



# FORD MOLDBOARD PLOWS

## ASSEMBLY AND OPERATING INSTRUCTIONS

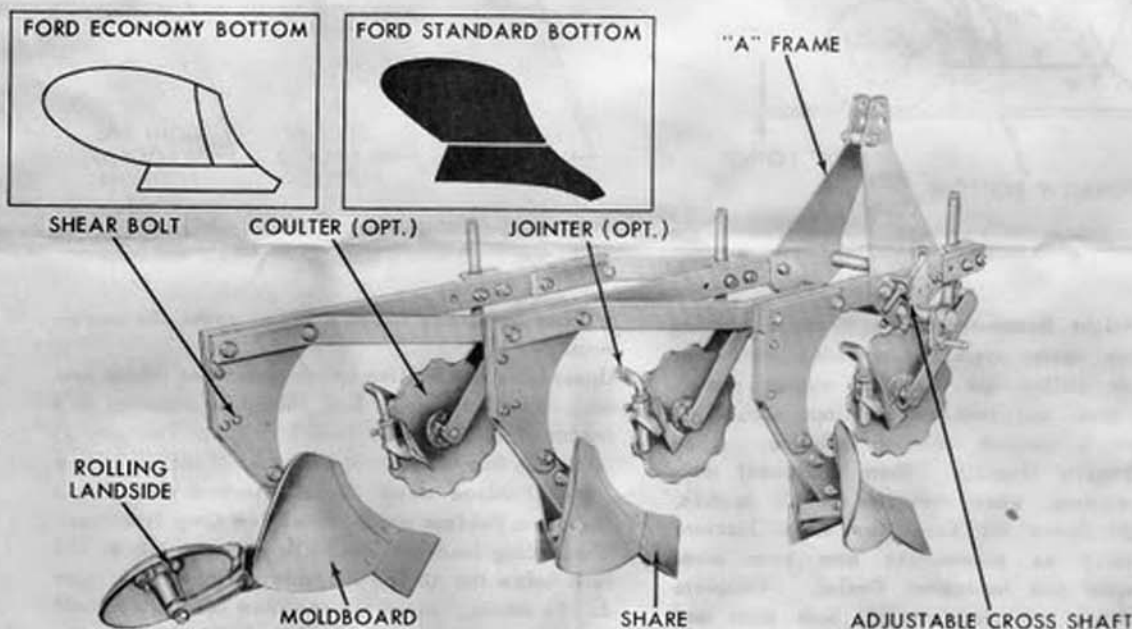


Figure 1 - Ford Three Bottom Moldboard Plow

The Ford Moldboard Plow shown above combines the outstanding features of strong, rigid truss frame construction, high beam clearance, shear bolt protection against damage and maximum ease of adjustment.

The plow may be readily adapted to either the Ford or Fordson Major Diesel Tractor by simply changing the cross shaft and by adding a gauge wheel for FMD operation.

Ford plow bottoms are available with a variety of moldboards in either the Economy type bottoms with replaceable shins and "Razor Blade" share, or the Standard type bottoms.

### PREPARING THE TRACTOR

**Tractor Wheel Spacings:** In order to obtain the proper width of cut on the front plow bottom, it is necessary that the tractor wheels be properly

spaced for the size of plow being used. The following chart outlines the recommended tread width settings for operation under average conditions.

### WHEEL SPACING CHART

Plow Size	All Ford & F.M.D. Tractors (Except F.M.D. 14)		F.M.D. 14	
	Front (4 wheel only)	Rear	Front	Rear
1 Bottom . . . .	52"	52" (56")*	52"	58"
2 Bottom 10"	52"	52" (56")*	—	—
3 Bottom 10"	52"	52" (56")*	—	—
2 Bottom 12"	52"	56"	52"	58"
3 Bottom 12"	52"	56"	52"	58"
2 Bottom 14"	56"	60"	56"	62"
3 Bottom 14"	56"	60"	56"	62"
2 Bottom 16"	60"	64"	56"	62"
3 Bottom 16"	60"	64"	56"	62"

\* Minimum spacing for Ford Row Crop Tractors.

