

HAMILTON AIR®

7775 Copper Road • Cincinnati, Ohio 45242 • 513-874-3733

Model HA1000-XLR

Installation and Service Manual

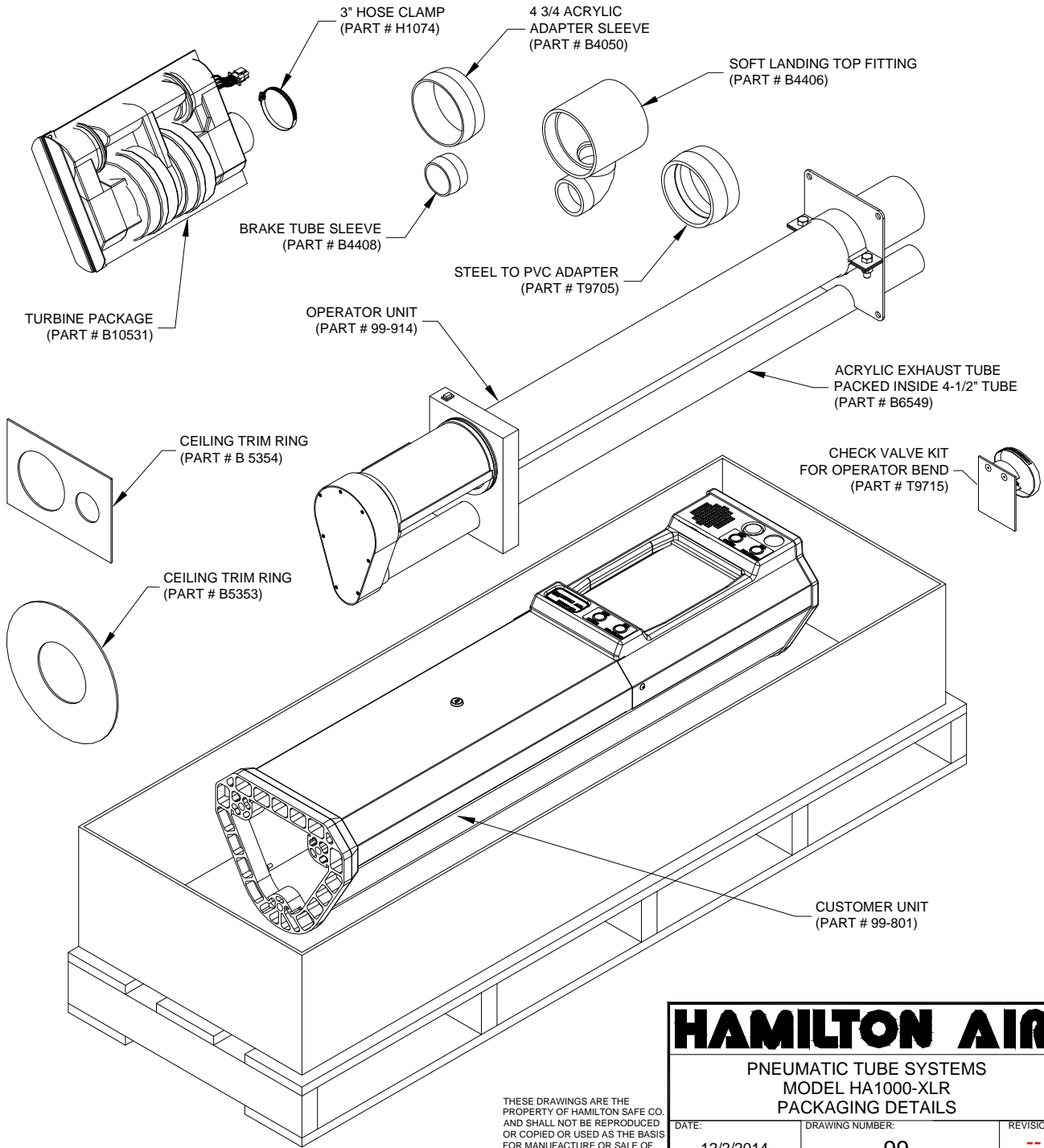


Doc #08-381

Typical Packaging Details

HAI000-XLR NOTICE:

CHECK CARTON CAREFULLY FOR ALL COMPONENTS SHOWN BELOW



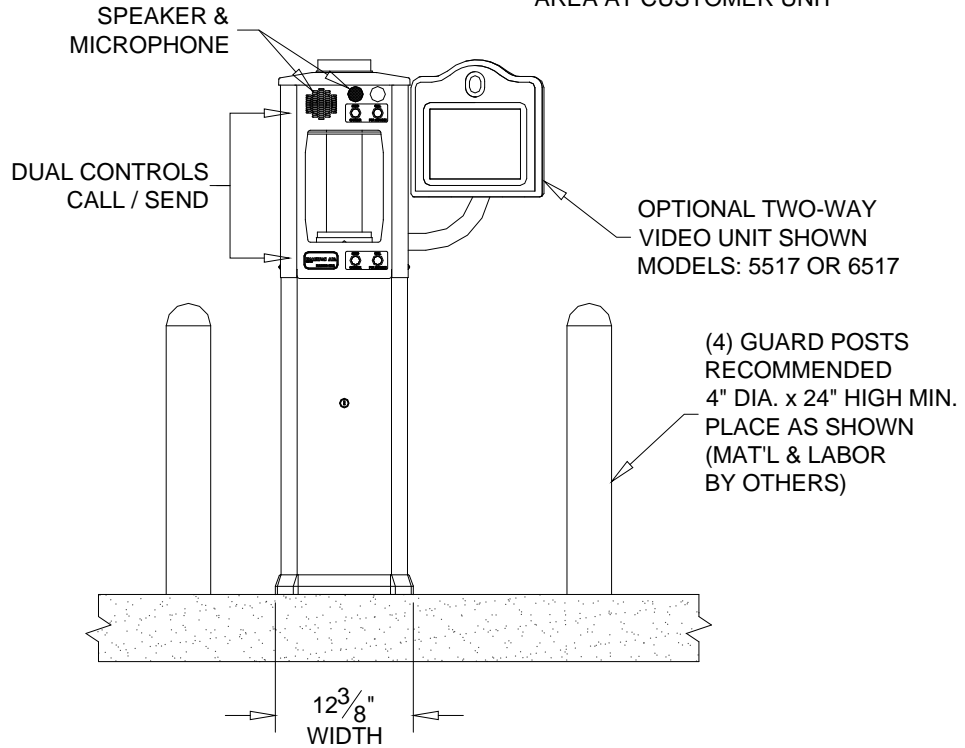
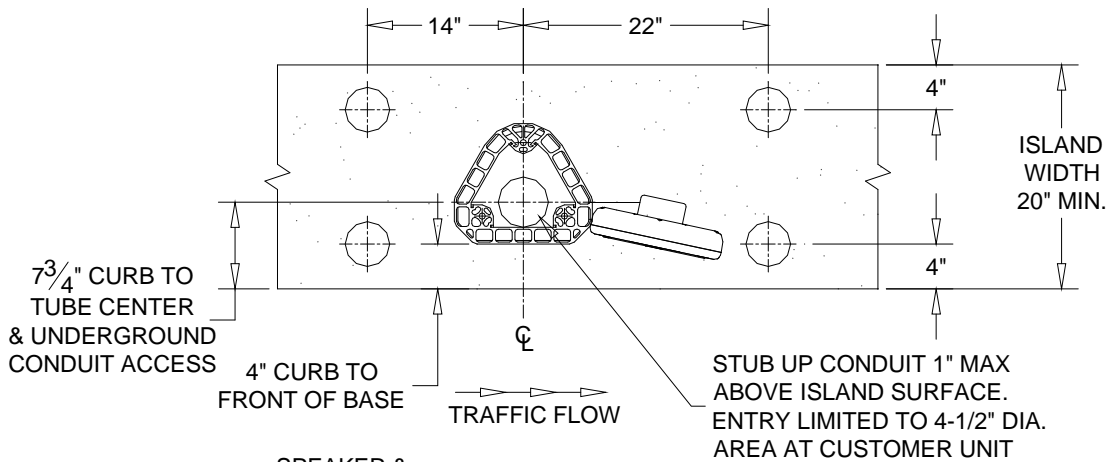
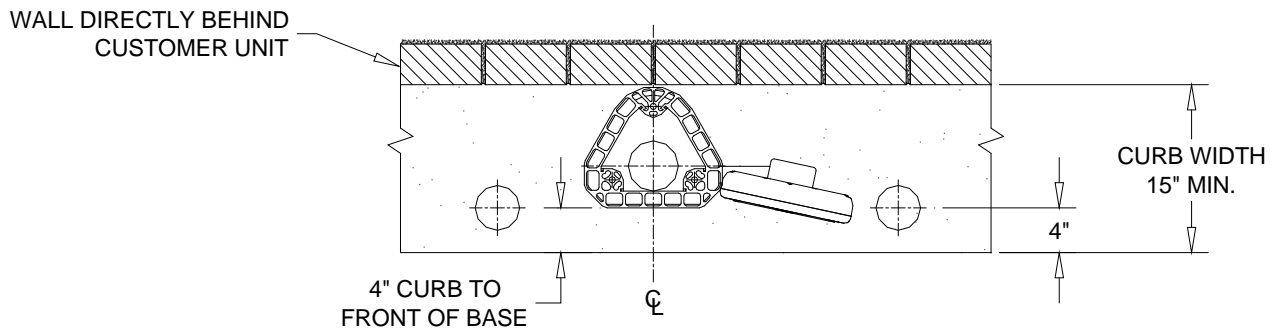
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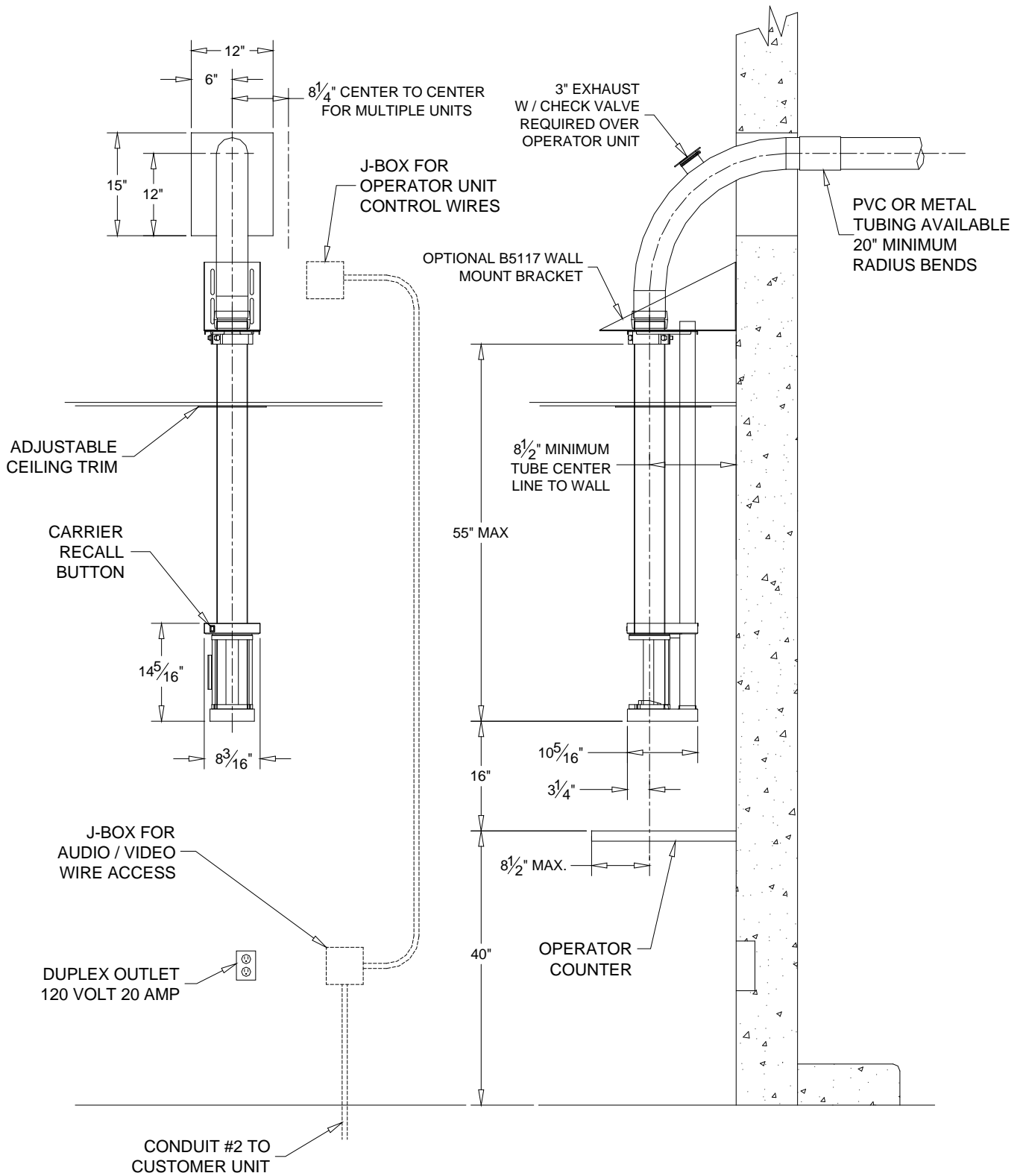
PNEUMATIC TUBE SYSTEMS
MODEL HA1000-XLR
PACKAGING DETAILS

