GED Integrated Solutions	GED Integrated Solutions, Inc 9280 Dutton Drive Twinsburg, OH 44087	Document No.: APN-0158 Revision: C	Date: 11/16/12
Description: **SMART EXTRUDER, SPACER COOLING SYSTEM INSTALL & OPER.**			
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Approved By: Bill Briese			

Revision History:	Changed By:	Release No.:	Date:
A) Original Release	BB	04484	11/16/12
B)	KC	N/A	N/A
C)	KC		

1.0 Scope

1.1 This document and K500-MSMEXT-SPACER-COOLER are used exclusively with the GED Smart Extruder. Reference the conversion kit for a complete listing of included drawings and parts.

1.2 1-28244, Spacer Cooler Assembly

1.3 3-091878, Spacer Cooler Pneumatic Schematic

1.4 3-091879, Spacer Cooler Electrical Schematic

2.0 Purpose

2.1 This document outlines the installation and use of the spacer cooling system that is located on the Smart Extruder exit conveyor.

2.2 A self-contained cold air gun using vortex technology is used to deliver low temperature compressed air through a series of flat nozzles to the side sealant on the spacer frame.

2.3 An infrared temperature sensor and digital read-out are used to quantify the side sealant temperature after it has passed through the cooling system.

2.4 A regulator is used to adjust the rate of cooling.

2.5 Drip channels and pans ensure that condensate is contained.

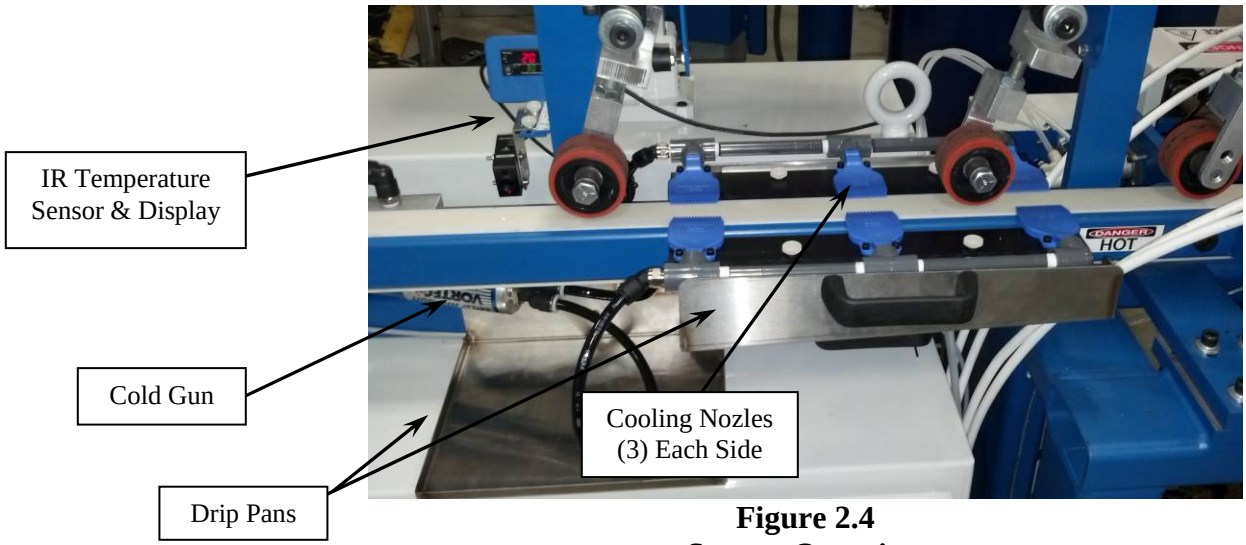

Figure 2.4
System Overview

3.0 Setup and Operation

3.1 Overview

3.1.1 As the spacer exits the extruding area, it is desired that the sealant is at an optimal temperature for handling considerations. If the sealant is too hot the spacer can become difficult to handle and fold without creating damage to the sealant. If the sealant is too cold the spacer can become distorted or damaged during folding and insertion of the 4th corner tab. The desired sealant temperature will be different for each sealant type, so it is recommended that a study be completed to ensure that an ideal cooling rate is achieved.

