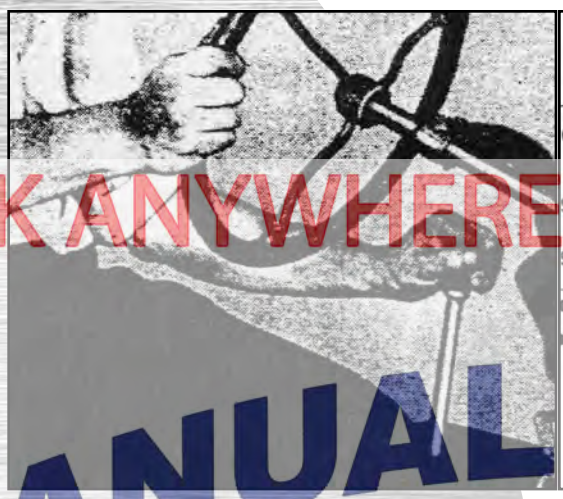


New Idea

Operator's and Parts Manual

290

Mower Conditioner

Operator's & Parts Manual

NI-OP-290 MC

OPERATOR'S MANUAL

No. MD-104

Lot No. MD 20 to-

AVCO NEW IDEA FARM EQUIPMENT

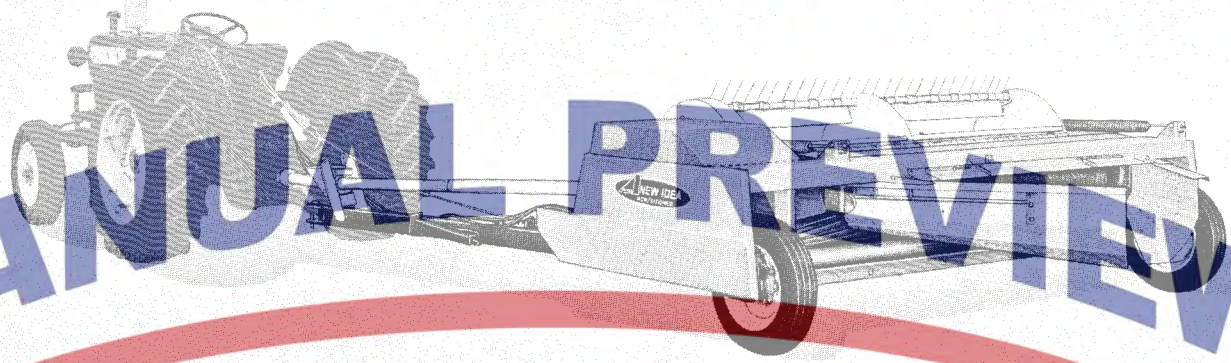
No. 290 MOW/DITIONER

For the Dealer and Operator

Read these instructions · Save it for reference

AVCO NEW IDEA FARM EQUIPMENT

COLDWATER, OHIO 45828, U.S.A.



PROTECT YOUR INVESTMENT AND GET MAXIMUM SERVICE AND VALUE, THROUGH:

1. PROPER ASSEMBLY . . . . . Check the assembly against the instructions in this manual to be sure that the Mow/Ditioner is "right" when it is delivered.

2. PROPER ADJUSTMENTS. . . . . Make adjustments in the manner prescribed in this manual.

3. PROPER MAINTENANCE . . . . . Check the entire Mow/Ditioner periodically to detect lost, broken or inoperative parts. Replace them promptly with genuine repair parts available through your dealer.

4. PROPER OPERATION. . . . . Be completely familiar with and follow the operational instructions that are provided in this manual

5. PROPER LUBRICATION . . . . . Follow our recommendations in this manual with regard to frequency and coverage. Economize by using only high grade lubricants and oil.

