

BC4 INTERNAL BEARING RODLESS CYLINDER



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BC4 BAND CYLINDER

ENDURANCE TECHNOLOGYSM

Endurance Technology features are designed for maximum durability to provide extended service life.

LOAD-SUPPORTING BEARING DESIGN

- Self-lubricating bearing runs the length of carrier web for maximum bearing surface, this patented floating bearing system provides smooth movement and maximum transverse load resistance
- Durable, engineered resin piston has 50% greater bearing area
- Thicker and longer web has 60% greater material for increased robustness
- Maximum bearing life for millions of cycles

The BC4 was designed in response to customer requests for a basic rodless cylinder for use in applications that have guidance and support for the load. The BC4 features durable stainless steel bands, field replaceable engineered bearings and a large carrier mounting pattern. Built-to-order in stroke lengths up to 206 inches.

ADJUSTABLE CUSHIONS

- Adjustable cushions are standard, not optional
- Easy screw adjustment for end-of-stroke deceleration
- Protects actuator and load from damage

RIGID CLEAR-ANODIZED EXTRUDED ALUMINUM TUBE

- Stronger, stiffer tube retains tolerance specifications when chamber is pressurized
- Keeps sealing band in place for maximized air efficiency
- Tube supports are minimized
- Solid structural support provides durability and long life performance

STAINLESS STEEL SEALING BAND SYSTEM

- Fatigue resistant stainless steel bands are specifically made to provide longer life and will not elongate, like elastomers
- Outer band keeps out contaminants for extended performance
- Inner band provides a smooth surface for less seal wear

FORMED END CAP WIPER SEAL

- Keeps contaminants from entering the sealing area
- Protects internal components
- Reduces maintenance while increasing productivity

OPTIONS



AUXILIARY CARRIER

- Substantially higher load capacity
- Substantially higher bending moment capacity



LONG CARRIER

- Substantially higher My and Mz bending moment capacity
- Larger load bearing mounting surface



FLOATING MOUNT

- Compensates for non-parallelism between band cylinder and externally guided load



TUBE SUPPORT MOUNTS

- Used for intermediate support



FOOT MOUNTS

- For end mounting of band cylinder



SHOCK ABSORBERS

- Smooth deceleration, higher productivity
- Allows increased operating speed
- Self-compensates for load or speed changes
- Minimizes impact load to equipment
- Adjustable position shocks available



SINGLE END PORTING

- Simplifies air connections



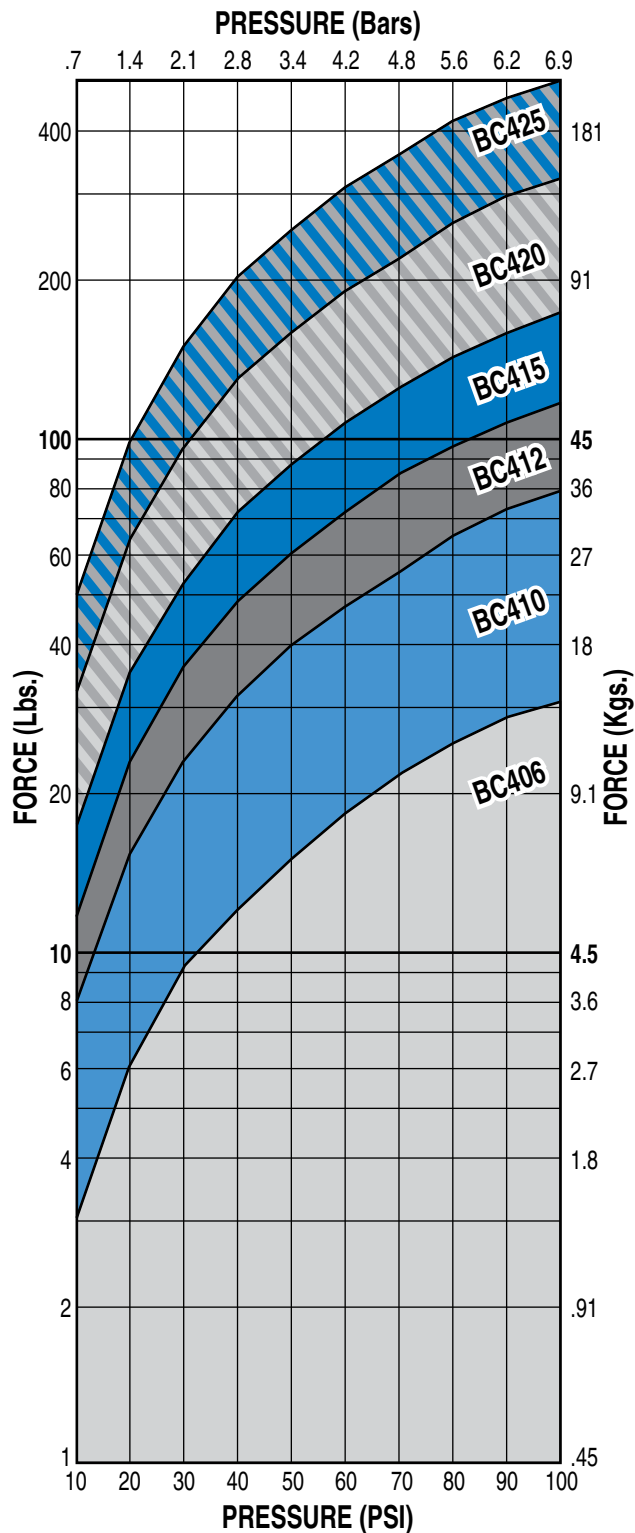
SWITCHES

- Available in Reed, Hall-effect and Triac
- 15ft. cable with flying leads; available with quick-disconnect couplers

BC4 Internal Bearing Rodless Cylinder

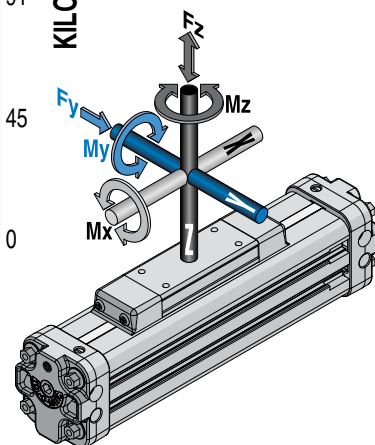
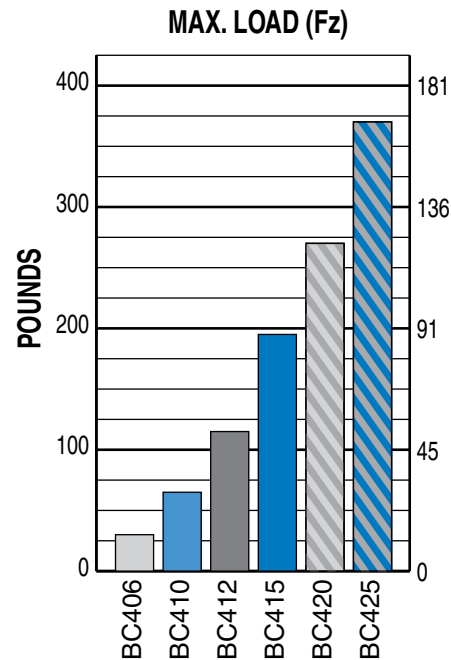
PERFORMANCE

BC4 THEORETICAL FORCE vs PRESSURE

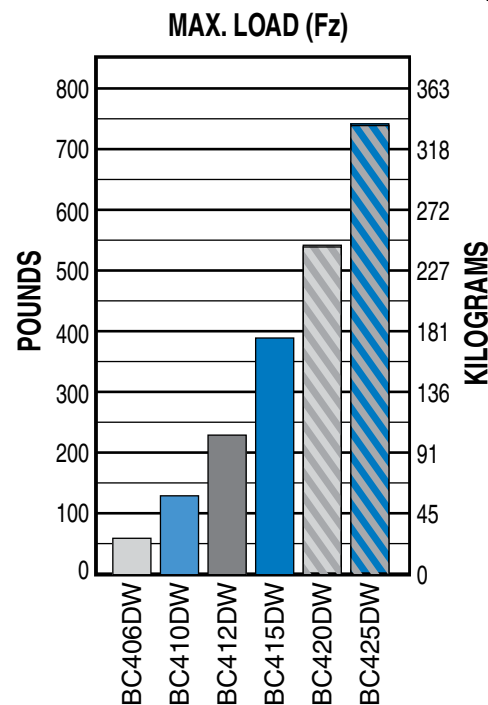


BC4 MAX. LOAD

STANDARD ACTUATOR



AUXILIARY CARRIER & LONG CARRIER OPTIONS

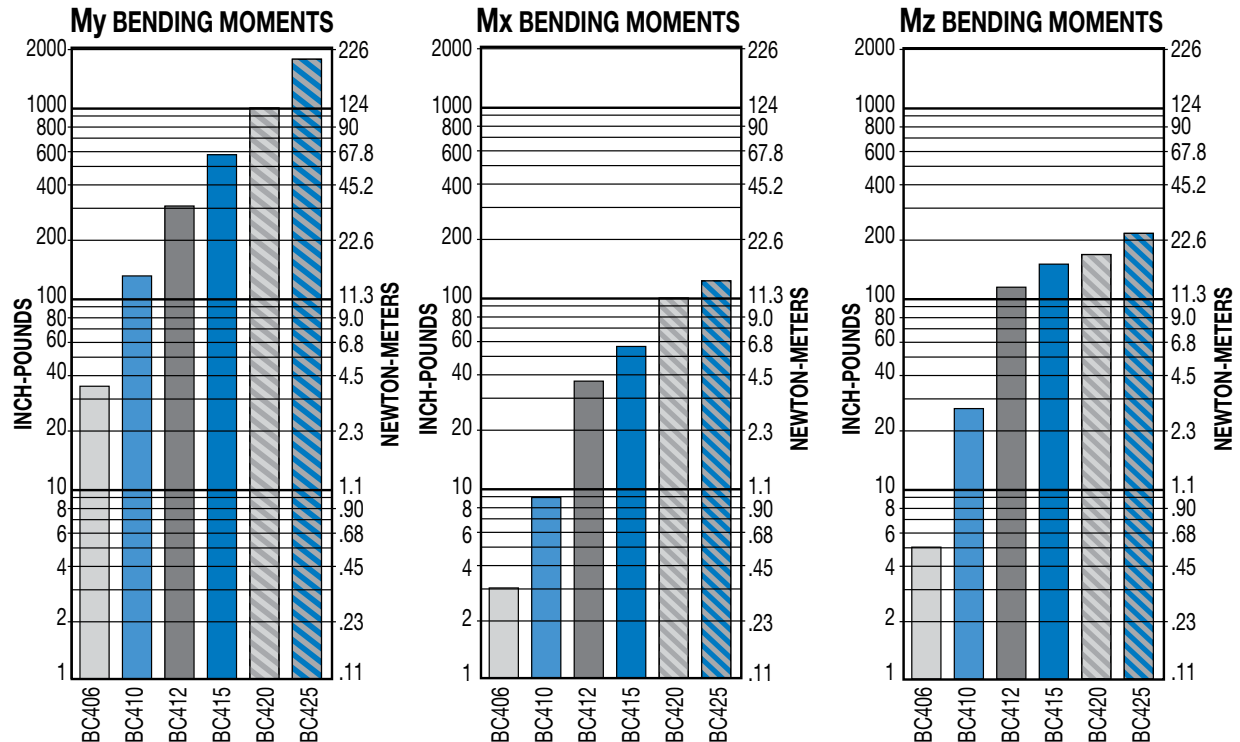


BC4 Internal Bearing Rodless Cylinder

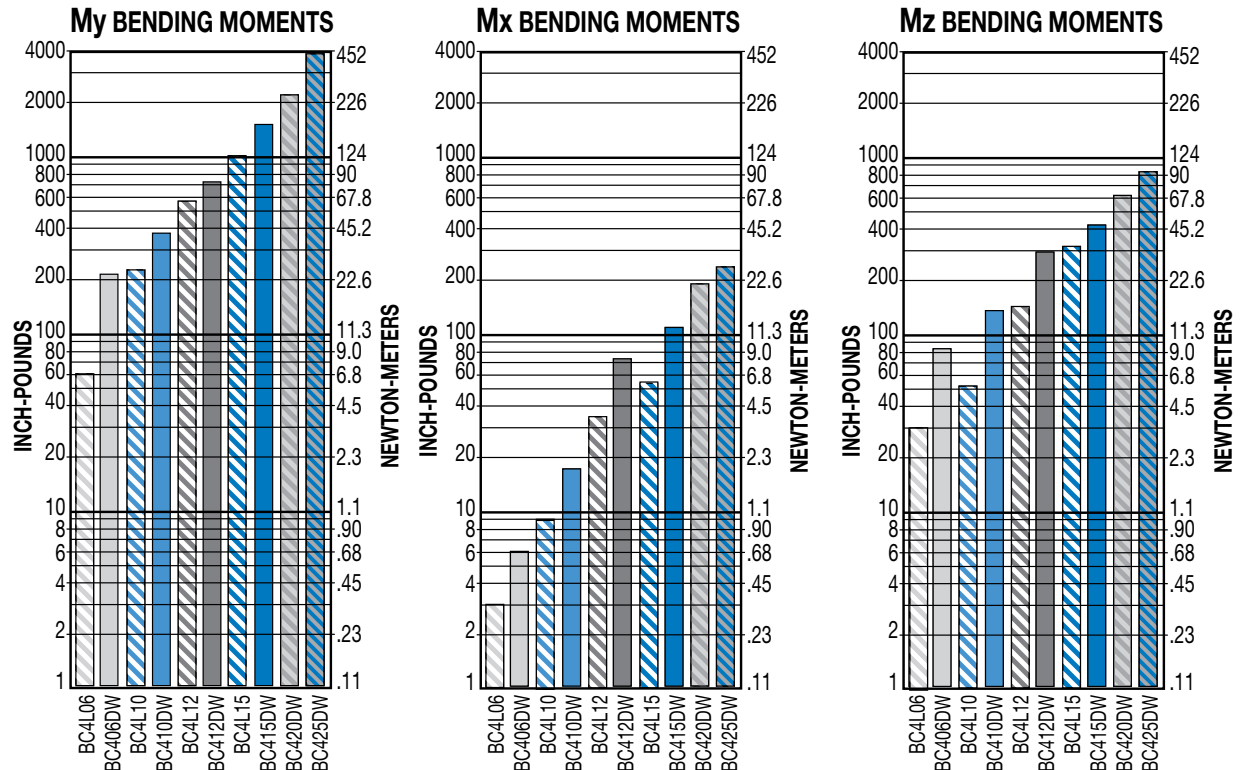
PERFORMANCE

BC4 BENDING MOMENTS AND LOAD

STANDARD ACTUATOR



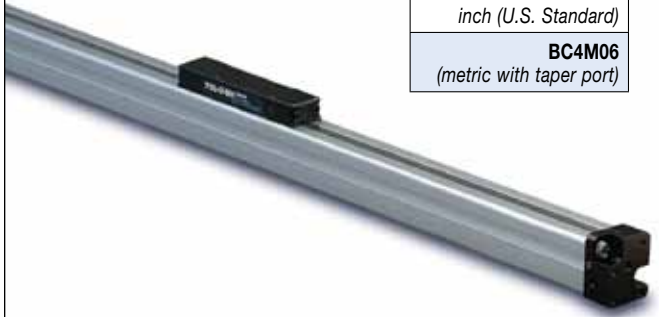
AUXILIARY CARRIER & LONG CARRIER OPTIONS



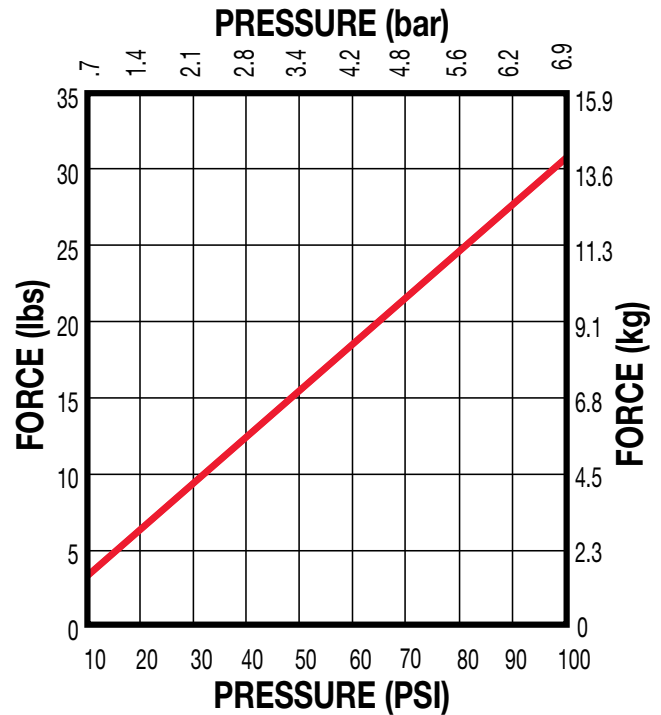
*Auxiliary carrier bending moments indicated are at minimum center to center distance. Additional My + Mz load capacity can be obtained by increasing "D" dimension. Refer to auxiliary carrier data on page BC4_20.

