

CATALOG  
air cylinders

# KG Series

*Air Cylinders for Valve Actuation*



# numatics®

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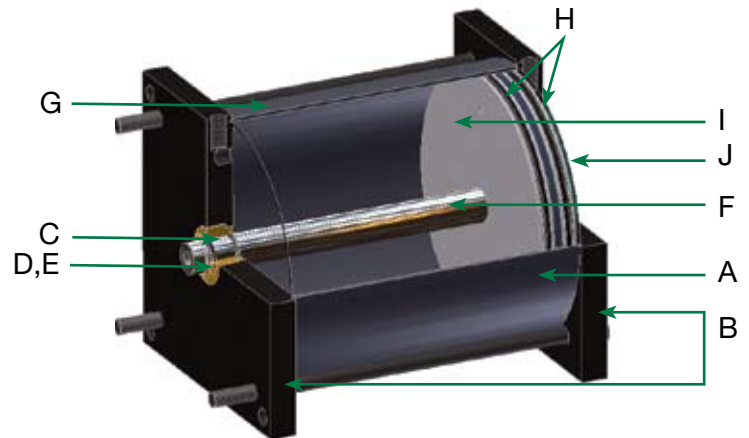
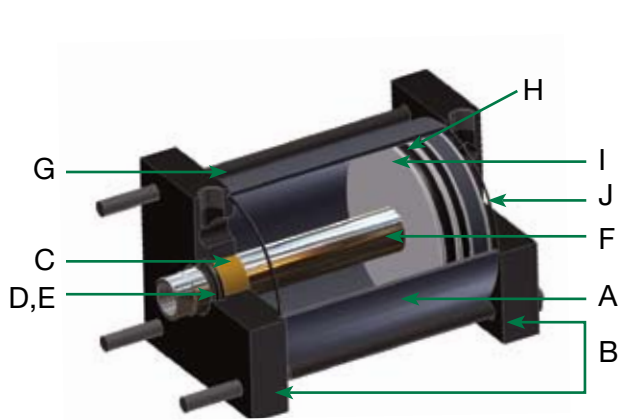
**EMERSON**  
Industrial Automation



## KG Series Air Cylinders for Valve Actuation

1-1/2" - 14" Bore

16" - 24" Bore



### Features:

The KG Series pneumatic cylinder is specifically designed to automate valve operation. Though this design is widely used throughout the knife gate industry, it can also be utilized in an assortment of applications that requires medium duty pneumatic actuation.

#### A - Tube

Honed and chrome plated (on the I.D.) steel tube is standard on 1-1/2" - 6" and 8" - 14" bores.

Composite tube is standard on 7" and 16" - 24" bore cylinders. Our composite tubing is a robust material that weighs less than traditional metallic materials. Composite and aluminum tubing is also an option on 1-1/2" - 6" and 8" - 14" bores.

#### B - End Caps

The standard KG Series end caps are accurately machined from precision square steel blocks. The cylinders are painted with black enamel paint. Note that black enamel paint is the standard and the black epoxy paint is an option.

A recess on the piston-mating surface (at both ends) enables the air to work on a larger piston area for effortless breakaway (even at both ends).

#### C - Rod Bushing

1-1/2" - 14" bore has a sintered bronze bushing.  
16" - 24" bores has a removable 660 bronze bushing.

#### D - Rod Seal

A nitrile rod/wiper is standard on 1-1/2" - 14" bore.  
A nitrile rounded lip seal is standard on 16" - 24" bore.

#### E - Rod Wiper

The standard nitrile rod wiper/rod seal combination is standard on 1-1/2" - 14" bores. A separate urethane rod wiper is standard on 16" - 24" bores.

#### F - Piston Rod

High strength steel (100,000 psi minimum yield) piston rod has a ground, polished, and chrome plated surface. This surface provides maximum life for both the rod bushing and the seals.

#### G - Tie Rods

The tie rods are 100,000 psi minimum yield steel for maximum holding power. Most are roll formed for superior strength and engagement.

#### H - Piston Seal

The piston seal 1-1/2" - 8" bores is a nitrile o-ring seal. Nitrile lip seals are standard offering on 10" - 24" bores.

