

CBA-300 Series Pneumatic Actuators

Strong, Efficient and Cost Effective



BETTIS


EMERSON[™]
Process Management

- PED 97/23/EC Compliant
- Suitable for SIL 2 and SIL 3
- Water Ingress Protected – IP66 and IP67M
- Five-Year Warranty
- NAMUR Topworks
- ISO/DIN Bottom Mounting
- Jackscrew Option

CBA-300 SERIES PNEUMATIC DESIGN AND CONSTRUCTION

Introduction

For more than 45 years, Bettis® valve actuators have demonstrated the latest technology. The CBA 300-Series pneumatic actuators combine the strengths of our new generation G-Series scotch-yoke actuators, while incorporating several new design economies for efficient and cost effective operation.

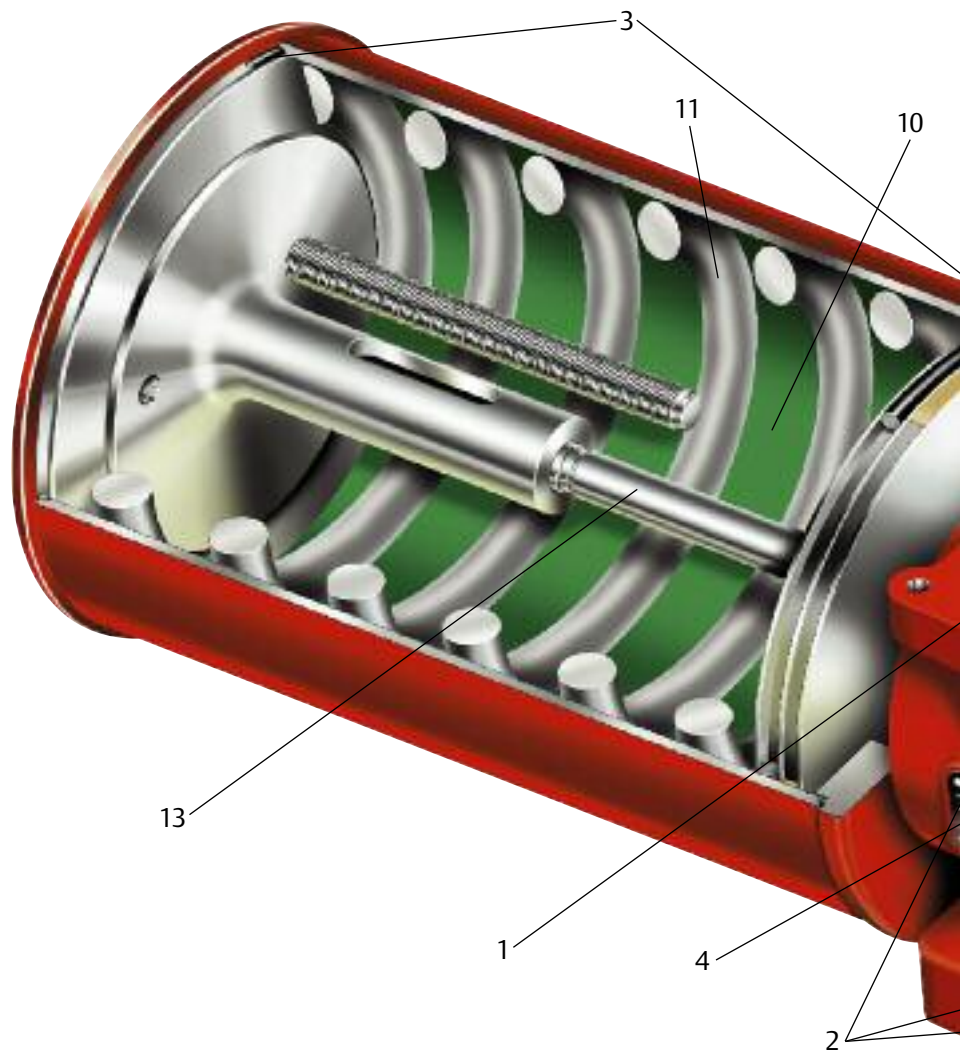
The advanced 300-Series have enhanced water ingress and corrosion protection. These compact actuators are lightweight and ideally suited for automating virtually any quarter-turn (90-degree) rotating mechanism including ball, butterfly and plug valves. With a variety of options, the 300-Series can meet your most demanding valve automation needs.

Operating Ranges

Double-acting 300-Series actuators are available with guaranteed minimum torque outputs ranging from 7,388 lb-in to 20,337 lb-in (835 to 2,333 Nm). 300-Series spring-return models require pressure in only one direction of travel and are available for fail clockwise or counterclockwise applications. These models produce spring ending torques ranging from 2,532 lb-in through 10,457 lb-in (286 to 1,182 Nm).

Standard construction 300-Series actuators are designed for operation temperatures ranging from -20°F to +200°F (-29°C to +93°C). Optional high temperature trim allows operation from 0°F to 350°F (-18°C to +177°C) and special non-PED low temperature trim permit operation to -40°F (-40°C).

