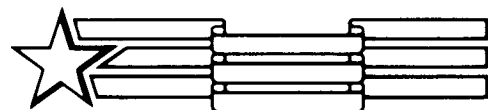


Ingersoll

HYDRACUTTER
AHC48, HC48, 1048
Operator's Manual 8-55601

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QUALITY IN THE AMERICAN TRADITION

Ingersoll Equipment Co., Inc.

Winneconne, Wisconsin 54986-9576



This Safety Alert Symbol Indicates Important Safety Messages In This Manual When You See This Symbol Carefully Read The Message That Follows and Be Alert To The Possibility Of Personal Injury Or Death

IF THIS MACHINE IS USED BY AN EMPLOYEE OR IS LOANED OR RENTED, MAKE ABSOLUTELY CERTAIN THAT THE OPERATOR(S), PRIOR TO OPERATING:

1. IS INSTRUCTED IN SAFE AND PROPER USE.
2. REVIEWS AND UNDERSTANDS THE MANUAL(S) PERTAINING TO THE MACHINE.

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WARNING

BEFORE STARTING ENGINE

**STUDY OPERATOR'S MANUAL SAFETY MESSAGES
READ ALL SAFETY SIGNS ON MACHINE
CLEAR THE AREA OF OTHER PERSONS**

**LEARN & PRACTICE SAFE USE OF
CONTROLS BEFORE OPERATING**

IT IS YOUR RESPONSIBILITY TO UNDERSTAND AND FOLLOW MANUFACTURER'S INSTRUCTIONS ON MACHINE OPERATION, SERVICE, AND TO OBSERVE PERTINENT LAWS AND REGULATIONS. OPERATOR AND SERVICE MANUALS MAY BE OBTAINED FROM YOUR EQUIPMENT DEALER.

TABLE OF CONTENTS

Safety Message	4-7
Introduction	8
Attachment Application	8
Operating Controls	9
Operation	9-10
Troubleshooting Chart	11
Adjustments	12-13
Specifications	14
Maintenance	15-17
Assembly	18-22
Removal and Storage	23

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SAFETY MESSAGES



The safety messages contained in this manual are to be used together with the safety messages appearing in the tractor operators manual. Be sure to review both carefully before operating the tractor-mower combination.



DANGER: Spinning blade. Keep clear. Contact can injure.



WARNING: Flying debris. Keep people and pets away from operating mower. Debris from mower can cause injury.



CAUTION: Keep away from mower when adjusting cutting height.



CAUTION: Be sure hydraulic PTO is off before starting tractor engine. Keep away from mower when engaging PTO. Blade contact can injure.



Regard your rotary mower as a piece of power equipment and be sure this manual is read and understood by all who operate it.



Maintain your tractor and rotary mower in top operating condition.



CAUTION: Clear the lawn or area to be mowed of sticks, stones or any hard objects which could come in contact with the blades and be hurled out the discharge opening.



CAUTION: Do not permit children or pets in the area while mowing and never direct the mower discharge at buildings, people, pets, windows or cars.



WARNING: Keep feet and hands away from discharge opening and make no repairs unless both the tractor engine and attachment drive are shut off and the key is removed from the tractor.



CAUTION: Fill gas tank out of doors and avoid spilling gasoline. Do not fill tank with gasoline while smoking or while engine is running.



CAUTION: Never allow children or young teenagers to operate the tractor and rotary mower.



WARNING: Be sure that the attachment drive clutch is off, the engine is shut off, the key removed and the blades have stopped spinning before attempting to clean a plugged discharge chute.



CAUTION: Unbalanced blades are a hazard and will cause premature wear and failure of bearing and spindles. If the blades cannot be balanced by sharpening, replace them with new ones.



CAUTION: Never get on or off the tractor while the mower is running.



CAUTION: Give complete and undivided attention to the job at hand.



CAUTION: Stop engine, disengage attachment drive, set parking brake and remove key when tractor is unattended.



CAUTION: Do not allow anyone other than the operator to ride on the tractor.



CAUTION: Stop and inspect the mower for damage immediately after striking a foreign object and repair damage before restarting and operating the machine.



CAUTION: Sharp mower blades. Wear gloves or wrap the mower blade with a rag when handling blades. Improper handling can cause cuts to the skin.



CAUTION: Disengage attachment drive clutch when someone approaches or whenever the mower is being transported.



CAUTION: Disengage attachment drive lever, stop engine and remove key and spark plug wire(s) before making adjustments.



CAUTION: Be sure you know how to stop the tractor and mower at a moments notice.



CAUTION: Shut off engine, allow engine to cool and remove key and spark plug wire(s) before replacing mower drive belt.



WARNING: Improper operation of your tractor on hillsides and slopes can be dangerous. Avoid improper operation! Read and follow the instructions given in the section titled "Hillside Operation" in this manual before operating your tractor.



WARNING: Rotating Machine Parts. Stay clear, keep shields installed to help protect from clothing entanglement and injury.



CAUTION: Put the Hydraulic PTO in neutral and shut off the engine and wait for all motion to stop before approaching the mower for any reason.

IMPORTANT: Always install new decals whenever the old decals are destroyed, lost, painted over or illegible. When individual parts are replaced that have decals attached, be sure to install a new decal with the new part. Replacement decals are available from your Dealer.

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HILLSIDE (SLOPE) OPERATION



WARNING: Improper operation of your tractor on hillsides and slopes can be dangerous. Avoid improper operation! Read and follow the instructions given in the section titled "Hillside Operation" in this manual before operating your tractor.

Avoid operating tractor on hillsides and slopes. To minimize the possibility of accidents while operating on hills and/or rough terrain, obey a combination of rules, practices and good common sense.

These include:

1. Reading, understanding, and obeying all written safety messages appearing on decals on the machine and in operator's manuals.
2. Learning from your operator's manual and carefully from EXPERIENCE how to operate your tractor correctly. Know your tractor's limitations.
3. Knowing the terrain on which you are operating your tractor. There are terrain conditions on which your tractor cannot be operated!
4. Learning to expect changes in operating conditions. Adding or removing attachments or weight to your tractor will make your tractor perform differently. Rain, snow, loose gravel, wet grass, etc. change the tractive conditions of the terrain requiring changes in your operating technique or not to operate on that terrain.

The following paragraphs will cover these practices one at a time. Read and study them. The examples provided are not all inclusive but will give you a firm understanding of the requirements for avoiding accidents while operating your tractor.

Ingersoll lawn and garden tractors are designed and built to comply with the Voluntary Standard ANSI (American National Standards Institute).

THE OPERATOR IS THE SOLE JUDGE AS TO THE DEGREE OF SLOPE ON WHICH THIS TRACTOR CAN BE SAFELY OPERATED. IF IN DOUBT THAT THIS TRACTOR CAN BE SAFELY OPERATED ON A PARTICULAR SLOPE, DO NOT OPERATE ON THAT SLOPE! COMMON SENSE MUST PREVAIL.

Read, Understand, Obey:

Safety messages are found on the tractor and in the operator's manuals. These must be understood by the tractor operator to be of value. Be sure that these messages are studied before starting and/or operating the tractor by an operator not familiar with this particular tractor.

Learn to Operate:

Learn your tractor's controls from decals on the tractor and from instructions in the operator's manual. Practice how to properly manipulate these controls. Practice must be done in a flat area, clear of obstacles and bystanders. Learn your tractor's operating characteristics and limitations. These include:

- a. amount of engine power available
- b. engine governor response
- c. tractive ability
- d. steering characteristics
- e. braking characteristics
- f. movement of gear shift lever
- g. forward and reverse ground speeds
- h. speed of attachment lift
- i. and others

Attempting any operation which approaches or exceeds the tractor's limitation is risking an accident.

Know the Terrain:

Know the terrain on which you are working. Find hidden obstacles by walking through and inspecting the area prior to operating your tractor on it. Mark obstacles, such as, rocks, ruts or holes with a 6 ft. long pole and red flag and stay well clear of these obstacles when operating.

