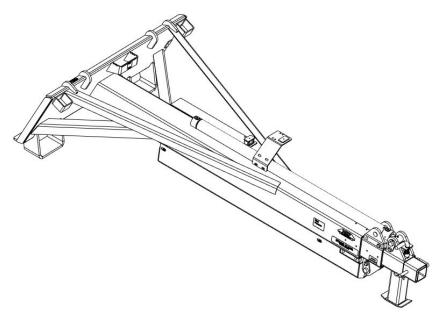


# OPERATOR'S MANUAL TELESCOPING BOOM

Model TB8X21 Serial Number 14592-Manual# 96277 APR 2024 ENGLISH



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# Introduction

# **Using This Manual**

Your loader operator's manual contains instructions to safely operate the loader. Anyone who operates a loader with this attachment installed must first read, understand and follow the instructions in the loader operator's manual.

This manual contains instructions to safely operate and service the attachment. Anyone who operates or services the attachment must first read, understand and follow the instructions in this manual.

Additional operating or servicing information for the attachment may be provided online, in video, or in other publications. This additional information does not replace, and is not a substitute for reading and following, the instructions in this manual.

The safety alert symbol is shown in WARNING statements to alert users to hazards which could cause death or injury. Carefully read and follow the messages.

IMPORTANT notices alert users to instructions which, if not followed, could result in damage. Carefully read and follow the messages.

There may be times when the attachment and loader shown in this manual may not be your exact model. The model shown will be close enough to your attachment or loader to accurately convey the information.

The most current information available is included in this manual. The publisher may revise this manual at any time and is not required to notify users of revisions.

#### **Replacement Manuals**

Be sure to include this operator's manual if you sell or transfer ownership of the attachment.

Contact Messer Attachments LLC for a printed manual, or find a downloadable manual on our website.

# **Using This Attachment**

The attachment is designed with three telescoping sections. It is designed for installation of secondary attachments designed by the manufacturer on the end of the telescoping sections.

The attachment is designed for installation on a full-size loader, connected to the loader's front auxiliary hydraulic couplers.

### Introduction

The manufacturer reserves the right to make improvements, and to discontinue or change specifications, models or design without notice and without incurring obligation.

#### Loader Compatibility

Confirm your loader's Rated Operating Capacity (ROC in the loader operator's manual. Confirm your attachment's ROC in SPECIFICATIONS in this manual.

Do not install the attachment on the loader if the combined weight of the attachment and attachment load will exceed the loader ROC during operation because this may cause difficulty in controlling the loader or may cause loader damage.

Do not exceed the attachment's ROC because this may damage the attachment.

Attachment compatibility with your loader should be confirmed before the intitial purchase. If you receive the attachment as part of a later resale or transfer of ownership, contact the manufacturer to confirm the attachment is designed to be used with your loader before you install the attachment.

#### Product Misuse

Product misuse can cause accidents, injury and death.

The manufacturer of the attachment is not responsible for any harm or injury resulting from product misuse.

Product misuse includes operating or servicing the attachment without following the instructions in this manual and in the loader manuals, using the attachment in any way for which it was not designed, neglecting to confirm loader compatibility, and modifying the attachment.

#### Modifications

Do not modify the attachment in any way.

# Manufacturer Contact

Call Messer Attachments LLC at (833) 352-3477, or see us at www.messerattach.com.

### **Product Identification**

#### **Identification Numbers**

Record your product information to provide when you contact the dealer or manufacturer.

Telescoping Boom Model TB8X21 Serial Number 14592-

#### **Serial Number Location**



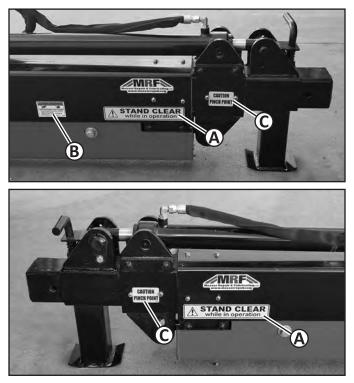
Purchase Date	
Dealer	
Dealer Phone	
Model	
Serial #	

# Specifications

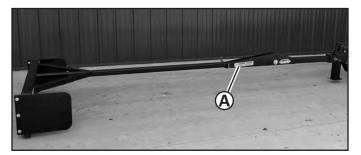
Model	TB8X21
Overall Width x Height	1.2 x 0.5 m (46 x 22 in.)
Overall Length (Collapsed)	2.4 m (96 in.)
Overall Length (Extended)	6.5 m (255 in.)
Cylinders	2 x 48 in. 3500 PSI
Weight	295 kg (650 lb.)