BC406 Internal Bearing Rodless Cylinder

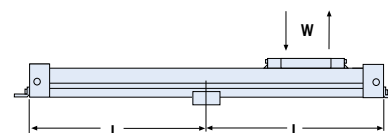
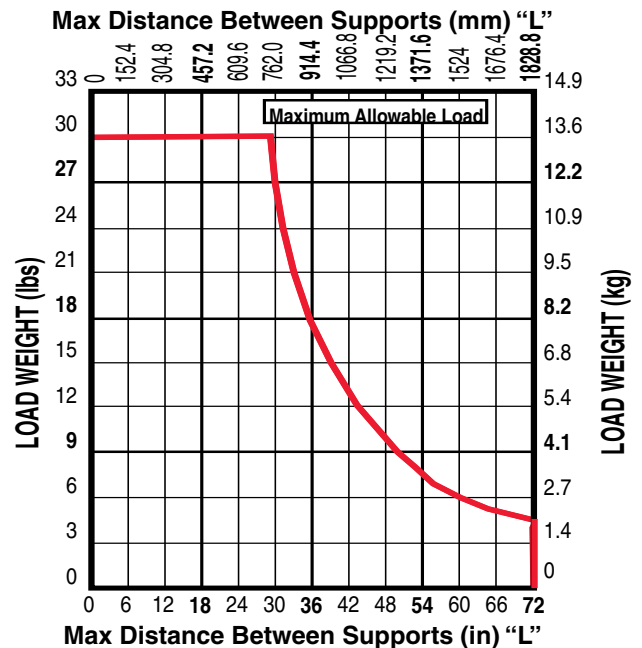
PERFORMANCE

BC406	
	
ORDER CODES	
BC406	inch (U.S. Standard)
BC4M06	(metric with taper port)
BC406 OPTIONS	
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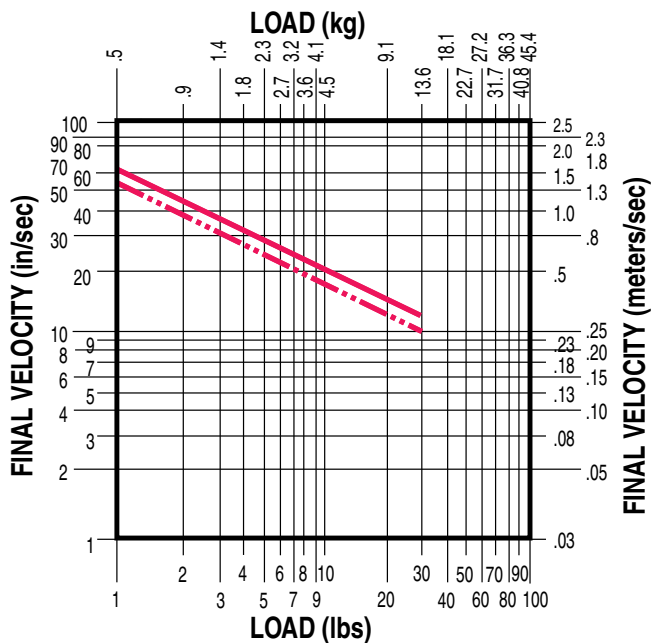
THEORETICAL FORCE vs PRESSURE



TUBE SUPPORT REQUIREMENTS



CUSHION DATA



NOTE:

- Max. for any application
- - - - - Max. for continuously cycled application

3D CAD AVAILABLE AT
WWW.TOLOMATIC.COM

A logo featuring a red 3D cube with the number '3' on its faces, positioned above the text 'CAD' in a large, bold, black font. Below 'CAD' is a white square containing the number '2D' in a large, bold, black font.

ABT



302

BC3

BC4

MG88

PB

BC410 Internal Bearing Rodless Cylinder

PERFORMANCE

BC410



ORDER CODES

BC410
inch (U.S. Standard)

BC4M10
(metric with taper port)

BC4MM10
(metric with parallel port)

BC410 OPTIONS

Page

Auxiliary Carrier BC4_20

Floating Mount Bracket BC4_25

Foot Mounts BC4_23

Long Carrier BC4_18

Shock Absorbers BC4_28

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Switches BC4_26

Tube Supports BC4_24

MORE INFORMATION

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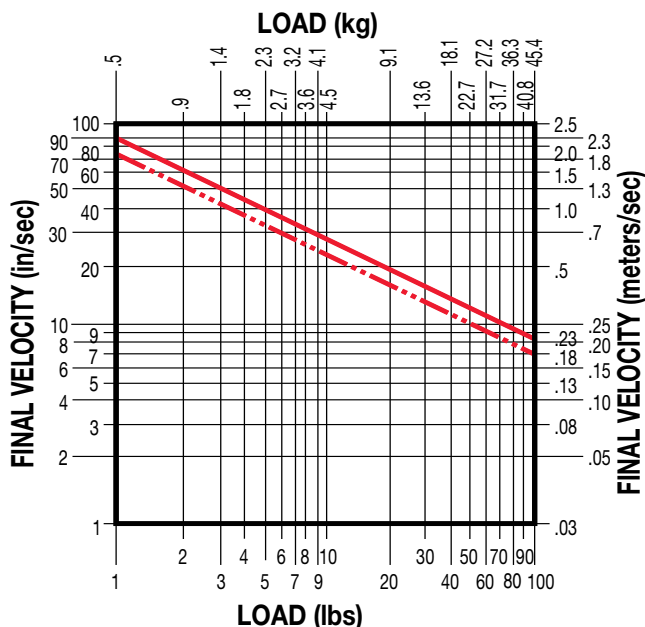
Application Guidelines BC4_32

Cushion Needle Adjustment BC4_32

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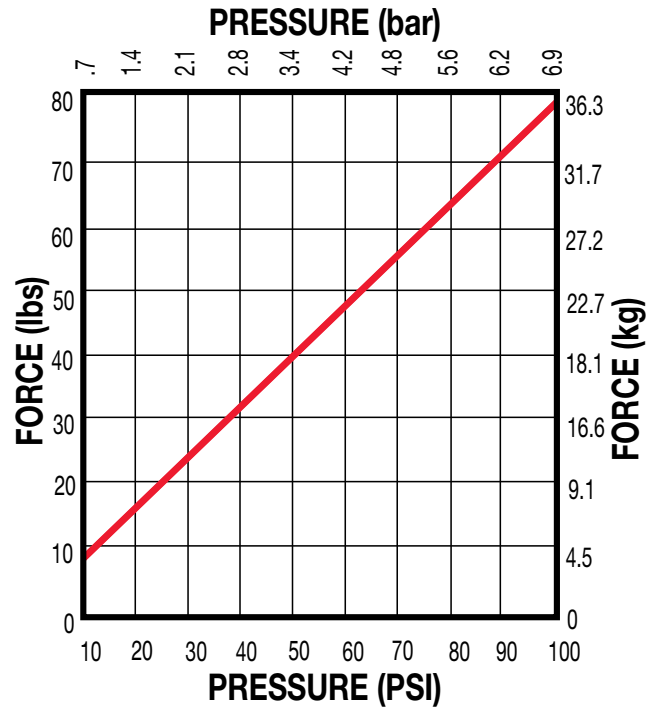
CUSHION DATA



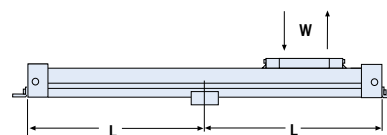
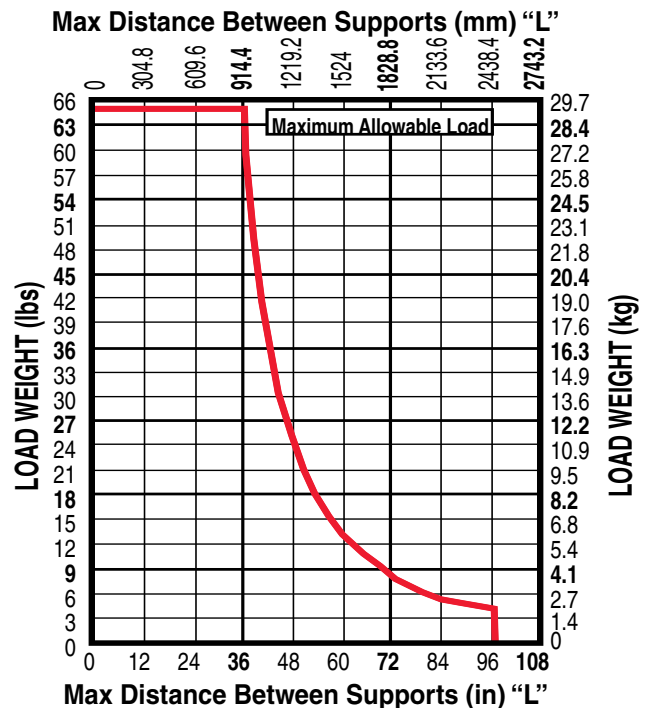
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THEORETICAL FORCE vs PRESSURE



TUBE SUPPORT REQUIREMENTS



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ABT



BC2

BC3

BC4

MG88

PB

BC412 Internal Bearing Rodless Cylinder

PERFORMANCE

BC412



ORDER CODES

BC412
inch (U.S. Standard)

BC4M12
(metric with taper port)

BC4MM12
(metric with parallel port)

BC412 OPTIONS

Page

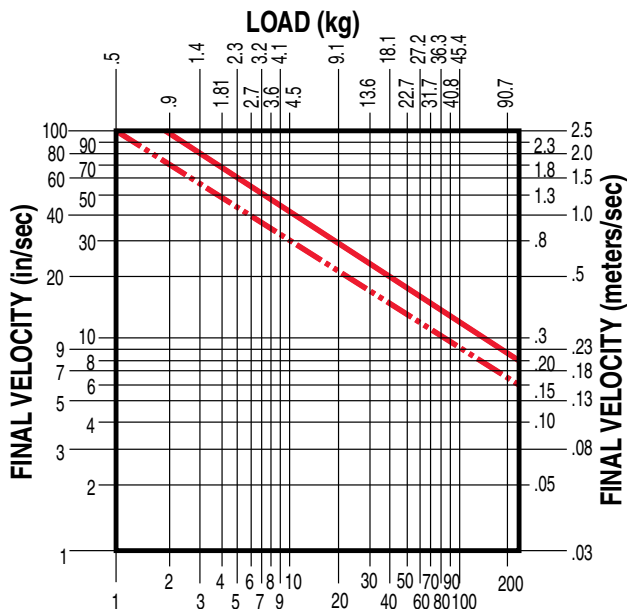
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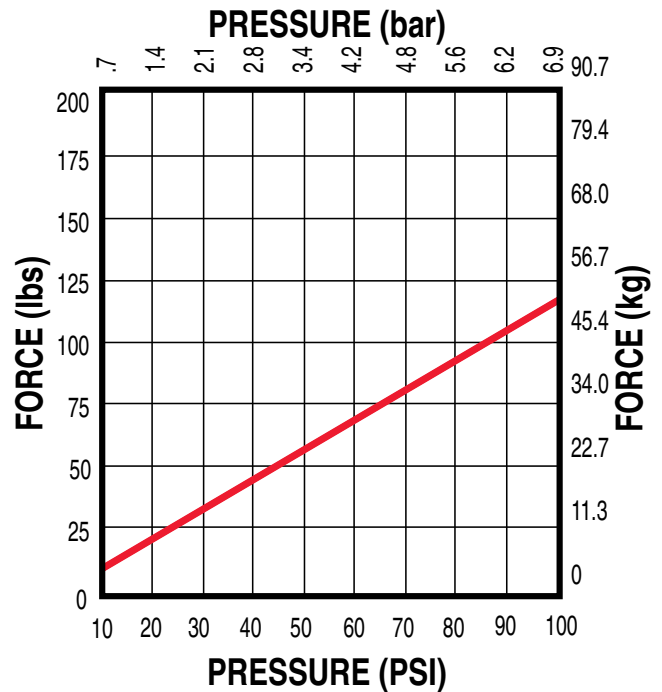
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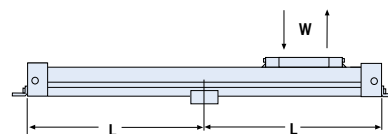
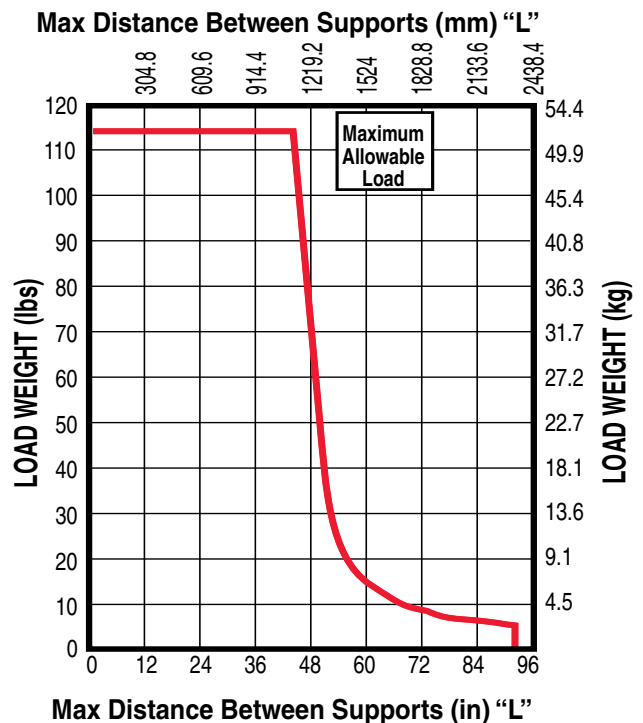
NOTE:

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THEORETICAL FORCE vs PRESSURE

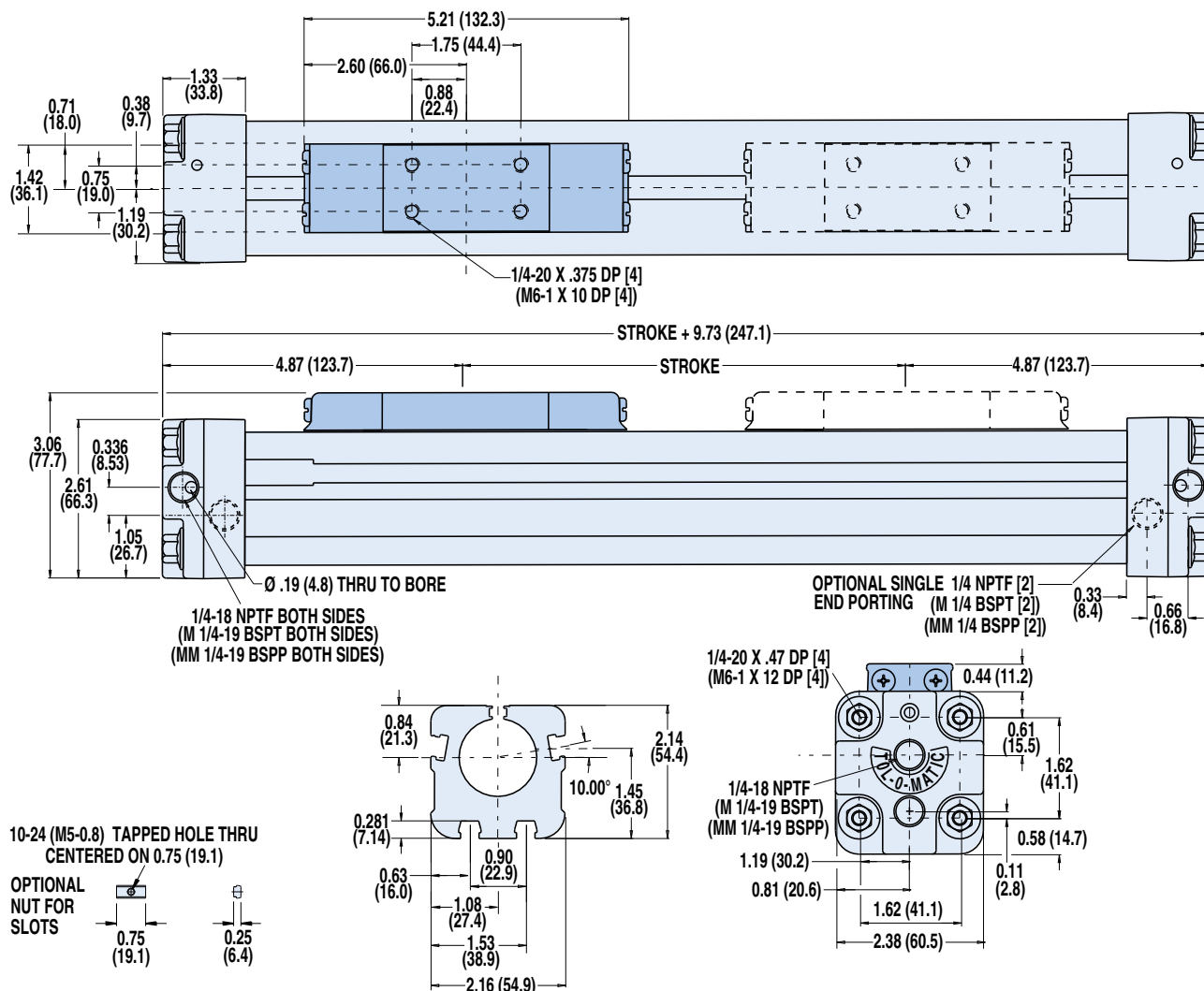


TUBE SUPPORT REQUIREMENTS



BC412 Internal Bearing Rodless Cylinder

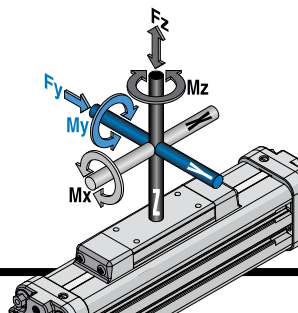
DIMENSIONS



Dimensions in inches (parenthesis indicate dimensions in millimeters)

SPECIFICATIONS

BC412 BENDING MOMENTS AND LOAD



	BORE SIZE	MAX. BENDING MOMENT			MAX. LOAD
		My	Mx	Mz	Fz
12	1.25 in	318 in-lbs	36 in-lbs	120 in-lbs	115 lbs
M(MM)12	32 mm	35.93 N-m	3.95 N-m	13.56 N-m	52.16 kg

	BORE SIZE	WEIGHT		MAX. STROKE LENGTH*	MAX. PRESSURE	TEMPERATURE RANGE
		BASE	PER UNIT OF STROKE			
12	1.25 in	3.98 lbs	0.27 lbs/in	204 in	100 PSI	20° to 140° F
M(MM)12	32 mm	1.81 kg	0.1225 kg/mm	5182 mm	6.895 bar	-7° to 60° C

