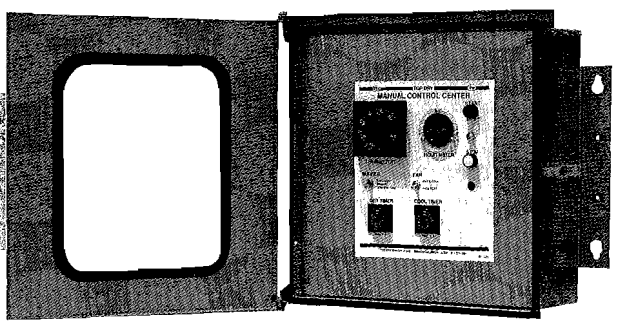
MANUAL CONTROL CENTER

MODELS TF-1195

STANDARD MODEL

OWNER'S MANUAL

PNEG-166



SAFETY FIRST

GENERAL SAFETY STATEMENTS

Grain Systems, Inc.'s principle concern is your safety and the safety of others associated with grain handling equipment. This manual was written with this thought in mind. We want to keep you as a customer. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist and inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation, where serious injury or death may occur.

SAFETY ALERT SYMBOL

The symbol shown below is used to call your attention to instructions concerning your personal safety. Watch for this symbol; it points out important safety precautions. It means "ATTENTION", "WARNING", "CAUTION", and "DANGER". Read the message that follows and be cautious to the possibility of personal injury or death.

BE ALERT!

WARNING!

Personnel operating or working around electrical equipment should read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

Disconnect electricity before inspecting or servicing. Keep guards and screens on exposed areas.

WILL CAUSE SERIOUS INJURY OR DEATH

Grain Systems, Inc. recommends that you contact your local power company and have a representative survey your installation so your wiring will be compatible with their system and so that you will have adequate power supplied to your unit.

ATTENTION: The decal shown below should be present on the inside door cover of the two ring door, 24" porthole door cover and the roof manway cover. If a decal has been damaged or is missing in any of these locations contact grain systems, inc. for a free replacement decal.

GRAIN SYSTEMS, INC.
1004 East Illinois Street
Assumption, Il 62510-0020
(217) 226-4421

⚠ DANGER

Rotating flighting can kill or dismember.

Flowing material can trap and suffocate.

Crusted material can collapse and suffocate.

Keep clear of all augers. DO NOT ENTER this bin!

If you must enter this bin:

1. **Shut off and lock out all power.**
2. **Use safety harness and safety line.**
3. **Station another person outside the bin.**
4. **Avoid the center of the bin.**
5. **Wear proper breathing equipment or respirator.**

Failure to heed these warnings will result in serious injury or death.

DC-552

GRAIN SYSTEMS, INC. WARRANTY

Grain Systems, Inc. warrants all products manufactured by Grain Systems, Inc. to be free of defects in material and workmanship under usual and customary service. Grain Systems, Inc. only obligation is to repair or replace products returned on a prepaid basis within 12 months after retail sale, and in our opinion, found to be defective due to material or workmanship. If defective, the product will be repaired or replaced without charge, F.O.B. factory, this constituting and fulfilling our warranty obligation. Expenses incurred without authorization of Grain Systems, Inc. shall be the sole responsibility of bearer. Under no circumstances will Grain Systems, Inc. be liable for any kind of special or consequential damages, nor will the liability ever exceed the selling price of the product.

This warranty does not cover products or parts that have been damaged by negligent use, misuse, alteration or accident. All products supplied by the outside manufacturers are warranted separately by the respective manufacturer. This warranty is exclusive and in lieu of all other warranties expressed or implied. Grain Systems, Inc. reserves the right to make design or specification changes at any time, without a contingent obligation to purchasers or products already sold.

All instructions shall be construed as recommendations only; because the actual installation may vary according to local conditions and Grain Systems, Inc. assumes no liability for results arising from the use of such recommendations.

Grain Systems, Inc. assumes no responsibility for field modifications or erection defects that create structural or storage quality problems. If any field modifications are necessary that are not specifically covered by the contents of this manual, contact Grain Systems, Inc. for recommendations and approval. Any unauthorized modification or erection defect that affects the structural integrity of the G.S.I. bin will be cause for immediate nullification of the G.S.I. bin warranty.

ROOF DAMAGE WARNING

Grain Systems, Inc. cannot warrant any roof damages due to excessive vacuum or internal pressure caused by fans or other air moving systems. Adequate ventilation and/or "make-up air" devices should be provided for all powered air handling systems. Grain Systems, Inc. does not recommend the use of downward flow systems (suction). Severe roof structural damage can result from any blockage of air passages. Running of fans during certain high humidity/cold weather conditions can cause freezing over of air exhaust or intake posts.

Manual Control Center Test Procedure

Model #_____ Serial #_____ Date _____

Customer _____

(__) Check Wiring Connection (Tighten If Needed)

(__) Door Panel Closes And Latches

(__) All Decals Are In Place

(__) Manuals In Control Box

(__) Are Timers Preset Correct (Memory On)

(__) Time Delay Operation

(__) All Operating Lights Work

(__) Timers Reset At End Of Operation

(__) Moisture Control Operates Correctly

(__) Wipe Out Any Metal Chips, Wire Insulation, Wire Ties, Etc.

(__) Check And Tighten All Bolts

(__) Visible Defects

(__) Moisture Control Sensor Kit

(__) All Unnecessary Holes Are Filled

(__) In Canadian Units, All Components Are CSA Approved

(__) Weather Strip

(__) Caulk Control Body

(__) Model And Serial Number Decal

Comments _____

Tested By _____

CONTENTS:

INTRODUCTION/GENERAL DESCRIPTION

The Top Dry Manual Control Center, Model TF-1195 is the modern method of controlling the drying and cooling cycles of the Top Dry dryer. The control center is a very practical and labor saving device. It not only eases the starting and stopping of the Top Dry fan and heater, but it also regulates and monitors the drying and cooling cycles. The control center may be used in several different modes of operation as follows:

- Temperature Drying And Time Cooling
- Temperature/Time Drying And Time Cooling
- Temperature Drying And No Cooling
- Temperature/Time Drying And No Cooling
- Manual Operation

DETAILED DESCRIPTION

THERMOSTAT

The thermostat is used to regulate the drying temperature of the Top Dry system. It operates in the time/temp mode and the temp mode. The thermostat has temperature indicator that is functional in the manual mode as well as in the time/temp and temp modes. The thermostat senses the temperature through the temperature sensor, which is mounted inside the grain chamber. The thermostat is located on the upper left hand corner of the sub-panel.

