



REDDI-ARM

10 SERIES

OPERATORS MANUAL

LIMITED WARRANTY:

Mandako Agri Marketing (2010) Ltd. ("MANDAKO") warrants for a period of one (1) year from the date of delivery to the purchaser that any new machinery purchased from MANDAKO (the "Product") will be free of manufacturing and materials defects (the "Covered Defects"). Before using the Product, the purchaser shall determine the suitability of the Product for its intended use. This Limited Warranty is non-transferable and valid to the purchaser of the Product only.

Except for the Covered Defects, this Limited Warranty shall not apply to any other defects or problems in the Product, including without limitation: (i) alterations, changes, replacements or repairs to the Product made by anyone other than MANDAKO or MANDAKO authorized Dealers; (ii) accessories, attachments, tools or parts sold or operated with the Product, if they have not been manufactured by MANDAKO; (iii) application or installation of accessories, attachments, tools or parts not completed in accordance with MANDAKO's operator's manual, specifications or printed instructions; (iv) defects or problems caused by misuse, abuse, neglect, improper testing, improper storage, improper handling or abnormal conditions; and (v) defects caused by wear and tear from ordinary use of the Product.

During the one (1) year warranty period, provided that written notice of the Covered Defects is given to MANDAKO within seven (7) days from the date that the defect was, or ought to have been, discovered, the liability of MANDAKO under this Limited Warranty shall be limited to the repair or replacement of any defective Product. For clarity, the purchaser shall be responsible for all expenses incurred as a result of any repairs, labour, parts, transportation or any other work, unless MANDAKO has otherwise authorized reimbursement of such expenses. In order to obtain repair or replacement, the written notice provided by the purchaser must contain full details of the Covered Defects and submitted online at www.mandako.com/warranty-claim or be sent to:

Mandako
Box 379, 12159B, Hwy 306
Plum Coulee, Manitoba, R0G 1R0

MANDAKO reserves the right to inspect the defective Product prior to repair or replacement. If MANDAKO determines that a defect in the Product is not a Covered Defect, it shall not have any obligation to repair or replace the Product.

No one is authorized to make oral warranties or representations on behalf of MANDAKO regarding the Product. The Product is subject to design changes and MANDAKO shall not be required to retro-fit or exchange items on previously sold Product, except at its own option.

THIS LIMITED WARRANTY IS DEEMED ACCEPTED BY YOU UPON YOUR PURCHASE OF THE PRODUCT. TO THE EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY IS EXCLUSIVE, AND IN LIEU OF ANY AND ALL OTHER WARRANTIES, CONDITIONS OR REPRESENTATIONS RESPECTING THE PRODUCT, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, SUITABILITY, OR ANY OTHER WARRANTIES, REPRESENTATIONS OR CONDITIONS THAT MAY ARISE FROM USAGE OF TRADE OR COURSE OF DEALING.

MANDAKO'S OBLIGATION SHALL NOT EXTEND BEYOND THE OBLIGATIONS EXPRESSLY UNDERTAKEN ABOVE AND IN NO EVENT SHALL MANDAKO OR ITS SUPPLIERS, AGENTS, OFFICERS, DIRECTORS, CONTRACTORS AND EMPLOYEES BE LIABLE TO THE PURCHASER OR ANY THIRD PARTY FOR ANY INDIRECT, PUNITIVE, EXEMPLARY, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OR LOSSES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS, LOSS OF PROFITS OR SALES, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION OR ANY OTHER PECUNIARY LOSS OR COMMERCIAL DAMAGE OR LOSS) ARISING FROM ANY CLAIM WHATSOEVER, INCLUDING ANY TORT, EQUITY, NEGLIGENCE, GROSS NEGLIGENCE, WILFUL MISCONDUCT OR STRICT LIABILITY CLAIM, EVEN IF MANDAKO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSSES OR THEY ARE FORESEEABLE. THE PURCHASER WAIVES ANY CLAIM AGAINST MANDAKO FOR PUNITIVE OR EXEMPLARY DAMAGES.

**WARRANTY VOID IF NOT REGISTERED
PLEASE REGISTER AT www.mandako.com/registration**

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SECTION 1: INTRODUCTION

Congratulations on your choice of a Mandako Reddi-Arm. This equipment has been designed and manufactured to meet the needs of your operation.

Safe, efficient, and trouble free operation of your Mandako Reddi-Arm requires that you and anyone else who will be using or maintaining the Reddi-Arm, read and understand the safety, operation, maintenance, and troubleshooting information contained within this manual.

This manual covers the Mandako Reddi-Arm. Keep this manual handy for frequent reference and to pass along to new operators or owners. Call your Mandako dealer if you need assistance, information or additional copies of the manual.

NOTE:

The directions left, right, front and rear - as mentioned throughout this manual - are as seen from the tractor driver's seat and facing in the direction of travel.

1.1 SERIAL NUMBER LOCATION



Fig. 1 Model/Serial Number Location

Always give your dealer the serial number of your Reddi-Arm when ordering parts or requesting service or other information

The serial number plate location is indicated in Fig. 1. Please mark the number in the space provided for easy reference.

Model Number _____

Serial Number _____

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SECTION 2: SAFETY

Why is SAFETY important to you?

3 Big Reasons:

- ▲ Accidents Disable and Kill
- ▲ Accidents Cost
- ▲ Accidents Can Be Avoided

This Safety Alert symbol means:
ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the Reddi-Arm and in this manual.

When you see this symbol, be alert to the possibility of personal injury or death.

Follow the instructions in the safety message.

SIGNAL WORDS:

Note the use of the signal words DANGER, WARNING, CAUTION and ATTENTION along with the accompanying safety messages. The appropriate signal word for each message has been selected using the following guidelines:

DANGER

DANGER - Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING

WARNING - Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

It identifies hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION

CAUTION - Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

It may also be used to alert against unsafe practices.

ATTENTION

ATTENTION - Indicates practices or situations which may result in the malfunction of, or damage to, the equipment.

2.1 SAFETY ORIENTATION

You are responsible for the SAFE operation and maintenance of your Mandako Reddi-Arm. Ensure that you and anyone else who will use, maintain or work around the Reddi-Arm be familiar with the Safety, Operating and Maintenance procedures in this manual.

This manual will take you step-by-step through your working day and alert you to all good safety practices that should be used while operating the Reddi-Arm.

Remember, you are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that everyone using this equipment follows all safety precautions, as well as the detailed operating and maintenance procedures.

Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices:

- Reddi-Arm owners must give operating instructions to operators or employees before allowing them to operate the machine, and review annually thereafter.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow them. Most accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to use the machine. An untrained operator exposes himself and bystanders to the possibility of serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

2.2 GENERAL SAFETY

- Read and understand the Operator's Manual and all safety signs before using, maintaining, adjusting or cleaning the Reddi-Arm.



- Have a first-aid kit available for use should the need arise and know how to use it.



- Have a fire extinguisher available for use should the need arise and know how to use it.

- Do not allow riders.

- Wear appropriate protective gear. This list includes but is not limited to:

- Hard hat
- Protective shoes with slip resistant soles
- Protective glasses, goggles or face shield
- Heavy gloves
- Hearing Protection



- Install and secure all guards before starting.

- Wear suitable ear protection for prolonged exposure to excessive noise.





- Lower machine to ground, place all controls in neutral, set park brake, stop engine, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.

- Clear the area of people, especially small children, before operating the unit.

- Review safety related items annually with all personnel who will be operating or maintaining the Reddi-Arm.

2.3 EQUIPMENT SAFETY GUIDELINES

- Safety of the operator and bystanders is one of the main concerns in the design and development of equipment. However, every year many accidents occur, which could have been avoided, by a few seconds of thought and a more careful approach to handling equipment.
- You, the operator, can avoid many accidents by following the precautions in this section. Insist that those working with you, or for you, follow them also.
- In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. Equipment should never be used in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use. 
- Replace any safety or instructional signs that are missing or illegible. The location of these safety signs are indicated in this manual.
- Never use alcoholic beverages or drugs which can hinder alertness or coordination while using this equipment. Consult your doctor about using this machine while taking prescription medications.
- Under no circumstances should young children be allowed to work with this equipment.
- The operator should be a responsible, properly trained and physically able person. They should be familiar with machinery and trained in this equipment's operations.
- If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
- If the tow vehicle is a tractor, it should be equipped with a Roll Over Protective Structure (ROPS) and a seat belt. 
- Never exceed the limits of the Reddi Arm if its ability to do a job, or to do so safely, is in question - DON'T TRY IT.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and life of the equipment, and may result in serious injury or death.

2.4 SAFETY DECALS

2.4.1 General Information:

- Keep safety decals clean and legible at all times.
- Replace decals that are missing or have become illegible.
- Replaced parts that displayed a safety decal should also display the current sign.
- Safety decals displayed in Section 2.13 each have a part number located below the sign. Use this part number when ordering replacements.
- Safety decals are available from your authorized Distributor or Dealer Parts Department.


NOTE:

Call Mandako directly if you are unfamiliar with who your local dealer/distributor is.




2.4.2 How to Install Safety Decals:

1. Be sure that the installation area is clean and dry.
2. Be sure temperature is above 50°F (10°C).
3. Determine exact position before you remove the paper backing. (See Section 2.13)
4. Remove the smallest portion of the split backing.
5. Align the decal over the specified area and carefully press the small portion with the exposed adhesive in place.
6. Slowly peel back the remaining paper and carefully smooth the rest of the decal in place.
7. Small air pockets can be pierced with a pin and smoothed out using the piece of the paper backing.

2.5 SAFETY TRAINING


- Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander. 
- Accident prevention and identifying hazards are dependent upon the proper training of personnel. Their awareness, concern, and common sense are crucial when involved with the operation, transport, maintenance and storage of the equipment.
- Working with unfamiliar equipment can lead to careless injuries. Read this manual to become acquainted with the machine.
- Whether the machine owner is the operator, loans or rents it out, it is their responsibility to make certain that the borrower reads and understands the operator's manuals.
- Know your controls, how to stop the tow unit, the engine, and machine quickly in an emergency.
- Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will use the machinery.
- A person who has not read and understood all operating and safety instructions is not qualified to use the machine. An untrained operator exposes himself and bystanders to the possibility of serious injury or death.
- If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.

2.6 PREPARATION

- Never use the mower until you have read this Manual, and the mower and power unit's Operator's Manual. Take note of each Safety Message found on the safety decals on the Reddi Arm, mower, and power unit. 
- Personal protective equipment including a hard hat, safety glasses, safety shoes, and gloves are recommended during assembly or installation, operation, adjustment, maintaining or repairing, cleaning or moving the unit. 
- Do not allow long hair, loose fitting clothing, or jewelry to be around equipment.
- **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**
- Power equipment with or without equipment attached can often be noisy enough to cause permanent or partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80db. 
- Noise over 85db on a long-term basis can cause severe hearing loss. Noise over 90db adjacent to the Operator over a long-term basis may cause permanent, total hearing loss.

NOTE:

Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery.

- When towing with a tractor, use only with a tractor equipped with an approved Roll-Over-Protective-Structure (ROPS). Always wear a seat belt. Serious injury or even death could result from falling off the tractor. If a roll-over occurs, the operator could be pinned under the ROPS or inside the tractor. 


- Clear working area of stones, branches, or hidden obstacles that might be hooked or snagged, causing damage or injury.
- Be sure the Reddi-Arm is properly attached, adjusted, and in good operating condition.
- Ensure that all safety shielding and safety decals are properly installed and in good condition.

2.7 OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before using. Review safety instructions annually.
- Place all controls in neutral, stop engine, set park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
- Install and secure all guards and shields before starting or operating.
- Keep hands, feet, hair, and clothing away from all moving and/or rotating parts.
- Do not allow riders on the Reddi Arm, mower, or tractor during operation or transporting.
- Clear the area of all bystanders, especially children, before starting.
- Stay away from mower when raising or lowering wings. Keep others away.
- Clean reflectors, SMV (Slow Moving Vehicle) emblem and lights before transporting. Be sure you are in compliance with all federal and local regulations regarding transport of equipment on public roads and highways.
- Do not exceed a safe travel speed.
- Use hazard flasher on tractor when transporting.
- Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are in good condition.
- Center machine and install frame lock pin before transporting or storing.

- Fold wings (if applicable) and install transport lock pins and retainers before transporting.
- Attach securely to tractor and mower using hardened pins with retainers.
- Do not drink and drive.

2.8 TIRE SAFETY

- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. 
- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Have a qualified tire dealer or repair service perform required tire maintenance.
- When replacing worn tires, make sure they meet the original tire specifications. Never under-size.

2.9 STORAGE SAFETY

- Store the unit in an area away from human activity.
- Do not allow children to play on or around the stored machine.
- Store the unit in a dry, level area. Support the frame with planks if required.
- Center machine and install frame lock pin before storing.

