

OPERATOR'S AND PARTS MANUAL

CM11 COTTON MODULE HANDLER



MANUAL #5MP76318



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PREFACE

GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your attachment. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance.

These instructions have been compiled from field experience and engineering data. Some information may be general in nature, due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.


The illustrations and data used in this manual were current at the time of printing. However, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

Throughout this manual, references are made to right and left direction. These are determined by standing behind the tractor facing the direction of forward travel.



¡LEA EL INSTRUCTIVO!

Si no lee Ingles, pida ayuda a
alguien que si lo lea para que le
truduzca lasmedidas de seguridad.

WARNING!  Never let anyone operate this unit without reading the "Safety Precautions" and "Operations" sections of this manual.
Always choose hard, level ground to park the loader on and set the brake so the unit cannot roll.

BEFORE OPERATION

The primary responsibility for safety with this equipment falls to the operator. Make sure the equipment is operated only by trained individuals that have read and understand this manual. If there is any portion of this manual or function you do not understand, contact your local Frontier Dealer.

SERVICE

When servicing your product, remember to use only manufacturer replacement parts. Substitute parts may not meet the standards required for safe, dependable operation.

To facilitate parts ordering, record the model and serial number of your unit in the space provided on this page. This information may be obtained from the identification plate located on the product.

Any questions related to this attachment should be directed to your local Frontier dealer.

MODEL: _____ **DATE:** _____

SERIAL NUMBER: _____ (See parts section for location.)

SAFETY STATEMENTS



THIS SYMBOL BY ITSELF OR WITH A WARNING WORD THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



DANGER

THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH WILL RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.



WARNING

THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.



CAUTION

THIS SIGNAL WORD IS USED WHERE MINOR INJURY COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

NOTICE

NOTICE INDICATES A PROPERTY DAMAGE MESSAGE.

GENERAL SAFETY PRECAUTIONS

WARNING!

READ MANUAL PRIOR TO INSTALLATION



Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual, as well as all manuals related to this equipment and the tractor thoroughly before beginning installation, operation, or maintenance. **FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE TRACTOR MANUAL(S).**



READ AND UNDERSTAND ALL SAFETY STATEMENTS

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment. Know and obey all OSHA regulations, local laws, and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing, or operating this equipment.



KNOW YOUR EQUIPMENT

Know your equipment's capabilities, dimensions, and operations before operating. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to ensure it is tight. Make certain that all locking pins, latches, and connection devices are properly installed and secured. Remove and replace any damaged, fatigued, or excessively worn parts. Make certain all safety decals are in place and are legible. Keep decals clean, and replace them if they become worn or hard to read.

GENERAL SAFETY PRECAUTIONS

WARNING!



PROTECT AGAINST FLYING DEBRIS

Always wear proper safety glasses, goggles, or a face shield when driving pins in or out, or when any operation causes dust, flying debris, or any other hazardous material.

WARNING!



LOWER OR SUPPORT RAISED EQUIPMENT

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels, or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or on blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

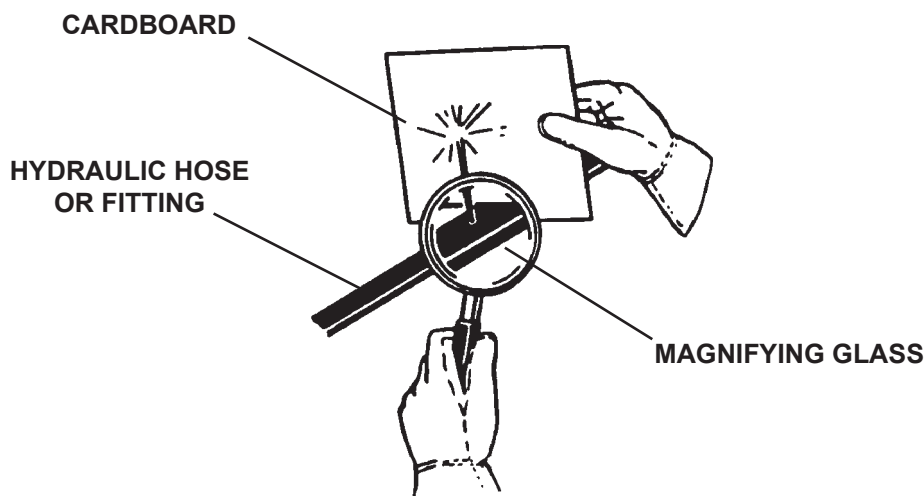
WARNING!



USE CARE WITH HYDRAULIC FLUID PRESSURE

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses, read your tractor operator's manual for detailed instructions on connecting and disconnecting hydraulic hoses or fittings.

- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.
- Wear safety glasses, protective clothing, and use a piece of cardboard or wood when searching for hydraulic leaks. **DO NOT USE YOUR HANDS!** **SEE ILLUSTRATION.**



GENERAL SAFETY PRECAUTIONS

WARNING!



DO NOT MODIFY MACHINE OR ATTACHMENTS

Modifications may weaken the integrity of the attachment and may impair the function, safety, life, and performance of the attachment. When making repairs, use only the manufacturer's genuine parts, following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS (Roll Over Protection Structure) or FOPS (Falling Object Protective Structure) equipment or device. Any modifications must be authorized in writing by the manufacturer.

WARNING!



SAFELY MAINTAIN AND REPAIR EQUIPMENT

- Do not wear loose clothing or any accessories that can catch in moving parts. If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tools for the job at hand. Make sure they are in good condition for the task required.
- Wear the protective equipment specified by the tool manufacturer.



SAFELY OPERATE EQUIPMENT

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your machine's manual for these instructions.

- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the tractor.
- Do not operate the equipment from anywhere other than the correct operator's position.
- Never leave equipment unattended with the engine running, or with this attachment in a raised position.
- Do not alter or remove any safety feature from the tractor or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

WARNING!



KNOW WHERE UTILITIES ARE

Observe overhead electrical and other utility lines. Be sure equipment will clear them. When digging, call your local utilities for location of buried utility lines, gas, water, and sewer, as well as any other hazard you may encounter.

EQUIPMENT SAFETY PRECAUTIONS



TRANSPORTING THE COTTON MODULE HANDLER

- Travel only with the attachment as close to the ground as possible.
- Do not exceed maximum transport speed of 16 km/h (10mph) with cargo on the cotton module handler or 32 km/h (20 mph) without cargo on the cotton module handler. Exceeding this speed may result in loss of control during transporting or braking.
- Transport only with proper tractor ballast. (See Preparing The Tractor Section)
- Do not travel on roadway with cargo on the cotton module handler.
- When driving on public roads use safety lights, reflectors, Slow Moving Vehicle signs etc., to prevent accidents. Check local government regulations that may affect you.
- Use headlights, flashing warning lights and turn signals day and night. Follow local regulations for equipment lighting and marking. Repair or replace lighting and marking that has been damaged or lost.
- Do not drive close to ditches, excavations, etc., cave in could result.
- Reduce speed when the cotton module handler is in the raised position, traveling on inclines, turning or under any adverse surface conditions.
- Do not operate on slopes greater than 10 degrees or 18% grade.
- Be careful when operating system on hillsides; tractor can tip sideways if it strikes a hole, ditch or other irregularity. When on a slope, keep the load low and proceed with extreme caution. Do not drive ACROSS a steep slope - drive straight up and down.
 - With a LOADED attachment - face the attachment and load uphill.
 - With an EMPTY attachment - face the attachment downhill.
- Do not operate at speeds greater than 3 mph when traveling in reverse.



MAINTAINING THE COTTON MODULE HANDLER

- Before performing maintenance, find a level surface, lower the attachment to the ground, apply the brakes, turn off the engine, and remove the key. Service work does not require going underneath the cotton module handler.
- Worn, damaged, or illegible safety decals must be replaced. New safety decals can be ordered from your Frontier Dealer.
- Never work under a raised attachment.



REMOVE PAINT BEFORE WELDING

Hazardous fumes/dust can be generated when paint is heated by welding, soldering or using a torch. Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do all work outside or in a well ventilated area and dispose of paint and solvent properly. Remove paint before welding or heating.

- If sanding or grinding paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

EQUIPMENT SAFETY PRECAUTIONS



OPERATING THE COTTON MODULE HANDLER

- Operate only from the operator's station. Always use the seat belt if the tractor has a ROPS. Do not use a seat belt if there is no ROPS. Check the seat belt daily and replace if frayed or damaged.
- Specified lift capacities must not be exceeded. See tractor and attachment specifications.
- An operator must not use drugs or alcohol, which can change his or her alertness or coordination. An operator taking prescription or over-the-counter drugs should seek medical advice on whether or not he or she can safely operate equipment.
- Never use any of these attachments for a work platform or personnel carrier.
- Always check locking pins before operating any attachment.
- Before exiting the tractor, lower the attachment to the ground, apply the brakes, turn off the tractor's engine, and remove the key.
- Add the required amount of ballast to tractor. (See Preparing the Tractor section of the Tractor Operator's Manual to determine the type and amount of ballast required.)
- Never stack loads on uneven ground. Loads stacked on uneven ground can topple.
- Do not handle cotton modules larger than your tractor and the attachment was designed to lift. Be sure stack and load heights do not exceed the lifting capabilities of your tractor or attachment.
- Never use tractor to stop a rolling module.
- Do not operate on slopes greater than 10 degrees or 18% grade.
- Be careful when operating system on hillsides; tractor can tip sideways if it strikes a hole, ditch or other irregularity. When on a slope, keep the load low and proceed with extreme caution. Do not drive ACROSS a steep slope - drive straight up and down.
 - With a LOADED attachment - face the attachment and load uphill.
 - With an EMPTY attachment - face the attachment downhill.
- Do not operate at speeds greater than 3 mph when traveling in reverse.
- The top of the implement mast should always tilt toward the tractor.



