1. PURPOSE

This guide provides an overview of tubing connections into an ASI wall-mounted junction box that has already been plumbed with a compressed air connection including an angle stop with a 3/8" compression outlet, electrical outlet, and optional suction.

2. TOOLS/SUPPLIES REQUIRED

- Screwdrivers (#2 Phillips and flat head)
- Side cutters
- Sleeve tool
- Utility knife
- Shears
- Box wrench set: 5/8"; 21mm thin style
- Channel lock style pliers
- Adjustable wrench
- Fish tape (for under the floor foot control tubing)
- Fish tape wire puller
- Electrical tape (for under the floor foot control tubing)
- Teflon tape

3. GENERAL SAFETY PRECAUTIONS

In addition to observing the normal precautions associated with standard dental practices and procedures, the following additional precautions should be strictly noted and observed during the set-up, operation, and maintenance of this system.

⚠ WARNING

QUALIFIED PERSONNEL ONLY

The product should only be operated by qualified personnel only. The operator bears responsibility for the correct settings and proper use of the system. ASI Dental (ASI) cannot be held liable for any malfunction of this product, or performance failure and/or its designed or desired utility, nor can ASI be held liable for injuries to persons or animals, in any case when the device is misused or not operated, applied or maintained in strict accordance with user/owner instructions set out in the operation manual. In the event of any doubt or question, the user is to contact ASI for clarification or assistance.

Improperly maintained or operated systems or instruments may void the associated warranties.

⚠ WARNING

COMPRESSED AIR

The compressed air system that operates this unit is under pressure. Compressed air can propel dust or loose particles and can cause bodily injury or damage. Always turn the system off and bleed off air pressure before attaching or removing air lines or accessories or servicing this unit. All air lines should be periodically inspected and replaced if worn or damaged.

If an outside compressed air supply is used to power this unit, the air supply must be regulated to 80 psi or below. Excessive air pressure could cause certain components to rupture.

⚠ WARNING

ELECTRICAL VOLTAGE

This system is powered by high voltage electricity. Like any other electrically powered device, if it is not used properly, it can cause electrical shock. Always plug the power cord into an electrical outlet with adequate fuse protection and proper grounding. In the event of a short circuit, grounding reduces the risk of shock by providing an escape wire for the electric current. Improper grounding of the unit can result in a risk of electric shock. Always unplug the unit before doing any service or repair to the unit.

4. UMBILICAL

There are two sizes of umbilical, depending on configuration:

- A standard 1-3/8” cart umbilical, or
- A 1-5/8” umbilical with suction hose and/or computer cables.

The length is preset at 8’, but should be cut back to fit operatory requirements. All cart systems come with an umbilical adapter plate to securely attach the umbilical to the ASI in-wall junction box.

Fig. 1

5. TUBING IDENTIFICATION (FIG. 2)

Color	Size*/ Description	Purpose
Electrical		
Black Power Cord (3 Wire)	SJTOW 16 ga.	Brown- Line, Blue - Neutral, Yellow/Green - Ground
Air		
Yellow	1/4” OD	Regulated (80 psi max) air supply to delivery unit
Black	1/4” OD	Drive Air from Foot Control to Control Block
Gray	1/8” OD	Air Signal Line from Wet/Dry Foot Control to Water Relay
Water		
Blue	1/8” OD	From Water Bottles to Delivery System
Optional:		
Yellow	1/8” OD	Air Supply To Master On/Off switch on the delivery unit from unregulated port on air master shut-off valve
Red	1/8” OD	Air Signal From Master On/Off switch in delivery unit
Clear/Wire	5/8” ID	Suction line from Plumbing to Solids Trap
White	1/4” OD	To connect Micro Evacuation
Outer Umbilical Tubing		
Beige/Gray	1.0” ID,1.25” OD	Standard Cart Umbilical
Beige/Gray	1.25” ID, 1.625” OD	Cart Umbilical with Suction Hose or computer cables

