ET720 Series

Torque Controlled Pneumatic Rolling Motors

Tube & Pipe Cleaners ○ Tube Testers ○ Tube Plugs ○ Tube Removal ○ Tube Installation

Operating and Maintenance Instructions

www.elliott-tool.com

ELLIOTT®
TOOL TECHNOLOGIES

TABLE OF CONTENTS

INTRODUCTION

Thank you for purchasing this Elliott product. More than 100 years of experience have been employed in the design and manufacture of this control, representing the highest standard of quality, value and durability. Elliott tools have proven themselves in thousands of hours of trouble-free field operation.

If this is your first Elliott purchase, welcome to our company; our products are our ambassadors. If this is a repeat purchase, you can rest assured that the same value you have received in the past will continue with all of your purchases, now and in the future.

If you have any questions regarding this product, manual or operating instructions, please call Elliott at +1 800 332 0447 toll free (USA only) or +1 937 253 6133, or fax us at +1 937 253 9189 for immediate service.

SAFETY GUIDELINES

Read and save all instructions. Before use, be sure everyone using this machine reads and understands this manual, as well as any labels packaged with or attached to the machine.

⚠ CAUTION

Caution: Impact resistant protection must be worn while operating or working near this tool.

⚠ CAUTION

Caution: Personal hearing protection is highly recommended when operating or working near this tool.

- Know Your Elliott Tool. Read this manual carefully to learn your tool's application and limitations as well as the potential hazards specific to this tool.
- Keep Work Area Clean and Well Lit. Cluttered, dark work areas invite accidents.
- Dress Properly. Do not wear loose clothing or jewelry. Wear a protective hair covering to contain long hair. It is recommended that the operator wear safety glasses with side shields or a full face shield eye protection. Gloves and water repellant, nonskid footwear are also recommended. Keep hands and gloves away from moving parts.
- Use Safety Equipment. Everyone in the work area should wear safety goggles or glasses with side shields complying with current safety standards. Wear hearing protection during extended use, respirator for a confined space and a dust mask for dusty operations. Hard hats, face shields, safety shoes, respirators, etc. should be used when specified or necessary. Keep a fire extinguisher nearby.
- Use The Right Tools. Do not force a tool or attachment to do a job or operate at a speed it was not designed for.
- Use Proper Accessories. Use Elliott accessories only. Be sure accessories are properly installed and maintained.
- Check for Damaged Parts. Inspect guards and other parts before use. Check for misalignment, binding of moving parts, improper mounting, broken parts or any other conditions that may affect operation. If abnormal noise or vibration occurs, turn the tool off immediately and have the problem corrected before further use. Do not use a damaged tool. Tag damaged tools "Do Not Use" until repaired. A damaged part should be properly repaired or replaced by an Elliott service facility. For all repairs, insist on only identical replacement parts.
- Keep Hands Away from All Moving Parts.

SAFETY GUIDELINES

- Do Not Overreach. Maintain Control. Keep proper footing and balance at all times.
- Stay Alert. Watch what you are doing, and use common sense. DO NOT use a tool when you are tired, distracted or under the influence of drugs, alcohol or any medication causing decreased control.
- Maintain Tool Carefully. Keep tools sharp and clean for best and safest performance. Follow instructions for lubrication, maintenance and changing accessories.
- Maintain Labels and Nameplates. These carry important information and will assist you in ordering spare and replacement parts. If unreadable or missing, contact an Elliott service facility for a replacement.
- Some individuals are susceptible to disorders of the hands and arms when exposed to task which involve highly repetitive motions or vibration. Those individuals predisposed to vasculatory or circulation problems may be particularly susceptible. Cumulative trauma disorders such as Carpal Tunnel Syndrome and Tendonitis can be caused by repetitions, forceful exertions of the hands and arms. These disorders develop gradually over periods of weeks, months and years.
- Tasks should be performed in such a manner that the wrists are maintained in a neutral position, which is not flexed, hyper extended, or turned side to side.
- Stressful postures should be avoided and can be controlled through tool selection and work location. Any user suffering from prolonged symptoms of tingling, numbness, clumsiness or weakened grip, nocturnal pain in the hand or any other disorder of the shoulders, arms, wrists or fingers is advised to consult with a physician. If it is determined that the symptoms are job related or aggravated by movements and postures dictated by the job design it may be necessary for the employer to take steps to prevent further occurrences. These steps might include, but are not limited to repositioning the work piece or redesigning the work station, reassigning workers to other jobs, rotating jobs, altering work pace and/or changing the type of tools used so as to minimize stress on the operator. Some tasks may require more than one type of tool to obtain the optimum operator/tool/task relationship.
- The following recommendations will help reduce or moderate the effects of repetitive work motions and/or extended vibration exposure.

  a.) Use a minimum hand grip force consistent with proper control and safe operation.

  b.) Keep body and hands warm and dry.

  c.) Avoid anything that inhibits blood circulation (ie. Smoking Tobacco, Cold Temperatures, etc)

  d.) Avoid highly repetitive movements of hands and wrists, and continuous vibration exposure.
- Work gloves with vibration reducing liners and wrist supports are available from some manufactures of industrial work gloves. Tool wraps and grips are also available from a number of different manufacturers. WARNING! Proper fit gloves are important. Improperly fitted gloves may restrict blood flow to the fingers and can substantially reduce grip strength.