2.10 MAINTENANCE SAFETY

- Good maintenance is your responsibility. Poor maintenance is an invitation for trouble.
- Follow good shop practices.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- Place all controls in neutral, stop engine, set the park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
- Place stand or blocks under the frame before working beneath the machine or when changing tires.
- Always use personal protective equipment such as safety glasses, gloves, and hearing protection, when performing any service or maintenance work.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Relieve pressure on the hydraulic system before servicing or connecting/disconnecting from tractor.
- Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are in good condition.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.





2.11 HYDRAULIC SAFETY

- Always place all tractor hydraulic controls in neutral before dismounting.
- Make sure that all components in the hydraulic system are kept in good condition and are clean.
- Replace any worn, cut, abraded, flattened, or crimped hoses and steel lines.
- Relieve pressure from hydraulic circuit before servicing or unhooking from tractor.
- Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps, or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
- Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
- If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
- Before applying pressure to the system, make sure all components are tight and that lines, hoses, and couplings are in good condition.



2.12 TRANSPORT SAFETY

- Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the Reddi-Arm in the field and/or on the road. 
- Maintain wheel bolts to specified torque.
- Check with local authorities regarding Reddi-Arm transport on public roads. Obey all applicable laws and regulations.
- Always travel at a safe speed. Use caution when making corners or meeting traffic.
- Clean reflectors, SMV (Slow Moving Vehicle) emblem, and all the lights before transporting. Be sure you are in compliance with all federal and local regulations regarding transport of equipment on public roads and highways. 
- Install additional lights on the rear of the machine to safeguard against rear end collisions. Daybreak and dusk are particularly dangerous and pilot vehicles are recommended.
- Center machine and install frame lock pin before transporting and storing.
- Be sure that the machine is securely hitched to the towing vehicle and a retainer is used through the mounting pins.
- Raise wings (if applicable) and install transport lock pins and retainers before transporting.
- Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the shoulder of the road, if permitted by law.
- Do not exceed 32 km/h (20 mph) on highway transport. Reduce speed on rough roads and surfaces.
- Always use hazard warning flashers on tractor when transporting unless prohibited by law.
- Do not drink and drive.

2.13 PTO SAFETY

- Place all controls in neutral, set park brake, stop engine, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, cleaning, or unplugging.
- Make sure everyone is clear of machinery before engaging the PTO.
- Keep all PTO shielding in place.
- Repair or replace damaged or missing shields.
- Stay away from moving parts. Keep others away.
- Do not wear work clothing with loose ends or strings to catch on or to be caught by machinery.
- Keep long hair under a cap or tied back to prevent it from being caught by the machinery.
- Keep all people away from equipment (especially small children).
- Stop PTO when dismounting from tractor.
- Do not use PTO shaft if guard is damaged or missing.
- Do not use if shaft doesn't telescope easily or guard doesn't turn freely on the shaft.
- Attach anchor chains to frame on both ends of guard before operating.



2.14 SAFETY DECAL LOCATIONS

The various safety decals, and their locations on the equipment are shown in the illustrations to follow.



Good safety practices require familiarizing yourself with the decals. Read the warning messages, and note the area, or particular function related to that area, that the decal highlights.

If safety decals have been damaged, removed, become illegible, or replacement parts do not have the decal, new ones must be applied. Safety decals are available from your authorized dealer.

Mandako reserves the right to update safety decals without notice. Safety decals may not be to scale or exactly as shown.

 WARNING	
<p>TO PREVENT SERIOUS INJURY OR DEATH:</p> <ul style="list-style-type: none"> - Read and understand the Operator's Manual and all safety signs before using. Review safety instructions annually. - Place all controls in neutral, stop tractor engine, set park brake and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging implement. - Install and secure all guards and shields before starting or operating. - Keep hands, feet, hair and clothing away from all moving and / or rotating parts. - Do not allow riders on the implement or tractor during operation or transportation. - Stay away from all extending or folding frames and components. Keep others away. - Ensure reflectors, SMV and lights are clean and visible before transporting. Be sure lights are working. 	<ul style="list-style-type: none"> - Stay away from overhead power lines when folding or extending frames and components. Electrocutation can occur without direct contact. - Attach to towing unit securely using a hardened pin with retainer and a safety chain. - Do not exceed a safe travel speed. - Use hazard flashers on tractor when transporting. - Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are in good condition. - When repairing or servicing implement, refer to Operator's Manual. <div style="text-align: right; margin-top: 20px;">  </div>
R9913114	

Part No. R9913114 (A)

 DANGER	
	<p style="margin: 0;">ROTATING DRIVELINE</p> <p style="margin: 0; font-weight: bold;">CONTACT CAN CAUSE SERIOUS INJURY OR DEATH</p> <p style="margin: 0; font-weight: bold;">KEEP AWAY!</p> <ul style="list-style-type: none"> - Ensure driveline and shields are attached securely. - Ensure driveline guards turn freely on driveline.
R9913095	

Part No. R9913095 (B)

Remember - Safety Decals are for your protection! If they have been damaged, removed, become illegible, or replacement parts do not have the decal; new ones must be applied. Safety decals are available from your authorized dealer.



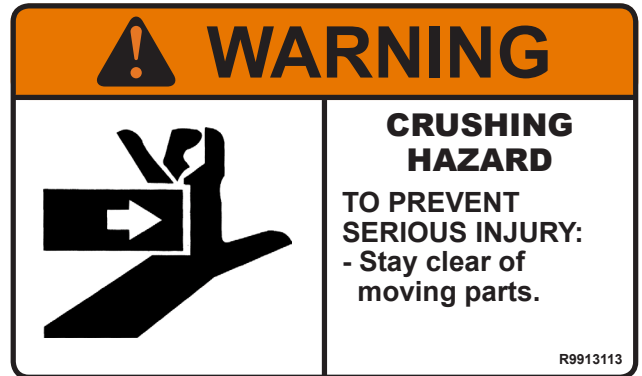
Part No. R9913073 (C)



Part No. R9913103 (D)

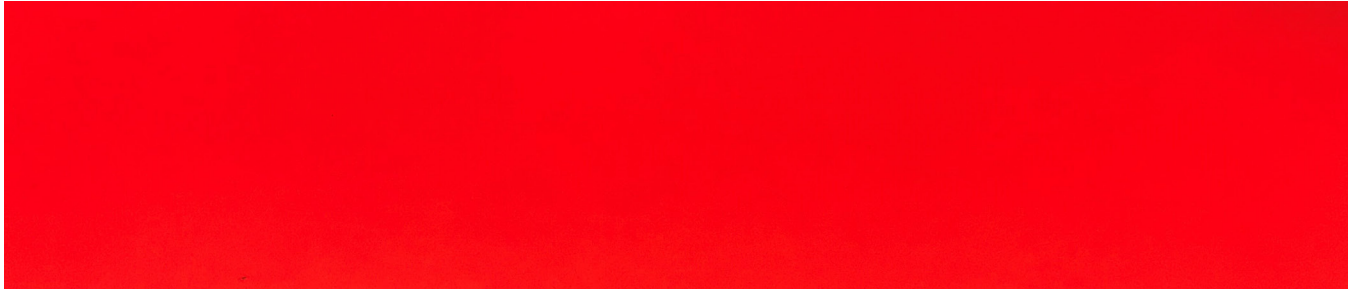


Part No. R9913110 (E)



Part No. R9913113 (F)

Remember - Safety Decals are for your protection! If they have been damaged, removed, become illegible, or replacement parts do not have the decal; new ones must be applied. Safety decals are available from your authorized dealer.



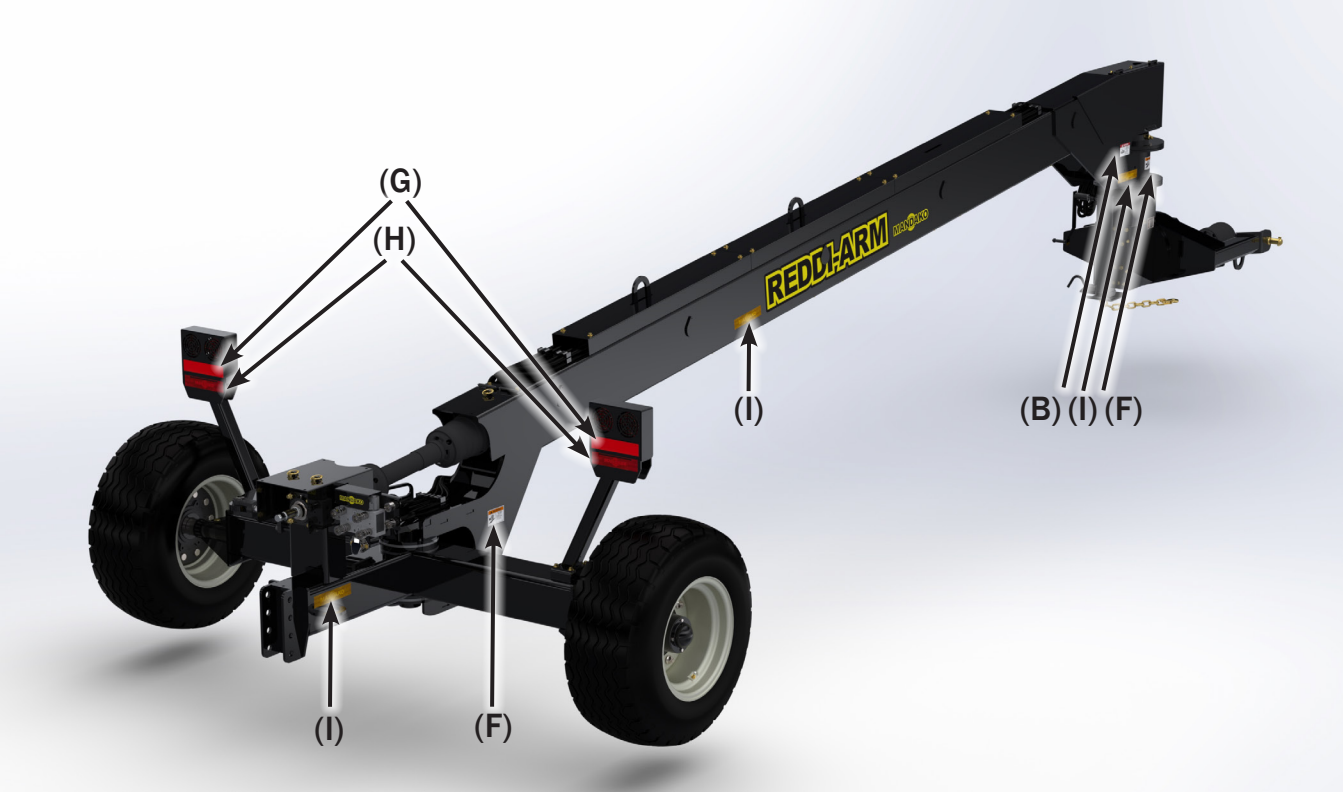
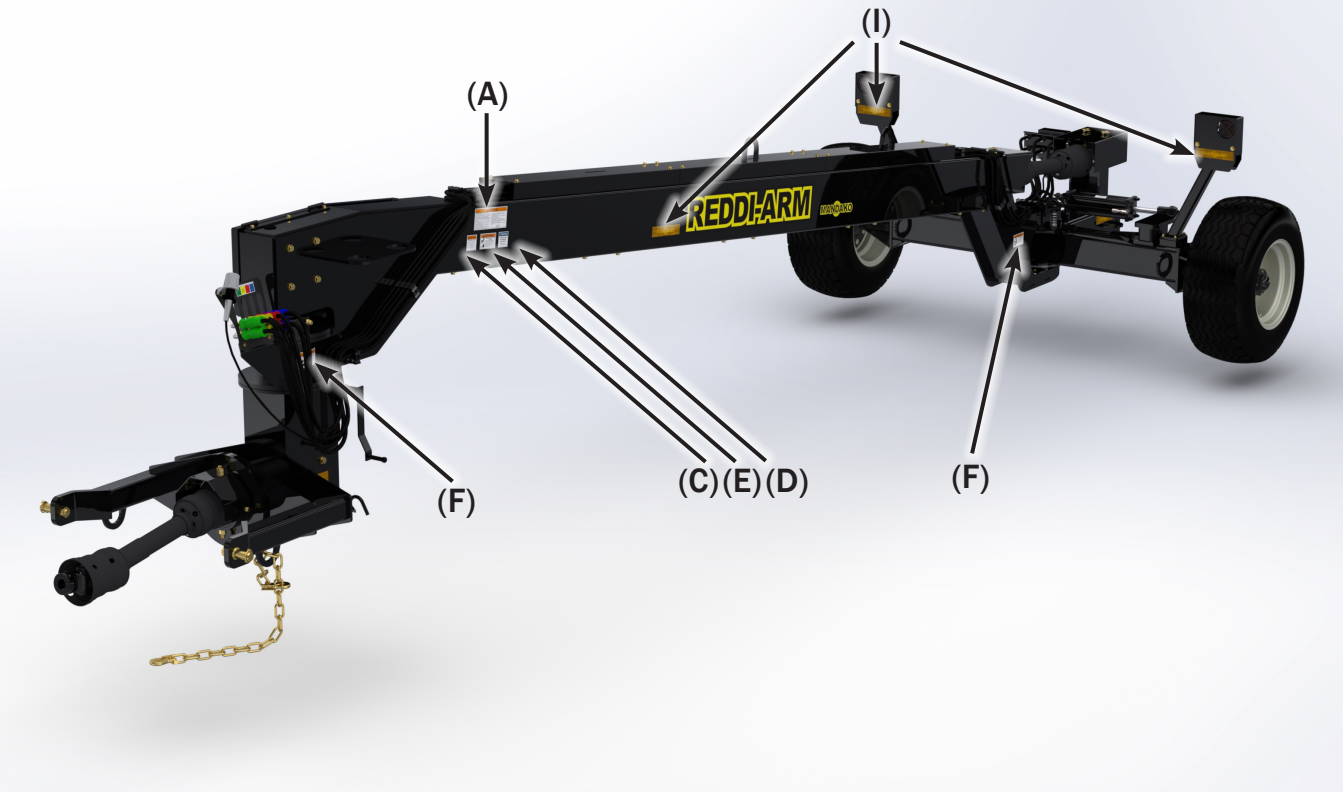
Part No. R9913004 (G)



