

DUKANE

Intelligent Assembly Solutions

**INSTRUCTION
MANUAL**

SOLUTION SERIES

Bench Top Model .50AS

Thermal Assembly System

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❖ WARRANTY

Dukane warrants its products for a period of one year from date of shipment against defects in material or workmanship under normal installation and instructions when accompanied by equipment. During the warranty period Dukane will, at its option, as the exclusive remedy, either repair or replace without charge for material and labor, the part (s) which prove upon our examination to be defective, provided the defective unit is returned to us properly packed with all transportation charges prepaid. All heaters are guaranteed against defects for a period of 90 days from date of shipment. Tooling heated by cartridges (i.e., tips, blades or swaging tools) is warranted for a period of one year from date of shipment. The warranty does not cover normal wear and tear of heated tooling.

❖ LIMITATION OF WARRANTY

This warranty is in lieu of any other warranties, either expressed, implied or statutory. Dukane neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the sale of its products. Dukane hereby disclaims any warranty, merchantability, or fitness for a particular purpose. No person or company is authorized to change, modify or amend the terms of this warranty in any manner or fashion whatsoever. Under no circumstances shall Dukane be liable to the purchaser or to any incidental or consequential damages of loss of profit or product resulting from any malfunction or failure of the Dukane product. This warranty does not apply to equipment, which has been subject to UN-Authorized repair, misuse, abuse, negligence or accident. Equipment, which in our judgment shows evidence of having been used in violation of operating instructions, or which has had the serial number removed or altered, will be ineligible for service under this warranty. This warranty is exclusive to the original purchaser from Dukane and is not transferable. No liability is assumed for expenses or damage resulting from interruption in operation of the product or damages to material in process. The Dukane “Standard Terms and Conditions” also cover this warranty and any or all as originally stated in the proposal of offer.

This warranty does not cover intentional misuse of our heatstaking system such as using the machine for purposes such as heating of food products, or inserting the hot tools into liquids, or damage to the unit form intentionally using it a press for force applications not involving plastics.



SAFETY

The thermal press system described in this manual are covered by various Federal and State regulations and O.S.H.A. laws applicable at time of purchase. The operator and owner is responsible for maintaining this equipment in a safe manner including updating all safety devices when and of any applicable laws or rules change from date of purchase.

The following safety recommendations should be complied with when installing, operating and maintaining any Dukane systems or equipment.



DO NOT operate the Thermal System before proper installation.



DO NOT remove the covers unless the A/C cord has been unplugged from the AC power outlet.



DO NOT remove tooling when the machine is on.



DO NOT remove any tool guarding or safety switches



DO NOT TOUCH PROBE ASSEMBLY OR PLATEN WHEN HOT



SPECIAL HEALTH NOTICE ABOUT PLASTICS

Certain plastic materials, when being processed, may emit fumes and/or gases hazardous to any employee's health. Where such materials' are processed, proper ventilation of the workstation should be provided. Inquiries should be directed to the U.S. Department of Labor concerning O.S.H.A. regulations for a particular plastic prior to processing with secondary thermal processes.

Some examples of those materials include: PVC, Polyesters, Polyamides and Polyolefin's.

NOTE: Please read carefully before operating the equipment, then forward to your service department.

The system supplied with this instruction manual is constructed of the finest material and the workmanship meets the highest manufacturing standards. It has been thoroughly tested and inspected before leaving the factory and when used in accordance with the procedures outlined in this manual, it will provide you with many years of safe and dependable service.

MANUAL CHANGE INFORMATION

We continually strive to be at the forefront of the latest electronic developments by adding circuit and component improvements to our equipment as soon as they are developed and tested.

Sometimes, due to printing and shipping requirements, we cannot incorporate these changes immediately into printed manuals. Hence, your manual may contain new change information. Change information, if any, is located in the Appendix.

We reserve the right to make any changes in the design or construction of our equipment at any time, without incurring any obligation to make any change whatsoever in units previously delivered.

The technical data and schematics in the manual are for informational purposes only and may not reflect the current configuration being shipped from our factory. Upon formal request, complete and up-to-date information can be provided from the factory free of charge.

ABOUT THIS MANUAL

This manual contains information on the setup and operating procedures for the DUKANE model .50 AS Thermal Assembly System to obtain satisfactory operation. If for any reason you desire additional information concerning this equipment or application help, contact your local DUKANE representative or our manufacturing facility for assistance.

The following definitions apply in this manual:



Inconvenience only if disregarded – no damage or personal injury .



Equipment damage can occur , but not personal injury .



Personal injury can occur – DO NOT DISREGARD.

HEAT STAKING EQUIPMENT DESCRIPTION

The Model .50AS. is a Thermal System used to facilitate various types of plastics processes through Staking, De-gating , Date Coding, Insertion, Filter Media, Film & Fabric Sealing.

The Model .50 AS. is a multi tasking control package with true closed loop control capabilities.

Examples of this are: Slide Table, Post cooling, Clamping, Eject Mechanisms, Part Sensing, Distance Control, Out of Temperature, Etc.

UNPACKING MACHINE

1. After unpacking, check the thermal press to see if there is any damage. If any damage has occurred notify the shipping company immediately. Store the shipping container for this purpose. If any damage to external crate indicates faulty shipping, contact the shipping company and retain the devices until a shipping inspector arrives.
2. Check to see if any components have become loose in shipping.
3. If any equipment needs to be returned, please contact DUKANE for return information.

LOCATION OF MACHINE

1. Machine should be placed in a well-ventilated area.
2. Machine requires a minimum of 60 psi gauge, and no more than 100 psi gauge (Check machine setup sheet for air pressures and temperatures).
3. Air must be oil less, water less, and dry. Air is connected to the filter assembly located on the bottom left of the machine .
4. Machine requires volts, depending on machine specs (check serial tag above the air regulator on the left side of the column). Extension cords should not be used to run equipment due to fire hazards.



The circuitry in this system has been designed to provide safe operation under normal usage. Unauthorized tampering with the circuitry can produce a safety hazard.

TURNING MACHINE ON

1. With machine plugged in , turn the on/off switch on the back of the machine to the on position .
2. Auto tune the heaters by depressing the tune button on the temperature screen.
(See page 4-9)
3. Allow the machine to heat up to operating temperature and stabilize before attempting to use .
4. To run machine load parts in fixture and depress the palm buttons until dwell timer starts timing . (See page 4-2; figure 4-2B)
5. This is used to run a DUKANE .50AS Solutions Series that has been factory setup. If setup is located in the front of this manual it was set-up at DUKANE. For information on the setup and debug of the equipment, refer to Section III.

