

# Bettis CBA300 Series

Pneumatic Actuators



*This page is intentionally left blank.*

## Table of Contents

|                                                       |    |
|-------------------------------------------------------|----|
| <b>Section 1: Introduction</b>                        |    |
| Introduction.....                                     | 5  |
| <b>Section 2: Torque Ratings</b>                      |    |
| Double-Acting Actuators.....                          | 6  |
| Spring-Return Actuators.....                          | 7  |
| <b>Section 3: Performance Data</b>                    |    |
| Double-Acting Actuators.....                          | 9  |
| Spring-Return Actuators.....                          | 9  |
| <b>Section 4: Actuator Dimensions (in.)</b>           |    |
| Double-Acting Actuators - CBAX30.....                 | 10 |
| Spring-Return Actuators - CBAX30-SRX.....             | 12 |
| <b>Section 5: Handwheel Override Dimensions (in.)</b> |    |
| Double-Acting Actuators - CBAX30-M3HW.....            | 13 |
| Spring-Return Actuators - CBAX30-SRX-M3HW.....        | 14 |
| <b>Section 6: Hydraulic Override Dimensions (in.)</b> |    |
| Double-Acting Actuators - CBAX30-M18.....             | 15 |
| Spring-Return Actuators - CBAX30-SRX-M18.....         | 15 |
| Double-Acting Actuators - CBAX30-M11.....             | 16 |
| Spring-Return Actuators - CBAX30-SRX-M11.....         | 16 |

*This page is intentionally left blank.*

## Introduction

The Bettis™ CBA300 Series pneumatic actuators incorporate the most advanced features from a long history of developments in the scotch yoke design, assuring operating efficiency and cost-effectiveness. They are lightweight and compact, making them ideally suited for automating virtually any quarter-turn (90°) rotating mechanism, including ball, butterfly and plug valves. They are economical and require little maintenance. They come with a variety of options to meet your demanding valve automation needs.

- Ductile iron housing and piston provide more strength per pound, increased durability and corrosion resistance. The pressure vessel quality housing is approved for use by ASME and the Pressure Equipment Directive (PED) 2014/68/EU.
- Increased actuator efficiency and corrosion resistance are possible with a Xylan® fluoropolymer coating on the interior of the power cylinder. This permanently bonded coating is highly resistant to abrasion, thermal shock and provides excellent lubricity and low friction properties.
- The CBA300 Series actuators meet both IP66 and IP67M specifications for submergence and severe high pressure water deluge test. This offers superior water ingress and corrosion protection. The actuator has no gaskets and is totally O-ring sealed.
- The scotch yoke design provides optimum torque curves for quarter-turn operation.
- Its lightweight assists in easy installation while its compactness allows use in tight piping configurations.
- Jackscrew and hydraulic override options.
- 5-year warranty.
- Its NAMUR TopWorx™ mounting configuration allows the CBA300 Series to be internationally accepted and promotes the ability to utilize standardized accessories that can be close coupled or direct mounted to the valve.
- Suitable for SIL 1, 2 or 3.
- The CBA300 Series provides models in both spring-return and double-acting configurations. They have guaranteed minimum torque outputs ranging from 7,160 to 20,598 lb-in in double-acting models. Spring-return models, requiring pressure from only one travel direction, are available for fail clockwise or counterclockwise applications. The spring ending torques range from 2,294 to 10,027 lb-in.

Torque Ratings

Double-Acting Actuators

CBA300 Series

All published torques are guaranteed minimum values (units are imperial).

Table 1.

| Actuator Model | Stroke Direction<br>Start/Minimum/End |          | Operating Pressure (psig)                         |       |       |                |       |       |                |       |       |                |       |       |       |       |                |     | MinOP<br>(psig) | Torque<br>@ MinOP<br>(lbf-in) | MOP<br>(psig) | Torque<br>@ MOP<br>(lbf-in) |       |
|----------------|---------------------------------------|----------|---------------------------------------------------|-------|-------|----------------|-------|-------|----------------|-------|-------|----------------|-------|-------|-------|-------|----------------|-----|-----------------|-------------------------------|---------------|-----------------------------|-------|
|                |                                       |          | 40                                                | 45    | 50    | 55             | 60    | 65    | 70             | 75    | 80    | 85             | 90    | 95    | 100   | 105   | 110            | 115 |                 |                               |               |                             | 120   |
|                |                                       |          | Pressure Torque Output Start/Minimum/End (lbf-in) |       |       |                |       |       |                |       |       |                |       |       |       |       |                |     |                 |                               |               |                             |       |
| CBA730         | Start                                 | Outboard | 7160                                              | 8106  | 9053  | 9999           | 10946 | 11893 | 12839          | 13786 | 14733 | 15680          | 16627 | 17574 | 18521 | 19468 | Exceeds<br>MOP | -   | -               | 40                            | 7160          | 105                         | 19468 |
|                | Minimum                               |          | 3810                                              | 4304  | 4798  | 5292           | 5787  | 6281  | 6775           | 7269  | 7763  | 8258           | 8752  | 9246  | 9741  | 10235 |                | -   | -               |                               | 3810          |                             | 10235 |
|                | End                                   |          | 7291                                              | 8237  | 9183  | 10128          | 11074 | 12020 | 12966          | 13911 | 14857 | 15803          | 16749 | 17695 | 18641 | 19587 |                | -   | -               |                               | 7291          |                             | 19587 |
|                | Start                                 | Inboard  | 7117                                              | 8058  | 8998  | 9939           | 10880 | 11821 | 12762          | 13703 | 14644 | 15585          | 16527 | 17468 | 18409 | 19351 |                | -   | -               |                               | 7117          |                             | 19351 |
|                | Minimum                               |          | 3810                                              | 4304  | 4798  | 5292           | 5787  | 6281  | 6775           | 7269  | 7763  | 8258           | 8752  | 9246  | 9741  | 10235 |                | -   | -               |                               | 3810          |                             | 10235 |
|                | End                                   |          | 7336                                              | 8287  | 9239  | 10190          | 11141 | 12093 | 13045          | 13996 | 14948 | 15899          | 16851 | 17803 | 18755 | 19707 |                | -   | -               |                               | 7336          |                             | 19707 |
| CBA830         | Start                                 | Outboard | 9485                                              | 10728 | 11972 | 13215          | 14459 | 15703 | 16947          | 18191 | 19435 | Exceeds<br>MOP | -     | -     | -     | -     | -              | -   | -               | 40                            | 9485          | 80                          | 19435 |
|                | Minimum                               |          | 5031                                              | 5680  | 6329  | 6978           | 7627  | 8276  | 8925           | 9574  | 10224 |                | -     | -     | -     | -     | -              | -   | -               |                               | 5031          |                             | 10224 |
|                | End                                   |          | 9628                                              | 10870 | 12112 | 13354          | 14596 | 15838 | 17081          | 18323 | 19565 |                | -     | -     | -     | -     | -              | -   | -               |                               | 9628          |                             | 19565 |
|                | Start                                 | Inboard  | 9427                                              | 10663 | 11900 | 13136          | 14372 | 15608 | 16845          | 18081 | 19318 |                | -     | -     | -     | -     | -              | -   | -               |                               | 9427          |                             | 19318 |
|                | Minimum                               |          | 5031                                              | 5680  | 6329  | 6978           | 7627  | 8276  | 8925           | 9574  | 10224 |                | -     | -     | -     | -     | -              | -   | -               |                               | 5031          |                             | 10224 |
|                | End                                   |          | 9686                                              | 10936 | 12186 | 13435          | 14685 | 15935 | 17185          | 18434 | 19684 |                | -     | -     | -     | -     | -              | -   | -               |                               | 9686          |                             | 19684 |
| CBA930         | Start                                 | Outboard | 12127                                             | 13708 | 15288 | 16869          | 18449 | 20030 | Exceeds<br>MOP | -     | -     | -              | -     | -     | -     | -     | -              | -   | -               | 40                            | 12127         | 65                          | 20030 |
|                | Minimum                               |          | 6417                                              | 7242  | 8067  | 8891           | 9716  | 10541 |                | -     | -     | -              | -     | -     | -     | -     | -              | -   | -               |                               | 6417          |                             | 10541 |
|                | End                                   |          | 12281                                             | 13859 | 15437 | 17015          | 18594 | 20172 |                | -     | -     | -              | -     | -     | -     | -     | -              | -   | -               |                               | 12281         |                             | 20172 |
|                | Start                                 | Inboard  | 12054                                             | 13625 | 15196 | 16767          | 18338 | 19909 |                | -     | -     | -              | -     | -     | -     | -     | -              | -   | -               |                               | 12054         |                             | 19909 |
|                | Minimum                               |          | 6417                                              | 7242  | 8067  | 8891           | 9716  | 10541 |                | -     | -     | -              | -     | -     | -     | -     | -              | -   | -               |                               | 6417          |                             | 10541 |
|                | End                                   |          | 12356                                             | 13944 | 15531 | 17119          | 18707 | 20295 |                | -     | -     | -              | -     | -     | -     | -     | -              | -   | -               |                               | 12356         |                             | 20295 |
| CBA1030        | Start                                 | Outboard | 16134                                             | 18225 | 20315 | Exceeds<br>MOP | -     | -     | -              | -     | -     | -              | -     | -     | -     | -     | -              | -   | 40              | 16134                         | 50            | 20315                       |       |
|                | Minimum                               |          | 8518                                              | 9608  | 10698 |                | -     | -     | -              | -     | -     | -              | -     | -     | -     | -     | -              | -   |                 | -                             |               | 8518                        | 10698 |
|                | End                                   |          | 16301                                             | 18387 | 20474 |                | -     | -     | -              | -     | -     | -              | -     | -     | -     | -     | -              | -   |                 | -                             |               | 16301                       | 20474 |
|                | Start                                 | Inboard  | 16037                                             | 18115 | 20192 |                | -     | -     | -              | -     | -     | -              | -     | -     | -     | -     | -              | -   |                 | -                             |               | 16037                       | 20192 |
|                | Minimum                               |          | 8518                                              | 9608  | 10698 |                | -     | -     | -              | -     | -     | -              | -     | -     | -     | -     | -              | -   |                 | -                             |               | 8518                        | 10698 |
|                | End                                   |          | 16400                                             | 18499 | 20598 |                | -     | -     | -              | -     | -     | -              | -     | -     | -     | -     | -              | -   |                 | -                             |               | 16400                       | 20598 |

