TD-AFB125

Installation and user manual

Table of Contents

TABLE OF CONTENTS

Warning Labels

Figure 1

Moving grain warning sticker.

Sticker to be placed on bin roof lid and top dryer bin door.

Figure 2

Danger, moving parts can crush and cut.

Placed on cover of actuator and guards of loading stages.

Figure 3

Danger 240v, disconnect power before opening.

Placed on cover of TD-AFB12_AB

Component Identification

HMI Box (TD-AFB12_HB)

Figure 4

A) Mushroom E-stop button (ZB4BS844)
B) Start button (ZB4BA3)
C) HMI (HMIGTO5310)
D) ¼ Turn latch

Inside HMI Box

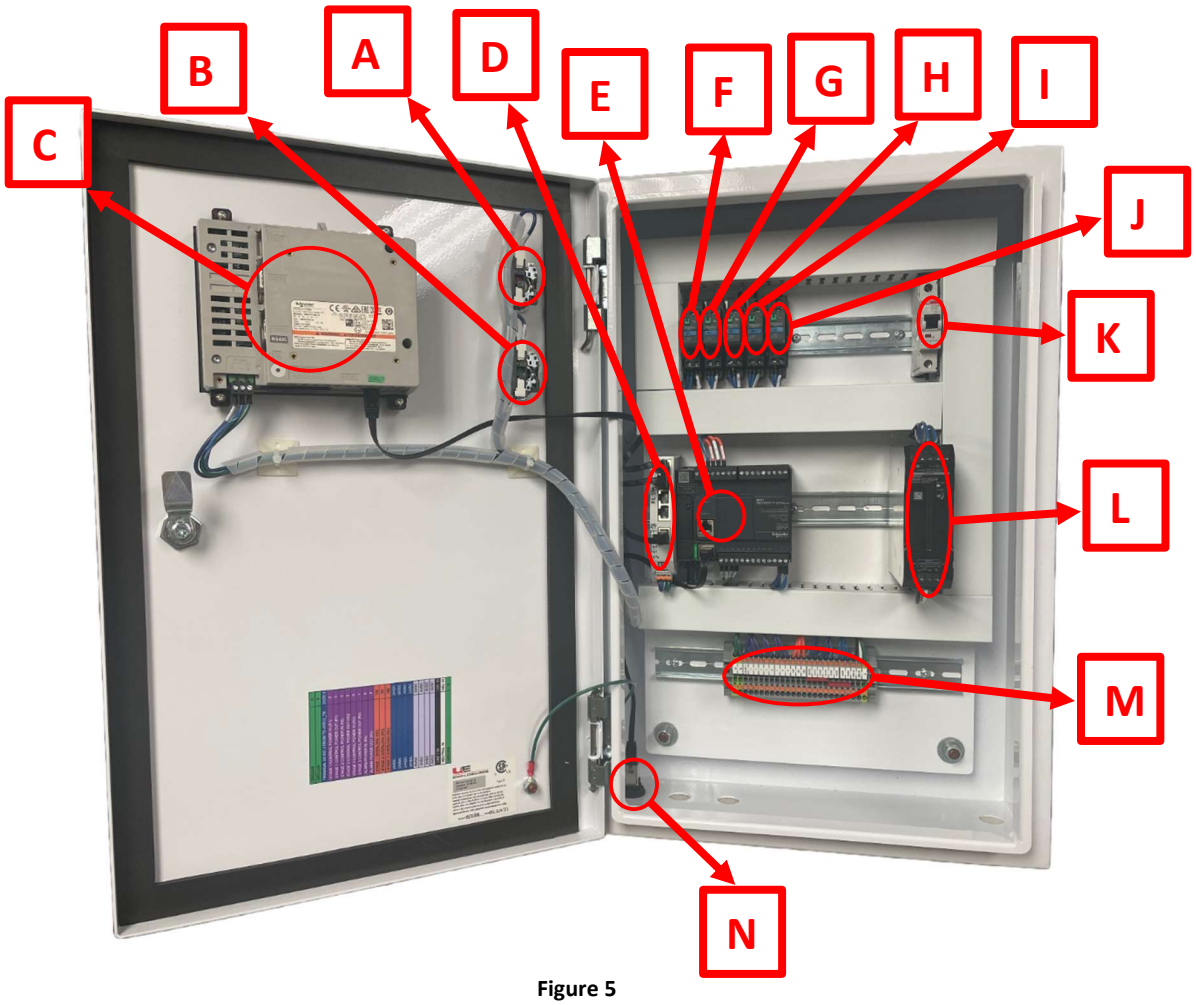

Figure 5

A) NC contact
B) NO contact
C) HMI (HMIGTO5310)
D) Ethernet switch (TCSESUO53FN0)
E) PLC (TM221CE24T)
F) (R1) Stage 1 relay (RPM11BD)
G) (R2) Stage 2 relay (RPM11BD)
H) (R3) Stage 3 relay (RPM11BD)
I) (R4) Control power relay (RPM11BD)
J) (R5) Alarm relay (RPM11BD)
K) 5-amp breaker (C5A)
L) 120v-24vdc power supply (S8VK-C12024)
M) Terminal Block 1 (TB1)
N) Ethernet plug (XB5PRJ45)

Terminal Block 1 (TB1)

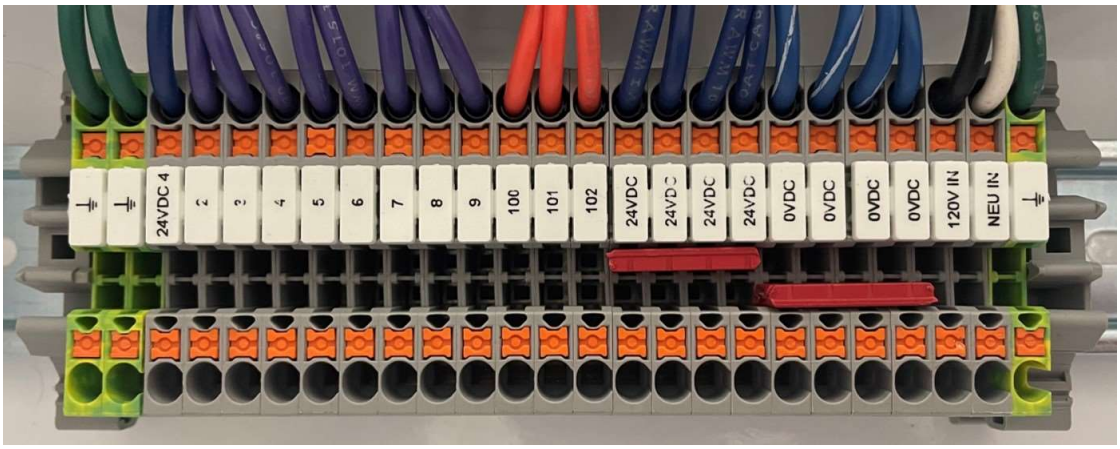

Figure 6

⏚	Ground
⏚	Ground
24VDC 4	To TD-AFB12_TB TB2 #24VDC 4 (Blue)
2	Stage 1 power in (R1)
3	Stage 1 power out (R1)
4	Stage 2 power in (R2)
5	Stage 2 power out (R2)
6	Stage 3 power in (R3)
7	Stage 3 power out (R3)
8	Alarm signal power in (R4)
9	Alarm signal power out (R4)
100	Stage 1 Overload (24vdc)
101	Stage 2 Overload (24vdc)
102	Stage 3 Overload (24vdc)
24VDC	+24vdc
24VDC	+24vdc
24VDC	+24vdc
24VDC	+24vdc
0VDC	-0vdc
0VDC	-0vdc
0VDC	-0vdc
0VDC	-0vdc
120V IN	120vac input
NEU IN	Neutral input
⏚	Ground

Top Box (TB-AFB12_TB)

Figure 7

A) Mushroom E-Stop (ZB4BS844)
B) ¼ Turn latch

Inside Top Box

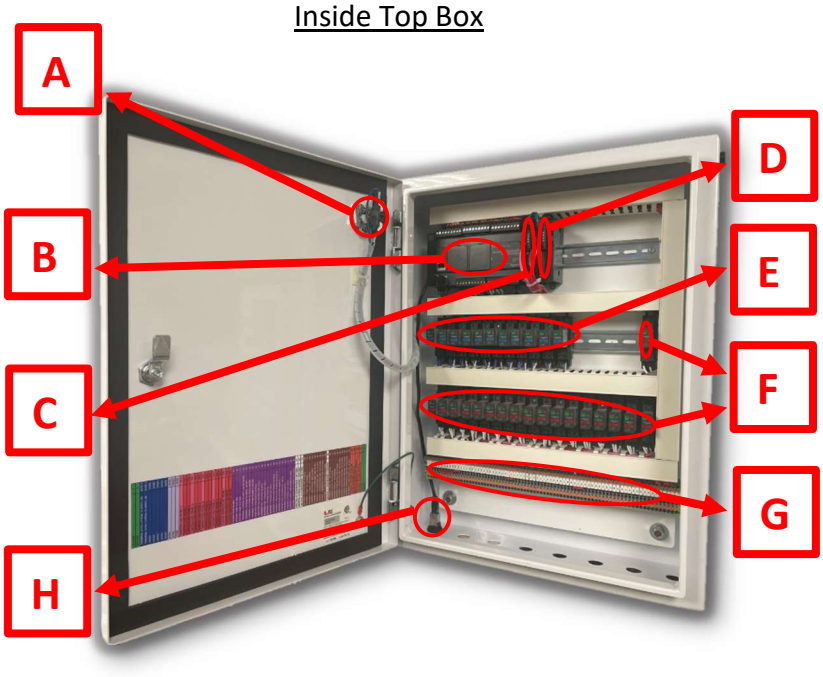

Figure 8

A) NC contact
B) PLC (TM221CE40T)
C) Temperature input card (Probes 1,2,3,4) (TM3TI4)
D) Temperature input card (Plenum temperature probe) (TM3TI4)
E) 24vdc relays (RPM11BD)
   - R6) Rotary relay
   - R7) Chutes up relay
   - R8) Chutes down relay
   - R9) Manual chute switch
   - R10) Aeration fan
   - R11) Dryer 1 fan relay
   - R12) Dryer 1 burner relay
   - R13) Dryer 1 Hi/Low relay
   - R14) Dryer 2 fan relay
   - R15) Dryer 2 burner relay
   - R16) Dryer 2 Hi/Low

F) 120vac relays (RPM11F7)
   - R17) Burner 1 fan coil
   - R18) Burner 1 fuse
   - R19) Burner 1 toggle switch
   - R20) Burner 1 air flow switch
   - R21) Burner 1 vapour high limit
   - R22) Burner 1 housing high limit
   - R23) Burner 1 transition high limit
   - R24) Burner 1 thermostat high limit
   - R25) Burner 1 flame sensor
   - R26) Burner 2 fan coil
   - R27) Burner 2 fuse
   - R28) Burner 2 toggle switch
   - R29) Burner 2 air flow switch
   - R30) Burner 2 vapour high limit
   - R31) Burner 2 housing high limit
   - R32) Burner 2 transition high limit
   - R33) Burner 2 thermostat high limit
   - R34) Burner 2 flame sensor
G) Terminal block 2 (TB2)
H) Ethernet plug (XB5PRJ45)

Terminal Block 2 (TB2)

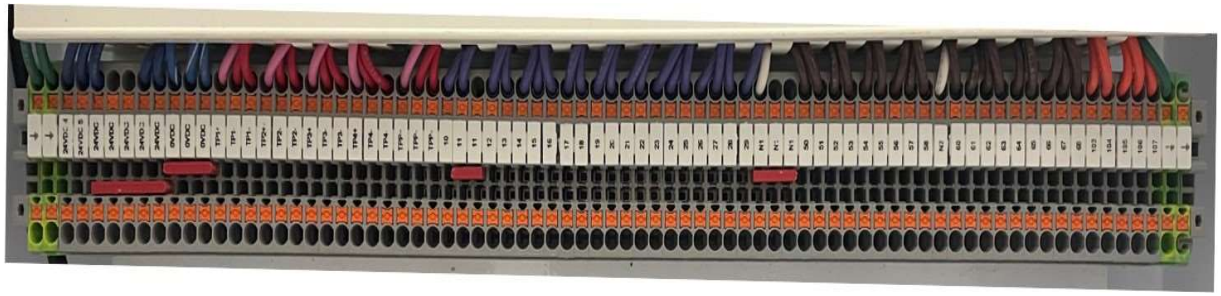

Figure 9

⏚	Ground
⏚	Ground
24VDC 4	From TD-AFB12_HB, TB1, 24VDC 4
24VDC 5	From TD-AFB12_HB, TB3, 24VDC 5
24VDC	+24vdc
24VDC	+24vdc
24VDC	+24vdc
24VDC	+24vdc
24VDC	+24vdc
0VDC	-0vdc (Blue/White)
0VDC	-0vdc (Blue/White)
0VDC	-0vdc (Blue/White)
TP1+	Temperature probe 1+
TP1-	Temperature probe 1-
TP1-	Temperature probe 1-
TP2+	Temperature probe 2+
TP2-	Temperature probe 2-
TP2-	Temperature probe 2-
TP3+	Temperature probe 3+
TP3-	Temperature probe 3-
TP3-	Temperature probe 3-
TP4+	Temperature probe 4+
TP4-	Temperature probe 4-
TP4-	Temperature probe 4-
TPP+	Plenum temperature probe +
TPP-	Plenum temperature probe -
TPP-	Plenum temperature probe -
10	Rotary power in (R6)
11	Rotary power out (R6)
11	Rotary power out (R6)
12	From TD-AFB12_AB, TB3, #12 (R7, R8, R9)
13	From TD-AFB12_AB, TB3, #13 (R7)
14	From TD-AFB12_AB, TB3, #14 (R8)
15	From TD-AFB12_AB, TB3, #15 (R9)
16	Aeration fan power in (R10)
17	Aeration fan power out (R10)
18	Dryer 1 fan power in (R11)
19	Dryer 1 fan power out (R11)
20	Dryer 1 burner power in (R12)
21	Dryer 1 burner power out (R12)
22	Dryer 1 hi/low power in (R13)
23	Dryer 1 hi/low power out (R13)
24	Dryer 2 fan power in (R14)
25	Dryer 2 fan power out (R14)
26	Dryer 2 burner power in (R15)
27	Dryer 2 burner power out (R15)
28	Dryer 2 hi/low power in (R16)
29	Dryer 2 hi/low power out (R16)
N1	Neutral in from burner 1 (R17-R25)
N1	Neutral in from burner 1 (R17-R25)
N1	Neutral in from burner 1 (R17-R25)
50	Burner 1 fan coil 120vac in (R17)
51	Burner 1 fuse 120vac in (R18)
52	Burner 1 toggle switch 120vac in (R19)
53	Burner 1 air switch 120vac in (R20)
54	Burner 1 vapour high limit 120vac in (R21)**
55	Burner 1 housing high limit 120vac in (R22)
56	Burner 1 transition high limit 120vac in (R23)
57	Burner 1 thermostat high limit 120vac in (R24)
58	Burner 1 flame sensor 120vac in (R25)
N2	Neutral in from burner 2 (R26-R34)
60	Burner 2 fan coil 120vac in (R26)
61	Burner 2 fuse 120vac in (R27)
62	Burner 2 toggle switch 120vac in (R28)
63	Burner 2 air switch 120vac in (R29)
64	Burner 2 vapour high limit 120vac in (R30)**
65	Burner 2 housing high limit 120vac in (R31)
66	Burner 2 transition high limit 120vac in (R32)
67	Burner 2 thermostat high limit 120vac in (R33)
68	Burner 2 flame sensor 120vac in (R34)
103	From TD-AFB12_AB, TB3, #103
104	Dryer top rotary
105	Dryer storage rotary
106	From TD-AFB12_AB, TB3, #106
107	From TD-AFB12_AB, TB3, #107
⏚	Ground
⏚	Ground

** Propane burner only

Actuator box

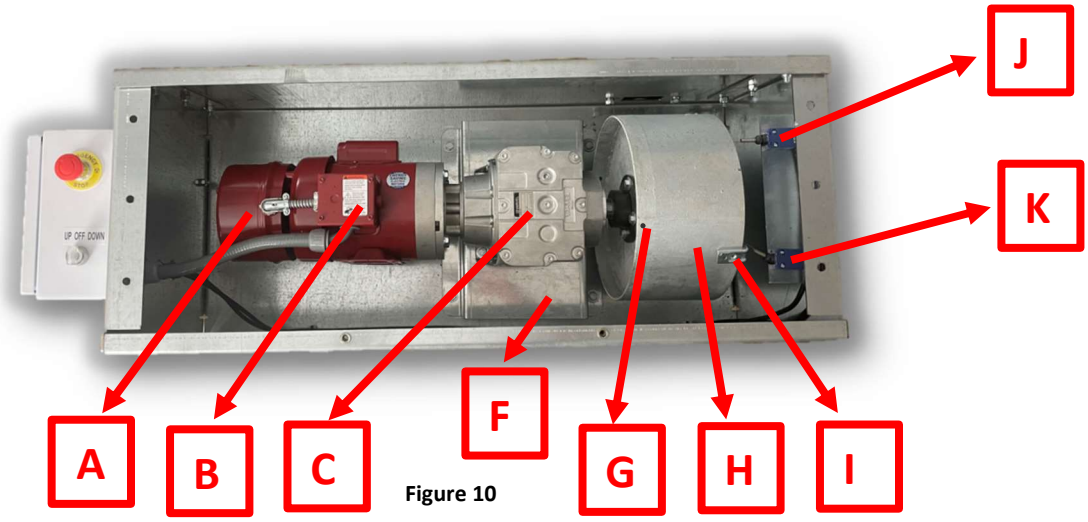

Figure 10

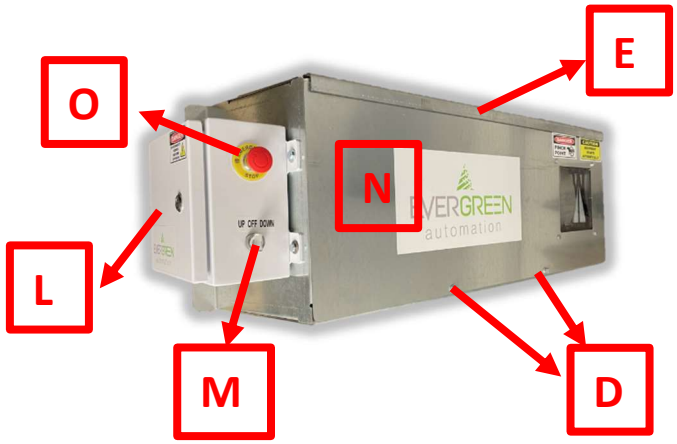

Figure 11

A) Motor brake
B) Forward / reversing motor
C) Gearbox
D) Cover mounting
E) Drip edge
F) Gearbox mounting bracket
G) Cable mounting hole
H) Cable drum
I) Beam clamp to activate limit switches
J) Open limit switch
K) Closed limit switch
L) Actuator control box
M) Chute leveling selector switch
N) Cover
O) Emergency stop

Actuator Control Box (TB-AFB12_AB)

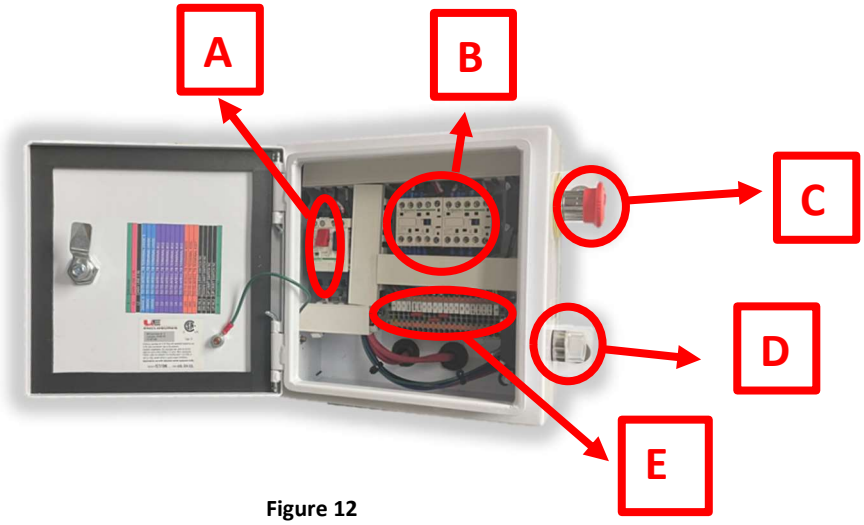

Figure 12

A) Overload switch
B) Chute contactor
C) E-Stop button
D) Selector switch
E) Terminal block 3 (TB3)

Terminal Block 3 (TB3)

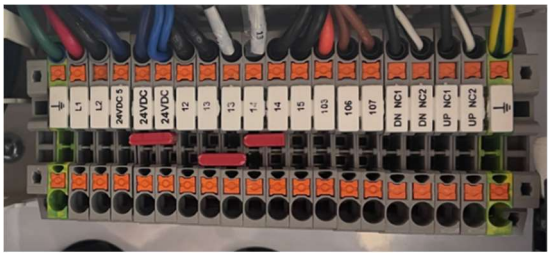

Figure 13

⏚	Ground
L1	Line 1 240vac input
L2	Line 2 240vac input
24VDC 5	To TD-AFB12_TB, TB2, 24VDC 5
24VDC	+24vdc
24VDC	+24vdc
12	To TD-AFB12_TB, TB2, #12 (120v out)
13	To TD-AFB12_TB, TB2, #13 (120v open)
13	
14	To TD-AFB12_TB, TB2, #14 (120v close)

14	
15	To TD-AFB12_TB, TB2, #15 (120v switch)
103	To TD-AFB12_TB, TB2, #103 (24vdc chute ol)
106	To TD-AFB12_TB, TB2, #106 (24vdc open sw)
107	To TD-AFB12_TB, TB2, #107 (24vdc close sw)
DN NC1	Open limit switch normally closed*
DN NC2	Open limit switch normally closed*
UP NC1	Closed limit switch normally closed*
UP NC2	Closed limit switch normally closed*
⏚	Ground

* Only used when actuator is being used as a stand-alone unit

GRAIN TEMPERATURE PROBE

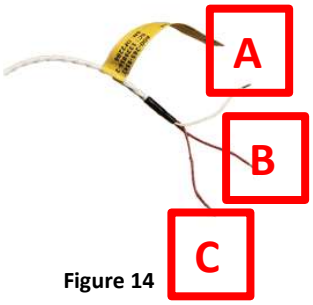

Figure 14

Figure 15

A) RTD + Lead
B) RTD - Lead
C) RTD – Lead

D) Connection point
E) Temperature probe

Plenum Temperature Probe

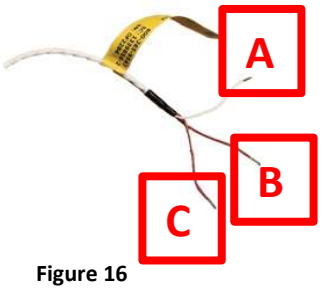

Figure 16

Figure 17

Figure 18

A) RTD + Lead
B) RTD - Lead
C) RTD - Lead

D) Connection point
E) Temperature probe

Rotaries not included (Bin Master BMRX)

