

## CONTROL ENGINEERING DATA

Control Engineering Data is intended to provide a single source from which one can determine, in detail, the full scope of the product line. Operating principles and dimensional data are found in the instruction and maintenance manuals. Control Engineering Data also provides a means of communicating, by way of a code number, which is fully descriptive of the product selection.

- NOTES:** 1. GB50X\_ - GB55X\_ Series Actuators will be supplied with spacer bars and lower flange. Specify stroke after catalog number (See position 11 for standard strokes - special strokes are available, consult the factory.)  
 2. Stroke lengths must be specified after all catalog numbers.  
 3. Catalog numbers as received must contain eleven (11) characters.

1-4 Models	GB50 = 3.0" Piston Diameter	7.0 sq. in. Effective Area
	GB51 = 4.0" Piston Diameter	12.0 sq. in. Effective Area
	GB52 = 6.0" Piston Diameter	28.5 sq. in. Effective Area
	GB53 = 8.0" Piston Diameter	50.0 sq. in. Effective Area
	GB54 = 10.0" Piston Diameter	78.0 sq. in. Effective Area
	GB55 = 12.5" Piston Diameter	123.0 sq. in. Effective Area

5 Standard Options	A = Yoke Type - Drilled for Isolating and Lubricator Valve (GB52-GB54 only)
	N = Airlock on Yoke (GB52-GB54 only)
	P = Airpak® Mounted to Positioner (GB52-GB54 only - Yoke Style)
	R = Airpak® Mounted to Positioner, Airlock on Yoke (GB52-GB54 only - Yoke Style)
	S = Lever Operation (GB52 and GB53 only)
	T = Airpak® Mounted to Positioner (GB5_XX_and GB5_XXA_Series)
	U = Yoke Type - GB52 1-1/4" Yoke Mount
	- GB53 1-11/16" Yoke Mount
	- GB54 1-11/16" Yoke Mount
	The same yoke mount dimensions apply to Options N, P and R
W = Airpak® Mounted to Positioner (GB52S_and GB53S_Lever Style)	
2 = Converts Commandaire® Positioner to the Full Reversal Mode (GH232T)	
X = Standard (If none of the above are selected).	

Commandaire® "C" Series Positioners	
C = GC31 Positioner	: 3-9, 3-15, 3-27 and 6-30 PSI
H = GC32 Positioner	: 3-9 and 3-15 PSI
7 = GC3230 Positioner	: 3-27 and 6-30 PSI
K = GC33 Positioner	: 3-9 and 3-15 PSI
8 = GC3330 Positioner	: 3-27 and 6-30 PSI
V = GC34 Positioner	: 3-9, 3-15, 3-27 and 6-30 PSI

Conoflow "J" Series Positioners		
R = GJ1103 Positioner	: 3-9, 3-15, 3-27 and 6-30 PSI	Equivalent GC31
S = GJ1215 Positioner	: 3-9 and 3-15 PSI	Equivalent GC32
9 = GJ1230 Positioner	: 3-27 and 6-30 PSI	Equivalent GC3230
T = GJ1315 Positioner	: 3-9 and 3-15 PSI	Equivalent GC33
1 = GJ1330 Positioner	: 3-27 and 6-30 PSI	Equivalent GC3330
U = GJ1403 Positioner	: 3-9, 3-15, 3-27 and 6-30 PSI	Equivalent GC34

- NOTES:** 1. When ordering specify model number and range required.  
 2. For positioner action, refer to chart below.

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Positioner  
Selections  
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MODEL		GC31	GC32	GC33	GC34
		GJ1103	GC3230 GJ1215 GJ1230	GC3330 GJ1315 GJ1330	GJ1403
<b>As Instrument Signal Increases</b>	<b>Positioner Output</b>	Increases	Decreases	Increases	Decreases
	<b>Actuator Stem</b>	Extends	Retracts	Retracts	Extends
<b>Positioner Output Loading To Actuator</b>		Top	Top	Bottom	Bottom
<b>On Air Supply Failure (With Airlock) Actuator Stem</b>		Retracts	Retracts	Extends	Extends
<b>Letter Designation in Actuator Model No.</b>		C & R	H, S, & 9	K, 8, T & 1	V & U

3. Refer to drawing A50-48 for piping schematic for GC\_Series Positioners  
 4. Refer to drawing A50-4 for piping schematic for GJ\_Series Positioners  
 5. The "J" Series Positioners are non-standard products which are superseded by the equivalent Commandaire® Positioner noted. If the "J" Series Positioner is required, refer to price sheet for CP5000 for adder

**Full Reversal Positioners**  
 N = GJ2103 Positioner : 3-9, 3-15, 3-27 and 6-30 PSI  
 P = GJ2215 Positioner : 3-9 and 3-15 PSI  
 Q = GJ2230 Positioner : 3-27 and 6-30 PSI

**NOTES:** 1. When ordering specify model number and range required.  
 2. For positioner action, refer to chart below:

MODEL		GJ2103	GJ2215 GJ2230
As Instrument Signal Increases	Positioner Output	Increases Pressure in Top Chamber	Decreases Pressure in Top Chamber
	Actuator Stem	Decreases Pressure in Bottom Chamber	Increases Pressure in Bottom Chamber
		Extends	Retracts
Letter Designation in Actuator Model No.		N	P & Q
On Air Supply Failure (With Airlock) Actuator Stem		Retracts or Extends. Specify when Ordering	

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3. Refer to drawing A50-16 for piping schematic.

