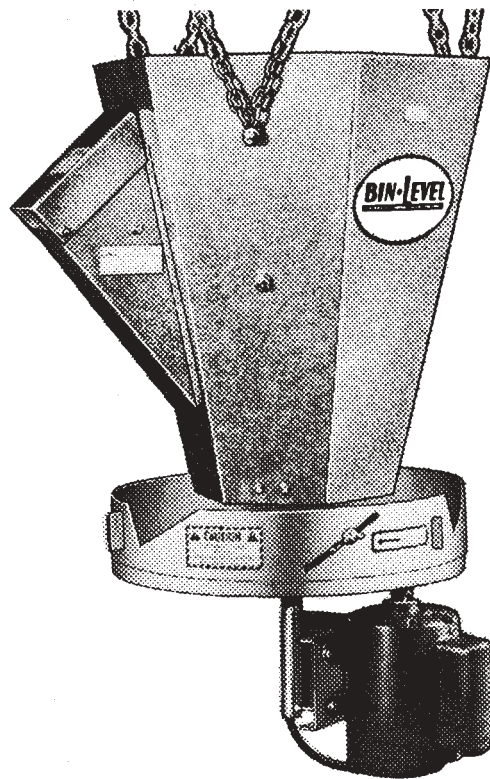


OWNER'S MANUAL

DMC

Bin Level

Automatic Control Grain Spreaders
Models 918 & 936



DAVID MANUFACTURING CO.

1600 12th Street N.E., Mason City, Iowa USA 50401 641-424-7010

SAFETY GUIDELINES

This manual contains information that is important for you, the owner/operator, to know and understand. This information relates to protecting **personal safety** and **preventing equipment problems**. It is the responsibility of the owner/operator to inform anyone operating or working in the area of this equipment of these safety guidelines. To help you recognize this information, we use the symbols that are defined below.

Please read the manual and pay attention to these sections. Failure to read this manual and its safety instructions is a misuse of the equipment and may lead to serious injury or death.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTE

NOTE indicates information about the equipment that you should pay special attention to.



