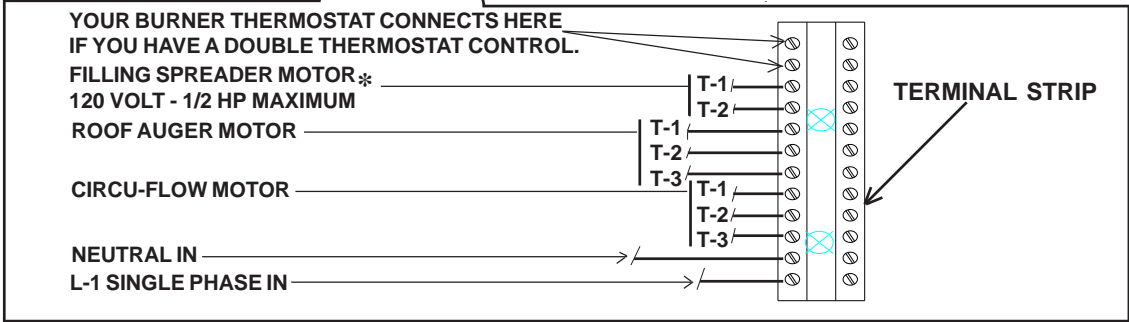
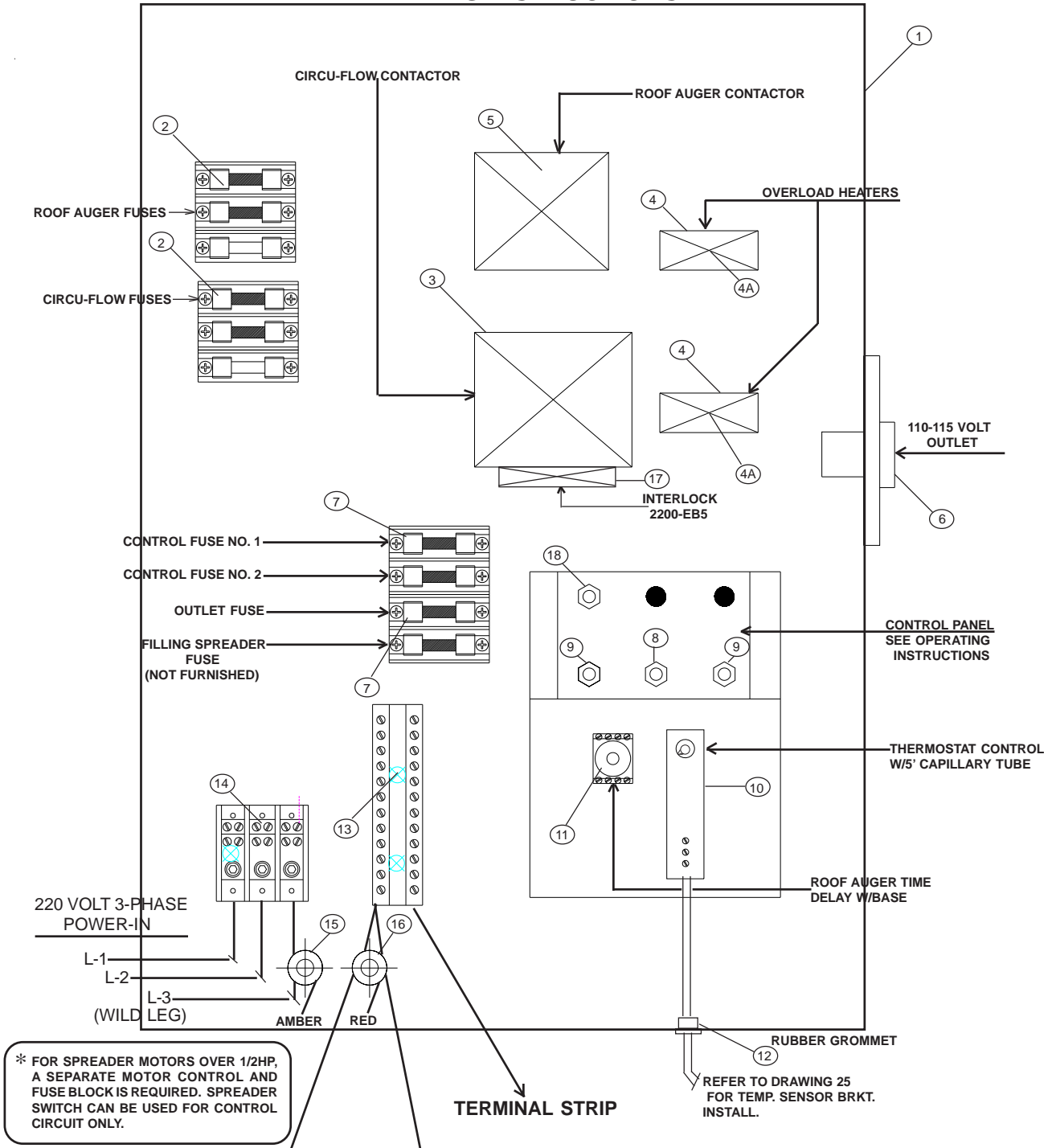


THREE PHASE DELUXE AUTOMATIC CONTROLS

DRAWING 27

WIRING INSTRUCTIONS



THREE PHASE DELUXE AUTOMATIC CONTROLS CIRCU-FLOW AND SUPER-FLOW PARTS LIST

REF. NO.	PART NO.	QTY REQ'D.	DESCRIPTION
1	009253	1	Control Box Assembly
2	005038	2	Fuse Blk 30A 250V-3 R25030-3CR
3	005028	1	CF183 Contactor 8910DPA34V09 (1-7.5 HP)
	005029	1	Contactor 20A 8910DPAV09 (10 HP)
	005031	1	Contactor 8910DPA53V09 50A 230 (15 HP)
	005033	1	Contactor 8910DPA63V09 60A 230 (20 HP)
4	005070	1	CF184 Overload Blk CR324C310A (1-10 HP)
	005071	1	CF208 Overload Blk CR324D310A (15 HP)
	005072	1	CF209 Overload Relay CR224E010A (20 HP)
4A	005075	3	CF227 Heater Strip CR123 C3.79A -1HP
	005076	3	CF228 Heater Strip CR123 C5.92A -1.5 HP
	005077	3	CF220 Heater Strip CR123 C6.95A -2HP
	005080	3	CF229 Heater Strip CR123 C10.4B -3HP
	005084	3	CF230 Heater Strip CR123 C16.3B -5HP
	005087	3	CF231 Heater Strip CR123 C25.0B -7.5HP
	005089	3	CF225 Heater Strip CR123 C33.0B -10HP
	005090	3	CF232 Heater Strip CR123 C40.0B -15HP
	005091	3	CF233 Heater Strip CR123 F61.4B -20HP
5	005027	1	Contactor 8910DPA33V09 30A 230 -5-7.5HP
	005029	1	Contactor 8910DPA13V09 20A 230 -10HP
	005031	1	Contactor 8910DPA53V09 50A 230 -15HP
	005033	1	Contactor 8910DPA63V09 60A 230 -20HP
6	F048412	2	CF171 Receptical 125Volt 14A 1P 3 Wire
7	005037	2	Fuse Block 30A 250V-2 R25030-2CR
8	005145	1	CF174 Toggle Switch SPDT
9	005143	2	Toggle Switch 15Amp 2 Pole SS206SP
10	005141	1	Thermostat T675A-1540
11	044066	1	Timer IDEC GT3A-3AFA20 W/Base 044262 SR2P-05
12	002104	1	CF161 Rubber Grommet - 1/2" ID
13	005153	A/R	Terminal Strip 1/2" 70A (3 Phase)
14	005040	1	Power Dist Blk 600V 3Pole 1423570
15	005098	1	Amber Lens (CSA)
	005092	1	Light Base Oil Tight (CSA)
	005096	1	CF201 Lamp Neon NE51H
16	005097	1	Red Lens (CSA)
	005092	1	Light Base Oil Tight (CSA)
	005096	1	CF201 Lamp Neon NE51H
17	005035	1	CF185 Interlock 2200-EB5
18	005146	1	CF206 Toggle Switch CH-7563K6

