

Swanson Bros.
294-3416

INTERNATIONAL®

2

ROTARY TILLER

SETTING UP INSTRUCTIONS

INTERNATIONAL®

OPERATOR'S MANUAL



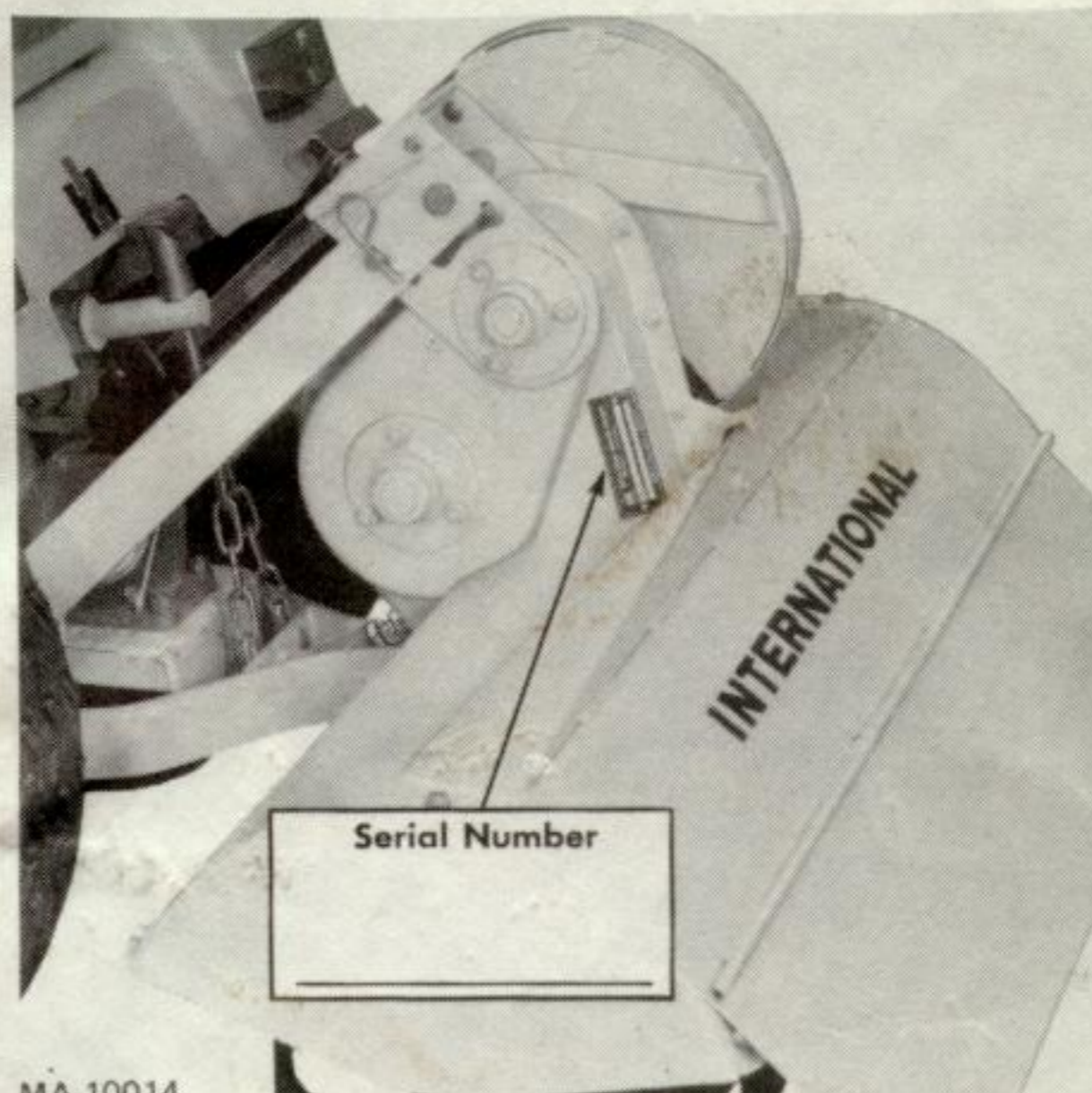
To The Owner

Your new rotary tiller is designed to meet today's exacting operating requirements. The ease of operation and ability to adjust to field conditions lighten your work and shorten your hours on the job.

You are urged to consult your International Harvester dealer concerning unusual field conditions or special applications. Let the experience of your dealer and the organization associated with him serve you.

Be sure to read the instructions for Adjusting and Operating in this manual. Check each item referred to and acquaint yourself with the adjustments required to obtain efficient operation and maximum trouble-free performance. Remember a machine which is properly lubricated and adjusted saves time, labor, and fuel.

After the operating season, thoroughly clean your equipment and inspect it. Preventive maintenance pays dividends. Your dealer has original-equipment parts which assure proper fit and best performance. He is able to recondition your equipment to a like new condition.



MA-10014

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TECHNICAL PUBLICATIONS AVAILABLE

Your International Harvester Dealer and his factory trained servicemen are best qualified to service your equipment. Up-to-date instructions and adequate special tools are also a part of your Dealer's service facilities.

This Operator's Manual was prepared to instruct you in proper operation and maintenance of your equipment. If you desire additional information you may purchase Service Manuals and/or Parts Catalogs. Additional copies of the Operator's Manual are also available.

Fill out the order blank and forward together with your check or money order in the appropriate amount (U.S. Funds) to:

International Harvester Company

PRINTING AND
DISTRIBUTION SERVICES

807 Blackhawk Drive

Westmont, Illinois 60559

Attention: Cashier

— — — — — Cut Along This Line — — — — —

Title	Number	Qty.	Price Each
Operator's Manual			
Rotary Tiller, 2	1084 352 R1		1.10
Parts Catalogs			
Cub Cadet Tractors (serial nos. 400,001 and above) and Equipment	TC-157		7.50
Cub Cadet Tractors (serial nos. 400,000 and below) and Equipment	TC-113		10.00
Service Manuals			
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INTRODUCTION

The International 2 Rotary Tiller is designed for rear mounting on International Cub Cadet Tractors with eight horsepower or more and with serial numbers 65458 and higher.

Tilling width is 38-inches and maximum tilling depth is 7-inches.

The tiller is driven by a V-belt from the tractor engine mounted power take-off clutch. The clutch is engaged by a hand lever.

The tine shaft is driven by chains which are enclosed in a housing. They are factory lubricated and require no periodic maintenance.

Raising and lowering of the tiller is done by means of the tractor lift lever.

This tiller is ideal for seedbed preparation, shallow mulching and cultivating between rows, under shrubs, in groves, etc.

It has a low profile with shielded tines to avoid damaging branches and foliage.

A center tooth is provided to till the soil left under the chain housing. It may be used or removed as required.



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WORK SAFELY – FOLLOW THESE RULES



This symbol is used to call your attention to instructions concerning your personal safety. Be sure to observe and follow these instructions.

The rotary tiller has been designed to minimize the chance of an accident. However, there is no substitute for a careful operator.

Do not wear loose fitting clothing.

Never place hands or feet under the tiller or raise the rear plate to look under the tiller while the tractor engine and tiller are running. Stay clear of all moving parts.

Before operating, be sure all stones, branches or any other debris that might be thrown or damage the tiller are removed.

Be sure the tiller is properly mounted on the tractor and all safety shields are in place and properly secured before starting to operate the equipment.

Disengage all clutches and shift into neutral before starting the engine.

Do not carry passengers or give rides. Keep children, pets, and bystanders a safe distance away.

Always disengage the power take-off, shift transmission into neutral, set the parking brake, stop the engine, and remove ignition key when leaving the machine unattended.

Keep machine in good operating condition and keep safety devices in place. Use guards or shields as instructed in Operator's Manual.

Always depress the brake pedal and set the brake pedal lock before working on the machine. Disengage all implements and shift the transmission into neutral.

Do not allow anyone in the area behind the tiller while operating.

Don't stop and start suddenly when going uphill or downhill.

Stay alert for holes in terrain and other hidden hazards.

Know the controls and how to stop quickly. **READ THE OPERATOR'S MANUAL.**

Use extreme care and maintain minimum ground speed when transporting on hillside, over rough ground, and when operating close to ditches and fences.

Reduce speed in sharp turns to prevent loss of control.

It is recommended that the machine be stopped and inspected for damage after striking a foreign object and that any damage be repaired before restarting and operating the machine.

Disengage power to any attachment when transporting or not in use.

Do not allow children or adults to operate the equipment without proper instructions.



CAUTION

Read the Operator's Manual.

Learn to operate this machine **SAFELY**.

Be alert. Observe **ALL** Safety Practices.

Machines can be hazardous in the hands of an **UNFAMILIAR, UNTRAINED or COMPLACENT** operator.

Don't risk **INJURY or DEATH**.

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ADJUSTING AND OPERATING

For the operating controls and adjustments on the tractor, refer to the tractor Operator's Manual.

GENERAL

Before going into the field with a new machine or one which has been stored, check to see that all bolts are tight and that all cotters are spread.

After the first hour of operation, check all bolts for adequate tightness and check both V-belts for proper tension. Refer to "V-Belt Tighteners."

LUBRICATION

The tiller gear box is a sealed unit and requires no servicing.

Tiller gear boxes are shipped from the factory filled with NLGI "O" grade lithium EP grease. If service is required, gear box must be refilled with "O" grade lithium grease.

TILLING AND CULTIVATING

For best results in adverse ground conditions, start the tilling operation at a shallow depth and increase the depth at successive passes over the area.

To control the tilling depth, set the lift handle in the desired position.

When tilling the soil, small lumps are desired; pulverizing the soil is not desirable, it tends to result in a hard crust. Depending on engine power and ground conditions select the tractor speed best suited to produce the desired soil conditions with a minimum number of passes over the area.

