Farm Fans - We Define Grain Drying

DriTek Plus Portable Dryer

OPERATORS MANUAL 2005

PNEG-1457 (Preliminary)

Two Fan Portable Dryer Models

DRI TEK plus
Network Dryer Control

READ THESE INSTRUCTIONS BEFORE INSTALLATION and OPERATION.
SAVE FOR FUTURE REFERENCE.

Thank you for choosing a FFI DriTek Plus grain dryer. These units are among the finest grain dryers ever built; designed to give you excellent operating performance and reliable service for many years.

This manual describes the installation and operation for all standard production model dryers. These dryers are available with liquid propane or natural gas fuel supply, single phase 230 volt, three phase 230 or 460 volt (60Hz) electrical power.

USE CAUTION IN THE OPERATION OF THIS EQUIPMENT

The design and manufacture of this dryer is directed toward operator safety. However, the very nature of a grain dryer having a gas burner, high voltage electrical equipment and high speed rotating parts does present a hazard to personnel which cannot be completely safeguarded against without interfering with efficient operation and reasonable access to components.

Use extreme caution in working around high speed fans, gas-fired heaters, augers and auxiliary conveyors which may start without warning when the dryer is operating on automatic control.

Continued safe dependable operation of automatic equipment depends, to a great degree, upon the owner. For a safe and dependable drying system, follow the recommendations within the manual and make it a practice to regularly inspect the operation of the unit for any developing problems or unsafe conditions.

Take special note of the Operating Precautions listed on Page 4 before attempting to operate the dryer.

Keep the dryer clean. Do not allow fine material to accumulate in the plenum chamber.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT.

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PRIOR TO INSTALLATION, PURCHASER HAS THE RESPONSIBILITY TO RESEARCH AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES WHICH MAY APPLY TO THE LOCATION AND INSTALLATION.

CONTENTS

OPERATING PRECAUTIONS

1. Read and understand the operation manual before attempting to operate the unit.

2. Keep ALL guards, safety decals, and safety devices in place. Never operate dryer while guards are removed.

3. Keep visitors, children and untrained personnel away from dryer at all times.

4. Never attempt to operate the dryer by jumping or otherwise bypassing any safety devices on the unit.

5. Always set the main power supply disconnect switch to OFF and lock it in the OFF position using a padlock before performing any service or maintenance work on the dryer or the auxiliary conveyor equipment.

6. Before attempting to remove and reinstall the propeller, make certain to read recommended procedure listed within the SERVICING section of the manual.

7. Keep the dryer and wet holding equipment CLEAN. Do not allow fine material to accumulate.

8. Set pressure regulator to avoid excessive gas pressure applied to a burner during ignition and when burner is in operation. See Table 2-1 for operating gas pressures. Do not exceed maximum recommended drying temperatures.

9. Do not operate the dryer if any gas leak is detected. Shut down and repair before further operation.

10. Clean grain is safer and easier to dry. Fine material can be highly combustible, and it also increases resistance to airflow and requires removal of extra moisture.

11. Use CAUTION in working around high-speed fans, gas burners, augers, and auxiliary conveyors which start automatically.

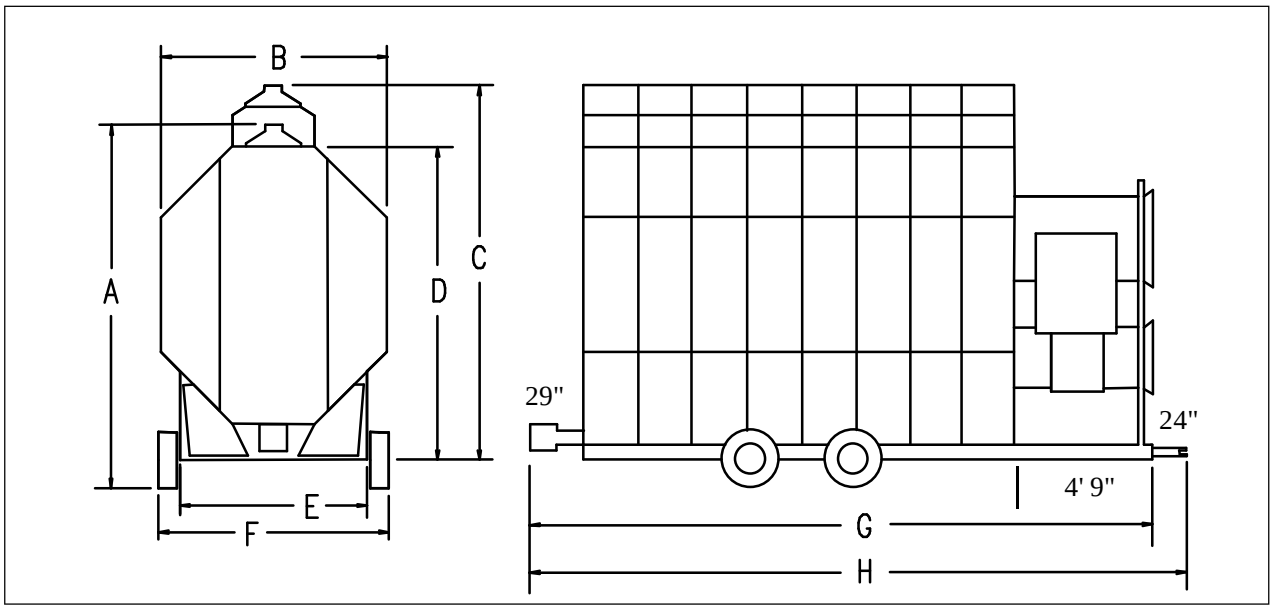
12. Be certain that capacities of auxiliary conveyors are matched to dryer auger capacities.

13. Do not operate in an area where combustible material will be drawn into the fan.

14. The operating and safety recommendations in this manual pertain to the common cereal grains as indicated. When drying any other grain or products, consult the factory for additional recommendations.

15. Routinely check for any developing gas plumbing leaks. Check LP vaporizer for contact with burner vanes.

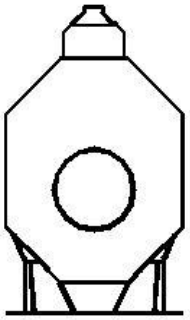
Figure 1.1 DRYER DIMENSIONS



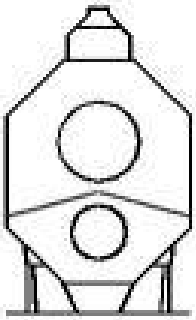
Single Module Transport and Installation Dimensions

Values are valid for transportation of stack modules.

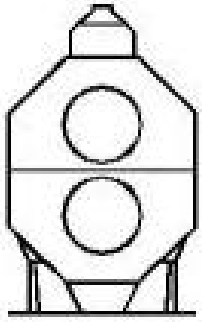
	Dryer Basket	A Transport Height	B Installed Width	C Installed Height		D Height w/o Wet Bin	E Frame Width	F Transport Width	G Installed Length	H Transport Length
				Wet Bin	Standard Top					
Single fan CFAB series dryers	150 (8 ft)	11' 11"	8'	13'	11' 6"	10' 3"	6' 5"	8'	15' 2"	17' 2"
	190 (10 ft)	11' 11"	8'	13'	11' 6"	10' 3"	6' 5"	8'	17' 2"	19' 2"
	270 (12 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	19' 2"	21' 2"
	320 (14 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	21' 2"	23' 2"
	370 (16 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	23' 2"	25' 2"
	400 (18 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	25' 2"	27' 2"
	460 (20 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	27' 2"	29' 2"
	511 (22 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	29' 2"	31' 2"
	601 (26 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	33' 2"	35' 2"
C2100A series dryers	2120 (14 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	21' 2"	23' 2"
	2122 (16 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	23' 2"	25' 2"
	2125 (18 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	25' 2"	27' 2"
	2130 (20 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	27' 2"	29' 2"
	2132 (22 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	29' 2"	31' 2"
	2140 (26 ft)	13' 5"	8'	14' 6"	13'	11' 9"	6' 5"	8'	33' 2"	35' 2"
CFSA series dryers	320 (14 ft)	13' 5"	8' 8"	14' 6"	13'	11' 9"	6' 5"	8'	21' 2"	23' 2"
	410 (18 ft)	13' 5"	8' 8"	14' 6"	13'	11' 9"	6' 5"	8'	25' 2"	27' 2"
	510 (22 ft)	13' 5"	8' 8"	14' 6"	13'	11' 9"	6' 5"	8'	29' 2"	31' 2"
	600 (26 ft)	13' 5"	8' 8"	14' 6"	13'	11' 9"	6' 5"	8'	33' 2"	35' 2"



Single Fan Profile



Two Fan Profile with 60/40 Plenum



Two Fan Profile with 50/50 Plenum

Single Fan Dryer Specifications

	CFAB 150 8 ft	CFAB 190 10 ft	CFAB 270 12 ft	CFAB 320 14 ft	CFAB 370 16 ft	CFAB 400 18 ft	CFAB 460 20 ft	CFAB 511 22 ft	CFAB 601 26 ft
Total Holding Capacity (bushels)	173	216	294	357	436	509	565	622	735
Grain Column Holding Capacity (bushels)	149	186	257	300	376	414	460	506	598
Fan	28" 10-13 Hp	28" 10-13 Hp	36" 15 Hp	40" 15 Hp	40" 15 Hp	42" 20 Hp	42" 25 Hp	42" 30 Hp	42" 40 Hp
Top Auger	8" Dia. 1.5Hp	8" Dia. 2Hp	8" Dia. 2Hp	8" Dia. 5Hp	8" Dia. 5Hp	8" Dia. 5Hp	8" Dia. 7.5Hp	8" Dia. 7.5Hp	8" Dia. 10Hp
Capacity (BHP)	680	925	1150	1800	2800	2800	2800	2800	2800
Bottom Auger	8" Dia. 1Hp	8" Dia. 1.5Hp	8" Dia. 2Hp	8" Dia. 3Hp	8" Dia. 3Hp	8" Dia. 3Hp	8" Dia. 5Hp	8" Dia. 5Hp	8" Dia. 7.5Hp
Meter Roll Drive	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp
Capacity - Max. Rate[1] (BHP)	545	680	815	955	1089	1225	1360	1495	1770
Electrical Load (Fans, Top & Bottom Augers[2])									
1 phase, 220 Volt	56	77	96	100	108	--	--	--	--
3 phase, 220 Volt	36	44	52	56	65	95	107	114	150
3 phase, 440 Volt	18	22	26	28	33	46	53	57	75

1. Actual discharge rate is controlled by meter roll speed adjustment, at 5% to 100% of maximum rate.
2. Excludes auxiliary load and unload conveyor equipment.

Two Fan 60/40 Plenum Dryer Specifications

	C2120A 14 ft	C2122A 16 ft	C2125A 18 ft	C2130A 20 ft	C2132A 22 ft	C2140A 26 ft
Total Holding Capacity (bushels)	375	436	490	544	599	708
Grain Column Holding Capacity (bushels)	322	376	415	460	517	600
Fans	28" 10-13Hp/28" 10-13Hp	28" 10-13Hp/36" 15Hp	28" 10-13Hp/36" 15Hp	28" 10-13Hp/39" 20Hp	28" 10-13Hp/42" 20Hp	28" 10-13Hp/42" 25Hp
Top Auger	8" Dia. 5Hp	8" Dia. 5Hp	8" Dia. 5Hp	8" Dia. 7.5Hp	8" Dia. 7.5Hp	8" Dia. 10Hp
Capacity (BHP)	1800	2800	2800	2800	2800	2800
Bottom Auger	8" Dia. 3Hp	8" Dia. 3Hp	8" Dia. 3Hp	8" Dia. 5Hp	8" Dia. 5Hp	8" Dia. 7.5Hp
Meter Roll Drive	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp
Capacity - Max. Rate[1] (BHP)	955	1089	1225	1360	1495	1770
Electrical Load (Fans, Top & Bottom Augers[2])						
1 phase, 220 Volt	146	187	187	--	--	--
3 phase, 220 Volt	92	96	96	135	144	154
3 phase, 440 Volt	46	48	48	68	72	77

1. Actual discharge rate is controlled by meter roll speed adjustment, at 5% to 100% of maximum rate.
2. Excludes auxiliary load and unload conveyor equipment.

Two Fan 50/50 Plenum Dryer Specifications

	CFSA 320 14 ft	CFSA 410 18 ft	CFSA 510 22 ft	CFSA 600 26 ft
Total Holding Capacity (bushels)	357	459	622	735
Grain Column Holding Capacity (bushels)	300	386	506	598
Fans	28" 10-13 Hp (2)	28" 10-13 Hp (2)	36" 15 Hp (2)	39" 20 Hp (2)
Top Auger	8" Dia. 5Hp	8" Dia. 5Hp	8" Dia. 7.5Hp	8" Dia. 10Hp
Capacity (BHP)	1800	1800	2800	2800
Bottom Auger	8" Dia. 3Hp	8" Dia. 3Hp	8" Dia. 5Hp	8" Dia. 7.5Hp
Meter Roll Drive	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp	SCR, 1/3 Hp
Capacity - Max. Rate[1] (BHP)	955	1225	1495	1770
Electrical Load (Fans, Top & Bottom Augers[2])				
1 phase, 220 Volt	136	156	217	--
3 phase, 220 Volt	72	92	127	166
3 phase, 440 Volt	36	46	63	83

1. Actual discharge rate is controlled by meter roll speed adjustment, at 5% to 100% of maximum rate.
2. Excludes auxiliary load and unload conveyor equipment.

SECTION 2
TRANSPORTATION & INSTALLATION

TRANSPORTING DRYER

An optional Transport Kit is available for transporting the unit by truck or tractor. Make certain to observe the following **safety precautions:**

1. Recommended towing hitch height: 16" to 17".
2. Hitch pin to be not less than 3/4 inch in dia. and securely fastened so it will not come out in travel.
3. Use a safety chain.
4. Dryer must be towed empty and in accordance with applicable state or provincial regulations.
5. Recommended tire pressure 55-60 psi (cold).
6. Maximum towing speed: 45 mph.
7. After first 50 miles and every 200 miles thereafter:

a. Check hub and spindle temperature immediately after stopping. Temperature should not exceed 150 degrees F. May be hot to touch, but not melting lubricant.

b. Check wheel lug bolts; they are factory torqued at 115 to 120 ft/lbs. Retighten, if required, to approximately 90 ft/lbs.

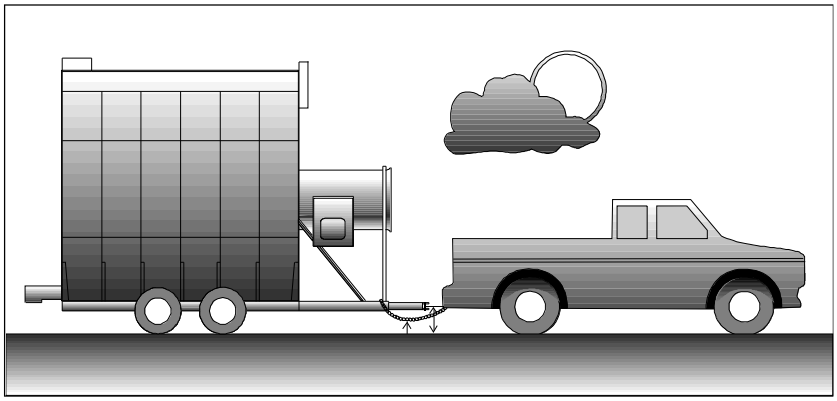


Figure 1: Use a 14-17 inch towing hitch height and a safety chain.

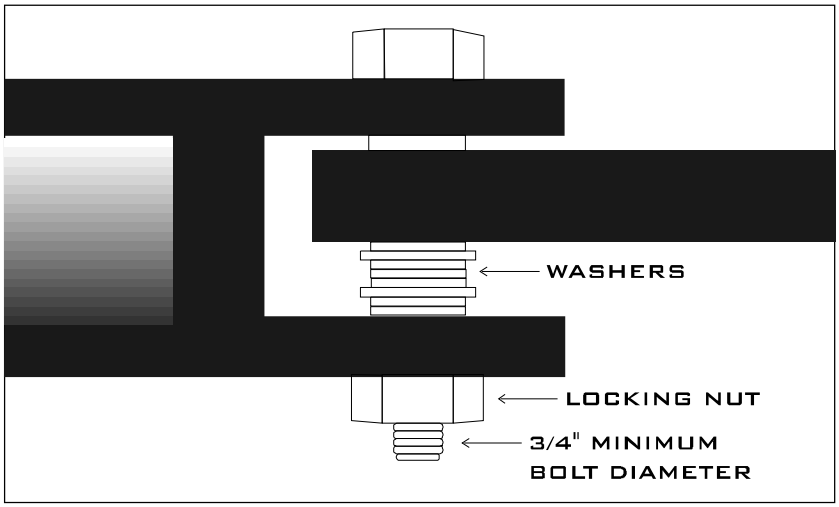


Figure 2: A 3/4 inch hitch bolt and washers fastened with a locking nut at the bottom of the hitch.

INSTALLATION

SYSTEM LAY-OUT — Consider the grain handling system, storage bins, and existing conveyors in selecting the dryer site, in order to facilitate wet grain supply and dry grain discharge to conveyors.

SITE SELECTION — The dryer is not to be operated inside a building or in any area not permitted by electrical codes, fuel installation regulations, or insurance requirements. Do not operate in an area where combustible material can be drawn into the fans. Maintain a minimum distance of three feet to other structures. Refer to Fig. 1-1 for dryer dimensions.

LEG SUPPORT — The wheels are provided only for transportation of the empty dryer. Before loading any grain into the dryer, it is necessary to support the frame of the unit. The optional Leg Set Package with a 16" minimum height is the recommended method of support. See Fig. 1-1 for recommended number of supports. Concrete blocks or other means may be used provided they can carry the total weight of dryer when filled with grain. If using blocks or other means, use shims to provide uniform, level support, at a minimum of 16" above the concrete slab to provide space for clean-out and for aux. conveyors. Hitch tongue should be removed, but hitch and fan support must be left on; they are not a part of the transport.

CONCRETE SLAB — An 8" thick reinforced concrete slab is recommended as the basic support for the dryer, located in a well drained area. The slab should be large enough to provide working area around the dryer, with a surface elevation consistent with other parts of the grain handling and storage system.

TIE-DOWN ANCHORS — Anchor points may be cast into the concrete slab, or dryer may be tied down by cable and turnbuckle to anchors installed at edge of slab. In any case, dryer must be securely anchored to support blocks and concrete base, to prevent overturn or lateral movement by wind forces.

FILLING POINT — Wet grain must enter the dryer at the hopper at the rear end of the top auger, since the top auger moves grain forward, toward the paddle switch controlling the top auger (except for special front-loading units).

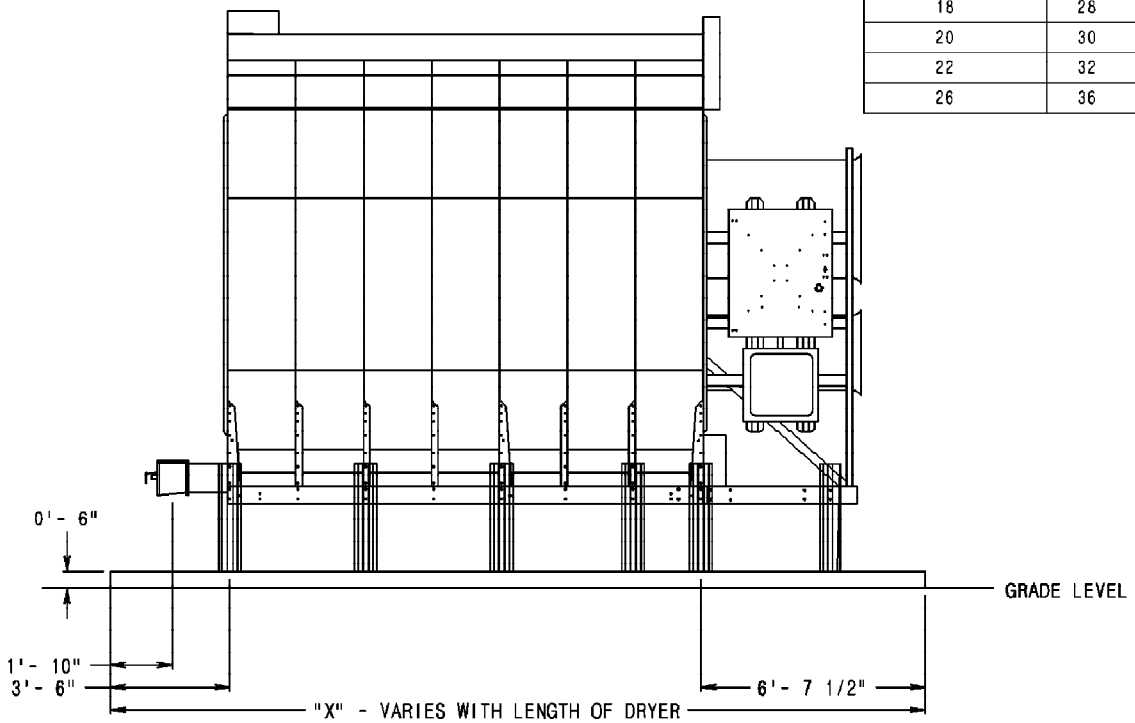
WET GRAIN SUPPLY — A wet holding bin may be utilized to supply grain to the dryer, with gravity flow into the dryer loading conveyor, or gravity flow from a wagon or truck into a loading conveyor may be used to fill the dryer. In any case, the dryer must have a constant supply of wet grain. Auxiliary loading conveyors should be sized to nearly match the capacity of the top auger, to avoid air loss problems caused by underfilling during high drying rate operations.

Figure 2.3 LEG SUPPORTS

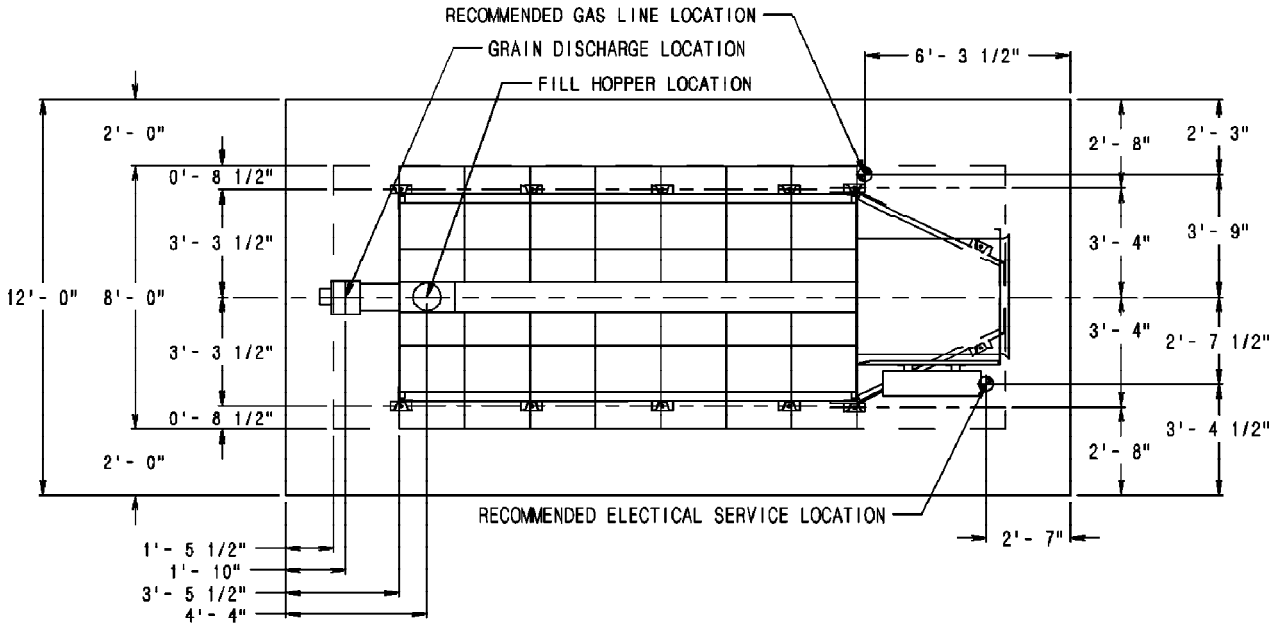
NOTE: INSTALLATION OF THE LEG STANDS SHOULD START AT THE BACK COLUMN LEG OF THE DRYER AND CONTINUE ON EVERY OTHER COLUMN LEG TOWARDS THE FRONT.

SOME DRYERS WILL HAVE TWO LEG STANDS NEAR THE FRONT OF THE BASKET AS SHOWN IN THE DRAWING.

BASKET LENGTH	X (FEET)
08	18
10	20
12	22
14	24
16	26
18	28
20	30
22	32
26	36

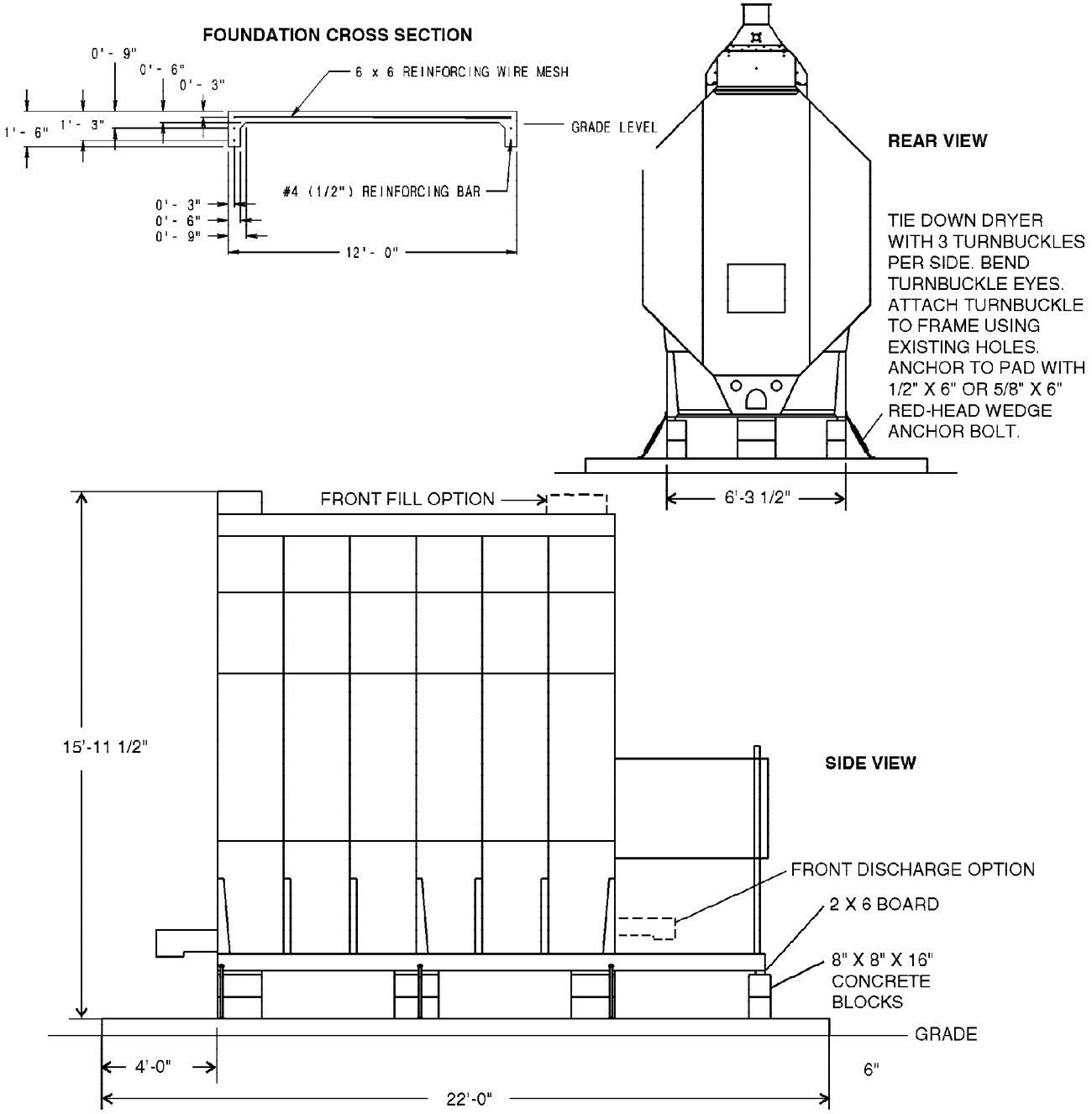


SIDE VIEW



TOP VIEW

Figure 2.4 CONCRETE BLOCK SUPPORTS



Dryer Basket Length	8	10	12	14	16	18	20	22	26
Conctrete Pad Size	12 x 18	12 x 20	12 x 22	12 x 24	12 x 26	12 x 28	12 x 30	12 x 32	12 x 36
Yards of Concrete	5.9	6.5	7.1	7.7	8.3	8.9	9.2	10.1	11.3
Reinforcing Rods (20" each)	6	7	7	7	8	8	8	9	10
Wire Mesh (ft^2)	216	240	264	288	312	336	360	384	432
Steel Legs (minimum)	8	10	10	12	12	14	14	16	18
Anchors	4	4	6	6	6	8	8	8	10
Blocks	14	14	18	18	18	22	22	26	30
Feet of 2 x 6	14	14	18	18	18	22	22	26	30
Turnbuckles	4	4	6	6	6	8	8	8	10
Estimated Manhours	10	12	14	18	18	20	22	24	28

Quantities are approximate and requirements may vary due to site elevations.
Setup times do not include preparing site and pouring concrete pad.

WET GRAIN LOADING — The dryer will automatically start the top auger and any loading conveyor electrically connected to the power circuit provided in the main control box. At the beginning, dryer will completely fill, requiring approximately its full holding capacity. During drying, the top auger will start and stop, as required to maintain the dryer full of wet grain.

LOAD TIMER — The unit is equipped with a load timer within the control box to provide automatic shut-down on wet grain outage, if the top auger operates for a time exceeding the adjustable timer setting.

DISCHARGE AUGER EXTENSIONS — Special discharge auger extension kits are available, with an additional length of 1 to 10 feet (one foot increments) to provide dry grain discharge points at various distances from the rear of the dryer, for direct discharge into elevator legs or other conveyors. Extensions are available with either a solid or perforated tube.

AUXILIARY CONVEYOR OVERLOAD RELAYS — The dryer is factory equipped with overload protection devices for a 10 HP loading conveyor and a 7.5 HP take-away conveyor. If other HP ratings are used, it will be necessary to change the settings of the overload devices or possibly replace the overload device with one properly sized for the HP rating.

FUEL CONNECTIONS

LIQUID PROPANE (LP) DRYERS WITH INTERNAL VAPORIZERS

LIQUID DRAW — The dryer is designed to operate on liquid propane, with liquid draw from a supply tank. A piping system is provided on the dryer, including strainer, pressure relief valve, and manual shut-off valve; a pressure regulator is provided on the fan-heater unit, between vaporizer and burner.

AMMONIA TANKS — Do not use propane supply tanks that have previously held ammonia or fertilizer solutions. These substances are extremely corrosive and may damage fuel supply and burner parts.

OIL OR WATER IN TANKS — With liquid draw from the supply tank, any water present in the tank may freeze in the piping and controls in cold weather. To ensure that tanks are free of moisture, the usual precaution is to purge with methanol. Avoid tanks which may contain an accumulation of oil or heavy hydrocarbons from long use on a vapor withdrawal system.

Figure 2.1 A grain dryer connected to a liquid propane tank.

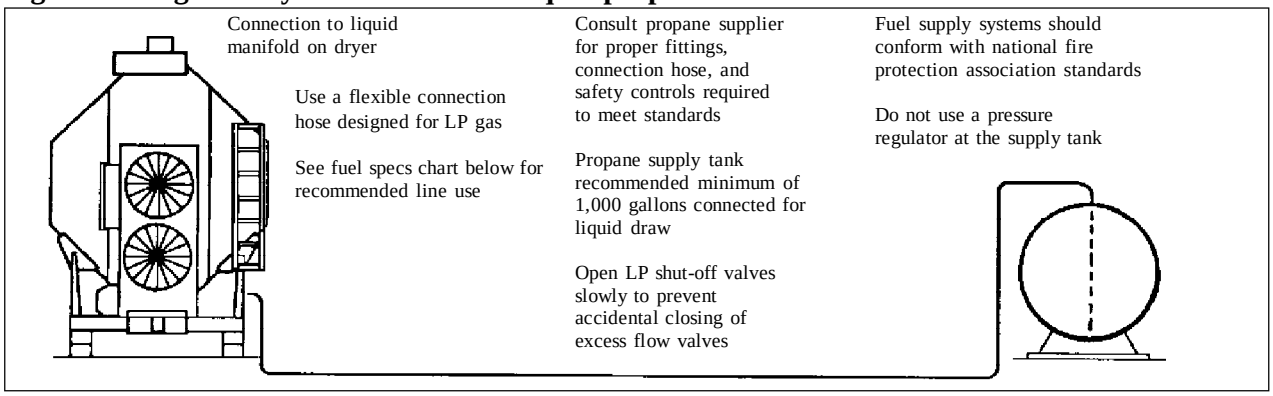


Chart 2.1 LP orifice sizes.