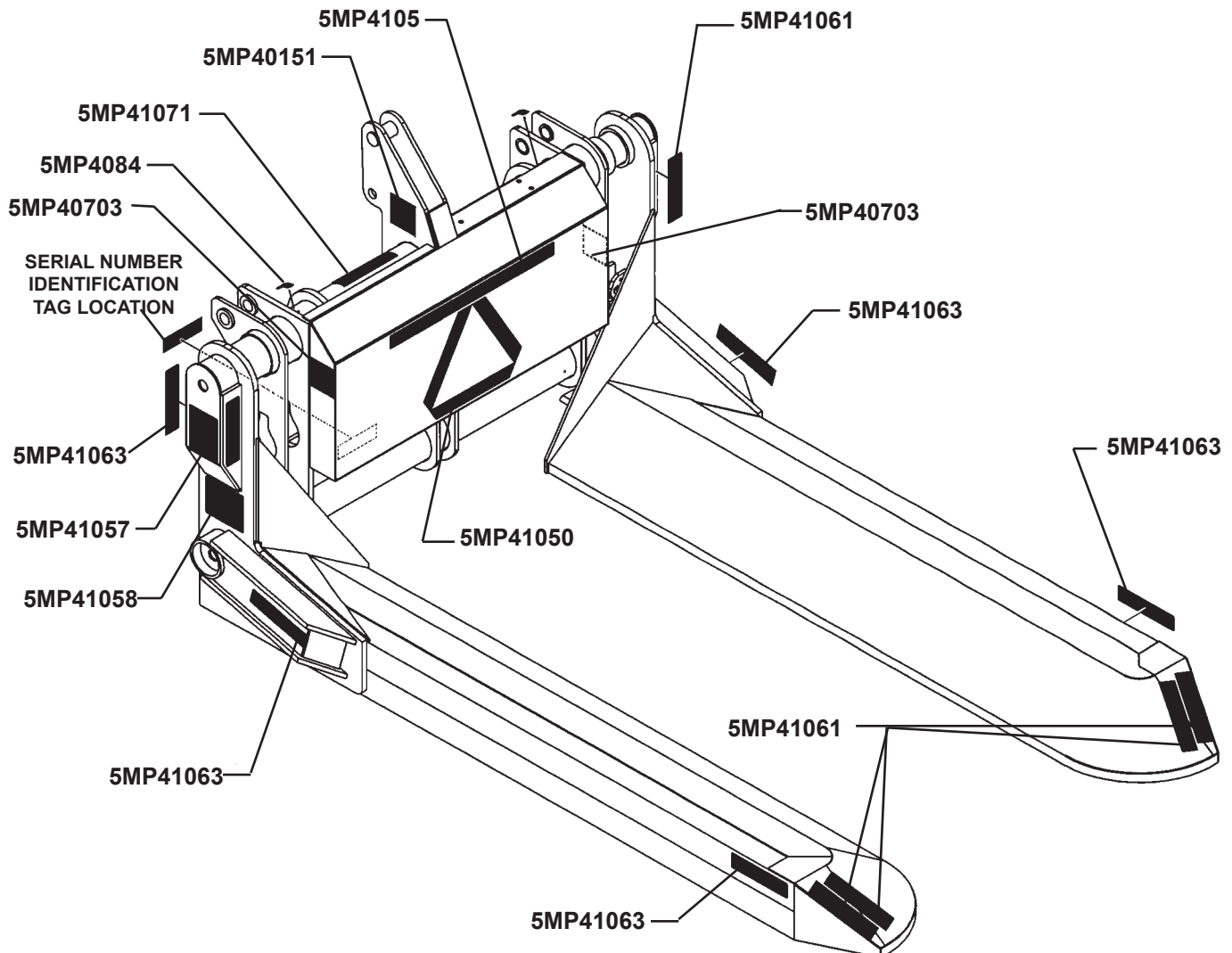
AVOID TIP-OVER

- Use seatbelt when present.
- Avoid holes, ditches, and obstructions which may cause the machine to tip, especially on hillsides.
- Never drive near the edge of a ditch, creek, gully or steep embankment.
- Slow down when turning, or traveling over rough ground and when turning on hillsides.
- Do not operate in reverse on hills or slopes.
- Do not operate on slopes greater than 10 degrees or 18% grade.

SAFETY SIGNS

GENERAL INFORMATION

The diagrams on this page show the location of the safety signs used on the CM11 Cotton Module Handler. The safety signs are identified by their part numbers, with reductions of the actual decals located on the following pages. Use this information to order replacements for lost or damaged safety signs. Be sure to read all safety signs before operating the attachment. They contain information you need to know for both safety and longevity.



IMPORTANT: Keep all safety signs clean and legible. Replace all missing, illegible, or damaged safety signs. When replacing parts with safety signs attached, the safety signs must also be replaced.

REPLACING SAFETY SIGNS: Clean the area of application with nonflammable solvent, then wash the same area with soap and water. Allow the surface to fully dry. Remove the backing from the safety sign, exposing the adhesive surface. Apply the safety sign to the position shown in the diagram above and smooth out any bubbles.

SAFETY SIGNS

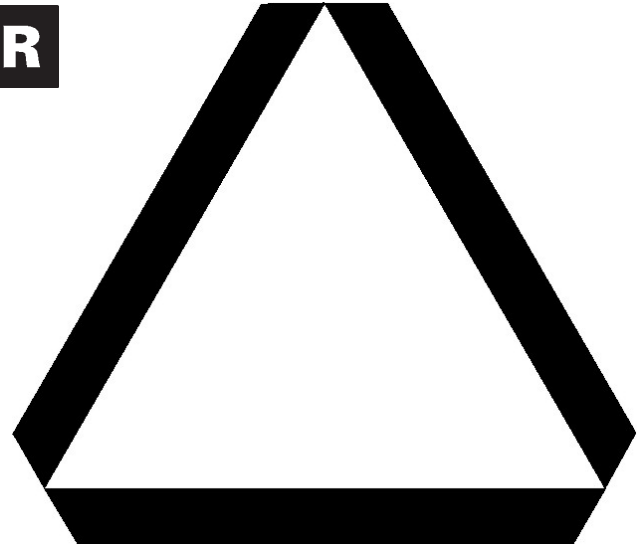
DANGER STAND CLEAR

DANGER STAND CLEAR

PART NO: 5MP4105 (1 REQ'D)



WARNING! HIGH PRESSURE FLUID
PART NO: 5MP40151 (1 REQ'D)

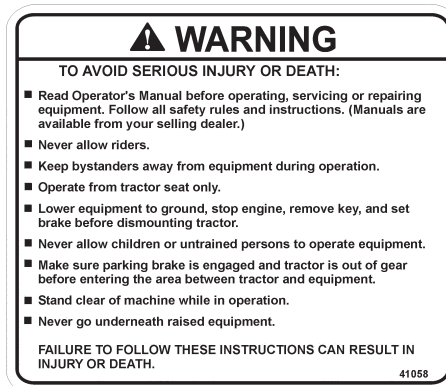


SLOW MOVING VEHICLE

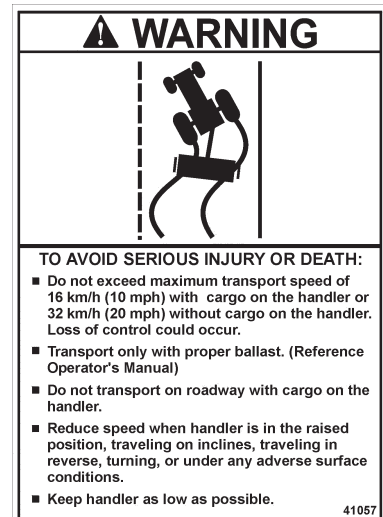
PART NO: 5MP41050 (1 REQUIRED)



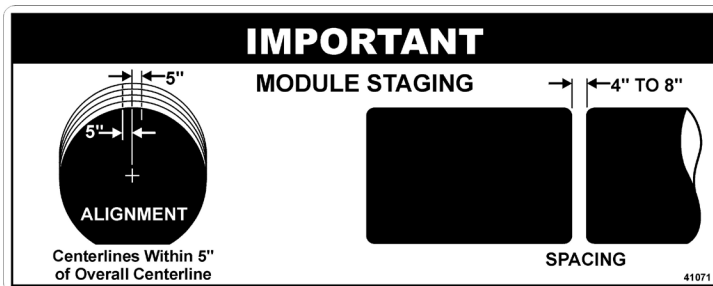
WARNING! PINCH POINT
PART NO: 5MP40703 (2 REQ'D)



WARNING! GENERAL
PART NO: 5MP41058 (1 REQ'D)



WARNING! TRANSPORTING
PART NO: 5MP41057 (1 REQ'D)



IMPORTANT! MODULE STAGING
PART NO: 5MP41071 (1 REQ'D)



GREASE 8 HOURS
PART NO: 5MP4084 (4 REQ'D)



RED REFLECTIVE TAPE 2" X 9"
PART NO: 5MP41061 (6 REQ'D)



AMBER REFLECTIVE TAPE 2" X 9" (5 REQ'D)
PART NO: 5MP41063

SET-UP

GENERAL INFORMATION

The CM11 Cotton Module Handler is shipped completely assembled and ready to install without any set-up required.

MAST INSTALLATION

The mast assembly is shipped completely assembled and ready to install onto the base unit of your cotton cotton module handler.

Position the base unit onto a level surface and remove the bottom two three point hitch pins and the top hitch pin if mounting onto a category 3 hitch. If not mounting onto a category three hitch the top pin can remain in the storage location.

INSTALLATION INSTRUCTIONS

1. Install the mast assembly onto the three point hitch by following Steps 1-10 in the Installation section of this manual.

CAUTION! To avoid bodily injury or machine damage, put transmission in **PARK** position and check the full range of hitch for interference, binding, or PTO separation whenever an implement is attached.



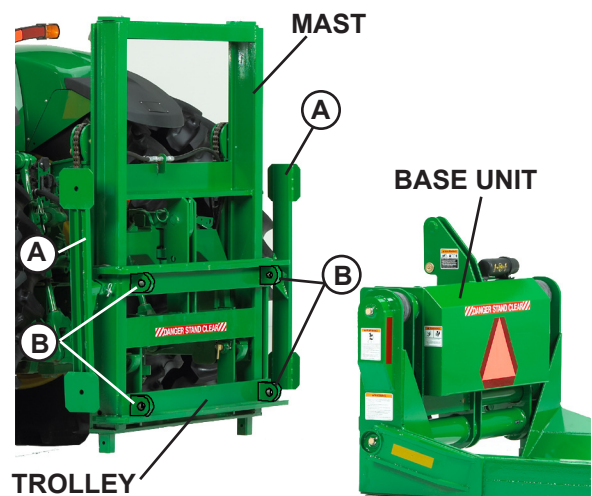
Do not stand between the tractor and implement.

To avoid bodily injury or machine damage make sure implement is attached correctly.

NOTE: ON SOME TRACTORS, SUCH AS THE 8x00 & 8x10, THE DRAWBAR WILL NEED TO BE REMOVED.

NOTE: 3-POINT HITCH LINKAGES SHOULD BE ADJUSTED SO THAT THE IMPLEMENT MAST IS ALWAYS TILTING TOWARDS THE TRACTOR THROUGHOUT THE HITCH RANGE OF MOTION.

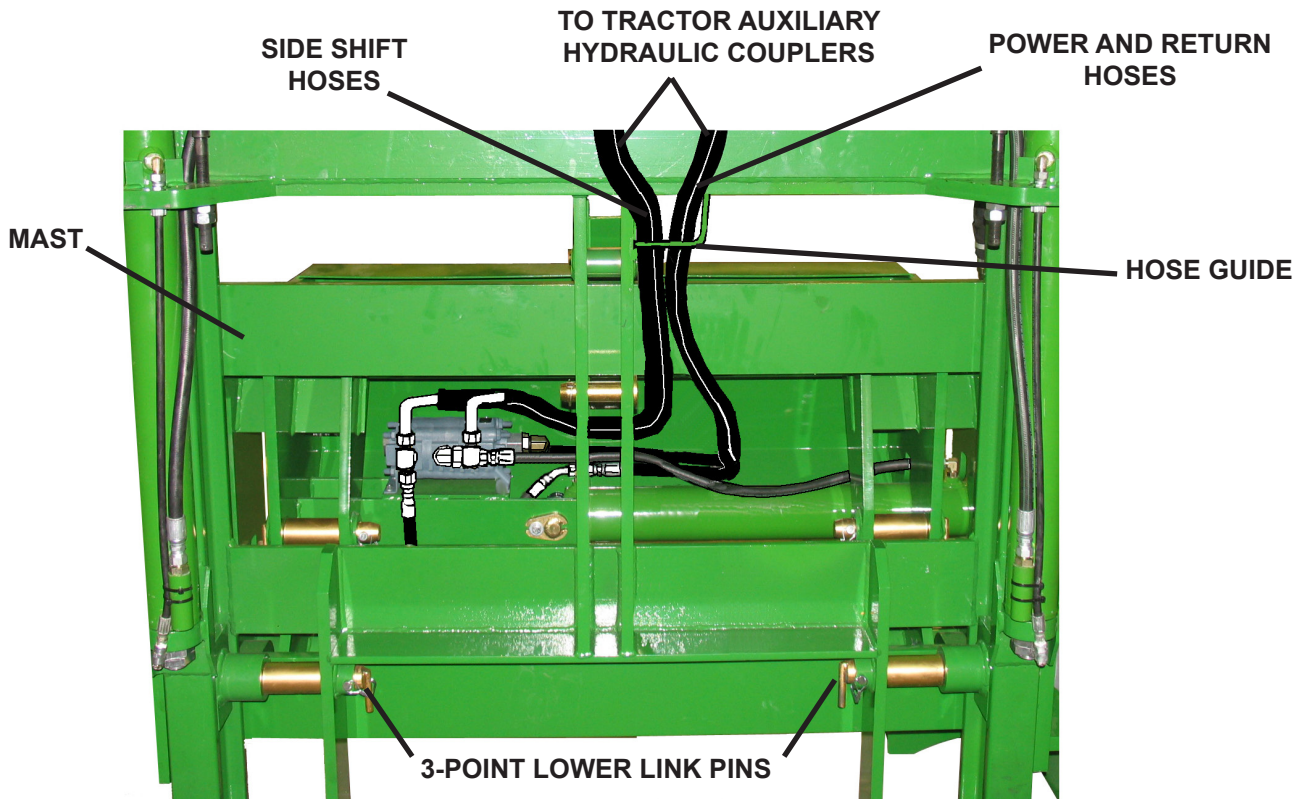
2. Once the mast assembly is securely attached to the tractor, raise the implement, remove the stands and install them in their storage position (A). Slowly back up to the base unit and align the four mounting ears (B) on the trolley between the mounting ears on the base unit.