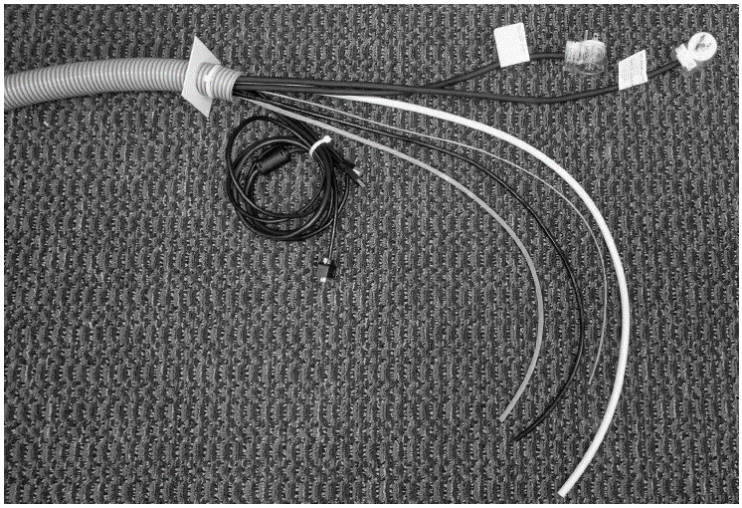

Fig. 2

6. AIR SUPPLY

The connections needed may vary depending on the options selected.

The installation kit bag tied to the cart umbilical contains the air supply regulator and optional hook ups.

The system is provided with a standard 1/4” O.D. air line for supplying compressed air to the system. The system includes a combination master air supply regulator and internal air filter.

Air supplied to the system should be oil-free.

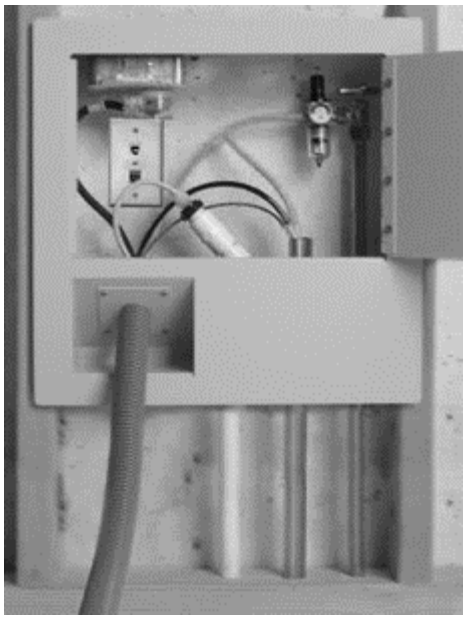

Fig. 1

IMPORTANT! Prior to installing the regulator, blow out the air lines to remove dust or particles from construction. Turn on the compressed air supply and then open the angle stop valve and allow to run for 15 seconds. Then close the valve.

Connect the air supply assembly regulator to angle stop, slide nut and compression sleeve onto the adaptor of the regulator. Then, seat fully into the angle stop and tighten firmly using a wrench. (Fig. 4, Fig. 5)

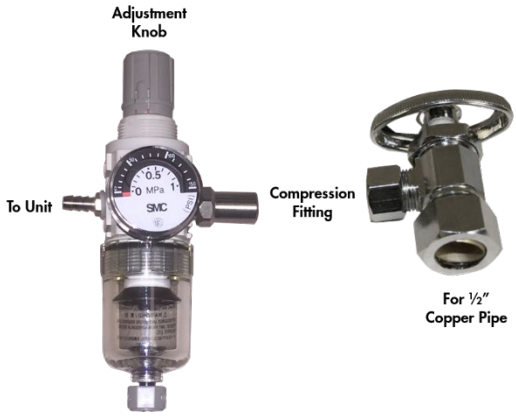

Fig. 4 (left side)

Fig. 5 (right side)

Connect the yellow tubing to the barb of the air supply regulator and secure with sleeve using a sleeve tool.

Open the air supply by turning the knob on the angle stop.

IMPORTANT! Ensure the regulator is set to <u>80 psi</u>. Adjust if necessary. To adjust, lift up the black cap. Turn clockwise to increase and counter-clockwise to decrease. <u>Setting the pressure above 80 psi may damage internal components.</u> (Fig. 6)

Fig. 6

7. ELECTRICAL SUPPLY

Connect electrical plug from umbilical to appropriate electrical supply. A dedicated outlet is recommended to prevent interference in the electrical instruments. (Fig. 7)

Fig. x (right side)

8. FOOT CONTROL TUBING

The foot control tubing has two large tubes. One has a fine ridge line running along it, indicating the main supply air. There will be an additional small tubing to activate the water relay. (Fig. 8)

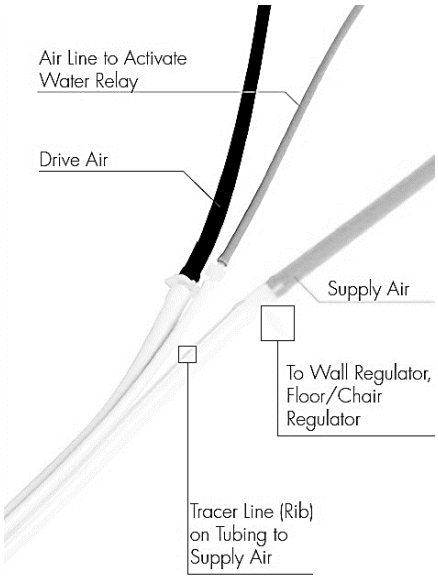

Fig. 8

Tee off the yellow supply air line and attach to the large tubing of the foot control with the indicator ridge line.

