

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

## Selection Charts

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

| Code Number <sup>1</sup>   | Pipe Size (In.) | Inlet and Outlet   | Opening Point Range – psig (kPa) | Pressure Element Style                        | Seat Repair Kit | Replacement Power Elements               |
|--|-----------------|--------------------|----------------------------------|---|-----------------|--|
| <b>COMMERCIAL TYPE, STANDARD FLOW – NON CORROSIVE REFRIGERANTS</b> |                 |                    |                                  |   |                 |  |
| V46AA-1C   | 3/8 NPT         | Threaded           | 70 to 260 (483 to 1793)          | 30 in Capillary; 1/4 in. Flare Nut (Style 45) | STT 14A-600R    | SEP91A-600R and SEC99AA-36C <sup>2</sup> |
| 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) | STT 15A-602R    | SEP91A-602R and SEC99AA-36C <sup>2</sup> |
| 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) | STT 16A-601R    | SEP91A-601R and SEC99AA-36C <sup>2</sup> |
| 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) | STT 17A-609R    | SEP91A-603R and SEC99AA-36C <sup>2</sup> |
| 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) | STT 17A-610R    | SEP91A-603R and SEC99AA-36C <sup>2</sup> |
| 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) | STT 15A-602R    | SEP77A-605R                              |
| V46EK-2C   | 3/4             |                    |                                  |   | STT 16A-601R    | SEP127A-600R                             |
| V46AL-2C   | 1               |                    |                                  |   | STT 17A-609R    | SEP107A-602R                             |
| V46AM-2C   | 1-1/4           |                    |                                  |   | STT 17A-610R    |  |
| V46AR-1C   | 1 1/2           | 4 Hole ASME Flange |                                  | 30 in Capillary; 1/4 in. Flare Nut (Style 45) |                 | SEP91A-603R and SEC99AA-36C <sup>2</sup> |
| V46AR-10C  |                 |                    |                                  | 1/4 in. Male Flare Fitting (Style 5)          |                 | SEP91A-603R                              |
| V46AS-1C   | 2               |                    | 70 to 170 (483 to 1172)          | (Note 1)                                      | STT 18A-600R    | SEP81A-602R                              |
| V46AS-2C   | 2               |                    | 160 to 260 (1103 to 1793)        |   | SEP81A-601R     |  |
| V46AT-1C   | 2 1/2           |                    | 70 to 170 (483 to 1172)          |   | STT 18A-601R    | SEP81A-602R                              |
| V46AT-2C   | 2 1/2           |                    | 160 to 260 (1103 to 1793)        |   |                 | SEP81A-601R                              |

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## Pressure Actuated Water Regulating Valve (Continued)

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

| Code Number <sup>1</sup>   | Pipe Size (In.) | Inlet and Outlet   | Opening Point Range – psig (kPa) | Pressure Element Style                            | Seat Repair Kit           | Replacement Power Elements               |             |
|--|-----------------|--------------------|----------------------------------|---|---------------------------|--|-------------|
| <b>COMMERCIAL TYPE, LOW FLOW – NON CORROSIVE REFRIGERANTS <sup>3</sup></b> |                 |                    |                                  |   |                           |  |             |
| 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 <sup>4</sup> |             |
| <b>COMMERCIAL TYPE – AMMONIA</b>   |                 |                    |                                  |   |                           |  |             |
| 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           |                    |                                  |   |                           |  |             |
| <b>MARITIME TYPE – NON-CORROSIVE REFRIGERANTS</b>                          |                 |                    |                                  |   |                           |  |             |
| 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           |                    |                                  |   |                           |  |             |
| <b>NAVSEA Certified – NON-CORROSIVE REFRIGERANTS</b>                       |                 |                    |                                  |   |                           |  |             |
| 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               |                    |                                  |   | STT17A-611R               | SEP50A-600R                              |             |
| V46CQ-2C   | 1 1/4           |                    |                                  |   | STT17A-612R               |  |             |
| V46BR-2C   | 1 1/2           |                    |                                  |   | 4 Hole ASME Flange        |  |             |
| V46CR-2C   | 1 1/2           | 6 Hole Navy Flange |                                  |   | 70 to 170 (483 to 1172)   | STT18A-602R                              | SEP50A-601R |
| V46BS-3C   | 2               | 4 Hole ASME Flange |                                  |   |                           |  |             |
| V46CS-3C   | 2               | 6 Hole Navy Flange |                                  |   | 160 to 260 (1103 to 1793) |  |             |
| V46CS-4C   | 2               |                    |                                  |   |                           |  |             |
| V46BT-3C   | 2 1/2           | 4 Hole ASME Flange |                                  |   | 70 to 170 (483 to 1172)   |  |             |
| V46CT-3C   | 2 1/2           | 6 Hole Navy Flange | 160 to 260 (1103 to 1793)        |   |                           |  |             |
| V46CT-4C   | 2 1/2           |                    |                                  |   |                           |  |             |

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.

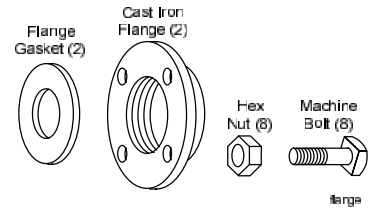
## Pressure Actuated Water Regulating Valve (Continued)

### Accessories (Companion Flanges and Gaskets)

| Code Number | Companion Flange Kit (See Diagram) | Water Valve Size (in.) |
|-------------|------------------------------------|------------------------|
| 246-423     | KIT14A-612 <sup>1</sup>            | 1-1/2 in.              |
| 246-424     | KIT14A-613 <sup>1</sup>            | 2 in.                  |
| 246-425     | KIT14A-614 <sup>1</sup>            | 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 <sup>1</sup> - psig (kPa)<br>V46A B, C, D | Maximum Permissible Pressure psig (kPa) |                 | Refrigerant |
|--|---|---|-----------------|-------------|
|  |   | Water                                   |                 |             |
|  |   | Static                                  | ΔP Across Valve |             |
| <b>Non-Corrosive Refrigerants (R12, R22, R134a, R502, R404a, R507)</b> |   |   |                 |             |
| 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)  |
| <b>Valves 2 in. or Larger</b>  |   |   |                 |             |
| 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)  |
| <b>Other Refrigerants</b>  |   |   |                 |             |
| Ammonia R717   | 100 to 200(690 to 1379)                                       | 150 (1034)                              | 60 PST          | 320 (2206)  |

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