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# EXPANSION VALVES

## GENERAL INFORMATION

SAGInoMIYA

### VALVE SELECTION

In order to properly select Expansion Valves, the following items should be considered.

- 1) Required valve capacity should be based on the actual system operating conditions rather than the normal valve capacity rating.
- 2) When there exists an appreciable pressure drop between the valve outlet and the evaporator outlet, i.e., above 0.02 MPa {0.2 kgf/cm<sup>2</sup>}, or when a pressure drop type of refrigerant distributor is used at the evaporator inlet, the valve should have the external equalizer feature for best performance. Otherwise, it will increase a static superheat (valve opening temp.), restricting the refrigerant flow and causing the reduction of system capacity. As for R134a, 0.01 MPa {0.1kgf/cm<sup>2</sup>} pressure drop will increase the static superheat approximately 1°C.
- 3) Internally equalized valve may be used with the evaporator which has a negligible pressure drop, i.e., below 0.02 MPa {0.2 kgf/cm<sup>2</sup>}

### GUIDE FOR EQUALIZER (Internal or External)

An internal or external equalizer should be selected depending on pressure drop between valve outlet and evaporator outlet. Internal equalizer increases superheat in the refrigeration system of which evaporator has some pressure drop, and the increase of superheat decreases the effective area of evaporator.

Select internal or external equalizer depending on refrigerant, pressure drop and evaporating temperature. The Guide Table for Equalizer indicates the pressure difference of refrigerant corresponding to 1°C temperature. The external equalizer valves should be used when the pressure drop exceeds the value of pressure difference indicated in the Table.

### GUIDE TABLE FOR EQUALIZER

Unit: MPa {kgf/cm<sup>2</sup>}

Refrigerant	Evaporating Temperature (°C)									
	10	5	0	-5	-10	-20	-30	-40	-50	-60
R134a	0.014 {0.14}	0.012 {0.12}	0.011 {0.11}	0.009 {0.09}	0.008 {0.08}	0.006 {0.06}	0.004 {0.04}	0.003 {0.03}	—	—
R22	0.024 {0.24}	0.02 {0.20}	0.018 {0.18}	0.016 {0.16}	0.014 {0.14}	0.011 {0.11}	0.008 {0.08}	0.006 {0.06}	0.004 {0.04}	0.003 {0.03}
R404A	0.025 {0.25}	0.022 {0.22}	0.019 {0.19}	0.017 {0.17}	0.015 {0.15}	0.012 {0.12}	0.008 {0.08}	0.006 {0.06}	0.004 {0.04}	0.003 {0.03}
R407C	0.021 {0.21}	0.018 {0.18}	0.016 {0.16}	0.014 {0.14}	0.012 {0.12}	0.009 {0.09}	0.006 {0.06}	0.004 {0.04}	0.003 {0.03}	0.002 {0.02}
R410A	0.033 {0.33}	0.029 {0.29}	0.026 {0.26}	0.023 {0.23}	0.020 {0.20}	0.015 {0.15}	0.011 {0.11}	0.008 {0.08}	0.006 {0.06}	0.004 {0.04}

Pressure Diff. corresponding to 1°C temperature.

## GUIDE FOR SETTING OF SUPERHEAT

Superheat Adjuster of Expansion Valve adjusts the superheat by which the valve begins to open from the fully closed condition, and this superheat is called Static Superheat.

S.S.H.: Static Superheat

O.S.H.: Operating Superheat (Superheat necessary for valve and refrigeration system operation)

S.H.C.: Superheat Change (Superheat which keeps the valve opening at the optimum balance point for refrigeration systems)

$S.S.H. = O.S.H. - S.H.C.$

To change the adjustment, remove the seal cap and turn the adjusting spindle. Turning the spindle clockwise to compress the spring decreases flow and raises superheat and turning the spindle counter clockwise to loosen the spring increases flow and lowers superheat.

## CHARGE & MOP (MAXIMUM OPERATING PRESSURE)

G-Charge: Gas charge used generally on air conditioning gives pressure limiting, but loses control if valve body becomes colder than sensing bulb. A gas charged valve should be installed in a location where the valve body can be warmer than the bulb to prevent condensation of the charge in the powerhead.

L-Charge: Liquid charge provides accurate control when valve body becomes colder than sensing bulb; hence a liquid charged valve may be installed in any location regardless of temperature. The charge, however, does not provide maximum operating pressure (pressure limiting) for motor overload protection.

C-Charge: Cross charge and Cross Low Temp. charge used generally on low temperature range application will not lose control even if valve body becomes colder than sensing bulb. A cross charged valve may be installed in any location regardless of temperature. Cross charge (C) for normal refrigeration (higher than  $-40^{\circ}\text{C}$  temp. range) and Cross Low Temp. charge (CL and CY) for low temp. refrigeration (CY...  $-70$  to  $-40^{\circ}\text{C}$  with R22 for Type ATX valves).

S-Charge: Saginomiya's all purpose special charge combines the best properties of gas and liquid charges. The charge provides accurate control even if valve body becomes colder than sensing bulb and further it provides MOP (pressure limiting) for motor overload protection. S-charged valve may be installed in any location regardless of temperature.

## ORDERING INFORMATION

1) Catalog Number ... On standard products, specify the Catalog No. only.

2) Special Specifications ... On special applications, specify the followings:

- |  |                                       |
|--|---------------------------------------|
| a) Normal Pressure and Maximum Pressure            | g) Length of Capillary Tube           |
| b) Normal Temperature and Minimum Temperature      | h) External or Internal Evaporator    |
| c) Detailed Application                            | i) Pressure Drop at Evaporator        |
| d) Refrigerant                                     | j) MOP (Maximum Operating Pressure)   |
| e) Valve Location                                  | k) Two Stage Compressor System or not |
| f) Capacity (Condensing & Evaporating Temperature) |                                       |

# EXPANSION VALVES (SMALL CAPACITY TYPE)

High Volume OEM Item

Type **ARX**



## GENERAL DESCRIPTION

- This product is expansion valve for small capacity.
- Application: Bottle cooler, display case, ice making machine, industrial air conditioner.

## SPECIFICATIONS

- Charge: S-charge (MOP20°C), C-charge, CL-charge
- Max. working pressure: 3.0MPa {30kgf/cm<sup>2</sup>}
- Adjustable range of static superheat: 0 to 5°C



## VALVE NOMENCLATURE

Catalog No. is decided according to the specifications.

Example:  $\frac{ARX}{I} - \frac{2303}{II} \frac{D}{III} \frac{H}{IV} \frac{S}{V}$

I : Type..... ARX-Small capacity thermostatic expansion valve

II: Model..... The first and the second digits indicate inlet and outlet pipe size respectively.  
The last two digits indicate nominal capacity.

III: Connection..... D-Solder Connection

IV: Refrigerant..... H = R22, M = R134a, P = R407C, U = R404A

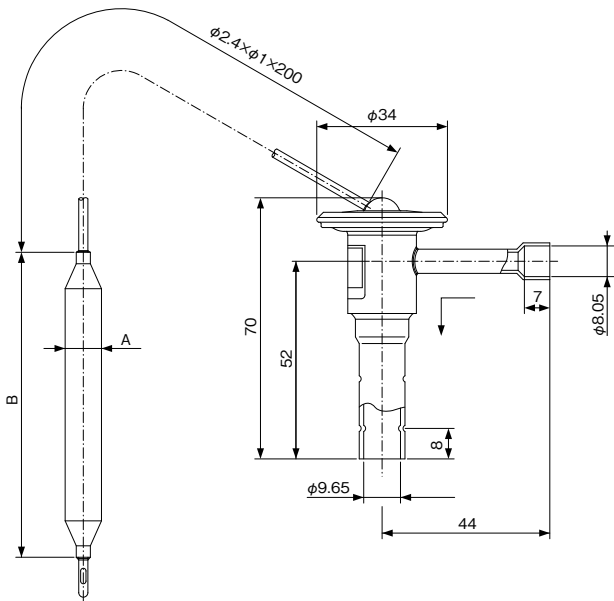
V: Charge type..... S = S-charge, C = C-charge, CL = CL-charge

## TYPE NUMBER SELECTION

Catalog No.					Capacity (U.S.R.T.) {kW}				Connection		Capil. Tube Length (mm)	Wt. (kg)
Type	Model	Connection	Refrigerant	Charge	R134a	R22	R407C	R404A	Inlet	Outlet		
ARX-	2303	D (Solder)	H(R22) M(R134a) P(R407C) U(R404A)	S	0.48 {1.69}	0.36 {1.27}	0.50 {1.76}	0.34 {1.20}	5/16"	3/8"	200	0.12
	2305			(R22, R134a, R404A, R407C)	0.80 {2.81}	0.60 {2.11}	0.82 {2.88}	0.57 {2.00}				
	2308			C	1.28 {4.57}	0.96 {3.37}	1.34 {4.71}	0.93 {3.27}				
	2310			(R22) CL	1.60 {5.63}	1.20 {4.22}	1.65 {5.80}	1.14 {4.01}				
	2315			(R22, R404A)	2.40 {8.44}	1.80 {6.33}	2.47 {8.70}	1.71 {6.01}				

Capacity: Based on condensing temp. 38°C and evaporating temp. 5°C.

