



50 FORAGE BLOWER

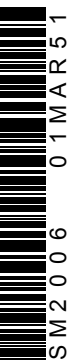


SERVICE MANUAL 50 FORAGE BLOWER

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ENGLISH



SERVICE MANUAL FOR
JOHN DEERE DEALERS

No.
50 FORAGE BLOWER

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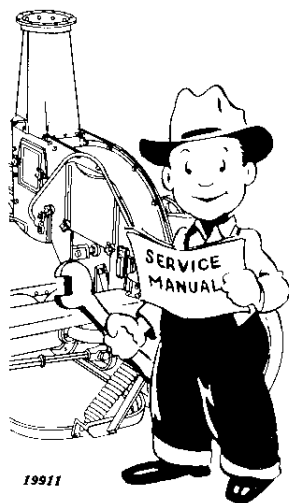
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INTRODUCTION



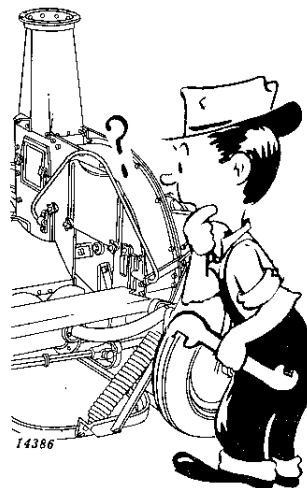
There is a
RIGHT WAY

←

and a
WRONG WAY

→

to do
everything



This Service Manual contains instructions for complete maintenance and operation of the No. 50 Blower. Given in it are detailed steps for removing, disassembling, cleaning, inspecting, repairing, assembling, and installing all parts. Tests and adjustments required to keep the blower operating at full efficiency are included. In addition, this manual contains brief fundamental information regarding various working parts of the blower.

These instructions have been prepared by men who are thoroughly familiar with the No. 50 Blower. Study the instructions carefully; familiarize yourself with the factory-suggested methods

of servicing the machine; use the instructions whenever the smallest doubt arises concerning correct maintenance procedure.

This manual is prepared in loose-leaf form for inclusion in your "N" style SMRL service Manual binder so that the latest developments and techniques can be sent to you on new pages for insertion in your manual as soon as such information is available.

Use this Service Manual in conjunction with the No. 50 Forage Blower Operator's Manual. It also contains valuable information concerning operation and care of the blower. See your Parts Catalog for information regarding replacement parts.

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Section 10

DESCRIPTION AND OPERATION

Group 5

DESCRIPTION AND SPECIFICATIONS

The John Deere No. 50 Forage Blower is a belt-driven, high-capacity blower designed to handle dry material, semi-cured material, or silage.

Built into this blower are several features—retractable wheels, lift springs, and clutch lever—designed to cut down on the time required to deliver the material into the silo, barn, or stack.

The retractable transport wheels allow the blower to be spotted at any convenient location desired without the necessity of digging in.

The lift springs counterbalance the weight of the auger conveyor so that it can be raised or lowered easily, allowing trucks to drive past the conveyor instead of backing up to it.

The clutch lever, controlling the auger, is accessible from either side of the blower.

