NEW

CAT:No.700-05E-B

FINE series PURE

High-temperature Valve series

KIWAMI

極

The Height of Excellence

Thanks to you!

謝恩

ありがとうございます。

th+2

Anniversary 2012

Fujikin Carp Group

FWBR-71-6.35

FWBR-71-9.52

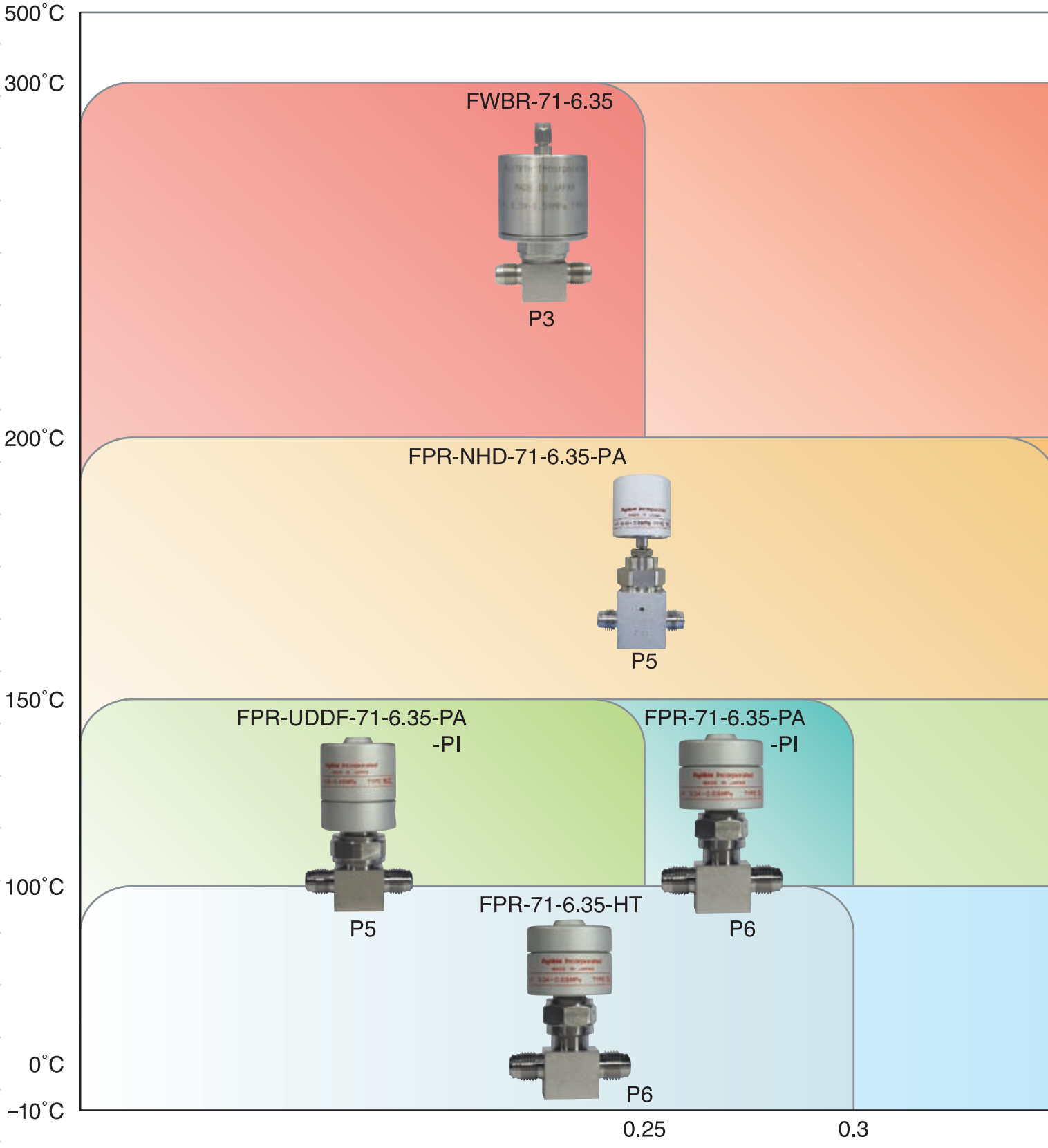
Dedicated heating unit

Patent pending

Safety & Clean Technology

Fujikin Incorporated

High-temperature Valve Series Lineup



−10 to +300˚C −10 to +200˚C −10 to +150˚C −10 to +100˚C

FWBR-71-9.52

P3

FPR-NHD-71-9.52-PA

P5

FPR-UDDF-71-9.52-PA
-PI

P5

FPR-71-9.52-PA
-PI

P6

FPR-71-9.52-HT

P6

0.4 0.6 0.8 Cv Value (20˚C)

