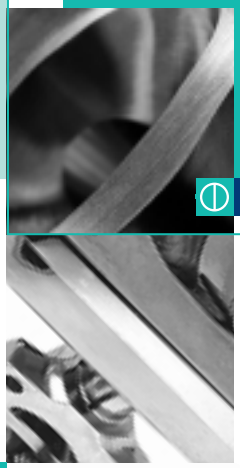
Saunders



HC4 Customised Fabrication Options

3

For applications where a standard machined block valve is not sufficient, but a full custom solution is not required, there is a wide variety of fabricated options that will provide the optimum valve configuration.

Tandem Valves (Sterile Access Valves)

Welded Valve Fabrications

The first and still most common customised valve concept is the tandem valve or valve and fitting combination.

A main valve is ported and a section of tube is welded to the port to create an access point into the valve. This tube can in turn be welded to a second valve forming a two-valve cluster, or the tube can be turned into a weld end, hygienic clamp or other type of fitting. The fabrication weld is polished to match the required surface finish specification. The resulting assembly is designed to optimise drainablity and meet standard process considerations including cGMPs for dead legs.

Applications include flow diversion, sampling, steam injection or condensate drain and block and bleed applications.

The following rules help define the possible orientation of tandem valves:

- **The main valve and access valve may be installed to drain in either the horizontal or vertical position. When installed in a horizontal run the valve must be rotated into the self-drain position to drain.**
- **Allowance must be made to permit access to bonnet or actuator fasteners and for diaphragm maintenance.**
- **The access valve can be any size including the same size as the main valve.**
- **The amount of dead leg between main and access valves will vary depending on respective valve sizes and orientation. Virtually all combinations fall within cGMP requirements.**
- **'Handwheel opposite' designs generally have shorter tangents than configurations with the handwheel of the main and access valves in the same quadrant.**
- **All Saunders welded valve fabrications are 100% hydro-tested before and after all welding and polishing processes to ensure mechanical integrity. Full material certification of all tube and fittings utilised is standard.**
- **Saunders bonnets, actuators and diaphragms fit fabricated valve assemblies without adaptors or distance pieces.**

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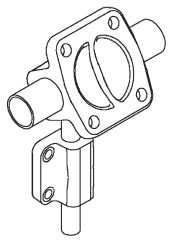
Tandem Valve Orientation Options

- Full range of horizontal and vertical, drainable options
- Can be configured to your exact pipe layout with minimum deadlegs
- Product transfer, purging, steam sterilisation, condensate drains, CIP systems

Horizontal main at drain angle/vertical tandem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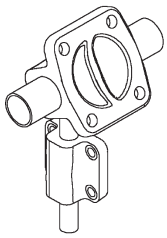
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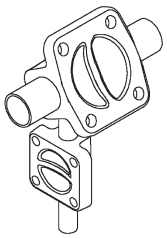
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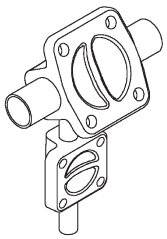
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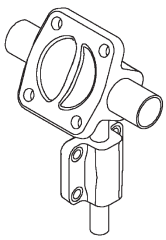
Horizontal main at drain angle/vertical tandem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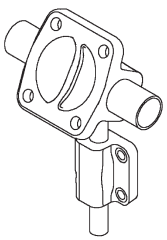
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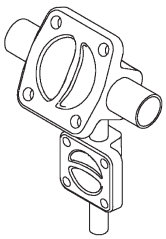
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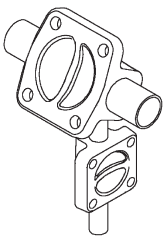
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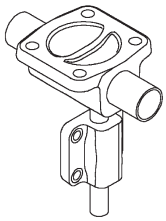
Horizontal main/vertical tandem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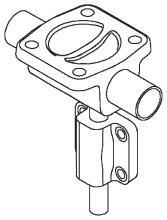
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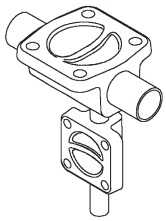
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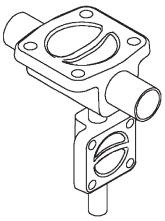
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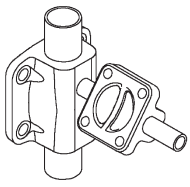
Vertical main/tandem at drain angle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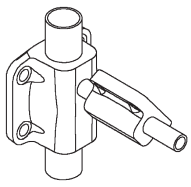
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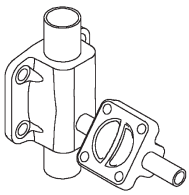
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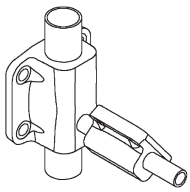
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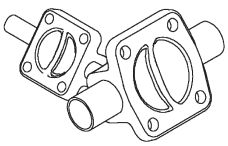
Horizontal main and tandem at drain angle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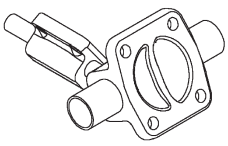
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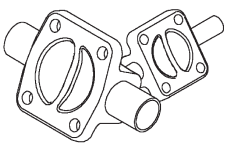
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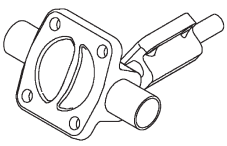
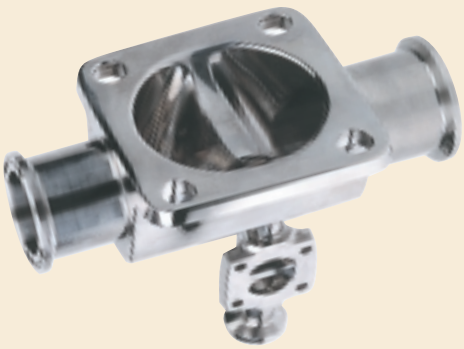
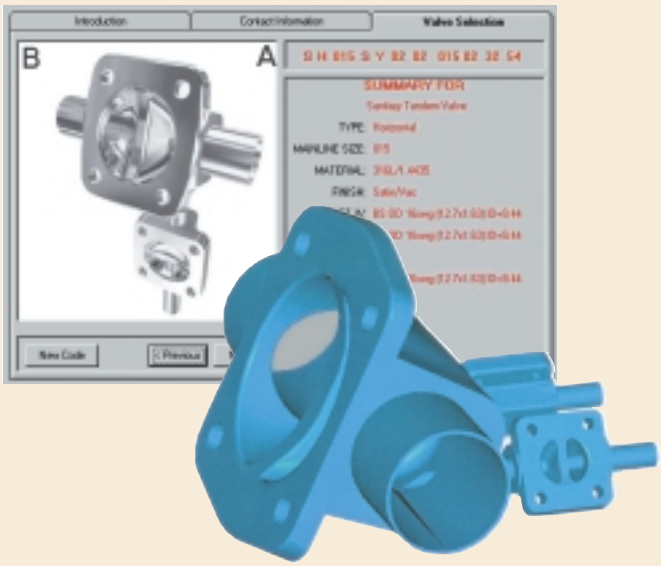