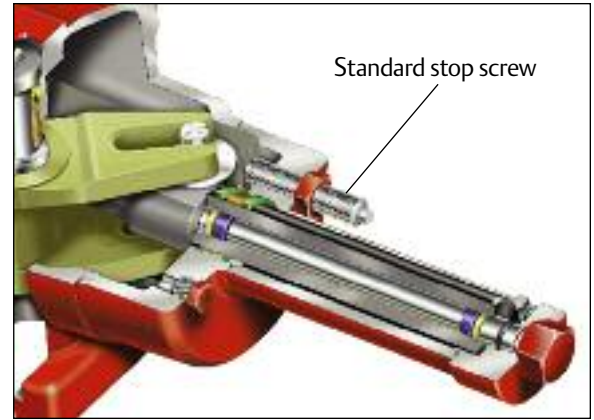
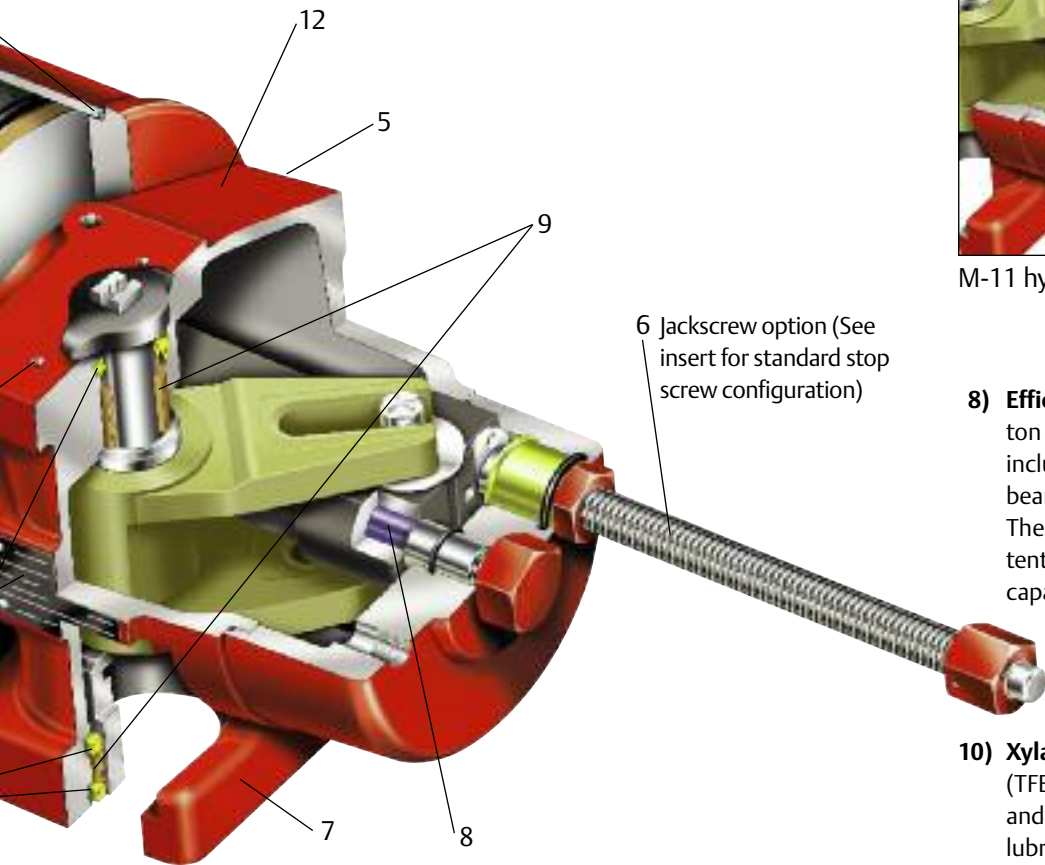
Pneumatic operating pressures for the 300-Series range from 40 to 150 PSIG (3 to 10 BAR).



Features and Advantages

Water Ingress Protection – The 300-Series actuators meet both IP66 and IP67M specifications for submergence and severe high pressure water deluge test, offering superior water ingress and corrosion protection. The actuator has no gaskets and is totally o-ring sealed.

- 1) **NAMUR Topworks** – The 300-Series utilizes the internationally accepted NAMUR mounting configuration that allows standardization of accessory hardware and the direct or close coupling of NAMUR designed hardware and accessories.
- 2) **New Quad Sealed Torque Shaft** – The lower torque shaft has two independent seals – the outer seal protects the large bearing area and the primary, inner cup seal from the environment. The upper shaft bearing area features a bi-directional, double lip seal providing twice the level of protection from corrosion and contaminants.
- 3) **New O-Ring Sealed Cylinders** – The o-ring sealed cylinders essentially eliminate the possibility of any cylinder leakage throughout the full range of operating pressures and climatic conditions.
- 4) **Name Plate** – Long lasting stainless steel plate provides lifetime traceability and critical operating information.
- 5) **Standard Accessory Mounting Pad** – The new accessory mounting pad is standard and identical on all CBA and CBA 300-Series models, allowing for the panel mounting of controls.



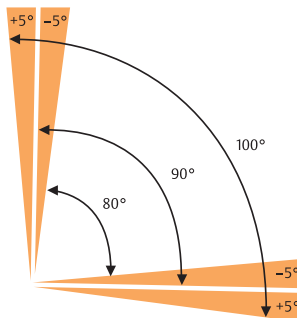
M-11 hydraulic override configuration

6) Jackscrew Option (Shown) – A blowout-proof, economical jackscrew manual override is available with the 300-Series. When equipped with a jackscrew, it also acts as a stop adjustment screw. The jackscrew feature has several advantages:

- Produces full rated torque output in the event of air supply loss.
- Available with or without handwheel, locking devices and many other options. Consult factory.
- The manual override absorbs impact loads at maximum recommended actuator speeds.
- Double-acting models are available with one or two jackscrews.

Bi-directional Travel Stops – Dual stops allowing 80° to 100° total travel adjustment. This feature provides an unmatched travel range to assist in prolonging valve seat integrity.

Optional Bi-directional Extended Travel Stop (ETS) – Allows 0° to 100° extended travel adjustment capability, and can be used as a lockout device. Consult factory.



7) ISO/DIN Actuator/Valve Interface – The 300-Series has an ISO/DIN F14 mounting configuration. This **female interface** allows close coupling or direct mounting of the actuator to the valve topworks.

8) Efficient All Bearing Design – The 300-Series piston has three field replaceable bearings. They include a TFE piston head bearing, PTFE/bronze bearings on either piston end and on the yoke pin. These bearings help to assure smooth and consistent torque output, while enhancing total cycle life capabilities.

9) Torque Shaft Bearing – The torque shaft features field replaceable upper and lower PTFE-coated, copper-clad metallic bearings.

10) Xylan™ Cylinder Coating – This fluoropolymer (TFE-based) coating is highly resistant to corrosion and thermal shock. It also provides for excellent lubricity, adding significantly to piston seal life and actuator efficiency. Xylan has been laboratory (ASTM B117) tested and field proven to be extremely resistant to contaminants typically found in instrument air supply systems.

11) Springs – High-strength, high-performance alloy carbon steel springs are protected by Tactyl 50, a pliable self-healing coating. Bettis takes an additional step and shot peens the springs, helping to extend the actuator's spring cycle life.

12) Ductile Iron Housing – CBA actuator housings are made of pressure vessel quality ductile iron which is approved for use by ASME and the Pressure Equipment Directive (PED 97/23/EC). All housings have been optimized by finite element analysis and are designed for light weight while retaining maximum strength, ductility and corrosion resistance.

13) Center Bar and Torque Shaft – Utilizes a proprietary surface conversion process, producing an extremely hard surface exhibiting excellent wear and corrosion resistance. The center bar guides the piston throughout its full stroke, preventing metal to metal contact with the cylinder bore.

SIZING AND SELECTION

General Definitions

To clarify and standardize terminology, Bettis offers the following definitions for terms commonly used. Please become familiar with and use the following standard definitions when referring to Bettis quarter-turn actuators.

Quarter-turn: A device which rotates a minimum of 90 degrees. All Bettis quarter-turn actuators will rotate more than 90 degrees.

Position: That degree of rotation describing an actuator's current location. The mid position of a quarter-turn actuator is generally at forty-five(45) degrees.

CW: Clockwise rotation.

CCW: Counterclockwise rotation.

Stroke: A continuous, ninety (90) degree rotation of a quarter-turn actuator. Bettis spring-return actuators have two (2) different strokes, a pressure stroke and a spring stroke. Bettis double-acting actuators have two (2) pressure strokes. Note that rack and pinon actuators have common torque values for both pressure strokes, while scotch yoke actuators have different torque values depending on which side of the piston is doing the work.

