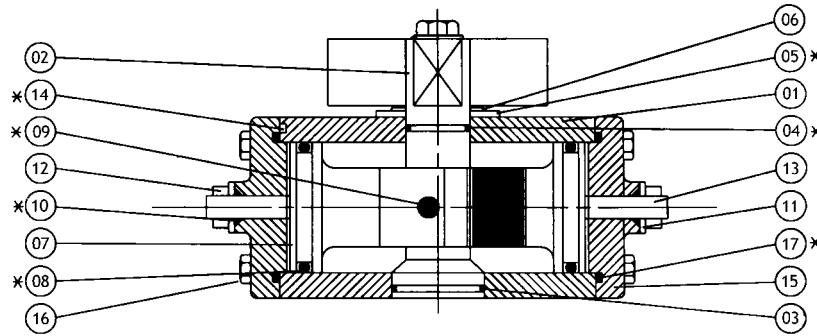


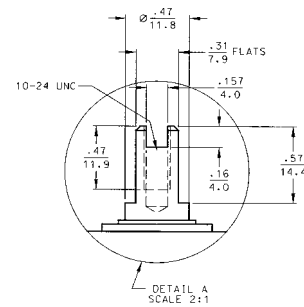
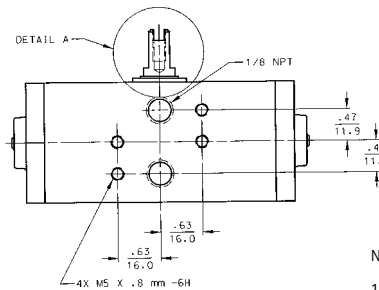
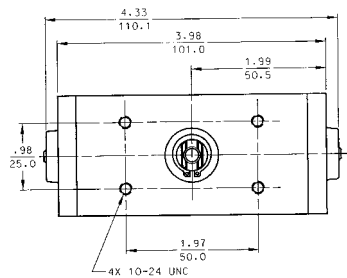
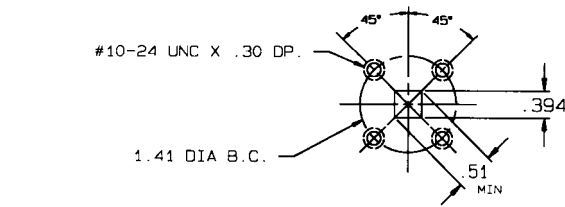
Apollo® CompactTorque™ 3TD-010-00



** Suggested spare parts; Included in repair kit
Factory lubricated with IMSCO poly U-II grease
Rebuild with High temp, disk brake, wheel bearing grease*

Actuator Temperature Limits

Nitrile (Buna) seals: -20°F to +200°F



Notes:

1. BOTTOM DIMENSIONS ARE IN mm

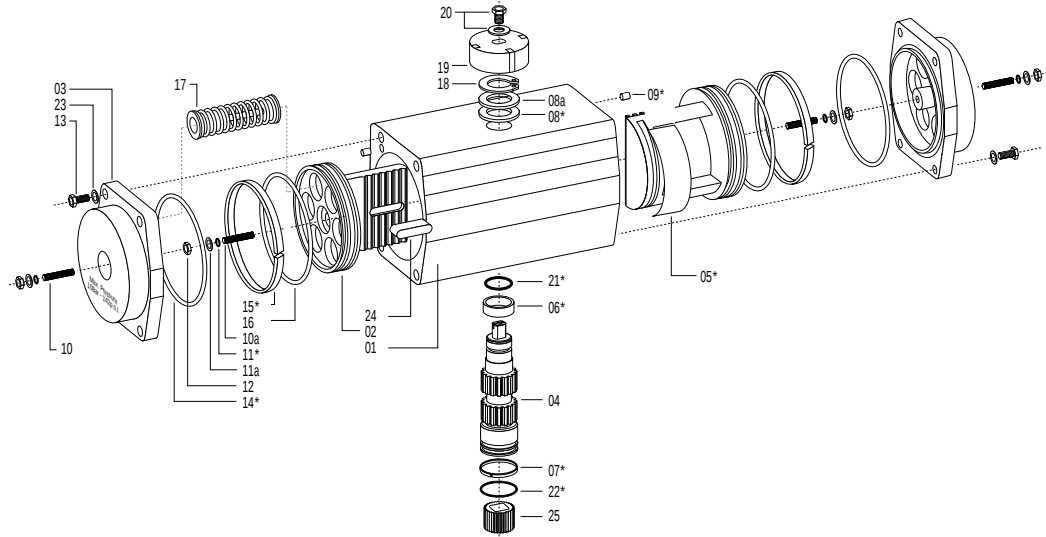
AIR SUPPLY PSIG	40	50	60	70	80	90	100	120
TORQUE Lb. In.	29.3	36.6	44	51.3	58.6	66	73.3	88

