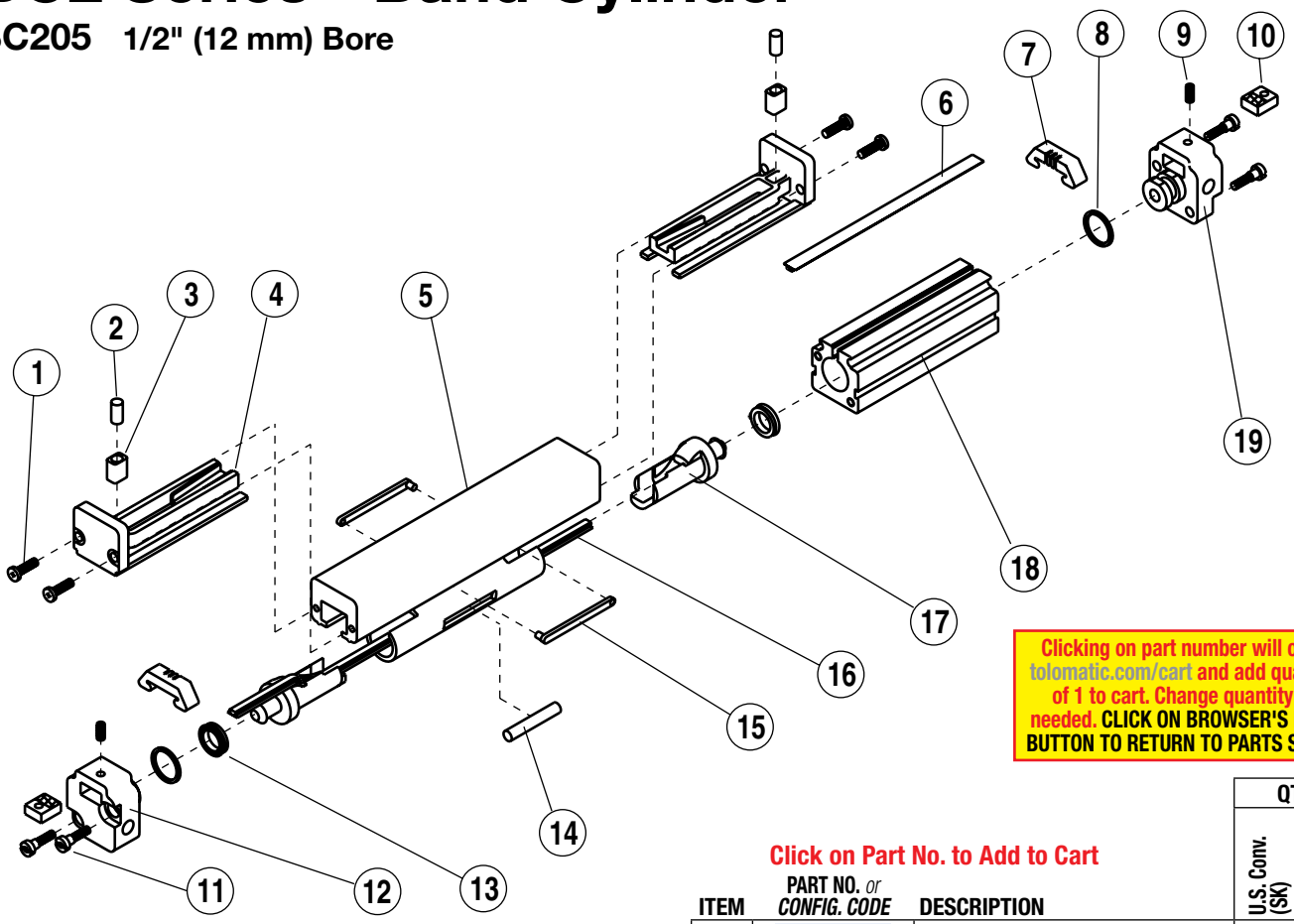
Tolomatic™
EXCELLENCE IN MOTION

Parts Sheet

0510-4001_14

BC2 Series™ Band Cylinder®

BC205 1/2" (12 mm) Bore



Clicking on part number will open tolomatic.com/cart and add quantity of 1 to cart. Change quantity as needed. CLICK ON BROWSER'S BACK BUTTON TO RETURN TO PARTS SHEET.

