

# Freeform



## PLASTICS

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A Division of Bourgault Industries Ltd.

### MT2000 HYDRAULIC SWATH ROLLER COMMON HYDRAULIC ASSEMBLY INSTRUCTIONS

Kit Part No. 7101-02

#### **ASSEMBLY INSTRUCTIONS & OPERATION EFFECTIVE S/N: 39632SR01 - DATE**

It is recommended to carefully follow the detailed steps of the assembly manual for the simplest and quickest assembly of the kit. Please check crate packing list against contents to be sure all parts have been received.

On all Free Form equipment, left and right are determined by standing behind the machine and looking forward.

All information, illustrations and specifications in this manual are based on the latest product information. Free Form updates products continually to improve quality. We reserve the right to make changes at any time.

## FREE FORM WARRANTY POLICY

Effective April 16, 2001

Free Form Plastic Products (referred to as Free Form), a Division of Bourgault Industries Ltd., warrants its **new**, unused, Agricultural Equipment to be free of defects in material and workmanship at time of the delivery to the first retail purchaser according to the Free Form Warranty Policy.

### 1) BASIC WARRANTY REPAIR PERIOD AND REMEDIES

- a) Free Form will repair or replace, at its option, without charge for parts or labour, **any defective part** of the equipment for a period of twelve (12) months from delivery to the first retail purchaser.
- b) Free Form will repair or replace, at its option, without charge for parts, any **Free Form manufactured part** that is found to be defective for the period of thirteen (13) months to twenty-four (24) months from delivery to the first retail purchaser.
- c) Free Form will repair or replace, at its option, for a charge of 50% of the parts, any **Free Form manufactured part** that is found to be defective for the period of twenty-five (25) months to thirty-six (36) months from delivery to the first retail purchaser.

**Note:** A **Free Form Manufactured Part** is any part which has been manufactured by Free Form. Parts purchased from an outside supplier are not considered to be manufactured by Free Form. Purchased parts would include bearings, bolts, etc...

- d) Any parts that are covered by an Extended Warranty published by Free Form, are an exception to the Basic Policy, and are to be warranted as per the details of the Extended Warranty document. The extended warranty policy may change from time to time without warning from Free Form.

### 2) EXTENDED WARRANTY

- a) **CULTIVATOR SHANKS** are warranted 100% for five years from date of manufacture against breakage. Breakage after the fifth year will

be covered at 50% warranty. Shanks are not warranted against bending, however, a bent shank policy is in place to provide Free Form customers with replacement shanks for 50% of list price.

### 3) EXCEPTIONS TO THIS WARRANTY

- a) In no event shall the owner be entitled to recover for incidental, special or consequential damages such as, but not limited to; loss of crop, loss of profit or revenue, other commercial losses, inconvenience or cost of rental of replacement equipment.
- b) **Repair, Maintenance, and Service items not related to defects:**
  - 1. Loss or damage during shipment (see: Free Form Wholegoods Shipping Policy)
  - 2. Failure resulting from lack of or improper maintenance.
  - 3. Damage caused by operator abuse, negligence, or improper operation.
  - 4. Non-defective items replaced due to customer demand unless authorized by Free Form.
  - 5. Nonreimbursable maintenance items including but not limited to oil, etc.
  - 6. Any and all costs for repairs or replacement of parts not shown to be defective.
  - 7. Damage due to accidents.
- c) **Cultivator Sweeps, Reversible Chisels, and Ground Engaging Tools** are **not** covered under this warranty policy, but by the warranty policy of their manufacturer.
- d) **Rubber Tires** are warranted directly by the tire manufacturer's agents only, and **not** by Free Form.
- e) **Replacement Parts** will be warranted for twelve months from the repair date, providing the bill of sale is attached to the warranty claim.
- f) The terms of this warranty are subject to Provincial and State Legislation. Free Form reserves the right to make changes in accordance with these Acts at any time without notification

**FREE FORM WARRANTY POLICY (CONT'D)**

or obligation. The stated warranty contained in the Free Form Warranty Policy applies in all situations, unless the law provides a greater warranty in the jurisdiction of the retail customer.

- g) Free Form reserves the right to continually improve its equipment, and reserves the right to change products or specifications at any time without notice or obligation.

