

# Scers \

# KAN-SUN<sub>®</sub> AUTOMATIC BATCH

MODEL 10-21-213 10-24-213 (Sunflower)

Unit Serial Number\_\_\_\_\_

# 遇國國國國國國國國國 WARRANT BUTLER MANUFACTURING COMPANY manufactures grain drying and handling equipment and component parts and accessories for grain bins and farm buildings ("Agri-Products"). Agri-Products are then sold to independent dealers and contractors throughout the United States and various foreign countries. We call these independent distributors "Butler Agri-Builders" and rely heavily upon them for the maintenance of our reputation in the market place. (the "Owner") may contract with the Agri-Builder for the purchase and installation of the Agri-Products or if he has the necessary expertise, he may simply purchase the materials from the Agri-Builder and In an effort to encourage proper installation, Butler furnishes the Agri-Builder (and will furnsin the Owner upon written request) written plans, specifications and installation procedures, which are recommended for nermal installations, and operating and maintenance instructions for the Owner (all of which are hereafter referred to as "Butler Instructions"). However, to keep the Agri-Products costs competitive and due to the varying needs of individual owners, we do not control or supervise the installation of Agri-Products, nor do we check Owner or Agri-Builder compliance with Butler Instructions. should be left to the people on the scene - the Agri-Builder and/or the Owner. Based upon this philosophy we warrant our Agri-Products as follows: PERFORMANCE. Butler warrants that new Agri-Products manufactured by it will be free from defect in material or workmanship when shipped in addition, if the Agri-Products are installed in a proper and workmanlike manner and in accordance with current Butler instructions, and if they are thereafter used and maintained in accordance with such instructions, the Agri-Products will perform properly without structural or operational failure. Components of Apri-Products manufactured by others, such as motors, starters, or other trade accessories are only warranted to the extent warranted by their respective manu-LENGTH OF GUARANTEED PERFORMANCE. The foregoing Warranty shall be effective for a period of one year after installation, unless otherwise specifically provided in writing by Butler prior to installation. FAILURE OF PERFORMANCE AND REQUIRED NOTICE. the above Warranty, angolf Butlar is notified of the defect in writing prior to the end of the warranty period, Butler will provide the labor and materials necessary to correct such failure either by repair or, at its option, by replacement of meterials. ITEMS FOR WHICH BUTLER IS NOT RESPONSIBLE. be liable for; loss or damage arising out of circumstances not subject to its control, such as: Butler does not warrant against, and shall not during shipment or storage); improper installation, use or maintenance; acts of the Owner, Agri-Builder or any other pelson not employed by Butler; design, engineering or instellation procedures not approved by Butler in writing; non-compliance with local building codes or ordinances; or acts of God, riots, abnormal atmospheric and weether conditions, or similar circumstances. LIABLE FOR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION DAMAGE TO THE CONTENTS OF A STRUCTURE, LOSS OF USE OF A PRODUCT, DAMAGE TO OTHER PROPERTY, NO OTHER AGREEMENTS. This Warranty, which is given only to the initial owner and to the Butler Agri-Builder without right of assignment, IS GIVEN EXPRESSLY AND IN LIEU OF ALL WARRANTIES, INCLUDING EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. 超超超超超超超超超

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35	D-443169	Wiring diagram

Prior to installation, the machine should be inspected. Look for loose bolts, damaged controls and loose wires. Check to make sure the fan blade has sufficient clearance.

#### TRANSPORTATION

Observe the following safety precautions:

DO NOT transport a fully assembled machine. Machine MUST BE empty. Use safety chain. DO NOT exceed 20 mph.

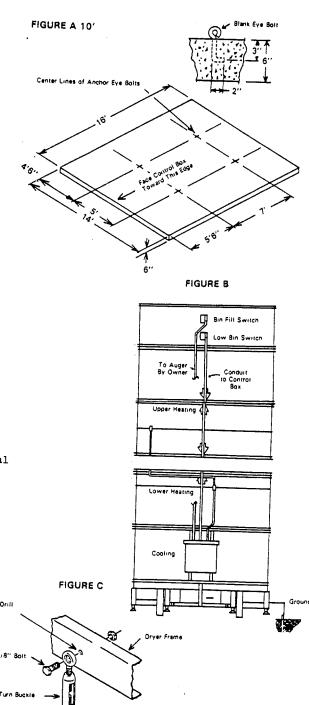
#### SITE SELECTION

Whether an installation is permanent or temporary, the following points should be considered:

- 1. Select a firm, well drained location.
- 2. Allow unrestricted air flow around the machine and a clean supply of intake air. (It is recommended locating the machine no closer than 10' to another machine.)
- 3. Place the fuel tank for L.P. gas machines at least 25' from the dryer.
- 4. A concrete pad is recommended for permanent installations. (See FIGURE A for minimum recommendations.)
- 5. Use a ground rod embedded 8'.6. Dryer orientation
- - A. To minimize noise disturbances, orient dryer with fans directed to unoccupied open areas.
  - To minimize buildup of foreign material in dryer plenum, orient dryer with fan directed toward prevailing winds. This is particularly important when drying sunflower seeds.

#### ASSEMBLY

- 1. Position sections as shown in FIGURE B. A boom truck or crane should be used to lift sections into place.
- 2. Be careful not to damage channel rings or perforations while handling.
- 3. Tighten all bolts.4. Upon completion of assembly, level the dryer. Dryer legs are adjustable by 1/8" increments. Use a carpenters level to do the job correctly.
- 5. Anchor machine securely. (See FIGURE C.) Guy wires should be used on temporary installations to prevent wind damage.



Section of Concrete Pad

# FUEL REQUIREMENTS AND INSTALLATION

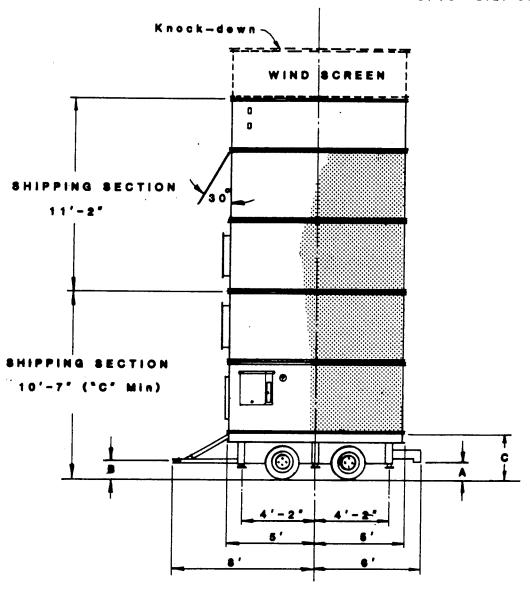
## OPERATING FUEL REQUIREMENTS

CONDITIO	ONS	PLENUM TEMPERATURES (°F.)	BTU/HR.	G.P.H. (L.P. LIQUID)
Normal	50° F. Amb.	220	4,400,000	53
Maximum	20° F. Amb.	220		<b>J</b> J
Normal	50° F. Amb.	_	5,600,000	62
	JU F. Amb.	160	3,100,000	34
Maximum	20° F. Amb.	160	2 222	34
		200	3,900,000	44

L. P. liquid dryers are equipped with an integral vaporizer. The L.P. tank MUST BE equipped for liquid withdrawal. Locate tank at least 25' from dryer. It is recommended an excess flow valve sized for 150% of maximum G.P.H. be installed at the supply tank. Gas line from tank to dryer should be 3/8" Sch. 80 pipe or 1/2" I.D. Type K copper tubing.

For a permanent installation, the line between tank and dryer should be buried at least 6" to protect from damage. Lines subject to vehicular traffic must be buried a mimimum of 24" below grade.

For temporary installations anchor in 3 places. Use 5/16" dia. cáble.



	Maximum	On Tires	Minimum
A	20 1/2"	15 1/2"	9 1/2"
8		11"	
С	38"	38"	27"

ALL PERF. SECTIONS 48 3/8" Holding bin & wind screen se 3/8"

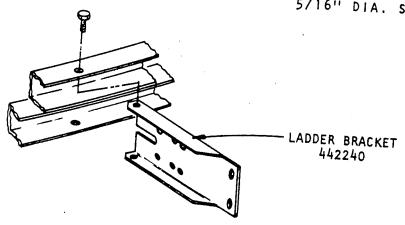
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DRYER DIMENSIONS

