

# 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 *Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)* provides 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 Charts

### Electric Actuators Only<sup>1</sup>

Size (in.)	Base Valve Model Code Number	Style <sup>2</sup>	End Connection	Direct Mount Valve Actuators <sup>3</sup>						Remote Mount Actuator <sup>3</sup>	M9116 / M9220 <sup>3</sup>
				VA-8x2x	VA-805x	VA-715x	VA-720x	VA-3100	VA-6100	M1n0 / Y20EBD-n	
1/2	VTM-xxnnn (With Slotted Top Stem)	All	NPT	A	B					C	E
			Union Angle								
			Union Globe								
			Union Sweat								
	VTM-xxnnn-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 1 1-1/4 1-1/2 2	VB-3754	PDTC	NPT		D	D	D			C
VB-3974		PDTO									
VB-4324		Mix									
2-1/2 3 4	VB-3752	PDTC	Flanged					G		C	
	VB-3970	PDTO									
	VB-4322	Mix									
5 6	VB-3752	PDTC	Flanged					H	H		
	VB-3970	PDTO									
	VB-4322	Mix									
2-1/2 3 4	VG2231xM	PDTC	Flanged					G		C	I
	VG2431xM	PDTO									
	VG2831xM	Mix									
4	VG2231VN	PDTC	Flanged						H		I
	VG2431VN	PDTO									
	VG2831VN	Mix									
5 6	VG2231xN	PDTC	Flanged					H	H		I
	VG2431xN	PDTO									
	VG2831xN	Mix									

- For allowable valve/actuator combinations and maximum closeoff pressures, refer to *Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)*.
- PDTC** = Push-Down-to-Close (Normally Open). **PDTO** = Push-Down-to-Open (Normally Closed). **Mix** = Three-Way Mixing.
- A** = Requires linkage kit VA-8020-100. **B** = Requires linkage kit VA-8050-100. **C** = For proper M100 and Y20EBD assemblies, refer to *Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)*. VT valve also requires linkage kit Y20EBE-2. **D** = No linkage kit or parts needed. **E** = Requires linkage kits Y20EBE-2 and M9000-500. **F** = Requires linkage kit M9000-500. **G** = Requires linkage kit VA-3100-500. **H** = Requires linkage kit VA-3100-501. **I** = Requires M9000-53x Series linkage kit, refer to *Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)*.

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

Size (in.)	Base Valve Model Code Number	End Connection	Valve Actuator						
			VA-715x	VA-720x	M110	M120 / M130	M140	M150	M9220
1/2 to 2	VG7000 <sup>1</sup>	NPT	None Required	None Required	VG7000-M110	VG7000-M130	VG7000-M140	VG7000-M150	M9000-500

- For VG7000 Selection Chart, refer to *Selection Chart: VG7000 Series Valve Bodies in the VG7000 Series Bronze Globe Valves for Assembly in the Field Catalog Page (LIT-1924005)*.



