



**CLEAN ROOM DEVICES, LLC**  
"WHERE TUBING AND FITTINGS COME TOGETHER"

# **ATS1000 Automatic TUBESETTER®**

## **OPERATIONS MANUAL**



VERSION 4.4  
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*clearroomdevices.com*

# Operating Procedure for the Automatic TUBESETTER<sup>®</sup>

## Initial Set Up:

### **Pneumatics:**

1. The Automatic TUBESETTER<sup>®</sup> will need to be connected to a compressed air line or air compressor, which supplies **80-120** psi of clean, dry air. It is important to have the ability to shut off the air pressure or disconnect from the air line. A quick-connect coupling or ball valve is recommended.
2. The air will need to be off or disconnected when manually cycling the pin set actuation air cylinder.

### **Electrical:**

1. Plug the electrical connector into the back of the TUBESETTER<sup>®</sup> and plug the power supply into an 110V AC outlet.

### **Mechanical:**

1. Remove the magazine from the TUBESETTER<sup>®</sup>.
2. Loosen the two socket head cap screws on either side of the machine and lift the front of the cover. Note that the cover is hinged at the rear.

### **Foot Switch Installation (optional):**

1. If the Foot Switch Option has been purchased, plug the foot switch connector into the back of the unit. As long as this connector is plugged in, the palm switches are disabled and the machine can only operate via the foot switch. If this option is used, assume the foot switch is used in place of the palm switches in the following instructions.

### **Pin Set Installation (air supply must be disconnected):**

1. The TUBESETTER<sup>®</sup> is equipped with a Pin Set Assembly which is designed for a specific tube fitting.
2. Roll the pin on a flat surface to insure that it is straight.
3. Insert the pin tip into the hole near the bottom of the magazine rack. Slide the pin through the hole until it is horizontal within the TUBESETTER<sup>®</sup>.
4. Push the pin toward the back of the machine until the threaded end reaches the threaded cylinder rod. Turn the pin clockwise to tighten. **Ensure both threaded parts are clear of any sand or other particulates, as a crooked pin can cause severe damage to the ATS-1000**
5. Once the pin is hand-tightened, pull the pin forward exposing the cylinder. Place a wrench on the flats of the cylinder rod and hold in place.
6. Place the 5/16" open end wrench onto the flats of the pin set and turn to secure the pin into the cylinder rod.
7. When the pin is fully tightened, the tip should not protrude into the magazine track. If it does, the magazine track must be loosened and moved forward slightly. This is accomplished by loosening the 2 socket head cap screws on the sides of the track and sliding the track forward. Retighten the socket head cap screws when finished.
8. **Dry Cycle the TUBESETTER<sup>®</sup>** by turning on the air and running the machine a couple of times by pushing both of the palm switches. The first push puts the machine into the "load position" and the

second push into the “release position”. Be sure to check that the pin is firing and the gate is lifting up.

### **Patented Jaw Set Installation (air supply must be disconnected):**

1. Remove the four socket head cap screws holding the small faceplate at the front of the unit.
2. Pull evenly and firmly on the front plate to free it from the unit.
3. If there is an existing jaw set in the unit, then gently pull it off of the cylinder and guide rods.
4. Select the jaw set that corresponds to the tube OD being used.
5. Slide the jaw set onto the guide rods making sure the numbers on the front of the jaw set are facing you.
6. Align the cylinder coupler on top off the jaw set to match the cylinder end.
7. Grip the jaw set and back plate. Push until the jaw set is snug against the back plate and the back plate is snug against the tower.
8. Return the front plate to the unit. Using both hands, firmly grip the front plate and the back plate. Squeeze until they are snug.
9. Insert the socket head cap screws back into the front plate and tighten.
10. **Check the pin-jaw alignment for pin concentricity.** The pin should clear the magazine and be centered on the jaw opening. Gently rotate the pin to ensure that there is no wobble in the pin head. **Failure to do so may result in severe damage to both the magazine and jaw set!**  
If any wobble is detected, recheck that the threads on the cylinder and pin set are clean. If there is still a wobble, the Pin Set Assembly is bad and another must be used.
11. **Dry cycle the machine** several times to seat the jaw set mechanism. Notice that the first time you hit the palm switches the jaw set partially closes. This is the “Load Position” which is where the tube is normally loaded. Hit the palm switches again and you will see the cycle complete and the jaw set is then fully spread. This is referred to as the “Release Position”. The pin should fire and make a direct alignment into the jaw set. If this does not happen, disconnect the air and make sure the components have been properly installed.

