

35 AND 45 INTEGRAL MOLDBOARD PLOWS



OPERATORS MANUAL 35 AND 45 INTEGRAL MOLDBOARD PLOWS

OMA43507 F1 English

**PLOW & PLANTER WORKS
OMA43507 F1**

LITHO IN THE U.S.A.
ENGLISH



35 AND 45 INTEGRAL MOLDBOARD PLOWS

TO THE DEALER

After the plow has been assembled and lubricated, inspect it thoroughly to be sure it is functioning properly before delivering it to the customer. The following check list is a reminder of points to check. Check off each item as it is found satisfactory or after proper adjustment has been made.

The John Deere Delivery Receipt, when properly filled out and signed by the dealer and customer verifies that the predelivery and delivery services were satisfactorily performed. When delivering this machine, give the customer a copy of the delivery receipt and the operator's manual. Explain their purpose.

PREDELIVERY CHECK LIST

The following check list is a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- ☐ Inspect to be sure nuts on all bolts have been tightened and all cotter pins spread. See bolt torque chart on page 33.
- ☐ Be sure all grease fittings are installed. Lubricate the plow (see pages 31-32).
- ☐ If plow is equipped with a gauge wheel, inflate tire to 250 kPa (2.5 bar) (36 psi) of air pressure.
- ☐ Paint all unpainted bolts and nuts and any other parts scratched in shipment.
- ☐ This plow has been checked and, to the best of my knowledge, is ready for delivery to the customer.

(Date Set Up)

(Signature of Set-Up Person)

OWNER REGISTER

Name _____

Post Office _____

County _____ State _____

Date Sold _____

DELIVERY CHECK LIST

The following check list is a reminder of very important information which should be conveyed directly to the customer at the time the plow is delivered. Check off each item as it is fully explained to the customer.

- ☐ Advise the customer that the life expectancy of this or any other machine is dependent on regular lubrication as directed in the operator's manual.
- ☐ Tell the customer all about safety precautions which must be observed while using this plow.
- ☐ When the plow is transported on a road or highway at night or during the day, accessory lights and devices should be used for adequate warning to operators of other vehicles. In this regard tell the customer to check local governmental regulations.
- ☐ Give the operator's manual to the customer and explain all operating adjustments.
- ☐ To the best of my knowledge this machine has been delivered ready for field use and customer has been fully informed as to proper care and operation.

(Date Delivered)

(Signature of Delivery Person)



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Safety

2-3



CAUTION: Improper use of the plow can result in personal injury. Please read and understand all safe operation rules before using the plow.

TRANSPORT SAFETY

Use required tractor front end weights for optimum tractor stability. See pages 8, 10 and 11 under "FRONT BALLAST."

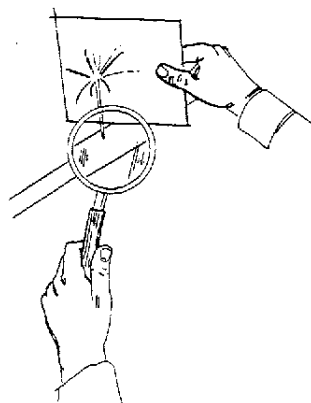
Never travel at any speed which does not permit adequate control of steering and stopping.

Reduce speed when traveling over rough or uneven ground.

Be certain sway chains or sway blocks are adjusted to prevent excessive side sway when transporting the plow.

When transporting the plow on a road or highway at night or during the day, use accessory lights and devices for adequate warning to operators of other vehicles. In this regard, check local governmental regulations for proper use. Various safety lights and devices are available from your John Deere dealer.

AVOID HIGH PRESSURE LEAKS



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H35336

Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve pressure. Before applying pressure, be sure connections are tight and lines, pipes and hoses are not damaged. Use a piece of cardboard or wood, rather than hands, to search for leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Always relieve pressure in the hydraulic system before working with hydraulic system components.

OPERATE SAFELY

Never permit any person other than the operator on the tractor.