sheet

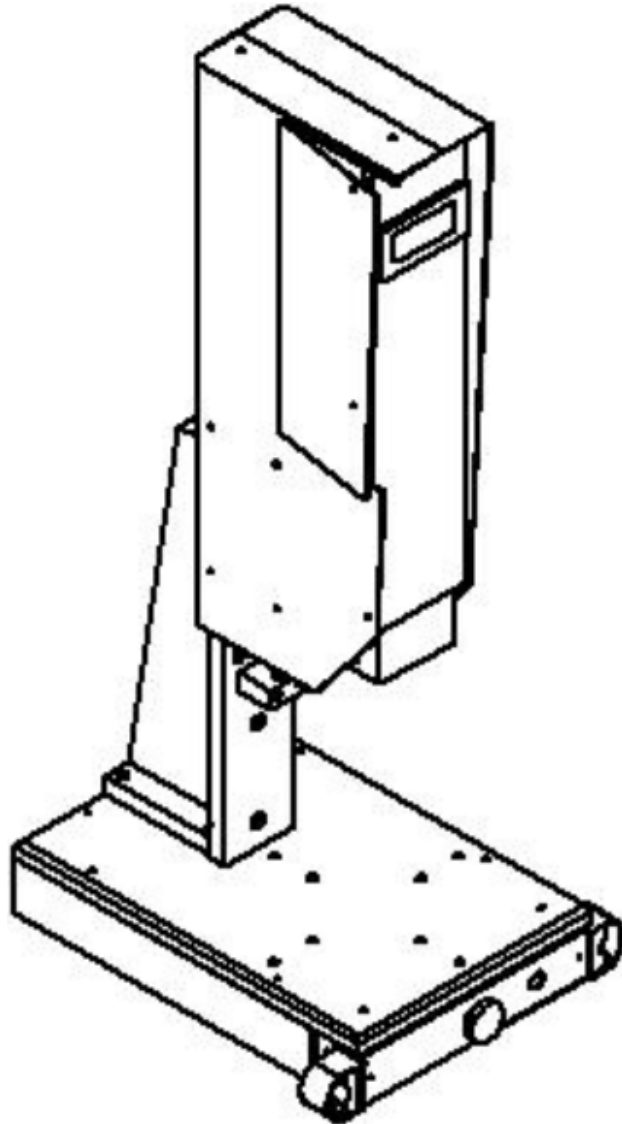
INTRODUCTION

SECTION I

1-1 BENCH TOP THERMAL SYSTEM

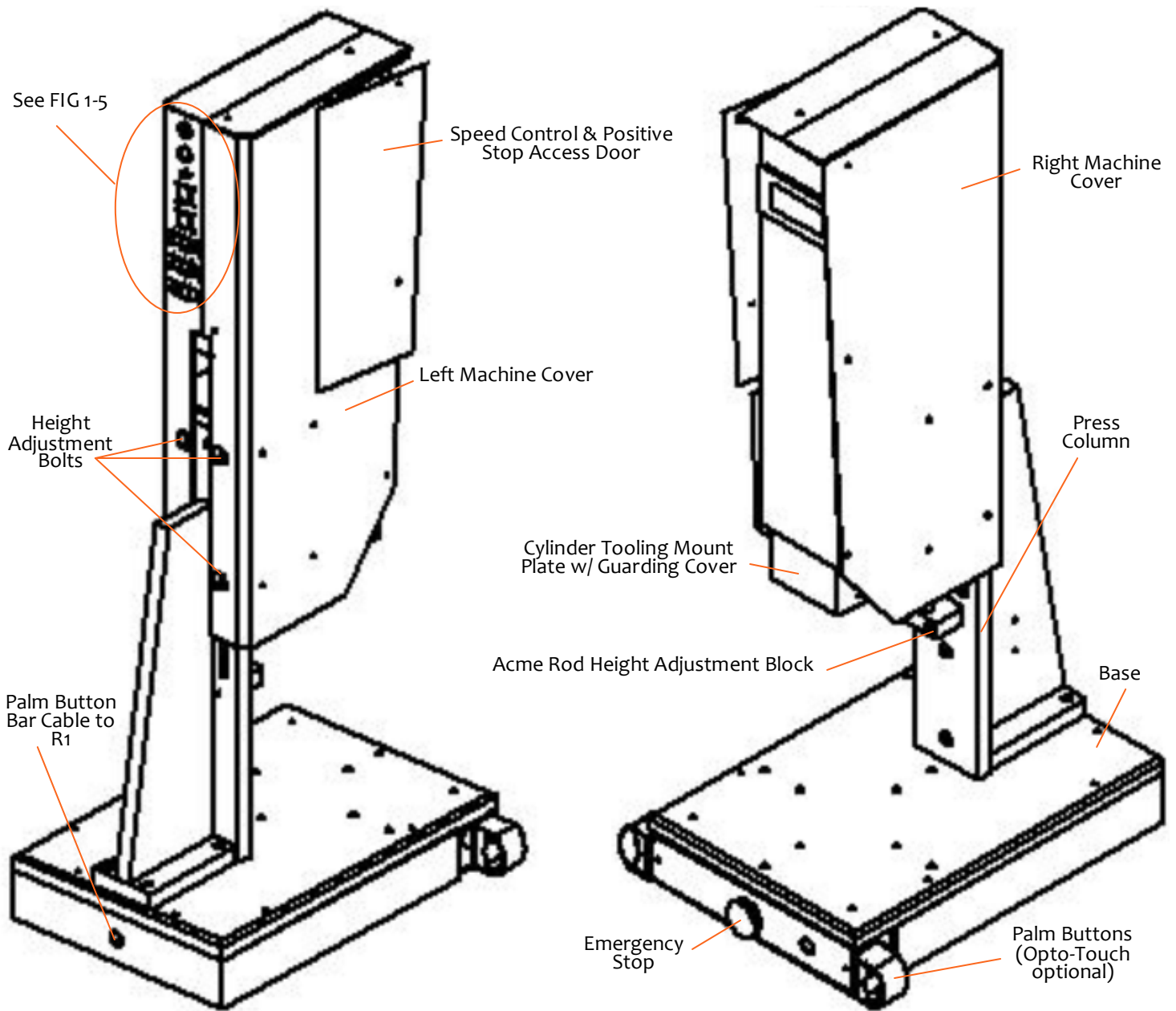
“SOLUTION SERIES” MODEL .50 AS

Intelligent Assembly System



DUKANE Bench Top Model .50AS has a large work base, two anti-tie down actuation devices located on each side of the machine (Opto-Touch palm buttons optional). An emergency stop is located at the front of the base.

FIG. 1-2 MACHINE DETAILS and Main Head Height Adjustment



To adjust the main head height, slightly loosen the 4 height adjustment bolts (do not remove). Once loose, turn the bolt under the acme rod height adjustment block (Hex Head Bolt) to the desired machine head height. Once the machine is at the desired height, tighten the height adjustment bolts.

****Base NOT included**** **See page 1-7 for Palm button and Estop wiring**

GENERAL SYSTEM DESCRIPTION

RAM PLATE

The ram plate is driven by a half ton double acting air cylinder. The ram plate is mounted on a box way mount system to provide a precise alignment between the upper heated tooling and lower fixtures. This insures consistent cycle repeatability.

PNEUMATIC SYSTEM

Pneumatic controls consist of a main air cylinder, pressure regulator, air dump and corresponding valves for optimal equipment.

SYSTEM CONTROLS

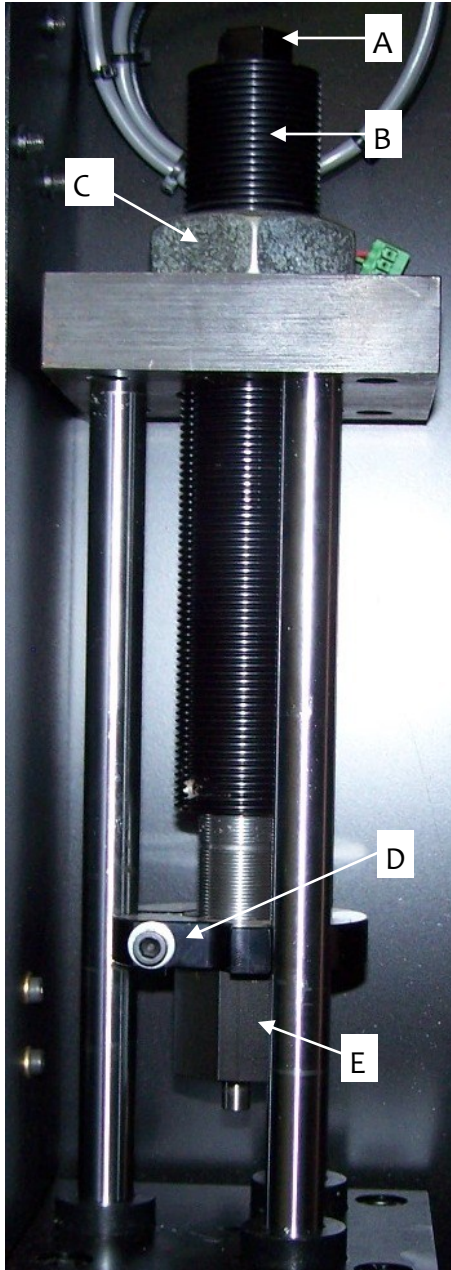
The system controls consist of a main machine interface and multiple temperature controller capacity to provide consistent and long term reliability of the thermal assembly process.

HYDRAULIC SPEED CONTROL

The hydraulic speed control is a linear device used to control the final down speed of the press and tooling during the processing stage. This allows the machine to come down at a high rate of speed, engage the speed control to slow the tooling plate and perform the staking process operation at a constant rate of linear deceleration.

Locating Press Controls

FIG. 1-4 .50 AS PRESS CONTROLS ⚠



****Located inside access door on the left side of the machine****

A) Speed Control Adjustment - Adjusts the rate of linear deceleration. Using an open faced wrench, turn the hex to adjust the rate of deceleration.

B) Coarse Threaded Rod – This is the coarse adjustment for the stroke of the cylinder.

C) Locking Nut - Locks the speed control assembly in place.

D) Depth Stop Ring – Locks the final depth stop in place using a 3/16 Allen wrench.

E) Depth Stop - This is the fine adjustment for the speed control assembly as well as the final depth stop.

