ET125 MAINTENANCE MANUAL

This guide contains maintenance instructions, replacement parts information, and information on various options.

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I. ET125 electric cylinder features:

- Ground and polished precision stainless steel rod
- Bearing support on front end of ball screw
- Combination lip and wiper seal
- Extra length rod bearing
- Polyurethane bumper on end cap
- Precision anti-rotate drive nut bearings
- Tapered roller bearings on screw
- Anti-friction ball bearing nut
- Extruded and anodized aluminum body
- Integral switch grooves on all four sides
- High quality flexible coupling
- Internal magnet (sensing target for switches)
- High performance servo motors
- Produced to hard metric ISO standards

Drives available:

- Brushed servos
- User provided (see specifications at the end of this guide)

Controls:

Microprocessor based system interfaces with computers and programmable controllers.
The APEX 640 motor with GEMINI drive from Compumotor run on the 6K software language.
The HJ155 and HJ190 motors with the COMPAX 3500M drive/controller run on the Servo-manager software from Hauser.

II. General Maintenance Procedures

Cleaning

Clean cylinder body, head, etc., using a clean cloth. Use only a mild, non-corrosive cleaning agent. Remove any sludge, deposits, or other foreign substances from the surface of the cylinder.

NOTE: ***Do not use high-pressure wash down or steam-lance type cleaning systems***

Loctite

Use precautions contained with Loctite or any other adhesive used in assembly.

Lubrication procedure

Ball nut

The ball nut will be shipped from the factory pre-lubricated, however in order to assure proper operation of the cylinder additional lubrication is necessary. The recommended lubricating frequency is 5 to 6 times over the estimated life of the unit. The recommended lubrication is the Thomson Linear Lube. The lubrication fitting and access hole are provided in the 12 o'clock position as standard unless specified differently in the part number coding.

Following is the procedure to be followed when re-lubricating the ball nut:

Remove the plug (67) from the cylinder body (29). Stroke the cylinder until the lubrication fitting (64) is directly below the hole in the cylinder body. Wipe the fitting with a clean rag. Apply the lubrication until it begins to protrude out from under the ball nut wiper.