FAN DIA.	HP/Hz	LP ORIFICE DATA		
		ORIFICE SIZE		PART No.
28"	10-13 / 60	9/32"	0.281"	OP-1028LP-F
36"	10-15 / 60	9/32"	0.281"	OP-1036LP-F
39"	20 / 60	7/16"	0.438"	OP-2039LP-F
40"	15 / 60	11/32"	0.3438"	THF-3058
42"	20 / 60	3/8"	0.375"	THF-3247
42"	25 / 60	25/64"	0.3906"	THF-3249
42"	30 / 60	7/16"	0.4375"	THF-3059
42"	40 / 60	29/64"	0.4531"	THF-3252

Chart 2.2 LP fuel system specifications & recommendations.
(tank pressure)

Dryer Model	Max. Heat Capacity (BTU/hr)	Fuel Line Size (Minimum for 100')
CFAB150	2,300,000	1/2"
CFAB190	3,000,000	1/2"
CFAB270	4,600,000	1/2"
CFAB320	5,800,000	1/2"
CFAB370	5,800,000	1/2"
CFAB400	6,800,000	1/2"
CFAB460	7,500,000	1/2"
CFAB511	8,800,000	3/4"
CFAB601	10,300,000	3/4"
C2120A	5,300,000	1/2"
C2122A	6,900,000	1/2"
C2125A	6,900,000	1/2"
C2130A	9,000,000	3/4"
C2132A	9,800,000	3/4"
C2140A	10,500,000	3/4"
CFSA320	5,000,000	1/2"
CFSA410	6,000,000	1/2"
CFSA510	9,200,000	3/4"
CFSA600	12,000,000	3/4"

NATURAL GAS

AS VOLUME AND PRESSURE — The dryer is designed to operate on natural gas having a heat value of about 1,000 BTU per cubic foot. The dryer is equipped with a natural gas supply pipe system connected to the heater solenoid valves. A regulated pressure of 5 to 10 PSI must be provided at the connection to the dryer, with gas available in sufficient volume to maintain operating pressure.

Figure 2.2 A grain dryer connected to a natural gas supply tank.

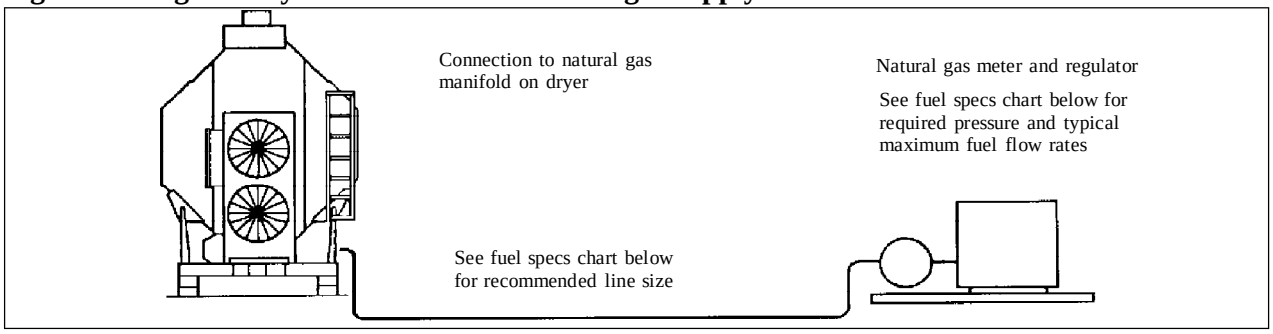


Chart 2.3 NG orifice sizes.

FAN DIA.	HP/Hz	NG ORIFICE DATA		
		ORIFICE SIZE		PART No.
28"	10-13 / 60	25/64"	0.391"	OP-1028NG-F
36"	10-15 / 60	7/16"	0.438"	OP-1036NG-F
39"	20 / 60	9/16"	0.562"	OP-2039NG-F
40"	15 / 60	33/64"	0.5156"	THF-3246
42"	20 / 60	35/64"	0.5469"	THF-3248
42"	25 / 60	37/64"	0.5781"	THF-3250
42"	30 / 60	19/32"	0.5938"	THF-3251
42"	40 / 60	41/64"	0.6406"	THF-3253

Chart 2.4 NG fuel system specifications & recommendations.

(10 psig operating pressure)

Dryer Model	Max. Heat Capacity (BTU/hr)	Fuel Line Size (Minimum for 100')
CFAB150	2,300,000	1-1/2"
CFAB190	3,000,000	1-1/2"
CFAB270	4,600,000	2"
CFAB320	5,800,000	2"
CFAB370	5,800,000	2"
CFAB400	6,800,000	2"
CFAB460	7,500,000	2"
CFAB511	8,800,000	2-1/2"
CFAB601	10,300,000	2-1/2"
C2120A	5,300,000	2"
C2122A	6,900,000	2"
C2125A	6,900,000	2"
C2130A	9,000,000	2-1/2"
C2132A	9,800,000	2-1/2"
C2140A	10,500,000	2-1/2"
CFSA320	5,000,000	2"
CFSA410	6,000,000	2"
CFSA510	9,200,000	2-1/2"
CFSA600	12,000,000	2-1/2"

POWER SUPPLY

An adequate power supply and proper wiring are important factors for maximum performance and long life of the dryer. Electrical service must be adequate enough to prevent low voltage damage to motors and control circuits. Power supply for single phase models must include a neutral wire.

TRANSFORMERS AND WIRING VOLTAGE DROP

Advise the service representative of your local power supplier that an additional load will be placed on the line. Check on KVA rating of transformers, considering total horsepower load. The power supply wiring, main switch equipment and transformers must provide adequate motor starting and operating voltage. Voltage drop during motor starting should not exceed 14% of normal voltage, and after motor is running at full speed it should be within 8% of normal voltage.

POWER SUPPLY DISCONNECT

All dryers are equipped with a power disconnect switch in the power box to permit total power shutdown before opening the power box door, as required for inspection and service. The power disconnect switch is located on the power box door for quick shutdown.

MACHINE TO EARTH GROUNDING

It is very important that a *Machine To Earth Ground Rod* be installed at the dryer. Place the ground rod that comes standard, within 8 feet of the dryer and attach it to the dryer control panel with at least a #6 solid, bare, copper ground wire and the clamp provided. The grounding rod located at the power pole will not provide adequate grounding for the dryer. The proper grounding will provide additional safety in case of any short and will ensure long life of all circuit boards, SCR drive, and the ignition system. The ground rod must be in accordance with local requirements.

PROPER INSTALLATION OF GROUND ROD

It is not recommended that the rod be driven into dry ground. Follow these instructions for proper installation.

1. Dig a hole large enough to hold 1 to 2 gallons of water.
2. Fill hole with water.
3. Insert rod through water and jab it into the ground.
4. Continue jabing the rod up and down. The water will work its way down the hole, making it possible to work the rod completely into the ground. This method of installation assures good contact with the surrounding soil, making a proper ground.
5. Connect the bare, copper ground wire to the rod with the proper clamp.
6. Connect ground wire to control panel with the ground lug provided in the control box.
7. Ground wire must not have any breaks or splices. Insulated wire is not recommended for grounding applications.

CONNECTING AUXILIARY CONVEYORS

The auxiliary load and auxiliary unload augers or conveyors can be wired directly to the dryer. Electrical Load Information (page 14,15) shows the maximum horse power and amps of auxiliaries that can be wired to the dryer. If an auxiliary motor is larger than what is recommended, then it must be powered from a source outside the dryer, and must use a separate contactor and overload protection device for each motor. However, the operation of the auxiliaries can be performed by the control panel.

The following charts provide information for the electrician wiring the grain dryer, and are a reference guide for parts. It is recommended that you contact your local power company and have a representative survey the installation to see that your wiring is compatible with their system and that adequate power is supplied to your unit. Remember that the only thing connected to the recommended service amps should be your grain dryer.

Standard electrical safety practices and codes should be used. (Refer to National Electrical Code Standard Handbook by National Fire Protection Association.) A qualified electrician should make all electrical wiring installations.

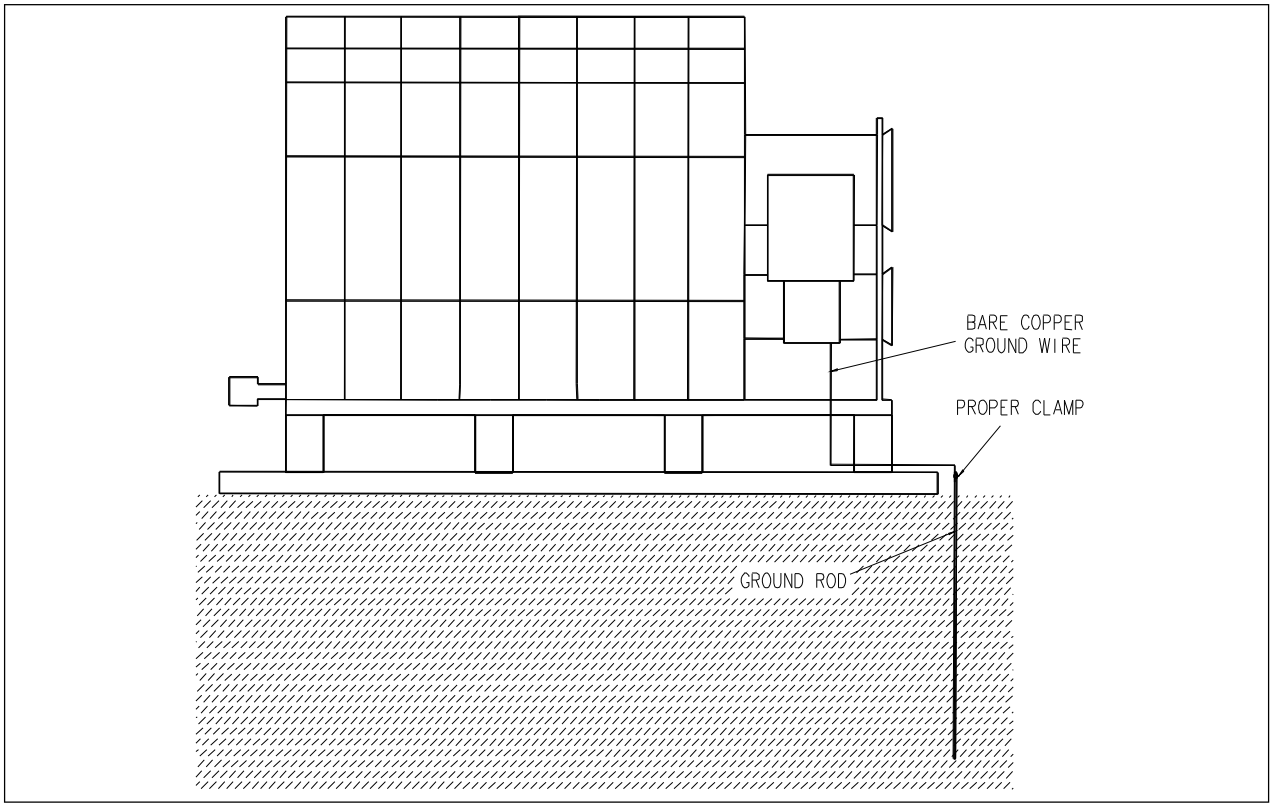


Figure 7: Installation of a ground rod (standard with dryer purchase) specifically for the grain dryer is necessary for safety and equipment preservation.

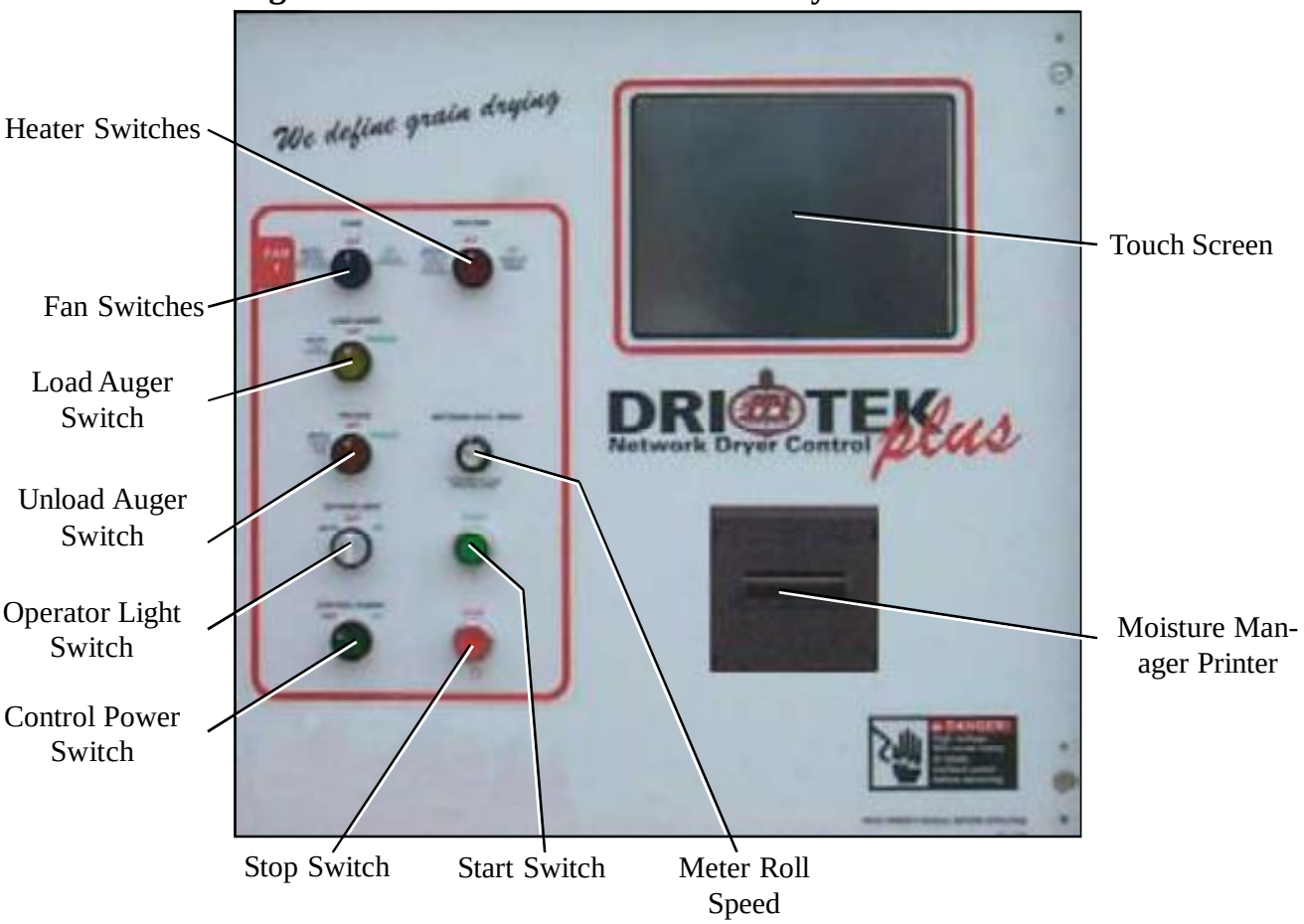
Auxiliary Load Information

Dryer Model	Phase	Voltage	Auxililary Size	Motor Amps	Wire Gauge
CFAB150	1	220	(2) 7.5 hp	153	8
	3	220	(2) 7.5 hp	104	10
	3	440	(2) 7.5 hp	57	14
CFAB190	1	220	(2) 7.5 hp	168	8
	3	220	(2) 7.5 hp	101	10
	3	440	(2) 7.5 hp	56	14
CFAB270	1	220	(2) 7.5 hp	196	8
	3	220	(2) 7.5 hp	114	10
	3	440	(2) 7.5 hp	62	14
CFAB320	1	220	(2) 7.5 hp	231	8
	3	220	(2) 10 hp	145	10
	3	440	(2) 10 hp	78	14
CFAB370	1	220	(2) 7.5 hp	231	8
	3	220	(2) 10 hp	145	10
	3	440	(2) 10 hp	78	14
CFAB400	3	220	(2) 10 hp	158	10
	3	440	(2) 10 hp	84	14
CFAB460	3	220	(2) 15 hp	219	6
	3	440	(2) 15 hp	115	10
CFAB511	3	220	(2) 15 hp	231	6
	3	440	(2) 15 hp	120	10
CFAB601	3	220	(2) 15 hp	277	6
	3	440	(2) 15 hp	143	10

Auxiliary Load Information

Dryer Model	Phase	Voltage	Auxililary Size	Motor Amps	Wire Gauge
C2120A	1	220	(2) 7.5 hp	31	8
	3	220	(2) 10 hp	26	10
	3	440	(2) 10 hp	13	14
C2122A	1	220	(2) 7.5 hp	31	8
	3	220	(2) 10 hp	26	10
	3	440	(2) 10 hp	13	14
C2125A	1	220	(2) 7.5 hp	31	8
	3	220	(2) 10 hp	26	10
	3	440	(2) 10 hp	13	14
C2130A	1	220	(2) 7.5 hp	31	8
	3	220	(2) 15 hp	39	6
	3	440	(2) 15 hp	19.5	10
C2132A	3	220	(2) 15 hp	39	6
	3	440	(2) 15 hp	19.5	10
C2140A	3	220	(2) 15 hp	39	6
	3	440	(2) 15 hp	19.5	10
CFSA320	1	220	(2) 7.5 hp	31	8
	3	220	(2) 10 hp	26	10
	3	440	(2) 10 hp	13	14
CFSA410	1	220	(2) 7.5 hp	31	8
	3	220	(2) 10 hp	26	10
	3	440	(2) 10 hp	13	14
CFSA510	1	220	(2) 7.5 hp	31	8
	3	220	(2) 15 hp	39	6
	3	440	(2) 15 hp	19.5	10
CFSA600	3	220	(2) 15 hp	39	6
	3	440	(2) 15 hp	19.5	10

Fig. 3.1 DriTek Plus Control Panel Layout



CONTROL POWER SWITCH

The control power to energize the Vision Control System is turned on or off with this switch.

Note: This switch does not disconnect the power that is present at the breakers, contactors, transformer(s), fuses or other electrical components found in the upper and lower control boxes. Turn the Main Disconnect Handle to the OFF posistion prior to servicing any of the installed components.

FAN SWITCH

Each fan is turned on or off with this switch. The on position operates the fan continuously during staged batch and continuous flow modes. The auto position operates the fan in staged batch during the dry and cool cycle but the fan will not operate during the unload cycle. The switch will light up whenever the air pressure switch is sensing air pressure and the dryer is full of grain.

Note: The bottom fan on your dryer is always Fan 1.

HEATER SWITCH

Each burner is turned on or off with this switch. The auto position operates the burner in staged batch during the dry cycle only. The on position will operate the burner only when the fan is running. The switch will light up only when the flame sensor detects the flame.

Note: The bottom burner on your dryer is always Burner 1.

LOAD AUGER SWITCH

This is used to select the operation of the fill auger. In both the auto and manual position the load auger will operate if the dryer is low on grain and will automatically shut off when the dryer is full. In the auto position only, the dryer will shut down after a preset period of time set on the out of grain timer, or if grain flow is interrupted to the dryer. The switch will light whenever the load auger is operating.

Note: If the load auxiliary controls are being used, this switch will also control the operation of the auxiliary equipment.

UNLOAD SWITCH

The unload switch turns the metering rolls and discharge auger on or off, and selects the operation of the metering rolls.

Note: If the unload auxiliary controls are being used, this switch will also control the operation of the auxiliary equipment.

OUTSIDE LIGHT SWITCH

The dryers outside service light is turned on or off here. It also may be set on auto, which turns the light on while the dryer is running and off if a shutdown occurs.

RUN SWITCH

This switch starts and operates the dryer based on switch settings. If other switch settings are in the off position, individual dryer components can be operated by turning the drying mode switch to continuous flow, pressing the dryer power run button and then turning on the desired dryer component.

STOP SWITCH

This switch stops all dryer functions. If an automatic dryer shutdown occurs, first determine and correct the cause of the shutdown. Then, press the dryer power stop button to reset the dryer before restarting.

TOUCH SCREEN DISPLAY

BOOT SCREEN

With the Power Switch in the on position, pushing the Start Switch will start the Vision computer. The first screen to appear will be the boot screen (see fig. 3.2). Notice that there are two “buttons” on the boot screen. The Update Program button is only used for program updates that may be released at a later date. Touching the Start Dryer button will display the Main Screen.

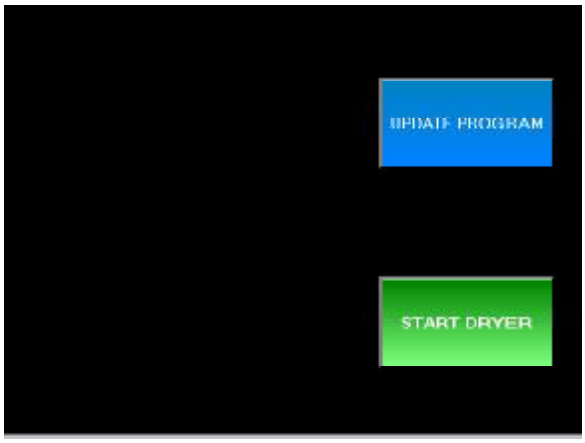


Fig. 3.2 Boot Screen

MAIN SCREEN

All of the timer settings, delays and dryer operation parameters are setup with the touch screen. Below is an image of the Dryer Status Screen or Main Screen. As you can see the main screen is divided into six different sections. These sections show the operator the status of the dryer, the grain temperature/moisture, unload status, plenum temperature, and access to setup screens and other features of the Vision Control system. A description of each section of the Main Screen starts at the bottom of this page.

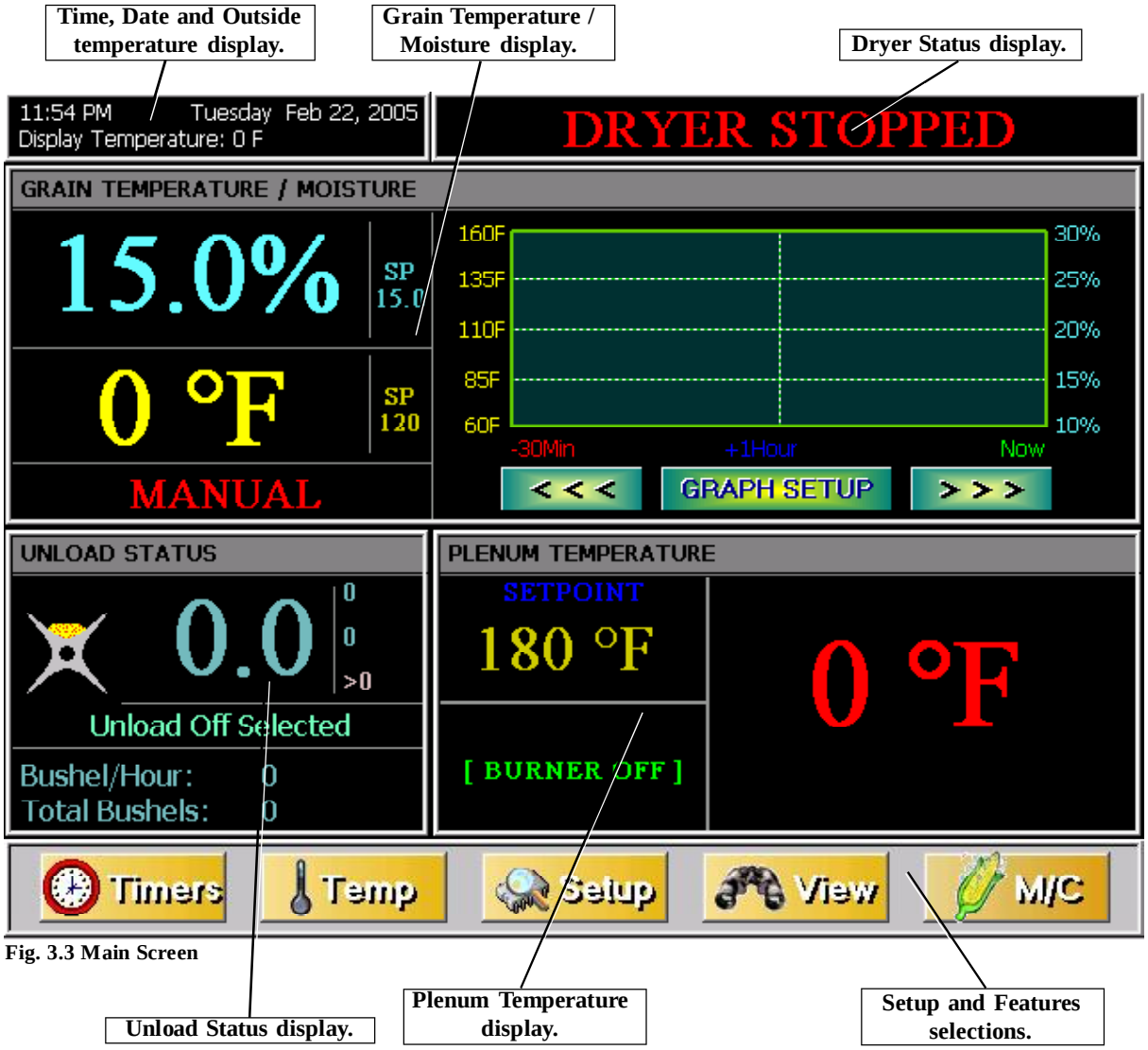


Fig. 3.3 Main Screen

Time, Date and Outside temperature display

This display shows the time, date and outside temperature.

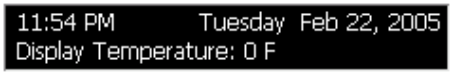


Fig. 3.4 Time, Date & Temp display

Dryer Status display

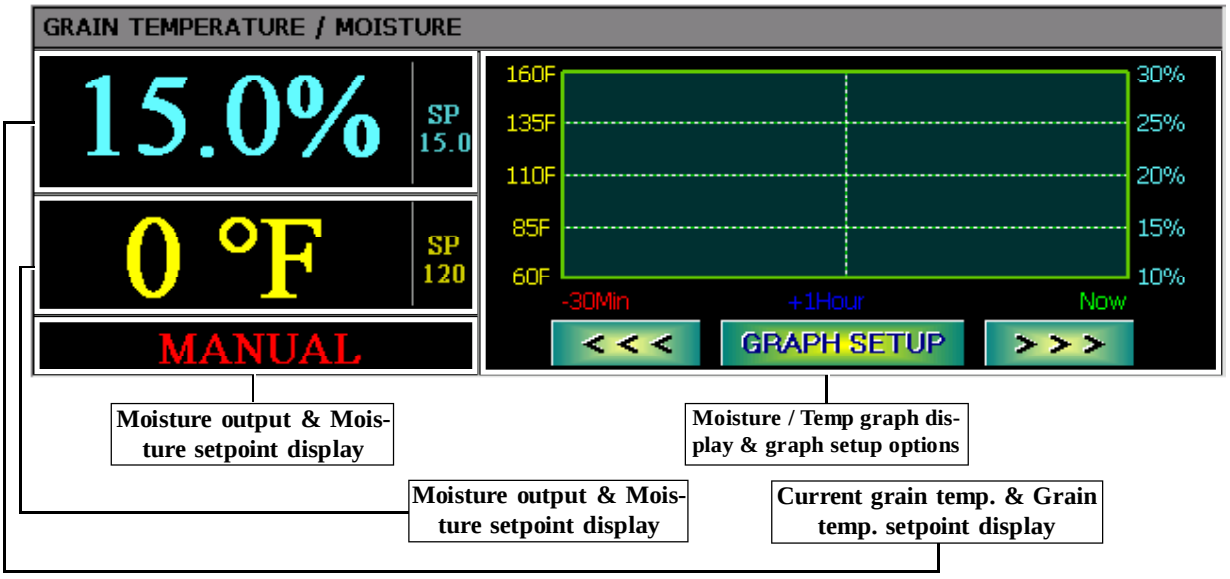
This display shows status of the dryer.

Fig. 3.5 Dryer Status Display

Grain Temperature / Moisture display

This display shows the moisture output and moisture setpoint, grain temp. and temp. setpoint, and a graph display.

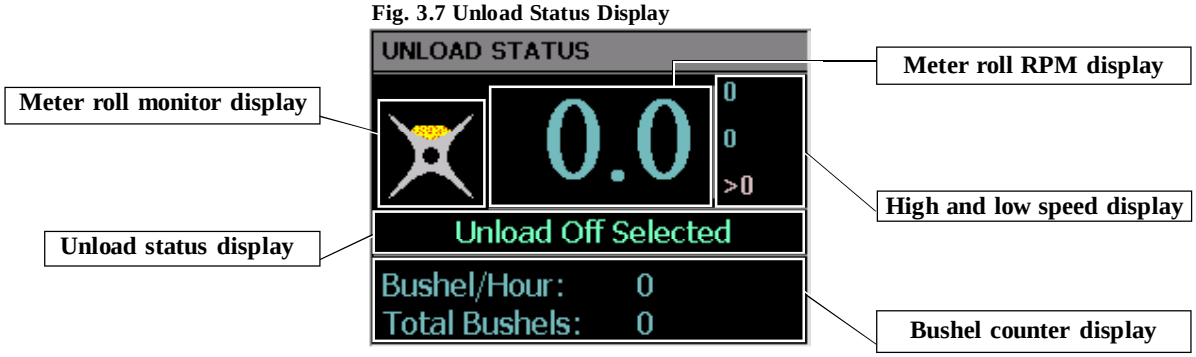
Fig. 3.6 Grain Temp. / Moist. Display



Unload Status display

This display shows the status of the unload system.

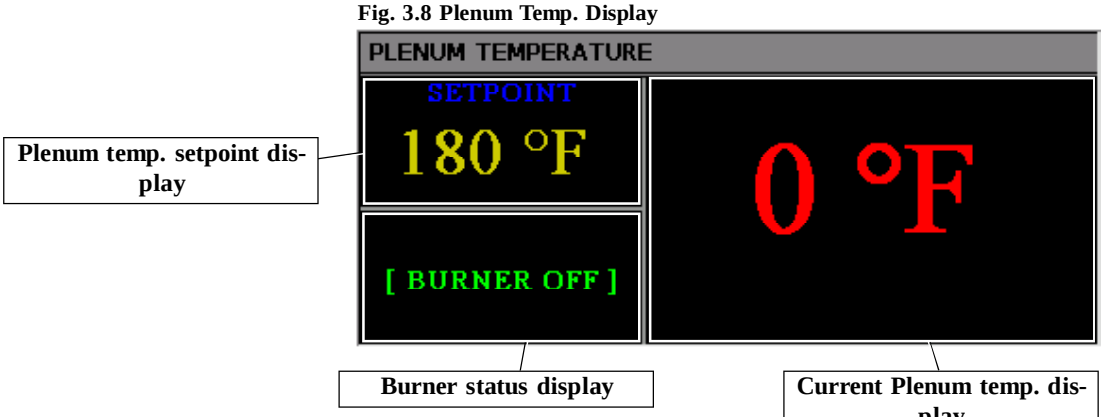
Fig. 3.7 Unload Status Display



Plenum Temp. display

This display shows the plenum temperature setpoint, burner status, and current plenum temperature.

Fig. 3.8 Plenum Temp. Display



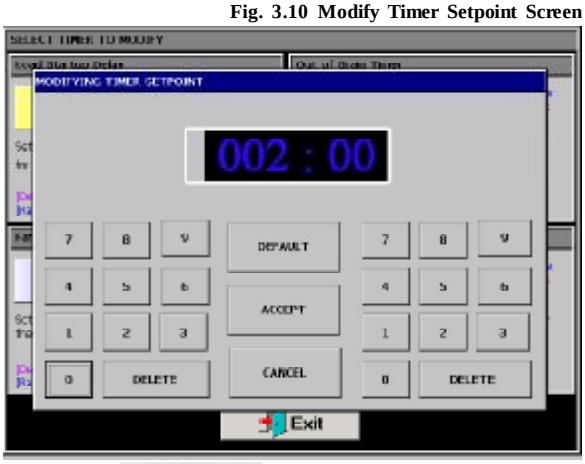
TIMERS BUTTON

Touching the Timers button will display a timers screen (see fig. 3.9). This screen shows the current setting for each timer, the default setting, and the range that each timer can be set to. Enter a new timer setting by touching the button for the timer you want to change.

Example: To change the Out Of Grain (OOG) timer from its default setting of 8 minutes to a different length of time touch the OOG Timer button and the Modifing Timer Setpoint screen is displayed (see fig. 3.10). Touch the DELETE button to erase the old setpoint. Use the number pad displayed on the screen to enter the new timer setpoint (the number pad on the left is used to modify minutes and the number pad on the right is used to modify seconds). Touching the DEFAULT button will set the timer to its default setting. Touch the ACCEPT button to exit and save or CANCEL to exit without saving.

