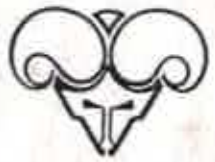




# RAMROD



## 230A SERIES SKID STEER LOADERS

## Owner's Manual

## INTRODUCTION

### TO OUR CUSTOMER:

We at **RAMROD EQUIPMENT CORPORATION** are pleased that you have chosen a **RAMROD Mini Loader**. This loader is a simple, compact earth moving machine designed and manufactured to give you years of dependable service.

We would ask that you carefully read this Manual before operating the loader. It contains the necessary information for safe and proper operating, routine servicing and preventative maintenance.

We also recommend that you carefully read the Engine Manufacturer's Manual (Honda) before operating the loader. Do not neglect the maintenance that is recommended.

The reference to right-hand and left-hand used throughout this Manual refers to the position when operating the machine, facing forward.

For any additional information required, please refer to your **RAMROD Dealer**.

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LITHO'D IN CANADA

April, 1988

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# I. SAFETY

## OPERATE LOADER SAFELY

IMPROPER OPERATION OF THIS LOADER MAY RESULT IN SERIOUS INJURY. BEFORE OPERATING THIS LOADER, OPERATORS MUST HAVE PROPER INSTRUCTIONS, BE FAMILIAR WITH THE SAFETY PRECAUTIONS, AND HAVE READ THIS AND THE ENGINE MANUFACTURER'S MANUAL THOROUGHLY.

THIS SAFETY ALERT SYMBOL POINTS OUT IMPORTANT SAFETY PRECAUTIONS.



OPERATORS MUST UNDERSTAND CAPABILITIES AND LIMITATIONS OF THE EQUIPMENT, WITH RESPECT TO SPEED, BRAKING, STEERING, STABILITY AND LOAD CHARACTERISTICS BEFORE STARTING TO OPERATE.

NEW OPERATORS MUST CHECK ALL CONTROLS IN A SAFE, OPEN AREA BEFORE STARTING WORK.









### WARNING

*This Decal Advises Of Actions Or Danger Which Can Cause Personal Injury.*

### IMPORTANT

*This Decal Identifies Important Proceedings Which Must Be Followed To Prevent Damage To The Loader.*

## SAFETY PRECAUTIONS

-  READ YOUR OWNER'S MANUAL AND ALL SUPPLEMENTS BEFORE OPERATING YOUR MINI LOADER.
-  WHEN LEARNING TO OPERATE, PROCEED SLOWLY AND CAREFULLY.
-  WEAR CLOSE FITTING PROTECTIVE CLOTHING AND SHOES.
-  DO NOT PLACE FEET UNDER THE PLATFORM.
-  DO NOT OPERATE ANY OF THE CONTROL LEVERS INCLUDING AUXILIARY POWER TAKE-OFF UNLESS YOU ARE STANDING WITH BOTH FEET ON THE PLATFORM AND FIRMLY HOLDING THE GRIP HANDLES.
-  DO NOT JERK THE CONTROL LEVERS, USE A STEADY EVEN MOTION.

## SAFETY PRECAUTIONS - CONTINUED

- ⚠ KEEP HANDS, FEET AND CLOTHING AWAY FROM ALL MOVING PARTS AND CYLINDERS.
- ⚠ DO NOT RIDE IN THE BUCKET.
- ⚠ DO NOT ALLOW MORE THAN ONE PERSON ON THE LOADER AT ANY TIME.
- ⚠ DO NOT ALLOW ANY OTHER PERSON OR ANIMAL CLOSE TO THE MINI LOADER WHILE IN OPERATION.
- ⚠ WATCH FOR OTHER PEOPLE AND EQUIPMENT.
- ⚠ KEEP THE BUCKET LOW WHEN TRAVELLING, TURNING OR CHANGING SPEED.
- ⚠ TRAVEL SLOWLY OVER ROUGH TERRAIN.
- ⚠ BEWARE OF TRENCHES, HOLES, AND SIDE SLOPES.
- ⚠ DO NOT DRIVE THE MINI LOADER ACROSS STEEP SLOPES.
- ⚠ LOAD, UNLOAD AND TURN AROUND ON FLAT, LEVEL GROUND ONLY.
- ⚠ ENSURE ADEQUATE VENTILATION WHEN USING THE MACHINE IN CONFINED SPACES.
- ⚠ DO NOT CARRY LOAD WITH ARMS IN A RAISED POSITION. ALWAYS CARRY LOADS CLOSE TO THE GROUND. DO NOT STEP OFF PLATFORM WITH THE LOAD RAISED.
- ⚠ TO AVOID FREE-FALL OF LOAD WHEN LOWERING LIFT ARMS, DO NOT PUSH LIFT ARM LEVER FULLY FORWARD.
- ⚠ DO NOT EXCEED RATED LOAD CAPACITY.
- ⚠ ALWAYS LOWER THE BUCKET AND SHUT OFF THE ENGINE BEFORE LEAVING THE MACHINE.
- ⚠ AVOID PARKING ON A SLOPE. IF IT IS NECESSARY, PARK ACROSS THE GRADE, GROUND THE BUCKET AND BLOCK THE WHEELS.
- ⚠ WHEN HOOKING UP ATTACHMENTS TO THE MACHINE, CHECK TO BE SURE LOCK PINS ARE FULLY ENGAGED.
- ⚠ DO NOT PLACE ANY PART OF THE OPERATOR'S BODY OR ALLOW ANYONE UNDER LOADER ARMS OR ATTACHMENTS.
- ⚠ DO NOT REMOVE PROTECTIVE GUARDS ON MACHINE EXCEPT IN THE CASE OF MAINTENANCE.
- ⚠ DO NOT LUBRICATE, ADJUST OR REPAIR THE MACHINE WITH THE ENGINE RUNNING.
- ⚠ NEVER FUEL A HOT MACHINE.
- ⚠ DO NOT SMOKE WHEN FUELLING OR OPERATING THE MACHINE.
- ⚠ ALWAYS READ THE OWNER'S MANUAL FOR PROCEDURES FOR SERVICING AND MAINTENANCE OF THE MINI LOADER.
- ⚠ REMEMBER - SAFETY FIRST.

## II. CONTROLS

It is necessary to become familiar with the location and purpose of each control before operating the loader.

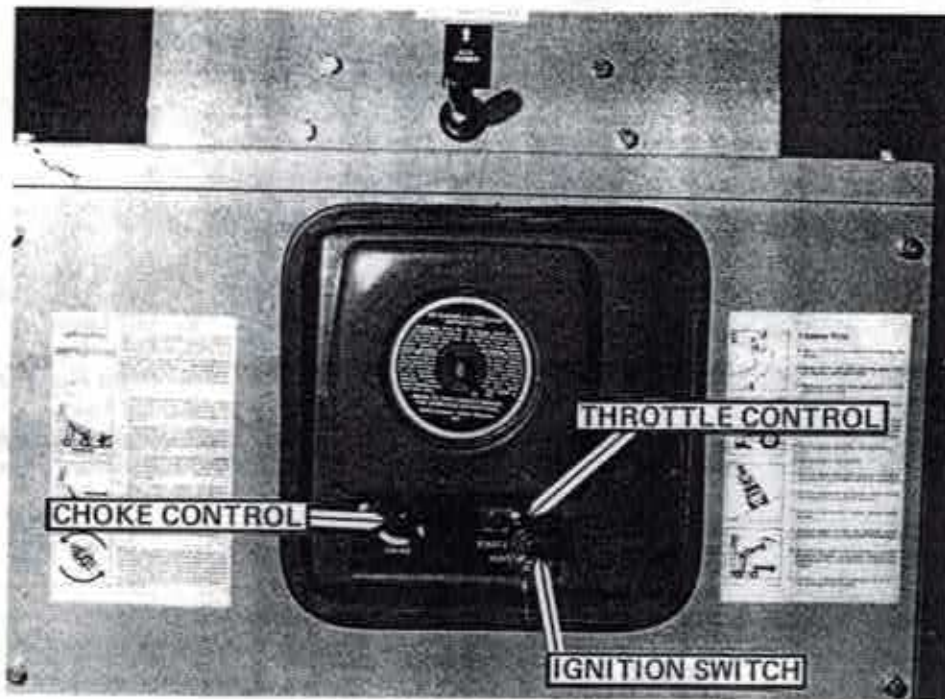


FIGURE 1 - GAS ENGINE CONTROLS

### ENGINE CONTROLS

#### IGNITION SWITCH — FIGURE 1

The ignition switch is a three position switch. Clockwise from the OFF position, are the ON and START position.

#### THROTTLE CONTROL - FIGURE 1

When the throttle control is set fully down the engine is at idle speed. Pulling the control upward increases the engine speed.

#### CHOKE CONTROL — FIGURE 1

Turn counterclockwise the choke control to start a cold engine. As the engine warms up, turn back the control gradually.