Part No. R9913002 (H)



Part No. R9913003 (I)



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SECTION 3: OPERATION

-
- Read and understand the Operator's Manual for all machines and all safety signs before using. Review safety instructions annually.
 - Place all controls in neutral, stop engine, set park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, unplugging, or disconnecting.
 - Install and secure all guards and shields before starting or operating.
 - Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
 - Do not allow riders on the Reddi-Arm, mower or tractor during operation or transporting.
 - Clear the area of all bystanders, especially children, before starting.
 - Stay away from mower when raising or lowering wings. Keep others away.
 - Clean reflectors, SMV (Slow Moving Vehicle) emblem and lights before transporting. Be sure you are in compliance with all federal and local regulations regarding transport of equipment on public roads and highways.
 - Do not exceed a safe travel speed.
 - Use hazard flasher on tractor when transporting.
 - Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses, and couplings are in good condition.
 - Center machine and install frame lock pin before transporting or storing.
 - Fold wings (if applicable) and install transport lock pins and retainers before transporting.
 - Attach securely to tractor and mower using hardened pins and retainers.
 - Do not drive impaired.

It is the responsibility of the owner and operator to read this manual. They must also train all others before starting to work with the machine. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site.

Many features incorporated into this machine are the result of suggestions made by customers like you.

This manual will describe how to set the Reddi-Arm to provide maximum field efficiency. By following the operating instructions in conjunction with a good maintenance program, your Reddi-Arm will provide many years of trouble-free service.

3.1 MACHINE COMPONENTS

The Mandako Reddi-Arm acts as a link between a tractor and a rotary mower giving the operator a greater reach without putting themselves in unsafe positions. The Mandako Reddi-Arm is made up of three main components: hook-up component, main frame, and rear axle.

A mower is attached to the back of the frame to cut the grass on either side of the tractor. Rotational power to the mower is provided by the tractor PTO into 2 right angle gearboxes and across the top of the frame to the mower attached to the back. Flanged bearings support the drive shaft along the frame.

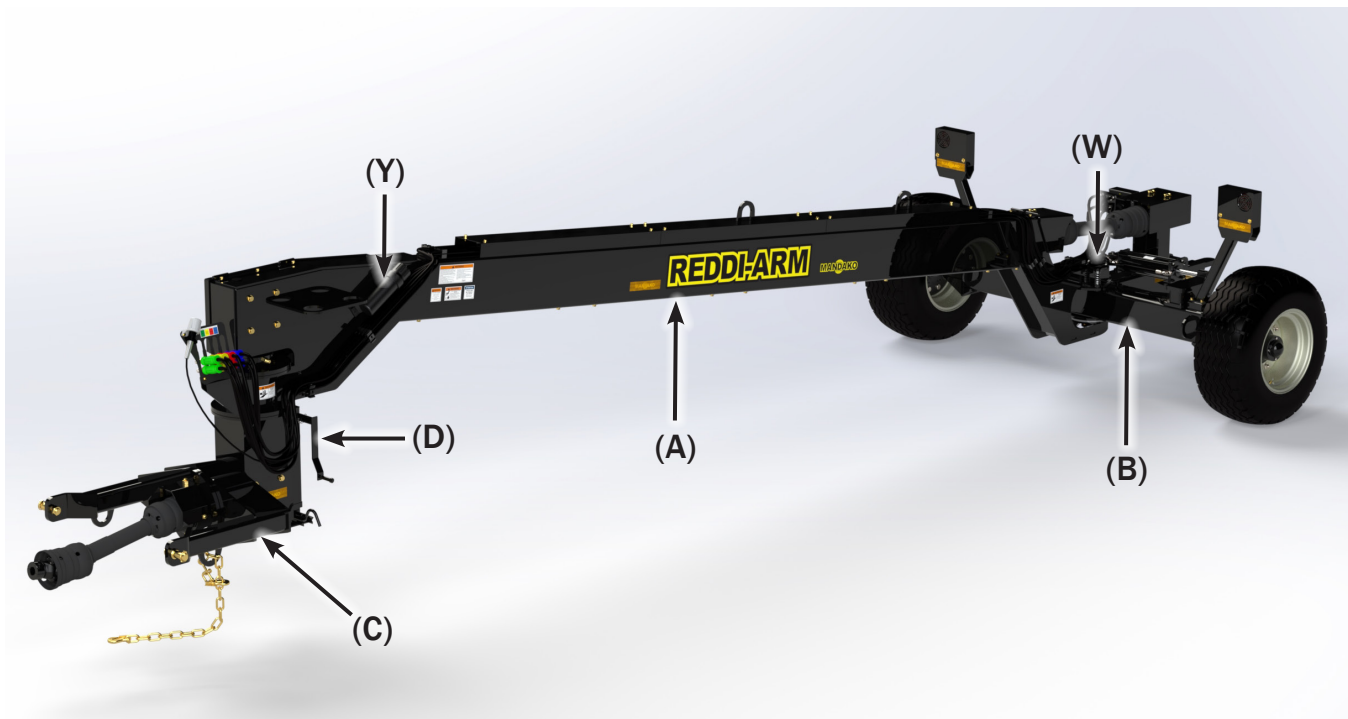
There are two different hydraulic options offered for the Mandako Reddi-Arm.

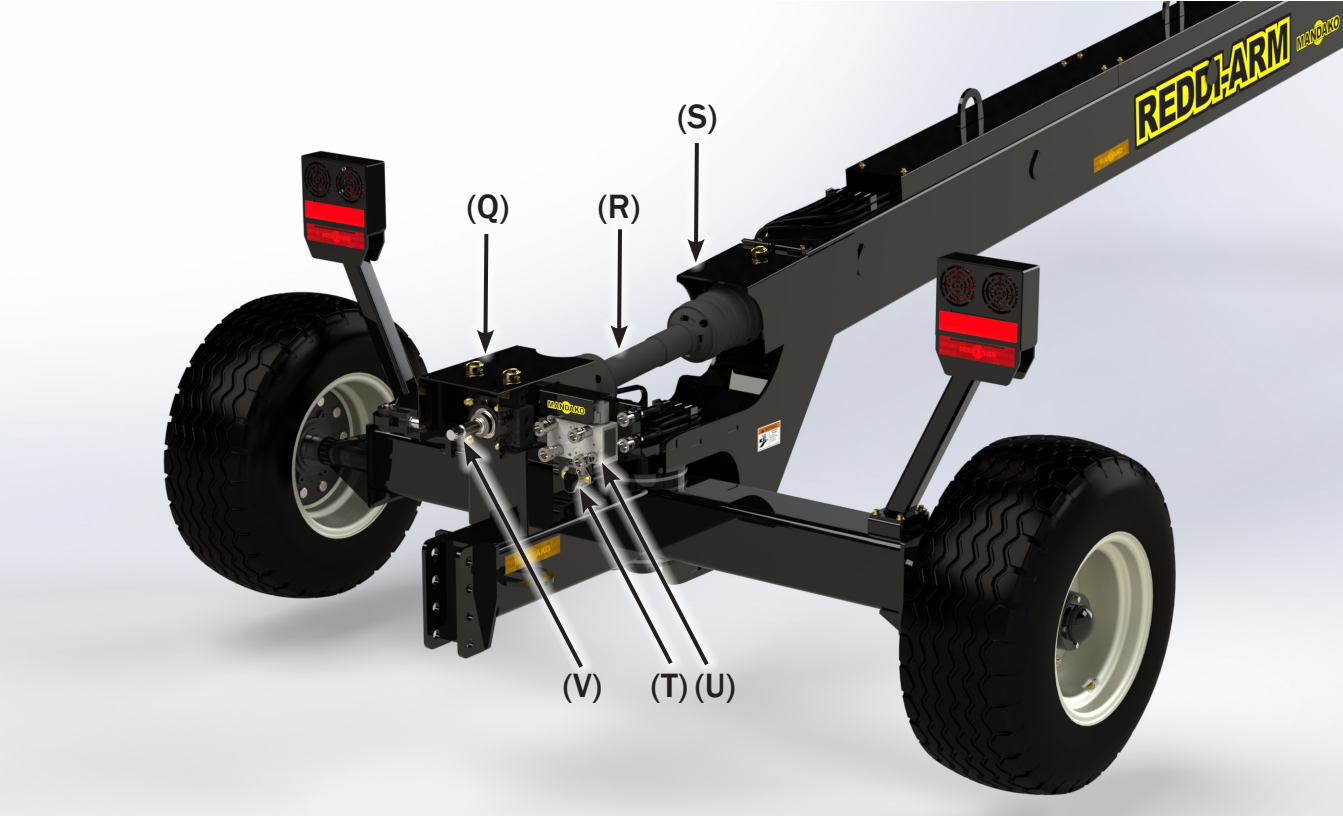
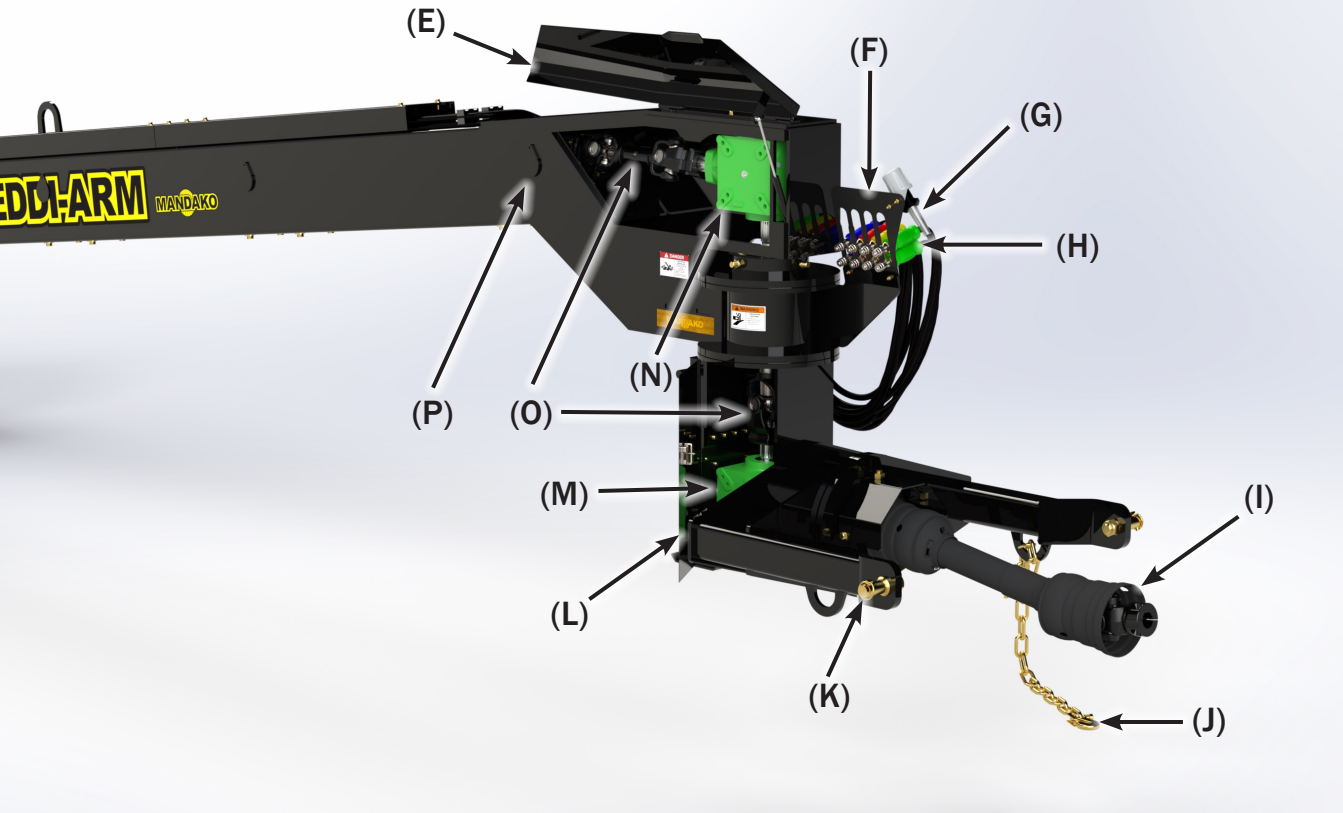
The first option consists of three hydraulic circuits which controls the following: one circuit controls a two-way selector valve which operates the mower left and right wings, one circuit operates the deck lift, and the other operates the Reddi-Arm steering.

