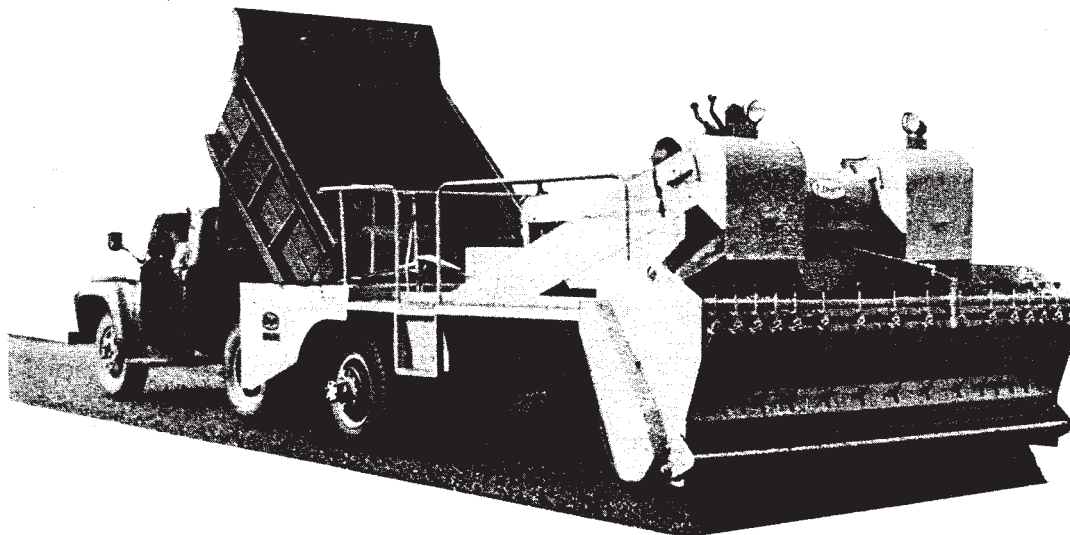


M-202-71

Thru S/N K-3813



CHIPSPREADER
OPERATION, MAINTENANCE and
SAFETY MANUAL



⚠ WARNING

Stay off hopper when machine is in motion.
Machine movements could cause a fall
resulting in injury or death.

E. D. ETNYRE & CO., Oregon, Illinois 61061

**CHIPSREADER
OPERATION, MAINTENANCE AND SAFETY MANUAL**

M-202-71



E. D. ETNYRE & CO., Oregon, Illinois 61061, Phone Area Code 815/732-2116, Cable Address "EDECO"

TABLE OF CONTENTS

Introduction	4
Warning	5
General Identification	6
Initial Start-up	7
Operation	8
Truck Size And Arrangement	10
Adjustment	11
Trouble Shooting	12
Lubrication	14
Lubrication Chart	15

INTRODUCTION

Your ETNYRE ChipSpreader is designed to give many years of continuous economic service. The information contained in this manual will enable you to obtain maximum performance from your ChipSpreader.

Ease of operation and application of an even uniform layer of clean dry aggregate a short distance behind a distributor are the main design criteria for the ETNYRE ChipSpreader.

