

CBA-300 Series Pneumatic Actuators



The Bettis™ CBA-300 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 degree) 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 97/23/EC).
- 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 300-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 light weight assists in easy installation while its compactness allows use in tight piping configurations
- Jackscrew Option
- Five-Year Warranty
- Its NAMUR topworks mounting configuration allows the CBA-300 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 CBA-300 Series provides models in both spring-return and double-acting configurations. They have guaranteed minimum torque outputs ranging from 835 to 2,333 Nm in double-acting models. Springreturn models, requiring pressure from only one travel direction, are available for fail clockwise or counterclockwise applications. The spring ending torques range from 286 to 1,182 Nm.

Torque Ratings - (Pneumatic)

All Published Torques are Guaranteed Minimum Values.

Double-Acting Actuators

CBA-300 Series

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

Spring-Return Actuators

CBA-300 Series

Actuator Model	Spring Torque Start/Min./End (Nm)		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.	148	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	
Actuator Model	Spring Torque Start/Min./End (Nm)		Pressure Torque Output Start/Min./End (Nm)										
			3	3.5	4	5	5.5	6	7	8	9	10	11
			Operating Pressure (Bar)										

Spring-Return Actuators
CBA-300 Series (cont.)

Actuator Model	Spring Torque Start/Min./End (Nm)		Operating Pressure (Bar)										
			3	3.5	4	5	5.5	6	7	8	9	10	11
			Pressure Torque Output Start/Min./End (Nm)										
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	669	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								
Actuator Model	Spring Torque Start/Min./End (Nm)		Pressure Torque Output Start/Min./End (Nm)										
			3	3.5	4	5	5.5	6	7	8	9	10	11
			Operating Pressure (Bar)										

Spring-Return Actuators
CBA-300 Series (cont.)

Actuator Model	Spring Torque Start/Min./End (Nm)		Operating Pressure (Bar)										
			3	3.5	4	5	5.5	6	7	8	9	10	11
		Pressure Torque Output Start/Min./End (Nm)											
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						
Actuator Model	Spring Torque Start/Min./End (Nm)		Pressure Torque Output Start/Min./End (Nm)										
			3	3.5	4	5	5.5	6	7	8	9	10	11
		Operating Pressure (Bar)											

Performance Data - (Pneumatic)

All Published Torques are Guaranteed Minimum Values.

Double-Acting Actuators

CBA-300 Series

Actuator Model	Volume (Cu. cm.) ▲		Maximum Operating Pressure (MOP)* (Bar)	Maximum Allowable Working Pressure (MAWP)** (Bar)	Approximate Weight of Actuator (Kg)
	Outboard	Inboard (Housing)			
CBA 730	4260.6	9209.5	7.2	13.8	59
CBA 830	5588.0	10373.0	5.5	13.8	63.5
CBA 930	7095.6	11683.9	4.5	11.7	70.3
CBA 1030	9373.4	13666.8	3.4	9.0	77.1
Actuator Model	Outboard	Inboard (Housing)	Maximum Operating Pressure (MOP)* (Bar)	Maximum Allowable Working Pressure (MAWP)** (Bar)	Approximate Weight of Actuator (Kg)
	Volume (Cu. cm.) ▲				

Spring-Return Actuators

CBA-300 Series

Actuator Model	Volume (Cu. cm.) ▲	Maximum Operating Pressure (MOP)* (Bar)	Maximum Allowable Working Pressure (MAWP)** (Bar)	Approximate Weight of Actuator (Kg)
♦ CBA730-SR40	9209.5	9.3	13.8	71.7
SR60	9209.5	9.7	13.8	72.8
SR80	9209.5	10.0	13.8	73.9
SR100	9209.5	10.3	13.8	74.4
♦ CBA830-SR40	10373.0	7.2	13.8	81.6
SR60	10373.0	7.6	13.8	83.7
SR80	10373.0	8.0	13.8	85.3
SR100	10373.0	8.3	13.8	87.3
♦ CBA930-SR40	11683.9	5.9	11.7	88.5
SR60	11683.9	6.2	11.7	91.6
SR80	11683.9	6.6	11.7	93.7
SR100	11683.9	7.2	11.7	93.0
♦ CBA1030-SR40	13666.8	4.8	9.0	99.8
SR60	13666.8	5.2	9.0	102.5
SR80	13666.8	5.5	9.0	105.9
Actuator Model	Volume (Cu. cm.) ▲	Maximum Operating Pressure (MOP)* (Bar)	Maximum Allowable Working Pressure (MAWP)** (Bar)	Approximate Weight of Actuator (Kg)

