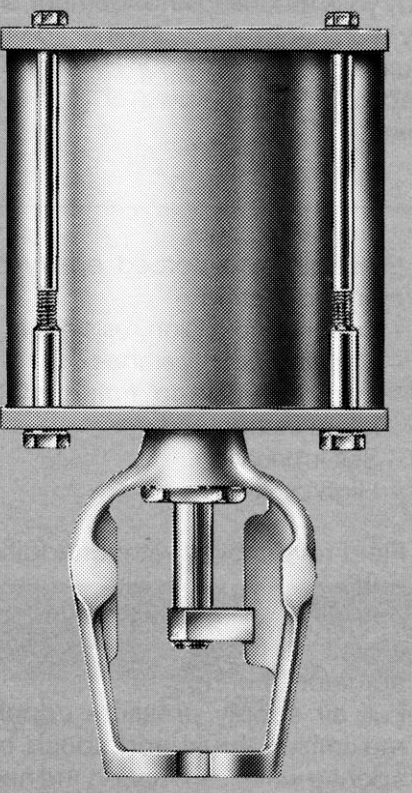
30A Series
Cylinder Actuator



Masoneilan DRESSER

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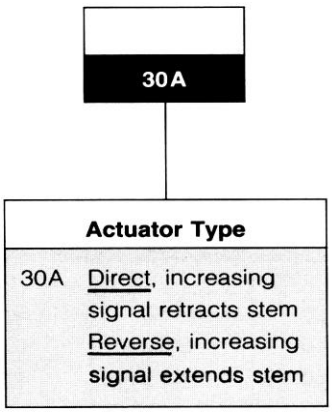
Foreword

The 30A cylinder combines the versatility of the traditional Annin control valve configuration to a high performance, double acting, spring fail-safe actuator. This cylinder actuator utilizes the standard split-body yoke mounting arrangement, so it is fully interchangeable with other split-body actuator offerings. The 30A cylinder is also adaptable to our series of globe style valves.

Features

1. Glass fibre reinforced epoxy resin cylinder, offering
   - Superior corrosion resistance
   - High impact resistance
   - Internal surface finish of 5-15 micro-inches
   - Self lubrication
   - High cycle life
2. Field reversibility without additional parts
3. Standard split body yoke mounting for full interchangeability with other actuator offerings
4. Full air supply pressure capability maximizes thrust and speed of response while eliminating the necessity for supply pressure regulators. Consult thrust tables for supply pressure limitations.
5. Stainless steel mounting hardware for increased corrosion resistance.
6. Wide selection of spring ranges for optimization of actuator force.
7. Steel or cast iron spring retaining parts to maintain positive failure action at temperature extremes.

Numbering System



General Data

type

Double acting cylinder
with fail safe spring

ambient temperature limit

+ 180°F (82°C) Buna-N O-Rings
+ 225°F (107°C) Viton O-Rings

action

Increasing signal retracts stem (direct)
Increasing signal extends stem (reverse)

supply pressure

up to 150 psi

air connections

¼" NPT upper and lower

Nominal Effective Area (sq. in.)	Maximum Stroke (in.)	Available Spring Ranges (Psig) All Sizes
38	1.5	10-20
78	2.5	15-30
154	6.0	or
314	6.0	25-50

Auxiliary side mounted handwheel is available.

Available Thrust

FINAL THRUST TABLES (FULL TRAVEL)

Spring to Retract						Spring to Extend		
Actuator Size	Spring Range	Supply Pressure				Actuator Size	Spring Range	Any Supply Pressure
		30 psig	60 psig	100 psig	150 psig			
38 sq. In.	10-20	380	1520	3040	4940	38 sq. In.	10-20	380
	15-30		1140	2660	4560		15-30	570
	25-50		380	1900	3800		25-50	950
78 sq. In.	10-20	780	3120	6240	10140	78 sq. In.	10-20	780
	15-30		2340	5460	9360		15-30	1170
	25-50		780	3900	7800		25-50	1950
154 sq. In.	10-20	1540	6160	12320	20020	154 sq. In.	10-20	1540
	15-30		4620	10780	18480		15-30	2310
	25-50		1540	7700	15400		25-50	3850
314 sq. In.	10-20	3140	12560	25120	40820	314 sq. In.	10-20	3140
	15-30		9420	21980	37680		15-30	4710
	25-50		3140	15700	31400		25-50	7850