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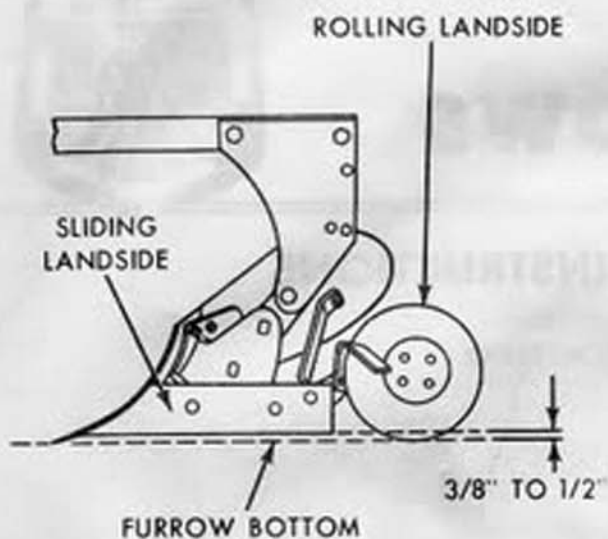


Figure 2 - Adjusting Rolling Landside

**Tractor Weight Recommendations:** Because plowing is a high draft operation requiring sufficient traction to utilize the maximum engine power, both the front and rear tractor tires should be filled with a calcium chloride solution. (See Tractor Owner's Manual). Where additional traction is required, wheel weights for all models, and weight boxes for Ford Row Crop Tractors are available as accessories from your local Ford Tractor and Implement Dealer. Complete wheel weights are recommended, both front and rear, to assure maximum traction for most efficient plowing.

**NOTE:** Check to be sure that the tractor tires are inflated to the recommended pressure outlined in your Tractor Owner's Manual.

#### PRELIMINARY TRACTOR AND PLOW ADJUSTMENTS

Before entering the field, the following adjustments should be made on the tractor and plow. These are initial adjustments only. Final adjustment may vary, depending upon soil conditions, and should be made in the field.

**Attaching Plow to Tractor:** Attach the plow to the tractor three point linkage and secure with the linch pins provided.

On four wheel Ford Tractors, the adjustable upper link should be attached to the lower hole in the tractor rocker arm. On Row Crop Ford Tractors, the upper link should be attached to the center hole (marked "PLOW") in the rocker arm.

**NOTE:** On Fordson Major Diesel Tractors, adjust both check chains to permit maximum plow swing

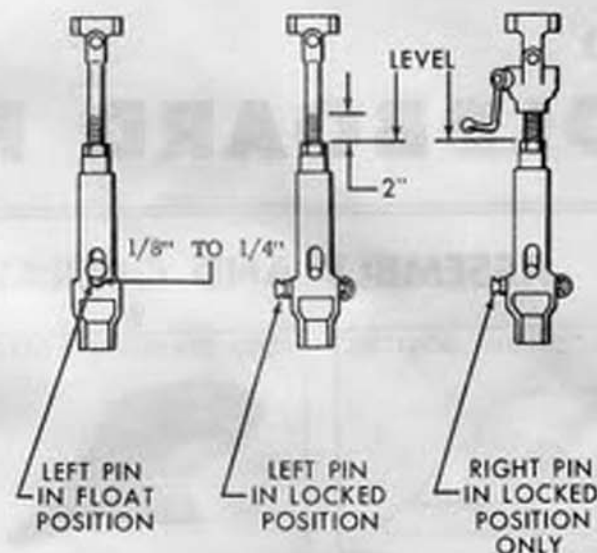


Figure 3 - Fordson Major Diesel Lift Rod Pins

without permitting lower links to strike the tractor tires.

**Upper Link and Rolling Landside:** As an initial setting, the tractor upper link should be adjusted to a length of 23 inches on Ford Row Crop Tractors, 25 inches on four wheel Ford Tractors, 27 inches on four wheel Fordson Major Diesel Tractors and 26-1/2 inches on Fordson Major Diesel Row Crop Tractors.

The rolling landside should be set from 3/8 to 1/2 inch below the sliding landside as shown in Figure 2. To adjust, loosen the two plow bolts which hold the rolling landside arm to the landside, then raise or lower the assembly to the proper position by means of the adjusting set screw under the arm. Tighten all bolts and nuts securely.

**Leveling the Plow:** The side tilt of the plow is adjusted by turning the tractor leveling crank which raises or lowers the right hand tractor lift link. Before entering the field, adjust the right lift rod on Ford Tractors to the median mark or groove in the leveling shaft. On Fordson Major Diesel Tractors, adjust the left lift rod until approximately two inches of thread are showing, then adjust the right lift rod to the same length as the left. See Figure 3.

**NOTE:** When plowing with the Fordson Major Diesel Tractor, the right lift rod pin (see Figure 3) should always be in the locked position as shown. The left lift pin (Figure 3) may be placed in the float position, as shown, when plowing in uneven, rolling land or when using a four bottom plow.