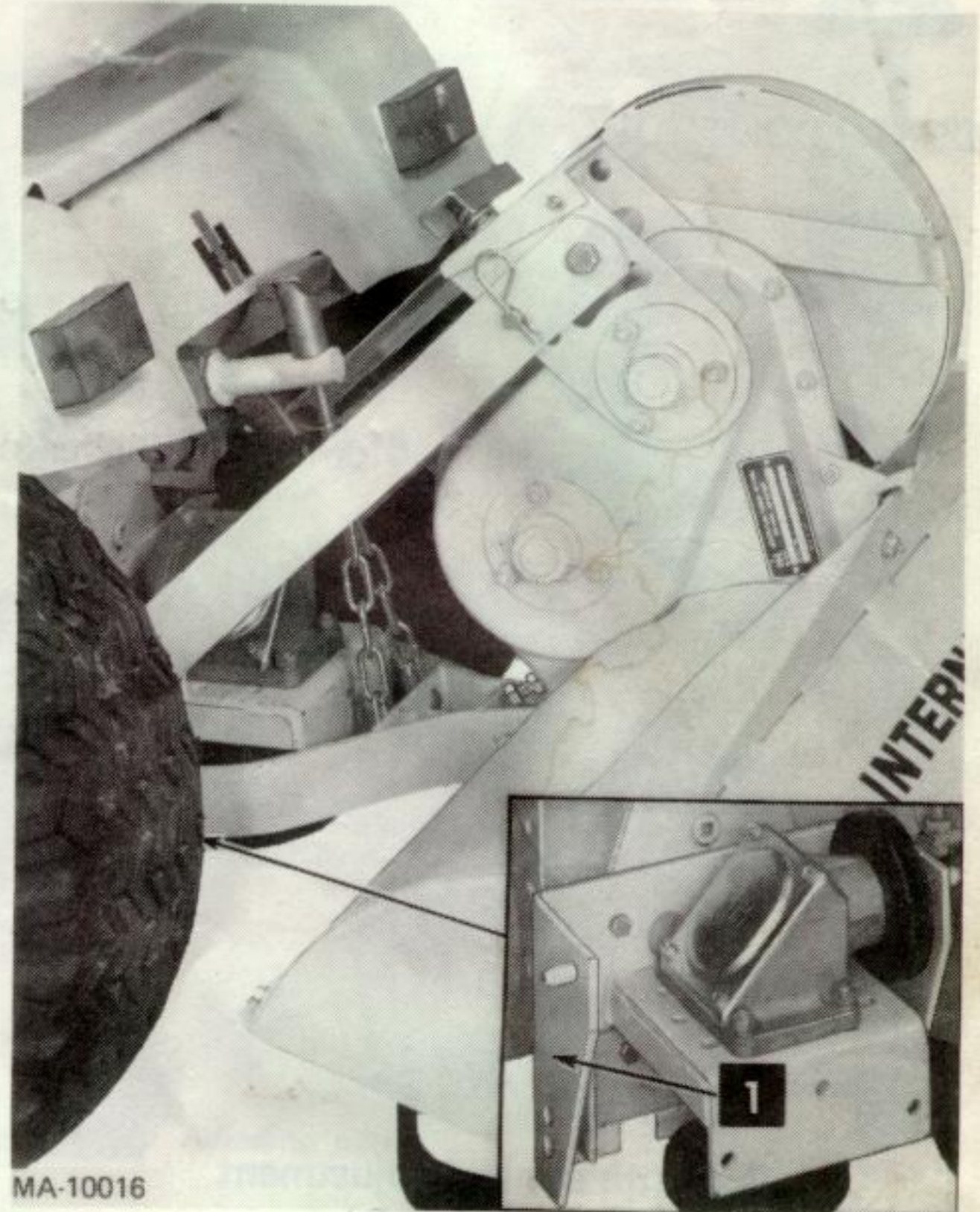
TILLER ACTION

Two sets of mounting holes are provided in the tiller mounting frame for attaching the tiller assembly.

Use the upper holes as shown for most tilling conditions.

NOTE: In tilling application, the tractor is used to hold the rotary tiller back rather than to pull the unit as in plowing or mowing.

In difficult soil conditions the tiller tends to overcome the ground traction of the tractor and propels the entire unit. Use the lower mounting holes to overcome this condition.



1. Mounting frame

TILLER OPERATING WITH CUB CADET TRACTOR HAVING HYDROSTATIC DRIVE

When operating the tiller mounted on these tractors, proceed as follows:

Engage the power take-off clutch.

Lower the tiller to the desired cutting depth.

Move the speed control lever to start forward motion.

Move the control lever to a position to maintain proper mulching of the soil.

ADJUSTING AND OPERATING

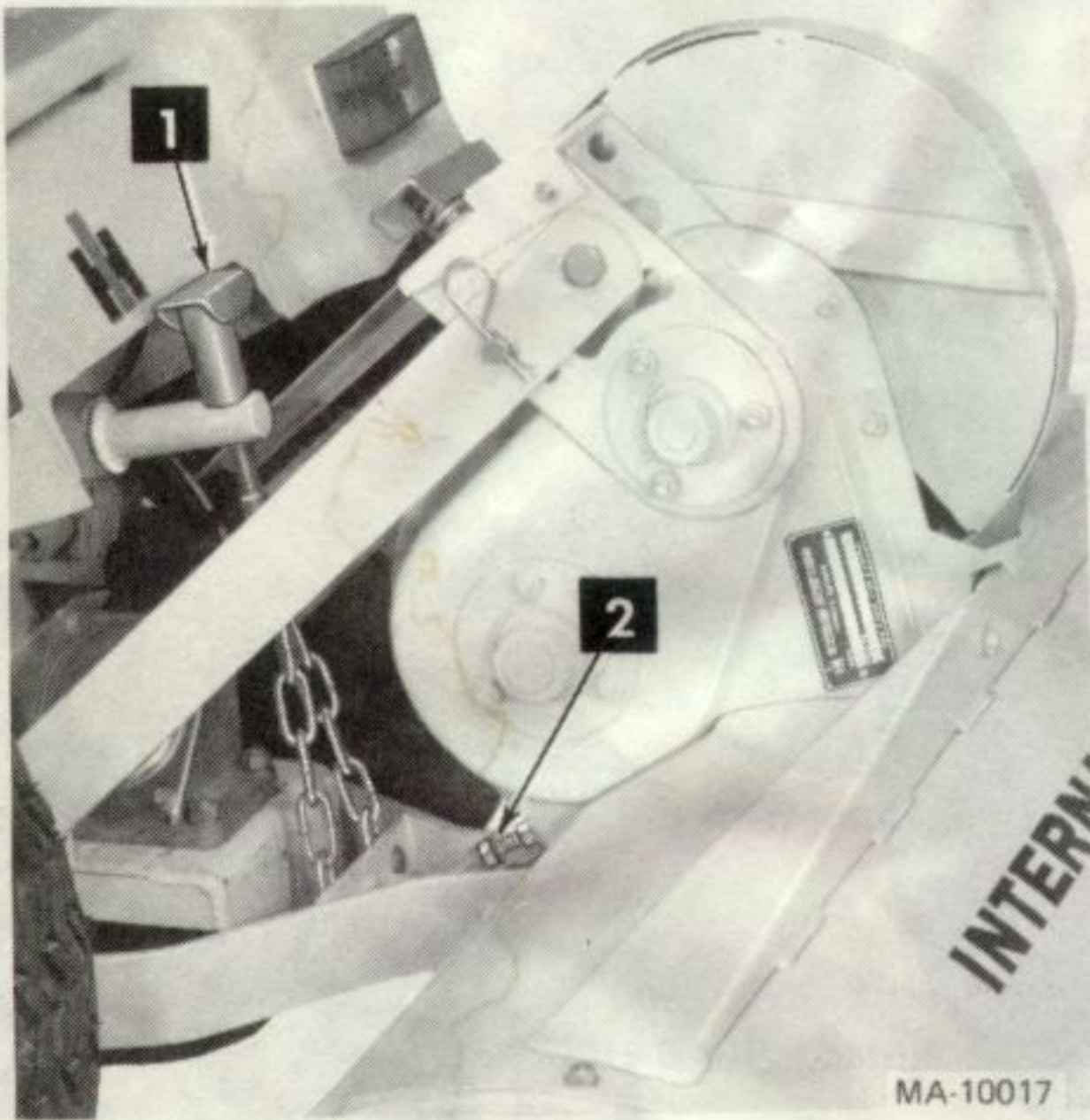
It may be necessary to adjust the speed control lever as soil conditions vary.

If desired depth cannot be obtained in the first pass, additional passes will be necessary.



CAUTION! Do not allow anyone in the area behind the tiller while operating.

DEPTH CONTROL



1. Depth control adjustment
2. Chain tension bolt

The depth control adjustment divides the amount of hitch travel up and down, between tilling depth and transport height.



CAUTION! Always disengage the power to the tiller when transporting or not in use.

The maximum amount of total travel up and down is seven inches. Therefore, if a four inch tilling

depth is selected, then three inches remain available for transport height.

To check the transport height so as to determine the tillage depth, place the tractor and tiller on level ground and pull the tractor lift handle to the full rearward position to raise the tiller. Measure the transport height. If adjustment is required, lower the tiller to the ground to relieve the load on the depth control adjustment. Then adjust the tillage depth by turning the depth control handle as required.

CHAIN TENSION BOLT

The chain tension bolt is preset at the factory to assure proper chain function and no further adjustment is required. **DO NOT ADJUST THE BOLT TO CHANGE THE CHAIN TENSION.** However when servicing or replacing the chain it may be necessary to reset the tension. To do this, loosen the locking nut, finger tighten the tension bolt and lock the nut in place.

NOTE: Be sure to finger tighten the bolt, do not use a tool of any kind.

V-BELT TIGHTENERS

Always keep belts adjusted properly and free of oil.

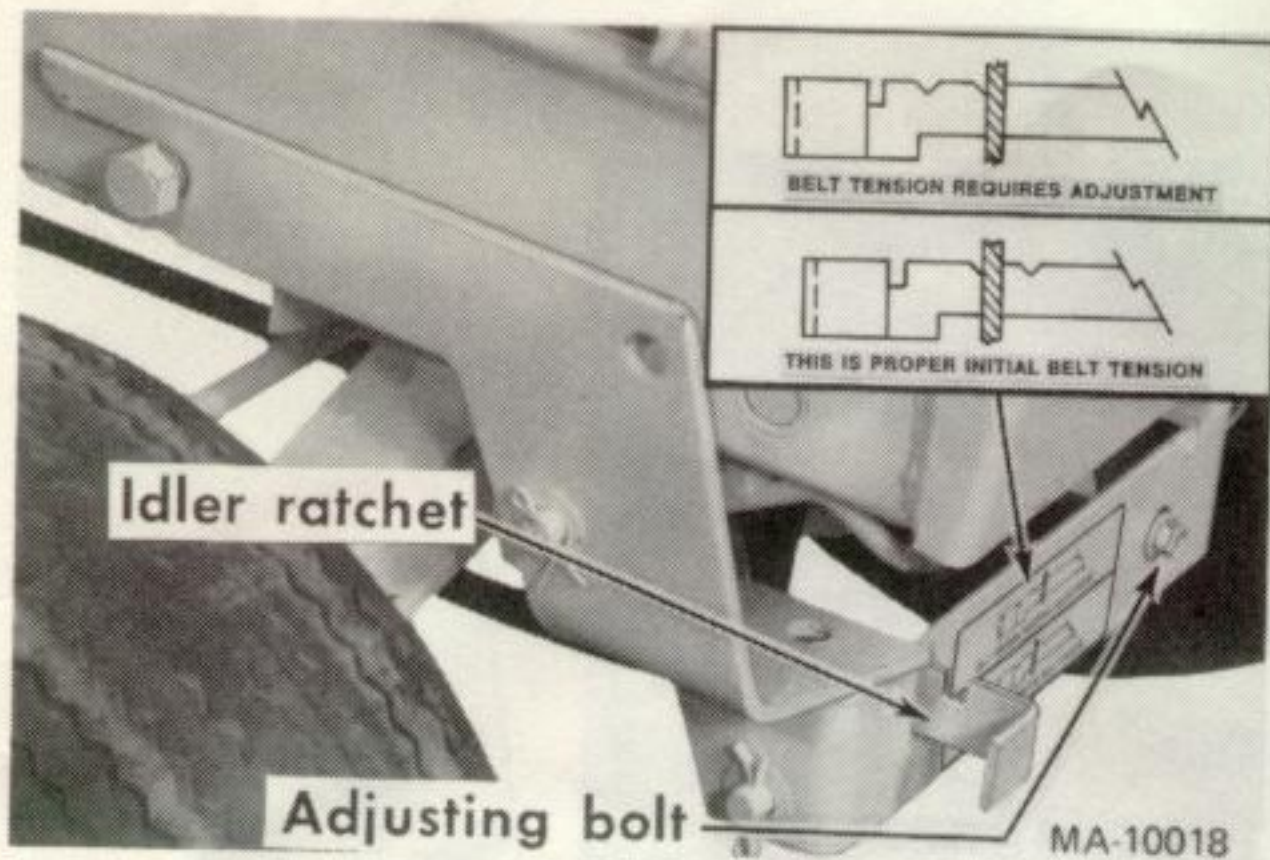
V-belts must be operated with proper tension. Too little tension will permit slippage which results in shorter belt life and loss of power. If excessive slippage occurs in normal operation, tighten the V-belts as follows:



CAUTION: Always depress the brake pedal and set the brake pedal lock before working on the machine. Disengage all implements and shift the transmission into neutral.

