

INSTRUCTION

# PLOW BOOK

Claims Service Dept.



Models 9N - 2N - 8N  
1939 - 1952



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# PLOW BOOK

Delving into the early days of civilization, historians have found a great deal of evidence to support the belief that plowing was one of the first gainful occupations of mankind.

Primitive man broke the soil with rocks, or with tough roots and crooked sticks. The muscles of his own back and legs and arms supplied the power to pull these crude implements through the earth so that he could assist Nature in providing food for himself and his family.

Later oxen and then horses were used with improved tools; and finally, within the range of our own memory, mechanical power was introduced to reduce once and for all the drudgery and long hours of tilling the soil.

Those unfamiliar with the plow are likely to regard it as a simple and commonplace tool of little importance. They little realize that it is still a basic farm implement, with the vital function of preparing a deep seedbed, mellowing the soil, covering vegetation and providing air and moisture to the tilled earth.

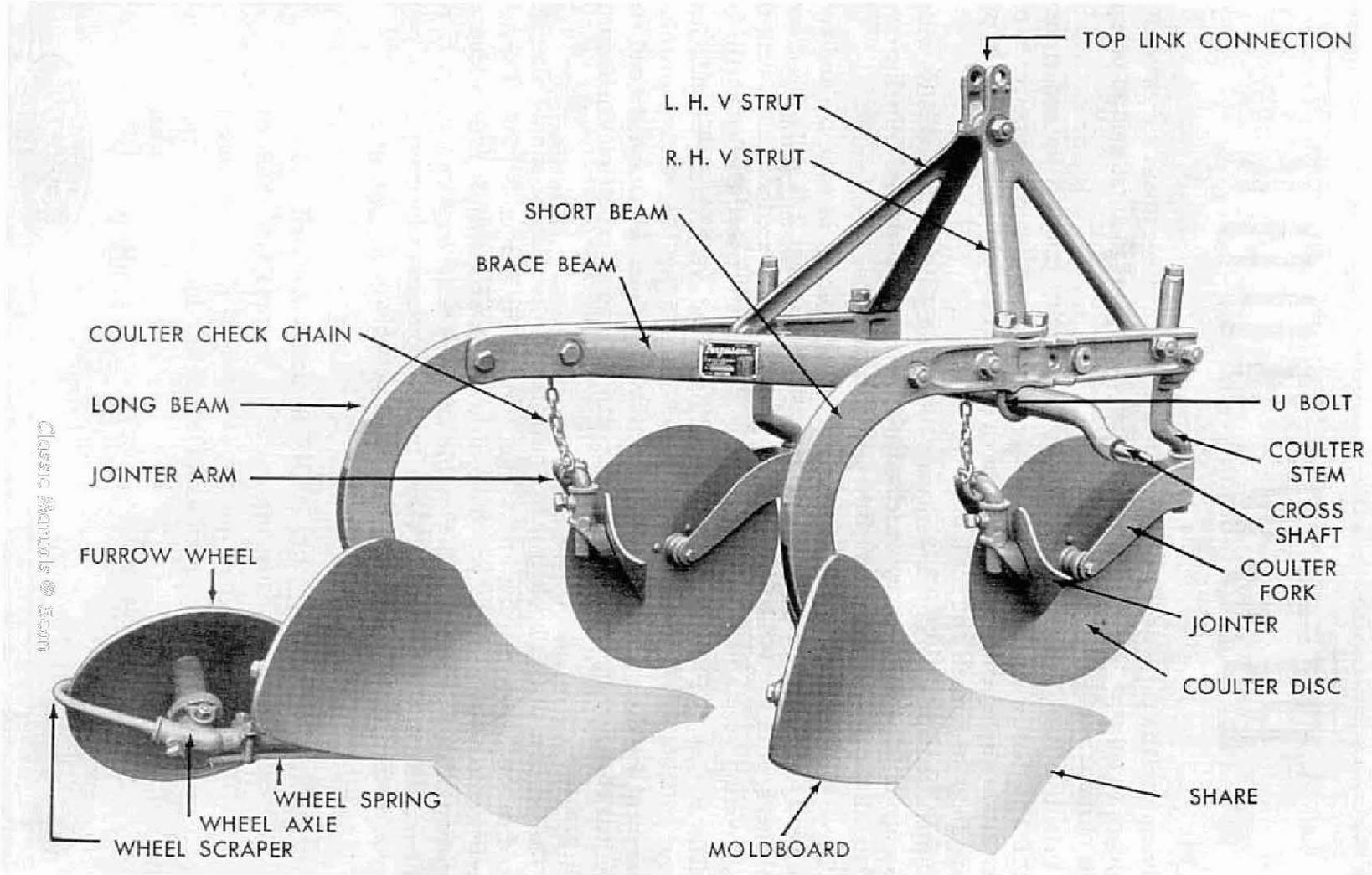
The Ferguson Plow is comparatively light and very strong—made from many different alloy steels which were chosen after long and painstaking experiment for their strength-to-weight ratio. It is so simple to operate and easy to adjust that any member of the family can become an expert plowman with a little practice.