Operate your tractor at a ground speed slow enough to insure complete control at all times.

Place the transmission in low gear and regulate the throttle control lever slowly and smoothly to maintain this safe speed.

Always drive in a forward direction when proceeding downhill. Never drive up a hill. If necessary, back up a hill to the desired position. Always back up loading ramps and tilt bed trailers. If necessary to turn while on a hill, always turn downward.

Your judgement, based on operating experience is the final word in deciding if you should negotiate any given hill or slope. If you are in doubt about safety, STAY OFF THE SLOPE.

Under no circumstances should an inexperienced operator attempt to use your tractor on slopes or hillsides.

You may encounter some terrain on which your tractor cannot be operated even if a different piece of equipment has operated there in the past.

Learn to Compensate for Changes in Operating Conditions:

Adding or removing attachments or ballast (such as wheel weights or fluid) change the weight and weight distribution of your tractor and, therefore, changes your tractor's operating characteristics.

Be alert to these changes. Practice operating the tractor after each change has been made.

Adding an attachment (weight) to the rear of the tractor reduces the weight on the front axle. Adding an attachment (weight) to the front of the tractor reduces weight on the rear of the tractor. You must add counterweight to the front if a rear mounted attachment is installed. You must add counterweight to the rear if a front mounted attachment is installed.

Tractive conditions will vary with weather and terrain and equipment.

Areas wet with dew or rain will be more slippery than when dry. Areas covered with loose gravel are more slippery than firm dry ground. Greater stopping distances are required in these slippery areas.

Spinning rear wheels tend to move the tractor sideways. The addition of tire chains will provide more traction to the rear wheels in the forward-reverse direction but less stability in the sideways direction. Chains will cause more abrupt starting and stopping.

The final word in safe tractor operation rests on your judgement.

If in doubt of your safety, STAY OFF THE SLOPE.

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INTRODUCTION

This operator's manual includes:

- a. Safety Rules
- b. Installation Procedure
- c. Operating Procedure
- d. Adjustments
- e. Maintenance

Illustration clarity: Illustrations used in this manual are for reference only. Your equipment can be different. To expedite the timely release of this manual, we must use equipment available at time of development.

Read this manual before operating your rotary mower.

See your authorized dealer for parts or repairs.

The words "Right, Left, Front and Rear" as used in this manual indicate directions when you are in the operator's seat in the normal operating position.

NOTE: We reserve the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

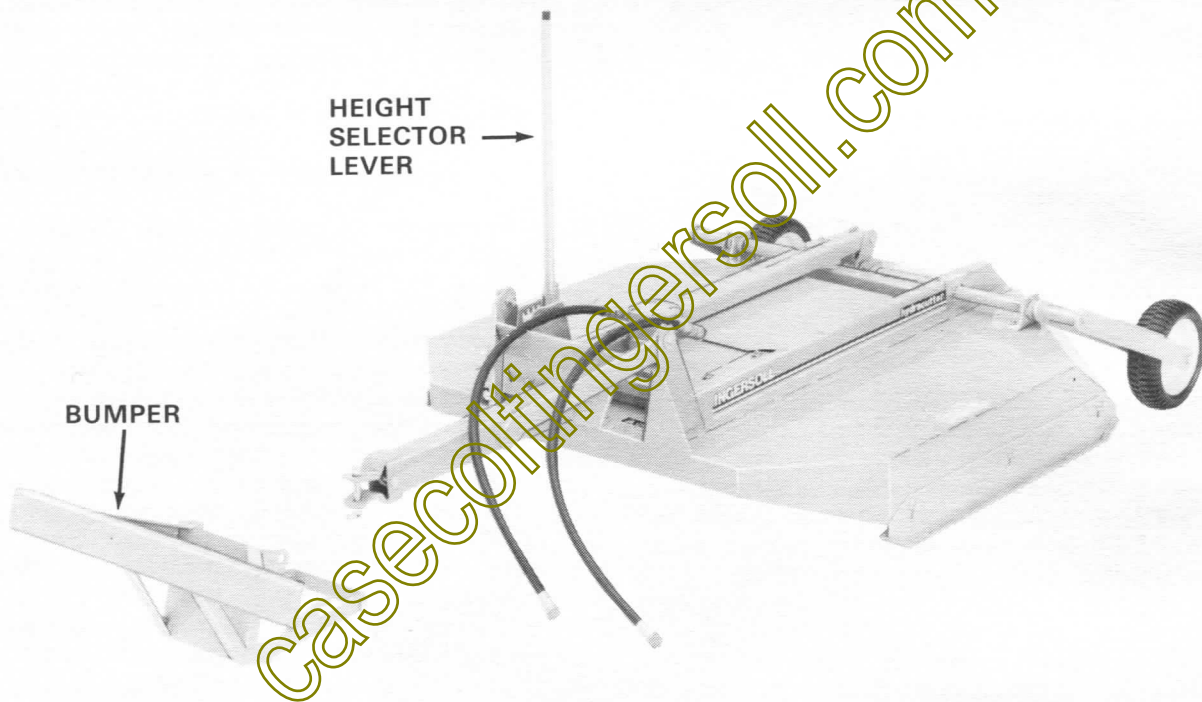


FIGURE 1 Model 1048, HC48 shown.

ATTACHMENT APPLICATION

MODEL	SIZE	TRACTOR MODEL
HC48*, 1048	48" (1220 mm)	224, 226, 3014, 3016, 3018, 3020 444, 446, 448, 4016, 4018, 4020 644, 646, 648, 6018
AHC48	48" (1220 mm)	3118, 4116, 4118, 4120

NOTE: Requires Hydraulic PTO Attachment.

*May require quick couplers to attach to HP32 or HP42 PTO if not equipped.

OPERATING CONTROLS

Hydraulic PTO Handle

The rotary mower is started and stopped with the hydraulic PTO handle. Move the hydraulic PTO handle to the right (floor mounted PTO) or forward (fender mounted PTO) to start the mower. Move the hydraulic PTO handle back to the center position to stop the mower. See your PTO or tractor operators manual for this control.

IMPORTANT: The mower motor can not operate and excessive pressure will occur if the hydraulic PTO lever is pushed fully to reverse direction or if the hoses are incorrectly installed.

NOTE: A lockout is provided to prevent the PTO handle from being pushed into the "reverse" position.

HEIGHT SELECTOR LEVER

The cutting height is controlled by the height selector lever.

TO INCREASE THE CUTTING HEIGHT:

Pull the lever forward a small amount to decrease the tension on the latch.



CAUTION: Keep away from mower when adjusting cutting height.

Push the button on top of the lever to disengage the latch.

Pull the lever forward to lift the mower.

Release the button.

NOTE: On some units, the top notch cannot be used due to axle contacting mower housing.

TO DECREASE THE CUTTING HEIGHT:

Pull the lever forward a small amount to decrease the tension on the latch.

Push the button on top of the lever to disengage the latch.

Push the lever rearward to lower the mower.

Release the button.

OPERATION

1. See the "ADJUSTMENTS" and "MAINTENANCE" sections of this manual before operating your rotary mower.
2. See your tractor operator's manual for correct use of your tractor controls.
3. Learn to operate the tractor and rotary mower in an area clear of persons and obstructions.



CAUTION: Never allow children or young teenagers to operate the tractor and rotary mower.

4. Check the work area for obstructions. Remove the small obstructions. Mark the large obstructions so you can see them. Do not hit the large obstructions.



CAUTION: Clear the lawn or area to be mowed of sticks, stones or any hard objects which could come in contact with the blades and be hurled out the discharge opening.



CAUTION: Stop and inspect the mower for damage immediately after striking a foreign object and repair damage before restarting and operating the machine.

IMPORTANT: The tractor front bumper must be installed to protect the tie rod and hood from tall weeds and brush.

5. Use the highest cutting position whenever possible and especially in rough or uneven terrain. Using the highest cutting position will reduce the possibility of the blades contacting the ground and minimize the chance for premature wear or damage.

