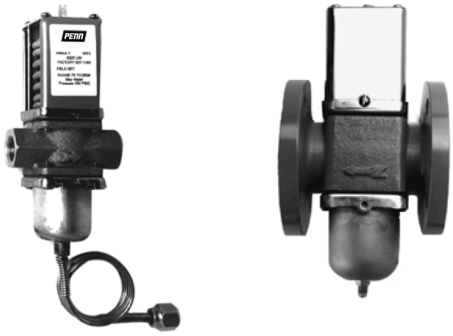
# V46 Series Pressure-Actuated Water Regulating Valve Catalog Page

2021-08-17

LIT-1927350



## 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 | | 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. Use only on valves specified. | | SEP91A-603R |
| V46AS-1C | 2 | | 70 to 170 (483 to 1,172) | | STT18A-600R | SEP81A-602R |
| V46AS-2C | 2 | | 160 to 260 (1,103 to 1,793) | | | SEP81A-601R |
| V46AT-1C | 2-1/2 | | 70 to 170 (483 to 1,172) | | STT18A-601R | SEP81A-602R |
| V46AT-2C | 2-1/2 | | 160 to 260 (1,103 to 1,793) | | | 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 |

**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 | | | | | |



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### 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 | | | | |
| 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 | | | | |
| V46BT-3C | 2-1/2 | Four-hole ASME flange | | | | |
| V46CT-3C | 2-1/2 | Six-hole Navy flange | | | | |
| V46CT-4C | 2-1/2 | | 160 to 260 (1,103 to 1,793) | | | |

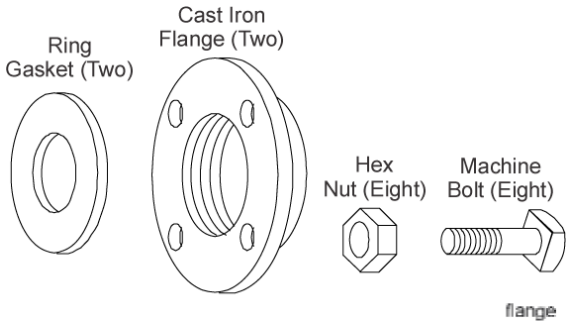
## Companion flange and gasket accessories

| 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 | 3/8 in. 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 |



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### Table 6: Pressure range specification

| Refrigerant | Opening point range[1], psig (kPa) V46 A B, C, D | Maximum permissible pressure, psig (kPa) | | |
|---|---|---|---|---|
| | | Water | | |
| | | Static | ΔP across valve | Refrigerant |
| 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.

## Software terms

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## Single point of contact

| APAC | Europe | NA/SA |
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## Contact information

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