

## Flowrite™ 599 Series

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### 2-1/2 to 6-Inch Valve, Two-Way & Three-Way, and Actuator Assembly Selection

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#### Description

This Technical Bulletin will aid in the selection of a Flowrite 599 Series 2-1/2 inch to 6-inch valve and actuator assembly. Begin with the graph of water capacity and the chart of close-off pressures to select a valve and actuator according to specifications. Use Tables 1 through 4 to identify product numbers.

These tables show all the possible combinations of the Flowrite 599 Series valves and compatible actuators that can be ordered as complete valve assemblies from the factory.

The dimensions of all valves and the service envelope required for each actuator are included in Tables 5 through 7.

#### How to Use the Selection Graphs

Use Figure 1, the water capacity graph, to select a valve. Locate the specified flow rate on the vertical axis. Follow across on the horizontal line to the point of intersection with the specified pressure drop. Choose the valve size from the heavy diagonal lines across the graph.

Use Figure 2, the close-off pressure graph, to select an actuator. First locate the valve action and actuator power source specified. Locate the bar that represents the valve line size. The top of the bar indicates the maximum close-off pressure for tight close-off.

Use the legend at the bottom of the graph to identify the actuator.

#### How To Use The Valve Tables

Tables have been organized to help select a valve and actuator combination using additional specifications.

Moving from left to right, identify the valve by selecting the combination of parameters needed. Continue to the right to match the selected valve to a desired actuator.

A valve and actuator assembly part number is determined by combining the actuator prefix code with the suffix of the valve product number.

#### NOTES:

1. No valve will combine with all actuators.
  2. The symbol “—” indicates a combination is not available.
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## **Selection Example      Specification**

Select a two-way normally closed valve and actuator assembly for an ANSI 125 piping system that will deliver 500 gpm (113 m<sup>3</sup>/h) chilled water with an equal percentage flow characteristic with no more than 5 psi (35 kPa) pressure drop across the fully open valve.

The valve shall be operated by a 24 Vac powered, 0 to 10 Vdc control signal, spring return electronic actuator, and must close off tightly against a pump head pressure of 15 psi (1 bar).

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### **Valve Sizing**

Use Figure 1, the water capacity graph, to begin valve sizing.

1. Locate 500 gpm (113 m<sup>3</sup>/h) on the vertical axis to find the required flow.
2. Read across the horizontal axis to find 5 psi (35 kPa), the maximum allowable pressure drop across the open valve.
3. Select a 5-inch (125 mm) 250 Cv (214 Kvs) line size valve because the point of intersection falls close to the 5-inch line.

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### **Actuator selection**

Use Figures 2, the close-off pressure graph, to choose an actuator.

1. Locate the graph for electronic actuators for NC valves in the upper left side of the figure.
  2. Locate the bar for 5-inch valves. The black bar represents an SKB/C actuator.
  3. Notice that the SKB/C has the sufficient force to provide tight close-off against more than 20 psi (1.4 bar) differential. For a 5-inch valve, select an SKC actuator with a 40 mm stroke.
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## Product Number Selection

Use Table 1 for ANSI Class 125 valves. Begin at the left and select the specifications necessary.

1. Select a two-way, normally closed, equal percentage flow characteristic according to the specifications.
2. Select bronze trim for the low pressure water application and standard packing for chilled water.
3. Select the 5-inch line size determined from the sizing example above. Note the 40 mm stroke of the valve. The valve part number is 599-05993.
4. Read across the top of the table to Electronic-hydraulic, 40 mm, and 24 Vac, 0-10 Vdc control signal.  
The actuator part number is SKC62U.  
The actuator code number is 294.
5. Read down the column to determine the valve and actuator assembly product number is 294-05993.

**NOTE:** A valve and actuator can be ordered separately by using the part numbers from Steps 3 and 4.

## References

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*Two-Way Valves 2-1/2 to 6-inch Flanged Iron Body Technical Instructions (155-159)*

*Three-Way Valves 2-1/2 to 6-inch Flanged Iron Body Technical Instructions (155-160)*