FIG. 1-5 .50 AS CONTROL MODULE

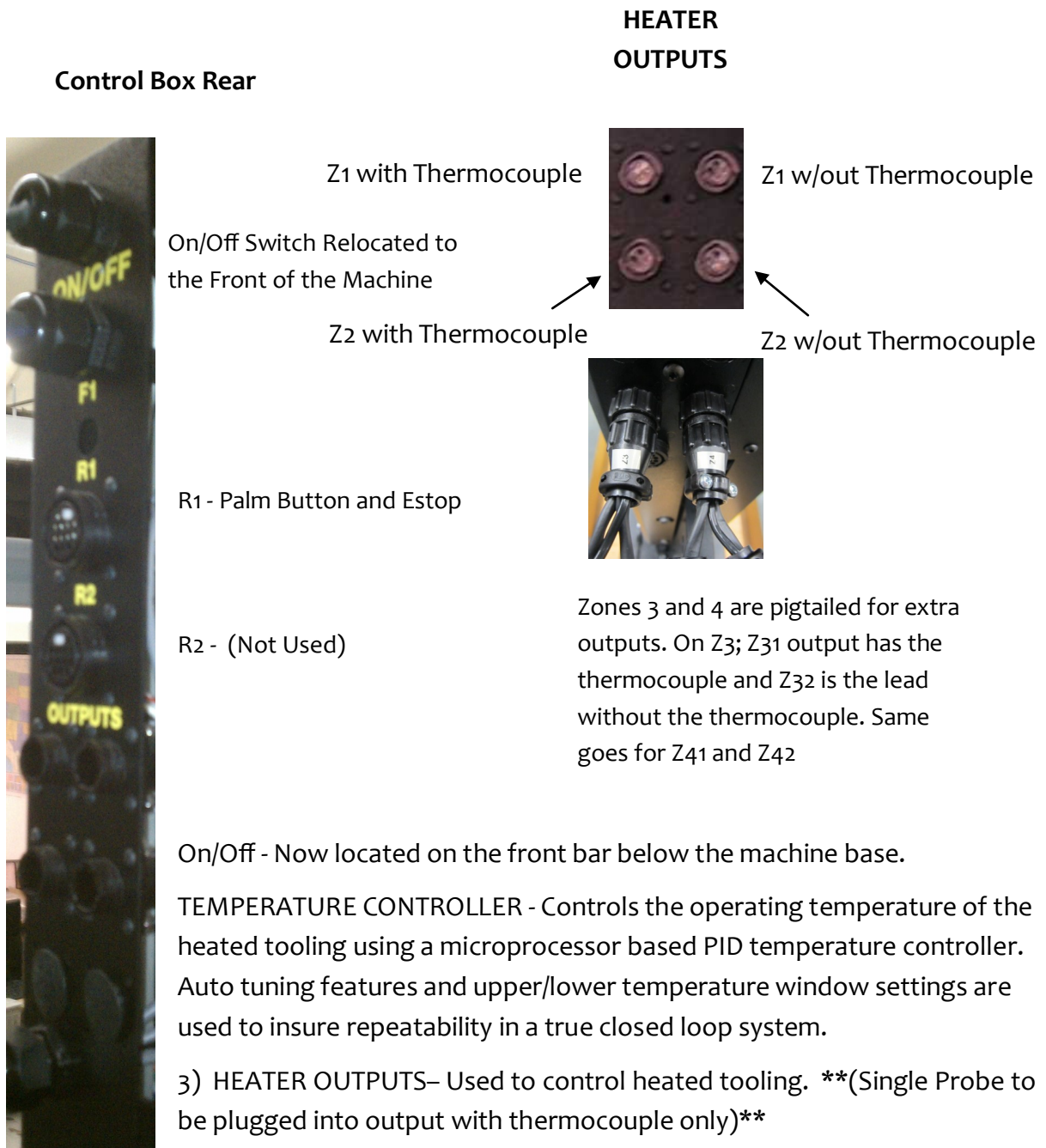


FIG. 1-6 .50 AS FRL ASSEMBLY

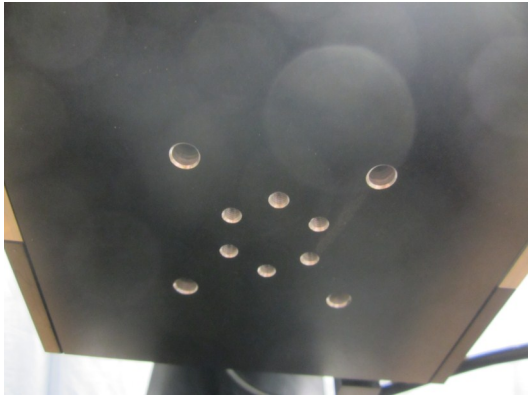
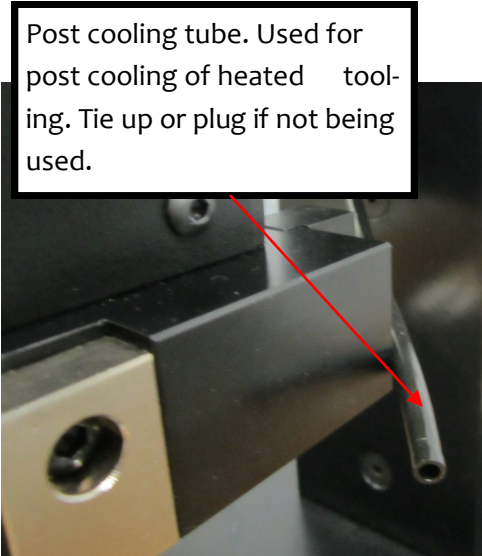
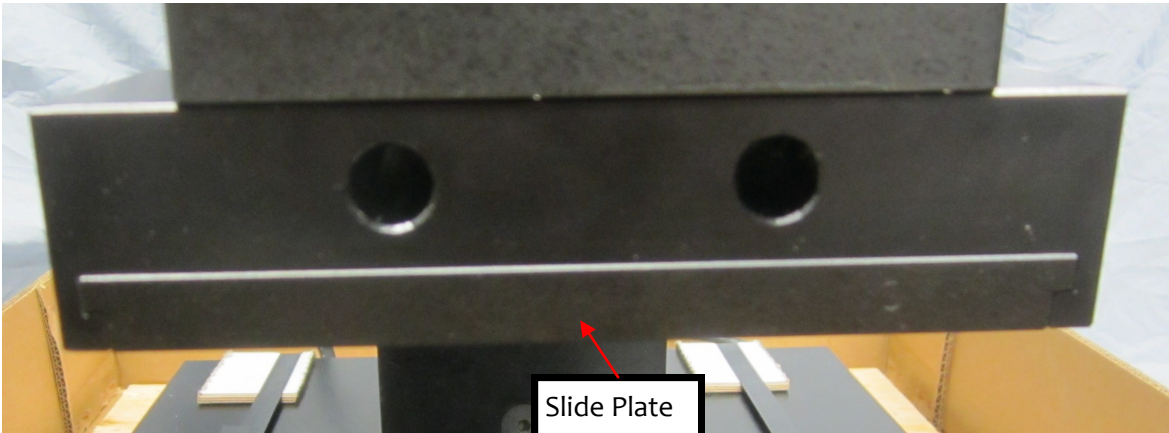


A) Pressure gauge - Pressure Regulator and air dump. Located on Lower Left Side of Press

TOOLING

SECTION II

FIG 2-1 SLIDE PLATE ADAPTER FOR CUSTOMER TOOLING



1/4 Turn Cam locks. Located on each side of the platen. Loosen with a 1/4 turn on each side to slide adapter plate out.

Slide plate with adapter holes to accommodate customer tooling along with a standard probe mount in the center.


SETUP & EQUIPMENT BREAKDOWN

SECTION III

TOOLING REPLACEMENTS

PROBE ASSEMBLY, REPLACING A TIP

 **NEVER REMOVE TIP WHILE HOT**

- 1) Turn the machine off.
- 2) With the probe assembly cool, remove existing tip with an opened end wrench .
 Always coat tip threads with high-temp anti-seize
- 3) Install new tip into probe body and tighten .
- 4) Auto tune the temperature controller before running new tip, if the tip is of significant mass difference. (See page 4-10 for auto-tuning)

TEMPERATURE WILL DISPLAY 999.9 IF THERE IS A THERMOCOUPLE IS OPEN

REMOVING / REPLACING COMPLETE PROBE ASSEMBLY

 **NEVER REMOVE PROBE ASSEMBLY WHILE HOT.**

- 1) Turn machine off.
- 2) Disconnect the heater connector from the rear of machine.
- 3) Remove the three 10/32 SHCS from the probe assembly.
- 4) Remove the probe assembly from the tooling plate.


REPLACING A HELIX HEATER FROM A PROBE BODY

 **NEVER REMOVE HELIX HEATER WHILE HOT.**

- 1) Turn machine off.
- 2) Remove the tip from the probe body.
- 3) Slip the probe tool over the helix heater until the heater is fully encapsulated.
- 4) Hold heater by solid portion of heater lead and turn probe tool in a clockwise direction until heater becomes loose.
- 5) Remove heater by pressing down on the heater lead while turning probe tool.

PLATEN TIP REMOVAL

 **NEVER REMOVE TIPS WHILE HOT**

- 1) Turn machine off.
- 2) With platen cool remove the existing tip or tips with an opened end wrench .
 Always coat tip threads with high-temp anti-seize
- 3) Install new tip into platen and tighten.
- 4) Auto tune temperature controller before running new tips. (See page 4-10 for auto-tuning)

REPLACING A THERMOCOUPLE ON A PLATEN ASSEMBLY

 **NEVER REMOVE THERMOCOUPLE WHILE HOT.**

- 1) Turn machine off.
- 2) Disconnect cartridge heater connector(s) from the back of the machine.
- 3) Using an open end wrench remove the thermocouple from the back of the platen.

TOOLING REPLACEMENTS & SET-UP

CHANGING OUT COMPLETE PLATEN ASSEMBLY



NEVER REMOVE PLATEN ASSEMBLY WHILE HOT.

- 1) Turn machine off.
- 2) Disconnect cartridge heater connectors from the rear of the temperature control box.
- 3) With the platen assembly cool remove cylinder tooling mount plate guard (See Fig 1-2) by removing the four ¼-20 BHCS.
- 4) Dump the air to the machine and allow the head cylinder to drop.
- 5) Remove the (4) 5-16-18 SHCS from platen assembly.
- 6) Remove platen assembly from press.

REMOVING CARTRIDGE HEATER FROM PLATEN ASSEMBLY



NEVER REMOVE CARTRIDGE HEATER WHILE HOT.

- 1) Turn machine off.
- 2) With the platen assembly cool, remove cylinder tooling mount plate guard (See Fig 1-2) by removing the four ¼-20 BHCS.
- 3) Disconnect cartridge heater connector (s) from the back of the machine.
- 4) Loosen 1/4 turn cam locks and slide out the quick change plate
- 5) Loosen the 10/32 set screws located on the bottom back side of the platen assembly until the heater slides freely.
- 6) Remove heater from platen assembly.



When installing new heater, coat the heater with Milk of Magnesia

SETTING UP TOOLING

- 1) Turn machine off.
- 2) With the tooling cool, remove lower lexan guarding (if provided) by removing the ¼-20 screws.
- 3) Install a finished part into the fixture.
- 4) Dump air to press. (see page 1-6)
- 5) Lower tooling head until tips of platen are about 1/16” above unassembled part.
- 6) Move depth stop/speed control assembly until (HSC) rod contacts plate and tighten. (see page 1-4)
- 7) Turn air on.
- 8) Loosen both 3/8-16 fixture bolts, mounted into machine base. (see page 1-12)
- 9) Dump air.
- 10) Lower tooling onto part and align tips to the part by adjusting the fixture tip, blocks and/or probes.
- 11) Adjust the depth stop bolt to contact depth stop/shock contact surface. (see page 1-4)
- 12) Tighten depth stop locking nut.
- 13) Turn air on , being careful not to allow the fixture to move.
- 14) Tighten fixture bolts.
- 15) Adjust your gross head height to desired distance. (see page 1-4)

SETTING UP TEMPERATURE CONTROLLER PARAMETERS

TEMPERATURE CONTROLLER

Used to control the operating temperature of the heated tooling.

CHANGING SET POINT OF MACHINE OR ACCESSING THE TEMP INPUT SCREEN

See section IV in the manual.

AUTO-TUNING TEMPERATURE CONTROLLER

To auto tune depress the "tune" key on the temperature input screen.

Auto-tuning the temperature controller will tune the temperature controller to the tip and should be done from room temperature and as close to normal operating temperature as possible. The auto-tuning function should be done whenever the heater or tip is changed to maintain consistent operation.



DO NOT OPERATE MACHINE UNTIL AUTO-TUNING IS FINISHED.



Temperature will display a "800.0" if there is a thermocouple open. Do not reverse the thermocouple or it will cause serious damage to the heating element on the tooling.

TOUCH SCREEN

DISPLAY

(TSD)

OPERATIONS

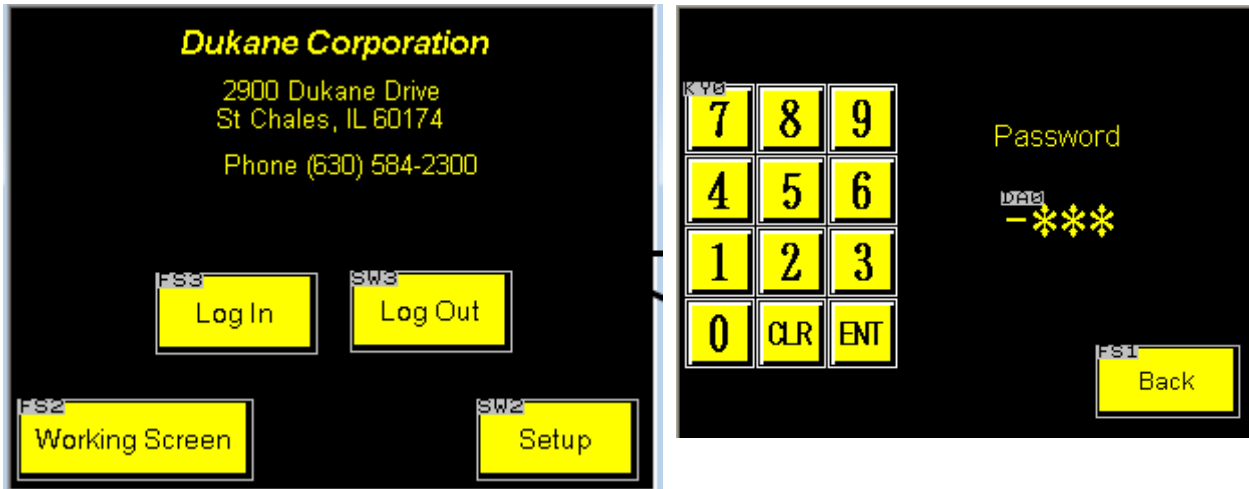
AND CONTROLS

SECTION IV

FIG 4-1 INITIAL OPERATING SCREEN

LOG IN/OUT

When first turning on the machine the only screen that is accessible is the working screen until you “Log In.”



To Log In, simply press the Log In button and press the blinking “ ooo ”, enter in the password (19) and hit the enter key on the keypad.

After entering in the password the display will jump to the system controls screen. You can now access any screen in the display until you hit the Log Out button. Once the Log Out button is pressed the only accessible screens will be the main screen and the working screen.

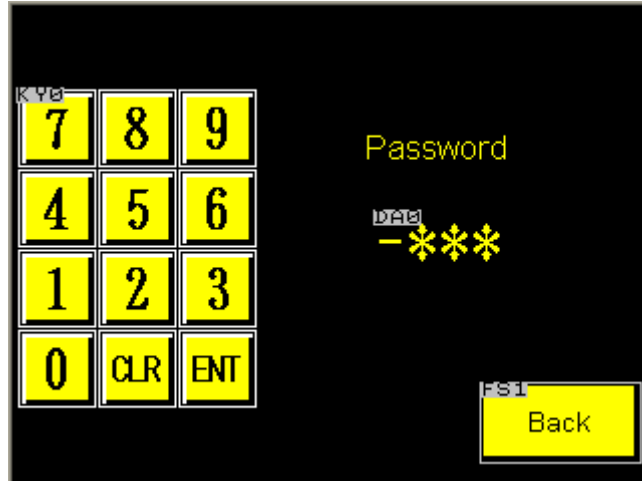
WORKING SCREEN

The working screen displays the temperature set points and actuals as well as the Dwell and Cool Time set point and actuals. These readings cannot be changed through this screen. In order to change the set points and actuals you need to log in and change them through the system controls screen.