The purpose of this booklet is to illustrate and describe the simple rules that should be observed in using and taking care of the Ferguson Plow. They are merely common-sense rules you have always followed, with a little added explanation made necessary by the unique design of the Ferguson linkage. If you will read them and be guided by them, there is no reason why every job of plowing you do should not be as nearly perfect as possible.



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## OPERATION AND CARE

Like all other Ferguson unit implements, the plow is built to high standards of quality. Materials used in its construction combine light weight with strength to withstand hard service.

Before a plow leaves the Ford factory it is completely assembled and put over an inspection table where it is carefully checked by trained mechanics. During this inspection special care is taken in setting the plow to insure its proper working in the field. It needs no further adjustments except in the most extreme soil conditions.

### REMOVE PAINT AND VARNISH

Do not attempt to use the plow until all paint and varnish has been removed from moldboards, shares, and landsides, also from both sides of the rolling coulters and the top side of jointers. The plow bottom will not scour as long as any paint or varnish remains on these parts.

Also remove all paint and grease from top link pins, ball joints, and connections on the cross-shaft of the plow. This will eliminate any binding.

### ADJUSTMENT OF ROLLING COULTER AND JOINTER

The coulters should be set approximately  $\frac{3}{4}$ " above the share at nearest point. For deep plowing, the coulters must be raised to prevent the hubs from dragging on the ground. They must be raised also in heavy, trashy ground to permit coulters to cut through. Set both front and rear coulters to left of the landside just far enough to leave a clean-cut furrow wall. The jointer should be turned toward the coulters until the point touches the coulters blade lightly with top of jointer approximately  $\frac{1}{2}$ " away from the coulters. Set the jointer just deep enough to roll a slice of soil into the bottom of the furrow. Do not operate the plow without the *check chains* on coulters. These prevent the coulters from swinging side-ways or into the tractor wheels.

Rolling Coulters, like shares, can cause inefficient plowing. Dull coulters increase the draft, tend to ride the plow out of the ground, and do not cut trash well. Coulters should be kept sharp by sharpening or replacement.

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## ADJUSTING WIDTH OF CUT

Fig. 1. To change the width of cut of the front plow base, loosen the U bolts on the rotating cross-shaft. Mark the cross-shaft to beam for a starting point.



Fig. 1.

A  $\frac{1}{8}$ " turn on the shaft will change the width of cut 1". To increase width of cut, rotate the shaft forward. To decrease cut, rotate the shaft backwards. Tighten the U bolts evenly and snug. Under no circumstances should the cross-shaft be moved on the plow horizontally.

Fig. 2. Location of Cross Shaft on Ferguson Plows.

Dimensions are given from left side of Plow Beam to Cross Shaft Collar.