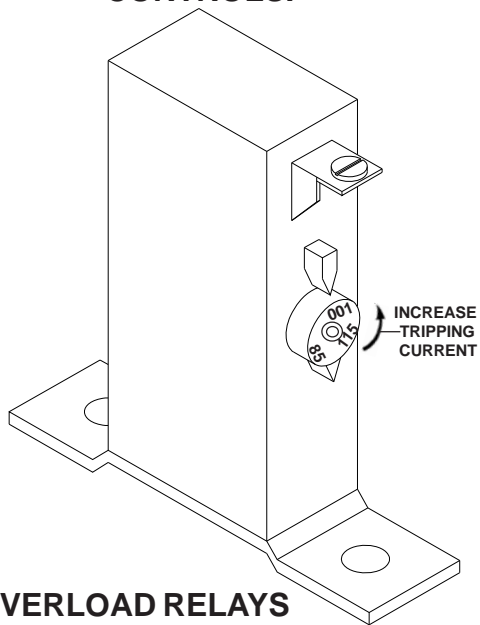
IF HEATER RELAYS KICK OUT REPEATEDLY:

The first thing to check is to see if the wrong size heater strip is installed or if the heater strip is damaged or defective.

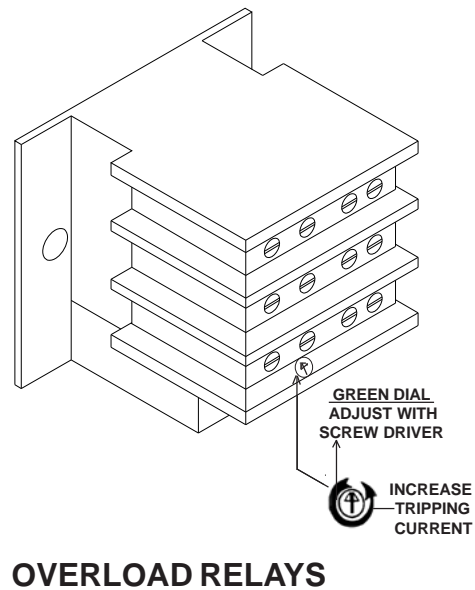
The second thing to check for is an overload of the motor. An amperage check should be made to see that the amperage draw does not exceed the amperage on the motor name plate. If it does exceed the name plate amperage, refer to Manual Trouble Shooting Section under heading **CIRCU-FLOW AUTOMATIC CONTROL**, sub title: **Motor runs, but then fuses blow.**

Overload relays incorporate a dial for field adjustment of tripping current. This makes it possible to eliminate such problems as nuisance-tripping in hot weather. If the draw from the motor is not above name plate amperage, the heaters may be adjusted. Turning the adjusting dial COUNTER-CLOCKWISE increases the ultimate tripping current. (See illustration) On single-phase boxes, this can be adjusted $\pm 15\%$ and on the 3-phase box $\pm 10\%$.

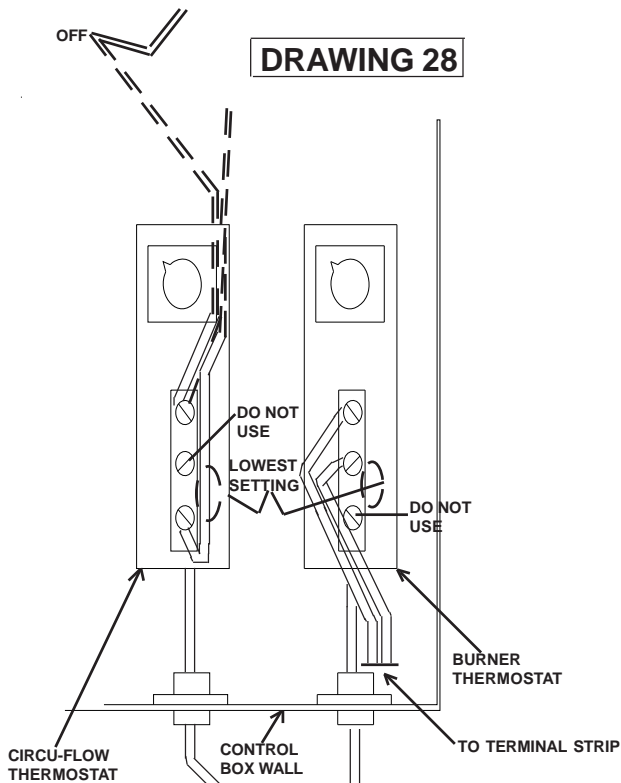
OVERLOAD RELAY FOR SINGLE PHASE DELUXE CONTROLS.



