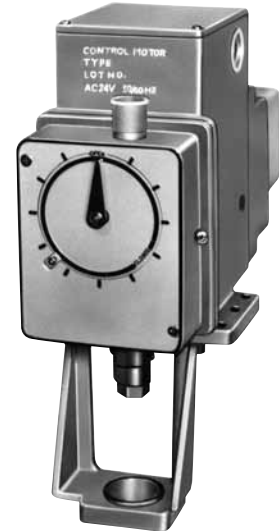
Power requirement: 24V.AC \pm 10%, 50/60Hz

Max. power consumption: 21VA (without spring return action)
24VA (with spring return action)

Input signal: resistance 0 to 135 Ω
Current 4 to 20mA. DC
(Input Impedance 250 Ω)
Voltage 1 to 5V. DC
(Input Impedance 100k Ω)



Type EGK



Type WGK

Type: EGK

Torque: 12.2N·m {1.25 kg·m}
(without spring return action)
3.9N·m {0.4 kg·m}
(with spring return action)
Rotation angle: 90 to 270°
(without spring return action)
90 to 160°
(with spring return action)
Delivery Setting 90°
Timing: 80 sec/160°
Ambient temp.: - 20 to 55°C
(without spring return action)
- 10 to 55°C
(with spring return action)
Weight: 4.3kg
(without spring return action)
6.1kg
(with spring return action)

Type: WGK

Thrust: 1220N {125 kgf}
(without spring return action)
390N {40 kgf}
(with spring return action)
Stroke: 14 to 50mm
(without spring return action)
14 to 30mm
(with spring return action)
Delivery Setting 20mm
Timing: 80 sec/stroke 25mm
Ambient temp.: - 20 to 55°C
(without spring return action)
- 10 to 55°C
(with spring return action)
Weight: 5kg
(without spring return action)
6.7kg
(with spring return action)

DAMPER MOTOR SELECTION

Function	On-Off / Floating Control	Without Positioning Balance Relay	With Positioning Balance Relay	With Positioning Balance Relay	
	*1 On-Off / Floating	*2 On-Off Servo	*3 Resistance Input	*4 Current Input	Voltage Input
Standard	EGK-N500A	EGK-N600 A/S	EGK-N700 A/S	EGK-N701 A/S	EGK-N702 A/S
With Auxiliary Potentiometer	—	EGK-N610 A/S	EGK-N710 A/S	EGK-N711 A/S	EGK-N712 A/S
With Auxiliary Switch	EGK-N520A	EGK-N620 A/S	EGK-N720 A/S	EGK-N721 A/S	EGK-N722 A/S

VALVE MOTOR SELECTION

Function	On-Off / Floating Control	Without Positioning Balance Relay	With Positioning Balance Relay	With Positioning Balance Relay	
	*1 On-Off / Floating	*2 On-Off Servo	*3 Resistance Input	*4 Current Input	Voltage Input
Standard	WGK-N500A	WGK-N600 A/S	WGK-N700 A/S	WGK-N701 A/S	WGK-N702 A/S
With Auxiliary Potentiometer	—	WGK-N610 A/S	WGK-N710 A/S	WGK-N711 A/S	WGK-N712 A/S
With Auxiliary Switch	WGK-N520A	WGK-N620 A/S	WGK-N720 A/S	WGK-N721 A/S	WGK-N722 A/S

* 1. The motor actuates with On-Off or floating signal from sensor.

* 2. The motor actuates with proportional signal from electronic sensor (Example: Type RBE Control Unit).

* 3. The motor actuates with the signal between 0 and 135 Ω from electric sensor (Example: Type PWS Thermostat).

* 4. Spring Return Type is so designed that actuator shaft returns to safe side on current failure.