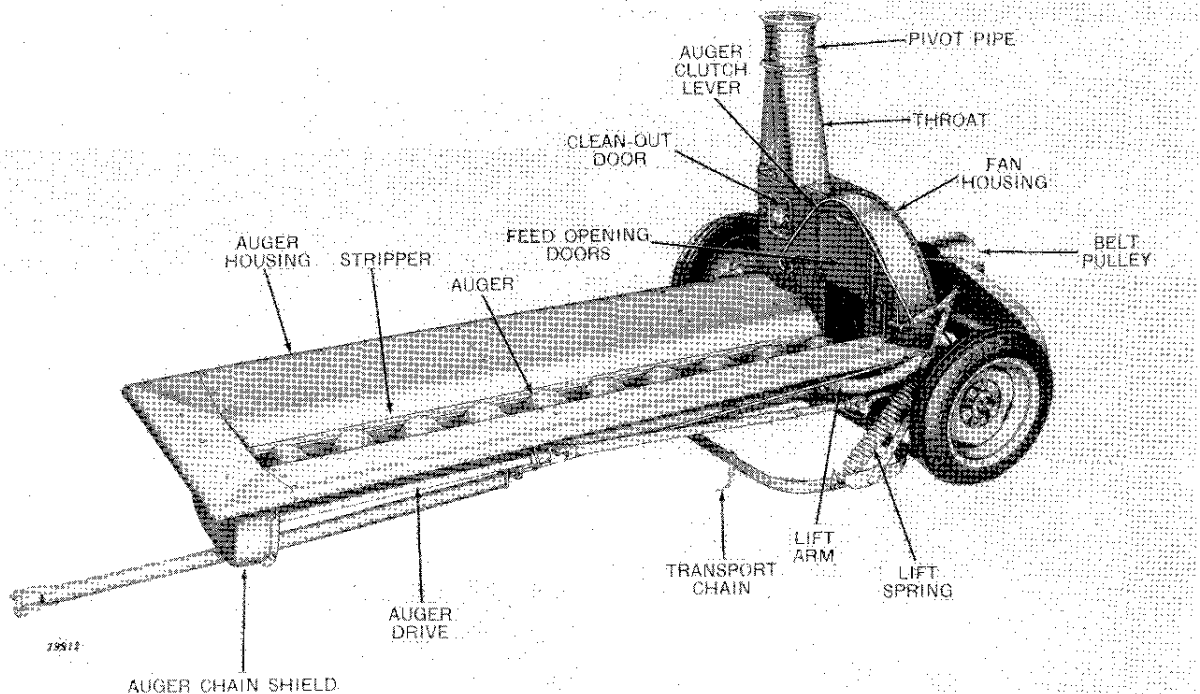


Figure 10-5-1—The John Deere No. 50 Forage Blower

SPECIFICATIONS AND DATA

Width in Operating and Transport Positions	6 ft.
Length.....	13 ft.
Height in Transport.....	5 ft. 5 in.
Height When Auger Is Raised.....	12 ft. 5 in.
Weight.....	1070 lbs. (Approx.)
Capacity.....	Silage, 10-30 tons per hour Dry material, 6-15 tons per hour Semi-cured material, 8-20 tons per hour
Auger.....	10-in. diameter, 8 ft. long roller chain drive
Auger Conveyor.....	Hinged—may be raised to allow wagon to pass
Length.....	9 ft. 6 in.
Width.....	3 ft. 4 in.
Height.....	20 in.
Blower Fan.....	Steel, 4-blade, 34-in. diameter
Fan Speed.....	800 to 1000 rpm.
Tires (Pneumatic Implement) (Optional).....	4-ply—5.90 x 15
Blower Pipe.....	8 in. diameter—1-, 2-, 4-, and 7-ft. lengths
Belt Pulley.....	Face width 7-3/4-in. by 10-1/2-, 12-, or 13-1/2-in. diameter as required for tractor used
Power Required.....	2-plow tractor, single-phase electric motor 10 to 20 h.p.

(NOTE: Right- and left-hand referred to in this manual are determined from a position at the rear of the machine facing in the direction of travel in transport.)

(NOTE: It is John Deere policy to improve our machines at every opportunity. Consequently, it may be necessary to change design without notice.)

Group 10 OPERATION AND ADJUSTMENT

OPERATION

GENERAL INSTRUCTIONS.

Before operating a new John Deere No. 50 Forage Blower, make sure that all bolts are tight, cotter pins are spread, and machine has been properly set up (see the *Operator's Manual*).

Be sure the machine is thoroughly lubricated as shown in lubrication chart (see *Section 30*).

See that the blower is as near the silo as possible. **This is important.**

Pipe and Deflector.