Figure 19

Installation

Wiring Diagrams

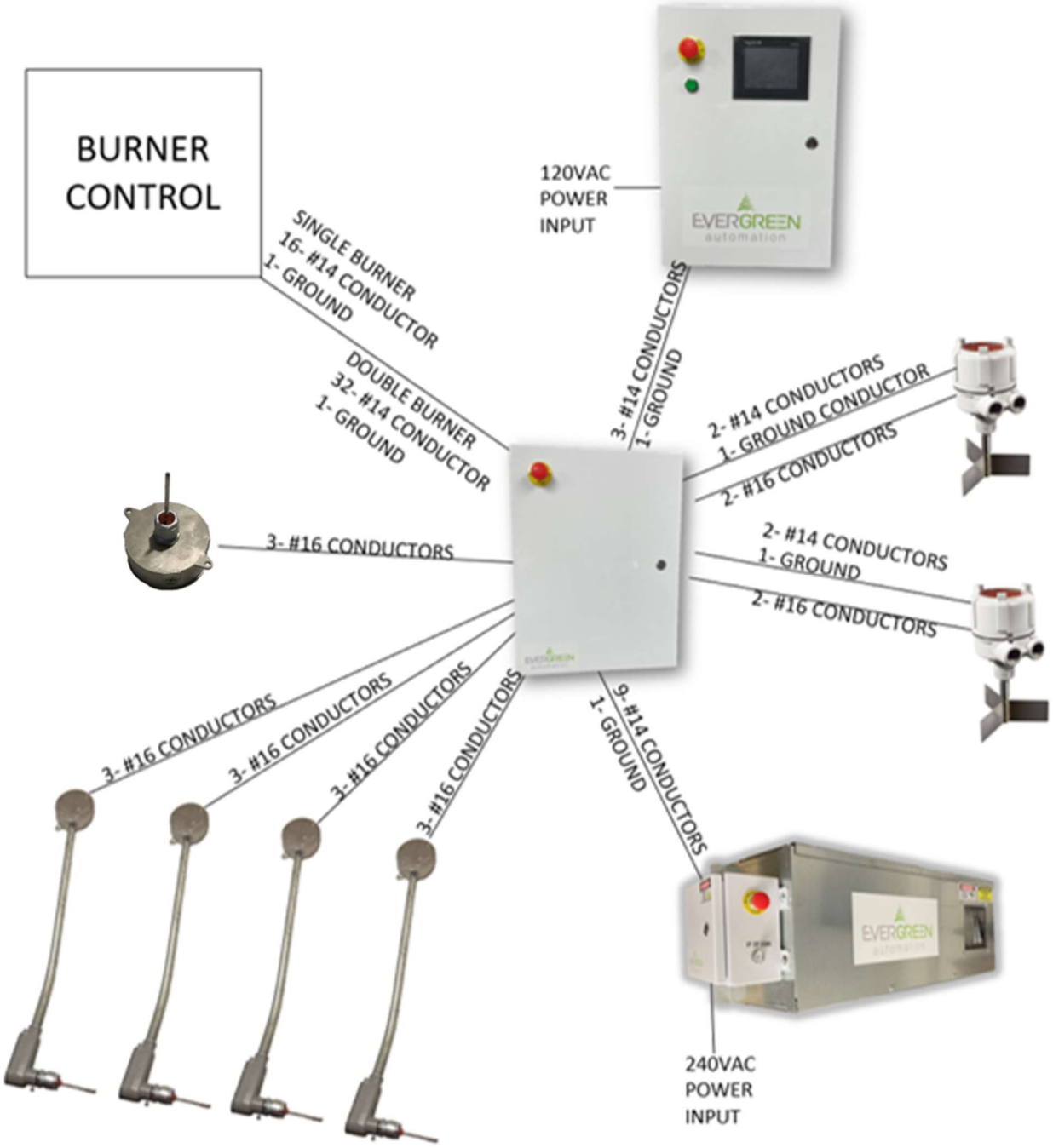

Figure 20

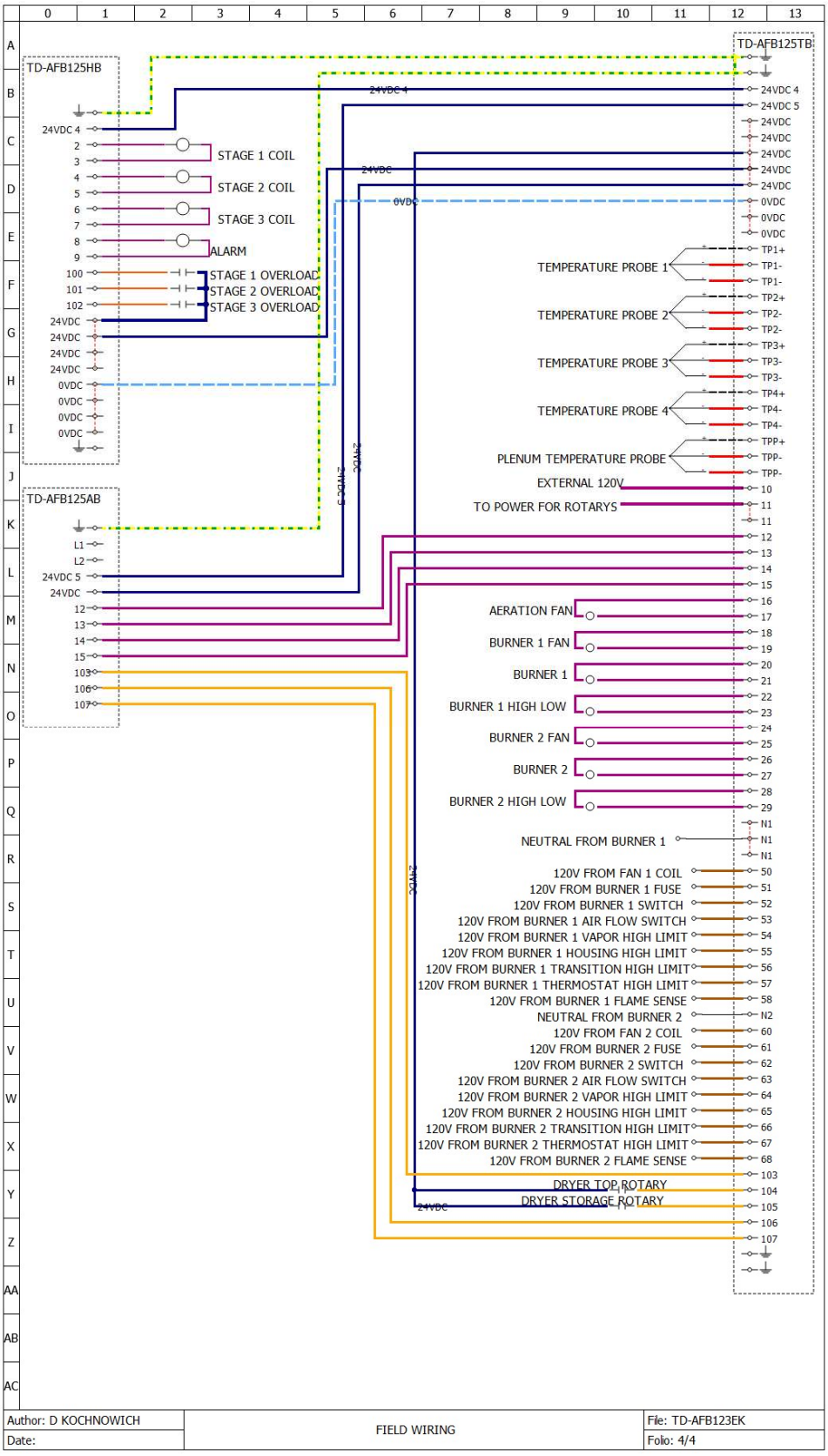
TD-AFB125HB
TD-AFB125AB
TD-AFB125TB
STAGE 1 COIL
STAGE 2 COIL
STAGE 3 COIL
ALARM
STAGE 1 OVERLOAD
STAGE 2 OVERLOAD
STAGE 3 OVERLOAD
TEMPERATURE PROBE 1
TEMPERATURE PROBE 2
TEMPERATURE PROBE 3
TEMPERATURE PROBE 4
PLENUM TEMPERATURE PROBE
EXTERNAL 120V
TO POWER FOR ROTARYS
AERATION FAN
BURNER 1 FAN
BURNER 1
BURNER 1 HIGH LOW
BURNER 2 FAN
BURNER 2
BURNER 2 HIGH LOW
NEUTRAL FROM BURNER 1
120V FROM FAN 1 COIL
120V FROM BURNER 1 FUSE
120V FROM BURNER 1 SWITCH
120V FROM BURNER 1 AIR FLOW SWITCH
120V FROM BURNER 1 VAPOR HIGH LIMIT
120V FROM BURNER 1 HOUSING HIGH LIMIT
120V FROM BURNER 1 TRANSITION HIGH LIMIT
120V FROM BURNER 1 THERMOSTAT HIGH LIMIT
120V FROM BURNER 1 FLAME SENSE
NEUTRAL FROM BURNER 2
120V FROM FAN 2 COIL
120V FROM BURNER 2 FUSE
120V FROM BURNER 2 SWITCH
120V FROM BURNER 2 AIR FLOW SWITCH
120V FROM BURNER 2 VAPOR HIGH LIMIT
120V FROM BURNER 2 HOUSING HIGH LIMIT
120V FROM BURNER 2 TRANSITION HIGH LIMIT
120V FROM BURNER 2 THERMOSTAT HIGH LIMIT
120V FROM BURNER 2 FLAME SENSE
DRYER TOP ROTARY
DRYER STORAGE ROTARY
Author: D KOCHNOWICH
Date:
FIELD WIRING
File: TD-AFB123EK
Folio: 4/4

Figure 21

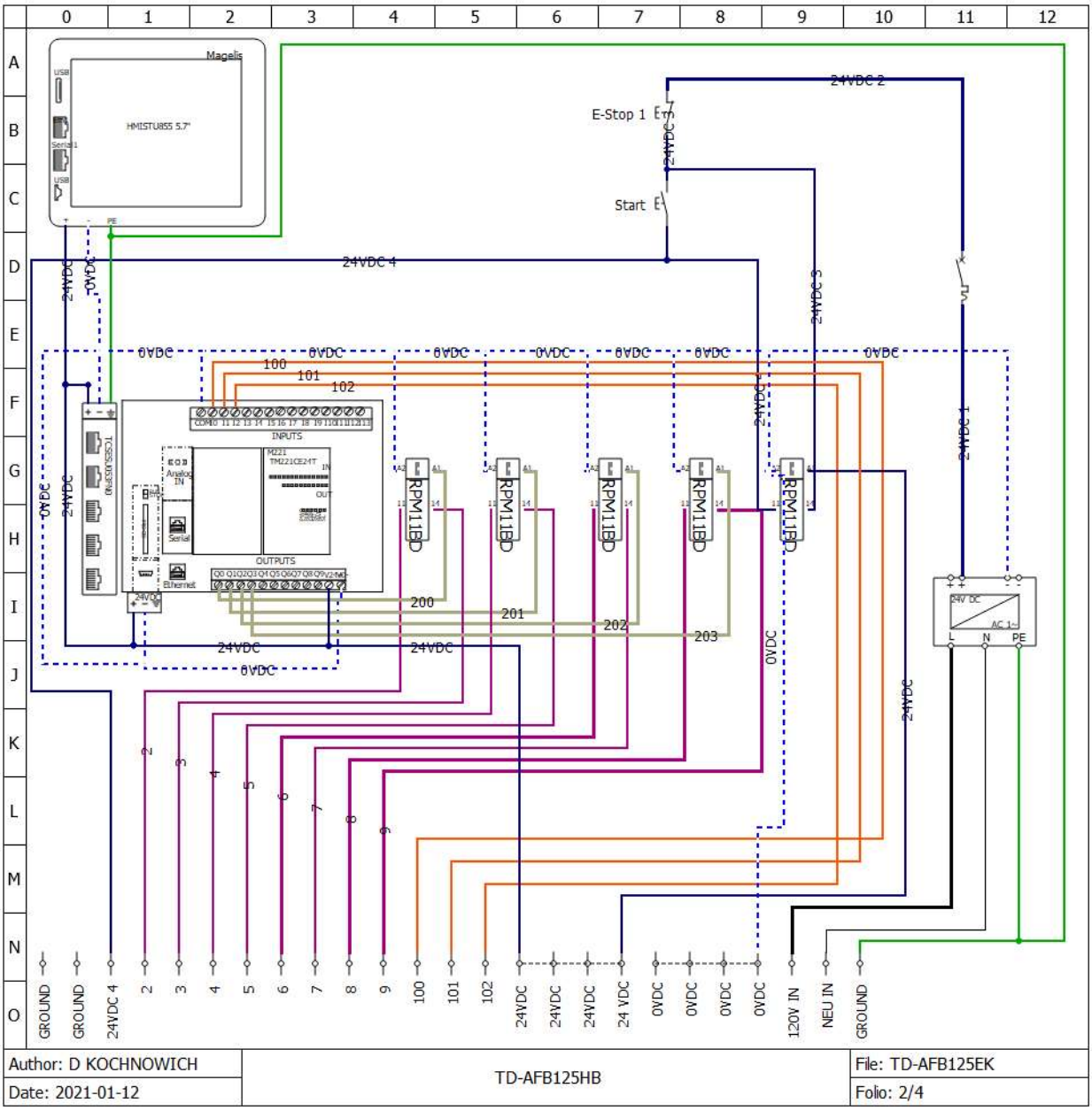
Magelis
HMISTU855 5.7"
E-Stop 1
Start
24VDC 1
24VDC 2
24VDC 3
24VDC 4
0VDC
INPUTS
OUTPUTS
RPM11BD
24V DC
AC 1~
L
N
PE
100
101
102
200
201
202
203
GROUND
GROUND
24VDC 4
2
3
4
5
6
7
8
9
100
101
102
24VDC
24VDC
24VDC
24 VDC
0VDC
0VDC
0VDC
0VDC
120V IN
NEU IN
GROUND
Author: D KOCHNOWICH
Date: 2021-01-12
TD-AFB125HB
File: TD-AFB125EK
Folio: 2/4

Figure 22

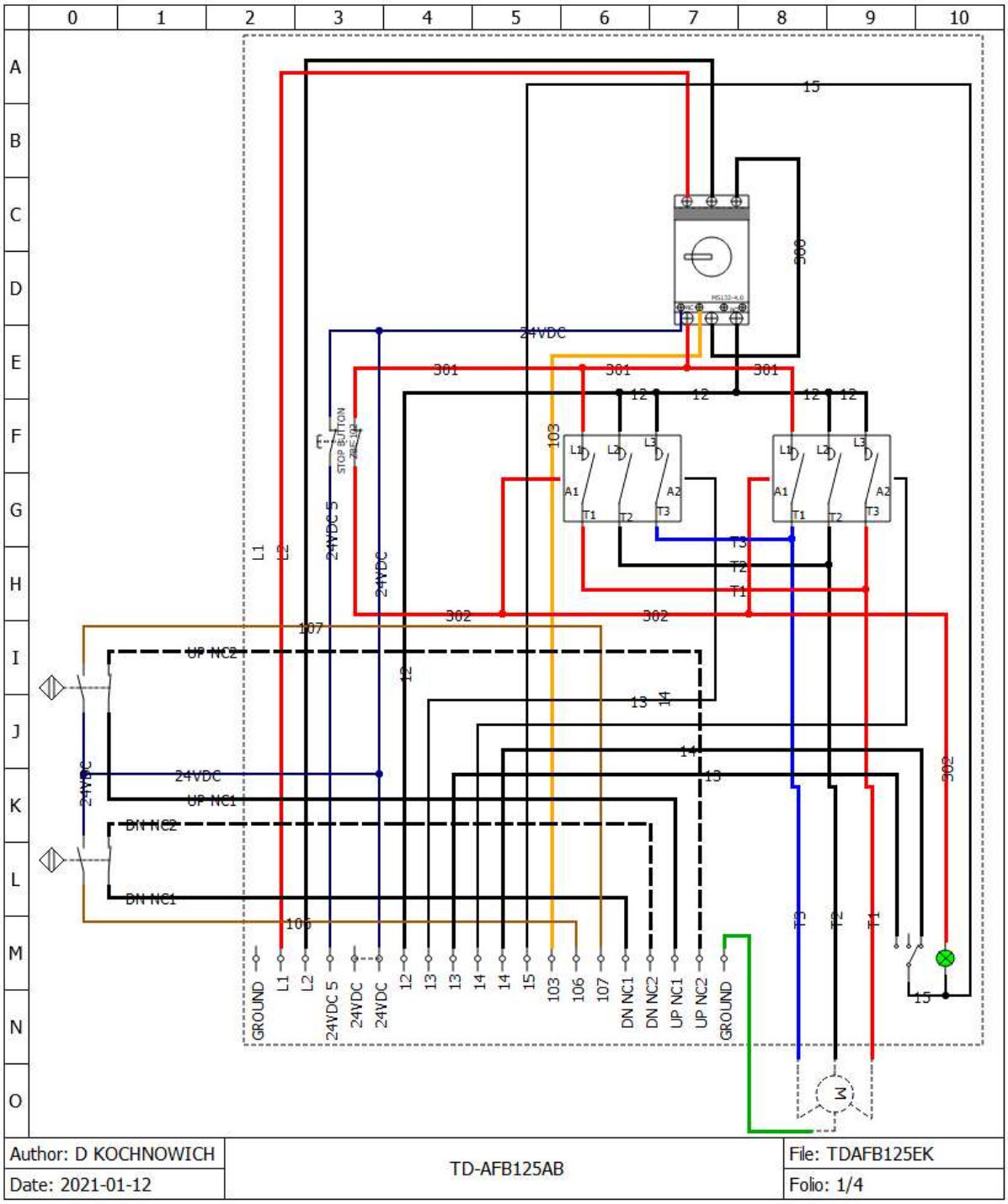
Author: D KOCHNOWICH
Date: 2021-01-12
TD-AFB125AB
File: TDAFB125EK
Folio: 1/4
GROUND
L1
L2
24VDC 5
24VDC
24VDC
12
13
13
14
14
15
103
106
107
DN NC1
DN NC2
UP NC1
UP NC2
GROUND
UP NC2
UP NC1
DN NC2
DN NC1
STOP BUTTON
24VDC
301
302
300
T3
T2
T1
M

Figure 23

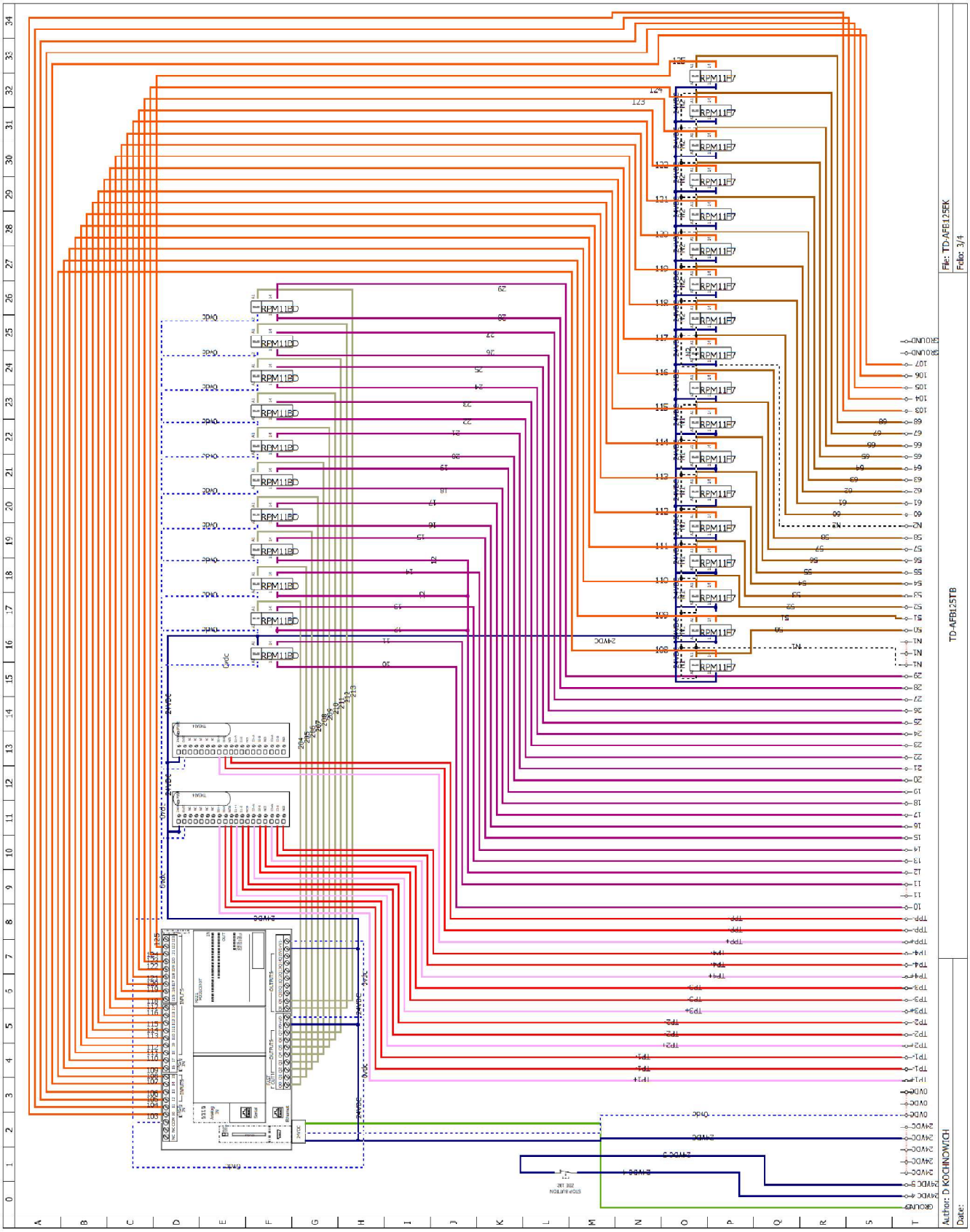
TD-AFB125TB
File: TD-AFB125EK
Folder: 3/4
Author: D.KOCHNOWICH
Date:

Figure 24

Grain Temperature Probe Installation

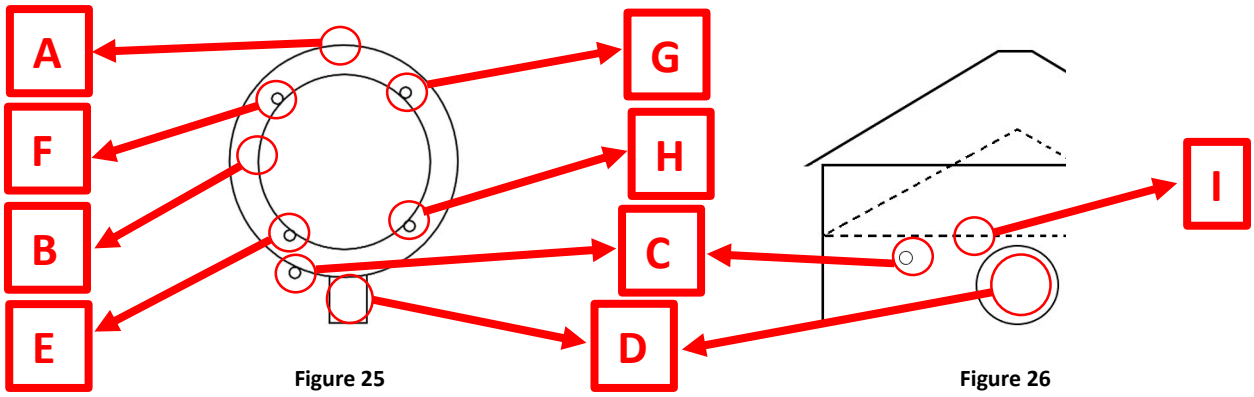

Figure 25

Figure 26

A) Bin wall
B) Outside leveling band
C) Plenum temperature probe
D) Burner
E) Temperature probe 1
F) Temperature probe 2
G) Temperature probe 3
H) Temperature probe 4
I) Drying floor

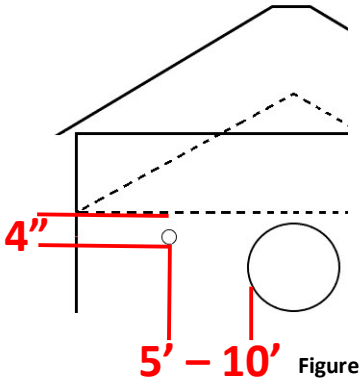

Figure 27

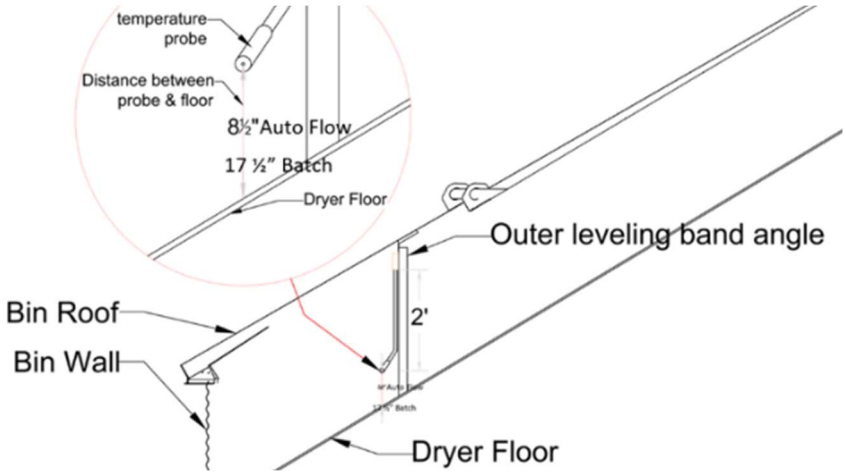

Figure 28

- Equally space temperature probes E, F, G, H.
- Mount probe 8.5in (Auto flow) or 17.5in (Batch) from drying chamber floor.
- Use provided ½” 2-hole straps to attach the temperature probe conduit to bottom leveling band.
- Install so temperature probes are parallel with bands.
- Mount plenum temperature probe 4” under drying floor and 5’-10’ away from burner inlet. Ex (Figure 27)

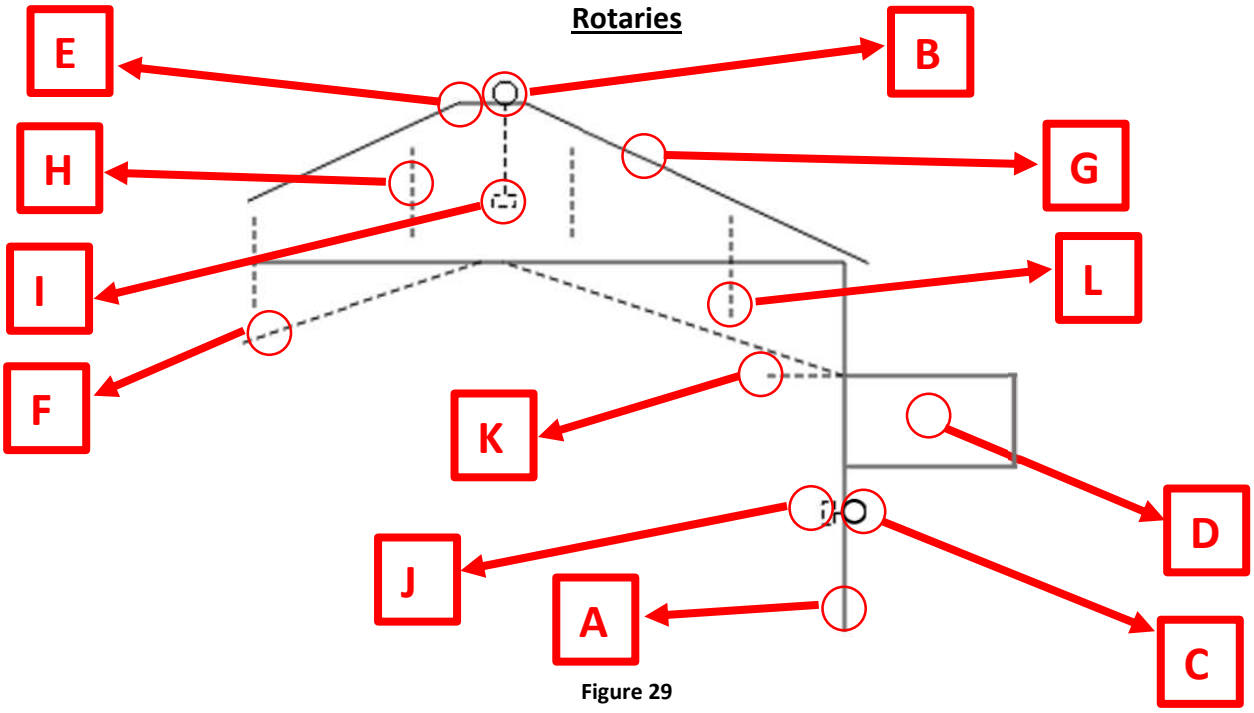

Figure 29

A) Bin wall
B) Drying chamber full rotary (Rotary #1)
C) Storage full rotary (Rotary #2)
D) Burner
E) Dryer bin lid
F) Drying chamber floor
G) Bin roof
H) Top leveling band
I) Rotary #1 paddle
J) Rotary #2 paddle
K) Chutes
L) Bottom leveling band