3.2 Set the Manifold Vertical Position

3.2.1 The nozzles should be set vertically as close to the exit conveyor belt as possible without making contact with the belt. Slotted holes on the side mounting L-brackets (opposite from side shown) are used to properly position both sides of the cooling system vertically.

3.3 Set the Manifold Horizontal Position

3.3.1 Thumb screws position each nozzle manifold horizontally. There should be about ¼" to ½" clearance between the spacer and nozzle on each side. For large variations in spacer size, it may be necessary to adjust this during a spacer change.

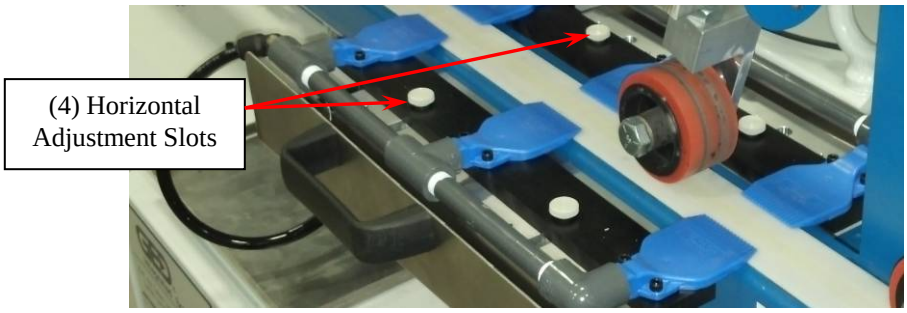

Figure 3.3
Setting the Manifold Horizontal Position

3.4 Set the Temperature Sensor Position

3.4.1 Adjust the IR sensor so that the head is properly focused. The sensor contains two red target beams pointing at an angle to each other. When the two red target beams appear as one red dot, the sensor is set properly. To ensure proper temperature measurement, this should be adjusted during each spacer size changeover. The red target beams are only used to focus the amplifier, they are not used to measure temperature.

3.4.2 A graduated scale on the sensor bracket will assist the spacer width adjustment process. For spacer width changeover, typically once the angle is set we only need horizontal adjustment done with thumb screws.

