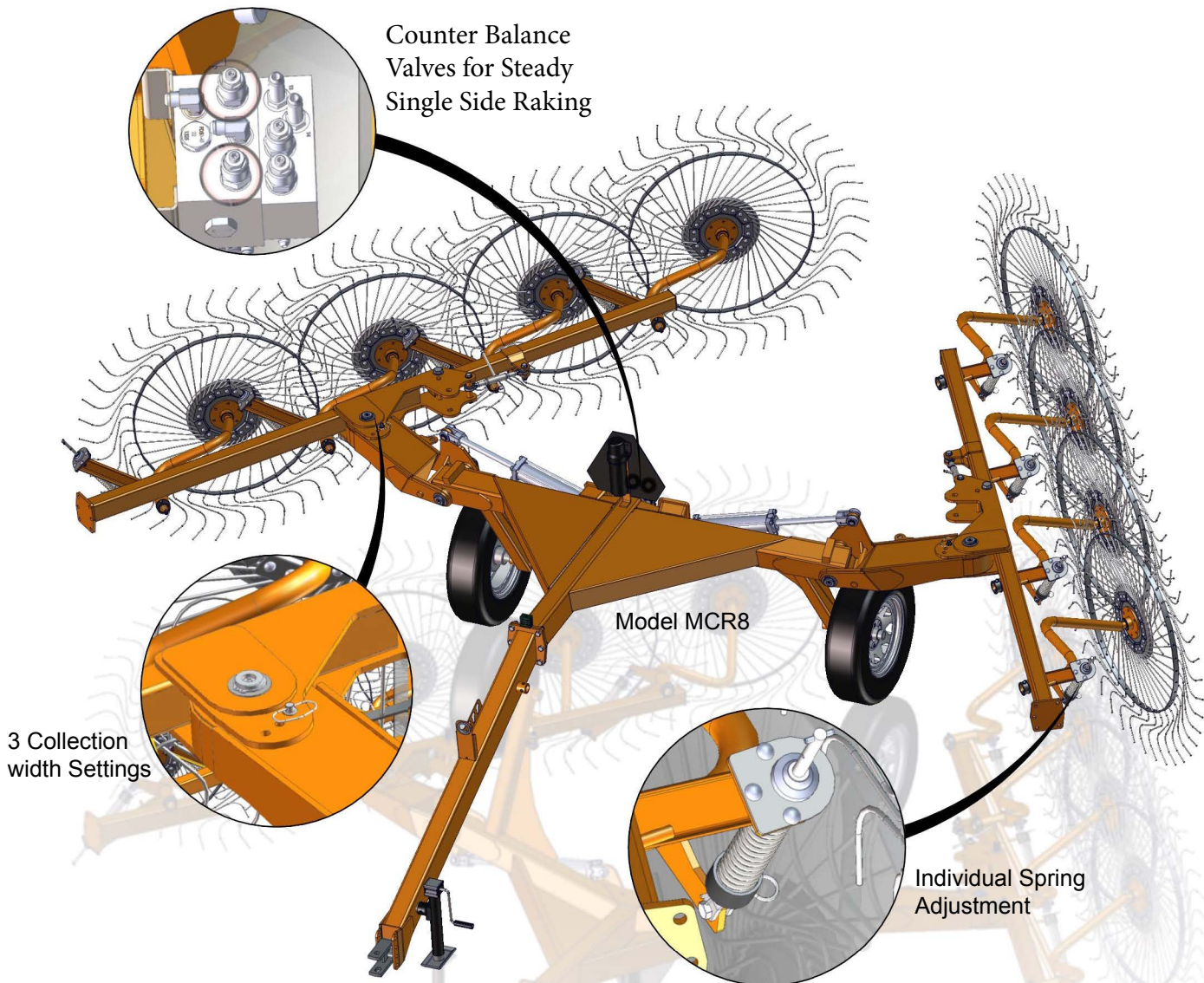




MidCap Rake

•MCR8 •MCR10 •MCR12

Operator's Manual



THIS MANUAL MUST BE READ AND UNDERSTOOD BEFORE ANYONE OPERATES THIS MACHINE!

Manual # 990128
Modified: 8/15/2013

YOU MUST FILL OUT YOUR WARRANTY REGISTRATION TO ACTIVATE YOUR WARRANTY AND TO QUALIFY FOR PARTS AND SERVICE!!

To the Owner;

Thank-You for choosing a quality MidCap Rake from Pequea Machine, Inc. We strive to give you the best equipment and the best level of service of any company. With a little care and maintenance this machine will do your work for you for many years. In this manual, we make an effort to get you better acquainted with the rake so you can achieve maximum performance. We design and build all of our equipment with the end user in mind so we welcome any suggestions or ideas for improvement.

Please take a few minutes to fill out the area below. This information will be valuable to you when ordering parts or requesting service from your dealer.

Dealer Name: _____

Dealer Phone Number: _____

Service Manager/Technician: _____

Model# and Description: _____

Serial Number: _____

Date of Purchase: _____

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Introduction

Thank-You for choosing the Pequea MidCapRake. Your rake is the result of years of research and development work. This Operator's Manual will familiarize the operator with the safety and operation of the machine. Included are complete instructions for assembly, operation, lubrication, and maintenance procedures. Understanding and following these procedures will result in years of maximum performance from your Pequea Rake.

Read entire manual before operating. Failure to follow the instructions outlined in this manual may result in personal injury and/or damaged equipment, and could void the warranty.

Rake Serial Number

The rake's serial number can be found near the front of the main frame of the machine. Please use this number when requesting service, seeking information, or ordering parts. For the operator's convenience, space to record the serial number, model number, purchase date, and dealer has been provided inside the front cover of this manual.



All pictures and instructions in this manual assume that the right and left side of the machine are that of someone standing behind the rake facing forward.