Auxiliary positioner data*

type

Double acting
cam feedback

instrument signals

Standard: 3-15 psi
Split Range: 6 psi (3-15 split)
Stroke Ranges: 0.5-6.0 inches (linear)

characteristics

equal percentage
or linear

ambient temperature limit

+180°F (82°C)
− 40°F (−40°C)

supply pressure

Up to 150 psi

adjustment

Zero and span are
internally accessible

hysteresis

less than 0.75%
of the span

linearity

±0.1% of the span

repeatability

0.2% of the span

dead band

0.1% of the span

air consumption (max.)

0.65 SCFM

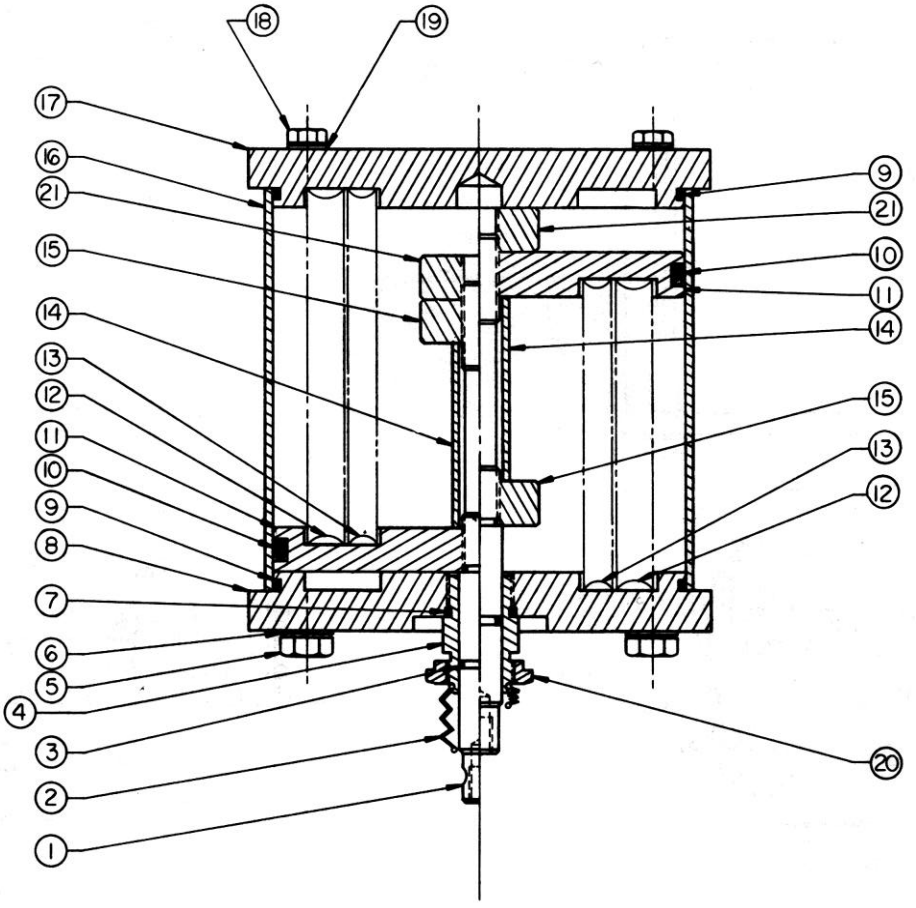
supply pressure influence

less than 0.5% of span
for 5 psi change

air pilot capacity

7.5 SCFM

* At 60 psi supply
Moore Model 750 P

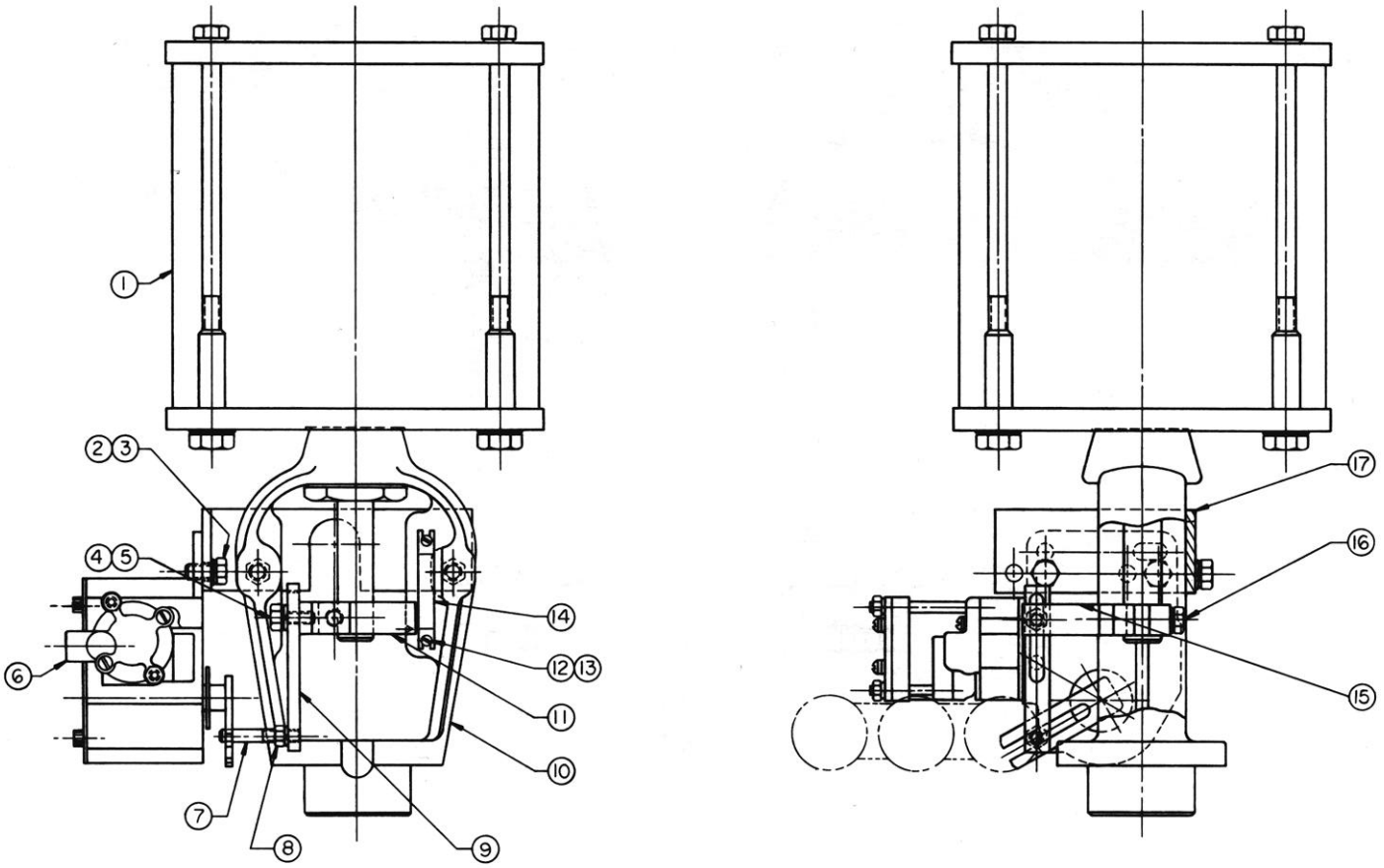


Materials

Ref. No.	Description	Material
1	Piston Rod	303 St. St.
2	Piston Rod Boot	Neoprene
3	O-Ring	Buna-N (Viton*)
4	Adapter Screw	Aluminum Bronze
5	Extended Nut	304 St. St.
6	Flat Washer	Molded Nylon
7	O-Ring	Buna-N (Viton*)
8	Bottom Cap	Steel (St. St.*)
9	O-Ring	Buna-N (Viton*)
10	O-Ring	Buna-N (Viton*)
11	Piston	Steel (St. St.*)

