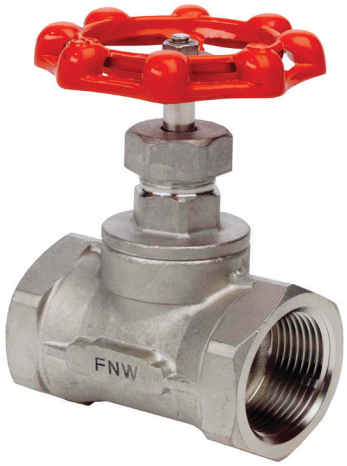
FIGURE 17B-200
GLOBE VALVES

STAINLESS STEEL 200 WOG GLOBE VALVES

This instruction manual includes installation, operation and maintenance information for FNW Figure 17B-200; 1 PC stainless steel rising stem globe valve with threaded ends.

Please refer to other FNW manuals for other ball valves, actuated valves, modifications or accessories.



SAFETY PRECAUTIONS

1. Globe valves are pressure equipment, therefore, the appropriate safety measures need to be taken into account.
2. Any alterations on the valves and the documents without prior approval from FNW with formal documentation are not permitted and might result in a safety risk.
3. All valves are designed for use within the limits specified herein and described on the valve body. Exceeding these specified limits is to be considered misuse and can lead to serious injuries and/or damage to the installation and environment.
4. When personnel are maintaining a valve, proper eye, head and body protection, and protective clothing should always be utilized. The most important thing is to avoid the injury to personnel and damage to the equipment.
5. All of the valves should arrive in the open position at the installation site.
6. There is the possibility that the (dangerous) pressurized fluid or gas could be trapped in the cavity of the valve. Make sure this is released safely by partly opening the valve.
7. When the valves are operated on low or elevated temperature, operating personnel must take special care to avoid injuries.
8. The valve body rating can be higher than the seat rating. Valve surface temperature may become extremely hot or cold due to the ambient or operating conditions. Prevent any type of direct contact with the valve that may harm the workers.
9. Valves and accessories must not be used as a sole support of piping or human weight.
10. Safety accessories such as safety relief (overpressure) valves are the responsibility of the system designer.
11. It is the user/system designer's responsibility to use insulation in high-temperature applications.

FIGURE 17B-200
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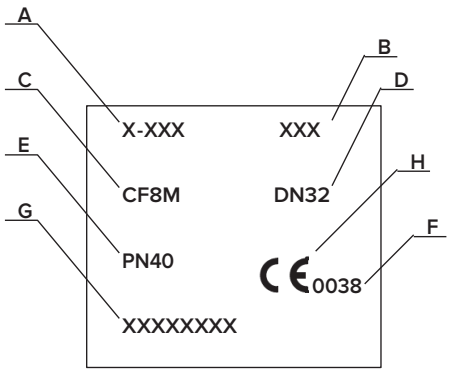
GENERAL

1. Valve pressure varies under different models, sizes, working temperatures and the materials of the main parts. Please verify the application within the limits specified herein and as described on the valve body or nameplate from FNW.
2. Any gate, globe and check valves are pressure containing parts of the installation with an operational function and maintenance personnel must take this into consideration, and take appropriate safety measures into account. It is necessary to wear protective equipment and take appropriate precautions to safeguard against possible injury.
3. Always use FNW recommended spare parts for maintenance and replacement.
4. Valve marking: All the marking information should be cast on the body.

PED VALVES MARKING

Mark	Description
A	Type #
B	Year of manufacture
C	Material
D	Size
E	Pressure
F	CE. mark
G	Temperature
H	TUV Rheinland/Berlin-Brandenburg



PED (SEP) VALVES MARKING UNDER DN25 & OUTSIDE THE EU COUNTRIES NON-PED VALVES MARKING

Mark	Description
A	Size
B	Material
C	Pressure

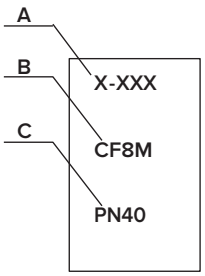


FIGURE 17B-200
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STORAGE

Be careful not to damage the valve stems during handling. In case the valves are rack mounted for storage, their packing chambers should not come into direct contact with the racks. Placing valves directly on the ground or on concrete floors is not recommended.

