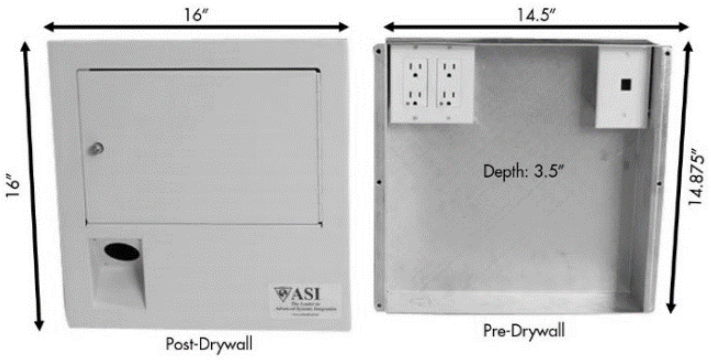
IN-WALL JUNCTION BOX FOR ASI DELIVERY UNITS

ASI TECHNICAL GUIDELINE FOR 90-1818

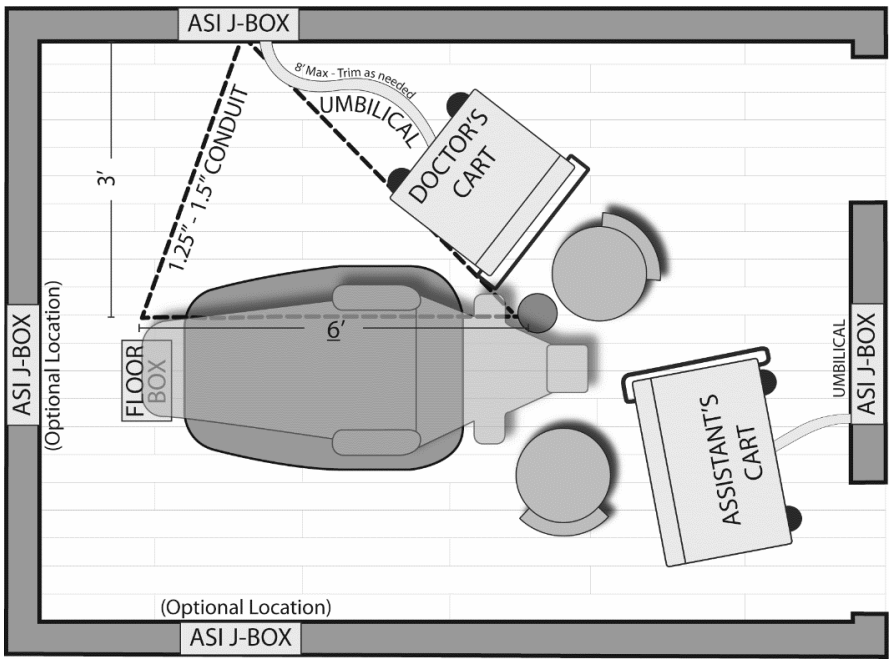
PURPOSE

ASI's In-Wall Junction Box (Model 90-1818) provides a seamless way to connect the umbilical of a cart system to central plumbing, while neatly concealing the rough-in connections within the wall. The decision to use the ASI In-Wall Junction Box should be made before construction begins. This way it is known exactly where to install air, suction, dedicated electrical outlet, conduit for foot control tubing and the audio/visual/data connections.



The In-Wall Junction Box is comprised of two components to facilitate installation. The pre-drywall box is designed to be inserted during the wall construction and the post-drywall portion is used to finish and conceal the installation after drywall and surfacing have been completed.

IMPORTANT!
Before commencing on the following instructions, please read and follow all applicable warnings/cautions listed at the end of this technical guideline.



LOCATING THE WALL BOX IN THE OPERATORY

Side Delivery

The in-wall junction box for the delivery system can be located in different locations depending on the room layout and where the cart will be stored when not in use. The most common location is on the side wall toward the toe of the chair that would roughly align with the knees of a patient when seated in the patient chair. This allows the cart to be pushed back away and toward the corner of the room to allow patient egress from the rear of the room.

