

# Technical and Operational Instructions For T41-V41 Series Electro thermal Heating Valves

## General

T41-V41 Series electro thermal heating valves consist of T41 Series Electro Thermal Actuator and V41 Series Heating Valve, which are widely applicable for air conditioning and floor heating control system. They are used to adjust the indoor temperature by control the open/close of the pipe of chiller water or hot water and very simple to install and maintain.



## T41 Series Electro Thermal Actuator

### Description

T41 series electro-thermal actuator is designed to control the open/close of the pipe of chiller water or hot water for air-conditioning system so as to control the indoor temperature. Mount the actuator on the valve for chiller water or hot water; it can control the open/close of the valve through the electro-thermal sensor inside the actuator. Because the valve is normally closed, when it needs to work, the thermostat will provide an open signal by connecting it with the AC supply to make the actuator work, then the valve will be opened, the chiller water or hot water will enter into the fan coil or heat exchanger to supply chiller air or hot air for the room; when the room temperature reaches the set point, the thermostat will make the electro-thermal actuator power off, and the spring return of the valve will close the valve and stop the water flow entering into the fan coil or heat exchanger. Through the open and close of the valve, room temperature will be always kept in the range of set point temperature.

The electro-thermal actuator (Fig.1) can be connected with the valve body (Fig.2) quickly by using button connecting way, the control system structure (Fig.3) as following. It can be installed on field, flexible and convenient, reliable performance, durable, energy-saving, environmental protection.



Fig.1 Electro Thermal Actuator



Fig.2 Valve Body

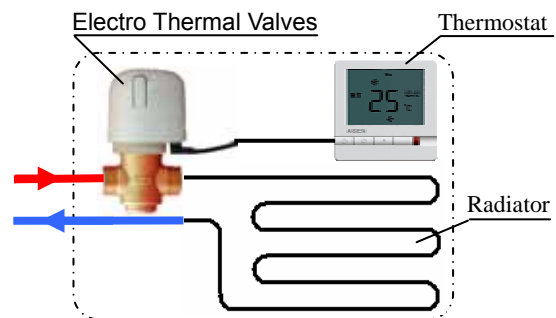
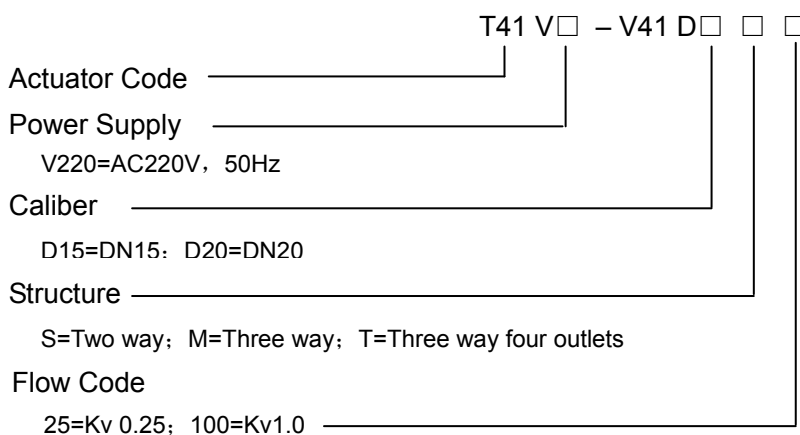


Fig.3 Control System Structure

## Model Definitions



### Actuator Parameters

Housing	Material	Fireproof ABS engineering plastic
	Color	White
Control Element		Electro-thermal wax sensor
Connector		M30×1.5
Working Ambient Temperature		<40℃
First Fully Open Time		<6min (25℃)
Working Force		≥80N
Full Stroke		≥4.5mm
Protection Class		IP40
Power Consumption		1.1VA
Max.Impact Current		0.7A
Lead Wire		1m Length (2-core)
Net Weight		94g

### Dimensions (mm)

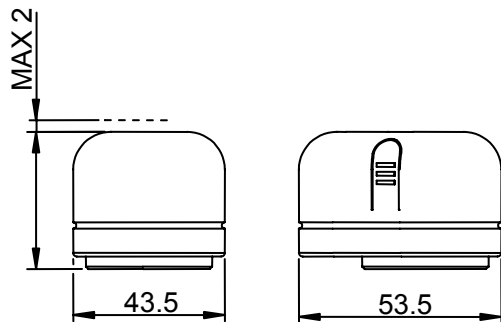


Fig.4

“MAX 2” means the max upward moving height when component inside the electro-thermal actuator is overloaded (2mm).