### **Adjusting the Tubing Protrusion:**

1. The distance between the end of the jaw set and the white gate may need to be adjusted according to what fitting is being used.
2. Initially, set the distance at ¼”.
3. To adjust this distance, loosen the 2 socket cap screws on the sides of the gate track and move the gate in or out depending on the stick out desired. Re-tighten the screws before attempting to run the machine.
4. If the fitting is not being fully inserted, adjust the gate backwards, towards the pin. If the fitting is being pushed on too far, or the tubing is rolling, adjust the gate forward, toward the operator.  
**Dry cycle the machine again.** Verify that the tip of the pin set is well centered with the jaw set in both a left-to-right view point and an up-and-down view point.  
Close the Cover on the TUBESETTER® and tighten the spring-loaded screws on each side.

**Notice: It is not recommended to operate the TUBESETTER® with the cover open.**

### **Magazine Installation:**

1. Select the appropriate magazine that corresponds to the fitting being installed.
2. Slide the fittings into the slot on the magazine so that the barbed end (the end you will insert into the tube) is protruding. Put enough parts into the magazine to fill it. **Always have at least five fittings in the magazine or a jam may occur.**
3. Place the magazine into the magazine rack with the parts facing the patented jaw set.

4. Check to see that the fittings have fully settled into the magazine.
5. **Dry cycle the machine** a couple of times. A fitting should drop out of the magazine. If you don't see a fitting drop, then open the unit and verify that the pressure is set at 80 psi on the internal gauge. If the pressure is adequate, remove the magazine to check that the fittings have been properly loaded and put the magazine back into the rack.

### **Running the TUBESETTER® (2-hit cycle):**

1. Fill the magazine with fittings (5 pieces minimum).
2. Hit the palm switches once to set the jaws into the load position.
3. Insert the proper size tube into the jaw set on the front of the TUBESETTER® until the tube stops against the gate.
4. Press both palm switches on the side of the TUBESETTER® simultaneously and release. The TUBESETTER® will insert the fitting into the tube and drop the assembly from the bottom of the machine.
5. Remove the assembled tube and fitting set from beneath the machine.
6. Repeat steps 1-4. (As necessary)
7. If the TUBESETTER® does not drop an assembly beneath the machine when both palm switches are pressed, **DO NOT** push the palm switches again. Perform the dry cycle tests again.

### **Running the TUBESETTER® (1-hit cycle):**

1. Fill the magazine with fittings (5 pieces minimum).
2. Lift the cover.
3. Hit the palm switches once to set the jaws into the load position.
4. Flip the cycle switch located behind the SMART Relay.
5. Hit the palm switches again to cycle the machine. The jaws will be ready for the tube to be inserted.
6. Insert the proper size tube into the jaw set on the front of the TUBESETTER® until the tube stops against the gate.
7. Press both palm switches on the side of the TUBESETTER® simultaneously and release. The TUBESETTER® will insert the fitting into the tube and drop the assembly from the bottom of the machine.
8. Remove the assembled tube and fitting set from beneath the machine.
9. Repeat steps 5-7. (As necessary)

**Caution: If the TUBESETTER® does not drop an assembly beneath the machine when both palm switches are pressed, DO NOT press the palm switches again.**

## **\*Daily Operation:**

### **Dry Cycle Test (at the beginning of each day):**

1. Warning – Do not place any foreign objects into the machine.
2. Remove the magazine.
3. Without placing any tubing into the front of the machine, push both palm switches simultaneously. The pin will move towards the jaw set.
4. If the pin does not complete a full cycle (forward and back), check to see that the air pressure is at 40 to 80 psi. If the problem still persists, contact a Clean Room Devices Technical Support representative.
5. Once the first cycle is complete, put the tubing into the jaw set and push both palm switches. Look to see if there is any misalignment when the pin reaches the tubing (the pin should be inserted inside the tubing). If there is, disconnect the air line and remove the pin. Roll the pin on a flat surface to see if it is bent. If so, contact a Clean Room Devices Technical Support representative.
6. After the second cycle is complete, insert a loaded magazine. Do not place any tubing into the jaw set. Push both palm switches simultaneously. The pin will be inserted through a fitting in the bottom of the magazine. The fitting will then be inserted into the closed jaw set. Then the fitting will be released underneath the machine. If there are any misalignment problems between the pin, magazine or jaw set, contact a Clean Room Devices Technical Support representative.
7. Clear fittings from under machine and verify that the fittings in the magazine have settled to the bottom.
8. If the machine does not make the assembly after the dry cycle tests have been completed, contact a Clean Room Devices Technical Support representative.
9. At the end of a shift we recommend that the operator remove the magazine so that the next person to run the TUBESETTER® will be reminded to dry cycle the machine before beginning production.