**4) OWNER'S OBLIGATION**

It is the **responsibility of the owner, at the owner's expense, to transport the equipment to the service shop of an authorized Free Form Dealer (place of purchase) or alternately to reimburse the dealer for any travel or transportation expense** involved in fulfilling this warranty.

It is the **responsibility of the owner to read, understand and practice the maintenance, safety, and operational guidelines set out in the operator's manual** furnished with the equipment.

It is the owner's responsibility to ensure that the Warranty Registration, which must be signed by the owner, is completed and returned to Free Form by the dealer. The completed and signed Warranty Registration is required to register a new unit for warranty.

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## 1 SAFETY

### SAFETY ALERT SYMBOL

This Safety Alert symbol means

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS

INVOLVED!



The Safety Alert symbol identifies important safety messages. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

- Accidents Disable and Kill
  - Accidents Cost
  - Accidents Can Be Avoided
- 3 Big Reasons

#### SIGNAL WORDS:

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

DANGER -

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING -

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION -

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

## 1 SAFETY (CONT'D)

YOU are responsible for the SAFE operation and maintenance of your Free Form equipment. YOU must ensure that you and anyone else who is going to operate, maintain or work around the equipment be familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the unit.

Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that EVERYONE operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- **Think SAFETY! Work SAFELY!**

### 1.1 GENERAL SAFETY

1. Read and understand the Operator's Manual
2. Have a first-aid kit available for use should the need arise and know how to use it.
3. Wear appropriate protective gear. This list may include but is not limited to:
  - A hard hat
  - Protective shoes with slip resistant soles
  - Protective goggles
  - Heavy gloves
  - Hearing protection

### 1.2 OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Attach securely to towing unit using a pin with a retainer.
3. Do not exceed a safe travel speed.
4. Use hazard flasher on towing unit when transporting.
5. Review safety instructions annually.

### 1.3 MAINTENANCE SAFETY

1. Follow good shop practices:
  - Keep service area clean and dry.
  - Be sure electrical outlets and tools are properly grounded.
  - Use adequate light for the job at hand.
2. Use only tools, jacks and hoists of sufficient capacity for the job.

### 1.4 TRANSPORT SAFETY

1. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the swath roller in the field and/or on the road.
2. Always travel at a safe speed. Use caution when making corners or meeting traffic.
3. Make sure the reflectors required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.

**Note:** The slow moving vehicle sign and flashing lights on the swather must be visible from behind when the MT2000 is secured in the transport position.

4. Be sure that the TB2000 is hitched positively to the towing vehicle and a retainer is used through the drawbar pin. Be sure that the MT2000 is secured properly with **both** transport locks and the pins are secured.
5. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
6. Do not exceed 20 m.p.h. (32 km/h). Reduce speed on rough roads and surfaces.

## 2 MT2000H SPECIFIC PARTS ASSEMBLY

### 2.1 RAM MOUNT TAB INSTALLATION

Refer to *Figure 2.1* for this step.

1. Locate the hydraulic ram mounting tab (#24). Place it atop the tower and secure it with four  $\frac{3}{8}$ " x 1- $\frac{1}{2}$ " bolts (#1),  $\frac{3}{8}$ " washers (#8) and  $\frac{3}{8}$ " nuts (#5).

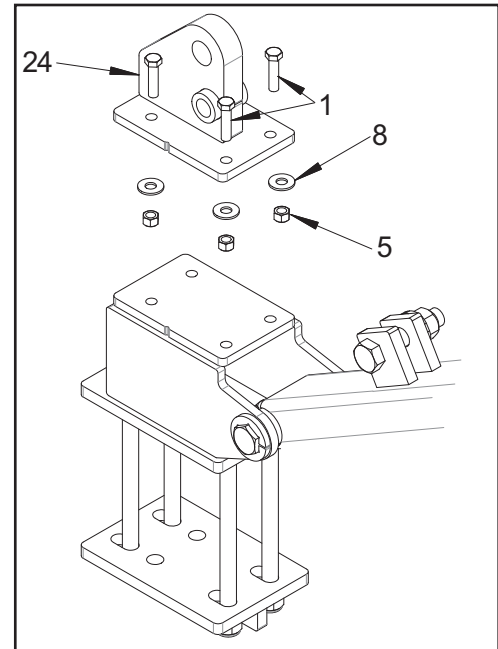


Figure 2.1 - Hydraulic Ram Mount Installation

### 2.2 FLOATING TAB INSTALLATION

Refer to *Figure 2.2* for this step.