SETUP

Moves to the System Controls screen.

FIG 4-2A PASSWORD SCREEN



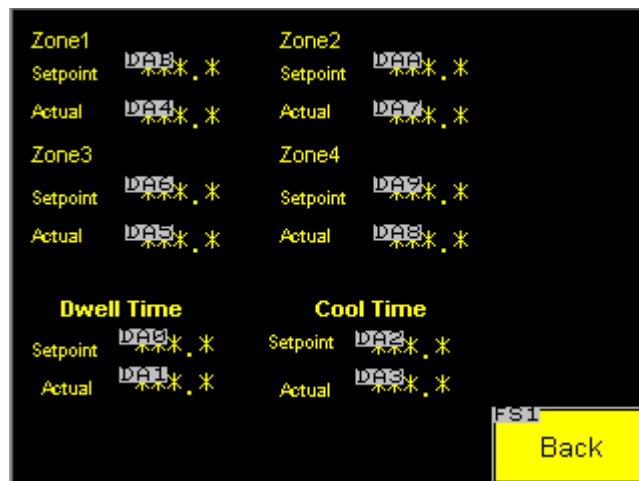
PASSWORD

To enter in the password press the three zeros under the word Password. The three zeros will start flashing. Enter in the password (19) and press the enter key. If the Password is correct the screen will jump to the System Controls screen. If the Password is incorrect the screen will not change and the zeros will still be flashing.

BACK

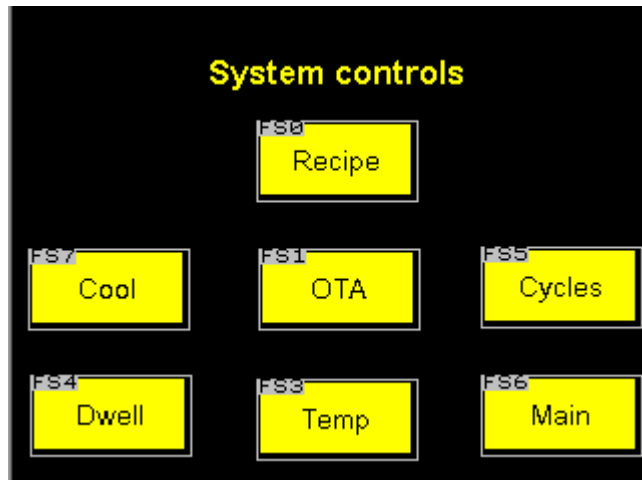
When Pushed the screen will jump to the previous screen displayed.

FIG 4-2B WORKING SCREEN



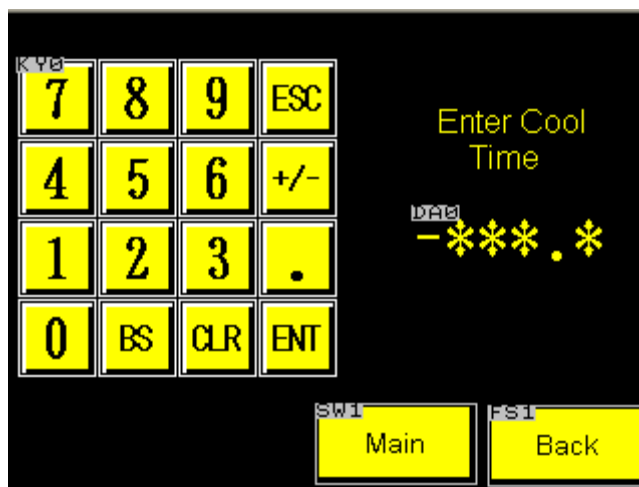
The working screen displays the setpoints and actuals for all of the temperature zones, dwell time and cool time. The setpoints and actuals cannot be changes from this screen.

FIG 4-3 CONTROLS SCREEN



All of the Buttons on this screen jump to the designated screen that is labeled on the button. All of the systems can be changed and should be checked before the machine is used to run production parts.

FIG 4-4 POST COOL



COOL TIME

Cool time is the amount of time needed to solidify the melted plastic from the staking process. To change the cool time press the three zeros under the “Enter Cool Time” text. Enter in the cool time desired and press the enter key.

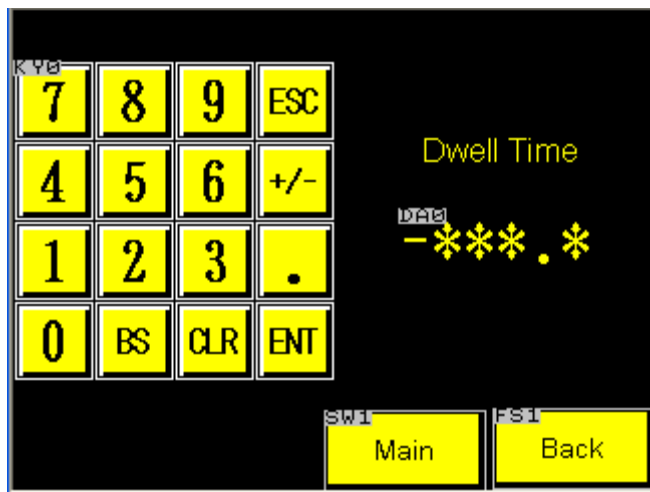
MAIN

Jumps to the Main Screen

BACK

Jumps to the previous screen

FIG 4-5 DWELL TIMER



DWELL TIME

Dwell Time is the amount of time needed to stake the part. This time starts just before the tip is about to contact the staking area. To change the dwell time, press the time box under the “dwell time”. Enter in the desired dwell time with the keypad and press the enter key.

MAIN

Jumps to the Main Screen

BACK

Jumps to the previous screen

FIG 4-6 RECIPE



SAVING RECIPES

To save a recipe you must enter in all of the setpoints for your Dwell Time, Cool Time, OTA Limits and all of your Temperature settings. Once all of those values are entered, press the number box to the right of the word “Recipe” and enter in the recipe number desired and then press the enter key on the keypad. The number box will now display the recipe number that you entered, press the save key and now all of the values that you set for the machine are saved under that recipe number.

LOADING RECIPES

Enter recipe number as described in saving recipes and press the load button. Now the recipe that you previously saved is now loaded into the machine.

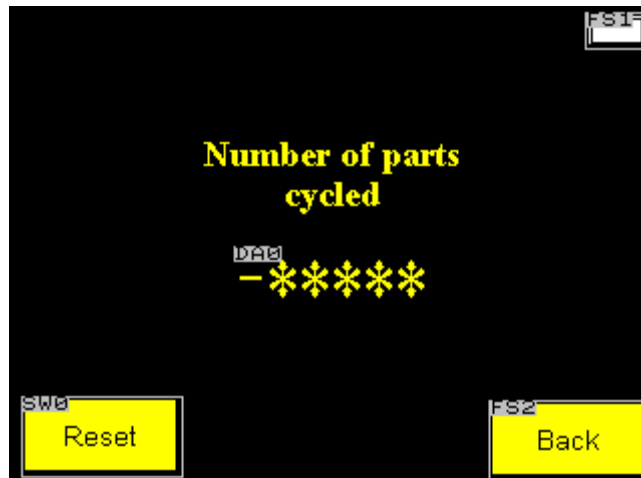
DELETING RECIPES

Enter recipe number as described in saving recipes and press the delete button. Now the recipe that you previously saved or loaded is no longer saved to the display. All memory of that recipe is erased.

BACK

Jumps to the previous screen.

FIG 4-7 RESETTABLE COUNTER



NUMBER OF PARTS CYCLED

The number displayed is the amount of cycles run before it was last reset.

RESET

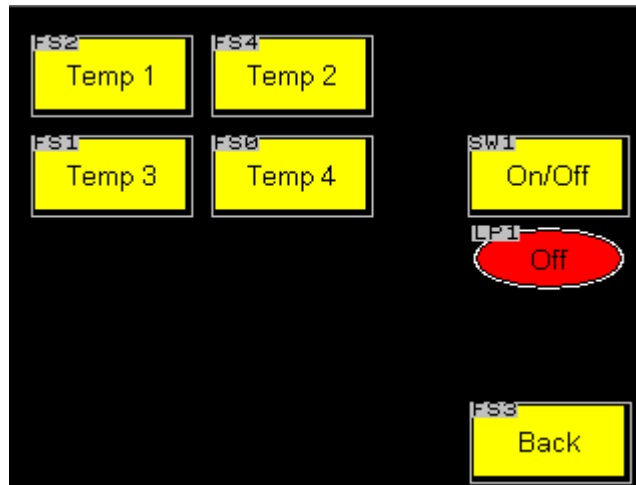
Resets the “number of parts cycled” back to zero.

BACK

Jumps back to the previous screen.

4 Zone Machine

FIG 4-8 MAIN TEMP SCREEN



TEMP ON/OFF

This button turns the heat on and off.

NOTE: When L.E.D.'s are colored black that option is turned on. When L.E.D. is clear the option is turned off.

TEMP BUTTONS

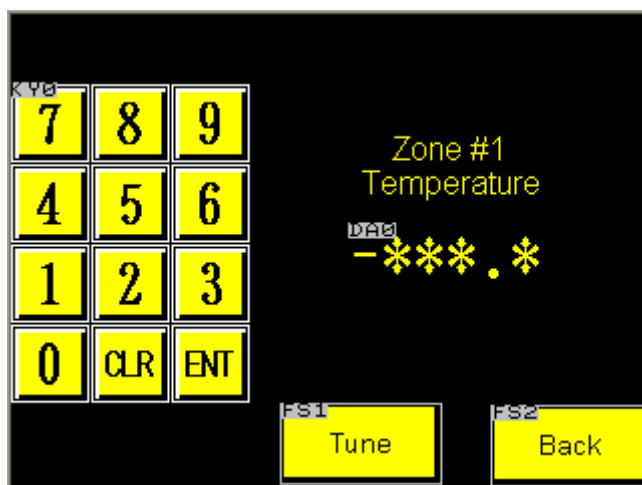
These buttons jump to the temperature screens to change the setpoints and to select the Auto-Tuning parameters.

NOTE: The number of temp buttons depends on how many temp zones were purchased.

BACK

Jumps back to the temperature screen.

FIG 4-9 ZONE TEMPS



ZONE TEMPERATURE

This changes the setpoint temperatures for zones 1-4. To change the setpoint press the number box under the “Zone #1 temperature” text and enter the setpoint desired. Then press the enter key on the keypad and your setpoint is set.