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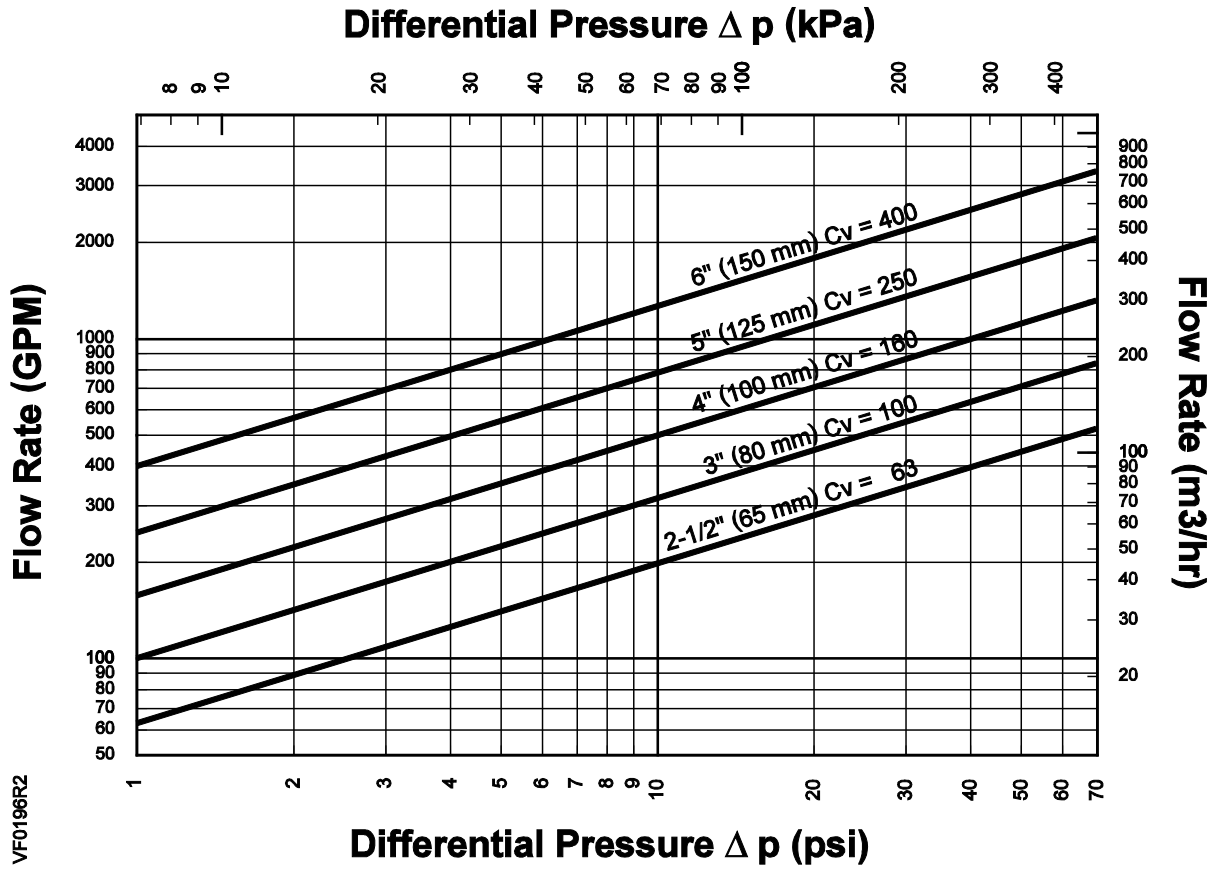


Figure 1. Water Capacity Graph.

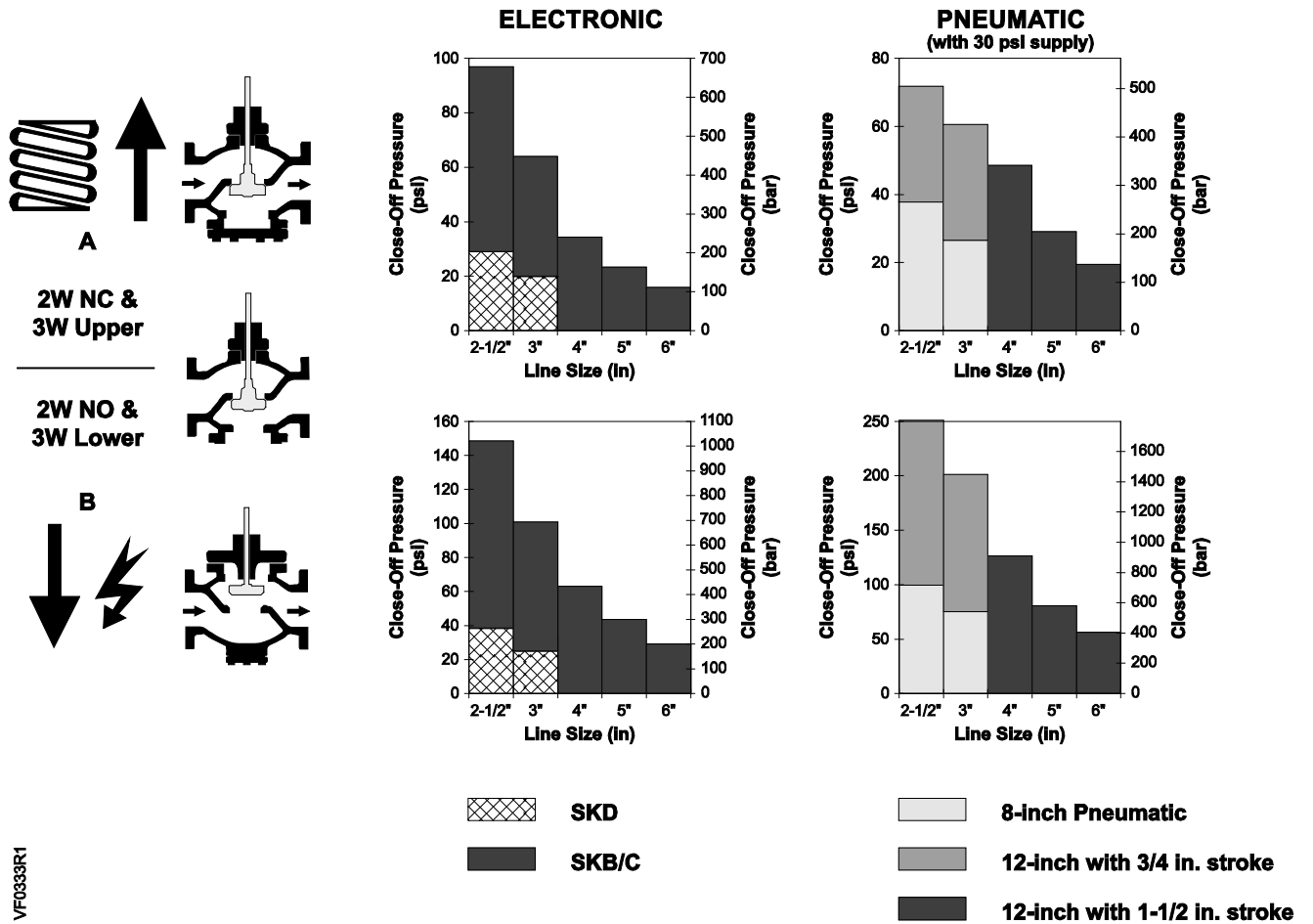


Figure 2. Close-off Pressures for 2-1/2 through 6-Inch Valves.

