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Manually Operated PTFE Diaphragms Installation & Maintenance Instructions

Saunders® HC4 Diaphragm Valves

CRANE

Index

⚠ CAUTION

READ INSTRUCTIONS BEFORE INSTALLATION or valve service. Failure to follow instructions could result in death or serious injury. If there is any question, contact the factory at U.S: 936-588-8360 or UK: +44 1633 486666

⚠ WARNING

Proper installation plays an important role in valve performance. Installation must be performed by qualified technicians only. Customer assumes all responsibility for valve performance on valves installed in the field by non-Crane ChemPharma & Energy, Saunders personnel. Improper installation will result in damage to the valve.

Installation & Operation

IMPORTANT:
Ensure that the line pressure has been removed and the system is drained and flushed.
Please ensure that you have the correct tools and safety equipment to disassemble valves correctly and ensure you follow recommended safe working practices.

1. Position the valve in the fully-open position by turning the handwheel anti-clockwise.

Installation & Operation

2. Start to loosen the fastenings.
IMPORTANT:
Do not remove the nuts completely as there may be pressure remaining in the system. Wait for any excess pressure to finish venting.

3. Remove the fastenings.

4. Remove manual bonnet assembly.

5. Inspect the valve body sealing surface for damage.

6. Remove diaphragm from bonnet assembly by turning through 90°.

Attach new diaphragm:

7. Close the bonnet assembly by turning the hand-wheel clockwise. This will expose the compressor to allow easier diaphragm engagement.

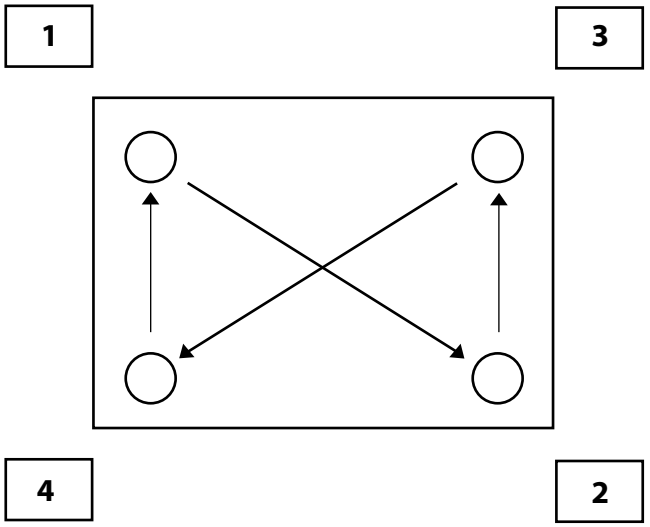
8. Engage diaphragm bayonet into the compressor slot by applying pressure to the center of the diaphragm. Ensure correct engagement. Continue to apply pressure to the center of the diaphragm and turn through 90°.

9. Fully open the bonnet assembly.
(Molded closed 214S diaphragms - open until diaphragm is flush with bonnet flange).

10. Attach the bonnet assembly to the body. Insert the retaining fastenings and hand tighten as shown in Figure 1.

Use diagonally opposing technique to tighten fastenings at all times.

Figure 1



11. Place valve in fully-closed position and tighten fastenings to ¾ of full torque (as per torque spec sheet).

Installation & Operation

12. Before final tightening, position valve as follows:

- Moulded OPEN Diaphragms 214/425 - open the valve fully.
- Moulded CLOSED Diaphragms 21S/425 - rotate back one full turn.

Moulded Closed 214S/425

Moulded Open 214/425

13. Tighten all fastenings to the specified torque setting (see torque spec tables), as per Figure 1.

Torque Spec Table

Valve Size (DN)	Maximum Torque (Nm)
8	3
15	6.6
20	6.6
25	8
40	17
50	33
65	47
80	67

IMPORTANT:

14. Re-tighten fastenings to the maximum torque after 24 hours or first heat cycle, ideally the retightening operation should be carried out with the valve in the open position and the valve temperature at 40°C or below.

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