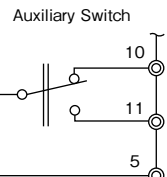
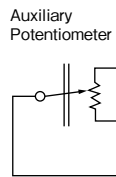
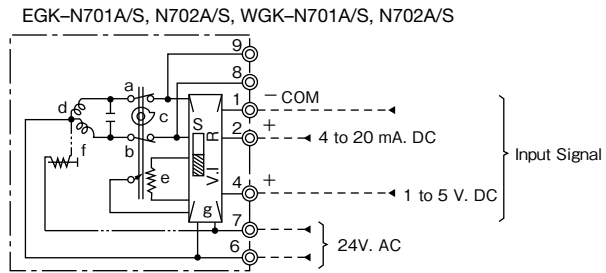
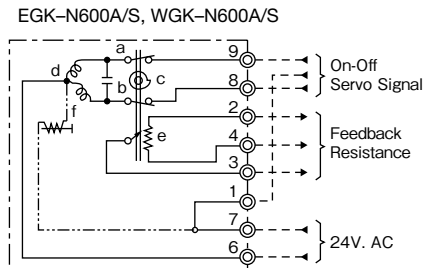
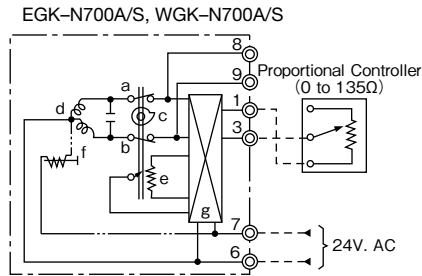
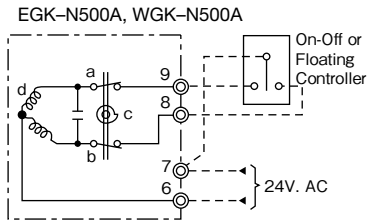
• Auxiliary potentiometer is to provide the signal between 0 and 135 Ω in accordance with motor angular rotation for output.

• Auxiliary switch provides the contact signal of S.P.D.T. for output.

• Enclosure: IP62

INTERNAL WIRINGS

- Check power supply to be 24V. AC $\pm 10\%$.
- Wiring is to be based on the technical standard of electrical installation. Be assured to use covered copper wire larger than 1.2 mm dia.
- Terminal wiring should be conducted with flexible wire of adequate length to prevent wire disconnection from slight move of the motor.