## Linkage Kits for Field Coupling Johnson Controls® Actuators to Johnson Controls

### Cross-Reference and Index - Electric Actuator Valve Linkage Kits<sup>1</sup> (Part 1 of 2)

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-8020-1 Floating/Incremental Control Electric Valve Actuator Catalog Page (LIT-1924165)	VTM-xxnnn	1/2	---	Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)
	VA-8022-1					
VA-8050-100	VA-8050-1	VA-805x Series Electric Valve Actuators Catalog Page (LIT-1924170)	VTM-xxnnn	1/2	---	
	VA-8051-1					
	VA-8052-1					
M9000-500 <sup>2</sup>	M9116-xxx M9220-xxx-3	M9108, M9116, M9124, and M9132 Series Electric Actuators Catalog Page (LIT-1922030), M9220-xxx-3 Electric Spring Return Actuators Catalog Page (LIT-1900358)	VG7000 Series	1/2 to 2	Valve Body Selection Chart Catalog Page (LIT-1924545), Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)	
M9000-530 M9000-531 M9000-532 M9000-533 M9000-534 M9000-535 M9000-536 M9000-537	M9116-xGx-2	VG2000 Series Cast Iron Flanged Globe Valves for Assembly in the Field Catalog Page (LIT-1900064)	VG2231TM	2-1/2	---	
	M9124-xGx-2		VG2431TM			
	M9220-xGx-3 (Single Actuator)		VG2831TM			
	M9116-xGx-2		VG2231TM	3		
	M9124-xGx-2		VG2431TM	4		
	M9220-xGx-3 (Single Actuator)		VG2831TM			
	M9116-xGx-2		VG2231TM	3		
	M9124-xGx-2		VG2431TM	4		
	M9220-xGx-3 (Tandem Actuators)		VG2831TM			
	M9124-xGx-2 (Single Actuator)		VG2231TM	5		
M9124-xGx-2	VG2431TM	5				
M9220-xGx-3 (Tandem Actuators)	VG2831TM					
M9124-xGx-2 (Single Actuator)	VG2231TM	6				
M9124-xGx-2	VG2431TM	6				
M9220-xGx-3 (Tandem Actuators)	VG2831TM					
Y20EBE-2	M100 Series	M100 Series Electric Actuators Catalog Page (LIT-1924155)	VTM-xxnnn	1/2	---	
Y20EBD-1 Y20EBD-2 Y20EBD-3 Y20EBD-4 Y20EBD-5 Y20EBD-6	M100 Series	M100 Series Electric Actuators Catalog Page (LIT-1924155)	VTM-xxnnn	1/2	---	
			VB-3766			
			VB-3966			
			VB-4332			
			VB-3754	3/4	---	
			VB-3974	1		
			VB-4324	1-1/4		
				1-1/2	---	
				2		
			VB-3752	2-1/2	---	
VB-3970	3					
VB-4322	4					
VG2231						
VG2431						
VG2831						

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

### Cross-Reference and Index - Electric Actuator Valve Linkage Kits<sup>1</sup> (Part 2 of 2)

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-3100-500	VA-3100	VG2000 Series Cast Iron Flanged Globe Valves for Assembly in the Field Catalog Page (LIT-1900064)	VB-3752 VB-3970 VB-4322 VG2231 VG2431 VG2831	2-1/2 3 4	---	Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)
VA-3100-501	VA-3100 VA-6100	VG2000 Series Cast Iron Flanged Globe Valves for Assembly in the Field Catalog Page (LIT-1900064)	VB-3752 VB-3970 VB-4322 VG2231 VG2431 VG2831	5 6	---	Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)

- For allowable valve/actuator combinations and maximum closeoff pressures, refer to *Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)*.
- M9000-500 has been discontinued.

### VG7000 Pneumatic

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

- A** = Mounting kit is required, refer to *VG7000 Series Bronze Globe Valves, Maintenance and Repair Catalog Page (LIT-1924275)*. **B** = Mounting kit is required, refer to *VG7000 Series Bronze Globe Valves, Maintenance and Repair Catalog Page (LIT-1924275)*. **Also available in a kit containing three springs (3-6, 4-8, 9-13). Includes hardware to adapt one valve only.**
- For VG7000 Selection Chart, refer to *Selection Chart: VG7000 Series Valve Bodies in the VG7000 Series Bronze Globe Valves for Assembly in the Field Catalog Page (LIT-1924005)*.