**On/Off Series**  
 W = On/Off : Full extend or full retract operation  
 6 = On/Off : Throttling Type Headplate without Positioner

**NOTE:** 1. When specifying Option 6, note that the Range Spring Ass'y and Cushion-Loading Regulator will not be supplied.

**Optional Positioners**

B = Moore Positioners - (73N12)  
**NOTE:** 1. For other versions of Moore Positioners, specify model number and range required.  
 73NR Reverse Acting  
 73NB Bottom Loading  
 D = GJ1615 Positioner Transmitter - Refer to drawing A50-10 for piping schematic.  
 E = GJ1803 Positioner Transmitter - Refer to drawing A50-10 for piping schematic.  
 L = Roller Type Side Mounted Positioner - Customer to specify model required.  
 M = Lever Type Side Mounted Positioner - A Moore 72LN3-15 PSI Positioner will be supplied.

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Mounting  
Options

A = No Spacer Bars or Lower Flange  
 X = Absence of Specification (If characters in position 5 or "A" in position 7 are not specified then spacer bars will be provided.)

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Range  
Selections

A = 3-7 PSI (21-48 kPa)	F = 6-18 PSI (41-124 kPa)	K = 14-22 PSI (97-152 kPa)
B = 3-9 PSI (21-62 kPa)	G = 6-30 PSI (41-207 kPa)	L = 18-30 PSI (124-207 kPa)
C = 3-15 PSI (21-103 kPa)	H = 7-11 PSI (48-76 kPa)	M = 22-30 PSI (152-207 kPa)
D = 3-27 PSI (21-186 kPa)	J = 9-15 PSI (62-103 kPa)	K = Standard for On/Off Operation

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Airlock  
Selections  
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**Airlock - Extend or Retract on Air Failure**  
**Airlock - Lock in Last Position**

**For GC31/34 and On/Off Only (See Note 1)**

A = 57 cu. in. system  
 C = 180 cu. in. system  
 E = 400 cu. in. system  
 G = 1000 cu. in. system  
 J = 2100 cu. in. system

**For Full Reversal Series Only (Extend Stem) (See Note 2)**

B = 57 cu. in. system  
 D = 180 cu. in. system  
 F = 400 cu. in. system  
 H = 1000 cu. in. system  
 K = 2100 cu. in. system

**For Full Reversal Series Only (Retract Stem) (See Note 2)**

T = 57 cu. in. system  
 M = 180 cu. in. system  
 N = 400 cu. in. system  
 P = 1000 cu. in. system  
 R = 2100 cu. in. system

L = Airlock - Lock in Last Position (See Note 3)

X = Absence of Specification

Tank Size	Cylinder Bore Diameter	Stroke
57 Cu. In.	GB50 - 3"	2" + 5"
	GB51 - 4"	3" + 4"
	GB52 - 6"	1-1/8"
180 Cu. In.	GB50 - 3"	8"
	GB52 - 6"	4" + 6"
	GB53 - 8"	1-1/2"
400 Cu. In.	GB53 - 8"	4" + 6"
	GB54 - 10"	2-1/2" + 4"
1000 Cu. In.	GB53 - 8"	8" + 10"
	GB54 - 10"	10"
	GB55 - 12.5"	4"

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Airlock  
Selections  
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NOTES: 1. Airlock Assembly includes Capacity Tank, Check Valve and Regulator. Refer to Drawing A50-4 and A50-48 for Piping Schematic.  
2. Airlock Assembly includes Capacity Tank, Check Valve, Regulator and GVB12 Relay.  
3. Airlock Assembly consists of GVB12 Relay.

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Optional  
Accessories

M = GB2700 Manual Actuator - Refer to Bulletin C8005 for specifications.  
R = GB2800 Manual Actuator - Refer to Bulletin C8005 for specifications.  
X = Absence of Specification

11  
Stroke  
Lengths

**Standard Stroke Lengths**

GB50 2", 5" and 8"  
GB51 3" and 4"  
GB52 1-1/8", 4" and 6"  
GB53 1-1/2", 4", 6", 8" and 10" (3)  
GB54 2-1/2", 4" (1) and 10"  
GB55 4"

NOTES: 1. Maximum available stroke length on the GB54-4 is 5-3/8".  
2. For stroke lengths longer than listed, consult the factory.  
3. Maximum Piston Travel without Collars is:  
4" Stroke = 4.125"  
6" Stroke = 6.750"  
8" Stroke = 8.750"  
10" Stroke = 10.750"

**Actuators with Yokes for Valve Mounting**

GB52 Maximum Stroke 1-1/8"  
GB53 Maximum Stroke 1-1/2"  
GB54 Maximum Stroke 2-1/2"

**Lever Actuators**

GB52 Maximum Lever Travel 12"  
GB53 Maximum Lever Travel 12"

**For Dimensional Data, Refer to Drawing:**

A6-15 GB2700/2800  
A6-41 GB51/55 On-Off  
A6-113 GB50 On-Off  
  
A7-100 GB50 w/Yoke-GC31  
A7-101 GB50 w/Yoke-GC32  
A7-102 GB50 w/Yoke-GC33  
A7-103 GB50 w/Yoke-GC34  
A7-107 GB50 Series-w/GC31  
A7-108 GB50 Series-w/GC32  
A7-109 GB50 Series-w/GC33  
A7-110 GB50 Series-w/GC34  
A7-111 Lever Actuator  
A7-114 GB51-55 w/GC31  
A7-115 GB51-55 w/GC32  
A7-116 GB51-55 w/GC33  
A7-117 GB51-55 w/GC34