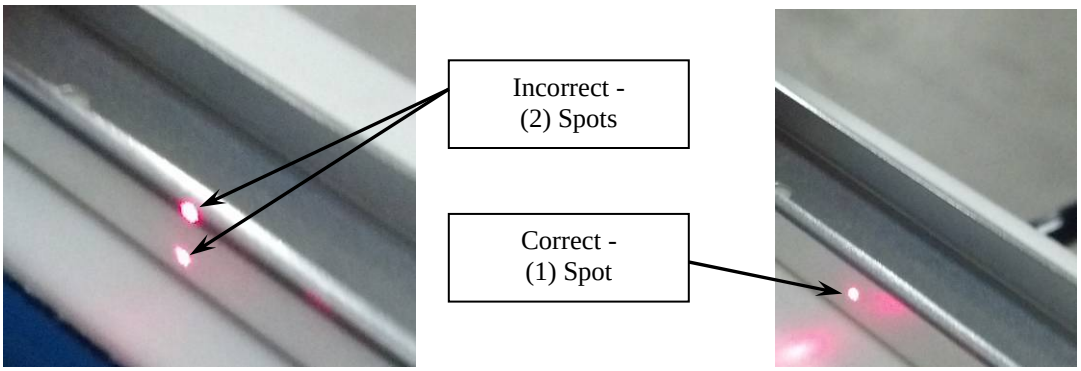

Figure 3.4.1
Incorrect and Correct Temperature Sensor Alignment

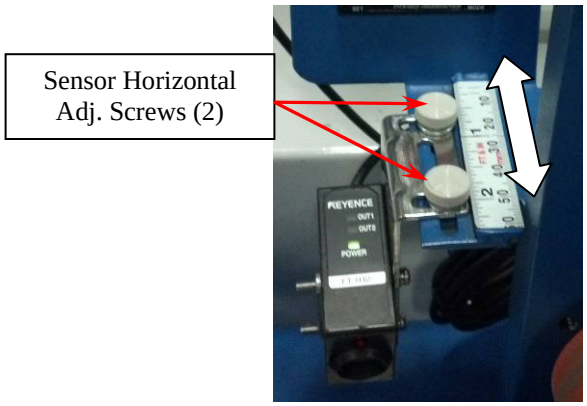

Figure 3.4.2
Temperature Sensor Horizontal Adjustment

3.5 **Set the Desired Sealant Temperature**

3.5.1 Adjust the main air regulator to achieve the desired sealant temperature. Higher air pressure will result in lower sealant temperatures. As stated above, if the sealant becomes too cool it can result in spacer damage during folding or tab insertion. The cold-gun also contains an adjustment knob which should not be used; ensure that this always remains on the “Coldest” setting.

3.5.2 Note that the air supply contains a water/oil separator and a very fine 1 micron filter so that we ensure a contaminant-free delivery of compressed air to the sealant surface. When the green indicator disappears and the red indicator appears it is time to change the filter.

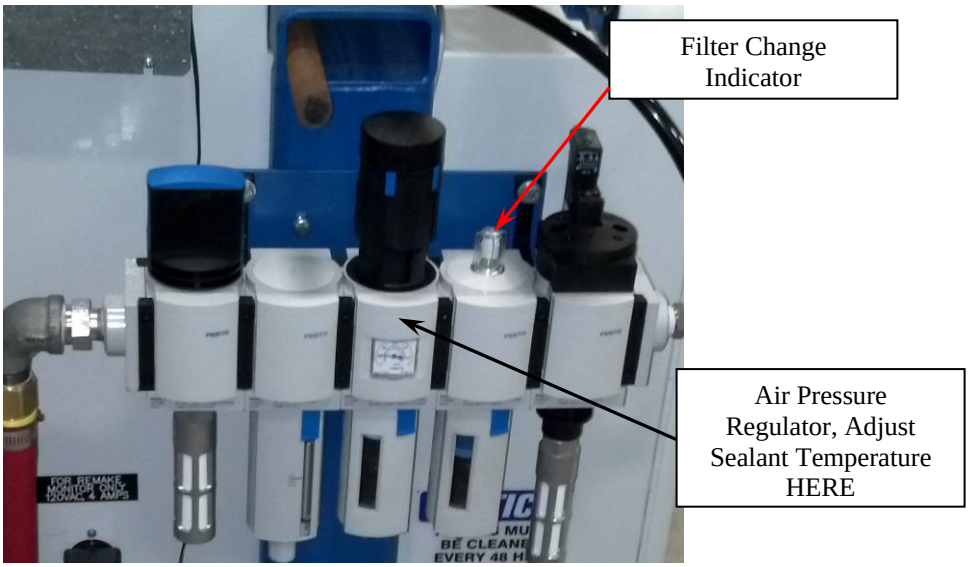

Figure 3.5
Main Air Supply, Regulator & Filter

3.6 Extruder Belt Change

3.6.1 When it becomes necessary to change the extruder belt, the operator side nozzle manifold can be removed for access. Pulling the handles outward will release the magnets from the exit conveyor tube. When re-installing the nozzle manifold, line up the guide pins to the bearing sleeves and the manifold will snap back into its original location on the conveyor tube.