Click on Part No. to Add to Cart

ITEM	PART NO. or CONFIG. CODE	DESCRIPTION	QTY. U.S. Conv. (SK)	QTY. Metric (SM)
1	0905-1117	Screw (US Conv.)	4	–
	4505-1002	Screw (Metric)	–	4
2[1]	4510-1014	Spring	2	2
3[1]	0605-1013	Band Insert	2	2
4[1]	0905-1110	End Cap/Band Ramp	2	2
5	0905-1113	Piston Bracket/Carrier (US Conv.)	1	–
	4505-1003	Piston Bracket/Carrier (Metric)	–	1
6[1,2]	NDBBC205SK_	Replacement Dust Band specify stroke (SK=US Conv) (SM=Metric)	A/R	–
	NDBBC205SM_		–	A/R
7[1]	0905-1033	Shock Absorbing Pad	2	2
8[1]	0905-1005	O-Ring	2	2

Click on Part No. to Add to Cart

ITEM	PART NO. or CONFIG. CODE	DESCRIPTION	QTY. U.S. Conv. (SK)	QTY. Metric (SM)
9	0905-1007	Set Screw	2	2
10	0905-1008	Band Clamp	2	2
11	0505-1000	Tapped Screw (US Conv.)	4	–
	4505-1000	Tapped Screw (Metric)	–	4
12	0905-1001	Left Head (US Conv.)	1	–
	4905-1001	Left Head (Metric)	–	1
13[1]	0905-1015	U-Cup	2	2
14	0905-1171	Magnet	1	1
15[1]	0905-1114	Bearing	2	2
16[1,2]	NSBBC205SK_	Replacement Seal Band specify stroke (SK=US Conv) (SM=Metric)	A/R	–
	NSBBC205SM_		–	A/R
17	0905-1111	Piston End	2	2
18[2]	RTBBC205SK_	Replacement Tube specify stroke (SK=US Conv) (SM=Metric)	A/R	–
	RTBBC205SM_		–	A/R
19	0905-1004	Right Head (US Conv.)	1	–
	4905-1004	Right Head (Metric)	–	1

Repair Kit

[1] Repair Kit (RK) ordering method: RK BC205 SK ____ . __

EXAMPLE: RK BC205 SK 21 . 25

[2] Replacement Dust Band (NDB) Seal Band (NSB), ___ BC205 SK ____ . __

or Tube (RTB) ordering method: EXAMPLE: RTB BC205 SK 21 . 25

Tube — Model — Size — Stroke Length

[1] Repair Kit (RKBC205 SK or SM_) includes: Screw, Springs, Band Inserts, End Caps/Band Ramps, Dust Band, Shock Absorbing Pads, O-Rings, Bearings, Quad Rings, Seal Band, U-Cups;
SK = Stroke length in inches for US Conventional.
SM = Stroke length in millimeters for Metric

[2] After configuration code add: SK_ (note: the letters SK = stroke in inches or SM = stroke length in millimeters, follow these letters with the stroke length in these units.) If the actuator has the dual carrier option add the code DW/DO_ _ _ (note: follow the letters DW or DO with the distance between the carriers in the same units.)

MAINTENANCE

1. The Band Cylinder® should be kept as clean as possible around the bands and Carrier Bracket.

2. Always use air that is adequately lubricated. Tolomatic recommends that a 5 to 10 weight non-detergent, petroleum oil be used. For FDA requirements, we recommend that Multitherm® PG-1 or equivalent be used. For dry air applications, please consult Tolomatic, Inc., toll free at 1-800-328-2174.

