

V46 Series

Pressure Actuated Water Regulating Valve

Description

The V46 is a pressure actuated modulating valve that is suitable for use either on closed or open systems. Direct acting valves open on pressure increase. This type of valve is primarily used to regulate the flow of water or glycol to a water cooled condenser on a refrigeration system.

Features

- no close fitting or sliding parts in water passages
- minimizes chatter or water hammer
- free movement of all parts provides smooth pressure modulation
- refrigerant adjustment is not affected by water pressure
- withstands high hydraulic shock without damage
- range spring does not come in contact with cooling water
- easy manual flushing, if required
- 3/8, 1/2, and 3/4 in. valves may be disassembled and reassembled without detaching from the refrigeration system or without pumping down



V46AA-1



V46AT-1

Applications

This valve is designed to modulate flow of water or glycol to a water cooled condenser on a refrigeration system.

- ice machines
- computer room air conditioning units
- ice cream machines
- refrigeration cases.

Selection Charts

V46 Series Pressure Actuated Water Regulating Valve (Part 1 of 2)

Code Number ¹	Pipe Size (In.)	Inlet and Outlet	Opening Point Range – psig (kPa)	Pressure Element Style	Seat Repair Kit	Replacement Power Elements
COMMERCIAL TYPE, STANDARD FLOW – NON CORROSIVE REFRIGERANTS						
V46AA-1C	3/8 NPT	Threaded	70 to 260 (483 to 1793)	30 in Capillary; 1/4 in. Flare Nut (Style 45)	STT14A-600R	SEP91A-600R and SEC99AA-36C ²
V46AA-50C				1/4 in. Male Flare Fitting (Style 5)		SEP91A-600R
V46AB-1C	1/2 NPT			30 in Capillary; 1/4 in. Flare Nut (Style 45)	STT15A-602R	SEP91A-602R and SEC99AA-36C ²
V46AB-25C				1/4 in. Male Flare Fitting (Style 5)		SEP91A-602R
V46AC-1C	3/4 NPT			30 in Capillary; 1/4 in. Flare Nut (Style 45)	STT16A-601R	SEP91A-601R and SEC99AA-36C ²
V46AC-26C				1/4 in. Male Flare Fitting (Style 5)		SEP91A-601R
V46AD-1C	1 NPT			30 in Capillary; 1/4 in. Flare Nut (Style 45)	STT17A-609R	SEP91A-603R and SEC99AA-36C ²
V46AD-13C				1/4 in. Male Flare Fitting (Style 5)		SEP91A-603R
V46AE-1C	1 1/4 NPT			30 in Capillary; 1/4 in. Flare Nut (Style 45)	STT17A-610R	SEP91A-603R and SEC99AA-36C ²
V46AE-17C				1/4 in. Male Flare Fitting (Style 5)		SEP91A-603R
V46AJ-2C	1/2	Union		30 in Capillary; 1/4 in. Flare Nut (Style 45)	STT15A-602R	SEP77A-605R
V46EK-2C	3/4				STT16A-601R	SEP127A-600R
V46AL-2C	1				STT17A-609R	SEP107A-602R
V46AM-2C	1-1/4				STT17A-610R	
V46AR-1C	1 1/2				4 Hole ASME Flange	
V46AR-10C		1/4 in. Male Flare Fitting (Style 5)		SEP91A-603R		
V46AS-1C	2	70 to 170 (483 to 1172)	(Note 1)	STT18A-600R		
V46AS-2C	2	160 to 260 (1103 to 1793)		SEP81A-601R		
V46AT-1C	2 1/2	70 to 170 (483 to 1172)		STT18A-601R	SEP81A-602R	
V46AT-2C	2 1/2	160 to 260 (1103 to 1793)		SEP81A-601R		

The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products. © 2009 Johnson Controls, Inc. www.johnsoncontrols.com



Pressure Actuated Water Regulating Valve (Continued)

V46 Series Pressure Actuated Water Regulating Valve (Part 2 of 2)

