HOW TO SELECT A WATER GAUGE

1. SELECT A VALVE SERIES BASED UPON THE APPLICATION:

- Use 20-410 series for 90° handles or when working in close quarters.
- Use 20-600, 24-600, or 25-600 series (chain levers) where the water gauge is located beyond reach from the floor.
- Use 20-604/605 (bronze) or 23-650 (stainless steel) series expansion tank gauges when a shut-off is not required in the top valve (NEVER USE AN EXPANSION TANK GAUGE ON A BOILER!).
- Use 20-800 (bronze) or 23-450 (stainless steel) series expansion tank gauges to mount a pressure gauge or other instrument directly to the water gauge.
- Use 20-700 series expansion tank gauge for easier gauge glass replacement.
- Use 23-450 series stainless steel for superior corrosion resistance.
- Use polished gauges for a more elegant appearance.
- Use heavy pattern water gauges (such as 20-200/250, 24-300/350) for higher pressures. Be sure to verify gauge glass will withstand pressure by consulting the "Gauge Glass Service Rating Table".
- Use longer shank on NPT end when extra shank length is needed to penetrate an outer jacket or insulation (available on 21 series). Otherwise use a standard water gauge.

2. SELECT NON-AUTOMATIC, AUTOMATIC, OR ASME AUTOMATIC:

- Use automatic (horizontally seating) or ASME automatic (vertically rising to seat in lower valve body) ball checks where available to minimize the risk of personal injury and/or property damage in the event of gauge glass breakage. The sudden rush of steam and water seats the balls, thereby shutting off the escape of steam and water. There will however be slight leakage as required by certain codes.

3. SELECT A HANDWHEEL STYLE:

- Use aluminum handwheels for durability.
- Use plastic (composition) handwheels for reduced heat transfer.
- Use chain levers (not available on all models) when the water gauge is located beyond reach from the floor.

4. SELECT A GAUGE GLASS SIZE (DIAMETER):

- Use larger (3/4") diameter gauge glass where available for increased visibility.

5. SELECT A GAUGE GLASS TYPE (BASED ON PRESSURE REQUIREMENTS):

- Use redline glass for increased fluid level visibility.
- Use high pressure glass for high pressure applications.
- For economy use standard glass for low pressure applications.
- Replace the two digit suffix in the part number of the water gauge with -10 when selecting Redline or high pressure gauge glass (23 and 24 series have high pressure glass as standard).

*Please call Customer Service when non-standard (-10) devices are required.

6. SELECT GAUGE GLASS LENGTH:

- Select a default gauge glass length when possible (pages 8-9).
- Select a non-standard gauge glass length as needed, and replace the two digit suffix in the part number of the water gauge with -10. The longer the gauge glass, the lower the allowable pressure and temperature. Be sure to consult the "Gauge Glass Service Rating Table" for pressure and temperature limits. When selecting non-standard gauge glass lengths, the gauge glass length is determined by subtracting the GL code from the desired "L" length for the valve series number according to the tables on pages 8 and 9.
- For gauge glass longer than 72" it is necessary to use two or more water gauges of shorter length in an overlapped staggered tandem (i.e. for 100" of needed coverage, use two gauges of about 55" and install them parallel and staggered so as to overlap their individual coverage of 55" to get 100" total coverage).

* Please call Customer Service when non-standard (-10) devices are required.

7. SELECT TUBULAR GAUGE GLASS PROTECTOR:

- For 5/8" diameter gauge glass, use I-2733-05
- For 3/4" diameter gauge glass, use I-2734-05
- Maximum protector length is 50"
- Protector not available on 23-300, 23-650, and 24-600 series.
- Available in brass only

8. SELECT DRAIN TYPE:

- Plug drain is standard on 23-600 series. Ball valve drain is standard on 23-400/450 and 24-300/350 series. Needle drain is standard on all others. Ball valve drain or pet cock drain available on most models upon request.