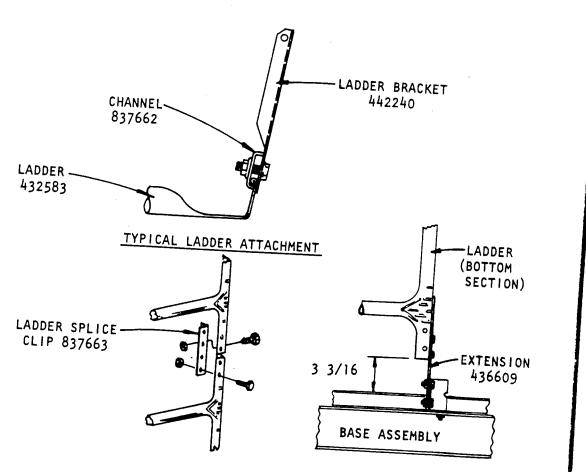
GEM 4-29-80

ALL FASTENERS

5/16" DIA. SELF-LOCKING



TYPICAL BRACKET MOUNT

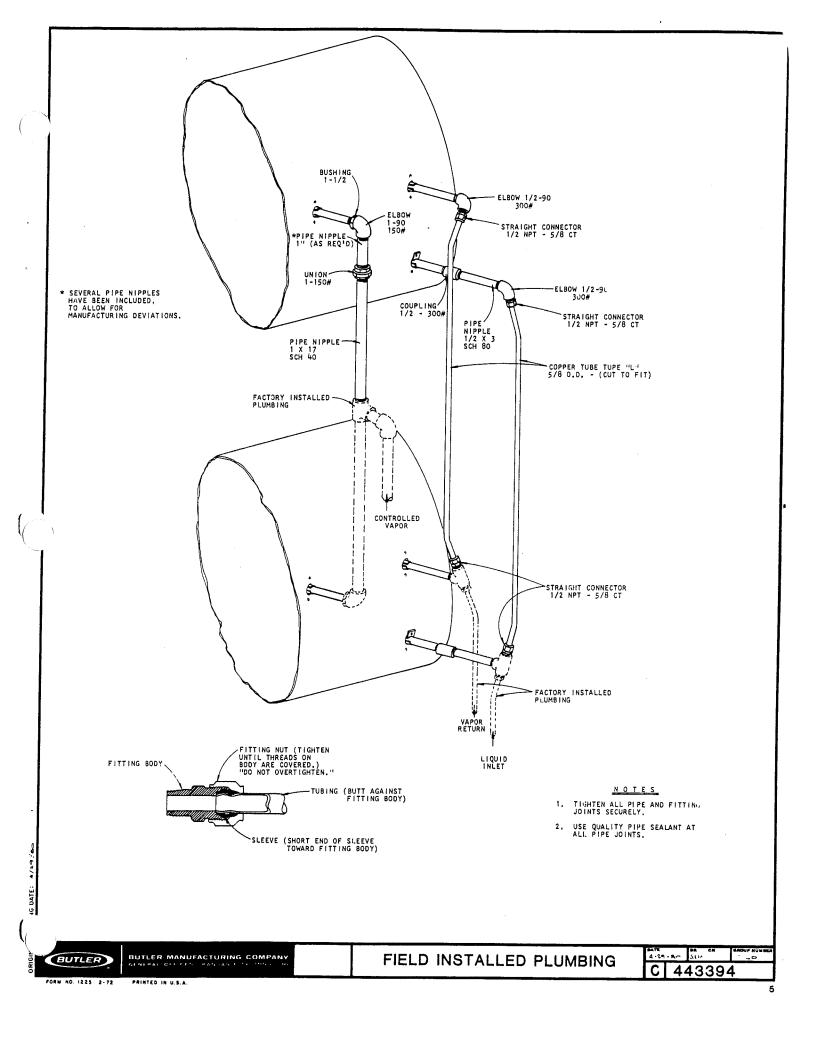


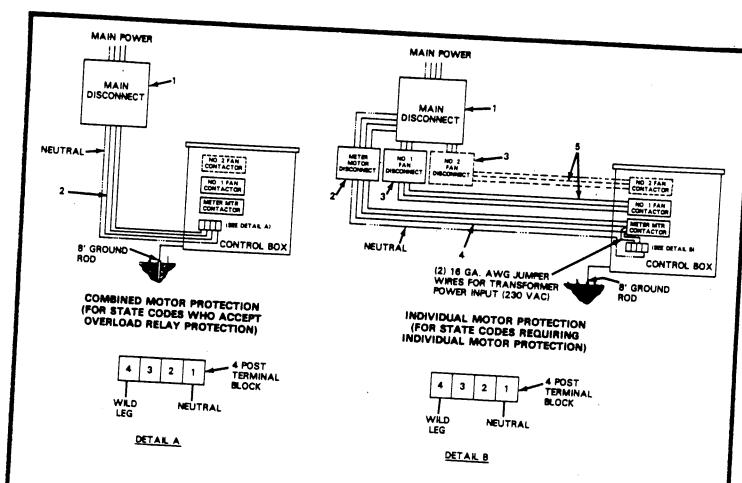
TYPICAL LADDER SPLICE

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COMPANY
GENERAL OFFICES - KANSAS CITY 26, MISSOURI

LADDER CONNECTIONS

GEM 4-29-80





# BRANCH CIRCUIT SPECIFICATIONS CHART NO. 1

# BRANCH CIRCUIT SPECIFICATIONS CHART NO. 2

		MAIN DE	CONNECT	2**	
DRYER MODEL	Fuil Load Amps (Total)	Fuestran Size	Circuit Breaker (Amps)	Wire Size THW AWG	Conduit Size
220V 19 8-15-10 8-17-15 10-21-210 △ 10-25-215	74 85 126 148	FRIN 90 FRIN 100 FRIN 150 FRIN 175	90 100 150 NA	#3 #2 2/0 3/0	11/4" 11/4" 2" 2"
220V 3V 8-15-10 8-17-15 10-21-210 Δ 10-25-215	47 54 80 94	FRIN 60 FRIN 60 FRIN 100 FRIN 110	60 60 100	#6 #4 #3	1" 11/4" 11/4" 11/2"
8-15-10 8-17-15 10-21-210 \( \text{10-25-215} \)	27 40	FRS 30 FRS 35 FRS 50 FRS 60	30 # 35 #	10	3/4" 3/4" 1"

		Main Di	acamed!	2° Meter Di	i SCHINGE	3° Mater D	li scomeci	4** Meter	Meter	5**	*4
DRYER MODEL 220V 18	Full Load Amps (Total)	fusatron	Circuit Breaker (Amps)	t Fesetran	Circuit		Circuit	Copper Wire Size THAV AWG	Conduit Size	Copper Wire Size THW	Conduit
8-15-10 8-17-15 10-21-210 △ 10-25-215	74 85 126 148	FRN 90 FRN 100 FRN 150 FRN 180	100 150	FRN 30 FRN 30 FRN 30 FRN 30		FRN 80 FRN 70	80 70	#10 #10 #10 #10	1/2" 1/2" 1/2"	#8 #4 #8	5i 20 1" 1" 1"
220V 3g 8-15-10 8-17-15 10-21-210 \triangle 10-25-215	54 80	FRM 80 FRM 80 FRM 100 FRM 120	100	FRN 15 FRN 15 FRN 15 FRN 15	15 F	FRIN 40 FRIN 50 FRIN 40 FRIN 50	50 40	#12 #12 #12	1/2" 1/2" 1/2"	#4 #8 #6 #8	1" 3/4" 1" 3/4"
#40V 3g #-15-10 #-17-15 10-21-210 A 10-25-215	27 40 F	FRS 30 FRS 50	30 F 35 F 50 F	FRS 10 FRS 10 FRS 10	10 FF	765 20 765 25 765 20	20 ± 25 ± 20 ±	#14   #14   #14	1/2" # 1/2" # 1/2" #	#10   : #10	3/4" 3/4" 3/4" 3/4"

NOTES: 1 - \* SIZED AT 120% OF FULL LOAD ANDS
2 - \*\*SIZED AT 125% OF FULL LOAD ANDS
3 - WINE SIZES SHOWN ARE FOR SHOWS 100 FEET OR LESS.
USE 3 WINE COMMUNICATIONS FOR 16 UNITS AND 4 WINE

USE J WILE COMPUTATION FOR 18 UNITS AND 4 WIRE COMPUTATIONS FOR 36 UNITS.

4 - CONTROL BOX, CONTACTORS AND 4-POST TERMINAL RICCE ARE PUBLISHED BY MUTLER AND. CO., ALL OTHER ITEMS SHOWN ARE TO BE PUBLISHED BY CUSTOMER.

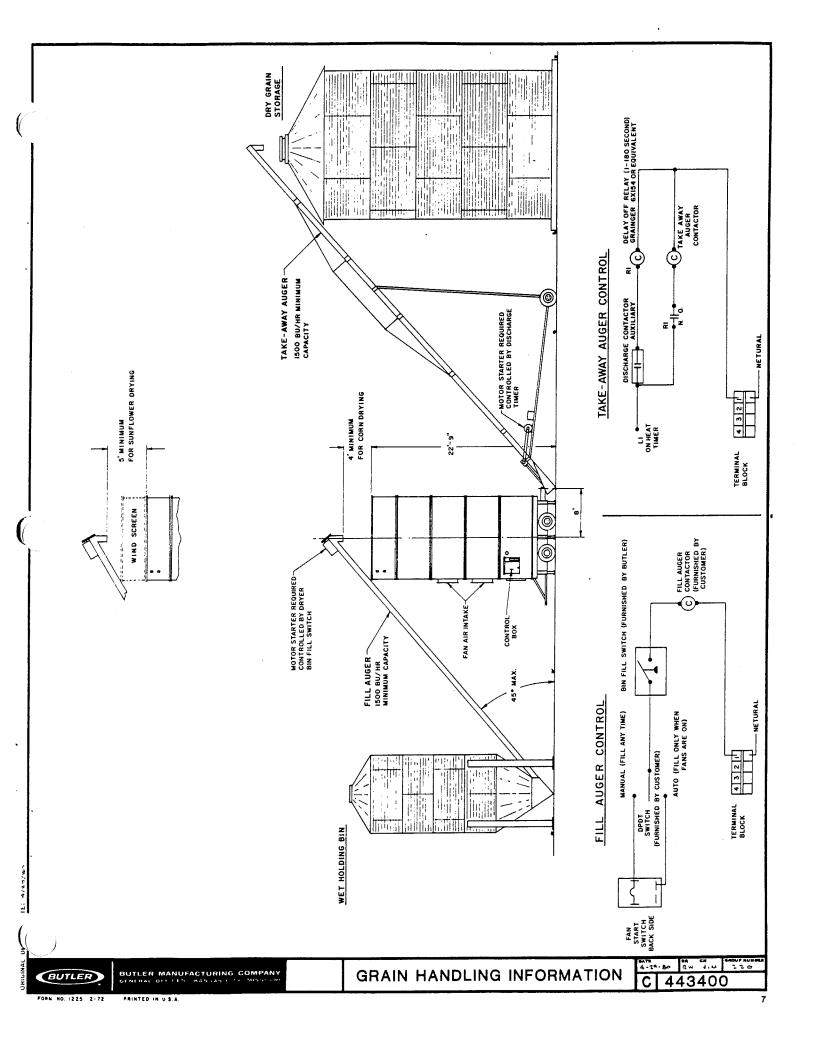
DISCORDER SHOULD BE 3 POLE FOR 36 UNITS AND 2 POLE FOR 16 UNITS.

6 - A ALSO THE SAME FOR 10-21-213 BATCH DETERMS.

BUTLER MANUFACTURING (AVTLER) COMPANY - RAMBAS CITY SE MISSOURI

TYPICAL ELECTRICAL HOOK-UP

Gem 4-29-80 A 443383



#### **DEFINITIONS**

AIR VELOCITY: The speed of air flow in feet per minute.

AMBIENT TEMPERATURE: Outside air temperature.

AMBIENT RELATIVE HUMIDITY: Outside relative humidity.

BTU: British Thermal Unit is a unit used to measure heat. One BTU will raise the temperature of one pound of water 1° Fahrenheit.

BTU/Hour: A common standard by which a heating unit is rated.

BUSHELS: One bushel equals 1-1/4 cubic feet. The generally accepted weights in pounds per bushel of grain are as follows:

CFM: Cubic feet per minute is a common measure of a quantity of air movement.