Bolt the required lengths of pipes and the deflector securely together. *NOTE: Inside rounded ends of pipes should go toward ground. This forms a smooth surface and allows the material to flow freely through the pipe. To raise the pipe, attach a rope and pulley at top of silo near opening or door. Fasten one end of rope securely to upper end of center section which has been bolted to other sections. Take a half-hitch around pipe about 8 feet from the upper end and elevate pipe into position. The pivot pipe on blower outlet will permit connecting at the angle necessary to reach the silo. Secure the pipe in a position as nearly vertical as possible to eliminate resistance on elevated material.*

Blower Fan Speed.

Operate the blower fan at 800 to 1000 rpm in average conditions. Other conditions being equal, the lower speed is practical for elevating dry chopped hay and corn ensilage and the higher speed for green chopped hay. Blower speeds are dependent upon tractor rpm and pulley sizes. For further information see *Group 15* of this *Section*.

Belt.

For best results, a 4-ply, 6-inch wide, 50-foot endless belt is recommended.

Do not use a sticky belt dressing as it collects on the pulleys and increases the pulley size, causing vibration and loss of speed.

To prevent a belt from whipping when it is used in windy conditions, drive a stake about halfway between the blower and the tractor. Place the stake so it just clears the belt when the blower is not being operated.

ELEVATING ENSILAGE AND GREEN HAY.

Use the large sprocket on the auger drive when blowing moist material (see *Adjustments* below).

See that the fan is operating at 800 to 1000 revolutions per minute.

Feed and Air Door Adjustments.

When adjusting the doors for moist material the large feed opening door (Figure 10-10-1) should be fully down in its slots and the small feed opening door about halfway open. In this initial setting the air door (Figure 10-10-2) should be completely closed.

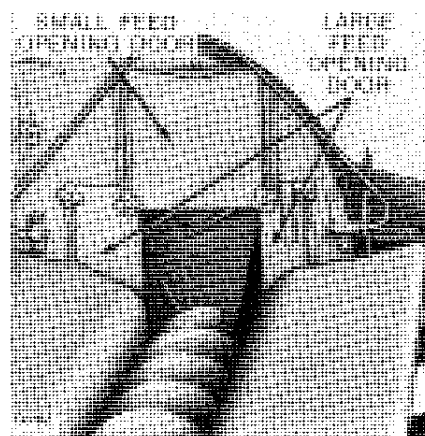


Figure 10-10-1—Feed Door Adjustment

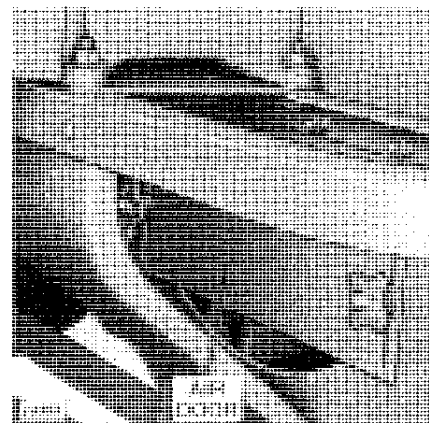


Figure 10-10-2—Air Door Adjustment

When the machine is running, gradually open the small feed opening door (Figure 10-10-1) until the fan is accepting its full capacity. After the best feed opening size has been determined, raise the air door (Figure 10-10-2) one inch at a time until the material is blowing freely and the machine has reached its peak capacity.

ELEVATING DRY HAY.

See that the fan is operating at 800 to 1000 revolutions per minute.

Feed and Air Door Adjustments.

When adjusting the doors for dry material the small feed opening door (Figure 10-10-1) should be fully down in its slots and the large feed opening door opened halfway. In this initial setting, the air door (Figure 10-10-2) should be completely closed.

When the machine is running, gradually open the large feed opening door (Figure 10-10-1) until the fan is accepting its full capacity.

After the best feed opening size has been determined, raise the air door (Figure 10-10-2) one inch at a time until the material is blowing freely and the machine has reached its peak capacity.

NOTE: Once these adjustments have been made, keep in mind that when the feed opening size is changed it may be necessary to readjust the air door to proportion the air in relation to the material.

ADJUSTMENTS

AUGER SPROCKETS.

Purpose of Different Sprockets.

The auger speed can be altered by reversing the auger sprockets illustrated in Figure 10-10-3.

