

RECON 2500

Tube Leak Test Gun - Pressure



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



Operating and Maintenance Instructions

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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.

The RECON 2500 Tube Leak Test Gun has been designed for the following types of equipment:

Heat Exchangers

Condensers

Chillers

Evaporators

Air Conditioners

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 tool reads and understands this manual, as well as any labels packaged with or attached to the machine.

CAUTION

Operators should always wear safety glasses and a face shield when operating this tool.

CAUTION

Pinching Hazard located between Backup Washer and Cylinder Nose. Do not place fingers in this location during operation.

- CAUTION: Pinching Hazard located between Backup Washer and Cylinder Nose. Do not place fingers in this location during operation.
- CAUTION: Operators should always wear safety glasses and a face shield when operating this tool.
- Prior to testing, the tubes should be cleaned and any loose deposits or scale should be removed. If the tubes have not been cleaned any foreign materials present may be ejected during the testing operation and may damage the test guns or injure the operators.
- Use Proper Accessories. Use Elliott accessories only. Be sure accessories are properly installed and maintained.
- 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.

GENERAL INFORMATION

RECON Series 2500 (TTP2500) Kit Includes:

Tube Leak Test Gun Set – Pressure

Support Tube Assembly (TTPST4)

Washers to support up to 2.456" (62.4mm) Seals (BW1700, BW2090, BW2600)

Tool Case

Start-Up

If the tubes have been chemically cleaned, please check with Elliott Tool regarding the compatibility of the test gun seals with the cleaning agent.

Range	Support Tube Assembly Part Number	Support Tube	Washer Set
1.240" - 1.630" (31.5 mm - 41.1 mm)	TTPST4	TTPST4	BW1700
1.640" - 2.030" (41.6 mm - 51.6 mm)	TTPST5	TTPST4	BW2090
2.040" - 2.456" (51.8 mm - 62.4 mm)	TTPST6	TTPST4	BW2600

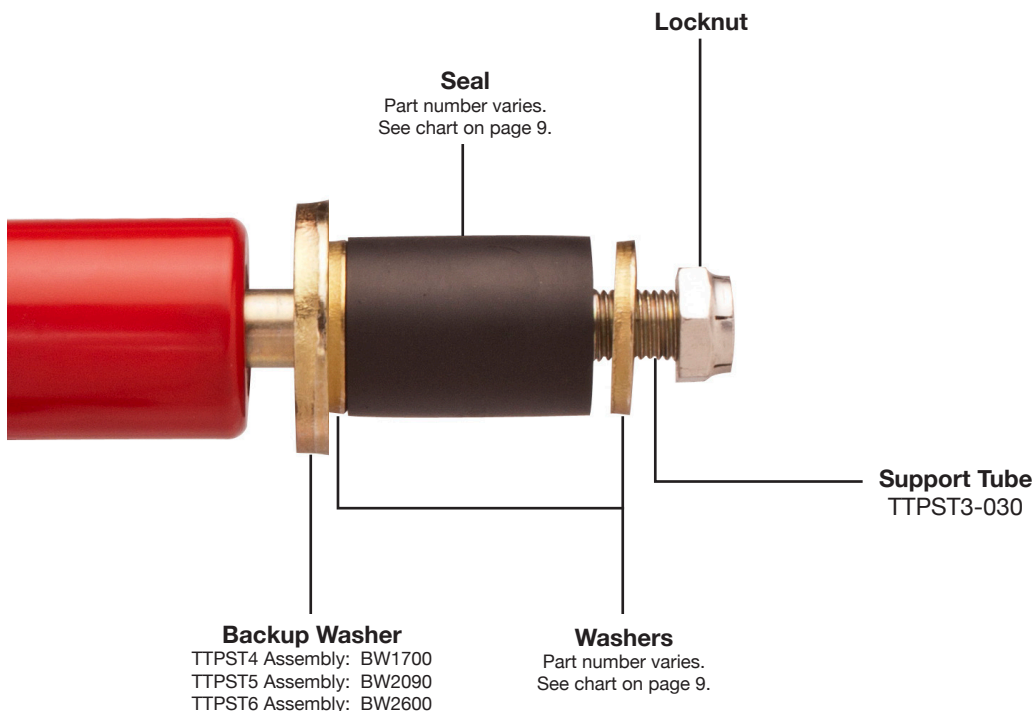
Make sure the test guns have the correct size Seal and Washer Set on them for the tubes being tested (see chart above). Seal and washer sets contain two seals and four washers. The seals and washers are considered to be correctly sized if the OD of the seal is between 0.030" to 0.050" (0.76 mm to 1.27 mm) smaller than the actual tube ID. Using seals that are too small may cause the following: premature seal wear, jamming of the test gun in the tube, or expulsion of the test gun from the tube end. Using seals that are improperly sized may cause inability to pull a vacuum on tube end.

