Operator's Manual & Parts List

Olathe

MODEL 71 AERATOR
MODEL 831 POLYMER PLANTER

PUB. NO. 390.1 - 01 - 502 - 0950

THIS COMPANY RESERVES THE RIGHT TO DISCONTINUE ANY MODEL OR PRODUCT, ADD IMPROVEMENTS TO, OR CHANGE THE DESIGN AT ANY TIME WITHOUT OBLIGATION TO IMPROVE EXISTING MACHINES, EITHER BY CHANGING THE DESIGN OR ADDING NEW PARTS.

RECORD IN THE SPACE PROVIDED BELOW THE MODEL NUMBER AND THE SERIAL NUMBER OF THIS UNIT. PLEASE RETAIN THESE NUMBERS FOR FUTURE REFERENCE.

MODEL NUMBER _____ **SERIAL NUMBER** _____

THIS MANUAL COVERS MODEL 71 WITH SERIAL NO. 710113 & UP.
MODEL 831 WITH SERIAL NO. 831123 & UP.

MANUFACTURED BY:
OLATHE MANUFACTURING, INC.
100 INDUSTRIAL PARKWAY
INDUSTRIAL AIRPORT, KS. 66031
PHONE: 913-782-4396 FAX: 913-764-1473

PERFORMANCE GUARANTEE

OLATHE MANUFACTURING, INC. of Olathe, Kansas, provides warranty to the original purchaser of a new Olathe product, that the same is free from defects in workmanship or material that may cause performance failures, subject to the conditions stated herein.

The warranty is limited to a period of one (1) year from the date of purchase. If used for rental purposes, the period of time is one hundred eighty (180) days. **Olathe Manufacturing, Inc.** will replace any defective parts, exclusive of labor, with the exception of normal wear caused by usage of the machine, free of charge, F.O.B., any authorized Olathe Service Station.

This warranty does not apply to any parts that are manufactured and guaranteed by the manufacturer thereof; nor does it apply with respect to any product or part that (1) has been repaired by someone other than an authorized Olathe Service Station, (2) has had original parts removed or otherwise altered without specific authorization beforehand by **Olathe Manufacturing, Inc.** (3) has had placed on it, or attached to it, any part or product not sold or approved by **Olathe Manufacturing, Inc.** (4) has been damaged or improperly used by, or (5) has not been properly adjusted or maintained by the user.

This warranty is in lieu of and excludes all other guarantees and conditions of merchantability and fitness of purpose. Acceptance of an Olathe Product constitutes an agreement that **Olathe Manufacturing, Inc.** shall have no liability for any special or consequential damages.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

FORWARD

Read his manual carefully. Operating instructions, adjustments and periodic maintenance procedures are given so you, the owner, can keep your unit running like new and expect many years of dependable service from it. Remember, any machine, regardless of design or type, will perform only in relation to the service it receives. Regularly scheduled maintenance lowers operation costs.

The material in this manual has been prepared to aid you in ordering parts and to instruct you in the proper maintenance of this equipment for trouble free, efficient performance.

When new parts are required through normal wear or accident, contact your nearest Olathe Service Station. Many parts on Olathe equipment are standard stock items and can be purchased at local supply houses.

When ordering parts, always specify the model number and serial number of your machine, together with the correct part number, description and quantity required. Prices are subject to change without notification.

If additional information is required or should you need trained mechanic services, contact your nearest authorized Olathe Service Station.

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OPERATOR'S MANUAL & PARTS LIST

GENERAL INFORMATION

The Model 71 is a tractor mounted, 3 point hitch attachment that cuts grooves with rotating blades. The Model 71 can be used alone or with the Model 831 Polymer Planter. The Model 71 cuts the grooves, then the Model 831 deposits water absorbing polymer into the grooves at a depth of 1" to 2 1/2". A 40 HP or larger tractor is recommended.

SPECIFICATIONS

FRAME	Heavy duty steel construction, 1/4" side plates, 7 ga. top plate
SKID SHOES	Adjustable in 3/8" increments from 0 to 4"
HITCH	3 point
GEARBOX	65 HP rated
BEARINGS	2", 4 bolt flange, sealed, self-aligning
DRIVE SYSTEM	PTO Powered, Heavy duty #80 chain
BLADE SHAFT	2" CRR (8) 3/8" blade mounting plates
BLADES	48 blades, hardened, 6" centers, reversible, 6 blades per plate
DEPTH	2 1/2" rated depth with 1 1/2" blade wear
SWATH	48"
DIMENSIONS	WIDTH: 1/2" HEIGHT: 36" LENGTH: 37"
SHIPPING WEIGHT	910 lbs. with Model 831 Polymer Planter
OPTIONS	Model 831 Polymer Planter

SET UP INSTRUCTIONS

The Model 71 is shipped from the factory assembled and usually ready to mount. Upon delivery of the unit, please inspect for loose or missing parts and any damage that may have occurred in shipment. Please make any claims to the carrier.

1. Attach the two side arms with at least one stabilizer bar to the tractor.

2. The PTO shaft which connects to the tractor is a standard 13/8" splined yoke. When new, the spring locking pin on the PTO should be worked in and out several times. A light film of grease worked into the pin should allow it to snap out freely.

3. Connect the PTO shaft. When connecting, hold the locking pin as you slip the yoke over the splined tractor shaft. When in proper position, the locking pin will spring out and lock the shafts together.

4. Raise and lower the unit. Check the length of the PTO, it may have to be cut down to achieve maximum height. (No more than 15 degrees.)

5. Attach the drag mat to the unit with the hardware provided.

BLADE ROTATION

The Model 71 is shipped from the factory with the gearbox mounted to produce a forward rotation. An advantage of forward rotation is that it makes a cleaner cut compared with reverse rotation. A feature of the Model 71 allows a choice of blade direction by reversing the mounting position of the gearbox. The decision as to blade rotation should be made with consideration to the condition of the turf.

REVERSING BLADE ROTATION

To reverse the blade rotation of your unit, follow the instructions outlined below.

1. Remove the PTO from the gearbox shaft.
2. Remove the gearbox from the frame by removing the (4) four bolts holding the gearbox to the frame.
3. Stand the gearbox on the input shaft and remove the relief valve and drain plug.
4. Replace the relief valve and drain plug in reverse positions so the relief valve is located on top and the drain plug is on bottom of the gearbox when reinstalled on the machine.
5. Remount the gearbox to the main frame using the original mounting bolts and reconnect the PTO shaft.
6. Replace any of the gearbox lubricant lost during the process. See maintenance section.
7. Flip the blades on the plate so that the point is to the front instead of the rear.
8. Move the idler sprocket from the slot it is mounted on, to the opposite end of the slot. Mount the idler sprocket so it is on the outside of the chain. When reversing rotation this procedure keeps the idler sprocket on the slack side of the chain.

OPERATING CAUTIONS AND INSTRUCTIONS

Safety is of the utmost concern to everyone. A concentrated effort is made to build safety into all OLATHE equipment. The following guide is recommended by OLATHE MANUFACTURING to provide operator safety.

1. Never engage the PTO with the blades in the ground.
2. If excessive vibration is encountered during operation, stop immediately. This vibration is normally caused by low PTO speed or the blade cutting depth is too deep. The PTO speed should be maintained at 540 RPM. Continued operation under excessive vibration can seriously damage the PTO shaft, gearbox, drive chain and the blade shaft.
3. Never attempt to make turns with the unit in cutting position.
4. When making turns, raise the unit just high enough to clear the surface. Lifting too high will damage PTO universal joints. (No more than 15 degrees.)
5. If extremely dry or hard soil conditions are encountered, tractor speed and/or blade cutting depth should be reduced.
6. When starting the unit, first raise off the ground. With engine at idle speed, engage the PTO then increase tractor RPM to 540. With tractor moving at 3 to 5 MPH gradually lower the unit to cutting position.
7. If any of the guards are removed for service work, "replace them". Guards are built for your protection.
8. DO NOT place hands or feet under or near the blades while the unit is running.
9. Immediately after hitting a hard object, stop the unit and inspect the blades, blade bolts and holders for damage.

ADJUSTMENTS

1. **BLADE DEPTH:** The blade depth is adjusted by the height of the skid shoes in 3/8" increments. To change simply move the skid shoes to the appropriate hole for desired depth and fasten with existing hardware. Normal operating depth is 1" to 2 1/2". There is adjustment in the skid shoes to go 4" deep but this has been allowed for blade wear only.

2. **BLADE WEAR:** The blades can be rotated 180 degrees to prolong the life of the blades. Once the diameter is approximately 16" o.d. the blades must be flipped or replaced. This is approximately 1 1/2" off each end. See the diagram in Figure 1.