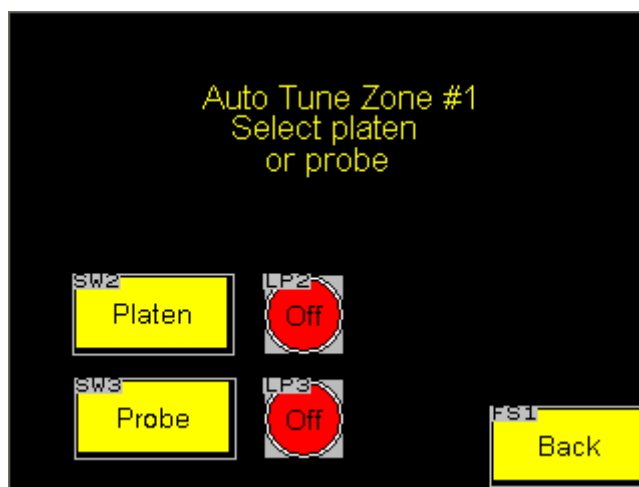
TUNE

Jumps to the auto-tune zone 1 screen

BACK

Jumps back to the previous screen

FIG 4-10 AUTO-TUNE TEMPS



PLATTEN

Push for Auto-Tuning a platen assembly

PROBE

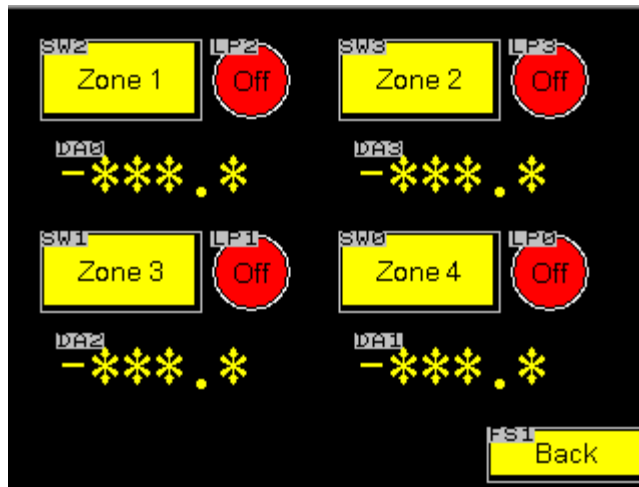
Push for Auto-Tuning a probe assembly.

NOTE: When L.E.D. 's to the right of platen and probe are colored black that option is turned on. When L.E.D. is clear the option is turned off.

BACK

Jumps back to the previous screen

FIG 4-11 OTA SCREEN



OTA

This screen turns the OTA on and off. The OTA is a bandwidth alarm. When the OTA is ON the temperature has to be within the bandwidth that is entered in according to temperature setpoint. If it is not the machine will not cycle and a warning screen will flash on the display.

CHANGING THE OTA

Press the number box below the appropriate “Zone” button. A keypad screen will pop up. Enter the OTA desired and press the enter key on the keypad. The OTA is now set.

OTA ON/OFF

When L.E.D. box are colored black that option is turned on. When L.E.D. is clear the option is turned off.

BACK

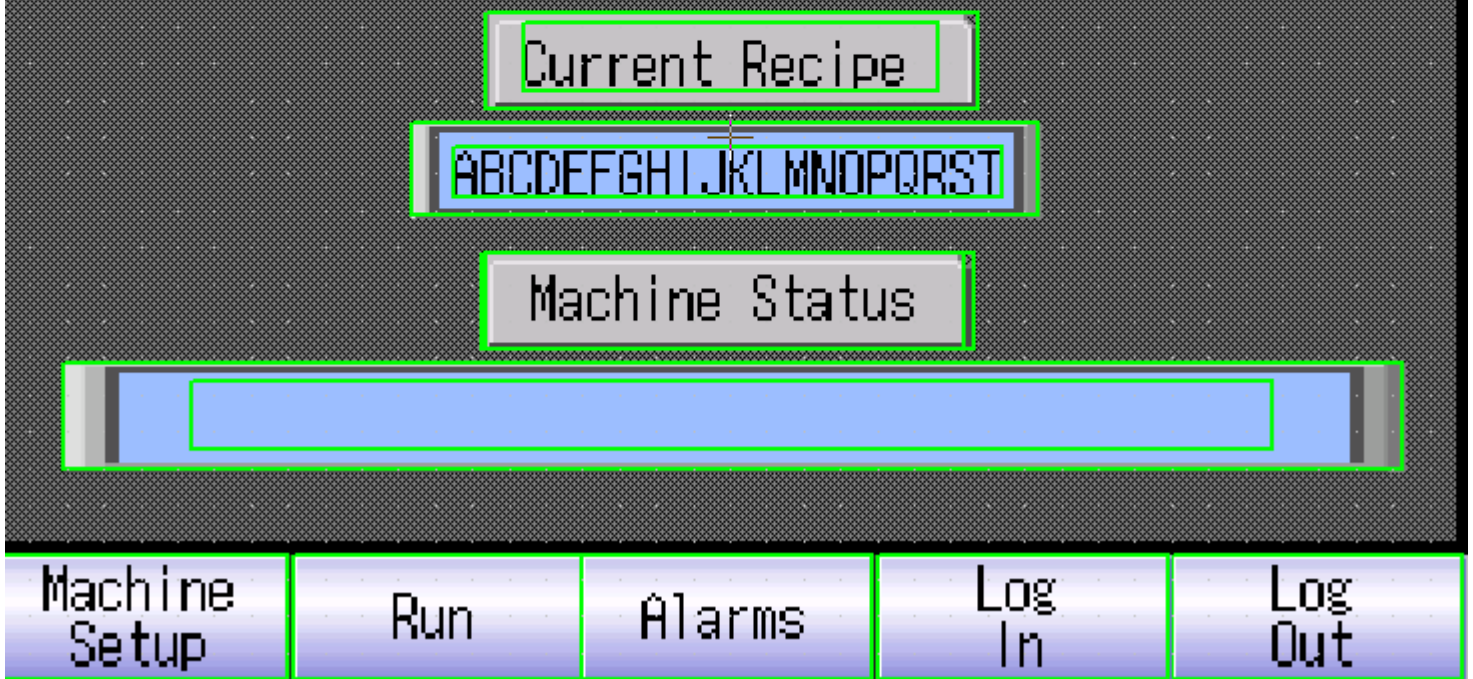
Jumps back to the temperature screen.

.50AS
mitsubishi
CONTROLS
OPTION

SECTION V

DUKANE

Intelligent Assembly Solutions



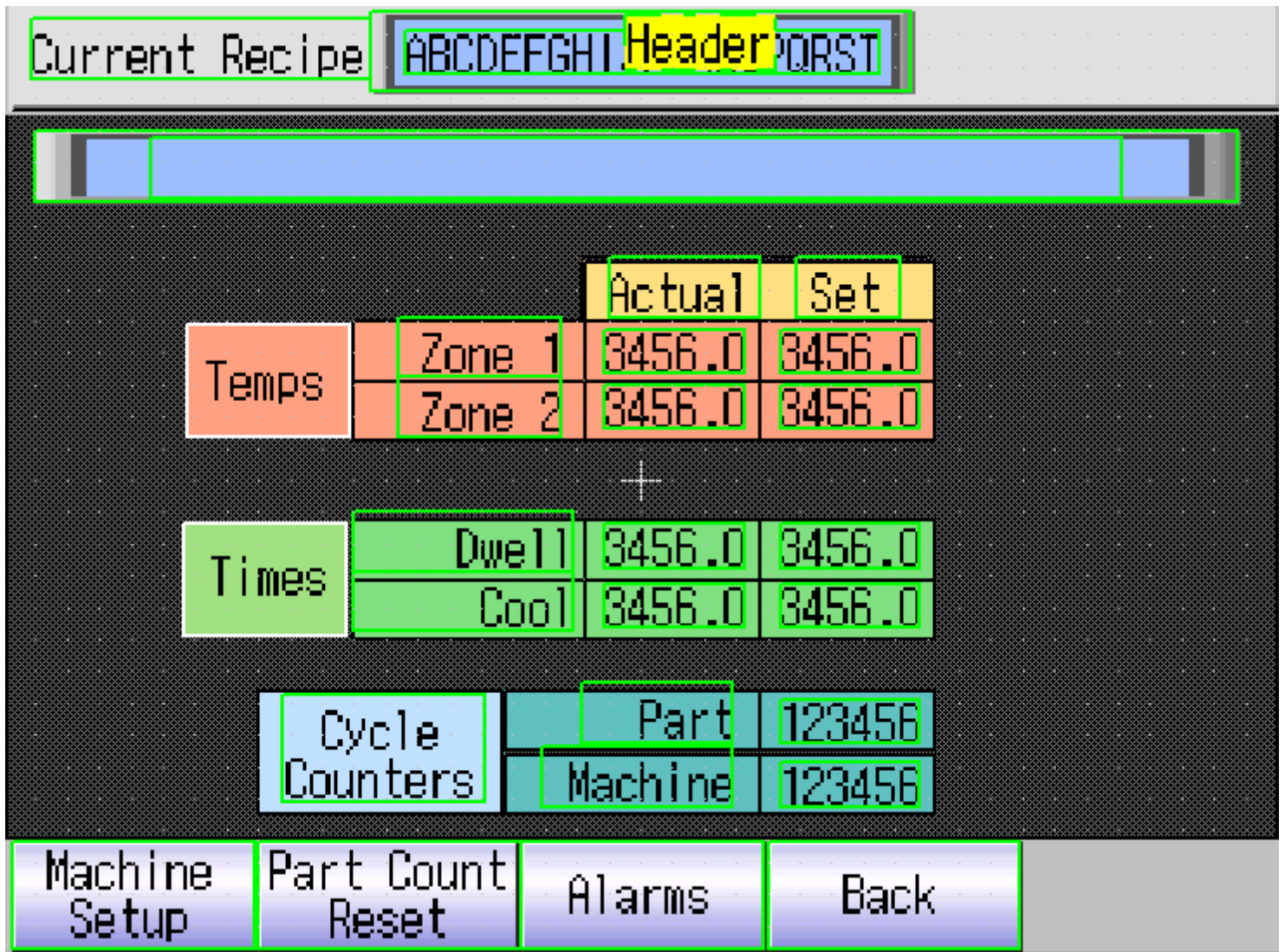
The Main Screen shows the operator the recipe being used, the Machine Status. It also allows navigation to the Log In Screen, the Machine Setup Screen, Run Screen And the Alarm Screen.