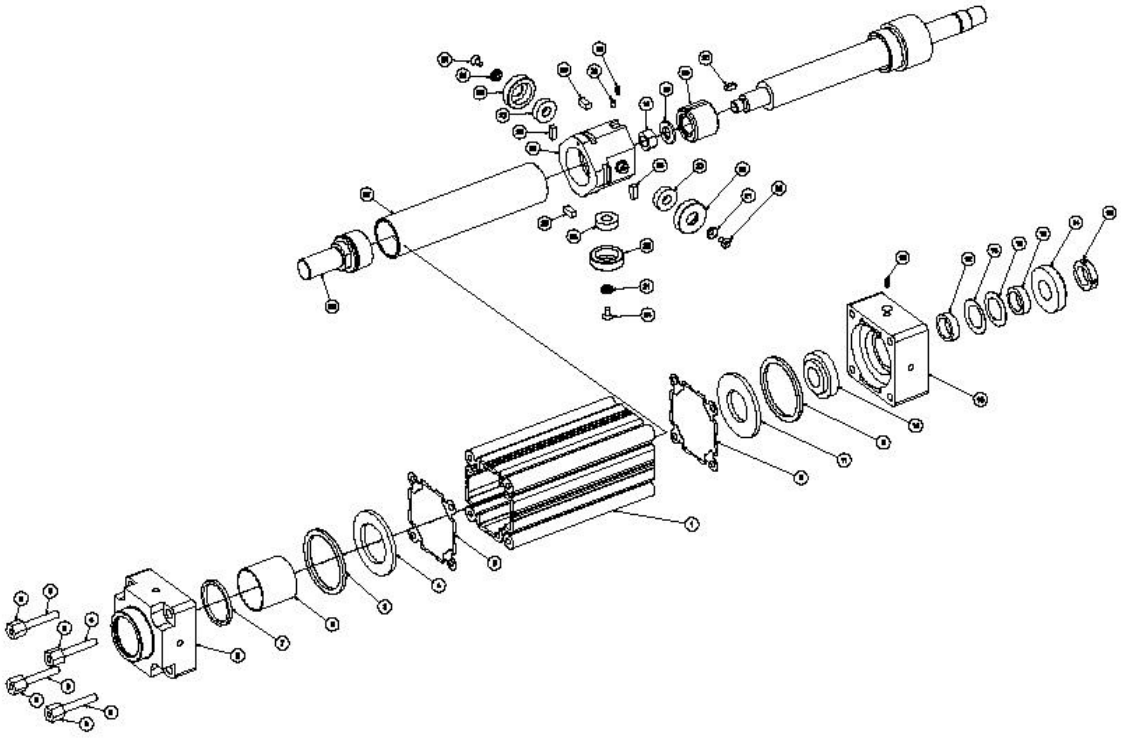
Thrust bearings

The taper roller thrust bearings in the rear end cap (7) are pre-lubricated at the factory upon assembly. Additional lubrication of these bearings is also recommended with a lubrication fitting (64) being provided in the cylinder end cap. The recommended lubrication is the Molygrease. This lubrication should be done 3 to 4 times over the actuator life. The lubrication fitting for the thrust bearings is provided standard in the 3 o'clock position.

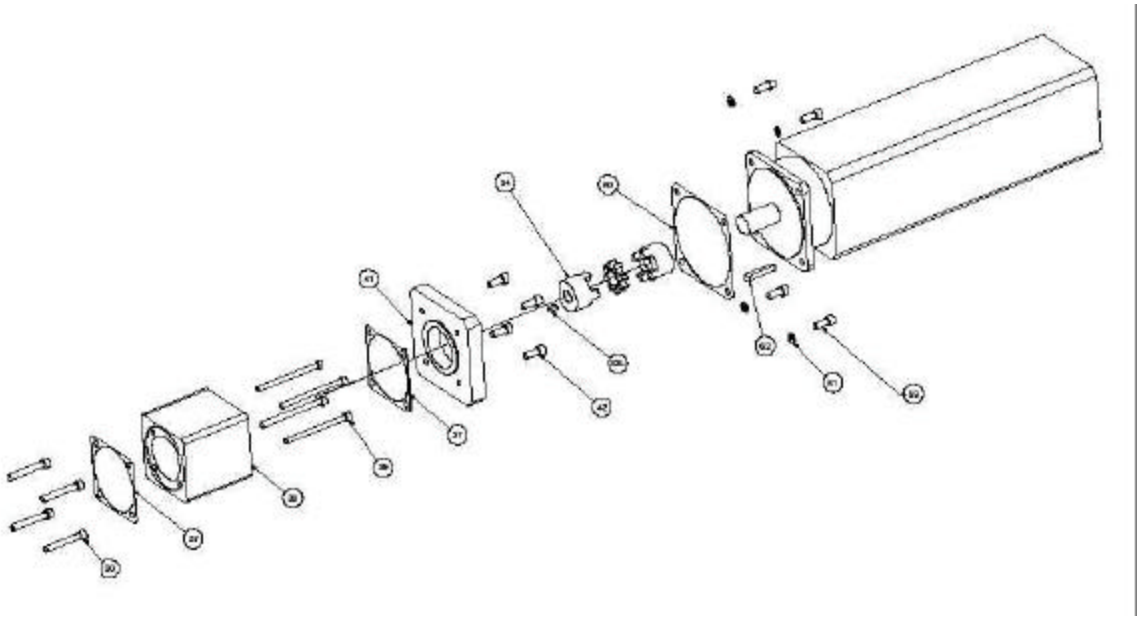
III. Exploded views

All parts in the following exploded views can be obtained through your Parker Automation Distributor or through the Automation Actuator Division.