\*Omit this operation if you have a Fitting Sensor

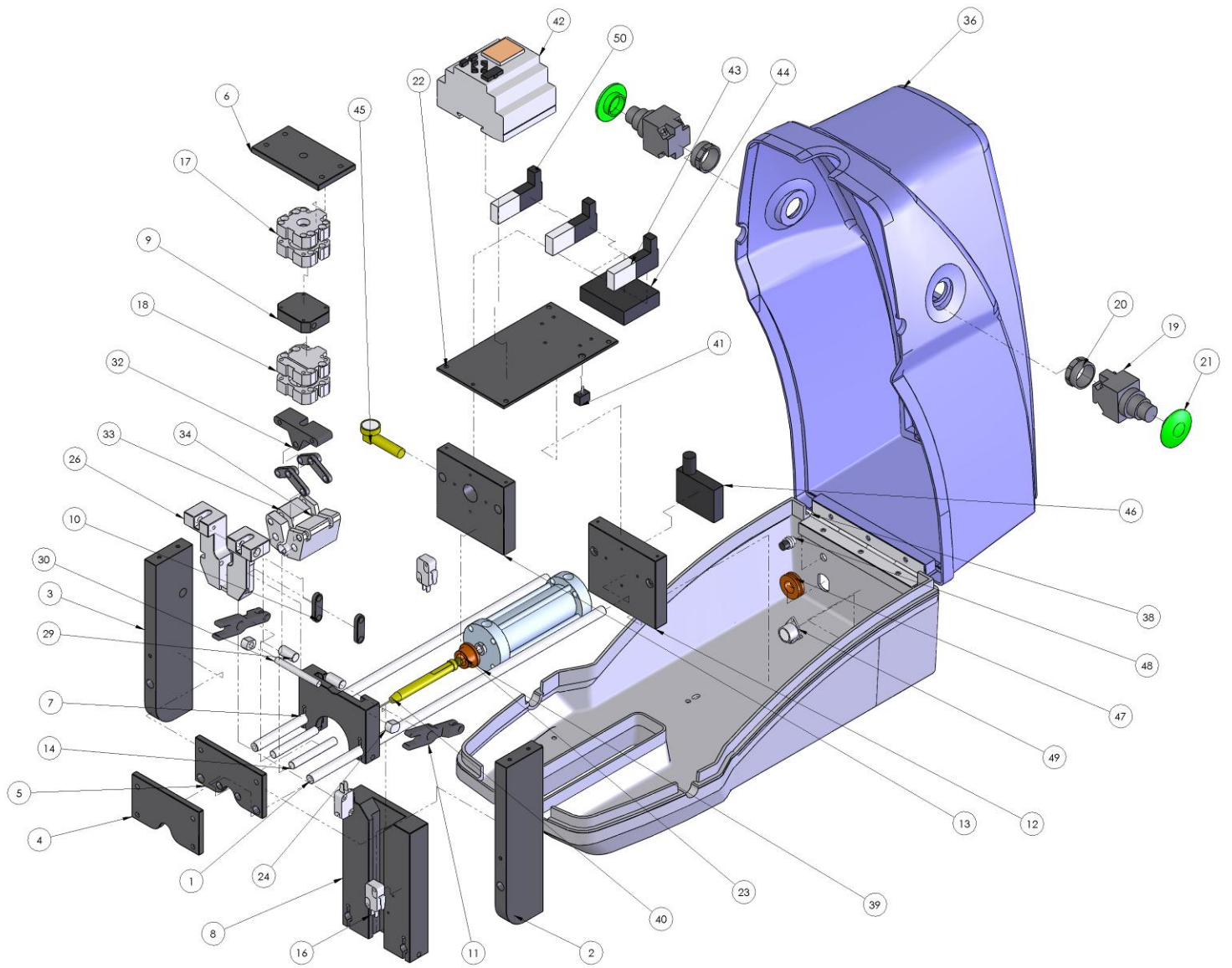
## Maintenance

1. **Once each day:** the pin set should be retightened onto the air cylinder. Use 5/16 and 7/16 wrenches for the pin set and air cylinder respectively. Loose pin sets can result in damage to the machine.
2. **Once each day:** ensure that the screws holding the jaw face plate on are tight. Loose screws will allow the jaws to move enough that fittings may not properly insert into the tubing.
3. **Once each day:** disconnect the air at the rear of the machine and pull the pinset toward the magazine hole and be sure that it enters the hole freely (without hanging up on the side-wall). The pin set must enter the magazine hole without moving the magazine or damage can occur.
4. **Once every three months,** the lid should be opened and the inside around the jaw set and magazine should be cleaned via air (no more than 30psi). This will remove any dust that has collected. At this time, air connectors on the manifold should be checked for tightness. The pin-set should be checked to make sure it is tight. Any dust or debris which the blown air did not clean up should be wiped away.
5. **Once every three months** the Jaw Set should be cleaned, and if necessary lubricated lightly. (Make sure the air is turned off) Remove the four socket head cap screws holding the faceplate. Pull evenly and firmly on the front plate to free it from the TUBESETTER®. Remove the jaw set in the TUBESETTER®, gently pull it off of the cylinder and guide rods. Before continuing to the next step, make sure to pay close attention to the orientation of the jaw set parts. Remove the three .250 dia. steel dowel pins which will release the four link arms and the jaw set “V-Block”. Clean the individual parts with damp cloth (mild soap and water) while looking for any adverse wear conditions. If no adverse conditions exist assembly is the reverse of removal.