***For longer strokes, alternate materials, mounting and/or fasteners – consult Tolomatic**

BC415 Internal Bearing Rodless Cylinder

PERFORMANCE



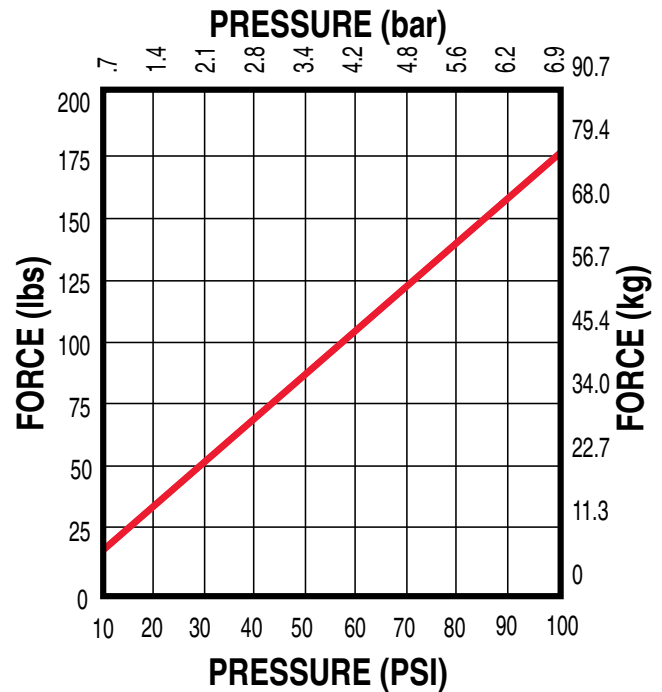
BC415

ORDER CODES	
BC415	inch (U.S. Standard)
BC4M15	(metric with taper port)
BC4MM15	(metric with parallel port)

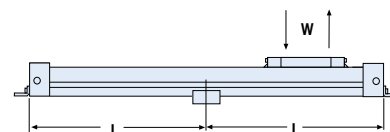
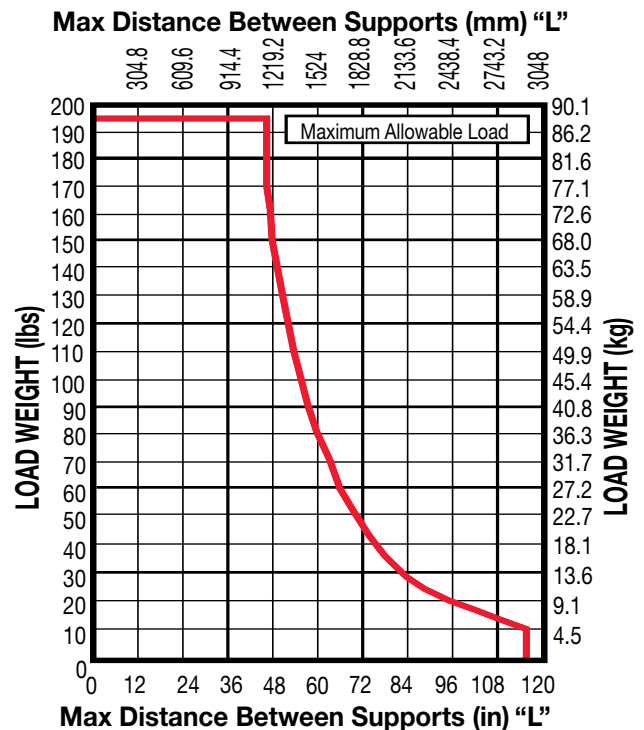
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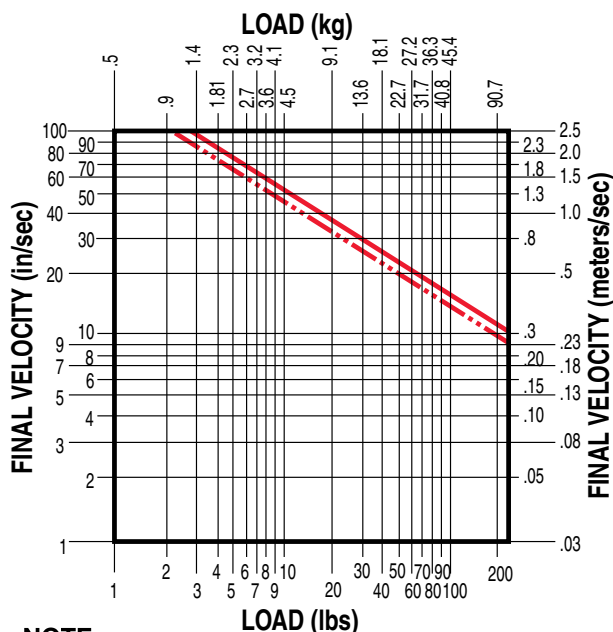
THEORETICAL FORCE vs PRESSURE



TUBE SUPPORT REQUIREMENTS



CUSHION DATA

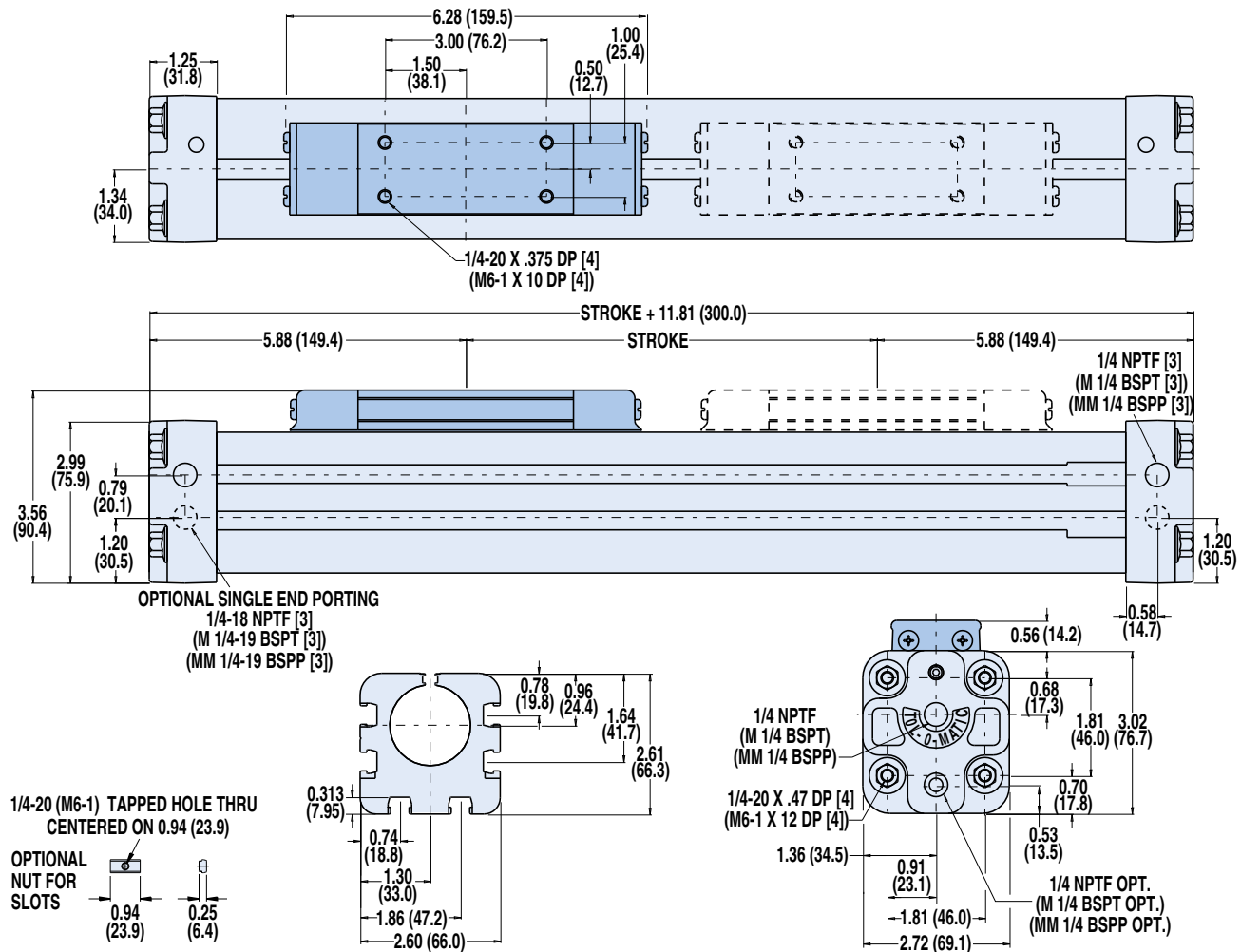


NOTE:

- Max. for any application
- Max. for continuously cycled application

BC415 Internal Bearing Rodless Cylinder

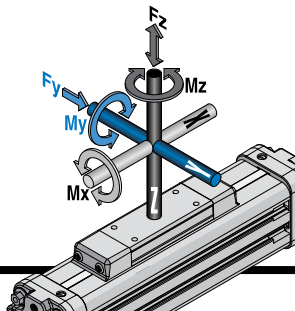
DIMENSIONS



Dimensions in inches (parenthesis indicate dimensions in millimeters)

SPECIFICATIONS

BC415 BENDING MOMENTS AND LOAD



	BORE SIZE	MAX. BENDING MOMENT			MAX. LOAD
		M_y	M_x	M_z	F_z
15	1.50 in	575 in-lbs	55 in-lbs	156 in-lbs	195 lbs
M(MM)15	40 mm	64.97 N-m	6.21 N-m	17.63 N-m	88.45 kg

	BORE SIZE	WEIGHT		MAX. STROKE LENGTH*	MAX. PRESSURE	TEMPERATURE RANGE
		BASE	PER UNIT OF STROKE			
15	1.50 in	7.56 lbs	0.41 lbs/in	202 in	100 PSI	20° to 140° F
M(MM)15	40 mm	3.43 kg	0.1860 kg/mm	5130 mm	6.895 bar	-7° to 60° C

*For longer strokes, alternate materials, mounting and/or fasteners – consult Tolomatic

BC420 Internal Bearing Rodless Cylinder

PERFORMANCE

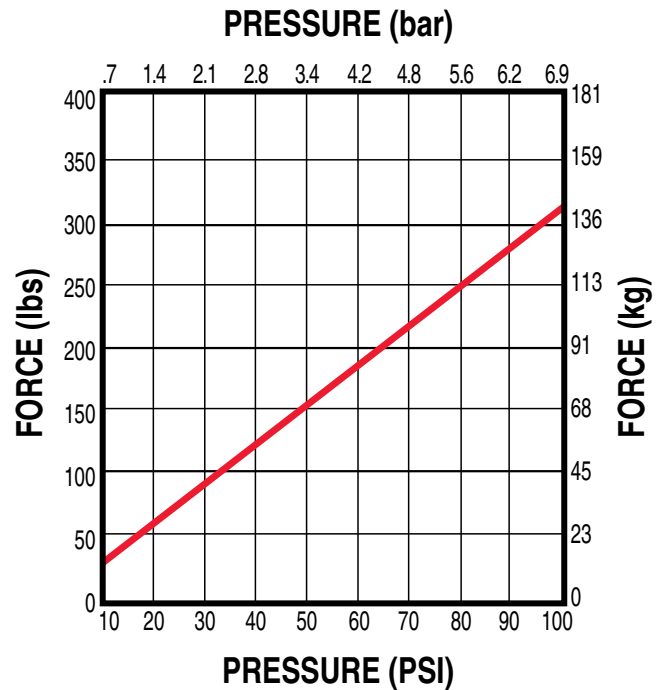


BC420

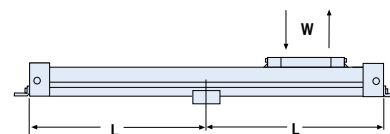
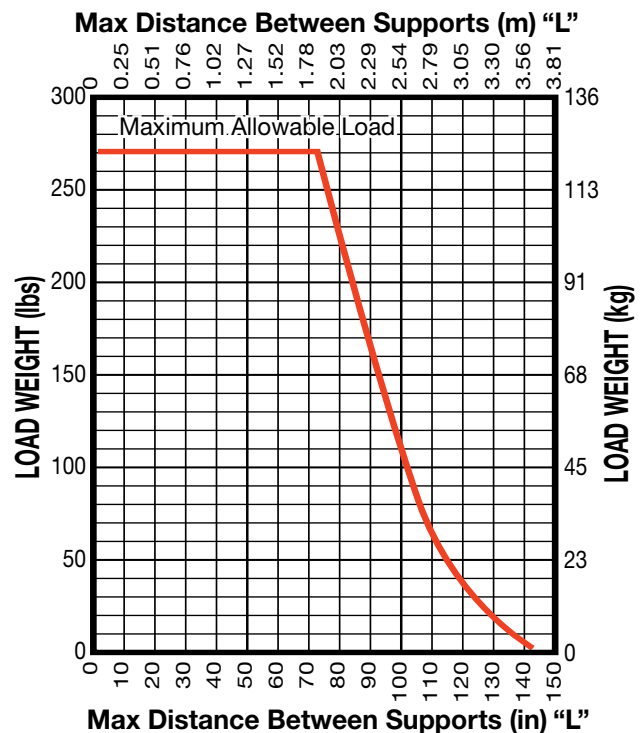
ORDER CODES	
BC420	inch (U.S. Standard)
BC4M20	(metric with taper port)
BC4MM20	(metric with parallel port)

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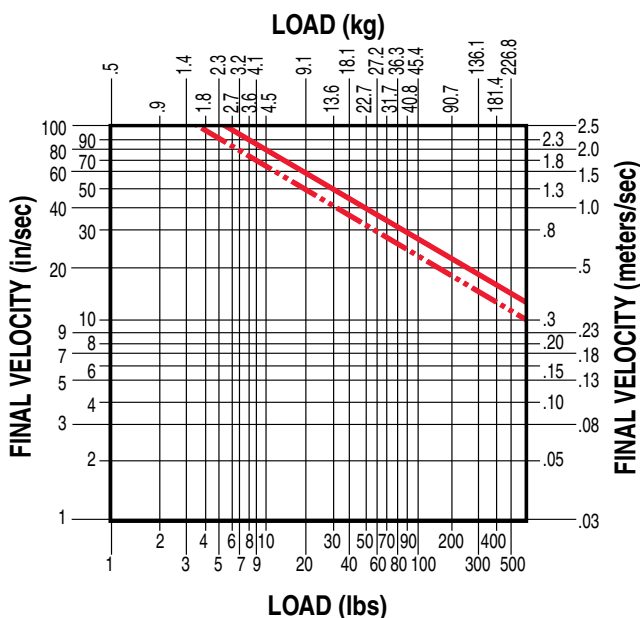
THEORETICAL FORCE vs PRESSURE



TUBE SUPPORT REQUIREMENTS



CUSHION DATA

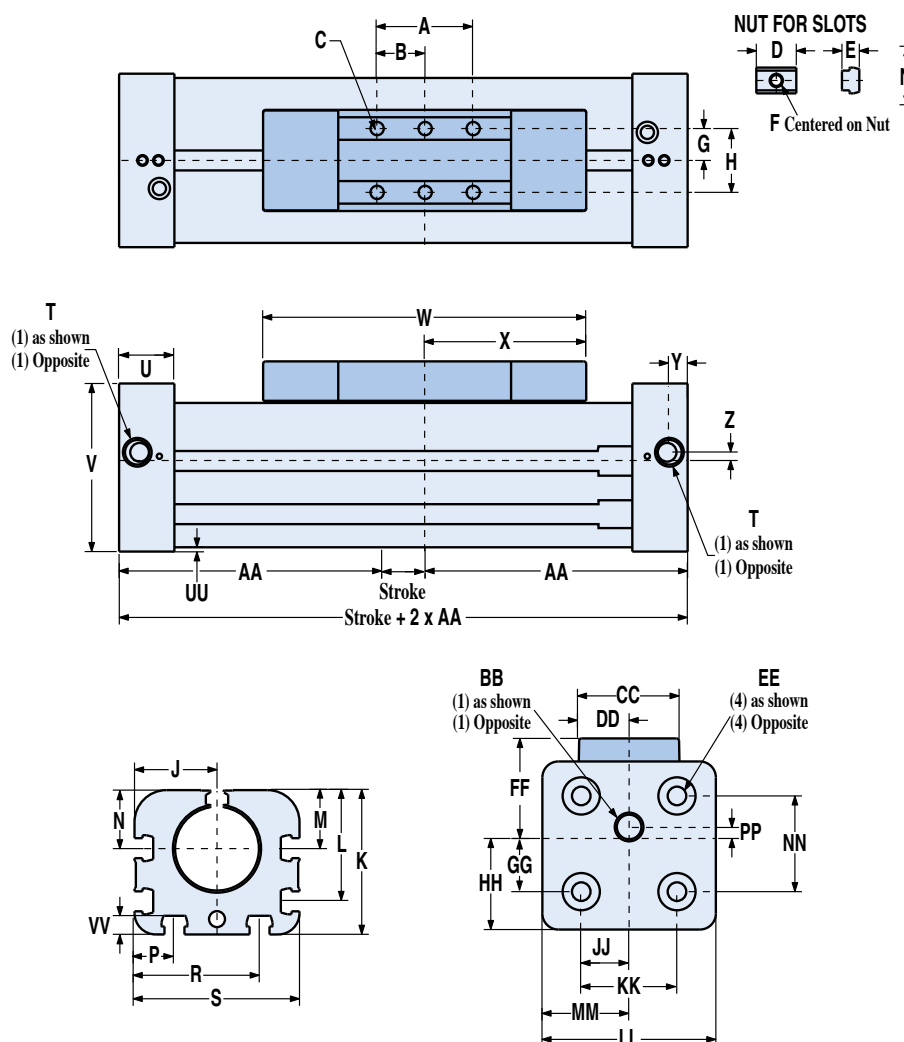


NOTE:

- Max. for any application
- - - Max. for continuously cycled application

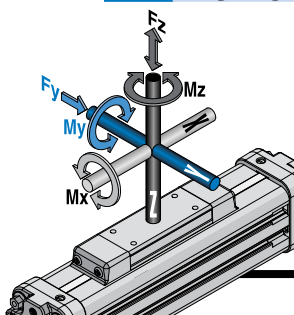
BC420 Internal Bearing Rodless Cylinder

DIMENSIONS



SPECIFICATIONS

BC420 BENDING MOMENTS AND LOAD



	BORE SIZE	MAX. BENDING MOMENT			MAX. LOAD
		My	Mx	Mz	Fz
20	2.00 in	1017 in-lbs	98 in-lbs	172 in-lbs	270 lbs
M(MM)20	50 mm	114.92 N-m	11.07 N-m	19.43 N-m	122.47 kg