DRY TIMER

The dry timer is used to regulate the drying time of the Top Dry system. It operates only in the time/temp mode. The dry timer has a progress indicator that shows the remaining amount of time to dry. The dry timer is located on the lower left hand corner of the sub-panel.

COOL TIMER

The cool timer is used to regulate the cooling time of the Top Dry system. It operates only in the dry & cool mode. The cool timer has a progress indicator that shows the remaining amount of time too cool. The cool timer is located immediately to the right of the dry timer.

HOUR METER

The hour meter records the accumulated time the Top Dry system has been operated. It operates in the time/temp mode, temp mode, as well as manual mode. The hour meter is located to the immediate right of the thermostat.

START SWITCH

The start switch starts the Top Dry fan/heater from a remote position. It also initiates the Top Dry Manual Control Center's operation. The start switch is located on the upper right hand corner of the sub-panel.

INDICATOR LIGHT

The indicator light provides a visual indication when power is being applied to the fan/heater. The light will also illuminate whenever the control center is receiving power. The indicator light is located directly below the start switch.

STOP SWITCH

The stop switch shuts down the Top Dry fan/heater as well as the Top Dry Control Center. The switch allows stopping of the entire system when the control center is used in manual mode or when it is desired to stop the drying process. The stop switch is located in the middle of the right hand side of the sub-panel.

NOTE: When the system is shut down, the timers in the control center are automatically reset to their set times.

BURNER SWITCH

The burner switch allows the selection of the drying modes. The available modes of drying are time/temperature, temperature and manual. When the switch is in the time/temp mode, the heater(s) will shut off when the grain chamber has reached the temperature set on the thermostat or when the dry timer has totally run down. When the switch is in the temperature mode, the heater(s) will shut off when the grain chamber has reached the temperature set on the thermostat. When the switch is in the manual mode, the heater(s) must be started and stopped manually. The burner switch is located on the middle left side of the sub-panel.

FAN SWITCH

The fan switch allows the grain chamber to be cooled before dumping. The options are dry & cool, and full heat. When the switch is in the dry & cool position, the fan(s) will continue to run after the thermostat or the dry timer shuts off the heater(s). When the switch is in the full heat position, the fan(s) will shut off with the heaters(s). The fan switch is located between the burner switch and the stop switch.

INSTALLATION ON A TOP DRY SYSTEM

NOTE: Read the appropriate instructions entirely before installation.

SINGLE CROP DRYER INSTALLATION

1. Mount the Top Dry Manual Control Center on the side of the bin. Position the control center in a location that is approximately eye level and that will allow the operator to see the fan and heater unit start. Locate and drill the appropriate holes for mounting the control center. Mount the control center with four (4) 5/16" bin bolts and nuts provided.
2. Run two (2) 16 ga. wires (either use wires in conduit or use a 2 lead power cord) from the Top Dry Manual Control Center to the drying chamber. Connect the temperature probe to the two wires (one wire per probe lead) with the connectors provided. Mount the temperature probe assembly in the drying chamber in the Top Dry bin. See Fig. 1. Connect the wires to the thermostat with the one wire going to terminal 7 on terminal strip and the other wire going to terminal 8.
   NOTE: The conduit should be mounted approximately 21" off of drying floor.
3. Remove the jumper wires between terminals 2 and 3, and terminals 4 and 5 on the terminal strip in the Top Dry Crop Dryer box.
4. Run six (6) 16 ga. wires (either use wires in conduit or use a 6 lead power cord) from the Top Dry Manual Control Center to the Top Dry Crop Dryer. Connect the wires so that the terminal numbers 1 through 6 in the crop dryer box correspond with the terminal numbers 1 through 6 in the control center.