EGK-N □ 1 □ A/S
WGK-N □ 1 □ A/S

EGK-N □ 2 □ A/S
WGK-N □ 2 □ A/S

⊙ Terminals

— Motor Internal Wiring

- - - Motor External Wiring

— Spring Return Type Only

a: Upper Limit Switch

b: Lower Limit Switch

c: Cam

d: Condenser Motor

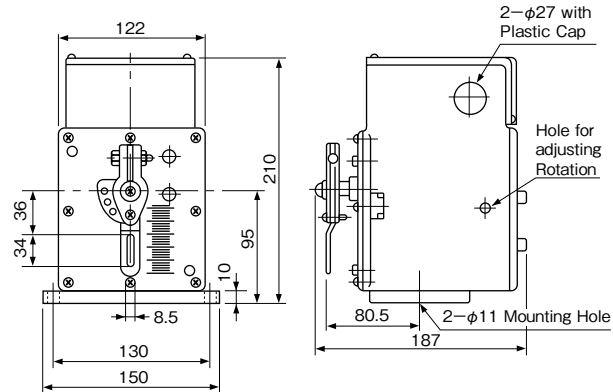
e: Feedback Potentiometer

f: Spring Return Releasing Magnet

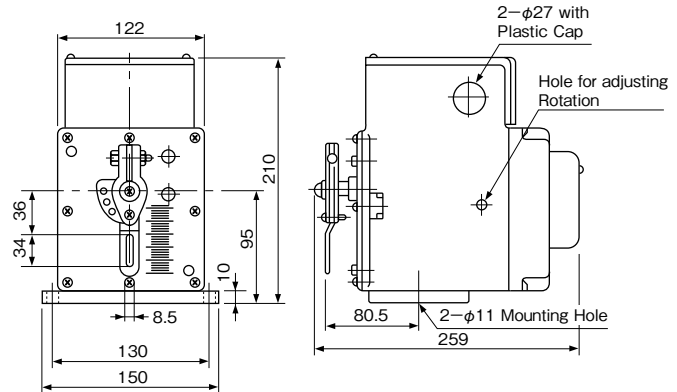
g: Balance Relay

DIMENSIONS

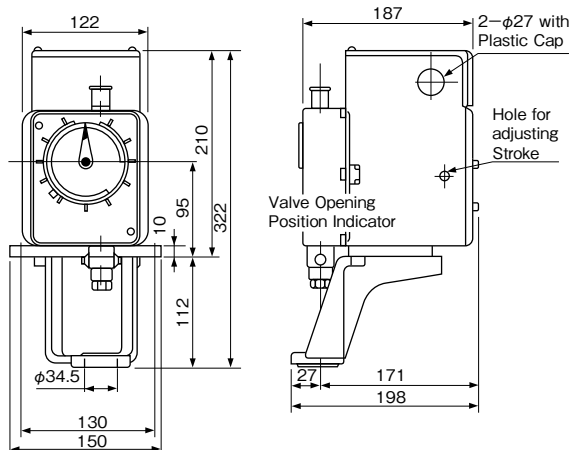
Type EGK-N...A



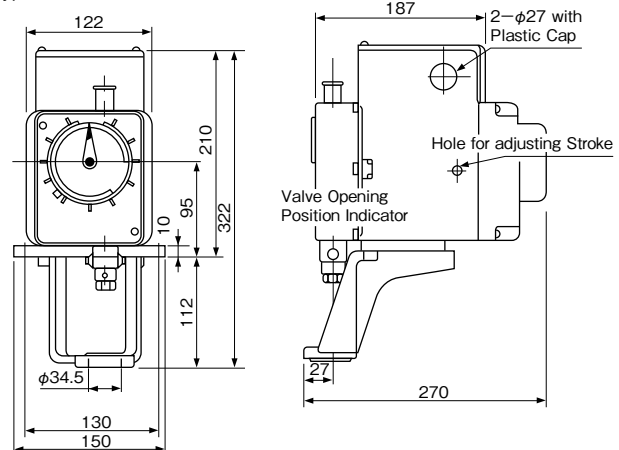
Type EGK-N...S



Type WGK-N...A



Type WGK-N...S



2-WAY & 3-WAY CONTROL VALVES

Type NVK

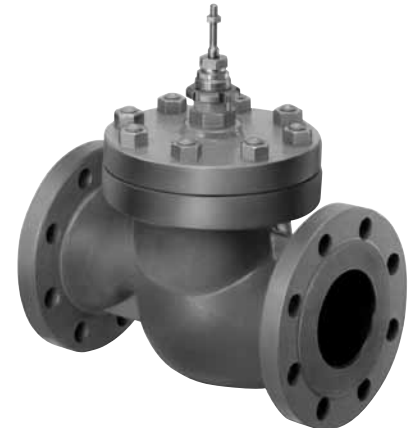
SAGInoMIYA

GENERAL DESCRIPTION

- Type NVK control valves are accompanied by Saginomiya type WGK motor for two position (On-Off), floating or proportional control.
- For use with low or high pressure hot and chilled water or non-corrosive fluid.
- NVK ... 2-way valve (single seated type)
NVK-W ... 2-way valve (double seated type)
NVK-M ... 3-way valve (mixing valve)
- Wide model selection available for various applications.
- V-port plug provides almost linear flow characteristic.



Type NVK-G



Type NVK-F

TYPE NUMBER SELECTION (SPECIFICATIONS)

Type NVK – 2-way valve

Item \ Model	NVK-****GL	NVK-****FL	NVK-****FP	NVK-W****FL
Connection	Rc	Flange (JIS 10K)	Flange (JIS 20K)	Flange (JIS 10K)
Fluid	Non-corrosive Water and Steam			
Max. Working Press.	0.98MPa {10 kgf/cm ² }		1.96MPa {20 kgf/cm ² }	0.98MPa {10 kgf/cm ² }
Fluid Temp. (°C)	0 to 200		0 to 250	0 to 200
Flow Characteristic	Equal Percentage			
Material of Body	CAC406	FC200	FCD-S	FC200
Material of Plug	SCS14			
Material of Seat Ring	SUS316			
Material of Stem	SUS304			