IMPORTANT: Engage the hydraulic PTO lever the first time with the engine at low idle. This procedure will minimize the chance of damage to the hydraulic system if the hoses are connected backwards.

IMPORTANT: Always check the Hydraulic PTO Lever before attempting to START the ENGINE. The Hydraulic PTO is not equipped with a neutral start switch on some model tractors. The mower can rotate (if no load) or the engine will not start if you attempt to start the engine with the hydraulic PTO engaged.



CAUTION: Be sure hydraulic PTO is off before starting tractor engine. Keep away from mower when engaging PTO. Blade contact can injure.

NOTE: Secure the drawbar pin with the spiral retaining ring to prevent possible loss by upset from tall brush or bushes that are driven over.

6. To start the mower:

- a. Position the mower over an area of thin grass or a previously cut area.
- b. Set the tractor throttle between 1/3 and 1/2 open.
- c. Engage hydraulic PTO slowly. The blades will make a noise as they begin to rotate.

NOTE: It is normal for the blades to make a noise until they come up to speed. Stop and inspect the mower if noise continues.

d. Increase the engine speed to full throttle.



DANGER: Spinning blade. Keep clear. Contact can injure.

7. To stop the mower.

- a. Reduce the tractor throttle setting, but not low enough to cause the engine to stall.
- b. Push the hydraulic PTO handle to the "center" position. Do not push the handle past the "center" position.

IMPORTANT: The mower motor can not operate and excessive pressure will occur if the hydraulic PTO lever is pushed fully for reverse direction or if the hoses are incorrectly installed.



CAUTION: Be sure you know how to stop the tractor and mower at a moments notice.

8. Mow with the tractor's two speed transaxle in low range and engine speed at full throttle for best results. This is required to maintain correct blade speed and to produce a clean cut. Regulate tractor ground speed as required to produce a clean cut and as limited by engine power.

IMPORTANT: Do not overload (lug) the engine. The engine can overheat and will be damaged if operated with an overload.

9. Under some conditions, grass that is pushed down by the tractor tires may not be cut at the same height as the rest of the grass. Reducing ground speed, while maintaining engine speed, and cutting at lower cutting heights, if the terrain permits, will provide the best possible cut.

10. Extremely tall grass should be cut twice.

Set the mower at the highest position for the first pass.

If mower becomes overloaded, slow down, stop, or backup slightly to permit mower to clear itself of excessive material.



CAUTION: Put the Hydraulic PTO in neutral and shut off the engine and wait for all motion to stop before approaching the mower for any reason.

For the second pass, set the mower to the desired height and mow at right angles to the first pass.

11. Study the area to be mowed. Consider the shape of the field, the terrain, hilly areas, etc.

Usually the field should be "opened" by mowing two or three passes around. Then the field should be divided into "lands" for most efficient cutting and clean cut corners.

Since debris is expelled from the rear of the mower, the direction of cut is optional.

WARNING: Improper operation of your tractor on hill-sides and slopes can be dangerous. Avoid improper operation! Read and follow the instructions given in the section titled "Hillside Operation" in this manual before operating your tractor.



TROUBLESHOOTING CHART

MOWER NOT CUTTING EVEN OR LEAVING A STRIP OF GRASS

POSSIBLE CAUSE	CORRECTION
1. Grass too long.	1. Cut twice. First at highest position then at needed height.
2. Conditions too wet for mowing.	2. Allow grass to dry before mowing.
3. Travel speed too fast.	3. Decrease travel speed.
4. Engine speed too slow.	4. Adjust engine speed to 3600 RPM.
5. Grass pressed down by tractor tires.	5. Reduce ground speed but maintain engine speed.
6. Obstruction in bottom of mower deck.	6. Clean under deck.
7. Blades not sharp.	7. Cutting edge must be sharp.
8. Drive belt slippage.	8. Check belt. Adjust tension or replace.
9. Hydraulic relief valve bypassing.	9. Pressure test and adjust (if necessary) the hydraulic relief valve.

TOO MUCH POWER CONSUMPTION AND CUTS BADLY

1. Blades not sharp.	Sharpen blades.
2. Blade not straight.	2. Replace blade.
3. Blades installed upside down or wrong blades installed.	3. Install correctly. Blades rotate clockwise as viewed from the top down. Cutting edge must lead.
4. Mower not level front to rear.	4. Blade must be 1/2" (13 mm) to 3/4" (19 mm) low in front.

EXCESSIVE NOISE OR VIBRATION

1. Blades not balanced.	1. Sharpen blades equally. Replace blades in sets only.
2. Loose blade.	2. Check blade retainers.
3. Worn bearing.	3. Stop and inspect blade spindle and bearings.

ADJUSTMENTS

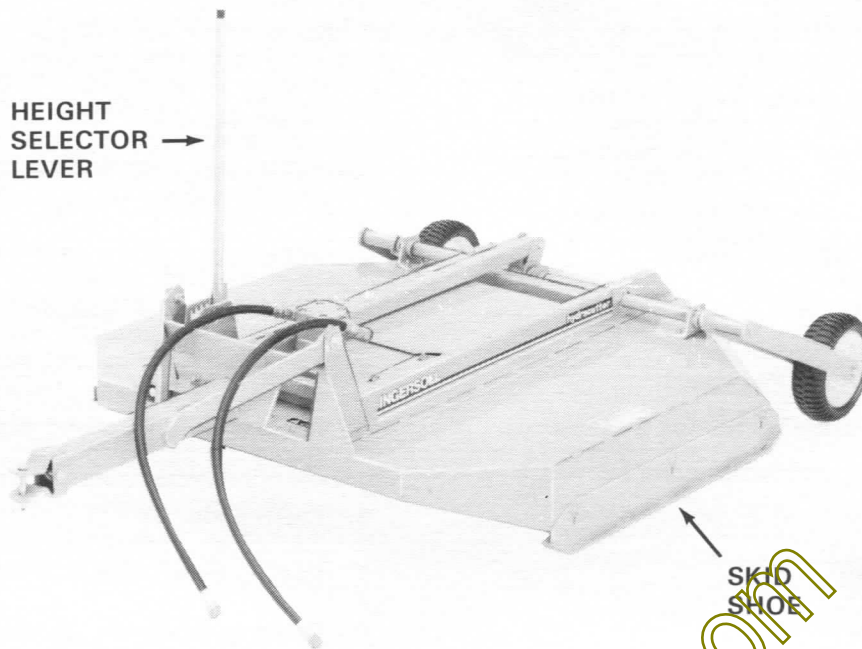


FIGURE 2 Model 1048, HC48 shown.

CUTTING HEIGHT

The cutting height is controlled by the height selector lever.



CAUTION: Keep away from mower when adjusting cutting height.

TO INCREASE THE CUTTING HEIGHT:

Pull the lever forward a small amount to decrease the tension on the latch.

Push the button on top of the lever to disengage the latch.

Pull the lever forward to lift the mower.

Release the button.

TO DECREASE THE CUTTING HEIGHT:

Pull the lever forward a small amount to decrease the tension on the latch.

Push the button on top of the lever to disengage the latch.

Push the lever rearward to lower the mower.

Release the button.

SKID SHOES

Raise or lower the skid shoes as required to prevent constant contact with the ground at the selected cutting height.

The skid shoes are held in place by 3 bolts.

FRONT TO REAR LEVEL

The mower is properly leveled when the front blade tip is 1/2" (13 mm) to 3/4" (19 mm) lower than the rear blade tip.

Proper cutting and minimum power consumption are a result of a properly leveled mower.

Before Starting the Procedure:

1. Put the tractor and mower on a level surface, such as, a concrete floor.
2. Put the height selector lever in a middle position.



CAUTION: Disengage attachment drive lever, stop engine and remove key and spark plug wire(s) before making adjustments.

3. Align the blades parallel to the tractor frame.
4. Measure the distance from the blade ends to the level surface. Make sure you measure as near the blade end as possible.

5. Do not push up on the blade when making this measurement.
6. The front must be 1/2" (13 mm) to 3/4" (19 mm) lower than the rear.
7. Rotate blade and remeasure. Average the measurements.