## DIMENSIONS



Unit: mm

Refrigerant	Charge	A	B
H(R22) M(R134a) U(R404A)	S	3/8"	80
P(R407C)	S	1/2"	80
H(R22)	C	1/2"	80
H(R22) U(R404A)	CL	3/8"	50

# EXPANSION VALVES (BI-FLOW)

High Volume OEM Item

Type **TCX**



## GENERAL DESCRIPTION

- Application: Heat pump air conditioner  
 Note: This Bi-flow expansion valve features flow direction reversibility being suitable for heat pump application.
- Charge: C (Cross) charge
- Max. working pressure:  
 High pressure side: 2.8 MPa {28 kgf/cm<sup>2</sup>}  
 Low pressure side: 1.4 MPa {14 kgf/cm<sup>2</sup>}
- Static superheat: Fixed (Factory setting)
- Superheat change: 5 to 6°C



## VALVE NOMENCLATURE

Catalog No. is decided according to the specifications.

Example:  $\frac{\text{TCX}}{\text{I}} - \frac{2307}{\text{II}} \frac{\text{D}}{\text{III}} \frac{\text{H}}{\text{IV}} \frac{\text{C}}{\text{V}}$

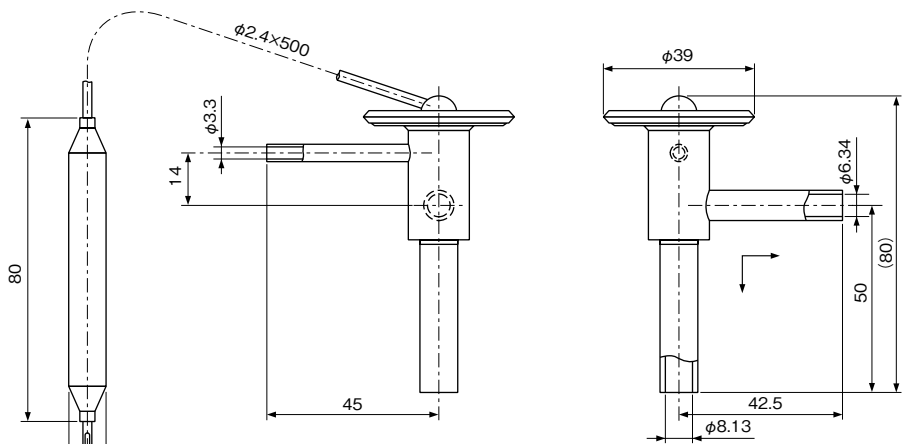
- I : Type..... TCX Bi-Flow Thermostatic expansion valve
- II : Model..... The first and the second digits indicate inlet and outlet pipe size respectively.  
 The last two digits indicate nominal capacity.
- III : Connection..... D-Solder Connection
- IV : Refrigerant..... H = R22
- V : Charge type..... C = C-charge

## TYPE NUMBER SELECTION (SPECIFICATIONS)

Catalog No.					Capacity (U.S.R.T.) {kW}	Connection			Capil. Tube Length (mm)	Wt. (kg)
Type	Model	Connection	Refrigerant	Charge	R22	Inlet	Outlet	Equalizer		
TCX-	2307	D (Solder)	H (R22)	C	1.0 {3.52}	φ 6.34	φ 8.13	φ 3.3	φ 2.4 × 500	0.13
	2310				1.6 {5.63}					
	2315				2.4 {8.44}					
	2320				3.2 {11.3}					

Capacity: Based on condensing temp. 38°C and evaporating temp. 5°C.

## DIMENSIONS



Unit: mm

# EXPANSION VALVES

## Type QCX & RCX

SAGInoMIYA

### GENERAL DESCRIPTION

- Application: Commercial refrigerator, freezer, air conditioner, cold chain box, etc.
- Suitable for refrigeration systems with hot gas defrosting.
- Type QCX ... Internal equalizer type  
Type RCX ... External equalizer type
- The same products can be used for R22 and R407C.
- With superheat external adjust device.

### SPECIFICATIONS

- Max. working pressure: 3.0 MPa {30kgf/cm<sup>2</sup>}
- Adjustable range of static superheat:  
1 to 7°C at R22, R134a, R404A  
1 to 5°C at R407C, R410A
- ○ Increase about 0.045MPa / rotation
- Superheat change: 4 to 5°C (C, SL-charge)  
3 to 4°C (SA-charge)



Type QCX-B

Type QCX-D



Type RCX-B

Type RCX-D

Charge	A Zone	R Zone	F Zone	MOP (°C)	Temp. Condition
					Evaporating Temp. (°C)
SA	-40 to 10	-	-	18	Ts ≧ Tb
C		-40 to 0	-	-	Ts ≧ Tb
SL		-	-60 to -25	-20	Ts ≧ Tb
C	-30 to 10			-	Ts ≧ Tb
SA	-40 to 10	-	-	18	Ts ≧ Tb
C		-40 to 0	-	-	Ts ≧ Tb
SL		-	-60 to -25	-20	Ts ≧ Tb
SA	-40 to 10	-	-	18	Ts ≧ Tb
C		-40 to 0	-	-	Ts ≧ Tb
SL		-	-60 to -25	-20	Ts ≧ Tb
SA	-45 to 10	-	-	18	Ts ≧ Tb
C		-40 to -10	-	-	Ts ≧ Tb
SL		-	-60 to -25	-20	Ts ≧ Tb

### VALVE NOMENCLATURE

Catalog No. is decided according to the specifications.

Example: QCX - 0234 B U SA  
 I II III IV V

- I : Type..... QCX-Internal equalizer type, RCX-External equalizer type
- II : Model..... The first and the second digits indicate nominal capacity.  
The last two digits indicate inlet and outlet pipe size respectively.
- III : Connection..... B-Flare Connection, D-Solder Connection
- IV : Refrigerant..... M = R134a, H = R22, R407C, U = R404A, V = R410A
- V : Charge type..... SL = SL-charge, C = C-charge, SA = SA-charge

# TYPE NUMBER SELECTION (1)

Refrigerant	Catalog No.	Refrigerant	Capacity (U.S.R.T.) {kW}		Connection		Capil. Tube Length (mm)	Wt. (kg)				
			A,R Zone	F Zone	Inlet	Outlet						
			C.T. 38°C	C.T. 38°C								
			E.T. -5°C	E.T. -30°C								
F Zone	Freezing -60 to -25°C (SL: R22, R404A)	QCX- RCX-	R22	-	0334B[D]HSL	0.22 {0.79}	3/8" Flare [B]  [3/8" Solder [D]	1/2" Flare [B]  [1/2" Solder [D]	φ 2.4 × 1500	0.28 (QCX-***34B) 0.24 (QCX-***34D) 0.29 (RCX-***34B) 0.24 (RCX-***34D)		
					0534B[D]HSL	0.33 {1.16}						
					0834B[D]HSL	0.54 {1.91}						
					1234B[D]HSL	0.87 {3.07}						
					1634B[D]HSL	1.10 {3.87}						
					2434B[D]HSL	1.68 {5.91}						
					3134B[D]HSL	2.27 {7.97}						
					4734B[D]HSL	3.10 {10.9}						
					0234B[D]USL	0.13 {0.46}						
		0334B[D]USL	0.19 {0.68}									
		0534B[D]USL	0.32 {1.11}									
		0834B[D]USL	0.51 {1.79}									
		1034B[D]USL	0.64 {2.25}									
		1534B[D]USL	0.98 {3.44}									
		2034B[D]USL	1.32 {4.63}									
		3034B[D]USL	1.80 {6.34}									
		R Zone	Refrigeration -40 to 0°C (C: R22, R404A, R407C)	QCX- RCX-	R22	-					0334B[D]HC	0.31 {1.10}
											0534B[D]HC	0.47 {1.65}
0834B[D]HC	0.78 {2.75}											
1234B[D]HC	1.25 {4.41}											
1634B[D]HC	1.57 {5.51}											
2434B[D]HC	2.35 {8.26}											
3134B[D]HC	3.13 {11.0}											
4734B[D]HC	4.69 {16.5}											
0234B[D]UC	0.20 {0.70}											
0334B[D]UC	0.30 {1.05}											
0534B[D]UC	0.49 {1.74}											
0834B[D]UC	0.78 {2.76}											
1034B[D]UC	0.99 {3.48}											
1534B[D]UC	1.48 {5.22}											
2034B[D]UC	1.98 {6.95}											
3034B[D]UC	2.96 {10.4}											
0334B[D]HC	0.32 {1.13}											
0534B[D]HC	0.48 {1.70}											
0834B[D]HC	0.81 {2.84}											
1234B[D]HC	1.29 {4.54}											
1634B[D]HC	1.61 {5.67}											
2434B[D]HC	2.42 {8.51}											
3134B[D]HC	3.21 {11.3}											
4734B[D]HC	4.83 {17.0}											
QCX- RCX-	R134a		-	0234B[D]MC	0.24 {0.85}							
				0434B[D]MC	0.36 {1.28}							
				0634B[D]MC	0.61 {2.13}							
				1034B[D]MC	0.96 {3.38}							
				1234B[D]MC	1.21 {4.27}							
				1834B[D]MC	1.82 {6.40}							
				2434B[D]MC	2.43 {8.54}							
				3634B[D]MC	3.64 {12.8}							
				QCX- RCX-	R410A	-	0334B[D]VC	0.35 {1.22}				
0534B[D]VC	0.52 {1.83}											
0934B[D]VC	0.86 {3.04}											
1434B[D]VC	1.37 {4.82}											
1734B[D]VC	1.73 {6.08}											
2634B[D]VC	2.59 {9.12}											
3534B[D]VC	3.44 {12.1}											
5234B[D]VC	5.18 {18.2}											

