Assembly Instructions

QX2 5 Section Field Cultivators

08-2021 | 74377

VADERSTAD INC. LIMITED WARRANTY TERMS AND CONDITIONS – UNITED STATES AND CANADA

EFFECTIVE FOR EQUIPMENT RETAILED AND DELIVERED AFTER MAY 21ST, 2021

WHAT IS WARRANTED Vaderstad Inc. warrants its new equipment to be free of defects in material and workmanship at time of delivery to the first retail purchaser, renter, or lessee. These terms apply to all 10K, Amity, Concord, Wil-Rich and Wishek brands of new equipment originally marketed in the United States and Canada.

WARRANTY PERIOD

- 12 Months from the date of delivery to the first retail purchaser, renter or lessee.
- 483 Disk Chisel, Field Cultivator and Disk Cultivators: 3 years on main frames, wing frames, and shank assemblies
- Precision Shank Drill: 3 years on main frame, wing frame, and rockshafts.

EXCEPTIONS FROM THIS WARRANTY

- **Freight Charges -** This warranty does not cover freight charges.
- **Improvements, Changes, or Discontinuance** Vaderstad Inc. reserves the right to make changes and improvements in design or changes in specifications at any time to any product without incurring any obligations to owners of products previously sold.
- **Repairs and Maintenance Not Covered Under Warranty -** This warranty does not cover conditions resulting from misuse, natural calamities, use of non-Vaderstad Inc. parts, negligence, alteration, accident, use of unapproved attachments, usage which is contrary to the intended purposes, or conditions caused by failure to perform required maintenance. Replacement of Wear or Maintenance items (unless defective) such as but not limited to, filters, hoses, belts, lubricants, light bulbs, wheel alignment, tightening of nuts, belts, bolts, and fittings, service tune-up, computer parameter adjustments and general adjustments which may from time to time be required are not covered.
- **Rubber Tire Warranty -** Rubber tires are warranted directly by the respective manufacturer only and not by Vaderstad Inc.
- **Satellite Outages -** Interruptions in satellite interfaces and satellite communications are outside the control of this product and are not covered by this warranty. The company is not responsible for issues or degradation of system performance resulting from such interruptions in satellite interfaces and satellite communications where the issues are not related to defects in this product.

OWNER'S OBLIGATION

It is the responsibility of the Owner to transport the equipment or parts to the service shop of an authorized Vaderstad Inc. Dealer or alternatively to reimburse the Dealer for any travel or transportation expense involved in fulfilling this warranty. This Warranty does NOT cover rental of replacement equipment during the repair period, damage to products which have been declared a total loss and subsequently salvaged, overtime labor charges, freight charges for replacement parts, or special handling requirements (such as, but not limited to, the use of cranes).

EXCLUSIVE EFFECT OF WARRANTY AND LIMITATION OF LIABILITY

THIS WARRANTY IS IN LIEU OF ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PURPOSE OR OTHER REPRESENTATIONS, WARRANTIES OR CONDITIONS, EXPRESSED OR IMPLIED. The remedies of the Owner set forth herein are exclusive. The Company neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the sale of covered machines. Correction of defects, in the manner and for applicable period of time provided above, shall constitute fulfillment of all responsibilities of Vaderstad Inc. to the Owner, and Vaderstad Inc. shall not be liable for negligence under contract or in any manner with respect to such machines. IN NO EVENT SHALL THE OWNER BE ENTITLED TO RECOVER FOR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES SUCH AS BUT NOT LIMITED TO, LOSS OF CROPS, LOSS OF PROFITS OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE OR COST OF RENTAL OR REPLACEMENT EQUIPMENT.

Some States or Provinces do not permit limitations or exclusions of implied warranties or incidental or consequential damages, so the limitations or exclusions in this warranty may not apply.

"VADERSTAD INC." AS REFERRED TO HEREIN WITH RESPECT TO SALES IN: UNITED STATES and CANADA: Vaderstad Inc.
PO Box 1030
Wahpeton, ND 58074

Additional Warranty Information

New Equipment Warranty - Equipment is eligible for warranty service only if it qualifies under the provisions of the New Equipment Warranty. The selling dealer will deliver this Warranty to the original retail purchaser at the time of sale, and the dealer will register the sale and Warranty with Vaderstad Inc.

Subsequent Owners - This Warranty covers the first retail purchaser and all subsequent owners of the equipment during the specified warranty period. Should the Vaderstad Inc. Dealer sell this equipment to a subsequent owner, the Dealer must deliver the warranty document to the subsequent owner so the subsequent owner can register ownership with Vaderstad Inc. and obtain the remaining warranty benefits, if available, with no intermission in the Warranty Period. Subsequent Owner Procedure will apply. It is the responsibility of the subsequent owner to transport the equipment to the service shop of an authorized Vaderstad Inc. Dealer or alternatively to reimburse the Dealer for any travel or transportation expense involved in fulfilling this warranty. This Warranty does NOT cover charges for rental or replacement equipment during the repair period, products which have been declared a total loss and subsequently salvaged, overtime labor charges, freight charges for replacement parts, or units sold at auction.

Warranty Service - To be covered by Warranty, service must be performed by an authorized Vaderstad Inc. It is recommended that you obtain warranty service from the Dealer who sold you the equipment because of that Dealer's continued interest in you as a valued customer. In the event this is not possible, warranty service may be performed by any other authorized Vaderstad Inc. Dealers in the United States or Canada. It is the responsibility of the Owner to transport the equipment to the service shop of an authorized Vaderstad Inc. Dealer or alternatively to reimburse the Dealer for any travel or transportation expense involved in fulfilling this warranty.

Maintenance Service - The Owner's Manual furnished to you with the equipment at the time of delivery contains important maintenance and service information. You must read the manual carefully and follow all the maintenance and service recommendations. Doing so will result in greater satisfaction with your equipment and help avoid service and warranty problems. Please remember that failures due to improper maintenance of your equipment are not covered by warranty.

Maintenance Inspections - To insure the continued best performance from your agricultural equipment, we recommend that you arrange to make your equipment available to your selling Dealer for a maintenance inspection 30 days prior to warranty expiration.

Introduction

Safety Alert Symbol

This is the safety alert symbol. The safety alert symbol will direct the operator's attention to information that involves personal safety and the safety of others.

Safety Messages

The words DANGER, WARNING, or CAUTION are used with the safety alert symbol. Learn to recognize these safety alerts and follow the recommended precautions and safety practices.

Indicates an imminently hazardous situation that, if avoided, will result in DEATH OR VERY SERIOUS INJURY.

Indicates a potentially hazardous situation that, if not avoided, could result in DEATH OR SERIOUS INJURY.

Indicates a potentially hazardous situation that, if not avoided, may result in MINOR INJURY.

Informational Messages

The words important or note are not related to personal safety, but are used to give additional information and tips for operating or servicing this equipment.

IMPORTANT: Identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of the machine, process, or its surroundings.

NOTE: Identifies points of particular interest for more efficient and convenient repair or operation.

Safety Signs

Do not remove or obscure Danger, Warning, or Caution signs. Replace any Danger, Warning or Caution signs that are not readable or are missing. Replacement signs are available from the dealer in the event of loss or damage. The actual location of the safety signs is illustrated at the end of this section.

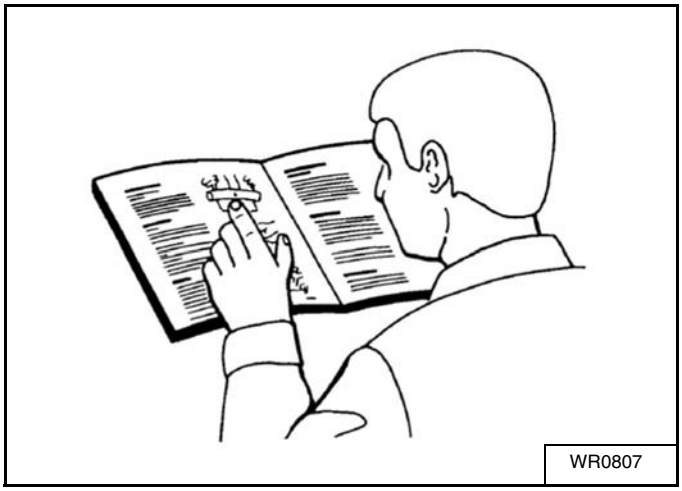
Keep signs clean by wiping off regularly. Use a cleaning solution if necessary.

If parts have been replaced or a used machine has been purchased, make sure all safety signs are in the correct location and can be read. Illustrations of safety sign locations are located at the rear of this section.

Replace any safety signs that can not be read or are missing. Clean the machine surface thoroughly with a cleaning solution before replacing signs. Replacement safety signs are available from a dealer.

Introduction (Cont'd)

A Word To The Operator



It is the operator's responsibility to read and understand the safety section in this manual and the manual for all attachments before operating this machine.

Study the features in this manual and make them a working part of a safety program. Keep in mind that this safety section is written only for this type of machine. Practice all other usual and customary safe working precaution. The operator can prevent serious injury and death.

This safety section is intended to point out some of the basic safety situations that may be encountered during the normal operation and maintenance of this machine. This section also suggests possible ways of dealing with these situations. This section is not a replacement for other safety practices feature in other sections of this manual.

Personal injury or death may result if these precautions are not followed.

Learn how to operate the machine and how to use the controls properly.

Do not let anyone operate the machine without instruction and training.

For personal safety and the safety of others, follow all safety precautions and instructions found in the manual and on safety signs affixed to the machine and all attachments.

Use only approved attachments and equipment

Make sure the machine has the correct equipment needed by the local regulations.

WARNING **An operator should not use alcohol or drugs which can affect their alertness or coordination. An operator on prescription or 'over the counter' drugs needs medical advice on whether or not they can properly operate machines.**

CAUTION **If any attachments used on this equipment have a separate Operator Manual, see that manual for other important safety information.**

Introduction (Cont'd)

This Manual

Right-hand and left-hand, as used in this manual, are determined by facing the direction the machine will travel when in use.

The photos, illustrations, and data used in this manual were current at the time of printing, but due to the possible in-line production changes, your machine can vary slightly in detail. The manufacturer reserves the right to redesign and change the machine as necessary without modification.

In some illustrations and photos used in this manual, shields or guards may have been removed for clarity. Never operate the machine with any shields or guards removed. If the removal of shields or guards is necessary to make a repair, they must be replaced before operation.

Operation

Prepare For Operation

Read and understand all operating instructions and precautions in this manual before operating or servicing the machine.

Know and understand the positions and operations of all controls. Make certain all controls are in neutral and the parking brake is applied before starting the machine. Make sure the steering wheel is centered and locked.

Any time the engine is running and the parking brake is disengaged, the machine will turn if the steering wheel is moved even though the travel control lever is in neutral.

Make certain all people are well away from the area of work before starting and operating the machine. Check and learn all controls in an area clear of people and obstacles before starting work. Be aware of the machine size and have enough space available to allow for operation. Never operate the machine at high speeds in crowded places.

Emphasize the importance of using correct procedures when working around and operating the machine. Do not let children or unqualified persons operate the machine. Keep others, especially children, away for the area of work. Do not permit others to ride on the machine.

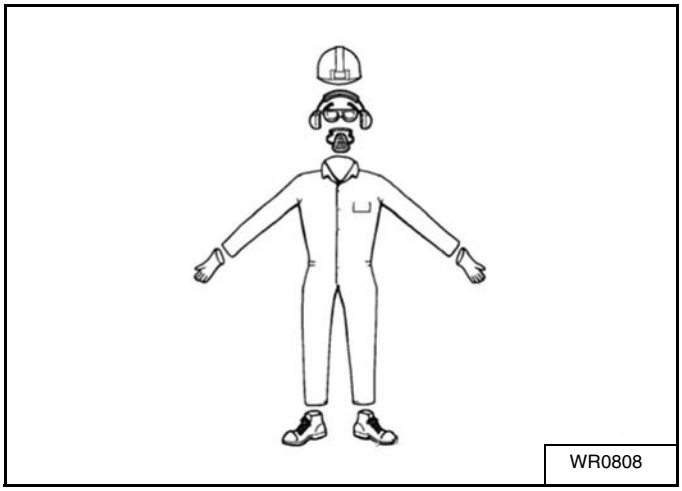
Make sure the machine is in the proper operating condition as stated in the Operator's Manual. Make sure the machine has the correct equipment required by local regulations.

All equipment has a limit. Understand the speed, brakes, steering, stability and load characteristics of the equipment before starting.

Operation (Cont'd)

Personal Protective Equipment

Wear all personal protective equipment (PPE) and protective clothing issued or called for by job conditions and county / local regulations. PPE includes, but is not limited to, equipment to protect eyes, lungs, ears, head, hands and feet when operating, servicing or repairing equipment.



Agricultural Chemicals

Agricultural chemicals can be very hazardous. Improper use of fertilizer, fungicides, herbicides, insecticides and pesticides can injure people, plants, animals, soil and other people's property.

Always read and follow all manufacturers' instructions before opening any chemical container.

Read and follow instructions each time a chemical is used.

Use the same precautions when adjusting, servicing, cleaning or storing the machine as used when installing chemicals into the hoppers or tanks.

Inform anyone who comes in contact with chemicals of the potential hazards involved and the safety precautions required.

Stand upwind and away from smoke from a chemical fire.

Store or dispose of all unused chemicals only in a manner as specified by the chemical manufacturer.

Operation (Cont'd)

Traveling On Public Roads

Machine was designed for apply chemicals and fertilizers in off-road use. Do not use the machine for transporting product on public roads. Chemical spills result in environmental damage. A loaded machine driven on public roads also runs a high risk of tire failure. Personal injury could result.

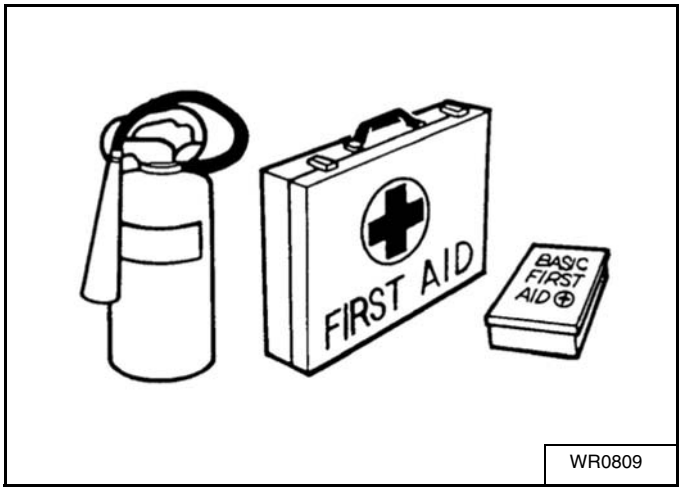
Always walk around and visually inspect the machine before traveling on public roads. As a warning, honk the horn twice before starting the engine. Check for damage and / or faulty components that can fail and create a hazardous condition. Make sure all the machine systems operate properly. The following, including, but not limited to: front road lights, tail and brake lights, hazard warning lights, parking brake, horn, windshield wiper and washer and rear view mirrors. Repair or replace any component not in proper working order.

Never drive at a speed causing the machine to bounce or lose control.

Obey all traffic rules. Operate the machine with hazard warning lights on, unless prohibited by law. Use of road lights while traveling on public roads is operator's responsibility.

Maintenance

Fire Prevention And First Aid



WR0809

Be prepared for emergencies.

Keep a first aid kit handy for treatment of minor cuts and scratches.

Always carry one or more fire extinguishers of the correct type. Check fire extinguishers regularly as instructed by the manufacturer. Make sure the fire extinguishers are properly charged and in operating condition.

Due to the nature of the crops this machine will operate in, the risk of fire is of concern. Use a water type fire extinguisher or other water source for a fire in crops.

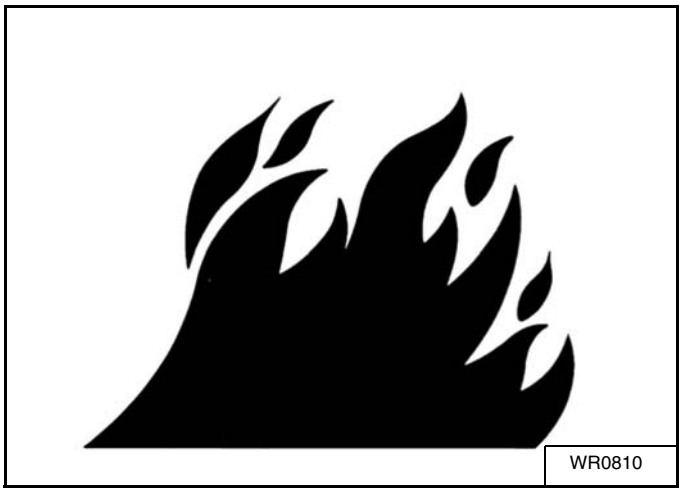
For fires involving anything other than crops, such as oil or electrical components, use a dry chemical fire extinguisher with a ABC rating.

Mount fire extinguishers within easy reach of where fires can occur.

Frequently remove accumulated crop material from the machine and check for overheated components. Check the machine daily for any noises that are not normal. Such noises could indicate a failed component that can cause excess heat.

If any flame cutting, welding, or arc welding is to be done on the machine or attachments, make sure to clear any crop material or debris from around the area. Make sure the area below the work area is clear of any flammable material as falling molten metal or sparks can ignite the material.

If fire occurs stand upwind and away from the smoke from the fire.

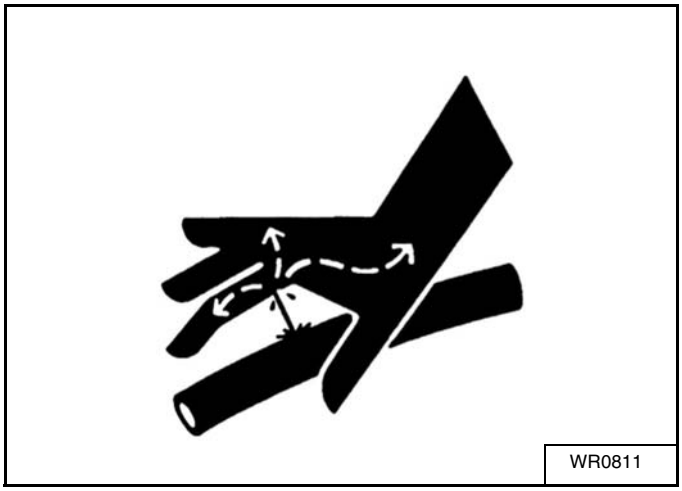

WR0810

Maintenance (Cont'd)

High Pressure Leaks

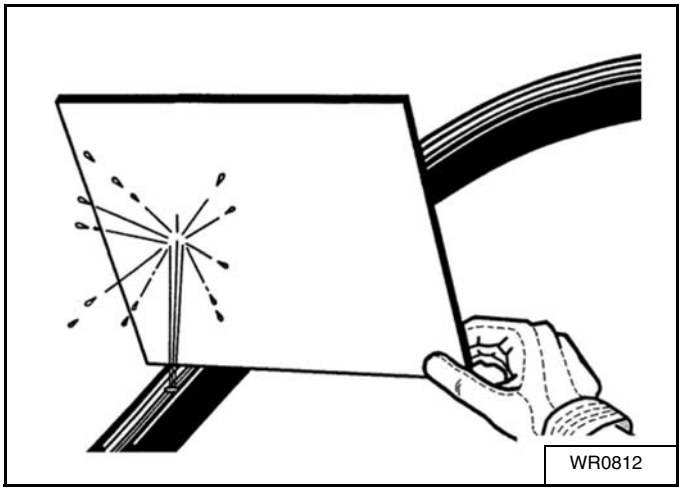
Fluid leaking from the hydraulic system or the fuel injection system under high pressure can be very hard to see. The fluid can go into the skin causing serious injury.

Fluid injected into the skin must be surgically removed within a few hours. If not removed immediately, serious infection or reaction can develop. Go immediately to a doctor who knows about this type of injury.


WR0811

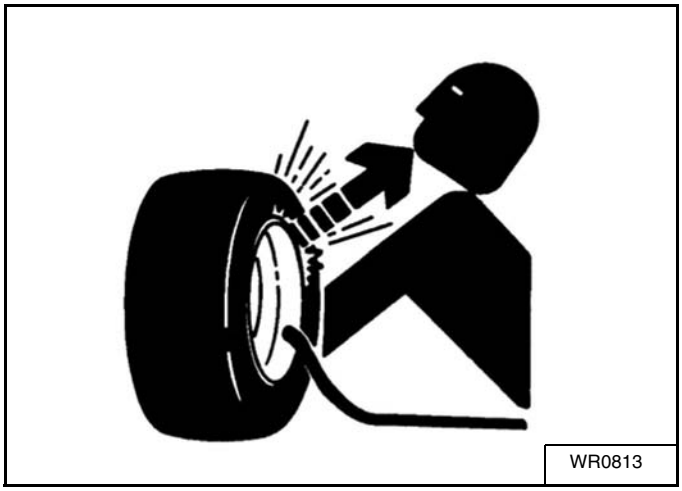
Use a piece of cardboard or wood to search for possible leaks. Do not use your bare hand. Wear leather gloves for hand protection and safety goggles for eye protection.

Relieve all pressure before loosening any hydraulic lines. Relieve the pressure by lowering raised equipment, shutting off accumulator valve, if equipped, and shutting off the engine. Tighten all connections securely before apply pressure.


WR0812

Maintenance (Cont'd)

Tire Safety


WR0813

Check the tires for cuts, bulges and the correct pressure. Replace worn or damaged tires. When tire service is needed, have a qualified tire mechanic service the tire. Changing the tire can be very hazardous and must be done by a qualified tire mechanic using the proper tools and equipment. See the Specifications Sections for the correct tire size.

Tire explosion and / or serious injury can result from over inflation. Do not exceed the tire inflation pressures. See the Specifications Section for the correct tire pressure.

Do not inflate a tire that is seriously under inflated or has been run flat. Have the tire checked by a qualified tire mechanic.

Do not weld on the rim when a tire is installed. Welding can make an air / gas mixture that can cause an explosion and burn with high temperatures. This danger applies to all tires, inflated or deflated. Removing air or breaking the bead is not enough. The tire must be completely removed from the rim prior to welding.

When preparing a calcium chloride solution for fluid ballasting the tractor tires, never pour water onto the calcium chloride. A chlorine gas can be generated which is poisonous and explosive. This can be avoided by slowly adding calcium chloride flakes to water and stirring until they are dissolved.

When seating tire beads onto the rims, never exceed 2.4 bars (35 psi) or the maximum inflation pressure specified on the tire. Inflation beyond this maximum pressure may break the bead, or even the rim, with explosive force.

Maintenance (Cont'd)

Replacement Parts

Where replacement parts are necessary for periodic maintenance and servicing, genuine replacement parts must be used to restore your equipment to original specifications.

The manufacturer will not accept responsibility for installation of unapproved parts and / or accessories and damages as a result of their usage.

WR0814

Torque Specifications

GRADE 2	GRADE 5	GRADE 8				
TORQUE IN FOOT POUNDS						
BOLT DIA	3/8	1/2	5/8	3/4	7/8	1
HEX HEAD	9/16	3/4	15/16	1-1/8	1-5/1	1-1/2
UNC GR2	18	45	89	160	252	320
UNC GR5	30	68	140	240	360	544
UNC GR8	40	100	196	340	528	792
UNF GR2	21	51	102	178	272	368
UNF GR5	32	70	168	264	392	572
UNF GR8	48	112	216	368	792	840

WR0513

Wheel Nut and Bolt Torque		
Nut Size	Grade	Torque
1/2" -20UNF x 60°	5	93 ft/lbs
1/2" -20UNF X 60°	5	93 ft/lbs
1/2" -20UNF X 90°	5	93 ft/lbs
9/16" -18UNF X 90°	5	133 ft/lbs
5/8" -18UNF X 90°	5	187 ft/lbs
5/8" -18UNF X 90° (Heavy Hex)	5	187 ft/lbs
3/4" -16UNF (Bud Nut)	8	462 ft/lbs
3/4" -16UNF (Flange Nut)	8	462 ft/lbs
7/8" -14UNF (Flange Nut)	8	735 ft/lbs
Bolt Size	Grade	Torque
1/2"-20UNF X 1-7/16"	5	72 ft/lbs
1/2"-20UNF X 1-1/4"	5	72 ft/lbs
1/2"-20UNF X 1-1/2"	5	72 ft/lbs
1/2"-20UNF X 1-3/4"	5	72 ft/lbs
1/2"-20UNF X 1"	5	72 ft/lbs
9/16"-18UNF X 1-3/4"	5	103 ft/lbs
9/16"-18UNF X 2-1/4"	5	103 ft/lbs

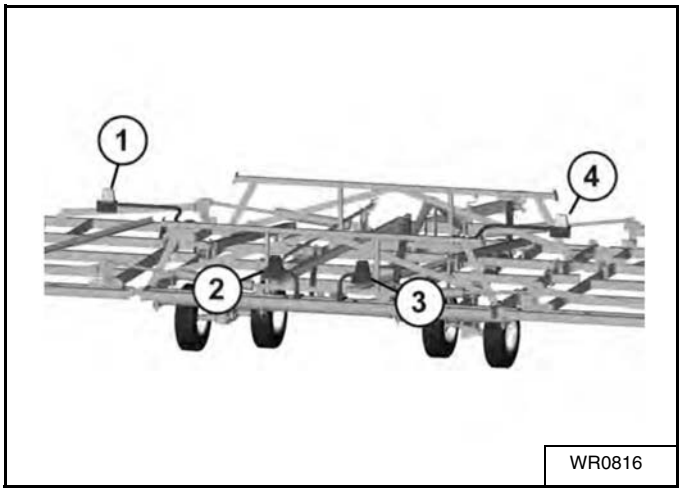
WR0815

Marker Lamps

The machine is equipped with marker lamps that must be used when transporting the machine on public roads.

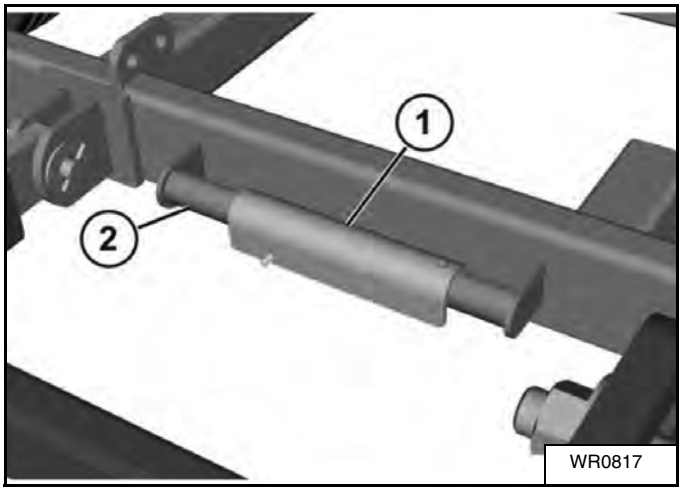
The machine is equipped with two amber lamps (1) (4) located on the outside edges of the rear wing rest frame.

The machine is equipped with two red lamps (2) (3) located in the rear center of the machine.



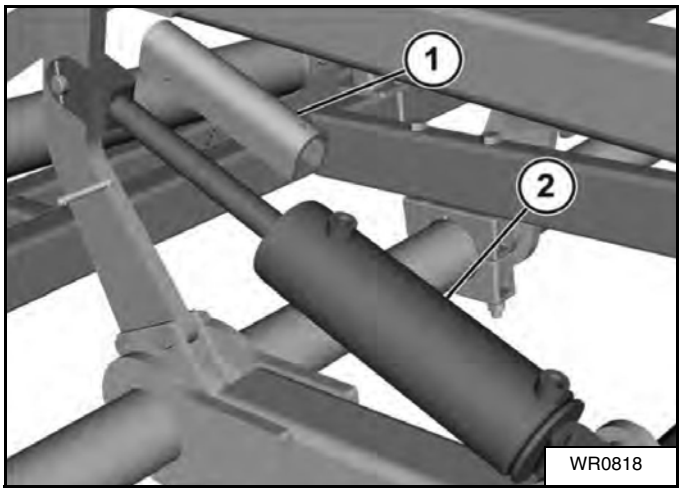
Transport Stops

The machine is equipped with transport stops (1). Use the transport stops when transporting the machine on public roads. When not in use, keep the transport stops on the storage brackets (2) on the main frame of the machine.



Machines Equipped With A Level Lift Hitch

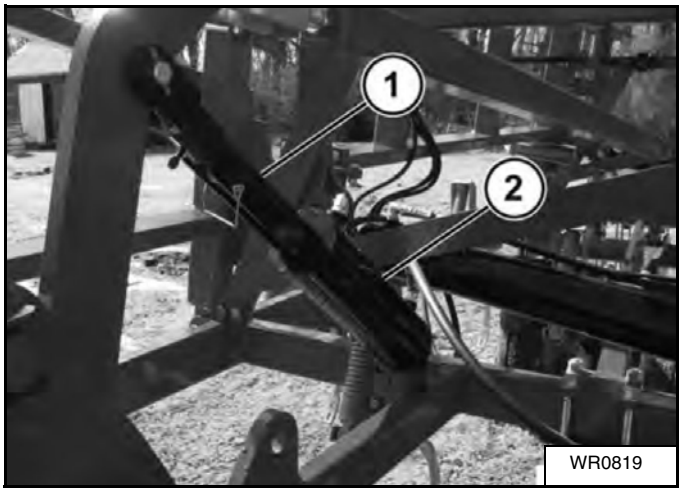
Install the transport stops (1) on the rods of the lift cylinders (2) located at the rear of the machine.



Transport Stops (Cont'd)

Machines Equipped With Floating Hitch

Install the transport stops (1) on the rods of the lift cylinders (2) located at the front of the machine.



Unbundling

STEP 1

While frame is still in shipping configuration, remove the straps to allow access to the hubs.

STEP 2

Place the tire on the hub using six lug bolts.

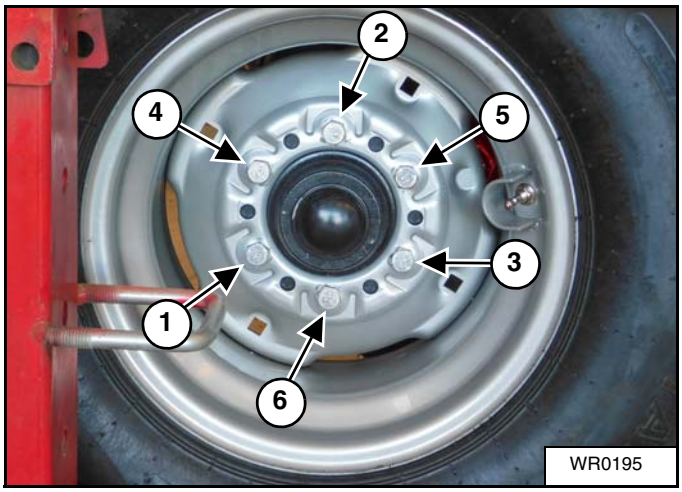
Tighten the lug bolts in a star pattern to the torque specs.

103 ft-lbs (140 N•m) for the 8 bolt main frame wheels.

72 ft-lbs (98 N•m) for all other 6 bolt wheels.

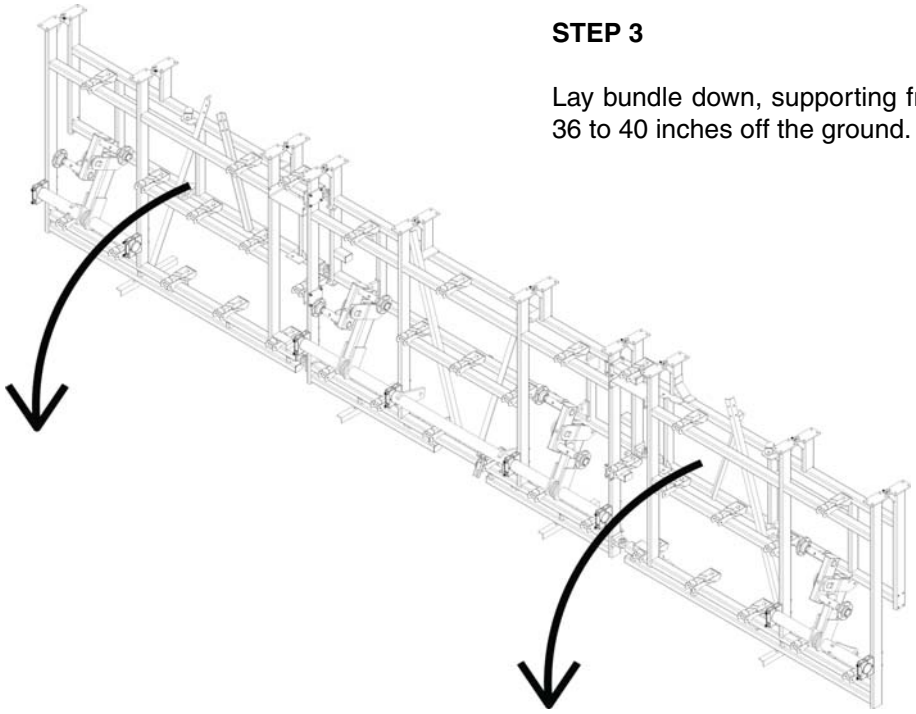
NOTE: Tires on the main frame and wings are all installed the same way.

The tires on the main frame use 63831 9/16 inch NF lug bolts. The tires on the wings use 88142 1/2 inch NF lug bolts.



Unbundling (Cont'd)

Opening Bundle



STEP 3

Lay bundle down, supporting frame securely 36 to 40 inches off the ground.

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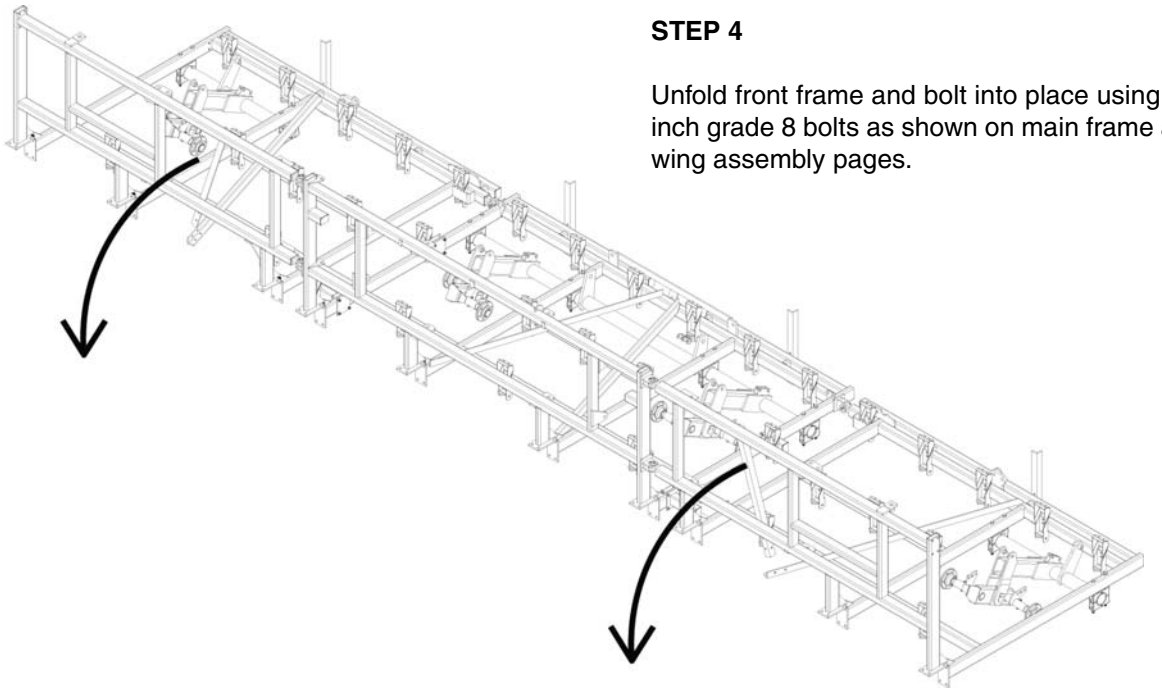


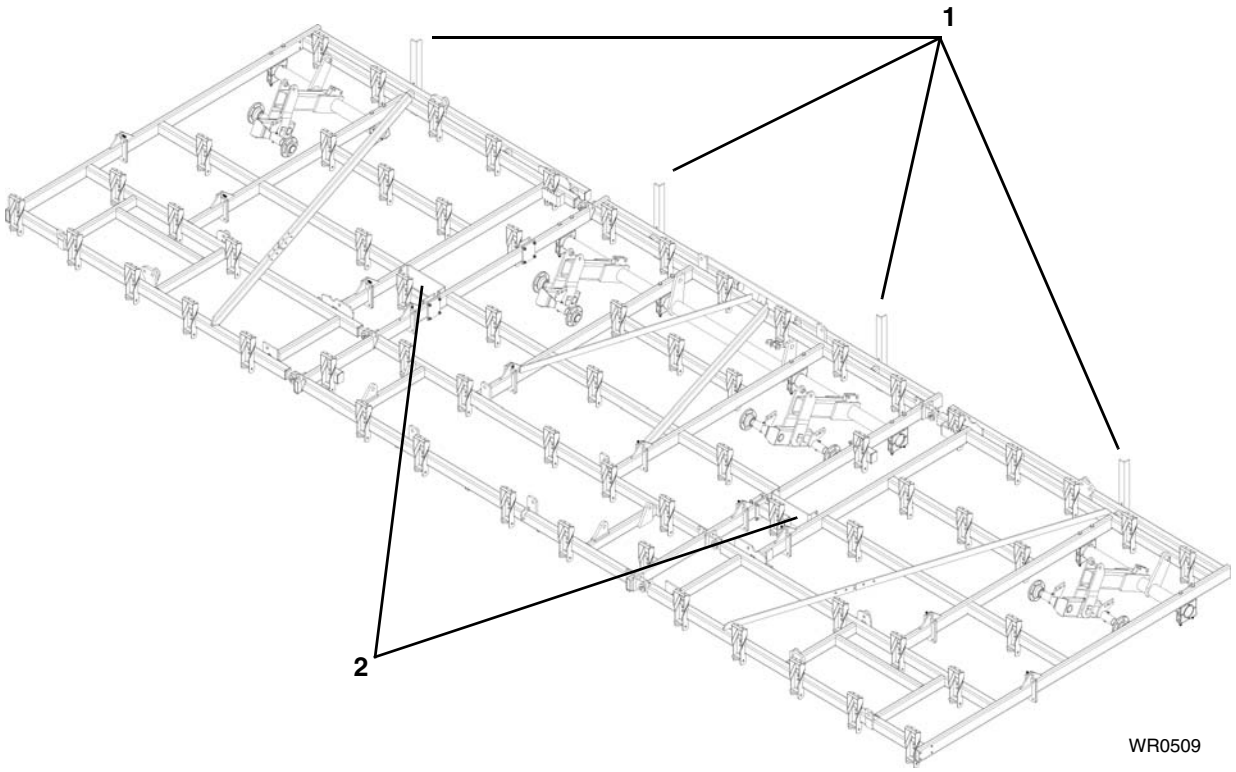
STEP 4

Unfold front frame and bolt into place using 3/4 inch grade 8 bolts as shown on main frame and wing assembly pages.

WR0507

Unbundling (Cont'd)

Opening Bundle (Cont'd)



STEP 5

After bundle is unfolded and two frame halves are bolted together remove shipping stands (1) and brackets (2).

After the shipping stands (1) and brackets (2) are removed the rest of the cultivator may be assembled as shown in this book.

Lay the frame carefully down on the stands 24 1/2 inches (62 cm) off the ground.

NOTE: 24 1/2 inches only if the tires were installed in Steps 1, 2 and 3. If not installed the height will be 30 - 40 inches (76 - 102 cm) to allow clearance to install the tires after the frame is resting on the stands.

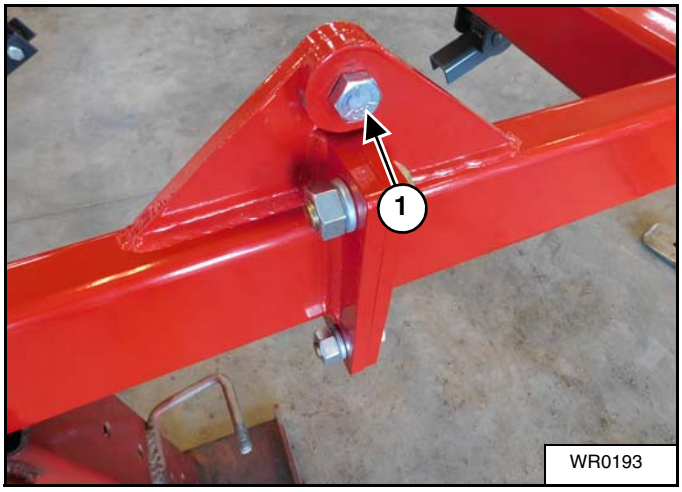
Unbundling (Cont'd)

STEP 6

Cut the bands holding the front part of frame in place.

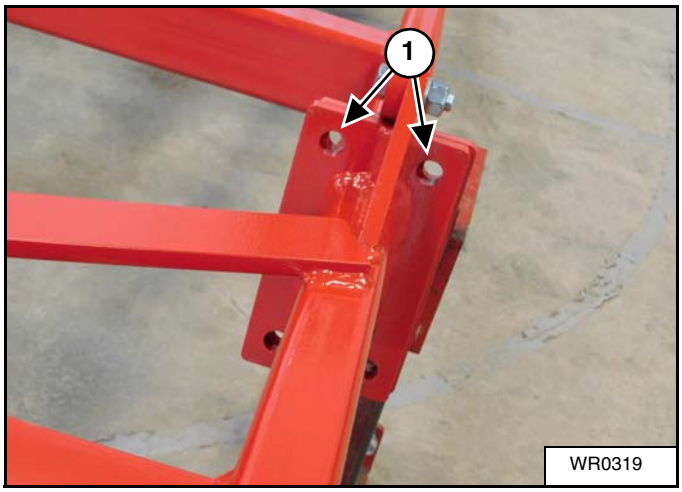
Loosen up the pivot bolts (1) for the front section of the main frame.

Unfold the front part of the frame.



STEP 7

Align the flanges (1) on the front section of the frame and main frame.

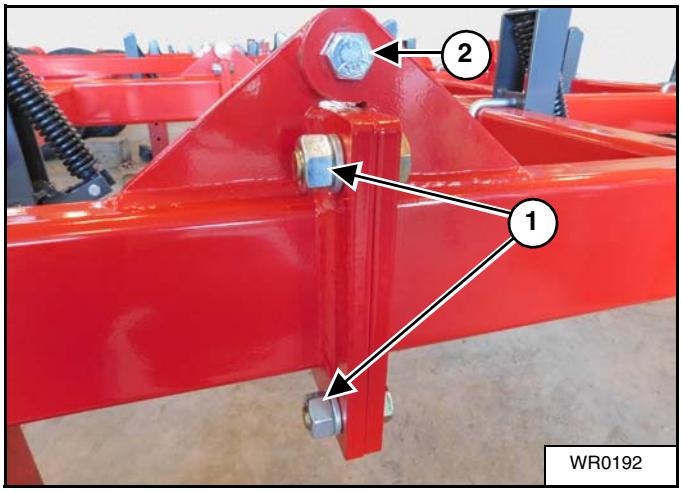


STEP 8

Use four 88290 3/4 x 2 inch grade 8 bolts (1), 88130 lock washers and 88110 nuts to secure the frame flanges making sure to align bolts front to back.