#### I - Piston

The solid aluminum alloy piston is strong and durable.  
1-1/2" - 14" bores: 6061-T6 aluminium piston.  
16"- 24" bores: A36 steel piston.

#### J - Tube End Seal

The tube end seals are compression type and reusable.

#### K - Ports

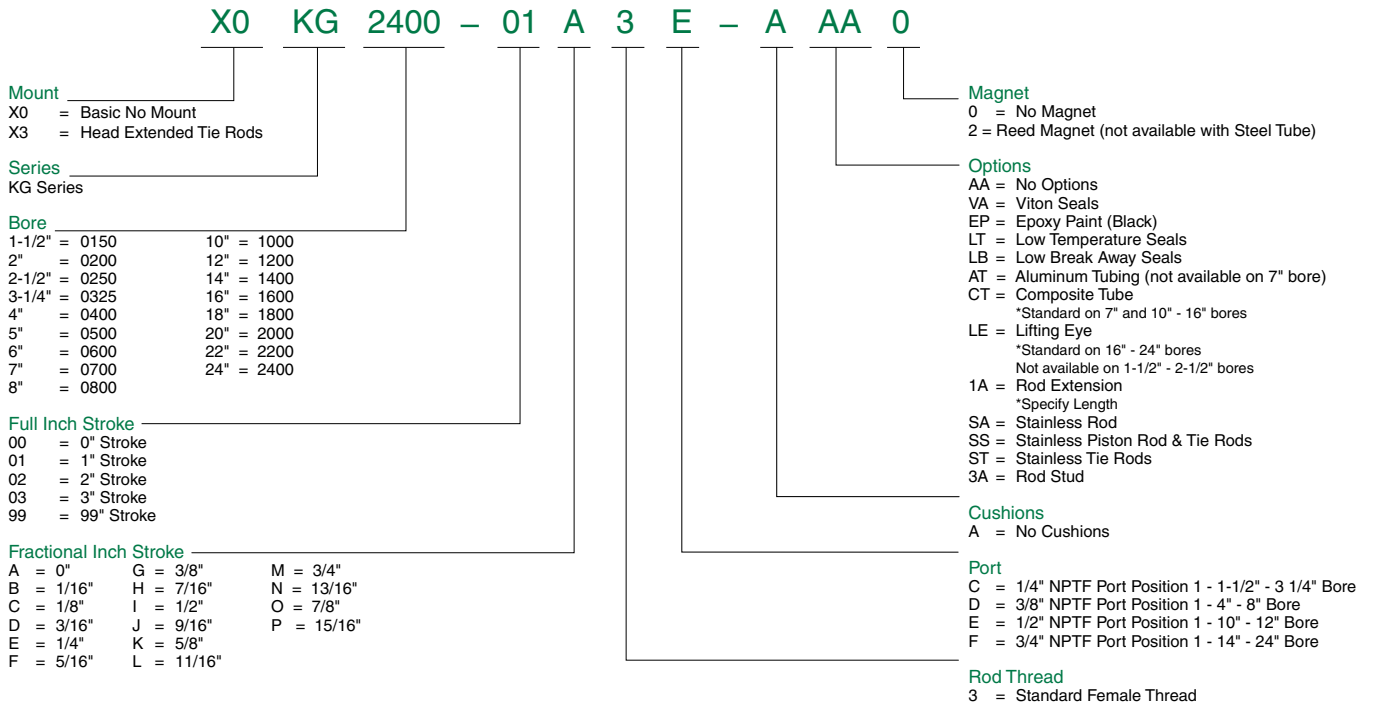
Our enhanced port design enables the cylinder to work more efficiently. Through the use of precise machining depths and tool shape, we are able to smooth the flow path into and out of the cylinder.