GENERAL INFORMATION

Installing Replacement Seals

Replacement seals for the RECON 2500 test guns are always supplied with the corresponding size washers. Always replace the seals and washers on both guns at the same time. Under optimum testing conditions you should be able to test between 500 to 1000 tubes per replacement Seal and Washer set.

1. Remove the locknut from the end of the Support Tube and set it aside.
2. Remove the Seal and Washer Set from the Support Tube. Discard if worn.
NOTE: If you are changing the Seal and Washer Set to test a different size tube, it may be necessary to change the back-up washer as well.
3. Assemble the Support Tube and Seal and Washer Set as shown below.
NOTE: When replacing the locknut on the support tube do not use a wrench, screw it on finger tight only. A small space between the locknut, seal and washer set, and back-up washers is normal. There will be enough stroke in the air cylinder to compensate for this space.



Other Replacements and Repairs

Under no conditions should you attempt to service the air cylinders. Any attempt will void any and all remaining warranties, implied or otherwise.

OPERATION INSTRUCTIONS

The RECON 2500 Test Guns come as a set. This set is comprised of: an air injection gun and a plugging gun. The air injection gun can be differentiated from the plugging gun because it incorporates the valve block and air regulator.

1. Attach air supply to both guns. The RECON 2500 test guns will be operational on plant air supplies ranging from 40 to 125 psi (2.7 to 8.6 Bar) at a minimum of 5 cfm. The maximum test pressure of the tube is dependent on the tube ID and the air supply pressure (see Table 1).
2. On the air injection gun, turn the adjusting nut on the air regulator counterclockwise to set the tube testing pressure to zero.
3. Insert the air injection gun into one end of the tube to be tested and the plugging gun into the other end. The seal should be fully into the tube and the backup washer should be against the tube end.
4. Press the the top button for actuating the cylinder of the air injection gun, and press the air control valve on the plugging gun and hold until the guns are firmly held in the tubes. Release both buttons.
5. Press the the bottom button for pressurizing the tube on the air injection gun and adjust the air regulator clockwise until the desired tube test pressure is achieved (use Table 1 for maximum tube test pressures available).
NOTE: The air pressure regulator must be readjusted if testing different size tubes or if air supply pressure changes.
6. Both injection gun and plugging gun operators should observe the pressure gage on their respective guns. Any decrease in the pressure will indicate a leaking tube.
7. Press the bleed valve on the injection gun between the gage and the cylinder body to bleed off the air pressure in the tube. After the tube test pressure has bled to zero, press the bleed valve on both guns to release the pressure in the cylinder and relax the seals.
8. Remove the test guns and move on to the next tube. Mark each leaking tube encountered for repair. The total operation should be completed in 5 to 10 seconds. Your actual testing time will depend on the amount of time you choose to hold the pressure test.
9. Repeat steps 3 through 8 for each tube to be tested.

Nominal Tube Size	Air Supply Pressure - PSI				
	40	60	80	100	125
	Maximum Test Pressure - PSI				
1-1/4"	40	60	80	100	125
1-1/2"	30	40	50	60	75
1-3/4"	20	30	40	50	60
2	15	20	25	30	35
2-1/4"	10	15	20	25	30
2-1/2"	5	10	15	20	25