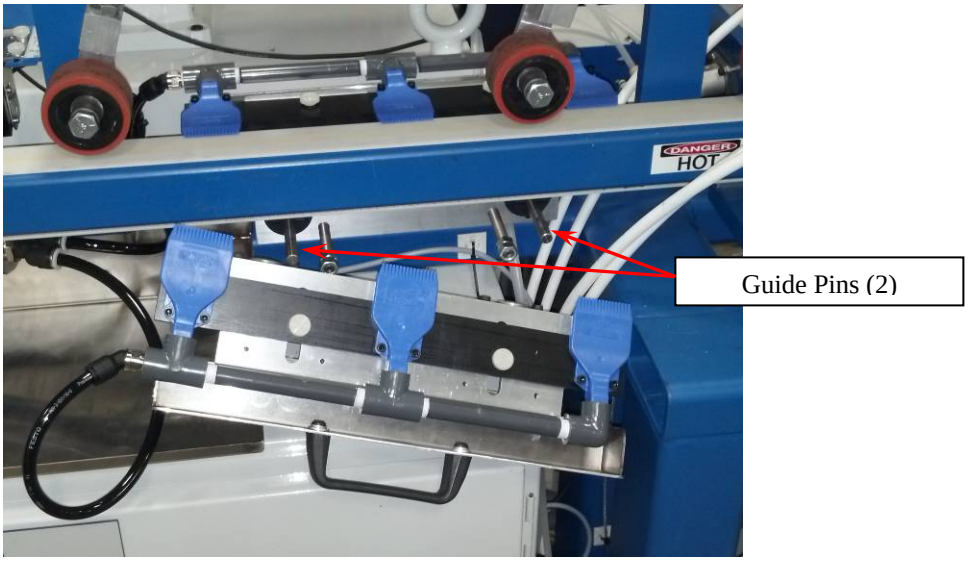

Figure 3.6
Operator Side Manifold Removed for Belt Change

4.0 Installation

4.1 Tools Required

4.1.1 ¼-20 tap & drill set, right angle (low profile) drill
4.1.2 7/16” socket / wrench
4.1.3 5/32” allen wrench
4.1.4 Screwdrivers

4.2 Tap holes for FRL into Smart Extruder frame and mount FRL

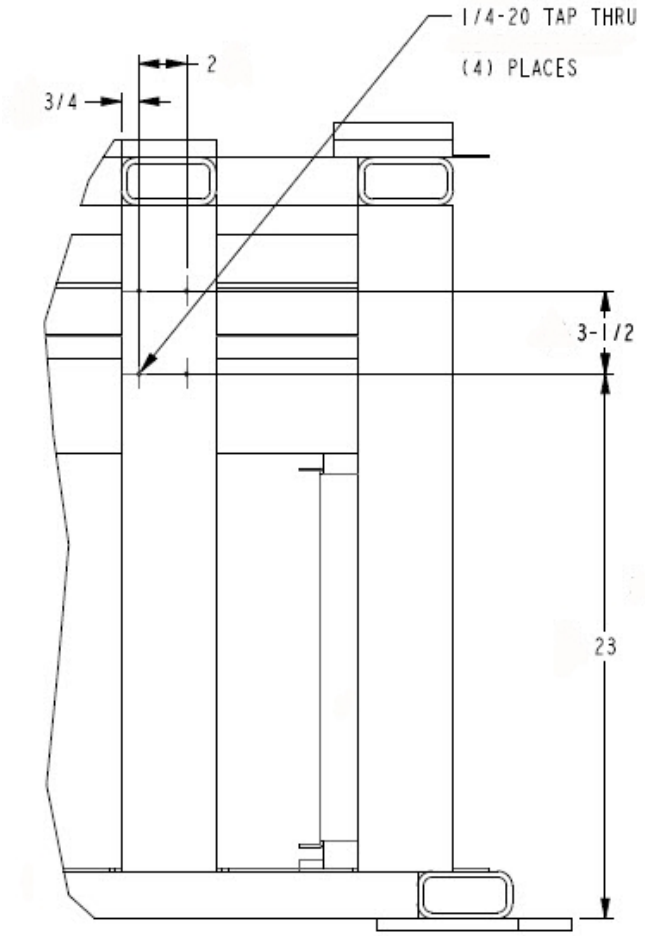

Figure 4.2
FRL Mounting Holes Into Frame

4.3 **Tap holes for sensor & readout onto the vertical hold-down wheel support that is furthest downstream**