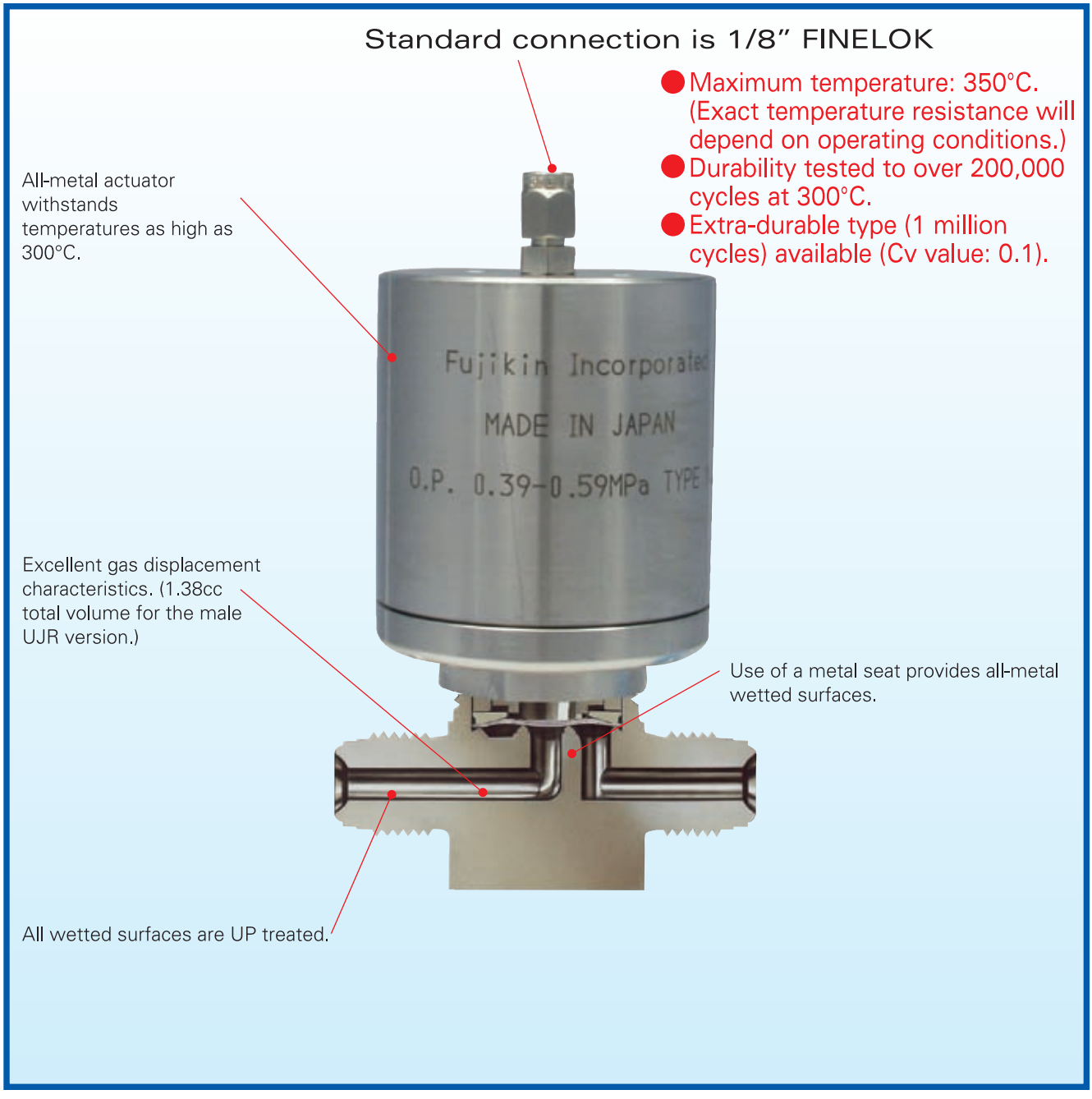
MEGA-M LA

All-metal Pneumatic Valves

High-temperature Valves

MEGA-M LA is an all-metal valve for use in temperatures of up to 350°C. (Exact temperature resistance will depend on operating conditions.)

When coupled with a dedicated heater, it significantly helps in preventing deposits from adhering in high-temperature processes and gas exhaust systems.



Specifications / Materials / Performance

Specifications	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv* (with N_2 gas at 20°C)	Actuation Pressure	End Connection
	6.35	1 MPa	−10 to + 300˚C	0.25	0.39 to 0.59 MPa	UJR, UPG®, Wseal
	9.52 & 12.7			0.7		