Dim. for 14" 2-Bottom.....	3 $\frac{1}{2}$ "
Dim. for 12" 2-Bottom.....	7 $\frac{1}{2}$ "
Dim. for 10" 2-Bottom.....	9 $\frac{7}{8}$ "
Dim. for 16" Single Bottom.....	8 $\frac{7}{8}$ "

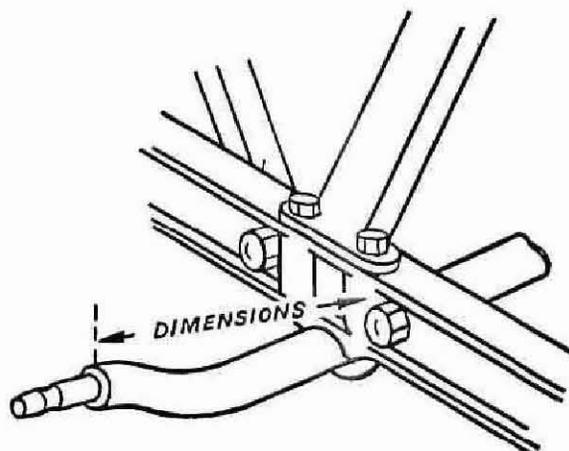


Fig. 2.

## REAR FURROW WHEEL

The rear furrow wheel carries no weight. It carries the side thrust of the plow and is actually a rolling landside. The bracket should be kept free from an accumulation of dirt which might prevent the wheel from moving freely up or down against the spring. If the wheel cannot raise against the spring, slow penetration at the headland furrow may result.

## THE TOP LINK

The top link is a compression member and is used to hold the plow at the proper angle with the ground. It is also used to transfer force to the tractor through the control spring where it can be used to operate the control valve of the hydraulic mechanism. Its length is adjusted to 25" from center to center of the ball joints, and should not be changed. The top link is a *tractor part* and is delivered to the user with the tractor.

## LUBRICATION

Lubricate the following points daily with grease gun furnished in tractor tool kit:

- (1) Coulter Hubs
- (2) Furrow Wheel Hub
- (3) Furrow Wheel Bracket

**CAUTION:** Do not put any oil on connections at cross-shaft, top link, or ball-socket joints. Oil at these points will collect dirt and grit, causing rapid wear.

At the end of each day's plowing, or when storing the plow, be sure to apply a heavy coating of lubricant to all polished parts, such as moldboards, shares, rolling coulters, jointers, and furrow wheel. If this is not done, rust will eat into the hard material, causing pitted places, which will prevent the plow from scouring. This can be corrected only by replacement with new parts.

## CAUSES OF BAD PLOWING

- (1) Dull or worn out shares.
- (2) Coulters and jointers out of adjustment or dull.
- (3) Front plow cutting too wide or too narrow.
- (4) Plow not level.
- (5) Loose bolts and nuts.

## PLOW SHARES

By far the largest percentage of all plow trouble can be traced directly to dull or worn out shares. Trying to plow with dull or worn out shares, especially in hard ground, is a waste of time and power, and the costs are greater than the cost of resharpening or replacing them. For this reason always have on hand one or two

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extra pairs of shares in good condition, ready to replace any share that shows signs of becoming dull.

Fig. 3

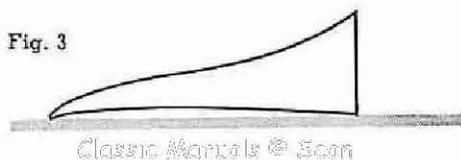


Fig. 4

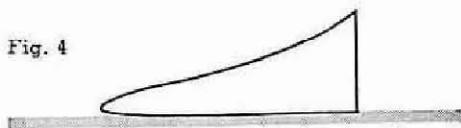


Fig. 3 represents a new or properly sharpened share. Straight edge, placed along the under side of the gunnel, should touch the extreme point, leaving a gap of about  $\frac{1}{8}$ " in the center. This is what is commonly known as "plow suck" or penetration.

Fig. 4 shows a dull share with the underneath edge of the point worn until a straight edge will not touch the extreme end. When a share gets into this condition it will not penetrate or stay in hard ground. Note that the suck or penetration is relatively *more important* than the sharpness of the share edge. In examining a share it is this condition (see Figures 3 and 4) that should be used as a criterion of sharpness. Replace it with a new or sharpened share.