Code Number ¹	Pipe Size (In.)	Inlet and Outlet	Opening Point Range – psig (kPa)	Pressure Element Style	Seat Repair Kit	Replacement Power Elements	
COMMERCIAL TYPE, LOW FLOW – NON CORROSIVE REFRIGERANTS ³							
V46DA-2C	3/8 NPT	Threaded	70 to 260 (483 to 1793)	30 in. Capillary; 1/4 in. Flare Nut (Style 45)	STT14A-603R	SEP91A-600R and SEC99AA-36C ⁴	
COMMERCIAL TYPE – AMMONIA							
V46AC-8C	3/4 NPT	Threaded	100 to 200 (690 to 1379)	1/4 in. Female NPT (Style 15)	STT16A-601R	SEP70A-601R	
V46AD-4C	1 NPT				STT17A-609R	SEP70A-604R	
V46AE-4C	1 1/4 NPT				STT17A-610R		
V46AR-2C	1 1/2	4 Hole ASME Flange			STT18A-600R	SEP70A-605R	
V46AS-3C	2				STT18A-601R		
V46AT-3C	2 1/2						
MARITIME TYPE – NON-CORROSIVE REFRIGERANTS							
V46BA-2C	3/8 NPT	Threaded	70 to 260 (483 to 1793)	30 in. Capillary with Sweat Connection (Style 34)	STT14A-601R	SEP13A-602R	
V46BB-2C	1/2 NPT				STT15A-603R	SEP13A-600R	
V46BC-2C	3/4 NPT				STT17A-613R	SEP13A-603R	
V46BD-2C	1 NPT				STT17A-611R	SEP50A-600R	
V46BE-2C	1 1/4 NPT				STT17A-612R		
V46BS-4C	2	4 Hole ASME Flange	160 to 260 (1103 to 1793)		STT18A-602R	SEP50A-601R	
V46BT-4C	2 1/2						
NAVSEA Certified – NON-CORROSIVE REFRIGERANTS							
V46CJ-2C	1/2	Sweat Connector	70 to 260 (483 to 1793)	30 in. Capillary with Sweat Connection (Style 34)	STT15A-603R	SEP13A-600R	
V46CN-2C	3/4	4 Hole Navy Flange			STT17A-613R	SEP13A-603R	
V46CP-2C	1	4 Hole ASME Flange			STT17A-611R	SEP50A-600R	
V46CQ-2C	1 1/4				STT17A-612R		
V46BR-2C	1 1/2				6 Hole Navy Flange		
V46BS-3C	2	4 Hole ASME Flange			70 to 170 (483 to 1172)	STT18A-602R	SEP50A-601R
V46CS-3C	2	6 Hole Navy Flange					
V46CS-4C	2				160 to 260 (1103 to 1793)		
V46BT-3C	2 1/2	4 Hole ASME Flange			70 to 170 (483 to 1172)		
V46CT-3C	2 1/2	6 Hole Navy Flange					
V46CT-4C	2 1/2		160 to 260 (1103 to 1793)				

1. Refer to *Valve Sizing Information—90% Open Method Catalog Page, LIT-1927400*. Then specify the code number from this chart. Refer to the *Accessories* chart on the following page for companion flange kit code numbers.
2. Replacement element supplied with 1/4 in. male SAE connector. Order SEC99AA capillary kit with 2 flare nuts separately, if needed.
3. Low water flow valve - 2.5 GPM max.
4. Replacement element supplied with 1/4 in. male SAE connector. Order SEC99AA capillary kit with 2 flare nuts separately, if needed.

Note 1: Use only on valves specified.

Note 2: Standard capillary length on Style 45 and Style 34 elements is 30 inches.

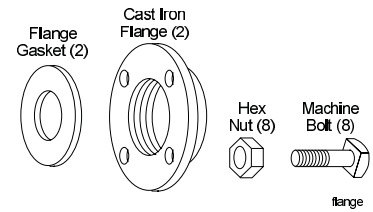
Pressure Actuated Water Regulating Valve (Continued)

Accessories (Companion Flanges and Gaskets)

Code Number	Companion Flange Kit (See Diagram)	Water Valve Size (in.)
246-423	KIT14A-612 ¹	1-1/2 in.
246-424	KIT14A-613 ¹	2 in.
246-425	KIT14A-614 ¹	2-1/2 in.

1. For commercial valves only

Note: Flange has NPT (National Pipe Thread)



Companion Flange Kit

Technical Specifications

V46 Series Pressure Actuated Water Regulating Valves		
Maximum Water Temperature	170°F (77°C)	
Valve Body	Commercial	3/8 to 3/4 in. cast brass, 1 in. and larger cast iron with a special finish
	Navy and Maritime	Cast naval bronze with monel interior parts

Pressure Range Specification

Refrigerant	Opening Point Range ¹ - psig (kPa) V46A B, C, D	Maximum Permissible Pressure psig (kPa)		Refrigerant
		Water		
		Static	ΔP Across Valve	
Non-Corrosive Refrigerants (R12, R22, R134a, R502, R404a, R507)				
All Range Valve	70 to 260 (483 to 1793)	150 (1034)	60 PST	320 (2206)
All Range with High Overpressure				370 (2551)
3/8 in. Extended All Range	70 to 300 (483 to 2068)			440 (3034)
Valves 2 in. or Larger				
R12, R134a - 2 and 2-1/2 in. Low Range	70 to 170 (483 to 1172)	150 (1034)	60 PST	230 (1586)
R22, R502, R404a, R507 - 2 and 2-1/2 in. High Range	160 to 260 (1103 to 1793)			320 (2206)
Other Refrigerants				
Ammonia R717	100 to 200(690 to 1379)	150 (1034)	60 PST	320 (2206)

1. Direct acting valve ranges indicate the valve opening point.