	20	M(MM)20
A	2.250	57.15
B	1.125	28.58
B2	—	—
C	5/16-18 x .47 DP	M8-1.25 x 13 DP
D	0.940	23.88
E	0.408	10.36
F	5/16-18 UNC-2B	M8-1.25
G	0.750	19.05
H	1.500	38.10
J	1.939	49.25
K	3.393	86.18
L	2.625	66.68
M	1.375	34.93
N	1.375	34.93
P	0.939	23.85
R	2.939	74.65
S	3.878	98.50
T	3/8-18 NPT	3/8-19 BSP(P)T
U	1.300	33.02
V	3.951	100.36
W	7.594	192.89
X	3.797	96.44
Y	0.428	10.87
Z	0.193	4.90
AA	6.181	157.00
BB	3/8-18 NPT	3/8-19 BSP(P)T
CC	2.347	59.61
DD	1.173	29.79
EE	5/16 - 18 x 0.88 DP	M8 x 22 DP
FF	2.352	59.74
GG	1.210	30.73
HH	2.101	53.37
JJ	1.125	28.58
KK	2.250	57.15
LL	4.078	103.58
MM	2.039	51.79
NN	2.250	57.15
PP	0.270	6.86
UU	0.101	2.57
VV	0.438	11.11
	INCHES	MILLIMETERS

	BORE SIZE	WEIGHT		MAX. STROKE LENGTH*	MAX. PRESSURE	TEMPERATURE RANGE
		BASE	PER UNIT OF STROKE			
20	2.00 in	11.90 lbs	0.67 lbs/in	154 in	100 PSI	20° to 140° F
M(MM)20	50 mm	5.40 kg	0.30 kg/mm	3911 mm	6.895 bar	-7° to 60° C

***For longer strokes, alternate materials, mounting and/or fasteners – consult Tolomatic**

BC425 Internal Bearing Rodless Cylinder

PERFORMANCE



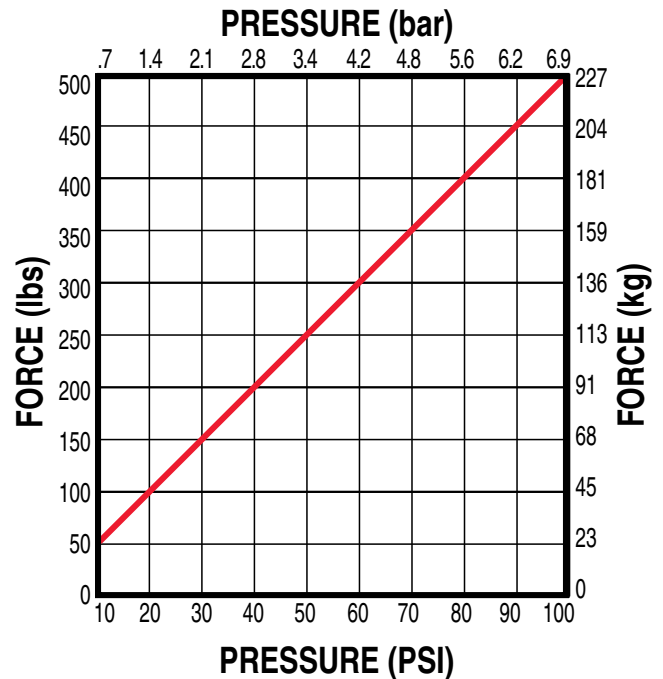
BC425

ORDER CODES	
BC425	inch (U.S. Standard)
BC4M25	(metric with taper port)
BC4MM25	(metric with parallel port)

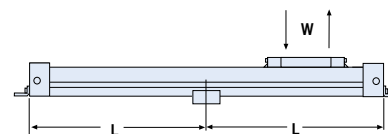
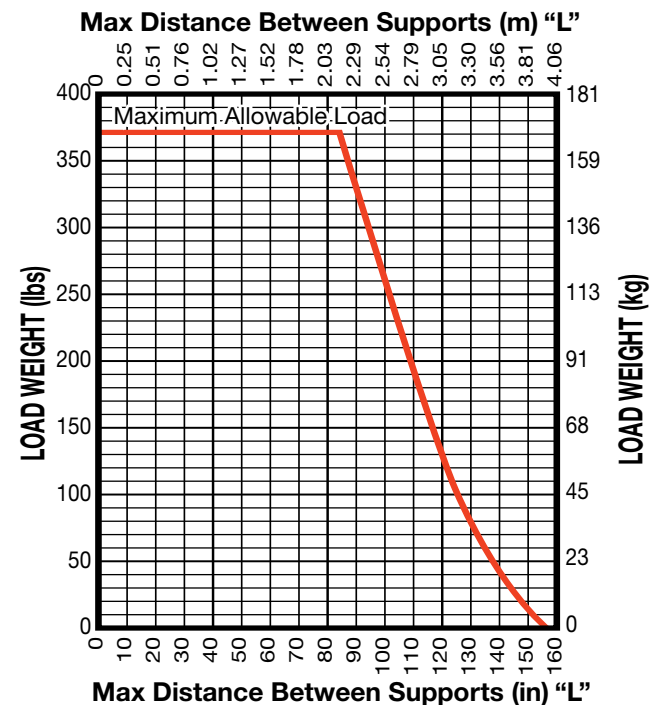
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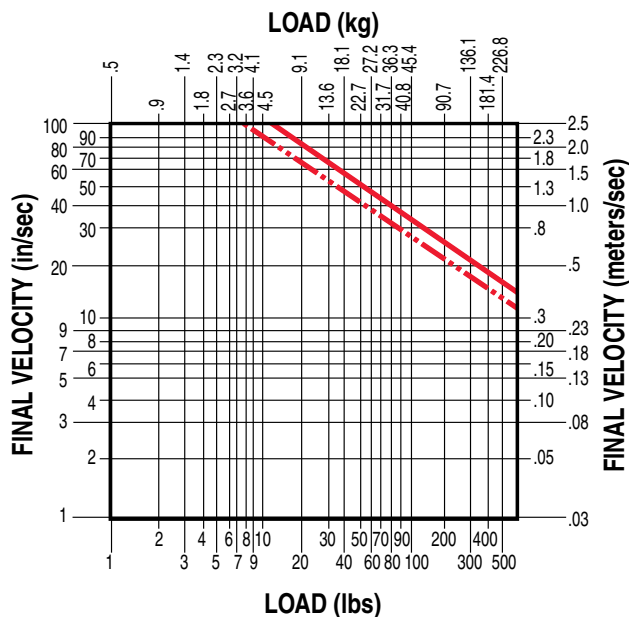
THEORETICAL FORCE vs PRESSURE



TUBE SUPPORT REQUIREMENTS



CUSHION DATA

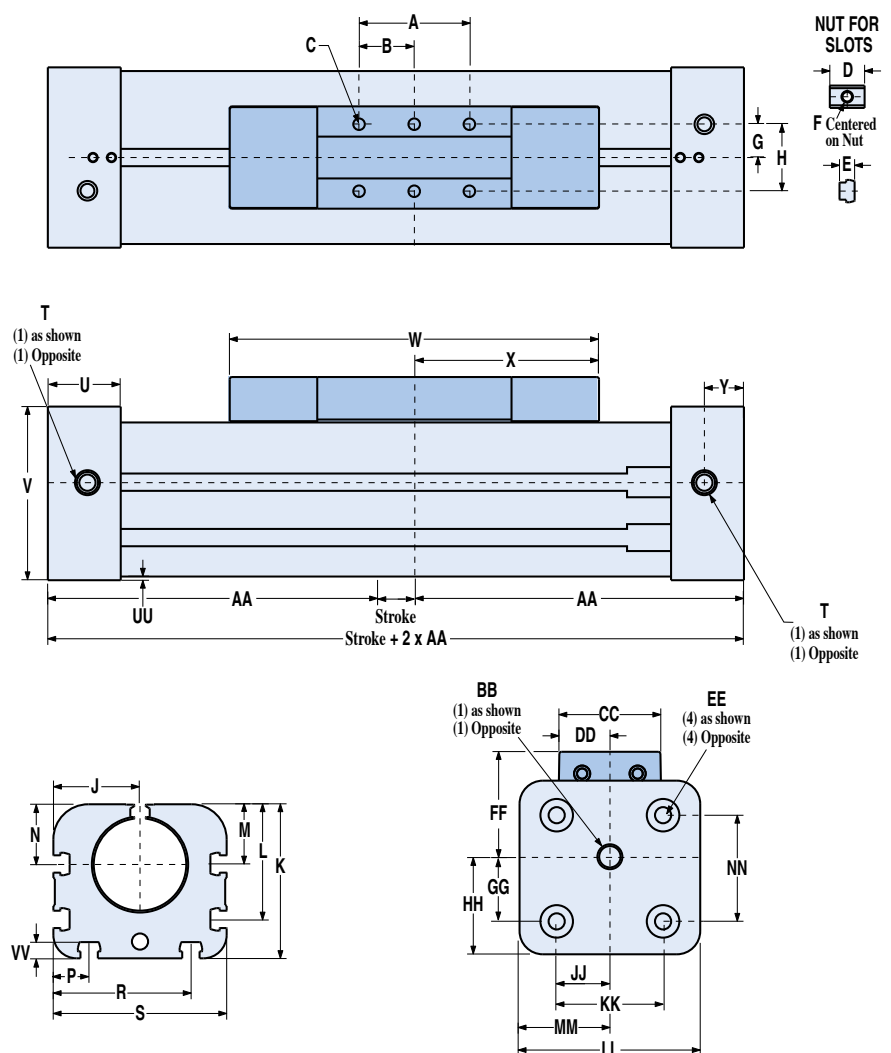


NOTE:

- Max. for any application
- - - - - Max. for continuously cycled application

BC425 Internal Bearing Rodless Cylinder

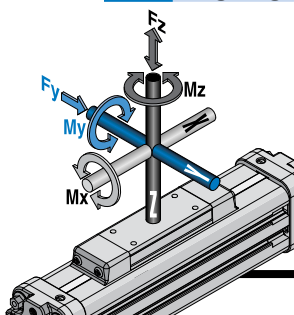
DIMENSIONS



	25	M(MM)25
A	3.000	76.20
B	1.500	38.10
B2	—	—
C	3/8-16 x .60 DP	M10-1.5x15.2DP
D	0.94	23.88
E	0.408	10.36
F	5/16-18 UNC-2B	M8-1.25-6g Thru
G	0.909	23.09
H	1.817	46.15
J	2.341	59.46
K	4.171	105.94
L	3.106	78.89
M	1.617	41.07
N	1.630	41.40
P	0.958	24.33
R	3.708	94.18
S	4.666	118.52
T	3/8-18 NPT	3/8-19 BSP(P)T
U	1.97	50.04
V	4.700	119.38
W	9.98	253.49
X	4.990	126.75
Y	1.070	27.18
Z	—	—
AA	8.423	213.94
BB	3/8-18 NPT	3/8-19 BSP(P)T
CC	2.730	69.34
DD	1.365	34.67
EE	5/16-18 x .88 DP	M8 x 22 DP
FF	2.93	74.42
GG	1.680	42.67
HH	2.571	65.3
JJ	1.438	36.53
KK	2.875	73.03
LL	4.883	124.03
MM	2.444	62.08
NN	2.875	73.03
PP	—	—
UU	0.08	2.03
VV	0.438	11.11
	INCHES	MILLIMETERS

SPECIFICATIONS

BC425 BENDING MOMENTS AND LOAD

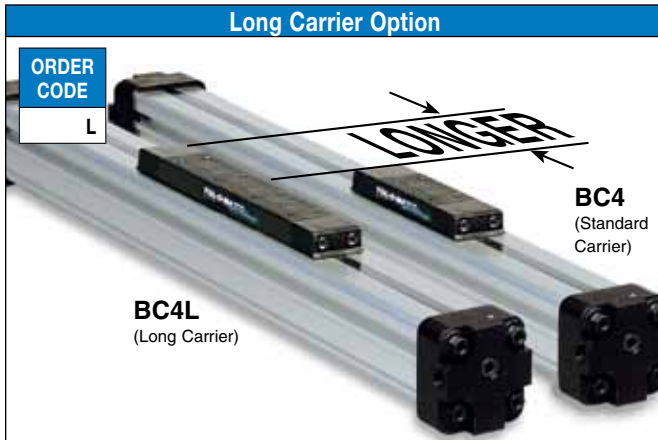


	BORE SIZE	MAX. BENDING MOMENT			MAX. LOAD
		My	Mx	Mz	Fz
25	2.50 in	1776 in-lbs	120 in-lbs	216 in-lbs	370 lbs
M(MM)25	63 mm	200.69 N-m	13.56 N-m	24.41 N-m	167.83 kg

	BORE SIZE	WEIGHT		MAX. STROKE LENGTH*	MAX. PRESSURE	TEMPERATURE RANGE
		BASE	PER UNIT OF STROKE			
25	2.50 in	22.10 lbs	0.95 lbs/in	139 in	100 PSI	20° to 140° F
M(MM)25	63 mm	10.02 kg	0.43 kg/mm	3530 mm	6.895 bar	-7° to 60° C

***For longer strokes, alternate materials, mounting and/or fasteners – consult Tolomatic**

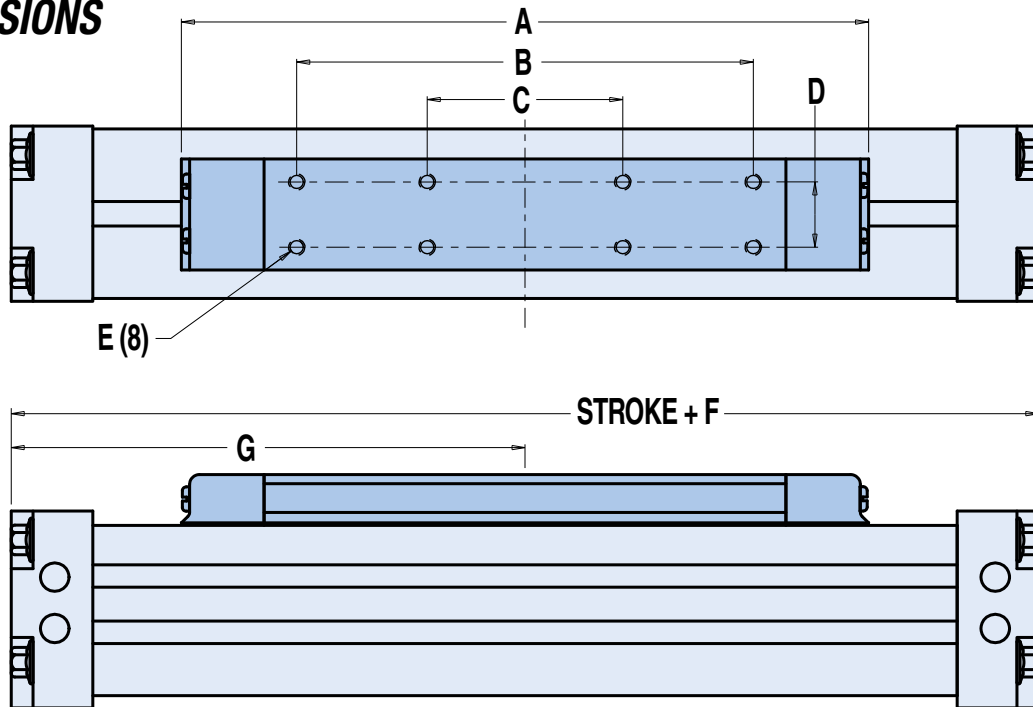
BC4 Long Carrier - 06, 10, 12, 15 Sizes



Long carrier option greatly increases the “My” and “Mz” moment load capacity. This broadens the application range for these models. Other benefits include larger mounting surface and virtual elimination of chatter for vertical cantilever loads.

❌ Not available for 20, 25 (2" & 2.5" bore).

DIMENSIONS



	BORE	A	B*	C*	D	E	F [§]	G
L06	0.625	6.13	3.50	1.25	0.56	#6-32 x .22 DP	8.54	4.27
L10	1.00	8.03	4.75	2.00	0.82	#10-24 x .30 DP	10.63	5.31
L12	1.25	8.53	5.00	1.75	0.75	1/4-20 x .38 DP	13.06	6.53
L15	1.50	10.53	7.00	3.00	1.00	1/4-20 x .38 DP	15.75	7.88

Dimensions in inches

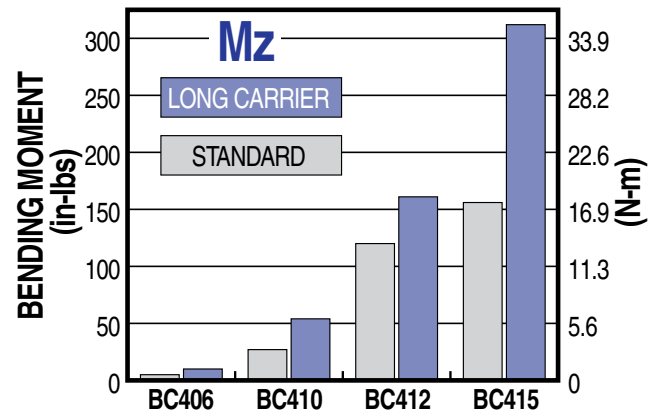
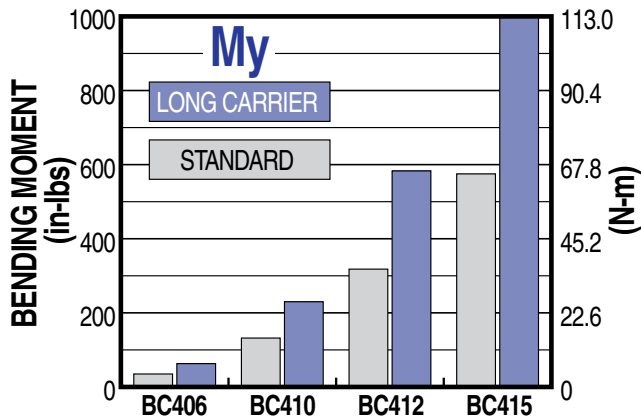
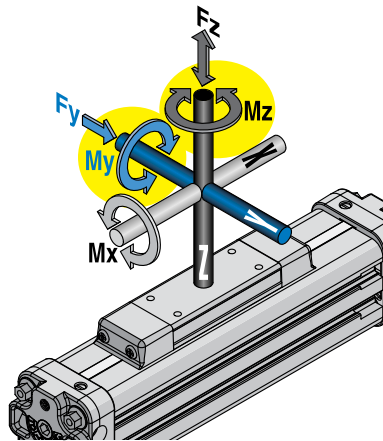
	BORE	A	B*	C*	D	E	F [§]	G
ML06	16	155.6	88.9	31.8	14.3	M3 x 0.5 x 6DP	217.0	108.5
M(MM)L10	25	204.0	120.7	50.8	20.9	M5 x 0.8 x 6DP	270.0	134.9
M(MM)L12	32	216.7	127.0	44.5	19.1	M6 x 1.0 x 10DP	331.7	165.8
M(MM)L15	40	267.5	177.8	76.2	25.4	M6 x 1.0 x 10DP	400.1	200.0

Dimensions in millimeters

⚠️ *Not the same as standard BC4 carrier
 📏 §Actuator is longer than with standard BC4 carrier

BC4 Long Carrier - 06, 10, 12, 15 Sizes

PERFORMANCE



	BORE SIZE	MAXIMUM BENDING MOMENT					MAX. LOAD Fz†
		My (Standard)	My (Long)	Mx†	Mz (Standard)	Mz (Long)	
L06	0.625 in	35 in.-lbs.	63 in.-lbs.	3.0 in.-lbs.	5.0 in.-lbs.	30 in.-lbs.	30 lbs.
L10	1.00 in	132 in.-lbs.	230 in.-lbs.	9 in.-lbs.	27 in.-lbs.	54 in.-lbs.	65 lbs.
L12	1.25 in	318 in.-lbs.	583 in.-lbs.	36 in.-lbs.	120 in.-lbs.	161 in.-lbs.	115 lbs.
L15	1.50 in	575 in.-lbs.	1003 in.-lbs.	55 in.-lbs.	156 in.-lbs.	312 in.-lbs.	195 lbs.