Factory set Log ins are

Level 1: Input the number 19

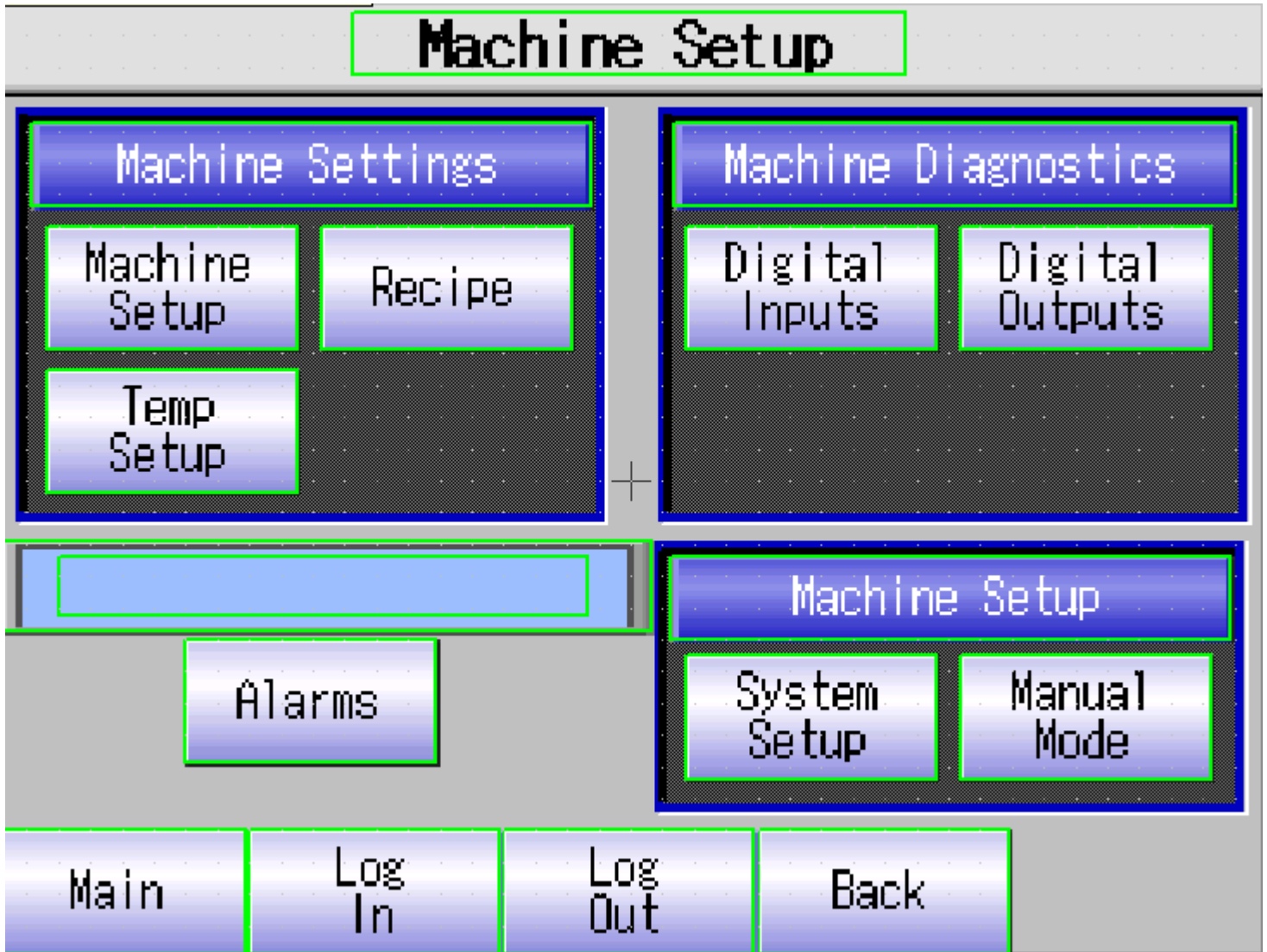
Level 2 (Administrator and higher diagnostics): Input the number 91

Alarms are cleared by going to the Alarm Screen, selecting the alarm from the list, and hitting Acknowledge.

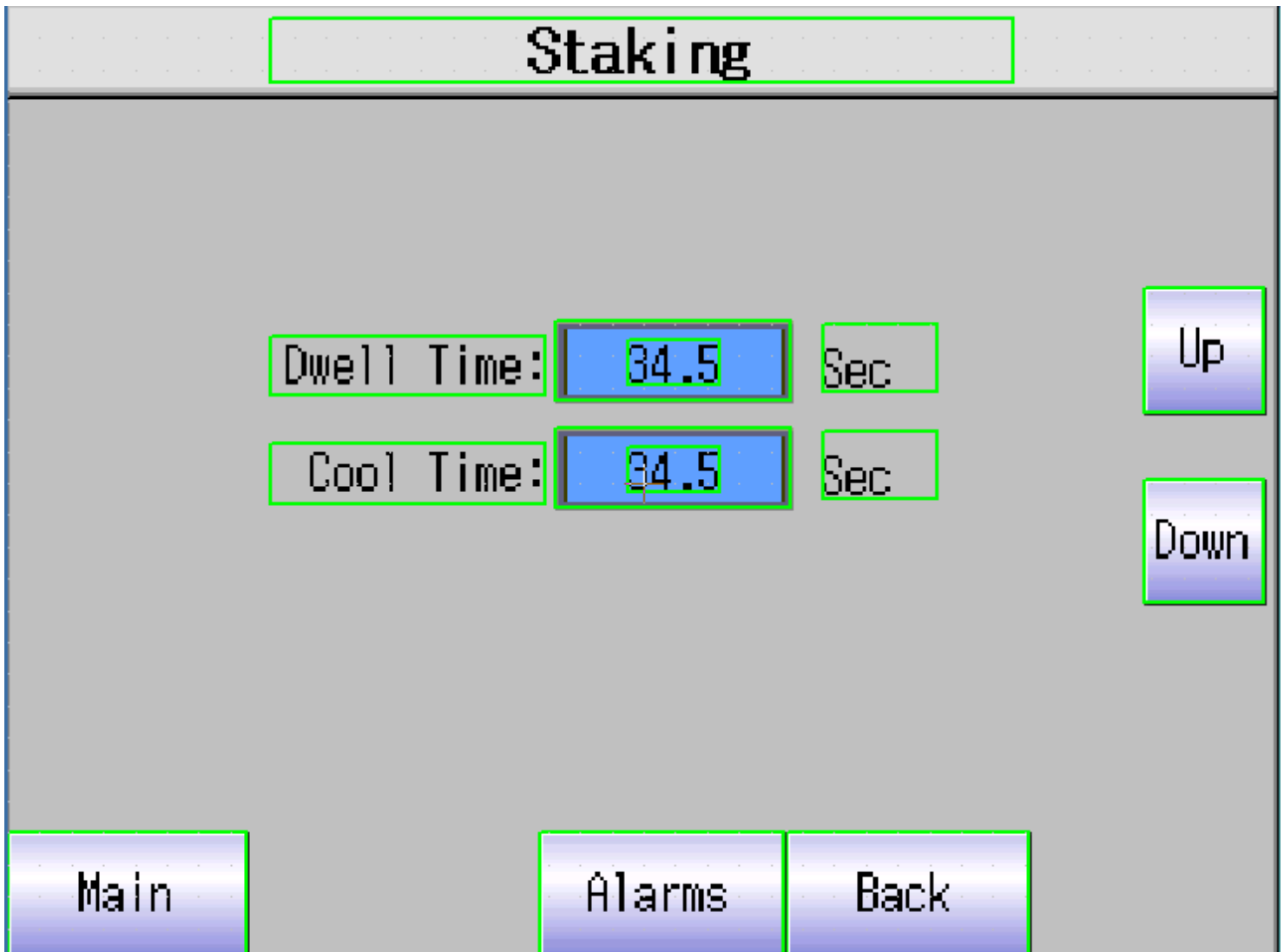


The Run Screen displays the Recipe at the top. Any Status information of the machine directly below that. In addition, the temps, times for this recipe are displayed. Part and Machine counts are also displayed.

On this screen the part count can be reset to zero.

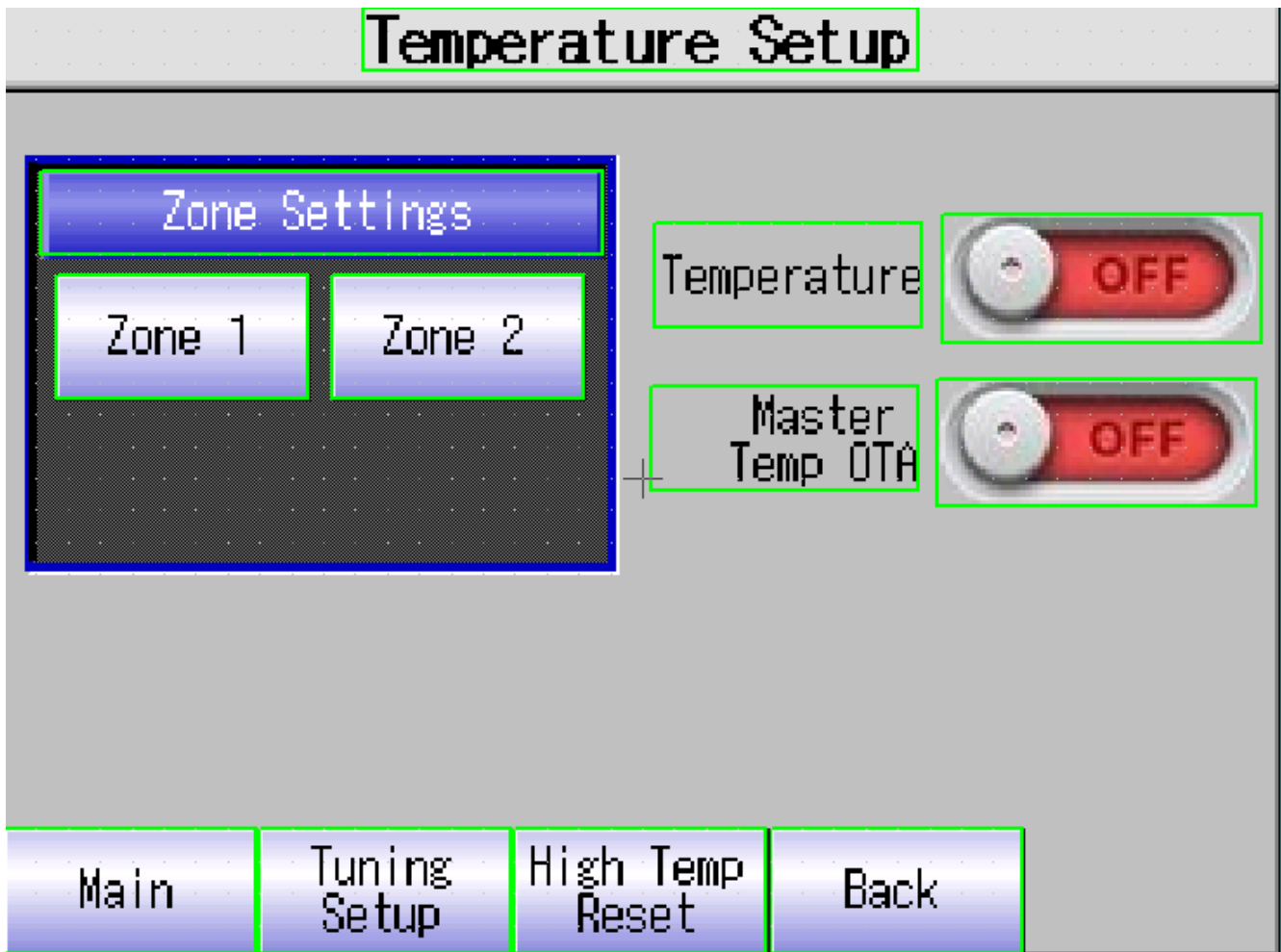


The Machine Setup Screen is the main navigational screen and takes the operator to the various screens of the interface



The Machine Setup Button takes the operator to the Staking Screen. The amount of time the head **dwells** in the weld position as well as the amount of time for **post-cooling** are set here.

The buttons to the right move the head up and down when in manual mode.