9. SELECT A GAUGE GLASS PACKING MATERIAL:

- Use EPDM for most general applications, including steam service, for temperatures -20°F to 350°F. Recommended for water, steam, silicone oils, ketones (MEK, acetone, etc...), alcohol, and brake fluid. Unsuitable for petroleum oils. Comes standard on most models. EPDM is most economical.
- Use Viton® for superior resistance at elevated temperatures -15°F to 400°F (up to 600°F for short periods.) Recommended for petroleum oils, silicone oils, halogenated hydrocarbons (carbon tetrachloride, trichloroethylene), acids. Unsuitable for ketones (MEK, acetone), amines, anhydrous ammonia, hot hydrofluoric or chlorosulfonic acid. Viton® is about ten times more expensive than EPDM. * Not recommended for use with steam.
- Use Hypalon® for superior acid resistance at temperatures -20°F to 450°F. Has a shorter service life than EPDM and Viton® in standard, non-acid applications. More difficult to seal than softer EPDM or Viton®. Comes standard on 23 and 24 series. Hypalon® is equivalent to EPDM in cost.
- Use Teflon® for best chemical resistance, for temperatures up to 450°F. More difficult to seal than Hypalon®, Viton®, or EPDM. Use only when needed for more chemical resistance than Viton® at elevated temperatures. Not recommended for hot fluorine, oxygen difluride, or chlorine triflouride. Teflon® is about three times as expensive as EPDM.
- Use Graphite for superior service at elevated temperatures. More difficult to seal than EPDM or Viton® but has more universal application. Graphite is about ten times more expensive than EPDM.Remember, chemical resistance decreases as temperature increases. Consult "Compass Corrosion Guide" or equivalent.
- To order non-standard gauge glass packing, order the water gauge normally, then also order a "Water Gauge Repair Kit" ("Standard All" for EPDM, Hypalon® and Teflon®; "Viton® Gaskets Only" for Viton®, and "Graphite Gaskets Only" for graphite). Remove the pre-installed packing, and install the desired packing material

WATER GAUGE DO'S AND DON'TS

DO NOTS

- DO NOT use glass if it contains any scratches, chips, or any other visible signs of damage.
- DO NOT reuse any tubular glass or glass packings.
- DO NOT subject gauge glass to bending or torsional stresses.
- DO NOT over tighten glass packing nuts.
- DO NOT allow glass to touch any metal parts.
- DO NOT exceed the recommended pressure of the gauge or gauge glass.
- DO NOT clean the gauge or gauge glass while pressurized or in operation.

DO'S

- DO verify proper gauge has been supplied.
- DO examine gauge glass and packings carefully for damage before installation.
- DO install protective guards and utilize automatic ball checks where necessary to help prevent injury in case of glass breakage.
- DO inspect the gauge glass daily, keep maintenance records, and conduct routine replacements.
- DO protect glass from sudden changes in temperatures such as drafts, water spray, etc.

MAINTENANCE

- Examine the gauge glass regularly for any signs of clouding, scratching, erosion, or corrosion. The glass should be inspected daily until the need for replacement becomes apparent. This will help establish the routine inspection and routine replacement schedules.

CLEANING

- Use commercial non-abrasive glass cleaners to keep glass clean. Use diluted acids such as Hydrochloric (muriatic) acid when regular cleaners do not seem to work. Do not use wire brushes or any other abrasive materials which could scratch the glass.

INSPECTION

- Examine the surface of the glass for scratches, corrosion, chips, cracks, surface flaws, or nicks. To do this, aim a very bright concentrated light at an angle of about 45 degrees. A
  defective glass will glisten as the light strikes imperfections. Glass which appears cloudy or roughened, and will not respond to cleaning, should be replaced.

STORING

- Keep gauge glass in original packaging until ready to install.

INSTALLATION

Only properly trained personnel should install and maintain water gauge glass and connections. Remember to wear safety gloves and glasses during installation. Before installing, make sure all parts are free of chips and debris.

1. Apply Teflon® tape or pipe dope to pipe threads. Install top gauge fitting (fitting without a drain valve) into the upper most tapping. Wrench tighten the fitting until it is snug and the glass outlet is pointing at five o'clock (about 1/8 turn from its final, downward vertical, position).

2. Install the bottom gauge fitting (the fitting with a drain valve) until it is snug and the glass outlet is pointing directly upward. Verify top and bottom fittings are threaded into the tappings the same number of turns (distance A= distance B).

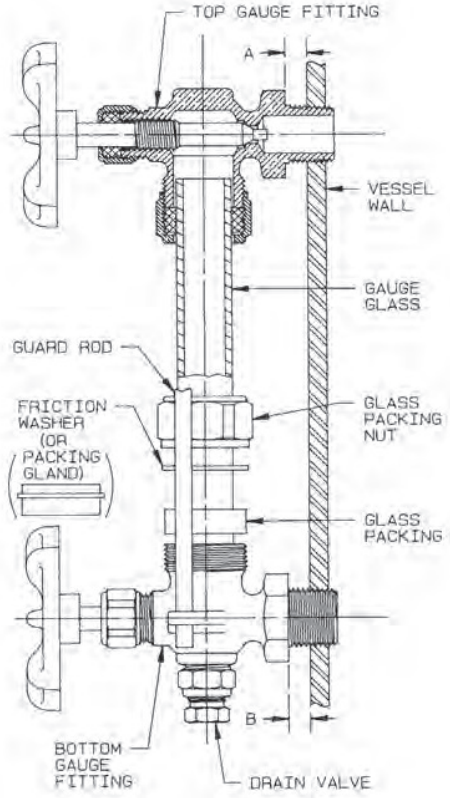
3. Remove glass packing nut, friction washer (or packing gland and retaining ring, depending upon the model), and glass packing from the fittings, and place them, in the same order, on to both ends of the gauge glass. Push both packings about an inch up the gauge glass.

