



MINI SKID LOADER

MODEL 3300

OPERATOR'S MANUAL

RAMROD Equipment

(A Division of Leon's Mfg. Company Inc.)

Canada

P.O. Box 5002
135 York Road East
Yorkton, Saskatchewan
S3N 3Z4

Phone: (800) 667-1581

Fax: (306) 782-1884

Email: sales@ramrodequip.com

Website: www.ramrodequip.com

This page intentionally left blank

INTRODUCTION

TO OUR CUSTOMER:

RAMROD EQUIPMENT is pleased that you have chosen a **RAMROD MINI-SKID**.

This loader is a simple, compact power source designed and manufactured to give you years of dependable service.

Read this Manual carefully before operating the Mini-Skid. It contains the necessary information for safe and proper operating, routine servicing and preventive maintenance.

We also recommend that you carefully read the Engine Manufacturer's Manual before operating the Mini-Skid. 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.

© Copyright 2008, Ramrod Equipment Corporation

All rights reserved.

No part of this book may be reproduced or transmitted by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without written permission of Ramrod Equipment Corporation.

September 2011
Printed in Canada



RAMROD EQUIPMENT

(A Division of Leon's Mfg. Company Inc.)

CANADA

Box 5002 – 135 York Road East
Yorkton, Saskatchewan
S3N 3Z4
Phone: (800) 667-1581
Fax: (306) 782-1884

Email: sales@ramrodequip.com
Website: www.ramrodequip.com

RAMROD WARRANTY

The RAMROD EQUIPMENT warrants each new RAMROD Mini-Skid to be free from proven defects in material and workmanship under normal use and maintenance for a period of twelve (12) months, commencing with delivery to the original buyer. Under conditions of this warranty, the Mini-Skid must be operated according to manufacturer's instructions, and by a competent and careful operator.

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

It is the responsibility of the Buyer, at his expense, to transport the Mini-Skid 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 Mini-Skid fluids and lubricants.

This warranty does not extend to Mini-Skid components such as, but not limited to, engine, 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 warranty 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.

Printed in Canada

<p>NOTE: In order for warranty to be in effect, the following warranty registration forms must be completed and one copy sent to Ramrod Equipment at time of sale.</p>



Leon's Mfg. Company Inc.
"Home of Quality Leon & Ramrod Products"

RAMROD MINI-SKID LOADER
 DEALER PRE-DELIVERY INSPECTION & SERVICE REPORT

Owner: _____ Dealer: _____
 Address: _____ Address: _____

Model: _____ Serial No: _____ Date: _____
 Engine Serial No: _____ Hour Meter Reading: _____

<u>Item</u>	<u>Remarks</u>
--------------------	-----------------------

- () Check engine oil
- () Check hydraulic oil level
- () Check radiator coolant level
- () Check battery fluid level
- () Check tension of engine belts
- () Check air cleaner hoses & connections
- () Grease/lubricate all pivot points
- () Grease/lubricate control lever cross
Shafts and linkages
- () Check all wheel bolts for tightness
(90 ft-lbs)
- () Check tire pressure
- () Check drive chain adjustment
- () Check for loose or missing bolts, nuts,
Cotter pins etc.



Leon's Mfg. Company Inc.



PO Box 5002, 135 York Road East, Yorkton, SK S3N 3Z4 Canada

Ph: 306.786.2600 Fx: 306.782.1884

www.leonsmfg.com www.ramrodequip.com www.lratattachments.com

This page intentionally left blank



RAMROD EQUIPMENT

NEW MINI-SKID WARRANTY REGISTRATION FORM

Mini-Skid Serial Number
Number

Model Number

Engine Serial

Name of Owner

Name of Dealer

Owner's Type of Business

Owners Address

Dealers Address

Date Mini-Skid Sold

Date Mini-Skid Delivered

OPTIONS & ACCESSORIES

BUCKETS:

- 31 inch (787 mm)
- 36 inch (914 mm)
- 42 inch (1067 mm)
- 44 inch (1118 mm)

RAMROD COPY

Please forward to:
RAMROD EQUIPMENT
P.O. Box 5002, 135 York Road East
Yorkton, Saskatchewan, Canada
S3N 3Z4
Phone: (800) 667-1581
Fax: (306) 782-1884

This page intentionally left blank

P.O. Box 5002, 135 York Road East
Yorkton, Saskatchewan, Canada
S3N 3Z4
Phone: (800) 667-1581
Fax: (306) 782-1884



RAMROD EQUIPMENT

NEW MINI-SKID WARRANTY REGISTRATION FORM

Mini-Skid Serial Number
Number

Model Number

Engine Serial

Name of Owner

Name of Dealer

Owner's Type of Business

Owners Address

Dealers Address

Date Mini-Skid Sold

Date Mini-Skid Delivered

OPTIONS & ACCESSORIES

BUCKETS:

- 31 inch (787 mm)
- 36 inch (914 mm)
- 42 inch (1067 mm)
- 44 inch (1118 mm)

DEALER COPY

This page intentionally left blank

P.O. Box 5002, 135 York Road East
Yorkton, Saskatchewan, Canada
S3N 3Z4
Phone: (800) 667-1581
Fax: (306) 782-1884



RAMROD EQUIPMENT

NEW MINI-SKID WARRANTY REGISTRATION FORM

Mini-Skid Serial Number
Number

Model Number

Engine Serial

Name of Owner

Name of Dealer

Owner's Type of Business

Owners Address

Dealers Address

Date Mini-Skid Sold

Date Mini-Skid Delivered

OPTIONS & ACCESSORIES

BUCKETS:

- 31 inch (787 mm)
- 36 inch (914 mm)
- 42 inch (1067 mm)
- 44 inch (1118 mm)

CUSTOMER COPY

This page intentionally left blank

TABLE OF CONTENTS

I. SAFETY	1
OPERATE MINI SKID SAFELY	1
SAFETY PRECAUTIONS	1
II. CONTROL	3
ENGINE CONTROLS AND INSTRUMENTATION.....	3
PRIMARY CONTROLS	4
ATTACHMENT LOCK PINS	6
III. OPERATION.....	7
PRE-STARTING INSPECTION AND PREPARATION.....	7
STARTING PROCEDURE – GASOLINE ENGINE	7
SHUT-OFF PROCEDURE – GASOLINE ENGINE.....	8
STARTING PROCEDURE – DIESEL ENGINE	8
SHUT-OFF PROCEDURE – DIESEL ENGINE	8
MOUNTING ATTACHMENTS	9
OPERATIONAL PROCEDURE.....	10
IV. MAINTENANCE	14
ENGINE MAINTENANCE	14
BATTERY MAINTENANCE.....	14
FUELS, LUBRICANTS AND CAPACITIES	15
HYDRAULIC SYSTEM MAINTENANCE.....	16
FINAL DRIVE MAINTENANCE	17
PERIODIC GREASING DETAILS	18
PERIODIC MAINTENANCE AND SERVICE SCHEDULE.....	19
TROUBLESHOOTING.....	20

I. SAFETY

OPERATE MINI SKID SAFELY

IMPROPER OPERATION OF THIS MINI-SKID MAY RESULT IN SERIOUS INJURY. BEFORE OPERATING THIS MINI-SKID, 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 Advised Of Actions or Danger Which Can Cause Personal Injury.

IMPORTANT
This Decal Identifies Procedures Which Must Be Followed to Prevent Damage Top The Mini-Skid



Wear Ear Protection When Engine Is Running. The Sound Pressure Level Is: 102 DB for A Weighted level & 88 DB For C Weighted Level...



Do Not Use The Mini-Skid During A Thunderstorm Or When There Is A Chance Of A Lightning Strike.

SAFETY PRECAUTIONS

READ YOUR OWNERS'S MANUAL AND ALL SUPPLEMENTS BEFORE OPERATING YOUR MINI-SKID.

WHEN LEARNING TO OPERATE, PROCEED SLOWLY AND CAREFULLY.

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.

I. SAFETY

SAFETY PRECAUTIONS – CONTINUED

KEEP HANDS, FEET AND CLOTHING AWAY FROM ALL MOVING PARTS AND CYLINDERS.

DO NOT RIDE IN BUCKET.

DO NOT ALLOW MORE THAN ONE PERSON ON THE MINI-SKID AT ANY TIME.

DO NOT ALLOW ANY OTHER PERSON OR ANIMAL CLOSE TO THE MINI-SKID 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-SKID 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 MINI-SKID ARMS OR ATTACHMENTS.

DO NOT LUBRICATE, ADJUST OR REPAIR THE MACHINE WITH THE ENGINE RUNNING.

NEVER FUEL A HOT MACHINE.

DO NOT SMOKE WHEN FUELING OR OPERATING THE MACHINE.

ALWAYS READ THE OWNER'S MANUAL FOR PROCEDURES FOR SERVICING AND MAINTENANCE OF THE MINI-SKID.

REMEMBER, **SAFETY FIRST.**

II. CONTROL

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

ENGINE CONTROLS AND INSTRUMENTATION



Low Fuel Indicator Light – Indicator will illuminate when fuel levels become low and require refueling.



Low Hydraulic Oil Indicator Light – Indicator will illuminate if the hydraulic oil is low. Stop the engine and immediately add oil.



Low Engine Oil Indicator Light – Indicator will illuminate if the engine oil is low. Stop the engine and add oil immediately.



