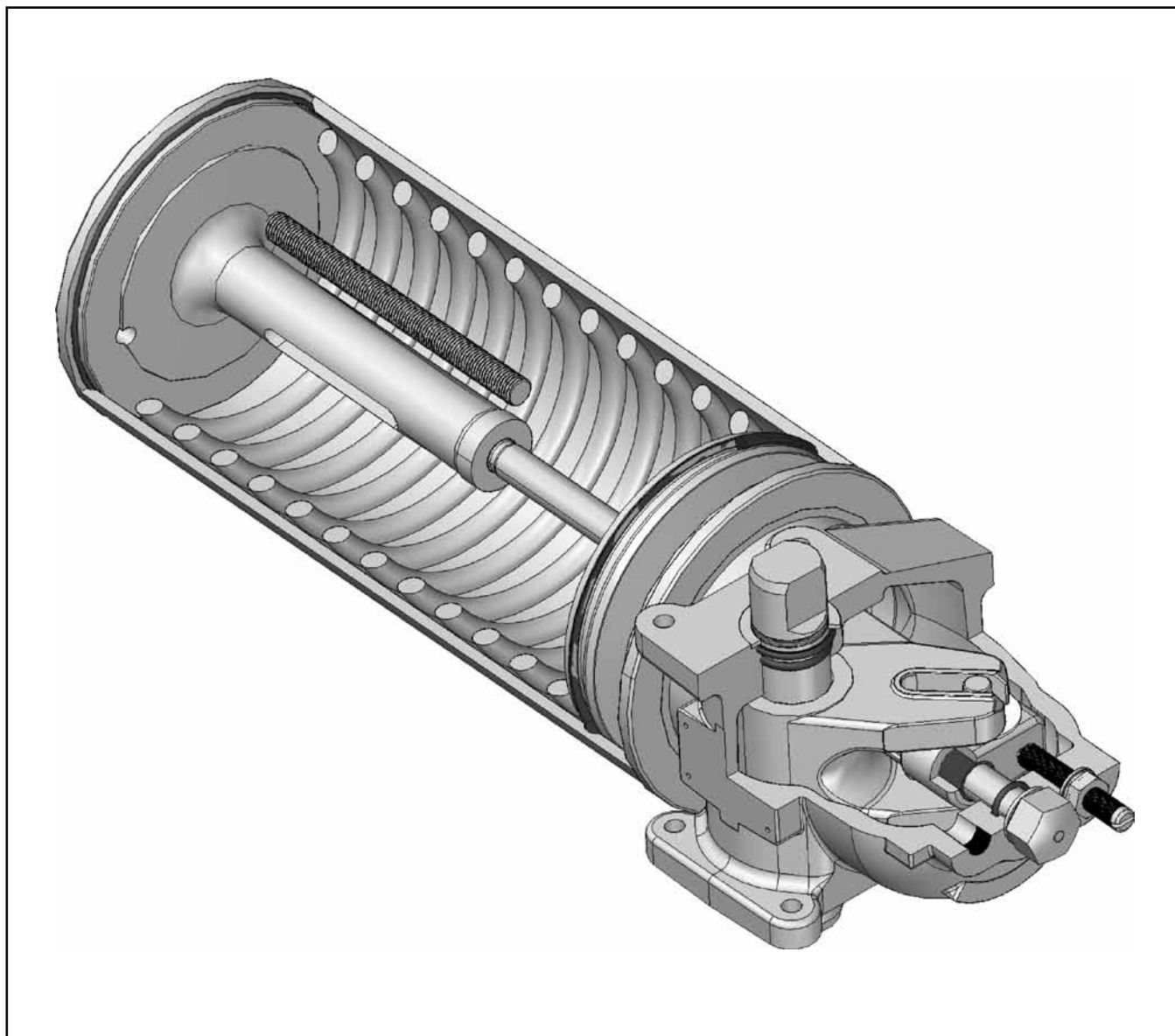


Data sheet

Date: February 2010
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Bettis CBB-Series

Technical data sheet - Metric



Data sheet

Sheet No.: CBPM 1.01 RevB

Date: February 2010

CBB-Series

Torque Ratings – (Pneumatic)

All Published Torques are Guaranteed Minimum Values.