DATE:	DRAWING NUMBER:	REVISION
12/2/2014	99-	--

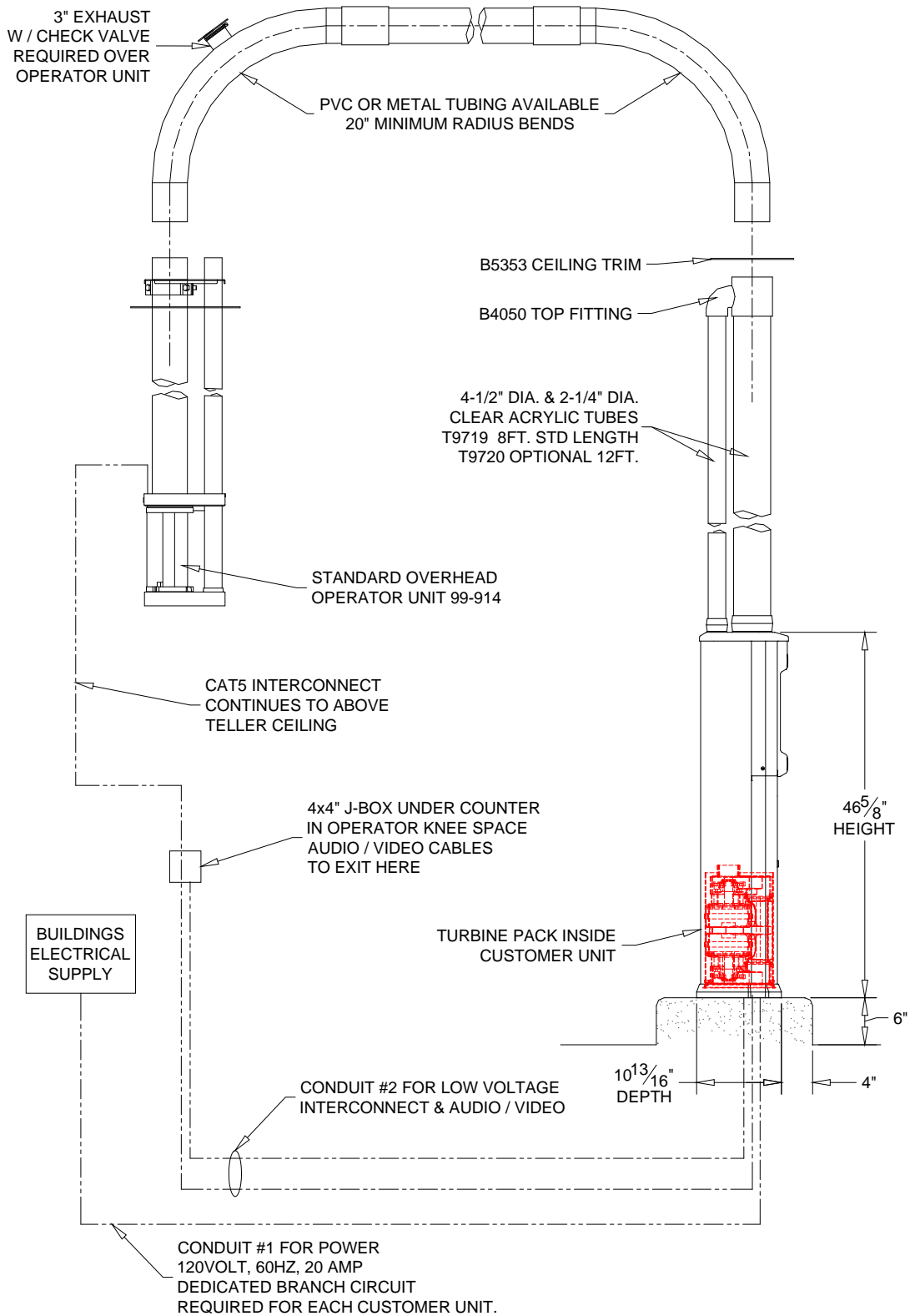
Customer Unit Details



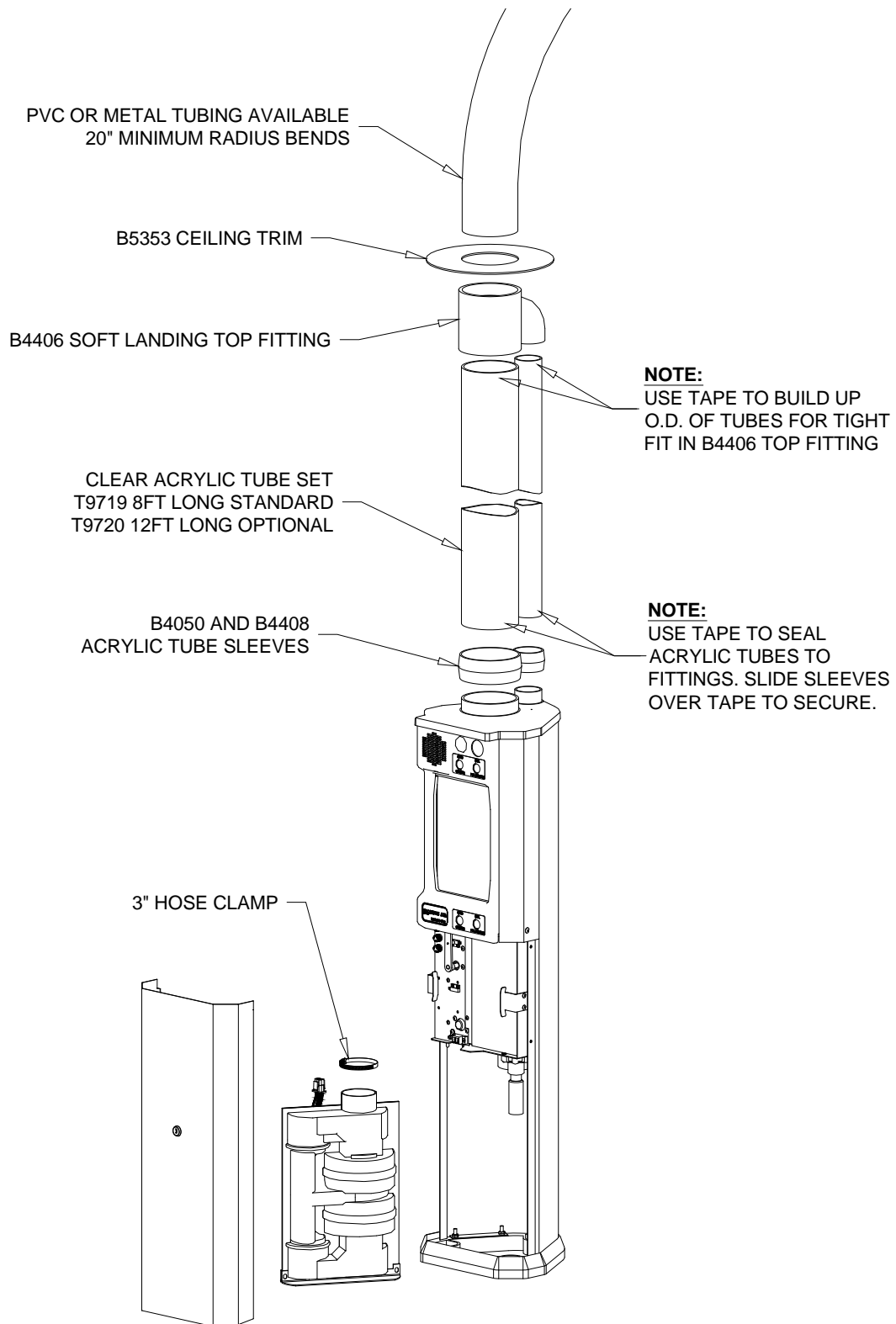
Operator Unit Details



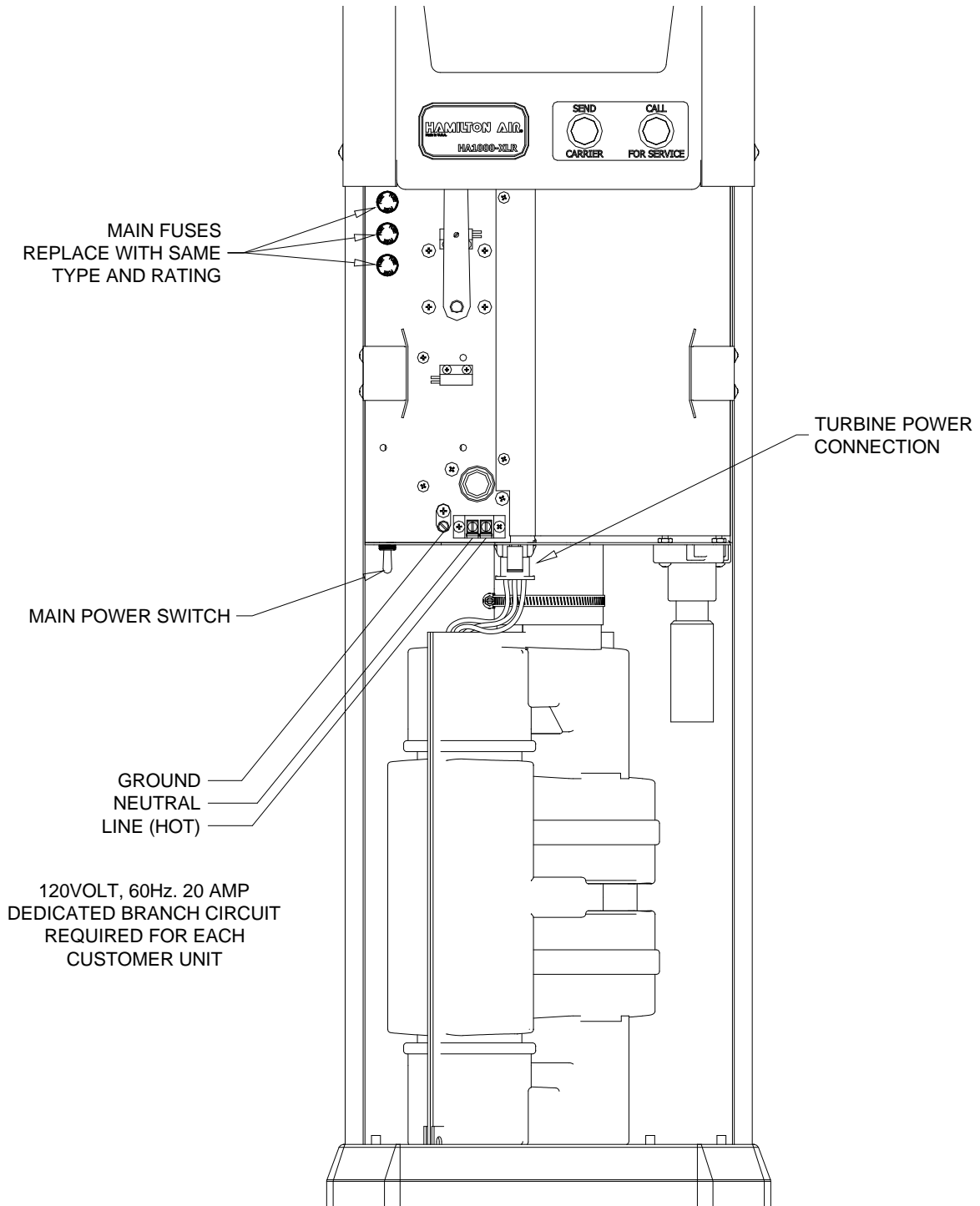
System Connections



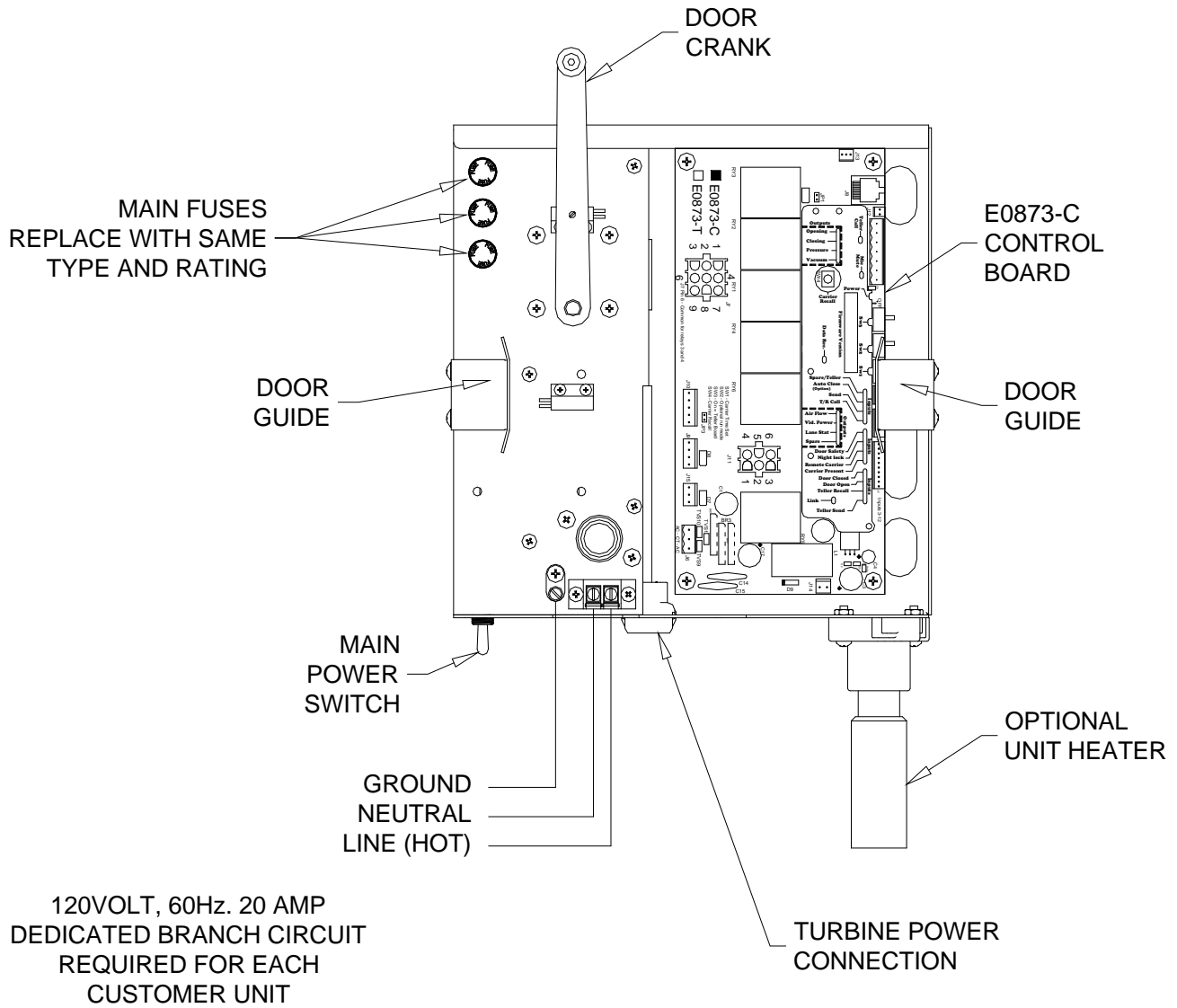
Customer Unit Connections



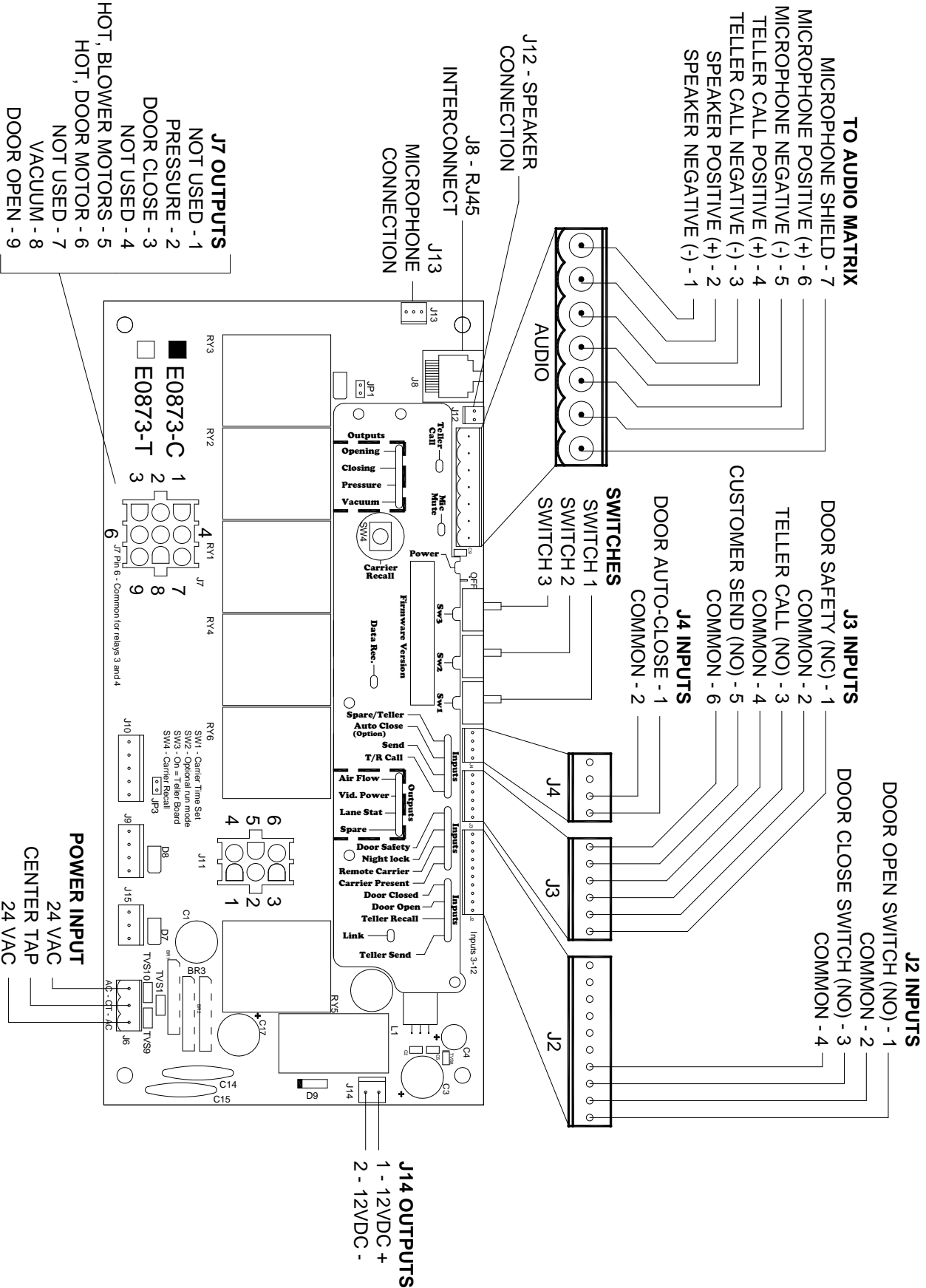
Customer Unit Power Connections