OPERATION INSTRUCTIONS

Operation
The Model ET720-1800 is a trigger operated rolling control with an automatic, torque controlled reversal. It is designed for use with regulated, filtered and lubricated 90 psig air (measured at the tool inlet), but can be used at lower pressures to lower the minimum torque setting if required (with some loss of free speed). The operator pulls the trigger to start the tool (before engaging the expander mandrel in soft tubes to avoid “staking”) and holds it until the entire rolling operation is completed. The tool expands to a preset torque, reverses automatically and backs out to release the mandrel. The tool stops and resets when the operator releases the trigger between tubes. If necessary, the tool can be started in reverse by unscrewing the clutch housing (3) three or four turns and pulling back gently on the tool before pulling the trigger.

Torque Adjustment
Remove clutch housing (3) (left hand thread) and spindle/clutch assembly from tool, taking care to avoid loss of push rod (25) or spring (24). Hold clutch driver (22) with a 3/8” wrench and turn the adjusting nut (7) with a 3/4” open end wrench (right hand thread). Compressing the torque spring (9) increases the torque setting. Reinstall the spindle/clutch assembly and the clutch housing (3) carefully to avoid damaging the push rod. For very light torque settings, the adjusting nut (7) can be locked to the spindle with a #8-32 x 3/16” nylon tipped set screw (not included).

Changing The Torque Regulating Spring
Remove clutch housing (3) (left hand thread) and spindle/clutch assembly from the tool. Remove the socket head cap screw and the chuck assembly (1), wave washer (4), bearing (5), c-ring (6), lock nut (7), lock washer (8) and torque spring (9) and install the correct torque spring required for the application and reassemble parts in reverse order. Make sure that the wave washer (4) is centered on the bearing guard (2) (1/4” chuck) or chuck body (1) (3/8” chuck) before securing the chuck. With the 1/4” chuck, it is important to always keep the socket head cap screw tight to avoid excessive wear to the spindle (14) and the chuck body. Set and test tool to verify that it reaches the adjusted preset torque and auto reverses properly before resuming operations - SEE CAUTION.

⚠ CAUTION

CAUTION: IF THE CLUTCH IS ADJUSTED OVER THE MAXIMUM POWER OUTPUT OF THE TOOL, THE CLUTCH WILL NOT FUNCTION AND THE TOOL WILL OPERATE LIKE A STALL TYPE TOOL. ALSO, IF THE TOOL IS BEING OPERATED AT ITS UPPER TORQUE LIMITS, A DROP IN AIR PRESSURE COULD CAUSE THE CLUTCH NOT TO FUNCTION DUE TO A LOSS OF MOTOR POWER AND THE TOOL WILL FUNCTION LIKE A STALL TYPE TOOL. OPERATIONAL CHECK: GRIP TOOL SECURELY AND BE PREPARED TO COUNTERACT STALL TORQUE IN CASE THE CLUTCH IS IMPROPERLY ADJUSTED.

OPERATION INSTRUCTIONS

Air Supply
The tool is designed to operate on 90 psig maximum air pressure. The air pressure should be checked at the tool's inlet when the tool is running. An automatic in-line filter-lubricator is required. This will sustain the tool with clean, lubricated air; keeping it in sustained operation; and increase tool life.

For maximum performance, use a 1/4" I.D. minimum air hose up to 8 feet in length. If additional length is required, a 3/8" I.D. or larger hose should be connected to the 1/4" hose (or use 3/8" I.D. hose or larger the full length).

The air hose should be cleared of accumulated dirt and moisture. Then pour one half (1/2) teaspoon of 10W machine oil into the tool's air inlet before connecting the hose to the tool. A new hose should be similarly lubricated before placing in service. The tool should be cycled several times to disperse the oil before rolling tubes.

Lubrication
The in-line lubricator should be regularly checked and kept filled with a good grade of 10W machine oil. Application of the tool should govern how frequently it is greased. It is recommended that the idler gears (30) receive a generous amount of No.2 Moly grease after every 40 hours of operation. The clutch housing (3) (left hand threads) and the clutch/spindle/driver assembly must be removed and the grease applied through the hex in the spider (28).

