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EXCELLENCE IN MOTION

Parts Sheet

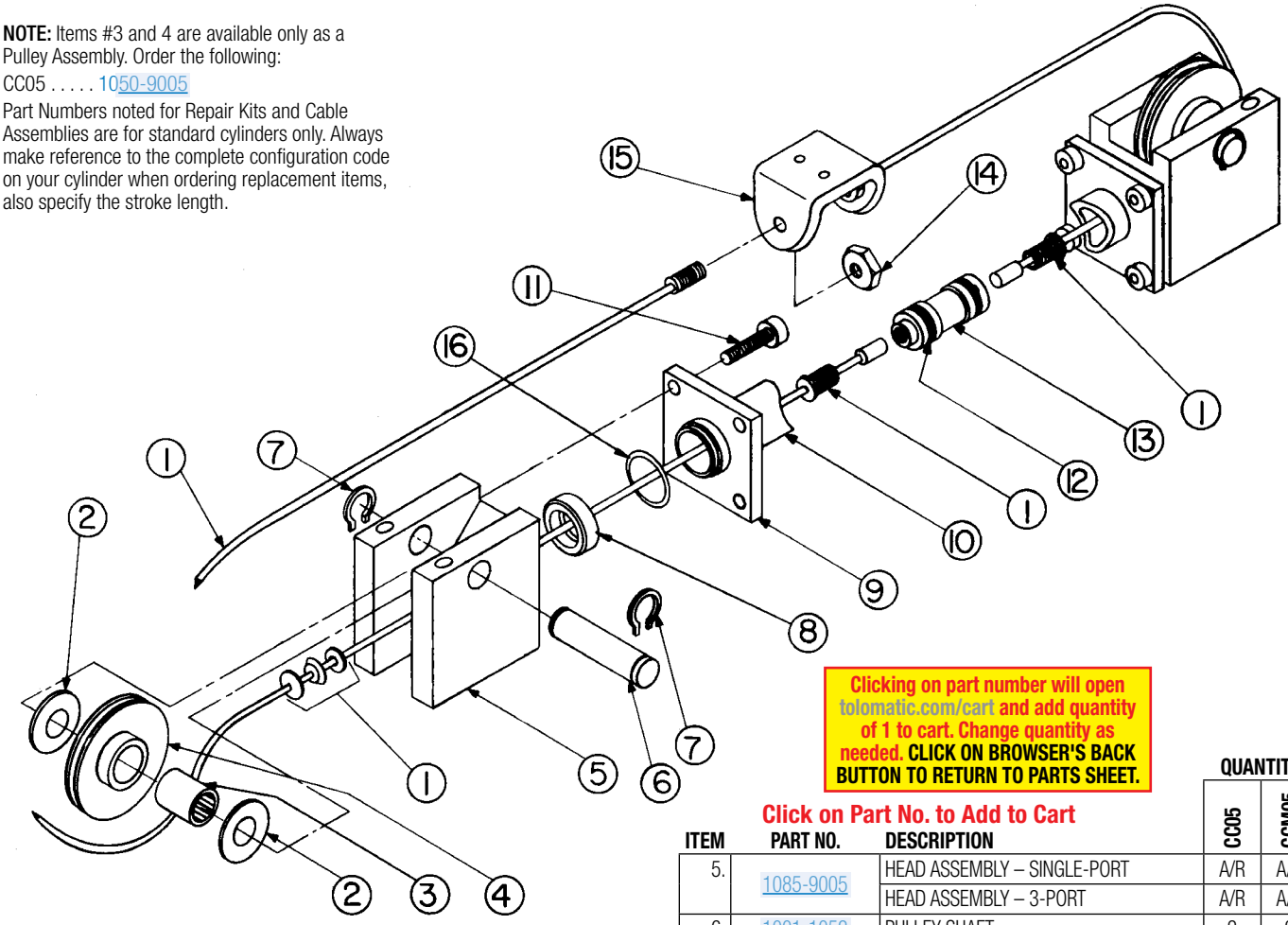
1001-4000_08

Cable Cylinder

1/2"Bore

MODELS: CC05 CCM05

NOTE: Items #3 and 4 are available only as a Pulley Assembly. Order the following:
CC05 1050-9005
Part Numbers noted for Repair Kits and Cable Assemblies are for standard cylinders only. Always make reference to the complete configuration code on your cylinder when ordering replacement items, also specify the stroke length.