# Safety Decals

## **Decal Locations (Telescoping Boom)**



# Decal Locations (Optional Roof Rake)



Location	Description	Part Number
А	Stand Clear Decal	96028
В	Warning Decal	96117
C	Caution Decal	96109

## Safety Decals

#### **STAND CLEAR DECAL 96028**



#### STAND CLEAR WHILE IN OPERATION

#### WARNING DECAL 96117



#### HIGH PRESSURE FLUID HAZARD To prevent serious injury or death:

- Relieve pressure on system before repairing, adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

### **CAUTION DECAL 96109**



**PINCH POINT** 

### Wear Protective Equipment

- Wear gloves to protect hands from burns if hydraulic couplers become hot during operation.
- Never wear sandals or other light footwear when operating or servicing the attachment. Wear protective footwear when handling blades or heavy parts.
- Do not wear loose fitting clothing which may become entangled when operating or servicing the attachment.

# **Parking Safely**

- 1. Follow the instructions in the loader operator's manual to park the loader safely.
- 2. Fully lower the attachment to level ground.
- 3. Stop the loader engine and remove the key from the switch.
- 4. Do not leave the loader operator seat until the engine and all other moving loader and attachment parts have stopped.
- 5. Follow the instructions in the loader operator's manual to exit the loader safely. Use the attachment step area if one is provided.

# **Operating Attachments Safely**

- Always be aware of the weight of any loads you are transporting with an attachment. The weight of any load must not exceed the attachment's Rated Operating Capacity. The weight of the attachment combined with the attachment load must not exceed the loader's Rated Operating Capacity.
- Do not allow anyone to operate the attachment unless they have first read and understood the loader and the attachment operator's manuals.
- Do not allow anyone to operate the attachment unless they have first read and understood the safety and warning decals on the loader and on the attachment.
- The attachment owner is responsible for training others to safely operate the attachment, and is responsible for any injuries or harm which occurs while the attachment is being operated.
- If an area to step on the attachment has been provided, be sure to use it when entering and exiting the loader.

# Safety

- Before operating, replace any worn or damaged safety decals.
- Before operating, thoroughly inspect the attachment to be sure all hardware (bolts, nuts, etc.) is installed and tightened.
- Before operating, thoroughly inspect the attachment to be sure it is in working order. If the attachment is damaged or otherwise not in working order, do not operate until it has been repaired by a qualified technician.
- Before raising or lowering the attachment be sure the area is clear of bystanders.
- Do not operate the loader or the attachment if you are under the influence of alcohol, drugs, or medications which may cause drows-iness.
- Do not allow children to operate the loader or the attachment.
- Do not allow anyone who has not been trained to operate the loader or the attachment.
- Never allow riders on the attachment.
- Keep hands, feet or other objects away from underneath the attachment while operating.
- Fully lower the attachment to level ground when you are done operating.
- Never leave the attachment unattended while in a raised position.
- When transporting the attachment installed on the loader, travel at a slower speed to maintain control.

### **Servicing Safely**

- Disconnect the attachment hydraulic hoses from the loader before servicing. Do not service the attachment when the hydraulic hoses are installed on the loader.
- Remove the attachment from the loader before servicing when instructed to do so in this manual.
- Do not allow anyone to service the attachment unless they have first read and understood the loader and the attachment operator's or service manuals.
- Do not allow anyone to service the attachment unless they have first read and understood the safety and warning decals on the loader and

on the attachment.

- The attachment owner is responsible for training others to safely service the attachment, and is responsible for any injuries or harm which occurs while the attachment is being serviced.
- Before inspecting or servicing the attachment, follow the Parking Safely instructions in this manual and disconnect the attachment hydraulic hoses from the loader.
- Always securely block the attachment to prevent accidental release of the lifting mechanism when inspecting or servicing the attachment.

# Hydraulic Fluid Safety

- Read and understand the hydraulic safety information in the loader operator's manual before operating or servicing the attachment.
- Use cardboard or a board when you check for a leak.
- Fluid in hydraulic hoses is under extreme pressure. If fluid is injected into your skin seek medical treatment immediately.
- Do not handle any hydraulic components until pressure has been relieved from the system.
- Disconnect the attachment hydraulic hoses from the loader before inspection or service.
- Inspect attachment hydraulic hoses and hose shields for damage or wear before attaching to the loader.

# Safety Decals

Safety decals may be installed on the attachment to warn users of safety hazards:

- DANGER decals provide warnings about hazardous situations which will result in death or serious injury if not avoided.
- WARNING decals provide warnings about hazardous situations which could result in death or serious injury if not avoided.
- CAUTION decals provide warnings about hazardous situations which could result in injury if not avoided.

