CRANE FLUID SYSTEMS

INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS

PN25 BUTTERFLY VALVES

FM638 and FM639 Butterfly Valves
DM638 and DM639 Butterfly Double-Regulating Valves

- These instructions relate only to Crane rubber lined butterfly valves, which are designed and manufactured to provide isolation, or can be used for flow regulation, of suitable fluids
- Design, manufacture and testing of these valves are subject to a Quality Assurance System and procedures according to EN ISO 9001
- Service temperature and pressure indicated on the identification plate, or body marking, should not be exceeded.
- Crane butterfly valves have not been designed as fire safe valves
- Valves must be installed into a well-designed system and it is recommended that the system be inspected in accordance with the appropriate national and regional legislation

INSTALLATION

STORAGE:

- If valves are to be stored prior to installation, ensure that action is taken to protect the valves:
  - Store valves with the discs at 5° from fully closed position
  - Protect against frost, or excessive heat, contamination and corrosion
  - Cover valves to prevent ingress of dust and debris
  - Protect faces of valves as these are sealing faces, and any damage may result in leaks

PREPARATION:

- Before installation, ensure that the valve is suitable for service conditions e.g. pressure, temperature and service media
- Ensure that pipe flanges are clean, to prevent damage to valve flanges / liners on installation
- Check that the internal pipe diameter has sufficient clearance for valve disc to be fully operated
  - Check that there are no restrictions in pipework, i.e. internal welding of flanges
- Check that pipe flanges are parallel, and on same centreline before installation of valves. This will enable bolting to be fitted through flanges and valves without damage to threads on bolting or tapped holes in valve bodies
- Ensure that all welding and heat treatment of pipe flanges is completed prior to installation of valves to prevent damage to liners from excessive heat

INSTALLATION (CONTINUED)

PREPARATION:

These valves have been designed for loadings appropriate to 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 system pressure does not exceed the allowable limits as stated on the nameplate.
- The piping system shall be designed to reduce the risk of fatigue due to vibration of pipes
- The installation shall be designed to provide adequate means of drainage 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
- These products 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 office

HANDLING

Care should be taken when handling these valves. See valve data sheets for weights and dimensions. It is the responsibility of the installer to ensure that all lifting equipment is rated for the required lifting weight, and is properly maintained and safe to use. When unloading, lifting and positioning of these valves, care must be taken to avoid damage to the faces of the valves as these are used as sealing faces on the pipe flanges.

PIPE FLANGES

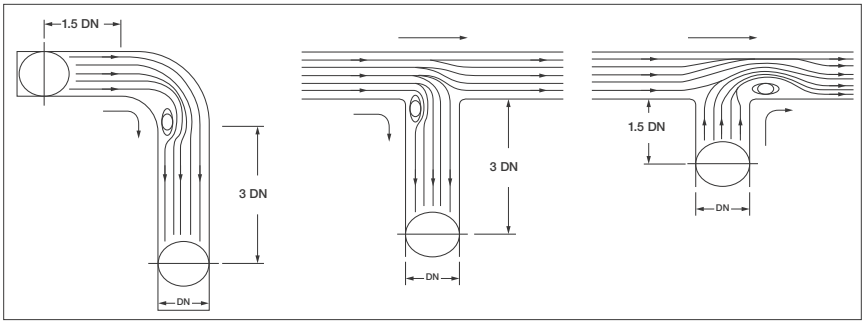
- Before installation, check that the pipe flanges are to the correct size and standard to match the valve flanges
- Ensure that all pipe flanges are cleaned prior to installation of the valves and that there are no damaged areas that may create a leak path
- **It is prohibited to add an additional gasket between the pipe flange and the valve body**

PIPE SUPPORTS

Pipe supports must be carefully aligned and at the correct distance between centres for the size and types of pipe.