For ambidextrous use, the wall box could be located in a chase type wall at the foot of the chair. This could allow the cart to be used on either the right side or left side of the room depending on the operator.

Assistants System

The in-wall junction box for the assistant's system should be located to the center of the wall which can facilitate either right-handed or ambidextrous designs. For solely right-handed use, it can be located to the slight right of the wall.

Wall Height

The bottom edge of the in-wall junction box should be approximately 12" above the floor to allow room for the base board and most importantly to prevent a kink in the umbilical. The standard length of an umbilical is 8' and should be cut down to the desired length. (Fig. 1)

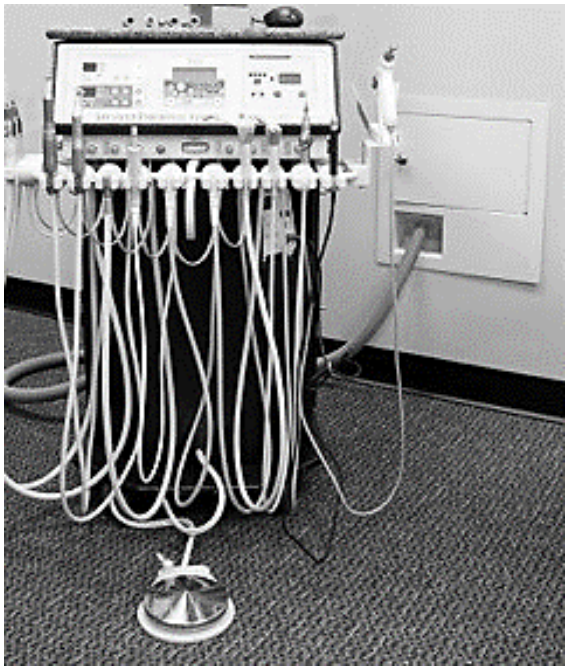


Fig. 1

INSTALLATION OF THE PRE-DRYWALL ROUGH-IN BOX

The pre-drywall box is made to fit between two studs on 16" centers. The box should be secured and then all applicable utilities can be connected or stubbed inside (e.g., electrical, compressed air, suction and computer cabling). See below for notes on each.

Electrical

The box is provided with double-gang electrical box in the upper left corner. It is recommended to use two hospital grade receptacles that should each be connected to dedicated AC power circuit with an isolated ground to provide line noise rejection. This provides dedicated power for the delivery system and a separate outlet for auxiliary devices. The ASI delivery system that will be connected at final installation will have two power cord and hospital grade plugs provided.

> ***Local Building Codes should be followed when installing electrical connections.***

Data and Communication Cabling
The box provides a receptacle in the upper right corner that can be used for CAT 5/6 cable connections or other data communication cabling. If necessary, additional types of cables can be run via access holes made through the upper panel. Ensure not to cut holes in the areas indicated on the box as these are reserved to connect to the finish post-drywall connection.

Compressed Air Connection
The Regulator assembly requires connection to a 1/2" copper pipe. This should be run through the bottom right corner of the box using an appropriate hole saw and seal for the piping.

Optional Suction Connection
If suction is to be connected, it is recommended to use either 1/2" or 3/4" PVC piping. PVC pipe is highly recommended as it is more resistant to caustic chemicals that can be used in certain dental procedures such as bleach. Check with local building codes to determine which type of piping materials may be used for suction lines.

Water Supply
A water supply connection to the municipal water lines is not required as the delivery system is provided with a water bottle system that provides water for treatment use and aids in maintaining water line disinfection in the dental tubing. If connection to municipal supply is still desired, an optional water master valve can be provided with water line tubing run through the dental umbilical. This option must be ordered at the time of placing the order for the delivery system.

Under Floor Foot Control Tubing Option
A desirable option is to place the tubing for the foot control under the floor and have it exit from behind the patient chair base. This allows the foot control to remain in place without moving between patients and keeps the tubing from interfering with cart movements.