CAUTION

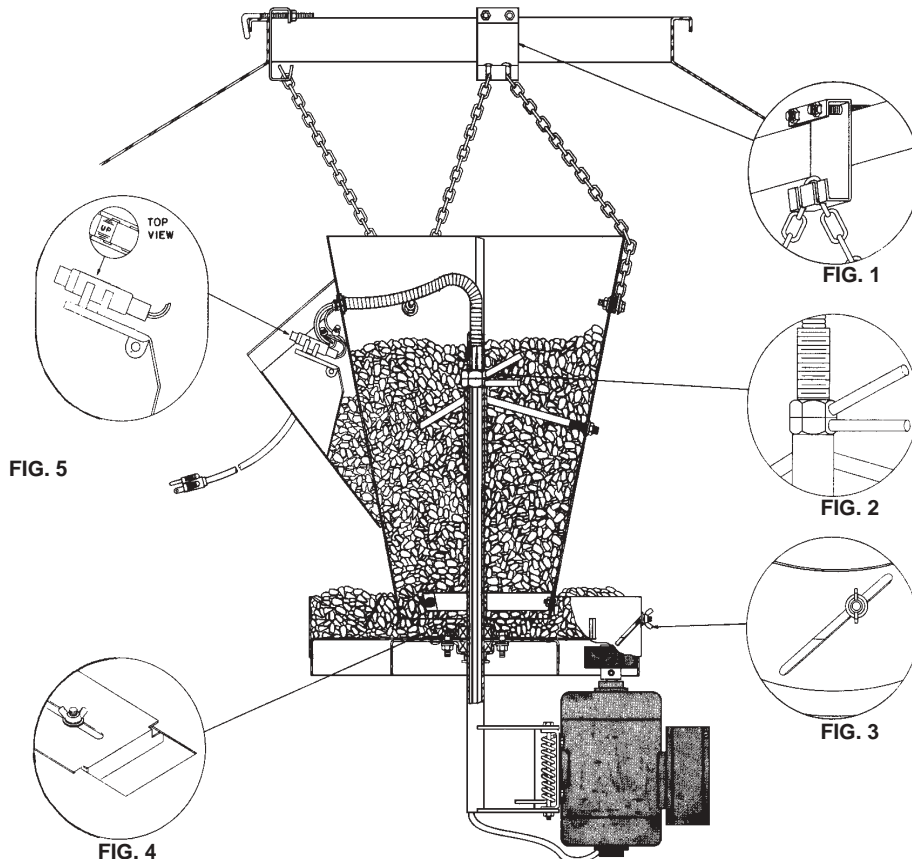


1. Disconnect all power before servicing or adjusting. Have bin properly grounded.
- NOTE:** With power on, the unit will start unexpectedly if the mercury switch is activated by jerking, shaking or jarring.
2. Do not enter a bin without proper eye protection while the unit is operating.
3. Do not attempt to service or adjust the unit from a ladder unless the ladder is secured to another piece of equipment or to the bin. The grain spreader can swing and will not support a ladder. Be sure electric power **IS DISCONNECTED**.
4. Power cords, plug and receptacles should be grounded type to prevent personal injury.
5. All wiring should be done according to the National Electric Code and by a qualified electrician.
6. Read and understand the operator's manual.

****WARNING****

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE

INSTALLATION



INSTALLATION

Figure 1: 918 and 936 Bin Level - Hanger Hooks and Chains

Double chains are attached to the hopper in three places. One chain from each of the three attachment points is hooked into a hanger hook to form a "V". This is necessary to keep the spreader from swinging around the fill-hole each time the spreader is started.

The Bin Level hanging height can change the spreading pattern. On steep-roofed bins, hanging the Bin Level lower in the bin will be beneficial for a more level grain spread.

All Bin Levels should be installed so that, during operation, grain from legs or augers is not directly hitting the mercury switch control plate.

INSTALL THE BIN LEVEL SPREADER AS LEVEL AS POSSIBLE

ADJUSTMENT & OPERATION

Figure 2: Adjusting Flow Rate

The two wing nuts inside of the top of the hopper regulate the volume of grain the Bin Level will spread by adjusting the gap between the lower end of the hopper and the spreader pan. This adjustment should be made so the incoming grain operates the switch, turning the motor on at least **three times per minute** and **not more than six times per minute**. If the Bin Level is adjusted to start and stop less than three times per minute, level spread cannot be achieved. If adjusted to start and stop more than six times per minute, motor damage can result. Adjusting the Bin Level to operate within the recommended "stop" and "start" pattern is a must to achieve a level spread.

Figure 3: Outside Ring Adjustment

The outside ring of the Bin Level grain spreader is designed so it can be raised or lowered depending upon the amount of grain being put through the spreader and the width of spread needed. Because of this feature the grain is showered up and out into the bin which allows an even spread, regardless of the corn depth in the bin. To attain this showering action, the outside ring has to be kept higher than the bottom of the hopper cone. Under normal conditions, the outside ring should be from 1/2" to 3/4" higher than the bottom of the Bin Level cone or fill hopper.

Raise the ring to throw grain farther to the outside. Lower the ring to decrease spread width.

Figure 4: Side Gate Adjustments

A slide gate is provided in the spreader pan to keep the center level with the remainder of the bin. Adjustment of the slide gate will vary, depending upon volume and number of start-stops per minute at which the Bin Level is set.

CHECK PERIODICALLY FOR CLOGGING WITH TRASH

Figure 5: Mercury Switch Control

This is the heart of the Bin Level grain spreader. By use of the mercury switch, the spreader is always operating under full-load capacity so a very even spread is obtained. **IMPORTANT:** For proper operation, the mercury switch plate has to be kept from becoming bent or from having other physical damage, and must work freely at all times.

