LEWIS M. CARTER MFG. CO.

8907 HAY RAKE
OPERATOR'S MANUAL

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Introduction

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages. (See your dealer to order.)

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are given in US equivalents. Use only correct replacement parts and fasteners.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction the implement will travel when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Specification section. Accurately record all numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

WARRANTY is provided as part of LMC support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that Lewis M. Carter Mfg. Co. will back its product where defects appear within the warranty period. In some circumstances, LMC also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

THE TIRE MANUFACTURE'S warranty applicable to your machine may not apply outside the U.S.

8907 Twin Rake Checklists

DEALER'S RECORD

Owners Name_____ **Date Sold**_____

Address_____ **Model Number** _____

City_____ **Serial Number**_____

State_____ **Zip**_____

PREDELIVERY

After the rake has been completely set up, inspect it to be sure it is in good running condition before delivering it to the customer. The following checklist is a reminder of important points to inspect. Check off each item as it is found satisfactory after proper adjustment has been made.

__ Rake has been set up correctly.
__ Check hydraulic hoses and connections for leaks.
__ Machine lubricated.
__ Check condition of wheel rims.
__ Check tightness of wheel mounting hardware.
__ Completed 30 minute break-in period.
__ Tire pressures checked.
__ All hardware tight. Make sure all cotter pins are spread.
__ Hydraulic cylinders operate properly.
__ All moving parts are working freely.
__ Check safety chains are installed correctly.
__ All decals are intact and legible.

_____ _____

(Date set up) **(Signature)**

8907 Twin Rake Checklist

DELIVERY

The following checklist is a reminder of very important information which should be conveyed to the customer at the time the rake is delivered. Check each item off as it is explained to the customer.

__ Lewis M. Carter Mfg. Co. warranty
__ Safe and correct operation and service.
__ Daily and periodic inspections.
__ Servicing machine regularly and correctly.
__ Give the Operator's manual to the customer and encourage customer read entire manual.
__ Advise customer of safety precautions that must be observed while using this machine.
__ Review information on how to prepare rake. (See preparing the rake section.)
__ Review recommended procedures for attaching or detaching from tractor. (See attaching and detaching section.)
__ Recommended transporting information. (See transporting section.)
__ When rake is transported on a road or highway at night or during day, accessory lights and devices should be used for adequate warning to operators of other vehicles. Various safety lights and devices are available. In this regard, tell customers to check local governmental regulations.
__ Review all special operating conditions. (See operating the rake section.)
__ Review recommended lubricants, service intervals and lubrication points.
__ Review all adjustments.
__ Recommended machine storage.
__ Have customer record machine serial number in the Specifications section.
__ Lewis M. Carter parts and service.
__ Remove and file this page in customer history.

(Date Delivered) **(Signature)**

8907 Twin Rake Checklist

AFTER-SALE

It is suggested the following items be checked sometime during the first season of operation.

__ Inspect entire machine for loose or missing hardware.

__ All shields in place and fastened.

__ Check tightness of wheel hardware.

__ Check tire pressures.

__ Decals intact and legible.

__ Check rake baskets are set at proper height.

__ Check for broken or damaged parts.

__ If possible, run the rake to see if it is functioning properly.

__ Check operating adjustments.

__ Review the entire Operator's manual with the customer and stress the importance of safety precautions, special operating conditions, and proper and regular lubrication.

(Date Checked) **(Signature)**

Safety

RECOGNIZE SAFETY INFORMATION

This is the safety alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

UNDERSTAND SIGNAL WORDS

A signal word-DANGER, WARNING, or CAUTION-is used with the safety alert symbol. DANGER identifies the most serious hazards.

FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your LMC dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instructions.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and effect machine life.

If you do not understand any part of this manual and need assistance, contact your LMC dealer.

Safety

OPERATE RAKE SAFELY

All machinery should be operated by responsible persons Who have been properly instructed and delegated to do so.

Before each use, inspect entire machine. Check tightness of all hardware.

Stop the tractor engine, engage parking brake, and wait until all moving parts have stopped before leaving tractor operator's station to adjust, lubricate, clean or unclog the machine.

Never hand feed material into machine.

Do not sit, stand, or lean against rake.

Do not attempt to remove hay from rake teeth when machine is running.

Make certain everyone is clear of machine before starting tractor engine or beginning operation.

KEEP RIDERS OFF MACHINE

Keep riders off.

Riders on machine are subject to injury such as being struck by foreign objects and being thrown off the machine.

Riders can be caught in rotating baskets.

Riders obstruct the operator's view resulting in the machine being operated in an unsafe manner.

Safety

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Operating equipment safely requires the full attention the operator. Do not wear radio or music headphones while operating machine.

Safety

HANDLE CHEMICAL PRODUCTS SAFELY

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with LMC equipment include such items as lubricants, coolants, paints, and adhesives.

