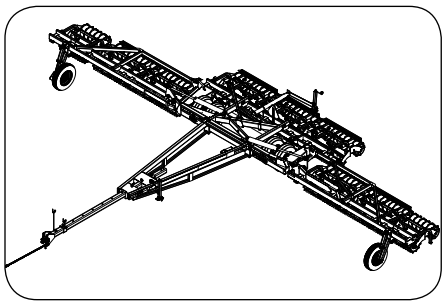


Seedbed Tillage

CROSS-FOLD ROLLING HARROW®
1645/1645D

Soil Conditioner
39-45 Ft. Models

Beginning With Serial Number A62280100

Part No. 75714

Foreword

This symbol identifies important safety messages. When you see it, read the message that follows and be alert to the possibility of personal injury.

Remember, safety instructions stated in this manual are for your protection. Read them carefully and follow them closely when working around or using this machine.

Read and study this manual completely before attempting to operate this implement. Take this manual to the field for handy reference when operating, adjusting, or servicing your machine.

When referenced, “Right-Hand” (RH) and “Left-Hand” (LH) side of the machine are determined by standing behind the machine and facing in the direction of travel.

Product Information

When ordering parts or when requesting further information or assistance, always give the following information:

- Model number
- Serial number

All products manufactured by Unverferth Mfg. Co., Inc. are warranted to be free from material and workmanship defects for one full year from time of consumer delivery. Your local dealer will gladly assist you with any warranty questions.

Please fill out and retain this portion for your records. The serial number plate is located on the inside of the main frame near the hinge area (FIG. 1).

Purchase Date _____ Model _____Serial No._____

Dealer _____ City _____

Dealer Contact _____ Phone _____

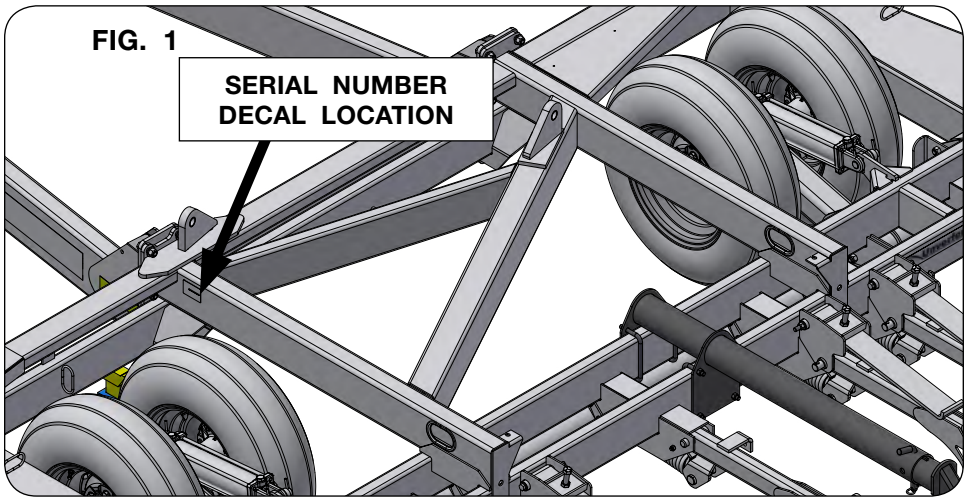


FIG. 1

IMPORTANT

The information, specifications, and illustrations in the manual are on the basis of information available at the time it was written. Due to continuing improvements in the design and manufacture of Unverferth products, all specifications and information contained herein are subject to change without notice.

Table of Contents

SECTION I
Safety

Table of Contents

SECTION II
Set Up

Table of Contents

SECTION III
Operation

Table of Contents

SECTION IV
Maintenance

SECTION V
Parts

Notes

SECTION I
Safety

General Hazard Information

No accident-prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the equipment.

A large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the field, or in the industrial plant, can be safer than the person who is at the controls. If accidents are to be prevented--and they can be prevented--it will be done by the operators who accept the full measure of their responsibility.

It is true that the designer, the manufacturer, and the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that, “the best kind of a safety device is a careful operator.” We, at Unverferth Mfg. Co., Inc. ask that you be that kind of operator.

REMEMBER:

THINK SAFETY

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT!

SIGNAL WORDS

DANGER

INDICATES AN EXTREMELY HAZARDOUS SITUATION OR ACTION THAT WILL RESULT IN SERIOUS INJURY OR DEATH.

WARNING

INDICATES A HAZARDOUS SITUATION OR ACTION THAT COULD RESULT IN SERIOUS INJURY OR DEATH.

CAUTION

INDICATES AN UNSAFE SITUATION OR ACTION THAT MAY RESULT IN PERSONAL INJURY.

IMPORTANT

Is used for instruction on operating, adjusting, or servicing a machine.

Safety Decals

PART NUMBER 901891

PART NUMBER 97575

PART NUMBER 95136

PART NUMBER 97961

PART NUMBER 95445

PART NUMBER 95605

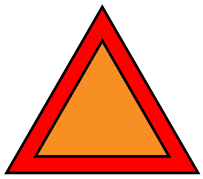
PART NUMBER 94094

PART NUMBER 98229

Part #9003126
Red Reflector

Part #9003127
Amber Reflector

Part #9003125
Fluorescent Reflector



PART NO. 9829
SMV Emblem

Following Safety Instructions

- Read and understand this operator's manual before operating.

- All machinery should be operated only by trained and authorized personnel.
- To prevent machine damage, use only attachments and service parts approved by the manufacturer.
- Always shut tractor engine off and remove key before servicing.

- Avoid personal attire such as loose fitting clothing, shoestrings, drawstrings, pants cuffs, long hair, etc., that may become entangled in moving parts.
- Do not allow anyone to ride on the implement. Make sure everyone is clear before operating machine or towing vehicle.

- Never attempt to operate implement unless you are in driver's seat.

Before Servicing Or Operating

- Avoid working under an implement; however, if it becomes absolutely unavoidable, make sure the implement is safely blocked.

- Ensure that all applicable safety decals are installed and legible.
- When working around the implement, be careful not to be cut by sharp edges.
- Explosive separation of a tire and rim can cause serious injury or death. Only properly trained personnel should attempt to service a tire and wheel assembly.
- Do not stand between towing vehicle and implement during hitching.
- Verify that all safety shields are in place and properly secured.

During Operation

- Regulate speed to working conditions. Maintain complete control at all times.
- Never service or lubricate equipment when in operation.
- Keep away from overhead power lines. Electrical shock can cause serious injury or death.
- Use extreme care when operating close to ditches, fences, or on hillsides.
- Do not leave towing vehicle unattended with engine running.

