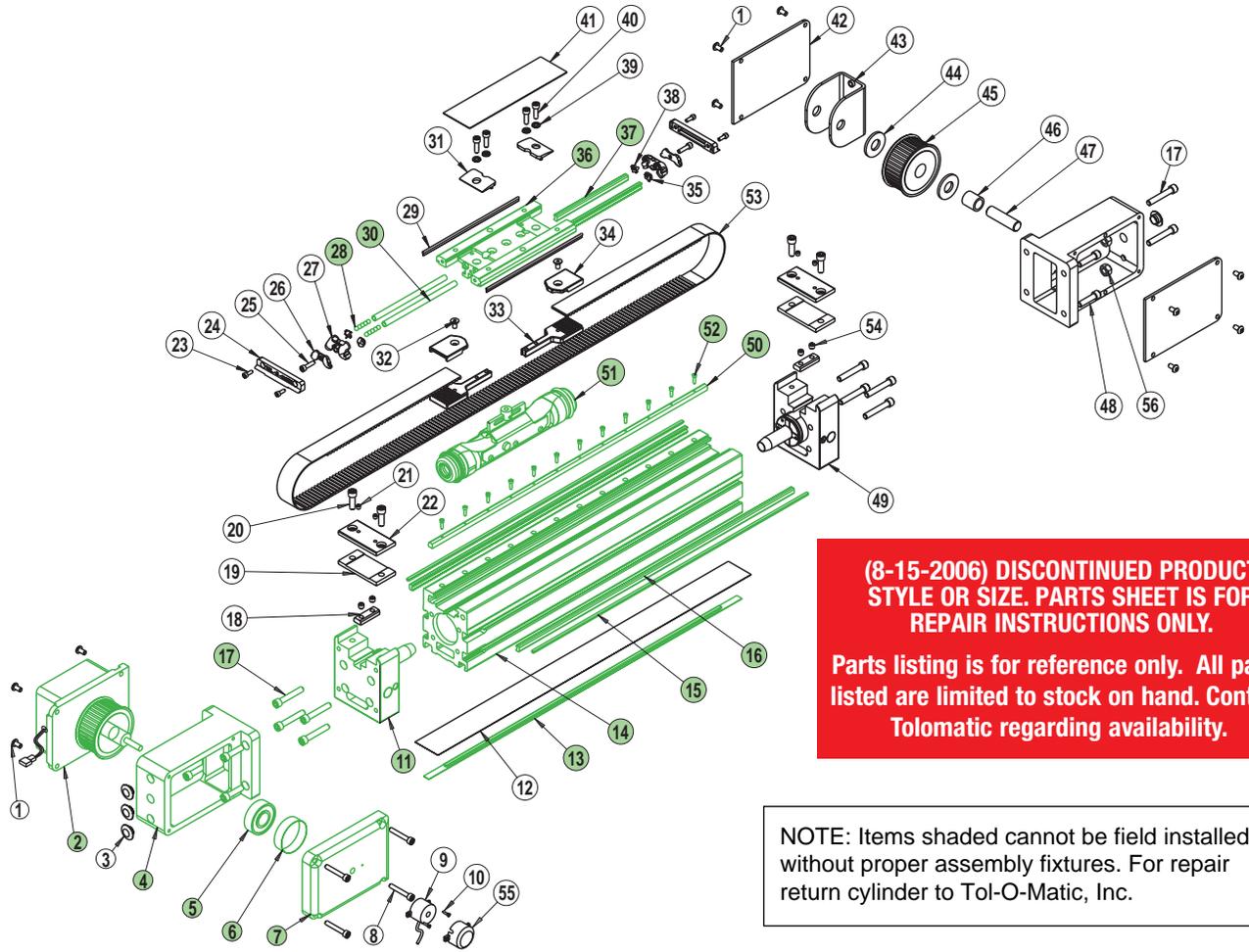




## PAS15 PrecisionAir Actuator 1-1/2 INCH BORE



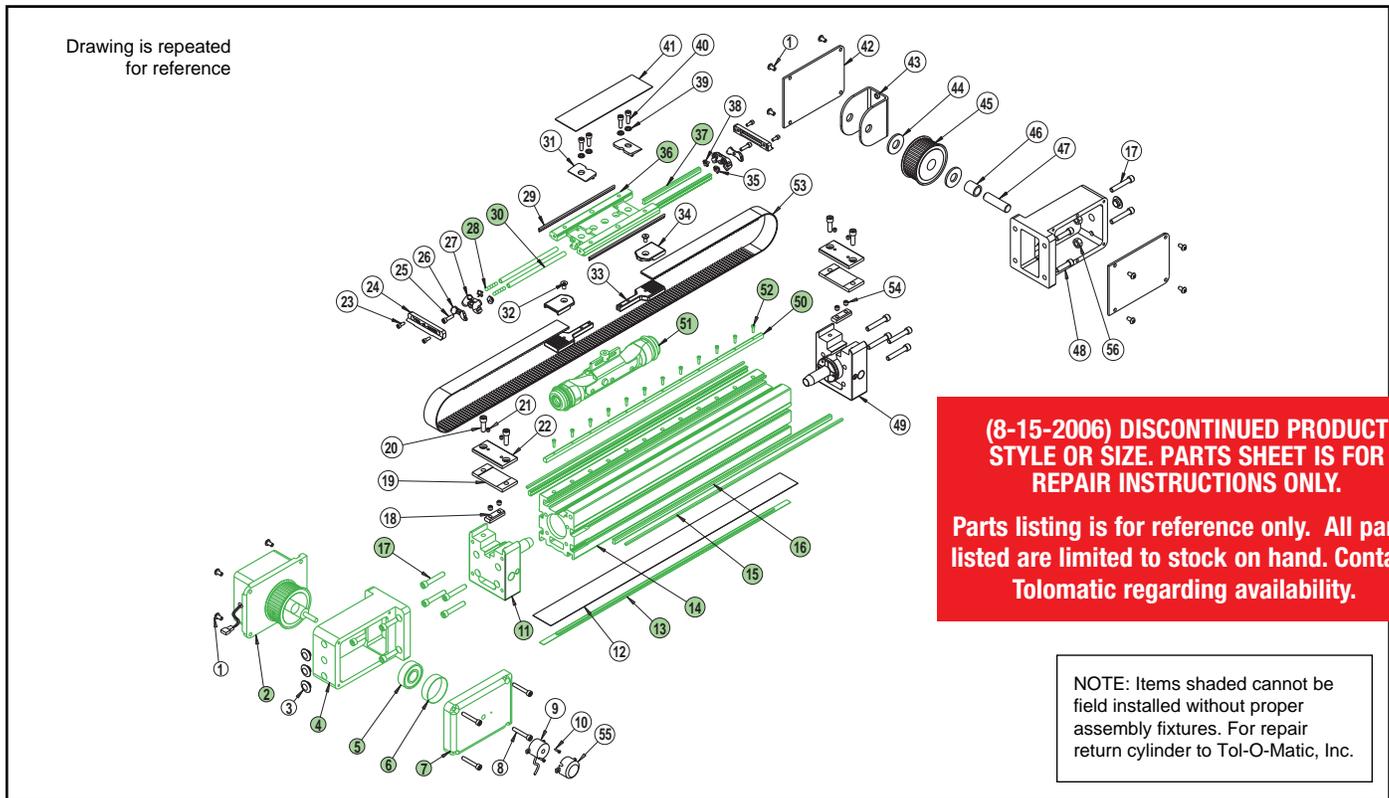
**(8-15-2006) DISCONTINUED PRODUCT  
STYLE OR SIZE. PARTS SHEET IS FOR  
REPAIR INSTRUCTIONS ONLY.**

**Parts listing is for reference only. All parts  
listed are limited to stock on hand. Contact  
Tolomatic regarding availability.**

**NOTE:** Items shaded cannot be field installed  
without proper assembly fixtures. For repair  
return cylinder to Tol-O-Matic, Inc.

Item	Part No.	Description	PAS15
1	3415-1784	BHCS, #10-24 x 0.38, BLK	4
2	3415-9318	BRAKE, PULLEY ASSY., PAS15	1
3	3415-1750	CAP PLUGS, PAS15	4
4	3415-1732	PULLEY HOUSING, PAS15	2
5	3415-1760	BRNG, BL, SPCL, ENCODER	1
6	3415-1762	RING, TOLERANCE, PAS10	1
7	3415-1770	PLATE, MOUNTING, ENCODER	1
8	0810-1201	SHCS, #10-24X1.00, BLK	4
9	3410-1722	ENCODER, 1024 LINES	1
10	1903-1018	SHCS, #2-56X0.312, BLK	2
11	3415-9304	HEAD, SUB-ASSY RIGHT	1
12	3415-1028	DUST BAND	A/R
13	0915-9016	SEAL BAND, FIN, SIL	A/R
14	3415-1758	TUBE, MACH, PAS15	1
15	3415-1022	MAGNET, BAND, CUT	2
16	3415-1023	WAY, RAIL	2