ADJUSTING AND OPERATING

Main drive V-belt



Idler pulley assembly with ratchet adjustment

V-belt is properly tensioned when the idler ratchet is positioned as shown on the decal on the front of the assembly.


To adjust the belt for proper tension, tighten the V-belt adjusting bolt so the notch on the idler ratchet is in line with the front of the assembly as shown on the decal.

For idler pulley assemblies not equipped with ratchet adjustment, adjust the main drive V-belt tension by tightening or loosening the two adjusting nuts, or single adjusting nut as applicable.

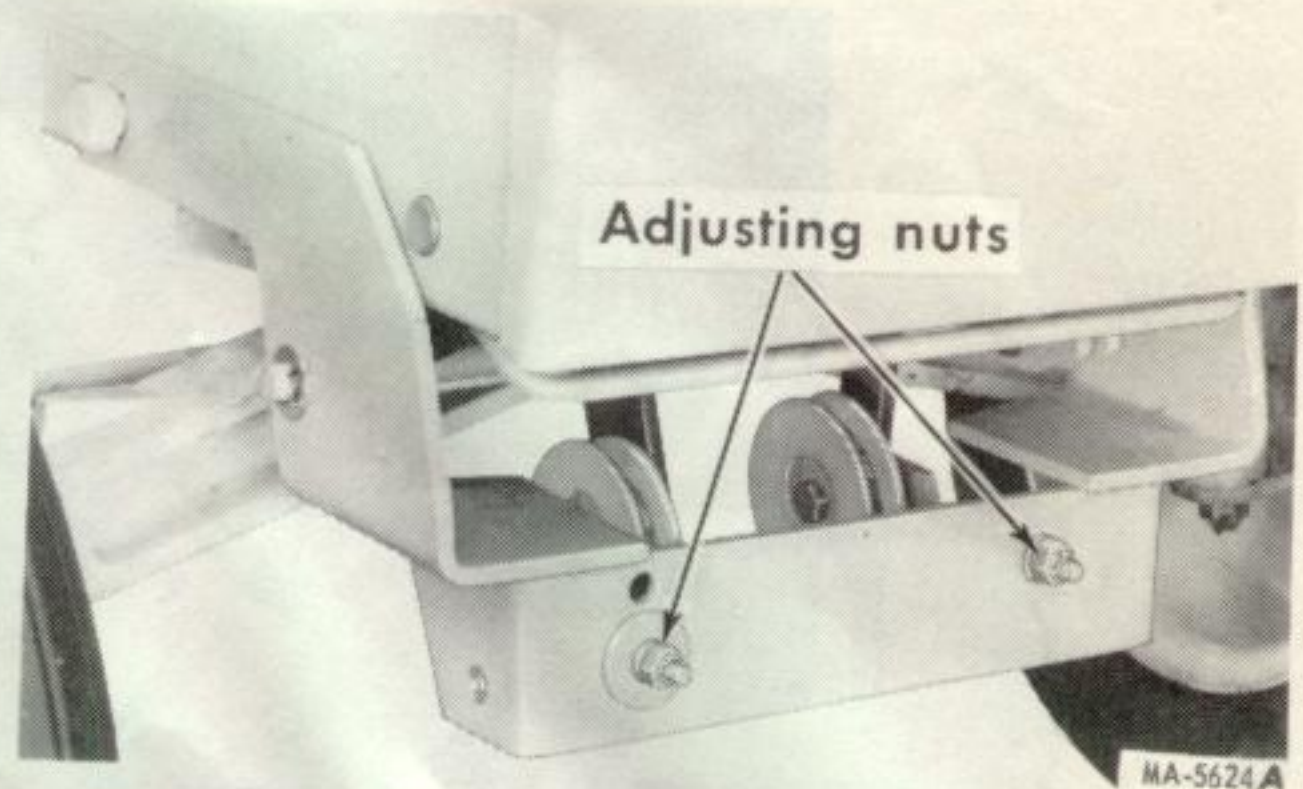
For idler pulley assemblies with two adjusting nuts, adjust each nut equally so the idler pulleys are in line with each other.

Adjust belt tightener to obtain a clearance of 2-inches between both strands of the belt with slight hand pressure at point "J" as shown in illustrations on page 12.

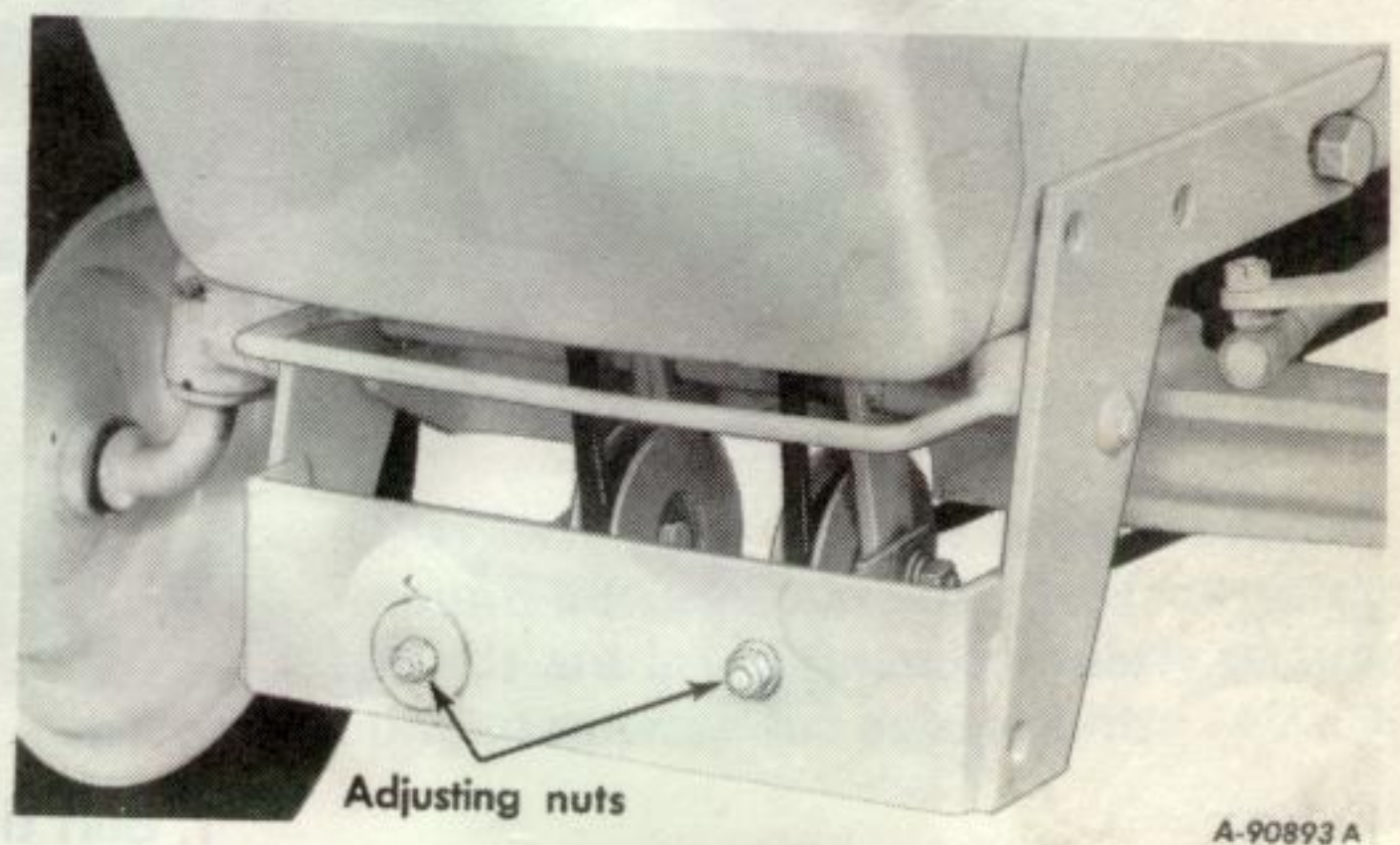
After the first hour of operation, belt tension must be checked and readjusted if necessary.

 **CAUTION:** Always stop the engine, depress the brake pedal and set the brake pedal lock before working on the machine. Disengage all implements and shift the transmission into neutral.

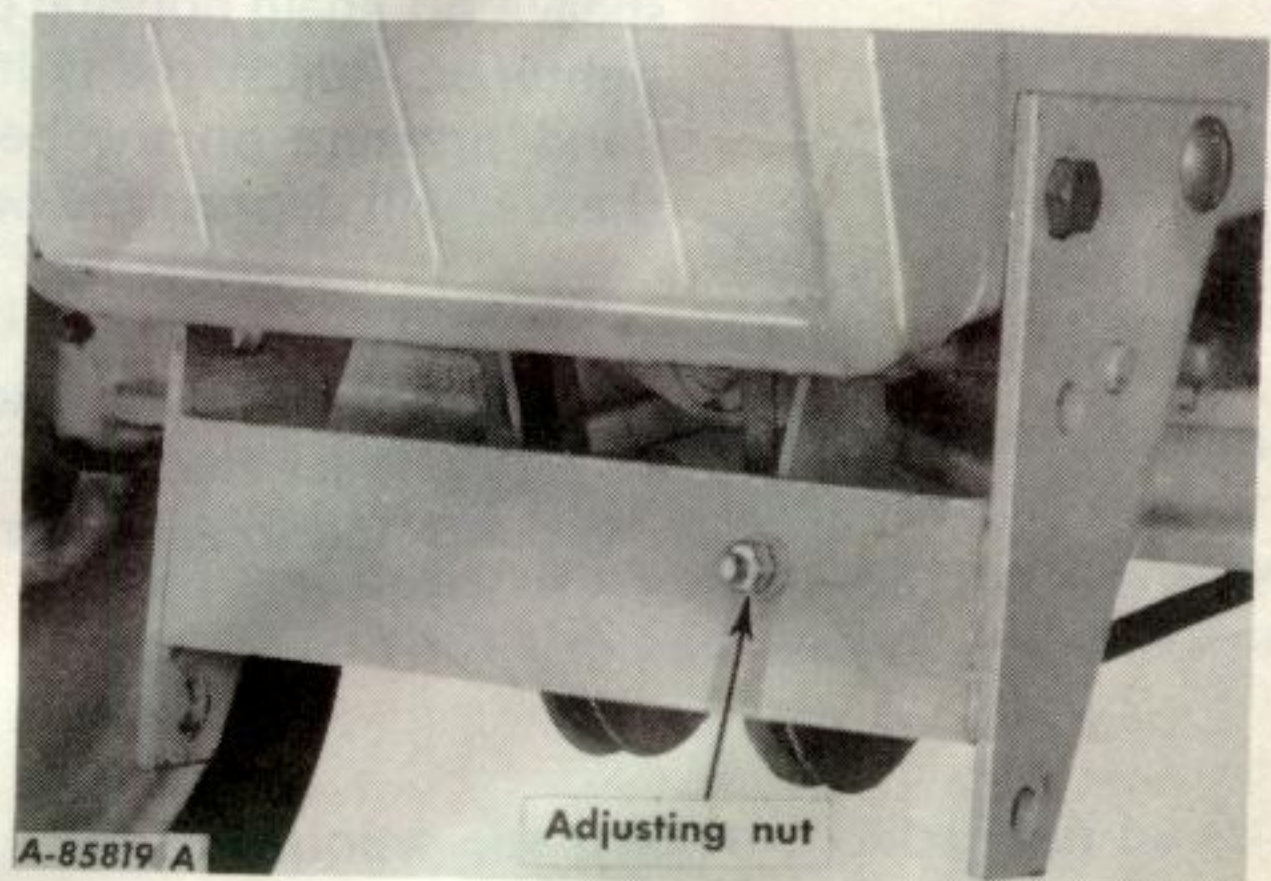
When installing a new belt, adjust until all belt slack is removed. Check sheave grooves to be sure belt is properly positioned in the grooves.