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.	DESCRIPTION	QUANTITY CC05	QUANTITY CCM05
[2,3]1.	CACC05SK_	CABLE ASSEMBLY	2	
	CACCM05SK_	CABLE ASSEMBLY W/MAGNET OPTION		2
2.	0100-1306	THRUST RACE	4	4
3.	1001-1055	NEEDLE BEARING	2	2
4.	1050-1051	PULLEY	2	2

Click on Part No. to Add to Cart

ITEM	PART NO.	DESCRIPTION	QUANTITY CC05	QUANTITY CCM05
5.	1085-9005	HEAD ASSEMBLY – SINGLE-PORT	A/R	A/R
		HEAD ASSEMBLY – 3-PORT	A/R	A/R
6.	1001-1052	PULLEY SHAFT	2	2
7.	1001-1056	EXTERNAL RETAINING RING	4	4
[3]8.	1085-1025	SEAL, BUNA-N MATERIAL	2	2
9.	1085-1016	CLAMP PLATE	2	2
[1]10.	RTBCC05SK_	ALUMINUM TUBE	A/R	
	RTBCCM05SK_	ALUMINUM TUBE W/MAGNET OPTION		A/R
11.	1085-1075	SOCKET HEAD CAP SCREW	8	8
[3]12.	1080-1020	PISTON U-CUP, BUNA-N MATERIAL	2	2
13.	1085-1040	PISTON	1	
	1085-1041	PISTON		1
14.	1001-1058	LOCK NUT	2	2
15.	1001-1057	CLEVIS (BRACKET)	1	1
16.	1085-1018	EXTERNAL RETAINING RING	2	2

Tube — Magnet[6] — Extra Cable[7]

[1]Replacement Tube ordering method: RTB CC M 05 SK _ _ _ _ _ XA _

EXAMPLE: RTB CC M 05 SK 21·25 XA 9

[2] Repair Kit (RK) & Cable Assembly (CA) ordering method: _ _ CC M 05 SK _ _ _ _ _ XA _

EXAMPLE: RK CC M 05 SK 21·25 XA 9

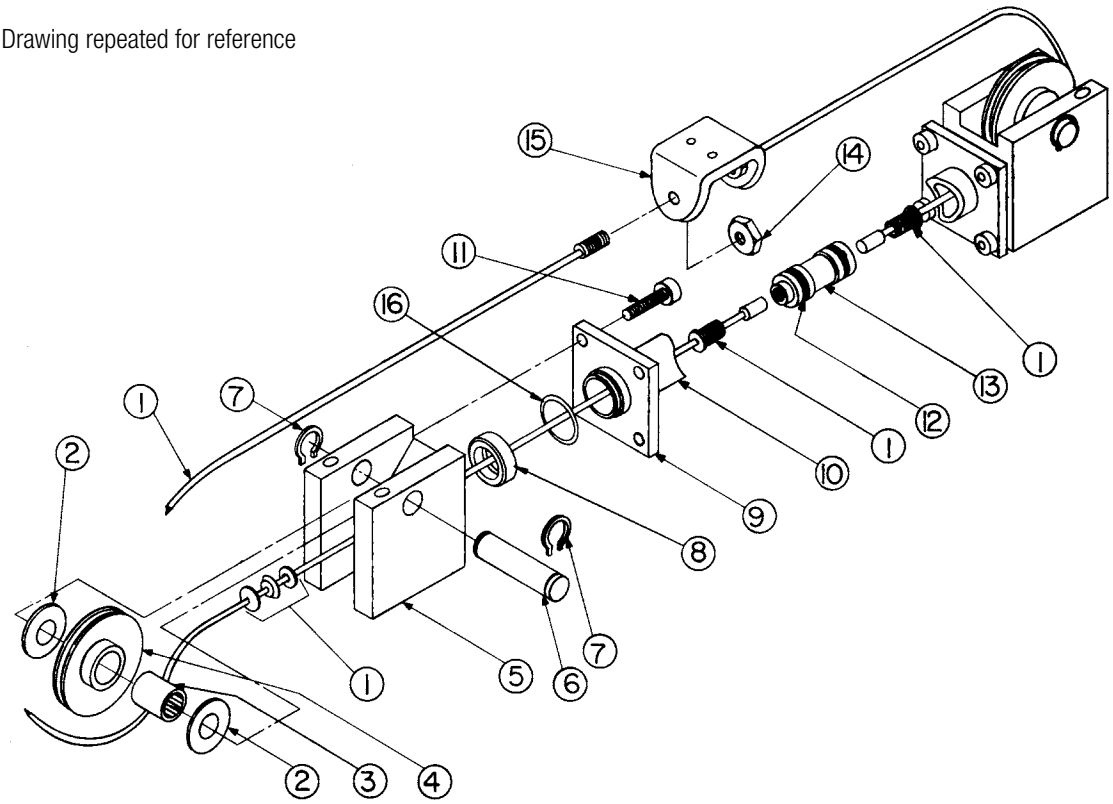
Repair Kit — Model — Size — Stroke Length