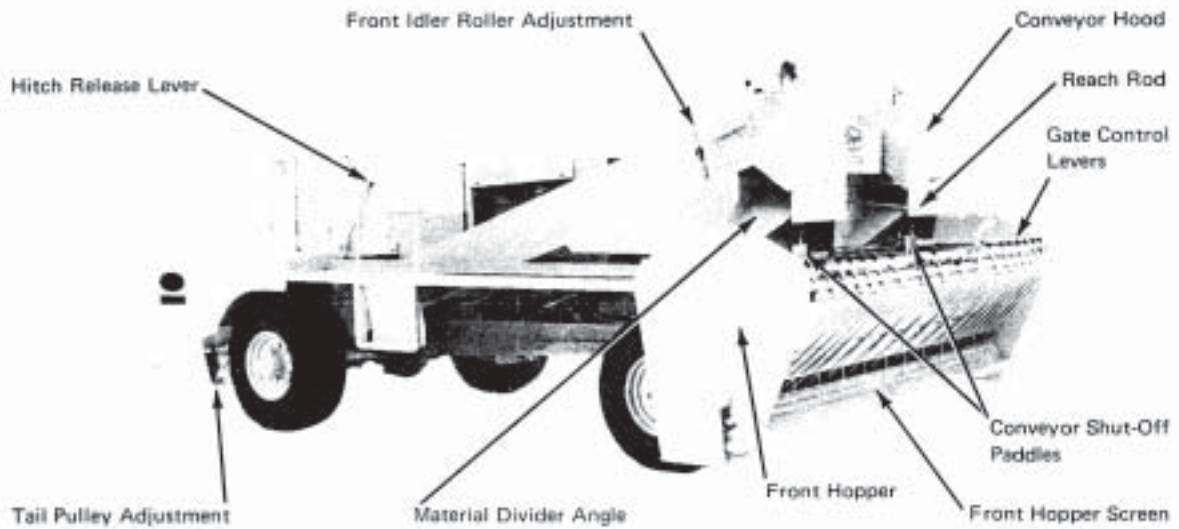
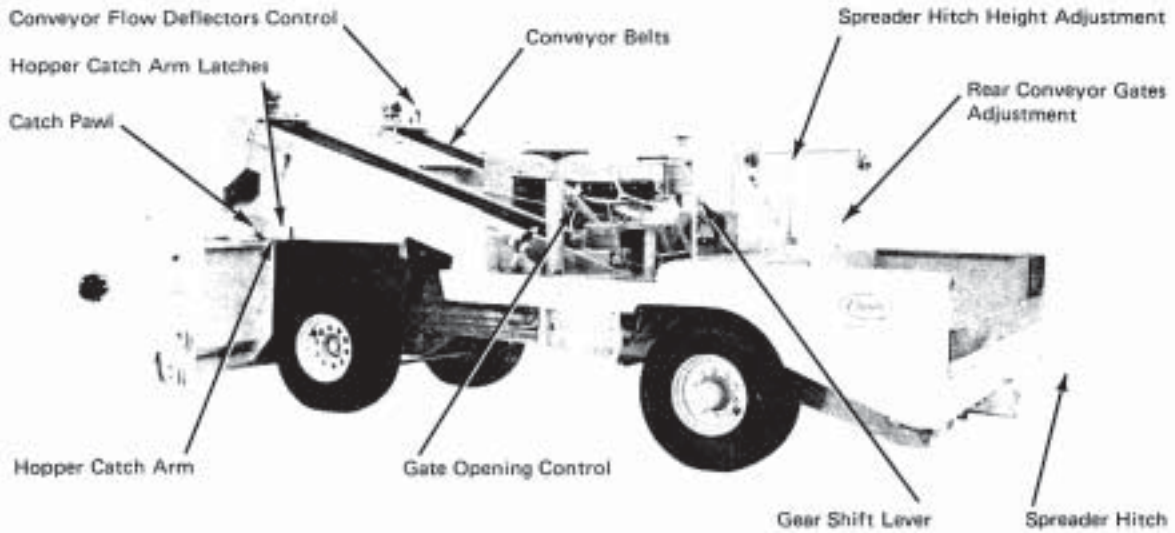


WARNING



- 1 Front hopper screen should be up when unit is traveling between job sites.
- 2 Keep machine on road or level ground at all times.
- 3 Place truck gear shift in neutral position as soon as truck is connected to the spreader.
- 4 Under most operating conditions the Chip-Spreader should be allowed to tow the truck. However, certain steep up-grade conditions may require the truck to push the spreader with the spreader transmission in neutral position.
- 5 Never use ChipSpreader to dislodge a truck or other equipment which has become stuck in mud or soft shoulder conditions.

GENERAL IDENTIFICATION



INITIAL START-UP

Check Out

1. The following accessories are with each spreader: grease gun, allen wrench set, extra linkage rods for shortened truck hook-up, cushion and seat back, agitator disconnect bolt, hopper drive line components, and various Operator, Parts and Instruction Manuals.