SET-UP

NOTE: The mounting ears on the base unit should fit between the top and bottom lip on the trolley and properly align the mounting ears into their correct position.

3. Turn off the engine, remove the key and apply the brakes before leaving the operator's station to insert the pins. Install pins #5MP110370 into the mounting ears, secure in place using the four safety snap pins provided locking the mast onto the base unit.



4. Route the side shift hoses along with the power and return hoses through the hose loop in the center of the mast. Connect hydraulic hoses to tractor rear auxiliary hydraulic couplers.

NOTICE: Check for implement interference and hose routing.

5. Slowly pull hitch control lever to raise implement. Lower implement to the ground and adjust upper height limit control for maximum lifting height.

PREPARING THE TRACTOR

GENERAL INFORMATION

Due to the size of the Cotton Module Handler and the cotton modules themselves the tractor may require some additional set-up for operating this attachment.

USE YOUR TRACTOR OPERATOR'S MANUAL. Always refer to your tractor operator's manual for specific detailed information regarding operation of your equipment.

Following tractor related information uses John Deere tractors to illustrate preparation, attachment and operational procedures. Use your tractor OM for detailed information, as procedures will vary by equipment.

BALLAST

WEIGHTING FRONT END

CAUTION Front-end ballast may not always maintain the required stability if the tractor is driven too fast over rough ground with machine in raised position. Be safe and drive slowly under these conditions.



Install the proper amount of weight to the front of the tractor as recommended in the tractor operator's manual. For proper front end weighting, see the following implement code table.

NOTE: The implement code number represents the weight of the machine and how far rearward the weight is from the tractor.

	WEIGHT (LBS.)	CG DISTANCE	IMPLEMENT CODE
BASE UNIT	2154	24.9"	133.0
BASE UNIT WITH MAST	3860	18.8"	215.4

	WEIGHT (LBS)	CG DISTANCE	IMPLEMENT CODE
COTTON MODULE	4500		
Base Unit	Total = 6654	50.0"	579.0
Base Unit with Mast	Total = 8360	45.9"	692.7
COTTON MODULE	5000		
Base Unit	Total = 7154	50.9"	628.6
Base Unit with Mast	Total = 8860	47.2"	745.7
COTTON MODULE	6000		
Base Unit	Total = 8154	52.2"	727.6
Base Unit with Mast	Total = 9860	49.4"	851.8
COTTON MODULE	7000		
Base Unit	Total = 9454	53.3"	826.7
Base Unit with Mast	Total = 10,860	51.2"	957.7

PREPARING THE TRACTOR

NOTICE: Dual rear wheels are recommended for stability and load capacity. Determine the hitch lift compatibility of your tractor prior to attaching the Cotton Module Handler.

To determine minimum front end weighting for tractor-implement combinations where implement code information is not available, see your tractor operator's manual and your John Deere dealer.

REAR WHEEL WEIGHTING

Limit liquid or cast wheel weights on the rear tractor tires. This decreases the tire load carrying capacity which is needed to carry the machine and cotton module for transporting and/or loading.

TRACTOR REQUIREMENTS FOR CM11 COTTON MODULE HANDLER

The cotton module handler requires tractors in the 8000/8R & 9000 series size range and equipped with a quick coupler. The cotton module handler cannot be connected to a free link 3-point system, or a tractor without a quick coupler.

8000/8R / 9000 WHEEL & TRACK TRACTOR RECOMMENDATIONS

BALLAST Full set of Quick-tach weights on 8000/8R series.
Enough front weight needs to be added to maintain steering control of the tractor.

REAR TIRES (Do not exceed tire capacity on tractor - see tractor OM for details.)
Single rear tires: 170 Load Index or above (710R42 or 800 section)
Dual rear tires: 150 Load Index or above (480 section tires or wider)

FRONT TIRES (Do not exceed tire capacity on tractor - see tractor OM for details.)
Single front tires: 150 Load Index or above (480 section tires or wider)
Dual front tires: 125 Load Index or above (320 section tires or wider)

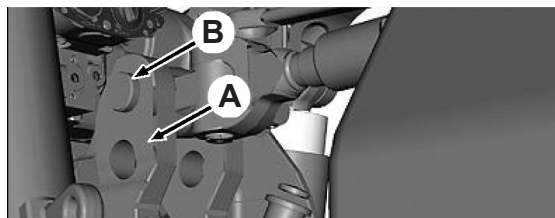
TREAD SETTING (TRACKS OR WHEELS)
Singles: 1900 mm (75 in) minimum.

SWAY BLOCKS

Set sway blocks to prevent side sway. See your tractor operator's manual.
NOTE: Shims may be added to reduce sway even further.

ROCKSHAFT SETUP (8000/8R SERIES)

Place pin and center link in upper hole.
A = Lower hole
B = Upper hole



NOTE: The 3-point hitch linkages should be adjusted so that the implement mast is always tilting towards the tractor throughout the hitch range of motion.

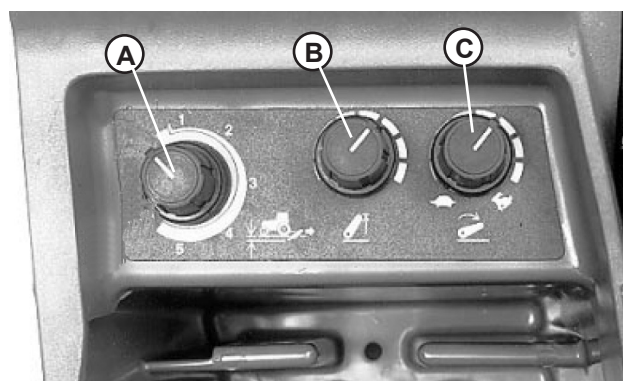
PREPARING THE TRACTOR

ROCKSHAFT DRAFT SENSING CONTROL

Set the Draft/Position control (A) for the hitch to POSITION CONTROL to prevent unexpected hitch movement when hitching and during operation.

Set the upper Draft/Position (B) to the maximum height setting.

The three point hitch rate of drop (C) should be adjusted to a speed slow enough to be controllable.



8000/8R SERIES

PREPARING TRACTOR DRAWBAR

Check tractor drawbar clearance. If drawbar is in the UP position and the drawbar clevis is installed, the drawbar may hit the coupler or machine and not allow the hitch to lower completely. Turn the drawbar offset down and position it in the “shortest” position.

NOTE: On some tractors, such as the 8x00 and 8x10, the drawbar will need to be removed completely.

CHECKING TIRE INFLATION

Inflate front and rear tires to proper pressure as recommended in the tractor operator’s manual.

NOTE: The rear tires on the tractor will be carrying significant load. Checking for proper tire inflation is Very Important.

SETTING ELECTRO/HYDRAULIC SELECTIVE CONTROL VALVE

Press appropriate touch control switch (A) I through V to program each SCV. The SCV should be adjusted so a cotton module will be raised and lowered at speeds slow enough to be controllable. Connect SCV hoses as per the tractor manual’s instructions regarding orientation for extend and retract.

Adjust flow rate with flow knob (B).

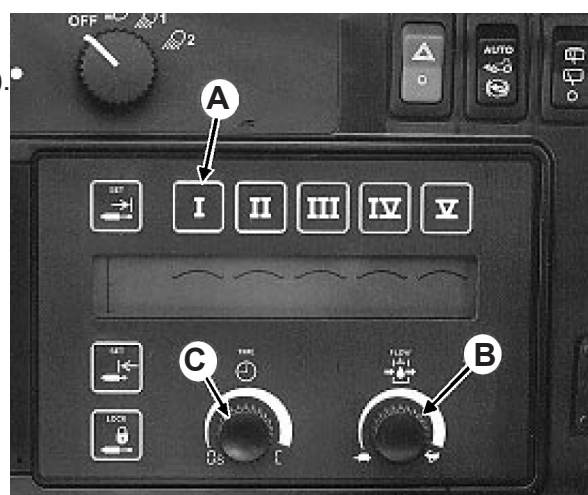
Set detent time with time detent knob (C).

FUNCTION	FLOW	DETENT (TIME
MAST RAISE / LOWER	START AT 5	SET DETENT TIME TO “0” (NO TIME DETENT)
FORK SPREAD	START AT 5	SET DETENT TIME TO “0” (NO TIME DETENT)

A = Touch Control Switch

B = Flow Control Knob

C = Time Detent Knob



8000/8R SERIES

NOTE: Selective Control Valves have an automatic cylinder extend/retract position (detent) that should be locked out for the operation of the cotton module handler.

INSTALLATION

The following instructions will help you mount your cotton module handler onto a category 3 standard quick coupler or category 4 narrow quick coupler. Remember to read all safety warnings, decals and operating instructions before operating the cotton module handler.

NOTICE: MAKE SURE YOUR TRACTOR IS PROPERLY EQUIPPED AND READY TO INSTALL THE COTTON MODULE HANDLER BY FOLLOWING ALL INSTRUCTIONS IN “PREPARING THE TRACTOR” SECTION OF THIS MANUAL.

INSTALLATION

1. CAT. 3 Quick Coupler: Pin #5MP17866 must be installed into the frame or mast. See Figure #1
2. Remove the bushing adapter #5MP110368 from both hitch pins and reinstall the pins into their appropriate location.

FIGURE #1

**CATEGORY 3
BASE UNIT WITHOUT MAST**

**INSTALL PIN #5MP17866
(CAT. 3 TOP HOOK LOCATION)**

**CATEGORY 3
BASE UNIT WITH MAST**

**INSTALL PIN #5MP17866
(CAT. 3 TOP HOOK LOCATION)**



INSTALLATION

3. CAT 4N Quick Coupler: Pin #5MP17866 must be removed from frame. See Figure #2
4. Install bushing adapter #5MP110368 onto both 7.50" long pins #5MP110370 and reinstall pins into their appropriate location. See

FIGURE #2

**CATEGORY 4
BASE UNIT WITHOUT MAST**

(CAT. 4 TOP HOOK LOCATION)

REMOVE PIN #5MP17866

**CATEGORY 4
BASE UNIT WITH MAST**



(CAT. 4 TOP HOOK LOCATION)

REMOVE PIN #5MP17866



CAUTION! To avoid bodily injury or machine damage, put transmission in **PARK** position and check the full range of hitch for interference.
Do not stand between the tractor and implement.

5. Turn load/depth control fully counterclockwise before attaching or detaching implements.

INSTALLATION

6. Pull up on coupler latch handles (A).

NOTICE: Contacting implement hitch pins with the levers in the locked position may result in damage to the latch mechanism.

7. Lower hitch until quick coupler hooks are lower than the implement hitch pins.
8. Back up tractor to implement.
9. Raise hitch enough to engage implement pins in hooks.

CAUTION! To avoid bodily injury or machine damage make sure implement is attached correctly.

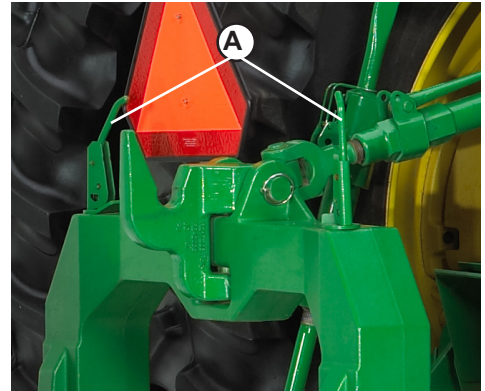


10. Push coupler latch handles down to lock implement to quick coupler.
11. Connect hydraulic hoses to tractor rear auxiliary hydraulic couplers.

