

Field Servicing Instruction for Sporlan Expansion Valves - Assembling Instructions

The following steps are necessary in properly disassembling, inspecting, cleaning, and reassembling a TEV whether the valve is in or out of the refrigerant piping.

1. Before disassembling the valve, be sure the refrigerant pressure in the system has been reduced to a safe level (0 psig).

2. Remove the seal cap and turn the adjustment stem counter-clockwise to relieve the spring force. Count and record the number of turns so adjustment can be returned to its original position.

3. Using appropriate wrenches or a vise to properly support the valve body, remove the element (if a replaceable type), the bottom cap assembly, and the internal parts.

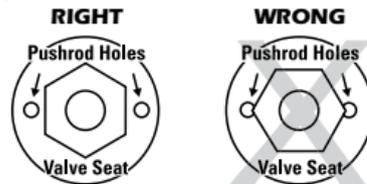
Caution: Regardless of whether the valve is in the system or in a vise, care must be taken to prevent distorting the body by exerting too much pressure in tightening the element or in clamping the body in the vise.

Also, do not use a wrench on the outer welded edge of the element.

4. Inspect element and body for any foreign materials or physical damage.

5. To reassemble valves with replaceable seats, screw seat into body with a fairly light pressure since it does not require a heavy pressure to make this small knife-edge joint.

Caution: Be sure hexagon corners of seat do not protrude into pushrod holes (see below).



For valves that do not have replaceable elements or for Type O valves, place the pushrod(s) into the body now.

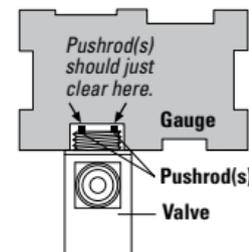
6. Next, slip the pin and carrier (which have been pressed together at the factory) into the body and tap

the pin into the seat to form a true seating surface. It is generally advisable, before tapping these parts together, to check the concentricity of both the pin and seat by engaging the parts by pressing them lightly together with one finger and noting that there is no tendency to stick together. This should be repeated several times after rotating the pin carrier a quarter of a turn. In assembling valves with port sizes of 1/4" and larger which use the flat disc instead of the tapered pin, DO NOT TAP THE DISC AGAINST THE SEAT.

7. Now place the spring guide stamping (when used), and spring, in the pin carrier, place the lower spring guide on the opposite end of the spring and screw the bottom cap in place. After screwing bottom cap assembly in place, carefully tighten, preferably with two 10" wrenches, to seal the metal-to-metal knife edge joint. The sealing surfaces should be free of any foreign material or nicks that might prevent a leak-tight joint.

8. On valves with replaceable elements (except Types O), place the pushrods into the body and open the valve several times by pressing down on the pins with a flat metal surface. This will help seat the pin properly.

9. Check the height of the pushrod(s) above the element sealing surface with the pushrod gauge.



Check Height of Pushrod(s) with Gauge

The appropriate gauge numbers for the various TEV's are given on the reverse side.

10. Caution: If the element-to-body joint utilizes a gasket, the gasket must be removed before checking pushrod height.

11. If the pushrod(s) are too long, they must be carefully ground off to the proper length. Clean the pushrod(s) of all dirt and grindings and place them into the body.

12. Element Replacement — If the element is dam-

aged or has lost its thermostatic charge, replace it with the same type.

To properly replace the element without damaging the element or the valve body on valves which utilize a gasketed joint, be sure only one gasket is used before assembling the element. In assembling gasketed elements held in place by two cap screws, be sure to pull up the cap screws evenly.

On valves which utilize the threaded type of element with metal-to-metal knife edge joints, always use an appropriate wrench (10") on the wrench flats. DO NOT use a wrench on the outer welded edge of the element. The sealing surfaces should be free of any foreign materials or nicks that might prevent a leak-tight joint. A few drops of refrigerant oil on the element threads will facilitate easy assembling and removal.