Index

TROUBLE SHOOTING

PROBLEM	CAUSE	CORRECTION
1. Cutter bar plugging.	(a) Guards not aligned properly - dull or broken knife sections and guards. Hold down clips not down far enough.	(a) Check cutter bar for proper maintenance. See page 11.
	(b) Cutting material having wet and heavy undergrowth.	(b) Wait until crop is dry. Cut material higher. Install optional stub guards.
	(c) Float springs not adjusted properly.	(c) Readjust float springs to reduce header weight. See page 10, Fig. 8.
	(d) Knife drive belt loose.	(d) Tighten belt.
	(e) Bell crank not adjusted properly allowing knife misalignment.	(e) Readjust bell crank, See page 11, Fig. 12.
2. Excessive breakage of knives	(a) Operating too low.	(a) Raise cutting height with skid shoes and readjust float springs if necessary. See page 10, Figs. 9 & 10.
	(b) Ground speed too fast.	(b) Reduce ground speed.
	(c) Float springs not adjusted properly.	(c) Readjust float springs to reduce header weight. See page 10 Fig. 8.
	(d) Guards not aligned properly - bent knife.	(d) Check cutter bar for proper maintenance. See page 11.
	(e) Operating in rocky conditions with the knife cutting at the 9° angle.	(e) Operate with knife in the 4° position only when necessary.
3. Leaving ragged or long stubble.	(a) Excessive ground speed.	(a) Reduce ground speed.
	(b) P.T.O. speed too slow.	(b) Maintain 540 R.P.M. on P.T.O. Do not exceed this speed.
	(c) Lack of cutter bar maintenance.	(c) Check cutter bar for proper maintenance. See page 11.
	(d) Reel speed too slow for ground speed.	(d) Increase reel speed. See page 12, Fig. 15.
	(e) Reel drive clutch slipping.	(e) Tighten clutch. See page 12, Fig. 15.
	(f) Header floating too high.	(f) Increase header weight for smooth ground conditions. See page 10, Fig. 8.
	(g) Sickle drive belt loose.	(g) Readjust belt.
	(h) Push bar too low in tall crops.	(h) Raise push bar - move to rear position - remove bar in very tall crops. See page 10, Fig. 8.
	(i) Bell crank not adjusted properly allowing knife misalignment.	(i) Readjust bell crank, See page 11, Fig. 12.
4. Stubble too long in down crops.	(a) Excessive ground speed.	(a) Reduce ground speed.
	(b) Cutting too high.	(b) Decrease tension on float springs and/or lower cutter bar using adjustment skids and adjustable wheels. See page 10, Figs. 8, 9, & 10.
	(c) Improper reel adjustment.	(c) Readjust reel. See page 12, Fig. 14.
	(d) Reel speed too slow.	(d) Speed up reel. See page 12, Fig. 15.
	(e) P.T.O. speed too slow.	(e) Maintain 540 R.P.M. on P.T.O. Do not exceed this speed.

All Drive Chains

- Keep all drive chains adjusted to the point where they will not whip or jump teeth on the sprockets.

Hitching Mow/Ditioner to Tractor, Jack Transport Position, Cylinder and Hoses

Figure 5

Figure 6

Figs. 5 and 6 – 1. Tractor drawbar "A" (Fig. 5) should be adjusted so the top of the drawbar is 13 to 17" above the ground.

2. Drawbar "A" (Fig. 5) should also be adjusted to ASAE standard length which is 14" measured from end of tractor P.T.O. to a vertical line from center of hole for hitch as illustrated.

3. Hook unit and power shaft to tractor. Adjust bearing "B" (Fig. 5) so the power shaft is as straight as possible. To adjust bearing, remove bolt at "C" and position bearing as desired.

NOTE: Bearing housing can also be inverted. P.T.O. shield will have to be repositioned when this is done.

4. Reposition jack assembly "D" (Fig. 6) with foot facing tractor for transport.

5. Any single or double acting cylinder can be used provided they conform to ASAE standards, 20-1/8" contracted to 28-1/8" extended. Install the cylinder as shown.