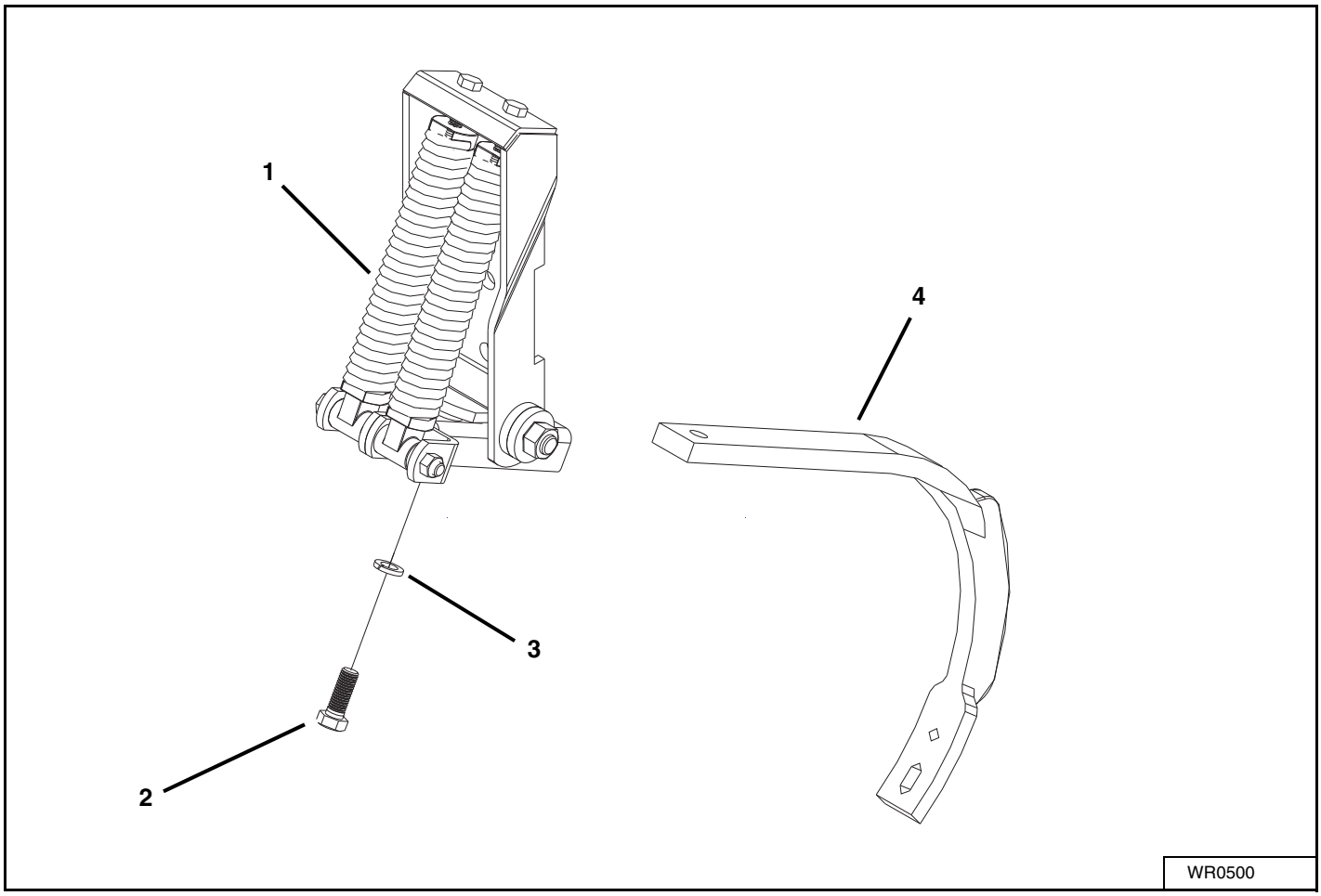
Use Steps 5 and 6 for all hinge flanges.

Tighten up the pivot bolts (2) that were loosened in Step 4.



Shank Assembly

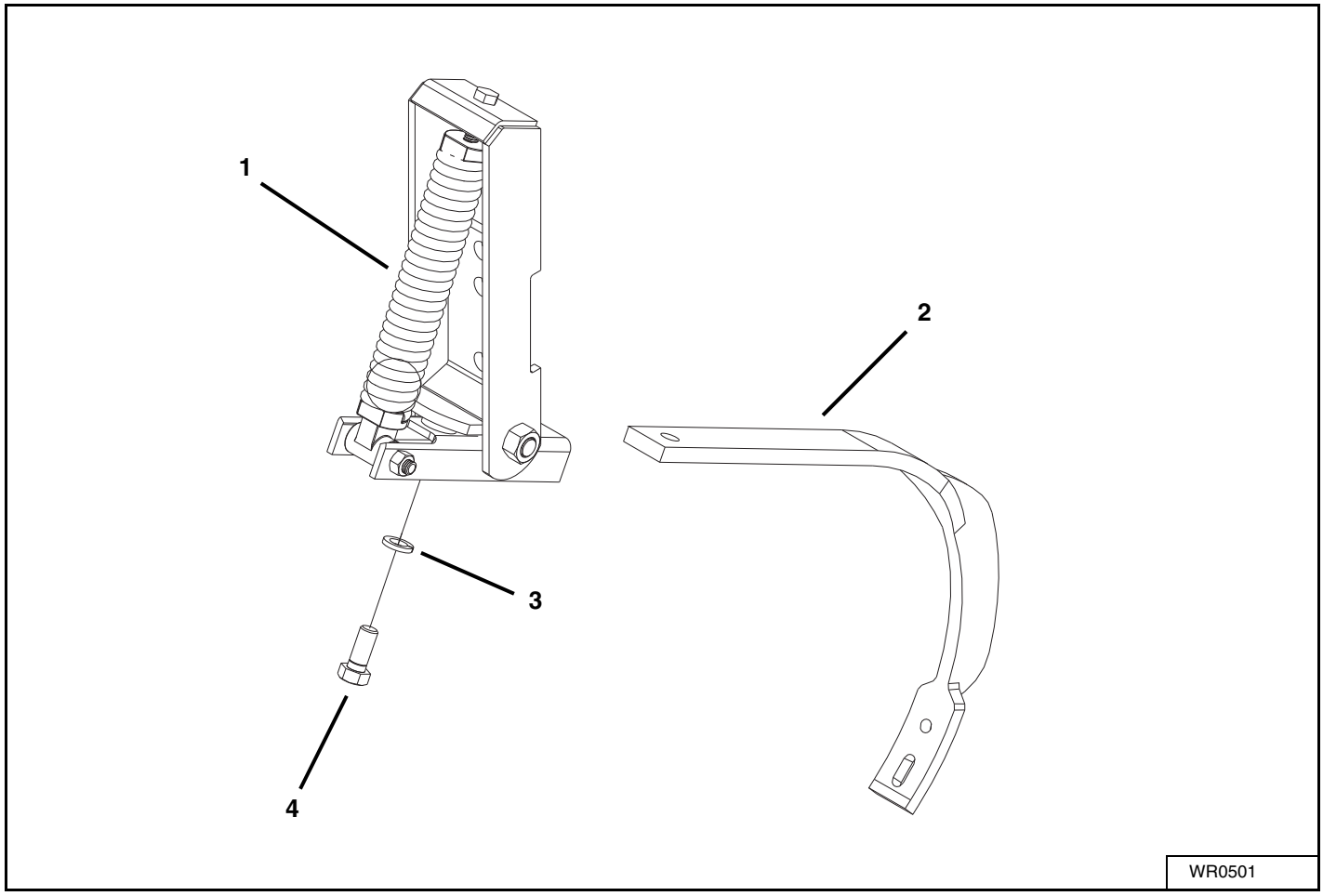
Twin Spring Shank Assembly



REF.	PART NO.	DESCRIPTION
1	240560	TWIN SPRING FC SHK HOLDER ASSY
2	88838	BOLT, HEX: 5/8 - 11NC x 1-3/4 5ZP
3	88129	WASHER, Lock Helical: 5/8 ID (11/16 ACT) ZP
4	55655	HD EDGE FORM CULT SHNK (GRAY)

Shank Assembly (Cont'd)

Single Spring Shank Assembly

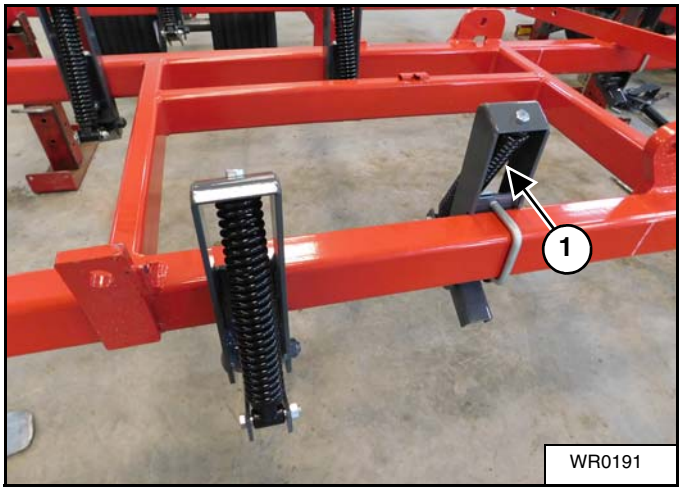


REF.	PART NO.	DESCRIPTION
1	240434	SINGLE SPRING SHK HOLDER ASSY
2	53408	EDGE FORMED SHANK (GRAY)
3	88129	WASHER, Lock Helical: 5/8 ID (11/16 ACT) ZP
4	88577	BOLT, Hex: 5/8 - 11NC x 1-1/2 5ZP

Shank Assembly (Cont'd)

STEP 9

Some spring assemblies were installed backwards (1) for shipping. Remove the backwards spring assemblies and using the existing hardware reinstall them in the same location facing forward.



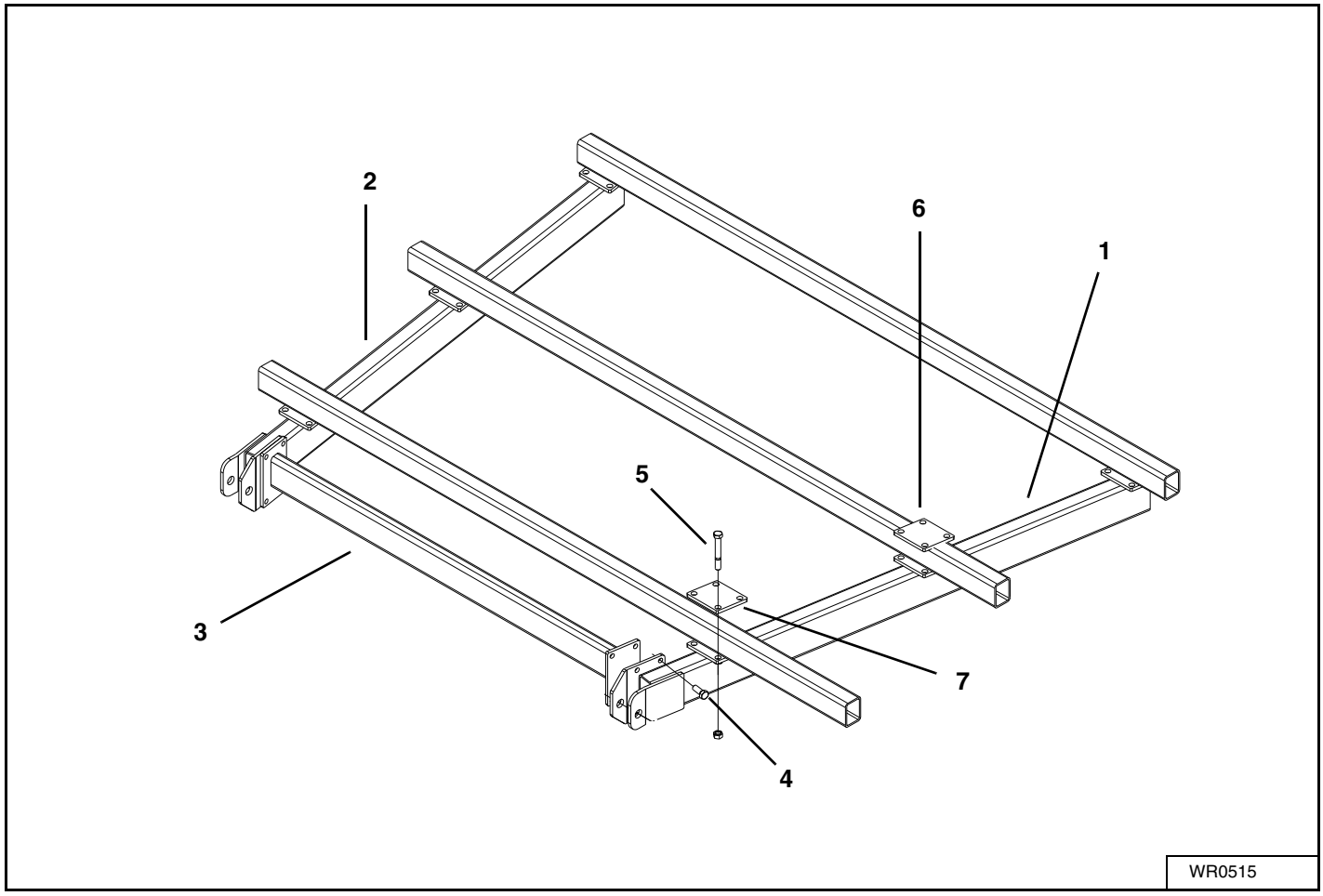
STEP 10

Attach the shank to each spring assembly using a grade 5 bolt (1) and 88129 lock washer.

NOTE: The single spring shank uses an 88577 5/8 x 1-1/2 grade 5 bolt. The double spring shank uses an 88838 5/8 x 1-3/4 grade 5 bolt.

Hitch Assembly

Hitch Assembly



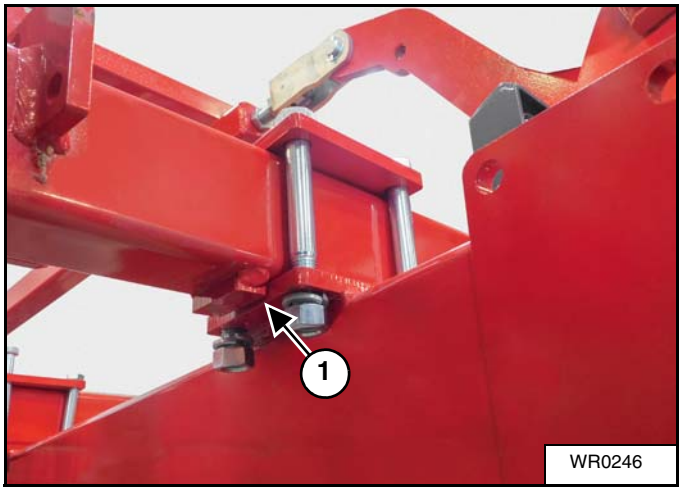
REF.	PART NO.	DESCRIPTION
1	220796	QX / XL HITCH TUBE - Left
2	220795	QX / XL HITCH TUBE - Right
3	220792	13 FT QX / XL HITCH TUBE
4	88294	BOLT, Hex: 5/8 - 11NC x 2 5ZP
5	88293	BOLT, Hex: 3/4 - 10NC x 6 5ZP
6	68040	FLAT (RED) 11’ & 13’
7	247418	ANCHOR WELD LH
	247417	ANCHOR WELD RH

Hitch Assembly (Cont'd)

STEP 11

Lift the hitch tube onto the main frame aligning the outside of the tab (1) on the bottom flange of the main frame.

NOTE: The left hitch tube is 220796. The right hitch tube is 220795.

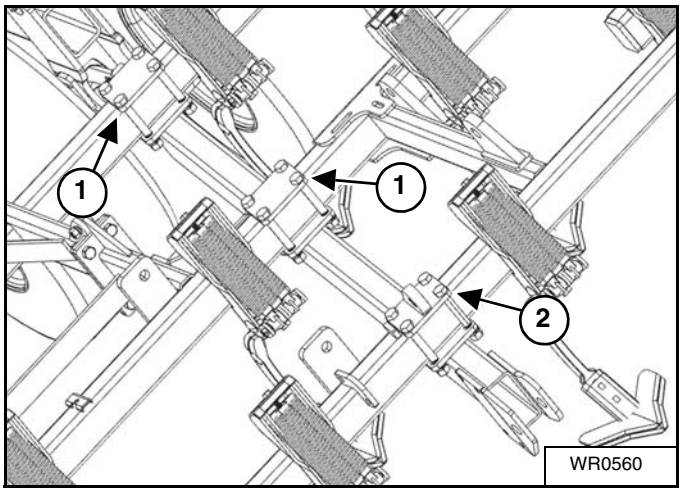


STEP 12

Using two 68040 plates (1) and the 247418 left side hitch cylinder plate (2) on top of the main frame along with twelve 88293 3/4 x 6 inch grade 5 bolts, 88130 lock washers and 88110 nuts secure the hitch bracket to the main frame. Leave the bolts loose until the crossmember has been installed.

Repeat Steps 9 and 10 for the other hitch bracket and use the 247417 right hitch cylinder plate.

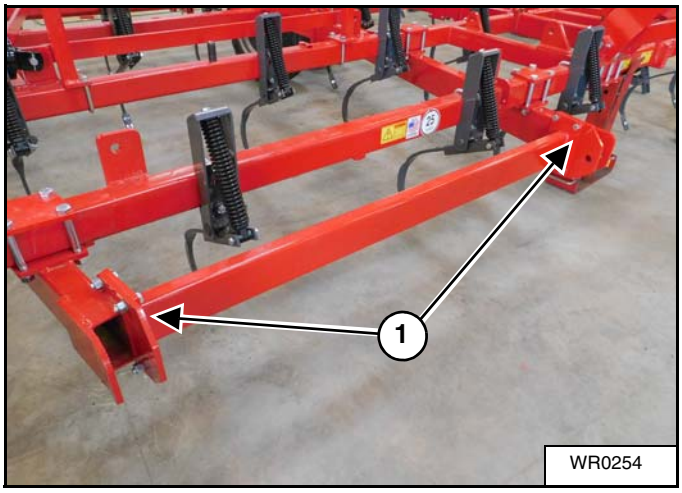
NOTE: Right and left are determined as sitting in the tractor facing forward.



STEP 13

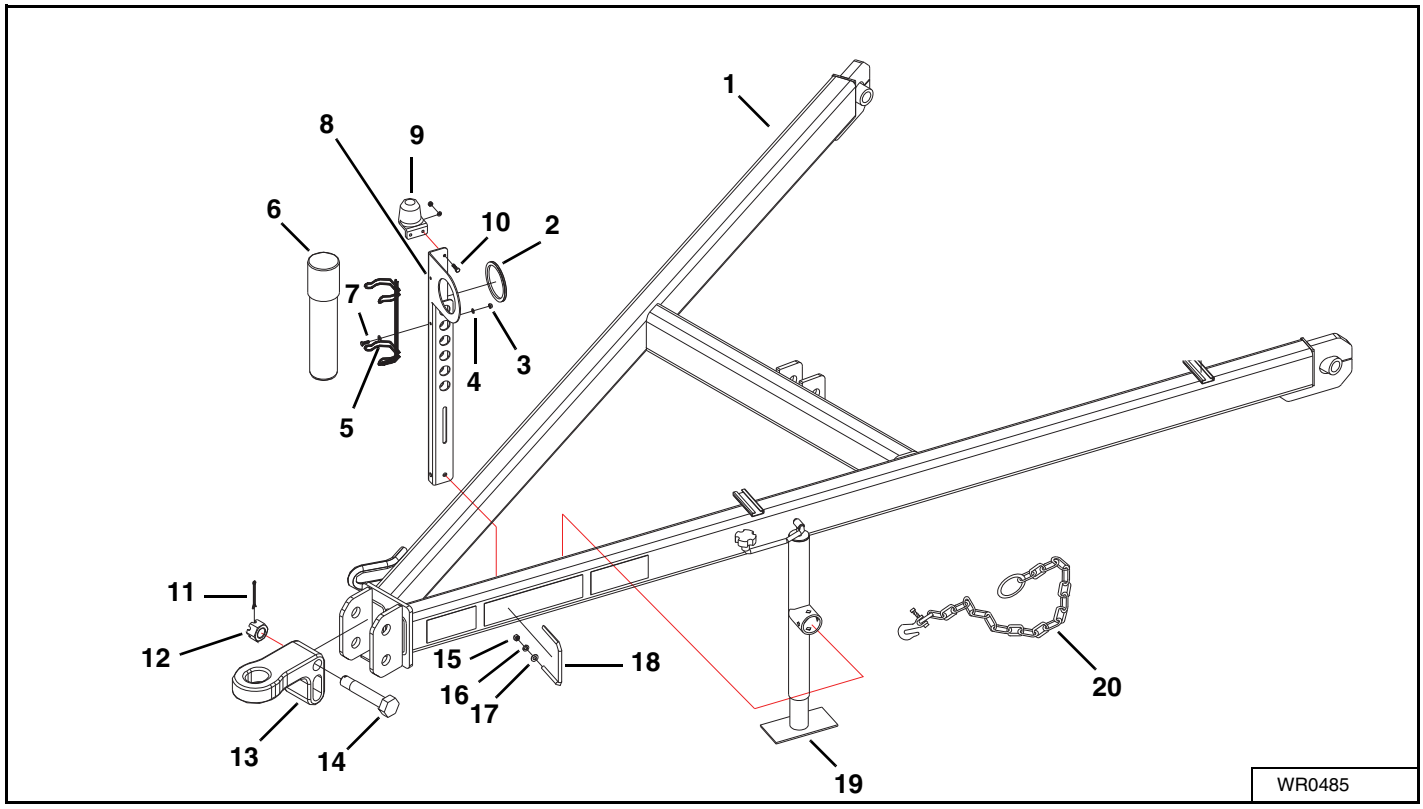
Use eight 88294 5/8 x 2 inch grade 5 bolts (1), 88129 lock washers and 88126 nuts to install the 220792 crossmember to the front of each hitch bracket.

Tighten the crossmember installed in Step 13 then tighten the bolts for both hitch brackets installed in Steps 11 and 12.



Hitch Assembly (Cont'd)

Hitch Assembly Continued

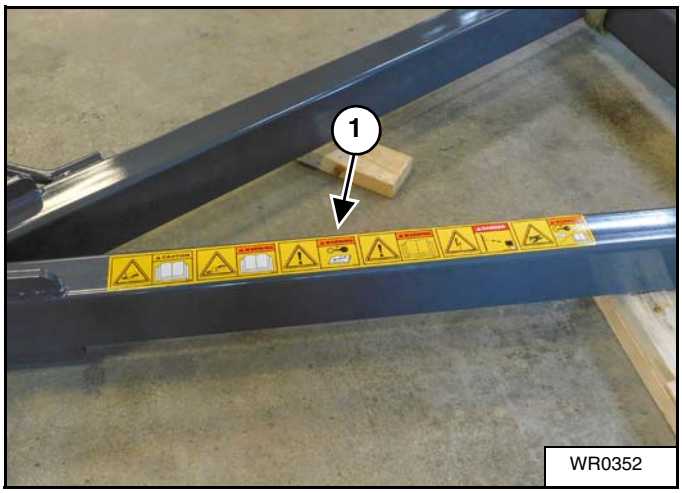


REF.	PART NO.	DESCRIPTION
1	233670	13 FT HITCH
2	236092	RUBBER EDGE
3	88172	NUT, Hex 1/4 - 20NC 5ZP
4	88262	WASHER, Lock: 1/4 ID (5/16 ACT) ZP
5	88261	WASHER, Flat: 1/4 (5/16 x 3/4 ACT) 2ZP
6	88993	BOLT, Hex: 1/4 - 20NC x 3/4 5ZP
7	234313	STORAGE TUBE, Owner's Manual
8	236142	FORMED CHANNEL, Hyd Hose Brkt
9	223329	PLUG HOLDER
10	88203	BOLT, Hex: 1/4 - 20NC x 1 5ZP
11	88133	PIN, Cotter: 3/16 DIA x 2 ZP
12	88350	NUT, Castle: 1-1/4 - 7NC 2ZP
13	18236	DUAL CAST HITCH
14	11638	BOLT, Hitch Special: 1-1/4 x 6-1/2
15	88103	NUT, Hex: 3/8 - 16NC 5ZP
16	88362	WASHER, Helical: 3/8 ID ZP
17	88282	WASHER, Flat: 3/8 (7/16 x 1 ACT) 2ZP
18	89069	BOLT, U-bolt: 3/8 - 16NC x 5 x 4 Z
19	24415	JACK
20	24459	20K SAFETY CHAIN: 3/8" x 62"

Hitch Assembly (Cont'd)

STEP 14

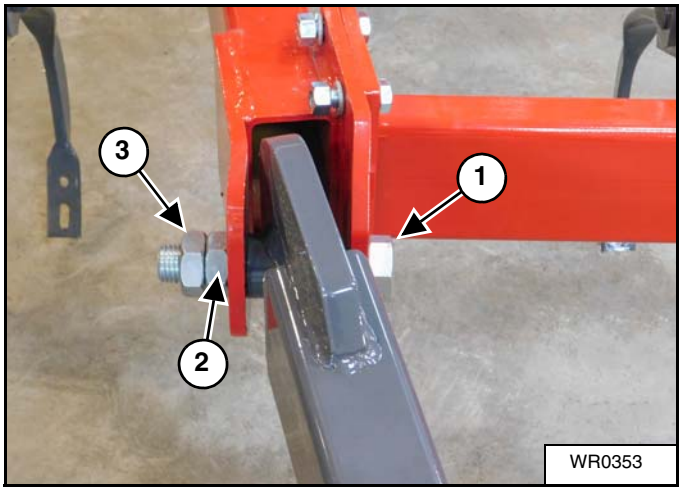
Place the 233670 hitch in front of the main frame. Be sure the decals (1) are facing up.



STEP 15

Use two 88349 1-1/4 x 6-1/2 grade 5 inch bolts (1) and two 88622 jam nuts per bolt to secure the hitch to the hitch brackets installed in Steps 8 and 9.

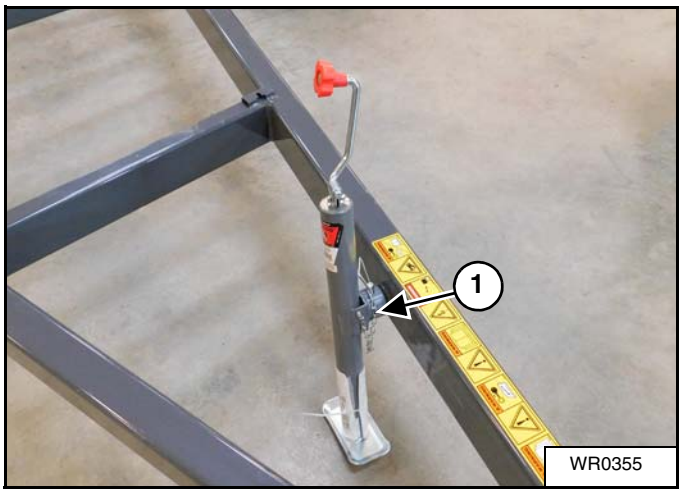
Tighten the inner nut (2) a half turn after contacting the bracket. Tighten the outer nut (3) firmly against the inner nut (2).



Hitch Assembly (Cont'd)

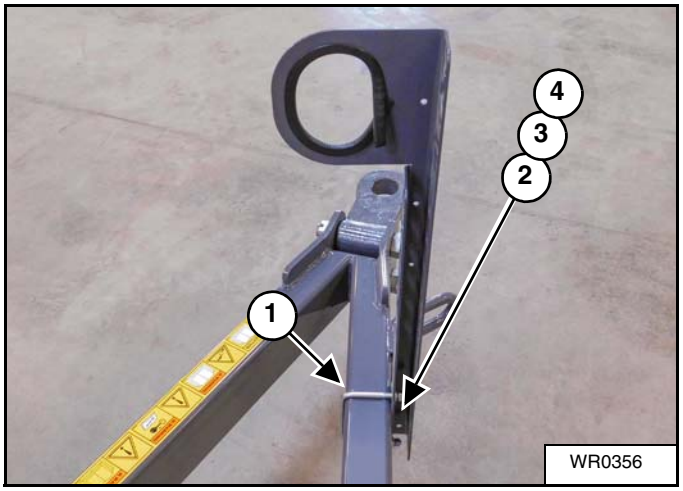
STEP 16

Install the 24415 jack to the hitch frame using the pin (1) chained to the hitch stand.



STEP 17

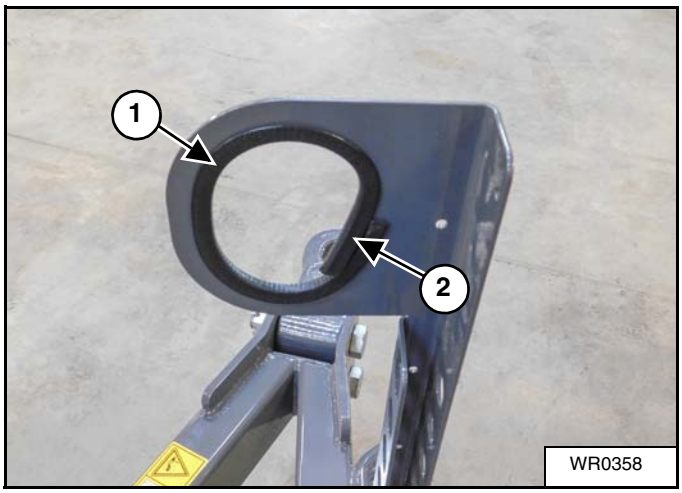
Use a 89358 3/8 x 6 x 3-3/4 inch U-bolt (1), 241777 backing plate (2), two 88282 flat washers, two 88362 lock washers (3) and two 88103 locknuts (4) to install the 236142 hose bracket as shown.



Hitch Assembly (Cont'd)

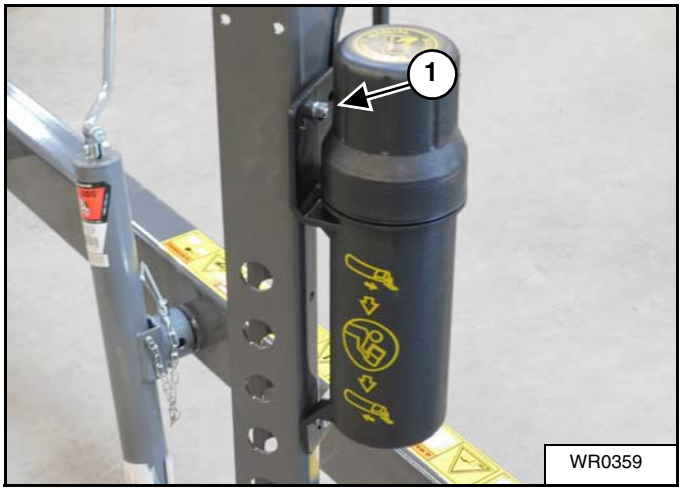
STEP 18

Install the 98231 weather stripping (1) in the opening of the hydraulic hose bracket. Cut off any overlapping edging (2).



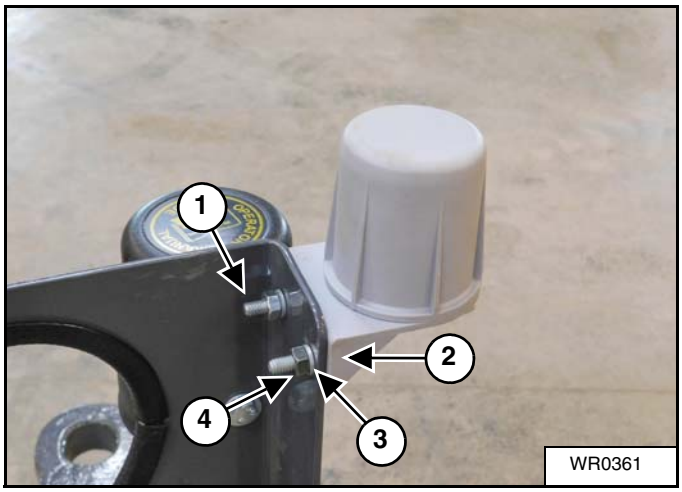
STEP 19

Use two 88993 1/4 x 3/4 inch grade 5 bolts (1), two 88261 flat washers, two 88262 lock washers and two 88172 nuts to install the 234313 operator's manual tube to the 236142 hydraulic hose bracket.



STEP 20

Install the 223329 light plug retainer to the 236142 hydraulic hose bracket with two 88203 1/4 x 1 inch grade 5 bolts (1), two 88261 flat washers (2), two 88262 lock washers (3) and two 88172 nuts (4).

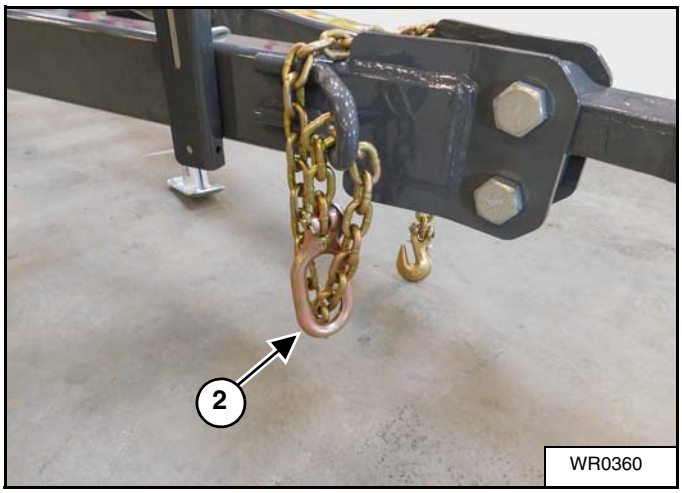


Hitch Assembly (Cont'd)

STEP 21

Install the 24459 safety chain to the hitch by running through the bracket (1) on the hitch frame then through the end (2) of the hitch safety chain as shown.

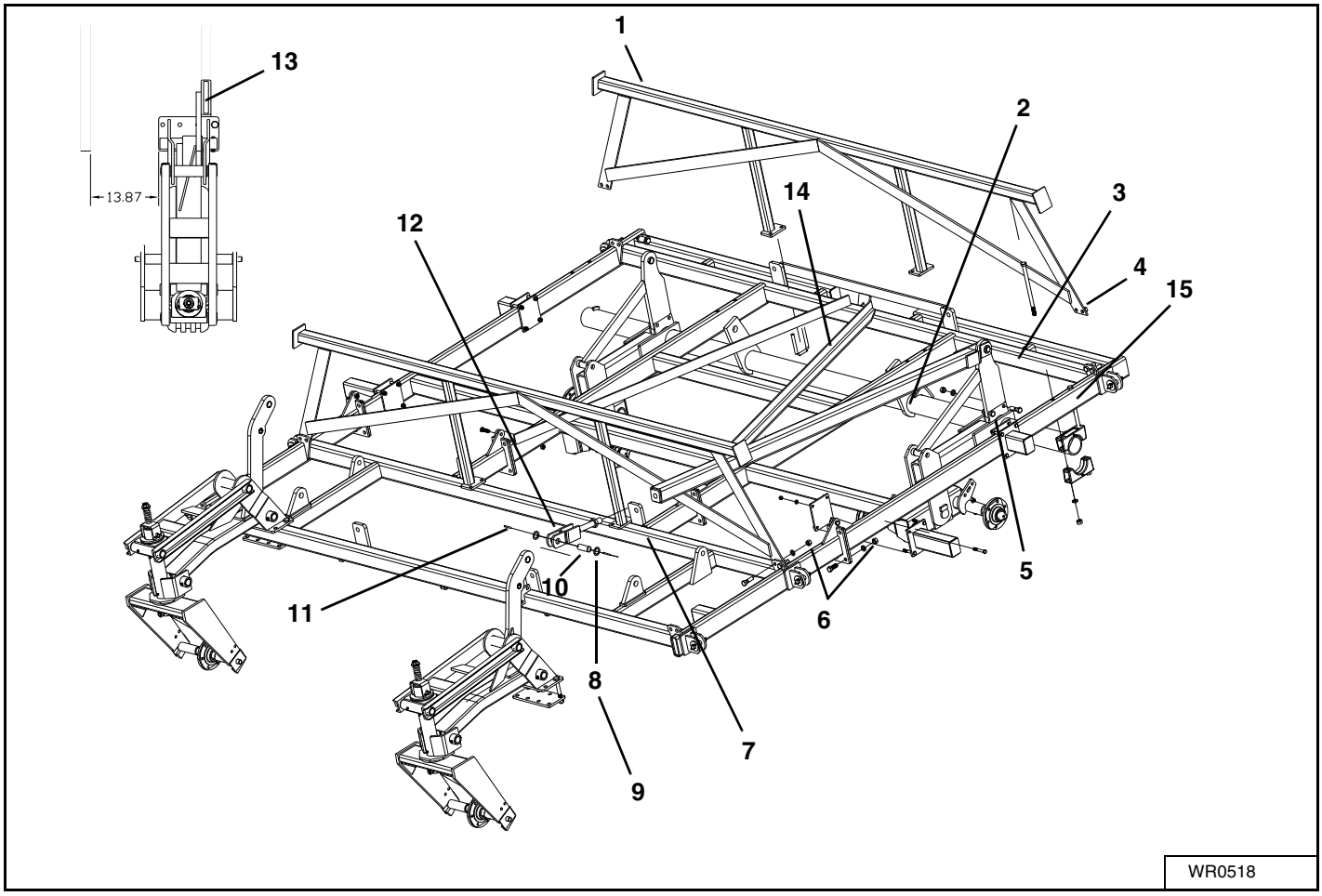
NOTE: The chain must be installed in the loop on the right side of the hitch.



QX2 5 SECTION CULTIVATOR

Main Frame Assembly

Main Frame



REF.	PART NO.	DESCRIPTION
1	240818	QX2 / XL2 13 FT WING REST
2	221461	QUADX MAIN MAST TUBE
3		NOTE - ORIENTATION
4	89165	BOLT, Hex: 3/4-10NC x 13 5ZP
5	220769	QUADX AXLE ANCHOR
6	88290	BOLT, Hex: 3/4-10NC x 2 8YZP
7	88622	NUT, Jam: 1-1/4 - 7NC 2ZP PRELIMINARY SETTING OF 3-1/4”
8	88440	BUSHING, Machinery: 1-1/4 x 1-7/8 14GA ZP
9	88293	BOLT, Hex: 3/4-10NC x 6 5ZP
10	68034	HEADLESS PIN (2): 1-1/4 x 3.38
11	54800	CLEVIS ADJUST ROD
12	42484	PIN-ROLL: 1/4 x 2-1/4 ZP
13		NOTE: OFFSET ANCHOR ON ARM, RIGHT SHOWN LEFT IS OPPOSITE
14	88503	BOLT, U: 5/8-11NC x 3 x 5-1/4 Z
15	88841	BOLT, Hex: 3/4-10NC x 2-3/4 5ZP

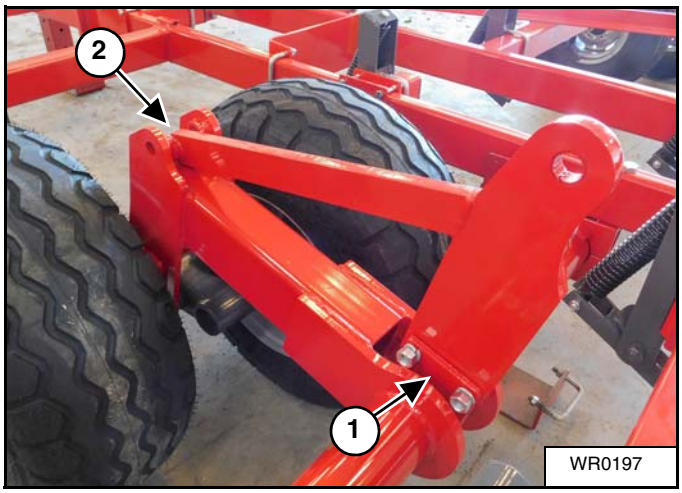
Main Frame Assembly (Cont'd)

STEP 22

Use two 88841 3/4 x 2-3/4 grade 5 bolts, 88130 lock washers and 88110 nuts to install the axle anchor (1) to the axle (Do not tighten the bolts).

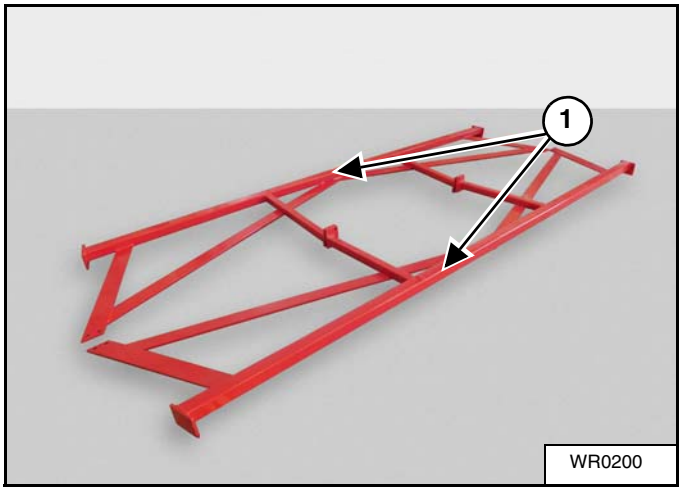
Use a 68033 1 x 6-3/8 inch pin (2), two 88196 flat washers and two 42484 2-1/4 inch long roll pins to secure the front end of the axle to the anchor.

Tighten the bolts.



STEP 23

The two wing rests (1) are shipped bolted together. Remove the bolts that separate the rests (1).



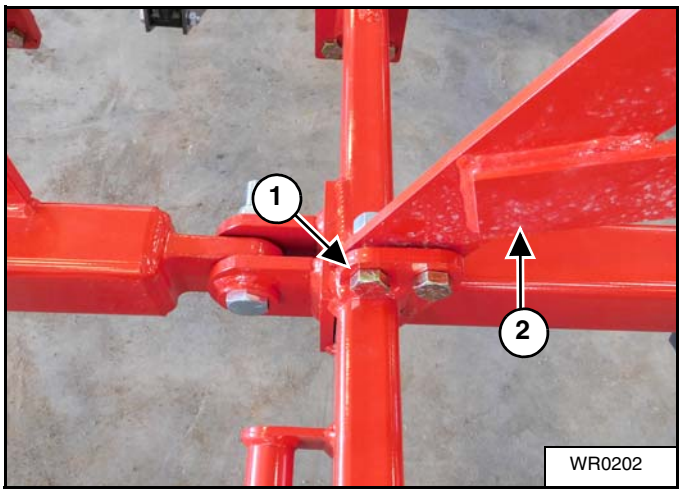
Main Frame Assembly (Cont'd)

STEP 24

Using four 88290 3/4 x 2 inch grade 8 bolts (1), 88130 lock washers, and 88110 nuts secure the rear wing rest at either end to the main frame.

Use the same hardware to install the opposite end.

IMPORTANT: The flat bar brace (2) of the wing rest must be facing forward.