The tubing can be run from the In-Wall Junction box to a floor box in front of the chair. The foot control tubing can then be run through the chair (depending on the model) and out to the rear of the chair base. To avoid handpiece delays, it is very important to keep the length of tubing used for the foot control to a minimum and should not exceed 12' to the junction box.

An alternative would be to run the tubing directly from the wall box to directly behind the chair base to keep the tubing length minimized. A flooring grommet would have to be provided to the contractor to allow this option.

A 1-1/4" to 1-1/2" conduit is recommended to provide ample room inside the conduit for the tubing and any additional wiring included in the delivery system and prevent potential kinking of the tubing.

INSTALLATION OF POST-DRYWALL FINISH BOX

Once the drywall and wall finish have been completed, the post-drywall finish box can be inserted into the pre-drywall box. Cut any excess drywall from around the inside of the pre-drywall box and clean as appropriate. Then insert the post-drywall box and press in tightly until flush with the wall. Secure with screws through the sides and top. Complete the installation of the umbilical for the cart system and utilities as noted below.

Umbilical Installation

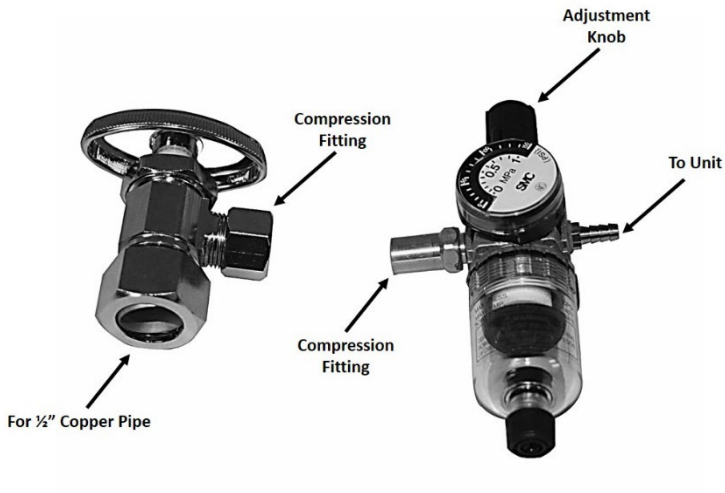
Your system arrives with either of two sizes of umbilical: a standard 1-3/8" cart umbilical, or a 1-5/8" umbilical with suction hose and/or computer cables. The length is preset at 8'. Cut it down to fit the operatory without undue excess. All cart systems come with an umbilical adapter plate to securely attach the umbilical to the ASI in-wall junction box. (Fig. 2)

Fig. 2

Compressed Air Connection

The dental unit is provided with a standard dental air line for the compressed air supply.

The air line is 1/4" outside diameter and has a 1/8" inside diameter (ID). The dental unit includes a combination master air supply assembly with regulator and internal air filter (85-0035). The angle stop has a 5/8" compression fitting inlet to connect onto 1/2" copper pipe. The outlet of the angle stop has a 3/8" compression fitting to accept the connector from the master air supply. Air supplied to the system should be oil-free and must be regulated to a standard dental unit pressure of 75 to 80 psi. The 1/4" air line is connected directly to the master air supply assembly. (Fig. 3)



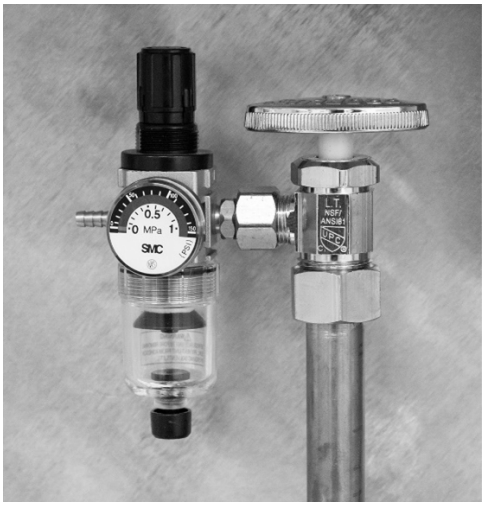


Fig. 3

An optional quick connect (PN 90-2744) can be ordered to allow disconnection of the air supply, making it possible to use the cart in different operatories. The 3/8" male quick connect is placed on the air line to the cart and the 3/8" female quick connect is placed on the line to the air supply. The back end of the quick connect has reducers to adapt to the 1/4" tubing. (Fig. 4)

