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TUT092 PRESSURE TRANSDUCER INSTALLATION INSTRUCTIONS

NOTE REGARDING THE AJUNC 3 BOARD CALIBRATION

The AJUNC 3 Board must be calibrated anytime the PT100 Temperature Sensor is replaced and to do so, it will require many of the tools and materials included in the RPI Diagnostic Smart Kit® (RPI Part #TUK108). *If using the OEM test kit, use the components corresponding to RPI tools mentioned below.*

IMPORTANT NOTES

- Before beginning the installation of the new Pressure Transducer, determine which AJUNC Board is installed in the autoclave.
- Tuttnauer automatic autoclaves have a Pressure Transducer using either an AJUNC 3 Board (RPI Part #TUB154) or an AJUNC 2 Board. Once determined, follow the steps below that correspond to the type of AJUNC Board installed in the autoclave.

UNITS WITH AJUNC 3 BOARD *(For units with AJUNC 2 Board, see reverse page)*

IMPORTANT NOTE

- The following Installation, Calibration and Troubleshooting steps are only for the Pressure Transducer that is used with an AJUNC 3 Board and does not have an in-line PCB assembly. *For units with and AJUNC 2 Board, see reverse page.*

Installation Instructions

- 1) Turn the sterilizer power off and unplug the unit from the electrical source.
- 2) Remove the cover and put aside any hardware for use later in these instructions.
- 3) On the back of the AJUNC 3 Board, locate a 4-pin connector labeled JP6 and unplug the Pressure Transducer connector. See **Figure 1 - Close up view of AJUNC 3 Board (RPI Part #TUB154)**.
- 4) Remove the cable ties holding the silicone tube to the Pressure Transducer and the brass tubing.
- 5) Remove the Pressure Transducer and the tubing. Discard both parts.
- 6) Install and securely mount the new Pressure Transducer (RPI Part #TUT092) and the new silicone tube included in the package (RPI Part #RPK282). Be sure to secure tubing at both ends with the enclosed new cable ties.
- 7) Plug the JP6 connector back into the AJUNC 3 Board.
- 8) Continue to the Calibration Instructions below. Note: The calibration procedure must be done following the replacement of either the Pressure Transducer or the AJUNC 3 Board.

Calibration Instructions

This procedure needs to be done anytime the Pressure Transducer or AJUNC 3 Board is replaced.

1) Zero Adjustment Procedure

- a) Plug the unit into the electrical source and make sure the unit is in the off position.
- b) Press and hold in the door switch. Turn the power on and hold the door switch for approximately 5 seconds.

- c) The unit automatically sets the display to zero. Any display other than 0.0 is not acceptable and indicates a bad AJUNC 3 board.

2) Gain Adjustment Procedure for units with an AJUNC 3 Board: (See Figure 1 for initial setup)

- a) Connect the Test Point Board (RPI Part #TUB109) using the Ribbon Cable (RPI Part #TUC117) to the JP14 connector on front of the AJUNC 3 Board.
- b) Connect a voltmeter to test points TP4 and TP1 on the Test Point Board.
- c) Adjust Pot 2 on the AJUNC 3 Board until the voltmeter reads 500mv DC (+/-5mv). Use the Trim Pot Adjustment Tool (RPI Part #RPT460) for this adjustment.
- d) If the front panel display changed from zero (set during the zero adjustment procedure above) to any other value, close the sterilizer door and start an unwrapped cycle. As the pressure rises within the chamber from room pressure to 30 PSI, the voltage reading should rise from 500 mv DC (set in Step #3 above) to 1.5 volts. While the cycle is running, it should be noted that each one-pound change in pressure should be approximately equal to 0.033 mv DC.
 - If the readings obtained are not correct then the AJUNC 3 Board may need to be replaced.
 - If the readings on the voltmeter are correct but the display is inaccurate then the Digital Predg Board may need to be replaced.

3) Final Check

- a) Turn off power switch and remove the Test Point Board and Ribbon Cable.
- b) Open the connection that leads to the Pressure Transducer and connect the Test Pressure Gauge (RPI Part #TUG110) in-line with the Pressure Transducer. See **Figure 2**.

- c) Run an empty sterilization cycle and after checking for leaks at the Test Pressure Gauge connections, verify that the digital display matches the mechanical gauge.
- d) Disconnect the Test Pressure Gauge and reconnect the tubing.
- e) Run an unwrapped cycle to check for leaks at the Pressure Transducer connections.
- f) Turn the sterilizer power off and unplug the unit from the electrical source.
- g) Replace the top cover and removed hardware.
- h) Retest the final assembly repair by running an additional cycle before returning the sterilizer to service.