Engine Temperature Indicator Light (If Equipped) – Indicator will illuminate if the engine temperature becomes too hot. Shut off the engine immediately.



Throttle Control Idle – When the throttle is in this position machine is at idle.



Throttle Control Maximum – Increasing throttle from idle will increase machine speed until the maximum operating point is reached.

Shut-Off Button (If Equipped) – Turn ignition switch to the OFF position and hold shut-off button until the engine stops. The ignition switch must be in the OFF position to prevent battery drain.



Light Switch (If equipped) – This switch is used to control the working lights.



Ignition Switch (Gas) – The ignition switch is a three position switch. Clockwise from the OFF position is the ON and START positions.



Ignition Switch (Diesel) – The ignition switch is a four position switch. Turn the key counter-clockwise and hold to warm the glow plugs. Glow plugs must be warmed three to four seconds prior to starting. Clockwise from the OFF position is the ON and START positions.



Hour Meter/Tachometer (Gas) – The hour meter records total machine hours. The hour meter accumulates whenever the key is not in the OFF position. During operation engine speed (RPM) will be presented.



Hour Meter (Diesel) – The hour meter records total machine hours. The hour meter accumulates whenever the key is not in the OFF position.

Important

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

Important

For Maximum Power While Working The Engine Should Be Running At Full Throttle

Important

Some Engine Models Come With Additional Features And Indicators, Refer To Engine Owner's Manual For Details

II. CONTROL

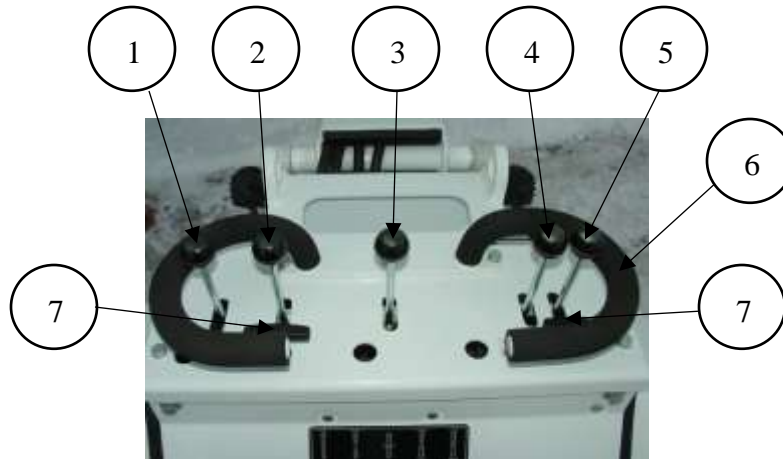


Figure 1: Control Panel

PRIMARY CONTROLS

1. Lift Arm Lever
2. Tilt Lever
3. Auxiliary Lever
4. Left Hand Drive Lever
5. Right Hand Drive Lever
6. Grip Handle
7. Auxiliary Controls (7 GPM each)



Figure 2: Single Hand Steering

DRIVE LEVERS, Items 4 & 5 Figure 1

The left hand drive lever controls the track on the left hand side and the right hand drive lever controls the track on the right hand side. Engage the drive levers slowly because even a small movement of the levers will cause motion. All lever movements should be smooth and gradual. To drive the Mini-Skid straight forward, move both control levers forward the same amount. To drive the Mini-Skid straight backwards, move both control levers back the same amount.

The Mini-Skid is steered by moving one lever further forward than the other. To turn left, move the right lever further ahead than the left; to turn right, move the left lever further ahead than the right lever. For the Mini-Skid to perform a spin –turn or “Skid-Steer”, move one lever forward and one lever backward the same amount.

The “TASKMASTER” features single-handed steering. For normal operation, the most comfortable hand position is to operate the two steering levers with the palm of the right hand, with the fingers gripping the grip handle.

Flexing the fingers will allow forward travel, and simply rotating the palm will allow normal steering. To reverse, slip the palm back to the rear of the grip handle, and use the tips of the fingers to pull the steering levers backwards.

This position will allow for more precise control of the unit. At the same time, the left hand should grip the grip handle for operator stability, but can also be used to operate the lift and tilt functions as required.

Note: Be sure to slowly move the levers to the center (neutral) position when stopping. The Mini-Skid will stop **INSTANTLY** if the operator releases the drive levers.



Warning

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

II. CONTROL



Warning

*Keep **BOTH HANDS** On The Grip Handle At All Times When Operating The Machine.*



Warning

Use Extreme Caution When Stopping. If The Bucket Or Attachments 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 – Item 1, Figure 1

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 centered to neutral upon release of the lever.