6. Place hoses in hose clips "E" (Fig. 6).

NOTE: Make sure to disconnect transport link from arm "F" (Fig. 6) as indicated prior to operation.

Offsetting Hitch

Figure 7

Fig. 7 - With pin "F" positioned in the frame as shown, the machine is in the minimum offset position. Hole "G" is the maximum offset position. Hole "H" is the transport position. Use holes "F" or "G" (depending on R.H. tractor wheel) to attain the full 9 foot cut.

Pull on the rope to disengage the pin from the frame, reposition the hitch to the hole desired in frame.

Knife Register and Removal — Guard Alignment and Cutter Bar Maintenance

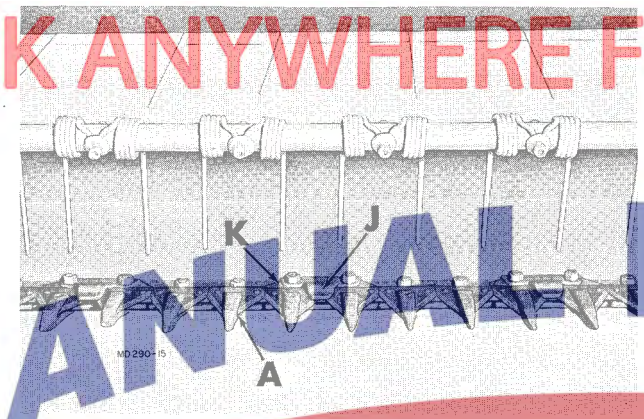


Figure 11

Figure 12

Figs. 11, 12, 13, & 13A

Knife Register

To check the register of the knife, position the pitman to the end of it's stroke. The knife is in proper register if the knife sections are centered in the guards as indicated at "A" (Fig. 11). If they are not centered, loosen jam nuts "B" (Fig. 13) and adjust turnbuckle "C" until the knives are centered.

Knife Removal and Bellcrank Alignment

To remove the knife assembly, remove bolt "D" (Fig. 12) from the knife head. Lift pin "E" (Fig. 13) from the bellcrank far enough to attain clearance, then pull the knife out of the cutter bar.

Pay particular attention when reinstalling the knife. The knife head must fit flush with the bell crank at "F" (Fig. 12) or knife head breakage could occur. These parts must not be forced together. To align them, loosen (4) bolts "G" (Fig. 12) and tap pivot shaft assembly "H" up or down until perfect alignment is attained. Before retightening these bolts, check to see that the knife sections rest firmly on the ledger section of the guards at the inner end of the cutter bar. The bell crank assembly can be shifted accordingly to attain the alignment. Tighten all bolts securely.

NOTE: The knife is protected by the power band drive belt.

Guard Alignment and Cutter Bar Maintenance

The guards should be aligned so the knife rests flush on the ledger plates. 1/64" clearance is allowed between these two parts. This is accomplished by driving the guards up with a hammer. RETIGHTEN THE GUARD BOLTS AFTER ALIGNING THE GUARDS. The knife hold down clips "J" (Fig. 11) must hold the knife down on the ledger plates. Drive them down as required. Adjust wear plates "K" to compensate for wear on the knife back. Check to see that all parts are tight; rivets, bolts, etc. Replace badly worn or damaged parts. **SHARPEN THE KNIFE AS REQUIRED. IT MUST BE KEPT SHARP AT ALL TIMES.** After making all adjustments, oil the knife and make sure it works freely.

Study Fig. 13A carefully. Apply the information it contains and you will save a lot of time in the field.