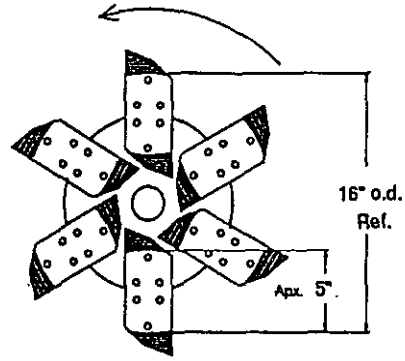

FIG. 1

Chain tension Adjustment

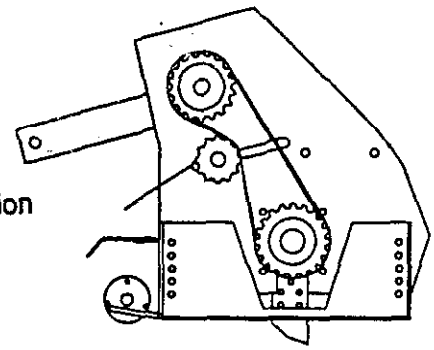

FIG. 2

3. **CHAIN TENSION:** The tension of the drive chain can be adjusted by moving the idler sprocket on the slot it is mounted (See Figure 2). A 1/8" deflection is recommended. Do not over tighten, this will cause chain wear. Do not allow the chain to remain loose, this will cause sprocket wear.

PREVENTIVE MAINTENANCE

Regular maintenance will result in a smoother running, more efficient, longer lasting machine. If worn or damaged parts are found in your inspection, replace them immediately. Remember . . . . any machine, regardless of design or type will perform only in relation to the service it receives. Regularly scheduled maintenance lowers operating costs.

1. Check gearbox oil level every 40 hours of operation. Add good quality 80-90 weight oil. Fill gearbox to level of side filler plug. Oil should seep from the opening when the side plug is removed. Change oil after first 100 hours of operation. Thereafter oil should be changed every 2500 hours of operation.

2. Keep the drive chain lightly lubricated with grease or oil. Maintain proper tension at all times.

3. Lubricate the PTO grease fitting every 40 hours of use.

4. A general inspection should be made after each use. If worn or damaged parts are found, replace them immediately. Check for loose bolts, nuts and unusual noises.

5. There are 4 bearings on the Model 71, two on the roller shaft and two on the blade shaft. The bearings are self sealed and self aligning. Too much grease can cause overheating. Bearings should be greased as often as necessary to maintain a slight leakage on the seals. The bearings are greased with a No. 2 consistency Lithium based grease.

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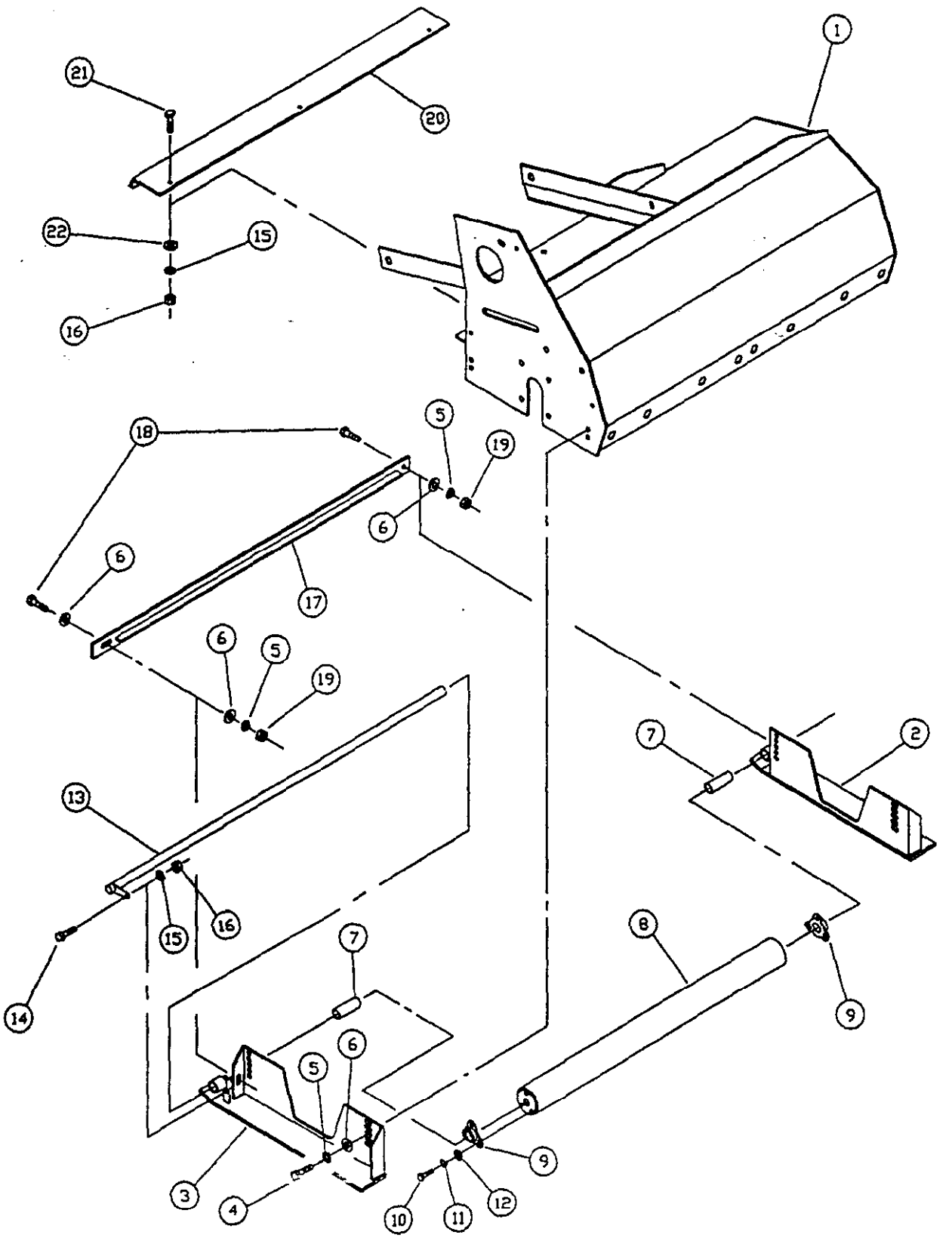
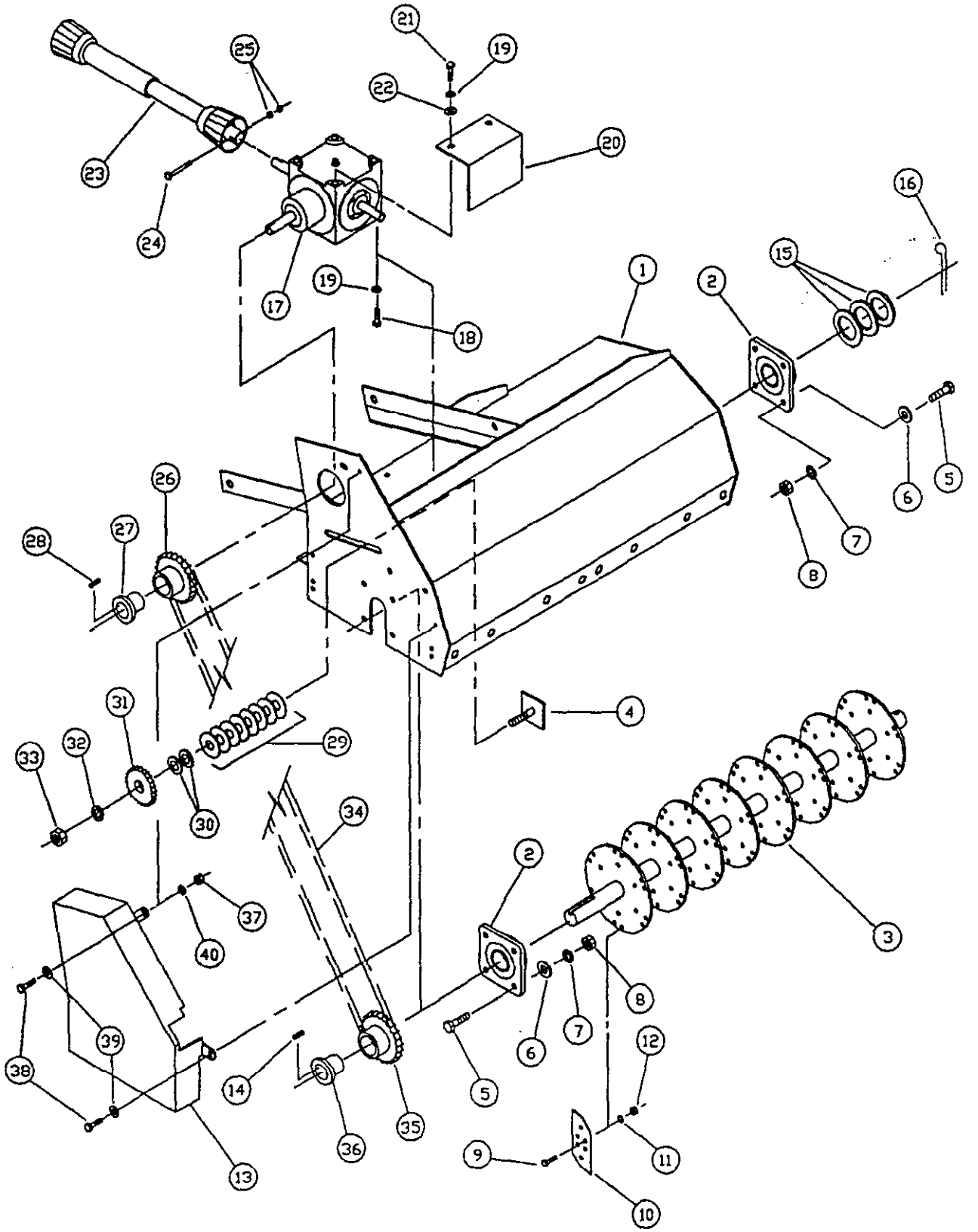
MAIN FRAME ASSEMBLY