Specifications

Models	MCR8	MCR10	MCR12
Number of Wheels	8	10	12
Wheel Diameter	55"	55"	55"
Tines per wheel	40 - .273 (7mm) Dia.		
Rake Wheel Suspension	Individual compression spring (1 per arm)		
Rake Wheel Arms	Independent arms with greasable bushing		
Dimensions			
Overall Length, ft	21'	23'	25'
Transport Height, ft	8'3"	8'10"	9'5"
Transport Width, ft	12'2"		
Wheel Tread Width, ft	7'		
Tires	205/75 R15		
Working Width			
Minimum, ft	17	19	21
Maximum, ft	19	21	23
Windrow Width			
Minimum, ft	3		
Maximum, ft	5		
Tractor Requirements			
Pressure	1200-1400		

Safety



This symbol precedes specific safety instructions throughout this manual. When reading the manual pay close attention to the information that follows this symbol



FAILURE TO FOLLOW INSTRUCTIONS IN THIS MANUAL COULD RESULT IN PERSONAL INJURY OR DEATH. READ ENTIRE MANUAL BEFORE OPERATING THE RAKE.



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



Never allow anyone to ride on the rake or the tractor.



Be constantly aware of the location of the ends of the rake to avoid collision with other objects.



When transporting the machine on public roads use the proper reflectors, lights, and slow moving vehicle signs required by local government agencies.



Stop the tractor engine, remove ignition key, and allow all mechanisms to stop before cleaning, adjusting, or lubricating the machine.



Stay clear of the rake when raising or lowering the rake wheel beams to avoid injury from the rake tines.



Stay clear of hydraulic lines, they may be under extreme pressure or heat. Never go near a hydraulic leak until the pressure has been relieved and the leaking has stopped. A high pressure hydraulic leak can easily penetrate your skin and cause serious injury, gangrene or death.

We at Pequea Machine, Inc. try to provide safety shield and guards wherever possible, however, it is impossible to shield every area that could be dangerous. We will not be responsible for carelessness and misuse of any of our equipment.

Safety Continued

Safety Decals and Reflectors

Decals and reflectors are for the protection of yourself and others. If they are missing, faded, or not readable, get replacements from your dealer immediately.



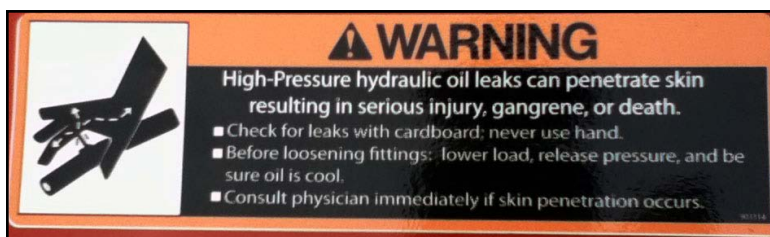
- There are two red and two yellow reflectors mounted on the Rake. (Part #'s 903112 (Red) 903121 (Yellow))



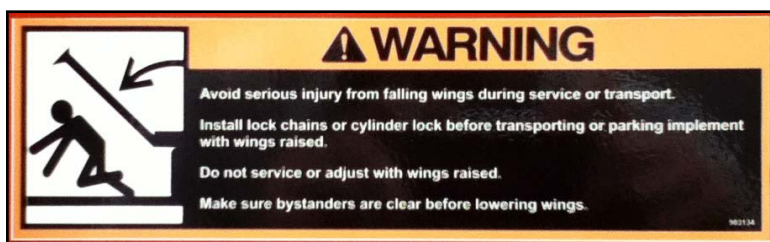
- Hitch can cause serious injuries from whipping up. Tractor must be properly balanced before detaching. (Part #903136)



- General guidelines to preventing serious injury start with reviewing the complete operator's manual. Each machine is labeled with safety precautions that should be reviewed before operation. (Part #903103)



- Pinch hazards are labeled with this pinch point warning label. This Rake has large moving parts that can cause serious injury if caught. (Part #903137)



- The MidCap Rake is equipped with hydraulic lines under high pressure, which can penetrate skin if there is a leak. (Part #903114)



- Avoid working under wheel beams until the rake is in full transport position. Falling beams can cause serious injury. (Part #903134)

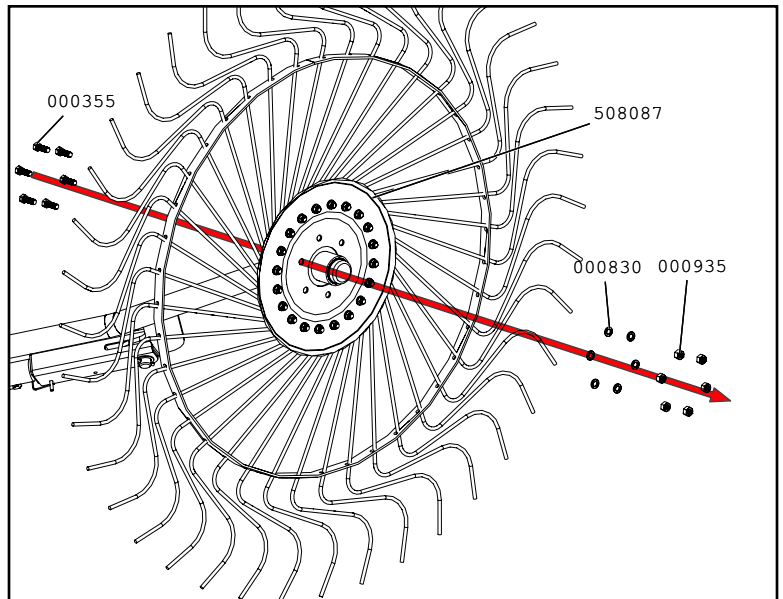
- transport should be done with a proper ballasted tractor at a minimum speed of 20 mph. (Part #903124)

Setup

Wheel Installation

Included with each MidCap Rake option are the rake wheels and hardware for that kit.

To install these wheels, insert the 7/16-14 x 1-1/4 Hex Head Bolts through the back of the hub and wheel. Secure each bolt with the 7/16 lock washers and nuts shown in the image to the right. All bolts should be secured with the proper torque pattern and setting. Torque settings can be found in the back of the manual.