**Lateral Adjustment of Cross Shaft:** The adjustable cross shaft on both Ford and FMD plows has a series of four lateral adjusting holes on both the front and rear of the shaft. See Figure 4. Under most conditions, the dog point set screw should be positioned

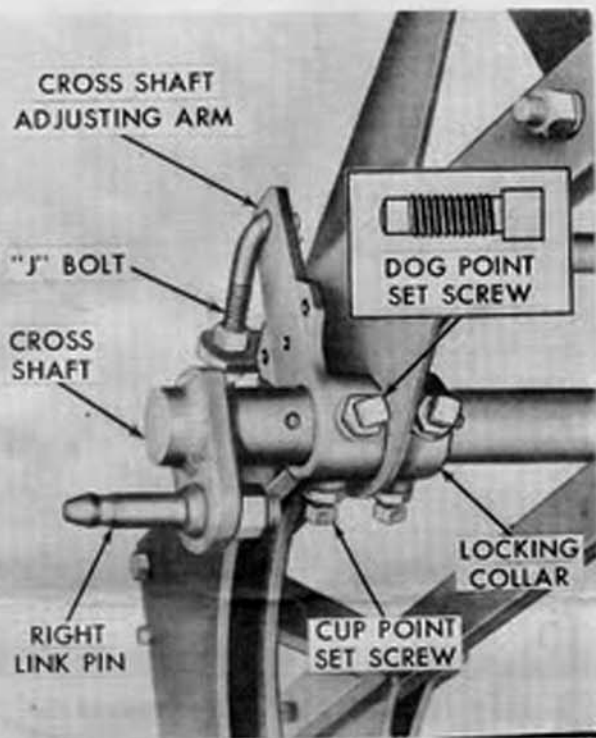


Figure 4 - Cross Shaft Adjustments

in the cross shaft adjusting arm as shown and should engage the second hole from the right of the forward series of holes in the cross shaft. The cup point set screw is then installed in the rear of the cross shaft adjusting arm as shown. After adjusting the cross shaft, the locking collar should be positioned against the inside of the "A" frame and the set screws and jam nuts in the collar tightened securely.

**NOTE:** The set screws in the locking collar should be tightened against the cross shaft and not in or near the adjusting holes.

**Width of Cut:** The "J" bolt shown in Figure 4 controls the width of cut by rotating the cross shaft to angle the plow. For the recommended starting setting, locate the right link pin (see Figure 4) directly below the center of the cross shaft.

**NOTE:** On plows equipped with a Width of Cut Adjusting Lever (sold separately), the cross shaft is rotated to change the width of cut by means of a lever accessible from the tractor seat.

**Depth Control - FMD Tractor:** When operating with a Fordson Major Diesel Tractor, plowing depth is gauged by means of the gauge wheel shown in Figure 5. The wheel may be positioned toward the inside if desired. See inset, Figure 5, for proper location of the gauge wheel on one and two bottom plows.

**Rolling Coulters:** Normally, the rolling coulters should be set approximately 2-1/2 inches above the nearest

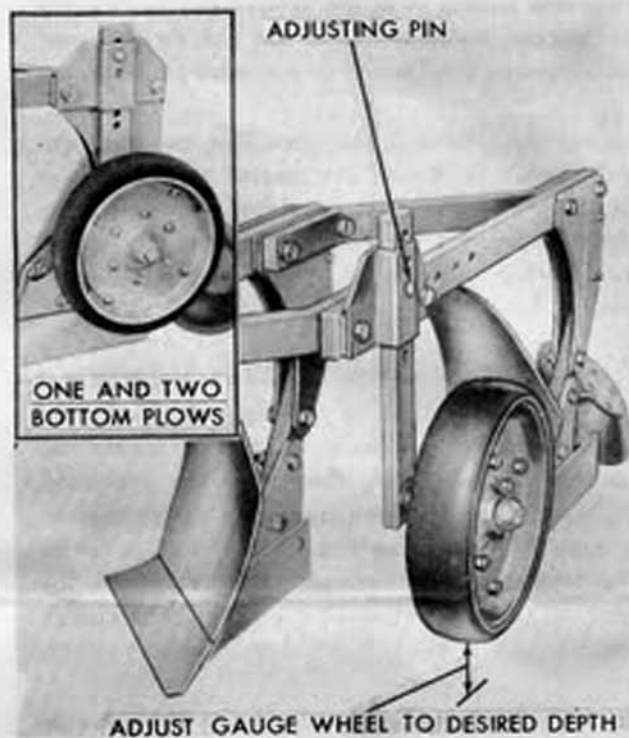


Figure 5 - FMD Gauge Wheel Assembly

point of the plow shin and about 3/4 inch to the left of the shin as shown in Figure 6. Adjust all coulters to the same dimension. Tighten the coulters securely.