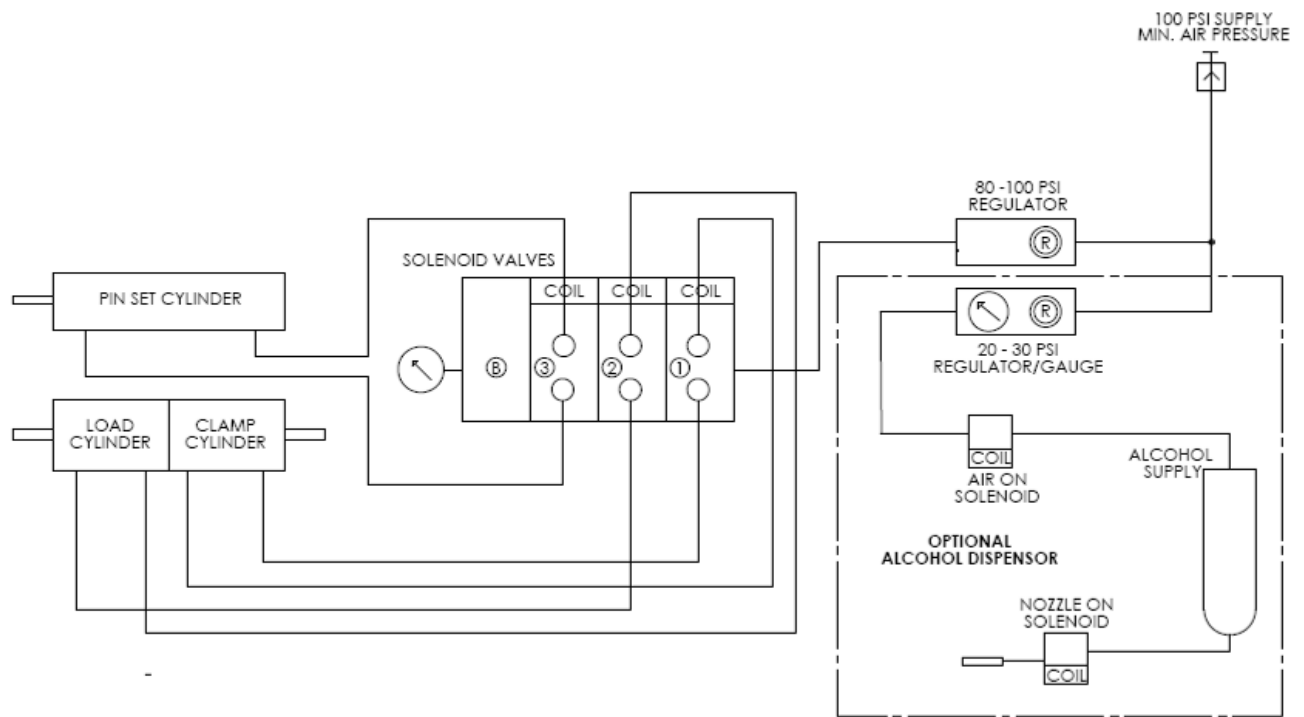
### **Recommended Spare Components:**

It is strongly recommended that you keep at least the following components on hand to minimize downtime should a component wear out or break