### Standard Specifications:

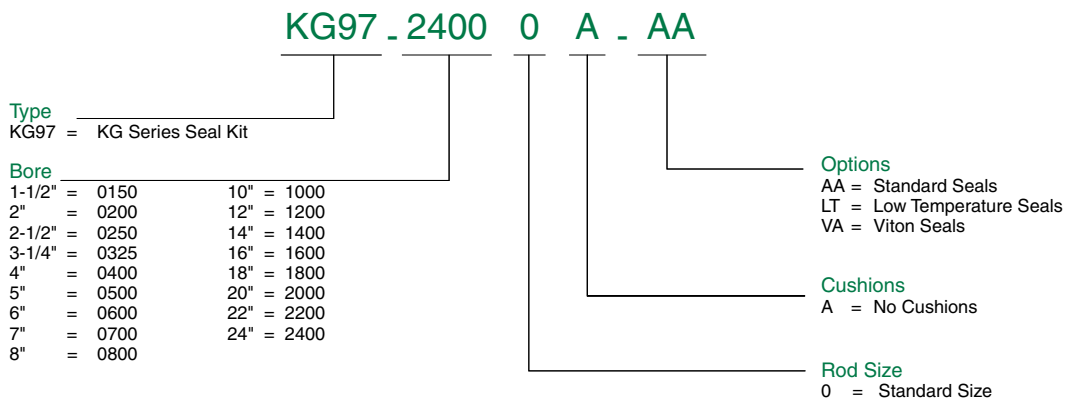
- Bore sizes from 1-1/2" to 24"
- Piston rod diameters from 5/8" to 3-1/2"
- Nominal pressure rating is 150 psi air
- Standard temperature -10°F to 165°F (-23°C to 74°C)
- Optional low temperature seal -40°F to +165°F (-40°C to +74°C)
- Optional Viton Seals 0°F to +400°F -17°C to +204°C
- NPTF ports
- Black enamel paint



### How to Order



### Seal Kit How to Order

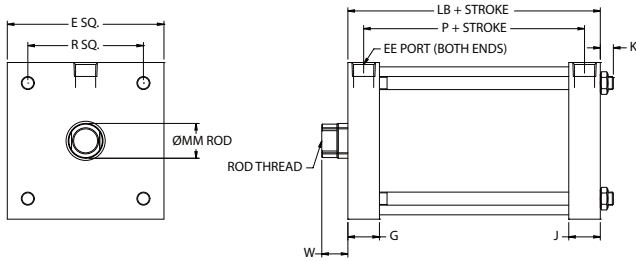




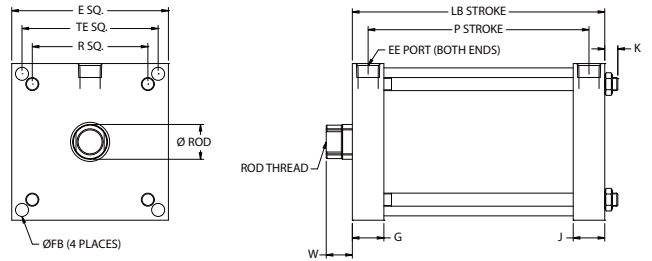
## KG Series Air Cylinders for Valve Actuation

### 1-1/2" - 14" Bore

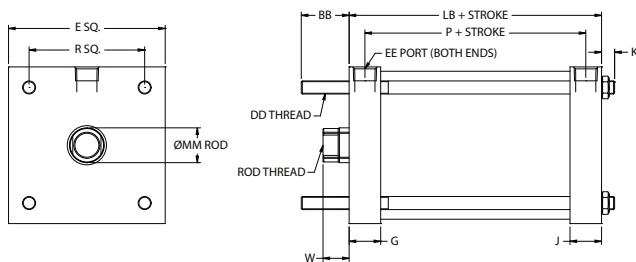
X0 MOUNT (1 1/2" - 6" BORES)



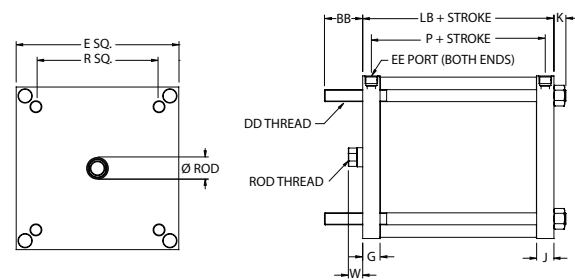
X0 MOUNT (7" - 14" BORES)