The Ferguson *forged* plow shares are made of the finest materials and extreme care is taken in heat-treating to make them long wearing and able to withstand heavy strains. Therefore, particular care must be taken, when sharpening, not to withdraw this hardness by placing the share into a broad fire or by standing on edge.

First, heat and draw out the point. Then work back on the share, limiting the heat to about two or three inches at a time and continue hammering after redness has left so as to toughen the cutting edge.

Ferguson *cast steel* plow shares are cast from special wear-resisting alloy, but can be sharpened in the same manner as crucible steel shares, except that different temperatures are employed; thus, the following directions should be followed explicitly. This share can be heated and drawn in the same manner as you now sharpen solid or soft-center steel shares. When you have hammered the share into the proper shape and given it the proper land-suck, as well as depth-suck, it should be allowed to anneal for two or three minutes. The shares can then be heated to 1600° F, color bright red. Then remove from heat immediately when this color is reached, otherwise carbon may be drawn from the share. The heated area should be extended six inches back from the point. The point is then quenched three inches back from the point, in a 20% solution of salt brine or cold water, until it is black. It should then be allowed to cool in the air. Care should be taken so that the brine solution or water does not become too warm from frequent quenchings.

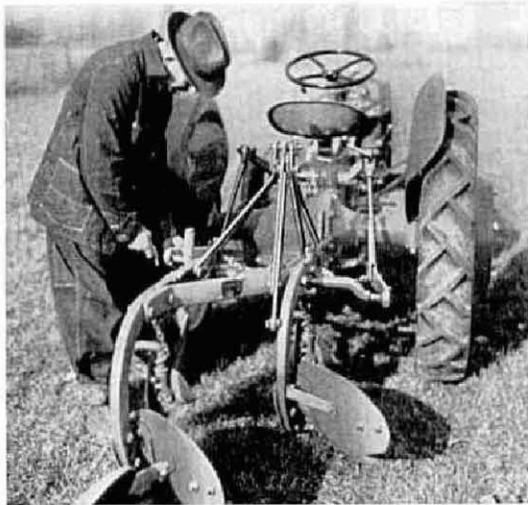


Fig. 5.



Fig. 6.

## HOW TO ATTACH THE PLOW

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1. Back the tractor so that it is centered with the plow.
2. Attach the left bottom link. (Fig. 5)
3. Attach right bottom link, using the leveling lever to bring the ball joint in line with the cross shaft on plow. (Fig. 6)
4. Attach top link to V strut on plow.
5. When seated on the tractor, attach top link to the tractor, moving tractor slightly backward or forward to line up holes for the front pin. (Fig. 7)



Fig. 7.

## HOW TO DETACH THE PLOW

1. Level the plow bases with leveling crank, then lower on level ground.
2. While seated on the tractor, detach front end of the top link, moving tractor slightly backward or forward, if necessary, to free the pin at its connection.
3. Detach right bottom link, adjusting leveling lever to free any strain on ball socket joint.
4. Detach left bottom link.

*IMPORTANT: Be careful to put the linch pins in their proper clips on the bottom links, to prevent the pins from being torn off.*



Fig. 8.

## HEADLAND FURROW

**Fig. 8.** When laying out a piece of ground to be plowed, do not fail to open headland furrows. These furrows should always be turned toward land to be plowed. Headland furrows make it possible for the plow to penetrate quickly and to make an even finish at the end.

When opening up a new land, tilt the plow over to the left by turning leveling crank. The amount of tilt is largely determined by experience in the field. This adjustment will insure better penetration, especially in hard ground, and will prevent a too high ridge on back furrow.

When re-entering the newly opened furrow at the headland, drive the tractor straight in line with the furrow. This will insure the plow cutting full width at the start, and keep the furrow straight at the ends. It makes finishing the land easier as well.



Fig. 9.

## ENTERING THE FURROW

**Fig. 9.** When entering the furrow, look over left shoulder and lower the plow just as the rear wheels climb out of the headland furrow. This will insure quick and even entry.