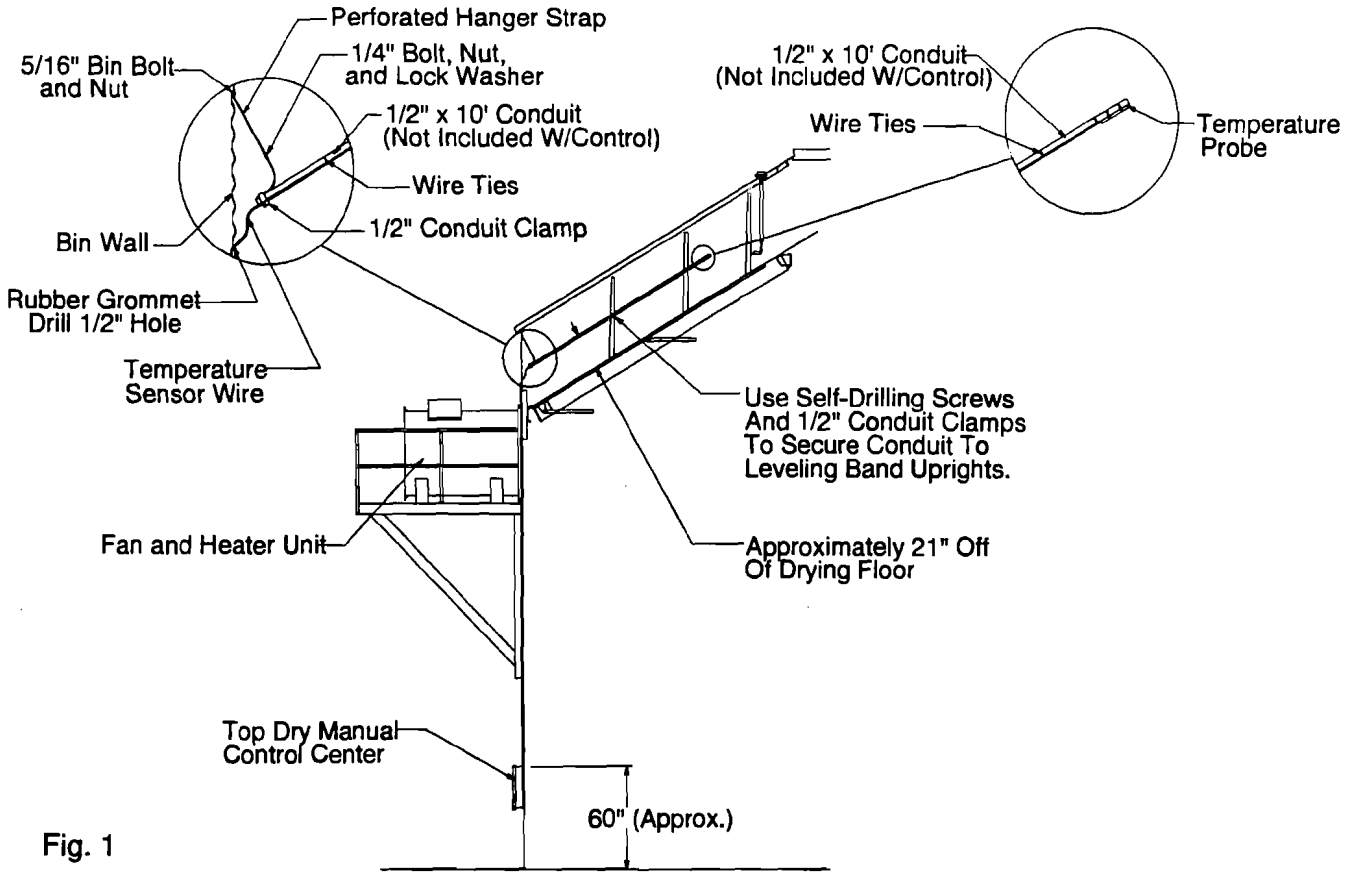


Fig. 1

DUAL CROP DRYER INSTALLATION

1. Mount the Top Dry Manual Control Center on the side of the bin. Position the control center in a location that is approximately eye level and that will allow the operator to see the fan and heater unit start. Locate and drill the appropriate holes for mounting the control center. Mount the control center with four (4) 5/16" bin bolts and nuts provided.
2. Run two (2) 16 ga. wires (either use wires in conduit or use a 2 lead power cord) from the Top Dry Manual Control Center to the drying chamber. Connect the temperature probe to the two wires (one wire per probe lead) with the connectors provided. Mount the temperature probe assembly in the drying chamber in the Top Dry bin. See Fig. 1. Connect the wires to the thermostat with the one wire going to terminal 7 on terminal strip and the other wire going to terminal 8.
   NOTE: The conduit should be mounted approximately 21" off of drying floor.
3. Remove the jumper wires between terminals 2 and 3, and terminals 4 and 5 on the terminal strip in the Top Dry Crop Dryer box.
4. Run six (6) 16 ga. wires (either use wires in conduit or use a 6 lead power cord) from the Top Dry Manual Control Center to the Crop Dryer Unit #1. Connect the wires so that the terminal numbers 1 through 6 in the crop dryer box correspond with the terminal numbers 1 through 6 in the control center.
5. Install the toggle switch in the 1/2" hole in the control center sub-panel.
6. Drill a 1/8" hole in the back of panel of the Top Dry Manual Control Center and use a 8-32 x 1-1/4" self tapping screw to mount the time delay relay. (Careful not to over tighten the screw.)
7. Run two (2) 16 ga. wires (either use wires in conduit or use a 2 lead power cord) from the Top Dry Manual Control Center to the second fan/heater.
8. Run a 16 ga. wire from terminal number 4 in the control center to one side of the toggle switch. On the same side, connect one of the wires coming from the second fan/heater.
9. Connect a 16 ga. wire from the unused side of the toggle switch to the input terminal on the time delay relay. On the load terminal on the time delay relay, connect the other wire coming from the second fan/heater.
10. Connect the wire coming from the time delay relay to terminal number 1 in second fan box.
11. Remove the wire coming from the safety circuit board to the stop switch in Crop Dryer Unit #2. Connect the other wire coming from the Top Dry Manual Control Center to the stop switch where the other wire was previously removed.
12. Run nine (9) 16 ga. wires (either use wires in conduit or use a 9 lead power cord) from the first fan/heater to the second fan/heater.
13. The crop dryer control circuits should be wired as shown in the wiring diagrams. Note that the overload circuits are wired in series with the contact coil in unit number 1. The contact coil in unit number 2 should be wired so that it will only get power if unit number 1 is started. See pages 9 through 11 for complete wiring diagrams.

OPERATION

SINGLE CROP DRYER

The Top Dry manual Control Center is very simple to operate. By following some basic rules, the control center will accurately control the Top Dry fan and heater. The following instructions are provided for operation in the time/temperature mode and the temperature mode. In the manual mode, the crop dryer unit(s) are started and stopped either at the control center or at the electrical box on the crop dryer. The following instructions are provided as guidelines only.

Time/Temperature Mode

The time/temperature mode of operation is recommended for a wide variety of grain and various moisture contents of grain. The time/temperature mode is recommended when the drying time is less than twelve hours. In the time/temperature mode, the grain thermostat as well as the dry timer control the crop dryer unit. Once the grain reaches the desired temperature, the heater shuts off and the fan shuts off after 60 seconds or longer if cooling is desired in the drying chamber. (See the Cooling Mode section for more details about cooling in the drying chamber.) If the time set on the dry timer expires before the desired temperature is reached in the drying chamber, the dry timer will shut off the heater and the fan, if cooling is not desired in the drying chamber. The time/temperature mode allows the thermostat to decrease drying times when the temperature rises rapidly while the dry timer never allows the drying chamber to exceed the maximum drying time. See the Cooling Mode section for more details about cooling in the drying chamber. Use the following steps to operate the Top Dry system in the time/temperature mode.

OPERATING PROCEDURE: TIME/TEMPERATURE MODE

1. Determine the initial moisture content of the first batch to be dried.
2. Find the estimated drying time for the applicable Top Dry system in the Top Dry drying tables and set the dry timer.

NOTE: Ambient conditions will affect these drying time. Refer to the table (on page 14) for the conditions that the drying rates were based upon.

3. Set the burner switch and the fan switch to the desired positions and if applicable, set the cool timer at the desired cooling time.
4. Set the thermostat to a temperature at a very high setting
5. Start the crop dryer unit via the start switch in the Top Dry Manual Control Center.
6. Once the crop dryer has been shut off by the dry timer, restart the unit. With burner switch in time/temperature mode, slowly turn back the thermostat until the crop dryer shuts off. Depress the stop switch to stop entire system if necessary.
7. After the batch has been dumped and cooled, determine the final moisture content. The sample of grain should be taken from the batch after it has been dumped. If the batch is within one percent of desired moisture content, all the controls are set properly. If the moisture content is too high or too low, adjust the dry timer and/or the thermostat accordingly.