Double-Acting Actuators

CBB-Series

Actuator Model	Stroke Position	Operating Pressure (Bar)							
		3	3.5	4	5	5.5	6	7	8
		Pressure Torque Output Start/Min./End (Nm)							
CBB 315	Start/End	83	97	111	139	153	167	194	222
	Minimum	50	58	66	83	91	99	116	133
CBB 420	Start/End	189	220	252	315	346	378	441	504
	Minimum	107	125	143	179	196	214	250	286
CBB 520	Start/End	262	306	350	437				
	Minimum	160	187	213	267				
CBB 525	Start/End	362	422	482	603	663	724	844	965
	Minimum	211	247	282	352	387	423	493	564
CBB725	Start/End	708	826	944	1179	1297			
	Minimum	422	492	563	703	774			

Spring-Return Actuators

CBB-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)										
CBB315 SR40	Start	39	49	61	74	100	113	125	151	177	202	228	
	Min.	17	21	29	36	51	58	65	79	94	108	123	
	End	23	31	44	57	84	97	110	136	162	189	215	
CBB315 SR60	Start	68		51	65	93	107	121	148	176	204	232	
	Min.	27		18	26	41	49	57	72	87	102	117	
	End	34		21	35	63	76	90	118	146	174	202	
CBB315 SR80	Start	86				84	99	115	145	175	206	236	
	Min.	35				29	37	44	59	74	89	103	
	End	45				41	56	71	101	132	162	192	
CBB315 SR100	Start	121						93	122	151	180	209	238
	Min.	46						34	50	66	81	97	113
	End	56						42	71	100	129	159	188
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)										

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Sheet No.: CBPM 1.02 RevB

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CBB-Series

Torque Ratings – (Pneumatic)

All Published Torques are Guaranteed Minimum Values.

Spring-Return Actuators

CBB-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)										
CBB415 SR40	Start	77	90	113	137	185	208	232	279				
	Min.	32	39	52	66	93	106	119	146				
	End	41	56	82	108	159	185	210	262				
CBB415 SR60	Start	122		82	104	150	173	195	241				
	Min.	49		31	45	73	87	100	127				
	End	65		36	61	111	136	161	211				
CBB415 SR80	Start	152				130	153	176	223	270			
	Min.	65				53	68	82	109	137			
	End	80				66	91	116	165	214			
CBB415 SR100	Start	187						182	232				
	Min.	76						54	84				
	End	85						54	102				
CBB420 SR40	Start	67	108	135	162	216	243	270	324	377	431	485	
	Min.	34	43	58	73	102	117	131	160	190	219	248	
	End	54	57	83	109	161	187	213	266	318	370	422	
CBB420 SR60	Start	149			143	200	229	258	316	374	431	489	
	Min.	54			50	81	97	112	143	173	204	234	
	End	78			56	107	132	158	208	259	310	360	
CBB420 SR80	Start	188				176	205	235	293	352	410	469	527
	Min.	74				61	77	94	126	158	191	223	255
	End	102				66	94	123	179	235	291	347	403
CBB420 SR100	Start	252						209	268	328	387	446	506
	Min.	94						64	100	134	166	199	232
	End	126						64	121	178	235	292	349
CBB520 SR40	Start	113	168	208	249	330	370	411	492				
	Min.	50	68	91	113	158	180	202	246				
	End	64	99	147	194	289	336	384	478				
CBB520 SR60	Start	194		161	203	286	328	370	453	537			
	Min.	84		58	83	132	156	180	229	277			
	End	109		62	110	205	252	299	394	489			
CBB520 SR80	Start	291				256	299	342	428	514			
	Min.	115				98	125	150	201	251			
	End	140				118	167	216	315	413			
CBB520 SR100	Start	438						268	356	443	530		
	Min.	154						84	138	187	236		
	End	194						84	178	273	368		
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)										

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Sheet No.: CBPM 1.03 RevB

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CBB-Series

Torque Ratings – (Pneumatic)

All Published Torques are Guaranteed Minimum Values.

Spring-Return Actuators

CBB-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)										
CBB525 SR40	Start	187	210	267	324	437	493	550	663	776	890	1003	
	Min.	69	86	115	144	202	231	260	317	374	432	489	
	End	107	134	191	248	361	417	474	587	700	814	927	
CBB525 SR60	Start	286		215	272	387	445	502	617	732	846	961	
	Min.	111		75	108	172	204	235	298	361	424	487	
	End	155		85	143	259	317	375	492	608	725	841	
CBB525 SR80	Start	343				329	386	443	558	673	788	903	1017
	Min.	146				121	153	185	248	311	373	435	498
	End	190				148	208	268	387	507	627	746	866
CBB525 SR100	Start	522						391	509	627	745	862	980
	Min.	189						141	208	274	339	404	469
	End	252						166	290	415	539	663	787
CBB725 SR40	Start	356	436	552	669	903	1020	1137	1370				
	Min.	145	175	236	297	419	479	539	658				
	End	185	281	407	534	786	912	1038	1291				
CBB725 SR60	Start	593		403	514	735	846	956	1178	1399			
	Min.	238		147	217	351	417	483	614	745			
	End	312		158	284	537	663	789	1042	1294			
CBB725 SR80	Start	833				610	719	828	1046	1264			
	Min.	320				253	322	391	527	662			
	End	376				307	435	563	818	1074			
CBB725 SR100	Start	1071						786	1016	1247			
	Min.	368						251	384	511			
	End	482						260	506	752			
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)										