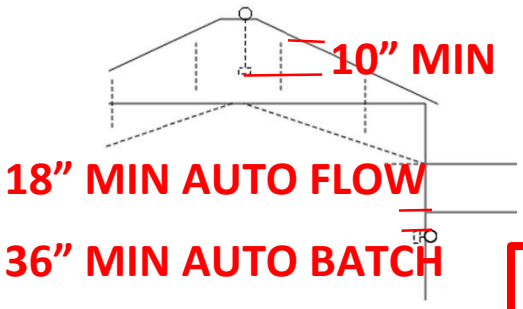

Figure 30

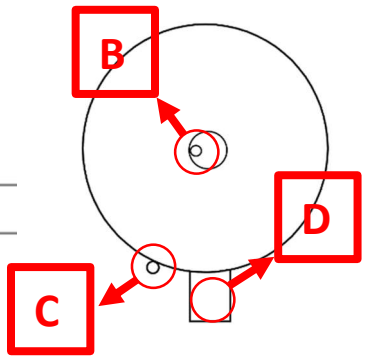

Figure 31

Figure 32

- Dryer storage full rotary paddle mounted 18in (Auto flow) 36in (Auto Batch) under and no more than 6ft from burner inlet. Ex (Figure 32)
- Drying chamber full rotary paddle mounted a minimum of 10in below the top of the top leveling band. Ex (Figure 30)

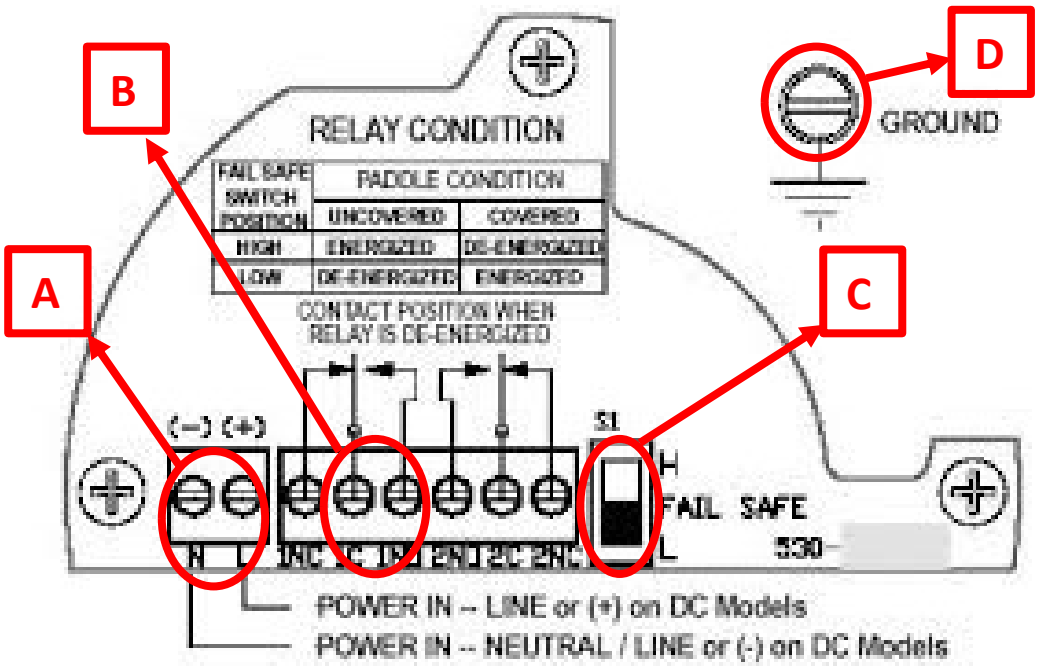

Figure 33

A) 120v power in
B) Relay
C) Fail safe switch
D) Ground

Bin Top Rotary

- Run wire from “+” to “TB2 #28”
- Tie “-“ to neutral
- Run wire from “1C” to “TB2 #24”
- Run wire from “1NO” to “TB2 #36”
- “Fail safe” switch set to “H”

Bin Storage Rotary

- Run wire from “+” to “TB2 #28”
- Tie “-“ to neutral
- Run wire from “1C” to “TB2 #24”
- Run wire from “1NO” to “TB2 #36”
- “Fail safe” switch set to “H”

Cable Install

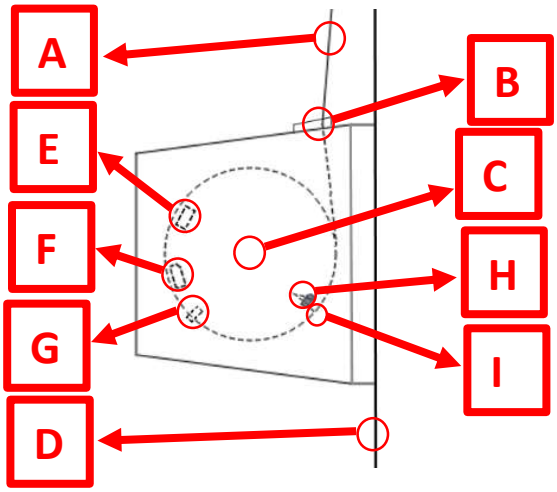

Figure 34

A) Cable
B) Fairlead
C) Actuator drum
D) Bin wall
E) Open limit switch
F) Closed limit switch
G) Beam clamp
H) Crosby clamp
I) Hole through actuator drum

Figure 35

- Mount actuator so fairlead is as close to directly under cable as possible.
- Run cable through fairlead.

Figure 36

- Feed cable along the back of actuator drum and through hole in drum.
- Fold cable over after being fed through hole and install Crosby clamp on doubled over cable. Ex (Figure 36)

Top Box (TB-AFB12_TB)

Figure 37

- Mount box #1 on the bin wall so it is easily accessible from the top platform.
- Tie temperature probe wires into TB2.
- Run 9 wire cable between the TB-AFB12_AB and TB-AFB12_TB.
- Tie 9 wire into TB2.
- Run 3 wire between TB-AFB12_HB and TB-AFB12_TB.
- Run ethernet cable between TB-AFB12_HB and TB-AFB12_TB.
- Plug ethernet cable into RJ45 plug on bottom of box.

HMI Box (TB-AFB12_HB)

Figure 38

- Mount Box 2 in a dry location.
- Connect 3 wire from TD-AFB12_HB to TD-AFB12_TB.
- Connect loading system control to Stage 1, Stage 2, Stage3 if necessary.
- The overloads for the stages should be setup in the normally open configuration so that when in the overload position 24vdc is sent to the corresponding terminal in the TD-AFB12_HB box.

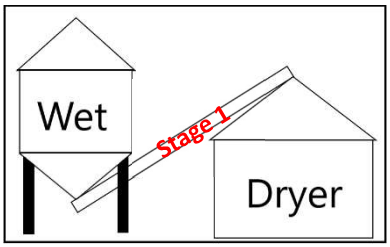

Figure 39

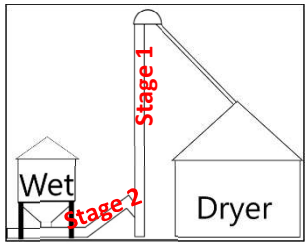

Figure 40

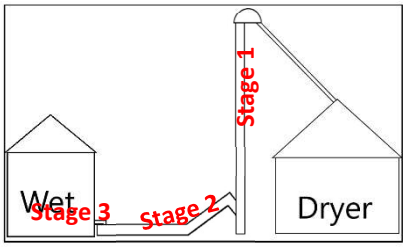

Figure 41

- Stage 1 is loading system closest to the dryer, stage 2 is second loading system from the dryer and stage 3 is third. Ex. (Figure 39, 40, 41)
- Plug ethernet cable into RJ45 plug on bottom of box.
- Plug power supply into female adapter on bottom side of box.
- Plug power supply into AFCI protected outlet.

Burner Setup

TABLE OF CONTENTS

To tie into Sukup Burner

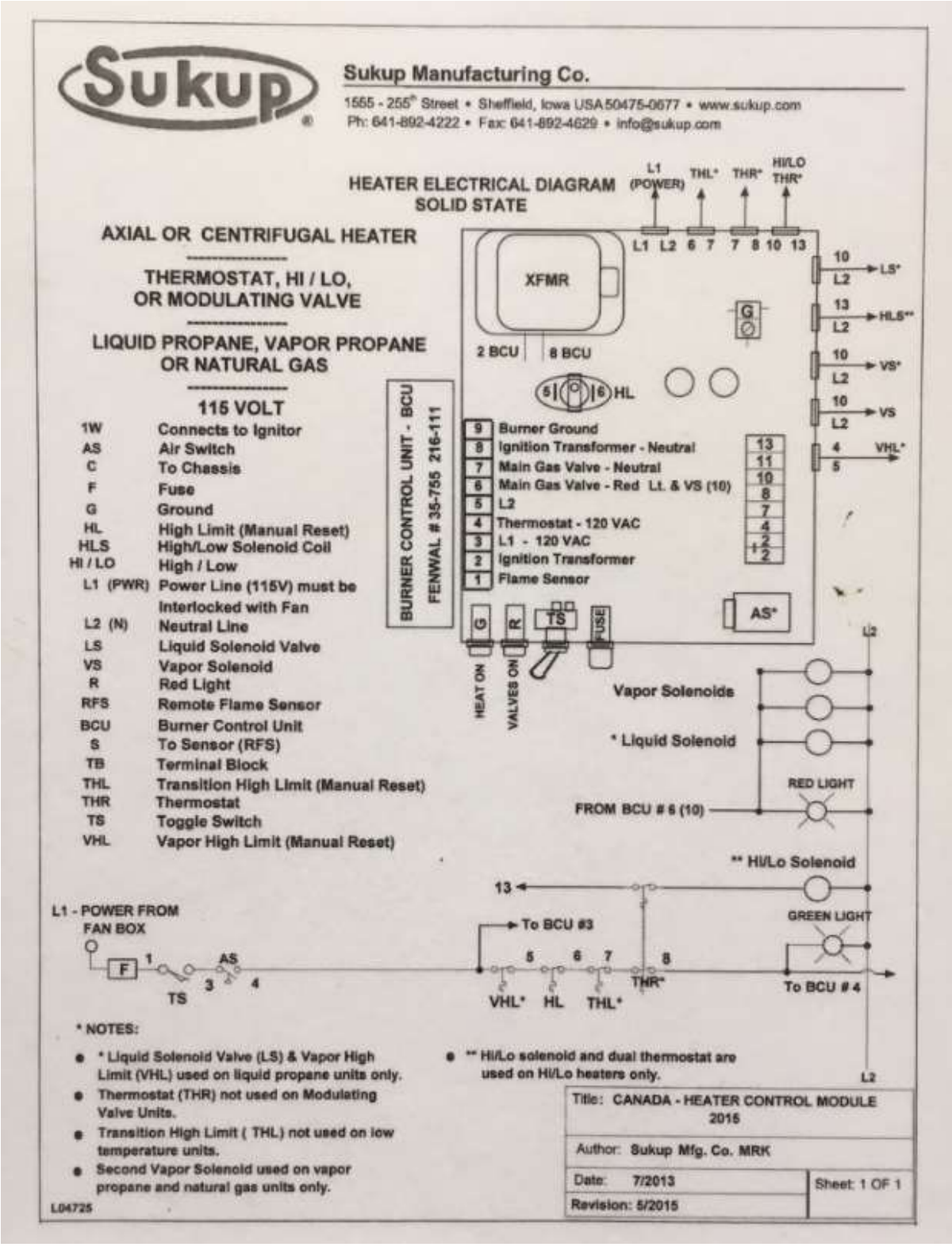

Figure 42

Sukup Manufacturing Co.
1555 255th St, Box 677
Sheffield, Iowa 50475 USA

FAN
(with heater power block)
ELECTRICAL DIAGRAMS

NOTES:

- **Customer must provide means of disconnect, short circuit, and ground fault protection**
- **For motors without internal protection, correctly sized thermal units must be used in overload relay.**
- **Control circuit voltages are the same as that of the incoming power supply.**
- **Wire motor as per nameplate diagram.**

KEY:

M - Motor
MS - Magnetic Starter
C - Magnetic Starter Coil
OL - Overload Relay
PB1 - Start Button (Green)
PB2 - Stop Button (Red)
HPB - Heater Power Block
F - Fuse

N - Neutral Terminal
G - Ground Terminal

AUX - Auxiliary Contact
XFMR - Control Transformer
L1,L2,L3 - Incoming Lines
T1,T2,T3 - Contactor Terminals
J - Motor Leads w/ Internal Protection

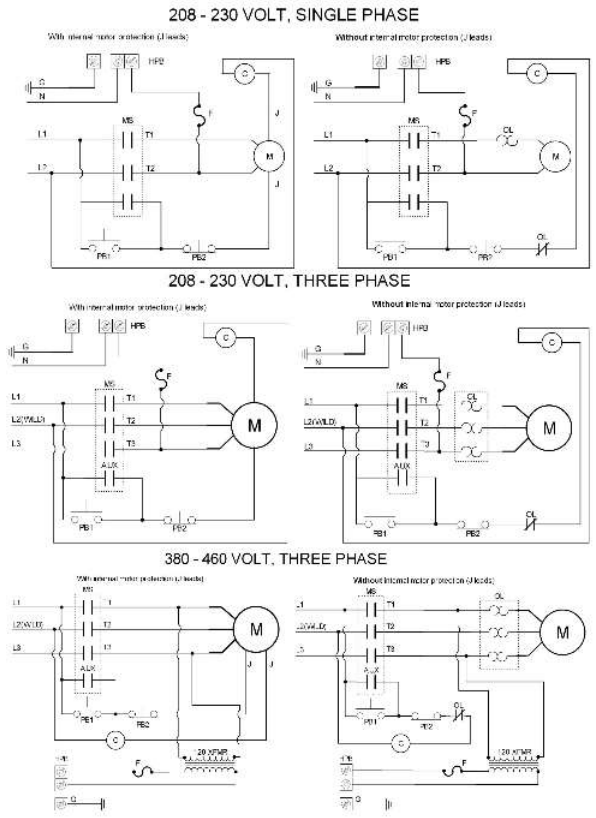

Figure 43

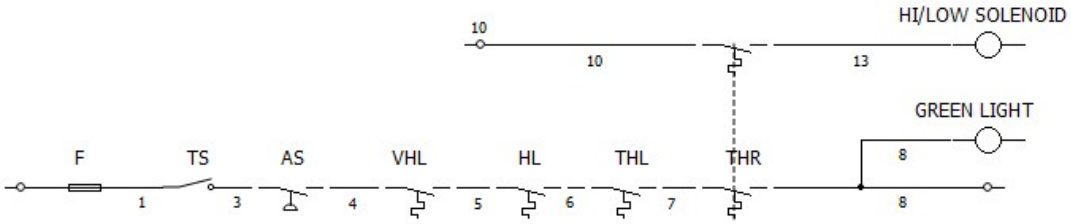

Figure 44

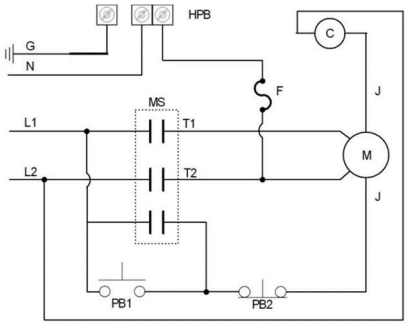

Figure 45

1st Burner

1)

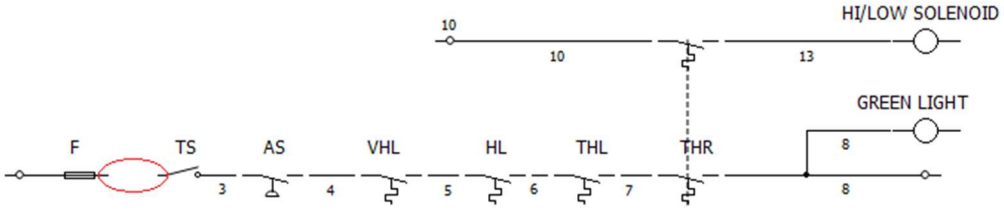

Figure 46

- Disconnect wire #1 between "F" and "TS" in the burner control box.

2)

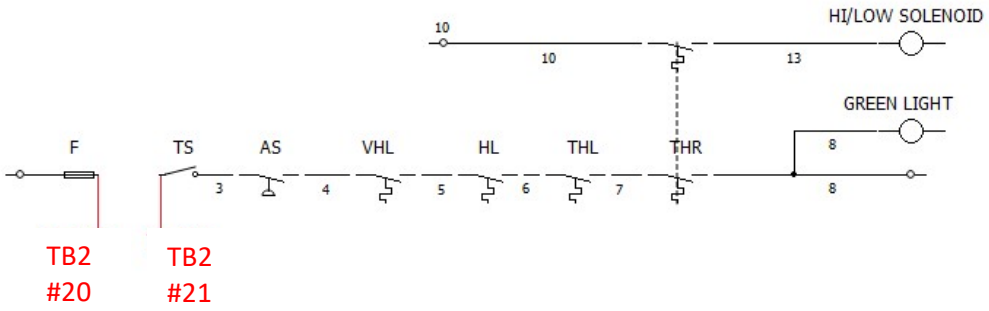

Figure 47

- Connect a wire between "F" in the burner control box and #20 of TB2
- Connect a wire between "TS" in the burner control box and #21 of TB2

3)

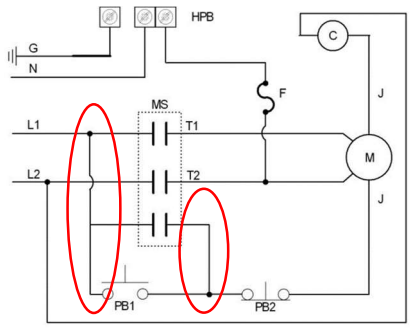

Figure 48

- Disconnect wire between L1, AUX, and PB1.
- Disconnect wire between AUX, PB1 and PB2.

4)

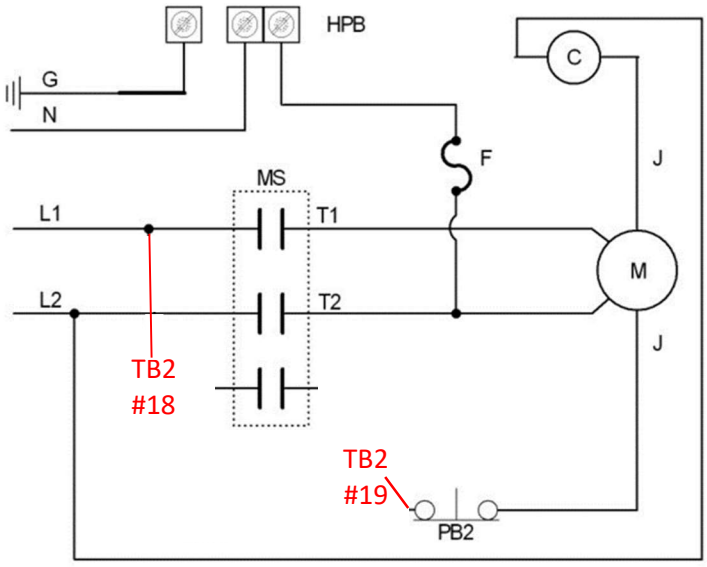

Figure 49

- Run wire from “L1” to terminal “18” of TB2.
- Run wire from “PB2” to terminal “19” of TB2.

5)

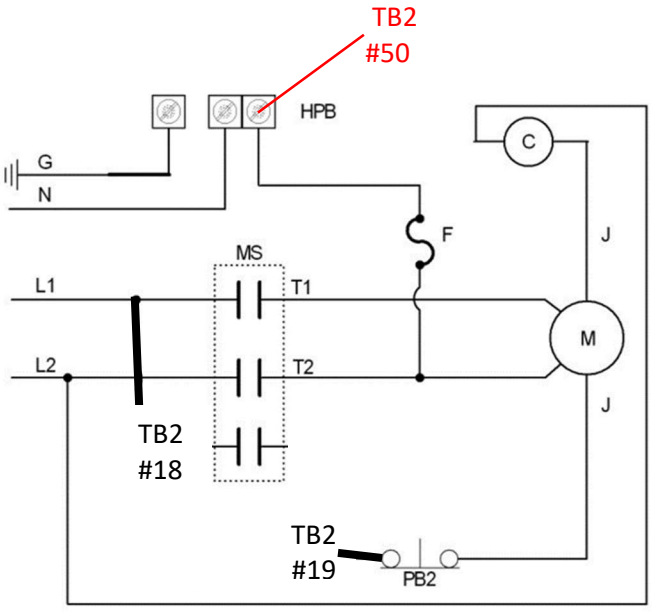

Figure 50

- Run wire from “HPB” of burner 1 to terminal “50” of TB2 (120vac)

6) High/Low Burner Option*

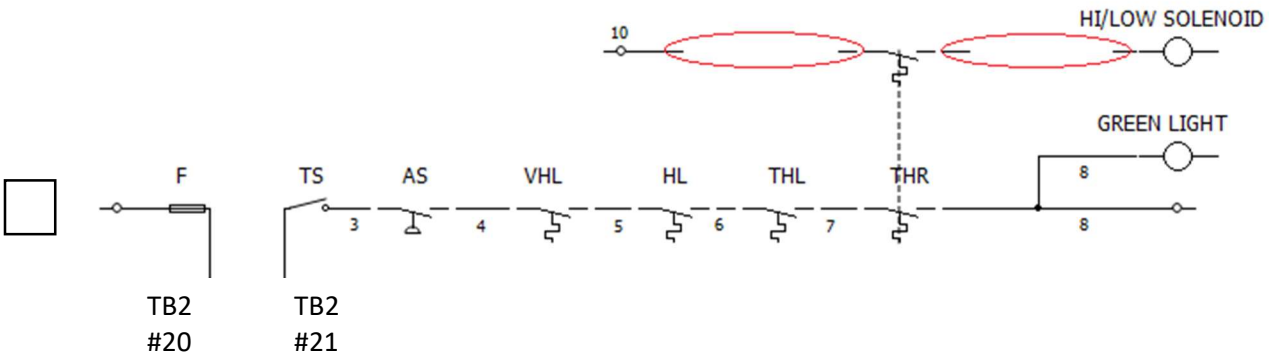

Figure 51

- Disconnect wire #10 between the terminal block on the back of the burner control box and thermostat.
- Disconnect wire #13 between the terminal block on the back of the burner control box and thermostat.

7) High/Low Burner Option*

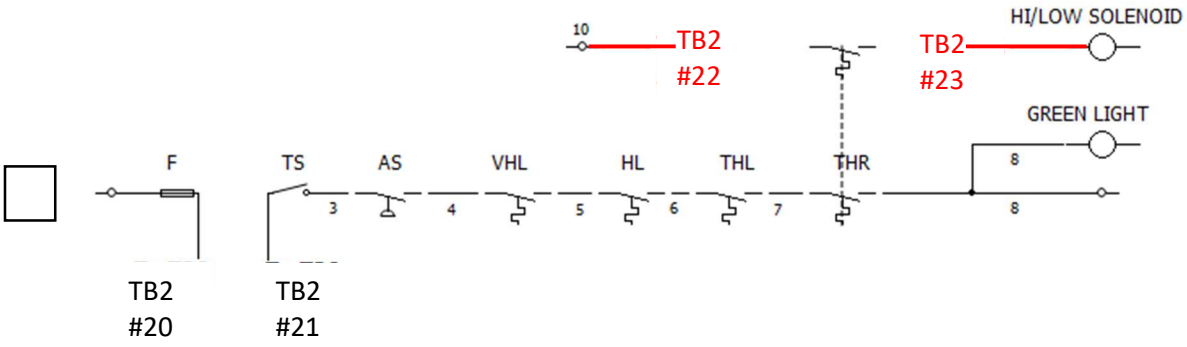

Figure 52

- Connect a wire between terminal #10 on the back of the burner control box and #22 of TB2.
- Connect a wire between terminal #13 on the back of the burner control box and #23 of TB2.

2nd Burner

1)

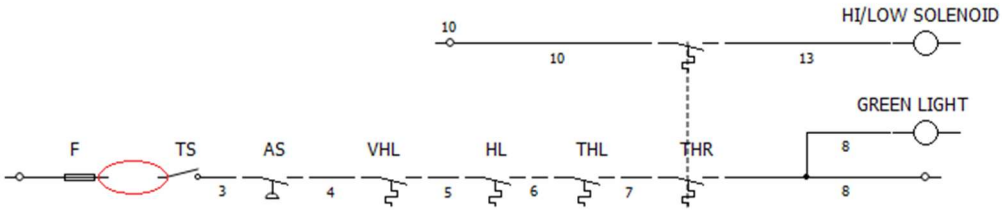

Figure 53

- Disconnect wire #1 between “F” and “TS” in the burner control box.

2)

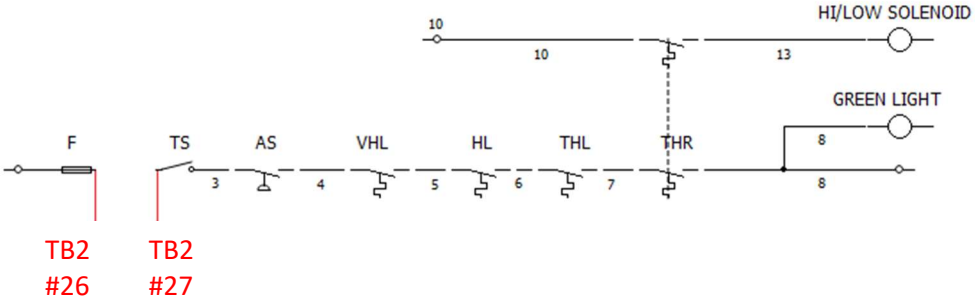

Figure 54

- Connect a wire between “F” in the burner control box and #26 of TB2
- Connect a wire between “TS” in the burner control box and #27 of TB2

3)

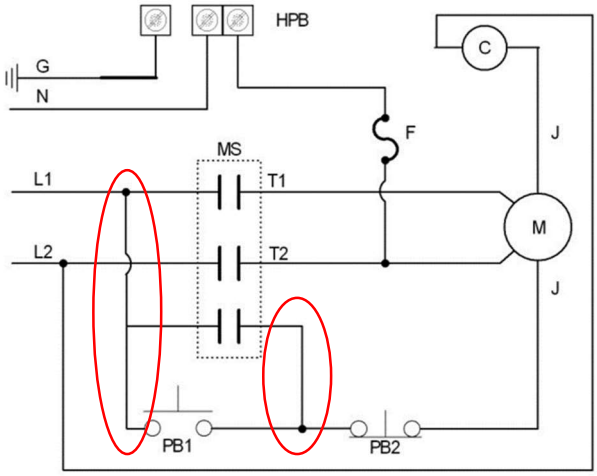

Figure 55

- Disconnect wire between L1, AUX, and PB1.
- Disconnect wire between AUX, PB1 and PB2.