Fig. 3.9 Timer to Modify Screen

Fig. 3.10 Modify Timer Setpoint Screen



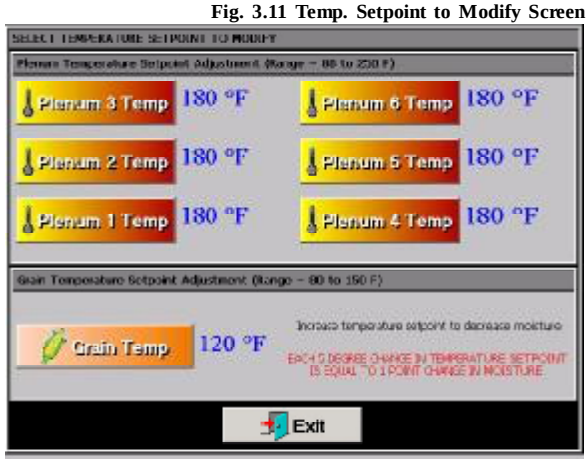
Touch the Exit button on the Timers Screen to return to the Main Screen.

TEMP BUTTON

Touching the Temp button will display temperature setup screen (see fig. 3.11). This screen shows the current setting for each plenum, the grain temperature, and the range that each one can be set to. Enter a new temperture setpoint by touching the button for the plenum or grain temp. you want to change.

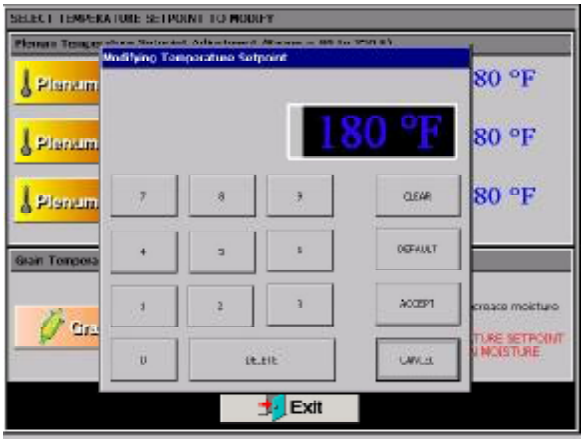
Example: To change the Plenum 1 Temp from its default setting of 180 degrees F to a different temperature touch the Plenum 1 Temp button and the Modifing Temperature Setpoint screen is displayed (see fig. 3.12). Touch the DELETE button to erase the old setpoint. Use the number pad displayed on the screen to enter the new temperature setpoint and touch ACCEPT to save that setting.

Fig. 3.11 Temp. Setpoint to Modify Screen



Note: The bottom plenum on your dryer is always Plenum 1.

Fig. 3.12 Modify Temp. Setpoint Screen

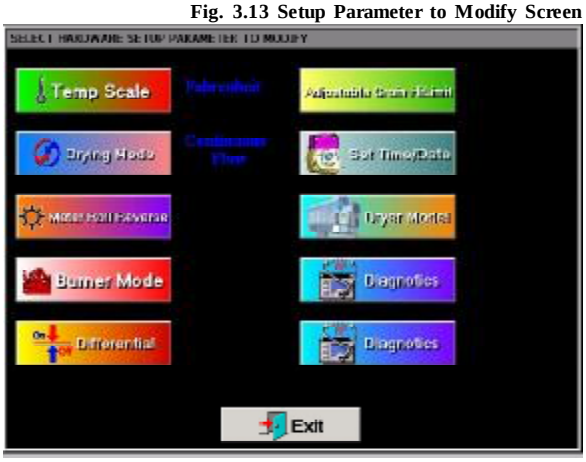


Touch the Exit button on the Timers Screen to return to the Main Screen.

SETUP BUTTON

Touching the Setup button will display the Setup Screen (see fig. 3.13).

Fig. 3.13 Setup Parameter to Modify Screen



TEMP. SCALE BUTTON

Touch the Temp Scale button to choose the Farenheit or Celsius temperature scales. Just touching this button will change the temp. scale.

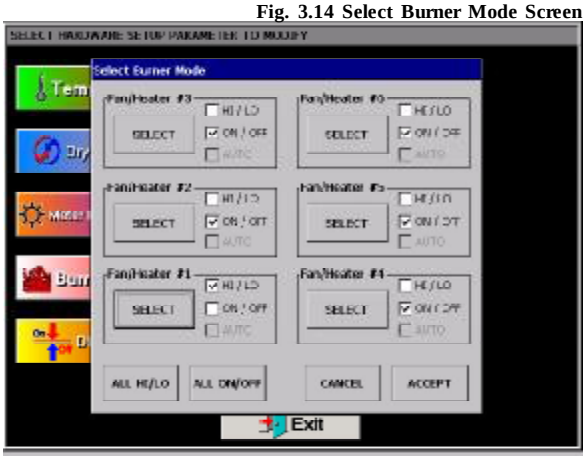
DRYING MODE BUTTON

Touch the Drying Mode button to choose staged batch or continuous flow drying modes. Just touching this button will change the drying mode.

BURNER MODE BUTTON

Touching the Burner Mode button will display the burner mode setup screen (see fig. 3.14).

Fig. 3.14 Select Burner Mode Screen



Note: The bottom fan heater on your dryer is always fan heater 1.

This screen will allow the operator to select the type of burner operation for each burner. In the HI/LO mode the burner will switch from high heat to low heat when the plenum temperature setpoint has been reached. In the ON/OFF mode the burner will shut off when the upper temperature set point has been reached. To select either the HI/LO or ON/OFF modes touch the SELECT button for the fan heater you wish to change. Touching the ALL HI/LO button will set all burners to HI/LO mode and touching ALL ON/OFF will set all burners to ON/OFF mode. Touch the ACCEPT button to save any changes and return to the setup screen or touch CANCEL to return to setup screen without saving any changes to the burner modes.

DIFFERENTIAL BUTTON

Touching the 

button will display the differential setup screen (see fig. 3.15).

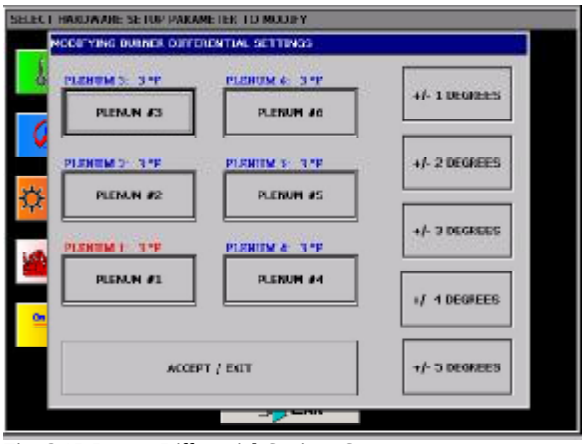


Fig. 3.15 Burner Differential Settings Screen

Adjusting the Burner Differential settings allows the operator to keep the plenum temperature within a certain range.

Example: If you have the temperture setpoint at 180 degrees F and you select +/- 3 DEGREES as the Burner Differential, then the burner will switch to low heat at 177 degrees F and back to high heat at 183 degrees F.

To modify a burner differential setting touch the desired plenum button, then select one of the five differential setting buttons of the right side of the Modify Burner Differential Settings screen.

Example: To set the burner differential for plenum 2 to +/-4 degress.

Touch the 

button, then touch 

Burner # 2 will now operate 4 degrees above and below the temperature setpoint for plenum 2.
Touch the ACCEPT / EXIT button to return to the Setup screen.

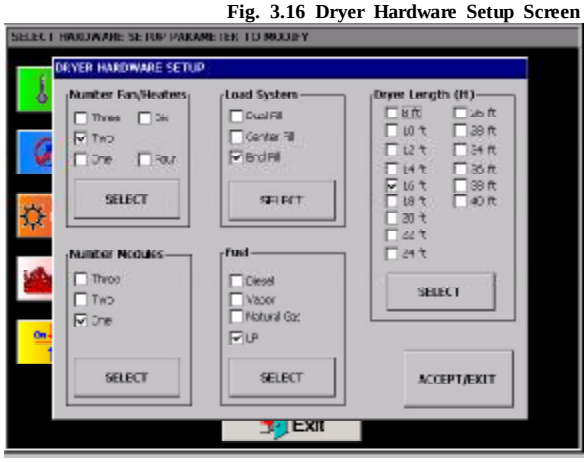
DRYER MODEL BUTTON

Touching the 

button will display the Dryer Hardware Setup screen (see fig. 3.16).

Touch the SELECT button to cycle through the selections for each of the setup perameters.

Fig. 3.16 Dryer Hardware Setup Screen



Example: To setup a 1226 Liquid Propane, rear fill dryer. Touch the SELECT button at Number Fan/Heaters section until the box beside two is checked, then touch the SELECT button at Load Systems section until the box beside end fill is checked. A 1226 is a single module dryer, so SELECT one for number of modules, then LP for the fuel.
Touch the ACCEPT/EXIT button to return to the Setup Screen.

SECTION 4
TEST FIRING

DRYER PRESEASON CHECKS

This section gives a series of checks to be carried out on the dryer before starting for the first time in the drying season. If any of the checks fail to produce the stated result, you should consult your dealer.

YOU SHOULD NOT ATTEMPT TO USE THE DRYER UNLESS ALL THE PRE-START CHECKS HAVE BEEN SUCCESSFULLY COMPLETED.

BEFORE ATTEMPTING TO OPERATE THE DRYER MAKE SURE ALL SAFETY SHIELDS ARE IN PLACE, ALL BOTTOM CLEANOUT AND REAR ACCESS DOORS ARE CLOSED AND ALL PERSONNEL ARE CLEAR OF THE DRYER

INSPECT THE METERING ROLLS

Open all metering roll access doors and inspect each compartment for any bolts, nuts or other foreign material, that may cause possible jamming of the metering rolls.

ELECTRICAL POWER

Turn on the electrical power supply to the dryer, set all circuit breakers to on, including the safety disconnect handle mounted on front of the dryer power panel.

CONTROL POWER SWITCH

Turn the control power switch to on. The switch will light up. The Boot Screen will appear on the display. Once the Boot Screen appears, touch the Start Dryer button and the dryer will perform a safety circuit check. If a fault is found, the cause will be displayed. If all are found safe, the controller will supply power to the electronic fuel shut-off valve (Maxon), if so equipped, and the dryer is ready to be started.

RUN BUTTON

Push the dryer run button, and all the selector switches on the control panel will be activated.

FUEL CHECK

If using LP gas, make sure the tank has plenty of fuel and that the tank must not have a regulator mounted on the liquid line. Slowly open the main fuel supply valve at the tank. Then, open the electronic shut off valve (Maxon valve), if so equipped, or open the manual shut off valve on the dryer to allow fuel flow to the dryer.

If using natural gas, make sure an adequate supply is available. Turn on the valve along the supply line. Then, open the electronic shut off valve (Maxon valve). Inspect all gas lines and connections for possible leaks.

Any gas leaks must be fixed immediately!

LOAD AUGER

With the grain supply shut off, quickly bump the load auger switch to manual, and see if the load auger rotates clockwise as viewed from the drive end, or counterclockwise if the dryer is a front load model. If the wet grain supply auxiliary is wired to the dryer it should also rotate in the correct direction at this time.

Turn the load auger switch to the auto position. The top auger and wet grain supply auxiliary should run for eight (8) minutes, and then the dryer will shutdown leaving the safety shutdown message (out of grain warning) displayed. Press the dryer power stop button to reset the panel, then press the start button.

UNLOAD ONE SPEED OPERATION

To check one speed operation place the unload switch in the one speed setting. Turn the metering roll dial until the metering rolls start rotating. The bottom auger should rotate counterclockwise as viewed from the drive end. The metering roll drive motor should rotate clockwise as viewed from the drive end of the gear box. If the dry grain take away auxiliary is wired to the dryer, it should start and rotate in the proper direction.

UNLOAD TWO SPEED OPERATION

To check two speed operation move the unload switch to the two speed position, change the low speed reading to 200 and high speed on 600. Adjust the moisture control (grain temperature) setpoint to a value **lower** then the ambient temperature or until the moisture control switch light comes on. The metering roll speed is now controlled by the low speed setting. Adjust the moisture control (grain temperature) setpoint to a value **higher** then the ambient temperature or until the light goes out leaves the metering rolls controlled by the high speed setting.

METERING ROLL OPERATION

To check the metering roll operation turn the knob clockwise, and the metering roll speed should increase. Turning either knob counterclockwise will decrease the speed. Make sure the drive chain tension is properly adjusted and all sections of the metering rolls rotate. Turn the unload switch off after these checks are complete. The bottom auger will continue to run for 60 seconds (default cleanout delay setting) after the switch is turned off to allow for cleanout.

Note: Due to the nature of the DC drive motor used on the meter rolls, it is possible for the brushes inside the motor to become corroded if the dryer has not been operated for several months. This will cause the meter rolls not to function. To fix this problem, use a rubber mallet or a piece of wood to tap the DC drive motor. The shock is usually all the motor needs to start working again. You should not have any more problems with this during the rest of your drying season.

METERING ROLL ONE SPEED DISPLAY

This is used to adjust the speed of the metering roll when the single speed automatic moisture control feature of the dryer is in use.
This is used to:
• Set the speed of the metering rolls when the one speed automatic moisture control feature of the dryer is utilized.
• Set the speed of the metering rolls during continuous flow operation or .

Just turn the meter roll adjustment knob and put the is in the **single** speed position, your display will now show the following:

If you are finished with your adjustments, press the button. The screen will also return to the main display if you don't turn or press the knob for about 8 seconds.

METERING ROLL TWO SPEED DISPLAY

• Set the speed of the metering roll when the two speed automatic moisture control feature of the dryer is utilized.

If you turn the meter roll adjustment knob and the is in the **two** speed position, you can adjust your 2 speed settings. Notice that the numbers next to Low is flashing. This indicates that any adjustment you make with the meter roll know will only affect this setting. To change the High setting, press the meter roll adjusment knob until it clicks. You screen should now flash the numbers next to the High setting. Any adjustment made at this point will only affect this setting.

If you are finished with your adjustments, press the button. The screen will also return to the main display if you don't turn or press the knob for about 8 seconds.

Note: This screen is only available if the moisture control switch is on and the unload switch is in the 2 speed position.

FAN SWITCHES

Momentarily turn each fan switch to on and observe the fan rotation. The fan should run counterclockwise. Sometimes on three phase models all motors will run backwards. They can easily be reversed by interchanging two of the three power supply wires. All power should be switched and locked off before attempting to reverse the connections. Reverse the two outside wires, L1 and L3, and leave the middle one in the same position.

Note: The bottom fan on your dryer is always refered to as Fan 1.

BURNER SAFETY

To check the burner safety function, first make sure the main gas valve is off. Turn the fan switch on and allow the fan to start. Then, turn the heater switch on for that fan. The dryer will shut down after 20 seconds. The safety message, "Ignition Failure x" will appear. Reset the dryer and repeat for the other fan/heater(s).

BURNER TEST FIRE

Test fire each burner by starting the fan. Then, turn the burner switch to on. Turn on the fuel supply, and the burner should ignite after a short purge delay of approximately 10 seconds. Gas pressure should be shown on the gauge. At this time adjust the plenum set point to 200°F (93°C), causing the burner to operate on hi-fire. Observe the gas pressure on gauge, and lower the plenum set point until it causes the burner to cycle into lo-fire. When the plenum temperature set point is met, the gas pressure should show a noticeable drop, indicating that the cycle solenoid is closed and the burner is being supplied with less gas through the bypass valve. At this time set the hi-fire and lofire pressure settings. Use the pressure regulator for hi-fire and the needle valve on the cycle solenoid for lo-fire. The computer should cycle the burners between high and low, approximately 4 to 5 times per minute.

Only use pressure required to obtain desired temperature.

Approximate settings should be:

LP Gas	Hi-Fire 6-15 PSI (41-102 kPa)
	Lo-Fire 2-6 PSI (14-41 kPa)
Natural Gas	Hi-Fire 6-10 PSI (41-69 kPa)
	Lo-Fire 1-3 PSI (7-20 kPa)

If the burner remains on hi-fire and does not cycle, increase the regulator setting on the propane models, or the supply valve on the natural gas models in order to reach the plenum set point. If the burner remains in lo-fire and does not cycle, slightly decease gas pressure with the needle valve. If the gas pressure is decreased too much a popping or fluttering sound will be heard. Also, anytime the high pressure side is adjusted, the low pressure side needs to be checked. Repeat the test for each fan/heater unit.

DRYER SHUTDOWN

To shut down the dryer,

1. Close the fuel supply valve at the tank or valve along the fuel line.
2. If the burner is operating, let the dryer run out of fuel, and it will shut down automatically due to .
3. Close the fuel valve at the dryer, and press the dryer power .
4. Turn off the .
5. Turn off the safety disconnect handle on the front of the power box, and turn off the main power to the dryer.

EMERGENCY

In case of emergency push the dryer or the emergency stop button. This will interupt power to the control panel and the fan, burner and all augers will stop immediately.

SECTION 5
DRYER OPERATION

DRYER STARTUP AND OPERATION

FULL HEAT DRYING

Full Heat Operation

With this type of drying, the grain is discharged hot, with no cooling. Drying capacity is substantially higher with FULL HEAT than the DRY AND COOL process.

Dryeration Process

The full heat process is called “DRYERATION”. Recommended procedure is to temper the hot grain for 4 to 10 hours in a cooling bin or storage bin, then cool by an aeration fan at an air flow rate of 1/2 to 1 CFM per bushel of grain in the hot batch being cooled. The process of tempering and slow cooling provides higher quality in shelled corn because of less stress cracking of kernels and less breakage during subsequent handling of the grain.

Final Moisture

From 1 to 3% apparant moisture is usually removed in the cooling process, so hot shelled corn is removed from the dryer at about 17% moisture if the final desired moisture content is 15%.

DRYING TEMPERATURES

Shelled Corn

For shelled corn with an initial moisture content of 25-30%, the recommended maximum drying temperature is 220-240° F (104-116° C) for the top fan and 170-190° F (77-88° C) for the bottom fan. For lower initial moisture content, lower drying temperatures are recommended.

Small Grain

For drying small grain (wheat, oats, milo), 150° F (66° C) is suggested.

Rice, Soybeans

Drying temperatures are critical in drying rice and soybeans. A temperature of 130° F (54° C) is recommended to keep grain temperature low.

Drying Efficiency

The general rule for obtaining the highest drying efficiency is to use the highest possible drying temperatures which will not adversely affect grain quality.

DRYER SHUTDOWN

Cooling Hot Grain

If the dryer is to be shut down while filled with grain, it is recommended that hot grain be cooled for 10 to 15 minutes, especially in cold weather, to prevent water vapor condensation and possible freezing of such condensate following shut down.

INITIAL SETUP PARAMETERS

Timer and Delay Settings

Turn the control power switch to on. The monitor (touch screen) will display a copyright message and model number, total running time in hours and minutes and the current time and date. To activate the controller touch

the 

button.

The Dryer Status screen (Main screen) will be displayed. At the bottom of the Main screen are a row of buttons used to setup how the dryer will operate.

To set the timers and delay settings touch the 

button. The Select Timers To Modify screen is now displayed.

Fan and Auger Delays

Load Timer

The load timer is used to delay the starting of the load auger when the dryer is unloading to prevent the load auger from cycling to often. To change the setting of this delay follow these instructions:

Touch the 

button on Select Timers To Modify display. The Modifying Timer Setpoint display is now shown. The default time for the Load Timer is 2 minutes. This timer can be modified to any time within the range of 15 seconds to 10 minutes. To enter a new Load Timer setting, use the number pads displayed on the touch screen (left number pad will change the value for minutes, right number pad for seconds). Once a new timer setting has been entered touch the ACCEPT button to exit and save new timer setting. NOTE: Touching the CANCEL button will exit the Modify Timer Setpoint screen without saving any changes that may have been made and timer setpoint will return to the previous setpoint saved.

Out of Grain (OOG) Timer

The Out of Grain timer should be set to the maximum time it takes for your dryer to refill during continious or batch mode drying.

If the dryer runs out of grain while the load auger switch is in the **auto** position, the out of grain timer automatically shuts off the dryer after the period of time preset on the timer.

Touch the 

button on Select Timers To Modify display. The Modifying Timer Setpoint display is now shown. The default time for the OOG Timer is 8 minutes. This timer can be modified to any time within the range of 0 to 30 minutes. To enter a new OOG Timer setting, use the number pads displayed on the touch screen (left number pad will change the value for minutes, right number pad for seconds). Once a new timer setting has been entered touch the ACCEPT button to exit and save new timer setting.

NOTE: Touching the CANCEL button will exit the Modify Timer Setpoint screen without saving any changes that may have been made and timer setpoint will return to the previous setpoint saved.

NOTE: Anytime your TIME LEFT counter reaches zero, your dryer will shut down with a "Out of Grain" warning.

Fan Sequence Delay

The Fan Sequence Delay controls the amount of time between each fan startup to reduce the dryer startup amps. Default setting is 3 seconds. To change the setting of this delay follow these instructions:

Touch the 

button on the Select Timers To Modify display. The Modifying Timers Setpoint display is now shown. The default time for the Fan Delay is 3 seconds. This timer can be modified to any time within the range of 1 to 15 seconds. To enter a new Fan Delay setting, use the number pads displayed on the touch screen (left number pad will change the value for minutes, right number pad for seconds). Once a new timer setting has been entered touch the ACCEPT button to exit and save new timer setting. NOTE: Touching the CANCEL button will exit the Modify Timer Setpoint screen without saving any changes that may have been made and timer setpoint will return to the previous setpoint saved.

Unload Delay

The Unload Delay is used to control the amount of time the unload auger runs after the metering rolls stop to allow the unload auger to clean itself out. To change the setting of this delay follow these instructions:

Touch the 

button on the Select Timers To Modify display. The Modifying Timers Setpoint display is now shown. The default time for the Unload Delay is 1 minute. This timer can be modified to any time within the range of 0 to 10 minutes. To enter a new Unload Delay setting, use the number pads displayed on the touch screen (left number pad will change the value for minutes, right number pad for seconds). Once a new timer setting has been entered touch the ACCEPT button to exit and save new timer setting. NOTE: Touching the CANCEL button will exit the Modify Timer Setpoint screen without saving any changes that may have been made and timer setpoint will return to the previous setpoint saved.

STARTUP

Startup Procedure

At the beginning of each harvest and before filling the dryer with grain make sure to inspect the dryer for rodent damage, proper belt and chain tension and missing or damaged safety shields. Test operate the dryer using the pre start check procedures.

1. Before attempting to operate the dryer make sure that all safety shields are in place, all plenum bottom closure panel doors are closed, all rear access doors are closed and all personnel are clear of the grain dryer and grain handling machinery.

2. Turn all selector switches on the control panel to the off position.

3. Turn on the electrical power supply to the dryer, and move the safety disconnect handle mounted on the dryer's upper power box to on.

4. Turn the control power switch to on. The switch will light up. A copyright message, model number, total running time in hours and minutes, current date and time will appear. At this point the controller will lock out all other dryer functions. Once the time and date screen appears, touch the 

button and the dryer will perform its safety circuit checks. If a fault is found the cause will be displayed on the Display screen (touch screen). If all safeties do not detect a problem the controller will allow the electronic fuel shutoff valve (Maxon) to be manually opened, if so equipped, and the drying mode switch will light up, indicating that the dryer is ready to be started.

5. Move the load auger switch to manual, and push the dryer power start switch. The top auger will immediately start, and the load auger switch will light up. If additional loading equipment is wired to the dryer it will also start immediately.

6. When the dryer is full of grain the top auger will stop automatically, and any auxiliary loading equipment wired to the dryer will also stop.

CONTINUOUS FLOW DRYING MODE

Full Heat-Continuous Flow Operation

1. Turn the **CONTORL POWER** switch to on.

2. After the date and time appear on screen, touch the 

button.

3. Touch the 

button at the bottom of the Dryer Status (Main) display. Once the Select Hardware Parameter To Modify screen is displayed touch the 

button until Continuous Flow is displayed next to it. Then touch the 

button to return

to the Dryer Status screen.

4. Make sure the UNLOAD switch is **OFF**.

5. Make sure the MOISTURE CONTROL switch is **OFF**.

6. Open the main fuel supply valve on the tank if using LP gas, or open the fuel supply line if using natural gas. Turn on the Maxon electric shut off valve, if so equipped, or open the manual shut off valve to allow fuel flow to the dryer.

7. Push the DRYER POWER START switch.

8. The dryer should already be filled with grain. Turn the LOAD AUGER switch to the **AUTO** position. In both the auto and manual positions, the dryer grain level switch will automatically keep the dryer full of grain. In the auto position the dryer will shut down after a preset time period using the out of grain timer.

9. Look in the Drying Charts section in the back of this manual for the FULL HEAT chart settings that correspond to your model of dryer. You will see the settings for (Initial Moisture) (Moisture Removed) (Approx. Dry Time) (1 Speed) (2 Speed Low) (2 Speed High) pick the line that has your initial starting moisture. These are the settings we will be referring to during this start up procedure.

10. Turn each FAN switch to **ON**. The fan will start, and the switch will light up when air pressure is detected.

11. Start each burner by turning the HEATER switch to **ON**. After purging for approximately 10 seconds the burner will fire, and the heater switch will light up. This indicates that the flame sensing circuit is sensing burner flame. For information concerning burner adjustment see the Dryer pre start checks section of this manual.

12. Run the fan(s) and heater(s) for about 10% longer than the (APPROX. DRYING TIME) required for the moisture you are trying to dry.

13. Example: 10% removal would be about 54 minutes, 15% removal would be about 76 minutes and 20% removal would be about 100 minutes. Add 10 minutes to insure that the grain is dry.

14. After the time in step 12 turn the UNLOAD to **1 SPEED** and set the METER ROLL SPEED, (HIGH SPEED). to the setting for 1 SPEED operation. Grain should begin to run at this time. Run time for this is about 10% longer than the (APPROX. DRYING TIME) required for the moisture you are trying to dry. This allows the moisture in the dryer to reach an even gradient top to bottom without having any highs or lows in it. It will however, over dry some of the corn a little.

15. Increase the drying temperature to 190 deg. for single fans or for multiple fan dryers set the heat chambers 30 to 60 degrees apart. Hottest at the top, most cool at the bottom.

16. DO NOT TRY TO ADJUST THE DRYER FOR MOISTURE DURING THIS PROCESS OR YOU WILL ESTABLISH HIGH AND LOW SWINGS IN THE MOISTURE CONTROL. IT WILL TAKE SEVERAL HOURS TO WORK ITSELF OUT.

17. After the run time in step 14 you are ready to set up the moisture control. Now turn the MOISTURE CONTROL to the **ON** position. Set the temperature to about 100 deg.

18. Turn the UNLOAD to 2 SPEED. Set the METER ROLL SPEED, LOW SPEED and HIGH SPEED. to the settings listed for them. Let the dryer run on these settings before trying to adjust moisture or meter roll settings. These settings will not have your grain moisture adjusted exactly where you want it, but will be a good place to start initially. A little different moisture at the bottom of the storage bin is not usually a problem as long as you have full floor aeration.

19. After the run time in step 18 you are ready to adjust the moisture control, and the meter roll speeds if required. Each time you make an adjustment to the moisture control it will take about the time shown in the drying charts to see the results of this adjustment.

Dry and Cool-Continuous Flow Operation

1. Turn the **CONTORL POWER** switch to on.

2. After the date and time appear on screen, press the

button.

3. Touch the 

button at the bottom of the Dryer Status (Main) display. Once the Select Hardware Parameter To Modify screen is displayed touch the

button until Continuous Flow is displayed next to it. Then touch the 

button to return to the Dryer Status screen.

4. Make sure the UNLOAD switch is **OFF**.

5. Make sure the MOISTURE CONTROL switch is **OFF**.

6. Open the main fuel supply valve on the tank if using LP gas, or open the fuel supply line if using natural gas. Turn on the Maxon electric shut off valve, if so equipped, or open the manual shut off valve to allow fuel flow to the dryer.

7. Push the DRYER POWER START switch.

8. The dryer should already be filled with grain. Turn the LOAD AUGER switch to the **AUTO** position. In both the auto and manual positions, the dryer grain level switch will automatically keep the dryer full of grain. In the auto position the dryer will shut down after a preset time period on the out of grain timer.

9. Look in the Drying Charts section in the back of this manual for the DRY AND COOL chart settings that correspond to your model of dryer. You will see the settings for (Initial Moisture) (Moisture Removed) (Approx. Dry Time) (1 Speed) (2 Speed Low) (2 Speed High) pick the line that has your initial starting moisture. These are the settings we will be referring to during this start up procedure.

10. Run the bottom fan(s) and heater(s) (to be used for cooling later) for about 20 minutes. This will start the bottom drying so we can cool it before we begin to discharge grain.

11. Take the remaining number of burners to be started,

divide that into the total drying time required, working up, start each burner that many minutes apart. Run them about 10% longer than the (APPROX. DRYING TIME) total required for the moisture you are trying to dry.

12. Example: 10% removal would be about 60 minutes, 15% removal would be about 85 minutes, and 20% removal would be about 110 minutes. Add 10 minutes to insure that the grain is dry.

13. After the required drying time turn the bottom heater (OFF) cool this section for about 20 minutes. Set the upper plenum thermostats to the decreed temperature (190°-230°F)

14. Turn the UNLOAD to **1 SPEED** and set the METER ROLL SPEED (HIGH SPEED). to the setting for 1 SPEED operation. Run time for this is about 10% longer than the (APPROX. DRYING TIME) required for the moisture you are trying to dry. This allows the moisture in the dryer to reach an even gradient top to bottom without having any highs or lows in it. It will however, over dry some of the corn a little.

15. DO NOT TRY TO ADJUST THE DRYER FOR MOISTURE DURING THIS PROCESS OR YOU WILL ESTABLISH HIGH AND LOW SWINGS IN THE MOISTURE CONTROL. IT WILL TAKE SEVERAL HOURS TO WORK ITSELF OUT.

16. After the run time in step 14 you are ready to set up the moisture control. Now turn the MOISTURE CONTROL to the **ON** position. Set the temperature to about 130 deg.

17. Turn the UNLOAD to 2 SPEED. Set the METERING ROLL SPEED, LOW SPEED and HIGH SPEED. to the settings listed for them. Let the dryer run on these settings before trying to adjust moisture or meter roll settings. These settings will not have your grain moisture adjusted to exactly where you want it, but it will be a good starting place to adjust from. A little different moisture at the bottom of the storage bin is not usually a problem as long as you have full floor aeration.

18. After the run time in step 17, you are ready to adjust the moisture control and the meter roll speeds if required. Each time you make an adjustment to the moisture control it will take about the time shown in drying charts to see the results of this adjustment.