TILT CONTROL LEVER – Item 2, Figure 1

The inside control lever located on the left hand side controls the tilting action of attachments such as buckets, forks, etc. Pulling the lever back tilts the attachments back. Pushing forward on the lever tilts forward or “dumps” the attachment. The lever is spring centered 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 Over Heat.

AUXILIARY CONTROLS – Item 7, Figure 1

The Taskmaster features two “T-Bar” control knobs which each provide 7 gallons per minute oil flow to the auxiliary circuit. This allows the operator to select the speed of the attachment. These are “push-pull” knobs. Pulling the knob “up” turns the oil flow on to the attachment circuit. Pushing the knob “down” turns the oil flow off.

Thus, for attachments where 7 GMP is desired (grapples, dozer blades, backhoes, etc.) pull either one of the control knobs up.

For attachments where 14 GPM is desired (trenchers, post-hole augers, tillers, etc.) pull both of the control knobs up.

When the auxiliary circuit is not in use (no hydraulic attachment mounted on the machine), both control knobs should be pushed down to turn off this circuit.

AUXILIARY LEVER – Item 3, Figure 1

Direction of auxiliary flow and “on-off” control of attachments is provided by this lever. When the auxiliary controls above are turned on, this lever becomes active. Pushing this lever forward will operate the attachment in one direction, while pulling it back will operate the attachment in the opposite direction. This lever locks in each position and must be returned to the center (off) position manually.

II. CONTROL

ATTACHMENT LOCK PINS

ATTACHMENT LOCK PINS

The “Taskmaster” tool bar design allows changing from one attachment to another quickly and easily, without having to remove pins.

Attachments are secured on the unit with two spring-loaded pins. Rotating the handles on the pins one half of a turn moves the pins from the locked to the unlocked position.

To unlock attachments, rotate both pins so that their handles are both pointing to the outside of the tool bar, as shown in Figure 3.

To lock attachments, rotate both pins inwards so that both handles are pointing towards the center of the machine as shown in Figure 4. This will allow the springs to push the pins downwards through the mounting holes in the attachment and secure it to the unit.



Figure 3: Lock Pins Disengaged



Figure 4: Lock Pins Engaged



WARNING

The design of the quick attach system is such that attachments can be lifted and carried without the lock pins being engaged. Before using any attachment, check to be sure that the lock pins are fully engaged and properly in place. The attachment will fall off when dumped if the lock pins are not engaged, resulting in possible damage or injury.



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-Skid** by following the operating information presented here. The Mini-Skid has been designed to do a lot of work with a minimum of operating fatigue.

Note: For more information regarding engine starting and operation, refer to your engine “Owner’s Manual”.

PRE-STARTING INSPECTION AND PREPARATION

Before you start the Mini-Skid 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 leaks. –**WARNING**– Never check for hydraulic leaks *with your bare hand. High-pressure fluid could penetrate your skid and cause injury.*
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 – GASOLINE ENGINE

1. Push the throttle lever down slightly
2. 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.)
3. Set the throttle lever for idling speed. Avoid excessive engine speed during warm-up.
4. 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 The Auxiliary Lever is In 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 Mini-Skid Under Full Load Condition Until It Has Had An Adequate Warm-Up Period.

III. OPERATION

SHUT-OFF PROCEDURE – GASOLINE ENGINE

1. Park the Mini-Skid 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. Ensure Auxiliary & Control levers are in neutral position.
5. Turn ignition key off, and remove key.

IMPORTANT

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

STARTING PROCEDURE – DIESEL ENGINE

1. Open Throttle lever slightly.
2. Turn key counter-clockwise to the “Preheat Position” and hold for a few seconds.
3. Turn key clockwise to the “Start” position to crank engine.
4. Once engine starts, release key.
5. Set throttle lever to idling speed to allow engine to warm up.
6. If engine fails to start after cranking 10 seconds, repeat steps 2 and 3, allowing a longer “Preheat” period
7. To restart a warm engine, turn key clockwise to start.

SHUT-OFF PROCEDURE – DIESEL ENGINE

1. Park the Mini-Skid 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. Move throttle to a slow idling position and allow the engine to run for a few minutes to cool down.
4. Turn key counter – clockwise to the “Off” position.

Important

Different Engine Model Options Are Available With Additional Procedures, Consult The Engine Owner’s Manual For More Information

III. OPERATION

MOUNTING ATTACHMENTS

INSTALLATION OF ATTACHMENT

1. Rotate Lock Pins to the unlock position (handle pointing outwards).
2. Tilt the attachment frame forward as show in Figure 5, so that the top round edge of the attachment frame will fit under the lip of the attachment.
3. Drive into the attachment, raising the arms so that the top of the attachment frame slips under the lip on the attachment, and attachment lifts slightly.
4. Using the tilt cylinder, roll back the attachment so it drops into place, as shown in Figure 6.
5. Rotate the lock pins to the locked position (handles facing inwards), and check that the lock pins are fully inserted through the lock holes in the attachment.
6. Connect attachment hydraulic hoses (if required) to the quick couplers as shown in Figure 7.

back and forth, and disconnect the attachment.