#### IMPORTANT

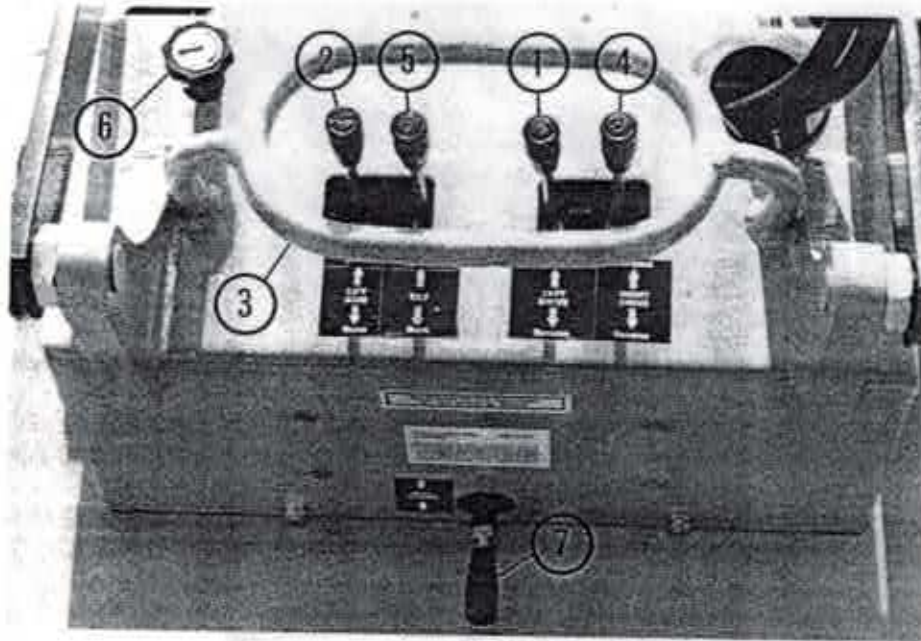
*Be Sure Ignition Key Is In OFF Position, Or Even Removed, When The Engine Is Not Running.*

#### IMPORTANT

*The Machine Should Always Be Worked With The Engine Running At Full Speed.*

## CONTROLS

On the top face of the mini loader are four spring centred levers which control the basic mini loader functions. The auxiliary power lever (on the rear face) is for use with powered accessories.



1. Left Hand Drive Lever
2. Lift Lever
3. Grip Handle
4. Right Hand Drive Lever
5. Tilt Lever
6. Speed Control Valve
7. Auxiliary Lever

FIGURE 2 — CONTROL PANEL

## CONTROLS

The left hand drive lever controls the wheels on the left hand side and the right hand drive lever controls the wheels on the right hand side.

Engage the drive levers slowly because even a small movement of the levers will cause motion. Maximum power is produced at minimum speed. All lever movements should be smooth and gradual. To drive the loader straight forward, move both control levers forward the same amount. To

drive the loader straight backward, move both control levers back the same amount.

The loader is steered by moving one lever further forward than the other. To turn left, move the right lever further ahead than the left lever; to turn right, move the left lever further ahead than the right lever. For the loader to go into a spin-turn, or "Skid-Steer", move one lever forward and the other backward the same amount.



### WARNING

*Do Not Move Any Of The Control Levers Unless Standing With Both Feet On The Platform And Holding The Grip Handles.*



### WARNING

*Use Extreme Caution When Stopping. If The Bucket Or Attachment Is Raised, The Machine Can Tip. Keep All Movements Smooth. All New Operators Must Work The Machine In A Safe Open Area To Become Familiar With Its Operating Characteristics.*

## LIFT CONTROL LEVER — FIGURE 2

The outside control lever located on the left hand side controls the lift. Pushing the lever forward lowers the lift arm and pulling the lever back raises the lift arm. In these two positions, the lever is spring centred to neutral upon release of the lever.

## SPEED CONTROL VALVE — FIGURE 2

Turning this valve clockwise decreases the operating speed of all loader functions. The operator can set this speed to a comfortable level.

## AUXILIARY CONTROL LEVER — FIGURE 2

The auxiliary control lever is located on the rear face and can be used to control accessory attachments such as: post hole augers, trenchers, rock hammers, etc. Accessory hydraulic hoses are connected to the quick couplers at the front of the machine. Lifting the auxiliary up puts the attachment in forward motion and pushing it down reverses the motion. The lever is not spring centred and must be returned to neutral manually.

## TILT CONTROL LEVER — FIGURE 2

The inside control lever located on the right hand side controls the tilting action of attachments such as buckets, forks, etc. Pushing the lever forward tilts the attachment forward and pulling the lever back tilts the attachment back. The lever is spring centred to neutral upon release.

## IMPORTANT

*Ensure That The Auxiliary Lever Is Kept In Neutral When Not Being Used To Avoid Wasting Power. Engine Is Difficult To Start If Lever Is Engaged. Hydraulic Oil May Also Overheat.*

## ATTACHMENT LOCK PINS

### ATTACHMENT LOCK PINS

The tool bar design allows changing from one attachment to another quickly without having to remove bolts and pins.

The two pins are located on the inner side and along the top of the attachment frame. To unlock attachments, pull up the pin handle and slide towards the centre, as shown in Figure 3.

To lock attachments, first check that the lock pins align with, and enter freely into the attachments holes; then slide the pins into the attachment mounting bars and lock the pin handle in a downward position, as show in Figure 4.

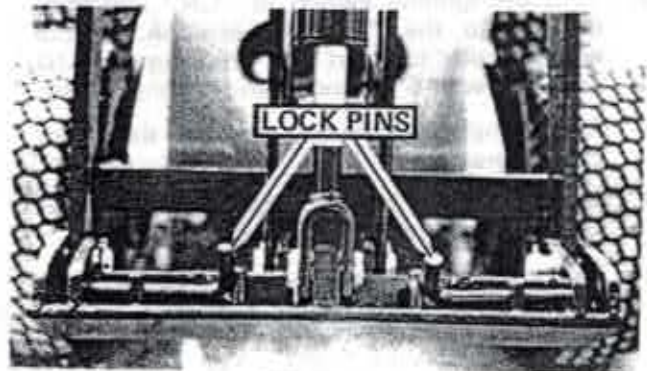


FIGURE 3

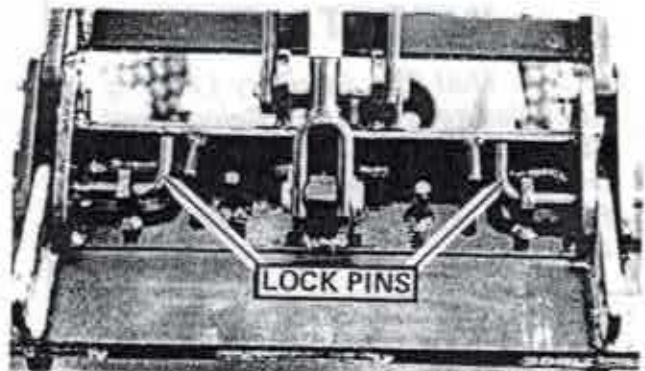


FIGURE 4



## WARNING

*After Hook-Up To Attachment, Check To Be Sure Lock Pins Are Fully Engaged, And Locked Into Position.*



### III. OPERATION

You can take full advantage of all the features of your RAMROD Mini Loader by following the operating information presented here. The loader has been designed to do a lot of work with a minimum of operating fatigue.

#### PRE-STARTING INSPECTION AND PREPARATION

Before you start the loader for the first time each day, perform the following checks and service:

1. Check engine crankcase oil level.
2. Check engine fuel and open fuel shut-off valve if closed.
3. Check hydraulic fluid level in tank.
4. Check for fuel, engine oil or hydraulic oil leaks.
5. Visually inspect all hoses, lines, fittings, tires, pivot points, mounting pins, nuts and bolts, safety shields and decals for possible failure or looseness.
6. Check that all controls are in the neutral position.



#### WARNING

*Do Not Move Any Of The Control Levers Unless Standing With Both Feet On The Platform And Holding The Grip Handles.*

#### STARTING PROCEDURE

1. Push the throttle lever up slightly.
2. Turn the choke control completely on.
3. Turn the ignition switch to "ON" and then through to the "START" position. (If the engine fails to start by cranking for 10 seconds, wait 5 seconds before trying again).
4. As the engine warms up, turn back the choke control gradually.
5. Set the throttle lever for idling speed. Avoid excessive engine speed during warmup.
6. To restart a warm engine - move throttle control slightly and turn ignition key to "START".

#### IMPORTANT

*Do Not Crank Engine With Starter For More Than 10 Seconds At A Time, As This Will Overheat The Starter.*

#### IMPORTANT

*Ensure That The Auxiliary Lever Is Kept Neutral When Not Being Used To Avoid Wasting Power. Engine Is Difficult To Start If Lever Is Engaged. Hydraulic Oil May Also Overheat.*

#### IMPORTANT

*Do Not Put Loader Under Full Load Conditions Until It Has Had An Adequate Warm-Up Period.*

**NOTE:** For more information regarding engine starting and operation, refer to your Honda "Owner's Manual".

# OPERATION

## SHUT-OFF PROCEDURE

1. Park the loader on level ground. If it is necessary to park on a slope, park across the grade and block the wheels.
2. Lower the lift arms and ground the bucket.
3. Return throttle control to "Idle" position, and allow engine to idle for a short while.
4. Turn ignition key off.
5. Place control levers in neutral position, and remove the key.

### IMPORTANT

*Be Sure Ignition Key Is In OFF Position, Or Even Removed, When The Engine Is Not Running.*

## MOUNTING ATTACHMENTS

### INSTALLATION OF ATTACHMENT

1. Pull up pin handles and slide the pins toward the centre of the attachment mount frame.
2. Tilt the attachment frame forward as shown in **Figure 5**, and line up the mount bars on the attachment with the slots on the attachment frame.
3. Drive up the attachment and tilt back the attachment frame until the attachment is lifted off the ground and rests against the attachment frame, as shown in **Figure 6**.
4. Be sure that the mount bars on the attachment are fitted properly into the slots on the attachment frame.
5. Slide pins into the attachment mounting bars and lock the pin handle in a downward position.
6. Connect accessory hydraulic hoses to the quick couplers if so required. See **Figure 7**. Restart the engine.