4. Gently insert one end of the glass into the top gauge fitting. Keeping the glass inside the top fitting, gently rotate the top gauge fitting clockwise, using wrench on valve wrench flats, until vertically aligned with the bottom gauge fitting, then insert glass into bottom fitting until glass bottoms out on the shoulder inside the bottom fitting.

5. Carefully raise glass about 1/16" and slide lower glass packing down until the glass packing contacts the lower gauge fitting. DO NOT allow the glass to remain in contact with any metal!

6. Carefully slide upper glass packing up as far as possible.

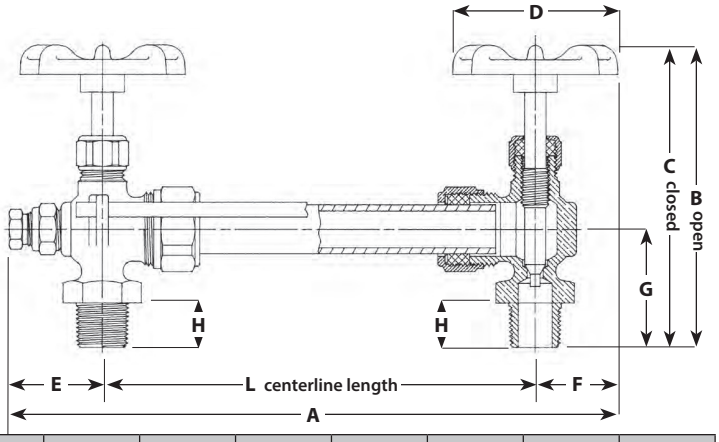
7. Hand tighten both glass packing nuts, then tighten 1/2 turn more by wrench. Tighten only enough to prevent leakage. DO NOT OVER TIGHTEN! If any leakage should occur, tighten slightly, a quarter turn at a time, checking for leakage after each turn.



DIMENSIONS

A = Overall length is found by adding this to dimension "L"
B = Valve open total depth
C = Valve closed total depth
D = Handle diameter
E = Maximum extension below lower arm centerline
F = Maximum extension above upper arm centerline
G = End of arm NPT to centerline of glass
H = End of arm NPT to hex shoulder
L = Centerline Length