Customer Unit Electrical Box Details



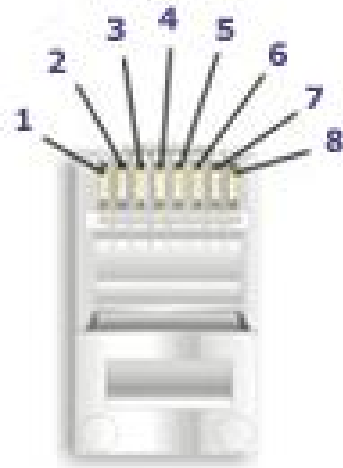
Customer Unit Control Board Connections



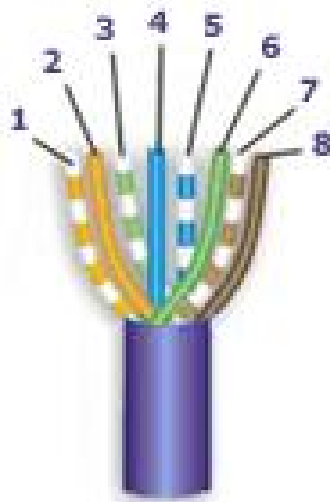
Interconnection Cable

CAT5 Interconnect Cable Wiring

The I/O control board system requires an interconnect cable to connect the manual teller unit to the control board located in the customer unit and/or the control board located in the teller unit to the control board located in the customer unit. This cable is a standard category 5 (CAT5) cable, Hamilton part number E0889, and terminated with male RJ-45 connectors on both ends. The connectors should be wired in the straight through design as shown below on both ends. There are commercially available testers that can be used to verify correct connector installation and function.



