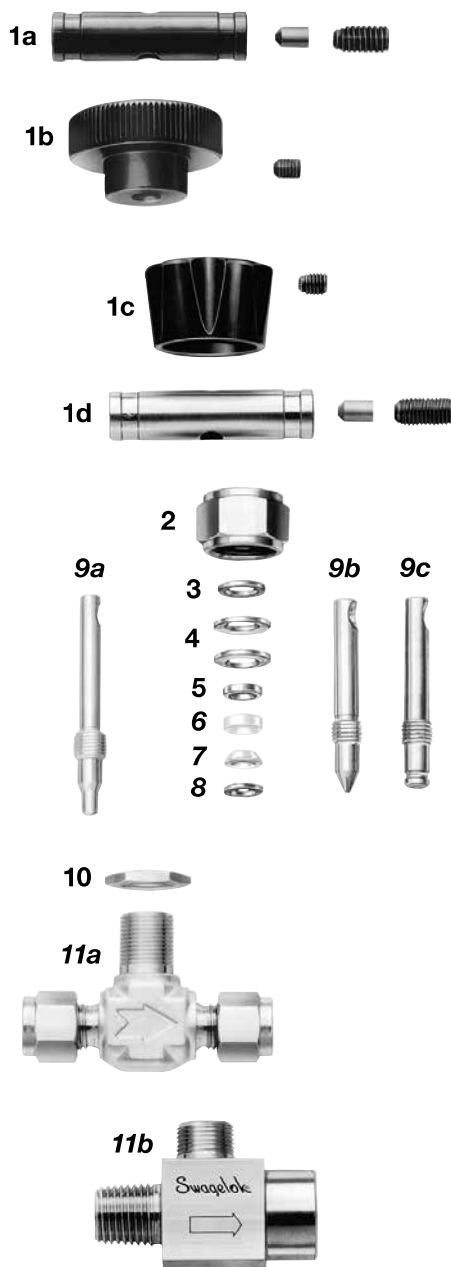


Materials of Construction



Component	Series	Valve Body Materials			
		Material Grade/ASTM Specification			
		316 SS	Brass	Steel	Alloy 400
1a Bar handle	18	Anodized aluminum 2024/B221 or A209			
Handle pin		Steel/A108			
Set screw		Nickel cadmium-plated steel			
1b Round handle	O and 1	Phenolic with brass insert			
Set screw		Nickel cadmium-plated steel			
1c Knob handle	20K	Anodized aluminum 7129/B221	—		
Set screw		Nickel cadmium-plated steel			
1d Bar handle	20V and 26	316 SS/A276	—		
Handle pin, set screw		S17400/A564			
2 Packing nut	All	316 SS/A276	Brass 360/B16	12L14/A108	Alloy 400/B164
3 Gland	O, 1, ^① and 20	304 SS/A240, A167			
4 Packing springs	All ^②	S17700/A693			
5 Packing gland	All	316 SS/A240, A276, B783			
6 Upper packing	All	PFA/D3307			
7 Lower packing					
8 Lower gland	All	316 SS/A240			Alloy 400/B127
9a Regulating stem	O, 1, and 18	Chrome-plated ^③ 316 SS/A276	316 SS/A276		Alloy 400/B164
9b Vee stem	All				
9c Soft-seat stem	All				
Stem tip		PCTFE/D1430			
10 Panel nut	O, 1, and 18	316 SS	Brass 360/B16	316 SS	
11a Body	O, 1, and 18	316 SS/A182	Brass 377/B283	Cadmium-plated 11L17/A108	Alloy 400/B564
11b Body	20 and 26	316 SS/A479	—		
Lubricant	All	Tungsten disulfide- and fluorocarbon-based			

Wetted components listed in *italics*.

Valve series listed with standard handles. For handle options, see **Handles**, page 8.

① 1 series valves with orifice of 0.172 in. (4.4 mm).

② O, 20 and 1 series with orifice of 0.172 (4.4 mm)—2 springs; 18, 26, and 1 series with orifice of 0.250 (6.4 mm)—3 springs.

③ Regulating and vee stem tip and threads; soft-seat stem threads.

Testing

Every integral-bonnet needle valve is factory tested with nitrogen at 1000 psig (69 bar). Seats have a maximum allowable leak rate of 0.1 std cm³/min. Shell testing is performed to a requirement of no detectable leakage with a liquid leak detector.

Cleaning and Packaging

All integral-bonnet needle valves are cleaned and packaged in accordance with Swagelok Standard *Cleaning and Packaging* (SC-10) catalog, MS-06-62. Cleaning and packaging in accordance with Swagelok *Special Cleaning and Packaging* (SC-11) catalog, MS-06-63, to ensure compliance with product cleanliness requirements stated in ASTM G93 Level C are available as an option.

Low Fugitive Emissions

The American Petroleum Institute's API 624 tests for fugitive emissions to atmosphere for rising stem valves. The tests are conducted at a third party lab and certify that at no point in the test did the valve leak in excess of 100 ppm of methane. Certificates stating that the valve is certified for Low Emissions service are available for valves with PFA and PEEK packing. For more information, contact your authorized Swagelok sales and service representative.