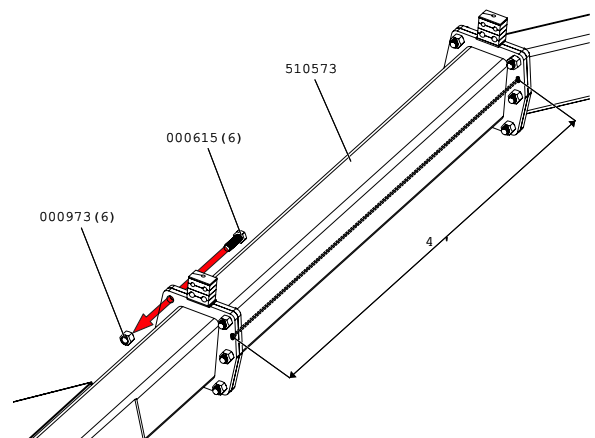
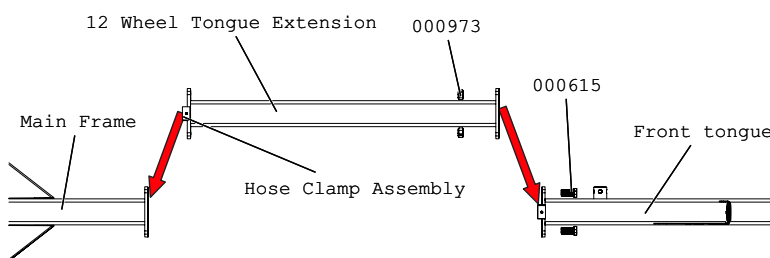
Tongue Extension

The 10 and 12 wheel versions of the MCR include a tongue extension. The tongue extension is used to balance out the rake due to the addition of the wheel extensions. The 10 wheel kit includes a 2 ft. extension and the 12 wheel includes a 4 ft. extension.

The insallation of the tongue extension begins by first removing the 6 bolts between the front tongue and the main frame. Use a sturdy prop to support the main frame, and remove the front tongue from the assembly.

- Notice the direction of the hose clamp bracket on the beam extension

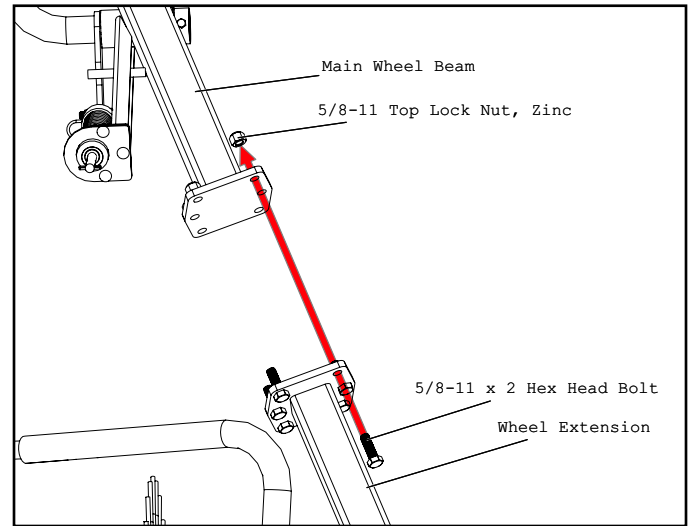
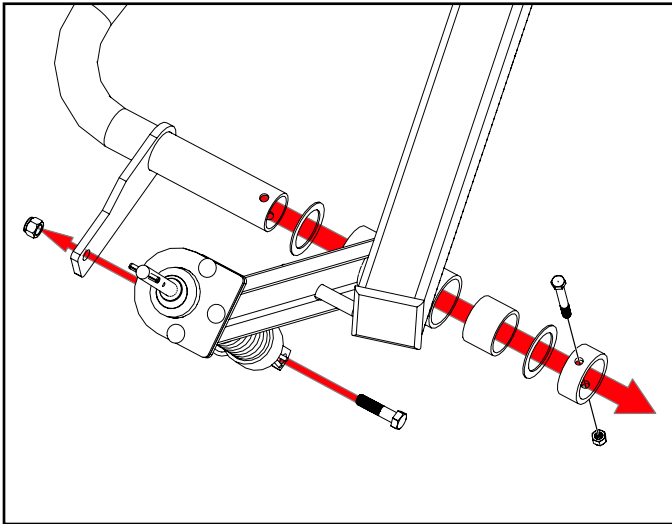
Once the front tongue is removed, the extension can be installed with the hardware provided with the kit. Please refer to torque settings at the end of this manual to prevent bolts from loosening or breaking.



Wheel Beam Extension

All 10 wheel and 12 wheel kits include the proper wheel beam extension. The 10 wheel kit includes a 2' beam with a single wheel and hardware for both the left and right wheel beams. The 12 wheel kit includes a 5' beam with 2 rake wheels and hardware for either side. The rake wheel mounts directly to the wheel arm as illustrated on page 4. The mounts to both the beam extension and the tension spring, as shown in the image below. The entire wheel beam assembly mounts to the front of each main wheel beam with a 6 bolt pattern.

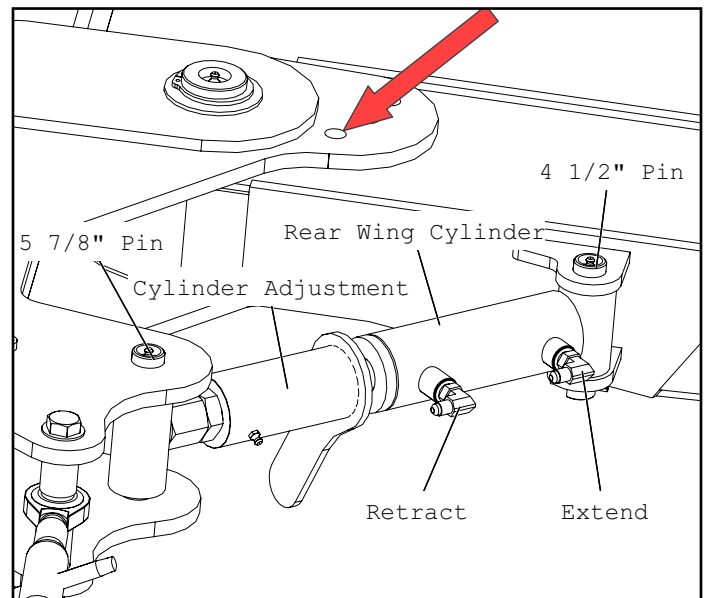
Note: All options are installed by the dealer



Hydraulic Beam Option

This rake has the option for a rear wing cylinder which is used to hydraulically adjust the windrow width. This option also comes with a manifold extension, fittings, and hose clamps. The manifold extension bolts to the existing manifold at each of the four corners. The cylinder itself connects to the main frame with a 4 1/2 inch pin and extends out to the main wheel beam and is held by a 5 7/8 inch pin.