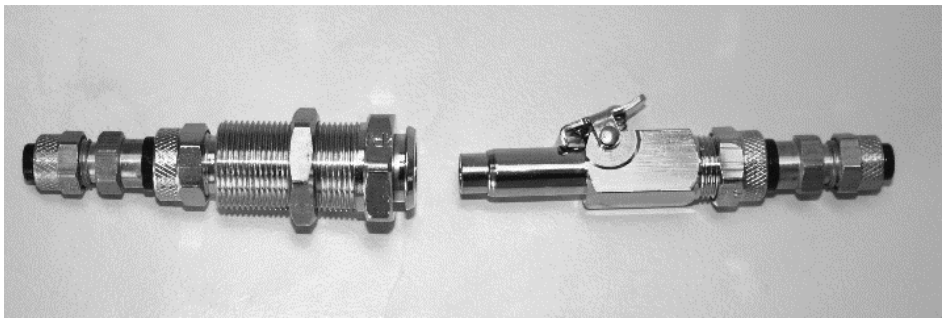


Fig. 4

Optional High-Volume Suction

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" ID. Included with suction packages are PVC adapters to connect the 5/8" tubing to either 1/2" or 3/4" PVC pipe. If using 1/2" copper pipe for suction, the tubing can simply be slipped over the pipe and clamped into place.

For umbilical suction delivery systems, an optional quick connect (PN 90-2769) is available to allow the suction hose to the cart to be disconnected. It comes with a 5/8" barb that plugs into the receptacle half and a blank plug to seal the outlet if the hose is disconnected. (Fig. 5, Fig. 6)

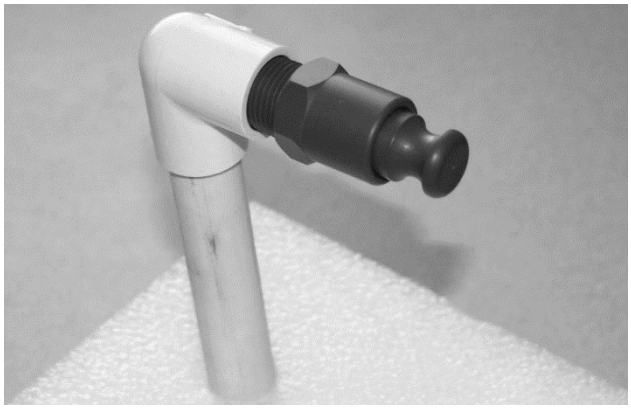


Fig. 5

Fig. 6

Optional 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. It may be connected straight to a PVC elbow with the provided adaptor. (Fig. 7)

Fig. 7

Optional Extended Foot Control Tubing

The tubing can be run through the conduit to a floor box (Fig. 8) and then placed appropriately through the chair to rear base of the chair (Fig. 9) or run directly to the rear of the chair base.

Fig. 8

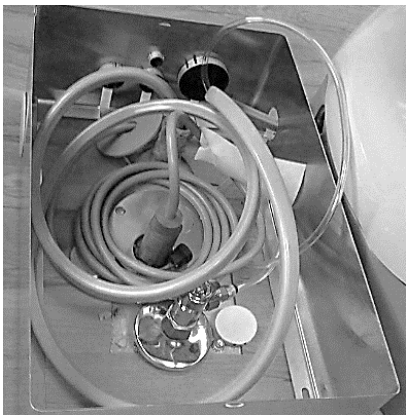


Fig. 9

For extended foot control tubing a quick exhaust valve will be required to prevent a response lag when the foot pedal is released by the operator.

INSTALLING QUICK EXHAUST VALVE ON EXTENDED FOOT CONTROL TUBING

1 At the designated in-wall junction box, connect the tee-barb on the extended beige tubing tracer line to the main air connection in the junction box.