Dimensions in inches

	BORE SIZE	MAXIMUM BENDING MOMENT					MAX. LOAD Fz†
		My (Standard)	My (Long)	Mx†	Mz (Standard)	Mz (Long)	
ML06	16mm	3.95 N-m	7.06 N-m	0.34 N-m	0.56 N-m	1.12 N-m	13.61 kg
M(MM)L10	25mm	14.91 N-m	25.99 N-m	1.02 N-m	3.03 N-m	6.10 N-m	29.48 kg
M(MM)L12	32mm	35.93 N-m	65.83 N-m	3.95 N-m	13.56 N-m	18.20 N-m	52.16 kg
M(MM)L15	40mm	64.97 N-m	113.36 N-m	6.21 N-m	17.63 N-m	35.26 N-m	88.45 kg

Dimensions in millimeters

†Mx Bending Moment and Fz (Maximum Load) are the same for Standard and Long Carrier BC4.

BC4 Auxiliary Carrier - All Sizes

AUXILIARY CARRIER

ORDER CODE

DW

(Auxiliary Carrier with piston)

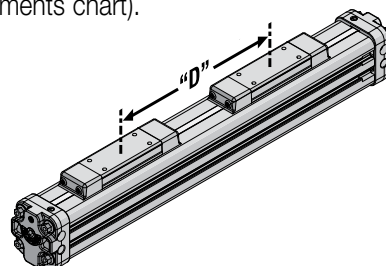
The auxiliary carrier option substantially increases load carrying and bending moments capacity over the standard single carrier models. As a general rule, the auxiliary carrier option is highly recommended in vertical applications (My) if the distance from the carrier mounting surface to the load center of gravity (CG) exceeds the overall length of the carrier. For the BC4 auxiliary carriers can only be ordered with "DW" an internal piston. (BC2 & BC3 auxiliary carriers may be ordered "DO" without a piston.)



NOTE: breakaway pressure will increase when using auxiliary carrier.

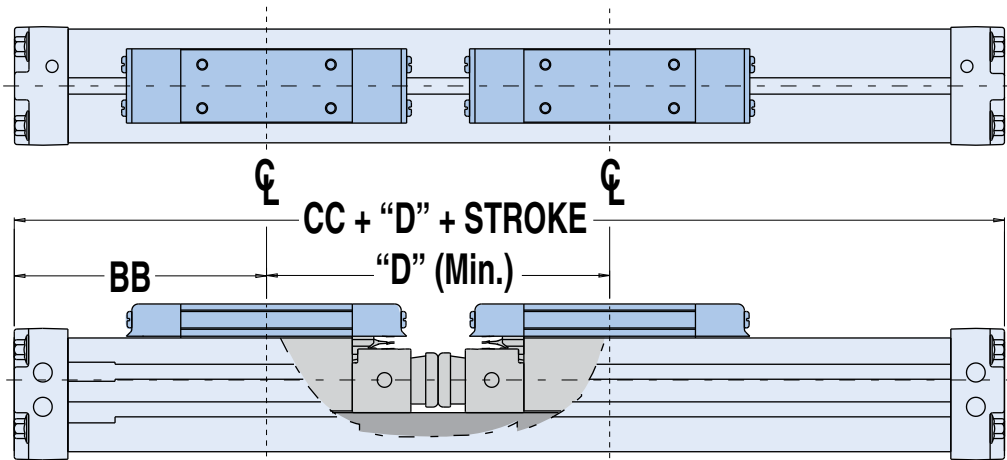
ORDERING INFORMATION

When ordering, determine the minimum distance required between carriers (dimension "D" in Auxiliary Carrier Bending Moments chart).



Determine your working stroke and your "D" dimension, then enter these into your configuration string. (Example: BC415SK50.00DW15.00RT2) The configurator will calculate the overall length of the actuator.

DIMENSIONS

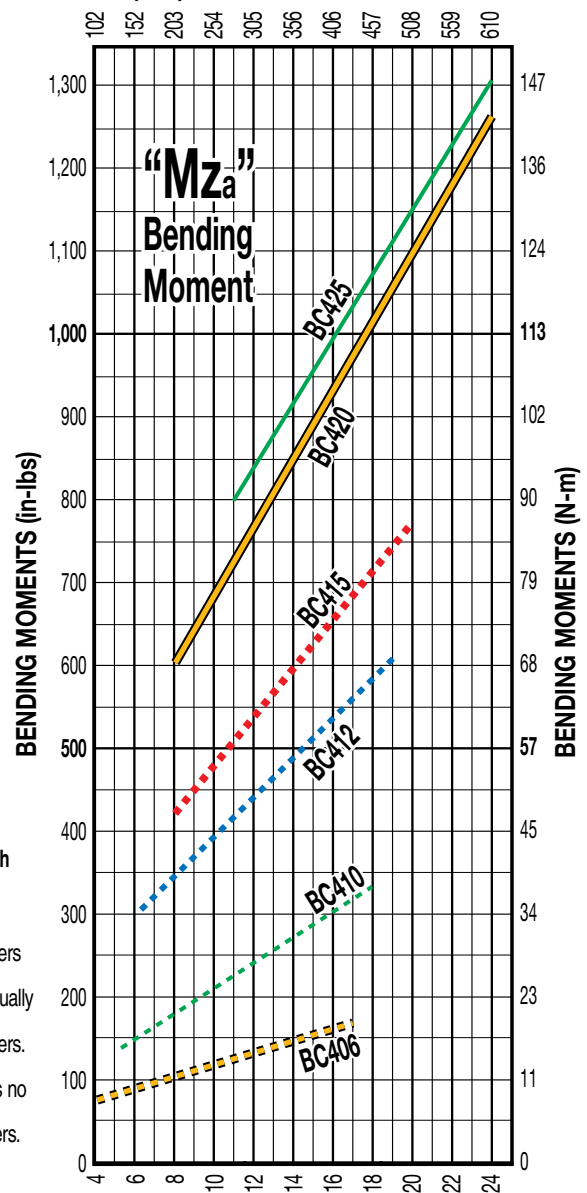
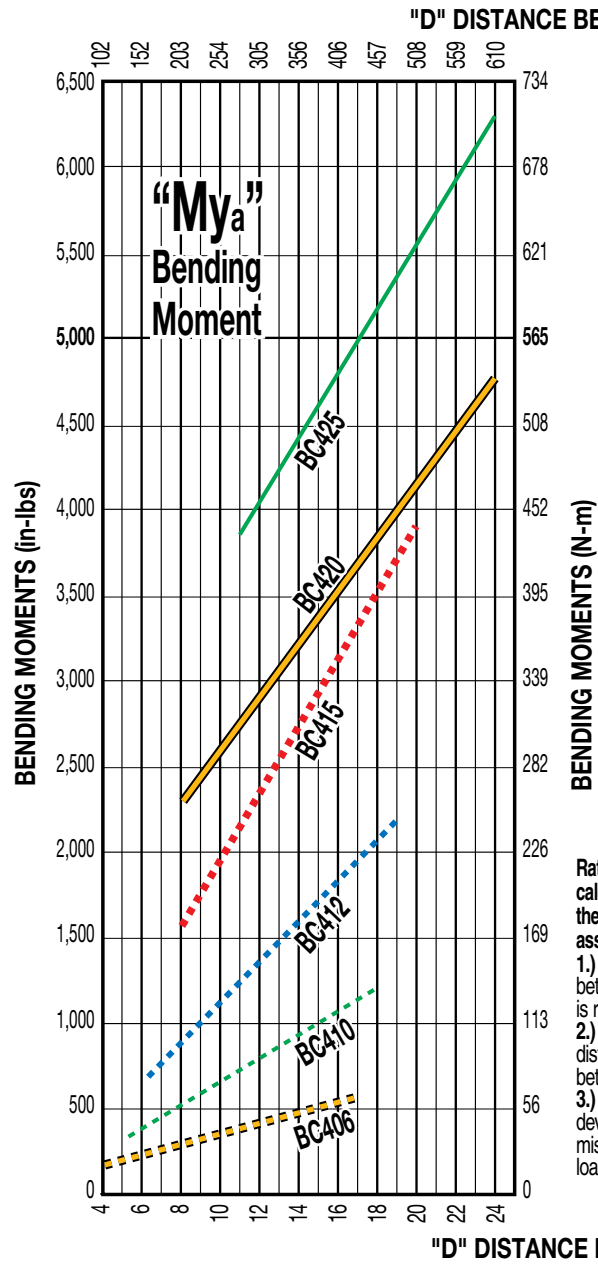


	BORE SIZE		BB		CC		"D" MINIMUM (with Piston)	
	in	mm	in	mm	in	mm	in	mm
06	0.625	16	3.15	79.9	6.30	159.8	4.26	108.2
10	1.00	25	3.94	100.2	7.88	200.4	5.30	134.6
12	1.25	32	4.87	123.7	9.74	247.4	6.23	158.2
15	1.50	40	5.88	149.4	11.81	300.0	8.00	203.2
20	2.00	50	6.18	157.0	12.36	314.0	8.12	206.3
25	2.50	63	8.42	213.9	16.85	427.9	11.04	280.4

BC4 Auxiliary Carrier - All Sizes

PERFORMANCE

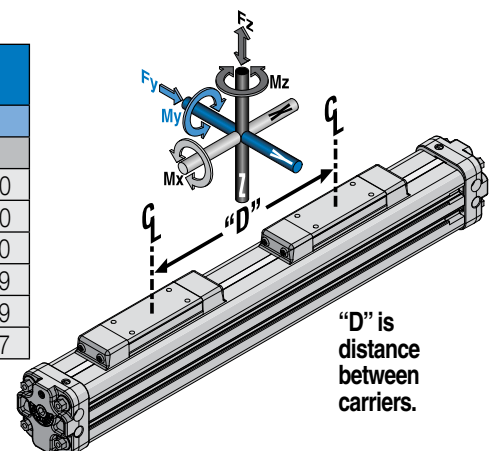
BENDING MOMENTS



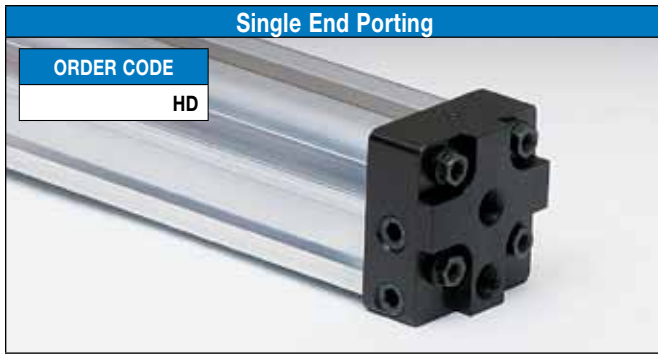
Rates were calculated with the following assumptions:
 1.) Coupling between carriers is rigid.
 2.) Load is equally distributed between carriers.
 3.) Coupling device applies no misalignment loads to carriers.

	BORE SIZE		"D" MINIMUM *		MAX. BENDING MOMENT		MAX. LOAD	
	in	mm	in	mm	in-lbs	N-m	lbs	kg
06	0.625	16	4.26	108.2	6	0.68	60	27.0
10	1.00	25	5.30	134.5	18	2.03	130	59.0
12	1.25	32	6.23	158.2	72	8.13	230	104.0
15	1.50	40	8.00	203.2	110	12.43	390	176.9
20	2.00	50	8.12	206.3	196	22.15	540	244.9
25	2.50	63	11.04	280.4	240	27.12	740	335.7

* "D" is distance between carriers



BC4 Single End Porting - 10, 12, 15, 20, 25 Sizes

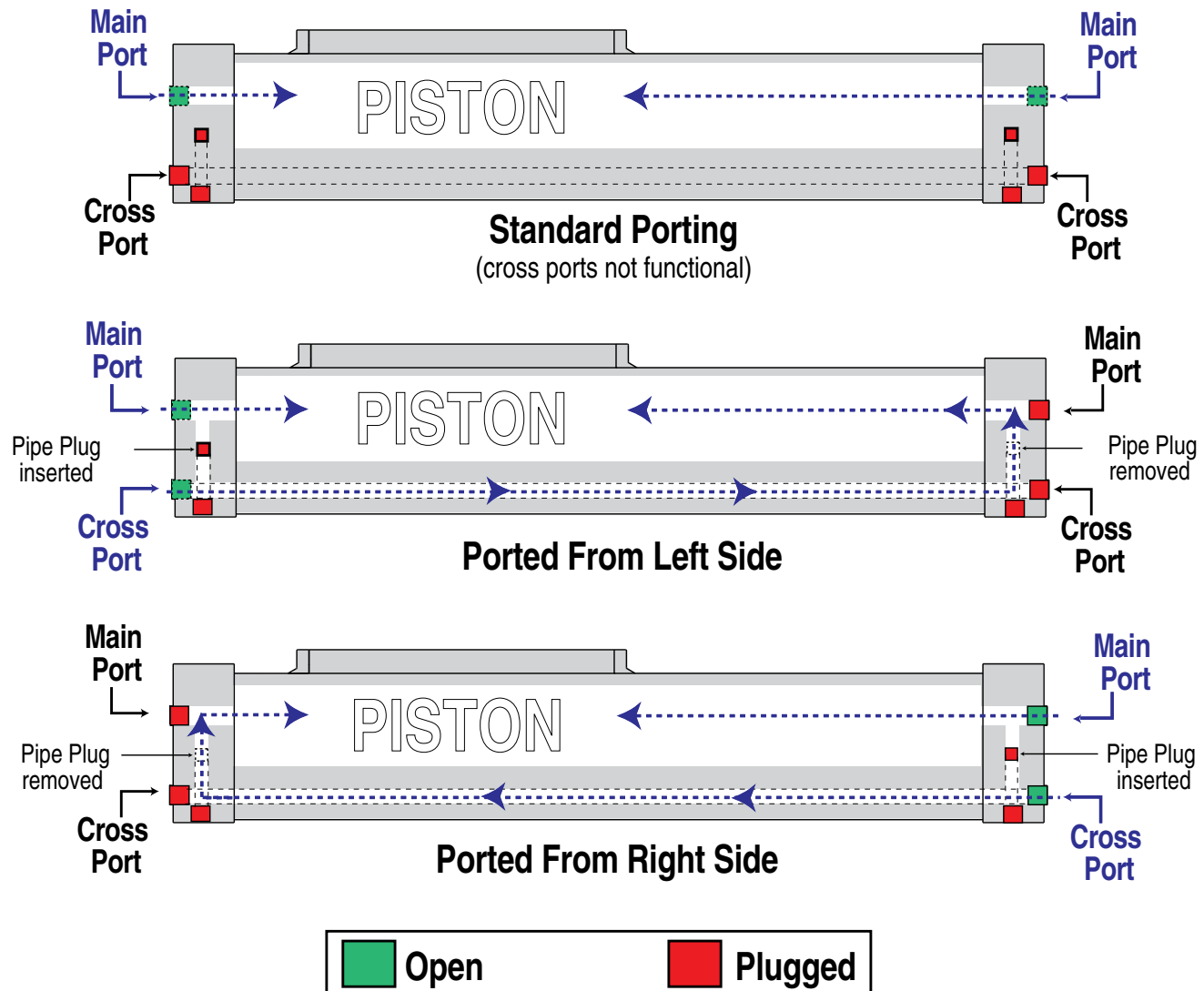


SINGLE END PORTING ALLOWS THE GREATEST FLEXIBILITY IN AIR HOOK UP.

This option allows you to run air lines to just one end of the BC4, simplifying air hook up. The Single End Porting option for the BC410 is factory installed on the right side.

✗ Not available for 06 (5/8" bore).

AIR FLOW DIAGRAMS



NOTE: Standard porting may be field converted to ported from left or ported from right. For complete instructions refer to parts sheet.

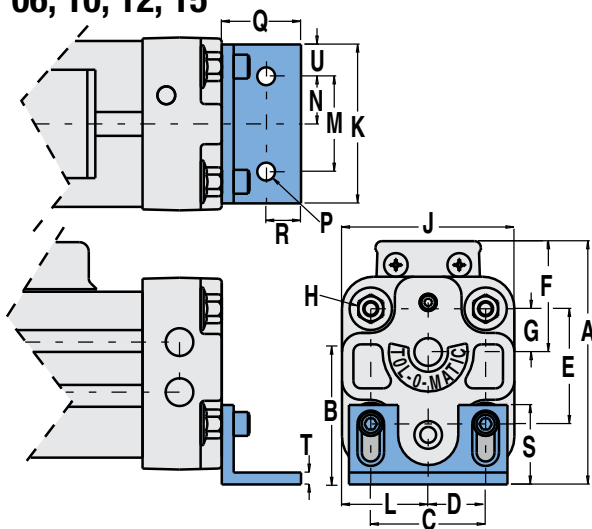
BC4 Foot Mounts - ALL Sizes



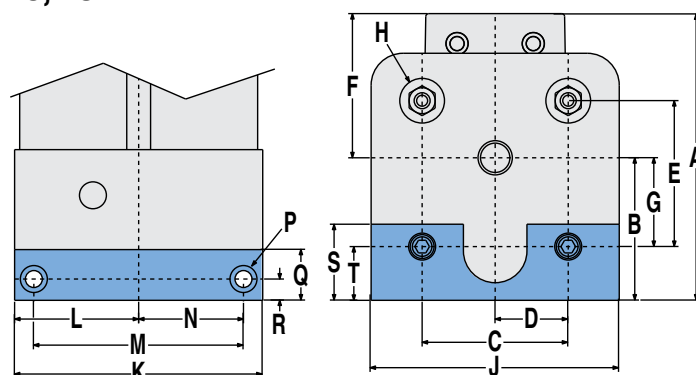
For mounting other than flush. Foot mounts may be specified on one or both ends of the cylinder.