Connect the black drive air tubing to the other large foot control line.

Connect the gray air signal tubing to the small tubing of the foot control.

9. FOOT CONTROL TUBING – OPTIONAL UNDER THE FLOOR

An optional conduit can be placed under the floor to allow the foot control tubing to run under the floor and exit behind the base of the patient chair.

> ***A conduit with a 1-1/4" diameter should be installed under the floor from the in-wall junction box to either directly behind the chair base or to an optional floor junction box located at the toe of the patient chair.***

> ***Make sure to trim any extra foot control tubing. Excessive runs of tubing greater than 12' should be avoided to prevent a response lag when the foot pedal is released by the operator.***

10. CLOSED WATER SYSTEM

All systems include a closed water system as standard. To optimize infection control, connecting to municipal water is not recommended.

11. OPTIONAL SUCTION: MICRO EVACUATION

For systems with optional micro evacuation that are not connected through a solids trap, a separate 1/4” suction line will be provided.

Connect optional micro evacuation by sliding completely into the push-in fitting. Pull gently to ensure the collar has locked it into place. (Fig. 9)

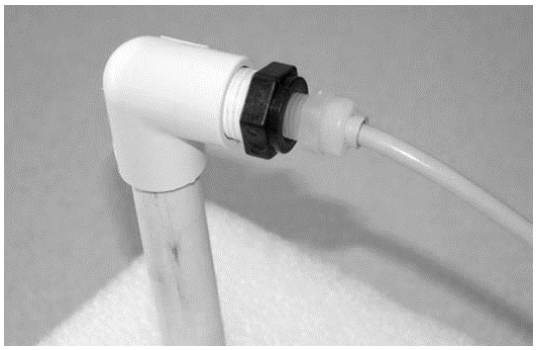

Fig. 9

12. OPTIONAL FULL SUCTION: CONNECTIONS WITH A SOLIDS TRAP

ASI supplies suction line tubing made from a special grade of material that is inert to common caustic irrigants and disinfectants used in dentistry. The suction tubing has a 5/8” inside diameter (I.D.). PVC adapters are included with suction packages to connect the 5/8” tubing to either 1/2” or 3/4” PVC pipe.

13. SUCTION PIPING RECOMMENDATION

PVC pipe is recommended for suction plumbing lines, as copper can corrode from some of the caustic irrigating solutions used in dentistry.

However, copper may still be required for some jurisdictions with legacy building codes. If using 1/2” copper for suction, the tubing can be slipped over the pipe and clamped into place.

14. OPTIONAL AUDIO, VISUAL & DATA CABLES

Connect computer connections such as video, USB, HDMI CAT-6, and network connections to ports in the junction box.

15. STARTUP

Follow the instructions taped to the worktop surface, “Getting Started”.

16. OPERATIONAL FUNCTION CHECKLIST

- ☑ Ensure all required safety notification labels are attached.
- ☑ Partially fill bottles and optional irrigator bottles with clean water and turn on to load into system. For umbilical units, ensure system is connected to a regulated air supply of 80psi. Check inside and under system for absence of any water or air leaks.
- ☑ Plug the system into the appropriate electrical supply, then plug the circuit tester into rear accessory outlet and the interior outlet (if applicable) and verify wiring is properly configured.
- ☑ Check all of the functions (pressure, air purge, solution selector) of the clean water system and optional irrigation system.
- ☑ Test the air/water syringe for air and water spray. Adjust the flow valves accordingly to create a strong mist when both buttons are pushed at the same time.
- ☑ Attach a test handpiece to each handpiece tubing. Test each handpiece from left to right by operating the handpiece and setting the handpiece air pressure to recommended handpiece settings per the manufacturer.
- ☑ Turn on handpiece coolant spray and chip air to adjust the flow to each handpiece to achieve a fine mist. Ensure that the water stops and does not drip after releasing.
- ☑ Verify proper operation of all other installed accessory items according to their individual testing requirements per their installation instructions (e.g.: electric instruments). Ensure all items using an auto-holder shut off properly when placed in the holder.