



<b>CHECKLIST: VALVES CHECKLIST</b>				
(NOTE: All the following parameters are for European/US Males and need to be calibrated for other populations)				
<b>CRITERIA</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>COMMENTS</b>
Is manual operation of valves by means of a circular handwheel or lever?				
Are valves that cannot be located within the reach limit distances of the expected population operated by mechanical extenders rather than chain operators?				
Do handwheels or levers on all valves (e.g. gate, globe, ball) turn counterclockwise (CCW) to open, and clockwise (CW) to close?				
Are valves equipped with valve position indicators so the indicator is directly visible to the operator from his/her normal body position required to open or close the valve?				
Is knurling, indentation, high-friction covering, or a combination of these built into handwheels to facilitate operator grasp for applying maximum torque?				
Is a spinner handle added for applications where a valve can be rotated rapidly through several revolutions except where the projecting handle is vulnerable to inadvertent displacement of a critical wheel setting or if it creates a safety hazard?				
Are valves larger than 152 mm diameter fitted with handwheels or gear operators?				
Are valves 305 mm or larger fitted with hydraulic or pneumatic operators?				
Are valves located so that the operator does not have to stand on adjacent pipework, cabletrays, handrails, other equipment, or any object not meant specifically to be used as a standing surface for the operation, maintenance, repair, or replacement of any valve?				
Are valves weighing in excess of 11 kg (25 pounds) mounted in overhead piping, or other difficult to access locations, provided with a means of assisted lifting (e.g. padeyes, chain falls, come alongs) such that the weight of the valve is supported by lifting-aids, not a person, during valve removal or replacement?				
Is a minimum of 76 mm (3 in) clearance provided between the outside rim of a valve handwheel or the end of a valve handle, and any obstacle located within the field of travel of the handwheel or handle?				
Are valves used for emergency operations not located below deck grating or behind other covers to prevent delay in their actuation?				
Are vertical stem valves used when the valve handle can be located between 150 mm (6 in) and 990 mm (39 in) above the operator's standing surface?				
Are horizontal stem valves used when the handle centerline is located more than 1180 mm (46 in) above the operator's standing surface?				
Are either vertical or horizontal stem valves used when the valve handle is located between 990 mm (39 in) and 1180 mm (46 in) above the operator's standing surface?				
Are valves located above an operator's head with the valve actuator (i.e. handwheel or handle) oriented parallel to the standing surface, not to more than 1720 mm (68 in) above the operator's standing surface? Valves in this position should not be larger than 508 mm (20 in) in diameter and no actuator should require an operating torque of more than 15 N-m (20 ft-lb).				



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<p>Does the preferred location for vertically oriented stem valves conform to the following for normal operations:</p> <ul style="list-style-type: none"> <li>• The valve handwheel is in excess of 610 mm (24 in) in diameter</li> <li>• The valve is used for emergency services such as fire fighting or deballasting,</li> <li>• The valve is infrequently used so that stem freeze-up is possible</li> <li>• The valve handwheel operating torque is in excess of 29.5 N-m (40 ft-lb)</li> <li>• Preferred height is 1150 mm from grade</li> <li>• The valve may be expected to be operated by a female or a small man?</li> </ul>				
Are vertically oriented stem valves that cannot be oriented in the preferred location, located between 434 mm and 790 mm?				
Are only infrequently operated, vertically oriented valves that cannot be oriented in the preferred location, located between 120 mm and 434 mm?				
<p>Does the preferred location for horizontally oriented stem valves conform to the following for normal operations:</p> <ul style="list-style-type: none"> <li>• The valve handwheel is in excess of 610 mm (24 in) in diameter</li> <li>• The valve handwheel operating torque is in excess of 29.5 N-m (40 ft-lb)</li> <li>• Preferred height is between 989 mm and 1691 mm from grade</li> <li>• The valve may be expected to be operated by a female or a small man.</li> </ul>				
Are horizontally oriented stem valves that cannot be oriented in the preferred location, located between 564 mm and 989 mm?				
Are only infrequently operated, horizontally oriented valves that cannot be oriented in the preferred location, located between 120 mm and 564 mm?				
<p>Are valves installed in pipes running parallel to the deck mounted with the stem horizontal and the valve handle perpendicular to the deck when the centerline of the pipe is more than 1194 mm (47 in) above the deck? Note: The maximum height above the deck to the valve tip should not exceed 1720 mm (68 in).</p>				
Are valves installed in pipes running parallel to the deck mounted with the stem horizontal and the valve handle perpendicular to the deck when the centerline of the pipe is between 6 and 30 in 150 to 762 mm (6 and 30 in) above the deck?				
<p>Are valves mounted piping that runs parallel to the deck mounted such that the stem is vertical and the valve handle parallel to the deck, when the handle can be within 762 -1194 mm (30 to 47 in) above the deck? NOTE: A valve located such that the stem will protrude into a walkway when the valve is opened or closed, is to be mounted with the stem horizontal, and the valve handle perpendicular to the deck, regardless of its mounting height.</p>				
Are valves installed in pipes running vertical to the deck mounted with the stem horizontal and with the maximum height to the tip of the valve handle being 1720 mm (68 in)?				



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Are valves installed in pipes running parallel or vertical to the deck, and access to the valve handle is available only from one side, designed so that the valve handle moves to and from the operator's body?				
Are valves located below deck level (i.e. below the operator's standing surface) installed with the stem perpendicular or parallel to the standing surface?				
Do valve levers or handwheels operated from a ladder move toward and away from the operator's body, not parallel to it, in order to open and close the valves?				