When dry material is being elevated, faster auger speeds can be used. These are obtained by using the small 21-tooth sprocket.

When moist material is being elevated, slower

auger speeds are used. These are obtained by using the large 31-tooth sprocket.

In addition to the different auger speeds which result from use of the two sprockets, the auger speed will vary within certain ranges depending upon the speed at which the fan is operating. The various auger speeds are given in the table below.

AUGER SPEEDS

	21-Tooth Sprocket	31-Tooth Sprocket
Fan Speed 800 rpm	163 rpm	111 rpm
Fan Speed 1000 rpm	204 rpm	138 rpm

Reversing Sprockets.

To change from large sprocket for moist material to small sprocket for dry material, remove auger chain shield and loosen idler (Figure 10-10-3).

Remove cotter pin, nut, and washer from auger drive shaft and disengage the drive chain from the large auger sprocket.

Remove auger sprockets, turning them around and replacing them on shaft with the small sprocket inside.

Replace washer, nut, cotter pin and chain on small sprocket. Tighten idler and replace shield.

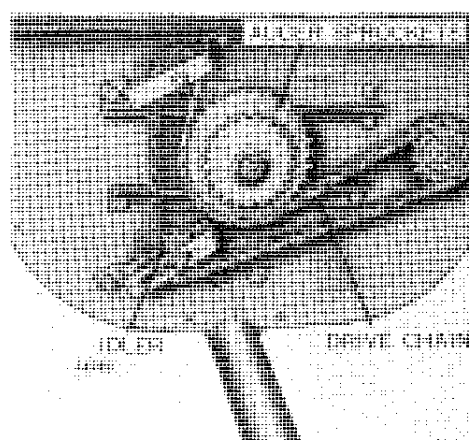


Figure 10-10-3—Sprocket Adjustment

To change from small sprocket for dry material to large sprocket for moist material, place the large sprocket on the inside where it will engage the chain.

CLUTCH AND CLUTCH LEVER.

The clutch is engaged and disengaged by operating the clutch lever (Figure 10-10-4). Moving the clutch lever away from the blower housing engages the clutch; moving the clutch lever toward the blower housing disengages the clutch.

The step-notched collar (Figure 10-10-4) is adjusted to one of three positions to keep the sliding clutch properly engaged with the stationary clutch. Rotate collar to increase or decrease tension of the clutch spring.

The clutch lever shifter yoke (Figure 10-10-4) should not bind on clutch face when engaged. Binding causes undue wear. Engage the clutch and

adjust by loosening and tightening adjusting nuts which hold yoke to rod.

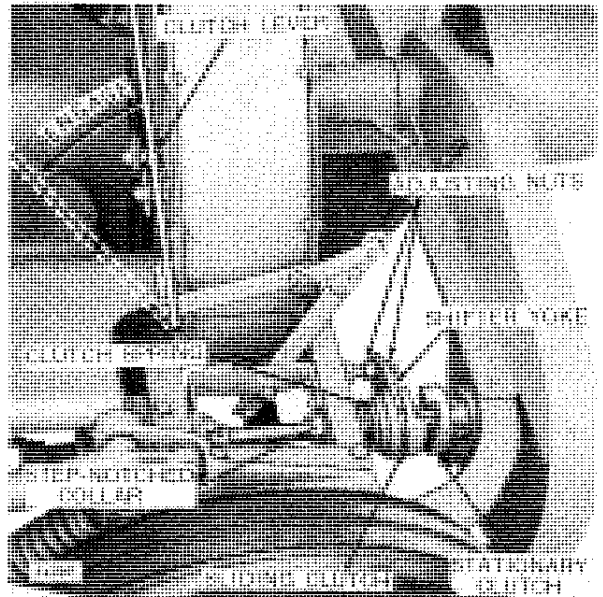


Figure 10-10-4—Clutch Adjustment

Group 15 TRACTOR AND BLOWER PULLEYS

The No. 50 Blower is designed to operate at 800 to 1000 rpm. Since many types of tractors with which the blower can be used have different pulley sizes and speeds, it is necessary to choose a blower pulley of the proper size to produce the desired 800 to 1000 rpm blower speed.