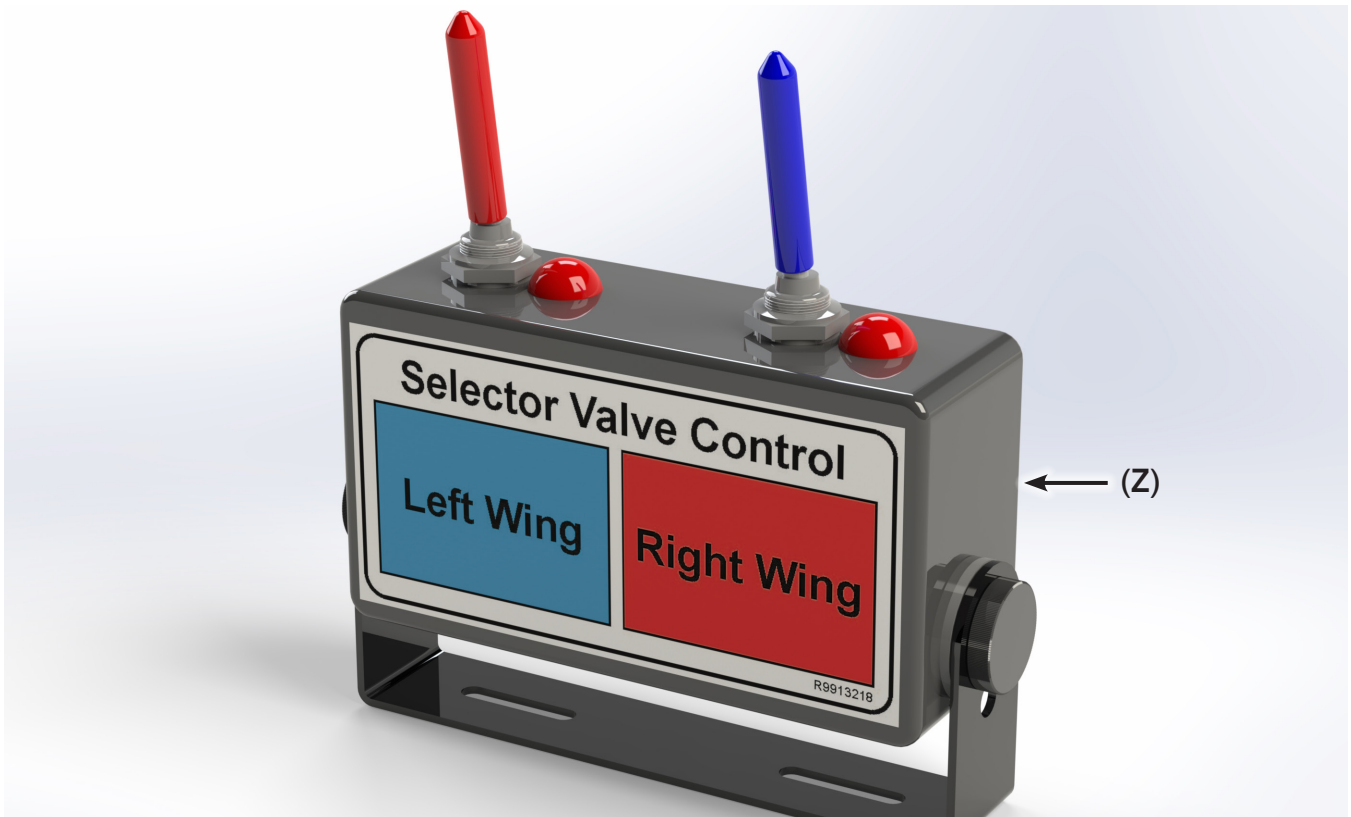
The second option consists of four individual circuits that control the following: deck lift, mower left wing, mower right wing, and Reddi-Arm steering.

The main components of the unit are as follows:

- a. Main Frame
- b. Rear Axle
- c. 3-Point Hookup Arms
- d. Jack
- e. Top Gearbox Access Door
- f. Hydraulic Storage Mount Plate
- g. Electrical Connector
- h. Hydraulic Coupler/Male Tips
- i. Input Driveline
- j. Safety Chain
- k. Lift Arm Pin
- l. Lower Gearbox Access Door
- m. Lower Gearbox
- n. Upper Gearbox
- o. Connection Driveline
- p. Grease Access Covers
- q. Rear Driveline Rear Guard
- r. Rear Driveline
- s. Rear Driveline Front Guard
- t. Electrical Outlet
- u. Hydraulic Outlets
- v. Rear PTO
- w. Transport Steering Lock
- x. Rear Drawbar
- y. Operator Manual Cannister
- z. Selector Valve Control Box







3.2 MACHINE BREAK-IN

There are no operational restrictions on the Reddi-Arm when used for the first time.

It is recommended that the following mechanical items be inspected:

Before starting:

1. Check oil level in gearboxes. Top up before starting. (See No. 4 in section 4:2:2)

After operating for 1/2 hour:

1. Re-torque all wheel bolts, fasteners, and hardware. (See section 7:1)
2. Check oil level in gearboxes. Top up as required. (See No. 4 in section 4:2:2)
3. Check that no hydraulic lines are being pinched or crimped. Re-route as required.
4. Inspect all hydraulic lines, hoses, fittings, and couplers for leaks. Tighten any leaking fittings.
5. Check for and remove all entangled material.
6. Lubricate all grease fittings with one shot of grease.

NOTE:

See Section 7 for specifications

7. Check that PTO driveline telescopes easily and guard turns freely on shaft.

After 50 hours of operation:

1. Replace oil in both upper and lower gearboxes (see section 4.1.3 for oil requirements).
2. Re-torque all bolts shown in Fig. 50
3. Go to the normal servicing and maintenance schedule as defined in the Service and Maintenance Section.

3.3 PRE-OPERATION CHECKLIST

Efficient and safe operation of the Mandako Reddi-Arm requires that each operator reads and understands the procedures, and all related safety precautions outlined in this section.

A pre-operation checklist is provided for the operator. It is important for both personal safety and maintaining the good mechanical condition of the Mandako Reddi-Arm that this checklist is followed.

Before operating the Mandako Reddi-Arm and each time thereafter, the following areas should be checked off:

1. Lubricate the machine according to the schedule outline in the Maintenance Section.
2. Use a tractor of adequate power and weight to operate the Mandako Reddi-Arm.
3. See Section 3.4 for recommendations.
4. Be sure the machine is properly attached to the tractor. Be sure that hardened pins and retainers are used to mount to the 3-point hitch and mower.
5. Inspect all hydraulic lines, hoses, fittings and couplers for leaks. Tighten any leaking fittings.
6. Check the oil level in gearboxes. Top up as required. (See No. 4 in section 4:2:2)
7. Check the tires and ensure that they are inflated to their specified pressure. (See section 7.2)
8. Check the wheel bolts. Ensure they are tightened to their specified torque. (See section 7:1)
9. Remove all entangled material.
10. Check that PTO driveline telescopes easily and guard turns freely on shaft.

3.4 EQUIPMENT MATCHING

To ensure the safe and reliable operation of the Reddi-Arm, it is necessary to use a tractor with appropriate specifications.

Be certain that these requirements are met:

1. A full cab tractor or one with ROPS (Rollover Protective system).
2. A working seat belt.
3. Horsepower:
The Reddi-Arm needs both power and mass to pull and stabilize the unit in all operating conditions. A minimum of 140 PTO HP tractor is recommended.

Different conditions or mowers may require different horsepower or tractor mass.
4. Hydraulic System:
The tractor's hydraulic system must be capable of a minimum of 10 gpm (38 lpm) at 1800 psi (12,420 kPa) but not to exceed 2800 psi (19,320 lpm).

Depending on the option selected the Reddi-Arm requires 3-4 hydraulic circuits to control the axle position, mower height, and mower wings. Switches that control the selector valves are mounted in the cab for access by the operator.

5. 3-Point Hitch:
The Reddi-Arm is designed with a frame that connects to the lower arms of a tractor's 3-point hitch. Either Cat II or Cat III works with the machine. Always secure the mounting pins with retainers.
6. PTO:
A tractor with a 1000 RPM PTO is required. Either 21 spline, 1³/₈ inch or 20 spline, 1³/₄ inch yokes are available.

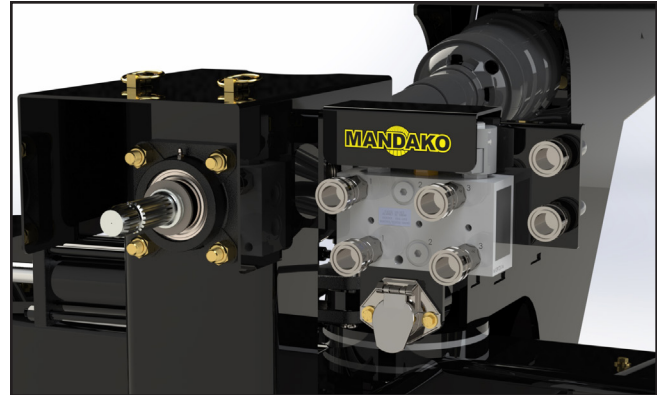


Fig. 2 Hydraulic Selector Valve

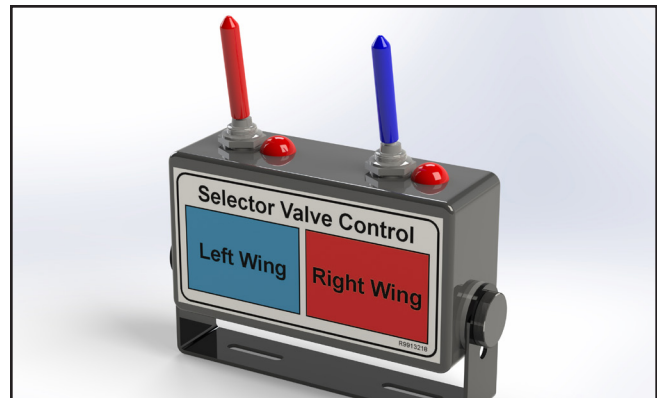


Fig. 3 Selector Valve Control Box

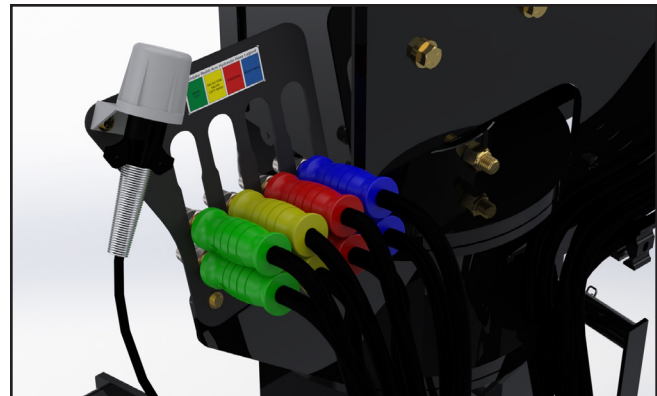


Fig. 4 Hydraulic Circuits



Fig. 5 3-Point Hitch

3.5 DRIVELINE DIMENSION

A PTO driveline is supplied with the machine. To accompany the variety of 3 point hitch geometry available today, the driveline can be too long for most machines or too short for others. It is very important that the driveline be free to telescope but not to bottom out when going through its working range. If the driveline bottoms out, the bearings on both the machine and tractor PTO shaft will be overloaded and fail in a short time.

1. To determine the proper length of the driveline, follow this procedure:
 - a. Clear the area of bystanders, especially small children.
 - b. Attach the Reddi-Arm to the tractor (see section 5.8) but do not attach the driveline.
 - c. Raise the machine until the input shaft is level with the tractor PTO shaft.
 - d. Measure the dimension between the locking grooves on the tractor PTO shaft and the attaching bolt on the Reddi-Arm.
 - e. Measure the same dimensions on the compressed driveline.
 - f. If the compressed driveline dimension exceeds the machine dimension, the driveline will have to be cut.