### Separate Gasket Dimensions

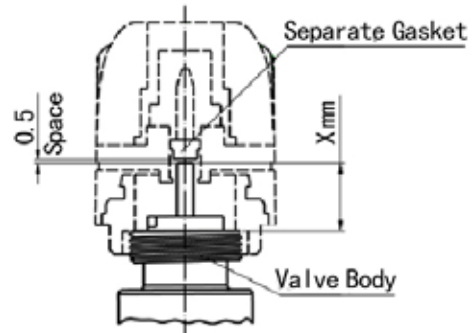


Fig.5

“Xmm” means the height from the top of the valve stem to the top of the connector. Standard height is 16mm, and different height can be made according to customers’ requirements.

### Installation

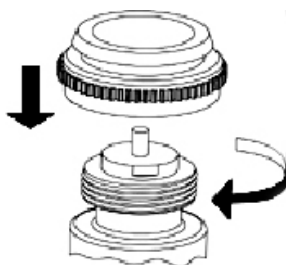


Fig. 6 Install Connector

※ Rotate the connector to the valve tightly.

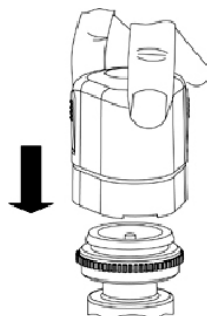


Fig. 7 Install Actuator

※ Put the actuator on the connector, and press it downwards until the internal lock is locked

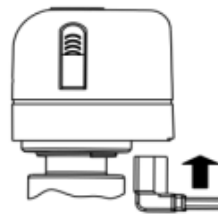


Fig.8 Insert Power Plug

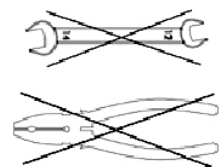
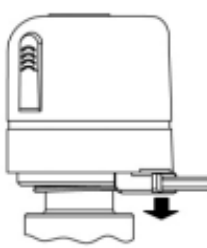
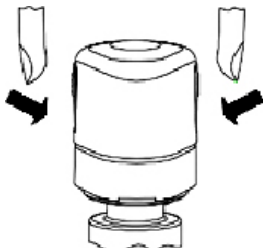
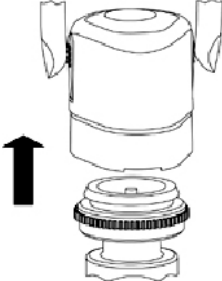
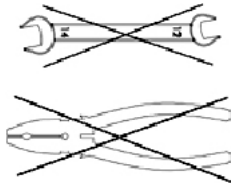


Fig. 9 No need tools

### Disassembly

 <p>Fig. 10 Disassembly position</p>	 <p>Fig. 11 Disassembly Directions</p>	 <p>Fig. 12 Disassembly Direction</p>	 <p>Fig. 13 The tool should not be required</p>
<p>※ Pressing the two beside detachable buttons of the actuator with fingers and pull it out upwards</p>			

### V41 Series Heating Valve



### Description

V41 Series heating valve is designed to supply temperature control for air-conditioning circumstance. It has three models: V41S (2-way), V41M (3-way) and V41 T(3-way 4-outlet). V41 series heating valve 2-way and 3-way is normally closed on direct way (3- way angle way is normally open), its actuator will be electro-thermal actuator or other micro-electromechanical actuator. Actuator can drive the piston to open direct way and close angle way. Spring is used to return the piston, and ensure its good sealing performance by O-sealing-ring. V41 series heating valve is with characteristics of condensed structure, reliability and convenient installation.