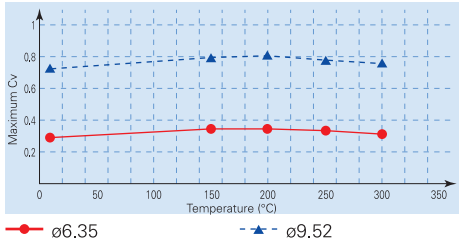
- Theoretical leak rate: External leak: < 5 x 10^{-12} Pa·m³/sec. Seat leak: < 5 x 10^{-12} Pa·m³/sec
- Tested leak rate: External leak: < 5 x 10^{-10} Pa·m³/sec. Seat leak: < 5 x 10^{-10} Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 200,000 cycles at 300°C under test conditions

* Depends on the configuration of the body.

Materials	Part	Material
	Body	SUS316L double-melt
	Diaphragm	Nickel-cobalt alloy
	Stem/bonnet	SUS316
	Actuator	SUS316

Cv - Temperature Curve

Example



Dimensions

Figure 1

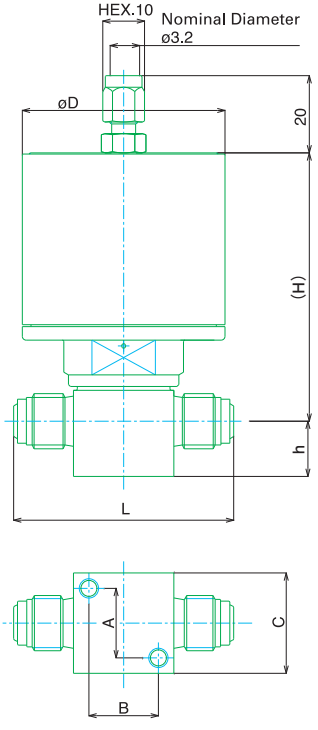
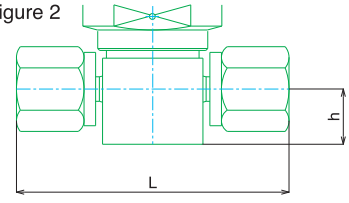


Figure 2



(Units: mm)