DRIED GRAIN: Grain which has been dried to the desired moisture content.

EXHAUSTED AIR: The air leaving the grain after having absorved as much moisture as possible.

GRAIN COOLING: Reducing the temperature of grain after drying to the desired level.

GRAIN DRYING: Reducing the moisture content of grain to the desired level.

HIGH TEMPERATURE LIMIT: The temperature above which grain should not be dried. This is determined by the end use intended for the grain.

L. P. GAS: A mixture of various petroleum products usually consisting of propane and butane. It is normally stored and transported as a liquid under pressure. This mixture weights about 4.5 lbs. per gallon and has a heating value of approximately 90,000 BTU/Gallon.

MOISTURE CONTENT: The moisture content of grain is measured by dividing the weight of the water which it contains by the total weight of the wet grain. This is the moisture content upon which grain is bought and sold commercially. (Sometimes referred to as wet basis.)

PLENUM TEMPERATURE: Temperature of the air used for drying.

RELATIVE HUMIDITY: A measure of the moisture content of the air relative to fully saturated air.

STATIC PRESSURE: A measure of the air pressure in a container compared to surrounding air. It is expressed in inches of water column. Small kernal grains such as wheat and milo pack closer together and offer greater resistance to air flow. This causes higher static pressure to develop in the plenum chamber, reducing drying rate.

TEMPERATURE RISE: The difference between ambient temperature and plenum temperature is referred to as the temperature rise.

#### CAPACITY

Capacity figures listed on page 9 are based on wet bushels into the dryer.

Drying rate is largely affected by physical characteristics of the grain. Variety, fertilization program, rainfall, sunlight (degree days), planting date, disease/insect damage, and hail and storm damage all affect drying rate. Capacity changes of up to 30% have been observed simply by changing from one field of corn to another of equal moisture content.

Trash in grain reduces the drying rate and may cause uneven drying and flow patterns.

Ambient temperature and relative humidity variations have little affect on drying rate. The dryer will burn more fuel as ambient temperatures go down, but will continue to heat and superdry the air to 2-3% R.H.

#### MOISTURE CONTENT RECOMMENDATIONS

Harvest of grain should not begin until certain moisture levels are reached to minimize kernel damage and threshing losses. In addition, different grains have various allowable moisture levels for safe storage. Recommended moisture contents are shown on page 10.

#### DRYING TEMPERATURE LIMITS

Commonly dried grains have various maximum allowable drying temperatures depending upon anticipated storage, handling and end usage.

Excessive temperatures affect palatability to livestock, milling, germination, and cracking. Commonly accepted temperature limits are shown on page  $10\,$ .

#### COOLING

Grain should be cooled to no more than 10 to 15° F. above outside temperature for safe storage unless adequate aeration is provided to cool grain in storage. Refer to operating instructions to determine cooling cycle length.

#### DRYING IN GENERAL

#### (Corn)

Corn is the most commonly dried grain, thus general drying instructions apply to it as well as other crops.

Clean grain dries faster, more cheaply and more uniformly. All possible trash should be removed in harvesting. Additional cleaning prior to drying is desirable for pollution control and may be necessary in extreme cases.

Drying equipment should be serviced at least daily. Heating and cooling chambers should be inspected and all foreign material removed. Perforated walls may need wire brushing to remove foreign material. Plenum temperature and moisture content are established as flow rate shown in the operation section. The bottom row of roof covers may be removed for corn below 27% mc.

Soybeans are not dried as a common practice; however, they are dried successfully by operating at a lower temperature with added inspection for cracks and special handling care.

For air drying, roof covers may be removed.

#### WHEAT & MILO

Wheat and milo kernels are smaller than corn and pack more densely causing higher resistance to air flow. The increased resistance results in drying capacity somewhat below that of corn as shown in the capacity table page 10. Fill dryer with fan off. Clean dryer after filling and before starting heater.

Milo, in particular, is frequently very trashy as harvested. This trash, if not removed, will reduce capacity, waste fuel and cause uneven drying. Trash should be removed at least twice daily to prevent fire. Do not remove solid roof covers.

#### SUNFLOWER SEEDS

Solid roof sections are specified for drying sunflower seeds. Perforated roofs, even with covers, accumulate fuzz, resulting in increased fire hazard.

Sunflower seed drying requires special operations and constant supervision. The fuzz from sunflower seeds collects in the dryer perforations and heat chamber, reducing airflow and increasing the danger of fire.

Walls, plus heating and drying chamber floors, must be cleaned at least every 6 to 12 hours of operation and even more often if buildup is severe. A shop vacuum cleaner is recommended to remove fuzz. Special handling is desirable to minimize floating fuzz.

Due to potential fire hazards, fire prevention and control equipment should be available.

# MOISTURE CONTENT RECOMMENDATIONS

# Obtain Samples per instructions on Discharge Auger

	Maximum Harvest Wet Basis	Moisture in Short Term	Storage Long Term
Corn Soybeans	30%	15%	13%
Wheat & Milo Sunflower Seeds*	18-20 25	12 12 12	11 11 9.6

\*Samples taken immediately after drying typically indicate 1-2% lower M.C. than actual as a result of the hull being dried more than the seed. Allow 12 hours to equalize moisture for final moisture testing.

#### GRAIN

# Recommended Drying Temperatures °F\*

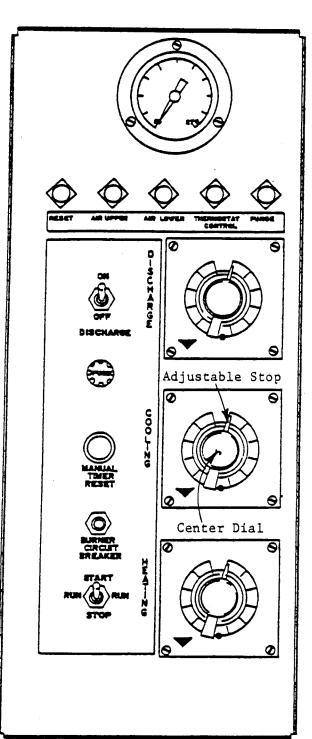
Grain	Seed	Commercial Use	Feed
Corn	110	130	220
Soybeans	110	130	-
Wheat & Milo	105	130	170
Sunflower seeds	90-110	130-160	130-160

\*Modulating valves supplied on standard dryers have a range of 140-250° F. Modulating valves supplied on sunflower seed dryers have a range of 90-210° F. Refer to page 29 to order alternate modulating valve required to cover either drying range.

#### DRYING CAPACITIES

	Drying Temp	· Cooled	Moisture Removel	Capacity*
Corn Corn	220 220	Yes Yes	10 pt. (25%-15%) 5 pt. (20%-15%)	215 wet bu/hr 285 wet bu/hr
Corn Corn Corn Corn Wheat & Milo Wheat & Milo Wheat & Milo Soybeans Soybeans Sunflower Sunflower	220 130 130 110 110 170 130 105 130 110 160	No Yes	5 pt. (25%-20%) 10 pt. (25%-15%) 5 pt. (20%-15%) 10 pt. (25%-15%) 5 pt. (20%-15%) 5 pt. (17%-12%) 10 pt. (20%-10%) 10 pt. (20%-10%)	500 wet bu/hr 125 wet bu/hr 165 wet bu/hr 105 wet bu/hr 140 wet bu/hr 170 wet bu/hr 170 wet bu/hr 170 wet bu/hr 145 wet bu/hr 145 wet bu/hr 340 wet bu/hr 455 wet bu/hr

\*Capacity expressed in wet bushels per hour. Rates do not include load or unload times. Loading and unloading occur simultaneously. Approximately 15-25 minutes is required to load and unload a 340 bushel Batch dryer, depending on the grain being dried and discharge systems adjustment.



PLENUM AIR THERMOMETER

Five neon lamps indicate section activated when lit.

Discharge timer sets length of discharge cycle. Timer stop is set by hand for desired time. Center dial may be turned counter clockwise to "O" manually. Do not turn clockwise. Reset center pointer electrically only. Discharge switch "OFF" causes dryer to shut down at end of cooling cycle.

Cooling timer sets length of cooling cycle. Set to "O" for hot grain discharge.

Manual timer reset sets all three timers to preset stop when pushed. Center pointer must not be turned clockwise by hand.

Heating timer sets length of time burner will fire. Burner circuit breaker shuts dryer down if flame is lost. Start switch controls entire dryer including starting fan motors.

SUTLER MANUFACTURING
COMPANY
GENERAL OFFICES - MANBAS CITY 28, MEAGUM

OPERATION

GEM 4-29-80

A 443385

#### GAS CONTROLS

SOLENOID VALVE: Two solenoid valves, located on the fuel line, are incorporated in the control system. When the electrical circuit is completed, the valves open, permitting the fuel to flow through. When the machine is not in operation, or in the event of malfunction, the valves close.

GAS REGULATOR: The pressure regulator determines the rate of fuel flow to the burner and is equipped with a gauge which indicates the amount of pressure in the line.

MODULATING VALVE: The modulating valve is installed between the regulator and the burner to aid in maintaining a constant drying temperature. As the temperature in the plenum chamber varies, a sensing bulb senses the change and the valve adjusts the flow of fuel.

VAPORIZER: Each burner has an intergral vaporizer.

STRAINER: Due to impurities in L.P. fuel, Y-type strainers are used on all dryers.

#### POWER CIRCUIT

MAGNETIC STARTERS: Starters, located inside the control box, are used to start the dryer motors, and are an integral part of the control circuit.

#### CONTROL CIRCUIT

TRANSFORMER: The transformer is used to provide a high voltage spark to the igniter.

PURGE TIMER: The purge timer is used to time the burner purge period.

CYCLE TIMERS: The cycle timers are used to control the length of time the dryer operates in each phase of operation. These are adjustable off-delay type timers. Total length of time on each timer is:

Heating cycle timer......3 hours
Cooling cycle timer......1 hour
Discharge cycle time......1 hour

DISCHARGE SWITCH: This switch allows the operator to dry and cool a batch and hold the grain in the dryer until he returns to discharge the batch, or to allow the dryer to discharge and refill automatically. LOW BIN SWITCH: The low bin switch is used to keep the dryer from automatically recycling if the dryer is not full of grain.

DISCHARGE TIME DELAY RELAY: This relay is used to shut the dryer off if the dryer does not refill with grain within ten minutes after the completion of the discharge cycle. If this occurs, the dryer must be restarted manually.