Type NVK-M – 3-way valve

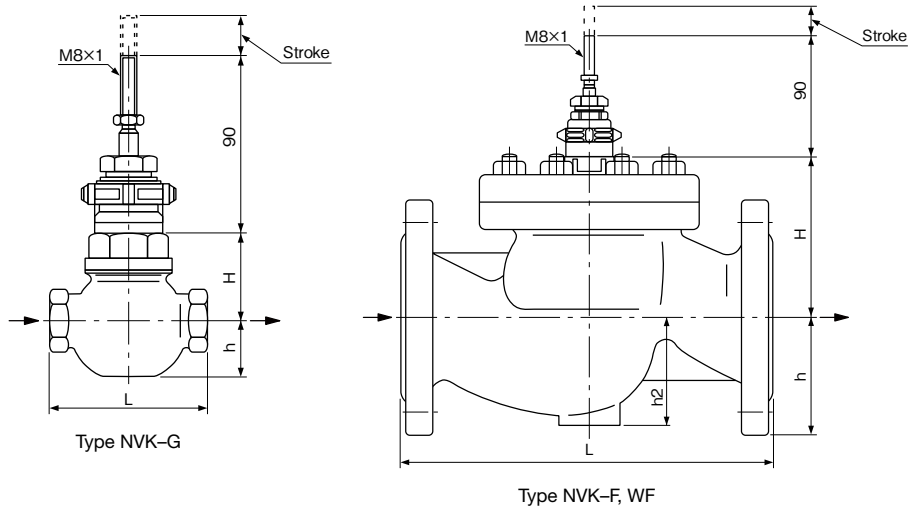
Item \ Model	NVK-M****GL	NVK-M****FL
Connection	Rc	Flange (JIS 10K)
Fluid	Non-corrosive Water for Air conditioning	
Max. Working Press.	0.98MPa {10 kgf/cm ² }	
Fluid Temp. (°C)	0 to 200	
Flow Characteristic	Equal Percentage	
Material of Body	CAC406	FC200
Material of Plug	SCS14	
Material of Seat Ring	SUS316	
Material of Stem	SUS304	

Type NVK – 2-way valve

Catalog No.	Port Size (mm)	Connection		Cv	Stroke (mm)	Close off Rating MPa (kgf/cm ²)			Dimensions (mm)			Wt. (kg)							
		Tube O.D.	Style			WGK-N*A	WGK-N*S	WGK-N*L	L	H	h (h2)								
NVK-	1504GL@1	15	1/2"	Rc	1	0.98 {10}	0.98 {10}	0.98 {10}	80	43	28	0.9							
	1504GL@2				2.5								0.66 {6.7}						
	1504GL				5								0.38 {3.9}						
	2006GL	20	3/4"	Rc	8	0.98 {10}	0.98 {10}	0.98 {10}	90	48	29	0.95							
	2510GL	25	1"		12								0.24 {2.4}						
	3212GL	32	1-1/4"		20								0.95 {9.7}	0.14 {1.4}					
	4014GL	40	1-1/2"	Rc	30	0.98 {10}	0.98 {10}	0.98 {10}	105	50	30	1.6							
	5020GL	50	2"		45								0.61 {6.2}	0.09 {0.9}					
	6524FL	65	2-1/2"		70								0.40 {4.1}	0.05 {0.5}	0.67 {6.8}	140	68	46	3.6
	8030FL	80	3"	Flange (JIS 10K)	110	0.28 {2.9}	0.044 {0.45}	0.48 {4.9}	276	125	87.5	19.9							
	10040FL	100	4"		180	0.19 {1.9}	0.028 {0.29}	0.31 {3.2}	298	149	92.5	25							
	1504FP@1	15	1/2"	Flange (JIS 20K)	1	1.96 {20}	1.96 {20}	1.96 {20}	190	45	47.5	3.5							
	1504FP@2				2.5								0.66 {6.7}						
	1504FP				5								0.38 {3.9}						
	2006FP	20	3/4"	Flange (JIS 20K)	8	0.98 {10}	0.98 {10}	0.98 {10}	194	50	50	4							
	2510FP	25	1"		12								1.57 {16}	0.24 {2.4}					
	3212FP	32	1-1/4"		20								0.95 {9.7}	0.14 {1.4}					
	4014FP	40	1-1/2"	Flange (JIS 20K)	30	0.98 {10}	0.98 {10}	0.98 {10}	210	53	67.5	7.3							
	5020FP	50	2"		45								0.61 {6.2}	0.09 {0.9}					
	6524FP	65	2-1/2"		70								0.40 {4.1}	0.062 {0.62}	0.67 {6.8}	267	72	77.5	12
8030FP	80	3"	Flange (JIS 20K)	110	0.28 {2.9}	0.044 {0.45}	0.48 {4.9}	292	125	87.5	20								
10040FP	100	4"		180	0.19 {1.9}	0.028 {0.29}	0.31 {3.2}	317	149	100	28.5								
NVK-W	4014FL@1	40	1-1/2"	Flange (JIS 10K)	20	0.98 {10}	0.98 {10}	0.98 {10}	222	110	70	10.5							
	4014FL				30								0.81 {8.3}						
	5020FL				45								0.66 {6.7}						
	6524FL	65	2-1/2"	Flange (JIS 10K)	70	0.98 {10}	0.98 {10}	0.98 {10}	276	129	(96)	18							
	8030FL	80	3"		110								0.66 {6.7}						
	10040FL	100	4"		180								—	—	—	352	187	(150)	46.5
	12550FL	125	5"	Flange (JIS 10K)	260	—	—	—	403	208	(153)	63.3							
	15060FL	150	6"		380								—	—	—	451	225	(170)	90.6
	20080FL	200	8"		630								0.69 {7}	—	—	543	278	(212)	167
	250100FL	250	10"	960	45	0.49 {5}	—	—	673	319	(232)	251							

- Cv ... Flow (L/min) passing through the valve at full opening when water temperature is 15°C and pressure difference across the valve is 0.00048 MPa (0.0049 kgf/cm²)
- The dimension value bracketed off by () shows "h2" value due to "h2" value being bigger than the one of "h".