1. Place the tab bracket (#22) on the connector arm. Ensure that it sits between the two locating tabs. Secure the bracket with two  $\frac{1}{2}$ " x 3- $\frac{1}{8}$ " x 3- $\frac{1}{8}$ " U-bolts (#4) and four  $\frac{1}{2}$ " nuts (#6) and  $\frac{1}{2}$ " washers (#9).
2. Secure the floating tab (#23) using a 1" x 6- $\frac{1}{2}$ " bolt (#3) and a 1" stover nut (#7).
3. After tightening the bolt, ensure that the tab bracket (#22) can still move freely.

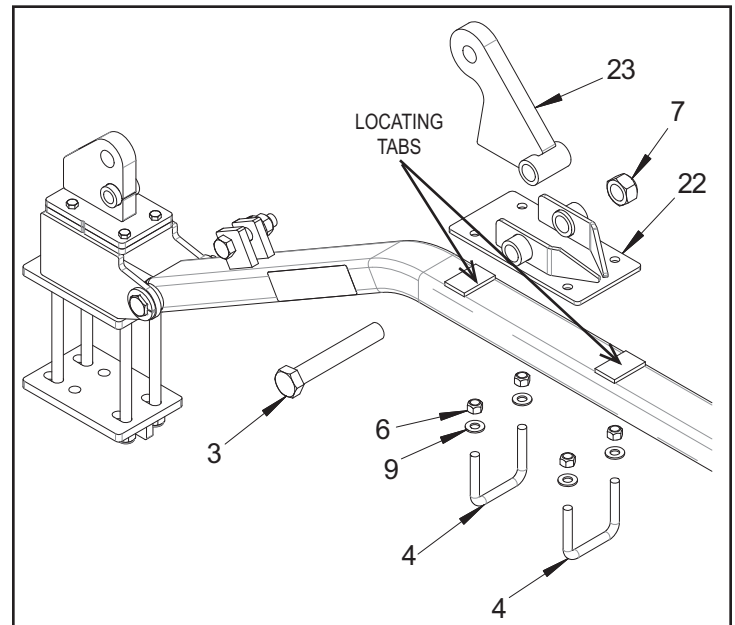


Figure 2.2 - Floating Tab Installation

### 2.3 DEPTH CONTROL ASSEMBLY

Refer to *Figure 2.3* for this step.

1. The depth control also secures the hydraulic ram assembly and must be assembled prior to mounting the rams.
2. Slide the pin (#19) onto the depth bar (#18). It will be free floating.
3. Slide the depth lock (#20) onto the depth bar (#18) and secure in the lower most hole with the pin (#13).

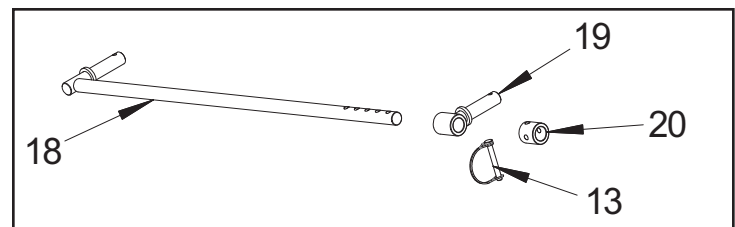


Figure 2.3 - Depth Bar Assembly



## 2.4 MOUNTING HYD RAM

Refer to *Figure 2.4 & 2.5* for this step.