THERMOSTAT OVERRIDE: The thermostat override, located to the right of the control box, will override the heating timer. Heating continues until grain temperatures reach the thermostat set point. It will not stop the heating cycle in the event grain temperature reaches set point before the heating timer times out. WARNING: Do not turn the thermostat dial past the marker on the dial face, 150° for corn, 125° for sunflower seeds.

#### SAFETY CIRCUIT

BURNER CIRCUIT BREAKER: Circuit breaker is used to turn the dryer off in the event of loss of flame.

HIGH LIMIT CONTROL: This control, located on the control panel, shuts the dryer off when the selected plenum temperature is exceeded.

SAIL SWITCH: Two air activated switches are placed in air stream. Any time the fans are running, the movement of air closes these switches. If either switch is open, the burner will not fire.

FLAME SWITCH: Two heat activated switches are used to detect heat. If either burner does not ignite, its flame switch remains closed and trips the Burner Circuit Breaker. This shuts off the dryer. (NOTE: This flame switch is not interchangeable with 1972 or older Butler Stor-N-Dry flame switches.)

#### GENERAL

BIN FILL SWITCH: Located on the side of the holding bin, directly above the fan and burner is a diaphram actuated switch. This is provided to control auxiliary filling equipment. A diagram is provided to aid in proper electrical installation.

TEMPERATURE GAUGE: Each dryer is equipped with a temperature sensing gauge, located in the control box, which indicates plenum temperature.

#### PRE START INSTRUCTION

The settings shown below during initial startup are approximate. Following the start up procedure are listed adjustments to timers, thermostat, regulators, etc., to help obtain the desired dryer output. The entire procedure should be read thoroughly before starting the dryer.

STARTUP - FIRST BATCH (Second day requires only steps marked\*.)

DO NOT TURN CENTER DIAL OF TIMERS CLOCKWISE MANUALLY.

- 1.\* Turn on fuel supply valve.
- 2.\* Turn on dryer fuel valve.
- 3.\* Turn on electrical power to dryer.
- Set high limit 25° F. above intended operating temperature.
- 5. Set heating timer stop at 6 minutes per point of moisture (4.5 minutes for sunflower seed) to be removed (6 minutes x 10 points = 60 minutes)
- Set cooling timer stop to "0" for hot grain discharge. Set cooling timer stop to "30" minutes to obtain discharged grain about 10-15° F. above ambient temperature.
- Set discharge timer stop to "15" minutes as a trial discharge time.
- 8. Set thermostat override at "O"° F.
- Set discharge switch "ON" for automatic discharge and recycle. Set "OFF" to shut off dryer at the end of the cooling cycle. Approximately 340 bushels will be discharged per batch.
- 10.\* Push reset button to electrically reset all three timers. (Do not reset if automatic shutdown occurs mid-cycle unless complete new cycle is desired.)
- 11.\* Push burner circuit breaker.
- Turn modulating valve T handle fully clockwise (maximum increase).
- 13. Turn pressure regulator T handle about 2/3 of the way out. Pressure gauge will not register until the solenoid(s) open.
- 14.\* Start fan(s). Two burner dryers have a six second delay between the first and second fan motor startup. Fan(s) run for about 15 seconds before ignition to purge dryer of residual combustible gases.

After purging, the solenoid(s) should open and the burner(s) ignite. Both burners must ignite or the burner circuit breaker will trip shutting off the entire dryer.

15. After ignition, slowly adjust pressure regulator until temperature is approximately 10° F. higher than desired. Slowly reduce the plenum temperature to the desired level by turning the modulating valve counter clockwise. Wait about 1 1/2 minutes between adjustments. Wide daily temperature swings may require regulator readjustments.

STARTUP PROCEDURE IS COMPLETE.

#### ADDITIONAL ADJUSTMENTS

Time and temperature adjustments may be required as harvest proceeds. Adjust using following guidelines:

#### SAMPLING PROCEDURE

Collect a one cup sample after two minutes of discharge and additional one cup samples every ten seconds until 1/2 gallon of grain has been collected. Mix the samples together, then test for moisture content and temperature.

Adjust Heating Timer Stop if moisture content of sample is not acceptable. Increase or decrease timer setting on the basis of six minutes per point (4.5 minutes for sunflower seeds). Additional adjustments will be necessary as incoming moisture varies. Continue to sample incoming grain as harvest progresses and make heat timer corrections as needed.

Adjust Cooling Timer Stop depending upon temperature of sample and storage bin cooling air flow available.

Note the last half of each batch discharged will be cooler than the first half as the cooling fans run during discharge.

Adjust Discharge Timer Stop based on one cup samples taken each ten seconds of last one minute of discharge.

- A. If this sample is 2% above the average moisture content of the batch sample obtained under the Sampling Procedure listed above, shorten the discharge time.
- B. If this sample is less than 1% above the batch sample, increase discharge time one minute.

Repeat this procedure on successive batches until the last sample is about 1% above the batch average moisture content.

Adjusting Thermostat Override After the heating timer has been set to obtain the desired discharge moisture content, turn the thermostat dial to 150° F. for corn (125° F. for sunflower seeds).

#### WARNING

Do not leave machine unattended at this setting as severe overdrying could occur. Never set the dial above the maximum temperatures shown on the dial decal as grain against the inner wall might ignite before grain against the outer wall reached thermostat setting.

When the heating timer times out, slowly turn the thermostat dial counter-clockwise (to lower setting) until the burner shuts off. This is the thermostat set point.

As incoming grain moisture decreases, it will be necessary to reduce the heating timer setting to prevent overdrying. The thermostat will not stop the heating cycle before the heating timer reaches "O".

Turn the thermostat dial clockwise to increase, counter-clockwise to decrease final grain moisture content.

# ADJUSTMENT OF DISCHARGE RATE

The grain discharge rate may be adjusted if necessary to accomodate specific takeaway equipment. See page 33.

## STOPPING PROCEDURE

When dryer is in heating cycle

- 1. Shut off fuel supply valve and allow line to burn dry. (Burner circuit breaker will pop out.)
- Shut off dryer fuel valve.
   Run fans 5 to 15 minutes to cool grain only if shut down is for over 30 minutes.
- 4. Stop fan.

When dryer is in cool or discharge cycle

- 1. Shut off fuel supply valve, push timer reset and burn line dry.
- 2. Shut off dryer fuel valve.
- 3. Stop fan.

The discharge timer delay relay will automatically shut the dryer off if the low bin switch is not closed by grain pressure within ten minutes after the discharge time is completed.

Grain left in the dryer should be aerated 15 minutes each day to minimize spoilage.

If the burner circuit breaker does not pop out when the fuel line is burned dry, refer to the trouble shooting section for repair.

#### LUBRICATION & STORAGE

The best insurance against costly and time consuming breakdowns is a regular maintenance program. The following pages contain instructions for the care of this dryer.

NOTE: Before attempting service or repair on the dryer, consult the service charts. Be certain all power and gas supplies are shut off.

#### STORAGE

- (a) Remove all grain, dirt and chaff from the machine.
- (b) Lift cooling floor door and clean metering system.
- (c) Lubricate all grease fittings.
- (d) Securely anchor dryer if it is to be stored outside. Refer to Page 1 for recommendations.

#### LUBRICATION

All areas that need lubrication are properly lubricated before leaving the factory. You should maintain a lubrication schedule as described in the following chart:

ITEM	LUBRICATION REQUIRED	INTERVAL
50:1	Fill up to gears with SAE 90 gear lubricant.	Maintain proper level. Check every 100 hours.
	Grease zerk on output shaft. Use three (3) strokes of gun grease.	Prior to operation and end of season.
U-joints	Use one (1) stroke of gun grease.	Every 100 hours of operation.
Discharge motor	Lubricate with SRI (Chevron) grease or equivalent. (Equivalents below)	Prior to operation and end of season.
Fan motors	Lubricate with SRI (Chevron) grease or equivalent. (Equivalents below)	After three seasons of drying.

# PROTECTION OF RUSTING GALVANIZED MATERIAL

In time, the galvanized surfaces of the grain dryer will rust. To protect the machine, paint rusty surfaces as soon as possible after rust appears. To paint galvanized metal, use any commercially available zinc dust primer, or zinc alkyd primer that is intended for use on galvanized surfaces.

#### BE SURE TO FOLLOW ALL LABEL INSTRUCTIONS.

When painting perforation, avoid plugging the holes in the perforation. Spray painting is preferred. A top coat may be applied if the color of the primer is objectionable. If the inside of the wet holding bin becomes rusty, use the same recommendations as for painting on galvanized surfaces.

When cleaning grain residue from painted surfaces, use only a non-metal brush, as scraping or wire brushing will remove the paint.

#### EXAMPLES OF ZINC DUST PRIMERS:

Cooks"Primer Coat -471R112"
CO-OP"Zinc Metal Paint"
Pratt & Lambert"Galvanized Metal Primer"
Tru-Test"Galvanized Metal Primer"
Sherwin-Williams"All Surface Enamel"

#### FAN AND DISCHARGE MOTOR GREASES

at	0
Chevron SRI	-Standard Oil of Calif.
Aeroshell 16	-Shell Oil Company
Hi Temp	-Texaco, Inc.
Andok 260	-Humble Oil
Rykon No. 2	-American Oil

#### POSSIBLE CAUSES

#### I. Fan fails to start

A. Contactor does not pull in

115 volt control circuit dead control circuit fuse
Start switch
Fan motor overload tripped
High limit tripped
Discharge motor overload tripped
Contactor coil dead

Ground No. 2 fan delay timer

No. 2 fan delay timer

No power to motor Loose connections Bad capacitors Burned out motor

Burner circuit breaker tripped

Discharge switch off

# II. Fan shuts down during Operation

B. Contactor pulls in

A. Overload trips

Supply voltage not within N.E.C. allowable of ± 10% of motor nameplate. Loose connections
Bad oil capacitors
Bad bearings
Shorted winding
Improperly sized heater strip

B. High limit switch trips

High limit improperly set or defective Temperature gauge inaccurate Inner perforated wall plugged Modulating valve or regulator fluctuating

C. Discharge Motor Overload trips

Supply voltage not within N.E.C. allowable of ± 10% of motor nameplate Bad run capacitors
Bad discharge motor bearing
Shorted winding
Imporperly sized heater strip
Loose connections
50:1 gearbox binding
Sweep arms overloaded
Discharge auger overloaded
Trash or tramp metal jammed on rod finger of sweep