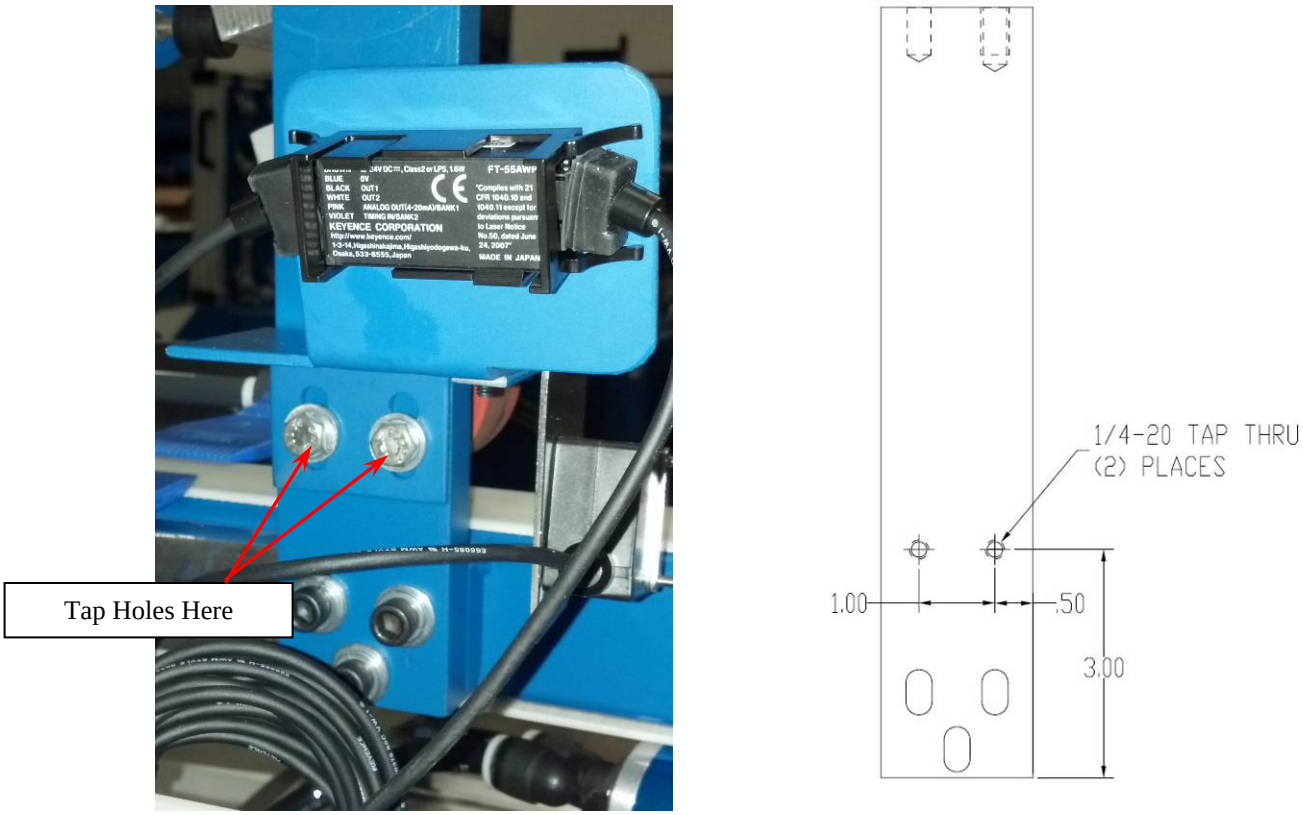

Figure 4.3
Temperature Sensor Bracket Mounting Holes

4.4 Tap holes and mount cooling rail nozzle manifolds and cold gun

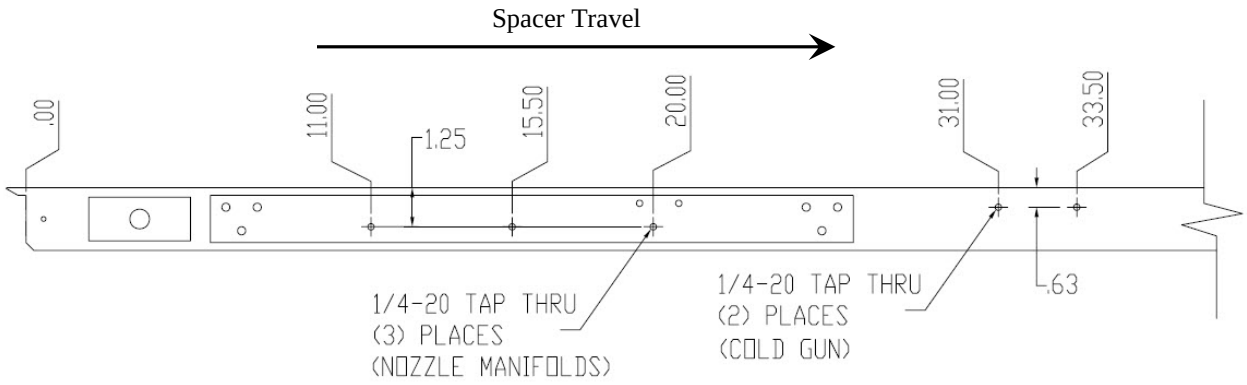

Figure 4.4
Nozzle Manifold & Cold Gun Mounting Holes
(View from Non-Operator Side)

4.5 Install electrical connections

4.5.1 The spacer cooling system receives its 24VDC power from the Smart Extruder

4.5.2 DIN rail, terminal blocks, strain relief and wire are included with the kit

4.5.3 Install the field wiring and internal panel wiring per electrical schematic 3-091879