4)

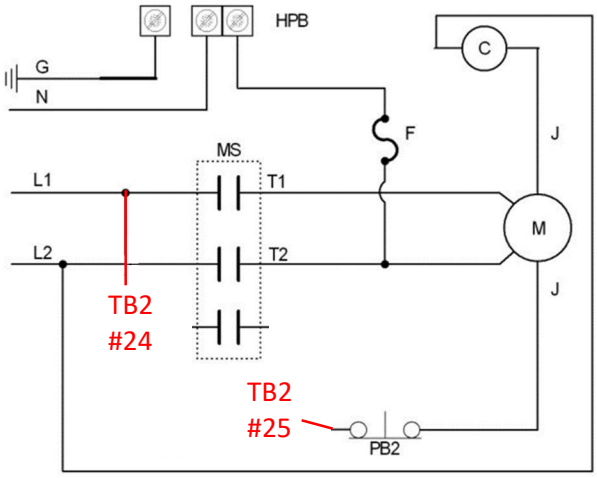

Figure 56

- Run wire from “L1” to terminal “24” of TB2.
- Run wire from “PB2” to terminal “25” of TB2.

5)

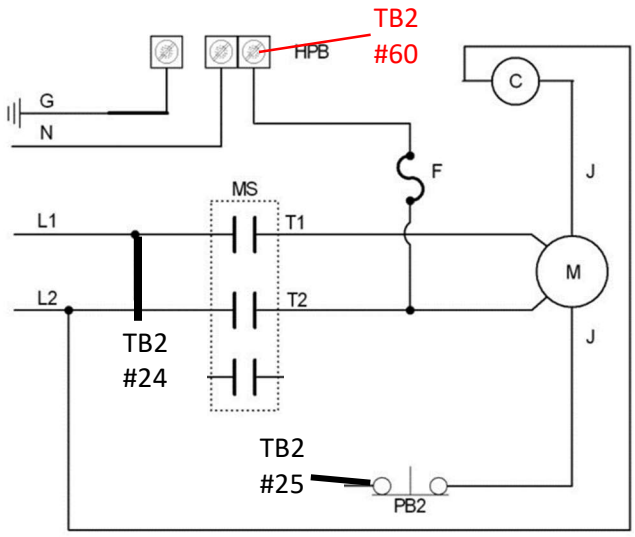

Figure 57

- Run wire from “HPB” of burner 2 to terminal “50” of TB2 (120vac)

6) High/Low Burner Option*

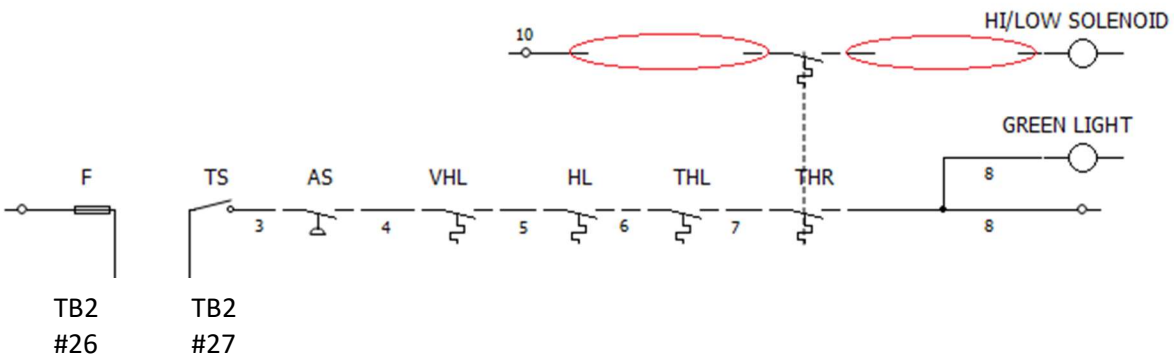

Figure 58

- Disconnect wire #10 between the terminal block on the back of the burner control box and thermostat.
- Disconnect wire #13 between the terminal block on the back of the burner control box and thermostat.

7) High/Low Burner Option*

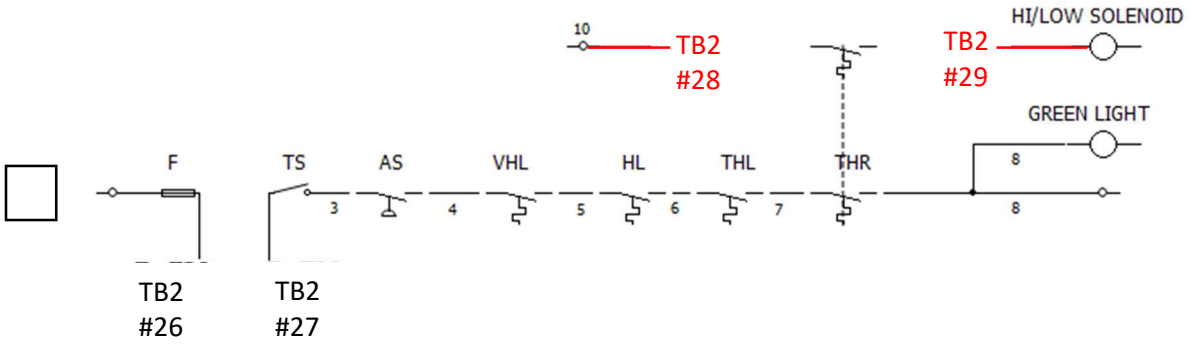

Figure 59

- Connect a wire between terminal #10 on the back of the burner control box and #28 of TB2.
- Connect a wire between terminal #13 on the back of the burner control box and #29 of TB2.

Sukup Safety Monitoring

1st Burner

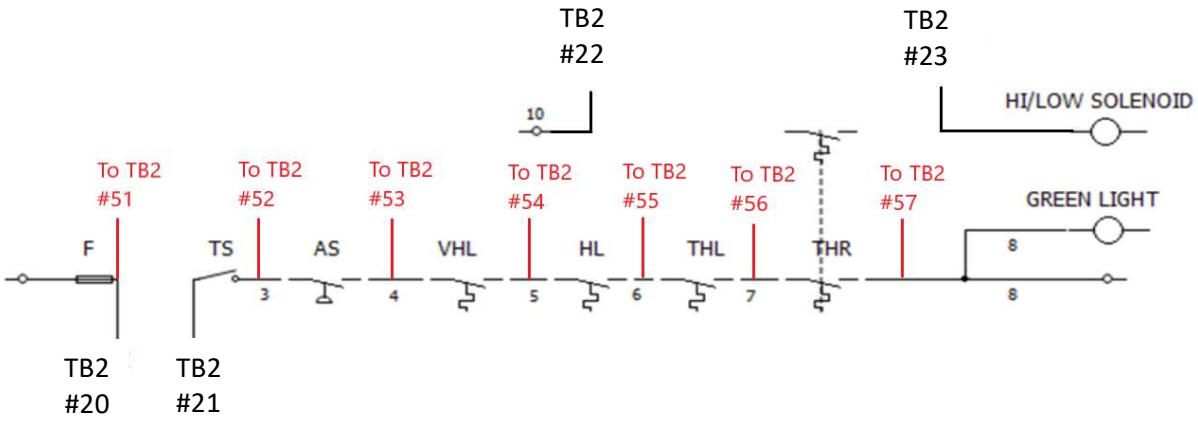

Figure 60

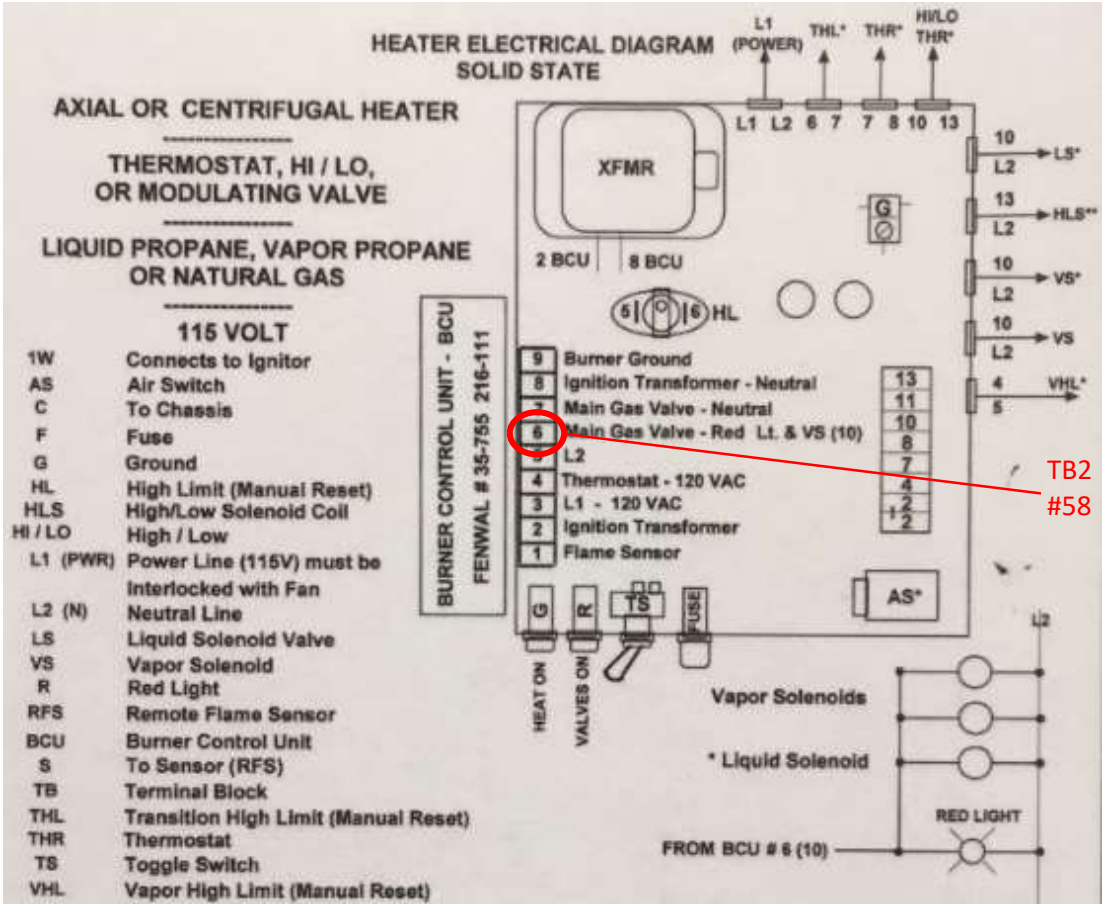

Figure 61

- Connect wire from load side of fuse (wire #1 of burner) to terminal #51 of TB2.
- Connect wire from load side of toggle switch (wire #3 of burner) to terminal #52 of TB2.
- Connect wire from load side of air switch (wire #4 of burner) to terminal #53 of TB2.
- (Propane only) Remove jumper between #53 and #54 of TB2. Connect wire from load side of vapor high limit (wire #5 of burner) to terminal #54 of TB2.
- Connect wire from load side of housing high limit (wire #6 of burner) to terminal #55 of TB2.
- Connect wire from load side of transition high limit (wire #7 of burner) to terminal #56 of TB2.
- Connect wire from load side of to thermostat high limit (wire #8 of burner) to terminal #57 of TB2.
- Connect wire from #6 of the BCU to terminal #58 of TB2.

**If no power is detected on terminal #58 10 sec after start up and burner safety monitoring is on the burner will shutdown.

2nd Burner

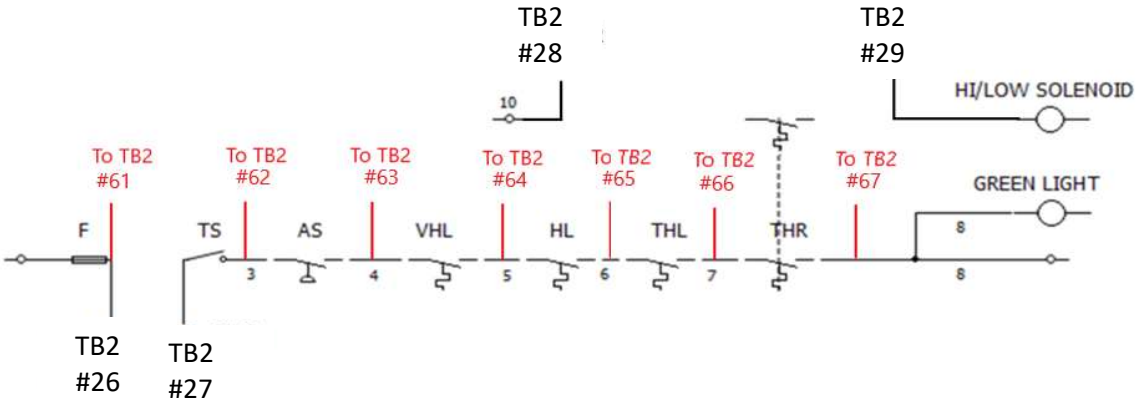

Figure 62

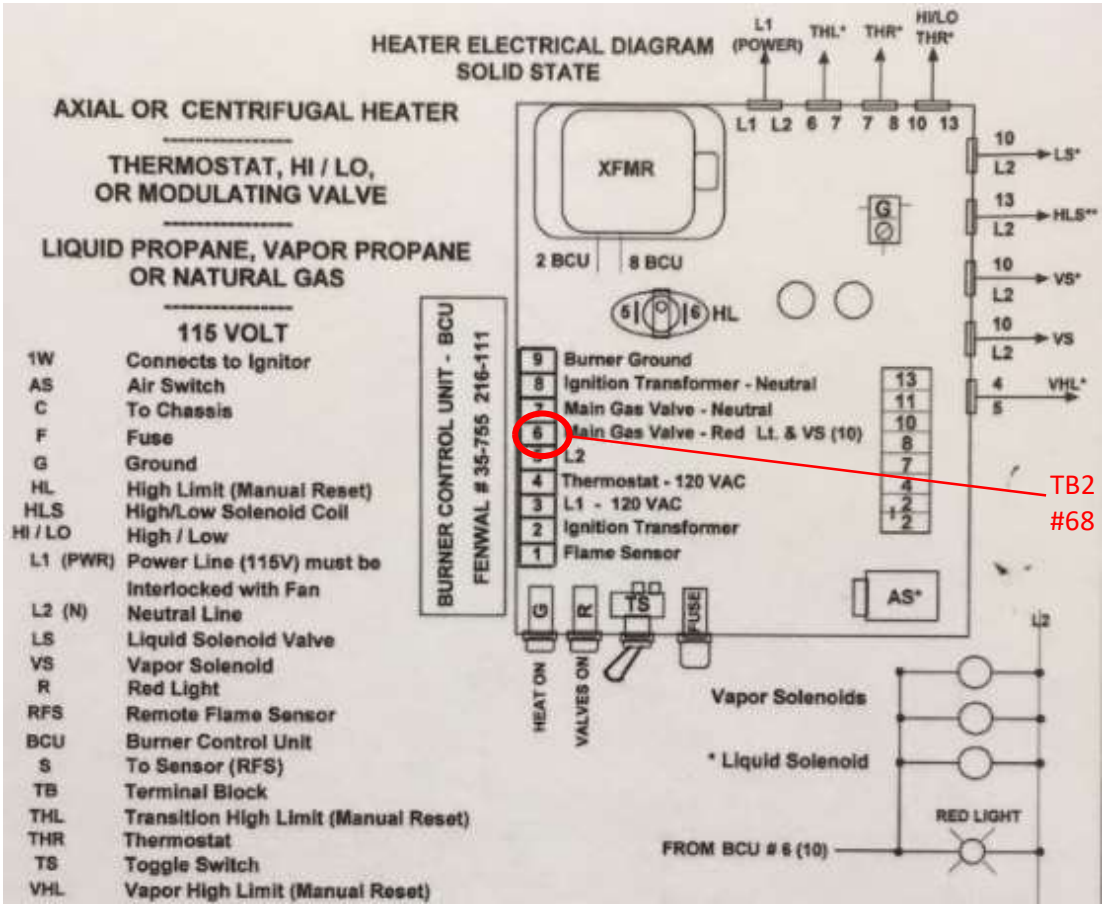

Figure 63

- Connect wire from load side of fuse (wire #1 of burner) to terminal #61 of TB2.
- Connect wire from load side of toggle switch (wire #3 of burner) to terminal #62 of TB2.
- Connect wire from load side of air switch (wire #4 of burner) to terminal #63 of TB2.
- (Propane only) Remove jumper between #63 and #64 of TB2. Connect wire from load side of vapor high limit (wire #5 of burner) to terminal #64 of TB2.
- Connect wire from load side of housing high limit (wire #6 of burner) to terminal #65 of TB2.
- Connect wire from load side of transition high limit (wire #7 of burner) to terminal #66 of TB2.
- Connect wire from load side of to thermostat high limit (wire #8 of burner) to terminal #67 of TB2.
- Connect wire from #6 of the BCU to terminal #68 of TB2.

**If no power is detected on terminal #68 10 sec after start up and burner safety monitoring is on the burner will shutdown.

Farm Fans Burner 1 Hookup

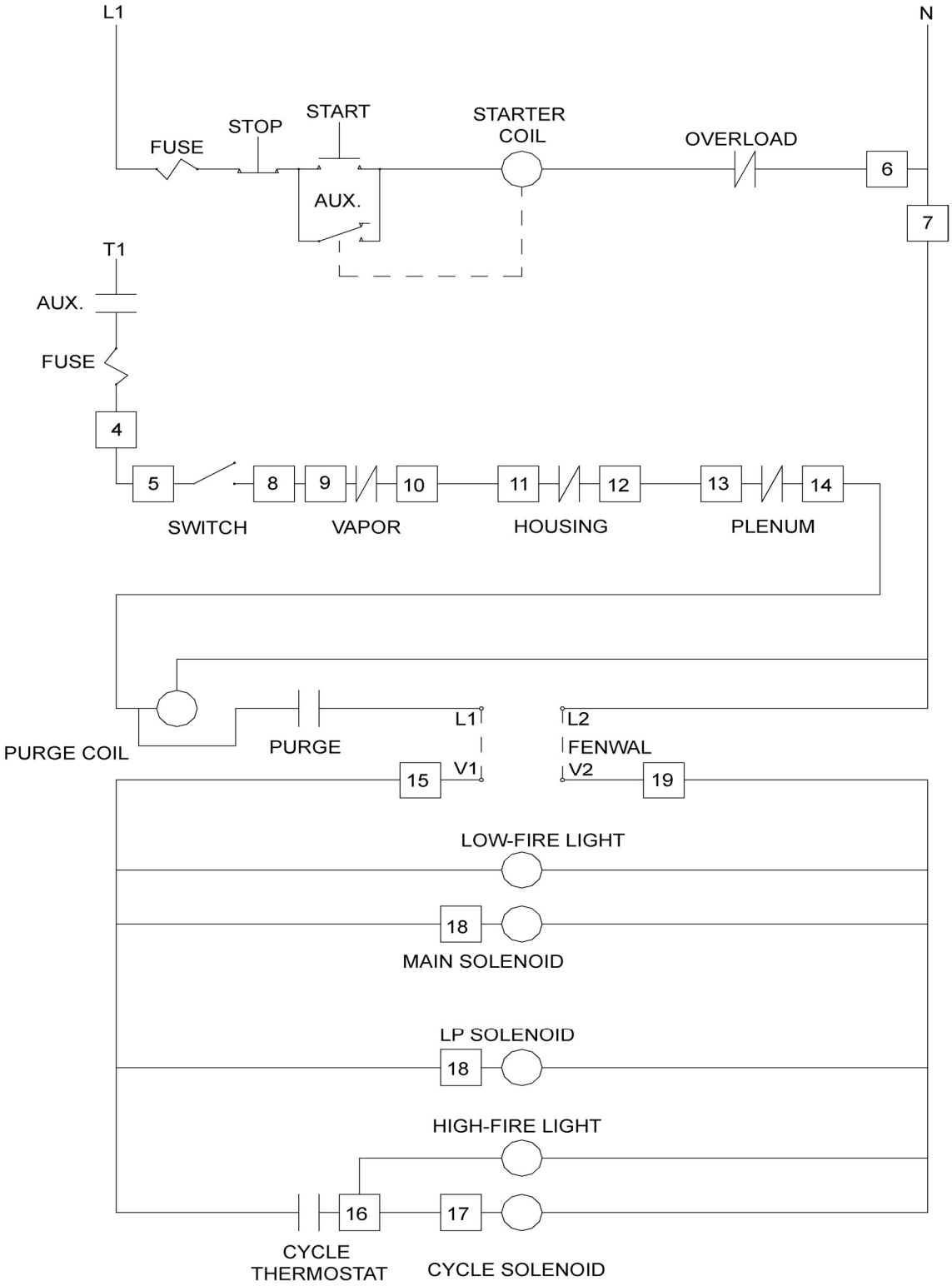

Figure 64

1)

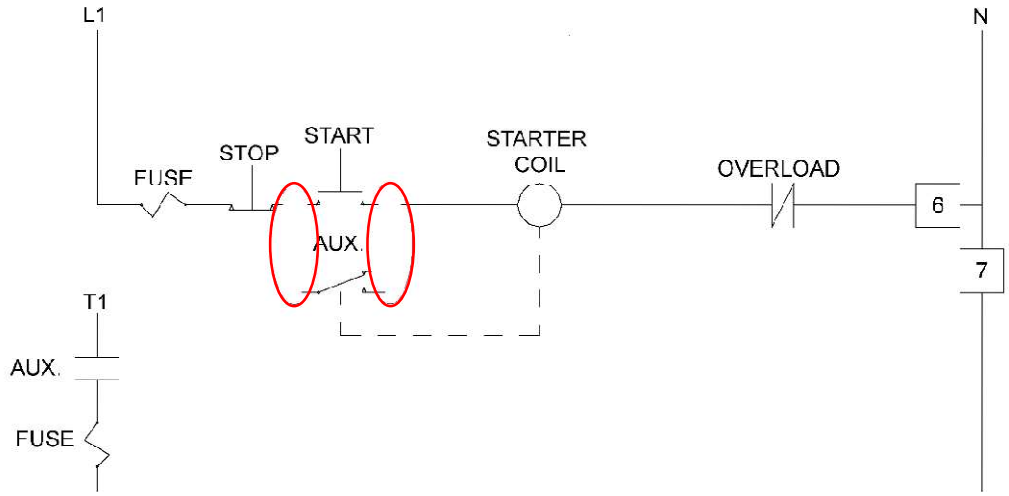

Figure 65

- Disconnect wire between the “STOP”, “START”, “AUX” and “STARTER COIL” in dryer #1 control box.

2)

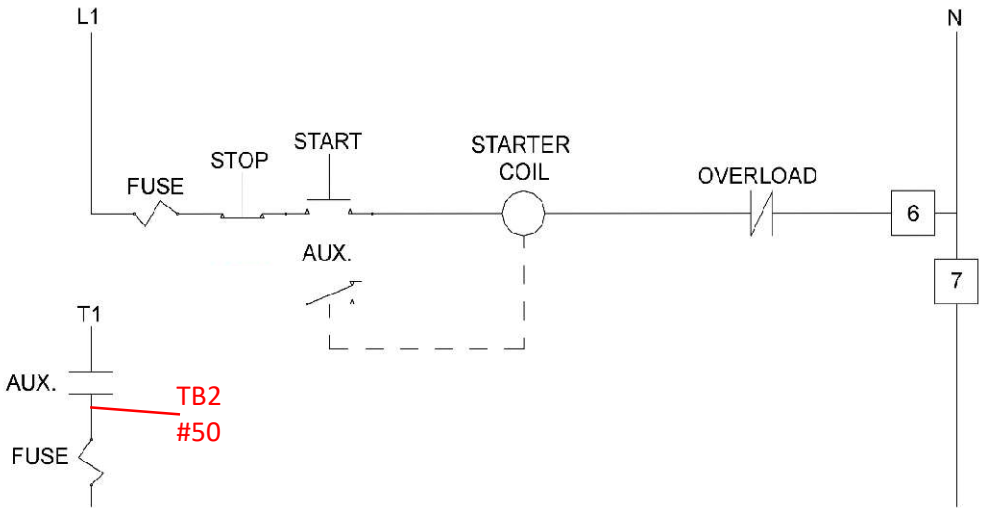

Figure 66

- Run wire from the other side of the normally open “AUX” contact of the fan coil in dryer control box #1 to terminal “50” of TB2. (120vac)

3)

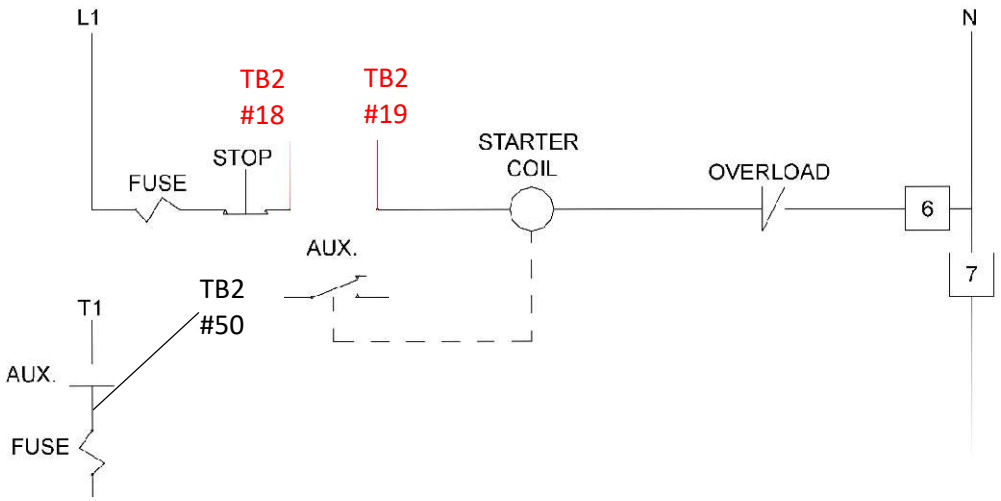

Figure 67

- Run wire from “STOP” push button of burner control box #1 to terminal “18” of TB2.
- Run wire from “STARTER COIL” of burner control box #1 to terminal “19” of TB2.