Temporary Storage

If valves are to be temporarily stored prior to installation, the following should be observed:

1. Keep the valves wrapped and protected at all times.
2. Preferably, store the valves in a dust-free and well-ventilated area with low humidity.
3. If stored outside, make sure that the valves are well protected from the environment and positioned so that water does not accumulate on or in the valve.
4. Protective end coverings are shipped with the valve to protect against mechanical damage and prevention of dust and foreign object intrusion. If the end covers are found missing during transit, apply an adequate type of end protector immediately.
5. Valves should be kept in the closed position.

Long-Term Storage

If the valves are to be stored for more than one year, they should be prepared as above and include the following:

1. Do not store the valves outdoors.
2. Remove the packing and apply a preservative to the packing well.
3. Annually, perform the following:
    a. Lubricant may be lost or reduced from the stem threads or grease nipples. Apply lubricant to these exposed areas.
    b. Remove the end protectors and apply a rust prevention spray to the valve interior. Reinstall the end protectors.
    c. As needed, apply a protective surface coating to the valve exterior. Be sure the surface area is clean before applying protective spray.

LIMITATIONS

Valves are not to be used in safety functions such as safety loops or separating incompatible fluids.

1. It is not suitable if full flow at minimal pressure drop is required.
2. It is not suitable for slurries or fluids containing solids that can build up in valve cavities.
3. Globe valves are unidirectional; make sure the valves are installed in accordance with the flow indicator on the valve body.

FIGURE 17B-200
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INSTALLATION

1. Valve pressure varies under different valve series, sizes, application temperatures and the material of the main parts. Please verify the application within the limits and as described on the valve body or nameplate from FNW.
2. Prior to the installation, check the valve as well as the connecting parts to make sure they are free from dirt and burrs. It might be necessary to flush the valve, valve cavity and the pipes to remove the accumulated dirt and burrs. Do not remove protective end coverings until immediately prior to valve installation.
3. Verify that the space available is adequate to allow the valve to be installed and to be operated comfortably.
4. Do not disassemble or modify a FNW valve in any way prior to installation. This will void the factory warranty if it occurs.
5. Remove protective end caps and inspect the valve ends for damages to avoid leakage before installation.
6. Actuate the valve full-open to full-closed to check for possible damage from shipping and handling.
7. Inspect end connections to be sure that pipe threads faces are free from scratches, nicks or dents.
8. Threaded ends
    a. Check specification of threads on mating pipe.
    b. Apply joint compound to the male end of joint only.
    c. Be careful to prevent applying torque to the joint of the valve body.
    d. We do not recommend any back welding. It is possible to damage the seats because of overheating while welding.
    e. Following installation, carry out leak and operating tests.
9. After installation, the line system should be cleaned by flushing to remove any unwanted material. Open and close the valve while flushing to ensure the valve operation is normal.
10. Pressurize the line and see if any leakage occurred; make sure there is not any leakage before using.

OPERATION

1. Globe valves are designed to throttle the flow where certain pressure drop is permitted in a pipeline.
2. Globe valves can be used for on-off service also. The disc is designed to completely stop flow and form a tight seal with pressure under the disc. Continuous throttling at less than 25% open may cause excessive vibration, noise and damage to discs and seats.
3. Rotation of the hand wheel in the clockwise direction will close the valve, and vice versa. Do not use pipe extensions (cheater bars) to operate the valve as this may damage seat surfaces, yoke or stem. For larger valves, consider gear-operators or other means of actuation.
4. For globe valves, on a new valve or a valve that has had new packing installed, the hand wheel torque may be relatively high. This high torque will diminish to a reasonable level after the valve has been operated several times. Hand wheel operating torque also depends on the type and size of each valve and its position. Note that the operating torque is high when opening a fully closed valve or when closing the valve and near the end of valve travel.

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5. For globe valves, sometimes material in the line can get stuck between the disc and seating area. Should this happen, re-open the valve to allow the process fluid to clear the material. If the condition persists, it may be necessary to shut down the line and inspect the interior of the valve.
6. To provide an optimum service life, globe valves should not be at fully backing seated condition normally.
7. When the valves are operated on low or elevated temperature operating, personnel must take special care to avoid injuries.
8. Operate the valve within the pressure Vs temperature range. The valve can be damaged by operating beyond the allowable range.
9. Do not step on the valve or apply excessive weight on valve.
10. Allow sufficient space for maintenance and inspection.
11. Keep the valve away from excessive heat or fire.