NOTICE: Check for implement interference and hose routing.

12. Slowly pull hitch control lever to raise implement. Lower implement to the ground and adjust upper height limit control to maximum height position.
13. If using the optional mast assembly, raise the implement and remove the stands and install in their storage position (A).
14. Make any necessary adjustments.

NOTE: THE 3-POINT HITCH LINKAGES SHOULD BE ADJUSTED SO THAT THE IMPLEMENT MAST IS ALWAYS TILTING TOWARDS THE TRACTOR THROUGHOUT THE HITCH RANGE OF MOTION.



DETACHING AN IMPLEMENT FROM QUICK COUPLER.

1. If using the optional mast assembly, raise the implement and remove the stands from their storage position and install on bottom of mast.
2. Disconnect hydraulic hoses from the tractor auxiliary hydraulic couplers.
3. Lower attachment to the ground and raise both latch levers.
4. Continue lowering quick coupler until top and bottom hooks clear implement hitch pins.

NOTE: For tractors equipped with independent link suspension induce tractor leveling with engine operating. (Refer to your tractor operator's manual.)

5. Carefully drive tractor away from implement.

OPERATION

**Read all Safety Precautions before operating your attachment.
Refer to your machines operator's manual for attachment operation.**

The CM11 Cotton Module Handler is designed to pick up and load round cotton modules out in the field for transport. Due to the size and weight of the module's themselves along with the cotton module handler, caution must be taken during handling. Clear the area of bystanders before operating.

SIDE SHIFT OPERATION: The side shift feature was added to assist placing cotton modules tight together on the truck bed or staging area in a productive way that will reduce damage to the arms and bearings on the cotton module handler and mast. Two SCV's (auxiliary hydraulics) are required even though the same cylinders that open and close the arms of the cotton module handler also shift it from side to side. Therefore closing the arms only enough to securely hold the cotton module will give you more side shifting ability when placing the cotton module.

NOTICE: Frequent lubrication of the grease fittings on the center carriage is required when utilizing the side shift feature. Failure to maintain adequate lubrication will cause damage to the cotton module handler.

1. Activate the hydraulic cylinders on the cotton module handler to open the arms enough to clear the cotton module and prevent damage to the module wrap.
2. Center the module between the arms and slowly drive in reverse until the module makes contact with the back stop on the cotton module handler.
3. Slowly retract the cylinders to close the arms onto the cotton module. Closing the arms only enough to securely hold the cotton module will give you more side shifting ability during placement.
4. Using the three point arms, raise the cotton module handler just high enough to provide ground clearance during transport.

NOTE: If the module appears to be unstable, lower the module, open the arms of the cotton module handler and reposition module.

5. Transport the module to the desired location taking extra care not to exceed a maximum transport speed of 16 km/h (10 mph). For optimum stability during transporting, verify that the cotton module handler is in the center position and not shifted to either side.

NOTE: It is recommended that you stage modules on flat ground to reduce the chance of rolling. Make sure module is adequately raised to prevent wrap damage

6. Use the side shift feature to place cotton modules tight together in the staging area and lower the three point hitch until the cotton module is resting firmly on the ground. Open the arms of the cotton module handler, releasing the module, and slowly drive the tractor forward until the arms clear the module. Opening or closing the arms completely will synchronize the cylinders and return the cotton module handler to the center position for traveling.

OPERATION

NOTICE: *Shifting the module sideways by turning the tractor instead of using the side shift feature may damage the arms on the handler along with the bearings on the mast. Side Shift Kit 5MP114815 can be ordered to update cotton module handlers up to Serial Number #XFCM11X000116.*

7. Repeat steps 1-6 until all modules have been staged in the desired location.

LOADING MODULES WITH THE OPTIONAL MAST

8. Follow steps 1-5 above.
9. Once the tractor is in position for loading the module onto a transport vehicle, raise the three point arms, take care to keep the module parallel to the ground.
10. Continue to raise the module using the optional mast until the module and cotton module handler will clear the transport vehicle.
11. Positioned the module where desired on transport vehicle. Use the side shift feature on your handler to shift the modules tightly together and then slowly lower the mast until the cotton module is resting firmly on the transport vehicle. Open the arms of the cotton module handler and slowly drive the tractor forward until the arms clear the module and transport vehicle. Opening or closing the arms completely will synchronize the cylinders and return the cotton module handler to the center position for traveling.

NOTICE: *Shifting the module sideways by turning the tractor instead of using the side shift feature may damage the arms on the handler along with the bearings on the mast. Side Shift Kit 5MP114815 can be ordered to update cotton module handlers up to Serial Number #XFCM11X000116.*

NOTE: Drive straight forward to reduce arm contact with adjacent module.

12. Lower the cotton module handler until the implement is just high enough to provide ground clearance.



- Make sure parking brake is engaged and tractor is out of gear before entering the area between tractor and equipment.
- Never go underneath raised equipment.
- Never allow children or untrained persons to operate equipment.
- Do not exceed maximum transport speed of 16 km/h (10 mph) with cargo on the cotton module handler, 32 km/h (20 mph) without cargo on the cotton module handler or 5 km/h (3 mph) when traveling in reverse. Loss of control could occur.
- Only transport modules with the cotton handler in the center position. Do not transport with the unit shifted to either side.
- Do not transport on roadways with cargo on the cotton module handler.
- Reduce speed when the cotton module handler is in the raised position, traveling on inclines, traveling in reverse, turning, or under any adverse surface conditions.

OPERATION



- Operate only from the operator's station. Always use the seat belt when present.
- Do not exceed the lift capacity of your equipment. See tractor and attachment specifications.
- Never use this attachments for a work platform, personnel carrier or ladder.
- Always check locking pins before operating this attachment.
- Before exiting the tractor, lower the attachment to the ground, turn off the tractor's engine, remove the key and apply the brakes.
- Add the required amount of ballast to tractor. (See Preparing the Tractor section of the Loader Operator's Manual to determine the type and amount of ballast required.)
- Never stack loads on uneven ground. Loads stacked on uneven ground can topple.
- Do not handle cotton modules larger than your tractor and the attachment was designed to lift. Be sure stack and load heights do not exceed the lifting capabilities of your tractor or attachment.
- Never use tractor to stop a rolling modules.
- Do not operate on slopes greater than 10 degrees or 18% grade.
- Be careful when operating system on hillsides; tractor can tip sideways if it strikes a hole, ditch or other irregularity. When on a slope, keep the load low and proceed with extreme caution.
- The 3-point hitch linkages should be adjusted so that the implement mast is always tilting towards the tractor throughout the hitch range of motion.

MAINTENANCE

GENERAL INFORMATION

Your attachment was designed to be virtually maintenance free. Very little effort is needed to keep it in top condition. It is, however, important to follow these procedures to get full performance and longevity out of the equipment.

IMPORTANT: When replacing parts, use only factory approved replacement parts. Manufacturer will not claim responsibility for use of unapproved parts or accessories and/or other damages as a result of their use.

DAILY OR EVERY 8 HOURS OF OPERATION

- Replace any missing bolts or nuts with approved replacement parts.
- Lubricate four grease fittings on center carriage with arms open AND closed (4 pumps).
- Visually inspect the machine for worn parts (such as bearings and rollers), cracks in chain link side plates, or cracked welds. Repair as necessary.
- Visually inspect the machine for oil leaks and loose or damaged fittings and hoses.
- Check wear parts such as bearings and chains. Replace as necessary.
- Replace any damaged, illegible or missing decals. See Decal Identification and Replacement

MONTHLY OR EVERY 40 HOURS OF OPERATION

- Inspect both lift chains and lubricate with a spray of chain lubricant when necessary. Measure the chain under load or tension for elongation. When the chain is 3% or more of its original length it must be replaced. See Chain Replacement
- Check for proper roller adjustment between trolley and mast, if so equipped. See Roller Assembly Replacement and Adjustment
- Check chain bearing/sheave for chain seat/alignment, clearance and wear. See Chain Bearing/Sheave Replacement
- Check all bolts, nuts and bearings for tightness. Tighten or replace as needed.
- Clean equipment of dirt, oil, grease, etc. This will assist you in making a visual inspection and help avoid overlooking worn or damaged components.

EVERY 12 MONTHS

- Lubricate grease fittings on arm positioning cylinders.

DECAL IDENTIFICATION AND REPLACEMENT

Decal placement and identification for all of the attachments can be found on the parts diagrams and lists located at the back of this manual. The decals are identified by their part numbers with reductions of the actual decals located on the page. Use this information to order replacements for missing, illegible or damaged deals. When replacing parts with safety signs attached, the safety sign must also be replaced. All Safety Decals are free of charge. Contact your local Frontier dealer for replacements.

REPLACING SAFETY SIGNS:

1. Clean the area of application with nonflammable solvent.
2. Wash the same area with soap and water.
3. Allow the surface to fully dry.

MAINTENANCE

4. Remove the backing from the safety sign exposing the adhesive surface.
5. Apply the safety sign to the location shown in the parts diagram.
6. Smooth out any bubbles.

Helpful Hints: (1) *Decals adhere to a warm surface better than a cold surface.* (2) *Applying heat (from a hair dryer) will greatly improve your ability to remove a damaged decal before preparing the surface for installation of a new one.*

FLOW DIVIDER REPLACEMENT

The flow divider may need replacing if the arms are actuating unevenly or if only one is moving during operation.

WARNING! Before performing maintenance, find a level surface, lower the attachment to the ground and detach from the tractor.



Service work does not require going underneath the cotton module handler.

1. Tag and remove hydraulic fittings and hoses from the flow divider on the cotton module handler.
2. Remove the flow divider.
3. Install the new flow divider in the same orientation using the existing .31" hardware.
4. Reinstall the hydraulic fittings and hoses into the new flow divider.
5. Install the cotton module handler onto your tractor following the installation instructions in this manual.
6. Check the hydraulic system for leaks and correct operation.

NOTE: REPLACING INTERNAL SEALS WILL VOID WARRANTY. When out of warranty, if the seals are replaced, retighten bolts to 70 ft. lbs. upon reassembly.

BELLOWS REPLACEMENT

The bellows help to prevent dirt from entering into the slide tubes on the center carriage causing binding and scarring of the rods and tubes.

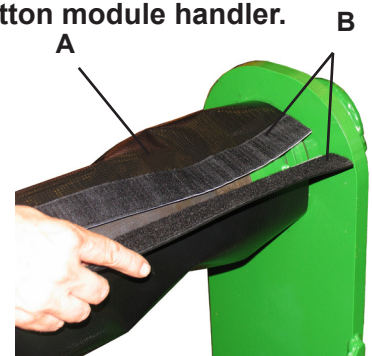
It is recommended the bellows be replaced when they become cracked or frayed enough that they allow contaminants to enter into the slide mechanism of the arms and center carriage.

WARNING! Before performing maintenance, find a level surface, open the arms and lower the attachment onto the ground. Apply the brakes, turn off the engine, and remove the key.



Service work does not require going underneath the cotton module handler.

1. Remove the clamp on both sides of the bellows that is being replaced.
2. Remove the damaged bellows. (It may be necessary to cut the damaged bellows off of the unit.) Note that the replacement bellows (A) may have been updated with a velcro type closure to eliminate the need to remove the arm of the cotton moduler when replacing.

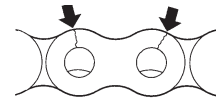


MAINTENANCE

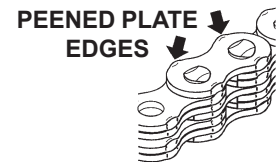
3. Inspect the rod and tube for damage and remove any dirt and/or contaminants. Coat rod with grease.
4. Position the bellows over the rod and press the velcro ends together (B). With the velcro seam down, pull the bellows over the mounting flanges on the arm and center carriage and secure in place using the existing hose clamps (C).
5. Apply two pumps of grease to each tube at the grease fittings on the center carriage.