SERVICE INSTRUCTIONS

Disassembly
Clamp the handle (55) in a soft jawed vise and unscrew (left hand threads) the clutch housing (3) and remove the shaft/clutch assembly (6 thru 25). Pull out the push rod (25) and spring (24). Unscrew the gear case (31) from the handle assembly (55). The motor package (32 thru 42) and spool valve sub assembly (43) can now be removed from the handle assembly (55). See the following paragraphs for disassembly instructions for the various sub-assemblies.

Handle Maintenance
Unscrew the air inlet bushing (51) and remove the air inlet screen (52), spring (53) and throttle valve (54). The air inlet screen should be washed in solvent and blown out in reverse of normal air flow. Replace the screen if clogged or torn. Inspect the seal on the throttle valve (54) and replace the valve if necessary. Inspect the O-rings (49 & 50) and replace if necessary. If replacement of the trigger (44) or throttle pin (45) becomes necessary, check that the spring pin (47) will clear the back of the trigger slot before installing the pin. If there is interference, grind off enough of the throttle pin (45) so that the trigger will clear. If this is not done, the tool will not shut off when the trigger is released. Before putting the throttle valve (54) back into the tool, push the throttle pin (45) all the way forward and make sure that the notch in the end of the throttle pin is vertical so that the throttle pin will engage the throttle valve properly after assembly.

Clutch Disassembly
Disassemble the spindle/clutch assembly per instructions in CHANGING THE TORQUE REGULATING SPRING. Remove snap ring (23), clutch driver (22) and washers (20 & 21). Drive out the 1/16” x 3/8” spring pin (15) and remove the washer (10), cam (11), six balls (17), trip (16), spring bushing (19), spring (18), retaining ring (12) and clutch (13).

Gear Case Assembly
The spider w/ pins (28) should be pressed out of the rear of the gear case (31). Remove the retainer ring (26) and press the bearing (27) out of the front of the gear case (31). If replacement of the idler gear pins (30) is necessary, they should be pressed out of the rear of the spider (28). See Figure 1 for replacement pin height.

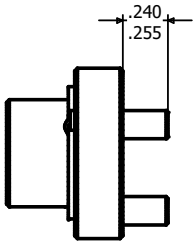


Fig. 1 - SINGLE REDUCTION SPIDER

SERVICE INSTRUCTIONS

Motor Disassembly
Slip the front bearing plate (34) and bearing (33) off the front of the rotor (37) and remove the cylinder (42) and four (4) rotor blades (36). Set the rear bearing plate assembly (43) on the vise jaws with the rotor (37) hanging down. Use a 7/32" punch to drive the rotor (37) out of the rear rotor bearing.

Reassembly In General
All parts should be washed in a solvent and inspected for damage or wear. Particular attention should be given to all bearings, gears, gear pins and rotor blades as failure of these parts could cause damage to more expensive parts. Rotor blades should be replaced if they measure less than 3/16" on either end. Inspect and replace any O-rings or seals that show signs of wear or deterioration. All gears, gear pins and open bearings should receive a generous amount of No.2 Moly grease during reassembly. When assembling the gear case to the back head, the case should be tightened to a torque of 300/325 in. lbs. (33.9/36.7 Nm). Do Not Over-tighten, as it can distort the valve assembly and cause the valve to stick. Reassembly of all of the various sub-assemblies is in the reverse order of disassembly; however, the following paragraphs list some of the more important reassembly procedures.

Clutch Assembly
During the reassembly of the spindle/clutch assembly, all parts should receive a thin coating of a mixture of 10W machine oil and No.2 Moly grease. The clutch (13), retaining ring (12), spring (18), spring bushing (19), trip (16), balls (17), cam (11) and washer (10) must be in position on the clutch shaft (14) before installing the spring pin (15). Install the spring pin (15) so it is below the surface at both ends. The installation of the balls (17) can be simplified by filling the ball slots in the clutch shaft (14) with grease if desired.

Motor Assembly
Install the rotor bearing (33) into the rear bearing plate (42). Press the rear bearing plate assembly (press the bearing's inner race) onto the rear shaft of rotor (37) until there is approximately .001" clearance between the rear bearing plate (42) and the rotor. Install the cylinder (40) with the slotted end toward the front and install 4 paddles (36). Install bearing (33) into front bearing plate (34). Press the front bearing plate assembly (press the bearing's inner race) onto the front shaft of rotor (37) until there is approximately .001" clearance between the front bearing plate (34) and the rotor. If a new rotor or complete motor assembly is to be installed, first use RC609 Loctite when installing a push rod guide (38) – with the countersunk end in first, and the other end flush with the rear of the rotor shaft.

