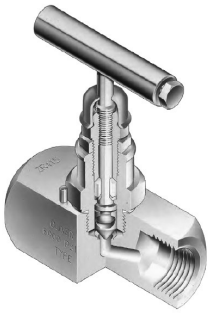
Installation, Operation & Maintenance **Instructions**



delta-mobrey

V Series
Valves and Manifolds

SAFETY INSTRUCTIONS

Information ...points out useful tips, recommendations and information for efficient and trouble-free operation.

CAUTION! ...indicates a potentially dangerous situation that can result in light injuries or damage to equipment or the environment, if not avoided.

WARNING! ...indicates a potentially dangerous situation that can result in serious injury or death, if not avoided.

WARNING! ...identifies hazards caused by electric power. Should the safety instructions not be observed, there is a risk of serious or fatal injury.

WARNING! ...indicates a potentially dangerous situation that can result in burns, caused by hot surfaces or liquids, if not avoided.

WARNING! ...indicates a potentially dangerous situation in the hazardous area that can result in serious injury or death, if not avoided.

Ex applications...special instructions for Ex applications.

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Foreword

The unit is manufactured, checked and supplied in accordance with our published specification, and when installed and used in normal or prescribed applications, and within the parameters set for mechanical performance, will not cause danger or hazard to life or limb.

Warning: Units must be selected and installed by suitably trained and qualified personnel in accordance with appropriate codes of practice so that the possibility of failure resulting in injury or damage caused by misuse or misapplication is avoided.

Warning: Before installation **check** that the **characteristics** of the valve comply with process and plant requirements

Warning: The user should ensure the equipment is suitable for use in the application with aggressive substances.

Warning: The users attention is drawn to the fact that, when the unit is 'live' with respect to electrical or pressure supplies, a hazard may exist if the unit is opened or dismantled.

Caution: Due to the small size of the vent orifice it is not recommended that valves with this feature are used to depressurize long pipe runs.

Warning If the process fluid is hazardous then it should be vented to a safe location.
Do not vent to atmosphere!

Pressure Range

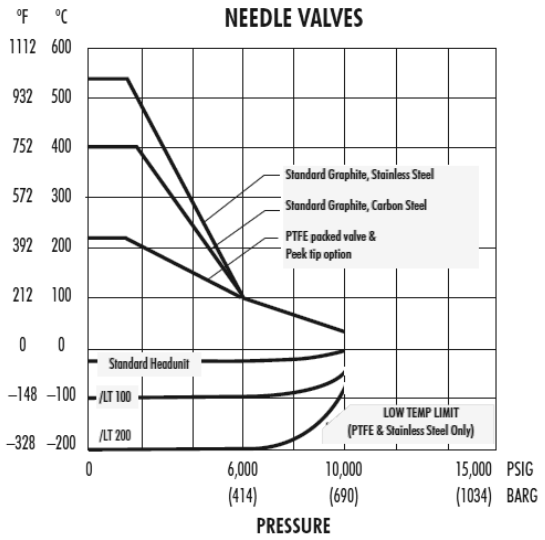
Needle valves and manifolds are rated or 6000 psi according to the model & version Valves can be upgraded to 10000psi.
Pmax is limited by the ambient and process temperature, according to the table below.

Ambient temperature

The surface temperature of the valve is influenced by the process temperature and environmental.
Special attention must be taken to avoid exceeding the limits specified on table below (i.e. special seals & plug construction).

Process temperature

The below tables is applicable:



Standard Basic Specification

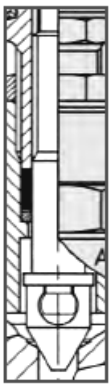
Below are listed the specification of the standard product. Several options are available. Please contact our sales department.

Body rating: 6000psi
Vacuum condition: valves with PTFE packing are tested full vacuum condition @0.01mbarA
Temperature: 240degC (see graph at page 1)
Limited by installation (direct/remote)
Packing : PTFE
Thread: NPT
Thread size: 1/2”
Handle: “T” bar in AISI316
Locking pin: as standard, in AISI316
Seat: Metal to Metal
Bore: 0.21” (5.4mm)
CV: 0.46
Valve Identification: St.St, tag affixed to the valve head
blue for **ISOLATE**
Green for **EQUALIZE**
Red for **VENT**

All direct mount manifolds are supplied with Teflon gaskets and high tensile carbon steel bolts.
Graphite gaskets and stainless steel bolts are available on request.
Manifolds are not supplied with plugs unless specifically requested.
Manifolds have stainless steel colour identity tags affixed to individual valve head unit.