DISASSEMBLY INSTRUCTIONS

1. With a razor blade, remove Shock Absorbing Pads and excess glue from face of cylinder Heads. Remove Set Screws (9) from Heads (12, 19) and dislodge Band Wedges (10) from Head slots. Remove the Head Screws (11) and remove Heads.

2. Slide the Piston Carrier Bracket (5) to one end of the Tube and remove the End Cap Screws (1). Hold a finger over the top of the End Cap to contain the Spring (2) while pulling on the End Cap Band Ramp (4) assembly to remove it. Slide Piston Carrier Bracket to opposite end of Tube and remove other End Cap Band Ramp assembly in same manner. Slide Piston out Tube. Remove Piston Ends (17) from the Piston Carrier Bracket (being careful not to damage the ends) Remove U-Cups (13).

3. Remove the Dust Band (6) and collapse Sealing Band (16) by pressing down on it lightly with an O-ring pick or similar tool, gliding the pick the length of the cylinder tube.

ASSEMBLY INSTRUCTIONS

1. **CLEAN AND LUBRICATE:** Thoroughly clean all components, particularly the tube bore slot and bands. **Generously lubricate the tube and all rubber parts including the rubber on both the Sealing and Dust Band with Magnalube®-G grease.**

2. **INSTALL CARRIER AND BEARINGS:** Snap Bearings (15) into slots on the Piston Bracket Carrier (5). Slide assembly into Tube (18). If there is any interference between the Bearings and the Tube slot, lightly sand Bearings with 30 micron mylar sandpaper to remove any interference.

3. **PREPARE AND INSERT INSIDE SEALING BAND AND PISTON ENDS:** Clean the Sealing Band (16) thoroughly and remove any residue from the stainless steel surface with a razor blade.

   CAUTION: Sealing Band is sharp and may cause serious injury. Handle with care! Sharp edges of band are easily damaged.

   CAREFULLY check band for nicks or burred edges. If present, remove by sanding beveled side with 320 emery cloth and the top side (side with retaining rubber) with 30 micron mylar sandpaper. Fill grooves on both sides of rubber strip with Magnalube-G grease. Weave one end of Sealing Band (16) through one Piston End (17). Feed Sealing Band through hole in Piston on Piston Bracket/Carrier (5) and snap Piston End (17) into Piston Bracket/Carrier (5). Weave other end of Sealing Band through other Piston End (17) and snap Piston End into place on other end of Piston Bracket/Carrier. Insert U-Cups (13) onto Piston Ends

4. **INSTALL PISTON BRACKET/CARRIER ASSEMBLY:** Generously lubricate bore and slot of Tube (18) and bearing portion of Piston Bracket/Carrier (5) with grease. Insert Piston Bracket/Carrier (5) into greased end of Tube (18) guiding Sealing Band through Tube. Push Piston Bracket/Carrier assembly along the Tube to seat the Sealing Band into its groove and disperse grease the length of the Tube. Remove excess grease from end of cylinder. With a razor blade, trim off rubber on Sealing Band (16) flush with end of Tube closest to the Piston. With tin snips, trim metal band to .437" from rubber (tolerance of +/- .032").

5. **INSTALL HEAD:** Install O-Ring (8) into groove in Head (12). On end of Tube with trimmed Sealing Band, install Head (12) with a gentle rocking motion and secure with the two Tapped Screws (11).

   CAUTION: Do NOT twist Head when installing. A cut O-Ring may result causing air leakage during operation. Do NOT cut Band longer than the Head thickness or serious injury may occur during installation.

6. **INSTALL DUST BAND:** Thoroughly clean Dust Band (6) and fill both grooves of rubber strip with grease. Weave Dust Band (6) through End Cap/Band Ramp (4). Slide this assembly through hole in Carrier portion of Piston Bracket/Carrier (5). Before seating the End Cap/Band Ramp (4) flush to the Carrier, place Band Insert (3) and Spring (2) into position on End Cap/Band Ramp (4). Repeat these same procedures for other end of Dust Band (6).