**NOTE:** Before entering the field, remove any protective coating on polished surfaces to improve scouring.

#### FIELD ADJUSTMENTS

After the field has been opened and the tractor wheel is in a furrow of approximate plowing depth, the following field adjustments should be made in the sequence listed.

**Depth Control:** On Ford Tractors, depth of penetration is determined by setting the touch control lever on the tractor hydraulic system.

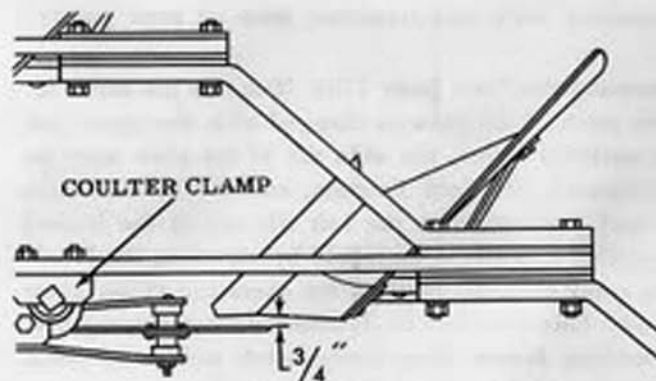


Figure 6 - Rolling Coulters Adjustment



When the rear bottom is at the desired depth, the stop on the tractor quadrant should be set so that the lever can always be returned to the same position.

When using the plow with the Ford Tractor, it is generally desirable to operate the tractor hydraulic system in the Constant Draft position; however, the Position Control setting may be satisfactory under certain plowing conditions. (See Tractor Owner's Manual).

When operating the plow with a Fordson Major Diesel Tractor, depth is gauged by a gauge wheel as previously outlined and shown in Figure 5. Lower the plow to the desired depth, then raise the hydraulic control lever to be sure the tractor is carrying most of the weight. Return the hydraulic control lever to the "hold" or neutral position. The tractor should carry the bulk of the weight of the plow for maximum traction.

**NOTE:** A Position Control Attachment is available as extra equipment, for use on the PMD Tractor. This attachment may be set to automatically return the hydraulic control lever to the neutral position when the plow reaches the desired depth.

**Pitch Control:** With the rear bottom at the desired depth and the rolling landside set  $3/8$  to  $1/2$  inch below the sliding landside as shown in Figure 2, adjust the tractor upper link until the rolling landside runs at the bottom of the furrow wall. This indicates that the plow bottoms are operating at the optimum pitch.

The amount of pitch or suction required varies in different types of soil. In extremely hard to penetrate soil, the upper link may be shortened to help increase penetration; however, the rolling landside should then be lowered so that it rides at the bottom of the furrow wall.

**NOTE:** Care should be taken to avoid plowing with the upper link adjusted too short. This will cause increased draft and premature wear of plow points.

**Leveling the Plow (Side Tilt):** Whenever the front to rear pitch of the plow is changed with the upper link as outlined above, the side tilt of the plow must be readjusted. On Ford Tractors, and on Fordson Major Diesel Tractors with the left lift rod in the locked position, side tilt is corrected by adjusting the leveling crank until all bottoms are operating at the same depth. This can best be determined by observing that a uniform furrow slice leaves each moldboard when operating at the correct plowing speed.

**NOTE:** The furrow slice leaving the front moldboard may also be affected by the width of cut.



Figure 7 - Measuring for Correct Width of Cut

If the left lift rod of the Fordson Major Diesel Tractor, is in the float position, as shown in Figure 3, raise the hydraulic control lever slightly until the pin floats approximately  $1/8$ " to  $1/4$ " above the bottom of the slot while plowing, then level the plow with the tractor leveling crank as described above. This adjustment when properly made will allow the plow to maintain a more uniform furrow depth, independent of the left rear tractor wheel on rough or rolling land. A plow that is properly set for pitch and level may still be throwing a light or heavy front furrow slice depending on the width of cut of the front bottom.