2 After running the extended tubing from the junction box to the desired location, connect the drive-air (non-traced) line of the white foot control tubing to the inlet of the relay valve, and connect the drive-air of the beige foot control to the outlet of the valve (Fig. 10). Connect the remaining traced master air and water toggle air lines of the beige and white tubing together according to the figure.

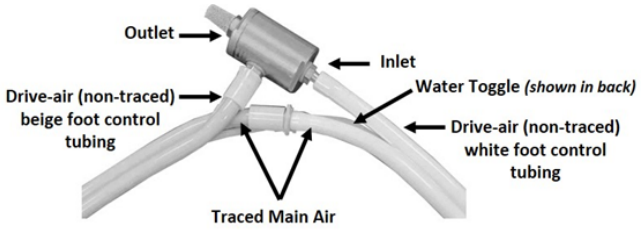


Fig. 10

WARNINGS/CAUTIONS

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	⚠ AVERTISSEMENT
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.	**PERSONNEL QUALIFIÉ UNIQUEMENT** Le produit ne doit être utilisé que par du personnel qualifié. L'exploitant est responsable des réglages corrects et de l'utilisation correcte du système. ASI Dental (ASI) ne peut être tenu responsable de tout dysfonctionnement de ce produit, ou d'une défaillance de performance et/ou de son utilité conçue ou souhaitée, et ASI ne peut être tenu responsable des blessures aux personnes ou aux animaux, en tout cas lorsque l'appareil est mal utilisé ou pas utilisé, appliqué ou entretenu en stricte conformité avec les instructions de l'utilisateur/propriétaire énoncées dans le manuel d'utilisation. En cas de doute ou de question, l'utilisateur doit contacter ASI pour obtenir des éclaircissements ou de l'aide. Des systèmes ou instruments mal entretenus ou mal exploités peuvent annuler les garanties associées.

⚠ WARNING	⚠ AVERTISSEMENT
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.	**AIR COMPRIMÉ** Le système d'air comprimé qui fait fonctionner cet appareil est sous pression. L'air comprimé peut propulser de la poussière ou des particules libres et peut causer des blessures ou des dommages corporels. Éteignez toujours le système et purgez la pression d'air avant de fixer ou de retirer les conduites d'air ou les accessoires ou de procéder à l'entretien de cet appareil. Toutes les conduites d'air doivent être inspectées périodiquement et remplacées si elles sont usées ou endommagées. Si une alimentation extérieure en air comprimé est utilisée pour alimenter cet appareil, l'alimentation en air doit être régulée à 80 psi ou moins. Une pression d'air excessive peut entraîner la rupture de certains composants.

⚠ WARNING	⚠ AVERTISSEMENT
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.	**TENSION ELECTRIQUE** Ce système est alimenté par de l'électricité à haute tension. Comme tout autre appareil électrique, s'il n'est pas utilisé correctement, il peut provoquer un choc électrique. Branchez toujours le cordon d'alimentation dans une prise électrique avec une protection par fusible adéquate et une mise à la terre appropriée. En cas de court-circuit, la mise à la terre réduit le risque d'électrocution en fournissant un fil d'échappement pour le courant électrique. Une mauvaise mise à la terre de l'appareil peut entraîner un risque d'électrocution. Débranchez toujours l'appareil avant d'effectuer tout entretien ou réparation sur l'appareil.

⚠ WARNING	⚠ AVERTISSEMENT
INFECTIOUS MATERIALS Infectious disease workplace safety protocols to safeguard against cross contamination of infectious disease should always observed. When maintaining the suction system or emptying the contents of the suction waste container, safe precautions and practices including the wearing of face mask, eye protection and gloves are to be followed.	**MATIERES INFECTIEUSES** Les protocoles de sécurité sur le lieu de travail contre les maladies infectieuses pour se prémunir contre la contamination croisée des maladies infectieuses doivent toujours être observés. Lors de l'entretien du système d'aspiration ou de la vidange du contenu du conteneur de déchets d'aspiration, des précautions et des pratiques de sécurité, notamment le port d'un masque facial, d'une protection oculaire et de gants, doivent être suivies.