3TD-010-00 Parts List

ITEM	DESCRIPTION	MATERIAL	TREATMENT	UNIT QTY.
1	Body	Extruded Aluminum Alloy	Hard Anodized	1
2	Pinion	High Strength Alloy Steel	Nickel Plated	1
*3	O-Ring (Lower Pinion)	Nitrile (Buna-N)	N/A	1
*4	O-Ring (Upper Pinion)	Nitrile (Buna-N)	N/A	1
*5	Thrust Bearing (Pinion)	Nylon 4-6	N/A	1
6	Retaining Ring (Pinion)	Stainless Steel	N/A	1
7	Piston	Die Cast Aluminum	N/A	2
*8	O-Ring (Piston)	Nitrile (Buna-N)	N/A	2
*9	Bearing (Piston)	Nylon 4-6	N/A	2
*10	O-Ring (Adjustment Screw)	Nitrile (Buna-N)	N/A	2
11	Washer (Adjustment Screw)	Stainless Steel	N/A	2
12	Nut (Adjustment Screw)	Stainless Steel	N/A	2
13	Adjustment Screw	Stainless Steel	N/A	2
14	Left End Cap	Die Cast Aluminum	Powder Coat	1
15	Right End Cap	Die Cast Aluminum	Powder Coat	1
16	Screw (End Cap)	Stainless Steel	N/A	8
*17	O-Ring (End Cap)	Nitrile (Buna-N)	N/A	2

*Suggested spare parts; Included in repair kit (3TK-210-00).

Materials of Construction and Operation



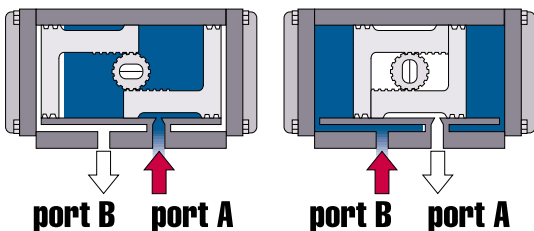
CompacTorque Part Number Designations

Part #	Unit Qty.	Part Description	Material	Specifications	Optional Materials	Protection
01	1	Body	Extruded aluminum alloy	ASTM 6063 T6		A, B, C, D, E, F
02	2	Piston	Aluminum	ASTM B179-DIN 1725/5		
03	2	End caps	Aluminum alloy	ASTM B179-DIN 1725/5		C, D, E, F
04	1	Drive shaft	Steel alloy	AISI 1144	SS	Nickel plated
05*	2	Bearing (piston back)	Nylon 46			
06*	1	Bearing (pinion top)	Nylon 46			
07*	1	Bearing (pinion bottom)	Nylon 46			
08*	1	Thrust bearing (pinion)	Polyphthalamide (PPA)			
08a	1	Thrust washer (pinion)	SS	AISI 304		
09*	2	Plug (transfer port)	Nitrile (NBR)		For extreme temperature	
10	2	Screw (ext. stroke adj.)	SS	18-8		
10a	1	Screw (int. stroke adj.)	SS	18-8		
11*	4	O-Ring (screw seal)	Nitrile (NBR)		For extreme temperature	
11a	4	Washer (seal)	SS	AISI 304		
12	4	Nut (stop adjustment)	SS	18-8		
13	8	Cap screw (end cap)	SS	18-8		
14*	2	O-Ring (end cap)	Nitrile (NBR)		For extreme temperature	
15*	2	Bearing (piston head)	Nylon 46			
16*	2	O-Ring (piston head)	Nitrile (NBR)		For extreme temperature	
17	12 (max)	Spring (cartridge)	High alloy spring steel			Polyester powder coating
18	1	Spring clip (pinion)	High alloy spring steel			Nickel plated
19**	1	Position indicator	Polyamide			
20**	1	Cap screw/washer	SS	18-8		
21*	1	O-Ring (pinion top)	Nitrile (NBR)		For extreme temperature	
22*	1	O-Ring (pinion bottom)	Nitrile (NBR)		For extreme temperature	
23	8	Washer (cap screw)	SS	18-8		
24***	2	Piston guide	Polyphthalamide (PPA)			
25	1	Universal shaft adapter	Sintered metal	FLN-4205-40	SS	