   Apply Loctite® #222 on screws (1) and secure End Cap/Band Ramps (4) to Piston Bracket/Carrier (5).

7. **TRIM DUST BAND AND INSTALL BAND CLAMP:** With razor blade, trim rubber on end of Dust Band (6) flush with Head (12). With tin snips, trim steel portion of Band so end is just short of through hole in top of Head. Insert Dust Band into slot in Head. Insert Band Clamp (10) into slot on Head, fitting it between Sealing Band (16) and Dust Band (6). Insert Set Screw (9) into hole in top of Head (12). Apply Loctite® #222 and thread Set Screw (9) into Band Clamp (10) until it tightens firmly against bottom band.

8. **INSTALL SECOND HEAD:** Slide Carrier to opposite end of Tube (18). Trim Sealing Band (16) as indicated in step 4. Install second Head (19) and secure with two Tapped Screws (11) and Loctite® #222. Trim and insert Dust Band (6), Band Clamp (10) and secure as indicated in step 7.

9. **INSTALL SHOCK ABSORBING PAD:** Clean the exposed top face of the Head (19) with contact cleaner, avoiding excess cleaner contacting the Dust Band (6). Using Loctite #495, glue a Shock Absorbing Pad (7) to face of each Head (12 and 19).

10. **CHECK ASSEMBLY AND REMOUNT**

OPTIONAL ACCESSORY ASSEMBLY INSTRUCTIONS

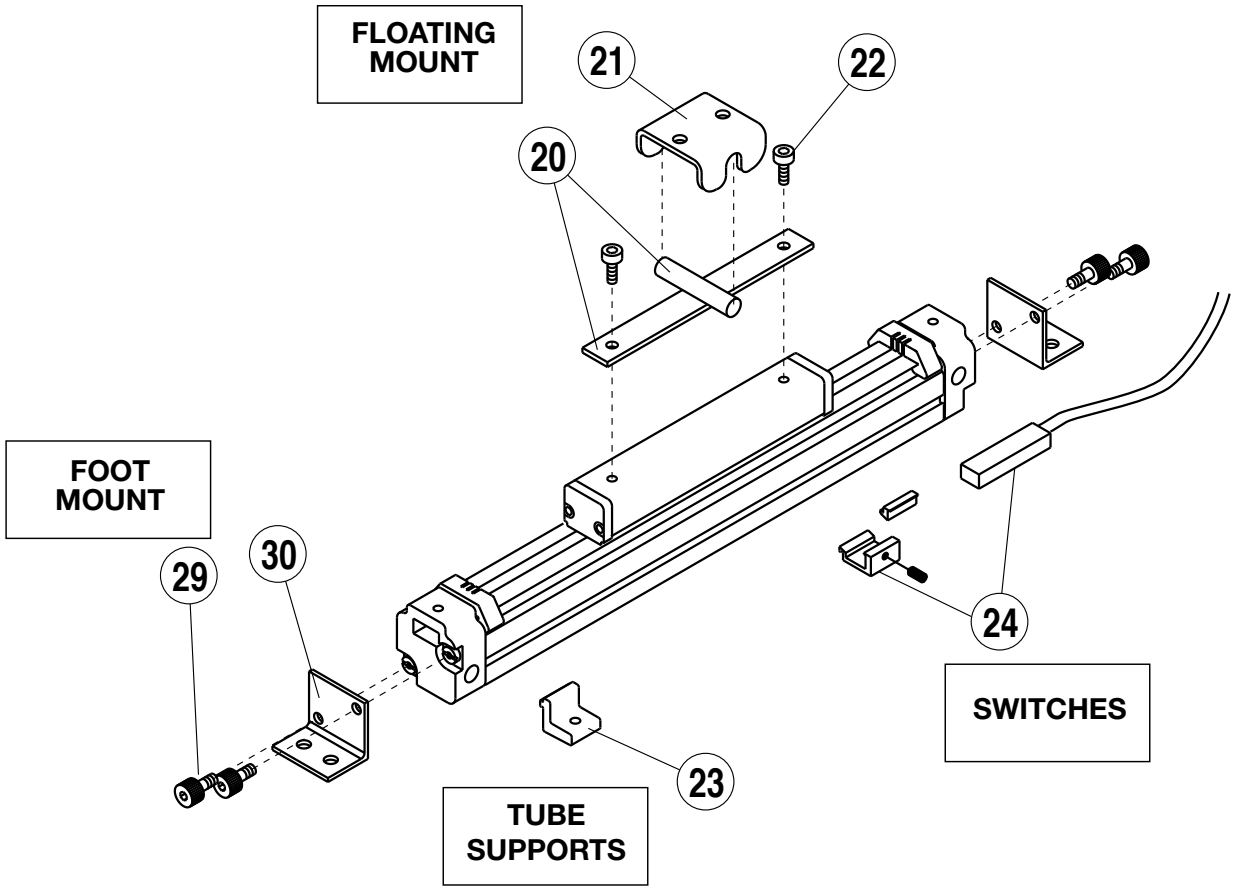
1. **TUBE SUPPORTS**
   Follow cylinder assembly instructions through steps 4. Before installing second cylinder Head (19) in step 5., slide Tube Support (23) onto cylinder Tube (18).