Read and understand all safety decals before operating or servicing the attachment.

### Safety

See the Decal Locations illustration in this manual to confirm where decals are installed on the attachment.

Safety decals which are missing, worn or faded must be replaced. Replacement safety decal part numbers are included in this manual. Contact the attachment manufacturer for replacement decals.

# **Preparing for Installation**

- 1. Check the loader and attachment hydraulic couplers to be sure the surfaces are clean before connecting.
- 2. Inspect the couplers for damage or wear and replace if needed for proper connection.

# **Installing the Attachment**

- 1. Follow the instructions in the loader operator's manual to install the attachment and exit the operator station safely.
- 2. Fully lower the loader lift arms.



3. Move the loader attaching plate levers (A) to the unlocked (up) position either manually or by using the loader controls.

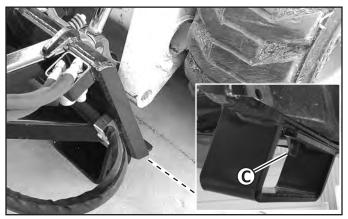


- Tilt the loader attaching plate forward, and drive the loader forward until the top edge of the loader attaching plate is under the top flange (B) of the attachment mounting frame.
- 5. Raise the loader lift arms slightly until the attaching plate is fully seated under the top flange.
- 6. Tilt the attaching plate backward to raise the front of the attachment.



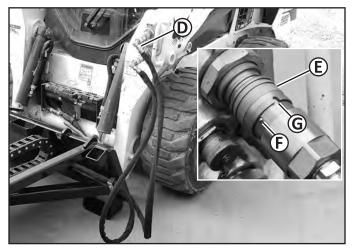
- 7. Move the loader attaching plate levers (A) to the locked (fully down) position either manually or by using the loader controls.
- 8. Park the loader. (See Parking Safely in this manual.)





Picture Note: Wedge on right side shown. Check the wedges or pins on both sides of the attachment.

9. Check to be sure the loader attaching plate pins or wedges (C) extended into the holes in the bottom of the attachment mounting frame. If not, move the loader attaching plate levers to the unlocked (up) position and repeat installation.



- 10. Connect the attachment hydraulic hoses to the loader's front auxiliary couplers (D).
  - a. Install the male couplers into the female couplers and pull or push the sleeves (E) to be sure they are locked into place.
  - b. Rotate the coupler sleeves as shown so the ball (F) is outside the groove (G) to prevent the coupler disconnecting (Some sleeves

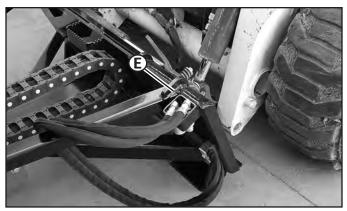
may not have this locking mechanism).

# **Removing the Attachment**

- 1. Follow the instructions in the loader operator's manual to remove the attachment and exit the operator station safely.
- 2. Fully lower the loader lift arms and the attachment to level ground.
- 3. Follow instructions in the loader operator's manual to relieve hydraulic pressure in the front auxiliary hydraulic coupler lines.
- 4. Stop the loader engine.

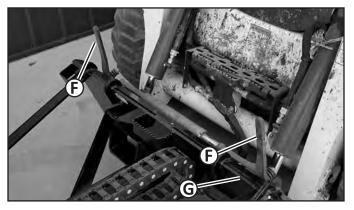


- 5. Disconnect the attachment hydraulic hoses from the loader's front auxiliary couplers (A).
  - a. Rotate the coupler sleeves (B) so the ball (C) is aligned with the groove (D) to allow the coupler to disconnect (Some sleeves may not have this locking mechanism).
  - b. Grasp and push or pull the sleeves to disconnect the couplers.



6. Install protective caps on the couplers if they are provided, and store the couplers on the attachment hydraulic hoses into the hose coupler storage area (E) as shown.

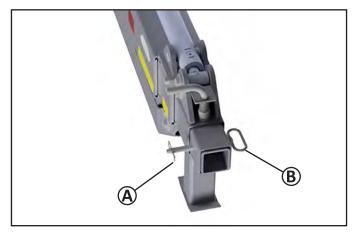
AVOID INJURY! Loader attaching plate levers which are operated manually may have spring tensioning. Firmly grasp the levers and move the levers slowly.



- 7. Move the loader attaching plate levers (F) to the unlocked (up) position as shown either manually or by using the loader controls.
- 8. Tilt the loader attaching plate forward slightly and drive the loader backward until the top edge of the attaching plate clears the top flange (G) of the attachment mounting frame.