**Width of Cut:** After the plow has been leveled and the coulter blades are all properly adjusted, the width of cut should be measured as shown in Figure 7. The dimension from the coulter blade to the furrow wall should be the same as the size of the plow bottom. For example, a 14 inch plow should cut 14 inches on the front bottom.

If the width of cut is not correct and the tractor wheel tread and other adjustments are correct, correction should be made by adjusting the "J" bolt as shown in Figure 8, or with the Width of Cut Adjusting Lever (sold separately). To decrease the width of cut, rotate the Cross Shaft Adjusting Arm toward the rear. To increase the width of cut, rotate the adjusting arm forward. Should it become necessary to decrease the width of cut more than the limits of the "J" bolt or the Width of Cut Adjusting Lever will permit, the dog point set screw (see Figure 4) should be interchanged with the cup point set screw, then the top of the



Figure 8 - Changing Width of Cut

Cross Shaft Adjusting Arm should be rotated forward until the dog point set screw will engage the corresponding hole in the rear series of holes in the cross shaft.

**NOTE:** A major change in the width can affect the level of the plow, recheck as outlined above.

**Rolling Coulter:** If rolling coulters (extra equipment) are being used, they should be checked for proper adjustment at this time. The coulters should be set just deep enough to cut through surface trash and only far enough to the left of the plow bottom shin to leave a straight, clean furrow wall. The coulters may be installed at either of two positions on the plow beam. For maximum trash clearance, position the coulters and clamps in the forward set of holes. Where penetration is a problem, the coulters should be installed in the rearmost position.

**IMPORTANT:** Keep the rolling coulters bearings lubricated at all times, and tightened only as necessary to avoid excessive side play.

**Jointers:** Jointer Assemblies (extra equipment) should be set to cut from one to three inches deep, depending on trash conditions.

The point of the jointer should always touch the coulters blade lightly to prevent trash accumulation. As wear occurs, the jointer blade may be rotated by loosening the two bolts that attach the blade to the palm.

**Tractor Steering:** After adjustments have been made as outlined above, the tractor steering should be checked. If the tractor steering is objectionable due

to excessive side pull, loosen the locking collar (see Figure 4) and the dog point and cup point set screws in the Cross Shaft Adjusting Arm. Move the cross shaft laterally in the same direction as the front end of the tractor tends to pull. The dog point set screw should then be secured in the next lateral hole in the cross shaft. Tighten the cup point set screw and the set screws in the locking collar securely.

**NOTE:** Always check the width of cut after the cross shaft has been moved laterally and readjust if necessary.

**Tractor Plowing Speed:** The speed of operation while plowing will usually vary with ground conditions and the type of bottom being used. The recommended ground speed for the Ford Moldboard Plow, under average conditions, is from 3-1/2 to 5 M.P.H.

## SAFETY SHEAR BOLT

Your Ford Moldboard Plow incorporates a safety device to prevent discomfort to the operator and damage to the plow when an obstruction is hit in the field. A special heat treated shear bolt (Part No. 300875-S8) allows the bottom to trip as shown in Figure 9.

**IMPORTANT:** After the first few hours of operation, retighten the beam pivot bolts securely. These bolts should be checked regularly.

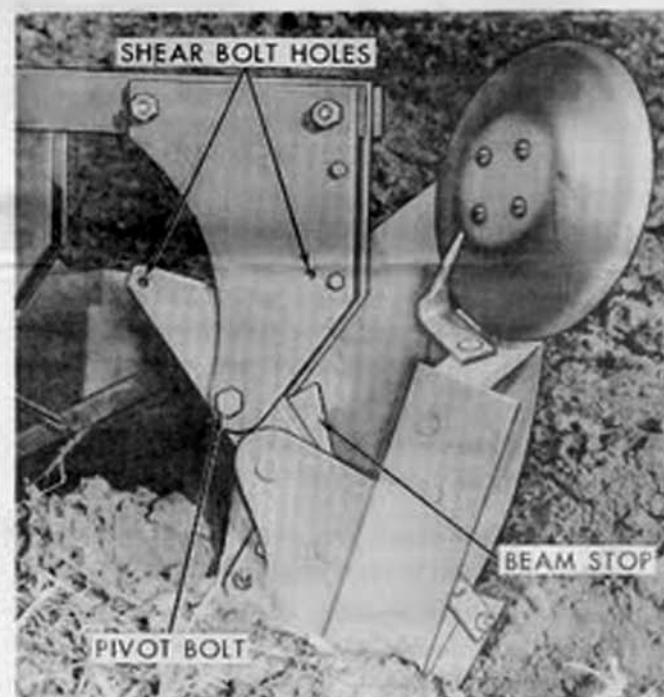


Figure 9 - Bottom in Tripped Position

The following Operational Check Lists are provided as a quick reference for the basic adjustment procedure of your plow. It is important that the adjustments be made in the proper sequence as listed. For detailed information regarding each adjustment, refer to the section on FIELD ADJUSTMENTS.