## Spring-Return Actuators

### CBA300 Series

All published torques are guaranteed minimum values (units are imperial).

**Table 2.**

| Actuator Model | Spring Torque Start/Minimum/End (lbf-in) |       | Operating Pressure (psig)                         |      |                        |      |       |       |                        |                        |       |       |             |             |       |             |             |     |     | MinOP (psig) | Torque @ MinOP (lbf-in) | MOP (psig) | Torque @ MOP (lbf-in) |
|----------------|------------------------------------------|-------|---------------------------------------------------|------|------------------------|------|-------|-------|------------------------|------------------------|-------|-------|-------------|-------------|-------|-------------|-------------|-----|-----|--------------|-------------------------|------------|-----------------------|
|                |                                          |       | 40                                                | 45   | 50                     | 55   | 60    | 65    | 70                     | 80                     | 90    | 100   | 110         | 120         | 130   | 140         | 150         | 160 | 165 |              |                         |            |                       |
|                |                                          |       | Pressure Torque Output Start/Minimum/End (lbf-in) |      |                        |      |       |       |                        |                        |       |       |             |             |       |             |             |     |     |              |                         |            |                       |
| CBA730-SR40    | Start                                    | 4059  | 4077                                              | 4966 | 5856                   | 6746 | 7636  | 8526  | 9417                   | 11197                  | 12978 | 14759 | 16540       | 18321       | 20103 | Exceeds MOP | -           | -   | -   | 35           | 3187                    | 135        | 20994                 |
|                | Minimum                                  | 1651  | 1686                                              | 2163 | 2637                   | 3108 | 3579  | 4048  | 4518                   | 5455                   | 6393  | 7329  | 8265        | 9202        | 10138 |             | -           | -   | -   |              | 1201                    |            | 10607                 |
|                | End                                      | 2294  | 2372                                              | 3271 | 4171                   | 5071 | 5971  | 6871  | 7772                   | 9572                   | 11372 | 13173 | 14974       | 16775       | 18576 |             | -           | -   | -   |              | 1472                    |            | 19477                 |
| CBA730-SR60    | Start                                    | 6406  | -                                                 | -    | Please consult factory | 5566 | 6456  | 7346  | 8236                   | 10017                  | 11797 | 13578 | 15359       | 17141       | 18923 | 20704       | Exceeds MOP | -   | -   | 52           | 5032                    | 140        | 20704                 |
|                | Minimum                                  | 2541  | -                                                 | -    |                        | 2123 | 2607  | 3086  | 3562                   | 4508                   | 5450  | 6390  | 7330        | 8267        | 9205  | 10143       |             | -   | -   |              | 1827                    |            | 10143                 |
|                | End                                      | 3478  | -                                                 | -    |                        | 2718 | 3618  | 4518  | 5419                   | 7219                   | 9019  | 10820 | 12621       | 14422       | 16223 | 18024       |             | -   | -   |              | 2178                    |            | 18024                 |
| CBA730-SR80    | Start                                    | 9041  | -                                                 | -    | -                      | -    | -     | -     | Please consult factory | 9165                   | 10945 | 12726 | 14507       | 16289       | 18070 | 19852       | Exceeds MOP | -   | -   | 72           | 7740                    | 145        | 20743                 |
|                | Minimum                                  | 3383  | -                                                 | -    | -                      | -    | -     | -     |                        | 3507                   | 4472  | 5426  | 6374        | 7319        | 8261  | 9203        |             | -   | -   |              | 2716                    |            | 9673                  |
|                | End                                      | 4332  | -                                                 | -    | -                      | -    | -     | -     |                        | 4578                   | 6378  | 8179  | 9979        | 11780       | 13582 | 15383       |             | -   | -   |              | 3137                    |            | 16284                 |
| CBA730-SR100   | Start                                    | 11350 | -                                                 | -    | -                      | -    | -     | -     | Please consult factory | 9789                   | 11570 | 13351 | 15132       | 16914       | 18696 | 20478       | Exceeds MOP | -   | -   | 90           | 9789                    | 150        | 20478                 |
|                | Minimum                                  | 4257  | -                                                 | -    | -                      | -    | -     | -     |                        | 3461                   | 4447  | 5412  | 6367        | 7317        | 8264  | 9209        |             | -   | -   |              | 3461                    |            | 9209                  |
|                | End                                      | 5491  | -                                                 | -    | -                      | -    | -     | -     |                        | 4063                   | 5864  | 7665  | 9466        | 11267       | 13068 | 14870       |             | -   | -   |              | 4063                    |            | 14870                 |
| CBA830-SR40    | Start                                    | 5394  | 5448                                              | 6618 | 7787                   | 8956 | 10126 | 11295 | 12465                  | 14804                  | 17144 | 19484 | Exceeds MOP | -           | -     | -           | -           | -   | -   | 35           | 4279                    | 105        | 20654                 |
|                | Minimum                                  | 2191  | 2253                                              | 2879 | 3500                   | 4119 | 4737  | 5354  | 5971                   | 7202                   | 8433  | 9663  |             | -           | -     | -           | -           | -   | -   |              | 1616                    |            | 10278                 |
|                | End                                      | 3062  | 3191                                              | 4373 | 5555                   | 6738 | 7920  | 9102  | 10284                  | 12649                  | 15014 | 17379 |             | -           | -     | -           | -           | -   | -   |              | 2009                    |            | 18561                 |
| CBA830-SR60    | Start                                    | 8752  | -                                                 | -    | Please consult factory | 7723 | 8893  | 10062 | 11232                  | 13571                  | 15911 | 18251 | 20591       | Exceeds MOP | -     | -           | -           | -   | -   | 54           | 7490                    | 110        | 20591                 |
|                | Minimum                                  | 3315  | -                                                 | -    |                        | 2799 | 3444  | 4078  | 4706                   | 5953                   | 7193  | 8430  | 9664        |             | -     | -           | -           | -   | -   |              | 2668                    |            | 9664                  |
|                | End                                      | 4298  | -                                                 | -    |                        | 3371 | 4553  | 5735  | 6918                   | 9282                   | 11647 | 14012 | 16377       |             | -     | -           | -           | -   | -   |              | 3135                    |            | 16377                 |
| CBA830-SR80    | Start                                    | 12015 | -                                                 | -    | -                      | -    | -     | -     | Please consult factory | 12234                  | 14573 | 16913 | 19253       | Exceeds MOP | -     | -           | -           | -   | -   | 73           | 10596                   | 115        | 20423                 |
|                | Minimum                                  | 4450  | -                                                 | -    | -                      | -    | -     | -     |                        | 4641                   | 5910  | 7163  | 8410        |             | -     | -           | -           | -   | -   |              | 3732                    |            | 9030                  |
|                | End                                      | 5638  | -                                                 | -    | -                      | -    | -     | -     |                        | 6012                   | 8377  | 10742 | 13107       |             | -     | -           | -           | -   | -   |              | 4357                    |            | 14289                 |
| CBA830-SR100   | Start                                    | 15378 | -                                                 | -    | -                      | -    | -     | -     | -                      | Please consult factory | 15676 | 18016 | 20356       | Exceeds MOP | -     | -           | -           | -   | -   | 92           | 13804                   | 120        | 20356                 |
|                | Minimum                                  | 5570  | -                                                 | -    | -                      | -    | -     | -     | -                      |                        | 5825  | 7102  | 8362        |             | -     | -           | -           | -   | -   |              | 4779                    |            | 8362                  |
|                | End                                      | 6879  | -                                                 | -    | -                      | -    | -     | -     | -                      |                        | -     | 7370  | 9735        |             | 12101 | -           | -           | -   | -   |              | 5478                    |            | 12101                 |

