

MORIN B AND C SERIES ACTUATORS

B Series - Ductile iron with stainless steel cylinders

C Series - Ductile iron with carbon steel cylinders

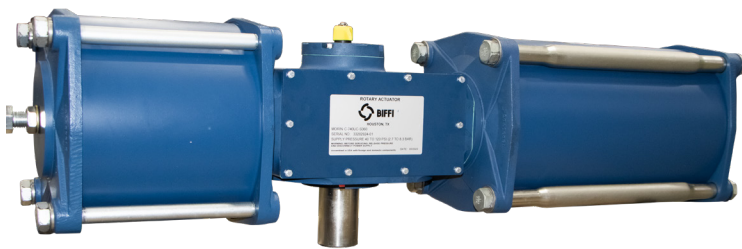
Spring-return and double-acting actuators

Quarter-turn output torques to 1400000 lb-in



B SERIES

C SERIES



GENERAL APPLICATIONS

For remote control of any quarter-turn application: ball, butterfly, rotary plug or damper style valves, etc. for use in chemical process, food and beverage, iron and steel, pharmaceutical, power, oil and gas, pulp and paper and textile industries.

TECHNICAL DATA

Supply pressure:	40 to 160 psig (see torque chart on page 4)
Supply medium:	Air or any gas compatible with materials of construction
Temperature rating	
Standard range:	-20 to 210 °F
Optional range:	-65 to 300 °F
Angular rotation:	90° (adjustable between 82° and 98°)
Mounting pattern:	ISO 5211
Protection:	IP66
Certification:	SIL3 capable



FEATURES AND BENEFITS

- Ductile iron housing, piston and end caps provide long life and durable, cost-effective operation.
- High strength alloy steel or 17-4PH stainless output shaft transmits torque without fatigue.
- Sintered bronze or PTFE (Polytetrafluoroethylene) composite output shaft bushings eliminate side loading of valve stem to maximize stem packing performance.
- Strong, corrosion-resistant chrome-plated steel piston rod for enduring high cycle applications.
- Sintered bronze piston rod bushings provide low-friction support and precise alignment to increase efficiency, reduce maintenance and extend actuator life.
- Heat-treated stainless steel thrust pin and rollers transfer piston force to yoke to reduce friction for longer life and more efficient torque transmission.
- PTFE guide bands ensure low-friction piston guidance, protecting cylinder walls from scoring and extending seal performance with a continuous cylinder wiping action.
- Bi-directional travel stops provide accurate valve rotation adjustment.
- NAMUR drive slot maintains a compact assembly for accessory-driven components with no couplings necessary.
- Tectyl-coated springs need no special tools to be disarmed safely and easily, reducing down time.
- Easily removable housing cover provides easy access for yoke mechanism inspection.

ALGA/ALGAS models available over the 1150 size.

MORIN B AND C SERIES ACTUATORS

DESIGNED WITH A RUGGED HEART

Scotch yoke design

The heart of any scotch yoke actuator is the yoke. B and C Series actuators use either 17-4PH or ductile iron for this critical area as standard. The yoke is the mechanism used to convert linear force to torque. The yoke is critical to actuator performance, it must be rugged yet precisely machined to last long at high efficiency - all our yoke designs meet this test.

Principles of construction

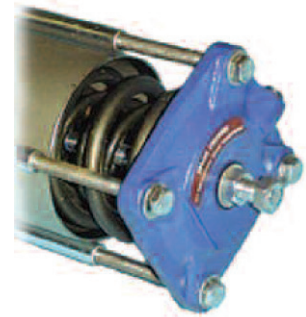
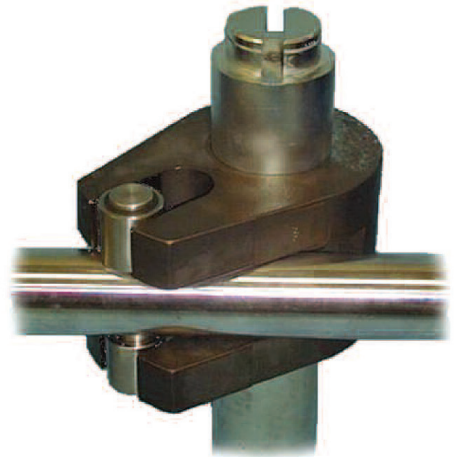
Using high-quality materials of construction and modern rugged design concepts, provides the standard for high-quality, low-cost valve actuation. The actuator housings are all machined from ductile iron castings. This produces a rugged, low cost product through reduced machining time and by eliminating wasteful excess material. Any components that rotate or slide during operation, such as the high strength output shaft, chrome-plated piston rod, stainless steel thrust pin or the ductile iron piston, are all supported by replaceable friction reducing bearings.

Bi-directional travel stops

Adjustable stops on each end cap provide the flexibility of accurate valve rotation positioning at the end of the 'open' and 'close' stroke. Both stops are located on the cylinder centerline, the optimal position to maximize travel adjustment and eliminate any detrimental side loading on the travel stops. Adjustable from 82° to 98°.

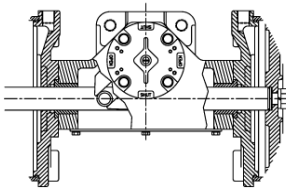
Spring designed for safety

All spring-return models incorporate a 'man safe' spring design that allows the actuator to be safely assembled and disassembled in the field without the need for special tools. The integral tie rods are bored and tapped to provide a means of loading and unloading the spring in a safe and convenient manner.

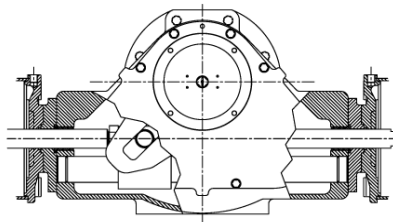


Experts in actuator design

We understand that the most efficient design for one torque range is not the most efficient for another. Our actuators use the standard scotch yoke design for lower torque ranges and a guide bar design for the higher torque ranges. This gives a rugged design at an economic cost.



STANDARD DESIGN, SCOTCH YOKE

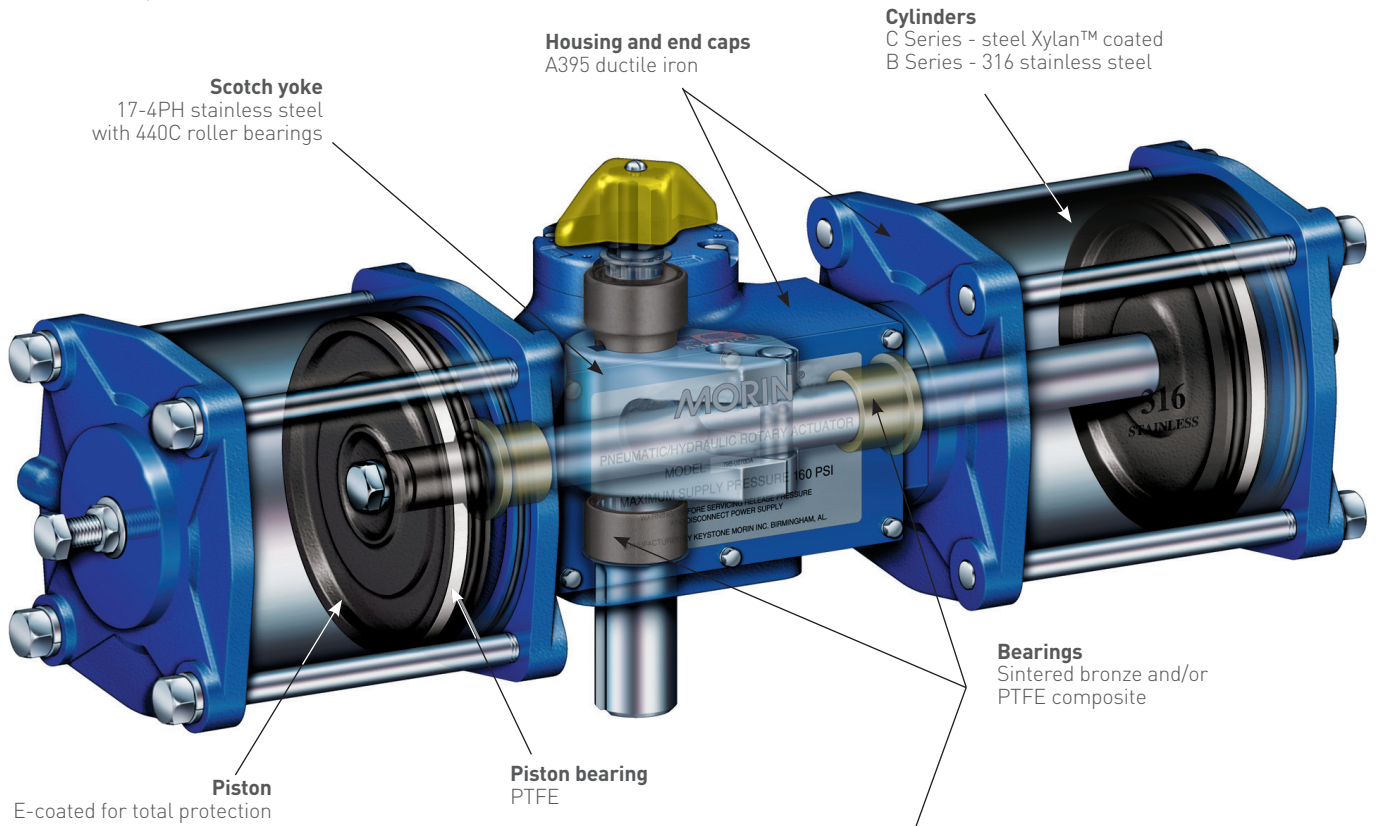


GUIDE BAR DESIGN, SCOTCH YOKE

MORIN B AND C SERIES ACTUATORS

Superior materials of construction offer long life, and mean less downtime.

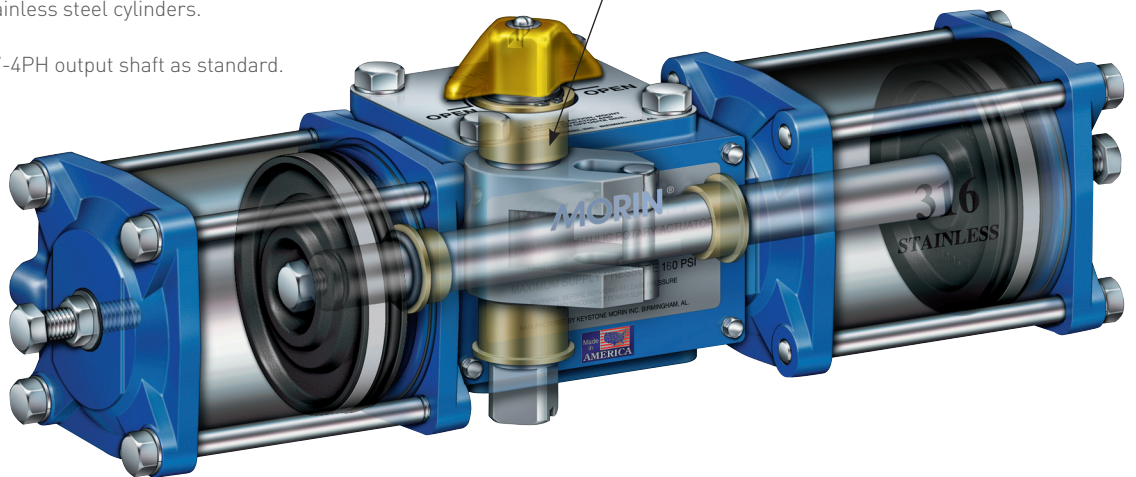
B OR C SERIES, MODELS 135 TO 1150



B SERIES MODELS 006 TO 100

B Series actuators use construction identical to the C Series, but with 316 stainless steel cylinders.

Models 006 to 100 use 17-4PH output shaft as standard.



NOTE

See B/C/S Series IOM for a complete bill of materials.

MORIN B AND C SERIES ACTUATORS

SYMMETRICAL AND CANTED YOKES

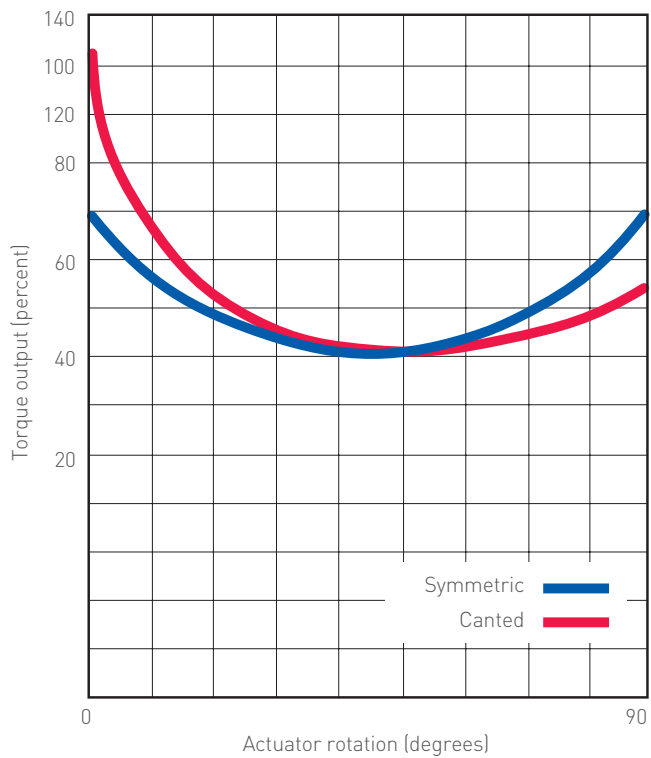
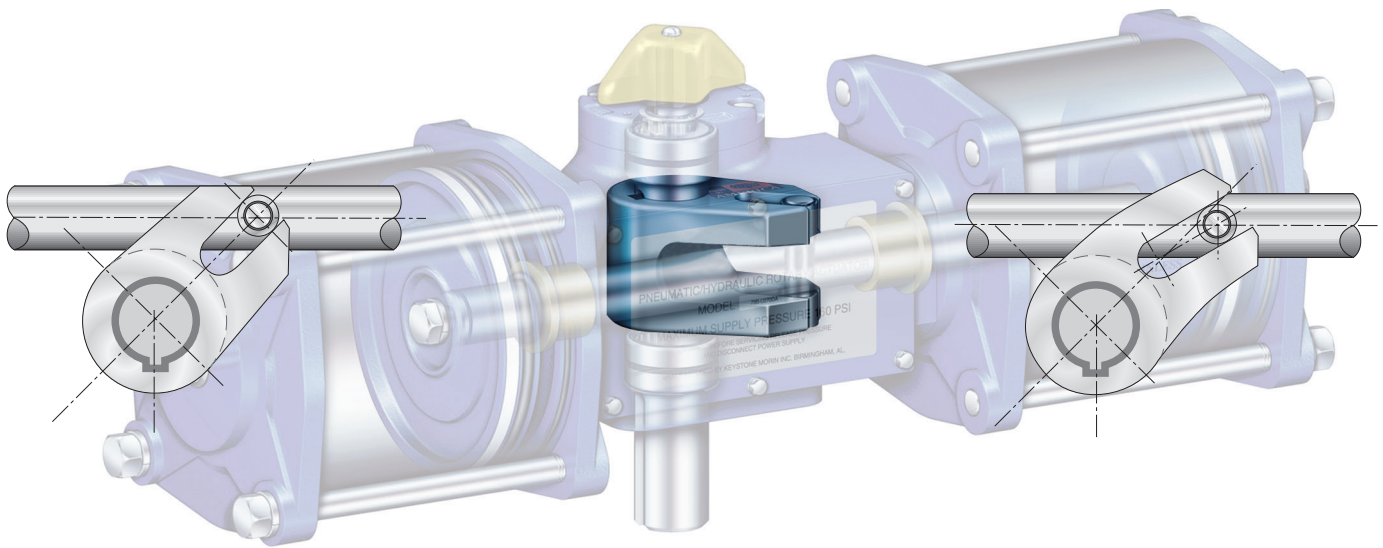
It's about fitting the torque curve of the actuator to the valve . . .
It's about lower cost, lighter weight, smaller actuators . . .
It's about CHOICE . . .

Symmetric

Symmetrical yoke design offers the standard torque curve seen most often in relation to scotch yoke actuators. It offers the increased torque advantage at both ends of the 90° stroke as shown on the blue curve below. This torque curve covers most quarter-turn applications.

Canted

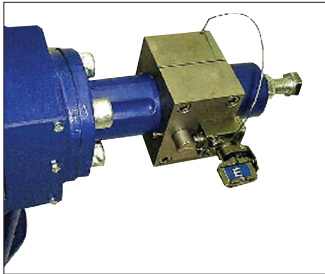
Canted yoke design moves the torque curve to where it's the needed most, gaining as much as 35% more break and reseal torque for the same size actuator. The canted yoke curve is shown in red below. Canted yoke actuators allow selection of smaller, lighter and less expensive actuator packages.



MORIN B AND C SERIES ACTUATORS

OPTIONS

To provide the actuation package best suited for your application, we offer a full range of manual accessories.



Partial stroke test device (PSTD)
Provides a method of testing ESD packages without shutdown.



Lockout
Integral lockout allows safe shutdowns for maintenance and isolation of systems.



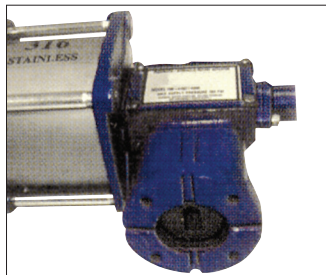
Jackscrew override (JSO)
Manual operation when power is lost. Simple and effective.



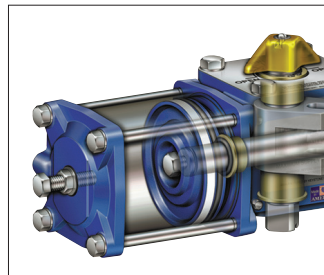
Hydraulic override (MHP)
Manual operation when power is lost. Includes speed controls.



AWWA (American Waterworks Association)
Tested per American Waterworks Association C541. Available for pneumatic or water service operation.



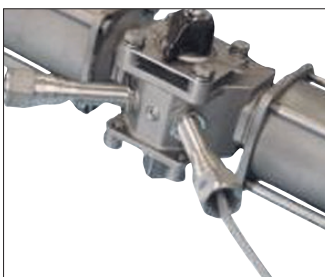
Direct mounting cast adapters
Many valve top works covered, including some ISO mounting. Assures economic but correct mounting alignment.



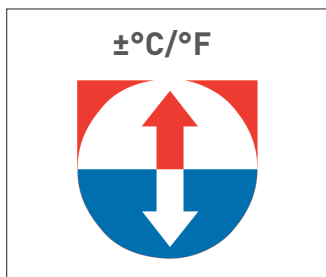
Full stroke adjuster
Provides mechanical control of maximum and/or minimum valve stroke.



Epoxy painting (EX)
Offshore rated, three-part coating system for high level of environmental protection.



Proximity switch preparation
Allows installation of cartridge style proximity switches. Leaves top works open for mounting of other devices.



High or low temperature ratings
Standard rating of -20 to 210 °F / -29 to 99 °C covers most applications. Optional ratings down from -65 to 300 °F / -54 to 149 °C.



Optional certification for CE
Manufactured in accordance with the Pressure Equipment Directive 2014/68/EU and ATEX 2014/34/EU.

MORIN B AND C SERIES ACTUATORS

MECHANICAL DATA

Actuator model	Closing torque at 80 psig		Number of pistons	Cylinder bore (in.)	Stroke (in.)	Volume ^[1] (cu. in.) 90° stroke	Cycle time ^[2]	Weight (lb)
	Symmetrical	Canted					(seconds) 90° stroke	
Double-acting								
006	600	-	1	2.750	2	12	0.5	11
015	1500	-	1	4.375	2	30	1	14
023	2300	2990	1	4.375	3	45	1	30
036	3960	5148	1	5.438	3	70	1.5	33
050	5000	6500	1	6.250	3	92	2.2	39
059	5900	7670	2	4.375/5.438	3	112	2.4	36
072	7920	*9009	2	5.438	3	137	2.5	41
100	10000	**9750	2	6.250	3	182	3	49
135	14175	18428	1	8.250	5	267	4.5	165
210	23100	30030	1	10.250	5	413	5	185
270	28350	36855	2	8.250	5	526	6	210
345	36225	*41206	2	8.250/10.250	5	671	7	234
370	37000	51469	1	12.250	6	707	8	390
420	42000	**40950	2	10.250	5	816	8.5	257
575	63825	82973	1	15.500	6	1132	9.5	519
740	77700	101010	2	12.250	6	1395	10	530
945	101115	**98587	2	12.250/15.500	6	1820	11	653
1150	120750	***98110	2	15.500	6	2245	12	775
1485	•	•	•	•	•	•	•	•
1935	•	•	•	•	•	•	•	•
2385	•	•	•	•	•	•	•	•
3071	•	•	•	•	•	•	•	•
3731	•	•	•	•	•	•	•	•
4534	•	•	•	•	•	•	•	•
5336	•	•	•	•	•	•	•	•
7114	•	•	•	•	•	•	•	•

NOTES:

- Use ALGA model

1. Air consumption:

Cubic inches shown in chart represent actual free air volume in cylinder between piston and end cap when furthest apart. Air consumption will vary depending on supply pressure. To determine standard cubic feet per minute use the following formula:

$$\left(\frac{\text{Vol. in}^3}{1728}\right)\left(\frac{\text{Supply air barg} + 14.7}{14.7}\right)\left(\text{Strokes/min}\right)$$

Example: calculate SCFM for model 023 double-acting using 80 psig air supply and 5 strokes/minute.

$$\text{SCFM} = \left(\frac{45}{1728}\right)\left(\frac{80 + 14.7}{14.7}\right)\left(5\right) = 0.97$$

2. Cycle times shown represent average time to stroke 90° using standard pilot valves and should be used as a guide only. Cycle times can be increased or decreased dramatically by using speed controls, oversized pilot valves or quick exhaust valves.

* at 70 psig *** at 50 psig
 ** at 60 psig **** at 90 psig

MORIN B AND C SERIES ACTUATORS

MECHANICAL DATA

Actuator model	Closing torque at 80 psig		Number of pistons	Cylinder bore (in.)	Stroke (in.)	Volume ^[1] (cu. in.) 90° stroke	Cycle time ^[2]	Weight (lb)
	Symmetrical	Canted					(seconds) 90° stroke	
Spring-return								
006	221	-	1	2.750	2	12	0.5	13
015	525	-	1	4.375	2	30	1	20
023	800	1120	1	4.375	3	45	1	38
036	1260	1764	1	5.438	3	70	1.5	46
046	1600	2083	2	4.375	3	88	2	47
058	*1600	*2240	2	5.438/4.375	3	112	2.3	54
059	1890	2646	2	4.375/5.438	3	112	2.4	54
072	2500	3500	2	5.438	3	137	2.5	60
100	3500	4900	2	6.250	3	182	3	86
135	5670	7938	1	8.250	5	267	4.5	210
210	8085	11319	1	10.250	5	413	5	235
270	10395	14553	2	8.250	5	526	6	250
344	12637	17692	2	10.250/8.250	5	671	7	315
345	****13760	****19264	2	8.250/10.250	5	671	7	315
370	14893	20850	1	12.250	6	707	8	540
420	15435	21609	2	10.250	5	816	8.5	379
575	21131	27512	1	15.500	6	1132	9.5	779
740	29785	41699	2	12.250	6	1395	10	660
944	*27713	*38798	2	15.500/12.250	6	1820	11	871
945	32303	45224	2	12.250/15.500	6	1820	11	871
1150	42263	59168	2	15.500	6	2245	12	1082
1485	✧	✧	✧	✧	✧	✧	✧	✧
1934	✧	✧	✧	✧	✧	✧	✧	✧
1935	✧	✧	✧	✧	✧	✧	✧	✧
2385	✧	✧	✧	✧	✧	✧	✧	✧
3071	✧	✧	✧	✧	✧	✧	✧	✧
3072	✧	✧	✧	✧	✧	✧	✧	✧
3731	✧	✧	✧	✧	✧	✧	✧	✧
4534	✧	✧	✧	✧	✧	✧	✧	✧
5336	✧	✧	✧	✧	✧	✧	✧	✧
6044	✧	✧	✧	✧	✧	✧	✧	✧
7114	✧	✧	✧	✧	✧	✧	✧	✧

NOTES:

✧ Use ALGA model

1. Air consumption:

Cubic inches shown in chart represent actual free air volume in cylinder between piston and end cap when furthest apart. Air consumption will vary depending on supply pressure. To determine standard cubic feet per minute use the following formula:

$$\left(\frac{\text{Vol. in}^3}{1728} \right) \left(\frac{\text{Supply air barg} + 14.7}{14.7} \right) \left(\text{Strokes/min} \right)$$

Example: calculate SCFM for model 023 double-acting using 80 psig air supply and 5 strokes/minute.

SCFM =

$$\left(\frac{45}{1728} \right) \left(\frac{80 + 14.7}{14.7} \right) \left(5 \right) = 0.97$$

2. Cycle times shown represent average time to stroke 90° using standard pilot valves and should be used as a guide only. Cycle times can be increased or decreased dramatically by using speed controls, oversized pilot valves or quick exhaust valves.

