

Pneumatic Cylinder Actuators

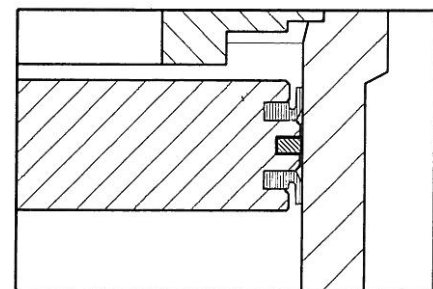
XB50-SERIES

General

The B50-series cylinder actuator is a compact and efficient actuator. It derives its power from a differential pressure across the moving piston.

The piston is forced upward by a constant pressure from a reducing relief type cushion loading regulator, adjustable to suit the stem load. The chamber above the piston is dynamically loaded through the integral mounted positioner which operates on the force balance principle. Depending on the form of positioner used, the actuator can be supplied so that the piston stem will move upward with an increase or decrease in instrument signal.

Supply pressure as low as 1.5 bar and as high as 7 bar can be used depending upon power required. Standard stroking speeds of 2 to 5 seconds are possible because of high capacity positioner and small air volumes in the cylinder.



Design:

Throughout the years, the design of the actuator has been improved. The most important improvement has been the introduction of lipseals as a sealing material between piston and cylinder.

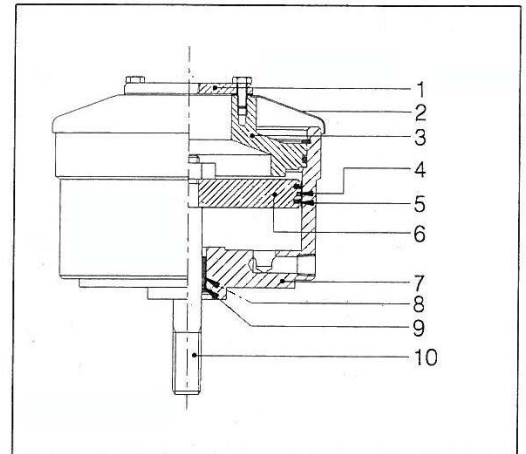
In the past, the sealing for the actuators was provided by an o-ring. A quad-ring was introduced to provide a positive sealing, but the quad-ring as well as the o-ring were not satisfactory enough to suit the job.

The lipseals we use now-a-days definitely do not roll out of the groove, are also easy to mount and have a high self-adjustable capacity.

In some chemical industries, Conoflow cylinder actuators are acting 87000 times a month for over two years without any interruptions

Actuator design

1. On-Off plate with 1/4"-NPTF connection. With the use of a top mounted positioner this item will not be used.
2. Cover for prevention of water and/or dust falling on the actuator.
3. Cylinder headplate which provide the upper stop of the piston and the mounting holes for positioner or On-Off plate.
4. Guide strip for the guiding of the piston in the cylinder.
5. Lipseals which provides the sealing between the upper & lower air chamber of the actuator.
6. Piston of the actuator.
7. Cylinder
8. Lower guiding of the actuator.
9. O-ring sealing between stem and lower chamber.
10. Stem for mounting on the operating instrument.



Accessories :

- Pneumatic or electro-pneumatic positioners.
- Filter-regulator combination screens out foreign matter as small as 5 microns.
- Manual operator for 600 kgf or 1,800 kgf stem thrust:
- Airlock system to operate actuator on air failure.
- Lock-in-last-position relay.
- Solenoid valves for on-off control
- Limit switches.
- Intermediate strokes with increments of 6.4, 3.2, 1.6 and 0.4 mm {1/4', 1/8', 1/16' & 1/64'} available.
- Series G T electro-pneumatic transducers.
- Other accessories available on request

Technical data:

Materials:

Cylinder	Aluminum
Piston	Aluminum
Headplate	Cast Aluminum
Bearing	Oilite bronze
Stem	SS316
Lipseals	Buna-N

Pressure Connections:

1/4" NPTF

Supply Pressure

1,4 to 7 bar

Air consumption:

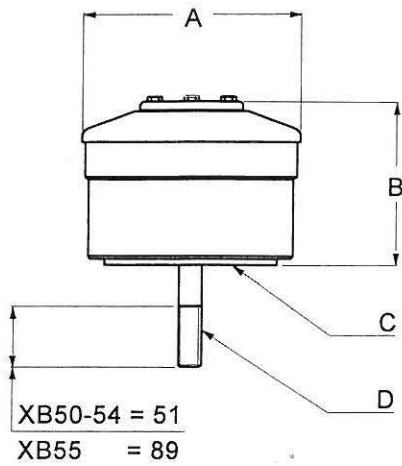
Static	0,005 nM3/min
Dynamic	Depends on type of actuator

Stem thrust:

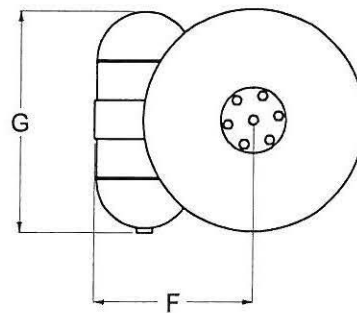
Equivalent to effective area and air pressure differential (as high as 7 bar)

Model	Bore		Stroke		Effective area	
	mm	inch	mm	inch	cm2	inch2
XB50	76	3	51	2	45	1
			127	5		
			203	8		
XB51	102	4	76	3	77	12
			102	4		
XB52	152	6	25	1	181	28
			102	4		
			152	6		
XB53	203	8	38	1 1/2	323	50
			102	4		
			152	6		
			203	8		
XB54	254	10	64	2 1/2	503	78
			102	4		
			254	10		
XB55	317	12 1/2	102	4	794	123

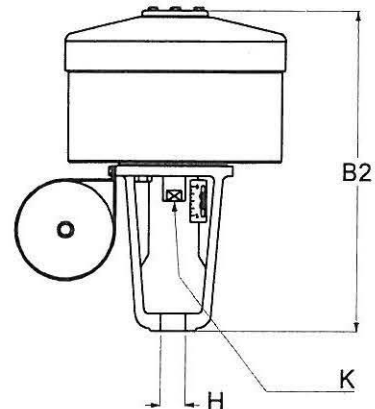
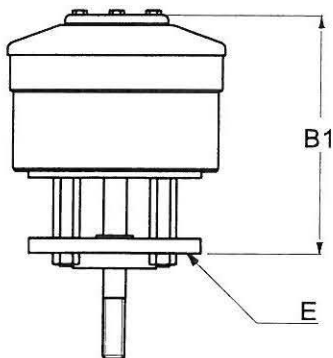
On-Off actuator - No spacer-bars