2. Tires are shipped with 90 P.S.I. pressure. Best performance for most operating conditions is achieved when tire pressures are set to 50 P.S.I. in front and 65 P.S.I. in the rear. However, various operating speeds, road bed conditions, truck pulling arrangements, and other operating conditions may require different tire pressures.

3. Grease and check oil levels in accordance with the ChipSpreader lubrication chart prior to operation.

4. Check engine water and oil level prior to operation. Refer to Engine Operators Maintenance Manual for complete engine service requirements.

5. Hopper gate adjustment and spread roll straightness are established at the factory. However, to insure proper adjustment or straightness were not altered during shipment and storage the following gate and spread roll adjustment checks should be performed prior to operation:

a. With the hopper removed from the spreader, or the reach rod disconnected, each gate adjusting screw should be set so as to maintain 1/16" clearance between the gate and spread roll. At the same time, the gate control lever linkage should be adjusted so the control lever just touches the actuator bar stop.

b. With the hopper attached to the spreader, disengage a 6" gate at each end and a 12" gate at the hopper center. Engage hopper. Spread roll rotation should not cause disengaged gate levers to move. However, if any gate levers do move,

indicating that spread roll is out of round or bent, contact factory for spread roll straightening instructions.

Attaching Hopper to Unit

1. Remove drive line from spare parts box.

2. Assemble drive line (P/N 3110051) onto spreader drive shaft. Also if necessary, assemble drive line (P/N 3140122) onto hopper drive shaft.

3. On one man units check to insure conveyor shut off paddles are secured in up position.

4. By hooking a lifting device into the rear lifting eye, the hopper can be tilted forward while being raised, allowing the hopper carrying shaft to engage hopper carrying arms on the spreader.

5. Check to insure hopper catch arm latches on each side of the spreader are in float position.

6. Attach lifting device to front lifting attachment, establish proper relationship between drive line squares and while raising hopper to vertical position engage drive line members.

7. After hopper catch arms have engaged latches rotate each latch pawl to locking position.

8. Attach reach rod.

9. After proper setting of gate adjusting screws and control lever linkages has been established only then if necessary should the reach rod be adjusted to maintain 1/16" clearance between gate and spread roll.

OPERATION

Standard Unit (2 Man)

1. Check to insure disconnect switch was placed in "off" position after machine was last used. If not, place switch in "off" position.
2. To start engine open throttle about 1/4 to 1/3, add choke if necessary, and engage starter switch.
3. Place disconnect switch in "on" position.
4. Operate spreader with engine at full governed speed.
5. Engage the proper number of hopper gate control levers to obtain the desired spread width.
6. Select gear ratio from speed chart to obtain desired forward speed. It should be noted that second gear high-range and third gear low-range offer the two most convenient operating speeds.
7. Set hopper gate opening to achieve desired application rate. It should be noted that aggregate size, moisture content and spreader speed will determine the proper gate opening.
8. Adjust spreader hitch height if necessary to accommodate individual trucks.
9. Engage conveyor belts so as to maintain an even distribution of aggregate in front hopper.
10. Conveyor flow deflectors may be used to achieve a desired aggregate distribution in the front hopper.
11. Rear conveyor gates may be adjusted so material is supplied to the front hopper at a rate approximately equal to the rate at which material is being spread.
12. The operator may wish to disengage the front hopper agitator while spreading clean dry aggregate. This operation is performed by removing the agitator sprocket drive bolt.
13. When the aggregate is not of uniform size the front hopper screen may be used to place larger chips on the asphalt ahead of smaller chips and fines. This helps prevent the smaller chips and fines from blotting out the larger material.

FORWARD SPEED CHART

GEAR	RANGE	
	HIGH	LOW
1st	2.5 M.P.H. = 220 FPM	1.8 M.P.H. = 158 FPM
2nd	4.3 M.P.H. = 378 FPM	3.1 M.P.H. = 273 FPM
3rd	7.9 M.P.H. = 695 FPM	5.6 M.P.H. = 493 FPM
4th	12.0 M.P.H. = 1060 FPM	8.6 M.P.H. = 756 FPM
5th	17.4 M.P.H. = 1550 FPM	12.5 M.P.H. = 1100 FPM