2. To determine the proper length of the driveline, follow this procedure:
 - a. Subtract the machine dimension (A) from the uncut driveline dimension (B) or (B-A). This difference determines the driveline excess (Fig. 6).
 - b. Add another 2 inches (50 mm) to this difference to be sure it doesn't bottom out. This determines the cut off dimension (C).
 - c. Use a hacksaw to cut dimension (C) from both ends. Cut both the plastic tubes and the metal cores (Fig. 7).
 - d. Use a file to remove the burrs from the edges that were cut.
 - e. Assemble the 2 ends of the shaft.
 - f. Make sure the shaft can telescope freely. If it does not, separate the 2 parts and inspect for burrs or cuttings on the shaft ends. Be sure it telescopes freely before installing.
 - g. Remeasure distance "A" in Fig. 8 to verify collapsed length.

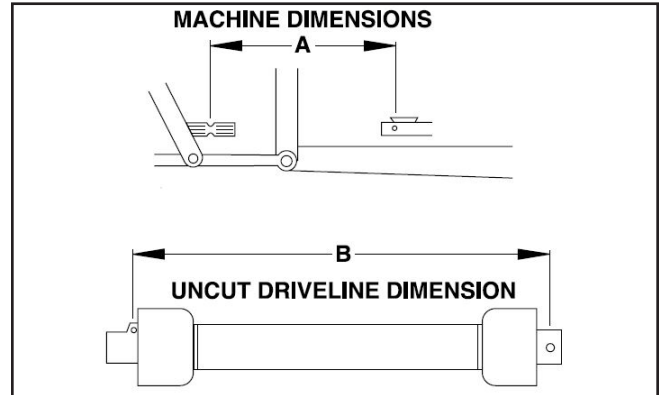


Fig. 6 Driveline Dimensions

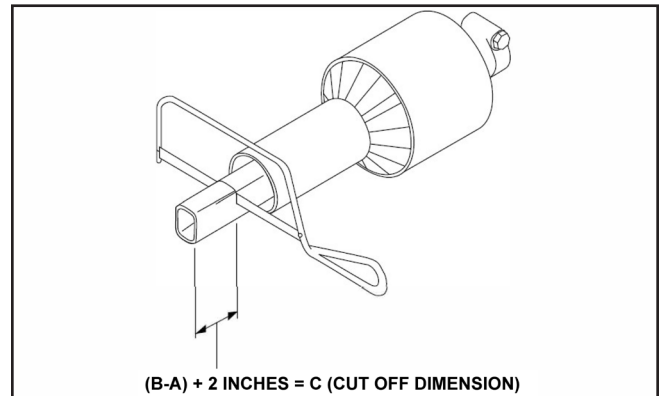


Fig. 7 Cut-Off Dimension

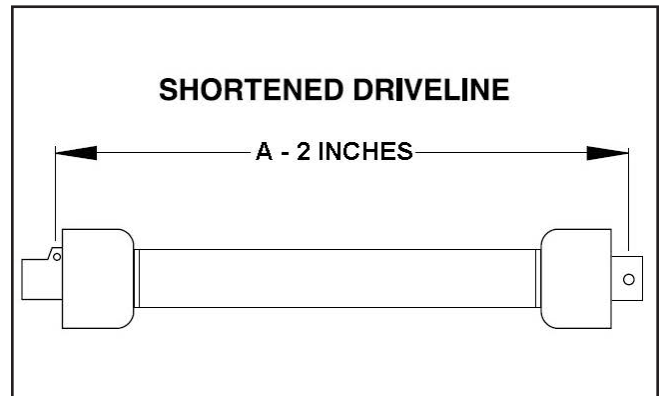


Fig. 8 Shortening

3.6 CONTROLS

Before starting to work, all operators should familiarize themselves with the location and function of all controls.

1. **Transport Steering Lock:**
The wheel frame axle lock is equipped with a spring-loaded pin to lock the axle in its transport configuration. Place the axle at right angles to the frame and the lock pin will move into the hole in the bottom plate. Always install the pin before transporting or storing.

Tip: Slowly operate the steering circuit back and forth until pin engages.

Pull up the pin and rotate 90° to release the lock pin. The axle and wheels are now free to move back and forth as required.

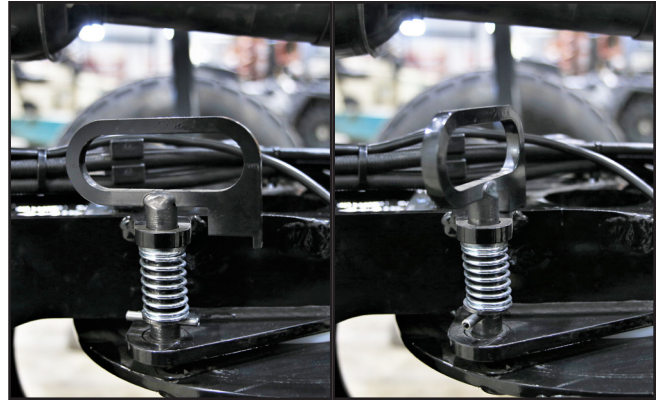


Fig. 9 Transport Steering Lock - Engaged/Disengaged



Fig. 10 Hydraulic Circuits

2. **Hydraulic Selector Valve (Optional):**
A two-way hydraulic selector valve is located at the back of the machine to control the hydraulics to the mower. The selector valve is controlled and connected to the operator control box which gets mounted in the tractor cab.

3. **Hydraulic Circuit System:**
The system is designed with optional 3 or 4 circuits which control the following:

- a. Wheel axle position.
- b. Mower deck height.
- c. Mower wings.

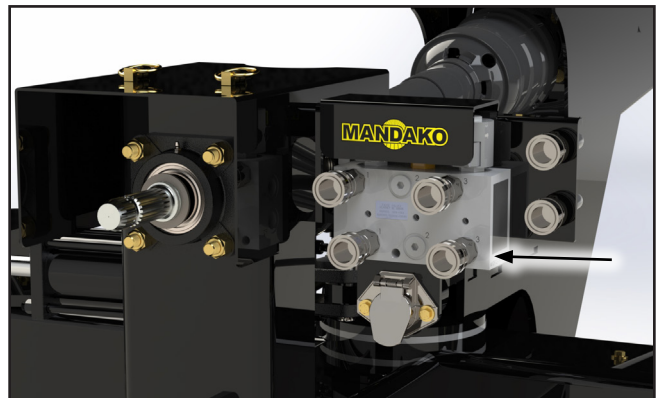


Fig. 11 Selector Valve

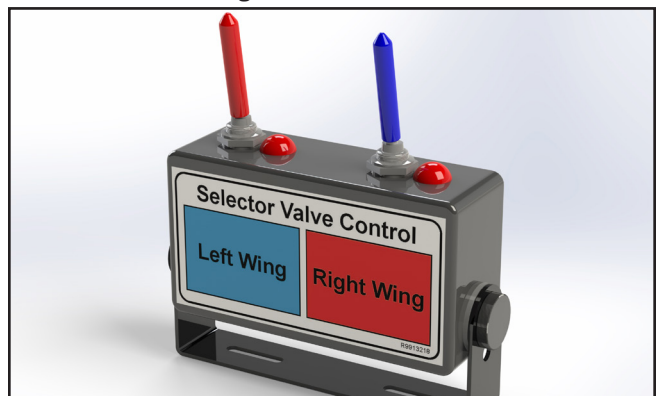


Fig. 12 Selector Valve Control Box

3.7 ATTACHING REDDI-ARM TO TRACTOR

3.7.1 Connect to 3-Point Hitch

Follow this procedure when attaching the Reddi-Arm to a tractor:

1. Clear the area of bystanders, especially small children.
2. Make sure there is sufficient room and clearance to safely back up to the machine.
3. Remove anti-sway blocks from 3-point hitch arms.
4. Remove drawbar (or swing to the side and pin) from the tractor if it will interfere with the PTO driveline (refer to tractor manual for detailed instructions).
5. Align the hitch arms while backing up using the jack or moving the 3-point hitch arm height.
6. Stop engine, set park brake, remove ignition key, and wait for all moving parts to stop before dismounting.
7. Install the mounting pin through the left arm and secure with the retainer.
8. Repeat with the right arm.
9. Raise the 3-point hitch to remove the weight from the jack.

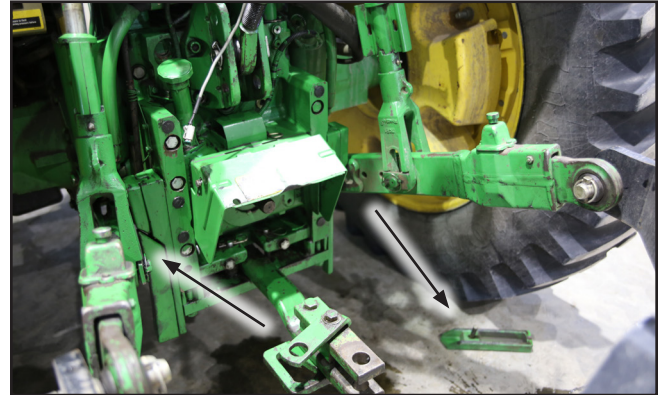


Fig. 13 Anti-Sway Blocks



Fig. 14 Drawbar



Fig. 15 Aligning 3-Point Arms



Fig. 16 Aligning/Secured

10. Stow the jack:
 - a. Raise Jack.
 - b. If applicable remove jack and place in storage location.
11. Connect Safety Chain.

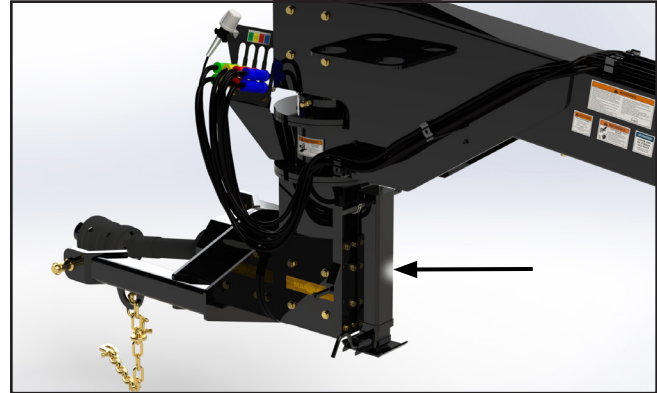


Fig. 17 Jack

3.7.2 Connect PTO

Follow this procedure:

1. Check that the driveline is the appropriate length. Measure to be sure (Refer to Section 3.5).
2. Check that the driveline telescopes easily and the shield rotates freely.
3. Clean the splines in the yokes on both ends of the driveline.
4. Clean the splines on the tractor and Reddi-Arm shafts.
5. Remove both ends of the input driveline from storage and assemble them together.



Fig. 18 Input Driveline Stored

6. Attach the driveline to the machine:

NOTE:

Remove guard from machine by removing the top nut to better access the machine shaft if needed. (Fig. 19)

- a. Push the lock pin or retract the locking collar.
 - b. Align the splines.
 - c. Slide the yoke over the shaft.
 - d. Push on the yoke until the lock pin/collar clicks into place.
 - e. Pull on the yoke to be sure it is locked in position.
6. Compress the driveline and attach yoke to the tractor PTO drive shaft:
 - a. Push the lock pin or retract the locking collar.
 - b. Align the splines.
 - c. Slide the yoke over the shaft.
 - d. Push on the yoke until the lock pin/collar clicks into place
 - e. Pull on the yoke to be sure it is locked in position.
 7. Attach the driveline shield anchor chain on both ends to an adjacent component to hold it in place.



Fig. 19 Remove Guard



Fig. 20 Connected/Anchor Chain

3.7.3 Connect hydraulic system

WARNING: High Pressure Fluid.

Wear eye and hand protection when searching for leaks. Relieve pressure before adjusting. Keep components in good repair.

1. Use a clean cloth or paper towel to clean the dirt and build-up from around the couplers and male tips.
2. Insert the male tips into the couplers. Be sure they are locked in place.
3. Ensure the hoses are properly routed to prevent the hoses from dragging on the ground. Make sure there is enough slack to prevent hoses from being pinched when turning.

Check the function of each circuit. Be sure they function according to expectations. Reverse hoses if they do not.

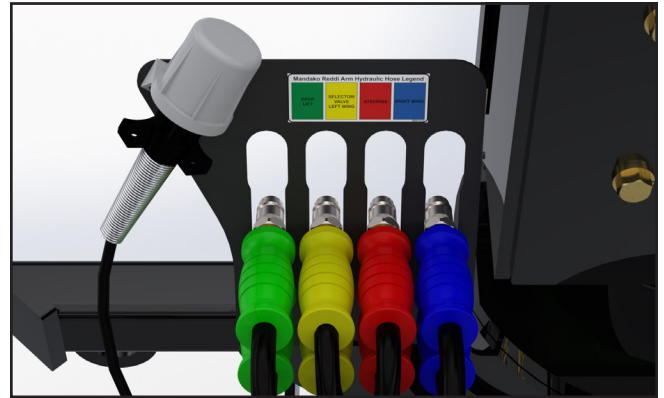


Fig. 21 Stored



Fig. 22 Circuit 1



Fig. 23 Connected

3.7.4 Connect Lights

1. Connect the wiring harness by inserting terminal into plug on tractor. Route harness properly to prevent harness from dragging on the ground.
2. Check light function.