Figure 5



Figure 6

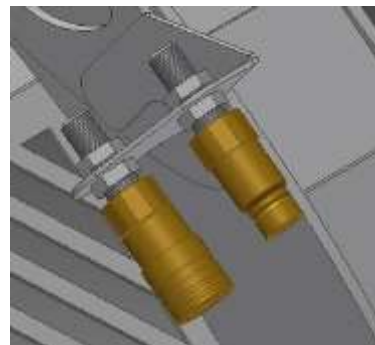


Figure 7



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 and tilt forward on the attachment so that the attachment is resting on the ground.
2. If attachment is hydraulically equipped, stop the engine, relieve hydraulic pressure in the attachment lines by shifting the auxiliary lever

3. Rotate the lock pins to the unlocked (handles pointing outwards) position.
4. Start engine, tilt the attachment mount frame clears that lip on the attachment, and back the Mini-Skid away from the attachment.

III. OPERATION

OPERATIONAL PROCEDURE

Mini-Skid 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, posthole auger, trencher, rock hammer, etc., are included in the respective attachments bundle.

OPERATING SUGGESTIONS

1. Install an attachment (bucket). Drive carefully to a clean and level area and practice operating the Mini-Skid 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 Mini-Skid, 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 Mini-Skid 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 as in 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 Mini-Skid.



Figure 8: Empty Bucket

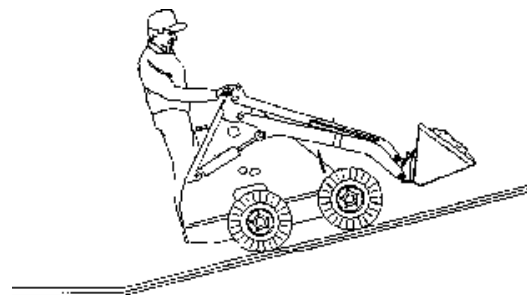


Figure 9: Full Bucket

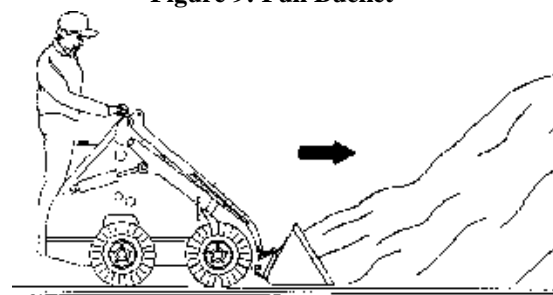


Figure 10



WARNING

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



WARNING

If Operating Mini-Skid Indoors, Make Sure Building Is Well Ventilated.

III. OPERATION

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.
2. As soon as the bucket is full, tilt bucket back and back away from the pile, as shown in Figure 11 and 12.
3. When dumping, raise bucket high enough to clear stockpile or sides of container being loaded.
4. Drive slowly forward until bucket is over dumping area and tilt bucket forward until it completely empties.
5. Tilt bucket, back up if necessary to clear container side and back away.

3. Continue driving forward until bucket is full and then tilt bucket fully back while driving slowly forward or stopping the machine.

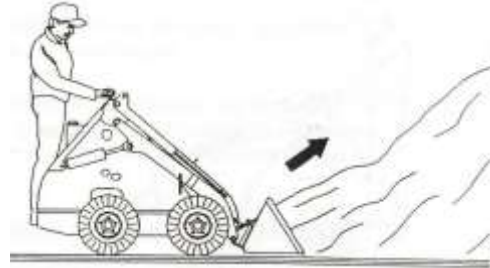


Figure 11

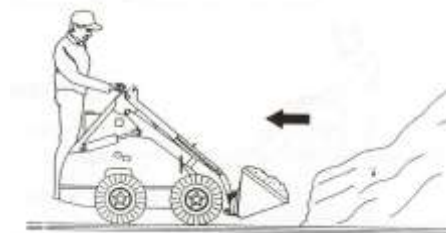


Figure 12

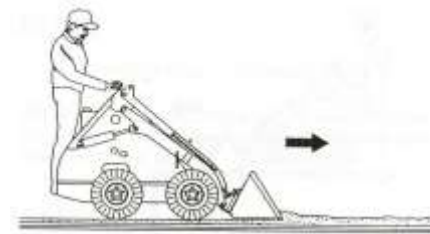


Figure 13

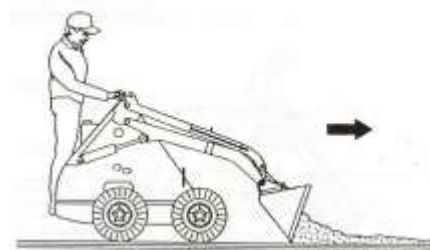


Figure 14



WARNING

Use Extreme Caution When Stopping. If The Bucket Or Attachment Is Raised The Machine Can Tip. Keep All Movements Smooth and Gradual When Maneuvering With Lift Arms Raised. Do Not Cross Obstructions With 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

1. Lower lift arms fully and tilt bucket forward until cutting edge is on the ground.
2. 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 show in Figure 13.

