



E Furnace KH112

Operating and Maintenance Instructions

HEAT004 E

Controls



MAIN START:

Closes Main Contactors for supply to Heating elements

HEAT START:

Switches thyristor on. Current will be shown on Ammeter if $SP > PV$

PUMP START:

Ignites gas flame, when lit starts pump if $PV > 700^{\circ}\text{C}$

PROGRAM START/STOP:

Setpoint program runs if start pressed and is frozen is stopped pressed. Pressing and hold stop and press start at the same time will stop and Reset the program

EMERGENCY STOP:

Shuts furnace down. stops pump. Turns heating off. Opens main contactors.



INDICATOR



ON



OFF

Conditions

HEATER OK



Main Power ON and heat start OFF

or

HEATER TRIP



Main Power ON and Heat Start ON and furnace temperature > 10°C above setpoint

HEATER OK



Main Power ON and Heat Start ON and furnace temperature < 10°C above setpoint

HEATER TRIP



HEATER OK

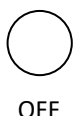


Main Power OFF or High Temp Alarm or Thyristor Alarm

HEATER TRIP



INDICATOR



Conditions

FAN ON/OK



Heat Enable OFF or Lid Open

FAN TRIP



FAN ON/OK



Heat Enable ON and Lid Closed

FAN TRIP



FAN ON/OK



Fan Circuit Breaker Tripped

FAN TRIP



Pump ON/OK



Heat Enable OFF, Lid Open or Temperature < 700°C

Pump TRIP



Pump ON/OK



Heat Enable ON, Lid Closed and Temperature =>700°C

Pump TRIP



Pump ON/OK

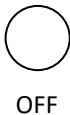


Pump Motor Drive Tripped or Circuit Breaker Tripped

Pump TRIP



INDICATOR



Conditions

Water OK



Control Panel is Switched off

Water Failed



Water OK



Water Pump Running

Water Failed



Water OK



Water Pump Stopped or Tripped

Water Failed

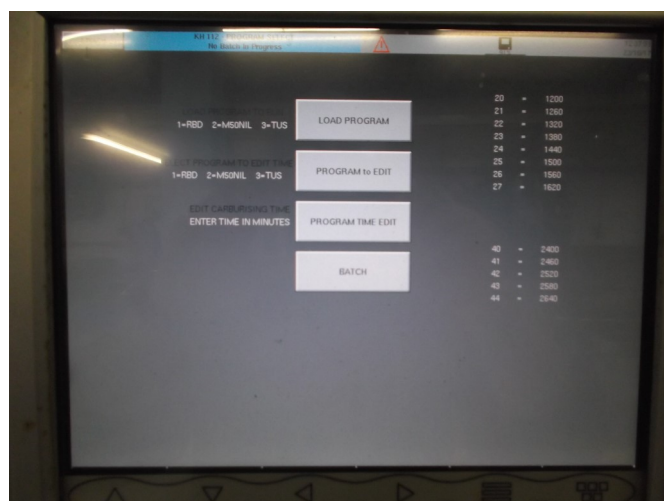


Manual Operation

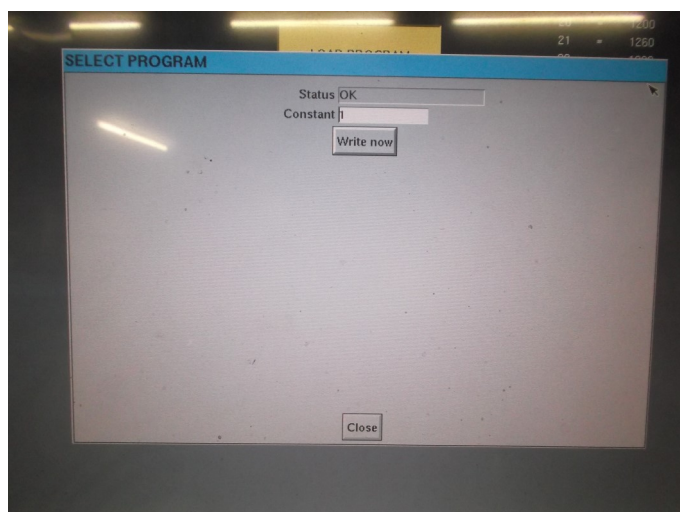


1. Close furnace Lid
2. Press main start on
3. Press heat start on
4. Press pump start
5. Adjust temperature setpoint on controller as required with the up/ down arrows
6. Select carbon setpoint on controller and adjust as required with the up / down arrows