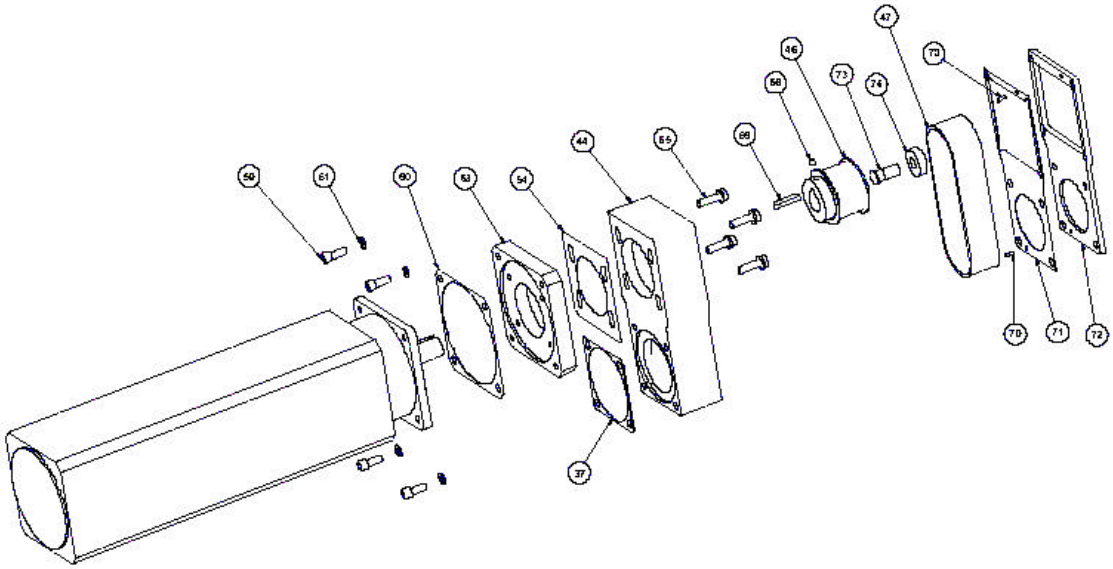
Drawing 1 – Basic Actuator Assembly



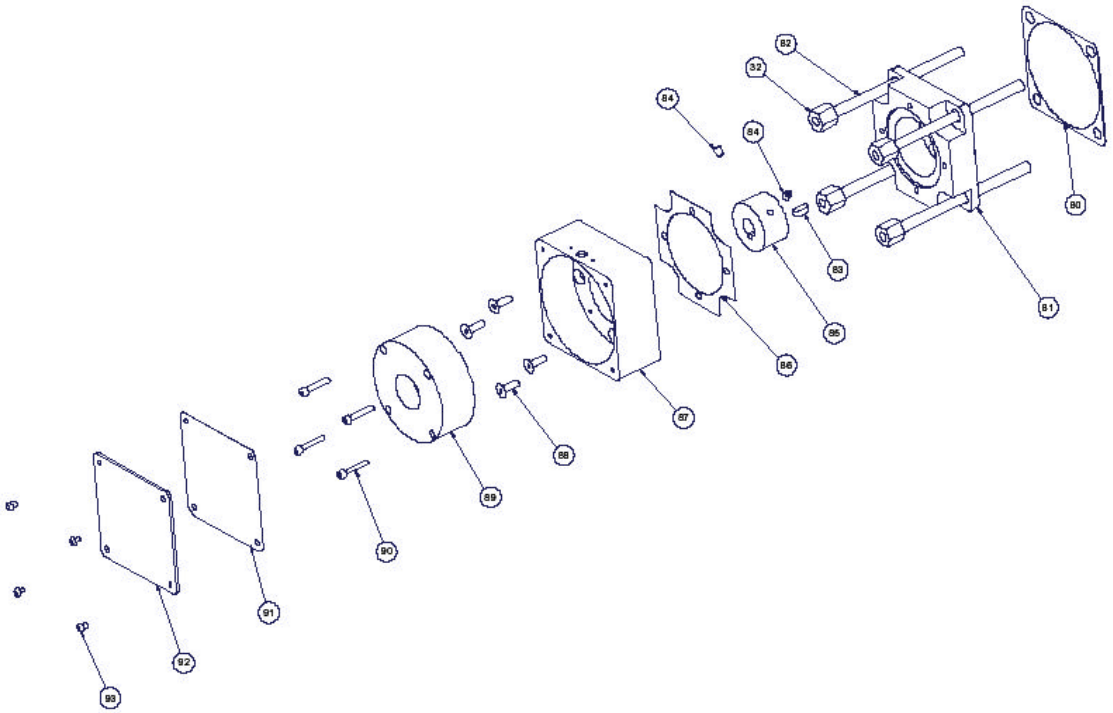
Drawing 2 – Inline Assembly



Drawing 3 – Parallel Assembly



Drawing 4 – Brake Assembly



IV. Parts list

	ET SERIES PARTS LIST		125
ITEM	**DESCRIPTION**	**QTY**	**PART NO.**
1	Head	1	ET125E01
2	Rod Bearing	1	RA368-70
3	Bumper	2	ET125M01
4	Washer	1	ET125M03
5	Snap Ring	2	NA
6	Rod Seal	1	RS453-70
7	End Cap-Standard	1	ET125E02
7T	End Cap-Trunnion Mount	1	ET125E02T
8	Screw Support Bearing	2	RA399
9	Washer	1	ET125M02
10	Drive Screw	1	TSBM****T*******
11	Bearing Locknut	1	B8975
12	Cap Screw	1	NA
13	Sleeve	1	NA
14	Screw End Bearing	1	ET125R06
15	Washer	1	ET125R09
16	Elastic Locknut	1	B3122
17	Nut Retainer	1	ET125R03
18	Roller Cover	3	ET125RCA
19	Bearing	3	ET125RCA
20	Snap Ring	3	NA
21	Bearing Retainer	3	ET125R04
22	Flat Head Cap Screw	3	CF-CM8X1.25-016-Z
23	Magnet	1	ER80M10
24	Brass Tip Set SCrew	1	SC-CM8X1.25-010
25	Cylinder Rod	1	ET125R01-*****
26M	Cylinder Rod End - M	1	ET125R05
26F	Cylinder Rod End - F	1	ET125R12
27M	Jam Nut - M	1	NHJ-CM36X2.0-Z
28	Gasket	2	ET125M04
29	Cylinder Body	1	ET125C****
30	Cap Screw (in line only)	4	CS-CM12X1.75-080
31	Tie Rod Bolt	4	B8805-M12-083
32	Tie Rod Nut	8	125-27015
33L	Key-Inline	1	B8534M8-20
33P	Key-Parallel	1	B8534M10-50
33B	Key-Brake	1	B8534M6-30
34	Coupler End Fitting - HJ190 Motor	1	RGSM383810
	Coupler Sleeve	1	RGS3898
	Coupler End Fitting	1	RGSM383008