TABLE 1 – Maximum Tube Test Pressure Versus Air Supply Pressure And Tube ID

SEAL SETS & SUPPORT TUBES

RECON 1250 & 2500 Seal Sets							
Tube OD	BWG						
	8-9	10-11	12-13	14-15	16-17	18-19	20-24
1/2" (12.7mm)	-	-	TTPS250	TTPS300	TTPS340	TTPS370	TTPS400
5/8" (15.9mm)	TTPS270	TTPS340	TTPS370	TTPS440	TTPS470	TTPS500	TTPS530
3/4" (19.1mm)	TTPS400	TTPS440	TTPS500	TTPS530	TTPS590	TTPS620	TTPS650
7/8" (22.2mm)	TTPS530	TTPS590	TTPS620	TTPS690	TTPS720	TTPS750	TTPS780
1" (25.4mm)	TTPS650	TTPS690	TTPS750	TTPS800	TTPS840	TTPS870	TTPS900
1-1/8" (28.6mm)	TTPS780	TTPS840	TTPS870	TTPS940	TTPS970	TTPS1000	TTPS1030
1-1/4" (31.75mm)	TTPS900	TTPS940	TTPS1000	TTPS1070	TTPS1090	TTPS1120	TTPS1150
1-3/8" (34.9mm)	TTPS1050	TTPS1090	TTPS1120	TTPS1190	TTPS1230	TTPS1250	TTPS1280
1-1/2" (38.1mm)	TTPS1150	TTPS1190	TTPS1250	TTPS1310	TTPS1340	TTPS1370	TTPS1400
1-5/8" (41.3mm)	TTPS1280	TTPS1340	TTPS1370	TTPS1440	TTPS1470	TTPS1500	TTPS1530
1-3/4" (44.5mm)	TTPS1400	TTPS1470	TTPS1500	TTPS1550	TTPS1590	TTPS1620	TTPS1650
2" (50.8mm)	TTPS1650	TTPS1700	TTPS1750	TTPS1800	TTPS1840	TTPS1840	TTPS1900
2-1/4" (54.0mm)	TTPS1900	TTPS1950	TTPS2000	TTPS2050	TTPS2090	TTPS2120	TTPS2150
2-1/2" (63.5mm)	TTPS2150	TTPS2200	TTPS2250	TTPS2290	TTPS2340	TTPS2370	TTPS2400

Seal sets contain two seals and four washers. Seal sets TTPS250 through TTPS440 contain 4 seals and 4 washers. Standard seal material is neoprene. Seals are backwards-compatible.

Replacement Support Tube Sets & Optional Extensions					
Tube ID Range	4" (Std.) (101.6mm) Part #	12" (305mm) Part #	24" (610mm) Part #	36" (914mm) Part #	48" (1,219mm) Part #
0.282"-0.510" (7.2-13mm)	TTPST1	TTPST1-12	TTPST1-24	TTPST1-36	TTPST1-48
0.532"-0.856" (13.5-21.7mm)	TTPST2	TTPST2-12	TTPST2-24	TTPST2-36	TTPST2-48
0.857"-1.230" (21.8-31.2mm)	TTPST3	TTPST3-12	TTPST3-24	TTPST3-36	TTPST3-48
1.240"-1.630" (31.5-41.4mm)	TTPST4	TTPST4-12	TTPST4-24	TTPST4-36	TTPST4-48
1.640"-2.030" (41.6-51.6mm)	TTPST5	TTPST5-12	TTPST5-24	TTPST5-36	TTPST5-48
2.040" - 2.456" (51.8-62.4mm)	TTPST6	-	-	-	-

For larger seal and washer sizes, contact factory. Support Tubes are backwards-compatible. Extensions for TTPST6 available upon request.

