

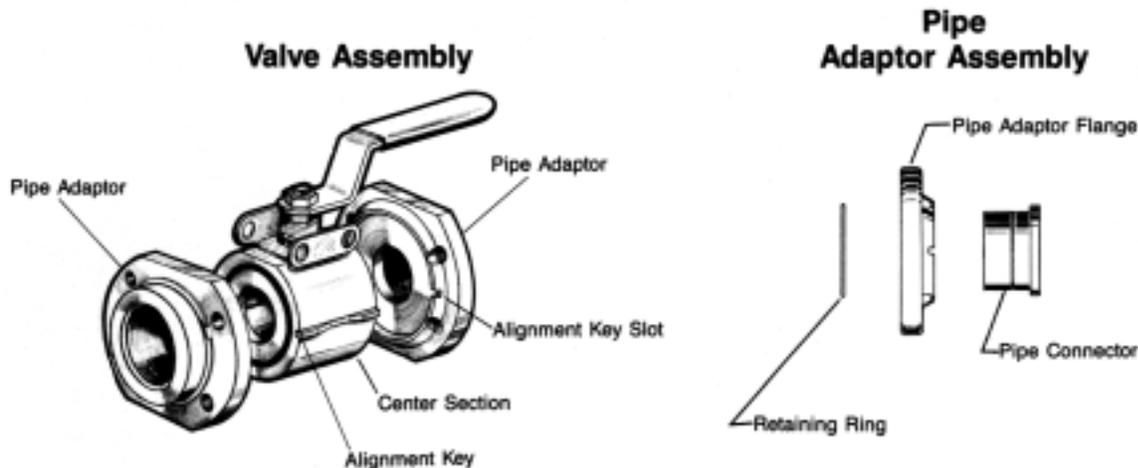


Installation Instructions Gemini Series 89

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Nomenclature

A complete valve consists of three subassemblies; two Pipe Adaptor assemblies and a Center Section assembly comprising functional elements such as the ball, seats, seals and stem.



Threaded Valves

When installing a threaded Series 89 valve fully assembled, apply the wrench first to the Pipe Connector being engaged by the male pipe thread; fully make up pipe joint. (See Figure 1). Complete the installation by assembling pipe to the other connector while that connector is securely held against rotation with a second wrench. (Figure 2).

Avoid wrenching the end of the valve opposite the end being assembled to prevent the Pipe Connector from spinning inside the Pipe Adaptor possibly damaging the seals. Valve stem orientation may be adjusted, after loosening the tie bolts, by rotating the Center Section to the desired position.

When it is advantageous to install pipe adaptors separately, as when a valve is being 'cut in' to an exist-

ing line, the following procedure is recommended:

1. Disassemble valve and assemble Pipe Adaptors to the ends of the pipe individually. Fully make-up joints need not be backed off for alignment.
2. Place Center Section in position between Pipe Adaptors. Enter and engage tie-bolts.
3. Snug tie-bolts evenly. As bolts are tightened, be sure that the Alignment Key (fixed to the Center Section) is engaged in the Pipe Connector Flange notches.
4. Rotate Center Section to intended final position. Tighten tie-bolts fully. See To Complete Installation For All Valves on back for torque recommendations.

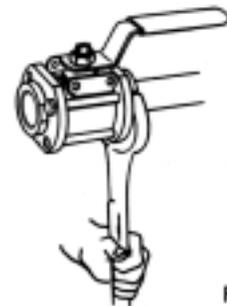


Figure 1

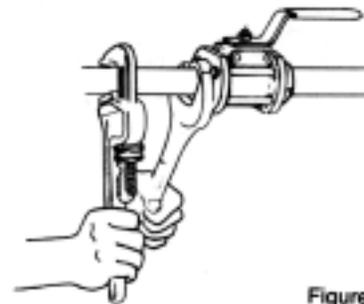


Figure 2

Butt & Socket Weld Valves

To avoid damaging seats and seals by exposure to welding temperature, the Center Section must be removed while the Pipe Adaptors are welded separately into line. Both butt and socket weld valves may be tack welded in place assembled, as long as the Center Section is removed while the welds are completed. (Seal temperature must never exceed 400°F).