Cycle: The collective reference to two (2) strokes, one (1) for clockwise (CW) rotation and one (1) for counterclockwise (CCW) rotation. Bettis actuators must rotate through two (2) stroke to complete one (1) cycle.

Safety Factor: Represents a protective component (an adjustment to torque requirement) sometimes added to a valve's required torque value. Often used when the user/specifier is not certain of the valve's torque requirements, or because of other application concerns.

Sizing Bettis Actuators

The following information is generally the minimum required for sizing Bettis quarter-turn pneumatic and hydraulic actuators for specific valve requirements.

A) An accurate maximum torque requirement must be obtained before actuator sizing begins. Normal maximum stem torque for a properly applied and maintained valve is usually defined as: The maximum starting torque required to rotate the valve element (ball, disc, plug, etc.) from a fully closed position (unsealing), against the maximum normal valve rated different pressures. Most valve manufacturers make adjustments in the form of torque amendments under various operating conditions. Application operating conditions such as temperature extremes, actual differential pressure, unusual loading, high flow rates, operating speeds, etc. are some of the most common causes for adjustments.

Bettis recommends that the valve manufacturer supply the maximum required torque value(s) (**including any adjustments or suggested safety factors**). Additionally, the valve manufacturer must identify at which position(s) and direction(s) of rotation (CCW or CW) these maximum requirements occur.

B) Bettis actuators include stops which will resist the maximum rated torque output of the actuator. The possibility exists, that should the valve become immobilized during rotation, the actuator could exceed the maximum allowable valve input torque rating. If this possibility is a concern, your application needs further review.

Once the maximum torque requirements, its position, and direction of rotation are identified, the appropriate Bettis actuator can be selected from torque output charts on pages 4-7.

Actuator Selection Procedures

- A)** Determine the type of Bettis actuator required: double-acting or spring-return.
- B)** Determine the power supply media: pneumatic or hydraulic, and the minimum/maximum supply pressure(s) at the actuator.
- C)** Using this information, select the applicable torque rating table and see the appropriate following examples.

Scotch-Yoke, Double-Acting Actuators (example assumes CW to close)

Note: The valve's torque requirements must be exceeded by the actuator's torque output at all corresponding positions and directions of rotation.

Bettis has included Start, Minimum, and End pressure torque outputs for your use.

A) Using your minimum operating pressure, select an operating pressure column from the Pressure Torque Rating Section of less than or equal pressure. Move down the column until both starting and minimum output torques are found which exceed the valve's maximum and minimum torque requirements. Determine the Bettis model number at the left, under the model number column.

B) Once a Bettis actuator model has been selected, use the performance data tables to ensure your maximum supply pressure does not exceed the maximum operating pressure (M.O.P.) for your Bettis actuator. If the actuator selected is not rated for your maximum supply pressure, either the maximum supply pressure must be reduced or an actuator rated for a higher M.O.P. must be selected.

Scotch-Yoke, Spring-Return, Fail CLOCKWISE Actuators (example assumes CW to close)

Note: The valve's maximum torque requirements must be exceeded by the actuator's torque output at all corresponding positions and directions of rotation.

Bettis has included Start, Minimum, and End Spring Torque outputs, as well as Start, Minimum and End Pressure Torque Outputs for your use. The minimum torque outputs listed on the Spring-Return torque charts are the lowest value of torque output available at any position, during either stroke (pressure or spring).

A) Select from the Spring Torque column a Spring Ending torque output which exceeds that of the valve's maximum seating requirement.

B) Proceed to the right using your minimum operating pressure and select an operating pressure column from the Pressure Torque Rating Section of less than or equal pressure. The Pressure Start torque output must exceed the valve's torque requirement at this position (unseating). The Pressure End torque output must exceed the valve's torque requirement at this position (full flow) and direction of rotation (CCW).

C) Once a Bettis actuator model has been selected, use the performance data tables to ensure your maximum supply pressure does not exceed the maximum operating pressure (M.O.P.) for your Bettis actuator. If the actuator selected is not rated for your maximum supply pressure, either the maximum supply pressure must be reduced or an actuator rated for a higher M.O.P. must be selected.

Contact your local Authorized Bettis distributor or a Bettis manufacturing facility if you require assistance.

Performance Data – CBA-300-Series (Pneumatic) - Imperial & metric

Double-Acting Actuators CBA-Series

Actuator Model	Volumes				Maximum System Pressure (MSP)*		Maximum Operating Pressure (MOP)**		Maximum Allowable Working Pressure (MAWP)***		Approximate Weight of Actuator	
	Outboard		Inboard (Housing)		PSIG	Bar	PSIG	Bar	PSIG	Bar	Lbs.	KG
	Cu. Inches	Cubic CM	Cu. Inches	Cubic CM								
CBA 730	260	4260.6	562	9209.5	120	8.3	105	7.2	200	13.8	130	59
CBA 830	341	5588.0	633	10373.0	90	6.2	80	5.5	200	13.8	140	63.5
CBA 930	433	7095.6	713	11683.9	70	4.8	65	4.5	170	11.7	155	70.3
CBA 1030	572	9373.4	834	13666.8	55	3.8	50	3.4	130	9.0	170	77.1

Spring-Return Actuators CBA-Series

Actuator Model	Volume		Maximum System Pressure (MSP)*		Maximum Operating Pressure (MOP)**		Maximum Allowable Working Pressure (MAWP)***		Approximate Weight of Actuator	
	Cu. Inches	Cubic CM			PSIG	Bar	PSIG	Bar	Lbs.	KG
◆CBA 730- SR40	562	9209.5	150	10.3	135	9.3	200	13.8	158	71.7
	562	9209.5	155	10.7	140	9.7	200	13.8	160.5	72.8
	562	9209.5	160	11.0	145	10.0	200	13.8	163	73.9
	562	9209.5	165	11.4	150	10.3	200	13.8	164	74.4
◆CBA 830- SR40	633	10373.0	125	8.6	105	7.2	200	13.8	180	81.6
	633	10373.0	125	8.6	110	7.6	200	13.8	184.5	83.7
	633	10373.0	130	9.0	115	8.0	200	13.8	188	85.3
	633	10373.0	140	9.7	120	8.3	200	13.8	192.5	87.3
◆CBA 930- SR40	713	11683.9	120	8.3	85	5.9	170	11.7	195	88.5
	713	11683.9	120	8.3	90	6.2	170	11.7	202	91.6
	713	11683.9	120	8.3	95	6.6	170	11.7	206.5	93.7
	713	11683.9	120	8.3	105	7.2	170	11.7	205	93.0
◆CBA 1030- SR40	834	13666.8	95	6.5	70	4.8	130	9.0	220	99.8
	834	13666.8	100	6.9	75	5.2	130	9.0	225.5	102.5
	834	13666.8	110	7.6	80	5.5	130	9.0	233.5	105.9
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Notes:

- ◆ CBA-SRXXM mechanical handwheel overrides are available on these models. The override adds approximately 2 lbs. (.8 kg) to the weight of the standard CBA model.
- ▲ Maximum volume including cavity required for calculating consumption per stroke.
- * **Maximum System Pressure (MSP)** – The maximum allowable system supply pressure to which the actuator may be exposed.
- ** 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.
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 above.