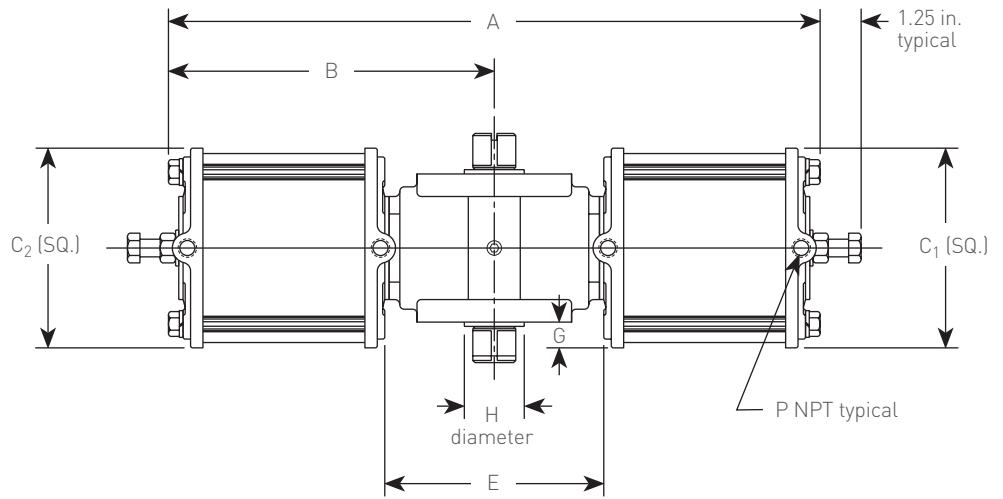
* at 70 psig *** at 50 psig

** at 60 psig **** at 90 psig

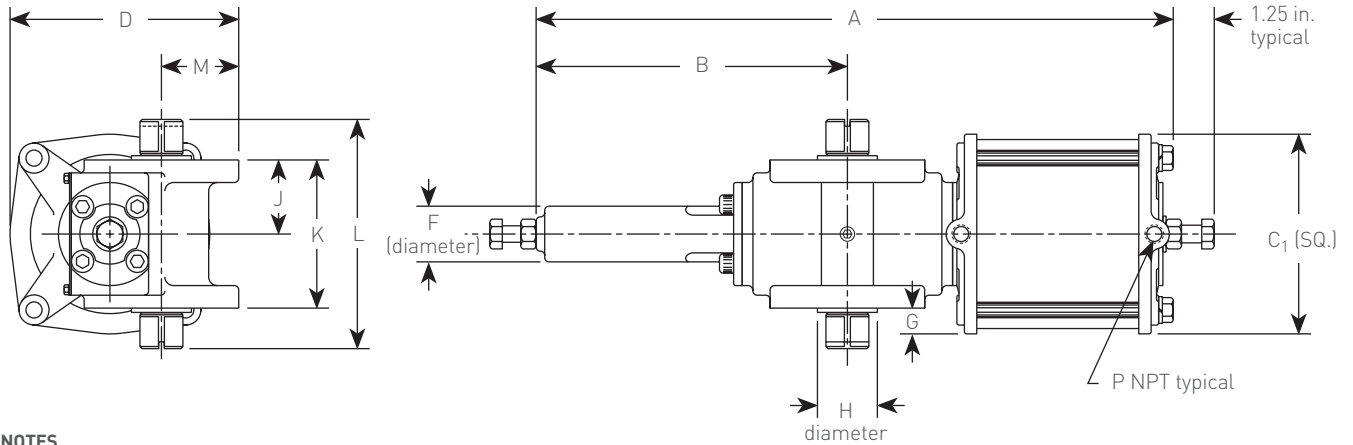
MORIN B AND C SERIES ACTUATORS

DIMENSIONS

MODELS 046, 058, 059, 072 AND 100



MODELS 006, 015, 023, 036 AND 050



NOTES

1. Shown without pointer for clarity.
2. For mounting dimensions, refer to page 10.

DIMENSIONS (in.) DOUBLE-ACTING

Model	A	B	C ₁	C ₂	D	E	F	G	H	J	K	L	M	P
006DA	12.87	5.28	3.18	-	3.87	-	1.09	0.18	1.50	1.50	3.00	4.75	1.31	1/8
015DA	12.31	5.28	4.81	-	4.81	-	1.09	1.00	1.50	1.50	3.00	4.75	1.31	1/4
023DA	18.54	8.88	4.81	-	6.16	-	1.75	0.25	1.75	2.16	4.31	6.69	2.25	1/4
036DA	18.60	8.88	5.81	-	6.66	-	1.75	0.75	1.75	2.16	4.31	6.69	2.25	1/4
050DA	18.55	8.88	7.12	-	7.31	-	1.75	1.38	1.75	2.16	4.31	6.69	2.25	1/4
059DA	19.40	9.66	4.81	5.81	6.66	6.34	-	0.75	1.75	2.16	4.31	6.69	2.25	1/4
072DA	19.35	9.68	5.81	5.81	6.66	6.38	-	0.75	1.75	2.16	4.31	6.69	2.25	1/4
100DA	18.98	9.68	7.12	7.12	7.31	6.38	-	1.38	1.75	2.16	4.31	6.69	2.25	1/4

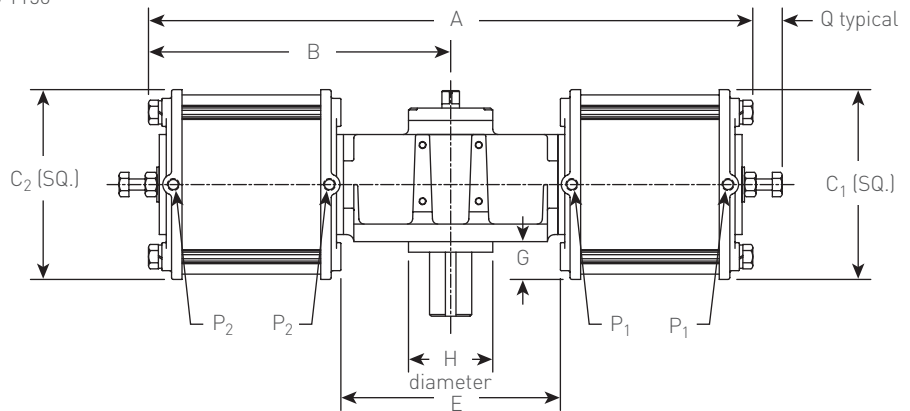
DIMENSIONS (in.) SPRING-RETURN

Model	A	B	C ₁	C ₂	D	E	F	G	H	J	K	L	M	P
006SR	12.87	5.28	3.18	-	3.87	-	1.09	0.18	1.50	1.50	3.00	4.75	1.31	1/8
015SR	14.50	5.28	4.81	-	4.81	-	1.09	1.00	1.50	1.50	3.00	4.75	1.31	1/4
023SR	21.95	8.88	4.81	-	6.16	-	1.75	0.25	1.75	2.16	4.31	6.69	2.25	1/4
036SR	23.65	8.88	5.81	-	6.66	-	1.75	0.75	1.75	2.16	4.31	6.69	2.25	1/4
046SR	22.73	9.66	4.81	4.81	6.16	5.58	-	0.25	1.75	2.16	4.31	6.69	2.25	1/4
058SR	22.79	9.73	5.81	4.81	6.66	5.58	-	0.75	1.75	2.16	4.31	6.69	2.25	1/4
059SR	24.44	9.66	4.81	5.81	6.66	5.44	-	0.75	1.75	2.16	4.31	6.69	2.25	1/4
072SR	24.45	9.68	5.81	5.81	6.66	5.44	-	0.75	1.75	2.16	4.31	6.69	2.25	1/4
100SR	24.51	9.73	7.12	7.12	7.31	5.44	-	1.38	1.75	2.16	4.31	6.69	2.25	1/4

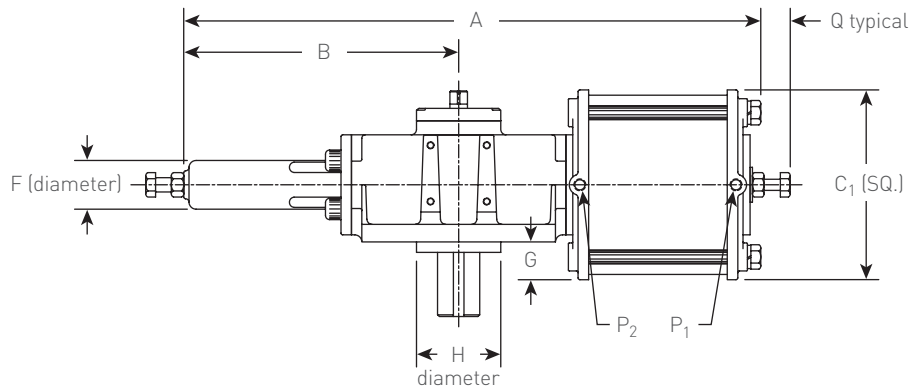
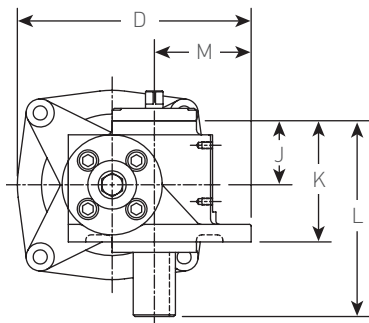
MORIN B AND C SERIES ACTUATORS

DIMENSIONS

MODELS 270, 344, 345, 420, 740, 944, 945 AND 1150



MODELS 135, 210, 370 AND 575



NOTES

1. Shown without pointer for clarity.
2. For mounting dimensions, refer to pages 10-12.

DIMENSIONS (in.) DOUBLE-ACTING

Model	A	B	C ₁	C ₂	D	E	F	G	H	J	K	L	M	P ₁	P ₂	Q
135DA	32.74	15.88	9.50	-	10.44	-	2.75	1.00	-	4.38	8.13	11.82	3.19	3/8	3/8	1.75
210DA	33.26	15.88	11.50	-	11.44	-	2.75	2.00	-	4.38	8.13	11.82	3.19	1/2	1/2	2.12
270DA	33.77	16.89	9.50	9.50	10.44	11.72	-	1.00	-	4.38	8.13	11.82	3.19	3/8	3/8	1.75
345DA	34.26	16.89	9.50	11.50	11.44	11.47	-	2.00	-	4.38	8.13	11.82	3.19	3/8	1/2	2.12
370DA	41.64	19.56	13.50	-	16.75	-	3.50	2.69	5.90	5.44	9.50	14.81	6.88	1/2	1/2	1.75
420DA	34.75	17.38	11.50	11.50	11.44	11.22	-	2.00	-	4.38	8.13	11.82	3.19	1/2	1/2	2.12
575DA	42.26	19.56	17.00	-	18.50	-	3.50	4.44	5.90	5.44	9.50	14.81	6.88	3/4	3/4	2.50
740DA	44.15	22.07	13.50	13.50	16.75	15.62	-	2.69	5.90	5.44	9.50	14.81	6.88	1/2	1/2	1.75
945DA	44.77	22.07	13.50	17.00	18.50	15.25	-	4.44	5.90	5.44	9.50	14.81	6.88	1/2	3/4	2.50
1150DA	45.39	22.69	17.00	17.00	18.50	14.88	-	4.44	5.90	5.44	9.50	14.81	6.88	3/4	3/4	2.50

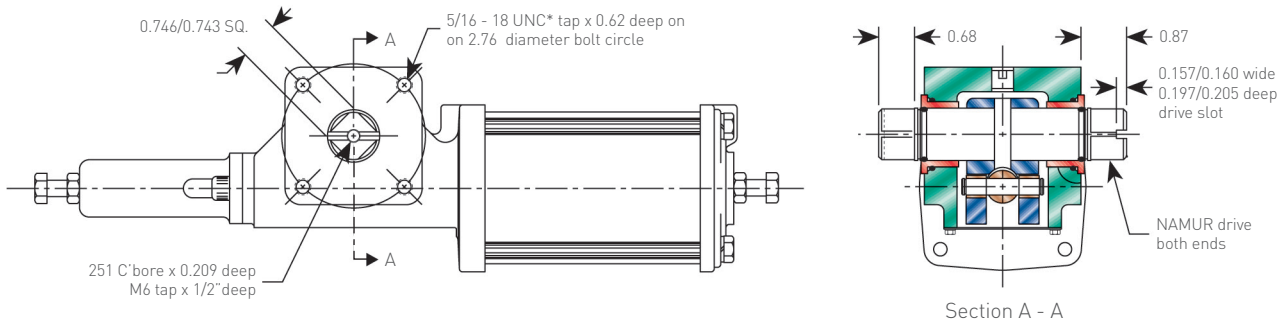
DIMENSIONS (in.) SPRING-RETURN

Model	A	B	C ₁	C ₂	D	E	F	G	H	J	K	L	M	P ₁	P ₂	Q
135SR	39.46	15.88	9.50	-	10.44	-	2.75	1.00	-	4.38	8.13	11.82	3.19	3/8	3/8	1.75
210SR	42.67	15.88	11.50	-	11.44	-	2.75	2.00	-	4.38	8.13	11.82	3.19	1/2	1/2	2.12
270SR	40.57	16.99	9.50	9.50	10.44	10.95	-	1.00	-	4.38	8.13	11.82	3.19	3/8	3/8	1.75
344SR	40.95	17.38	11.50	9.50	11.44	10.70	-	2.00	-	4.38	8.13	11.82	3.19	1/2	3/8	2.12
345SR	43.79	16.99	9.50	11.50	11.44	10.61	-	2.00	-	4.38	8.13	11.82	3.19	3/8	1/2	2.12
370SR	51.48	19.56	13.50	-	16.75	-	3.50	2.69	5.90	5.44	9.50	14.81	6.88	1/2	1/2	1.75
420SR	44.17	17.38	11.50	11.50	11.44	10.36	-	2.00	-	4.38	8.13	11.82	3.19	1/2	1/2	2.12
575SR	54.12	19.56	17.00	-	18.50	-	3.50	4.44	5.90	5.44	9.50	14.81	6.88	3/4	3/4	2.50
740SR	53.99	22.07	13.50	13.50	16.75	14.75	-	2.69	5.90	5.44	9.50	14.81	6.88	1/2	1/2	1.75
944SR	54.59	22.67	17.00	13.50	18.50	14.37	-	4.44	5.90	5.44	9.50	14.81	6.88	3/4	1/2	2.50
945SR	56.63	22.07	13.50	17.00	18.50	14.16	-	4.44	5.90	5.44	9.50	14.81	6.88	1/2	3/4	2.50
1150SR	57.22	22.69	17.00	17.00	18.50	13.79	-	4.44	5.90	5.44	9.50	14.81	6.88	3/4	3/4	2.50

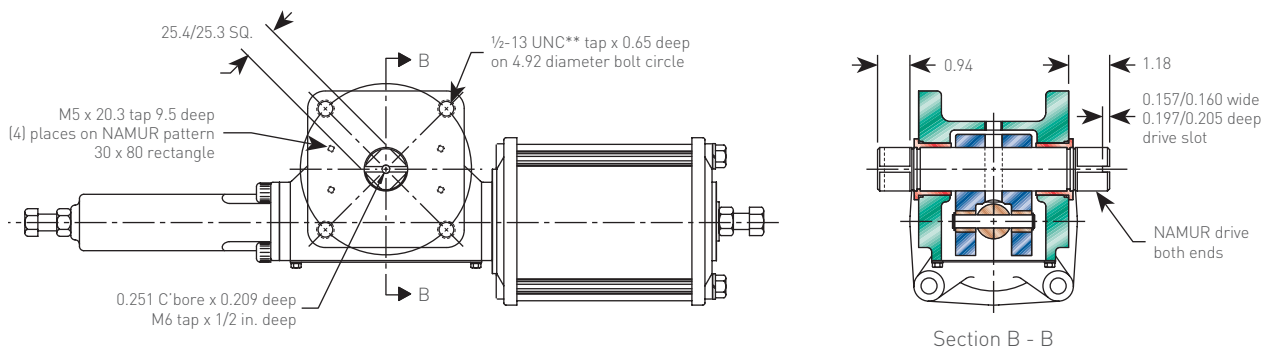
MORIN B AND C SERIES ACTUATORS

MOUNTING DETAILS

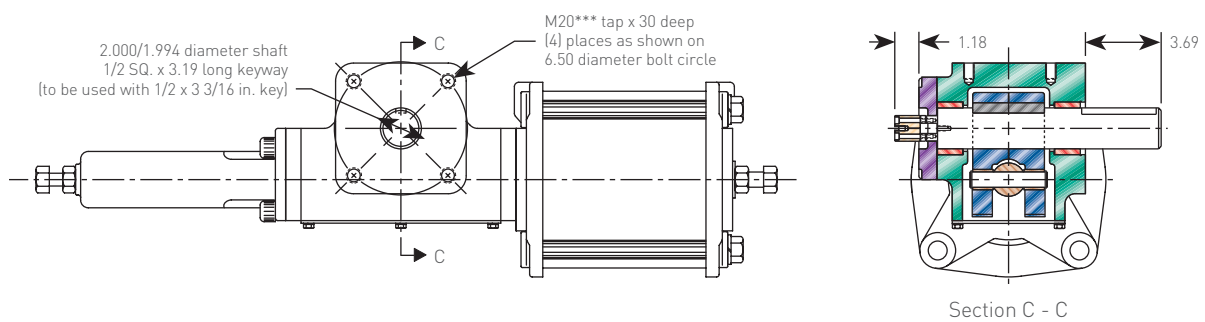
MODELS 006 AND 015 - TOP AND BOTTOM OF HOUSING (SYMMETRICAL) ISO 5211-F07



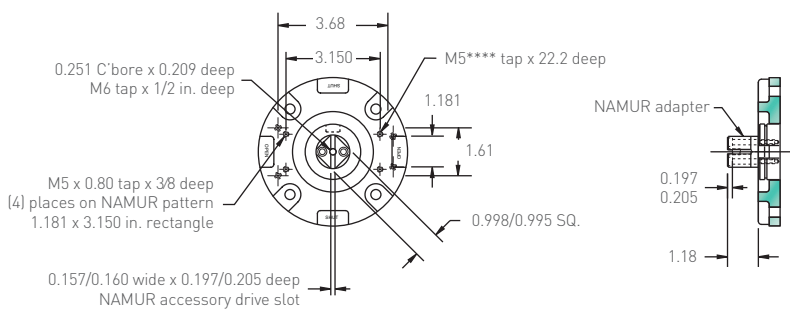
MODELS 023 THROUGH 100 - TOP AND BOTTOM OF HOUSING (SYMMETRICAL) ISO 5211-F12



MODELS 135, 210, 270, 344, 345 AND 420 - BOTTOM OF HOUSING ISO 5211-F16



MODELS 135, 210, 270, 344, 345 AND 420 - TOP OF HOUSING - MOUNTING DETAILS



METRIC THREAD OPTION

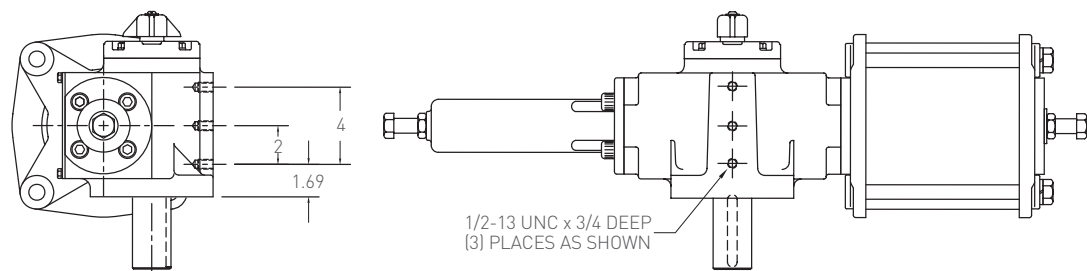
Metric tap	Model number
* M8	006 and 015
** M12	023 to 100
*** M20	135 to 1150
**** M5	135 to 1150

Replace 'U' with 'M' in order number designation (refer to page 13).

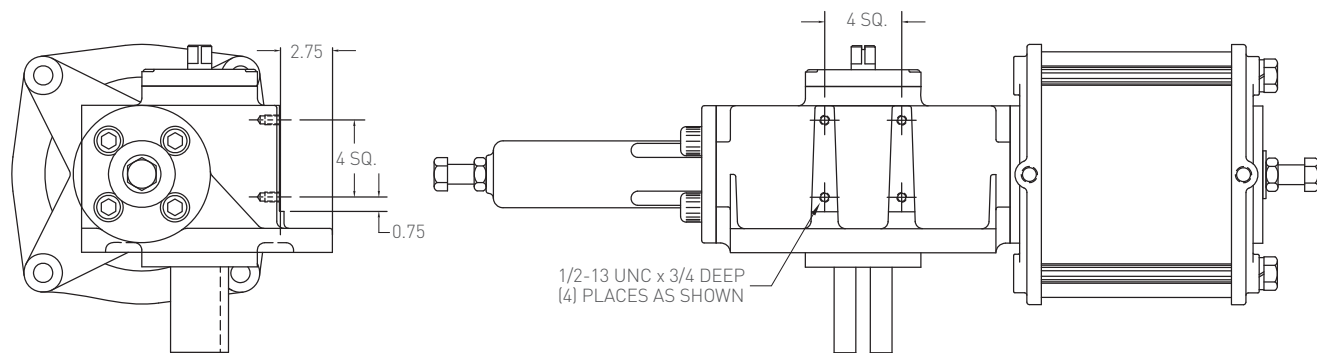
MORIN B AND C SERIES ACTUATORS

MOUNTING DETAILS

MODELS 135, 210, 270, 344, 345, 420



MODELS 370, 575, 740, 944, 945, 1150



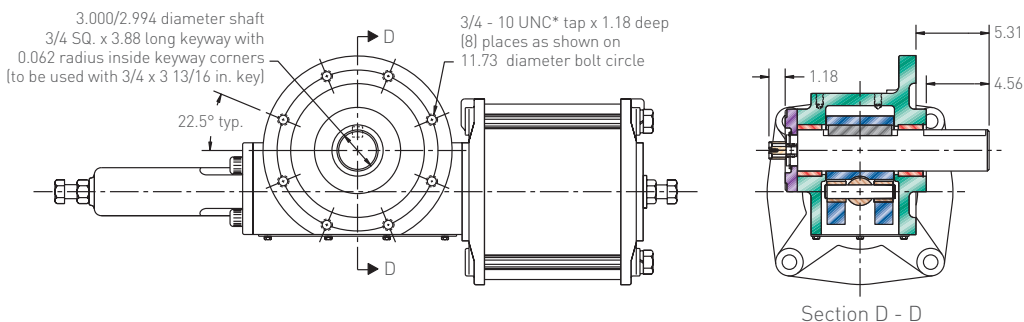
NOTE:

All dimensions except threads are in inches.

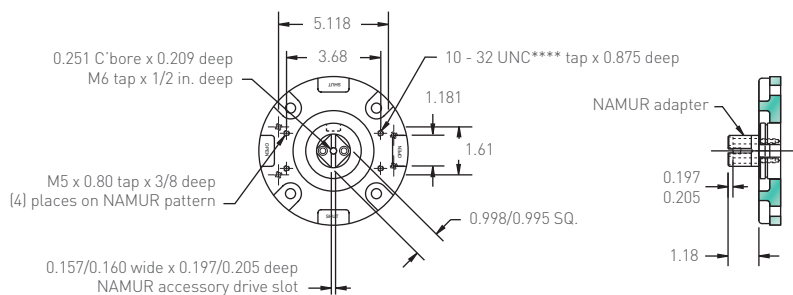
MORIN B AND C SERIES ACTUATORS

MOUNTING DETAILS

MODELS 370, 575, 740, 944, 945 AND 1150 - BOTTOM OF HOUSING ISO 5211-F30



MODELS 370, 575, 740, 944, 945 AND 1150 - TOP OF HOUSING - MOUNTING DETAILS



IMPERIAL THREAD OPTION

Standard tap	Model number
* M20	370 and 575 to 1150
*** M30	1485 to 5336
**** M5	135 to 1150

Replace 'U' with 'M' in order number designation (refer to page 13).

MORIN B AND C SERIES ACTUATORS

ORDERING INFORMATION

SELECTION GUIDE

Actuator model																									
B-																									
C-																									
Actuator size Model code based on approximate torque of symmetrical double-acting at 80 psig																									
270	<table border="1"> <tr> <td>006</td> <td>059</td> <td>370</td> </tr> <tr> <td>012</td> <td>072</td> <td>420</td> </tr> <tr> <td>015</td> <td>100</td> <td>575</td> </tr> <tr> <td>023</td> <td>135</td> <td>740</td> </tr> <tr> <td>036</td> <td>210</td> <td>944</td> </tr> <tr> <td>046</td> <td>270</td> <td>945</td> </tr> <tr> <td>050</td> <td>344</td> <td>1150</td> </tr> <tr> <td>058</td> <td>345</td> <td></td> </tr> </table>	006	059	370	012	072	420	015	100	575	023	135	740	036	210	944	046	270	945	050	344	1150	058	345	
006	059	370																							
012	072	420																							
015	100	575																							
023	135	740																							
036	210	944																							
046	270	945																							
050	344	1150																							
058	345																								
Interface bolting																									
U -	UNC mounting threads																								
M -	Metric mounting threads																								
Yoke design																									
(blank)	Symmetrical yoke																								
C -	Canted yoke																								
Function																									
D -	Double-acting																								
S -	Spring-return																								
Spring code																									
00	No spring - Double-acting																								
04	40 pound spring																								
05	50 pound spring																								
06	60 pound spring																								
Etc. see Morin Torque Book for available springs																									
Spring-return failure rotation																									
0 -	No spring (double-acting OR actuator rotates clockwise on loss of air)																								
1 -	Actuator rotates counterclockwise on loss of air																								
Option																									
(blank)	No options (standard configuration)																								
See complete modules code listing																									
Note: Some codes can be used in combination. Indicate by "stacking" separated by "-". Consult factory for possible combinations combinations.																									

B- 270 U C - D 00 0 - JSO = Model number **S-270UC-D000-JSO**

HOW TO ORDER

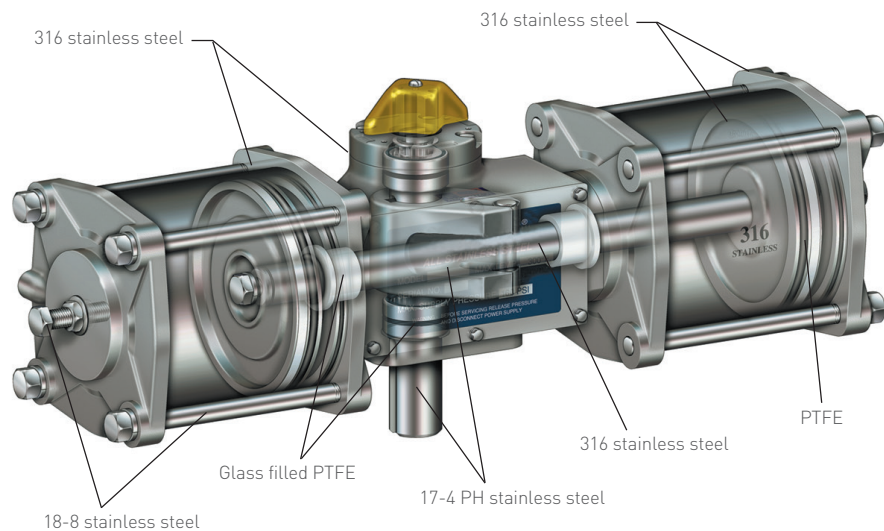
1. Double-acting (symmetrical yoke) example	2. Spring-return (symmetrical yoke) example	3. Double-acting (canted yoke) example
Air supply: 80 psig Break/end torque: 23100 lb-in.	Air supply: 80 psig End torque: 8085 lb-in.	Air supply: 80 psig Break (CCW) torque: 31185 lb-in. End (CW) torque: 30030 lb-in.
B-210U-D000	B-210U-S080	B-210UC-D000
B Series	B Series	B Series
210 Model number	210 Model number	210 Model number
U UNC mounting threads	U UNC mounting threads	U UNC mounting threads
D Double-acting	S Spring-return	C Canted yoke
000 No spring	080 Spring set	D Double-acting
		000 No spring

4. For all spring-return models
 Use required torque to determine spring set code (see torque chart)
 All spring sets ending with '0' fail clockwise (40, 50, 60, etc.)
 All spring sets ending with '1' fail counterclockwise (41, 51, 61, etc.)
 All symmetrical yoke models between 006 and 100 may be mounted to fail clockwise or counterclockwise by 'flipping' along the longitudinal axis

MORIN B AND C SERIES ACTUATORS

ALSO AVAILABLE

THE S SERIES ACTUATOR (ALL STAINLESS)



Setting an unrivaled standard in actuation at a price unexpectedly low for stainless steel.

- Up to 160 psig max operating pressure (see torque chart on page 4).
- Double-acting break torques to 240000 lb-in.
- Spring end torques to 104125 lb-in.

For additional information, refer to S Series data sheet.

THE HP SERIES ACTUATOR



High pressure actuation with carbon steel cylinders for superior corrosion resistance.

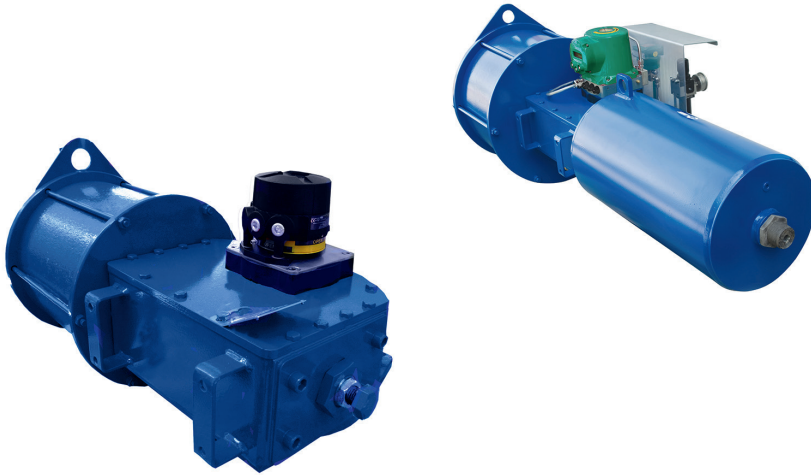
- Up to 2250 psig max operating pressure (see torque chart on page 4).
- Double-acting torques to 800000 lb-in.
- Spring end torques to 400000 lb-in.

For additional information, refer to HP Series data sheet.

BIFFI ALGA/ALGAS PNEUMATIC ACTUATORS

SCOTCH YOKE DESIGN

Double-acting and spring-return pneumatic quarter turn actuators for on-off and modulating control of valves in heavy duty service. Available for output torques to 6638000 lb-in.



GENERAL APPLICATION

ALGA and ALGAS pneumatic actuators are designed for on-off or modulating control of quarter turn ball, butterfly, plug or damper style valves.

TECHNICAL DATA

Design pressure:	174 psig
Supply medium:	Air, nitrogen or sweet gas (Sour gas version available)
Output torque	
ALGA:	Double-acting torque up to 6638000 lb-in
ALGAS/ALGAS-QA:	Spring starting torque up to 2964000 lb-in Spring end torque up to 2079900 lb-in
Ambient temperature	
Standard range:	-20 to +210 °F / -20 to +100 °C
Extended temperature:	-70 to +275 °F / -60 to +135 °C

FEATURES

- Totally enclosed, weatherproof housing in fabricated carbon steel for maximum strength.
- Guide bar resists transverse loads and supports the piston rod.
- Hard chromium plated alloy steel material guarantees corrosion protection and minimal friction.
- PTFE-impregnated bronze or sintered bronze bushings provide minimal friction and extended service life.
- Scotch yoke design with canted or symmetric torque arm allows close working to distinctive valve torque profiles.
- External travel stops for precise angular stroke adjustment between 82° and 98°.
- Electroless nickel plated and polished cylinder provides maximum corrosion resistance and reduces friction.
- Floating type piston seals provide low hysteresis and high sensitivity, preventing sticking problems.
- ALGAS spring-return pack incorporates up to four springs, fully encapsulated in a factory welded cartridge ensuring personnel safety and simplifying assembly.
- ALGAS spring action can be changed easily in the field from to close to open or vice versa.
- Special coatings for offshore or corrosive environments.

