

Linkage Kits for Field Coupling Johnson Controls Actuators to Johnson Controls Valves

The following tables contain information that allows you to easily select component parts (actuator, valve linkage, and valve body) for shop or field assembly of most recommended pneumatic and electric combinations.

The *Pneumatic Valve and Actuator Selection Charts* and *Electric Valve and Actuator Selection Charts* provide the recommended actuator/valve combinations with available sizes, Cvs, maximum closeoff pressures, and

actuator details. The tables in this section provide details on required valve linkage kits and parts.

Selection Chart (Electric Actuators Only)

Size (in.)	Base Valve Model Code Number	Style	End Connection	Direct Mount Valve Actuators						Remote Mount Actuator	M9116 / M9216
				VA-8x2x	VA-805x	VA-715x	VA-720x	VA-3100	VA-6100	M1n0 / Y20EBD-n	
1/2	VTM-xxxxn (With Slotted Top Stem)	All	NPT	A	B					C	E
			Union Angle								
			Union Globe								
			Union Sweat								
	VTM-xxxxn-020 (With Threaded Top Stem)	All	NPT		B	D				C	F
			Union Angle								
			Union Globe								
			Union Sweat								
	VB-3766	PDTC	Flare		D	D				C	
	VB-3966	PDTO									
VB-4332	Mix										
3/4	VB-3754	PDTC	NPT		D	D	D		C	F	
1	VB-3974	PDTO									
1-1/4											
1-1/2		Mix									
2	VB-4324	Mix									
2-1/2	VB-3752	PDTC	Flanged					G	C		
	3	VB-3970									PDTO
	4	VB-4322									Mix
		VB-3752									PDTC
5	VB-3970	PDTO	Flanged					H	H		
	6	VB-4322									Mix
		VB-3752									PDTC
2-1/2	VG2231xM	PDTC	Flanged					G	C	I	
	3	VG2431xM									PDTO
	4	VG2831xM									Mix
4	VG2231VN	PDTC	Flanged						H	I	
	VG2431VN	PDTO									
	VG2831VN	Mix									
5	VG2231xN	PDTC	Flanged					H	H	I	
	6	VG2431xN									PDTO
		VG2831xN									Mix

- PDTC** Push-Down-to-Close. **A** Requires linkage kit VA-8020-100. **E** Requires linkage kits Y20EBE-2 and M9000-500.
PDTO Push-Down-to-Open. **B** Requires linkage kit VA-8050-100. **F** Requires linkage kit M9000-500.
Mix Three-Way Mixing. **C** For proper M100 and Y20EBD assemblies, refer to *Electric Valve and Actuator Selection Charts*. VT valve also requires linkage kit Y20EBE-2. **G** Requires linkage kit VA-3100-500.
D No linkage kit or parts needed. **H** Requires linkage kit VA-3100-501.
I Requires M9000-53x Series linkage kit, refer to *Electric Valve and Actuator Selection Charts*.

Note: For allowable valve/actuator combinations and maximum closeoff pressures, refer to *Pneumatic Valve and Actuator Selection Charts* and *Electric Valve and Actuator Selection Charts*.

Linkage Kits for Field Coupling Johnson Controls Electric Actuators to Johnson Controls VG7000 Valves

Size (in.)	Base Valve Model Code Number	End Connection	Valve Actuators						
			VA-715x	VA-720x	M110	M120 / M130	M140	M150	M9x16
1/2 to 2	VG7000 (a)	NPT	None Required	None Required	VG7000-M110	VG7000-M130	VG7000-M140	VG7000-M150	M9000-500

(a) For VG7000 Selection Chart, refer to *VG7000 Series Bronze Globe Valves for Assembly in the Field, Selection Chart: VG7000 Series Valve Bodies*.

Linkage Kits for Field Coupling Johnson Controls Actuators to Johnson Controls Valves (Continued)

Cross-Reference and Index (Electric Actuator Valve Linkage Kits)