Torque Ratings – CBA-300-Series (Pneumatic) - Imperial

All Published Torques are Typical Minimum Values.

Double-Acting Actuators

Actuator Model	Stroke Position	Operating Pressure (PSIG)							
		40	50	60	70	80	90	100	110
		Pressure Torque Output Start/Min./End (lb-in)							
CBA730	Start/End	7388	9235	11082	12929	14776	16623	18470	
	Minimum	4248	5310	6372	7434	8496	9558	10620	
CBA830	Start/End	9697	12121	14545	16969	19393			
	Minimum	5575	6969	8363	9757	11151			
CBA930	Start/End	12313	15391	18470					
	Minimum	7080	8850	10620					
CBA1030	Start/End	16270	20337						
	Minimum	9355	11694						

Spring-Return Actuators

Actuator Model	Spring Torque (in-lbs) Start/Min./End	Operating Pressure (PSIG)												
		40	50	60	70	80	90	100	110	120	130	140	150	
		Pressure Torque Output Start/Min./End (lb-in)												
CBA730-SR40	Start	4383	4589	6436	8283	10130	11977	13824	15671	17518	19365	21212		
	Min.	1759	1808	2782	3747	4712	5677	6641	7599	8557	9515	10473		
	End	2532	2544	4391	6238	8085	9932	11779	13626	15473	17319	19166		
CBA730-SR60	Start	6748		5225	7095	8965	10835	12705	14575	16445	18315	20185	22055	
	Min.	2625		1704	2709	3692	4657	5622	6587	7552	8517	9483	10446	
	End	3732		1892	3762	5632	7502	9372	11242	13112	14982	16852	18722	
CBA730-SR80	Start	9340				8033	9903	11773	13643	15513	17383	19253	21123	
	Min.	3450				2565	3591	4578	5564	6529	7494	8459	9424	
	End	4576				2767	4637	6507	8377	10247	12117	13987	15857	
CBA730-SR100	Start	11755						10637	12530	14423	16316	18210	20103	21996
	Min.	4301						3499	4513	5500	6488	7458	8423	9388
	End	5792						4046	5939	7832	9725	11619	13512	15405
CBA830-SR40	Start	5739	6029	8453	10877	13301	15725	18149	20573					
	Min.	2330	2406	3700	4982	6263	7545	8826	10099					
	End	3318	3354	5778	8202	10626	13050	15474	17899					
CBA830-SR60	Start	9010		7299	9783	12268	14753	17237	19722	22207				
	Min.	3443		2216	3587	4898	6189	7471	8753	10035				
	End	4637		2226	4711	7196	9680	12165	14650	17135				
CBA830-SR80	Start	12171				10786	13271	15756	18241	20725				
	Min.	4565				3400	4772	6083	7394	8679				
	End	5978				3605	6089	8574	11059	13544				
CBA830-SR100	Start	15438						14385	16870	19354	21839			
	Min.	5677						4560	5935	7258	8569			
	End	7218						4873	7358	9842	12327			
CBA930-SR40	Start	7471	7849	11004	14159	17315	20470							
	Min.	3063	3163	4866	6551	8237	9922							
	End	4317	4364	7519	10674	13829	16985							
CBA930-SR60	Start	11942		9602	12757	15912	19067	22223						
	Min.	4470		2577	4691	6425	8145	9830						
	End	5586		2577	5732	8888	12043	15194						
CBA930-SR80	Start	15872				13771	16927	20082						
	Min.	5977				4442	6258	7993						
	End	7523				4544	7699	10854						
CBA930-SR100	Start	19822						17899	21054					
	Min.	7500						6009	7808					
	End	9498						6489	9644					
CBA1030-SR40	Start	9929	10455	14624	18793	22962								
	Min.	4036	4178	6431	8658	10885								
	End	5629	5703	9872	14041	18210								
CBA1030-SR60	Start	15924		12989	17159	21328								
	Min.	5839		3245	6204	8507								
	End	7108		3245	7415	11584								
CBA1030-SR80	Start	20580				17626	21796							
	Min.	7978				5937	8299							
	End	10457				6438	10607							

Torque Ratings – CBA-Series (Pneumatic) - metric

All Published Torques are Typical Minimum Values.

Double-Acting Actuators

Actuator Model	Stroke Position	Operating Pressure (PSIG)							
		3	3.5	4	5	5.5	6	7	8
		Pressure Torque Output Start/Min./End (lb-in)							
CBA730	Start/End	908	1059	1211	1513	1665	1816	2119	2421
	Minimum	522	609	696	870	957	1044	1218	1392
CBA830	Start/End	1192	1390	1589	1986	2185	2384		
	Minimum	685	799	914	1142	1256	1371		
CBA930	Start/End	1513	1766	2018					
	Minimum	870	1015	1160					
CBA1030	Start/End	2000	2333						
	Minimum	1150	1341						