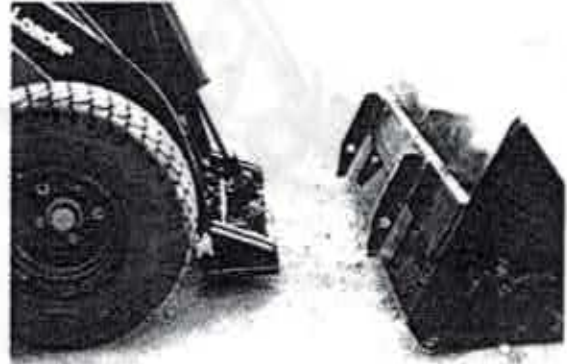


FIGURE 5



FIGURE 6

### ⚠ WARNING ⚠

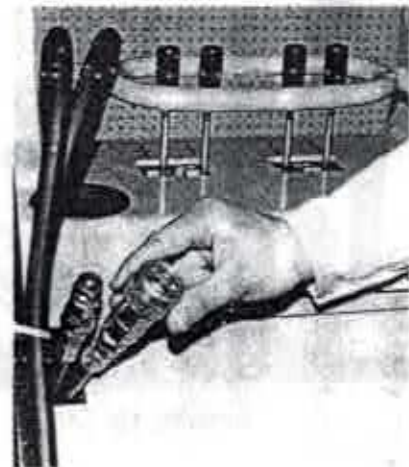
*After Hook-Up To Attachment, Check To Be Sure Lock Pins Are Fully Engaged, And Locked Into Position.*

### REMOVAL OF ATTACHMENT

1. Lower lift arms fully and tilt attachment frame back. Stop the engine.
2. If attachment is hydraulically equipped, relieve pressure in the lines, and disconnect the hydraulic hoses.
3. Pull the locking pin handles up and slide the pins toward the centre of the attachment frame.
4. Start engine, tilt the attachment frame forward and back the loader away from the attachment.

**NOTE:** You may have to rest the attachment on a higher point (i.e. pallet, etc.) before removing it. The remaining procedures are the same.

FIGURE 7



## OPERATIONAL PROCEDURE

Loader operational procedure and suggestions in this manual are based on the use of a bucket. Operating procedure and suggestions for such other attachments as dozer blade, post hole auger, trencher, rock hammer, etc., are included in the respective attachment bundle.

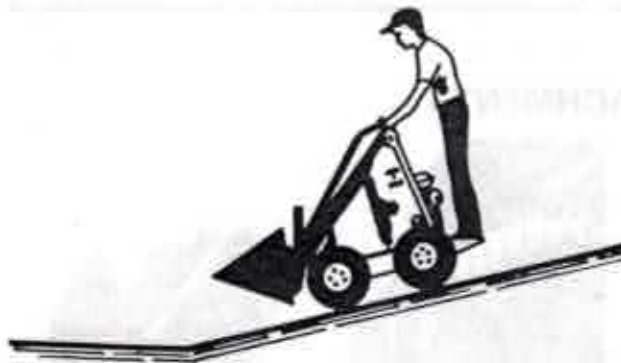


FIGURE 8 — EMPTY BUCKET



FIGURE 9 — FULL BUCKET

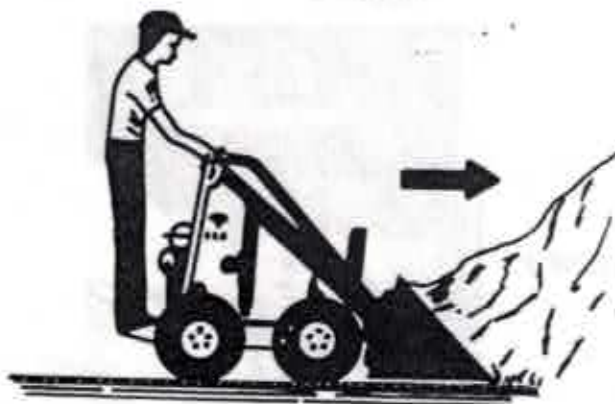


FIGURE 10

## OPERATING SUGGESTIONS

1. Install an attachment (bucket). Drive carefully to a clean and level area and practise operating the loader at a slow rate until familiar with the operation of all controls.
2. Hydraulic power transmission is instantaneous. When using the drive levers, sudden movement will result in acceleration to full speed and a very jerky ride. Use smooth and gradual movements when using the drive levers.
3. For efficient operation of the loader, keep the work area small, and as level as possible.
4. Decrease cycle time by "SKID" turning rather than backing up, using a slow turn, then going forward.
5. When driving on slopes keep the heaviest end of the loader upward. When driving on a slope with an empty bucket, back up the slope in reverse, and drive down a slope forward as in Figure 8. When driving on a slope with a load, drive up the slope forward and back down the slope in reverse and is Figure 9.
6. Fill the bucket to rated capacity. Turning is easier with a full load than with a partial load.
7. To increase machine life, let the engine warm completely before starting operations each day. Avoid "over-loading" or "lugging" the loader.

### ⚠ WARNING ⚠

*Always Carry The Bucket Low While Moving. Drive Directly Up And Down Instead Of Across A Slope.*

### ⚠ WARNING ⚠

*If Operating Loader Indoors, Make Sure Building Is Well Ventilated.*

## FILLING AND DUMPING A BUCKET

1. Approach the pile with the lift arms fully down and bucket cutting edge just skimming the top of the ground as in Figure 10.

## OPERATION

- As soon as the bucket is full, tilt bucket back and back away from the pile, as shown in Figures 11 and 12.  
When transporting a load, carry the bucket just high enough to clear obstacles.
- When dumping, raise bucket high enough to clear stock pile or sides of container being loaded.
- Drive slowly forward until bucket is over dumping area and tilt bucket forward until it completely empties.
- Tilt bucket, back up if necessary to clear container sides and back away.

### ⚠ WARNING ⚠

*Use Extreme Caution When Stopping. If The Bucket Or Attachment Is Raised, The Machine Can Tip. Keep All Movements Smooth And Gradual When Manoeuvring With Lift Arms Raised. All New Operators Must Work The Machine In A Safe Open Area To Become Familiar With Its Operating Characteristics.*

### ⚠ WARNING ⚠

*Never Step Off The Operator Platform With The Load Raised.*

#### DIGGING WITH A BUCKET

- Lower lift arms fully and tilt bucket forward until cutting edge is on the ground.
- Drive machine forward slowly and continue to tilt bucket forward until it enters the ground to desired depth and then tilt it back a small amount to keep an even depth, as shown in Figure 13.
- Continue driving forward until bucket is full and then tilt bucket fully back while driving slowly forward or stopping the machine.

#### LEVELLING

- To spread material on uneven ground, raise lift arms and tilt bucket forward while driving slowly forward, as in Figure 14.