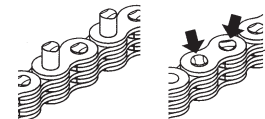
CRACKED SIDE PLATES



TIGHT JOINTS



PEENED PLATE EDGES



PROTRUDING OR TURNED PINS

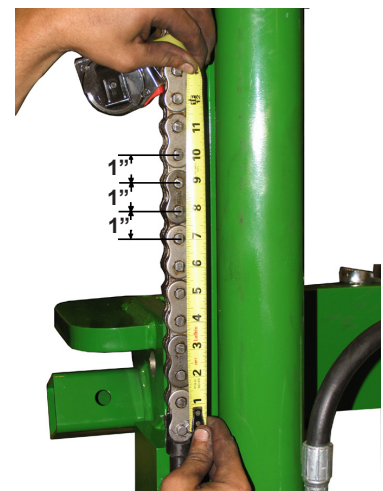
- Check for rust and cracked side plates. If cracks are found, replace both strands of the chain.
- Check for tight joints. Tight joints may be caused by rust, corrosion, bent pins or plates or by peened plate edges. If the tight joint cannot be loosened by lubrication or penetrating oil then replace both strands of the chain.
- Check for protruding or turned pins. If found, replace both strands of the chain.
- Check for chain side wear. If caused by misalignment, correct alignment and if wear is excessive, replace both strands of chain.

Regular lubrication and adjustment of the chains will increase their service life and downtime. The chains should be covered with a thin film of lubricant at all times. If the chains are dry, lubricate the full length of the chains with SAE 40 wt oil.

Chains are a standard leaf chain with a 1" pitch. The chain must be replaced when the chain is 3% or more of its original length or if there are signs of chain fatigue such as cracks on any link side plates. Measure the chain under load or tension for elongation.

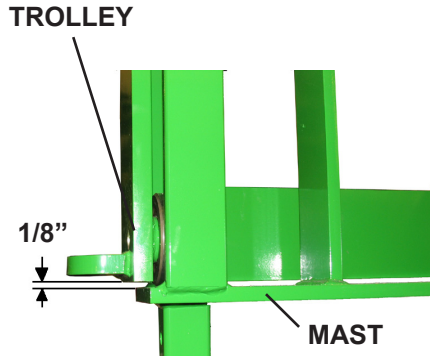
Count 12 pins on the chain, this distance on a new chain will be 12" and if this distance measures more than 12-3/8" (3% increase) the chain should be replaced.

NOTE: To Measure chain under tension: Lift cotton module handler ONLY 1" - 2" off the ground. Do NOT go under the unit for ANY reason.



MAINTENANCE

WARNING! Before adjusting the chain, find a level surface, lower the attachment to the ground, apply the brakes, turn off the engine, and remove the key. Service work does not require going underneath the cotton module handler.



Chain Adjustment

The chains should be adjusted to lift both sides of the cotton module handler equally to prevent unnecessary wear on chains and lift cylinders and also prevent the trolley from striking the mast when lowered. With the trolley completely lowered, measure the distance between the bottom roller assembly and the mast. Tighten or loosen the adjustment bolts as required until approximately 1/8" of space is between the trolley and the roller on both sides.

WARNING! Before replacing the chain, find a level surface. lower the attachment to the ground and detach from the tractor. Service work does not require going underneath the cotton module handler.



Chain Replacement

1. Release all tension from the chain and remove the chain tensioning bolt from the trolley.
2. Remove the chain pins from the tensioning bolts and replace the chain.
3. Reinstall the chain tensioning bolt onto the trolley and check chain tension.

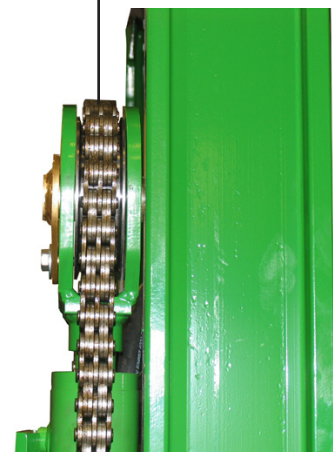
CHAIN BEARING/SHEAVE REPLACEMENT (MAST)

The chain bearing/sheave on the mast (if so equipped) should be visually inspected daily to ensure chain alignment and the bearing/sheave is turning freely. If the bearing/sheave is "froze" up or wore unevenly, it will cause excessive wear on the chain and should be replaced.

WARNING! Before performing maintenance, find a level surface, install stands on the bottom of the mast, lower the attachment to the ground and detach from the tractor. Service work does not require going underneath the cotton module handler.

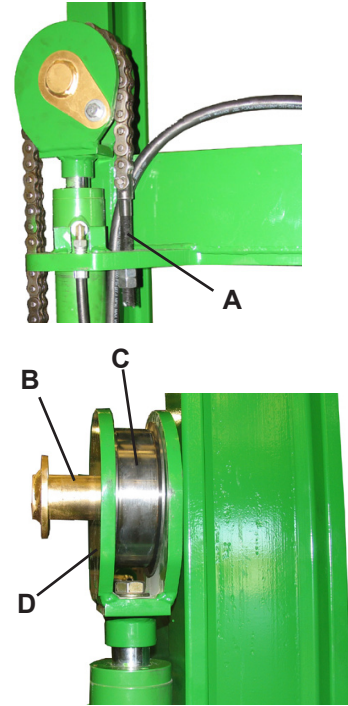


**CHECK CHAIN
ALIGNMENT DAILY**



MAINTENANCE

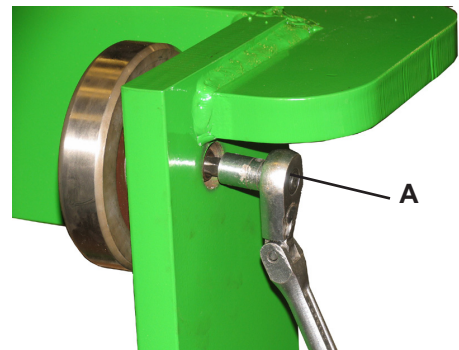
1. Remove the chain tensioning bolt (A) from the mast to gain access to the bearing/sheave.
2. Remove the snap ring, bolt and pin (B) from the chain sheave head and remove the bearing/sheave (C).
3. Inspect the pin for uneven wear or damage. Replace if necessary
4. Install the new bearing/sheave into the chain sheave head (D) and secure in place.
5. Inspect the chain for uneven wear or damage and replace if necessary. Reinstall chain tensioning bolt into the trolley and check chain for correct alignment.
6. Install the cotton module handler onto your tractor following the installation instructions in this manual.



ROLLER ASSEMBLY REPLACEMENT AND ADJUSTMENT

The trolley should be checked for “side play” regularly and the thrust plugs adjusted as necessary. The thrust plugs eliminate the side play of the trolley on the mast and help prevent uneven wear of the roller assemblies. The thrust plugs are adjusted by a set screw on the outside of the trolley. Tightening the set screw will push the thrust plug out towards the mast and loosening the set screw will allow the thrust plug to retract into the trolley and relieve the pressure on the mast.

NOTE: Thrust plugs are to be used for guides only. Tightening a thrust plug too tight will have a braking effect on the trolley and may cause unnecessary wear. It is recommended to hand tighten all four thrust plugs evenly and then loosen each set screw 1/2 - 3/4 turn (A).

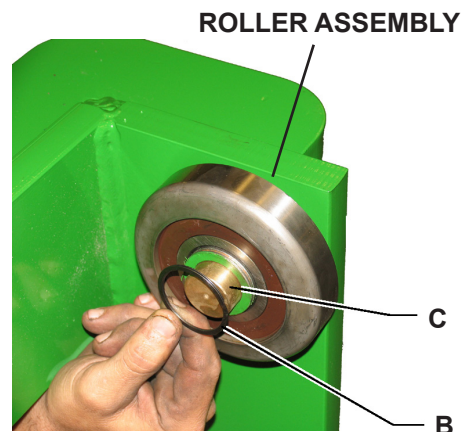
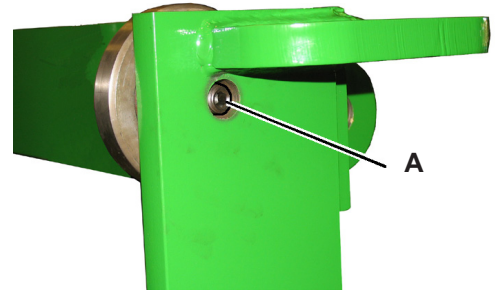


Roller Assembly Replacement

1. Remove the base unit from the mast. (See Installation Instructions) **NOTE: Leave the mast on the tractor.**
2. Remove the stop plates from the top of the mast. Release all tension from the chain and remove the chain tensioning bolt from the trolley.

MAINTENANCE

3. Loosen the roller adjusting set screws (A) (approximately two turns) which will allow the thrust plug to retract into the trolley and relieve the pressure on the mast.
4. Securely attach the trolley to a hoist and lift the trolley off of the mast and set down on the ground flat with the rollers facing up.
5. Remove the roller assembly by first removing the retaining ring (B) securing it to the trolley.
6. Inspect the thrust plugs (C) for wear. Replace if less than 3/8" thick. **NOTE: If thrust plug has been replaced the set screw will require additional loosening to allow for the extra plug thickness.**
7. Replace the roller assembly and reinstall the trolley onto the mast. **NOTE: Take special care to ensure all thrust plugs remain in place during installation.**
8. Readjust the thrust plugs and reinstall the chain tensioning bolt onto the trolley. Check chain tension.
9. Reinstall the base unit onto the mast. (See Installation Instructions)



MAINTENANCE AND SERVICE

CYLINDER SEAL REPLACEMENT

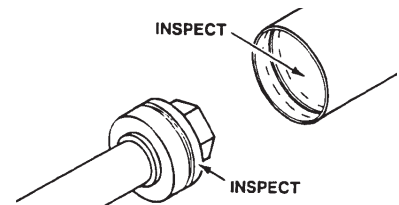
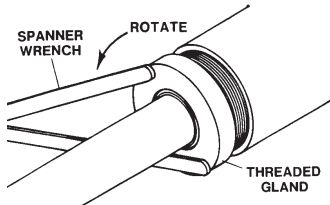
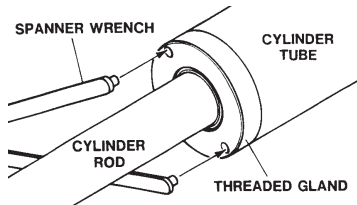
The following information is provided to assist you in the event you should need to repair or rebuild a hydraulic cylinder. When working on hydraulic cylinders, make sure that the work area and tools are clean and free of dirt to prevent contamination of the hydraulic system and damage to the hydraulic cylinders. Always protect the active part of the cylinder rod (the chrome section). Nicks or scratches on the surface of the rod could result in cylinder failure. Clean all parts thoroughly with a cleaning solvent before reassembly.

DISASSEMBLY PROCEDURE

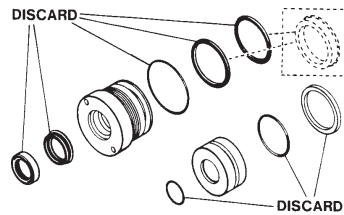
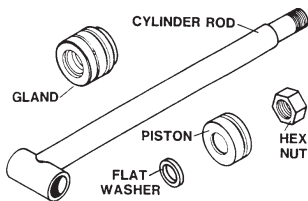
IMPORTANT: Do not contact the active surface of the cylinder rod with the vise. Damage to the rod could result.

THREADED TYPE GLAND

1. Rotate the gland with a spanner wrench counterclockwise until the gland is free of the cylinder tube.
2. Pull the cylinder rod from the cylinder tube and inspect the piston and the bore of the cylinder tube for deep scratches or galling. If damaged, the piston AND the cylinder tube must be replaced.