[3] Repair Kit (RK) includes: Piston U-Cups, Seals, Cable Assembly

[4] M is for optional switch magnet, which is required for switches to function. Since the Magnet Option adds length to the piston and the tube length, it must be included when ordering.

[5] XA & XB are for extra cable length [include addition cable required measured in decimal inches]

Drawing repeated for reference



Installation

When unpacking a Tolomatic cable cylinder, BE EXTRA CAREFUL NOT TO SCRATCH OR MAR THE NYLON COVERING ON THE CABLE. The cylinder may be mounted using the bolt holes in the head. When attaching the cable bracket to the driven mechanism, be sure it is in perfect alignment and that it does not deflect the cable to the side. Misalignment can cause excessive seal wear.

Pretensioning and proof-loading instructions: All double-acting cable cylinders are shipped without being pretensioned. They must be pretensioned after mounting to insure maximum service life of the device. There are two types of stretch in cable— constructional and elastic. The constructional stretch is removed by proof-loading of the cable. The elastic stretch is removed by proper pretensioning of the cable.

Proof-loading of cables (for cylinders without Auto Tensioners)

1. Tighten the bracket terminal lock nuts equally with a torque wrench to torque requirements listed in Table A.
2. Let set for 30 seconds.
3. Loosen lock nuts to remove tension. (But leave them tight enough to eliminate any slack.)
4. Follow Pretensioning Instructions.

TABLE A: TORQUE TO PROOF-LOAD THE CABLE

MODEL	REQUIRED TORQUE
CC05	15 INCH-POUNDS *(1.69 NEWTON-METERS)*

Pretensioning of cables

1. Block the load some distance from the end of travel to keep cylinder from bottoming.
2. Apply pressure that is 15-20 percent higher than actual load pressure needed to move the load.

NOTE: Load pressure is defined as the actual pressure required to move the load. When the load is stopped externally before the piston bottoms, the relief valve or regulator setting becomes the load pressure.

When pressurized, one cable becomes tight and the other becomes slack. Manually adjust out the slack. Release the pressure. Block the load on the opposite side and pressurize the other port. Repeat the manual adjustment on the other cable. Release pressure and remove blocks. Return the regulator or relief valve to the original load pressure.

The cylinder is now pretensioned. Additional manual adjustment should not be required. It is suggested however, that the cables be checked periodically.

Alternate Method: If the load cannot be blocked for cable pretensioning as stated above, tighten the bracket terminal lock nuts with a torque wrench to total pretensioning torque as stated in Table B.

TABLE B: TORQUE FOR UNBLOCKABLE LOADS

MODEL	PRETENSIONING TORQUE	+	STARTING TORQUE OF TERMINAL NUTS	=	TOTAL PRETENSIONING TORQUE
CC05	2.5 IN-LBS.	+	10.0 IN.-LBS.	=	12.5 IN.-LBS.
	.282 N-M	*+*	*1.130 N-M*	=	1.412 N-M

NOTE: For cylinders with Auto Tensioners, the cables must be proof-loaded and pretensioned before pressure is applied to the AT unit.

TO REBUILD THE CYLINDER

1. Remove cable cylinder from machinery.
2. Disconnect Cable (1) from the Clevis (15) and remove Pulleys (4) on both ends of the cylinder.
3. Remove internal retaining rings (16) from both heads and remove

one head from cylinder by removing the four Socket Head Cap Screws (11)

4. Pull Piston (13) towards the open tube end and remove from Tube (10).
5. Disconnect Cables (1) from Piston (13) and pull back through the Heads (5) to remove them.
6. Install new U-cups (12) on Piston (13) and rethread new Cables (1) through Heads (5), and connect them to the Piston (13).
7. Being careful not to damage the cable, lubricate and install the Gland Seals on the Cable Assembly (1) in the Heads (5), and reinstall the retaining rings (7).
8. Push the Piston (13) back into Tube (10) by gently tucking in the U-cup (12) with a screwdriver or pencil. Mount head back on cylinder with Socket Head Cap Screws (11). Replace the Pulleys (4) and connect Cable (1) to clevis (15).
9. Operate cable cylinder back and forth by hand several times to be sure it is properly assembled before reconnecting air or hydraulic service.
10. Reinstall cable cylinder on machinery.