Temperature Mode

The temperature mode of operation is recommended for drying grain that has a medium too high (25 to 35%) initial moisture content. Grain that has a medium to high moisture content undergoes a temperature change that is easily detected by the grain thermostat. In the temperature mode, the grain thermostat is the only method of shutting the crop dryer off, besides the stop switches. Once the grain has reached the desired temperature, the burner shuts off and the fan shuts off after 60 seconds or longer if cooling is desired in the drying chamber. See the Cooling Mode section for more details about cooling in the drying chamber. Use the following steps to operate the Top Dry system in the temperature mode.

OPERATING PROCEDURE: TEMPERATURE MODE

1. Determine the initial moisture content of the first batch to be dried.
2. Find the estimated drying time for the applicable Top Dry system in the Top Dry drying tables.

NOTE: Ambient conditions will affect these drying time. Refer to the table (on page 14) for the conditions that the drying rates were based upon.

3. Set the burner switch and the fan switch to the desired positions and if applicable, set the cool timer at the desired cooling time.
4. Set the thermostat to a temperature at a very high setting
5. Start the crop dryer unit via the start switch in the Top Dry Manual Control Center. Allow the batch to dry the estimated drying time found in step 2. It may be desired to reduce the drying time by 10% if the ambient conditions are not identical as found in the drying tables to ensure the grain is no over dried.
6. Once the time has elapsed, slowly turn back the thermostat until the crop dryer shuts off.
7. After the batch has been dumped and cooled, determine the final moisture content. The sample of grain should be taken from the batch after it has been dumped. If the batch is within one percent of desired moisture content, all the controls are set properly. If the moisture content is too high or too low, adjust the drying time accordingly and readjust the thermostat.

Cooling Mode

When the fan switch is placed in the dry & cool position, the fan will continue to run after the heater shuts off until the cool timer expires. Cooling in the drying chamber is normally done only when rapid cooling of the grain is needed. Most cooling is done in the bottom of the Top Dry bin for more efficient drying and higher quality grain. The cooling cycle (when the fan switch is in the dry & cool position) is controlled by the cool timer. When the fan switch is in the full heat position, the fan will shut off 60 seconds after the burner shuts off, allowing the fan to cool the burner before total shut down.

DUAL CROP DRYER UNITS

For controlling a dual Crop Dryer system, the Top Dry Manual Control Center operates identically to a single Crop Dryer system, except as follows:

OPERATING PROCEDURE: DUAL CROP DRYER

1. The second unit toggle switch is placed in the on position.
2. Start the crop dryer unit via the switch in the Top Dry Manual Control Center. The second unit will start after the first unit has run a short while. When the second unit toggle switch is in the off position, the second unit may be started after the first unit has started.

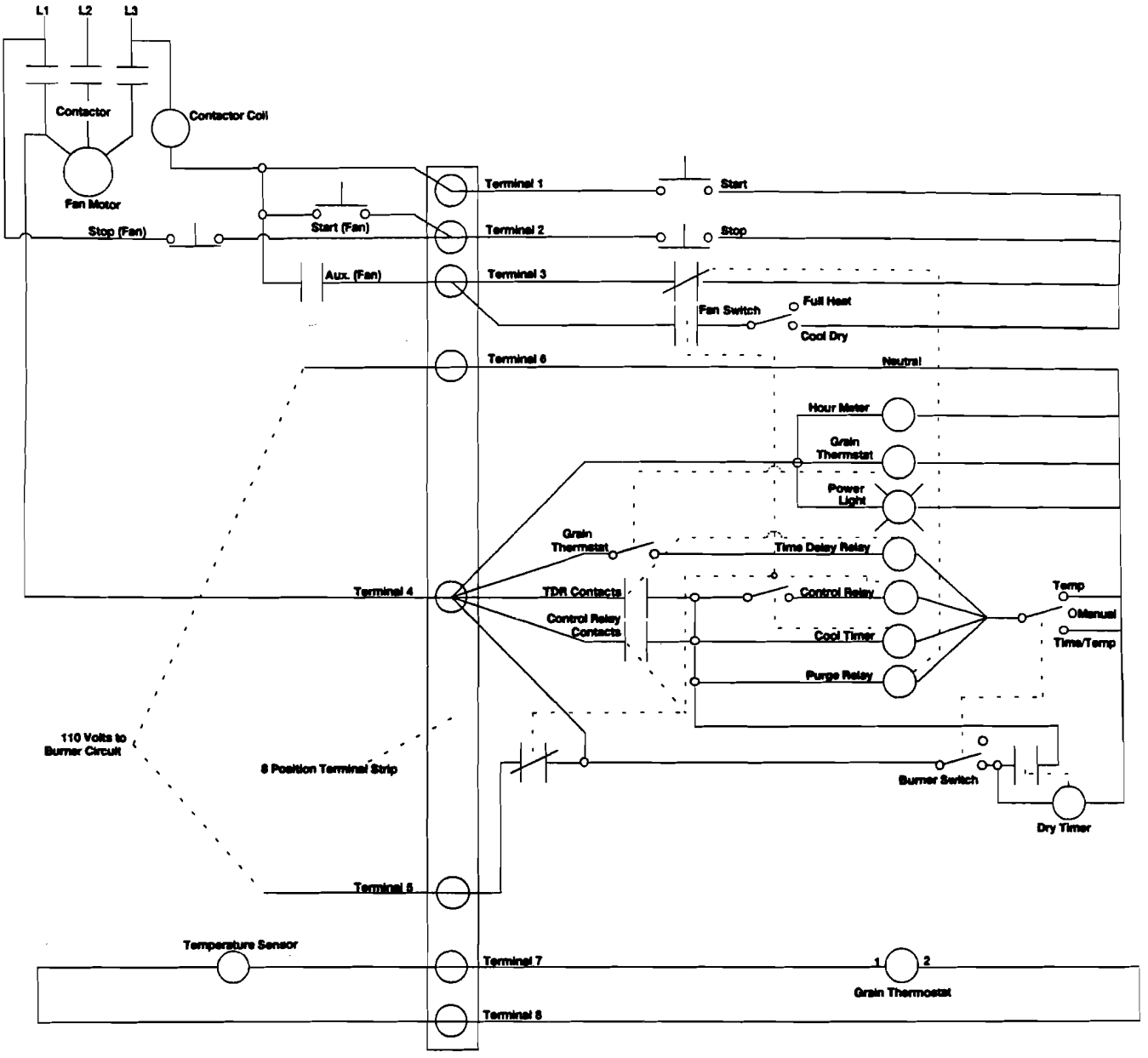
! *WARNING: When the second unit toggle switch is in the on position, the stop switch on the second unit is disabled. The second fan must be stopped by stopping the first fan.*