Idler pulley assembly with two adjusting nuts



Idler pulley assembly with two adjusting nuts



Idler pulley assembly with single adjusting nut

ADJUSTING AND OPERATING

Tiller Drive V-Belt



1. Belt tightener

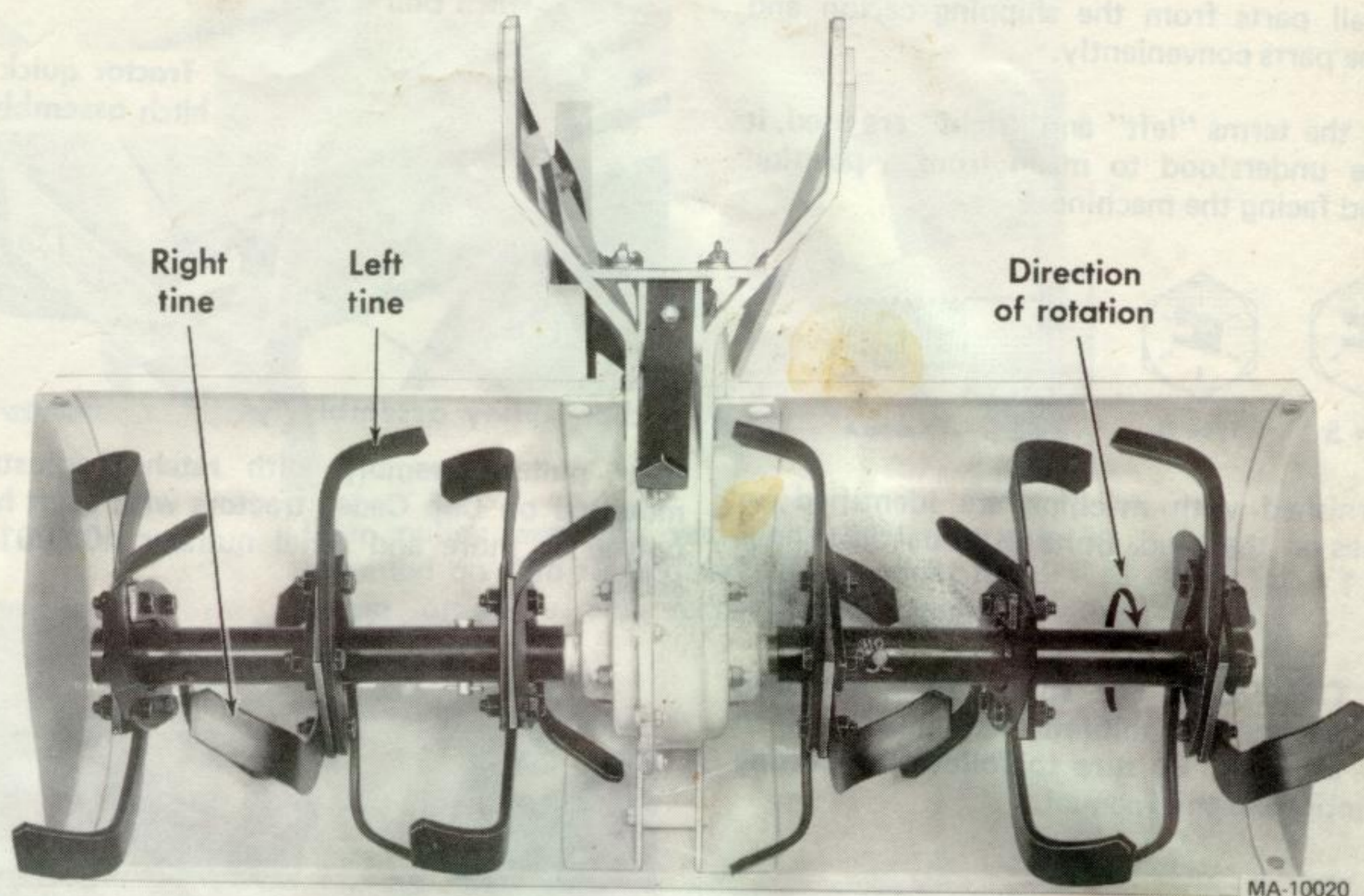
The tiller drive V-belt (gear box sheave to large sheave on chain housing drive) is adjusted by a belt tightener. Adjust the belt tightener so that a slight hand pressure on the belt midway between both sheaves will depress the belt 1/8-inch.



CAUTION! Stop the engine and disconnect the spark plug wire before attempting to adjust or clean the tiller.

ADJUSTING AND OPERATING

REPLACING TINES



Tines are marked Left“(L)” and Right“(R)”. Proper assembly requires that the same bolt pass through the end hole of a right tine and the inner hole of a left tine. Another bolt passes through the end hole of a left tine and the inner hole of a right tine. Complete the assemblies as shown.

All knife edges must lead in the direction of rotation.



CAUTION! Be sure the tiller is properly mounted on the tractor and all safety shields are in place and properly secured before starting to operate the equipment.

DETACHING THE TILLER

The tiller assembly can be easily detached as follows:

Lower the tiller to ground.

Loosen the tiller drive V-belt tightener, then remove the belt from the gear box sheave.

Unscrew the depth control handle from the lift chain adjusting rod.

Remove the four quick-attachable cotter pins at the mounting frame. Disconnect the support bars from the upper studs. Remove the lower headed pins. Then slide the tiller assembly away from the tractor.

At this point, the tractor drawbar can be attached and used for trail-behind implements.

SETTING UP

Remove all parts from the shipping carton and arrange the parts conveniently.

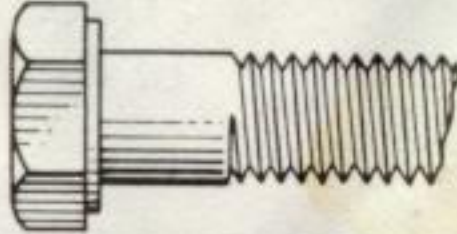
Whenever the terms "left" and "right" are used, it should be understood to mean from a position behind and facing the machine.



Type 5



Type 8



A-88880 A

Bolts furnished with machine are identified by radial lines on the head. Bolts without radial lines are Type 1.



CAUTION! The rotary tiller has been designed to minimize the chance of an accident. Be sure to follow the Setting Up instructions in this manual.

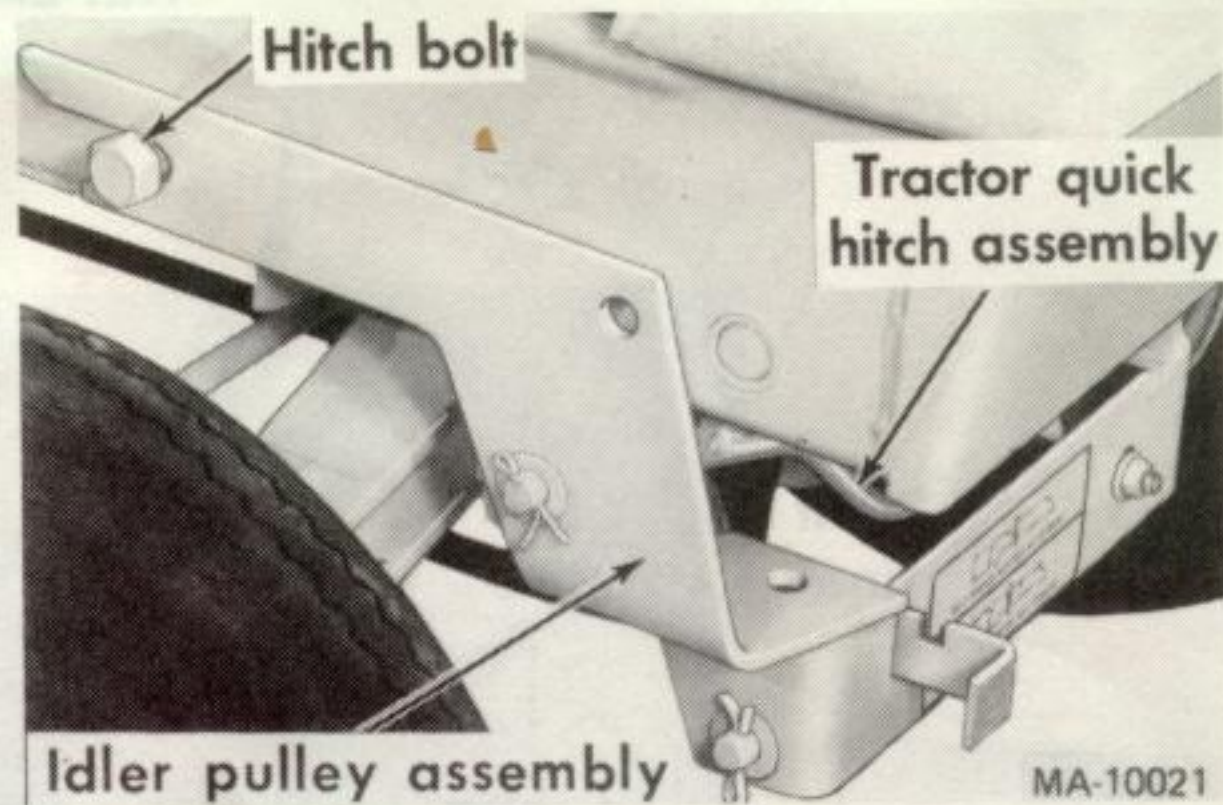
IDLER PULLEY ASSEMBLY

If the tractor has been equipped with an International Rotary Mower the mower front drive hanger (idler pulley) assembly remains on the tractor when using the tiller. However for tractors not equipped with a rotary mower or those equipped with 44 or 50 inch rotary mower, a tiller front drive package will be required. If your tractor is equipped with stamped idler pulleys and is to be used in extreme service conditions you may want to replace them with solid steel idler pulleys. See your International Harvester dealer.