### Technical Parameters for Valve

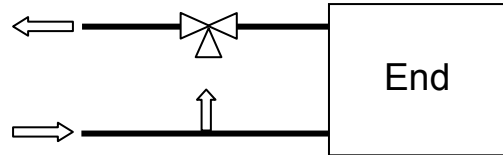
Material	Valve Body	Forging Brass HPb59-1
	Valve Stem	Stainless Steel (1Cr18Ni9)
	Spring	Stainless Steel Wire (1Cr18Ni9)
	Inner Cover	PBT
	Piston	FRPA-66
	O-Sealing-Ring	Nitrile Rubber
Valve Body Rating-Pressure		1.6MPa
Stroke		2.5, 4.5 (mm)
Max. Flow Speed		3m/s
Medium		Water, Water+Glycol
Temperature		5—95℃
Leakage		0 (When direct way and angle way, valve is closed)

### Installation

Before installing the valve, make sure the pipe is clean and free from soldering scraps, and to

ensure the piston inside the valve can open and close freely.

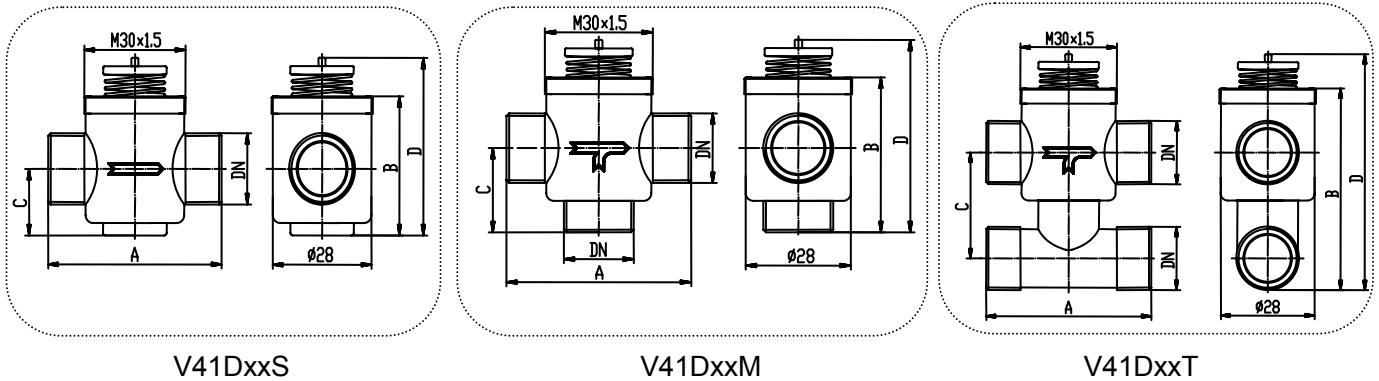
Pay attention to the allowed flow direction when installation, actuator should be mounted above the valve body, three valve is better use as mixing valve, and installation diagram is as following:



**Specification and Technical Data**

Model	Structure	KV Value (Direct Way) m <sup>3</sup> /h	KV Value (Angle Way) m <sup>3</sup> /h	Pressure (MPa)	Connecting Size
V41D15S25	Two way	0.25	—	0.25	G1/2 (DN15)
V41D15S40		0.4			
V41D15S60		0.6			
V41D15S100		1.0			
V41D15S160		1.6			
V41D20S250	Two way	2.5	—	0.15	G3/4 (DN20)
V41D15M25	Three way	0.25	0.25	0.25	G1/2 (DN15)
V41D15M40		0.4	0.4		
V41D15M60		0.6	0.6		
V41D15M100		1.0	0.8		
V41D15M160		1.6	1.0		
V41D20M250	Three way	2.5	1.6	0.15	G3/4 (DN20)
V41D15T25	Three way with by pass (4 outlets)	0.25	0.25	0.25	G1/2 (DN15)
V41D15T40		0.4	0.4		
V41D15T60		0.6	0.6		
V41D15T100		1.0	0.8		
V41D15T160		1.6	1.0		
V41D15T250		2.0	1.2		
V41D20T250	Same ↑	2.5	1.6	0.15	G3/4 (DN20)

**Installation dimensions are as following diagrams**



Valve P/N	Dimensions ( mm )				
	DN	A	B	C	D
V41D15S	D15	52	47	19.5	63
V41D20S	D20	56	47	22	63
V41D15M	D15	52	50	25	66
V41D20M	D20	56	59	37	78
V41D15T	D15	52	70	35	86
V41D15T	D15	52	70	40	86
V41D20T	D20	56	88	50	104

**Warning !**

- Make sure the arrow on the valve conforms to the flow direction.
- Please check the power supply of actuator carefully, make sure it is suitable for actuator to avoid damaging motor.