NOTES: (1) *Suggested spare parts; included in repair kit. Factory lubricated w/IMSCO poly U-11 grease. Rebuild w/ high temperature disc brake wheel bearing grease. Actuator temp. limits: Nitrile (BUNA) seals: -20°F to +200°F (2) ** Optional. (3) Model OAO Part No. 23 and 13 unit quantity is 12 pieces. (3) *** 3T 010 thru 3T 060 is cast onto piston

Diagram 3

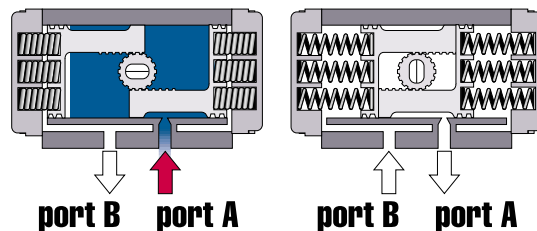
Double-Acting (TOP VIEW)



port B port A
Air supplied to port A forces pistons apart and toward end positions with exhaust air exiting at port B. (A CW rotation is obtained.)

port B port A
Air supplied to port B forces pistons toward center with exhaust air exiting at port A. (A CW rotation is obtained.)

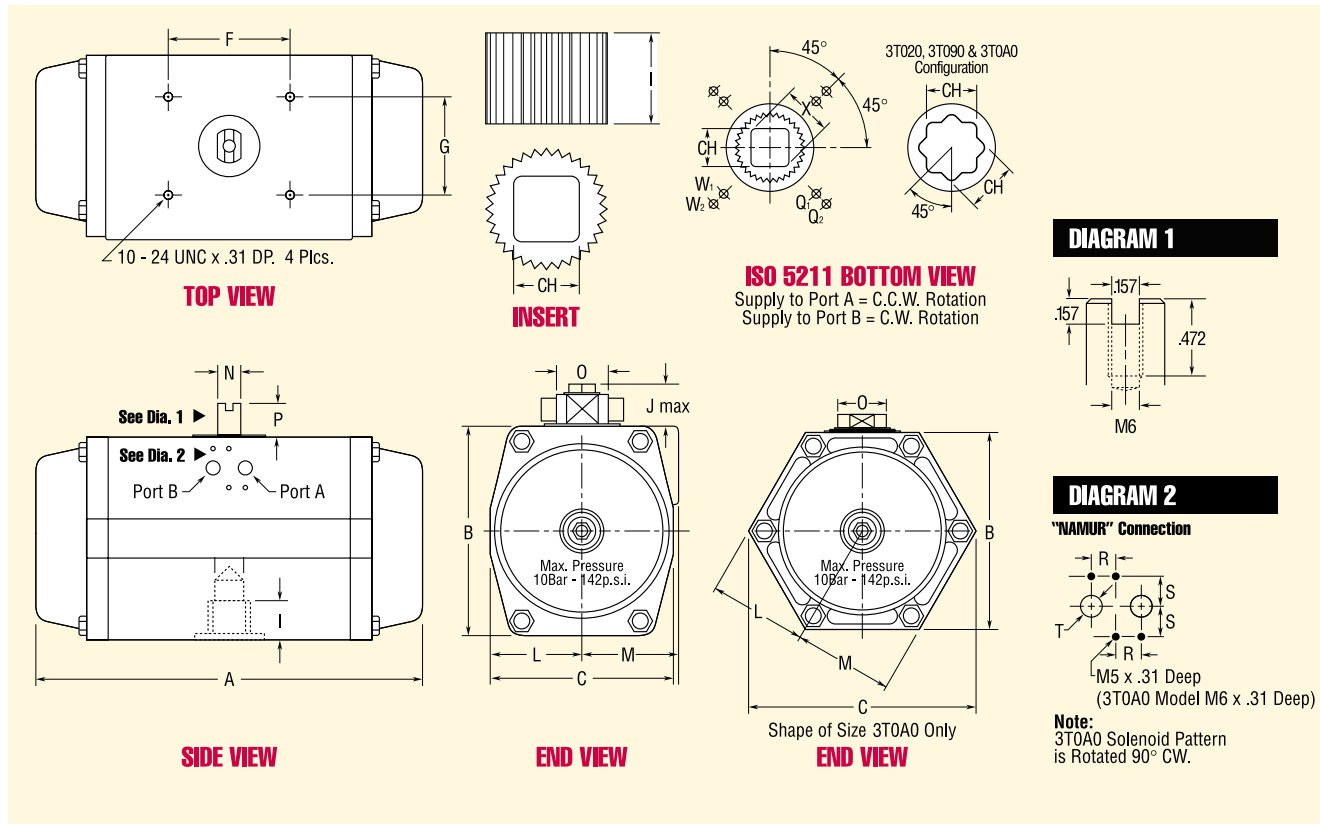
Spring Return (TOP VIEW)



port B port A
Air supplied to port A forces pistons apart and toward end position compressing springs. Exhaust air exits at port B. (A CW rotation is obtained.)