DIMENSIONS

06, 10, 12, 15



20, 25



	BORE SIZE	A MIN.	A MAX.	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
06	0.625	1.87	1.87	0.90	0.75	0.38	1.00	0.97	0.36	—	1.18	1.00	0.59	0.50	0.25	Ø .15 Thru (2)	0.70	0.30	0.38	0.06	0.25
10	1.00	2.19	2.54	0.98	1.10	0.55	1.10	1.21	0.55	10-24 ∇ 0.43	1.85	1.60	0.92	1.00	0.50	Ø .27 Thru (2)	1.00	0.28	0.98	0.19	0.30
12	1.25	2.93	3.20	1.46	1.62	0.81	1.62	1.47	0.61	1/4-20 ∇ 0.47	2.38	2.25	1.19	1.50	0.75	Ø .28 Thru (2)	1.00	0.40	1.00	0.19	0.38
15	1.50	3.38	3.83	1.64	1.81	0.91	1.81	1.74	0.68	1/4-20 ∇ 0.47	2.72	2.50	1.36	1.50	0.75	Ø .28 Thru (2)	1.25	0.55	1.25	0.19	0.50
20	2.00	4.62	4.62	2.54	2.25	1.13	2.25	2.08	1.52	3/8-16 ∇ 0.88	4.08	4.08	2.04	3.38	1.69	Ø.334 $\sqcap$ Ø.531 ∇ 0.32	1.00	0.51	1.50	1.02	—
25	2.50	5.67	5.67	2.74	2.88	1.44	2.88	2.93	1.68	3/8-16 ∇ 0.88	4.88	4.88	2.44	4.13	2.06	Ø.334 $\sqcap$ Ø.531 ∇ 0.32	1.00	0.58	1.50	1.06	—

Dimensions in inches

	BORE SIZE	A MIN.	A MAX.	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
M06	16	47.5	47.5	22.9	19.1	9.7	25.4	24.6	9.1	—	30.0	25.4	15.0	12.7	6.3	Ø 3.8 Thru (2)	17.8	7.6	9.7	1.5	6.35
M10	25	55.6	64.5	24.9	27.9	14.0	27.9	30.8	14.0	M5 ∇ 10	47.0	40.6	23.4	25.4	12.7	Ø 6.9 Thru (2)	25.4	7.0	24.9	4.8	7.62
M12	32	74.3	81.3	37.1	41.1	20.6	41.1	37.3	15.5	M6 ∇ 12	60.5	57.1	30.2	38.1	19.1	Ø 7.1 Thru (2)	25.4	10.2	25.4	4.8	9.65
M15	40	85.9	97.3	41.7	46.0	23.1	46.0	44.2	17.3	M6 ∇ 12	69.1	63.5	34.5	38.1	19.1	Ø 7.1 Thru (2)	31.8	14.0	31.8	4.8	12.70
M20	50	117.3	117.3	64.5	57.2	28.6	57.2	52.9	38.6	M8 ∇ 22	103.6	103.6	51.8	85.7	42.9	Ø8.5 $\sqcap$ Ø13.5 ∇ 8.1	25.4	13.0	38.1	25.9	—
M25	63	144.0	144.0	69.6	73.2	36.6	73.2	74.4	42.7	M8 ∇ 22	124.0	124.0	62.0	104.9	52.4	Ø8.5 $\sqcap$ Ø13.5 ∇ 8.1	25.4	14.7	38.1	26.9	—

Dimensions in millimeters

BC4 Tube Supports - ALL Sizes



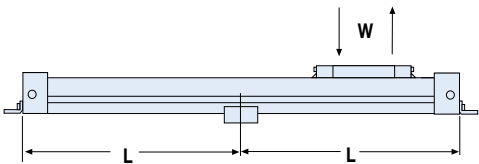
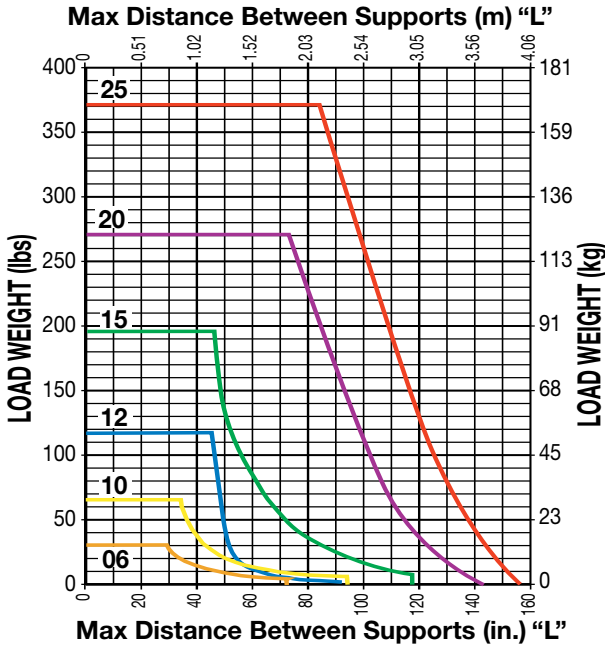
Made of anodized aluminum, BC4 tube supports are designed to attach to T-nuts inside the grooves which run the length of the cylinder tube. Refer to the tube support graph to determine the number of tube supports required.



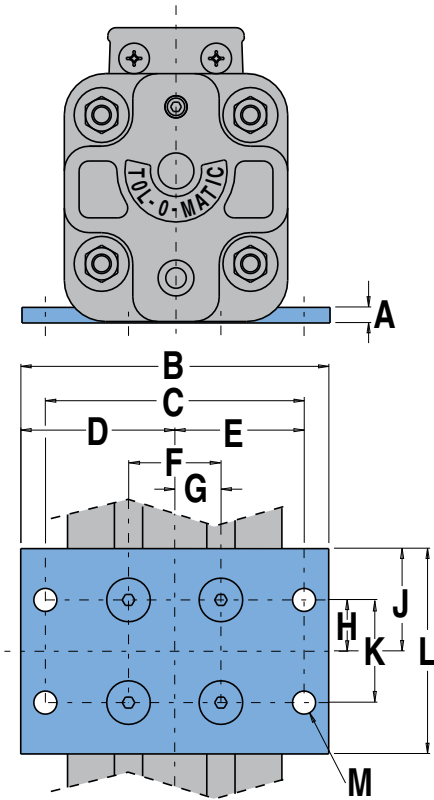
NOTE: Switches cannot be mounted on the same face of the actuator as tube supports.

PERFORMANCE

TUBE SUPPORT REQUIREMENTS



DIMENSIONS



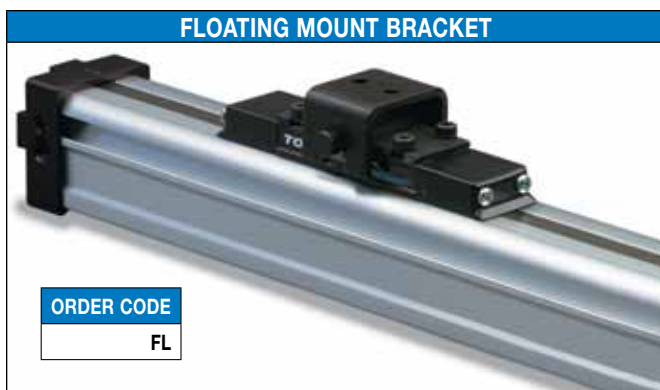
	BORE SIZE	A	B	C	D	E	F	G	H	J	K	L	M
06	0.625	0.12	1.69	1.38	0.84	0.69	0.50	0.25	0.75	1.00	1.50	2.00	Ø .15 Thru (4)
10	1.00	0.19	2.75	2.25	1.38	1.13	1.10	0.55	0.50	0.88	1.00	1.75	Ø .23 Thru (4)
12	1.25	0.30	3.50	2.84	1.75	1.42	0.90	0.45	0.50	1.00	1.00	2.00	Ø .28 Thru (4)
15	1.50	0.19	3.75	3.15	1.88	1.58	1.13	0.56	0.63	1.25	1.25	2.50	Ø .28 Thru (4)
20	2.00	0.25	6.00	5.00	3.00	2.50	2.00	1.00	0.75	1.50	1.50	3.00	Ø.344 Thru (4)
25	2.50	0.25	6.50	5.50	3.25	2.75	2.75	1.38	0.75	1.50	1.50	3.00	Ø.344 Thru (4)

Dimensions in inches

	BORE SIZE	A	B	C	D	E	F	G	H	J	K	L	M
M06	16	3.2	41.7	34.9	21.4	17.5	12.7	6.4	19.1	25.4	38.1	50.8	Ø 3.9 Thru (4)
M10	25	4.8	69.9	57.1	35.1	28.7	27.9	14.0	12.7	22.2	25.4	44.4	Ø 5.8 Thru (4)
M12	32	7.6	88.9	72.1	44.4	38.1	22.9	11.4	12.7	25.4	25.4	50.8	Ø 7.1 Thru (4)
M15	40	4.8	95.3	80.0	47.8	40.1	28.7	14.2	16.0	31.8	31.8	63.5	Ø 7.1 Thru (4)
M20	50	6.4	152.4	127.0	76.2	63.5	50.8	25.4	19.1	38.1	38.1	76.2	Ø 8.7 Thru (4)
M25	63	6.4	165.1	139.7	82.6	69.9	69.9	34.9	19.1	38.1	38.1	76.2	Ø 8.7 Thru (4)

Dimensions in millimeters

BC4 Floating Mount Bracket - ALL Sizes



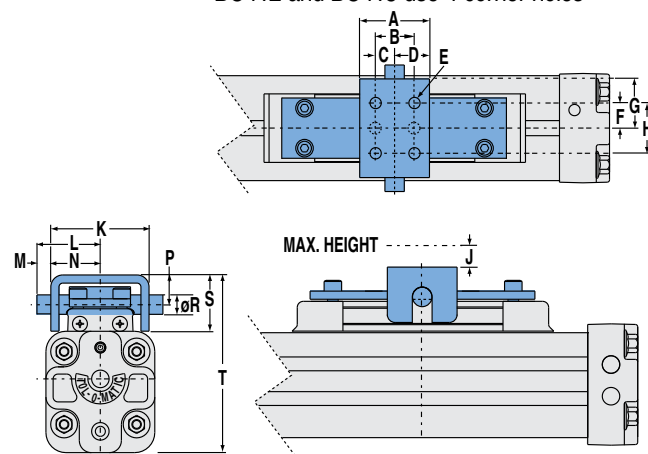
For applications where a BC4 band cylinder is moving a load that is externally guided and supported. An externally guided load, not parallel to the BC4 band cylinder may result in cylinder binding. The floating mount bracket compensates for nonparallelism between the cylinder and the external guide.

✗ (Floating mount brackets are not to be used in conjunction with shock absorbers)

DIMENSIONS

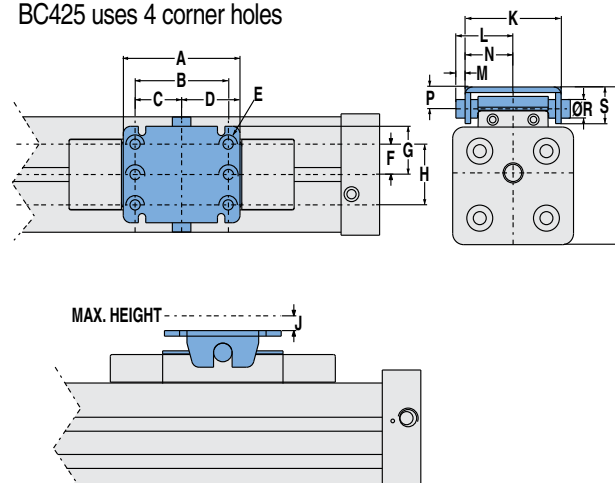
06, 10, 12, 15

Please Note: For Dimension "E"
BC406 and BC410 use 2 center holes
BC412 and BC415 use 4 corner holes



20, 25

Please Note: For Dimension "E"
BC420 uses 2 center holes
BC425 uses 4 corner holes



	BORE SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	ØR	S	T
06	0.625	0.90	0.50	0.25	0.45	Ø .17 Thru (2)	—	0.63	—	0.33	1.27	0.81	0.18	0.63	0.38	0.25	0.72	2.18
10	1.00	1.26	0.63	0.32	0.63	Ø .22 Thru (2)	—	0.82	—	0.33	1.64	1.00	0.18	0.82	0.56	0.38	1.01	3.04
12	1.25	1.50	0.75	0.37	0.75	Ø .28 Thru (4)	0.50	1.09	1.00	0.44	2.18	1.50	0.41	1.09	0.99	0.44	1.49	4.10
15	1.50	1.50	0.75	0.38	0.75	Ø .28 Thru (4)	0.63	1.24	1.25	0.52	2.48	1.63	0.39	1.24	0.99	0.44	1.56	4.62
20	2.00	3.94	3.15	1.57	1.97	Ø.344 Thru (2)	—	1.62	—	0.50	3.24	1.93	0.31	1.62	0.73	0.63	1.23	5.26
25	2.50	4.72	3.94	1.97	2.36	Ø.344 Thru (4)	1.39	1.78	2.77	0.57	3.54	2.36	0.59	1.77	0.75	0.63	1.32	6.28

Dimensions in inches

	BORE SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	ØR	S	T
M06	16	22.9	12.7	6.4	11.5	Ø 4.3 Thru (2)	—	16.1	—	8.3	32.2	20.7	4.6	16.0	9.7	6.4	18.3	55.4
M10	25	32.0	16.0	8.0	16.0	Ø 5.3 Thru (2)	—	20.8	—	8.3	41.7	25.4	4.6	20.8	14.2	9.7	25.7	77.2
M12	32	38.1	19.0	9.4	19.0	Ø 7.1 Thru (4)	12.7	27.7	25.4	11.2	55.4	38.1	10.4	27.7	25.1	11.2	37.8	104.1
M15	40	38.1	19.0	9.7	19.0	Ø 7.1 Thru (4)	16.0	31.5	31.8	13.2	63.0	41.4	9.9	31.5	25.1	11.2	39.6	117.3
M20	50	100.1	80.0	39.9	50.0	Ø8.7 Thru (2)	—	41.2	—	12.7	82.3	49.1	7.9	41.2	18.6	15.9	31.2	133.6
M25	63	119.9	100.1	50.0	59.9	Ø8.7 Thru (4)	35.2	45.1	70.4	14.4	89.9	60.0	15.0	45.0	19.1	15.9	33.5	159.5

Dimensions in millimeters

BC4 Switches - ALL Sizes

SWITCHES

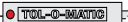


There are 10 sensing choices: DC reed, form A (open) or form C (open or closed); AC reed (Triac, open); Hall-effect, sourcing, PNP (open); Hall-effect, sinking, NPN (open); each with either flying leads or QD (quick disconnect). Commonly used to send analog signals to PLC (programmable logic controllers), TLL, CMOS circuit or other controller device. These switches are activated by the actuator's magnet.

Switches contain reverse polarity protection. QD cables are shielded; shield should be terminated at flying lead end.

If necessary to remove factory installed switches, be sure to reinstall on the same of side of actuator with scored face of switch toward internal magnet.

SPECIFICATIONS

REED DC											REED AC		HALL-EFFECT DC			
ORDER CODE	RT	RM	BT	BM	CT	CM	TT	TM	KT	KM						
PART NUMBER	3600-9082	3600-9083	3600-9084	3600-9085	3600-9086	3600-9087	3600-9088	3600-9089	3600-9090	3600-9091						
LEAD	5m	QD*	5m	QD*	5m	QD*	5m	QD*	5m	QD*						
CABLE SHIELDING	Unshielded	Shielded†	Unshielded	Shielded†	Unshielded	Shielded†	Unshielded	Shielded†	Unshielded	Shielded†						
SWITCHING LOGIC	"A" Normally Open		"C" Normally Open or Closed		Triac Normally Open		PNP (Sourcing) Normally Open		NPN (Sinking) Normally Open							
MECHANICAL CONTACTS	Single-Pole Single-Throw		Single-Pole Double-Throw		Single-Pole Single-Throw		NO, These Are Solid State Components									
COIL DIRECT	Yes		Yes		Yes		—									
POWER LED	None			None		None		None			None					
SIGNAL LED	Red							Red								
OPERATING VOLTAGE	200 Vdc max.		120 Vdc max.		120 Vac max.		5 - 25 Vdc									
OUTPUT RATING	—				—		25 Vdc, 200mA dc									
OPERATING TIME	0.6 msec max. (including bounce)		0.7 msec max. (including bounce)		—		< 10 micro sec.									
OPERATING TEMPERATURE	-40°F [-40°C] to 158°F [70°C]						0°F [-18°C] to 150°F [66°C]									
RELEASE TIME	1.0 msec. max.				—		—									
ON TRIP POINT	—				—		150 Gauss maximum									
OFF TRIP POINT	—				—		40 Gauss minimum									
**POWER RATING (WATTS)	10.0 §		3.0 §§		10.0		5.0									
VOLTAGE DROP	2.6 V typical at 100 mA		NA		—		—									
RESISTANCE	0.1 Ω Initial (Max.)				—		—									
CURRENT CONSUMPTION	—				1 Amp at 86°F [30°C]	0.5 Amp at 140°F [60°C]	200 mA at 25 Vdc									
FREQUENCY	—				47 - 63 Hz		—									
CABLE MIN. BEND RADIUS	STATIC	0.630" [16mm]														
	DYNAMIC	Not Recommended														

CAUTION: DO NOT OVER TIGHTEN SWITCH HARDWARE WHEN INSTALLING!