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Sheet No.: CBPM 2.01 RevB

Date: February 2010

CBB-Series

Performance Data – (Pneumatic)

Double-Acting Actuators CBB-Series

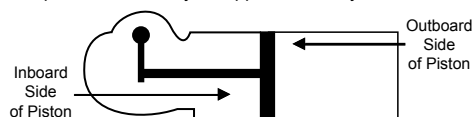
Actuator Model	Volume				Maximum Operating Pressure (MOP)*		Maximum Allowable Working Pressure (MAWP)**		Approximate Weight of Actuator	
	Outboard		Inboard (Housing)							
	Cu. Inches	Cubic Cm	Cu. Inches	Cubic Cm	PSIG	Bar	PSIG	Bar	Lbs.	Kg
CBB 315	24	393.3	54	885.0	120	8.3	200	13.8	20	9.1
CBB 420	53	868.5	115	1884.5	120	8.3	200	13.8	22	10.0
CBB 520	83	1360.1	148	2425.3	70	4.8	160	11.0	28	12.7
CBB 525	105	1720.6	207	3392.1	120	8.3	200	13.8	44	20.0
CBB 725	208	3408.5	327	5358.6	80	5.5	160	11.0	68	31.0

Spring-Return Actuators CBB-Series

Actuator Model	Volume		Maximum Operating Pressure (MOP)*		Maximum Allowable Working Pressure (MAWP)**		Approximate Weight of Actuator	
	Cu. Inches	Cubic Cm	PSIG	Bar	PSIG	Bar		
◆ CBB 315-SR40	54	885	155	10.7	200	13.8	22	10.0
SR60	54	885	152	10.5	200	13.8	23	10.4
SR80	54	885	150	10.3	200	13.8	26	11.8
SR100	54	885	164	11.3	200	13.8	25	11.4
◆ CBB 415-SR40	75	1229	100	6.9	160	11.0	27	12.7
SR60	75	1229	112	7.7	160	11.0	29	14.1
SR80	75	1229	117	8.1	160	11.0	30	14.1
SR100	75	1229	114	7.9	160	11.0	31	14.1
◆ CBB 420-SR40	115	1884.5	157	10.8	200	13.8	37	16.8
SR60	115	1884.5	156	10.8	200	13.8	39	17.7
SR80	115	1884.5	161	11.0	200	13.8	40	18.1
SR100	115	1884.5	166	11.4	200	13.8	41	18.6
◆ CBB 520-SR40	148	2425.3	110	7.6	160	11.0	45	20.4
SR60	148	2425.3	116	8.0	160	11.0	48	21.8
SR80	148	2425.3	120	8.3	160	11.0	49	22.2
SR100	148	2425.3	132	9.1	160	11.0	53	24.0
◆ CBB 525-SR40	207	3392	146	10.1	200	13.8	62	28.1
SR60	207	3392	151	10.4	200	13.8	65	29.5
SR80	207	3392	159	11.0	200	13.8	65	29.5
SR100	207	3392	163	11.2	200	13.8	67	30.4
◆ CBB 725-SR40	327	5358.6	102	7.0	160	11.0	97	44.0
SR60	327	5358.6	115	8.0	160	11.0	98	44.5
SR80	327	5358.6	124	8.6	160	11.0	104	47.2
SR100	327	5358.6	124	8.6	160	11.0	107	48.5

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 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