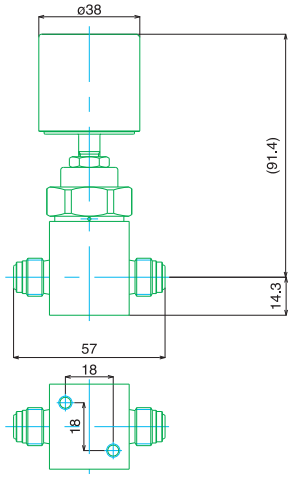
Part Number	Figure	L	h	H	D	A	B	C
FWB(R)-71-6.35	1	57	14.3	69.5	52	18	18	26
FWB(R)-71-9.52	1	76.2	11.1	94.3	62	20.2	20.2	35
FWB(R)-71-6.35-2	2	70.6	14.3	69.5	52	18	18	26
FWB(R)-71-9.52-2	2	83	12.7	94.3	62	20.2	20.2	35
FWBR-71-6.35-ATS (*)	1	57	14.3	69.5	52	18	18	26

*Optional or made-to-order; the Cv value is 0.1.

High-temperature
High-durability Pneumatic Direct Diaphragm Valves FPR-NHD-71-★★-PA

Durability of over 30 million cycles at 200°C

Seat material: PFA (PFA resin)
and PI (polyimide resin)
are also available.



Specifications	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv* (with N_2 gas at 20°C)	Actuation Pressure	Supply Air Connection	End Connection
	6.35	1 MPa	−10 to + 200°C	0.4	0.45 to 0.6 MPa	M5 x 0.8	UJR, UPG®, F900, tube stub
	9.52			0.6			

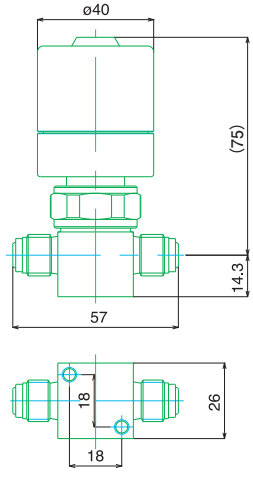
- Theoretical leak rate: External leak: < 5 x 10^{-12} Pa·m³/sec. Seat leak: < 5 x 10^{-12} Pa·m³/sec
- Tested leak rate: External leak: < 5 x 10^{-10} Pa·m³/sec. Seat leak: < 5 x 10^{-10} Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 30 million cycles under test conditions.

* Depends on the configuration of the body.

High-temperature
Pneumatic Direct Diaphragm Valves FPR-UDDF-71-★★-NL-PA

Durability of over 2 million cycles at 150°C

Seat material: PFA (PFA resin)
and PI (polyimide resin)
are also available.



Specifications	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv* (with N_2 gas at 20°C)	Actuation Pressure	Supply Air Connection	End Connection
	6.35	1 MPa	−10 to + 150°C	0.25	0.34 to 0.49 MPa	Rc1/8	UJR, UPG®, F900, tube stub
	9.52			0.6			

- Theoretical leak rate: External leak: < 5 x 10^{-12} Pa·m³/sec. Seat leak: < 5 x 10^{-12} Pa·m³/sec
- Tested leak rate: External leak: < 5 x 10^{-10} Pa·m³/sec. Seat leak: < 5 x 10^{-10} Pa·m³/sec
- All valves are helium leak tested.
- Durability: over 3 million cycles at 150°C under test conditions.

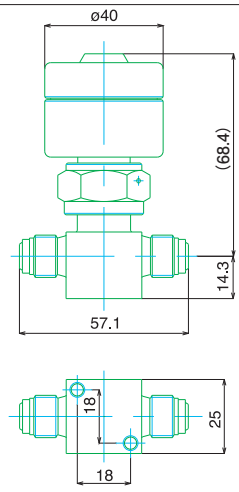
* Depends on the configuration of the body.

High-temperature Pneumatic Cylinder Actuator Bellows Valves

FPR-71- ★★-PA

Product can withstand temperatures up to 150° C

Seat material: PFA (PFA resin)
and PI (polyimide resin)
are also available.