Three pulleys of different diameter are available for this purpose — 10-1/2, 12, and 13-1/2 inches.

Field complaints on blowers often can be traced to the use of a blower pulley which does not match the tractor pulley.

Listed below are a few of the most popular

tractors currently in use throughout the country. Following the name of each tractor manufacturer is the series or model of the tractor, its pulley size and pulley rpm, and the recommended blower pulley. With this information it is readily possible to choose the proper blower pulley to produce the desired 800 to 1000 rpm blower speed.

Be sure to check the table below before putting a blower in operation or when complaints of poor performance are received.

If the tractor to be used is not listed in the table below, or if the tractor pulley size or rpm are different than those listed, use the chart on the next page to determine proper pulley size.

Tractor	Tractor Pulley Size	Tractor Pulley rpm	Blower Pulley Size	Tractor	Tractor Pulley Size	Tractor Pulley rpm	Blower Pulley Size
Allis-Chalmers				Massey-Harris (Continued)			
“C”	8	1129	10-1/2	44 Series	13-1/2	863	12
“WC”	9	1170	12	55 Series	16	730	13-1/2
“WD”	9	1260	12	Minneapolis-Moline			
B. F. Avery				GTB	16	627	12
“A”	8-1/2	1035	10-1/2	“R” Series	12-1/4	933	12
Case				“U” Series	16	927	13-1/2
“D” Series	12-1/4	813	10-1/2	“Z” Series	15-1/8	786	13-1/2
“L” Series	13	779	10-1/2	Mc-C—Deering Farmall			
“S” Series	9-1/4	1078	10-1/2	“A” Series	8-1/2	1157	10-1/2
“VA” Series	10-1/4	969	10-1/2	“C”	8-1/2	1363	12
Ferguson				“H” Series	9-3/4	1019	10-1/2
TO-20	9	1358	13-1/2	“M” Series	11	899	10-1/2
Ford				W-4, O-4 & OS-4	9-3/4	1019	10-1/2
8N	9	1358	13-1/2	W-6, WD-6, O-6, O S - 6 and ODS-6	11	899	10-1/2
John Deere				W-9, WD-9, WR-9 and WDR-9	14	707	10-1/2
“A” Series	12-13/16	975	13-1/2	Oliver Row-Crop			
“B” Series	9-11/16	1250	13-1/2	“66”	11-7/8	987	13-1/2
“D”	13-1/4	900	13-1/2	“77”	11-7/8	992	13-1/2
“G”	12-7/8	975	13-1/2	“88”	11-7/8	992	13-1/2
“M” Series	7-1/4	1575	13-1/2	“99”	16-3/4	596	12
“R”	12-7/32	1000	13-1/2				
Massey-Harris							
30 Series	13-1/2	838	12				

**CHART FOR COMPUTING BLOWER PULLEYS TO OBTAIN SPEED
OF APPROXIMATELY 900 RPM WITH VARIOUS TRACTORS**

To determine the proper pulley for the blower, find the diameter of the tractor pulley, to the nearest one-half-inch at the top of the chart. Find the speed of the tractor pulley, in revolutions per minute, to the nearest 50, down the side of the

graph. Carefully trace the lines from these two figures into the center of the graph until they intersect.

The zone in which the lines intersect determines the size of pulley to use on the blower.