Spring-Return Actuators

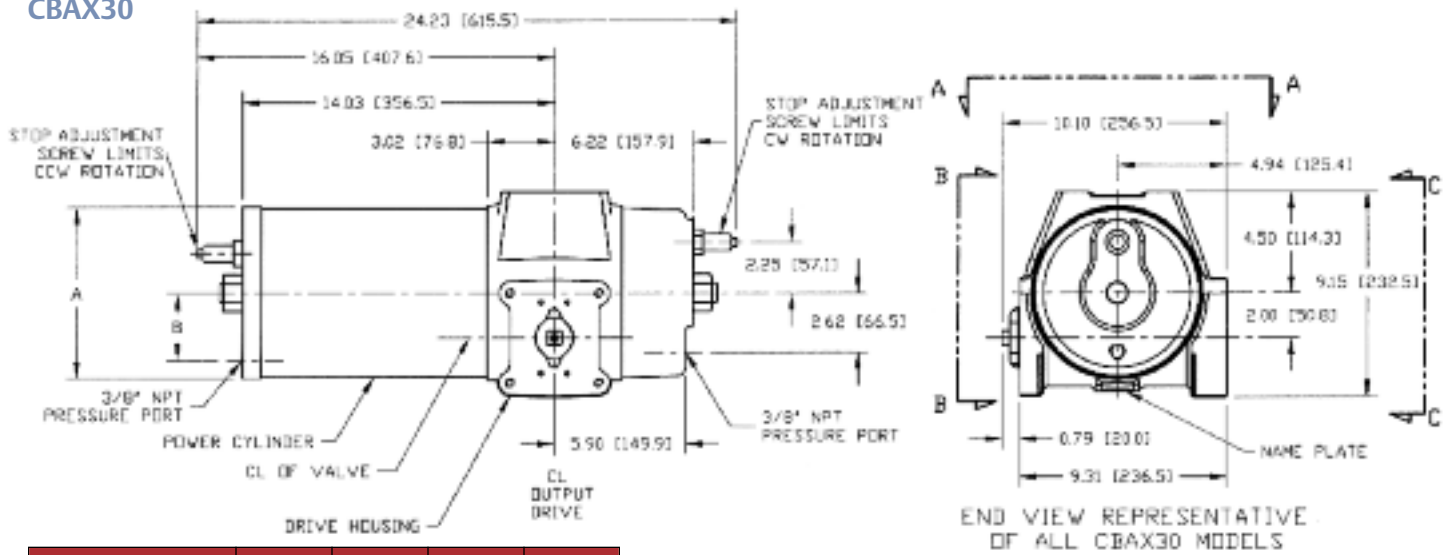
Actuator Model	Spring Torque (Nm) Start/Min/End	Operating Pressure (Bar)											
		3	3.5	4	5	5.5	6	7	8	9	10	11	
		Pressure Torque Output Start/Min./End (Nm)											
CBA730-SR40	Start	495	592	743	894	1197	1348	1500	1802	2105	2408		
	Min.	198	204	314	423	532	641	750	859	967	1075		
	End	286	361	512	663	966	1117	1269	1571	1874	2177		
CBA730-SR60	Start	763		606	760	1066	1219	1373	1679	1986	2292		
	Min.	297		193	306	417	526	635	744	853	962		
	End	422		230	383	690	843	996	1302	1609	1915		
CBA730-SR80	Start	1055				961	1114	1267	1574	1880	2187	2493	
	Min.	390				290	406	517	629	738	847	956	
	End	517				366	519	672	979	1285	1592	1898	
CBA730-SR100	Start	1328						1138	1448	1759	2069	2379	
	Min.	486						395	510	622	733	843	
	End	654						393	704	1014	1324	1634	
CBA830-SR40	Start	648	777	976	1175	1572	1770	1969	2366				
	Min.	263	272	418	563	708	853	997	1141				
	End	375	475	674	872	1270	1468	1667	2064				
CBA830-SR60	Start	1017		846	1050	1457	1660	1864	2271				
	Min.	389		250	405	553	699	844	989				
	End	524		273	476	884	1087	1291	1698				
CBA830-SR80	Start	1375				1289	1493	1697	2104	2511			
	Min.	516				384	539	687	835	981			
	End	675				478	682	885	1292	1699			
CBA830-SR100	Start	1744						1542	1949	2356			
	Min.	641						515	671	820			
	End	816						467	874	1281			
CBA930-SR40	Start	844	1012	1271	1529	2046	2305						
	Min.	346	357	550	740	931	1121						
	End	488	618	877	1135	1652	1911						
CBA930-SR60	Start	1349		1112	1371	1888	2146	2405					
	Min.	505		291	530	726	920	1111					
	End	631		318	577	1094	1352	1611					
CBA930-SR80	Start	1793				1646	1904	2163					
	Min.	675				502	707	903					
	End	850				603	862	1120					
CBA930-SR100	Start	2240						1916	2433				
	Min.	847						679	882				
	End	1073						627	1144				
CBA1030-SR40	Start	1122	1347	1688	2030								
	Min.	456	472	727	978								
	End	636	810	1151	1493								
CBA1030-SR60	Start	1799		1504	1845	2528							
	Min.	660		367	701	961							
	End	803		403	744	1427							
CBA1030-SR80	Start	2325				2110	2452						
	Min.	901				671	938						
	End	1182				846	1187						