Before Transporting

- Secure transport chains to towing vehicle before transporting. DO NOT transport without chains.
- Install transport locks before transporting.
- Check for proper function of all available transport lights. Make sure that all reflectors are clean and in place on the machine. Make sure the SMV emblem and SIS decal are visible to approaching traffic

During Transport

- Comply with all laws governing highway safety when moving machinery.
- Use transport lights as required by all laws to adequately warn operators of other vehicles.
- Regulate speed to road conditions and maintain complete control.
- Maximum transport speed of this implement should never exceed 20 mph as indicated on the machine. Maximum transport speed of any combination of implements must not exceed the lowest specified speed of the implements in combination. Do not exceed 10 mph during off-highway travel.
- Slow down before making sharp turns to avoid tipping. Drive slowly over rough ground and side slopes.
- It is probable that this implement is taller, wider, and longer than the towing vehicle. Become aware of and avoid all obstacles and hazards in the travel path of the equipment, such as power lines, ditches, etc.

Pressurized Oil

- Relieve the hydraulic system of all pressure before adjusting or servicing. See hydraulic power unit manual for procedure to relieve pressure.
- High-pressure fluids can penetrate the skin and cause serious injury or death. Leaks of high-pressure fluids may not be visible. Use cardboard or wood to detect leaks in the hydraulic system. Seek medical treatment immediately if injured by high-pressure fluids.

- Hydraulic system must be purged of air before operating to prevent serious injury or death.
- Do not bend or strike high-pressure lines. Do not install bent or damaged tubes or hoses.
- Repair all oil leaks. Leaks can cause fires, personal injury, and environmental damage.
- Route hoses and lines carefully to prevent premature failure due to kinking and rubbing against other parts. Make sure that all clamps, guards and shields are installed correctly.
- Check hydraulic hoses and tubes carefully. Replace components as necessary if any of the following conditions are found:
  - End fittings damaged, displaced, or leaking.
  - Outer covering chafed/cut or wire reinforcing exposed.
  - Outer covering ballooning locally.
  - Evidence of kinking or crushing of the flexible part of a hose.

Preparing for Emergencies

- Keep a first aid kit and properly rated fire extinguisher nearby.


- Keep emergency numbers for fire, rescue, and poison control personnel near the phone.

Wearing Protective Equipment

- Wear clothing and personal protective equipment appropriate for the job.


- Wear steel-toed shoes when operating.

- Wear hearing protection when exposed to loud noises.

- Do not wear additional hearing impairing devices such as radio headphones, etc

Notes

SECTION II
Set Up

General Set Up Information

This section contains all of the instructions required for the complete assembly of the entire Rolling Harrow implement.

For your safety, and the safety of others, use proper tools and equipment and always use safe working procedures. Refer to these instructions before starting any work on your machine.

IMPORTANT

- *The procedures for assembling this unit were intended for two or more people.*

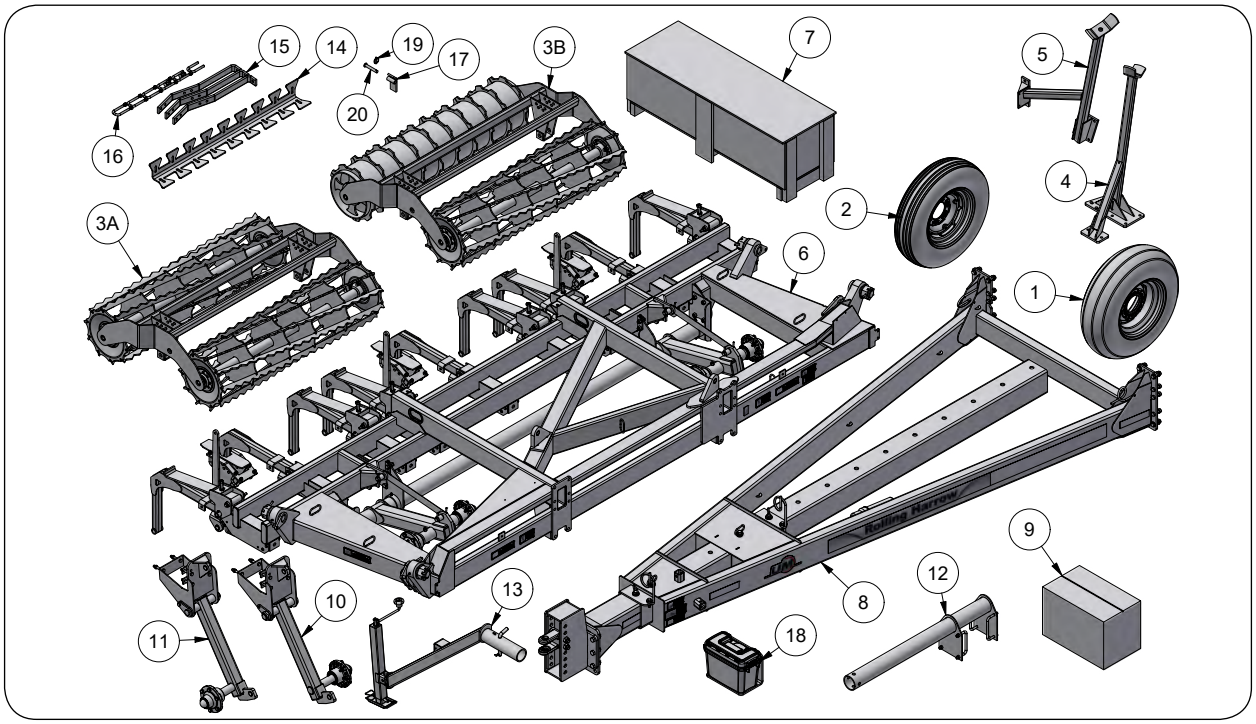
For ease of assembly, install all hardware loosely until assembly is complete and then tighten according to "Torque Chart" unless otherwise specified.