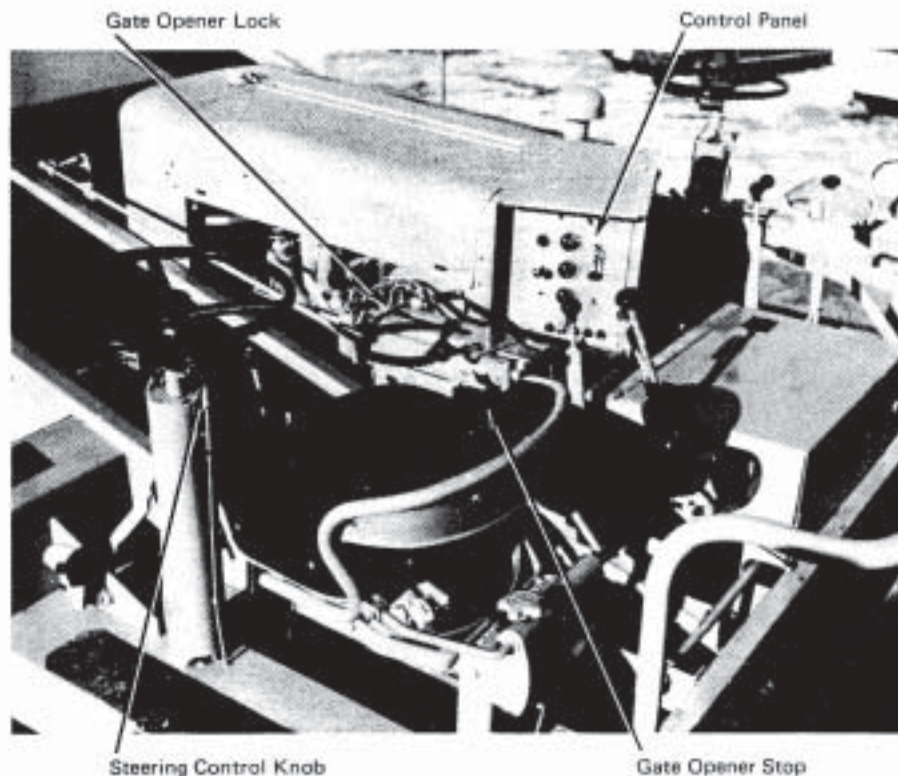
This chart is based on: 2000 R.P.M. engine speed and 10:00 - 20 tires.

One Man Unit Operation

1. Operate engine at full governed speed.
2. Conveyor belt control switches have three positions; "off", "automatic control", and "override". It should be noted that the disconnect switch must be in the "on" position before belts will operate.
3. Mirrors placed at left front of hopper to view material in hopper, right front of operator platform to view truck behind operator and right rear of machine to view along right side of spreader are quite helpful to the operator.
4. Optional horn may be used to signal the truck driver the initiation or completion of various operations.

Dual Control Unit Operation

1. On dual control units the following steps should be taken when the driver is changing from one side of the unit to the other:
 - a. Place gate opener stop in rear most position on the control opposite the drivers side.
 - b. Swing control panel to drivers side and lock into position.
 - c. Locate gate opener stop at desired position on drivers side.
 - d. Pull power steering control knob on steering column to upper most position on drivers side.
2. When transporting spreader between job sites, lock gate opener in forward position so as to prevent gates from opening inadvertently.