D. Burner circuit breaker trips

Air switch
Flame switch too cool
Plugged orifice
Flame switch failed closed

E. Items A,B,C,D operate properly but fans still shut down

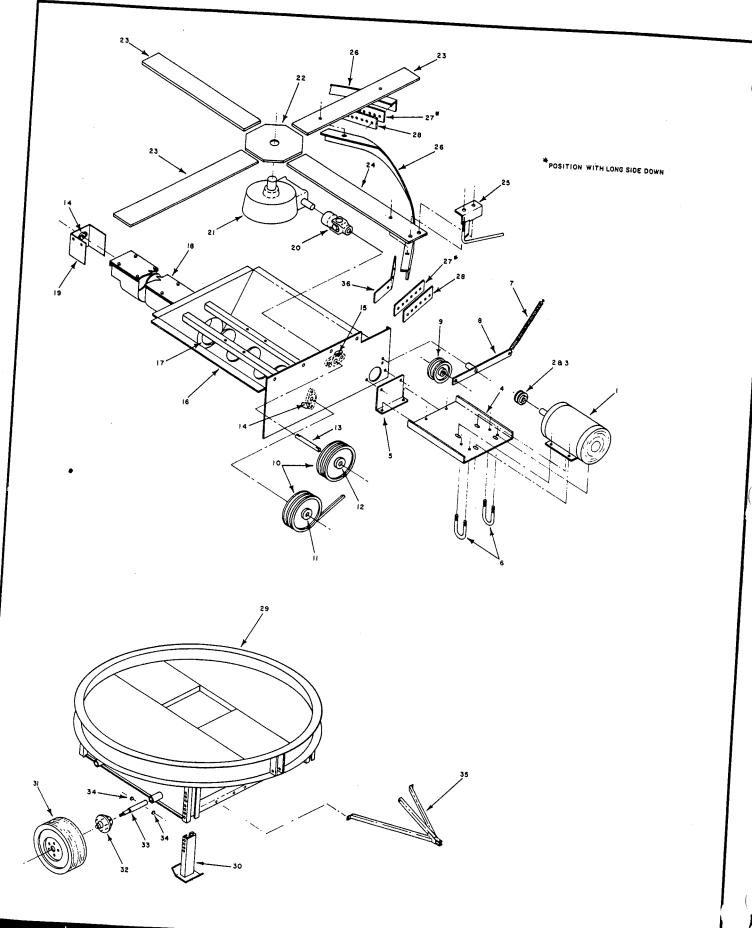
Out of grain
Low bin switch sticks
Loose connections to contactor coils
or overload relays
Bad auxiliary contacts on motor
contactors
Vibrating contactors
Defective contactor coils
Loose or erratic ground wire

#### III. Burner won't fire

A. Burner circuit breaker trips
 1. No pressure on fuel gauge

Adjust modulating valve to maximum increase.
Adjust regulator 1/3 of the way out Fuel supply valves
Solenoid(s)
Strainers clogged at Y and/or regulator Air switch open

2. Pressure on fuel gauge	Adjust modulating valve to maximum increase. Ignition transformer Plugged burner orifice Spark plug and/or wire
B. Burner circuit breaker does not trip	Flame switch failed open Purge timer Burner circuit breaker defective Heat timer T. O. contact
IV. Burner lights, but shuts down during operation	
A. Burner circuit breaker trips	Flame switch Air switch Flame out or not on flame switch No fuel
B. Solenoid chatters Flame may go on and off	Air switch chattering Static pressure too high
V. Discharge motor won't start	Power to motor contactor coil
A. Time set on timer	Power to motor Bad contactor coil Faulty ground Cooling or discharge timer Discharge switch "off"
VI. Timer malfunction	
A. Timer stays at pre-set time	Relay 5 Timer jaw clutch open Purge timer stays in "Purge" Timer damaged by turning center dial clockwise manually Timer motor Ground (L <sub>2</sub> )
B. Timer will time out to "O" and next timer does not start	TO or TC contacts of microswitch on timer
C. Timer won't reset	Timer mechanism dirty Low bin circuit No grain 10 minute delay relay Relay 2 Timer "pilot" or L2 connection Timer TC switches not funcitioning Manual timer reset switch
D. Timer reset to less than preset time	Timer mechanism dirty Center dial damaged by turning clockwise manually Relay 2 or 5 not holding in during purge
VII. Erratic plenum temperature	Strainers in "Y" or regulator plugged Inner perforated wall plugged Temperature gauge Modulating valve Burner ring plugged Vaporizer leak
VIII. Uneven moisture content of discharged grain	Dryer not filled evenly Dryer out of plumb Sweep arms not running parallel to inner wall Burner ring plugged Inner air deflectors displaced Review sample procedure on page





REF.	PART NO.	DESCRIPTION	QTY.
110.			
1.	823235	MOTOR 3 HP - 3Ø	1.
	or	HOTOD 2 UD 14	1
_	435943	MOTOR 3 HP - 10 2.65" DIA. SHEAVE	li
2.	837357	HUB 1 1/8" BORE 1/4 x 1/16 KEY	l i
3.	442493	MOTOR MOUNTING PLATE	l i
4.	441968	MOTOR ATTACHMENT PLATE	l i
5.	441969	"U" BOLT	2
6.	441967	SPRING	1
7.	441966 823465	BELT TIGHTENER ASS'Y.	1
8.		IDLER PULLEY	1
9.	833318 837742	SHEAVE 6.9" DIA.	2
10.	438747	HUB 3/4" DIA. BORE	1
11.	837739	HUB 1" DIA, BORE	1
12. 13.	830017	DRIVE SHAFT (TO GEAR BOX)	1
14.	437438	BEARING W/COLLAR 3/4" DIA. BORE	2
	821372	BEARING W/COLLAR 1" DIA. BORE	1
15. 16.	438729	SUMP WELD ASS'Y.	1
	438727	AUGER ASS'Y.	1
17. 18.	438725	TROUGH COVER	1
	436482	AUGER GUARD	] ]
19.	820026	UNIVERSAL JOINT (1" BORE x 1" BORE)	1
20. 21.	437752	GEAR BOX 50:1	1
	821633	SWEEP ARM HUB ASS'Y.	1
22.	834682	SWEEP ARM (SHORT)	3
23. 24.	834683	SWEEP ARM (LONG)	1
25.	821364	SWEEP ARM FINGER ASS'Y.	1
26.	821649	SWEEP FIN.	4
27.	441965	SWEEP FIN FINGER	4
27.	833278	SWEEP FIN FINGER	4
	438021	BASE WELDMENT	1
29. 30.	439837	LEG EXTENSION ASS'Y.	1 6
	820104	WHEEL/TIRE ASSEMBLY (WHEEL-830089, TIRE-830090	) 4
31. 32.	821647	SPINDLE ASSEMBLY	] 4
33.	820014	HUB ASSEMBLY	4
34.	837848	SPACER FERRULE	8
35.	439867	HITCH ASSEMBLY	1
35. 36.	442400	ANGLED SHEEP FINGER	1

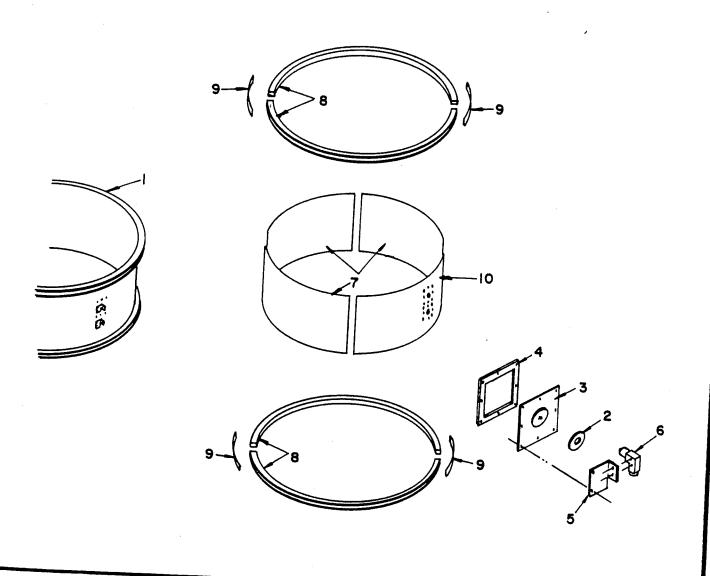
BUTLER)

BUTLER MANUFACTURING COMPANY BASE AND DRIVE ASS'Y

GEM 4-29-80

18

REF. NO.	PART NO.	DESCRIPTION	QTY
1. 2. 3. 4. 5. 6. 7. 8. 9.	442425 830099 820033 830100 833319 830096 835293 438761 438649 835294	TOP BIN SECTION NEOPRENE SHIELD LIMIT SWITCH DIAPHRAGM LIMIT SWITCH PLATE LIMIT SWITCH BRACKET MICRO SWITCH TOP BIN SHEET STD. OUTSIDE CHANNEL RING OUTER RING BOLTING TAB TOP BIN LIMIT SHEET	1 2 2 2 2 2 2 2 3 4

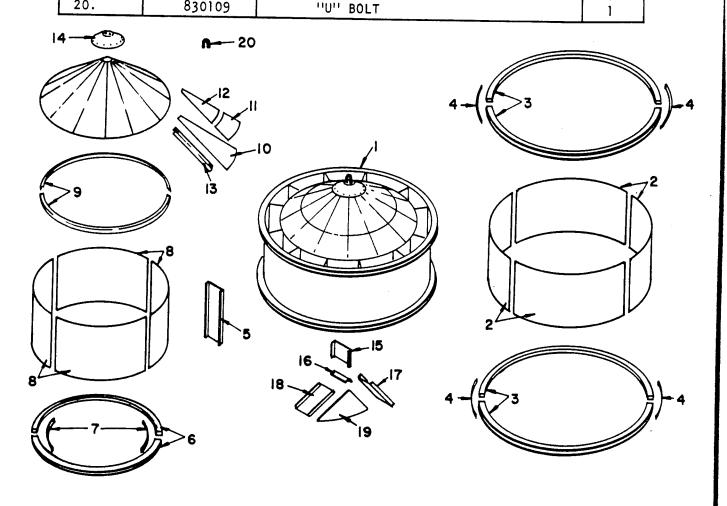


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SENERAL OFFICES - KANSAS CITY 26, MISSOURI