Never ride or permit others to ride on the plow.

When the plow is in a raised position, be sure rockshaft lever is not bumped or touched by anyone.

(If Equipped) Lower the support stand to help support the plow before unhitching from the tractor.

On plows without a support stand, block or support the plow frame to prevent the plow from tipping after it is disconnected from the tractor. If plow is equipped with a gauge wheel, lower the gauge wheel to support the plow.

Stand clear of plow when raising and lowering.

Do not attempt to adjust the plow while it is in motion.

For tractor stability and operator safety, tractor front end weights and/or liquid ballast in the front tires may be required. See pages 8, 10 and 11.

Keep children and pets a safe distance away.

Follow all safety precautions stated in your tractor operator's manual.

Always lower the plow to the ground when not in use.

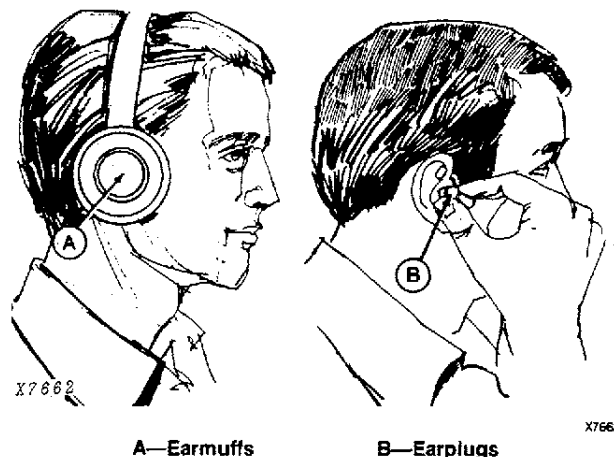
LUBRICATE THE PLOW SAFELY

Do not grease, oil or adjust the plow while it is in motion.

DISPOSE OF SPRAY CANS SAFELY

If spray can paint is used for protecting plow bottoms to be put in storage, be careful when discarding empty can. Do not incinerate or puncture can.

PROTECT AGAINST NOISE



A—Earmuffs

B—Earplugs

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable or uncomfortable loud noises.

MOUNTING TIRES

Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job. Have it done by your John Deere dealer or a qualified tire repair service.

When sealing tire beads on rims, never exceed 35 psi or maximum inflation pressures specified by tire manufacturers for mounting tires. Inflation beyond this maximum pressure may break the bead, or even the rim, with dangerous explosive force. If both beads are not seated when the maximum recommended pressure is reached, deflate, reposition tire, relubricate bead, and reinflate.

Detailed agricultural tire mounting instructions, including necessary safety precautions, are contained in John Deere Fundamentals of Service (FOS) Manual 55, Tires and Tracks, available through your John Deere dealer. Such information is also available from the Rubber Manufacturers Association and from tire manufacturers.



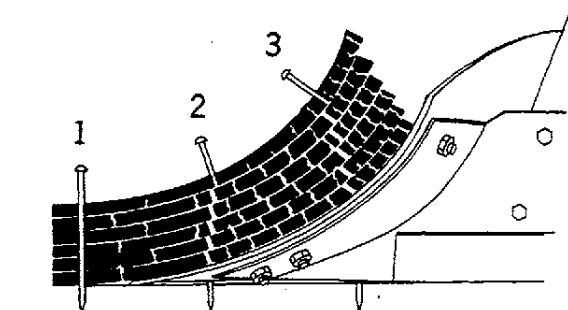
Plowing Terms

GENERAL

4-6

The purpose of the moldboard plow is to turn and break up the soil, admitting air, light, and moisture, and to cover surface vegetation completely. Mixed with the soil, the decaying plants provide food for the subsequent crop.

The principle of the pulverizing effect of the moldboard plow is shown in the illustration below.



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As the soil moves up the curved surface of the moldboard, it is progressively sheared and pulverized as illustrated by the pins 1, 2 and 3.