• External equalizer for RCX: 1/4" flare (for all flare outlet bodies) , 1/4" solder[ID] (for all solder outlet bodies)

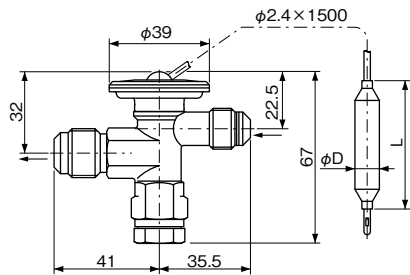
## TYPE NUMBER SELECTION (2)

Refrigerant	Catalog No.	Refrigerant	Capacity (U.S.R.T.) {kW}		Connection		Capil. Tube Length (mm)	Wt. (kg)	
			A,R Zone	F Zone	Inlet	Outlet			
			C.T. 38°C	C.T. 38°C					
E.T. -5°C	E.T. -30°C								
A Zone	Air Conditioning -40 to 10°C (SA: R22, R404A, R407C)	R22	0334B[D]HSA	0.31 {1.10}	-	3/8" Flare [B]	1/2" Flare [B]	φ 2.4 × 1500	0.28 (QCX-***34B)
			0534B[D]HSA	0.47 {1.65}					
			0834B[D]HSA	0.78 {2.75}					
			1234B[D]HSA	1.25 {4.41}					
			1634B[D]HSA	1.57 {5.51}					
			2434B[D]HSA	2.35 {8.26}					
			3134B[D]HSA	3.13 {11.0}					
			4734B[D]HSA	4.69 {16.5}					
			0234B[D]USA	0.20 {0.70}					
		0334B[D]USA	0.30 {1.05}						
		0534B[D]USA	0.49 {1.74}						
		0834B[D]USA	0.78 {2.76}						
		1034B[D]USA	0.99 {3.48}						
		1534B[D]USA	1.48 {5.22}						
		2034B[D]USA	1.98 {6.95}						
		3034B[D]USA	2.96 {10.4}						
		R404A	0334B[D]HSA	0.32 {1.13}					
			0534B[D]HSA	0.48 {1.70}					
	0834B[D]HSA		0.81 {2.84}						
	1234B[D]HSA		1.29 {4.54}						
	1634B[D]HSA		1.61 {5.67}						
	2434B[D]HSA		2.42 {8.51}						
	3134B[D]HSA		3.21 {11.3}						
	4734B[D]HSA		4.83 {17.0}						
	0334B[D]VSA		0.35 {1.22}						
	R407C	0534B[D]VSA	0.52 {1.83}						
		0934B[D]VSA	0.86 {3.04}						
		1434B[D]VSA	1.37 {4.82}						
		1734B[D]VSA	1.73 {6.08}						
		2634B[D]VSA	2.59 {9.12}						
		3534B[D]VSA	3.44 {12.1}						
		5234B[D]VSA	5.18 {18.2}						
		R134a	0334B[D]HSA	0.32 {1.13}					
			0534B[D]HSA	0.48 {1.70}					
	0834B[D]HSA		0.81 {2.84}						
	1234B[D]HSA		1.29 {4.54}						
1634B[D]HSA	1.61 {5.67}								
2434B[D]HSA	2.42 {8.51}								
3134B[D]HSA	3.21 {11.3}								
4734B[D]HSA	4.83 {17.0}								
0334B[D]VSA	0.35 {1.22}								
0534B[D]VSA	0.52 {1.83}								
0934B[D]VSA	0.86 {3.04}								
1434B[D]VSA	1.37 {4.82}								
1734B[D]VSA	1.73 {6.08}								
2634B[D]VSA	2.59 {9.12}								
3534B[D]VSA	3.44 {12.1}								
5234B[D]VSA	5.18 {18.2}								
						3/8" Solder [D]	1/2" Solder [D]		0.24 (QCX-***34D)
									0.29 (RCX-***34B)
									0.24 (RCX-***34D)

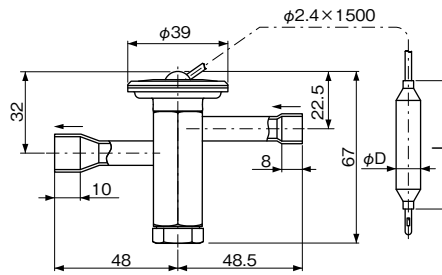
• External equalizer for RCX: 1/4" flare (for all flare outlet bodies), 1/4" solder[ID] (for all solder outlet bodies)

### DIMENSIONS

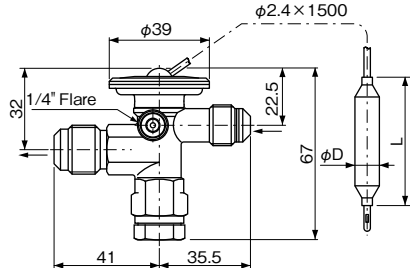
Type QCX-B



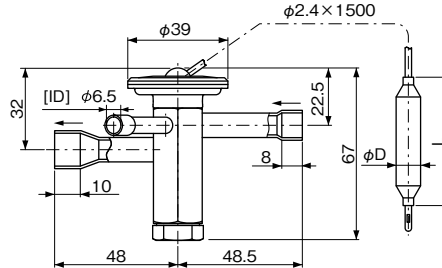
Type QCX-D



Type RCX-B

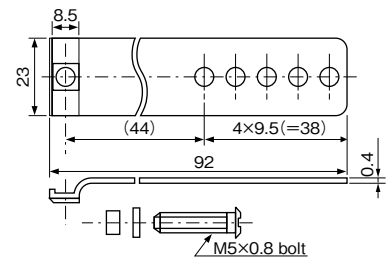


Type RCX-D



### ACCESSORY

• Sensing Bulb Mounting Band



	D	L
SA	12.7	80
C	9.5	50
SL	12.7	80

Unit: mm



# EXPANSION VALVES

**Type SCX**

**SAGInoMIYA**

## GENERAL DESCRIPTION

- Application: Chillers, cold chain boxes, heat pump air conditioner, air conditioning, etc.
- Suitable for refrigeration systems with hot gas defrosting.
- The same products can be used for R22 and R407C.
- With superheat external adjust device.

## SPECIFICATIONS

- Max. working pressure: 3.0 MPa {30kgf/cm<sup>2</sup>}
- Adjustable range of static superheat:
  - 1 to 7°C at R22, R134a, R404A
  - 1 to 5°C at R407C, R410A
- ○ Increase about 0.045MPa / rotation
- Superheat change: 4 to 5°C (C, SL-charge)  
3 to 4°C (SA-charge)



Type SCX-D



Type SCX-B

Charge	A Zone	R Zone	F Zone	MOP (°C)	Temp. Condition	
					Evaporating Temp. (°C)	
					Power Element Temp.: Ts, Sensing Bulb Temp.: Tb	
SA	-40 to 10	-	-	18	Ts ≥ Tb	
C		-40 to 0		-	Ts ≧ Tb	
SL		-		-60 to -25	-20	Ts ≧ Tb
C	-30 to 10		-	-	Ts ≧ Tb	
SA	-40 to 10	-	-	18	Ts ≥ Tb	
C		-40 to 0		-	Ts ≧ Tb	
SL		-		-60 to -25	-20	Ts ≧ Tb
SA	-40 to 10	-	-	18	Ts ≥ Tb	
C		-40 to 0		-	Ts ≧ Tb	
SL		-		-60 to -25	-20	Ts ≧ Tb
SA	-45 to 10	-	-	18	Ts ≥ Tb	
C		-40 to -10		-	Ts ≧ Tb	
C		-		-40 to -10	-	Ts ≧ Tb

## VALVE NOMENCLATURE

Catalog No. is decided according to the specifications.

Example:  $\frac{\text{SCX}}{\text{I}}$  -  $\frac{0445}{\text{II}}$   $\frac{\text{D}}{\text{III}}$   $\frac{\text{U}}{\text{IV}}$   $\frac{\text{SA}}{\text{V}}$

I : Type..... SCX-External equalizer type

II : Model..... The first and the second digits indicate nominal capacity.

The last two digits indicate inlet and outlet pipe size respectively.