2. **FOOT MOUNTS**
   On assembled cylinder, insert Screws (29) through holes in Foot Mount Bracket (30) and install in holes on cylinder Heads (12,19).

3. **FLOATING MOUNT**
   Completely assemble cylinder. Attach Floating Plate (20) to Carrier (5) with Screws (22) and Loctite® #242. Place Floating Mount Bracket (33) over pin of Floating Plate (20) and hold in place with a rubber band.

4. **SWITCHES**
   On assembled cylinder, Secure Switch to open port side of cylinder with Switch Hardware Kit. Cycle the carrier over the Switch by hand to ensure that the carrier does not hit the switch.

   See page 3 and 4 for additional switch information



ITEM	PART NO.	DESCRIPTION	QTY. U.S. Conv. (SK)	QTY. Metric (SM)
FLOATING MOUNT				
KIT	0905-9115	Floating Mount Bracket Kit	1	–
	4905-9115		–	1
20	0905-1026	Floating Plate	1	1
21	0905-1027	Floating Bracket	1	1
22	0605-1045	Screw	2	–
	4905-1005	Screw	–	2
TUBE SUPPORTS[4]				
23[4]	0905-1034	Tube Support Bracket	2	2
FOOT MOUNT[1]				
KIT[1]	0905-9010	Foot Mount Kit	1	–
	4905-9010		–	1
29	0905-1038	Screw	4	–
	4905-1006	Screw	–	4

ITEM	PART NO.	DESCRIPTION	QTY. U.S. Conv. (SK)	QTY. Metric (SM)
30	0905-1037	Bracket	2	2
SWITCHES				
24		**CONFIG. CODE ORDERING** – Mounting Hardware & FE conn. included		
		DESCRIPTION / **CODE**: Switch Kit, Reed, Form C, 5m – BT; Switch kit, Reed, Form C, Male Conn. – BM; Switch kit, Reed, Form A, 5m – RT; Switch kit, Reed, Form A, Male Conn. – RM; Switch kit, Triac, 5m – CT; Switch kit, Triac, Male Conn. – CM		
		NOTE: When kit is ordered female connector & all mounting hardware is included.		
	0905-1171	Switch Magnet	1	1

Service Parts Ordering NOTES:

1 Foot Mount Kit contains two foot mount brackets and mounting hardware

4 A minimum of 2 (two) Tube Supports required per cylinder

NA = Not Available

To Order Retrofit Kits

All Switch Kits come with 1 switch and mounting hardware.