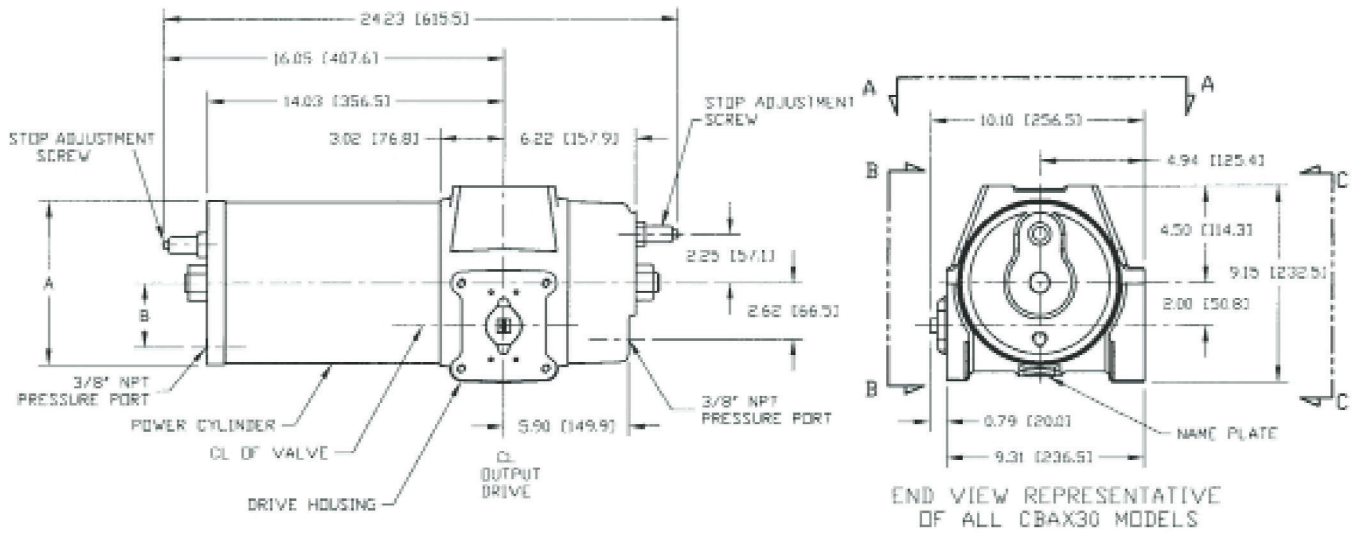
Notes:

- ♦ CB-SRXXM mechanical handwheel overrides are available on these models. The override adds approximately 2 lbs. (.8 kg) to the weight of the standard CB model.
- ▲ 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. 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

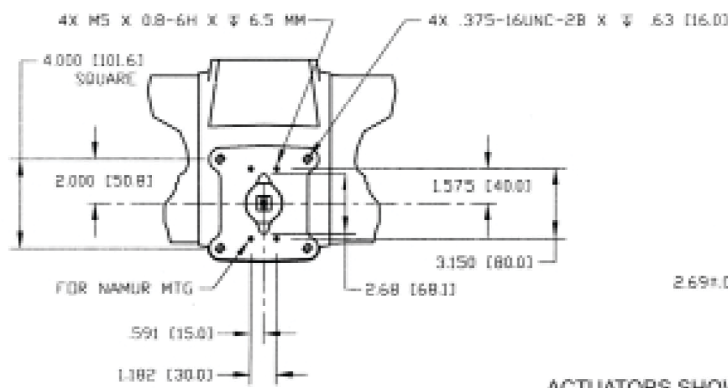


Dimensions - (Pneumatic) Mm.