OVERLOAD RELAY FOR THREE PHASE DELUXE CONTROLS



For a Listing of Heater Strips and Overload Relays See this Manual, **Page 81 for Single Phase** and **Page 83 for Three Phase.**



DRAWING 28

DELUXE AUTOMATIC CONTROLS WITH EXTRA SENSOR

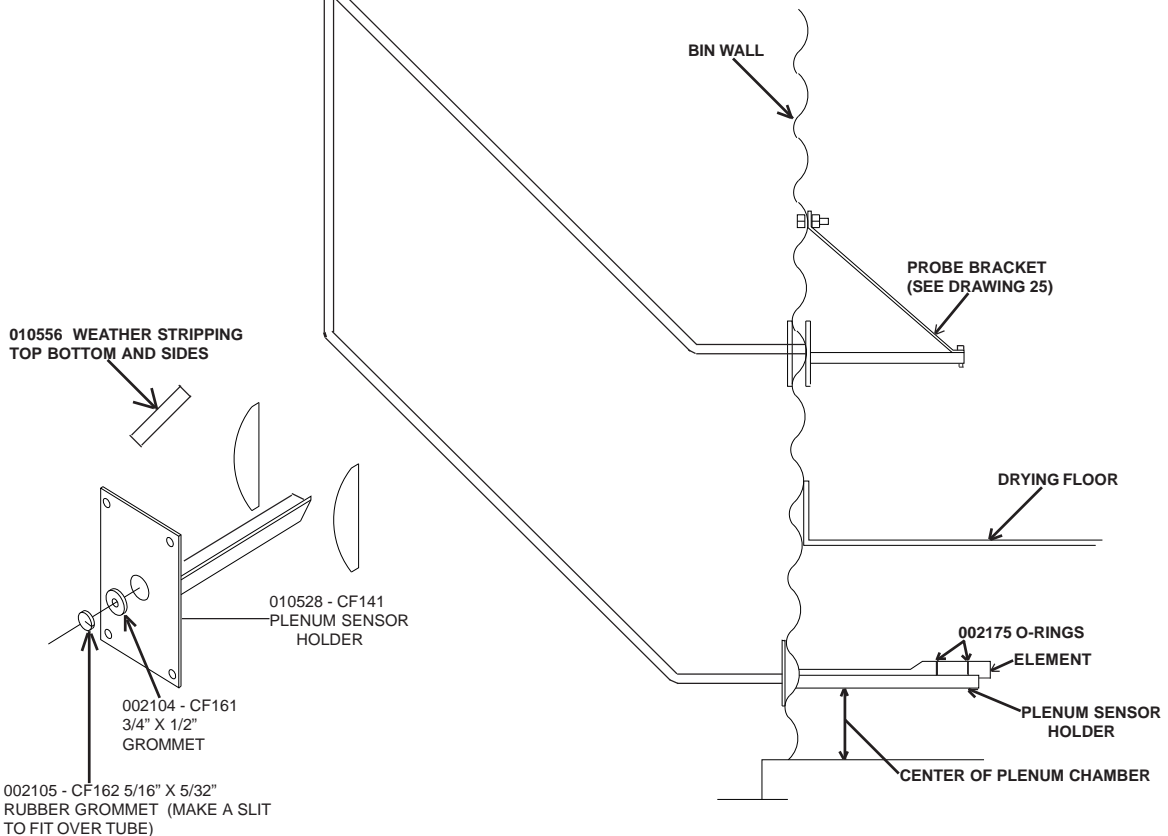
DELUXE AUTOMATIC CONTROL BOXES ARE TO BE WIRED AS SHOWN ON DRAWINGS 23 AND 24.

PLENUM SENSOR HOLDER IS TO BE MOUNTED DIRECTLY BELOW THE TEMPERATURE SENSOR ELEMENT FOR THE CIRCU-FLOW. IT MUST BE MOUNTED IN THE CENTER OF THE PLENUM CHAMBER.

RUBBER GROMMETS ARE TO GO OVER THE 5 FT. CAPILLARY TUBE - PRESS THE RUBBER GROMMETS INTO THE PLENUM SENSOR HOLDER PLATE.

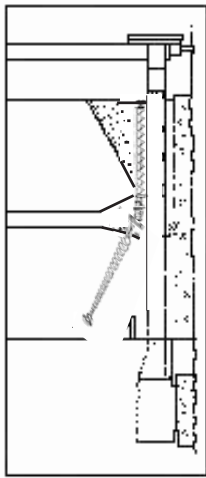
MOUNT HOLDER TO BIN WALL WITH METAL SCREWS. BE SURE TO USE RUBBER CLOSURES AND WEATHER STRIPPING.

SEE DRAWING 25 FOR INSTALLATION OF CIRCU-FLOW TEMPERATURE SENSOR.



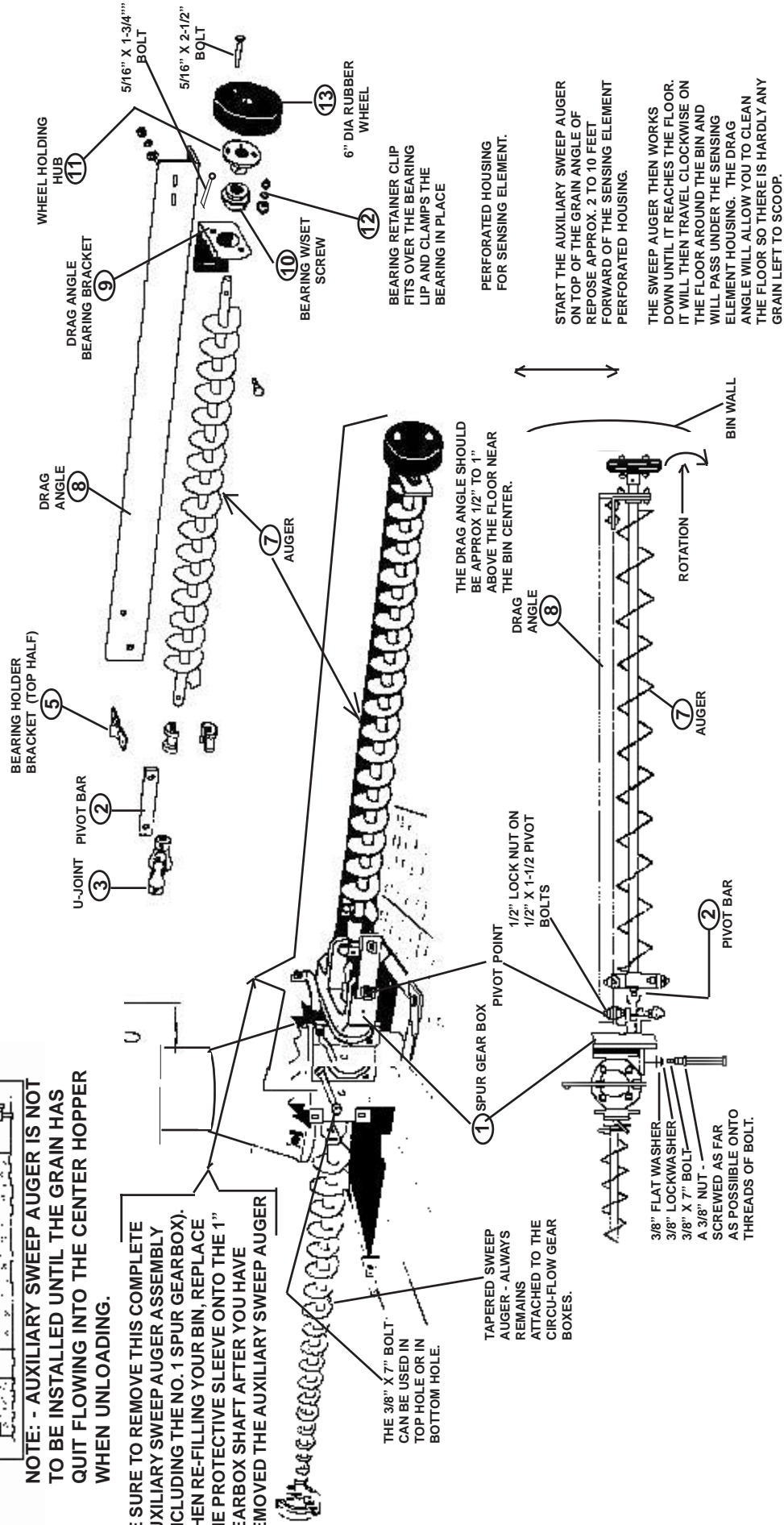
INSTALLATION AND OPERATING INSTRUCTIONS FOR CIRCU-FLOW AUXILIARY SWEEP AUGER (ACCESSORY)