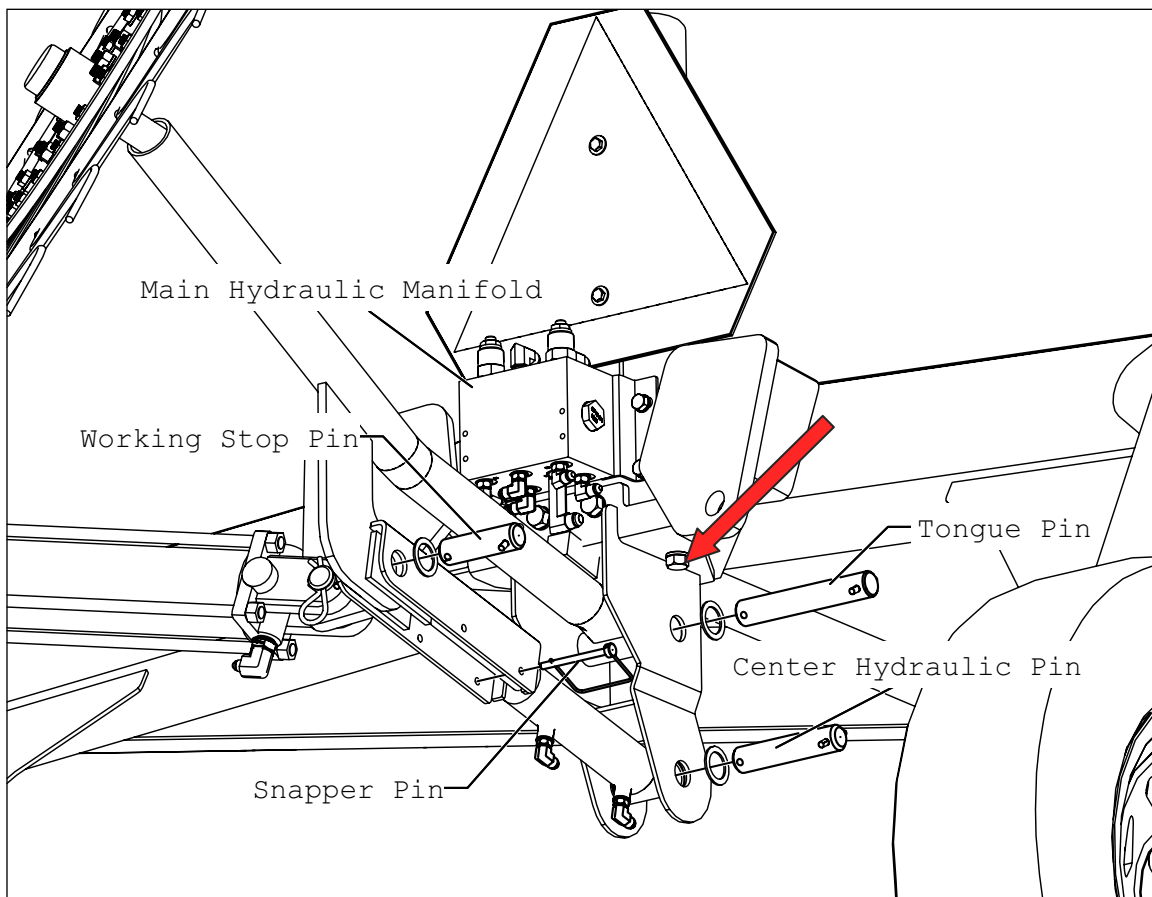
The threaded cylinder adjustment can be moved depending on the operator's needs. To do this, extend the cylinder until the wheel beams are at the desired position. Then, turn the cylinder adjustment and jam nut until the cylinder adjustment is against the base end of the cylinder. This adjustment will keep the wheel beams from changing positions during raking.



Kicker Wheel Option

A kicker wheel is designed to move the hay that lays below the center of the rake and does not get touched by the two main rake beams. If you are raking hay that is not completely dry and you do not use the kicker wheel the moisture will become trapped as the other hay is being thrown on top.

Pequea offers a kicker wheel attachment located on the back of the rake. The kit is mounted just underneath the manifold by 4 bolts (000405) supported by lock washers (000840) that thread into weldnuts located on the inside of the main frame. The hose attachments are located on the bottom of the main manifold, labeled K1 (extend) and K2 (retract). The extend connection on the cylinder is the port located at the base of the kicker wheel cylinder. There are 3 different sized pins that are included with this kit. There are one of each with the lengths of 3, 5, and 6 inches. The 3" pin connects the *working stop* and the upper cylinder mount to the kicker arm. The base cylinder mount is held by the 5" pin, located at the bottom right of the image below, labeled *center hydraulic pin*. The 6" pin connects the *tongue* of the kicker wheel arm to the upper hole on the kicker wheel mounting bracket. Each pin comes with 2 washers and 2 roll pins for either side of each pin. The snapper pin, shown below, is shifted to the right pin hole when the operator wishes to use the kicker wheel, and to the left pin hole when the operator wishes to lock out the kicker wheel.



Hitching



Check tires to make sure they are inflated to the correct pressure. Recommended pressure is written on the sidewall of the tire.