port B port A
Air or electric failure allows springs to force pistons toward center position with exhaust air exiting at port A. (A CW rotation is obtained.)

Engineering



Dimensions

	3T-20	3T-30	3T-40	3T-50	3T-60	3T-65	3T-70	3T-80	3T-90	3T-0A
A	5.30	5.98	7.95	9.05	10.66	12.13	14.17	18.18	22.60	26.93
B	2.63	3.26	3.93	4.33	4.92	5.59	6.10	7.70	9.44	13.00
C	2.28	2.87	3.34	3.85	4.33	5.04	5.51	6.92	8.66	13.78
F	1.97	3.15	3.15	3.15	3.15	5.12	5.12	5.12	5.12	5.12
G	.98	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
I	.51	.59	.748	.94	1.18	1.18	1.18	1.45	1.96	1.97
J	1.00	1.00	1.00	1.00	1.00	1.38	1.42	1.42	1.42	1.42
L	1.14	1.44	1.67	1.93	2.16	2.68	2.75	3.46	4.33	6.04
M	1.45	1.61	1.81	2.08	2.36	2.52	2.87	3.58	4.33	6.32
N	.31	.31	.55	.55	.55	1.06	1.06	1.06	1.26	2.16
O	.47	.47	.70	.70	.70	1.42	1.42	1.42	1.66	3.15
P	.78	.78	.78	.78	.78	1.18	1.18	1.18	1.18	1.18
R	.47	.47	.47	.47	.47	.47	.47	.47	.47	.65
S	.63	.63	.63	.63	.63	.63	.63	.63	.63	.75
T-NPT	1/8"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/2"
Q1-Q2 DIA B.C.	1.65	1.97	1.97-2.75	1.97-2.75	2.75-4.01	2.75-4.01	2.75-4.01	4.01-4.92	5.51	6.50
CH	.43/11mm	.43/11mm	.55/14mm	.748/19mm	.748/19mm	.86/22mm	.86/22mm	1.06/27mm	1.41/36mm	1.81
X MIN.	.55	.55	.71	.87	.87	1.11	1.11	1.42	1.89	2.46
'W1' THD x 'Y' DEEP	1/4-20X.31	1/4-20X.33	1/4-20X.39	1/4-20X.35	5/16-18X.39	5/16-18X.39	5/16-18X.39	3/8-16X.47	5/8-11X.78	3/4-10X.90
'W2' THD x 'Y' DEEP	—	—	5/16-18X.47	5/16-18X.47	3/8-16X.47	3/8-16X.47	3/8-16X.47	1/2-13X.59	—	—
ISO 5211	F04*	F05*	F05*-F07	F05-F07*	F07*-F10	F07-F10*	F07-F10*	F10-F12*	F14*	F16*