DRYING TIME TABLE……. CFAB150

CORN...Dry & Cool (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	15	21	0.35	12	185								
18	15	28	0.47	12	163	25	0.41	12	173				
19	15	34	0.57	12	146	30	0.50	12	157	27	0.45	12	166
20	15	40	0.67	12	133	35	0.59	12	144	31	0.52	12	153
21	15	47	0.78	12	122	41	0.68	12	133	36	0.60	12	142
22	15	53	0.88	12	113	46	0.77	12	123	41	0.69	12	132
23	15	60	0.99	12	104	52	0.87	12	114	46	0.77	12	123
24	15	67	1.11	12	96	58	0.97	12	106	52	0.87	12	114
25	15	75	1.24	12	89	65	1.09	12	98	58	0.97	12	106
26	15	83	1.39	12	82	73	1.21	12	91	65	1.08	12	99
27	15	93	1.54	12	76	81	1.35	12	84	72	1.20	12	91
28	15	103	1.71	12	70	90	1.50	12	77	80	1.33	12	85
29	15	114	1.90	12	65	100	1.66	12	72	89	1.48	12	78
30	15	126	2.09	12	60	110	1.83	12	66	98	1.63	12	73
31	15	138	2.30	12	55	121	2.01	12	62	107	1.79	12	68
32	15	151	2.51	12	51	132	2.20	12	57	117	1.96	12	63
33	15	164	2.74	12	48	144	2.39	12	53	128	2.13	12	59
34	15	178	2.96	12	45	155	2.59	12	50	138	2.30	12	55
35	15	191	3.18	12	42	167	2.78	12	47	149	2.48	12	52

Drying table based on 100% meter roll speed of…... **544 bph**
unload timer set for **16.9 minutes**

CORN...Full Heat (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out*	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	17	2	0.03	0	486								
18	17	9	0.14	0	361	5	0.09	0	412				
19	17	14	0.24	0	294	10	0.17	0	335	7	0.12	0	377
20	17	20	0.33	0	250	15	0.25	0	286	12	0.19	0	321
21	17	25	0.42	0	218	20	0.33	0	249	16	0.26	0	280
22	17	31	0.51	0	193	25	0.41	0	220	20	0.34	0	248
23	17	37	0.61	0	171	30	0.50	0	196	25	0.41	0	220
24	17	43	0.72	0	153	36	0.59	0	175	30	0.50	0	196
25	17	50	0.84	0	137	42	0.70	0	156	35	0.59	0	176
26	17	58	0.97	0	122	49	0.81	0	140	42	0.69	0	157
27	17	67	1.12	0	110	56	0.94	0	125	48	0.81	0	141
28	17	76	1.27	0	98	65	1.08	0	112	56	0.93	0	127
29	17	87	1.44	0	89	74	1.23	0	101	64	1.06	0	114
30	17	97	1.62	0	80	83	1.39	0	92	72	1.20	0	103
31	17	109	1.81	0	73	93	1.55	0	83	81	1.35	0	94
32	17	121	2.01	0	67	103	1.72	0	76	90	1.50	0	86
33	17	132	2.21	0	62	114	1.90	0	70	99	1.65	0	79
34	17	144	2.40	0	57	124	2.07	0	65	108	1.80	0	73
35	17	155	2.59	0	53	134	2.23	0	61	117	1.95	0	69

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**
Drying table based on 100% meter roll speed of…... **544 bph**
Unload timer set for **16.9 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…….CFAB150

CORN...Full Heat (Continuous flow)

MOISTURE		190 °F			210 °F			230 °F		
%in	%out*	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph
18	17	66	25	361						
19	17	54	31	294	62	27	335			
20	17	46	37	250	53	32	286	59	29	321
21	17	40	42	218	46	37	249	52	33	280
22	17	35	48	193	40	42	220	46	37	248
23	17	31	54	171	36	47	196	40	42	220
24	17	28	60	153	32	53	175	36	47	196
25	17	25	67	137	29	59	156	32	52	176
26	17	22	75	122	26	66	140	29	58	157
27	17	20	84	110	23	73	125	26	65	141
28	17	18	93	98	21	82	112	23	73	127
29	17	16	104	89	19	91	101	21	81	114
30	17	15	114	80	17	100	92	19	89	103
31	17	13	126	73	15	110	83	17	98	94
32	17	12	137	67	14	120	76	16	107	86
33	17	11	149	62	13	131	70	15	116	79
34	17	10	161	57	12	141	65	13	125	73
35	17	10	172	53	11	151	61	13	134	69

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**

Drying table based on 100% meter roll speed of…... **544 bph**

WHEAT, BARLEY, MILO...Dry & Cool (automatic batch)

MOISTURE		140 °F				155 °F				175 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	32	0.54	12	151	28	0.46	12	163				
16	13	43	0.72	12	129	37	0.61	12	141	31	0.51	12	155
17	13	53	0.88	12	113	45	0.75	12	125	38	0.63	12	138
18	13	62	1.03	12	102	53	0.89	12	113	45	0.74	12	126
19	13	71	1.19	12	92	61	1.02	12	103	51	0.86	12	115
20	13	81	1.35	12	84	69	1.16	12	94	58	0.97	12	106
21	13	91	1.52	12	77	78	1.30	12	86	66	1.09	12	98
22	13	102	1.70	12	70	88	1.46	12	79	74	1.23	12	90
23	13	114	1.90	12	64	98	1.63	12	73	82	1.37	12	83

SOYBEANS...Dry & Cool (automatic batch)

MOISTURE		120 °F				130 °F				140 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	28	0.47	12	161	25	0.41	12	172				
16	13	38	0.63	12	139	33	0.55	12	149	29	0.49	12	159
17	13	46	0.77	12	123	40	0.67	12	133	36	0.60	12	143
18	13	54	0.91	12	111	48	0.79	12	121	42	0.71	12	130
19	13	63	1.04	12	101	55	0.91	12	110	49	0.81	12	119
20	13	71	1.18	12	92	62	1.04	12	101	55	0.92	12	110
21	13	80	1.33	12	85	70	1.17	12	93	62	1.04	12	101
22	13	90	1.50	12	78	79	1.31	12	86	70	1.16	12	93
23	13	100	1.67	12	71	88	1.46	12	79	78	1.30	12	86

Drying table based on 100% meter roll speed of…... **544 bph**

Unload timer set for **16.9 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. CFAB190

CORN...Dry & Cool (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	15	20	0.33	12	237								
18	15	26	0.44	12	209	23	0.39	12	222				
19	15	32	0.54	12	188	28	0.47	12	202	25	0.42	12	214
20	15	38	0.64	12	172	33	0.56	12	185	30	0.49	12	197
21	15	44	0.73	12	159	38	0.64	12	172	34	0.57	12	183
22	15	50	0.83	12	147	44	0.73	12	159	39	0.65	12	171
23	15	56	0.93	12	136	49	0.82	12	148	44	0.73	12	159
24	15	63	1.05	12	125	55	0.92	12	137	49	0.82	12	148
25	15	70	1.17	12	116	62	1.03	12	127	55	0.91	12	138
26	15	78	1.31	12	107	69	1.14	12	118	61	1.02	12	128
27	15	87	1.46	12	99	76	1.27	12	109	68	1.13	12	119
28	15	97	1.62	12	91	85	1.41	12	101	75	1.26	12	110
29	15	107	1.79	12	84	94	1.56	12	94	83	1.39	12	102
30	15	118	1.97	12	78	104	1.73	12	87	92	1.53	12	95
31	15	130	2.17	12	72	114	1.90	12	81	101	1.69	12	88
32	15	142	2.37	12	67	124	2.07	12	75	111	1.84	12	82
33	15	155	2.58	12	63	135	2.26	12	70	120	2.00	12	77
34	15	167	2.79	12	59	146	2.44	12	66	130	2.17	12	72
35	15	180	3.00	12	55	157	2.62	12	62	140	2.33	12	68

Drying table based on 100% meter roll speed of…... **680 bph**
unload timer set for **16.9 minutes**

CORN...Full Heat (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out*	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	17	1	0.02	0	643								
18	17	7	0.12	0	478	4	0.07	0	546				
19	17	13	0.21	0	389	9	0.15	0	444	6	0.10	0	500
20	17	18	0.30	0	331	13	0.22	0	378	10	0.17	0	426
21	17	23	0.38	0	289	18	0.30	0	330	14	0.23	0	371
22	17	28	0.47	0	255	22	0.37	0	292	18	0.30	0	328
23	17	34	0.56	0	227	27	0.46	0	259	22	0.37	0	292
24	17	40	0.66	0	202	33	0.54	0	231	27	0.45	0	260
25	17	46	0.77	0	181	39	0.64	0	207	32	0.54	0	233
26	17	54	0.90	0	162	45	0.75	0	185	38	0.64	0	208
27	17	62	1.04	0	145	52	0.87	0	166	45	0.74	0	187
28	17	71	1.18	0	130	60	1.00	0	149	52	0.86	0	168
29	17	81	1.34	0	118	68	1.14	0	134	59	0.98	0	151
30	17	91	1.51	0	106	77	1.29	0	122	67	1.12	0	137
31	17	102	1.69	0	97	87	1.45	0	111	75	1.25	0	124
32	17	113	1.88	0	89	96	1.61	0	101	84	1.40	0	114
33	17	124	2.06	0	81	106	1.77	0	93	93	1.54	0	105
34	17	135	2.25	0	76	116	1.93	0	86	101	1.68	0	97
35	17	145	2.42	0	71	125	2.08	0	81	109	1.82	0	91

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**
Drying table based on 100% meter roll speed of…... **680 bph**
Unload timer set for **16.9 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…….CFAB190

CORN...Full Heat (Continuous flow)

MOISTURE		190 °F			210 °F			230 °F		
%in	%out*	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph
18	17	70	24	478						
19	17	57	29	389	65	26	444			
20	17	49	35	331	56	30	378	63	27	426
21	17	42	40	289	49	35	330	55	31	371
22	17	38	45	255	43	39	292	48	35	328
23	17	33	50	227	38	44	259	43	39	292
24	17	30	57	202	34	50	231	38	44	260
25	17	27	63	181	30	55	207	34	49	233
26	17	24	71	162	27	62	185	31	55	208
27	17	21	79	145	24	69	166	27	61	187
28	17	19	88	130	22	77	149	25	68	168
29	17	17	98	118	20	85	134	22	76	151
30	17	16	108	106	18	94	122	20	84	137
31	17	14	118	97	16	104	111	18	92	124
32	17	13	129	89	15	113	101	17	101	114
33	17	12	141	81	14	123	93	15	109	105
34	17	11	152	76	13	133	86	14	118	97
35	17	10	162	71	12	142	81	13	126	91

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**

Drying table based on 100% meter roll speed of…... **680 bph**

WHEAT, BARLEY, MILO...Dry & Cool (automatic batch)

MOISTURE		140 °F				155 °F				175 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	33	0.56	12	185	29	0.48	12	201				
16	13	44	0.74	12	157	38	0.63	12	172	32	0.53	12	190
17	13	54	0.91	12	138	47	0.78	12	153	39	0.65	12	169
18	13	64	1.07	12	124	55	0.92	12	137	46	0.77	12	154
19	13	74	1.23	12	112	63	1.05	12	125	53	0.89	12	141
20	13	84	1.40	12	102	72	1.20	12	114	60	1.00	12	129
21	13	94	1.57	12	93	81	1.35	12	105	68	1.13	12	119
22	13	106	1.76	12	85	91	1.51	12	96	76	1.27	12	110
23	13	118	1.97	12	78	101	1.69	12	88	85	1.42	12	101

SOYBEANS...Dry & Cool (automatic batch)

MOISTURE		120 °F				130 °F				140 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	29	0.49	12	198	26	0.43	12	212				
16	13	39	0.65	12	170	34	0.57	12	183	30	0.51	12	195
17	13	48	0.80	12	150	42	0.70	12	163	37	0.62	12	175
18	13	56	0.94	12	135	49	0.82	12	147	44	0.73	12	159
19	13	65	1.08	12	123	57	0.95	12	135	50	0.84	12	145
20	13	74	1.23	12	112	64	1.07	12	123	57	0.95	12	134
21	13	83	1.38	12	103	73	1.21	12	114	64	1.07	12	123
22	13	93	1.55	12	94	81	1.36	12	104	72	1.20	12	114
23	13	104	1.73	12	87	91	1.52	12	96	81	1.35	12	105

Drying table based on 100% meter roll speed of…... **680 bph**

Unload timer set for **16.9 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. CFAB270

CORN...Dry & Cool (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	15	20	0.34	11	311								
18	15	27	0.45	11	275	23	0.39	11	292				
19	15	33	0.55	11	248	29	0.48	11	265	25	0.42	11	281
20	15	39	0.64	11	227	34	0.56	11	244	30	0.50	11	259
21	15	44	0.74	11	209	39	0.65	11	226	35	0.58	11	241
22	15	50	0.84	11	193	44	0.73	11	210	39	0.65	11	225
23	15	57	0.95	11	179	50	0.83	11	195	44	0.74	11	210
24	15	64	1.06	11	166	56	0.93	11	181	49	0.82	11	195
25	15	71	1.19	11	153	62	1.04	11	168	55	0.92	11	182
26	15	79	1.32	11	142	69	1.16	11	156	62	1.03	11	169
27	15	88	1.47	11	131	77	1.29	11	144	69	1.14	11	157
28	15	98	1.63	11	121	86	1.43	11	134	76	1.27	11	146
29	15	109	1.81	11	112	95	1.58	11	124	84	1.41	11	135
30	15	120	1.99	11	103	105	1.75	11	115	93	1.55	11	126
31	15	131	2.19	11	96	115	1.92	11	107	102	1.70	11	117
32	15	144	2.40	11	89	126	2.10	11	99	112	1.86	11	109
33	15	156	2.61	11	83	137	2.28	11	93	122	2.03	11	102
34	15	169	2.82	11	78	148	2.47	11	87	132	2.19	11	96
35	15	182	3.03	11	73	159	2.65	11	82	142	2.36	11	90

Drying table based on 100% meter roll speed of…... **816 bph**
unload timer set for **18.9 minutes**

CORN...Full Heat (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out*	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	17	-1	-0.01	0	856								
18	17	5	0.09	0	636	2	0.04	0	727				
19	17	11	0.18	0	517	7	0.12	0	591	4	0.07	0	665
20	17	16	0.27	0	441	12	0.20	0	503	8	0.14	0	566
21	17	21	0.35	0	384	16	0.27	0	439	12	0.21	0	494
22	17	27	0.44	0	340	21	0.35	0	388	16	0.27	0	437
23	17	32	0.54	0	302	26	0.43	0	345	21	0.35	0	388
24	17	38	0.64	0	269	31	0.52	0	308	26	0.43	0	346
25	17	45	0.75	0	241	37	0.62	0	275	31	0.52	0	310
26	17	53	0.88	0	215	44	0.73	0	246	37	0.61	0	277
27	17	61	1.02	0	193	51	0.85	0	221	43	0.72	0	248
28	17	70	1.17	0	173	59	0.98	0	198	50	0.84	0	223
29	17	80	1.33	0	156	67	1.12	0	179	58	0.96	0	201
30	17	90	1.50	0	141	76	1.27	0	162	66	1.10	0	182
31	17	101	1.68	0	129	86	1.43	0	147	74	1.24	0	165
32	17	112	1.87	0	118	96	1.59	0	135	83	1.38	0	151
33	17	123	2.06	0	108	106	1.76	0	124	92	1.53	0	139
34	17	134	2.24	0	101	115	1.92	0	115	100	1.67	0	129
35	17	145	2.42	0	94	125	2.08	0	107	109	1.81	0	121

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**
Drying table based on 100% meter roll speed of…... **816 bph**
Unload timer set for **18.9 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…….CFAB270

CORN...Full Heat (Continuous flow)

MOISTURE		190 °F			210 °F			230 °F		
%in	%out*	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph
18	17	78	24	636						
19	17	63	30	517	72	26	591			
20	17	54	35	441	62	31	503	69	27	566
21	17	47	40	384	54	35	439	61	31	494
22	17	42	45	340	48	40	388	53	35	437
23	17	37	51	302	42	45	345	48	40	388
24	17	33	57	269	38	50	308	42	45	346
25	17	30	64	241	34	56	275	38	50	310
26	17	26	72	215	30	63	246	34	56	277
27	17	24	80	193	27	70	221	30	62	248
28	17	21	89	173	24	78	198	27	69	223
29	17	19	99	156	22	86	179	25	77	201
30	17	17	109	141	20	95	162	22	85	182
31	17	16	120	129	18	105	147	20	93	165
32	17	14	131	118	16	115	135	19	102	151
33	17	13	142	108	15	124	124	17	111	139
34	17	12	153	101	14	134	115	16	119	129
35	17	12	164	94	13	144	107	15	128	121

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**

Drying table based on 100% meter roll speed of…... **816 bph**

WHEAT, BARLEY, MILO...Dry & Cool (automatic batch)

MOISTURE		140 °F				155 °F				175 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	32	0.54	11	250	28	0.46	11	270				
16	13	43	0.72	11	213	37	0.61	11	233	31	0.51	11	256
17	13	53	0.88	11	188	45	0.75	11	207	38	0.63	11	229
18	13	62	1.03	11	169	53	0.89	11	187	45	0.74	11	208
19	13	71	1.19	11	153	61	1.02	11	170	51	0.86	11	191
20	13	81	1.35	11	140	69	1.16	11	156	58	0.97	11	176
21	13	91	1.52	11	128	78	1.30	11	143	66	1.09	11	162
22	13	102	1.70	11	117	88	1.46	11	132	74	1.23	11	150
23	13	114	1.90	11	107	98	1.63	11	121	82	1.37	11	138

SOYBEANS...Dry & Cool (automatic batch)

MOISTURE		120 °F				130 °F				140 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	28	0.47	11	266	25	0.41	11	284				
16	13	38	0.63	11	230	33	0.55	11	247	29	0.49	11	262
17	13	46	0.77	11	204	40	0.67	11	221	36	0.60	11	236
18	13	54	0.91	11	184	48	0.79	11	200	42	0.71	11	215
19	13	63	1.04	11	167	55	0.91	11	183	49	0.81	11	197
20	13	71	1.18	11	153	62	1.04	11	168	55	0.92	11	182
21	13	80	1.33	11	141	70	1.17	11	155	62	1.04	11	168
22	13	90	1.50	11	129	79	1.31	11	143	70	1.16	11	155
23	13	100	1.67	11	119	88	1.46	11	131	78	1.30	11	143

Drying table based on 100% meter roll speed of…... **816 bph**

Unload timer set for **18.9 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. CFAB320

CORN...Dry & Cool (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	15	19	0.32	11	369								
18	15	26	0.43	11	327	22	0.37	11	347				
19	15	31	0.52	11	296	27	0.46	11	316	24	0.41	11	334
20	15	37	0.62	11	271	32	0.54	11	292	29	0.48	11	309
21	15	42	0.71	11	250	37	0.62	11	270	33	0.55	11	288
22	15	48	0.80	11	232	42	0.70	11	251	37	0.62	11	269
23	15	54	0.90	11	215	48	0.79	11	234	42	0.70	11	251
24	15	61	1.01	11	199	53	0.89	11	218	47	0.79	11	234
25	15	68	1.13	11	185	60	0.99	11	202	53	0.88	11	219
26	15	76	1.27	11	171	66	1.11	11	188	59	0.98	11	203
27	15	85	1.41	11	158	74	1.23	11	174	66	1.10	11	189
28	15	94	1.56	11	146	82	1.37	11	161	73	1.22	11	176
29	15	104	1.73	11	135	91	1.51	11	150	81	1.35	11	163
30	15	115	1.91	11	125	100	1.67	11	139	89	1.48	11	152
31	15	126	2.10	11	116	110	1.84	11	129	98	1.63	11	141
32	15	138	2.29	11	108	120	2.01	11	120	107	1.78	11	132
33	15	150	2.49	11	100	131	2.18	11	112	116	1.94	11	123
34	15	162	2.70	11	94	142	2.36	11	105	126	2.10	11	116
35	15	174	2.90	11	88	152	2.54	11	99	135	2.26	11	109

Drying table based on 100% meter roll speed of…... **953 bph**
unload timer set for **18.9 minutes**

CORN...Full Heat (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out*	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	17	-2	-0.03	0	1044								
18	17	4	0.07	0	776	1	0.02	0	887				
19	17	10	0.16	0	631	6	0.10	0	721	3	0.05	0	811
20	17	15	0.24	0	537	10	0.17	0	614	7	0.12	0	691
21	17	20	0.33	0	469	15	0.25	0	536	11	0.18	0	603
22	17	25	0.41	0	414	19	0.32	0	473	15	0.25	0	533
23	17	30	0.50	0	368	24	0.40	0	421	19	0.32	0	474
24	17	36	0.60	0	329	29	0.48	0	376	24	0.40	0	422
25	17	42	0.71	0	294	35	0.58	0	336	29	0.48	0	378
26	17	50	0.83	0	263	41	0.68	0	300	34	0.57	0	338
27	17	58	0.96	0	236	48	0.80	0	269	41	0.68	0	303
28	17	66	1.10	0	212	56	0.93	0	242	47	0.79	0	272
29	17	75	1.26	0	191	64	1.06	0	218	55	0.91	0	245
30	17	85	1.42	0	173	72	1.21	0	197	62	1.04	0	222
31	17	96	1.60	0	157	81	1.36	0	179	70	1.17	0	202
32	17	106	1.77	0	144	91	1.51	0	164	79	1.31	0	185
33	17	117	1.95	0	132	100	1.67	0	151	87	1.45	0	170
34	17	128	2.13	0	123	110	1.83	0	140	95	1.59	0	158
35	17	138	2.30	0	115	118	1.97	0	131	103	1.72	0	147

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**
Drying table based on 100% meter roll speed of…... **953 bph**
Unload timer set for **18.9 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……CFAB320

CORN...Full Heat (Continuous flow)

MOISTURE		190 °F			210 °F			230 °F		
%in	%out*	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph
18	17	81	23	776						
19	17	66	29	631	76	25	721			
20	17	56	33	537	64	29	614	72	26	691
21	17	49	38	469	56	34	536	63	30	603
22	17	43	43	414	50	38	473	56	34	533
23	17	39	49	368	44	43	421	50	38	474
24	17	34	55	329	39	48	376	44	43	422
25	17	31	61	294	35	54	336	40	48	378
26	17	28	69	263	32	60	300	35	53	338
27	17	25	76	236	28	67	269	32	59	303
28	17	22	85	212	25	74	242	29	66	272
29	17	20	94	191	23	83	218	26	73	245
30	17	18	104	173	21	91	197	23	81	222
31	17	16	115	157	19	100	179	21	89	202
32	17	15	125	144	17	110	164	19	97	185
33	17	14	136	132	16	119	151	18	106	170
34	17	13	147	123	15	128	140	17	114	158
35	17	12	157	115	14	137	131	15	122	147

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**

Drying table based on 100% meter roll speed of…... **953 bph**

WHEAT, BARLEY, MILO...Dry & Cool (automatic batch)

MOISTURE		140 °F				155 °F				175 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	32	0.54	11	291	28	0.46	11	315				
16	13	43	0.72	11	249	37	0.61	11	272	31	0.51	11	298
17	13	53	0.88	11	219	45	0.75	11	241	38	0.63	11	267
18	13	62	1.03	11	197	53	0.89	11	218	45	0.74	11	243
19	13	71	1.19	11	179	61	1.02	11	199	51	0.86	11	223
20	13	81	1.35	11	163	69	1.16	11	182	58	0.97	11	205
21	13	91	1.52	11	149	78	1.30	11	167	66	1.09	11	189
22	13	102	1.70	11	137	88	1.46	11	154	74	1.23	11	175
23	13	114	1.90	11	125	98	1.63	11	141	82	1.37	11	161

SOYBEANS...Dry & Cool (automatic batch)

MOISTURE		120 °F				130 °F				140 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	28	0.47	11	311	25	0.41	11	331				
16	13	38	0.63	11	268	33	0.55	11	288	29	0.49	11	306
17	13	46	0.77	11	238	40	0.67	11	257	36	0.60	11	275
18	13	54	0.91	11	215	48	0.79	11	233	42	0.71	11	251
19	13	63	1.04	11	195	55	0.91	11	214	49	0.81	11	230
20	13	71	1.18	11	179	62	1.04	11	196	55	0.92	11	212
21	13	80	1.33	11	164	70	1.17	11	181	62	1.04	11	196
22	13	90	1.50	11	151	79	1.31	11	167	70	1.16	11	181
23	13	100	1.67	11	139	88	1.46	11	153	78	1.30	11	167

Drying table based on 100% meter roll speed of…... **953 bph**

Unload timer set for **18.9 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. CFAB400

CORN...Dry & Cool (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	15	20	0.33	10	495								
18	15	27	0.44	10	438	23	0.39	10	465				
19	15	33	0.54	10	396	29	0.48	10	423	25	0.42	10	448
20	15	38	0.64	10	363	34	0.56	10	390	30	0.50	10	414
21	15	44	0.74	10	334	39	0.64	10	361	34	0.57	10	385
22	15	50	0.83	10	310	44	0.73	10	336	39	0.65	10	360
23	15	56	0.94	10	287	49	0.82	10	312	44	0.73	10	336
24	15	63	1.05	10	266	55	0.92	10	291	49	0.82	10	313
25	15	71	1.18	10	246	62	1.03	10	270	55	0.92	10	292
26	15	79	1.31	10	228	69	1.15	10	250	61	1.02	10	271
27	15	88	1.46	10	211	77	1.28	10	232	68	1.14	10	252
28	15	97	1.62	10	195	85	1.42	10	215	76	1.26	10	234
29	15	108	1.80	10	180	94	1.57	10	199	84	1.40	10	218
30	15	119	1.98	10	167	104	1.74	10	185	93	1.54	10	202
31	15	131	2.18	10	154	114	1.91	10	172	102	1.69	10	188
32	15	143	2.38	10	144	125	2.08	10	160	111	1.85	10	176
33	15	156	2.59	10	134	136	2.27	10	149	121	2.02	10	164
34	15	168	2.80	10	125	147	2.45	10	140	131	2.18	10	154
35	15	181	3.02	10	118	158	2.64	10	132	141	2.35	10	145

Drying table based on 100% meter roll speed of…... **1225 bph**
unload timer set for **20.3 minutes**

CORN...Full Heat (automatic batch)

		190 °F				210 °F				230 °F			
MOISTURE		DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity	DRY	TIME	COOL	Capacity
%in	%out*	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph	min.	hrs	min.	Dry Bph
17	17	-2	-0.04	0	1387								
18	17	4	0.06	0	1030	1	0.01	0	1178				
19	17	9	0.16	0	838	6	0.09	0	958	3	0.05	0	1078
20	17	15	0.24	0	714	10	0.17	0	816	7	0.11	0	918
21	17	20	0.33	0	623	15	0.24	0	712	11	0.18	0	800
22	17	25	0.41	0	550	19	0.32	0	629	15	0.25	0	707
23	17	30	0.51	0	489	24	0.40	0	559	19	0.32	0	629
24	17	37	0.61	0	436	30	0.49	0	499	24	0.40	0	561
25	17	43	0.72	0	390	35	0.59	0	446	29	0.49	0	501
26	17	51	0.85	0	349	42	0.70	0	399	35	0.58	0	449
27	17	59	0.99	0	313	49	0.82	0	357	41	0.69	0	402
28	17	68	1.14	0	281	57	0.95	0	321	48	0.81	0	361
29	17	78	1.30	0	253	66	1.09	0	289	56	0.93	0	326
30	17	88	1.47	0	229	75	1.24	0	262	64	1.07	0	295
31	17	99	1.65	0	209	84	1.40	0	238	72	1.21	0	268
32	17	110	1.83	0	191	94	1.56	0	218	81	1.35	0	245
33	17	121	2.02	0	176	103	1.72	0	201	90	1.50	0	226
34	17	132	2.20	0	163	113	1.89	0	186	98	1.64	0	209
35	17	143	2.38	0	152	122	2.04	0	174	107	1.78	0	196

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**
Drying table based on 100% meter roll speed of…... **1225 bph**
Unload timer set for **20.3 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……CFAB400

CORN...Full Heat (Continuous flow)

MOISTURE		190 °F			210 °F			230 °F		
%in	%out*	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph
18	17	84	24	1030						
19	17	68	30	838	78	26	958			
20	17	58	35	714	67	30	816	75	27	918
21	17	51	40	623	58	35	712	65	31	800
22	17	45	45	550	51	40	629	58	35	707
23	17	40	51	489	46	44	559	51	39	629
24	17	36	57	436	41	50	499	46	44	561
25	17	32	64	390	36	56	446	41	50	501
26	17	28	71	349	33	62	399	37	55	449
27	17	26	79	313	29	69	357	33	62	402
28	17	23	88	281	26	77	321	29	69	361
29	17	21	98	253	24	86	289	27	76	326
30	17	19	108	229	21	95	262	24	84	295
31	17	17	119	209	19	104	238	22	93	268
32	17	16	130	191	18	114	218	20	101	245
33	17	14	141	176	16	124	201	18	110	226
34	17	13	152	163	15	133	186	17	119	209
35	17	12	163	152	14	143	174	16	127	196

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**

Drying table based on 100% meter roll speed of…... **1225 bph**

WHEAT, BARLEY, MILO...Dry & Cool (automatic batch)

MOISTURE		140 °F				155 °F				175 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	32	0.54	10	398	28	0.46	10	429				
16	13	43	0.72	10	340	37	0.61	10	371	31	0.51	10	407
17	13	53	0.88	10	300	45	0.75	10	330	38	0.63	10	365
18	13	62	1.03	10	270	53	0.89	10	298	45	0.74	10	332
19	13	71	1.19	10	245	61	1.02	10	272	51	0.86	10	305
20	13	81	1.35	10	224	69	1.16	10	250	58	0.97	10	281
21	13	91	1.52	10	205	78	1.30	10	230	66	1.09	10	259
22	13	102	1.70	10	188	88	1.46	10	211	74	1.23	10	240
23	13	114	1.90	10	172	98	1.63	10	194	82	1.37	10	221

SOYBEANS...Dry & Cool (automatic batch)

MOISTURE		120 °F				130 °F				140 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	28	0.47	10	424	25	0.41	10	452				
16	13	38	0.63	10	366	33	0.55	10	393	29	0.49	10	418
17	13	46	0.77	10	325	40	0.67	10	352	36	0.60	10	376
18	13	54	0.91	10	294	48	0.79	10	319	42	0.71	10	343
19	13	63	1.04	10	268	55	0.91	10	292	49	0.81	10	315
20	13	71	1.18	10	245	62	1.04	10	269	55	0.92	10	291
21	13	80	1.33	10	225	70	1.17	10	248	62	1.04	10	269
22	13	90	1.50	10	207	79	1.31	10	229	70	1.16	10	248
23	13	100	1.67	10	190	88	1.46	10	211	78	1.30	10	230

Drying table based on 100% meter roll speed of…... **1225 bph**

Unload timer set for **20.3 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. CFAB460

CORN...Dry & Cool (automatic batch)

MOISTURE		190 °F				210 °F				230 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
17	15	21	0.35	10	541								
18	15	28	0.46	10	477	24	0.40	10	508				
19	15	34	0.57	10	431	30	0.50	10	461	26	0.44	10	488
20	15	40	0.67	10	394	35	0.58	10	424	31	0.52	10	451
21	15	46	0.77	10	363	40	0.67	10	392	36	0.60	10	419
22	15	52	0.87	10	335	46	0.76	10	364	41	0.68	10	390
23	15	59	0.98	10	310	51	0.86	10	338	46	0.76	10	364
24	15	66	1.10	10	287	58	0.96	10	314	51	0.85	10	339
25	15	74	1.23	10	266	64	1.07	10	292	57	0.96	10	316
26	15	82	1.37	10	246	72	1.20	10	270	64	1.07	10	293
27	15	92	1.53	10	227	80	1.33	10	250	71	1.19	10	272
28	15	102	1.69	10	209	89	1.48	10	232	79	1.32	10	253
29	15	112	1.87	10	194	98	1.64	10	215	87	1.46	10	235
30	15	124	2.07	10	179	109	1.81	10	199	96	1.61	10	218
31	15	136	2.27	10	166	119	1.99	10	185	106	1.77	10	203
32	15	149	2.48	10	154	130	2.17	10	172	116	1.93	10	189
33	15	162	2.70	10	144	142	2.36	10	160	126	2.10	10	177
34	15	175	2.92	10	134	153	2.56	10	150	136	2.27	10	166
35	15	189	3.14	10	126	165	2.75	10	141	147	2.44	10	156

Drying table based on 100% meter roll speed of…... **1361 bph**
unload timer set for **20.3 minutes**

CORN...Full Heat (automatic batch)

MOISTURE		190 °F				210 °F				230 °F			
%in	%out*	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
17	17	-2	-0.03	0	1478								
18	17	5	0.08	0	1098	2	0.03	0	1255				
19	17	11	0.18	0	894	7	0.11	0	1021	4	0.06	0	1149
20	17	16	0.27	0	761	11	0.19	0	870	8	0.13	0	978
21	17	21	0.36	0	664	16	0.27	0	759	12	0.20	0	853
22	17	27	0.45	0	586	21	0.35	0	670	16	0.27	0	754
23	17	33	0.54	0	521	26	0.43	0	596	21	0.35	0	670
24	17	39	0.65	0	465	32	0.53	0	532	26	0.43	0	598
25	17	46	0.77	0	416	38	0.63	0	475	31	0.52	0	535
26	17	54	0.90	0	372	45	0.74	0	425	37	0.62	0	478
27	17	62	1.04	0	333	52	0.87	0	381	44	0.74	0	429
28	17	72	1.20	0	300	60	1.01	0	342	51	0.86	0	385
29	17	82	1.37	0	270	69	1.15	0	309	59	0.99	0	347
30	17	93	1.54	0	244	79	1.31	0	279	68	1.13	0	314
31	17	104	1.73	0	222	88	1.47	0	254	76	1.27	0	286
32	17	115	1.92	0	203	98	1.64	0	232	85	1.42	0	261
33	17	127	2.12	0	187	109	1.81	0	214	94	1.57	0	241
34	17	139	2.31	0	174	119	1.98	0	198	103	1.72	0	223
35	17	150	2.50	0	162	128	2.14	0	186	112	1.87	0	209

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**
Drying table based on 100% meter roll speed of…... **1361 bph**
Unload timer set for **20.3 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…… CFAB460

CORN...Full Heat (Continuous flow)

MOISTURE		190 °F			210 °F			230 °F		
%in	%out*	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph
18	17	81	25	1098						
19	17	66	31	894	75	27	1021			
20	17	56	36	761	64	32	870	72	28	978
21	17	49	42	664	56	36	759	63	32	853
22	17	43	47	586	49	41	670	55	37	754
23	17	38	53	521	44	46	596	49	41	670
24	17	34	59	465	39	52	532	44	46	598
25	17	31	66	416	35	58	475	39	52	535
26	17	27	74	372	31	65	425	35	58	478
27	17	24	83	333	28	72	381	31	64	429
28	17	22	92	300	25	81	342	28	72	385
29	17	20	102	270	23	89	309	26	80	347
30	17	18	113	244	21	99	279	23	88	314
31	17	16	124	222	19	109	254	21	97	286
32	17	15	136	203	17	119	232	19	106	261
33	17	14	147	187	16	129	214	18	115	241
34	17	13	159	174	15	139	198	16	124	223
35	17	12	170	162	14	149	186	15	132	209