**DRAWING
NO. 29**



NOTE: - AUXILIARY SWEEP AUGER IS NOT TO BE INSTALLED UNTIL THE GRAIN HAS QUIT FLOWING INTO THE CENTER HOPPER WHEN UNLOADING.

BE SURE TO REMOVE THIS COMPLETE AUXILIARY SWEEP AUGER ASSEMBLY (INCLUDING THE NO. 1 SPUR GEAR BOX). WHEN RE-FILLING YOUR BIN, REPLACE THE PROTECTIVE SLEEVE ONTO THE 1" GEARBOX SHAFT AFTER YOU HAVE REMOVED THE AUXILIARY SWEEP AUGER



THE 3/8" X 7" BOLT CAN BE USED IN TOP HOLE OR IN BOTTOM HOLE.

TAPERED SWEEP AUGER - ALWAYS REMAINS ATTACHED TO THE CIRCU-FLOW GEAR BOXES.

THE DRAG ANGLE SHOULD BE APPROX 1/2" TO 1" ABOVE THE FLOOR NEAR THE BIN CENTER.

PERFORATED HOUSING FOR SENSING ELEMENT.

START THE AUXILIARY SWEEP AUGER ON TOP OF THE GRAIN ANGLE OF REPOSE APPROX. 2 TO 10 FEET FORWARD OF THE SENSING ELEMENT PERFORATED HOUSING.

THE SWEEP AUGER THEN WORKS DOWN UNTIL IT REACHES THE FLOOR. IT WILL THEN TRAVEL CLOCKWISE ON THE FLOOR AROUND THE BIN AND WILL PASS UNDER THE SENSING ELEMENT HOUSING. THE DRAG ANGLE WILL ALLOW YOU TO CLEAN THE FLOOR SO THERE IS HARDLY ANY GRAIN LEFT TO SCOOP.

3/8" FLAT WASHER
3/8" LOCKWASHER
3/8" X 7" BOLT
A 3/8" NUT -
AS POSSIBLE AS FAR
SCREWED ONTO
THREADS OF BOLT.

FOR SAFETY- DO NOT GET INTO THE BIN WHEN THE SWEEP AUGERS ARE IN OPERATION.

CIRCU-FLOW AUXILIARY SWEEP AUGER REPLACEMENT PARTS LIST

REF. NO.	PART NO.	NO. REQ'D.	DESCRIPTION
1	010789	1	ACF39 SPUR GEAR BOX ASSEMBLED
2	010509	1	CF124 PIVOT BAR
3	035001	1	B0002 U-JOINT
4	035373	1	B0225 1" PR. SPLIT WOOD BEARING
5	036024	1	CF126 BEARING HOLDER BRACKET - TOP HALF
6	010510	1	CF125 BEARING HOLDER BRACKET - BOTTOM HALF
7	DIA.	1	CF088 AUX SWEEP AUGER (SPECIFY BIN DIA.)
8	DIA.	1	CF127 DRAG ANGLE (SPECIFY BIN DIA.)
9	018490	1	E0020 DRAG ANGLE BEARING BRACKET
10	035068	1	B0026 1" BEARING W/SET SCREW
11	010521	1	CF128 WHEEL HOLDING HUB
12	035374	2	B0226 BEARING RETAINER CLIPS
13	018498	1	E0022 6" DIAMETER X 2" RUBBER WHEEL

NOTE: The Auxiliary Sweep Auger is NOT to be installed until the grain has quit flowing into the Center Hopper when unloading.

BE SURE to remove this Complete Auxiliary Sweep Auger Assembly, Including the Spur Gear Box, when re-filling your bin. Replace the protective sleeve onto the 1" gear box shaft after you have removed the Auxiliary Sweep Auger Assembly.