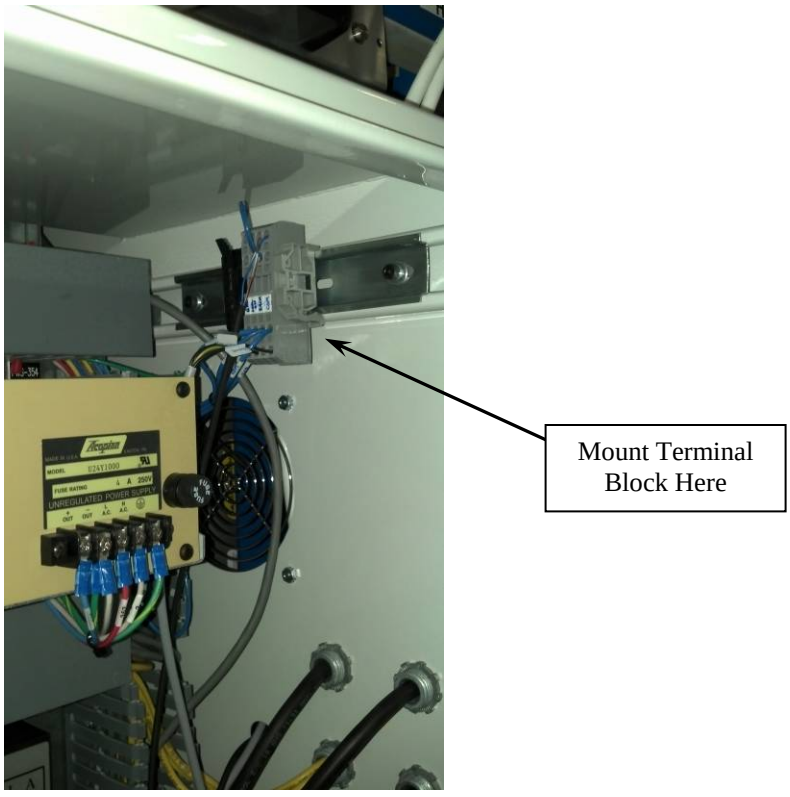

Figure 4.5
Terminal Block Mounting Inside Smart Extruder Enclosure

4.5.4 The compressed air supply to the manifolds should turn-on when the machine is switched to automatic and turn-off when the machine is switched to manual. This is done using the Extruder Ready relay #CR-1426 N.O. contacts.

4.6 Configure display for infrared temperature sensor

4.6.1 This system includes a temperature display that is capable of maintaining / holding the measured temperature of the last run spacer, displayed on the top red box.