Fig. 24 Wiring Harness

3.7.5 Connect optional Hydraulic Selector Valve system

Each Reddi-Arm is designed with a yellow hydraulic circuit to provide oil to the selector bank mounted on the front of the frame. Connect this coupler to a valve on the tractor that is equipped with a float feature that continuously supplies oil to the solenoid.

The control box is mounted in the cab and the power cord is plugged into 12V power outlet.

Follow this procedure when connecting the selector valve control switches.

1. Retrieve the selector valve control box from its stored location.

IMPORTANT:

Tractor cabs are designed with an access opening to allow wires or the components to enter or exit the cab in a controlled manner rather than leaving a window or door open. Refer to tractor manual for its location.

2. Mount selector valve control box in cab.
3. Connect power line to the 12V power outlet.
4. Route the wires out of the cab through the opening in the bottom rear edge of the cab.

IMPORTANT:

It is recommended that the switch assembly be removed from the tractor and Reddi-Arm and stored inside in a secure location to prevent deterioration from the environment. Unplug the control wires at the terminal to remove switch assembly.

5. Plug assembly plug into terminal on control wiring harness.
6. Reverse the above procedure when unhooking.

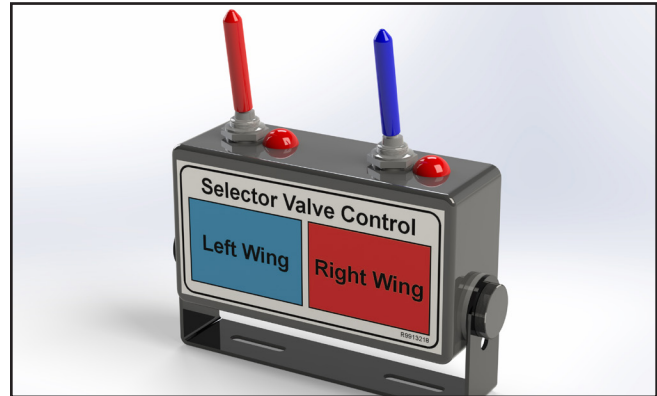


Fig. 25 Selector Valve Control Box



Fig. 26 Plugged In

3.8 ATTACHING MOVER TO REDDI-ARM

3.8.1 Connect hitch

Follow this procedure when attaching a mower to the back of the Reddi-Arm.

1. Clear the area of bystanders, especially small children.
2. Make sure there is sufficient room and clearance to safely back up to the mower.
3. Ensure the mower hitch is at the appropriate height to connect to the Reddi-Arm drawbar.

NOTE:

Ensuring the hitch is the appropriate height may require functioning the mower hydraulics. If this is the case see section 3.8.3 for hooking up the mower hydraulics.

4. Backup till the Reddi-Arm drawbar and mower hitch are aligned.
5. Stop tractor, set park brake, remove ignition key, and wait for all moving parts to stop before dismounting.
6. Use a drawbar pin with provisions for a mechanical retainer. Install pin and the retainer.
7. Safety Chain:
Attach the safety chain around the drawbar cage to prevent unexpected separation.

3.8.2 Connect lights

1. Connect the wiring harness by inserting terminal into plug on rear frame of Reddi-Arm. Route harness properly to prevent harness from dragging on the ground.
2. Check light function.



Fig. 27 Backing Up



Fig. 28 Pin/Retainer



Fig. 29 Safety Chain



Fig. 30 Lights Connected

3.8.3 Connect hydraulics

WARNING:

High Pressure Fluid.

Wear eye and hand protection when searching for leaks. Relieve pressure before adjusting. Keep components in good repair.

1. Remove hoses from their storage bracket.
2. Use a clean cloth or paper towel to clean the dirt and build-up from around the couplers on the Reddi-Arm and male tips.
3. Insert the male tips into the couplers. Be sure they are locked in place.
4. Check the function of each circuit. Be sure they function according to expectations. Change hose position if they do not.



Fig. 31 Hydraulics Disconnected



Fig. 32 Hydraulics Connected

3.8.4 Connect PTO

Follow this procedure:

1. Check that the driveline is the appropriate length. Measure to be sure (Refer to Section 3.5).
2. Check that the driveline telescopes easily and the shield rotates freely.
3. Clean the splines in the yokes on both ends of the driveline.
4. Clean the splines on the Reddi-Arm and mower.
5. Attach the driveline to the Reddi-Arm output shaft:
 - a. Retract the lock pin.
 - b. Align the splines.
 - c. Slide the yoke over the shaft.
 - d. Push on the yoke until the lock pins click into place.
 - e. Pull on the yoke to be sure it is locked in position.
7. Attach the driveline shield anchor chain on both ends to an adjacent component to hold it in place if needed.



Fig. 33 PTO disconnected



Fig. 34 PTO Connected

3.9 OPERATION

Although the Reddi-Arm is easy to use, each operator should review this manual to familiarize themselves with the safety and operating procedures.

When using this machine, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Attach the machine to the tractor, and the mower to the Reddi-Arm (see section 3.7 and 3.8).
3. Using the 3-Point hydraulics, ensure the input driveline is level from the Reddi-Arm to the tractor. If the tractor is equipped with a locking feature for the 3-point hydraulics, ensure it is locked.
4. Review and follow pre-operation checklist (see section 3.3).
5. Transport to the working area.
6. Place the Reddi-Arm steering hydraulic circuit in float.
7. Disengage the wheel axle transport lock pin by pulling it up and rotating 90°.
8. Use the wheel axle cylinder to set the angle of the wheels appropriate for the application.



Fig. 35 Operation

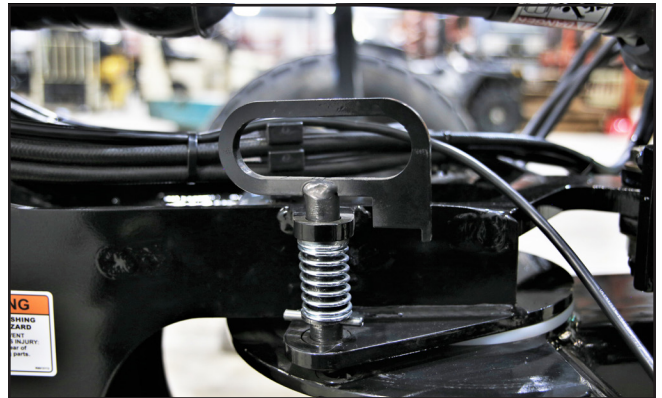


Fig. 36 Transport Steering Lock: Engaged



Fig. 37 Transport Steering Lock: Disengaged



Fig. 38 Wheel Angle

9. Starting:

- a. With the engine at approximately 1/3 throttle position, engage PTO, release clutch, and move forward.
- b. Position wheel angle to direct Reddi-Arm and mower into the ditch or over the area to be cut.
- c. Lower machine into ground.
- d. Increase throttle position until desired engine RPM is reached.

10. Stopping

- a. Move the wheel angle to direct unit out of the ditch and back on the road.
- b. Reduce engine RPM and disengage PTO.
- c. Raise mower.
- d. Press clutch to stop forward motion.

11. Mower Wing Position

Using the wing lift circuits and optional selector valve control box, lower the mower wings to the ground. For more information and best practices on lowering the mower wings, please refer to the mower manual.

12. Wheel Frame Angle

The rear axle can be angled up to 48° left or right from center to steer the cab mower. Use the hydraulic steering circuit in the cab to control the angle of the rear axle and steer the mower. Reddi-Arm operators should observe the position of the mower while driving and adjust as required to get the job done.

13. Side Roads

All roads intersect side roads leading to fields or other destinations. When approaching a side road, it is recommended that these steps be taken

- a. Slow travel speed.
- b. Raise mower deck.
- c. Turn wheel axle and move mower back in the center of the road.
- d. Slow PTO speed.
- e. Reverse this procedure when side road is passed.

14. Ditch Obstacles

There are many things that could be an obstacle in the ditch, including but not limited to: highway signs, culverts, rocks, debris, etc. Use the same procedure as described in 'Side Roads' to avoid all obstacles.



Fig. 39 Mower Wings Raising



Fig. 40 Mower Wings Down

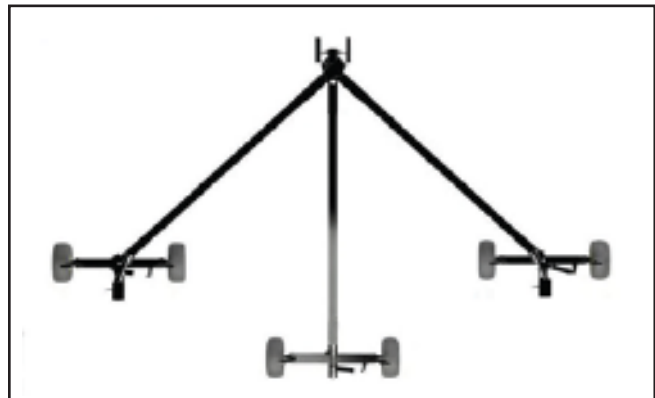


Fig. 41 Rear Axle Angle - 48° Left/Right

15. Rear Hitch Height

The rear hitch of the Reddi-Arm is designed so it can be adjusted up or down as required for the mower deck to be level. Mowers perform best when the decks are level. Position the hitch as required to obtain a level mower deck.

16. Travel Speed

The operator is responsible to determine the appropriate travel speed according to different terrain conditions. The recommended travel speed is 0 to 8 kph (0-5 mph). Slow down when on or near rough conditions such as ditches, steep slopes, and obstacles or when avoiding obstacles. Mowers operate better at slower speeds. Refer to your mower manual for more information.

17. Operating Hints

- a. Always read and follow the instruction in the mower operator's manual when operating mower.
- b. Monitor the mower performance and make the appropriate adjustments as needed to obtain the best results.
- c. Slow down to avoid obstacles and obstructions to prevent damaging the machine or the mower.
- d. Do not use PTO shaft adaptors at any time.

3.10 TRANSPORTING

Mandako Reddi-Arms are designed to be easily and conveniently moved from field to field. When transporting, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Be sure the Reddi-Arm is properly attached to the tractor (see section 3.7).
3. Be sure the mower is properly attached to the Reddi-Arm (see section 3.8).
4. Drive forward and centre Reddi-Arm and mower straight behind the tractor.
5. Make sure the mower is ready for transport. Refer to mower manual.
 - a. Raise mower wings using mower wing lift circuits and optional selector valve control box.
 - b. Raise mower deck using the mower deck hydraulic circuit.
6. Using the steering axle circuit make sure the axle is straight and then place the hydraulic circuit in float.
7. Engage the steering axle lock and turn off the steering hydraulic circuit.
8. Keep to the right and yield right-of-way to allow faster traffic to pass. Drive on shoulder of road if permitted by law.
9. Make sure the SMV (Slow Moving Vehicle) emblem and all lights and reflectors that are required by local highway and transport authorities are in place, clean, and can be seen clearly by all overtaking and on-coming traffic.
10. It is not recommended that the machine be transported faster than 32 km/h (20 mph). Table 1 gives acceptable transport speed as the ratio of Reddi-Arm weight to tractor weight.
11. Do not allow riders on the machine.
12. During periods of limited visibility, use pilot vehicles and extra lights on the machine.
13. Always use hazard flashers on the tractor when transporting unless prohibited by law.



Fig. 42 Transporting



Fig. 43 Rear Axle Straight

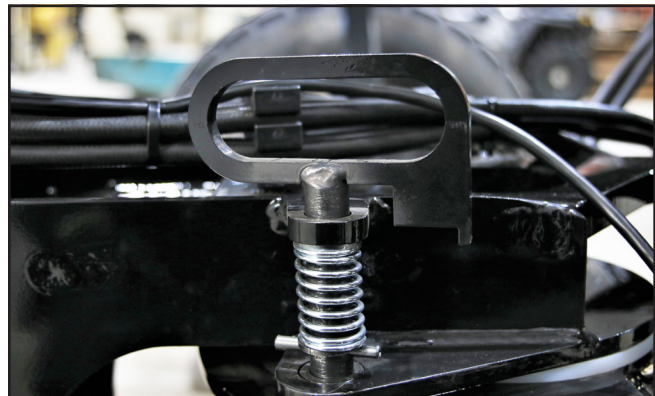


Fig. 44 Transport Steering Lock: Engaged

Road Speed	Weight of fully equipped or loaded implement(s) relative to weight of tow vehicle
Up to 32 km/h (20 mph)	1 to 1, or less
Up to 16 km/h (10 mph)	2 to 1, or less
Do not tow	More than 2 to 1

Table 1 - Travel Speed vs. Weight Ratio

3.11 STORAGE

3.11.1 Place in storage:

At the end of the season, the unit should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the beginning of the next season.