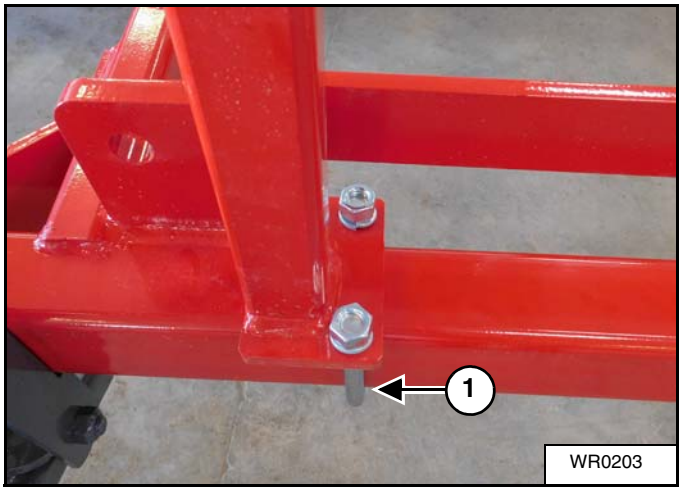
STEP 25

Use a 88503 5/8 x 3 x 5-1/4 inch U-bolt (1) with 88129 lock washers and 88126 nuts to secure the center of the wing rest to the main frame.

Use the same hardware to secure the other center point of the wing rest to the frame.

Repeat Steps 24 and 25 to install the front wing.

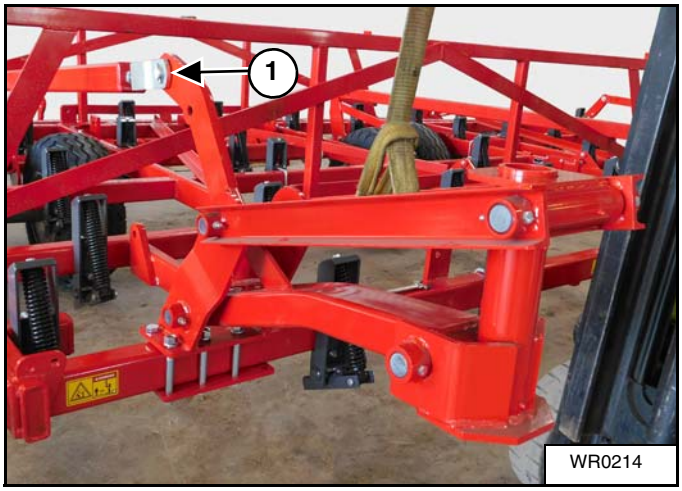
NOTE: The wing rests must be installed before proceeding to the next step.



Main Frame Gauge Wheel Assembly

STEP 26

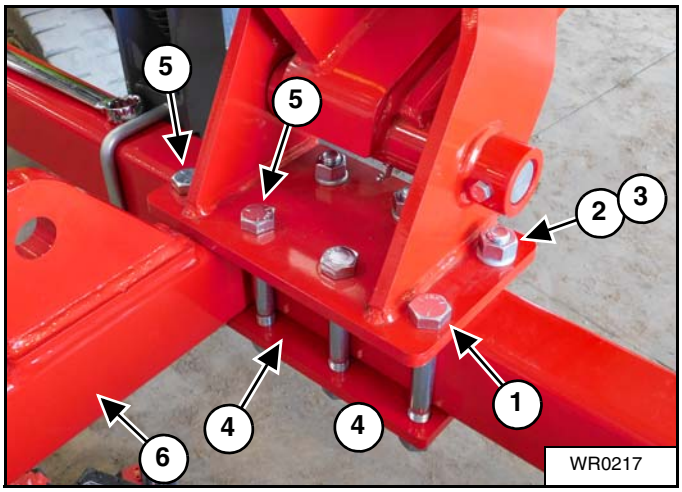
When installing the 233750 right gauge wheel assembly make sure that the part connecting to the main mast tube (1) is angled towards the center of the main frame slightly.



STEP 27

Use eight 88293 3/4 x 6 inch grade 5 bolts (1), 88130 lock washers (2), 88110 nuts (3) and 222353 plate (4) to install the gauge wheel assembly on the frame as shown.

NOTE: The two inside bolts (5) are positioned on each side of the frame crossmember (6).



Main Frame Gauge Wheel Assembly (Cont'd)

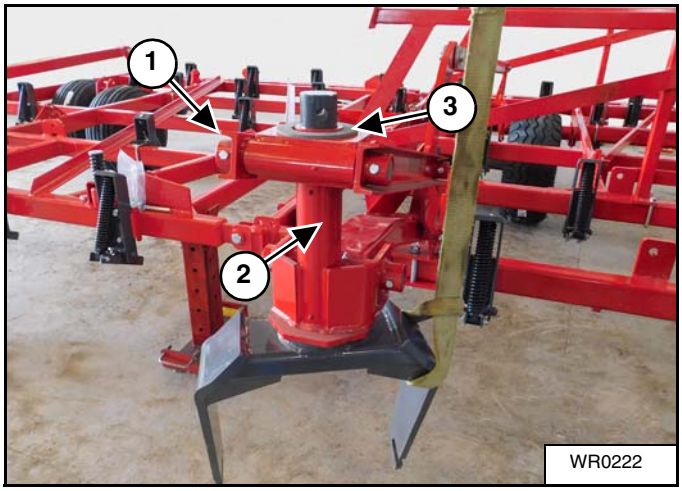
STEP 28

Carefully lift the gauge wheel assembly (1) and place the 58203 18 inch gauge wheel yoke (2) under the gauge wheel assembly.

Lower the gauge wheel assembly on the gauge wheel yoke.

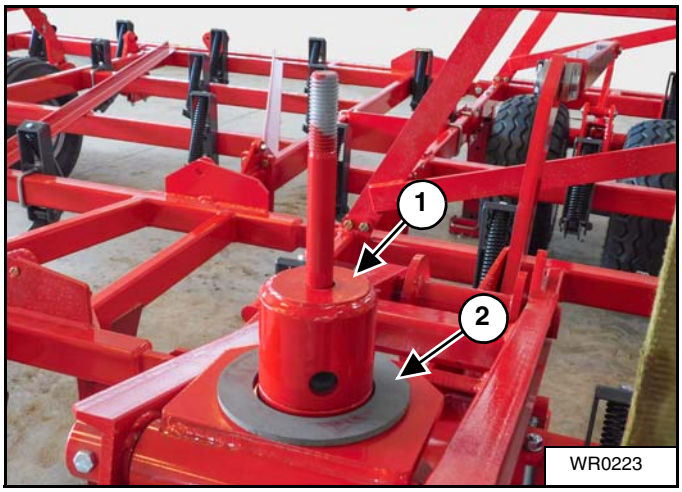
NOTE: It is important to keep the yoke spindle aligned with the opening in the gauge wheel assembly when lowering.

Install a 233742 damper brake pad (3) on top of the assembly.



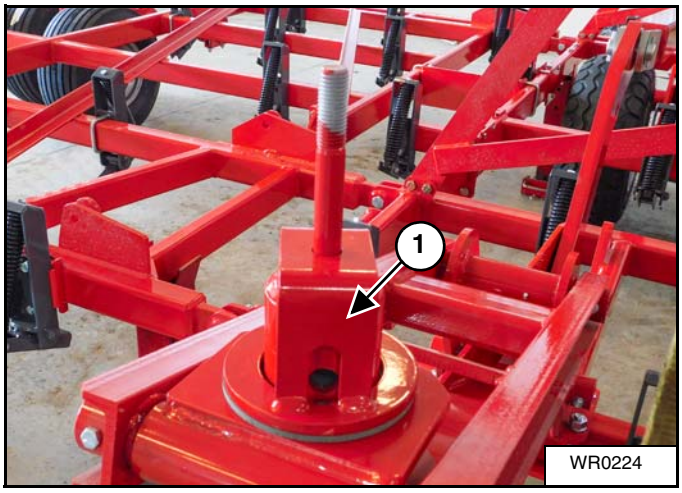
STEP 29

Place the 233746 damper cap (1) top of the damper brake pad (2).



STEP 30

Place the 233747 top damper bracket (1) on top of the damper cap.



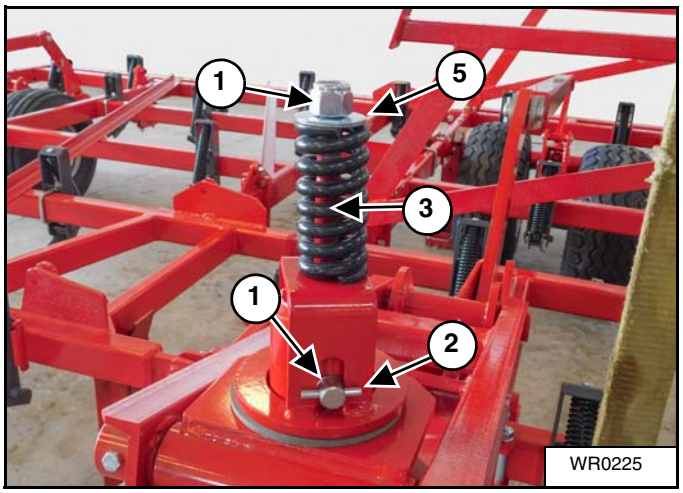
Main Frame Gauge Wheel Assembly (Cont'd)

STEP 31

Secure the top damper bracket using a 233749 3/4 x 4-3/4 inch pin (1) and two 88628 1/4 x 1-3/4 inch roll pins (2).

Place a 54832 4 1/2 inch compression spring (3) on top of the damper bracket. Install a 88131 3/4 flat washer (4) and 88611 3/4 nylon locknut (5).

Tighten the locknut (5) until one set of the threads from the damper cap rod is exposed above the nut (5).

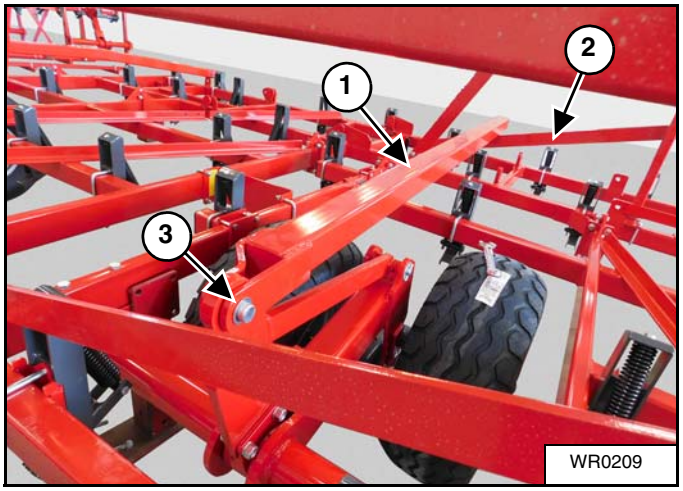


STEP 32

Slide the 221461 main mast tube (1) from the back to the front of the frame over the front wing rest crossmember (2).

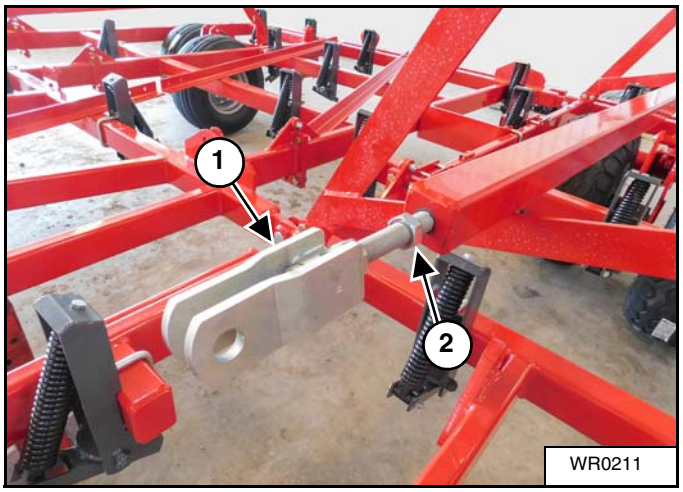
Use a 68034 1-1/4 x 3-3/8 inch long pin (3) with two 88440 machinery bushings and two 42484 2-1/4 inch roll pings to secure the rear end of the wing tube to the upper hole in the axle anchor.

Repeat this step to install the other wing tube on the main frame.



STEP 33

Install the 54800 clevis adjust rod (1) and an 86622 1-1/4 inch jam nut (2) in the end of the wing tube.

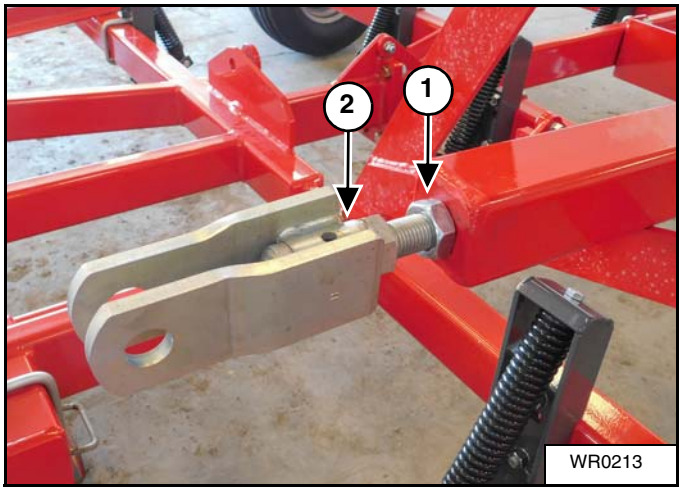


Main Frame Gauge Wheel Assembly (Cont'd)

STEP 34

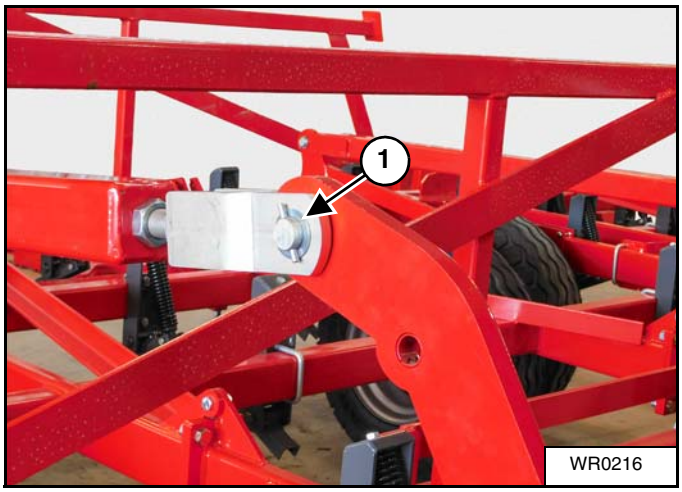
Make sure the length from the end of the main mast (1) to the edge of the clevis adjust rod (2) is 3-1/4 inches (8.26 cm).

Follow Steps 32 through 34 for the other wing tube and height adjuster.



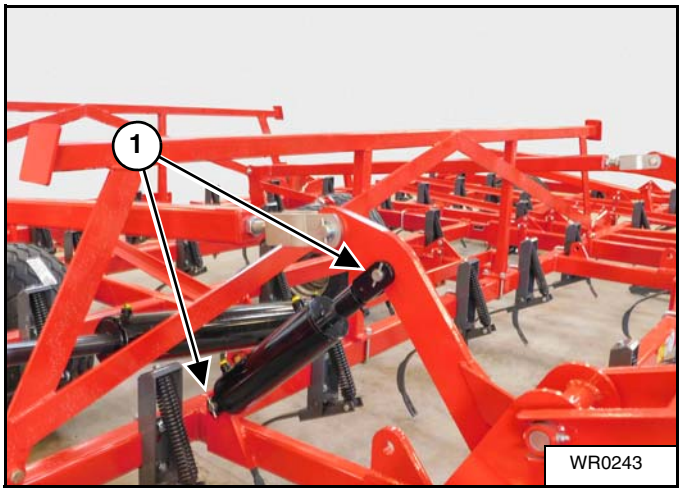
STEP 35

Raise the gauge wheel assembly up and secure it to the clevis adjust rod using a 68034 1-1/4 x 3-3/8 inch long pin (1) with 88440 machine bushing and two 42484 2-1/4 inch roll pins.



STEP 36

Use two 42473 1 x 2-3/8 inch pins (1) and four 42484 2-1/4 inch roll pins to install the 67683F2 4 x 12.6 cylinder to the frame and gauge wheel assembly.



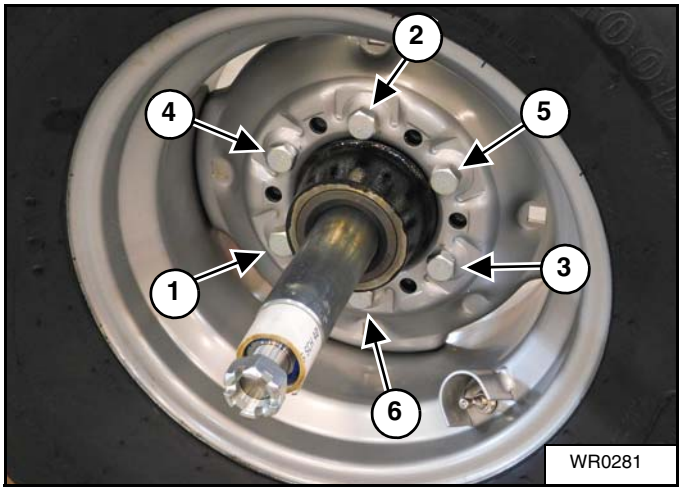
Main Frame Gauge Wheel Assembly (Cont'd)

STEP 37

Install the 58294 yoke hub assembly into the rim. The hub must be on opposite side from the valve stem.

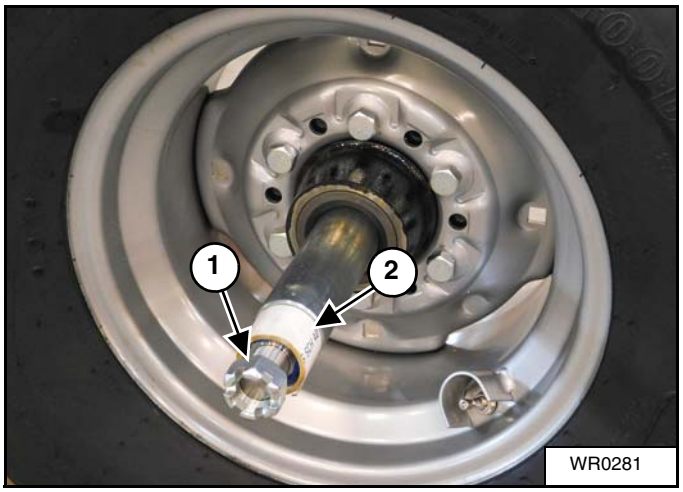
Secure the rim to the axle with the six 63831 9/16 x 1-1/2 NF wheel bolts.

Tighten the wheel bolts in a star pattern to 90 ft-lb (122 N•m).



STEP 38

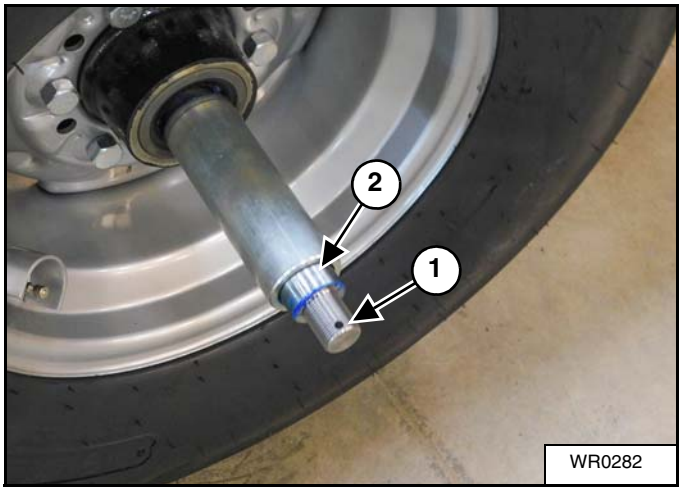
Remove the 88299 castle nuts (1) on each end of the spindle. Remove and discard the spacer (2).



Main Frame Gauge Wheel Assembly (Cont'd)

STEP 39

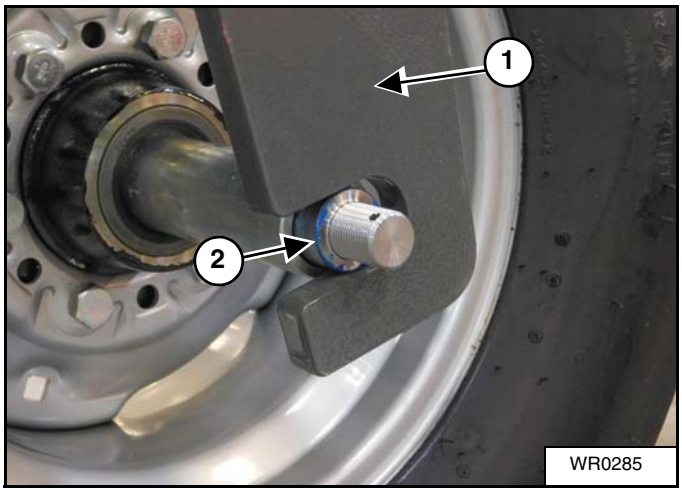
Center the 58204 spindle (1) in the hub assembly with an equal amount of the mounting shoulder (2) exposed on both ends.



STEP 40

Roll the tire assembly into the pivot yoke (1).

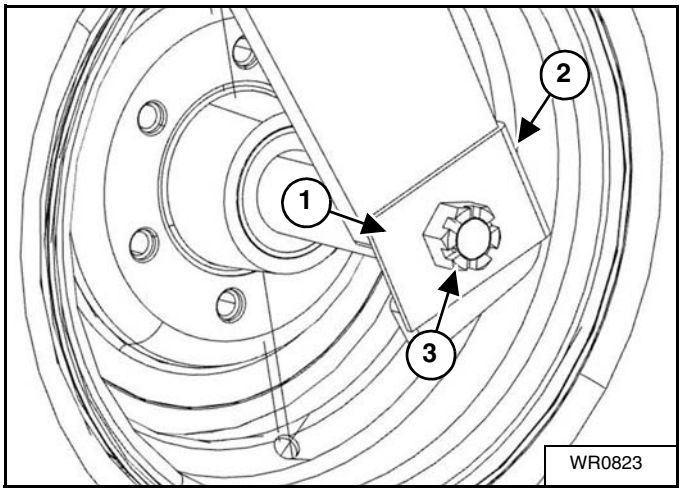
NOTE: Make sure the shoulder (2) of axle shaft is completely seated in the pivot yoke.



STEP 41

Install the 55150 spindle lock (1) on both sides of the yoke. Be sure to place the locking edge (2) opposite the opening.

Install the 88299 slotted nuts (3) on both ends of the axle shaft.



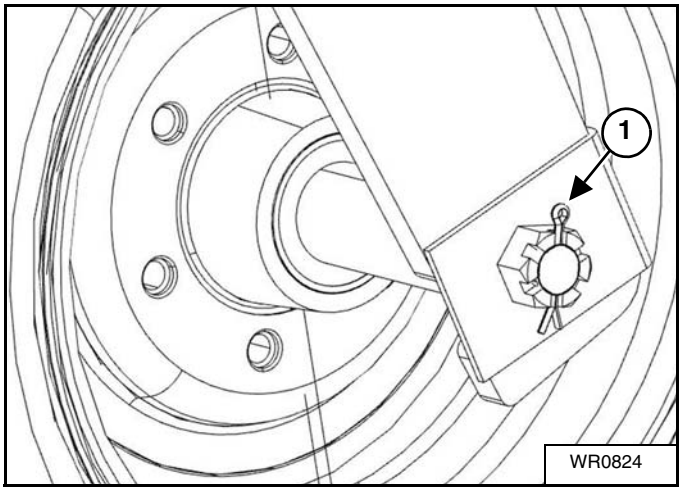
Main Frame Gauge Wheel Assembly (Cont'd)

STEP 42

Tighten the nut.

Insert the 88133 cotter pin (1). If the hole for the cotter pin is not accessible, slowly rotate the nut in a clockwise motion until the hole is visible, then insert the cotter pin and spread the end of cotter pin.

Repeat the steps for other gauge wheel assemblies.

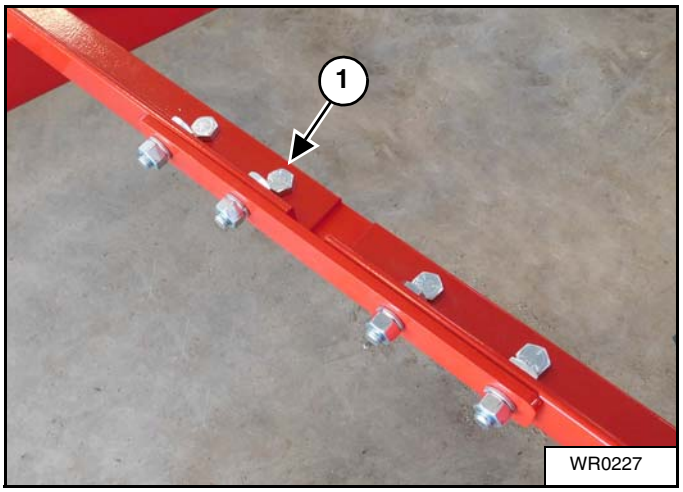


Inner Wing Assembly

STEP 43

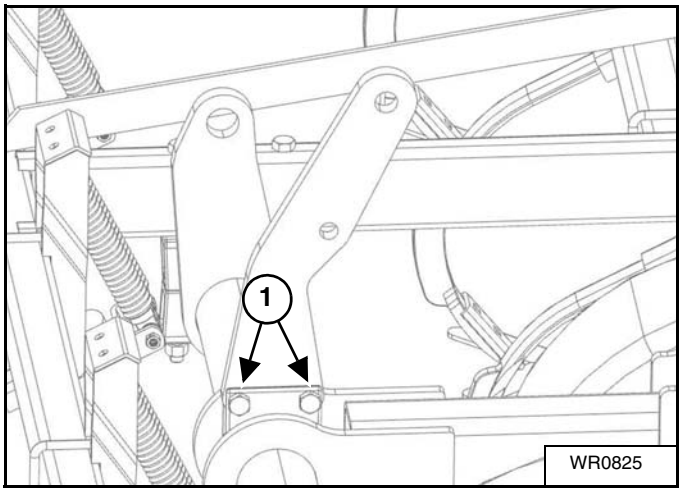
Use eight 1/2 x 1-1/2 inch grade 5 bolts (1), lock washers and nuts to secure the plates on the wing assembly.

NOTE: The bolt heads (1) must be on the inside of the brace as shown.



STEP 44

Using two 88841 3/4 x 2-3/4 inch grade 5 bolts (1) with 88130 lock washers and 88110 nuts, install the wing axle anchor to the axle. Do not tighten the bolts.



Inner Wing Assembly (Cont'd)

STEP 45

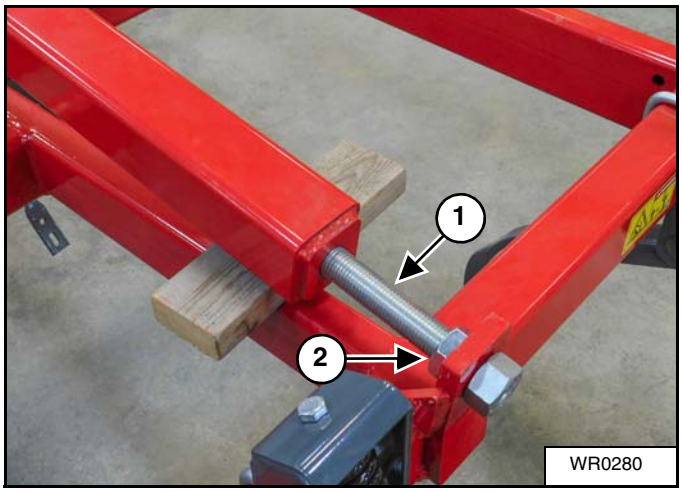
Use a 68034 1-1/4 x 3-3/8 inch long pin (1) with two 88440 machine bushings and two 42484 2-1/4 inch roll pins to secure the rear end of the 67709 wing adjust arm to the upper hole in the axle anchor.

Repeat Steps 44 and 45 for other wing.

STEP 46

Using a small wood block positioned under the 67709 wing adjust arm to assist in lining up the mounting point on the frame.

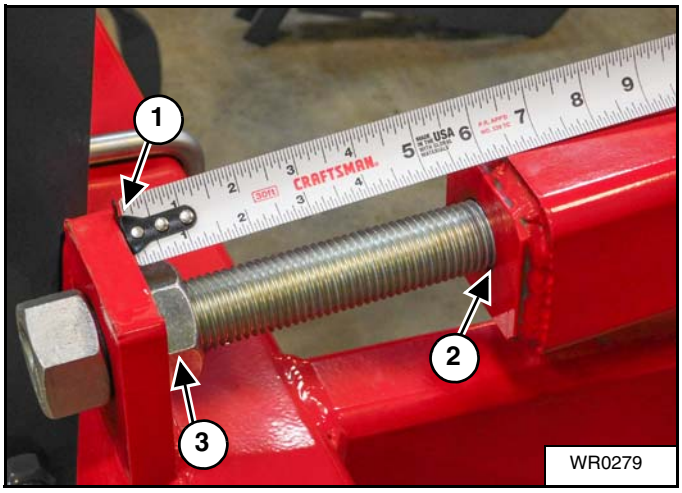
Install a 69799 11-1/2 inch adjuster rod (1) and the 88622 1-1/4 inch jam nut (2).



STEP 47

Tighten the adjuster rod to leave a 6 to 6 1/2 inch (15.2 cm) space between inside of the mounting point (1) on the frame and the end of the wing adjust arm (2).

Tighten the jam nut (3).



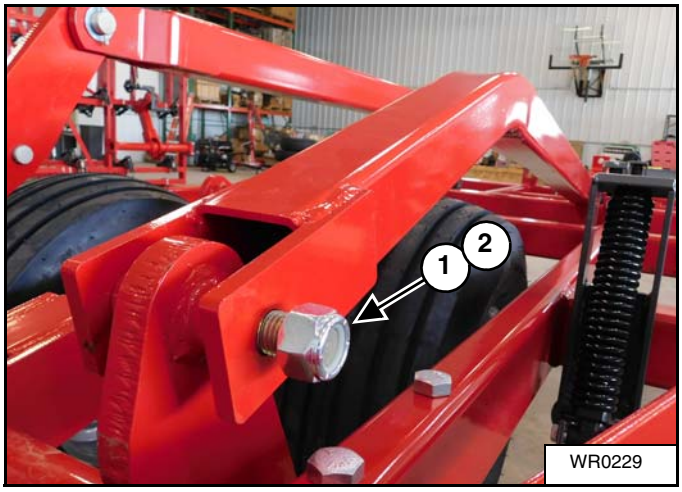
Inner Wing Assembly (Cont'd)

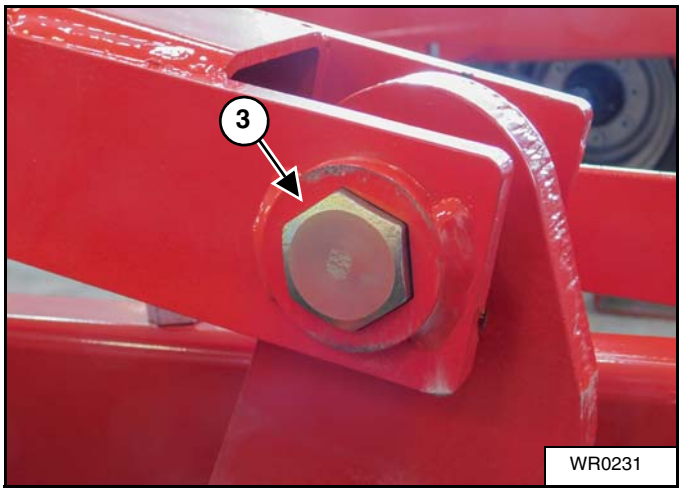
STEP 48

Using 89574 1 x 6 inch long grade 8 bolt (1) and 89075 nylon locknut (2) to secure the wing tube to the axle assembly.

NOTE: Be sure the head of the bolt is seated inside the recessed opening (3).

IMPORTANT: The wing tube must pivot freely after the bolt (1) is tightened.

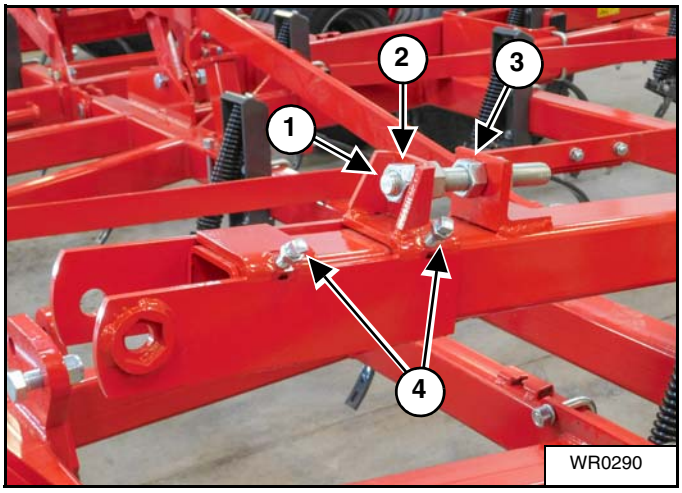




STEP 49

Install the 48890 adjuster rod (1) in the gauge tube adjust bracket. Install the 86125 1 inch nut (2) to secure the adjuster rod. Install a second 86125 1 inch nut (3) on the adjuster rod.

Loosen the set bolts (4), slide the 220843 gauge tube adjust bracket onto the wing adjust arm.



Inner Wing Assembly (Cont'd)

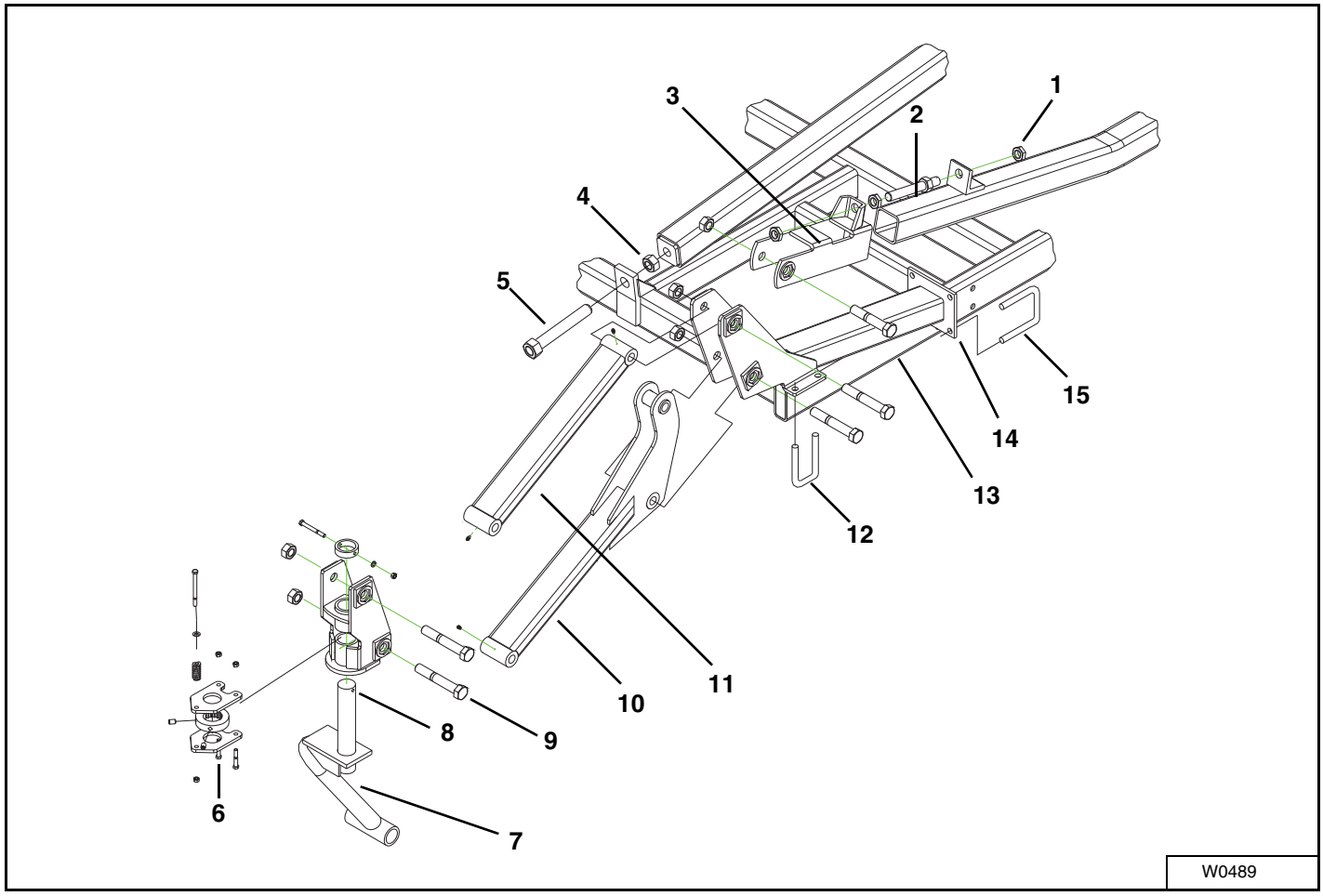
STEP 50

Turn the adjustment bolt until there is a 3 to 3-1/2 inch (7.6 to 8.9 cm) space between the inside of the mounting bracket and gauge bracket.

Install and tighten the 86125 1 inch nut (1). Tighten the nut (2) installed in Step 49.

Inner Wing Parallel Link Gauge Wheel Assembly

Parallel Link Gauge Wheel



REF.	PART NO.	DESCRIPTION
1	88125	NUT, Hex: 1-8NC 5ZP
2	48890	ADJUSTMENT ROD ASSEMBLY
3	220843	GAUGE TUBE ADJUST BRACKET
4	88622	NUT, Top Lock: 3/4-10NC 5ZP
5	69799	ADJUSTER ROD (11.5)
6	242216	BRAKE ASSEMBLY, Caster Wheel
7	240360	CASTER WHEEL LEG (RED)
8	220850	QUADX GAUGE WHEEL PIVOT (RED)
9	221336	BOLT, Hex: 1NC x 6.88 (1.5 IN) 5ZP
10	222961	5 FT WING LOWER GAUGE ARM
11	221100	EXCEL UPPER GAUGE WHEEL ARM
12	88503	BOLT, U: 5/8-11NC x 3 x 5-1/4 Z
13	88264	BOLT, Hex: 1-8NC x 6 5ZP
14	220853	GAUGE WHEEL MOUNT
15	88388	BOLT, U: 5/8-11NC x 4 x 3-1/4 Z

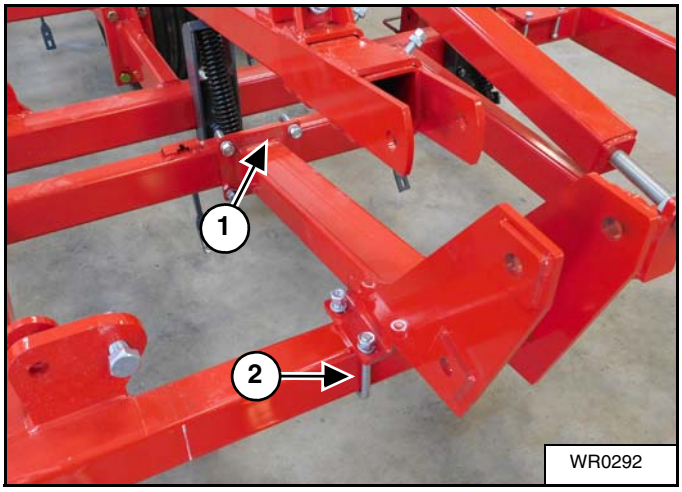
Inner Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 51

Use two 88388 5/8 x 4 x 3-1/4 inch U-bolts (1), four 88129 lock washers and four 88126 nuts to secure the gauge wheel mount to the inside the front frame crossmember.

Use two 88503 5/8 x 3 x 5-1/4 inch U-bolts (2), four 88129 lock washer and four 88126 nuts to secure the front of the 220853 gauge wheel mount to the front crossmember of the frame.

Do not tighten the U-bolts until the gauge wheel is completely assembled in Step 58.

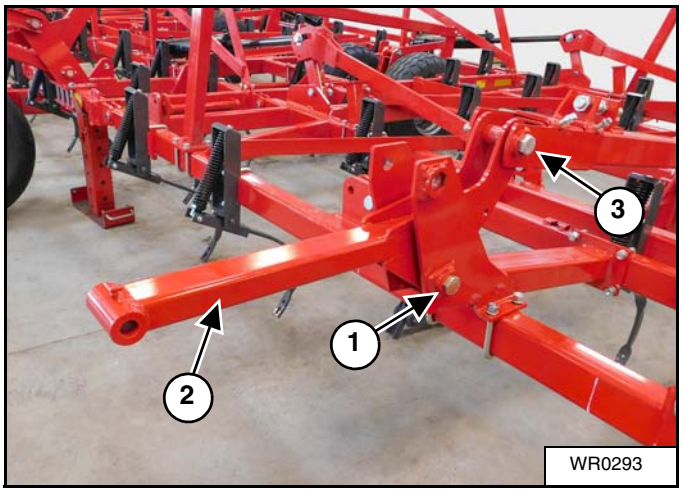


STEP 52

Use a 221336 1 x 6-5/8 inch grade 5 bolt (1) and 89075 nylon locknut to install the 220840 lower gauge arm (2) on the gauge wheel mount.

Use a 1 x 6 inch bolt (3) and 89075 nylon locknut to install the end of the gauge bracket and lower gauge arm.

NOTE: Be sure the heads of the bolts (1) and (3) are seated inside the recessed opening.

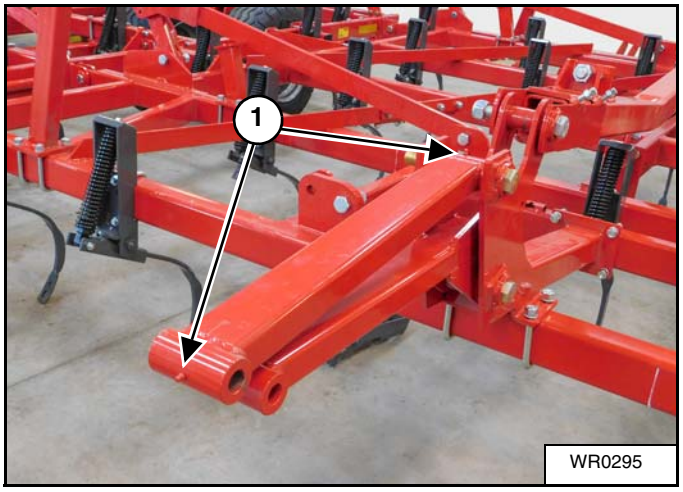


Inner Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 53

Install the 245304 upper gauge wheel arm with a 221336 1 x 6-5/8 inch bolt (1) and 89075 nylon locknut.

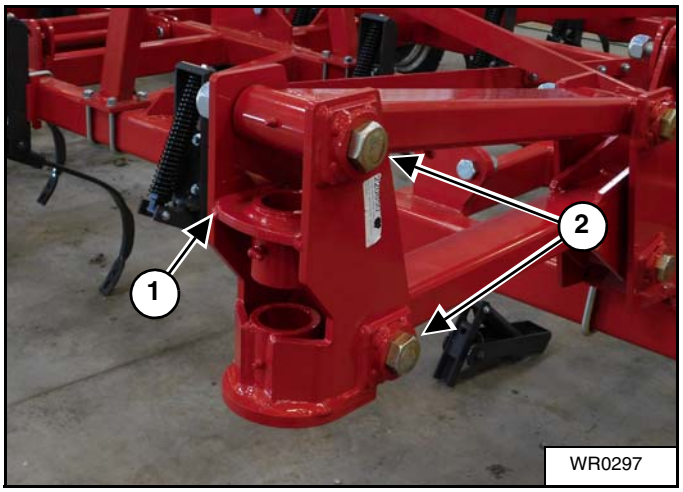
NOTE: The grease zerks (2) must be in the position as shown.