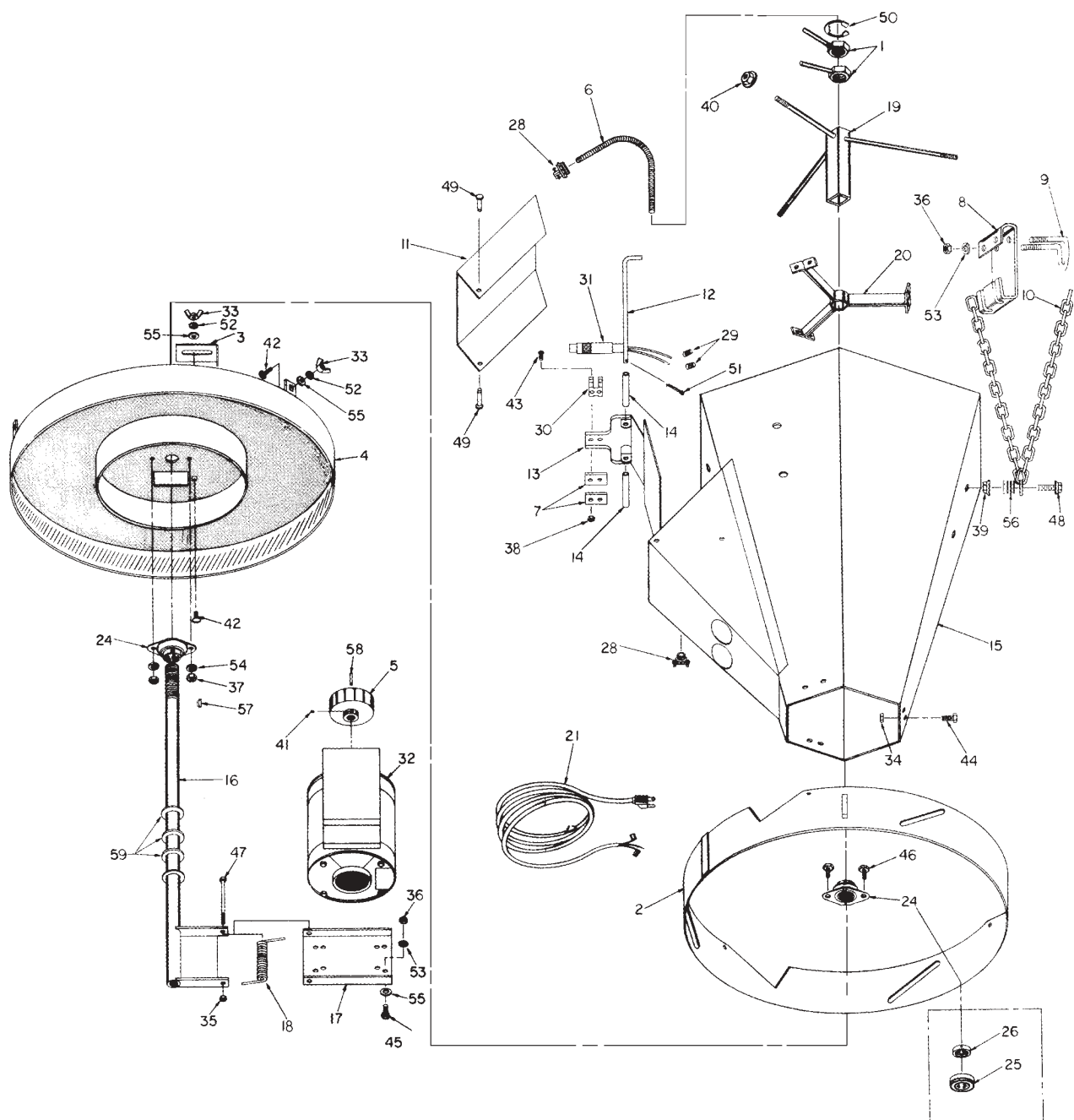
Do not direct flow of grain onto the mercury switch plate. Mercury switch and/or motor failure will result!

SPREADING CAPACITIES				
Various Weights of Grain in Relation to Distance Spread				
MODEL	HP	BIN SIZE		
		HEAVY GRAIN		LIGHT GRAIN
		2500 BPH	3500 BPH	3500 BPH
918	1/3	18'-30'	18'-27'	18'-24'
936	1/2	31'-36'	28'-33'	25'-30'