FIGURE 11

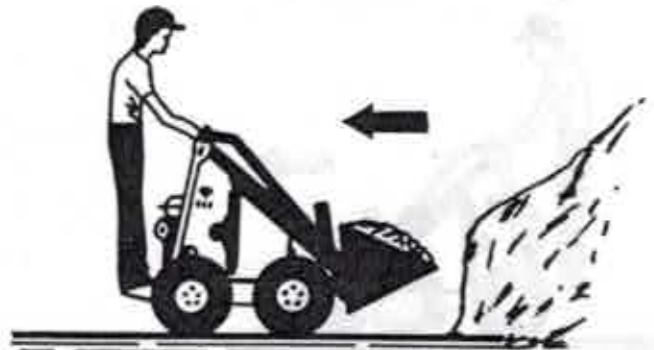


FIGURE 12

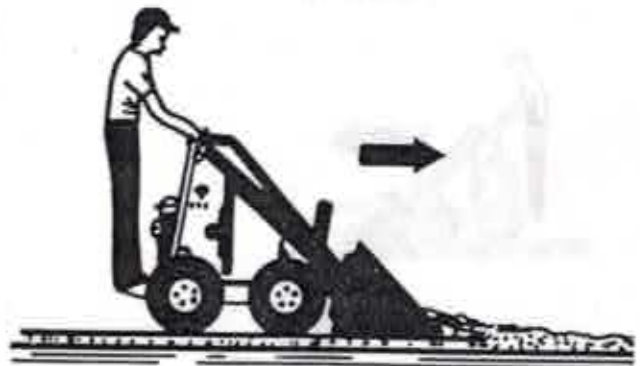


FIGURE 13

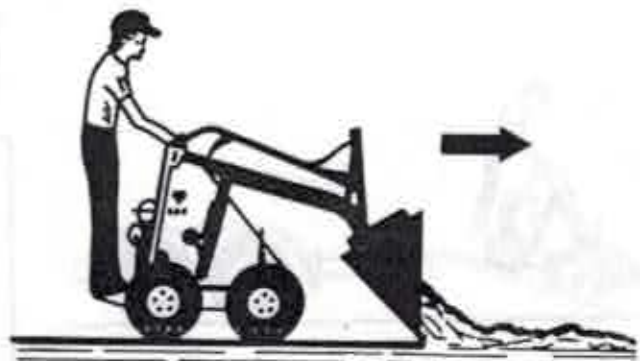


FIGURE 14

## OPERATION

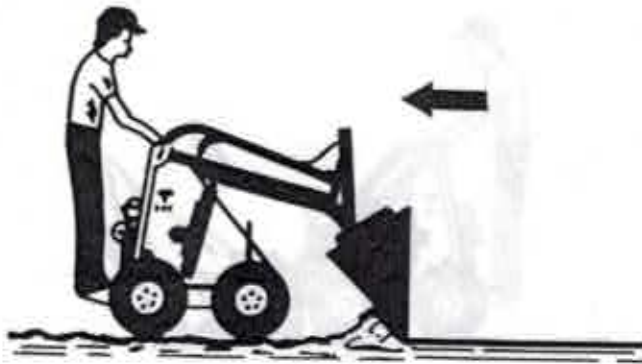


FIGURE 15

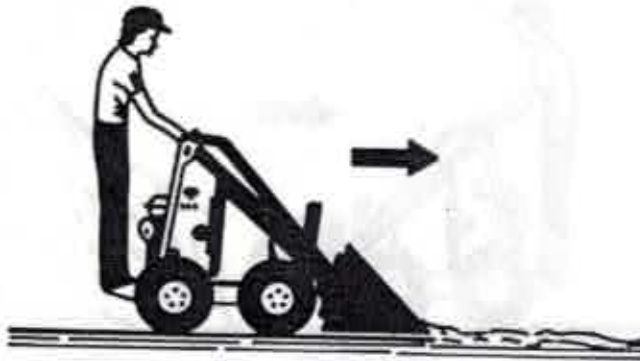


FIGURE 16

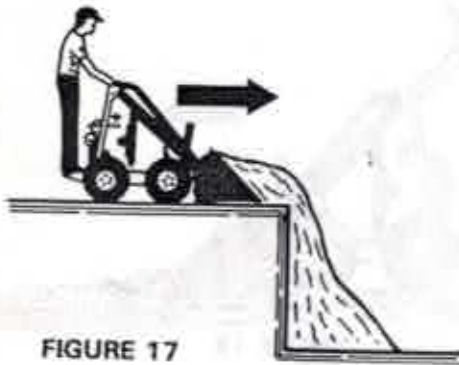


FIGURE 17

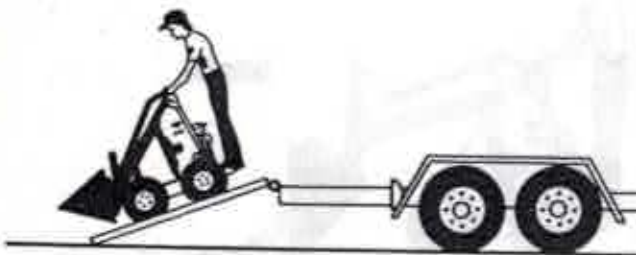


FIGURE 18

2. To level a filled area, tilt bucket forward and drive machine backwards to drag bucket and spread material, as in Figure 15.
3. Another method of levelling is to travel forward with bucket down and level, full of material and pushing excess into low areas. Depth is controlled by tilting the bucket slightly up or down, as in Figure 16.

### BACKFILLING

1. When filling a trench or a hole, drive up the hole with bucket low or push material up to edge, as in Figure 17.
2. Tilt bucket forward as soon as it reaches the edge of the hole and when necessary raise lift arms to empty the bucket.

### TRANSPORTING THE LOADER

## IMPORTANT

*Never Tow The Loader.  
Damage May Result.*

When the machine is transported on a truck or trailer, proper ramps must be used for loading.

A loader with an empty bucket, or no attachment should be driven backwards up a ramp onto the trailer or forward down a ramp, as shown in Figure 18.

After the loader is driven onto the transporting vehicle, lower any attachments, and install chains to hold loader from moving during sudden stops or when travelling up and down grades.

Close the fuel valve when the mini loader is to be transported. Vibration during transport could cause the carburetor to flood.

## ⚠ WARNING ⚠

*When Transporting On A Road Or Highway During The Day Or At Night, Be Sure That The Trailer Is Equipped With Lights And Signs As Required By Law.*

## IV. MAINTENANCE

Maintenance and service of the mini loader is made simple by the use of hydraulics for power transmission and the accessibility to the components.

Maintenance and service intervals recommended in this manual are based on operation under average conditions. When operating the loader in severe conditions of heat, cold, dust, high humidity or other extremes, service the loader at more frequent intervals.

Failure to perform regular maintenance will result in damage to the loader. Periodic maintenance and service is the key to trouble free operation.

When replacement parts are needed for mini loader components, **Figure 19** on page 12 shows a complete breakdown of the loader. Page 13 shows the corresponding parts list containing item number, part number, description and quantity.

### USING THE PARTS LIST

#### ITEM:

— The item number is the identifying number from the illustration.

#### PART NUMBER:

— The part numbers that appear in the part number column, are 6 digit numbers by which the components may be identified and ordered from us.

#### DESCRIPTION:

— This column contains the name and description of the part.

#### QUANTITY:

— This column shows the quantity of each part used on that loader component.

### ORDERING PARTS

When ordering parts from us, be sure to state:

- 1) Part Number
- 2) Full Description
- 3) Quantity Required

4) Loader Model and Serial Number

**NOTE:** The reference to right and left used throughout this manual, refers to the position when operating the machine, facing forward.

### APPLIED WARRANTIES

Below are listed the warranties for the major components of the mini loader as set by their respective manufacturers at the publication date of this manual. For the complete **RAMROD** warranty, refer to page 24 of this manual. For information on the engine warranty, refer to the Honda warranty booklet supplied.

#### REXROTH HYDRAULIC PUMP

— 6 months from the time of 1st delivery to purchaser.

#### OVER CENTRE VALVE-FLUID CONTROL

— 6 months from the time of 1st delivery to purchaser.

#### NICHOLS WHEEL MOTOR

— 18 months from date shipped and/or 12 months from date installed.

#### BATTERY - GLOBELITE

— 9 months from time installed.

#### TIRES - GOODYEAR

— 12 month or 25% No Charge replacement on Factory defects. 4 year weather check.

#### CYLINDERS - RAM INDUSTRIES

— 6 months from date installed.