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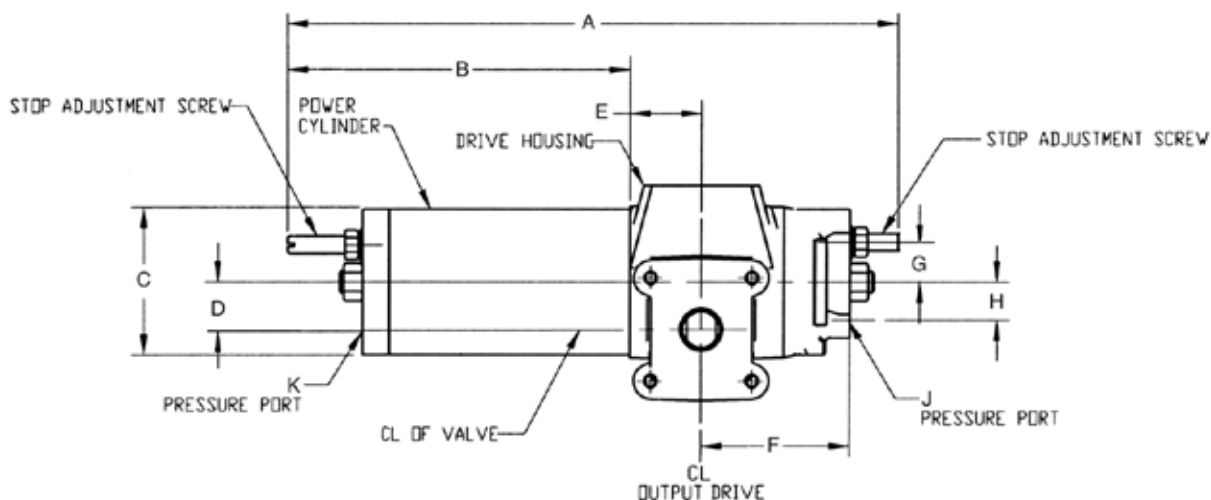
Sheet No.: CBPM 3.01 RevB

Date: February 2010

CBB-Series

Dimensions – (Pneumatic) mm.

Double-Acting Actuators CBBXXX



Actuator Model	A	B	C	D	E	F	G	H	J/K	L	M	N
CBB315	359.8	187.5	82.6	27.8	47.8	87.8	23.8	23.9	1/4" NPT	.313-18 UNC	9.7	57.2
CBB420	417.3	217.6	108.0	34.9	54.1	111.0	27.9	27.9	3/8" NPT	.375-16 UNC	12.7	76.2
CBB520	418.1	219.2	136.7	34.9	53.5	111.0	27.9	27.9	3/8" NPT	.375-16 UNC	12.7	76.2
CBB520	488.1	250.9	136.7	42.9	65.0	127.0	31.8	28.4	3/8" NPT	.500-13 UNC	12.7	88.9
CBB725	492.7	260.1	190.5	42.9	64.2	127.0	31.8	28.4	3/8" NPT	.500-13 UNC	12.7	88.9

Actuator Model	P	Q	R	S	T	U	V	W	X	Y	Z	AA
CBB315	.313-18 UNC	28.6	73.8	147.6	19.1	56.4	131.5	15.6 15.73	26.2	95.3	27.8	22.15 22.25
CBB420	.375-16 UNC	38.1	85.1	169.9	19.1	71.3	158.9	22.09 21.09	26.2	117.5	35.1	28.5 28.6
CBB520	.375-16 UNC	38.1	85.1	169.9	19.1	71.3	158.9	22.09 21.09	26.2	117.5	35.1	28.5 28.6
CBB520	.500-13 UNC	44.5	111.1	222.3	28.4	88.9	192.6	28.33 24.47	38.1	146.1	42.9	38.02 38.12
CBB725	.500-13 UNC	44.5	111.1	222.3	28.4	88.9	192.6	28.32 28.48	38.1	146.1	42.9	38.02 38.12

Note: Not Certified dimensional drawings. Such drawings available on request.

Contact factory with correct model designation and serial number.

All dimensions are expressed in millimeters.