IMPORTANCE OF THE BOTTOM

No matter how well a plow may be built, proper care of the bottom is a **must** for good performance. If the bottom fails to scour and turn the soil properly, the seedbed will be uneven and lumpy, resulting in lower yields.

Unnecessary delays at plowing time are often caused by a bottom that will not scour properly. The trouble is usually caused by improper adjustment of the plow, or from insufficient care of the bottom.

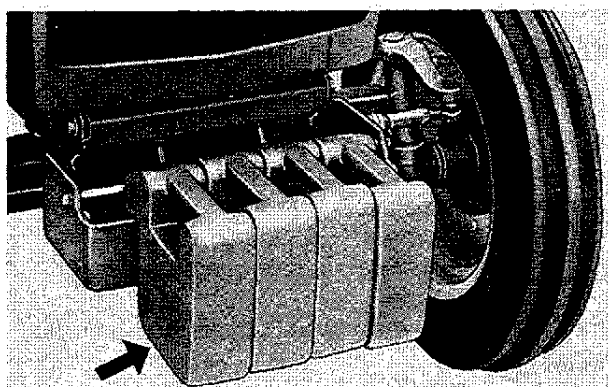
Protect the face of the moldboard and share from rust whenever the plow is not in use (even overnight) by applying a light coating of oil or grease. When storing the plow for the season, apply a good rust preventive such as John Deere Plow Bottom Black Paint. A well cared for plow bottom will help insure good scouring and better performance of your moldboard plow.

Be sure the tractor and plow are adjusted properly. Before going to the field, check plow coulter and land-side settings; initial settings are given on pages 18 and 21. Check tractor hitch link lengths; starting point settings are given on pages 9 and 12. Make final adjustments in the field as described on page 22.

DEFINITIONS

The following list of definitions is provided to help familiarize you with terms common to plowing.

Ballast

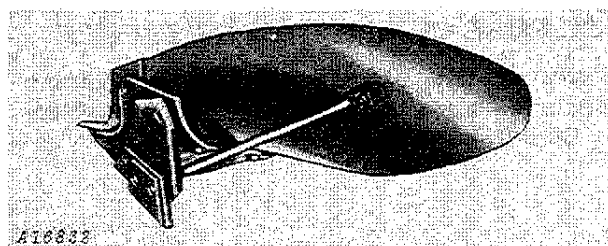


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Ballast is weight added to the front or rear of tractor; such as calcium chloride solution in tires or cast iron weights.

Bottom

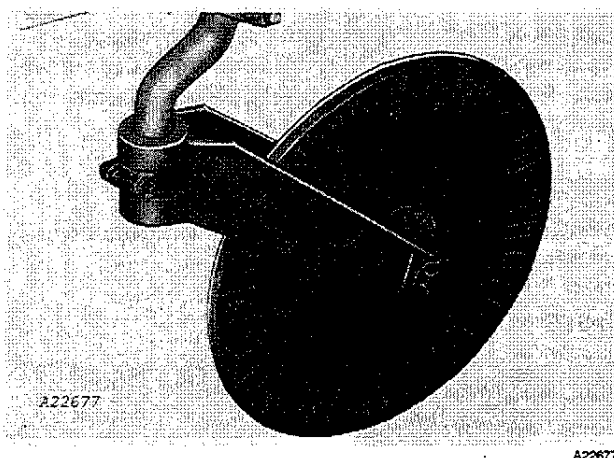


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The bottom of a plow is the part that turns the ground over. The bottom is made up of a moldboard, a shin, a share, a landside and other related parts.

Coulter



The coulter is the sharp disk attached to the plow frame. The purpose of the coulter is to cut trash and sod ahead of the bottom which helps establish a smooth furrow wall.