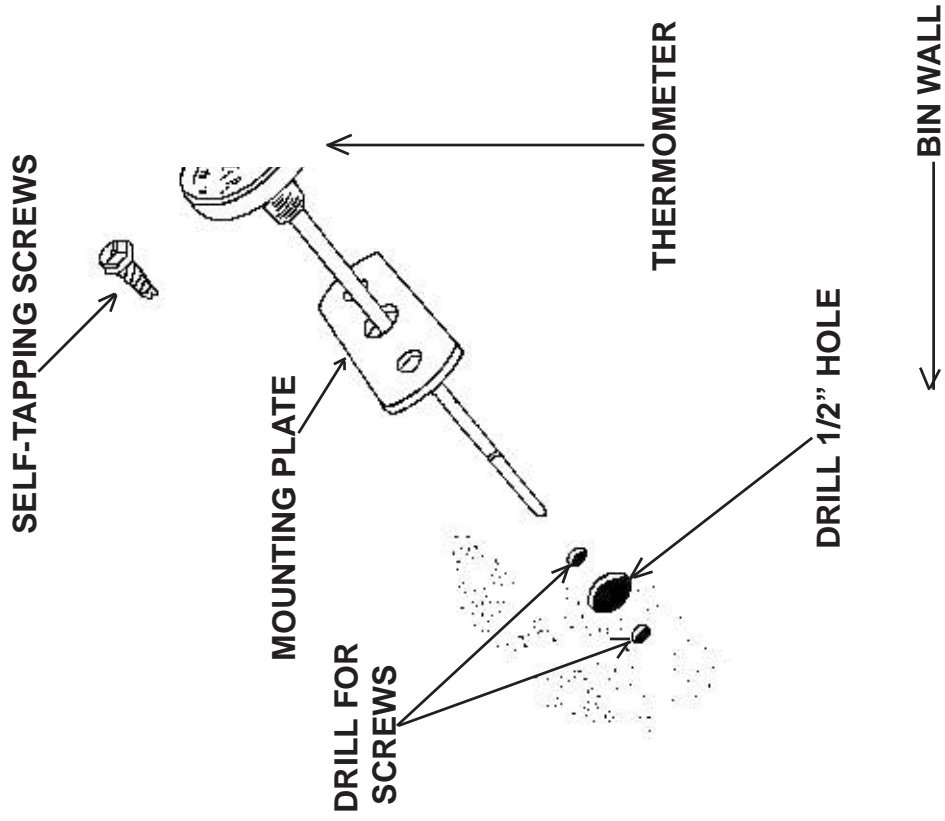
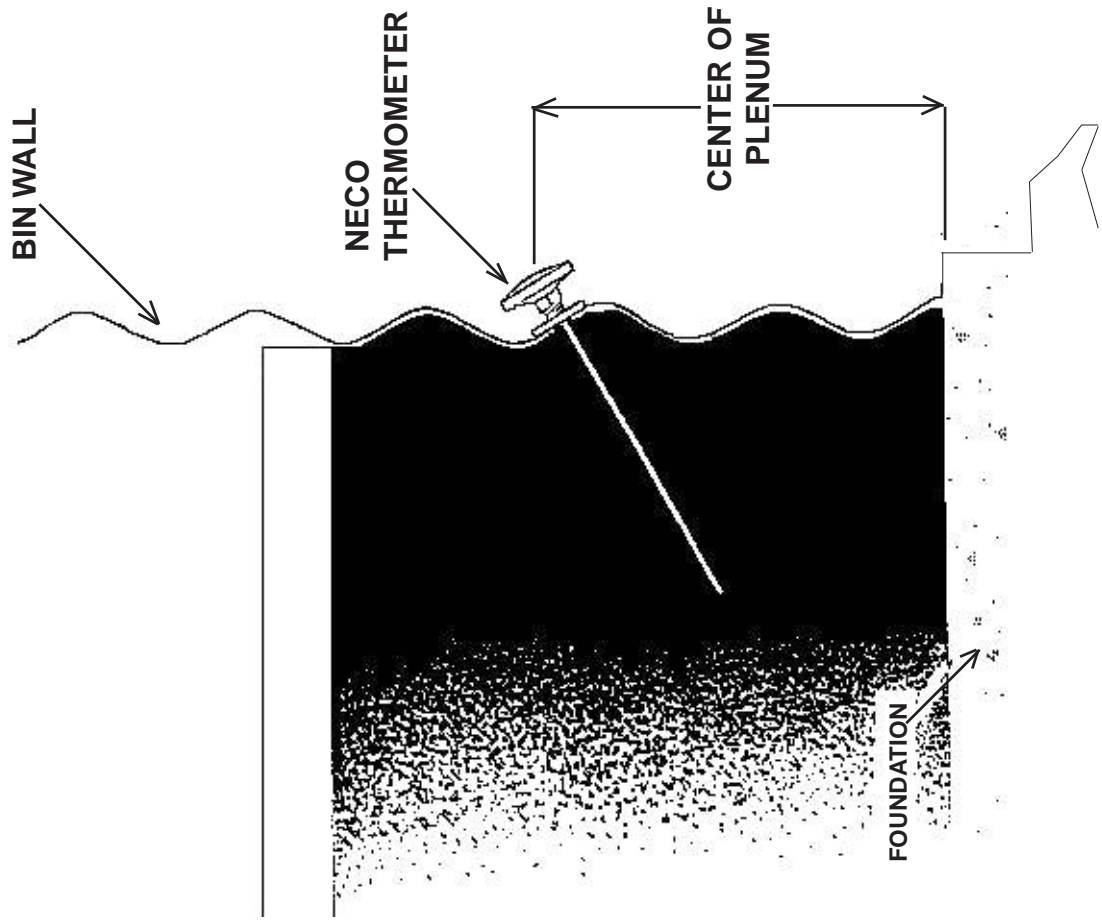
Start the Auxiliary Sweep Auger on top of the grain angle of repose at approximately 2 to 10 feet forward of the sensing element perforated housing.

The Sweep Auger then works down until it reaches the floor, and it will then travel clockwise on the floor around the bin and will pass **under** the sensing element housing. The Drag Angle will allow you to clean the floor so there is hardly any grain left to scoop.

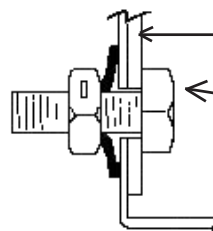
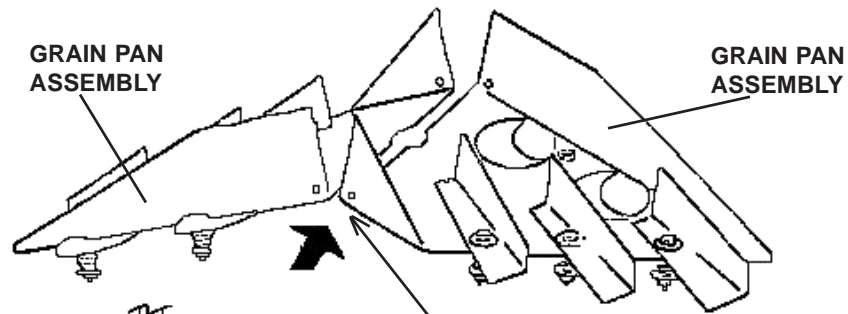
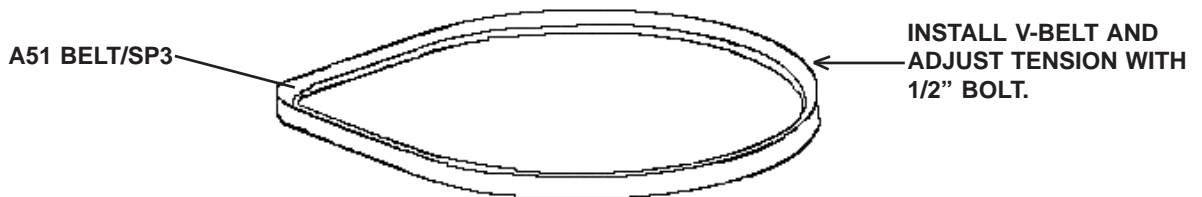
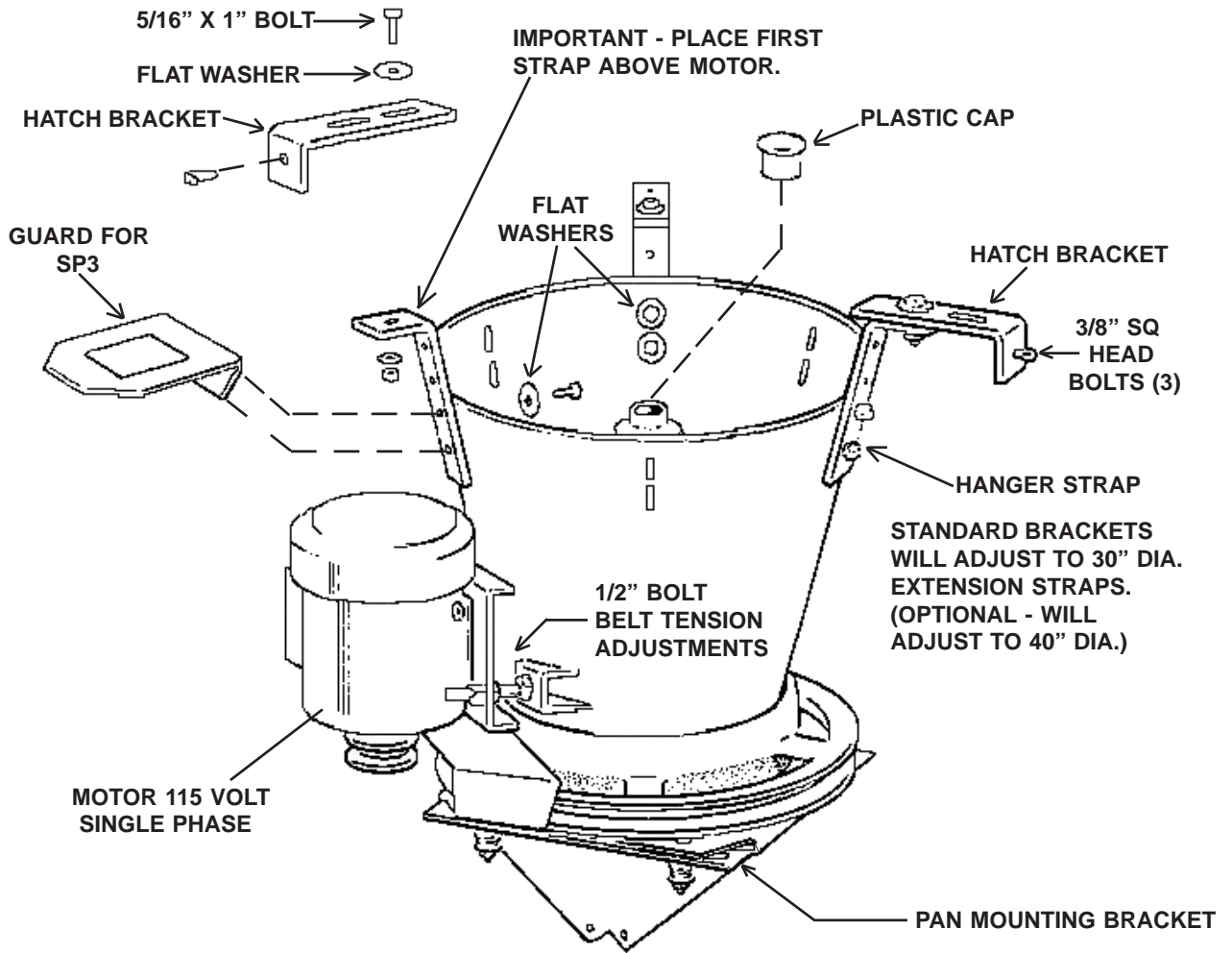