MAIN FRAME ASSEMBLY

REF. NO.	PART NUMBER	PART NAME AND DESCRIPTION	QTY.
1.	71-005-0203	MAIN FRAME	1
2.	71-005-0222	R.H. SKID	1
3.	71-005-0212	L.H. SKID	1
4.	01-178-0810	HHCS, 1/2" - 13 x 1-1/4"	4
5.	01-166-0810	LOCK WASHER, 1/2"	6
6.	01-166-0800	FLAT WASHER, 1/2"	7
7.	71-004-0821	ROLLER SPACER, 3-5/16" Lg.	2
8.	71-005-0261	ROLLER	1
9.	01-100-0260	BEARING, 1"	2
10.	01-178-0510	HHCS, 5/16" - 18 x 1-1/4"	6
11.	01-166-0510	LOCK WASHER, 5/16"	6
12.	01-166-0500	FLAT WASHER, 5/16"	6
13.	71-005-0251	ROLLER SHAFT	1
14.	01-178-0606	HHCS, 3/8" - 16 x 3/4"	1
15.	01-166-0610	LOCK WASHER, 3/8"	4
16.	01-188-0616	HEX NUT, 3/8" - 16	4
17.	71-005-0291	ROLLER SCRAPER	1
18.	01-178-0814	HHCS, 1/2" - 13 x 1-3/4"	2
19.	01-188-0813	HEX NUT, 1/2" - 13	2
20.	71-004-0321	DEFLECTOR	1
21.	01-178-0608	HHCS, 3/8" - 16 x 1"	3
22.	01-166-0600	FLAT WASHER, 3/8"	3

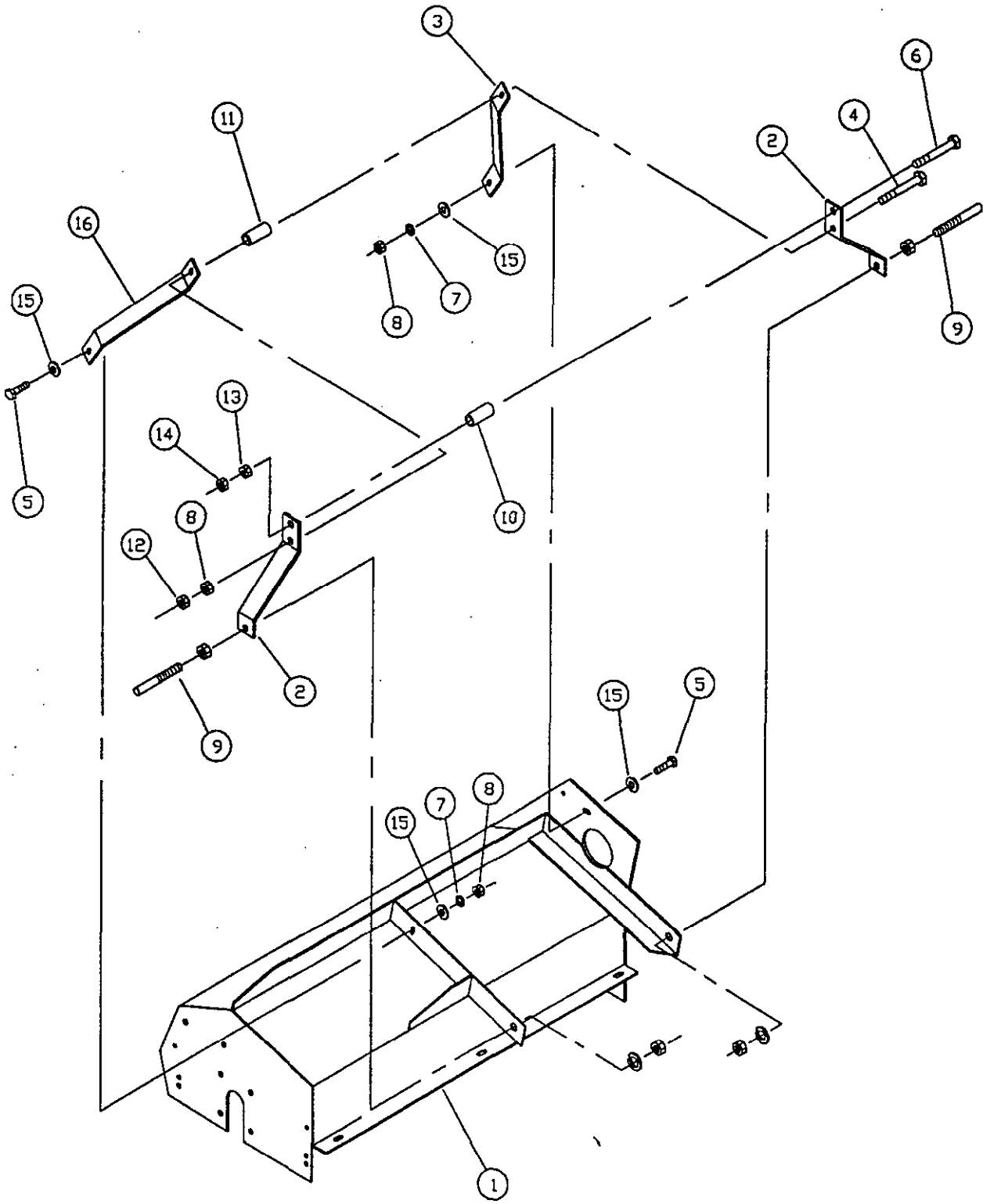
MAIN FRAME ASSEMBLY (Cont.)



MAIN FRAME ASSEMBLY (Cont.)

ITEM NO.	PART NUMBER	PART NAME AND DESCRIPTION	QTY.
1.	71-005-0203	MAIN FRAME	REF
2.	01-100-0430	BEARING, 2"	2
3.	71-005-0242	BLADE SHAFT	1
4.	71-005-0281	IDLER BOLT	1
5.	01-178-1016	HHCS, 5/8" - 11 x 2"	8
6.	01-166-1000	FLAT WASHER, 5/8"	8
7.	01-166-1010	LOCK WASHER, 5/8"	8
8.	01-188-1011	HEX NUT, 5/8" - 11	8
9.	01-178-0710	HHCS, 7/16" - 14 x 1-1/4"	144
10.	71-004-0601	BLADE	48
11.	01-166-0710	LOCK WASHER, 7/16"	144
12.	01-188-0714	HEX NUT, 7/16" - 14	144
13.	71-005-0232	CHAIN GUARD	1
14.	76-004-2811	KEY, 1/2" Sq. x 2-1/2"	1
15.	01-168-3210	MACHINERY BUSHING, 2" ID x 10 Ga.	3
16.	01-151-0160	COTTER PIN, 3/16" x 3"	1
17.	01-267-0020	GEARBOX	1
18.	01-178-0810	HHCS, 1/2" - 13 x 1-1/4"	4
19.	01-166-0810	LOCK WASHER, 1/2"	6
20.	83-004-0361	SHIELD	1
21.	01-178-0808	HHCS, 1/2" - 13 x 1"	2
22.	01-166-0800	FLAT WASHER, 1/2"	2
23.	01-282-0960	PTO	1
24.	01-178-0526	HHCS, 5/16" - 18 x 3-1/4"	1
25.	01-188-0518	HEX NUT, 5/16" - 18	2
26.	01-262-0060	SPROCKET, 80Q18	1
27.	01-260-0140	BUSHING, 1-3/8"	1
28.	71-005-0271	KEY, 5/16 Sq. x 2-3/16"	1
29.	01-166-1200	FLAT WASHER, 3/4"	8(VAR)
30.	01-168-1214	MACHINERY BUSHING, 3/4" ID x 14 Ga.	2(VAR)
31.	01-262-0860	SPROCKET, HB80A12	1
32.	01-166-1210	LOCK WASHER, 3/4"	1
33.	01-188-1210	HEX NUT, 3/4" - 10	1
34.	71-004-0811	DRIVE CHAIN, #80 - 50 Pitches	1
	01-251-0180	CONNECTING LINK	1
	01-251-0170	OFFSET LINK	1
35.	01-262-0880	SPROCKET, 80Q20	1
36.	01-260-1720	BUSHING, 2"	1
37.	01-188-0616	HEX NUT, 3/8" - 16	1
38.	01-178-0608	HHCS, 3/8" - 16 x 1"	3
39.	01-166-0600	FLAT WASHER, 3/8"	3
40.	01-166-0610	LOCK WASHER, 3/8"	1