FIGURE 2 - Test Pressure Gauge (RPI Part #TUG110)

Open the connection that leads to the Pressure Transducer and connect the Test Pressure Gauge (RPI Part #TUG110) in-line with the Pressure Transducer.

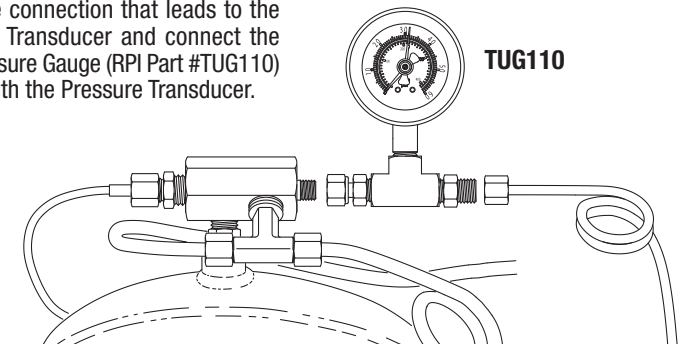
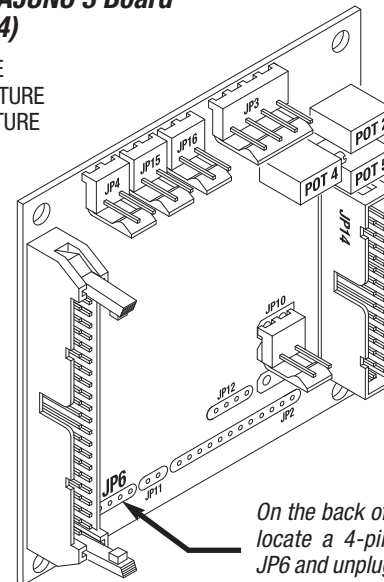


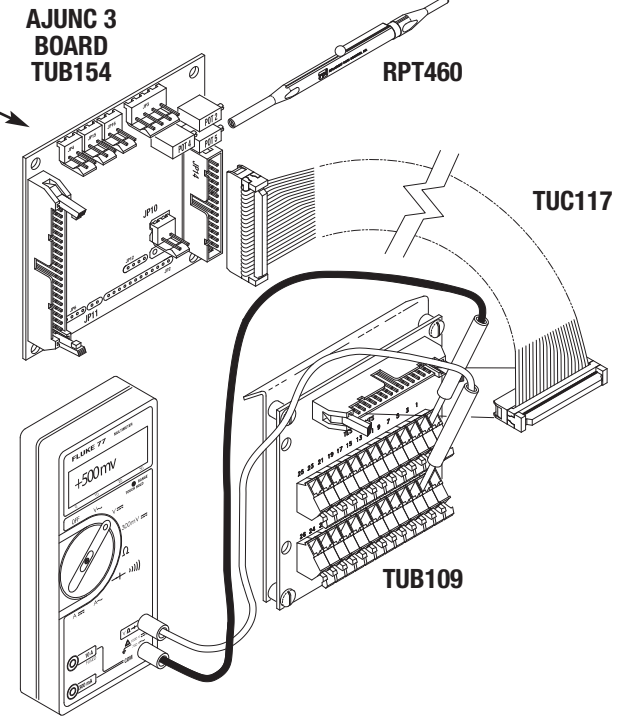
FIGURE 1 - Initial Setup

Close up view of AJUNC 3 Board (RPI Part #TUB154)

POT 2: GAIN PRESSURE
POT 4: ZERO TEMPERATURE
POT 5: GAIN TEMPERATURE



On the back of the AJUNC 3 Board, locate a 4-pin connector labeled JP6 and unplug the Pressure Transducer connector.



UNITS WITH AJUNC 2 BOARD (For units with AJUNC 3 Board, see reverse page)
IMPORTANT NOTES