Specifications	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv* (with N_2 gas at 20°C)	Actuation Pressure	Supply Air Connection	End Connection
	6.35	1 MPa	−10 to + 150°C	0.3	0.34 to 0.69 MPa	Rc1/8	UJR, F900, tube stub
	9.52			0.8			
	12.7			0.8			

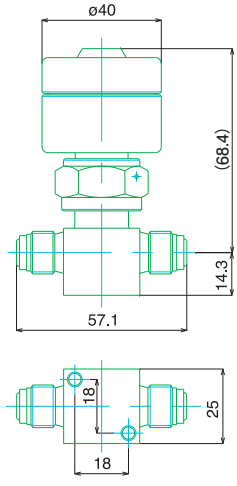
●Theoretical leak rate: External leak: < 5 x 10^{-12} Pa·m³/sec. Seat leak: < 5 x 10^{-12} Pa·m³/sec ●All valves are helium leak tested.
●Tested leak rate: External leak: < 5 x 10^{-10} Pa·m³/sec. Seat leak: < 5 x 10^{-10} Pa·m³/sec
* Depends on the configuration of the body.

High-temperature Pneumatic Cylinder Actuator Bellows Valves

FPR-71- ★★-HT

Product can withstand temperatures up to 150° C

Seat material: PCTFE



Specifications	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv* (with N_2 gas at 20°C)	Actuation Pressure	Supply Air Connection	End Connection
	6.35	1 MPa	−10 to + 150°C	0.3	0.39 MPa	Rc1/8	UJR, F900, tube stub
	9.52			0.8			
	12.7			0.8			

●Theoretical leak rate: External leak: < 5 x 10^{-12} Pa·m³/sec. Seat leak: < 5 x 10^{-12} Pa·m³/sec ●All valves are helium leak tested.
●Tested leak rate: External leak: < 5 x 10^{-10} Pa·m³/sec. Seat leak: < 5 x 10^{-10} Pa·m³/sec
* Depends on the configuration of the body.

Dedicated Heating Unit

1 Stable temperatures ensured by patented heating mechanism.

This unit heats the valve body directly. It heats the fittings indirectly by creating a high-temperature convection chamber around the valve. It maintains a constant temperature in and around the wetted parts of the valve.

For a set temperature of 300°C, the temperature uniformity remains within ±3% (under test conditions).

2 Easily removed for maintenance.

Disassembling conventional line heaters can be complicated, and involves removing the entire heating assembly and its insulation. This heater is easily assembled and disassembled: the two halves of its case are held together with two thumbscrews.

3 Solves problems associated with line heating.

Conventional line heaters have separate heating units for the fittings and the valves. Their multiple-thermostat design renders them susceptible to heating inconsistency and overheating. By heating both the valve body and the fittings, this heating unit eliminates the problems associated with line heating.

4 Lightweight and highly durable.

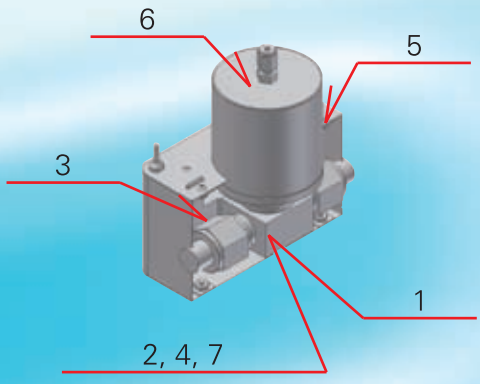
The case design keeps the unit simple and lightweight.
The heater itself can withstand temperatures approaching 350°C.