⚠ WARNING

- **READ AND UNDERSTAND SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW THE SAFETY SECTION IN THIS MANUAL, IF NECESSARY.**
- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**
- **MOVING PARTS CAN CRUSH AND CUT. KEEP AWAY FROM MOVING PARTS.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 3,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING THE IMPLEMENT.**
- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. LEAKS OF HIGH-PRESSURE FLUIDS MAY NOT BE VISIBLE. USE CARD-BOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

Rolling Harrow - 15' Base Shipping Bundles

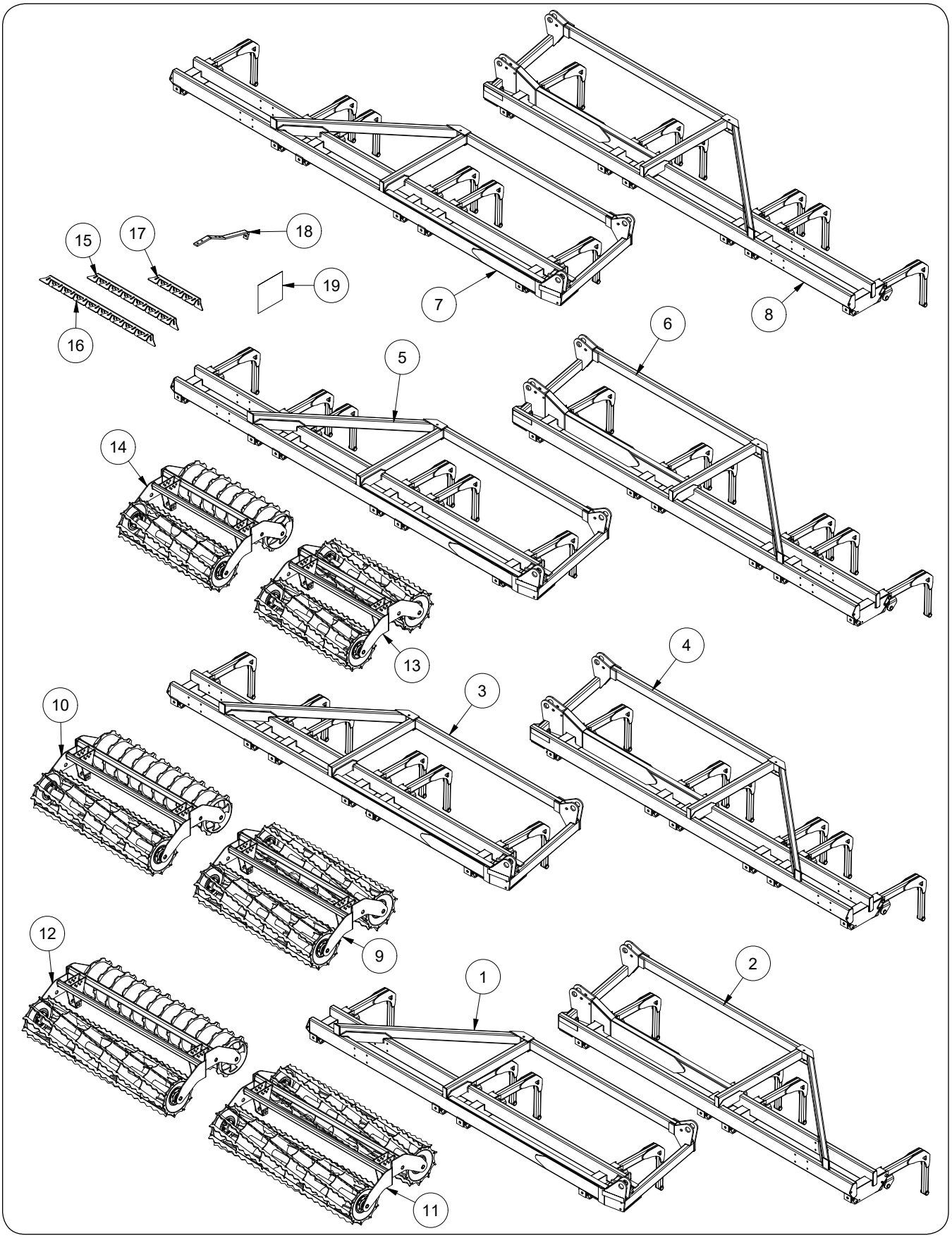
Depending on the model you ordered, you should have received the following bundles:



ITEM	PART NO.		DESCRIPTION	QTY
	MODEL 1645	MODEL 1645D		
1	60911	60911	Mounted Tire & Wheel W815-6-08 TL9.5LB15 8-Ply (Off White)	4
	60911SM	60911SM	Mounted Tire & Wheel W815-6-08 TL9.5LB15 8-Ply (Silver Mist)	
2	81145	81145	Mounted Tire & Wheel W615-6 TL7.6B15 8-Ply (Off White)	2
	81145SM	81145SM	Mounted Tire & Wheel W615-6 TL7.6B15 8-Ply (Silver Mist)	
3A	77085B	-	Roller Basket 5 Ft. Assembly (Basket Roller)	3
3B	-	77089B	Roller Basket 5 Ft. Assembly (Drum Roller)	
4	79249B	79249B	Wing Stand LH Weldment	1
5	87887B	87887B	Wing Stand RH Weldment	1
6	700315G	700315G	Main Frame Assembly (Green)	1
	700315R	700315R	Main Frame Assembly (Red)	
7	75859B	75859B	Parts Box/Crate	1
8	78572G	78572G	Cross Fold Hitch Assembly (Green)	1
	78572R	78572R	Cross Fold Hitch Assembly (Red)	
9	89110B	89110B	Light Transport Kit	1
10	76819B	76819B	Lift Wheel LH Assembly	1
11	76818B	76818B	Lift Wheel RH Assembly	1
12	75897G	75897G	Jack Mount Weldment (Green)	1
	75897R	75897R	Jack Mount Weldment (Red)	
13	87755B	87755B	Jack Stand Assembly (Black)	1
14	-	76970B	Drum Scraper 52" For 5 Ft. Drum Scraper	3
15	-	75564B	Drum Scraper Bar Mount	9
16	-	75687	Hardware Bag For 5 Ft. Drum Scraper	3
17	-	77042B	Pin-Up Bushing	6
18	-	77401B	Toolbox / Storage Box	1
19	-	9093	Klik Pin	6
20	-	91523	Clevis Pin	6

NOTE: Refer to PARTS section for complete parts breakdown.