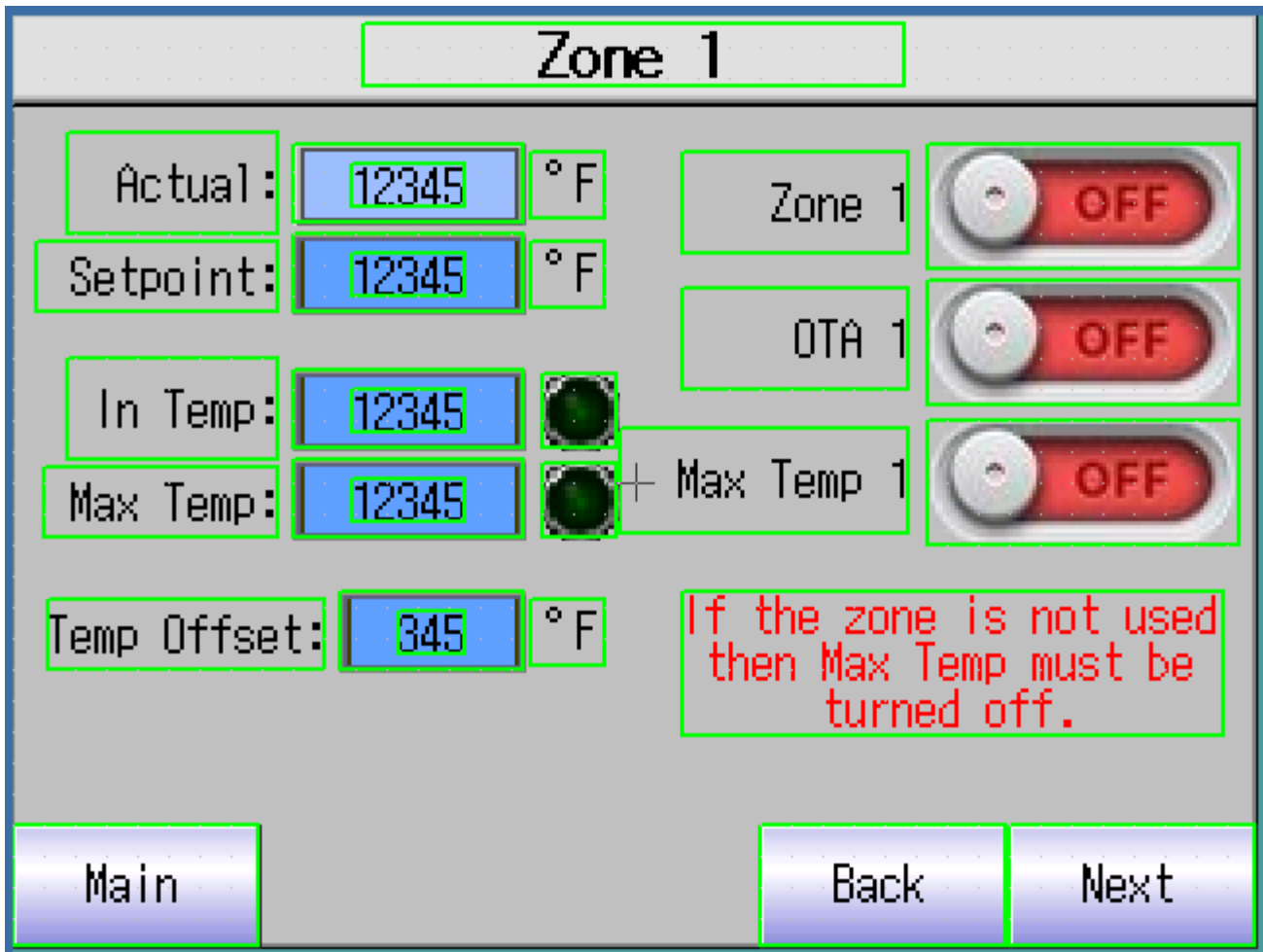
The Temperature Setup screen allows for the heat function to be turned on and off via the Temperature toggle switch.

Master Temperature Out of Temp Alarm (OTA) can be turned off. This means the machine will still cycle even if temperature of the heaters is varying by a significant amount.

Running Temperatures are set by selecting the individual zones

Tuning of heaters is done on the Tuning Setup screen.

The High Temperature is reset by the button of the same name when a high temp fault occurs.



Zone Screens display the current temp of the heaters in that zone.

By selecting the Set-point field, the operator inputs the desired temperature.

In Temp LED indicates that temperature is within the prescribed range.

By selecting the field one can set the amount the temp is allowed to vary.

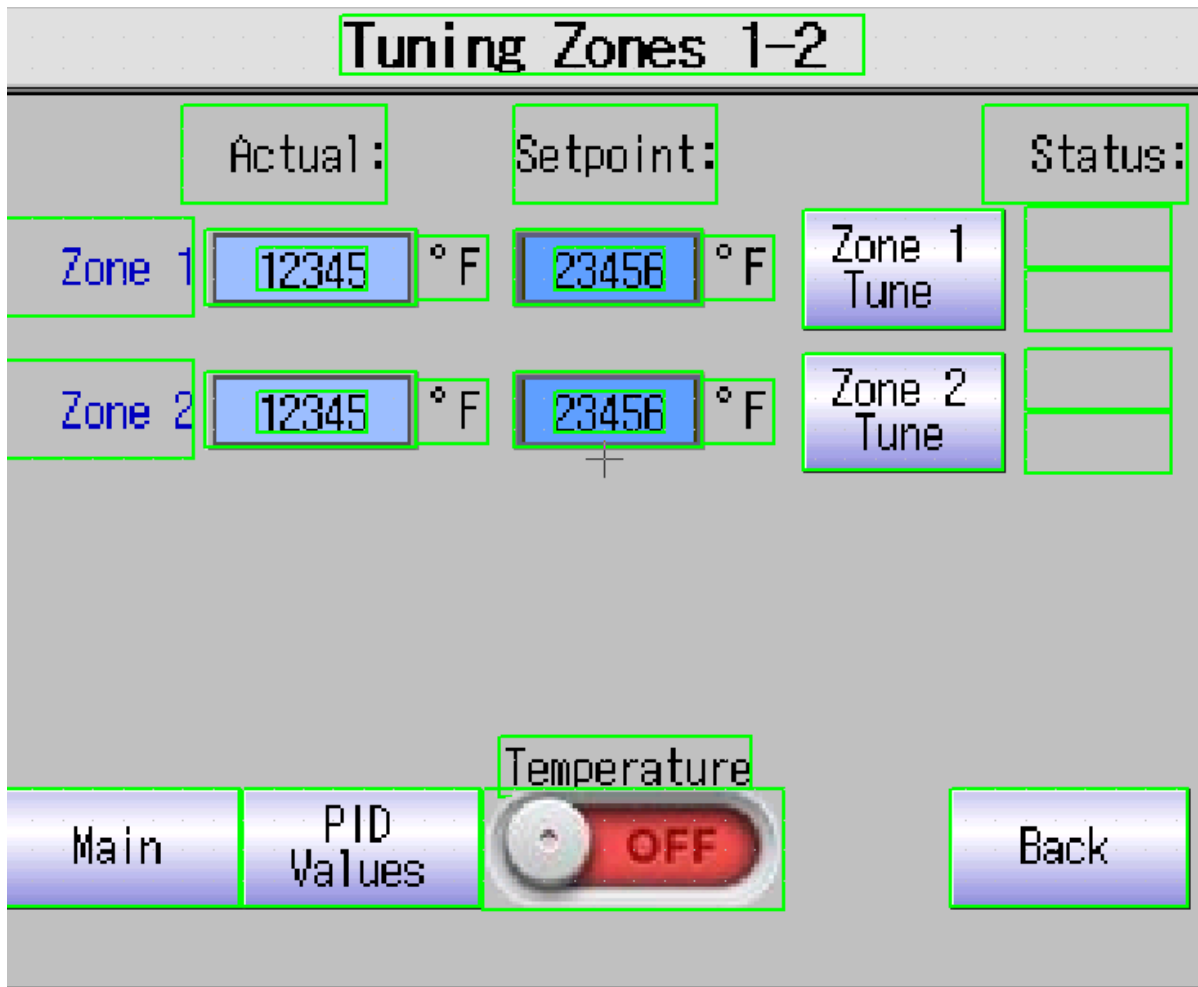
In Temp is preset at +/- 10 degrees.

Max Temp LED indicates that the Maximum Temperature has been reached.

This is also set by selecting the field.

The 3 toggle switches to the right enable/disable the

1. Zone itself
2. The zone's Out of Temp Alarm, allowing the machine to still cycle
3. The Max Temp Alarm, allowing the machine to cycle



Tuning of the heaters in each zone allows the machine to sense how quickly the heaters achieve temperature and how quickly they lose it. This allows the most efficient maintenance of the temperature set point.

Merely hit the **Zone 1 or Zone 2 Tune** button.

The specific manner in which the computer maintains heat can be manually changed in **PID Values**.

This is needed in extremely rare instances.

This screen also has a Temp toggle switch to turn off heat entirely.