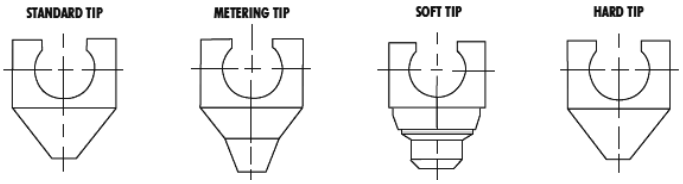
Operating principles

Rugged design with solid rolled threads in contact with body, ensures high factor of safety when valve is at maximum pressure and temperature conditions.
Metal to metal body to bonnet contact coupled with a special secondary seal, offers an extremely effective leak free joint.



The needle valves are operated as standard with Non—rotating and self-centering anti galling spindle tip which gives positive bubble-tight shut-off self-centering closure and field interchangeability of different tip style.
All threads are rolled and lubricated to eliminate galling. A special ten micro inches super finish on the seal diameter, dramatically reduces operating torque and the stem is anti-blout and non removable, offering the best safety in field.
Threads are protected from process media.

Tip can be manufactured in different configuration according to the application



INSTALLATION

Safety notice

Warning: All adjustments should be carried out by qualified personnel with the valve at zero pressure.

Warning: End connectors must not be removed from bodies.

Caution: Handle wrenches/extension must not be used to operate the valves

Warning: Vent plugs must not be removed when the isolate valve is open and under pressure.

Warning: Head units and locking pins must not be removed once installed.

Warning: Maximum torque to be applied to tee-bars is 10lb/ft (14.88kg/m)

Warning: Do not apply side forces exceeding 30lb/ft (44.65kg/m) to the head unit

Caution: Do not paint over the valve body marking.

Equipment required

For heavy duty and standard use:

- Tee bar bolt—10mm A/F spanner
- Pusher nut 9/16” A/F spanner
- Head unit cartridge—22mm socker and torque wrench

.1/4” vent plug

- .9/16” A/F spanner

1/2” vent plug

- .22mm A/F spanner

Installation

Needle valves with socket weld or butt weld connections are supplied with head separated from th body, to be assembled after the weld of the body to the pipeline.

1) ensure the spindle is fully retracted into the head unit so the tip is hardly showing
2) Place PTFE ring into the undercut at the top of the 3/4”UNF thread
3) If head unit is stainless steel, please ensure that adequate spry is used on the threads prior toi engage the body
4) Screw head unit down and torque to :
   - Carbon Steel: 95lb/ft (131,4kg/m)
   - Stainless Steel 180lb/ft (267.8kg/m)
5) Replace locking pin in either one of the 4mm holes and secure
6) Replace tee bar and tighten down tee bar bolt. Max torque to operate tee bar 2lb/ft (2.9kg/m).
7) Adjust packing if required by loosening lock nut (bottom nut on head unit). Close the valve by turning the tee bar in a clockwise direction until stops. Open the valves one full turn. Tioghten down the pusher (top nut on head unit) which compresses packing until the valve feels not too slack or difficult to operate , then tighten down lock nut

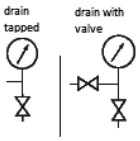
5) If the valve is fitted with graphite packing wait two minutes after tightening the pusher and before checking valve operation.

Operation

NEEDLE VALVE with drain

Valves open/close the circuit simply rotating the tee bar.

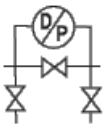
NEEDLE VALVE with drain (tapped or with valve)



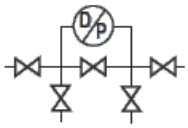
Warning Before removing the plug on the venting port, be sure that the venting valve is closed

1) Close the isolation valve (isolate from process)
2) Open the venting valve slowly and let any trapped pressure be released
3) When venting is complete, close vent valve
4) Refit the venting plug if fitted
5) Open the isolation valve when it is safe to do so.

MANIFOLD 3 and 5 VALVES with drain



Warning Before removing the plug on the venting port, be sure that the venting valve is closed



1) Check all valves are closed.
2) Open the equalizing valve – this ensures that the same pressure will be applied to both sides of the transmitter, i.e., zero differential pressure.
3) Open the High Pressure valve (process) slowly, check for leakage from both the high pressure and low-pressure side of the transmitter/gauge/switch.
4) Close the equalizing valve – this locks the pressure on both sides of the transmitter.
5) Open the low-pressure block valve to apply process pressure to the low-pressure side of the dP instrument and establish the working differential pressure.
6) The instrument is now in service.

Maintenance

Other than periodic inspection to ensure satisfactory operation & sealing, no routine maintenance is necessary.
Any gland leakage should be addressed by first depressurising the valve and tightening the pusher clockwise gradually until the leakage stops.
If no further adjustment is possible or seat leakage is suspected, then the valve will require a complete overhaul and should be returned to Delta Mobrey Ltd.
Head units & end connections are fitted with anti-tamper pins to prevent unauthorized removal.
Undsr no circumstances should these pins be removed without first the prior written consent of Delta Mobrey Ltd.