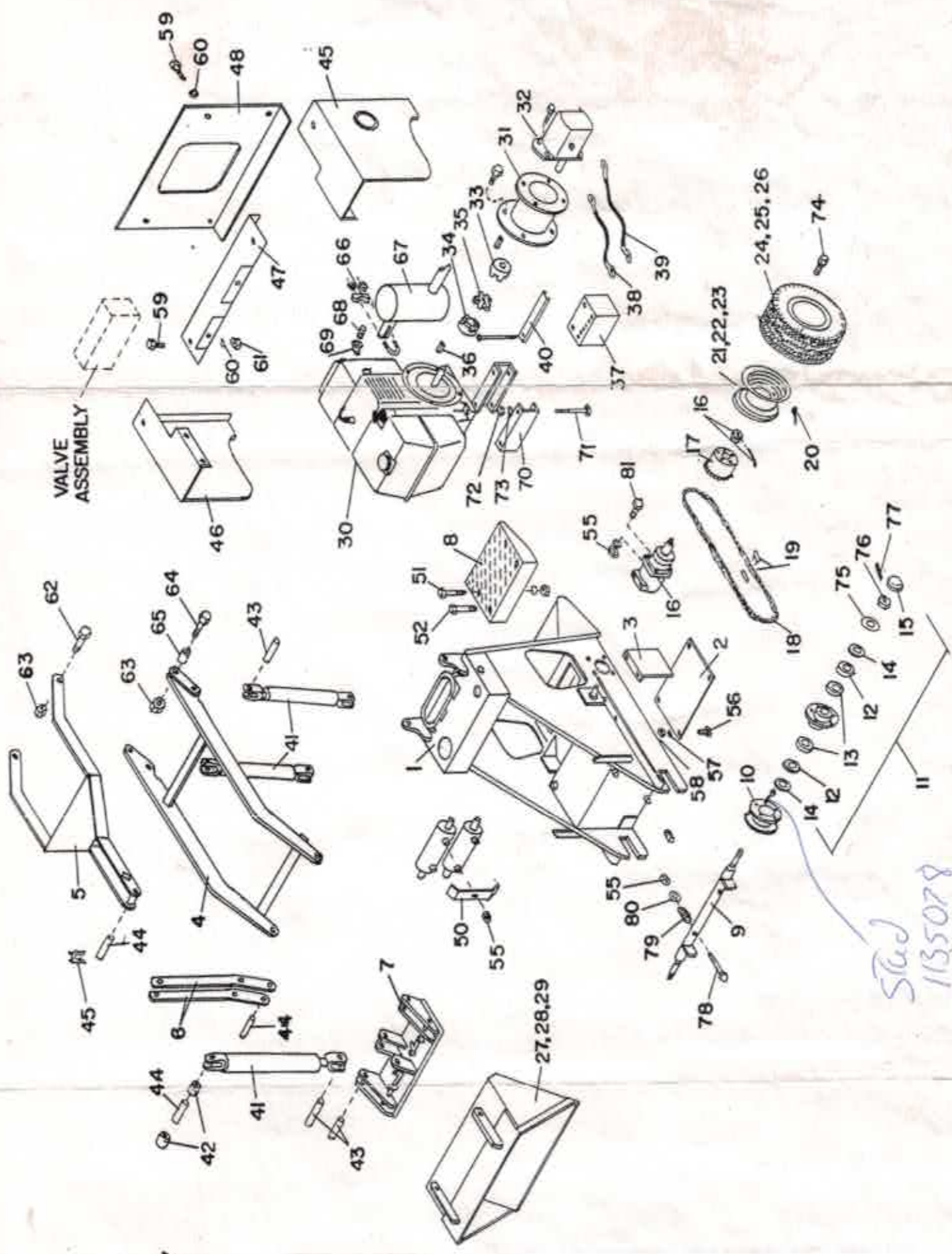
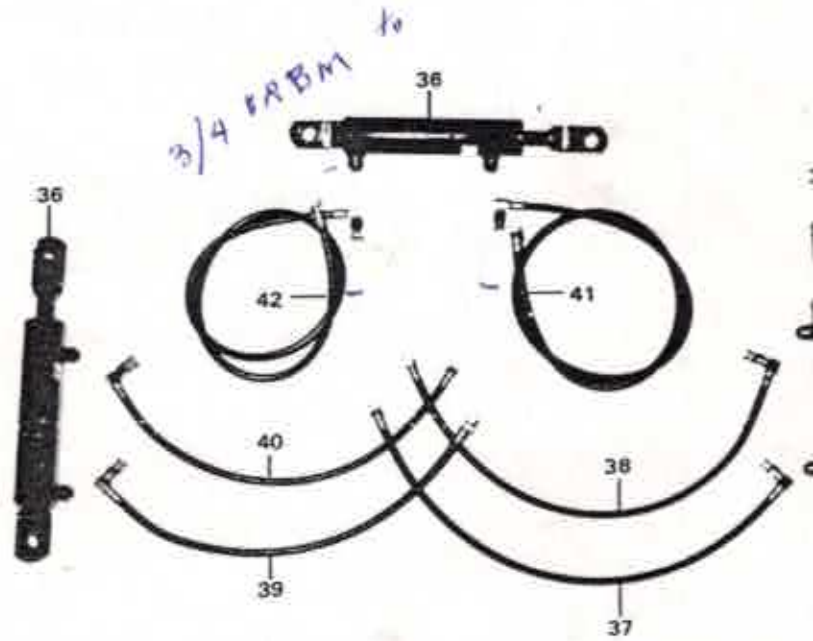
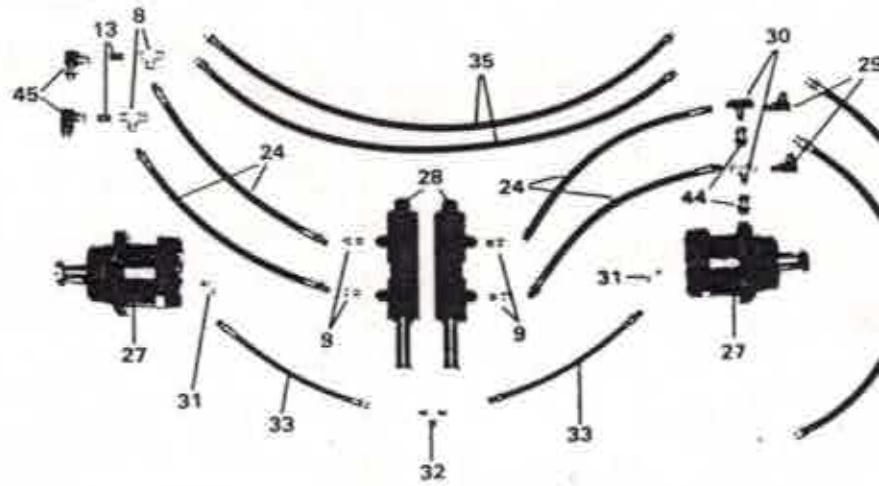


FIGURE 19

Stud  
 1135078  
 Nut  
 1135340  
 Motor Mount Rubber Stud  
 1151210

MAINTENANCE





| Item | Part No. | Description                                     | No. Used |
|------|----------|---|----------|
| 1    | 127148   | Valve Assembly                                  | 1        |
| 2    | 127030   | Flow Divider                                    | 1        |
| 3    | 127146   | Gear Pump                                       | 1        |
| 4    | 127144   | Filter Assembly                                 | 1        |
|      | 127150   | Replacement Element                             | In Above |
| 5    | 230179   | Long Valve Handle                               | 4        |
|      | 230181   | Short Valve Handle                              | 1        |
| 6    | 122948   | 3/8" NPT Street Elbow                           | 13       |
| 7    | 122981   | 3/4" NPT x 3/8" NPT Reducer Bushing             | 3        |
| 8    | 122873   | 3/8" NPT Tee                                    | 4        |
| 9    | 122870   | 3/8" NPT Swivel Adaptors                        | 7        |
| 10   | 122970   | 3/8" NPT x 1/2" JIC Unions                      | 4        |
| 11   | 122872   | 1/2" x 90 Degree Solid Street Elbow             | 1        |
| 12   | 122884   | 1/2" x 3/8" Reducer Bushing                     | 2        |
| 13   | 122850   | 3/8" NPT Close Nipple                           | 5        |
| 14   | 122952   | 1/2" x 90 Degree Swivel Street Elbow            | 2        |
| 15   | 122980   | 1/2" NPT x 3/4" NPT Union                       | 1        |
| 16   | 127010   | 1/2" NPT Female Coupler                         | 1        |
| 17   | 127011   | 1/2" NPT Male Coupler                           | 1        |
| 18   | 122844   | 3/8" NPTF x 1/2" NPTM Swivel Street Elbow       | 1        |
| 19   | 122845   | 1/2" NPTM x 1/2" Spline Union                   | 1        |
| 20   | 122853   | 1/2" x 2" Nipple                                | 1        |
| 21   | 123290   | Screw Hose Clamps                               | 2        |
| 22   | 122098   | 3/8" F-1 Hose x 10-1/2" Long                    | 1        |
| 23   | 123013   | 3/8" F-1 Hose x 18" Long                        | 1        |
| 24   | 123029   | 3/8" F-1 Hose x 20" Long                        | 5        |
| 25   | 124981   | Hydraulic Oil Line                              | 2        |
| 26   | 230202   | 3/4" SWB Hose x 12" Long                        | 1        |
| 27   | 127148   | Hydraulic Motor                                 | 2        |
| 28   | 126654   | Accumulators                                    | 2        |
| 29   | 122879   | 3/8" NPT Swivel Street Elbows                   | 2        |
| 30   | 122846   | 3/8" NPT M x F Tees                             | 2        |
| 31   | 124462   | 1/4" ORBM x 1/4" JICM 90 Degree Elbows          | 2        |
| 32   | 124467   | 1/4" JICM x 3/8" NPTM Tees                      | 1        |
| 33   | 123260   | 1/4" F-1 Hose x 13" Long                        | 2        |
| 34   | 123020   | 3/8" F-1 Hose x 29" Long                        | 2        |
| 35   | 122099   | 3/8" F-1 Hose x 39" Long                        | 2        |
| 36   | 126288   | Hydraulic Cylinder                              | 3        |
| 37   | 123256   | 3/8" NPT M x 3/4" 90 Degree ORBM x 48" SWB Hose | 1        |
| 38   | 123255   | 3/8" NPT M x 3/4" 90 Degree ORBM x 42" SWB Hose | 1        |
| 39   | 123254   | 3/8" NPT M x 3/4" 90 Degree ORBM x 36" SWB Hose | 1        |
| 40   | 123253   | 3/8" NPT M x 3/4" 90 Degree ORBM x 30" SWB Hose | 1        |
| 41   | 123257   | 3/8" NPT M x 3/4" 90 Degree ORBM x 78" SWB Hose | 1        |
| 42   | 123258   | 3/8" NPT M x 3/4" 90 Degree ORBM x 72" SWB Hose | 1        |
| 43   | 124468   | 3/4" NPT Street Elbow                           | 1        |
| 44   | 124848   | 7/8" ORBM x 3/8" NPTF 90 Degree Adaptor         | 2        |
| 45   | 124465   | 7/8" ORBM x 3/8" NPTF Adaptor                   | 2        |

# MAINTENANCE

## FUELS, LUBRICANTS AND CAPACITIES

The service obtained from your loader is greatly affected by the quality of the petroleum products used in it. It requires only common products which are commercially available through the outlets of major refineries. The following chart shows which lubricant to use in the various components of the loader.

| COMPONENT  | TEMPERATURES   | TYPE OF LUBRICANT/FLUID                  | CAPACITY<br>Litre (Imp. Gals.) |
|--|--|--|--------------------------------|
| Engine Oil<br>- must meet Kohler motor specification | Above 25°C (77°F)<br>0°C to 25°C (32° - 77°F)<br>-15°C to 0°C (5° - 32°F)<br>Below -15°C (5°F) | SAE 30<br>SAE 10W<br>SAE 10W<br>SAE 5W30 | 1 litre<br>(1 quart)           |
| Fuel Tank  | All temperatures   | 91 Octane, Regular                       | 4 litres (1 gal.)              |
| Hydraulic Oil Reservoir                              |  | ISO 46 HYD OIL                           | 37 litres<br>(39 quarts)       |



### WARNING

*Never Add Fuel To A Loader When The Engine Is Running Or Is Hot.*



### WARNING

*Do Not Service Loader While Engine Is Running.*

## ENGINE MAINTENANCE

### OIL LEVEL CHECK

**Note:** Remove the upper front cover for engine access.

1. Ensure that the loader is standing level.
2. Remove dipstick on the right hand side of the engine, **Figure 21**, visibly check the level. Top up with recommended oil; see the chart above if required.