4)

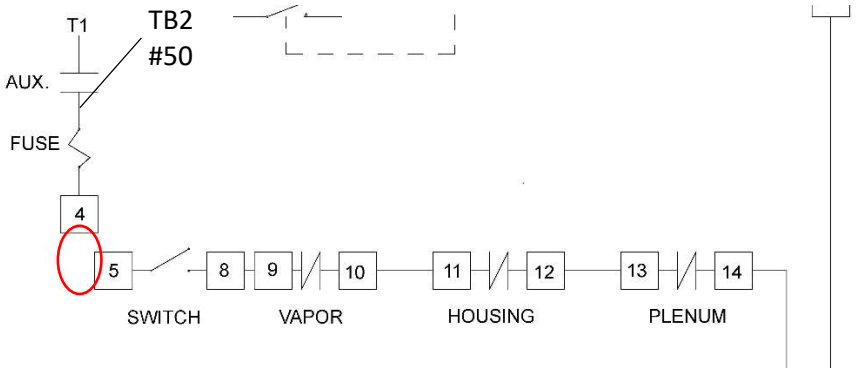

Figure 68

- Disconnect wire between terminal “4” and “5” of burner control box #1.

5)

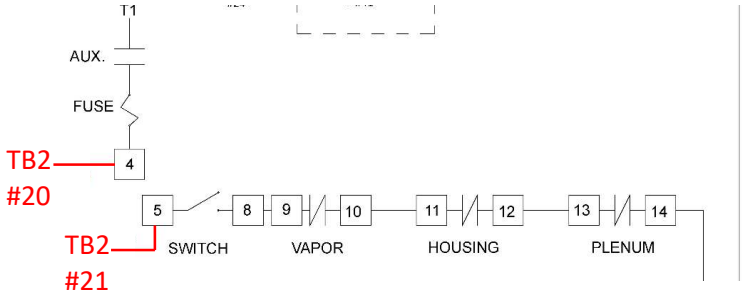

Figure 69

- Connect a wire between “FUSE” in the burner control box #1 and #20 of TB2
- Connect a wire between “SWITCH” in the burner control box #1 and #21 of TB2

6) High/Low Burner Option*

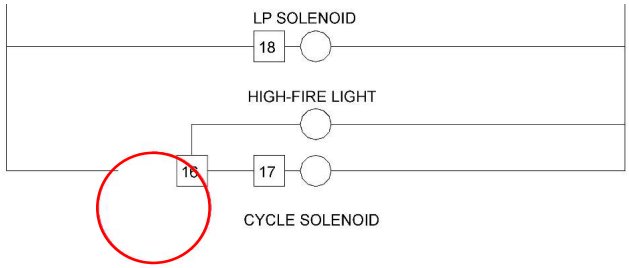

Figure 70

- Disconnect wire “15” and “16” of burner control box #1 between thermostat and terminals “15” and “16”.

7) High/Low Burner Option*

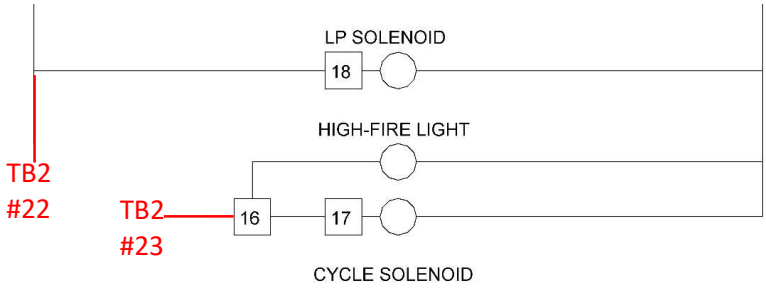

Figure 71

- Connect wire from terminal “15” of farm fans dryer panel #1 to terminal “22” of TB2
- Connect wire from terminal “16” of farm fans dryer panel #1 to terminal “23” of TB2

Farm Fans Burner 2 Hookup

1)

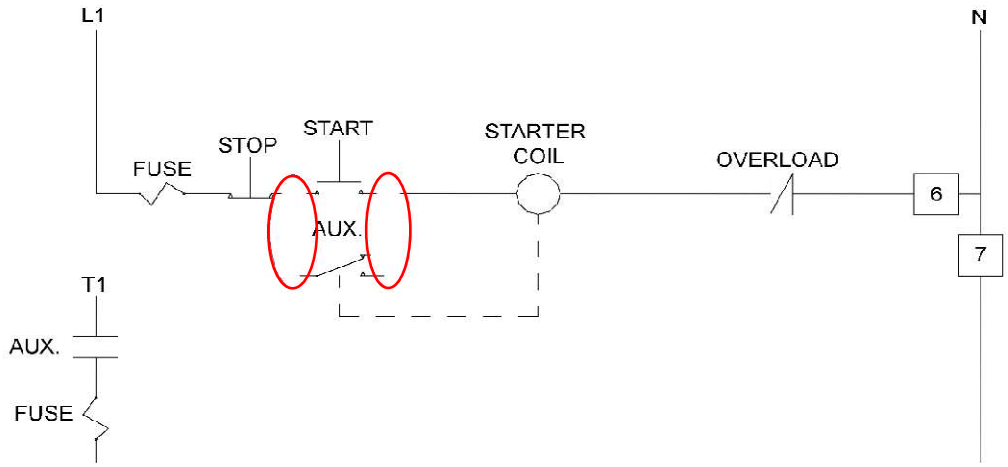

Figure 72

- Disconnect wire between the “STOP”, “START”, “AUX” and “STARTER COIL” in dryer #1 control box.

2)

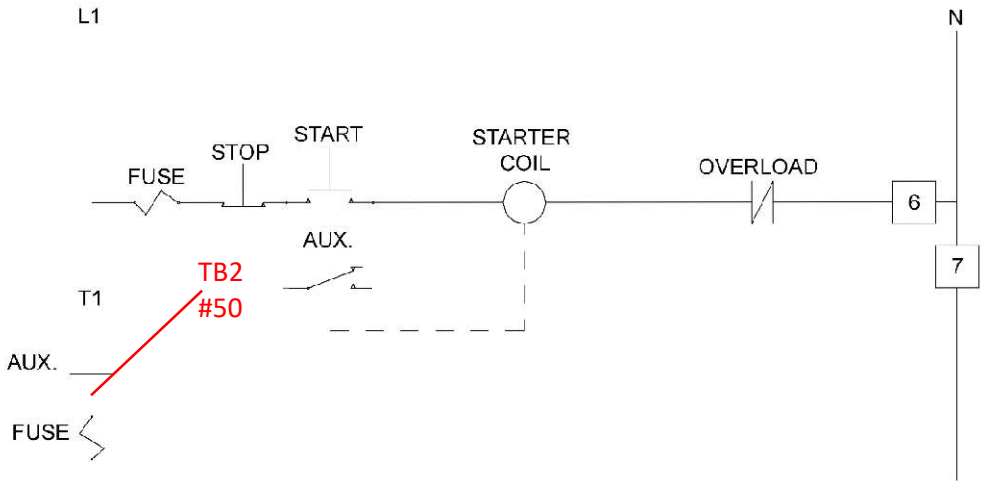

Figure 73

- Run wire from the normally open “AUX” contact of the fan coil in dryer control box #1 to terminal “” of “TB2”
- Run wire from the other side of the normally open “AUX” contact of the fan coil in dryer control box #1 to terminal “60” of “TB2”

3)

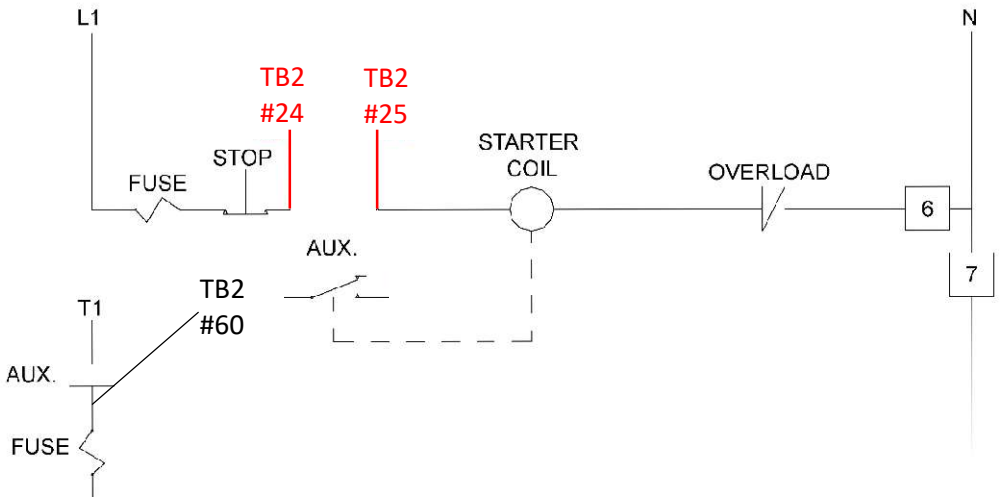

Figure 74

- Run wire from “STOP” push button of burner control box #1 to terminal “24” of TB2.
- Run wire from “STARTER COIL” of burner control box #1 to terminal “25” of TB2.

4)

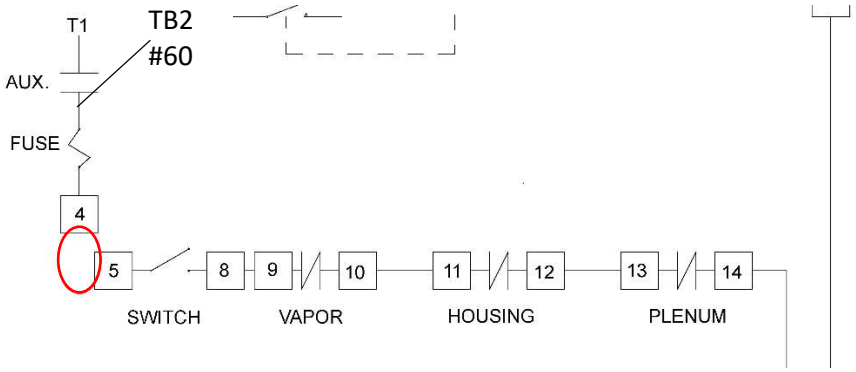

Figure 75

- Disconnect wire between terminal “4” and “5” of burner control box #1.

5)

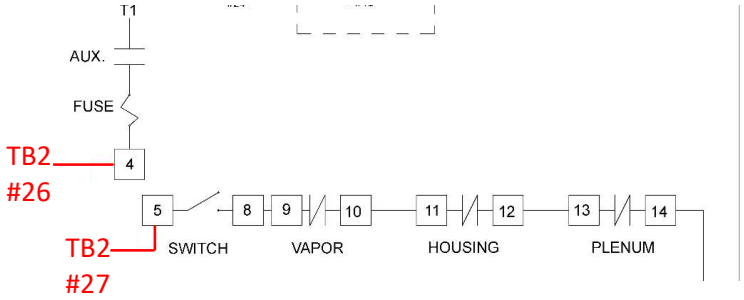

Figure 76

- Connect a wire between “FUSE” in the burner control box #1 and #26 of TB2
- Connect a wire between “SWITCH” in the burner control box #1 and #27 of TB2

6) High/Low Burner Option*

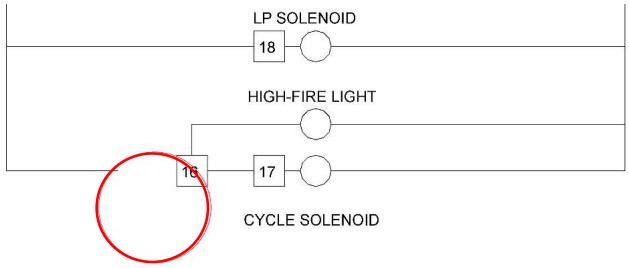

Figure 77

- Disconnect wire “15” and “16” of burner control box #1 between thermostat and terminals “15” and “16”.

7) High/Low Burner Option*

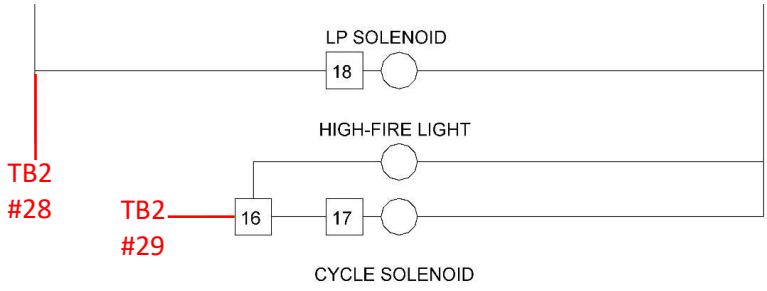

Figure 78

- Connect wire from terminal “15” of farm fans dryer panel #1 to terminal “28” of TB2
- Connect wire from terminal “16” of farm fans dryer panel #1 to terminal “29” of TB2

Burner 1 Safeties

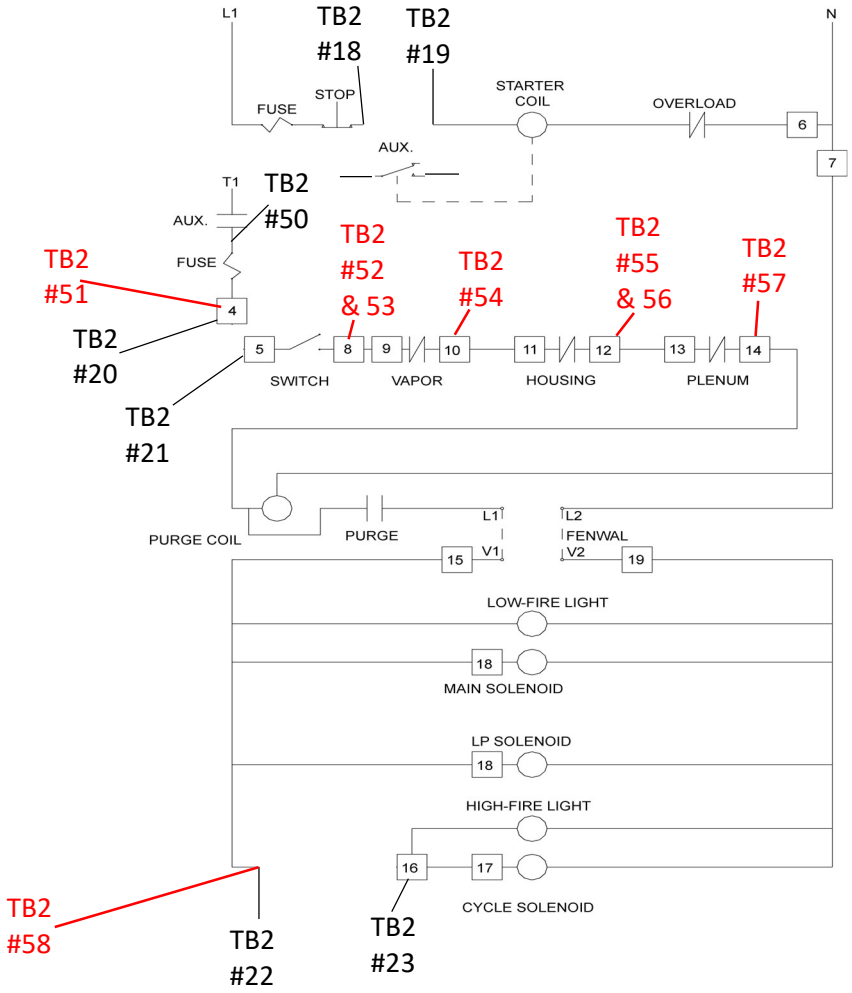

Figure 79

- Connect wire from load side of fuse to terminal #51 of TB2.
- Connect wire from load side of toggle switch to terminal #52 and #53 of TB2.
- (Propane only) Remove jumper between #53 and #54 of TB2. Connect wire from load side of vapor high limit to terminal #54 of TB2.
- Connect wire from load side of housing high limit to terminal #55 & #56 of TB2.
- Connect wire from load side of to thermostat high limit to terminal #57 of TB2.
- Connect wire from #15 of the fenwall to terminal #58 of TB2.

Burner 2 Safeties

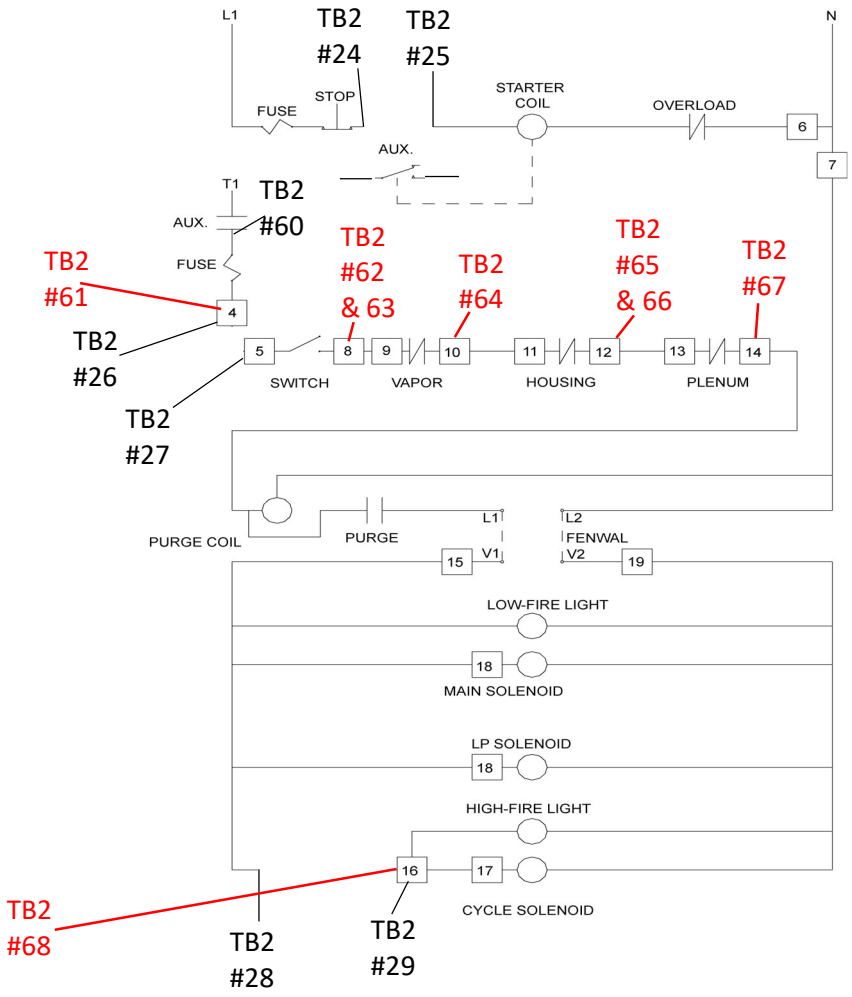

Figure 80

- Connect wire from load side of fuse to terminal #61 of TB2.
- Connect wire from load side of toggle switch to terminal #62 and 63 of TB2.
- (Propane only) Remove jumper between #63 and #64 of TB2. Connect wire from load side of vapor high limit to terminal #64 of TB2.
- Connect wire from load side of housing high limit to terminal #65 & 66 of TB2.
- Connect wire from load side of to thermostat high limit to terminal #67 of TB2.
- Connect wire from #15 of the fenwall to terminal #68 of TB2.

**If no power is detected on terminal #68 10 sec after start up and burner safety monitoring is on the burner will shutdown.

Operation

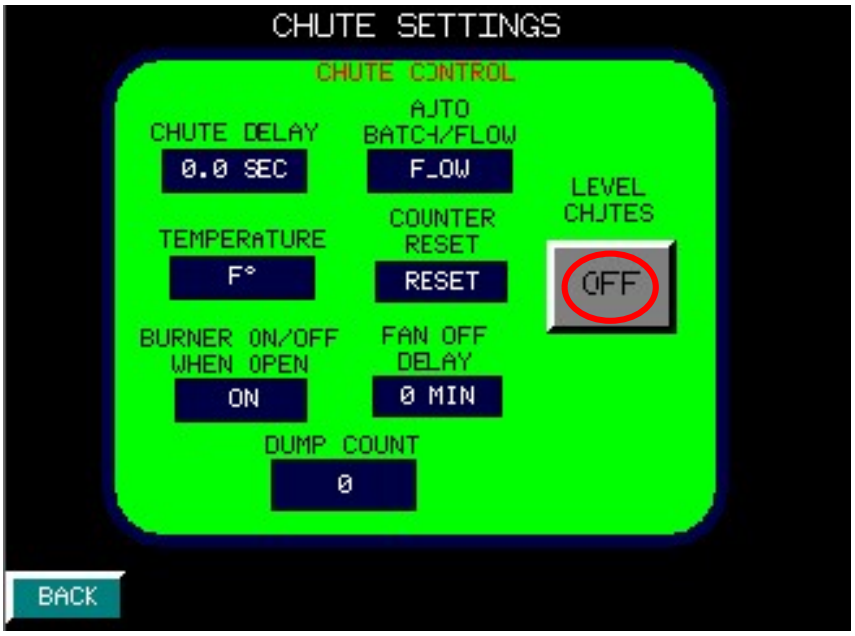

Figure 81

- To level chutes select the “LEVEL CHUTES” button.
- When “LEVEL CHUTES” is selected the button will turn yellow and read “ON”

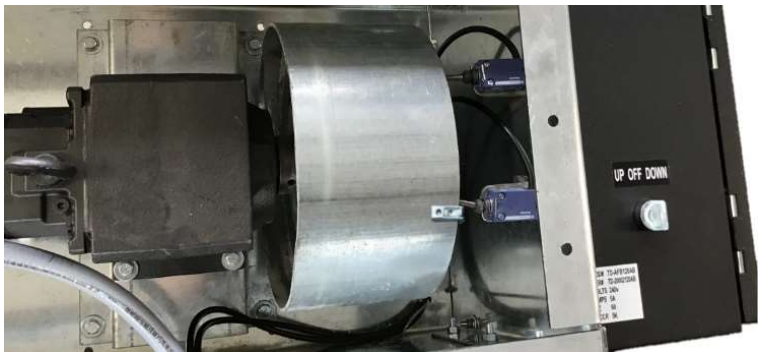

Figure 82

- When the “LEVEL CHUTES” option is selected the selector switch on the side of the actuator control box will light up green.
- Use the selector switch to raise or lower the chutes into the desired position.
- Once chutes are level install beam clamp so it is positioned against the “closed limit switch”. Ex. (Figure 82)

Figure 83

- The initial setting for large chutes should be 3.5sec and 45sec for smaller chutes. These times should only be used as a starting point.
- To set-up the proper chute time place a 1/4in dowel into the grain column see (Figure 83). Time how long it takes for the piece of dowel to travel from the top of the outer column to the chute while the grain is dumping.

Figure 84

- Subtract 6 sec from the time and set “CHUTE DELAY”.
- “AUTO BATCH/FLOW” indicates how the loading and chutes will function.
- When set to “BATCH” the “CHUTYE DELAY” will automatically be set to 300sec. The loading will not run again until the chutes have lowered after the top has been filled once.
- “BATCH” loading will not top up the bin top. Fills once and will not refill until chutes have lowered and been brought back up. Sets “CHUTE DELAY” to 300 secs to allow enough time for drying floor to clear.
- When set to “FLOW” the chutes will follow the time set in “CHUTE DELAY” and the loading will follow the parameters set in the “LOADING SETTINGS” page.
- “FLOW” chutes will not drop if bin top is not full. Dryer will call for grain as soon as bin top rotary becomes free.
- “TEMPERATURE” indicates the temperature unit the dryer will function in.
- “COUNTER RESET” resets the “DUMP COUNT”
- “BURNER ON/OFF WHEN OPEN” when in the “ON” position the burner will stay on when chutes are open. When in the “OFF” position the burner will shutoff when the chutes are ready to lower. The fan will run for the amount of time set in the “PRE-DUMP COOLING TIMER” section. After the fan shuts off the chutes will lower. The fan and burner will restart when the chutes are raised.
- The “PRE-DUMP COOLING TIMER” will only be displayed when “BURNER ON/OFF WHEN CHUTES OPEN” set to “OFF”
- “DUMP COUNT” keeps track of how many dumps there has been since the counter was reset last.

Figure 85

- "ON/OFF" selects which stages will be used.
- "AUTO" indicates how the loading stage will run.
- When in the "AUTO" position the stage will start and stop according to the parameters set in the "DELAY START" and "DELAY STOP" selections.
- Set "DELAY START" to the amount of time after grain has cleared from the bin top sensor that the first stage will start.
- Set "DELAY OFF" to the minimum amount of time the stage takes to clean out.
- If loading is turning on frequently while dryer is running increase delay off time of last stage by increments of 5 sec until loading is topping up once or twice between dumps or until upper ring is full.

Be careful not to run loading too long as it can lead to plugging of equipment.

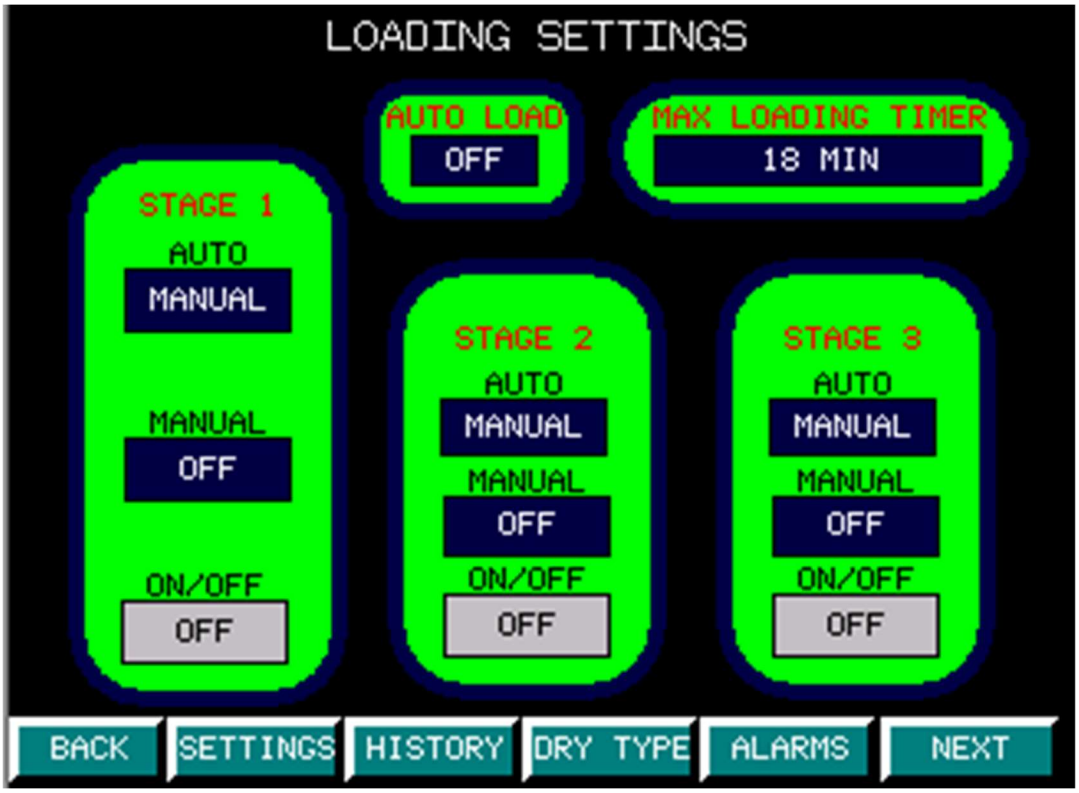

Figure 86

- When “AUTO” is in the “MANUAL” position and “MANUAL” is set to “ON” the stage will run until “MANUAL” is switched to “OFF” or the overload trips.
- To set the “MAX LOADING TIMER” time how long it takes to fill the drying chamber from empty. Add %10 to the filling time and input it into “MAX LOADING TIMER”. This will shut down the loading system if bin top rotary has not been reached within the time frame.

