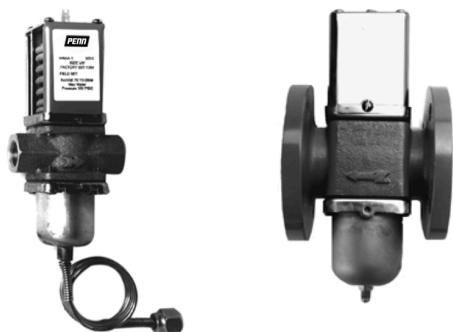




Description

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 the flow of water or glycol to a water-cooled condenser on a refrigeration system such as the following:

- Ice machines
- Computer room air conditioning units
- Ice cream machines
- Refrigeration cases

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.

WARNING

Risk

This product is made of copper alloy, which contains lead. The product is therefore not to be used on drinking water.

Selection chart

Refer to *V46 Series Valve Sizing Information — 90% Open Method Catalog Page (LIT-1927400)*. Then specify the code number from the following chart. For companion flange kit code numbers, see [Companion flange and gasket accessories](#).

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

For SEC99AA-36C, a replacement element is supplied with a 1/4 in. external SAE connector. Order the SEC99AA Capillary Kit with two flare nuts separately, if needed.

Table 1: Commercial type, standard flow - non-corrosive refrigerants

Product code	Pipe size, in.	Inlet and outlet	Opening point range, psig (kPa)	Pressure element style	Seat repair kit	Replacement power elements
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
V46AA-50C				1/4 in. external 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
V46AB-25C				1/4 in. external 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
V46AC-26C				1/4 in. external 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
V46AD-13C				1/4 in. external flare fitting, Style 5.		SEP91A-603R
V46AE-17C	1 1/4 NPT			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	
V46AR-1C	1 1/2	Four-hole American Society of Mechanical Engineers (ASME) flange	70 to 170 (483 to 1,172) 160 to 260 (1,103 to 1,793) 70 to 170 (483 to 1,172) 160 to 260 (1,103 to 1,793)	30 in. capillary; 1/4 in. flare nut, Style 45.		SEP91A-603R and SEC99AA-36C
V46AR-10C				1/4 in. external flare fitting, Style 5.		SEP91A-603R
V46AS-1C	2			Use only on valves specified.	STT18A-600R	SEP81A-602R
V46AS-2C	2					SEP81A-601R
V46AT-1C	2-1/2				STT18A-601R	SEP81A-602R
V46AT-2C	2-1/2					SEP81A-601R

Table 2: Commercial type, low flow - non-corrosive refrigerants

Product code	Pipe size, in.	Inlet and outlet	Opening point range, psig (kPa)	Pressure element style	Seat repair kit	Replacement power elements
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

❶ **Note:** Low water flow valve - 2.5 gpm maximum.

Table 3: Maritime type - non-corrosive refrigerants

Product code	Pipe size, in.	Inlet and outlet	Opening point range, psig (kPa)	Pressure element style	Seat repair kit	Replacement power elements
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	Four-hole ASME flange	160 to 260 (1,103 to 1,793)		STT18A-602R	SEP50A-601R
V46BT-4C	2-1/2					

Table 4: NAVSEA certified – non-corrosive refrigerants

Product code	Pipe size, in.	Inlet and outlet	Opening point range, psig (kPa)	Pressure element style	Seat repair kit	Replacement power elements
V46CG-1C	3/8	Threaded	70 to 260 (483 to 1,793)	30 in. capillary with sweat connection, Style 34.	STT14A-601R	SEP13A-602R
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	70 to 170 (483 to 1,172)		STT18A-602R	SEP50A-601R
V46CR-2C	1-1/2	Six-hole navy flange				
V46BS-3C	2	Four-hole ASME flange				
V46CS-3C	2	Six-hole Navy flange				
V46BT-3C	2-1/2	Four-hole ASME flange	160 to 260 (1,103 to 1,793)			
V46CT-3C	2-1/2	Six-hole Navy flange				
V46CT-4C	2-1/2					

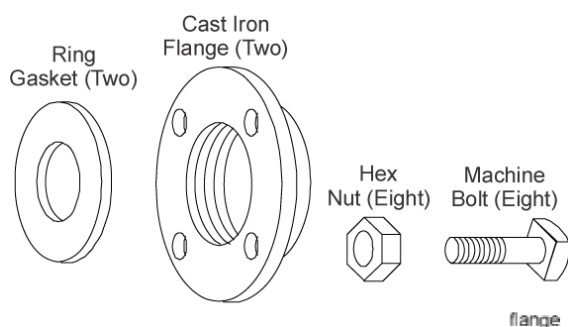
Companion flange and gasket accessories

Product code		Water valve size, in.
Flange gasket, one gasket per package	Companion flange kit, see following figure	
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: The flange has NPT (National Pipe Thread).

Figure 1: Companion flange kit



V46 series pressure-actuated water regulating valve technical specifications

Table 5: V46 Series pressure-actuated water regulating valves

Specification	Description
Maximum water temperature	170°F (77°C)
Valve body	Commercial
	Navy and maritime

Table 6: Pressure range specification

Refrigerant	Opening point range ¹ , psig (kPa) V46 A B, C, D	Maximum permissible pressure, psig (kPa)		
		Water		Refrigerant
		Static	ΔP across valve	
Non-corrosive refrigerants (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				
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)

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

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

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Single point of contact

APAC	Europe	NA/SA
JOHNSON CONTROLS C/O CONTROLS PRODUCT MANAGEMENT NO. 32 CHANGJIANG RD NEW DISTRICT WUXI JIANGSU PROVINCE 214028 CHINA	JOHNSON CONTROLS WESTENDHOF 3 45143 ESSEN GERMANY	JOHNSON CONTROLS 507 E MICHIGAN ST MILWAUKEE WI 53202 USA

Contact information

Contact your local branch office:
www.johnsoncontrols.com/locations

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