A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques.

Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

USE SAFETY LIGHTS AND DEVICES

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use hand signals or turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep marking and lighting visible and in good working order. Replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your LMC dealer.

Safety

USE A SAFETY CHAIN

A safety chain will help control equipment should it accidentally separate from the tractor drawbar.

Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

See your local LMC dealer for a chain with strength rating equal to or greater than the gross weight of the towed implement. DO NOT USE SAFETY CHAIN FOR TOWING.

TOW LOADS SAFELY

Stopping distance increases with speed and weight of towed loads, and on slopes, towed loads with or without brakes that are to heavy for the tractor or are towed to fast to cause loss of control. Consider the total weight of the equipment and its load.

Observe these recommended maximum road speeds, or local speed limits which may be lower.

If towed equipment does not have breaks, do not travel more than (20 mph) and do not tow loads more than one and half (1.5) times the tractor weight.

If towed equipment has breaks, do not travel more than (25 mph) and do not tow loads more than four and half (4.5) times the tractor weight.

Safety

SERVICE RAKE SAFELY

To help prevent injury caused by unexpected movement, be sure to service machine on a level surface.

If machine is connected to a tractor;
- **-Engage tractor parking brake and/or place transmission in "Park"**
- **-Shut off the engine and remove the key**
- **-Wait until all parts have stopped moving**

If machine is detached from tractor, block wheels and use safety stands to prevent movement.

PRACTICE SAFE MAINTANCE

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands free, and clothing from power driven parts. Disengage all power and operate controls to relieve hydraulic pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

Safety

AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.

AVOID HIGH-PRESSURE FLUIDS

Escaping fluid pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

Preparing the Tractor

POSITIONING THE TRACTOR DRAWBAR

1. **Remove locking pins and move drawbar to center position.**
2. **Install locking pins.**
3. **Extend drawbar away from tractor as far as possible, for better maneuverability when attaching/detaching and operating in the field.**
4. **Remove clevis assembly, if equipped.**
5. **If drawbar is offset, turn drawbar so offset is down.**

The rake can be attached to any tractor drawbar having a drawbar that confirms to ASAE-SAE standards of 330 to 432 mm. (13-17 in.) from the ground.

THREE-POINT HITCH POSITION

IMPORTANT: To prevent damage to rake hitch when making turns, lock tractor draft and lift links in the up position. (And or completely remove tractor lift links from tractor.)

Raise tractor draft links and lift links completely.
(Refer to your tractor operator's manual for this procedure.)

CHECKING BALLAST, WHEEL SPACING, AND TIRE INFLATION

Provide sufficient weight to stabilize tractor when operating on hilly land or other adverse conditions. (See your tractor operator's manual).

To insure proper stability, adjust ballast, wheel spacing and tire inflation according to tractor operator's manual.

Preparing the Tractor

ADJUSTING TRACTOR FLOW CONTROL VALVE

On tractors equipped with a hydraulic flow control valve, adjust the valve to the lowest setting that gives proper reel speed (see your tractor operator's manual for proper adjustment).

IMPORTANT: Operating the rake with a closed-center hydraulic system set for maximum flow may result in overheating of hydraulic oil. Adjust the hydraulic flow control valve to proper setting.

On tractors with open-center hydraulic system, operate at approximately half throttle to prevent hydraulic oil from overheating.

The rake is equipped with flow divider that limits maximum oil flow to the reel drive motors, to help keep the reel speed from exceeding 90 rpm.

The reel drive motors are not designed to run in a reverse motion, this could cause severe motor damage if ran in a long period of time.

CAUTION: Before leaving tractor operator's station, push hydraulic lever into neutral setting so reels will not be activated when tractor is started.

Preparing the Rake

CHECKING TIRE INFLATION PRESSURE

8907 Twin Rake front and rear tires (P205/75R14) 35psi.

CHECKING WHEEL HARDWARE TORQUE

IMPORTANT: Check wheel hardware after the first 10 hours of use

Whenever a wheel has been removed and installed, check torque after one hour of operation and 40 hour intervals. Wheel hardware should be torqued to 115 nm. (85 lb.-ft.)

Attaching and Detaching

ATTACHING RAKE TO TRACTOR DRAWBAR

1. **Position tractor drawbar. (See procedure in preparing the tractor section.)**
2. **Remove hitch pin.**
3. **Back up tractor to rake. Align tractor drawbar with front of rake tongue.**
4. **Engage tractor parking brake and/or place tractor transmission in "PARK".**
5. **Shut off tractor engine and remove key.**
6. **Install hitch pin**
7. **Route safety chain through loop on drawbar (if equipped) and connect to tractor drawbar supporting structure, remove all slack except what is needed for turning.**
8. **Turn handle on tongue jack to take load off jack stand.**
9. **Remove pin from jack and jack.**
10. **Install jack in storage location, install pin.**

CAUTION: A safety chain will help control drawn equipment should it accidentally separate from the drawbar. A runaway machine could cause severe injury or death to someone. Provide only enough slack in chain to permit turning. Do not use safety chain for towing.

