



FLEX SHREDDER

ASSEMBLY — OPERATION AND MAINTENANCE INSTRUCTIONS

MODEL

20-24-30

FS 75

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INSTRUCTIONS FOR ORDERING PARTS:

1. ALL PARTS MUST BE ORDERED FROM YOUR DEALER.
2. GIVE MODEL NUMBER and SERIAL NUMBER that is stamped on the NAME PLATE of your machine. ORDER BY QUANTITY DESIRED AND DESCRIPTION OF THE PART.
3. NOTE: The Company reserves the right to incorporate any changes in design without obligation to make these changes on units previously sold.



1. KEEP ALL SHIELDS IN PLACE.
2. STOP ENGINE BEFORE LEAVING OPERATOR'S POSITION TO ADJUST, LUBRICATE, CLEAN, OR UNCLOG MACHINES, UNLESS OTHERWISE SPECIFICALLY RECOMMENDED IN THE "OPERATOR'S MANUAL".
3. WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING THE MACHINE.
4. KEEP HANDS, FEET AND CLOTHING AWAY FROM POWER DRIVEN PARTS.
5. KEEP OFF EQUIPMENT UNLESS SEAT OR PLATFORM FOR OPERATION AND OBSERVATION IS PROVIDED.
6. KEEP ALL OTHERS OFF.
7. USE FLASHING WARNING LIGHTS WHEN OPERATING ON HIGHWAYS EXCEPT WHEN PROHIBITED BY LAW.
8. MAKE CERTAIN EVERYONE IS CLEAR OF MACHINE BEFORE STARTING ENGINE OR OPERATION.

SETUP - ASSEMBLY INSTRUCTIONS

Check packages and bundles to make sure that they correspond with your shipping documents. Make claims for shortages immediately.

Step 1. Place the main frame and 7' center body assembly on a level area approximately 6" off the ground. Mount the two double wheel mount assemblies (Ref. No. 1) to the extreme ends of the square axle tube using the $\frac{1}{2}$ -13 x 2 $\frac{1}{4}$ bolts, lockwashers and nuts provided on each assembly.

Care should be taken to tighten all four bolts equally a few turns at a time to insure proper seating on the axle. Mount four tires to the double wheel mount assemblies.

Step 2. Place either the left or right wing body next to the main frame assembly so that the hinge bushings on both the main frame and the wing body are in line. Skid the wing body sideways and up until the bores of both sets of bushings are in line. This will require blocking of the wing body as it is moved over to meet the main frame.

Install both hinge pins (Ref. No. 2) at the same time, sliding each one a little so as to insure proper alignment of the wing body and main frame assembly.

If both pins do not engage, check the alignment of the hinge bores and shim the wing body accordingly. The hinge pins are sized closely to the bushings so they may need to be tapped in with a rawhide mallet. Do not use excessive force in installing the hinge pins as this will cause damage to the pins and bushing bores.

After the hinge pins are in place, install the four keeper snap rings.

Repeat this operation for the opposite wing body.

Step 3. Mount three (two on 20' and 24' models) single wheel mount assemblies (Ref. No. 3) on each wing axle, placing one to the extreme outside end and the other two spaced evenly along the axle tube. (Caution: The inner most wheel mount assembly on the left wing body must be set so as to clear the belt guard when the wing body is raised for road transport.) Again, care should be taken to tighten all four wheel mount bolts equally a few turns at a time to insure proper seating on the axle tube. (See Operating Tips for row crop wheel spacing.)

Step 4. Remove the banding from each wing body height adjustment cylinder and hose (Ref. No. 4) and install them on the wing body mount and wing axle mount using the pins and clips provided in each cylinder.

The wing body tires may now be mounted.

Step 5. Install the two gauge wheel assemblies (Ref. No. 5) on each wing body using the lower set of holes on the body mounting bars. Uncoil the wing body tie chains from the main frame and slip the end of the chain into the slotted bracket (Ref. No. 6) on the top of each wing body. Adjust the eye bolt on the tie chain until the chain is tight and the eye is in line with the center of the body hinge pins. This may require taking up or letting out of links at the slotted bracket on the wing bodies. (NOTE: The eye must be in line with the center line of the hinge points, or the tie chain will become slack and excessively tight during the up and down travel of the wing bodies.)

Install the keeper bars over the slotted tie chain mounts. Two plastic tie wraps are provided for each side to secure the wing lift cylinder hoses to the tie chains.

Step 6. Remove the banding from the wing lift cylinder and primary lift arm assembly (Ref. No. 7) and install the secondary lift arm to the lift cylinder rod by removing the clips and pins inserted through the rod end of the cylinder.