Spring-Return Actuators

CBA300 Series

All published torques are guaranteed minimum values (units are imperial).

Table 3.

| Actuator Model | Spring Torque Start/Minimum/End (lbf-in) |       | Operating Pressure (psig)                         |       |                        |       |       |       |                        |             |                        |             |             |     |     |     |     |     |     | MinOP (psig) | Torque @ MinOP (lbf-in) | MOP (psig) | Torque @ MOP (lbf-in) |       |
|----------------|------------------------------------------|-------|---------------------------------------------------|-------|------------------------|-------|-------|-------|------------------------|-------------|------------------------|-------------|-------------|-----|-----|-----|-----|-----|-----|--------------|-------------------------|------------|-----------------------|-------|
|                |                                          |       | 40                                                | 45    | 50                     | 55    | 60    | 65    | 70                     | 80          | 90                     | 100         | 110         | 120 | 130 | 140 | 150 | 160 | 165 |              |                         |            |                       |       |
|                |                                          |       | Pressure Torque Output Start/Minimum/End (lbf-in) |       |                        |       |       |       |                        |             |                        |             |             |     |     |     |     |     |     |              |                         |            |                       |       |
| CBA930-SR40    | Start                                    | 6930  | 7010                                              | 8496  | 9982                   | 11468 | 12954 | 14440 | 15927                  | 18900       | Exceeds MOP            | -           | -           | -   | -   | -   | -   | -   | -   | 35           | 5524                    | 85         | 20386                 |       |
|                | Minimum                                  | 2810  | 2893                                              | 3688  | 4477                   | 5264  | 6049  | 6832  | 7616                   | 9180        |                        | -           | -           | -   | -   | -   | -   | -   | -   |              | 2084                    |            | 9962                  |       |
|                | End                                      | 3939  | 4111                                              | 5613  | 7115                   | 8617  | 10119 | 11621 | 13123                  | 16127       |                        | -           | -           | -   | -   | -   | -   | -   | -   |              | 2610                    |            | 17629                 |       |
| CBA930-SR60    | Start                                    | 11419 | -                                                 | -     | Please consult factory | 10202 | 11688 | 13174 | 14661                  | 17634       | 20607                  | Exceeds MOP | -           | -   | -   | -   | -   | -   | -   | -            | 55                      | 10202      | 90                    | 20607 |
|                | Minimum                                  | 4184  | -                                                 | -     |                        | 3569  | 4397  | 5207  | 6009                   | 7597        | 9176                   |             | -           | -   | -   | -   | -   | -   | -   | -            |                         | 3569       |                       | 9176  |
|                | End                                      | 5208  | -                                                 | -     |                        | 4117  | 5619  | 7121  | 8623                   | 11627       | 14632                  |             | -           | -   | -   | -   | -   | -   | -   | -            |                         | 4117       |                       | 14632 |
| CBA930-SR80    | Start                                    | 15367 | -                                                 | -     | -                      | -     | -     | -     | Please consult factory | 15701       | 18674                  | Exceeds MOP | -           | -   | -   | -   | -   | -   | -   | -            | 73                      | 13620      | 95                    | 20161 |
|                | Minimum                                  | 5663  | -                                                 | -     | -                      | -     | -     | -     |                        | 5933        | 7546                   |             | -           | -   | -   | -   | -   | -   | -   | -            |                         | 4778       |                       | 8345  |
|                | End                                      | 7145  | -                                                 | -     | -                      | -     | -     | -     |                        | 7670        | 10675                  |             | -           | -   | -   | -   | -   | -   | -   | -            |                         | 5567       |                       | 12177 |
| CBA930-SR100   | Start                                    | 19333 | -                                                 | -     | -                      | -     | -     | -     | -                      | -           | Please consult factory | 19677       | Exceeds MOP | -   | -   | -   | -   | -   | -   | -            | 91                      | 17001      | 105                   | 21164 |
|                | Minimum                                  | 7159  | -                                                 | -     | -                      | -     | -     | -     | -                      | -           |                        | 7455        |             | -   | -   | -   | -   | -   | -   | -            |                         | 5972       |                       | 8265  |
|                | End                                      | 9120  | -                                                 | -     | -                      | -     | -     | -     | -                      | -           |                        | 9703        |             | -   | -   | -   | -   | -   | -   | -            |                         | 6999       |                       | 11206 |
| CBA1030-SR40   | Start                                    | 9319  | 9456                                              | 11421 | 13387                  | 15352 | 17317 | 19283 | 21249                  | Exceeds MOP | -                      | -           | -           | -   | -   | -   | -   | -   | -   | -            | 35                      | 7491       | 70                    | 21249 |
|                | Minimum                                  | 3740  | 3864                                              | 4916  | 5960                   | 7001  | 8039  | 9075  | 10111                  |             | -                      | -           | -           | -   | -   | -   | -   | -   | -   | 2794         |                         | 10111      |                       |       |
|                | End                                      | 5199  | 5456                                              | 7441  | 9427                   | 11412 | 13398 | 15384 | 17370                  |             | -                      | -           | -           | -   | -   | -   | -   | -   | -   | 3470         |                         | 17370      |                       |       |
| CBA1030-SR60   | Start                                    | 15341 | -                                                 | -     | Please consult factory | 13876 | 15842 | 17807 | 19773                  | Exceeds MOP | -                      | -           | -           | -   | -   | -   | -   | -   | -   | -            | 55                      | 13876      | 75                    | 21739 |
|                | Minimum                                  | 5502  | -                                                 | -     |                        | 4762  | 5864  | 6939  | 8001                   |             | -                      | -           | -           | -   | -   | -   | -   | -   | -   | 4762         |                         | 9056       |                       |       |
|                | End                                      | 6678  | -                                                 | -     |                        | 5375  | 7361  | 9347  | 11332                  |             | -                      | -           | -           | -   | -   | -   | -   | -   | -   | 5375         |                         | 13318      |                       |       |
| CBA1030-SR80   | Start                                    | 20016 | -                                                 | -     | -                      | -     | -     | -     | Please consult factory | 20363       | Exceeds MOP            | -           | -           | -   | -   | -   | -   | -   | -   | -            | 71                      | 16825      | 80                    | 20363 |
|                | Minimum                                  | 7611  | -                                                 | -     | -                      | -     | -     | -     |                        | 7906        |                        | -           | -           | -   | -   | -   | -   | -   | -   | -            |                         | 5957       |                       | 7906  |
|                | End                                      | 10027 | -                                                 | -     | -                      | -     | -     | -     |                        | 10618       |                        | -           | -           | -   | -   | -   | -   | -   | -   | -            |                         | 7044       |                       | 10618 |