X3 MOUNT (1 1/2" - 6" BORES)



X3 MOUNT (7" - 14" BORES)



### KG Series Standard Mount - X0 Mount

BORE	E	G	J	K	P	R	W	EE	FB	Rod	LB	TE	Rod Thread
1-1/2	2.000	1.000	1.000	0.250	2.188	1.430	0.625	1/4	-	5/8	3.125	-	7/16-20
2	2.500	1.000	1.000	0.313	2.188	1.840	0.625	1/4	-	5/8	3.125	-	7/16-20
2-1/2	3.000	1.000	1.000	0.313	2.313	2.190	0.625	1/4	-	5/8	3.250	-	7/16-20
3-1/4	3.750	1.000	1.000	0.375	2.344	2.760	0.750	1/4	-	1	3.250	-	3/4-16
4	4.500	1.000	1.000	0.375	2.344	3.320	0.750	3/8	-	1	3.250	-	3/4-16
5	5.500	1.000	1.000	0.500	2.594	4.100	0.750	3/8	-	1	3.500	-	3/4-16
6	6.500	1.000	1.000	0.500	2.594	4.880	0.750	3/8	-	1	3.500	-	3/4-16
7	7.500	1.000	1.000	0.625	2.719	5.730	0.750	3/8	9/16	1	3.625	6.750	3/4-16
8	8.500	1.000	1.000	0.625	2.719	6.440	0.750	3/8	11/16	1	3.625	7.570	3/4-16
10	10.625	1.250	1.250	0.750	3.469	8.060	1.000	1/2	13/16	1	4.625	9.400	3/4-16
12	12.750	1.250	1.250	0.750	3.969	9.410	1.000	1/2	13/16	1 3/8	5.125	11.100	1-14
14	14.750	1.500	1.500	0.875	4.750	10.900	1.000	3/4	15/16	1 3/8	6.125	12.870	1-14

### KG Series Head Extended Tie Rod Mount - X3 Mount

BORE	E	G	J	K	P	R	W	BB	DD	EE	Rod	LB	TE	Rod Thread
1-1/2	2.000	1.000	1.000	0.250	2.062	1.430	0.625	1.000	1/4-28	1/4	5/8	3.125	-	7/16-20
2	2.500	1.000	1.000	0.313	2.062	1.840	0.625	1.125	5/16-24	1/4	5/8	3.125	-	7/16-20
2-1/2	3.000	1.000	1.000	0.313	2.187	2.190	0.625	1.125	5/16-24	1/4	5/8	3.250	-	7/16-20
3-1/4	3.750	1.000	1.000	0.375	2.156	2.760	0.750	1.375	3/8-24	1/4	1	3.250	-	3/4-16
4	4.500	1.000	1.000	0.375	2.156	3.320	0.750	1.375	3/8-24	3/8	1	3.250	-	3/4-16
5	5.500	1.000	1.000	0.500	2.406	4.100	0.750	1.750	1/2-20	3/8	1	3.500	-	3/4-16
6	6.500	1.000	1.000	0.500	2.406	4.880	0.750	1.750	1/2-20	3/8	1	3.500	-	3/4-16
7	7.500	1.000	1.000	0.625	2.406	5.730	0.750	2.000	5/8-18	3/8	1	3.625	6.750	3/4-16
8	8.500	1.000	1.000	0.625	2.531	6.440	0.750	2.000	5/8-18	3/8	1	3.625	7.570	3/4-16
10	10.625	1.250	1.250	0.750	3.281	8.060	1.000	2.250	3/4-16	1/2	1	4.625	9.400	3/4-16
12	12.750	1.250	1.250	0.750	3.781	9.410	1.000	2.250	3/4-16	1/2	1 3/8	5.125	11.100	1-14
14	14.750	1.500	1.500	0.875	4.500	10.900	1.000	2.500	7/8-14	3/4	1 3/8	6.125	12.870	1-14