Line up the holes in the secondary lift arm, cylinder rod end and primary lift arm and insert the pin and clips. The lower end of the secondary lift arm is mounted to the wing body with the 1" pin and two $\frac{1}{2}$ " thick washers provided. One $\frac{1}{2}$ " thick washer on each side of the body lift bracket.

Step 7. Remove the front PTO shield (Ref. No. 8) and slide the tractor take-apart PTO shaft onto the 1 11/16"-20 splined jackshaft and fasten with the cap screw and washer provided. The cap screw MUST be wired securely through the hole in the head of the cap screw and around the PTO yoke. Replace the PTO shield.

It will be necessary to secure 3-male quick couplers to mate the particular tractor used to the M-C Flex Shredder hydraulic system.

Step 8. Slide the male wing PTO half shaft into the female half shaft attached to each wing body rotor end. Pull the completed assembly back and onto the splined lower jackshaft, depressing the safety lock pin as this is done. Push the assembly all the way on until the safety lock pin snaps into the groove on the splined jackshaft. WITHOUT depressing the safety lock pin, pull and push several times on the PTO to make sure it is securely in place. Both left and right wing body PTO's are installed in the same manner. It is not necessary to phase either of these PTO's.

NOTE: Whenever the wing bodies are raised, it is necessary to repeat the above procedure BEFORE RUNNING the machine.

THE MACHINE ASSEMBLY IS NOW COMPLETE. BEFORE PUTTING THE MACHINE IN OPERATION, CHECK THE GEARBOX OIL LEVEL AND ALL NUTS AND BOLTS FOR TIGHTNESS. MAKE SURE ALL GUARDS AND SHIELDS ARE IN PLACE AND SECURELY FASTENED. RUN IT AT A LOW RPM CHECKING TO MAKE SURE THAT ALL DRIVE LINE PARTS ARE MOVING FREELY.

SECTION II.

OPERATING TIPS

By following the suggestions in OPERATING TIPS, you will be able to PROLONG the LIFE of your FLEX SHREDDER and get the MOST EFFICIENT and EFFECTIVE results.

1. BEFORE ATTEMPTING to make ANY INSPECTION, BE SURE to DISENGAGE the PTO and STOP the tractor engine.
2. AFTER SHREDDING approximately 10 to 15 acres, the inside of the machine and the blades will become polished and will give you the best performance.
3. AFTER OPERATING for a few hours, check to MAKE SURE that all nuts and bolts are TIGHT (check to MAKE SURE that ALL Knife Blades are secure.)
4. AFTER OPERATING for 2 to 3 hours, all the Drive Belts Tension will need to be adjusted. DO NOT operate with the drive belts loose as it will cause excessive wear and shorten belt life. (See Maintenance, Item #2).
5. ALTHOUGH the machine is of very RUGGED construction, excessive ABUSE caused by ROCKS and other OBSTRUCTIONS will result in EXCESSIVE WEAR and costly REPAIR to the ROTORS and BLADES.
6. DO NOT EXCEED the 1000 RPM PTO speed.
7. On all row crops, operate the knives 2" above the hills.
8. When operating in row crops, the rear wheels may be adjusted for various spacings. Start in the middle on the two double wheel mounts and adjust them in or out accordingly. (NOTE: Keep the double wheel mounts spaced as wide as possible for better stability when roading.) Next, adjust each wing body wheel mount measuring the desired spacing from the double wheel mounts outward.
9. Cutting Height adjustment is obtained with the three (3) 8" hydraulic lift cylinders. A pre-determined height setting may be achieved by putting an equal number of ram limiters on each cylinder rod.

10. Before running the machine after roading, make sure both wing PTO's are properly hooked up. RUNNING THE MACHINE WITH WING PTO'S NOT ENGAGED WILL SERIOUSLY DAMAGE THEM.

11. WHENEVER THE WING BODIES ARE FULLY RAISED AND BEFORE ROADING, THE SAFETY CHAIN BETWEEN BOTH WING BODIES MUST BE SECURELY INSTALLED. Both wing body female PTO half shafts should be chained up with the "S" hook inserted into the hole in the end of the PTO shaft. Both wing body male PTO half shafts should be removed from the lower splined jackshaft.

12. All three Flex Shredder body sections are equipped with an adjustable cutter bar. If crop residues are quite heavy, it may be necessary to loosen the bolts and slide the cutter bar forward and away from the cutting knives. As crop residues become lighter or wear occurs on the cutting knives and/or bar, it may be necessary to loosen the bolts and slide the cutter bar backward towards the knives. AT NO TIME SHOULD THE CUTTING KNIVES STRIKE THE CUTTER BAR.