### **Installing the Secondary Attachments**

- 1. Install the telescoping boom attachment on the loader.
- 2. Park the loader (See Parking Safely in this manual.)



- 3. Remove the pin (A) and hitch pin (B) from the end of the manual extension tube.
- 4. Install the secondary attachment in the tube with the hitch pin and pin.

### **Pre-Operation Inspection**

Before starting operation, inspect the area you will be clearing and inspect the attachment.

#### **Inspect the Work Area**

- 1. Confirm the area is clear of bystanders including animals. Establish a safety zone by keeping bystanders and animals beyond a 100 foot radius around the attachment when operating.
- 2. Be aware of any wet or sloping areas and mark the areas to avoid contact if needed.

#### **Inspect the Attachment**

Inspect the attachment to be sure it is in working order. If the attachment is damaged or not in working order, do not operate until it has been repaired by a qualified technician.

#### Description



- A Hose Carrier
- **B** Main Frame Tube
- **C** Primary Extension Tube
- **D** Secondary Extension Tube
- **E** Manual Extension Tube

- F Hydraulic Cylinder
- **G** Cylinder Guard
- H Step Area
- I Hose Coupler / Secondary Attachment Storage Area
- J Spring Pin Assembly

# **Theory of Operation**

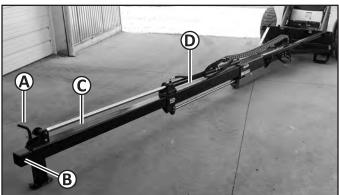
The Telescoping Boom hydraulic hoses are connected to the loader front auxiliary hydraulic couplers. The loader's hydraulic controls are used to extend and retract the hydraulic cylinders, which extend and collapse the boom.

D-Ring Hitch Attachment Load Capacities (lbs)					
Loader Rated Operating Capacity	2000	2500	3000	4000	
Maximum Load with Boom Horizontal and Collapsed	870	1180	1490	1900	
Maximum Load with Boom Horizontal and Fully Extended	280	410	540	727	
Maximum Load, Boom at 70-degree Operating Angle and Collapsed	2000	2500	3000	3975	
Maximum Load, Boom at 70-degree Operating Angle and Fully Extended	975	1290	1600	2040	

# Operation

- 1. Follow the instructions in the Installing and Removing section to install the attachment.
- 2. Park the loader. (See Parking Safely in this manual.)
- 3. Install the secondary attachment (See Installing the Secondary Attachments).
- 4. Perform the pre-operation inspection.

#### Adjusting the Boom Length



- 1. Turn to unlock the sping pin assembly (A) and slide out the manual extension tube (B) if needed.
- 2. Position the nearest hole in the manual extension tube to lock the spring pin assembly into place to secure the manual extension tube.
- 3. Use the loader hydraulic controls to extend the primary (C) and secondary (D) extension tubes as needed.

# Using the Secondary D-Ring Hitch Attachment

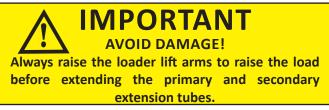
- 1. Install the D-Ring Hitch Attachment (See Installing the Secondary Attachments).
- 2. Confirm the weight of the load you intend to lift.
- 3. See the D-Ring Hitch Attachment Load Capacities table to confirm the weight does not exceed your lift capacity.



4. Secure the load to the D-Ring with straps or chains.



5. Raise the load, taking care not to exceed the maximum boom length or 70-degree operating angle as shown.



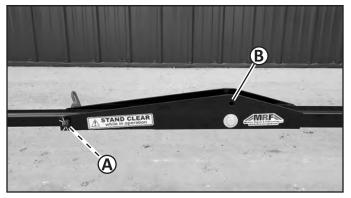
- a. Tilt the loader attaching plate and raise the loader lift arms until you reach the roughly 70-degree operating angle as shown.
- b. Use the loader hydraulic controls to adjust the boom length to extend both the primary and secondary extension tubes as needed.



- 6. Lower the load.
  - a. Use the loader hydraulic controls to fully collapse the extension tubes.
  - b. Lower the loader lift arms.

# Using the Secondary Roof Rake Attachment

1. Install the Roof Rake Attachment (See Installing the Secondary Attachments).



- 2. Install the pins in the front hole (A) as shown for fixed operation, or in the rear hole (B) for floating operation.
- 3. If you need to adjust the boom length to include extending the manual extension tube, adjust the boom length.
- 4. Raise the telescoping boom attachment and adjust the boom length to position the roof rake a few inches above the surface of the roof.
- 5. Lower the roof rake to contact the roof.
- 6. Rake the roof by collapsing the boom and slowly backing the skid steer loader as needed.
  - a. As you back the skid steer loader you may need to raise the telescoping boom to avoid putting too much weight on the roof.