THEORY OF OPERATION

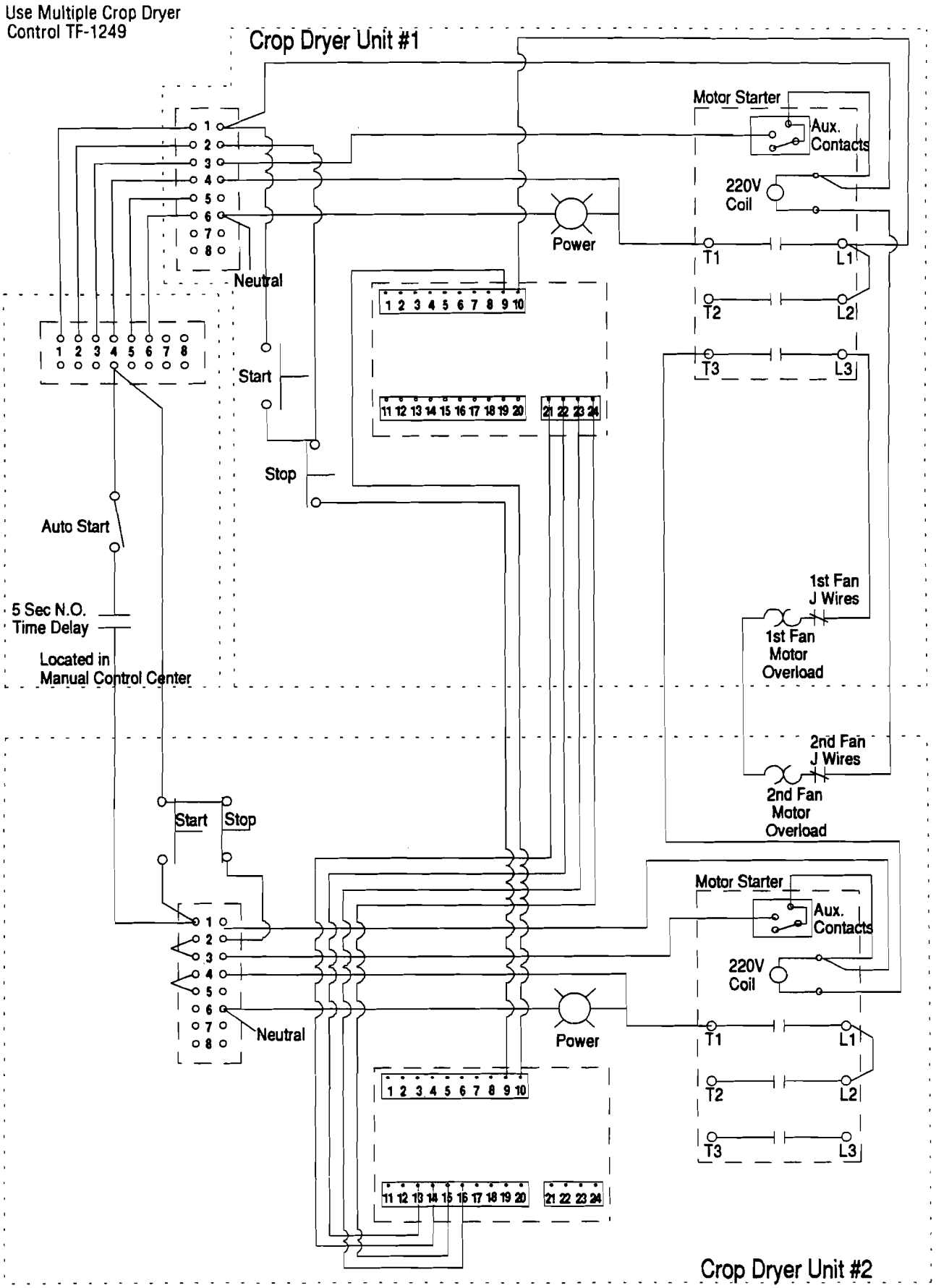
The theory of operation describes the actual operation of components inside the Top Dry Manual Control Center. The following operation will occur provided the components are set as described in the previous sections. In the following section, the individual component operation is described as they would operate in the various modes.

1. With the burner switch in the time/temp mode and the fan switch in the dry & cool position, the following operations occur:
   A. When either start switch (in control center or in fan box) is depressed, the fan starts. Ten seconds later the burner ignites. The hour meter, thermostat, and indicator lamp will be energized. The dry timer motor and clutch are energized also.
   B. The burner will continue burning until either the thermostat has sensed the grain has reached the preset temperature, or time has expired on the dry timer. The thermostat contacts will close applying power to the time delay relay. The time delay relay contacts will close and energize the relay and cool timer motor. The dry timer contacts will open to turn the dry motor off and close to energize the relay and cool timer.
   C. The relay is energized and the relay contacts change state. The relay contacts open to de-energize the burner. Another set of contacts will close to allow the relay and cool timer to be energized.
   D. When the time has expired on the cool timer, the fan will be de-energized. The cool timer contacts will open breaking the circuit and de-energizing the fan as well as the Top Dry Manual Control Center.
2. With the burner switch in the temperature mode and the fan switch in the dry & cool position, the following operations occur:
   A. When either start switch (in control center or in fan box) is depressed, the fan starts. Ten seconds later the burner ignites. The hour meter, thermostat, and indicator lamp will be energized.
   B. The burner will continue burning until the thermostat has sensed the grain has reached the preset temperature. The thermostat contacts will close applying power to the time delay relay. The time delay relay contacts will close and energize the relay and cool timer motor.
   C. The relay is energized and the relay contacts change state. The relay contacts open to de-energize the burner. Another set of contacts will close to allow the relay and cool timer to be energized.
   D. When the time has expired on the cool timer, the fan will be de-energized. The cool timer contacts will open breaking the circuit and de-energizing the fan as well as the Top Dry Manual Control Center.
3. With the burner switch in the time/temp mode and the fan switch in the full heat position, the following operations occur:
   A. When either start switch (in control center or in fan box) is depressed, the fan starts. Ten seconds later the burner ignites. The hour meter, thermostat, and indicator lamp will be energized. The dry timer motor and clutch are energized also.
   B. The burner will continue burning until either the thermostat has sensed the grain has reached the preset temperature, or time has expired on the dry timer. The thermostat contacts will close applying power to the time delay relay. The time delay relay contacts will close and energize the relay and cool timer motor. The dry timer contacts will open to turn the dry motor off and close to energize the relay and cool timer.
   C. The relay is energized and the relay contacts change state. The relay contacts open to de-energize the burner. Another set of contacts will close to allow the relay and cool timer to be energized. The relay and cool timer are temporarily energized.
   D. The relay contacts open and break the circuit shutting off the burner and 60 seconds later de-energizing the fan as well as the Top Dry Manual Control Center.
4. With the burner switch in the temperature mode and the fan switch in the full heat position, the following operations occur:
   A. When either start switch (in control center or in fan box) is depressed, the fan starts. Ten seconds later the burner ignites. The hour meter, thermostat, and indicator lamp will be energized.
   B. The burner will continue burning until the thermostat has sensed the grain has reached the preset temperature, or time has expired on the dry timer. The thermostat contacts will close applying power to the time delay relay. The time delay relay contacts will close and energize the relay and cool timer motor.
   C. The relay is energized and the relay contacts change state. The relay contacts open to de-energize the burner. Another set of contacts will close to allow the relay and cool timer to be energized. The relay and cool timer are temporarily energized.
   D. The relay contacts open and break the circuit shutting off the burner and 60 seconds later de-energizing the fan as well as the Top Dry Manual Control Center.