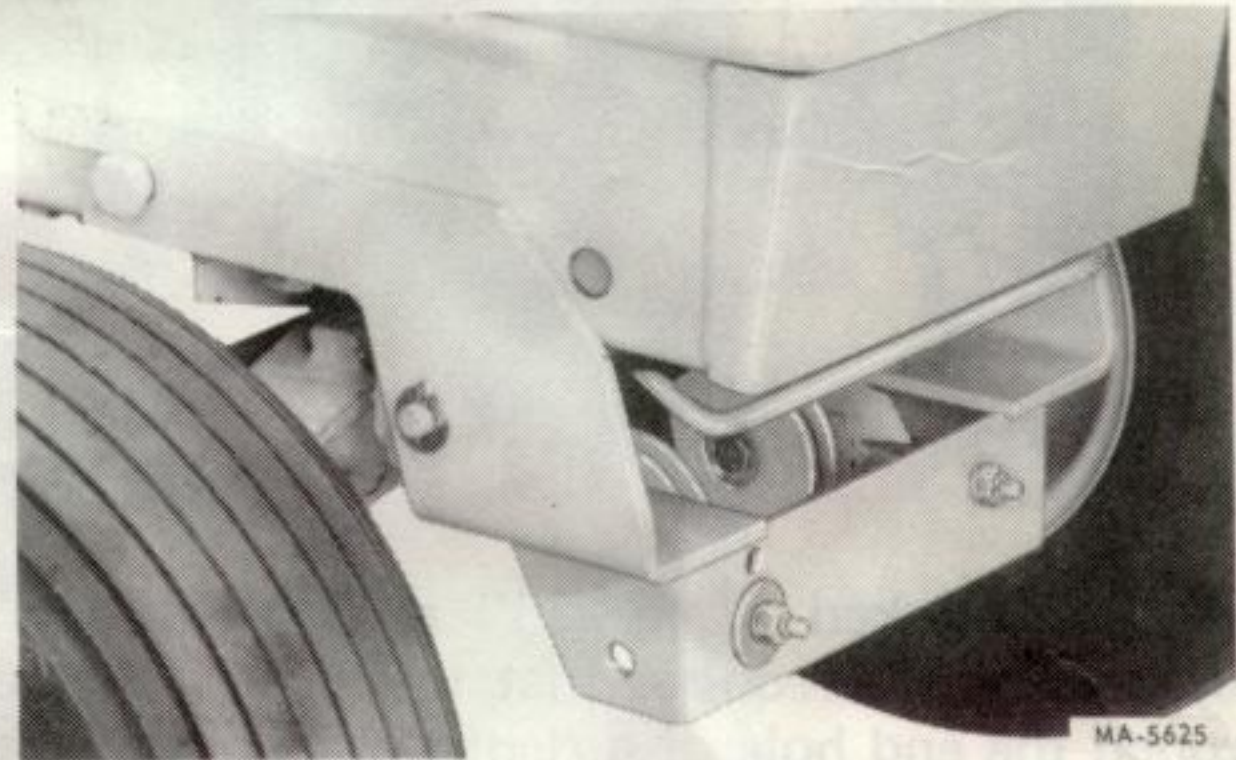
NOTE: Different length drive belts must be ordered for tractors with Serial number from 400,001 to 530,000 or tractors with Serial number 400,000 and below. See your International Harvester dealer.

A Three-Point Hitch Attachment is also required.

To assemble the three-point hitch refer to the instructions furnished with the package. However, do not attach the lower hitch link at this time.



Idler pulley assembly with ratchet adjustment mounted on Cub Cadet tractors with eight horsepower or more and serial number 400,001 and above.



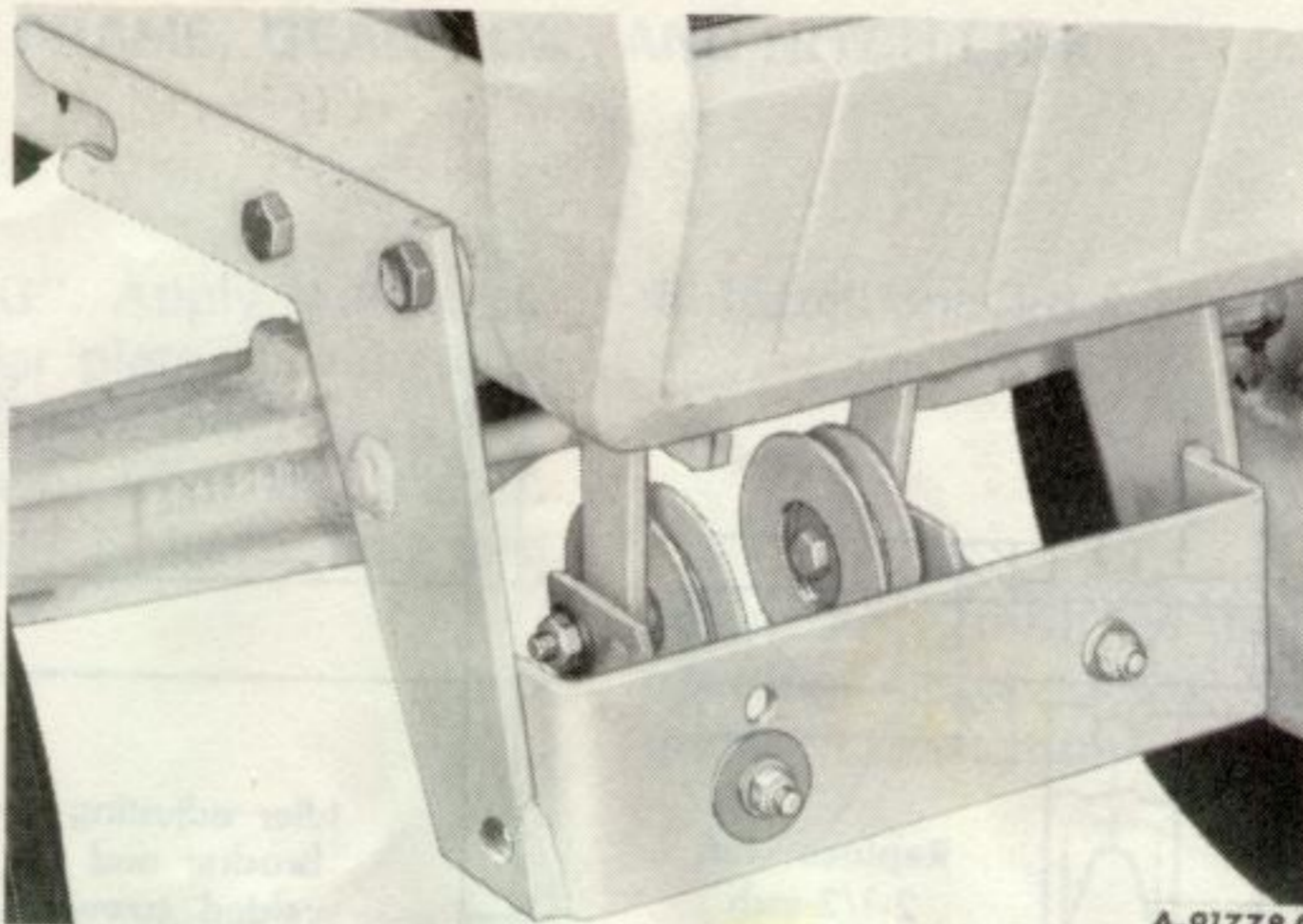
Idler pulley assembly with two adjusting nuts mounted on Cub Cadet tractors with eight horsepower or more and serial number 400,001 and above.



Idler pulley assembly with two adjusting nuts mounted on Cub Cadet tractors with eight horsepower or more and serial number 218,010 to 400,000.

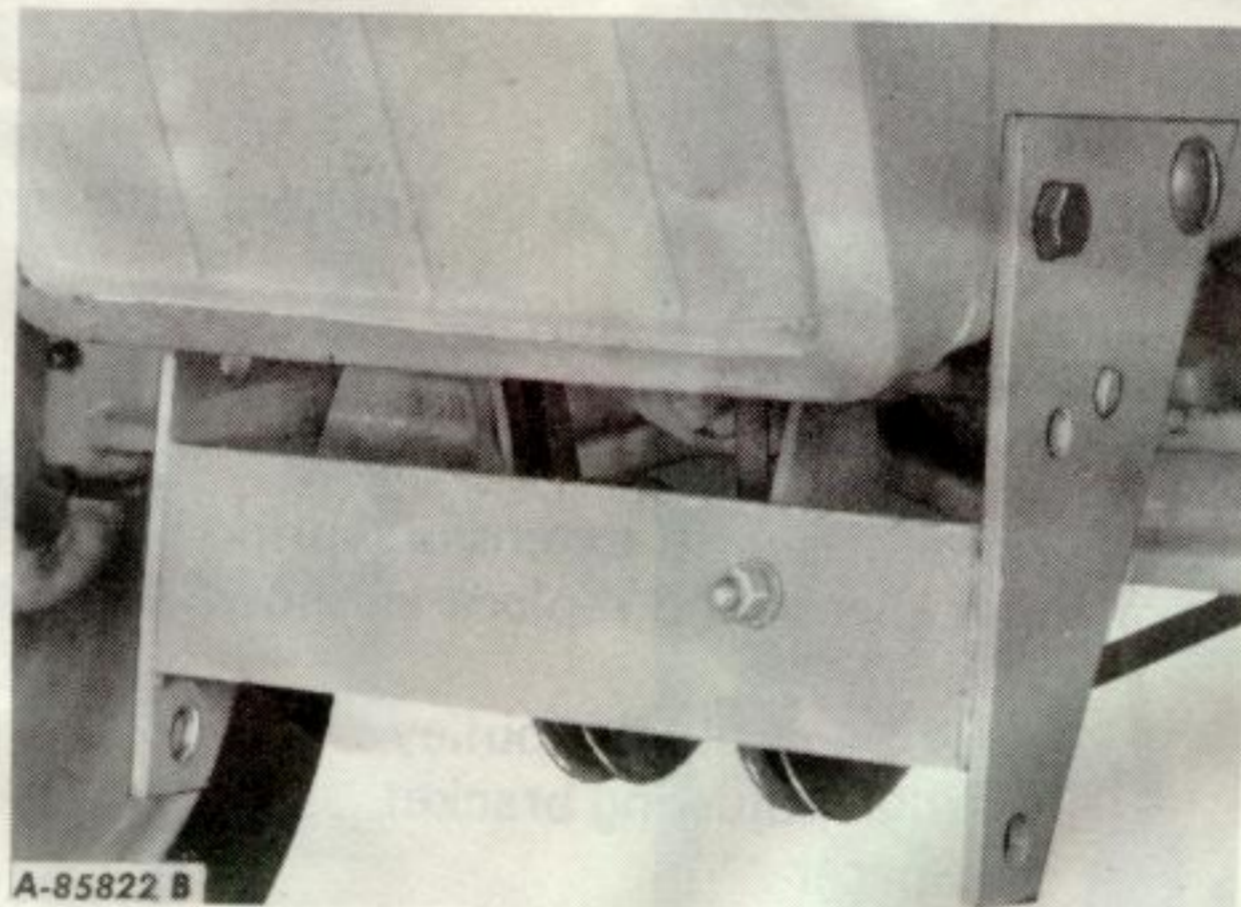
Latch the idler pulley assembly in place on the tractor frame as shown.

SETTING UP



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Idler pulley assembly with two adjusting nuts mounted on Cub Cadet tractors with eight horsepower or more and serial number 65458 to 218009.