III: Connection..... B-Flare Connection, D-Solder Connection

IV: Refrigerant..... H = R22, M = R134a, P = R407C, U = R404A, V = R410A

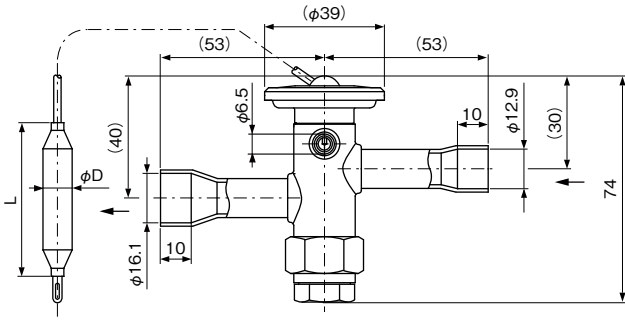
V: Charge type..... SL = SL-charge, C = C-charge, SA = SA-charge

# TYPE NUMBER SELECTION

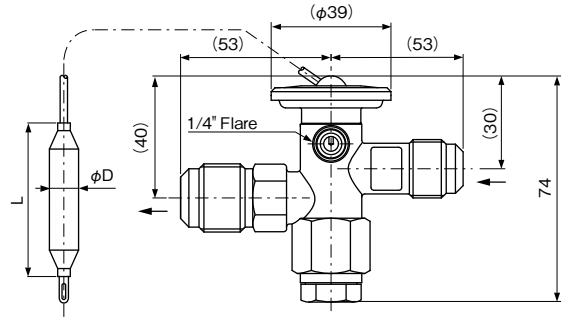
Refrigerant	Catalog No.	Refrigerant	Capacity (U.S.R.T.){kW}		Connection			Capil. Tube Length (mm)	Wt. (kg)	
			A,R Zone	F Zone	Inlet	Outlet	Equalizer			
			C.T. 38°C	C.T. 38°C						
			E.T. -5°C	E.T. -30°C						
F Zone Freezing -60 to -25°C (SL:R22,R404A)	SCX- 0645D[B]HSL 0845D[B]HSL 1057DHSL 1257DHSL 1457DHSL	R22	-	3.25 {11.4}	1/2" Solder(D) [1/2" Flare(B)]	5/8" Solder(D) [5/8" Flare(B)]	1/4" Solder(D) [1/4" Flare(B)]	φ 2.4 × 1500	0.31 (SCX-**45D)  0.39 (SCX-**45B)  0.32 (SCX-**57D)	
				4.53 {15.9}						
				5.70 {20.0}						
				6.83 {24.0}						
				8.08 {28.4}						
	SCX- 0445D[B]USL 0545D[B]USL 0657DUSL 0857DUSL 0957DUSL	R404A	-	1.92 {6.74}	1/2" Solder(D) [1/2" Flare(B)]	5/8" Solder(D) [5/8" Flare(B)]				
				2.67 {9.39}						
				3.36 {11.8}						
				4.03 {14.2}						
				4.76 {16.7}						
	R Zone Refrigeration -30 to 10°C (C:R134a)	SCX- 0545D[B]MC 0745D[B]MC 0857DMC 1057DMC 1257DMC	R134a	-	4.76 {16.7}	1/2" Solder(D) [1/2" Flare(B)]				5/8" Solder(D) [5/8" Flare(B)]
					6.62 {23.3}					
					8.32 {29.3}					
					9.98 {35.1}					
					11.8 {41.5}					
		SCX- 0645D[B]HC 0845D[B]HC 1057DHC 1257DHC 1457DHC	R22	-	5.78 {20.3}	1/2" Solder(D) [1/2" Flare(B)]				5/8" Solder(D) [5/8" Flare(B)]
8.05 {28.3}										
10.1 {35.6}										
12.1 {42.6}										
14.4 {50.5}										
SCX- 0445D[B]UC 0545D[B]UC 0657DUC 0857DUC 0957DUC		R404A	-	3.65 {12.8}	1/2" Solder(D) [1/2" Flare(B)]	5/8" Solder(D) [5/8" Flare(B)]				
				5.08 {17.9}						
				6.38 {22.5}						
				7.66 {26.9}						
				9.06 {31.9}						
SCX- 0645D[B]HC 0845D[B]HC 1057DHC 1257DHC 1457DHC		R407C	-	5.95 {20.9}	1/2" Solder(D) [1/2" Flare(B)]	5/8" Solder(D) [5/8" Flare(B)]				
				8.29 {29.1}						
				10.4 {36.6}						
				12.5 {43.9}						
				14.8 {52.0}						
SCX- 0645D[B]VC 0945D[B]VC 1157DVC 1357DVC 1657DVC	R410A	-	6.38 {22.4}	1/2" Solder(D) [1/2" Flare(B)]	5/8" Solder(D) [5/8" Flare(B)]					
			8.87 {31.2}							
			11.2 {39.2}							
			13.4 {47.0}							
			15.8 {55.6}							
A Zone Air Conditioning -45 to 10°C (SA:R22,R404A,R407C)	SCX- 0645D[B]HSA 0845D[B]HSA 1057DHSA 1257DHSA 1457DHSA	R22	-	5.78 {20.3}	1/2" Solder(D) [1/2" Flare(B)]	5/8" Solder(D) [5/8" Flare(B)]				
				8.05 {28.3}						
				10.1 {35.6}						
				12.1 {42.6}						
				14.4 {50.5}						
	SCX- 0445D[B]USA 0545D[B]USA 0657DUSA 0857DUSA 0957DUSA	R404A	-	3.65 {12.8}	1/2" Solder(D) [1/2" Flare(B)]	5/8" Solder(D) [5/8" Flare(B)]				
				5.08 {17.9}						
				6.38 {22.5}						
				7.66 {26.9}						
				9.06 {31.9}						
	SCX- 0645D[B]HSA 0845D[B]HSA 1057DHSA 1257DHSA 1457DHSA	R407C	-	5.95 {20.9}	1/2" Solder(D) [1/2" Flare(B)]	5/8" Solder(D) [5/8" Flare(B)]				
				8.29 {29.1}						
				10.4 {36.6}						
				12.5 {43.9}						
				14.8 {52.0}						
	SCX- 0645D[B]VSA 0945D[B]VSA 1157DVSA 1357DVSA 1657DVSA	R410A	-	6.38 {22.4}	1/2" Solder(D) [1/2" Flare(B)]	5/8" Solder(D) [5/8" Flare(B)]				
				8.87 {31.2}						
				11.2 {39.2}						
				13.4 {47.0}						
				15.8 {55.6}						

# DIMENSIONS

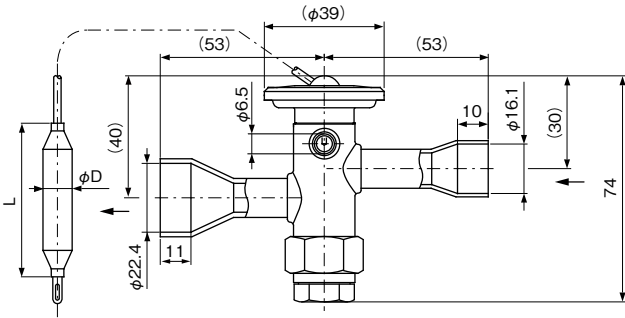
Type SCX-\*\*45D



Type SCX-\*\*45B



Type SCX-\*\*57D

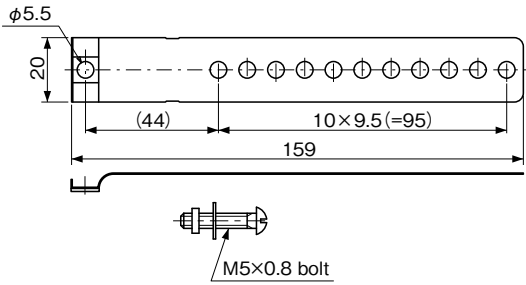


	D	L
SA	12.7	80
C	9.5	50
SL	12.7	80

Unit: mm

# ACCESSORY

- Sensing Bulb Mounting Band



# EXPANSION VALVES

Type **BHX**

**SAGINOMIYA**

## GENERAL DESCRIPTION

- Application: General refrigeration and air conditioning system.

Note: This valve provides excellent control in unloading, heat pump application, or in a hot gas defrost system.

- Charge: S (Special) charge for all purpose with 18°C (standard) MOP.
- Max. working pressure: 2.8 MPa {28 kgf/cm<sup>2</sup>}
- Adjustable range of static superheat: 0 to 8°C
- Superheat change: 4 to 5°C



## VALVE NOMENCLATURE

Catalog No. is decided according to the specifications.

Example:  $\frac{\text{BHX}}{\text{I}} - \frac{45030}{\text{II}} \frac{\text{B}}{\text{III}} \frac{\text{H}}{\text{IV}} \frac{\text{S}}{\text{V}}$

I : Type..... BHX–Thermostatic expansion valve for general use

II : Model..... The first and the second digits indicate inlet and outlet pipe size respectively.

The last three digits indicate nominal capacity.