Wire	Pin #	Teller Connections
White/Orange	1	Spare
Orange	2	Teller Nigh Lock
White/Green	3	Teller Carrier Arrival
Blue	4	Teller Recall
White/Blue	5	Door Closed / Teller Send
Green	6	Common
White/Brown	7	RS485 A
Brown	8	RS485 B



Switch Settings

The switches on the control boards are used to set functions and test operations. There are three slide switches and one pushbutton switch located on the control boards. The three slide switches are labeled #1, #2, and #3 while the fourth pushbutton switch (SW4) is labeled “Carrier Recall”. Momentarily pressing SW4 recalls the carrier to this end of the tube system.

Standard switch settings for Customer mounted control board

- SW1 Switch 1: **Blower Run Time Set.** “Off” is normal setting. Switching “On” enables blower “Time-Set” mode. See “Blower Run Time Set” for full instructions on setting blower run times.
- Activate “Turbine Test Mode” by holding SW4 while switching SW1 “On” if customer door is open and turbines are connected to this control board. Send and teller call will activate the pressure and vacuum turbines.
 - If SW3 is turned on before SW1, the unit will enter “Door Test Mode” which allows send and teller call buttons to operate the customer door motor open and closed.
- SW2 Switch 2: **Turbine Mode.** “Off” is normal setting with single stage turbine. “On” is normal setting with multi-blower turbine systems.
- SW3 Switch 3: **Unit Selection.** “Off” is normal setting for board mounted in customer unit.

Additional Functions of E0873

Door Auto-Close Option

There is a fourth jumper that can be placed across pins #1 and #2 on the J4 input connector that will enable the door auto-close feature. This optional feature when activated by this jumper closes the customer door after three minutes of no activity with the unit. After the door has auto-closed, pressing either the send or teller call buttons will re-open the door for the customers.

Microphone Muting:

The E0873 control board can be set-up to mute the microphone during blower operation with certain systems that have the blowers located close to the microphone in the customer unit. The control board can also be set-up not to mute the customer microphone during blower operation for systems that are not affected by the blowers.

- 1) Recall carrier to customer unit. (Press SW4 “Recall” located on control board)
- 2) Press and hold SW4 and press the teller call button on customer unit. The output LED for microphone mute will flash.

One flash = the microphone is set to mute.

Two flashes = the microphone is set to NOT mute.

- (Note: the input LED for the teller call button will light when the button is pressed. This is NOT the output LED for microphone mute and therefore NOT the LED that will signal the setting of microphone muting.)
- 3) Repeat step #3 to toggle between settings as needed.
 - (Note: SW4 and teller call must be released to toggle setting.)
 - 4) System is now functional as normal with the new setting for muting the microphone.

Night Lock Switch on Overhead Operator Unit

Night lock operation.

The night lock function is used to turn the lane off for the night or whenever the lane will not be used. The night lock function will close the customer unit and call the carrier inside, if needed, to prevent outside use of the lane. If there is a video monitor connected to the control circuit using Hamilton cable #E10036, the night lock function will also turn the video monitor off for this lane. Note, if multiple lanes are installed, each lane will have its own separate night lock switch.

Night lock switch
located under recall button.



The night lock switch is shown pushed to the back which is the normal run position.

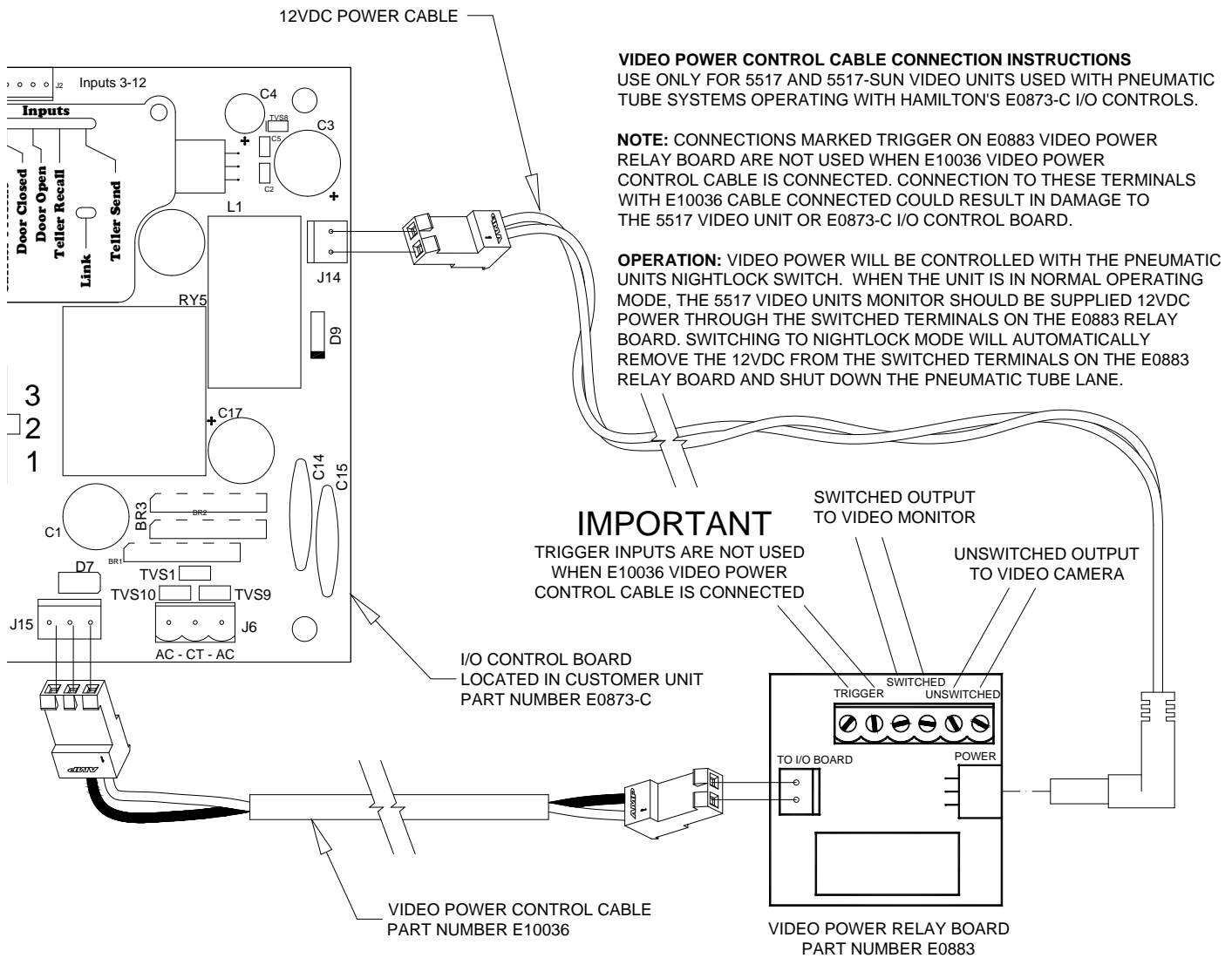
Pulling the switch forward will put the lane in the night lock mode.