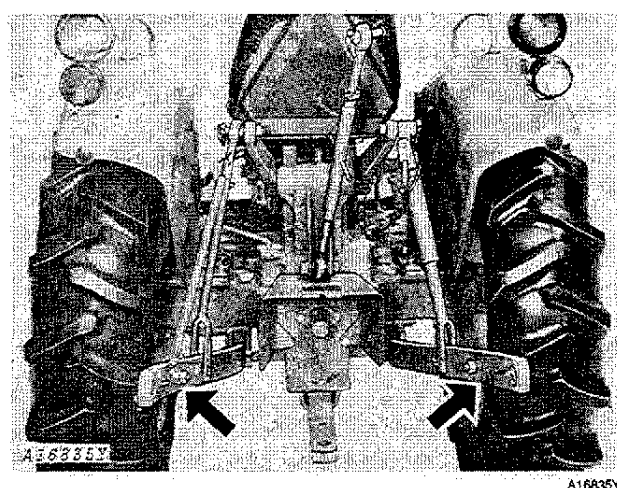
Crowding

Crowding is a characteristic of an improperly adjusted plow which causes the plow to pull to the right or left.

Draft

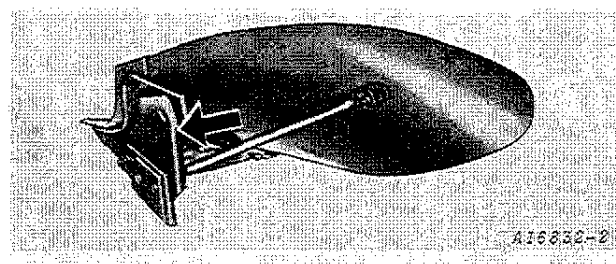
The draft is the pull of load imposed upon a tractor by a plow or another ground engaging implement.

Draft Links



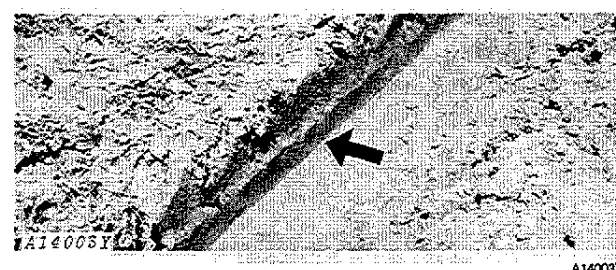
The draft links are the two lower hitch links on a tractor three point hitch. The draft links bear the pulling load.

Frog



The frog (bold arrow) is the basic part of a plow bottom which attaches the moldboard, landside and share.

Furrow Wall

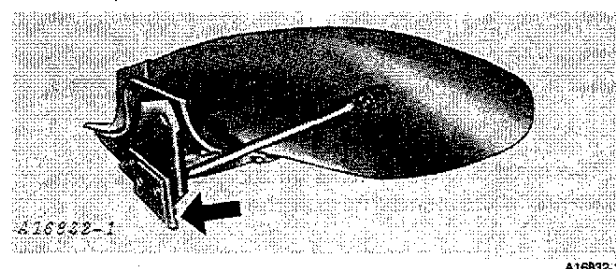


The furrow wall is the sheer, smooth surface on the left side of the furrow.

Land Polish

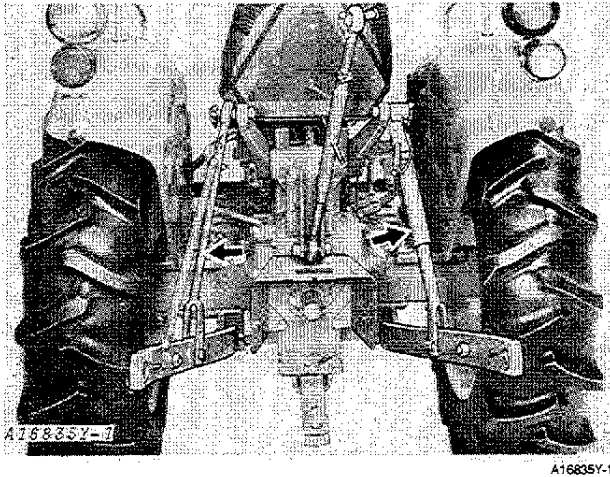
The land polish is the bright metallic luster on a plow bottom caused from the scouring action of the soil.