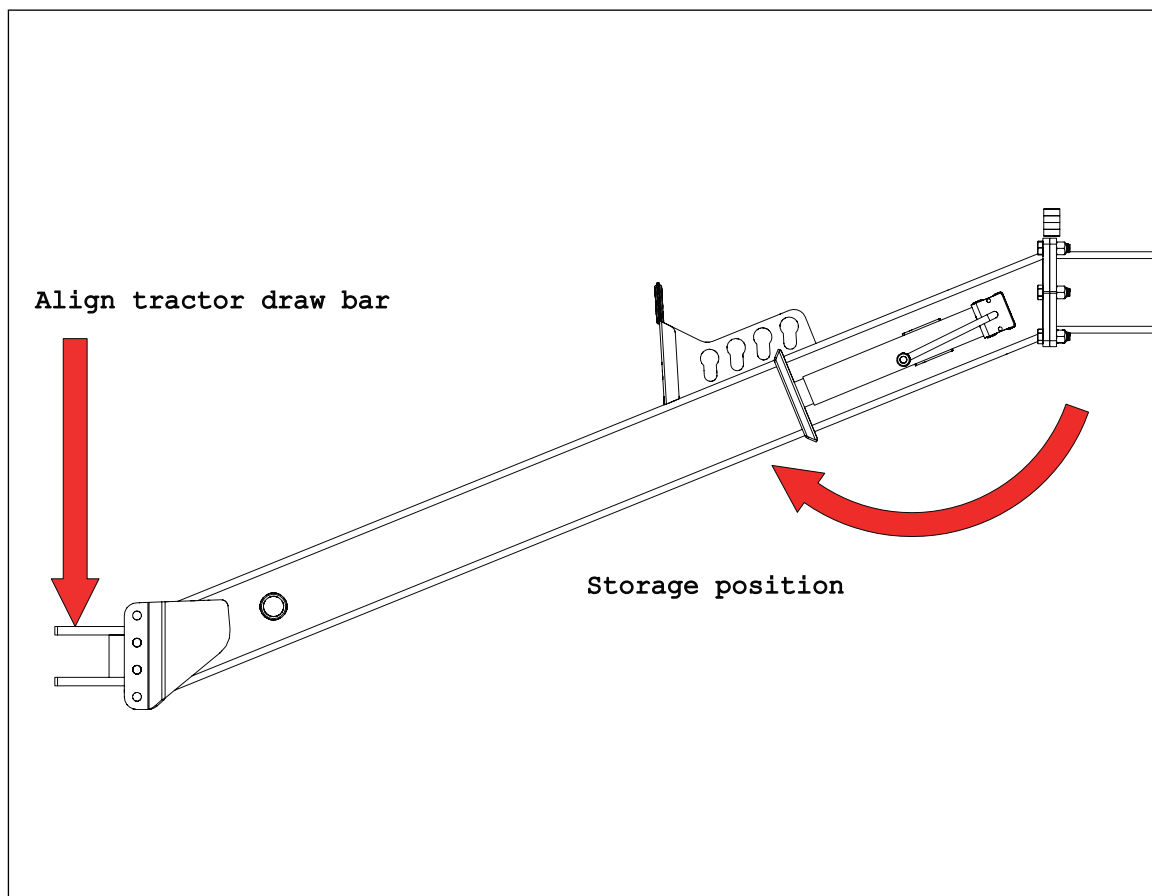


Check lug bolts. Bolts should be torqued to 65 - 75 ft. lbs.



Perform a quick visual check of all hardware on the rake. Vibrations from normal use can cause bolts to loosen, especially on new machinery.

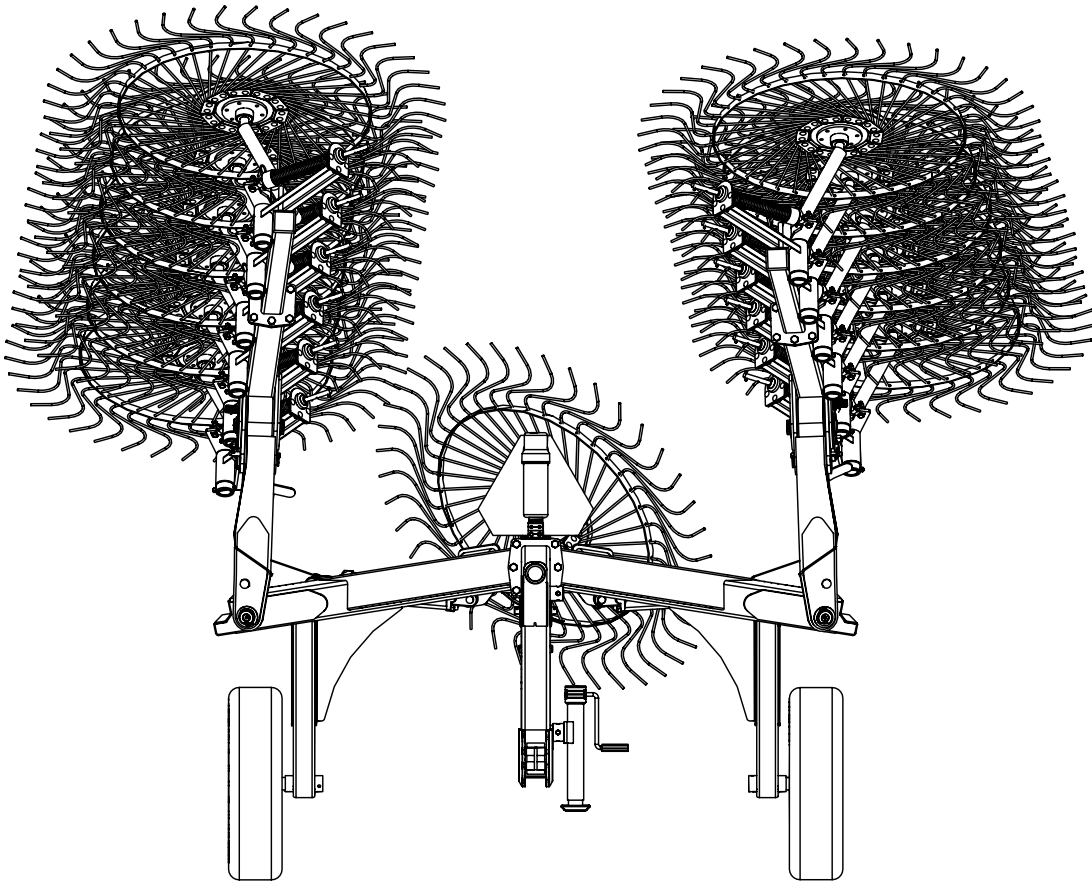
- Align the hole in the tractor draw bar with the hole in the rake tongue and insert an approved hitch pin. Lock the hitch pin with a safety clip to insure it cannot work its way out.
- Remove the jack from the hitch and place onto the storage position.
- Connect hydraulic hoses to a double acting valve on the tractor.