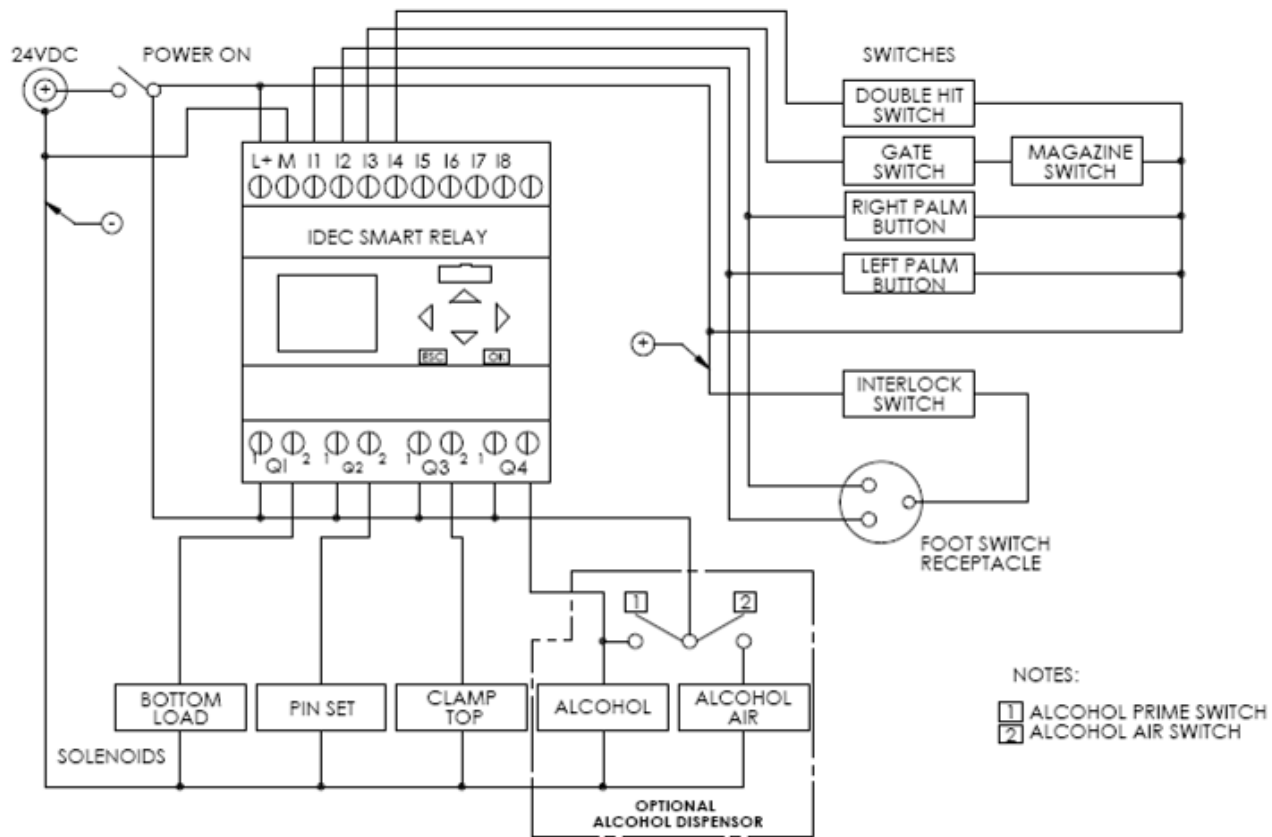
1. 1 additional Pin Set Assembly
2. 1 additional Magazine
3. 1 additional Jaw Set



3	1	TS00003	LEFT SIDE SUPPORT
4	1	TS00004	FRONT AXLE PLATE
5	1	TS00005	REAR AXLE PLATE
6	1	TS00006	TOP PLATE
7	1	TS00007	GATE TRACK
8	1	TS00008	MAGAZINE TRACK
9	1	TS00009	CYLINDER SPACER
10	6	TS00010	7/8" LINK
11	2	TS00011	GATE ACTUATING LEVER
12	1	TS00012	BACK PLATE
13	1	TS00013	MID PLATE
14	2	TS00016	JAW AXLE
15	1	TS00017	V BLOCK LINK
16	3	TS00021	MICRO SWITCH
17	2	TS00026	1/4" AIR CYLINDER
18	2	TS00027	1/2" AIR CYLINDER
19	2	TS00113	PALM SWITCH BASE
20	2	TS00114	PALM SWITCH NUT
21	2	TS00115	PALM SWITCH TOP
22	1	TS00023	CYLINDER COVER PLATE
23	1	TS00024	1/2" ID X 3/4" OD X 1/2"L MID PLATE BUSHING
24	2	TS00029	LEVER BUSHING
25	3	TS00030	FEMALE WIRE TERMINAL
26	1	TS00031	GATE
27	2	TS00032	PIVOT PIN
28	2	TS00033	RETAINER RING
29	2	TS00034	3/8" X 3/4" DOWEL PIN
30	1	TS00035	1/4" X 2 1/4" DOWEL PIN
31	2	TS00036	1/4" X 3/4" SHOULDER BOLT
32	1	TS00055	JAW V-BLOCK
33	1	ATJ-218L	LEFT JAW
34	1	ATJ-218R	RIGHT JAW
35	4	TS00038	10-32 UNF X 1/2" SLOTTED THUMB SCREW
36	1	TS00059	ATS COVER
37	1	TS00060	ATS BASE
		TS00060	
38	2	HINGE	HINGE
39	1	TS00028	4" AIR CYLINDER
40	1	ATPS-XXX	PINSET
41	1	TS00111	TOGGLKE SWITCH
42	1	TS00112	SMART RELAY - IDEC PN FL1D-H12RCE
43	2	TS00086	MAC VALVE
44	1	TS00105	MAC VALVE MANIFOLD
45	1	TS00106	MAC VALVE PRESSURE GAUGE
46	1	TS00107	MAC REGULATOR
47	1	TS00108	INPUT AIR BULKHEAD
48	1	TS00109	POWER JACK
49	1	TS00110	FOOT SWITCH JACK
50	1	TS00116	LARGE VOLUME MAC VALVE