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PLENUM THERMOMETER INSTALLATION FOR USE IN DRYING BINS



ASSEMBLY ILLUSTRATION



THESE BOLTS MUST BE COMPLETELY TIGHTENED DOWN OR GRAIN PANS WILL FLATEN OUT WEN ROTATING, CAUSING THE GRAIN TO BE THROWN TOWARDS THE BIN WALL.

SP3A GRAIN SPREADER INSTALLATION INSTRUCTIONS

(Refer to Illustrations)

- STEP 1. The motor pulley supplied on the SP3A units is a 2-Step pulley. The small step is to be used on bins 30' in diameter and smaller. The large step is to be used on bins over 30' in diameter.
- STEP 2. Check to make sure the V-Belt is tightened and aligned properly. Tighten or loosen with 1/2" Adjusting Bolt.
- STEP 3. Remove the four 3/8" bolt, spring washers and lock nuts from the mounting bracket. Fasten the two pan assemblies to the mounting bracket with the 3/8" bolts you just removed. Attach the spring washers and lock nuts to the outside.

IMPORTANT: Spring washers must be fastened so that they are compressed when tightened.

- STEP 4. Determine how far you want the spreader to fit down into the bin fill hatch. Then, fasten the hanger straps to the funnel at 120 degrees apart and one must be positioned above the motor.
- STEP 5. Attach the motor guard to the hanger strap above the motor. The decal will be facing up. This guard will prevent the motor cooling fan from plugging with grain.
- STEP 6. Bolt the hatch brackets to the hanger straps. Make sure that the hatch brackets fit tight against the hatch ring.
- STEP 7. Level the spreader by raising or lowering the hanger straps against the funnel. Slots in the funnel are provided for this adjustment. To check, place a level on the aluminum pulley.
- STEP 8. To secure the spreader, tighten the 3/8" square head set screws in the hatch brackets against the hatch ring.
- STEP 9. Check the power to the spreader.



**BE SURE SPREADER POWER IS DISCONNECTED AND LOCKED
OUT BEFORE MAKING ANY ADJUSTMENTS !!**

SP3A GRAIN SPREADER OPERATING INSTRUCTIONS

(Refer to Illustrations)



ANY ADJUSTMENTS ARE TO BE MADE WITH THE POWER OFF !!

- STEP 1. GRAIN FLOW CONTROL - Adjust both spring-loaded flow control gates inward (equally) towards the spreader center. Move both plates until the incoming grain just starts to back up into the funnel. These gates control the flow so that the grain is always flowing onto the pans in a steady manner. **IMPORTANT - DO NOT** allow the grain to back up into the funnel. **NOTE:** If you did not use the flow control gates (you have them set full open), you would have to be very careful that the incoming grain is deposited in the funnel center, otherwise the grain will tend to build up in one area of the bin.
- STEP 2. By using the adjusting tool, any spring-loaded part can be adjusted from the top of the fill hatch without taking the spreader out of the bin. If any springloaded parts do not hold their position after operation, retighten parts a little tighter. Cone springs on pans should be fully compressed.
- STEP 3. Refer to illustrations on bin spreading pattern. These diagrams show and note which parts of the spreader fill a particular area of the bin.
- STEP 4. The grain pans should be lowered for smaller diameter bins and raised for larger bins. **IMPORTANT** - By raising the pans too high, you could cut down the spreader capacity. You may also raise one pan and lower the other one to vary the spreader pattern.
- STEP 5. The throwing blades and cover plates are pre-assembled on the pans at the **NECO** factory. They should be positioned adequately to handle most spreading jobs. However, the blades should be adjusted as follows and in some instances will have to be re-positioned as follows.
- STEP 6. The throwing blades will throw **LESS** grain if they are rotated counter-clockwise. To throw even less grain, extend the blades further out over the edge of the pan. The blades may also be turned over.
- STEP 7. If you want to throw **MORE** grain, rotate throwing blades clockwise. To throw even more grain, move the blades further onto the pans. **NOTE:** You can also vary the spreading pattern by moving the throwing blades to different holes in the grain pans, or you can completely remove one or more blades.
- STEP 8. Move the top cover plates so that they open the top holes in the grain pans just enough to cover area "A". Then, open the bottom cover plates to help cover area "B".