Transporting

Field Transport

- Never travel at speeds of more than 20 MPH
- Remain fully aware of the width of the rake in relation to the objects you are raking, especially along tree lines.
- Make sure all rake wheels are off the ground when not raking.



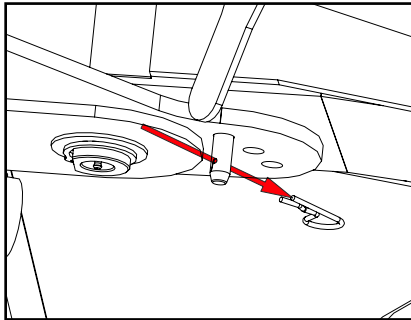
Road Transport

- Never travel at speeds of more than 20 MPH
- Remain fully aware of the width of the rake in relation to the objects you are passing, either stationary or moving.
- Make sure the rake wheels are up in the transport position and locked with chains (Figure 2) to keep the arms from falling down into traffic in case of a hydraulic failure.
- Follow all local regulations for moving agricultural equipment on public roads, especially those related to lights, reflectors, SMV (slow moving vehicle) symbols and safety markers
- Never travel on public roads at night. Your rake is not equipped with lights.

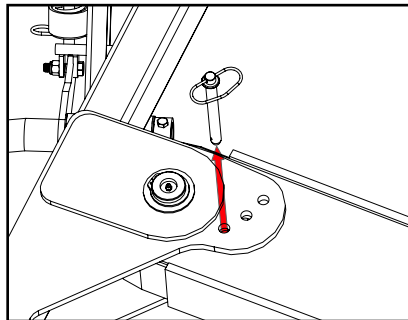
Field Adjustments

Rake Width Adjustment

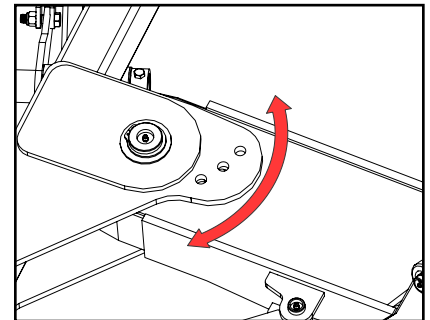
Step 1: Remove hairpin (Part #100216) from the hitch pin on the appropriate wheel Beam.



Step 2: Pull hitch pin (Part #510641) and fully remove from adjustment port.



Step 3: Rotate wheel beam to desired rake width setting. (See Chart Below)

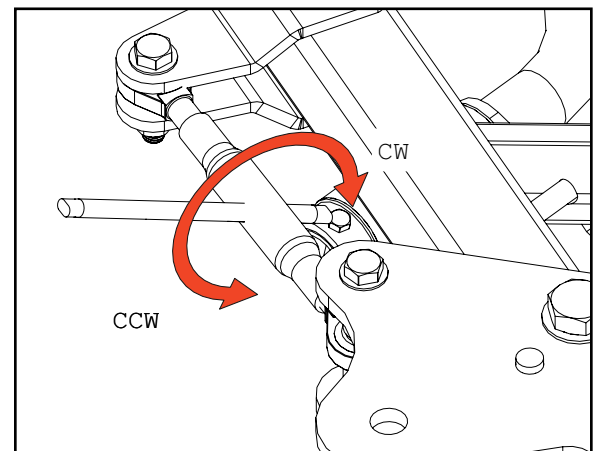


Rake Position Widths			
Rake Option	Position 1 (min)	Position 2	Position 3 (Max)
8 Wheel	17 ft	18 ft	19 ft
10 Wheel	19 ft	20 ft	21 ft
12 Wheel	21 ft	22 ft	23 ft

Windrow Width Adjustment

Windrow width can be adjusted to keep the desired width of the windrow when increasing or decreasing the collection width of the rake. The adjustment is made by turning the turnbuckle (part #505259) in a clockwise (Narrow) or counter clockwise (Wide) direction. The Range on the windrow width adjustment is from 3 feet to 5 feet.

Note: The minimum and maximum windrow width is the same for all versions of this rake.



Left Rear Extension (510535), left Main Beam (510532), 10" Turnbuckle (505259)

Spring Tension Adjustment

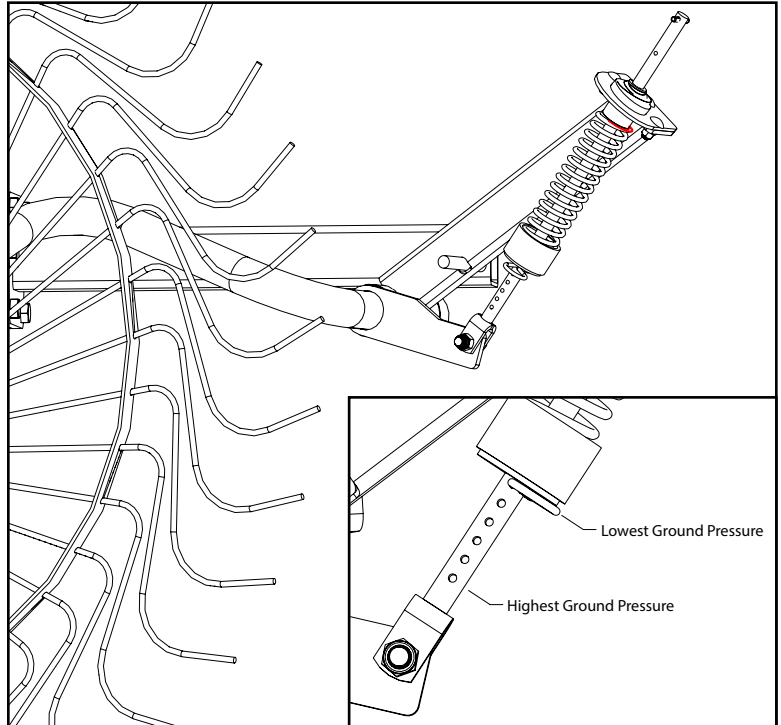
The new Pequea MidCap rakes are equipped with individual wheel springs for precise and customizable Wheel Ground tension. Spring Tension can be adjusted with three steps.