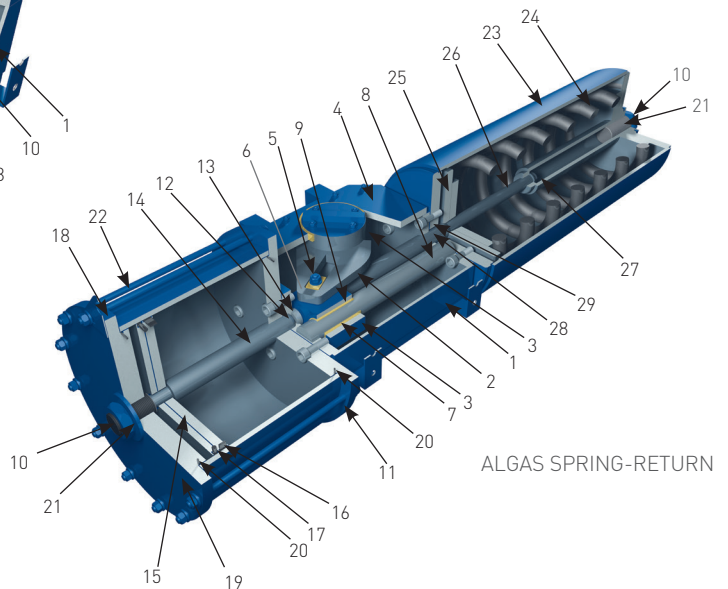
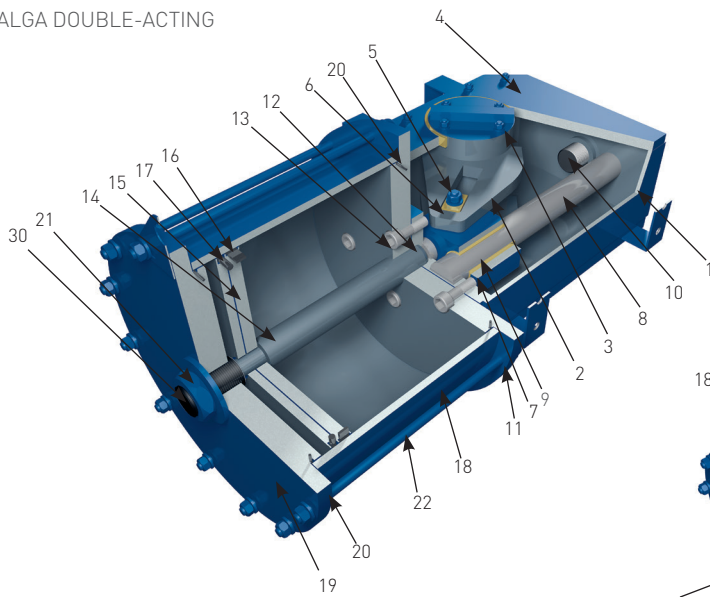
APPROVALS

Safety Integrity Level: (IEC 61508-1÷7:2010):	SIL 3
Area Classification: (ATEX):	II 2G 135° T4
Enclosure standards: (IEC 60529): (ANSI/NEMA 250):	IP66, IP66M, IP67M NEMA 4, 4X, 6
Pressure Equipment Directive:	2014/68/EU
Machinery Directive:	2006/42/EC

BIFFI ALGA / ALGAS PNEUMATIC ACTUATORS

SCOTCH YOKE DESIGN

ALGA DOUBLE-ACTING



ALGAS SPRING-RETURN

MATERIALS

Part	Material
1 Housing	Carbon steel
2 Yoke	Carbon steel
3 Yoke bushing	Bronze
4 Cover	Carbon steel
5 Guide block pin	Alloy steel
6 Sliding block	Bronze
7 Guide block	Carbon steel
8 Guide bar	Alloy steel (hard chrome plated)
9 Guide block bushing	Steel + Bronze + PTFE
10 Travel stop screw	Carbon steel
11 Cylinder head flange	Carbon steel
12 Piston rod bushing	Steel + Bronze + PTFE
13 Piston rod seal	NBR rubber
14 Piston rod	Alloy steel (hard chrome plated)
15 Piston	Carbon steel
16 Piston guide sliding ring	PTFE + Graphite
17 Piston seal O-ring	NBR rubber
18 Cylinder tube	Carbon steel (ENP)
19 Cylinder end flange	Carbon steel
20 Cylinder seal O-ring	NBR rubber
21 Sealing washer	PVC
22 Tie rod	Alloy steel
23 Spring container	Carbon steel
24 Spring	Carbon steel
25 Spring thrust flange	Carbon steel
26 Guide rod	Alloy steel (hard chrome plated)
27 Guide rod bushing	Steel + Bronze + PTFE
28 Container rod	Alloy steel
29 Container rod bushing	Steel + Bronze + PTFE
30 Travel stop screw	Carbon steel

Mounting brackets and tie rods available in stainless steel as an option.

Fluoroelastomer and fluorosilicone seals available as an option.

BIFFI ALGA DOUBLE-ACTING PNEUMATIC ACTUATOR
 OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, MODELS 1.5C-280 TO 6C-585

Model	Position	Operating supply pressure (psig)										MOP* (psig)		
		50.8		58		65.3		72.5		79.8			87	
		OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	
1.5C-280	0°	40321	43808	46268	50268	52215	56737	58162	63207	64109	69667	70057	76137	149.4
	45°	15762	15434	18081	17718	20408	19992	22736	22275	25054	24550	27382	26833	-
	90°	22727	21382	26081	24541	29426	27701	32780	30860	36135	34011	39489	37170	-
1.5C-335	0°	57888	63304	66402	72614	74915	81933	83429	91244	91943	100563	100456	109873	104.4
	45°	22629	22311	25957	25594	29285	28878	32612	32161	35940	35444	39267	38728	-
	90°	32630	30904	37427	35453	42223	40002	47020	44551	51826	49091	56622	53640	-
1.5C-385	0°	76915	84411	88155	96757	99403	109103	110643	121449	-	-	-	-	78.3
	45°	30063	29754	34453	34099	38852	38453	43250	42807	-	-	-	-	-
	90°	43347	41214	49684	47241	56021	53268	62366	59295	-	-	-	-	-
3C-335	0°	95819	104784	109917	120201	124006	135617	138095	151034	152193	166442	166283	181859	126.2
	45°	37453	36931	42958	42365	48471	47799	53976	53233	59490	58667	64994	64101	-
	90°	54003	51153	61950	58684	69888	66207	77836	73738	85774	81261	93722	88792	-
3C-385	0°	127307	139724	145919	160158	164530	180584	183142	201019	201753	221454	220365	241888	94.3
	45°	49764	49241	57038	56445	64313	63649	71588	70853	78862	78057	86137	85252	-
	90°	71756	68216	82243	78190	92730	88173	103226	98147	113714	108120	124210	118094	-
3C-435	0°	162999	179328	186753	205479	210515	231622	234277	257774	-	-	-	-	74.0
	45°	63711	63207	72995	72420	82287	81641	91571	90854	-	-	-	-	-
	90°	91872	87553	105262	100324	118652	113085	132042	125856	-	-	-	-	-
3C-485	0°	203214	223958	232746	256517	-	-	-	-	-	-	-	-	59.5
	45°	79429	78933	90978	90412	-	-	-	-	-	-	-	-	-
	90°	114537	109342	131184	125236	-	-	-	-	-	-	-	-	-
6C-485	0°	237569	261836	272102	299891	306635	337955	341168	376019	375700	414083	410233	452147	101.5
	45°	92863	92288	106359	105704	119856	119112	133361	132529	146857	145945	160353	159362	-
	90°	133901	127838	153371	146423	172832	164999	192293	183584	211754	202169	231224	220754	-
6C-535	0°	289926	319928	331946	366302	373957	412676	415977	459041	457996	505415	-	-	82.7
	45°	113324	112767	129750	129104	146175	145450	162601	161796	179027	178142	-	-	-
	90°	163406	156203	187089	178841	210780	201479	234463	224126	258146	246765	-	-	-
6C-585	0°	346646	382886	396887	438376	447129	493874	-	-	-	-	-	-	69.6
	45°	135502	134954	155141	154512	174779	174071	-	-	-	-	-	-	-
	90°	195381	186939	223701	214028	252013	241127	-	-	-	-	-	-	-

NOTE:

* MOP = Maximum Operating Pressure (psig)

BIFFI ALGA DOUBLE-ACTING PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, MODELS 1.5C-280 TO 6C-585

Model	Position	Operating supply pressure (psig)												MOP* (psig)
		101.5		116		130.5		145		159.5		174		
		OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	
1.5C-280	0°	81960	89066	93854	102005	105749	114935	117643	127865	-	-	-	-	149.3
	45°	32037	31391	36683	35949	41330	40506	45985	45064	-	-	-	-	-
	90°	46188	43489	52896	49799	59605	56109	66304	62428	-	-	-	-	-
1.5C-335	0°	117484	128502	-	-	-	-	-	-	-	-	-	-	104.4
	45°	45923	45285	-	-	-	-	-	-	-	-	-	-	-
	90°	66216	62738	-	-	-	-	-	-	-	-	-	-	-
1.5C-385	0°	-	-	-	-	-	-	-	-	-	-	-	-	78.3
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-
3C-335	0°	194461	212692	222648	243525	-	-	-	-	-	-	-	-	126.1
	45°	76013	74968	87031	85836	-	-	-	-	-	-	-	-	-
	90°	109607	103846	125493	118900	-	-	-	-	-	-	-	-	-
3C-385	0°	-	-	-	-	-	-	-	-	-	-	-	-	94.2
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-
3C-435	0°	-	-	-	-	-	-	-	-	-	-	-	-	73.9
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-
3C-485	0°	-	-	-	-	-	-	-	-	-	-	-	-	59.4
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-
6C-485	0°	479298	528265	-	-	-	-	-	-	-	-	-	-	101.5
	45°	187346	186195	-	-	-	-	-	-	-	-	-	-	-
	90°	270146	257924	-	-	-	-	-	-	-	-	-	-	-
6C-535	0°	-	-	-	-	-	-	-	-	-	-	-	-	82.6
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-
6C-585	0°	-	-	-	-	-	-	-	-	-	-	-	-	69.6
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE:

* MOP = Maximum Operating Pressure (psig)

BIFFI ALGA DOUBLE-ACTING PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb-in) - CANTED YOKE DESIGN, MODELS 14C-635 TO 18C2-685

Model	Position	Operating supply pressure (psig)												MOP* (psig)
		50.8		58		65.3		72.5		79.8		87		
		OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	
14C-635	0°	446403	490936	511105	562090	575799	633253	640501	704407	705195	775570	769897	846733	108.8
	45°	174495	173035	199780	198116	225073	223197	250367	248278	275651	273359	300944	298440	-
	90°	251606	239693	288076	274439	324538	309175	361009	343920	397471	378665	433942	413410	-
14C-735	0°	598083	659254	684760	754817	771437	850370	858114	945923	944799	1041477	-	-	81.2
	45°	233782	232366	267659	266049	301546	299723	335424	333406	369311	367080	-	-	-
	90°	337097	321875	385957	368532	434809	415180	483661	461837	532522	508486	-	-	-
18C-635	0°	513371	564577	587773	646404	662175	728240	736577	810076	810979	891903	885381	973739	140.7
	45°	200665	198992	229755	227834	258836	256677	287917	285519	316998	314370	346079	343212	-
	90°	289351	275642	331291	315600	373222	355558	415162	395507	457094	435464	499034	475422	-
18C-685	0°	597402	657829	683981	753179	770561	848529	857140	943870	943720	1039220	1030299	1134570	121.8
	45°	233516	231861	267359	265465	301201	299077	335043	332680	368886	366293	402728	399896	-
	90°	336716	321175	385515	367726	434314	414286	483113	460837	531912	507388	580710	553939	-
18C-735	0°	687795	758144	787473	868035	887151	977925	986837	1087807	1086515	1197697	1186192	1307588	104.4
	45°	268845	267217	307812	305953	346778	344681	385745	383417	424703	422145	463669	460881	-
	90°	387665	370160	443845	423809	500034	477458	556214	531115	612402	584764	668582	638412	-
18C2-635	0°	1022095	1134313	1170236	1298711	1318367	1463117	-	-	-	-	-	-	69.6
	45°	399524	399808	457430	457749	515336	515698	-	-	-	-	-	-	-
	90°	576091	553815	659582	634085	743081	714354	-	-	-	-	-	-	-
18C2-685	0°	1190148	1320818	1362643	1512253	-	-	-	-	-	-	-	-	60.9
	45°	465218	465545	532646	533018	-	-	-	-	-	-	-	-	-
	90°	670812	644873	768038	738347	-	-	-	-	-	-	-	-	-

NOTE:

* MOP = Maximum Operating Pressure (psig)

Model	Position	Operating supply pressure (psig)												MOP* (psig)
		101.5		116		130.5		145		159.5		174		
		OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	
14C-635	0°	899284	989049	-	-	-	-	-	-	-	-	-	-	108.8
	45°	351522	348602	-	-	-	-	-	-	-	-	-	-	-
	90°	506866	482891	-	-	-	-	-	-	-	-	-	-	-
14C-735	0°	-	-	-	-	-	-	-	-	-	-	-	-	81.2
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-
18C-635	0°	1034184	1137411	1182988	1301074	1331792	1464737	-	-	-	-	-	-	140.7
	45°	404250	400896	462413	458580	520584	516274	-	-	-	-	-	-	-
	90°	582905	555329	666777	635235	750648	715142	-	-	-	-	-	-	-
18C-685	0°	1203458	1325270	1376618	1515970	-	-	-	-	-	-	-	-	121.8
	45°	470422	467112	538107	534328	-	-	-	-	-	-	-	-	-
	90°	678308	647050	775915	740152	-	-	-	-	-	-	-	-	-
18C-735	0°	1385556	1527360	-	-	-	-	-	-	-	-	-	-	104.4
	45°	541602	538346	-	-	-	-	-	-	-	-	-	-	-
	90°	780951	745719	-	-	-	-	-	-	-	-	-	-	-
18C2-635	0°	-	-	-	-	-	-	-	-	-	-	-	-	69.6
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-
18C2-685	0°	-	-	-	-	-	-	-	-	-	-	-	-	60.9
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE:

* MOP = Maximum Operating Pressure (psig)

BIFFI ALGA DOUBLE-ACTING PNEUMATIC ACTUATOR
OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, MODELS 1.5S-280 TO 6S-585

Model	Position	Operating supply pressure (psig)														MOP* (psig)
		43.5		50.8		58		65.3		72.5		79.8		87		
		OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	
1.5S-280	0°	23408	25674	27453	30125	31506	34568	35550	39020	39604	43462	43657	47905	47702	52357	174.0
	45°	13691	13364	16063	15682	18426	18001	20798	20311	23169	22629	25532	24939	27904	27258	-
	90°	22576	20098	26488	23576	30391	27063	34303	30541	38205	34019	42117	37506	46020	40984	-
1.5S-335	0°	33621	37126	39418	43533	45215	49932	51011	56339	56808	62747	62605	69154	68402	75552	150.8
	45°	19665	19328	23054	22665	26453	26001	29842	29329	33232	32665	36621	36002	40011	39338	-
	90°	32435	29063	38028	34073	43622	39090	49215	44108	54808	49118	60401	54135	65994	59145	-
1.5S-385	0°	44710	49560	52365	58047	60030	66534	67685	75021	75340	83517	82995	92005	90651	100492	114.6
	45°	26152	25798	30630	30223	35117	34639	39595	39064	44073	43480	48551	47896	53029	52321	-
	90°	43135	38798	50525	45445	57914	52082	65295	58729	72685	65375	80075	72021	87465	78668	-
3S-335	0°	54923	60649	64393	71110	73862	81579	83332	92040	92801	102501	102271	112961	111749	123431	174.0
	45°	32568	32028	38179	37559	43799	43082	49418	48604	55029	54135	60649	59658	66260	65189	-
	90°	54516	48852	63924	57277	73322	65702	82721	74128	92120	82562	101518	90987	110926	99412	-
3S-385	0°	73039	80960	85553	94828	98058	108696	110572	122564	123077	136432	135582	150300	148096	164168	139.2
	45°	43312	42754	50728	50082	58145	57401	65561	64729	72986	72057	80402	79376	87819	86703	-
	90°	72508	65207	84925	76376	97341	87544	109758	98713	122174	109890	134591	121059	147007	132228	-
3S-435	0°	93571	103961	109536	121714	125502	139458	141476	157203	157442	174947	173407	192691	189372	210435	108.8
	45°	55481	54905	64950	64278	74420	73650	83889	83022	93359	92394	102828	101766	112298	111138	-
	90°	92881	83739	108731	98031	124581	112324	140432	126617	156282	140910	172133	155202	187983	169495	-
3S-485	0°	116714	129900	136564	151999	156415	174097	176265	196196	196116	218294	215958	240384	235808	262482	87.0
	45°	69207	68605	80978	80278	92748	91943	104519	103616	116289	115289	128060	126953	139830	138626	-
	90°	115855	104625	135555	122422	155264	140219	174965	158017	194673	175814	214374	193611	234074	211409	-
6S-485	0°	136202	151601	159371	177389	182531	203178	205701	228958	228861	254747	252030	280536	275191	306325	149.4
	45°	80916	80216	94677	93863	108439	107510	122201	121157	135963	134803	149724	148450	163486	162097	-
	90°	135724	122573	158804	143423	181894	164274	204975	185124	228056	205975	251136	226826	274226	247667	-
6S-535	0°	166300	185328	194488	216745	222675	248163	250862	279580	279049	310998	307237	342415	335424	373824	123.3
	45°	98793	98067	115537	114696	132290	131316	149034	147945	165778	164566	182522	181195	199267	197815	-
	90°	165716	149848	193806	175248	221887	200647	249977	226047	278067	251455	306157	276855	334238	302254	-
6S-585	0°	198842	221799	232543	259394	266243	296997	299944	334592	333645	372187	367355	409782	401055	447385	103.0
	45°	118121	117369	138149	137264	158167	157158	178195	177053	198213	196948	218232	216843	238260	236738	-
	90°	198134	179336	231720	209727	265305	240127	298891	270527	332468	300927	366054	331326	399639	361726	-

NOTE:

* MOP = Maximum Operating Pressure (psig)

BIFFI ALGA DOUBLE-ACTING PNEUMATIC ACTUATOR
OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, MODELS 1.5S-280 TO 6S-585

Model	Position	Operating supply pressure (psig)												MOP* (psig)
		101.5		116		130.5		145		159.5		174		
		OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	
1.5S-280	0°	55799	61251	63906	70145	72004	79031	80101	87925	88199	96819	96306	105713	174.0
	45°	32648	31887	37382	36515	42117	41144	46861	45781	51596	50410	56339	55038	-
	90°	53835	47949	61649	54905	69473	61870	77287	68835	85102	75791	92916	82756	-
1.5S-335	0°	79995	88367	91589	101173	103182	113988	114785	126794	-	-	-	-	150.8
	45°	46799	46002	53578	52675	60366	59348	67145	66012	-	-	-	-	-
	90°	77181	69172	88367	79199	99554	89235	110740	99262	-	-	-	-	-
1.5S-385	0°	105970	117475	-	-	-	-	-	-	-	-	-	-	114.6
	45°	61985	61162	-	-	-	-	-	-	-	-	-	-	-
	90°	102235	91960	-	-	-	-	-	-	-	-	-	-	-
3S-335	0°	130688	144352	149627	165283	168566	186204	187505	207134	206444	228056	225392	248986	174.0
	45°	77491	76234	88721	87288	99961	98341	111191	109395	122422	120449	133653	131502	-
	90°	129723	116271	148530	133122	167327	149981	186124	166831	204931	183682	223728	200541	-
3S-385	0°	173106	191903	198125	219639	223144	247375	-	-	-	-	-	-	139.2
	45°	102651	101350	117484	115997	132316	130644	-	-	-	-	-	-	-
	90°	171840	154565	196665	176903	221498	199240	-	-	-	-	-	-	-
3S-435	0°	221312	245933	-	-	-	-	-	-	-	-	-	-	108.8
	45°	131237	129883	-	-	-	-	-	-	-	-	-	-	-
	90°	219684	198081	-	-	-	-	-	-	-	-	-	-	-
3S-485	0°	-	-	-	-	-	-	-	-	-	-	-	-	87.0
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-
6S-485	0°	321529	357894	367859	409472	414189	461041	460519	512619	-	-	-	-	149.4
	45°	191010	189381	218533	216675	246057	243968	273580	271253	-	-	-	-	-
	90°	320388	289368	366558	331070	412720	372771	458890	414463	-	-	-	-	-
6S-535	0°	391798	436659	448173	499494	-	-	-	-	-	-	-	-	123.3
	45°	232764	231065	266252	264314	-	-	-	-	-	-	-	-	-
	90°	390418	353053	446589	403852	-	-	-	-	-	-	-	-	-
6S-585	0°	468457	522575	-	-	-	-	-	-	-	-	-	-	103.0
	45°	278297	276527	-	-	-	-	-	-	-	-	-	-	-
	90°	466802	422526	-	-	-	-	-	-	-	-	-	-	-

NOTE:

* MOP = Maximum Operating Pressure (psig)

BIFFI ALGA DOUBLE-ACTING PNEUMATIC ACTUATOR
OUTPUT TORQUES (lb-in) - SYMMETRIC YOKE DESIGN, MODELS 14S-635 TO 18S2-685

Model	Position	Operating supply pressure (psig)														MOP* (psig)
		43.5		50.8		58		65.3		72.5		79.8		87		
		OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	
14S-635	0°	259907	288660	303962	337592	348017	386533	392064	435464	436119	484396	480174	533328	524221	582268	158.1
	45°	152043	150291	177814	175770	203585	201249	229357	226728	255128	252198	280899	277678	306670	303157	-
	90°	250756	225976	293262	264279	335760	302590	378267	340893	420764	379205	463271	417508	505769	455819	-
14S-735	0°	348212	387639	407233	453350	466253	519053	525274	584764	584295	650475	643315	716186	702336	781898	117.5
	45°	203709	201824	238233	236038	272757	270244	307290	304458	341814	338672	376337	372886	410870	407100	-
	90°	335955	303458	392905	354894	449846	406339	506786	457775	563727	509220	620668	560656	677618	612093	-
18S-635	0°	298811	331866	349460	388126	400100	444385	450748	500645	501397	556895	552045	613155	602685	669414	174.0
	45°	174858	172841	204497	202143	234127	231445	263765	260739	293404	290041	323043	319343	352681	348646	-
	90°	288466	259960	337362	304024	386258	348097	435155	392161	484042	436234	532938	480298	581834	524371	-
18S-685	0°	347717	386683	406658	452235	465590	517787	524531	583330	583463	648882	642404	714434	701336	779977	174.0
	45°	203479	201391	237968	235534	272456	269668	306945	303812	341433	337946	375921	372089	410410	406224	-
	90°	335689	302900	392586	354248	449483	405596	506379	456934	563276	508282	620173	559630	677069	610977	-
18S-735	0°	400339	445659	468192	521203	536045	596747	603897	672290	671750	747834	739603	823377	807456	898921	152.3
	45°	234268	232109	273969	271447	313679	310794	353389	350141	393090	389489	432800	428827	472510	468174	-
	90°	386480	349097	451987	408268	517495	467448	583003	526619	648510	585799	714009	644970	779517	704150	-
18S2-635	0°	594915	666777	695752	779800	796589	892823	897434	1005847	998271	1118870	1099117	1231893	1199954	1344917	101.5
	45°	348124	347274	407135	406135	466147	464997	525159	523867	584171	582728	643174	641590	702186	700460	-
	90°	574321	522300	671680	610836	769030	699371	866380	787907	963730	876433	1061080	964969	1158430	1053504	-
18S2-685	0°	692734	776419	810156	908019	927569	1039627	1044990	1171236	1162412	1302835	1279834	1434443	1397256	1566043	88.5
	45°	405365	404374	474086	472917	542797	541461	611508	609995	680220	678538	748931	747082	817643	815625	-
	90°	668759	608181	782119	711275	895478	814368	1008829	917453	1122189	1020547	1235549	1123631	1348908	1226725	-

NOTE:

* MOP = Maximum Operating Pressure (psig)

Model	Position	Operating supply pressure (psig)												MOP* (psig)
		101.5		116		130.5		145		159.5		174		
		OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	OP	CL	
14S-635	0°	612332	680131	700433	778004	788544	875867	876646	973739	-	-	-	-	158.2
	45°	358213	354115	409755	405065	461297	456023	512840	506981	-	-	-	-	-
	90°	590773	532434	675777	609048	760781	685663	845786	762277	-	-	-	-	-
14S-735	0°	820377	913311	938419	1044734	-	-	-	-	-	-	-	-	117.5
	45°	479927	475519	548974	543948	-	-	-	-	-	-	-	-	-
	90°	791500	714974	905382	817855	-	-	-	-	-	-	-	-	-
18S-635	0°	703982	781933	805270	894443	906567	1006962	1007865	1119481	1109153	1231991	1210450	1344510	174.0
	45°	411950	407242	471227	465846	530504	524442	589773	583047	649050	641643	708327	700247	-
	90°	679618	612509	777411	700637	875194	788774	972987	876911	1070770	965048	1168563	1053185	-
18S-685	0°	819209	911081	937082	1042176	1054955	1173280	1172829	1304375	1290702	1435470	1408575	1566574	174.0
	45°	479387	474510	548364	542788	617332	611066	686309	679344	755286	747621	824262	815899	-
	90°	790863	713673	904656	816359	1018449	919055	1132242	1021750	1246036	1124437	1359829	1227132	-
18S-735	0°	943171	1050008	1078877	1201104	1214583	1352192	1350298	1503279	-	-	-	-	152.3
	45°	551921	546868	631332	625553	710744	704248	790163	782933	-	-	-	-	-
	90°	910532	822501	1041548	940852	1172554	1059203	1303570	1177554	-	-	-	-	-
18S2-635	0°	1401636	1570964	-	-	-	-	-	-	-	-	-	-	101.6
	45°	820209	818183	-	-	-	-	-	-	-	-	-	-	-
	90°	1353138	1230575	-	-	-	-	-	-	-	-	-	-	-
18S2-685	0°	-	-	-	-	-	-	-	-	-	-	-	-	88.5
	45°	-	-	-	-	-	-	-	-	-	-	-	-	-
	90°	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE:

* MOP = Maximum Operating Pressure (psig)

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, SPRING TO CLOSE. MODELS 1.5C-1100-385-CL TO 1.5C-1200-585-CL

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
1.5C-1100-385-CL	116.0	50489	28267	45728	-	-	-	-	-	-	-	-	-	-	-	-
1.5C-1100-435-CL	91.4	50374	28178	45498	-	-	-	-	-	-	65295	7505	7505	79650	15594	15594
1.5C-1100-485-CL	74.0	50303	28125	45347	57392	3044	3044	75234	13107	13107	93075	22090	23160	110926	29462	33223
1.5C-1100-535-CL	60.9	50286	28116	45321	80570	16116	16116	102288	25931	28355	124006	34745	40595	-	-	-
1.5C-1100-585-CL	43.5	50056	27939	44843	105642	27311	30240	131600	37790	44878	-	-	-	-	-	-
1.5C-1200-385-CL	127.6	58560	34400	62800	-	-	-	-	-	-	-	-	-	-	-	-
1.5C-1200-435-CL	100.1	58445	34311	62561	-	-	-	-	-	-	-	-	-	-	-	-
1.5C-1200-485-CL	79.8	58375	34258	62419	-	-	-	58233	3797	3797	76083	13859	13859	93925	22603	23913
1.5C-1200-535-CL	65.3	58357	34250	62384	63578	6806	6806	85287	18859	19045	107005	28019	31285	128714	36772	43524
1.5C-1200-585-CL	43.5	58127	34073	61915	88642	20346	20930	114608	31099	35568	-	-	-	-	-	-

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					72.5			79.8			87			101.5		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
1.5C-1100-385-CL	116.0	50489	28267	45728	63109	6275	6275	74358	12611	12611	85597	18815	18948	108094	28311	31621
1.5C-1100-435-CL	91.4	50374	28178	45498	94005	22479	23683	108359	28426	31772	122714	34223	39869	-	-	-
1.5C-1100-485-CL	74.0	50303	28125	45347	128768	36657	43277	-	-	-	-	-	-	-	-	-
1.5C-1100-535-CL	60.9	50286	28116	45321	-	-	-	-	-	-	-	-	-	-	-	-
1.5C-1100-585-CL	43.5	50056	27939	44843	-	-	-	-	-	-	-	-	-	-	-	-
1.5C-1200-385-CL	127.6	58560	34400	62800	-	-	-	-	-	-	68605	9638	9638	91093	21399	22320
1.5C-1200-435-CL	100.1	58445	34311	62561	77004	14372	14372	91359	21523	22470	105713	27488	30559	-	-	-
1.5C-1200-485-CL	79.8	58375	34258	62419	111776	29957	33975	129617	37126	44029	-	-	-	-	-	-
1.5C-1200-535-CL	65.3	58357	34250	62384	-	-	-	-	-	-	-	-	-	-	-	-
1.5C-1200-585-CL	43.5	58127	34073	61915	-	-	-	-	-	-	-	-	-	-	-	-

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)								
					130.5			145			174		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
1.5C-1100-385-CL	116.0	50489	28267	45728	-	-	-	-	-	-	-	-	-
1.5C-1100-435-CL	91.4	50374	28178	45498	-	-	-	-	-	-	-	-	-
1.5C-1100-485-CL	74.0	50303	28125	45347	-	-	-	-	-	-	-	-	-
1.5C-1100-535-CL	60.9	50286	28116	45321	-	-	-	-	-	-	-	-	-
1.5C-1100-585-CL	43.5	50056	27939	44843	-	-	-	-	-	-	-	-	-
1.5C-1200-385-CL	127.6	58560	34400	62800	-	-	-	-	-	-	-	-	-
1.5C-1200-435-CL	100.1	58445	34311	62561	-	-	-	-	-	-	-	-	-
1.5C-1200-485-CL	79.8	58375	34258	62419	-	-	-	-	-	-	-	-	-
1.5C-1200-535-CL	65.3	58357	34250	62384	-	-	-	-	-	-	-	-	-
1.5C-1200-585-CL	43.5	58127	34073	61915	-	-	-	-	-	-	-	-	-

NOTES:

- MOP: Maximum Operating Pressure
- BTC: Break to Close
- RTC: Run to Close
- ETC: End to Close
- BTO: Break to Open
- RTO: Run to Open
- ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb-in) - CANTED YOKE DESIGN, SPRING TO CLOSE. MODELS 3C-2000-385-CL TO 14C-8300-935-CL