*Target moisture out of the dryer. Expected final moisture in the bin is **15.0%**

Drying table based on 100% meter roll speed of…... **1361 bph**

WHEAT, BARLEY, MILO...Dry & Cool (automatic batch)

MOISTURE		140 °F				155 °F				175 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	32	0.54	10	442	28	0.46	10	477				
16	13	43	0.72	10	378	37	0.61	10	412	31	0.51	10	452
17	13	53	0.88	10	333	45	0.75	10	367	38	0.63	10	406
18	13	62	1.03	10	300	53	0.89	10	332	45	0.74	10	369
19	13	71	1.19	10	272	61	1.02	10	303	51	0.86	10	339
20	13	81	1.35	10	249	69	1.16	10	277	58	0.97	10	312
21	13	91	1.52	10	228	78	1.30	10	255	66	1.09	10	288
22	13	102	1.70	10	209	88	1.46	10	235	74	1.23	10	266
23	13	114	1.90	10	191	98	1.63	10	216	82	1.37	10	246

SOYBEANS...Dry & Cool (automatic batch)

MOISTURE		120 °F				130 °F				140 °F			
%in	%out	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph	DRY min.	TIME hrs	COOL min.	Capacity Dry Bph
15	13	28	0.47	10	471	25	0.41	10	502				
16	13	38	0.63	10	407	33	0.55	10	437	29	0.49	10	464
17	13	46	0.77	10	361	40	0.67	10	391	36	0.60	10	417
18	13	54	0.91	10	326	48	0.79	10	355	42	0.71	10	381
19	13	63	1.04	10	298	55	0.91	10	325	49	0.81	10	350
20	13	71	1.18	10	273	62	1.04	10	299	55	0.92	10	323
21	13	80	1.33	10	250	70	1.17	10	275	62	1.04	10	299
22	13	90	1.50	10	230	79	1.31	10	254	70	1.16	10	276
23	13	100	1.67	10	211	88	1.46	10	234	78	1.30	10	255

Drying table based on 100% meter roll speed of…... **1361 bph**

Unload timer set for **20.3 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…….…. CFSA320

CORN...Dry & Cool (staged automatic)

		190 °F				210 °F				230 °F			
MOISTURE		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
17	15	20	-2.2	15.3	399								
18	15	27	1.2	15.3	348	24	-0.5	15.3	372				
19	15	33	4.2	15.3	311	29	2.1	15.3	335	26	0.5	15.3	356
20	15	39	7.2	15.3	282	34	4.7	15.3	306	30	2.8	15.3	327
21	15	45	10.1	15.3	259	39	7.3	15.3	281	35	5.1	15.3	302
22	15	51	13.1	15.3	238	45	9.9	15.3	260	40	7.5	15.3	280
23	15	57	16.3	15.3	219	50	12.7	15.3	240	45	10.0	15.3	260
24	15	64	19.8	15.3	202	56	15.8	15.3	222	50	12.7	15.3	241
25	15	72	23.6	15.3	186	63	19.1	15.3	205	56	15.6	15.3	223
26	15	80	27.8	15.3	171	70	22.8	15.3	190	62	18.9	15.3	207
27	15	89	32.3	15.3	158	78	26.7	15.3	175	69	22.4	15.3	191
28	15	99	37.2	15.3	145	87	31.0	15.3	161	77	26.2	15.3	177
29	15	110	42.5	15.3	134	96	35.7	15.3	149	85	30.3	15.3	163
30	15	121	48.2	15.3	123	106	40.6	15.3	138	94	34.7	15.3	151
31	15	133	54.2	15.3	114	116	45.8	15.3	128	103	39.4	15.3	140
32	15	145	60.4	15.3	106	127	51.3	15.3	118	113	44.2	15.3	131
33	15	158	66.8	15.3	98	138	56.9	15.3	110	123	49.2	15.3	122
34	15	171	73.2	15.3	92	150	62.5	15.3	103	133	54.2	15.3	114
35	15	184	79.7	15.3	86	161	68.2	15.3	97	143	59.2	15.3	107

CORN...Full Heat (staged automatic)

		190 °F				210 °F				230 °F			
MOISTURE		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
17	17	18	-0.3	0.0	988								
18	17	25	2.8	0.0	734	21	1.3	0.0	839				
19	17	30	5.6	0.0	597	26	3.7	0.0	682	23	2.3	0.0	768
20	17	35	8.3	0.0	508	31	6.0	0.0	581	28	4.3	0.0	654
21	17	41	10.9	0.0	443	36	8.3	0.0	507	32	6.3	0.0	570
22	17	46	13.5	0.0	392	40	10.7	0.0	448	36	8.4	0.0	504
23	17	52	16.4	0.0	348	45	13.2	0.0	398	40	10.6	0.0	448
24	17	58	19.5	0.0	311	51	15.9	0.0	355	45	13.1	0.0	400
25	17	65	23.0	0.0	278	57	18.9	0.0	317	50	15.8	0.0	357
26	17	72	26.8	0.0	249	63	22.2	0.0	284	56	18.7	0.0	320
27	17	81	31.0	0.0	223	71	25.9	0.0	255	63	22.0	0.0	286
28	17	90	35.5	0.0	200	79	29.9	0.0	229	70	25.5	0.0	257
29	17	100	40.4	0.0	180	87	34.2	0.0	206	78	29.4	0.0	232
30	17	110	45.7	0.0	163	96	38.8	0.0	187	86	33.4	0.0	210
31	17	121	51.2	0.0	149	106	43.6	0.0	170	94	37.7	0.0	191
32	17	132	56.8	0.0	136	116	48.5	0.0	155	103	42.1	0.0	175
33	17	144	62.5	0.0	125	126	53.5	0.0	143	112	46.5	0.0	161
34	17	155	68.1	0.0	116	136	58.4	0.0	133	121	50.9	0.0	149
35	17	166	73.5	0.0	108	145	63.2	0.0	124	129	55.1	0.0	139

*Target moisture out of the dryer. Expected final moisture in the bin is….. **15.0%**

Drying table based on 100% meter roll speed of... **953 bph**

Unload timer set for….. **9.4 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…… CFSA320

CORN...Full Heat (Continuous flow)

MOISTURE		190 °F			210 °F			230 °F		
%in	%out*	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph
18	17	77	24.5	734	88	21.5	839			
19	17	63	30.2	597	72	26.4	682	81	23.5	768
20	17	53	35.4	508	61	31.0	581	69	27.5	654
21	17	47	40.6	443	53	35.5	507	60	31.6	570
22	17	41	45.9	392	47	40.2	448	53	35.7	504
23	17	37	51.7	348	42	45.2	398	47	40.2	448
24	17	33	57.9	311	37	50.7	355	42	45.0	400
25	17	29	64.8	278	33	56.7	317	37	50.4	357
26	17	26	72.4	249	30	63.4	284	34	56.3	320
27	17	23	80.8	223	27	70.7	255	30	62.8	286
28	17	21	89.9	200	24	78.7	229	27	70.0	257
29	17	19	99.8	180	22	87.3	206	24	77.6	232
30	17	17	110.3	163	20	96.5	187	22	85.8	210
31	17	16	121.2	149	18	106.1	170	20	94.3	191
32	17	14	132.5	136	16	115.9	155	18	103.1	175
33	17	13	143.9	125	15	125.9	143	17	111.9	161
34	17	12	155.1	116	14	135.7	133	16	120.7	149
35	17	11	166.0	108	13	145.2	124	15	129.1	139

*Target moisture out of the dryer. Expected final moisture in the bin is….. **15.0%**

Drying table based on 100% meter roll speed of **953 bph**

WHEAT, BARLEY, MILO...Dry & Cool (staged automatic)

MOISTURE		140 °F				155 °F				175 °F			
		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
15	13	32	3.8	15.3	315	28	1.5	15.3	343				
16	13	43	9.1	15.3	266	37	6.0	15.3	293	31	3.1	15.3	324
17	13	53	14.0	15.3	233	45	10.2	15.3	258	38	6.6	15.3	287
18	13	62	18.6	15.3	208	53	14.2	15.3	231	45	9.9	15.3	260
19	13	71	23.3	15.3	188	61	18.2	15.3	210	51	13.3	15.3	237
20	13	81	28.1	15.3	170	69	22.3	15.3	191	58	16.8	15.3	217
21	13	91	33.2	15.3	155	78	26.7	15.3	175	66	20.4	15.3	199
22	13	102	38.7	15.3	142	88	31.4	15.3	160	74	24.4	15.3	183
23	13	114	44.7	15.3	130	98	36.6	15.3	147	82	28.8	15.3	168

SOYBEANS...Dry & Cool (staged automatic)

MOISTURE		120 °F				130 °F				140 °F			
		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
16	13	25	0.1	15.3	363								
17	13	31	2.9	15.3	326	27	1.0	15.3	350				
18	13	36	5.6	15.3	297	31	3.4	15.3	320	28	1.6	15.3	341
19	13	41	8.3	15.3	272	36	5.7	15.3	295	32	3.7	15.3	316
20	13	47	11.1	15.3	251	41	8.2	15.3	273	37	5.9	15.3	294
21	13	53	14.1	15.3	232	46	10.8	15.3	253	41	8.2	15.3	273
22	13	59	17.3	15.3	214	52	13.6	15.3	235	46	10.7	15.3	254
23	13	66	20.8	15.3	198	58	16.7	15.3	217	52	13.4	15.3	236

Drying table based on 100% meter roll speed of **953 bph**

Unload timer set for….. **9.4 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…….…. CFSA410

CORN...Dry & Cool (staged automatic)

MOISTURE		190 °F				210 °F				230 °F			
%in	%out	Total Dry Time	Timer Setting Heat	Timer Setting Cool	Capacity Dry Bph	Total Dry Time	Timer Setting Heat	Timer Setting Cool	Capacity Dry Bph	Total Dry Time	Timer Setting Heat	Timer Setting Cool	Capacity Dry Bph
17	15	21	-1.7	15.3	504								
18	15	28	1.7	15.3	437	25	0.0	15.3	469				
19	15	35	4.9	15.3	390	30	2.8	15.3	421	27	1.1	15.3	448
20	15	41	8.0	15.3	354	36	5.5	15.3	384	32	3.5	15.3	411
21	15	47	11.1	15.3	324	41	8.1	15.3	352	36	5.9	15.3	379
22	15	53	14.2	15.3	297	47	10.9	15.3	325	41	8.3	15.3	350
23	15	60	17.6	15.3	274	52	13.8	15.3	300	47	10.9	15.3	325
24	15	67	21.2	15.3	252	59	17.0	15.3	277	52	13.8	15.3	301
25	15	75	25.2	15.3	232	66	20.5	15.3	256	58	16.8	15.3	279
26	15	84	29.5	15.3	213	73	24.3	15.3	236	65	20.2	15.3	258
27	15	93	34.3	15.3	196	82	28.4	15.3	218	73	23.9	15.3	238
28	15	104	39.4	15.3	181	91	32.9	15.3	201	81	27.9	15.3	220
29	15	115	44.9	15.3	166	100	37.8	15.3	185	89	32.2	15.3	203
30	15	126	50.8	15.3	153	111	42.9	15.3	171	98	36.8	15.3	188
31	15	139	57.1	15.3	142	122	48.4	15.3	158	108	41.6	15.3	174
32	15	152	63.6	15.3	131	133	54.1	15.3	147	118	46.7	15.3	162
33	15	165	70.2	15.3	122	145	59.9	15.3	137	128	51.9	15.3	151
34	15	179	77.0	15.3	114	156	65.8	15.3	128	139	57.1	15.3	141
35	15	192	83.7	15.3	107	168	71.7	15.3	120	149	62.4	15.3	133

CORN...Full Heat (staged automatic)

MOISTURE		190 °F				210 °F				230 °F			
%in	%out	Total Dry Time	Timer Setting Heat	Timer Setting Cool	Capacity Dry Bph	Total Dry Time	Timer Setting Heat	Timer Setting Cool	Capacity Dry Bph	Total Dry Time	Timer Setting Heat	Timer Setting Cool	Capacity Dry Bph
17	17	19	0.1	0.0	1,217								
18	17	26	3.4	0.0	904	22	1.8	0.0	1,034				
19	17	31	6.3	0.0	736	28	4.3	0.0	841	24	2.8	0.0	946
20	17	37	9.0	0.0	627	32	6.7	0.0	716	29	4.9	0.0	806
21	17	42	11.7	0.0	547	37	9.1	0.0	625	33	7.0	0.0	703
22	17	48	14.5	0.0	483	42	11.5	0.0	552	37	9.2	0.0	621
23	17	54	17.5	0.0	429	47	14.1	0.0	491	42	11.5	0.0	552
24	17	60	20.8	0.0	383	53	17.0	0.0	438	47	14.1	0.0	493
25	17	68	24.4	0.0	342	59	20.1	0.0	391	53	16.9	0.0	440
26	17	76	28.3	0.0	306	66	23.6	0.0	350	59	19.9	0.0	394
27	17	84	32.7	0.0	275	74	27.5	0.0	314	66	23.4	0.0	353
28	17	94	37.5	0.0	247	82	31.6	0.0	282	73	27.1	0.0	317
29	17	104	42.6	0.0	222	91	36.1	0.0	254	81	31.1	0.0	286
30	17	115	48.1	0.0	201	101	40.9	0.0	230	90	35.3	0.0	259
31	17	127	53.8	0.0	183	111	45.9	0.0	209	98	39.8	0.0	235
32	17	138	59.7	0.0	167	121	51.1	0.0	191	108	44.3	0.0	215
33	17	150	65.6	0.0	154	131	56.3	0.0	176	117	49.0	0.0	198
34	17	162	71.5	0.0	143	142	61.4	0.0	163	126	53.5	0.0	184
35	17	173	77.2	0.0	134	152	66.3	0.0	153	135	57.9	0.0	172

*Target moisture out of the dryer. Expected final moisture in the bin is….. **15.0%**

Drying table based on 100% meter roll speed of... **1225 bph**

Unload timer set for….. **9.5 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…….. CFSA410

CORN...Full Heat (Continuous flow)

MOISTURE		190 °F			210 °F			230 °F		
%in	%out*	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph
18	17	74	25.6	904	84	22.4	1,034			
19	17	60	31.5	736	69	27.5	841	77	24.5	946
20	17	51	37.0	627	58	32.3	716	66	28.8	806
21	17	45	42.4	547	51	37.1	625	57	33.0	703
22	17	39	48.0	483	45	42.0	552	51	37.3	621
23	17	35	53.9	429	40	47.2	491	45	41.9	552
24	17	31	60.5	383	36	52.9	438	40	47.0	493
25	17	28	67.7	342	32	59.2	391	36	52.6	440
26	17	25	75.6	306	29	66.2	350	32	58.8	394
27	17	22	84.4	275	26	73.8	314	29	65.6	353
28	17	20	93.9	247	23	82.2	282	26	73.0	317
29	17	18	104.2	222	21	91.1	254	23	81.0	286
30	17	16	115.1	201	19	100.7	230	21	89.5	259
31	17	15	126.5	183	17	110.7	209	19	98.4	235
32	17	14	138.3	167	16	121.0	191	18	107.6	215
33	17	13	150.2	154	14	131.4	176	16	116.8	198
34	17	12	162.0	143	13	141.7	163	15	126.0	184
35	17	11	173.2	134	12	151.6	153	14	134.7	172

*Target moisture out of the dryer. Expected final moisture in the bin is….. **15.0%**

Drying table based on 100% meter roll speed of **1225 bph**

WHEAT, BARLEY, MILO...Dry & Cool (staged automatic)

MOISTURE		140 °F				155 °F				175 °F			
		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
15	13	33	4.4	15.3	398	29	2.0	15.3	434				
16	13	44	9.8	15.3	335	38	6.7	15.3	369	32	3.6	15.3	408
17	13	54	14.9	15.3	292	47	11.0	15.3	324	39	7.2	15.3	362
18	13	64	19.7	15.3	261	55	15.1	15.3	291	46	10.7	15.3	327
19	13	74	24.5	15.3	235	63	19.2	15.3	263	53	14.2	15.3	298
20	13	84	29.5	15.3	214	72	23.5	15.3	240	60	17.8	15.3	272
21	13	94	34.8	15.3	195	81	28.0	15.3	219	68	21.6	15.3	250
22	13	106	40.5	15.3	178	91	33.0	15.3	201	76	25.7	15.3	230
23	13	118	46.7	15.3	162	101	38.3	15.3	184	85	30.2	15.3	211

SOYBEANS...Dry & Cool (staged automatic)

MOISTURE		120 °F				130 °F				140 °F			
		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
16	13	26	0.5	15.3	458								
17	13	32	3.5	15.3	411	28	1.5	15.3	442				
18	13	37	6.3	15.3	374	33	3.9	15.3	404	29	2.1	15.3	431
19	13	43	9.1	15.3	343	37	6.4	15.3	372	33	4.3	15.3	399
20	13	49	11.9	15.3	316	43	8.9	15.3	344	38	6.5	15.3	370
21	13	55	15.0	15.3	291	48	11.6	15.3	319	43	8.9	15.3	344
22	13	61	18.3	15.3	269	54	14.5	15.3	295	48	11.5	15.3	319
23	13	69	22.0	15.3	248	60	17.7	15.3	273	53	14.3	15.3	296

Drying table based on 100% meter roll speed of **1225 bph**

Unload timer set for….. **9.5 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…….…. CFSA510

CORN...Dry & Cool (staged automatic)

		190 °F				210 °F				230 °F			
MOISTURE		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
17	15	20	-2.5	14.9	673								
18	15	27	0.7	14.9	588	23	-0.9	14.9	628				
19	15	33	3.8	14.9	527	29	1.7	14.9	567	25	0.1	14.9	602
20	15	38	6.6	14.9	479	34	4.2	14.9	518	30	2.4	14.9	553
21	15	44	9.5	14.9	439	39	6.8	14.9	477	34	4.6	14.9	511
22	15	50	12.5	14.9	404	44	9.4	14.9	441	39	6.9	14.9	474
23	15	56	15.7	14.9	373	49	12.1	14.9	408	44	9.4	14.9	440
24	15	63	19.1	14.9	344	55	15.1	14.9	378	49	12.1	14.9	409
25	15	71	22.8	14.9	317	62	18.4	14.9	349	55	15.0	14.9	379
26	15	79	26.9	14.9	292	69	22.0	14.9	323	61	18.1	14.9	351
27	15	88	31.4	14.9	269	77	25.9	14.9	298	68	21.6	14.9	325
28	15	97	36.2	14.9	248	85	30.1	14.9	275	76	25.4	14.9	301
29	15	108	41.4	14.9	228	94	34.7	14.9	254	84	29.4	14.9	279
30	15	119	47.0	14.9	211	104	39.5	14.9	235	93	33.7	14.9	258
31	15	131	52.8	14.9	195	114	44.7	14.9	218	102	38.3	14.9	240
32	15	143	58.9	14.9	181	125	50.0	14.9	202	111	43.1	14.9	223
33	15	156	65.2	14.9	168	136	55.5	14.9	188	121	47.9	14.9	208
34	15	168	71.6	14.9	157	147	61.1	14.9	176	131	52.9	14.9	195
35	15	181	77.9	14.9	147	158	66.6	14.9	166	141	57.8	14.9	183

CORN...Full Heat (staged automatic)

		190 °F				210 °F				230 °F			
MOISTURE		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
17	17	18	-1.2	0.0	1,695								
18	17	24	1.9	0.0	1,259	21	0.4	0.0	1,439				
19	17	30	4.7	0.0	1,025	26	2.8	0.0	1,171	23	1.4	0.0	1,317
20	17	35	7.3	0.0	872	30	5.1	0.0	997	27	3.4	0.0	1,122
21	17	40	9.8	0.0	761	35	7.3	0.0	870	31	5.4	0.0	978
22	17	45	12.4	0.0	672	40	9.6	0.0	768	35	7.4	0.0	864
23	17	51	15.2	0.0	598	44	12.1	0.0	683	39	9.6	0.0	769
24	17	57	18.3	0.0	533	50	14.8	0.0	610	44	12.0	0.0	686
25	17	64	21.7	0.0	477	56	17.7	0.0	545	50	14.6	0.0	613
26	17	71	25.4	0.0	427	62	21.0	0.0	487	55	17.5	0.0	548
27	17	79	29.6	0.0	382	69	24.6	0.0	437	62	20.7	0.0	492
28	17	88	34.1	0.0	343	77	28.5	0.0	393	69	24.2	0.0	442
29	17	98	38.9	0.0	310	86	32.8	0.0	354	76	28.0	0.0	398
30	17	108	44.0	0.0	280	95	37.3	0.0	320	84	32.0	0.0	360
31	17	119	49.4	0.0	255	104	42.0	0.0	291	93	36.2	0.0	328
32	17	130	55.0	0.0	233	114	46.8	0.0	266	101	40.5	0.0	300
33	17	141	60.6	0.0	215	124	51.7	0.0	245	110	44.9	0.0	276
34	17	152	66.1	0.0	199	133	56.6	0.0	228	119	49.2	0.0	256
35	17	163	71.4	0.0	186	143	61.2	0.0	213	127	53.3	0.0	239

*Target moisture out of the dryer. Expected final moisture in the bin is….. **15.0%**

Drying table based on 100% meter roll speed of... **1497 bph**

Unload timer set for….. **10.1 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…… CFSA510

CORN...Full Heat (Continuous flow)

		190 °F			210 °F			230 °F		
MOISTURE		Unload	Dry	Dry	Unload	Dry	Dry	Unload	Dry	Dry
%in	%out*	%Rate	Time	Bph	%Rate	Time	Bph	%Rate	Time	Bph
18	17	84	24.1	1,259	96	21.1	1,439			
19	17	68	29.6	1,025	78	25.9	1,171	88	23.0	1,317
20	17	58	34.8	872	67	30.5	997	75	27.1	1,122
21	17	51	39.9	761	58	34.9	870	65	31.0	978
22	17	45	45.2	672	51	39.5	768	58	35.1	864
23	17	40	50.8	598	46	44.4	683	51	39.5	769
24	17	36	56.9	533	41	49.8	610	46	44.3	686
25	17	32	63.7	477	36	55.7	545	41	49.5	613
26	17	28	71.2	427	33	62.3	487	37	55.4	548
27	17	26	79.4	382	29	69.5	437	33	61.8	492
28	17	23	88.4	343	26	77.3	393	29	68.8	442
29	17	21	98.1	310	24	85.8	354	27	76.3	398
30	17	19	108.4	280	21	94.8	320	24	84.3	360
31	17	17	119.1	255	19	104.2	291	22	92.7	328
32	17	16	130.2	233	18	113.9	266	20	101.3	300
33	17	14	141.4	215	16	123.7	245	18	110.0	276
34	17	13	152.5	199	15	133.4	228	17	118.6	256
35	17	12	163.1	186	14	142.7	213	16	126.9	239

*Target moisture out of the dryer. Expected final moisture in the bin is….. **15.0%**

Drying table based on 100% meter roll speed of **1497 bph**

WHEAT, BARLEY, MILO...Dry & Cool (staged automatic)

		140 °F				155 °F				175 °F			
MOISTURE		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
15	13	32	3.6	14.9	529	28	1.3	14.9	575				
16	13	43	8.9	14.9	447	37	5.9	14.9	491	31	2.9	14.9	542
17	13	53	13.8	14.9	391	45	10.0	14.9	433	38	6.4	14.9	482
18	13	62	18.4	14.9	349	53	14.0	14.9	388	45	9.8	14.9	436
19	13	71	23.1	14.9	315	61	18.0	14.9	352	51	13.1	14.9	398
20	13	81	27.9	14.9	287	69	22.1	14.9	322	58	16.6	14.9	364
21	13	91	33.0	14.9	261	78	26.5	14.9	294	66	20.3	14.9	335
22	13	102	38.5	14.9	239	88	31.2	14.9	270	74	24.2	14.9	308
23	13	114	44.6	14.9	218	98	36.4	14.9	247	82	28.6	14.9	283

SOYBEANS...Dry & Cool (staged automatic)

		120 °F				130 °F				140 °F			
MOISTURE		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
16	13	25	-0.1	14.9	607								
17	13	31	2.8	14.9	546	27	0.8	14.9	586				
18	13	36	5.5	14.9	497	31	3.2	14.9	537	28	1.5	14.9	572
19	13	41	8.2	14.9	457	36	5.6	14.9	495	32	3.6	14.9	530
20	13	47	11.0	14.9	421	41	8.0	14.9	459	37	5.7	14.9	493
21	13	53	13.9	14.9	389	46	10.6	14.9	425	41	8.0	14.9	458
22	13	59	17.1	14.9	360	52	13.4	14.9	394	46	10.5	14.9	426
23	13	66	20.6	14.9	332	58	16.5	14.9	365	52	13.3	14.9	396

Drying table based on 100% meter roll speed of **1497 bph**

Unload timer set for….. **10.1 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…….…. CFSA600

CORN...Dry & Cool (staged automatic)

		190 °F				210 °F				230 °F			
MOISTURE		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
17	15	20	-2.7	14.9	803								
18	15	26	0.5	14.9	703	23	-1.2	14.9	751				
19	15	32	3.4	14.9	630	28	1.4	14.9	678	25	-0.1	14.9	720
20	15	38	6.2	14.9	573	33	3.9	14.9	620	29	2.1	14.9	661
21	15	43	9.0	14.9	526	38	6.3	14.9	571	34	4.2	14.9	612
22	15	49	12.0	14.9	485	43	8.9	14.9	528	38	6.5	14.9	568
23	15	55	15.0	14.9	447	48	11.6	14.9	489	43	8.9	14.9	528
24	15	62	18.4	14.9	413	54	14.5	14.9	453	48	11.5	14.9	490
25	15	69	22.0	14.9	381	61	17.7	14.9	419	54	14.4	14.9	455
26	15	77	26.0	14.9	351	68	21.2	14.9	388	60	17.5	14.9	422
27	15	86	30.4	14.9	323	75	25.0	14.9	358	67	20.9	14.9	391
28	15	95	35.1	14.9	298	83	29.2	14.9	331	74	24.5	14.9	362
29	15	106	40.2	14.9	275	92	33.6	14.9	306	82	28.5	14.9	335
30	15	116	45.7	14.9	254	102	38.4	14.9	283	91	32.7	14.9	310
31	15	128	51.4	14.9	235	112	43.4	14.9	262	99	37.2	14.9	288
32	15	140	57.4	14.9	218	122	48.6	14.9	243	109	41.8	14.9	268
33	15	152	63.5	14.9	203	133	54.0	14.9	227	118	46.6	14.9	250
34	15	165	69.7	14.9	189	144	59.5	14.9	212	128	51.5	14.9	234
35	15	177	75.9	14.9	178	155	64.9	14.9	199	138	56.3	14.9	221

CORN...Full Heat (staged automatic)

		190 °F				210 °F				230 °F			
MOISTURE		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
17	17	18	-1.4	0.0	2,048								
18	17	24	1.6	0.0	1,522	21	0.2	0.0	1,739				
19	17	29	4.3	0.0	1,238	25	2.5	0.0	1,415	23	1.1	0.0	1,592
20	17	34	6.9	0.0	1,054	30	4.8	0.0	1,205	26	3.1	0.0	1,355
21	17	39	9.4	0.0	920	34	6.9	0.0	1,051	30	5.0	0.0	1,182
22	17	44	11.9	0.0	812	39	9.2	0.0	928	34	7.0	0.0	1,045
23	17	50	14.7	0.0	723	43	11.6	0.0	826	39	9.2	0.0	929
24	17	56	17.7	0.0	645	49	14.2	0.0	737	43	11.5	0.0	829
25	17	62	21.0	0.0	576	55	17.1	0.0	658	48	14.1	0.0	741
26	17	70	24.7	0.0	515	61	20.3	0.0	589	54	16.9	0.0	663
27	17	78	28.7	0.0	462	68	23.8	0.0	528	60	20.1	0.0	594
28	17	86	33.1	0.0	415	76	27.7	0.0	474	67	23.5	0.0	534
29	17	96	37.8	0.0	374	84	31.8	0.0	428	75	27.2	0.0	481
30	17	106	42.8	0.0	339	93	36.2	0.0	387	82	31.1	0.0	435
31	17	117	48.1	0.0	308	102	40.8	0.0	352	91	35.2	0.0	396
32	17	127	53.5	0.0	282	111	45.6	0.0	322	99	39.4	0.0	362
33	17	138	59.0	0.0	259	121	50.4	0.0	296	108	43.6	0.0	334
34	17	149	64.4	0.0	241	130	55.1	0.0	275	116	47.9	0.0	309
35	17	160	69.6	0.0	225	140	59.6	0.0	257	124	51.9	0.0	289

*Target moisture out of the dryer. Expected final moisture in the bin is….. **15.0%**

Drying table based on 100% meter roll speed of... **1769 bph**

Unload timer set for….. **10.1 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE…… CFSA600

CORN...Full Heat (Continuous flow)

MOISTURE		190 °F			210 °F			230 °F		
%in	%out*	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph	Unload %Rate	Dry Time	Dry Bph
18	17	86	23.6	1,522	98	20.6	1,739			
19	17	70	29.0	1,238	80	25.4	1,415	90	22.5	1,592
20	17	60	34.0	1,054	68	29.8	1,205	77	26.5	1,355
21	17	52	39.0	920	59	34.1	1,051	67	30.3	1,182
22	17	46	44.2	812	52	38.6	928	59	34.3	1,045
23	17	41	49.7	723	47	43.5	826	53	38.6	929
24	17	36	55.7	645	42	48.7	737	47	43.3	829
25	17	33	62.3	576	37	54.5	658	42	48.4	741
26	17	29	69.6	515	33	60.9	589	37	54.1	663
27	17	26	77.7	462	30	68.0	528	34	60.4	594
28	17	23	86.5	415	27	75.6	474	30	67.2	534
29	17	21	95.9	374	24	83.9	428	27	74.6	481
30	17	19	106.0	339	22	92.7	387	25	82.4	435
31	17	17	116.5	308	20	101.9	352	22	90.6	396
32	17	16	127.4	282	18	111.4	322	20	99.1	362
33	17	15	138.3	259	17	121.0	296	19	107.6	334
34	17	14	149.1	241	16	130.5	275	17	116.0	309
35	17	13	159.5	225	15	139.6	257	16	124.1	289

*Target moisture out of the dryer. Expected final moisture in the bin is….. **15.0%**

Drying table based on 100% meter roll speed of **1769 bph**

WHEAT, BARLEY, MILO...Dry & Cool (staged automatic)

MOISTURE		140 °F				155 °F				175 °F			
		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
15	13	32	3.6	14.9	625	28	1.3	14.9	680				
16	13	43	8.9	14.9	528	37	5.9	14.9	580	31	2.9	14.9	641
17	13	53	13.8	14.9	462	45	10.0	14.9	511	38	6.4	14.9	570
18	13	62	18.4	14.9	412	53	14.0	14.9	459	45	9.8	14.9	515
19	13	71	23.1	14.9	372	61	18.0	14.9	416	51	13.1	14.9	470
20	13	81	27.9	14.9	339	69	22.1	14.9	380	58	16.6	14.9	431
21	13	91	33.0	14.9	309	78	26.5	14.9	348	66	20.3	14.9	396
22	13	102	38.5	14.9	282	88	31.2	14.9	319	74	24.2	14.9	364
23	13	114	44.6	14.9	258	98	36.4	14.9	292	82	28.6	14.9	334

SOYBEANS...Dry & Cool (staged automatic)

MOISTURE		120 °F				130 °F				140 °F			
		Total	Timer Setting		Capacity	Total	Timer Setting		Capacity	Total	Timer Setting		Capacity
%in	%out	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph	Dry Time	Heat	Cool	Dry Bph
16	13	25	-0.1	14.9	718								
17	13	31	2.7	14.9	645	27	0.8	14.9	692				
18	13	36	5.5	14.9	588	31	3.2	14.9	634	28	1.5	14.9	676
19	13	41	8.2	14.9	540	36	5.6	14.9	585	32	3.6	14.9	627
20	13	47	11.0	14.9	498	41	8.0	14.9	542	37	5.7	14.9	582
21	13	53	13.9	14.9	460	46	10.6	14.9	503	41	8.0	14.9	542
22	13	59	17.1	14.9	425	52	13.4	14.9	466	46	10.5	14.9	504
23	13	66	20.6	14.9	393	58	16.5	14.9	432	52	13.3	14.9	468

Drying table based on 100% meter roll speed of **1769 bph**

Unload timer set for….. **10.1 minutes**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. C2120A