## Performance Data

### Double-Acting Actuators

#### CBA300 Series

All published torques are guaranteed minimum values (units are imperial).

Table 4.

| Actuator Model | Volume (cu. in.) ▲ |                   | Maximum Operating Pressure (MOP)* (psig) | Maximum Allowable Working Pressure (MAWP)** (psig) | Approximate Weight of Actuator (lb) |                      |
|----------------|--------------------|-------------------|------------------------------------------|----------------------------------------------------|-------------------------------------|----------------------|
|                | Outboard           | Inboard (Housing) |                                          |                                                    | Ductile Iron Housing                | Carbon Steel Housing |
| CBA730         | 260                | 562               | 105                                      | 200                                                | 112.3                               | 117.2                |
| CBA830         | 341                | 633               | 80                                       | 200                                                | 124.9                               | 129.8                |
| CBA930         | 433                | 713               | 65                                       | 174                                                | 138.7                               | 143.6                |
| CBA1030        | 572                | 834               | 50                                       | 174                                                | 154.1                               | 159.0                |

### Spring-Return Actuators

#### CBA300 Series

All published torques are guaranteed minimum values (units are imperial).

Table 5.

| Actuator Model | Volume (cu. in.) ▲ | Maximum Operating Pressure (MOP)* (psig) | Maximum Allowable Working Pressure (MAWP)** (psig) | Approximate Weight of Actuator (lb) |                      |
|----------------|--------------------|------------------------------------------|----------------------------------------------------|-------------------------------------|----------------------|
|                |                    |                                          |                                                    | Ductile Iron Housing                | Carbon Steel Housing |
| CBA730-SR40    | 562                | 135                                      | 200                                                | 135.7                               | 141.7                |
| CBA730-SR60    | 562                | 140                                      | 200                                                | 138.0                               | 144.0                |
| CBA730-SR80    | 562                | 145                                      | 200                                                | 140.2                               | 146.2                |
| CBA730-SR100   | 562                | 150                                      | 200                                                | 141.2                               | 147.2                |
| CBA830-SR40    | 633                | 105                                      | 200                                                | 150.4                               | 156.7                |
| CBA830-SR60    | 633                | 110                                      | 200                                                | 154.5                               | 160.8                |
| CBA830-SR80    | 633                | 115                                      | 200                                                | 157.9                               | 164.1                |
| CBA830-SR100   | 633                | 120                                      | 200                                                | 162.1                               | 168.3                |
| CBA930-SR40    | 713                | 85                                       | 174                                                | 166.0                               | 172.6                |
| CBA930-SR60    | 713                | 90                                       | 174                                                | 172.4                               | 178.9                |
| CBA930-SR80    | 713                | 95                                       | 174                                                | 176.6                               | 183.1                |
| CBA930-SR100   | 713                | 105                                      | 174                                                | 184.4                               | 191.0                |
| CBA1030-SR40   | 834                | 70                                       | 174                                                | 187.4                               | 194.3                |
| CBA1030-SR60   | 834                | 75                                       | 174                                                | 192.4                               | 199.4                |
| CBA1030-SR80   | 834                | 80                                       | 174                                                | 200.1                               | 207.0                |

#### NOTES:

▲ Maximum volume including cavity required for calculating consumption per stroke.

\* **Maximum Operating Pressure (MOP)** is the pressure required to produce the maximum rated torque of the actuator.