Model	MOP (psig)	Operating supply pressure (psig)														
		BTC	RTC	ETC	43.5			50.8			58			65.3		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
3C-2000-385-CL	143.6	86155	51826	100067	-	-	-	-	-	-	-	-	-	-	-	-
3C-2000-435-CL	113.1	85960	51684	99686	-	-	-	-	-	-	-	-	-	107554	21824	21824
3C-2000-485-CL	89.9	85845	51596	99439	-	-	-	100253	17709	17709	129785	31993	34356	159327	44046	51003
3C-2000-535-CL	74.0	85818	51578	99386	109085	22691	22691	145025	38267	42949	180974	52711	63207	216914	66977	83464
3C-2000-585-CL	62.4	85438	51295	98607	150574	40515	46073	193550	57720	70296	236525	74721	94518	-	-	-
6C-2500-485-CL	143.6	122962	75021	149556	-	-	-	-	-	-	-	-	-	153096	33966	34338
6C-2500-535-CL	117.5	122935	74995	149494	-	-	-	136387	24922	24922	178407	44763	48604	220427	61826	72287
6C-2500-585-CL	98.6	122484	74667	148583	142874	28577	28577	193116	50799	56888	243348	70995	85208	293590	90916	113528
6C-2500-635-CL	84.1	121997	74305	147591	195709	51852	58357	254898	75588	91721	314095	99014	125086	373293	122334	158450
6C-2500-735-CL	62.4	120909	73499	145361	314370	99120	125236	393675	130334	169938	472979	161468	214639	-	-	-
6C-3800-535-CL	130.5	166522	104766	224259	-	-	-	-	-	-	-	-	-	145963	22939	22939
6C-3800-585-CL	110.2	166079	104439	223347	-	-	-	118652	7549	7549	168893	35869	35869	219135	57437	64180
6C-3800-635-CL	92.8	165592	104085	222356	121245	9009	9009	180443	41268	42374	239640	65747	75738	298829	89394	109103
6C-3800-735-CL	69.6	164504	103288	220117	239906	65862	75889	319220	97474	120590	398524	128768	165291	477829	159946	209993
14C-5100-635-CL	149.4	198975	125405	269518	-	-	-	170832	26187	26187	235534	58242	62649	300227	84553	99120
14C-5100-735-CL	111.7	197780	124528	267075	235826	58366	62817	322512	93465	111678	409189	127829	160530	495866	161990	209391
14C-5100-785-CL	98.6	197125	124050	265721	307776	87571	103368	406649	126821	159096	505521	165787	214825	604393	204621	270553
14C-5100-835-CL	87.0	196417	123537	264279	384453	118059	146591	496326	162167	209648	608190	206108	272695	720063	249968	335751
14C-5100-885-CL	76.9	195674	122988	262748	465864	150176	192479	591534	199576	263305	717204	248844	334141	842874	298068	404967
14C-5100-935-CL	69.6	194877	122413	261128	552010	184045	241030	692282	239074	320096	832546	294032	399153	972819	348947	478219
14C-5400-635-CL	156.6	258393	158937	322963	-	-	-	-	-	-	-	-	-	-	-	-
14C-5400-735-CL	124.7	257199	158070	320520	-	-	-	269279	47011	47011	355956	88686	95863	442642	123935	144724
14C-5400-785-CL	101.5	256544	157583	319166	254544	38710	38710	353416	87633	94438	452297	127812	150167	551169	167168	205895
14C-5400-835-CL	89.9	255836	157070	317724	331229	78296	81924	443093	124112	144981	554966	168672	208037	666830	212860	271084
14C-5400-885-CL	79.8	255092	156521	316193	412640	111855	127812	538310	162070	198647	663971	211727	269474	789641	261181	340309
14C-5400-935-CL	72.5	254296	155937	314573	498786	146361	176363	639050	201913	255429	779322	257119	334486	919595	312201	413552
14C-8300-735-CL	121.8	331618	204833	420322	-	-	-	-	-	-	-	-	-	343247	61977	61977
14C-8300-785-CL	108.8	330955	204355	418968	-	-	-	254030	11691	11691	352903	67419	67419	451775	113386	123148
14C-8300-835-CL	97.2	330255	203833	417525	-	-	-	343699	62233	62233	455571	114962	125289	567444	160327	188346
14C-8300-885-CL	85.6	329503	203293	415994	313246	45073	45073	438916	108050	115900	564586	159176	186735	690247	209205	257562
14C-8300-935-CL	76.9	328716	202709	414375	399392	91244	93624	539664	149167	172681	679928	205116	251747	820200	260562	330804

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb-in) - CANTED YOKE DESIGN, SPRING TO CLOSE. MODELS 3C-2000-385-CL TO 14C-8300-935-CL

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					72.5			79.8			87			101.5		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
3C-2000-385-CL	143.6	86155	51826	100067	-	-	-	98793	16886	16886	117404	26727	27382	154636	42153	48356
3C-2000-435-CL	113.1	85960	51684	99686	131316	32630	35223	155079	42338	48613	178841	51861	62003	226356	70703	88792
3C-2000-485-CL	89.9	85845	51596	99439	188859	55852	67649	218400	67561	84305	247933	79216	100952	-	-	-
3C-2000-535-CL	74.0	85818	51578	99386	252853	81155	103722	-	-	-	-	-	-	-	-	-
3C-2000-585-CL	62.4	85438	51295	98607	-	-	-	-	-	-	-	-	-	-	-	-
6C-2500-485-CL	143.6	122962	75021	149556	187629	48560	53799	222162	62525	73269	256694	76305	92730	325760	103616	131653
6C-2500-535-CL	117.5	122935	74995	149494	262447	78579	95969	304467	95208	119652	346478	111776	143335	430517	144813	190700
6C-2500-585-CL	98.6	122484	74667	148583	343831	110731	141839	394073	130493	170159	444314	150229	198479	-	-	-
6C-2500-635-CL	84.1	121997	74305	147591	432482	145583	191815	491679	168805	225179	-	-	-	-	-	-
6C-2500-735-CL	62.4	120909	73499	145361	-	-	-	-	-	-	-	-	-	-	-	-
6C-3800-535-CL	130.5	166522	104766	224259	187983	44516	46631	230003	61853	70313	272022	78730	93996	356062	112032	141361
6C-3800-585-CL	110.2	166079	104439	223347	269376	77668	92500	319609	97633	120820	369850	117475	149131	470333	156999	205763
6C-3800-635-CL	92.8	165592	104085	222356	358027	112811	142467	417224	136131	175832	476413	159389	209196	-	-	-
6C-3800-735-CL	69.6	164504	103288	220117	-	-	-	-	-	-	-	-	-	-	-	-
14C-5100-635-CL	149.4	198975	125405	269518	364930	110315	135582	429623	135901	172053	494326	161380	208515	623713	212196	281448
14C-5100-735-CL	111.7	197780	124528	267075	582542	196045	258243	669228	230038	307095	755905	264022	355956	929259	331893	453660
14C-5100-785-CL	98.6	197125	124050	265721	703265	243384	326282	802137	282129	382010	901010	320830	437739	-	-	-
14C-5100-835-CL	87.0	196417	123537	264279	831935	293793	398808	943799	337583	461864	1055672	381382	524911	-	-	-
14C-5100-885-CL	76.9	195674	122988	262748	968535	347265	475803	-	-	-	-	-	-	-	-	-
14C-5100-935-CL	69.6	194877	122413	261128	-	-	-	-	-	-	-	-	-	-	-	-
14C-5400-635-CL	156.6	258393	158937	322963	311697	69818	70915	376399	97111	107386	441093	123307	143848	570489	174823	216781
14C-5400-735-CL	124.7	257199	158070	320520	529319	158504	193576	615995	192806	242428	702672	226976	291289	876035	295112	389002
14C-5400-785-CL	101.5	256544	157583	319166	650041	206240	261624	748914	245172	317352	847786	284023	373081	1045530	361584	484538
14C-5400-835-CL	89.9	255836	157070	317724	778703	256880	334141	890576	300829	397197	1002440	344690	460244	-	-	-
14C-5400-885-CL	79.8	255092	156521	316193	915311	310529	411136	1040981	359797	481971	-	-	-	-	-	-
14C-5400-935-CL	72.5	254296	155937	314573	1059858	367204	492609	-	-	-	-	-	-	-	-	-
14C-8300-735-CL	121.8	331618	204833	420322	429924	104288	110837	516601	139865	159689	603278	174646	208541	776641	243375	306254
14C-8300-785-CL	108.8	330955	204355	418968	550647	153574	178876	649519	193054	234605	748391	232215	290333	946136	310148	401790
14C-8300-835-CL	97.2	330255	203833	417525	679308	204869	251402	791181	249119	314449	903054	293192	377506	-	-	-
14C-8300-885-CL	85.6	329503	203293	415994	815917	258880	328397	941587	308361	399224	-	-	-	-	-	-
14C-8300-935-CL	76.9	328716	202709	414375	960464	315777	409870	-	-	-	-	-	-	-	-	-

NOTES:

- MOP: Maximum Operating Pressure
- BTC: Break to Close
- RTC: Run to Close
- ETC: End to Close
- BTO: Break to Open
- RTO: Run to Open
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BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, SPRING TO CLOSE. MODELS 3C-2000-385-CL TO 14C-8300-985-CL

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)								
					130.5			145			174		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
3C-2000-385-CL	143.6	86155	51826	100067	229082	71782	90323	-	-	-	-	-	-
3C-2000-435-CL	113.1	85960	51684	99686	-	-	-	-	-	-	-	-	-
3C-2000-485-CL	89.9	85845	51596	99439	-	-	-	-	-	-	-	-	-
3C-2000-535-CL	74.0	85818	51578	99386	-	-	-	-	-	-	-	-	-
3C-2000-585-CL	62.4	85438	51295	98607	-	-	-	-	-	-	-	-	-
6C-2500-485-CL	143.6	122962	75021	149556	463882	157902	209506	-	-	-	-	-	-
6C-2500-535-CL	117.5	122935	74995	149494	-	-	-	-	-	-	-	-	-
6C-2500-585-CL	98.6	122484	74667	148583	-	-	-	-	-	-	-	-	-
6C-2500-635-CL	84.1	121997	74305	147591	-	-	-	-	-	-	-	-	-
6C-2500-735-CL	62.4	120909	73499	145361	-	-	-	-	-	-	-	-	-
6C-3800-535-CL	130.5	166522	104766	224259	524132	178124	236091	-	-	-	-	-	-
6C-3800-585-CL	110.2	166079	104439	223347	-	-	-	-	-	-	-	-	-
6C-3800-635-CL	92.8	165592	104085	222356	-	-	-	-	-	-	-	-	-
6C-3800-735-CL	69.6	164504	103288	220117	-	-	-	-	-	-	-	-	-
14C-5100-635-CL	149.4	198975	125405	269518	882504	313591	427313	1011900	364239	500246	-	-	-
14C-5100-735-CL	111.7	197780	124528	267075	-	-	-	-	-	-	-	-	-
14C-5100-785-CL	98.6	197125	124050	265721	-	-	-	-	-	-	-	-	-
14C-5100-835-CL	87.0	196417	123537	264279	-	-	-	-	-	-	-	-	-
14C-5100-885-CL	76.9	195674	122988	262748	-	-	-	-	-	-	-	-	-
14C-5100-935-CL	69.6	194877	122413	261128	-	-	-	-	-	-	-	-	-
14C-5400-635-CL	156.6	258393	158937	322963	829280	276748	362646	958676	327530	435579	-	-	-
14C-5400-735-CL	124.7	257199	158070	320520	-	-	-	-	-	-	-	-	-
14C-5400-785-CL	101.5	256544	157583	319166	-	-	-	-	-	-	-	-	-
14C-5400-835-CL	89.9	255836	157070	317724	-	-	-	-	-	-	-	-	-
14C-5400-885-CL	79.8	255092	156521	316193	-	-	-	-	-	-	-	-	-
14C-5400-935-CL	72.5	254296	155937	314573	-	-	-	-	-	-	-	-	-
14C-8300-735-CL	121.8	331618	204833	420322	-	-	-	-	-	-	-	-	-
14C-8300-785-CL	108.8	330955	204355	418968	-	-	-	-	-	-	-	-	-
14C-8300-835-CL	97.2	330255	203833	417525	-	-	-	-	-	-	-	-	-
14C-8300-885-CL	85.6	329503	203293	415994	-	-	-	-	-	-	-	-	-
14C-8300-935-CL	76.9	328716	202709	414375	-	-	-	-	-	-	-	-	-

NOTES:

- MOP: Maximum Operating Pressure
- BTC: Break to Close
- RTC: Run to Close
- ETC: End to Close
- BTO: Break to Open
- RTO: Run to Open
- ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb-in) - CANTED YOKE DESIGN, SPRING TO CLOSE. MODELS 18C-9600-835-CL TO 18C-11000-1300-CL

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
18C-9600-835-CL	116.0	536354	313157	563480	-	-	-	-	-	-	-	-	-	-	-	-
18C-9600-935-CL	97.2	534584	311839	559851	-	-	-	537620	31267	31267	698929	122183	122183	860238	203559	213108
18C-9600-1000-CL	85.6	533328	310901	557276	513238	17523	17523	697752	121528	121528	882265	212887	225525	1066788	288696	329521
18C-9600-1100-CL	71.1	531230	309334	552975	741851	146379	146379	965119	247296	272217	1188387	337592	398064	1411646	426464	523902
18C-9600-1200-CL	59.5	528929	307626	548266	992244	258402	287510	1257948	365390	437270	1523651	470811	587029	-	-	-
18C-9600-1300-CL	50.8	526433	305759	543151	1264400	367956	440907	1576238	491582	616668	-	-	-	-	-	-
18C-9800-835-CL	130.5	680733	394887	699327	-	-	-	-	-	-	-	-	-	-	-	-
18C-9800-935-CL	103.0	678963	393568	695707	-	-	-	-	-	-	-	-	-	-	-	-
18C-9800-1000-CL	89.9	677706	392639	693132	-	-	-	-	-	-	-	-	-	931489	172079	172079
18C-9800-1100-CL	75.4	675600	391073	688831	-	-	-	829820	114776	114776	1053079	236561	240623	1276347	330565	366461
18C-9800-1200-CL	62.4	673299	389356	684123	856937	130068	130068	1122649	266677	279828	1388353	376098	429588	-	-	-
18C-9800-1300-CL	43.5	670803	387488	678999	1129101	269421	283466	1440939	397330	459227	-	-	-	-	-	-
18C-10500-935-CL	105.9	761348	437340	755870	-	-	-	-	-	-	-	-	-	-	-	-
18C-10500-1000-CL	92.8	760091	436402	753294	-	-	-	-	-	-	-	-	-	-	-	-
18C-10500-1100-CL	76.9	757985	434827	748993	-	-	-	769888	25860	25860	993156	151707	151707	1216424	272996	277545
18C-10500-1200-CL	63.8	755684	433110	744285	797013	41153	41153	1062717	190912	190912	1328429	321184	340672	-	-	-
18C-10500-1300-CL	43.5	753188	431234	739170	1069177	194550	194550	1381016	343168	370311	-	-	-	-	-	-
18C-11000-935-CL	114.6	852556	505344	942684	-	-	-	-	-	-	-	-	-	-	-	-
18C-11000-1000-CL	100.1	851299	504415	940109	-	-	-	-	-	-	-	-	-	-	-	-
18C-11000-1100-CL	82.7	849193	502857	935808	-	-	-	-	-	-	-	-	-	1030379	172681	172681
18C-11000-1200-CL	69.6	846892	501149	931100	-	-	-	876672	86049	86049	1142376	235808	235808	1408079	354389	385568
18C-11000-1300-CL	59.5	844396	499290	925976	883133	89686	89686	1194962	263358	265447	1506801	394905	441208	-	-	-

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					72.5			79.8			87			101.5		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
18C-9600-835-CL	116.0	536354	313157	563480	-	-	-	826864	189195	194302	955517	243348	266810	1212822	347363	411835
18C-9600-935-CL	97.2	534584	311839	559851	1021547	270350	304024	1182856	335380	394949	1344165	399701	485865	-	-	-
18C-9600-1000-CL	85.6	533328	310901	557276	1251302	362744	433526	1435824	436048	537522	-	-	-	-	-	-
18C-9600-1100-CL	71.1	531230	309334	552975	-	-	-	-	-	-	-	-	-	-	-	-
18C-9600-1200-CL	59.5	528929	307626	548266	-	-	-	-	-	-	-	-	-	-	-	-
18C-9600-1300-CL	50.8	526433	305759	543151	-	-	-	-	-	-	-	-	-	-	-	-
18C-9800-835-CL	130.5	680733	394887	699327	-	-	-	-	-	-	820218	109368	109368	1077514	247296	254393
18C-9800-935-CL	103.0	678963	393568	695707	886248	146583	146583	1047557	234100	237507	1208866	302794	328424	1531484	433685	510264
18C-9800-1000-CL	89.9	677706	392639	693132	1116003	263845	276085	1300516	340451	380081	1485039	415047	484086	-	-	-
18C-9800-1100-CL	75.4	675600	391073	688831	1499615	420897	492299	-	-	-	-	-	-	-	-	-
18C-9800-1200-CL	62.4	673299	389356	684123	-	-	-	-	-	-	-	-	-	-	-	-
18C-9800-1300-CL	43.5	670803	387488	678999	-	-	-	-	-	-	-	-	-	-	-	-
18C-10500-935-CL	105.9	761348	437340	755870	-	-	-	987633	148592	148592	1148942	239508	239508	1471560	380497	421349
18C-10500-1000-CL	92.8	760091	436402	753294	1056079	187169	187169	1240593	283634	291165	1425116	361407	395170	-	-	-
18C-10500-1100-CL	76.9	757985	434827	748993	1439691	367408	403383	-	-	-	-	-	-	-	-	-
18C-10500-1200-CL	63.8	755684	433110	744285	-	-	-	-	-	-	-	-	-	-	-	-
18C-10500-1300-CL	43.5	753188	431234	739170	-	-	-	-	-	-	-	-	-	-	-	-
18C-11000-935-CL	114.6	852556	505344	942684	-	-	-	-	-	-	962898	134644	134644	1285516	303015	316485
18C-11000-1000-CL	100.1	851299	504415	940109	-	-	-	1054548	186301	186301	1239062	282961	290307	-	-	-
18C-11000-1100-CL	82.7	849193	502857	935808	1253638	289307	298519	1476906	382683	424366	-	-	-	-	-	-
18C-11000-1200-CL	69.6	846892	501149	931100	-	-	-	-	-	-	-	-	-	-	-	-
18C-11000-1300-CL	59.5	844396	499290	925976	-	-	-	-	-	-	-	-	-	-	-	-

NOTES:

- MOP: Maximum Operating Pressure
- BTC: Break to Close
- RTC: Run to Close
- ETC: End to Close
- BTO: Break to Open
- RTO: Run to Open
- ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, SPRING TO CLOSE. MODELS 18C-9600-835-CL TO 18C-11000-1300-CL

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)								
					130.5			145			174		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
18C-9600-835-CL	116.0	536354	313157	563480	-	-	-	-	-	-	-	-	-
18C-9600-935-CL	97.2	534584	311839	559851	-	-	-	-	-	-	-	-	-
18C-9600-1000-CL	85.6	533328	310901	557276	-	-	-	-	-	-	-	-	-
18C-9600-1100-CL	71.1	531230	309334	552975	-	-	-	-	-	-	-	-	-
18C-9600-1200-CL	59.5	528929	307626	548266	-	-	-	-	-	-	-	-	-
18C-9600-1300-CL	50.8	526433	305759	543151	-	-	-	-	-	-	-	-	-
18C-9800-835-CL	130.5	680733	394887	699327	1592115	457917	544443	-	-	-	-	-	-
18C-9800-935-CL	103.0	678963	393568	695707	-	-	-	-	-	-	-	-	-
18C-9800-1000-CL	89.9	677706	392639	693132	-	-	-	-	-	-	-	-	-
18C-9800-1100-CL	75.4	675600	391073	688831	-	-	-	-	-	-	-	-	-
18C-9800-1200-CL	62.4	673299	389356	684123	-	-	-	-	-	-	-	-	-
18C-9800-1300-CL	43.5	670803	387488	678999	-	-	-	-	-	-	-	-	-
18C-10500-935-CL	105.9	761348	437340	755870	-	-	-	-	-	-	-	-	-
18C-10500-1000-CL	92.8	760091	436402	753294	-	-	-	-	-	-	-	-	-
18C-10500-1100-CL	76.9	757985	434827	748993	-	-	-	-	-	-	-	-	-
18C-10500-1200-CL	63.8	755684	433110	744285	-	-	-	-	-	-	-	-	-
18C-10500-1300-CL	43.5	753188	431234	739170	-	-	-	-	-	-	-	-	-
18C-11000-935-CL	114.6	852556	505344	942684	-	-	-	-	-	-	-	-	-
18C-11000-1000-CL	100.1	851299	504415	940109	-	-	-	-	-	-	-	-	-
18C-11000-1100-CL	82.7	849193	502857	935808	-	-	-	-	-	-	-	-	-
18C-11000-1200-CL	69.6	846892	501149	931100	-	-	-	-	-	-	-	-	-
18C-11000-1300-CL	59.5	844396	499290	925976	-	-	-	-	-	-	-	-	-

NOTES:

- MOP: Maximum Operating Pressure
- BTC: Break to Close
- RTC: Run to Close
- ETC: End to Close
- BTO: Break to Open
- RTO: Run to Open
- ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, SPRING TO OPEN. MODELS 1.5C-1100-385-OP TO 1.5C-1200-585-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
1.5C-1100-385-OP	142.1	89128	20390	20939	-	-	-	-	-	-	-	-	-	-	-	-
1.5C-1100-435-OP	111.7	88916	20293	20815	-	-	-	-	-	-	34842	13682	13682	42622	22275	29612
1.5C-1100-485-OP	89.9	88783	20240	20744	30559	4912	4912	40232	20417	24718	49896	27824	44524	59569	35064	64322
1.5C-1100-535-OP	74.0	88757	20222	20727	43126	22665	30639	54888	31568	54737	66658	40321	78836	78420	48949	102934
1.5C-1100-585-OP	60.9	88332	20036	20488	56702	32922	58463	70773	43356	87270	84845	53640	116085	-	-	-
1.5C-1200-385-OP	153.7	104067	26816	29630	-	-	-	-	-	-	-	-	-	-	-	-
1.5C-1200-435-OP	120.4	103855	26727	29506	-	-	-	-	-	-	-	-	-	33409	11293	11293
1.5C-1200-485-OP	95.7	103722	26674	29435	-	-	-	31019	6390	6390	40692	20877	26196	50357	28258	46002
1.5C-1200-535-OP	78.3	103695	26665	29417	33913	12319	12319	45684	24718	36418	57445	33568	60516	69207	42294	84615
1.5C-1200-585-OP	66.7	103271	26488	29178	47498	26099	40135	61561	36630	68950	75632	46994	97757	89695	57251	126573

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					72.5			79.8			87			101.5		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
1.5C-1100-385-OP	142.1	89128	20390	20939	33657	11257	11257	39754	20045	23745	45843	24753	36223	58029	33913	61180
1.5C-1100-435-OP	111.7	88916	20293	20815	50401	28196	45542	58180	34028	61481	65959	39798	77411	81517	51206	109271
1.5C-1100-485-OP	89.9	88783	20240	20744	69242	42223	84128	78907	49303	103934	88580	56357	123741	-	-	-
1.5C-1100-535-OP	74.0	88757	20222	20727	90190	57525	127033	-	-	-	-	-	-	-	-	-
1.5C-1100-585-OP	60.9	88332	20036	20488	-	-	-	-	-	-	-	-	-	-	-	-
1.5C-1200-385-OP	153.7	104067	26816	29630	-	-	-	30541	5416	5416	36639	17665	17895	48825	27099	42852
1.5C-1200-435-OP	120.4	103855	26727	29506	41188	21267	27223	48967	27214	43153	56746	33046	59083	72305	44560	90951
1.5C-1200-485-OP	95.7	103722	26674	29435	60030	35489	65809	69703	42648	85606	79367	49719	105412	-	-	-
1.5C-1200-535-OP	78.3	103695	26665	29417	80978	50896	108713	-	-	-	-	-	-	-	-	-
1.5C-1200-585-OP	66.7	103271	26488	29178	-	-	-	-	-	-	-	-	-	-	-	-

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)								
					130.5			145			174		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	BTC
1.5C-1100-385-OP	142.1	89128	20390	20939	82402	51861	111094	-	-	-	-	-	-
1.5C-1100-435-OP	111.7	88916	20293	20815	-	-	-	-	-	-	-	-	-
1.5C-1100-485-OP	89.9	88783	20240	20744	-	-	-	-	-	-	-	-	-
1.5C-1100-535-OP	74.0	88757	20222	20727	-	-	-	-	-	-	-	-	-
1.5C-1100-585-OP	60.9	88332	20036	20488	-	-	-	-	-	-	-	-	-
1.5C-1200-385-OP	153.7	104067	26816	29630	73198	45215	92775	85385	54109	117732	-	-	-
1.5C-1200-435-OP	120.4	103855	26727	29506	-	-	-	-	-	-	-	-	-
1.5C-1200-485-OP	95.7	103722	26674	29435	-	-	-	-	-	-	-	-	-
1.5C-1200-535-OP	78.3	103695	26665	29417	-	-	-	-	-	-	-	-	-
1.5C-1200-585-OP	66.7	103271	26488	29178	-	-	-	-	-	-	-	-	-

NOTES:

- MOP: Maximum Operating Pressure
- BTC: Break to Close
- RTC: Run to Close
- ETC: End to Close
- BTO: Break to Open
- RTO: Run to Open
- ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, SPRING TO OPEN. MODELS 3C-2000-385-OP TO 1.5C-1100-385-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
3C-2000-385-OP	161.0	153105	41542	47498	-	-	-	-	-	-	-	-	-	-	-	-
3C-2000-435-OP	126.2	152760	41400	47303	-	-	-	-	-	-	45002	15797	15797	57879	30612	42170
3C-2000-485-OP	104.4	152539	41312	47179	-	-	-	53923	27541	34064	69924	39737	66844	85934	51657	99616
3C-2000-535-OP	82.7	152494	41294	47153	58711	31249	43869	78181	45905	83756	97660	60304	123643	117130	74517	163530
3C-2000-585-OP	69.6	151786	41011	46755	81190	48144	89907	104474	65278	137600	127759	82243	185292	151043	99147	232985
6C-2500-485-OP	152.3	218330	60985	71101	-	-	-	-	-	-	64145	29090	29090	82854	45073	67410
6C-2500-535-OP	124.7	218268	60959	71074	-	-	-	73800	38126	48861	96562	55410	95500	119333	72340	142131
6C-2500-585-OP	113.1	217445	60631	70605	77314	40843	56065	104536	61357	111820	131759	81464	167575	158981	101324	223330
6C-2500-635-OP	88.5	216551	60269	70101	105943	62401	114696	138016	86040	180390	170088	109404	246083	202161	132697	311777
6C-2500-735-OP	66.7	214542	59463	68968	170239	109519	246384	213205	140715	334397	256181	171840	422411	299157	202939	510424
6C-3800-535-OP	140.7	297537	88881	108377	-	-	-	-	-	-	-	-	-	78951	39365	44896
6C-3800-585-OP	117.5	296714	88553	107908	-	-	-	64154	14585	14585	91376	49002	70340	118599	69481	126095
6C-3800-635-OP	100.1	295820	88199	107404	65561	17461	17461	97633	53764	83155	129706	77738	148848	161778	101297	214542
6C-3800-735-OP	74.0	293811	87403	106271	129856	77845	149149	172823	109359	237171	215798	140609	325184	258774	171779	413198
14C-5100-635-OP	152.3	355505	106581	130272	-	-	-	92491	45878	51419	127546	72703	123219	162601	98775	195019
14C-5100-735-OP	107.3	353301	105713	129033	127706	72818	123546	174672	107651	219746	221639	141910	315936	268606	176027	412136
14C-5100-785-OP	100.1	352088	105227	128343	166690	101793	203391	220268	140910	313122	273837	179823	422853	327415	218648	532575
14C-5100-835-OP	88.5	350787	104713	127617	208241	132157	288492	268854	176204	412640	329468	220135	536797	390090	264031	660945
14C-5100-885-OP	78.3	349407	104165	126838	252349	164229	378842	320450	213604	518309	388542	262907	657767	456633	312140	797235
14C-5100-935-OP	69.6	347947	103580	126015	299033	198098	474440	375036	253128	630111	451040	308095	785783	527044	363045	941454
14C-5400-635-OP	165.3	459970	130874	154486	-	-	-	-	-	-	-	-	-	133370	64685	66879
14C-5400-735-OP	123.3	457766	129998	153247	-	-	-	145441	74243	91606	192408	109988	187806	239375	144936	283997
14C-5400-785-OP	104.4	456545	129511	152565	137458	67950	75260	191027	108961	184983	244605	148795	294714	298174	188001	404445
14C-5400-835-OP	95.7	455253	128989	151831	179000	99917	160353	239623	145113	284510	300236	189505	408658	360850	233622	532805
14C-5400-885-OP	85.6	453872	128440	151052	223117	132883	250703	291209	182921	390170	359301	232490	529637	427393	281908	669104
14C-5400-935-OP	75.4	452412	127856	150229	269792	167292	346309	345796	222666	501981	421800	277846	657644	497804	332910	813315
14C-8300-735-OP	134.9	589286	169053	200656	-	-	-	-	-	-	139334	26488	26488	186301	96111	122679
14C-8300-785-OP	118.9	588065	168566	199966	-	-	-	137954	23665	23665	191532	100164	133396	245101	140759	243127
14C-8300-835-OP	111.7	586764	168044	199240	-	-	-	186549	96306	123192	247163	142299	247340	307776	187328	371496
14C-8300-885-OP	92.8	585383	167495	198461	170044	83314	89385	238136	135538	228852	306228	186186	368319	374320	236021	507786
14C-8300-935-OP	84.1	583923	166911	197638	216719	119413	184992	292723	176186	340663	368726	231941	496326	444730	287271	651997