CORN ...dry & cool

MOISTURE		190 °F			210 °F			230 °F		
		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
17	15	66	21	625	75	18	714			
18	15	49	27	471	56	24	538			
19	15	40	34	384	46	29	439	52	26	494
20	15	34	39	326	39	35	373	44	31	419
21	15	30	45	284	34	40	324	38	35	365
22	15	26	52	250	30	45	285	34	40	321
23	15	23	58	222	27	51	253	30	45	285
24	15	21	65	198	24	57	226	27	51	254
25	15	19	73	177	21	64	202	24	57	227
26	15	17	81	159	19	71	181	21	63	204
27	15	15	90	142	17	79	163	19	70	183
28	15	13	100	128	15	88	147	17	78	165
29	15	12	111	116	14	97	132	16	86	149
30	15	11	123	105	13	107	120	14	95	135
31	15	10	135	96	11	118	109	13	105	123
32	15	9	147	88	10	129	100	12	114	113
33	15	8	160	80	10	140	92	11	125	103
34	15	8	173	74	9	152	85	10	135	96
35	15	7	186	69	8	163	79	9	145	89

CORN ...full heat

MOISTURE		190 °F			210 °F			230 °F		
		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	*out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
18	17	82	25	778	93	22	889			
19	17	66	31	633	76	27	724	85	24	814
20	17	57	36	539	65	31	616	73	28	693
21	17	49	41	470	56	36	537	63	32	605
22	17	44	46	416	50	41	475	56	36	534
23	17	39	52	370	44	46	422	50	41	475
24	17	35	59	330	40	51	377	44	46	424
25	17	31	66	295	35	57	337	40	51	379
26	17	28	73	264	32	64	301	36	57	339
27	17	25	82	236	28	72	270	32	64	304
28	17	22	91	212	25	80	243	29	71	273
29	17	20	101	191	23	88	219	26	79	246
30	17	18	112	173	21	98	198	23	87	223
31	17	17	123	158	19	107	180	21	95	203
32	17	15	134	144	17	117	165	19	104	185
33	17	14	146	133	16	127	152	18	113	171
34	17	13	157	123	15	137	141	17	122	158
35	17	12	168	115	14	147	131	16	131	148

*Target moisture out of the dryer. Expected final moisture in the bin is…….. **15.0%**

Based on 100% Unload rate c **953 bph**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. C2120A

WHEAT, BARLEY, MILO ...dry & cool

MOISTURE		140 °F			155 °F			175 °F		
		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
15	13	42	32	398	49	28	465	58	23	553
16	13	31	43	300	37	37	350	44	31	417
17	13	26	53	245	30	45	286	36	38	340
18	13	22	62	208	25	53	243	30	45	289
19	13	19	71	181	22	61	211	26	51	251
20	13	17	81	159	19	69	186	23	58	221
21	13	15	91	141	17	78	165	21	66	196
23	13	12	114	113	14	98	132	16	82	157
25	13	10	142	91	11	122	106	13	102	126

SOYBEANS ...dry & cool

MOISTURE		120 °F			130 °F			140 °F		
		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
15	13	48	28	453	54	25	518	61	22	583
16	13	36	38	342	41	33	390	46	29	439
17	13	29	46	278	33	40	318	38	36	358
18	13	25	54	237	28	48	270	32	42	304
19	13	22	63	206	25	55	235	28	49	264
20	13	19	71	181	22	62	207	24	55	233
21	13	17	80	161	19	70	184	22	62	207
23	13	13	100	128	15	88	147	17	78	165
25	13	11	125	103	12	109	118	14	97	133

CANOLA ...dry & cool

MOISTURE		120 °F			140 °F			160 °F		
		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
11	9	38	36	362	49	28	465	60	23	569
12	9	29	47	273	37	37	351	45	30	429
13	9	23	58	222	30	45	286	37	37	349
14	9	20	68	189	25	53	243	31	43	297
15	9	17	78	164	22	61	211	27	50	258
16	9	15	89	145	20	69	186	24	57	227
17	9	13	100	128	17	78	165	21	64	202
18	9	12	112	115	15	87	147	19	72	180
19	9	11	126	102	14	98	132	17	80	161

Based on 100% Unload rate c **953** **bph**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. C2125A

CORN ...dry & cool

		190 °F			210 °F			230 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
17	15	66	21	805	75	18	920			
18	15	50	27	607	57	24	694			
19	15	40	34	495	46	29	565	52	26	636
20	15	34	39	420	39	35	480	44	31	540
21	15	30	45	365	34	40	418	38	35	470
22	15	26	52	322	30	45	368	34	40	414
23	15	23	58	286	27	51	327	30	45	367
24	15	21	65	255	24	57	291	27	51	328
25	15	19	73	228	21	64	261	24	57	293
26	15	17	81	204	19	71	234	21	63	263
27	15	15	90	184	17	79	210	19	70	236
28	15	14	100	165	15	88	189	17	78	213
29	15	12	111	149	14	97	171	16	86	192
30	15	11	123	135	13	107	155	14	95	174
31	15	10	135	123	12	118	141	13	105	159
32	15	9	147	113	11	129	129	12	114	145
33	15	8	160	104	10	140	118	11	125	133
34	15	8	173	96	9	152	110	10	135	123
35	15	7	186	89	8	163	102	9	145	115

CORN ...full heat

		190 °F			210 °F			230 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	*out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
18	17	82	25	1003	94	22	1146			
19	17	67	31	816	76	27	933	86	24	1049
20	17	57	36	695	65	31	794	73	28	893
21	17	49	41	606	57	36	693	64	32	779
22	17	44	46	536	50	41	612	56	36	689
23	17	39	52	476	44	46	544	50	41	612
24	17	35	59	425	40	51	486	45	46	546
25	17	31	66	380	35	57	434	40	51	488
26	17	28	73	340	32	64	388	36	57	437
27	17	25	82	305	28	72	348	32	64	392
28	17	22	91	274	26	80	313	29	71	352
29	17	20	101	247	23	88	282	26	79	317
30	17	18	112	223	21	98	255	23	87	287
31	17	17	123	203	19	107	232	21	95	261
32	17	15	134	186	17	117	212	19	104	239
33	17	14	146	171	16	127	195	18	113	220
34	17	13	157	159	15	137	181	17	122	204
35	17	12	168	148	14	147	169	16	131	191

*Target moisture out of the dryer. Expected final moisture in the bin is…….. **15.0%**

Based on 100% Unload rate c **1225 bph**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. C2125A

WHEAT, BARLEY, MILO ...dry & cool

		140 °F			155 °F			175 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
15	13	42	32	513	49	28	599	58	23	713
16	13	32	43	387	37	37	451	44	31	537
17	13	26	53	315	30	45	368	36	38	438
18	13	22	62	268	26	53	313	30	45	372
19	13	19	71	233	22	61	272	26	51	324
20	13	17	81	205	20	69	239	23	58	285
21	13	15	91	182	17	78	213	21	66	253
23	13	12	114	145	14	98	170	16	82	202
25	13	10	142	117	11	122	137	13	102	163

SOYBEANS ...dry & cool

		120 °F			130 °F			140 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
15	13	48	28	584	54	25	667	61	22	751
16	13	36	38	440	41	33	503	46	29	566
17	13	29	46	359	33	40	410	38	36	461
18	13	25	54	305	28	48	348	32	42	392
19	13	22	63	265	25	55	303	28	49	341
20	13	19	71	234	22	62	267	25	55	300
21	13	17	80	207	19	70	237	22	62	267
23	13	13	100	165	15	88	189	17	78	213
25	13	11	125	133	12	109	152	14	97	171

CANOLA ...dry & cool

		120 °F			140 °F			160 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
11	9	38	36	466	49	28	600	60	23	733
12	9	29	47	351	37	37	452	45	30	552
13	9	23	58	287	30	45	368	37	37	450
14	9	20	68	243	26	53	313	31	43	383
15	9	17	78	212	22	61	272	27	50	333
16	9	15	89	186	20	69	240	24	57	293
17	9	14	100	166	17	78	213	21	64	260
18	9	12	112	148	15	87	190	19	72	232
19	9	11	126	132	14	98	170	17	80	208

Based on 100% Unload rate c **1225 bph**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. C2130A

CORN ...dry & cool

		190 °F			210 °F			230 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
17	15	69	20	940	79	17	1074			
18	15	52	26	708	59	23	809			
19	15	42	32	577	48	28	660	55	25	742
20	15	36	38	490	41	33	561	46	29	631
21	15	31	43	426	36	38	487	40	34	548
22	15	28	49	376	32	43	429	35	38	483
23	15	25	55	334	28	48	381	32	43	429
24	15	22	62	297	25	54	340	28	48	382
25	15	20	69	266	22	61	304	25	54	342
26	15	18	77	239	20	68	273	23	60	307
27	15	16	86	214	18	75	245	20	67	276
28	15	14	95	193	16	83	221	18	74	248
29	15	13	106	174	15	92	199	16	82	224
30	15	12	116	158	13	102	181	15	91	203
31	15	11	128	144	12	112	164	14	99	185
32	15	10	140	132	11	122	150	12	109	169
33	15	9	152	121	10	133	138	11	118	156
34	15	8	165	112	9	144	128	11	128	144
35	15	8	177	104	9	155	119	10	138	134

CORN ...full heat

		190 °F			210 °F			230 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	*out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
18	17	86	24	1171	98	21	1338			
19	17	70	29	952	80	25	1088	90	23	1224
20	17	60	34	811	68	30	927	77	26	1043
21	17	52	39	707	59	34	808	67	30	909
22	17	46	44	625	52	39	714	59	34	804
23	17	41	50	556	47	43	635	53	39	715
24	17	36	56	496	42	49	567	47	43	637
25	17	33	62	443	37	55	506	42	48	570
26	17	29	70	396	33	61	453	37	54	510
27	17	26	78	355	30	68	406	34	60	457
28	17	23	86	319	27	76	365	30	67	410
29	17	21	96	288	24	84	329	27	75	370
30	17	19	106	260	22	93	298	25	82	335
31	17	17	117	237	20	102	271	22	91	305
32	17	16	127	217	18	111	248	20	99	279
33	17	15	138	200	17	121	228	19	108	257
34	17	14	149	185	16	130	212	17	116	238
35	17	13	160	173	15	140	198	16	124	222

*Target moisture out of the dryer. Expected final moisture in the bin is…….. **15.0%**

Based on 100% Unload rate c **1361 bph**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. C2130A

WHEAT, BARLEY, MILO ...dry & cool

		140 °F			155 °F			175 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
15	13	42	32	569	49	28	664	58	23	790
16	13	32	43	429	37	37	500	44	31	596
17	13	26	53	350	30	45	408	36	38	486
18	13	22	62	297	25	53	347	30	45	413
19	13	19	71	258	22	61	301	26	51	359
20	13	17	81	228	20	69	265	23	58	316
21	13	15	91	202	17	78	236	21	66	281
23	13	12	114	161	14	98	188	16	82	224
25	13	10	142	130	11	122	151	13	102	180

SOYBEANS ...dry & cool

		120 °F			130 °F			140 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
15	13	48	28	647	54	25	740	61	22	832
16	13	36	38	488	41	33	558	46	29	627
17	13	29	46	398	33	40	455	38	36	511
18	13	25	54	338	28	48	386	32	42	434
19	13	22	63	294	25	55	336	28	49	378
20	13	19	71	259	22	62	296	24	55	333
21	13	17	80	230	19	70	263	22	62	295
23	13	13	100	183	15	88	209	17	78	236
25	13	11	125	148	12	109	169	14	97	190

CANOLA ...dry & cool

		120 °F			140 °F			160 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
11	9	40	34	545	51	26	701	63	21	856
12	9	30	45	411	39	35	528	47	29	645
13	9	25	55	335	32	43	430	39	35	526
14	9	21	65	284	27	50	366	33	41	447
15	9	18	74	247	23	58	318	29	47	389
16	9	16	84	218	21	66	280	25	54	342
17	9	14	95	193	18	74	249	22	61	304
18	9	13	107	173	16	83	222	20	68	271
19	9	11	119	154	15	93	198	18	76	242

Based on 100% Unload rate c **1361 bph**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. C2140A

CORN ...dry & cool

		190 °F			210 °F			230 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
17	15	69	20	1221	79	17	1396			
18	15	52	26	921	59	23	1052			
19	15	42	32	751	48	28	858	55	25	965
20	15	36	38	638	41	33	729	46	29	820
21	15	31	43	554	36	38	634	40	34	713
22	15	28	49	488	32	43	558	35	38	628
23	15	25	55	434	28	48	496	32	43	558
24	15	22	62	387	25	54	442	28	48	497
25	15	20	69	346	22	61	395	25	54	445
26	15	18	77	310	20	68	354	23	60	399
27	15	16	86	279	18	75	318	20	67	358
28	15	14	95	251	16	83	287	18	74	323
29	15	13	106	227	15	92	259	16	82	291
30	15	12	116	206	13	102	235	15	91	264
31	15	11	128	187	12	112	214	14	99	241
32	15	10	140	171	11	122	196	12	109	220
33	15	9	152	157	10	133	180	11	118	202
34	15	8	165	145	9	144	166	11	128	187
35	15	8	177	135	9	155	154	10	138	174

CORN ...full heat

		190 °F			210 °F			230 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	*out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
18	17	86	24	1522	98	21	1739			
19	17	70	29	1238	80	25	1415	90	23	1592
20	17	60	34	1054	68	30	1205	77	26	1355
21	17	52	39	920	59	34	1051	67	30	1182
22	17	46	44	812	52	39	928	59	34	1045
23	17	41	50	723	47	43	826	53	39	929
24	17	36	56	645	42	49	737	47	43	829
25	17	33	62	576	37	55	658	42	48	741
26	17	29	70	515	33	61	589	37	54	663
27	17	26	78	462	30	68	528	34	60	594
28	17	23	86	415	27	76	474	30	67	534
29	17	21	96	374	24	84	428	27	75	481
30	17	19	106	339	22	93	387	25	82	435
31	17	17	117	308	20	102	352	22	91	396
32	17	16	127	282	18	111	322	20	99	362
33	17	15	138	259	17	121	296	19	108	334
34	17	14	149	241	16	130	275	17	116	309
35	17	13	160	225	15	140	257	16	124	289

*Target moisture out of the dryer. Expected final moisture in the bin is…….. **15.0%**

Based on 100% Unload rate c **1769 bph**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

DRYING TIME TABLE……. C2140A

WHEAT, BARLEY, MILO ...dry & cool

		140 °F			155 °F			175 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
15	13	42	32	740	49	28	863	58	23	1027
16	13	32	43	557	37	37	650	44	31	774
17	13	26	53	454	30	45	530	36	38	631
18	13	22	62	386	25	53	450	30	45	536
19	13	19	71	336	22	61	392	26	51	466
20	13	17	81	296	20	69	345	23	58	411
21	13	15	91	263	17	78	306	21	66	365
23	13	12	114	209	14	98	244	16	82	291
25	13	10	142	169	11	122	197	13	102	234

SOYBEANS ...dry & cool

		120 °F			130 °F			140 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
15	13	48	28	842	54	25	962	61	22	1082
16	13	36	38	634	41	33	725	46	29	815
17	13	29	46	517	33	40	591	38	36	665
18	13	25	54	439	28	48	502	32	42	565
19	13	22	63	382	25	55	436	28	49	491
20	13	19	71	336	22	62	385	24	55	433
21	13	17	80	299	19	70	341	22	62	384
23	13	13	100	238	15	88	272	17	78	306
25	13	11	125	192	12	109	219	14	97	247

CANOLA ...dry & cool

		120 °F			140 °F			160 °F		
MOISTURE		% Unload	Dry	Capacity	% Unload	Dry	Capacity	% Unload	Dry	Capacity
in	out	Rate	Time	Dry Bph	Rate	Time	Dry Bph	Rate	Time	Dry Bph
11	9	40	34	708	51	26	911	63	21	1113
12	9	30	45	534	39	35	686	47	29	839
13	9	25	55	435	32	43	560	39	35	684
14	9	21	65	370	27	50	475	33	41	581
15	9	18	74	321	23	58	413	29	47	505
16	9	16	84	283	21	66	364	25	54	445
17	9	14	95	251	18	74	323	22	61	395
18	9	13	107	224	16	83	288	20	68	352
19	9	11	119	201	15	93	258	18	76	315

Based on 100% Unload rate c **1769 bph**

The above drying capacities are estimates based on drying principles, field results, and computer simulations. Variances may occur due to grain physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, weather conditions, ect.

gas, or the valve in the fuel supply line if using natural gas. Turn on the Maxon electric shut off valve, if so equipped, or open the manual shut off valve to allow fuel flow to the dryer.

5. The dryer should already be filled with grain. Turn the LOAD AUGER switch to **AUTO**. In both the auto and manual position, the grain level switch will automatically keep the dryer full of grain. In the auto position the dryer will shut down after the preset time period on the out of grain timer, or if the grain flow to the dryer is interrupted.

6. Turn each FAN switch to **AUTO**. The fan will start, and the switch will light up when air pressure is detected.

7. Start each burner by turning the HEATER switch to **AUTO**. After purging for approximately 10 seconds the burner will fire, and the heater switch will light up indicating that the flame sensing circuit is sensing burner flame. For information concerning burner adjustment see the pre start section of this manual.

8. To properly set the correct DRY, COOL and UNLOAD time for various moisture content grains, see the drying charts for your size of dryer.

9. If the dryer is being operated in all heat, turn each FAN switch to **ON**. In this position the fan will run continuously during both the dry and unload stages of the staged batch operation. If the dryer is being operated in the dry and cool mode, the preferred position for the FAN switch is the **ON** position, so the fan will run continuously. If desired, the fan can be turned off during the unload cycle of the dry-cool-unload sequence by turning the fan switch to auto.

10. If the dryer is being operated in all heat, turn each HEATER switch to **ON**. The burner will operate whenever the fan is operating. If the dryer is being used in dry and cool, turn the HEATER switches to **AUTO** and the burner will automatically shut down during the cooling and unloading cycles.

11. Turn the UNLOAD switch to the **ONE SPEED** position. The bottom auger and metering rolls will start automatically during the unload cycle of the dry-cool-unload mode, along with any grain handling equipment that is wired to the dryer. The speed at which the metering rolls operate during the unload cycle is adjusted by using the high speed metering roll knob. Turning the dial clockwise will increase the grain discharge rate, and counterclockwise will decrease the discharge rate.

12. To control the length of the dry cycle using only the dry time setting programmed into the system, turn the moisture control setting to off. To use the automatic moisture control so that the dry time is determined, not only by the dry time setting, but also by the moisture content of the drying grain, turn the MOISTURE CONTROL switch to **ON**, and set the grain temperature set point to a setting of 135°F (57°C).

13. To start the drying operation push the dryer POWER START button. The controller will start all the dryer components in their proper order.

14. To shutdown the dryer, close the fuel supply valve at the fuel tank or fuel source. If the burners are operating, let the dryer run out of fuel causing an automatic shutdown due to a loss of flame. Close the fuel valve at the dryer, and press the dryer power stop button. Turn off the dryer's main circuit breaker located on the front of the power panel. Turn off the main power supply to the dryer.

15. In case of an emergency, press the dryer power stop button. The burners, fans and all augers will stop immediately.

Continuous-Batch Operation

These switches are used to set the cycle times in the staged batch drying mode only. The drying mode switch must be in the staged batch position. The current setting on these three timers is displayed directly above each timer button.

During operation the remaining time on each timer is displayed on the screen. If the power goes out or if the dryer is stopped, these times are saved by the controller. When the dryer is restarted the timers will continue timing down. The timers will return to their initial setting if the reset button is pushed.

Use the dryer charts in the back of this manual for reference of a suggested timer settings.

Dry Timer

This timer controls how long the burner will operate. If the moisture control switch is turned on and the dry time reaches zero, then the burner will continue to burn as long as the grain temperature has not reached the moisture control set point.

To change the setting of this timer follow these instructions:

During dryer operation the remaining time on each timer is displayed on the screen unless reset to their

stored values by pressing the button.

Fan Setting	Heater Setting	Fan Function	Heater Function
Auto	Auto	Fans stay on during dry and cool cycle only	Burners stay on during dry timer cycle only
Auto	On	Fans stay on during dry and cool cycle only	Burners stay on during dry and cool
On	On	Fans are on continuously	Burners are on continuously
On	Auto	Fans are on continuously	Burners shut down at the end of the dry cycle

At the end of the dry cycle in staged batch, the fans and heaters will continue running if in the Auto-Auto setting, until the preset temperature for the moisture control is reached.

Cool Timer
This timer controls how long the fan will operate after the dry timer has expired.
To change the setting of this timer follow these instructions:
During dryer operation the remaining time on each timer is displayed on the screen unless reset to their stored values by pressing the button.

Unload Timer
This timer controls how long the unload auger will operate after the cool timer has expired.
Use the dryer charts in the back of this manual for reference of a suggested timer settings.
To change the setting of this timer follow these instructions:
During dryer operation the remaining time on each timer is displayed on the screen unless reset to their
stored values by pressing the button.

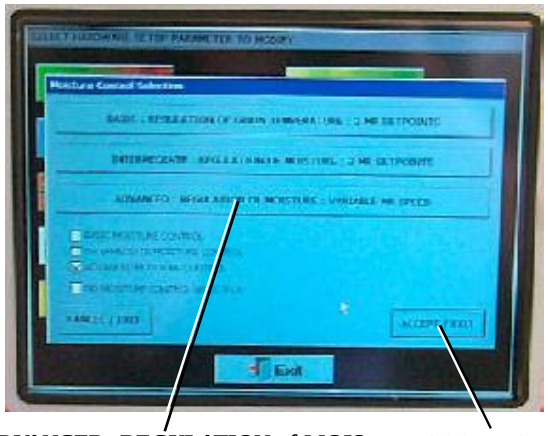
Moisture Control Activation

SETUP BUTTON

To activate the Advanced Moisture Control with printer touch the **Setup** button at the bottom of the Main Screen. The Select Hardware Setup Parameter To Modify screen is now displayed.

DIAGNOSTICS BUTTON

Now touch the **Diagnostics** button at the bottom of the right column of buttons (see diagram above). The Moisture Control Selection screen is now displayed.



ADVANCED: REGULATION of MOISTURE: VARIABLE MR SPEED

ACCEPT/EXIT BUTTON

Now touch the **Advanced : Regulation Of Moisture Variable MR Speed** button. Be sure the Advanced Moisture Control box is checked. Touch the **Accept / Exit** button to save settings an exit back to the Select Hardware Setup Parameter To Modify display. Touch the **Exit** button at the bottom of the Select Hardware Setup Parameter To Modify display to return to the Main Display.

Moisture Control Setup

M/C BUTTON

To set up the Advanced Moisture Control with printer touch the **M/C** button at the bottom of the Main Display. The Select Moisture Control Operating Mode & Setpoint display is now displayed.

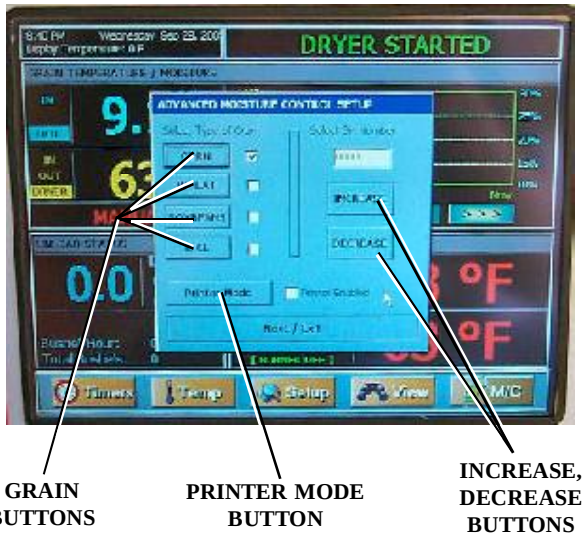
Touch the **Moisture Control On** button to turn the Moisture Controller on, the box next to on should be checked.

Touch the **Modify Setpoint** button to modify moisture setpoint. Note that when this button is touched a number pad display will be displayed. Use the number buttons to enter a new moisture setpoint. The Delete button will erase old setpoint or one entered in error. When the desired moisture setpoint has been entered touch the accept button. The number pad display will disappear and the Select Moisture Control Operating Mode & Setpoint display with the desired moisture setpoint will be displayed. Touch the **Next** button to move on to the next step. Note that touching the **Exit** button at this point during setup will exit the setup proceedure and you will have to begin from the beginning of the setup.

The next step in the Moisture Control setup is to enter the values for:

Unload Capacity - (BPH) the capacity of the dryer unloading device itself (e.g. metering rolls) running at 100% speed. It is not the rated dryer capacity.
Take Away Limit - (BPH) the maximum capacity of the overall take away equipment. The take away equipment refers to any augers/conveyors/legs after the unloading device. The take away limit is the maximum capacity in which the dryer can run without plugging any unload equipment.
Unload Low Limit - (%) the minimum speed the unloading device can run. It should not trigger the unload alarm at this speed for the dryer having an unload monitoring device.

When the values for Unload Cap., Take Away Limit, and Unload Low Limit have been entered touch the **Next / Exit** button to go to the next step in the Moisture Control setup proceedure.

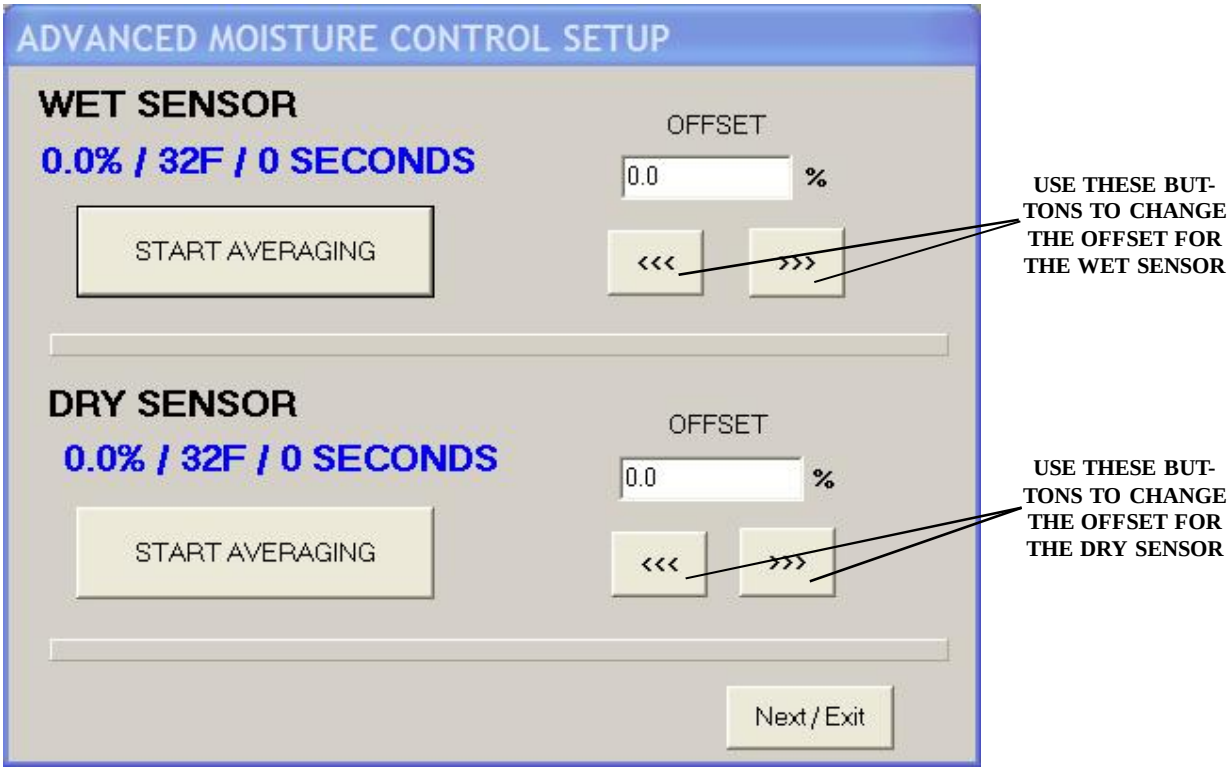


Select the type of grain that you are drying (corn, wheat, soybeans, rice). A check in the box next to these button will confirm the type of grain selected.

To select bin number touch the **Increase** or **Decrease** buttons until the desired bin is displayed.

To select printer mode touch the **Printer Mode** button. A check in the box next to this button will confirm that the printer is enabled.

When the type of grain, bin number, and printer mode have been entered touch the **Next / Exit** button to go to the next step in the Moisture Control setup proceedure.



If you have your own bench meter you can test samples of wet and dry grain and compare those with the moisture reading displayed on the dryer display or printed on the moisture control printer.

Change the sensor offset if the moisture content displayed on the dryer does not match the bench measurement. For example, if the offset was 0.0% and the moisture content displayed on the dryer is 0.5% lower than the bench meter, then change the offset to 0.5% to match the sensor to the bench meter. To change the offset touch the <<< or >>> buttons until the desired offset is displayed.

If you do not have bench meter then you can use the results of the moisture samples taken at the grain elevator to calibrate the dry sensor on your dryer.

The moisture control setup is complete. Touch the Next/Exit button to exit moisture control setup and return to the dyrer Main Screen.

Note: the sensor should be calibrated 2-3 times a day. At the same time check and clean the sensor and sensor sampling box to make sure there are no cobs or straws blocking the grain flow around the sensor.

How the Advanced Moisture Control works

The controller continuously monitors the moisture coming in and out of the dryer, and the column grain temperature at the end of the drying section. However, the control action is mainly based on the dry sensor at the outlet of the dryer. If the moisture coming out of the dryer is not right at the target, the controller will speed up or slow down the unload accordingly. The wet sensor and the column grain temperature sensor are intended to detect moisture spikes coming into the dryer so that the moisture controller can react ahead of time. For example, if the wet sensor detect a jump of moisture coming into the dryer, the controller will start to slow down the unload speed right away. However, the controller does not act to the full scale immediately. Instead, it slows down the dryer gradually so that the grain currently in the dryer would not get too much overdried.

The controller does not have enough information of the grain in the dryer in the first pass after the dryer is started. It controls the dryer by using the manual speed setting as the starting point. In other words, the manual speed setting is most responsible for the first pass of drying. Therefore, set the manual unloading speed as close as it should be for the grain currently in the dryer before switching to moisture control mode. The manual speed setting does not have to be adjusted after the moisture control is activated.

SECTION 6
SAFETY CIRCUIT SHUTDOWN MESSAGES

FAN AND HEATER GENERATED ERRORS

The following is a list of errors that are generated with the fan and heater controller. Each fan and heater has there own set of safeties which are listed below. You will need to inspect the controller associated with the error. Example: If you get this error, it is telling you the problem is with Housing 1 (bottom most fan) High Limit (see fig. 6.1).

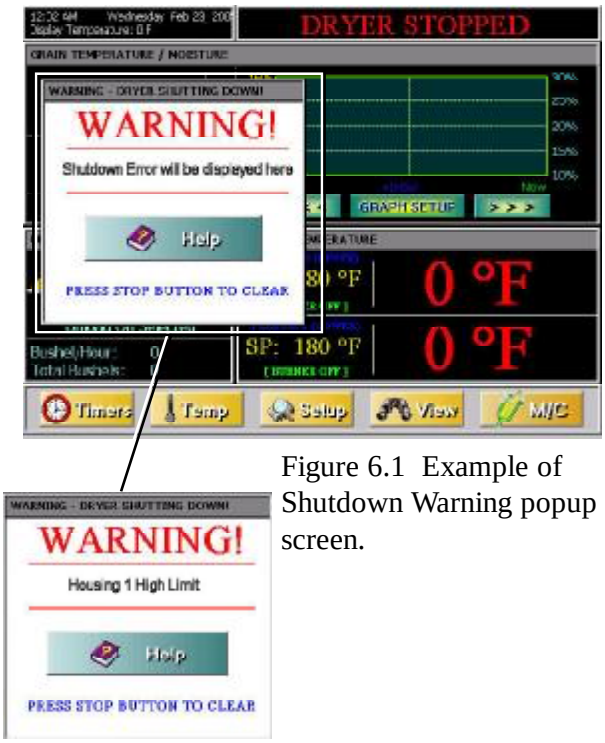


Figure 6.1 Example of Shutdown Warning popup screen.

Air Switch x Stuck
The air switch contacts have closed prior to the fan starting, indicating a freewheeling blade or improper setting of the air switch. The message will distinguish between which fan caused the shutdown. This indicates that 12VDC has been lost to terminal **J4-04** on the Fan/Heater board.

Fan x Loss of Airflow
This error message is displayed when airflow (air pressure) has been established but was lost for some reason. This could happen if while during the dryers operation the grain has settled or shrinkage in the grain columns causing a loss of air pressure in the plenum chamber.

Fan x No Airflow
Contacts in the air switch have never opened due to the fan not turning, or the air switch may need adjustment. The message will distinguish between which fan caused the shutdown.

Flame Loss x
The flame sensor has failed to detect a burner flame which had been established but was lost for some reason and there is a problem with the flame sensing circuitry or the dryer is not getting burner fuel. The message will distinguish between which burner caused the shutdown. The reference to the number one (1) is telling you that it is burner number 1 which is the bottom most fan.