III : Connection..... B–Flare Nut Connection, D–Solder Connection

IV : Refrigerant..... M = R134a, H = R 22

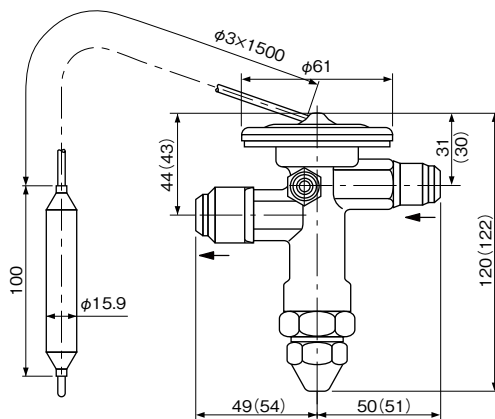
V : Charge type..... S = S–charge

## TYPE NUMBER SELECTION (SPECIFICATIONS)

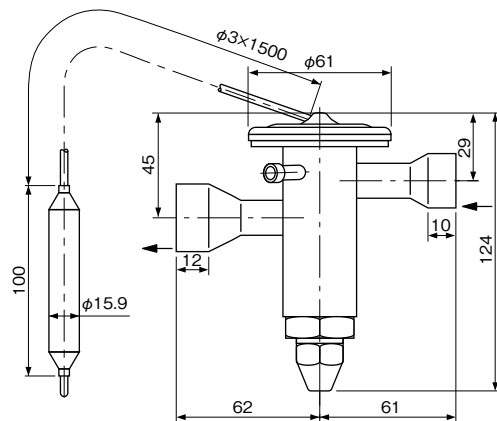
Catalog No.					Capacity (U.S.R.T.) {kW}		Connection			Capil. Tube Length (mm)	Wt. (kg)
Type	Model	Connection	Refrigerant	Charge	R134a	R22	Inlet	Outlet	Equalizer		
<b>BHX-</b>	45030	B (Flare) or D (Solder)	M (R134a) H (R22)	S (Special)	3.6 {12.7}	4.8 {16.9}	1/2"	5/8"	1/4"	$\phi 3 \times 1500$	0.85
	45040				4.8 {16.9}	6.4 {22.6}					
	45050				6.0 {21.1}	8.0 {28.1}					
	56070	B (Flare)			8.4 {29.5}	11.2 {39.4}	5/8"	3/4"			
	56090				10.8 {38.0}	14.4 {50.6}					
	56110				13.2 {46.4}	17.6 {61.9}					
	56140	D (Solder)			16.8 {59.1}	22.4 {78.7}	7/8"	7/8"	1/4"		
	57070				8.4 {29.5}	11.2 {39.4}					
	57090				10.8 {38.0}	14.4 {50.6}					
	71110	D (Solder)			13.2 {46.4}	17.6 {61.9}	7/8"	1-1/8"	Solder		0.84
	71140				16.8 {59.1}	22.4 {78.7}					

Capacity: Based on condensing temp. 38°C and evaporating temp. 5°C.

## DIMENSIONS



Type BHX–45030B to 45050B  
(BHX–56070B to 56140B)



Type BHX–57070D to 71140D

Unit: mm

# EXPANSION VALVES

## Type ATX (R410A)

SAGINOMIYA

### GENERAL DESCRIPTION

- Applicable for R410A
- Capacity can be changed by replacing the body sheet assembly.
- Application: General refrigeration and air conditioning system.
- Suitable for refrigeration systems with hot gas defrosting.

### SPECIFICATIONS

- Max. working pressure: 3.3 MPa {33kgf/cm<sup>2</sup>}
- Adjustable range of static superheat: 1 to 7°C
- $\Delta$  Increase about 0.007MPa / rotation



TYPE ATX-D

Charge	Evaporating Temp.(°C)	MOP (°C)	Temp. Condition
			Power Element Temp.: Ts, Sensing Bulb Temp.: Tb
<b>C</b>	10 to -20	-	Ts ≡ Tb
<b>CL</b>	-10 to -40		

### VALVE NOMENCLATURE

Catalog No. is decided according to the specifications.

Example:  $\frac{\text{ATX}}{\text{I}} - \frac{34006}{\text{II}} \frac{\text{B}}{\text{III}} \frac{\text{V}}{\text{IV}} \frac{\text{C}}{\text{V}}$

I : Type ... ATX-Thermostatic expansion valve for general use.

II : Model ... The first and the second digits indicate inlet and outlet pipe size respectively.  
The last three digits indicate nominal capacity.

III : Connection ... B-Flare Nut Connection D-Solder Connection

IV : Refrigerant ... V = R410A

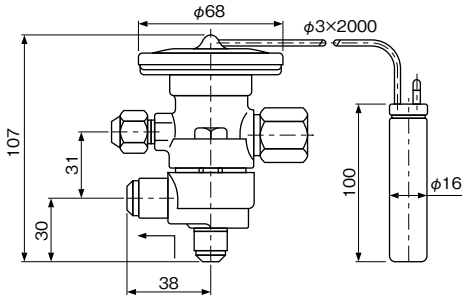
V : Charge type ... C = C-charge, CL = CL-charge

### TYPE NUMBER SELECTION

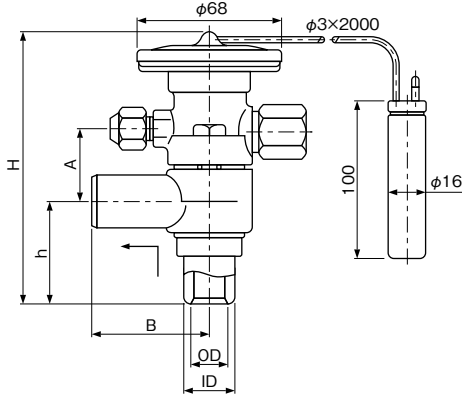
Catalog No.					Capacity (U.S.R.T.){kW}		Connection			Wt. (kg)
Type	Model	Connection	Refrigerant	Charge	CT38°C	ET5°C	Inlet	Outlet	Equalizer	
ATX-	34006	B (Flare) or D (Solder)	V (R410A)	C CL	1.10 {3.85}		3/8" {3/8"OD}	1/2" {1/2"OD}	1/4" Flare	1.2 (B) 1.1 (D)
	34013				2.32 {8.14}					
	34023				3.98 {14.0}					
	34035				6.05 {21.3}					
	34045				7.77 {27.3}					
	57060	D (Solder)			10.7 {37.6}		5/8"OD or 7/8"ID	7/8"OD or 1-1/8"ID		1.3
	57080				14.3 {50.3}					
	71110				19.6 {69.0}					
	71140				24.9 {87.4}					
	71160				28.6 {101}					
	12220				39.4 {139}					
	12270				48.2 {170}		1"OD or 1-1/4"ID	1"OD or 1-1/4"ID		1.5
	12330				58.6 {206}					
	12420				74.2 {261}					
	12500				89.2 {314}					

# DIMENSIONS

Type ATX-B



Type ATX-D

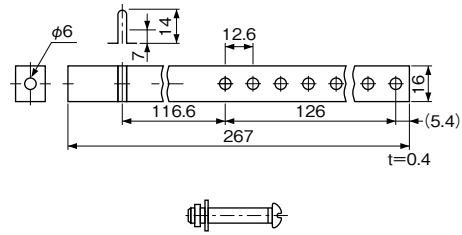


Type	H	h	A	B
ATX-34006D to 34045D	107	30	31	38
ATX-57060D to 71160D	132	52	34	51
ATX-12220D to 12500D	138	56	36	

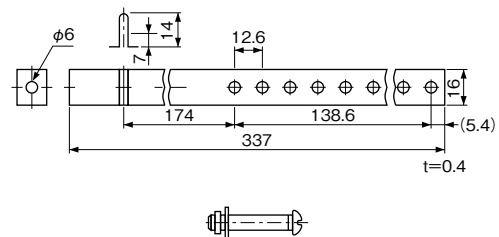
# ACCESSORY

## • Sensing Bulb Mounting Band

For Type ATX-34006 to 71160



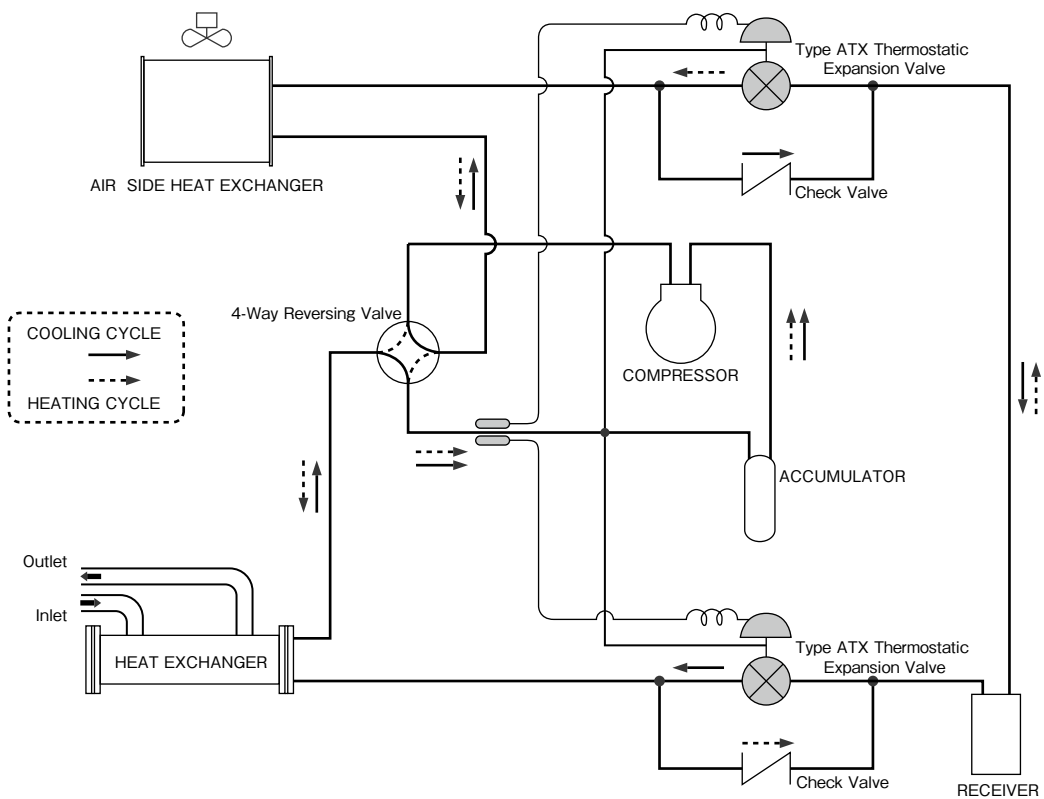
For Type ATX-12220 to 12500



# SYSTEM EXAMPLE

## Heat Pump Chiller System

- In case of using ATX in heat pump circuits, sensing bulb and external equalizer shall be mounted at a position between 4way reversing valve and accumulator.