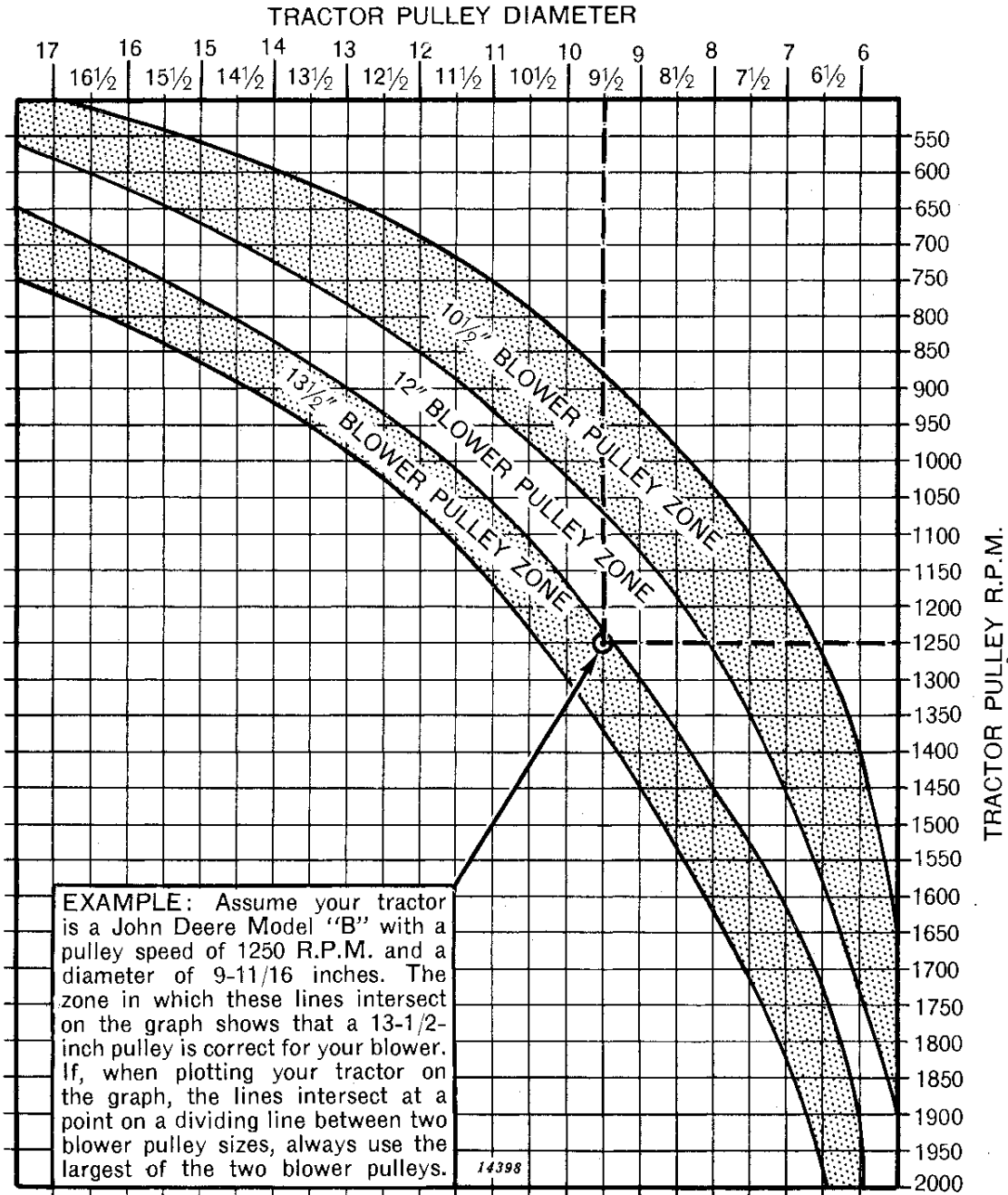


Figure 10-15-1—Pulley Chart

Section 20

TROUBLE SHOOTING

Group 5

The No. 50 Forage Blower is designed to provide rugged and efficient operation over a long period of time. The best equipment, however, can develop difficulties due to normal wear, improper operation, or neglect, and an immediate and accurate diagnosis of the trouble involved will minimize the service required.

The following chart has been prepared to help the serviceman classify difficulties and investigate their possible causes and remedies. Recognizing the problem involved is a major step in overcoming most difficulties.

BREAKAGE OF AUGER DRIVE CHAIN AND SPROCKETS

Probable Cause	Possible Remedy
Auger travel obstructed.	Remove the obstruction.
Sprockets misaligned.	Realign or replace sprockets. See Section 40, Group 10.
Sprocket bent causing it to wobble.	Replace the sprocket. See Section 40, Group 15.