Landside



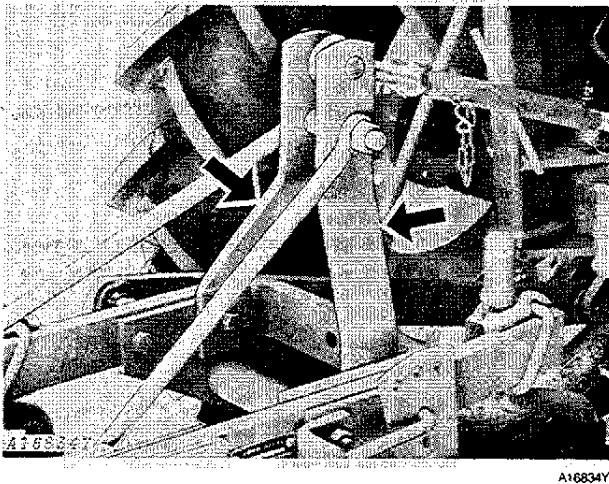
The landside slides along the face of the furrow wall and guides the bottom in the furrow.

Lift Links



The lift links are the part of the tractor three point hitch which attaches the draft links to the upper lift arms.

Mast



The mast is the structure on the plow frame which attaches to the center link on the tractor.

Moldboard

The moldboard is the curved area of the plow bottom which turns the soil. See (C) in illustration at right.

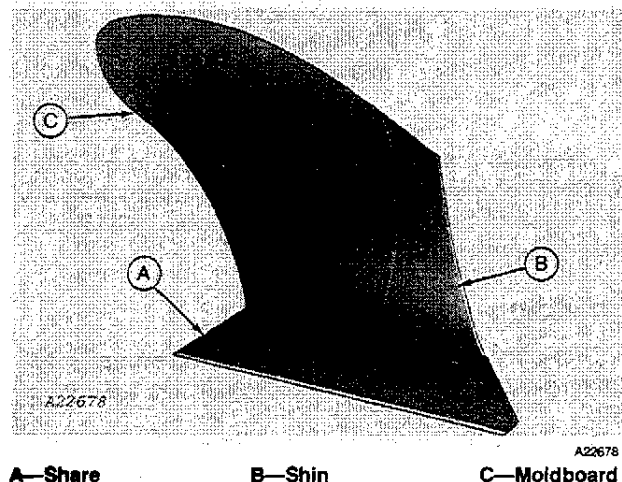
Rockshaft

The rockshaft is the component of the tractor's hydraulic system which raises and lowers the three point hitch. The rockshaft is controlled by a lever located on the right side of the tractor seat.

Scouring

Scouring is the action of the soil as it moves across the moldboard.

Share



A—Share

B—Shin

C—Moldboard

The share (A) is the area of the bottom which cuts the base of the furrow slice.

Shin

The shin (B) is the leading edge of the moldboard which is replaceable.

Standard

The standard is the vertical support which attaches the plow bottom to the frame.

Suck

Suck is the ability of the bottom to penetrate.

Trash

Trash is the surface vegetation remaining from previous crops. The coulter must slice cleanly through the trash to have a smooth furrow wall.



Preparing For Use

IMPORTANCE OF PROPER ADJUSTMENT

A well adjusted plow pulls lighter, has furrow slices which are uniform in width and depth, covers trash and leaves the soil in proper condition to be worked down into the best type seed bed.

Improper adjustment results in rapid wear, possible breakage of parts and inefficient operation.

PREPARING THE PLOW

Plow Bottoms

The polished surfaces of the plow bottoms have been painted with protective black paint.

In those soils where the black paint will not wear off, remove with diesel fuel.

If the plow is not to be used immediately, protect polished surfaces by applying a coat of cup or gun grease. If the plow is to be put in storage for a considerable length of time, see page 33.