LEVELING

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

III. OPERATION

1. To level a filled area, tilt bucket forward and drive machine backwards to drag bucket and spread material, as shown in Figure 15.
2. Another method of leveling 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.

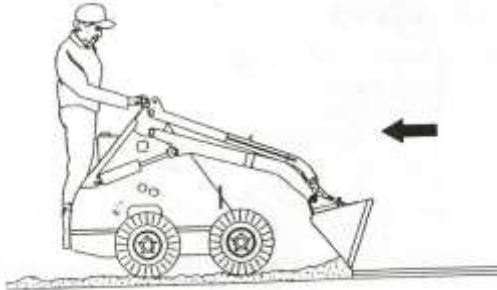


Figure 15

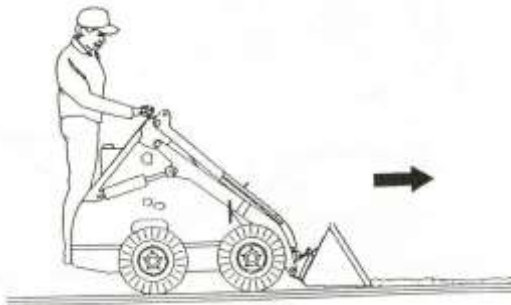


Figure 16

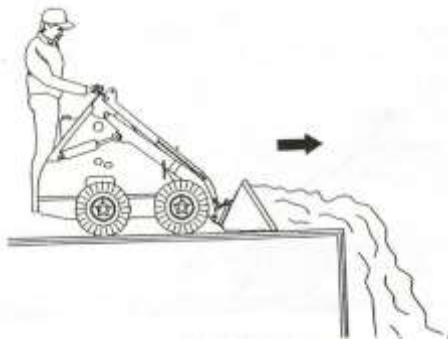


Figure 17

BACKFILLING

1. When filling a trench or a hole, drive up to 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 the arms to empty the bucket.

TRANSPORTING THE MINI-SKID

Important

Never Tow The Mini-Skid Damage May Result.

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

A Mini-Skid 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 Mini-Skid is driven onto the transporting vehicle, lower any attachments, and install chains to hold Mini-Skid from moving during sudden stops or when traveling up and down grades.

Close the fuel valve when the Mini-Skid is to be transported. Vibration during transport could cause the carburetor to flood.

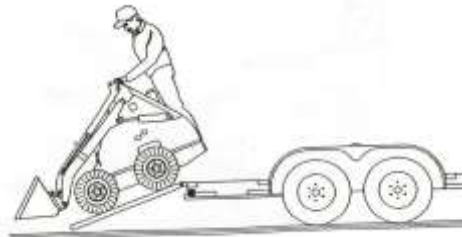


Figure 18



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.

III. OPERATION

LIFT ARM SUPPORT DEVICE

Your Mini-Skid is equipped with a lift arm support device. This is bolted below the arm pivot on the rear upright on each side of the unit.

In order to safely work underneath the lift arms remove the support device from the body and remove any attachment from the Mini-Skid. Raise the lift arms to their maximum extension and place the support device onto the lift cylinders of the Mini-Skid. Lock the support in place using the bolt that attached it to the leveling arm.

Ensure the machine is shut off before performing any work on the Mini-Skid. After completing work on the Mini-Skid remove the support device from the lift cylinder and replace it on the leveling arm.

Important

Never Lower The Lift Arms With The Support Device In Place. Damage To The Lift Cylinder Will Result.



WARNING

Before Performing Any Work Underneath The Mini Lift Arms Remove Any Attachment And Raise The Lift Arm To Full Height. Use The Lift Arm Support To Lock The Arms In The Raised Position

IV. MAINTENANCE

ENGINE MAINTENANCE

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

To access the engine compartment, remove louvered side panels or back panel as required.

BATTERY MAINTENANCE

The battery is located within the engine compartment.

NOTE: Check the battery hold down bracket for tightness. Do not over tighten. Remove any acid corrosion from the battery terminals and cables with a baking soda and water solution. Coat the terminals with high temperature grease.

