

GUIDANCE ON USE

Needle Valves & Manifolds

1 MATERIALS

- Materials must be compatible with medium.
- Pressure and temperature also have direct bearing on the correct seal & body material to be used and must be considered when specifying. See pressure/temperature ratings table contained in our printed literature. If in any doubt, consult STEWARTS.

2 THREADS AND JOINTING

- All pressure connections should be leak tight and should be observed when first applying pressure.
- Recommended maximum operating pressure for each size of thread and type of material must not be exceeded. Please note the stated pressures represent the maximum applied pressure. If in doubt, consult the manufacturer.
- Care must be taken to ensure mis-match of threads does not occur.
- Mating female connections must have a pressure rating that is compatible with the pressure range of the product.
- Valves with parallel threads must have the independent seal made on the flat seating using a washer or bonded seal of material compatible with the pressure medium.
- Valves with tapered threads have the joint made by mating of the threads. It is common practice to apply jointing material to the male thread. This must be compatible with the pressure medium and applied in the correct quantity to ensure non-interference with the mating of the thread
- NPT and other tapered thread forms when manufactured to the standard specification may not be adequate to offer sufficient thread engagement for safe use under pressure.
- Particular care must be taken to ensure the valve has the correct pressure rating for the application.

3 INSTALLATION

- When joining up a valve to the system, the system must not be pressurized.
- If the valve is already fitted to a gauge at time of installation, the valve should be in the closed position to prevent the build-up of pressure from entering the gauge. The valve should then be opened slowly and care taken to ensure the pressure entering the gauge does not exceed its pressure rating.
- When the valve does not have a gauge fitted at time of installation (i.e., with an open port) the valve should be in the open position which will prevent build-up of pressure within the valve. Care should therefore be taken to confirm that all systems are sealed before pressurizing.
- Manifolds and equalizing valves are accompanied by specific installation instructions and these should be referred to before proceeding with installation.

MAINTENANCE

4a

- Valves etc. should be part of a planned maintenance programme to ensure they continue to function properly.
- The time interval between examinations will vary depending upon site conditions, the number of opening and shutting operations etc. and should be determined in the light of experience.
- Threaded connections should be checked for leaks and tightened as required.
- If leaking through the packing is evident, loosen locknut, tighten packing compression bolt to torque rating of 13 lbs/ft (18 Nm) minimum to 18 lbs/ft (25 Nm) maximum and re-tighten locknut.

MAINTENANCE - HIGH PRESSURE VALVES

4b

- Valves etc. should be part of a planned maintenance programme to ensure they continue to function properly.
- The time interval between examinations will vary depending upon site conditions, the number of opening and shutting operations etc. and should be determined in the light of experience.
- Threaded connections should be checked for leaks and tightened as required.
- If leaking through the packing is evident, loosen locking device, tighten glandnut to torque rating of 49 lbs/ft (68 Nm) and re-tighten locking device.

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GUIDANCE ON USE

REPAIRS

5a

- The design of these valves allows packing or whole stem assembly to be replaced without removing the valve from the system. The system must be closed down and any residual pressure exhausted in a controlled manner before proceeding.
- To replace packing: - Remove handle, slacken locknut, remove compression bolt and compression gland ring. Remove packing and replace. Re-assemble in reverse order to the above and tighten to torque described in Paragraph 4a.
- To replace whole stem assembly: - Remove handle and bonnet locking pin. Remove whole head assembly (N.B. To loosen - turn anti-clockwise). Slacken locknut, remove compression bolt and compression gland ring. Remove stem assembly by withdrawing downwards. Fit new stem assembly and packing.
Re-assemble in reverse order to the above and tighten compression bolt to torque described in Paragraph 4a.
Re-fit head assembly to valve body and tighten to torque of 100 lbs/ft (135.58Nm) Replace locking pin. Test valve for leaks.
Note: Ensure stem is screwed fully into the bonnet before refitting to body. Fit locking pin, after testing.
- If the valve seat is damaged, the whole valve should be replaced.

REPAIRS HIGH PRESSURE VALVES

5b

- The design of these valves allows packing or whole stem assembly to be replaced without removing the valve from the system. The system must be closed down and any residual pressure exhausted in a controlled manner before proceeding.
- To replace packing: - Remove handle if necessary, loosen and and remove locking device from gland nut hex, remove gland nut and compression gland ring
Re-assemble in reverse order to the above and ensure that rotating stem is fully screwed into gland nut. tighten to torque described in Paragraph 4b.
- To replace whole stem assembly: - Remove handle and bonnet locking device. Remove whole head assembly (N.B. To loosen - turn anti-clockwise). If necessary, remove packing and compression gland ring from non rotating stem. Remove stem assembly by rotating upper stem and withdrawing downwards.
Fit new stem assembly and packing.
Re-assemble in reverse order to the above and tighten compression bolt to torque described in Paragraph 4b.
Re-fit head assembly to valve body and tighten to torque of 49lbs/ft (68Nm) Replace locking device. Test valve for leaks.
Note: Ensure stem is screwed fully into the bonnet before refitting to body. Fit locking device, after testing.
- If the valve seat is damaged, the whole valve should be replaced.

6 SPARES

- We recommend that spares should be held in the form of whole stem assemblies. (and PCTFE packing for High Pressure Valves)
Note: It is the responsibility of the customer to select the proper valve.
If in any doubt, consult STEWARTS

WARNING – For Your Safety—USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Stewart-Buchanan, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

IT IS SOLELY THE RESPONSIBILITY OF THE SYSTEM DESIGNER AND USER TO SELECT PRODUCTS SUITABLE FOR THEIR SPECIFIC APPLICATION REQUIREMENTS AND TO ENSURE PROPER INSTALLATION, OPERATION AND MAINTENANCE OF THESE PRODUCTS, MATERIAL COMPATIBILITY, PRODUCT RATINGS AND APPLICATION DETAILS SHOULD BE CONSIDERED IN THE SELECTION.

The user through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyse all aspects of the application; follow applicable industry standards; and follow the information concerning the product in the current product catalogue and in any other materials provided by Stewart-Buchanan or authorized distributors.

To the extent that Stewart-Buchanan or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

(Please refer to our Guidance on Use of Equipment document).

OFFER OF SALE

The items described in this document are hereby offered for sale by Stewart-Buchanan its subsidiaries or its distributors. Any order accepted by Stewart-Buchanan will be subject to our terms and conditions of sale, copy available on www.stewarts-group.com, or by request.



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