Bolts And Set Screws

Before starting to work with a new plow or one which has been stored, be sure all bolts and set screws are tight and all cotter pins spread to keep them from falling out. Be sure the bolts that hold the plow bottoms are drawn up tight.

Check for loose bolts, screws, or parts when lubricating the plow. Loose bolts are easily lost or cause excessive wear on parts, resulting in possible damage to the plow. See page 33 for torque specifications.

Tire Inflation

If plow is equipped with rubber-tired rear wheel or gauge wheel, inflate to 250 kPa (2.5 bar) (36 psi) of air pressure.

Lubrication

Be sure plow has been properly lubricated. See Lubrication on pages 31-32.

PREPARING AND ADJUSTING THE TRACTOR

For complete tractor operating instructions, refer to your tractor operator's manual.

Tire Inflation

Inflate the tractor tires as recommended in the tractor operator's manual.

Rear Wheel Weighting

Rear wheel weights may be necessary to eliminate excessive wheel slippage or for stability in rough or hillside fields. However, weights should not be added to the point where all slippage is eliminated. To do so would hinder maximum performance of the tractor.


The ideal amount of added weight can be determined by observing the tracks of the rear wheels. When the tractor is pulling its rated load, the soil between the tire lugs should be broken or shifted. If too much weight has been added, the tread marks will be clear and distinct. If too little weight has been added, the tread marks will be entirely obliterated. See your tractor operator's manual.

Cast iron weights, liquid weight solution, or a combination of cast iron and liquid weight may be used to obtain proper rear ballast.

See your tractor operator's manual or your John Deere dealer for rear wheel ballast recommendations.

Preparing and Adjusting the 850, 950 and 1050 Tractors

PTO Master Shield


 **CAUTION:** Be sure the PTO guard is in place any time the master shield is removed. Replace the master shield immediately upon removal of the plow. Be sure the master shield is installed whenever the PTO is used.

Tractor Drawbar

Remove the drawbar from the tractor.

7-12 Front Ballast

Tractor front end stability is necessary for safe and efficient operation. Therefore, it is important that the proper amount of weight be installed on the front of the tractor as recommended in your tractor operator's manual.

 **CAUTION:** Ballast recommendations provide for adequate transport stability. Additional front ballast may be required for satisfactory field operation. See tractor operator's manual.

Instructions

Step 1 - Find your plow model in the IMPLEMENT CODE TABLE and enter its code on line 1 above, right.

Step 2 - Enter an Implement Code for each attachment on line 2.

Step 3 - Add these codes to obtain Total Implement Code.

Step 4 - Select additions or subtractions from tractor operator's manual.

Step 5 - Refer to tractor operator's manual to determine required tractor front ballast.

IMPLEMENT CODE

35 Plow

2-Btm. 16" (400 mm) (Basic Plow)	33
Add for Trash Boards	1
Add for Rear Wheel	3

45 Plow

2-Btm. 14" (350 mm) (Basic Plow)	32
2-Btm. 16" (400 mm) (Basic Plow)	34
3-Btm. 14" (350 mm) (Basic Plow)	52
Add for Trash Boards	
2-Btm.	1
3-Btm.	2
Add for Rear Wheel	
2-Btm.	3
3-Btm.	4
Add for Gauge Wheel (3-Btm.)	2

Our example is a 45 Plow, 2-bottom with 14-inch (350 mm) frame (32) equipped with trash boards (1).


EXAMPLE

YOUR CODE

Step 1	32	Step 1
Step 2	1	Step 2
Step 3	33 (sub.)	Step 3
Step 4		Step 4
Step 5	(total)	Step 5

Refer to your tractor operator's manual for steps 4 and 5 for your recommended front end ballast.

IMPORTANT: Refer to tractor operator's manual: 1. If the total implement code exceeds the maximum implement code listed for a particular tractor model, the implement-attachment combination is not recommended for the tractor. 2. The total load on any tractor wheel due to the weight of the implement-attachment combination and tractor equipment, should not exceed the carrying capacity of the tractor tires.