Top Dry Manual Control Center
Electrical Schematic

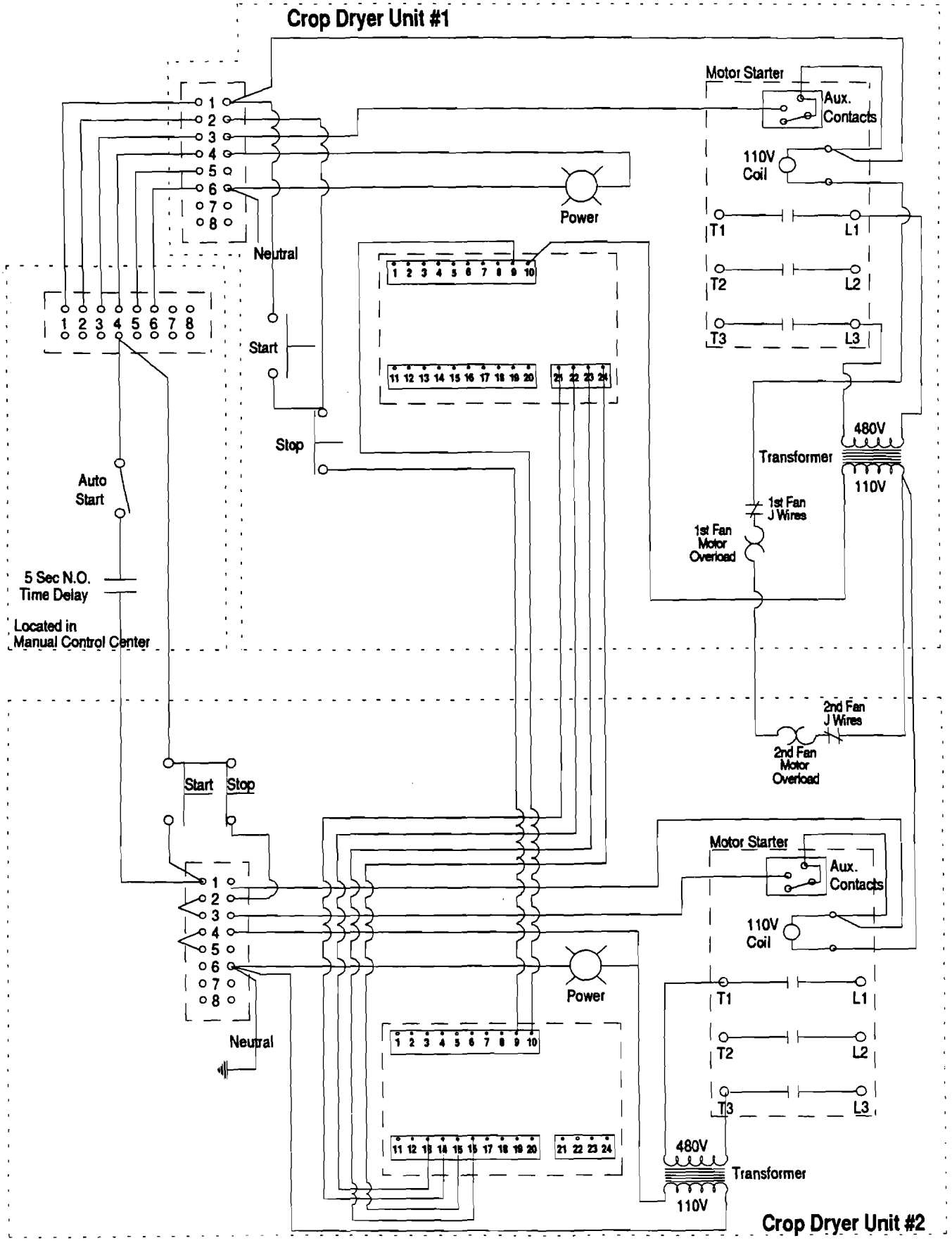


Multiple Crop Dryer Control Wiring Diagram

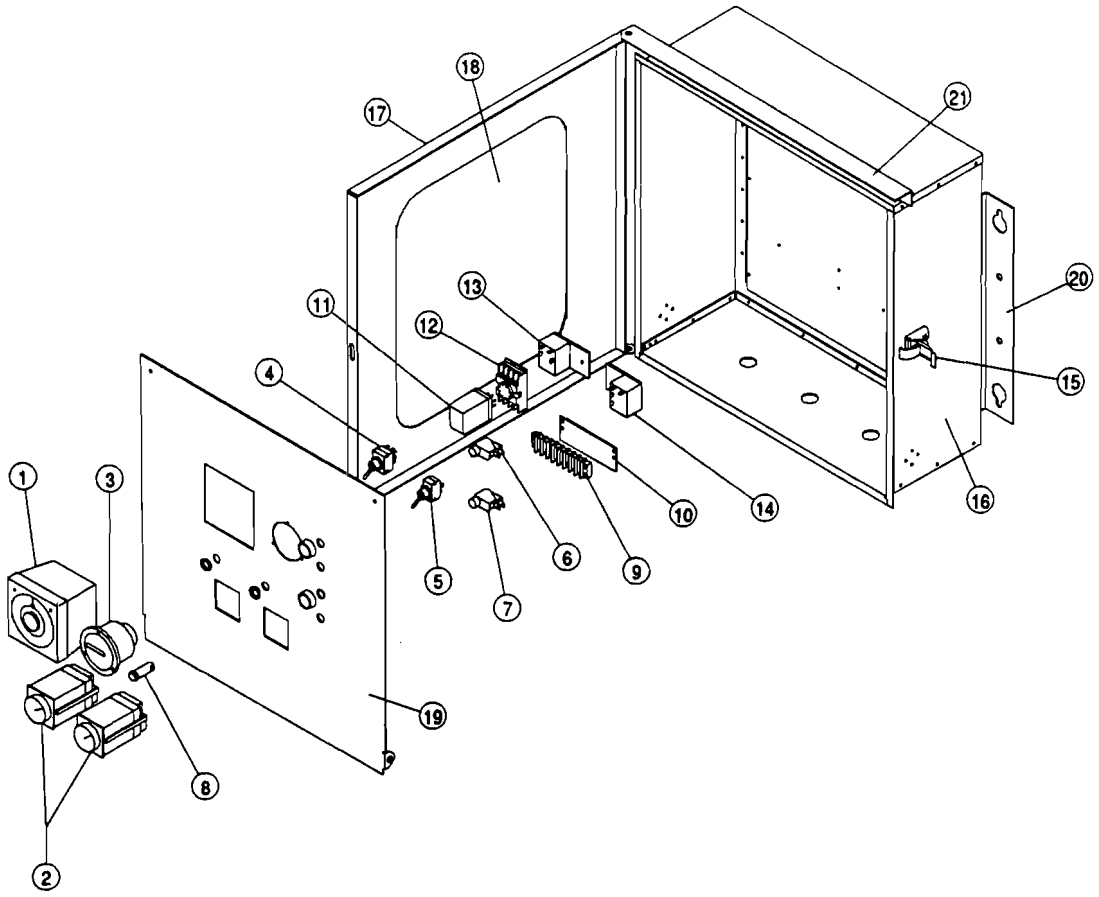


Multiple Crop Dryer Control Wiring Diagram (480 Volt 3 Phase)

Use Multiple Crop Dryer
Control Kit # TF-1250



Top Dry Manual Control Center
Control Panel With Box



Item	Part Number	Description	Quantity
1	D03-0041	Thermostat	1
2	D03-0003	12 Hr. Timer	2
3	TFC-0036	Hour Meter	1
4	TFC-0013	3-Pos. Toggle Switch	1
5	HH-1442	SPST Toggle Switch	1
6	FH-999	Start Switch	1
7	FH-1000	Stop Switch	1
8	TFH-2021	Red Light	1
9	TFH-2013	8 Conductor Terminal Strip	1
10	TFH-2052	Terminal Strip Marker	1
11	TD-100300	2PDT Relay	1
12	TD-100301	2PDT Relay Base	1
13	D03-0046	60 Sec. N.C. Time Delay Relay	1
14	D03-0077	10 Sec. N.O. Time Delay Relay	1
15	FH-4429-1	Latch	1
16	TF-1221	Manual Control Center Box Body	1
	TF-1223	Manual Control Center Box Top	1
	TF-1224	Manual Control Center Box Bottom	1