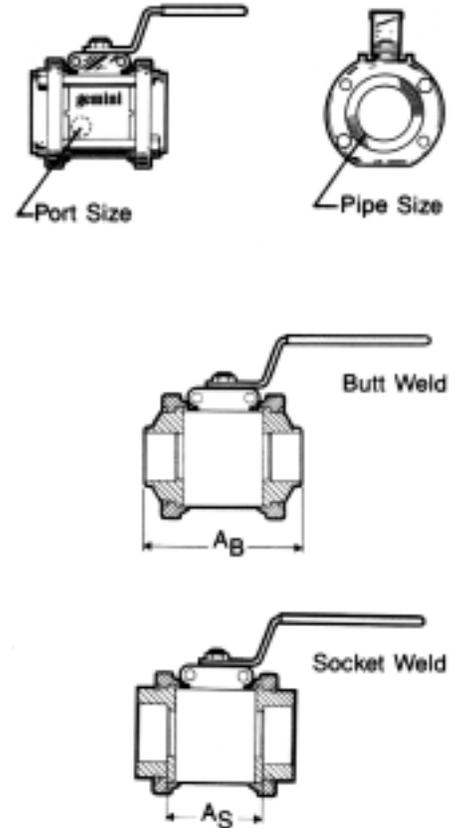
Care must be taken when 'cutting' a valve into a line that the gap created to accept the valve is the correct, particularly in the case of butt welded valves.

The socket-stop dimension for socket weld valves are listed in the adjacent chart. For socket weld valves it is good practice to pro-

vide a gap of approximately 1/16" between the end of the pipe and the bottom of the socket, before welding.

Dimensions—Inches			
Port* Size	Pipe Size	A _B Max Butt Weld	A _S Max Socket Weld
0.5	1/4, 3/8	—	2.02
	1/2	3.20	
0.6	1/2	3.40	2.02
	3/4		
0.8	3/4	3.76	2.02
	1		
1.0	1	4.59	2.91
	1 1/4		
1.25	1 1/4	4.67	2.91
	1 1/2		
1.50	1 1/2	5.15	3.50
	2		

* Port size is first item in Center Section Code



To Complete Installation For All Valves

Complete installation of the Series 89 valve by securely and uniformly tightening the tie-bolts. Begin by tightening each bolt in succession, following diagonal pattern (Figure 3), until even contact is achieved between the Center Section and the Pipe Connectors. Continue tightening each bolt, a small amount at a time following the diagonal pattern, until each is brought within the torque range shown in the chart.

If the valve is in a long unsupported horizontal run, support the valve while hand-tightening the upper two until an even contact is

achieved between the Pipe Connectors and Center Section seals. Finish the installation procedure by gradually bringing the bolts to the torque levels given in the chart.

Although an experienced fitter or mechanic will find no need to rely on a chart or torque wrench to ensure successful installation, the upper figure, shown in parentheses, must not be exceeded when stainless steel tie bolts are used as the bolts may yield (twist) at higher torque levels. For this reason, even experienced personnel are advised to employ a torque wrench when working with stainless steel bolts.



Figure 3

Port Size	Bolt Thread	Hex Size	Torque Range Inch-Pounds
0.5	5/16-24	1/2	50-100 (115)
0.6	5/16-24	1/2	50-100 (115)
0.8	5/16-24	1/2	50-100 (115)
1.0	3/8-24	9/16	75-150 (200)
1.2	3/8-24	9/16	75-150 (200)
1.5	7/16-20	5/8	100-200 (330)

*Formerly 1/4-28 Bolt Thread, 7/16 Hex Size, Torque Range 40-80 (80) Inch Pounds