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, SPRING TO OPEN. MODELS 3C-2000-385-OP TO 1.5C-1100-385-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					72.5			79.8			87			101.5		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
3C-2000-385-OP	161.0	153105	41542	47498	43046	11788	11788	53135	26931	32444	63216	34683	53100	83385	49772	94412
3C-2000-435-OP	126.2	152760	41400	47303	70756	40356	68534	83633	49958	94907	96500	59454	121280	122254	78234	174018
3C-2000-485-OP	104.4	152539	41312	47179	101934	63428	132396	117944	75101	165176	133945	86739	197957	165955	109961	263518
3C-2000-535-OP	82.7	152494	41294	47153	136609	88677	203417	156079	102802	243304	-	-	-	-	-	-
3C-2000-585-OP	69.6	151786	41011	46755	-	-	-	-	-	-	-	-	-	-	-	-
6C-2500-485-OP	152.3	218330	60985	71101	101563	59145	105740	120280	73030	144060	138989	86748	182381	176407	114006	259031
6C-2500-535-OP	124.7	218268	60959	71074	142104	89022	188762	164867	105607	235392	187638	122157	282023	233171	155176	375284
6C-2500-585-OP	113.1	217445	60631	70605	186204	121121	279085	213427	140865	334840	240649	160592	390595	295086	200010	502105
6C-2500-635-OP	88.5	216551	60269	70101	234242	155955	377470	266314	179177	443164	298387	202391	508857	-	-	-
6C-2500-735-OP	66.7	214542	59463	68968	-	-	-	-	-	-	-	-	-	-	-	-
6C-3800-535-OP	140.7	297537	88881	108377	101722	56844	91527	124484	73871	138157	147255	90686	184788	192788	123891	278058
6C-3800-585-OP	117.5	296714	88553	107908	145821	89633	181850	173044	109519	237605	200267	129325	293360	254703	168831	404870
6C-3800-635-OP	100.1	295820	88199	107404	193859	124661	280235	225932	147954	345929	258004	171221	411622	-	-	-
6C-3800-735-OP	74.0	293811	87403	106271	301741	202895	501211	-	-	-	-	-	-	-	-	-
14C-5100-635-OP	152.3	355505	106581	130272	197656	124440	266819	232720	149963	338619	267774	175416	410419	337884	226233	554019
14C-5100-735-OP	107.3	353301	105713	129033	315573	210072	508326	362540	244083	604526	409507	278067	700716	503441	345982	893115
14C-5100-785-OP	100.1	352088	105227	128343	380984	257438	642306	434562	296183	752038	488139	334919	861760	-	-	-
14C-5100-835-OP	88.5	350787	104713	127617	450704	307856	785101	511318	351681	909249	571940	395507	1033397	-	-	-
14C-5100-885-OP	78.3	349407	104165	126838	524725	361372	936702	-	-	-	-	-	-	-	-	-
14C-5100-935-OP	69.6	347947	103580	126015	-	-	-	-	-	-	-	-	-	-	-	-
14C-5400-635-OP	165.3	459970	130874	154486	168424	91916	138680	203479	118271	210480	238534	144317	282288	308644	195638	425889
14C-5400-735-OP	123.3	457766	129998	153247	286342	179363	380196	333309	213577	476387	380276	247712	572586	474201	315821	764976
14C-5400-785-OP	104.4	456545	129511	152565	351752	227003	514167	405321	265889	623898	458899	304741	733630	566046	382329	953083
14C-5400-835-OP	95.7	455253	128989	151831	421464	277607	656962	482086	321529	781110	542700	365425	905267	-	-	-
14C-5400-885-OP	85.6	453872	128440	151052	495485	331238	808563	563577	380541	948030	-	-	-	-	-	-
14C-5400-935-OP	75.4	452412	127856	150229	573807	387949	968987	-	-	-	-	-	-	-	-	-
14C-8300-735-OP	134.9	589286	169053	200656	233268	131892	218878	280226	166929	315069	327193	201603	411268	421127	270102	603659
14C-8300-785-OP	118.9	588065	168566	199966	298679	180602	352850	352248	219914	462581	405826	258969	572312	512973	336804	791765
14C-8300-835-OP	111.7	586764	168044	199240	368390	231693	495644	429013	275837	619792	489626	319866	743949	610854	407746	992253
14C-8300-885-OP	92.8	585383	167495	198461	442412	285581	647254	510503	335017	786712	578595	384391	926179	-	-	-
14C-8300-935-OP	84.1	583923	166911	197638	520734	342442	807669	596738	397524	963340	-	-	-	-	-	-

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, SPRING TO OPEN. MODELS 3C-2000-385-OP TO 14C-8300-985-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)								
					130.5			145			174		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	BTC
3C-2000-385-OP	161.0	153105	41542	47498	123732	79314	177035	143901	93969	218347	-	-	-
3C-2000-435-OP	126.2	152760	41400	47303	-	-	-	-	-	-	-	-	-
3C-2000-485-OP	104.4	152539	41312	47179	-	-	-	-	-	-	-	-	-
3C-2000-535-OP	82.7	152494	41294	47153	-	-	-	-	-	-	-	-	-
3C-2000-585-OP	69.6	151786	41011	46755	-	-	-	-	-	-	-	-	-
6C-2500-485-OP	152.3	218330	60985	71101	251252	168274	412322	288678	195364	488963	-	-	-
6C-2500-535-OP	124.7	218268	60959	71074	-	-	-	-	-	-	-	-	-
6C-2500-585-OP	113.1	217445	60631	70605	-	-	-	-	-	-	-	-	-
6C-2500-635-OP	88.5	216551	60269	70101	-	-	-	-	-	-	-	-	-
6C-2500-735-OP	66.7	214542	59463	68968	-	-	-	-	-	-	-	-	-
6C-3800-535-OP	140.7	297537	88881	108377	283864	189939	464581	-	-	-	-	-	-
6C-3800-585-OP	117.5	296714	88553	107908	-	-	-	-	-	-	-	-	-
6C-3800-635-OP	100.1	295820	88199	107404	-	-	-	-	-	-	-	-	-
6C-3800-735-OP	74.0	293811	87403	106271	-	-	-	-	-	-	-	-	-
14C-5100-635-OP	152.3	355505	106581	130272	478104	327671	841219	548222	378355	984828	-	-	-
14C-5100-735-OP	107.3	353301	105713	129033	-	-	-	-	-	-	-	-	-
14C-5100-785-OP	100.1	352088	105227	128343	-	-	-	-	-	-	-	-	-
14C-5100-835-OP	88.5	350787	104713	127617	-	-	-	-	-	-	-	-	-
14C-5100-885-OP	78.3	349407	104165	126838	-	-	-	-	-	-	-	-	-
14C-5100-935-OP	69.6	347947	103580	126015	-	-	-	-	-	-	-	-	-
14C-5400-635-OP	165.3	459970	130874	154486	448872	297484	713089	518982	348248	856689	-	-	-
14C-5400-735-OP	123.3	457766	129998	153247	-	-	-	-	-	-	-	-	-
14C-5400-785-OP	104.4	456545	129511	152565	-	-	-	-	-	-	-	-	-
14C-5400-835-OP	95.7	455253	128989	151831	-	-	-	-	-	-	-	-	-
14C-5400-885-OP	85.6	453872	128440	151052	-	-	-	-	-	-	-	-	-
14C-5400-935-OP	75.4	452412	127856	150229	-	-	-	-	-	-	-	-	-
14C-8300-735-OP	134.9	589286	169053	200656	608995	406401	988439	-	-	-	-	-	-
14C-8300-785-OP	118.9	588065	168566	199966	-	-	-	-	-	-	-	-	-
14C-8300-835-OP	111.7	586764	168044	199240	-	-	-	-	-	-	-	-	-
14C-8300-885-OP	92.8	585383	167495	198461	-	-	-	-	-	-	-	-	-
14C-8300-935-OP	84.1	583923	166911	197638	-	-	-	-	-	-	-	-	-

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb-in) - CANTED YOKE DESIGN, SPRING TO OPEN. MODELS 18C-9600-835-OP TO 18C-11000-1300-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
18C-9600-835-OP	140.7	936083	235331	255863	-	-	-	-	-	-	-	-	-	313344	106705	106705
18C-9600-935-OP	108.8	932817	233977	254022	-	-	-	296033	71243	71243	383436	197400	250261	470838	264093	429287
18C-9600-1000-OP	97.2	930498	233012	252712	282820	44180	44180	382798	196904	248960	482777	273085	453731	582755	347655	658511
18C-9600-1100-OP	81.2	926622	231410	250526	406693	215383	297900	527664	306680	545683	648644	396427	793456	769623	484865	1041238
18C-9600-1200-OP	68.2	922383	229649	248137	542364	317627	575781	686336	424057	870655	830307	529089	1165537	974279	633758	1460410
18C-9600-1300-OP	58.0	917772	227738	245535	689831	426615	877823	858804	549816	1223894	1027769	672565	1569964	-	-	-
18C-9800-835-OP	155.2	1188317	294272	316839	-	-	-	-	-	-	-	-	-	-	-	-
18C-9800-935-OP	124.7	1185051	292909	314999	-	-	-	-	-	-	-	-	-	397826	119900	119900
18C-9800-1000-OP	103.0	1182732	291935	313698	-	-	-	-	-	-	409764	144344	144344	509743	265500	349124
18C-9800-1100-OP	89.9	1178856	290325	311512	-	-	-	454652	222206	236295	575631	315901	484069	696611	406720	731851
18C-9800-1200-OP	75.4	1174608	288546	309122	469351	233915	266394	613323	344372	561267	757295	451846	856149	901267	557984	1151023
18C-9800-1300-OP	63.8	1169997	286617	306520	616819	347009	568436	785792	472971	914506	954756	597039	1260577	-	-	-
18C-10500-935-OP	133.4	1385185	344894	372665	-	-	-	-	-	-	-	-	-	-	-	-
18C-10500-1000-OP	117.5	1382857	343929	371355	-	-	-	-	-	-	-	-	-	442899	103643	103643
18C-10500-1100-OP	97.2	1378981	342327	369169	-	-	-	-	-	-	508787	238588	238588	629766	338009	486370
18C-10500-1200-OP	81.2	1374742	340566	366780	402507	20913	20913	546479	273474	315795	690451	384082	610668	834423	491857	905550
18C-10500-1300-OP	69.6	1370131	338646	364178	549975	276236	322964	718948	405561	669034	887912	531567	1015104	1056876	655998	1361175
18C-11000-935-OP	143.6	1553512	413897	467537	-	-	-	-	-	-	-	-	-	-	-	-
18C-11000-1000-OP	124.7	1551184	412959	466227	-	-	-	-	-	-	-	-	-	-	-	-
18C-11000-1100-OP	105.9	1547317	411384	464050	-	-	-	-	-	-	407977	32117	32117	528956	259544	279899
18C-11000-1200-OP	87.0	1543069	409658	461652	-	-	-	445669	109316	109316	589641	307184	404198	733612	416561	699071
18C-11000-1300-OP	74.0	1538458	407782	459050	449173	116484	116484	618138	329114	462555	787102	456599	808625	956066	582030	1154695

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					72.5			79.8			87			101.5		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
18C-9600-835-OP	140.7	936082	235330	255862	383046	197098	249473	452757	250464	392250	522469	302803	535027	661883	406144	820572
18C-9600-935-OP	108.8	932817	233976	254022	558240	329459	608305	645652	394214	787323	733054	458182	966340	907860	585507	1324385
18C-9600-1000-OP	97.2	930498	233012	252712	682733	421419	863282	782712	494423	1068062	882699	567197	1272834	-	-	-
18C-9600-1100-OP	81.2	926622	231410	250526	890593	572940	1289011	1011573	660812	1536794	-	-	-	-	-	-
18C-9600-1200-OP	68.2	922382	229649	248136	-	-	-	-	-	-	-	-	-	-	-	-
18C-9600-1300-OP	58.0	917772	227737	245534	-	-	-	-	-	-	-	-	-	-	-	-
18C-9800-835-OP	155.2	1188316	294271	316839	-	-	-	379745	82863	82863	449456	218029	225640	588870	325937	511185
18C-9800-935-OP	124.7	1185050	292908	314998	485228	246428	298918	572639	313626	477935	660042	379426	656962	834856	509273	1014998
18C-9800-1000-OP	103.0	1182732	291935	313697	609721	341654	553895	709708	416481	758675	809687	490688	963446	1009643	637094	1372998
18C-9800-1100-OP	89.9	1178855	290324	311511	817581	496520	979624	938560	585224	1227407	1059531	673458	1475189	-	-	-
18C-9800-1200-OP	75.4	1174607	288545	309122	1045238	663060	1445904	-	-	-	-	-	-	-	-	-
18C-9800-1300-OP	63.8	1169997	286616	306520	-	-	-	-	-	-	-	-	-	-	-	-
18C-10500-935-OP	133.4	1385184	344893	372665	418384	53436	53436	505795	232463	232463	593198	309927	411481	768003	442341	769516
18C-10500-1000-OP	117.5	1382857	343929	371355	542877	270624	308423	642855	348017	513194	742842	423481	717974	942799	572241	1127525
18C-10500-1100-OP	97.2	1378980	342327	369169	750737	429393	734152	871716	519557	981925	992687	608995	1229708	-	-	-
18C-10500-1200-OP	81.2	1374741	340566	366779	978394	598517	1200423	1122366	703779	1495296	-	-	-	-	-	-
18C-10500-1300-OP	69.6	1370130	338645	364178	-	-	-	-	-	-	-	-	-	-	-	-
18C-11000-935-OP	143.6	1553511	413897	467537	-	-	-	404985	25984	25984	492387	205001	205001	667202	366496	563046
18C-11000-1000-OP	124.7	1551184	412959	466227	442066	101943	101943	542054	269960	306723	642032	347389	511495	841989	497503	921046
18C-11000-1100-OP	105.9	1547316	411383	464050	649926	353381	527672	770906	444509	775455	891876	534505	1023228	1133835	712151	1518793
18C-11000-1200-OP	87.0	1543068	409658	461651	877584	523902	993952	1021556	630129	1288826	1165527	735276	1583708	-	-	-
18C-11000-1300-OP	74.0	1538457	407781	459050	1125030	705726	1500765	-	-	-	-	-	-	-	-	-

NOTES:

- MOP: Maximum Operating Pressure
- BTC: Break to Close
- RTC: Run to Close
- ETC: End to Close
- BTO: Break to Open
- RTO: Run to Open
- ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - CANTED YOKE DESIGN, SPRING TO OPEN. MODELS 18C-9600-835-OP TO 18C-11000-1300-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)								
					130.5			145			174		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	BTC
18C-9600-835-OP	140.7	936082	235330	255862	940720	609402	1391671	-	-	-	-	-	-
18C-9600-935-OP	108.8	932817	233976	254022	-	-	-	-	-	-	-	-	-
18C-9600-1000-OP	97.2	930498	233012	252712	-	-	-	-	-	-	-	-	-
18C-9600-1100-OP	81.2	926622	231410	250526	-	-	-	-	-	-	-	-	-
18C-9600-1200-OP	68.2	922382	229649	248136	-	-	-	-	-	-	-	-	-
18C-9600-1300-OP	58.0	917772	227737	245534	-	-	-	-	-	-	-	-	-
18C-9800-835-OP	155.2	1188316	294271	316839	867707	533407	1082284	1007121	635253	1367838	-	-	-
18C-9800-935-OP	124.7	1185050	292908	314998	-	-	-	-	-	-	-	-	-
18C-9800-1000-OP	103.0	1182732	291935	313697	-	-	-	-	-	-	-	-	-
18C-9800-1100-OP	89.9	1178855	290324	311511	-	-	-	-	-	-	-	-	-
18C-9800-1200-OP	75.4	1174607	288545	309122	-	-	-	-	-	-	-	-	-
18C-9800-1300-OP	63.8	1169997	286616	306520	-	-	-	-	-	-	-	-	-
18C-10500-935-OP	133.4	1385184	344893	372665	1117631	700327	1485596	-	-	-	-	-	-
18C-10500-1000-OP	117.5	1382857	343929	371355	-	-	-	-	-	-	-	-	-
18C-10500-1100-OP	97.2	1378980	342327	369169	-	-	-	-	-	-	-	-	-
18C-10500-1200-OP	81.2	1374741	340566	366779	-	-	-	-	-	-	-	-	-
18C-10500-1300-OP	69.6	1370130	338645	364178	-	-	-	-	-	-	-	-	-
18C-11000-935-OP	143.6	1553511	413897	467537	1016821	626660	1279126	-	-	-	-	-	-
18C-11000-1000-OP	124.7	1551184	412959	466227	-	-	-	-	-	-	-	-	-
18C-11000-1100-OP	105.9	1547316	411383	464050	-	-	-	-	-	-	-	-	-
18C-11000-1200-OP	87.0	1543068	409658	461651	-	-	-	-	-	-	-	-	-
18C-11000-1300-OP	74.0	1538457	407781	459050	-	-	-	-	-	-	-	-	-

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, SPRING TO CLOSE. MODELS 1.5S-1100-385-CL TO 1.5S-1200-585-CL

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
1.5S-1100-385-CL	158.1	54950	26762	32241	-	-	-	-	-	-	-	-	-	-	-	-
1.5S-1100-435-CL	123.3	54826	26674	32081	-	-	-	-	-	-	-	-	-	-	-	-
1.5S-1100-485-CL	98.6	54746	26621	31984	38285	4275	4275	50436	16001	16001	62587	24559	27718	74738	32002	39444
1.5S-1100-535-CL	81.2	54728	26603	31957	54074	19089	19505	68862	28426	33772	83650	37365	48038	98430	46188	62304
1.5S-1100-585-CL	65.3	54472	26426	31630	71145	29816	35975	88819	40462	53029	106501	50967	70083	124174	61419	87137
1.5S-1200-385-CL	168.2	63862	33011	43976	-	-	-	-	-	-	-	-	-	-	-	-
1.5S-1200-435-CL	132.0	63738	32922	43816	-	-	-	-	-	-	-	-	-	41869	8036	8036
1.5S-1200-485-CL	105.9	63658	32869	43719	-	-	-	38869	5133	5133	51020	16859	16859	63171	25046	28586
1.5S-1200-535-CL	87.0	63640	32860	43692	-	-	-	57286	21346	22904	72074	30506	37170	86854	39409	51436
1.5S-1200-585-CL	72.5	63384	32683	43374	59569	22798	25107	77243	33639	42161	94925	44215	59224	112607	54702	76278

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					72.5			79.8			87			101.5		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
1.5S-1100-385-CL	158.1	54950	26762	32241	42188	8036	8036	49843	15417	15417	57498	21337	22806	72809	30833	37586
1.5S-1100-435-CL	123.3	54826	26674	32081	63224	24948	28329	72995	30948	37754	82774	36843	47188	102324	48498	66048
1.5S-1100-485-CL	98.6	54746	26621	31984	86889	39312	51171	99040	46551	62888	111191	53755	74614	-	-	-
1.5S-1100-535-CL	81.2	54728	26603	31957	113218	54950	76561	128006	63685	90828	-	-	-	-	-	-
1.5S-1100-585-CL	65.3	54472	26426	31630	-	-	-	-	-	-	-	-	-	-	-	-
1.5S-1200-385-CL	168.2	63862	33011	43976	-	-	-	38267	4558	4558	45923	11948	11948	61242	23842	26718
1.5S-1200-435-CL	132.0	63738	32922	43816	51649	17461	17461	61419	23957	26895	71198	29975	36329	90748	41728	55189
1.5S-1200-485-CL	105.9	63658	32869	43719	75322	32480	40303	87473	39772	52029	99624	47002	63755	123927	61384	87199
1.5S-1200-535-CL	87.0	63640	32860	43692	101642	48206	65702	116431	56959	79969	131210	65685	94235	-	-	-
1.5S-1200-585-CL	72.5	63384	32683	43374	130281	65136	93332	-	-	-	-	-	-	-	-	-

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)								
					130.5			145			174		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
1.5S-1100-385-CL	158.1	54950	26762	32241	103439	49162	67127	118749	58224	81907	-	-	-
1.5S-1100-435-CL	123.3	54826	26674	32081	-	-	-	-	-	-	-	-	-
1.5S-1100-485-CL	98.6	54746	26621	31984	-	-	-	-	-	-	-	-	-
1.5S-1100-535-CL	81.2	54728	26603	31957	-	-	-	-	-	-	-	-	-
1.5S-1100-585-CL	65.3	54472	26426	31630	-	-	-	-	-	-	-	-	-
1.5S-1200-385-CL	168.2	63862	33011	43976	91863	42392	56268	107182	51489	71039	-	-	-
1.5S-1200-435-CL	132.0	63738	32922	43816	129847	64879	92907	-	-	-	-	-	-
1.5S-1200-485-CL	105.9	63658	32869	43719	-	-	-	-	-	-	-	-	-
1.5S-1200-535-CL	87.0	63640	32860	43692	-	-	-	-	-	-	-	-	-
1.5S-1200-585-CL	72.5	63384	32683	43374	-	-	-	-	-	-	-	-	-

NOTES:

- MOP: Maximum Operating Pressure
- BTC: Break to Close
- RTC: Run to Close
- ETC: End to Close
- BTO: Break to Open
- RTO: Run to Open
- ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, SPRING TO CLOSE. MODELS 3S-2000-385-CL TO 14S-8300-935-CL

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
3S-2000-385-CL	174.0	95978	50162	69561	-	-	-	-	-	-	-	-	-	-	-	-
3S-2000-435-CL	153.7	95766	50020	69304	-	-	-	-	-	-	54684	10363	10363	70658	25585	26214
3S-2000-485-CL	123.3	95633	49932	69136	-	-	-	65747	21337	21337	85597	35205	41037	105448	47436	60746
3S-2000-535-CL	101.5	95598	49914	69101	71685	26285	27231	95837	41560	51206	119988	56251	75181	144149	70791	99164
3S-2000-585-CL	84.1	95173	49631	68570	99563	43843	54905	128449	61357	83579	157326	78685	112245	186204	95943	140910
6S-2500-485-CL	174.0	137467	72924	103731	-	-	-	-	-	-	77172	17957	17957	100332	38232	41037
6S-2500-535-CL	163.9	137432	72906	103687	-	-	-	89120	29860	29860	117307	49011	57950	145494	66340	86040
6S-2500-585-CL	136.3	136936	72570	103067	93474	33657	34196	127175	55127	67782	160875	75676	101368	194576	95987	134945
6S-2500-635-CL	116.0	136387	72207	102395	128918	56198	69517	168628	80358	109085	208338	104244	148653	248048	128024	188222
6S-2500-735-CL	87.0	135166	71393	100881	208515	104359	148839	261721	136193	201851	314918	167938	254862	368125	199647	307874
6S-3800-535-CL	174.0	186301	102704	154707	-	-	-	-	-	-	-	-	-	95182	27532	27532
6S-3800-585-CL	147.9	185797	102377	154087	-	-	-	76853	9275	9275	110563	41011	42861	144264	62357	76437
6S-3800-635-CL	124.7	185257	102014	153415	78597	11009	11009	118307	46073	50578	158017	70800	90146	197727	94881	129714
6S-3800-735-CL	94.3	184036	101209	151901	158203	70906	90332	211400	103120	143343	264597	135042	196355	317804	166840	249366
14S-5100-635-CL	174.0	217675	122590	187257	-	-	-	114431	32241	32241	158477	64163	74738	202532	90836	117245
14S-5100-735-CL	153.7	216356	121705	185576	158681	64286	74933	217701	99908	131874	276722	134927	188824	335742	169734	245765
14S-5100-785-CL	134.9	215630	121218	184646	207674	93916	122201	274996	133909	187151	342318	173602	252101	409640	213188	317060
14S-5100-835-CL	118.9	214851	120696	183655	259880	124962	172575	336052	169911	246065	412224	214701	319556	488396	259411	393046
14S-5100-885-CL	105.9	214028	120139	182602	315317	157707	226056	400887	208037	308608	486449	258270	391170	572020	308449	473723
14S-5100-935-CL	95.7	213161	119555	181487	373974	192231	282642	469484	248322	374798	564993	304334	466944	660502	360292	559090
14S-5400-635-CL	174.0	282333	154309	224949	-	-	-	-	-	-	-	-	-	165353	42719	42719
14S-5400-735-CL	158.1	281023	153424	223277	-	-	-	180522	57357	57357	239543	97545	114298	298564	133290	171239
14S-5400-785-CL	139.2	280288	152937	222347	170495	47675	47675	237817	96483	112634	305139	137237	177584	372461	177319	242543
14S-5400-835-CL	123.3	279518	152415	221356	222701	87119	98049	298873	133476	171540	375054	178850	245039	451226	223878	318529
14S-5400-885-CL	108.8	278695	151857	220303	278138	121015	151539	363708	172124	234091	449279	222728	316644	534841	273138	399206
14S-5400-935-CL	97.2	277819	151273	219188	336796	156132	208125	432305	212710	300272	527814	269005	392427	623323	325131	484573
14S-8300-735-CL	166.8	362416	199107	292643	-	-	-	-	-	-	-	-	-	230162	75455	75455
14S-8300-785-CL	146.5	361691	198621	291714	-	-	-	-	-	-	236738	81624	81792	304059	124520	146751
14S-8300-835-CL	129.1	360912	198098	290723	-	-	-	230472	75747	75747	306644	126104	149246	382816	172150	222737
14S-8300-885-CL	114.6	360089	197541	289669	209736	55746	55746	295298	119139	138299	380869	170982	220852	466439	221940	303413
14S-8300-935-CL	103.0	359222	196948	288554	268394	102350	112333	363903	160805	204479	459412	217772	296634	554922	274262	388781

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb-in) - SYMMETRIC YOKE DESIGN, SPRING TO CLOSE. MODELS 3S-2000-385-CL TO 14S-8300-935-CL

Model	MOP (psig)	Operating supply pressure (psig)														
		72.5			79.8			87			101.5					
		BTC	RTC	ETC	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
3S-2000-385-CL	174.0	95978	50162	69561	52259	7947	7947	64764	20364	20364	77278	29940	32780	102288	45507	57614
3S-2000-435-CL	153.7	95766	50020	69304	86624	35851	42064	102589	45693	57914	118563	55392	73765	150494	74597	105465
3S-2000-485-CL	123.3	95633	49932	69136	125298	59454	80447	145149	71384	100155	164991	83279	119856	204692	106970	159265
3S-2000-535-CL	101.5	95598	49914	69101	168300	85252	123139	192452	99669	147114	216604	114068	171088	264916	142821	219038
3S-2000-585-CL	84.1	95173	49631	68570	215082	113165	169575	243959	130352	198240	-	-	-	-	-	-
6S-2500-485-CL	174.0	137467	72924	103731	123502	52852	64118	146662	67048	87199	169832	81084	110289	216161	108935	156450
6S-2500-535-CL	163.9	137432	72906	103687	173681	83411	114130	201869	100377	142220	230056	117271	170301	286430	150954	226480
6S-2500-585-CL	136.3	136936	72570	103067	228286	116201	168531	261987	136352	202116	295687	156468	235702	363089	196647	302865
6S-2500-635-CL	116.0	136387	72207	102395	287758	151742	227790	327459	175425	267367	367169	199081	306936	446589	246366	386072
6S-2500-735-CL	87.0	135166	71393	100881	421322	231321	360894	474519	262987	413906	527726	294625	466917	-	-	-
6S-3800-535-CL	174.0	186301	102704	154707	123369	49303	55622	151556	66844	83703	179744	84013	111793	236118	117971	167973
6S-3800-585-CL	147.9	185797	102377	154087	177965	82933	110023	211665	103280	143609	245366	123519	177195	312777	163840	244357
6S-3800-635-CL	124.7	185257	102014	153415	237437	118767	169283	277147	142538	208860	316857	166274	248428	396276	213630	327565
6S-3800-735-CL	94.3	184036	101209	151901	371001	198567	302387	424207	230268	355398	477404	261942	408410	-	-	-
14S-5100-635-CL	174.0	217675	122590	187257	246588	117086	159743	290634	143140	202249	334689	169115	244747	422800	220914	329751
14S-5100-735-CL	153.7	216356	121705	185576	394763	204444	302705	453784	239109	359646	512804	273722	416587	630846	342920	530478
14S-5100-785-CL	134.9	215630	121218	184646	476962	252703	382010	544284	292192	446969	611615	331663	511919	746259	410516	641829
14S-5100-835-CL	118.9	214851	120696	183655	564568	304086	466537	640749	348725	540027	716921	393338	613517	869265	482564	760507
14S-5100-885-CL	105.9	214028	120139	182602	657590	358584	556276	743161	408702	638837	828723	458819	721390	999864	559010	886505
14S-5100-935-CL	95.7	213161	119555	181487	756011	416233	651236	851520	472174	743391	947039	528097	835537	-	-	-
14S-5400-635-CL	174.0	282333	154309	224949	209409	78730	85226	253464	106058	127723	297510	132662	170230	385621	185107	255234
14S-5400-735-CL	158.1	281023	153424	223277	357584	168486	228188	416605	203444	285129	475626	238269	342070	593667	307715	455961
14S-5400-785-CL	139.2	280288	152937	222347	439783	217126	307493	507114	256809	372443	574436	296413	437402	709080	375479	567312
14S-5400-835-CL	123.3	279518	152415	221356	527398	268757	392020	603570	313529	465510	679742	358275	539000	832086	447615	685981
14S-5400-885-CL	108.8	278695	151857	220303	620412	323423	481759	705982	373656	564320	791553	423844	646873	962685	524150	811988
14S-5400-935-CL	97.2	277819	151273	219188	718841	381196	576719	814350	437208	668865	909860	493211	761020	-	-	-
14S-8300-735-CL	166.8	362416	199107	292643	289183	115351	132396	348203	151344	189337	407224	186726	246278	525265	256747	360168
14S-8300-785-CL	146.5	361691	198621	291714	371381	165291	211701	438703	205470	276651	506025	245384	341610	640678	324795	471519
14S-8300-835-CL	129.1	360912	198098	290723	458988	217524	296227	535160	262597	369718	611331	307520	443208	763684	397117	590189
14S-8300-885-CL	114.6	360089	197541	289669	552010	272536	385966	637572	322972	468528	723142	373302	551081	894284	473794	716195
14S-8300-935-CL	103.0	359222	196948	288554	650431	330539	480927	745940	386701	573073	841449	442810	665228	1032476	554833	849520