STEP 54

Install the 220850 pivot bracket (1) on both the lower and upper arms using two 221336 1 x 6-5/8 inch grade 5 bolts (2) and two 89075 nylon locknuts.

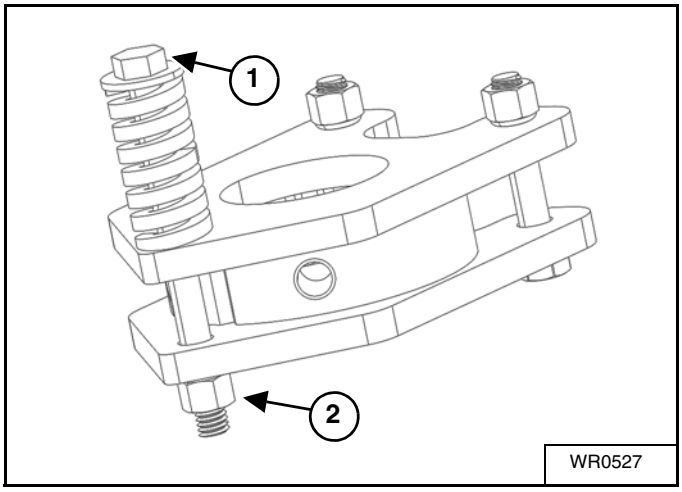
IMPORTANT: The bolts and locknuts installed in Steps 42, 43 and 44 must allow the pivot bracket (1) to move up and down freely after tightening.



Inner Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 55

Remove the bolt (1) and locknut (2) holding the spring on the front side on the 242216 brake assembly.

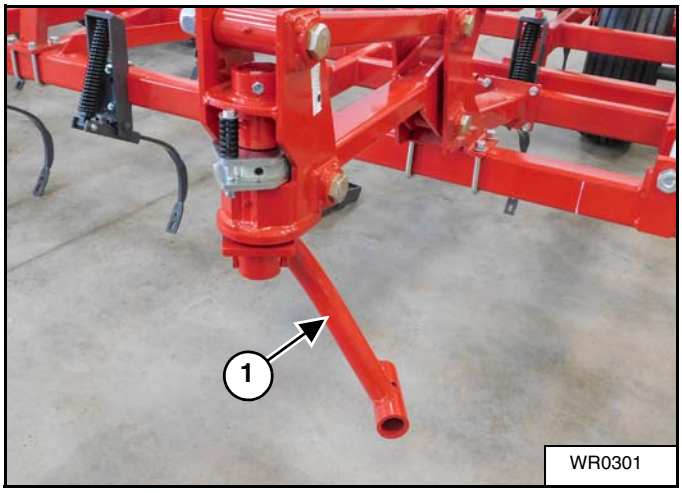


STEP 56

Slide the brake assembly into pivot bracket from the rear side as shown and reinstall all hardware you removed in Step 55.

STEP 57

Install the 240360 caster wheel leg (1) by sliding into the pivot bracket and through the brake assembly.



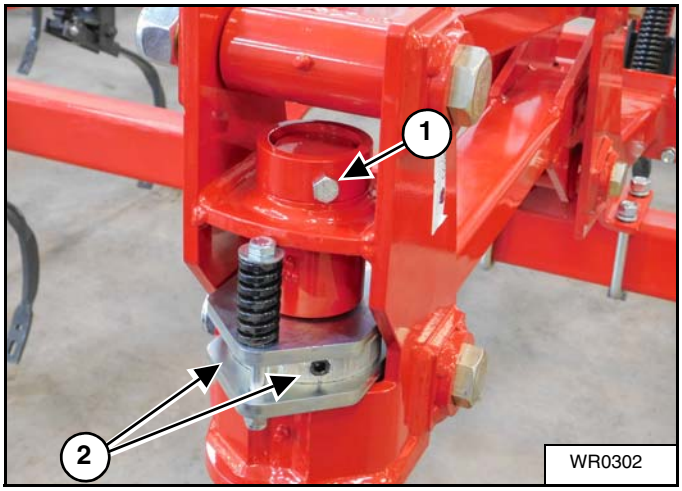
Inner Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 58

Secure the caster wheel leg using a 14189 stop collar, a 88531 3/8 x 3 inch grade 5 bolt (1), 88362 lock washer and 88103 nut.

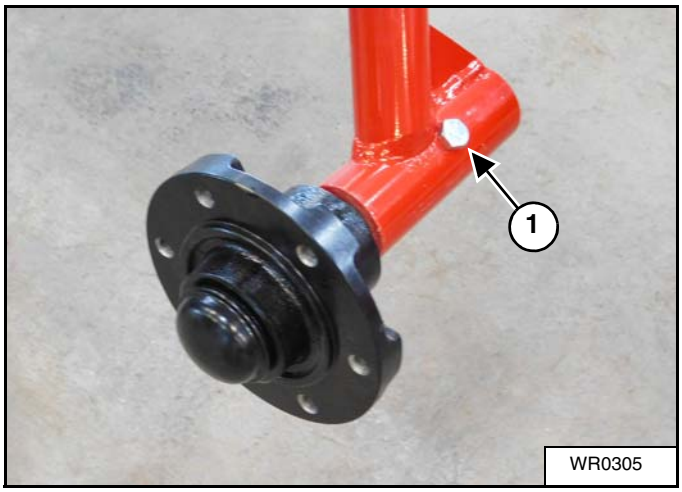
Tighten the 88984 set screws (2) on brake assembly to 1/4 turn past the first contact.

Tighten the U-bolts installed in Step 51.



STEP 59

Slide the 41234 hub assembly into the wheel leg, securing with a 88313 fine thread 1/2 x 3 inch grade 5 bolt (1) and 88304 1/2 inch fine thread nut.



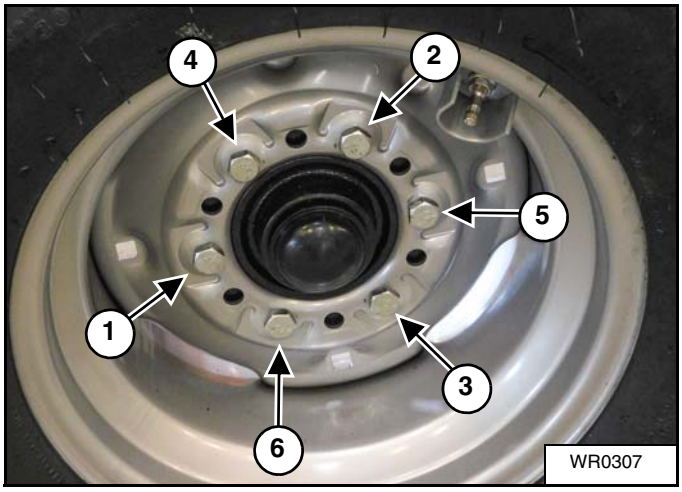
Inner Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 60

Install the tire on the hub using six 88142 1/2 inch fine thread 13/16 head wheel bolts. Tighten to 72 ft-lb (155 to 98 N•m).

Follow the same steps to install the remaining wheels and tires on the caster assemblies.

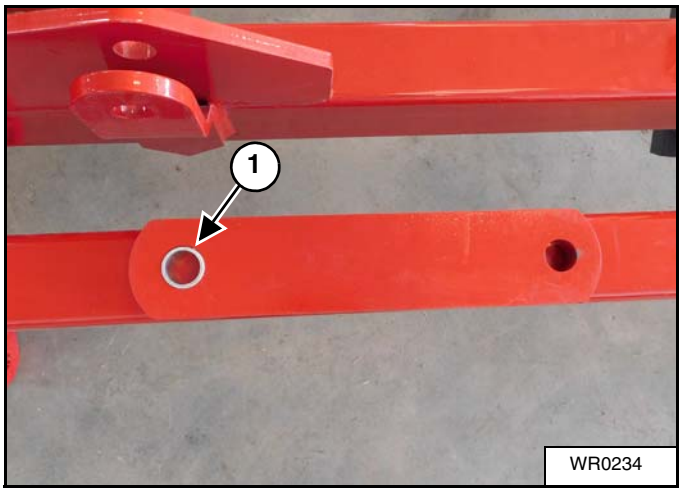
Follow Steps 46 - 60 for the other wing caster assemblies.



Inner Wing Fold Assembly

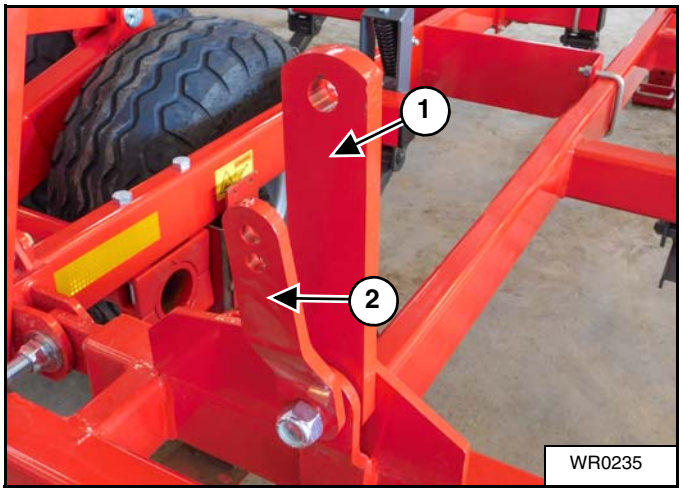
STEP 61

Insert 48523 wing lift bushing (1) into the 221267 wing lift link as shown.



STEP 62

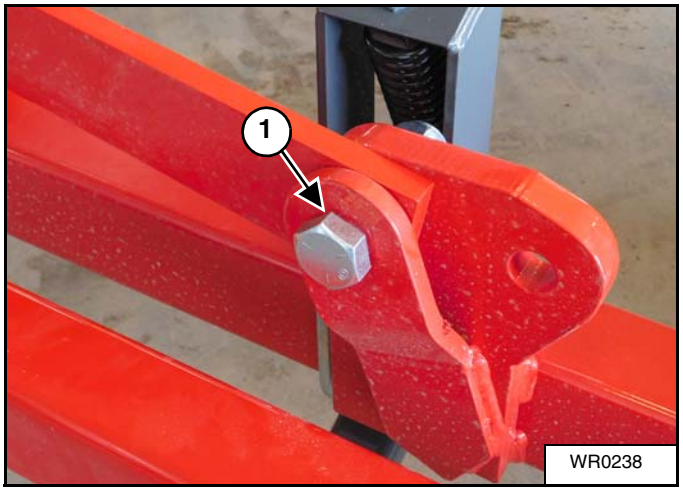
Use a 88447 1 x 3-1/2 grade 5 bolt and 89075 nylon locknut to secure the bushing end of the wing lift link (1) and 245306 link strap (2) to the frame as shown.



Inner Wing Fold Assembly (Cont'd)

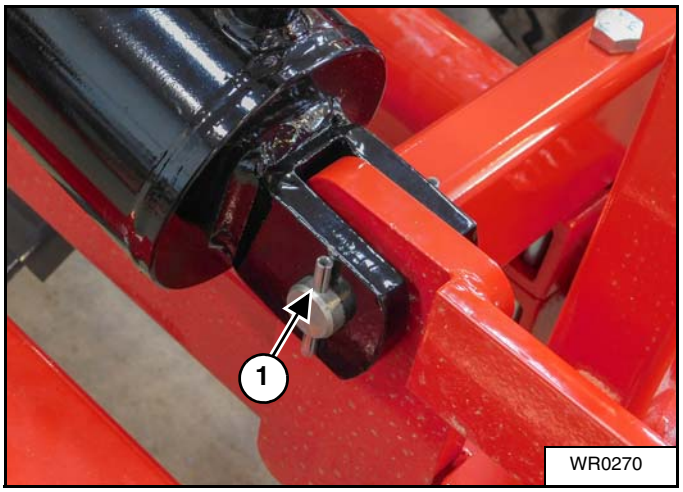
STEP 63

Use a 88580 1 x 4-1/2 inch grade 5 bolt (1) and 89075 nylon locknut to secure the end of the lift link arm to the frame.



STEP 64

Use a 42473 1/2 x 2-3/8 inch pin (1) and two 42484 2-1/4 inch roll pins secure the base end of the 20966F 5 x 30 wing lift cylinder to main frame.



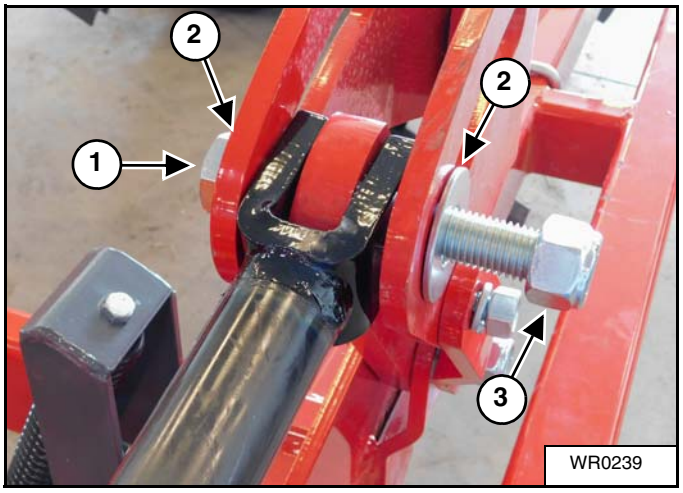
STEP 65

Use a 355975 Special Wing Fold Bolt 1 NC X 6 (1.50) (1), two 86196 flat washers (2) and a 89075 locknut (3) to install the rod end of the cylinder to the wing lift links.

Use the hydraulic cylinder to align the ends of the links.

Tighten the bolt (1) until the bolt cannot be freely turned and loosen the nut one complete turn.

Follow Steps 61 through 65 for all wing hinge installations.



Inner Wing Fold Assembly (Cont'd)

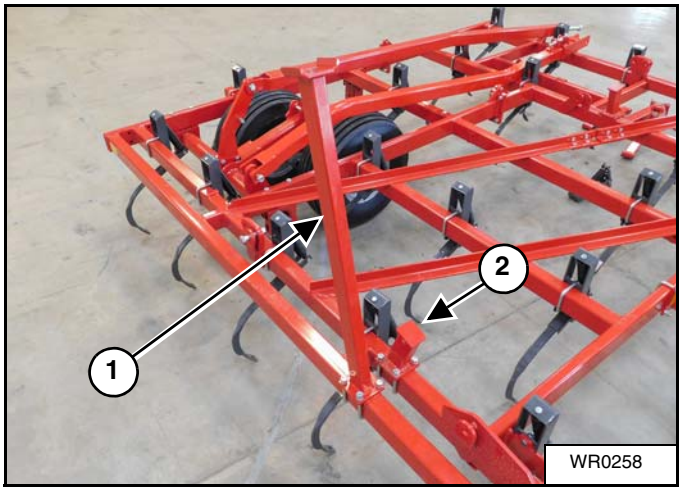
STEP 66

The 221356 outer wing rest (1) is angled to the outside of the frame and the 221358 inner wing rest (2) is angled to the inside of the frame.

Use two 88503 5/8 x 3 x 5-1/4 inch U-bolts, four 88129 lock washers, and four 88126 nuts to bolt the outer wing rest to the most outside frame crossmember.

Use two 88503 5/8 x 3 x 5-1/4 inch U-bolts, four 88129 lock washers, and four 88126 nuts to bolt the inner wing rest to the inside rear frame crossmember.

NOTE: Do not tighten the nuts.



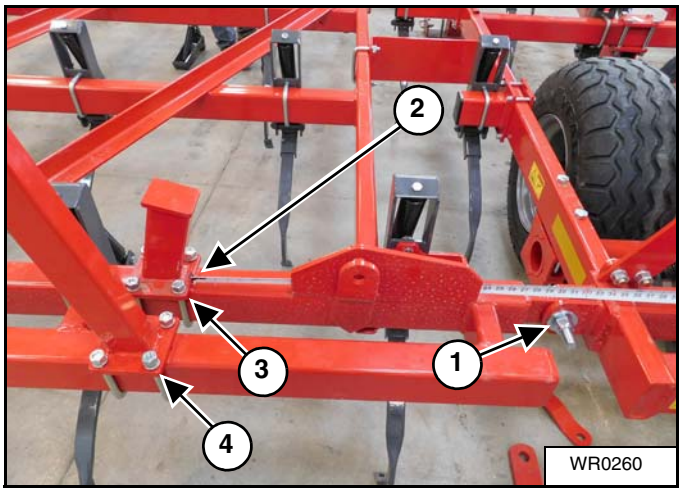
STEP 67

Be sure the measurement from center of the bolt (1) of link between main and wing frame to edge (2) of all rests is 30 3/4 inches (78.1 cm).

NOTE: The inner (3) and outer (4) wing rest mounts must align as shown.

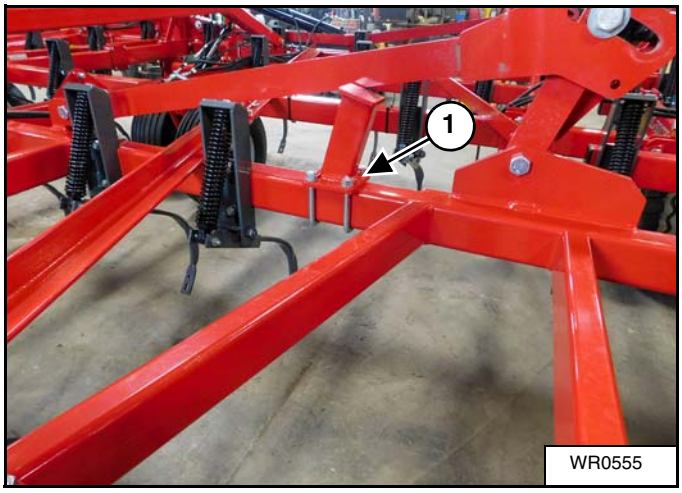
Tighten all nuts when the rests are positioned correctly.

Follow Steps 66 and 67 for the other rear wing rests.



STEP 68

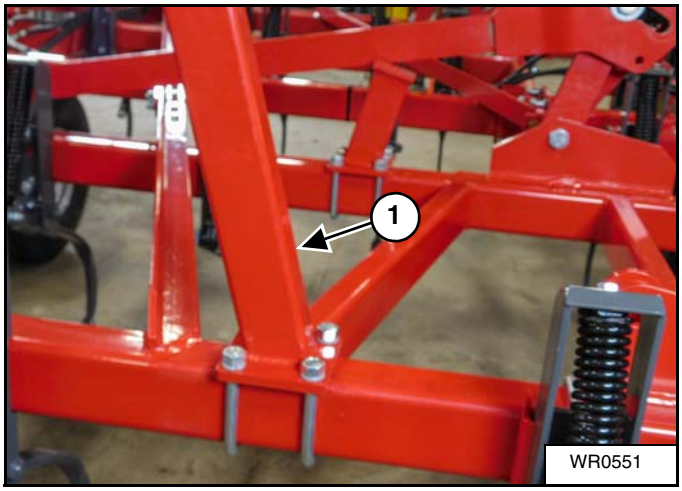
Use two 88503 5/8 x 3 x 5-1/4 inch U-bolts, four 88129 lock washers, and four 88126 nuts to bolt the inner wing rest (1) to the inside rear frame crossmember.



Inner Wing Fold Assembly (Cont'd)

STEP 69

Use two 88503 5/8 x 3 x 5-1/4 inch U-bolts, four 88129 lock washers, and four 88126 nuts to bolt the outer wing rest (1) to the most outside frame crossmember.



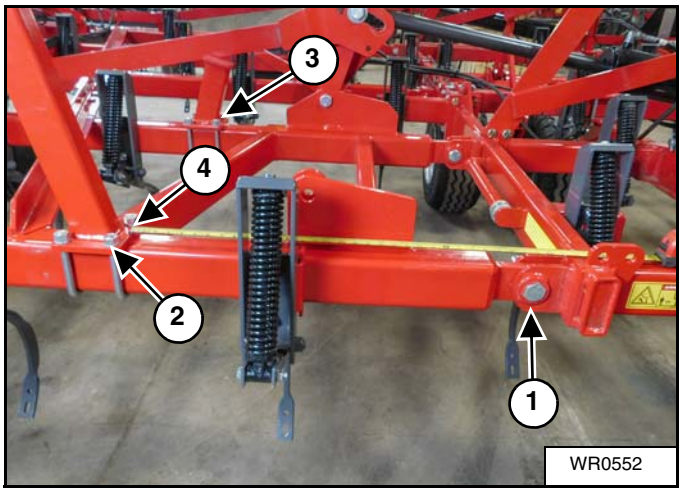
STEP 70

Be sure the measurement from the center of the bolt (1) of link between main and wing frame to edge (2) of all rests is 30 3/4 inches (78.1 cm).

NOTE: The inner (3) and outer (4) wing rest mounts must align as shown.

Tighten all nuts when the rests are positioned correctly.

Follow Steps 66 through 70 for the other front wing rests.

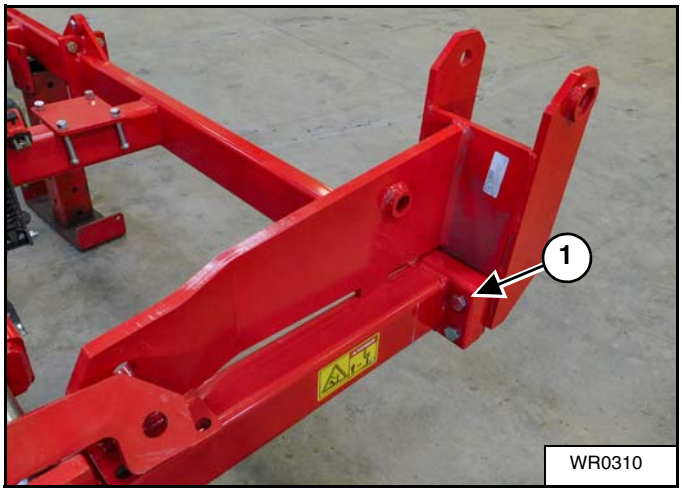


STEP 71

Place the hinge assembly on the **front** outside edge of the wing frame.

Using four 9/16 x 4 inch grade 5 bolts (1), lock washers and nuts to secure the hinge assembly to the frame.

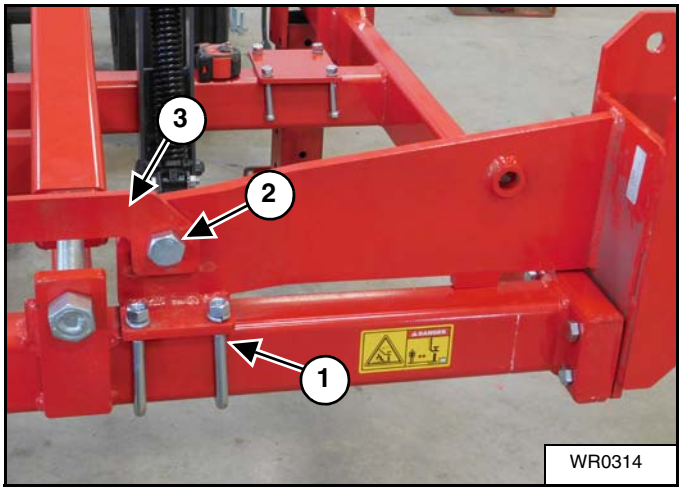
NOTE: Do not tighten the bolts.



Inner Wing Fold Assembly (Cont'd)

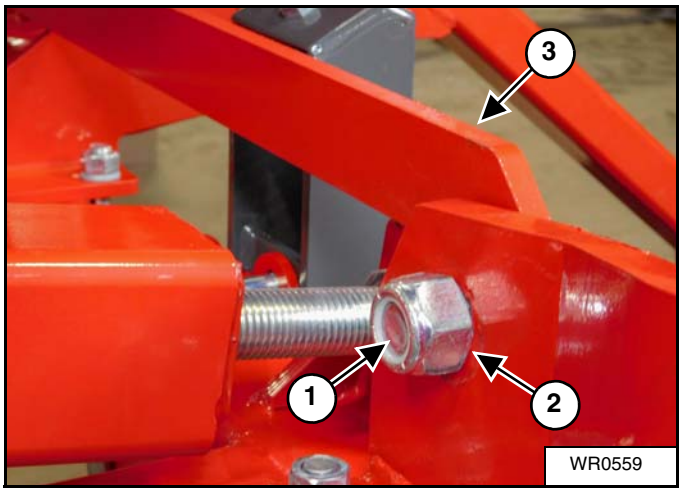
STEP 72

Secure the inside the hinge assembly to the frame using two 88503 5/8 x 3 x 5-1/4 inch U-bolts (1), four 88129 lock washers and four 88126 nuts.

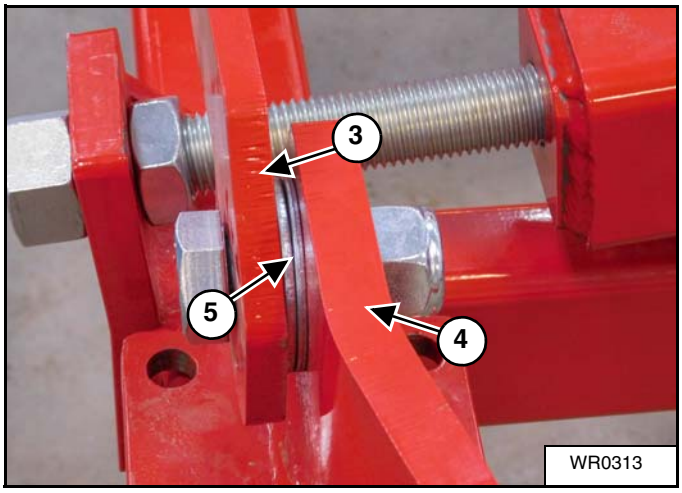


STEP 73

Use a 88393 1 x 2-1/2 inch grade 5 bolt (1) and 89075 nylon locknut (2) to install the 350611 right-hand anchor strap and 350605 left-hand anchor strap to the hinge assembly.



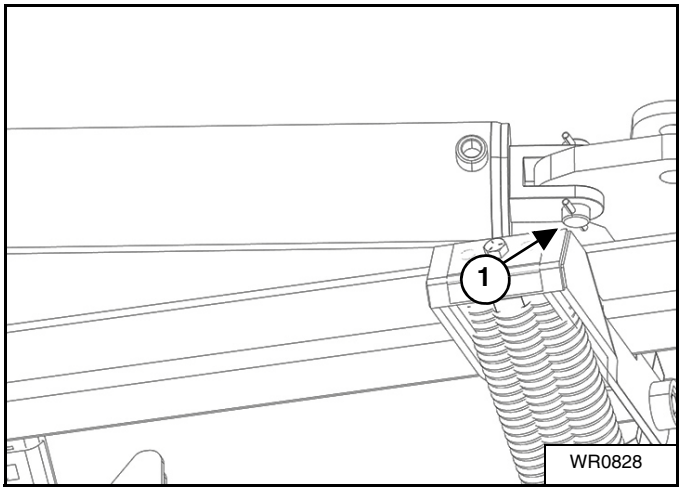
NOTE: Between the hinge assembly (4) and anchor strap (3) place the two 88196 1 inch flat washers (5) as shown.



Inner Wing Fold Assembly (Cont'd)

STEP 74

Use a 42473 1 x 3 inch pin (1) and two 42484 roll pins to install the base end of the 51229F1 4 x 30 wing hinge cylinder to the frame.



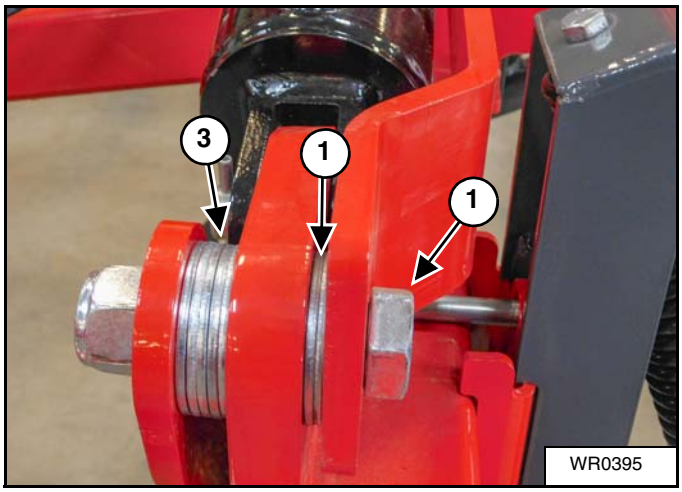
STEP 75

Fasten the other end of the anchor strap using a 88398 1 x 4 inch grade 5 bolt (1), seven 88196 1 inch flat washers and 89050 nylon locknut.

Two flat washers (2) and five flat washers (3) are positioned as shown.

Begin tightening all hardware in the following order:

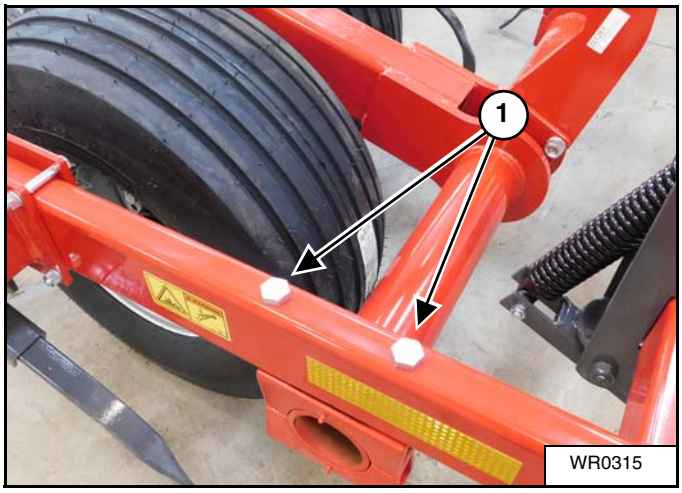
1. Inner bolt of the anchor strap
2. Outside bolt of the anchor strap
3. Inner U-bolt of the hinge assembly
4. Bolts holding the frame to the rear axle
5. The U-bolts of the hinge assembly
6. Tighten the bolts from Step 71.



Follow Steps 71 through 75 to install the other front wing hinge.

STEP 76

To install the rear hinge assembly, remove the two 89165 bolts (1) that secure the axle shaft to the frame.

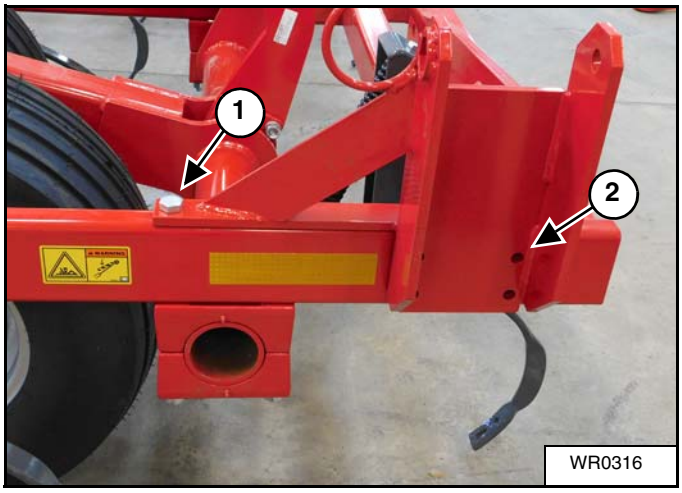


Inner Wing Fold Assembly (Cont'd)

STEP 77

Place the rear hinge assembly on the outer edge, using the two bolts (1), lock washers and nuts that were removed in Step 65. Install four 88292 5/8 x 3-1/2 grade 5 bolts (2), lock washers and nuts through the frame.

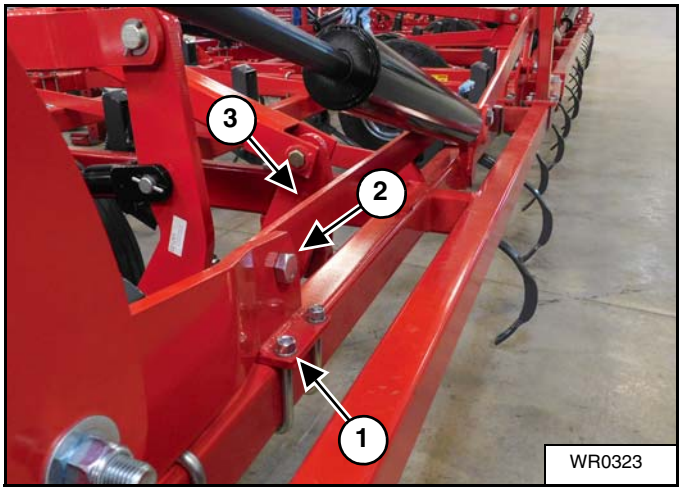
NOTE: Do not tighten the bolts.



STEP 78

Use two 88503 5/8 x 3 x 5-1/4 inch U-bolts (1), four 88129 lock washers and four 88126 nuts to secure the inside end of the hinge assembly to the frame.

Use one 88393 1 x 2-1/2 inch grade 5 bolt (2), two 88196 flat washers between the strap and the hinge assembly and two 89075 nylon locknuts to fasten the anchor strap (3) to the hinge assembly.



STEP 79

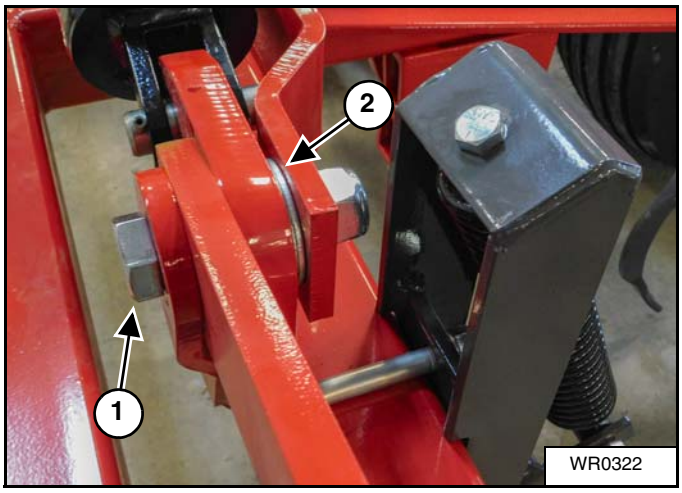
Secure the other end of the anchor strap using a 88398 1 x 4 inch grade 5 bolt (1), 89075 nylon locknut and two 88196 flat washers.

NOTE: When fastening the hinge assembly and anchor strap place the two flat washers as shown in image (2).

Begin tightening all hardware in the following order:

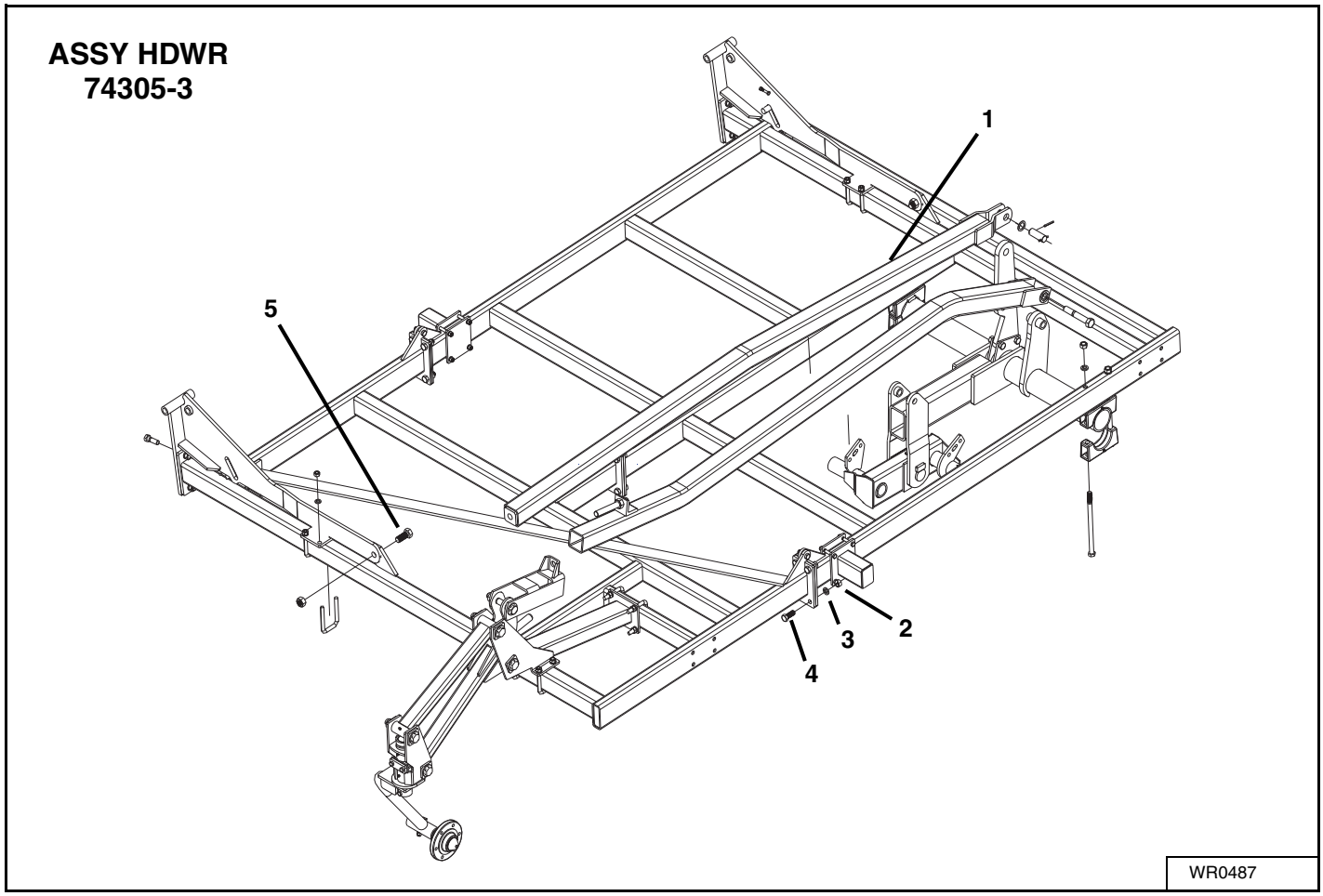
1. Inner bolt of the anchor strap
2. Outside bolt of the anchor strap
3. Inner U-bolt of the hinge assembly
4. Bolts holding the frame to the rear axle
5. The U-bolts of the hinge assembly
6. Tighten the bolts from Step 77.

Follow Steps 76 through 79 for installation of the other rear wing hinge.