3. Remove the hex nut, piston, flat washer or spacer tube (if so equipped), and gland from the cylinder rod. If the cylinder rod is rusty, scratched, or bent, it must be replaced.
4. Remove and discard all the old seals.



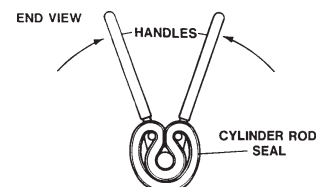
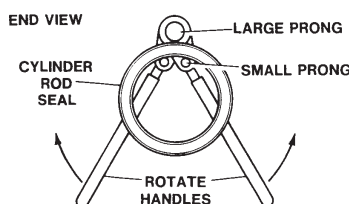
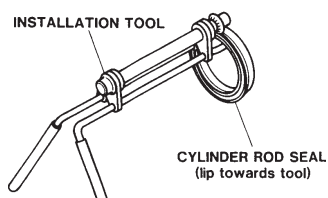
ASSEMBLY PROCEDURE

IMPORTANT: Replace all seals even if they do not appear to be damaged. Failure to replace all seals may result in premature cylinder failure. **NOTE:** Seal kits will service most cylinders of similar bore size and rod diameter.

1. Install the cylinder rod seal in the gland first. Be careful not to damage the seal in the process, as it is somewhat difficult to install.

NOTE: A special installation tool (Part #5MP65349) is available to help with installing the seal. Simply fit the end of the tool over the seal so that the large prong of the tool is on the outside of the seal, and the two smaller prongs on the inside. The lip of the seal should be facing towards the tool. Rotate the handles on the tool around to wrap the seal around the end of the tool.

Rotate the handles on the tool around to wrap the seal around the end of the tool.



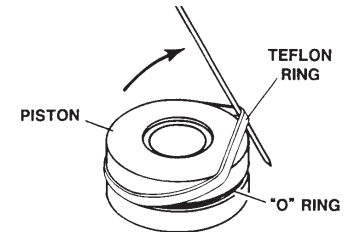
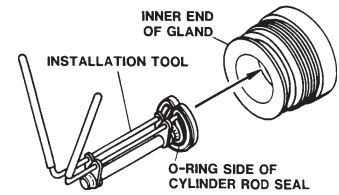
MAINTENANCE AND SERVICE

Now insert the seal into the gland from the inner end. Position the seal in its groove, and release and remove the tool. Press the seal into its seat the rest of the way by hand.

2. Install the new piston ring, rod wiper, O-rings and backup washers, if applicable, on the piston.

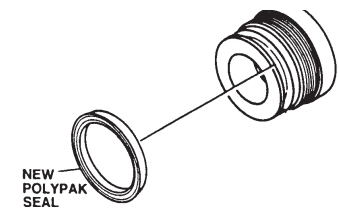
Be careful not to damage the seals. Caution must be used when installing the piston ring. The ring must be stretched carefully over the piston with a smooth, round, pointed tool.

3. After installing the rod seal inside the gland, as shown in step #1, install the external seal.



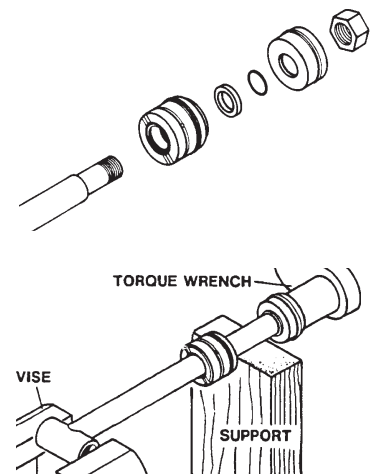
NOTE: Threaded glands may have been equipped with a separate O-ring and backup washer system or a polypak (all in one) type seal. Current seal kits contain a polypak (all in one) type seal to replace the discarded seal types on ALL THREADED GLANDS.

4. Slide the gland onto the cylinder rod, being careful not to damage the rod wiper. Then install the spacer, or flat washer (if so equipped), small o-ring, piston, and hex nut onto the end of the cylinder rod.
5. Secure the cylinder rod (mounting end) in a vise with a support at its center. Torque the nut to the amount shown for the thread diameter of the cylinder rod (see chart).



Thread Diameter	POUNDS - FEET
7/8"	150-200
*1"	230-325
1-1/8"	350-480
1-1/4"	490-670
1-3/8"	670-900
* 1" Thread Diameter WITH 1.25" Rod Diameter	
Min. 230 ft. lbs. Max. 250 ft. lbs.	

IMPORTANT: Do not contact the active surface of the cylinder rod with the vise. Damage to the rod could result.



6. Apply a lubricant (such as Lubriplate #105) to the piston and teflon ring. Insert the cylinder rod assembly into the cylinder tube.

IMPORTANT: Ensure that the piston ring fits squarely into the cylinder tube and piston groove, otherwise the ring may be damaged and a leak will occur.

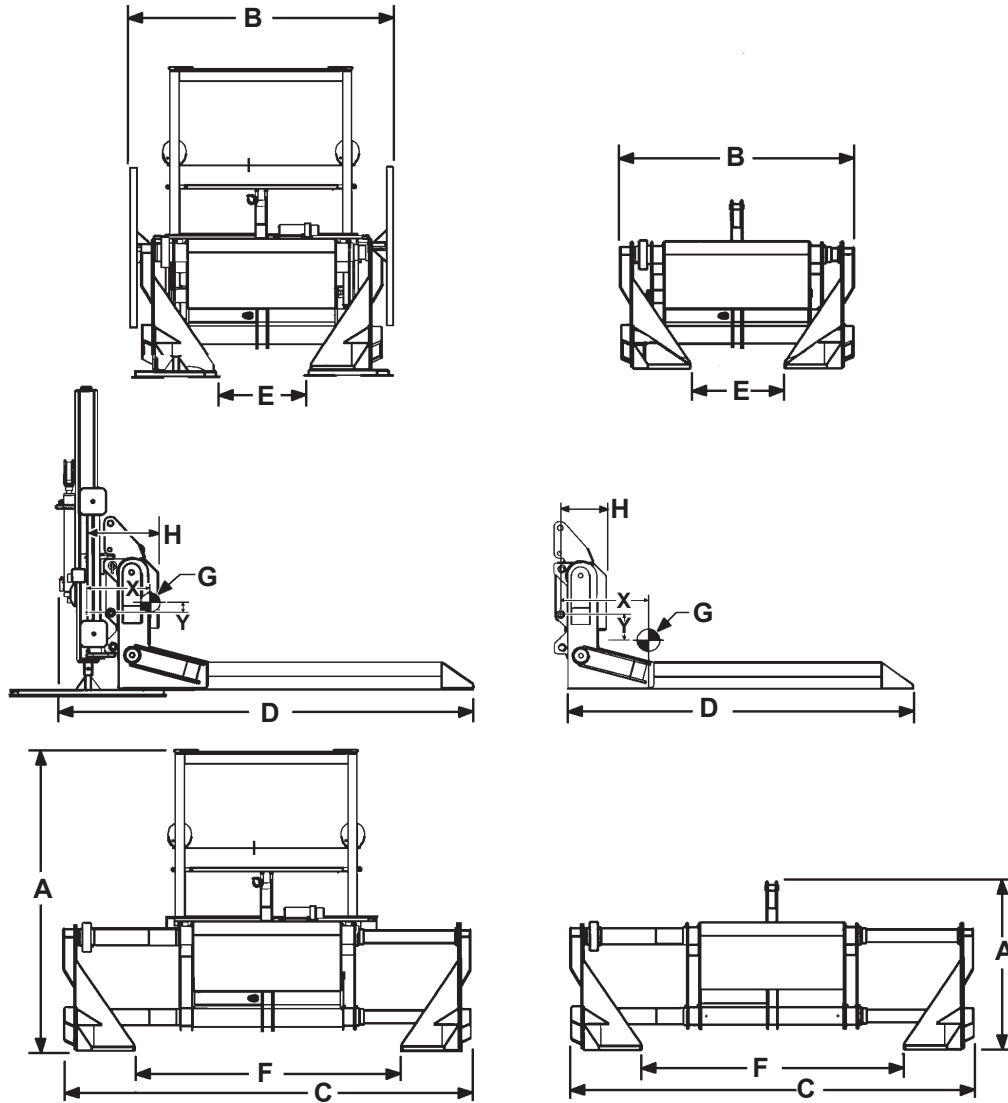
7. Use a spanner wrench to rotate the gland clockwise into the cylinder. Continue to rotate the gland with the spanner wrench until it is tight.

WARNING!



Cylinders serviced in the field are to be tested for leakage prior to the attachment being placed in work. Failure to test rebuilt cylinders could result in damage to the cylinder and/or the attachment, cause severe personal injury or even death.

SPECIFICATIONS



CM11 COTTON MODULE HANDLER SPECIFICATIONS

	BASE UNIT	BASE UNIT WITH
MAST		
A. Overall Height (inches).....	50.38	94.00
B. Overall Width - Arms Closed (inches)	72.38	78.40
C. Overall Width - Arms Open (inches).....	124.38	124.38
D. Overall Length (inches)	108.18	124.48
E. Arm Opening (Closed).....	29.68	29.68
F. Arm Opening (Open).....	81.68	81.68
G. Center of Gravity (attachment only)		
Distance "back" from lower 3-point mounting pins "X"	24.84	18.80"
Distance "up/down" from lower 3-point mounting pins "Y"	8.12"	3.00"
H. Lower 3-Point Mounting to Module Back Stop	14.07"	21.07"
Weight (lbs)	2154	3860
Hitch Type	Cat. 3 or 4N	Cat. 3 or 4N
Approximate Lift Height (inches)	24.00*	72.00*
*Actual lift height depends on tractor tires and configuration.		

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BOLT TORQUE

BOLT TORQUE SPECIFICATIONS

GENERAL TORQUE SPECIFICATION TABLES


Use the following charts when determining bolt torque specifications when special torques are not given. Always use grade 5 or better when replacing bolts.

SAE BOLT TORQUE SPECIFICATIONS


NOTE: The following torque values are for use with extreme pressure lubricants, plating or hard washer applications Increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.