### **Transporting the Attachment**

#### On the Loader

Check to be sure the attachment is correctly installed on the loader before hauling the loader on a trailor or truck. Follow all loader, truck or trailer operator's manual instructions to safely haul the loader.

#### Hauling the Attachment

Follow all truck or trailer operator's manual instructions to securely fasten the attachment to the truck or trailer with straps or chains.

## **Service Intervals**

#### Every 8 hours or daily:

- Grease the cylinder mount pins.
- Inspect the attachment and hoses for damage and wear. Replace parts as needed.
- Check and tighten all hardware.

#### Weekly:

• Inspect the plastic wear flats and replace as needed.

# Lubrication

#### **Recommended Grease**

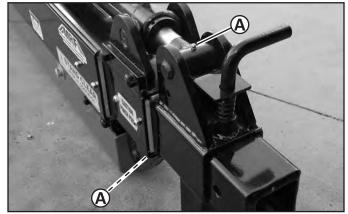
Standard Lithium

## Lubricating the Cylinder Mount Pins

- 1. Use the loader hydraulic controls to fully collapse the boom.
- 2. Park the loader. (See Parking Safely in this manual.)

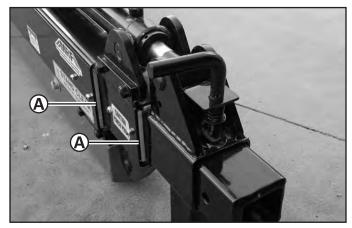


3. Disconnect the attachment hydraulic hoses from the loader.



4. Lubricate the two grease fittings (A) until grease appears in the joints.

#### Servicing the Plastic Wear Flats



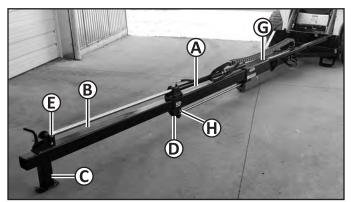
Four plastic wear flats (A) are bolted to the inside surfaces at the ends of the main frame assembly tube and the primary extension tube.

- 1. Use the loader hydraulic controls to fully extend the boom.
- 2. Park the loader. (See Parking Safely in this manual.)



#### **Inspecting the Wear Flats**

1. Inspect all eight 1/4 in. thick flats for wear. If the visible edge of any wear flat is worn down to 1/8 in. or less, replace the flat.



#### Replacing the Wear Flats (Primary Extension Tube)

- 1. Use the loader hydraulic controls to fully extend the boom primary extension tube (A) and secondary extension tube (B).
- 2. Raise the boom enough to lift the stand (C) off the ground, position a block under the trunnion mounts (D) and lower the boom to rest on the block.
- 3. Remove the bolt (E), nut and cylinder pin weldment to disconnect the top hydraulic cylinder.
- 4. Use the loader hydraulic controls to fully retract the top hydraulic cylinder.



- 5. Slide out and remove the secondary extension tube (B) to replace the wear flats on the end of the primary extension tube (A).
- 6. Remove the flat cap screws to replace each wear flat as needed.
- 7. If you are not replacing the wear flats in the main frame assembly tube (G), install the secondary extension tube and connect the top hydraulic cylinder.

#### Replacing the Wear Flats (Main Frame Assembly Tube)

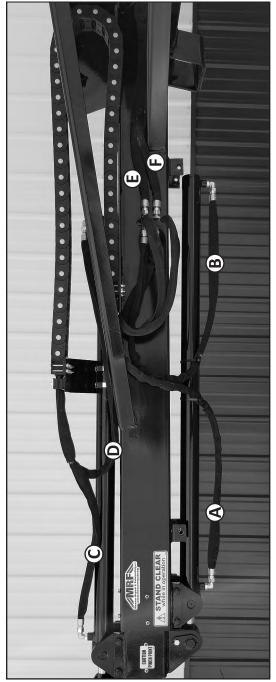
1. Follow the Replacing the Wear Flats (Primary Extension Tube) instructions to remove the secondary extension tube.

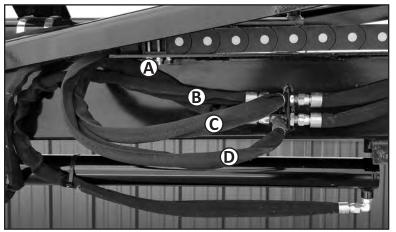
- 2. Remove the bolt (H) and cylinder pin weldment to disconnect the bottom hydraulic cylinder.
- 3. Use the loader hydraulic controls to fully retract the bottom hydraulic cylinder.