HOLDING BIN SECTION

GEM 4-29-80 **A** 443388

				_
REF.	PART NO.	DESCRIPTION	QTY.	T
1. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 10. 11. 12. 13. 14. 15.	442376 442478 834530 438761 438649 834589 438760 833353 834531 833219 439780 442832 440035 440035 440034 441551 439068 442491 442471 442476	UPPER HEATING SECTION UPPER HEATING SECTION (SUNFLOWER) OUTER 4' STD. SHEET OUTSIDE CHANNEL RING OUTER RING BOLTING TAB PARTITION 4' STD. INSIDE CHANNEL RING INNER RING BOLT TAB INNER 4' STD. SHEET TRANSITION RING ROOF SECTION (PERFORATED) ROOF SECTION (SOLID) SUNFLOWER LOWER ROOF INSERT UPPER ROOF INSERT ROOF CAP GRAIN DIVIDER PARTITION GRAIN DIVIDER ANGLE GRAIN DIVIDER R.H.	QTY.  1 1 4 4 13 2 4 2 16 16 16 16 16 1	
18.	442477	GRAIN DIVIDER L.H.	]	
19. 20.	442473 830109	OUTER WALL FILLER	1	



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(SUTT

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ROOF SECTION

GEM 443389

# REPLACEMENT PARTS LIST

# ACCESS SECTION

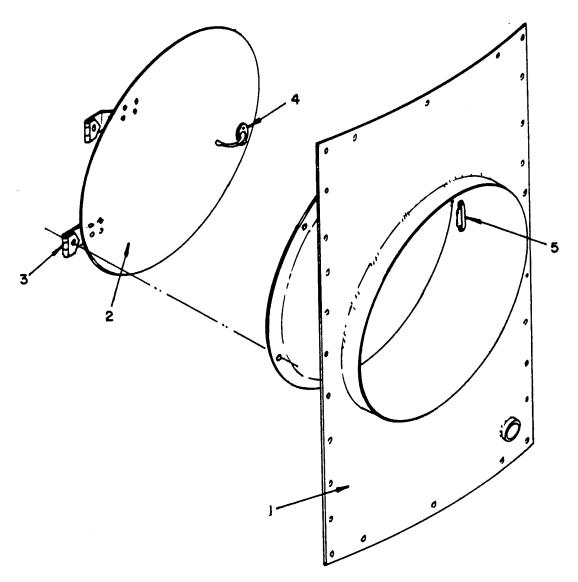
PART NUMBER	DESCRIPTION	0711
834532 834531 442439 442437 438760 438649 833353 834589 442360 441971 833324 833356 833165 438710	OUTER SHEET (STANDARD) INNER SHEET (STANDARD) OUTER SHEET - ACCESS (SHORT) INNER SHEET - ACCESS (SHORT) OUTSIDE CHANNEL RING INSIDE CHANNEL RING OUTER BOLT TAB INNER BOLT TAB PARTITION (STANDARD) ENTRANCE PARTITION COLUMN BAFFLE DUMP GATE COOLING FLOOR - SIDE COOLING FLOOR - HOPPER COVER FLOOR LATCH	QTY.  2 2 2 4 6 4 13 2 1 14 2 2 1 2

# FAN-HEATER SECTION

PART NUMBER	DESCRIPTION	OTY
834530 834531 442438 442437 438760 438649 833353 834589 442360 442447 430885 430886	OUTER SHEET (STANDARD) INNER SHEET (STANDARD) OUTER SHEET - FLASHING (SHORT) INNER SHEET - FLASHING (SHORT) OUTSIDE CHANNEL RING INSIDE CHANNEL RING OUTER BOLT TAB INNER BOLT TAB PARTITION (STANDARD) ENTRANCE PARTITION JUNCTION BOX CAPACITOR BALDOR 216-240 MFD. 230 V ELECT. CAPACITOR BALDOR 20 MFD 370 V OIL CAPACITOR MARATHON 710-825 MFD 165 V ELECT	QTY.  2 2 2 4 4 4 13 2 1 2 1 2

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REF.	PART NUMBER	DESCRIPTION	QTY.
1 2 3 4 5	442452 442440 427543 437427 437428	ACCESS ASSEMBLY COVER HINGE HANDLE LATCH	1 1 2 1

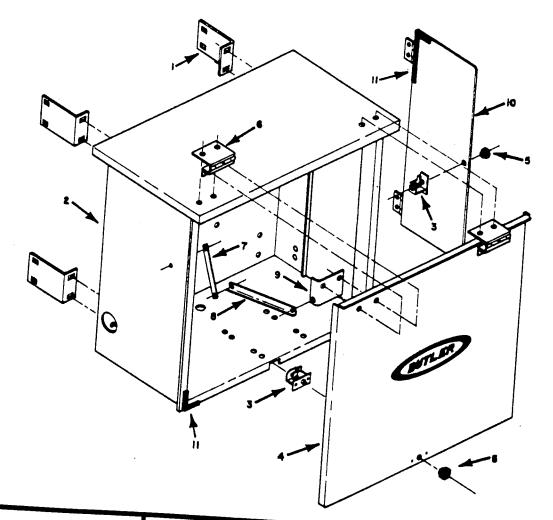


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COMPANY
GENERAL OFFICES - KANSAS CITY 26, MISSOU

ACCESS DOOR PARTS

GEM 4-29-80
A 443638

REF. PART NO. NO.		
1 836894 2 438844 3 437007 4 437112 5 437008 6 437009 7 437012 8 437011 9 437010 10 437114 11 436447	DESCRIPTION  CONTROL BOX ATTACHING BRACKET CONTROL BOX LATCH CONTROL BOX COVER KNOB HINGE HOLDER BRACE HOLDER ANGLE HOLDER BRACKET CONTROL BOX DOOR 48" GASKET STRIP	QTY.  4 1 2 1 2 1 1 1 1 1

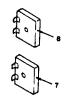


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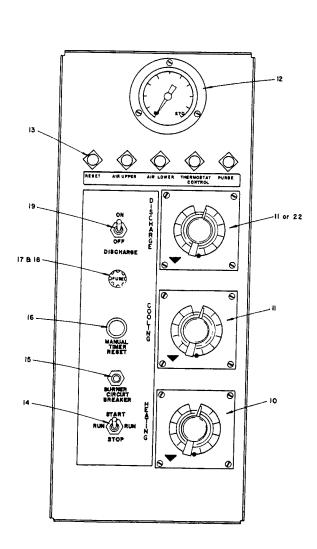
CONTROL BOX ASS'Y.

GEM 4-29-80 A 443397

REF.	PART		81	10'
NO.	NO.	DESCRIPTION	QTY.	QTY.
1234567890112345678901223445	436163 4379666 8328296 438591056 83571056 44195334 4425334 4425334 4425334 8377158 83774010 433100 433100 4331442 443634 44364 44	SNAP TRACK (12" LG) RELAY SOCKET AUTOMATIC RELAY TIME DELAY RELAY (3-30 SEC) HIGH LIMIT SWITCH TRANSFORMER TIME DELAY RELAY (600 SEC) TIME DELAY RELAY (600 SEC) TIMER COVER TIMER 0-180 MIN. (SPECIAL) TIMER 0-60 MIN. TEMPERATURE GAUGE (80 -270 F) LAMP ASS'Y. START-STOP SWITCH DPDT (HOM) CIRCUIT BREAKER PUSH BUTTON FUSE HOLDER FUSE 5 AMP (SLO-BLOW) DISCHARGE SWITCH DPDT THERMOSTAT SNAP TRAC: (2" LG) TIMER 0-15 MIN IGNITION TRANSFORMER IGNITION WIRE 96" LG. IGNITION WIRE 90" LG. IGNITION WIRE 40" LG. IGNITION WIRE 40" LG. IGNITION TERMINALS 90"	165111111111111111111111111111111111111	2651111131215111111-2224

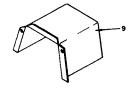


\* --- NOT PICTURED

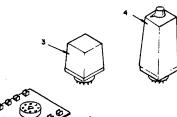


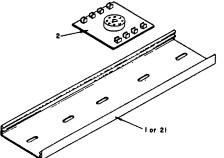












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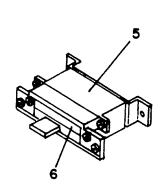
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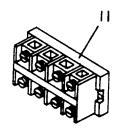
CONTROLS

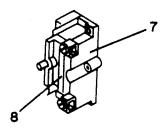
C 443390

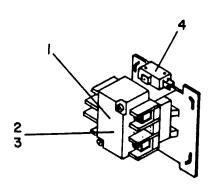
RM NO. 1225 2-72 PRINTED IN U.S

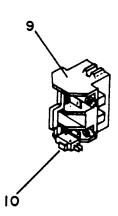
REF. NO.	PART NO.	DESCRIPTION	QTY.
1. 2. 3. 4. 5. 6. 7. 8. 9. 0.	442545 438322 438324 431155 837669 837700 835283 441560 434820 437053	CONTACTOR 60 AMP-2 POLE REPLACEMENT COIL FOR 40 AMP OR 60 60 AMP REPLACEMENT CONTACTS & SPRINGS FOR 60 AMP CONTACTOR AUXILIARY INTERLOCK FOR 60 AMP CONTACTOR OVERLOAD RELAY HEATER (FURNAS) E-78 OVERLOAD RELAY HEATER (S & D) W-57 CONTACTOR 25 AMP-2 POLE AUXILIARY INTERLOCK KIT FOR 25 AMP CONTACTOR 4 POST TERMINAL BLOCK	2 1 2 2 2 2 1 1 1







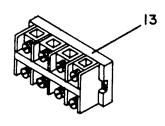


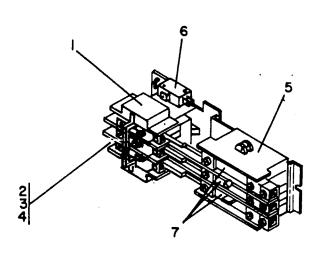


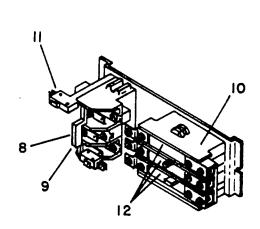
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A	443	391