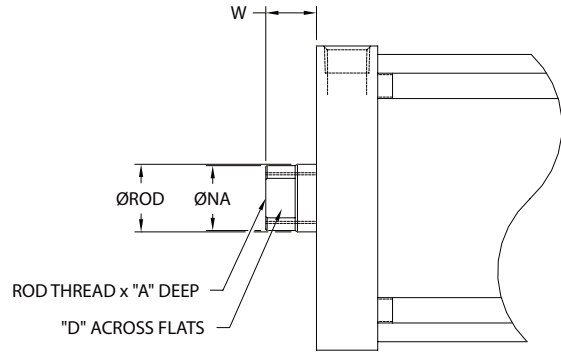


### 1-1/2" - 14" Rod End

#### Rod

BORE	ROD	A	D	W	NA	Rod Thread
1-1/2	5/8	0.750	0.500	0.625	0.585	7/16-20
2	5/8	0.750	0.500	0.625	0.585	7/16-20
2-1/2	1	0.750	0.500	0.625	0.585	7/16-20
3-1/4	1	1.125	0.813	0.750	0.960	3/4-16
4	1	1.125	0.813	0.750	0.960	3/4-16
5	1	1.125	0.813	0.750	0.960	3/4-16
6	1	1.125	0.813	0.750	0.960	3/4-16
7	1	1.125	0.813	0.750	0.960	3/4-16
8	1	1.125	0.813	0.750	0.960	3/4-16
10	1	1.125	0.813	0.750	0.960	3/4-16
12	1 3/8	1.625	1.125	1.000	1.313	1-14
14	1 3/8	1.625	1.125	1.000	1.313	1-14

#### ROD END (1 - 1/2" - 14" BORES)

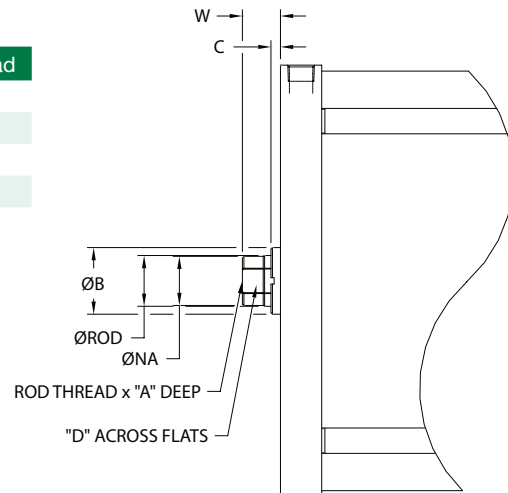


### 16" - 24" Rod End

#### Rod

BORE	ROD	A	B	C	D	W	NA	Rod Thread
16	2	1.625	2.625	0.375	1.750	1.500	1.940	1-14
18	2	2.000	2.625	0.375	1.750	1.500	1.940	1 1/8-12
20	2	2.000	2.625	0.375	1.750	1.500	1.940	1 1/4-12
22	3	2.000	4.750	0.375	2.625	2.250	2.940	1 1/4-12
24	3 1/2	2.000	4.750	0.375	3.000	2.250	3.440	1 1/4-12

#### ROD END (16" - 24" BORES)

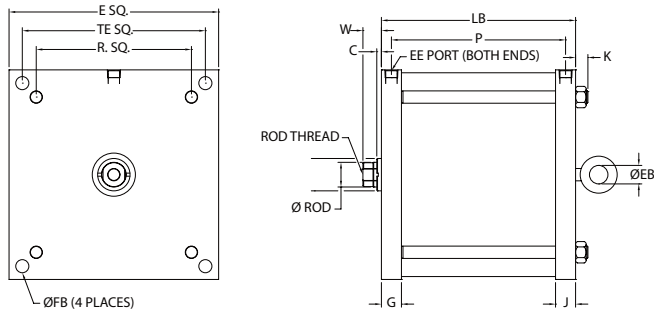




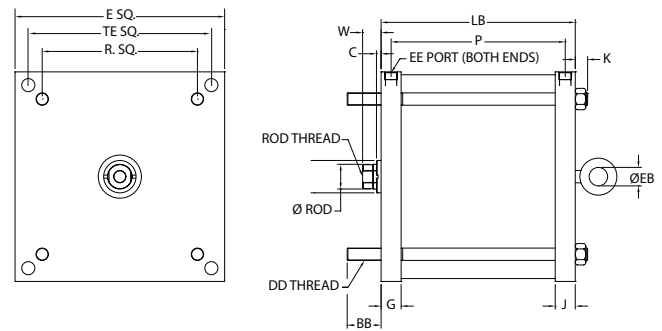
## KG Series Air Cylinders for Valve Actuation