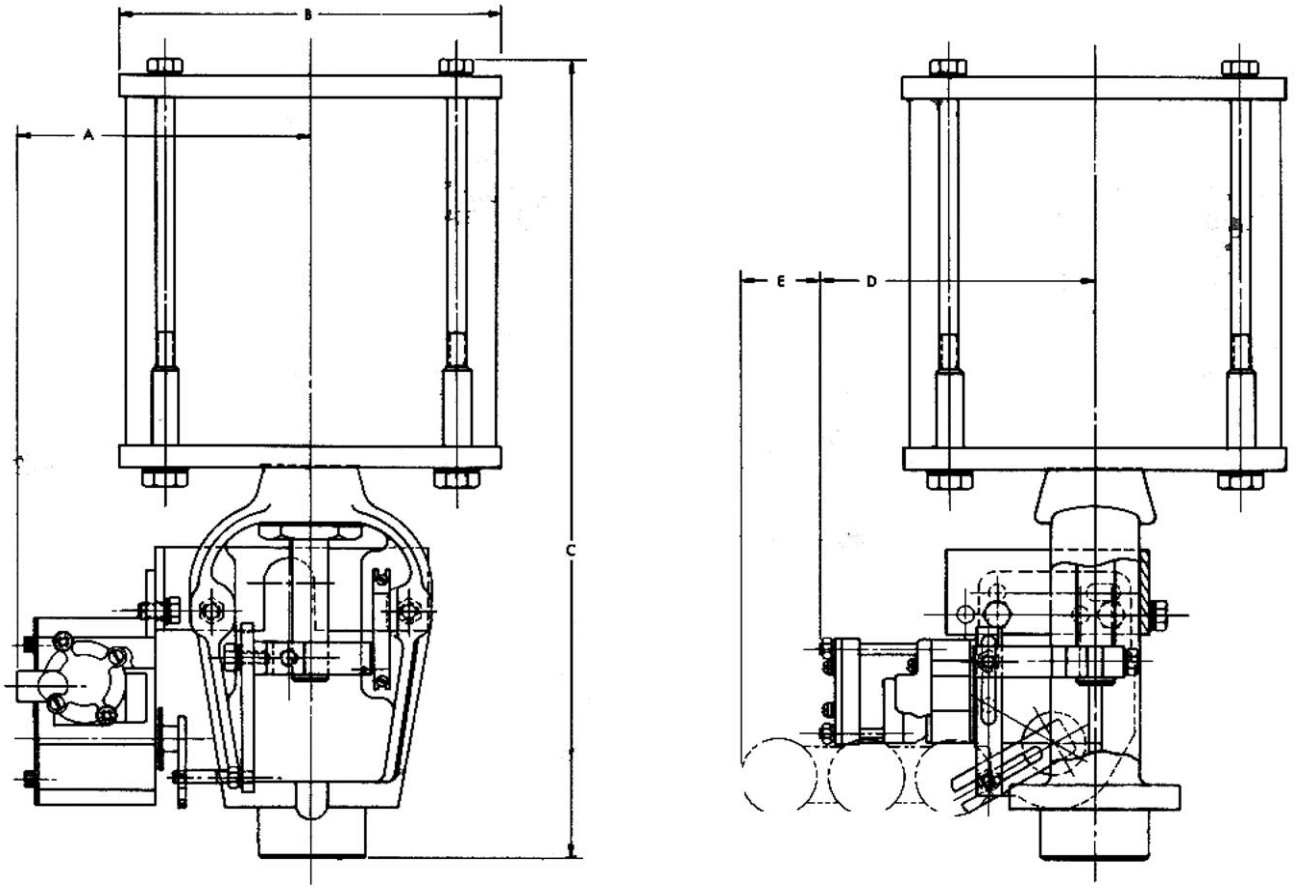
* Denotes optional material

Ref. No.	Description	Material
12	Spring	Steel
13	Spring	Steel
14	Spacer	Steel
15	Travel Stop	Steel
16	Cylinder	Black Amalgon
17	Top Cap	Steel (St. St.*)
18	Cap Screw	St. St.
19	Flat Washer	Molded Nylon
20	Adapter Nut	Steel (St. St.*)
21	Travel Stop	St. St.