PNEUMATIC DIAGRAM



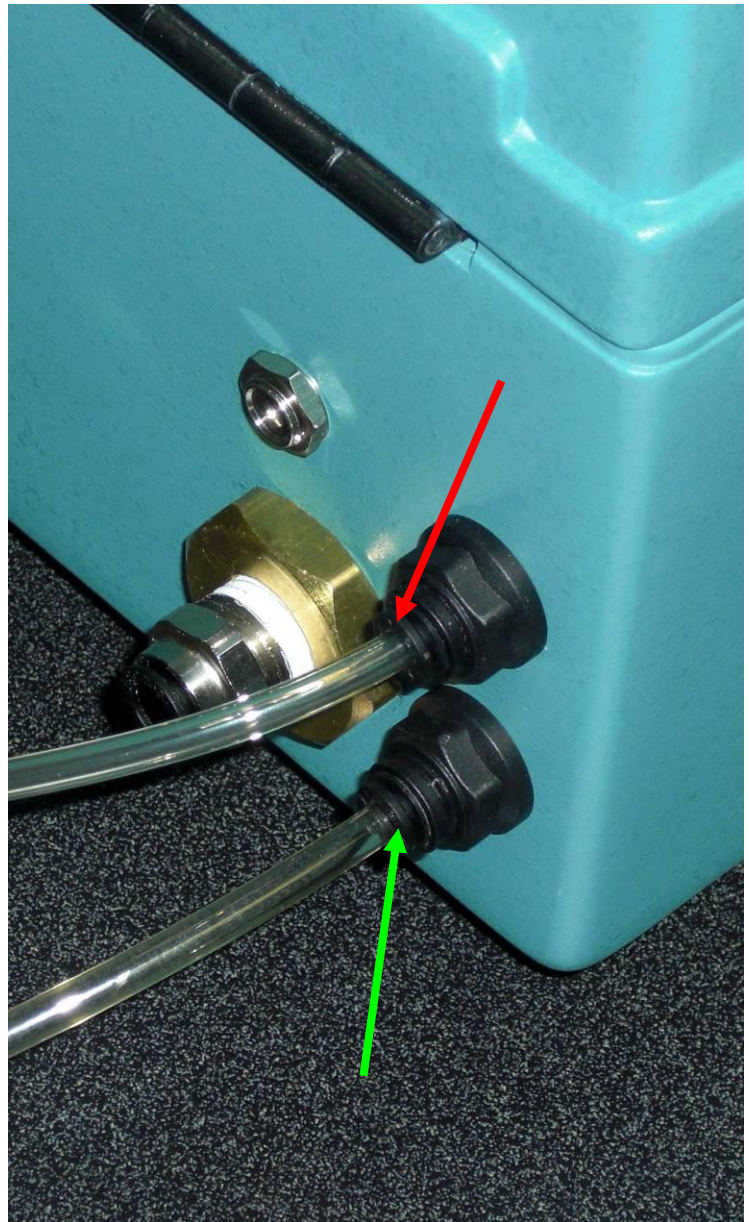
WIRING DIAGRAM  
ATS1000 - TUBESETTER

WIRING DIAGRAM

## Alcohol Dispenser Option

The Alcohol Dispenser allows lubrication to be placed on the barb directly, allowing for a more reliable fitting insertion process. Shown below are both the assembly diagram, as well as how to refill the dispenser. **IMPORTANT: READ BEFORE OPERATING ALCOHOL DISPENSER**

### Attaching Alcohol Reservoir To ATS1000:



AIR IN



FLUID OUT

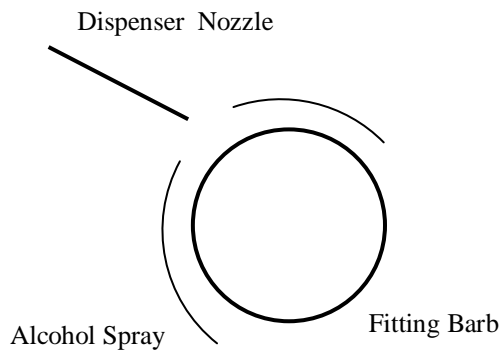


Use adjustment knob on regulator to set pressure to 20-30 psi.