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, SPRING TO CLOSE. MODELS 3S-2000-385-CL TO 14S-8300-985-CL

Model	MOP (psig)	Operating supply pressure (psig)											
		BTC	RTC	ETC	130.5			145			174		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
3S-2000-385-CL	174.0	95978	50162	69561	152326	75694	107280	177345	90659	132113	227374	120475	181779
3S-2000-435-CL	153.7	95766	50020	69304	214365	112731	168867	246304	131741	200568	-	-	-
3S-2000-485-CL	123.3	95633	49932	69136	-	-	-	-	-	-	-	-	-
3S-2000-535-CL	101.5	95598	49914	69101	-	-	-	-	-	-	-	-	-
3S-2000-585-CL	84.1	95173	49631	68570	-	-	-	-	-	-	-	-	-
6S-2500-485-CL	174.0	137467	72924	103731	308821	164300	248782	355151	191921	294953	447810	247092	387285
6S-2500-535-CL	163.9	137432	72906	103687	399179	218144	338831	455563	251712	395011	-	-	-
6S-2500-585-CL	136.3	136936	72570	103067	497901	276890	437199	-	-	-	-	-	-
6S-2500-635-CL	116.0	136387	72207	102395	-	-	-	-	-	-	-	-	-
6S-2500-735-CL	87.0	135166	71393	100881	-	-	-	-	-	-	-	-	-
6S-3800-535-CL	174.0	186301	102704	154707	348867	185363	280324	405242	218976	336495	517991	286112	448854
6S-3800-585-CL	147.9	185797	102377	154087	447580	244180	378692	514990	284315	445854	-	-	-
6S-3800-635-CL	124.7	185257	102014	153415	-	-	-	-	-	-	-	-	-
6S-3800-735-CL	94.3	184036	101209	151901	-	-	-	-	-	-	-	-	-
14S-5100-635-CL	174.0	217675	122590	187257	599012	324282	499760	687114	375877	584764	863326	479086	754772
14S-5100-735-CL	153.7	216356	121705	185576	866928	481192	758250	984970	550293	872132	-	-	-
14S-5100-785-CL	134.9	215630	121218	184646	1015555	568188	901638	-	-	-	-	-	-
14S-5100-835-CL	118.9	214851	120696	183655	-	-	-	-	-	-	-	-	-
14S-5100-885-CL	105.9	214028	120139	182602	-	-	-	-	-	-	-	-	-
14S-5100-935-CL	95.7	213161	119555	181487	-	-	-	-	-	-	-	-	-
14S-5400-635-CL	174.0	282333	154309	224949	561833	289006	425243	649935	340769	510247	826148	444128	680255
14S-5400-735-CL	158.1	281023	153424	223277	829749	446244	683724	947791	515424	797615	-	-	-
14S-5400-785-CL	139.2	280288	152937	222347	978376	533336	827121	-	-	-	-	-	-
14S-5400-835-CL	123.3	279518	152415	221356	-	-	-	-	-	-	-	-	-
14S-5400-885-CL	108.8	278695	151857	220303	-	-	-	-	-	-	-	-	-
14S-5400-935-CL	97.2	277819	151273	219188	-	-	-	-	-	-	-	-	-
14S-8300-735-CL	166.8	362416	199107	292643	761348	395745	587932	879380	465059	701823	-	-	-
14S-8300-785-CL	146.5	361691	198621	291714	909966	482998	731329	1044619	561957	861238	-	-	-
14S-8300-835-CL	129.1	360912	198098	290723	-	-	-	-	-	-	-	-	-
14S-8300-885-CL	114.6	360089	197541	289669	-	-	-	-	-	-	-	-	-
14S-8300-935-CL	103.0	359222	196948	288554	-	-	-	-	-	-	-	-	-

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb-in) - SYMMETRIC YOKE DESIGN, SPRING TO CLOSE. MODELS 18S-9600-835-CL TO 18S-11000-1300-CL

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
18S-9600-835-CL	165.3	586790	301325	397197	-	-	-	-	-	-	-	-	-	378019	61826	61826
18S-9600-935-CL	132.0	584835	299988	394710	-	-	-	356274	40834	40834	466076	146839	146839	575887	225002	252845
18S-9600-1000-CL	114.6	583454	299033	392940	339672	24807	24807	465280	146069	146069	590879	234348	267323	716487	311060	388586
18S-9600-1100-CL	95.7	581135	297449	389975	495299	172982	175044	647280	269058	321768	799261	360806	468492	951233	451332	615208
18S-9600-1200-CL	79.8	578595	295705	386745	665741	280324	339592	846609	389081	514203	1027476	496494	688813	1208344	603366	863424
18S-9600-1300-CL	65.3	575843	293811	383223	851007	391701	518451	1063274	517698	723372	1275542	642944	928294	1487818	767870	1133225
18S-9800-835-CL	172.6	742692	378028	491095	-	-	-	-	-	-	-	-	-	-	-	-
18S-9800-935-CL	137.8	740736	376691	488609	-	-	-	-	-	-	-	-	-	483281	72897	72897
18S-9800-1000-CL	120.4	739356	375736	486839	-	-	-	-	-	-	498282	87376	87376	623881	208639	208639
18S-9800-1100-CL	100.1	737037	374143	483883	-	-	-	554674	141821	141821	706655	266181	288545	858636	360416	435270
18S-9800-1200-CL	84.1	734497	372399	480644	573144	159645	159645	754011	296015	334256	934879	406613	508866	1115746	514999	683477
18S-9800-1300-CL	65.3	731745	370514	477121	758401	298749	338504	970677	428190	543425	1182944	554975	748356	1395211	680795	953278
18S-10500-935-CL	139.2	820342	410675	518831	-	-	-	-	-	-	-	-	-	-	-	-
18S-10500-1000-CL	121.8	818961	409720	517061	-	-	-	-	-	-	-	-	-	594074	118360	118360
18S-10500-1100-CL	101.5	816643	408118	514105	-	-	-	524867	51542	51542	676848	198267	198267	828829	315237	344991
18S-10500-1200-CL	85.6	814103	406365	510866	543337	69366	69366	724204	243977	243977	905072	362921	418587	1085939	473156	593198
18S-10500-1300-CL	72.5	811350	404463	507344	728594	248225	248225	940870	384975	453147	1153137	513574	658077	1365405	640280	862999
18S-11000-935-CL	147.9	920949	479661	647254	-	-	-	-	-	-	-	-	-	-	-	-
18S-11000-1000-CL	129.1	919559	478714	645484	-	-	-	-	-	-	-	-	-	-	-	-
18S-11000-1100-CL	107.3	917241	477130	642528	-	-	-	-	-	-	550205	76004	76004	702186	222728	222728
18S-11000-1200-CL	89.9	914709	475395	639289	-	-	-	597561	121714	121714	778428	282846	296325	959296	396294	470935
18S-11000-1300-CL	76.9	911948	473510	635775	601950	125962	125962	814227	305953	330884	1026494	437208	535814	1238761	564834	740736

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)											
					72.5			79.8			87			101.5		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
18S-9600-835-CL	165.3	586790	301325	397197	465599	146370	146370	553169	210701	230914	640740	265075	315458	815890	370735	484546
18S-9600-935-CL	132.0	584835	299988	394710	685689	292431	358850	795491	358549	464855	905302	424021	570860	1124915	554099	782880
18S-9600-1000-CL	114.6	583454	299033	392940	842086	386382	509840	967694	461076	631094	1093294	535425	752356	1344501	683556	994864
18S-9600-1100-CL	95.7	581135	297449	389975	1103214	541284	761932	1255196	630952	908656	1407177	720470	1055371	-	-	-
18S-9600-1200-CL	79.8	578595	295705	386745	1389220	709885	1038034	1570087	816218	1212645	-	-	-	-	-	-
18S-9600-1300-CL	65.3	575843	293811	383223	-	-	-	-	-	-	-	-	-	-	-	-
18S-9800-835-CL	172.6	742692	378028	491095	-	-	-	460572	50967	50967	548142	135511	135511	723293	276731	304599
18S-9800-935-CL	137.8	740736	376691	488609	593092	178903	178903	702894	263774	284917	812704	332326	390922	1032308	465165	602933
18S-9800-1000-CL	120.4	739356	375736	486839	749489	293192	329893	875088	370434	451146	1000696	446199	572409	1251903	595932	814926
18S-9800-1100-CL	100.1	737037	374143	483883	1010617	452155	581985	1162598	542877	728709	1314579	633067	875433	-	-	-
18S-9800-1200-CL	84.1	734497	372399	480644	1296614	622421	858087	1477481	729382	1032698	-	-	-	-	-	-
18S-9800-1300-CL	65.3	731745	370514	477121	-	-	-	-	-	-	-	-	-	-	-	-
18S-10500-935-CL	139.2	820342	410675	518831	563285	88633	88633	673087	194638	194638	782898	285758	300643	1002501	422658	512654
18S-10500-1000-CL	121.8	818961	409720	517061	719682	239614	239614	845281	325636	360876	970889	403365	482130	1222097	554877	724647
18S-10500-1100-CL	101.5	816643	408118	514105	980810	409419	491706	1132791	501370	638430	1284772	592295	785154	1588734	772711	1078594
18S-10500-1200-CL	85.6	814103	406365	510866	1266807	581578	767808	1447674	689150	942419	-	-	-	-	-	-
18S-10500-1300-CL	72.5	811350	404463	507344	1577681	766162	1067921	-	-	-	-	-	-	-	-	-
18S-11000-935-CL	147.9	920949	479661	647254	-	-	-	546443	72375	72375	656245	178381	178381	875858	344787	390391
18S-11000-1000-CL	129.1	919559	478714	645484	593039	117351	117351	718638	238614	238614	844246	324981	359868	1095453	478891	602384
18S-11000-1100-CL	107.3	917241	477130	642528	854167	331220	369443	1006148	424871	516167	1158129	516566	662892	1462082	697681	956331
18S-11000-1200-CL	89.9	914709	475395	639289	1140163	505795	645546	1321031	613898	820156	1501907	721275	994767	-	-	-
18S-11000-1300-CL	76.9	911948	473510	635775	1451037	691141	945658	-	-	-	-	-	-	-	-	-

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, SPRING TO CLOSE. MODELS 18S-9600-835-CL TO 18S-11000-1300-CL

Model	MOP (psig)	BTC	RTC	ETC	Operating supply pressure (psig)								
					130.5			145			174		
					BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
18S-9600-835-CL	165.3	586790	301325	397197	1166182	578471	822723	1341333	681689	991811	-	-	-
18S-9600-935-CL	132.0	584835	299988	394710	1564131	812722	1206901	-	-	-	-	-	-
18S-9600-1000-CL	114.6	583454	299033	392940	-	-	-	-	-	-	-	-	-
18S-9600-1100-CL	95.7	581135	297449	389975	-	-	-	-	-	-	-	-	-
18S-9600-1200-CL	79.8	578595	295705	386745	-	-	-	-	-	-	-	-	-
18S-9600-1300-CL	65.3	575843	293811	383223	-	-	-	-	-	-	-	-	-
18S-9800-835-CL	172.6	742692	378028	491095	1073585	489830	642776	1248735	594056	811864	-	-	-
18S-9800-935-CL	137.8	740736	376691	488609	1471534	725868	1026954	-	-	-	-	-	-
18S-9800-1000-CL	120.4	739356	375736	486839	-	-	-	-	-	-	-	-	-
18S-9800-1100-CL	100.1	737037	374143	483883	-	-	-	-	-	-	-	-	-
18S-9800-1200-CL	84.1	734497	372399	480644	-	-	-	-	-	-	-	-	-
18S-9800-1300-CL	65.3	731745	370514	477121	-	-	-	-	-	-	-	-	-
18S-10500-935-CL	139.2	820342	410675	518831	1441727	685627	936675	-	-	-	-	-	-
18S-10500-1000-CL	121.8	818961	409720	517061	-	-	-	-	-	-	-	-	-
18S-10500-1100-CL	101.5	816643	408118	514105	-	-	-	-	-	-	-	-	-
18S-10500-1200-CL	85.6	814103	406365	510866	-	-	-	-	-	-	-	-	-
18S-10500-1300-CL	72.5	811350	404463	507344	-	-	-	-	-	-	-	-	-
18S-11000-935-CL	147.9	920949	479661	647254	1315083	610358	814412	1534696	740701	1026432	-	-	-
18S-11000-1000-CL	129.1	919559	478714	645484	-	-	-	-	-	-	-	-	-
18S-11000-1100-CL	107.3	917241	477130	642528	-	-	-	-	-	-	-	-	-
18S-11000-1200-CL	89.9	914709	475395	639289	-	-	-	-	-	-	-	-	-
18S-11000-1300-CL	76.9	911948	473510	635775	-	-	-	-	-	-	-	-	-

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb-in) - SYMMETRIC YOKE DESIGN, SPRING TO OPEN. MODELS 1.5S-1100-385-OP TO 1.5S-1200-585-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					44			51			58			65		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
1.5S-1100-385-OP	174.0	59976	22913	25196	-	-	-	-	-	-	-	-	-	-	-	-
1.5S-1100-435-OP	137.8	59835	22824	25054	-	-	-	-	-	-	37763	10293	10293	46339	20612	21240
1.5S-1100-485-OP	110.2	59738	22762	24975	33037	4257	4257	43701	17877	17877	54366	26346	31497	65021	33710	45117
1.5S-1100-535-OP	91.4	59720	22753	24948	46887	21019	21948	59861	30170	38524	72836	39020	55091	85810	47763	71667
1.5S-1100-585-OP	75.4	59437	22568	24674	61870	31541	41082	77376	42091	60897	92890	52516	80703	108404	62897	100518
1.5S-1200-385-OP	174.0	70145	29338	35312	-	-	-	-	-	-	-	-	-	-	-	-
1.5S-1200-435-OP	146.5	70004	29249	35179	-	-	-	-	-	-	-	-	-	36197	8646	8646
1.5S-1200-485-OP	117.5	69915	29196	35090	-	-	-	33559	5275	5275	44223	18895	18895	54879	26824	32515
1.5S-1200-535-OP	97.2	69897	29178	35073	36745	9346	9346	49719	23187	25922	62693	32214	42489	75668	41029	59065
1.5S-1200-585-OP	79.8	69605	29010	34789	51728	24603	28479	67233	35312	48294	82748	45799	68110	98262	56206	87916

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					72.5			79.8			87			101.5		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
1.5S-1100-385-OP	174.0	59976	22913	25196	36462	8620	8620	43179	17204	17204	49896	23196	25789	63331	32550	42949
1.5S-1100-435-OP	137.8	59835	22824	25054	54914	26736	32196	63490	32657	43153	72066	38498	54109	89217	50056	76022
1.5S-1100-485-OP	110.2	59738	22762	24975	75685	40949	58729	86349	48126	72349	97005	55277	85969	118333	69526	113209
1.5S-1100-535-OP	91.4	59720	22753	24948	98784	56463	88235	111758	65136	104811	124732	73791	121378	-	-	-
1.5S-1100-585-OP	75.4	59437	22568	24674	123909	73243	120333	-	-	-	-	-	-	-	-	-
1.5S-1200-385-OP	174.0	70145	29338	35312	-	-	-	33037	4602	4602	39754	13187	13187	53189	25638	30347
1.5S-1200-435-OP	146.5	70004	29249	35179	44772	19567	19603	53348	25754	30550	61923	31692	41507	79075	43330	63419
1.5S-1200-485-OP	117.5	69915	29196	35090	65543	34161	46135	76207	41391	59746	86863	48569	73367	108191	62844	100607
1.5S-1200-535-OP	97.2	69897	29178	35073	88642	49755	75632	101616	58445	92208	114590	67110	108775	-	-	-
1.5S-1200-585-OP	79.8	69605	29010	34789	113767	66570	107731	129281	76915	127546	-	-	-	-	-	-

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)								
					130.5			145			174		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	BTC
1.5S-1100-385-OP	174.0	59976	22913	25196	90199	50719	77278	103642	59711	94438	130511	77650	128768
1.5S-1100-435-OP	137.8	59835	22824	25054	123528	72986	119847	-	-	-	-	-	-
1.5S-1100-485-OP	110.2	59738	22762	24975	-	-	-	-	-	-	-	-	-
1.5S-1100-535-OP	91.4	59720	22753	24948	-	-	-	-	-	-	-	-	-
1.5S-1100-585-OP	75.4	59437	22568	24674	-	-	-	-	-	-	-	-	-
1.5S-1200-385-OP	174.0	70145	29338	35312	80057	43993	64676	93500	53020	81836	120369	70968	116165
1.5S-1200-435-OP	146.5	70004	29249	35179	113386	66313	107244	130538	77756	129157	-	-	-
1.5S-1200-485-OP	117.5	69915	29196	35090	-	-	-	-	-	-	-	-	-
1.5S-1200-535-OP	97.2	69897	29178	35073	-	-	-	-	-	-	-	-	-
1.5S-1200-585-OP	79.8	69605	29010	34789	-	-	-	-	-	-	-	-	-

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, SPRING TO OPEN. MODELS 3S-2000-385-OP TO 14S-8300-935-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
3S-2000-385-OP	174.0	101421	44976	56755	-	-	-	-	-	-	-	-	-	-	-	-
3S-2000-435-OP	159.5	101191	44834	56516	-	-	-	-	-	-	50047	12540	12540	64463	28594	30435
3S-2000-485-OP	129.1	101040	44746	56375	42108	2690	2690	60030	24939	24939	77951	37993	47179	95863	50091	69428
3S-2000-535-OP	105.9	101005	44728	56339	65393	29258	31595	87199	44268	58667	108997	58844	85739	130803	73287	112802
3S-2000-585-OP	88.5	100536	44436	55870	90562	46533	62844	116634	63906	95208	142697	81137	127582	168770	98297	159946
6S-2500-485-OP	174.0	144317	65623	84863	-	-	-	-	-	-	71685	22364	22364	92677	42622	48330
6S-2500-535-OP	163.9	144282	65596	84827	56976	4168	4168	82517	35347	35763	108059	53197	67349	133608	70349	98943
6S-2500-585-OP	136.3	143724	65260	84279	86456	38214	40639	116997	59233	78411	147538	79615	116183	178080	99793	153955
6S-2500-635-OP	116.0	143122	64897	83677	118581	60295	80358	154565	84270	124865	190549	108014	169371	226533	131653	213878
6S-2500-735-OP	87.0	141777	64074	82332	190718	108120	169575	238923	139777	229206	287138	171389	288837	335344	202992	348460
6S-3800-535-OP	174.0	197116	94518	129113	-	-	-	-	-	-	62747	1894	1894	88288	33488	33488
6S-3800-585-OP	149.4	196567	94182	128564	-	-	-	71685	12948	12948	102226	46126	50719	132768	67074	88500
6S-3800-635-OP	126.2	195966	93819	127962	73260	14903	14903	109244	51047	59410	145229	75437	103917	181213	99341	148423
6S-3800-735-OP	94.3	194620	93014	126617	145397	75552	104120	193611	107536	163743	241817	139264	223374	290032	170885	283005
14S-5100-635-OP	174.0	240348	113377	153725	-	-	-	100421	37480	37480	139078	69313	86854	177726	95695	136228
14S-5100-735-OP	149.4	238853	112492	152282	139255	69437	87084	191036	104678	153229	242826	139432	219383	294608	174000	285536
14S-5100-785-OP	130.5	238021	111997	151485	182239	98748	141989	241304	138414	217445	300378	177850	292900	359443	217259	368355
14S-5100-835-OP	116.0	237136	111475	150627	228047	129546	200506	294882	174186	285882	361717	218772	371258	428552	263358	456633
14S-5100-885-OP	103.0	236198	110917	149724	276686	162044	262633	351761	212135	358540	426844	262217	454448	501919	312281	550355
14S-5100-935-OP	92.8	235206	110324	148760	328149	196382	328379	411950	252287	435429	495750	308166	542478	579551	364001	649528
14S-5400-635-OP	174.0	310635	140520	182885	-	-	-	-	-	-	-	-	-	144715	49162	49162
14S-5400-735-OP	159.5	309139	139626	181443	-	-	-	158026	66163	66163	209816	104943	132316	261597	140299	198461
14S-5400-785-OP	139.2	308307	139131	180646	149229	54923	54923	208294	103899	130378	267367	144202	205833	326432	183965	281288
14S-5400-835-OP	123.3	307422	138600	179788	195036	94677	113439	261872	140485	198815	328707	185487	284191	395542	230197	369558
14S-5400-885-OP	110.2	306484	138042	178885	243676	128139	175566	318750	178805	271474	393834	229056	367381	468908	279138	463289
14S-5400-935-OP	98.6	305493	137441	177920	295139	162937	241313	378939	219108	348363	462740	275031	455412	546541	330937	562453
14S-8300-735-OP	171.1	398029	181239	237410	-	-	-	-	-	-	150707	22196	22196	202488	88350	88350
14S-8300-785-OP	150.8	397197	180744	236614	-	-	-	149184	20258	20258	208258	92721	95713	267332	134476	171177
14S-8300-835-OP	133.4	396312	180213	235755	-	-	-	202762	88615	88695	269598	136042	174071	336433	181575	259447
14S-8300-885-OP	117.5	395374	179655	234852	184567	65455	65455	259641	129166	161362	334725	180416	257261	409799	230958	353168
14S-8300-935-OP	105.9	394383	179062	233888	236030	112687	131192	319830	170345	238242	403640	226817	345292	487440	282917	452341

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, SPRING TO OPEN. MODELS 3S-2000-385-OP TO 14S-8300-935-OP

Model	MOP (psig)	Operating supply pressure (psig)														
		BTO	RTO	ETO	72.5			79.8			87			101.5		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
3S-2000-385-OP	174.0	101421	44976	56755	47852	9824	9824	59145	23842	23842	70437	32816	37860	93022	48179	65897
3S-2000-435-OP	159.5	101191	44834	56516	78880	38630	48339	93288	48365	66233	107705	57985	84128	136538	77075	119926
3S-2000-485-OP	129.1	101040	44746	56375	113784	62021	91677	131706	73880	113926	149627	85695	136175	185461	109262	180673
3S-2000-535-OP	105.9	101005	44728	56339	152609	87659	139874	174416	102005	166946	196213	116324	194019	239826	144981	248163
3S-2000-585-OP	88.5	100536	44436	55870	194842	115422	192311	220914	132555	224684	246986	149680	257048	-	-	-
6S-2500-485-OP	174.0	144317	65623	84863	113669	56994	74287	134662	71057	100253	155654	84987	126219	197638	112669	178142
6S-2500-535-OP	163.9	144282	65596	84827	159150	87296	130538	184691	104156	162132	210232	120953	193727	261323	154459	256907
6S-2500-585-OP	136.3	143724	65260	84279	208621	119891	191726	239162	139936	229507	269704	159955	267279	330786	200010	342822
6S-2500-635-OP	116.0	143122	64897	83677	262518	155247	258385	298502	178841	302891	334486	202435	347398	406463	249614	436411
6S-2500-735-OP	87.0	141777	64074	82332	383559	234605	408091	431774	266208	467723	479980	297820	527345	-	-	-
6S-3800-535-OP	174.0	197116	94518	129113	113829	54215	65074	139370	71517	96669	164920	88544	128263	216002	122298	191443
6S-3800-585-OP	149.4	196567	94182	128564	163309	87473	126272	193850	107696	164044	224392	127812	201815	285474	167902	277368
6S-3800-635-OP	126.2	195966	93819	127962	217197	123086	192930	253190	146733	237437	289174	170327	281943	361142	217506	370957
6S-3800-735-OP	94.3	194620	93014	126617	338238	202497	342628	386453	234109	402259	434668	265712	461890	-	-	-
14S-5100-635-OP	174.0	240348	113377	153725	216383	121723	185602	255030	147600	234976	293687	173389	284351	370992	224958	383099
14S-5100-735-OP	149.4	238853	112492	152282	346389	208550	351681	398179	243101	417835	449961	277642	483980	553532	346663	616279
14S-5100-785-OP	130.5	238021	111997	151485	418517	256668	443810	477590	296068	519274	536655	335415	594729	654794	414118	745639
14S-5100-835-OP	116.0	237136	111475	150627	495388	307927	542009	562223	352451	627377	629058	396976	712752	762720	485954	883504
14S-5100-885-OP	103.0	236198	110917	149724	577002	362292	646262	652077	412313	742161	727151	462280	838068	877309	562214	1029883
14S-5100-935-OP	92.8	235206	110324	148760	663361	419826	756569	747161	475599	863618	830962	531363	970668	-	-	-
14S-5400-635-OP	174.0	310635	140520	182885	183372	86465	98536	222020	113351	147910	260677	139680	197284	337982	191709	296033
14S-5400-735-OP	159.5	309139	139626	181443	313379	175203	264615	365169	209895	330760	416950	244481	396914	520522	313573	529212
14S-5400-785-OP	139.2	308307	139131	180646	385506	223498	356744	444580	262907	432199	503645	302316	507654	621783	381125	658573
14S-5400-835-OP	123.3	307422	138600	179788	462377	274784	454934	529212	319370	540310	596048	363956	625686	729709	453102	796438
14S-5400-885-OP	110.2	306484	138042	178885	543992	329229	559187	619066	379311	655095	694141	429402	751002	844299	529442	942808
14S-5400-935-OP	98.6	305493	137441	177920	630350	386842	669503	714151	442739	776552	797951	498565	883602	-	-	-
14S-8300-735-OP	171.1	398029	181239	237410	254278	125440	154494	306060	160982	220648	357841	196028	286802	461412	265509	419101
14S-8300-785-OP	150.8	397197	180744	236614	326397	174788	246632	385471	214621	322087	444536	254225	397542	562683	333105	548452
14S-8300-835-OP	133.4	396312	180213	235755	403268	226569	344823	470103	271323	430199	536938	315936	515574	670609	405109	686318
14S-8300-885-OP	117.5	395374	179655	234852	484883	281209	449076	559957	331291	544983	635041	381382	640882	785199	481555	832697
14S-8300-935-OP	105.9	394383	179062	233888	571241	338822	559391	655042	394728	666440	738842	450633	773490	906444	562418	987580

NOTES

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, SPRING TO OPEN. MODELS 3S-2000-385-OP TO 14S-8300-985-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)								
					130.5			145			174		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	BTC
3S-2000-385-OP	174.0	101421	44976	56755	138184	78163	121971	160769	93040	150016	205940	122714	206090
3S-2000-435-OP	159.5	101191	44834	56516	194196	114997	191514	223029	133936	227303	-	-	-
3S-2000-485-OP	129.1	101040	44746	56375	-	-	-	-	-	-	-	-	-
3S-2000-535-OP	105.9	101005	44728	56339	-	-	-	-	-	-	-	-	-
3S-2000-585-OP	88.5	100536	44436	55870	-	-	-	-	-	-	-	-	-
6S-2500-485-OP	174.0	144317	65623	84863	281607	167761	281996	323591	195284	333919	407560	250340	437774
6S-2500-535-OP	163.9	144282	65596	84827	363496	221454	383276	414587	254942	446465	-	-	-
6S-2500-585-OP	136.3	143724	65260	84279	452952	280103	493919	-	-	-	-	-	-
6S-2500-635-OP	116.0	143122	64897	83677	-	-	-	-	-	-	-	-	-
6S-2500-735-OP	87.0	141777	64074	82332	-	-	-	-	-	-	-	-	-
6S-3800-535-OP	174.0	197116	94518	129113	318184	189346	317821	369266	222834	381001	471440	289829	507371
6S-3800-585-OP	149.4	196567	94182	128564	407640	247995	428455	468723	288041	504008	-	-	-
6S-3800-635-OP	126.2	195966	93819	127962	-	-	-	-	-	-	-	-	-
6S-3800-735-OP	94.3	194620	93014	126617	-	-	-	-	-	-	-	-	-
14S-5100-635-OP	174.0	240348	113377	153725	525602	328052	580604	602906	379550	679353	757516	482484	876849
14S-5100-735-OP	149.4	238853	112492	152282	760675	484591	880885	864238	553514	1013183	-	-	-
14S-5100-785-OP	130.5	238021	111997	151485	891080	571374	1047468	-	-	-	-	-	-
14S-5100-835-OP	116.0	237136	111475	150627	-	-	-	-	-	-	-	-	-
14S-5100-885-OP	103.0	236198	110917	149724	-	-	-	-	-	-	-	-	-
14S-5100-935-OP	92.8	235206	110324	148760	-	-	-	-	-	-	-	-	-
14S-5400-635-OP	174.0	310635	140520	182885	492591	294935	493529	569896	346513	592286	724505	449633	789783
14S-5400-735-OP	159.5	309139	139626	181443	727665	451739	793818	831236	520734	926117	-	-	-
14S-5400-785-OP	139.2	308307	139131	180646	858069	538611	960393	-	-	-	-	-	-
14S-5400-835-OP	123.3	307422	138600	179788	-	-	-	-	-	-	-	-	-
14S-5400-885-OP	110.2	306484	138042	178885	-	-	-	-	-	-	-	-	-
14S-5400-935-OP	98.6	305493	137441	177920	-	-	-	-	-	-	-	-	-
14S-8300-735-OP	171.1	398029	181239	237410	668556	403737	683698	772127	472829	815997	-	-	-
14S-8300-785-OP	150.8	397197	180744	236614	798960	490733	850281	917099	569515	1001192	-	-	-
14S-8300-835-OP	133.4	396312	180213	235755	937941	583410	1027821	-	-	-	-	-	-
14S-8300-885-OP	117.5	395374	179655	234852	-	-	-	-	-	-	-	-	-
14S-8300-935-OP	105.9	394383	179062	233888	-	-	-	-	-	-	-	-	-