Step 1: Fold wheel beams into transport position to relieve tension on the spring.

Step 2: Remove the hair pin located at the base of the spring.

Step 3: Select proper adjustment hole for the desired ground tension and re-insert the hair pin.

Once the Hair pin is inserted the wheel can be lowered. Repeat the above three steps for the remaining wheels.

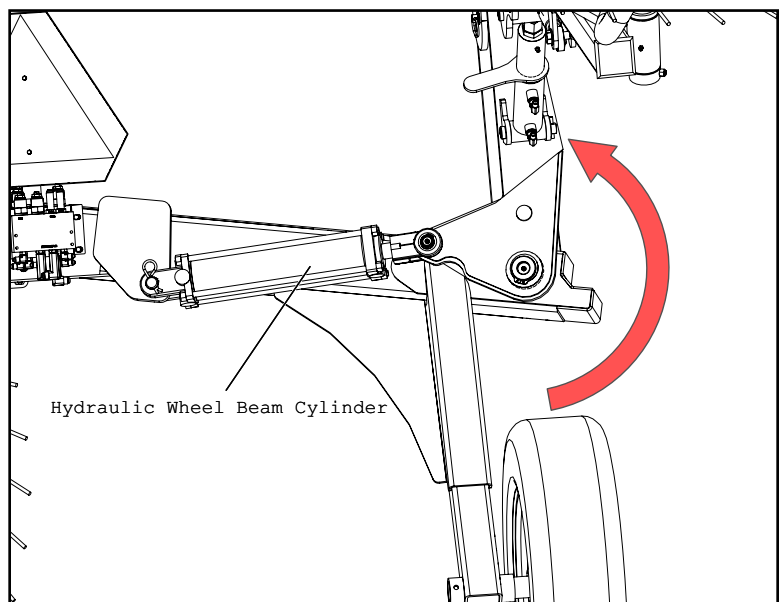


Wheel Beam Lift

The MidCap Rake is equipped with hydraulic cylinders to raise and lower the wheel beams. This rake comes standard with a manifold which contains a flow divider to ensure that both beams fold at the same time.

The MCR also has options for manual or electric single side lockout. To operate the manual control for the wheel beam, the operator must leave the tractor to raise and lower the wheel beams. The electric option allows the operator to control single side lockout from the tractor.

Note: The manual and electric control options are for single side lock out only.



Operating

Field Dangers



Check for proper assembly and adjustment and make sure that all bolts are tightened. Recheck all bolts after a few hours of operation as bolts can loosen up on new machinery. Check wheel lug bolts upon delivery and periodically thereafter.

Lower the rake arms into the raking position using the proper hydraulic controls. Once the wings are lowered to the ground, adjust the “V” to the desired raking width. If the rake is equipped with the hydraulic beam option, the raking width can be adjusted without leaving the tractor.



Keep bystanders and animals clear of the spreading wings. Serious injury can occur from being hit by either the rake wheels or the rake beam.

Begin raking at a low ground speed until you are comfortable with the rake and then increase your speed as desired. On good level ground you will be able to make a clean sweep at speeds up to 10MPH. If the fields are rough you will want to stay in the 5-8MPH range.

If you are raking a field that requires you to lift the wheels when you come to the end of a row, make sure the wheels are completely off the ground.

When raking a large volume of hay the hay may tend to “ball up” and clog up in the back of the rake as it exits the “V”. If this happens, you can engage the hydraulics momentarily to open up the back of the “V”. Keep driving until it unclogs and then close up the “V” again. This function is a Pequea exclusive and allows you to unclog the rake without getting off the tractor.