Outer Wing Assembly

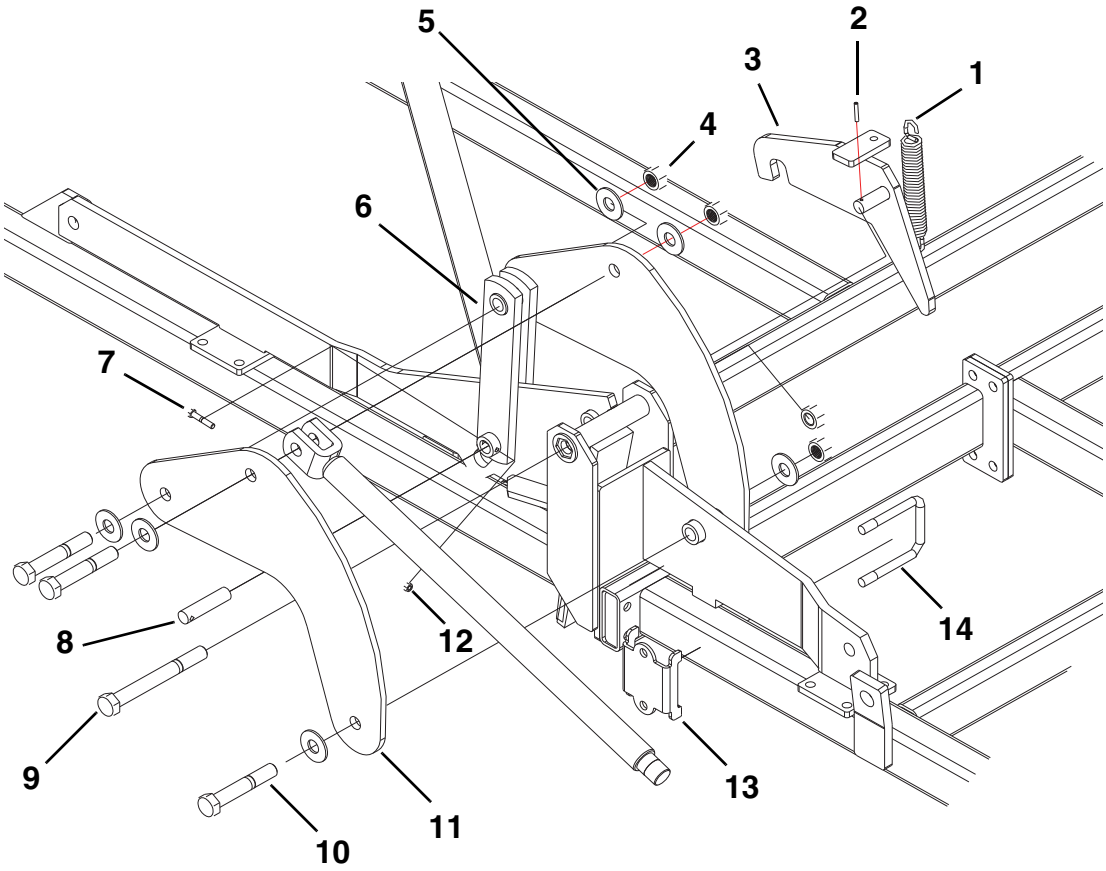
5 Sec Outer Wing



REF.	PART NO.	DESCRIPTION
1	67709	QUADX / EXCEL WING ADJUST ARM
2	88110	NUT, Hex: 3/4-10NC 5ZP
3	88130	WASHER, Lock Helical: 3/4 ID (13/16 ACT) ZP
4	88290	BOLT, Hex: 3/4-10NC x 2 8YZP
5	88393	BOLT, Hex: 1-8NC x 2-1/2 5ZP

Outer Wing Assembly (Cont'd)

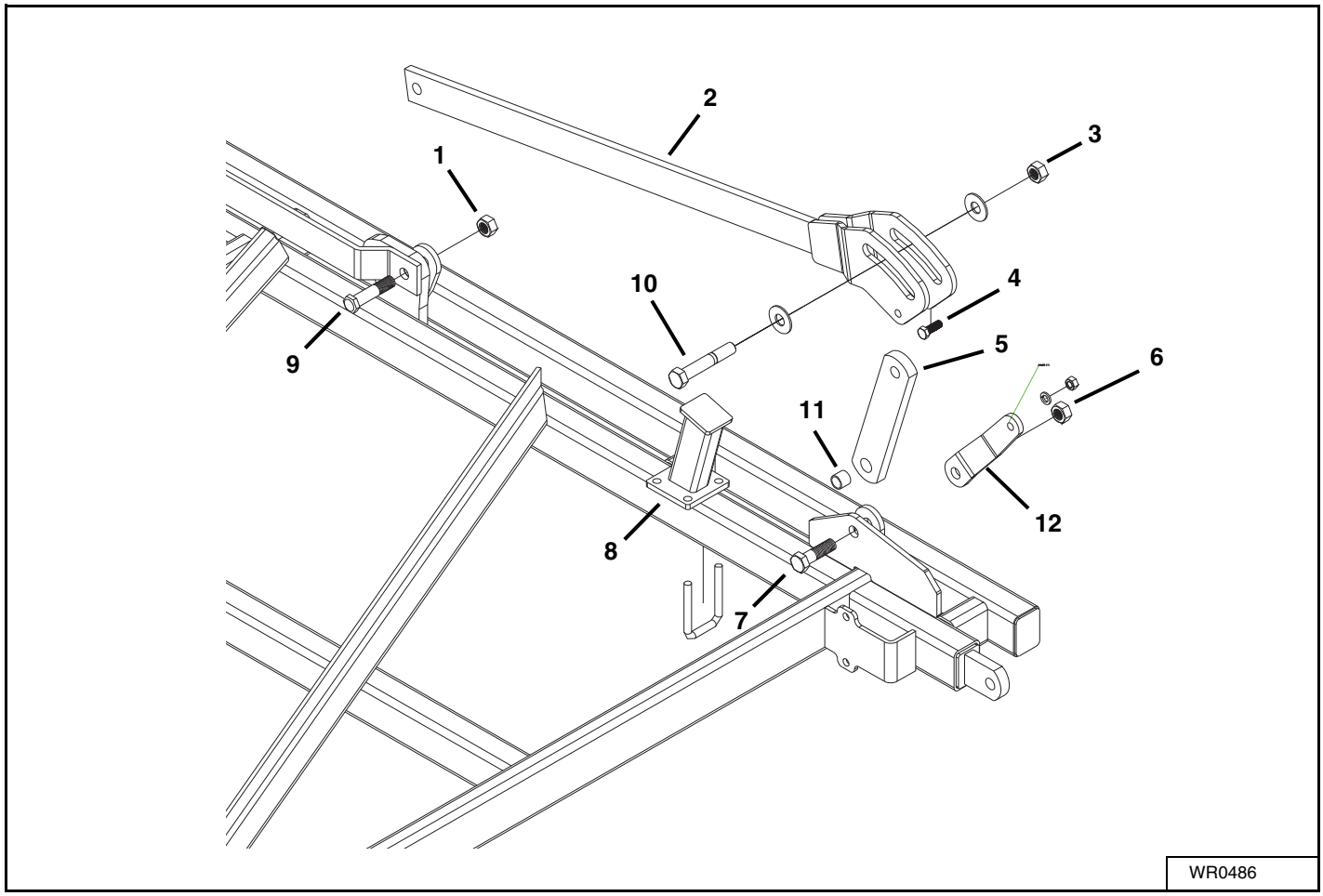
Outer Wing Hinge



REF.	PART NO.	DESCRIPTION
1	25863	SPRING, Ext. 30-Coils: 1/5 O.D. 9.5 LONG
2	42484	PIN, Roll: 1/4 x 2-1/4 ZP
3	221695	5 SEC OUTER WING LATCH - Right
	221696	5 SEC OUTER WING LATCH - Left
4	89075	NUT, Nylock: 1/8NC 2ZP
5	88196	WASHER, Flat: 1 (1-1/16 x 2-1/2 ACT) 2ZP
6	221189	5 SEC OUTER WING LINK
7	89011	BOLT, Hex: 3/8 -16NC x 2 5ZP
8	221692	HEADLESS PIN (1): 1 x 4.25
9	88901	BOLT, Hex: 1-8NC x 9-1/2 5ZP
10	88264	BOLT, Hex: 1-8NC x 6 5ZP
11	221190	5 SEC WING ARM (RED)
12	88162	NUT, Lock: 2 POS 3/8 x 16NC 2ZP
13	236400	SHANK SPACER - Used to space shank forward to clear bolt
14	88145	BOLT, U: 5/8-11NC x 4 x 5-1/4 Z

Outer Wing Assembly (Cont'd)

5 Section Inner Wing Hinge



REF.	PART NO.	DESCRIPTION
1	89075	NUT, Nylock: 1-8NC 2ZP
2	233370 - 63-1/8" 242870 - 34-1/4"	WING LIFT BRACKET 5 SECTION WING LIFT ARM 46'
3	89075	NUT, Nylock: 1-8NC 2ZP
4	88838	BOLT, Hex: 5/8-11NC x 1-3/4 5ZP
5	221267	LIFT LINK
	350269	LIFT LINK (46FT SPECIFIC)
6	89075	NUT, Nylock: 1-8NC 2ZP
7	88447	BOLT, Hex: 1-8 NC x 3-1/2 5ZP
8	221358	5 SEC INNER WING STOP
9	88580	BOLT, Hex: 1-8NC 2ZP
10	355975	BOLT, SPECIAL WING FOLD 1NC X 6 (1.50)
11	48523	WING LIFT BUSHING
12	245306	WING LIFT PLATE

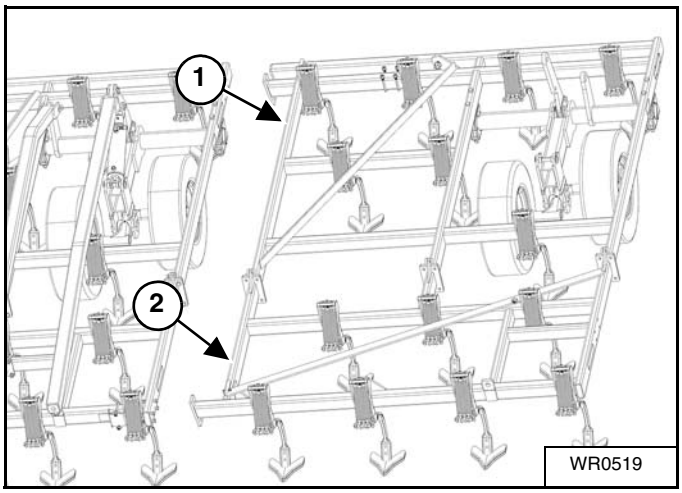
Outer Wing Assembly (Cont'd)

STEP 80

Stand the outer wing (1) next to the inner wing frame on a sheet of plywood.

Carefully place the outer wing onto the stands 24 1/2 inches (62.2 cm) off the ground aligned with the inner wing.

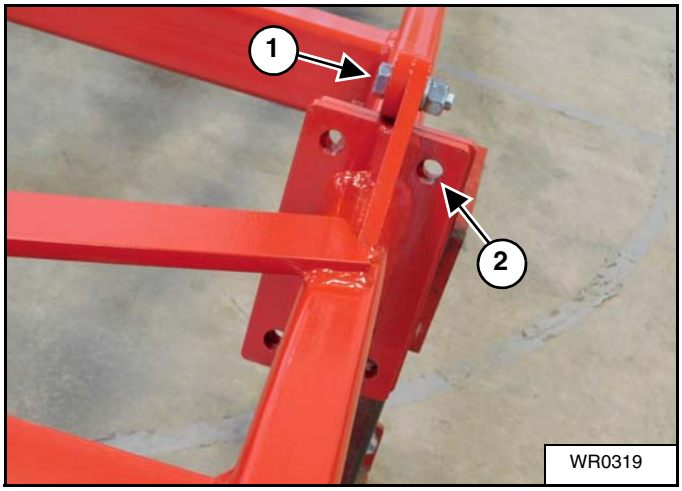
Remove the band securing the front section (2) and unfold.



STEP 81

Loosen the hinge bolt (1) on the pivot point for the front of the outer wing frame.

Carefully flip the front section and adjust the frame to align the bolt holes (2).



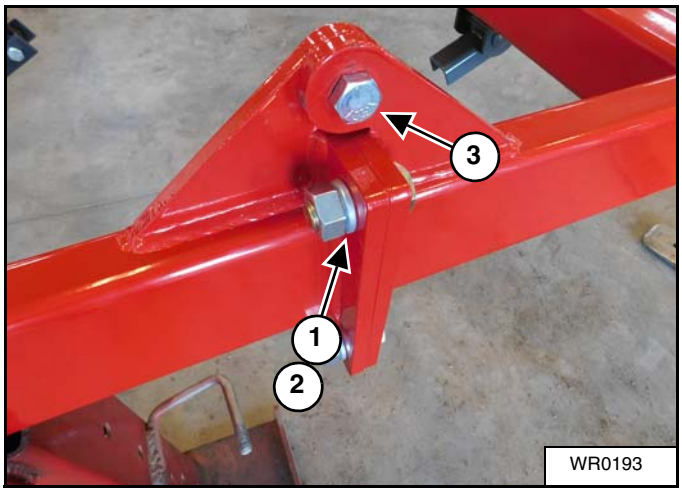
STEP 82

Use four 88290 3/4 x 2 inch grade 8 bolts (1), 88130 lock washers and 88110 nuts (2) to secure the frame flanges.

NOTE: Be sure to install the bolts from front to back.

Use Steps 81 and 82 for the other hinges on the outer wing frames.

Tighten the pivot bolts (3) that were loosened in Step 81 and all hinge flange bolts (1).

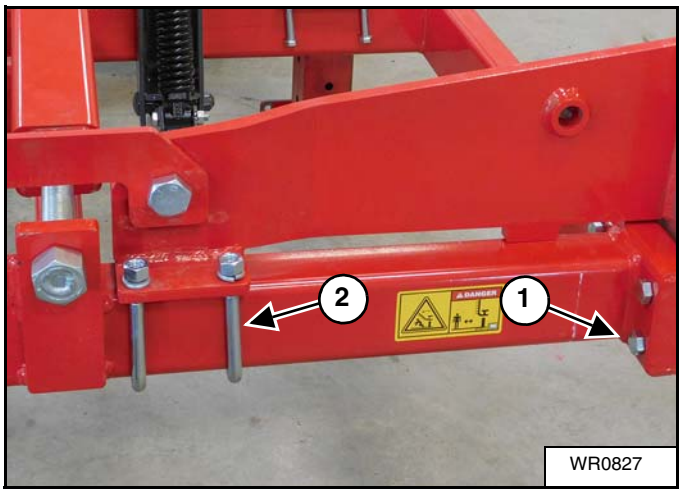


Outer Wing Assembly (Cont'd)

STEP 83

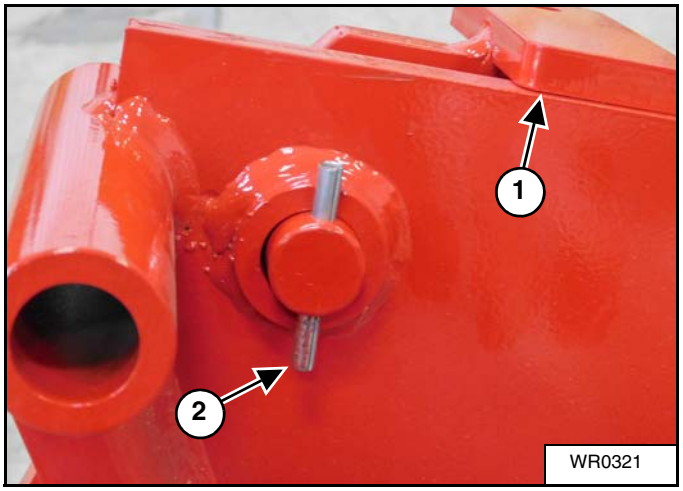
Use four 88292 5/8 x 3-1/2 inch grade 5 bolts (1), 88129 lock washers and 88126 nuts to secure the hinge to the inner wing frame.

Use two 88503 5/8 x 3 x 5-1/4 inch U-bolts (2), four 88129 lock washers and four 88126 nuts to secure the end of the hinge to the inner wing frame.



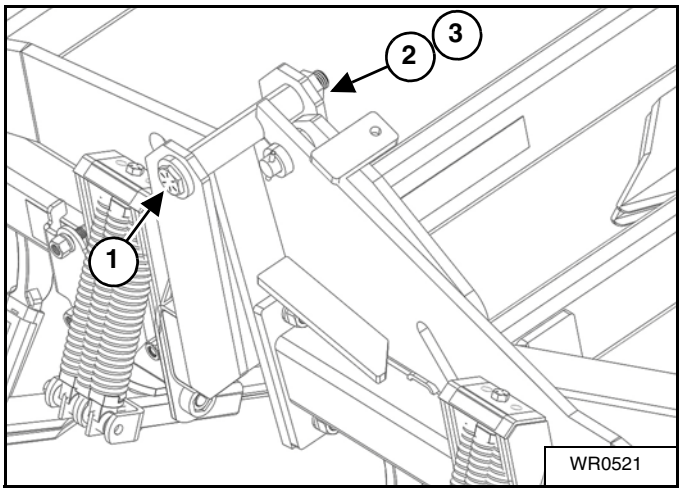
STEP 84

Install the 221695 wing latch (1) on the inside of both the front and rear hinge using a 42484 1/4 x 1-1/2 inch roll pin (2).



STEP 85

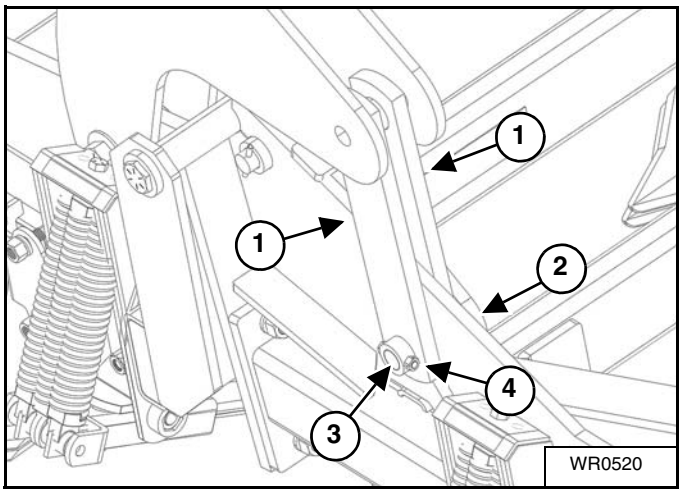
Insert a 88901 1 x 9-1/2 inch grade 5 bolt (1), 88196 washer (2) and 89075 locknut (3) into the hinge of both wings.



Outer Wing Assembly (Cont'd)

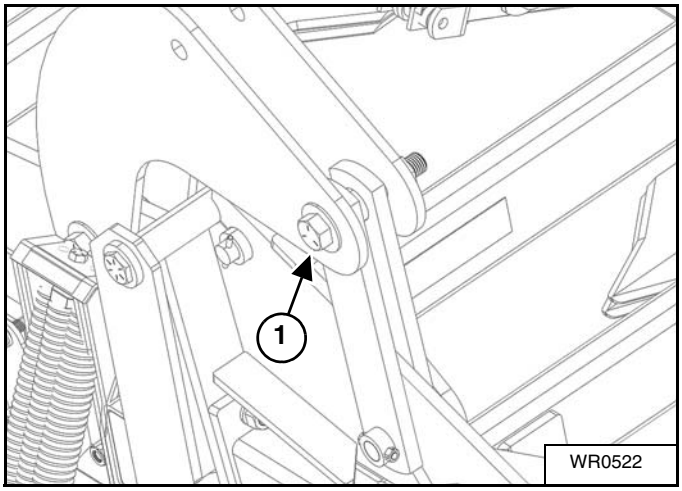
STEP 86

Install the 221188 5 section wing links (1) on either side of hinge (2), use a 221692 4-1/4 inch pin (3) and a 89011 3/8 x 2 inch grade 5 bolt and nut (4).



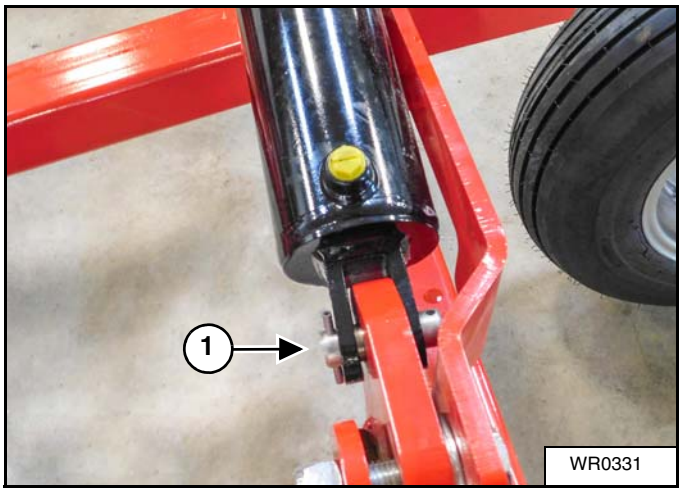
STEP 87

Use a 88264 1 x 6 inch grade 5 bolt (1), two 88196 flat washers and a 89075 nylon locknut to secure the 5 section wing arm to the wing link.



STEP 88

Use a 42473 2-3/8 inch pin (1) and 2 42484 2-1/4 inch long roll pin to install the base end of the 51229F 4 x 30 outer wing lift cylinder to the frame of the inner wing.

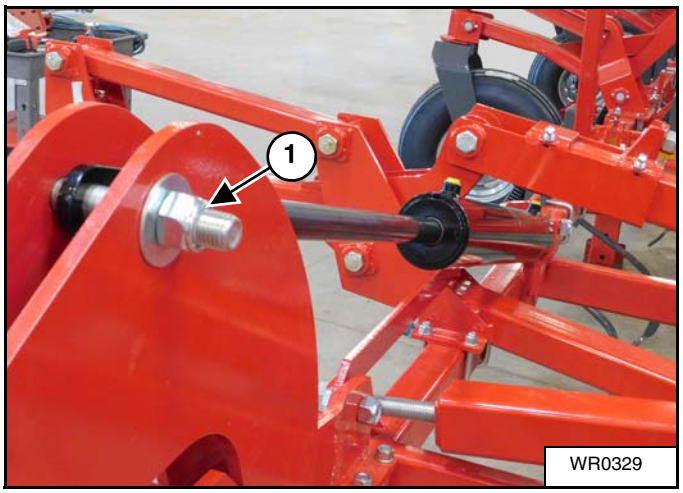


Outer Wing Assembly (Cont'd)

STEP 89

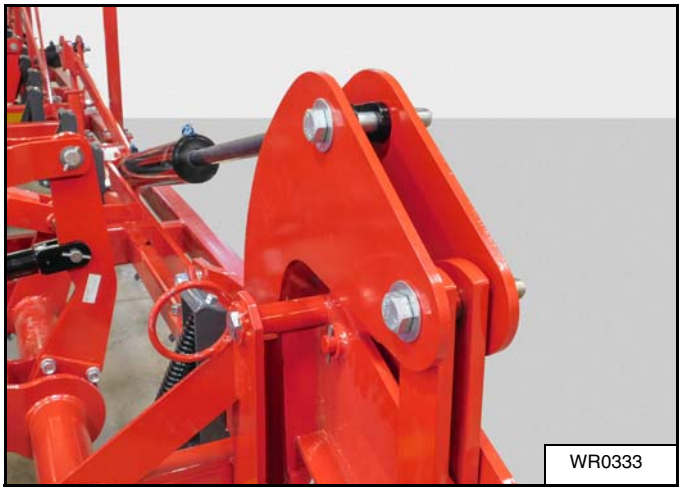
Use a 88264 1 x 6 inch grade 5 bolt (1), two 88196 flat washers and 89075 locknut to secure the yoke of the hydraulic cylinder to the 221190 section wing arms.

NOTE: The bolt must turn freely after the locknut is tightened.



STEP 90

Follow Steps 83 through 89 for all outer wing hinge assemblies.



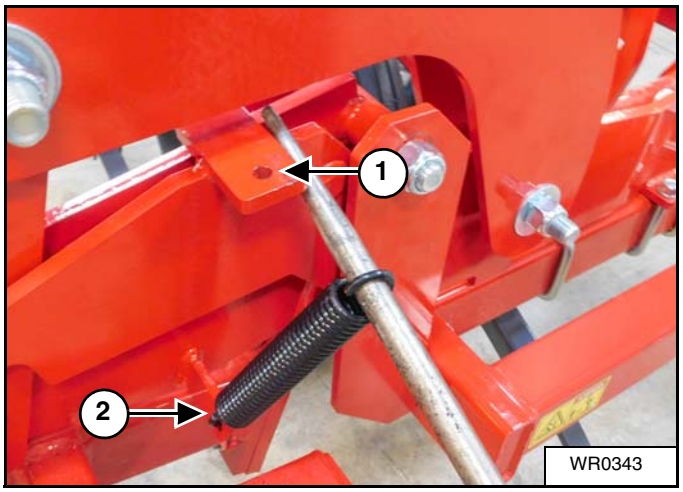
STEP 91

Using proper lifting equipment and safety measures to raise the outside of the outer wing to an approximate 25 to 30° angle.

Insert the bottom loop (1) of the 25863 spring into the bracket on the frame.

Use a pry bar, as shown, to extend the spring towards the bracket (2) on the hinge latch.

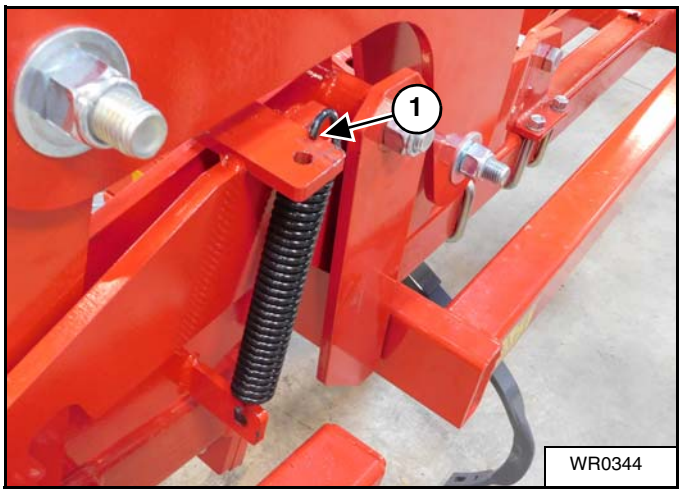
NOTE: Before installing the spring be sure there is enough clearance between the hook and body of the spring to allow installation on the bracket (2).



Outer Wing Assembly (Cont'd)

STEP 92

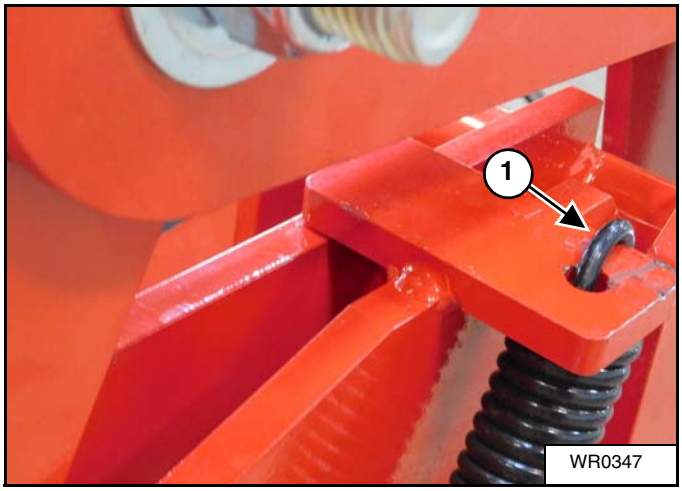
Hook the spring on the edge of the bracket (1) and remove the pry bar.



STEP 93

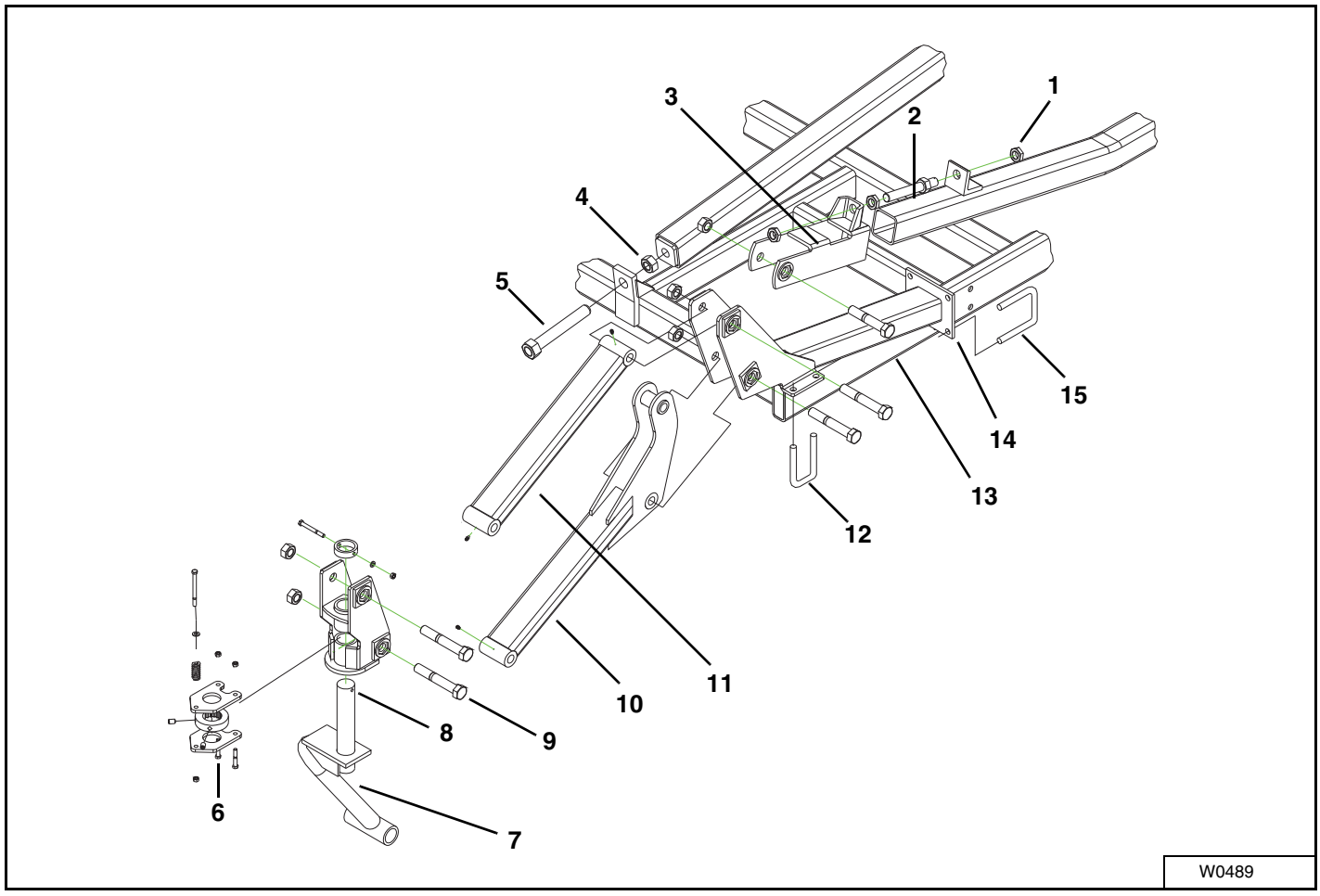
Carefully tap the spring until it slides into the bracket hole (1).

Follow Steps 91 through 93 on all outer wing hinges.



Outer Wing Parallel Link Gauge Wheel Assembly

Parallel Link Gauge Wheel

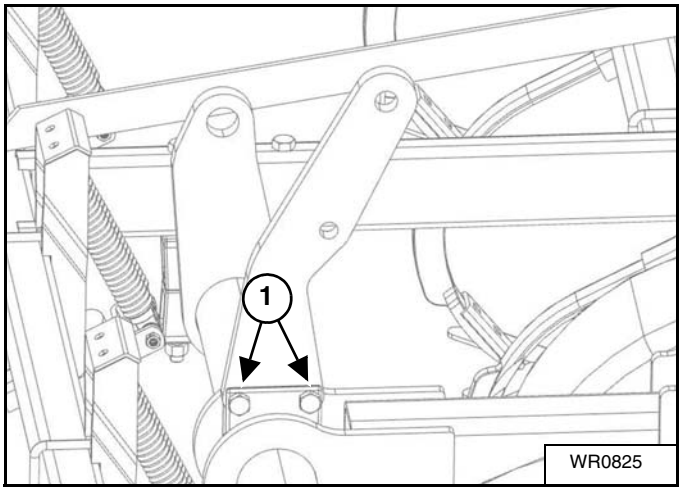


REF.	PART NO.	DESCRIPTION
1	88125	NUT, Hex: 1-8NC 5ZP
2	48890	ADJUSTMENT ROD ASSEMBLY
3	220843	GAUGE TUBE ADJUST BRACKET
4	88622	NUT, Top Lock: 3/4 - 10NC 5ZP
5	69799	ADJUSTER ROD (11.5)
6	242216	BRAKE ASSEMBLY, Caster Whl
7	240360	CASTER WHEEL LEG (RED)
8	220850	QUADX GAUGE WHEEL PIVOT (RED)
9	221336	BOLT, Hex: 1NC x 6.88 (1.5 IN) 5ZP
10	222961	5 FT WING LOWER GAUGE ARM
11	221100	EXCEL UPPER GAUGE WHEEL ARM
12	88503	BOLT, U: 5/8-11NC x 3 x 5-1/4 Z
13	88264	BOLT, Hex: 1-8NC x 6 5ZP
14	220853	GAUGE WHEEL MOUNT
15	88388	BOLT, U: 5/8-11NC x 4 x 3-1/4 Z

Outer Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 94

Using two 88841 3/4 x 2-3/4 inch grade 5 bolts (1) with 88130 lock washers and 88110 nuts, install the wing axle anchor to the axle. Do not tighten the bolts.



STEP 95

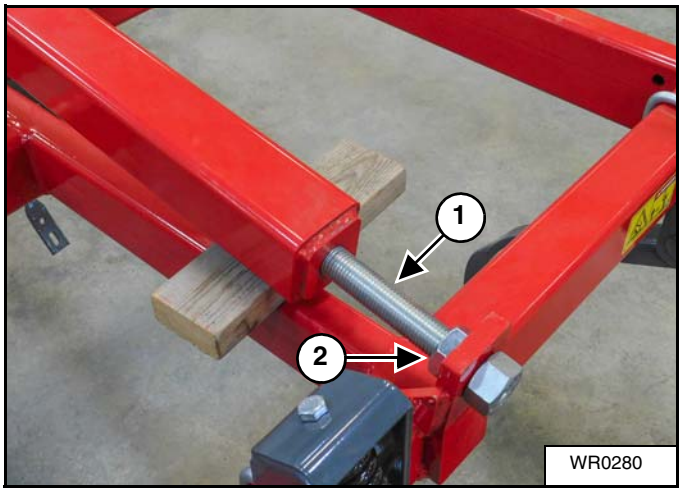
Use a 68034 1-1/4 x 3-3/8 inch long pin (1) with two 88440 machine bushings and two 42484 2-1/4 inch roll pins to secure the rear end of the 67709 wing adjust arm to the upper hole in the axle anchor.

Repeat Steps 94 and 95 for other wing.

STEP 96

Using a small wood block positioned under the 67709 wing adjust arm to assist in lining up the mounting point on the frame.

Install a 69799 11-1/2 inch adjuster rod (1) and the 88622 1-1/4 inch jam nut (2).

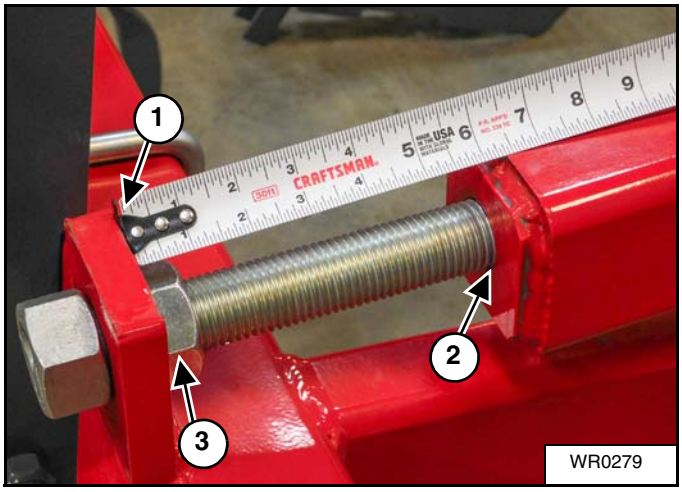


Outer Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 97

Tighten the adjuster rod to leave a 6 to 6 1/2 inch (15.2 cm) space between inside of the mounting point (1) on the frame and the end of the wing adjust arm (2).

Tighten the jam nut (3).

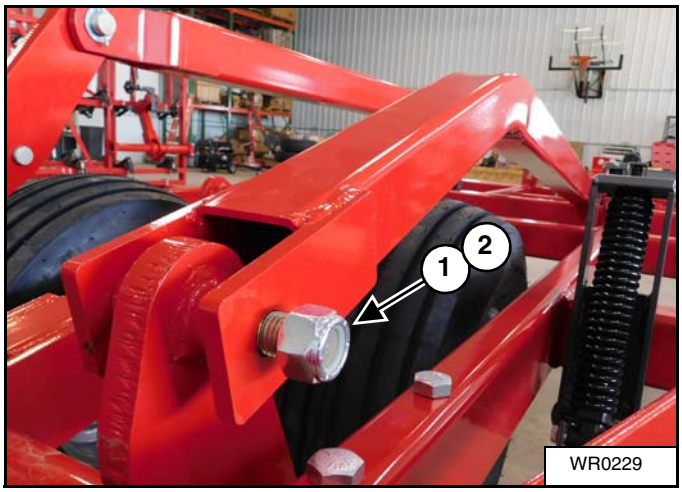


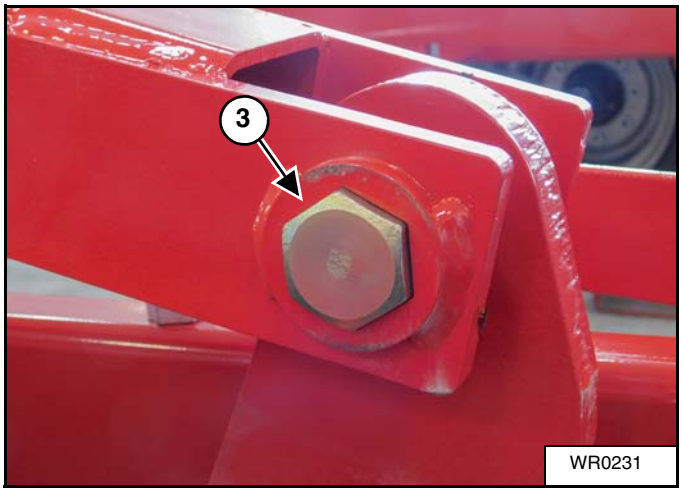
STEP 98

Using 89574 1 x 6 inch long grade 8 bolt (1) and 89075 nylon locknut (2) to secure the wing tube to the axle assembly.

NOTE: Be sure the head of the bolt is seated inside the recessed opening (3).

IMPORTANT: The wing tube must pivot freely after the bolt (1) is tightened.



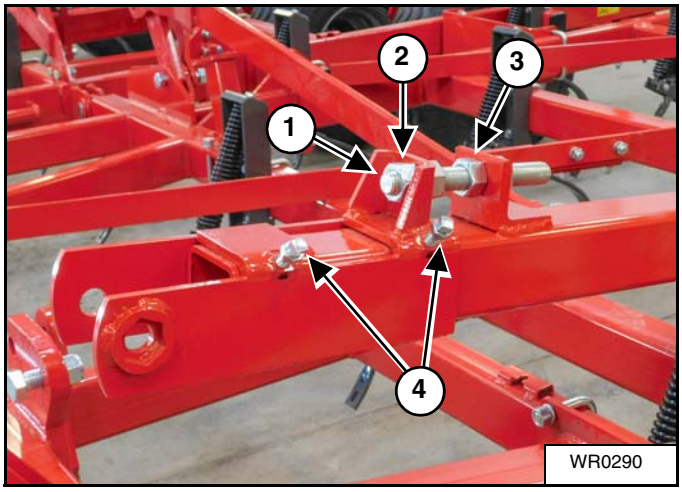


Outer Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 99

Install the 48890 adjuster rod (1) in the gauge tube adjust bracket. Install the 86125 1 inch nut (2) to secure the adjuster rod. Install a second 86125 1 inch nut (3) on the adjuster rod.

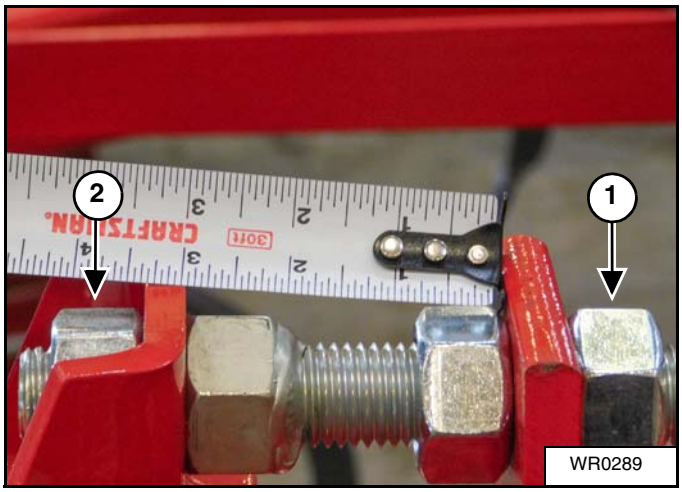
Loosen the set bolts (4), slide the 220843 gauge tube adjust bracket onto the wing adjust arm.



STEP 100

Turn the adjustment bolt until there is a 3 to 3-1/2 inch (7.6 to 8.9 cm) space between the inside of the mounting bracket and gauge bracket.

Install and tighten the 86125 1 inch nut (1). Tighten the nut (2) installed in Step 99.

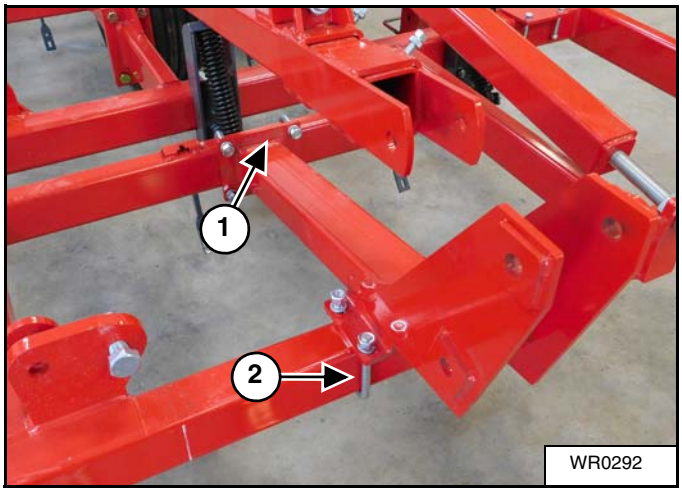


STEP 101

Use two 88388 5/8 x 4 x 3-1/4 inch U-bolts (1), four 88129 lock washers and four 88126 nuts to secure the gauge wheel mount to the inside the front frame crossmember.

Use two 88503 5/8 x 3 x 5-1/4 inch U-bolts (2), four 88129 lock washer and four 88126 nuts to secure the front of the 220853 gauge wheel mount to the front crossmember of the frame.

Do not tighten the U-bolts until the gauge wheel is completely assembled in Step 108.



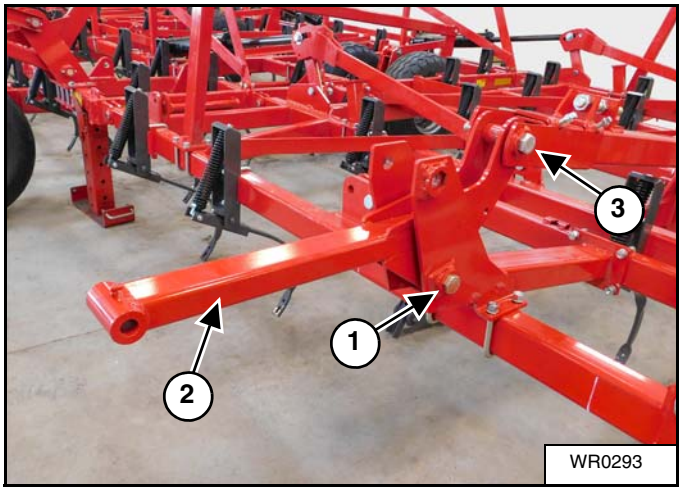
Outer Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 102

Use a 221336 1 x 6-5/8 inch grade 5 bolt (1) and 89075 nylon locknut to install the 220840 lower gauge arm (2) on the gauge wheel mount.

Use a 1 x 6 inch bolt (3) and 89075 nylon locknut to install the end of the gauge bracket and lower gauge arm.

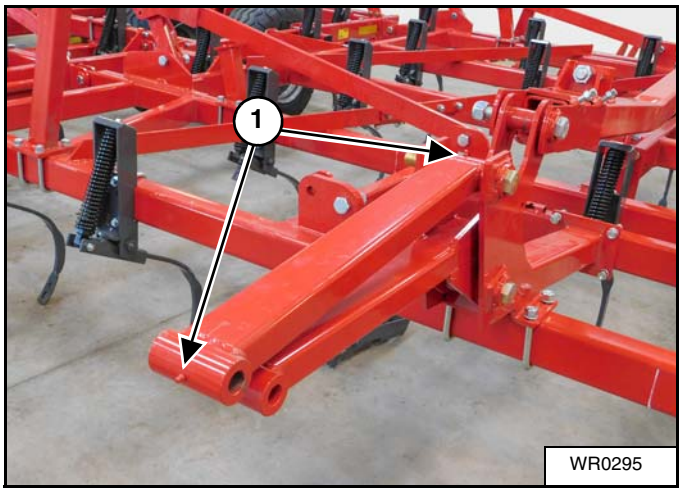
NOTE: Be sure the heads of the bolts (1) and (3) are seated inside the recessed opening.



STEP 103

Install the 245304 upper gauge wheel arm with a 221336 1 x 6-5/8 inch bolt (1) and 89075 nylon locknut.

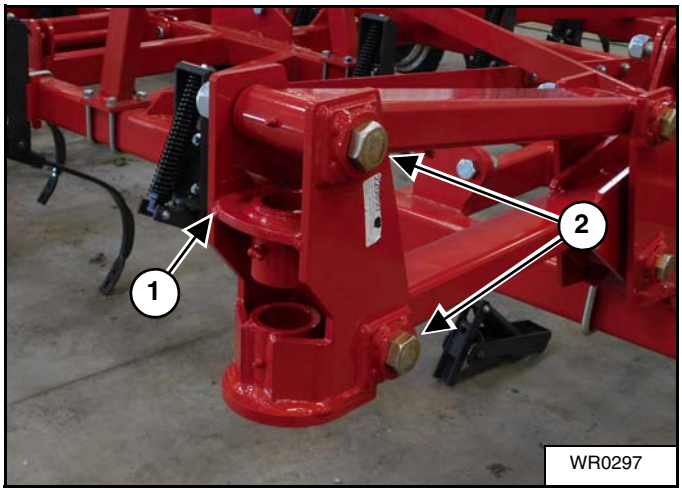
NOTE: The grease zerks (2) must be in the position as shown.



STEP 104

Install the 220850 pivot bracket (1) on both the lower and upper arms using two 221336 1 x 6-5/8 inch grade 5 bolts (2) and two 89075 nylon locknuts.