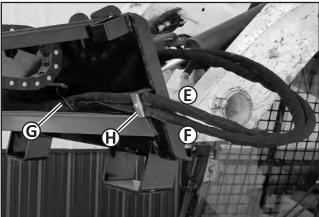


- 4. Slide out the primary extension tube (A) only far enough to remove it, taking care not to pull the hydraulic hose and hose carrier.
- 5. Remove the flat cap screws to replace the wear flats on the end of the main frame assembly tube (G) as needed.
- 6. Install the primary extension tube and connect the bottom hydraulic cylinder.
- 7. Install the secondary extension tube and connect the top hydraulic cylinder.

# Identifying Hydraulic Hoses







Part	Item	Routing
А	#96285 1/4 x 46 in.	Routed from cylinder pin end to T.
В	#96286 1/4 x 50 in.	Routed from cylinder base end to T.
C	#96287 1/4 x 134 in.	Routed from cylinder pin end through hose carrier to T.
D	#96288 1/4 x 146 in.	Routed from cylinder base end through hose carrier to T.
E	#96284 3/8 x 98 in.	Routed from T to female coupler.
F	#96284 3/8 x 98 in.	Routed from T to male coupler.
G	Hose Guide	
Н	Hose Retainer	

# **Replacing the Hydraulic Hoses**

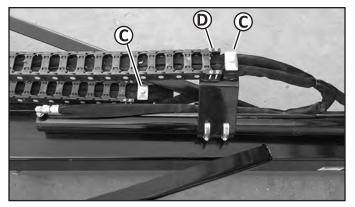
1. Fully collapse the boom and park the loader. (See Parking Safely in this manual.)



- 2. Disconnect the attachment hydraulic hoses from the loader.
- 3. Disconnect and remove the hydraulic hose you are replacing.



• When replacing the hoses with couplers, remove the hose retainer (A) and route the hose through the guide (B).



• When removing the hoses attached to the top hydraulic cylinder,

remove the hose retainers (C). Remove the nuts and bolts (D) attaching the hose carrier to the hose guide weldment to make replacement easier.

4. Route the new hose through the guides and install with the retainers.

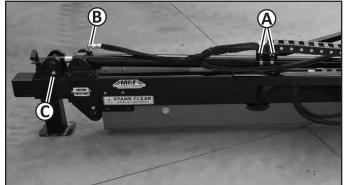
## **Replacing the Hydraulic Cylinders**

1. Fully retract the boom and both hydraulic cylinders.



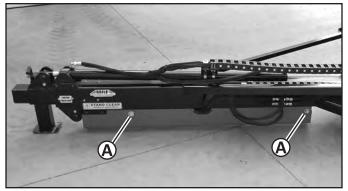
2. Remove the attachment from the loader.

#### **Replacing the Top Cylinder**

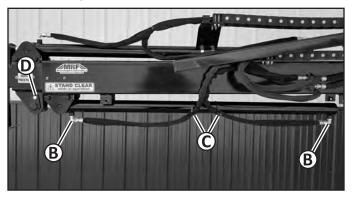


- 1. Remove the worm drive clamps (A) attaching the hose guide weldment to the cylinder.
- 2. Disconnect the fittings (B) and hydraulic hoses from the cylinder.
- 3. Remove the bolt (C), nut and cylinder pin weldment to remove the cylinder.
- 4. Install the new cylinder with the bolt, nut and cylinder pin weldment.
- 5. Connect the fittings and hydraulic hoses.
- 6. Install the worm drive clamps.

#### **Replacing the Bottom Cylinder**



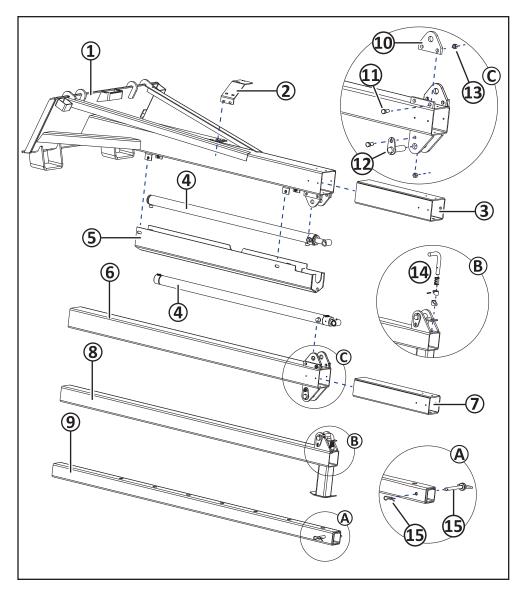
1. Remove the four bolts (A) and washers attaching the cylinder guard and remove the guard.