**Table 1. Two-Way and Three-Way Flanged Valves, ANSI Class 125.**

													Electro-Hydraulic - 24 Vac							
Action	Port & Characteristic	Trim	Packing	Flow Rate		Valve Size		Stroke	Stroke											
				Description	20 mm Stroke						40 mm Stroke									
					Non-Spring Return				Spring Return			NSR		Spring Return						
					Floating		0 to10 Vdc, 4 to20 mA		Floating		0 to10 Vdc, 4 to20 mA	Floating		0 to10 Vdc, 4 to20 mA						
					Technical Instructions	155-181P25	155-171P25		155-180P25	155-181P25	155-171P25	155-180P25	155-163P25	155-171P25		155-163P25				
					Actuator P/N	SKD82.50U	SKB82.50U		SKD60U	SKD82.51U	SKB82.51U	SKD62U	SKB62U	SKC82.60U	SKC82.61U	SKC62U				
Valve P/N	Actuator Code																			
	275	290	267	276	289	274	291	293	292	294										
Normally Open	2-Way Equal Percentage	Bronze	Standard	63	54	2.5	65	20	599-05980	275-05980	290-05980	267-05980	276-05980	289-05980	274-05980	291-05980	—	—	—	
				100	86	3	80	20	599-05981	275-05981	290-05981	267-05981	276-05981	289-05981	274-05981	291-05981	—	—	—	
				160	140	4	100	40	599-05982	—	—	—	—	—	—	—	293-05982	292-05982	294-05982	
				250	215	5	125	40	599-05983	—	—	—	—	—	—	—	293-05983	292-05983	294-05983	
				400	340	6	150	40	599-05984	—	—	—	—	—	—	—	293-05984	292-05984	294-05984	
				63	54	2.5	65	20	599-05960	275-05960	290-05960	267-05960	276-05960	289-05960	274-05960	291-05960	—	—	—	
		100	86	3	80	20	599-05961	275-05961	290-05961	267-05961	276-05961	289-05961	274-05961	291-05961	—	—	—			
		160	140	4	100	40	599-05962	—	—	—	—	—	—	—	293-05962	292-05962	294-05962			
		250	215	5	125	40	599-05963	—	—	—	—	—	—	—	293-05963	292-05963	294-05963			
		400	340	6	150	40	599-05964	—	—	—	—	—	—	—	293-05964	292-05964	294-05964			
		63	54	2.5	65	20	599-06060	275-06060	290-06060	267-06060	276-06060	289-06060	274-06060	291-06060	—	—	—			
		100	86	3	80	20	599-06061	275-06061	290-06061	267-06061	276-06061	289-06061	274-06061	291-06061	—	—	—			
	160	140	4	100	40	599-06062	—	—	—	—	—	—	—	293-06062	292-06062	294-06062				
	250	215	5	125	40	599-06063	—	—	—	—	—	—	—	293-06063	292-06063	294-06063				
	400	340	6	150	40	599-06064	—	—	—	—	—	—	—	293-06064	292-06064	294-06064				
	63	54	2.5	65	20	599-06040	275-06040	290-06040	267-06040	276-06040	289-06040	274-06040	291-06040	—	—	—				
	100	86	3	80	20	599-06041	275-06041	290-06041	267-06041	276-06041	289-06041	274-06041	291-06041	—	—	—				
	160	140	4	100	40	599-06042	—	—	—	—	—	—	—	293-06042	292-06042	294-06042				
	250	215	5	125	40	599-06043	—	—	—	—	—	—	—	293-06043	292-06043	294-06043				
	400	340	6	150	40	599-06044	—	—	—	—	—	—	—	293-06044	292-06044	294-06044				
	63	54	2.5	65	20	599-06000	275-06000	290-06000	267-06000	276-06000	289-06000	274-06000	291-06000	—	—	—				
	100	86	3	80	20	599-06001	275-06001	290-06001	267-06001	276-06001	289-06001	274-06001	291-06001	—	—	—				
	160	140	4	100	40	599-06002	—	—	—	—	—	—	—	293-06002	292-06002	294-06002				