BIN LEVEL GRAIN SPREADER

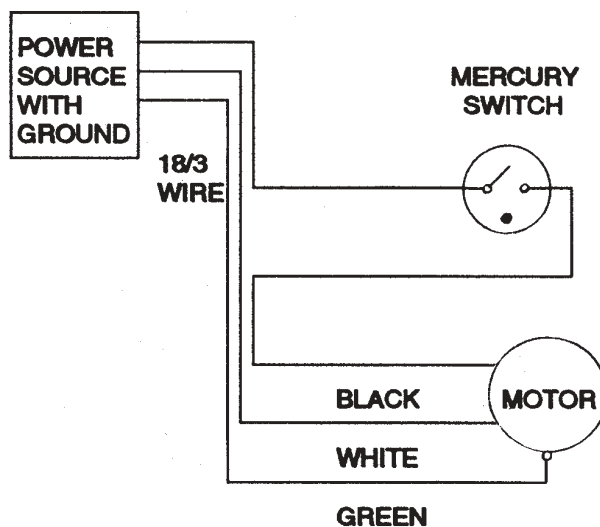
PARTS DRAWING

FOR MODELS 918 & 936



Bin Level Grain Spreader Parts List

918				936			
Ref. No.	Part Number	No. Required	Description	Ref. No.	Part Number	No. Required	Description
1	301A0102	2	Handle Nut	1	301A0102	2	Handle Nut
2	301A0108	1	Ring - Outside Pan	2	302A0309	1	Ring - Outside Pan
3	301A0110	1	Gate - Slide	3	301A0110	1	Gate - Slide
4	301A0111	1	Pan - Spreader, 18" O.D.	4	302A0307	1	Pan - Spreader, 20" O.D.
5	301A0122	1	Wheel - Rubber Drive, 2-3/4"	5	302A3013	1	Wheel - Rubber Drive, 3-1/4"
6	301B0202	1	Shield - Power Cord	6	301B0202	1	Shield - Power Cord
7	301B0208	2	Counter Balance Wt.-Switch Plate	7	301B0208	2	Counter Balance Wt.-Switch Plate
8	301B0220	3	Bracket - Hanger	8	301B0220	3	Bracket - Hanger
9	301B0221	3	U-Bolt - Hanger	9	301B0221	3	U-Bolt - Hanger
10	301B0222	3	Chain - Hanger, 54" Length	10	301B0427	3	Chain - Hanger, 72" Length
11	301B0236	1	Cover - Switch Housing	11	301B0236	1	Cover - Switch Housing
12	301B0237	1	Hinge Pin - Mercury Switch Plate	12	301B0237	1	Hinge Pin - Mercury Switch Plate
13	301B0239	1	Mercury Switch Plate	13	301B0239	1	Mercury Switch Plate
14	301B0244	2	Spacer Tube	14	301B0244	2	Spacer Tube
15	301B0245	1	Hopper - Hex	15	301B0245	1	Hopper - Hex
16	302A0303	1	Shaft - Hopper Center	16	302A0303	1	Shaft - Hopper Center
17	302A0304	1	Plate - Motor Mount	17	302A0304	1	Plate - Motor Mount
18	302A0311	1	Spring - Motor Mount, Torsion	18	302A0311	1	Spring - Motor Mount, Torsion
19	302B0406	1	Support - Hopper Center - (Upper)	19	302B0439	1	Support - Hopper Center - (Upper)
20	302B0408	1	Support - Hopper Center - (Lower)	20	302B0408	1	Support - Hopper Center - (Lower)
21	301N0014	1	Cord - Power	21	301N0014	1	Cord - Power
24	PT0109	2	Bearing, (Complete) 1" (Precision)	24	PT0111	2	Bearing, (Complete) 1" (Precision)
25	PT0215	2	Bearing, 1" w/Locking Collar	25	PT0215	2	Bearing, 1" w/Locking Collar
26	PT0401	2	Collar - Eccentric Lock, 1"	26	PT0401	2	Collar - Eccentric Lock, 1"
28	1EL0401	2	Connector, 3/8"	28	1EL0401	2	Connector, 3/8"
29	1EL0553	2	Wire Twist Connector, Gray	29	1EL0553	2	Wire Twist Connector, Gray
30	1EL0802	1	Mercury Switch Clip	30	1EL0802	1	Mercury Switch Clip
31	2EL0601	1	Mercury Switch, 6 Degree	31	2EL0602	1	Mercury Switch, 6 Degree
32	3EL5055	1	Motor, 1/3 HP, T.E.N.V. Electric	32	3EL5062	1	Motor, 1/2 HP, T.E.N.V. Electric