SP3A GRAIN SPREADER OPERATING INSTRUCTIONS CONTINUED

(Refer to Illustrations)



ANY ADJUSTMENTS ARE TO BE MADE WITH THE POWER OFF !!

STEP 9. After the spreader is once adjusted, it should not require any more adjustment unless you should happen to change to a different crop. It may then have to be re-adjusted.

STEP 10. In order to get more capacity out of the spreader, remove both flow control gates and lower grain pan mounting bracket as low as possible on the center shaft



REMEMBER - When you are filling a drying bin that has steel floor supports under the perforated drying floor, it is important to fill the bin with at least two feet of grain before you start your fan or fans. Without this weight on the floor, the tremendous air flow from the fan(s) might tilt some of the steel floor supports.

STEP 11. The motor pulley supplied on the SP3A unit is a 2-Step Pulley. The small step is to be used on bins 30' in diameter and smaller. The large step is to be used on bins over 30' in diameter. **NOTE:** Using the large step on the motor pulley on 30' or smaller bins will cause the spreader to run too fast. This high speed will throw grain against the bin roof and high on the bin wall causing uneven grain patterns.

Manufactured by



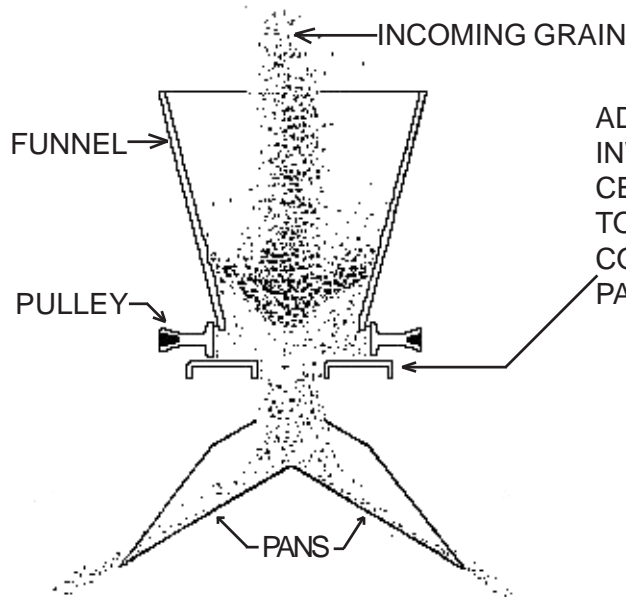
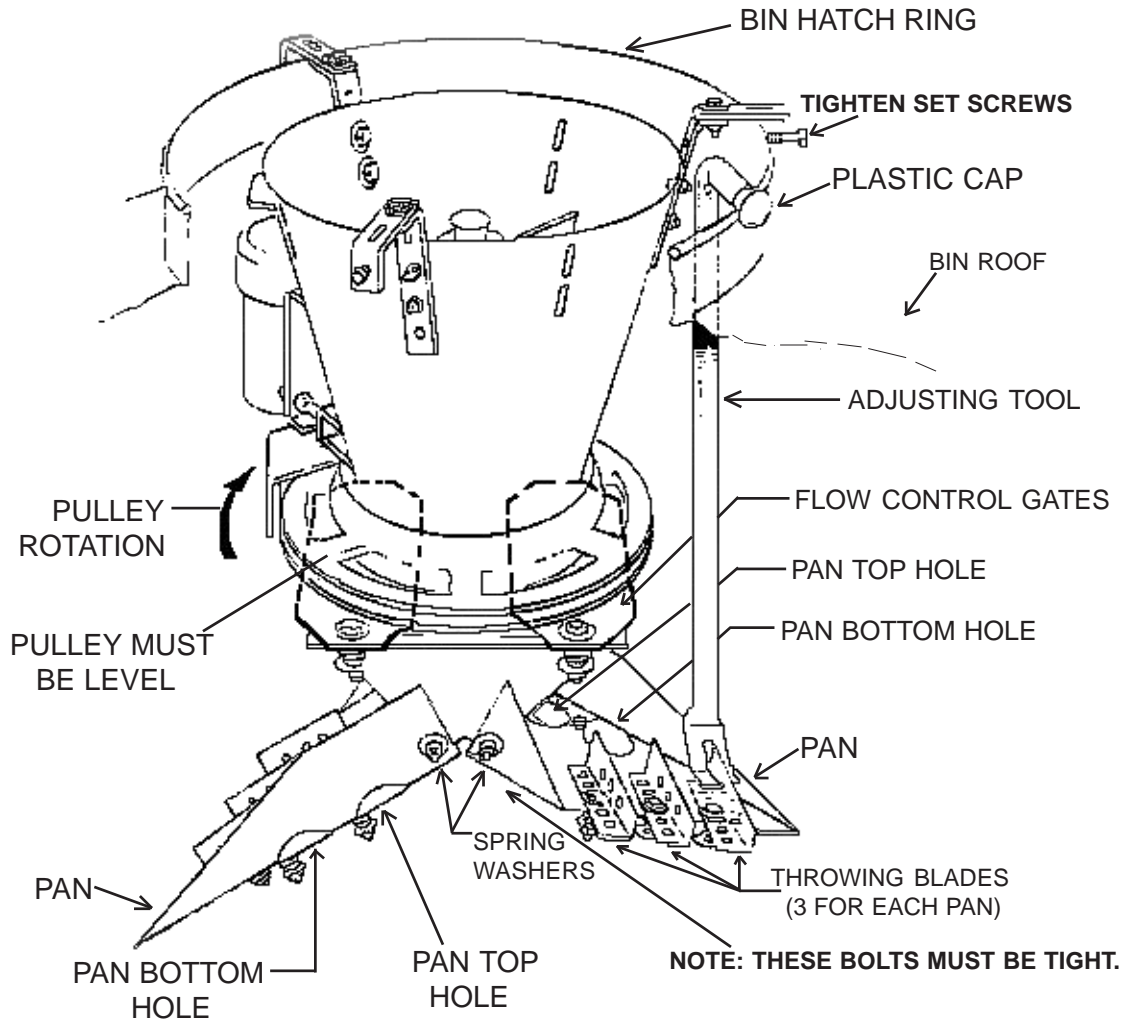
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SP3A GRAIN SPREADER OPERATING INSTRUCTIONS CONTINUED



ADJUST BOTH FLOW CONTROL GATES INWARD (EQUALLY) TOWARD SPREADER CENTER -- UNTIL THE GRAIN JUST STARTS TO BACK UP INTO THE FUNNEL. THIS WILL CONTROL THE FLOW OF GRAIN ONTO THE PANS IN A STEADY AND POSITIVE MANNER.

POWER MUST BE OFF FOR ADJUSTMENTS!