Linkage Kit	Actuator Code Number	Reference to Actuator Selection Charts	Valve Body Code Number	Size (in.)	Reference to Valve Body Selection Chart	Reference to Valve and Actuator Selection Table			
VA-8020-100	VA-8020-1	VA-8x2x Series Electric Actuators	VTM-xxxx	1/2	---				
	VA-8022-1								
VA-8050-100	VA-8050-1	VA-805x Series Electric Valve Actuators	VTM-xxxx	1/2	---				
	VA-8051-1								
	VA-8052-1								
M9000-500	M9116-xxx M9216-xxx	M9108, M9116, M9124, and M9132 Series Electric Non-Spring Return Actuators M9216 Series Electric Spring Return Actuators	VG7000 Series	1/2 to 2	Valve Body Selection Chart Electric Valve and Actuator Selection Charts				
M9000-530 M9000-531 M9000-532 M9000-533 M9000-534 M9000-535 M9000-536 M9000-537	M9116-xGx-2 M9124-xGx-2 M9216-xGx-2 (Single Actuator)	VG2000 Series Cast Iron Flanged Globe Valves for Assembly in the Field	VG2231TM VG2431TM VG2831TM	2-1/2	---	Electric Valve and Actuator Selection Charts			
	M9116-xGx-2 M9124-xGx-2 M9216-xGx-2 (Single Actuator)		VG2231TM VG2431TM VG2831TM	3 4					
	M9116-xGx-2 M9124-xGx-2 M9216-xGx-2 (Tandem Actuators)		VG2231TM VG2431TM VG2831TM	3 4					
	M9124-xGx-2 (Single Actuator)		VG2231TM VG2431TM VG2831TM	5					
	M9124-xGx-2 M9216-xGx-2 (Tandem Actuators)		VG2231TM VG2431TM VG2831TM	5					
	M9124-xGx-2 (Single Actuator)		VG2231TM VG2431TM VG2831TM	6					
	M9124-xGx-2 M9216-xGx-2 (Tandem Actuators)		VG2231TM VG2431TM VG2831TM	6					
	M9124-xGx-2 (Single Actuator)		VG2231TM VG2431TM VG2831TM	6					
Y20EBE-2	M100 Series	M100 Series Electric Actuators	VTM-xxxx	1/2	---				
Y20EBD-1 Y20EBD-2 Y20EBD-3 Y20EBD-4 Y20EBD-5 Y20EBD-6	M100 Series		VTM-xxxx	1/2					
			VB-3766						
			VB-3966						
			VB-4332						
			VB-3754 VB-3974 VB-4324	3/4 1 1-1/4 1-1/2 2					
			VB-3752 VB-3970 VB-4322 VG2231 VG2431 VG2831	2-1/2 3 4					
VA-3100-500	VA-3100		VG2000 Series Cast Iron Flanged Globe Valves for Assembly in the Field	VB-3752 VB-3970 VB-4322 VG2231 VG2431 VG2831			2-1/2 3 4	---	Electric Valve and Actuator Selection Charts
VA-3100-501	VA-3100 VA-6100		VG2000 Series Cast Iron Flanged Globe Valves for Assembly in the Field	VB-3752 VB-3970 VB-4322 VG2231 VG2431 VG2831			5 6	---	Electric Valve and Actuator Selection Charts

Note: For allowable valve/actuator combinations and maximum closeoff pressures, refer to *Pneumatic Valve and Actuator Selection Charts* and *Electric Valve and Actuator Selection Charts*.

Linkage Kits for Field Coupling Johnson Controls Actuators to Johnson Controls Valves (Continued)

Selection Chart (Pneumatic Actuator Valve Linkage)

Size (in.)	Valve Body Code Number	Style (a)	End Connection	Actuators				
				V-3802-1	V-4000-1	V-3000-1	V-3000-2	MP82
1/2	VTM-xxnnn-01n	All	NPT Union Angle Union Globe Union Sweat			A	A	
	VTM-xxnnn-09n			A	A			
	VTM-xxnnn (with slotted top stem)			B	B	C	C	
	VTM-xxnnn-020 (with threaded stem)	All	NPT Union Angle Union Globe Union Sweat			B	B	
	VB-3766	PDTC	Flare			D	D	
	VB-3966	PDTO						
VB-4332	Mix							
3/4 1 1-1/4 1-1/2 2	VB-3754	PDTC	NPT			E	E	
	VB-3974	PDTO						
	VB-4324	Mix						F

(a) PDTC = Push-Down-to-Close (Normally Open) PDTO = Push-Down-to-Open (Normally Closed) Mix = Three-Way Mixing

Note: For allowable valve/actuator combinations and maximum closeoff pressures, refer to *Pneumatic Valve and Actuator Selection Charts and Electric Valve and Actuator Selection Charts*.

- A No linkage kit or parts needed. Specify spring range (n) in code number.
- B Extra parts required.
Spring kit is required, refer to *Repair Parts for Use with Electric or Pneumatic VT Series Terminal Unit Valves 1/2 in., Two-Way and Three-Way*. In addition, this valve body has a slotted top stem and also requires linkage kit Y20EB0-2 containing a threaded stem adaptor and stamped bonnet adaptor.
- C Spring kit is required, refer to *Repair Parts for 1/2 in. Flare Valves for Use with V-3766, V-3966, V-4332, VB-3766, VB-3966, VB-4332, AV-8050, AV-8051, and AV-8052 (Flare Valve Assemblies)*.
- D Spring kit is required, refer to *Repair Parts for Cage Trim Valve for Use with V-3754 with Actuator and VB-3754 without Actuator (Including 1/2 in.)*.
- E No linkage or parts needed, if actuator is ordered with optional mounting hardware.
- F

Selection Chart (VG7000 Pneumatic)

Size (in.)	Valve Body Code Number	End Connection	Actuators				
			V-3000-8011	V-3000-8003	V-3801-8001	MP82	MP84
1/2 to 3/4	VG7000 Series ^(a)	NPT	A	A	B	A	A
1 to 1-1/4							
1-1/2 to 2							

(a) For VG7000 Selection Chart, refer to *VG7000 Series Bronze Globe Valves for Assembly in the Field, Selection Chart: VG7000 Series Valve Bodies*.