*Ignore if not controlling burner or aeration fan.

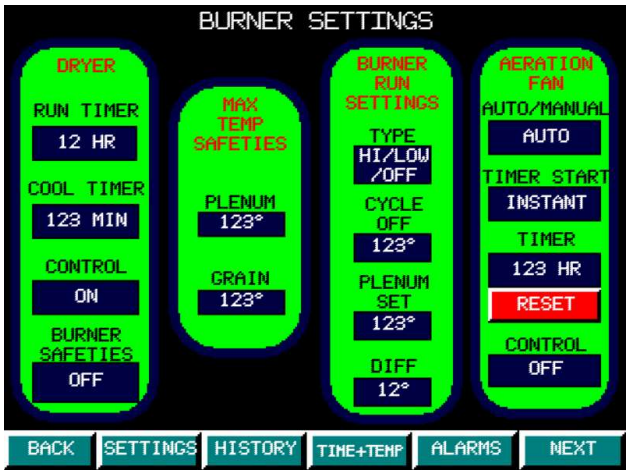

Figure 87

- "DRYER" only used if controlling burner.
- "RUN TIME" is the amount of time the burner will be on before shutting down.
- "COOL TIMER" is the amount of time the burner fan will run after the burner shuts off.
- "CONTROL" turns the dryer control on and off.
- "BURNER SAFETIES" only used if monitoring burner safeties.
- "MAX TEMP SAFTIES" should be set slightly higher than the plenum set point and the grain set point to prevent fires and damage to the burner and bin. (Consult burner manual for more information)
- In the "BURNER RUN SETTINGS" "TYPE" sets the stye of the burner and how it will be run.
- "MOD VALVE" setting the flame is controlled by a modulating valve built into the gas train.
- "HIGH/LOW" setting the flame is controlled by the "PLENUM SET" and "DIFF" settings. The burner will run at high flame until reaching the "PLENUM SET" temperature then switches to low flame until the plenum drops below the "PLENUM SET"- "DIFF". At which time the high flame starts again.
- "HIGH/LOW/OFF" setting the flame is controlled by the "CYCLE OFF", "PLENUM SET" and "DIFF" settings. The burner will run at high flame until reaching the "PLENUM SET" temperature then switches to low flame. If the plenum temperature continues to climb and reaches the "CYCLE OFF" set point it will shutoff the flame until the plenum drops below the "PLENUM SET"- "DIFF".
- "CYCLE OFF" is the set point at which the flame will shutoff then restart after dropping below the "PLENUM SET"- "DIFF" point
- The "PLENUM SET" is the temperature the plenum will reach before switching from high to low flame.
- The "DIFF" is the amount the temperature will drop after reaching the "PLENUM SET" point before the high flame will start again.
- "AERATION FAN" (only used if controlling aeration fan).
- "AUTO/MANUAL" controls how the aeration fan will be controlled. When in "AUTO" the fan will follow the parameters set in the "TIME START" and "TIMER" settings.
- "TIMER START" controls when the timer will start. "INSTANT" will start the timer as soon as "CONTROL" is turned on. "AFTER DRY" will start the timer after the burner fan shuts down.
- "TIMER" is the amount of time until the aeration fan will shut down according to the parameters set in the "TIMER START" selection.
- "CONTROL" turns the aeration fan control on and off.

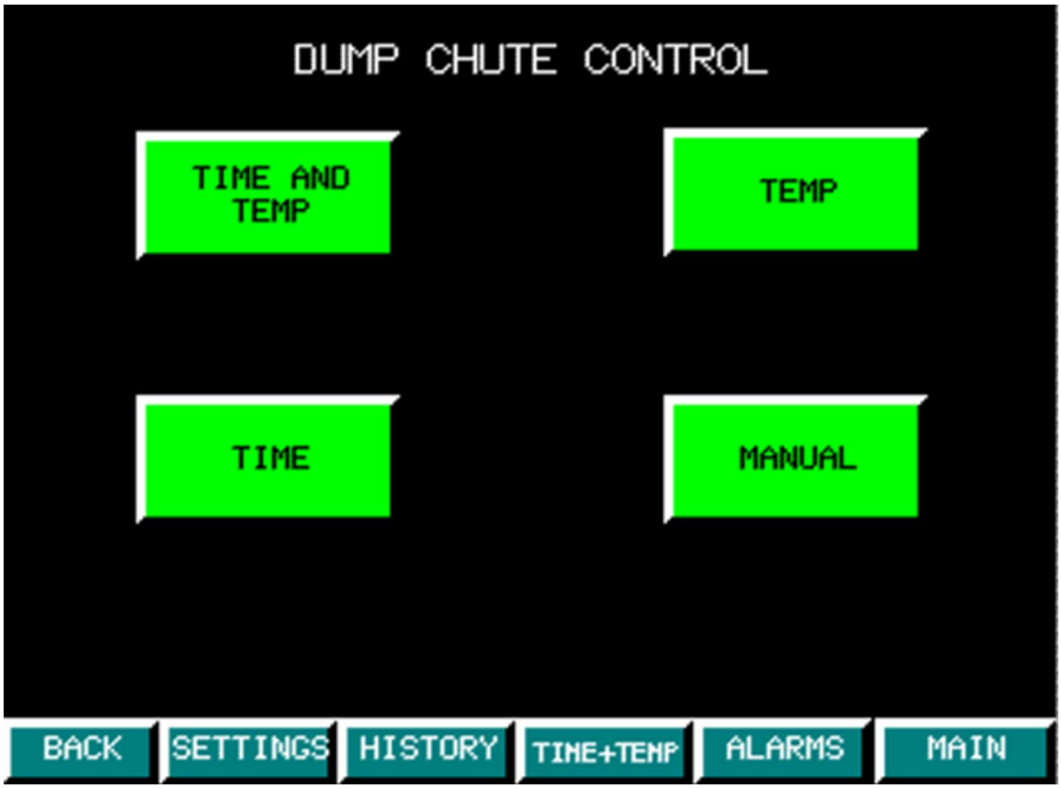

Figure 88

- “DRY TYPE” selects the type of drying that will be used to control the chutes.
- “TIME AND TEMP DRY” the dryer must reach both time and temperature set points to lower the chutes.
- “TEMP” the dryer must reach the temperature set point to lower the chutes.
- “TIME” the dryer must reach the time set point to lower the chutes.
- “FINISH DRY” the chutes are controlled by the “UP” and “DOWN” buttons in the finish dry section.

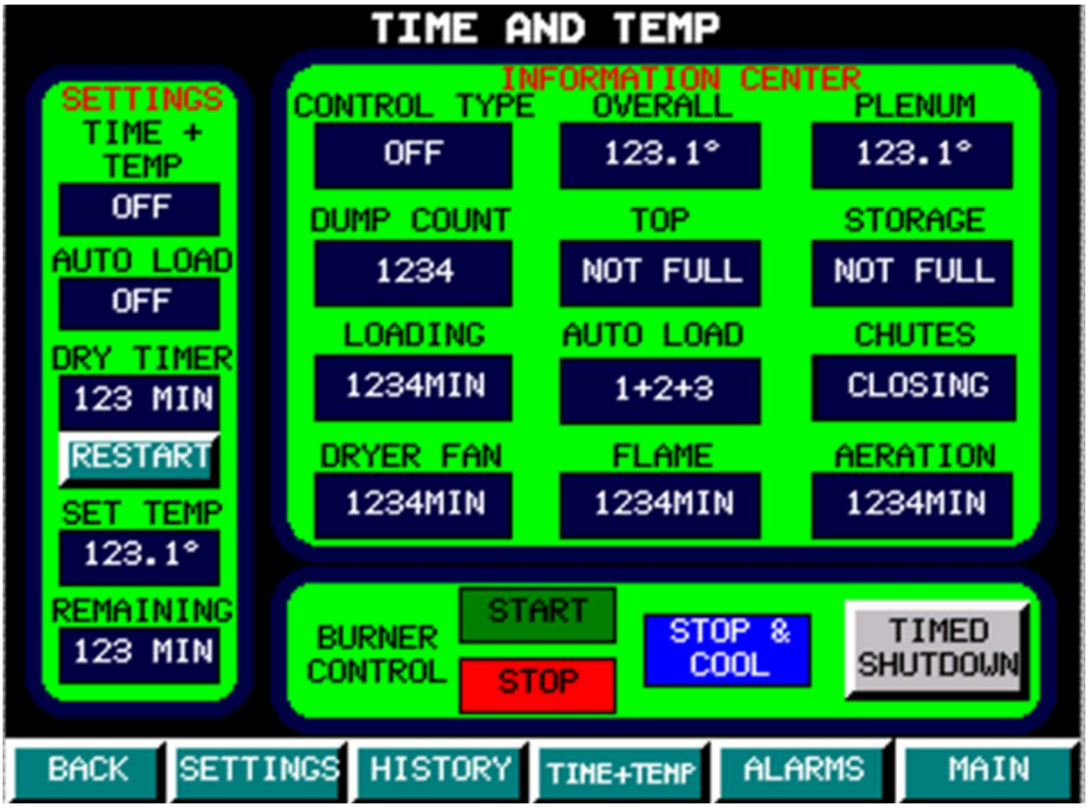

Figure 89

- "TIME + TEMP" when set to "ON" will allow the chutes to lower when the parameters set in the "DRY TIMER" and "SET TEMP" are met.
- "AUTO LOAD" allows the user to stop and start the auto loading from the drying page.
- "DRY TIMER" sets the minimum amount of time between dumps.
- "SET TEMP" sets the minimum the overall grain temperature must reach before the chutes will lower.
- "REMAINING" displays the amount of time left before the "DRY TIMER" parameter is reached.
- "START" in the "BURNER" section will start the dryer burner.
- "STOP" in the "BURNER" section will stop the dryer instantly.
- "STOP & COOL" in the "BURNER" section will stop the burner then run the burner fan for the amount of time set in the "COOL TIMER" setting on the "BURNER" page.
- "SHUTDOWN" will open the "SHUTDOWN COUNT" if in batch mode or "TIMED SHUTDOWN" if in auto flow mode.

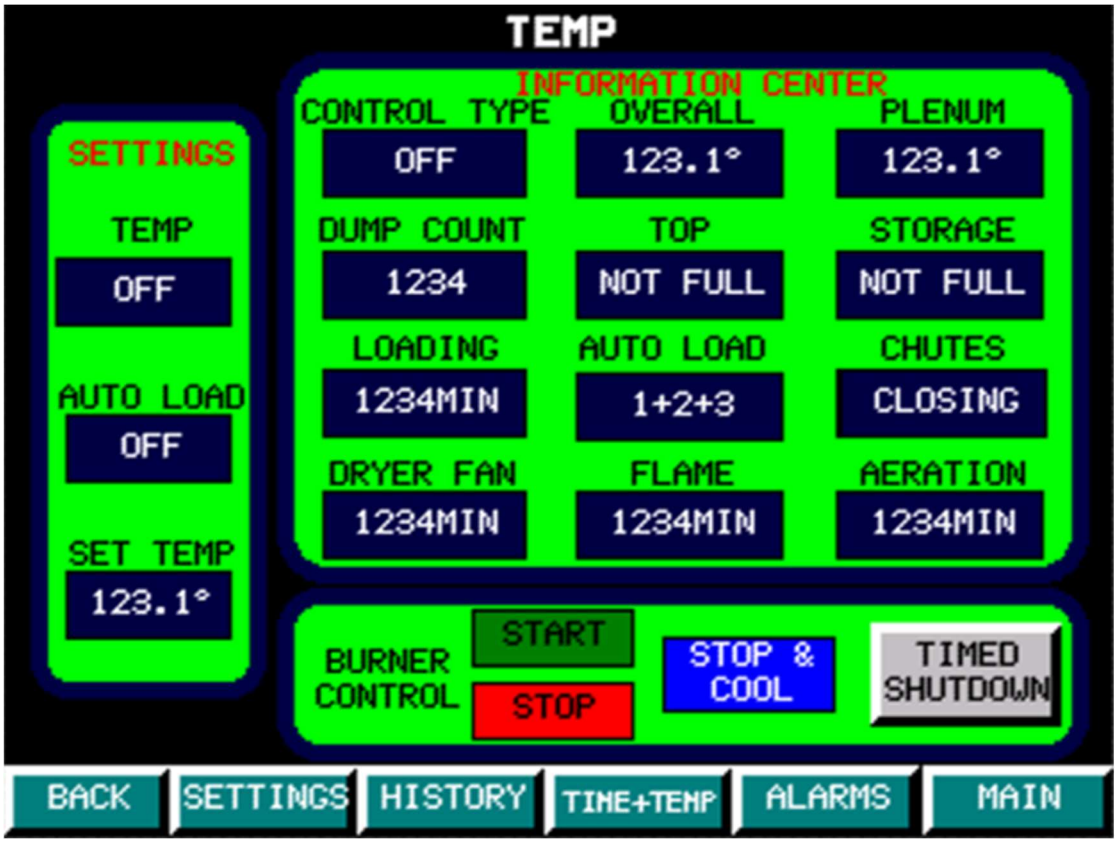

Figure 90

- "TEMP" when set to "ON" will allow the chutes to lower when the parameter set in the "SET TEMP" section is met.
- "AUTO LOAD" allows the user to stop and start the auto loading from the drying page.
- "SET TEMP" sets the point the overall grain temperature must reach before the chutes will lower.
- "START" in the "BURNER" section will start the dryer burner.
- "STOP" in the "BURNER" section will stop the dryer instantly.
- "STOP & COOL" in the "BURNER" section will stop the burner then run the burner fan for the amount of time set in the "COOL TIMER" setting on the "BURNER" page.
- "SHUTDOWN" will open the "SHUTDOWN COUNT" if in batch mode or "TIMED SHUTDOWN" if in auto flow mode.

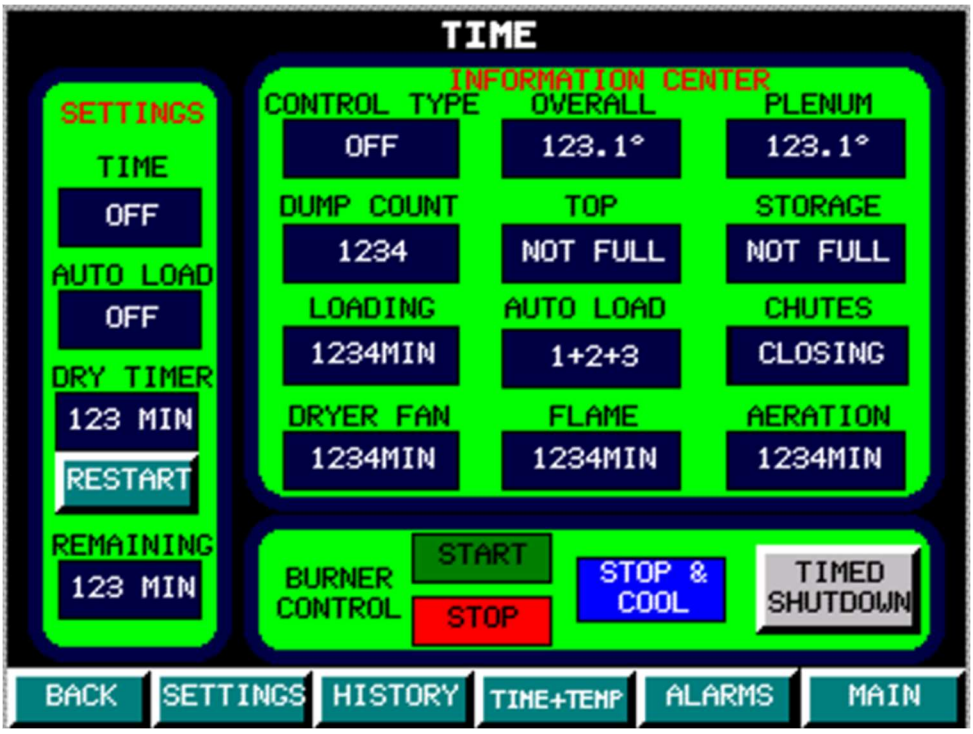

Figure 91

- "TIME" when set to "ON" will allow the chutes to lower when the parameter set in the "DRY TIMER" is met.
- "AUTO LOAD" allows the user to stop and start the auto loading from the drying page.
- "DRY TIMER" sets the minimum amount of time between dumps.
- "REMAINING" displays the amount of time left before the "DRY TIMER" parameter is reached.
- "START" in the "BURNER" section will start the dryer burner.
- "STOP" in the "BURNER" section will stop the dryer instantly.
- "STOP & COOL" in the "BURNER" section will stop the burner then run the burner fan for the amount of time set in the "COOL TIMER" setting on the "BURNER" page.
- "SHUTDOWN" will open the "SHUTDOWN COUNT" if in batch mode or "TIMED SHUTDOWN" if in auto flow mode.

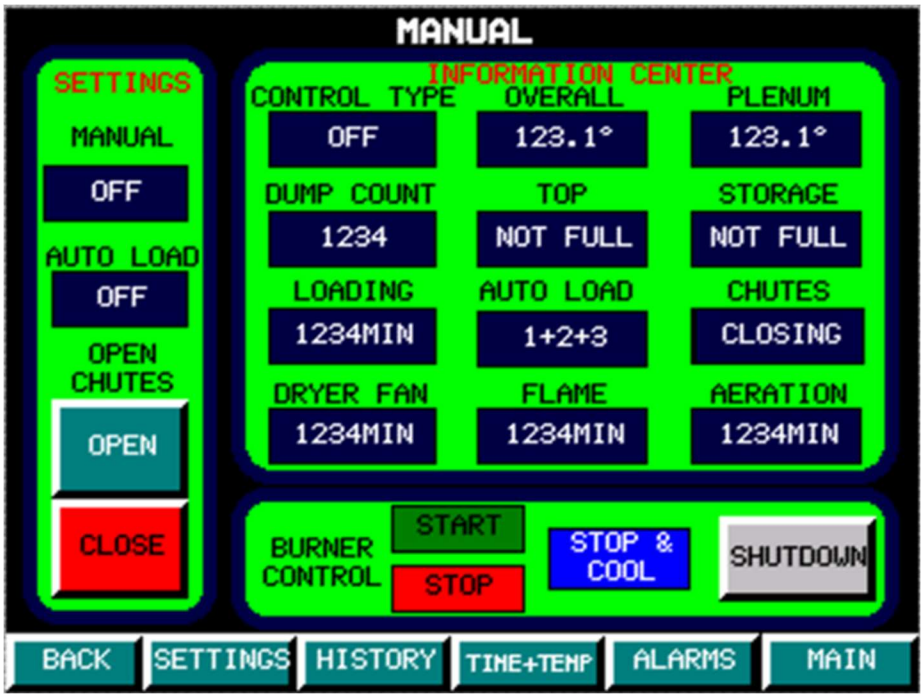

Figure 92

- "MANUAL" is generally used when clearing out the top of dryer.
- **When the dryer is set to "FLOW" and "MANUAL" it will allow the chutes to open even if the dryer storage rotary is covered. Caution should be used in this setting to ensure grain is not getting too close to the burner opening. **
- When "MANUAL" is set to "ON" the chutes will open when the "OPEN" button is pressed and will remain open until the "CLOSED" button is pushed.
- "AUTO LOAD" allows the user to stop and start the auto loading from the drying page.
- "START" in the "BURNER" section will start the dryer burner.
- "STOP" in the "BURNER" section will stop the dryer instantly.
- "STOP & COOL" in the "BURNER" section will stop the burner then run the burner fan for the amount of time set in the "COOL TIMER" setting on the "BURNER" page.
- "SHUTDOWN" will open the "TIME AND TEMP SHUTDOWN" popup.

Figure 93

- "MINUTES BEFORE SHUTDOWN" setting will shutoff the dry type and burner after the amount of time set has elapsed, the burner fan will run for the amount of time set in the "COOL TIMER" setting on the "BURNER" page. The timer will start after the "START COUNTDOWN TIMER" button is pressed.

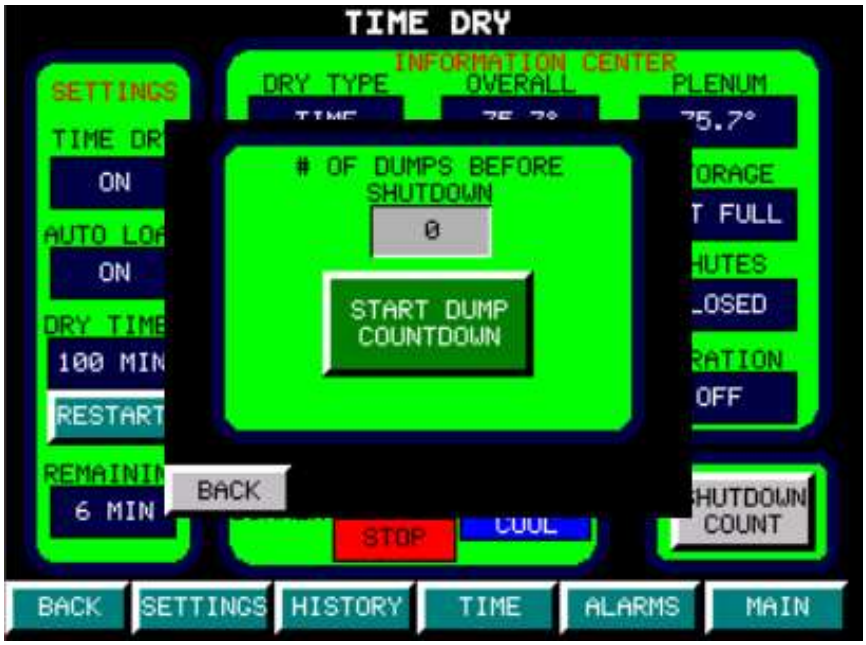

Figure 94

- "# OF DUMPS BEFORE SHUTDOWN" setting will shutoff the dry type and burner after the number of dumps has elapsed, the burner fan will run for the amount of time set in the "COOL TIMER" setting on the "BURNER" page.

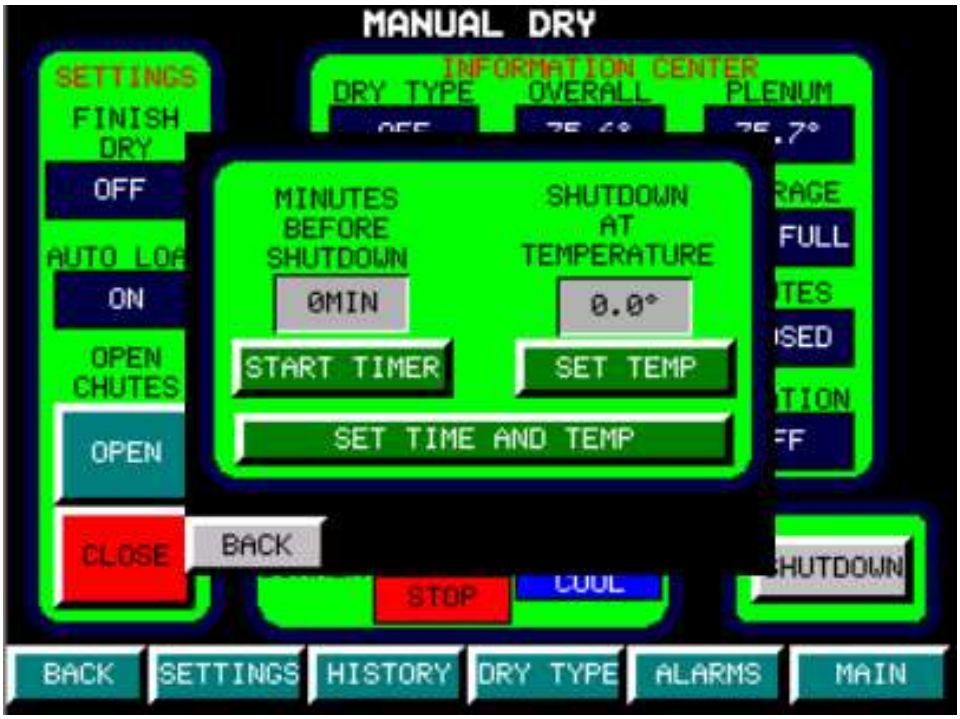

Figure 95

- "MINUTES BEFORE SHUTDOWN" setting will shutoff the dry type and burner after the amount of time set has elapsed, the burner fan will run for the amount of time set in the "COOL TIMER" setting on the "BURNER" page. The timer will start after the "START TIMER" button is pressed.
- "SHUTDOWN AT TEMPERATURE" after the "SET TEMP" button is activated the dry type and burner will shutoff after the temperature is reached, the burner fan will run for the amount of time set in the "COOL TIMER" setting on the "BURNER" page.
- "SET TIME AND TEMP" will shutoff the dry type and burner after the time and temperature are reached, the burner fan will run for the amount of time set in the "COOL TIMER" setting on the "BUENER" page. The timer will start and the "SET TEMP" will be input when the "SET TIME AND TEMP" button is pressed.