	TF-1257	Manual Control Center Box Dummy Panel	1
17	TF-1242	Manual Control Center Outer Door	1
18	D01-0219	Manual Control Center Outer Door Window	1
19	TF-1219	Manual Control Center Inner Door	1
20	TF-1257	Mounting Bracket	2
21	TF-1256	Rain Shield	1
-	DC-423	Manual Control Center Decal	1
-	DC-539	Wiring Diagram Decal	1
-	DC-528	Warning Decal	1

TOP DRY MANUAL CONTROL CENTER
HARDWARE LIST

Item	Part Number	Description	Quantity
1	D03-0045	Temperature Sensor	1
2	WR-16WH	16 Ga. White Wire	50'
3	WR-16BK	16 Ga. Black Wire	50'
4	HH-1096	1/2" Conduit Clamp	4
5	HH-1997	1/2" Rubber Grommet	1
6	PB-001	12" x 16" Plastic Bag	1
7	S-1101	1/4"-20 x 1/2" Hex Head Cap Screw Gr 2	1
8	S-1102	1/4"-20 Hex Nut	1
9	S-1923	Wire Ties	10
10	S-2041	1/4" Med. Lockwasher	1
11	S-275	5/16"-18 x 3/4" Bin Bolt Gr 5	5
12	S-280	#10-16 x 5/8" Self Drill Screw	4
13	S-396	5/16"-18 Hex Nut Gr 2	5
14	S-6555	14 Ga. Butt Splice Connector	2
15	TF-1128	Hanger Strap 2' In Length	1