For proper engine maintenance, refer to your Honda Owner's Manual. This pertains to all applicable maintenance on your Honda engine. Maintenance with respect to fluids and lubricants are included in the "Periodic Maintenance and Service Schedule" on page 17.

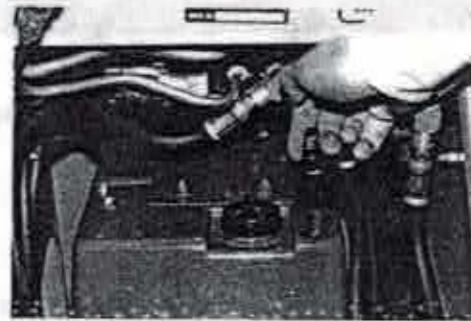


FIGURE 21

## BATTERY MAINTENANCE

With your new loader, you will also receive a "Battery Facts and Information Booklet". We recommend that you carefully read this booklet before servicing the battery.

Check the battery hold down bracket for tightness. Do not overtighten.

Remove any acid corrosion from the battery terminals and cables with baking soda and water solution. Coat the terminals with a high temperature grease.

## HYDRAULIC/HYDROSTATIC SYSTEM MAINTENANCE

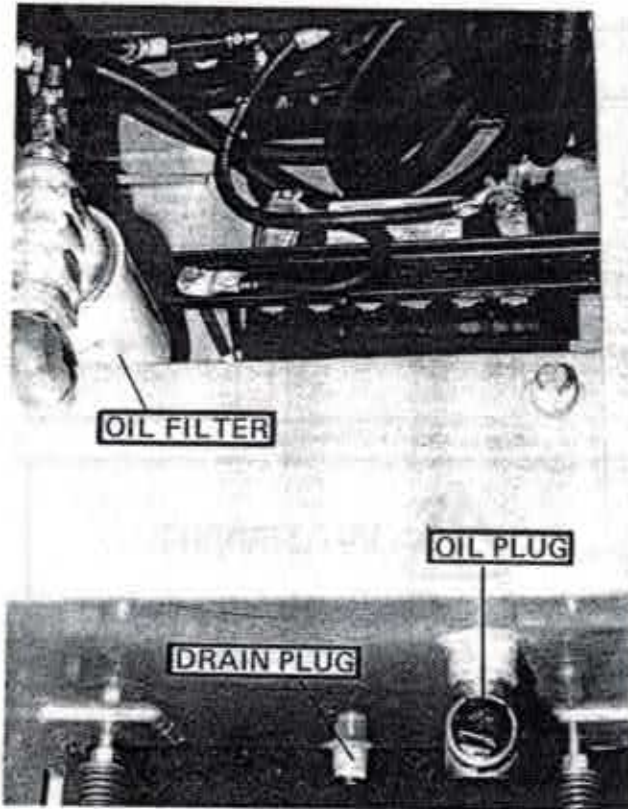


FIGURE 22

NOTE: Upper and lower front covers removed.

### HYDRAULIC OIL LEVEL CHECK

1. Ensure that the loader is standing level, the lift arms are down and the tilt cylinder is closed.
2. Remove the oil plug, see Figure 22, and check the level. If oil is apparent, the level is satisfactory.
3. If necessary, add the proper type and grade of oil, see page 15, until it appears at the check point.

### CHANGING HYDRAULIC OIL

The hydraulic oil normally needs to be changed after 1,000 operating hours or annually. However, if the oil becomes contaminated, or a major repair has been done to the hydrostatic transmission, it should be changed at once.

1. Remove the oil drain plug. See Figure 22, and drain the oil. Remove the oil level plug to ensure a better flow.
2. Replace the oil drain plug, and refill reservoir with clean oil of proper grade and type, see page 15.
3. Start engine, and check for leaks. Stop engine and re-check the oil level.

### CHANGING HYDRAULIC OIL FILTER

1. With the engine stopped, unscrew and remove the old oil filter, see Figure 22.
2. Clean the oil filter mounting flange.
3. Apply a thin film of oil to the sealing ring and screw the new filter into place. Hand-tighten the filter.
4. Start the engine and check for leaks. Stop the engine, and check the hydraulic oil level.

## IMPORTANT

*Do Not Allow Dirt To Enter Into The Hydraulic/Hydrostatic System*

## FINAL DRIVE MAINTENANCE

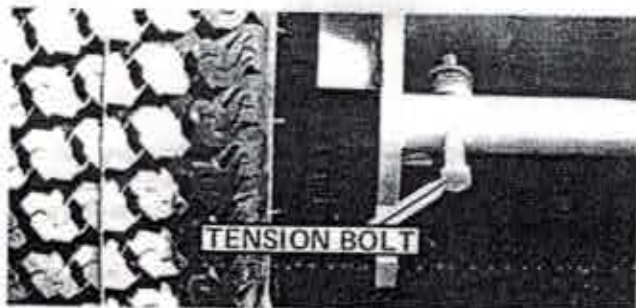


FIGURE 23

### DRIVE CHAIN

To obtain proper tension on the chain, tighten the tension bolts, Figure 23, till the spring is almost compresses. Ensure that the chain is tight. The spring gives a cushioning effect.

When mounting the rear hub, Figure 24, torque the wheel nut to 250 ft. lbs. to prevent damage to the wheel motor shaft, keyway and rear hub taper.

Visually inspect the chain daily and apply oil when it appears dry.

# MAINTENANCE

## WHEELS AND TIRES

Because the wheel studs are mounted to the front sprocket, when the wheel nuts are loosened the tension on the chain will cause the sprocket to go out of line, making it difficult to mount a tire.

Therefore, when removing the front tire on either side it is important to loosen the drive chain when removing or mounting a tire.

Visually inspect the tires and wheels daily for proper inflation and for looseness. Ensure that all wheel studs and wheel nuts are tight. For proper tire pressures, refer to page 20.

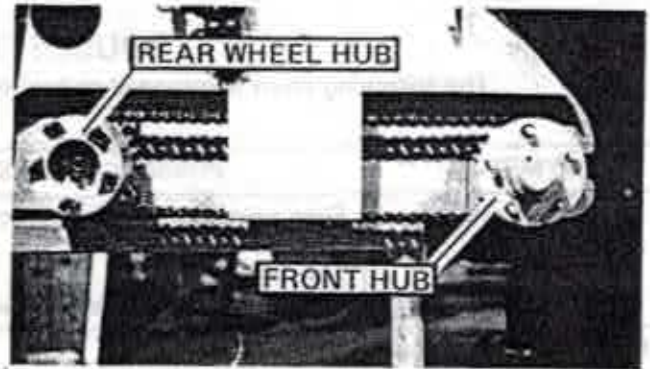


FIGURE 24

## PERIODIC MAINTENANCE AND SERVICE SCHEDULE

| ITEM                 | MANUAL                  | SERVICE REQUIRED  | HOURS OF OPERATION |              |               |                |                  |
|----------------------|-------------------------|---|--------------------|--------------|---------------|----------------|------------------|
|                      |                         |   | 10 OR DAILY        | 20 OR WEEKLY | 50 OR BI-WEEK | 100 OR MONTHLY | 1000 OR ANNUALLY |
| Engine Oil           | Ramrod Manual           | Check level of engine oil and top up if necessary. See Page 15 for specs.                   | X                  |              |               |                |                  |
| Engine Fuel          | Ramrod Manual           | Check level, and if necessary, top up. See Page 15 for specs.                               | X                  |              |               |                |                  |
| Hydraulic Oil        | Ramrod Manual           | Check level, and if necessary, top up. See Page 15 for specs.                               | X                  |              |               |                |                  |
| Tires and Wheel Nuts | Ramrod Manual           | Check tire pressure and wheel nuts. See Page 20.  | X                  |              |               |                |                  |
| Decals               | Ramrod Manual           | Check for damaged safety or instruction decals. Replace if necessary. See P. 25             | X                  |              |               |                |                  |
| Engine Oil           | Engine Manual           | Change oil after first 20 hours of operation. See Page 15 for specs.                        |                    | X            |               |                |                  |
| Wheel Drive Chain    | Ramrod Manual           | Check and adjust tension if necessary.  |                    | X            |               |                |                  |
| Air Cleaner          | Engine Manual           | Clean element and re-oil.   |                    |              | X             |                |                  |
| Battery              | Ramrod & Engine Manuals | Check level of battery acid and, if necessary, top up. Clean and protect battery terminals. |                    |              | X             |                |                  |
| Engine Oil           | Engine Manual           | Replace engine oil. See Page 15 for specs.  |                    |              |               | X              |                  |
| Fuel Strainer        | Engine Manual           | Clean and dry thoroughly.   |                    |              |               | X              |                  |
| Spark Plug           | Engine Manual           | Clean and check gap.  |                    |              |               | X              |                  |
| Hydraulic System     | Ramrod Manual           | Check all hoses, tires, fittings, etc. thoroughly. Replace if needed.                       |                    |              |               | X              |                  |
| Hydraulic Oil Filter | Ramrod Manual           | Replace oil filter. See Page 20.  |                    |              |               | X              |                  |
| Hydraulic Oil        | Ramrod Manual           | Change hydraulic oil. See Page 15 for specs.  |                    |              |               |                | X                |