13. Hitch settings: There are two types of hitch mountings depending on how the machine was ordered, (a) Straight drawbar mount with an adjustable clevis, or (b) Category 2 or 3/ three point mounted.

a) The straight drawbar hitch is set by leveling the lower front portion of the main frame front to rear and adjusting the machine clevis up or down to suit the drawbar height on the particular tractor being used. The lower front frame of the machine should have 10" to 11" ground clearance as measured from the bottom of this portion of the frame to the ground. There are 10 different height settings with the clevis, 5 in the upright position and 5 with the clevis inverted.

b) The 3-point hitch mount is designed to mount directly to the two lower tractor arms and the top third link with the pins provided in the yoke weldment, or it may be used directly with any commercially available 3-point "quick hitch attachment." In either case, the yoke weldment must be in a vertical position, 90° with level ground. Adjust the top link on the tractor until this vertical position is achieved.

14. Before running, remove the 1" pins on the lower end of the secondary lift arms to allow the wing bodies to flex and follow the contour of the land. Replace these pins before attempting to raise the wing bodies.

MAINTENANCE

1. SHARPENING ROTOR BLADES:

Step 1. Secure the Rotor. Line up the bank of Knives with the slot below the Rotor Bearing.

Step 2. Remove the End Locator Bracket and slide the Knife Hanger Rod out allowing the Knives to drop off.

Step 3. Sharpen the Blades. DO NOT sharpen the front edge. REPLACE any damaged Blades or Hangers. Operating with damaged Blades or Hangers can cause Rotor imbalance.

Step 4. Replace the Knife Blades, Knife Hanger Rod, and End Locator Bracket. MAKE SURE the dished or concave side of the Blades, when hanging down, are facing the front of the machine and will swing freely.

2. DRIVE BELT ADJUSTMENT AND CARE: Both the 8-band main drive belts and the 3-band secondary drive belts are of the same construction and require the same care and maintenance. These belts, when new, will do 95% of their stretching and seating in the first 20 to 30 hours of operation. IT IS IMPORTANT that they be kept as tight as possible during this initial run-in period and thereafter.

CAUTION: Drive belts that are run too loose will heat up and wear excessively, greatly shortening their life.

DURING the run-in period, both sets of drive belts should be checked every 2 - 3 hours of operation and adjusted as needed. AFTER the run-in period, both sets of belts should be checked each day before running and adjusted when needed.

To adjust both the 8-band and 3-band drive belts, loosen both large idler lock nuts. Adjust the $\frac{1}{2}$ " threaded rods outward until proper tension is achieved. (On the main drive, two $\frac{1}{2}$ adjusting rods are used. Adjust these two an equal number of turns to assure accurate tension and alignment of the idler to the other pulleys.)

To check tension on the main drive belts, apply approximately 150 pounds of force downward, midway between the IDLER and the LOWER pulley. With this amount of force, the belt should deflect $\frac{1}{4}$ " to $\frac{3}{8}$ " as measured with a straight edge.

To check for proper tension on the secondary drive (3-belts) belts, apply approximately 60 pounds of force inward, midway between the IDLER and the LOWER pulley. With this amount of force, the belt should deflect $\frac{1}{8}$ " to $\frac{3}{16}$ " as measured with a straight edge.

(Care should be taken in adjusting both sets of drive belts as it is often the tendency to have banded V-belts too loose and not too tight.)

3. CHECK THE OIL LEVEL IN THE GEARBOX REGULARLY. To check it, remove the Oil Level Plug on the side of the gearbox. If at the proper level, the oil will run out of this hole. If not at the proper level, remove the Filler Plug on the top of the Gearbox and bring up to oil level plug with 90 gear lube.

IF MACHINE IS IN CONSTANT USE, LUBRICATE ALL POINTS DAILY. USE GREASE SPARINGLY TO AVOID DAMAGING BEARING SEALS.

4. GREASE ALL BEARINGS, PTO'S AND WING BODY HINGE PINS DAILY. There are 6 flange bearings (one on each end of the cutting rotors), 5 pillow block bearings, (2 on the incoming PTO jackshaft which may be reached through the holes in the round guard tube), 2 on the lower main belt drive jackshaft, and one on the top at the end of the gearbox output shaft.

There are 11 PTO grease zerks: 3 on the tractor take-apart shaft, 2 on the fixed incoming shaft and 3 on both lower wing body drive PTO's. All PTO grease zerks are accessible at the end of the guards or through the round holes provided in the guards. When greasing through the round holes, rotate the particular shaft until the grease zerk lines up with these holes.

There are 8 grease zerks (4 on each side) located on the main frame and wing body bushings. These should be greased daily or more often under dusty conditions.

5. WINTER STORAGE. Before storing your Flex Shredder, grease all of the Bearings to eliminate any cavities where condensation may occur. It is also advisable to coat all the exposed surfaces of the inside of the machine with oil or grease to prevent rusting and pitting during storage.