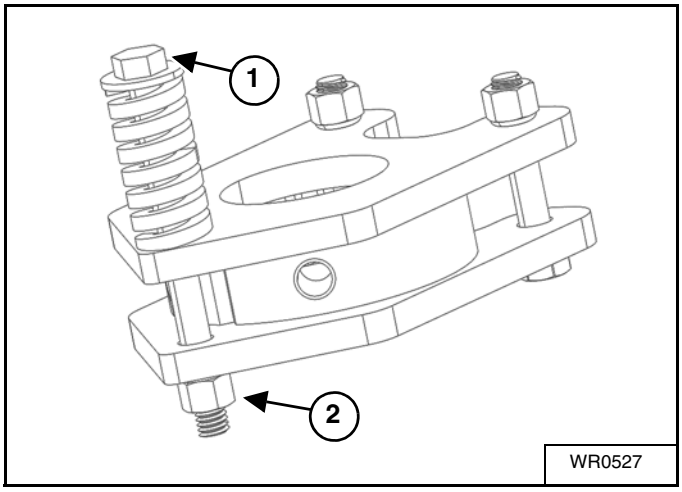
IMPORTANT: The bolts and locknuts installed in Steps 99, 102, 103 and 104 must allow the pivot bracket (1) to move up and down freely after tightening.



Outer Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 105

Remove the bolt (1) and locknut (2) holding the spring on the front side on the 242216 brake assembly.

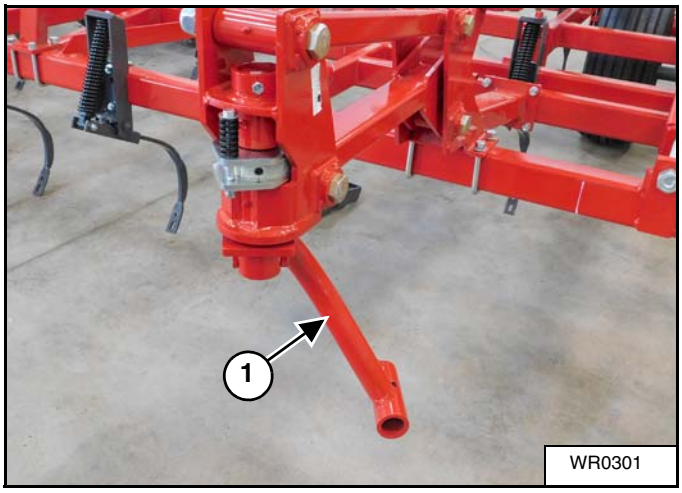


STEP 106

Slide the brake assembly into pivot bracket from the rear side as shown and reinstall all hardware you removed in Step 105.

STEP 107

Install the 240360 caster wheel leg (1) by sliding into the pivot bracket and through the brake assembly.



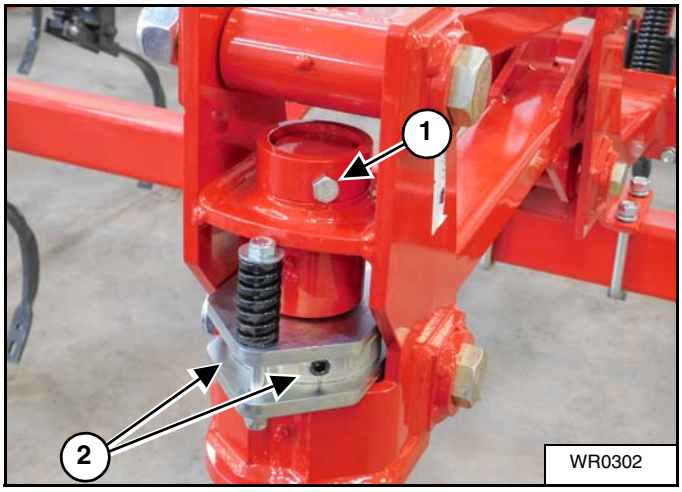
Outer Wing Parallel Link Gauge Wheel Assembly (Cont'd)

STEP 108

Secure the caster wheel leg using a 14189 stop collar, a 88531 3/8 x 3 inch grade 5 bolt (1), 88362 lock washer and 88103 nut.

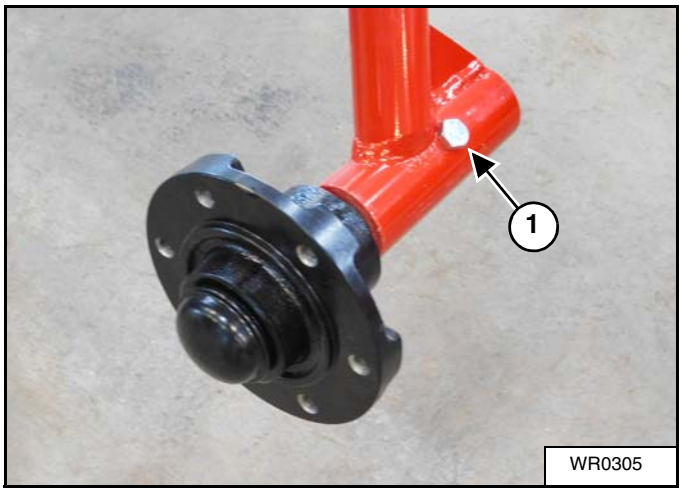
Tighten the 88984 set screws (2) on break assembly to 1/4 turn past the first contact.

Tighten the U-bolts installed in Step 101.



STEP 109

Slide the 41234 hub assembly into the wheel leg, securing with a 88313 fine thread 1/2 x 3 inch grade 5 bolt (1) and 88304 1/2 inch fine thread nut.

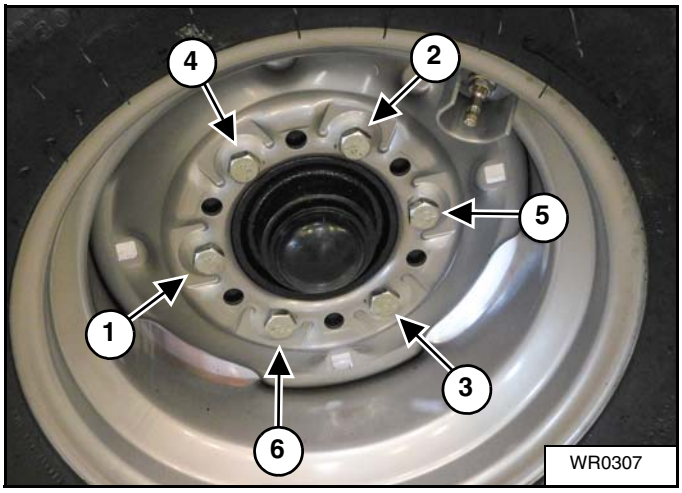


STEP 110

Install the tire on the hub using six 88142 1/2 inch fine thread 13/16 head wheel bolts. Tighten to 72 ft-lb (155 to 98 N•m).

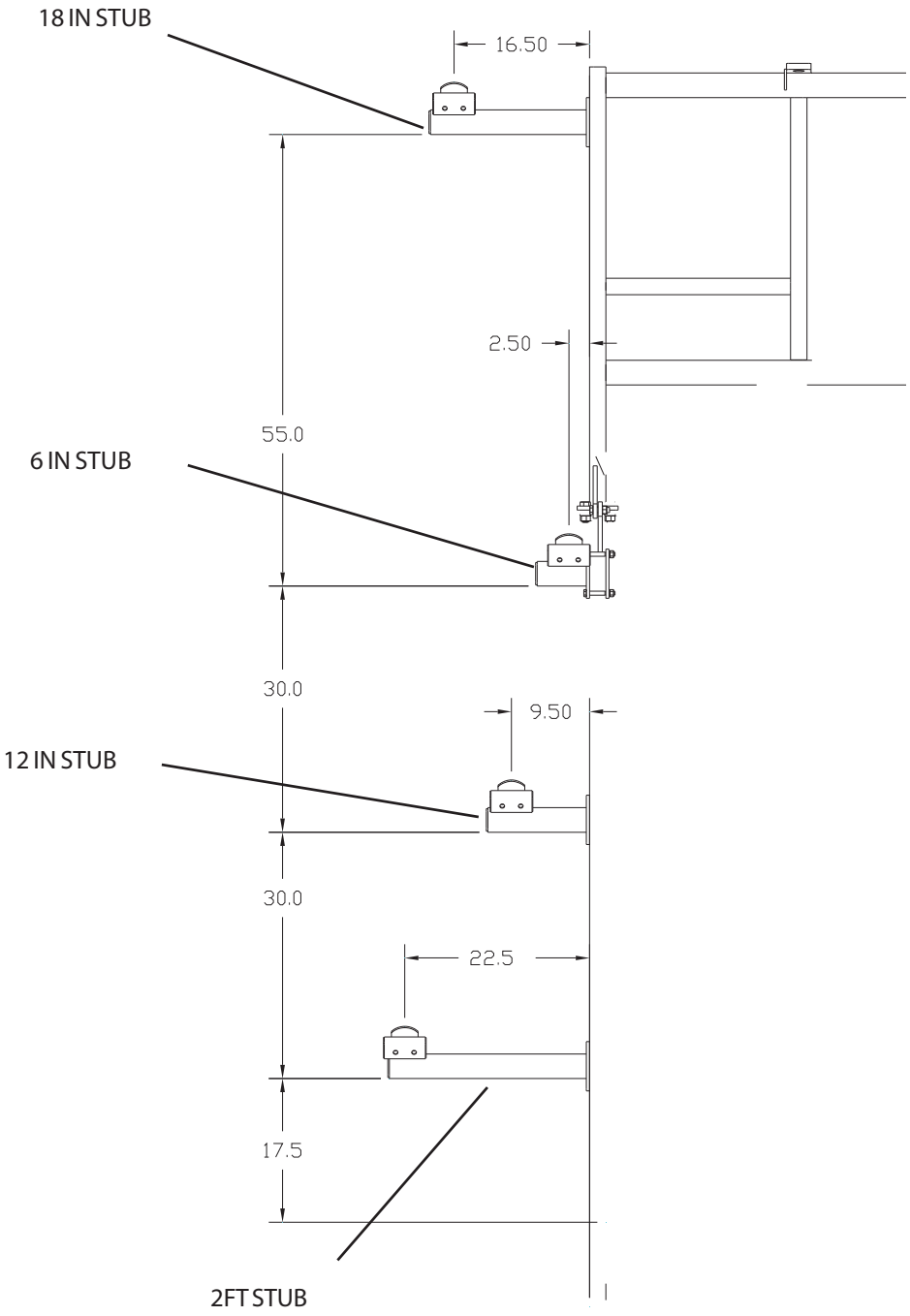
Follow the same steps to install the remaining wheels and tires on the caster assemblies.

Follow Steps 46 - 60 for the other wing caster assemblies.



Outer Wing Stub Assembly

Stub Locations



WR0561

Outer Wing Stub Assembly (Cont'd)

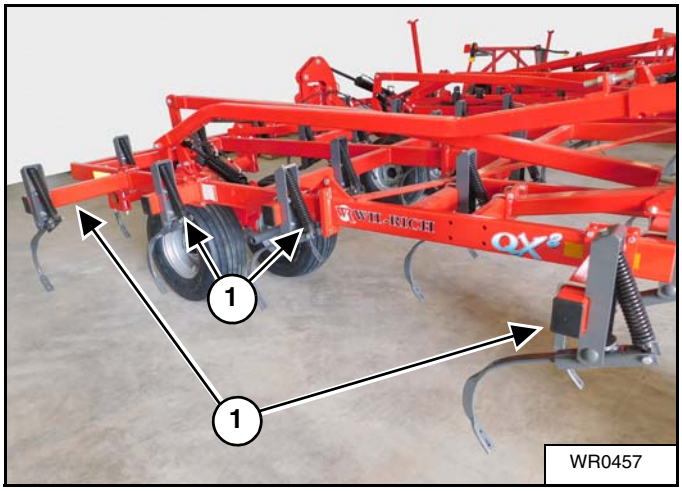
STEP 111

Install four long shank mounting stubs (1) according to the diagram for stub locations.

Use four 88307 1/2 x 3-1/2 inch grade 5 bolts, four 88303 lock washers and four 88104 nuts to secure each stub to the outside of the outer frame using the flange bracket on the inside of the frame.

IMPORTANT: Be sure all bolts are positioned with the head on the tire side of the frame.

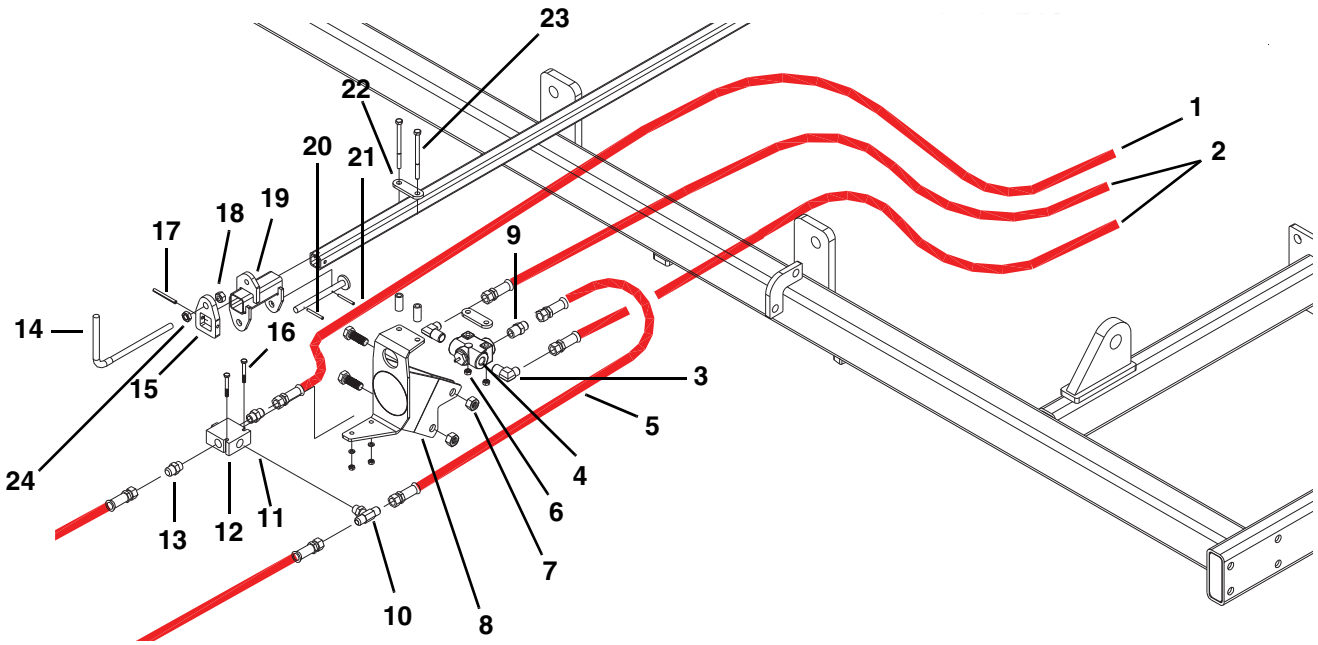
Repeat this step for the other side.



Single Point Depth Control

Single Point Depth Control

ASSY HDWR
74302-9



WR0499

Single Point Depth Control (Cont'd)

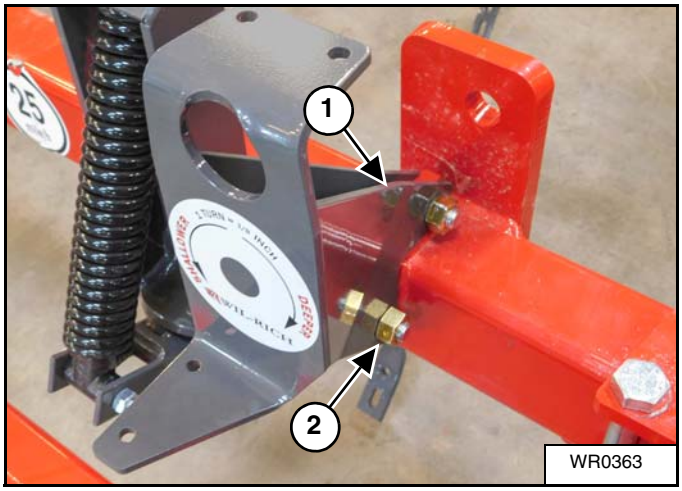
REF.	PART NO.	DESCRIPTION
1		RETURN LINE FROM WING LIFT CYLINDER
2		TO BASE END OF 12.6" MAIN FRAME LIFT CYLINDER
3	25580	ELB 8MORB x 8MJ
4	247429	DCV VALVE (8ORB)
5	242448	HSE, 3KPSI: 1/2 x 30 8FJX-8FJX
6	88540	NUT, Lock: 2 POS 5/16 - 18NC 5ZP
7	88369	NUT, Lock: 2 POS 5/8 - 11NC 5ZP
8	238638	SINGLE POINT BRACKET
9	24024	ADP 8MORB x 8MJ
10	13238	TEE 8MJ x 8MJ x 8MJ
11	24004	ADP 8MORB X 8FJX
12	241317	CHECK VALVE, Pilot (PC10-30-8T-NS-270)
13	24024	ADP 8MORB x 8MJ
14	222182	ADJUST CRANK
15	222107	ADJUST EAR
16	89058	BOLT, Hex: 1/4 - 20NC x 2 5ZP
17	88767	PIN, Roll: 1/4 DIA x 2-1/2 ZP
18	886231	NUT, Nylock: 3/8 - 16NC 2ZP
19	222111	SLIDE ADJUST
20	222180	SPRING PIN (ZINC)
21	89078	PIN, Roll: 3/16 x 1-3/4 ZP
22	238636	VALVE SPACER (ZINC)
23	88812	BOLT, Hex: 5/16 - 18NC x 4-1/2 5ZP
24	88561	NUT, Jam: 1/2 - 13NC 2ZP

Single Point Depth Control (Cont'd)

STEP 112

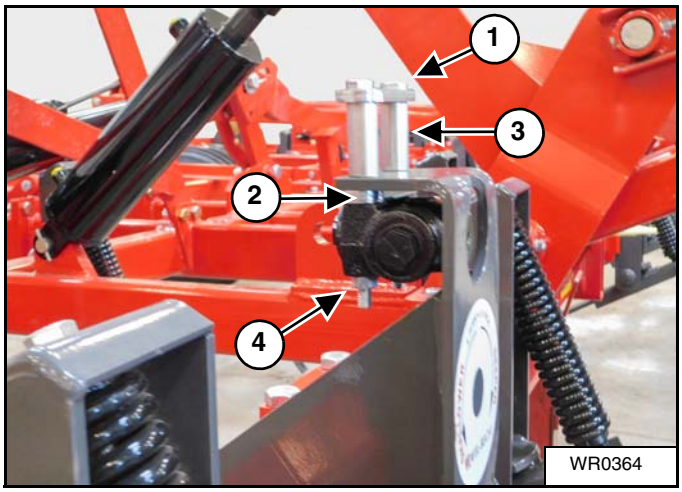
Use two 88838 5/8 x 1-3/4 inch grade 5 bolts (1) and 88369 nylon locknuts (2) to install the 238638 single point bracket on the main frame.

Figure 1



STEP 113

Use two 88812 5/16 x 4-1/2 inch grade 5 bolts (1), two 238637 spacers (2), two bushings (3) and two 88540 locknuts (4) to install the 247429 single point valve to the 238638 bracket as shown.

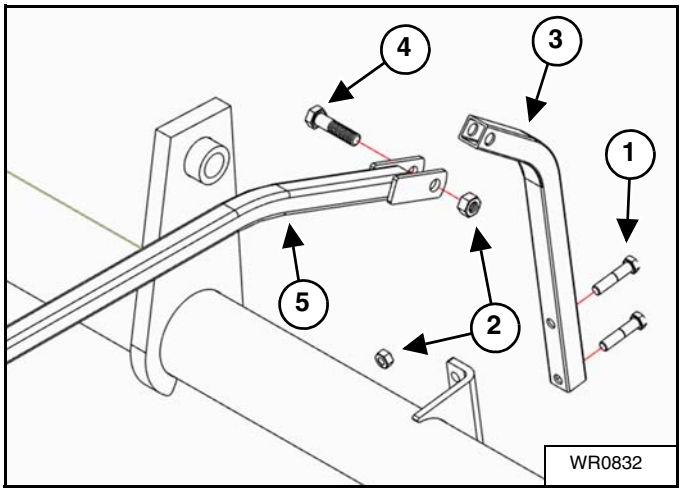


STEP 114

Use two 1/2 x 2-1/4 inch bolts (1) and two 88363 locknuts (2) to install the 238562 short single point tube (3) to the axle frame.

Use a 88409 5/8 x 2-1/2 inch bolt (4) with a 88369 locknut to install the 241487 bent tube (5).

NOTE: Step 114 is for the 60 foot cultivator only.

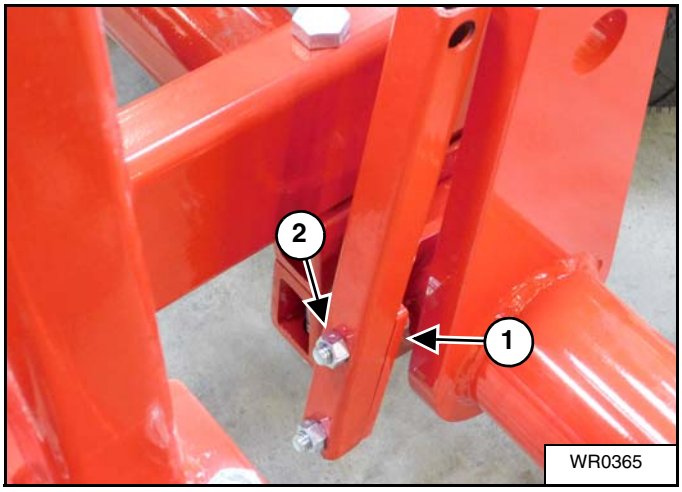


Single Point Depth Control (Cont'd)

STEP 115

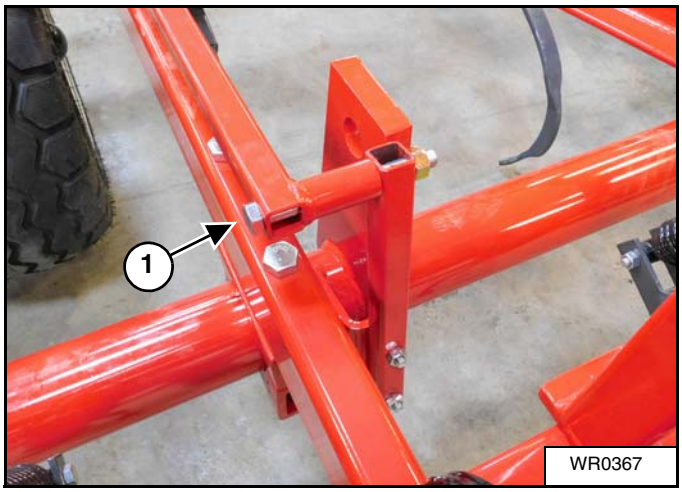
Use two 88825 1/2 x 2 inch grade 5 bolts (1) and two 88363 locknuts (2) to install the 354613 single point tube to the axle frame.

NOTE: Step 115 is for 60 foot cultivator only.



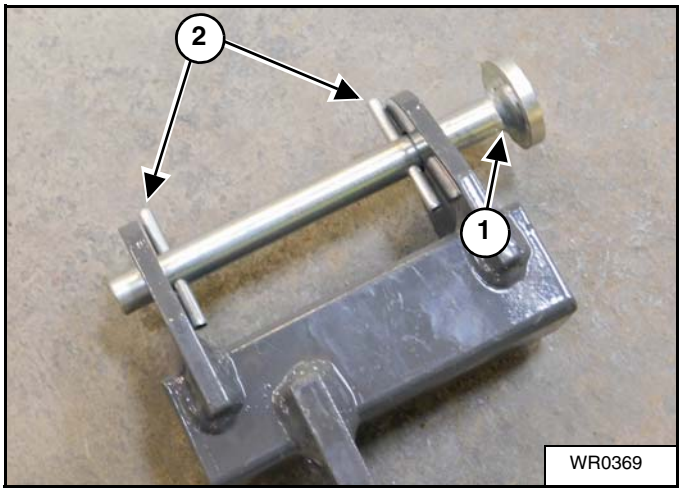
STEP 116

Use a 88295 5/8 x 6 inch grade 5 bolt (1) with a 88369 locknut to install the 354612 single point tube to the tube installed in Step 114.



STEP 117

Insert the 222180 plunger (1) into the slide adjust securing it with two 89078 roll pins (2).



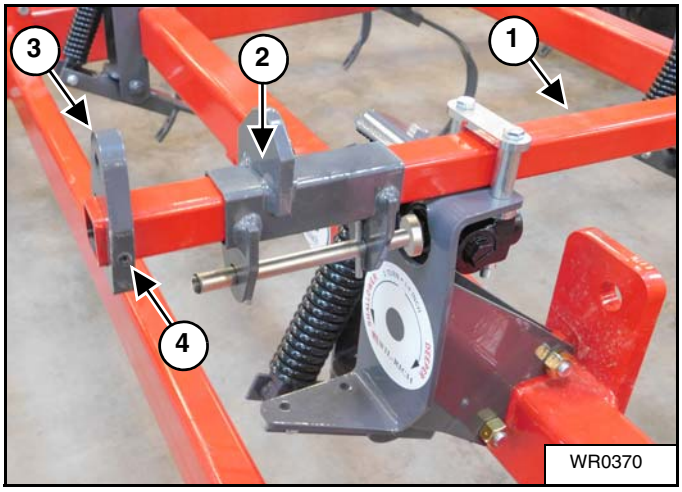
Single Point Depth Control (Cont'd)

STEP 118

Install the 241488 single point inner tube (1) through the bushings installed in Step 92.

Install the 222111 slide adjust (2) on the adjustment arm (1).

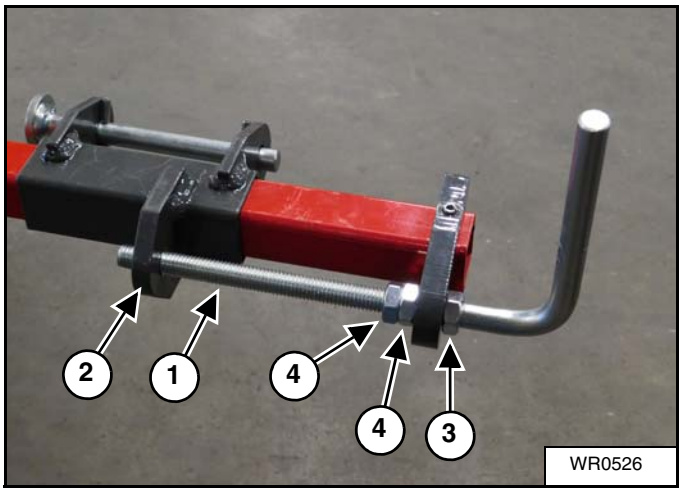
Install the adjustment bracket stop (3) on the adjustment arm with a 1/4 x 2-1/2 inch roll pin (4).



STEP 119

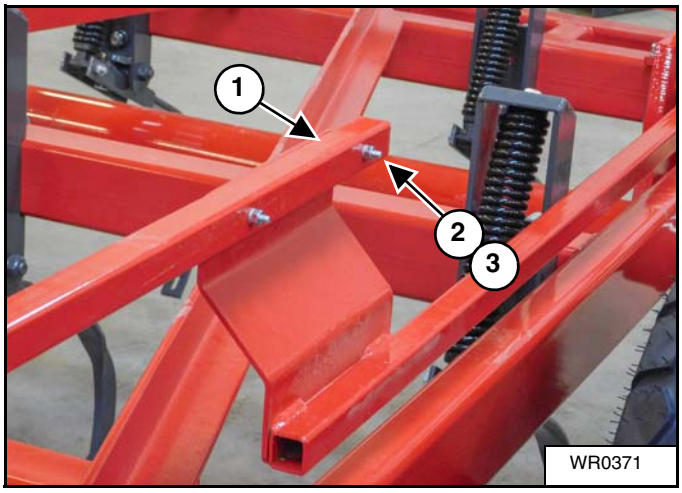
Screw the 222182 adjust crank (1) into the slide bracket (2) using three 88561 nuts (3) as shown.

NOTE: Bottom the nut (3) out on the threads. The two inner nuts (4) are positioned forward as shown. The handle must rotate freely when the inner nuts (4) are tightened against each other.



STEP 120

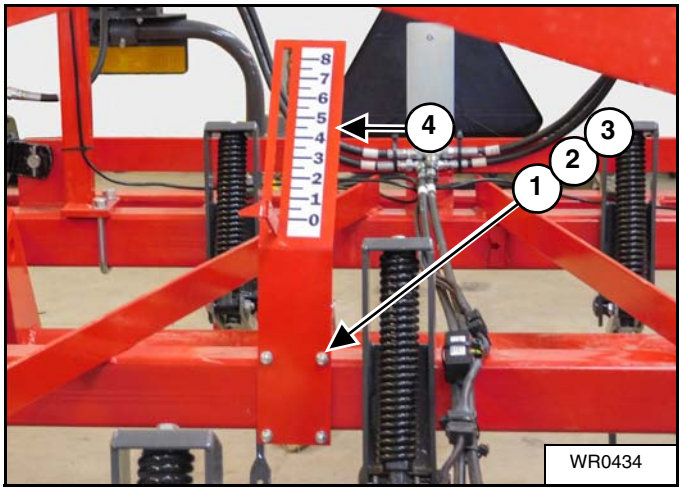
Use two 89058 1/4 x 2 inch bolts (1), two 88262 lock washers (2) and two 88172 nuts (3) to secure the end of the adjustment arm from Step 116 to the adjustment bar from Step 118.



Depth Gauge Assembly

STEP 121

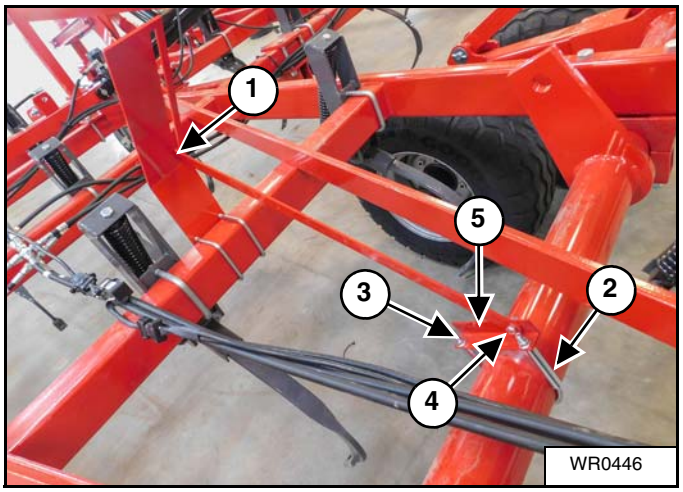
Use two 88514 3/8 x 4 x 3-3/4 inch U-bolts (1), four 88362 lock washers (2) and two 88103 nuts (3) to secure the 69303 depth gauge (4) to the frame.



STEP 122

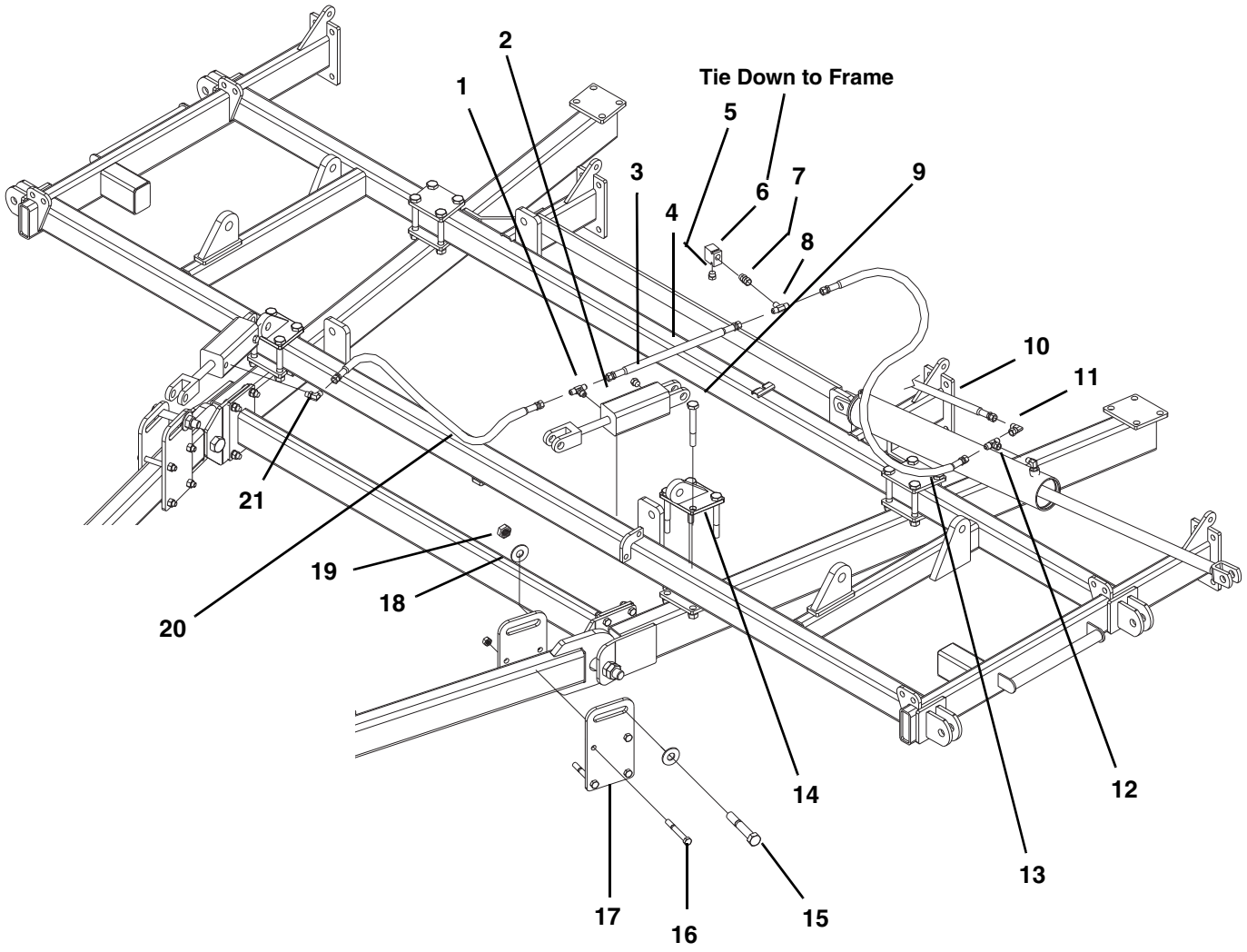
Install the 69309 depth indicator arm through the depth gauge slot (1).

Use a 69314 4-1/2 inch exhaust clamp (2), two flange nuts (3), a 88566 3/8 x 3/4 grade 5 bolt (4), a 88162 nylon locknut and bracket (5) to install the depth indicator arm to the axle as shown.



Hydraulic Weight Balance Assembly

Hyd-Weight Balance Kit



Operation: When the wings are folded the 2-1/2 x 8 cylinders will retract. This will bring weight forward on to the front caster wheels, providing stability during transport. When the unit is unfolded the pressure is relieved from the 2-1/2 x 8 cylinder allowing the hitch to float for field duties. The relief valve provides protection from extreme loads. The relief valve may drip oil in extreme cases.

WR0498

Hydraulic Weight Balance Assembly (Cont'd)

Hyd-Weight Balance Kit (Cont'd)

REF.	PART NO.	DESCRIPTION
1	56534	TEE, 8MJ x 8MJ x 8MORB
2	223324	HYD CYL: 2-1/2 x 8 (SAE)
3	247435	BREATHER, 8MORB (2C2035)
4	13423	HSE, 3KPSI: 3/8 x 24 8FJK-8FJX
5	247435	BREATHER, 8MORB (2C2035)
6	247423	PRESSURE RELIEF VALVE (RV10-22H-8T-N-35/35)
7	24004	ADP: 8MORB x 8FJX
8	13238	TEE: 8MJ x 8MJ x 8MJ
9		EXISTING BOLT
10		EXISTING HOSE
11	25591	ELB 8MJ x 8FJX
12	69080	TEE, 8MJ x 8MJ x 8FJX
13	56539	HSE, 3KPSI: 3/8 x 50 8FJX-8FJX
14	247417	ANCHOR WELD - Right-hand
	247418	ANCHOR WELD - Left-hand
15	88264	BOLT, Hex: 1-8NC x 6 5ZP
16	88395	BOLT, Hex: 5/8-11NC X 5 5ZP
17	247421	PLATE
18	88196	WASHER, Flat: 1 (1-1/16 X 2-1/2 ACT) 2ZP
19	88348	NUT, Lock: 2 POS 1-8NC 2ZP
20	27636	HSE, 3KPSI: 3/8 x 72 8FJX-8FJX
21	25580	ELB, 8MORB x 8MJ

Hydraulic Weight Balance Assembly (Cont'd)

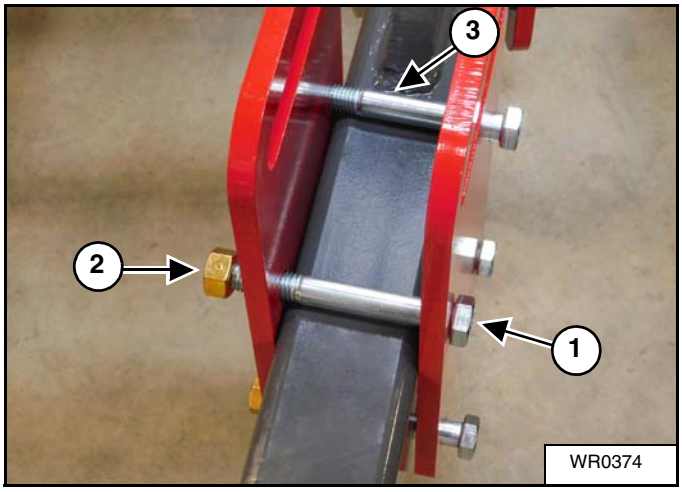
STEP 123

Use four 88395 5/8 x 5 inch grade 5 bolts (1) and 88369 locknuts (2), to install a 247421 cylinder lift plate on either side of the hitch.

IMPORTANT: Slide all the way up against the weld (3) before tightening.

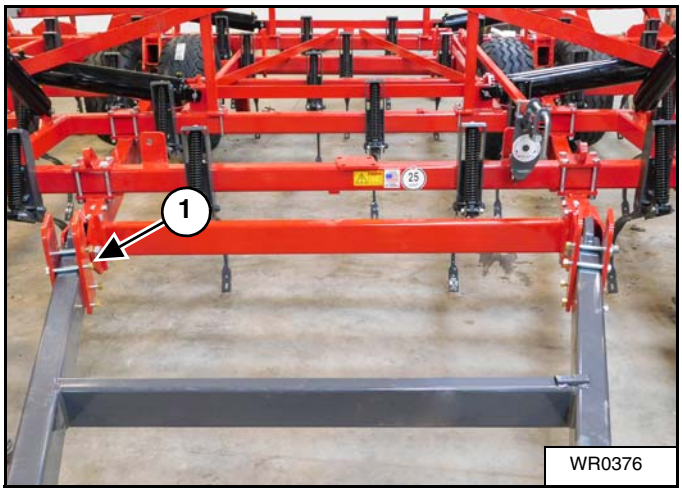
The top rear bolt must be against the weld (3) on the hitch frame.

NOTE: The bolts must be installed as shown with the head towards the outside of the hitch.



STEP 124

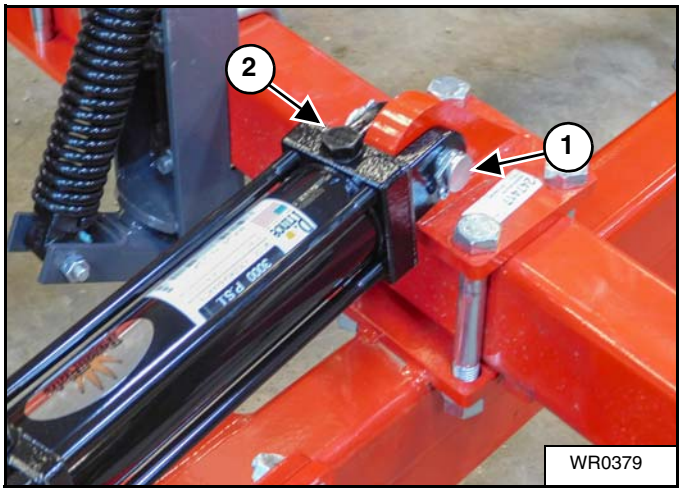
Repeat Step 123 on the other side (1) of the hitch frame.



STEP 125

Use the supplied pin and cotter keys to install the base of the 223324 2-1/2 x 4 inch cylinder to the anchor.

IMPORTANT: Install the cylinders with the ports (2) facing up.

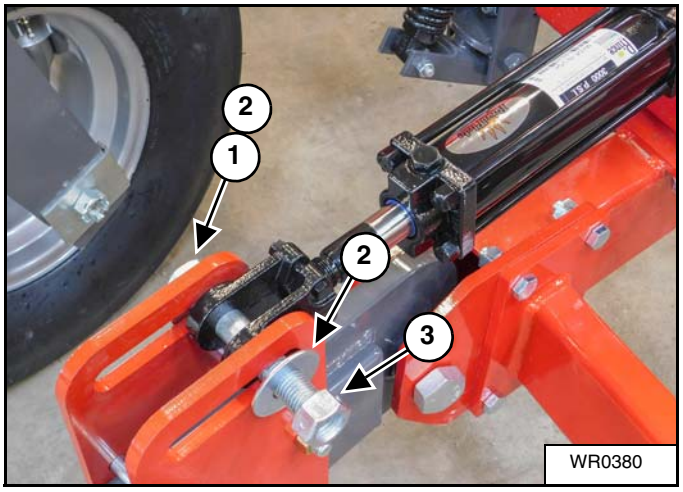


Hydraulic Weight Balance Assembly (Cont'd)

STEP 126

Use a 88264 1 x 6 inch grade 5 bolt (1), two 88196 flat washers (2) and a 88348 locknut (3) to install the rod end of the hitch cylinder on the plates installed in Step 102.

Repeat Steps 125 and 126 for the other side of the hitch.



Safety Light Assembly

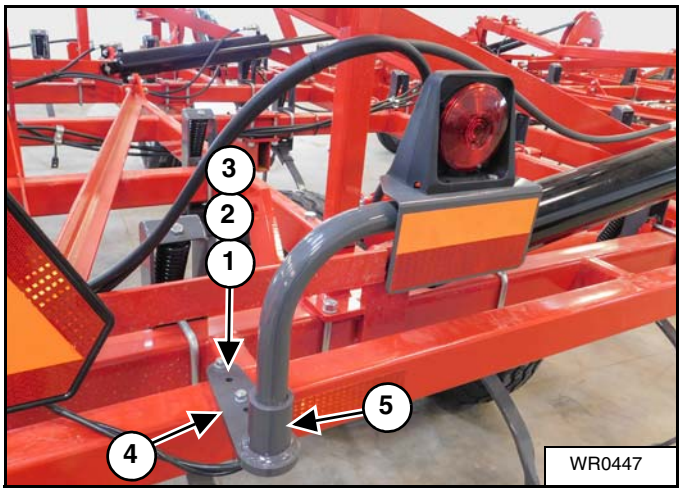
STEP 127

Use a 89347 1/2 x 3-1/4 inch U-bolt (1), two 88362 lock washers (2) and 88103 two nuts (3) to install the 223130 short base pivot to the frame (4).

Insert 223140 12 x 12 inch light arm into the short base pivot (5). Install a 88702 square head set screw and 88103 3/8 nut to secure the light arm.