## TROUBLE SHOOTING

The following chart is intended to help isolate troubles and possible remedies.

| SYMPTOM                                      | POSSIBLE CAUSES   | POSSIBLE REMEDIES   |
|--|---|---|
| Starter does not crank engine                | Fuse protecting ignition system burned<br>Low battery output<br>Loose or disconnected battery cable                                   | Replace with 1.5A fuse<br>Recharge or replace battery<br>Check and tighten all connections  |
| Engine turns over but does not start         | No fuel in tank.<br>Fuel shut-off valve closed<br>Improper starting procedure<br>Auxiliary control lever engaged<br>Spark plug fouled | Fill tank with clean fuel<br>Open fuel shut-off valve<br>Refer to starting procedure<br>Set auxiliary lever to neutral<br>Check spark plug gap and clean or replace spark plug  |
| Noisy hydrostatic system                     | Air in system<br>Loose suction line and/or fittings<br>Clogged oil filter<br>Hydraulic oil too heavy<br>Internal pump or motor damage | Check oil level, add if necessary<br>Bleed system<br>Tighten all fittings and connections<br>Replace oil filter<br>Warm up hydraulic oil when too cold<br>See you RAMROD Dealer |
| Erratic or no output on transmission         | Hydraulic oil too heavy<br>Hydraulic oil level too low<br>Drive coupling between engine and pump broken                               | Use proper viscosity oil. Refer to Page 15<br>Check oil level. Add if necessary<br>Check couplings, replace if necessary  |
| Loss of hydraulic oil flow from gear pump    | Reservoir low on oil<br>Drive couplings between engine and pump broken<br>Hydraulic gear pump not functioning                         | Check oil level. Add if necessary<br>Check couplings, replace if necessary<br>Inspect and repair if necessary   |
| Hydraulic cylinders do not function properly | Loss of hydraulic flow from gear pump<br>Air in system  | See above<br>Bleed system   |
| Oil overheating                              | Reservoir low on oil<br>Auxiliary control lever engaged<br>Setting of relief valve too high or too low                                | Check oil level. Add if necessary<br>Return auxiliary lever to neutral<br>Set to correct pressure   |
| No drive of either wheel on one side         | Key sheared on motor shaft  | Inspect shaft and hub for damage or wear. Replace key and tighten on slotted nut.   |
| No drive of front wheel on one side          | Chain failure   | Inspect and replace   |
| Noisy operation                              | Chains too loose<br>Chains dry  | Tighten chain<br>Lubricate chain  |

# V. LOADER SPECIFICATIONS

Rated Operating Capacity . . . . . 230 kg. (507 lbs.)  
 Shipping Weight: (Crated)  
 with 4" wheels and 31" bucket . . . 1,155 lbs. (524 kg.)  
 with 6" wheels and 36" bucket . . . 1,160 lbs. (526 kg.)  
 with 8" wheels and 42" bucket . . . 1,166 lbs. (530 kg.)  
 Travel Speed . . . . . 5 k.p.h. (3 m.p.h.)

## DIMENSIONS (With 18 x 8.50 x 8 tires - 8")

|   |                  |
|---|------------------|
| A. Overall Operating                          |                  |
| Height . . . . .                              | 90.375" (2296mm) |
| B. Height To Hinge Pin . . . 65.750" (1670mm) |                  |
| C. Overall Height of Loader 46.750" (1187mm)  |                  |
| D. Overall Length with                        |                  |
| 42" bucket . . . . .                          | 75.375" (1915mm) |
| E. Dump Angle . . . . . 90°                   |                  |
| F. Dump Height @ 45°                          |                  |
| Dump Angle . . . . .                          | 47.750" (1213mm) |
| G. Reach, Fully Raised @                      |                  |
| 45° Dump Angle . . . .                        | 22.125" (562mm)  |
| H. Height To Bottom Of                        |                  |
| 42" Bucket . . . . .                          | 62.00" (1575mm)  |
| I. Maximum Roll Back At                       |                  |
| Ground . . . . .                              | 35°              |
| J. Maximum Roll Back                          |                  |
| Fully Raised . . . . .                        | 36.5°            |
| K. Wheel Base . . . . . 25.250" (641mm)       |                  |
| L. Overall Length Less                        |                  |
| Bucket . . . . .                              | 57.250" (1454mm) |
| M. Ground Clearance . . . . 5.50" (140mm)     |                  |
| N. Angle Of Departure . . . 26°               |                  |
| O. Clearance Circle                           |                  |
| Without Bucket . . . . .                      | 28.56" (725mm)   |
| P. Clearance Circle With                      |                  |
| 42" Bucket . . . . .                          | 49.10" (1247mm)  |
| Q. Clearance Circle,                          |                  |
| Rear . . . . .                                | 32.45" (824mm)   |
| R. Overall Width Without                      |                  |
| Bucket . . . . .                              | 39.00" (1003mm)  |
| S. Tread Width . . . . . 31.00" (787mm)       |                  |

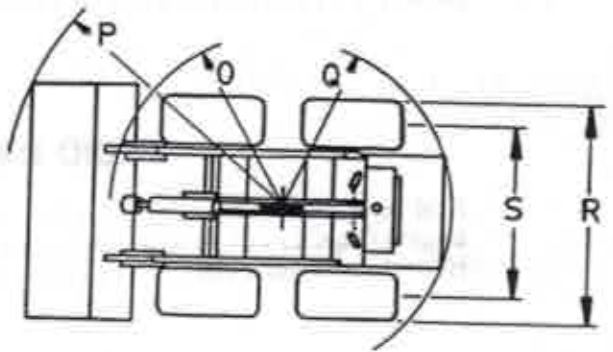
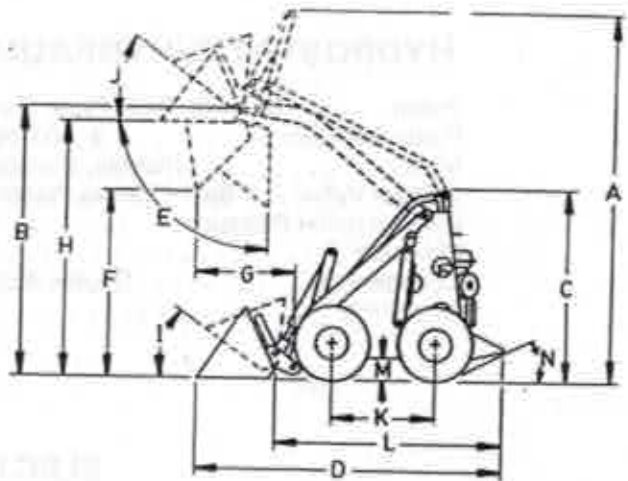


FIGURE 25

NOTE: 16 x 6.50 x 8 (6") tires will decrease the machine dimensions as follows:

All vertical dimensions will decrease by 1 inch (25mm)

|                                      |             |
|--------------------------------------|-------------|
| G. Reach, Fully Raised               |             |
| @ 45° Dump Angle . . .               | 23" (584mm) |
| R. Overall Width Without             |             |
| Bucket . . . . .                     | 35" (889mm) |
| S. Tread Width . . . . . 29" (737mm) |             |

NOTE: 4.80 x 8 (4") tires will decrease the machine dimensions as follows:

All vertical dimensions will decrease by .50 inch (13 mm)

|                                      |                |
|--------------------------------------|----------------|
| G. Reach, Fully Raised               |                |
| @ 45° Dump Angle . . .               | 22.50" (572mm) |
| R. Overall Width Without             |                |
| Bucket . . . . .                     | 31" (787mm)    |
| S. Tread Width . . . . . 27" (686mm) |                |

# LOADER SPECIFICATIONS

## ENGINE

Make and Model . . . . . Kohler M14  
Cycle, Valve Arrangement . . . . . 4 cycle, side valve  
Displacement . . . . . 24.8 in.<sup>3</sup> (406cm<sup>3</sup>)  
Maximum Output (Horsepower) . . . . . 10 H.P. (7.5 kw) @ 3600 r.p.m.  
Dry Weight (Mass) . . . . . 77.2 lbs. (35 kg.)

## HYDROSTATIC/HYDRAULIC SYSTEM & FINAL DRIVE

Pump . . . . . Rexroth, Gear Type, Fixed Displacement, 0.40 in<sup>3</sup>/rev. (6.5cm<sup>3</sup>)  
Pump Capacity . . . . . 4.50 GPM (13.6 l/min) @ 2500 P.S.I. (172 Bar)  
Motor . . . . . Nichols, Variable Displacement, 16.4 in<sup>3</sup>/rev. (269cm<sup>3</sup>)  
Control Valve . . . . . 5 Spool, Series Parallel, Spring Return and Detent On Auxiliary  
System Relief Pressure . . . . . 2500 P.S.I. (172 Bar)  
Filtration . . . . . Return Line: 10 Micron  
Cylinders (3) . . . . . Double Acting 2.50 Bore, 8.00 Stroke, 1.250 Rod.  
Final Drive . . . . . Primary Chain Number ASA 60

## ELECTRICAL

Battery . . . . . 12 Volt, Negative Ground, 220 Amps.