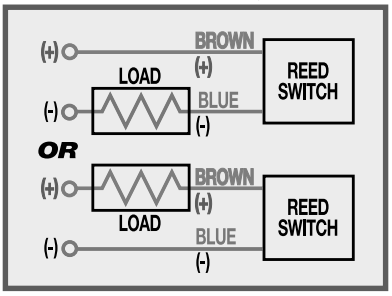
Retrofit ordering method: SW □□□ □□ □□

EXAMPLE: SW BC2 05 RT

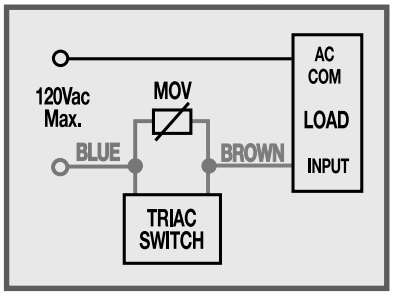
Switch Kit — Model — Size — Switch Type Code

WIRING DIAGRAMS

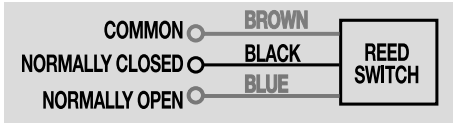
RT & RM DC REED, FORM A



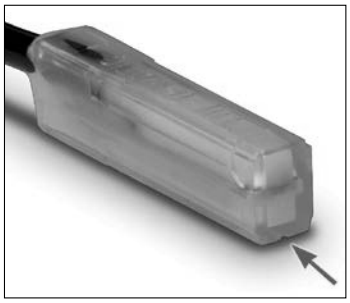
CT & CM AC REED, TRIAC



BT & BM DC REED, FORM C



INSTALLATION INFORMATION

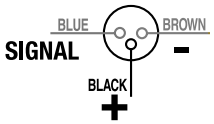


THE NOTCHED FACE OF THE SWITCH INDICATES THE SENSING SURFACE AND MUST FACE TOWARD THE MAGNET.

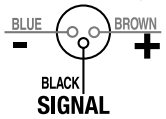
Some actuators may require switch mounting on a specific side of the assembly. Call Tolomatic for details.

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

OLD
Quick disconnect Wiring



CURRENT
Quick disconnect Wiring



Female Connector 5M

SWITCH OPTION
NOTE: Form A Reed Switches should not be used in TTL logic circuits. A voltage drop caused by the L.E.D. indicator will result. For applications where TTL circuits are used, please contact the factory.

WARNING: An ohmmeter is recommended for testing Reed Switches. NEVER use an incandescent light bulb as a high current rush may damage the switch.

Reed and TRIAC switches are only recommended for signalling position, not directly powering solenoids. For shifting a solenoid, a relay or resistor is recommended between it and the Reed Switch. Switch ratings must not be exceeded at any time.

For complete Switch Performance Data, refer to the Tolomatic Pneumatic Products Catalog # 9900-4000.

MAINTENANCE
The Band Cylinder® should be kept as clean as possible around the bands and Carrier Bracket.

LUBRICATION
All Tolomatic Band Cylinders are pre-lubricated at the factory. To ensure maximum cylinder life, the following guidelines should be followed.

1. **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.

2. **External Lubricators** (optional)– The factory pre-lubrication of Tolomatic Band Cylinders 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 is +32˚ to +125˚F (+0˚ to 51.6˚C).

NOTE: Use of external lubricators will 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 failure.

3. **Sanitary environments**– Oil mist lubricators must dispense 'Food Grade' lubricants to the air supply. Use fluids with **ORAL LD_{50} toxicity ratings of 35 or higher such as Multitherm® PG-1 or equivalent.** Demanding conditions can require a review of the application.

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Loctite® is a registered trademark of the Loctite Corporation, www.loctite.com
Magnalube®-G is a registered trademark of the Carleton-Stuart Corporation, www.magnalube-g.com

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