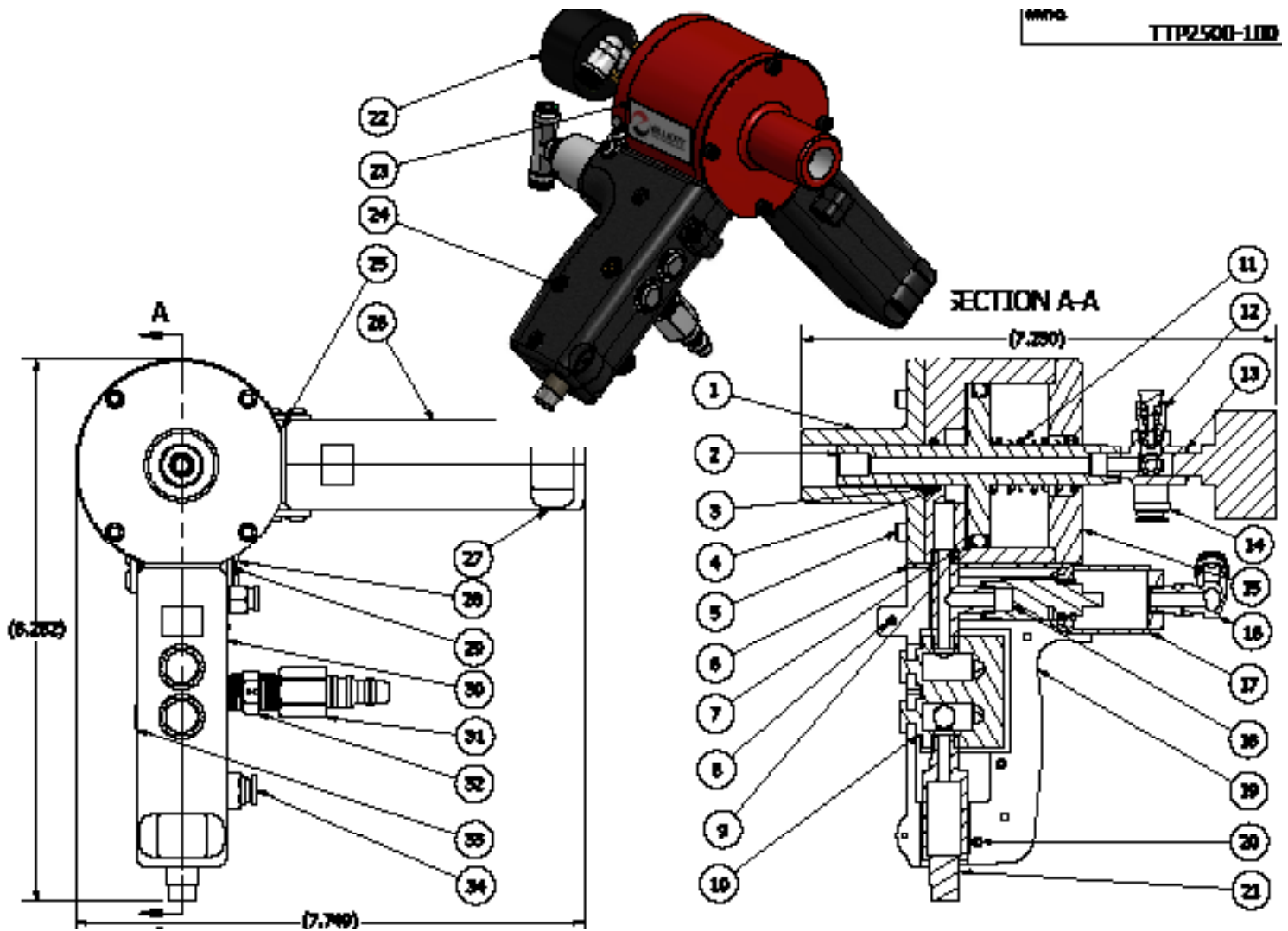
TUBE LEAK TEST GUN - PRESSURE

TTP2500-100

ITEM #	PART DESCRIPTION	NO. REQ	PART NUMBER
1	CYLINDER NOSE	1	TTP2500-120
2	PISTON	1	TTP2500-123
3	O-RING, AS568 - 114	1	P8309-12
4	CYLINDER BODY	1	TTP2500-121
5	SOCKET HEAD CAP SCREW, #8-32 X 3/4	8	P8302-20
6	GASKET	1	TTP2500-140
7	PIPE TEE	1	TTP2500-185
8	BUTTON HEAD CAP SCREW	2	TTP2500-178
9	O-RING, AS568 - 330	1	P8309-330
10	VALVE BLOCK	1	TTP2500-187
11	SPRING	1	37-72190
12	BLEED VALVE	2	TTP1250-177
13	ADAPTER TEE	1	TTP2500-174
14	ELBOW	1	TTP2500-161
15	CYLINDER CAP	1	TTP2500-122
16	TEE	1	TTP2500-163
17	VALVE ACTUATOR	1	TTP2500-176
18	POPPET VALVE	1	TTP2500-175
19	HANDLE HALF	1	TTP2500-150
20	BUTTON HEAD CAP SCREW	4	TTP1250-173
22	PRESSURE GAUGE	1	TTP2500-190
21	PRESSURE REGULATOR	1	TTP2500-179
23	LABEL	1	ETTLBL1800A
24	ELASTIC LOCKNUT, #4-40	6	546GSS
25	GASKET	1	TTP2500-141
26	HANDLE HALF	1	TTP2500-153
27	HANDLE HALF	1	TTP2500-152
28	BUTTON HEAD CAP SCREW	8	TTP1250-170
29	SUPPORT BRACKET	4	TTP1250-171
30	HANDLE HALF	1	TTP2500-151
31	1/4 NIPPLE	1	41-6534K56
32	CHECK VALVE	1	TTP2500-164
33	1/8 NPT PLUG	1	P548015
34	MALE CONNECTOR	1	TTP2500-162
35	LABEL (NOT SHOWN)	1	TTP2500LBL-1
36	TUBING (NOT SHOWN)	12	41-5156K87
37	THREADED STUD (NOT SHOWN)	1	TTP2500-138
38	NEEDLE ROLLER (NOT SHOWN)	4	P8573-17