REF. NO.	l l		QTY.	
1.	437051	STARTER 40 AMP-3POLE	2	
2.	438522	CONTACTOR 40 AMP 3 POLE (COMPLETE)	2	
3.	438322	REPLACEMENT COIL FOR 40 AMP OR 60 AMP CONTACTOR	Ī	
4.	438321	REPLACEMENT CONTACTS & SPRINGS FOR 60 AMP CONTACTOR	1	
5. 6.	438323	OVERLOAD RELAY FOR 40 AMP STARTER	1,	
6.	431155	AUXILIARY INTERLOCK FOR 40 AMP CONTACTOR	2	
7. 8.	438591	HEATER (FURNAS) E-74	2	
8.	437049	MOTOR STARTER - 25 AMP (CONSISTS OF 10, 11, 12)	1	
9.	434821	CONTACTOR 25 AMP-3 POLE		
10.	434827	OVERLOAD RELAY FOR 25 AMP STARTER		
11.	437053	AUXILIARY INTERLOCK KIT FOR 25 AMP CONTACTOR	2	
12.	442111	HEATER (FURNAS) E-52	3	
13.	823360	4 POST TERMINAL BLOCK		







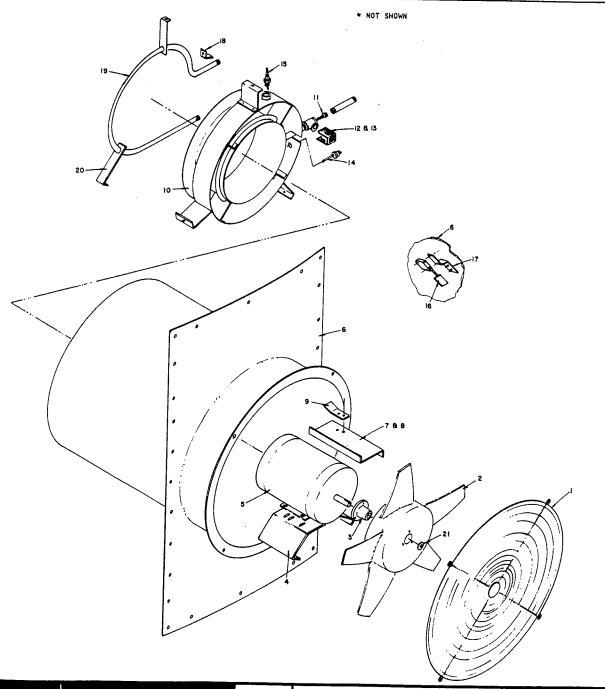
SEMERAL OF

EUTLER MANUFACTURING COMPANY

MOTOR CONTROLS (S PHASE)

GEM 4+3392

REF. NUMBER	PART NUMBER	DESCRIPTION	QTY.
1 2 3 4 5 5 6 7 8 9 0 1 1 2 3 4 5 6 7 8 9 10 1 1 2 3 4 5 6 7 8 9 10 1 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	433705 433273 421120 421120 43325 43325 43325 433241 443083 443073 443083 44243 443083 44223 443883 442227 443884 443884 4438883 442227 443884 44388 443884 44388 443884 443884 443884 443884 443884 443884 443884 443884 443884 4	SCREEN FAN BLADE ASS'Y. 10 HP (INCLUDES HUB) HUB & MOUNTING BOLTS HOTOR MOUNT HOTOR 10 HP (1 PHASE) (INCLUDES CAP.) HOTOR 10 HP (3 PHASE) FAN-HEATER SHELL ASS'Y. AIR VANE AIR	771111111111111111111111111111111111111



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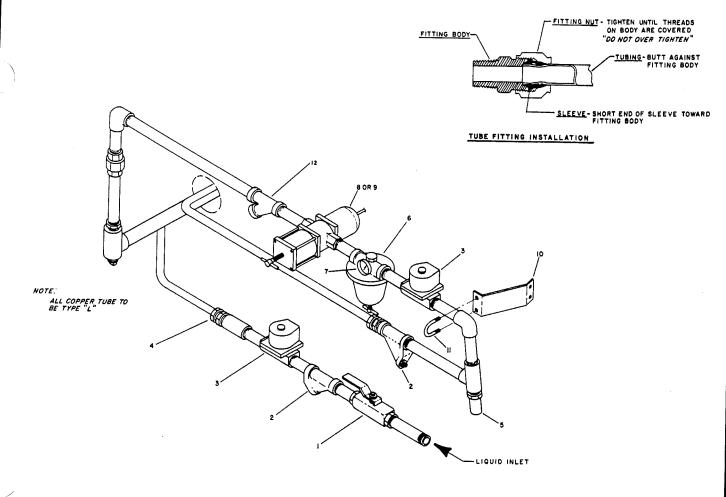
BUTLER MANUFACTURING COMPANY

FAN AND BURNER ASS'Y.

6478 4-29-80 46M 1220

REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1. 2.34. 56. 78. 90.	823387 823291 821438 436700 831065 821269 821269 821268 * 821439 * 442587 436349 436359 437085	BALL VALVE 1/2" NPT STRAINER 1/2" NPT SOLENDID 1/2" NPT MALE CONN. 5/8 CT-1/2" NPT RELIEF VALVE 1/2" NPT REGULATOR AND GAGE ASSY, PRESSURE GAGE (FOR 821269) MODULATING VALVE 1/2" NPT MODULATING VALVE 1/2" NPT PIPING BRACKET "U" BOLT 1/2" NPT. CHECK VALVE 1/2" NPT	1 2 2 2 1 1 1 1 1 1 4 4

- \* MODULATING VALVE TEMP. RANGE 140 TO 250 F.
- \*\* MODULATING VALVE TEMP. RANGE 90 TO 210 F.



BUTLER

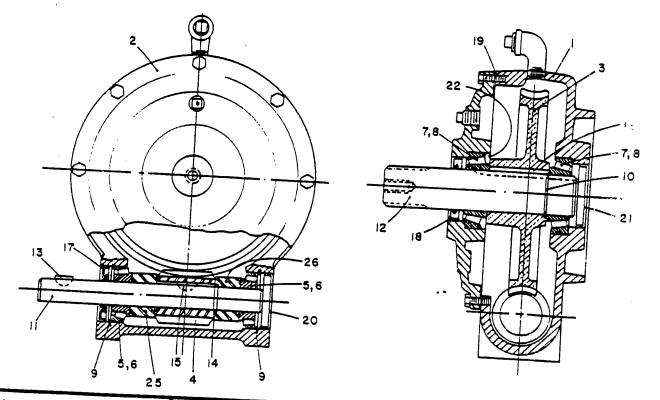
BUTLER MANUFACTURING COMPANY

CONTROL PLUMBING

C 443455

REF. NO.	BUTLER PART NO.	DESCRIPTION	DURST PART	
1	437754		NO.	QTY
2 3	437755	HOUSING	A268E6	
3	437756		A27A385	] 1
4	434781			1
5	830588		B28A 146CT	1
6	830589	BEARING CONE BEARING CUP	B31-23	1
<i>i</i> 1	437759	BEARING CUP	C12	2
8	437760	BEARING CUP. BEARING CONF	C13	2
9	830604	BEARING CONE	C21	2
10	437761	SNAP RING	C64	2
11	437762	SNAP RING	D24	2
12	437763	INPUT SHAFT	D136	1
13	833607	OUTPUT SHAFT	E2205-2	1 1
14	437764	WOODRUFF KEY (SOFT)	E3479	1
15	837879	SNAP RING	J10	1 1
16	437765	WOODRUFF KEY (HARD)	D197	1 1
17	830597		J56	1
18	833946	SEAL (INPUT)	J58	1
19	830579		K10	1
20	835446	GASKET	K25	1
21	835447	CAP (INPUT)	K47	1
22	437767	CAP (OUTPUT)	K154	i
23	831427	NILOS SEAL SHIM (INPUT) - NOT SHOWAR	K155	1
24	437768	SHIM (INPUT) — NOT SHOWN	K243	1
25	834782		P17	•
26	437769		P-50-A	
	3,,03	SPACER COUNTER-BORED	P103	1

<sup>\*</sup>WHEN ORDERING REPLACEMENT PARTS, USE "DURST" PART NUMBERS ONLY.



GEAR BOX-437752

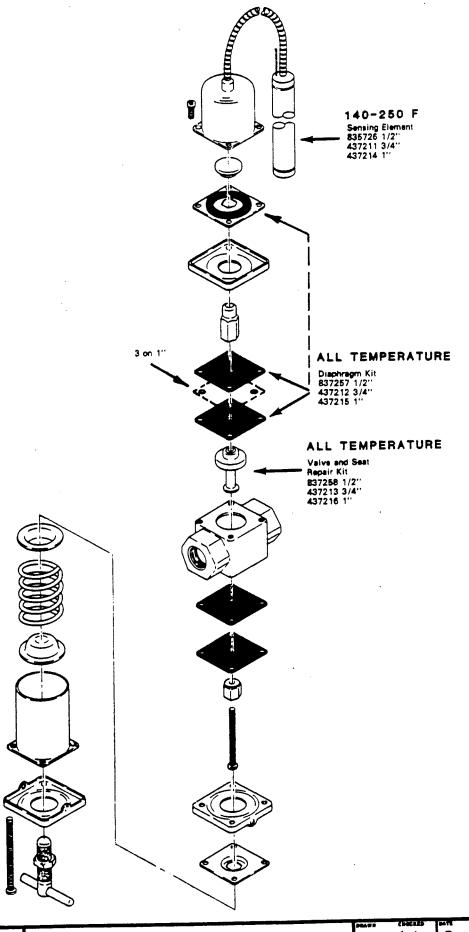
442155

821439 1/2" MODULATING VALVE

437088 3/4" MODULATING VALVE

437086 1" MODULATING VALVE

Only parts listed with part no's, will be svallable for field replacement. The other parts are shown so the unit can be properly resessmbled.



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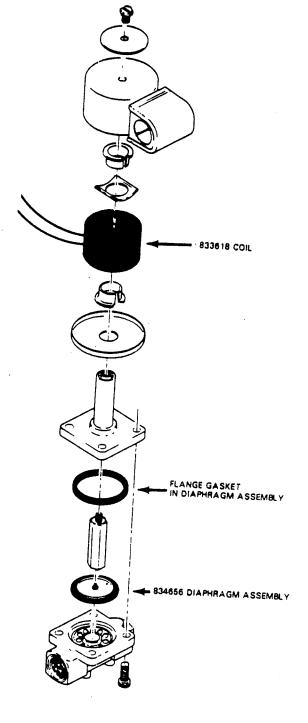
MOD. VALVE (Penn)

2-18-80 GM ZW 442152

821269 LP GAS REGULATOR INCLUDES GAUGE 821268

Only parts indicated by arrow will be available for field replacement. Order kit 440284. All other parts shown are for proper reassembly.