ATTACHING TO TRACTOR HYDRAULIC SYSTEM

1. **Clean off dust covers of any foreign debris.**

2. **Check to be sure symbols on receptacle identification plate, indicating cylinder movement, match cylinder travel direction.**

3. **Insert large hoses (Reel motor hoses) into bottom receptacles (SCV 1).**

4. **Insert small hoses (Lift and windrow width cylinders) into the next set of tractor receptacles (SCV II).**

5. **Push hose firmly into tractor receptacles.**

DETACHING RAKE FROM TRACTOR

CAUTION: To prevent personal injury caused by unexpected movement:
-Park machines on level surface.
-Engage tractor parking brake and/or place tractor transmission in "PARK".
-Shut off tractor engine and remove key.

1. **Park rake on level surface, or block rake wheels so machine cannot roll after detaching from tractor.**

2. **Engage tractor parking brake and/or place tractor in "PARK".**

3. **Shut off tractor engine and remove key.**

4. **If equipped disengage SCV lockouts.**

5. **Disconnect hydraulic hoses from tractor SCV.**

6. **Remove tongue jack from storage location and install on tongue, turn jack crank to remove weight from tractor drawbar.**

7. **Disconnect safety chain and wrap around tongue.**

8. **Carefully drive tractor away from rake.**

Operating the Rake

PREPARING THE RAKE FOR FIELD OPERATION

1. **Park machine on level surface.**
2. **Using tractor hydraulics, raise basket support frame completely (Transport frame lift cylinder fully extended).**
3. **Remove transport lock from cylinder, install in storage space.**
4. **Using tractor hydraulics lower basket support frame completely (Transport frame lift cylinder fully retracted).**
5. **Engage tractor in "PARK" and remove key.**
6. **Rotate chain locking tab and unlock transport chain from basket transport frame.**
7. **Repeat step 6 on other side.**
8. **Start tractor and raise basket transport frame completely (Lift cylinder completely extended).**
9. **Engage tractor parking brake and/or place tractor in "PARK" and remove key.**
10. **Manually swing basket frame away from main frame tongue.**
11. **Remove pin from center of basket support arm.**
12. **Remove quick lock pin from end of basket support arm install arm in swivel ball, located at the rear side of basket lift cylinder, install quick lock pin.**
13. **Swing basket outward to desired raking width, install pin back in center of support arm.**
14. **Repeat steps 10-13 on other side.**
15. **Adjust basket height, tine pitch, and finished windrow width as necessary. (See procedures in this section.)**

OPERATING THE RAKE

Use tractor SCV lever to operate the baskets.

Basket speed is controlled by the flow control valve located on the front of the tongue, basket speed should never exceed 90rpm.

Regulate your ground speed according to crop conditions, terrain, and tractor horsepower. A slower ground speed may be necessary for hills and rough terrain.

Direction of travel:

-Sickle mowed crop; Rake in the same direction as mower travel.

-Rotary mowed crop; Rake in opposite direction as mower traveled.

RAKING SINGLE WINDROW

To rake only a single windrow, unfold only one basket support frame into operating position, and raise the other basket support frame back into transport position.

NOTE: Both basket reels will be operating but only one will be used.

Operating the Rake

ADJUSTING RAKING WIDTH

Raking width can be adjusted to approximately (15'5"-26'5" ft.)

Approximate raking widths

Hole 1…… (15' 5")	**Hole 7…… (21' 5")**
Hole 2…… (16' 5")	**Hole 8…… (22' 5")**
Hole 3…… (17' 5")	**Hole 9…… (23' 5")**
Hole 4…… (18' 5")	**Hole 10…….. (24' 5")**
Hole 5…… (19' 5")	**Hole 11…….. (25' 5")**
Hole 6…… (21' 5")	**Hole 12…….. (26' 5")**

ADJUSTING BASKET REEL HEIGHT

1. **Manually rotate one tine bar so the tines are at the lowest point of contact to the ground.**

2. **Adjust basket height.**

   - **Remove the quick lock pin from basket height crank, adjust crank so basket rake teeth are approximately ¾" to 1" off the ground, install quick lock pin back in crank.**

   *** Perform the same procedure on front as rear, and then repeat on opposite side.**

   NOTE: ¾"-1" tooth clearance is recommended as an average setting. For increased tooth life, the rake teeth should be run high as possible but still able to get the entire crop.

Operating the Rake

ADJUSTING TINE PITCH

Changing the pitch of the teeth makes it possible to vary the shape and density of the windrow when operating at various speeds and various hay conditions.