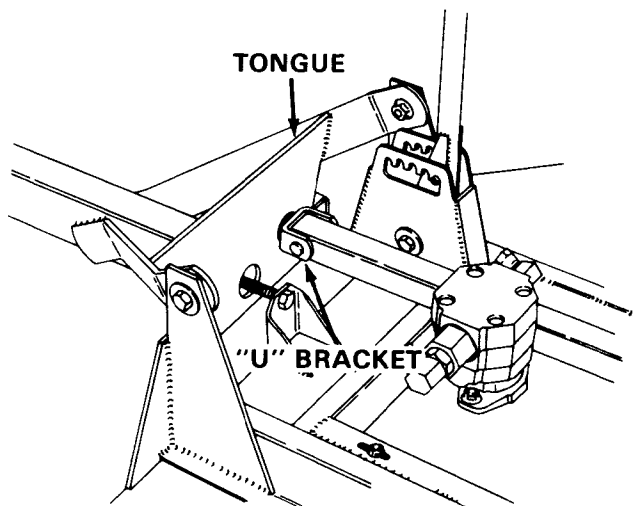


FIGURE 3 Model 1048, HC48 shown.

TO RAISE THE FRONT OF THE MOWER

1. Support the rear of the mower to remove weight from the rear axle.
2. Remove the "U" bracket from the tongue.
3. Remove washer(s) between the "U" bracket and the tongue.
4. Install the "U" bracket.
5. Remove the support.
6. Remeasure and readjust if necessary.

TO LOWER THE FRONT OF THE MOWER

1. Support the rear of the mower to remove weight from the rear axle.
2. Remove the "U" bracket from the tongue.
3. Add washer(s) between the "U" bracket and the tongue.
4. Install the "U" bracket.
5. Remove the support.
6. Remeasure and readjust if necessary.

DRIVE BELT ADJUSTMENT

1. Loosen the four nuts that secure the motor mounting plate.
2. Loosen the two locknuts on the adjustment bolts.
3. Turn the two adjusting bolts until the spacers protrude through the channel the thickness of one tractor ignition key.
4. Tighten the two locknuts and four nuts on the motor mounting plates.

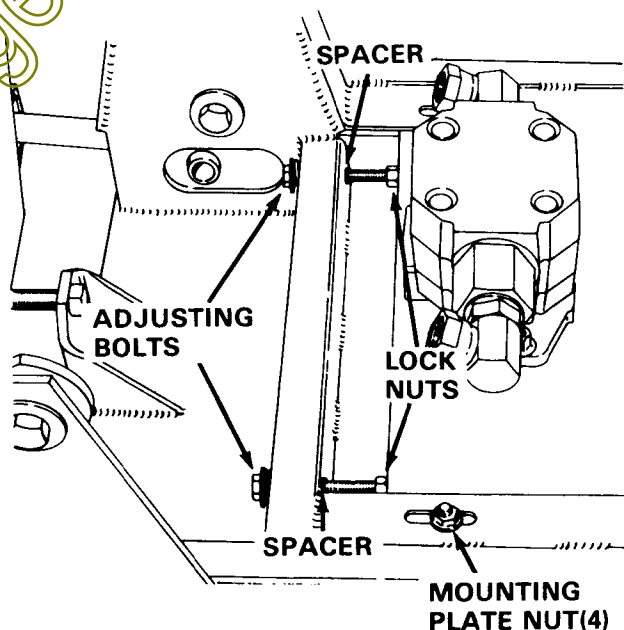


FIGURE 4 Model 1048, HC48 shown.

SPECIFICATIONS

Cutting Width	48" (1220 mm)
Overall Width	50.5" (1280 mm)
Overall Length	80 (2030 mm)
Cutting Height	1.5" (38 mm) to 6" (152 mm)
Hitch	Drawbar with hitch pin
Mower Speed (1048, HC48)	1082 RPM
Mower Speed (AHC48)	1028 RPM
Blade Tip Speed (AHC48)	12,640 ft/min.
Blade Tip Speed (1048, HC48)	13,300 FT/Minute
Blade Material	Heat treated alloy steel
Overall Weight	310 lbs. (140 kg)
Power Source	Gear type hydraulic motor
Oil Flow Requirement (1048, HC48)	8 to 9 GPM
Oil Flow Requirement (AHC48)	10-11 GPM
Minimum HP Requirement	14 hp tractor
Wheels	10.25" (260 mm) x 3.25" (83 mm)
Axles	3/4" (19 mm) with greaseable bearings
Deck Thickness	12 gauge steel
Level Adjustment	1/2" (13 mm) to 3/4" (19 mm) low in front
Mower Spindle	Tapered roller bearings - greaseable

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MAINTENANCE

DAILY

1. Grease wheel
2. Check belt adjustment
3. Check for and remove debris wrapped around spindle.
4. Check blades for sharpness
5. Check blade retainer bolts for tightness

EVERY 25 HOURS

1. Grease spindle
2. Inspect belt condition and adjustment



WARNING: Keep feet and hands away from discharge opening and make no repairs unless both the tractor engine and attachment drive are shut off and the key is removed from the tractor.

REAR WHEELS

Apply grease to the lubrication fittings on the wheels daily. Frequent greasing will force abrasives from the wheel bearing assuring normal wear life.



CAUTION: Shut off engine allow engine to cool and remove key and spark plug wire(s) before replacing mower drive belt.

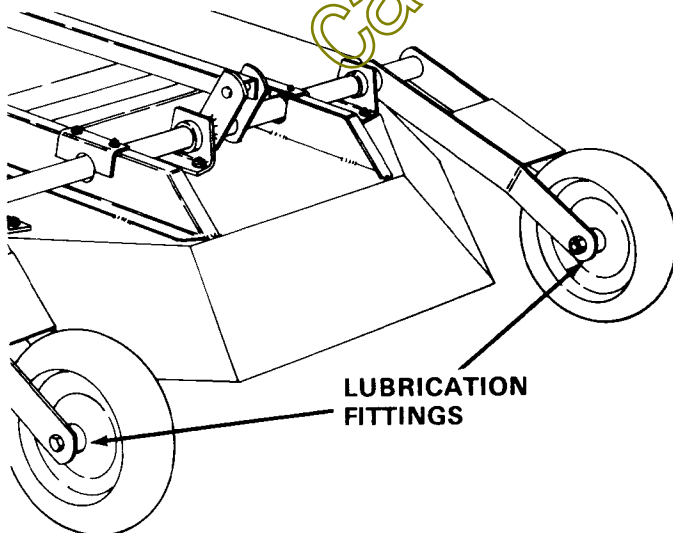


FIGURE 5

DRIVE BELT

Replace the drive belt when the adjustment procedure no longer provides proper belt tension.

Use the following procedure to replace the drive belt:

1. Remove the belt shield.
2. Loosen the four nuts that secure the motor mounting plate.
3. Loosen the two locknuts on the adjustment bolts.
4. Turn the adjusting bolts counterclockwise and move the motor mounting plate toward the spindles.
5. Remove the belt. (Install the new belt.)
6. Turn the adjusting bolts clockwise until the spacers protrude through the channel the thickness of one tractor ignition key.
7. Tighten the two locknuts and four nuts on the motor mounting plates.
8. Install the belt shield.

IMPORTANT: Check and readjust tension on a new belt after the first 20 minutes of operation.



WARNING: Rotating Machine Parts. Stay clear, keep shields installed to help protect from clothing entanglement and injury.

