

Air Activated Tube Tester 5373 Series

For Tube ID Range 0.28"-1.23" (7.1mm-31.3mm)



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 5373 Series Air Activated Tube Tester 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.

OPERATING INSTRUCTIONS

NOTE: See pages 6-9 for part numbers and illustrations of the 5373 as indicated in instructions below.

Prior to testing:

1. The tubes to be tested 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.
2. The operators should always wear safety glasses or a face shield when testing with the 5373 or any type of pressure test guns.
3. If the tubes have been acid cleaned please check with Elliott Customer Service regarding the compatibility of the test gun seals with the cleaning agent. Different types of elastomer seals are available as replacements.
4. Make sure the test guns have the correct size Replacement Seal and Washer Set (2) for the tubes being tested. The seals and washers are considered to be correctly sized if the OD of the seal is between 0.02" to 0.06" (0.5mm to 1.5mm) smaller than the actual tube ID. Using seals that are too small may cause any of the following: premature seal wear, jamming of the test gun in the tube, or expulsion of the test gun from the tube end. Replacement seals for the 5373 testing guns can be manufactured for any tube ID from 0.28" to 1.23" (7.1mm to 31.3mm). For tube ID's larger than 1.23", refer to Tech Manual TM-11 for information on the 5373A Test Gun Package. The procedure for replacing the seal and washer sets is outlined on page 5.

OPERATING INSTRUCTIONS (CONT.)

Testing Procedure:

Never actuate the injection gun unless the seal assembly is installed within the proper ID tube as the washers could be forced into the seal ID.

The 5373 Tube Testing 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 air control valve (10) and bleed valve (12). The plugging gun is a slave to the injection gun and will not operate without it.

1. Attach air supply to the air injection gun. The 5373 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. If testing tube ID's from 0.28 to 0.48" (7.1 to 12.3 mm) the regulator assembly is required. Install regulator assembly (14) with arrow pointing towards gun onto reducing nipple (11) leak tight and attach air supply to regulator input. For tube ID's from 0.28 – 0.48" adjust regulator to 40 – 60 psi (2.7 to 4.1 Bar) by rotating adjustment knobs while viewing gage.
2. Insert the air injection gun into one end of the tube to be tested and the plugging gun into the other end. Apply enough pressure to seat the back-up washer (3) firmly against the end of the tube. Maintain this pressure throughout the test.
3. After making sure that the plugging gun operator is ready, press the air control valve (10) on the injection gun and hold until the reading on the pressure gauge (7) stabilizes.
4. Release the button on the air control valve (10). It will automatically return to the closed position isolating the tube being tested. The tube is now under pressure.
5. Both injection gun and plugging gun operators should observe the pressure gage (7) on their respective guns. Any decrease in the pressure indicted on the gauge (7) will indicate a leaking tube.
6. Press the bleed valve (12) on the injection gun to bleed off the air pressure in the tube and air cylinders and to relax the seals.
7. 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 test pressure.
8. Repeat steps 2 through 7.

OPERATING INSTRUCTIONS (CONT.)

Installing Replacement Seals:

Replacement seals for the 5373 guns are supplied with the corresponding size washers. Always replace the seals and washers on both guns at the same time. (See chart on page 9 for seal selection.)

1. Remove the locknut (1) from the end of the support tube (4) and set it aside.
2. Remove the Seal and Washer Set (2) from the support tube (4). Discard if worn. Under optimum testing conditions you should be able to test between 100 to 500 tubes per replacement Seal and Washer Set.
3. For replacement Seal and Washer sets of the same size, install on existing support tube (4). If you are changing the Seal and Washer set to a different size, keep in mind that the support tube assembly (5) may be required to change as well. To replace the support tube assembly, refer to the procedure outlined below.
4. When replacing the locknut (1) on the support tube (4) 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.