Dimensions – CBA-300-Series (Pneumatic) - in/mm

Metric dimensions in parentheses

Double-Acting Actuators

CBAX30

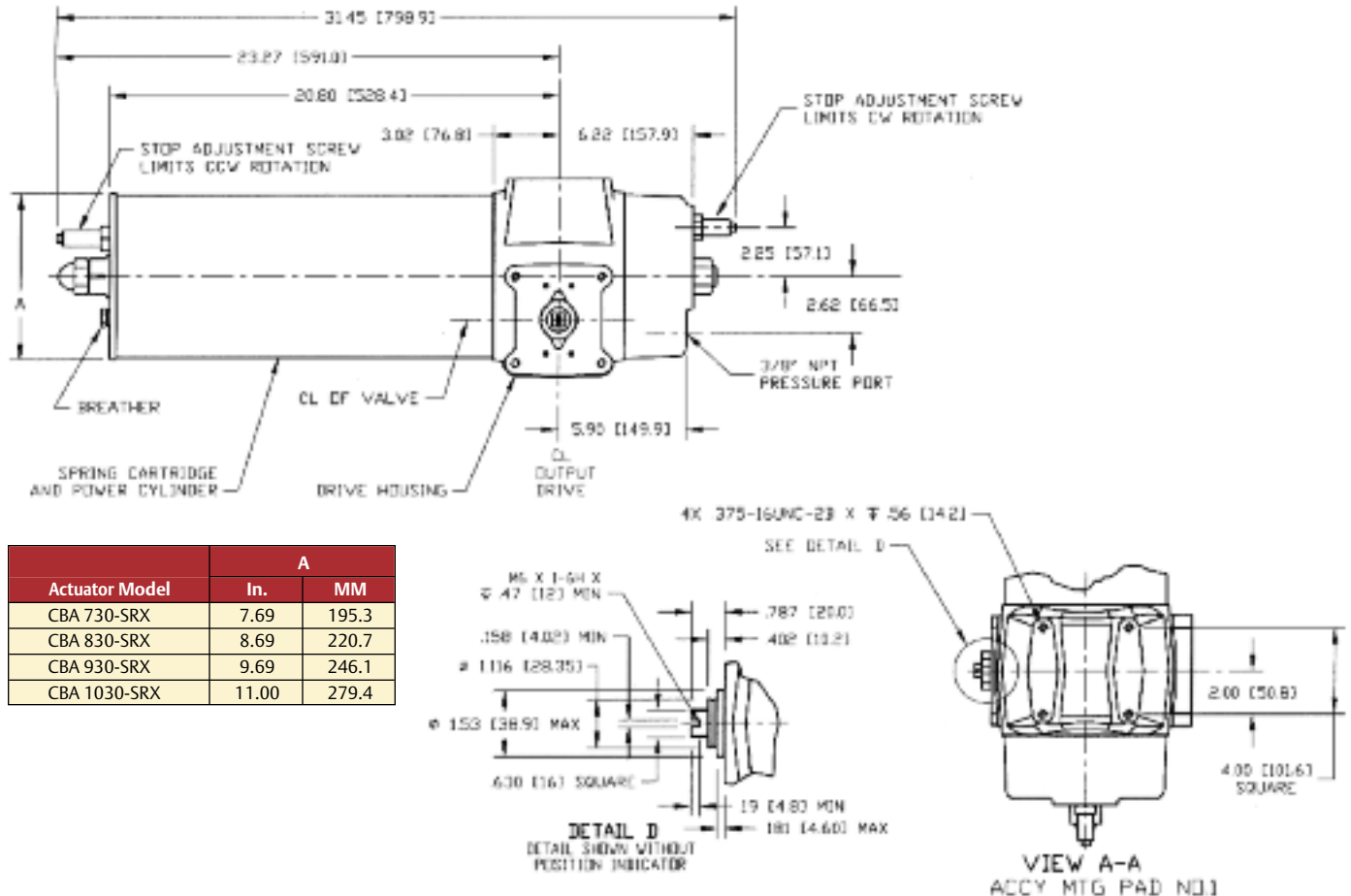


Actuator Model	A	B	A	B
	In.	In.	MM	MM
CBA 730-SRX	7.63	3.00	193.8	76.2
CBA 830-SRX	8.63	3.50	219.2	88.9
CBA 930-SRX	9.63	4.00	244.6	101.6
CBA 1030-SRX	10.88	4.50	276.4	114.3

ACTUATORS SHOWN ROTATED TO FULL CLOCKWISE POSITION

Spring Return Actuators

CBAX30-SRX



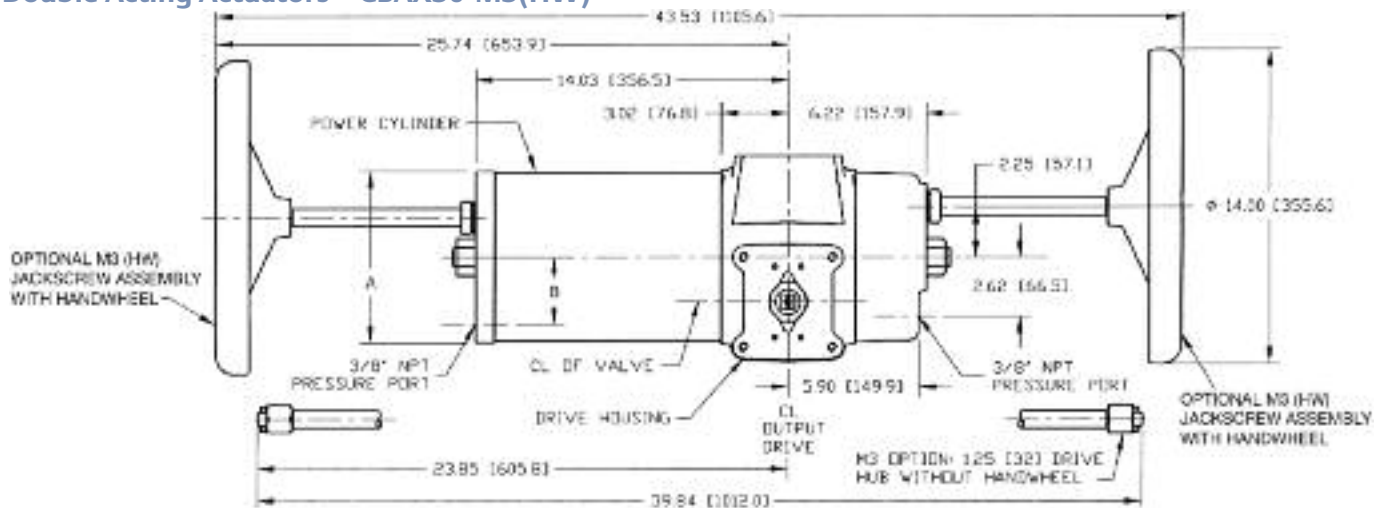
Actuator Model	A	
	In.	MM
CBA 730-SRX	7.69	195.3
CBA 830-SRX	8.69	220.7
CBA 930-SRX	9.69	246.1
CBA 1030-SRX	11.00	279.4

Dimensions – CBA-300-Series (Pneumatic) - in/mm

M3(HW) Overrides

Metric dimensions in parentheses

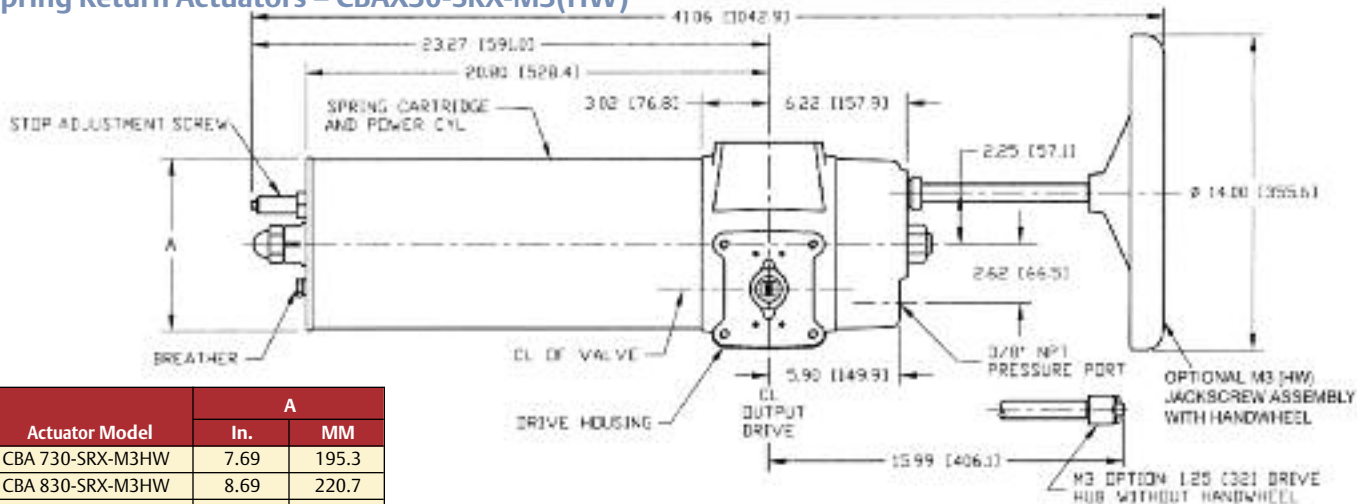
Double Acting Actuators – CBAX30-M3(HW)