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Fig. 10.

## LEAVING THE FURROW

**Fig. 10.** When leaving the furrow, look over left shoulder and raise control lever just as rear wheels climb out of the headland furrow.

## FINISHING A LAND

**Fig. 11.** When the land gets so narrow that the tractor wheels will span it, drive the tractor, as illustrated, with the *left wheels* against furrow wall—this will leave a narrow strip to be finished next time through the field.



Fig. 11.

**Fig. 12.** Tilt the plow over to the left, as when plowing a headland furrow, and drive the tractor in the normal position as shown, turning remaining land with the front bottom only.



Fig. 12.

## CAUTION

When backing from a hidden obstruction always raise plow at the same time. Do not use the plow with any top link pins other than those made for that purpose by the manufacturer. When plowing in fields full of hidden obstructions, or up a steep hill or in exceedingly hard ground, drive the tractor slowly.

**DO NOT UNDER ANY CIRCUMSTANCES USE THE TOP LINK CONNECTION ON TRACTOR AS A DRAW BAR.**

## SUGGESTIONS IN LAYING OUT FIELDS TO BE PLOWED

The ease of operation and simplicity of the Ferguson plow readily adapts itself to any type of field to be plowed. The following suggestions as outlined are given in the hope that they will be of assistance to the plowman in doing a better plowing job, easier and quicker.

The actual work of laying out a field to be plowed should be done at idle times. This will allow plenty of time to step off or measure the field, open headlands and back furrows. Use plenty of field markers, such as stakes. It saves lots of time, gives the operator a perfect guide for straight furrows which materially adds to the neatness and quality of the job.

### BACK FURROWING

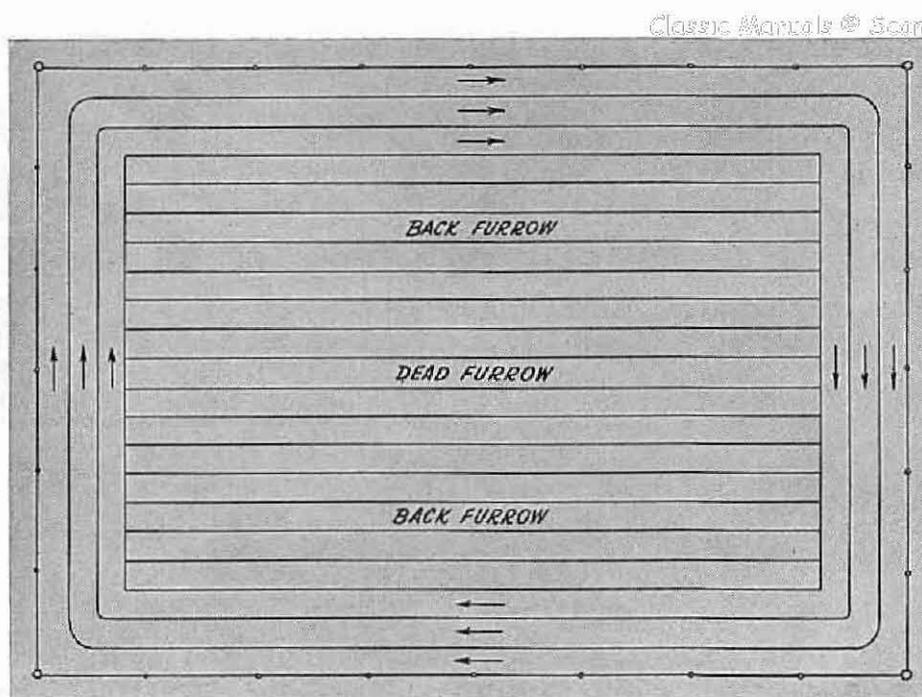


Fig. 13.

Fig. 13. This plan, as illustrated above, shows that the field is laid out in lands and plowed out in straight furrows.

First plow a headland furrow the full distance across both ends of the field, leaving ample room to make turns.