Replacing the Support Tube Assembly:

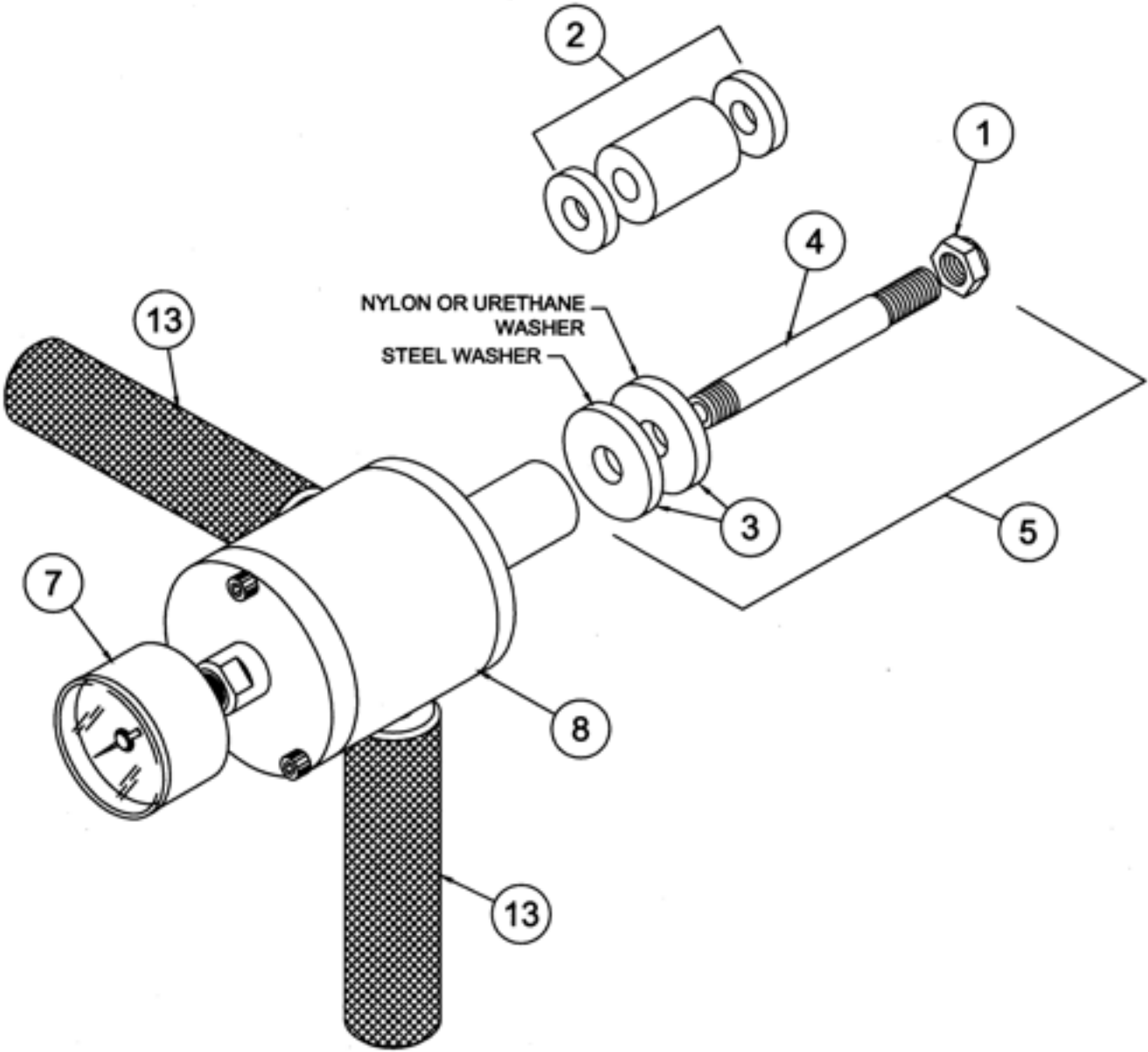
The 5373 test guns are originally shipped with three sets of support tube assemblies (5). These support tube assemblies will allow you to test tubes with ID's from 0.28" to 0.48", 0.49" to 0.83" and 0.84" to 1.23" (7.1mm to 12.3mm, 12.4mm to 21.2mm, and 21.3mm to 31.3mm respectively).

1. Remove the Seal and Washer Sets (2) as outlined above.
2. Using an open end wrench on the wrench flats provided on the piston and a pipe wrench on the support tube (4) gently unscrew the support tube from the piston inside the cylinder.
3. Choose the correct size support tubes for the tube ID being tested. All three sizes of support tubes will fit into the piston of the test gun. Use Never-seize or similar product to lubricate and seal the threads. Do not over tighten the support tube.
4. Repeat steps 1 thru 3 for the remaining gun.
5. If testing tube ID's from 0.28" to 0.48" (7.1mm to 12.3mm) thread the regulator assembly with arrow pointing towards gun onto reducing nipple leak tight.
6. Prior to replacing the Seal and Washer Set (2) and the Back-up Washer Set (3) inspect the support tube for scars left from the replacement procedure. File smooth if present.