Figure 13

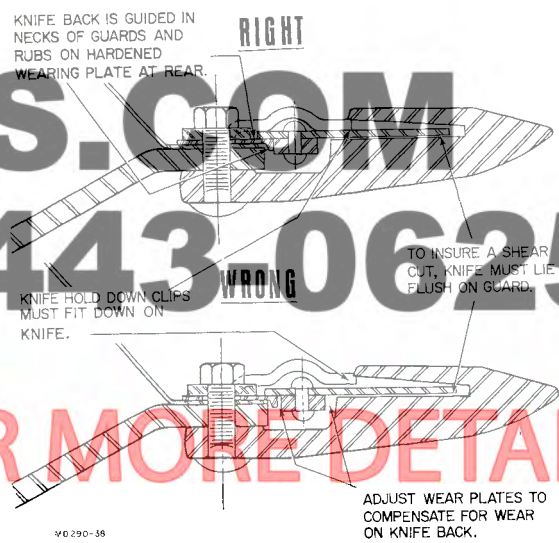


Figure 13A

REEL POSITION AND CAM TRACK ROTATION FOR PITCH OF TEETH

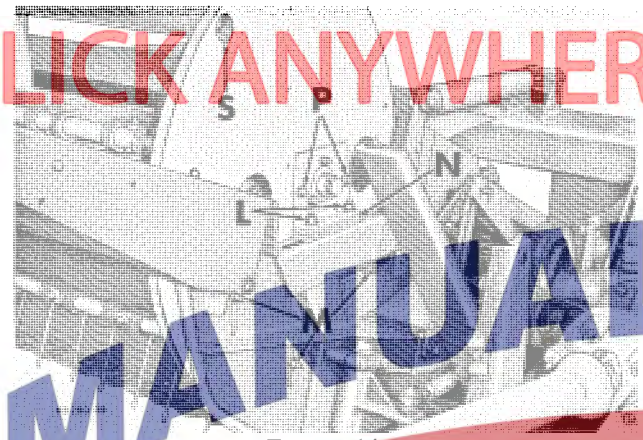


Figure 14

Reel Position

Fig. 14 - The reel comes shipped in the approximate mid position on the slotted holes as shown. This position should handle all normal or average crop conditions. Reposition the reel toward the front more when in down or tangled crops. Move it to the rear if roll feeding problems should occur. To do this, loosen bolts "L" (both sides) and bolts "M". NOTE: The bolts in the reel jackshaft support (R.H. side) may also have to be loosened. Move the reel a little at a time until operation is satisfactory. Tighten bolts securely.

REEL SPEED AND CLUTCH

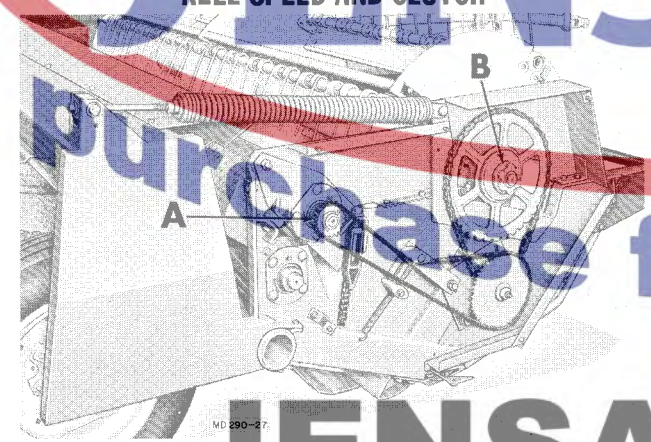


Figure 15

Reel Speed

Fig. 15 - In all conditions the reel should be running a little faster than the ground speed being traveled. Sprocket "A" drives the reel. A 21 tooth sprocket is installed on the machine at the factory. This sprocket should be sufficient for normal speeds and conditions. A 15 tooth sprocket will be found bolted to the frame next to the gear box. This sprocket is for slower speeds.

Reel Clutch

Clutch "B" protects the reel. Should it slip for no apparent reason, turn nut "B" against the Belleville springs a little at a time until operation is satisfactory. Do not over-tighten the clutch or the safety factor will be lost entirely.

The reel can also be lowered. Shims come assembled below the reel supports at "N" (both sides). In average or normal conditions the shims should not be removed. However, in certain down and adverse crop conditions it may be desirable to remove them allowing the reel to come closer to the cutter bar.