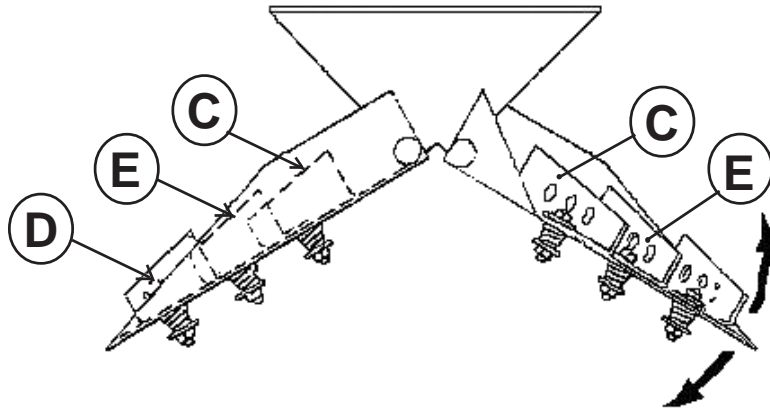
SP3A GRAIN SPREADER OPERATING INSTRUCTIONS CONTINUED

POWER MUST BE OFF FOR ADJUSTMENTS!

LOWER THE GRAIN PANS FOR
SMALLER DIAMETER BINS.

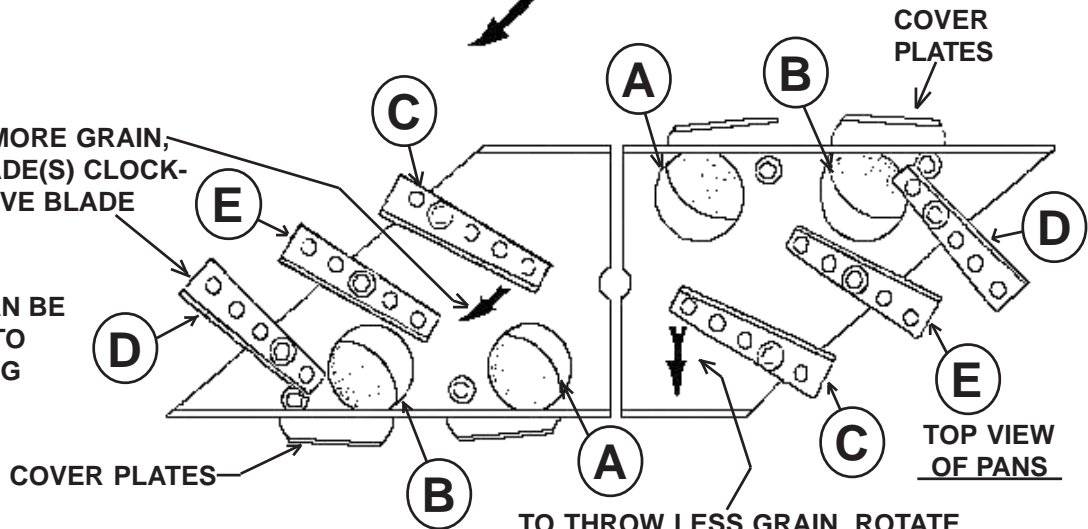
RAISE THE GRAIN PANS FOR
LARGER DIAMETER BINS.

IMPORTANT: DO NOT RAISE
PANS TOO HIGH OR YOU WILL
CUT SPREADER CAPACITY.

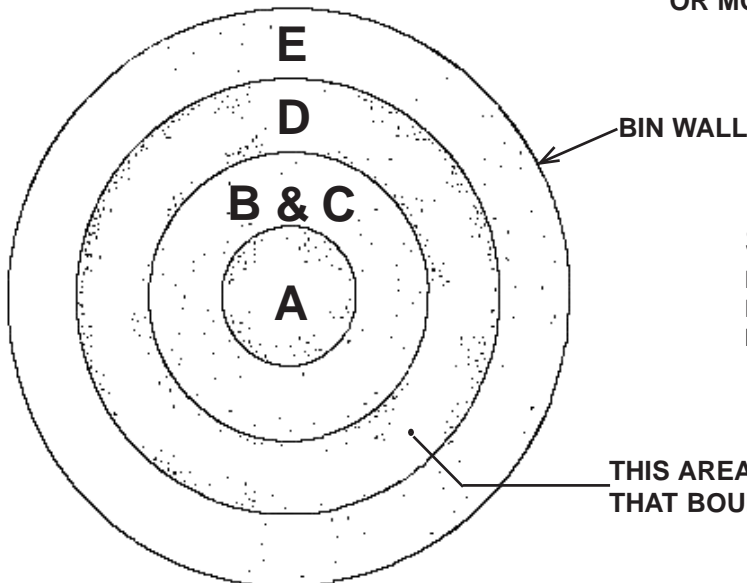


TO THROW MORE GRAIN,
ROTATE BLADE(S) CLOCK-
WISE OR MOVE BLADE
INWARD.

THE BLADES CAN BE
TURNED OVER TO
VARY SPREADING
PATTERN.



TO THROW LESS GRAIN, ROTATE
BLADE(S) COUNTER CLOCK-WISE
OR MOVE BLADE OUTWARD



TOP VIEW OF BIN

SPREADING PATTERN

LETTER IN SPECIFIC AREAS IN THE
BIN PERTAIN TO THE LETTERS ON
HOLES AND THROWING BLADES.

SP3A GRAIN SPREADER

Replacement Parts

Ref NO.	Part NO.	No. Req'd.	Description
1	032038	3	SP23 Hatch Brackets
2	032039	6	SP24 Hanger Straps (3 are used as hatch bracket Extensions)
3	032031	1	SP22 Funnel Weldment
4	003137	1	1/2" x 4-1/2" Full Threaded Bolt
5	032006	1	SP30 Motor Mount
6	032138	1	1/2 HP Motor with Cord
7	035686	1	#83 Spreader Decal
8	032024	1	SP17 Motor Guard w/Decal
9	032043	1	SP27 2-Groove Step Pulley
10	035774	1	A51K Belt W/Kevlar Cord
11	032018	1	SP11 Pivot Shaft
12	032028	1	SP20 15" Drive Pulley
13	032026	2	SP18 Flow Control Gates
14	032021	2	SP14 1" Plastic Caps
15	032010	1	SP6 Spreader Pan Mounting Bracket
16	035307	1	B172 1-1/4" Felt Washer
17	035999	1	SP15 Metal Spacer
18	035068	1	B26 1" Plain Bearing
19	035000	1	B1 1" Bearing w/Set Screw
20	032020	1	SP13 Adjusting Tool
21	032178	1	Pivot Shaft Sleeve
22	032017	4	SP9 Cover Discs
23	035075	14	B29 Cone Springs
24	032015	2	SP7 Grain Pans
25	032016	6	SP8 Throwing Blades
26	003319	4	SP19 Spring Washers
27	003170	4	3/8" Lock Nuts
28	032042	1	SP26 1/4" x 1" Woodruff Key (Special)
29	003208	1	5/16" x 2" Cotter Pin
30	032046	1	SP33 Belt Guard