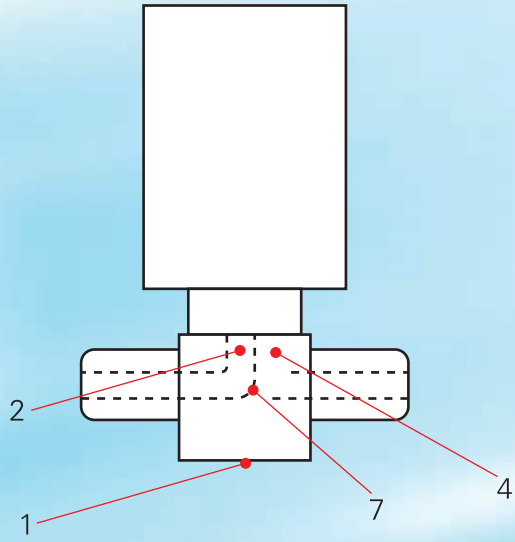
5 Cost efficient.

Conventional tape or sheathed heaters can be complex and time-consuming to install. Installing this heating unit is safe and easy. As a result, the cost of ownership is lower.

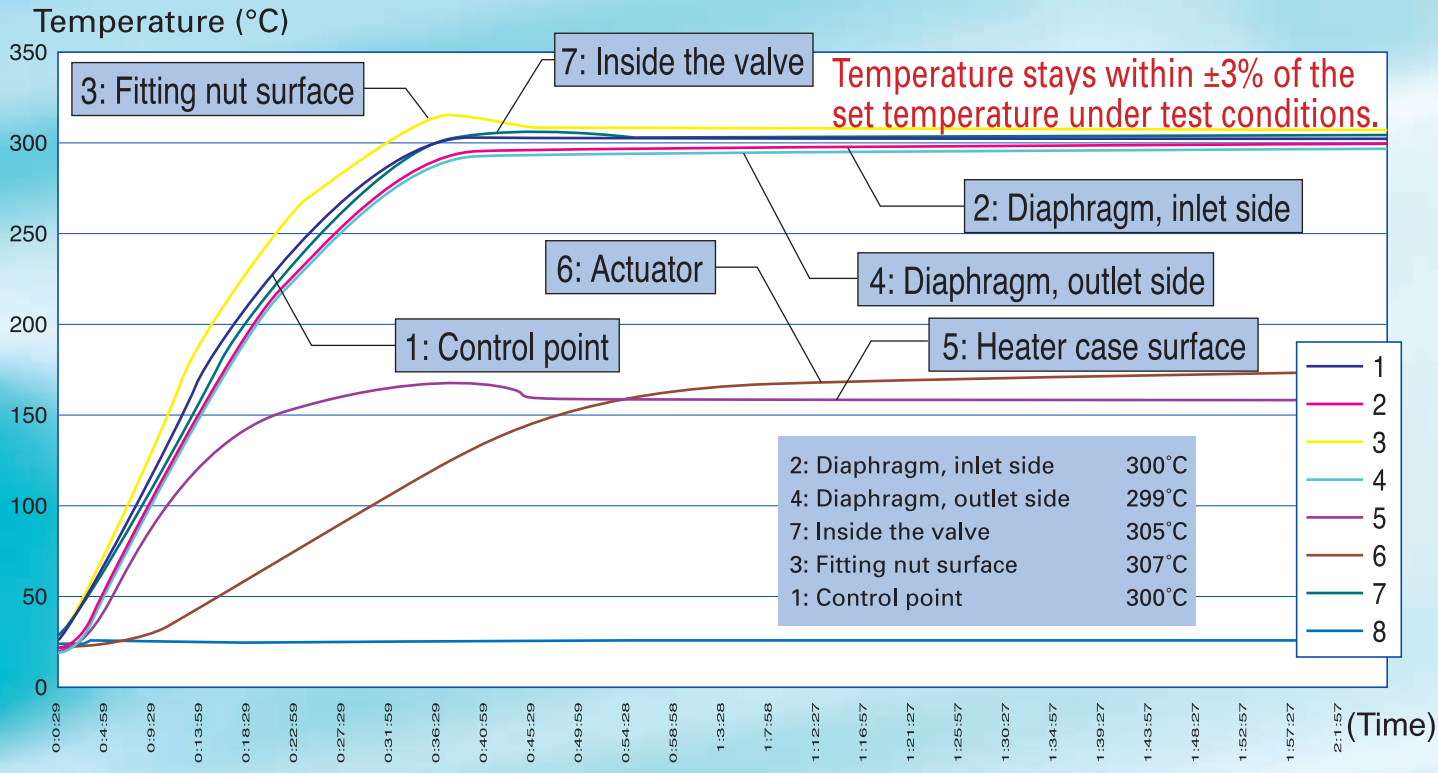
Performance

Stable temperature between 299°C and 305°C in the valve's wetted parts under test conditions.