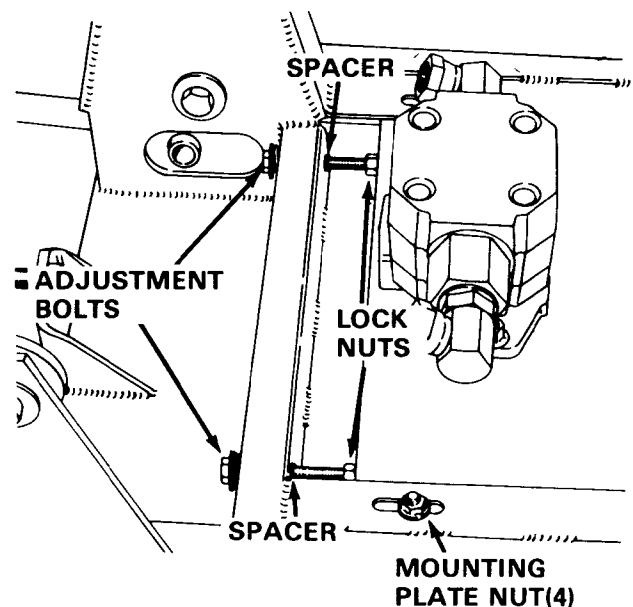


FIGURE 6 Model 1048, HC48 shown.

SPINDLE BEARINGS

Apply grease to the lubrication fitting on the mower spindle housing after each 25 hours of operation.

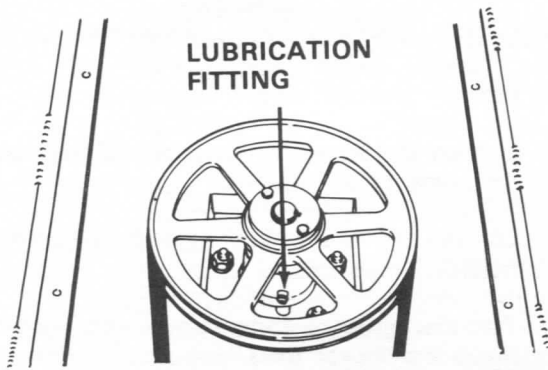


FIGURE 7



WARNING: Rotating Machine Parts. Stay clean, keep shields installed to help protect from clothing entanglement and injury.

NOTE: Inspect the drive belt condition and adjustment whenever the belt guard is removed for lubrication.

Use the following procedure when renewing the mower spindle bearings:

Apply number 1 gun grease with a lithium base to the bearings. If you do not have a machine for grease application use the following procedure:

1. Put the grease in one hand

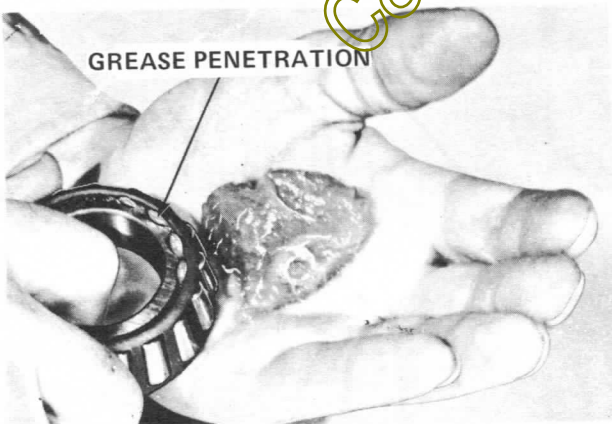


FIGURE 8

2. Use force to push the bearing through the grease and against your hand. Slide the bearing across your hand to work the grease in. Rotate the bearing and repeat this procedure until the bearing is full of grease.
3. Install the new bearing cones, cups, into the hubs and install the spindle into the hub.
4. Install thrust washers on the spindle and tighten this assembly with the retaining nut causing a slight binding in the rotation of the spindle.
5. Turn the nut counterclockwise until the hole in the spindle aligns with the nearest slot.
6. Install a cotter pin through the spindle hole.

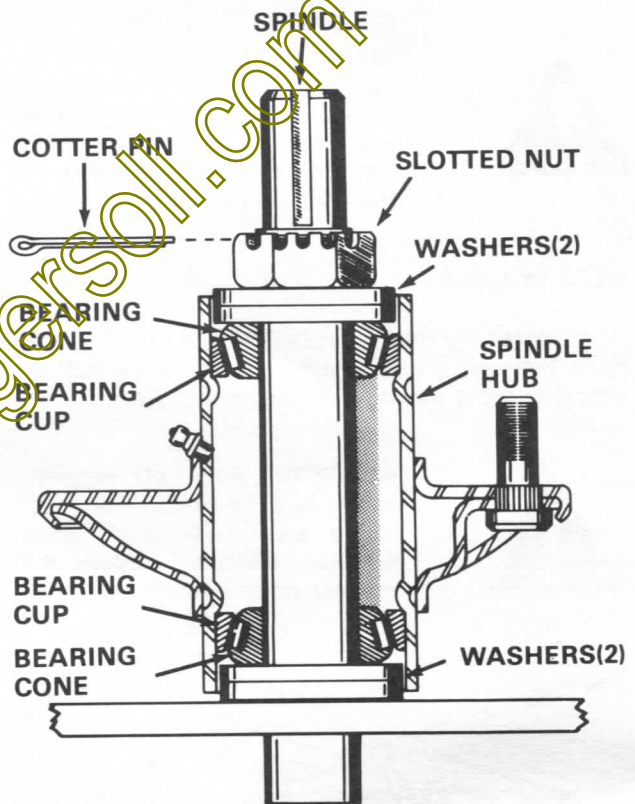


FIGURE 9



Maintain your tractor and rotary mower in top operating condition.

BLADES

Check the blades DAILY for sharpness.

1. Sharpen both blades at the same time to maintain proper balance.
2. Replace blades in pairs only, to maintain proper balance.

IMPORTANT: Unbalanced blades can cause vibration that can cause wear or damage to the mower.

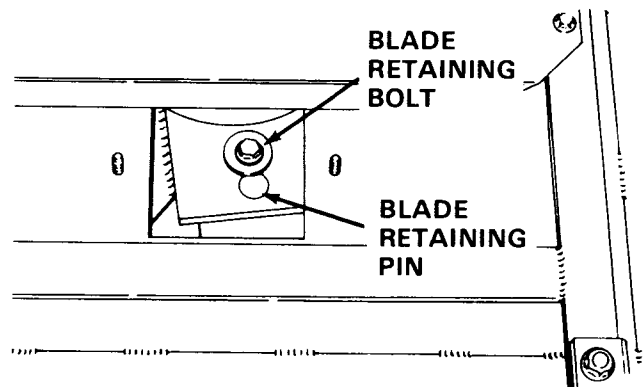


FIGURE 11



CAUTION: Unbalanced blades are a hazard and will cause premature wear and failure of bearing and spindles. If the blades cannot be balanced by resharpening, replace them with new ones.



CAUTION: Sharp mower blades. Wear gloves or wrap the mower blade with a rag when handling blades. Improper handling can cause cuts to the skin.

3. Sharpen blades to a 1/16" (1.6 mm) blunt cutting edge.

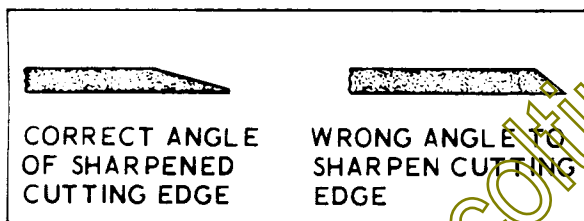


FIGURE 10

Sharpening blades to a razor sharp edge will promote rapid blade wear.



WARNING: Keep feet and hands away from discharge opening and make no repairs unless both the tractor engine and attachment drive are shut off and the key is removed from the tractor.

4. To remove blade:
 - a. Shut off tractor engine, remove key and wait for all motion to stop.

- b. Remove the access plate for the blade bolts.
- c. Remove the blade pin retaining bolt and washer.
- d. Use a small punch to push the retaining pin up.

Lifting slightly on the tip of the blade will make the pin easier to remove.
- e. Slide the blade out.
- f. Rotate the spindle and remove the second blade in the same way.

NOTE: The mower rotates clockwise as viewed from the top.

IMPORTANT: Install the blades with the sharpened edges facing the left (as viewed from the rear) to insure proper installation.

- g. Tighten the blade retaining bolts securely.

IMPORTANT: Use only genuine original equipment blades and blade pins. Use of substitutes may give poor performance and may fail causing a hazard. Contact your dealer.