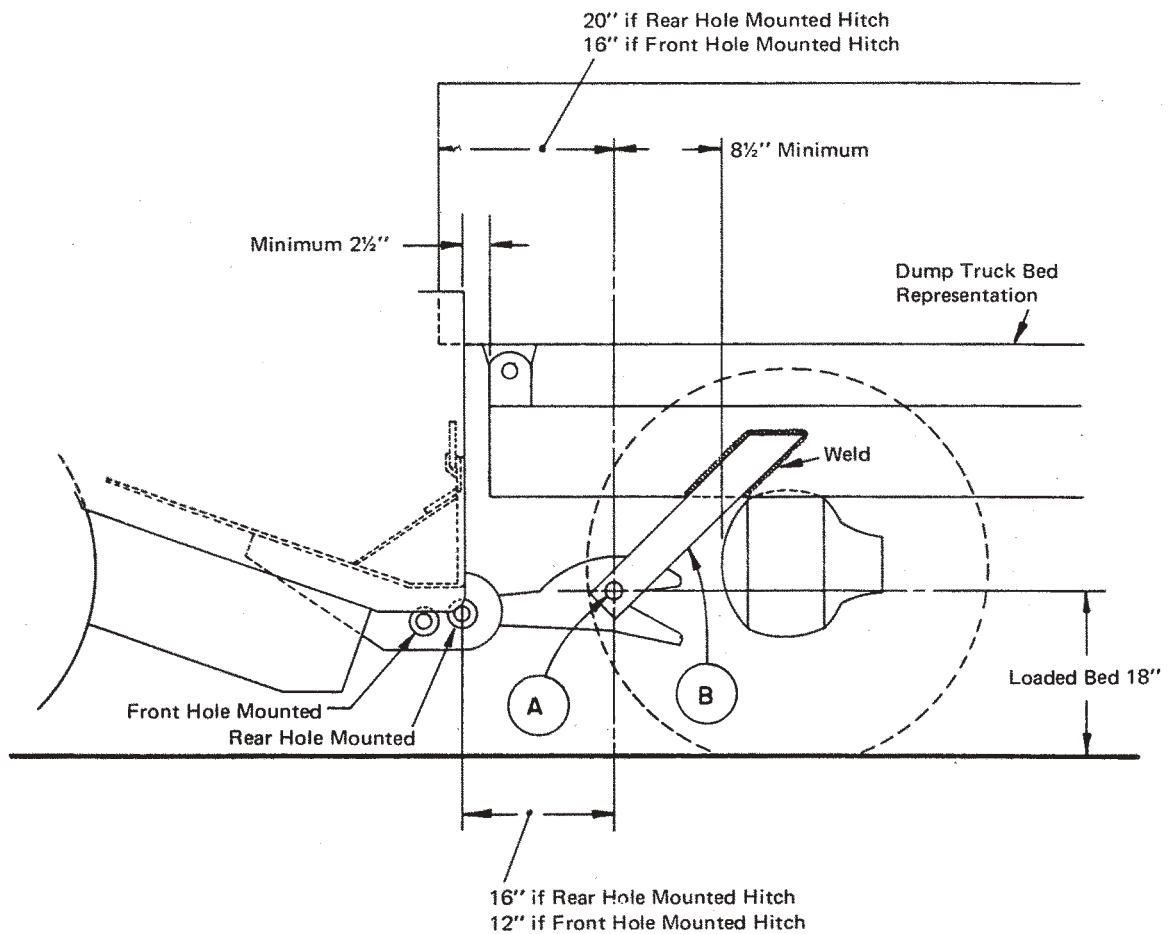
TRUCK SIZE AND ARRANGEMENT

1. Trucks ranging in size from four to ten yards are handled easily by an ETNYRE ChipSpreader.

2. An apron on the rear of each truck will be quite helpful.

3. For truck hitch arrangement, see truck hitch tow bar illustration.

Truck Hitch Tow Bar Illustration



A. 3390451-Cold Rolled Round 1 3/4" dia. x 36" long

B. 3390450-Hot Rolled Flat 1/2" x 4" x 18" long (2) Req'd

ADJUSTMENT

Spread roll clutch adjustment:

1. Shut off ChipSpreader engine.
2. To tighten clutch, disengage release pin (P/N 3170089) and rotate connector assembly (P/N 3170122) clockwise one or two adjusting holes.
3. Engage release pin.
4. Start engine and operate at full governed speed.
5. Operate spread roll clutch. If satisfactory spread roll operation is achieved, adjustment is complete. However, if additional tightening is necessary, repeat steps 1 through 5.
6. Slotted holes are provided in the clutch cover (P/N 3170104) for insertion of a drift punch for tapping the connector should the connector be too snug to move by hand.

Too tight a clutch adjustment will prevent the hydraulic cylinder from properly engaging the clutch or result in a damaged linkage ball joint.