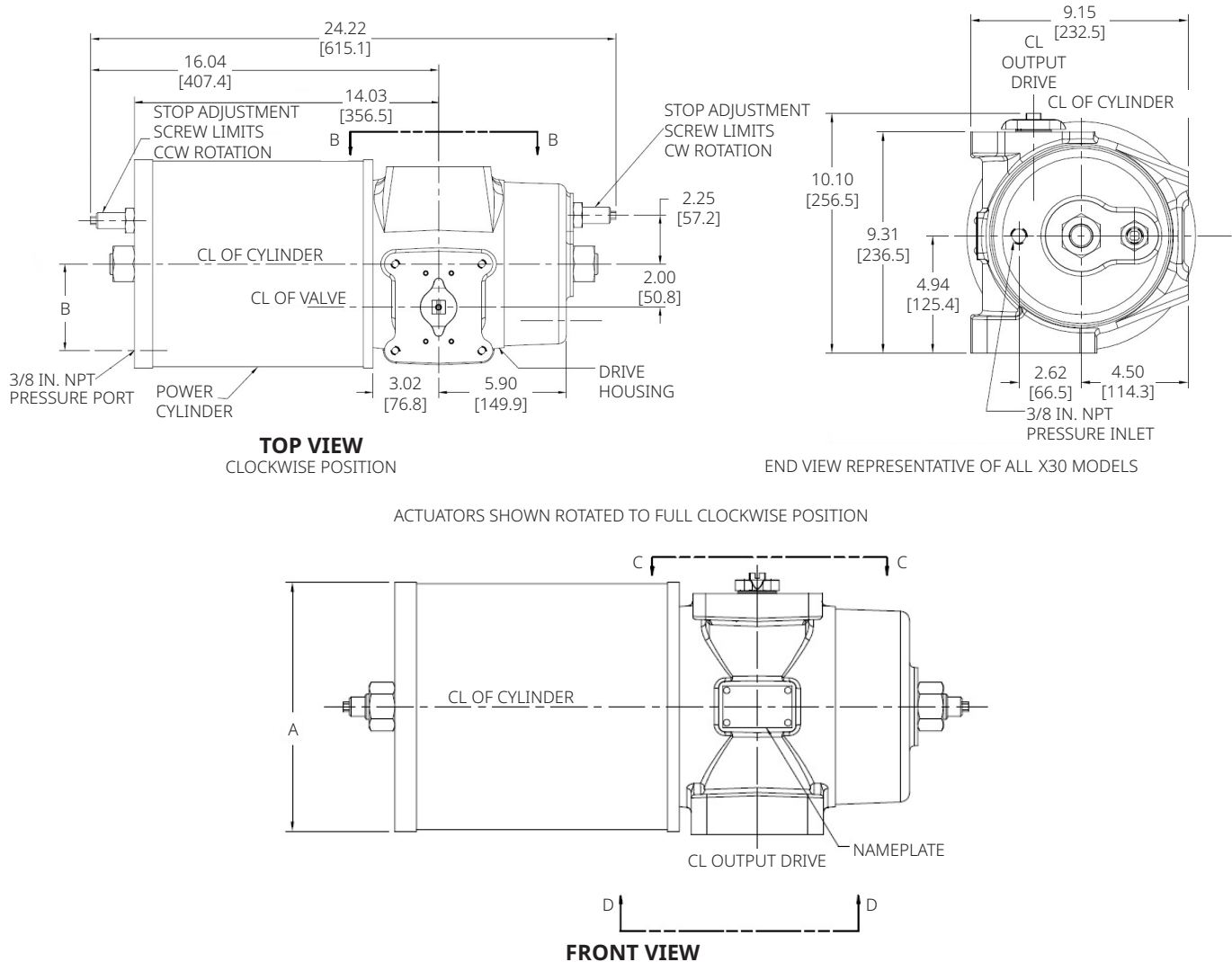
\*\* **Maximum Allowable Working Pressure (MAWP)** is the maximum static pressure that may be applied to a fully stroked actuator against the travel stops. CBA-SRXX-M3HW mechanical handwheel overrides are available on these models. The override adds approximately 2 lb / 0.9 kg to the weight of the standard CBA model. Standard installation produces clockwise rotation when the outboard side of piston is pressurized. Standard installation produces counterclockwise rotation when the inboard side of piston is pressurized. Note: Actuator may be installed opposite of that shown.



## Actuator Dimensions (in.)

## Double-Acting Actuators - CBAX30

**Figure 1.**

**Table 6.**

| Actuator Model | A     | B    |
|----------------|-------|------|
| CBA730         | 7.63  | 3.00 |
| CBA830         | 8.63  | 3.50 |
| CBA930         | 9.63  | 4.00 |
| CBA1030        | 10.88 | 4.50 |

**NOTES:**

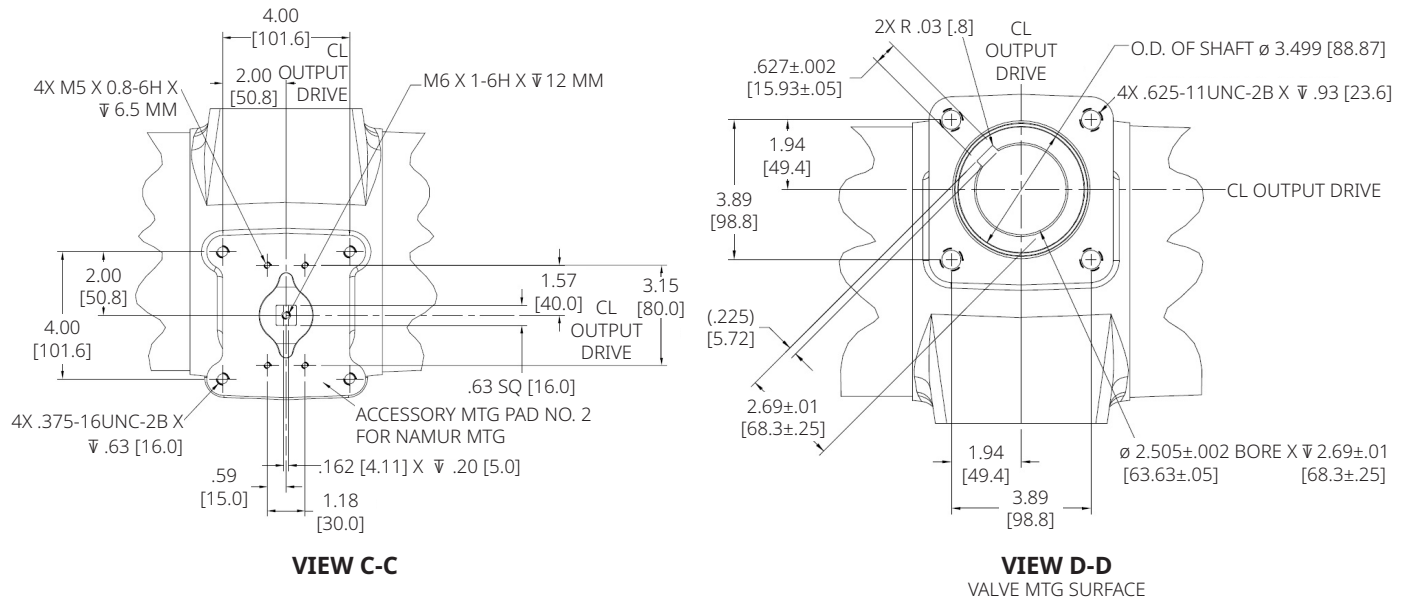
Actuators shown rotated to full clockwise position.

Not Certified dimensional drawings. Such drawings are available on request.

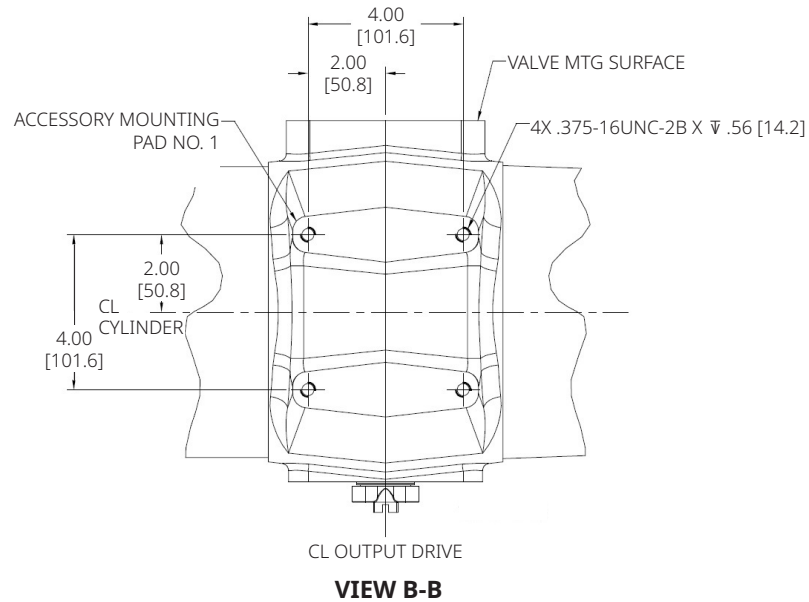
Contact factory with correct model designation and serial number.

All dimensions are expressed in inches and dimensions in brackets are in millimeters.