## FLUID CAPACITIES

Fuel Tank . . . . . 4 litres (1 Imp. Gal.)  
Engine Oil . . . . . 1 litre (1 quart)  
Hydraulic Oil Reservoir . . . . . 37 litres (39 quarts)

## TIRES AND BUCKETS

| TIRE                            | PRESSURE             |
|---------------------------------|----------------------|
| 4.80 x 8 - 4 ply . . . . .      | 50 p.s.i. (3.45 kPa) |
| 16 x 6.50 x 8 - 4 ply . . . . . | 30 p.s.i. (207 kPa)  |
| 18 x 8.50 x 8 - 2 ply . . . . . | 20 p.s.i. (138 kPa)  |

| BUCKET                 | CAPACITY                                    |
|------------------------|---|
| 31" (787mm) . . . . .  | 2.84 ft <sup>3</sup> (0.008m <sup>3</sup> ) |
| 36" (914mm) . . . . .  | 3.30 ft <sup>3</sup> (0.09m <sup>3</sup> )  |
| 42" (1067mm) . . . . . | 3.85ft <sup>3</sup> (0.11m <sup>3</sup> )   |

# LOADER SPECIFICATIONS

## DECALS

Operating Instructions  
Part No. 179150  
Location: Far L/H side on rear face

Safety First  
Part No. 179149  
Location: Far R/H side on left face

### OPERATING

### INSTRUCTIONS

#### HINTS FOR USE



Hydraulic power transmission is instantaneous. When using the drive levers, sudden movement will result in acceleration to full speed and very jerky ride. Ease the levers either forward or reverse.

If the bucket is pivoted down while the arms are down, the front of the mini loader will lift off the ground. This is a standard operation when scraping and leveling. The standing platform will prevent the mini loader from overturning backwards.



1 When attacking the heap or pile, always have the bucket level. To achieve this, lower the loader arm and activate bucket tilt cylinder to bring the bucket level with the ground.

2 Towards the end of the run when the bucket is nearly full, gently roll the bucket backwards. This decreases the lifting resistance when the arms are raised and promotes an efficient tear out.

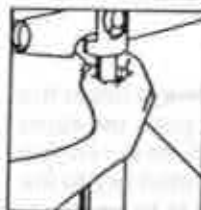
3 When transporting material in the bucket on hillsides or rough ground, keep the bucket close to ground level. This lowers the centre of gravity of the loader and maximizes stability.

4 When scraping, leveling and surface stripping, lower the bucket to ground level, tilt it down and so raise the front wheels slightly off the ground. Drive forward using the back wheels, the bucket will bite into the soil as you move forward.

5 The material may then be dumped into a trailer or utility truck for removal or re-positioning on the site. Do not step off the operator platform with the load raised.



Manoeuvring is made possible by individual controls for the hydraulic motor on each side of the mini loader. A turn may be achieved by varying the amount and/or direction of power supplied to each side of the machine. The machine is capable of turning in its own length by applying equal forward and reverse power to opposite sides of the machine.



### 1 Safety First

2 Wear close fitting protective clothing and shoes.

3 Keep hands, feet and clothing away from all moving parts and rams.

4 Do not allow more than one person on the loader at any time.

5 Do not smoke while fuelling or operating the mini loader.

6 Do not operate any of the control levers including auxiliary power take-off unless you are standing with both feet on the platform and firmly holding the grip handles.

7 Do not place feet under the platform.

8 Do not ride in the bucket.

9 Do not allow any other person or animal close to the mini loader while in operation.

10 Ensure adequate ventilation when using the machine in confined spaces.

11 Do not drive the mini loader across steep slopes.

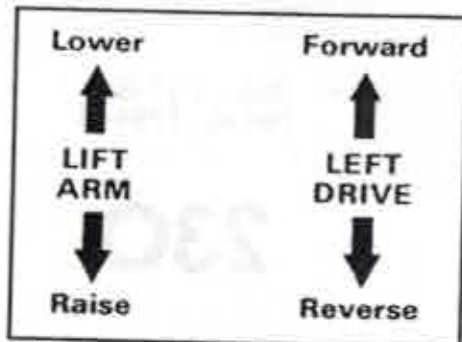
12 Always place bucket on ground when parking or leaving the loader unattended.

13 Do not carry load with the arms in a raised position. Always carry loads close to the ground. Do not step off platform with load raised.

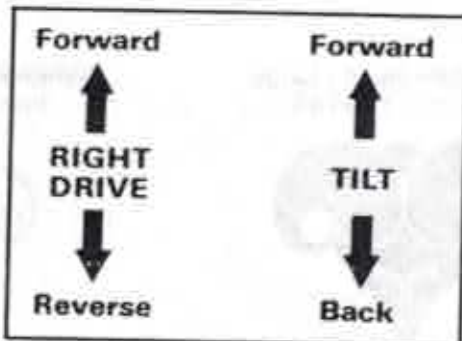
14 Caution — Never jerk the control levers, use a steady even motion.



Left Controls  
Part No. 179146  
Location: Top L/H side on control console



Right Controls  
Part No. 179147  
Location: Top R/H side on control console





# LOADER SPECIFICATIONS

Shutdown and Parking  
Part No. 179151  
Location: Centre of rear face

Auxiliary Power  
Part No. 179145  
Location: Centre of rear face

## SHUT DOWN AND PARKING      CAUTION

When parking the mini loader always lower the bucket to the ground. Do not park on steep slopes. To turn off the engine, reduce the engine speed at the throttle and turn the start key to the "Off" position. If the mini loader is to be transported close the fuel valve. Vibration during transport could cause the carburettor to flood.



Patent  
Part No. 179152  
Location: Top centre of rear face

INT. REG. PAT. No. PCT-AU83-00165.  
INT. REG. DESIGN No. 1017838

Ramrod - 2" High  
Part No. 179140

Mini Loader - 1" High  
Part No. 179141

Black Ram Head - Small  
Part No. 179142

# RAMROD Mini Loader



Black Ram Head - Large  
Part No. 179143



White Ram Head - Small  
Part No. 179144



230 - 1 1/2" High  
Part No. 179148

# 230

# —LOADER SPECIFICATIONS—

## LOADER IDENTIFICATION

The loader serial number plate is located on the front face of the control console under the lift arm. The Kohler engine serial number is located under the rear air cleaner cover. In order to qualify for warranty, the "New Loader Warranty Registration Form" must be completed

and one copy mailed to **RAMROD EQUIPMENT CORPORATION**. One copy should be retained by the Selling Dealer, and one by the Owner. To validate the engine warranty, the Honda Registration Certificate must be completed and mailed to the address shown in the Honda Warranty Book.

**NOTE: Spark Plug Removal.**  
The spark plug is removed by inserting a 13/16" open end wrench under the top cover as shown below. **Note:** Rear and engine cover and top rear cover must be removed.



FIGURE 26

## RAMROD WARRANTY

The **RAMROD EQUIPMENT CORPORATION** warrants each new **RAMROD** Skid Steer Loader to be free from proven defects in material and workmanship under normal use and maintenance for a period of six (6) months, commencing with delivery to the original buyer. Under conditions of this warranty, the Skid Steer Loader must be operated according to manufacturer's instructions and by a competent and careful operator.

This warranty shall not apply to the Loader on any part thereof which has been subject to misuse, negligence, alteration, accident, or used in any way which, in the manufacturer's opinion, adversely affects its performance.

It is the responsibility of the Buyer, at his expense, to transport the Loader or any part thereof in fulfilling this warranty to a designated service shop.

In no event shall the Buyer be entitled to recover for incidental or consequential damages such as, but not limited to, rental of replacement equipment, loss of profits, and loss of Loader fluids and lubricants.

This warranty does not extend to Loader components such as, but not limited to, engines, tires, batteries, hydraulic/hydrostatic components which are manufactured by others, and which carry separate warranties of their respective manufacturer's.

This warranty is in lieu of all other warranties expressed or implied, and there are no warranties of merchantability or fitness for a particular purpose.

No representative of the manufacturer, nor the selling dealer has authority to change this warranty in any manner whatsoever.



# RAMROD EQUIPMENT CORPORATION

"Manufacturers of Quality Built Skid Steer Loaders"

## NEW LOADER WARRANTY REGISTRATION FORM

|                       |              |                               |
|-----------------------|--------------|-------------------------------|
| Loader Serial Number  | Model Number | Engine Serial Number          |
| Name of Owner         |              | Name of Dealer                |
| Owner's Address       |              | Dealer's Address              |
| Date Loader Sold      |              | Date Loader Delivered         |
| OPTIONS & ACCESSORIES |              | SERIAL NUMBER (IF APPLICABLE) |

**TIRES:**

- 4.00 x 8
- 16 x 6.50
- 18 x 8.50

**BUCKETS:**

- 31 inch (787mm)
- 36 inch (914mm)
- 42 inch (1067mm)

RAMROD COPY

135 YORK ROAD EAST,  
YORKTON, SASKATCHEWAN, CANADA S3N 3N6  
PHONE (306) 783-6592      TELEX 074-21544  
FAX (306) 782-1884



# RAMROD EQUIPMENT CORPORATION

"Manufacturers of Quality Built Skid Steer Loaders"

## NEW LOADER WARRANTY REGISTRATION FORM

Loader Serial Number

Model Number

Engine Serial Number

Name of Owner

Name of Dealer

Owner's Address

Dealer's Address

Date Loader Sold

Date Loader Delivered

**OPTIONS & ACCESSORIES**

**SERIAL NUMBER (IF APPLICABLE)**

### TIRES:

- 4.00 x 8
- 16 x 6.50
- 18 x 8.50

### BUCKETS:

- 31 inch (787mm)
- 36 inch (914mm)
- 42 inch (1067mm)

DEALER COPY