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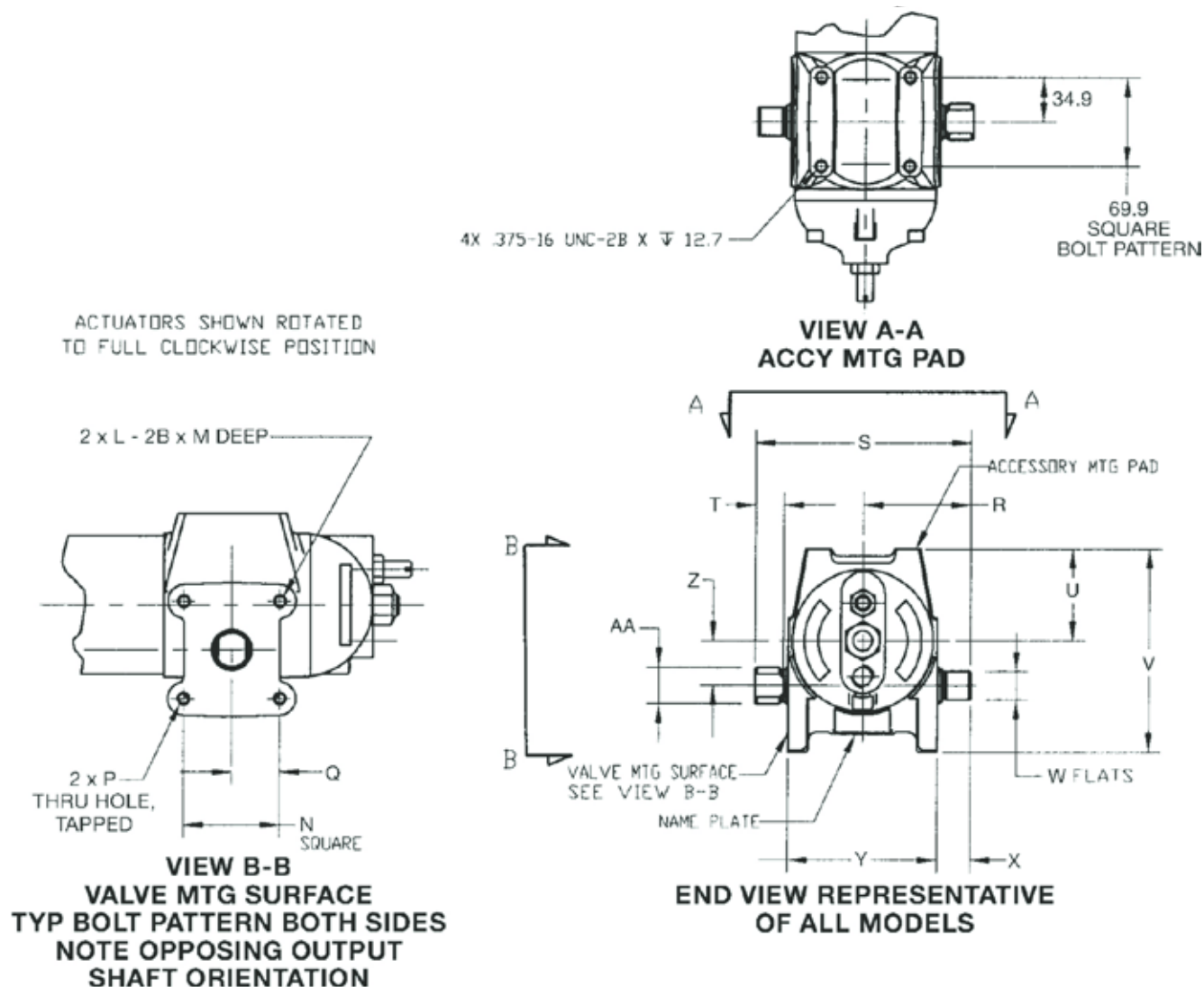
Sheet No.: CBPM 3.02 RevB

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CBB-Series

Dimensions – (Pneumatic) mm.

Double-Acting Actuators
CBBXXX (cont.)



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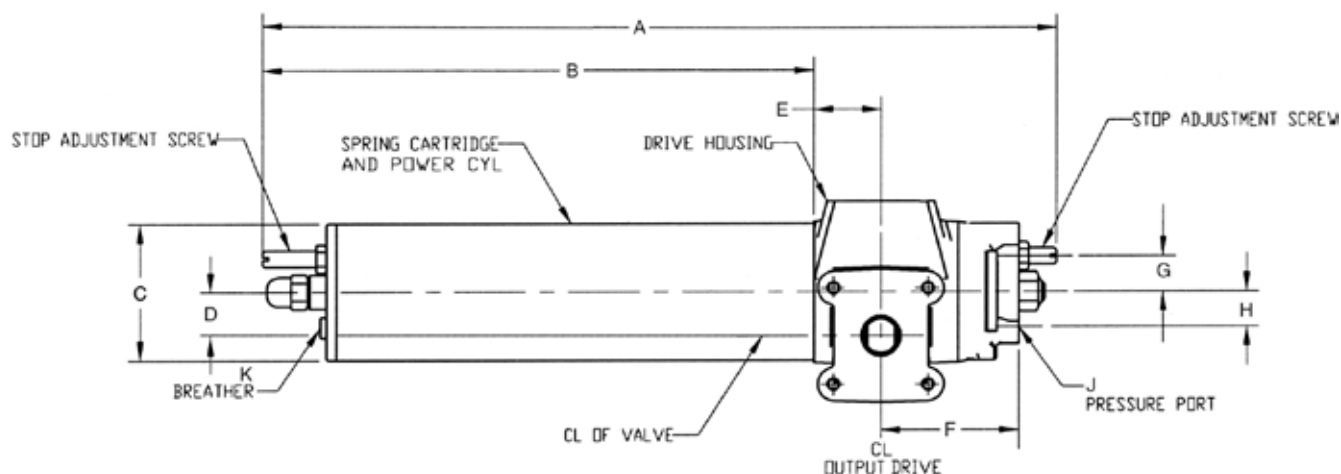
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CBB-Series

Dimensions – (Pneumatic) mm.