	250	215	5	125	40	599-06003	—	—	—	—	—	—	—	293-06003	292-06003	294-06003				
400	340	6	150	40	599-06004	—	—	—	—	—	—	—	293-06004	292-06004	294-06004					
Normally Closed	2-Way Equal Percentage	Bronze	Standard	63	54	2.5	65	20	599-05990	275-05990	290-05990	267-05990	276-05990	289-05990	274-05990	291-05990	—	—	—	
				100	86	3	80	20	599-05991	275-05991	290-05991	267-05991	276-05991	289-05991	274-05991	291-05991	—	—	—	
				160	140	4	100	40	599-05992	—	—	—	—	—	—	—	293-05992	292-05992	294-05992	
				250	215	5	125	40	599-05993	—	—	—	—	—	—	—	293-05993	292-05993	294-05993	
				400	340	6	150	40	599-05994	—	—	—	—	—	—	—	293-05994	292-05994	294-05994	
				63	54	2.5	65	20	599-05970	275-05970	290-05970	267-05970	276-05970	289-05970	274-05970	291-05970	—	—	—	
		100	86	3	80	20	599-05971	275-05971	290-05971	267-05971	276-05971	289-05971	274-05971	291-05971	—	—	—			
		160	140	4	100	40	599-05972	—	—	—	—	—	—	—	293-05972	292-05972	294-05972			
		250	215	5	125	40	599-05973	—	—	—	—	—	—	—	293-05973	292-05973	294-05973			
		400	340	6	150	40	599-05974	—	—	—	—	—	—	—	293-05974	292-05974	294-05974			
		63	54	2.5	65	20	599-06070	275-06070	290-06070	267-06070	276-06070	289-06070	274-06070	291-06070	—	—	—			
		100	86	3	80	20	599-06071	275-06071	290-06071	267-06071	276-06071	289-06071	274-06071	291-06071	—	—	—			
	160	140	4	100	40	599-06072	—	—	—	—	—	—	—	293-06072	292-06072	294-06072				
	250	215	5	125	40	599-06073	—	—	—	—	—	—	—	293-06073	292-06073	294-06073				
	400	340	6	150	40	599-06074	—	—	—	—	—	—	—	293-06074	292-06074	294-06074				
	63	54	2.5	65	20	599-06050	275-06050	290-06050	267-06050	276-06050	289-06050	274-06050	291-06050	—	—	—				
	100	86	3	80	20	599-06051	275-06051	290-06051	267-06051	276-06051	289-06051	274-06051	291-06051	—	—	—				
	160	140	4	100	40	599-06052	—	—	—	—	—	—	—	293-06052	292-06052	294-06052				
	250	215	5	125	40	599-06053	—	—	—	—	—	—	—	293-06053	292-06053	294-06053				
	400	340	6	150	40	599-06054	—	—	—	—	—	—	—	293-06054	292-06054	294-06054				
	3-Way Mixing	Linear	Bronze	Standard	63	54	2.5	65	20	599-06160	275-06160	290-06160	267-06160	276-06160	289-06160	274-06160	291-06160	—	—	—
					100	86	3	80	20	599-06161	275-06161	290-06161	267-06161	276-06161	289-06161	274-06161	291-06161	—	—	—
					160	140	4	100	40	599-06162	—	—	—	—	—	—	—	293-06162	292-06162	294-06162
					250	215	5	125	40	599-06163	—	—	—	—	—	—	—	293-06163	292-06163	294-06163
400					340	6	150	40	599-06164	—	—	—	—	—	—	—	293-06164	292-06164	294-06164	
63					54	2.5	65	20	599-06165	275-06165	290-06165	267-06165	276-06165	289-06165	274-06165	291-06165	—	—	—	
100		86	3	80	20	599-06166	275-06166	290-06166	267-06166	276-06166	289-06166	274-06166	291-06166	—	—	—				
160		140	4	100	40	599-06167	—	—	—	—	—	—	—	293-06167	292-06167	294-06167				
250		215	5	125	40	599-06168	—	—	—	—	—	—	—	293-06168	292-06168	294-06168				
400		340	6	150	40	599-06169	—	—	—	—	—	—	—	293-06169	292-06169	294-06169				