System Setup

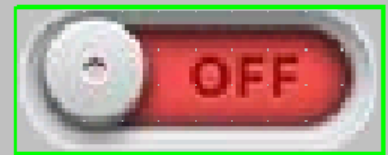
Front Left
Part Sensor



Front Right
Part Sensor



Back Part
Sensor



Main

Admin
Setup

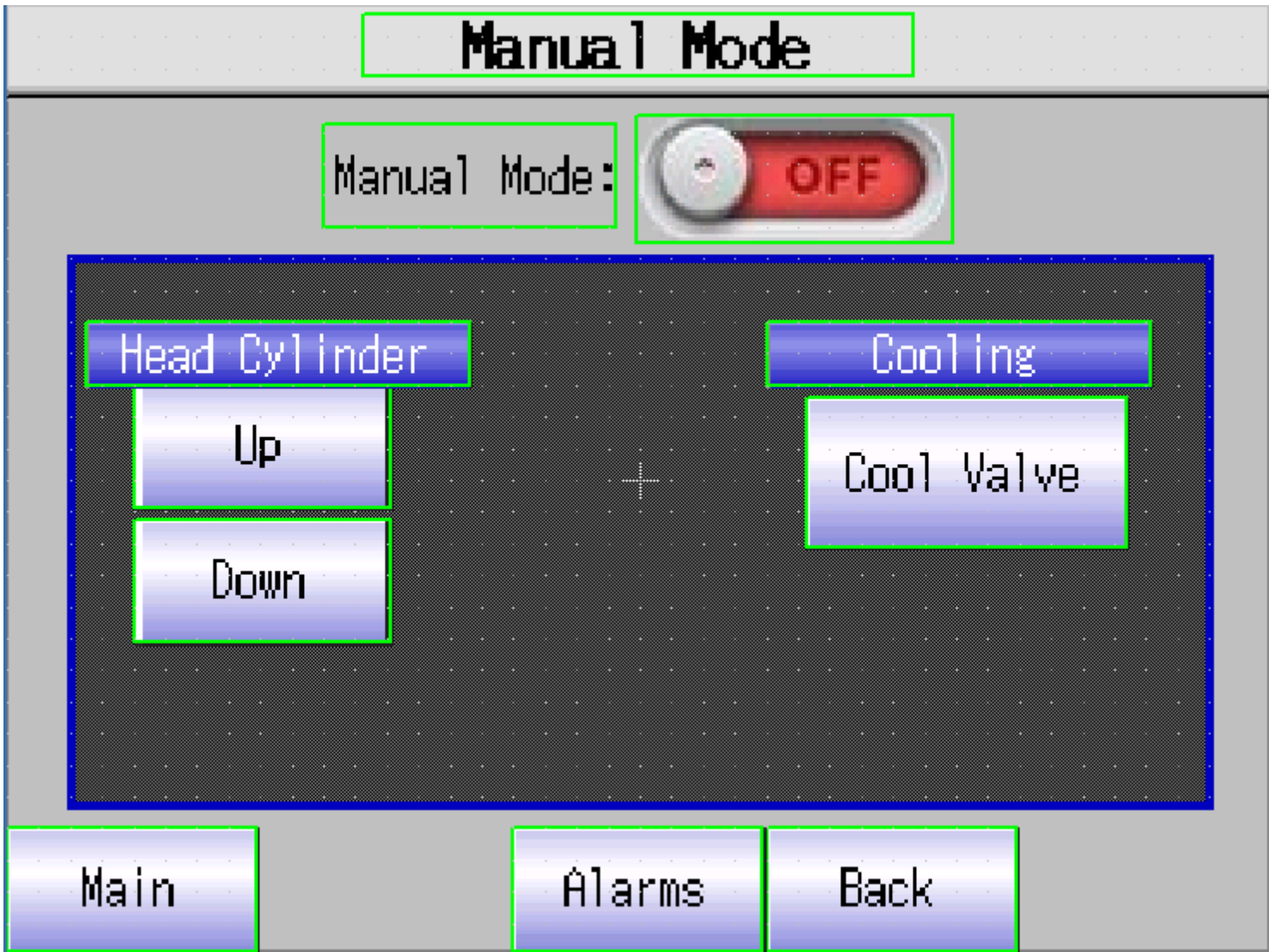
Alarms

Back

M. Counter
Reset

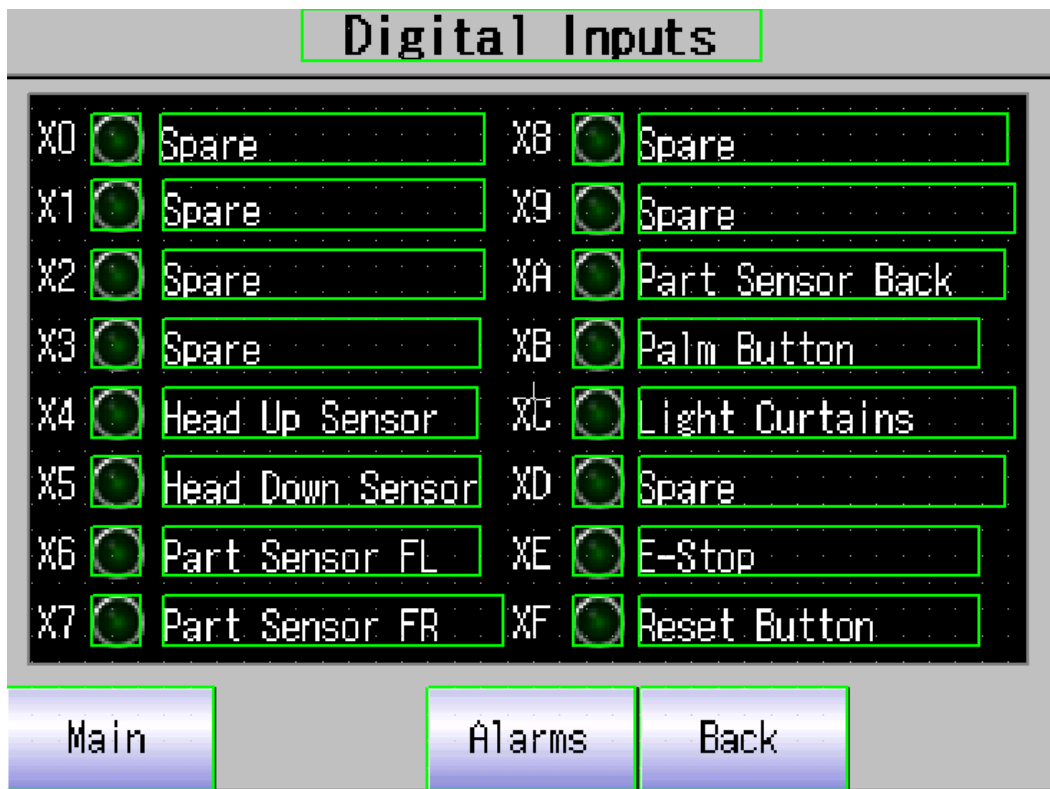
System Setup allows disabling of certain sensors. If the operator needs any sensor to ignore its input, each one can be turned off individually.

The System Setup screen allows DUKANE setup for administrative settings and the Machine Total Cycle counter reset, all the way to the right.



The Manual Mode screen allows one to move the head up and down and actuate the cooling valve.

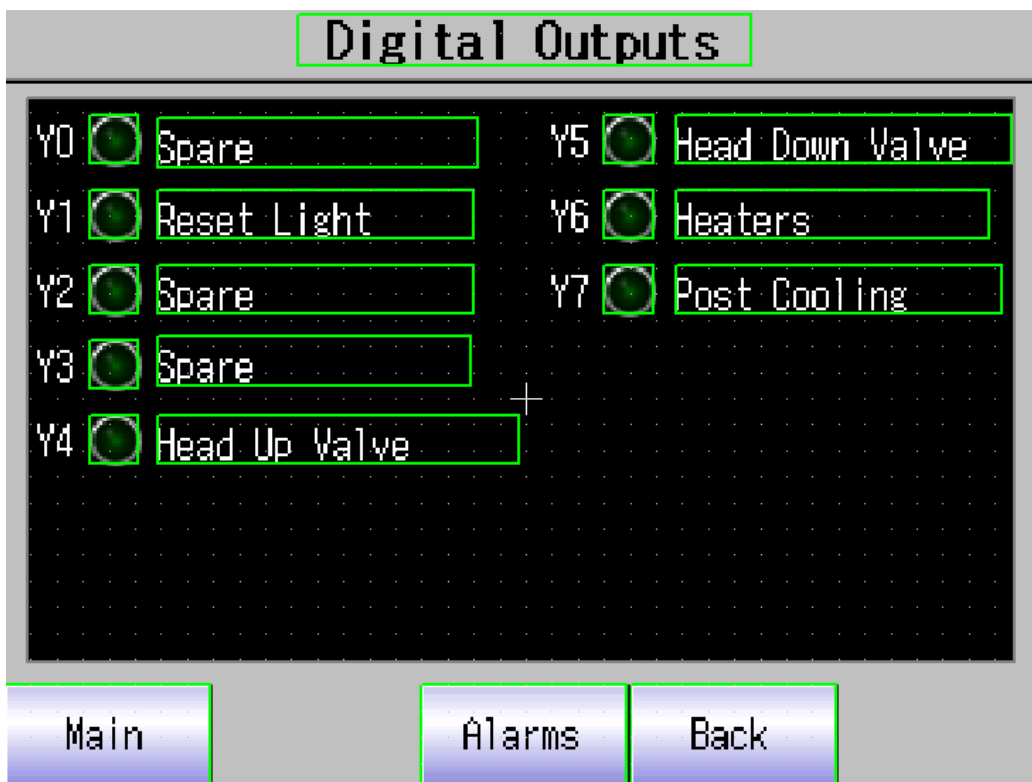
Manual mode must be off to run a cycle.



The Input and Output Screens indicate when an input or output is getting a signal.

The virtual LED is “lit” beside the particular function that is on.

This is particularly helpful for diagnosing problems with the function of the machine.



TROUBLESHOOTING

SECTION VI

Troubleshooting

SYMPTOM	PROBABLE CAUSE
System does not turn on	Power cord not plugged in
	Fuse blown
	Power switch failed not turned on
System on but tooling is not hot	Faulty solid state relay
	Probe/thermocouple not plugged into back of control box power supply
Press palm buttons but the head doesn't descend	No air to the system, bad palm button, solenoid valve, flow control closed, air-line pinched, e-stop in head up switch not made

***If none of the above apply/or do not rectify problem consult DUKANE for additional technical support.**

Thermal Staking

PROBLEM	PROBALBE CAUSE	SOLUTIONS
Staked head is not uniform	Cavity is to large or stud is to short	Reduce cavity size or increase stud height
Parts are loose after staking	Staked stud did not completely cool before pressure was released	Use post cool and lower tip temperature
Parts are loose after staking	Positive stop set too high or not enough post cooling	Lower stop and /or tip, increase cooling time/flow
Plastic flows between parts during staking	Metal part is not properly seated against the plastic	External clamps or plunger may be used for better
Stud not completely staked at end of cycle	Cavity is too large	Reduce cavity size or lower positive stop and or tip

Swaging

PROBLEM	PROBALBE CAUSE	SOLUTIONS
Swaged Material not formed over completely	Insufficient pressures and/or temperature	Increase temperature/or pressure
Material sticking to the tool	Too Hot	Lower dwell time and/or temperature
Material flashing	Cavity too small or tip temperature too hot	Decrease size of cavity and/or decrease temperature

Hot Knife Degating

PROBLEM	PROBALBE CAUSE	SOLUTIONS
Gate vestige out of specification	Blade adjusted improperly	With tools in a cool state adjust degating blade in the same axis of the gate
Cracking	Blade temperature or pressure too low	Decrease down speed by increasing hydraulic speed control decrease air pressure increase temperature
Stringing/Bubbling	Blade temperature too high	Decrease temperature
Part marking	Debris in fixturing inadequate support	Clean fixturing, clear contact area in fixture

Datecoding

PROBLEM	PROBALBE CAUSE	SOLUTIONS
Impression too deep	Depth stop too low and/or tip temperature too hot	Adjust depth stop higher and/or lower tip tempera-
Impression not deep enough	Depth stop set too high and/or temperature too low	Adjust depth stop lower and/or raise temperature
Impression not even across part	Part not fixtured correctly and/or part is not flat were marking	Adjust fixture and/or check part for flatness

*Glass filled material and crystalline materials
require higher temperature and/or pressure

Thermal Insertion

PROBLEM	PROBALBE CAUSE	SOLUTIONS
Insert installed to deep	Depth stop too low	Adjust depth stop higher
Insert not deep enough	Depth stop set too high and/or temperature too low	Adjust depth stop lower and/or raise temperature
Insert installed misaligned or “cocked”	Part not fixtured correctly and/or tip is misaligned	Adjust fixture and/or check part for flatness or adjust tip

**Our Customer Service Team is available
any time to assist you with any
application or technical
difficulties you may have.**

INSTRUCTION MANUAL

SOLUTION SERIES

Bench Top Model .50AS

Assembly System

Dukane ■ 2900 Dukane Drive ■ St. Charles, IL 60174

630-797-4900