# EXPANSION VALVES

**Type ATX**

**SAGINOMIYA**

## GENERAL DESCRIPTION

- Capacity can be changed by replacing the body sheet assembly.
- Application: General refrigeration and air conditioning system.
- In the case of  $-20^{\circ}\text{C}$  less, S-charge type is best suited for heat-pump air conditioners and unloading system attached device evaporation temperature.

## SPECIFICATIONS

- Max. working pressure:
  - 2.8 MPa {28kgf/cm<sup>2</sup>}..... (S, SL, CY-charge)
  - 3.3 MPa {33kgf/cm<sup>2</sup>}..... (S-charge for R407C)
  - 1.4 MPa {14kgf/cm<sup>2</sup>}..... (G, L, C, CL-charge)
- Adjustable range of static superheat:
  - 3 to 13°C..... (G, L, CL-charge)
  - 0 to 13°C..... (CY-charge)
  - 0 to 8°C..... (S-charge)
  - 1 to 7°C..... (S, SL-charge for R404A)
- $\bigcirc$  Increase about 0.007MPa / rotation



Type ATX-B



Type ATX-D

## VALVE NOMENCLATURE

Catalog No. is decided according to the specifications.

Example:  $\frac{\text{ATX}}{\text{I}} - \frac{34006}{\text{II}} \frac{\text{B}}{\text{III}} \frac{\text{H}}{\text{IV}} \frac{\text{L}}{\text{V}}$

I : Type..... ATX-Thermostatic expansion valve for general use.

II : Model..... The first and second digits indicate inlet and outlet pipe size respectively.  
The last three digits indicate nominal capacity.

III: Connection..... B-Flare Nut Connection, D-Solder Connection

IV: Refrigerant..... M = R134a, H = R22, U = R404A, P = R407C

V: Charge type..... G = G-charge, L = L-charge, C = C-charge, CL = CL-charge, CY = CY-charge,  
S = S-charge, SL = SL-charge

## TYPE NUMBER SELECTION

Catalog No.					Capacity (U.S.R.T.) {kW}					Connection			Capil. Tube Length (mm)	Wt. (kg)
Type	Model	Connection	Refrigerant	Charge	R22	R134a	R404A	R407C	R404A(SL)	Inlet	Outlet	Equalizer		
ATX-	34006	B (Flare)	M (R134a)	S (R134a)	1.0 {3.51}	0.7 {2.46}	0.7 {2.46}	1.0 {3.51}	0.3 {1.16}	3/8"	1/2"	1/4" Flare	$\phi 3$ $\times$ 1500	1.2
	34013				R22 (R404A R407A)	2.1 {7.39}	1.6 {5.63}	1.5 {5.27}	2.2 {7.74}					
	34023		H (R22)	3.6 {12.7}	2.8 {9.85}	2.7 {9.49}	3.7 {13.0}	1.4 {4.78}						
	34035		U (R404A)	5.5 {19.3}	4.2 {14.8}	4.0 {14.1}	5.7 {20.0}	2.0 {7.19}						
	34045		P (R407C)	G L C (R22)	7.0 {24.8}	5.4 {19.0}	5.1 {17.9}	7.2 {25.3}	2.6 {9.23}					
				CL (R22)										

\* Capillary tube length: 2000mm for S-charge valve as standard.

• Capacity: Based on condensing temp. 38°C and evaporating temp. 5°C. ( $-30^{\circ}\text{C}$  for SL-charge).

# TYPE NUMBER SELECTION

Catalog No.					Capacity (U.S.R.T.) {kW}					Connection			Capil. Tube Length (mm)	Wt. (kg)
Type	Model	Connection	Refrigerant	Charge	R22	R134a	R404A	R407C	R404A(SL)	Inlet	Outlet	Equalizer		
ATX-	34006	D (Solder)	M (R134a) H (R22) U (R404A) P (R407C)	S (R134a R22 R404A R407C)	1.0 {3.51}	0.7 {2.46}	0.7 {2.46}	1.0 {3.51}	0.3 {1.16}	3/8" OD	1/2" OD	1/4" Flare	φ3 × 1500	1.1
	34013				2.1 {7.39}	1.6 {5.63}	1.5 {5.27}	2.2 {7.74}	0.8 {2.90}					
	34023				3.6 {12.7}	2.8 {9.85}	2.7 {9.49}	3.7 {13.0}	1.4 {4.78}					
	34035				5.5 {19.3}	4.2 {14.8}	4.0 {14.1}	5.7 {20.0}	2.0 {7.19}					
	34045				7.0 {24.8}	5.4 {19.0}	5.1 {17.9}	7.2 {25.3}	2.6 {9.23}					
	57060				9.7 {34.1}	7.2 {25.4}	6.8 {23.9}	10.0 {35.1}	3.7 {12.9}					
	57080			SL (R404A)	13.0 {45.7}	9.6 {33.7}	9.1 {32.0}	13.4 {47.1}	4.9 {17.3}	5/8" OD or 7/8" ID	7/8" OD or 1-1/8" ID	1/4" Flare	φ3 × 2000	1.3
	71110				17.8 {62.6}	13.2 {46.4}	12.5 {44.0}	18.3 {64.3}	6.9 {24.4}					
	71140				22.6 {79.4}	16.8 {59.1}	16.0 {56.3}	23.3 {81.9}	8.7 {30.7}					
	71160			G L C CL (R22)	26.0 {91.6}	19.2 {67.5}	18.2 {64.0}	26.8 {94.2}	10.0 {35.0}	1" OD or 1-1/4" ID	1" OD or 1-1/4" ID	1/4" Flare	φ3 × 3000	1.5
	12220				35.8 {126}	26.4 {92.8}	25.1 {88.3}	36.9 {130}	13.7 {48.2}					
	12270				43.5 {154}	32.4 {114}	30.8 {108}	44.8 {158}	16.9 {59.3}					
	12330				53.4 {187}	39.6 {140}	37.6 {132}	55.0 {193}	20.6 {72.4}					
	12420				67.6 {237}	50.4 {177}	47.9 {168}	69.6 {245}	27.6 {97.1}					
12500	81.0 {285}	60.0 {211}	57.0 {200}	83.4 {293}	33.0 {116}									

\* Capillary tube length: 2000mm for S-charge valve as standard.

• Capacity: Based on condensing temp. 38°C and evaporating temp. 5°C. (-30°C for SL-charge).

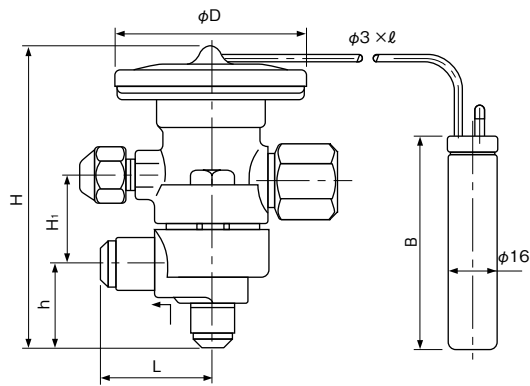
## Extreme Low Temperature Model ( - 70°C to - 40°C)

Catalog No.					Capacity (U.S.R.T.) {kW}		Connection			Capil. Tube Length (mm)	Wt. (kg)
Type	Model	Connection	Refrigerant	Charge	R22	Inlet	Outlet	Equalizer			
ATX-	34006	B (Flare) or D (Solder)	H (R22)	CY (Extreme Low)	1.39 {4.88}	3/8"OD	1/2"OD	1/4" Flare	φ3 × 2000	1.2 (Flare)	
	34013				3.21 {11.3}						
	34023				5.40 {19.0}						
	34035				7.56 {26.6}						
	34045	9.74 {34.3}			5/8"OD or 7/8"ID	7/8"OD or 1-1/8"ID	1/4" Flare	φ3 × 2000			
	57060	11.3 {39.8}									
	57080	15.3 {53.7}									

• Capacity: Based on condensing temp. 40°C and evaporating temp. -60°C, sub-cooling 50°C.