* F pattern Consistent with Conbraco's Mounting Bracket

** Alternate ISO 5211 Dimension Utilized

***Rev. B = 4.921/4.015 Dia. B.C.

OSHA Lockout Device

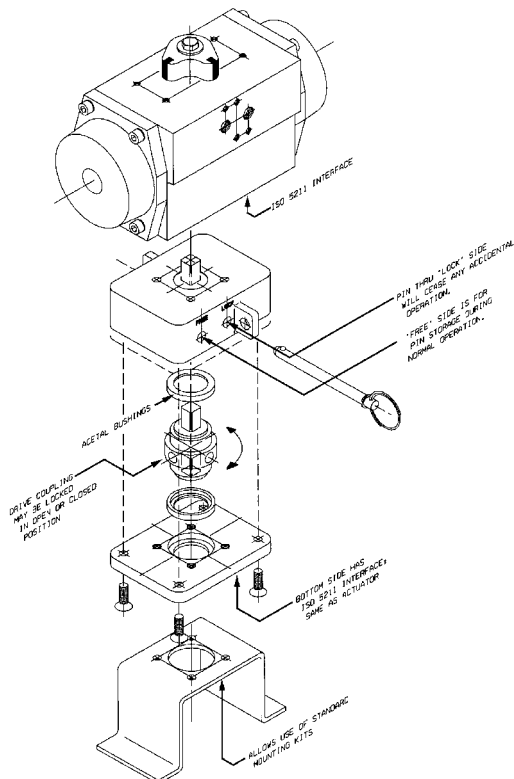
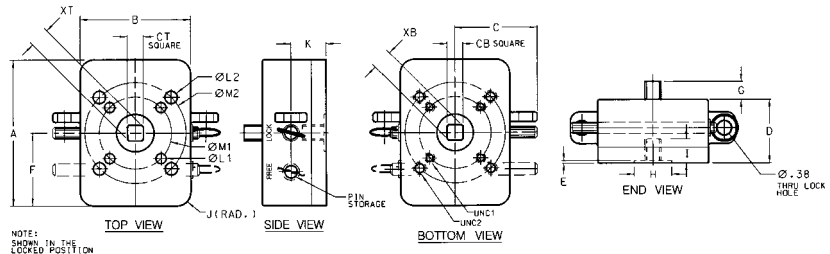
The Apollo® Lockout Tagout accessory for actuators complies with OSHA 1910.147 guidelines. It insures complete lockout capability in both the fully open or the fully closed position. Its design prevents accidental or malicious tampering of an automated valve's orientation.

The housing is constructed in investment cast 316SS, the fasteners, the lock pin, and the coupling are made of 300 Series stainless steel. This rugged construction, plus two acetal bushings located above and below the coupling, assures the strength and support necessary to withstand the torque and torsion generated by the actuator mounted above.

The top and bottom of the housing feature ISO 5211 mounting patterns. This design allows the accessory to be fitted between existing actuators and stainless steel bracketry that also comply with the ISO 5211 standard.

Available in six sizes, it is the perfect compliment to the CompacTorque Rack and Pinion Actuator and Apollo® Ball Valve. The design results in a safe automated package that will satisfy the concerns of the most discriminating safety engineer.

The lockout device may be used with electric actuators. However, caution should be exercised due to the possibility of motor burnout in an energized and locked position.



Material Specifications

HOUSING: INVESTMENT CAST 316 SS			BASE PLATE: 316 SS		DRIVE COUPLING: 303 SS	
BUSHINGS: ACETAL			LOCK PIN: 303 SS		FASTENERS: 18-8 SS	
DIMENSION	3TL3000	3TL4000	3TL5060	3TL6570	3TL8000	3TL9000
A	4.00	4.00	6.00	6.00	8.00	8.00
B	3.00	3.00	4.25	4.25	6.00	6.00
C	2.25	2.25	3.12	3.12	4.25	4.25
D	1.75	1.75	2.37	2.37	3.50	3.50
E	0.06	0.06	0.10	0.10	0.18	0.18
F	2.00	2.00	3.00	3.00	4.00	4.00
G	0.50	0.70	0.87	0.87	1.38	1.38
H	1.02	1.02	1.75	1.75	2.50	2.50
I	0.62	0.70	1.17	1.17	2.00	2.00
J(RAD.)	0.37	0.37	0.50	0.50	0.75	0.75
K	0.96	0.96	1.50	1.50	2.50	2.50
L1	0.265	0.265	0.328	0.328	0.515	0.640
L2	NA	NA	0.390	0.390	NA	NA
UNC1	1/4-20UNC	1/4-20UNC	5/16-18UNC	5/16-18UNC	1/2-20UNC	5/8-11UNC
UNC2	NA	NA	0.390	0.390	NA	NA
M1 B.C.	1.970 (F05)	1.970 (F05)	2.756 (F07)*	2.756 (F07)	4.920 (F12)	5.510 (F12)
M1 B.C.	NA	NA	4.016 (F10)	4.016 (F10)*	NA	NA
XT (MAX.)	0.540	0.690	0.955	1.080	1.325	1.780
XB (MIN.)	0.551	0.710	0.985	1.105	1.420	1.890
3T	.430/.432	.547/.550	.744/.747	.862/.865	1.056/1.059	1.413/1.416
CB	.433/.435	.551/.553	.748/.750	.866/.868	1.060/1.063	1.419/1.422
WEIGHT	3.65	3.75	9.90	10.40	28.90	29.50

*F Patterns Designated are Conbraco's Standard Mounting Arrangement