H 14 32

E Tools

Electronic tools exist to assist customers in the selection and orientation of these fabrications. Saunders Tandem Valve Selection Programme enables engineers and design detailers to select the optimum orientation to suit system requirements and produce a fully coded 3D graphic for immediate translation to valve manufacture.





ZDL Zero Deadleg Valve ‘L’ Pattern

The Saunders ZDL ‘L’ pattern diaphragm valve is typically installed in a vertical line. The functions of a 90 degree fitting and a take-off valve are combined within the valve body. The bore of the third port is situated in line with the point of seal where the diaphragm meets the weir. This ensures low point drainability and elimination of deadlegs.

The ZDL valve is available with tri-clamp or butt-weld end connections in sizes DN8–DN100.

Common applications include WFI (Water for Injection) point of use, CIP manifolds and vertical inlet/outlet piping to process equipment requiring low point drainage.

HC4 Customised Fabrication Options

Valve Manifolds/Clusters

Configuration of optimum process fabrication presents system designers with an ongoing challenge. Minimum space envelope, reduced hold up areas, reduced cost and facilitating ease of installation are all key considerations.

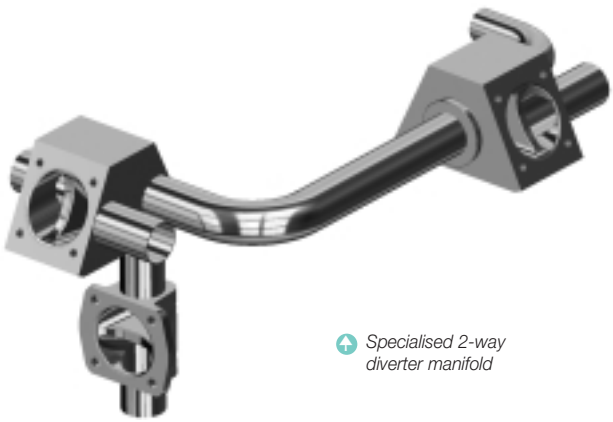
Our expert customisation service is designed to create the optimum valve configuration for customers' specific processes. Working from your sketch details or Piping and Instrumentation Drawings (P+IDs), our engineers will propose the solution, realised in a fully detailed CAD drawing for you to verify and approve. This straightforward process ensures that the product we make matches customer requirements in every respect.

The benefits of such fabrications include:

- **Manufactured under stringent ISO 9001:2000 quality control**
- **Tailor-made solutions to customer requirements**
- **Fully tested assembled units manufactured under controlled conditions**
- **Full traceability of all components**

All Saunders process fabrications utilise either forgings or machined barstock components to ensure process integrity.

Customised 5-way diverter fabricated manifold



Specialised 2-way diverter manifold

Specialised steam manifold

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