### 16" - 24" Bore

XO MOUNT (16" - 24" BORES)



X3 MOUNT (16" - 24" BORES)



### Dimensions

BORE	C	E	G	J	K	P	R	W	BB	DD	EB	EE	FB	Rod	LB	TE	Rod Thread
16	0.38	17.000	1.750	1.750	1.000	4.125	12.590	1.500	2.750	1-14	1.25	3/4	1	2.000	5.750	14.850	1-14
18	0.38	19.000	1.750	1.750	1.125	4.125	14.140	1.500	3.250	1 1/8-12	1.25	3/4	1 1/16	2.000	5.750	16.690	1 1/8-12
20	0.38	21.000	1.750	1.750	1.250	4.325	15.770	1.500	3.250	1 1/4-12	1.50	3/4	1 1/4	2.000	6.000	18.430	1 1/4-12
22	0.38	23.000	2.000	2.000	1.250	5.688	17.180	2.250	3.500	1 1/4-12	1.50	3/4	1 1/4	2.000	7.500	20.150	1 1/4-12
24	0.38	25.250	2.500	2.500	1.250	6.188	18.740	2.250	3.500	1 1/4-12	1.50	3/4	1 1/4	2.000	8.500	21.745	1 1/4-12

### Cylinder Weight Chart (Steel Tube)

BORE	Base Weight (lbs)	Per Inch Stroke (lbs)
1-1/2	3.5	0.3
2	5.5	0.4
2-1/2	7.4	0.5
3-1/4	11.5	0.7
4	15.4	0.8
5	24.4	1.0
6	33.4	1.1
7	45.9	0.9
8	58.4	1.9
10	112.0	2.8
12	162.5	3.4
14	259.7	4.0
16	438.6	2.5
18	556.8	3.0
20	706.3	3.4
22	1027.4	4.7
24	1403.4	5.6

### Lifting Eyes

BORE	EB Ø	Lifting Eye Capacity (LBS)
3-1/4	1.00	1300
4	1.19	2400
5	1.19	2400
6	1.19	2400
7	1.19	2400
8	1.19	2400
10	1.25	3000
12	1.25	3000
14	1.25	3000
16	1.25	3000
18	1.50	5000
20	1.50	5000
22	1.50	5000
24	1.50	5000



The KG Series is a robust air cylinder line that is designed to perform in the most demanding cylinder applications. One of the most popular applications for the KG Series is to provide a versatile method to automate Knife Gate Valves. The KG Series cylinder is designed to withstand the harshest Knife Gate industries and applications, i.e., water and wastewater treatment plants, power industry, pulp and paper mills, and the mining industry.

As more processes and systems move to automated control and monitoring, the need for actuated Knife Gate and Slide Gate Valves becomes apparent. Actuation provides remote, out-of-sight operation, faster cycling, lower operating costs, better process management and safer operation. The KG Series air actuators from Numatics provide a versatile and cost effective method of automation.

Furthermore, the KG Series cylinder line was designed to perform in general industry Knife Gate applications as well. For example, chemical processing, brewing, cement, tanneries, sugar mills, and chemical plants to name a few.

### Valve Accessories, Options, and Mounting Capabilities

In addition to tailoring actuator mounting to specific valve configurations, Numatics also offers a range of directional control valves for valve automation.

