

# STRAINERS

## CAST IRON, MALLEABLE IRON AND BRONZE STRAINERS

- Strainers are installed to prevent foreign matter e.g. scale and dirt causing damage to pipeline equipment.
- Service temperature and pressure indicated on the identification plate or body marking should not be exceeded.
- Crane strainers have not been designed as fire safe pressure equipment.
- Strainers must be installed into a well-designed system and it is recommended that the system be inspected in accordance with the appropriate member state legislation. In the UK – The Pressure Equipment Directive 97/23/EC and The Pressure Systems Safety Regulations 2000.



## INSTALLATION

### Preparation

- Ensure strainer is suitable for service conditions e.g. pressure, temperature, service media.
- Remove dust caps/flange protectors, where fitted.
- The installation shall be designed to provide adequate means of draining and venting to avoid harmful effects such as water hammer, vacuum collapse, corrosion and uncontrolled chemical reactions and to permit cleaning, inspection and maintenance in the correct manner.
- The strainers have not been designed to include corrosion, erosion or abrasion allowances. Any queries regarding service applications should be addressed to the Crane Fluid Systems - Technical Sales Department.
- The strainers have been designed for loadings, appropriate to its intended use and other reasonably foreseeable operating conditions. Loadings caused by traffic, wind and earthquake have not been taken into account.
- It is the responsibility of the installer to ensure that the strainers do not exceed the allowable limits of pressure. However the strainers are designed to withstand a momentary pressure surge of up to 10% above the maximum working pressure.
- The piping system shall be so designed to reduce the risk of fatigue due to vibration of pipes.



- Designed and manufactured under quality management systems in accordance with BS EN ISO 9001-2008

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### Location

- Strainers should be located to ensure access is provided for subsequent maintenance of the valve.
- Strainers should be installed in the correct orientation with the angled portion of valve pointing down.
- To ensure strainers work at best efficiency, valves must be installed so that the strainer basket is in the direction of flow. An indication arrow is cast on the valve body.

### Piping Supports

These must be carefully aligned and at the correct distance between centres for the size and type of pipe. The following publications provide details of correct spans and installation details:

BS3974, Specification for Pipe Supports (Available from BSI)

DOI Directorate of M & E Engineering Services, M & E No. 3 (Available from HMSO)

(Standards relevant at the time of design)

### Flanged Joints

- Bronze and cast iron flanges may be damaged by over tightening the bolts. The following procedures will reduce this risk:
  - Make sure the pipe flanges are correctly aligned.
  - Full-face gaskets reduce the stresses in flat face flanges and should be used with bronze flanges.
  - Low strength carbon steel bolting has traditionally been used to restrict the load imposed on iron flanges, but should not be used for temperatures above 200°C.
  - Always use the correct size and number of bolts.
- Do not match a flat-faced flange to a raised face flange.

### Threaded Joints

- The strainers are supplied with taper threads and, with the use of a thread sealant will give a pressure tight seal.
- To avoid distortion of the valve when fitting and tightening pipe, the valve must be held securely using the flats provided at the end of the valve to which the pipe is being fitted.
- The male thread on the pipe must have, fully formed, undamaged threads.

### Press-Fit Joints

For Press-Fit, please refer to the Geberit website [www.geberit.co.uk](http://www.geberit.co.uk) where installation instructions for Press-Fit can be found.

TEMPERATURE °C	-10 to 100	120
PRESSURE (BAR)	16	13.5

### ROUTINE MAINTENANCE

- Ensure that the strainer is isolated from the pipeline before commencing work. Remove the strainer cap and screen and clean out any sediment and other debris. Check for damage to the screen and renew if necessary with a screen of the same material and construction.

- Re-assemble the screen and cap using a new gasket. The procedure detailed below should be followed to ensure correct location of the screen in the strainer body.

#### - Strainers with Screwed Cap

Step 1: Fit gasket into the groove in the cap.

Step 2: Push the screen into the inside of the cap, making sure it fits squarely.

Step 3: Assemble the cap back into the body and tighten.

#### - Strainers with Bolted Cap

Step 1: Fit the gasket into the groove in the cap.

Step 2: Place the screen inside the body making sure it is seating correctly. Keep the screen in this position using a steel rule or something similar temporarily held across the opening in the body.

Step 3: Place the cap in position on the body studs and push home, making sure the screen engages the seating in the cap. Tighten down each nut gradually to ensure equal compression before fully tightening.

### GENERAL CONSIDERATIONS

- Maximum operating pressure reduces as service temperature increases. Pressure and temperature limitations are shown by the valve body marking or on the identification plate, and must not be exceeded.
- Strainers are not designed to operate under high shock loadings. Where pressure increases occur due to shock loading (water hammer), they should be added to the working pressure to obtain the total pressure acting on the valve. The total must not exceed the pressure rating of the valve. A pressure surge, or shock, is usually caused by the rapid closure of a check valve or quarter turn valve resulting in a sudden reduction in flow rate.
- The surfaces of strainers in service may be subject to extreme temperatures; care should be taken when handling.

FIG NO.	MATERIAL	PED CATEGORY BY VALVE SIZE			PRODUCT APPLICATIONS				
		SEP Not CE Marked	1	2	3	GROUP 1 GAS	GROUP 2 GAS	GROUP 1 LIQUID	GROUP 2 LIQUID
D297	Bronze	15-50							✓
D298	Bronze	15-50					✓	✓	✓
D298.PF	Bronze	15-54							✓
F277	Cast iron	50-65	80-125	150-300			✓	✓	✓
F277	Cast iron		350-600						✓
FM276	Cast Iron	50	65-125	150-300			✓	✓	✓
FM276	Cast Iron		350-600						✓
FM276W*	Cast Iron	65-150							✓
FM278W*	Ductile Iron	65-150							✓
FM278	Ductile Iron	50-65		80-300				✓	✓
F273	Malleable Iron	15-25		32-50			✓	✓	✓

The above products are not suitable for use with unstable fluids. \*WRAS approved