IV. MAINTENANCE

FUELS, LUBRICANTS AND CAPACITIES

The service obtained from your Mini-Skid 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 Mini-Skid.

COMPONENT	TEMPERATURES	TYPE OF LUBRICANT/FLUID	CAPACITY Liter (US. Gals.)
Engine Oil	See engine owner's manual	See engine owners Manual	See engine owner's manual
Fuel Tank	All Temperatures	Diesel – Regular	20 Liter (5.25 US gal.)
Hydraulic Oil Reservoir	All Temperatures	ISO 46 Anti-Wear Hydraulic Oil	80 Liters 21 US Gal.



Fuel filler location: To the right of the operator stand, Figure 19.



Figure 19

Hydraulic oil filler location: To the left of the operator stand, Figure 20.

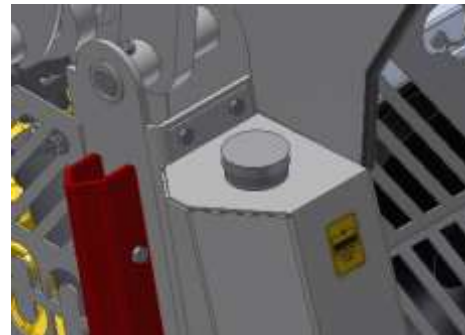


Figure 19

IV. MAINTENANCE

HYDRAULIC SYSTEM MAINTENANCE

HYDRAULIC OIL LEVEL CHECK

1. Ensure that the Mini-Skid is standing level, the lift arms are down and the tilt cylinder is closed.
2. Remove the oil cap, and check the level. If oil is apparent, the level is satisfactory.
3. If necessary add the proper type and grade of oil.

NOTE: *These units are equipped with a low hydraulic warning indicator. Do not operate if this indicator is lit.*

CHANGING HYDRAULIC OIL

1. There are two hydraulic oil drains located on the inside face of the front tank of the machine as seen in Figure 21 and the bottom of the rear side tank as seen in Figure 22.
2. Remove drain plug to drain oil.
3. Replace drain plug and refill reservoir with clean oil.
4. Start the engine and check for leaks.

CHANGING OIL FILTER

1. To access filter, remove the left side panel as seen in Figure 23.
2. Remove oil filter housing.
3. Remove and replace old filter.
4. Reassemble oil filter and close the panel.

NOTE: *when changing filter, it is recommended that a container be placed under the filter to collect any spilled oil.*

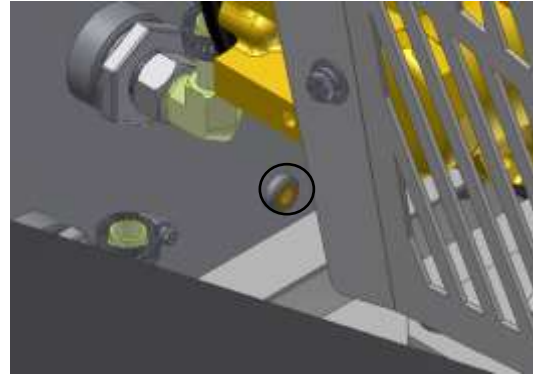


Figure 201: Front Hydraulic Oil Drain Plug

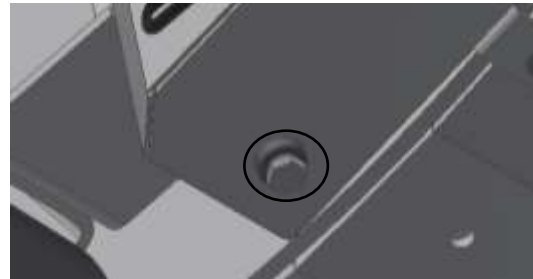


Figure 212: Rear Hydraulic Oil Drain Plug



Figure 22: Hydraulic Oil Filter

IV. MAINTENANCE

FINAL DRIVE MAINTENANCE

TRACK ADJUSTMENT

- 1) Locate tensioner cover on tracks and remove as seen in Figure 24

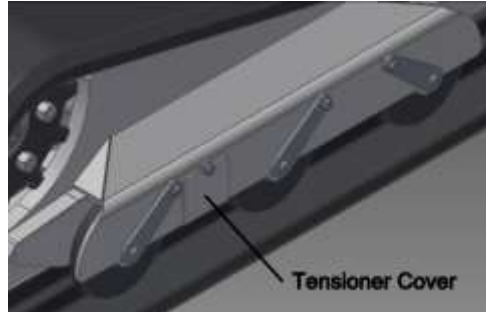


Figure 24: Track tension cover

- 2) Loosen the locking nut, towards unit front, and adjust the tensioning nut to the desired tension level as seen in Figure 25.