NOTE: Any attachments to the rear tool bars must be installed before the safety lights can be installed.

NOTE: Each 223130 short base pivot must be a minimum of 15 inches (38.1 cm) from the center of the frame to a maximum of 50 inches (127 cm).



Safety Light Assembly (Cont'd)

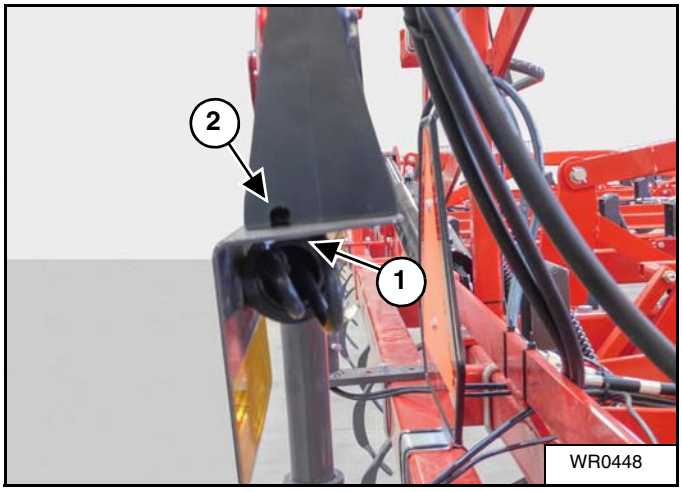
STEP 128

Secure the 223126 light / reflector bracket to the offset light arm with a 88702 3/8 x 3/4 inch square head set screw (1) and 88103 nut.

Use two 88203 1/4 x 1 grade 5 inch bolts (2) and two 88172 nuts to secure the red light to 223126 light / reflector bracket.

NOTE: Be sure to route wiring inside the offset light arm.

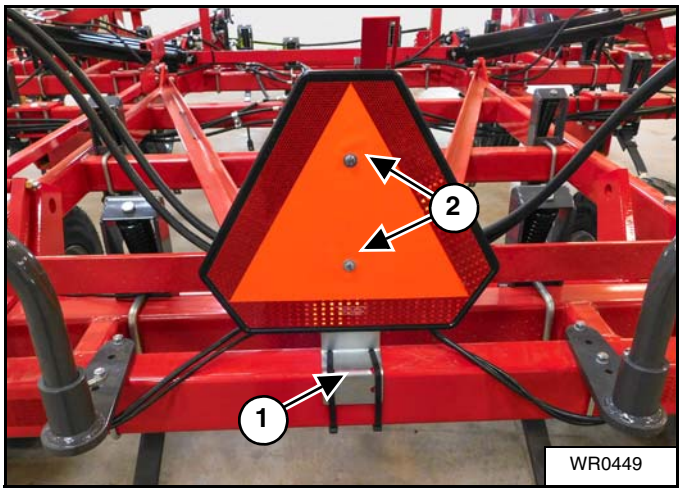
Repeat Steps 127 and 128 for the opposite side light.



STEP 129

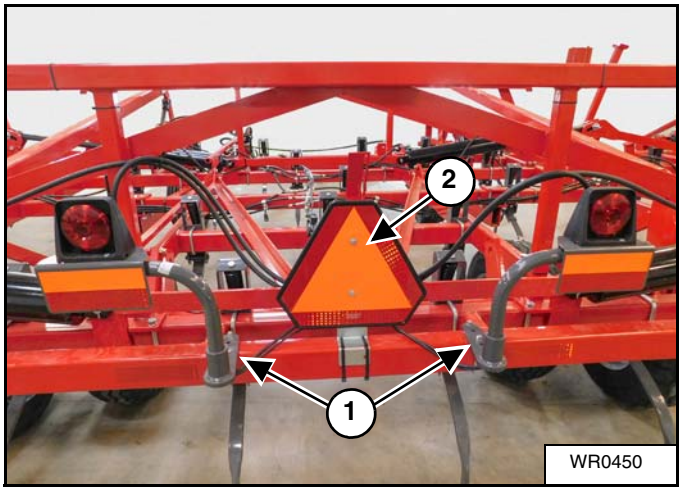
Use two zip ties to secure the 41359 reflector bracket (1) to the wing rest.

Secure the 30651 SMV reflector to the bracket with two 88993 1/4 x 3/4 grade 5 bolts (2), two 88261 flat washers, two 88262 lock washers and two 88172 nuts.



Safety Light Assembly (Cont'd)

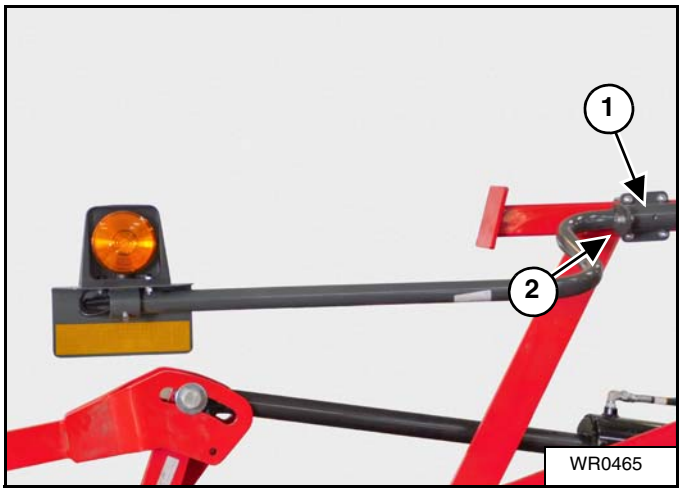
NOTE: Be sure to secure both lights offset arms inside the frame crossmember a minimum of 15 and a maximum of 50 inches (76 to 254 cm) from the center of the rear frame with the reflector (2) centered between the two arms (1).



STEP 130

Use two 88386 3/8 x 2-1/2 x 3-1/4 inch U-bolts (1) and four 88162 locknuts to secure the 240237 pivot plate to the upper crossmember of the rear wing rest.

Use a 88702 3/8 x 3/4 square head set screw (2) to secure the 223121 48 inch offset light arm to the pivot plate in the bottom hole.



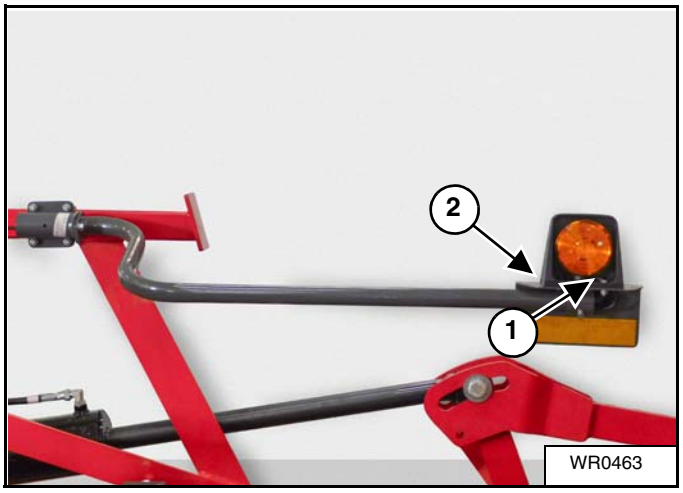
STEP 131

Secure the light / reflector bracket to the offset light arm with a 88702 3/8 x 3/4 square head set screw (1) and 88103 nut.

Use two 88203 1/4 x 1 inch grade 5 bolts (2) and two 88172 nuts to secure the 223143 amber light to the 223126 light / reflector bracket.

NOTE: Be sure to route wiring inside the offset light arm.

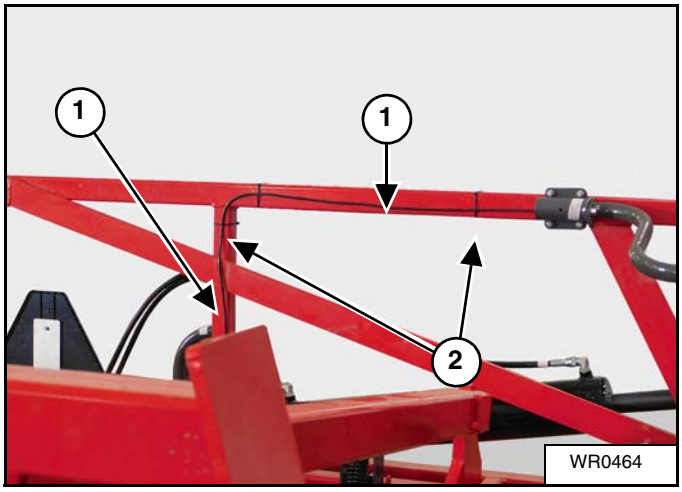
Repeat Steps 130 and 131 for the other side light.



Safety Light Assembly (Cont'd)

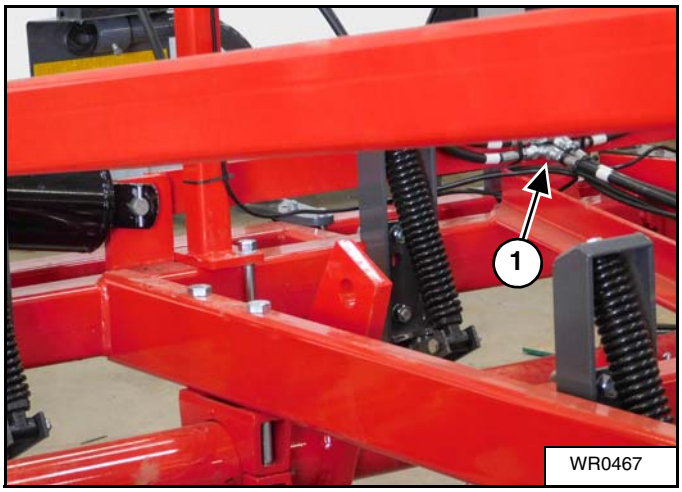
STEP 132

Route the wiring (1) for the 223143 amber lights along the rear wing rest as shown and secure to the wing rest with tie wraps (2) as needed to maintain a clean straight line.



STEP 133

Route the wires from the 223143 amber safety lights to the center (1) of the main frame where the hydraulic lines and 223144 red safety light wiring intersect.



Hydraulic Assembly

Hydraulic Component Assembly

All Wil-Rich lift systems should be assembled as noted in the appropriate assembly manual. For best functional results the following steps should be followed.

1. Position the main lift cylinders in the locations and connect the hydraulic circuitry as shown. Attach the base end of all cylinders but do not connect the rod ends. Support the cylinders to allow the rods to extend without machine contact.

2. Most fittings, except the connection tips at the tractor end and some valves, are JIC or O-ring type fitting. JIC or O-ring fitting do not require any type of thread compound to seal properly. **NOTE: Take care to keep all connections, fitting, hose, etc as clean as possible.**

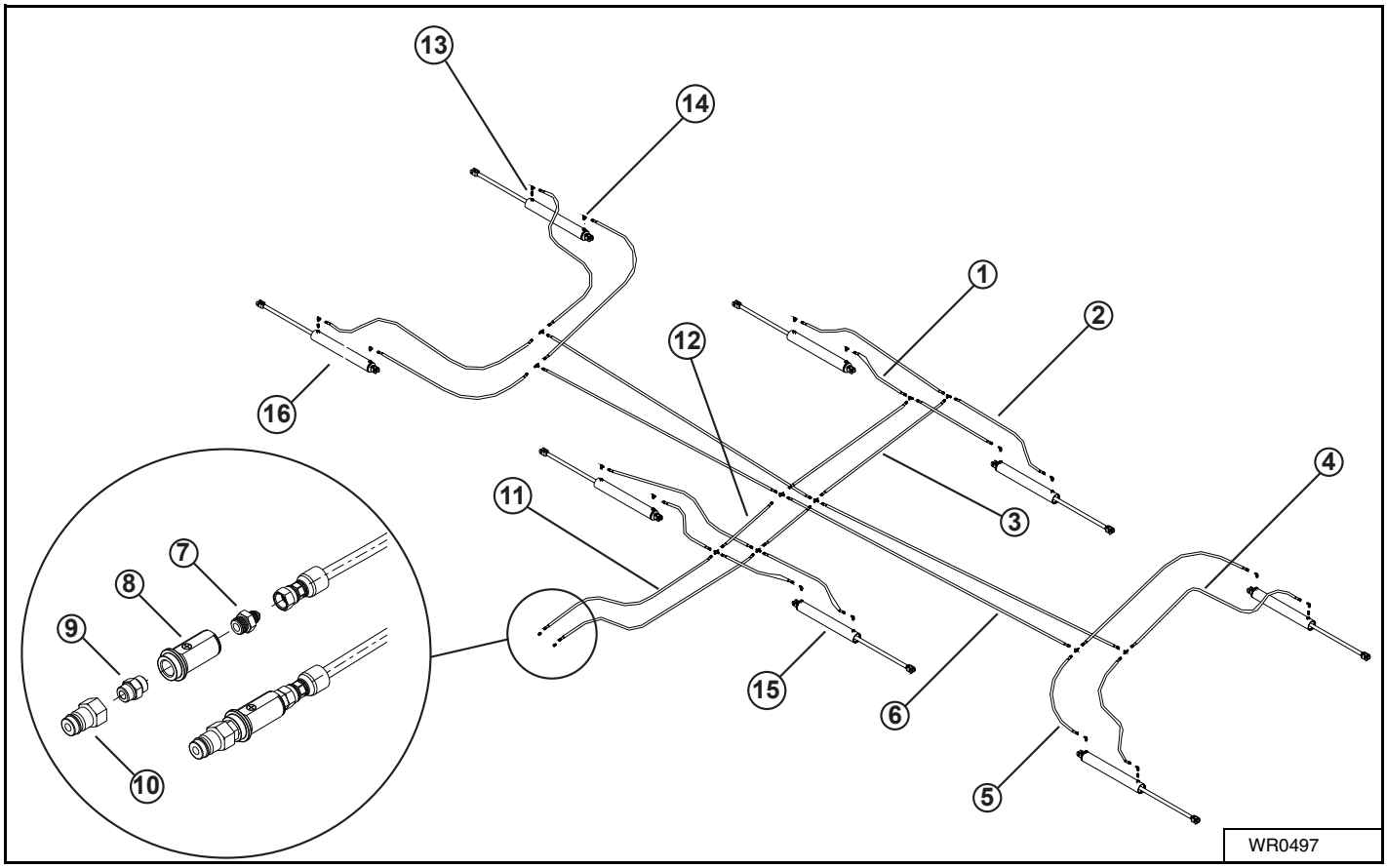
3. Where pipe threads are used a thread-sealing compound should be used. **NOTE: Do not use Teflon type tape on any hydraulic circuitry; use an appropriate liquid compound. If any tape or contaminate enters the system it can clog the bypass hole.**

Thread Size	Assembly Torque (in-lb)	Assembly Torque (ft-lb)	Tube Connection FFWR	Swivel Nut or Hose FFWR
2	35 – 45	2 – 4	N/A	N/A
3	65 – 75	5 – 7	N/A	N/A
4	130 – 150	11 – 13	2	2
5	165 – 195	14 – 16	2	2
6	235 – 265	20 – 22	1.5	1.25
8	525 – 575	43 – 47	1.5	1
10	650 – 750	55 – 65	1.5	1
12	950 – 1050	80 – 90	1.25	1
14	1200 – 1300	100 – 110	1	1
16	1400 – 1500	115 – 125	1	1
20	1900 – 2100	160 – 180	1	1
24	2250 – 2550	185 – 215	1	1
32	3000 – 3400	250 – 290	1	1

WR0826

Hydraulic Assembly (Cont'd)

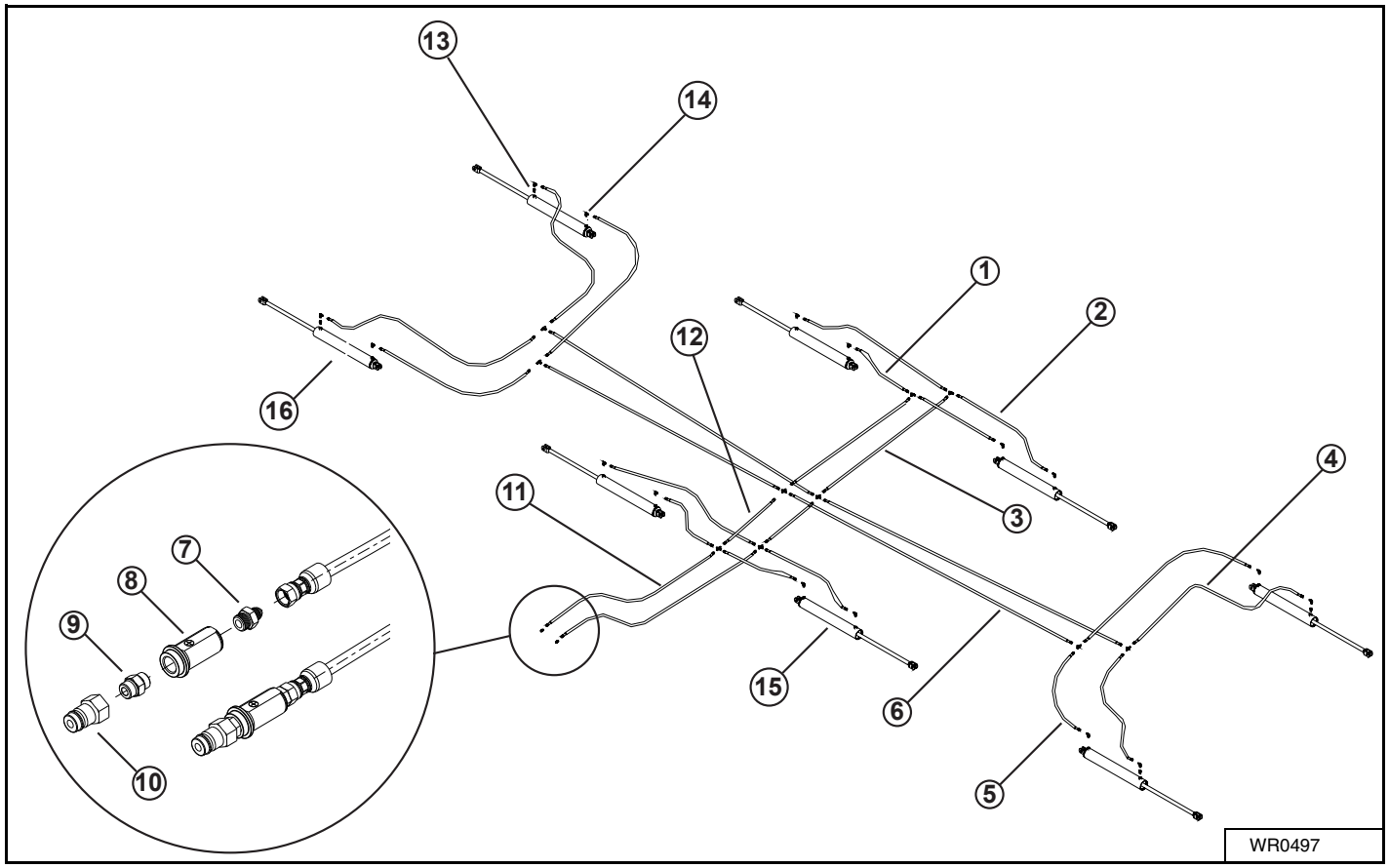
QX² 46 Fold Hydraulics



REF.	PART NO.	DESCRIPTION
1	14644	HOSE-HYD: 0.38 X 036 8FJX-8FJX 3KPSI
2	67636	HSE 3KPSI 3/8X72 8FJX-8FJX
3	25602	HSE 3KPSI 3/8X65 8FJX-8FJX
4	56540	HSE 3KPSI 3/8X89 8FJX-8FJX
5	13268	HOSE-HYD: 0.38 X 078 8FJX-8FJX 3KPSI
6	13484	HOSE-HYD: 0.38 X 156 8FJX-8FJX 3KPSI
7	24024	ADP 8MORB X 8MJ
8	334205	BLUE QD GRIP -8FORB PACK OF 2
9	334210	-8MORB X -8MORB UNION
10	247425	QUICK COUPLER 8 ORB
11	241494	HOSE-HYD: 0.50 X 276 8FJX-8FJX 3KPSI
12	242448	HSE 3KPSI 1/2X30 8FJX-8FJX
13	350600	RSTR ADP 8MORB X 8FORB (.060) W/INSERT
14	25580	ELB 8MORB X 8MJ
15	20966F1	HYD CYL 5X30 FGS #A519CY07
16	51229F1	HYD CYL 4X30 FGS

Hydraulic Assembly (Cont'd)

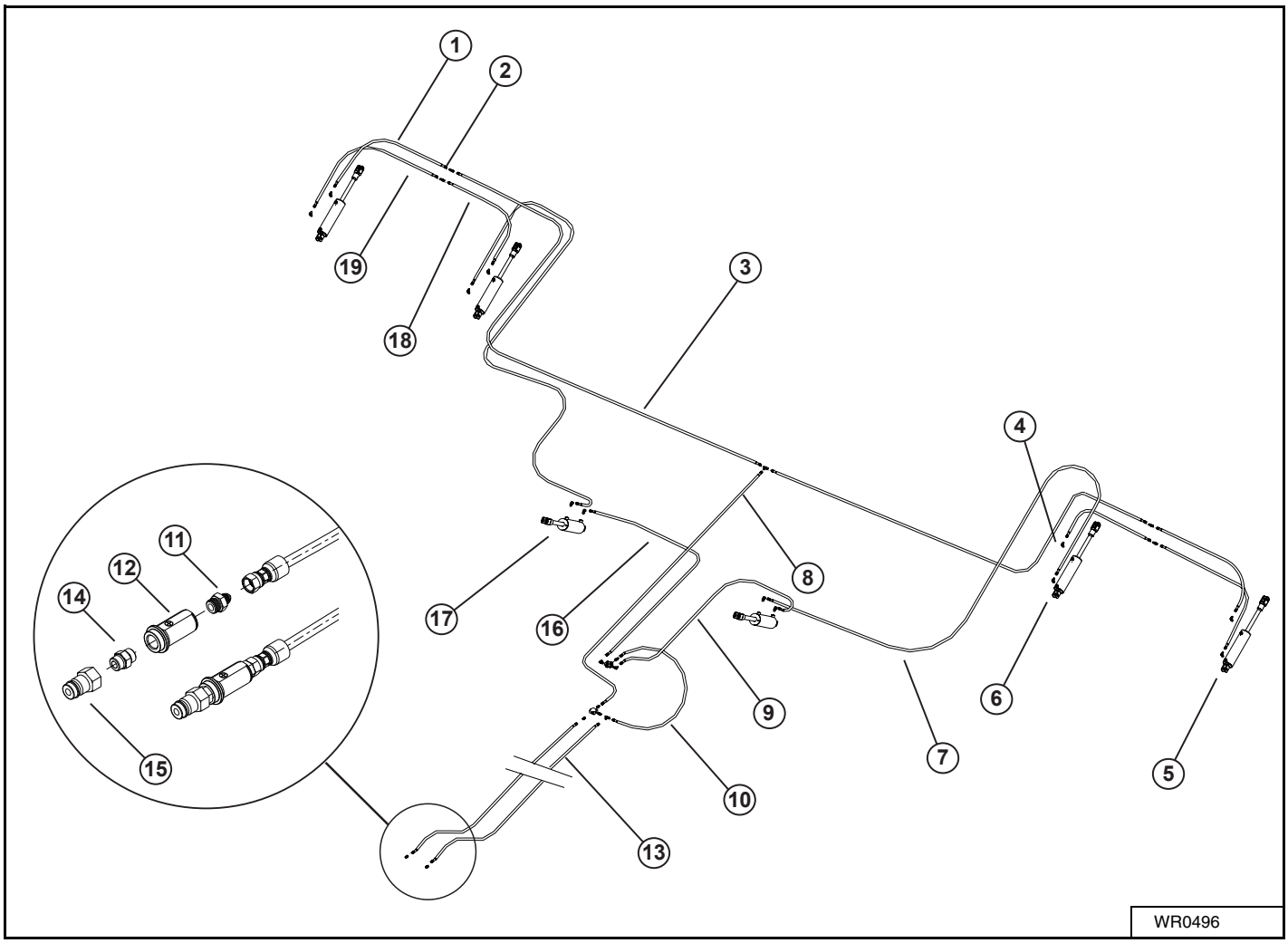
QX² 50 & 55 Fold Hydraulics



REF.	PART NO.	DESCRIPTION
1	14644	HOSE-HYD: 0.38 X 036 8FJX-8FJX 3KPSI
2	67636	HSE 3KPSI 3/8X72 8FJX-8FJX
3	25602	HSE 3KPSI 3/8X65 8FJX-8FJX
4	56540	HSE 3KPSI 3/8X89 8FJX-8FJX
5	13268	HOSE-HYD: 0.38 X 078 8FJX-8FJX 3KPSI
6	233689	HSE 3KPSI 3/8X180 8FJX-8FJX
7	24024	ADP 8MORB X 8MJ
8	334205	BLUE QD GRIP -8FORB PACK OF 2
9	334210	-8MORB X -8MORB UNION
10	247425	QUICK COUPLER 8 ORB
11	241494	HOSE-HYD: 0.50 X 276 8FJX-8FJX 3KPSI
12	242448	HSE 3KPSI 1/2X30 8FJX-8FJX
13	350600	RSTR ADP 8MORB X 8FORB (.060) W/INSERT
14	25580	ELB 8MORB X 8MJ
15	20966F1	HYD CYL 5X30 FGS #A519CY07
16	51229F1	HYD CYL 4X30 FGS

Hydraulic Assembly (Cont'd)

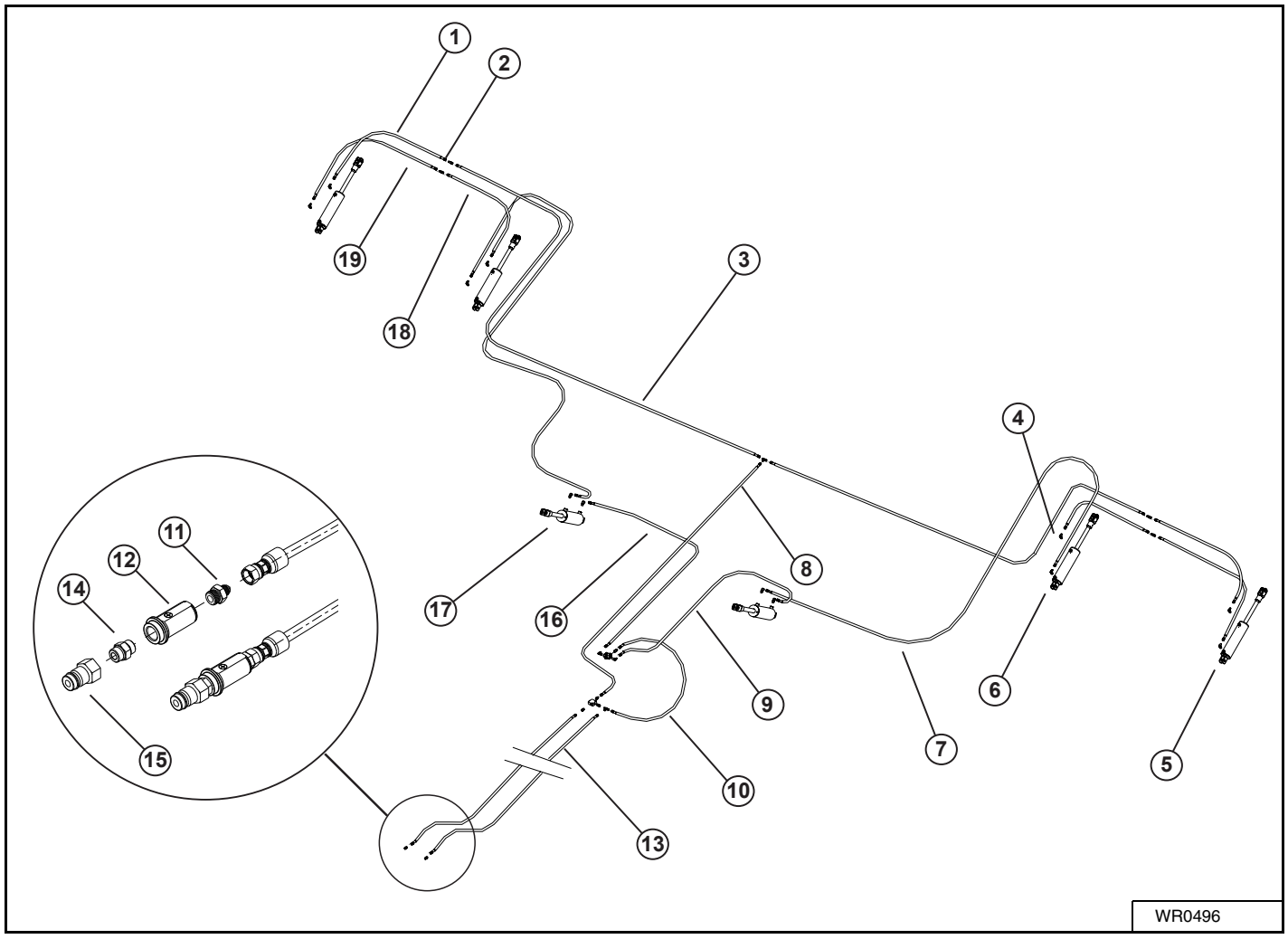
QX² 46 Depth Control Hydraulics



REF.	PART NO.	DESCRIPTION
1	56540	HOSE-HYD: 0.38 X 089 8FJX-8FJX 3KPSI
2	13239	UNION 8MJ X 8MJ
3	233688	HSE 3KPSI 3/8X252 8FJX-8FJX
4	25580	ELB 8MORB X 8MJ
5	220761F2	HYD CYL 4X9.3 ILP TBP FGS A519CY35
6	67688F2	HYD CYL 4X10.8 TBP ILP FGS #A519CY25
7	233688	HSE 3KPSI 3/8X252 8FJX-8FJX
8	233250	HOSE-HYD: 0.50 X 080 8FJX-8FJX 3KPSI
9	13265	HOSE-HYD: 0.38 X 056 8FJX-8FJX 3KPSI
10	242448	HOSE-HYD: 0.50 X 030 8FJX-8FJX 3KPSI
11	24024	ADP 8MORB X 8MJ
12	334204	GOLD QD GRIP -8FORB PACK OF 2
13	234940	HSE 3KPSI 1/2X216 8FJX-8FJX
14	334210	-8MORB X -8MORB UNION
15	247425	QUICK COUPLER 8 ORB

Hydraulic Assembly (Cont'd)

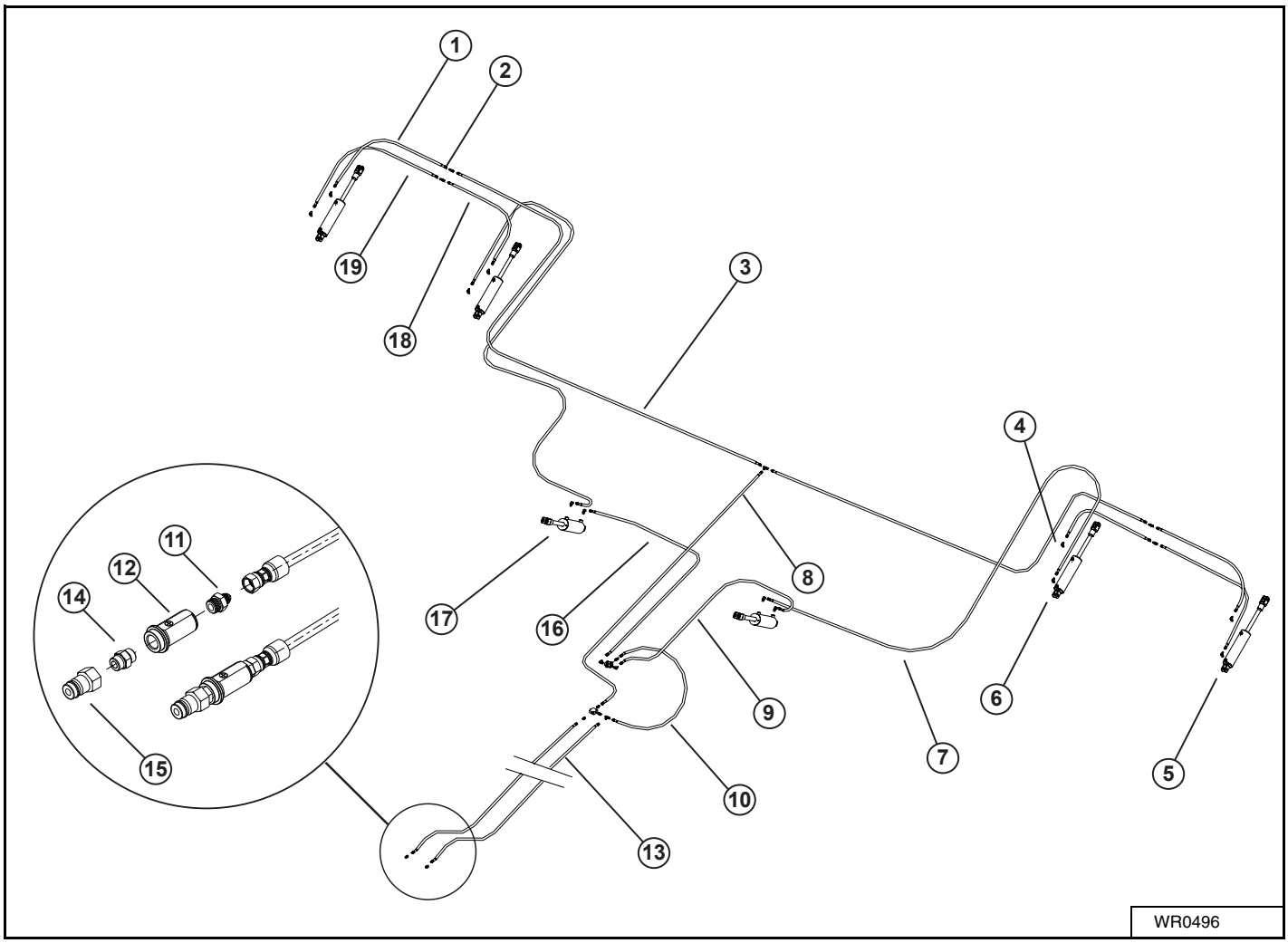
QX² 46 Depth Control Hydraulics (Cont'd)



REF.	PART NO.	DESCRIPTION
16	13484	HOSE-HYD: 0.38 X 156 8FJX-8FJX 3KPSI
17	67683F2	HYD CYL 4X12.56 TBP ILP FGS #A519CY24
18	56539	HOSE-HYD: 0.38 X 050 8FJX-8FJX 3KPSI
19	235388	HOSE-HYD: 0.38 X 102 8FJX-8FJX 3KPSI

Hydraulic Assembly (Cont'd)

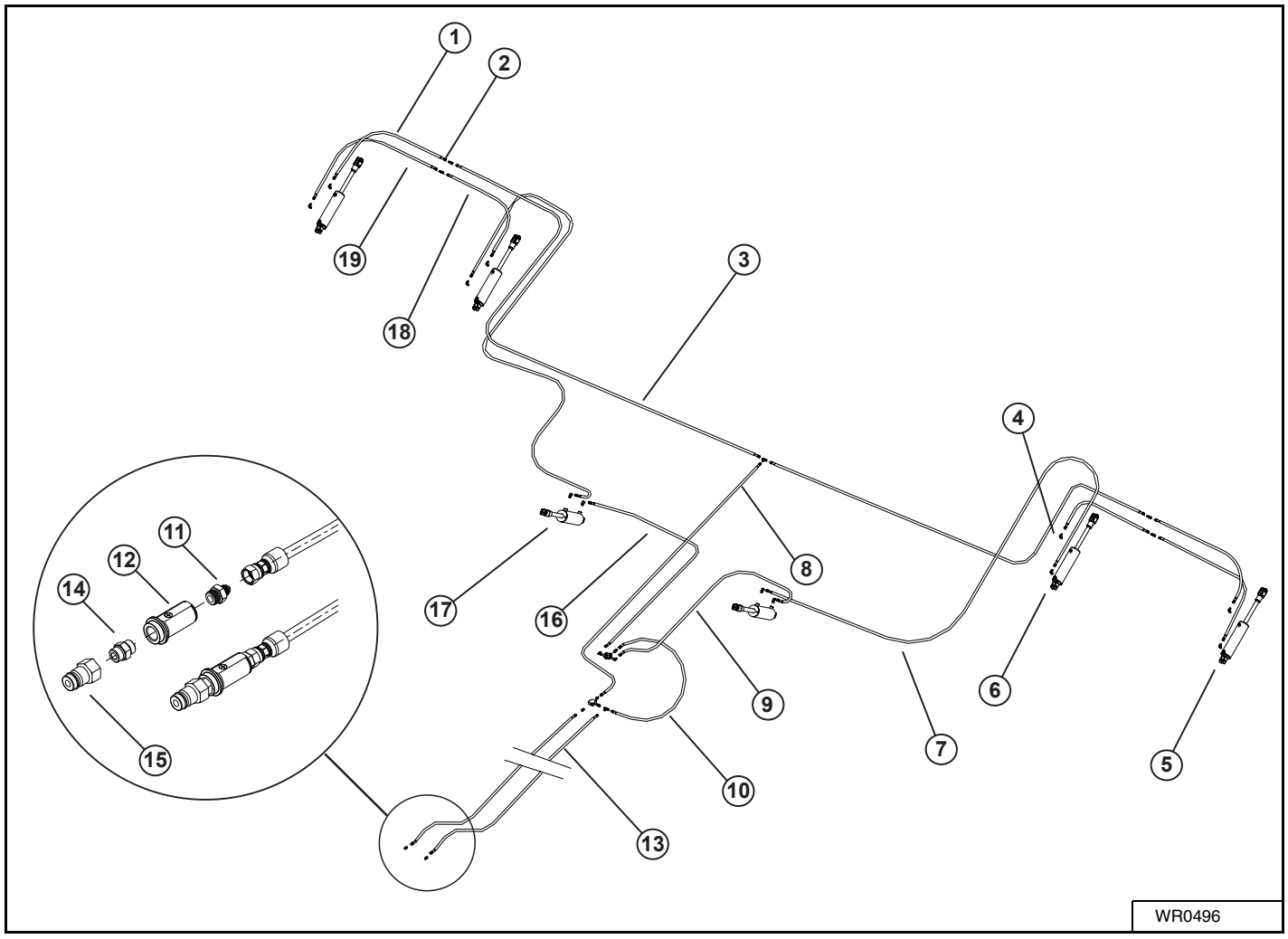
QX² 55 Depth Control Hydraulics



REF.	PART NO.	DESCRIPTION
1	13483	HOSE-HYD: 0.38 X 120 8FJX-8FJX 3KPSI
2	13239	UNION 8MJ X 8MJ
3	247459	HSE 3KPSI 3/8X284 8FJX-8FJX
4	25580	ELB 8MORB X 8MJ
5	220761F2	HYD CYL 4X9.3 ILP TBP FGS A519CY35
6	67688F2	HYD CYL 4X10.8 TBP ILP FGS #A519CY25
7	67576	HOSE-HYD: 0.38 X 276 8FJX-8FJX 3KPSI
8	233250	HOSE-HYD: 0.50 X 080 8FJX-8FJX 3KPSI
9	13265	HOSE-HYD: 0.38 X 056 8FJX-8FJX 3KPSI
10	242448	HOSE-HYD: 0.50 X 030 8FJX-8FJX 3KPSI
11	24024	ADP 8MORB X 8MJ
12	334204	GOLD QD GRIP -8FORB PACK OF 2
13	234940	HSE 3KPSI 1/2X216 8FJX-8FJX
14	334210	-8MORB X -8MORB UNION
15	247425	QUICK COUPLER 8 ORB

Hydraulic Assembly (Cont'd)

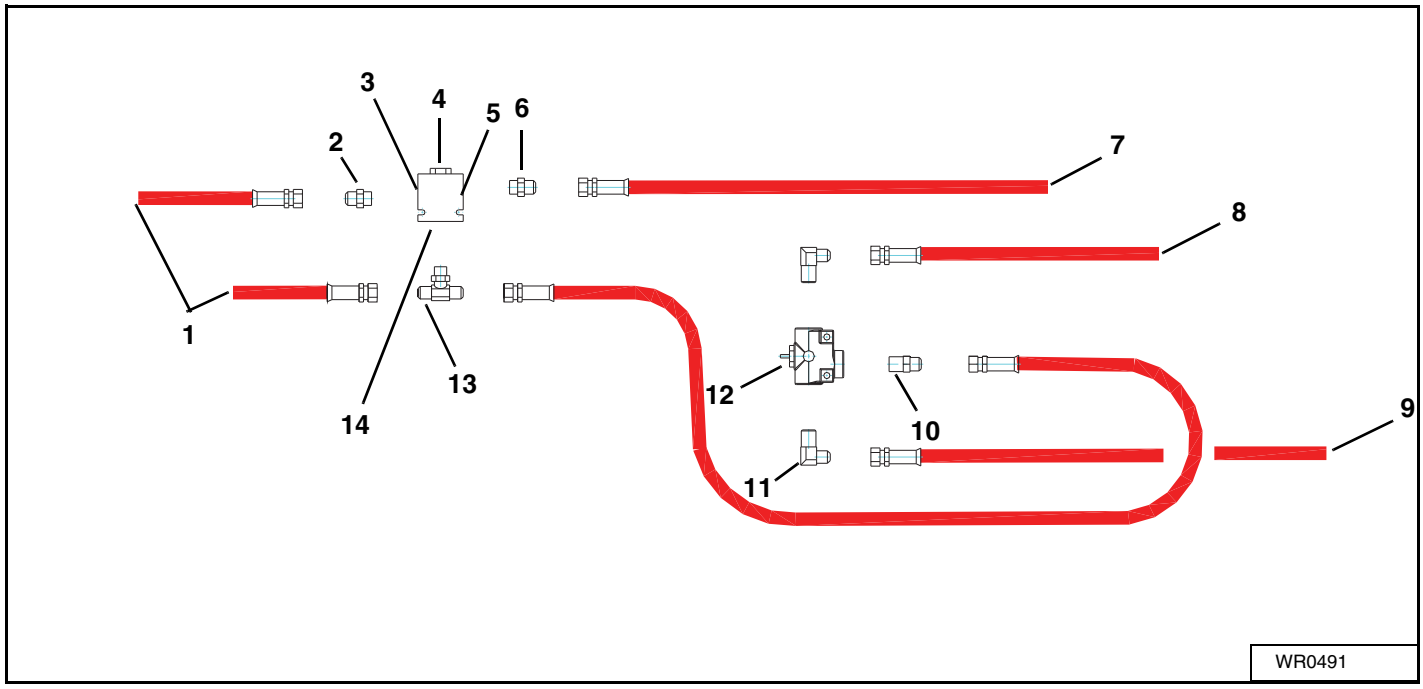
QX² 55 Depth Control Hydraulics (Cont'd)



REF.	PART NO.	DESCRIPTION
16	13484	HOSE-HYD: 0.38 X 156 8FJX-8FJX 3KPSI
17	67683F2	HYD CYL 4X12.56 TBP ILP FGS #A519CY24
18	56539	HOSE-HYD: 0.38 X 050 8FJX-8FJX 3KPSI
19	67634	HOSE-HYD: 0.38 X 132 8FJX-8FJX 3KPSI

Hydraulic Assembly (Cont'd)

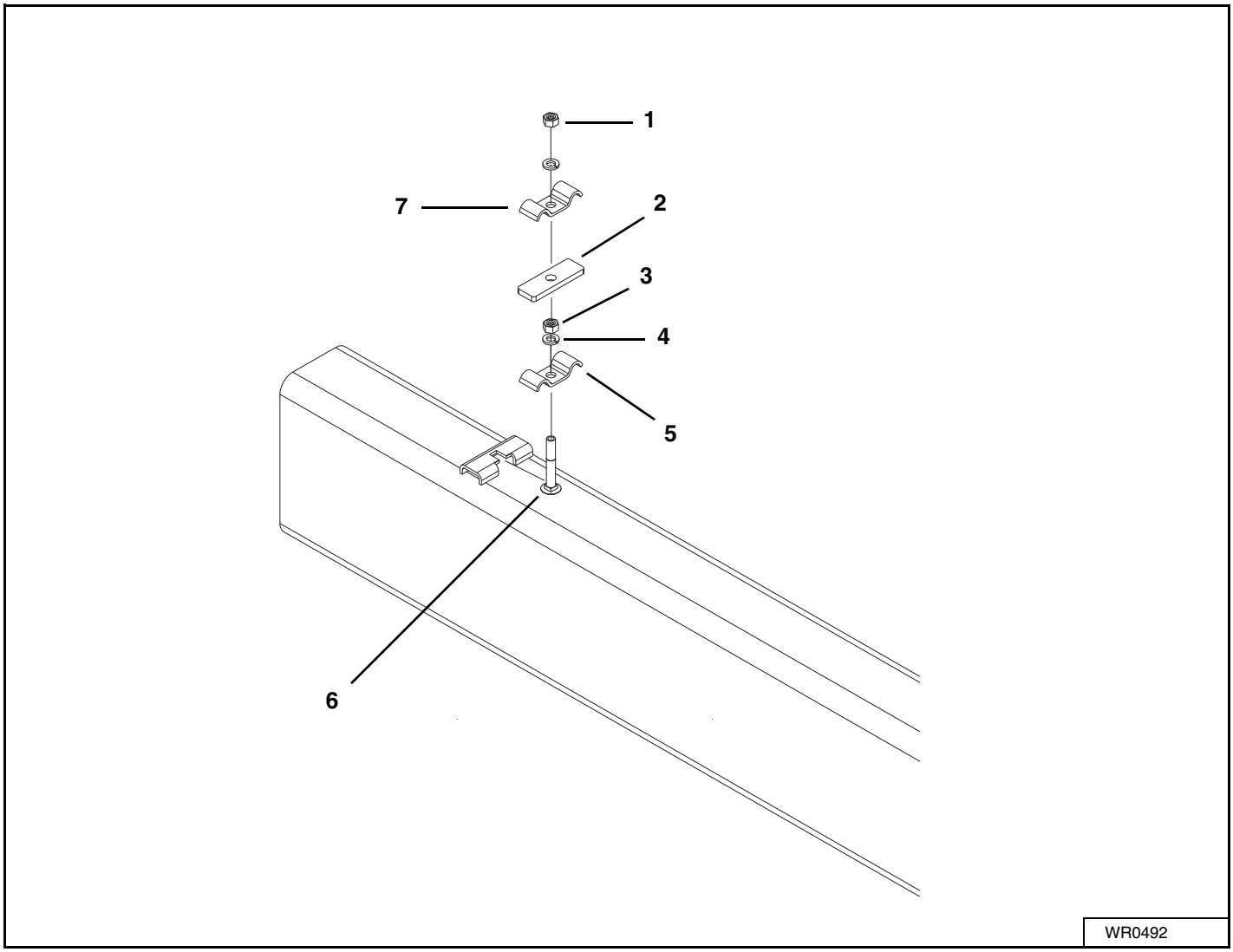
Check Valve With Single Point Valve



REF.	PART NO.	DESCRIPTION
1		TO TRACTOR REMOTES
2	24024	ADP: 8MORB x 8MJ
3		PORT 2
4	241317	CHECK VALVE, Pilot: (PC10-30-8T-NS-270)
5		PORT 3
6	24024	ADP: 8MORB x 8MJ
7		TEE FROM ROD END OF WING LIFT CYLINDER
8		BUTT END OF RIGHT MAIN LIFT CYLINDER
9		BUTT END OF LEFT MAIN LIFT CYLINDER
10	13234	ADP: 8MJ x 8MPT
11	13236	ELB: 8MJ x 8MPT
12	51975	DCV ASSEMBLY
13	56534	TEE: 8MJ x 8MJ x 8MORB
14		PORT 1

Hydraulic Assembly (Cont'd)

Hose Clamp Assembly



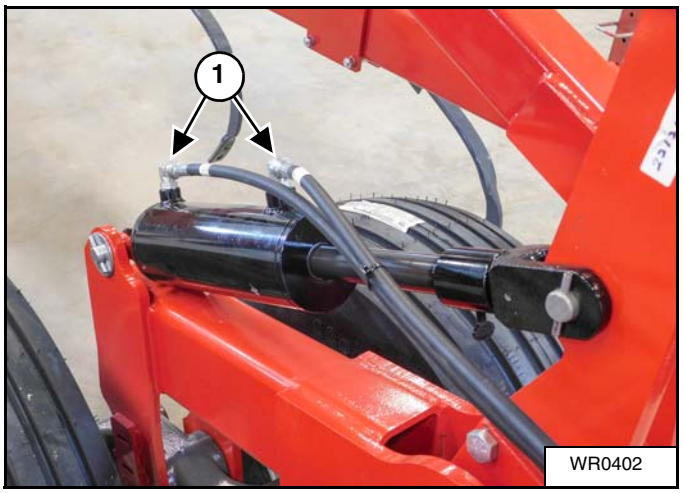
REF.	PART NO.	DESCRIPTION
1	88103	NUT, Hex: 3/8-16NC 5ZP
2	15543	BASE PLATE - ZINC
3	88103	NUT, Hex: 3/8-16NC 5ZP
4	88362	WASHER, Helical: 3/8 ID ZP
5	13215	CLAMP, Tube
6	89375	BOLT, Carriage: 3/8-16NC x 1-1/2 5ZP
7	89373	BOLT, Hex: 1-8NC x 8-1/2 8YZP
8	89475	BOLT, Carriage: 3/8-16NC x 3-1/2 2ZP
9	88362	WASHER, Helical: 3/8 ID ZP

Hydraulic Assembly (Cont'd)

STEP 134

Insert two 25580 8MORB X 8MJ elbow fittings (1) into the depth control cylinders of the outer wings as shown.