FAILURE OF UNIVERSAL JOINT ASSEMBLY

Telescoping shaft twisted.	Straighten or replace the shaft. See Section 40, Group 10.
Universal joints damaged. This can be detected by their heating.	Replace all damaged or worn parts. See Section 40, Group 10.

NOISY OPERATION

Universal joints defective.	Repair or replace. See Section 40, Group 10.
Countershaft drive spring or clip striking shield bolt.	Invert or shorten shield bolt.
Fan paddles hitting housing.	Adjust fan clearance at bearing housing. See Section 50, Group 40.
Auger housing dented.	Remove dent and straighten housing.
Auger drive sprockets misaligned.	Realign or replace sprockets. See Section 40, Group 10.
Improper setting of feed opening doors and air door.	Match setting between feed opening doors and air door. See Section 10, Group 10.
Lack of lubrication.	Lubricate machine or replace defective grease fittings. See Section 30, Group 5.
V-belt slippage.	Adjust V-belt idler. See Section 50, Group 20.

IRREGULAR AUGER SPEED

Loose drive belt.	Tighten V-belt idler on auger drive belt. See Section 50, Group 20.
Clutch jaws not fully engaged.	Adjust shifter fork. See Section 50, Group 30.

Probable Cause	Possible Remedy
Clutch spring too weak.	Reset the step-notched collar or replace the spring. See Section 50, Group 30.

EXCESSIVE HEATING OF MAIN BEARING

Bearing too tight.	Loosen and properly readjust. See Section 50, Group 40.
Lack of lubrication.	Lubricate the machine. See Section 30, Group 5.
Pulley chipped and out of balance.	Replace pulley.
Blower fan arm damaged or out of balance.	Repair as necessary. See Section 50, Group 40.
Bent fan shaft.	Replace the shaft.

FEED TROUBLES

Erratic auger speed.	See "Irregular Auger Speed," page 20-5-1.
Improper feed opening and air door adjustment.	Readjust according to the material being blown. See Section 10, Group 10.

AUGER CONVEYOR TOO HEAVY TO LIFT

Spring tension adjusted too loose.	Tighten the cap screw in bottom of each lift spring plug until plug is not less than 1/8-inch away from the lift spring bracket.
Weakened lift springs.	Replace springs. See Section 50, Group 10.
Pivot bracket shafts binding or freezing to the pivot brackets.	Free the shaft and repair as necessary.

PLUGGING OF PIPES

Pipe inverted.	Assemble blower pipes properly. Place inside rounded ends of pipe flanges toward the ground with the straight inside ends upward.
Pipe dented.	Straighten or replace damaged pipe.
Pipe slanted too much.	Reposition the blower to get the pipes as nearly vertical as possible.
Air door improperly adjusted.	Adjust air door. See Section 10, Group 10.
Fan speed too slow.	Operate fan within proper speed range of 800 to 1000 rpm. See Section 10, Groups 10 and 15.
Fan speed too fast.	Operate fan within proper speed range of 800 to 1000 rpm. See Section 10, Groups 10 and 15.

Probable Cause	Possible Remedy
Plant juice or liquid preservative accumulated on the inside of pipes.	Clean pipes.
LACK OF CAPACITY	
Feed opening and air doors improperly adjusted.	Readjust the doors. See Section 10, Group 10.
Wrong auger sprocket used.	Drive the auger with the large sprocket for moist material and with the small sprocket for dry material.
Wrong fan speed.	Operate at 800 to 1000 rpm. See Section 10, Group 10.
V-belt or clutch slippage.	Tighten belt or adjust clutch. See Section 50, Groups 20 and 30.
Pipes inverted or slanted.	Straighten pipes. See Section 10, Group 10.
VIBRATION	
Out-of-round pulley.	Belt dressing accumulated on pulley. Clean pulley.
Chipped pulley.	Replace pulley. See Section 50, Group 25.
Bent or broken fan paddle.	Repair as necessary. See Section 50, Group 40.
Lost balancing bolt and washers.	Rebalance fan. See Section 50, Group 40.
Belt splice hitting pulley.	Use endless belt.