**** WARNING:** Do not exceed power rating (Watt = Voltage X Amperage). Permanent damage to sensor will occur.

*QD = Quick Disconnect; Male coupler is located 6" [152mm] from sensor, Female coupler to flying lead (part #2503-1025) distance is 197" [5m] also see Cable Shielding specification above

REPLACEMENT OF QD SWITCHES MANUFACTURED BEFORE JULY 1, 1997: It will be necessary to replace or rewire the female end coupler.



Reed Switch Life Expectancy: Up to 200,000,000 cycles (depending on load current, duty cycle and environmental conditions)

†Shielded from the female quick disconnect coupler to the flying leads. Shield should be terminated at flying lead end.

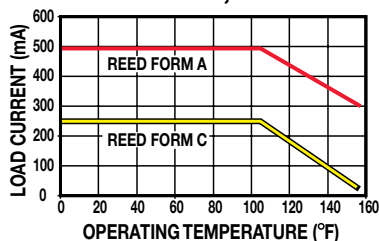
§ Maximum current 500mA (not to exceed 10VA) Refer to Temperature vs. Current graph and Voltage Derating graph

§§ Maximum current 250mA (not to exceed 3VA) Refer to Temperature vs. Current graph and Voltage Derating graph

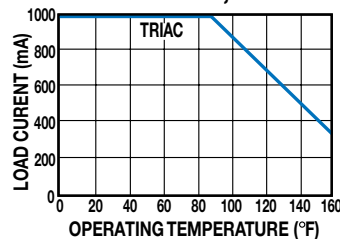
BC4 Switches - ALL Sizes

PERFORMANCE

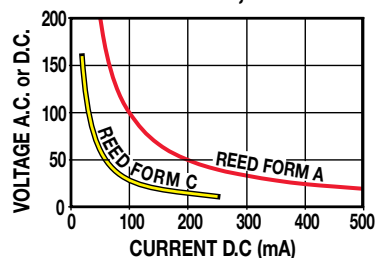
TEMP. vs CURRENT, DC REED



TEMP. vs CURRENT, AC REED

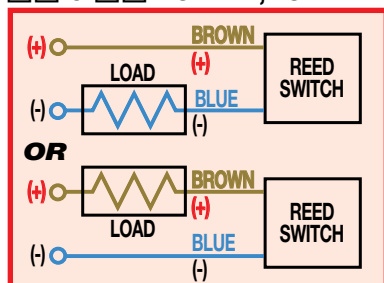


VOLTAGE DERATING, DC REED

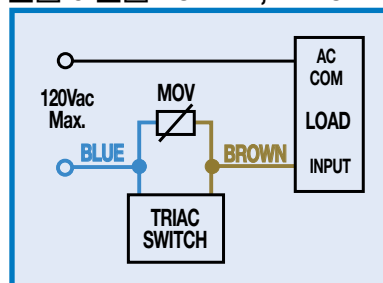


WIRING DIAGRAMS

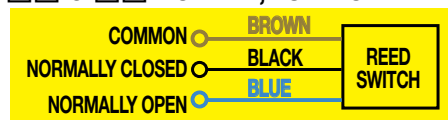
RT & **R**M DC REED, FORM A



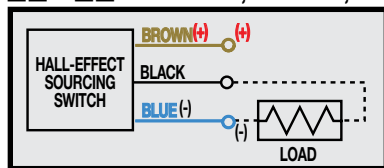
CT & **C**M AC REED, TRIAC



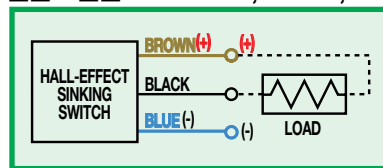
BT & **B**M DC REED, FORM C



TT & **T**M HALL-EFFECT, SOURCING, PNP

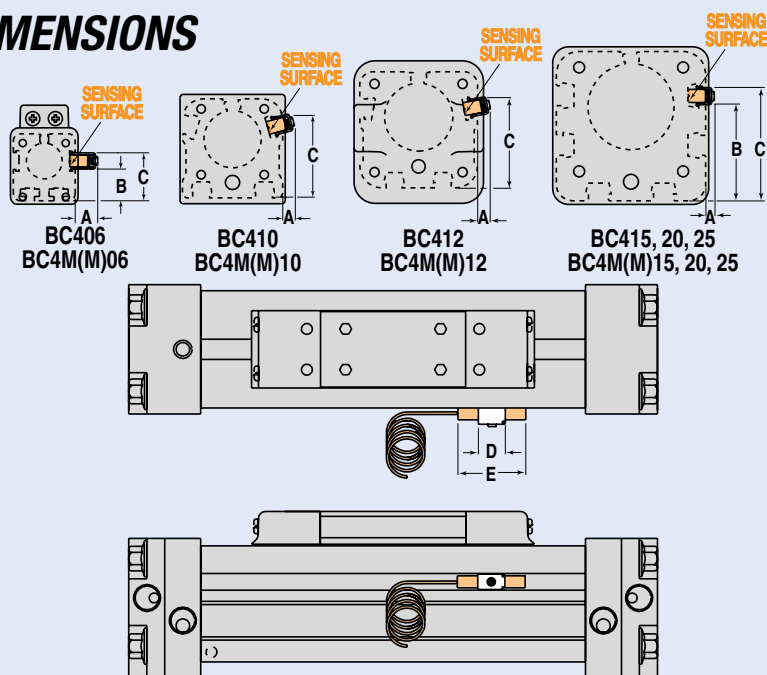


KT & **K**M HALL-EFFECT, SINKING, NPN



Some actuators may require switch mounting on a specific side of the assembly. Call Tolomatic for details.

DIMENSIONS



SIZE	BORE	A	B	C	D	E
06	0.625	0.39	0.55	0.84	0.50	1.25
10	1.000	0.22	-	1.47	0.50	1.25
12	1.250	0.23	-	1.66	0.50	1.25
15	1.500	0.16	-	1.98	0.50	1.25
20	2.000	0.04	1.88	2.18	0.50	1.25
25	2.500	0.04	2.41	2.70	0.50	1.25

Dimensions in inches

SIZE	BORE	A	B	C	D	E
M06	12	9.91	13.97	21.34	12.70	31.75
M10	25	5.59	-	37.34	12.70	31.75
M12	32	5.84	-	42.16	12.70	31.75
M15	40	4.06	-	50.29	12.70	31.75
M20	50	1.02	47.75	55.37	12.70	31.75
M25	63	1.02	61.21	68.58	12.70	31.75

Dimensions in millimeters

BC4 Shock Absorbers - All Sizes



SHOCK ABSORBERS



ORDER CODE

SD_ or SH_ or SL_
(_ = Number ordered)

Rodless cylinders with standard internal cushion offer an effective method of decelerating loads. However, all Tolomatic rodless cylinders are capable of carrying heavier loads at higher velocities than the cylinder cushion can absorb. Optional shock absorbers can be used to increase the cylinder's life and broaden the application range for the cylinder model you have chosen.

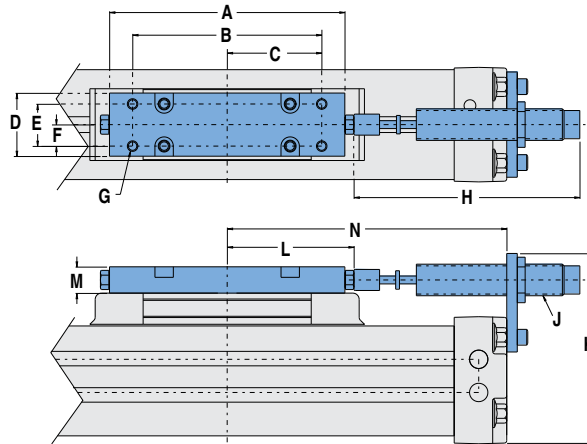
A shock stop plate must be used in conjunction with the BC4 shock to provide a stopping surface on the carrier.

Typical shock absorber life varies between 1-2 million cycles (depending on environment) appropriate preventative maintenance should be considered in high cyclic applications.

NOTE: When 2 shock absorbers are ordered, the unit will be assembled with NO internal cushions.

CAUTION: In applications which result in a load bending moment at deceleration, care should be taken to decelerate the load rather than the carrier of the band cylinder.

DIMENSIONS



SIZE	BORE	A	B	C	D	E	F	G	H(min.)	H(max.)	J	K	L	M	N
06	0.625	3.89	2.25	1.13	0.72	0.50	0.25	#6-32 Thru (4)	2.25	2.79	3/8-32 UNF-2B	2.25	1.72	0.44	3.15
10	1.000	4.00	3.00	1.50	1.09	0.75	0.38	#10-24 Thru (4)	3.71	4.25	9/16-18 UNF-2B	3.03	2.18	0.50	3.94
12	1.250	4.00	3.18	1.58	1.31	0.75	0.37	1/4-20 Thru (4)	4.50	5.38	3/4-16 UNF THD	3.92	2.25	0.63	5.89
15	1.500	5.60	4.50	2.25	1.50	1.00	0.51	1/4-20 Thru (4)	4.50	5.38	3/4-16 UNF THD	4.50	3.02	0.63	6.65
20	2.000	6.69	5.00	2.50	2.25	1.50	0.75	5/16-18 Thru (4)	5.32	5.75	1-12 UNF THD	5.85	3.66	0.99	6.18
25	2.500	8.83	6.00	3.00	2.50	1.82	0.91	5/16-18 Thru (4)	5.32	5.75	1-12 UNF THD	6.92	4.73	1.24	8.42

Dimensions in inches

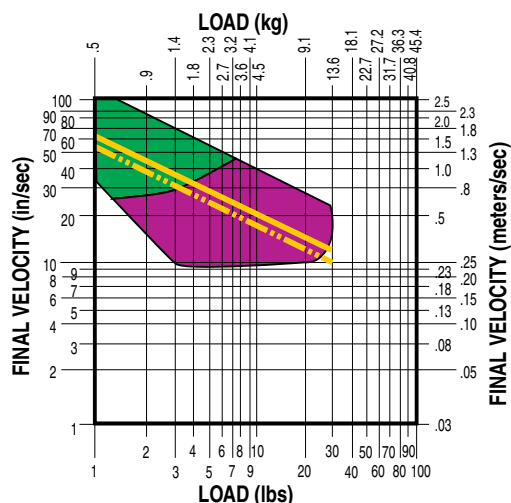
SIZE	BORE	A	B	C	D	E	F	G	H(min.)	H(max.)	J	K	L	M	N
M06	16	98.8	57.2	28.6	18.3	12.7	6.4	#6-32 Thru (4)	57.2	70.9	M8 x 1.0	57.2	43.6	11.1	79.9
M10	25	101.6	76.2	38.1	27.7	19.0	9.7	M5 x 0.8 Thru (4)	94.2	107.9	M14 x 1.5	77.0	55.4	12.7	100.1
M12	32	101.6	80.8	40.4	33.3	19.0	9.4	M6 x 1.0 Thru (4)	114.3	136.7	M20 x 1.5	99.6	57.1	16.0	149.6
M15	38	142.2	114.3	57.1	38.1	25.4	13.0	M6 x 1.0 Thru (4)	114.3	136.7	M20 x 1.5	114.3	76.7	16.0	168.9
M20	50	169.9	127.0	63.5	57.2	38.1	19.1	M8 x 1.25 Thru (4)	135.0	146.1	M25 X 1.5-6g	148.6	93.0	25.1	157.0
M25	63	224.3	152.4	76.2	63.5	46.2	23.1	M8 x 1.25 Thru (4)	135.0	146.1	M25 X 1.5-6g	175.8	120.1	31.5	213.9

Dimensions in millimeters

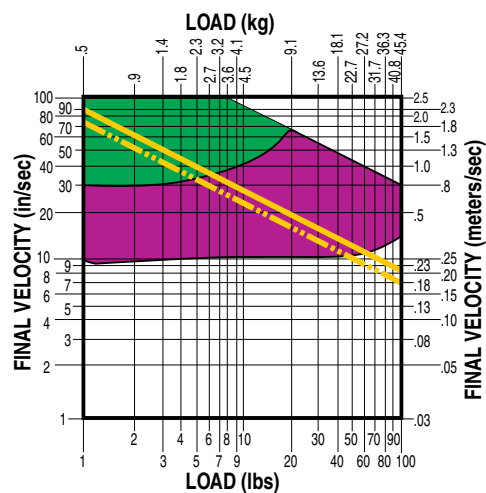
BC4 Shock Absorbers - All Sizes - PERFORMANCE

VELOCITY vs LOAD

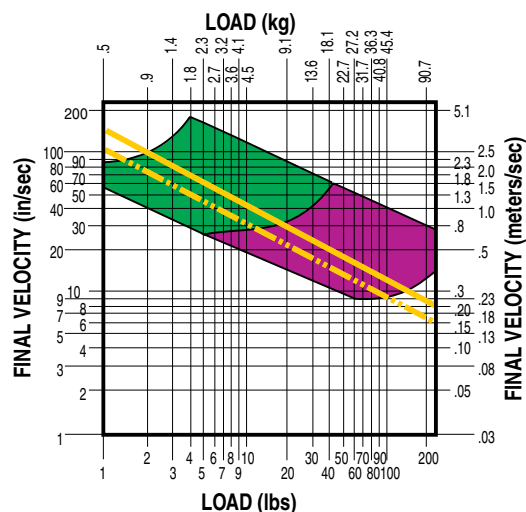
BC406



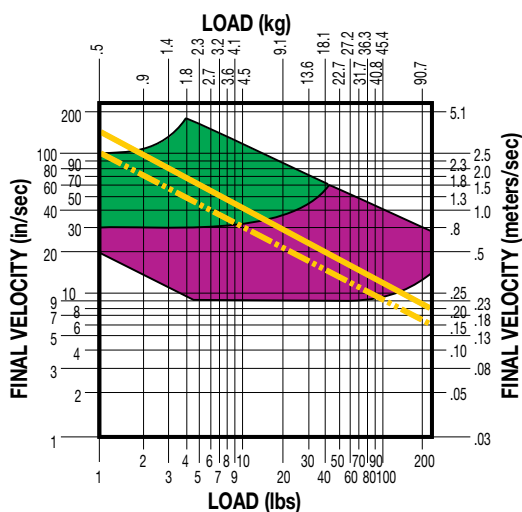
BC410



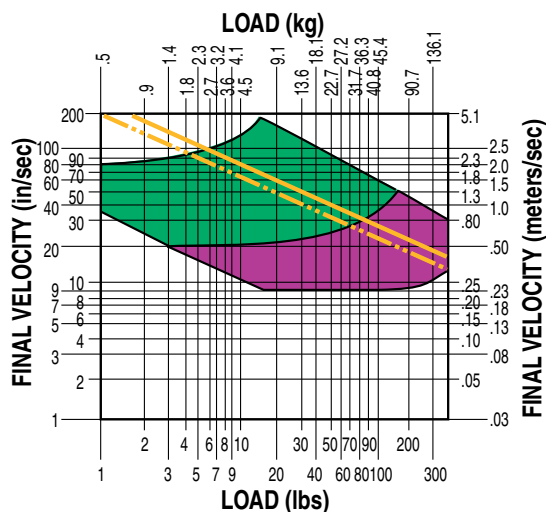
BC412



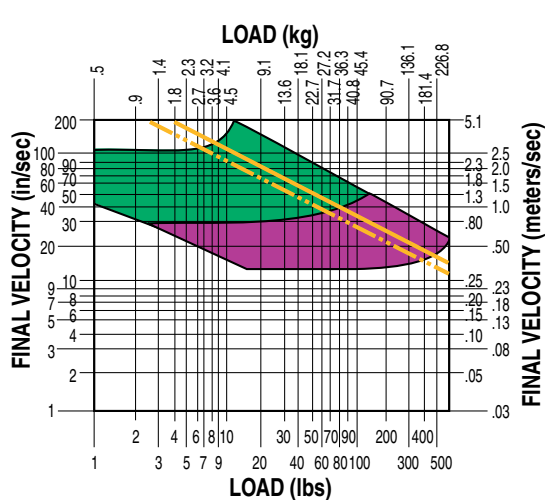
BC415



BC420



BC425



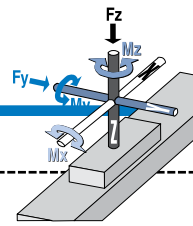
LIGHT DUTY (Light load/High velocity)

HEAVY DUTY (Heavy load/Low velocity)

AIR CUSHION DATA

NOTE: If final (or impact) velocity cannot be calculated directly, a reasonable guideline to use is 2 x average velocity.

Application Data Worksheet



STROKE LENGTH

☐ inch (S.K.) ☐ millimeters
(U.S. Standard) (Metric)

AVAILABLE AIR PRESSURE

☐ PSI ☐ bar
(U.S. Standard) (Metric)

REQUIRED THRUST FORCE

☐ lbf ☐ N
(U.S. Standard) (Metric)

LOAD

☐ lb ☐ kg
(U.S. Standard) (Metric)

LOAD CENTER OF GRAVITY DISTANCE TO CARRIER CENTER

☐ inch ☐ millimeters
(U.S. Standard) (Metric)

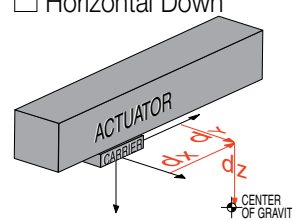
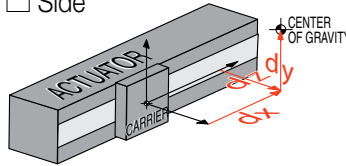
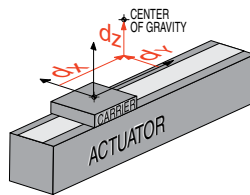
d_x _____
 d_y _____
 d_z _____

ORIENTATION

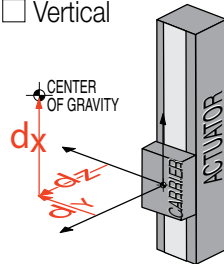
☐ Horizontal

☐ Side

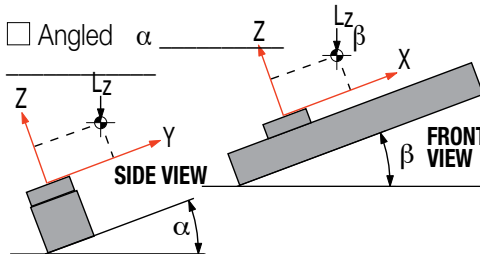
☐ Horizontal Down



☐ Vertical



☐ Angled α



OTHER ISSUES:

(i.e. Environment,
Temperature,
Contamination, etc.)