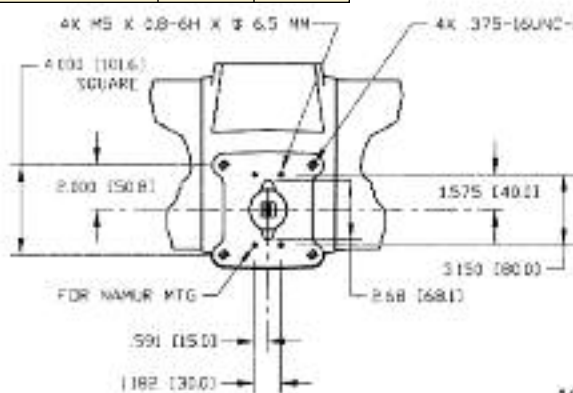
Actuator Model	A	B	A	B
	In.	In.	MM	MM
CBA 730-M3HW	7.63	3.00	193.8	76.2
CBA 830-M3HW	8.63	3.50	219.2	88.9
CBA 930-M3HW	9.63	4.00	244.6	101.6
CBA 1030-M3HW	10.88	4.50	276.4	114.3

M3/M3HW – This Jackscrew manual override is a mechanical advantage device threaded through a special adapter or the end cap of the CBA-300 Series cylinder to exert linear thrust on the actuator’s piston rod. The Jackscrew override is available for all CBA-300 models with or without handwheel.

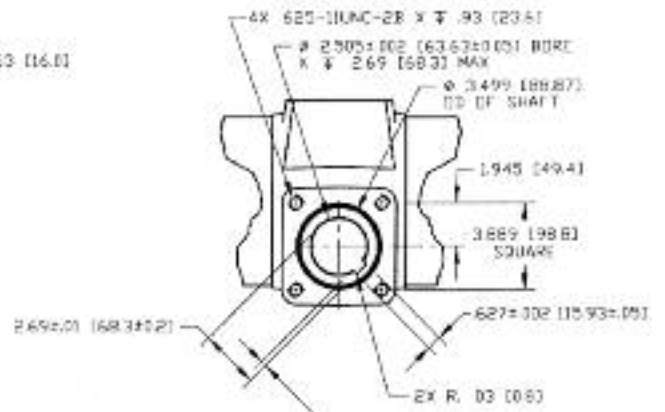
Spring Return Actuators – CBAX30-SRX-M3(HW)



Actuator Model	A	
	In.	MM
CBA 730-SRX-M3HW	7.69	195.3
CBA 830-SRX-M3HW	8.69	220.7
CBA 930-SRX-M3HW	9.69	246.1
CBA 1030-SRX-M3HW	11.00	279.4