No attempt to remove or dismantle the Valve should be undertaken without first ensuring that the line is depressed, vented and drained.
In systems where corrosion could be a potential hazard, check on the body and body seals should be made. If corrosion or leakage is present, then the valve should be replaced.

Inspections

Warning Valve should be at zero pressure and at ambient temperature prior to any inspection Maintenance Engineers & Operators are reminded to use correct tools and equipment.

Storage

If the valves are not required for immediate use then they should be stored in their original packaging and end protectors should not be removed. Storage should be off the ground in a clean, dry, indoor area. If storage period exceed 12 months then items should be accurately inspected prior to installation.

Replacement parts

IMPORTANT NOTE: Operations involving the replacement of essential components it is suggested to be carried out at our workshop. This is to guarantee the complete and correct restoration of the products original characteristics.

Warning: The equipment contains no user-replaceable parts and is not intended to be repaired by the user.

Warranty

See Standard Conditions of Sale.

Decommissioning

Warning: Do not dispose of the process fluid into the environment if this causes pollution or personal injury.

- Disconnect the instrument from the process connection.
- Disconnect the valve from the instrument
-

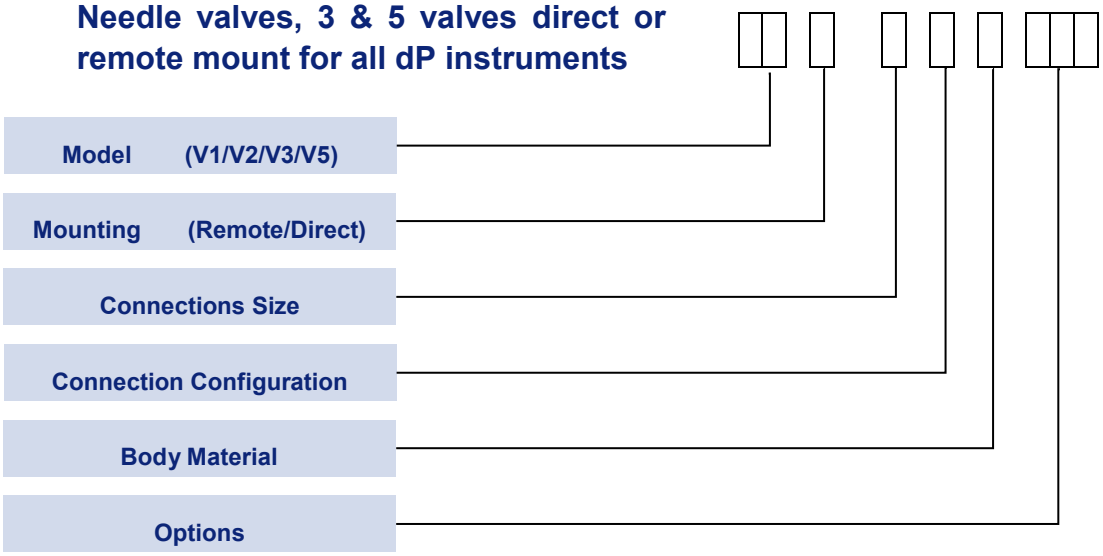
Warning: The process fluid can be hot and or corrosive.

- Plug the process pipe.

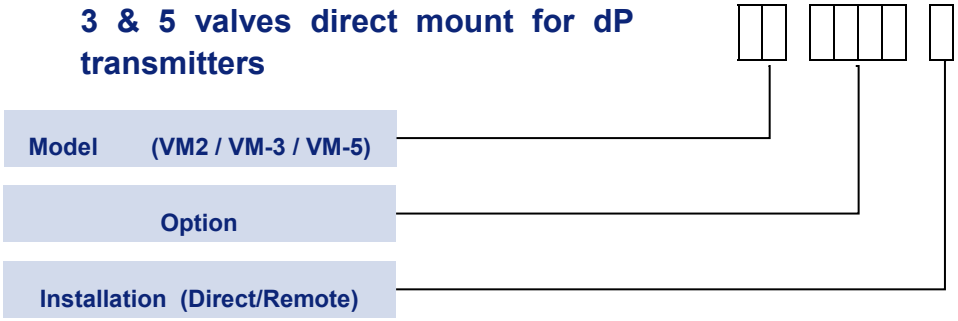
Disposal

The valve is mainly made of stainless steel. Clean the wetted parts before scrapping the instrument.

Model code
Needle valves, 3 & 5 valves direct or remote mount for all dP instruments



Model code
3 & 5 valves direct mount for dP transmitters



Model code
3 & 5 valves direct mount for dP gauges