**Table 2. Two-Way and Three-Way, Flanged Valves, ANSI Class 125.**

Characteristic	Trim	Packing	Flow Rate		Valve Size		Stroke	Pneumatic				Pneumatic with Factory Mounted Positioner						
								Stroke	20 mm		40 mm	20 mm		40 mm				
								Description	8-inch		12-inch	8-inch		12-inch				
									Standard	Hi Temp		Standard	Hi-Temp					
								Technical Instructions	155-161P25		155-162P25		155-161P25		155-162P25			
								Actuator P/N	599-01050	599-01051	599-01010	599-01000	599-01050 & 599-00426	599-01051 & 599-00426	599-01010 & 599-00423	599-01000 & 599-00423		
Valve P/N	Actuator Code																	
	277	278	279	281	283	284	285	287										
2-Way Equal Percentage NO	Bronze	Standard	63	54	2.5	65	20	599-05980	277-05980	—	279-05980	—	283-05980	—	285-05980	—		
			100	86	3	80	20	599-05981	277-05981	—	279-05981	—	283-05981	—	285-05981	—		
			160	140	4	100	40	599-05982	—	—	—	281-05982	—	—	—	287-05982		
			250	215	5	125	40	599-05983	—	—	—	281-05983	—	—	—	287-05983		
			400	340	6	150	40	599-05984	—	—	—	281-05984	—	—	—	287-05984		
			63	54	2.5	65	20	599-05960	277-05960	—	279-05960	—	283-05960	—	285-05960	—		
	Stainless Steel		100	86	3	80	20	599-05961	277-05961	—	279-05961	—	283-05961	—	285-05961	—		
			160	140	4	100	40	599-05962	—	—	—	281-05962	—	—	—	287-05962		
			250	215	5	125	40	599-05963	—	—	—	281-05963	—	—	—	287-05963		
			400	340	6	150	40	599-05964	—	—	—	281-05964	—	—	—	287-05964		
			63	54	2.5	65	20	599-06060	277-06060	—	279-06060	—	283-06060	—	285-06060	—		
			100	86	3	80	20	599-06061	277-06061	—	279-06061	—	283-06061	—	285-06061	—		
2-Way Linear NO	Stainless Steel	Hi-Temp	160	140	4	100	40	599-06062	—	—	—	281-06062	—	—	287-06062			
			250	215	5	125	40	599-06063	—	—	—	281-06063	—	—	287-06063			
			400	340	6	150	40	599-06064	—	—	—	281-06064	—	—	287-06064			
			63	54	2.5	65	20	599-06040	277-06040	278-06040	279-06040	—	283-06040	284-06040	285-06040	—		
			100	86	3	80	20	599-06041	277-06041	278-06041	279-06041	—	283-06041	284-06041	285-06041	—		
			160	140	4	100	40	599-06042	—	—	—	281-06042	—	—	—	287-06042		
	Bronze		250	215	5	125	40	599-06043	—	—	—	281-06043	—	—	—	287-06043		
			400	340	6	150	40	599-06044	—	—	—	281-06044	—	—	—	287-06044		
			63	54	2.5	65	20	599-05990	277-05990	—	279-05990	—	283-05990	—	285-05990	—		
			100	86	3	80	20	599-05991	277-05991	—	279-05991	—	283-05991	—	285-05991	—		
			160	140	4	100	40	599-05992	—	—	—	281-05992	—	—	—	287-05992		
			250	215	5	125	40	599-05993	—	—	—	281-05993	—	—	—	287-05993		
2-Way Equal Percentage NC	Bronze	Standard	400	340	6	150	40	599-05994	—	—	—	281-05994	—	—	287-05994			
			63	54	2.5	65	20	599-05970	277-05970	—	279-05970	—	283-05970	—	285-05970	—		
			100	86	3	80	20	599-05971	277-05971	—	279-05971	—	283-05971	—	285-05971	—		
			160	140	4	100	40	599-05972	—	—	—	281-05972	—	—	—	287-05972		
			250	215	5	125	40	599-05973	—	—	—	281-05973	—	—	—	287-05973		
			400	340	6	150	40	599-05974	—	—	—	281-05974	—	—	—	287-05974		
	Stainless Steel		63	54	2.5	65	20	599-06070	277-06070	—	279-06070	—	283-06070	—	285-06070	—		
			100	86	3	80	20	599-06071	277-06071	—	279-06071	—	283-06071	—	285-06071	—		
			160	140	4	100	40	599-06072	—	—	—	281-06072	—	—	—	287-06072		
			250	215	5	125	40	599-06073	—	—	—	281-06073	—	—	—	287-06073		
			400	340	6	150	40	599-06074	—	—	—	281-06074	—	—	—	287-06074		
			63	54	2.5	65	20	599-06050	277-06050	278-06050	279-06050	—	283-06050	284-06050	285-06050	—		
2-Way Linear NC	Stainless Steel	Hi-Temp	100	86	3	80	20	599-06051	277-06051	278-06051	279-06051	—	283-06051	284-06051	285-06051	—		
			160	140	4	100	40	599-06052	—	—	—	281-06052	—	—	—	287-06052		
			250	215	5	125	40	599-06053	—	—	—	281-06053	—	—	—	287-06053		
			400	340	6	150	40	599-06054	—	—	—	281-06954	—	—	—	287-06054		
			63	54	2.5	65	20	599-06160	277-06160	—	279-06160	—	283-06160	—	285-06160	—		
			100	86	3	80	20	599-06161	277-06161	—	279-06161	—	283-06161	—	285-06161	—		
	3-Way Mixing Linear		Bronze	Standard	160	140	4	100	40	599-06162	—	—	—	281-06162	—	—	287-06162	
					250	215	5	125	40	599-06163	—	—	—	281-06163	—	—	287-06163	
					400	340	6	150	40	599-06164	—	—	—	281-06174	—	—	287-06174	
					63	54	2.5	65	20	599-06165	277-06165	—	279-06165	—	283-06165	—	285-06165	—
					100	86	3	80	20	599-06166	277-06166	—	279-06166	—	283-06166	—	285-06166	—
					160	140	4	100	40	599-06167	—	—	—	281-06167	—	—	—	287-06167
Stainless Steel		250	215		5	125	40	599-06168	—	—	—	281-06168	—	—	—	287-06168		
		400	340		6	150	40	599-06169	—	—	—	281-06169	—	—	—	287-06169		