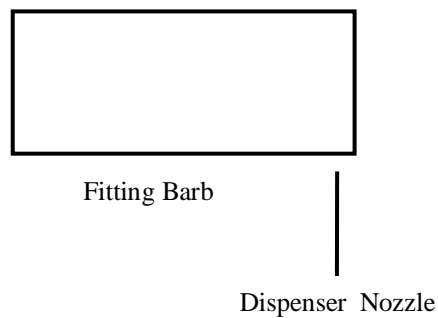


### Aiming the Alcohol Dispenser Nozzle:

Accurate aiming of the dispenser nozzle is critical to ensuring proper performance. Adjust the alcohol dispenser nozzle 1/16 – 1/8 inch in from the front of the barb, and at an oblique angle as shown in the diagram below. This alignment will ensure that alcohol will flow around both sides of the barb.



**FRONT VIEW**



**SIDE VIEW**

## Filling Alcohol Reservoir:



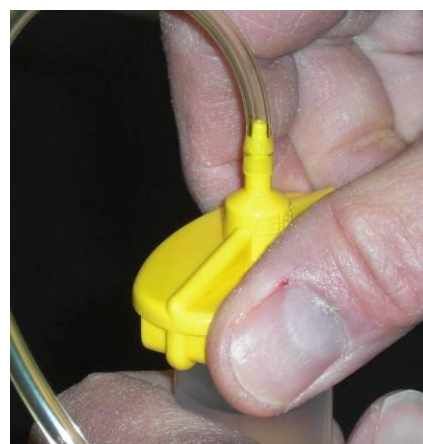
Step 1



Step 2



Step 3



Step 4



Step 5



Step 6

Step 1 – Disconnect air with quick-disconnect

Step 2 – Twist open the barrel assembly

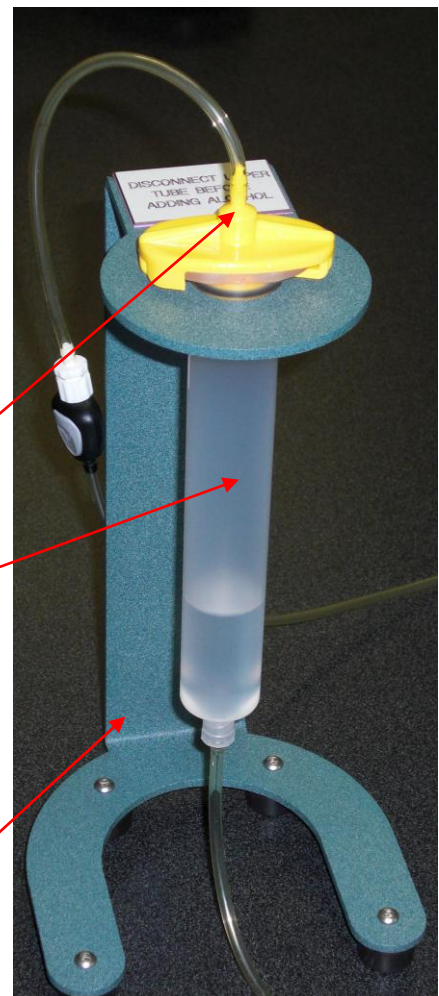
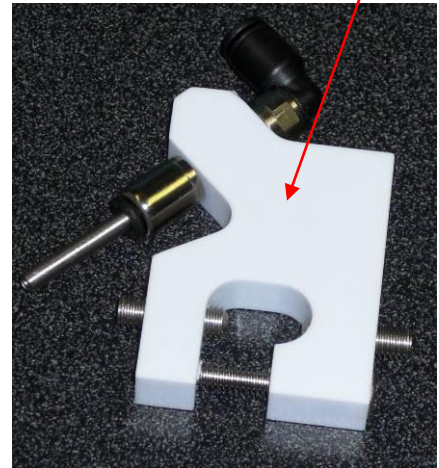
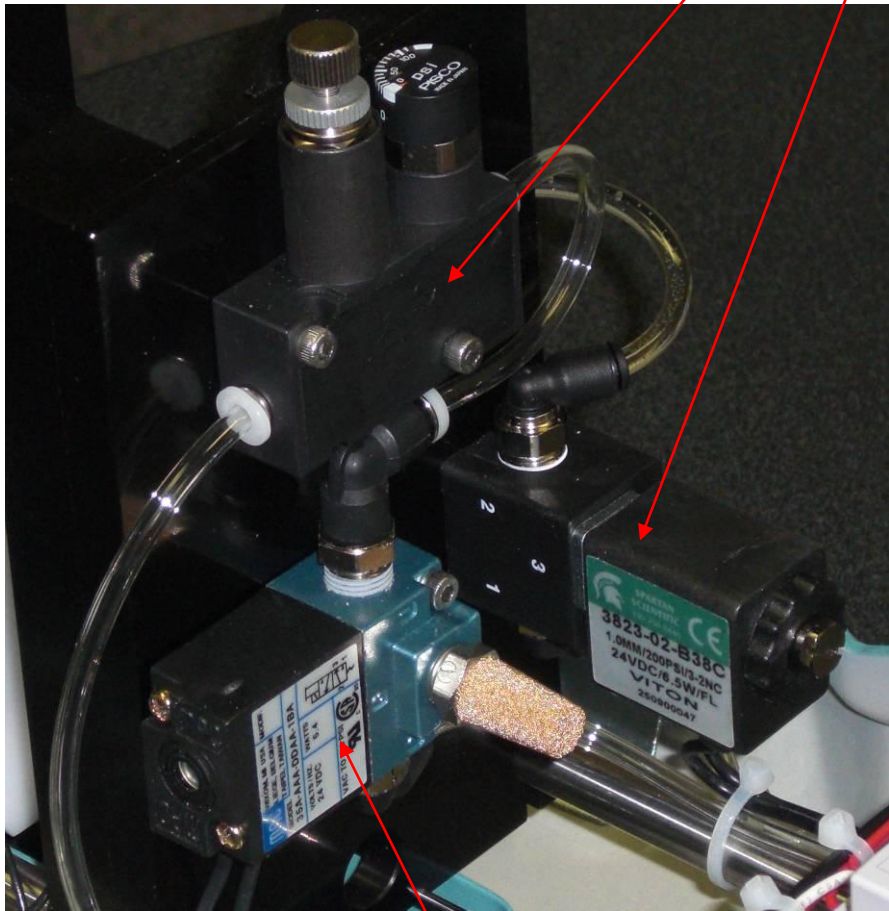
Step 3 – Fill reservoir with alcohol