Rolling Harrow - 15’ Base 12’-15’ Wing Shipping Bundles



Rolling Harrow - 15' Base 12'-15' Wing Shipping Bundles

ITEM	PART NO.	DESCRIPTION	WING QTY.			
			12' WINGS	13' WINGS	14' WINGS	15' WINGS
1	700270G	Wing 12' RH Asy =Green=	1	-	-	-
	700270R	Wing 12' RH Asy =Red=				
2	700269G	Wing 12' LH Asy =Green=	1	-	-	-
	700269R	Wing 12' LH Asy =Red=				
3	700282G	Wing 13' RH Asy =Green=	-	1	-	-
	700282R	Wing 13' RH Asy =Red=				
4	700281G	Wing 13' LH Asy =Green=	-	1	-	-
	700281R	Wing 13' LH Asy =Red=				
5	700284G	Wing 14' RH Asy =Green=	-	-	1	-
	700284R	Wing 14' RH Asy =Red=				
6	700283G	Wing 14' LH Asy =Green=	-	-	1	-
	700283R	Wing 14' LH Asy =Red=				
7	700285G	Wing 15' RH Asy =Green=	-	-	-	1
	700285R	Wing 15' RH Asy =Red=				
8	700286G	Wing 15' LH Asy =Green=	-	-	-	1
	700286R	Wing 15' LH Asy =Red=				
9	77085B	Basket & Frame 5' Asy (Model 1645)	-	2	4	6
10	77089B	Basket/Drum & Frame 5' Asy (Model 1645D)				
11	77086B	Basket & Frame 6' Asy (Model 1645)	4	-	-	-
12	77090B	Basket/Drum & Frame 6' Asy (Model 1645D)				
13	77084B	Basket & Frame 4' Asy (Model 1645)	-	4	2	-
14	77088B	Basket/Drum & Frame 4' Asy (Model 1645D)				
15	76969B	Drum Scraper 40" For 4 Ft. Drum Scraper	4	4	2	-
16	76970B	Drum Scraper 52" For 5 Ft. Drum Scraper	-	2	4	6
17	76971B	Drum Scraper 22" For 6 Ft. Drum Scraper	4	-	-	-
18	75564B	Drum Scraper Bar Mount	16	14	16	18
19	75688	Hardware Bag For 3 Ft. & 4 Ft. Drum Scraper	8	4	2	-
	75687	Hardware Bag For 5 Ft. Drum Scraper	-	2	4	6

NOTE: Refer to PARTS section for complete parts breakdown.

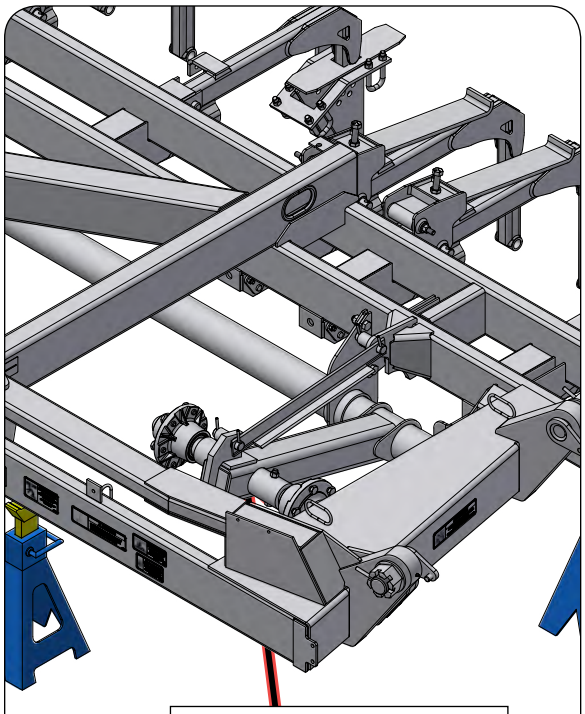
Shipping Bundles & Accessories (Optional)

PART NO.	DESCRIPTION	NOTES
91240	Lock/Check Valve	Connecting Rolling Harrow to lead machine that uses rephase hydraulics
87922	Dual Hydraulic Kit	
76531G	Offset Tongue 39-45' =Green=	In-Lieu of Standard Tongue
76531R	Offset Tongue 39-45' =Red=	
73393	Electric Control Option	For Offset Tongue

Main Frame/Tire & Wheel

1. Using a safe lifting device and supports rated at a minimum of 2,500 lbs.,lift main frame assembly (700315G or 700315R) onto stands rated at a minimum of 1,250 lbs. each.

2. Raise the front of machine until shipping strap, spacers and pins can be removed from the main frame assembly and rockshaft (FIG. 2-1).



Remove pins, spacers, and shipping straps.

FIG. 2-1

3. Open the parts box/crate (75859B) and locate the two 3" x 12" hydraulic cylinders (9501479). Check that retracted cylinder length is 22 1/4" (FIG. 2-2). Adjust both cylinders to this dimension as necessary.

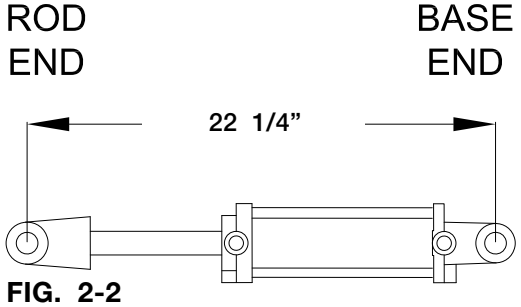


FIG. 2-2

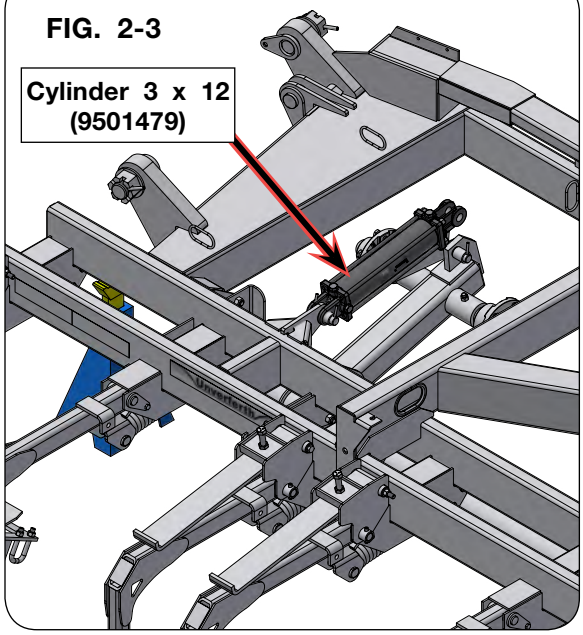
Main Frame/Tire & Wheel (continued)

⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN THE "MAINTENANCE" SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

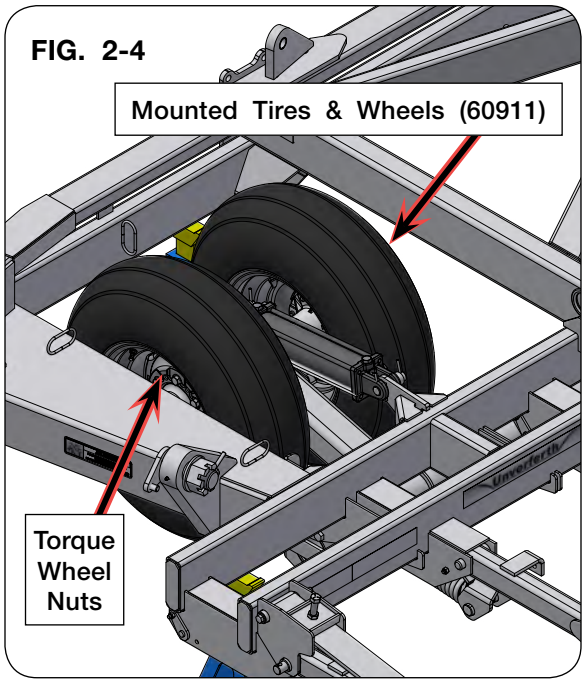
4. Install lift cylinders onto main frame assembly with the ports facing out. Secure base end of cylinders to the main frame assembly using the 1” dia. x 4” pins (85631) and 1/4” dia. x 1 7/8” spiral pins (91144-165) as shown in FIG. 2-3 and FIG. 2-4.