HITCH ASSEMBLY

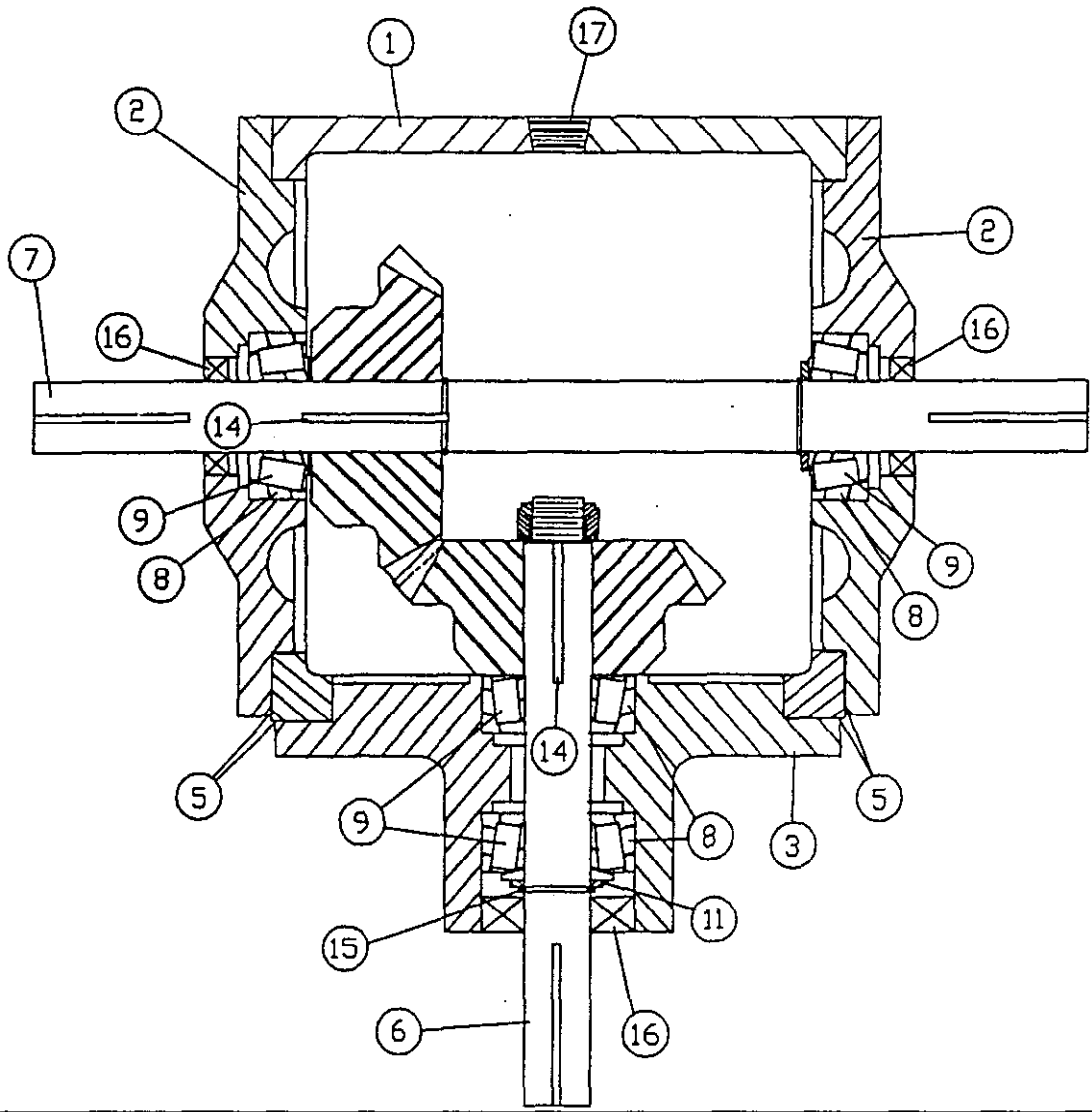


HITCH ASSEMBLY

REF. NO.	PART NUMBER	PART NAME AND DESCRIPTION	QTY.
1.	71-005-0203	MAIN FRAME	REF
2.	83-004-0291	ARM HITCH MOUNT	2
3.	71-004-0791	3 PT. BRACKET, L.H.	1
4.	01-178-0840	HHCS, 1/2" - 13 x 5"	1
5.	01-178-0812	1/2" - 13 x 1-1/2"	2
6.	01-178-1240	HHCS, 3/4" - 10 x 5	1
7.	01-166-0810	LOCK WASHER, 1/2"	2
8.	01-188-0813	HEX NUT, 1/2" - 13	3
9.	01-252-0010	HITCH PIN w/Nuts & Lock Washer	2
10.	83-004-0381	TOP SPACER, 2-5/8" Lg.	1
11.	83-004-0391	BOTTOM SPACER, 2-1/8" Lg.	1
12.	01-191-0813	JAM NUT, 1/2" - 13	1
13.	01-188-1210	HEX NUT, 3/4" - 10	1
14.	01-191-1210	JAM NUT, 3/4" - 10	1
15.	01-166-0800	FLAT WASHER, 1/2"	4
16.	71-004-0801	3 PT. BRACKET, R.H.	1

GEARBOX ASSEMBLY

01-267-0020



REF. NO.	PART NUMBER	PART NAME AND DESCRIPTION	QTY.
1.	01-267-0210	HOUSING	1
2.	01-267-0270	CAP - OPEN	2
3.	01-267-0280	HOUSING - PINION	1
4.	01-267-0180	GEAR - BEVEL	2
* 5.	01-267-0290	GASKET	15(REF)
6.	01-267-0110	PINION SHAFT	1
7.	01-267-0120	CROSS SHAFT	1
8.	01-103-0150	BEARING - CUP	4
9.	01-102-0140	BEARING - CONE	4
10.	01-178-0608	HHCS, 3/8" - 16 x 1"	18
11.	01-267-0300	SPACER	2
12.	01-267-0310	WASHER	1
* 13.	01-192-0210	NUT - SELF LOCKING	1(REF)
* 14.	01-267-0320	KEY	2(REF)
* 15.	01-267-0330	RETAINING RING	3(REF)
16.	01-267-0130	SEAL KIT	1
* 17.	01-451-0010	PIPE PLUG	2(REF)
* 18.	01-405-0480	SEAL	1(REF)
* 19.	01-405-0470	SEAL	2(REF)

* These items are included in seal kit Item #16 (01-267-0130)

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GENERAL INFORMATION

The Model 831 Polymer Planter makes it both practical and feasible to utilize long - lasting water absorbing polymers in the soil to cut down on the amount and frequency of watering. The polymer forms a water reservoir, with the plant roots growing through it absorbing water as needed. The Model 831 plow blades deposit the Polymer into the slits made by the Model 71. A drag mat then covers the slits.

SPECIFICATIONS

FRAME	Heavy duty welded steel construction
DIMENSIONS	Height: 37" Width: 57" Length: 45"
WEIGHT	260 lbs.
THATCHER SWATH	48"
PLOW BLADES	8 blades on 6" centers, aligned directly behind thatcher blades, 5/16" plate
POLYMER BOX	14 Gauge, all welded steel construction
HOPPER CAPACITY	150 lbs. of cross-linked polyacrylamide(polymer)
SIGHT GLASS	(2) Lexan plastic, 3" x 9"
HOPPER AUGER	1" shaft, 4 1/4" paddles, serrated disc type, calibrated to ground speed
POLYMER TUBES	Delivers polymer to 8 feed chutes on the back of the plow blades, clear vinyl, 1/2" diameter
BEARINGS	Self sealed throughout
DRIVE	Ground powered, #40 chain. This drives the auger shaft.
FEED RATE	Slide base, adjustable from 20 to 250 lbs. per acre
DRAG MAT	48" x 36"
FEED SHUT OFF	Mechanical, spring loaded, shuts off when unit lifts off the ground
AUGER DRIVE	Wheel ground powered, 3/8" plate, 11 points, #40 chain to hopper auger

SET UP INSTRUCTIONS

Please inspect the unit for loose or missing parts and any damages that may have occurred in shipment. Please make any claims immediately to the carrier. If the Model 831 is ordered with the Model 71, it will already be mounted to it. If ordered separately, the planter must be field mounted to the Aerator. Use the following instructions to mount. Refer to Fig. 3 while mounting.