VALVE LOCATION IN PIPEWORK

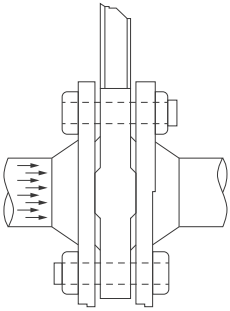
- Valves should be located to ensure ease and safety of operation and access should be allowed for subsequent maintenance of the valve, especially if actuators are fitted
- It is also important to ensure that flow through the valves is not subject to turbulent flow, and our recommendations are shown below:



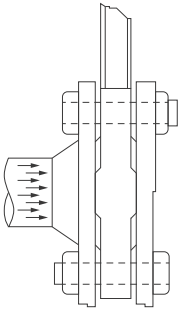
END OF LINE SERVICE

It is not recommended to use these valves for end of line service.

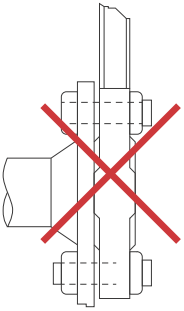
If valves are installed at end of line, a blanking flange must be fitted on downstream side of valve.



Standard Installation



End of Line
with blanking flange



Temporary Installation

DOUBLE REGULATING FEATURE (DM638 / DM639)

The memory stop device is factory fitted. This device enables the commissioning engineer to set the position of the valve at correct flow rate. The valve can be closed for isolation purposes as required, and when re-opened, can be returned to the set position without re-commissioning.

To set the memory stop:

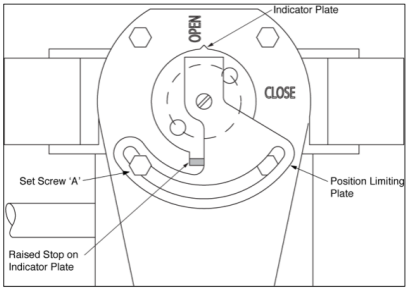
1 Slacken the set screw 'A' to allow plate to rotate

2 During commissioning, operate valve as normal, moving the valve disc to the correct position for flow required

3 Rotate the position limiting plate until it touches the raised stop on the indicator plate

4 Tighten set screw 'A'. This will then limit the maximum opening position

5 Record the set position



GENERAL CONSIDERATIONS

Operating pressures and temperatures must not exceed the limitations on the valve nameplates. If for any reason the nameplate is missing, refer to Crane Fluid Systems Technical Department for advice.

Lifting lugs are supplied for safe handling of these products. Ensure that lifting equipment is correctly rated for the weight of valve being handled.

Care must be taken to avoid any damage to faces of these valves. The rubber facings are used to seal valves against pipe flanges, and any damage to these faces may result in leakage.

The surfaces of valves in service maybe subject to extreme temperatures; care should be taken when handling valves.

PED Classifications and Limits of Use:

Limits of Use
These valves have been categorised in accordance with the Pressure Equipment Directive 2014/68/EU.

On no account must these valves be used on any group 1 liquids, group 1 gases, group 2 gases or unstable fluids.

Note - Valves that are classified as SEP (Sound Engineering Practice) are not CE marked and therefore do not require a delaration of conformity.

Fig No / Body Style	Liner Material / Temperature Limits	Pressure Rating	Product Application				PED Category by Valve Size (DN)		
			Group 1 Gas	Group 2 Gas	Group 1 Liquid	Group 2 Liquid	SEP	I	II
FM638 Fully Lugged Butterfly Lever DM638 Fully Lugged Butterfly DRV Lever	EPDM -10 to 120°C	PN25	-	-	-	✓	50-150	-	-
FM639 Fully Lugged Butterfly Gearbox DM639 Fully Lugged Butterfly DRV Gearbox DM639B Fully Lugged Butterfly Bareshaft	EPDM -10 to 120°C	PN25	-	-	-	✓	50-200	250-600	-

YouTube To visit our Video Library go to:
www.youtube.com/user/CraneBSU

CRANE FLUID SYSTEMS

CRANE HOUSE, EPSILON TERRACE
WEST ROAD, IPSWICH
SUFFOLK IP3 9FJ

TELEPHONE: +44 (0)1473 277300
FAX: +44 (0)1473 277301
EMAIL: enquiries@cranefs.com

www.cranefs.com

bsi. ISO 9001 Quality Management
FM 00311

• Designed and manufactured under quality management systems in accordance with ISO 9001-2015

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