FIG. 2-3



5. Install the four mounted tire and wheel assemblies (60911) to the main frame assembly as shown in FIG. 2-4. Torque wheel nuts according to specifications in “MAINTENANCE” Section.

FIG. 2-4



Hitch

1. Remove and save the hardware from the rear of the cross fold hitch assembly (78572G or 78572R). Using a safe lifting device and supports rated at a minimum of 1000 lbs., lift hitch assembly and attach it to the main frame assembly as shown in FIG. 2-5 using the hardware previously removed from the cross fold hitch assembly.

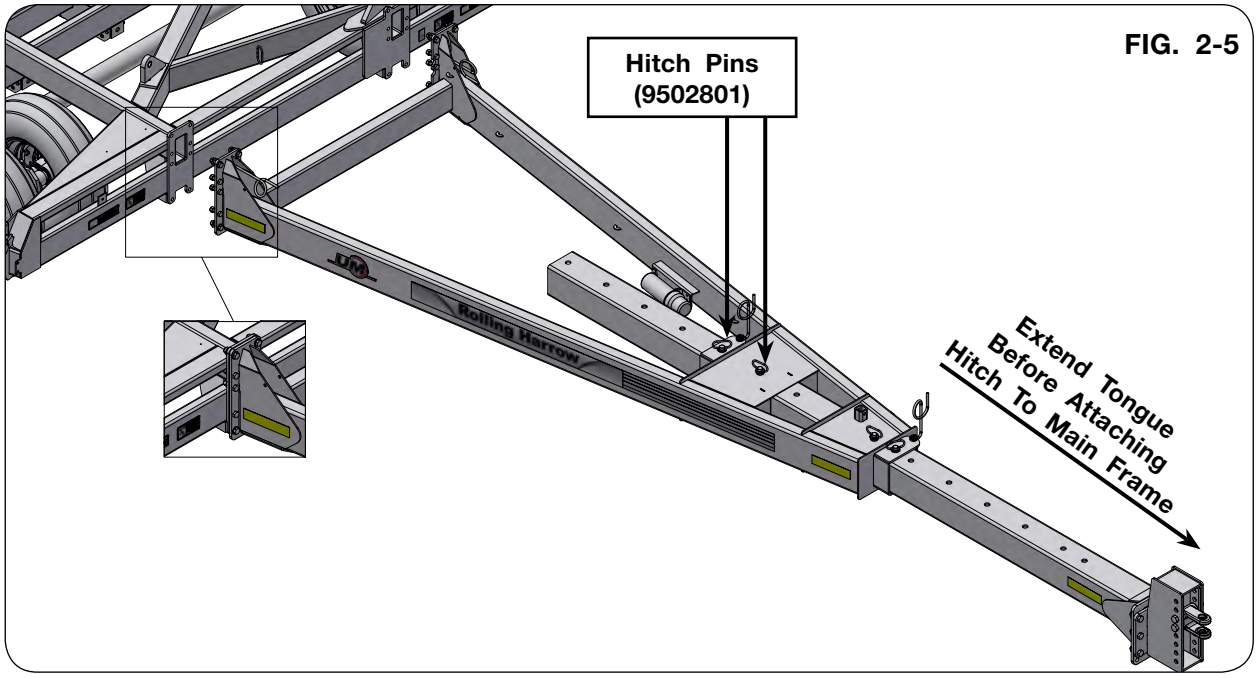


FIG. 2-5

Front Jack

1. With the safe lifting devices still attached to the cross fold hitch assembly (78572G or 78572R), attach the jack (901061), located in the parts box/crate (75859B), to the hitch using bent pin with hairpin (84979) as shown in FIG. 2-6 and FIG. 2-7.

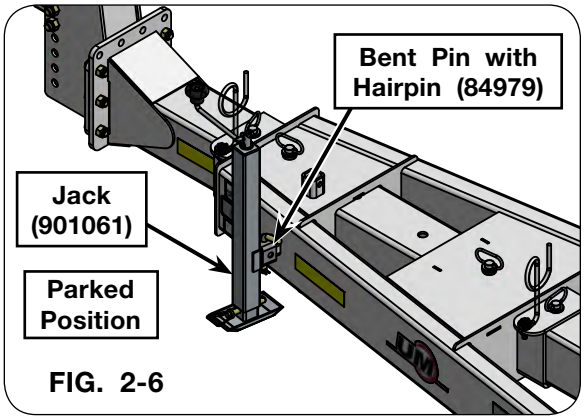


FIG. 2-6

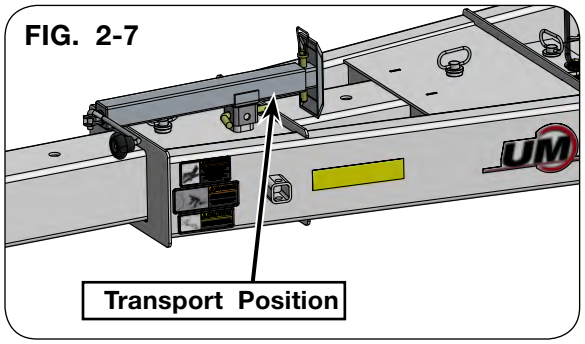


FIG. 2-7

Rear Jack

1. Locate jack mount (75897G or 75897R) and remove U-bolts and locknuts. Install jack mount to the right-hand side of the center bent arm on rear of main frame using previously removed hardware. See FIG. 2-8.

2. Locate jack stand assembly (87755B). Remove bent pin and install jack stand to jack mount using previously removed bent pin and hairpin. See FIG. 2-8.