Follow this procedure before storing:

1. Remove all entangled material.
2. Thoroughly wash the unit with a pressure washer or water hose to remove all dirt, mud, or debris.
3. Lubricate all grease points as per section 4.2. Make sure all grease cavities have been filled with grease to remove any water residue from washing.
4. Inspect all hydraulic hoses, couplers and fittings. Tighten any loose fittings. Replace any hose that is badly cut, nicked, abraded, or is separating from the crimped end of a fitting.
5. Touch up all paint nicks and scratches to prevent rusting.
6. Move the unit to its storage area. Inside a building is ideal.
7. Place planks under the jack for added support if required.
8. Place planks at tires.
9. Unhook the Reddi-Arm from the tow vehicle (reverse procedures in section 3.7).
10. Place input shaft in storage location.
11. Store unit in area away from human activity.
12. Do not allow children to play on or around stored Reddi-Arm.
13. Apply a rust inhibitor or heavy grease to the exposed hydraulic cylinder rams to prevent rusting. Remove inhibitor or grease before using machine again.



Fig. 45 Stored



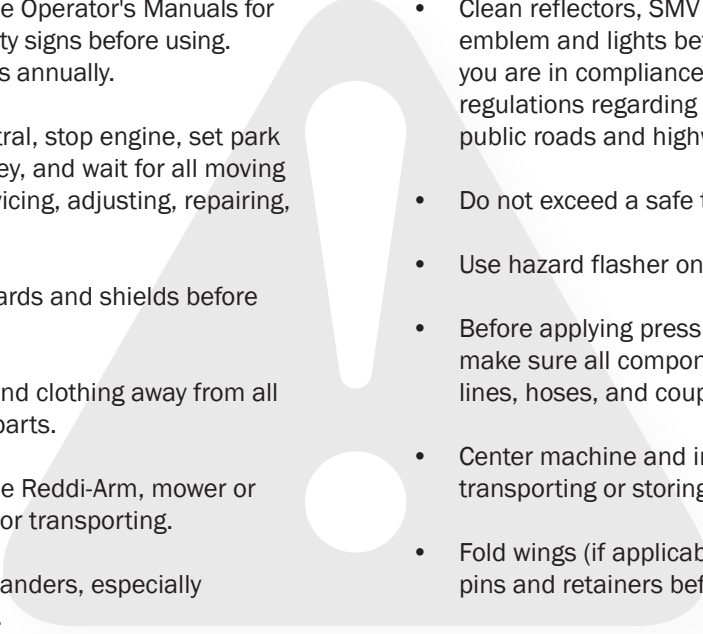
Fig. 46 Input Driveline Stored

3.11.2 REMOVING FROM STORAGE:

When removing this unit from storage, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Attach the unit to the tractor (see Section 3.7).
3. Check:
 - a. Electrical harness connections and components.
 - b. All hardware. Tighten as required.
 - c. Tire pressure. (see section 7.2)
 - d. All hydraulic lines, fittings and connections. Tighten as required.
4. Lubricate all grease fittings as per section 4.2.
5. Clean rust inhibitor or grease from exposed cylinder ram ends
6. Replace any worn or defective parts.
7. Go through the pre-operation checklist (see Section 3.3) before using unit.

SECTION 4: SERVICE AND MAINTENANCE

- 
- Read and understand the Operator's Manuals for all machines and all safety signs before using. Review safety instructions annually.
 - Place all controls in neutral, stop engine, set park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
 - Install and secure all guards and shields before starting or operating.
 - Keep hands, feet, hair, and clothing away from all moving and/or rotating parts.
 - Do not allow riders on the Reddi-Arm, mower or tractor during operation or transporting.
 - Clear the area of all bystanders, especially children, before starting.
 - Stay away from mower when raising or lowering wings. Keep others away.
 - Clean reflectors, SMV (Slow Moving Vehicle) emblem and lights before transporting. Be sure you are in compliance with all federal and local regulations regarding transport of equipment on public roads and highways.
 - Do not exceed a safe travel speed.
 - Use hazard flasher on tractor when transporting.
 - Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses, and couplings are in good condition.
 - Center machine and install frame lock pin before transporting or storing.
 - Fold wings (if applicable) and install transport lock pins and retainers before transporting.
 - Attach securely to tractor and mower using hardened pins and retainers.
 - Do not drive impaired.

4.1 FLUIDS AND LUBRICANTS

4.1.1 Grease:

Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium base grease.

4.1.2 Storing Lubricants:

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

4.1.3 Oil:

Mandako requires SAE 80W/90 gear oil for all gearboxes or SAE 80W/140 synthetic gear oil. Use SAE 80W/140 synthetic gear oil to lower oil temperatures and prolong the life of the gearbox.

4.1.4 Greasing:

Refer to Section 4.1.1 for the type of recommended grease.

Use the Maintenance Checklist provided to keep a record of all scheduled maintenance.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also, clean lubricant passageway. Replace fittings if necessary.

4.2 SERVICING INTERVALS

The periods recommended are based on normal operating conditions. Severe or unusual conditions may require more frequent checks of the equipment and lubrication.

4.2.1 Initial or rebuilt after 50 hours of use

1. Replace oil in both upper and lower gearboxes (see section 4.1.3 for oil requirements).
2. Re-torque all bolts shown in Fig. 50

4.2.2 Every 8 Hours or daily

1. Visually inspect the machine for damage or leaks. Repair any broken or damaged areas.
2. Grease rear driveline, input driveline and connection drivelines according to table in Fig. 51. See Fig. 52 and Fig 53 for locations.
3. Check wheel bolt torque. (See section 7.1 for specs)

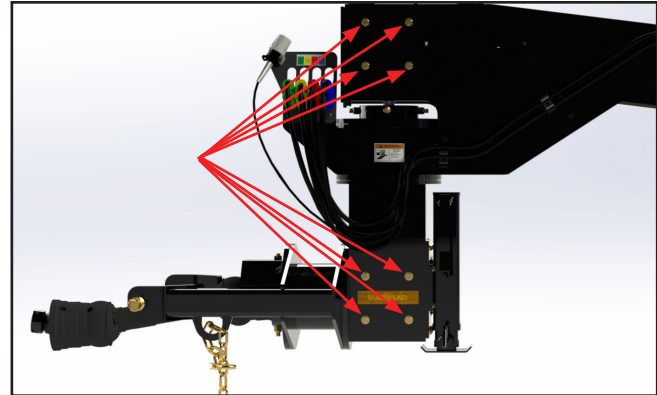


Fig. 47 Re-torque Bolts

Location	Interval (h)	Number of Pumps
Cross & Bearing	8	5
Telescoping Member	8	8-10
CV Ball & Socket	8	5
CV Center Housing	24	30
Guard Bushing	8	5

Fig. 48 Reference Table

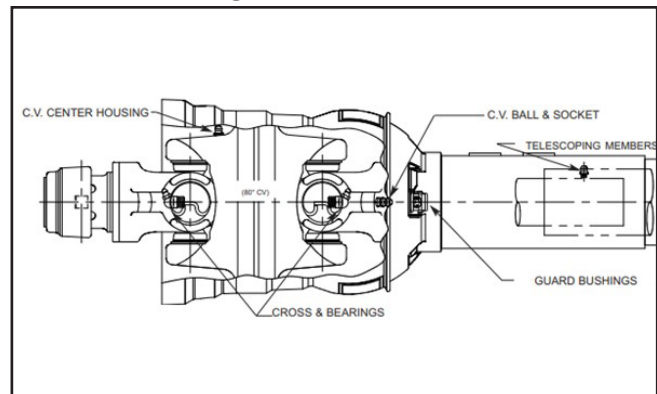


Fig. 49 Driveline Grease Locations

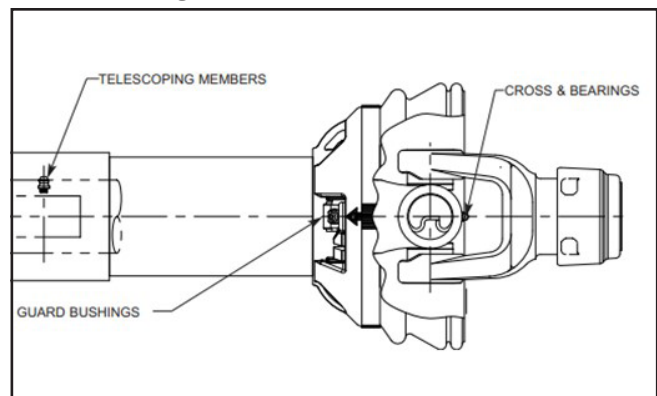


Fig. 50 Driveline Grease Locations

- Grease all transfer drive shaft flanged bearings and rear output flanged bearings with two pumps of grease each. Rotate or remove guards to access the grease zerks.

NOTE:

Replace any worn or damaged bearings.

IMPORTANT:

When replacing bearings always ensure that the set screws on all bearings are aligned/timed one to another. Not aligning set screws creates an imbalance in the driveshaft and can cause vibrations. See Fig. 54

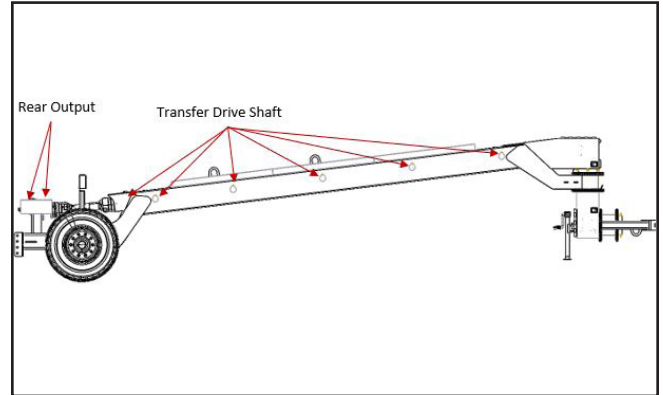


Fig. 51 Gearbox Universals - Upper/Lower

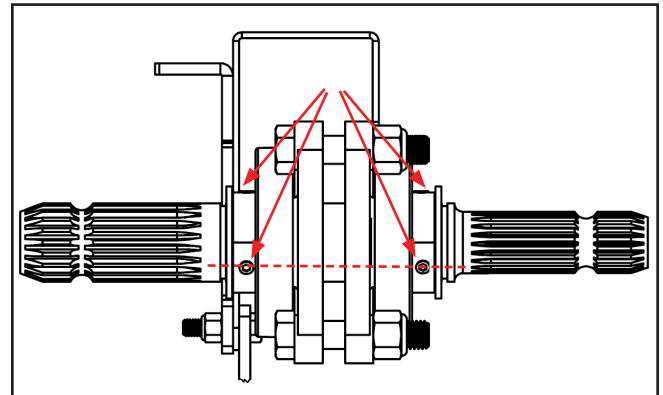


Fig. 52 Set screws aligned

- Check oil in both upper and lower gearboxes.
 - Ensure gearboxes are level.
 - Remove plug.
 - Insert finger to feel oil. (The oil should be approximately 1" beneath the oil plug hole)
 - If you cannot feel oil add until oil reaches approximately 1" underneath the oil plug hole. See section 4.1.3 for oil requirements.

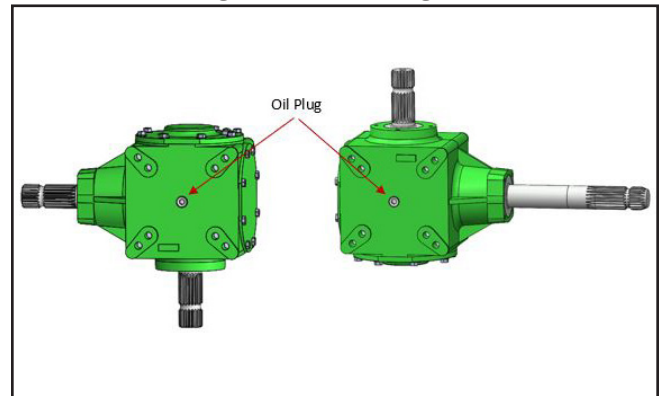


Fig. 53 Gearbox Plugs

4.2.3 Every 40 Hours or weekly

- Remove any debris. Clean and wash machine.
- Grease Rear Axle Pivot Pin with 10-15 pumps of grease.



Fig. 54 Rear Axle Pivot Pin

4.2.4 Annually

1. Grease Jack with one shot of grease.
2. Replace oil in both upper and lower gearboxes. See section 4.1.3 for oil requirements.
3. Re-torque all bolts on the machine as per section 7.1.