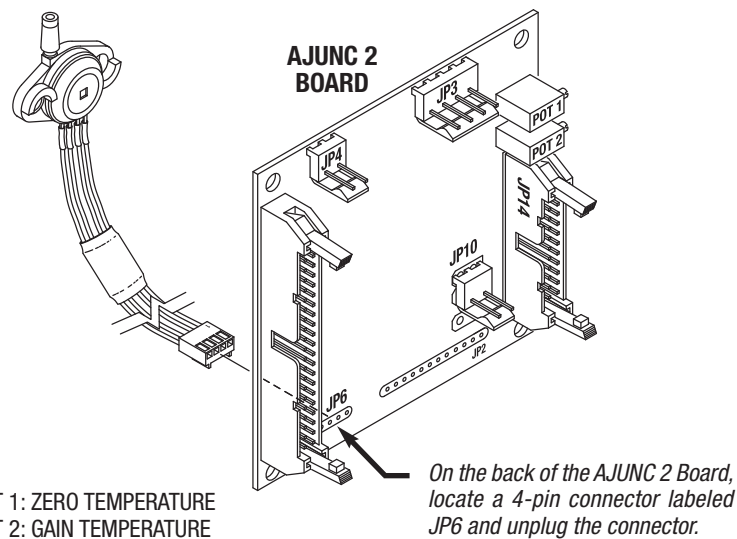
- The following Installation, Calibration and Troubleshooting steps are only for the Pressure Transducer that is used with an AJUNC 2 Board and has an in-line circuit PCB assembly. For units with and AJUNC 3 Board, see reverse page.

- Before installing the new Pressure Transducer into a unit using an AJUNC 2 Board, simple modifications must be made to the cable assembly wires.

Remove Existing Pressure Transducer

- Turn the sterilizer power off and unplug the unit from the electrical source.
- Remove the cover and put aside any hardware for use later in these instructions.
- On the back of the AJUNC 2 Board, locate a 4-pin connector labeled JP6 and unplug the Pressure Transducer connector. See **Figure 3**.
- Remove the cable ties holding the silicone tube to the Pressure Transducer and the brass tubing.
- Remove the Pressure Transducer and the silicone tubing. Discard the tubing. Keep the Pressure Transducer for modification later in these instructions.

FIGURE 3 - Close up view of AJUNC 2 board



Modification Instructions (See Figure 4)

Note: Tools needed – Soldering iron, solder, and Terminal Crimp Tool (RPI Part #RPT482).

- Using the Terminal Crimp Tool, section the heat shrink tubing that is enclosed in this Kit into 4 equal lengths of approximately 1 inch each.
- Using the Terminal Crimp Tool, clip the installed connector off of the new Pressure Transducer (RPI Part #TUT092) but be sure to leave at least 3 to 4 inches of wire attached to the Transducer. Discard connector.
- Slide one of the pieces of heat shrink tubing prepared in Step #1 onto each of the four individual wires attached to the new transducer.
- Using the Terminal Crimp Tool, carefully remove approximately 1/2 inch of the insulation on each of the 4 wires attached to the new transducer.
- Lay the original Pressure transducer (that was removed previously) on a flat surface with both the hose barb and the Red wire pair on the left side of the part. Then using a Termi-

nal Crimp Tool, clip the Black wire attached to Pin 1 and remove approximately 1/2 inch of the insulation from the Black wire connected to the existing cable assembly.

- Lengthwise, twist together the Black wire from the existing assembly to the new Pressure Transducer (RPI Part #TUT092). Solder the two twisted Black wires together and install the heat shrink tubing over the connection.
- Repeat the procedure above, attaching the corresponding wires connected to Pins 2, 3, and 4 of the new transducer to the wires originally attached to the old cable assembly ensuring that each connection is soldered properly and covered with heat shrink tubing. **Caution: Ensure wires of new transducer are spliced to the proper corresponding wires of original cable assembly.** Now the modified Pressure Transducer is ready for installation.

Installation of Modified Pressure Transducer Instructions

- Install and securely mount the modified Pressure Transducer (RPI Part #TUT092) and the new silicone tube included in the package (RPI Part #RPK282). Be sure to secure the tubing at both ends with the enclosed new cable ties.
- Plug the modified Pressure Transducer onto the JP6 connector on the AJUNC 2 Board.
- Continue to the Calibration Instructions below. Note: The calibration procedure must be done following the replacement of either the Pressure Transducer or the AJUNC 2 Board.

Calibration Instructions

This procedure must be done following the replacement of either the Pressure Transducer or the AJUNC 2 Board.

1) Zero Adjustment Procedure (See Figure 3)

- Turn off power. Connect the Test Point Board (RPI Part #TUB109) using the Ribbon Cable (RPI Part #TUC117) to the AJUNC 2 board.
- Connect a voltmeter to test points TP2 and TP3 on the Test Point Board.
- Turn on power. Use the Trim Pot Adjustment Tool (RPI Part #RPT460) to make adjustments to Pot 1 on the AJUNC 2 Board for 0.0 volts on voltmeter.