13. Return the superheat spring adjustment to its original position. Replace the seal cap tightly.

No. 6

No. 5A

No. 6A

| Valve Type | | Gauge Number |
|--|---|--------------|
| Current | Obsolete | |
| AA(E), LMC-AA(E) 100 tons only | --- | 1 |
| AA(E), LMC-AA(E) all others | --- | 1A |
| DA(E), LMC-DA(E) | --- | 2 |
| PFE or HFE-1-1/2, 3, 4, 5, 8, 12 | PFE or HFE-6, 7-1/2, 10, 11 | 3 |
| PVE or HVE-2-1/2, 5-1/2, 7, 11, 16, 20 | PVE or HVE-2, 5, 8, 10, 12, 15, 17, 18 | |
| PDE or HDE-5, 8, 14 | PDE or HDE-6, 7-1/2, 9, 12, 13 | |
| PRE or HRE-1-1/2, 4, 6-1/2, 9, 12 | PRE or HRE-6, 7-1/2, 11, 13 | |
| --- | UFE-12, 17/UVFE-22, 30/UDE-15, 21 URE-16, 22 | 3A |
| OFE-23, 32, 40 | UFE-23 | 3A |
| OVE-40, 55, 70 | UVE-40 | |
| ODE-28, 40, 50 | UDE-28 | |
| ORE-30, 35, 45 | URE-30 | 4 |
| All F Models except FF(E)-1/8, FV(E)-1/4, FD(E)-1/8, FR(E)-1/8 | --- | |
| FF(E)-1/8, FV(E)-1/4 | --- | 4A |
| FD(E)-1/8, FR(E)-1/8 | --- | |
| All G Models except GF(E)-1/8, GV(E)-1/4, GR(E)-1/8 | All small K models | 5 |
| GF(E)-1/8, GV(E)-1/4 | --- | 5A |
| GR(E)-1/8 | --- | |
| All X Models | --- | 6 |
| MFE-5, 7-1/2, 11, 13, 15, 20 | MFE-12, 17 | --- |
| MVE-8, 12, 18, 21, 26, 34 | MVE-30 | |
| MDE-6, 9, 13, 15, 18, 25 | MDE-14, 20 | |
| MRE-9, 15, 20, 25 | --- | |
| KFE or VFE-45, KVE or VVE-70 | --- | 6A |
| KDE or VDE-55, KRE or VRE-50 | --- | |
| MFE-25 | MFE-22 | 7 |
| MVE-42 | MVE-40 | |
| MDE-30 | MDE-26 | |
| MRE-30 | --- | |
| KFE or VFE-35, 55 | VFE-50 | 7 |
| KVE or VVE-52, 100 | VVE-90 | |
| KDE or VDE-40, 65 | VDE-42, 60 | |
| KRE or VRE-38, 70 | --- | |
| WFE-80, 110 | WFE-75, 100 | 8 |
| WVE-135, 180 | --- | |
| WDE-95, 130 | WDE-90, 120 | |
| WRE-100, 130 | --- | |
| CF(E) or SF(E)-1/4, 1/2, 1, 1-1/2, 2, 2-1/2, 3 | R and T Models with 83 elements | 8A |
| CV(E) or SV(E)-1/2, 1, 1-1/2, 2, 3, 4, 5 | --- | |
| CD(E) or SD(E)-1/4, 1/2, 1, 1-1/2, 2, 2-1/2, 3, 3-1/2 | --- | |
| CR(E) or SR(E)-1/4, 1/2, 1, 1-1/2, 2, 3, 4 | --- | |
| CFE-5, SFE-5, 6 | --- | 8B |
| CFE-8, SVE-8, 10 | --- | |
| CDE-6, SDE-6, 7 | --- | |
| CRE-6, SRE-6, 7 | --- | |
| OFE-6, 9, 12 | --- | 8B |
| OVE-10, 15, 20 | --- | |
| ODE-7, 11, 14 | --- | |
| ORE-6, 9, 12 | --- | |
| OFFE-16, OVE-30, ODE-20, ORE-21E | --- | 8B |
| OZE-20, OZE-25, OZE-35 | --- | |
| All (E)BS Models | --- | --- |

No. 5

No. 4A

No. 7

No. 4

No. 8

No. 3A

No. 8A

No. 3

No. 8B

Sporlan Pushrod Gauge

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Form 38-207

No. 1

No. 1A

No. 2