IMPORTANT NOTE: Apply (Blue) Loctite® #242 or equivalent to threaded cable terminal before connecting to the piston.

AP IN/OUT CABLE ASSEMBLY INSTRUCTIONS

Tolomatic cylinders with 1/2-, 3/4- and 1-inch bores are designed to allow assembly and disassembly of cables from the heads without the use of tools. This eliminates the possibility of damaging the cable or seals as well as providing for quick repair times.

Disassembly:

1. Holding onto cylinder Head (6), pull Piston Terminal (1) until Bracket Terminal (8) is against Washer (4).
2. Put a small amount of slack in Cable (7) as shown in Figure 2.
3. Impart a "snap" action to Piston Terminal (1).
4. With the imparting "snap" action, Washer (2) will release allowing the removal of the complete cable assembly.

Reassembly:

1. Holding onto cylinder Head (6), string Bracket Terminal (8) through Gland (5) until Washer (4), U-cup (3) and Washer (2) are held flush against one another by Piston Terminal (1).
2. Put a small amount of slack in Cable (7) as shown in Figure 3.
3. Impart a "snap" action to Bracket Terminal (8).
4. With the imparting "snap" action, Washer (2) will snap into Gland (5).
5. Move the cable in the opposite direction as shown in Figure 3, to verify if Washer (2) is seated in Gland (5). If not, repeat steps 1-4.

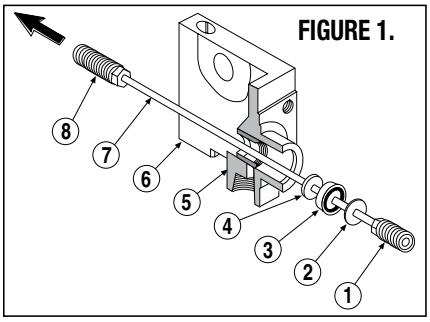
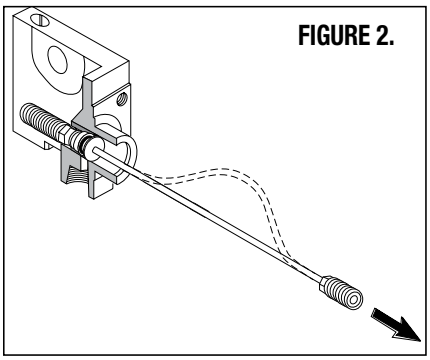
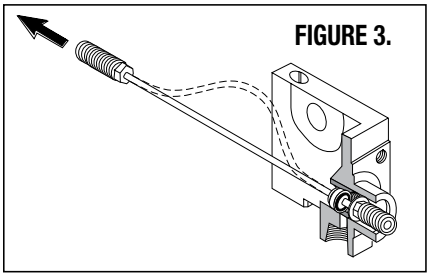


FIGURE 1.


FIGURE 2.


FIGURE 3.

MAINTENANCE

Keep the cylinder as clean as possible around pulleys, glands, etc. Pneumatic service should be adequately lubricated with SAE 10 or 20 grade non-detergent oil. Pulleys have permanently lubricated bearings and will require no maintenance. Check the cylinder's cables periodically to help prevent premature or unexpected failures.
Your Tolomatic Cable Cylinder will give you many cycles of trouble free service. However, should a leak occur, a rebuilding kit may be obtained which enables you to replace all the seals in a cylinder to return it to normal operating condition.

NOTE: Every Tolomatic Cable Cylinder has its stroke length indicated on the identification tag shipped with the cylinder. Refer to this stroke measurement when ordering replacement parts for the cable cylinder.

Should the tag be missing, measure the length of the cylinder including the heads at both ends. If there are no switches present on the cylinder, check the piston for a magnet to see if it is a Reed Switch model. If it is, consult the Tolomatic Cable Cylinder catalog dimensional drawings for "stroke-plus" length and subtract 1.62 inches for cylinders with 1/2-inch 3/4-inch and 1-inch bores and .375 inches for all larger bore Reed Switch models to determine the stroke length.