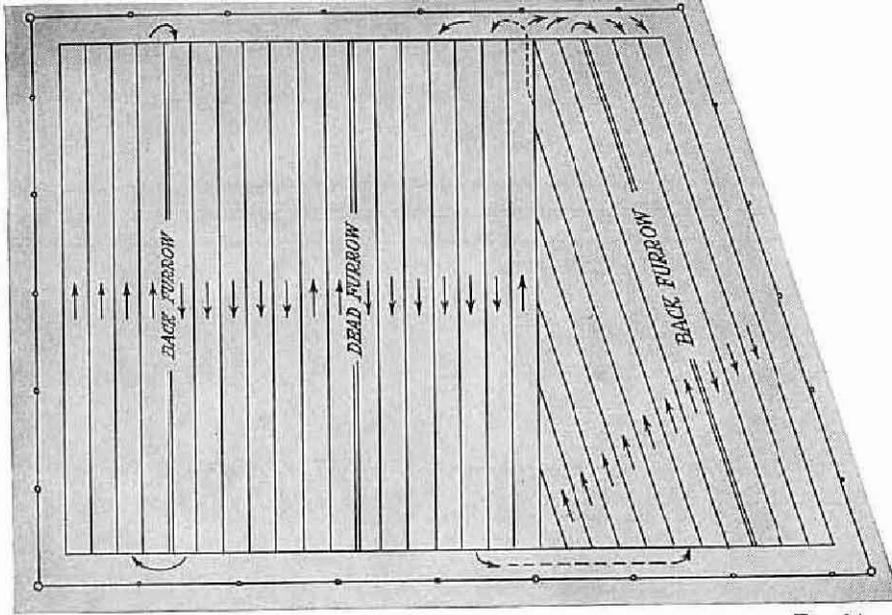


Fig. 14.

## FINISHING IRREGULARLY SHAPED FIELD

**Fig. 14.** Finishing a land in an irregularly shaped field, when the plot begins to narrow, lift the plow just as the left rear wheel of the tractor drops into the left furrow—then return empty to far end of the field and keep working the plot down in this manner.

This will leave a long narrow strip of land the length of the unplowed field and will permit finishing a dead furrow in the usual manner.

## PLOWING THE FIELD TURNING SQUARE CORNERS

**Fig. 15.** This plan is quite often used where a dead furrow in the center of the field is not desirable.

Start with a short back furrow in exact center of the field. After back furrowing a few rounds then start plowing furrows across the ends, making a complete turn at the corners by looping to the left.

In this way, the plowed land gradually grows larger and the dead furrows are left at the extreme outside of the field.

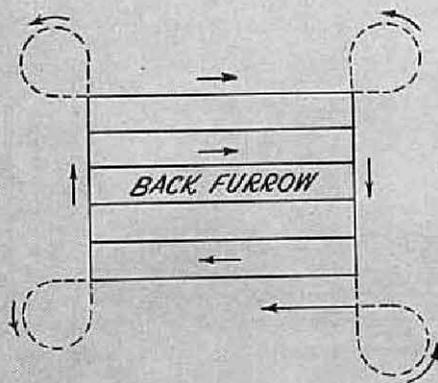


Fig. 15.

# WARRANTY



The Ferguson-Sherman Mfg. Corp. warrants the parts of all Ferguson-Sherman Mfg. Corp. implements bearing the "Ferguson" trade mark name to be free from defects in material or workmanship for a period of 90 days from date of original delivery to the owner.

This warranty shall be limited to shipment to the purchaser without charge except for transportation of the part or parts intended to replace those acknowledged by Ferguson-Sherman Mfg. Corp. to be defective.

If the purchaser shall use or allow to be used, on the implements, parts not made or supplied by the Ferguson-Sherman Mfg. Corp., then this warranty shall become void immediately. The Ferguson-Sherman Mfg. Corp. does not undertake responsibility to any purchaser of its products for any undertaking, representation or warranty made by anyone selling its products beyond those herein expressed.

The Ferguson-Sherman Mfg. Corp. reserves the right to make any changes in design and changes or improvements upon its implements without imposing any obligation to install the same upon its products heretofore manufactured.

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