## DIMENSIONS

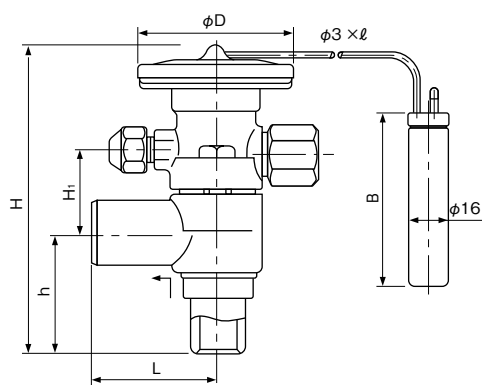
### Type ATX-B



Catalog No.			Unit: mm							
Type	Model	Connection	L	H	H <sub>1</sub>	h	φD	ℓ	B	
ATX-	34006	B (Flare) or D (Solder)	38	107	31	30	64	1500	76	
	34013									
	34023									
	34035									
	34045	D (Solder)	51	132	34	52	2000	64	1500	
	57060									
	57080									
	71110									
	71140									
	71160									
	12220	138	138	56	68	3000	100			
	12270									
	12330									
	12420									
12500										

• S,CY,SL-Charge C,CL-Charge for R410A : φD=68, ℓ=2000,B=100

### Type ATX-D

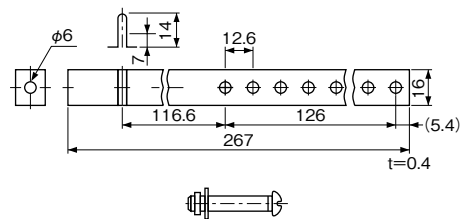


Unit: mm

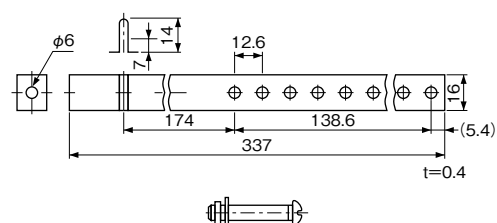
## ACCESSORY

### • Sensing Bulb Mounting Band

For Type ATX-34006 to 71160



For Type ATX-12220 to 12500





# ELECTRONIC EXPANSION VALVES

High Volume OEM Item (Type UKV, VKV, AKV)

Type UKV, VKV, PKV & AKV



## GENERAL DESCRIPTION

- Application: Wide range of air conditioning and refrigeration equipment
- Refrigerant: R22, R134a, R404A, R407C, R410A
- High cool down capability.
- Quick response.
- Less energy consumption.
- Bi-Flow capability. (Type UKV, VKV, AKV)



Type UKV



Type PKV



Type AKV

## SPECIFICATIONS

Max. working pressure: 4.2 MPa {42kgf/cm<sup>2</sup>}

Valve operating pulse range: 0 to 480 pulse, 1–2 phase excitation.

## TYPE NUMBER SELECTION

Type UKV – High volume OEM item

Catalog No.	Port Size (φ mm)	Capacity (U.S.R.T.) {kW}					Connection (Solder) (mm)		Operating Pressure Differential B to A flow direction (MPa) {kgf/cm <sup>2</sup> }	Valve shut press on, A to B flow direction (MPa) {kgf/cm <sup>2</sup> }	Wt. (kg)	
		R22	R134a	R404A	R407C	R410A	B side	A side				
<b>UKV-18D</b>	1.8	2.9 {10.3}	2.3 {8.1}	2.1 {7.3}	3.0 {10.6}	3.4 {12.1}	φ 6.35 OD	φ 6.35 OD	0 to 3.5 {0 to 35}	2.8 {28} or less	0.05	
<b>UKV-25D</b>	2.5	5.6 {19.6}	4.4 {15.3}	3.9 {13.8}	5.7 {20.1}	6.5 {23.0}	φ 7.94 OD	φ 7.94 OD		2.2 {22} or less		
<b>UKV-30D</b>	3.0	7.6 {26.8}	6.0 {20.9}	5.4 {18.9}	7.8 {27.5}	9.0 {31.5}				0 to 2.8 {0 to 28}		1.5 {15} or less
<b>UKV-32D</b>	3.2	8.2 {28.8}	6.4 {22.5}	5.8 {20.3}	8.4 {29.6}	9.6 {33.9}				0 to 2.1 {0 to 21}		1.2 {12} or less
<b>UKV-40D</b>	4.0	11.1 {39.1}	8.7 {30.6}	7.9 {27.6}	11.4 {40.2}	13.1 {46.0}				0.7 {7} or less		

• Capacity: Based on CT = 38°C, ET = 5°C, SC = 0°C and SH = 0°C

• Please contact us if other capacity or connection are required.

Type VKV – Middle volume OEM item

Catalog No.	Port Size (φ mm)	Capacity (U.S.R.T.) {kW}					Connection (Solder) (mm)		Operating Pressure Differential B to A flow direction (MPa) {kgf/cm <sup>2</sup> }	Valve shut press on, A to B flow direction (MPa) {kgf/cm <sup>2</sup> }	Wt. (kg)
		R22	R134a	R404A	R407C	R410A	B side	A side			
<b>VKV-14D</b>	1.4	1.5 {5.2}	1.1 {4.0}	1.0 {3.6}	1.5 {5.3}	1.7 {6.1}	φ 7.94 OD	φ 7.94 OD	0 to 3.5 {0 to 35}	2.8 {28} or less	0.11
<b>VKV-18D</b>	1.8	2.9 {10.3}	2.3 {8.1}	2.1 {7.3}	3.0 {10.6}	3.4 {12.1}				2.4 {24} or less	
<b>VKV-20D</b>	2.0	3.5 {12.4}	2.7 {9.7}	2.5 {8.7}	3.6 {12.7}	4.1 {14.5}				2.4 {24} or less	
<b>VKV-25D</b>	2.5	5.3 {18.5}	4.1 {14.5}	3.7 {13.1}	5.4 {19.0}	6.2 {21.8}				2.2 {22} or less	
<b>VKV-30D</b>	3.0	7.0 {24.7}	5.5 {19.3}	4.9 {17.4}	7.2 {25.4}	8.3 {29.1}			1.5 {15} or less		
<b>VKV-32D</b>	3.2	8.2 {28.8}	6.4 {22.5}	5.8 {20.3}	8.4 {29.6}	9.6 {33.9}	φ 9.52 OD	φ 12.7 OD	0 to 2.5 {0 to 25}	1.0 {10} or less	0.15

• Capacity: Based on CT = 38°C, ET = 5°C, SC = 0°C and SH = 0°C

• Please contact us if valves for application of hot gas bypass are required.

Type PKV – Flare connection model type

Catalog No.	Port Size (φ mm)	Capacity (U.S.R.T.) {kW}					Connection (Flare)		Operating Pressure Differential (MPa) {kgf/cm <sup>2</sup> }	Wt. (kg)
		R22	R134a	R404A	R407C	R410A	Inlet	Outlet		
<b>PKV-14BS</b>	1.4	1.5 {5.2}	1.1 {4.0}	1.0 {3.6}	1.5 {5.3}	1.7 {6.1}	3/8"	3/8"	0 to 2.3 {0 to 23}	0.5
<b>PKV-18BS</b>	1.8	2.9 {10.3}	2.3 {8.1}	2.1 {7.3}	3.0 {10.6}	3.4 {12.1}				
<b>PKV-24BS</b>	2.4	5.0 {17.5}	3.9 {13.7}	3.5 {12.3}	5.1 {18.0}	5.9 {20.6}				
<b>PKV-30BS</b>	3.0	7.9 {27.8}	6.2 {21.7}	5.6 {19.6}	8.1 {28.5}	9.3 {32.7}				

• Capacity: Based on CT = 38°C, ET = 5°C, SC = 0°C and SH = 0°C

Type AKV – Large capacity type

Catalog No.	Port Size (φ mm)	Capacity (U.S.R.T.) {kW}					Connection (Solder) (mm)		Operating Pressure Differential B to A flow direction (MPa) {kgf/cm <sup>2</sup> }	Valve shut press on, A to B flow direction (MPa) {kgf/cm <sup>2</sup> }	Wt. (kg)
		R22	R134a	R404A	R407C	R410A	B side	A side			
<b>AKV-55D</b>	5.5	23.7 {83.4}	18.5 {65.2}	16.7 {58.8}	24.4 {85.6}	27.9 {98.1}	φ 15.88 OD	φ 15.88 OD	0 to 2.5 {0 to 25}	0.7 {7} or less	0.4
<b>AKV-65D</b>	6.5	28.4 {99.9}	22.2 {78.1}	19.8 {70.4}	29.2 {102.5}	33.4 {117.4}					0.42

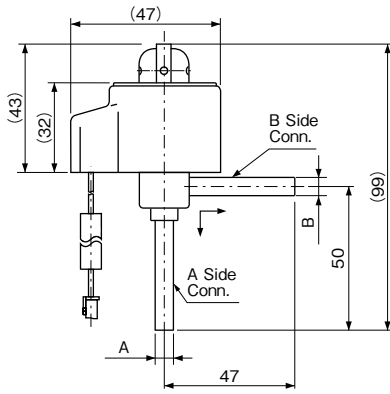
• Capacity: Based on CT = 38°C, ET = 5°C, SC = 0°C and SH = 0°C

## Coil

Valve Type	Rated Voltage & Current	Wt.(kg)
Type UKV	12V DC...260mA/Phase	0.13
Type VKV, PKV		0.15
Type AKV	12V DC...375mA/Phase	0.4