**Figure 2.**

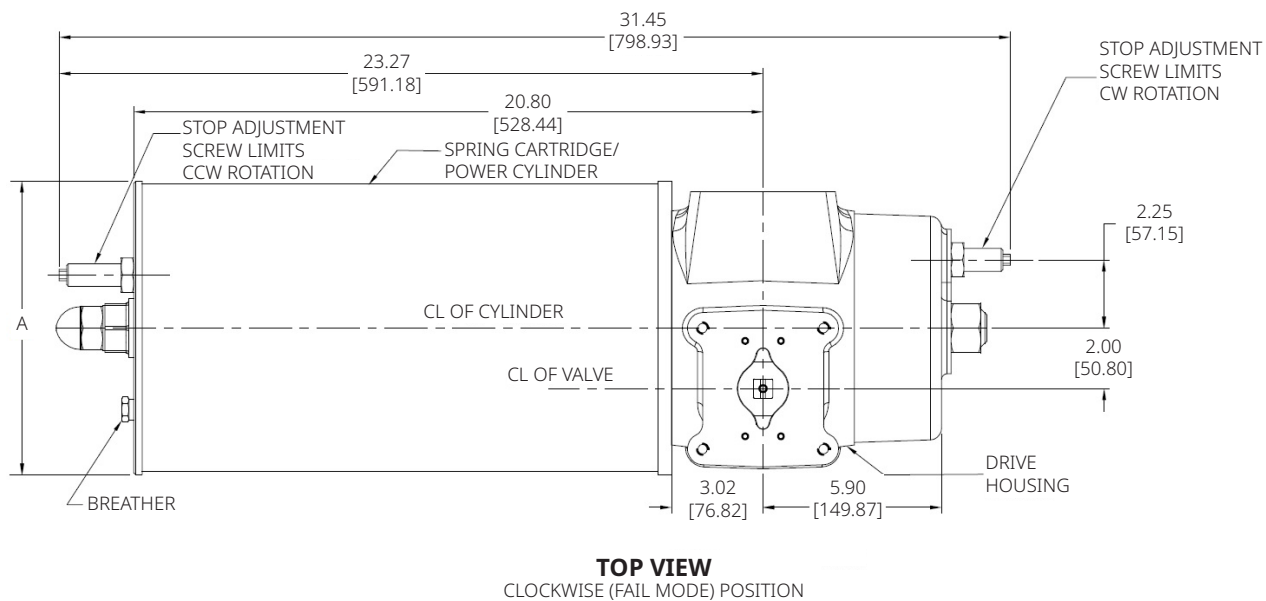


ACTUATORS SHOWN ROTATED TO FULL CLOCKWISE POSITION



## Spring-Return Actuators - CBAX30-SRX

**Figure 3.**



**Table 7.**

| Actuator Model | A     |
|----------------|-------|
| CBA730-SRX     | 7.69  |
| CBA830-SRX     | 8.69  |
| CBA930-SRX     | 9.69  |
| CBA1030-SRX    | 11.00 |

**NOTES:**

Other dimensions refer to Double-Acting page.

Not Certified dimensional drawings. Such drawings are available on request.

Contact factory with correct model designation and serial number.

All dimensions are expressed in inches and dimensions in brackets are in millimeters.

## Handwheel Override Dimensions (in.)

### Double-Acting Actuators - CBAX30-M3HW

Figure 4.

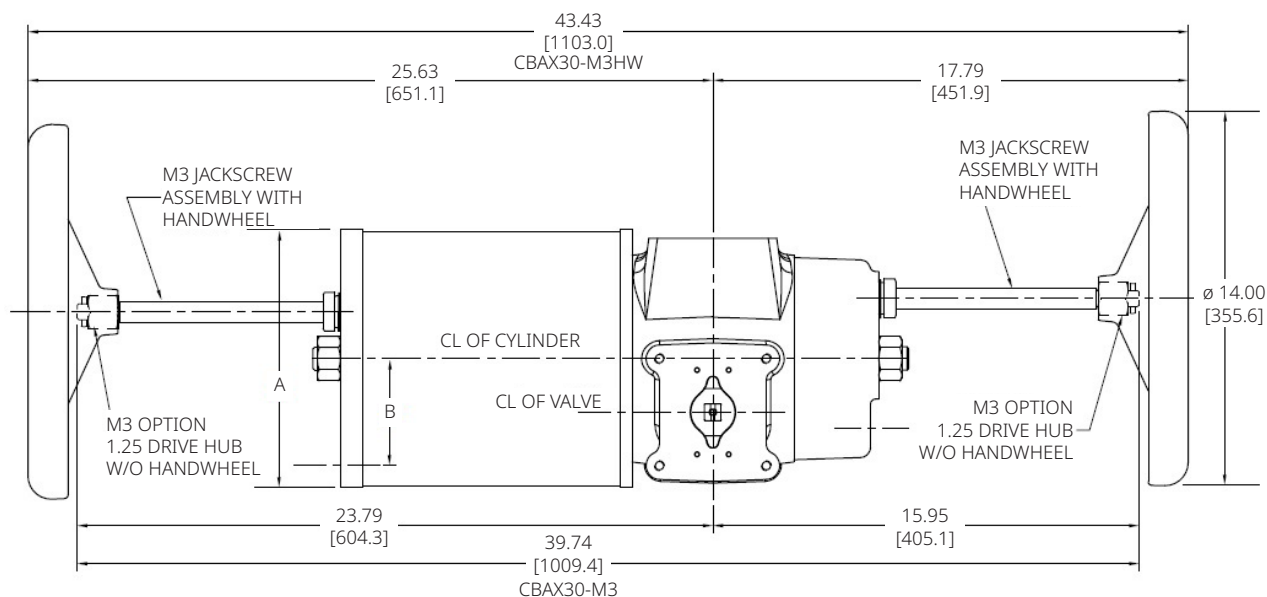


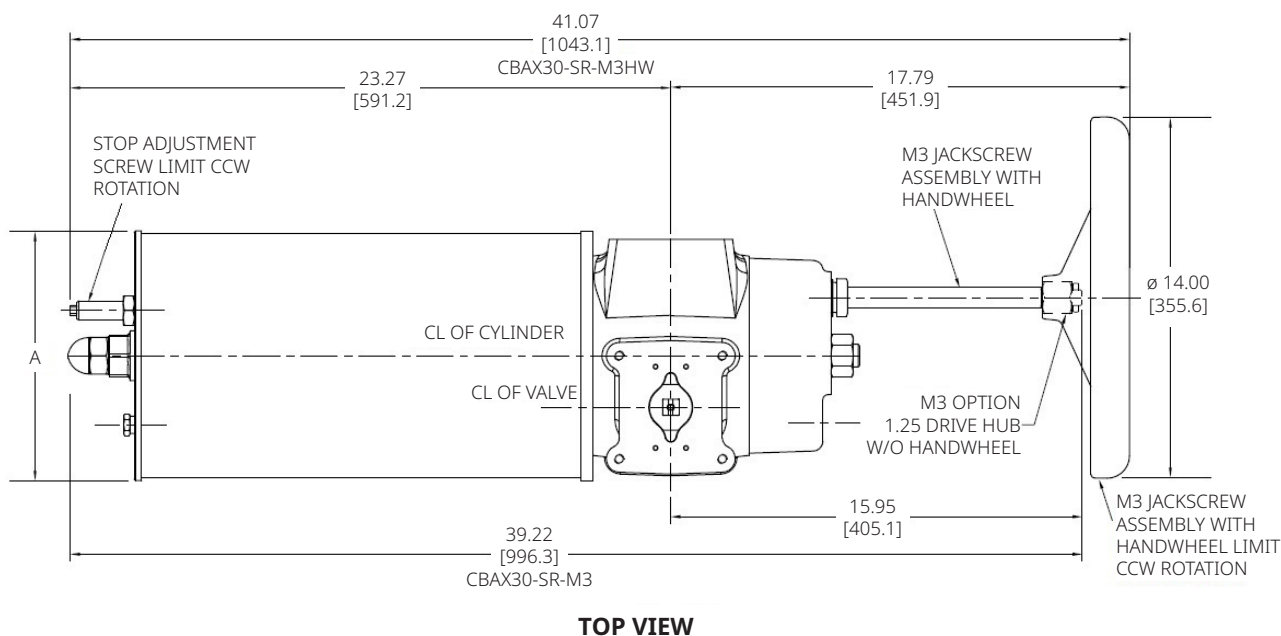
Table 8.