Optional Video Power and Control

Note, Only used with Hamilton 5517 two-way video units.

E10036 Video Power Control Cable Installation

Used only for 5517 video units when pneumatic tube system uses E0873-C I/O control boards.



VIDEO POWER CONTROL CABLE CONNECTION INSTRUCTIONS
 USE ONLY FOR 5517 AND 5517-SUN VIDEO UNITS USED WITH PNEUMATIC TUBE SYSTEMS OPERATING WITH HAMILTON'S E0873-C I/O CONTROLS.

NOTE: CONNECTIONS MARKED TRIGGER ON E0883 VIDEO POWER RELAY BOARD ARE NOT USED WHEN E10036 VIDEO POWER CONTROL CABLE IS CONNECTED. CONNECTION TO THESE TERMINALS WITH E10036 CABLE CONNECTED COULD RESULT IN DAMAGE TO THE 5517 VIDEO UNIT OR E0873-C I/O CONTROL BOARD.

OPERATION: VIDEO POWER WILL BE CONTROLLED WITH THE PNEUMATIC UNITS NIGHTLOCK SWITCH. WHEN THE UNIT IS IN NORMAL OPERATING MODE, THE 5517 VIDEO UNITS MONITOR SHOULD BE SUPPLIED 12VDC POWER THROUGH THE SWITCHED TERMINALS ON THE E0883 RELAY BOARD. SWITCHING TO NIGHTLOCK MODE WILL AUTOMATICALLY REMOVE THE 12VDC FROM THE SWITCHED TERMINALS ON THE E0883 RELAY BOARD AND SHUT DOWN THE PNEUMATIC TUBE LANE.

IMPORTANT
 TRIGGER INPUTS ARE NOT USED WHEN E10036 VIDEO POWER CONTROL CABLE IS CONNECTED

Basic Installation Procedures

- 1) Locate the customer unit where it will be mounted, as shown in customer unit details. Mark the three mounting hole locations through the base. Use the appropriate anchors for the material and location of installation. (Typically a drop-in concrete anchor or sleeve anchor is used. See local building codes for requirements in your area.)
- 2) Level the customer unit using shims under the base before tightening the anchors. Use shims of a material that will not corrode or decompose (Stainless Steel or Plastic shims recommended) Shim under the anchor points as close to the anchors as possible to avoid deforming the base. This may damage the base and/or make further assembly difficult.
- 3) Connect tubing as shown in customer unit connections. The acrylic tubes may need to be longer or shorter in order to reach the ceiling. These acrylic tubes come standard eight feet long but are available as an option twelve feet long.
- 4) Mount and connect operator unit per the instructions included with the operator unit.
- 5) Connect interconnection cable between customer and operator units. The interconnection page in this manual shows the CAT5 cable details. The cable will plug into the customer unit control board and the operator unit board.
- 6) Connect options like audio and video systems. Refer to the instructions included with these systems for installation details.
- 7) Connect power to the customer unit. A qualified technician should make all electrical connections. Each customer unit requires a dedicated branch circuit, 120volt, 60Hz, 20 amp. The customer unit electrical box details drawing shows the power connection locations.

Initial Startup Procedures

- 1) Check all connections, electrical and tubing.
- 2) Turn on power to customer unit.
- 3) The customer door will close if not already closed after the control board is fully started. It takes five to seven seconds for the control board to fully start.
- 4) Check LED lights on the customer unit control board. (Refer to instructions for the control board to confirm proper setup.) You should see Link, Teller Send, Door Open, Door Safety, Power, and Vid. Power LEDs on at startup. You may see Close C/Door also as an option.
 - a. Note the Link and Teller Send LED lights activate when the manual operator unit door is closed. If these two LED lights are not on, confirm the manual operator unit door is fully closed and activating the switch.
 - b. If the nightlock LED is on, the Vid. Power LED will not come on. Check the nightlock switch located on the manual operator unit.
 - c. Door safety LED should always be on with exception of when the safety bar is lifted on the customer unit.
 - d. Door open and door closed LEDs are on until the door is in that position. For example, both door open and door closed lights are on, when the door is fully closed, the door closed LED should go out. The door open light will remain lit. The same will happen when the door is completely open, the door open light should go out and the door closed light will remain on.
- 5) Test the operation by pressing the carrier recall button located on the customer control board. The vacuum motor should run for three seconds and the customer door should open. Now press the carrier send button located on the front of the customer unit. The customer door should close and the pressure motor should run for three seconds. Recall the carrier to customer unit again. Test safety bar but activating the safety bar while the door is closing. The door should return to open position after safety bar was activated.
- 6) Set blower run time.

Blower Run-Time Set Procedure

The “blower run time” is set using switch number one (SW1), which is located on the control board in the customer unit. The unit is shipped with a default time stored of about 3 seconds. This procedure will overwrite any existing times set in system. This time can be reset as often as necessary. **Power failure will NOT affect the times stored.**

To restore default blower run times:

- 1) Turn power “OFF” to unit.
- 2) Turn SW1 “ON”.
- 3) Turn power “ON” to unit.
- 4) Wait 10 Seconds for unit to initialize.
- 5) Return SW1 to “OFF”.
- 6) Default blower run time is restored.

The blower run time can be set with both directions of carrier travel using the same time or in a three stage cycle. The three stage cycle includes individual times for the two directions of carrier travel along with a third time for the carrier to free fall in the clear acrylic tube after the blowers stop and before the customer door opens.