**Table 3. Two-Way and Three-Way, Flanged Valves, ANSI Class 250.**

Action	Port & Characteristic	Trim	Packing	Flow Rate		Valve Size		Stroke	Electronic-Hydraulic – 24 Vac											
									Stroke	20 mm						40 mm				
									Description	Non-Spring Return			Spring Return			NSR	Spring Return			
										Floating		0 to 10 Vdc, 4 to 20 mA	Floating		0 to 10 Vdc, 4 to 20 mA	Floating		0 to 10 Vdc, 4 to 20 mA		
									Technical Instructions	155-181P25	155-171P25	155-180P25	155-181P25	155-171P25	155-180P25	155-163P25	155-171P25		155-163P25	
									Actuator P/N	SKD82.50U	SKB82.50U	SKD60U	SKD82.51U	SKB82.51U	SKD62U	SKB62U	SKC82.60U	SKC82.61U	SKC62U	
Valve P/N	Actuator Code																			
Cv	Kvs	In	mm		275	290	267	276	289	274	291	293	292	294						
Normally Open	2-Way Equal Percentage	Bronze	Standard	63	54	2.5	65	20	599-05940	275-05940	290-05940	267-05940	276-05940	289-05940	274-05940	291-05940	—	—	—	
				100	86	3	80	20	599-05941	275-05941	290-05941	267-05941	276-05941	289-05941	274-05941	291-05941	—	—	—	
				160	140	4	100	40	599-05942	—	—	—	—	—	—	—	293-05942	292-05942	294-05942	
				250	215	5	125	40	599-05943	—	—	—	—	—	—	—	293-05943	292-05943	294-05943	
				400	340	6	150	40	599-05944	—	—	—	—	—	—	—	293-05944	292-05944	294-05944	
		Stainless St	63	54	2.5	65	20	599-05920	275-05920	290-05920	267-05920	276-05920	289-05920	274-05920	291-05920	—	—	—		
			100	86	3	80	20	599-05921	275-05921	290-05921	267-05921	276-05921	289-05921	274-05921	291-05921	—	—	—		
			160	140	4	100	40	599-05922	—	—	—	—	—	—	—	293-05922	292-05922	294-05922		
			250	215	5	125	40	599-05923	—	—	—	—	—	—	—	293-05923	292-05923	294-05923		
			400	340	6	150	40	599-05924	—	—	—	—	—	—	—	293-05924	292-05924	294-05924		
	2-Way Linear	Stainless St	Standard	63	54	2.5	65	20	599-06140	275-06140	290-06140	267-06140	276-06140	289-06140	274-06140	291-06140	—	—	—	
				100	86	3	80	20	599-06141	275-06141	290-06141	267-06141	276-06141	289-06141	274-06141	291-06141	—	—	—	
				160	140	4	100	40	599-06142	—	—	—	—	—	—	—	293-06142	292-06142	294-06142	
				250	215	5	125	40	599-06143	—	—	—	—	—	—	—	293-06143	292-06143	294-06143	
				400	340	6	150	40	599-06144	—	—	—	—	—	—	—	293-06144	292-06144	294-06144	
		Hi-Temp	63	54	2.5	65	20	599-06120	275-06120	290-06120	267-06120	276-06120	289-06120	274-06120	291-06120	—	—	—		
			100	86	3	80	20	599-06121	275-06121	290-06121	267-06121	276-06121	289-06121	274-06121	291-06121	—	—	—		
			160	140	4	100	40	599-06122	—	—	—	—	—	—	—	293-06122	292-06122	294-06122		
			250	215	5	125	40	599-06123	—	—	—	—	—	—	—	293-06123	292-06123	294-06123		
			400	340	6	150	40	599-06124	—	—	—	—	—	—	—	293-06124	292-06124	294-06124		
Normally Closed	2-Way Equal Percentage	Bronze	Standard	63	54	2.5	65	20	599-05950	275-05950	290-05950	267-05950	276-05950	289-05950	274-05950	291-05950	—	—	—	
				100	86	3	80	20	599-05951	275-05951	290-05951	267-05951	276-05951	289-05951	274-05951	291-05951	—	—	—	
				160	140	4	100	40	599-05952	—	—	—	—	—	—	—	293-05952	292-05952	294-05952	
				250	215	5	125	40	599-05953	—	—	—	—	—	—	—	293-05953	292-05953	294-05953	
				400	340	6	150	40	599-05954	—	—	—	—	—	—	—	293-05954	292-05954	294-05954	
		Stainless St	63	54	2.5	65	20	599-05930	275-05930	290-05930	267-05930	276-05930	289-05930	274-05930	291-05930	—	—	—		
			100	86	3	80	20	599-05931	275-05931	290-05931	267-05931	276-05931	289-05931	274-05931	291-05931	—	—	—		
			160	140	4	100	40	599-05932	—	—	—	—	—	—	—	293-05932	292-05932	294-05932		
			250	215	5	125	40	599-05933	—	—	—	—	—	—	—	293-05933	292-05933	294-05933		
			400	340	6	150	40	599-05934	—	—	—	—	—	—	—	293-05934	292-05934	294-05934		
	2-Way Linear	Stainless St	Standard	63	54	2.5	65	20	599-06150	275-06150	290-06150	267-06150	276-06150	289-06150	274-06150	291-06150	—	—	—	
				100	86	3	80	20	599-06151	275-06151	290-06151	267-06151	276-06151	289-06151	274-06151	291-06151	—	—	—	
				160	140	4	100	40	599-06152	—	—	—	—	—	—	—	293-06152	292-06152	294-06152	
				250	215	5	125	40	599-06153	—	—	—	—	—	—	—	293-06153	292-06153	294-06153	
				400	340	6	150	40	599-06154	—	—	—	—	—	—	—	293-06154	292-06154	294-06154	
		Hi-Temp	63	54	2.5	65	20	599-06130	275-06130	290-06130	267-06130	276-06130	289-06130	274-06130	291-06130	—	—	—		
			100	86	3	80	20	599-06131	275-06131	290-06131	267-06131	276-06131	289-06131	274-06131	291-06131	—	—	—		
			160	140	4	100	40	599-06132	—	—	—	—	—	—	—	293-06132	292-06132	294-06132		
			250	215	5	125	40	599-06133	—	—	—	—	—	—	—	293-06133	292-06133	294-06133		
			400	340	6	150	40	599-06134	—	—	—	—	—	—	—	293-06134	292-06134	294-06134		
3-Way Mixing	Linear	Bronze	Standard	63	54	2.5	65	20	599-06170	275-06170	290-06170	267-06170	276-06170	289-06170	274-06170	291-06170	—	—	—	
				100	86	3	80	20	599-06171	275-06171	290-06171	267-06171	276-06171	289-06171	274-06171	291-06171	—	—	—	
				160	140	4	100	40	599-06172	—	—	—	—	—	—	—	293-06172	292-06172	294-06172	
				250	215	5	125	40	599-06173	—	—	—	—	—	—	—	293-06173	292-06173	294-06173	
				400	340	6	150	40	599-06174	—	—	—	—	—	—	—	293-06174	292-06174	294-06174	
	Stainless St	63	54	2.5	65	20	599-06175	275-06175	290-06175	267-06175	276-06175	289-06175	274-06175	291-06175	—	—	—			
		100	86	3	80	20	599-06176	275-06176	290-06176	267-06176	276-06176	289-06176	274-06176	291-06176	—	—	—			
		160	140	4	100	40	599-06177	—	—	—	—	—	—	—	293-06177	292-06177	294-06177			
		250	215	5	125	40	599-06178	—	—	—	—	—	—	—	293-06178	292-06178	294-06178			
		400	340	6	150	40	599-06179	—	—	—	—	—	—	—	293-06179	294-06179	294-06179			