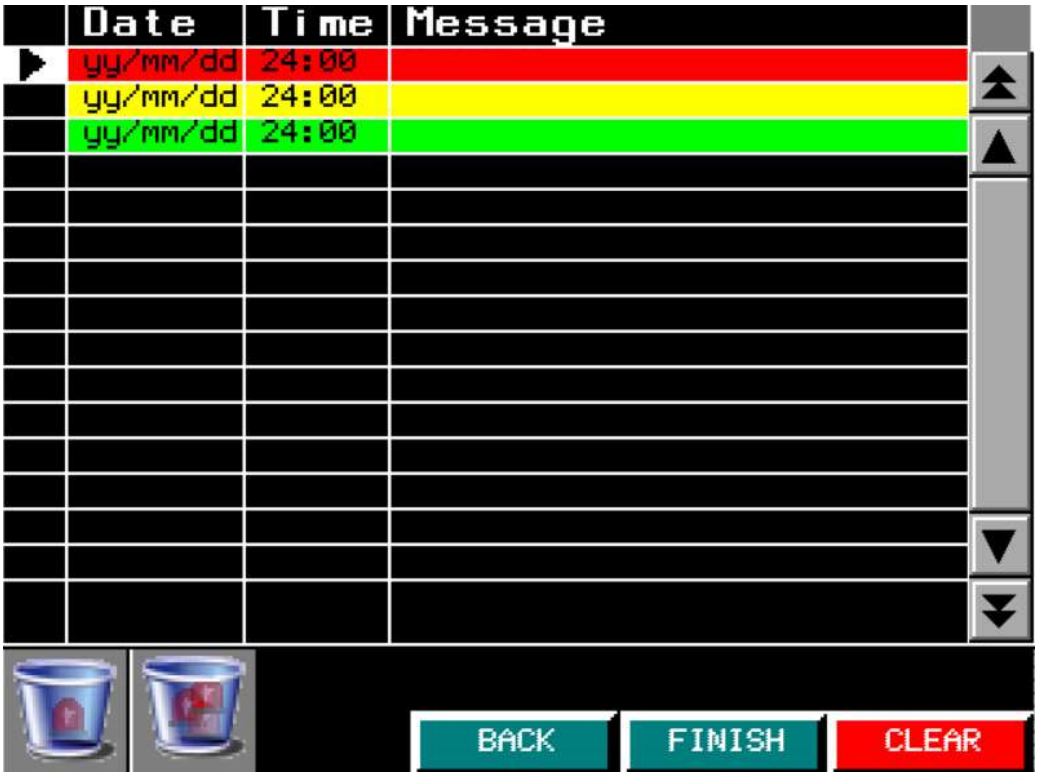

Figure 96

- Displays current and logged alarms.
- Red indicates alarm is active.
- Green indicates alarm is cleared.
- Clear button temporarily clears alarms. If alarm is still active will not clear.

Figure 97

- “BACK” navigates to previous page.
- “SETTINGS” to settings page.
- “HISTORY” to history page.
- “DRY TYPE” to dry type selection page. If a dry type is running the “DRY TYPE” button will change to the dry type that is running and will navigate to the selected drying page.
- “ALARM” to alarm page. If an alarm is active the “ALARM” button will light up red.
- “MAIN” to main display page.

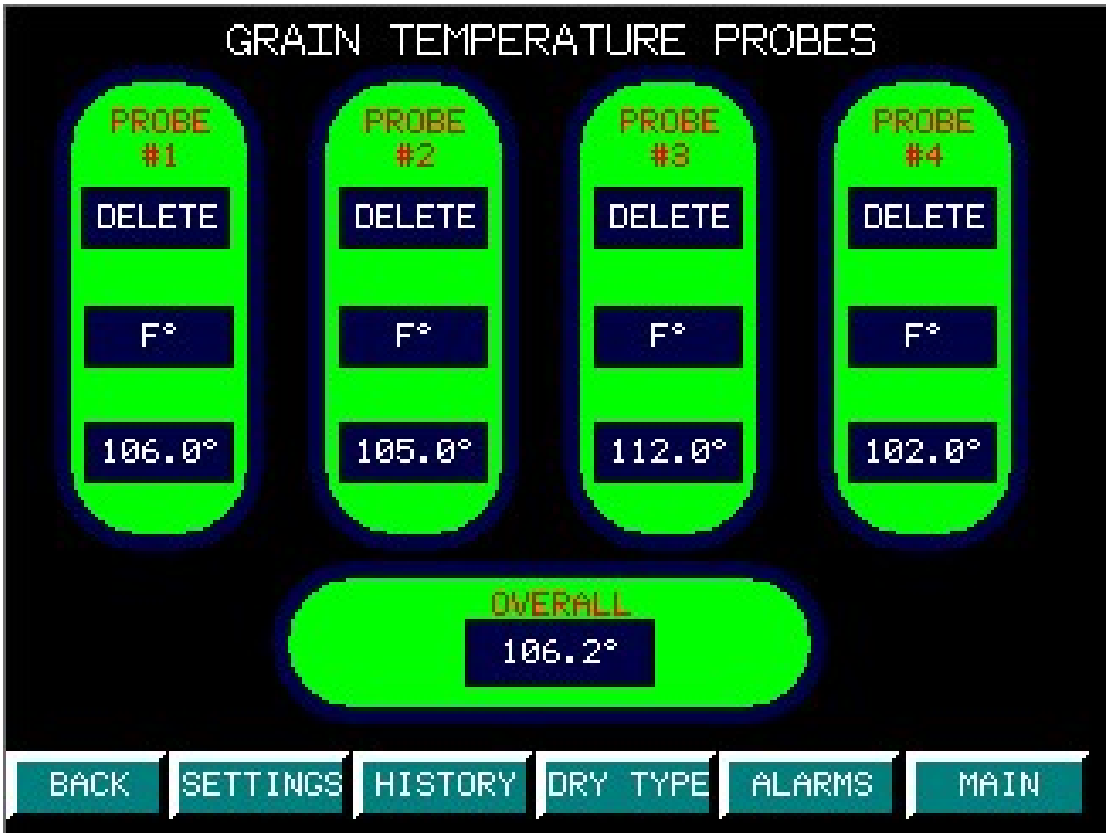

Figure 98

- “DELETE” allows deletion of individual sensors. Overall temperature will be taken by remaining sensors.
- “F°” or “C°” Displays current program temperature. Toggles between F° and C°.
- Current probe temperature is displayed at the bottom of each probe. Temperature will be displayed even if sensor is deleted.
- “OVERALL” displays current overall temperature of all active temperature probes.

Figure 99

- “CHUTE SETTINGS” directs to chute setup page.
- “LOAD SETTINGS” directs to load settings page.
- “BURNER SETTINGS” directs to burner setup page.
- “DRY TYPE” directs to dry type selection page.
- “GRAIN TEMP PROBE” directs to grain temperature probes settings page.
- “ALARM” directs to alarm history page.
- “CONFIGURE” to access configuration page user must be logged in. If user is not logged in “CONFIGURE” button will open user login page.
- “LOGIN” opens user login page.
- “CHANGE PASSWORD” opens change password page.
- “ADD USER” opens add user page.

Figure 100

- Displays the dump date, time, number, plenum temperature and grain temperature.
- Displays burner off date and time. (If used)
- Displays burner fan off date and time. (If used)
- Displays aeration fan off date and time. (If used)
- Displays loading time. (Time from loading start until bin top rotary is activated)

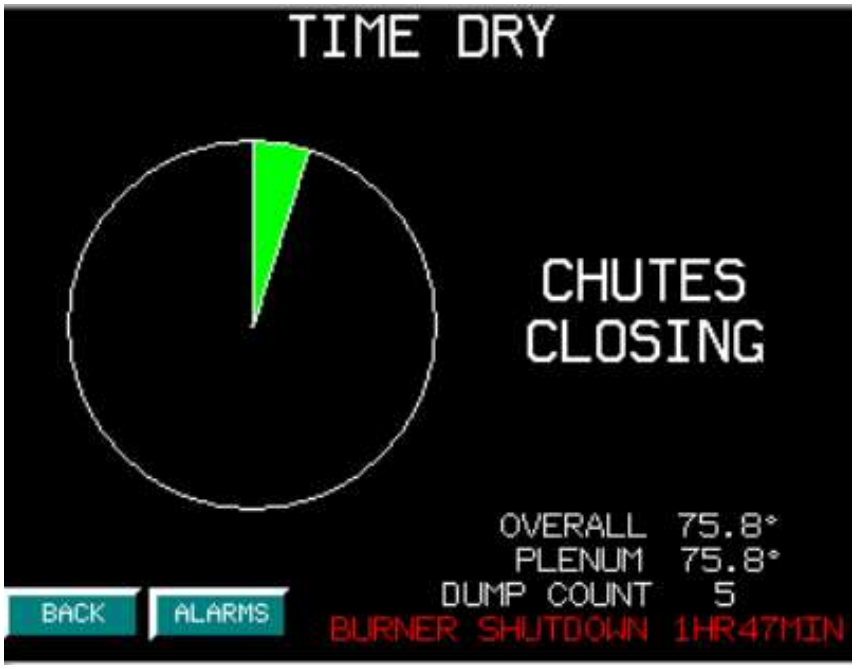

Figure 101

- "CHUTES CLOSING" the chutes are in the process of closing.

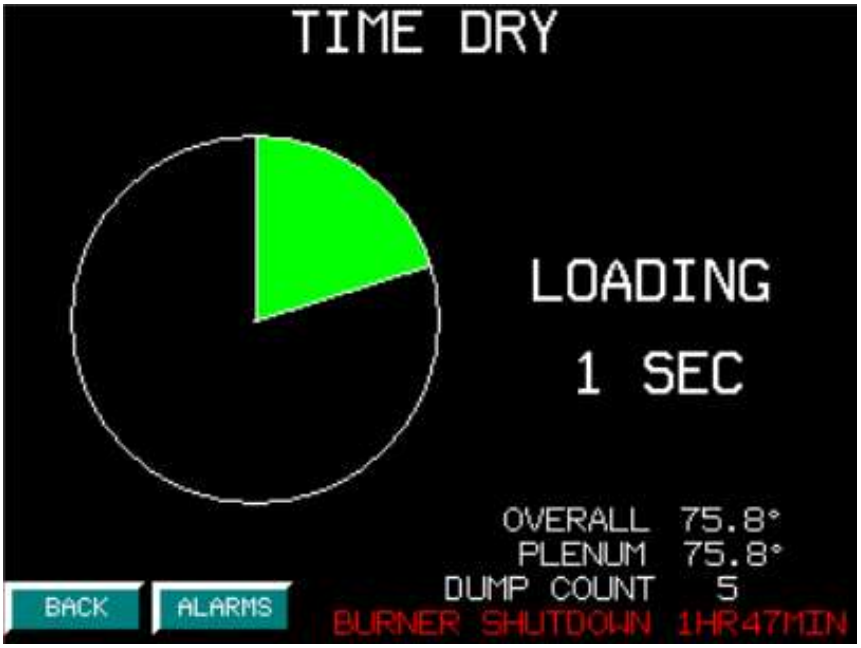

Figure 102

- "LOADING" displays the amount of time the loading process has been running.

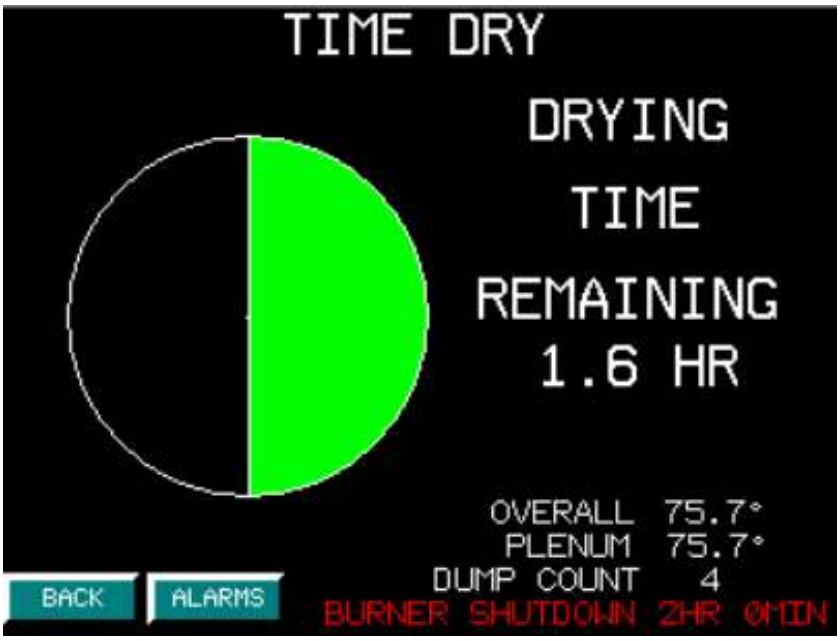

Figure 103

- "DRYING TIME REMAINING" displays the amount of time left in the drying cycle.

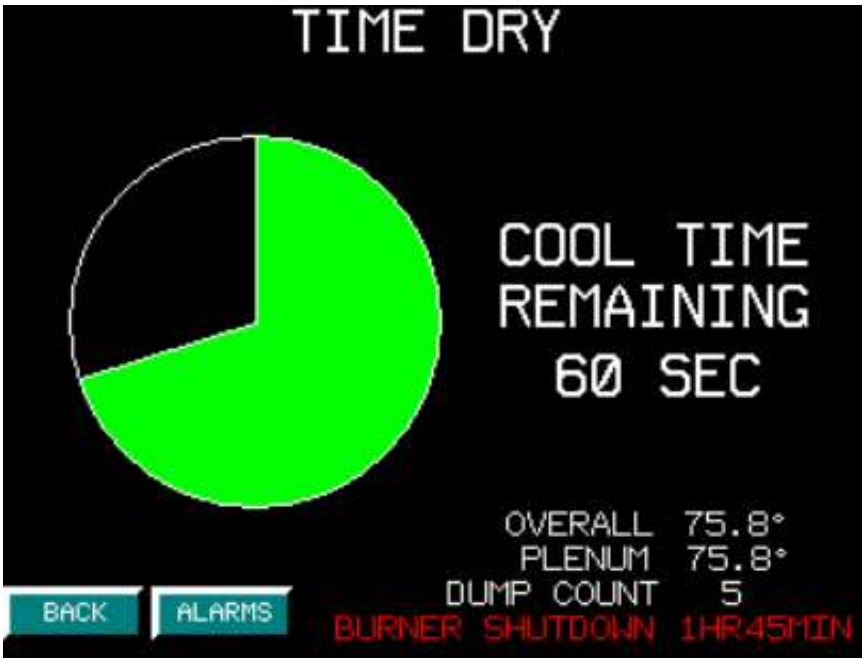

Figure 104

- "COOL TIME REMAINING" (Only displayed if "BURNER FAN ON OFF WHEN OPEN" is set to "OFF") will display the amount of time until the burner fan shuts off and the chutes open.

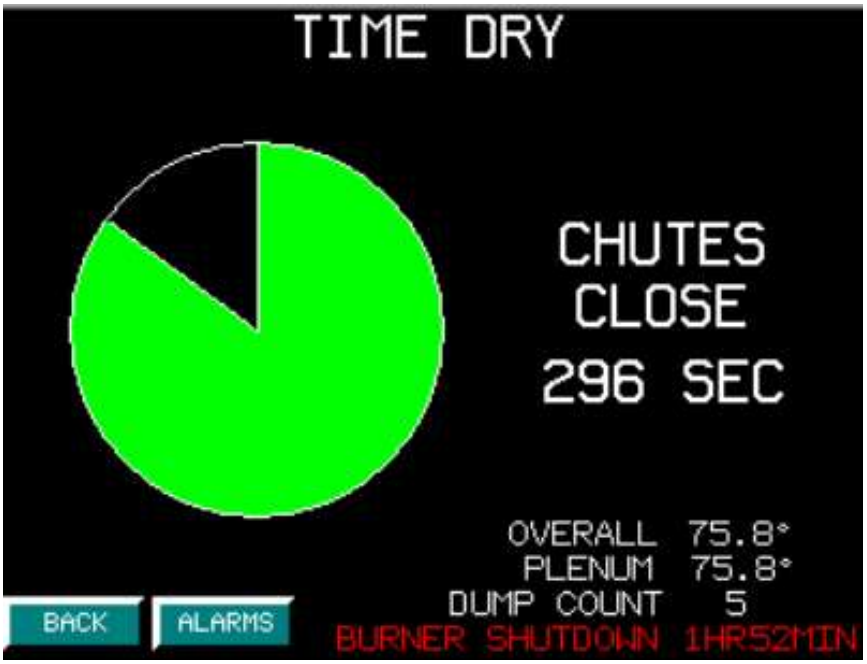

Figure 105

- "CHUTES CLOSE" displays the amount of time until the chutes begin to close.

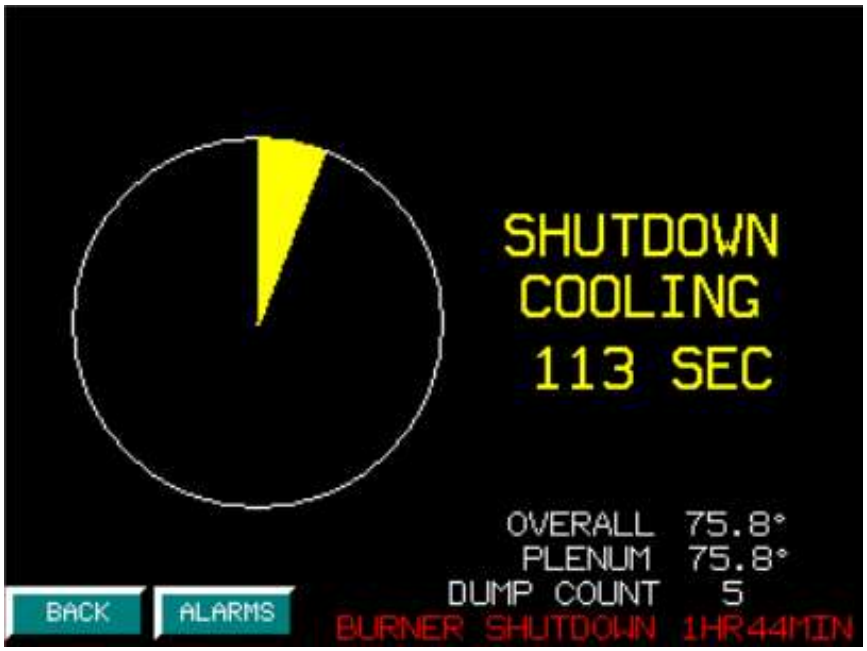

Figure 106

- "SHUTDOWN COOLING" is displayed when the burner is in the process of shutting down. It will display the amount of time until the dryer fan shuts down.

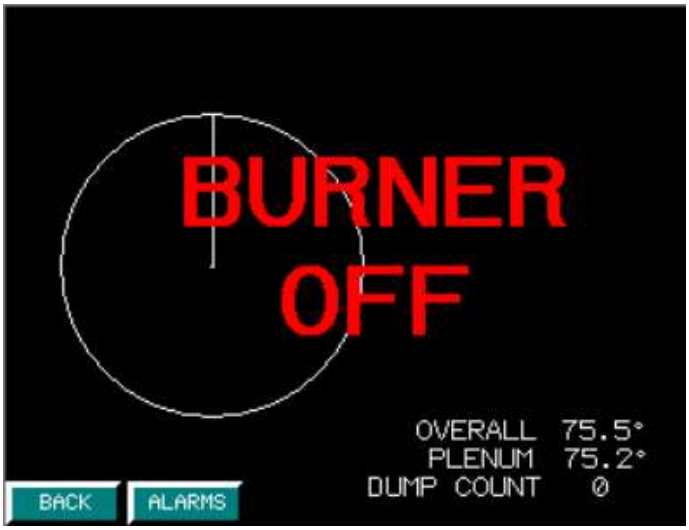

Figure 107

- "BURNER OFF" indicates the burner is off.

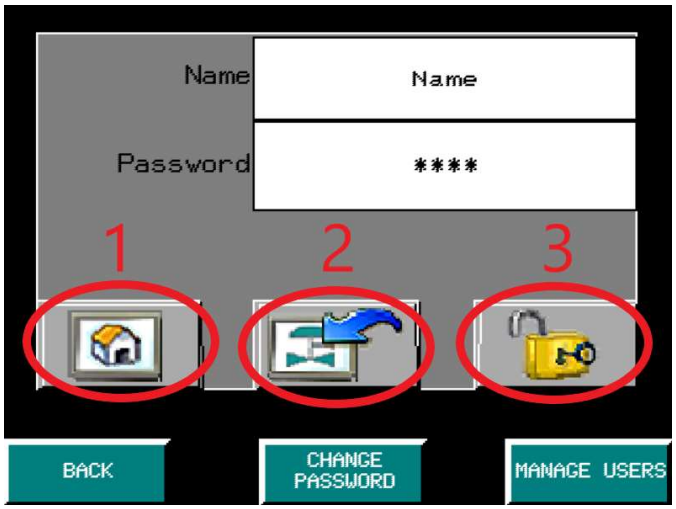

Figure 108

- To login as a user. Enter user name, password and press the unlock button (button 3).
- Current users name is displayed under the "Password" section.
- Default Administrator: Name – "Admin". Default Password – "Admin"
- Default User: Name – "User". Default password – "User"
- Home button (button 1) directs to chute settings page.
- Back button (button 2) directs to previous page
- "BACK" directs to previous page.
- "CHANGE PASSWORD" directs to password change page. (Changes password of current logged in user)
- "MANAGE USERS" directs to manage users' page. (Add and delete users)

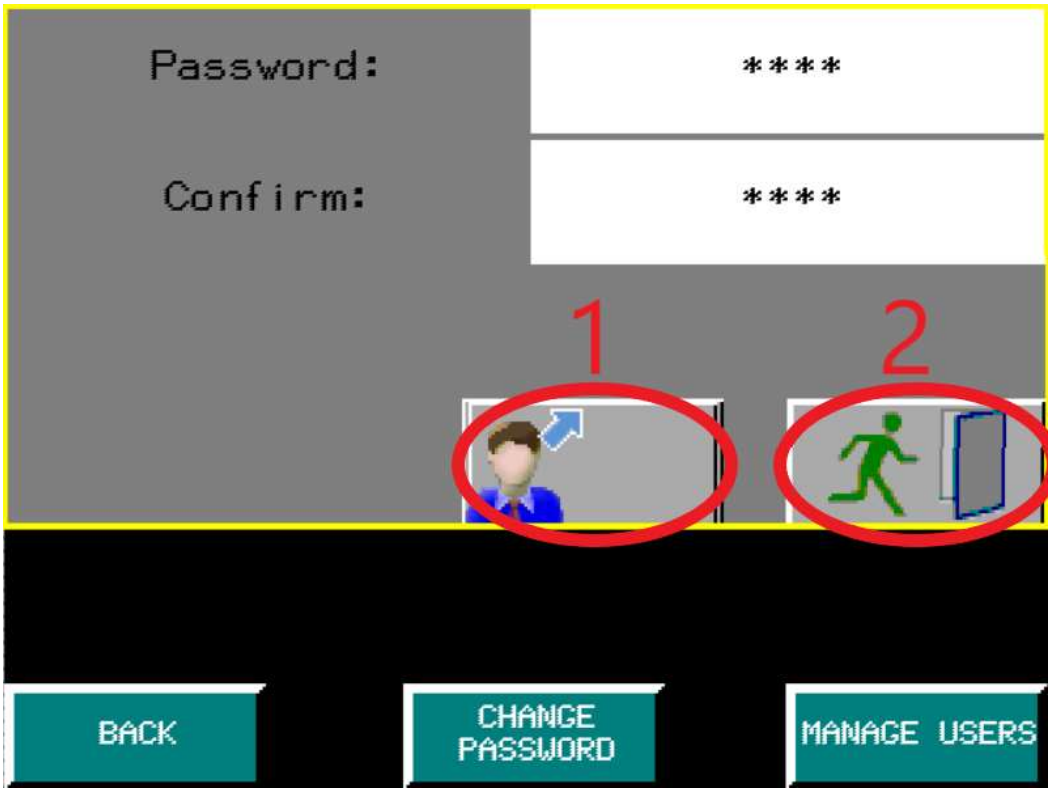

Figure 109

- Set button (button 1) sets the password input in the above sections.
- Exit button (button 2) directs to previous page.
- “BACK” directs to previous page.
- “CHANGE PASSWORD” directs to password change page. (Changes password of current logged in user)
- “MANAGE USERS” directs to manage users’ page. (Add and delete users)

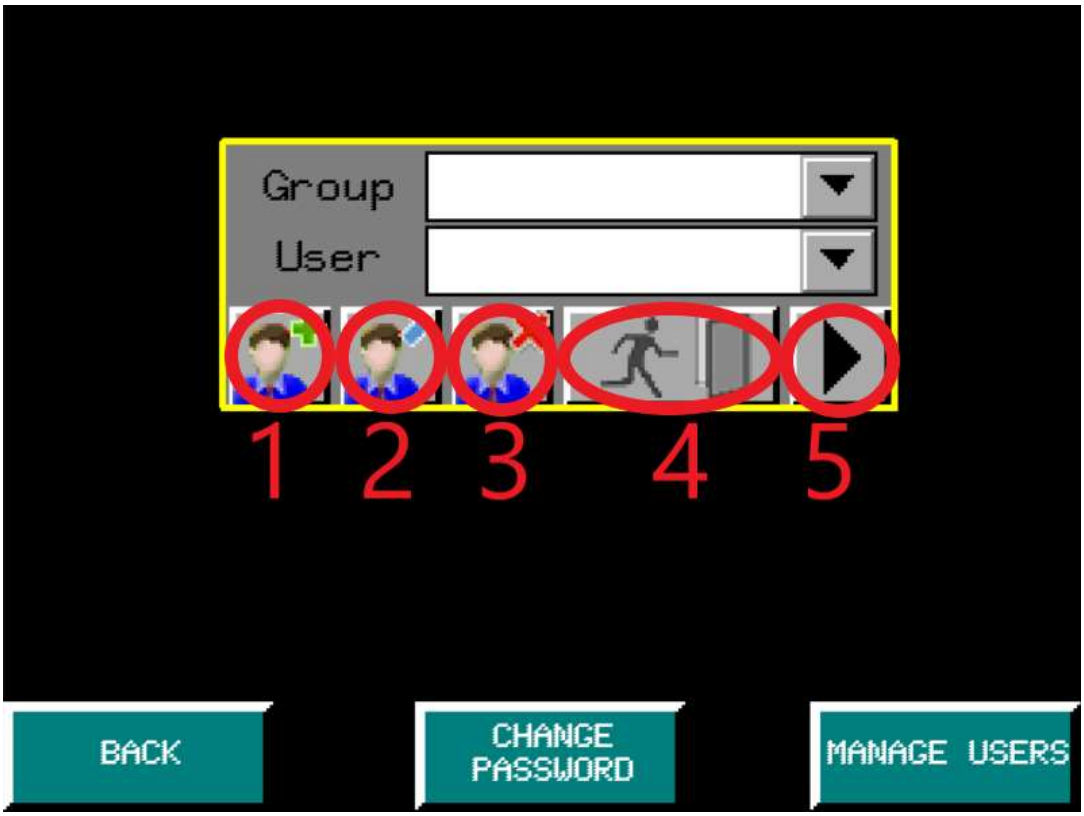

Figure 110

- “GROUP” indicates the security level that the user will be given.
- Group 1 has access to everything other than the “CONFIGURATION” page and the “MANAGE USER” page.
- Add user (button 1) adds user with the information set in the above sections and the password setting page.
- Change user (button 2) changes user with the information set in the above sections and password setting page.
- Delete user (button 3) deletes user selected in the above sections.
- Exit (button 4) exits user manager page.
- Password setting (button 5) navigates to password setting page.
- “BACK” directs to previous page.
- “CHANGE PASSWORD” directs to password change page. (Changes password of current logged in user)
- “MANAGE USERS” directs to manage users’ page. (Add and delete users)

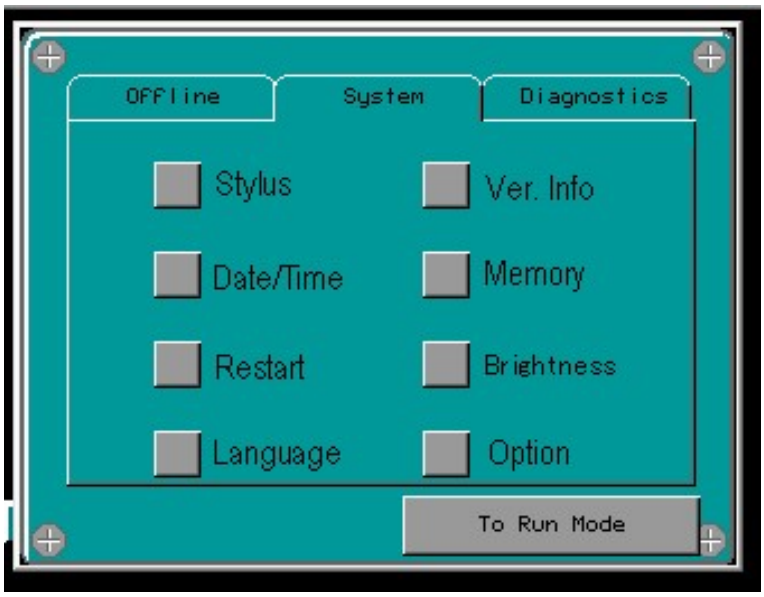

Figure 111

- The only changes that should be made in the configuration page is “Date/Time”

Figure 112

- This page indicates there is a connection issue between the indicated PLC and the HMI.
- Refer to trouble shooting guide.