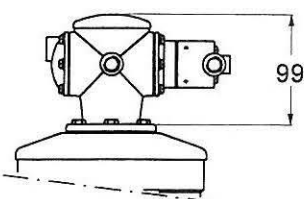
On-Off actuator - With yoke



On-Off actuator - With spacer-bars



Actuator with top mounted positioner



Model	Stroke	A	B	B1	B2	C		D		Hole		F	G	H	K
						STC Ø	4 x UNC	STC Ø	4 x Ø dia.	UNC	UNF				
XB50	2	88	150	245	---	70,6	5/16"	1/2"	70,6	8,7	---	---	---	---	---
	5	88	203	373	---	70,6	5/16"	1/2"	70,6	8,7	---	---	---	---	---
	8	88	280	526	---	70,6	5/16"	1/2"	70,6	8,7	---	---	---	---	---
XB51	3	102	190	314	---	82,5	3/8"	5/8"	69,8	10,3	---	---	---	---	---
	4	102	216	362	---	82,5	3/8"	5/8"	69,8	10,3	---	---	---	---	---
XB52	1	152	139	217	306	114,3	1/2"	3/4"	95,2	13,5	175	203	32	3/8"	---
	4	152	227	375	---	114,3	1/2"	3/4"	95,2	13,5	---	---	---	---	---
	6	152	291	488	---	114,3	1/2"	3/4"	95,2	13,5	---	---	---	---	---
XB53	1½	203	140	234	367	114,3	1/2"	7/8"	95,2	13,5	213	280	43	1/2"	---
	4	203	248	398	---	114,3	1/2"	7/8"	95,2	13,5	---	---	---	---	---
	6	203	303	501	---	114,3	1/2"	7/8"	95,2	13,5	---	---	---	---	---
	8	203	353	602	---	114,3	1/2"	7/8"	95,2	13,5	---	---	---	---	---
XB54	10	203	410	709	---	114,3	1/2"	7/8"	95,2	13,5	---	---	---	---	---
	2½	254	207	325	408	114,3	1/2"	1 1/8"	95,2	13,5	213	280	43	5/8"	---
	4	254	275	423	---	114,3	1/2"	1 1/8"	95,2	13,5	---	---	---	---	---
XB55	10	254	419	718	---	114,3	1/2"	1 1/8"	95,2	13,5	---	---	---	---	---
	4	318	308	488	880	228,6	1"	1 3/4"	203,2	27	302	330	---	1"	---

*. All dimensions in mm (unless otherwise specified)

Actuator Numbering System

1 Basic Instrument

- G Conoflow Produced Series
- X Absence Of Specification

2 Operating Instrument

- B Pneumatic Linear Actuator

3 4 Serial Number Of Instrument

- 5 0 3,0" piston diameter
- 5 1 4,0" piston diameter
- 5 2 6,0" piston diameter
- 5 3 8,0" piston diameter
- 5 4 10,0" piston diameter
- 5 5 12,5" piston diameter

5 Actuator Design

- K Lock In Last + Fail Save + Selecting Valve + Airpack
- L Lock In Last + Fail Save + Selecting Valve
- M Lock In Last + Airpack
- P Airpack
- Q Lock In Last (Only For Separate Motor)
- R Fail Save + Air Pack
- X Absence Of Specification

Expired Options:

- N = Fail Save + Airpack (Only For Separate Actuator For In Or Out Direction) = R
- T = Straight Thrust
- U = B-Series Actuator With Yoke

6 Positioner

- C GC31
- F GC31-3182
- G GC33-3183
- H GC32
- K GC33
- V GC34
- W On-Off Operation
- X Absence Of Specification

Expired Options:

- N = GJ21 (obsolete) replaced by GC31-3182 = F
- P = GJ22 (obsolete) replaced by GC33-3183 = G
- R = GJ11 / S = GJ12 / T = GJ13 / U = GJ14 all obsolete, replaced by GC series
- L = Slide Roller, Cable, Rotary or other Posi
- M = Conomoor
- Q = GP50, GP51, GP52

7 Version

- A No Spacerbars Or Lower Flange On Actuator
- U B-Series Actuator With Yoke
- X Absence Of Specification

8 Accessories

- E Transducer
- H Reversing Relay
- J Transducer + Reversing Relay
- K Transducer + Reversing Relay + Limit Switch
- L Transducer + Reversing Relay + Limit Switch Solenoid Valve
- M Reversing Relay + Limit Switch
- N Position Transmitter
- P Limit Switch + Solenoid Valve
- Q Transducer + Limit Switch
- R Transducer + Limit Switch + Solenoid Valve
- S Transducer + Solenoid Valve
- T Limit Switch
- V Relief Valve
- W Solenoid Valve
- X Absence Of Specification
- Z To Be Specified

9 Valve Bonnets

- B Bellow Seal
- L Extended
- N Finned + Extended
- R Finned
- T Finned + Bellow Seal
- X Absence Of Specification

Expired Options:

- D = Double Packing Box
- M = Extended + Double Packing Box
- S = Finned + Double Packing Box

10 Manual Operator

- M Manual Operator 1200 Rating (For B52, B53, B54)
- R Manual Operator 4000 Rating (For B55)
- X Absence Of Specification

11 Stroke Size

1 2 3 4 5 6 7 8 9 10 11