VIEW B-B
ACCESSORY MTG PATT. NO. 2



ACTUATORS SHOWN
ROTATED TO FULL
CLOCKWISE POSITION

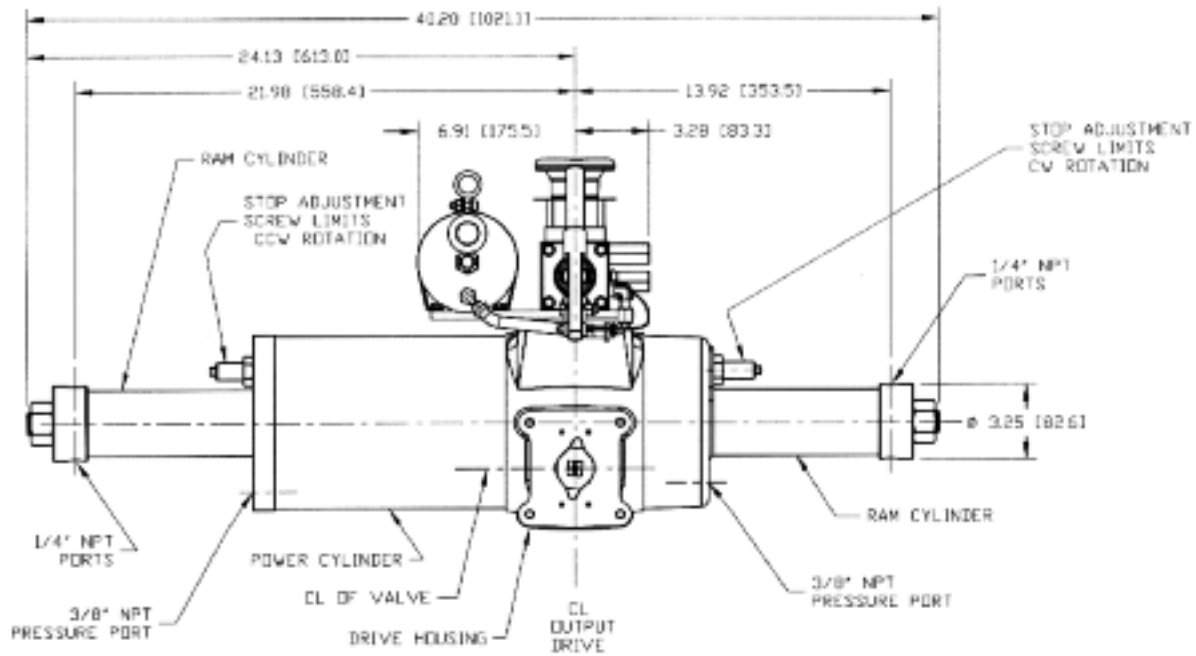
VIEW C-C
VALVE MTG SURFACE

Dimensions – CBA-300-Series (Pneumatic) - in/mm

M-11 Override

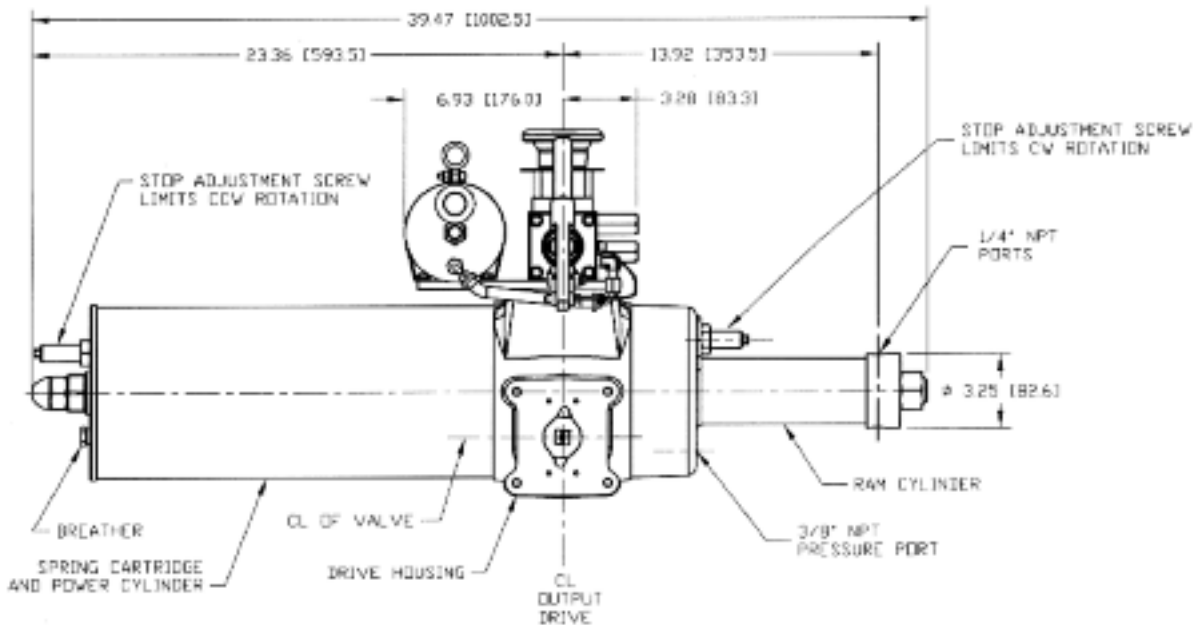
Metric dimensions in parentheses

Double-Acting Actuators CBAX30-M11



ACTUATORS SHOWN ROTATED TO FULL CLOCKWISE POSITION

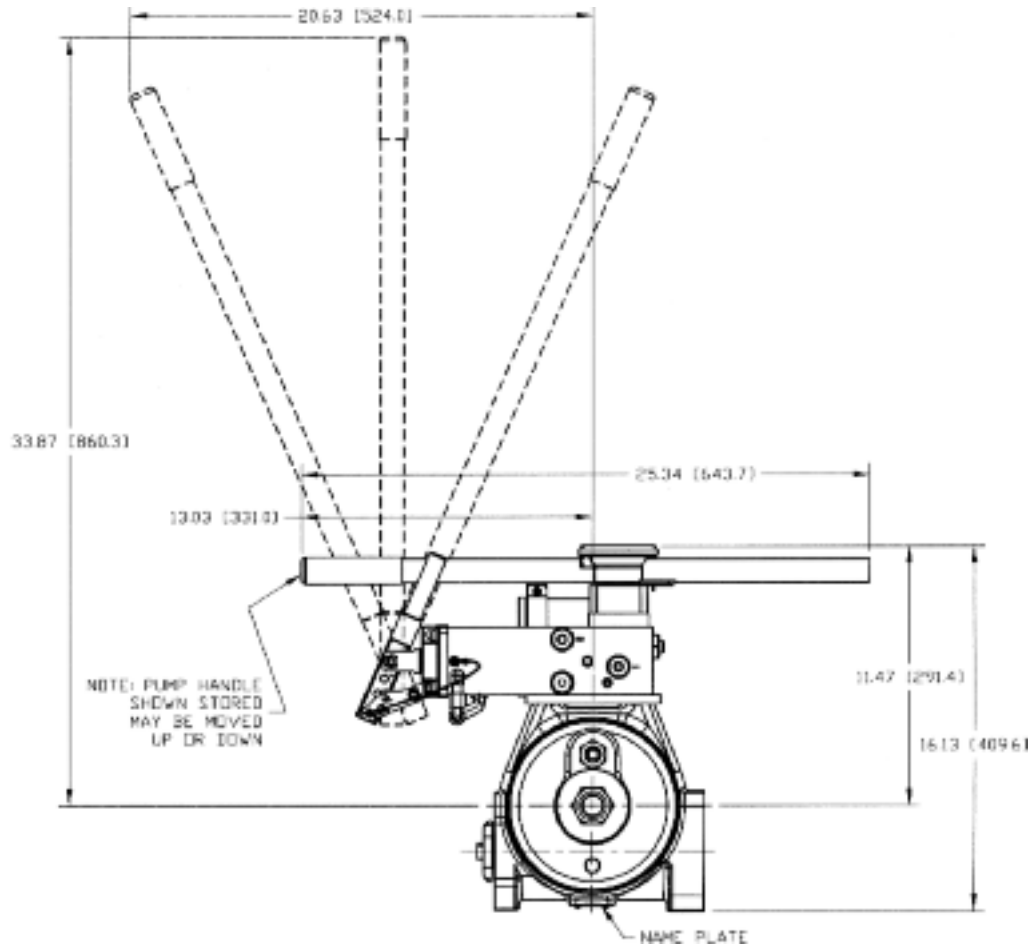
Spring Return Actuators CBAX30-SRX-M11



Dimensions – CBA-300-Series (Pneumatic) - in/mm

M-11 Override

Metric dimensions in parentheses



Options

SIL-PAC™ – The unique *SIL-PAC* solution provides a complete hardware and Bettis-supplied documentation package, embracing IEC, ISA and OSHA standards, for use in a SIL application. The CBA-300 Series actuators have a Failure Modes and Effects Diagnostics Analysis (FMEDA) report performed by Exida.com™ for SIL suitability. They can be combined with other components such as solenoid valves, switches and regulators. When Fisher's TÜV-certified FIELDVUE® DVC controller is added, *SIL-PAC* is capable of partial stroke testing PLUS providing continuous monitoring of supply pressure, valve position and pressure values to the actuator to verify its proper working condition. The *SIL-PAC* package can then be mounted on the appropriate quarter-turn valve for SIL1, 2 or 3 applications.

Bettis Automated Packages

Bettis offers complete packages as a solution for final valve control. Bettis has the capability to combine the CBA-300 actuator, necessary controls and selected valve into a single system – perfect for large international projects.

With this capability, Bettis can integrate its products with the complete offering of control options, including world-class PlantWeb® digital plant architecture and the entire range of Emerson automation solutions.

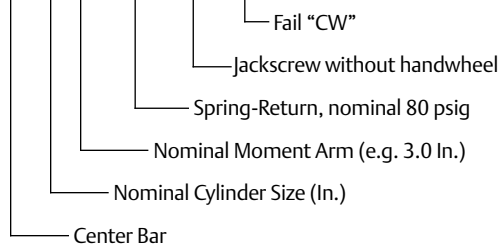
BettiSystems™ – Bettis has pre-engineered and documented a series of commonly required control systems. These approved systems utilize standard components, reduce lead times, and simplify purchasing, installation and start-up. Please consult the factory for additional information.



ORDERING / MODEL DESIGNATION

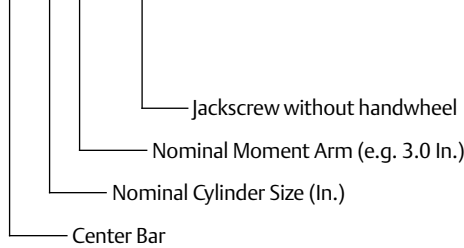
Spring-Return Example

CBA 7 30 SR80-M3-CW



Double-Acting Example

CBA 9 30 M3HW



OPTIONAL FEATURES

Fail-Safe Operation

Bettis 300-Series actuators are capable of fail-safe operation using either stored compressed air (air fail safe) or a mechanical spring.

Trims

Trim options for the 300-Series actuators include high temperature, low temperature, no copper or no yellow metal trims. Consult factory with your trim requirements.



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