UHT-WB-6.35 Temperature Stability (no gas purge)



Dedicated Heating Unit

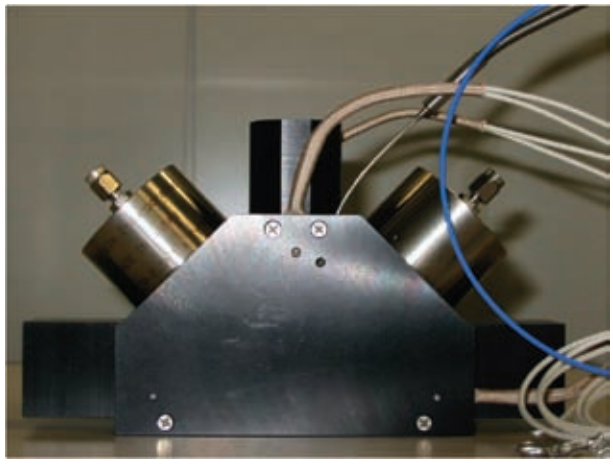
Basic Specifications

	6.35 Heater UHT-WB-6.35	9.52 Heater UHT-WB-9.52
Valve Model	FWBR-71-6.35(ATS)	FWBR-71-9.52
Maximum Operating Temperature	350°C (heater only)	350˚C (heater only)
Input Voltage	100 V AC, 150 W Power Consumption: 140 W (at 300°C)	100 V AC, 190 W Power Consumption: 170 W (at 300°C)
Rated Resistance	66.7Ω (±10%)	52.6Ω (±10%)
Heater Wire	Kanthal	Kanthal
Electrical Lead Wire (Lead length: 0.5 m)	Teflon-coated, exposed ends (UL-compliant)	Teflon-coated, exposed ends (UL-compliant)
Relay Lead Wire (Lead length: 0.5 m)	Polyimide-coated STM500 (UL-compliant)	Polyimide-coated STM500 (UL-compliant)
Ceramic Heater	WAGO connector (UL-compliant)	WAGO connector (UL-compliant)
Heater	Ceramic heater	Ceramic heater
Casing Material	SUS304	SUS304
Thermocouple Securing Plate	Standard feature (for Ø1.6 mm only)	Standard feature (for Ø1.6 mm only)
Thermocouple *1	Optional (for heating control and safety)	Optional (for heating control and safety)
Fittings *2	UJR-6.35MS-L33-AW-S (for valves with female end connections)	UJR-9.52MS-L37-AW-S (for valves with female end connections)

*1: Use a thermocouple of 1.6 mm in diameter and longer than 150 mm. *2: These part numbers are for the standard configuration only. All other specifications are for optional configurations (non-Fujikin products included).