| Actuator Model | A     | B    |
|----------------|-------|------|
| CBA730-M3HW    | 7.63  | 3.00 |
| CBA830-M3HW    | 8.63  | 3.50 |
| CBA930-M3HW    | 9.63  | 4.00 |
| CBA1030-M3HW   | 10.88 | 4.50 |

**NOTES:**

Other dimensions refer to base actuator pages.  
Not Certified dimensional drawings. Such drawings are available on request.  
Contact factory with correct model designation and serial number.  
All dimensions are expressed in inches and dimensions in brackets are in millimeters.

**Figure 5.**

**Table 9.**

| Actuator Model   | A     |
|------------------|-------|
| CBA730-SRX-M3HW  | 7.69  |
| CBA830-SRX-M3HW  | 8.69  |
| CBA930-SRX-M3HW  | 9.69  |
| CBA1030-SRX-M3HW | 11.00 |

**NOTES:**

Other dimensions refer to base actuator pages.

Not Certified dimensional drawings. Such drawings are available on request.

Contact factory with correct model designation and serial number.

All dimensions are expressed in inches and dimensions in brackets are in millimeters.

## Hydraulic Override Dimensions (in.)

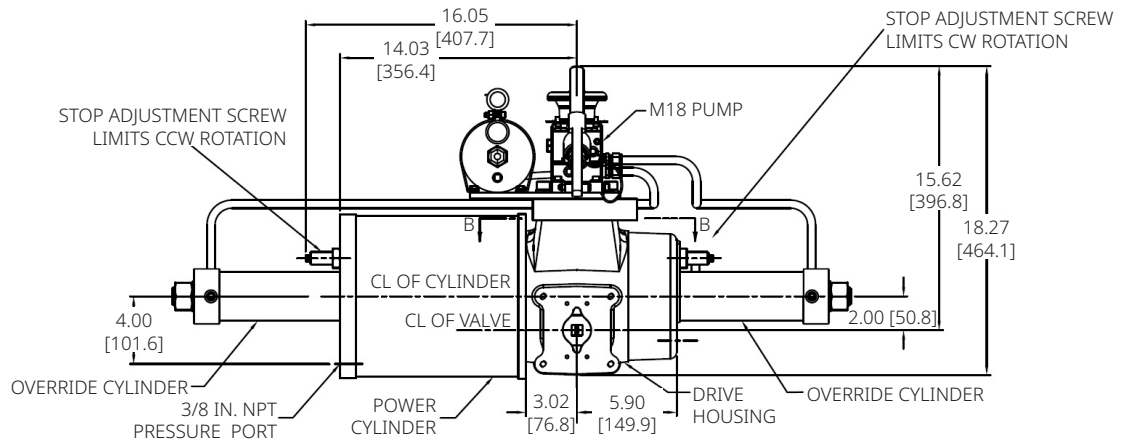
### Double-Acting Actuators - CBAX30-M18

Figure 6.

**TOP VIEW**

CLOCKWISE POSITION

ACTUATORS SHOWN  
ROTATED TO FULL  
CLOCKWISE POSITION



**NOTES:**

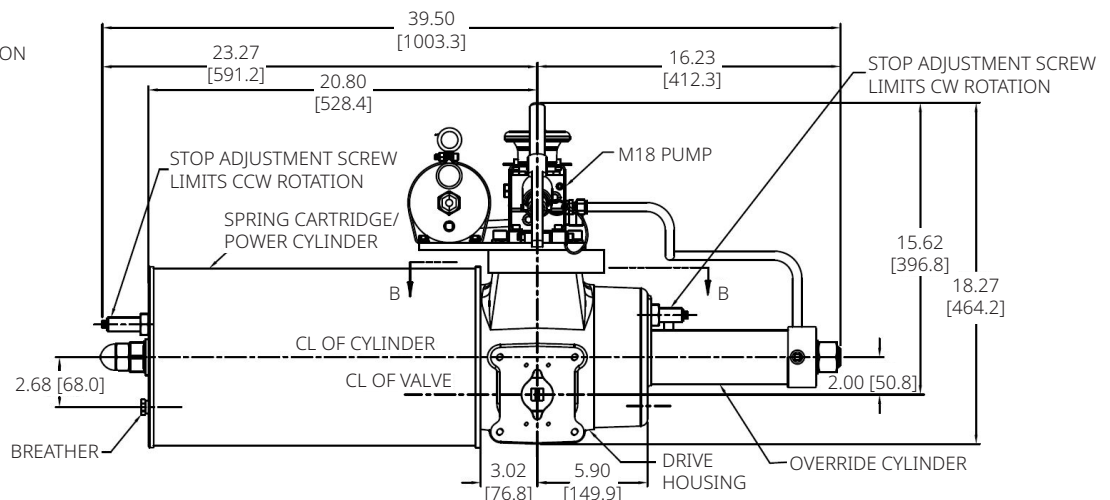
Other dimensions refer to base actuator pages.  
Not Certified dimensional drawings. Such drawings are available on request.  
Contact factory with correct model designation and serial number.  
All dimensions are expressed in inches and dimensions in brackets are in millimeters.

### Spring-Return Actuators - CBAX30-SRX-M18

Figure 7.

**TOP VIEW**

CLOCKWISE (FAIL MODE) POSITION



**NOTES:**

Other dimensions refer to base actuator pages.  
Not Certified dimensional drawings. Such drawings are available on request.  
Contact factory with correct model designation and serial number.  
All dimensions are expressed in inches and dimensions in brackets are in millimeters.