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

RTO: Run to Open

ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb-in) - SYMMETRIC YOKE DESIGN, SPRING TO OPEN. MODELS 18S-9600-835-OP TO 18S-11000-1300-OP

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					43.5			50.8			58			65.3		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
18S-9600-835-OP	174.0	628412	257508	303555	-	-	-	-	-	-	-	-	-	341654	84252	84252
18S-9600-935-OP	140.7	626182	256146	301404	-	-	-	322556	59879	59879	418959	182921	182947	515362	252039	306015
18S-9600-1000-OP	124.7	624606	255172	299882	307980	41276	41276	418260	182053	182053	528531	261199	322830	638802	336778	463607
18S-9600-1100-OP	101.5	621969	253553	297333	444615	201886	215692	578047	295325	386037	711478	386002	556373	844910	475732	726718
18S-9600-1200-OP	79.8	619075	251774	294546	594251	306422	406728	753047	414021	609446	911842	520566	812165	1070638	626633	1014883
18S-9600-1300-OP	72.5	615942	249853	291519	756905	416614	614376	943268	541585	852290	1129632	665980	1090205	1315995	790261	1328111
18S-9800-835-OP	174.0	799686	324335	378355	-	-	-	-	-	-	-	-	-	-	-	-
18S-9800-935-OP	152.3	797465	322963	376205	-	-	-	-	-	-	444677	110652	110652	554957	245685	251429
18S-9800-1000-OP	133.4	795881	321990	374682	-	-	-	-	-	-	627624	298095	344203	761056	390639	514548
18S-9800-1100-OP	110.2	793243	320352	372134	-	-	-	494193	173867	173867	827997	436270	599995	986784	543611	802713
18S-9800-1200-OP	92.8	790358	318565	369346	510406	194558	194558	669202	327246	397277	827997	436270	599995	986784	543611	802713
18S-9800-1300-OP	78.3	787216	316626	366319	673060	329928	402206	859424	457625	640121	1045787	583286	878026	1232150	708115	1115941
18S-10500-935-OP	158.1	932206	379656	444783	-	-	-	-	-	-	-	-	-	-	-	-
18S-10500-1000-OP	137.8	930631	378692	443261	-	-	-	-	-	-	-	-	-	480139	84518	84518
18S-10500-1100-OP	113.1	927993	377072	440712	-	-	-	-	-	-	552806	177283	177283	686238	316582	347628
18S-10500-1200-OP	95.7	925099	375293	437925	435588	27639	27639	594375	230357	230357	753170	364001	433075	911966	473528	635793
18S-10500-1300-OP	79.8	921958	373364	434898	598242	235286	235286	784606	385922	473201	970969	513681	711115	1157323	639563	949021
18S-11000-935-OP	20.3	1046787	449509	555408	-	-	-	-	-	-	-	-	-	-	-	-
18S-11000-1000-OP	145.0	1045212	448553	553877	-	-	-	-	-	-	-	-	-	-	-	-
18S-11000-1100-OP	120.4	1042574	446960	551337	-	-	-	-	-	-	-	35338	35338	575046	205683	205683
18S-11000-1200-OP	100.1	1039680	445208	548550	-	-	-	483192	88412	88412	641988	284315	291130	800783	397153	493857
18S-11000-1300-OP	79.8	1036547	443305	545514	487051	93341	93341	673414	307334	331256	859778	437810	569170	1046141	564595	807085

Model	MOP (psig)	BTO	RTO	ETO	Operating supply pressure (psig)											
					72.5			79.75			87			101.5		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	ETC
18S-9600-835-OP	174.0	628412	257508	303555	418534	182407	182407	495423	238092	280554	572312	291386	378709	726081	395861	575020
18S-9600-935-OP	140.7	626182	256146	301404	611765	318379	429092	708177	383771	552160	804580	448677	675228	997386	577772	921374
18S-9600-1000-OP	124.7	624606	255172	299882	749082	411348	604384	859353	485423	745152	969624	559214	885929	1190175	706354	1167483
18S-9600-1100-OP	101.5	621969	253553	297333	978341	565037	897054	1111772	654068	1067399	1245204	743046	1237734	1512067	921020	1578415
18S-9600-1200-OP	79.8	619075	251774	294546	1229433	732532	1217601	1388229	838431	1420319	-	-	-	-	-	-
18S-9600-1300-OP	72.5	615942	249853	291519	1502358	914550	1566025	-	-	-	-	-	-	-	-	-
18S-9800-835-OP	174.0	799686	324335	378355	-	-	-	411569	68384	68384	488458	166539	166539	642227	308387	362850
18S-9800-935-OP	152.3	797465	322963	376205	527920	216914	216914	624323	295758	339990	720726	362939	463059	913532	494228	709204
18S-9800-1000-OP	133.4	795881	321990	374682	665228	324485	392205	775499	400498	532982	885779	475457	673759	1106321	623898	955313
18S-9800-1100-OP	110.2	793243	320352	372134	894487	481343	684884	1027919	571294	855220	1161350	660776	1025565	1428213	838998	1366245
18S-9800-1200-OP	92.8	790358	318565	369346	1145579	650227	1005431	1304375	756410	1208149	1463171	862309	1410867	-	-	-
18S-9800-1300-OP	78.3	787216	316626	366319	1418513	832528	1353855	-	-	-	-	-	-	-	-	-
18S-10500-935-OP	158.1	932206	379656	444783	453102	50003	50003	549505	173071	173071	645908	287218	296139	838715	423349	542284
18S-10500-1000-OP	137.8	930631	378692	443261	590410	225294	225294	700681	326928	366071	810961	404188	506848	1031503	554700	788402
18S-10500-1100-OP	113.1	927993	377072	440712	819669	410206	517964	953101	501538	688309	1086532	591888	858645	1353395	771101	1199325
18S-10500-1200-OP	95.7	925099	375293	437925	1070762	581250	838511	1229557	688088	1041238	1388353	794473	1243956	-	-	-
18S-10500-1300-OP	79.8	921958	373364	434898	1343687	764605	1186935	1530050	889186	1424850	-	-	-	-	-	-
18S-11000-935-OP	165.3	1046787	449509	555408	-	-	-	438314	31125	31125	534717	154194	154194	727532	345973	400339
18S-11000-1000-OP	145.0	1045212	448553	553877	479219	83349	83349	589499	224126	224126	699770	326282	364903	920320	479228	646457
18S-11000-1100-OP	120.4	1042574	446960	551337	708478	332477	376019	841909	425543	546364	975341	516654	716700	1242204	696575	1057380
18S-11000-1200-OP	100.1	1039680	445208	548550	959570	505937	696575	1118366	613332	899293	1277161	720027	1102011	-	-	-
18S-11000-1300-OP	79.8	1036547	443305	545514	1232504	690061	1044990	1418867	814881	1282905	-	-	-	-	-	-

NOTES:

- MOP: Maximum Operating Pressure
- BTC: Break to Close
- RTC: Run to Close
- ETC: End to Close
- BTO: Break to Open
- RTO: Run to Open
- ETO: End to Open

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OUTPUT TORQUES (lb·in) - SYMMETRIC YOKE DESIGN, SPRING TO OPEN. MODELS 18S-9600-835-OP TO 18S-11000-1300-OP

Model	MOP (psig)	Operating supply pressure (psig)											
		BTO	RTO	ETO	130.5			145			174		
					BTC	RTC	ETC	BTC	RTC	ETC	BTC	RTC	BTC
18S-9600-835-OP	174.0	628412	257508	303555	1033618	601950	967632	1187396	704495	1163934	1494933	909594	1556547
18S-9600-935-OP	140.7	626182	256146	301404	1383007	834944	1413655	-	-	-	-	-	-
18S-9600-1000-OP	124.7	624606	255172	299882	-	-	-	-	-	-	-	-	-
18S-9600-1100-OP	101.5	621969	253553	297333	-	-	-	-	-	-	-	-	-
18S-9600-1200-OP	79.8	619075	251774	294546	-	-	-	-	-	-	-	-	-
18S-9600-1300-OP	72.5	615942	249853	291519	-	-	-	-	-	-	-	-	-
18S-9800-835-OP	174.0	799686	324335	378355	949773	518681	755463	1103542	622031	951764	1411088	827581	1344377
18S-9800-935-OP	152.3	797465	322963	376205	1299153	752923	1201485	1491960	881513	1447621	-	-	-
18S-9800-1000-OP	133.4	795881	321990	374682	1547423	918497	1518421	-	-	-	-	-	-
18S-9800-1100-OP	110.2	793243	320352	372134	-	-	-	-	-	-	-	-	-
18S-9800-1200-OP	92.8	790358	318565	369346	-	-	-	-	-	-	-	-	-
18S-9800-1300-OP	78.3	787216	316626	366319	-	-	-	-	-	-	-	-	-
18S-10500-935-OP	158.1	932206	379656	444783	1224336	684583	1034565	1417142	813731	1280710	-	-	-
18S-10500-1000-OP	137.8	930631	378692	443261	1472605	850812	1351510	-	-	-	-	-	-
18S-10500-1100-OP	113.1	927993	377072	440712	-	-	-	-	-	-	-	-	-
18S-10500-1200-OP	95.7	925099	375293	437925	-	-	-	-	-	-	-	-	-
18S-10500-1300-OP	79.8	921958	373364	434898	-	-	-	-	-	-	-	-	-
18S-11000-935-OP	20.3	1046787	449509	555408	1113144	609809	892620	1305950	739347	1138765	-	-	-
18S-11000-1000-OP	145.0	1045212	448553	553877	1361413	776464	1209565	1581964	923807	1491119	-	-	-
18S-11000-1100-OP	120.4	1042574	446960	551337	-	-	-	-	-	-	-	-	-
18S-11000-1200-OP	100.1	1039680	445208	548550	-	-	-	-	-	-	-	-	-
18S-11000-1300-OP	79.8	1036547	443305	545514	-	-	-	-	-	-	-	-	-

NOTES:

MOP: Maximum Operating Pressure

BTC: Break to Close

RTC: Run to Close

ETC: End to Close

BTO: Break to Open

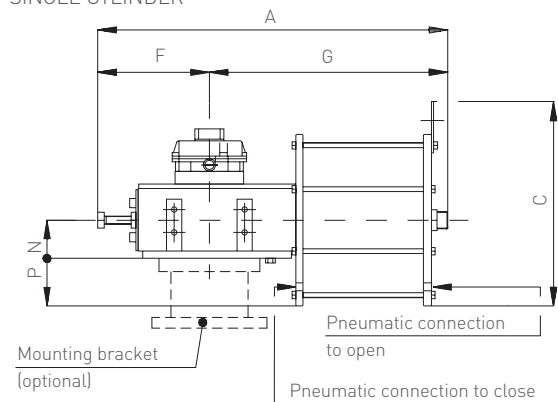
RTO: Run to Open

ETO: End to Open

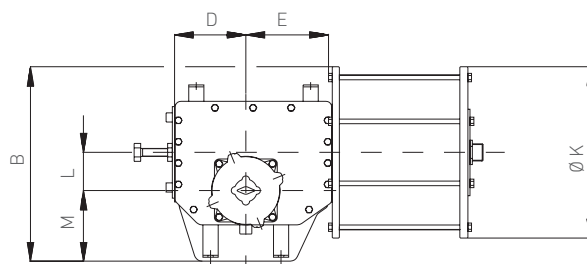
BIFFI ALGA DOUBLE-ACTING PNEUMATIC ACTUATOR

OVERALL DIMENSIONS - SINGLE CYLINDER / TWO CYLINDERS

SINGLE CYLINDER



Top view



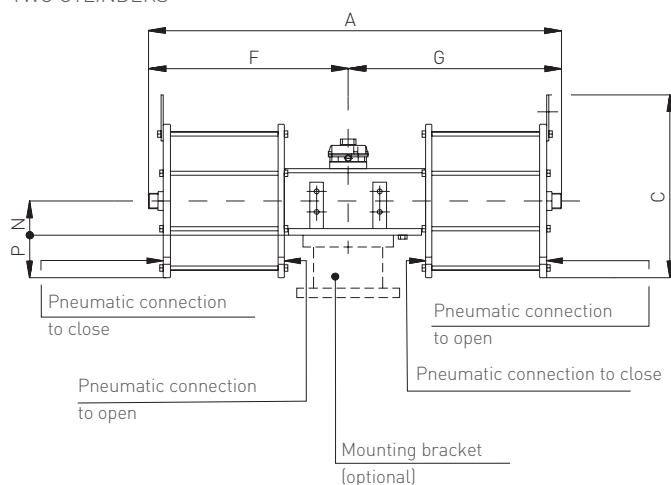
DIMENSIONS (in.)

Model	A	B	C	D	E	F	G	ØK	L	M	N	P	Pneumatic connection*		Weight (lb)	Air consumption (cu. in.)
													Close	Open		
1.5-280	38.7	18.3	14.1	7.3	8.9	12.1	26.6	13.5	3.9	7.2	3.9	2.8	1/2	3/4	365	16.0
1.5-335	38.6	18.9	18.6	7.3	8.9	12.1	26.5	15.6	3.9	7.2	3.9	3.9	1/2	1	427	23.0
1.5-385	38.7	19.9	20.9	7.3	8.9	12.1	26.6	17.6	3.9	7.2	3.9	4.9	1/2	1	499	31.0
3-335	51.2	22.9	18.6	11.1	12.9	15.2	35.9	15.6	6.2	8.4	4.1	3.7	1/2	1	583	36.0
3-385	51.3	23.4	20.9	11.1	12.9	15.2	36.0	17.6	6.2	8.4	4.1	4.7	1/2	1	678	47.0
3-435	51.3	24.4	22.6	11.1	12.9	15.2	36.1	19.5	6.2	8.4	4.1	5.5	3/4	1	814	60.0
3-485	51.5	25.5	24.9	11.1	12.9	15.2	36.3	21.8	6.2	8.4	4.1	6.8	3/4	1	854	74.0
6-485	58.4	28.9	24.9	12.8	14.8	16.8	41.6	21.8	7.2	10.1	5.5	5.5	3/4	1	1126	85.0
6-535	58.8	29.4	27.5	12.8	14.8	16.8	42.0	26.1	7.2	10.1	5.5	6.6	3/4	1	1452	104.0
6-585	58.7	30.4	29.6	12.8	14.8	16.8	41.9	26.1	7.2	10.1	5.5	7.6	3/4	1	1549	124.0
14-635	65.4	33.3	31.6	14.7	17.0	19.4	46.0	28.1	7.8	11.5	7.5	6.5	1	1	2750	159.0
14-735	70.6	35.2	35.6	14.7	17.0	19.4	51.2	31.8	7.8	11.5	7.5	8.5	1	1	3245	213.0
18-635	75.2	36.7	31.7	16.6	19.2	21.3	53.9	28.5	9.0	13.3	7.5	6.7	1	1	1758	184.0
18-685	76.1	37.2	34.7	16.6	19.2	21.3	54.8	30.0	9.0	13.3	7.5	7.5	1	1	3410	208.0
18-735	76.2	38.2	35.6	16.6	19.2	21.3	55.0	32.0	9.0	13.3	7.5	8.5	1	1	3630	239.0

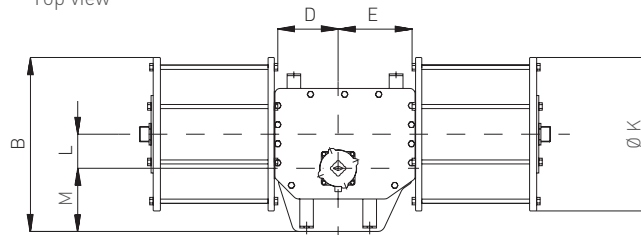
NOTE:

* Pneumatic connection NPT (in.)

TWO CYLINDERS



Top view



DIMENSIONS (in.)

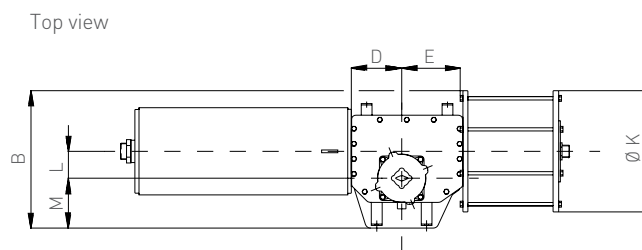
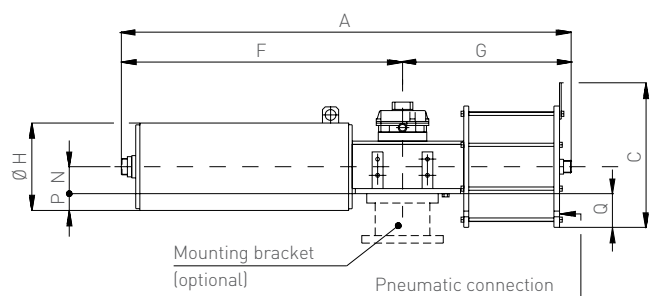
Model	A	B	C	D	E	F	G	ØK	L	M	N	P	Pneumatic connection*		Weight (lb)	Air consumption (cu. in.)
													Close	Open		
18#2-635	105.1	36.7	31.7	16.6	19.2	51.2	53.9	28.5	9.0	13.3	7.5	6.7	1	1	2823	357
18#2-685	107.0	37.2	34.7	16.6	19.2	52.2	54.8	30.0	9.0	13.3	7.5	7.5	1	1	4488	416

NOTE:

* Pneumatic connection NPT (in.)

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OVERALL DIMENSIONS - SPRING TO CLOSE, MODELS 1.5-1100-385-CL TO 14-8300-935-CL

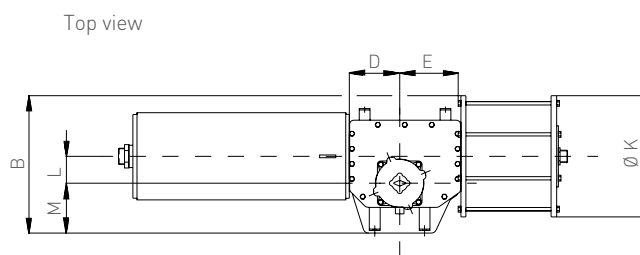
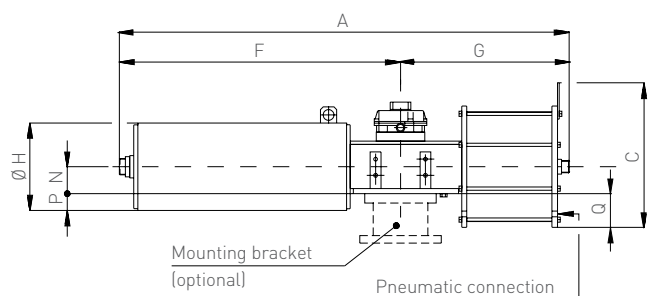


DIMENSIONS (in.)

Model	A	B	C	D	E	F	G	H	K	L	M	N	P	Q	NPT (in.)	Weight (lb)	Air consumption (cu. in.)
1.5-1100-385-CL	65.9	19.9	20.9	7.3	8.9	40.9	25.1	15.6	17.6	3.9	7.2	3.9	3.9	4.9	1	1047	31
1.5-1100-435-CL	65.9	20.9	22.6	7.3	8.9	40.9	25.1	15.6	19.5	3.9	7.2	3.9	3.9	5.9	1	1124	39
1.5-1100-485-CL	66.2	22.0	24.9	7.3	8.9	40.9	25.3	15.6	21.8	3.9	7.2	3.9	3.9	7.0	1	1203	48
1.5-1100-535-CL	66.5	24.2	27.7	7.3	8.9	40.9	25.7	15.6	24.2	3.9	7.2	3.9	3.9	8.2	1	1240	59
1.5-1100-585-CL	66.3	26.1	29.6	7.3	8.9	40.9	25.5	15.6	26.1	3.9	7.2	3.9	3.9	9.2	1	1278	70
1.5-1200-385-CL	68.6	19.9	20.9	7.3	8.9	43.6	25.1	12.6	17.6	3.9	7.2	3.9	2.4	4.9	1	1051	31
1.5-1200-435-CL	68.6	20.9	22.6	7.3	8.9	43.6	25.1	12.6	19.5	3.9	7.2	3.9	2.4	5.9	1	1106	39
1.5-1200-485-CL	68.9	22.0	24.9	7.3	8.9	43.6	25.3	12.6	21.8	3.9	7.2	3.9	2.4	7.0	1	1185	48
1.5-1200-535-CL	69.2	24.2	27.7	7.3	8.9	43.6	25.7	12.6	24.2	3.9	7.2	3.9	2.4	8.2	1	1223	59
1.5-1200-585-CL	69.0	26.1	29.6	7.3	8.9	43.6	25.5	12.6	26.1	3.9	7.2	3.9	2.4	9.2	1	1260	70
3-2000-385-CL	91.8	23.4	20.9	11.1	12.9	57.5	34.3	16.2	17.6	6.2	8.4	4.1	4.0	4.7	1	1702	47
3-2000-435-CL	91.8	24.4	22.7	11.1	12.9	57.5	34.3	16.2	19.5	6.2	8.4	4.1	4.0	5.7	1	1779	60
3-2000-485-CL	92.0	25.5	26.3	11.1	12.9	57.5	34.5	16.2	21.8	6.2	8.4	4.1	4.0	6.8	1	1854	74
3-2000-535-CL	92.5	26.7	27.7	11.1	12.9	57.5	35.0	16.2	24.2	6.2	8.4	4.1	4.0	8.0	1	2043	90
3-2000-585-CL	93.5	27.7	29.6	11.1	12.9	57.5	36.0	16.2	26.1	6.2	8.4	4.1	4.0	9.0	1	2233	108
6-2500-485-CL	116.0	28.9	25.0	12.8	14.8	76.4	39.6	14.9	21.8	7.2	10.1	5.5	2.0	5.5	1	2349	85
6-2500-535-CL	116.4	29.4	27.5	12.8	14.8	76.4	39.9	14.9	24.2	7.2	10.1	5.5	2.0	6.6	1	2783	104
6-2500-585-CL	116.5	30.4	29.6	12.8	14.8	76.4	40.1	14.9	26.1	7.2	10.1	5.5	2.0	7.6	1	2739	124
6-2500-635-CL	118.1	31.4	31.6	12.8	14.8	76.4	41.8	14.9	28.1	7.2	10.1	5.5	2.0	8.6	1	2910	146
6-2500-735-CL	118.9	33.3	35.6	12.8	14.8	76.4	42.5	14.9	31.8	7.2	10.1	5.5	2.0	10.4	1	3295	196
6-3800-535-CL	125.3	29.4	27.5	12.8	14.8	85.3	40.1	20.7	24.2	7.2	10.1	5.5	4.9	6.6	1	3520	104
6-3800-585-CL	125.2	30.4	29.6	12.8	14.8	85.3	40.0	20.7	26.1	7.2	10.1	5.5	4.9	7.6	1	3608	124
6-3800-635-CL	127.1	31.4	31.6	12.8	14.8	85.3	41.8	20.7	28.1	7.2	10.1	5.5	4.9	8.6	1	3784	146
6-3800-735-CL	127.8	33.3	35.6	12.8	14.8	85.3	42.5	20.7	31.8	7.2	10.1	5.5	4.9	10.5	1	4254	196
14-5100-635-CL	127.6	34.7	31.6	14.7	17.0	83.9	43.7	20.7	28.1	7.8	12.9	7.5	2.8	6.6	1	3982	159
14-5100-735-CL	128.3	36.6	35.6	14.7	17.0	83.9	44.4	20.7	31.8	7.8	12.9	7.5	2.8	8.3	1	4457	213
14-5100-785-CL	128.3	37.9	38.7	14.7	17.0	83.9	44.4	20.7	34.5	7.8	12.9	7.5	2.8	9.8	1	4457	243
14-5100-835-CL	129.9	38.7	40.4	14.7	17.0	83.9	46.0	20.7	36.1	7.8	12.9	7.5	2.8	10.5	1	5181	274
14-5100-885-CL	131.5	40.2	43.8	14.7	17.0	83.9	47.6	20.7	39.0	7.8	12.9	7.5	2.8	12.0	1	5401	308
14-5100-935-CL	131.4	41.2	46.0	14.7	17.0	83.9	47.5	20.7	41.0	7.8	12.9	7.5	2.8	13.0	1	5621	343
14-5400-635-CL	125.5	34.7	31.6	14.7	17.0	81.9	43.7	20.7	28.1	7.8	12.9	7.5	2.8	6.5	1	4213	159
14-5400-735-CL	126.2	35.2	35.6	14.7	17.0	81.9	44.4	20.7	31.8	7.8	11.5	7.5	2.8	8.4	1	4510	213
14-5400-785-CL	126.2	37.9	38.7	14.7	17.0	81.9	44.4	20.7	34.5	7.8	12.9	7.5	2.8	9.8	1	4972	243
14-5400-835-CL	126.2	37.4	40.4	14.7	17.0	81.9	44.4	20.7	36.1	7.8	11.5	7.5	2.8	10.5	1	4950	274
14-5400-885-CL	123.7	40.2	43.8	14.7	17.0	81.9	41.8	20.7	39.0	7.8	12.9	7.5	2.8	12.0	1	5401	308
14-5400-935-CL	129.2	41.0	46.0	14.7	17.0	81.9	47.4	20.7	41.0	7.8	12.7	7.5	2.8	13.1	1	5720	343
14-8300-735-CL	128.7	35.2	35.6	14.7	17.0	84.3	44.4	20.7	31.8	7.8	11.5	7.5	2.8	8.4	1	4620	213
14-8300-785-CL	128.7	37.9	38.7	14.7	17.0	84.3	44.4	20.7	34.5	7.8	12.9	7.5	2.8	9.8	1	5588	243
14-8300-835-CL	128.7	37.4	40.4	14.7	17.0	84.3	44.4	20.7	36.1	7.8	12.9	7.5	2.8	10.5	1	5060	274
14-8300-885-CL	126.2	40.2	43.8	14.7	17.0	84.3	41.8	20.7	39.0	7.8	12.9	7.5	2.8	12.0	1	5126	308
14-8300-935-CL	131.7	41.0	46.0	14.7	17.0	84.3	47.4	20.7	41.0	7.8	11.5	7.5	2.8	13.1	1	5830	343

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OVERALL DIMENSIONS - SPRING TO CLOSE, MODELS 18-9600-835-CL TO 18-11000-1300-CL

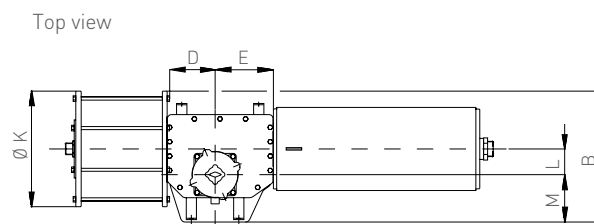
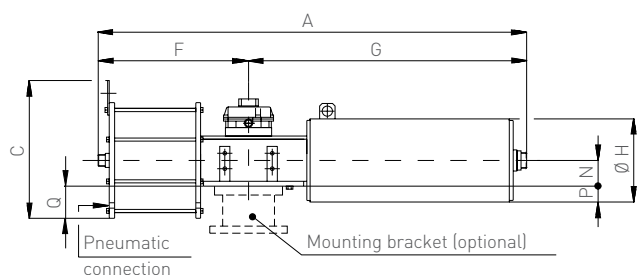


DIMENSIONS (in.)