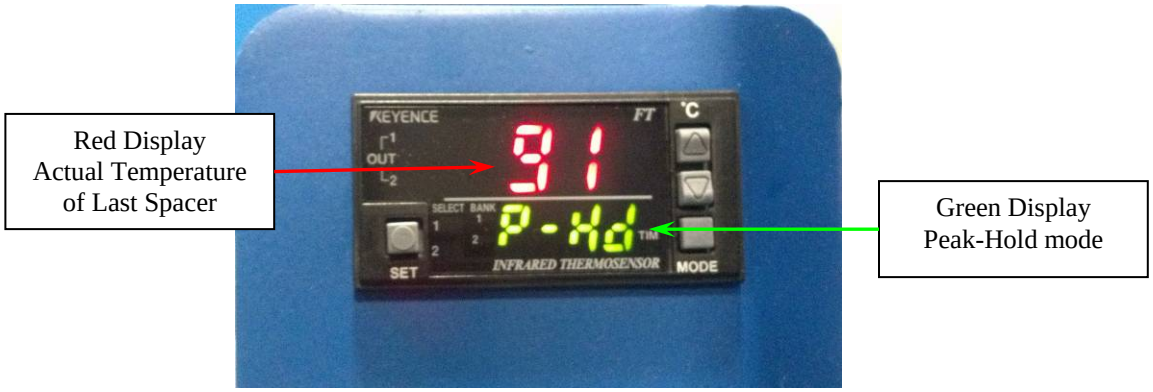

Figure 4.6
Amplifier Mode Setting

4.6.1.1 To insure success and minimize confusion begin by initializing the amplifier to the factor settings. To do this, hold down the MODE button and press the SET button five times. The display on the left below will appear.

Press the UP or DOWN arrow key to select “YES” then press MODE one more time.

4.6.1.2 At this point you may select to display in degrees “F” or degrees “C” by using the UP or DOWN arrow key to select. Press MODE once to select

then verify your selection by changing “no” to “YES” using the UP or

DOWN arrow key. Press MODE again one time.

At this point the display will show the current temperature on top and the emissivity below.

4.6.1.3 To set the display to update the temperature for each spacer as it passes, it is necessary to set the minimum trigger point (P1) to 122°F (50°C), or some temperature above ambient. This temperature set-point will appear in green in the lower display.

Press the MODE button once to change from the previous screen to the one on the left below.

Use the DOWN arrow key to change the default temperature of 932°F (500°C) to 122°F (50°C).

4.6.1.4 Next, Mode #9 must be changed from Hold/Hold to Hold/Auto which places the amplifier in an Auto Peak mode thus capturing the peak temperature of the spacer sealant once the trigger point (P1) is surpassed. This setting in-turn updates the bottom value when the temperature drops below the trigger point resetting the amplifier so it may capture the peak temperature of the next spacer.

To access the Basic Menu, press and hold the MODE button for 3 or more seconds. Mode #1 will appear:

Press the MODE button 4 more times until the display looks like the image on the left below:|

Press either the UP or DOWN arrow key once to access settings beyond the Basic Menu. Press the MODE button 5 more times to get to Mode #9 as seen below on the left:

Press either the UP or DOWN arrow key to change the mode setting to Hold/Auto. Press the MODE button twice to End and exit.

At this point the display will flash between Hold/Auto and Peak Temp/Bottom Temp.

4.6.1.5 Press the UP arrow key once to put the display in the Peak Hold mode shown below.

The amplifier is now set to function as described in 4.6.1.4

If this is not set to the Peak-Hold mode then the red display will dynamically show the current temperature and the green display will show the trigger point.

4.6.2 **Key Lock Function (Optional).**

4.6.2.1 If desired the keys can be locked to prevent accidental changing of the settings. The keys may still be used to toggle between display modes. To lock the keys press and hold the MODE button and either the UP or DOWN arrow simultaneously for about three seconds. The display will momentarily flash “Loc” indicating the keys are locked. Repeat these steps to unlock the keys at which time the display will momentarily flash “unL”.