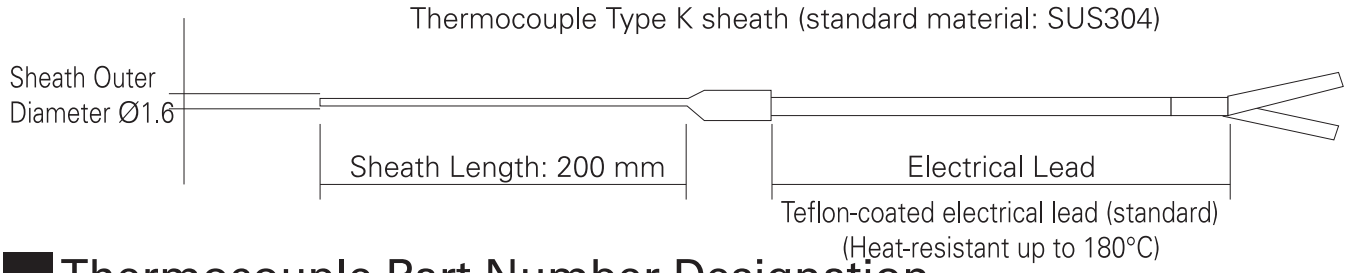
Related Products

- ●200 V model
- ●Block valve heaters are also available.
- ●Consult with Fujikin for other specifications.



OPTIONS

Thermocouple

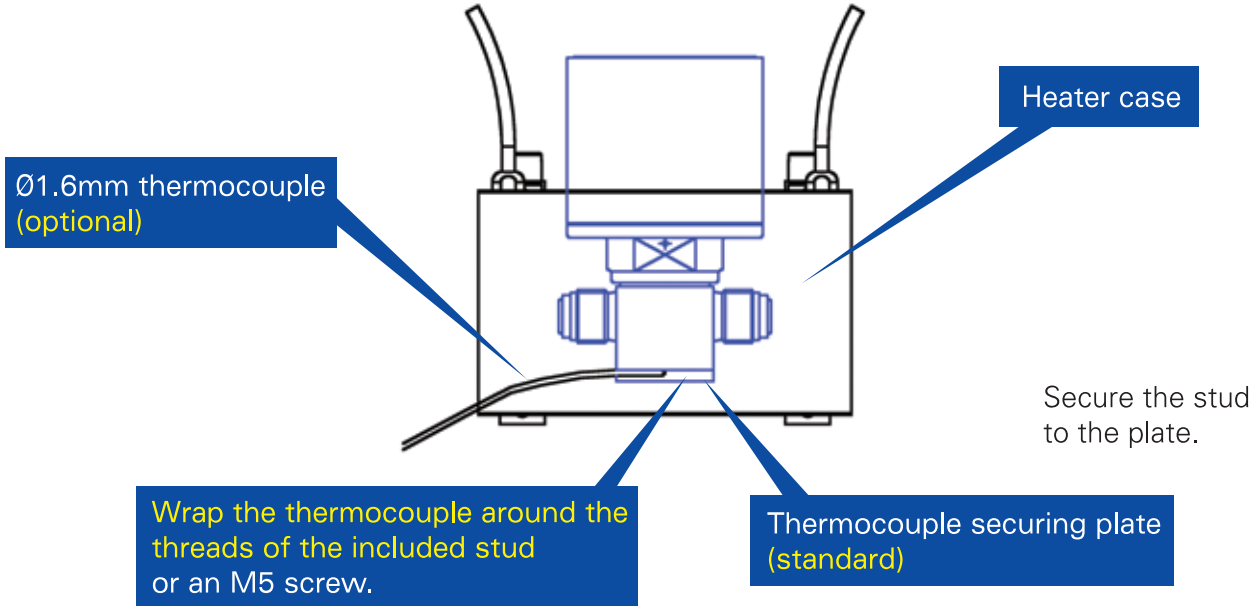


Thermocouple Part Number Designation

TCS	-	K	B	☐	2
		Type K	Sheath Diameter B: Ø1.6	Electrical Lead Length 1: 1m 3: 3m	Sheath Length 2: 200mm

Note:
We recommend the standard configuration (part numbers shown in red).
Other manufacturers' products may be used if their dimensions are the same as those of the standard options (sheath diameter: Ø1.6 mm, sheath length: 200mm).
Please specify lengths for the electrical leads.
Please contact Fujikin for other specifications.

Thermocouple Installation



Fujikin®

Fujikin® Carp® Group

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The Year 2005
The 1st Monozukuri (manufacturing)
Nippon Grand Awards
: Excellence Prize