Bolt Size		SAE GRADE 5 TORQUE				SAE GRADE 8 TORQUE				Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary
		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		
Inches	Millimeters	UNC	UNF	UNC	UNF	UNC	UNF	UNC	UNF	
1/4	6.35	8	9	11	12	10	13	14	18	
5/16	7.94	14	19	19	23	20	25	27	34	
3/8	9.53	30	36	41	49	38	46	52	62	
7/16	11.11	46	54	62	73	60	71	81	96	
1/2	12.70	68	82	92	111	94	112	127	152	
9/16	14.29	94	112	127	152	136	163	184	221	
5/8	15.88	128	153	174	207	187	224	254	304	
3/4	19.05	230	275	312	373	323	395	438	536	
7/8	22.23	340	408	461	553	510	612	691	830	
1	25.40	493	592	668	803	765	918	1037	1245	
1-1/8	25.58	680	748	922	1014	1088	1224	1475	1660	
1-1/4	31.75	952	1054	1291	1429	1547	1700	2097	2305	
1-3/8	34.93	1241	1428	1683	1936	2023	2312	2743	3135	
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103	


GRADE 2




GRADE 5









GRADE 8










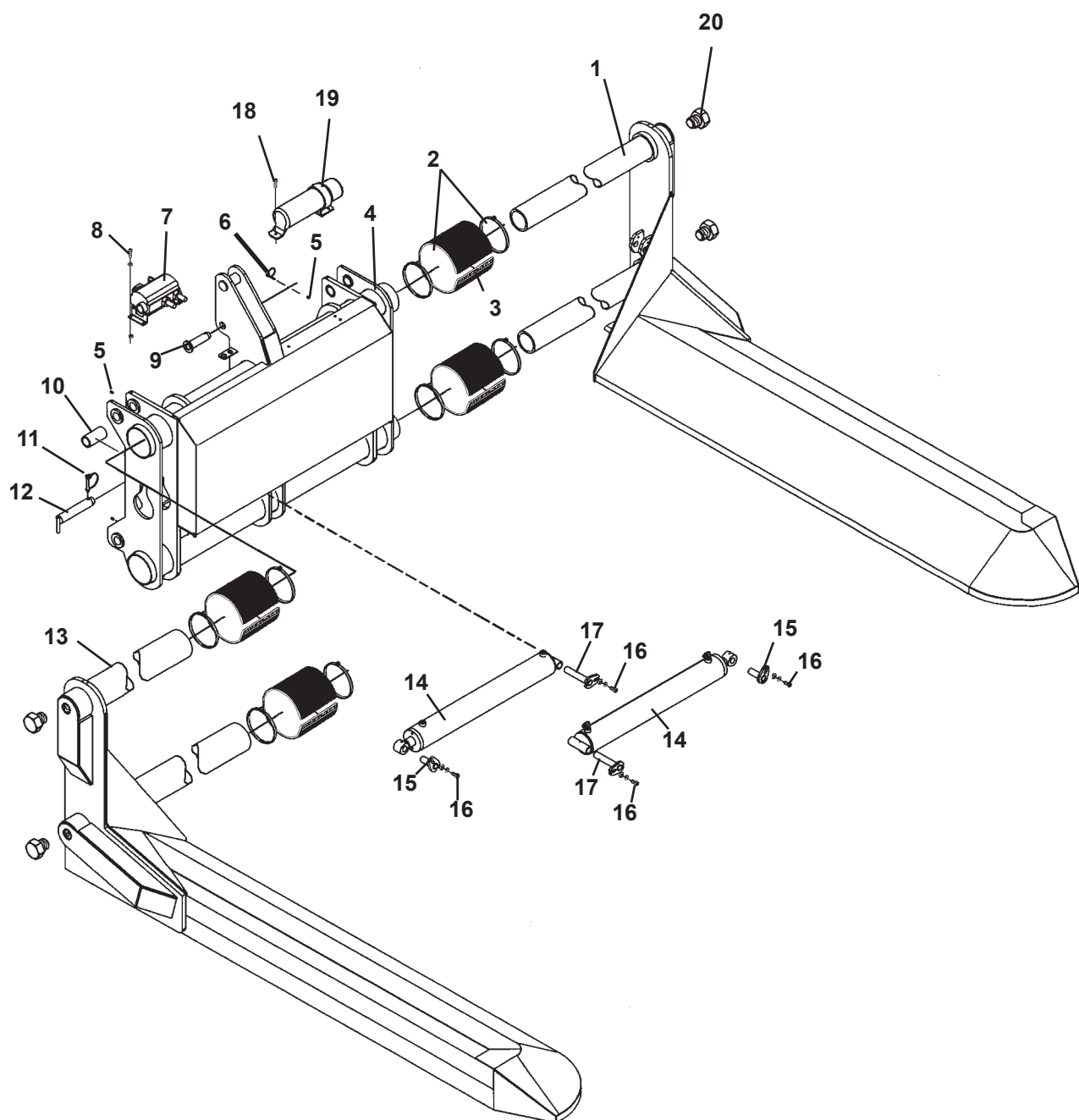
METRIC BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with metric hardware that is unplated and either dry or lubricated with engine oil. Reduce torque 15% when using hardware that has extreme pressure lubricants, plating or hard washer applications.

Bolt head identification marks as per grade.		
		

Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

CM11 COTTON MODULE HANDLER

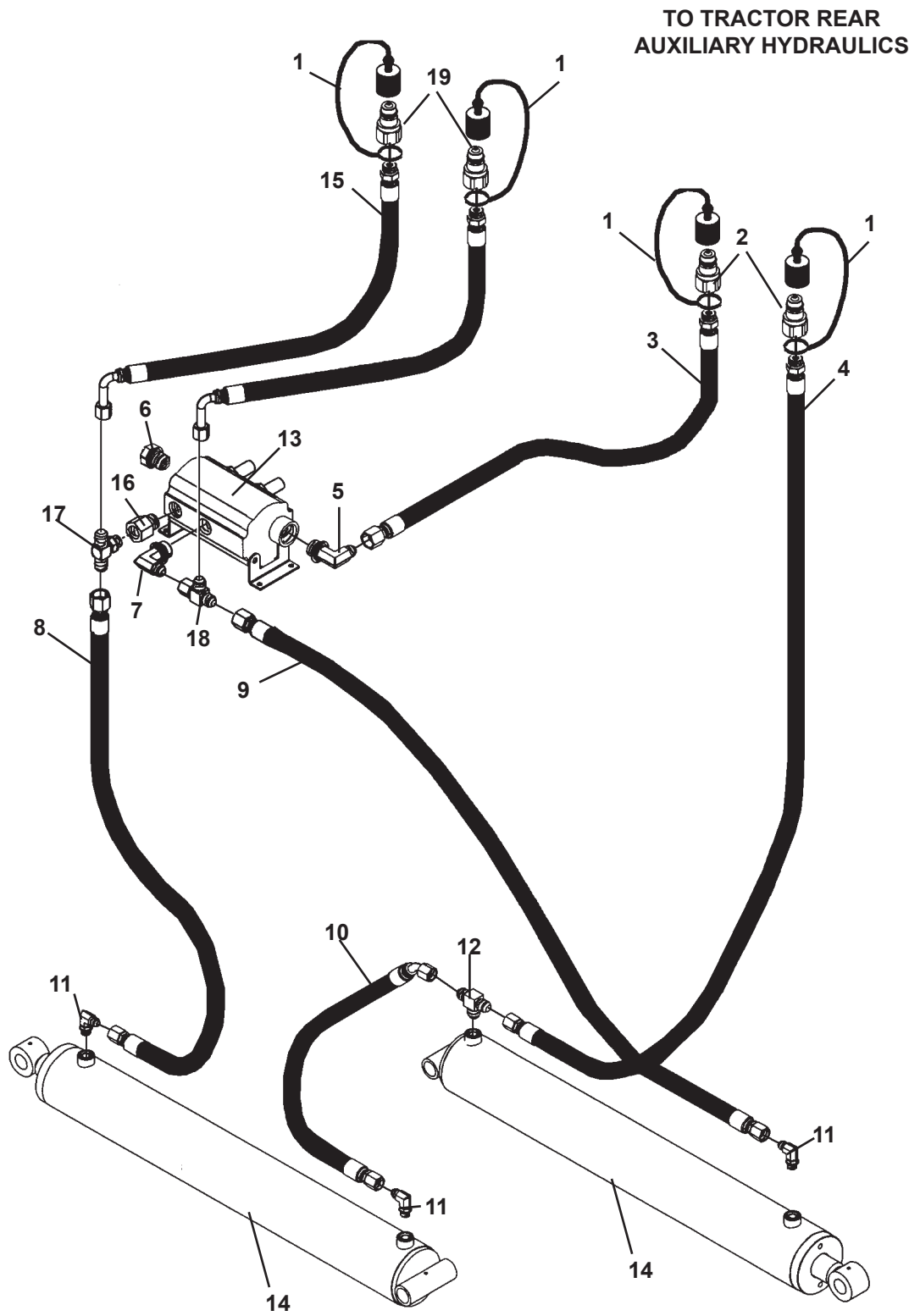


CM11 COTTON MODULE HANDLER

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	5MP108130	Right Arm
2	8	5MP110422	Hose Clamp
3	4	5MP110224	Bellows
4	1	5MP108053	Center Carriage
5	8	5MP6616	Grease Fitting
6	1	5MP6626	Klik Pin
7	1	5MP110225	Flow Divider with Relief (21 GPM, 3000 PSI)
		5MP46010*	Replacement Seal Kit
8	4	5MP1021	.31" UNC X .75" Hex Capscrew
	4	5MP1502	.31" Lock Washer
	4	5MP1225	.31" UNC Hex Nut
9	1	5MP17866	Pivot Pin 1.25" X 3.68"
10	4	5MP110368	Bushing Adapter
11	2	5MP10006	Safety Snap Pin
12	2	5MP110370	Pin 1.44" X 7.50"
13	1	5MP108131	Left Arm
14	2	5MP108149	Cylinder Assembly
15	2	5MP31991	Cylinder Pin 1.00" X 3.00"
16	4	5MP1043	.38" UNC X 1.00" Hex Capscrew
	4	5MP1503	.38" Lock Washer
	4	5MP1514	.38" Flat Washer
17	2	5MP32392	Cylinder Pin 1.00" X 5.06"
18	3	5MP1930	.31" UNC X .75" Hex Screw
	3	5MP10138	.31" UNC Rivet Nut
19	1	5MP25453	Manual Storage Tube
20	4	5MP25908	Breather Plug

* Field replacement of internal flow divider seals voids warranty.