### FORD PLOW OPERATIONAL CHECK LIST

1. **Depth:** Obtain desired plowing depth of rear bottom and set stop on tractor quadrant.
2. **Pitch:** Adjust tractor upper link until rolling landside is at bottom of furrow wall. (Rolling landside previously set 3/8" to 1/2" below sliding landside).
3. **Level:** Level plow with tractor leveling crank until all bottoms are plowing at same depth.
4. **Width of Cut:** Adjust coulter vertically and laterally to obtain straight, clean furrow wall.
5. **Coulters:** Check for proper width of cut and correct by rotating plow cross shaft. Set all coulters uniformly.
6. **Steering:** Check the tractor steering for objectionable side pull. Slide plow cross shaft if necessary.

### FMD PLOW OPERATIONAL CHECK LIST

1. **Depth:** Obtain desired plowing depth of rear bottom by setting Gauge Wheel.
2. **Pitch:** Adjust tractor upper link until rolling landside is at bottom of furrow wall. (Rolling landside previously set 3/8" to 1/2" below sliding landside).
3. **Level:** On plows operated with tractor left lift rod in FLOAT POSITION, adjust hydraulic control level until float pin is 1/8" to 1/4" from bottom of slot. Next, level the plow with the tractor leveling crank, until all bottoms are at same depth. Where left lift rod is in LOCKED POSITION, level plow with tractor leveling crank until all bottoms are plowing at same depth.
4. **Width of Cut:** Check for proper width of cut and correct by rotating plow cross shaft.
5. **Coulters:** Adjust coulters vertically and laterally to obtain straight, clean furrow wall. Set all coulters uniformly.
6. **Steering:** Check tractor steering for objectionable side pull. Slide plow cross shaft if necessary.

### MAINTENANCE

**Lubrication:** The lubrication fittings on the Ford Moldboard Plow are located as follows: one on each coulter bearing, and one on the rolling landside. Lubricate these fittings daily with a grease gun and a good grade of pressure gun grease.

**Plow Care:** When the plow is not in use, protect all polished surfaces from rust by applying a coat of grease or hard oil.

Inspect the plow periodically for worn parts and loose nuts and bolts. Particular attention should be given the beam pivot bolts (see Figure 9). These bolts should be tightened periodically to eliminate any side play or looseness.

### ACCESSORIES

**Width of Cut Adjusting Lever:** A Width of Cut Adjusting Lever (Part No. 109708) is available as extra equipment. This assembly replaces the cross shaft adjusting "J" bolt and provides the operator with a quick, easy means of adjusting for proper width of cut. It is especially useful in hillside plowing where the width of cut must be corrected frequently.

**Rolling Coulters:** The rolling coulters shown in Figure 1 are available, as extra equipment, with either plain or notched blades. The notched coulter blades are recommended for plowing in trashy ground. Model numbers of the coulters are as follows:

Model 10-350	.....	16" Plain Coulter
Model 10-351	.....	16" Notched Coulter
Model 10-352	.....	18" Plain Coulter
Model 10-353	.....	18" Notched Coulter

**Jointers:** Jointers (see Figure 1) assist in turning under and covering short growth and trash. They are available, as extra equipment in the following models:

Model 10-354	....	Jointer Assembly (long blade)
Model 10-355	....	Jointer Assembly (short blade)

**Coverboards:** Coverboards (extra equipment) are particularly effective in covering tall growth and heavy trash which is anchored to the ground. Coverboards are available, for use on Economy Bottoms only, as Part No. 109243.

**Moldboard Extensions:** Moldboard Extensions (Part No. 103911) are available, as extra equipment, for use on the Standard General Purpose, Sod and Clay, Scotch and Economy Sod and Clay Bottoms. These extensions are used in certain types of soil to give the furrow slice an additional "roll" as it leaves the moldboard.



## SHIPPING

The Ford Moldboard Plow is shipped assembled with the exception of the bottoms, rolling landside and cross shaft assembly. The Gauge Wheel Assembly for use with FMD operation, comprises an additional bundle. The bundle numbers are the same as the model numbers, except for the Rolling Landside which is shipped separately as Bundle No. 103000.