1. Using the depth control assembly, slide the ends of the pins into the FIRST tab of the hydraulic ram as shown in *Figure 2.4*.
2. Slide the ram ends onto the mounting tabs (#23) and (#24)
3. Once the ram is in place and the holes on the ram are lined up with the holes on the mounting tabs, slide the Depth bar assembly fully thru all holes to secure the ram and depth bar assembly. See *Figure 2.5*
4. Secure everything with the 1" washers (#10) and cotter pins 1/4" x 2" (#11)

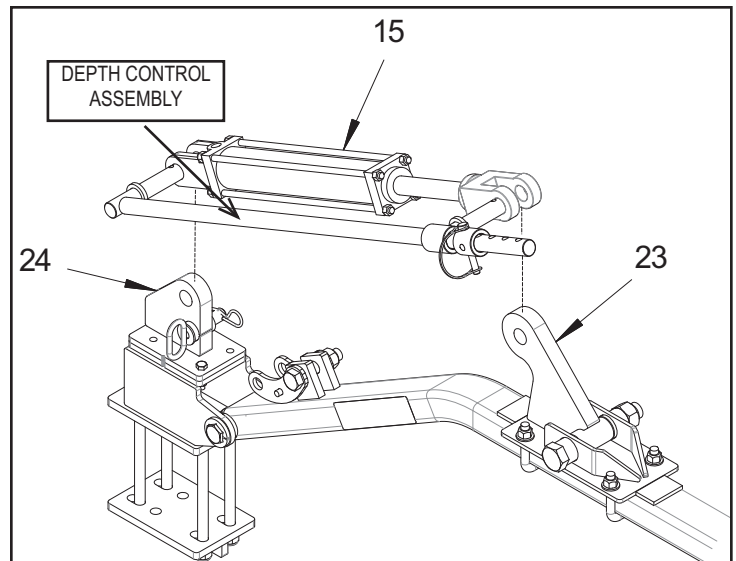


Figure 2.4 - Hydraulic Ram Installation

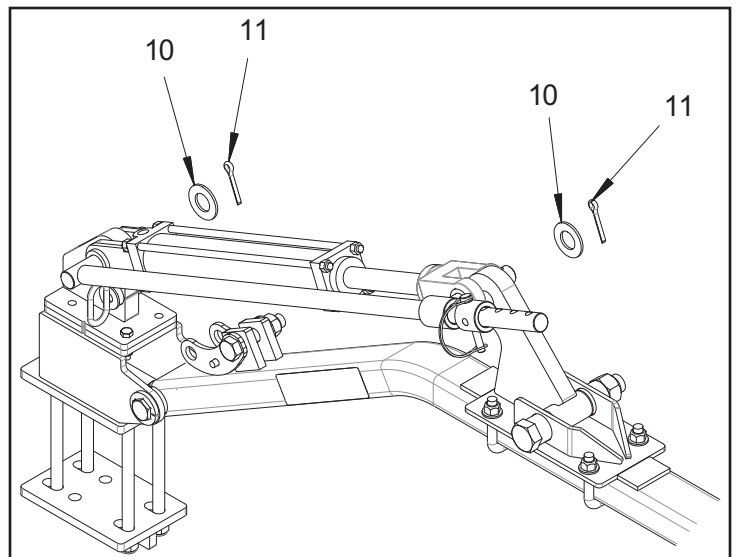


Figure 2.5 - Hydraulic Ram Mount Installation

## 2.5 HYDRAULIC HOSE CLAMP INSTALL

Refer to *Figure 2.6* for this step.

1. For the middle clamp; Mount a 3/8" x 2-1/4" bolt (#2) through the welded tab then slide the plastics clamp pieces (#14) onto the bolt.
2. For now thread the nut (#5) on the end of the bolt by only a few threads. Ensure that the clamps pieces can move freely to allow a hose to be placed between them.
3. For the connector arms, mount the clamp tab (#21) to the straight tabs on the connector arm. Secure with a 3/8" x 2 1/4" bolt (#2), 3/8" washer (#8) and locknut (#5). Tighten this bolt now.
4. Slide a 3/8" x 2-1/4" bolt (#2) thru the other hole and slide the plastic clamps (#14) onto the bolt.
5. For now thread the nut (#5) on the end of the bolt by only a few threads. Ensure that the clamps pieces can move freely to allow a hose to