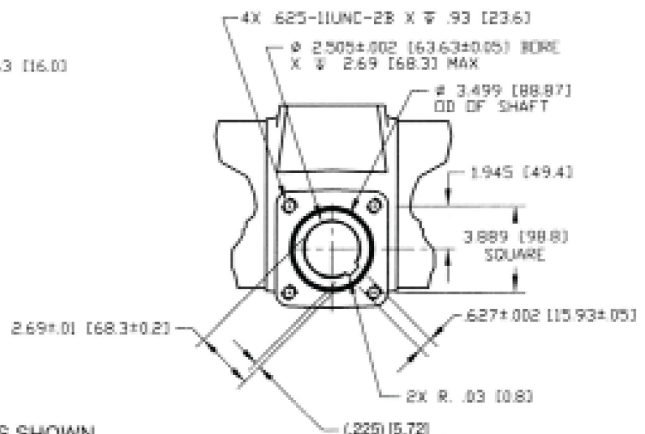
Double-Acting Actuators CBAX30



ACTUATORS SHOWN ROTATED TO FULL CLOCKWISE POSITION

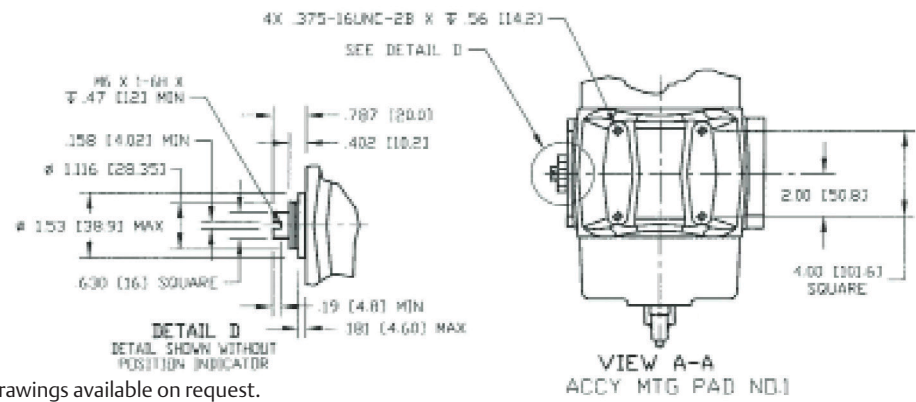


VIEW B-B
ACCESSORY MTG PAD NO. 2



VIEW C-C
VALVE MTG SURFACE

Actuator Model	A	B
CBA 730	193.8	76.2
CBA 830	219.2	88.9
CBA 930	244.6	101.6
CBA 1030	276.4	114.3