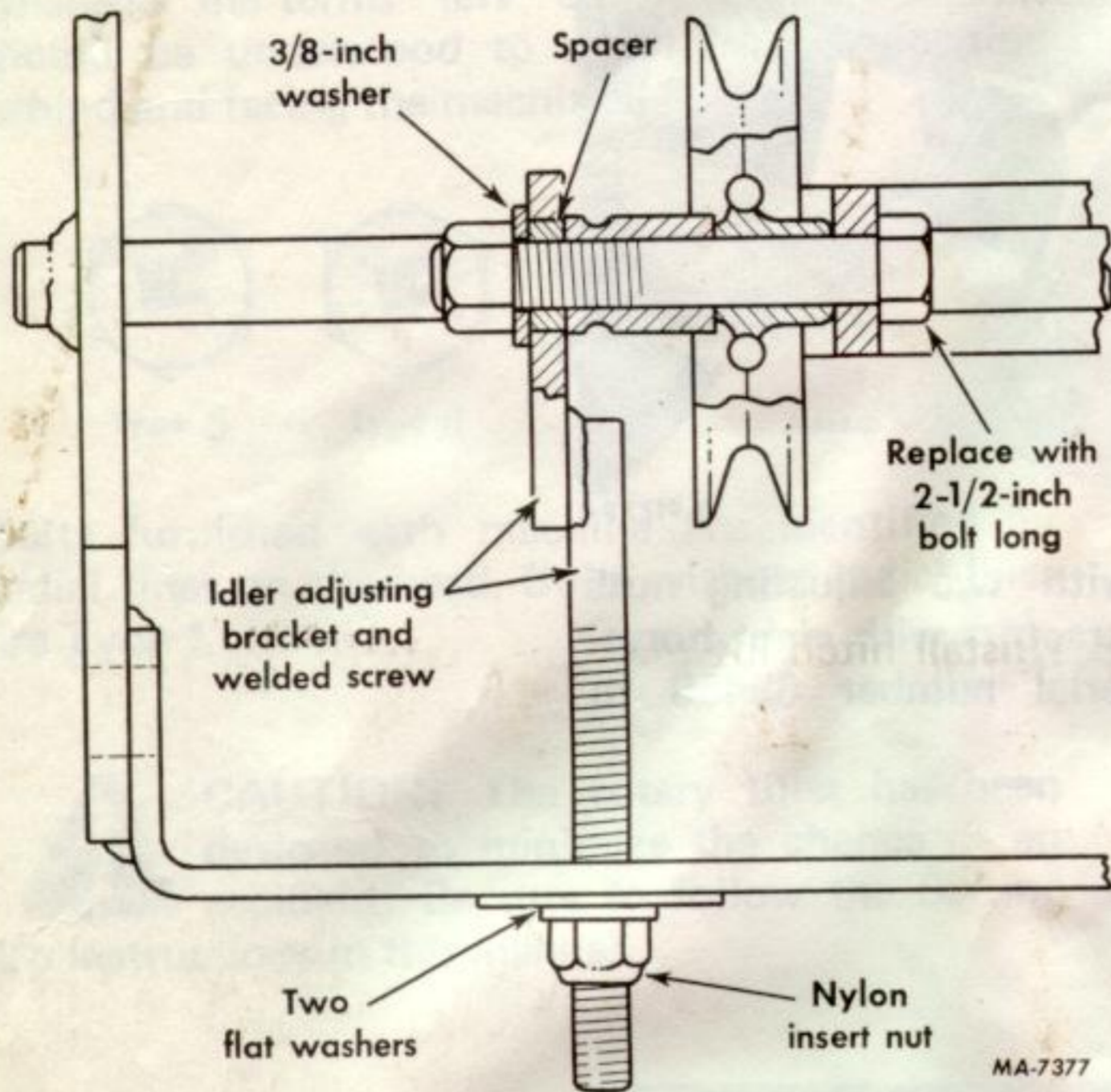


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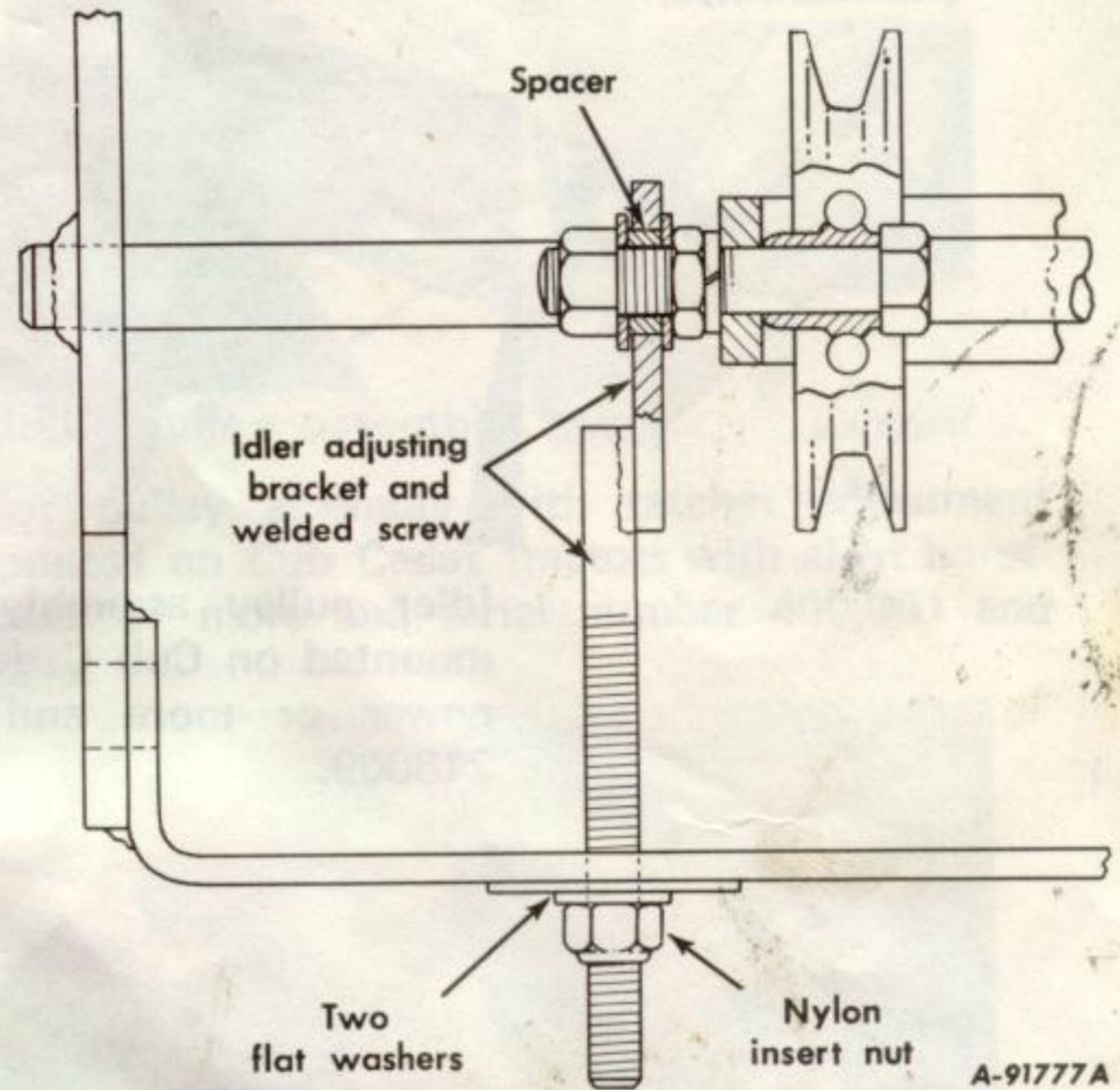
Idler pulley assembly with single adjusting nut, built prior to 1968, mounted on Cub Cadet tractors with eight horsepower or more and serial number 65458 to 218009.

Bolt the bracket to the tractor frame using $\frac{1}{2}$ x 1-inch slotted truss head bolt in rear hole on left side, three $\frac{1}{2}$ x 1-inch hex. head cap screws in other holes, four $\frac{17}{32}$ x 1- $\frac{1}{2}$ -inch x 11 gauge plain washers (between bracket and frame), and nuts for the front bolts.

SETTING UP



View of right side belt tightener.
Tractors with serial No. 400,001 and up.



View of right side belt tightener.
Tractors with serial No. 400,000 and below.

For idler pulley assemblies with extension spring belt tightener, remove the extension spring and spacer and replace as shown with the following parts:

- Solid steel idler pulley
- Idler adjusting bracket
- Spacer
- Plain washer 11/32 x 1 - 1/2 x .119 inch
- Plain washer 11/32 x 11/16 x .056 inch
- Nylon insert nut

Insert the threaded end of the welded screw in the large hole in the front of the idler pulley assembly. Place spacer in bracket hole and secure on pulley bolt using plain washer and nut previously removed. Secure welded screw loosely at front of assembly using large plain washer, small plain washer, and nylon insert nut in that order.

SETTING UP

GEAR BOX MOUNTING FRAME, GEAR BOX, AND HITCH LINK

1. Remove bolts at holes "G". Apply hand pressure on transmission case rear plate, to minimize oil loss at the gasket, then remove lower hitch link and fixed drawbar (not shown) from the tractor. Screw one removed bolt, "H" in lower hole and tighten securely.

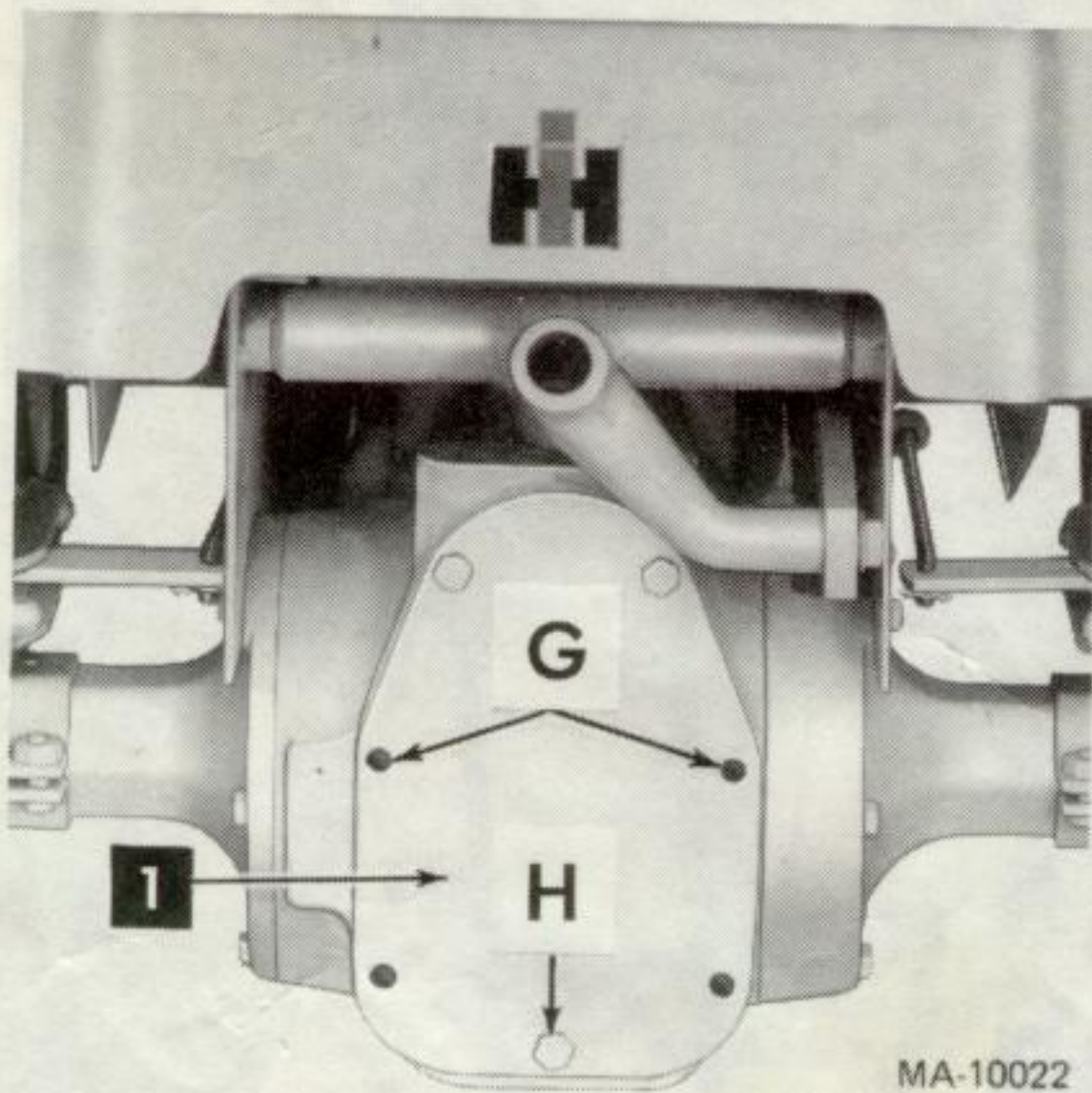
2. Bolt the gear box mounting frame to the rear case, using one 3/8 x 1 inch hex. head cap screw.