Ref. No.	Part Name	Material
1	Cylinder	See Page 5
2	Cap Screw	Steel (St. St.*)
3	Lock Washer	Steel (St. St.*)
4	Cap Screw	St. St.
5	Lock Washer	St. St.
6	Positioner	
7	Feedback Finger	St. St.
8	Jam Nut	St. St.
9	Adjustment Bar	St. St.
10	Yoke	D.I. (St. St.*)
11	Stem Lock	Steel (St. St.*)
12	Screw	St. St.
13	Nut	St. St.
14	Travel Plate	St. St.
15	Adapter Arm	St. St.
16	Cap Screw	Steel (St. St.*)
17	Mounting Plate	Steel (St. St.*)

* Denotes optional material



Dimensions inches

Actuator and Yoke Size	A	B (Dia.)	C	D	E
38 sq. in. "A" yoke	5.8	7.6	14.0	5.8	1.5
38 sq. in. "B" yoke	5.8	7.6	15.8	5.5	1.5
78 sq. in. "B" yoke	5.8	10.5	20.0	5.5	1.5
78 sq. in. "C" yoke	6.4	10.5	21.4	5.5	1.5
154 sq. in. "C" yoke	—	14.75	30.2	—	—
154 sq. in. "D" yoke	—	14.75	33.0	—	—
314 sq. in. "D" yoke	—	24.5	35.5	—	—

USEFUL EQUIVALENTS

U.S. CUSTOMARY UNITS

Specific gravity of air G = 1 (reference for gases)

Specific gravity of water = 1 (reference for liquids)

U.S. gallon of water = 8.33 lbs @ std. cond.
1 cubic foot of water = 7.48 gallons
Air specific volume = 1/density = 13.1 cubic feet/lb
G of any gas = density of gas/0.076

T + 460

Standard conditions (U.S. customary) are at 14.69 psia & 60°F

Flow conversion of gas

$$SCFH = \frac{Lbs/hr}{density} \qquad SCFH = \frac{Lbs/hr \times 379}{M} \qquad SCFH = \frac{Lbs/hr \times 13.1}{G}$$

Flow conversion of liquid

$$GPM = \frac{Lbs/hr}{500 \times G}$$

Temperature Conversion

F (Fahrenheit) = C(9/5) + 32

C (Celsius) = (F - 32) 5/9

METRIC CONVERSION TABLES

Multiply	By	To Obtain
LENGTH		
millimeters	0.039	inches
centimeters	0.394	inches
inches	2.54	centimeters
feet	30.48	centimeters
feet	0.304	meters
AREA		
sq. centimeters	0.155	sq. inches
sq. centimeters	0.001076	sq. feet
sq. inches	6.452	sq. centimeters
sq. inches	0.00694	sq. feet
sq. feet	929	sq. centimeters
FLOW RATES		
gallons US/minute (GPM)	3.785	liters/min
gallons US/minute	0.133	ft^3/min
gallons US/minute	0.227	m^3/hr
cubic feet/minute	7.481	GPM
cubic feet/hour	0.1247	GPM
cubic feet/hour	0.01667	ft^3/min
cubic meters/hour	4.403	GPM
cubic meters/hour	35.31	ft^3/hr
VELOCITY		
feet per second	0.3048	meters/second
feet per second	1.097	km/hr
feet per second	0.6818	miles/hr

Multiply	By	To Obtain
VOLUME & CAPACITY		
cubic feet	28.32	liters
cubic feet	7.4805	gallons
liters	61.02	cubic inches
liters	0.03531	cubic feet
liters	0.264	gallons
gallons	3785.0	cubic cm
gallons	231.0	cubic inches
gallons	0.1337	cubic feet
WEIGHT		
pounds	0.453	kilogram
kilogram	2.205	pounds
PRESSURE & HEAD		
pounds/sq. inch	0.06895	bar
pounds/sq. inch	0.06804	atmosphere
pounds/sq. inch	0.0703	Kg/cm^2
pounds/sq. inch	2.307	ft of H_20 (4°C)
pounds/sq. inch	0.703	m of H_20 (4°C)
pounds/sq. inch	5.171	cm of Hg (0°C)
pounds/sq. inch	2.036	in of Hg (0°C)
atmosphere	14.69	psi
atmosphere	1.013	bar
atmosphere	1.033	Kg/cm^2
atmosphere	101.3	kPa
bar	14.50	psi
kilogram/sq. cm	14.22	psi
kiloPascal	0.145	psi

Facilities: **Brazil, Canada, France, Germany, Italy, Japan, Mexico, Netherlands, Singapore, Spain, United Kingdom, United States**

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