- 2. Disconnect the fittings (B) and hydraulic hoses from the cylinder.
- 3. Remove the two tie straps (C) securing the hoses to the cylinder.
- 4. Remove the bolt (D), nut and cylinder pin weldment to remove the cylinder.
- 5. Install the new cylinder with the bolt, nut and cylinder pin weldment.
- 6. Install the fittings and hoses to the cylinder.
- 7. Install tie straps to secure the hoses to the cylinder.

# Troubleshooting

Cause	Action	
Tubes won't expand or collapse.	1.	Check to be sure the attachment hydrau- lic couplers are fully connected.
	2.	Check for foreign material in the tubes.
	3.	See the loader operator manual to check loader hydraulic pressure and flow.
	4.	Contact the attachment manufacturer.



# **Replacement Parts**

#### **Replacement Parts**

Contact Messer Attachments LLC for replacement parts. Part numbers may change without notice.

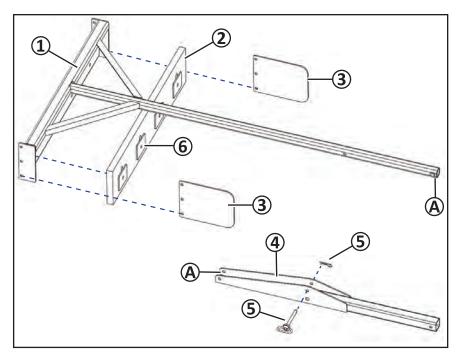
Item	Qty.	Part Number	Part Description
1	1	09920	Main Frame Assembly
2	1	10483	Hose Guide Weldment
3	4	09916	Wear Flat, Plastic, 5 x 24 in.
4	2	WCTM2X48	Cylinder, 2 x 48 Trunnion Mount, 3500 PSI
5	1	09719	Cylinder Guard
6	1	96204	Tube, Primary Extension
7	4	09922	Wear Flat, Plastic, 4 x 24 in.
8	1	09712	Tube, Secondary Extension
9	1	09389	Tube, Manual Extension
10	4	09703	Trunnion Mount
11	2	-	Bolt, 1/2 x 1.25
12	2	09269	Cylinder Pin Weldment
13	1	-	Nut, 1/2
14	1	09422	Spring Pin Assembly
15	1	96237	Hitch Pin, 5/8, with Clip
*	2	96231	Hose Carrier
*	1	96284	Hose, 3/8, 98 in.
*	1	96285	Hose, 1/4, 46 in.
*	1	96286	Hose, 1/4, 50 in.
*	1	96287	Hose, 1/4, 134 in.
*	1	96288	Hose, 1/4, 146 in.
*	2	6801-06-08	90° Adapter Fitting
*	4	6801-06-06	90° Adapter Fitting
*	2	2704-06-06-06	Tee Fitting

# **Replacement Parts**

Item	Qty.	Part Number	Part Description
*	2	T-2004HS	Hydraulic Clamp, 1/4
*	1	T-2006HS	Hydraulic Clamp, 3/8
*	1	96165	Nipple Assembly Male, 1/2" ORB-#8, 3/4"-16 SAE
*	1	96164	Coupler Assembly Female, 1/2" ORB-#8, 3/4"-16 SAE
*	12	-	Bolt, 1/2-13x1-1/2 Grade 5
*	2	-	Bolt, 3/8-16 x 1-1/4 Grade 5
*	2	-	Lock Nut, Top, 3/8"-16 Grade C
*	8	-	Screw, Machine, #10-32 x 2-1/4
*	8	-	Lock Nut, Nylon Insert, #10-32 Grade 2
*	16	-	Cap Screw, Flat, 1/4-20 x 3/4
*	16	-	Lock Nut, Top, 1/4-20 Grade C
*	2	-	Clamp, Worm Drive, #48 1-1/2" to 3-1/2" Dia 9/16"

\*Part not shown.

## **Replacement Parts**



Item	Qty.	Part Number	Part Description
1	1	10958-P	Pivoting Arm
2	1	10960	Rubber Blade, Double Sided, 10 in.
3	2	10969-P	Bolt On Sides
4	1	10953-P	Base Tube
5	1	HP02	Hitch Pin, 5/8 x 4, with Clip
6	4	10504-P	Backer Plates
*	1	96134	Bolt Kit, Single Blade
*	1	-	Bolt, 3/4 x 4
*	1	-	Locknut, 3/4
*	4	-	Bolt, 5/8 x 3-1/2
*	4	-	Locknut, 5/8
*	6	_	Bolt, 1/2 x 1-1/4
*	6	-	Locknut, 1/2

\*Part not shown.