3. Bolt hitch link in place, using two 3/8 x 1-1/4 inch hex. head cap screws.

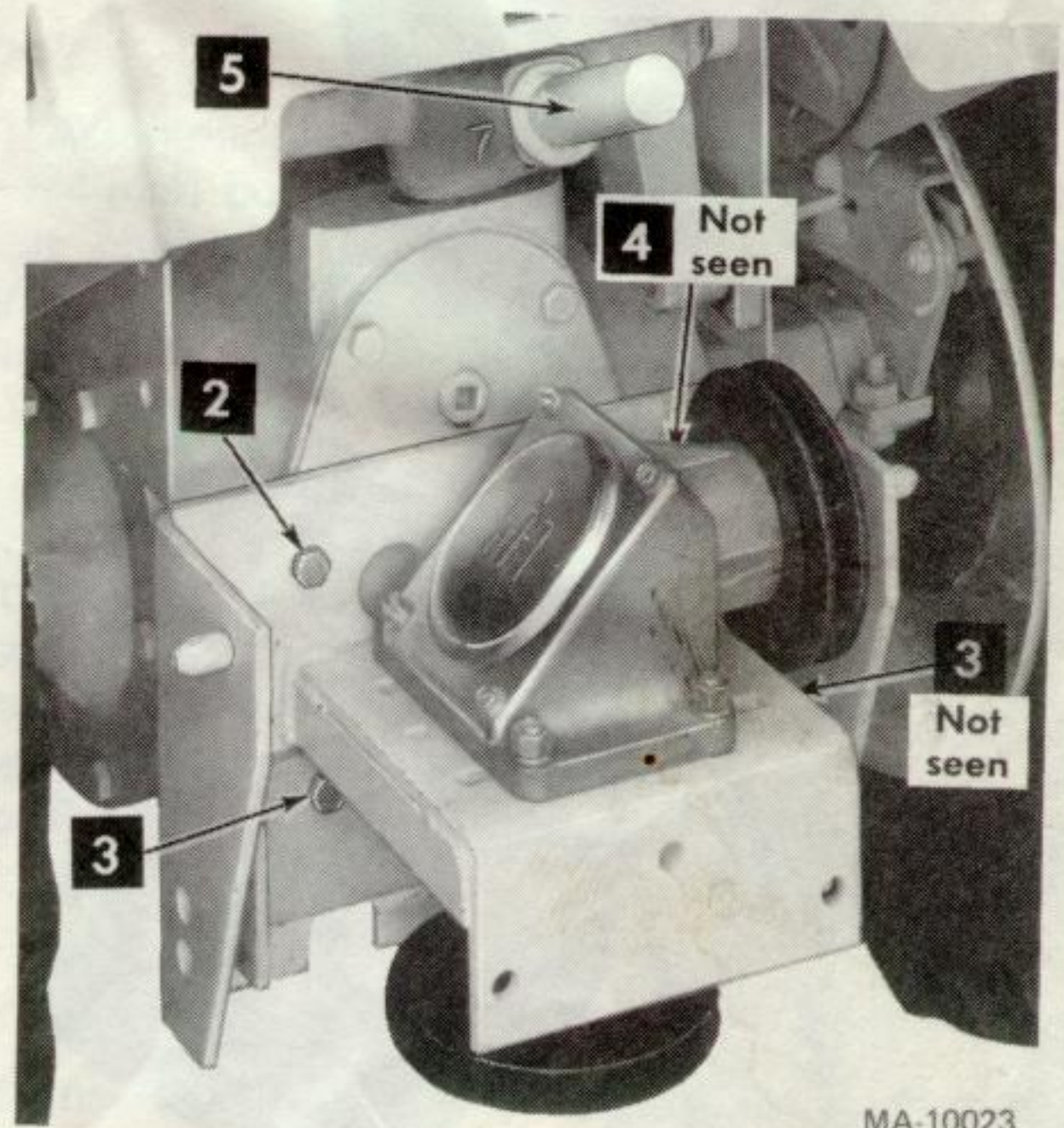
4. Install one 3/8 x 1 inch hex. head cap screw.

If necessary, refill the transmission case to the plug opening. Refer to the Tractor Operator's Manual under "Lubrication".

5. Install hitch lift pin and secure with cotter pin.



Tractor hitch link and drawbar removed.



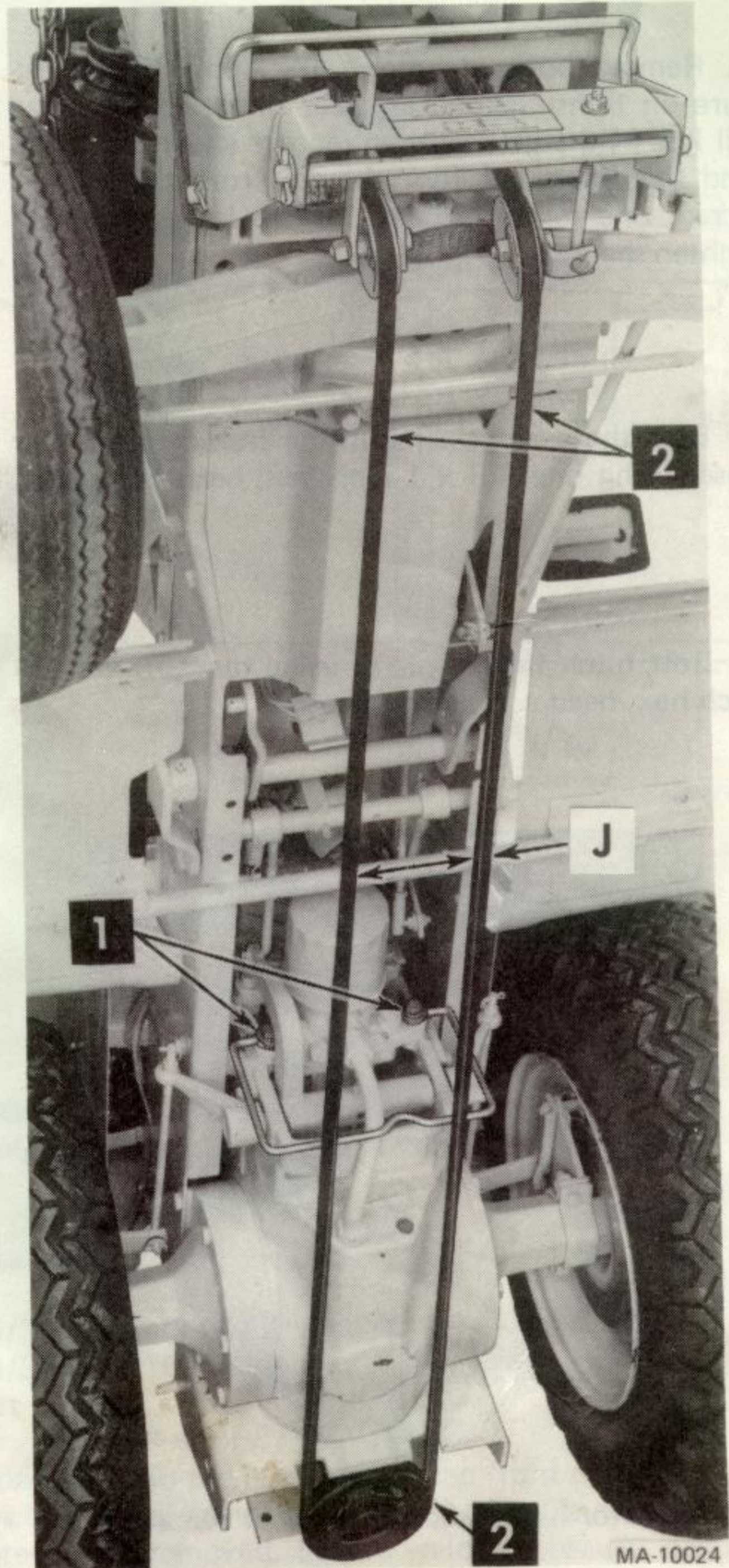
Gear box mounting frame and hitch link attached.

SETTING UP

DRIVE BELT



Underneath view of tractor with gear drive transmission showing main drive V-belt attached.

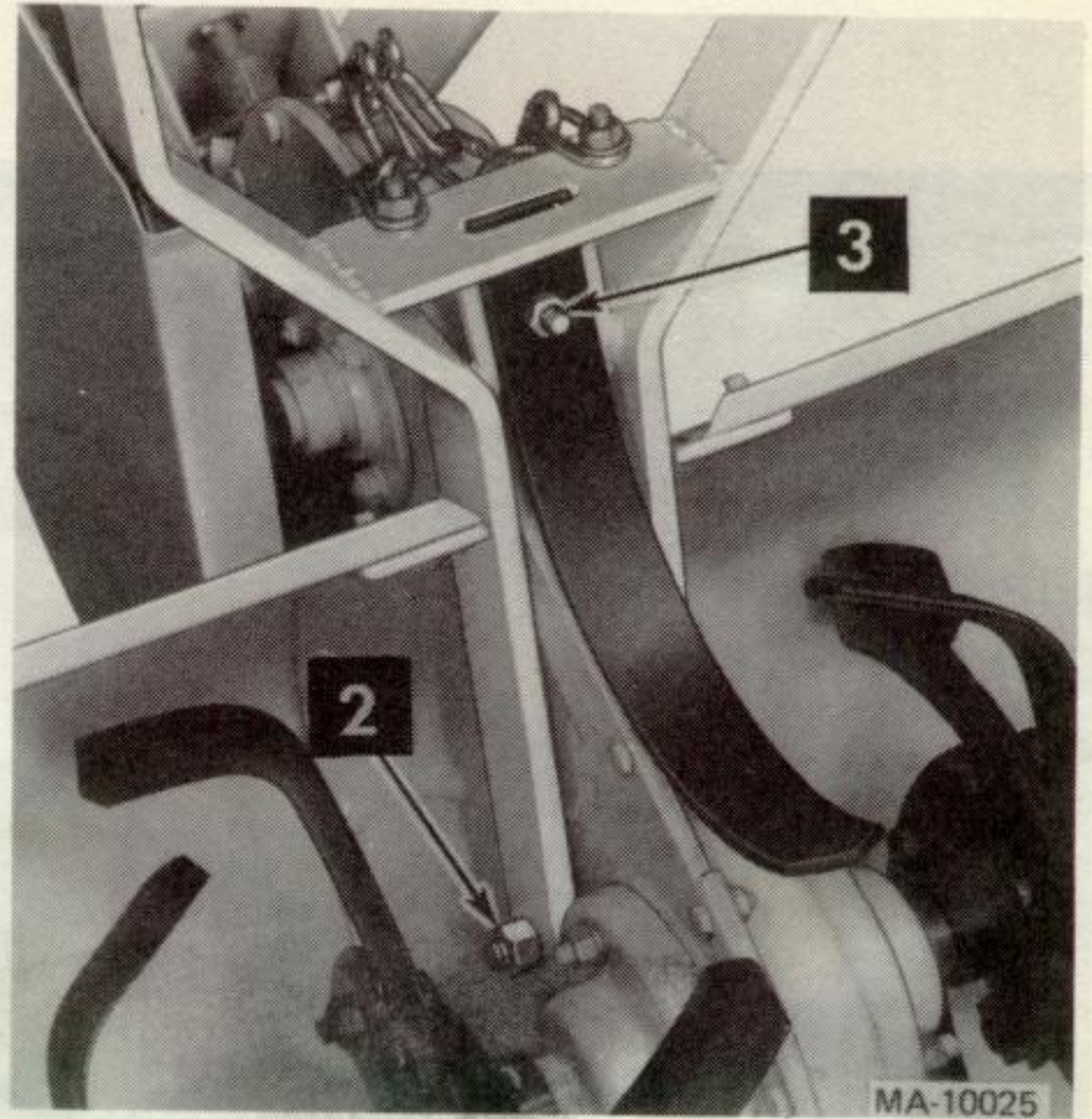


Underneath view of tractor with hydrostatic drive transmission showing main drive V-belt attached.