Item	Part No.	Description	PAS15
17	0915-1173	SHCS, 1/4-20X1.50, BLK	10
18	3415-1720	CLAMP, LOWER BAND, PAS15	2
19	3415-1751	CLAMP, DUST, BASE, PAS15	2
20	0803-1227	SHS, LOW HD, 1/4-20 x 0.75	4
21	2312-1028	SET SCREW, #10-24 x .25	4
22	3415-1719	CLAMP, UPPER BAND, PAS15	2
23	0910-1040	SHCS, #6-32x.38, BLK	4
24	3415-2024	CAP, END, BC315	2
25	2307-1021	SHCS, #8-32x0.63, BLK	2
26	3415-1109	PLT, BALL RETURN	2
27	3415-1014	RETURN, BALL	2
28	3415-1009	BALL, DIA .188 GR10	114
29	3415-1025	WIPER, BC315	2
30	3415-1019	TUBE, BALL RETURN	2
31	3415-1047	RAMP, BAND, UPPER	2
32	2006-1063	SFHCS, #10-24x0.38, BLK	2



Item	Part No.	Description	PAS15
33	3415-1723	CLAMP, BELT, PISTON BLOCK	2
34	3415-1724	CLAMP, BELT, PISTON BLOCK, TOP	2
35	3415-1015	RACE, BALL, RIGHT	2
36	3415-1764	CARRIER, MACH, PAS15	1
37	3415-1024	WAY, CARR	2
38	3415-1032	RACE, BALL, LEFT	2
39	3410-1048	WASHER, .221x.359x.030 THK	8
40	0707-1010	SHCS, #10-24x0.63, BLK	4
41	3415-2022	COVER, CARRIER	1
42	3415-1735	PLATE, TENSIONING SIDE	2
43	3415-1736	YOKE, TENSIONING, PAS15	1
44	3415-1730	SPACER, RING, .08	2

Item	Part No.	Description	PAS15
45	3415-9302	PULLEY, TENSIONING	1
46	0515-1024	BRNG, BL, .503 x .688 x .75	1
47	3415-1717	SHAFT, STEEL, .499x1.81	1
48	1310-1015	SHCS, 1/4-20x1.00, BLK	8
49	3415-9305	HEAD, SUB-ASY LEFT, PAS15	1
50	3415-1140	WEDGE, MACHINED	1
51	0605-1048	SHCS, #4-40x0.38, BLK	A/R
52	3415-9306	PISTON, ASSY, PAS15	1
53	3415-1744	BELT, MACH, PAS(M, MM)15	1
54	2006-1055	SET SCREW, 1/4-20x0.25	4
55	3415-1778	ENCODER COVER	1
56	2406-1027	JAM NUT	2

### Disassembly / Assembly Instructions

1. Remove cylinder from machinery. Remove any mounting hardware such as tube supports or mounting plates.

#### DUST BAND REPLACEMENT:

- Remove dust band clamp (22) by first loosening the 2 set screws (21). Remove the 2 SHCS (20) that hold the clamp to the head. Repeat for other side of cylinder.
- Remove carrier end caps (24) by taking out the 2 SHCS (23) that hold them onto the carrier (36). Remove the carrier cover (41).
- Remove the dust band (12).
- Install new dust band by laying it on the carrier and center-