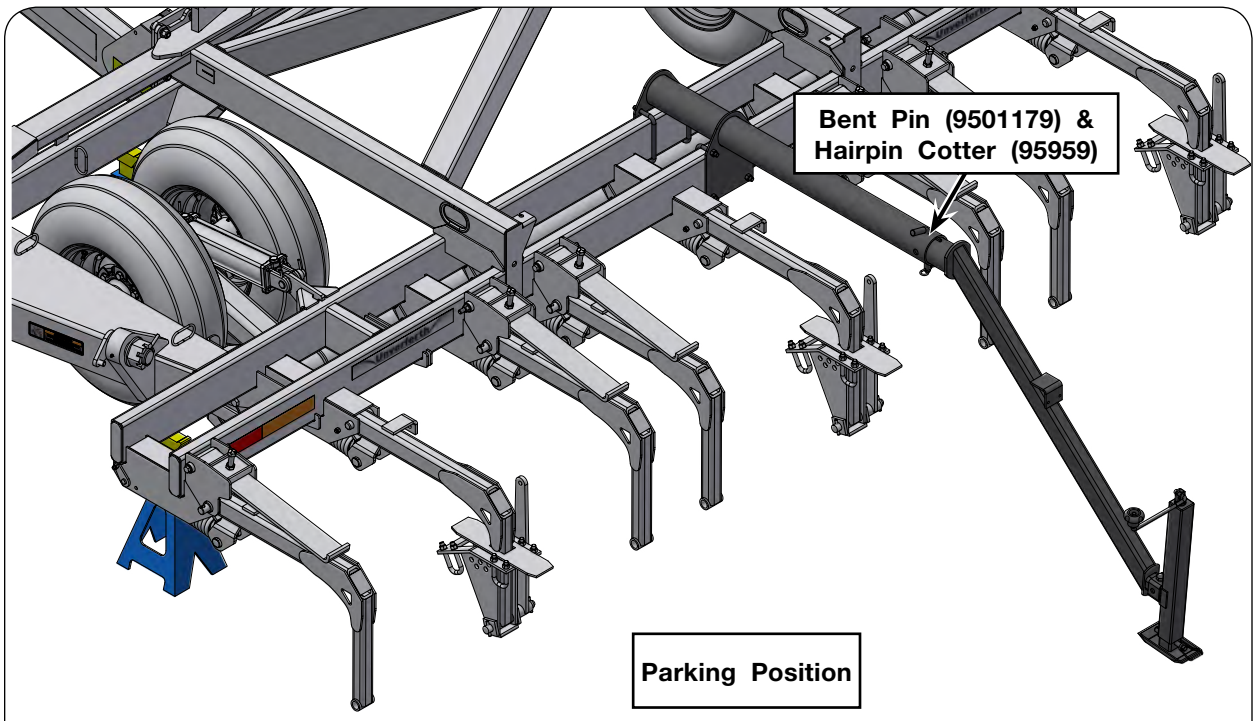
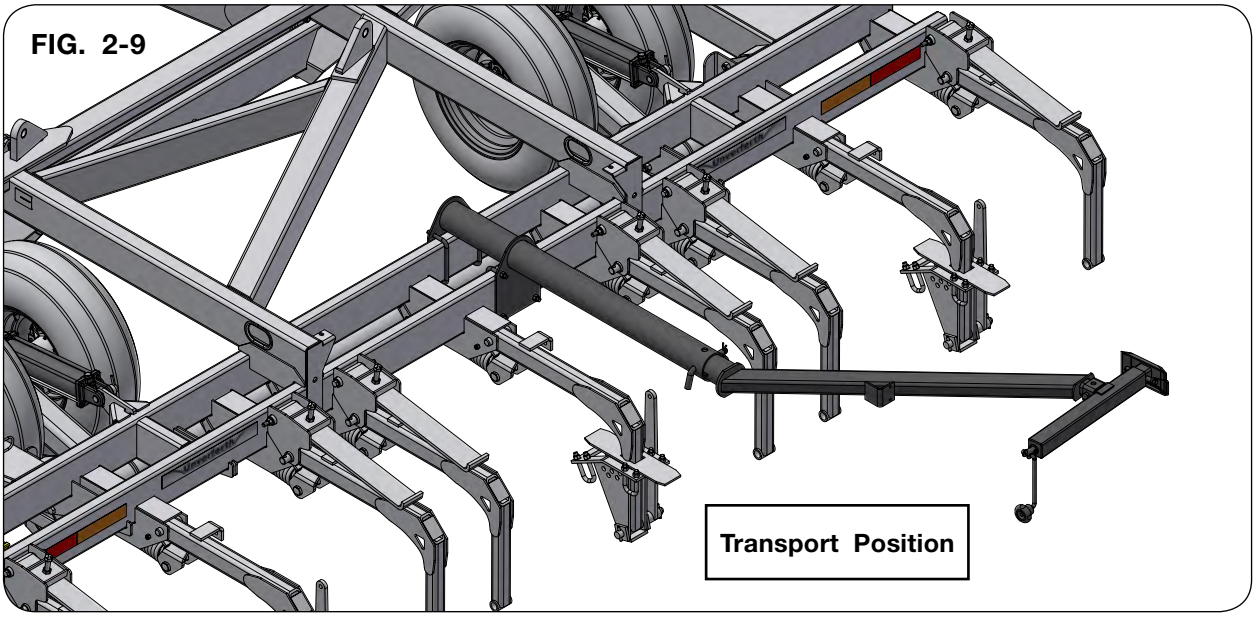


FIG. 2-8

FIG. 2-9



Transport Chain

1. Attach the transport chain (97436) with a rating of 16,100 lbs. to the front, left-hand side of the tongue/hitch using large flat washer (85723), capscrew 7/8"-9UNC x 3 1/2" (9390-170), and locknut 7/8"-9UNC (91141) as shown in FIG. 2-10. Parts are located in the parts box/crate (75859B).

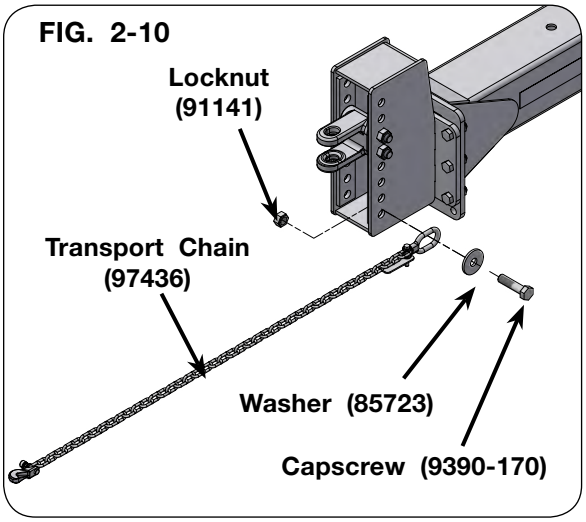


FIG. 2-10

⚠ CAUTION

- **ALWAYS USE TRANSPORT CHAIN WHEN TRANSPORTING IMPLEMENTS. FAILURE TO USE CHAINS COULD CAUSE PERSONAL INJURY OR DAMAGE IF IMPLEMENTS BECOME DISENGAGED.**

Hose Holders

1. Attach the hose holder (9661) to the hitch assembly (78572G or 78572R) using 1/2"-13UNC x 1 1/2" capscrew (9390-101), 1/2" flat washer (9405-088), and 1/2"-13UNC locknut (9800) as shown in FIG. 2-11. Parts are located in the parts box/crate (75859B).