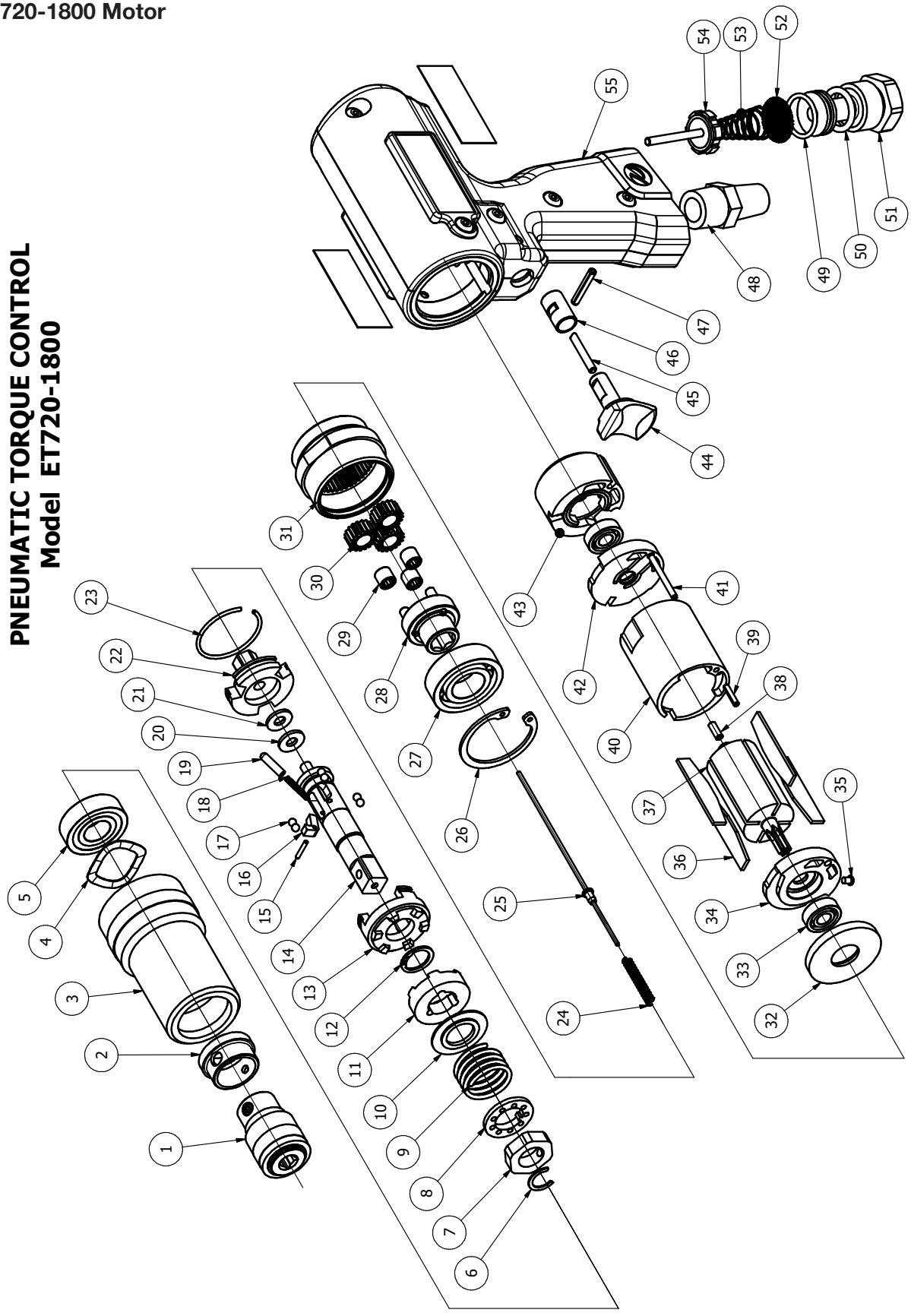
SERVICE INSTRUCTIONS

Push Rod
It is essential that the push rod be straight and that the ends be uniformly rounded and free from burrs, or erratic operation can result. The length of the push rod (25) determines the location of the valve spool when the tool is running forward and has been sized to be used without trimming in most cases. When installing a replacement push rod - before screwing on the clutch cover, make sure that the two washers (20 & 21) are in place and that the end of the push rod does not touch the end of the trip (16) when the spindle assembly is held tightly in position. If the rod must be shortened, grind uniformly off the VALVE END of the rod just enough to allow the trip to reset without interference.

Safety Check
After repair or replacement of parts, servicing or prolonged storage, the tool should be tested to verify that it reaches the adjusted preset torque and auto reverses properly.