1. Fasten the plow blades to the rear of the Model 71 with hardware furnished. Use a straight edge to line up the plow blades to the Aerator blades. The Aerator shaft may have to be moved to line up. If the Aerator shaft is moved the sprocket may have to be moved to realign with the gearbox sprocket. The plow blades should be adjusted so the tips are 3/8" higher than the tips of the Model 71 Aerator blades.

2. Connect the Mounting Arms on the Model 831 to the holes provided in the sides of the Model 71 Aerator. Attach using the hardware furnished with the unit.

3. Attach the clear vinyl tubes to the plow blades and to the tubes on the bottom of the planter box.

4. Block the Model 71 up off the floor until the Drive Arm on the Model 831 falls to the bottom of the pivot slot. Attach the end of the 15" long spring to the eye bolt. Pull the eye bolt through the mounting bracket welded on the Mounting Arms. Place a nut on the end of the eye bolt and tighten until the spring has a small gap (1/16") between the coils. Once adjustment is achieved place a second nut on the eye bolt and jam the two nuts together. Remove the blocks and place the unit on the ground.

5. Mount the drag mat to the unit with the hardware provided.

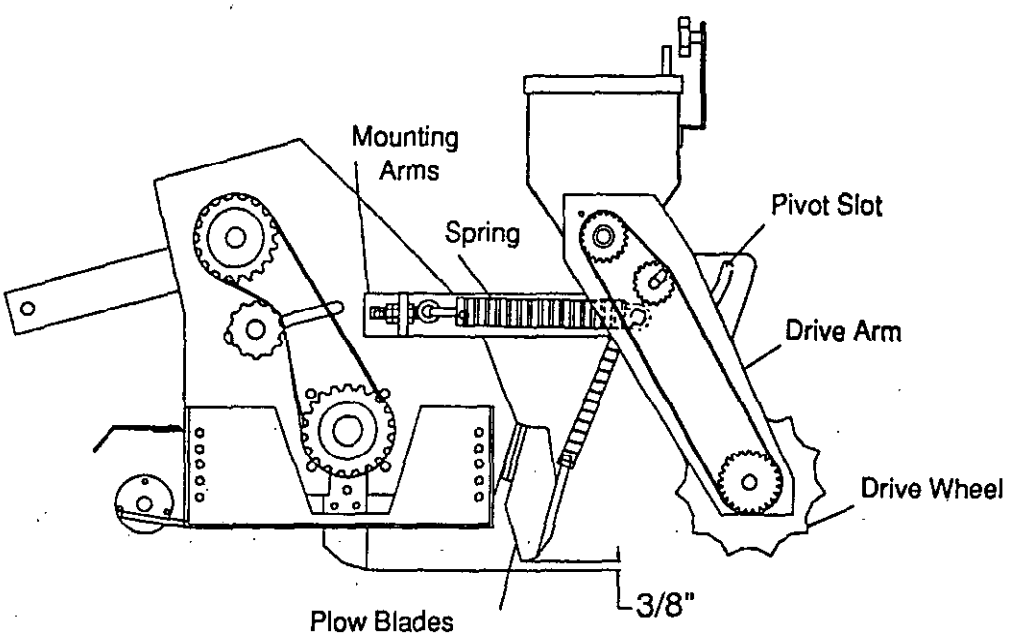

FIG. 3

OPERATING CAUTIONS

Read and understand all operating and safety instructions. Safety is of utmost concern to everyone. A concentrated effort is made to build safety into all Olathe equipment.

1. Before each use check to be sure that all bolts and nuts are tight.

2. Keep inside the box as dry as possible. Moisture may cause polymer left in the box to expand causing blockage.

3. If the guard is removed for service work "replace it". Guards are built for your protection.

4. Periodically check the clear vinyl delivery tubes for blockage.

5. Check regularly that the slide mechanism moves freely as the Drive Arm pivots up and down (See Fig. 4). As the unit is lowered the Drive Wheel comes in contact with the ground. It lowers until the Delivery Rate Handle (See Fig. 4) hits the adjustment tube for the desired setting. If the assembly doesn't pivot freely the amount of polymer being delivered may be affected. Check the slide for build up of dirt or debris.

6. Inspect the condition and tension of the drive chain before each use.

OPERATING INSTRUCTIONS

1. Use the manufactures recommendations on the amount of polymer to be used. This information should be obtained when purchasing the polymer.

2. Determine the correct delivery rate setting. Move the tube and knob to the desired setting and secure.

3. Fill the hopper.

4. Lower the Model 71/831 and test the operation on a patch of ground, checking blade depth and approximate amount of polymer being dropped.

ADJUSTMENTS

1. **CHAIN TENSION:** The tension of the drive chain can be adjusted by moving the idler sprocket on the slot it is mounted (See Fig. 4). A 1/8"deflection is recommended. DO NOT over tighten, this will cause chain wear. Do not allow the chain to remain loose, this will cause sprocket wear.

2. **DELIVERY RATE:** The rate of polymer being planted is determined by the setting of the adjustment knob located by the arc decal(0-6) (See Fig. 4). Move the tube and knob to desired setting and secure.

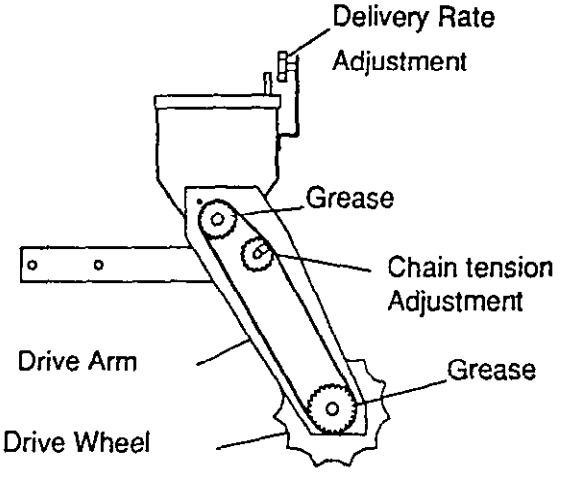

FIG. 4

3. **BLADE DEPTH:** As the blades on the Model 71 wear, the plow blades on the Model 831 must be moved. The plow blades must be approximately 3/8" higher than the Model 71 blades (See Fig. 3 under Set Up Instructions). To check, block up the Model 71 on a flat surface. Rotate the blade shaft until the blade is straight with the ground, then check the dimensions. The plow blades can be moved up or down on the slots they are mounted on.

PREVENTIVE MAINTENANCE

Regular maintenance will result in a smoother running, more efficient, longer lasting machine. If worn or damaged parts are found in your inspection, replace them immediately. Remember . . . any machine, regardless of design or type will perform only in relation to the service it receives. Regularly scheduled maintenance lowers operating costs.

1. A general inspection should be made before and after each use. Check for loose nuts, bolts and unusual noises.

2. LUBRICATION: There are two grease zerks on the Drive Arm. One below the top sprocket and one located behind the drive wheel sprocket. Grease every 50 hours of operation or as needed. Use a Lithium/NLGI Grade 2 lubricant.