Contact information:



Fax (1-763-478-8080) or call Tolomatic (1-800-328-2174) with the above information. We will provide any assistance needed to determine the proper actuator.

Rodless Cylinder Selection Guidelines - BC2, BC3, BC4, LS - All Sizes

PROVIDING LOAD GUIDANCE AND SUPPORT

The process of selecting a load bearing actuator for a given application can be complex. It is highly recommended that you contact Tolomatic or a Tolomatic Distributor for assistance in selecting the best actuator for your application. The following overview of the selection guidelines are for educational purposes only.

1 COMPILE APPLICATION REQUIREMENTS

To determine the appropriate Band Cylinder or Linear Slide model for an application, compile the following information:

- Available pressure (PSI)
- Weight of load (lbs or kg)
- Orientation of load (lbs or kgs)
- Velocity of load (in/sec or mm/sec)
- Stroke length (in or mm)

HINT: Use Tolomatic sizing and selection software, download at: tolomatic.com

2 SELECT CYLINDER SIZE

- Consult the Theoretical Force vs. Pressure charts.
- Cross-reference the load force (or load weight if force is not known) and the available operating pressure. If the intersection falls below the diagonal line, and if moments do not exceed maximum values listed for that model (see Step 3), the actuator will accommodate the application.

If the intersection is above the diagonal line, a larger cylinder bore size should be considered.

NOTE: Additional force may be required to obtain the necessary acceleration for vertical or horizontal loads.

3 DETERMINE NATURE OF LOAD AND THE EFFECT OF BENDING MOMENTS

If the cylinder will guide and support a load located directly over the center of carrier, bending moments will not be a factor in the cylinder selection.

NOTE: The maximum load "L" must not exceed the capacity limits of the cylinder selected.

- Bending Moments

For off center or side loads, determine the distance from the center of mass of the load to the center of the carrier bracket. This measurement is needed to calculate the torque for bending moments. (Refer to Bending Moment chart for each model.)

Should the resulting maximum bending moment exceed figures indicated on the chart, external guides, auxiliary carrier/s or a larger cylinder should be considered.

- Auxiliary Carrier Bending Moments

The auxiliary carrier option (available on most models) increases load carrying capacity and bending moments. Auxiliary carriers can be ordered with or without an internal piston. (Auxiliary

carriers without a piston have no internal cushion on the cylinder end closest to the auxiliary carrier.)

IMPORTANT: When ordering, determine the working stroke, then the minimum distance required between carriers (dimension "D" in Auxiliary Carrier Bending Moments chart). When ordered, Tolomatic's configurator will calculate the overall length of the actuator.

NOTE: breakaway pressure will increase when using auxiliary carriers.

4 DETERMINE INTERNAL CUSHION CAPACITY

- Consult the Cushion Data chart for the model selected. The velocities listed on the cushion charts are final or cushion impact velocities. On applications where the internal cushions or bumpers are to be used, be sure the actual, final or impact velocity is known. If the velocity is not known, use of limit switches with valve deceleration circuits or shock absorbers should be considered. NOTE: The BC205 uses external bumpers in place of internal cushions, LS05 & LS10 do not have cushions or bumpers.
- Cross-reference the final velocity and weight of the load. If the intersection is below the diagonal lines, the internal cushions on the actuator may be used. If the point falls above the dashed diagonal line or if the velocity is not known, use deceleration circuits, external shock absorbers or select a

larger cylinder with greater cushion capacity. On high-cyclic applications, use of external stops is strongly recommended.

5 DETERMINE TUBE SUPPORT REQUIREMENTS

- Consult the Tube Support chart for the model selected.
- Cross reference the load weight and maximum distance between supports.

6 CONSIDER OPTIONS

- Switches— dc Reed, Hall-effect or ac Triac

Band Cylinders and Linear Slides each have different standard features and options. Check the options section for the actuator you have selected.

- Shock Absorbers— if needed.
- Foot Mounting Kits
- Floating Mount Bracket — use when lack of parallelism occurs between the cylinder and an external guided and supported load.
- Single End Porting (BC3, BC4)
- Long Carrier (BC4)
- Proximity Sensors (LS)
- Dual 180° Carrier (BC3)

ABT

MXF

BC2

BC3

BC4

LS

MG

CC

PB

ENGR

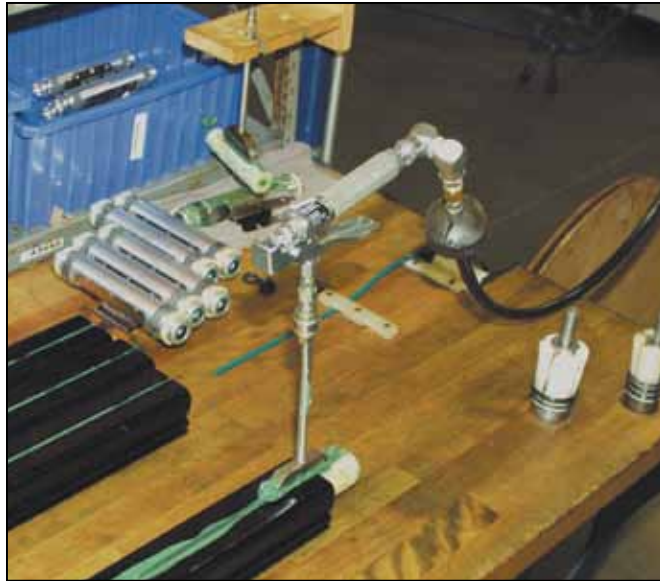
Application Guidelines

The following conditional statements are intended as general guidelines for use of Tolomatic actuators. Since all applications have their own specific operating requirements, consult Tolomatic, Inc. or your local Tolomatic distributor if an application is unconventional or if questions arise regarding the selection process.

CUSHION NEEDLE ADJUSTMENT (BC2, BC3, BC4, CC, SA, DP, TC ONLY)



Adjust the cushion needles in the cylinder heads carefully to obtain a smooth, hesitation free deceleration for your particular application. If there are questions on proper adjustment, please consult Tolomatic, Inc.



LUBRICATION GUIDELINES

All Tolomatic actuators (except Cable Cylinders) are prelubricated at the factory. To ensure maximum actuator life, the following guidelines should be followed.

• Filtration

We recommend the use of dry, filtered air in our products. "Filtered air" means a level of 10 Micron or less. "Dry" means air should be free of appreciable amounts of moisture. Regular maintenance of installed

filters will generally keep excess moisture in check.

• External Lubricators (optional)

The factory prelubrication of Tolomatic actuators will provide optimal performance without the use of external lubrication. However, external lubricators can further extend service life of pneumatic actuators if the supply is kept constant.

Oil lubricators, (mist or drop) should supply a minimum of 1 drop per 20 standard cubic feet per minute to the

cylinder. As a rule of thumb, double that rate if water in the system is suspected. Demanding conditions may require more lubricant.

If lubricators are used, we recommend a non-detergent, 20cP @ 140°F 10-weight lubricant. Optimum conditions for standard cylinder operation are +32° to +150°F (+0° to 65.5°C).

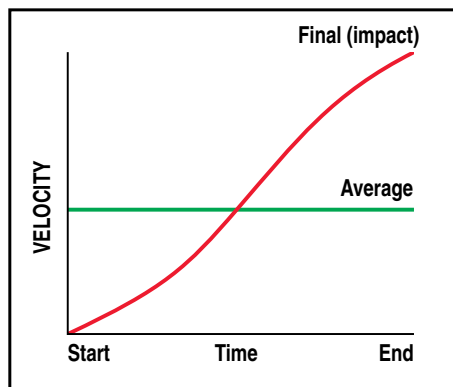
NOTE: Use of external lubricators may wash away the factory installed lubrication. External lubricants must be maintained in a constant supply or the results will be a dry actuator prone to premature wear.

• Sanitary Environments

Oil mist lubricators must dispense "Food Grade" lubricants to the air supply. Use fluids with ORAL LD50 toxicity ratings of 35 or higher such as Multitherm® PG-1 or equivalent. Demanding conditions can require a review of the application.

FINAL VELOCITY CALCULATION

Velocity calculations for all rodless cylinders need to differentiate between final velocity and average velocity. For example: Stroking a 100-inch BC3 model in one second yields an average velocity of 100 inches per second. To properly determine the inertial forces for cushioning, it is important to know the



final (or impact) velocity. Rodless cylinders accelerate and decelerate at each end of the stroke. Therefore this acceleration must be considered (see diagram).

If final (or impact) velocity cannot be calculated directly, a reasonable guideline is to use 2 x average velocity.

BC4 Service Parts Ordering - ALL Sizes

Inch (U.S. Standard) SIZE	06	10	12	15	20	25	30	40
Auxiliary Carrier Option	6906-9023	6910-9023	6912-9023	6915-9023	6920-9023	6925-9023	6930-9023	6940-9023
Floating Mount Kits	6906-9004	6910-9004	6912-9004	6915-9004	6920-9004	6925-9004	6930-9004	6940-9004
Foot Mount Kits ¹	6906-9003	6910-9003	6912-9003	6915-9003	6920-9003	6925-9003	6930-9003	6940-9003
Shock Abs. Field Retrofit Kit – Heavy Duty ²	6906-9006	6910-9020	6912-9020	6915-9020	6920-9020	6925-9020	–	–
Shock Abs. Field Retrofit Kit – Lite Duty ²	6906-9005	6910-9005	6912-9005	6915-9005	6920-9005	6925-9005	–	–
Shock Abs. Field Mount Kit (Hardware Only) ³	6906-9024	6910-9024	6912-9024	6915-9024	6920-9024	6925-9024	–	–
Shock Stop Kit ⁴	6906-9019	6910-9019	6912-9019	6915-9019	6920-9019	6925-9019	–	–
Shock Stop Kit (Long Carrier) ⁴	6906-9029	6912-9029	6912-9029	6915-9029	–	–	–	–
Single End Porting ⁵	NA	6910-9018	6912-9018	6915-9018	6920-9017	6925-9017	Std.	Std.
Switch (Hardware Only)	2506-9999	6910-9999	6910-9999	3415-9999	3420-9999	3420-9999	3420-9999	6940-9005
Tube Supports ⁶	6906-9002	6910-9002	6912-9002	6915-9002	6920-9002	6925-9002	6930-9002	6940-9002
Repair Kits ^{7,8}	RKBC406	RKBC410	RKBC412	RKBC415	RKBC420	RKBC425	RKBC430	RKBC440
Seal Kits ⁹	6906-9022	6910-9022	6912-9022	6915-9022	6920-9022	6925-9022	6930-9022	6940-9022

Metric SIZE	M(MM)06	M(MM)10	M(MM)12	M(MM)15	M(MM)20	M(MM)25	M(MM)30	M(MM)40
Auxiliary Carrier Option	7906-9023	7910-9023	7912-9023	7915-9023	7920-9023	7925-9023	7930-9023	7940-9023
Floating Mount Kits	7906-9004	7910-9004	7912-9008	7915-9008	7920-9004	7925-9004	7930-9005	7940-9005
Foot Mount Kits ¹	7906-9003	7910-9003	7912-9004	7915-9003	7920-9003	7925-9003	7930-9003	7940-9003
Shock Abs. Field Retrofit Kit – Heavy Duty ²	7906-9006	7910-9007	7912-9006	7915-9005	7920-9020	7925-9020	–	–
Shock Abs. Field Retrofit Kit – Lite Duty ²	7906-9005	7910-9005	7912-9005	7915-9006	7920-9005	7925-9005	–	–
Shock Abs. Field Mount Kit (Hardware Only) ³	7906-9024	7910-9024	7912-9024	7915-9024	7920-9024	7925-9024	–	–
Shock Stop Kit ⁴	7906-9019	7910-9008	7912-9007	7915-9004	7920-9019	7925-9019	–	–
Shock Stop Kit (Long Carrier) ⁴	7906-9029	7910-9029	7912-9029	7915-9029	–	–	–	–
Single End Porting Taper (M) ⁵	NA	7910-9006	7912-9001	7915-9001	7920-9017	7925-9017	Std.	Std.
Single End Porting Parallel (MM) ⁵	NA	8910-9002	8912-9001	8915-9001	8920-9017	8925-9017	Std.	Std.
Switch (Hardware Only)	2506-9999	6910-9999	6910-9999	3415-9999	3420-9999	3420-9999	3420-9999	6940-9005
Tube Supports ⁶	7906-9002	7910-9002	7912-9002	7915-9002	7920-9002	7925-9002	7930-9002	7940-9002
Repair Kits (Taper Port “M”) ^{7,8}	RKBC4M06	RKBC4M10	RKBC4M12	RKBC4M15	RKBC4M20	RKBC4M25	RKBC4M30	RKBC4M40
Repair Kits (Parallel Port “MM”) ^{7,8}	RKBC4MM06	RKBC4MM10	RKBC4MM12	RKBC4MM15	RKBC4MM20	RKBC4MM25	RKBC4MM30	RKBC4MM40
Seal Kits ⁹	6906-9022	6910-9022	6912-9022	6915-9022	6920-9022	6925-9022	6930-9022	6940-9022

PART NUMBER ORDERING		CONFIG. CODE ORDERING
No Mounting Hardware or FE conn. included		Mounting Hardware & FE conn. included
PART NO.	DESCRIPTION	CODE
3600-9084	Switch Only, Reed, Form C, 5m	BT
3600-9085	Switch Only, Reed, Form C, Male Conn.	BM
3600-9082	Switch Only, Reed, Form A, 5m	RT
3600-9083	Switch Only, Reed, Form A, Male Conn.	RM
3600-9086	Switch Only, Triac, 5m	CT
3600-9087	Switch Only, Triac, Male Conn.	CM
3600-9090	Switch Only, Hall-effect, Sinking, 5m	KT
3600-9091	Switch Only, Hall-effect, Sinking, Male Conn.	KM
3600-9088	Switch Only, Hall-effect, Sourcing, 5m	TT
3600-9089	Switch Only, Hall-effect, Sourcing, Male Conn.	TM
2503-1025	Connector (Female) 5 meter lead	

NOTE: When ordered by Config. Code Female connector & all mounting hardware is included

Switch Ordering NOTES:

To order field retrofit switch and hardware kits for all Tolomatic actuators: SW (Then the model and bore size, and type of switch required)

Example: SWBC415RT

(Hardware and Form A Reed switch with 5 meter lead for 1.5" bore BC4 band cylinder)

! Mounting hardware is required if replacing switch for any actuator manufactured before 7/1/97



Service Parts Ordering NOTES:

- 1 Foot Mount Kit contains one bracket and mounting hardware.
- 2 Shock Field Retrofit Kit contains one shock absorber, impact bolt, and mounting hardware.
- 3 Shock Field Mount Kit contains one set of mounting hardware and impact bolt.
- 4 Shock Stop Kit contains shock plate and screws.
- 5 Single End Porting Kit contains replacement head and plugs.
- 6 Contains one tube support and mounting hardware.
- 7 Repair Kit contains End Caps, Bearing Rods, O-rings, U-cups, Wear Rings, Cushion Seals, Band Inserts, Spring Clamps, Sealing Band and Dust Band.
- 8 When ordering repair kits, specify stroke as “SK” then indicate the desired length in decimal inches after the order code indicated above. EXAMPLE: RKBC410SK10.00
- 9 Seal Kit contains End Caps, Bearing Rods, O-rings, U-cups, Wear Rings, Cushion Seals, Band Inserts and Spring Clamps.

NA = Not Available

Std. = Standard Feature

BC4 Ordering - ALL Sizes

MODEL, BORE, STROKE

OPTIONS

BC4 L 10 SK100-250 DW6-0 TS3 FM2 SH2 BM2

MODEL & MOUNTING

BC4 BC4 Band Cylinder - inch (U.S. Standard)
BC4M metric mounting with taper port
BC4MM metric mounting with parallel port

LONG CARRIER (BC4_18)

L Long carrier available for 06, 10, 12 & 15 sizes

✗ Not available for 20 & 25 sizes (2" & 2.5" bore).

BORE SIZE

06 0.625" (16mm)
10 1.00" (25mm)
12 1.25" (32mm)
15 1.50" (40mm)
20 2.00" (50mm)
25 2.50" (63mm)

STROKE LENGTH

SK__ Enter desired stroke length in decimal inches

MAXIMUM STROKE

SIZE	BC4 BC4M(MM)	
	in	mm
06	206	5,232
10	205	5,207
12	204	5,182
15	202	5,130
20	154	3,911
25	139	3,530

AUXILIARY CARRIER (BC4_20)

DW Auxiliary carrier With piston & "D" distance
 --. -- "D" Distance between carriers

✗ Not available for 05 size

MINIMUM "D" DISTANCE BETWEEN CARRIERS

	with Piston	
	in	mm
06	4.26	108.2
10	5.30	134.6
12	6.23	158.2
15	8.00	203.2
20	8.12	206.3
25	11.04	280.4

✎ *When ordering auxiliary carrier option, enter the distance required between carriers. The configurator will calculate the overall length of the actuator.

TUBE SUPPORTS (BC4_23)

TS Tube Support & number required

T-NUTS

TN additional T-Nuts (see individual dimensional drawings for sizes)

FOOT MOUNT (BC4_22)

FM Foot Mount & number required (1 or 2)

FLOATING MOUNT (BC4_24)

FL Floating Mount Bracket

✗ Not compatible with shock absorbers

SHOCK ABSORBERS (BC4_27)

***SD** Shock hardware Only and number required
***SH** Shock, Heavy duty and number required
***SL** Shock, Light duty and number required

✎ *NOTE: When shock absorbers are ordered cushion seals are removed.

SWITCHES (BC4_25)

TYPE		QUICK-DISCONNECT	CODE	QUANTITY	LEAD LENGTH
REED	Form A	QD	RM	After code enter quantity desired	5 meters
		no	RT		
HALL-EFFECT	Form C	QD	BM		
		no	BT		
	Sinking	QD	KM		
		no	KT		
TRIAC	Sourcing	QD	TM		
		no	TT		
		QD	CM		
		no	CT		

PORTING OPTION

HD Single End Porting

✗ Not available for 06 size

✎ Not all codes listed are compatible with all options. Contact Tolomatic with any questions.