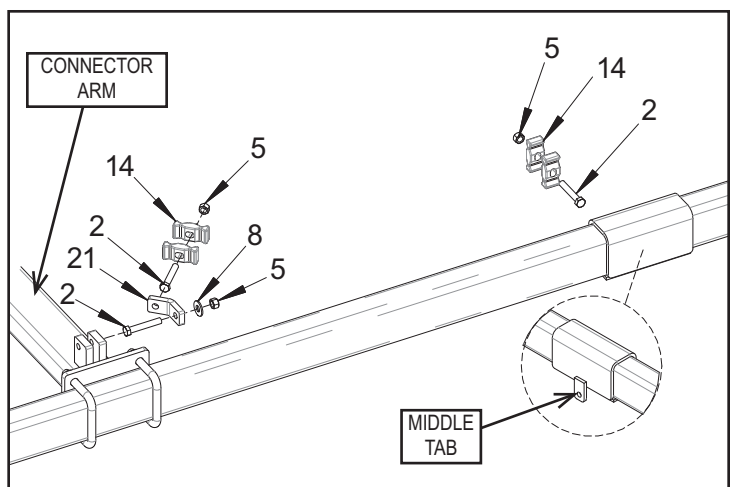


Figure 2.6 - Hydraulic Hose Clamp Installation



## 3 HYDRAULIC SWATH ROLLER USE AND OPERATION

### 3.1 ADJUSTING THE SWATHROLLER

Refer to *Figure 3.1* for this step.

1. To adjust the width of your swath roller, loosen the two pins on each end of the swath roller.
2. Slide the ends in or out to the desired width. The width of the roller is marked on the main drum.
3. Tighten the pins once the width is set.

### 3.2 SETTING THE DEPTH

Refer to *Figure 3.2* for this step.

1. The roller assembly can be set to lower to a predetermined stop point using the bars next to the hydraulic rams.
2. Using a combination of the holes on the main bar and the holes of the sliding collar (#20), you can set the roller's minimum height.
3. Secure the collar (#20) with the supplied locking pin (#13).

### 3.3 TRANSPORT LOCKS

Refer to *Figure 3.3* for this step.

1. When transporting the swather or while driving the unit on roadways, use the roller assembly's transport locks. This will take the weight off of the hydraulic components and increase service life.
2. Remove the pin (#16) from the ram/cylinder mounting tab (#24), location "A".
3. Raise the swath roller until the hole in transport lock lever (#25) lines up with the holes on the ram/cylinder mounting tab (#24).
4. Insert the pin (#16) through all holes and secure with a cotter pin (#12).
5. Lower the roller to relieve pressure on the hydraulics. If you are having trouble to get the lock to locate properly you can thread the clevis onto the cylinder more to fix this.