37	Gasket	2	ET125M05
38	Motor Adapter Flange - HJ190 Motor	1	ET125E04
39	Cap Screw	4	CS-CM10X1.50-140
40	Gasket	1	N/A
41	Lg Frame Motor Flange	1	ET125E13
42	Flat Head Cap Screw	4	N/A
43	Trunion Mount	2	ET125E03
44	Parallel End Cap	1	ET125E06
45	Pulley - No Flange	1	ET125P02-34M3510
46	Pulley - Double Flange	1	ET125P01-34M3810
47	Timing Belt	1	B8868-50-80
48	Parallel Mount End Cap	1	ET125E07
49	Tie Rod Bolt	4	B8805-M12-208
50	Parallel Bearing Plate	1	ET125E10
51	Parallel Bearing Plate Gasket	1	ET125M08
52	Socket Head Cap Screw	4	CS-CM10X1.50-040
53	Lg Motor Flange Pl - HJ190	1	ET125E14
54	Parallel housing & motor transition gasket	1	ET125M09
55	Flanged & ribbed M12 HHCS	4	CH-CM12X1.75-040-R
56	M8 SHSS	2	w/pulley
59	SHCS-APEX 640 In line	4	CS-CM10X1.50-030-Z
	SHCS-HJ155	4	CS-CM10X1.50-030-Z
	SHCS-HJ190	4	CH-CM12X1.75-040-R
60	Gasket-142 Frame Motor In Line	1	ET125M11
	Gasket-155 Frame Motor In Line	1	ET125M10
	Gasket-190 Frame Motor In Line	1	ET125M31
61	Lockwasher-142 Frame Motor	4	ESF1110
	Lockwasher-155 Frame Motor	4	ESF1110
62	Key	1	w/motor
64	Zerk fitting	2	RF407
65	Spacer	2	ET125M32
66	Wave spring	2	B8978
67	Cylinder plug	1	ET125M33
68	Shaft Key	1	B8534M8-16
69	Shaft Key	2	B8534M10-50
70	Dowel pin	2	DPM-C006016
71	Gasket	1	ET125M30
72	Intermediate plate	1	ET125E50
73	Bearing shaft	1	ET125R11
74	Bearing		6204 Peer
75	Set screw		SC-CM10X1.5-010
76	Liquid Tite Seal	1	ET125M35
80	Gasket	1	ET125M05
81	Intermediate plate	1	ET125E20
82	Stud	4	B8805-M12-208
83	Key	1	w/brake
84	Set screw	2	w/brake
85	Brake Sprocket		N/A
86	Gasket	1	ET125M16

87	Brake Housing	1	ET125E33
88	Flat Head Cap Screw	4	CF-CM08X1.25-025
89	Brake	1	N/A
90	CS-CM06X1.0-035	4	CS-CM06x1.0-035
91	Gasket	1	ET125M15
92	Cover	1	ET125E22
93	CB-CM06X1.0-010	4	CB-CM06X1.0-010

Parallel Series Timing belts & pulleys			
Model	**Drive**	**Driven**	**Belt**
ETB125-**AK1**	ET125P01-34M3810	ET125P02-34M3510	B8868-50-80
ETB125-**AH1**	ET125P01-34M3210	ET125P02-34M3510	B8868-50-80
ETB125-**A81**	ET125P01-34M2408	ET125P02-34M3510	B8868-50-80
ETB125-**AD1**	ET125P01-34M4012	ET125P02-34M3510	B8868-50-80

Inline Series Coupler			
Model	**Screw Coupler**	**Motor Coupler**	**Spider**
ETB125-**LK1**	RGSM383510	RGSM383810	RGS3898
ETB125-**LH1**	RGSM383510	RGSM383210	RGS3898
ETB125-**L81**	RGSM383510	RGSM382408	RGS3898
ETB125-**LD1**	RGSM383510	RGSM384012	RGS3898

V. Torque table

This table provides torque specifications for all items requiring specific torque values. When assembling parts, make sure to use the recommended torque value listed in this table. If a torque value is not listed, use industry standard torque for the fastener/metal combinations.