Spring-Return Actuators

CBB XXX-SRX



Actuator Model	A	B	C	D	E	F	G	H	J/K	L
CBB315-SRX	511.2	347.0	82.6	27.8	47.8	87.8	23.8	23.9	1/4" NPT	.313-18 UNC
CBB415-SRX	513.3	348.2	108.0	27.8	47.8	87.8	23.9	23.9	1/4" NPT	.313-18 UNC
CBB420-SRX	623.3	433.5	108.0	34.9	54.1	111.0	27.9	27.9	3/8" NPT	.375-16 UNC
CBB520-SRX	631.9	442.9	136.7	34.9	52.2	111.0	27.9	27.9	3/8" NPT	.375-16 UNC
CBB525-SRX	716.6	457.4	136.7	42.9	65.0	127.0	31.8	28.4	3/8" NPT	.500-13 UNC
CBB725-SRX	713.6	466.7	190.5	42.9	64.2	127.0	31.8	28.4	3/8" NPT	.500-13 UNC

Actuator Model	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	AA
CBB315-SRX	9.7	57.2	.313-18 UNC	28.6	73.8	147.6	19.1	56.4	131.5	15.6 15.73	26.2	95.3	27.8	22.15 22.25
CBB415-SRX	9.7	57.2	.313 -18 UNC	28.6	73.8	147.6	19.1	56.4	131.5	15.59 15.75	26.2	95.3	27.8	22.12 22.22
CBB420-SRX	12.7	76.2	.375 -16 UNC	38.1	85.1	169.9	19.1	71.3	158.9	22.09 21.09	26.2	117.5	35.1	28.5 28.6
CBB520-SRX	12.7	76.2	.375 -16 UNC	38.1	85.1	169.9	19.1	71.3	158.9	22.09 21.09	26.2	117.5	35.1	28.5 28.6
CBB525-SRX	12.7	88.9	.500 -13 UNC	44.5	111.1	222.3	28.4	88.9	192.6	28.33 24.47	38.1	146.1	42.9	38.02 38.12
CBB725-SRX	12.7	88.9	.500 -13 UNC	44.5	111.1	222.3	28.4	88.9	192.6	28.32 28.48	38.1	146.1	42.9	38.02 38.12

Note: Not Certified dimensional drawings. Such drawings available on request.

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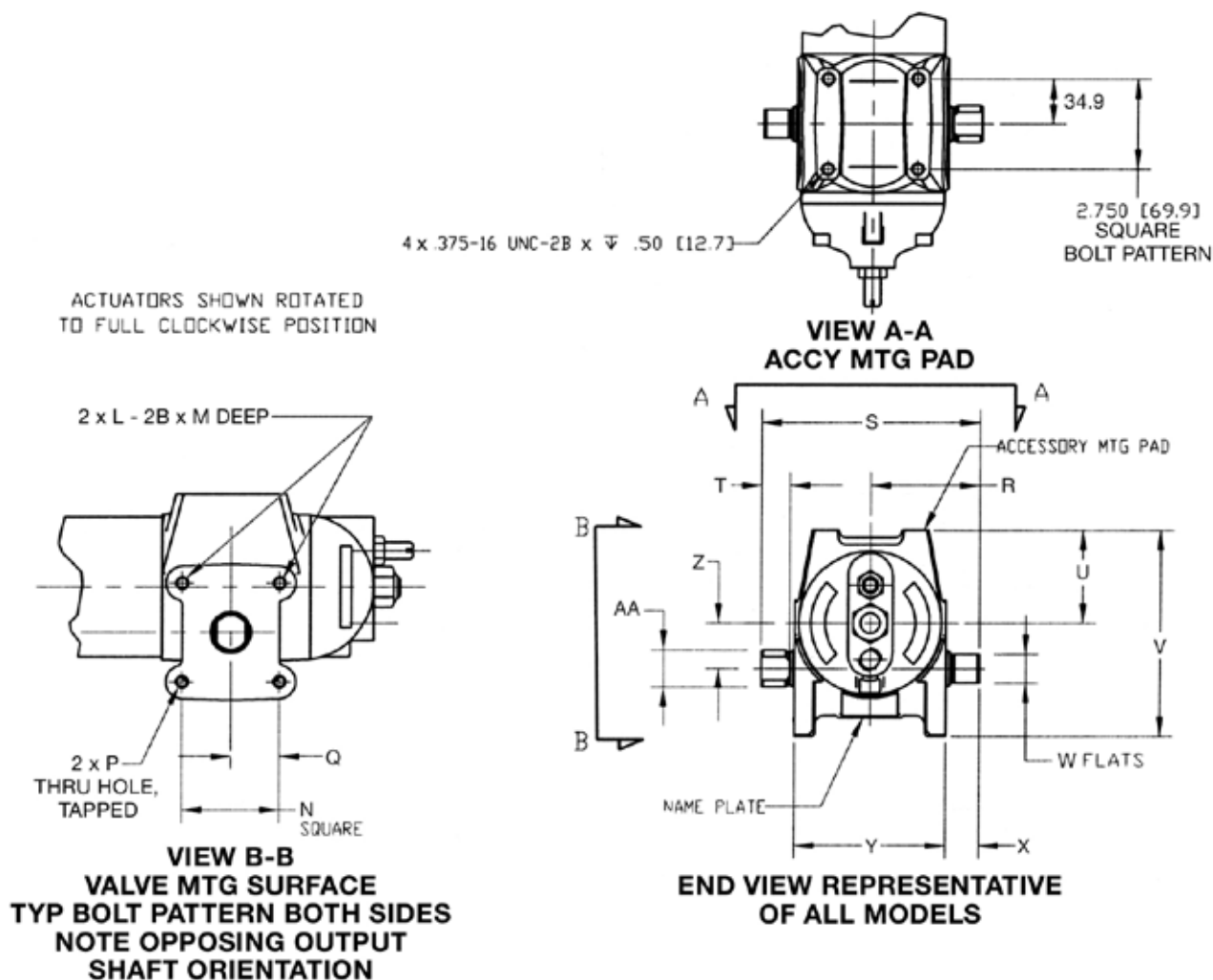
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CBB-Series