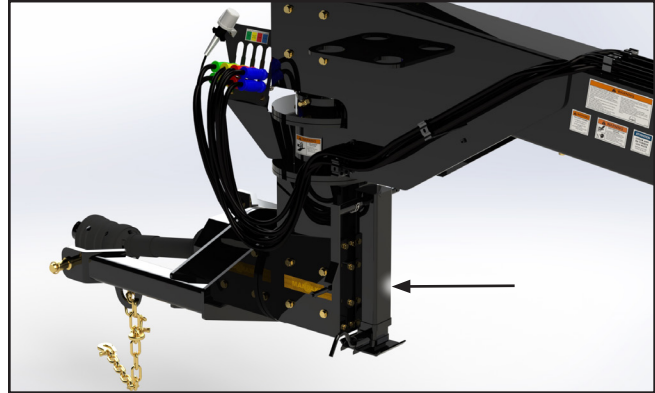


Fig. 56 Jack

4.2.5 Every 3 years

1. Rebuild wheel hubs.
 - a. Dissassemble
 - b. Clean
 - c. Inspect all bearings races and seal
 - d. Replace worn or damaged parts
 - e. Repack with fresh grease
 - f. Assemble



Fig. 55 Level Plug - Upper/Lower

4.3 SERVICE RECORD

The Servicing Intervals section is only a guide under good conditions. Under extreme or unusual circumstances, adjust service timing accordingly. Copy this page to continue record.

Maintenance	Date																		
	Serviced By																		
EVERY 8 HOURS OR DAILY																			
Visually inspect the machine																			
Grease all drivelines																			
Grease flanged bearings																			
Check gearbox oil																			
EVERY 40 HOURS OR WEEKLY																			
Remove debris, clean machine																			
Grease rear axle pivot pin																			
ANNUALLY																			
Grease Jack																			
Replace oil in gearboxes																			
Re-torque all bolts																			
EVERY 3 YEARS																			
Rebuild Wheel Hubs																			

Maintenance	Date																		
	Serviced By																		
EVERY 8 HOURS OR DAILY																			
Visually inspect the machine																			
Grease all drivelines																			
Grease flanged bearings																			
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Remove debris, clean machine																			
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Replace oil in gearboxes																			
Re-torque all bolts																			
EVERY 3 YEARS																			
Rebuild Wheel Hubs																			

Copy this page to continue record.

Maintenance	Date																		
	Serviced By																		
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Grease all drivelines																			
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Check gearbox oil																			
EVERY 40 HOURS OR WEEKLY																			
Remove debris, clean machine																			
Grease rear axle pivot pin																			
ANNUALLY																			
Grease Jack																			
Replace oil in gearboxes																			
Re-torque all bolts																			
EVERY 3 YEARS																			
Rebuild Wheel Hubs																			

SECTION 5: TROUBLESHOOTING

This Reddi-Arm is a simple and reliable system that requires minimal maintenance.

The problems which you may encounter, their causes and solutions, are listed below.

If you encounter a problem which is difficult to solve, even after having read through this section, please contact your local distributor or dealer. Before you call, please have this Operator's Manual and the unit's serial number ready.

PROBLEM	POSSIBLE CAUSE	POSSIBLE CORRECTION
Vibrations	Worn out cross kits (u-joints)	Check and replace worn out cross kits
	Driveline connections not secure	Tighten connections as necessary and ensure bolts are equal length
	Loose or worn out bearings	Check and tighten all bolts for bearing flanges and bearing brackets and replace worn or damaged bearings
	Gearboxes not secure or worn out	Check to make sure both gearboxes are fastened properly and rebuild worn out gearboxes if necessary
	Bent shaft	Check and replace a bent transfer shaft or rear output shaft
	Bearing set screws not aligned	Align set screws (Section 4.2.2)
Over heating gearbox	Low on oil	Fix leak and top gearbox up with oil (Section 4.2.2)
	Too much oil	Drain oil to the appropriate level (Section 4.2.2)
	Wrong oil	Use synthetic oil (Section 4.1.3)
Oil leak	Leaking from gearbox oil seals	Replace oil seals
	Leaking from vents	Replace vents with extended vents Check oil level and drain to the appropriate level (Section 4.2.2)
Selector Valve not working	Not connected	Check all connections and ensure they are properly connected
	Solenoid not activating	Check wiring and solenoid using 12V and replace if necessary.

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SECTION 6: SIGN-OFF FORM

Mandako Agri Marketing (2010) Ltd. follows the general Safety Standards specified by the American Society of Agricultural and Biological Engineers (ASABE), and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the unit must read and clearly understand all Safety, Operating and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until this document has been read.
Review this information annually, before the season start-up.

Make periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment.

The following Sign-Off Form is provided for your record keeping. Use it to show that all personnel who will be working with the equipment have read and understand the provided information. They also have been instructed in the operation of the equipment. Copy this page to continue the record.

DATE	EMPLOYEE'S SIGNATURE	EMPLOYER'S SIGNATURE

SECTION 7: REFERENCE

For information not included here, or for a digital copy of this manual, please call your dealer, or Mandako directly for assistance (1-888-525-5892).

Specifications may change without notice.

7.1 BOLT TORQUE

CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

Bolt Diameter "A"	Bolt Torque •					
	SAE 2 (N.m) (lb-ft)		SAE 5 (N.m) (lb-ft)		SAE 8 (N.m) (lb-ft)	
1/4"	8	6	12	9	7	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970
1-1/8"	651	480	1077	794	1939	1430
1-1/4"	508	375	1498	1105	2678	1975

8-Bolt wheel hub lug nuts should be torqued to 133 lb-ft.

10-Bolt wheel hub lug nuts should be torqued to 462 lb-ft.

Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

- Torque value for bolts and capscrews are identified by their head markings.

7.2 TIRE PRESSURE

The recommended tire pressure is specific to the tires on your machine. Match your tires to the table below to find the right tire pressure for your tire. Never exceed the manufacturers maximum tire pressure rating!

320/70R15 (8-Bolt)	20-25 PSI
440/55R18 (10-Bolt)	18-25 PSI

7.3 HYDRAULIC FITTING TORQUE

Tightening Flare Type Tube Fittings*

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Lubricate connection and hand tighten swivel nut until snug.
4. To prevent twisting the tube(s), use two wrenches on the connector body and with the second tighten the swivel nut to the torque shown.

- The torque values shown are based on lubricated connections as in reassembly.

Pipe Rigid - Tapered Pipe Threads (NPTF, N/NF) - Carbon Steel			
Pipe Size	Turns-from-finger	Max ft-lbs	Max N-m
1/8" (-2)	3/4 - 1 3/4	12	16
1/4" (-4)	3/4 - 1 3/4	25	34
3/8" (-6)	3/4 - 1 3/4	40	54
1/2" (-8)	1/2 - 1 1/2	54	73
3/4" (-12)	1/2 - 1 1/2	78	106
1" (-16)	1/2 - 1 1/2	112	152
1 1/4" (-20)	1/2 - 1 1/2	154	209
1 1/2" (-24)	1/2 - 1 1/2	211	286
2" (-32)	1/2 - 1 1/2	300	407

For reference only, Source: Air-Way Manufacturing Co. - Carbon Steel Hydraulic

Stud End O-Ring Boss (ORB) SAE (U/UF)			
		Carbon Steel	
Tube Size	Thread UNF-2A	Max ft-lbs	Max N-m
-2	5/16" - 24	6-7	8-9
-3	3/8" - 24	8-9	11-12
-4	7/16" - 20	13-15	18-20
-5	1/2" - 20	17-19	23-26
-6	9/16" - 18	22-24	29-33
-8	3/4" - 16	40-43	49-53
-10	7/8" - 14	43-48	59-64
-12	1 1/16" - 12	68-75	93-102
-14	1 3/16" - 12	90-99	122-134
-16	1 5/16" - 12	112-123	151-166
-20	1 5/8" - 12	146-161	198-218
-24	1 7/8" - 12	154-170	209-231

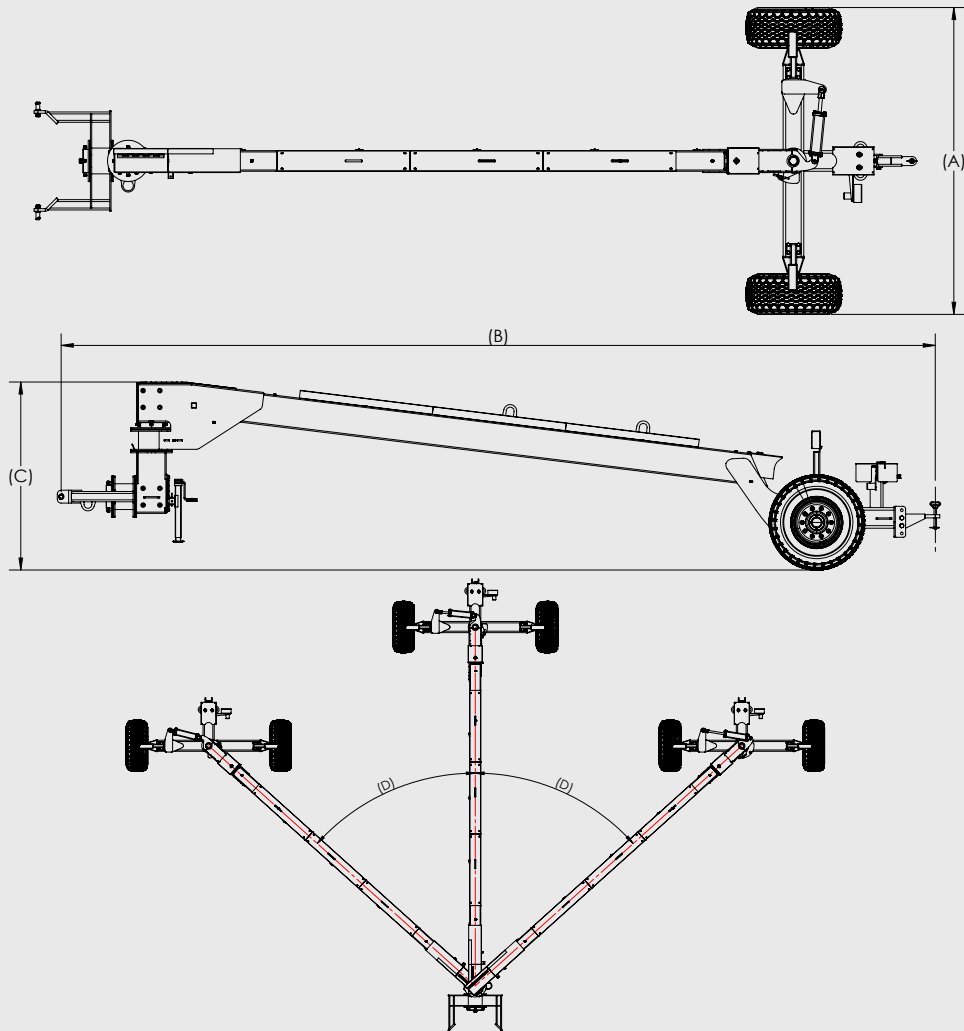
For reference only, Source: Air-Way Manufacturing Co. - Carbon Steel Hydraulic

O-Ring Face Seal Fitting (ORFS) (F/FF)			
Tube Size	Turns-from-finger	Torque ft-lbs	Torque N-m
-4	9/16 - 18	10-12	14-16
-6	11/16 - 18	18-20	24-27
-8	13/16 - 16	32-35	43-47
-10	1 - 14	46-50	60-68
-12	1 3/16 - 12	65-70	90-95
-16	1 7/16 - 12	92-100	125-135
-20	1 11/16 - 12	125-140	170-190
-24	2 - 12	150-165	200-225

For reference only, Source: Air-Way Manufacturing Co. - Carbon Steel Hydraulic

7.4 MECHANICAL SPECIFICATIONS

REDDI-ARM
SPECIFICATIONS



Unit Width (A)	10'
Unit Length (B)	28'-8"
Unit Height (C)	6'-2"
Unit Weight	3270 lbs (1483 kg)
Hitch Weight	1362 lbs (618 kg)
Angling (D)	48° Left/Right
Offset (D)	16' Left-Right
Main Frame Dimensions	12" x 8" x 0.250" W
Hitch Hookup Type	3-Point (Cat 2 or Cat 3)
Tires	320/70R15 / 440/55R18
Hub/Spindle Assembly	8-Bolt / 10-Bolt
Drivelines	Weasler (Cat 6)
Gearbox Ratio	1:1
PTO Requirements	1000 RPM



REVISION: 1.0

PART #: R9912020

RELEASED: JANUARY 01, 2022

Box 379 | 12159B Hwy 306

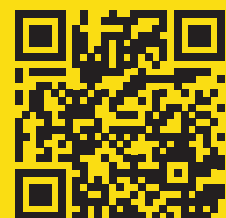
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