

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.

Refer to the *V46 Pressure-Actuated Water-Regulating Valve Product Bulletin (LIT-125687)* for important product application information.

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

Applications

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

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



V46AA-1 Water Regulating Valve



V46AT-1 Water Regulating Valve

Repair Information

If the V46 Series Pressure Actuated Water Regulating Valve fails to operate within its specifications, replace the unit. For a replacement valve, contact the nearest Johnson Controls® representative.

Selection Chart

Product Code Number ¹	Pipe Size (In.)	Inlet and Outlet	Opening Point Range – psig (kPa)	Pressure Element Style ²	Seat Repair Kit	Replacement Power Elements					
Commercial Type, Standard Flow - Non-Corrosive Refrigerant											
V46AA-1C	3/8 NPT	Threaded	70 to 260 (483 to 1,793)	30 in Capillary; 1/4 in. Flare Nut (Style 45)	STT14A-600R	SEP91A-600R and SEC99AA-36C ³					
V46AA-50C	1/2 NPT			1/4 in. External Flare Fitting (Style 5)			STT15A-602R	SEP91A-602R and SEC99AA-36C ³			
V46AB-1C				30 in Capillary; 1/4 in. Flare Nut (Style 45)	STT16A-601R	SEP91A-601R and SEC99AA-36C ³					
V46AB-25C	1/4 in. External Flare Fitting (Style 5)			STT17A-609R			SEP91A-603R and SEC99AA-36C ³				
V46AC-1C	3/4 NPT				30 in Capillary; 1/4 in. Flare Nut (Style 45)	STT17A-610R		SEP91A-603R and SEC99AA-36C ³			
V46AC-26C	1 NPT			1/4 in. External Flare Fitting (Style 5)	STT17A-610R		SEP91A-603R				
V46AD-1C				30 in Capillary; 1/4 in. Flare Nut (Style 45)		STT17A-610R		SEP91A-603R and SEC99AA-36C ³			
V46AD-13C	1 1/4 NPT			1/4 in. External Flare Fitting (Style 5)	STT17A-610R		SEP91A-603R				
V46AE-1C				30 in Capillary; 1/4 in. Flare Nut (Style 45)		STT17A-610R		SEP91A-603R and SEC99AA-36C ³			
V46AE-17C	1/4 in. External Flare Fitting (Style 5)			STT17A-610R	SEP91A-603R						
V46AJ-2C	1/2	Union	48 in Capillary; 1/4 in. Flare Nut (Style 46)			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	SEP91A-603R and SEC99AA-36C ³
V46AR-1C	1 1/2										
V46AR-10C	Four Hole ASME Flange	1/4 in. External Flare Fitting (Style 5)	SEP91A-603R								
V46AS-1C				2	STT18A-600R	SEP81A-602R					
V46AS-2C				2			(see Note below)	SEP81A-601R			
V46AT-1C				2-1/2					STT18A-601R	SEP81A-602R	
V46AT-2C				2-1/2							STT18A-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. © 2015 Johnson Controls, Inc. www.johnsoncontrols.com



V46 Series Pressure Actuated Water Regulating Valve (Continued)

Product Code Number ¹	Pipe Size (In.)	Inlet and Outlet	Opening Point Range – psig (kPa)	Pressure Element Style ²	Seat Repair Kit	Replacement Power Elements	
Commercial Type, Low Flow - Non-Corrosive Refrigerants⁴							
V46DA-2C	3/8 NPT	Threaded	70 to 260 (483 to 1,793)	30 in. Capillary; 1/4 in. Flare Nut (Style 45)	STT14A-603R	SEP91A-600R and SEC99AA-36C ⁵	
Commercial Type - Ammonia							
V46AC-8C	3/4 NPT	Threaded	100 to 200 (690 to 1,379)	1/4 in. Internal 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	Four 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 1,793)	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				STT18A-602R	SEP50A-601R	
V46BT-4C	2-1/2	Four Hole ASME Flange	160 to 260 (1,103 to 1,793)				
NAVSEA Certified – Non-Corrosive Refrigerants							
V46CG-1C	3/8	Threaded	70 to 260 (483 to 1,793)	30 in. Capillary with Sweat Connection (Style 34)	STT14A-601R	SEP13A-602R	
V46CH-2C	3/8	Sweat Connector					
V46CH-4C	3/8						
V46CH-5C	3/8						
V46CJ-2C	1/2	Sweat Connector			STT15A-603R	SEP13A-600R	
V46CN-2C	3/4	Four Hole Navy Flange			STT17A-613R	SEP13A-603R	
V46CP-2C	1				STT17A-611R	SEP50A-600R	
V46CQ-2C	1-1/4				STT17A-612R		
V46BR-2C	1-1/2	Four Hole ASME Flange					
V46CR-2C	1-1/2	Six Hole Navy Flange					
V46BS-3C	2	Four Hole ASME Flange			70 to 170 (483 to 1,172)	STT18A-602R	SEP50A-601R
V46CS-3C	2	Six Hole Navy Flange					
V46CS-4C	2				160 to 260 (1,103 to 1,793)		
V46BT-3C	2-1/2	Four Hole ASME Flange			70 to 170 (483 to 1,172)		
V46CT-3C	2-1/2	Six Hole Navy Flange					
V46CT-4C	2-1/2		160 to 260 (1,103 to 1,793)				

1. Refer to *V46 Series Valve Sizing Information — 90% Open Method (LIT-1927400) 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. Standard capillary length on Style 45 and Style 34 elements is 30 inches
3. Replacement element supplied with 1/4 in. external SAE connector. Order SEC99AA Capillary Kit with 2 flare nuts separately, if needed.
4. Low water flow valve - 2.5 GPM max.
5. Replacement element supplied with 1/4 in. external SAE connector. Order SEC99AA Capillary Kit with 2 flare nuts separately, if needed.

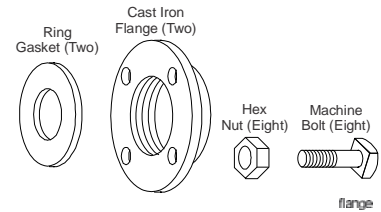
Note: Use only on valves specified.



V46 Series Pressure Actuated Water Regulating Valve (Continued)

Accessories (Companion Flanges and Gaskets)

Product 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.



Companion Flange Kit

1. For commercial valves only

Note: Flange has NPT (National Pipe Thread)

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 1,793)	150 (1,034)	60 PST	320 (2,206)
All Range with High Overpressure				370 (2,551)
3/8 in. Extended All Range	70 to 300 (483 to 2,068)			440 (3,034)
Valves 2 in. or Larger				
R12, R134a - 2 and 2-1/2 in. Low Range	70 to 170 (483 to 1,172)	150 (1,034)	60 PST	230 (1,586)
R22, R502, R404a, R507 - 2 and 2-1/2 in. High Range	160 to 260 (1,103 to 1,793)			320 (2,206)
Other Refrigerants				
Ammonia R717	100 to 200 (690 to 1,379)	150 (1,034)	60 PST	320 (2,206)

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