Grain Temp Short x
This error indicates there is a shorted condition with one of the grain temperature sensors located inside the left or right grain columns. This could be a shorted sensor or the sensor wires could be shorted.

Grain x Overheat
An over temperature condition has occurred in one of the grain columns causing the control to shutdown the dryer. This control is set at 210°F (99°C) and automatically resets itself when cool. This can be caused from a grain column plugged with trash or your meter rolls may be adjusted to slow. Feel the grain columns to determine which one may be causing the problems. If all the columns are hot to the touch then you will probably need to check your meter roll settings. If not, then examine the column that feels hot, make sure you can see the grain moving down the column screens. For more information on service see Meter Roll Servicing.

Housing x High Limit
The temperature high limit located on the fan/burner housing has opened, indicating an over temperature condition has occurred towards the rear of the fan/heater housing. This control is set at 200°F (93°C) and must be manually reset. The message will distinguish between which fan housing caused the shutdown. The reference to the number one (1) is telling you that it is fan number 1 which is the bottom most fan.

Ignition Failure x
This condition happens during the intial ignition of the burner. If the burner fails to light, check to make sure that your gas has been turned on and/or the maxon valve has been turned on. The reference to the number one (1) is telling you that it is burner number 1 which is the bottom most fan.

Illegal Flame x
This message is displayed when the flame detection circuit of your heater is sensing flame when the burner is supposed to be off. Example, if you shut down the dryer and the heater continues to burn due to a solenoid stuck in an open state, it will generate this type of error.

Motor Overload x
One of the thermal overloads on either the fan, load, unload or auxiliary motors has opened, indicating an overcurrent condition. The overloads must be manually reset. The

message will distinguish between which fan overload caused the shutdown. The reference to the number one (1) is telling you that it is fan number 1 which is the bottom most fan.

Vapor x High Limit

The LP gas vapor temperature sensor located in the gas pipe train downstream from the vaporizer, has opened indicating that the vaporizor is running too hot and must be readjusted. This sensor is set at 200°F (93°C) and automatically resets itself when cool. The message will distinguish between which burner caused the shutdown. The reference to the number one (1) is telling you that it is burner number 1 which is the bottom most fan/heater unit, is where the malfunction is located. Try adjusting the vaporizer coils farther away from the burners flame. You may also want to try switching the burner mode from Hi/Lo to On/Off, especially on warmer days.

INPUT/OUTPUT GENERATED ERRORS

The following is a list of errors that are generated with the Input/Output board located in the upper control box.

Air System Failure

A shutdown has occurred due to a air system that was installed with an intergal safety switch that was in the unit. The air system safety connections are located in the upper control box on the terminal strip. This can occur if this safety looses 12VDC to terminal **J1-10** on the I/O board. This input is jumpered on the terminal strip when it leaves the factory and is usually installed in the field by a qualified electrician.

Aux Load Overload

The motor overload relay has tripped on the Aux Load Motor circuit located in the upper control box. This can occur if this safety looses 12VDC to terminal **J1-05** on the I/O board. Push the red button on the overload to reset this error. This is caused from the motor operating with to much of a work load, which in turn uses more current (amperage). If the problem reoccurs then check the motor to make sure it is not being overworked. You may need to call an electrician to measure the motors full load amps (FLA).

Aux Unload Overload

The motor overload relay has tripped on the Aux Unload Motor circuit located in the upper control box. This can occur if this safety looses 12VDC to terminal **J1-04** on the I/O board. Push the red button on the overload to reset this error. This is caused from the motor operating with to much of a work load, which in turn uses more current (amperage). If the problem reoccurs then check the motor to make sure it is not being overworked. You may need to call an electrician to measure the motors full load amps (FLA).

Grain Discharge Warning

The lid on the grain discharge box has opened, indicating that either the grain is not being taken away fast enough from the discharge box or the take away auger system connected to the dryer may be causing the problem. This can also occur if this safety looses 12VDC to terminal **J1-08** on the I/O board.

Load Motor Overload

The motor overload has tripped on the Load Motor Overload located in the upper control box. This can occur if this safety looses 12VDC to terminal **J1-03** on the I/O board. Push the red button on the overload to reset this error. This is caused from the motor operating with to much of a work load, which in turn uses more current (amperage). If the problem reoccurs then check the motor to make sure it is not being overworked. You may need to call an electrician to measure the motors full load amps (FLA).

Meter Rolls Failed

If you have the meter roll speed adjustment turned too low (not turning), this will cause this error message. It also could indicate that you have a defective meter roll sensor, the metering roll drive system has failed to turn or broken chain or jammed metering roll is a possibility. This can occur if the input is not receiving a 5 volt pulse on terminal **J4-04** on the I/O board.

Out of Grain

The dryer has run low on grain, and the out of grain timer has timed out, shutting the dryer down. The unload auger will continue to run so it can clean out the remaining grain before shutting down.

Unload Motor Overload

The motor overload has tripped on the Unload Motor Overload located in the upper control box. This indicates that 12VDC has been lost to terminal **J1-02** on the I/O board. Push the red button on the overload to reset this error. This is caused from the motor operating with to much of a work load, which in turn uses more current (amperage). If the problem reoccurs then check the motor to make sure it is not being overworked. You may need to call an electrician to measure the motors full load amps (FLA).

User Safety

A shutdown has occurred due to a user installed safety switch that was installed on the dryer. The user installed safety connections are located in the upper control box on the terminal strip. This also indicates that 12VDC has been lost to terminal **J2-01** on the I/O board. This input is jumpered on the terminal strip when it leaves the factory and is usually installed in the field by a qualified electrician.

MASTER DISPLAY GENERATED ERRORS

The following is a list of errors that are generated with the Master Display board located in the lower control box.

Cont-Batch Mode Chng

This error occurs when you switch the dryer mode switch from the Cont. Flow to the Staged Batch position while the dryer is running in the Continous Flow Mode. To avoid this shutdown, stop the dryer before switching modes. Press Stop to clear the error.

Network Failed FH x
This error is generated whenever Fan/Heater board has lost its communications link with the Input/Output board (upper control panel) and the Master Display board (lower control panel). Check the ethernet cable jacks to make sure they are plugged in tightly. An ethernet cable is a computer communication cable that looks like the phone cable in your home (see fig. 6.2) The reference to the number one (FH1) is telling you that it is fan number 1 which is the bottom most fan.

Network Failed I/O
This error is generated whenever Input/Output board (upper control panel) has lost its communications link with the master (lower control panel door) and the fan/heater boards. Check the ethernet cable jacks to make sure they are plugged in tightly. There are 3 LED lights next to this plug, one indicates power and the other two indicate data being transmitted. These two labeled RXD and TXD, should be flashing randomly back and forth indicating network activity.

Network Failed Mast
This error is generated whenever Master Display board (lower control panel) has lost its communications link with the Input/Output board (upper control panel door) and the fan/heater boards. Check the ethernet cable jacks to make sure they are plugged in tightly.

Figure 6.2 Ethernet cable and jack.

Plenum Temp Open x
This error indicates there is a open condition with the plenum temperature sensor located inside the plenum chamber. This could be a open sensor or the sensor wires could have a open connection.

Plenum Temp Short x
This error indicates there is a shorted condition with the plenum temperature sensor located inside the plenum chamber. This could be a shorted sensor or the sensor wires could be shorted.

Plenum x Overheat
An over temperature condition has occurred inside the dryer plenum. This control is a 300°F (149°C) limit and automatically resets itself when cool. The message will distinguish between which plenum caused the shutdown.

Figure 7.1 Supply Line (LP shown)

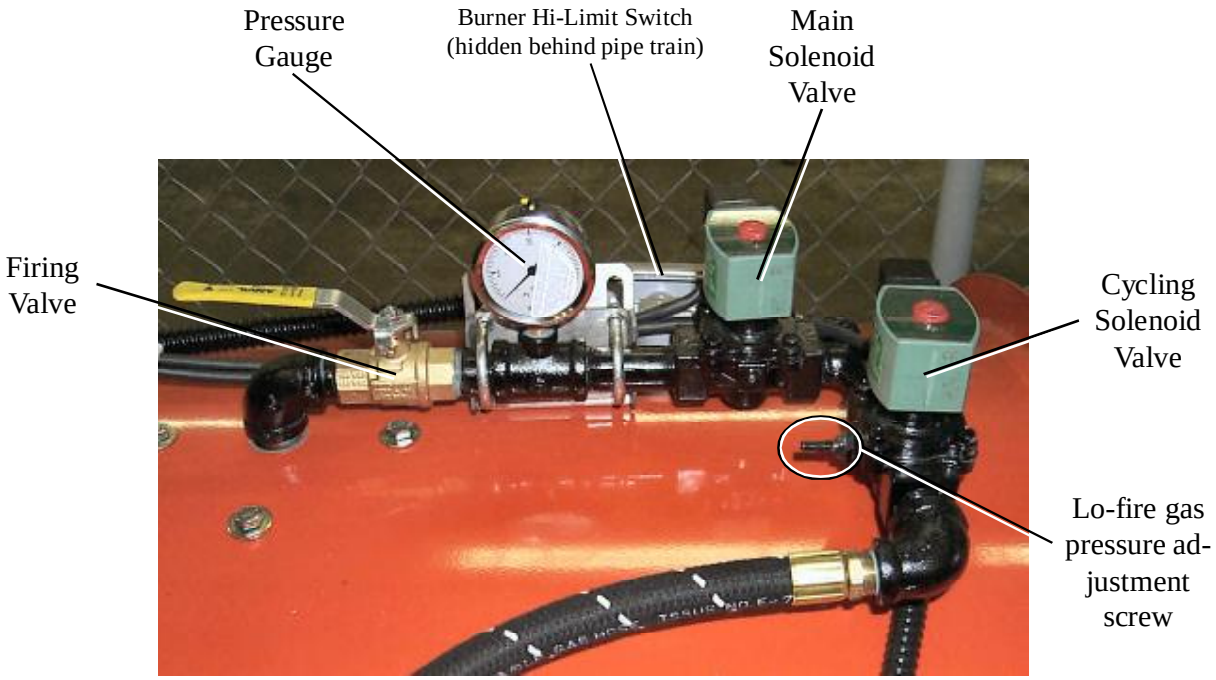


Figure 7.2 LP Fan/heater pipe train.

Figure 7.3 LP Fan/heater pipe train.

Figure 7.4 NG Fan/heater pipe train.

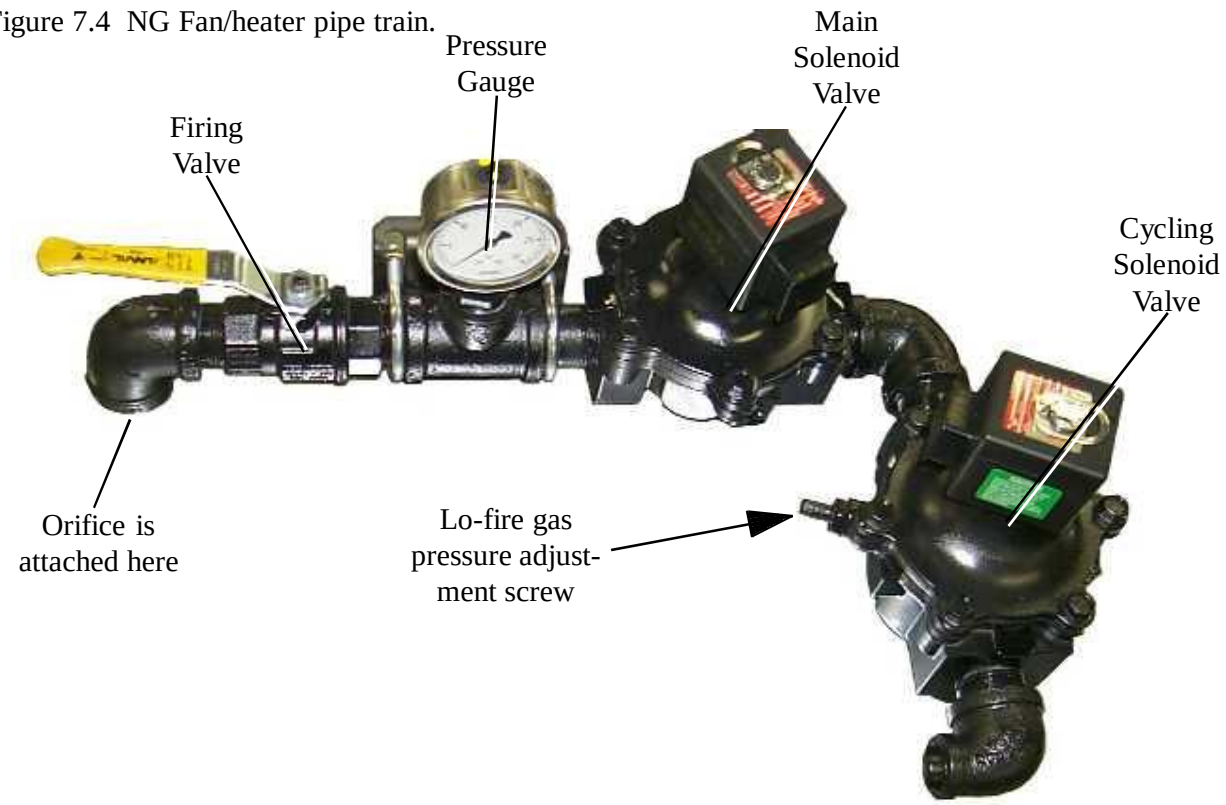


Figure 7.5 NG hi-fire adjustment.

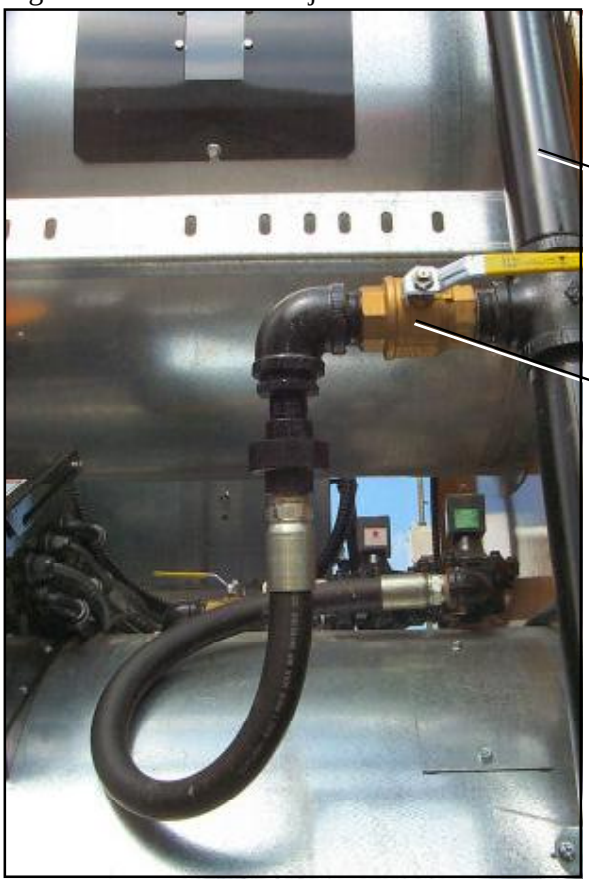


Figure 7.6 Discharge safety shut-off switch.

Figure 7.7 Meter roll switch location.

Figure 7.8 Meter roll switch.

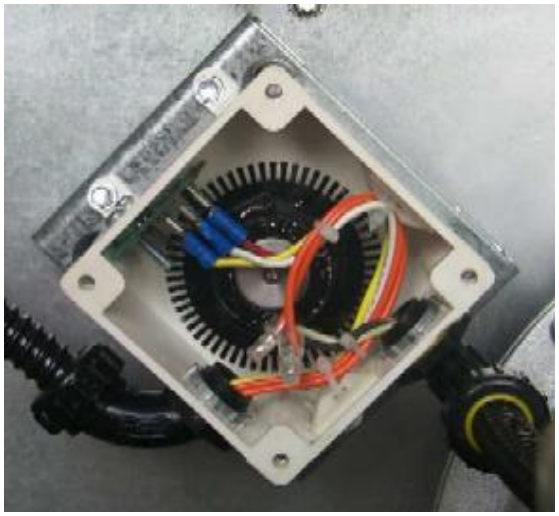
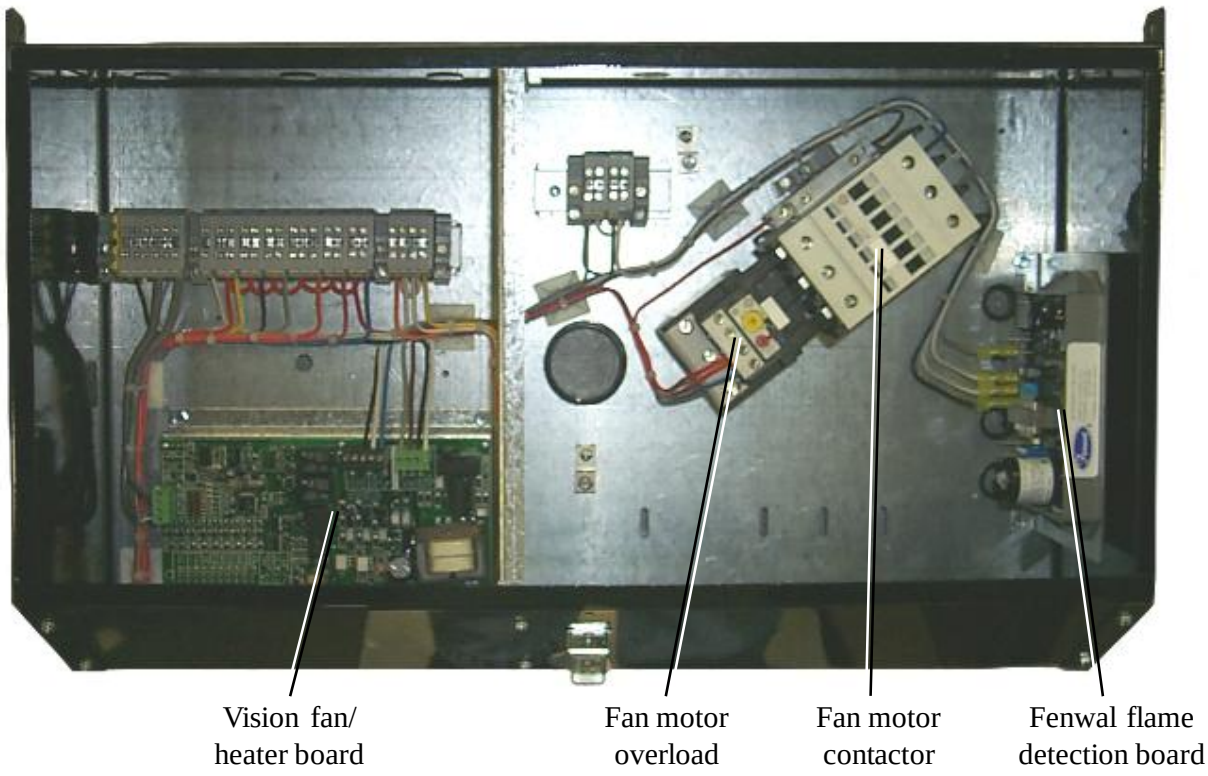


Figure 7.9 Fan/heater control box.



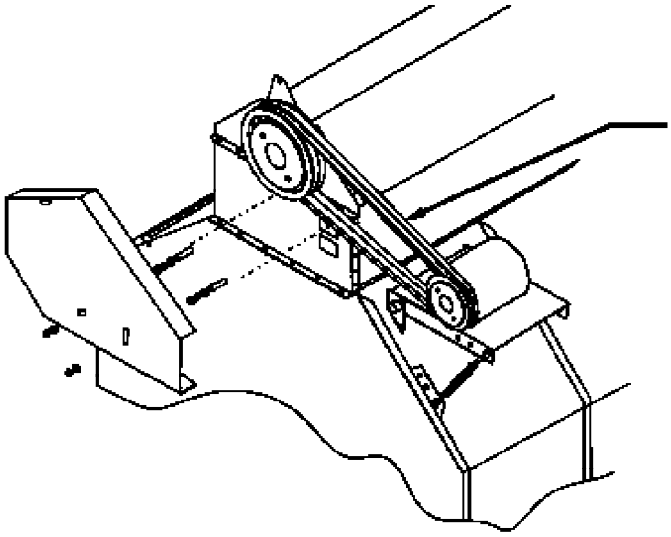


Figure 7.10 Top auger drive.

Figure 7.11 Upper Control Box.

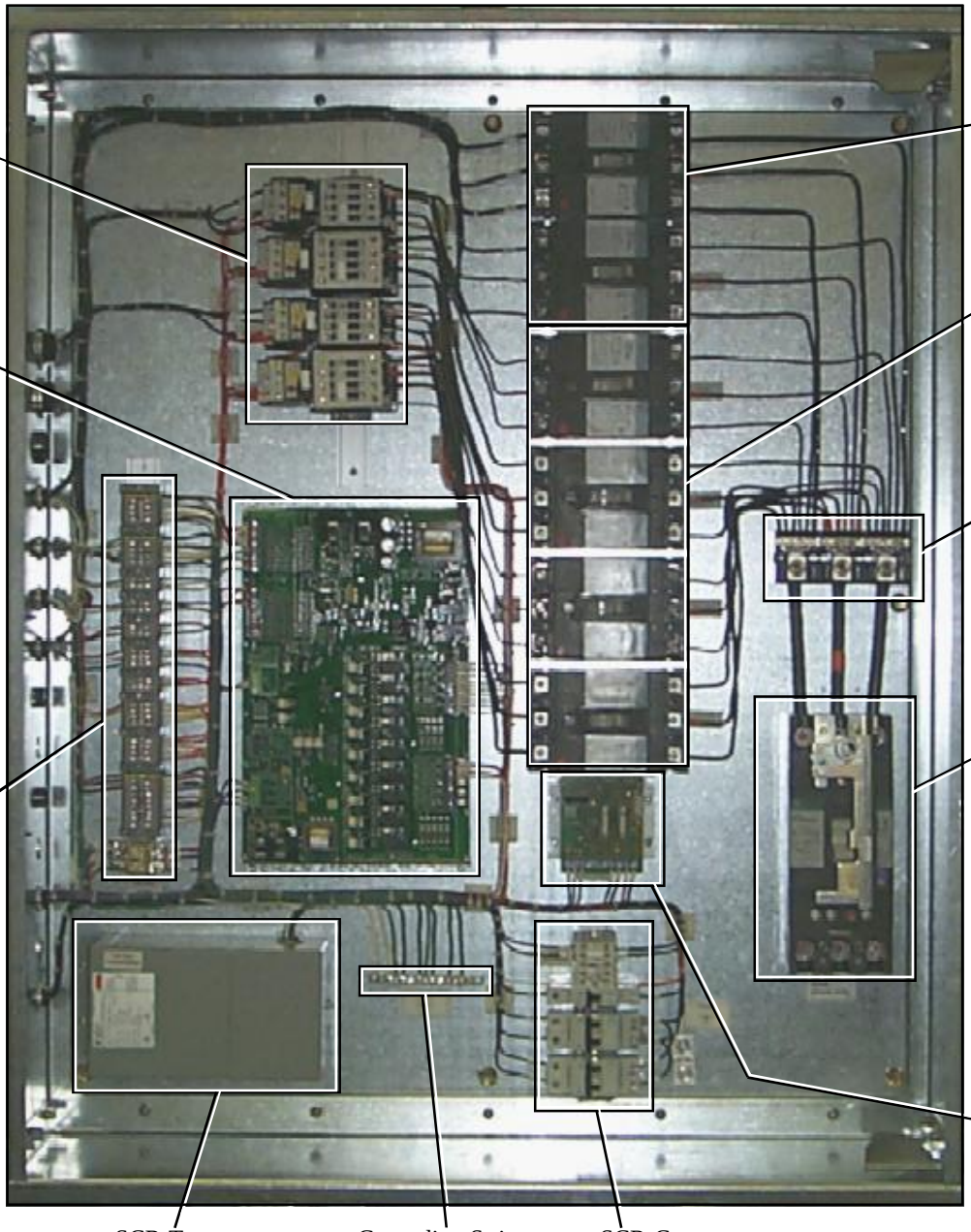
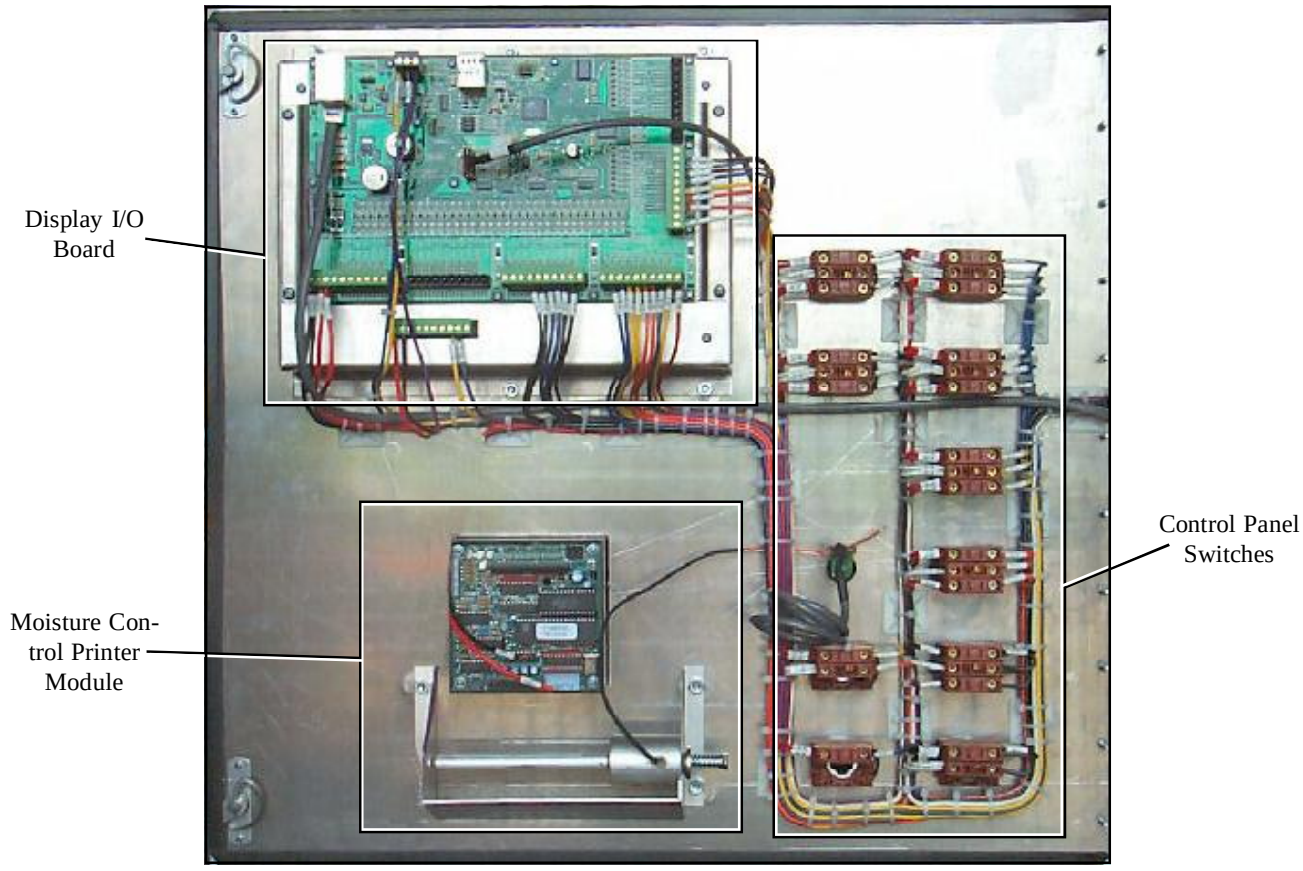


Figure 7.12 Control Panel (Rear).



SECTION 8
SERVICE

Before starting any repairs or maintenance on your dryer, observe the following safety steps:

1. Isolate the whole system from the electrical supply by switching off the power isolator and locking it.
2. Isolate the dryer from the gas supply by shutting off the main gas valve (if necessary lock the valve).
3. Keep the keys in your possesion.
4. Augers and drives to augers may be under some degree of tension. Avoid touching these parts with your hands until you are sure that they are free.
5. Do not reconnect the power supply until all work is completed and all guards are correctly refitted.

SEASONAL INSPECTION AND SERVICE

The dryer is made of weather resistant material, and is designed to require a minimum of service. However, each season we recommend the following items be checked before the unit is used, and any damaged or questionable parts replaced. These checks will help eliminate possible failures, and assure dependable operation of the equipment.

1. Shut off electrical power. Open power box and control box, and inspect for moisture, rodent damage or accumulated foreign material. Remove any foreign material present. Inspect and tighten any loose terminal connections. Replace any damaged or deteriorated wiring.

2. Check each blade for freedom of rotation and uniform tip clearance. They should also be inspected for dirt and grain dust, especially inside the hub. Any additional weight can seriously effect the balance, and result in harmful vibrations and a short bearing life.

3. Check each blade for free play. Any side play is an indication of defective motor bearings, which should be replaced to prevent a complete motor failure. Make sure motor mount bolts are tight.

4. Motor bearings should be lubricated periodically, depending on operating conditions. Under normal usage it is desirable to have the motor cleaned, checked and bearings repacked by an authorized service station every two to three seasons. If the unit is operated continuously through most of the year, this service should be performed each year.

Note: If on site bearing relubrication is to be performed, see lubrication instructions for ball bearing motors. To keep motor bearings properly lubricated, and dispel any accumulation of moisture within the windings, the fan and auger motors should be operated for 15 to 30 minutes each month.

LUBRICATION PROCEDURE

If the motors are equipped with an alemite fitting, clean the tip of the fitting and grease with a grease gun. Use 1 or 2 full strokes on motors in NEMA 215 frame and smaller. Use 2 to 3 strokes on NEMA 254 through NEMA 365 frame. Use 3 to 4 strokes on NEMA 404 frames and larger. On motors having drain plugs, remove drain plug and operate motor for 20 minutes before replacing drain plug. On motors equipped with slotted head grease screw, remove screw and apply grease tube to hole. Insert 5 to 8 cm length of grease string into each hole on motors in NEMA frame and smaller. Insert 8 to 13 cm length on larger motors. On motors having grease drain plugs, remove plug and operate motor for 20 minutes before replacing drain plug.

Suggested Lubrication Schedules*

Hours of Service per Year	HP Range	kW Range	Suggested Lube Interal
5000	1/8 to 7 1/2	.1 to 5.6	5 years
	10 to 40	7.5 to 29.8	3 years
	50 to 150	37.3 to 111.9	1 year
Continuous Normal Applications	1/8 to 7 1/2	.1 to 5.6	1 year
	10 to 40	7.5 to 29.8	3 years
	50 to 150	37.3 to 111.9	9 years
Seasonal Service (motor is idle for 6 months or more)	All	All	1 year-beginning of season
Continuous high ambient temperatures, dirty or moist locations, high vibrations or when shaft gets hot	1/8 to 40	.1 to 29.8	6 months
	50 to 150	37.3 to 111.9	3 months

* The bearings have been lubricated at the factory, thus no lubrication should be added before start up.

Suggested Lubricant's

Insulation Class	Consistency	Type	Grease	Frame Type
A & B	Medium	Polyurea	Shell Dolium R	215T & Smaller
A & B	Medium	Polyurea	Shell Dolium R	254 & Larger
F & H	Medium	Polyurea	Shell Dolium R	All

Note: All of the auger and metering roll bearings are lifetime lubricated and do not require service relubrication.

1. Remove and clean the gas line strainers. Make certain gas valves are closed and that gas is purged from the system before attempting to disassemble anything.

2. Inspect the collector plate at the top of the burner casting and the burner cup for any accumulation of foreign material. Clean if required. Foreign material in the burner cup or casting will not burn out and will impair burner operation.

3. If required, inspect ignitor plug and clean the electrodes. Use an ignition point file to remove carbon and rust between the electrode surfaces. Ignitor gap should be about 1/4" (3 mm).

4. Inspect flame sensors for possible damage or poor connections. Flame sensor wires must be in good condition.

5. Inspect and manually rotate the top auger paddle assembly. The paddle unit must rotate freely without any indication of sticking or binding.

6. Inspect the top auger and bottom auger drive lines for proper adjustment and condition. Re adjust line tension as required.

7. Operate dryer clean out levers, and check clean out hatch mechanism for proper operation. With hatch open, inspect and remove any accumulation of dirt, fines and foreign material from the bottom auger trough area.

Note: Do not allow high moisture material to collect within the trough area. It may adversely affect metal parts.

8. Inspect entire dryer for loose, worn or damaged parts. Include check of auger flighting, metering rolls and other internal parts. Check that temperature sensors within air plenum chamber are secured within insulated clamps, and do not chafe on other metal parts.