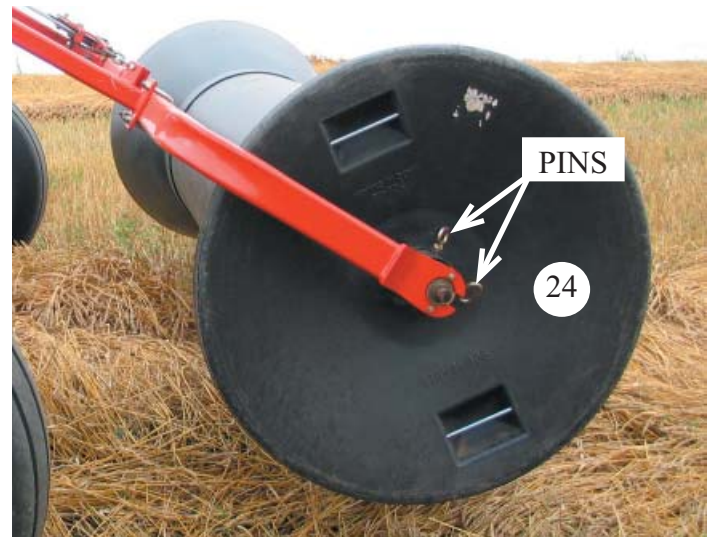


Figure 3.1 - Roller Adjustment

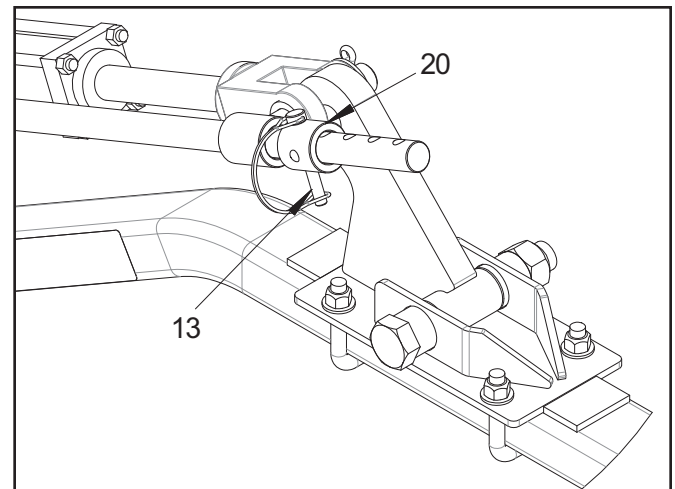


Figure 3.2 - Depth Adjustment

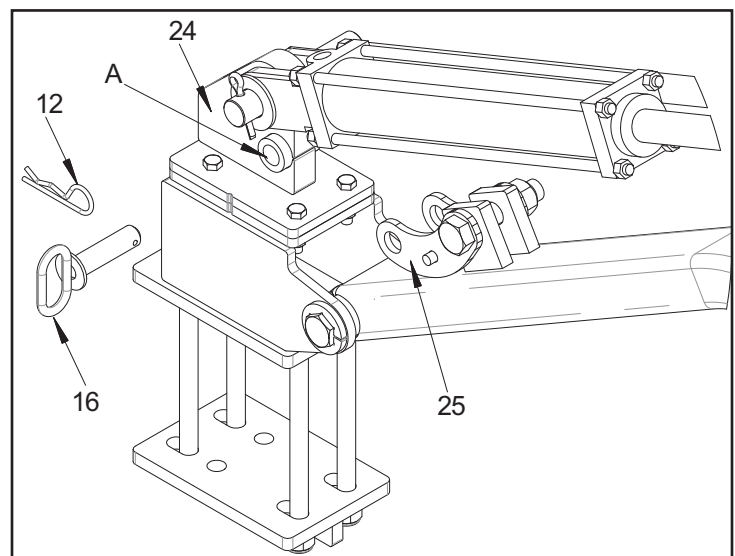


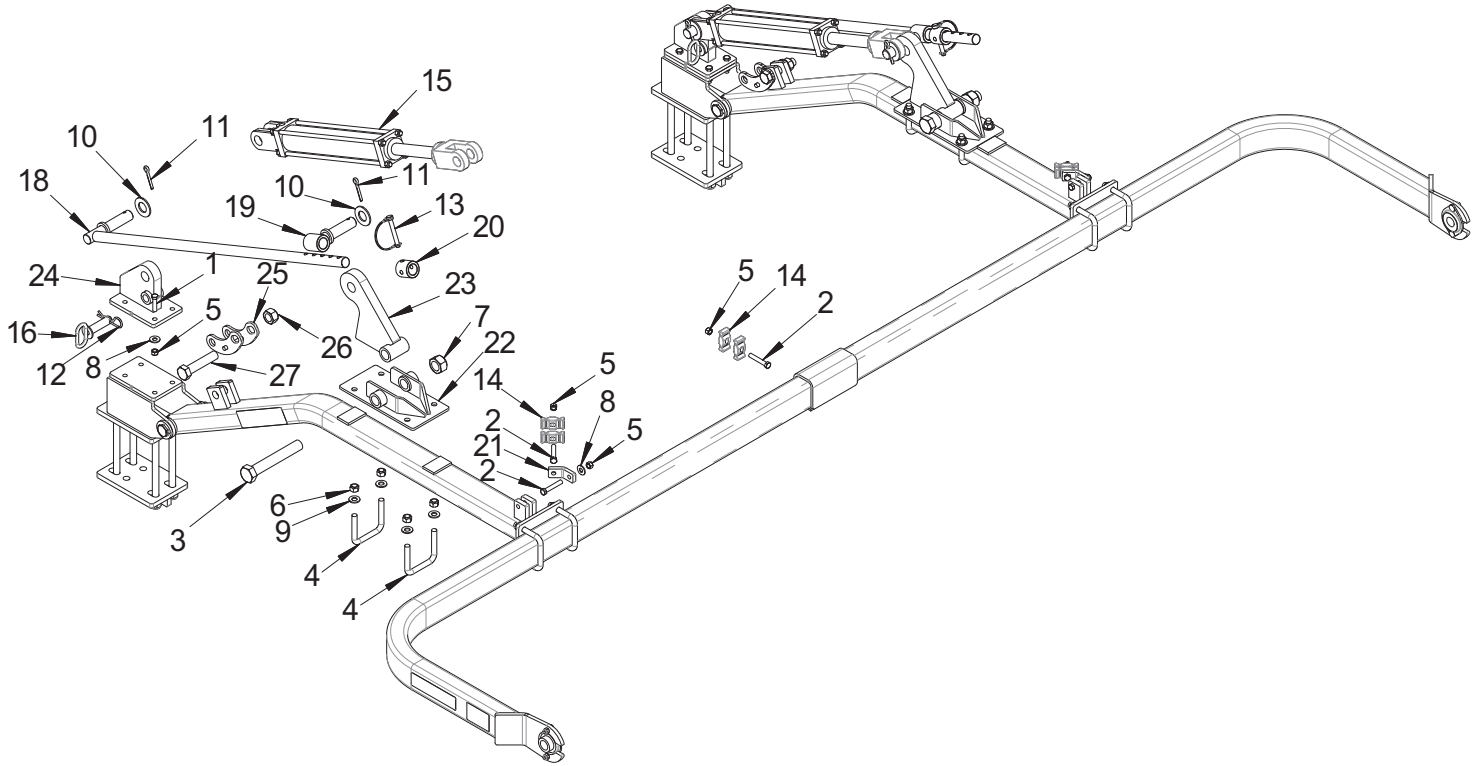
Figure 3.3 - Transport Lock



**Caution:** Before use ensure adequate distance between the roller and the exhaust pipe. Exposure to extreme heat can cause roller deformation and will void the warranty.

**4 HYDRAULIC PARTS**

**4.1 SWATHROLLER HYDRAULIC ASSEMBLY**



#	PART #	DESCRIPTION	QTY.
1	1004-05	BOLT 3/8X1-1/2 UNC GR5 PLD .....	8
2	1004-23	BOLT 3/8X2-1/4 UNC GR5 PLD .....	5
3	1015-40	BOLT 1X6-1/2 UNC GR5 PLD .....	2
4	1180-19	UBLT SQ 1/2X3-1/8X3-1/8 UNC G5.....	4
5	1202-30	NUT PTRQ TL 3/8 UNC GR B ZDW .....	13
6	1204-05	NUT PTRQ PLD 1/2 UNC GR B ZDW .....	8