ASSEMBLY

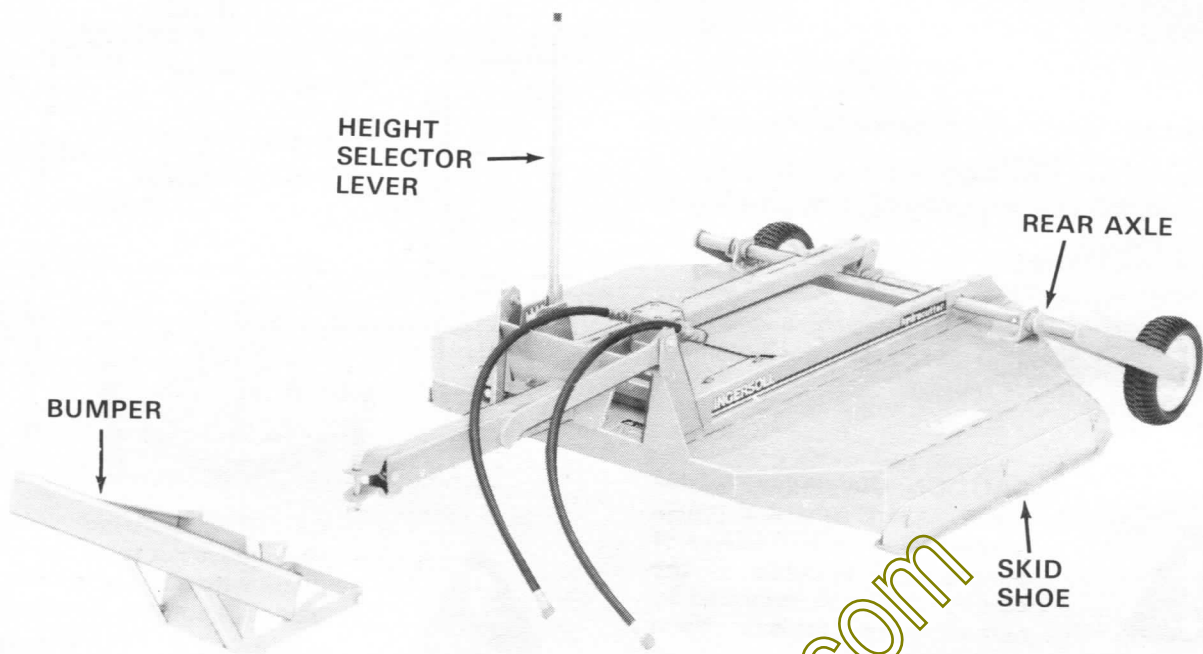


FIGURE 12 Model 1048, HC48 shown

1. Change the rear axle from it's shipping position to it's operating position.
 - a. Carefully raise and block the rear of the mower to permit access to the axle mounting bolts.
 - b. Remove the six (6) bolts which hold the rear axle to the mower deck.
 - c. Rotate the rear axle 180 degrees.
 - d. Secure the axle in position with the same bolts.
 2. Install the axle clamps using 5/16" carriage bolts.
 3. Install the skid shoes to the outside of the deck. Use 3/8" carriage bolts, installed from the inside out, flat washer against the slot and special "flange lock" nut.
- The skid shoes may be positioned with the offset facing inward or outward. Assemble with the long offset inward if the mower must pass through narrow gates or doorways.

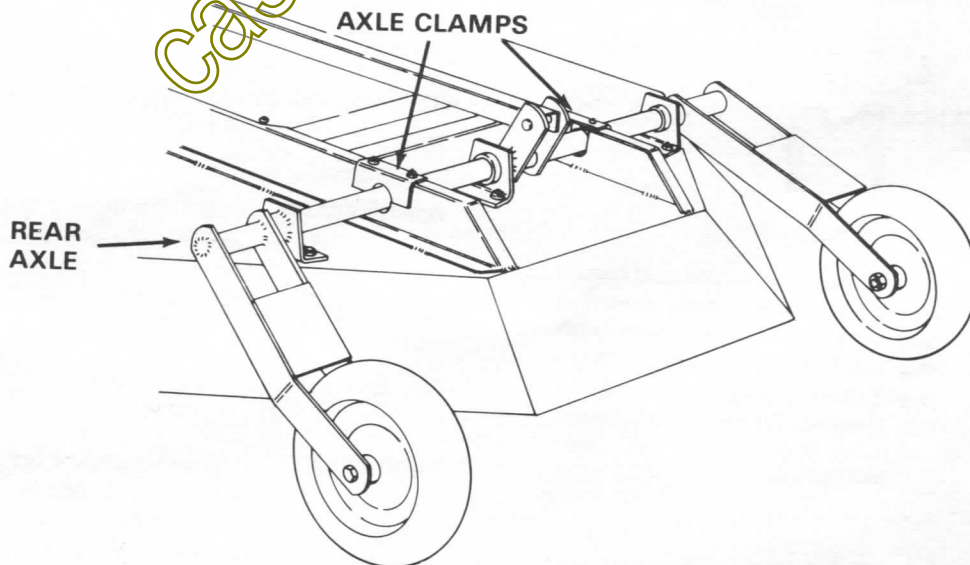


FIGURE 13

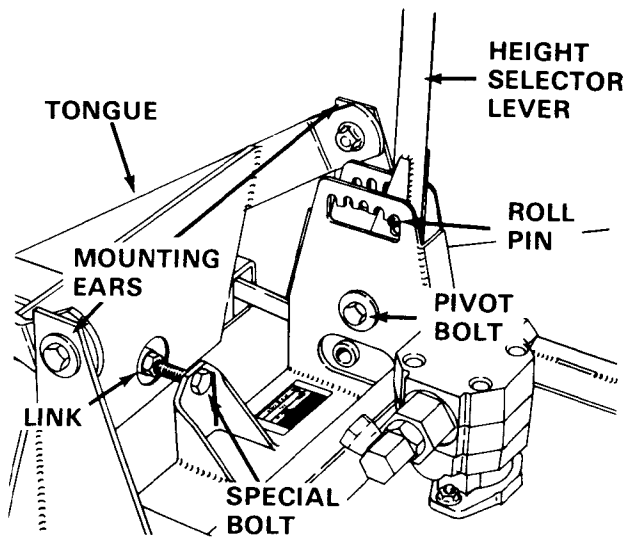


FIGURE 14 Model 1048, HC48 shown

4. Install the height selector lever:
 - a. Insert the lever into the bracket with the angled plates facing forward.
 - b. Insert the plain sleeve bushing through the upper hole in the lever bracket and lever.
 - c. Secure with a 2-3/4" long by 1/2" bolt with a flat washer under the head.

Insert from the inside out and secure with the special "flange lock" nut.

5. Assemble the height selector lever:
 - a. Coat the spring and the large end of the rod with grease.
 - b. Drop the spring into the lever.
 - c. Drop the rod into the lever with the threaded end up.
 - d. Thread the thumb knob onto the rod.
 - e. Rotate the rod to align the roll pin hole with the slot in the lever.
 - f. Insert the roll pin through one of the notches in the lever bracket, through the lever and rod.

When properly installed, the roll pin will protrude equally from both sides of the lever to engage the notches in both sides of the bracket.

- g. Tighten the thumb knob.