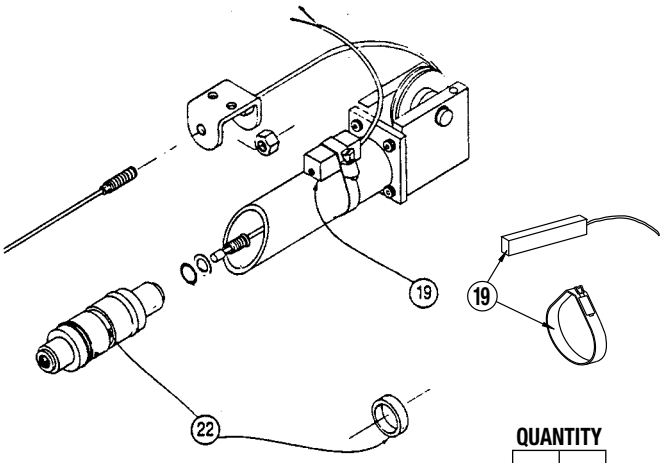
REED SWITCHES

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 Tolomatic.

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 soleniods. For shifting a solenoid, a relay or resistor is recommended between it and the switch. Switch ratings must not be exceeded at any time

	CONFIG. CODE ORDERING MOUNTING HARDWARE & FE CONN. INCLUDED	
ITEM	**CODE**	**DESCRIPTION**
19.	BT	SWITCH KIT, REED, FORM C, 5M
	BM	SWITCH KIT, REED, FORM C, QD MALE CONN.
	RT	SWITCH KIT, REED, FORM A, 5M
	RM	SWITCH KIT, REED, FORM A, QD MALE CONN.
	CT	SWITCH KIT, TRIAC, 5M
	CM	SWITCH KIT, TRIAC, QD MALE CONN.

NOTE: When ordered female connector & all mounting hardware is included



ITEM	PART NO.	DESCRIPTION	QUANTITY CC05	QUANTITY CCM05
22.	1075-1019	MAGNET		1

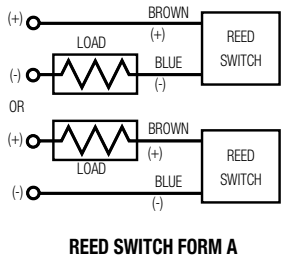
Click on Part No. to Add to Cart

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To Order Retrofit Kits
All Switch Kits come with 1 switch and mounting hardware.

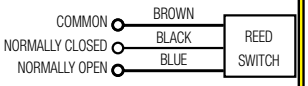
Retrofit ordering method: SWCC__RT
EXAMPLE: SWCC05RT
Switch Kit — Model — Size — Switch Type Code

Universal Switch Wiring Diagrams and Label Color Coding

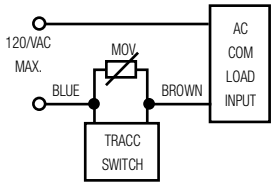


REED SWITCH FORM A
LABEL COLOR: RED
10VA MAX. 200 VDC
500MA MAX. CURRENT

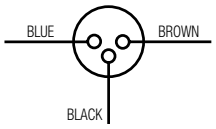
NOTE: The side of the switch with the groove indicates the sensing surface. This must face toward the magnet.



REED SWITCH FORM C
LABEL COLOR: YELLOW
120 VDC/120 VAC MAX.
250MA MAX. CURRENT



TRIAC SWITCH
LABEL COLOR: BLUE
MAX. 1AMP. CONT. CURRENT @ 86°F
MAX. .5AMP. CONT. CURRENT @ 140°F
PEAK SURGE CURRENT 10AMP.



QUICK-DISCONNECT (APPLIES TO ALL SWITCH TYPES)

An Important Note Regarding Field Retrofit of Quick-Disconnect Couplers:
If replacing a Quick-Disconnect switch manufactured before 7-1-97 it will also be necessary to replace or rewire the female-end coupler with the in-line splice

Female Connector 5M

For complete Reed and TRIAC Switch Performance Data, refer to the Tolomatic Pneumatic Products Catalog.

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Viton® is a registered trademark of the E.I. Du Pont de Newmours Co., www.dupont.com

SWITCH TYPE CODE	
BT	FORM C REED SWITCH WITH 5-METER LEAD
BM	FORM C REED SWITCH WITH 5-METER LEAD AND QD
RT	FORM A REED SWITCH WITH 5-METER LEAD

SWITCH TYPE CODE	
RM	FORM A REED SWITCH WITH 5-METER LEAD AND QD
CT	TRIAC SWITCH WITH 5-METER LEAD
CM	TRIAC SWITCH WITH 5-METER LEAD AND QD

Tolomatic™
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