33	1FH0579	4	Wing Nut, 1/4"	33	1FH0579	4	Wing Nut, 1/4"
34	1FH0734	6	Hex Lock Nut, 1/4"	34	1FH0734	6	Hex Lock Nut, 1/4"
35	1FH0736	1	Hex Lock Nut, 3/8"	35	1FH0736	1	Hex Lock Nut, 3/8"
36	1FH0764	10	Hex Nut, 5/16"	36	1FH0764	10	Hex Nut, 5/16"
37	1FH0765	2	Hex Nut, 3/8"	37	1FH0765	2	Hex Nut, 3/8"
38	1FH0780	2	Hex Machine Screw Nut, #4-40	38	1FH0780	2	Hex Machine Screw Nut, #4-40
39	1FH0983	3	Hex Flange Lock Nut, 5/16"	39	1FH0983	3	Hex Flange Lock Nut, 5/16"
40	1FH0985	3	Hex Flange Lock Nut, 7/16"	40	1FH0985	3	Hex Flange Lock Nut, 7/16"
41	2FH0502	2	Set Screw - Skt. Hd. 1/4"x1/4"	41	2FH0502	2	Set Screw - Skt. Hd. 1/4"x1/4"
42	2FH0631	4	Carriage Bolt, 1/4"x3/4"	42	2FH0631	4	Carriage Bolt, 1/4"x3/4"
43	2FH0687	2	Machine Screw-Rd. Hd.#4-40x5/8"	43	2FH0687	2	Machine Screw-Rd. Hd.#4-40x5/8"
44	2FH0801	6	Hex Bolt, 1/4"x1/2"	44	2FH0801	6	Hex Bolt, 1/4"x1/2"
45	2FH0828	4	Hex Bolt, 5/16"x3/4"	45	2FH0828	4	Hex Bolt, 5/16"x3/4"
46	2FH0857	2	Hex Bolt, 3/8"x 1 1/2"	46	2FH0857	2	Hex Bolt, 3/8"x 1 1/2"
47	2FH0870	1	Hex Bolt, 3/8" x 5-1/2"	47	2FH0870	1	Hex Bolt, 3/8" x 5-1/2"
48	2FH0990	3	Hex Flange Wiz Lk.Scr., 5/16"x1"	48	2FH0990	3	Hex Flange Wiz Lk.Scr., 5/16"x1"
49	3FH0530	2	Pop Rivet-3/16" Aluminum	49	3FH0530	2	Pop Rivet-3/16" Aluminum
50	3FH0567	1	Snap Ring 1"	50	3FH0567	1	Snap Ring 1"
51	3FH0712	1	Cotter Pin, 1/8"x3/4"	51	3FH0712	1	Cotter Pin, 1/8"x3/4"
52	3FH0789	4	Lock Washer, 1/4"	52	3FH0789	4	Lock Washer, 1/4"
53	3FH0790	10	Lock Washer, 5/16"	53	3FH0790	10	Lock Washer, 5/16"
54	3FH0791	2	Lock Washer, 3/8"	54	3FH0791	2	Lock Washer, 3/8"
55	3FH0863	8	Flat Washer, 1/4"	55	3FH0863	8	Flat Washer, 1/4"
56	3FH0947	12	Flat Washer, SAE, 5/16"	56	3FH0947	12	Flat Washer, SAE, 5/16"
57	3FH0999	1	Key - Woodruff(Tab Type) 1/4" x1"	57	3FH0999	1	Key - Woodruff(Tab Type) 1/4" x1"
58	3FH1011	1	Key - Square, 1/8"x1"	58	3FH1015	1	Key - Square, 3/16"x1"
59			Not used on 918 Bin Level	59	3FH0830	3	Machinery Bushing, 1"x1-1/2"x10GA

WIRING DIAGRAM**ALTERNATING CURRENT****918 & 936 - 115 VOLTS****INSTALLATION**

Use Tables A & B to determine the proper size of fuse protection and the length and size of wiring required. Portable extension cords, if used, should be as short as possible to minimize voltage drop. Cords that are too long, or cords that are of a too small wire gauge, can cause the motor to fail.