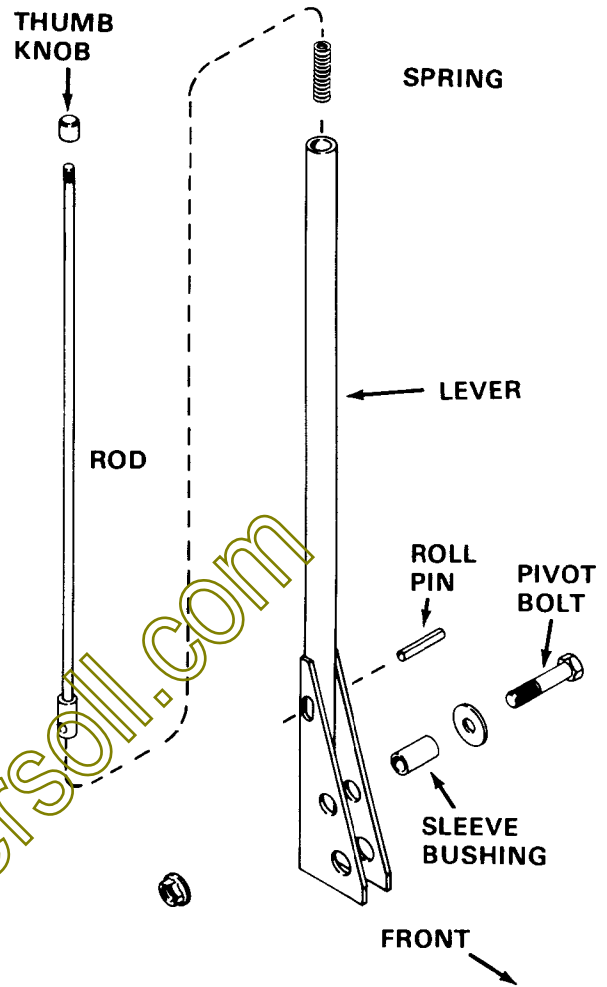
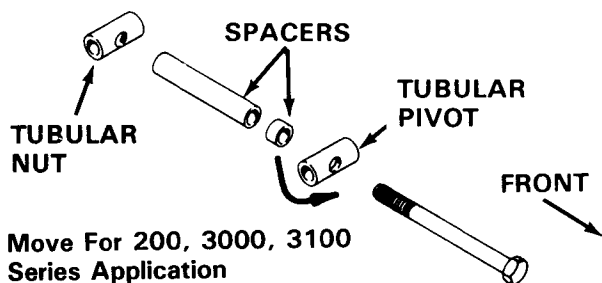
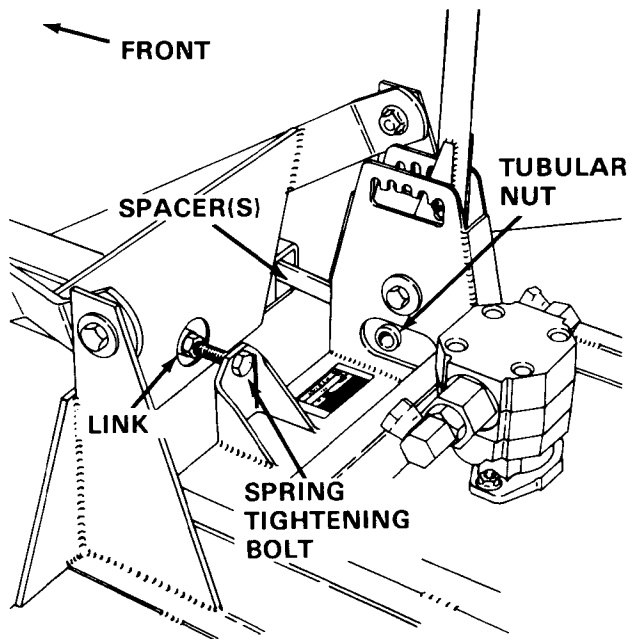


FIGURE 15

6. Install the tongue and counterbalance spring:
 - a. Identify the special 1/2" bolt which is threaded all the way to the head.
 - b. Insert this bolt through the tab on the front of the deck from the rear forward.
 - c. Turn the link about 3 turns onto the bolt, hook the spring to the link and insert the spring into the hollow tongue.
 - d. Move the tongue rearward until the forward eye of the spring can be held in place with the 2-3/4" long x 1/2" bolt.
 - e. Install bushings into the mounting ears on the deck. Secure the tongue to the mounting ears using 1-1/4" long x 1/2" bolts, flat washers and, "flange lock" nuts.



Move For 200, 3000, 3100 Series Application

FIGURE 16 Illustrated for 400, 4000, 4100 Series Application Model 1048, HC48 shown

7. Connect height selector lever to tongue:
 - a. Identify the special "tubular pivot" without threads and install it into the bracket on the tongue.
 - b. Identify the special "tubular nut" with threads and install it into the lower hole of the lift lever.
 - c. Identify the 5/16" (8 mm) long spacer.
Identify the 4-1/2" (114 mm) long spacer.
 - d. For 200, 3000, 3100 series tractors—install the 5/16" (8 mm) spacer on the bolt before inserting the bolt.
For 400, 4000, 4100 series tractors—insert the bolt, then install both spacers on the bolt.
 - e. Insert the bolt from the front, through the special "tubular pivot" without threads, install the spacer(s) and thread the bolt into the special "tubular nut" with threads.
 - f. Tighten the bolt to clamp the spacer.

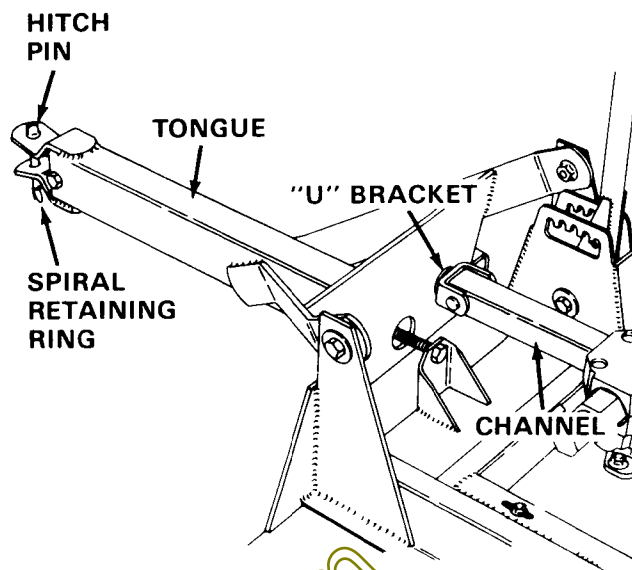


FIGURE 17

8. Tighten the spring tightening bolt until the link is flush with the plate on the tongue.
9. Install the leveling link:
 - a. Install the "U" bracket to the tongue. Use 2 shim washers between the bracket and tongue.
NOTE: Front to rear level adjustment is made by adding or removing shim washers.
 - b. Install the channel open end down. Secure with clevis pins, washers and cotter pins.
 - c. Lift the rear wheels to align the rear hole.
10. Hitch to tractor. Use the spiral retaining ring to secure the hitch pin.
NOTE: The hitch plates are curved to permit pitching.
11. Check front to rear level adjustment. The front must be 1/2" (13 mm) to 3/4" (19 mm) lower than the rear.
12. Install the bumper to the anchor pins and snap-fast pins at the front on the tractor.

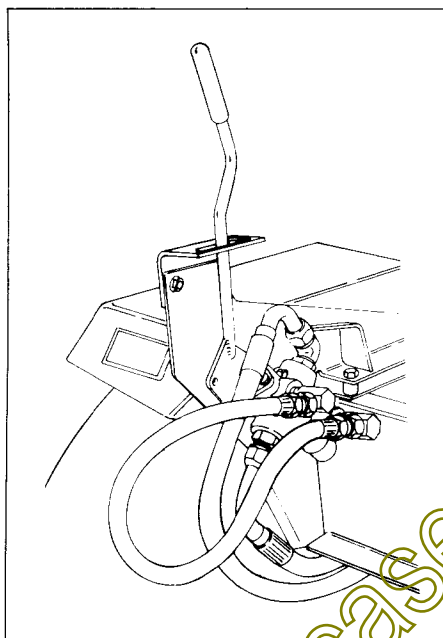
HYDRAULIC CONNECTION FOR 1048, HC48 TO
J17, L17 HYD. PTO

FIGURE 18

1. Install the lockout bolt to the front slot in the PTO valve handle bracket.

NOTE: For installation on Loader tractors, install a 1" I.D. x 7/8" long steel tube on the PTO valve spool for reverse direction lockout.