### Pneumatic Actuator Valve Linkage<sup>1</sup>

Size (in.)	Valve Body Code Number	Style <sup>2</sup>	End Connection	Actuators <sup>3</sup>					
				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	VB-3754	PDTC	NPT			E	E		
1	VB-3974	PDTO						F	
1-1/4									
1-1/2	VB-4324	Mix							
2									

- For allowable valve/actuator combinations and maximum closeoff pressures, refer to *Electric Valve and Actuator Selection Charts Catalog Page (LIT-1924560)*.
- PDTC** = Push-Down-to-Close (Normally Open). **PDTO** = Push-Down-to-Open (Normally Closed). **Mix** = Three-Way Mixing.
- A** = No linkage kit or parts needed. Specify spring range (n) in code number. **B** = Extra parts required. **C** = 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 Catalog Page (LIT-1924280)*. 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. **D** = 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) Catalog Page (LIT-1924285)*. **E** = 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.) Catalog Page (LIT-1924300)*. **F** = No linkage or parts needed, if actuator is ordered with optional mounting hardware.



## 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.	Closeoff Pressure (psig)	Pneumatic Positioner	Desired Assembly <sup>1</sup>		Valve Body	Actuator	Linkage Kit <sup>2</sup>
			Normally Open Assembly	Normally Closed Assembly			
2	175	Yes	VF4231AA+3153P	VF4431AA+3153P	VF4231AA	D-3153-5120	VF4-D3000-201
		No	VF4231AA+3153	VF4431AA+3153		D-3153-5130	
2-1/2	175	Yes	VF4231BA+3153P	VF4431BA+3153P	VF4231BA	D-3153-5120	
		No	VF4231BA+3153	VF4431BA+3153		D-3153-5130	
3	175	Yes	VF4231CA+3153P	VF4431CA+3153P	VF4231CA	D-3153-5120	
		No	VF4231CA+3153	VF4431CA+3153		D-3153-5130	
4	175	Yes	VF4231DA+3244P	VF4431DA+3244P	VF4231DA	D-3244-5100	VF4-D3000-203
		No	VF4231DA+3244	VF4431DA+3244		D-3244-5110	
	50	Yes	VF6231DA+3153P	VF6431DA+3153P	VF6231DA	D-3244-5100	VF4-D3000-202
		No	VF6231DA+3153	VF6431DA+3153		D-3244-5110	
5	175	Yes	VF4231EA+3246P	VF4431EA+3246P	VF4231EA	D-3246-5100	VF4-D3000-204
		No	VF4231EA+3246	VF4431EA+3246		D-3246-5110	
	50	Yes	VF6231EA+3244P	VF6431EA+3244P	VF6231EA	D-3244-5100	VF4-D3000-203
		No	VF6231EA+3244	VF6431EA+3244		D-3244-5110	
6	175	Yes	VF4231FA+3246P	VF4431FA+3246P	VF4231FA	D-3246-5100	VF4-D3000-205
		No	VF4231FA+3246	VF4431FA+3246		D-3246-5110	
	50	Yes	VF6231FA+3246P	VF6431FA+3246P	VF6231FA	D-3246-5100	
		No	VF6231FA+3246	VF6431FA+3246		D-3246-5110	
8	175	Yes	VF4231GA23246P	VF4431GA23246P	VF4231GA	D-3246-5100 and D-3246-5110	VF4-D3000-207
		No	VF4231GA23246	VF4431GA23246		Two Required	
	50	Yes	VF6231GA+3246P	VF6431GA+3246P	VF6231GA	D-3246-5100	VF4-D3000-206
		No	VF6231GA+3246	VF6431GA+3246		D-3246-5110	
10	50	Yes	VF6231HA23246P	VF6431HA23246P	VF6231HA	D-3246-5100 and D-3246-5110	VF4-D3000-208
		No	VF6231HA23246	VF6431HA23246		Two Required	

1. See *VF Series Two-Way, Spring Return, Low Pressure Pneumatically Actuated, Standard-Pressure, Standard-Temperature Butterfly Valve Assemblies Catalog Page (LIT-1900140)* for further information on the desired assemblies.
2. The mounting kits contain a mounting bracket, crankarm, sleeve adapter, a clevis kit, and all necessary hardware for competing actuator field mounting D-3000 Series Actuator to bare stem VF4000 and VF6000 Series Valves date coded 0501 or later (manufactured 2005 or later).