## ASSEMBLY

**NOTE:** Assembly of the Ford Moldboard Plow is the responsibility of the Ford Tractor and Implement Dealer. The implement should be delivered completely assembled.

1. Install the cross shaft assembly on the plow as follows:

**NOTE:** The cross shaft assembly shown is for use with Ford Tractors only. The FMD cross shaft, while slightly different in appearance, is installed in the same manner.

- a. Place a jack stand under the left side of the plow to hold it in an upright position. Remove the top "A" frame hex head bolt, spacer, lock washer and nut (1), Figure 10.
- b. Remove the nut (2), Figure 10, from the long hex bolt.
- c. Remove the hex head bolt (4), Figure 10, flat washer, bushing, lock washer and nut which secures the cross shaft adjusting linkage to the plow. Remove the right "A" frame member.
- d. Position the cross shaft adjusting arm (see Figure 4) on the cross shaft, then install the right "A" frame member on the shaft. Position the locking collar (see Figure 4) on the cross shaft and slide the cross shaft through the left "A" frame member. Reinstall the right "A" frame member on the long front bolt and secure with the lock washer and nut (2). Do not tighten securely at this time.

**NOTE:** For two and three bottom 16 inch plows, a spacer (Part No. 109674) is supplied and should be installed on the cross shaft between the cross shaft adjusting arm and the right "A" frame member.

- e. Engage the dog point set screw in the Cross Shaft Adjusting Arm in the second hole from the right in the forward series of holes in the cross shaft, as shown in Figure 4. Tighten the jam nut securely. Tighten the cup point set screw against the cross shaft and secure with the jam nut as shown.

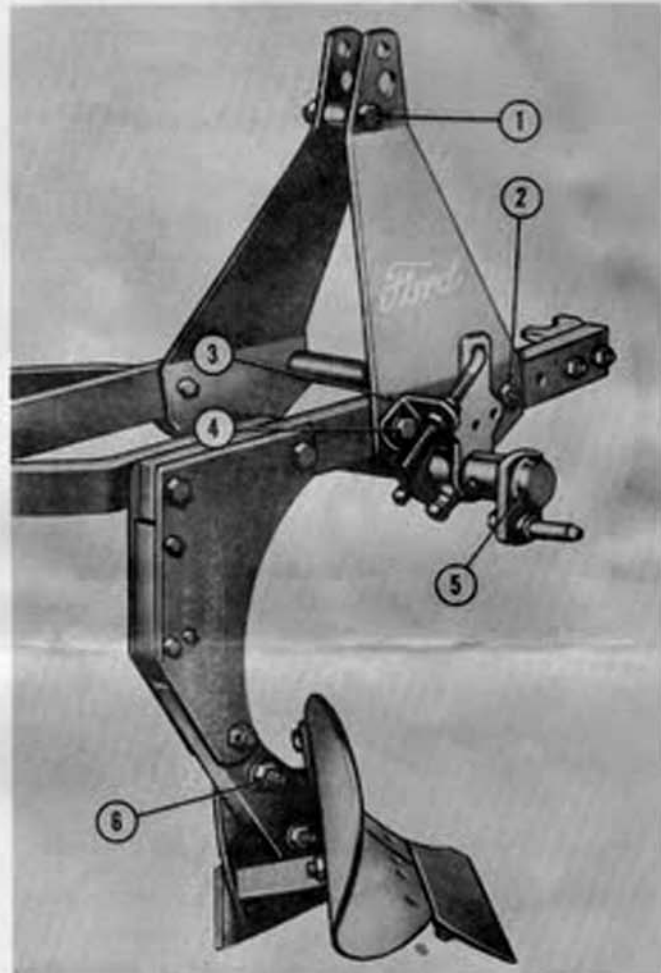


Figure 10 - Cross Shaft Installed

- f. Attach the "J" bolt bracket (3), Figure 10, with the hex head bolt, flat washer, bushing, lock washer and nut (4). Do not tighten the bolt at this time.
- g. Reinstall the top "A" frame hex head bolt and spacer (1), Figure 10, and secure with the lock washer and nut.
- h. Tighten the nuts on the hex head bolts (2) and (4), Figure 10, securely.
- i. Slide the cross shaft assembly to the left until the Adjusting Arm is against the right "A" frame member, then secure with the locking collar as shown in Figure 4. Tighten the jam nuts on the two collar set screws securely.