3. Dirt and debris should be washed off after each use.

4. Keep the drive chain lightly lubricated with grease or oil. Maintain proper tension on the chain at all times.

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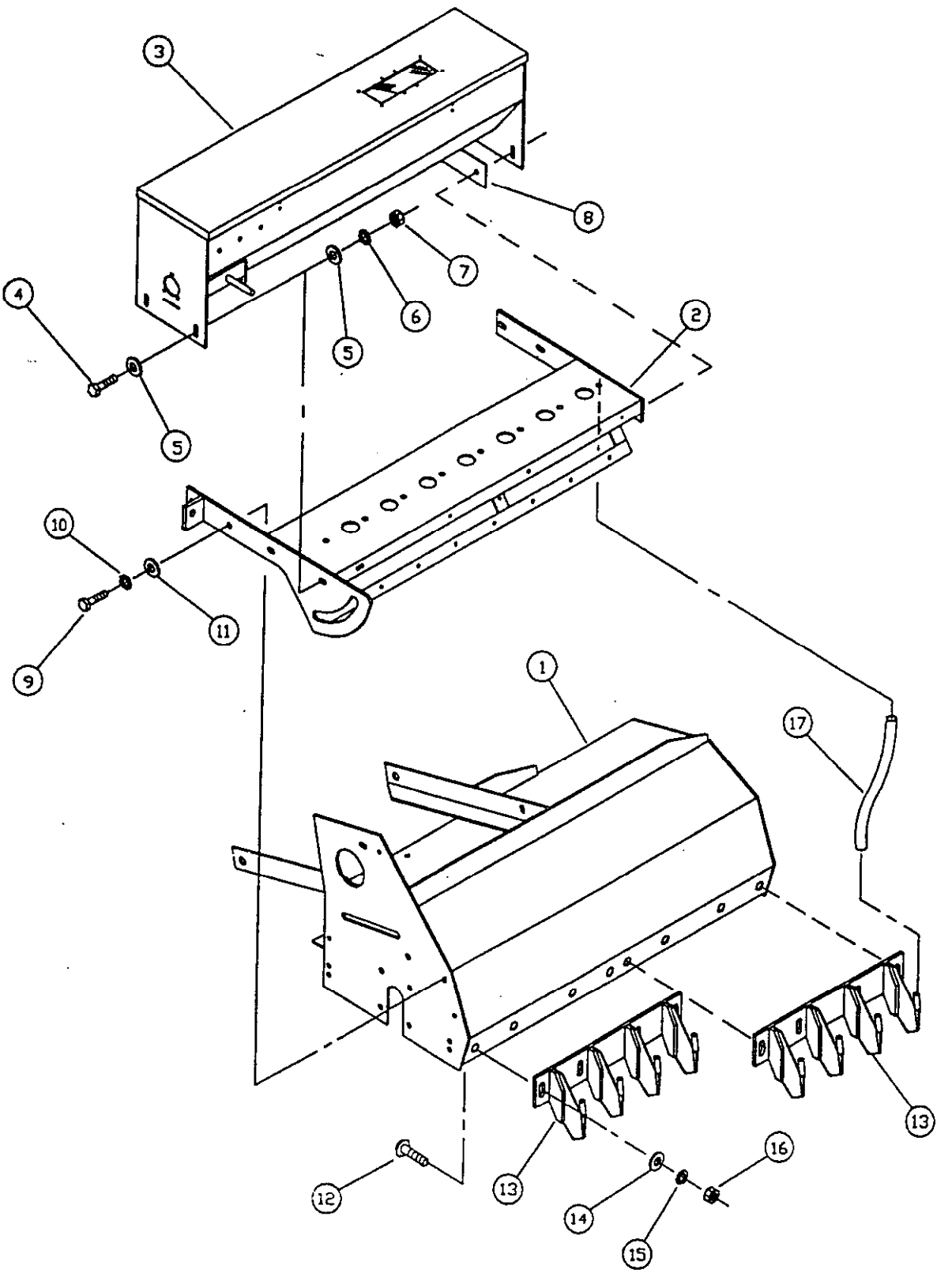
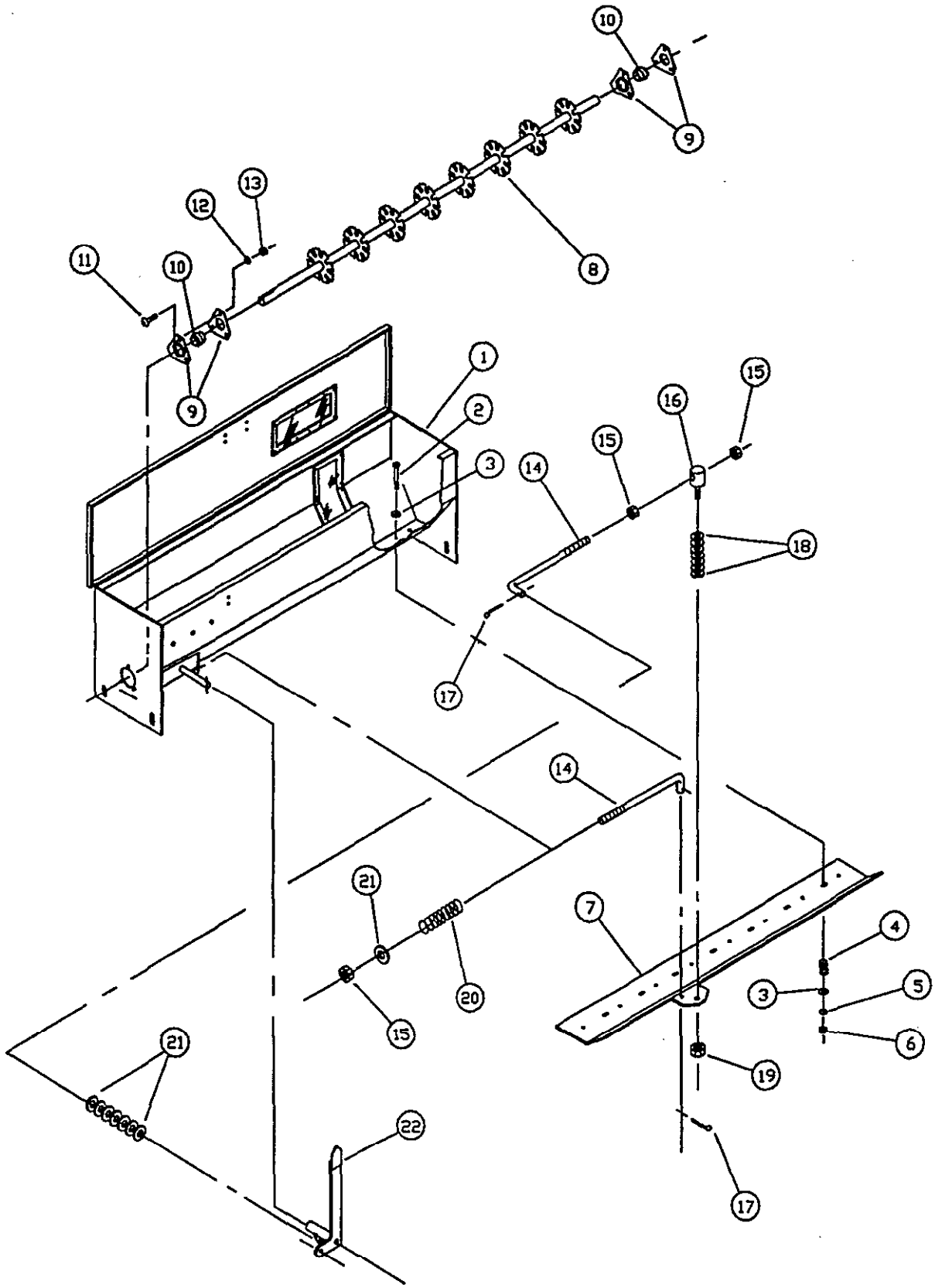
MAIN FRAME ASSEMBLY



MAIN FRAME ASSEMBLY

ITEM NO.	PART NUMBER	PART NAME AND DESCRIPTION	QTY.
1.	71-005-0203	MODEL 71 MAIN FRAME	REF
2.	83-105-1102	SEEDER FRAME	1
3.	83-105-1112	SEEDER BOX	1
4.	01-178-0812	HHCS, 1/2" - 13 x 1-1/2"	4
5.	01-166-0800	FLAT WASHER, 1/2"	8
6.	01-166-0810	LOCK WASHER, 1/2"	4
7.	01-188-0813	HEX NUT, 1/2" - 13	4
8.	83-104-1441	SEEDER SHIM, Use Only When Necessary	2(REF)
9.	01-178-1014	HHCS, 5/8" - 11 x 1-3/4"	4
10.	01-166-1010	LOCK WASHER, 5/8"	4
11.	01-166-1000	FLAT WASHER, 5/8"	4
12.	01-173-1220	CARRIAGE BOLT, 3/4" - 10 x 2-1/2"	8
13.	83-105-1121	BLADE ASSEMBLY	2
14.	01-166-1200	FLAT WASHER, 3/4"	8
15.	01-166-1210	LOCK WASHER, 3/4"	8
16.	01-188-1210	HEX NUT, 3/4" - 10	8
17.	83-104-1831	HOSE	8