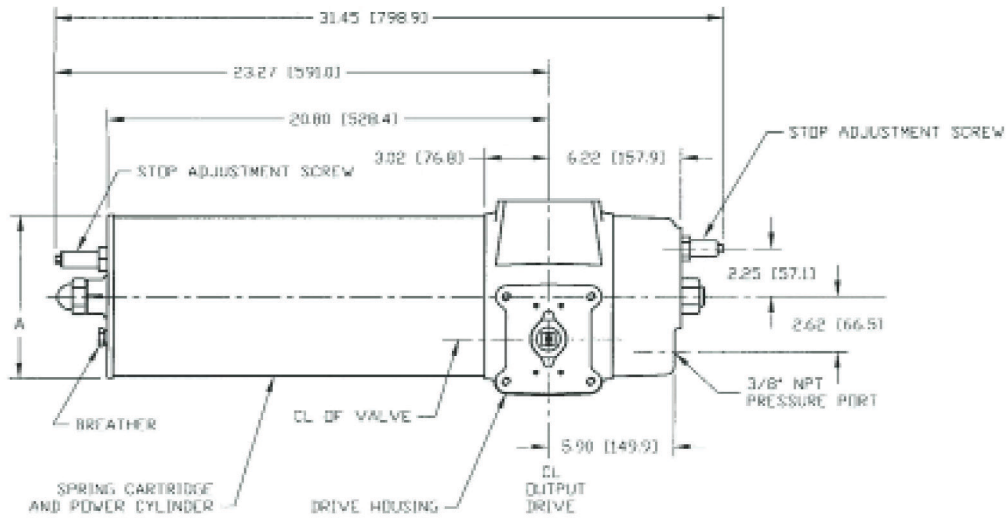


VIEW A-A
ACCY MTG PAD NO.1

Note:
Not Certified dimensional drawings. Such drawings available on request.
Contact factory with correct model designation and serial number.
All dimensions are expressed in inches.

Dimensions - (Pneumatic) Mm.

Spring-Return Actuators CBAX30-SRX



Actuator Model	A
CBA 730 -SRX	195.3
CBA 830 -SRX	220.7
CBA 930 -SRX	246.1
CBA 1030-SRX	279.4

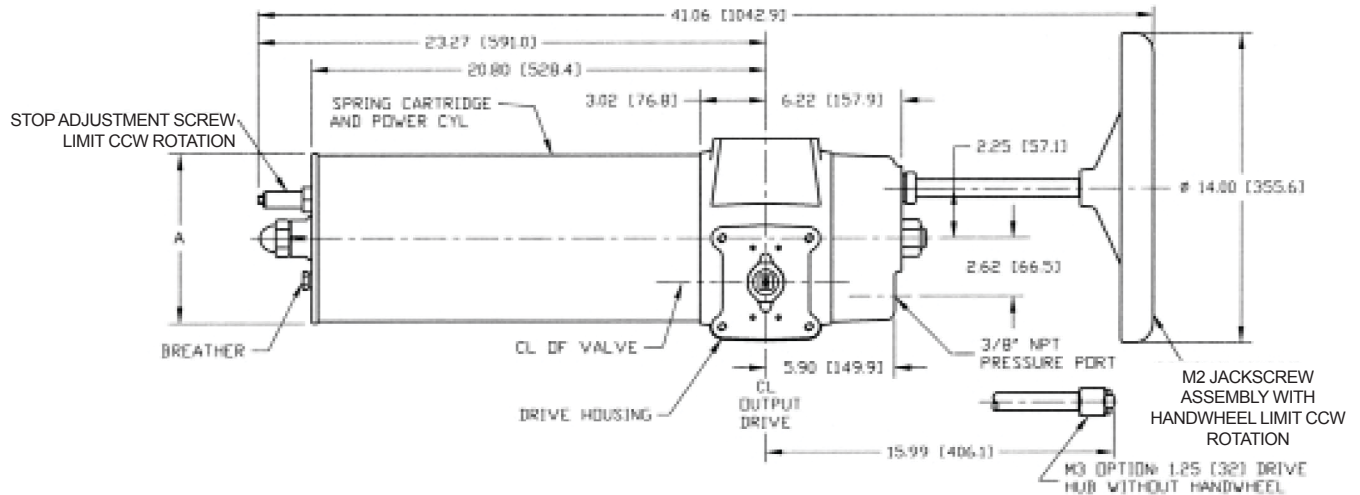
Note:
Not Certified dimensional drawings. Such drawings available on request.
Contact factory with correct model designation and serial number.
All dimensions are expressed in inches.

Dimensions - (Pneumatic) Mm.