TUBE LEAK TEST GUN - PRESSURE

TTP2500-100



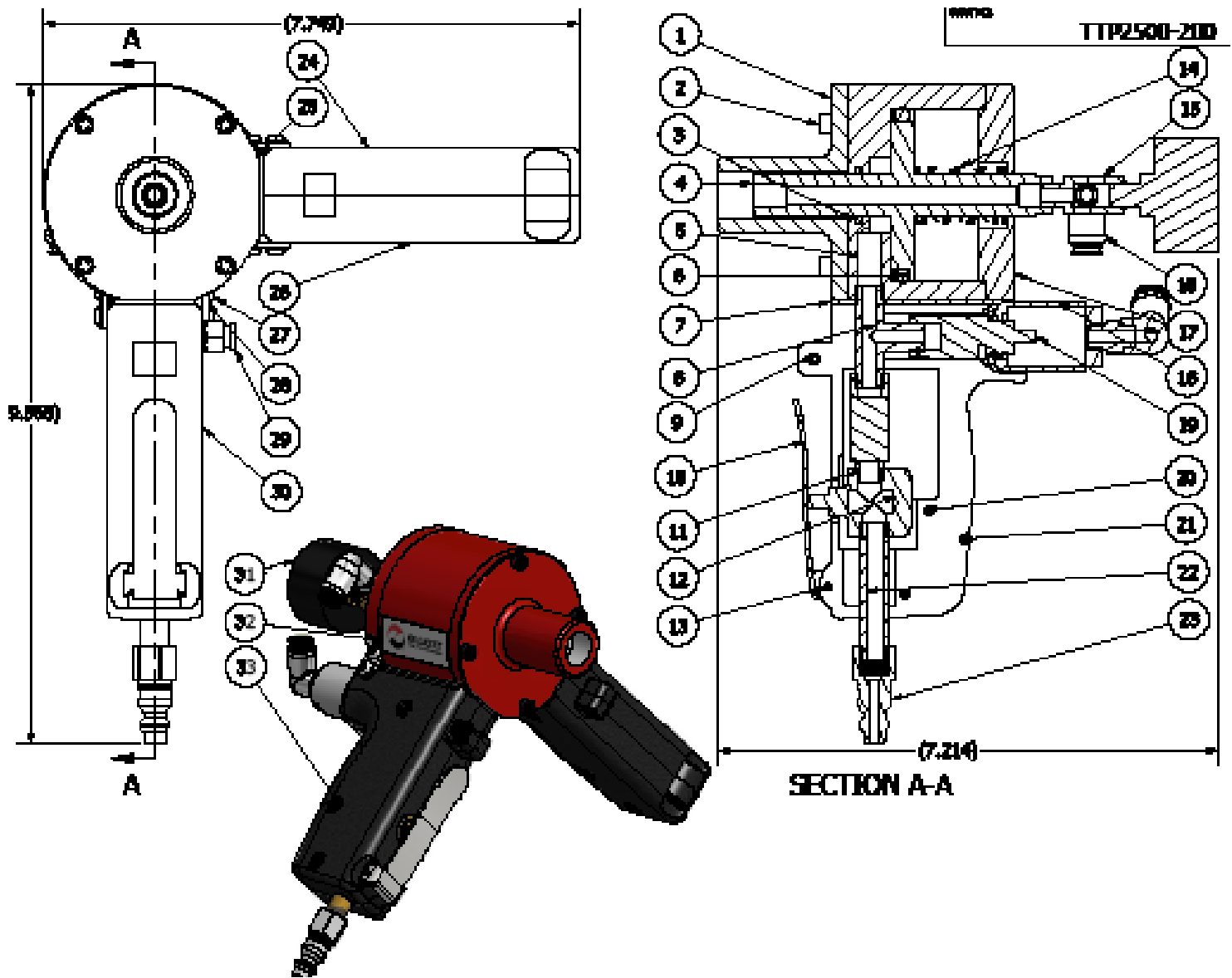
TUBE LEAK TEST GUN - PRESSURE

TTP2500-200

ITEM NO.	PART NAME	NO. REQ	PART NUMBER
1	CYLINDER NOSE	1	TTP2500-120
2	SOCKET HEAD CAP SCREW, #8-32 X 3/4	8	P8302-20
3	O-RING, AS568 - 114	1	P8309-12
4	PISTON	1	TTP2500-123
5	CYLINDER BODY	1	TTP2500-121
6	O-RING, AS568 - 330	1	P8309-330
7	GASKET	1	TTP2500-140
8	PIPE TEE	1	TTP2500-185
9	BUTTON HEAD CAP SCREW	2	TTP2500-178
10	LEVER	1	TTP1250-160
11	CHECK VALVE	1	TTP2500-275
12	BUTTON VALVE	1	TTP1250-176
13	SPRING PIN, 3/32 X 7/8	1	P8381-14
14	SPRING	1	37-72190
15	ADAPTER TEE	1	TTP1250-174
16	ELBOW	2	TTP2500-161
17	CYLINDER CAP	1	TTP2500-122
18	VALVE ACTUATOR	1	TTP2500-176
19	POPPET VALVE	1	TTP2500-175
20	BUTTON HEAD CAP SCREW	4	TTP1250-173
21	HANDLE HALF	1	TTP2500-250
22	LONG NIPPLE	1	TTP1250-182
23	1/4 NIPPLE	1	41-6534K18
24	HANDLE HALF	1	TTP2500-153
25	GASKET	1	TTP2500-141
26	HANDLE HALF	1	TTP2500-152
27	BUTTON HEAD CAP SCREW	8	TTP1250-170
28	SUPPORT BRACKET	4	TTP1250-171
29	BLEED VALVE	1	TTP1250-177
30	HANDLE HALF	1	TTP2500-251
31	PRESSURE GAUGE	1	TTP2500-190
32	LABEL	1	ETTLBL1800A
33	ELASTIC LOCKNUT, #4-40	6	546GSS
34	THREADED STUD (NOT SHOWN)	1	TTP2500-138
35	LABEL (NOT SHOWN)	1	TTP2500LBL-2
36	TUBING (NOT SHOWN)	12	41-5156K87
37	NEEDLE ROLLER (NOT SHOWN)	4	P8573-17

TUBE LEAK TEST GUN - PRESSURE

TTP2500-200



TROUBLESHOOTING GUIDE

Seal slips out of tube.

1. The tube is not clean of debris/lubrication.
 - a.) It is always very important to properly clean tubes before testing them. Debris/lubrication can inhibit the seal from seating correctly in the tube.
 - b.) Check how much PSI is being supplied to the gun. DO NOT exceed the MAX PSI rating of 125 PSI. If there is too much pressure being supplied to the tube(s) being tested, the excess PSI will force the test guns out of the tube. Use the provided air regulator to ensure you are within the specified PSI range (40 - 125 PSI, 2.7 - 8.6 bar).

Tester will not create a seal.

1. The seal set being used is not the proper size for the tube.
2. Proper air pressure is not being used.
 - a.) Test guns operate on air pressure ranging from 40 to 125 psi (2.7 to 8.6 Bar). Use the provided air regulator to ensure you are within the specified PSI range.

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.



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

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