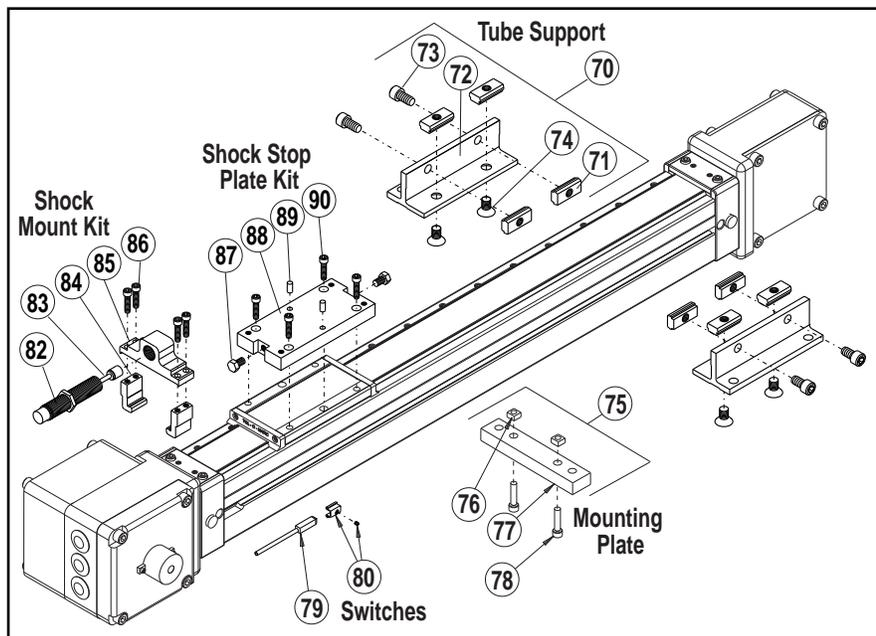
ing it along the cylinder. Replace the end caps and carrier cover, and install the dust band clamps and tighten down. Tighten down the set screws on the clamp.

#### LUBRICATE BALLWAYS

Before installing the top Dust Band (12) lubricate the ballways with Mobil HP Grease.

#### BELT REPLACEMENT:

- See instructions on dust band replacement on how to remove the dust band. This must be done before proceeding.
- Remove tensioner cover (42) from both sides of pulley



3. Loosen jam nuts (56) that are on screws (17) tightened against the tensioning yoke. Remove screws (17) and the jam nuts that are on those screws from the yoke pulley housing. These screws provide tension for the belt.
4. Remove screws (32) from both of the top belt clamps (34). Remove belt clamp (33) from carrier (36) by taking out the 4 SHCS (40) and the washers (39) underneath them.
5. Remove belt tensioner yoke (43) and pull out belt from the cylinder.
6. Take the new belt and feed it in through the tensioning yoke, and the pulley housing. Feed it through the tube and around the brake pulley on the other side. Slide the yoke back in the pulley housing.
7. Attach the belt to the belt clamps (33) and install the top belt clamp (34) with the flat head screws.

**OPTIONAL ACCESSORIES PART LISTING**

Item	PAS15 Part No.	Description	Qty.
70	3415-9006	Tube Supports Kit	A/R
71	3415-1013	T-Nut	8
72	3415-1044	Tube Support	2
73	0801-1251	SHCS	4
74	3415-1046	SFHCS	4
75	3415-9056	Mounting Plate Kit	A/R
76	3415-1013	T-Nut	2
77	3415-1332	Mounting Plate	1
78	0801-1251	SHCS	2
	3415-9013	Shock Mount Kit (Heavy Duty)	A/R
	3415-9003	Shock Mount Kit (Hardware Only)	A/R
82	0912-1068	Shock, Heavy Duty	1
83	0512-1018	Shock Stop Spacer	1
84	3415-1038	Clamping Hook	2
85	3415-1037	Shock Mount	1
86	1004-1064	SHCS	4
	3415-9004	Shock Stop Plate Kit	A/R
87	0925-1065	Impact Bolt	2
88	3415-1039	Shock Plate	1
89	0610-1044	Dowel Pin	2
90	1004-1064	SHCS	4

8. Install 2 screws (17) through the pulley housing. Start the 2 jam nuts (56) onto each screw. Screw them on far enough that they will be out of the way for tensioning the yoke. Install the 2 screws into the tensioning yoke and tighten them down to apply tension to the belt. Tension the belt evenly with both of the screws. The yoke should be sitting straight, not crooked.
9. Tighten down each jam nut against the pulley yoke. This will keep the screws from backing out over time.

**ENCODER REPLACEMENT:**

1. Remove 2 screws (10) that hold the protective aluminum housing (55). Remove protective plastic cap. Pull out slide mechanism on encoder. Loosen set screw on encoder hub. Remove the 2 SHCS (9) that hold the encoder to the mounting plate (7) and slide it off the brake shaft.
2. To install the encoder, pull out the slide. Take the encoder and slide it on the brake shaft by pressing gently against the aluminum hub. Press it down all the way to the encoder plate.
3. Tighten the set screw on the hub against the brake shaft.
4. Install and tighten down the 2 SHCS (9) that hold the encoder to the mounting plate. Press in the slide on the side of the encoder.