CM11 COTTON MODULE HANDLER HYDRAULICS



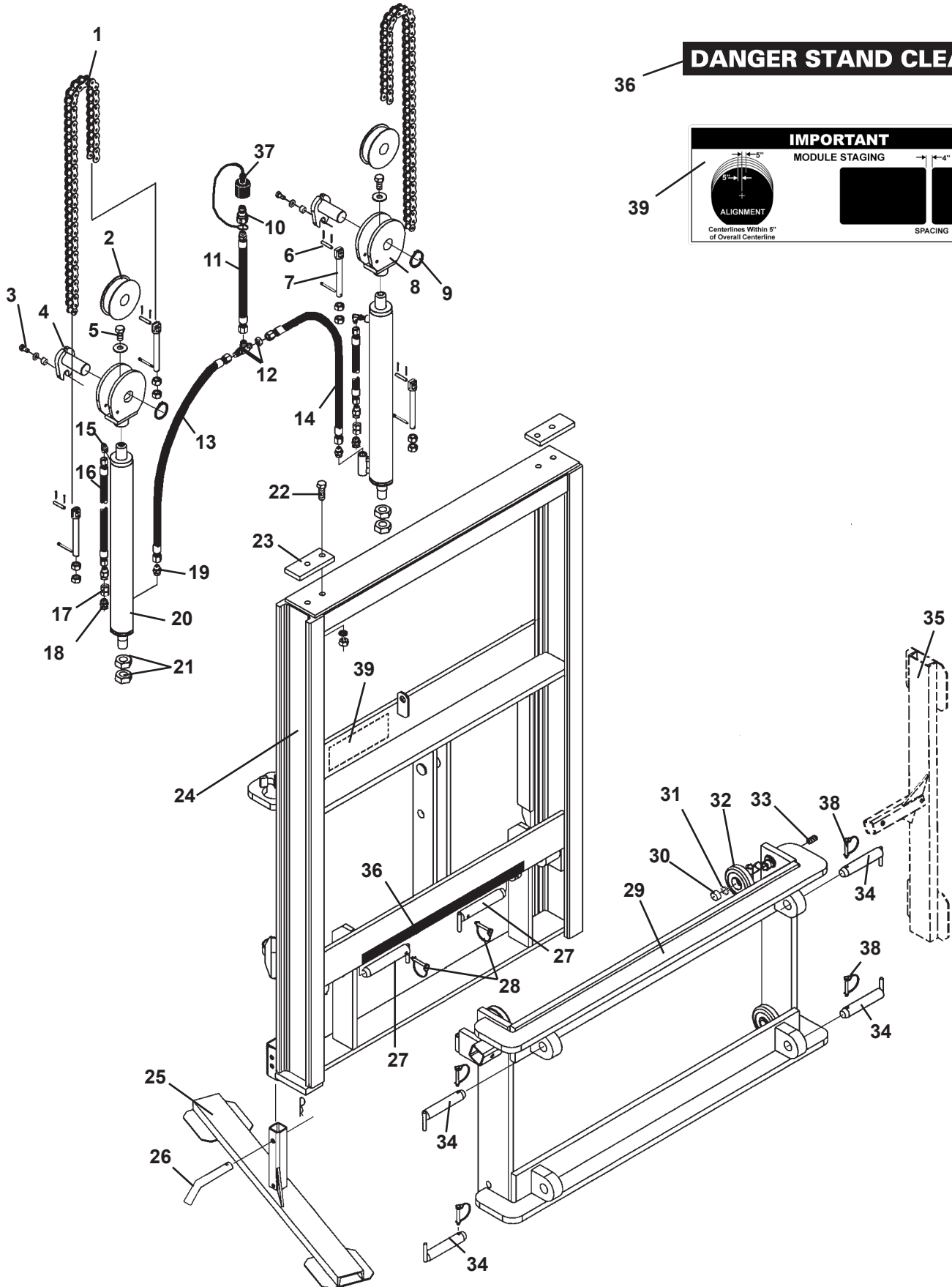
CM11 COTTON MODULE HANDLER HYDRAULICS

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	4	5MP51753*	Dust Cover
2	4	5MP15512	Male Coupler 10FBo .50" Body
3	1	5MP38541	Hose .38" X 100" 10MBo-8FJX-HS
4	1	5MP38542	Hose .38" X 93" 10MBo-6FJX-HS
5	1	5MP30035	90° Elbow 16MBo-8MJ
6	1	5MP3238	Plug 16MBo
7	2	5MP3316	90° Elbow 12MBo-8MJ
8	1	5MP37222	Hose .38" X 18" 8FJX-6FJX-HS
9	1	5MP37193	Hose .38" X 36" 8FJX-6FJX-HS
10	1	5MP38540	Hose .38" X 16" 6JFX 45°-6FJX
11	3	5MP3434	90° Elbow 6MBo-6MJ
12	1	5MP30137	Tee 6MJ-6MJ-6MBo
13	1	5MP110225	Flow Divider with Relief (21 GPM, 3000 PSI)
		5MP46010**	Replacement Seal Kit
14	2	5MP108149	Cylinder Assembly
15	2	5MP38683*	Hose .38" X 108" 8MBo - 8FJX 90°L
16	1	5MP30377*	Straight Connector 12MBo-8FBo
17	1	5MP3300*	Tee 8MJ-8MJ-86MBo
18	1	5MP3278*	Tee 8MJ-8FJX-8MJ
19	2	5MP17139*	Male Coupler 8FBo .50" Body

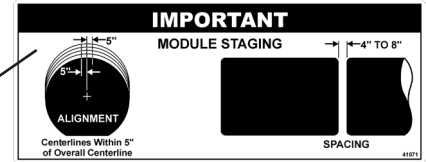
* Cotton Module Handlers with Serial Number XFCM11X000117 and UP are equipped with a standard side shift feature. All units up to Serial Number XF-CM11X000116 can be updated to include the side shift feature by ordering Side Shift Kit #114815 which includes items marked with an asterisk (*).

** Field replacement of internal flow divider seals voids warranty.

OPTIONAL MAST ASSEMBLY



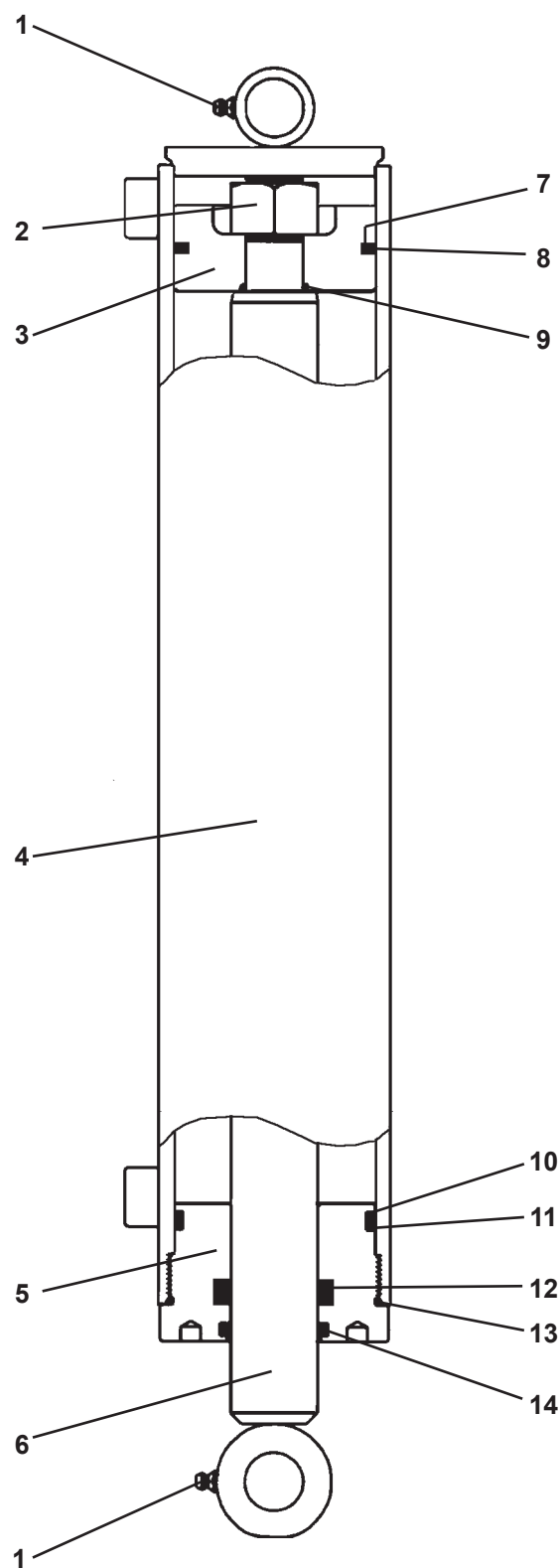
DANGER STAND CLEAR



OPTIONAL MAST ASSEMBLY

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	5MP108192	Chain
2	2	5MP108095	Chain Sheave
3	2	5MP1087	.50" UNC X .75" Hex Capscrew
	2	5MP1516	.50" Flat Washer
	2	5MP86149	Spacer Tube
4	2	5MP110282	Pin 1.75" X 2.94
5	2	5MP10011	.75" UNF X 1.50" Hex Capscrew Grade 8
	2	5MP1649	.75" Hard Flat Washer
6	4	5MP108194	Chain Pin (Includes Cotter Pins)
7	4	5MP108193	Chain Adjustment Bolt
	4	5MP1614	Cotter Pin
	8	5MP1481	.75" UNF Hex Nut
8	2	5MP108096	Chain Sheave Head
9	2	5MP1651	Snap Ring
10	1	5MP15512	Male Coupler 10FBo .50" Body
11	1	5MP38545	Hose .62" X 48" 10MBo-10FJX-HS
12	1	5MP30430	Bulkhead Tee 10MJ-10MJ BLKH-10MJ
13	1	5MP38543	Hose .50" X 45" 8FJX-10FJX
14	1	5MP38544	Hose .50" X 54" 8FJX-10FJX
15	2	5MP3434	90° Elbow 6MBo-6MJ
16	2	5MP37133	Hose .25" X 29" 4MP-6FJX
17	2	5MP30147	Coupling
18	2	5MP22588	Breather Plug
19	2	5MP3270	Straight Connector 10MBo-8MJ (Located in Cylinder Assembly)
20	2	5MP108064	Cylinder Assembly
21	2	5MP108698	1.38" UNF Special Nut
22	4	5MP1140	.75" UNC X 2.25" Hex Capscrew
	4	5MP1507	.75" Lock Washer
	4	5MP1231	.75" UNC Hex Nut
23	2	5MP110411	Stop Plate
24	1	5MP108087	Mast Frame
25	1	5MP108585	Left Stand
26	2	5MP89951	Hitch Pin (Includes Hair Pin)
27	2	5MP110369	Pin 1.44" X 8.50"
28	2	5MP10041	Safety Snap Pin
29	1	5MP108086	Trolley
30	4	5MP12155	Thrust Plug
33	4	5MP12097	Retaining Ring
32	4	5MP108195	Roller Assembly
33	4	5MP10146	Set Screw
34	4	5MP110370	Pin 1.44" X 7.50"
35	1	5MP108586	Right Stand (Shown in Storage Position)
36	1	5MP4105	Danger Stand Clear Decal
37	1	5MP51753	Dust Cover
38	4	5MP10006	Safety Snap Pin
39	1	5MP41071	Module Staging Decal

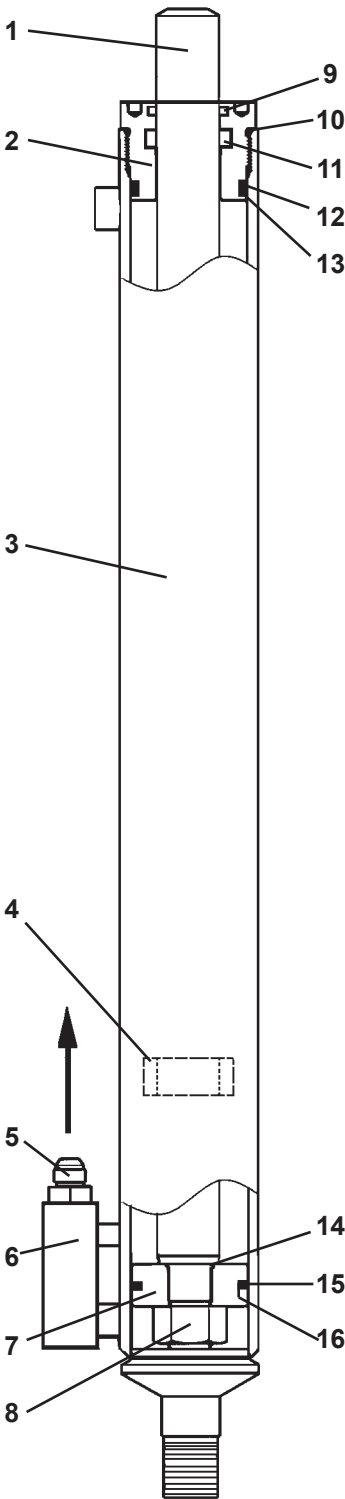
5MP108149 CYLINDER ASSEMBLY



5MP108149 CYLINDER ASSEMBLY

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	5MP6616	Grease Fitting
2	1	5MP1483	Hex Nut (Torque to 230-325 ft. lbs.)
3	1	5MP18440	Piston
4	1	5MP108150	Cylinder Tube
5	1	5MP18433	Cylinder Gland
6	1	5MP108151	Cylinder Rod
7	1	*	O'Ring
8	1	*	Piston Ring
9	1	*	O'Ring
10	1	*	O'Ring
11	1	*	Back-Up Washer
12	1	*	Poly-Pak Seal
13	1	*	O'Ring
14	1	*	Rod Wiper
		5MP45821	Cylinder Seal Kit (Includes all parts marked with an asterisk (*). Parts are not sold separately.)
		5MP65349	Installation Tool (Used for cylinder seal replacement.) (Not included with cylinder assembly.)

5MP108064 LIFT CYLINDER ASSEMBLY



5MP108064 LIFT CYLINDER ASSEMBLY

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	5MP108067	Cylinder Rod
2	1	5MP82449	Cylinder Gland
3	1	5MP108065	Cylinder Tube
4	1	5MP107207	Cylinder Stop
5	1	5MP3431	Straight Connector 10MBo-10MJ
6	1	5MP45958	Velocity Fuse
7	1	5MP64525	Piston
8	1	5MP1483	Hex Nut (Torque to 230-325 ft. lbs.)
9	1	*	Rod Wiper
10	1	*	O'Ring
11	1	*	Poly-Pak Seal
12	1	*	Back-Up Washer
13	1	*	O'Ring
14	1	*	O'Ring
15	1	*	Piston Ring
16	1	*	O'Ring
		5MP45618	Cylinder Seal Kit (Includes all parts marked with an asterisk (*). Parts are not sold separately.)
		5MP65349	Installation Tool (Used for cylinder seal replacement.) (Not included with cylinder assembly.)

PART NUMBER
5MP76318
REV. 5