NOTE: • Do not remove all shims with the reel in the rear position for the teeth could strike the floor pan.

- It may be necessary to change the pitch of teeth after making reel adjustments
- Reel drive chain may have to be altered when changing reel position.

Cam Track Rotation for Pitch of Teeth

The cam track comes shipped in the near extreme counter clockwise position. This position should be sufficient in normal or average conditions. The purpose of the teeth is to move the material through the cutter bar, then feed the material butt first to the conditioning rolls. In certain crop conditions, it may be desirable to change the pitch of teeth. To do this, loosen bolts "M" and "P". Then rotate cam track "R" clockwise a little at a time until operation is satisfactory. Tighten bolts securely.

NOTE: Hole "S" in cam track end sheet is provided to remove cam bearings should this ever need to be done.

ROLL SPACING AND TENSION

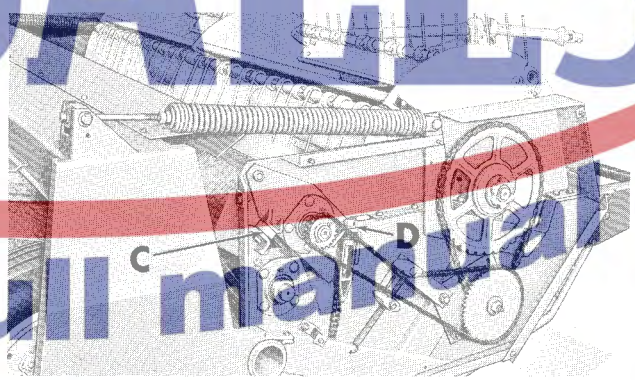


Figure 16

Roll Spacing

Fig. 16 - The rolls are adjusted at the factory to have 1/64" to 1/32" clearance between them. This clearance is attained by adding or removing shims below spacer blocks at "C" (both sides). Extra shims should be placed next to the block anchor bolt. For maximum roll and chain life, this setting must be maintained. It is not necessary to run the rolls tight together for proper conditioning. When this setting is maintained, Leaf loss is cut to a minimum.

Roll Tension

The roll tension is determined by the condition and type of material. Tension bolts "D" (both sides) are adjusted at the factory so they have approximately 3/4" of the threads left on the bolts. This setting should be sufficient in most crops. However, in large stems, such as Sorghum-Sudan Hybrids, it may be decrease the roll tension.

NOTE: Both sides must be adjusted equally.

MAIN DRIVE SLIP CLUTCH AND OVERRUNNING CLUTCHES ON JACKSHAFT AND UPPER ROLL

Figure 17

Main Drive Slip Clutch

Fig. 17 - The main drive slip clutch "E" protects the rolls. It is adjusted at the factory so the clutch springs are compressed to 2-3/16". This measurement is taken from between the outside of the washer at the front of the springs to the front side of the clutch plate. After periods of storage check to see if the clutch will slip by placing a wedge block between the rolls. Turn conditioner by sticking bar in "U" joint next to clutch. If unable to slip clutch, loosen all nuts until clutch slips. Retighten tension bolts evenly until proper tension is reached. Tighten nuts 1/2 turn at a time to avoid excessive tightening. Never compress springs completely. Too loose a setting of the clutch will not allow heavy bunches of hay to pass through the rolls. Keep the clutch free from oil or grease.

Overrunning Clutches

The overrunning clutch "G" for the rolls protects them from sudden shock loads as encountered when the P.T.O. is suddenly disengaged at high speeds. The upper roll overrunning clutch "F" prevents the drive chain from jumping on the sprocket. If these clutches are not lubricated properly (see lubrication guide, page 8) the pins inside them could freeze up. If difficulty is encountered check to see that the pins work freely and that a spring is not broken. Pins should be installed with the taper in the well and the round end out. Space between the sprocket or sheave and hub should be 1/32". To obtain this space, the hubs will have to be shifted.