**Item**

79.

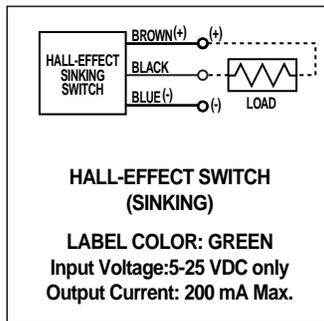
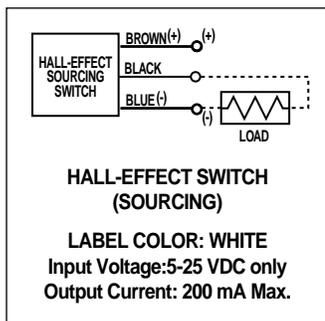
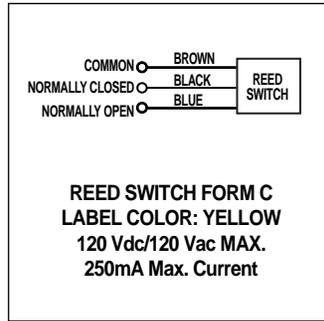
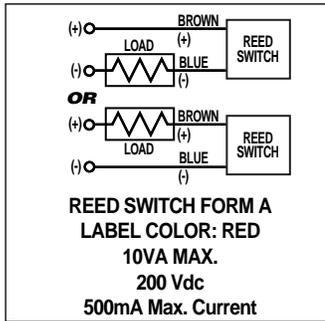
Description	SWITCH		Switch Kit number (Hardware & switch)	
	Part Number	(SWPAS15_)	Description	Description
Switch Only, Reed, Form C, 5m	3600-9084	BT	Form C, 5m lead	
Switch Only, Reed, Form C, Male Conn.	3600-9085	BM	Form C, 5m QD lead	
Switch Only, Reed, Form A, 5m	3600-9082	RT	Form A, 5m lead	
Switch Only, Reed, Form A, Male Conn.	3600-9083	RM	Form A, 5m QD lead	
Switch Only, Hall-effect, Sinking, 5m	3600-9090	KT	Hall-effect, Sinking switch, 5m lead	
Switch Only, Hall-effect, Sinking, Male Conn.	3600-9091	KM	Hall-effect, Sinking switch, 5m QD lead	
Switch Only, Hall-effect, Sourcing, 5m	3600-9088	TT	Hall-effect, Sourcing switch, 5m lead	
Switch Only, Hall-effect, Sourcing, Male Conn.	3600-9089	TM	Hall-effect, Sourcing switch, 5m QD lead	
Connector (Female) 5 meter lead	2503-1025			

SWITCH		
Item	Part No.	Description
80.	3415-9999	Switch Hardware

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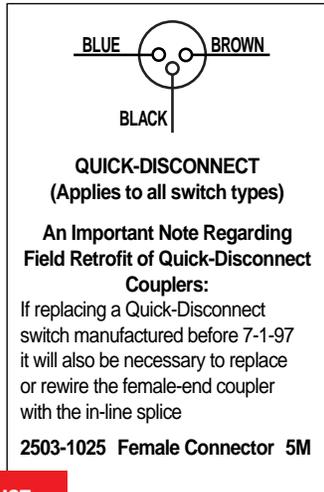
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**UNIVERSAL SWITCH WIRING DIAGRAMS AND LABEL COLOR CODING**



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

For complete Switch Performance Data, refer to the Tol-O-Matic PrecisionAire Catalog 3604-4134



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5. Install the plastic cap over the encoder. Note: There is a cut out for the wire on the cap.
6. Install the protective aluminum housing (55) with 2 screws (10).
7. Look at connector on the old encoder, and strip and install wires on the new one in the same locations on the connector.

**MAINTENANCE**

The PrecisionAire actuator should be kept as clean as possible around the bands and Carrier Bracket.

**LUBRICATION**

All Tol-O-Matic actuators are prelubricated 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 prelubrication of Tol-O-Matic 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 LD50 toxicity ratings of 35 or higher such as Multitherm® PG-1 or equivalent. Demanding conditions can require a review of the application.

**CUSHION NEEDLE ADJUSTMENT**

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 Tol-O-Matic, Inc.

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 Loctite® is a registered trademark of the Loctite Corporation, www.loctite.com  
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