Dimensions – (Pneumatic) mm.

Spring-Return Actuators

CBB XXX-SRX (cont.)



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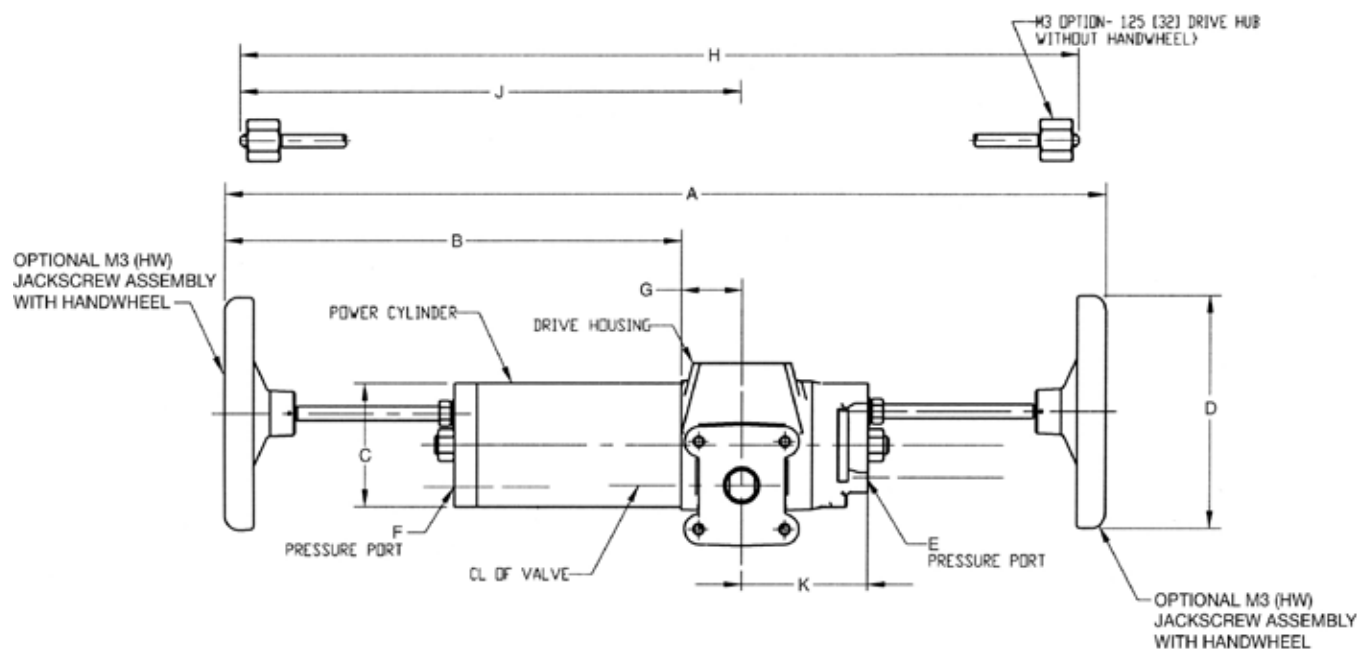
CBB-Series

Dimensions – (Pneumatic) mm.