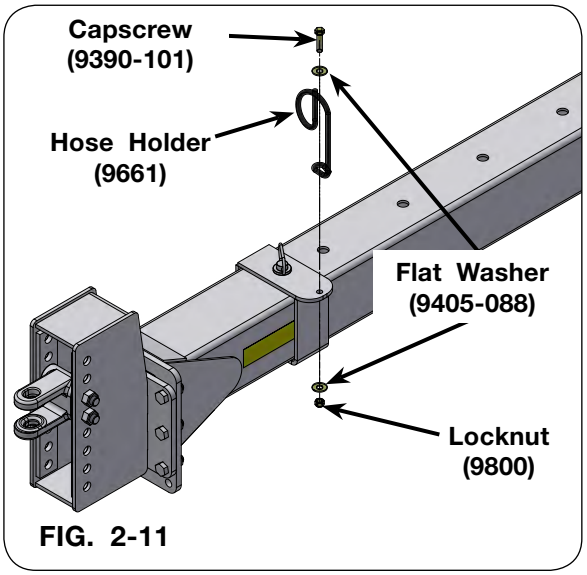


FIG. 2-11

Wings

IMPORTANT

- *Remove and discard shipping stand attached to bent arm on wing*

1. Using a safe lifting device and supports rated at a minimum of 1000 lbs., lift the right-hand wing assembly and attach it to the main frame assembly using the hardware in the wing hinge area as shown in FIG. 2-12 & FIG. 2-13.

2. Using a safe lifting device and supports rated at a minimum of 1000 lbs., lift the left-hand wing assembly and attach it to the main frame assembly using the hardware in the wing hinge area (not shown, use FIG. 2-12 & FIG. 2-13 for reference)

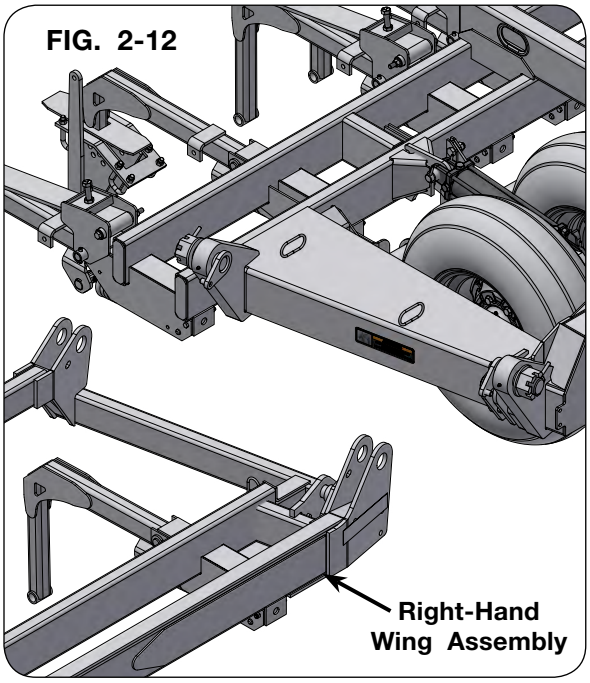


FIG. 2-12

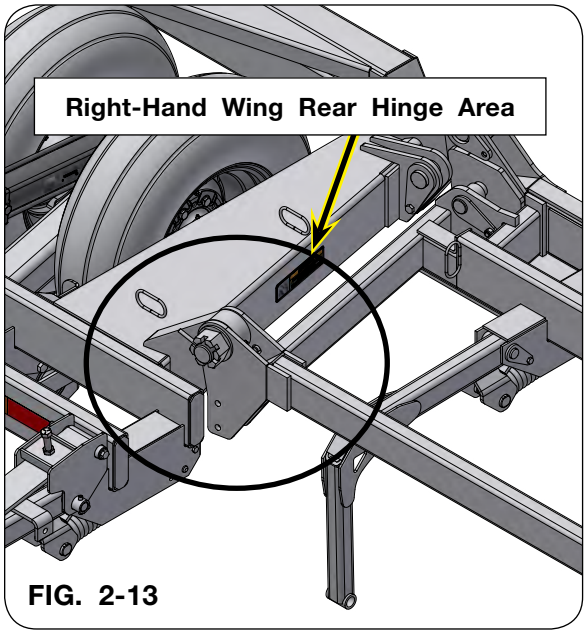


FIG. 2-13

Wings (continued)

3. Attach the plate/base hinge link (87706B) to the left-hand side of the main frame assembly using the hardware in the hinge area as shown in FIG. 2-14. Attach the other plate/base hinge link (87706B) to the right-hand side of the main frame assembly using the hardware located in that hinge area. Plate/links are located in the parts box/crate (75859B).