PARTS LISTS & DIAGRAMS

ET720-1800 Motor



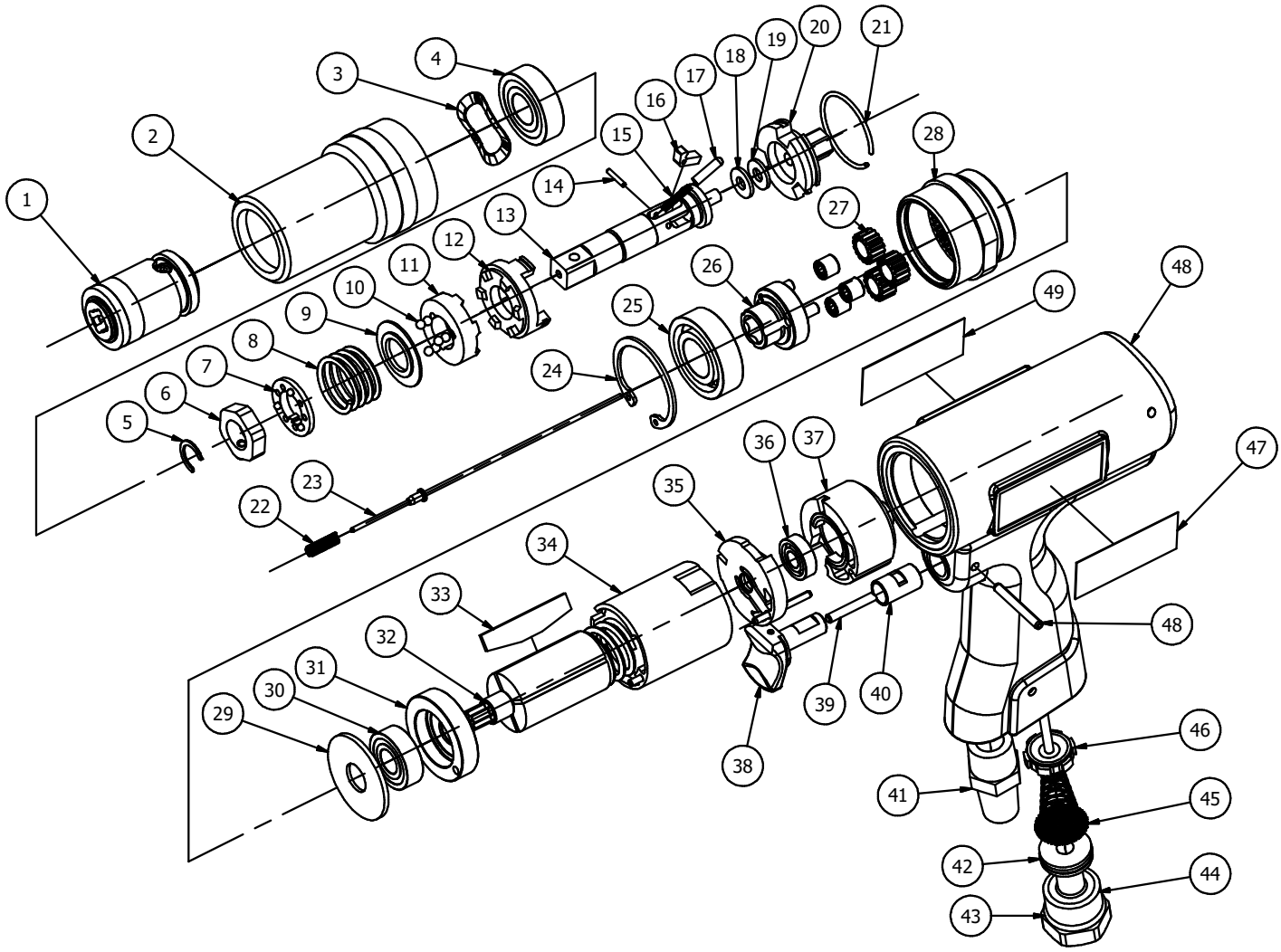
PARTS LISTS & DIAGRAMS

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ET720-025-037	QUICK CHANGE CHUCK
2	1	ET8567181	BEARING GUARD
3	1	ET8567196	CLUTCH HOUSING
4	1	41-90134A036	WAVE WASHER
5	1	PC80-6001-2RS	RADIAL BALL BEARING
6	1	P8719-43	RETAINING RING, EXTERNAL, CRESCENT, 7/16
7	1	ET3151200	LOCK NUT
8	1	ET3151000	LOCKWASHER
9	1	ET3118800	TORQUE SPRING PLAIN (2-11 INCH LBS.)
9	1	ET3150300	TORQUE SPRING YELLOW (6-30 INCH LBS.)
10	1	ET3161300	GUIDE WASHER
11	1	ET8566533	CAM
12	1	P8574-50	RETAINING RING, EXTERNAL, INVERTED, 1/2
13	1	ET8566532	DRIVE CLUTCH
14	1	ET8566867	CLUTCH SHAFT
15	1	P8688-6	SPRING PIN, 1/16 X 3/8
16	1	ET8566873	TRIP
17	6	109BA	BALL, STEEL, 1/8
18	1	ET3160995	COMPRESSION SPRING
19	1	ET3161007	SPRING BUSHING
20	1	ET8567157	SHAFT WASHER
21	1	591-15	NYLON WASHER, #10
22	1	ET8566868	CLUTCH DRIVE
23	1	596-13	SNAP RING
24	1	ET3150200	COMPRESSION SPRING
25	1	ET8567197	PUSH ROD
26	1	P8374-125	RETAINING RING
27	1	PC80-6002	RADIAL BALL BEARING