 **CAUTION:** When operating the tractor in lower gears, which have a maximum speed of 4 mph (6.4 km/h) or less, maximum permissible front end weight is recommended regardless of size and equipment of plow, to maintain front end stability.

For maximum permissible ballast, see your tractor operator's manual.

Rear Wheel Spacing

The rear wheels of the tractor must be set properly as shown in chart below. Unless the tractor wheels are set correctly, the plow and tractor cannot work smoothly together, uneven furrow slices will result, and the tractor will be difficult to steer. Adjust rear wheels of the tractor equi-distant from the center line of the tractor. The distance between the center line of the tractor and the inside of the tire is determined by the size of the plow.

DISTANCE BETWEEN CENTER OF TRACTOR AND INSIDE OF REAR TIRES

Plow Size	Distance
2- or 3-Bottom 14-In. (350 mm)	22 in.-24 in. (560 mm-610 mm)
2-Bottom 16-In. (450 mm)	24 in.-26 in. (610 mm-660 mm)

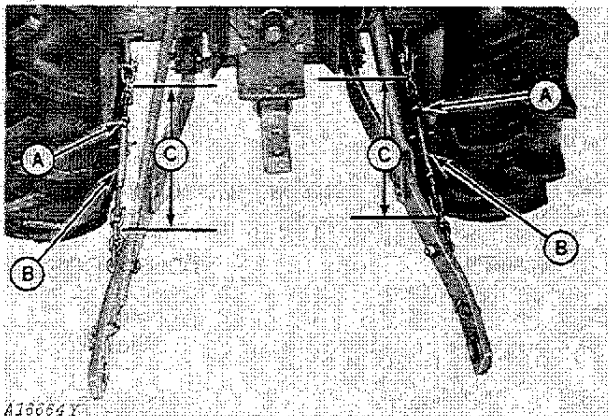
Front Wheel Spacing

Set the front wheels to conform to rear wheel settings, center-to-center of tread, or at least two inches (50 mm) wider than rear tires, measured from center line of tractor to inside edge of tire.

3-Point Hitch and Hydraulic System

The 3-point hitch provides a fast, easy means of attaching the plow to the tractor. See your tractor operator's manual for complete explanation of the hydraulic system.

Sway Chains



A—Lock Nuts
B—Turnbuckle

C—14-1/2-in. (370 mm)
Dimension

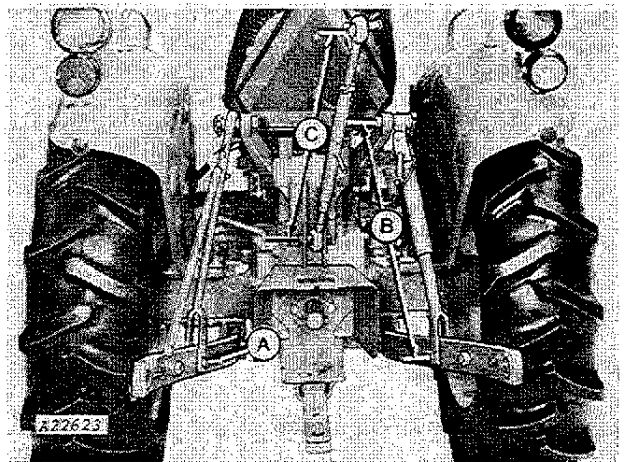
The sway chains are fully adjustable. Loosen lock nuts (A) and adjust sway chain turnbuckle (B) until dimension (C) is 14-1/2-in. (370 mm).

Link Lengths

It is important that the center link and lift links be adjusted properly. Measure from center to center of pins. See illustration below.

Consult the illustration and chart below for the recommended starting lengths of the center link and the lift links.

NOTE: Be sure center link is assembled in the third tractor bracket hole from the top. See illustration below.