M3(HW) Override

Double-Acting Actuators

CBB XXX-M3(HW)



Actuator Model	A	B	C	D	E	F	G	H	J	K
CBB315-M3HW	640.8	365.0	82.6	152.4	1/4" NPT	1/4" NPT	47.6	614.9	365.0	88.2
CBB420-M3HW	776.8	401.8	108.0	203.2	3/8" NPT	3/8" NPT	54.0	739.6	441.1	111.1
CBB520-M3HW	776.8	402.5	133.4	203.2	3/8" NPT	3/8" NPT	53.2	738.0	441.1	111.1
CBB525-M3HW	927.5	480.5	133.4	254.0	3/8" NPT	3/8" NPT	65.0	867.9	515.8	127.0
CBB725-M3HW	930.8	484.6	190.5	254.0	3/8" NPT	3/8" NPT	64.2	867.9	515.8	127.0

Note: Not Certified dimensional drawings. Such drawings available on request.

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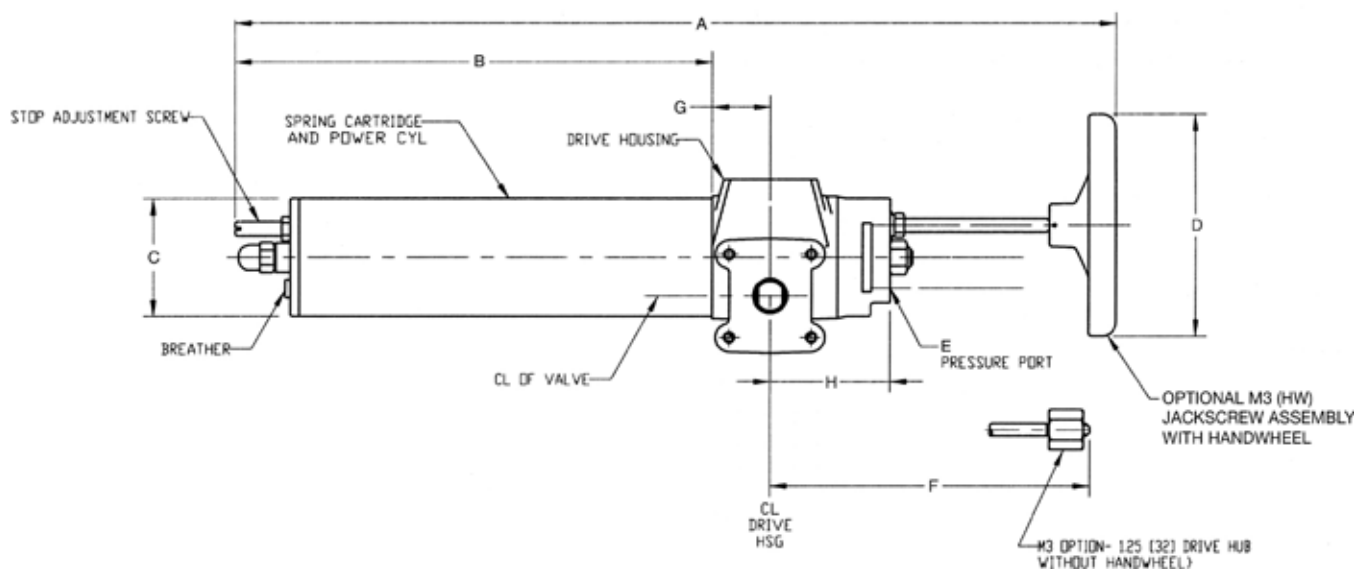
CBB-Series

Dimensions – (Pneumatic) mm.

M3(HW) Override

Spring-Return Actuators

CBB XXX-SRX-M3



Actuator Model	A	B	C	D	E	F	G	H
CBB315-SR-M3HW	677.1	366.5	82.6	152.4	1/4" NPT	249.9	47.6	88.2
CBB415-SR-M3HW	679.1	368.6	108.0	152.4	1/4" NPT	249.9	47.6	88.2
CBB420-SR-M3HW	816.2	441.3	108.0	203.2	3/8" NPT	297.0	54.0	111.1
CBB420-SR-M3HW	816.8	442.7	136.7	203.2	3/8" NPT	297.0	53.2	111.1
CBB525-SR-M3HW	937.9	491.0	136.7	254.0	3/8" NPT	351.9	65.0	127.0
CBB725-SR-M3HW	939.2	493.1	190.5	254.0	3/8" NPT	352.1	64.2	127.0

Note: Not Certified dimensional drawings. Such drawings available on request.

Contact factory with correct model designation and serial number.

All dimensions are expressed in millimeters.

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Updated data sheets can be obtained from our website www.bettis.com or from your nearest Valve Automation Center.

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