Route the hydraulic lines from both cylinders to the back of the outer wing.



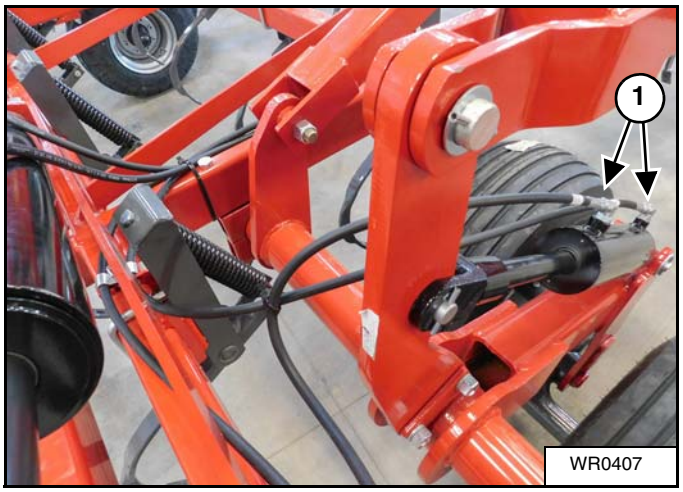
STEP 135

Route the hydraulic lines along the back of the wing to the main frame. Be sure the secure the lines with zip ties and route through the loop (1) on the inner wing hinge.

STEP 136

Insert two 25580 8MRB x 8MJ elbow fittings (1) into the 67688F2 4 x 10 inch depth control cylinders of the inner wing as shown.

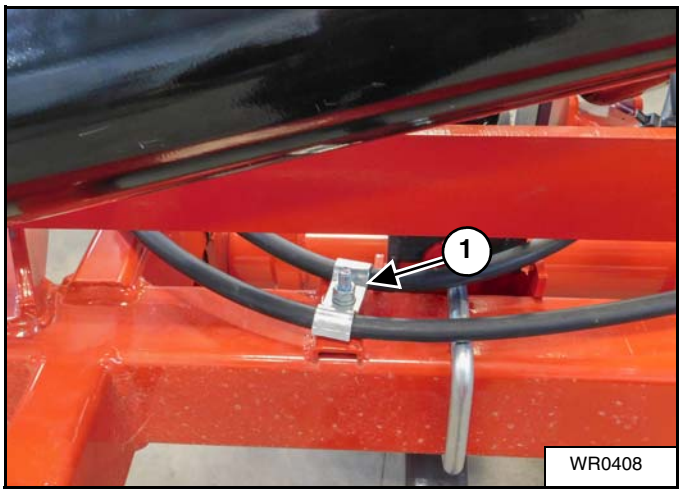
Route one hydraulic line from each depth control cylinder to the back of the inner wing frames.



Hydraulic Assembly (Cont'd)

STEP 137

Install the 13215 clamp (1) for the hydraulic lines from the 67688F2 depth control cylinder on the inner wing to the frame using a 89375 3/8 x 1-1/2 inch carriage grade 5 bolt, 88362 lock washer and 88103 nut.

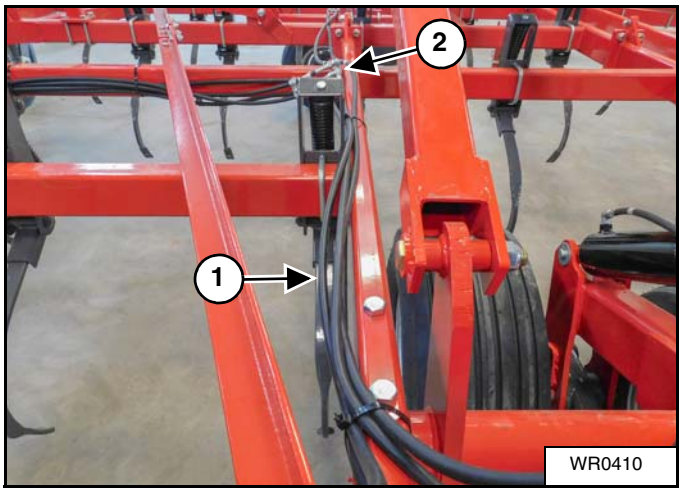


STEP 138

Install a 25580 8MORB x 8MJ elbow fitting (1) into the rod end of the 20966F 5 x 30 inch wing lift cylinder for folding the inner wing as shown.

STEP 139

Route the hydraulic lines (1) from the wing lift cylinder and depth control cylinders along the frame towards the center of the main frame where they will connect to the tee fittings (2).



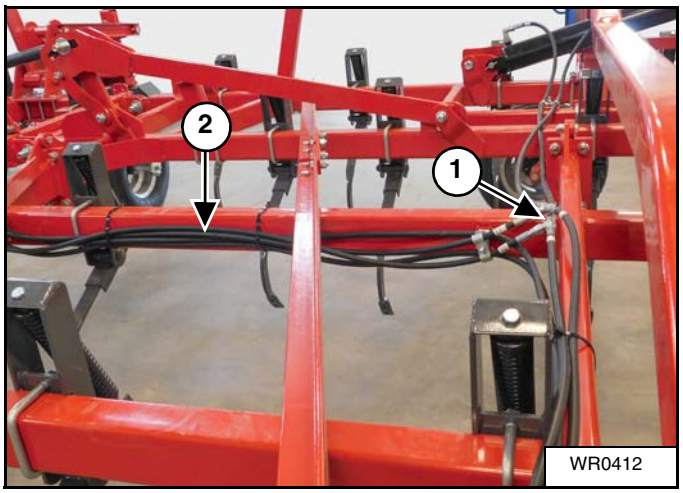
Hydraulic Assembly (Cont'd)

STEP 140

Install the tee fittings (1) on both hydraulic lines from the lift cylinders.

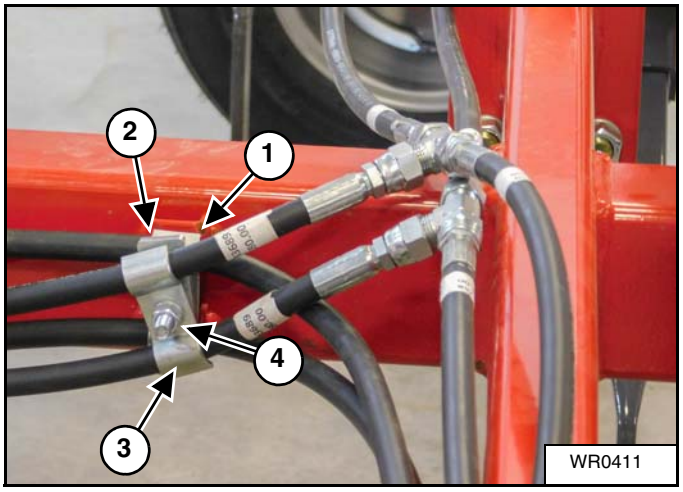
Continue running the depth control lines (2) along the frame towards the main frame.

Attach the two wing lift hydraulic lines to 13238 to tees and route along the depth control lines (2) on the frame.



STEP 141

Secure the depth control lines and then the lift lines using a 89373 3/8 x 2-1/2 inch carriage grade 5 bolt (1), 13215 clamp (2), 88362 lock washer (3) and 88103 nut (4).



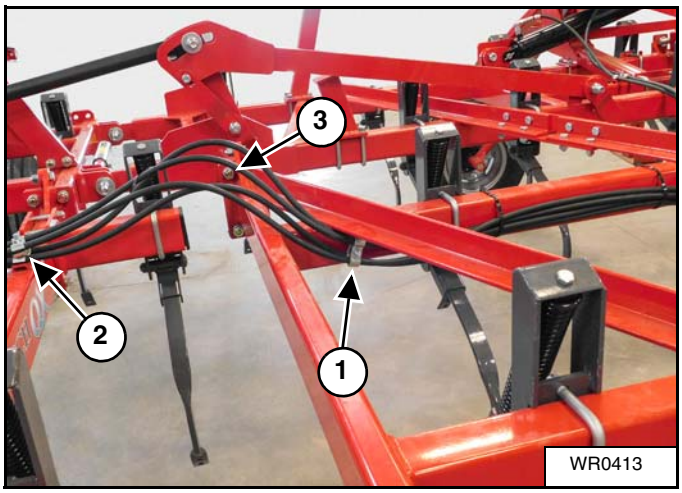
Hydraulic Assembly (Cont'd)

STEP 142

On the inner wing frame secure the depth lines and then the lift lines using a 89473 3/8 x 2-1/2 inch carriage grade 5 bolt, 13215 clamp, 88362 lock washer, 88103 nut, 15543 base plate, a second 13215 clamp, 88362 lock washer and 88103 nut (1).

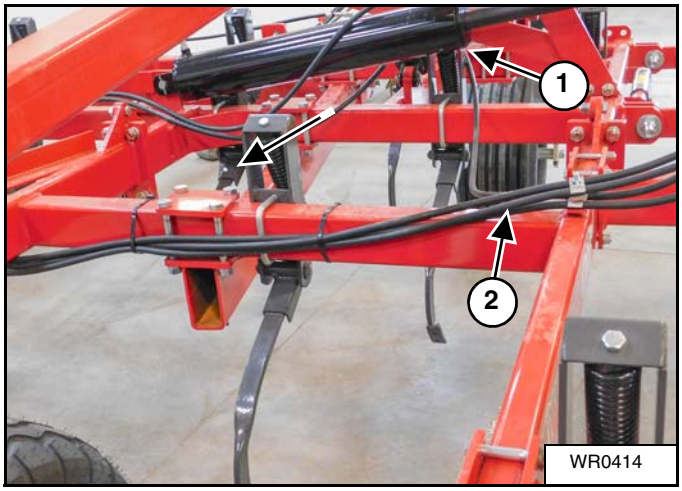
After crossing from the inner wing frame to the main frame secure the depth lines and then the lift lines using a 89473 3/8 x 2-1/2 inch carriage bolt, 13215 clamp, 88362 lock washer, 88103 nut, 15543 base plate, 13215 clamp, 88362 lock washer and 88103 nut (2) as done in Step 122.

IMPORTANT: Be sure to leave approximately 30 inches (91.4 cm) of hose (3) between clamps on the inner wing (1) and the main frame (2).



STEP 143

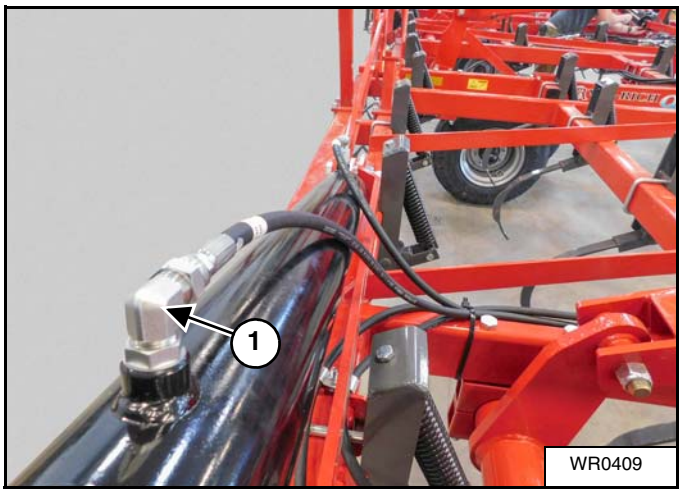
Install one line (1) on the depth control cylinder of the main frame and route the remaining three lines along the main frame (2).



Hydraulic Assembly (Cont'd)

STEP 144

Insert a 25580 8MORB x 8MJ elbow fitting (1) into the rod end port of the wing folding cylinder as shown.

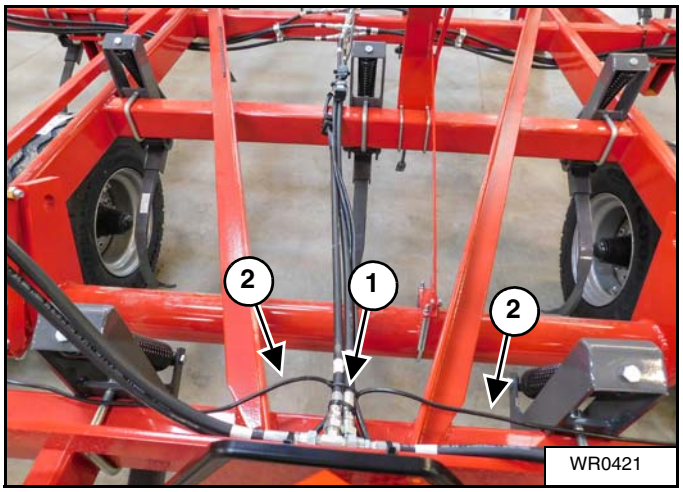


STEP 145

Route the hydraulic lines of the wing lift cylinder looping slightly to the 13238 8MJ tee (1) that connects the two wing fold hydraulics at the center point of the main frame.

STEP 146

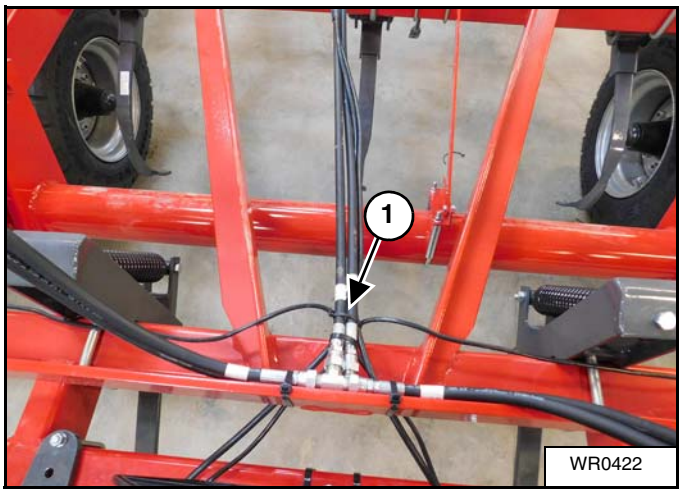
Connect both wing lift hydraulics to the 13238 tee (1) in the center of the main frame. Connect the hoses to the tee along with the wire harnesses (2) from both sets of markers. Run the hoses and harnesses towards the front of the frame as shown.



Hydraulic Assembly (Cont'd)

STEP 147

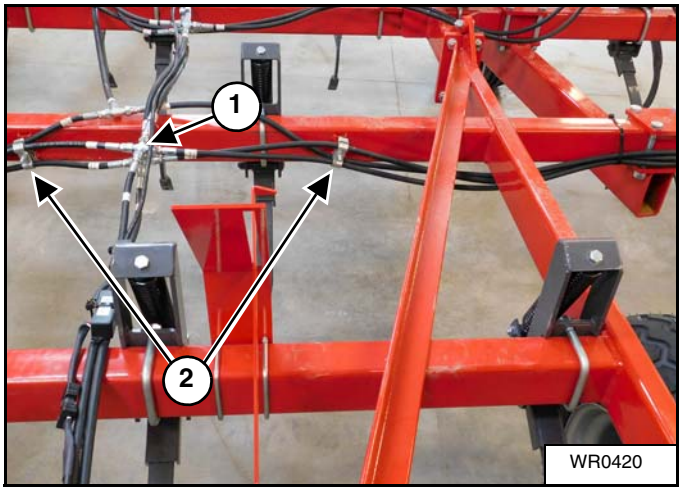
Use clamps and cable ties (1) to secure the hoses and wiring harnesses as needed.



STEP 148

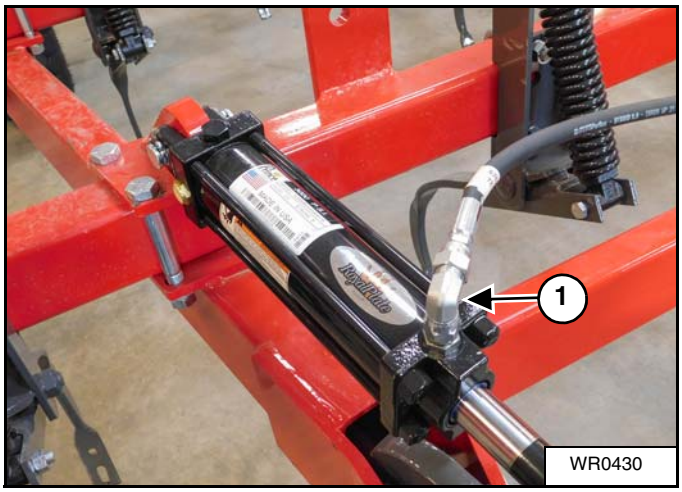
Connect the hoses running from the rear of the main frame and each other wing with 4-way tee fittings (1).

On the right and left sides of the 4-way fittings clamp the lines to the main frame using a 89473 3/8 x 2-1/2 inch bolt, 13215 clamp, 88362 lock washer, 88103 nut, 15543 base plate, 13215 clamp, 88362 lock washer and 88103 nut (2).



STEP 149

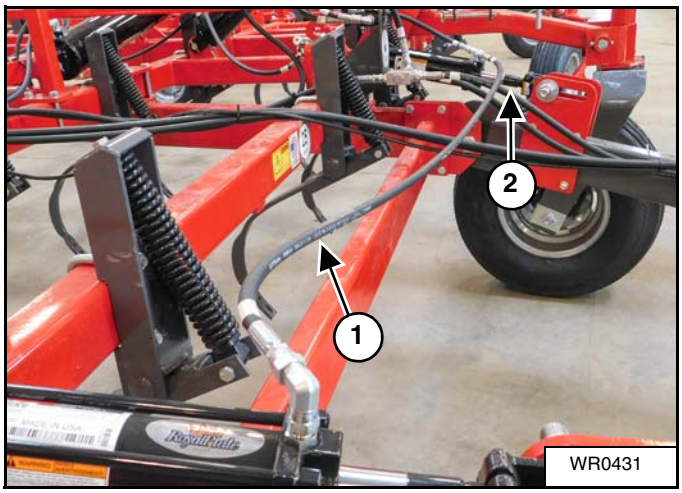
Install a 25580 8MORB x 8 MJ elbow fitting (1) in the single point cylinder in the direction shown.



Hydraulic Assembly (Cont'd)

STEP 150

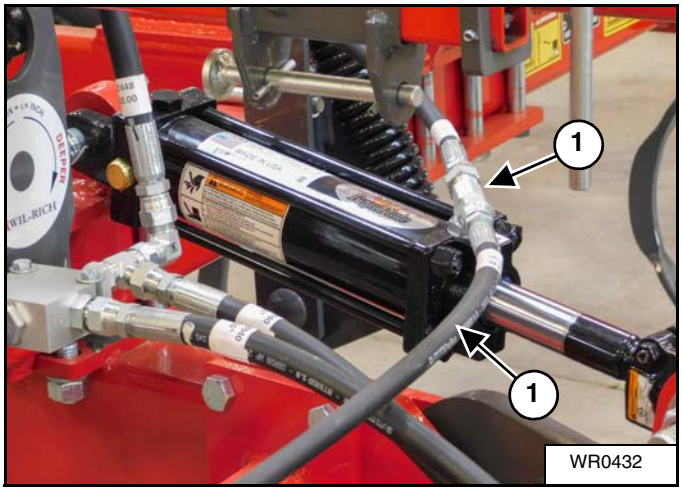
Connect and route the hydraulic hose (1) from the single point cylinder to the other single point cylinder (2).



STEP 151

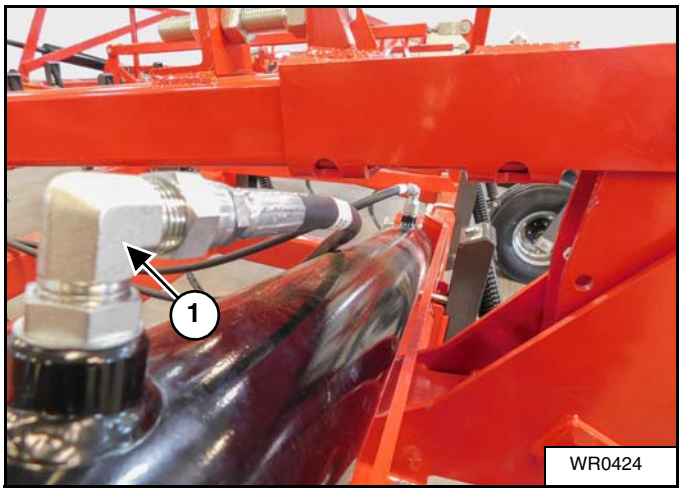
Install a 3-way tee (1) into the single point hydraulic cylinder positioned as shown.

Connect the hose (2) from Step 150 to one port of the 3-way tee (1).



STEP 152

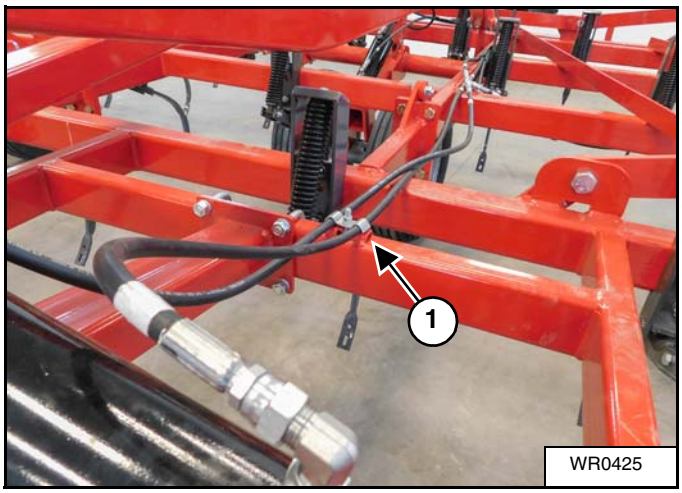
Insert an 25580 8MORB x 8MJ elbow fitting (1) in the rod end port of the outer wing cylinder as shown.



Hydraulic Assembly (Cont'd)

STEP 153

Route the hydraulic lines towards the rear of the frame. Secure the hydraulic lines with a 89375 3/8 x 1-1/2 inch carriage grade 5 bolt, 13215 clamp, 88362 lock washer, and 88103 nut (1).

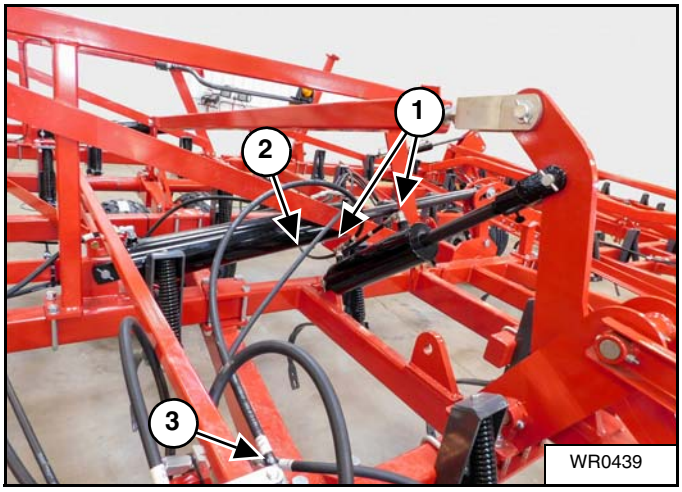


STEP 154

Insert two 25580 8MORB x 8MJ elbow fittings (1) into the depth control cylinder of the main frame as shown.

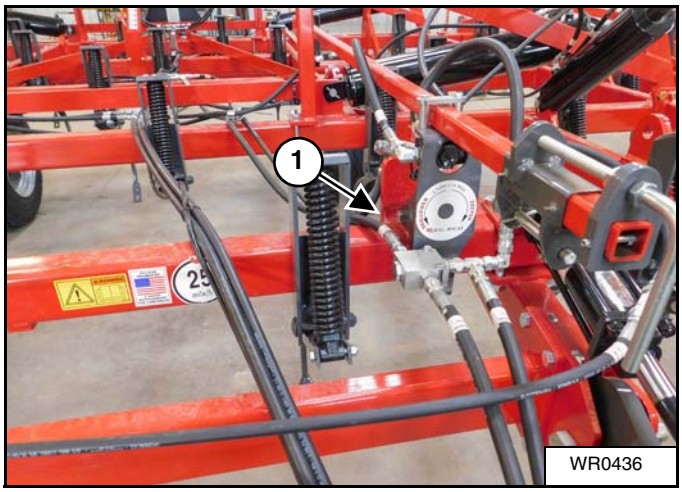
Run the upper line back to the center of the frame connecting to a 3-way tee (2).

Run the lower line to the single point valve.



STEP 155

Follow the diagram (on Page 48) for connecting the hose to the single point valve (1).



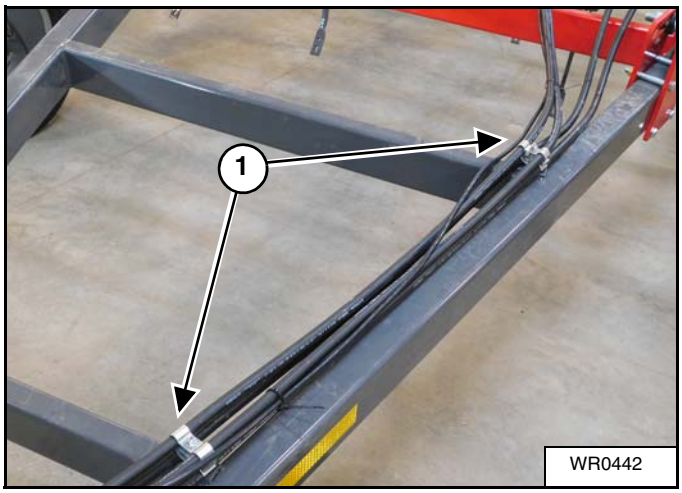
Hydraulic Assembly (Cont'd)

STEP 156

Route all the hydraulic lines along the hitch frame towards the hitch.

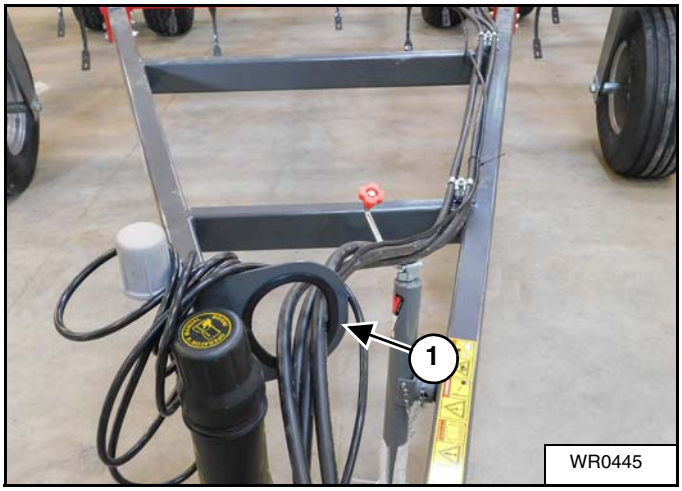
Use a 89473 3/8 x 2-1/2 inch carriage grade 5 bolt, 13215 clamp, 88362 lock washer, 88103 nut, 15543 plate, 13215 clamp, 88362 lock washer and 88103 nut (1) to secure the hoses to the frame.

NOTE: Secure any loose hoses with cable ties as needed.



STEP 157

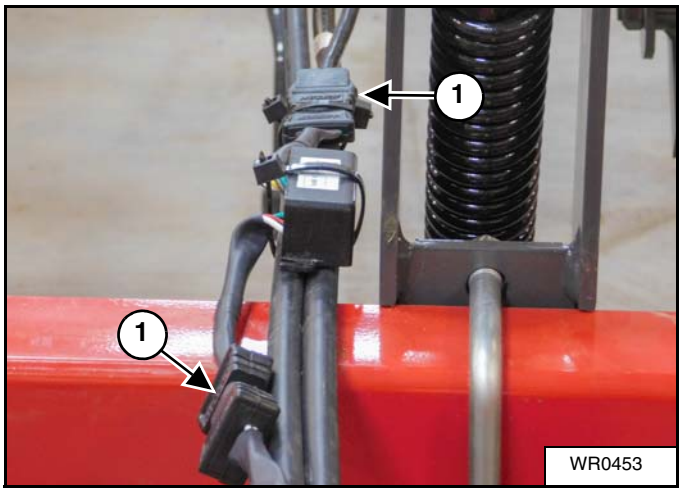
Run the hydraulic lines through the opening (1) in the hose holder as shown.



STEP 158

Connect the wiring harnesses (1) as shown.

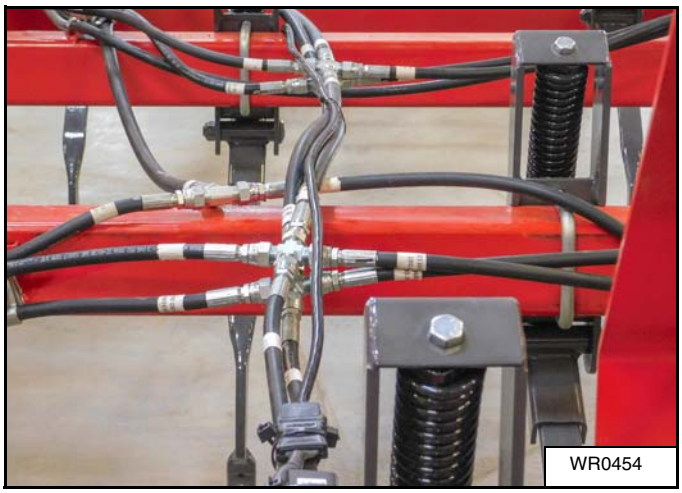
NOTE: Use cable ties to secure the harness to the hydraulic hoses running to the hitch.



Hydraulic Assembly (Cont'd)

STEP 159

Be sure to keep electrical wire harness straight as it is routed to the hitch, securing it with cable ties to the hydraulic lines.

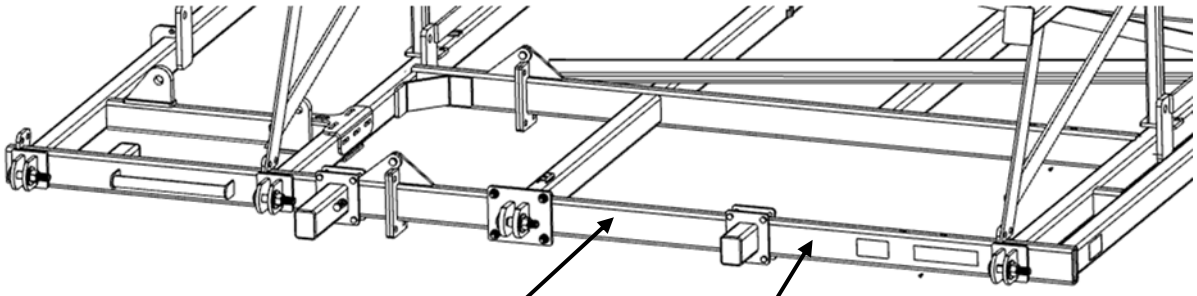


STEP 160

Use two large cable ties to secure the relief valve (1) to the frame bracket.

Branding Decal Layout For 5-Section QX2

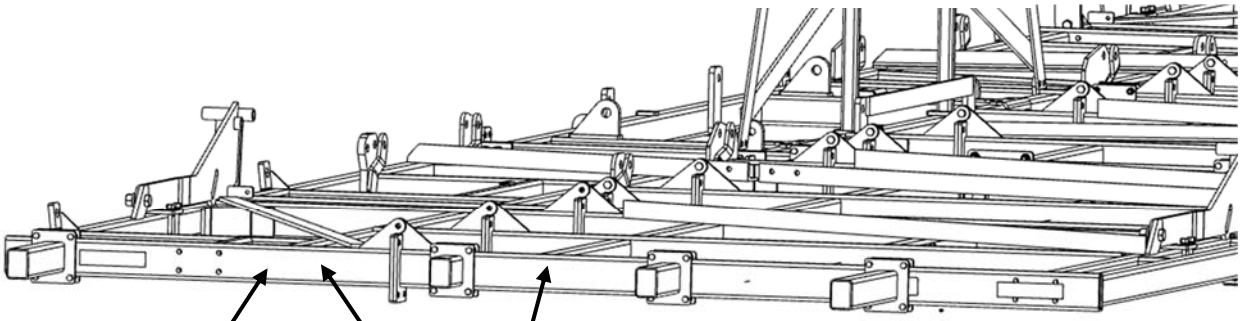
Mainframe Edge. Front of Machine at left of Image.



64404

242815

Outer Wing Edge. Front of Machine at left of Image.



64404

242815

If the QX2 decal fits please place it next to the Wil-Rich Decal. If not place in between the second and third stubs.

Bleeding air from the hydraulic lift system

Before starting the procedure

WARNING:
Leaking fluid under pressure can enter the skin causing serious injury. Release pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Wear correct hand and correct eye protection when looking for leaks. Use a piece of cardboard or paper instead of your hand. Any fluid injected into the skin can cause gangrene. The fluid must be removed by a doctor familiar with this type of injury.

WARNING:
Be careful of sweeps or blades when folded to prevent serious injury. Never keep the machine with the wings in the folded position.

To bleed the air from the hydraulic lift system, connect the machine to a tractor that is the correct size to operate the machine. See the information for minimum tow vehicle weight.

Completely bleed the hydraulic system of air when:

The lift system is filled with hydraulic oil for the first time.

Air has entered the hydraulic system through a leak or through repair of the hydraulic system.

Procedure

1. Park the machine on a flat, level surface that is large enough for the machine when unfolded.
2. Set the tractor hydraulic flow to less than 75.7 L/min (20 gal/min).

   IMPORTANT: *If the hydraulic flow is set to more than 75.7 L/min (20 gal/min) the hydraulics will not operate correctly.*
3. Connect the lift system hoses to the tractor.
4. Make sure the tractor reservoir is full of the hydraulic oil required by the manufacturer.

   IMPORTANT: *Do not loosen any hydraulic fittings to bleed air from the system.*
5. Raise the machine. Continue to hold the tractor lever to let oil bypass and fill each wing lift cylinder.
6. Engage the hydraulics to remove any hydraulic transport locks if equipped.
7. Stop the engine, apply the parking brake and take the key with you.
8. Remove the transport locks when all lift cylinders are fully extended.
9. Lower the unit.

   Make sure the cylinders move at the same time through the cycle.
10. Hold the hydraulic lever with the cylinders fully extended.
11. If the cylinders are not operating together, cycle the cylinders to remove the remaining air.

    IMPORTANT: *Do not loosen any hydraulic fittings to bleed air from the system.*
12. Stop the engine, apply the parking brake, and take the key with you.
13. Check the tractor hydraulic oil reservoir to make sure the hydraulic oil is still within operating limits.
14. Make sure all lift cylinders are operating together before starting any field operation.
15. Fully raise the machine when making turns during field operation.

    This will make sure that the cylinders are operating together and keep the machine level during operation.

3.2 Bleeding air from the hydraulic fold system

Before starting the procedure

WARNING:
Leaking fluid under pressure can enter the skin causing serious injury. Release pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Wear correct hand and correct eye protection when looking for leaks. Use a piece of cardboard or paper instead of your hand. Any fluid injected into the skin can cause gangrene. The fluid must be removed by a doctor familiar with this type of injury.

WARNING:
Be careful of sweeps or blades when folded to prevent serious injury. Never keep the machine with the wings in the folded position.

IMPORTANT: *Do not fold or unfold the fold system before bleeding air from the fold system.*

To bleed the air from the hydraulic fold system, connect the machine to a tractor that is the correct size to operate the machine. See the information for minimum tow vehicle weight.

Completely bleed the hydraulic system of air when:

The fold system is filled with hydraulic oil for the first time.

Air has entered the hydraulic system through a leak or through repair of the hydraulic system.

Procedure

1. Set the tractor hydraulic flow to less than 75.7 L/min (20 gal/min).

   IMPORTANT: *If the hydraulic flow is set to more than 75.7 L/min (20 gal/min), the hydraulics will not operate correctly.*

   NOTE: *Restrictors are installed in the fold cylinders to prevent falling of the wings. Never remove the restrictors, or the machine will not fold correctly.*
2. Stop the engine, apply the parking brake, and take the key with you.
3. Connect the fold system hoses to the tractor.
4. Make sure the tractor reservoir is full of the hydraulic oil required by the manufacturer.

   IMPORTANT: *Do not loosen any hydraulic fittings to bleed air from the system.*
5. Remove the pins from the rod ends of the fold cylinders.
6. Make sure the rod ends of the fold cylinders will not come into contact with any obstructions.
   If a blockage is present, lift the rod ends of the fold cylinders.
7. Use the remote lever in the tractor to fully extend and retract the fold cylinders.
   Extend and retract multiple times.
8. If the fold cylinders are not operating together, cycle the fold cylinders to remove the remaining air.

   IMPORTANT: *Do not loosen any hydraulic fittings to bleed air from the system.*
9. Stop the engine, apply the parking brake, and take the key with you.
10. Check the tractor hydraulic oil reservoir to make sure the hydraulic oil reservoir is still within operating limits.
11. Connect the rod ends of the fold cylinders to the machine.
12. Find an area large enough for the machine when unfolded.
13. Park the machine on a solid, level surface. Stop the engine, apply the parking brake, and take the key with you.
14. With the tractor at a low idle, slowly engage the hydraulics to fold and unfold the machine.
15. Fully extend the fold cylinders to let the wings flex freely.