Model	A	B	C	D	E	F	G	H	K	L	M	N	P	Q	NPT (in.)	Weight (lb)	Air consumption (cu. in.)
18-9600-835-CL	157.2	40.3	40.4	16.7	19.3	53.5	107.8	21.8	36.1	9.0	13.3	7.6	6.9	10.4	2 x 1	7370.0	318
18-9600-935-CL	160.2	42.8	46.0	16.7	19.3	55.0	107.8	21.8	41.1	9.0	13.3	7.6	6.9	12.9	2 x 1	8250.0	398
18-9600-1000-CL	160.3	44.7	49.3	16.6	19.2	55.1	107.8	21.8	43.7	9.0	13.8	7.5	6.9	14.3	2 x 1	8786.8	456
18-9600-1100-CL	160.2	47.4	53.2	16.7	19.3	55.1	107.8	21.8	47.6	9.0	13.3	7.6	6.9	16.1	2 x 1	9570.0	552
18-9600-1200-CL	159.4	51.5	57.1	16.6	19.2	53.5	107.8	21.8	51.5	9.0	13.3	7.5	6.9	18.2	2 x 1	9680.0	660
18-9600-1300-CL	161.9	55.4	61.4	16.6	19.2	56.3	107.8	21.8	55.4	9.0	13.3	7.5	6.9	20.2	2 x 1	12452.0	770
18-9800-835-CL	156.8	40.3	40.4	16.7	19.3	53.6	107.4	21.8	36.1	9.0	13.3	7.6	6.9	10.4	2 x 1	8140.0	318
18-9800-935-CL	159.8	42.8	46.0	16.7	19.3	55.0	107.4	21.8	41.1	9.0	13.3	7.6	6.9	12.9	2 x 1	9020.0	398
18-9800-1000-CL	159.9	44.7	49.3	16.7	19.3	55.1	107.4	21.8	43.7	9.0	13.8	7.5	6.9	14.3	2 x 1	9218.0	456
18-9800-1100-CL	159.8	47.4	53.2	16.7	19.3	55.1	107.4	21.8	47.6	9.0	13.3	7.6	6.9	16.1	2 x 1	10340.0	552
18-9800-1200-CL	159.0	51.5	57.1	16.7	19.3	54.4	107.4	21.8	51.5	9.0	13.3	7.6	6.9	18.2	2 x 1	11176.0	660
18-9800-1300-CL	161.5	55.4	61.4	16.7	19.3	56.4	107.4	21.8	55.4	9.0	13.3	7.5	6.9	20.2	2 x 1	12804.0	770
18-10500-935-CL	163.1	42.8	46.0	16.7	19.3	54.9	110.8	26.1	41.1	9.0	13.3	7.6	9.0	12.9	2 x 1	10527.0	398
18-10500-1000-CL	163.2	44.7	49.3	16.7	19.3	55.2	110.6	26.1	43.7	9.0	13.8	7.5	9.0	14.3	2 x 1	11057.2	456
18-10500-1100-CL	163.1	47.4	53.2	16.7	19.3	55.0	110.8	26.1	47.6	9.0	13.3	7.6	9.0	16.1	2 x 1	10450.0	552
18-10500-1200-CL	162.3	48.6	57.1	16.7	19.3	53.5	110.6	26.1	51.5	9.0	13.8	7.5	9.0	18.2	2 x 1	11827.2	660
18-10500-1300-CL	164.8	55.4	61.4	16.7	19.3	56.8	110.6	26.1	55.4	9.0	13.3	7.6	9.0	20.0	2 x 1	11827.2	770
18-11000-935-CL	158.5	42.8	46.0	16.7	19.3	55.0	106.2	26.1	41.1	9.0	13.3	7.6	9.0	12.9	2 x 1	9020.0	398
18-11000-1000-CL	158.7	44.7	49.3	16.7	19.3	55.2	106.1	26.1	43.7	9.0	13.8	7.5	9.0	14.3	2 x 1	10340.0	456
18-11000-1100-CL	158.5	47.4	53.2	16.7	19.3	55.0	106.2	26.1	47.6	9.0	13.3	7.6	9.0	16.1	2 x 1	10340.0	552
18-11000-1200-CL	157.9	51.5	57.1	16.7	19.3	54.4	106.2	26.1	51.5	9.0	13.3	7.6	9.0	18.1	2 x 1	9020.0	660
18-11000-1300-CL	160.3	50.5	61.4	16.7	19.3	56.8	106.1	26.1	55.4	9.0	13.8	7.5	9.0	20.2	2 x 1	14234.0	770

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OVERALL DIMENSIONS - SPRING TO OPEN, MODELS 1.5-1100-385-OP TO 14-8300-935-OP

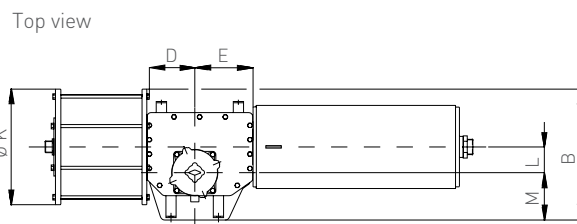
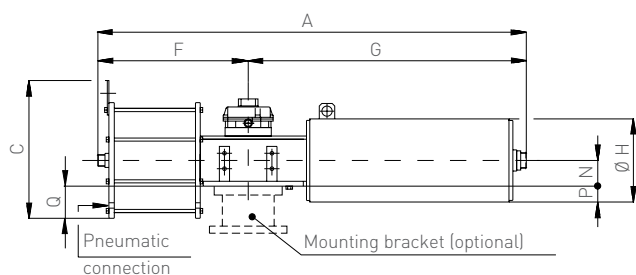


DIMENSIONS (in.)

Model	A	B	C	D	E	F	G	H	K	L	M	N	P	Q	NPT (in.)	Weight (lb)	Air consumption (cu. in.)
1.5-1100-385-OP	66.6	20.1	21.1	7.4	8.9	25.3	41.3	15.7	17.7	3.9	7.3	3.9	3.9	4.9	1	1049	31
1.5-1100-435-OP	66.6	21.1	22.8	7.4	8.9	25.3	41.3	15.7	19.7	3.9	7.3	3.9	3.9	5.9	1	1127	39
1.5-1100-485-OP	66.8	22.2	25.2	7.4	8.9	25.6	41.3	15.7	22.0	3.9	7.3	3.9	3.9	7.1	1	1206	48
1.5-1100-535-OP	67.2	24.4	28.0	7.4	8.9	25.9	41.3	15.7	24.4	3.9	7.3	3.9	3.9	8.3	1	1243	59
1.5-1100-585-OP	67.0	26.4	29.8	7.4	8.9	25.7	41.3	15.7	26.4	3.9	7.3	3.9	3.9	9.3	1	1281	70
1.5-1200-385-OP	69.3	20.1	21.1	7.4	8.9	25.3	44.0	12.7	17.7	3.9	7.3	3.9	2.4	4.9	1	1054	31
1.5-1200-435-OP	69.3	21.1	22.8	7.4	8.9	25.3	44.0	12.7	19.7	3.9	7.3	3.9	2.4	5.9	1	1109	39
1.5-1200-485-OP	69.5	22.2	25.2	7.4	8.9	25.6	44.0	12.7	22.0	3.9	7.3	3.9	2.4	7.1	1	1188	48
1.5-1200-535-OP	69.9	24.4	28.0	7.4	8.9	25.9	44.0	12.7	24.4	3.9	7.3	3.9	2.4	8.3	1	1226	59
1.5-1200-585-OP	69.7	26.4	29.8	7.4	8.9	25.7	44.0	12.7	26.4	3.9	7.3	3.9	2.4	9.3	1	1263	70
3-2000-385-OP	92.7	23.6	21.1	11.2	13.0	34.6	58.0	16.3	17.7	6.3	8.5	4.2	4.0	4.7	1	1706	47
3-2000-435-OP	92.7	24.6	22.9	11.2	13.0	34.6	58.0	16.3	19.7	6.3	8.5	4.2	4.0	5.7	1	1784	60
3-2000-485-OP	92.9	25.8	26.5	11.2	13.0	34.8	58.0	16.3	22.0	6.3	8.5	4.2	4.0	6.9	1	1858	74
3-2000-535-OP	93.4	27.0	28.0	11.2	13.0	35.4	58.0	16.3	24.4	6.3	8.5	4.2	4.0	8.1	1	2048	90
3-2000-585-OP	94.4	28.0	29.8	11.2	13.0	36.3	58.0	16.3	26.4	6.3	8.5	4.2	4.0	9.1	1	2238	108
6-2500-485-OP	117.1	29.1	25.2	12.9	14.9	40.0	77.1	15.1	22.0	7.3	10.2	5.5	2.0	5.5	1	2355	85
6-2500-535-OP	117.5	29.7	27.8	12.9	14.9	40.3	77.1	15.1	24.4	7.3	10.2	5.5	2.0	6.7	1	2789	104
6-2500-585-OP	117.6	30.7	29.8	12.9	14.9	40.5	77.1	15.1	26.4	7.3	10.2	5.5	2.0	7.7	1	2745	124
6-2500-635-OP	119.3	31.7	31.9	12.9	14.9	42.2	77.1	15.1	28.3	7.3	10.2	5.5	2.0	8.7	1	2917	146
6-2500-735-OP	120.0	33.6	35.9	12.9	14.9	42.9	77.1	15.1	32.1	7.3	10.2	5.5	2.0	10.5	2 x 1	3303	196
6-3800-535-OP	126.5	29.7	27.8	12.9	14.9	40.5	86.1	20.9	24.4	7.3	10.2	5.5	4.9	6.7	1	3527	104
6-3800-585-OP	126.4	30.7	29.8	12.9	14.9	40.4	86.1	20.9	26.4	7.3	10.2	5.5	4.9	7.7	1	3616	124
6-3800-635-OP	128.3	31.7	31.9	12.9	14.9	42.2	86.1	20.9	28.3	7.3	10.2	5.5	4.9	8.7	1	3792	146
6-3800-735-OP	129.1	33.6	35.9	12.9	14.9	42.9	86.1	20.9	32.1	7.3	10.2	5.5	4.9	10.6	2 x 1	4264	196
14-5100-635-OP	128.8	35.0	31.9	14.8	17.1	44.1	84.7	20.9	28.3	7.9	13.0	7.6	2.8	6.6	1	3990	159
14-5100-735-OP	129.5	36.9	35.9	14.8	17.1	44.8	84.7	20.9	32.1	7.9	13.0	7.6	2.8	8.4	2 x 1	4467	213
14-5100-785-OP	129.5	38.3	39.1	14.8	17.1	44.8	84.7	20.9	34.8	7.9	13.0	7.6	2.8	9.9	2 x 1	4467	243
14-5100-835-OP	131.1	39.1	40.8	14.8	17.1	46.4	84.7	20.9	36.4	7.9	13.0	7.6	2.8	10.6	2 x 1	5192	274
14-5100-885-OP	132.7	40.6	44.2	14.8	17.1	48.0	84.7	20.9	39.4	7.9	13.0	7.6	2.8	12.1	2 x 1	5412	308
14-5100-935-OP	132.6	41.6	46.4	14.8	17.1	48.0	84.7	20.9	41.4	7.9	13.0	7.6	2.8	13.1	2 x 1	5633	343
14-5400-635-OP	126.7	35.0	31.9	14.8	17.1	44.1	82.7	20.9	28.3	7.9	13.0	7.6	2.8	6.6	1	4222	159
14-5400-735-OP	127.4	35.6	35.9	14.8	17.1	44.8	82.6	20.9	32.1	7.9	11.6	7.6	2.8	8.5	2 x 1	4519	213
14-5400-785-OP	127.4	38.3	39.1	14.8	17.1	44.8	82.6	20.9	34.8	7.9	13.0	7.6	2.8	9.9	2 x 1	4982	243
14-5400-835-OP	127.4	37.7	40.8	14.8	17.1	44.8	82.6	20.9	36.4	7.9	11.6	7.6	2.8	10.6	2 x 1	4960	274
14-5400-885-OP	124.9	40.6	44.2	14.8	17.1	42.2	82.6	20.9	39.4	7.9	13.0	7.6	2.8	12.1	2 x 1	5412	308
14-5400-935-OP	130.5	41.4	46.4	14.8	17.1	47.8	82.6	20.9	41.4	7.9	12.8	7.6	2.8	13.2	2 x 1	5732	343
14-8300-735-OP	129.9	35.6	35.9	14.8	17.1	44.8	85.1	20.9	32.1	7.9	11.6	7.6	2.8	8.5	2 x 1	4630	213
14-8300-785-OP	129.9	38.3	39.1	14.8	17.1	44.8	85.1	20.9	34.8	7.9	13.0	7.6	2.8	9.9	2 x 1	5600	243
14-8300-835-OP	129.9	37.7	40.8	14.8	17.1	44.8	85.1	20.9	36.4	7.9	13.0	7.6	2.8	10.6	2 x 1	5071	274
14-8300-885-OP	127.4	40.6	44.2	14.8	17.1	42.2	85.1	20.9	39.4	7.9	13.0	7.6	2.8	12.1	2 x 1	5137	308
14-8300-935-OP	133.0	41.4	46.4	14.8	17.1	47.8	85.1	20.9	41.4	7.9	11.6	7.6	2.8	13.2	2 x 1	5842	343

BIFFI ALGAS SPRING-RETURN PNEUMATIC ACTUATOR

OVERALL DIMENSIONS - SPRING TO OPEN, MODELS 18-9600-835-OP TO 18-11000-1300-OP



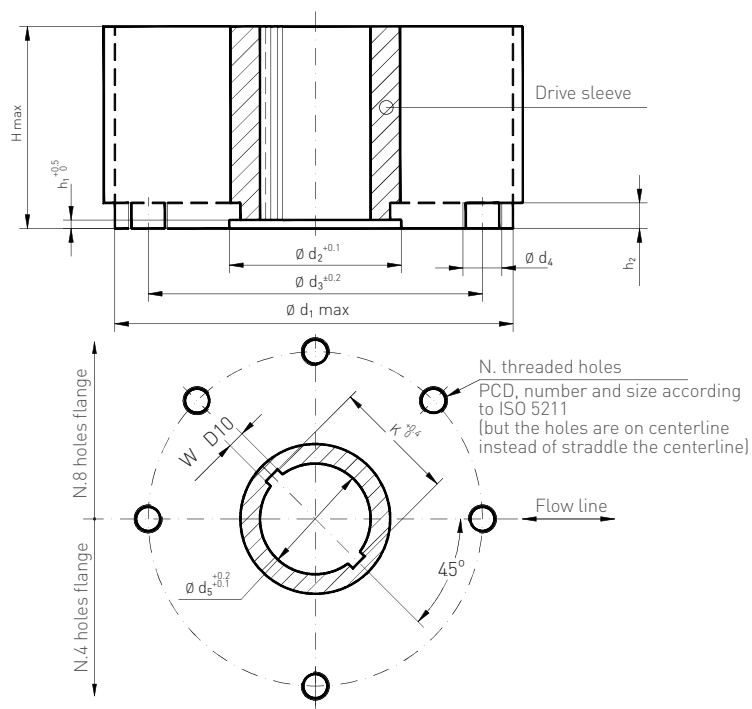
DIMENSIONS (in.)

Model	A	B	C	D	E	F	G	H	K	L	M	N	P	Q	NPT (in.)	Weight (lb)	Air consumption (cu. in.)
18-9600-835-OP	158.7	40.7	40.8	16.9	19.5	54.1	108.9	22.1	36.5	9.1	13.4	7.8	7.0	10.6	2 x 1	7385	318
18-9600-935-OP	161.7	43.3	46.5	16.9	19.5	55.6	108.9	22.1	41.6	9.1	13.4	7.8	7.0	13.1	2 x 1	8267	398
18-9600-1000-OP	161.9	45.1	49.8	16.8	19.5	55.7	108.8	22.1	44.1	9.1	14.0	7.6	7.0	14.5	2 x 1	8805	456
18-9600-1100-OP	161.7	47.9	53.8	16.9	19.5	55.7	108.9	22.1	48.1	9.1	13.4	7.8	7.0	16.3	2 x 1	9590	552
18-9600-1200-OP	161.0	52.0	57.7	16.8	19.5	54.1	108.8	22.1	52.0	9.1	13.4	7.6	7.0	18.4	2 x 1	9700	660
18-9600-1300-OP	163.5	56.0	62.1	16.8	19.5	56.9	108.8	22.1	56.0	9.1	13.4	7.6	7.0	20.4	2 x 1	12478	770
18-9800-835-OP	158.3	40.7	40.8	16.9	19.5	54.2	108.5	22.1	36.5	9.1	13.4	7.8	7.0	10.6	2 x 1	8157	318
18-9800-935-OP	161.3	43.3	46.5	16.9	19.5	55.6	108.5	22.1	41.6	9.1	13.4	7.8	7.0	13.1	2 x 1	9039	398
18-9800-1000-OP	161.5	45.1	49.8	16.9	19.5	55.7	108.4	22.1	44.1	9.1	14.0	7.6	7.0	14.5	2 x 1	9237	456
18-9800-1100-OP	161.3	47.9	53.8	16.9	19.5	55.7	108.5	22.1	48.1	9.1	13.4	7.8	7.0	16.3	2 x 1	10362	552
18-9800-1200-OP	160.6	52.0	57.7	16.9	19.5	54.9	108.4	22.1	52.0	9.1	13.4	7.8	7.0	18.4	2 x 1	11199	660
18-9800-1300-OP	163.1	56.0	62.1	16.9	19.5	57.0	108.4	22.1	56.0	9.1	13.4	7.6	7.0	20.4	2 x 1	12831	770
18-10500-935-OP	164.7	43.3	46.5	16.9	19.5	55.5	111.9	26.4	41.6	9.1	13.4	7.8	9.2	13.1	2 x 1	10549	398
18-10500-1000-OP	164.8	45.1	49.8	16.9	19.5	55.8	111.7	26.4	44.1	9.1	14.0	7.6	9.2	14.5	2 x 1	11080	456
18-10500-1100-OP	164.7	47.9	53.8	16.9	19.5	55.6	111.9	26.4	48.1	9.1	13.4	7.8	9.2	16.3	2 x 1	10472	552
18-10500-1200-OP	163.9	49.1	57.7	16.9	19.5	54.1	111.7	26.4	52.0	9.1	14.0	7.6	9.2	18.4	2 x 1	11852	660
18-10500-1300-OP	166.4	56.0	62.1	16.9	19.5	57.4	111.7	26.4	56.0	9.1	13.4	7.8	9.2	20.3	2 x 1	11852	770
18-11000-935-OP	160.1	43.3	46.5	16.9	19.5	55.6	107.3	26.4	41.6	9.1	13.4	7.8	9.2	13.1	2 x 1	9039	398
18-11000-1000-OP	160.2	45.1	49.8	16.9	19.5	55.8	107.2	26.4	44.1	9.1	14.0	7.6	9.2	14.5	2 x 1	10362	456
18-11000-1100-OP	160.1	47.9	53.8	16.9	19.5	55.6	107.3	26.4	48.1	9.1	13.4	7.8	9.2	16.3	2 x 1	10362	552
18-11000-1200-OP	159.5	52.0	57.7	16.9	19.5	54.9	107.3	26.4	52.0	9.1	13.4	7.8	9.2	18.3	2 x 1	9039	660
18-11000-1300-OP	161.9	51.0	62.1	16.9	19.5	57.4	107.2	26.4	56.0	9.1	14.0	7.6	9.2	20.4	2 x 1	14264	770

BIFFI ALGA / ALGAS PNEUMATIC ACTUATOR

MOUNTING DIMENSIONS - COUPLINGS MODELS 1.5 TO 6

ACTUATOR MODELS 1.5 TO 6.0



Top view of the Scotch yoke mechanism
(actuator shown in closed position)

COUPLING DIMENSIONS (in.) MODELS 0.3 TO 0.6 (in.)

Actuator model	Ø d ₁	Ø d ₂	Ø d ₃	Ø d ₄	N	h ₁	h ₂	H max	Ø d ₅	W	K
1.5	14.2	5.7	11.7	M20	0.3	0.2	0.7	7.5	4.4	0.7	4.7
3	16.9	7.7	14.0	M30	0.3	0.4	0.9	7.9	6.2	1.0	6.6
6	20.5	9.8	16.0	M36	0.3	0.6	1.1	10.2	7.9	1.1	8.4

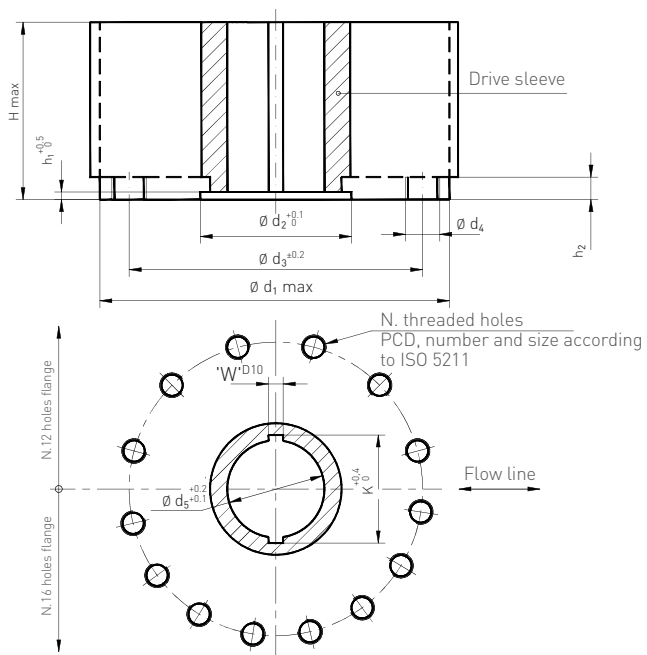
NOTE:

Ø d₁ is maximum adapter flange diameter.

BIFFI ALGA / ALGAS PNEUMATIC ACTUATOR

MOUNTING DIMENSIONS - COUPLINGS MODELS 14 TO 18

ACTUATOR MODELS 14 TO 18



Top view of the Scotch yoke mechanism
(actuator shown in closed position)

COUPLING DIMENSIONS (in.) MODELS 14 TO 18

Actuator model	Ø d ₁	Ø d ₂	Ø d ₃	Ø d ₄	N	h ₁	h ₂	H max	Ø d ₅	W	K
14	22.8	9.8	19.0	M36	0.5	0.4	1.1	13.4	6.9	1.8	7.7
18	26.8	11.4	23.7	M36	0.6	0.5	1.3	13.8	7.9	1.8	8.7

NOTE:

Ø d₁ is maximum adapter flange diameter.

BIFFI ALGA / ALGAS PNEUMATIC ACTUATOR

MOUNTING DIMENSIONS - STEM ACCEPTANCE

MOUNTING DIMENSIONS - STEM ACCEPTANCE

Square key



Rectangular key



Square stem



STEM ACCEPTANCE DIMENSIONS FOR INSERT BUSHES (in.)

Housing size	Maximum stem diameter with square key (key dimension)	Maximum stem diameter with rectangular key	Square stem		Maximum stem protrusion**
			W	S*	
1.5	0.8 (3.4)	3.5	2.9	4.1	7.1
3	1.3 (4.8)	5.1	4.1	5.8	7.5
6	1.5 (6)	6.7	5.2	7.4	9.8
14	1.5 (6.9)	7.8	-	-	14.2
18	1.8 (7.9)	8.7	-	-	14.2

NOTES

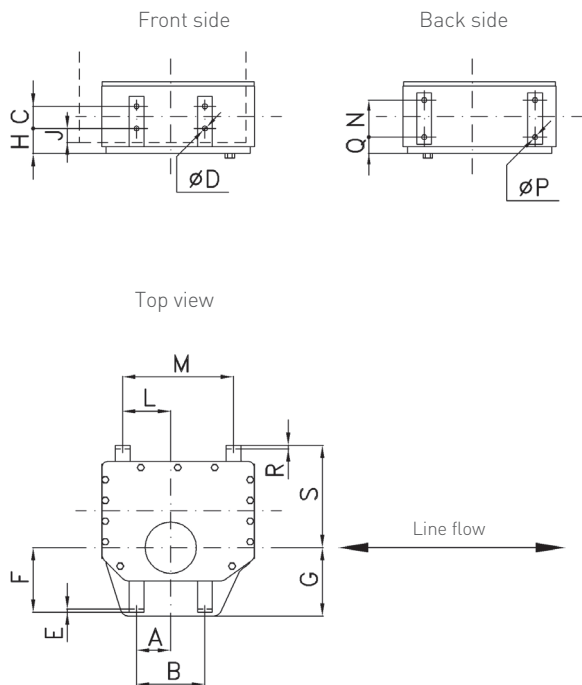
1. The listed maximum acceptance values are applicable for stems with keyway parallel or perpendicular to the flow line and for square stems with diagonal parallel with the flow line.
2. Key according to UNI6604 or DIN 6885 sh.1 or BS4325 part 1 or ISO 773 or equivalent.
3. * S max: maximum external diameter in case of rounded edge.
4. ** Without adapter flange.

BIFFI ALGA / ALGAS PNEUMATIC ACTUATOR

ACCESSORIES MOUNTING DIMENSIONS

ACCESSORIES MOUNTING DIMENSIONS

Actuator models 1.5 to 18



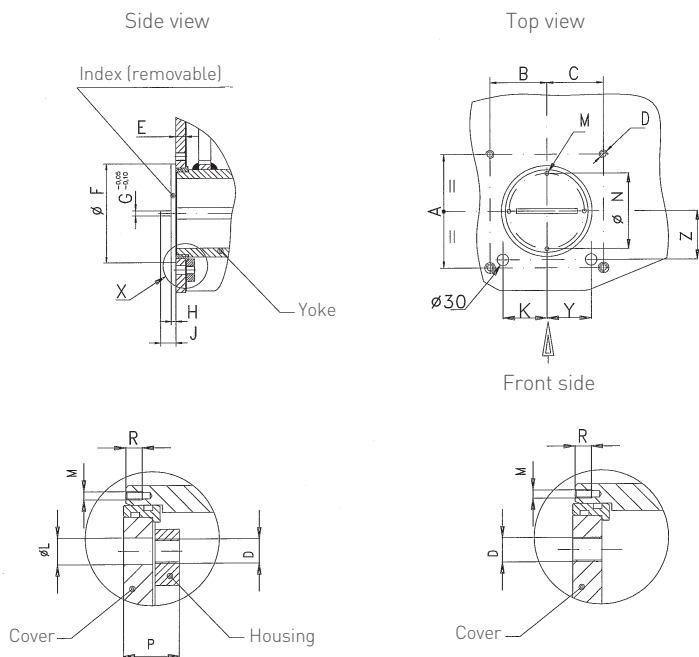
ACCESSORIES MOUNTING DIMENSIONS (in.)

Actuator model	A	B	C	$\varnothing D$	E	F	G	H	J	L	M	N	$\varnothing P$	Q	R	S
1.5	3.6	7.2	2.3	0.5	0.2	6.8	7.2	2.4	1.4	5.1	11.7	3.9	0.5	1.8	0.2	11.1
3	4.6	9.2	3.3	0.9	0.3	7.9	8.4	2.2	1.0	9.0	19.5	3.9	0.5	2.1	0.2	14.5
6	5.3	17.7	4.5	0.9	0.3	9.7	10.1	2.3	0.9	8.7	19.5	3.9	0.5	3.4	0.3	18.7
14	12.3	24.6	7.8	1.1	0.4	8.9	12.9	3.8	2.1	8.6	19.5	6.6	1.1	3.9	0.3	21.2
18	12.3	24.6	7.8	1.1	0.4	9.2	13.3	2.8	1.2	11.9	26.5	8.4	1.1	3.1	0.4	23.4

BIFFI ALGA / ALGAS PNEUMATIC ACTUATOR

MOUNTING DIMENSIONS - ACCESSORIES ON ACTUATOR TOP

ACCESSORIES MOUNTING HOLES ON ACTUATOR TOP (COVER AND YOKE)



X : for model
6 - 18

X : for model
3 - 14

The index is represented for actuator in end position (fully open or closed).

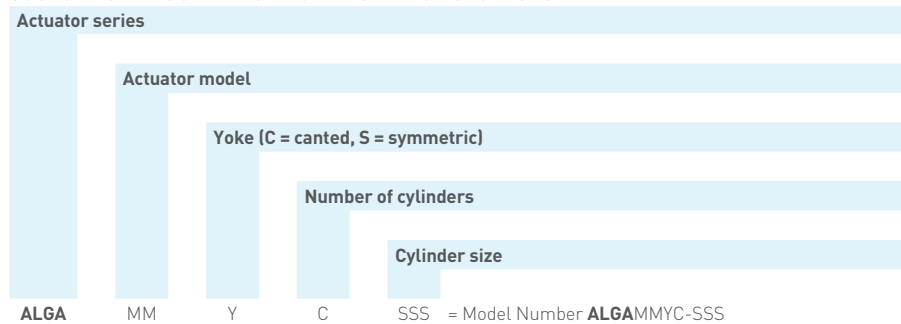
ACCESSORIES MOUNTING HOLES DIMENSIONS (in.)

Actuator model	A	B	C	D	E	δF	G	H	J	δL	M	δN	P	R	K	Y	Z
1.5	5.5	2.7	2.7	4 x M10	0.5	6.3	0.2	0.3	0.7	0.4	4 x M5	4.8	0.9	0.3	-	-	-
3	6.2	5.0	5.3	4 x M16	0.5	8.6	0.2	0.3	0.8	-	4 x M6	6.7	-	0.4	4.2	4.5	3.0
6	6.2	5.0	5.3	4 x M16	0.5	10.5	0.2	0.3	0.8	0.6	4 x M6	8.4	1.2	0.4	-	-	-
14	6.2	5.0	5.3	4 x M16	0.6	10.5	0.2	0.3	0.8	-	4 x M6	8.4	-	0.4	-	-	-
18	12.2	4.3	4.3	4 x M16	0.7	12.1	0.2	0.3	0.5	0.6	4 x M6	9.4	1.4	0.4	-	-	-

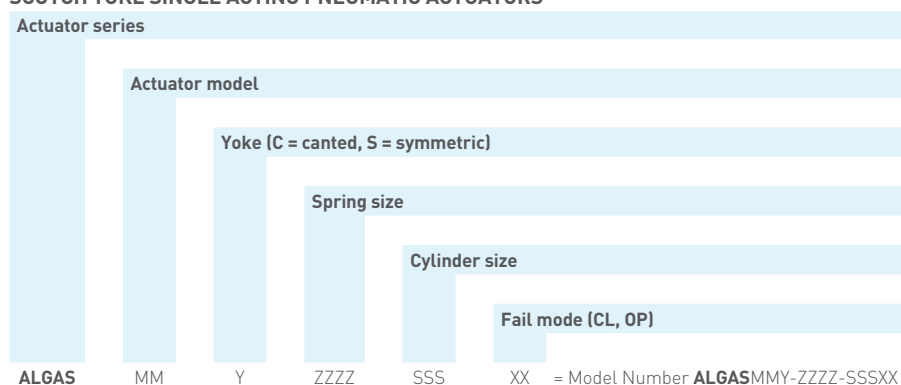
BIFFI ALGA / ALGAS PNEUMATIC ACTUATOR

SELECTION GUIDE

SCOTCH YOKE DOUBLE-ACTING PNEUMATIC ACTUATORS



SCOTCH YOKE SINGLE ACTING PNEUMATIC ACTUATORS



Biffi reserves the the right to change product designs and specifications without notice.

Biffi Italia S.r.L.

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