Conveyor clutch adjustment:

1. Shut off ChipSpreader engine.
2. To tighten clutch disengage release pin (P/N 3170041) and rotate connector assembly (P/N 3170034) clockwise one or two adjusting holes.
3. Engage release pin.
4. Start engine and operate at full governed speed.
5. Operate conveyor clutch. If satisfactory conveyor operation is achieved, adjustment is complete. However, if additional tightening is necessary, repeat steps 1 through 5.
6. Steps 1 through 5 should be repeated for both conveyor clutches if necessary.
7. Slotted holes are provided in the clutch cover (P/N 3170043) for insertion of a drift punch for tapping the connector assembly should the connector be too snug to move by hand.
8. On single man units too tight of a clutch adjustment will prevent the hydraulic cylinder from

properly engaging the clutch or result in a damaged linkage ball joint.

Conveyor belt adjustment:

1. If belt tends to move towards one side of the conveyor, tighten that side of the tail pulley adjustment until the belt is running in the center.
2. Raise (tighten) the front idler roller on the side opposite from the side towards which the belt is tending to run until the belt is operating in the center of the head pulley. FOR EXAMPLE: If the belt tends to run towards the right side of the head pulley, tighten the left side of the front idler roller. A variation in height of no more than 2" should be allowed to exist from one side of the front idler roller to the other.
3. Steps 1 and 2 may have to be repeated for both conveyors until the belts are operating approximately in the center of their respective head and tail pulleys.
4. The belts should be sufficiently tight to prevent head pulley slippage when the belts are loaded and operating at full governed engine speed. It should be noted, however, that excessive belt tightness will result in shortened belt and pulley bearing life. It may be necessary to tighten the belts several times during the first few weeks of operation until most of the initial belt stretch has been removed.

Conveyor hood adjustment:

1. For normal operation with a 10 and 11 foot hopper approximately 2-1/2" of clearance is required between the conveyor hood and material divider angle. For 12, 13, and 14 foot hoppers decrease the clearance to approximately 1-1/2".
2. Various aggregate sizes, moisture content, and other material characteristics may require an increase or decrease in hood clearance to obtain an even material distribution in the front hopper.

Hitch adjustment:

1. When adjusting ChipSpreader hitch to closer position for different truck hitch arrangements, use shorter control rods as provided. See truck hitch tow bar illustration.

TROUBLE SHOOTING

Standard Unit (2 Man)

IF CONVEYOR BELT IS NOT RUNNING IN CENTER OF CONVEYOR:

1. Check conveyor belt adjustment and adjust as indicated in adjustment section of this manual.

IF SPREAD ROLL FAILS TO OPERATE WHEN GATES ARE OPENED:

1. Check to insure "DISC" switch is in "on" position.
2. Check fuse panel for blown or shorted fuses.
3. Check to insure engine is at full governed speed.
4. Check spread roll clutch adjustment.
5. Check limit switch for proper adjustment.
6. Check filter gauge. If gauge indicates in RED, with engine at full governed speed, change filter element.

IF CLUTCH ASSEMBLY MOVES ON ITS SHAFT:

1. Check set screw in clutch hub on spreaders prior to 1965.

IF POWER STEERING IS NOISEY OR NOT OPERATING:

1. Check hydraulic reservoir oil level.
2. Check filter gauge. If gauge indicates in RED, with engine at full governed speed, change filter element.

IF BRAKES ARE NOT OPERATING PROPERLY:

1. Check brake fluid level in master cylinder.
2. Check hydrovac vacuum tank and connections for leaks.

IF CONSISTENT HOPPER FUSE FAILURE OCCURS:

1. With "DISC" switch in "off" position replace hopper control fuse and start engine. Check fuse. If fuse is blown check for a short in disconnect switch. If fuse is *not* blown, place "DISC" switch in "on" position with engine running. Check fuse. If fuse is blown check for short in hopper disconnect switch, hopper cylinder clutch engaging switch, and cylinder control valve coils.

IF ENTIRE ELECTRICAL SYSTEM FAILS TO OPERATE AND FUSES ARE NOT BEING BLOWN:

1. Check to determine if current is available at black-yellow wire terminal on engine oil pressure switch with engine operating at 1/2 throttle. If current is not available, replace engine oil pressure switch.