Windrow Shields and Swath Deflector

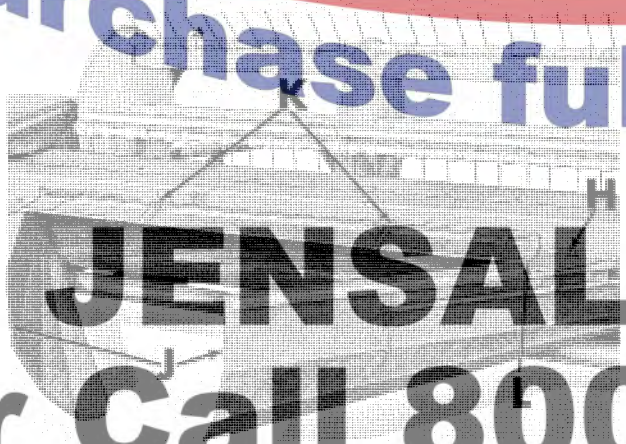


Figure 18

Figure 19

Figs. 18 & 19 - With the windrow shields positioned as shown in Fig. 18, the Mow/Ditioner is ready for windrowing. They are adjustable to make the width of windrow you desire. To adjust the shields, loosen bolts "H" (both sides) and adjust shields to width desired. The distance at "J" will be the width of the windrow. The windrow should be positioned on the return pass so that it comes between the L.H. tractor tire and the L.H. Mow/Ditioner wheel.

To adjust the swath deflector, loosen bolts "K" and adjust the deflector up or down to fluff the windrow as desired. Adjust the ends of the deflector so they come flush with the shield brackets at "L" (both sides).

With the shields positioned as shown in Fig. 19, the material will be layed down in a swath. Adjust the deflector to attain the amount of fluffiness desired.

Removing Conditioner Rolls and Rubber Roll Information

Figure 20

REMOVING CONDITIONER ROLLS

Fig. 20 - Lower the header all the way down, then proceed as follows:

1. Remove R. H. drive shield as shown. Open door on L. H. side. Remove shields "F" (both sides).
2. Remove drive chains from both sides of rolls.
3. Remove roll tension bolts "G" (both sides).
4. Remove hinge bolts "H" (both sides). Lift the upper roll assembly from the machine.
5. Remove lower bearing bolts "J" (both sides). Loosen locking collar. Remove R.H. inside deflector next to lower roll. Lift the roll from the machine.

NOTE: Reverse this procedure to reinstall the rolls.

Rubber Roll Information

Should the rubber roll ever be disassembled, pay particular attention to the way the rubber disc are installed. The disc have two different part nos., 290187 and 290188. The only difference between the two is the direction in which the cord runs. When reinstalling them, they are to be alternated, one and then the other.

SICKLE AND MAIN DRIVE BELT ADJUSTMENT & REMOVAL

Figure 21

Sickle Drive Belt Adjustment

Fig. 21 - The sickle drive belt should be adjusted to the point where it drives and does not slip on the sheaves. To adjust it, loosen idler sheave bolt "K" and thread adjusting bolt "L" in or out as desired until the proper driving tension is attained. Tighten jam nuts securely.

Sickle Drive Belt Removal

1. Relieve all tension from the sickle and main drive belts.
2. Remove roll drive chain "M".
3. Disconnect pitman "N".
4. Remove jackshaft housing bolts "P". The belt can now be removed.

Main Drive Belt Adjustment

The main drive belt tension is controlled by spring "R". It should be adjusted to measure 9-3/8" (active coils) as indicated. Adjust nuts on eye bolt from back side of machine to attain this dimension.

Main Drive Belt Removal

1. Relieve all tension from spring "R".
2. Remove the shield from below the lower drive sheave.
3. Remove cap screws (6) from the left side of the lower drive sheave. Slide the sheave to the right and remove the belt by sliding it around the end of the jackshaft.