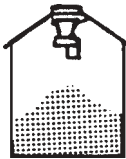
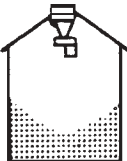
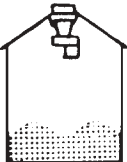

TABLE A (WIRE SIZE)
DISTANCE

MOTOR	25 FT.	50 FT.	100 FT.	200 FT.
1/3 HP (918)	#18 Ga.	#16 Ga.	#12 Ga.	#10 Ga.
1/2 HP (936)	#16 Ga.	#14 Ga.	#12 Ga.	# 8 Ga.

TABLE B (FUSE SIZE)

MOTOR	TYPE OF FUSE (CODE LETTER)					
	NON-TIME DELAY			DUAL ELEMENT TIME DELAY		
	A	B-E	F-V	A	B-E	F-V
1/3 HP (918)	10	15	20	10	10	10
1/2 HP (936)	15	25	30	15	15	15

TROUBLE SHOOTING

PROBLEM	CORRECTION
Grain is high on one side of bin. 	(a) Spreader is not hung level. (b) Spreader not stopping & starting properly during filling. See Figure 2. (c) Spreader running continuously.
Grain is high at the center of bin. 	(a) Slide Gate open too far. (b) Spreader stopping too long, letting too much grain through slide gate. See Figure 4. (c) Outside ring set too low. See Figure 3.
Grain is low at the center of bin. 	(a) Slide Gate not open far enough. (b) Spreader not stopping enough to let grain out through slide gate. See Figures 2 and 4. (c) Outside ring set too high. See Figure 3.
Grain forms "doughnut" a few feet from bin wall. 	Caused by grain bouncing off bin wall excessively. (a) Adjust outside ring. See Figure 3. (b) Hook Spreader higher in the roof cone to increase grain bouncing off underside of roof and then being deflected straight downward. (c) Open slide gate more to help fill center. (d) Spreader model not correct for bin size.
Grain not getting all the way to the wall. 	(a) The Model 918 Bin Level will only spread over an entire bin width of up to 30' and the Model 936 up to 36'. If the bin is bigger, lower sides will result because grain will not throw out far enough. (b) Adjust outside ring up. See Figure 3. (c) Bin Level hanging too high under bin roof. (d) Rubber drive wheel badly worn.
Spreader swings excessively when starting.	This condition is caused by improper hooking up of the suspension chains. There should be the same number of links from spreader to hook with all six strands of chain. This will also usually ensure level hanging of the Spreader. Equal spacing of hanger brackets is important. The hanger brackets should be on the outer fill-hole ring.
Spreader does not run.	(a) Mercury switch plate may be frozen shut or plugged with foreign material. (b) Rubber drive wheel may be slipping because of excessive moisture or broken mounting plate spring. (c) Motor overload may have tripped. It will reset automatically after the motor has cooled. (d) Blown fuse or broken wire. (e) Faulty mercury switch. (f) Mercury switch plate bent out of shape. (g) Grain extremely high moisture may not flow enough to operate the mercury switch plate. Bending section of the plate holding the mercury switch up to make it more sensitive may help. (h) The motor will not start and will "chatter" if the voltage is too high. (i) The motor will not start and will "hum" if the voltage is too low. See Table A on Page 4 for the proper length and size of wiring to prevent excessive voltage drop.
Motor slows down when loaded.	(a) Motor wired for the wrong direction. Pan should turn clockwise when viewed from the top.



Bin Level

Automatic Control Grain Spreaders

Models 918 & 936

DMC markets across the U.S. and around the world.

For more information, contact the DMC Distribution Center closest to you.

**DMC's Corporate Headquarters, Factory
and North Central Sales Center**

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Phone: 641-424-7010
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Dakota Distribution Center

3520 Ninth Avenue S.W.
Watertown, South Dakota 57201
Phone: 605-882-3210
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Ft. Wayne Distribution Center

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Garrett, Indiana 46738-0030
Phone: 219-357-5767
FAX: 877-362-8032

Illiana Distribution Center

515 West Main
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