MAINTENANCE

1. Before maintenance, always advise the maintenance personnel that the proper eye, head and whole body protection always be utilized.
2. Before maintenance, always make sure the pressure is released safely by partly opening the valve.
3. Prior to the maintenance, flush the valves and the pipe lines attached and make sure that no (dangerous) residues are left. Ensure that the installation, together with pressure-containing parts, is depressurized and secured.
4. Most valves are actuated manually by causing rotational movement of a handwheel, wrench, handle, etc. Periodically check the nut to ensure tightness.

Disassembly (refer to diagram on following page for part numbers)

1. Unfasten the hand wheel nut (24). Remove the hand wheel (19), washer (23) and nameplate (25) from the valve.
2. Unfasten the gland nut (16).
3. Unfasten the bonnet (9) from the body (1).
4. Lift the bonnet (9), stem (5) and disc (4) assembly out of the body (1) using care not to scratch any of the seating surfaces.
5. Remove the disc (4) from the stem (5). Be careful to protect the seating surfaces of the disc.
6. Remove the gland (15) and packing (14) using appropriate tools. Do not score or scratch the packing well.
7. Slowly rotate the stem (5) counterclockwise out from the bonnet (9).

FIGURE 17B-200
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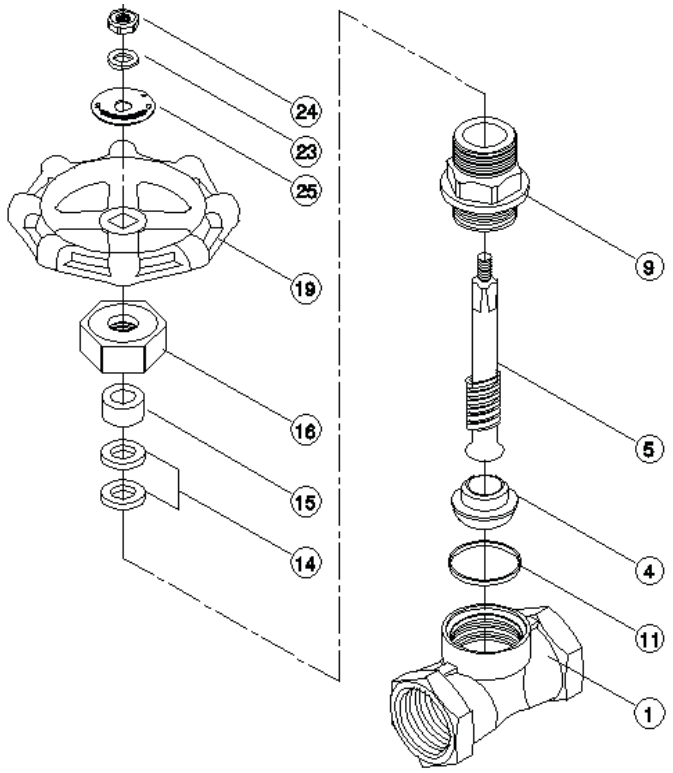
Assembly (refer to diagram for part numbers)

1. Thoroughly clean the valve interior and all components. Remove all scale, oil, grease or other foreign material. Wipe the seating surface of the disc (4) with a solvent-soaked cloth. Clean the body (1) and bonnet (9) surfaces and all nuts and bolts.
2. Install the stem (5) carefully, rotating it clockwise until it extends beyond the bonnet (9) packing well.
3. Install the disc (4) on to the stem (5).
4. Position a new bonnet gasket (11) on the body (1), aligning the holes in gasket and body. The gasket may be coated with oil. DO NOT REUSE GASKETS.
5. Lift the bonnet (9), stem (5) and disc (4) assembly up and over the body. Align the bonnet (9) and body (1) and the disc (4) and body (1) properly. Slowly rotate the bonnet counter-clockwise to fasten the body (1) and the bonnet (9).
6. Install the gland nut (16).
7. Place the hand wheel (19) onto the valve and secure with the hand wheel nut (24), washer (23) and nameplate (25).
8. Open and close the valve using the hand wheel (19). The action should be smooth and regular through full stem travel.



NOTES:
- End-users have the responsibility to check the wall thickness in regular intervals due to wear/tear/corrosion of the fluid in order to ensure the wall thickness is not below the minimum safety thickness allowed in the standard.
- The most important thing is to avoid the injury to the personal and damage to the equipment.