M3(HW) Override

Double-Acting Actuators

CBAX30-M3(HW)



Actuator Model	A	B
CBA 730-M3HW	193.8	76.2
CBA 830-M3HW	219.2	88.9
CBA 930-M3HW	244.6	101.6
CBA 1030-M3HW	276.4	114.3

Note:

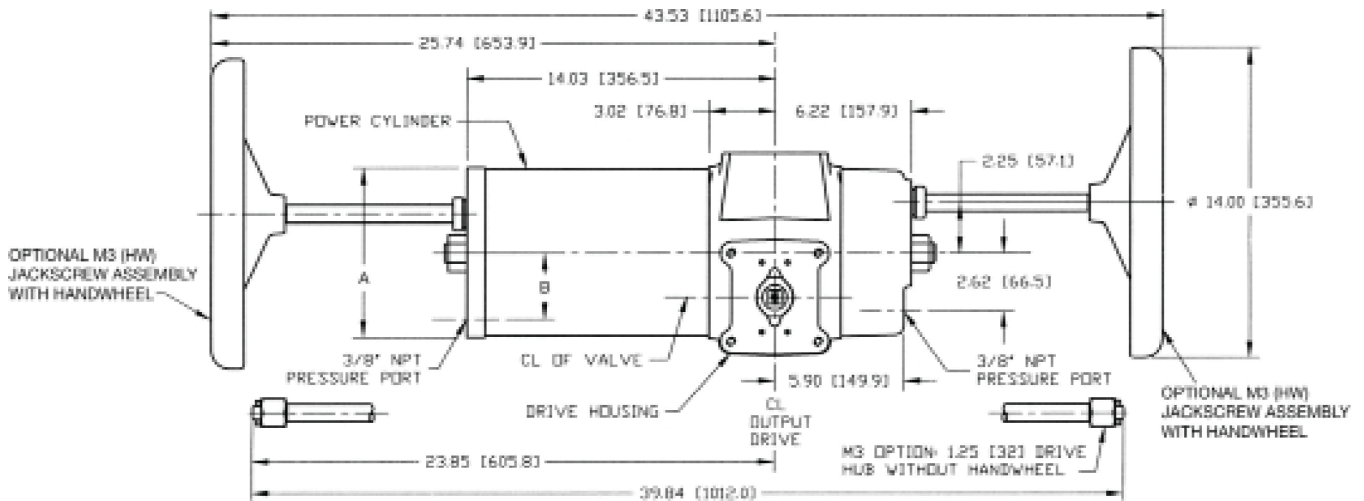
Not Certified dimensional drawings. Such drawings available on request. Contact factory with correct model designation and serial number. All dimensions are expressed in inches.

Dimensions - (Pneumatic) Mm.

M3(HW) Override

Spring-Return Actuators

CBAX30-SRX-M3(HW)



Actuator Model	A
CBA 730-SRX-M3HW	195.3
CBA 830-SRX-M3HW	220.7
CBA 930-SRX-M3HW	246.1
CBA 1030-SRX-M3HW	279.4

Note:

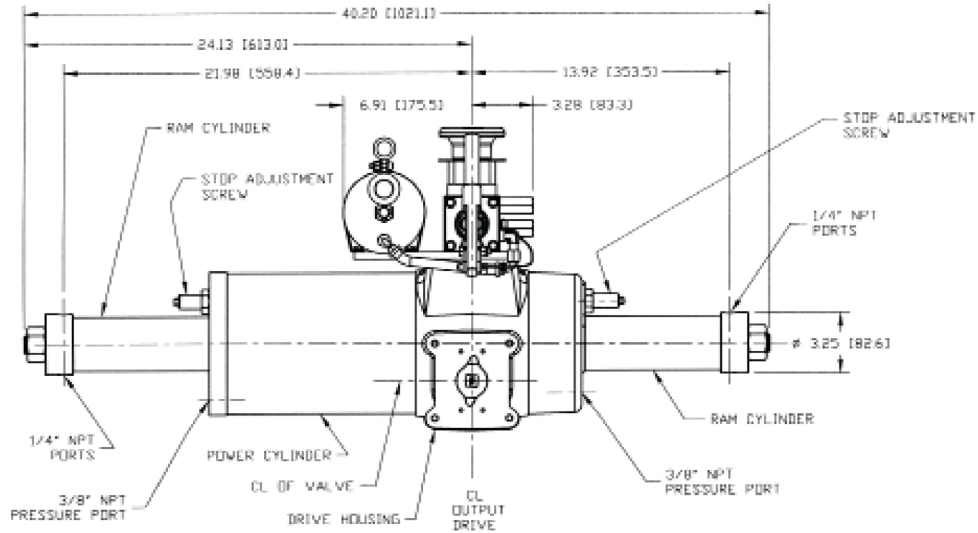
Not Certified dimensional drawings. Such drawings available on request.
Contact factory with correct model designation and serial number.
All dimensions are expressed in inches.