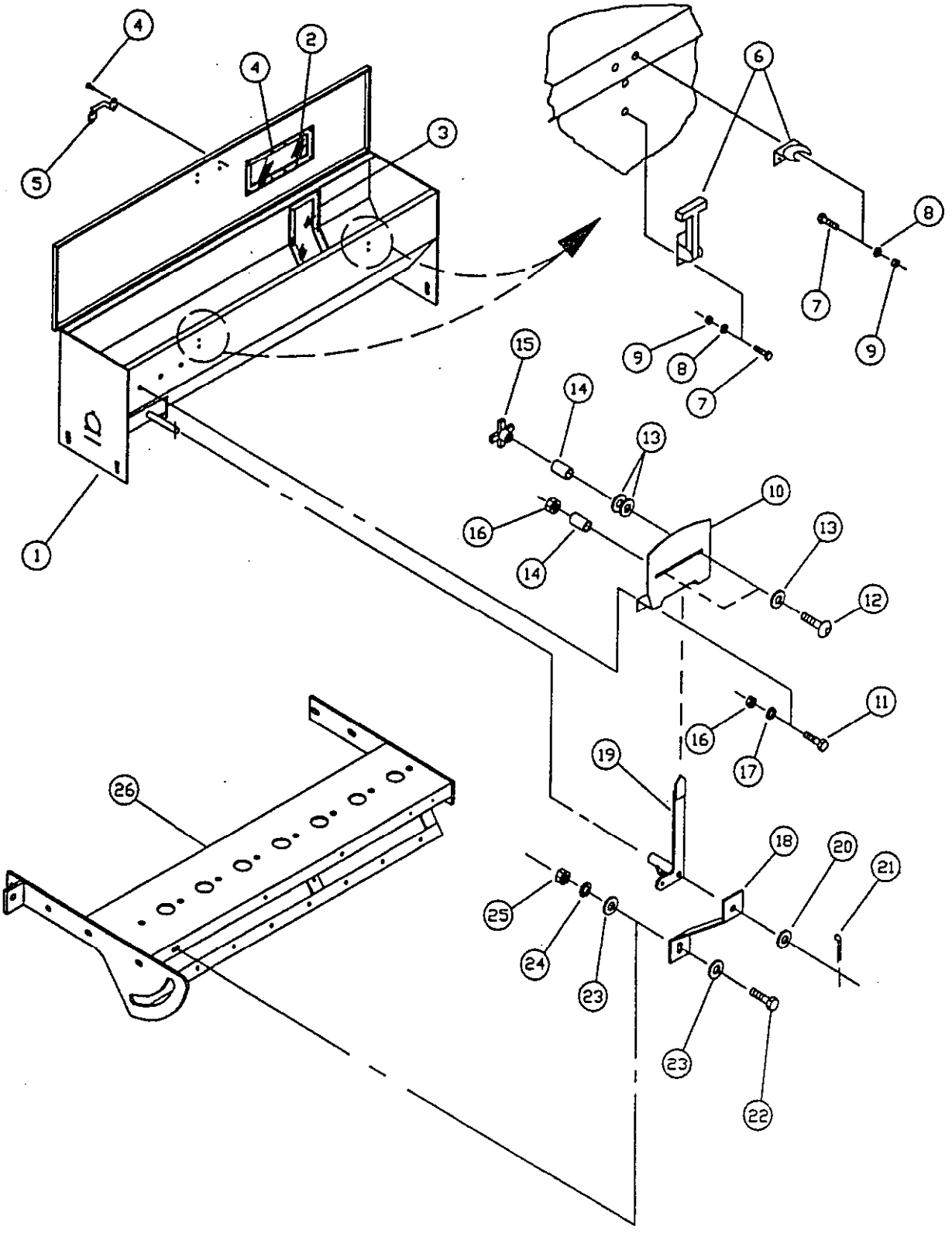
SEEDER BOX ASSEMBLY



SEEDER BOX ASSEMBLY

REF. NO.	PART NUMBER	PART NAME AND DESCRIPTION	QTY.
1.	83-105-1112	SEEDER BOX	REF
2.	01-158-1110	SHOULDER BOLT, 1/4" x 1-1/4"	7
3.	01-169-0020	FLAT WASHER, #10	7
4.	01-261-0060	SPRING, 5/8" OD x 1"	7
5.	01-169-0010	LOCK WASHER, #10	7
6.	01-188-0332	HEX NUT, 3/16" - 32	7
7.	83-105-1131	SEEDER SLIDE	1
8.	83-105-1191	AUGER SHAFT	1
9.	01-100-0460	BEARING HOUSING	4
10.	01-100-0450	BEARING, 1"	2
11.	01-173-0506	CARRIAGE BOLT, 5/16" - 18 x 3/4"	6
12.	01-166-0510	LOCK WASHER,, 5/16	6
13.	01-188-0518	HEX NUT, 5/16" - 18	6
14.	82-004-0331	SPRING ROD	2
15.	01-188-0616	HEX NUT, 3/8" - 16	3
16.	91-004-0731	ROD END JOINT	1
17.	01-151-0100	COTTER PIN, 3/16" x 1"	2
18.	01-166-0820	"SAE" FLAT WASHER, 1/2"	7
19.	01-189-0813	LOCK NUT, 1/2" - 13	1
20.	01-261-0620	SPRING, 5" Lg.	1
21.	01-166-0600	FLAT WASHER, 3/8"	1
22.	83-105-1141	SEEDER LEVER	1

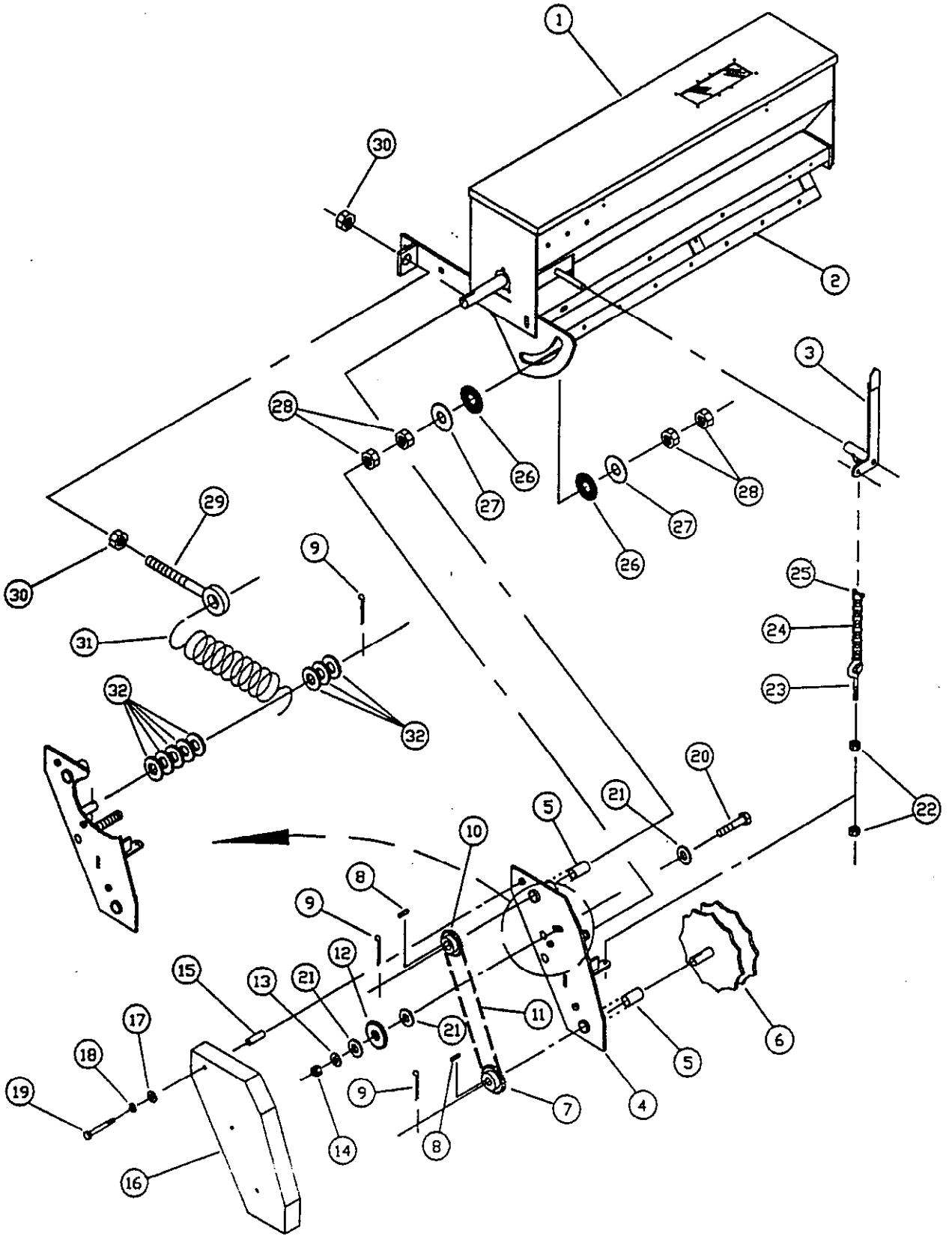
SEEDER BOX ASSEMBLY (Cont.)



SEEDER BOX ASSEMBLY (Cont.)