SETTING UP

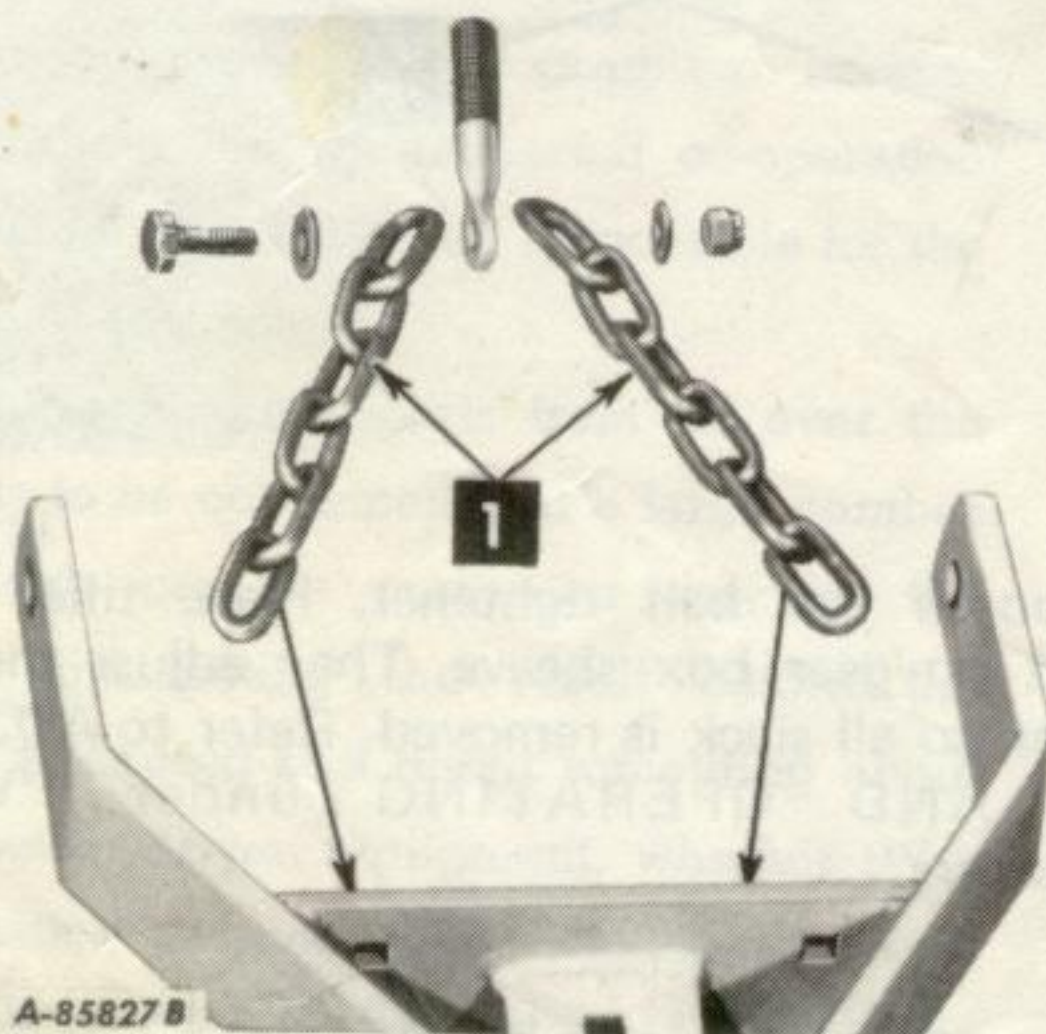
1. Remove cap screws at position shown. Refer to page 12. Bolt belt guide (angled to the rear for gear drive tractor) to housing, using 3/8 x 1-inch hex. head cap screws and 3/8-inch flat washers.

2. Loosen the clutch lever bolt enough so the lever can be moved forward to provide sufficient belt clearance between the engaging lever wear button and the pressure spring thrust button and install the belt on the pulley. Return lever to the disengaged position and retighten the bolt. Then, place belt under the front idler pulleys, under the belt guide and on the gear box sheave. (See page 12.) Refer to ADJUSTING AND OPERATING under "V-BELT TIGHTENERS" and adjust belt for tension.



Mounting frame and center tooth.

LIFT CHAINS, SUPPORT BRACKET, TILLER ASSEMBLY, AND CENTER TOOTH



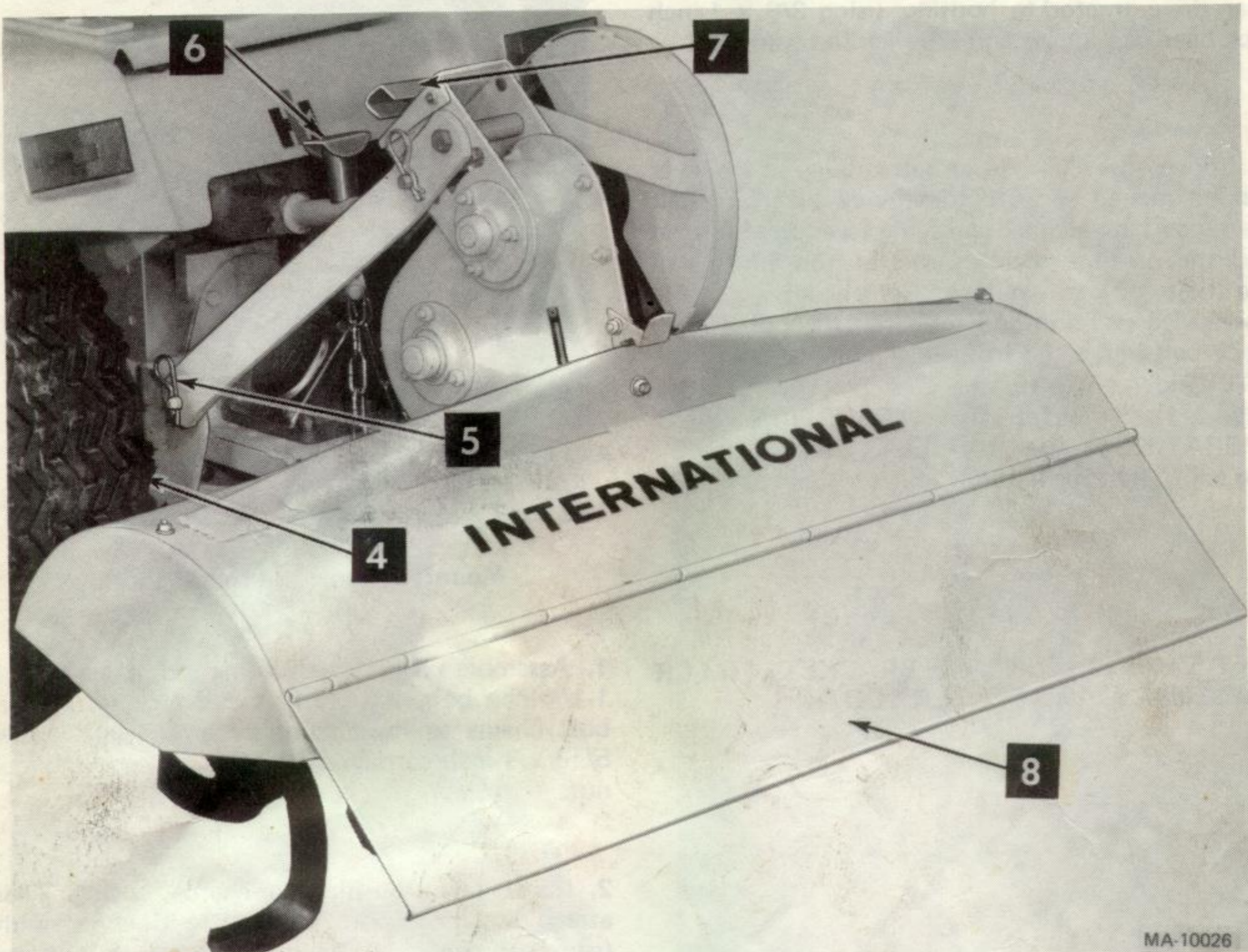
Lift chains

1. Assemble chains to adjusting rod, using 5/16 x 1-1/4-inch bolt, flat washers and lock nut. Then, bolt chains to lower support bracket using two 5/16 x 1-inch carriage bolts, flat washers, and lock nuts.

2. Insert pivot bushing in chain housing. Then attach lower support bracket to tiller assembly (square holes must be to the top side and the center tooth mounting plate to the bottom side), using 1/2 x 3-1/2-inch hex. head cap screw and lock nut.

3. Insert square end of center tooth in slot in lower support bracket and bolt to plate, using a 3/8 x 1-inch carriage bolt and lock nut.

SETTING UP



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4. Attach tiller to mounting frame, using shorter headed pins and quick-attachable cotter pins through mounting frame and lower support bracket. Refer to ADJUSTING AND OPERATING under "Tiller Action".

5. Attach tiller support bars to mounting frame studs using quick-attachable cotter pins.

6. Lower tiller to ground. Insert adjusting rod through hitch lift pin and screw depth control handle to rod. Refer to ADJUSTING AND OPERATING under "Depth Control".

7. Loosen the belt tightener. Place tiller drive V-belt on gear box sheave. Then adjust the belt tension so all slack is removed. Refer to ADJUSTING AND OPERATING under "V-Belt Tighteners".

8. Attach back plate to safety shield, using long hinge rod. Crimp outside ends of hinge to secure rod.



CAUTION! Keep machine in good operating condition and keep safety devices in place. Use guards or shield as instructed in Operator's Manual.

Accidents can be prevented with your help

No accident-prevention program can be successful without the wholehearted co-operation of the person who is directly responsible for the operation of equipment.

To read accident reports from all over the country is to be convinced that a large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the harvest field or in the

industrial plant, can be safer than the man who is at the controls. If accidents are to be prevented—and they can be prevented—it will be done by the operators who accept a full measure of their responsibility.

It is true that the designer, the manufacturer, the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that "*the best kind of a safety device is a careful operator.*" We ask you to be that kind of an operator.