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
28	1	ET867872	GEAR SPIDER W/ PINS
29	3	PC80B2-1/2-4	RADIAL BEARING
30	3	ET867866	IDLER GEAR
31	1	ET867871	GEAR CASE
32	1	ET867873	SPACER
33	2	PC80R4	RADIAL BALL BEARING
34	1	ET867935	FRONT BEARING PLATE
35	1	P8370-7	DRIVE SCREW
36	4	ET863738	PADDLE
37	1	ET867885	ROTOR
38	1	ET8567145	PUSH ROD GUIDE
39	1	P8381-7	SPRING PIN, 3/32 X 7/16
40	1	ET867936	CYLINDER
41	1	P8381-16	SPRING PIN, 3/32 X 1
42	1	ET867937	REAR BEARING PLATE
43	1	ET720VCSA	VALVE CASE / SPOOL ASSEMBLY
44	1	ET867054	TRIGGER
45	1	ET867939	THROTTLE PIN
46	1	ET867054B	TRIGGER BUSHING
47	1	P8382-12	SPRING PIN, 1/8 X 3/4
48	1	41-4450K3	MUFFLER
49	1	P8309-016	O-RING, 1/16 X 5/8
50	1	P8309-11	O-RING, 3/32 X 9/16
51	1	ET867929	AIR INLET
52	1	41-9317T132	AIR INLET SCREEN
53	1	ET3132300	TAPERED SPRING
54	1	ET869350	THROTTLE VALVE
55	1	ET720PGHA	PISTOL GRIP HANDLE ASSEMBLY