**Table 4. Two-Way and Three-Way, Flanged Valves, ANSI Class 250.**

Characteristic	Trim	Packing	Flow Rate		Valve Size		Stroke	Pneumatic				Pneumatic with Factory Mounted Positioner				
								Stroke		20 mm		40 mm		20 mm		40 mm
			Description	8-inch		12-inch		8-inch		12-inch						
				Standard	Hi-Temp			Standard	Hi-Temp							
			Technical Instructions	155-161P25		155-162P25		155-161P25		155-162P25						
Actuator P/N	599-01050	599-01051	599-01010	599-01000	599-01050 & 599-00426	599-01051 & 599-00426	599-01010 & 599-00423	599-01000 & 599-00423								
Valve P/N	Actuator Codes								277	278	279	281	283	284	285	287
Normally Open	2-Way Equal Percentage	Bronze	63	54	2.5	65	20	599-05940	277-05940	—	279-05940	—	283-05940	—	285-05940	—
			100	86	3	80	20	599-05941	277-05941	—	279-05941	—	283-05941	—	285-05941	—
			160	140	4	100	40	599-05942	—	—	—	281-05942	—	—	—	287-05942
			250	215	5	125	40	599-05943	—	—	—	281-05943	—	—	—	287-05943
			400	340	6	150	40	599-05944	—	—	—	281-05944	—	—	—	287-05944
		Standard	63	54	2.5	65	20	599-05920	277-05920	—	279-05920	—	283-05920	—	285-05920	—
			100	86	3	80	20	599-05921	277-05921	—	279-05921	—	283-05921	—	285-05921	—
			160	140	4	100	40	599-05922	—	—	—	281-05922	—	—	—	287-05922
			250	215	5	125	40	599-05923	—	—	—	281-05923	—	—	—	287-05923
			400	340	6	150	40	599-05924	—	—	—	281-05924	—	—	—	287-05924
	2-Way Linear	Stainless Steel	63	54	2.5	65	20	599-06140	277-06140	—	279-06140	—	283-06140	—	285-06140	—
			100	86	3	80	20	599-06141	277-06141	—	279-06141	—	283-06141	—	285-06141	—
			160	140	4	100	40	599-06142	—	—	—	281-06142	—	—	—	287-06142
			250	215	5	125	40	599-06143	—	—	—	281-06143	—	—	—	287-06143
			400	340	6	150	40	599-06144	—	—	—	281-06144	—	—	—	287-06144
		Hi-Temp	63	54	2.5	65	20	599-06120	277-06120	278-06120	279-06120	—	283-06120	284-06120	285-06120	—
			100	86	3	80	20	599-06121	277-06121	278-06120	279-06121	—	283-06121	284-06121	285-06121	—
			160	140	4	100	40	599-06122	—	—	—	281-06122	—	—	—	287-06122
			250	215	5	125	40	599-06123	—	—	—	281-06123	—	—	—	287-06123
			400	340	6	150	40	599-06124	—	—	—	281-06124	—	—	—	287-06124
Normally Closed	2-Way Equal Percentage	Bronze	63	54	2.5	65	20	599-05950	277-05950	—	279-05950	—	283-05950	—	285-05950	—
			100	86	3	80	20	599-05951	277-05951	—	279-05951	—	283-05951	—	285-05951	—
			160	140	4	100	40	599-05952	—	—	—	281-05952	—	—	—	287-05952
			250	215	5	125	40	599-05953	—	—	—	281-05953	—	—	—	287-05953
			400	340	6	150	40	599-05954	—	—	—	281-05954	—	—	—	287-05954
		Standard	63	54	2.5	65	20	599-05930	277-05930	—	279-05930	—	283-05930	—	285-05930	—
			100	86	3	80	20	599-05931	277-05931	—	279-05931	—	283-05931	—	285-05931	—
			160	140	4	100	40	599-05932	—	—	—	281-05932	—	—	—	287-05932
			250	215	5	125	40	599-05933	—	—	—	281-05933	—	—	—	287-05933
			400	340	6	150	40	599-05934	—	—	—	281-05934	—	—	—	287-05934
	2-Way Linear	Stainless Steel	63	54	2.5	65	20	599-06150	277-06150	—	279-06150	—	283-06150	—	285-06150	—
			100	86	3	80	20	599-06151	277-06151	—	279-06151	—	283-06151	—	285-06151	—
			160	140	4	100	40	599-06152	—	—	—	281-06152	—	—	—	287-06152
			250	215	5	125	40	599-06153	—	—	—	281-06153	—	—	—	287-06153
			400	340	6	150	40	599-06154	—	—	—	281-06154	—	—	—	287-06154
		Hi-Temp	63	54	2.5	65	20	599-06130	277-06130	278-06130	279-06130	—	283-06130	284-06130	285-06130	—
			100	86	3	80	20	599-06131	277-06131	278-06131	279-06131	—	283-06131	284-06131	285-06131	—
			160	140	4	100	40	599-06132	—	—	—	281-06132	—	—	—	287-06132
			250	215	5	125	40	599-06133	—	—	—	281-06133	—	—	—	287-06133
			400	340	6	150	40	599-06134	—	—	—	281-06134	—	—	—	287-06134
3-Way Mixing Linear	Bronze	Standard	63	54	2.5	65	20	599-06170	277-06170	—	279-06170	—	283-06170	—	285-06170	—
			100	86	3	80	20	599-06171	277-06171	—	279-06171	—	283-06171	—	285-06171	—
			160	140	4	100	40	599-06172	—	—	—	281-06172	—	—	—	287-06172
			250	215	5	125	40	599-06173	—	—	—	281-06173	—	—	—	287-06173
			400	340	6	150	40	599-06174	—	—	—	281-06174	—	—	—	287-06174
	Stainless St.	63	54	2.5	65	20	599-06175	277-06175	—	279-06175	—	283-06175	—	285-06175	—	
		100	86	3	80	20	599-06176	277-06176	—	279-06176	—	283-06176	—	285-06176	—	
		160	140	4	100	40	599-06177	—	—	—	281-06177	—	—	—	287-06177	
		250	215	5	125	40	599-06178	—	—	—	281-06178	—	—	—	287-06178	
		400	340	6	150	40	599-06179	—	—	—	281-06179	—	—	—	287-06179	

Note: Spring start point NO = 3 to 8 psi (21 to 55 kPa), NC = 10 to 15 psi (69 to 103 kPa), 3-Way = 8 to 13 psi (55 to 90 kPa).