DIMENSIONS



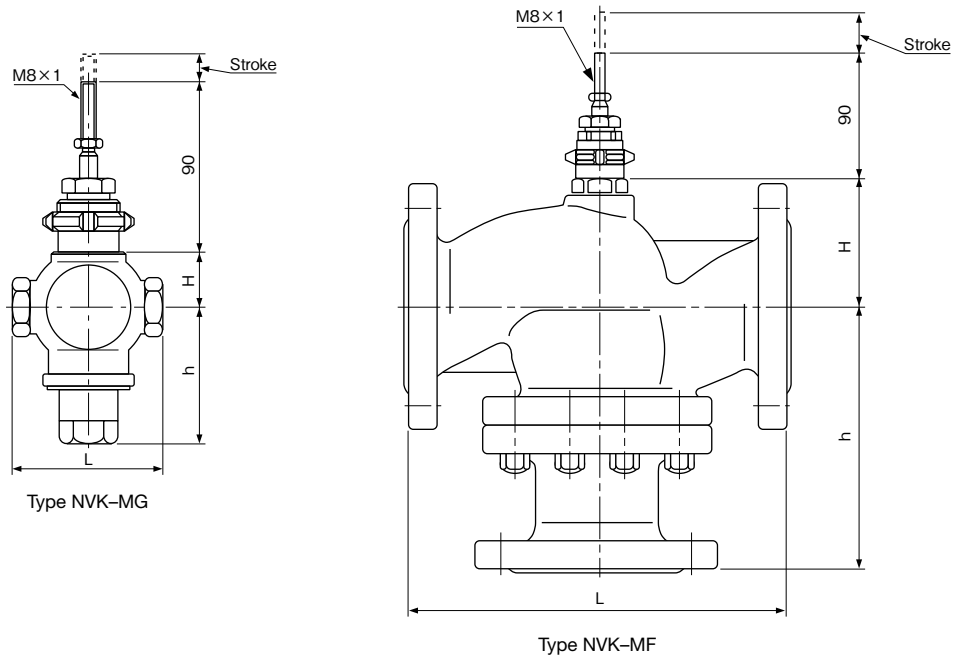
Unit: mm

Type NVK 3-way valve (used as a mixing valve)

Catalog No.	Port Size (mm)	Connection		Cv	Stroke (mm)	Close off Rating MPa {kgf/cm ² }			Dimension (mm)			Wt. (kg)
		Tube O.D.	Style			WGK-N*A	WGK-N*S	WGK-N*L	L	H	h	
NVK-M	1504GL	15	1/2"	Rc	5	0.98 {10}	0.38 {3.9}	0.98 {10}	80	29	72	1.1
	2006GL	20	3/4"		8				73	1.12		
	2510GL	25	1"		12				90	32	77	1.45
	3212GL	32	1-1/4"		20				105	38	80	1.95
	4014GL	40	1-1/2"		30				120	43	84	2.7
	5020GL	50	2"		45				140	51	97	4.17
	6524FL	65	2-1/2"	Flange (JIS 10K)	70	0.28 {2.9}	0.044 {0.45}	0.48 {4.9}	276	92	185	24.5
	8030FL	80	3"		110	0.19 {1.9}	0.028 {0.29}	0.31 {3.2}	298	106	215	31
	10040FL	100	4"		180	0.12 {1.2}	-	0.2 {2}	352	131	238	42
	12550FL	125	5"		260	0.08 {0.8}		0.13 {1.3}	403	149	263	64.5
	15060FL	150	6"		380	0.05 {0.5}		0.09 {0.9}	451	173	288	92

· Cv ... Flow (L/min) passing through the valve at full opening when water temperature is 15°C and pressure difference across the valve is 0.00048 MPa {0.0049 kgf/cm²}

DIMENSIONS



Unit: mm