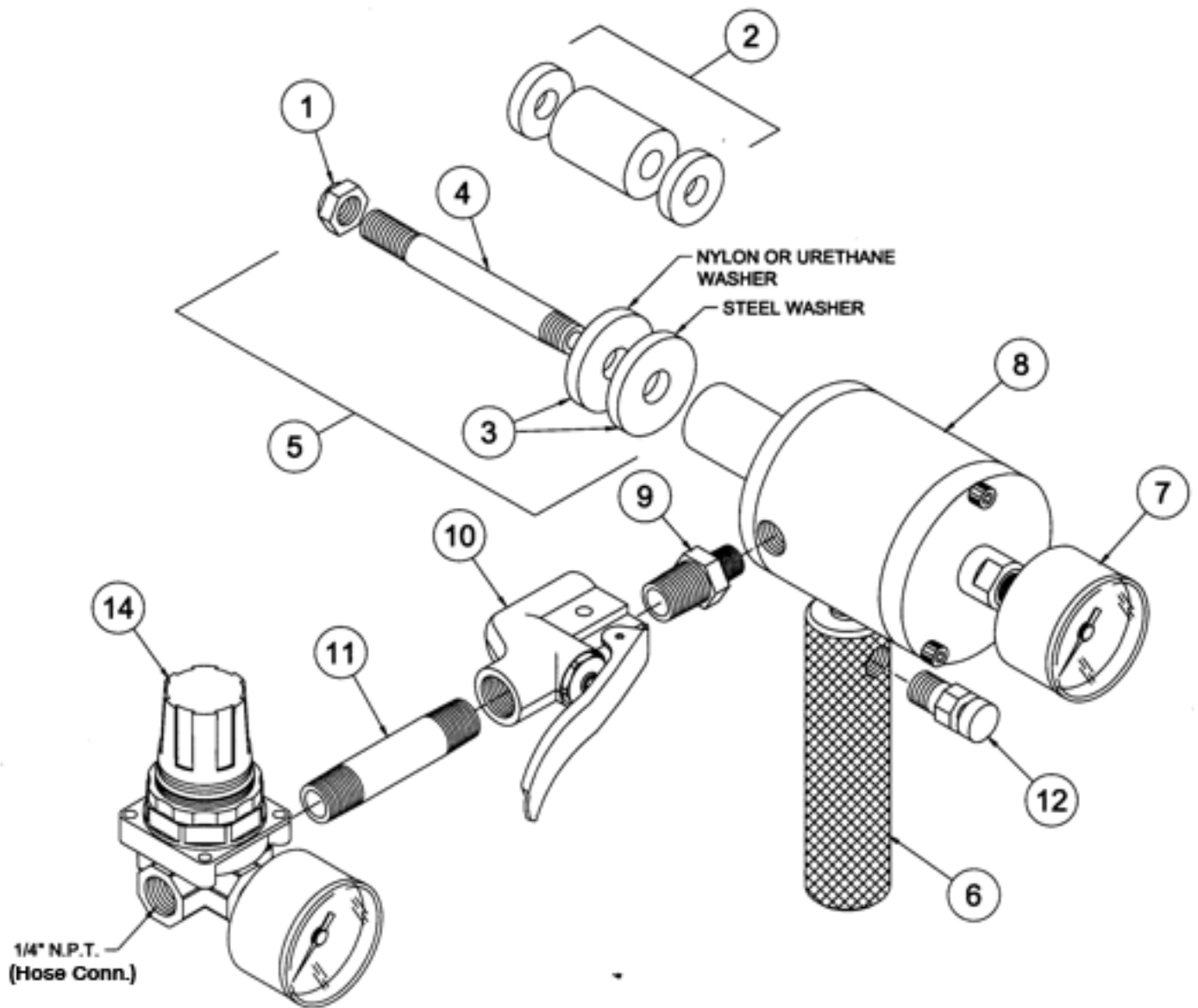
Other Replacements and Repairs:

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

5373-1 PLUGGING GUN ILLUSTRATION



5372-2 INJECTION GUN ILLUSTRATION



PARTS LIST

Item No.	Qty.	Description	Part No.
1	2	Lock Nut	
		.28" - .48" [7.1mm - 12.2mm]	5373LN1
		.49" - .83" [12.4mm - 21.1mm]	5373LN2
		.84" - 1.23" [21.3mm - 31.2mm]	5373LN3
2	2 sets	Seal Set w/ Washers	(See Chart on Page 9)
3	2 sets	Backup Washer Set	
		.28" - .48" [7.1mm - 12.2mm]	5373BW1
		.49" - .83" [12.4mm - 21.1mm]	5373BW2
		.84" - 1.23" [21.3mm - 31.2mm]	5373BW3
4	2	Support Tube	(Supplied as part of Item 5)
5	2 sets	Support Tube Assembly (Includes Items 1,3, and 4)	
		.28" - .48" [7.1mm - 12.2mm]	5373ST1
		.49" - .83" [12.4mm - 21.1mm]	5373ST2
		.84" - 1.23" [21.3mm - 31.2mm]	5373ST3
6	1	Handle, ported w/o Bleed Valve (Injection Gun only)	5373H1
7	2	Pressure Gauge (0-160 psi)	P5259G
8	2	Cylinder Body Complete (Includes Nose Piece)	5373C1
9	1	Reducing Nipple, 1/4" to 1/8" N.P.T. (Injection Gun only)	5373RN
10	1	Air Control Valve (Injection Gun only)	5373CV
11	1	2-1/2" Nipple, 1/4" N.P.T. (Injection Gun only)	5374N
12	1	Bleed Valve (Injection Gun only)	5373BV
13	2	Handle, w/o port (Plugging Gun only)	5373H2
14	1	Regulator Assembly	
		.28" - .48" [7.1mm - 12.2mm]	5373RA
		.49" - .83" [12.4mm - 21.1mm]	Not Required
		.84" - 1.23" [21.3mm - 31.2mm]	Not Required
15	2	Support Rod Extension (Optional)	(See Chart on Page 9)

SEALS AND SUPPORT TUBES

Seals & Washers Sets for 5373 Tube Tester									
Wall Gauge (BWG)	Tube O.D. Inches (mm)								
	1/2 (12.7)	5/8 (15.88)	3/4 (19.05)	7/8 (22.2)	1 (25.4)	1-1/8 (28.58)	1-1/4 (31.75)	1-3/8 (34.9)	1-1/2 (38.1)
8-9	N/A	5373-270	5373-400	5373-530	5373-650	5373-780	5373-900	5373-1050	5373-1150
10-11	N/A	5373-340	5373-440	5373-590	5373-690	5373-840	5373-940	5373-1090	5373-1190
12-13	5373-250	5373-370	5373-500	5373-620	5373-750	5373-870	5373-1000	5373-1120	See Note 1
14-15	5373-300	5373-440	5373-530	5373-690	5373-800	5373-940	5373-1070	5373-1190	
16-17	5373-340	5373-470	5373-590	5373-720	5373-840	5373-970	5373-1090	See Note 1	
18-19	5373-370	5373-500	5373-620	5373-750	5373-870	5373-1000	5373-1120		
20-24	5373-400	5373-530	5373-650	5373-780	5373-900	5373-1030	5373-1150		

Notes:

1. For seal sizes larger than listed in above chart, see Model 5373A Tube Tester (Tech Manual TM-11).
2. Standard material for seals is neoprene. For additional materials, consult factory.
3. Seal and Washer sets include one seal and two washers. One set is required for each gun.

Replacement Support Tube Sets & Optional Extensions					
(for easier testing when a channel head or water box is present)					
Tube I.D. Range Inches (mm)	Reach Inches (mm)				
	4 (Std.) (101.6)	12 (304.8)	24 (609.6)	36 (914.4)	48 (1219.2)
.28 to .48 (7.1 to 12.3)	5373ST1	5373ST1-12	5373ST1-24	5373ST1-36	5373ST1-48
.49 to .83 (12.4 to 21.2)	5373ST2	5373ST2-12	5373ST2-24	5373ST2-36	5373ST2-48
.84 to 1.23 (21.3 to 31.2)	5373ST3	5373ST3-12	5373ST3-24	5373ST3-36	5373ST3-48

Notes:

1. Support Tube Sets include (1) Support Tube, (1) Set Backup Washers consisting of (1) each elastomer & steel washer, and (1) lock nut.
2. Complete 5373 Tube Tester Package includes (3) Sets of Support Tube Sets that will cover tube I.D. range of .28" to 1.23" (7.1mm to 31.2mm).



Contact Us

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

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Printed in the USA
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TM-8
PL-24

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