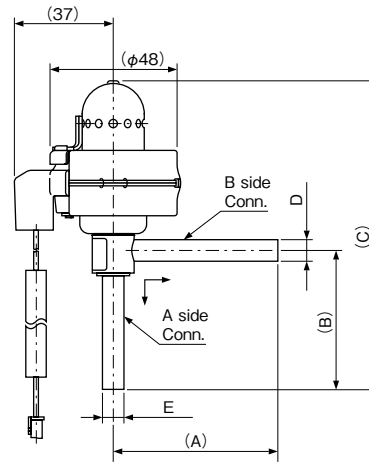
# DIMENSIONS

## Type UKV



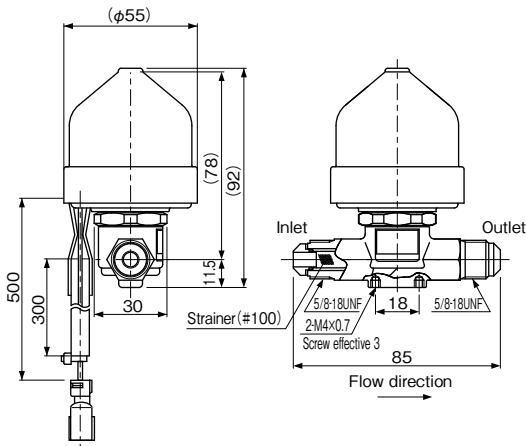
Catalog No.	A	B
<b>UKV-18D</b>	φ 6.35	
<b>UKV-25D</b>	φ 7.94	
<b>UKV-30D</b>	φ 7.94	
<b>UKV-32D</b>	φ 7.94	
<b>UKV-40D</b>	φ 7.94	

## Type VKV

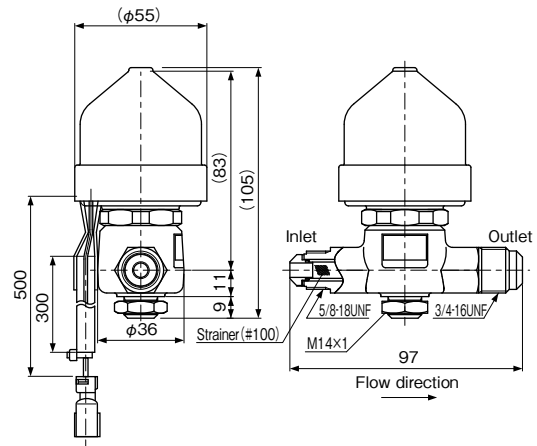


Catalog No.	A	B	C	D	E
<b>VKV-14D</b>	64	49	112	φ 7.94	φ 7.94
<b>VKV-18D</b>					
<b>VKV-20D</b>					
<b>VKV-25D</b>					
<b>VKV-30D</b>	66	64	130	φ 9.52	φ 12.7

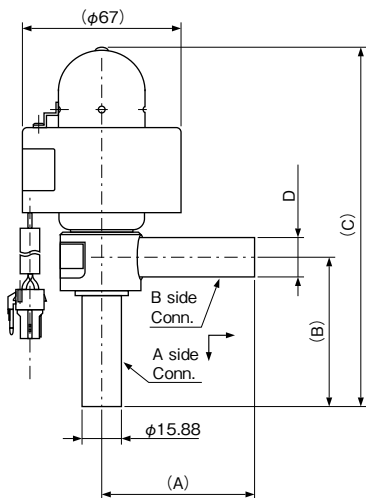
## Type PKV-14BS to 24BS



## Type PKV-30BS



## Type AKV



Unit: mm

Catalog No.	A	B	C	D	E
<b>AKV-55D</b>	64.5	65.5	150	φ 15.88	
<b>AKV-65D</b>					

# ELECTRONIC EXPANSION VALVES

High Volume OEM Item

Type UKV-F



## GENERAL DESCRIPTION

- Application: Residential air conditioner, etc.
- Refrigerant: R22, R134a, R404A, R407C, R410A
- With internal check valve function.
- High cool down capability.
- Quick response.
- Less energy consumption.



Type UKV-F

## SPECIFICATIONS

Max. working pressure: 4.2 MPa {42kgf/cm<sup>2</sup>}  
 Valve operating pulse range: 0 to 500 pulse, 1-2 phase excitation.

## TYPE NUMBER SELECTION

Type UKV-F – With internal check valve function

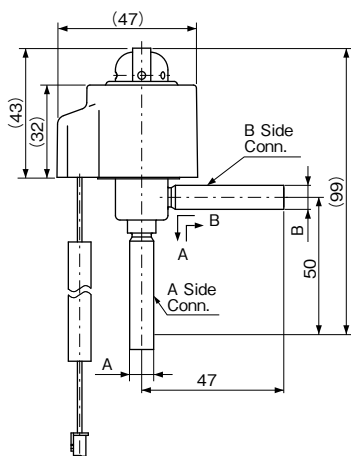
Catalog No.	Port Size (φ mm)	Capacity (U.S.R.T.) {kW}					Connection (Solder) (mm)		Operating Pressure Differential (MPa) {kgf/cm <sup>2</sup> }		Cv Value Flow Direction A to B Full opening position	Wt. (kg)
		R22	R134a	R404A	R407C	R410A	B side	A side	B to A	A to B		
UKV-F19D	1.9	2.9 {10.3}	2.3 {8.1}	2.1 {7.3}	3.0 {10.6}	3.4 {12.1}	φ 7.94 OD	φ 7.94 OD	0 to 3.3 {0 to 33}	N/A	0.47	0.05
UKV-F25D	2.5	4.7 {16.5}	3.7 {12.9}	3.3 {11.6}	4.8 {16.9}	5.5 {19.4}						

• Capacity: Based on CT = 38°C, ET = 5°C, SC = 0°C and SH = 0°C

### Coil

Rated Voltage & Current	Wt.(kg)
12V DC...260mA/Phase	0.13

## DIMENSIONS

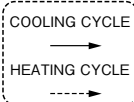
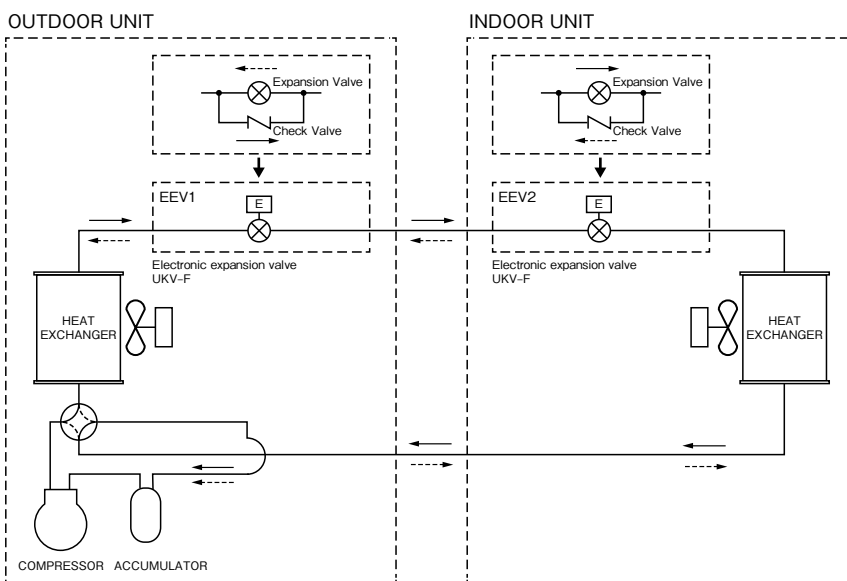


Unit: mm

B → A: Flow when the valve works as an expansion valve.  
 A → B: Flow when the valve works as a tube.

Catalog No.	A	B
UKV-F19D	φ 7.94	
UKV-F25D		

## APPLICATION EXAMPLE



**COOLING CYCLE**  
 EEV1: Flow when the valve works as a tube.  
 EEV2: Flow when the valve works as an expansion valve.

**HEATING CYCLE**  
 EEV1: Flow when the valve works as an expansion valve  
 EEV2: Flow when the valve works as a tube.

# PULSE CONVERTERS

**Type LNE**

**SAGInoMIYA**

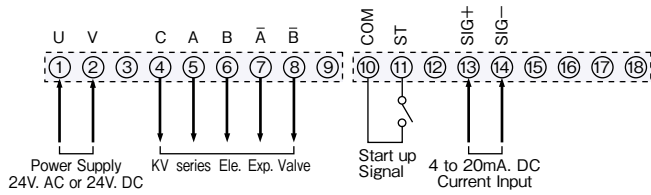
## GENERAL DESCRIPTION

- Can be used for all types of VKV, PKV, and AKV electronic expansion valves.
- Current input is converted to driving pulse output to electronic expansion valve with the pulse converter.
- Convert 4 to 20mA. DC input to 0 to 480 pulse output.

Input	Start up input	No voltage contact signal
	Current input	4 to 20mA. DC
Output	0 to 480 pulse	For VKV, PKV & AKV
Sampling time	0.1, 1, 5, and 10 sec.	



## WIRING



## DIMENSIONS (Type: LNE-ZN20-020)