Tractor	Left Lift Link	Right Lift Link (Dimension "B")	Center Link (Dimension "C")
850, 950, 1050	Bottom Hole "A"	22-3/8" (570 mm)	25-1/2" (650 mm)

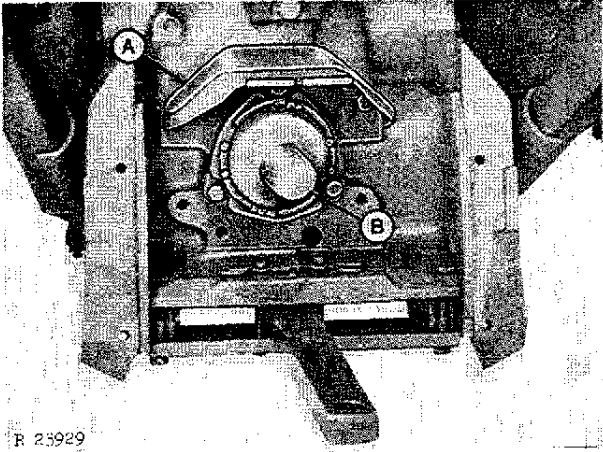
NOTE: A slight increase or decrease in the recommended lengths may be necessary in other than normal conditions and in very deep or very shallow plowing. Final adjustment should be made in the field.

Preparing and Adjusting 2040, 2240, 2440 and 2640 Tractors

Tractor Drawbar

Set the drawbar in the short high position and pin it to the extreme left side of the support. See your tractor operator's manual.

PTO Master Shield and Guard



A—PTO Master Shield

B—PTO Guard

Remove tractor PTO master shield (A).

Install PTO Guard (B) over PTO Shaft as shown above.

Front Ballast

Tractor front end stability is necessary for safe and efficient operation. Therefore, it is important that the proper amount of weight be installed on the front of the tractor as recommended in your tractor operator's manual.

CAUTION: Ballast recommendations provide for adequate transport stability. Additional front ballast may be required for satisfactory field operation. See tractor operator's manual.

Instructions

Step 1 - Find your plow model in the IMPLEMENT CODE TABLE and enter its code on line 1 above, right.
 Step 2 - Enter an Implement Code for each attachment on line 2.
 Step 3 - Add these codes to obtain Total Implement Code.

Step 4 - Select additions or subtractions from tractor operator's manual.

Step 5 - Refer to tractor operator's manual to determine required tractor front ballast.

IMPLEMENT CODE

35 Plow

2-Btm. 16" (400 mm) (Basic Plow)	33
3-Btm. 16" (400 mm) (Basic Plow)	54
4-Btm. 16" (400 mm) (Basic Plow)	79
Add for Trash Boards	
2-Btm.	1
3-Btm.	2
4-Btm.	3
Add for Rear Wheel	
2-Btm.	3
3-Btm.	4
4-Btm.	5
Add for Gauge Wheel	
3-Btm.	2
4-Btm.	2

45 Plow

2-Btm. 14" (350 mm) (Basic Plow)	32
2-Btm. 16" (400 mm) (Basic Plow)	34
3-Btm. 14" (350 mm) (Basic Plow)	52
3-Btm. 16" (400 mm) (Basic Plow)	55
4-Btm. 14" (350 mm) (Basic Plow)	77
4-Btm. 16" (400 mm) (Basic Plow)	80
Add for Trash Boards	
2-Btm.	1
3-Btm.	2
4-Btm.	3
Add for Rear Wheel	
2-Btm.	3
3-Btm.	4
4-Btm.	5
Add for Gauge Wheel	
3-Btm.	2
4-Btm.	2

NOTE: For tractors equipped with Quik-Coupler, add 10 to the implement code.

EXAMPLE

YOUR CODE

Step 1	34	Step 1
Step 2	3	Step 2
	1	
Step 3	38 (sub.)	Step 3
Step 4		Step 4
Step 5	(total)	Step 5

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