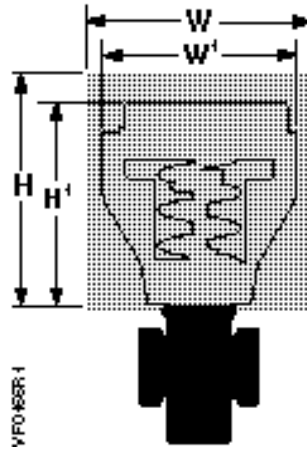
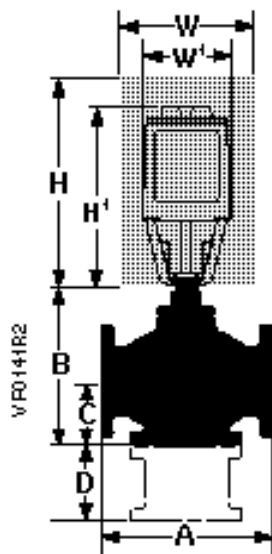


Figure 3. Actuator Dimensions.

Table 5. Dimensions of the Actuator and Recommended Service Envelope.  
 Dimensions in Inches (Millimeters).

Actuator	Actuator Prefix Code	Actual Height of Actuator H1	Service Height H	Actual Width or Diameter of Actuator W1	Service Width W
8-inch Pneumatic	277, 278, 283, 284	14-1/8 (359)	26 (660)	8-3/4 (222) diameter	21 (533)
12-inch Pneumatic	279, 281, 285, 287	17-7/8 (454)	30 (762)	15-1/8 (384) diameter	27 (686)
SKB/C with handle closed	289, 290, 291, 292, 293, 294	14-3/4 (375)	22-3/4 (578)	7 (178) width x 8-15/16 (226) depth	25 (635)
SKD	267, 274, 275, 276	11-13/16 (300)	19-3/4 (500)	5 (127) width x 6-5/8 (169) depth	14-1/2 (360)

**Table 6. Three-Way Valve Dimensions.**



Nominal Valve Size Inches (mm)	Dimensions in Inches (Millimeters)					Weight lb (kg)	
	A		B	C	D Service Flange	ANSI Class 125	ANSI Class 250
	ANSI Class 125	ANSI Class 250					
2-1/2 (65)	10-7/8 (276.4)	11-1/2 (292)	9-3/8 (239.2)	3-3/4 (95)	6-1/2 (165)	104 (47)	117 (53)
3 (80)	11-3/4 (298.5)	12-1/2 (318)	10-3/4 (272)	4-3/8 (111)	7 (178)	114 (52)	132 (60)
4 (100)	13-7/8 (352.4)	14-1/2 (368)	12-1/2 (317.6)	5-1/8 (131.6)	7-1/2 (191)	146 (66)	174 (79)
5 (125)	15-3/4 (400)	16-5/8 (422)	13-3/4 (349.2)	5-3/4 (146.2)	8-1/2 (216)	170 (77)	215 (99)
6 (150)	17-3/4 (451)	18-5/8 (473)	15-1/2 (393)	6-5/8 (167)	9-1/2 (241)	199 (90)	261 (119)

**Figure 4. Dimensions.**

**Table 7. Two-Way Valve Dimensions.**

Valve Action	Nominal Valve Size Inches (mm)	ANSI Class 125				ANSI Class 250			
		Dimensions in Inches (mm)			Weight lb (kg)	Dimensions in Inches (mm)			Weight lb (kg)
		A	B	C		A	B	C	
Normally Open	2-1/2 (65)	10-7/8 (276)	11 (281)	4-7/8 (123)	107 (49)	11-1/2 (292)	11 (281)	4-7/8 (123)	121 (55)
	3 (80)	11-3/4 (299)	12-1/4 (312)	5-5/16 (135)	118 (53)	12-1/2 (318)	12-1/4 (312)	5-5/16 (135)	139 (63)
	4 (100)	13-7/8 (352)	13-9/16 (345)	6-5/16 (160)	153 (70)	14-1/2 (368)	13-5/8 (344.7)	6-5/16 (160)	183 (83)
	5 (125)	15-3/4 (400)	15-3/16 (385)	7 (177)	176 (80)	16-5/8 (422)	15-3/16 (385)	7 (177)	222 (101)
	6 (150)	17-3/4 (451)	16-3/4 (426)	7-7/8 (200)	211 (96)	18-5/8 (473)	16-3/4 (426)	7-7/8 (200)	277 (126)
Normally Closed	2-1/2 (65)	10-7/8 (276)	10-5/8 (269)	4-7/8 (125)	107 (48)	11-1/2 (292)	11 (279)	5-3/8 (135)	120 (55)
	3 (80)	11-3/4 (299)	11-15/16 (303)	5-5/8 (142)	117 (53)	12-1/2 (318)	12-7/16 (315)	6 (154)	136 (62)
	4 (100)	13-7/8 (352)	13-15/16 (354)	6-5/8 (168)	154 (70)	14-1/2 (368)	14-3/8 (364)	7 (178)	184 (84)
	5 (125)	15-3/4 (400)	15-1/4 (388)	7-1/2 (185)	175 (79)	16-5/8 (422)	15-3/4 (399)	7-3/4 (196)	221 (101)
	6 (150)	17-3/4 (451)	17-1/16 (433)	8-3/16 (207)	210 (95)	18-5/8 (473)	17-1/2 (444)	8-5/8 (218)	275 (125)

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