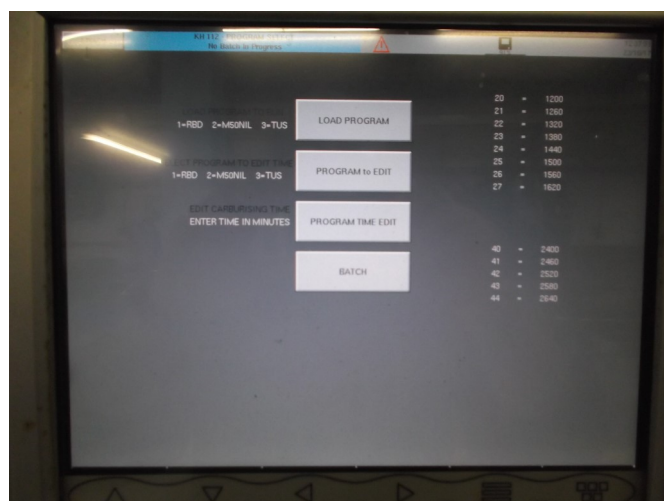
Programmed Operation



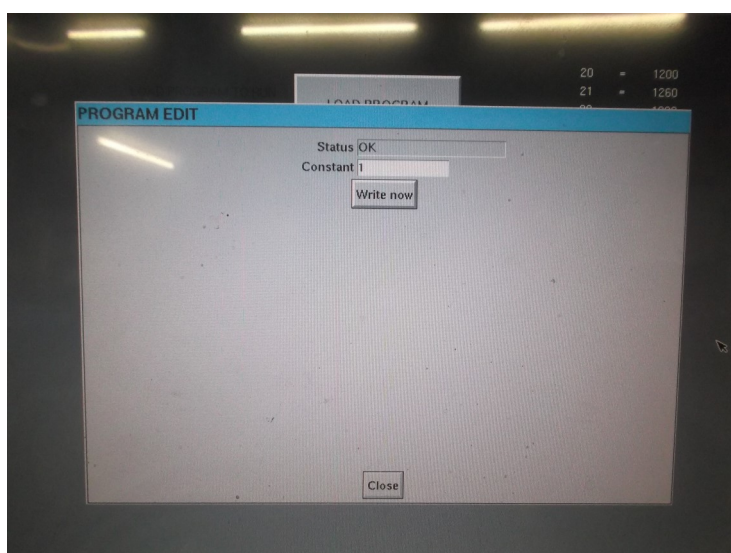
1. From KH112 chart screen press the down arrow, this will take you to the KH112 user screen as above
2. Press the Load Program Button a window will open as shown below, enter the number corresponding to the program you wish to run 1 = RBD, 2 = M50NIL 3 = TUS. Press the constant box to enter
3. Press the write now button, the value will be sent to the controller