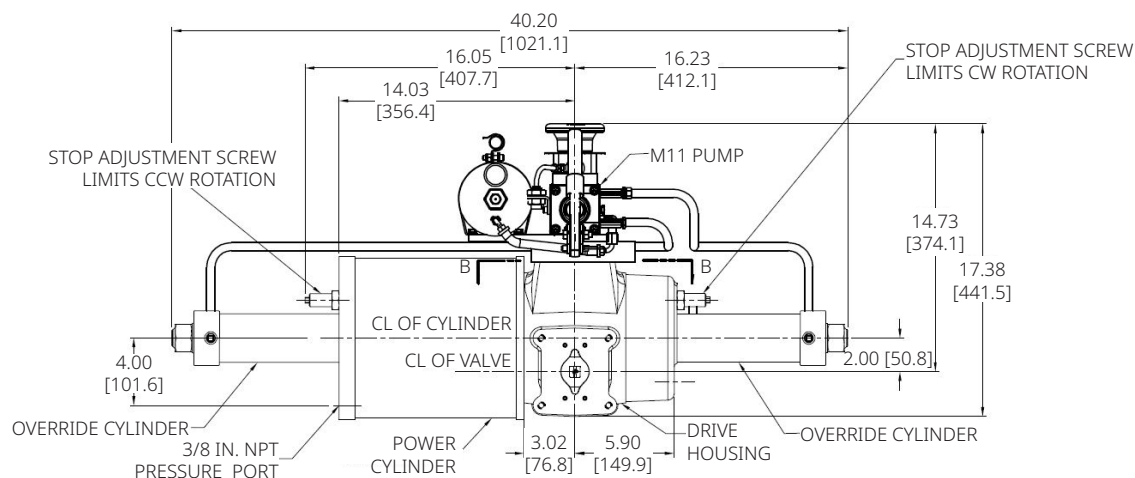
## Double-Acting Actuators - CBAX30-M11

**Figure 8.**

**TOP VIEW**

CLOCKWISE POSITION

ACTUATORS SHOWN  
ROTATED TO FULL  
CLOCKWISE POSITION



**NOTES:**

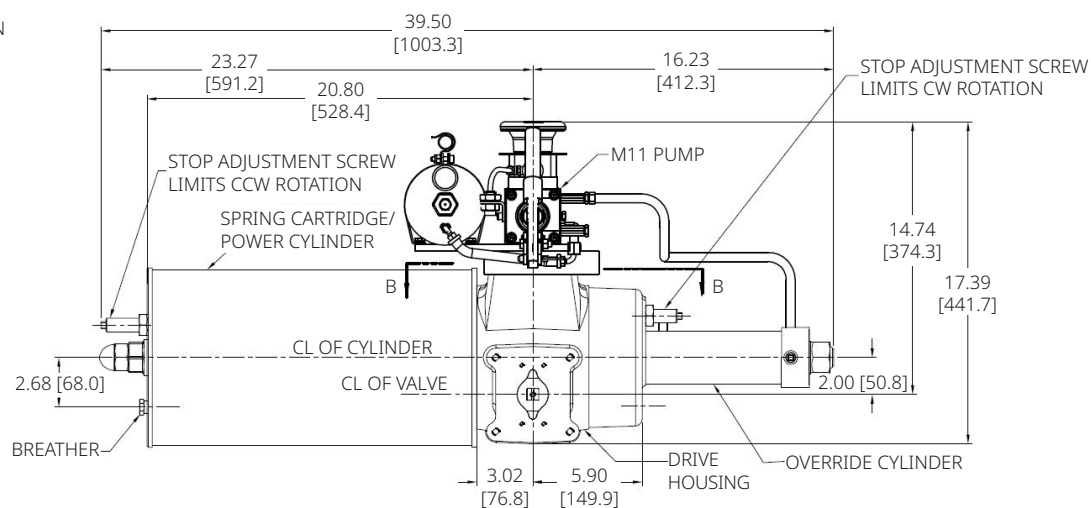
Other dimensions refer to base actuator pages.  
Not Certified dimensional drawings. Such drawings available on request.  
Contact factory with correct model designation and serial number.  
All dimensions are expressed in inches and dimensions in brackets are in millimeters.

## Spring-Return Actuators - CBAX30-SRX-M11

**Figure 9.**

**TOP VIEW**

CLOCKWISE (FAIL MODE) POSITION



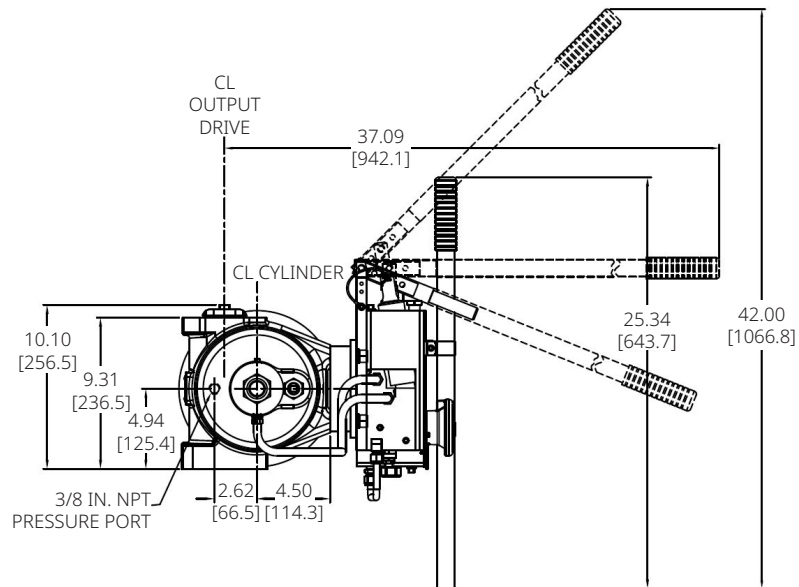
**NOTES:**

Other dimensions refer to base actuator pages.  
Not Certified dimensional drawings. Such drawings available on request.  
Contact factory with correct model designation and serial number.  
All dimensions are expressed in inches and dimensions in brackets are in millimeters.

**Figure 10.**

**END VIEW**

END VIEW REPRESENTATIVE  
OF ALL CBAX30-M18 MODELS



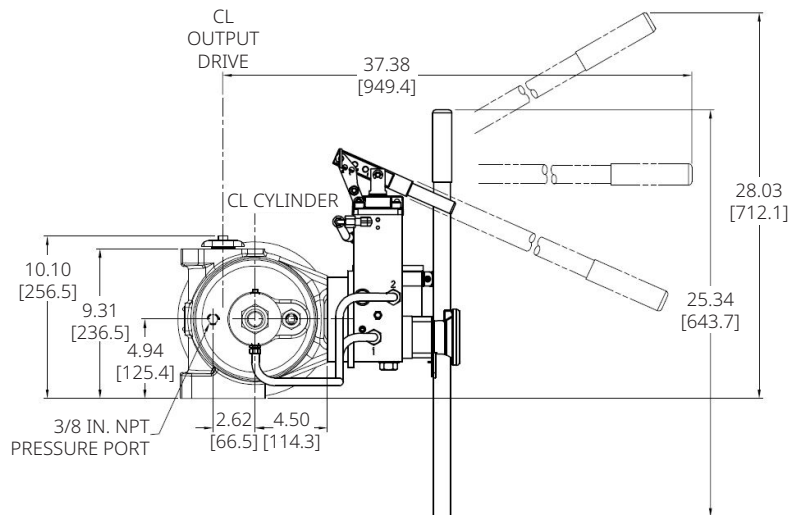
**NOTES:**

Other dimensions refer to base actuator pages.  
Not Certified dimensional drawings. Such drawings available on request.  
Contact factory with correct model designation and serial number.  
All dimensions are expressed in inches and dimensions in brackets are in millimeters.

**Figure 11.**

**END VIEW**

END VIEW REPRESENTATIVE  
OF ALL CBAX30-M11 MODELS



**NOTES:**

Other dimensions refer to base actuator pages.  
Not Certified dimensional drawings. Such drawings available on request.  
Contact factory with correct model designation and serial number.  
All dimensions are expressed in inches and dimensions in brackets are in millimeters.

[www.emerson.com/bettis](http://www.emerson.com/bettis)

VCPDS-13402-US (PC-16218-US) © 2025 Emerson. All rights reserved.

The Emerson logo is a trademark and service mark of Emerson Electric Co. Bettis™ is a mark of one of the Emerson family of companies. All other marks are property of their respective owners.

Neither Emerson nor any of its affiliated entities assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use, and maintenance of any product remains solely with the purchaser and end user.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

**BETTIS™**