Setting procedure for blower run time. (Single time for both directions)

- 1) Restore default times as described above.
- 2) Before beginning, the carrier must be in customer unit with customer door open.
- 3) Turn SW1 to the “ON” position. (LED indicator will light)
- 4) Push and hold either “Customer Send” or “Teller Recall” button until carrier arrives in the teller unit. Releasing button stores the time for this cycle.
 - Note:** For systems with carrier arrival switches at both ends, when the carrier arrives at the teller unit and activates the carrier arrival switch, the blowers will automatically turn off.
- 5) Turn SW1 to the “OFF” position to store the cycle time for both directions.
 - Note:** For systems with carrier arrival switches at both ends, the system will now run until it arrives and activates the carrier arrival switches at both customer and teller.

Setting procedure for blower run time. (Three stage cycle time)

- 1) Before beginning, the carrier must be in customer unit with customer door open.
- 2) Turn SW1 to the “ON” position. (LED indicator will light)
- 3) Push and hold either “Customer Send” or “Teller Recall” button until carrier arrives in the teller unit. Releasing button stores the time for this cycle.
- 4) Push and hold either “Teller Send” or “Teller Call” button until carrier arrives in the clear acrylic tube on the customer unit. Releasing the button stores the time held for this cycle. (Turbines will shut off, customer door stays closed)
- 5) When carrier lands in customer unit, press and release “Teller Call” button to open the door. This stores a third time for carrier free fall time in the clear acrylic tubing. Turn SW1 to the “Off” position for normal operation.

Troubleshooting the E0873

Motorized Door Test (Automatic):

- 1) Disconnect the interconnection cable from the board.
- 2) If the door is open, turn SW3 “ON”, if door is closed, turn SW3 “OFF”.
- 3) Cycle power “OFF” and back “ON”.
- 4) Door should open or close depending on the setting of SW3.
- 5) Repeat test in both directions and on both tube stations if applicable.

Motorized Door Test (Manual):

- 1) Turn SW3 “ON” if not already “ON”
- 2) Turn SW1 “ON”
- 3) Send and Call or Recall activates the door manually. Releasing the button stops the door as well as tripping the limit switches.
- 4) Turn SW1 “OFF” and SW3 “OFF” for customer or “ON” for teller for normal operation.

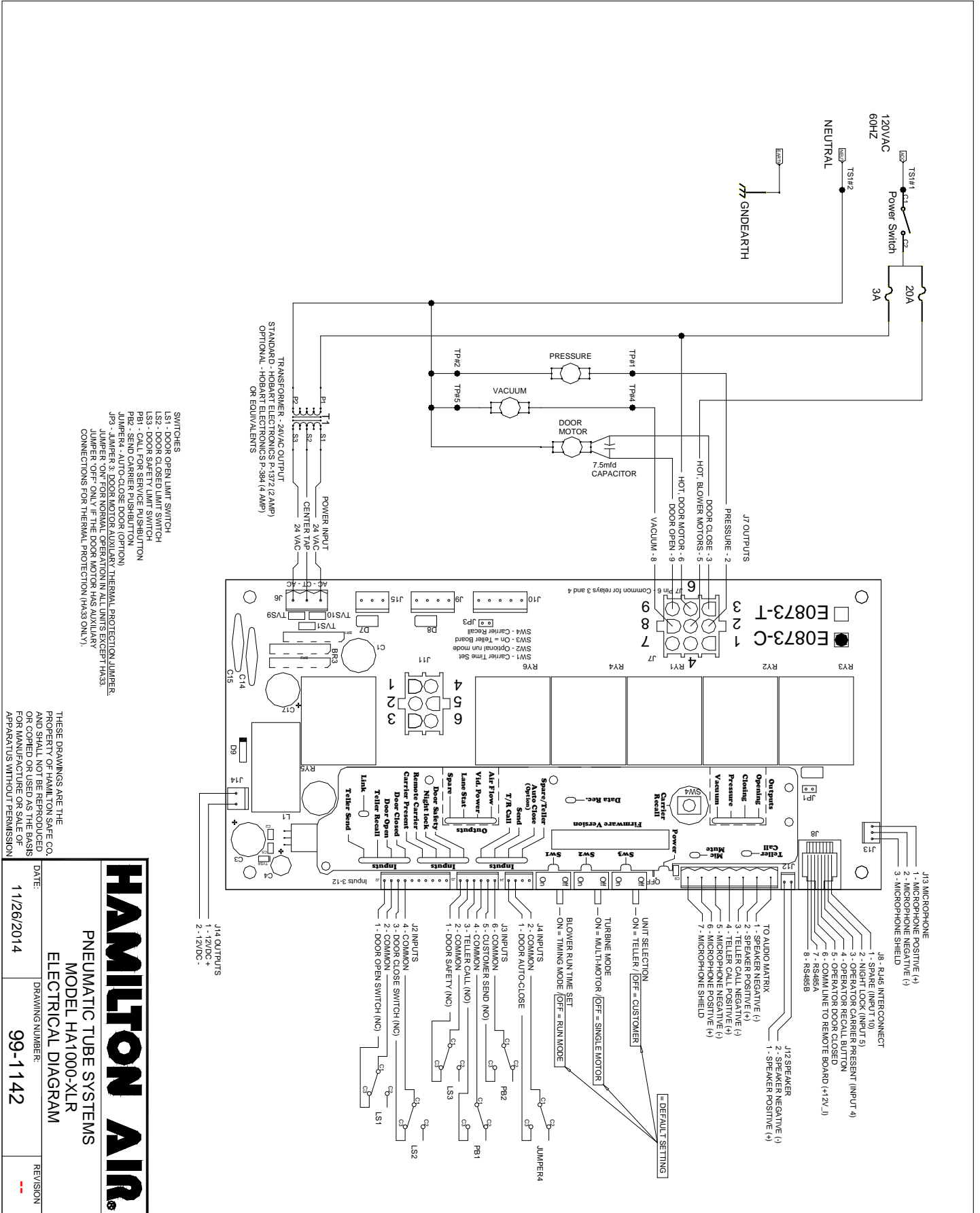
Blower Run Test:

- 1) Test is performed on terminal that turbines are controlled from. This could be on either customer or teller station on a two board system.
- 2) Recall carrier to station that has turbines connected so that door will open.
- 3) Hold SW4 while switching SW1 “ON”.
- 4) Pressing send and teller call or recall will activate the pressure and vacuum turbines.
- 5) Turn SW1 “OFF” to return to normal operation.

Restore Default Blower Run Times:

- 1) Turn power “OFF” to unit.
- 2) Turn SW1 “ON”.
- 3) Turn power “ON” to unit.
- 4) Wait 10 Seconds for unit to initialize.
- 5) Return SW1 to “OFF”.
- 6) Default blower run time is restored.

Logic Wiring Detail with Local Turbines



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REVISION: --

HAMILTON AIR

PNEUMATIC TUBE SYSTEMS
MODEL HA1000-XLR
ELECTRICAL DIAGRAM

Logic Wiring Detail with Remote Turbine