PARTS LIST & DIAGRAMS

ET720-2500 Motor



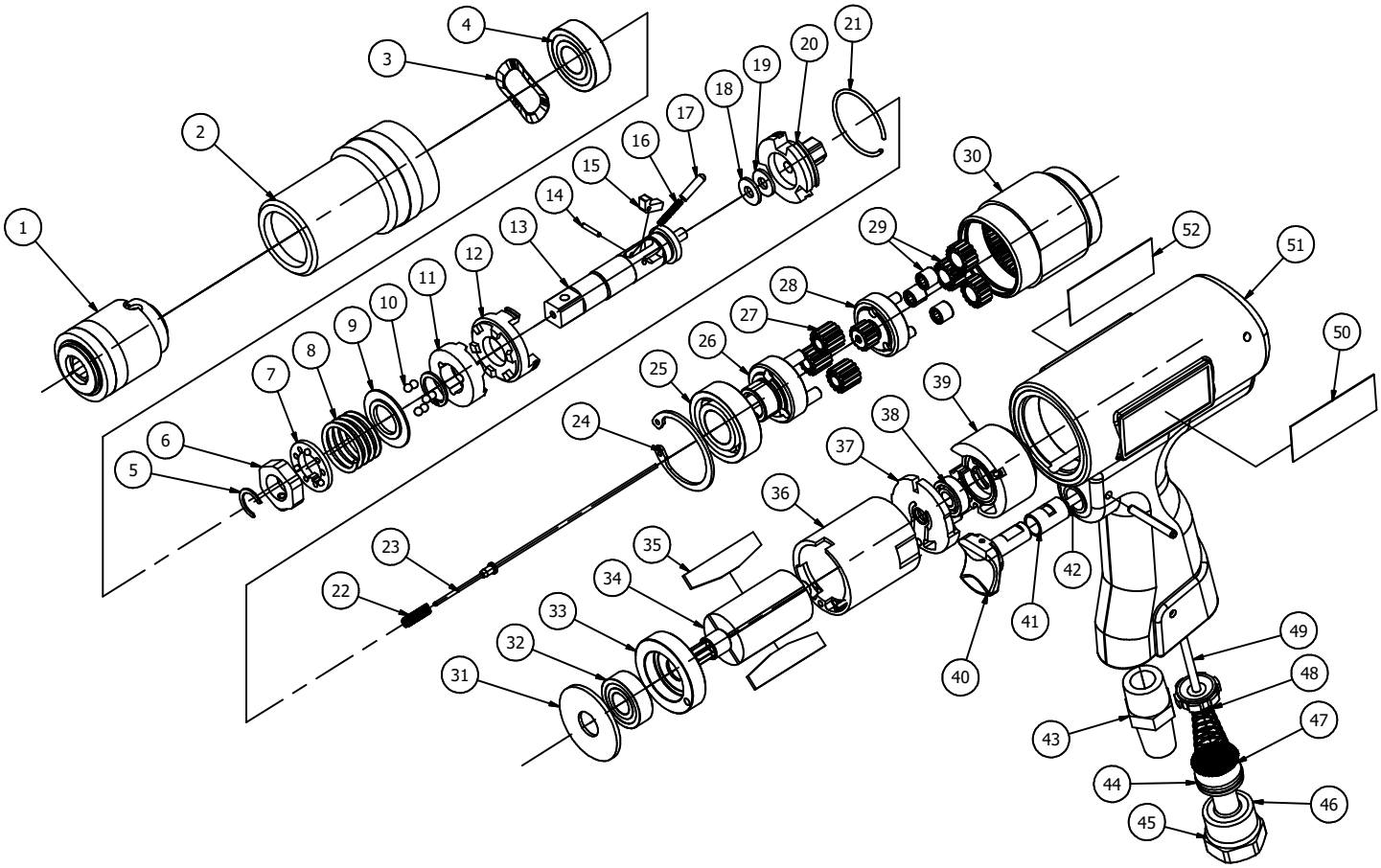
PARTS LIST & DIAGRAMS

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ET720-025-037	QUICK CHANGE CHUCK
2	1	ET8567196	CLUTCH HOUSING
3	1	41-90134A036	WAVE WASHER
4	1	PC80-6001-2RS	RADIAL BALL BEARING
5	1	P8719-43	RETAINING RING, EXTERNAL, CRESCENT, 7/16
6	1	ET3151200	LOCK NUT
7	1	ET3151000	LOCKWASHER
8	1	ET3118800	TORQUE SPRING PLAIN (2-11)
9	1	ET3161300	GUIDE WASHER
10	6	109BA	BALL, STEEL, 1/8
11	1	ET8566533	CAM
12	1	ET8566532	DRIVE CLUTCH
13	1	ET8566867	CLUTCH SHAFT
14	1	P8688-6	SPRING PIN, 1/16 X 3/8
15	1	ET3160995	COMPRESSION SPRING
16	1	ET8566873	TRIP
17	1	ET3161007	SPRING BUSHING
18	1	ET8567157	SHAFT WASHER
19	1	591-15	NYLON WASHER, #10
20	1	ET8566868	CLUTCH DRIVE
21	1	596-13	SNAP RING
22	1	ET3150200	COMPRESSION SPRING
23	1	ET8567197	PUSH ROD
24	1	P8374-125	RETAINING RING
25	1	PC80-6002	RADIAL BALL BEARING
26	1	ET869182	GEAR SPIDER W/ PINS
27	3	ET869181	IDLER GEAR
28	1	ET867871	GEAR CASE

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
29	1	ET869180	SPACER
30	1	PC80R6	RADIAL BALL BEARING
31	1	ET869179	FRONT BEARING PLATE
32	1	ET869178	ROTOR ASSEMBLY
33	4	ET863738	PADDLE
34	1	ET867936	CYLINDER
35	1	ET867937	REAR BEARING PLATE
36	1	PC80R4	RADIAL BALL BEARING
37	1	ET720VCSA	VALVE CASE / SPOOL ASSEMBLY
38	1	ET867054	TRIGGER
39	1	ET867939	THROTTLE PIN
40	1	ET867054B	TRIGGER BUSHING
41	1	41-4450K3	MUFFLER
42	1	P8309-016	O-RING, 1/16 X 5/8
43	1	P8309-13	O-RING, 3/32 X 11/16
44	1	ET867929	AIR INLET
45	1	41-9317T132	AIR INLET SCREEN
46	1	ET869350	THROTTLE VALVE
47	1	ETTLBL1800A	ELLIOTT LOGO LABEL
48	1	ET720PHA	PISTOL HANDLE ASSEMBLY
49	1	ET720LBL3	ET720-2500 LABEL
50	1	P8574-50	RETAINING RING, EXTERNAL, INVERTED, 1/2
51	1	ET3132300	TAPERED SPRING
52	1	ET3150300	TORQUE SPRING YELLOW (6-30)
53	1	ET720PK-1	PNUEMATIC TORQUE CONTROL CENTER FOAM (NOT SHOWN)
54	1	ET720PK-2	PNEUMATIC TORQUE CONTROL TOP/BOTTOM FOAM (NOT SHOWN)
55	1	ET720B	PNEUMATIC TORQUE CONTROL BOX (NOT SHOWN)