7	1209-07	NUT PTRQ TL 1 UNC GR B ZDW .....	2
8	1326-15	WSHR FLAT 3/8 SAE ZN .....	10
9	1325-27	WSHR 1/2 SAE PLD .....	8
10	1325-45	WSHR 1 SAE PLD .....	4
11	1500-23	PIN COT 1/4X2 PLD .....	4
12	1500-35	PIN HAIR #9.....	2
13	1600-44	PIN LK 3/8X2-1/2 PLD .....	2
14	1800-25	MOULDING PLSTC LINE HLDN .....	6
15	3300-73	CYL HYD 2X12X1-1/8 .....	2
16	7100-43	PIN 3/4X2-1/2 .....	2
18	7101-14	PIN HYD STOP ADJ PLD.....	2
19	7101-15	PIN WITH CLR HYD STOP PLD.....	2
20	7101-16	HYD DEPTH ADJ STOP.....	2
21	7101-17	PL 3/8X1 HYD HOSE BRKT.....	2
22	7101-18	MT HYD FLOAT TAB PVT WIDE.....	2
23	7101-20	CYL LUG, FLOTG .....	2
24	7101-21	CYL LUG, HIGH LIFT.....	2
25	7101-22	TRNPT LOCK, HIGH LIFT .....	2
26	1207-07	NUT PTRQ TL 3/4 UNC GR B CDW .....	2
27	1012-25	BOLT 3/4X3-1/2 UNC GR5 PLD .....	2

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