Troubleshooting

Status LEDs

The following figure shows the status LEDs:

The following table describes the status LEDs:

Label	Function Type	Color	Status	Description		
				Controller States(1)	Prg Port Communication	Application Execution
PWR	Power	Green	On	Indicates that power is applied.		
			Off	Indicates that power is removed.		
RUN	Machine Status	Green	On	Indicates that the controller is running a valid application.		
			Flashing	Indicates that the controller has a valid application that is stopped.		
			Off	Indicates that the controller is not programmed.		
ERR	Error	Red	On*	EXCEPTION	Restricted	NO
			Flashing (with RUN status LED Off)	INTERNAL ERROR	Restricted	NO
			Slow flash	Minor error detected(2)	Yes	Depends on the RUN status LED
			1 single flash	No application	Yes	Yes
SD	SD Card Access	Green	On	Indicates that the SD card is being accessed.		
			Flashing	Indicates that an error was detected during the SD card operation.		
			Off	Indicates no access (idle) or no card is present.		
BAT	Battery	Red	On	Indicates that the battery needs to be replaced.		
			Flashing	Indicates that the battery charge is low.		
			Off	Indicates that the battery is OK.		
SL	Serial line 1	Green	On	Indicates the status of Serial line 1.		
			Flashing	Indicates activity on Serial line 1.		
			Off	Indicates no serial communication.		

Figure 113

Alarm	Problem	Solution
RESET TOP PLC	-Connection issue between PLC in “TB-AFB12_TB” and HMI.	-Make sure “PWR” indicator on face of PLC in “TB-AFB12_TB” is on. -If “PWR” indicator is off check for 24vdc on the power supply on the bottom of the PLC. -Check “RUN” indicator on face of PLC in “TB-AFB12_TB” if blinking reset PLC (Figure 114). (Move switch to stop then back to run) -Check ethernet cable connection between HMI in “TB-AFB12_HB” and ethernet switch. -Check ethernet cable connection between PLC in “TB-AFB12_TB” and ethernet switch.
RESET BOTTOM PLC	-Connection issue between PLC in “TB-AFB12_HB” and HMI.	-Make sure “PWR” indicator on face of PLC in “TB-AFB12_HB” is on. -If “PWR” indicator is off check for 24vdc on the power supply on the bottom of the PLC. -Check “RUN” indicator on face of PLC in “TB-AFB12_HB” if blinking reset PLC (Figure 114). (Move switch to stop then back to run) -Check ethernet cable connection between HMI in “TB-AFB12_HB” and ethernet switch. -Check ethernet cable connection between “TB-AFB12_HB” and ethernet switch.
ALL TEMPERATURE PROBES DELETED	All temp probes deleted.	-Add temperature probes back in on “GRAIN TEMPERATURE PROBES” page.
TEMPERATURE DIFFERENTIAL TOO HIGH	Temperature differential between adjacent probes exceeds 30°.	-Check “GRAIN TEMPERATURE PROBES” page. -Check chutes for obstructions -Delete probes if necessary. This should only be done after grain temperature around probe has been checked. Overheated grain could cause damage or fire.

Alarm	Problem	Solution
CHECK CHUTES	Beam clamp did not activate limit switch in time.	-Check power to “TB-AFB12_HB”. -Check limit switches and beam clamps to be sure they’re in the proper position.
CHUTE OL TRIPPED	Chute Overload tripped	-Reset chute overload switch. (Figure 115) push the black button in. -Check overload is set to 4.4amps.
FILLING TIMED OUT	Full rotary sensor was not covered before “MAX LOADING TIMER” timed out.	-Check wet bin level. -Be sure wet grain is getting into the dryer top when loading is running. -Check chutes for leaking or broken chains. -Make sure timer is set for the appropriate amount of time.
**PLENUM TEMP TOO HIGH	Plenum temperature exceeded the maximum plenum temperature set in the “MAX TEMP SAFTIES” section of the “BURNER SETTINGS” page.	-Make sure maximum plenum temperature is set to an appropriate temperature. -Make sure the “PLENUM SET” in the “HIGH LOW TEMP SETTING” of the “BURNER SETTINGS” page is not set too close to the maximum plenum temperature. (If burner has a High/Low valve) -Make sure modulating valve is turned to an appropriate setting. (If burner has a modulating valve)
**GRAIN TEMP TOO HIGH	Grain temperature exceeded the maximum grain temperature set in the “MAX TEMP SAFTIES” section of the “BURNER SETTINGS” page.	-Make sure maximum grain temperature is set to an appropriate temperature. -Check chutes for obstructions.
DRYER STORAGE FULL	Dryer storage rotary not spinning.	-Check bin storage level. -Check rotary for obstructions. -Make sure rotary is powered.
STAGE 1 OL TRIPPED	Stage 1 overload tripped	-Reset tripped overload. -Check motor for obstructions.
STAGE 2 OL TRIPPED	Stage 2 overload tripped	-Reset tripped overload. -Check motor for obstructions.
STAGE 3 OL TRIPPED	Stage 3 overload tripped	-Reset tripped overload. -Check motor for obstructions.
SET "MAX LOADING TIMER"	Max loading timer not set	-Set “MAX LOADING TIME” in “LOADING SETTINGS” page.

Alarm	Problem	Solution
SET "CHUTE DELAY"	Chute delay not set	-Set “CHUTE DELAY” on “CHUTE SETTINGS” page.
SET "SET TEMP"	Drying temperature not set	-Set “SET TEMP” on “TEMP DRY” or “TIME AND TEMP DRY” page depending on which drying type is being used.
SET "DRY TIMER"	Drying time not set	-Set “SET TIME” on “TIME DRY” or “TIME AND TEMP DRY” page depending on which drying type is being used.
***CHECK BURNER 1 FUSE	Power from fuse not reading to PLC	-Check burner 1 fuse. -Check power on terminal #51 (120vac)
***CHECK BURNER 1 TOGGLE SWITCH	Power from switch not reading to PLC	-Check burner 1 power switch on burner. -Check power on terminal #52 (120vac)
***BURNER 1 HOUSING HIGH LIMIT TRIPPED	Power from burner housing high limit not reading to PLC	-Check burner housing high limit tripped. -Check power on terminal #55 (120vac)
***BURNER 1 NO AIR FLOW	Power from air flow switch not reading to PLC	-Check burner 1 airflow switch. -Check power on terminal #53 (120vac)
***BURNER 1 THERMOSTAT TRIPPED	Power from thermostat not reading to PLC	-Check burner 1 thermostat. -Check power on terminal #57 (120vac)
***BURNER 1 TRANSITION HIGH LIMIT TRIPPED	Power from transition high limit not reading to PLC	-Check burner 1 transition high limit. -Check power on terminal #56 (120vac)
*** BURNER 1 VAPOR HIGH LIMIT TRIPPED (PROPANE ONLY)	Power from vapor high limit not reading to PLC	-Check burner 1 vapor high limit. -Check power on terminal #54 (120vac)
***NO FLAME BURNER 1	Power from burner 1 flame sensor not reading to PLC	-Check burner 1 flame sensor. -Check power on terminal #58 (120vac)
***CHECK BURNER 2 FUSE	Power from fuse not reading to PLC	-Check burner 2 fuse. -Check power on terminal #61 (120vac)
***CHECK BURNER 2 TOGGLE SWITCH	Power from switch not reading to PLC	-Check burner 2 power switch on burner. -Check power on terminal #62 (120vac)
***BURNER 2 HOUSING HIGH LIMIT TRIPPED	Power from burner housing high limit not reading to PLC	-Check burner 2 housing high limit tripped. -Check power on terminal #65 (120vac)
***BURNER 2 NO AIR FLOW	Power from air flow switch not reading to PLC	-Check burner 2 airflow switch. -Check power on terminal #63 (120vac)
***BURNER 2 THERMOSTAT TRIPPED	Power from thermostat not reading to PLC	-Check burner 2 thermostat. -Check power on terminal #67 (120vac)
***BURNER 2 TRANSITION HIGH LIMIT TRIPPED	Power from transition high limit not reading to PLC	-Check burner 2 transition high limit. -Check power on terminal #66 (120vac)

Alarm	Problem	Solution
*** BURNER 2 VAPOR HIGH LIMIT TRIPPED (PROPANE ONLY)	Power from vapor high limit not reading to PLC	-Check burner 2 vapor high limit. -Check power on terminal #64 (120vac)
***NO FLAME BURNER 2	Power from burner 1 flame sensor not reading to PLC	-Check burner 2 flame sensor. -Check power on terminal #68 (120vac)

** only applies when controlling the burner.

*** only applies when monitoring burner safeties.

Figure 114

Figure 115

Notes

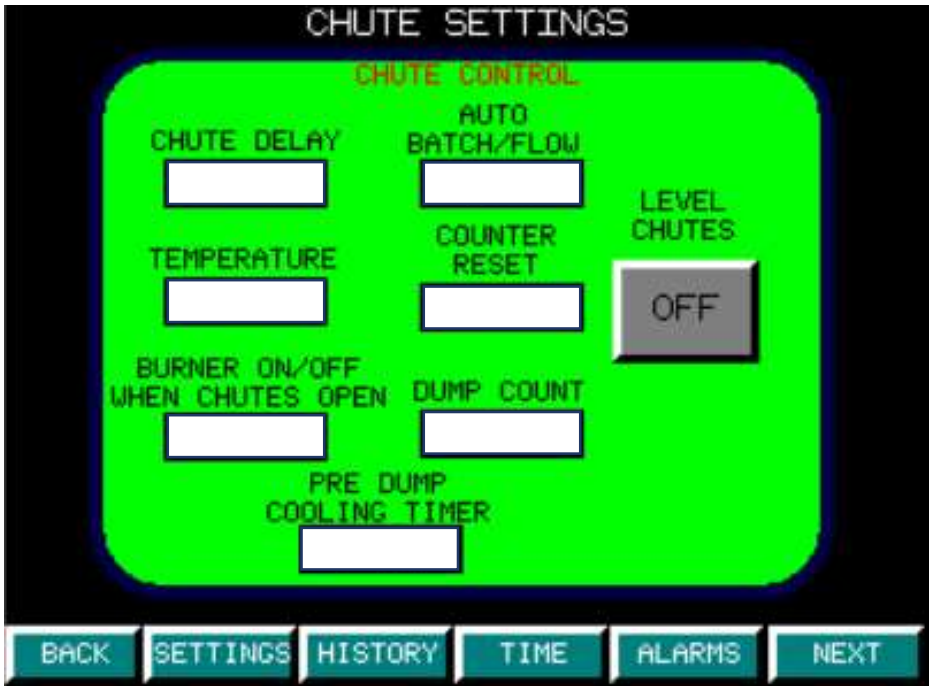

Figure 116

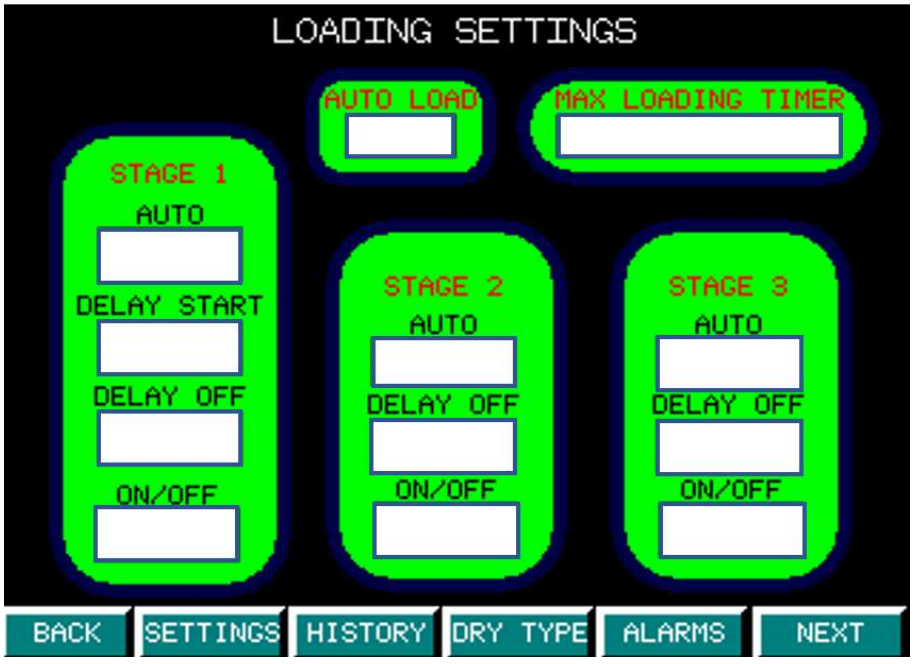

Figure 117

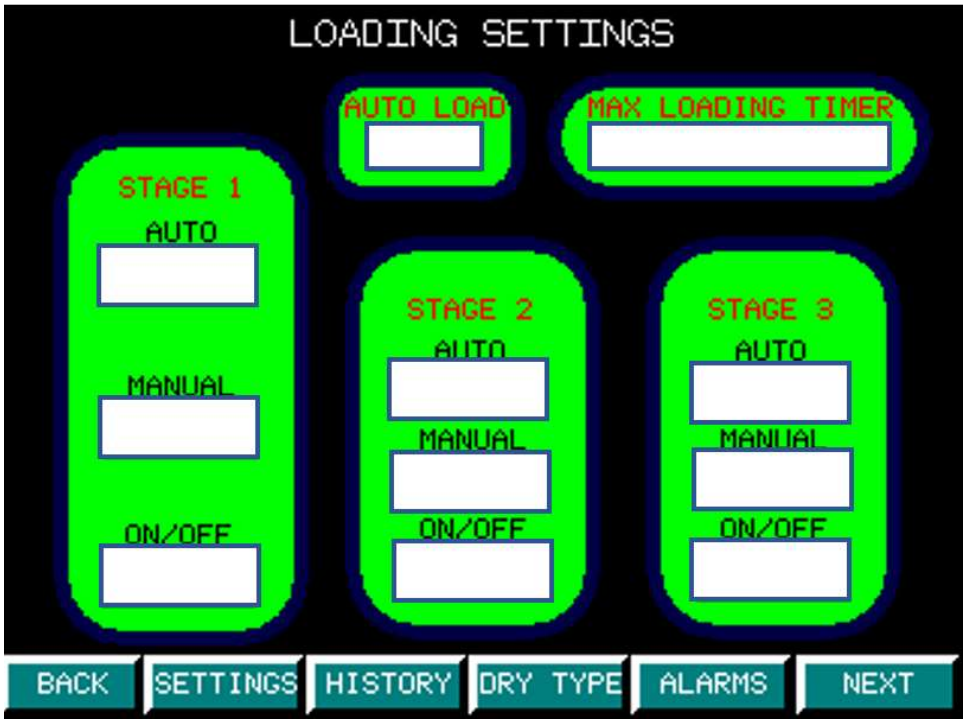

Figure 118

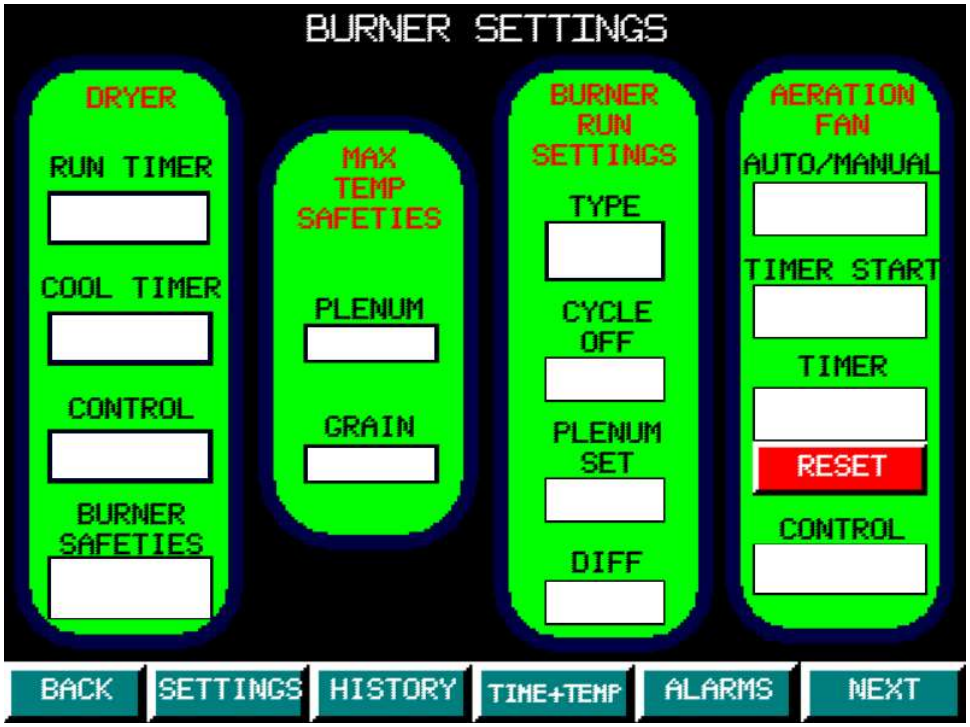

Figure 119

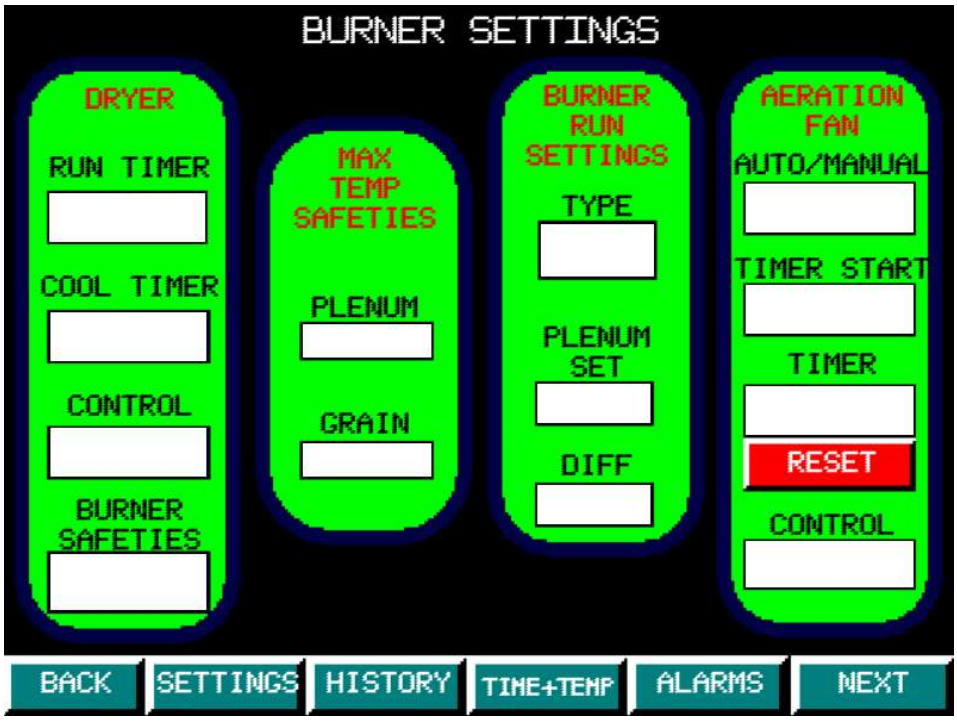

Figure 120

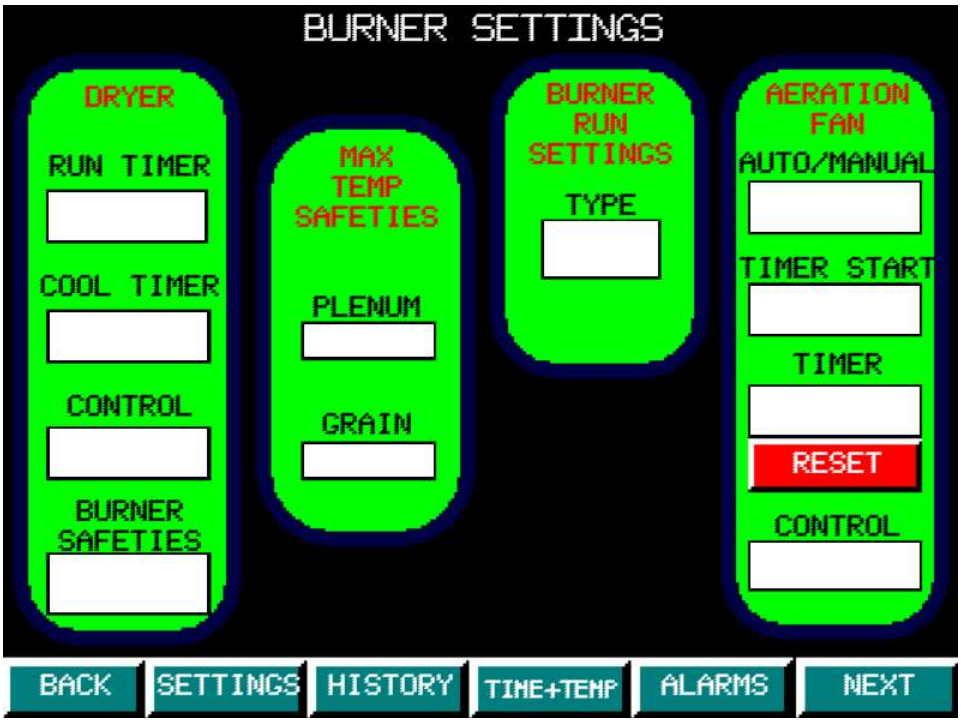

Figure 121

Figure 122

Figure 123

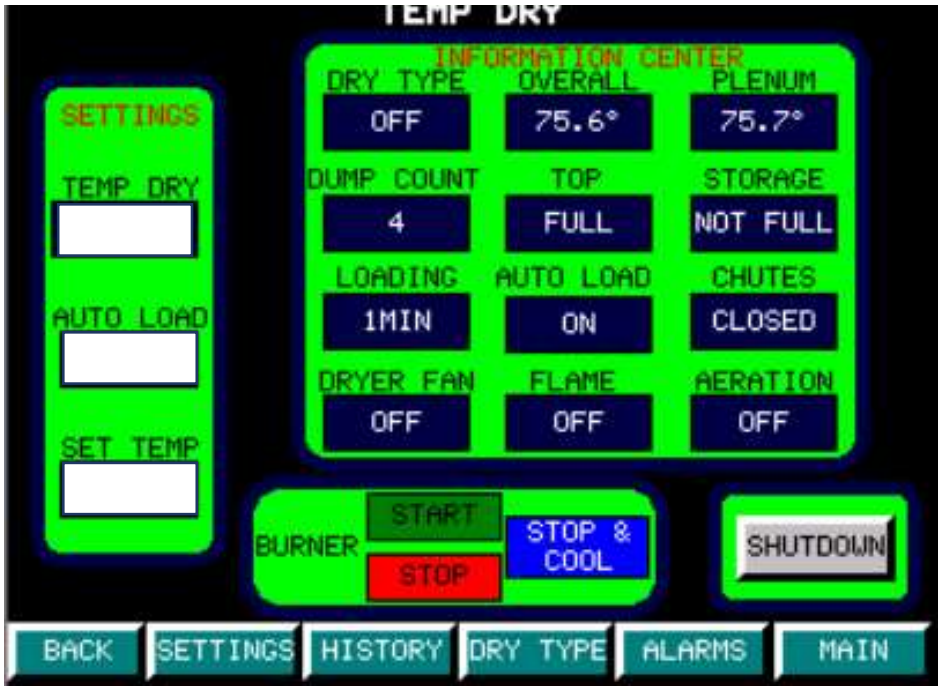
TEMP DRY
INFORMATION CENTER
DRY TYPE
OVERALL
PLENUM
OFF
75.6°
75.7°
DUMP COUNT
TOP
STORAGE
4
FULL
NOT FULL
LOADING
AUTO LOAD
CHUTES
1MIN
ON
CLOSED
DRYER FAN
FLAME
AERATION
OFF
OFF
OFF
SETTINGS
TEMP DRY
AUTO LOAD
SET TEMP
BURNER
START
STOP
STOP & COOL
SHUTDOWN
BACK
SETTINGS
HISTORY
DRY TYPE
ALARMS
MAIN

Figure 124