One Man Unit

IF CONVEYOR BELTS FAIL TO OPERATE PROPERLY:

1. Check to insure that "DISC" switch is in "on" position.
2. Check fuse panel for blown or shorted fuses.
3. Check to insure that engine is at full governed speed.
4. Check limit switches for proper adjustment.
5. Check conveyor belt clutch adjustment.
6. Check hydraulic pressure at clutch cylinders—Pressure should fall in the range of 750 to 850 P.S.I.
7. Check to insure conveyor hood is adjusted as noted in adjustment section.

IF CONSISTENT CONVEYOR FUSE FAILURE OCCURS:

1. With "DISC" switch in "off" position, replace conveyor control fuse and start engine. Check fuse. If fuse is blown, check for a short in disconnect switch. If fuse is *not* blown, place "DISC" switch in "on" position with engine running. Check fuse. If fuse is blown, check for short in conveyor cylinder clutch engaging switch, cylinder control valve coils and 12 point override switch in instrument panel.

**CONVEYOR CLUTCH RAPIDLY
ENGAGES AND DISENGAGES:**

**AGGREGATE TENDS TO
BUILD UP BEHIND CONTROL PAD-
DLE WHEN A NUMBER OF GATES
ARE CLOSED ON ONE SIDE OF
HOPPER FOR AN EXTENDED PE-
RIOD OF TIME:**

1. Replace appropriate 12 point override switch in panel.

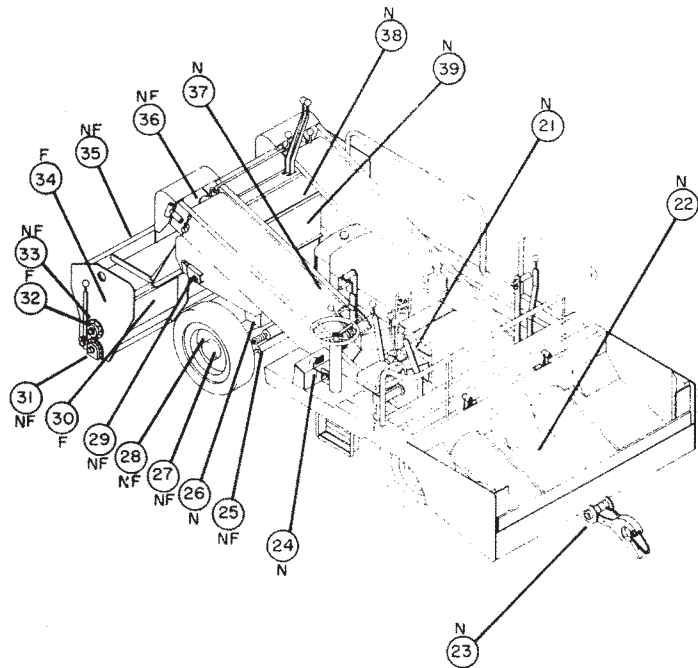
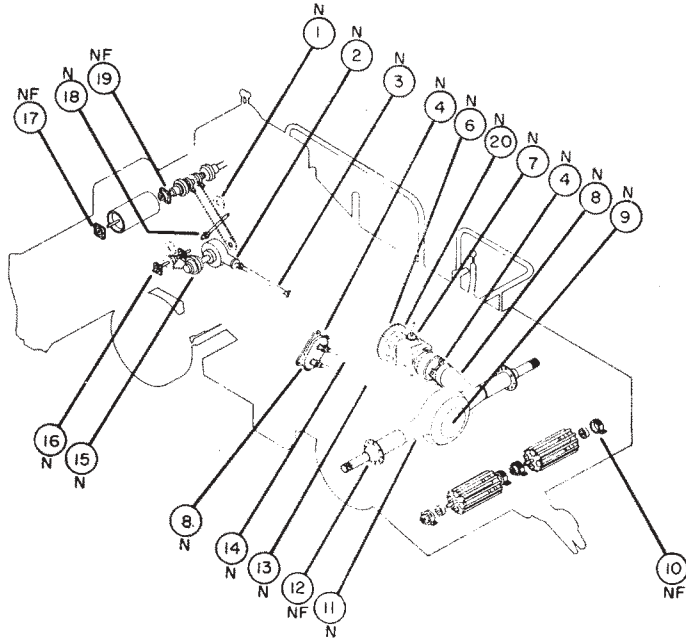
1. Check to insure control paddle is not bent forward of a vertical position. If paddle is bent forward, bend to a position slightly rearward of vertical.