#### Cylinder Options

- Viton High Temperature Seals
- Low Temperature Seals
- Composite and Aluminum Tubing
- Special Exterior Finishing
- Stainless Steel Piston Rod
- Stainless Steel Tie-Rods

#### Various Valve Types

- Knife Gate
- Wedge Gate
- Globe
- Pinch
- Sluice

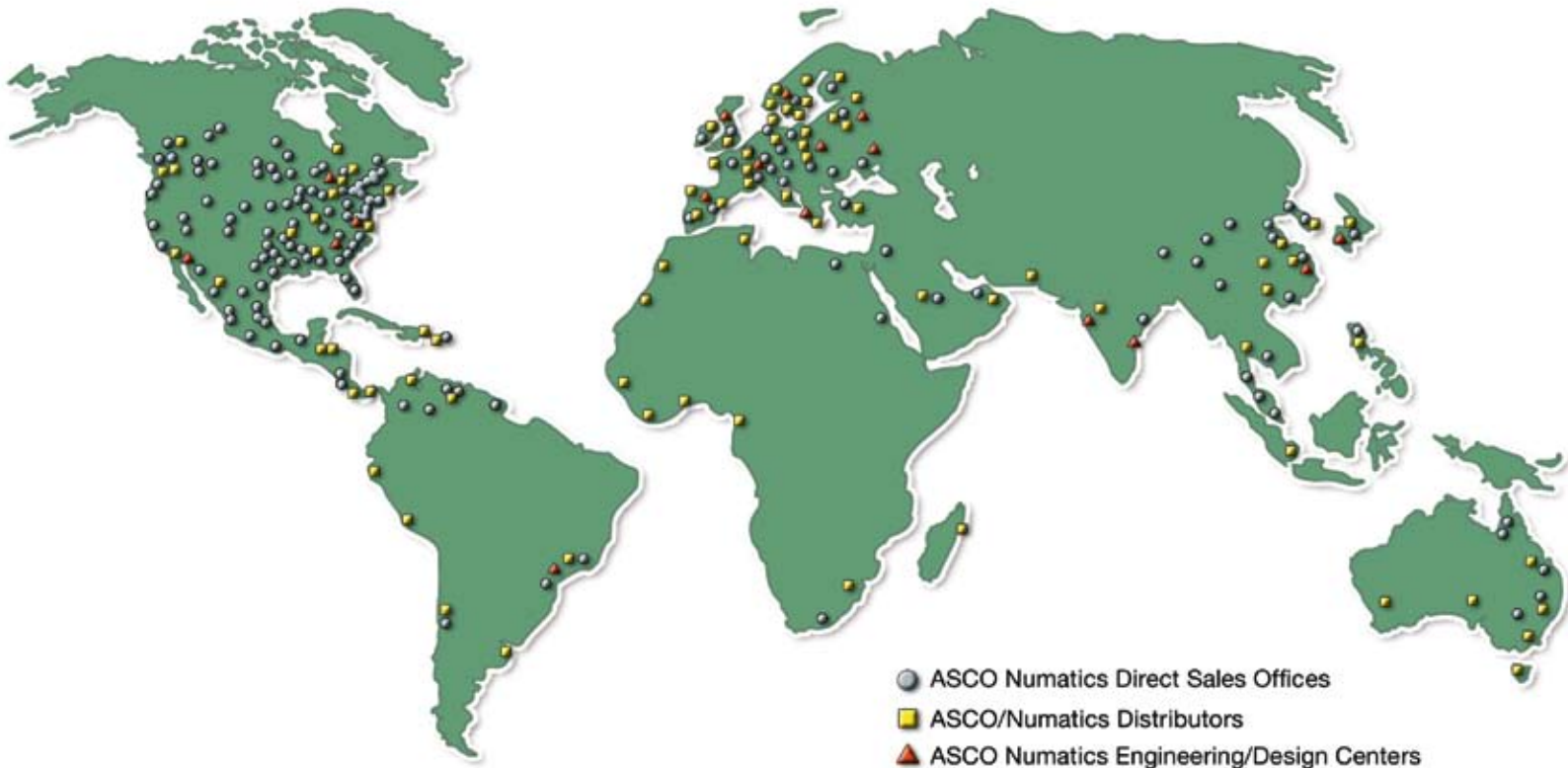


#### Automation Accessories

- Control Valves
  - Manual
  - Solenoid

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