Only perts listed with part no's, will be available for field replacement. The other parts are shown so the unit can be properly reassembled.

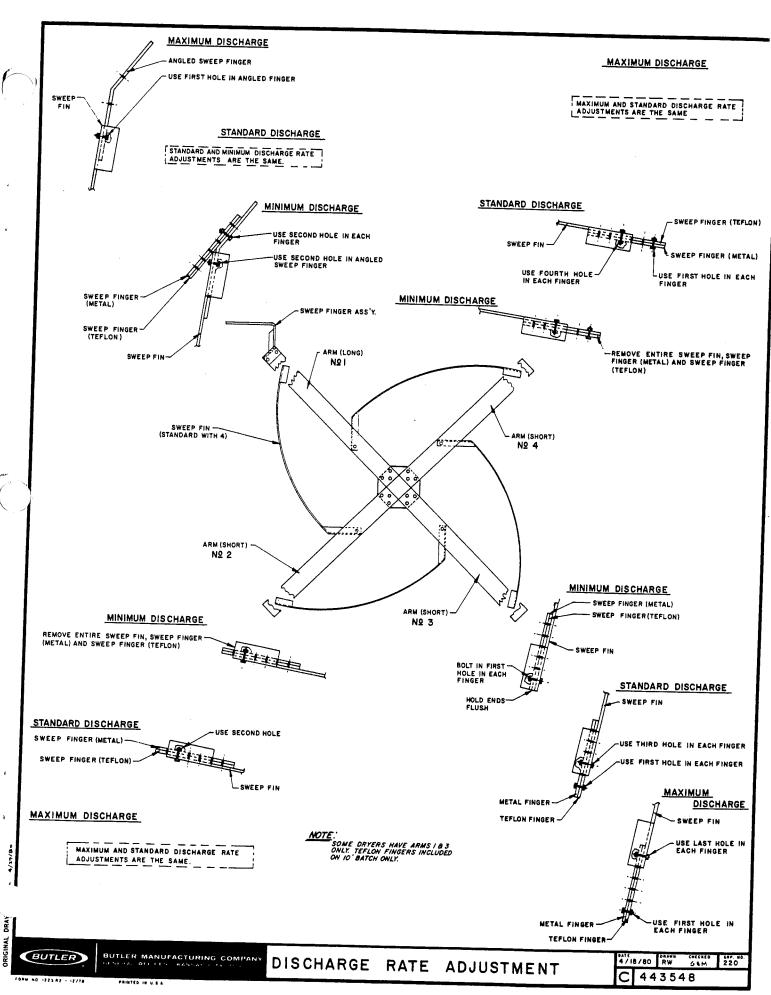


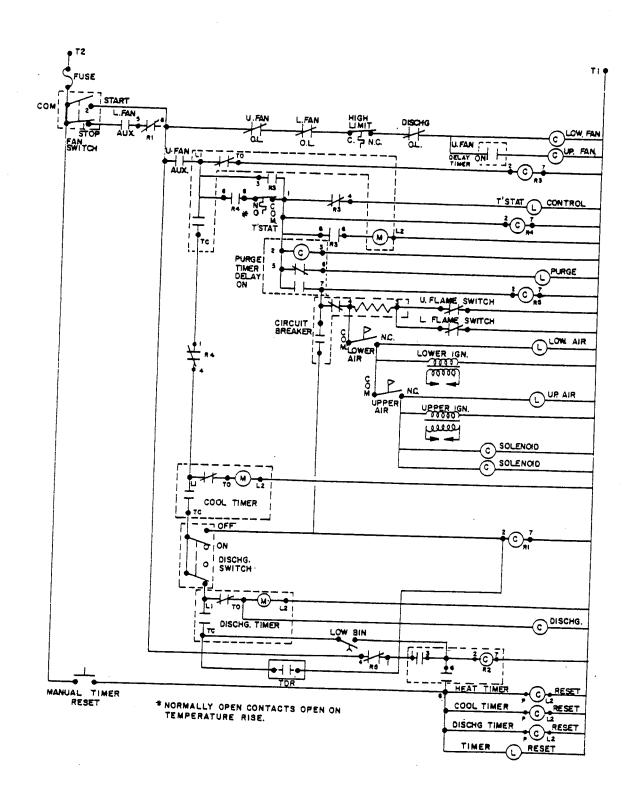
821438 1/2" SOLENOID VALVE

GUTLER MANUFACTURING COMPANY GENERAL OFFICES - KANSAS CITY 28, MISSOURI

REGULATOR-SOLENOID

Gem 2-16-79
A 442154



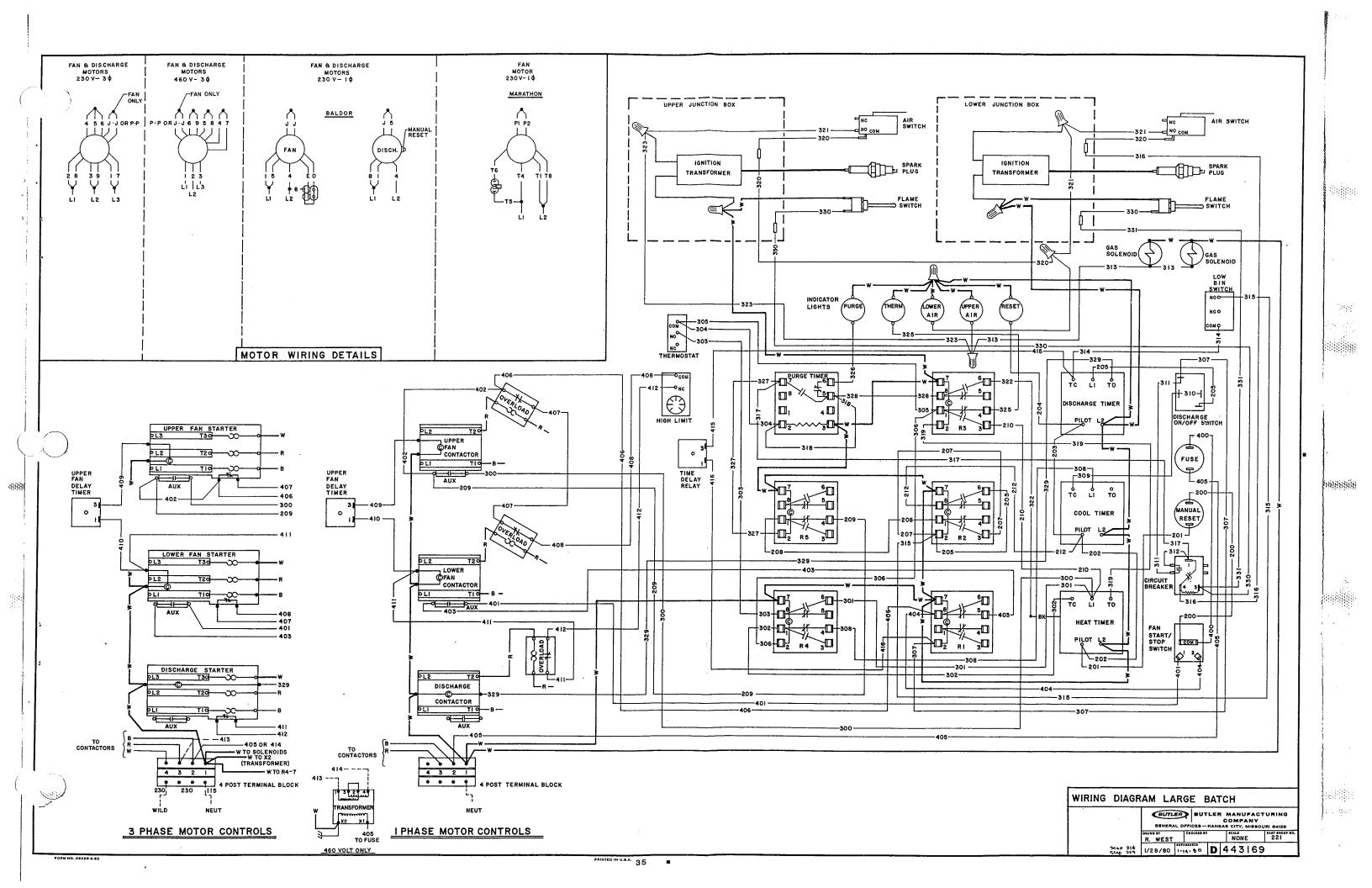


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GENERAL OFFICES - KANSAS CITY 26, MISSOURI

WIRING SCHEMATIC 10' BATCH

PAP GEM 1-30-80

A 443155





1. KEEP ALL SHIELDS IN PLACE.

2. DISCONNECT POWER SOURCE TO ADJUST OR SERVICE.

3. MAKE CERTAIN EVERYONE IS CLEAR OF EQUIPMENT BEFORE APPLYING POWER.

4. DISCONNECT POWER BEFORE RESETTING MOTOR OVERLOAD.

5. KEEP HANDS, FEET, AND CLOTHING AWAY FROM POWER DRIVEN PARTS IN MOTION.

FAILURE TO HEED MAY RESULT IN PERSONAL INJURY

- DO NOT ENTER MACHINE WHILE IN OPERATION. 1.
- CLOSE GAS SUPPLY VALVE AT SOURCE IF MACHINE IS TO STOPPED 2. LONGER THAN 30 MINUTES.
- DISCONNECT ELECTRICAL POWER TO MACHINE BEFORE MAKING 3. → REPAIRS. 1
- KEEP CLEAR OF FREE AIR DOOR.
- 5. CLEAN MACHINE DAILY - MAKE SURE CLEAN OUT PORTS ARE OPEN.
- MAKE SURE METERING FLOOR DOOR IS IN POSITION AND FASTENED. 6.

Most farm accidents, like industrial, home and highway accidents, are caused by the failure of some individual to observe simple and fundamental safe rules or precaution. For this reason farm accidents, just as other types of accidents, can be prevented by recognizing the cause of accidents and doing something about it before accident occurs.

Regardless of the care used in the design and construction of farm equipment, there are many points that cannot be completely safeguarded

without interfering with accessibility and efficient operation.

A careful operator is the best insurance against an accident.

The complete observance of one simple rule would prevent many thousand serious injuries each year. That rule is "NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST A MACHINE WHILE IN MOTION."

National Safety Council



MANUFACTURING BUTLER COMPANY

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