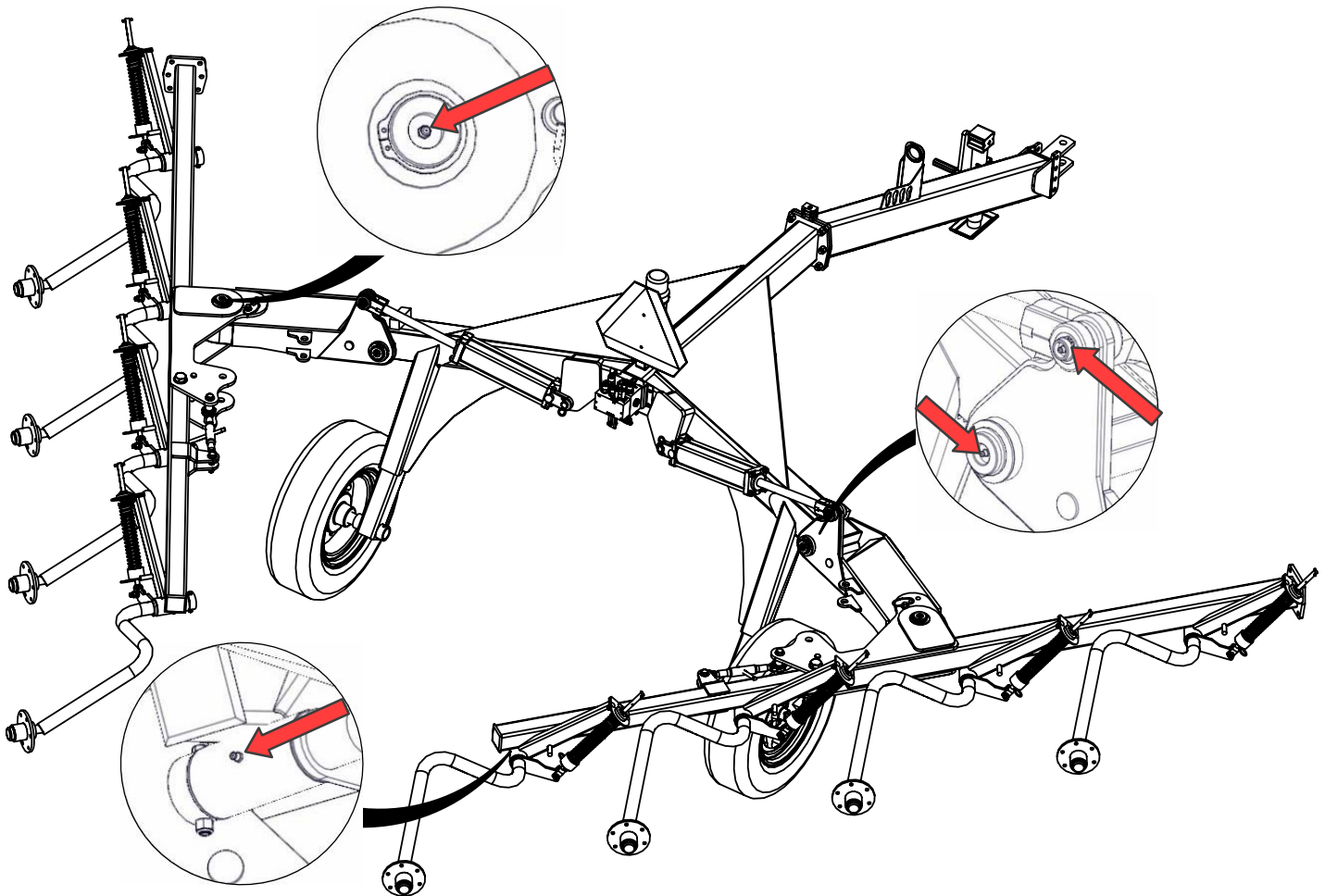
Lubrication

General Lubrication

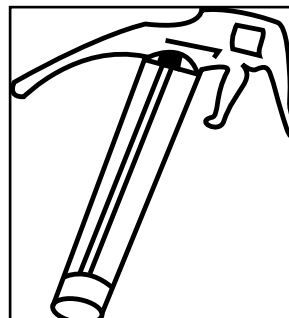
Proper lubrication on all the hinge points and bearings will greatly increase the life and the performance of the rake. This section shows the location of some of the grease fittings on the MidCap Rake. All of the grease points listed below should be greased daily during normal use and before and after storage and after power washing. On the sleeve type bearings, grease until it oozes out around the pivot shaft, then wipe off all excess grease to keep from collecting dust and chaff. Each rake has a grease fitting for each arm sleeve and at each area shown in the image below.

Transport wheel hubs should be repacked at the beginning of each season and checked periodically for optimal use and prolonged life.

Rake wheel hubs contain two tapered bearings which should be checked and cleaned periodically; as well as repacked at the beginning of each season.



Each lubrication point is marked with decal shown in the image to the right. Lubrication for each of these positions should be handled as stated above.



Torque Specifications

Shown below is the torque chart for U.S. standard bolt sizes. All hardware on the Pequea MidCap Rake should be tightened to these specs unless noted otherwise.

	GRADE 5 BOLTS		GRADE 8 BOLTS	
BOLT SIZE	TORQUE (DRY) FT. LBS.	LUBRICATED FT. LBS.	TORQUE (DRY) FT. LBS.	LUBRICATED FT. LBS.
1/4 20	8	6	12	9
1/4 28	10	7	14	10
5/16 20	17	13	24	18
5/16 24	19	14	27	20
3/8 16	30	23	45	35
3/8 24	35	25	50	35
7/16 14	50	35	70	50
7/16 20	55	40	80	60
1/2 13	75	55	110	80
1/2 20	85	65	120	90
9/16 12	110	80	150	110
9/16 18	120	90	170	130
5/8 11	150	110	210	160
5/8 18	170	130	240	180
3/4 10	260	200	380	280
3/4 16	300	220	420	310
7/8 9	430	320	600	450
7/8 14	470	350	670	500
1-8	640	480	910	680
1-14	720	540	1,020	760

Warranty

Pequea Machine's Limited Warranty

Pequea Machine Company warrants to the original Purchaser all Machinery, Equipment, or Trailers manufactured by it, to be free from defects in material and workmanship under normal use and service. Its obligation under this Warranty shall be limited to replacement or repair of any parts thereof, free of charge to the original Purchaser, at its place of business, provided, however, that the part(s) to be replaced or repaired, shall within one (1) year after delivery to the original Purchaser, be demonstrated to be defective; which determination shall be made by the Company. The said components or parts must be returned through the Selling dealer or distributor directly to the Company with all transportation charges prepaid. Notice of defect shall be furnished in writing to the Seller and to the agent through whom the machinery was received, disclosing in full all known defects and failure in operation and use, and reasonable time shall be given to the Seller to remedy any such defects and failures. Failure to make such trial or give such notice shall be deemed an absolute acceptance by the Buyer and satisfaction in full of this Limited Warranty.

This Warranty does not cover, under any circumstances, any parts, components, or materials which, in the opinion of the Seller and Company, have been subjected to neglect, misuse, alteration, accident, or if repaired, with parts other than those manufactured by and obtained from Pequea Machine Company.

This Warranty does not cover components which are already covered by a separate Warranty provided by the supplier of said parts or components.

The Company's obligation under this Warranty is limited to repair or replacement, free of charge to the original Purchaser, of any part which in judgment of the Company is defective. This Warranty does not cover normal wear and tear.

THIS WARRANTY IS MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR USE AND PURPOSE AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON ITS PART AND ANY IMPLIED WARRANTY. AND IT NEITHER ASSUMES NOR AUTHORIZES ANY OTHER LIABILITY IN CONNECTION WITH A SALE OF THIS MACHINE. THIS WARRANTY SHALL NOT APPLY TO THIS MACHINE OR TO ANY PART THEREOF WHICH HAS BEEN SUBJECT TO ACCIDENT, NEGLIGENCE, ALTERATION, ABUSE, OR MISUSE.

The Company makes no Warranty whatsoever in respect to accessories or parts not supplied by the Company. The term "original Purchaser" as used in this warranty, shall be deemed that person for whom the Machine, Equipment, or Trailer is originally supplied. This Warranty shall apply only within the boundaries of the continental United States.

Under this Warranty, the Company cannot guarantee that existing conditions beyond its control will not affect its ability to obtain materials or manufacture necessary replacement parts.

No one is authorized to alter, modify, or change the terms of this Warranty in any manner.

The Company warrants the Construction of the equipment sold herein and will replace at its expense for a period of (1) year from the date hereof, any parts which prove defective as determined under the terms of this Limited Warranty.

Notes