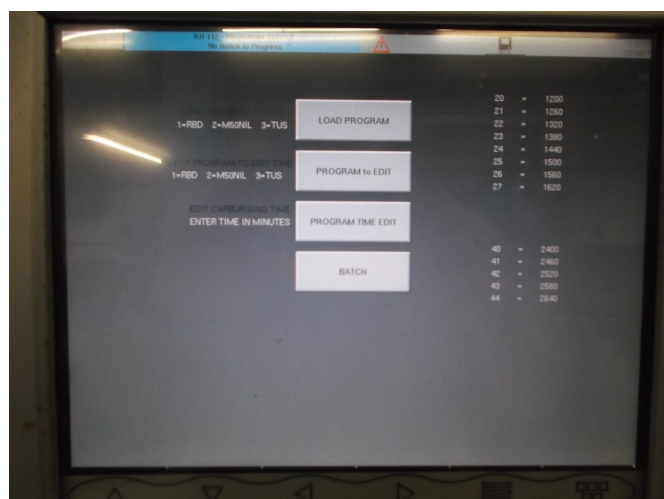
Programmed Operation



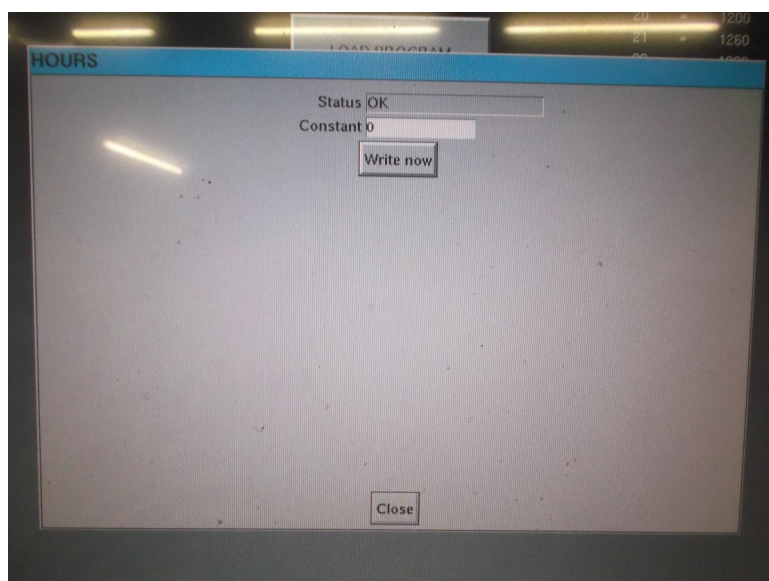
1. Press the Program to Edit Button a window will open as shown below
2. Enter the same value as entered in the load program window. Press the constant box to enter
3. Press the Write now button to send the value to the controller



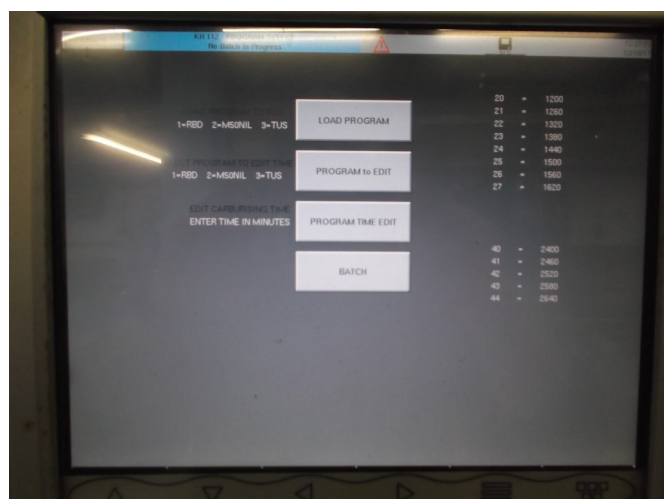
Programmed Operation



1. Press the Program Time Edit button a window will open as shown below
2. Enter the carb time from the load card in MINUTES. Press the constant box to enter
3. Press the write now button to send the value to the controller



Programmed Operation



1. Press the Batch button and enter the required data as normal
2. Go to the control panel look at the top line of the controller display it should display the program name you want to run
3. PRESS MAIN START puts main power on
4. PRESS HEAT START Enables Heaters
5. PRESS PUMP START ignites burn off flame and enables fluid pump
6. PRESS PROGRAM START Starts program running



NOTE on program start/stop



1. Pressing the program start push button: starts the program running
2. Pressing the program stop push button: holds or freezes the program at its current position
3. Press and hold the stop push button then press and release the start pushbutton: Stops the program and re-sets it to the beginning