Glass Length is "L" minus GL code
Rod Length is glass length plus RL code



VALVE	PIPE SIZE	A	B	C	D	E	F	G	H	DEFAULT L	DEFAULT GLASS LENGTH	GL CODE	RL CODE
20-101	3/8	2.3	4.1	3.8	2.1	1.25	1.07	1.50	0.56	11.25	10	1.25	2
20-102	3/8	2.3	4.3	4.1	2.0	1.25	1.00	1.50	0.56	11.25	10	1.25	2
20-104	1/2	2.3	4.2	3.9	2.1	1.25	1.07	1.63	0.69	13.25	12	1.25	2
20LF-104	1/2	2.3	4.2	3.9	2.1	1.25	1.07	1.63	0.69	13.25	12	1.25	2
20-105	1/2	2.3	4.4	4.2	2.0	1.25	1.00	1.63	0.69	13.25	12	1.25	2
20LF-105	1/2	2.3	4.4	4.2	2.0	1.25	1.00	1.63	0.69	13.25	12	1.25	2
20-150*	1/2	2.3	4.2	3.9	2.1	1.25	1.07	1.63	0.69	13.25	12	1.25	2
20-151*	1/2	2.3	4.4	4.2	2.0	1.25	1.00	1.63	0.69	13.25	12	1.25	2
20-201	3/8	2.4	4.4	4.2	2.1	1.38	1.07	1.69	0.56	11.25	10	1.25	2
20-202	3/8	2.4	4.4	4.1	2.0	1.38	1.00	1.69	0.56	11.25	10	1.25	2
20-204	1/2	2.4	4.6	4.3	2.1	1.38	1.07	1.81	0.69	13.25	12	1.25	2
20-205	1/2	2.4	4.5	4.3	2.0	1.38	1.00	1.81	0.69	13.25	12	1.25	2
20-207	3/4	2.4	4.9	4.6	2.1	1.38	1.07	2.05	0.75	17.50	16	1.50	2.25
20-208	3/4	2.4	5.1	4.8	2.0	1.38	1.00	2.05	0.75	17.5	16	1.50	2.25
20-250	1/2	2.4	4.6	4.3	2.1	1.38	1.07	1.81	0.69	13.25	12	1.25	2
20-251*	1/2	2.4	4.5	4.3	2.0	1.38	1.00	1.81	0.69	13.25	12	1.25	2
20-253*	3/4	2.4	4.9	4.6	2.1	1.38	1.07	2.05	0.75	17.50	16	1.50	2.25
20-254*	3/4	2.4	5.1	4.8	2.0	1.38	1.00	2.05	0.75	17.50	16	1.50	2.25
20-304	1/2	2.3	5.3	5.1	2.1	1.25	1.07	2.20	0.69	14	12	2.00	1.25
20-305	1/2	2.3	5.5	5.3	2.0	1.25	1.00	2.20	0.69	14	12	2.00	1.25
20-307	3/4	2.3	5.0	5.4	2.1	1.25	1.07	2.06	0.69	18	16	2.00	1.25
20-308	3/4	2.3	5.4	5.0	2.0	1.25	1.00	2.06	0.69	18	16	2.00	1.25
20-350*	1/2	2.3	5.3	5.1	2.1	1.25	1.07	2.20	0.69	14	12	2.00	1.25
20-351*	1/2	2.3	5.5	5.3	2.0	1.25	1.00	2.20	0.69	14	12	2.00	1.25
20-353*	3/4	2.3	5.0	5.4	2.1	1.25	1.07	2.06	0.69	18	16	2.00	1.25
20-354*	3/4	2.3	5.4	5.0	2.0	1.25	1.00	2.06	0.69	18	16	2.00	1.25
20-410	1/2	2.3	2.1	1.9	1.8	1.42	0.86	2.09	1.25	13.25	12	1.25	NA
20-601	1/2	4.2	5.3	4.8	5.9	1.25	2.94	2.09	0.69	14	12	2.00	1.25
20-602	3/4	4.2	5.3	4.8	5.9	1.25	2.94	2.09	0.69	18	16	2.00	1.25
20-604*	1/2	2.1	4.6	4.3	2.1	1.38	0.69	1.81	0.69	13.25	12	1.25	2
20-605*	1/2	2.1	4.5	4.3	2.0	1.38	0.69	1.81	0.69	13.25	12	1.25	2
20-703	3/8	1.8	NA	NA	NA	1.25	0.53	1.50	0.56	11.25	10	1.25	2
20-704	1/2	1.8	NA	NA	NA	1.25	0.53	1.63	0.69	13.25	12	1.25	2
20-713	3/8	2.6	NA	NA	NA	1.25	1.36	1.5	0.56	11.25	10	1.25	2
20-714	1/2	2.6	NA	NA	NA	1.25	1.36	1.63	0.69	0.69	12	1.25	2
20-804*	1/2	2.1	4.6	4.3	2.1	1.38	0.75	1.81	0.69	13.25	12	1.25	2
20-805*	1/2	2.1	4.5	4.3	2.0	1.38	0.75	1.81	0.69	13.25	12	1.25	2

26-100/26-300 SERIES — COMPRESSION GAUGE COCKS

26-300

For draining expansion tanks, other liquid storage vessels. For condensate only. Standard finish is satin brass.

FEATURES

- 26-100: Rated up to 125 psig
- 26-300: Soft Metal Seat/Stuffing Box Rated up to 250 psig at 400°F
- 26-310: Stainless Steel Ball Seat/Stuffing Box Rated up to 250 psig at 400°F
- 26-700: TFE Seat, Rated up to 250 psig at 400°F

SERIES NUMBER	PIPE SIZE (IN.)	WT./100 (LB.)	WHEEL TYPE
26-104-01	1/2	28.3	ALUMINUM
26-105-01	1/2	30.0	COMPOSITION
26-304-01	1/2	40.0	ALUMINUM
26-305-01	1/2	44.0	COMPOSITION
26-307-01	3/4	49.0	ALUMINUM
26-308-01	3/4	51.7	COMPOSITION
26-314-01	1/2	40.0	ALUMINUM
26-315-01	1/2	44.0	COMPOSITION
26-704-01	1/2	78.0	ALUMINUM
26-705-01	1/2	82.0	COMPOSITION

**26-100 series is not available with packing nut*

Specify the following suffix for finish: Polished Brass -28 (example: 26-304-28)

26-500 SERIES — LEVER OPERATED COMPRESSION COCK

For draining expansion tanks or other liquid storage vessels where the drain port is beyond reach. Spring loaded lever provides positive closure to 250 psig at 300

FEATURES

- Bronze Body B584 UNS C84400
- Stainless Steel Closure Spring
- PTFE Soft Seat
- Graphite Stem Packing
- Zinc Plated "S" Hook on Lever
- Optional 6 Foot Chain
- Rated up to 250 psig

SERIES NUMBER	PIPE SIZE (IN.)	WT./100 (LB.)	CHAIN
26-504-01	1/2	110	
26-504-02	1/2	112	6' chain