- A Mounting kit is required, refer to *Repair and Maintenance Parts for Use with Electric or Pneumatic VG7000 Series 1/2 Through 2 in. Valves*
- B Mounting kit is required, refer to *Repair and Maintenance Parts for Use with Electric or Pneumatic VG7000 Series 1/2 Through 2 in. Valves*
Note: Also available in a kit containing three springs (3-6, 4-8, 9-13). Includes hardware to adapt one valve only.

Linkage Kits for Field Coupling Johnson Controls Actuators to Johnson Controls Valves (Continued)

VF Series, Two-Way Mounting Kits, D-3153, D-3244, D-3246 Actuators

Valve Size (in.)	Action	Pressure	Type	Desired VF Assembly (a)	Manual VF Assembly (a)	Actuator Code Number	Field Mounting Kit Code Number (b)		
2, 2-1/2, 3	Normally Closed	High	Without positioner	VFC-020H-001N	VFM-020H-000N	D-3153-5130	VF-001-602		
				VFC-025H-001N	VFM-025H-000N				
				VFC-030H-001N	VFM-030H-000N				
			With positioner	VFC-020H-001A	VFM-020H-000N	D-3153-5120			
				VFC-025H-001A	VFM-025H-000N				
				VFC-030H-001A	VFM-030H-000N				
	Normally Open	High	Without positioner	VFN-020H-001N	VFM-020H-000N	D-3153-5130	VF-001-603		
				VFN-025H-001N	VFM-025H-000N				
			With positioner	VFN-020H-001A	VFM-020H-000N	D-3153-5120			
				VFN-025H-001A	VFM-025H-000N				
4	Normally Closed	Low	Without positioner	VFC-040L-001N	VFM-04L-000N	D-3153-5130	VF-001-604		
				With positioner		VFC-040L-001A		D-3153-5120	
			Normally Open	Without positioner		VFN-040L-001N	D-3153-5130	VF-001-605	
						With positioner	VFN-040L-001A		D-3153-5120
	Normally Open	High	Without positioner	VFC-040H-002N	VFM-04H-000N	D-3244-5110	VF-002-602		
				With positioner		VFC-040H-002A		D-3244-5100	
			Normally Open	Without positioner		VFN-040H-002N	D-3244-5110	VF-002-603	
						With positioner	VFN-040H-002A		D-3244-5100
	5	Normally Closed	Low	Without positioner	VFC-050L-002N	VFM-05L-000N	D-3244-5110	VF-002-604	
					With positioner		VFC-050L-002A		D-3244-5100
Normally Open				Without positioner	VFN-050L-002N		D-3244-5110	VF-002-605	
					With positioner		VFN-050L-002A		D-3244-5100
Normally Open		High	Without positioner	VFC-050H-003N	VFM-05H-000N	D-3246-5110	VF-003-602		
				With positioner		VFC-050H-003A		D-3246-5100	
			Normally Open	Without positioner		VFN-050H-003N	D-3246-5110	VF-003-603	
						With positioner	VFN-050H-003A		D-3246-5100
6	Normally Closed	High	Without positioner	VFC-060H-003N	VFM-060H-000N	D-3246-5110	VF-003-604		
				Low				VFC-060L-003N	VFM-060L-000N
		Normally Open	High	With positioner		VFC-060H-003A		VFM-060H-000N	D-3246-5100
						Low		VFC-060L-003A	
	Normally Open	High	Without positioner	VFN-060H-003N	VFM-060H*-000N	D-3246-5110	VF-003-605		
				Low	VFN-060L-003N			VFM-060L-000N	
		Normally Open	High	With positioner	VFN-060H-003A	VFM-060H-000N		D-3246-5100	
					Low	VFN-060L-003A			VFM-060L-000N
8	Normally Closed	Low	Without positioner	VFC-080L-003N	VFM-080L-000N	D-3246-5110	VF-003-606		
				With positioner		VFC-080L-003A		D-3246-5100	
	Normally Open		Without positioner	VFN-080L-003N		D-3246-5110	VF-003-607		
				With positioner		VFN-080L-003A		D-3246-5100	
10	Normally Closed	Low	With positioner	VFC-100L-005A	VFM-100L-000N	D-3246-5110, D-3246-5100	VF-005-602		
				Without positioner		VFC-100L-005N		D-3246-5110 (Two)	
	Normally Open		With positioner	VFN-100L-005A		D-3246-5110, D-3246-5100	VF-005-603		
				Without positioner		VFN-100L-005N		D-3246-5110 (Two)	

(a) Select appropriate stem material (A, B, C, D). See *VF Series Butterfly Valve Bodies, 2 Through 20 in., Selection Chart*.

(b) Mounting kit contains a mounting bracket, crankarm, sleeve adaptor, a clevis kit, and all necessary hardware for completing actuator field mounting. Individual parts can be ordered.