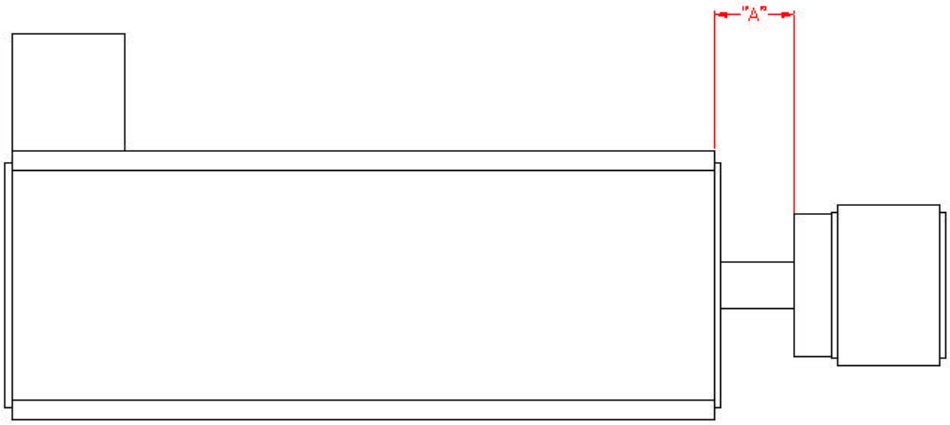
Description	Item Number(s)	Torque Specifications	
		N-m	ft-lbs
Rod Assembly	17,25,26	204	150
Roller Retainer FHSCS	22	24	18
Elastic Locknut	16	102	75
Bearing Ret. Locking SHSS	12	23	17
Cylinder Tie Bolts	31,32,30	136	100
Coupler End SHCS	34	39	29
Motor Adapter SHCS	39	77	57
HJ190 Motor SHCS	42,59	109	80
Apex 640 & HJ155 Motor SHCS	42,59	77	57
Parallel Flange Ribbed HHCS	55	136	100
Parallel Cover SHCS	52	77	57
Drive Pulley SHSS	56	23	17
Ball nut & ET125R03 assembly	17	109	80
Carriage Retainer SHSS	24	23	17
Lubrication Fitting	64	10	7
Brake Pulley SHCS	90	16	12
Brake Housing FHSS	88	23	17
Brake Cover Plate BHSCS	93	10	7

NOTE: This item number is the number used in the parts listing as well as any maintenance tasks contained in this manual.

VI. Motor coupler and pulley spacing

PROCEDURE

1. Determine type of motor (inline or parallel).
2. Referring to the appropriate illustration and specification table, assemble coupler or pulley to motor. Make sure to measure the “A” dimension from the mounting face of the motor. Do not measure off of the pilot. Assemble and tighten set screw with Loctite 242.
3. Make sure to torque motor mounting hardware as necessary (if applicable).



Motor	Parallel pulley "A" (mm)	Inline coupler "A" (mm)
APEX 640	42.25	49
APEX 640 w/ gearhead	42.25	49
HJ155G8-135	28.25	35
HJ190J8-150	28.25	35

VII. Belt Tensioning Procedure

1. Remove the rubber plug (76) in the back of the parallel housing plate (50) and back the M8 SHSS (75) off the flat of the bearing shaft (73).

2. Then remove the four socket head cap screws (52), the parallel bearing plate (50), and the gasket (51) out of the parallel housing.

3. Loosen the four flanged hex head cap screws (55). Loosen just enough to allow motor to move freely.

4. Adjust belt (47) tension. The correct deflection for the belt with finger pressure is 2.50 mm.
   - With belt tension tool
     a. Attach belt tension tool assembly (shown below) to mounting plate (53). Support the motor in the rear and then turn adjustment screw as required to properly tension the timing belt. Then tighten the flanged hex head cap screws (55).
     b. Check for proper belt tension.
   - Without belt tension tool
     a. Mount or hold the actuator rigid.
     b. Then lift up on the motor evenly until the belt has the proper tension. Tighten down the flanged hex head cap screws (55).
     c. Check for proper belt tension.

5. Visually inspect for proper seating of belt teeth in pulley grooves.

6. Torque the four flanged hex head cap screws (55). (Refer to the torque values chart located earlier in this section.)

7. Place the gasket (51) and parallel bearing plate (50) onto the parallel housing (44) with the bearing shaft sliding into the plate. Orient the bearing shaft and tighten the set screw onto the flat of the bearing plate.

8. Lift up on the parallel bearing plate (50) and keep pressure on this plate as you torque the four button head cap screws (52). (Refer to the torque values chart located earlier in this section.) This will ensure that the bearing in the pulley is providing support to the belt.