2. It may be necessary to operate the belts manually with the conveyor belt control switches until such a time as the desired spread width is increased.

3. Alternate solution: Disconnect clutch control cylinders and install control clutch handles. Operate machine manually.

4. If problem persists, consult factory.

LUBRICATION



N - Near Side

F - For Side

NF - Near and For Side

LUBRICATION CHART

Interval	Point	Identification	No. of Points	Lubricant	Quantity
Daily	1	Idler Sprocket	1	#2M-AG	Springly
	15	5" Clutch Spider and Idler	3	#2M-AG	Springly
	32	Bearing-Disconnect	1	#2M-AG	Springly
Weekly	3	Drive Line-Universal Joints	3	#2M-AG	Springly
	4	Drive Line-Universal Joints	3	#2M-AG	Springly
	6	14" Clutch	2	#2M-AG	Springly
	10	Tail Pulley Bearings	4	#2M-AG	Springly
	13	Drive Line-Universal Joints	3	#2M-AG	Springly
	14	Drive Line-Universal Joints	3	#2M-AG	Springly
	16	Flange Bearings	2	#2M-AG	Springly
	17	Flange Bearings	4	#2M-AG	Springly
	18	Drive Line-Universal Joints	1	#2M-AG	Springly
	19	Universal Joint	2	#2M-AG	Springly
	20	14" Clutch Grease Cup	1	#2M-AG	1-Turn
	21	Shifting Mechanism	6	#2M-AG	Springly
	22	Rear Hitch Levers	2	#2M-AG	Springly
	23	Rear Hitch	2	#2M-AG	Springly
	25	Tie Rod	2	#2M-AG	Springly
	26	Center-Axle Pivot Shaft	1	#2M-AG	Springly
	27	Spindle Assy.	4	#2M-AG	Springly
	29	Spread Hopper Latches	2	#2M-AG	Springly
	30	Universal Joint & Flange Brgs.	4	#2M-AG	Springly
	31	Cartridge Bearing	2	#2M-AG	Springly
33	Cartridge Bearing	2	#2M-AG	Springly	
34	Fixed Flange Brg.	1	#2M-AG	Springly	
36	Baffle Shaft	2	#2M-AG	Springly	
37	Throttle Control	1	#2M-AG	Springly	
Check Weekly	2	Durst Angle Drive	—	#90M-ATG	1 lb.
	7	5-Speed Transmission	—	#90M-ATG	18 lbs.
	8	Offset Transmission	—	#90M-ATG	3 lbs.
	9	2-Speed Differential	—	#90M-ATG	16 lbs.
	24	Master Brake Cylinder	—	Brake Fluid	Fill
38	Hydraulic Reservoir	—	Type A TF	11 quarts	
6 mo.	11	Electric Two-Speed	—	#10ND Oil	Fill
	35	Gate Latch Control Handle	Hopper	#2M-AG	Springly
1 yr.	12	Wheel Bearings	—	#2M-AG	Pack
	28	Wheel Bearings	—	#2M-AG	Pack
A.R.	39	Filter—Gauge Registers Red	—	Change Filter

#2M-AG—#2 Molub-Alloy Grease
 #90M-ATG—#90 Molub-Alloy Transmission Grease

#10ND-Oil—#10 Non-Detergent Oil
 Type A TF—Type A Transmission Fluid

CAUTION

1. Make certain everyone is clear of machine before starting engine or operation.
2. Always use steps, platforms and handrails provided.
3. Remain clear of moving or rotating parts.
4. Always have shields, covers and guards in place when operating.
5. Do not stand in front of hopper to engage and disengage hopper gates.
6. Keep loose clothing away from conveyor area when operating conveyor clutches.
7. Keep drive clutch engaged when machine is being roaded down hill.

M-202-71