2. Connect the hose from the left side of the hydraulic motor to the rear port of the hydraulic PTO valve.
3. Connect the hose from the right side of the hydraulic motor to the front port of the hydraulic PTO valve.



M17, N17, HP30, HP31, HP40, HP41

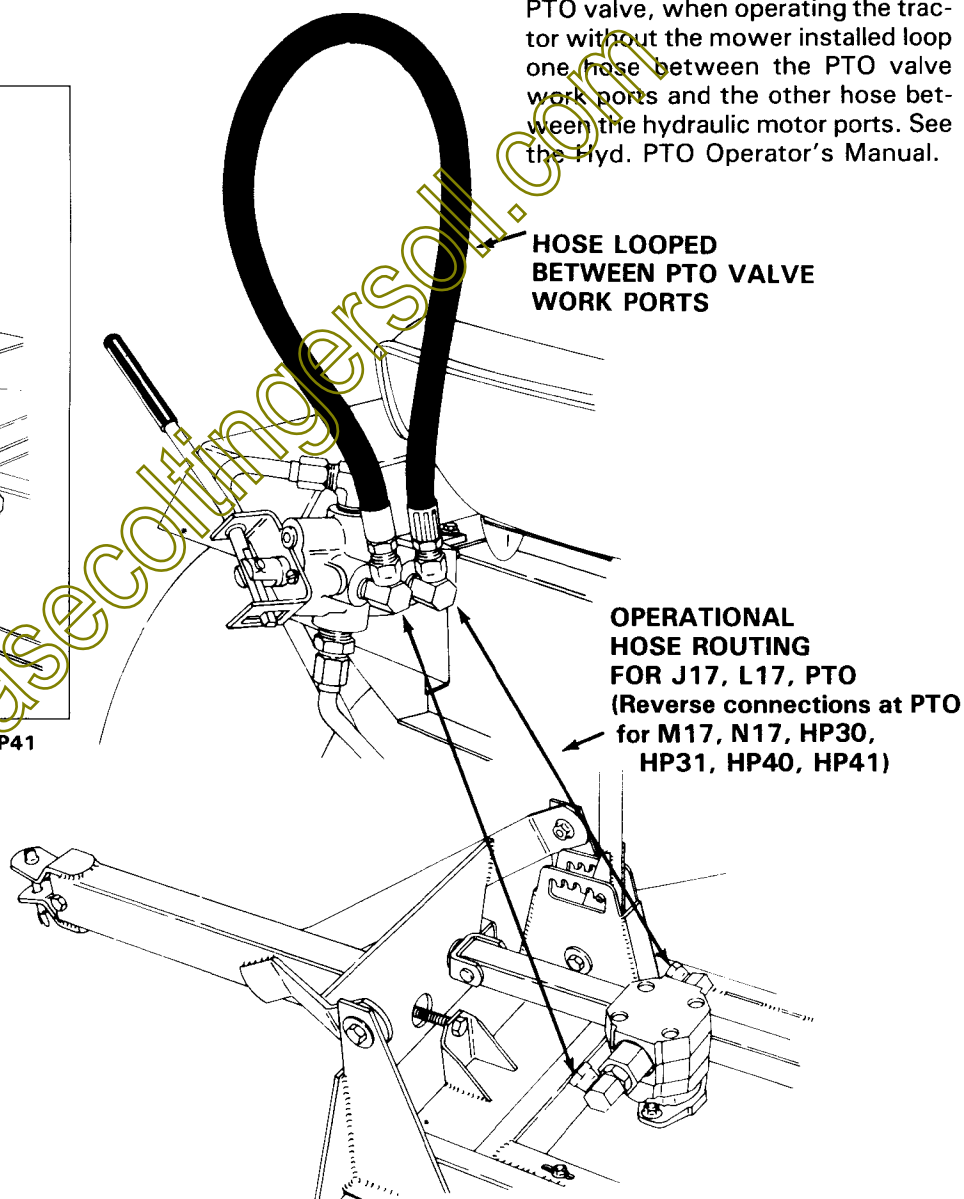
HYDRAULIC CONNECTIONS FOR 1048, HC48 TO
M17, N17 HP30, HP31, HP40 OR HP41 HYD. PTO

FIGURE 18

1. Install stop bracket in rear slot in PTO handle bracket and secure with bolt.
2. Connect hose from left side of hydraulic motor to front port of PTO valve.
3. Connect hose from right side of hydraulic motor to rear port of PTO valve.

IMPORTANT: Before operating the mower for the first time, see the Operation section in this manual.

IMPORTANT: On all models with fender mounted PTO valve, when operating the tractor without the mower installed loop one hose between the PTO valve work ports and the other hose between the hydraulic motor ports. See the Hyd. PTO Operator's Manual.



HOSE LOOPED
BETWEEN PTO VALVE
WORK PORTS

OPERATIONAL
HOSE ROUTING
FOR J17, L17, PTO
(Reverse connections at PTO
for M17, N17, HP30,
HP31, HP40, HP41)

FIGURE 18 Connecting Model 1048, HC48, to tractors with fender mounted PTO (J17, L17, M17, N17, HP30, HP31, HP40 or HP41).

HYDRAULIC CONNECTIONS FOR MODEL AHC48 OR HC48 TO HP32/HP42 PTO (These units have a floor mounted PTO valve rather than a fender mounted PTO valve.)

FIGURE 19

NOTE: Model HC48 may require additional quick couplers if not included.

1. Connect shorter hose between left fitting on hydraulic motor and left PTO coupler at rear of tractor.

IMPORTANT: To insure clearance between hoses and rear tire during maximum turns:

- a. hose must angle inward at coupling.
- b. fittings on hydraulic motor must point upward.
- c. tighten hose at hydraulic motor after hose is installed and positioned.

2. Connect longer hose between right fitting on hydraulic motor and right PTO coupler at rear of tractor. See Important note above.
3. For Model AHC48, connect smaller O.D. hose between case drain fitting on hydraulic motor and case drain coupler at lower rear of tractor.

IMPORTANT: For Model AHC48, case drain hose must be connected before operating hydracutter or damage to hydraulic motor will result. Model HC48 does not require case drain hose.

IMPORTANT: Before operating mower the first time, See Operation Section in this manual.

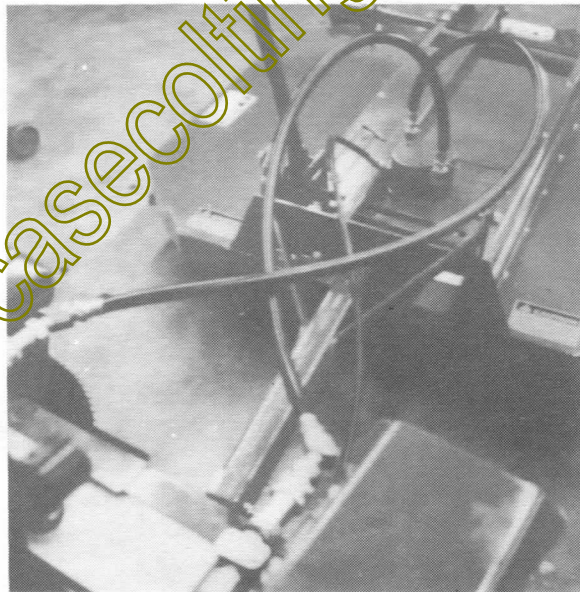


FIGURE 19 Connecting Model AHC48

REMOVAL AND STORAGE



CAUTION: Put the Hydraulic PTO in neutral and shut off the engine and wait for all motion to stop before approaching the mower for any reason.

1. Tow mower to desired storage area. Area should be dry and protected.
2. Disconnect couplers or fittings at tractor. Install protective plugs and caps on all couplers or fittings to keep dirt out.
3. Put a block under mower tongue.
4. Remove hitch pin. Separate mower from tractor. Reinstall hitch pin in mower tongue.
5. Clean underside of mower deck.
6. Protect unpainted surfaces with oil or touch-up paint to prevent rust.
7. Perform all required maintenance.

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