Dimensions - (Pneumatic) Mm.

M3(HW) Override

Double-Acting Actuators

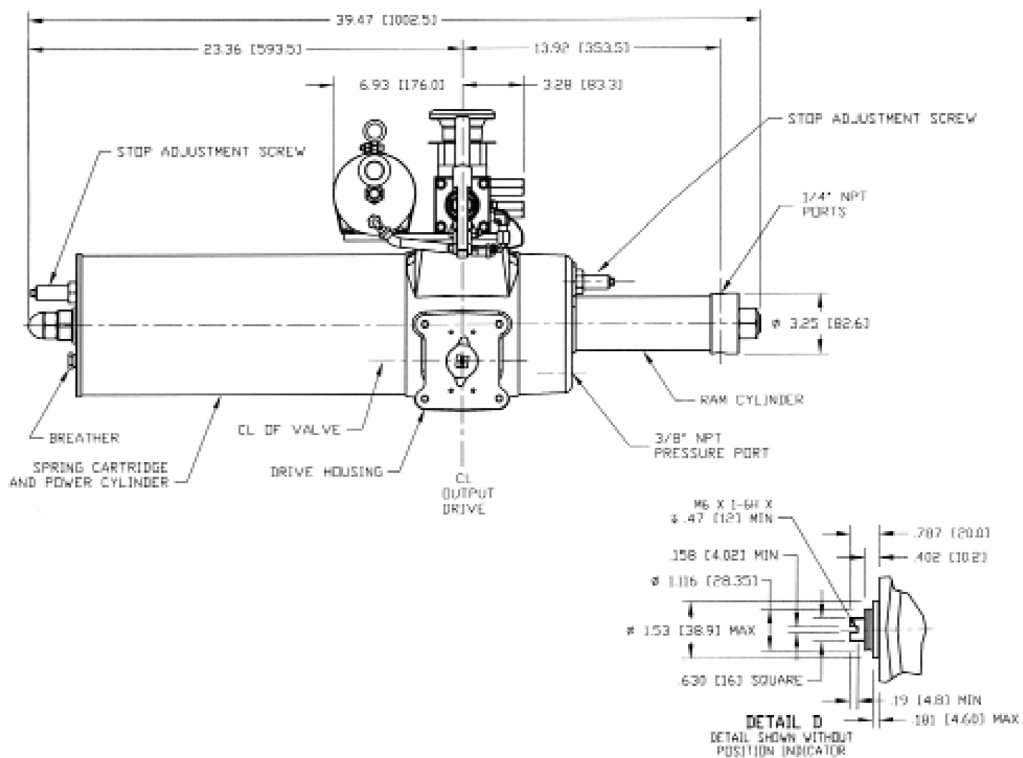
CBAX30-M11



ACTUATORS SHOWN ROTATED TO FULL CLOCKWISE POSITION

Spring-Return Actuators

CBAX30-SRX-M11



Note:

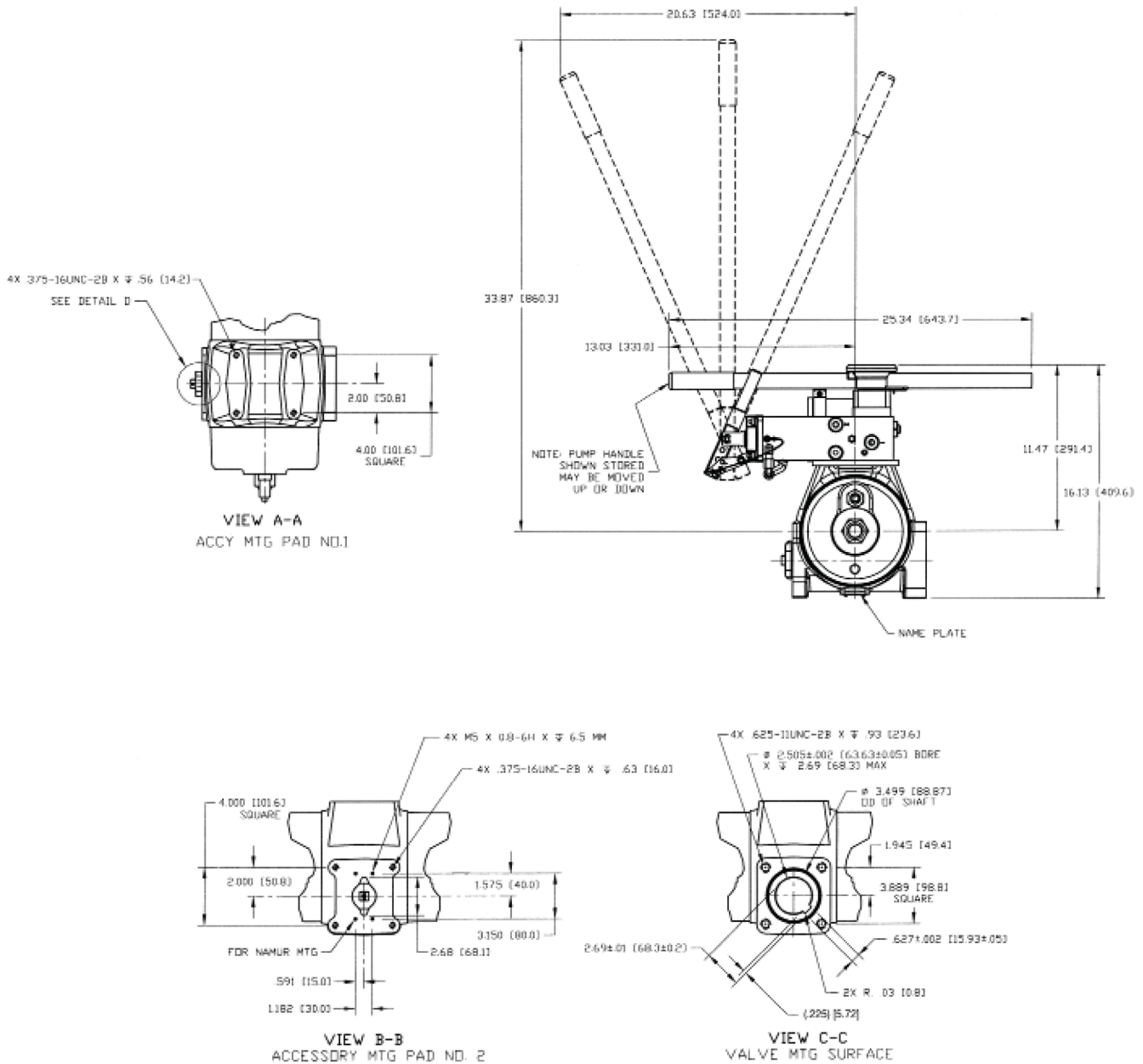
Not Certified dimensional drawings. Such drawings available on request.
Contact factory with correct model designation and serial number.
All dimensions are expressed in inches.

Dimensions - (Pneumatic) Mm.

M3(HW) Override

Spring-Return Actuators

End View Representative Of All CBAX30-M11 Models



Note:
Not Certified dimensional drawings. Such drawings available on request.
Contact factory with correct model designation and serial number.
All dimensions are expressed in inches.

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