-For heavier or green crops, adjust the basket spring links outward, this will lengthen the rod from the top support down and this will allow the teeth to lift the material as it is being raked.

-For lighter or drier crops, adjust the basket spring links in, this will shorten the rod from the top support down and will allow the material to be rolled rather than lifted.

IMPORTANT: Do not completely collapse springs!

NOTE: The basket height will have to be adjusted after changing the basket tine pitch.

ADJUSTING FINISHED WINDROW WIDTH

The finished windrow width can approximately be adjusted from (3-5 ft.)

A windrow of the proper width will result in more uniformed bales. The overall windrow width should be the same size or slightly wider than the bale chamber.

Wide finished windrow:
Raise transport frame completely (lift cylinder fully extended) continue holding tractor SCV lever to extend windrow width cylinder to desired finished windrow width.

Narrow finished windrow:
Move and hold tractor SCV lever in the opposite direction to retract windrow width cylinder to desired finished windrow width.

Specifications

8907 TWIN RAKE SPECIFICATIONS

Tractor Requirements

Horsepower (Minimum)…… (50 hp.)
Hydraulic Pressure Required...…… (2500 psi.)
Hydraulic Flow Required…….. (14-16 gpm.)
Hydraulic Remotes Required…….. (Two sets of remote outlets)

Raking Width...…..……..... (15.5 to 26.5 ft.)

Finished Windrow Width……. (3 to 5 ft.)

Overall height…… (5 ft. 9in.)

Overall Width

Operating Position…….……. (26.5 ft.)
Transport Position……..…….. (8 ft. 8 in.)

Overall Length…… (19 ft. 6 in.)

Shipping Weight (Approximate)…….. (3,700 lb.)

Baskets (Field to Transport position)…… (Hydraulic)

Baskets (Fold and Unfold)…….. (Manual)

Adjustments

Raking Width…..…… (Manual)
Basket Height (Front and Rear)……..……. (Manual Crank)
Tine (Tooth) Pitch……..……. (Manual)
Finished Windrow Width……..……. (Hydraulic)

Rake Baskets

Drive Motors...…….. (Hydraulic HD)
Tine Bars (Per Basket)…… (5)
Rubber Mounted Tines (Per Bar) (Universal)…… (32)

Tires

Size

Front Castors…… (P205/75R14)
Rear……..... (P205/75R14)

Warranty Registration Card

Dealer Name: _____

Customer Name: _____

Address: _____

Product: _____

Model Number:_____ Serial Number:_____

Date Delivered:_____

Did you receive the owner's manual? Yes_____ No_____
Did you receive a copy of warranty? Yes_____ No_____

WARRANTY IS VOID IF THIS CARD NOT RETURNED

I have read and fully understand the contents of this manual and am familiar with the operation procedures of this product**.**

Customer Signature_____Dealer Signature_____

WARRANTY

LMC MFG., INC. as manufacturer, warrants its products against defective parts in workmanship and material, for a period of twelve consecutive months from the date of retail to the original purchaser, but does not warrant in any way other attachments or accessories manufactured by other companies which may be attached to and therefore becoming a part of the product manufactured and sold by **LMC MFG., INC**., such as other attachments and accessories are in general covered by the warranty or warranties of the company which manufactured them.

Under no circumstances will it cover any merchandise or components thereof, which, in the opinion of the company, has been subjected to misuse, unauthorized modifications, alterations, and accident or if repairs have been made with parts other than those obtained through **LMC MFG., INC**.

LMC MFG., INC. in no way warrants engines, batteries, tires or trade accessories since these items are warranted separately by their respective manufacturer.

Our obligations under this warranty shall be limited to repairing or replacing, free of charge to the original purchaser, any part that, in our judgment, shall show evidence of such defect, provided further that such part shall be returned within thirty (30) days from date of failure to **LMC MFG., INC**. routed through the dealer and distributor from whom the purchase was made, ***transportation charges prepaid***.

This warranty shall not be interpreted to render **LMC MFG., INC**. liable for injury or damages of any kind or nature to person or property. This warranty does not extend to the loss of crops, loss because of delay in harvesting, or any expense or loss incurred for labor, substitute machinery, rental or for any other reason.

Except as set forth above, **LMC MFG., INC**. shall have no obligation or liability of any kind on account of its equipment and shall not be liable for special or consequential damages. **LMC MFG., INC**. makes no other warranty, expressed or implied, and specifically, **LMC MFG., INC**. disclaims any implied warranty or merchantability or fitness for a particular purpose. Some states or provinces do not permit limitations or exclusions or implied warranties or incidental or consequential damages, so the limitations or exclusions in this warranty may not apply.

This warranty is subject to any existing conditions of supply which may directly affect our ability to obtain materials or manufacture replacement parts.

LMC MFG., INC. reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold.

No one is authorized to alter, modify or enlarge this warranty nor the exclusions, limitations and reservations.