**NOTE:** Adjust the cross shaft "J" bolt for initial width of cut outlined in the section on PRELIMINARY ADJUSTMENTS.

2. Attach the bottom assemblies (see 5, Figure 11) to the plow frame as follows:

- a. Attach the plow to the tractor three point linkage and raise it with the tractor hydraulic system.

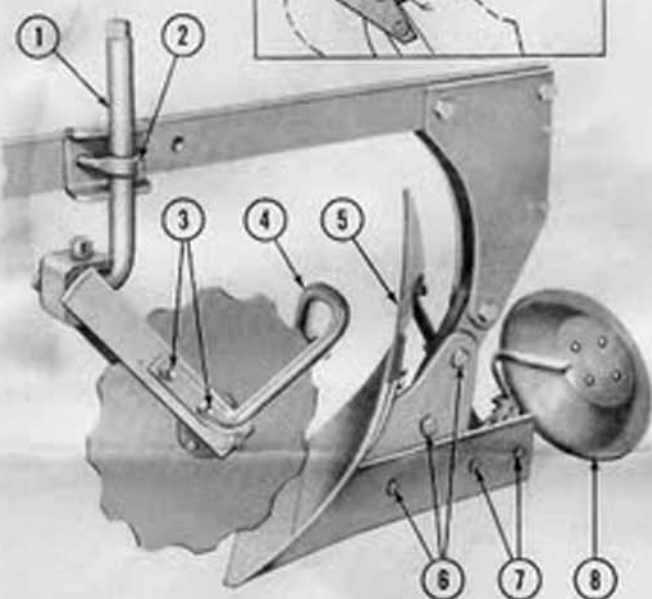


Figure 11 - Bottoms, Rolling Landside, Coulters and Jointers Attached

Remove the plow bottom attaching bolts from their shipping position in the beams.

- b. Back the tractor, with the plow frame attached, over the bottom assemblies (5), Figure 11, and lower the frame until the holes in the plow beams align with the holes in the bottoms.

**IMPORTANT:** When attaching the rear bottom, install the BEAM STOP on the right side of the beam as shown in the inset, Figure 11. This prevents damage to the rolling landside when the rear bottom is tripped.

3. Secure the bottoms to the beams with the three bolts, lock washers and nuts as shown at (6), Figure 11.

**NOTE:** When installing all Standard Front Bottoms, discard the top 2-1/2" button head attaching bolt (6), Figure 10 and replace it with a 3-1/4" heat treated bolt. Install three 5/8" flat washers on the bolt, between the beam and the moldboard brace. This will permit free rotation of the front bottoms when tripping.

4. Attach the rolling landside assembly (8), Figure 11, to the plow as follows:

- a. Bolt the rolling landside arm to the sliding landside with two plow bolts, lock washers and nuts (7). Do not tighten securely at this time.
- b. Raise the plow with the tractor hydraulic system, then turn the adjusting set screw in the bottom of the rolling landside arm until the rolling landside is 3/8 to 1/2 inch below the sliding landside, see Figure 2. Secure the set screw with the jam nut.
- c. Tighten the nuts on the plow bolts (7), Figure 11, securely.
- d. Adjust the scraper so that it touches the rolling landside lightly.

5. On plows which are to be used with Fordson Major Diesel Tractors, install the gauge wheel assembly as follows:

- a. On three bottom plows, attach the spacer and gauge wheel bracket to the front of the third beam with the two 3/4" x 4-3/4" bolts, lock washers and nuts provided. See Figure 5.
- b. On one and two bottom plows, attach the gauge wheel bracket and spacer to the rear of the plow with the two 5/8" x 5" bolts, lock washers and nuts provided. See inset, Figure 5.

6. If coulters and jointers (sold separately) are to be used, attach them to the plow as follows:

- a. Attach the coulters stem (1), Figure 11, to the plow beam with the U-bolt and seat (2), as shown. Adjust the coulters as outlined in the PRELIMINARY ADJUSTMENTS, then tighten the U-bolt nuts securely.
- b. Attach the jointer arm (4), Figure 11, to the left side of the coulters fork with two carriage bolts, lock washers and nuts (3). Adjust the jointer so that the point is lightly touching the coulters blade and approximately 2 inches above the lower edge of the coulters blade.

7. If the Width of Cut Adjusting Lever (sold separately) is to be used, attach it to the plow as outlined in the instructions provided with the lever assembly.



# OWNER'S MANUAL

ASSEMBLY and OPERATING INSTRUCTIONS



— PREPARED BY —

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