#### Warranty

#### **MESSER ATTACHMENTS LLC**

#### Limited Warranty and Terms and Conditions of Sale

The following limited warranty, and terms and conditions of sale (the "Limited Warranty") apply to all equipment, products, parts, and goods (any of the foregoing are referred to herein as "Equipment") sold by Messer Attachments LLC ("Messer"):

1. Covers All Equipment. Each purchase of Equipment by a purchaser is expressly made conditional on purchaser's assent to the terms and conditions in this Limited Warranty.

2. Limited Warranty. Messer warrants that for a period of 24 months from the date of purchase, the Equipment will remain free from defects in material and workmanship under normal use and proper maintenance. The warranty does not cover damage from operating in excess of rated capacities or normal wear and tear. Messer's obligation under the warranty shall be limited to the repair or replacement (at Messer's option) of the Equipment. Notwithstanding the foregoing, if the Equipment is used for commercial purposes or is rented or leased out by the purchaser, then, the foregoing warranty shall only be for a period of 180 days and not 24 months.

3. No Warranty For Equipment Components From Third Parties. Notwithstanding the limited warranty terms set forth above, MESSER OFFERS NO WARRANTY WHATSOEVER WITH RESPECT TO ANY COMPONENTS OF THE EQUIPMENT MADE OR PROVIDED TO MESSER BY OTHER MANUFACTURERS, PRODUCERS, OR SELLERS (the "Purchased Components"). The sole and exclusive warranty for each the Purchased Components shall be limited to the express written warranty with respect to the Purchased Component as provided by the manufacturer, producer, or seller of such Purchased Component. Messer's responsibility and liability for the Purchased Components shall be limited to the assignment of the Purchased Components' express written warranties applicable to the Purchased Components. Purchased Components include, without limitation, the following: axles, tires and rims; trailer hitch components and jacks; hydraulic pumps, motors, cylinders and components; and bales spears, pallet tines, and bucket teeth.

4. No Other Warranties. THE FOREGOING REPAIR AND REPLACEMENT OBLIGATIONS IN SECTION 2 ARE IN LIEU OF ALL OTHER WARRANTIES, LIABILITIES AND OBLIGATIONS, INCLUDING ALL WARRANTIES OF MERCHANTABILITY, OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, EXPRESSED OR IMPLIED IN FACT OR BY LAW, AND STATE MESSER'S ENTIRE AND EXCLUSIVE LIABILITY AND PURCHASER'S EXCLUSIVE REMEDY FOR ANY CLAIM IN CONNECTION WITH THE SALE AND PURCHASE OF EQUIPMENT (AND ALL COMPONENTS THEREOF), THEIR DESIGN, SUITABILITY FOR USE, INSTALLATION OR OPERATIONS.

#### Warranty

5. Location of Warranty Repairs. All warranty repairs pursuant to this Limited Warranty shall be made at Messer's corporate manufacturing plant, or other location as determined by Messer, at its discretion. Purchaser shall be responsible for and pay for any transportation expenses necessary for Limited Warranty repairs.

6. Limited Warranty Voidable. The limited warranty herein is void and deemed waived if the purchaser fails to give written notice to Messer of any alleged defect under the limited warranty herein within 20 days of its discovery; or (a) purchaser or parties other than Messer or its authorized representatives attempts to remedy or fix the alleged Equipment defects; or (b) purchaser has used the Equipment for purposes it was not intended to be used for; or (c) purchaser has not operated the Equipment in a manner consistent with Messer's instructions for the Equipment; or (d) the Equipment has been modified, altered, abused, or misused; or (e) the Equipment has been damaged pursuant to accident, fire, flood, or other Act of God.

7. No Consequential Damages. IN NO EVENT SHALL MESSER BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, AND MESSER'S LIABILITY, UNDER NO CIRCUMSTANCES, WILL EXCEED THE PRICE PAID FOR THE EQUIPMENT FOR WHICH LIABILITY IS CLAIMED.

8. Governing Law. This contract shall be governed by the laws of the State of Minnesota.

9. Arbitration. Any controversy or claim arising out of or relating to the limited warranty provided herein, or any alleged breach thereof, shall be settled exclusively by arbitration in accordance with the Rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. The arbitration shall be conducted in Minneapolis, MN, by one arbitrator selected by Messer and Purchaser, or, if they cannot agree, the President of the American Arbitration Association.

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