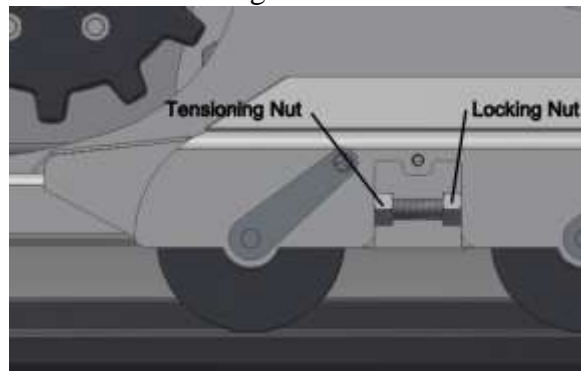


Figure 25: Track tensioning system

NOTE: A 180 lb person stepping on top of the track should give no more than 1" of flex mid-span between the tension wheels and drive sprocket.

- 3) Tighten the locking nut and replace the tension cover.

IV. MAINTENANCE

PERIODIC GREASING DETAILS

Greasing is an important factor in extending the service life of many items on your Mini-Skid.

GREASING PIVOT POINTS

The pivot points may be greased with a general purpose or bearing grease. The pivot points include: cylinder cross tubes (the lift and tilt cylinders), all quick attach pivot points, and the lift and leveling arm pivot points.

The lift cylinder, leveling arm and lift arm pivot points can be reached by raising the machine lift arms to their highest extent. The machine should be shutoff and the cylinder lock installed prior to greasing. The cylinder lock is located under the left side of the leveling arms.

IV. MAINTENANCE

PERIODIC MAINTENANCE AND SERVICE SCHEDULE

Item	Manual	Service Required	8 or Daily	25 or Weekly	50 or Bi-Weekly	100 or Monthly	1000 or Annually
Engine Oil	Engine Manual	Check level of engine oil and top up if necessary	X				
Engine Fuel	Ramrod Manual	Check level, and if necessary, top up.	X				
Hydraulic Oil	Ramrod Manual	Check level, and if necessary, top up.	X				
Track Bolts Wheel Bolts	Ramrod Manual	Check track bolts (bolts to 90 lb-ft).	X				
Decals	Ramrod Manual	Check if damaged safety or instruction decals. Replace if necessary	X				
Air Cleaner	Engine Manual	Service element.		X			
Grease Pivot Points	Ramrod Manual	Grease all pivot points		X			
Battery	Ramrod & Engine Manual	Clean and protect battery terminals.			X		
Engine Oil	Engine Manual	Change oil after first 20 hours of operation or as indicated in engine manual.			X		
Engine Oil	Engine Manual	Replace engine oil.				X	
Fuel Filter	Engine Manual	Clean and dry thoroughly.				X	
Hydraulic System	Ramrod Manual	Check all components. thoroughly. Replace if needed.				X	
Hydraulic Oil Filter	Ramrod Manual	Replace oil filter.				X	
Engine Oil Filter	Engine Manual	Change oil filter.				X	
Hydraulic Oil	Ramrod Manual	Change hydraulic oil					X

IV. MAINTENANCE

TROUBLESHOOTING

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

SYMPTOM	POSSIBLE CAUSES	POSSIBLE REMEDIES
Starter does not crank engine	Low battery output Loose or disconnected battery cable	Recharge or replace battery Check and tighten all connections
Engine turns over but does not start	No Fuel in Tank. Fuel shut-off valve closed Improper starting procedure Auxiliary control lever engaged	Fill tank with clean fuel Open fuel shut-off valve Refer to starting procedure Set auxiliary lever to neutral
Noisy hydrostatic system	Air in system Loose suction line and / or fittings Clogged oil filter Hydraulic oil too heavy Internal pump or motor damage	Check oil level, add if necessary Bleed system Tighten all fittings and connections Replace oil filter Warm up hydraulic oil when too cold See your RAMROD Dealer
Erratic or no output on transmission	Hydraulic oil too heavy Hydraulic oil level too low Drive coupling between engine and pump broken	Use proper viscosity oil. Check oil level. Add is necessary Check couplings, replace if necessary
Loss of hydraulic oil flow from gear pump	Reservoir low on oil Drive couplings between engine and pump broken Hydraulic gear pump not functioning	Check oil level. Add if necessary Check couplings, replace if necessary Inspect and repair if necessary
Hydraulic cylinders do not function properly	Loss of hydraulic flow from gear pump Air in System	See above Bleed system
Oil overheating	Reservoir low on oil Auxiliary control lever engaged Setting of relief valve too high or too low	Check oil level. Add if necessary Return auxiliary level to neutral Set to correct pressure See your RAMROD Dealer