Step 4 – Reconnect barrel assembly

Step 5 – Reconnect quick-disconnect

Step 6 – Prime alcohol system by pressing either palm switch on cover

# Alcohol Dispenser System Diagram:



Number	CRD#	Part Name
1	P00167	Air Regulator
2	P00168	Solenoid Air Valve
3	P00169	Viton Valve
4	TS00136	Nozzle Assembly & Bracket
5	P00178	Barrel Adapter Assembly
6	P00177	Alcohol Reservoir
7	P00176	Dispenser Stand

## Warranty

Clean Room Devices warrants the Automatic TUBESETTER® to be free of defects in material and workmanship. If the Automatic TUBESETTER® does not meet these criteria, we will replace or repair the defective part for up to one year from the invoice date. All replacements or repairs are subject to the discretion of Clean Room Devices

Clean Room Devices does not warrant the “consumable” or functional items used with the Automatic TUBESETTER®. This includes the jaw set, pin set, magazine, or additional items such as, but not limited to, dispensing or counting equipment. No warranty of merchantability or of fitness or any other warranty is expressed or implied. Clean Room Devices is not liable for consequential alterations or damages, or for any expense incurred through the use of the Automatic TUBESETTER®, and expressly disclaims any loss related to productivity.

## AUTOMATIC TUBESETTER® SAFETY NOTICE

PLEASE READ CAREFULLY BEFORE CONTINUING

### **Warning**

**The “Automatic TUBESETTER®” should only be operated by trained, qualified personnel, who have read and understand this manual.**

The owner of this TUBESETTER® is responsible for training all personnel to properly operate this machine. Failure to follow instructions may result in serious personal injury.

Never, under any circumstances operate the “Automatic TUBESETTER®” with the cover or guarding removed or any safety device disabled.

At the time of this writing the content of this manual was up-to-date. However, due to continual improvements in machine design, it is possible some descriptions and procedures contained herein vary from the machine actually delivered to you.

## **Contact Information for Clean Room Devices**

### **Company Information:**

Clean Room Devices, LLC  
10855 Dover Street, Suite 100  
Westminster, CO 80021

Main Phone Number: (303) 438-0853

Web Site Address: *www.cleanroomdevices.com*

### **Contact Personnel:**

For questions regarding TUBESETTER<sup>®</sup> operation or troubleshooting, or requests for repairs/maintenance:

Technical Support  
Phone: (303) 438-0853  
Fax: (888-345-2212  
Email: [techsupport@cleanroomdevices.com](mailto:techsupport@cleanroomdevices.com)