PARTS LIST & DIAGRAMS

ET720-550 Motor



PARTS LIST & DIAGRAMS

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ET720-037-037	QUICK CHANGE CHUCK
2	1	ET8567196	CLUTCH HOUSING
3	1	41-90134A036	WAVE WASHER
4	1	PC80-6001-2RS	RADIAL BALL BEARING
5	1	P8719-43	RETAINING RING, EXTERNAL, CRESCENT, 7/16
6	1	ET3151200	LOCK NUT
7	1	ET3151000	LOCKWASHER
8	1	ET3118800	TORQUE SPRING PLAIN (2-11)
9	1	ET3161300	GUIDE WASHER
10	6	109BA	BALL, STEEL, 1/8
11	1	ET8566533	CAM
12	1	ET8566532	DRIVE CLUTCH
13	1	ET8566867	CLUTCH SHAFT
14	1	P8688-6	SPRING PIN, 1/16 X 3/8
15	1	ET8566873	TRIP
16	1	ET3160995	COMPRESSION SPRING
17	1	ET3161007	SPRING BUSHING
18	1	ET8567157	SHAFT WASHER
19	1	591-15	NYLON WASHER, #10
20	1	ET8566868	CLUTCH DRIVE
21	1	596-13	SNAP RING
22	1	ET3150200	COMPRESSION SPRING
23	1	ET8567198	PUSH ROD
24	1	P8374-125	RETAINING RING
25	1	PC80-6002	RADIAL BALL BEARING
26	1	ET867906	GEAR SPIDER W/PINS
27	3	ET867904	2ND REDUCTION GEAR
28	1	ET869259	FIRST STAGE SPIDER W/PINS
29	3	ET869258	IDLER GEAR

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
30	1	ET867907	GEAR CASE
31	1	ET869180	SPACER
32	1	PC80R6	RADIAL BALL BEARING
33	1	ET869179	FRONT BEARING PLATE
34	1	ET869178	ROTOR ASSEMBLY
35	4	ET863738	PADDLE
36	1	ET867936	CYLINDER
37	1	ET867937	REAR BEARING PLATE
38	1	PC80R4	RADIAL BALL BEARING
39	1	ET720VCSA	VALVE CASE / SPOOL ASSEMBLY
40	1	ET867054	TRIGGER
41	1	ET867054B	TRIGGER BUSHING
42	1	ET867939	THROTTLE PIN
43	1	41-4450K3	MUFFLER
44	1	P8309-016	O-RING, 1/16 X 5/8
45	1	P8309-13	O-RING, 3/32 X 11/16
46	1	ET867929	AIR INLET
47	1	41-9317T132	AIR INLET SCREEN
48	1	ET3132300	TAPERED SPRING
49	1	ET869350	THROTTLE VALVE
50	1	ETTLBL1800A	ELLIOTT LOGO LABEL
51	1	ET720PHA	PISTOL HANDLE ASSEMBLY
52	1	ET720LBL2	ET720-550 LABEL
53	1	P8574-50	RETAINING RING, EXTERNAL, INVERTED, 1/2
54	1	ET3150400	TORQUE SPRING GREEN (25-75)
55	1	ET3150300	TORQUE SPRING YELLOW (6-30)
56	1	ET720PK-2	PNEUMATIC TORQUE CONTROL TOP/BOTTOM FOAM (NOT SHOWN)
57	1	ET720PK-1	PNEUMATIC TORQUE CONTROL CENTER FOAM (NOT SHOWN)
58	1	ET720B	PNEUMATIC TORQUE CONTROL BOX (NOT SHOWN)

WARRANTY

Should any part, of Seller's own manufacture, prove to have been defective in material or workmanship when shipped (as determined by Seller), Seller warrants that it will, at its sole option, repair or replace said part f.o.b., point of manufacture, provided that Buyer notifies, in writing, of such defect within twelve (12) months from date of shipment from the manufacturing plant.

On request of Seller, the part claimed to be defective will be returned, transportation, insurance, taxes and duties prepaid, to the factory where made, for inspection. Any item, which has been purchased by Seller, is warranted only to the extent of the original manufacturer's warranty to Seller.
Seller shall not be liable for any damages or delays caused by defective material or workmanship.

No allowance will be made for repairs or alterations made by others without Seller's written consent or approval. If repairs or alterations are attempted without Seller's consent, Seller's warranty is void.

THE WARRANTIES PROVIDED IN THE OBLIGATIONS AND LIABILITIES OF SELLER HEREUNDER, AND THE RIGHTS AND REMEDIES OF BUYER HEREUNDER ARE EXCLUSIVE AND IN SUBSTITUTION FOR, AND BUYER HEREBY WAIVES ALL OTHER WARRANTIES, GUARANTEES, OBLIGATIONS, CLAIMS FOR LIABILITIES, RIGHTS AND REMEDIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY FOR MERCHANTABILITY AND FITNESS FOR PURPOSE.

Seller's total liability is limited to the lower of the cost of repair or replacement.

This page intentionally left blank.

Contact Us

Elliott Tool offers a complete line of precision tube tools to meet your needs. Contact us or your local support.

Elliott Tool Technologies, Ltd.
1760 Tuttle Avenue
Dayton, Ohio 45403-3428
Phone: +1 937 253 6133 • +1 800 332 0447
Fax: +1 937 253 9189
www.elliott-tool.com

Locally Supported By:

www.elliott-tool.com/support

Printed in the USA

TM-133
PL-116