DRYING RATE FOR SHELLED CORN

Fan & Heater Unit(s)	Plenum Temp. (°F)	Initial Moisture Content Wet Basis	Dia 18' 1 Fans Bu/Hr	Batch Time Hours	Dia 21' 1 Fans Bu/Hr	Batch Time Hours	Dia 24' 1 Fans Bu/Hr	Batch Time Hours	Dia 27' 1 Fans Bu/Hr	Batch Time Hours	Dia 30' 1 Fans Bu/Hr	Batch Time Hours	Dia 30' 2 Fans Bu/Hr	Batch Time Hours	Dia 36' 1 Fans Bu/Hr	Batch Time Hours	Dia 36' 2 Fans Bu/Hr	Batch Time Hours
		20%	192	2.8	199	3.7	212	4.7	-	-	-	-	-	-	-	-	-	-
TF-2024	120	25%	100	5.4	103	7.1	111	9	-	-	-	-	-	-	-	-	-	-
24" Fan		30%	68	7.9	70	10.4	75	13.2	-	-	-	-	-	-	-	-	-	-
9.75 H.P.		20%	257	2.1	268	2.7	285	3.5	-	-	-	-	-	-	-	-	-	-
	140	25%	135	4	139	5.2	149	6.7	-	-	-	-	-	-	-	-	-	-
THF-4024		30%	91	5.9	94	7.8	102	9.8	-	-	-	-	-	-	-	-	-	-
2 Million		20%	317	1.7	328	2.2	344	2.9	-	-	-	-	-	-	-	-	-	-
BTU/HR	160	25%	163	3.3	170	4.3	181	5.5	-	-	-	-	-	-	-	-	-	-
		30%	112	4.8	115	6.3	125	8	-	-	-	-	-	-	-	-	-	-
		20%	216	2.5	234	3.1	256	3.9	254	4.7	-	-	-	-	-	-	-	-
TF-2028	120	25%	112	4.8	121	6	133	7.5	132	9.1	-	-	-	-	-	-	-	-
28" Fan		30%	77	7	82	8.9	90	11	89	13.5	-	-	-	-	-	-	-	-
10-15 H.P.		20%	284	1.9	314	2.3	344	2.9	342	3.5	-	-	-	-	-	-	-	-
	140	25%	154	3.5	163	4.5	178	5.6	117	6.8	-	-	-	-	-	-	-	-
THF-4028		30%	103	5.2	110	6.6	121	8.2	120	10	-	-	-	-	-	-	-	-
3 Million		20%	360	1.5	385	1.9	416	2.4	419	2.9	-	-	-	-	-	-	-	-
BTU/HR	160	25%	186	2.9	200	3.7	217	4.6	217	5.6	-	-	-	-	-	-	-	-
		30%	128	4.2	134	5.4	149	6.7	147	8.2	-	-	-	-	-	-	-	-
		20%	-	-	302	2.4	344	2.9	355	3.4	375	4	625	2.4	378	5.7	696	3.1
	120	25%	-	-	156	4.7	181	5.5	184	6.6	194	7.7	326	4.6	200	10.8	366	5.9
TF-2036		30%	-	-	106	6.9	123	8.1	124	9.7	132	11.3	220	6.8	135	15.9	251	8.6
36" Fan		20%	-	-	406	1.8	454	2.2	477	2.5	500	3	833	1.8	514	4.2	939	2.3
10-16 H.P.	140	25%	-	-	210	3.5	243	4.1	247	4.9	258	5.8	428	3.5	266	8.1	490	4.4
		30%	-	-	142	5.1	166	6	167	7.2	176	8.4	294	5.1	181	11.9	337	6.4
		20%	-	-	498	1.5	555	1.8	585	2.1	600	2.5	1000	1.5	617	3.5	1136	1.9
THF-4036	160	25%	-	-	258	2.8	294	3.4	303	4	319	4.7	535	2.8	327	6.6	600	3.6
4 Million		30%	-	-	174	4.2	204	4.9	205	5.9	217	6.9	365	4.1	222	9.7	490	4.4
BTU/HR		20%	-	-	595	1.2	666	1.5	-	-	-	-	1153	1.3	-	-	1350	1.6
	180	25%	-	-	308	2.4	356	2.8	-	-	-	-	625	2.4	-	-	720	3
		30%	-	-	208	3.5	243	4.1	-	-	-	-	428	3.5	-	-	490	4.4
		20%	-	-	-	-	400	2.5	426	2.8	483	3.1	-	-	502	4.3	830	2.6
	120	25%	-	-	-	-	212	4.7	221	5.5	245	6.1	-	-	266	8.1	440	4.9
TF-2042		30%	-	-	-	-	144	6.9	149	8	168	8.9	-	-	181	11.9	300	7.2
42" Fan		20%	-	-	-	-	555	1.8	572	2.1	641	2.3	-	-	675	3.2	1136	1.9
10-16 H.P.	140	25%	-	-	-	-	285	3.5	297	4	333	4.5	-	-	354	6.1	583	3.7
		30%	-	-	-	-	196	5.1	201	6	227	6.6	-	-	295	7.3	400	5.4
		20%	-	-	-	-	666	1.5	701	1.7	786	1.9	-	-	830	2.6	1350	1.9
THF-4042	160	25%	-	-	-	-	344	2.9	364	3.3	408	3.7	-	-	432	5	720	3
5 Million		30%	-	-	-	-	238	4.2	246	4.9	278	5.4	-	-	295	7.3	490	4.4
BTU/HR		20%	-	-	-	-	769	1.3	838	1.5	939	1.6	-	-	981	2.2	1661	1.3
	180	25%	-	-	-	-	416	2.4	435	2.8	488	3.1	-	-	514	4.2	684	2.5
		30%	-	-	-	-	285	3.5	294	4.1	332	4.5	-	-	354	6.1	583	3.7
		20%	-	-	-	-	-	-	743	1.6	750	2	-	-	800	2.7	1350	1.6
TF-2042-33	140	25%	-	-	-	-	-	-	544	2.2	405	3.7	-	-	423	5.1	744	2.9
42" Fan		30%	-	-	-	-	-	-	260	4.6	272	5.5	-	-	288	7.5	502	4.3
30 H.P.		20%	-	-	-	-	-	-	910	1.3	937	1.6	-	-	981	2.2	1661	1.3
	160	25%	-	-	-	-	-	-	472	2.5	483	3.1	-	-	514	4.2	900	2.4
THF-4042		30%	-	-	-	-	-	-	319	3.8	333	4.5	-	-	354	6.1	617	3.5
6 Million		20%	-	-	-	-	-	-	1088	1.1	-	-	-	-	-	-	1963	1.1
BTU/HR	180	25%	-	-	-	-	-	-	564	2.1	-	-	-	-	-	-	1080	2
		30%	-	-	-	-	-	-	382	3.2	-	-	-	-	-	-	744	2.9

1. Drying rates are estimated using 45°F. and 85% R.H. ambient air conditions.
2. Grain dried to 15% final moisture.
3. 1/5 CFM per Bushel aeration system recommended.
4. Drying charts are for shelled corn. Charts are to be user only as a guide, since ambient conditions will vary.

BATCH DRY LOG

Batch No.	Date	Time	Ambient Temp.	Humidity	Grain to be Dried	Plenum	Initial Moisture Content	Burner Switch Setting	Fan Switch Setting	Grain Thermostat Setting	Dry Timer Setting	Cool Timer Setting	Final Moisture Setting

Batch No.	Comment

Notes:

1. These charts are provided for the convience of the operator. The use of these charts is purely voluntary.
2. The reason for using these charts is to provide the operator with information to assist in the Initial setup of the system every year.

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