2) Gain Adjustment Procedure for units with an AJUNC 2 board:

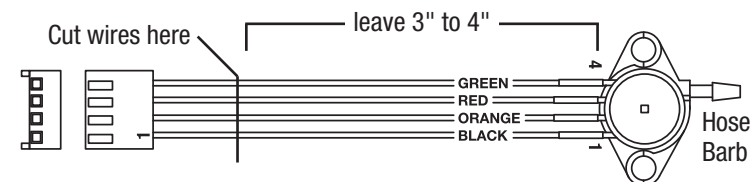
- Open the connection that leads to the Pressure Transducer and connect the Test Pressure Gauge (RPI Part #TUG110) in-line with the Pressure Transducer. See **Figure 2** on reverse page.
- Run an empty sterilization cycle and adjust Pot 2 so the digital display matches the mechanical gauge. Be sure to wait until the reading on the Test Pressure Gauge has passed 25 psi to make the final adjustment.
- If the display is incorrect or inconsistent, connect a voltmeter to test points TP4 and TP1 on the Test Point Board (RPI Part #TUB109).
- Run an empty sterilization cycle. The voltage reading should rise from 0 volts to 1.923 volts DC. This voltage reading corresponds to a pressure reading of between 0 psi and 30 psi. While the cycle is running, it can be noted that each one-pound change in pressure is approximately equal to 0.0641 mv DC.

- If the readings obtained are not correct then the AJUNC 2 Board may need to be replaced.
- If the readings are correct but the display is inaccurate then the Digital Predg Board may need to be replaced.

3) Final Check

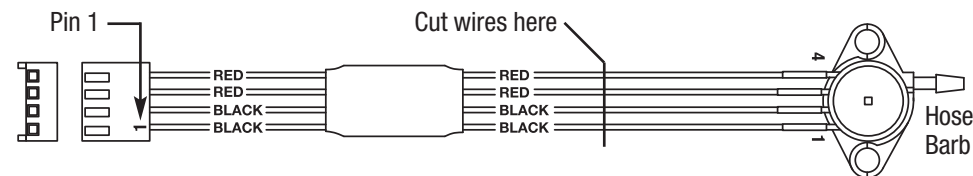
- Turn off power switch and disconnect sterilizer from AC source.
- Disconnect the Test Point Board and Ribbon Cable. Remove the Test Pressure Gauge and reconnect the original tubing.
- Run an unwrapped cycle to check for leaks at the Pressure Transducer connections.
- Turn the sterilizer power off and unplug the unit from the electrical source.
- Replace the top cover and any removed hardware.
- Retest the final assembly repair by running an additional cycle before returning the sterilizer to service.

FIGURE 4 - Modifying the Pressure Transducer (RPI Part #TUT092)



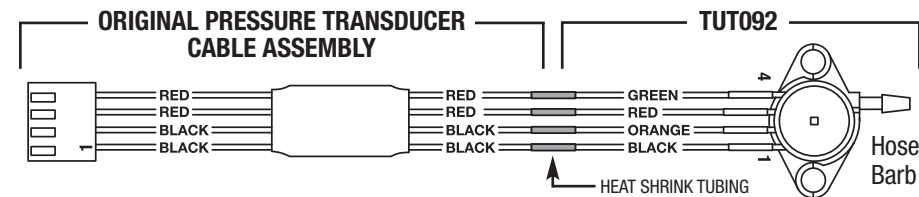
RPI PART #TUT092

Using the Terminal Crimp Tool, clip the installed connector off of the new Pressure Transducer (RPI Part #TUT092) but be sure to leave at least 3" to 4" of wire attached to the Transducer. Discard connector. Split the heat shrink tubing enclosed with the Pressure Transducer (RPI Part #TUT092) into 4 equal lengths of ≈1". Slide one piece of tubing onto each of the 4 wires attached to the new transducer. Remove ≈1/2" of the insulation on each of the 4 wires attached to the new transducer.



ORIGINAL PRESSURE TRANSDUCER

Clip the wires attached to Pins 1 thru 4 and using the Terminal Crimp Tool, remove ≈1/2" of the insulation from the wires connected to the existing cable assembly. Attach the corresponding wires connected to Pins 1 thru 4 of the new transducer to the wires originally attached to the original cable assembly ensuring that each connection is soldered properly and covered with heat shrink tubing.



MODIFIED PRESSURE TRANSDUCER

Caution: Ensure wires of new transducer are spliced to the proper corresponding wires of original cable assembly. Note the wire colors above.