REF. NO.	PART NUMBER	PART NAME AND DESCRIPTION	QTY.
1.	83-105-1112	SEEDER BOX	REF
2.	83-104-1371	SEED WINDOW (Top)	1
3.	83-104-1361	SEED WINDOW (Side)	1
4.	01-161-0080	POP RIVET, 3/16" x 5/16"	20
5.	01-256-0140	HANDLE	1
6.	01-270-1350	LATCH	2
7.	01-158-0150	SHCS, #10 - 24 x 1/2"	8
8.	01-166-0310	LOCK WASHER, #10	8
9.	01-192-0010	HEX NUT, #10 - 24	8
10.	83-104-1331	DECAL BRACKET	1
11.	01-178-0608	HHCS, 3/8" - 16 x 1"	3
12.	01-173-0612	CARRIAGE BOLT, 3/8" - 16 x 1-1/2"	2
13.	01-166-0600	FLAT WASHER, 3/8"	3
14.	83-104-1761	GAUGE TUBE	2
15.	01-256-0130	KNOB	1
16.	01-188-0616	HEX NUT, 3/8" - 16	4
17.	01-166-0610	LOCK WASHER, 3/8"	3
18.	83-104-1811	SEED ARM BRACE	1
19.	83-105-1141	SEEDER LEVER	REF
20.	01-166-1000	FLAT WASHER, 5/8"	1
21.	01-151-0100	COTTER PIN, 3/16" x 1"	1
22.	01-178-0812	HHCS, 1/2" - 13 x 1-1/2"	1
23.	01-166-0800	FLAT WASHER, 1/2"	2
24.	01-166-0810	LOCK WASHER, 1/2"	1
25.	01-188-0813	HEX NUT, 1/2" - 13	1
26.	83-105-1102	SEEDER FRAME	REF

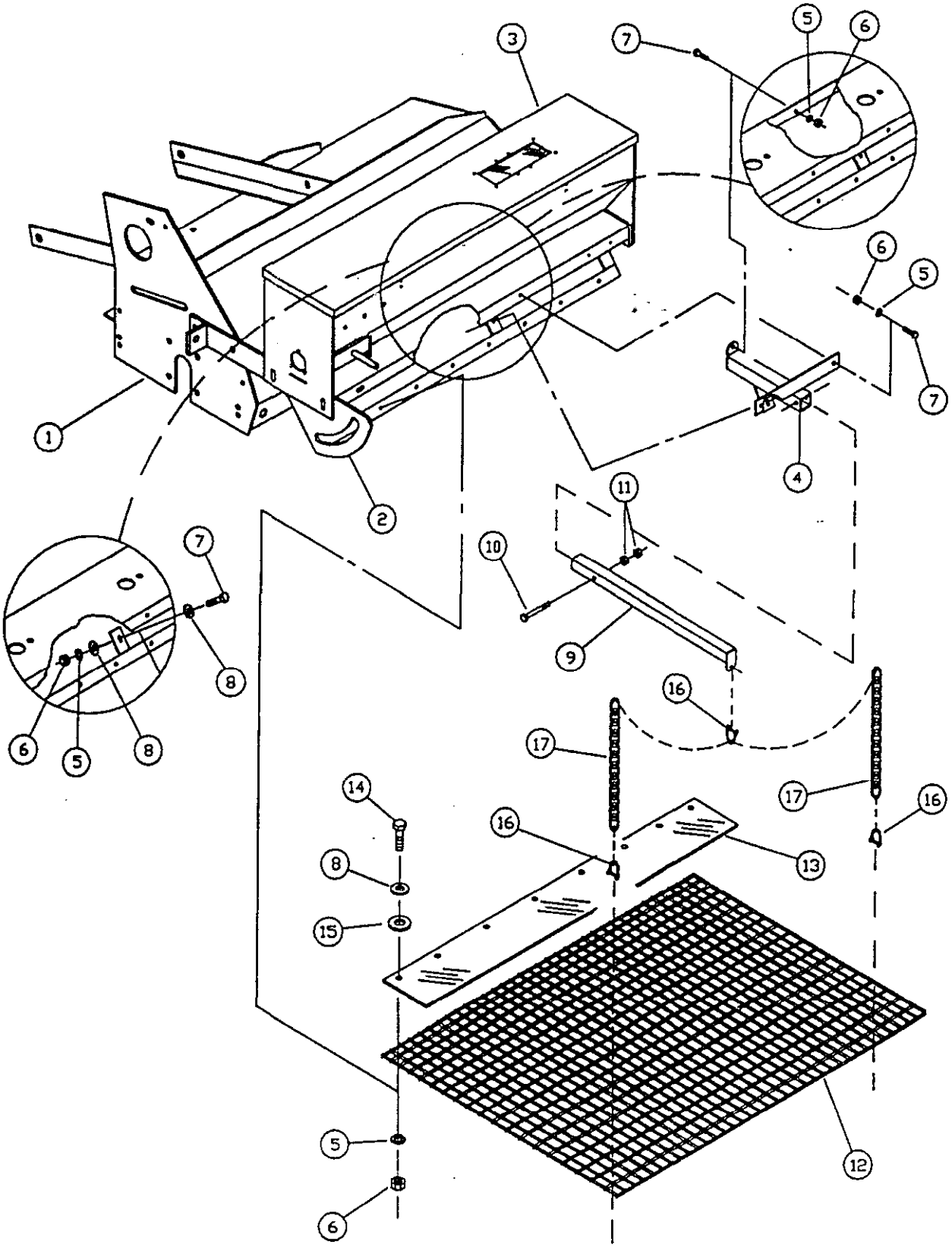
DRIVE ASSEMBLY



DRIVE ASSEMBLY

REF. NO.	PART NUMBER	PART NAME AND DESCRIPTION	QTY.
1.	83-105-1112	SEEDER BOX	REF
2.	83-105-1102	SEEDER FRAME	REF
3.	83-105-1141	SEEDER LEVER	REF
4.	83-105-1151	DRIVE ARM	1
5.	01-125-0060	BRONZE BUSHING	2
6.	83-105-1181	DRIVE WHEEL	1
7.	01-262-0950	SPROCKET, 40-24 x 1"	1
8.	48-004-1931	KEY, 1/4" Sq. x 7/8"	2
9.	01-151-0020	COTTER PIN, 3/16" x 2"	2
10.	01-262-0940	SPROCKET, H40-20 x 1"	1
11.	83-104-1801	DRIVE CHAIN, #40 - 102 Pitches	1
	01-251-0210	CONNECTING LINK	1
12.	01-262-0290	SPROCKET (Idler), HB40A17 x 5/8"	1
13.	01-166-1010	LOCK WASHER, 5/8"	1
14.	01-188-1011	HEX NUT, 5/8" - 11	1
15.	83-104-1861	CHAIN GUARD SPACER, 2.125" Lg.	2
16.	83-105-1161	CHAIN GUARD	1
17.	01-166-0600	FLAT WASHER, 3/8"	3
18.	01-166-0610	LOCK WASHER, 3/8"	3
19.	01-178-0614	HHCS, 3/8" - 16 x 2-3/4"	3
20.	01-178-1024	HHCS, 5/8" - 11 x 3"	1
21.	01-166-1000	FLAT WASHER, 5/8"	3
22.	01-188-0616	HEX NUT, 3/8" - 16	2
23.	01-171-0030	EYE BOLT, 3/8" - 16 x 3-3/4"	1
24.	83-104-1791	CHAIN (Seedar Lever), 6 Links	1
25.	01-170-0130	ANCHOR SHACKLE	1
26.	83-104-1731	UHMW WASHER, 1" ID x 3" Dia.	2
27.	83-104-1721	METAL WASHER, 1" ID x 3" Dia.	2
28.	01-191-1614	JAM NUT, 1" - 14	4
29.	01-158-1120	EYE BOLT, 3/4" - 10 x 6"	1
30.	01-188-1210	HEX NUT, 3/4" - 10	2
31.	01-261-0560	SPRING, 2-1/4" OD x 15" Lg.	1
32.	01-166-1600	FLAT WASHER, 1"	8(VAR)

DRAG MAT ASSEMBLY



DRAG MAT ASSEMBLY

REF. NO.	PART NUMBER	PART NAME AND DESCRIPTION	QTY.
1.	71-005-0203	MODEL 71 MAIN FRAME	REF
2.	83-105-1102	SEEDER FRAME	REF
3.	83-105-1112	SEEDER BOX	REF
4.	83-105-1171	DRAG MAT SUPPORT	1
5.	01-166-0610	LOCK WASHER, 3/8"	12
6.	01-188-0616	HEX NUT, 3/8" - 16	12
7.	01-178-0612	HHCS, 3/8" - 16 x 1"	4
8.	01-166-0600	FLAT WASHER, 3/8"	10
9.	83-105-1201	CHAIN TUBE EXTENSION	1
10.	01-178-0618	HHCS, 3/8" - 16 x 2-1/4"	1
11.	01-191-0616	JAM NUT, 3/8" - 16	2
12.	83-104-0861	DRAG MAT, 48" x 36"	1
13.	83-104-1851	REAR FLAP	1
14.	01-178-0614	HHCS, 3/8" - 16 x 1-3/4"	8
15.	01-166-0800	FLAT WASHER, 1/2"	8
16.	01-170-0130	ANCHOR SHACKLE	3
17.	83-104-1781	CHAIN (Drag Mat), 12 Links	2

NOTES

NOTES

SERVICE RECORD

DATE	SERVICE PERFORMED	PERFORMED BY