9. Make sure all dryer guards and warning decals are securely installed. Make certain guards do not interfere with moving parts. If guards or warning decals are missing, contact your dealer for a free replacement.

10. Test fire the dryer several weeks ahead of the drying season. Check for possible gas leaks. See burner test fire section.

FAN BLADE REMOVAL AND INSTALLATION

When working on or around the fan blade, be aware that it may free wheel, and could cause serious injury. It may be helpful to gently wedge the propeller to prevent this from occuring. However, do remember to remove the wedge before restarting the fan.

If at any stage the blade has become damaged, it is important that it is repaired and that the blade is in balance. Failure to do this could result in the blade running out of balance, and potentially exploding. Balancing the blade is a specialists job, if in doubt contact GSI or your dealer.

The fan blade is secured to the motor shaft by the use of a taper-lock bushing, motor shaft key and three cap screws.

CAUTION: Although the taper-lock method of retaining the blade onto the motor shaft is simple, it is essential that the following points be read carefully and fully understood. Improper installation can cause a loose flying blade, and result in serious injury or death.

FAN REMOVAL AND INSTALLATION

When reassembling parts, the cap screws must be installed through the untapped clearance holes as shown. This will cause the blade to be pulled forward onto the tapered bushing, thus locking the parts securely onto the motor shaft. When fan servicing requires removal and installation of the blade, make sure the blade is removed and reinstalled properly.

1. Lock out the fan power supply, and remove the fan guard and the venturi, as required on some models.

2. Remove the three cap screws from the clearance holes in the taper-lock bushing. (See figure 7.1)

3. Install two of the cap screws into the threaded holes in bushing, and turn them by hand until they bottom against the front surface of the blade. (See figure 7.2)

NOTE: The threaded holes within the bushing are provided for disassembly purposes only. Do not attempt to use these holes for reassembly. They will not allow the parts to lock onto the shaft thereby causing a hazardous operating condition.

4. Block blade to prevent it from turning, and gradually turn the cap screws (up to 1/4 turn at a time) until the blade breaks loose from the bushing and motor shaft. Carefully remove bushing and blade. With the blade free from the bushing,a wheel can be used to pull the bushing off of the motor shaft. Re-attach bushing onto blade to prevent the loss of parts.

Note: During manufacturing, the blade and bushing are balanced together and are marked with two small dots to identify their original alignment position. Check the bushing and propeller to make sure they have alignment marks. Mark the alignment of the propeller and bushing, if necessary.

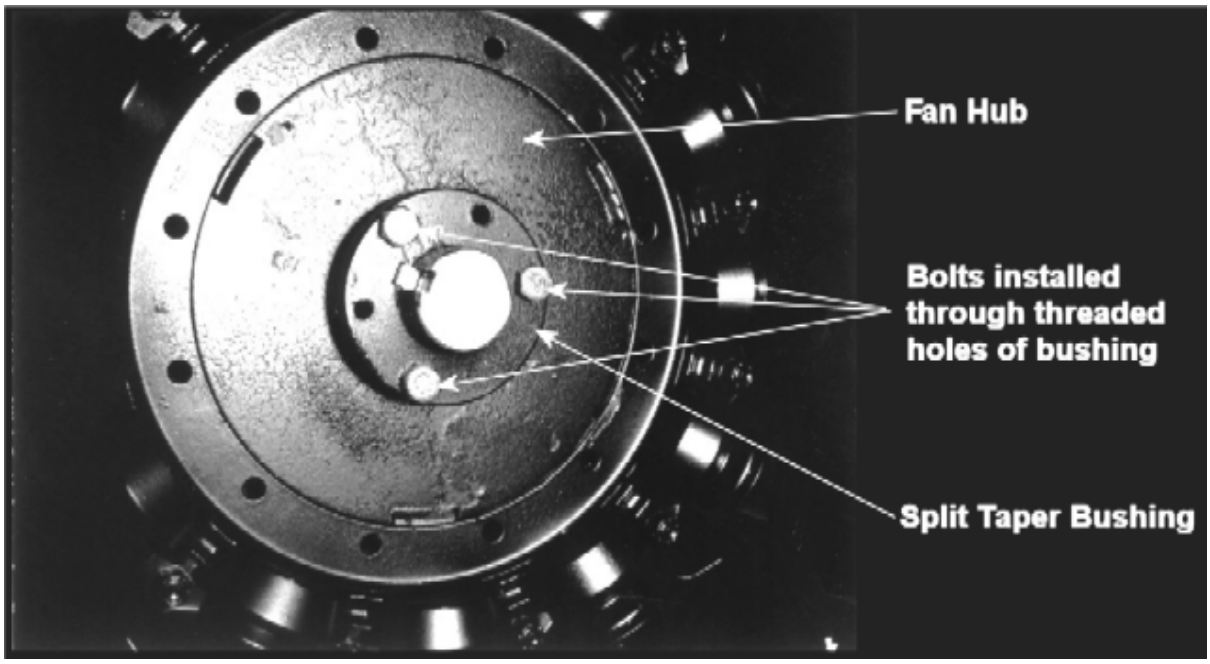


Figure 7.1

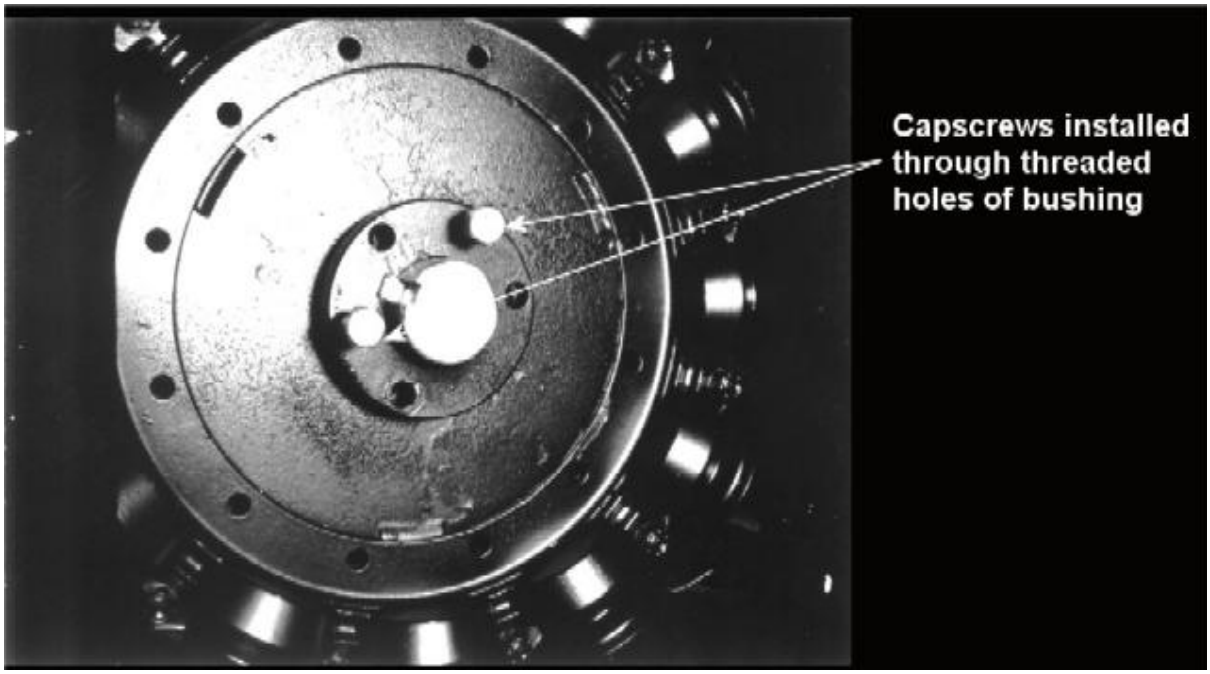


Figure 7.2

FAN MOTOR REMOVAL

In the event of motor failure, remove the motor as described, and take it to the nearest service station. An authorized service station is the only place that can provide possible motor warranty. Motor service and repair at other places will be at owners expense.
If the service station determines motor failure is caused by faulty material or workmanship within the warranty period, repair will be covered under the warranty. Motor failure caused by external sources will result in a charge to the owner for repair.

1. Make certain power is shut off and locked out. Remove fan guard and blade.

2. Remove cover from fan/heater control box, and disconnect the motor lead wires from within the box.

Note: Tag or otherwise identify wires for ease of reassembly.

3. Remove motor mount bolts. If there are shims between the motor and its base, note their location so they can be properly installed during reassembly.

4. Disconnect the upper end of the motor conduit, then carefully pull the wires through the hole in the fan/heater housing. Remove motor from the fan/heater unit with the conduit still attached. If motor requires service, take it to an authorized service station.

5. To reinstall motor, slide onto motor base plate and replace shims (if required) between motor base and plate. Reinstall motor mount bolts and washer, but do not fully tighten at this time.

6. Reinstall conduit and wires through hole in fan/heater housing and carefully connect all electrical wiring.

7. Adjust position of motor by temporarily mounting fan blade on motor shaft. Rotate fan blade by hand, making the necessary adjustments, so the tip clearance between blade and housing is uniform. If required, remove the fan blade and fully tighten all four motor mount bolts.

Note: Make sure to install and tighten the blade in accordance with previous instructions.

HEATER PARTS REMOVAL & INSTALLATION

Most of the heater parts can be removed by simply identifying any attached wiring, and then disconnecting the obvious mounting parts.

1. **Flame sensor**: Disconnect the wire connector, and unscrew the flame sensor out of its mounting bracket.

2. **Gas Solenoid valve coil(s)**: Unsnap either the plastic cap, or the metal clip on the gas valve, and slide the housing and coil off the valve stem and body. Do not energize the coil when it is removed, as the coil may become damaged due to excessive current flow.

3. **Regulator and gas solenoid valve(s)**: The gas regulator and solenoid valve(s) are directional and must be connected as indicated by the markings near the port openings. Make sure gas is shut off and purged from the system before removing parts.

Note: When installing a liquid gas solenoid valve on LP models, do not over tighten the connection into the inlet side, as the inlet orifice may become partially blocked.

4. **Main Gas Orifice:** With fuel shut off and gas purged from system, proceed as follows:

a. Disconnect the plumbing support brackets from the pipe train.
b. Disconnect gas solenoid valve coils. Be sure to mark which one goes where.
c. Lift pipe (with orifice, solenoid valve and other parts attached), straight up and remove from fan/heater housing. Orifice and other parts can now be removed from pipe train, if desired.

5. **Reassemble**: To reassemble parts, reverse the disassembly procedure and check the following:

a. Make sure all parts are thoroughly cleaned and open.
b. Use a dependable brand of high temperature pipe caulking compound when assembling gas connections. Apply only a light coating onto male threaded end of fittings.
c. Solenoid valves and gas regulators are directional and must be properly installed. Do not attempt to connect gas solenoid valve by applying force to the valve core stem as it may ruin the unit.
d. Make sure all electrical wires are properly connected. Refer to wiring diagrams.

METERING ROLL SERVICING

This dryer is equipped with SCR metering roll drive assembly. The metering rolls are driven by a separate DC type electric motor. The speed of the motor is variable, and is controlled by an electric SCR control within the main control box.

MAIN CONTROLS

1. **SCR speed control**: The metering roll speed pots on the front of the control box regulate the speed of the DC motor which drives the metering rolls.

The scale of adjustment is from 0 to 999 which represents the flow of grain past the metering rolls as a percent of the maximum grain discharge rate for the dryer. The maximum setting of 999 provides a maximum 100% discharge of 1960 BPH (50 MT / hr) for 1214, 2240 BPH (57 MT / hr) for 1216, 2520 BPH (64 MT / hr) for 1218, 2800 BPH (71 MT / hr) for 1220, 3080 BPH (78 MT / hr) for 1222, 3640 BPH (92 MT / hr) for 1226 model dryers.

Note: When the control is set to the maximum discharge rate (999), the metering roll speed should be 17.5 RPM for 8" (20 cm) discharge auger.

2. **DC electric motor**: The direct current (DC) motor provides the drive for the metering roll, and is located on the front left hand side of standard model dryers. The output shaft of the motor is connected directly to the gear box assembly.The DC motor requires no operational adjustment as it is completely controlled from the control box.

3. **Speed reducer gear box**: The direct drive gear box provides the required speed reduction, and transmits power to the metering rolls through a drive chain arrangement. The gear box does not require adjustment. The drive chain should also be periodically lubricated and retensioned as necessary.

4. **Unload auger time delay**: The delay controls the bottom auger system and causes the unload auger (and any connected auxiliary unloading conveyors) to continue operating for a programmed amount of time, even after the metering rolls stop. This feature permits the cleanout of grain within the unloading equipment at the end of all discharge cycles.

5. If a foreign object becomes lodged in the metering rolls and jams the system, the unloading auger will stay in motion. However, the metering roll drive will stop and the DC motor should stall out. The Network Control System will shut down the dryer after a two minute period.

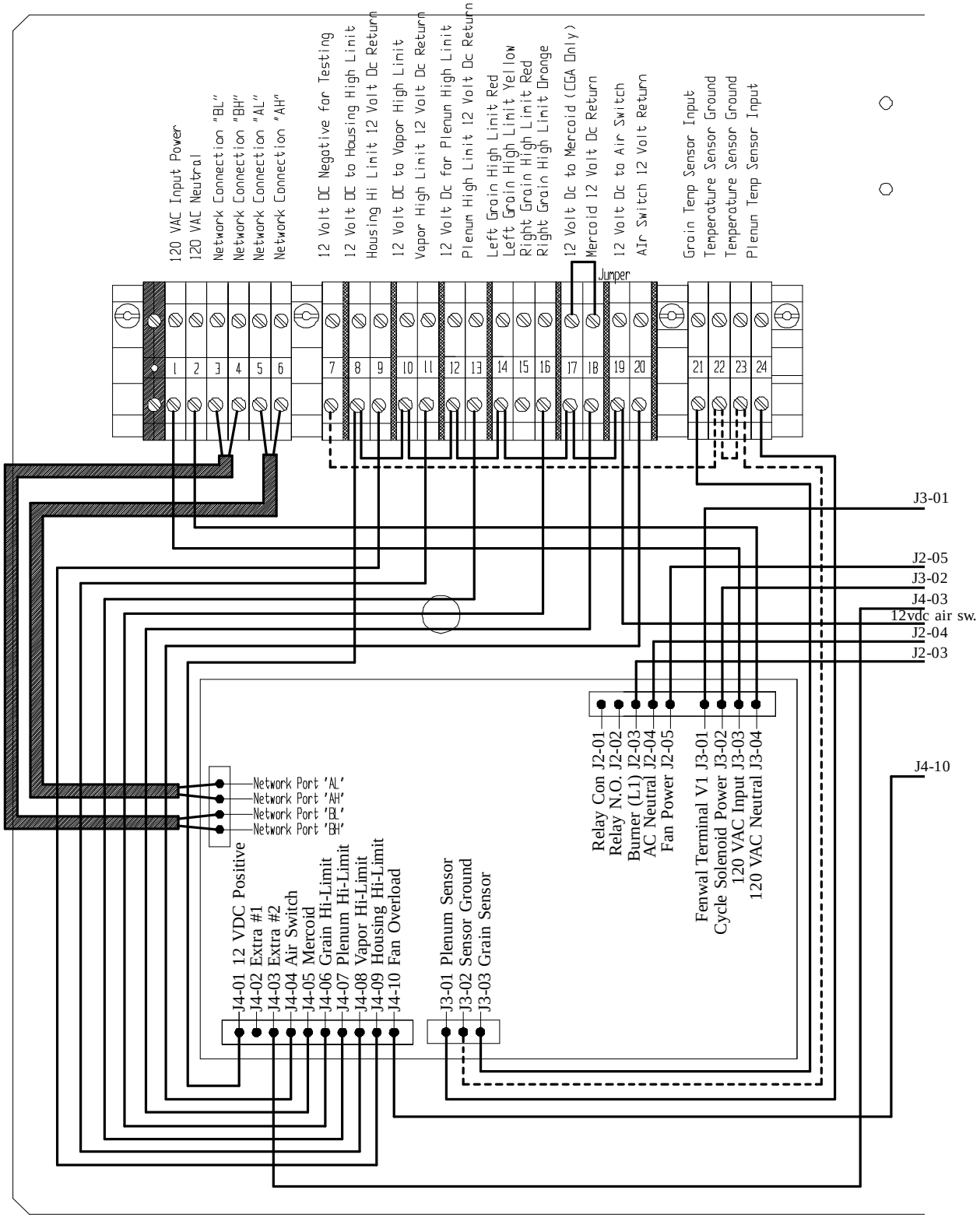
To determine if the metering problem is from blockage, perform the following test with the power off. Remove the drive chain by loosening the motor mounting bolts. Refer to photo, and place a pipe wrench on the hub of the roller chain sprocket, on the left hand metering roll at the drive end of the dryer. Apply up to 100 ft.lbs. (136 N-m) of force, and attempt to rotate the roll toward the inside of the dryer. If the metering roll will turn, then repeat for right hand side. If the metering roll will turn, it can be assumed that no blockage exists, and the problem is from some other cause. Check for a break in the power train, chain, drive key, pin, etc.

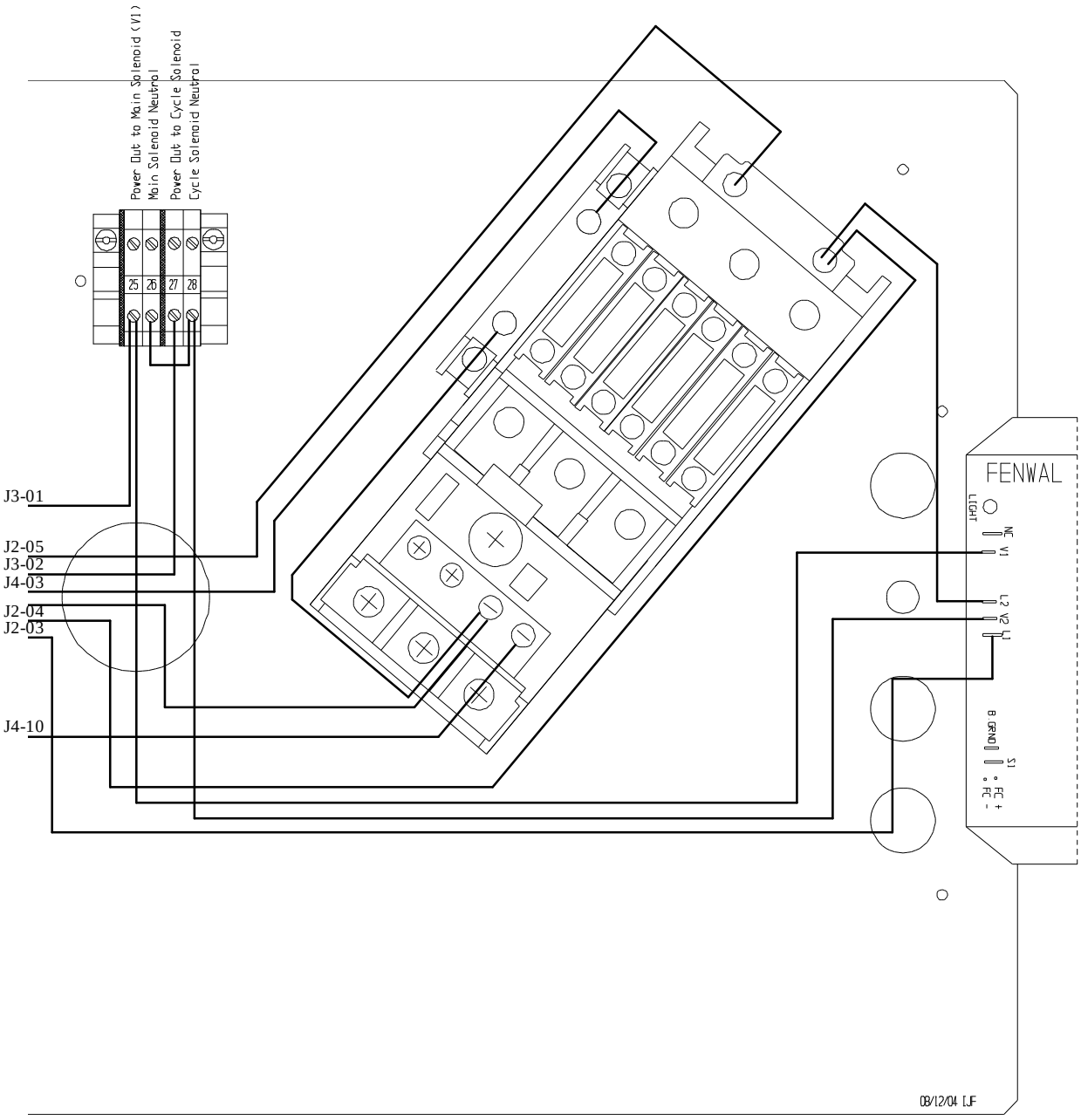
CAUTION: Keep hands away from sprocket teeth to avoid injury from chain backlash, as a result of torsion build up in the system caused by the jam.

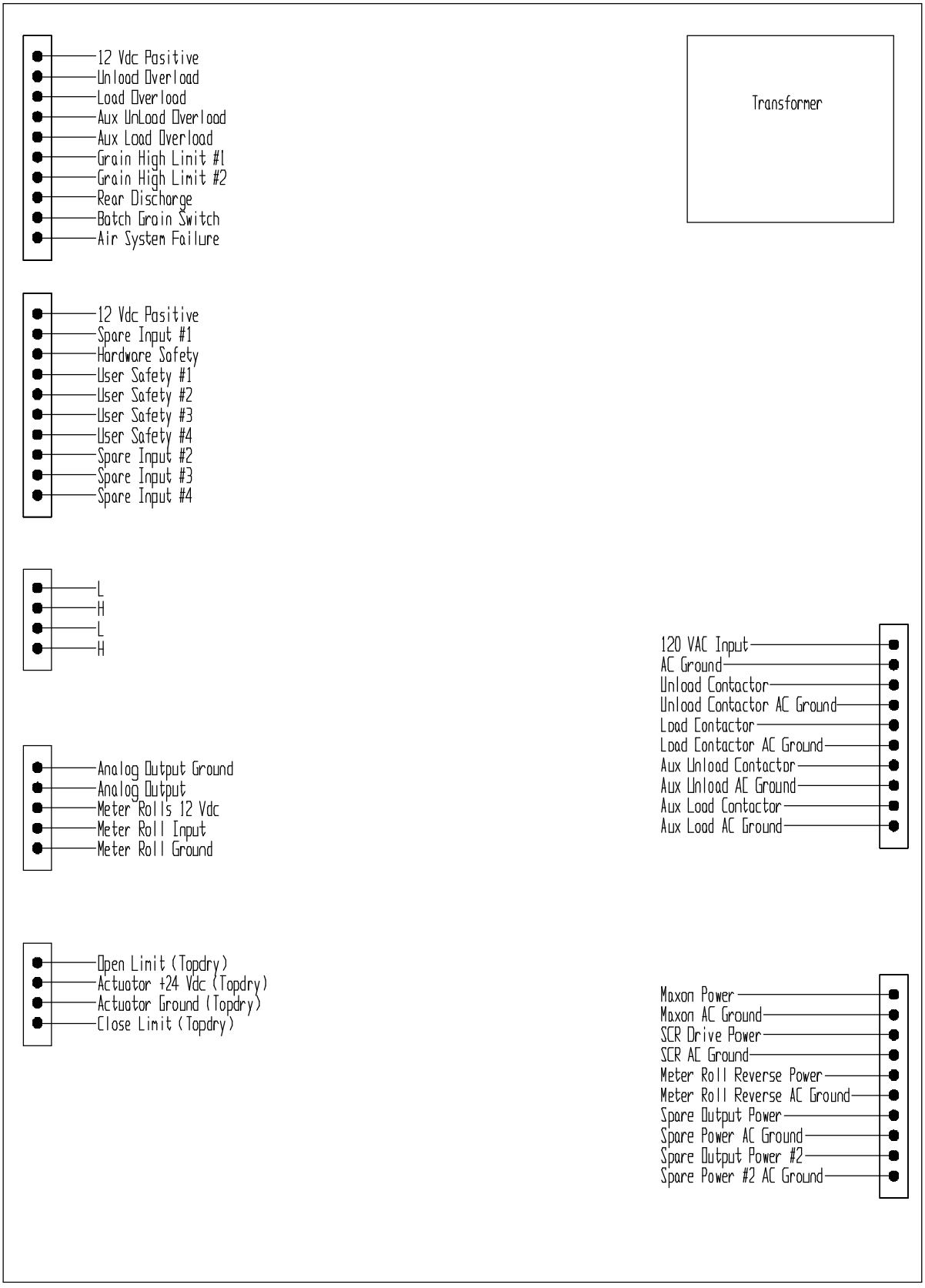
HOW TO CLEAR A JAMMED METERING ROLL

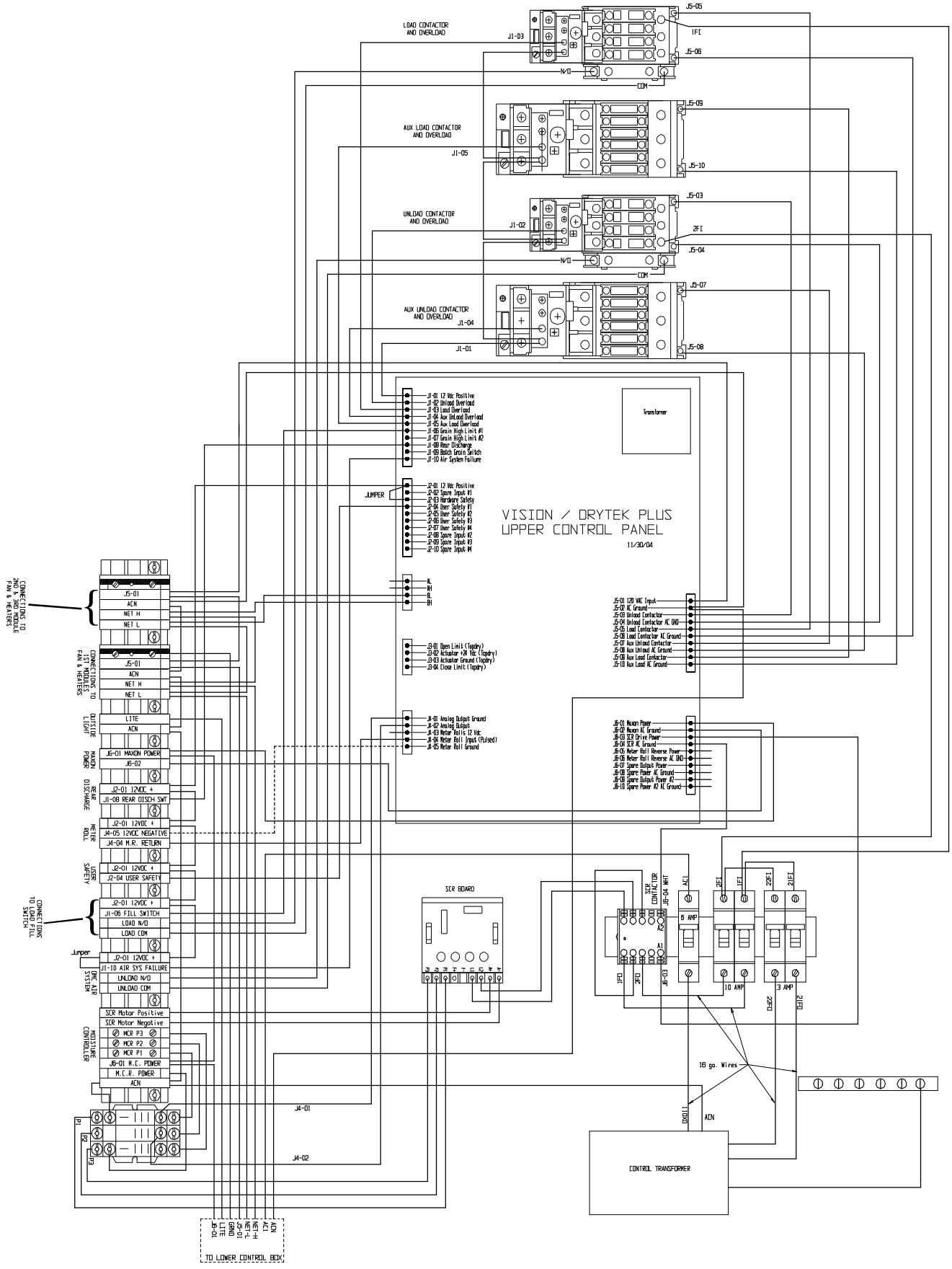
Place a pipe wrench on the hub of the sprocket of the jammed metering roll and turn the roll. First, backward, and then, forward several times in an attempt to dislodge the object, and clear it through the roll. If this is not successful, have an assistant turn the metering roll, and attempt to locate the jam by sound. Shut down the fan/heater, and eliminate any other noise when making this check. Once the location is determined, the roll can be reached from the outside by opening the access door to remove the foreign object causing the jam (before opening doors see below). The service tool must be inserted before opening doors. First, swing open the plenum bottom closure panel. Insert the service tool above the metering roll.

SECTION 9
WIRING DIAGRAMS


120 VAC Input Power
120 VAC Neutral
Network Connection "BL"
Network Connection "BH"
Network Connection "AL"
Network Connection "AH"
12 Volt DC Negative for Testing
12 Volt DC to Housing High Limit
Housing Hi Limit 12 Volt Dc Return
12 Volt DC to Vapor High Limit
Vapor High Limit 12 Volt Dc Return
12 Volt Dc for Plenum High Limit
Plenum High Limit 12 Volt Dc Return
Left Grain High Limit Red
Left Grain High Limit Yellow
Right Grain High Limit Red
Right Grain High Limit Orange
12 Volt Dc to Mercoid (CGA Only)
Mercoid 12 Volt Dc Return
12 Volt Dc to Air Switch
Air Switch 12 Volt Return
Grain Temp Sensor Input
Temperature Sensor Ground
Temperature Sensor Ground
Plenum Temp Sensor Input
Jumper
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
J3-01
J2-05
J3-02
J4-03
12vdc air sw.
J2-04
J2-03
J4-10
Network Port "AL"
Network Port "AH"
Network Port "BL"
Network Port "BH"
J4-01 12 VDC Positive
J4-02 Extra #1
J4-03 Extra #2
J4-04 Air Switch
J4-05 Mercoid
J4-06 Grain Hi-Limit
J4-07 Plenum Hi-Limit
J4-08 Vapor Hi-Limit
J4-09 Housing Hi-Limit
J4-10 Fan Overload
J3-01 Plenum Sensor
J3-02 Sensor Ground
J3-03 Grain Sensor
Relay Con J2-01
Relay N.O. J2-02
Burner (L1) J2-03
AC Neutral J2-04
Fan Power J2-05
Fenwal Terminal V1 J3-01
Cycle Solenoid Power J3-02
120 VAC Input J3-03
120 VAC Neutral J3-04


Power Out to Main Solenoid (V1)
Main Solenoid Neutral
Power Out to Cycle Solenoid
Cycle Solenoid Neutral
25
26
27
28
J3-01
J2-05
J3-02
J4-03
J2-04
J2-03
J4-10
FENWAL
LIGHT
NC
V1
L2
V2
L1
GRND
S1
FC +
FC -
08/12/04 DF


12 Vdc Pasitive
Unload Overload
Load Overload
Aux UnLoad Overload
Aux Load Overload
Grain High Linit #1
Grain High Limit #2
Rear Discharge
Batch Grain Switch
Air System Failure
Transformer
12 Vdc Pasitive
Spare Input #1
Hardware Safety
User Safety #1
User Safety #2
User Safety #3
User Safety #4
Spare Input #2
Spare Input #3
Spare Input #4
L
H
L
H
120 VAC Input
AC Ground
Unload Contactor
Unload Contactor AC Ground
Load Contactor
Load Contactor AC Ground
Aux Unload Contactor
Aux Unload AC Ground
Aux Load Contactor
Aux Load AC Ground
Analog Output Ground
Analog Output
Meter Rolls 12 Vdc
Meter Roll Input
Meter Roll Ground
Open Limit (Topdry)
Actuator +24 Vdc (Topdry)
Actuator Ground (Topdry)
Close Limit (Topdry)
Maxon Power
Maxon AC Ground
SCR Drive Power
SCR AC Ground
Meter Roll Reverse Power
Meter Roll Reverse AC Ground
Spare Output Power
Spare Power AC Ground
Spare Output Power #2
Spare Power #2 AC Ground


LOAD CONTACTOR AND OVERLOAD
AUX LOAD CONTACTOR AND OVERLOAD
UNLOAD CONTACTOR AND OVERLOAD
AUX UNLOAD CONTACTOR AND OVERLOAD
VISION / DRYTEK PLUS
UPPER CONTROL PANEL
11/30/04
Transformer
JUMPER
SCR BOARD
SCR CONTACTOR
6 AMP
10 AMP
3 AMP
CONTROL TRANSFORMER
16 ga. Wires
TO LOWER CONTROL BOX