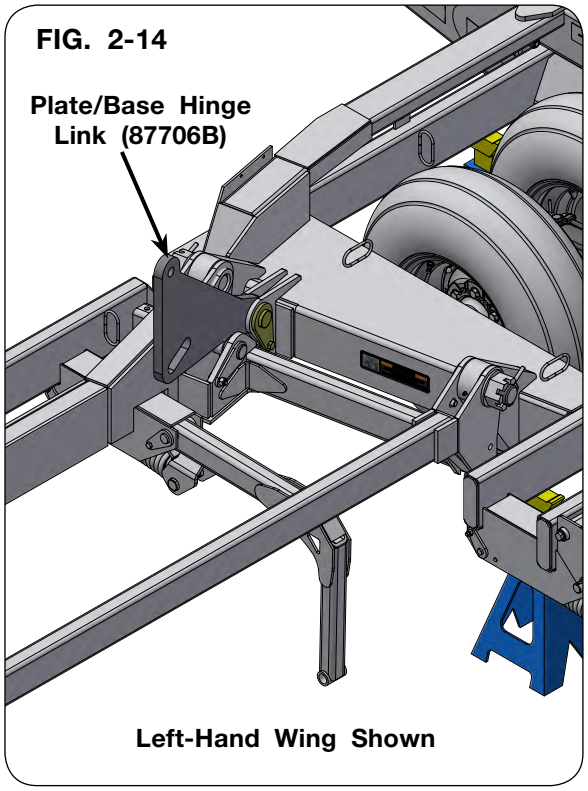


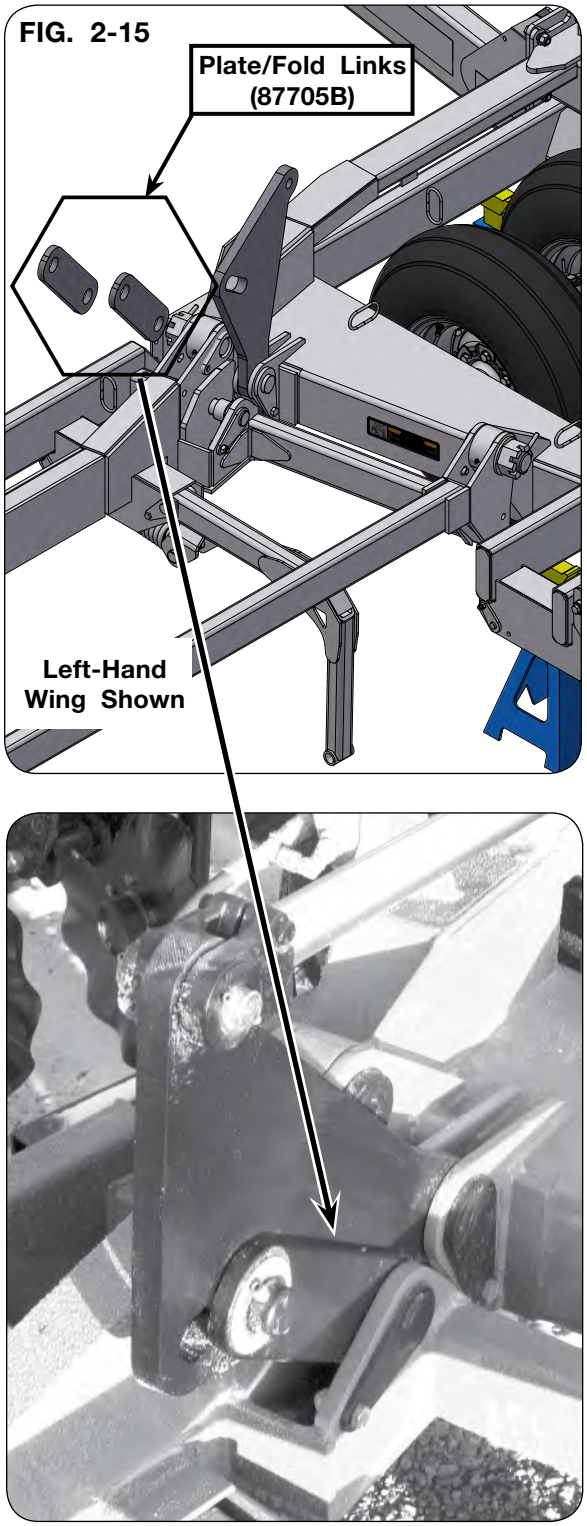
FIG. 2-14

Left-Hand Wing Shown

Wings (continued)

4. Attach two plate/fold links (87705B), located in the parts box/crate (75859B), to the left-hand wing assembly using the hardware located on the wing assembly as shown in FIG. 2-15. Repeat procedure for the right-hand wing.

FIG. 2-15



Wings (continued)

5. The plate/base hinge link (87706B) goes between the two plate/fold links (87705B) and place a 1 1/2" flat washer (9405-140) outside the plate/fold links secure with 1 1/2" Dia. x 4 3/8" pin (87872B) and 3/8" Dia. x 2 3/4" spiral pins (91144-210) as shown in FIG. 2-16. Washers and pins are located in the parts box/crate (75859B). Repeat procedure for the opposite wing assembly.

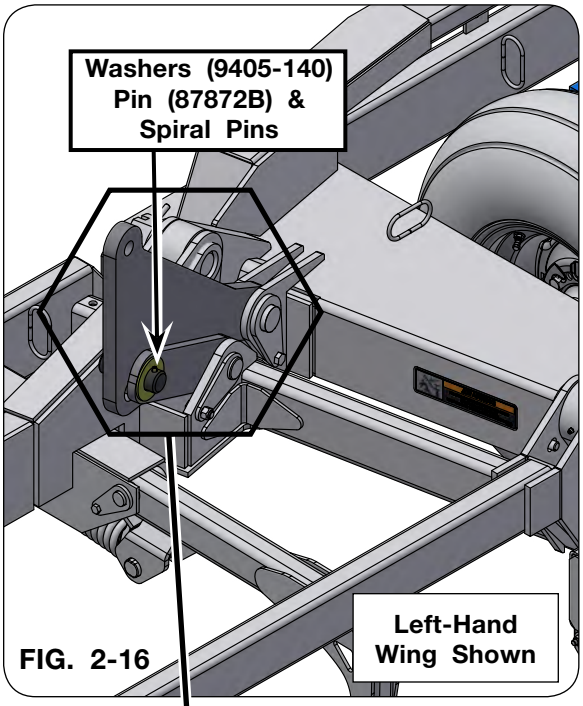
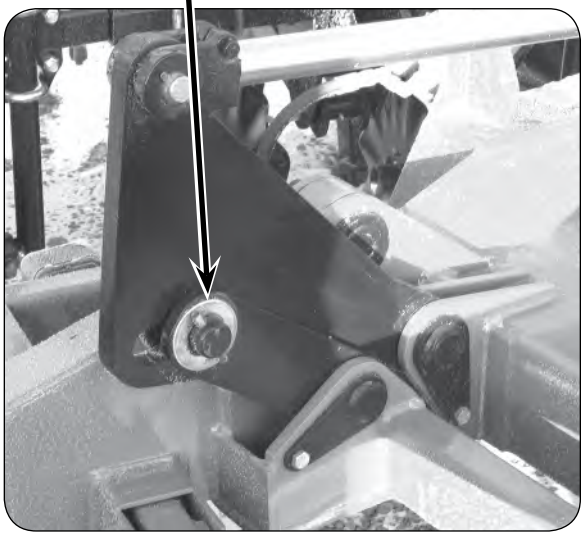


FIG. 2-16



Wings (continued)

6. In parts box/crate (75859B) locate the two 4 1/2" x 30" hydraulic cylinders (75862B), 1" Dia. x 4" pins (85631), and four 1/4" Dia. x 1 7/8" spiral pins (91144-165). Check that retracted cylinder length is 40 1/4". Adjust both cylinders to this dimension as necessary.

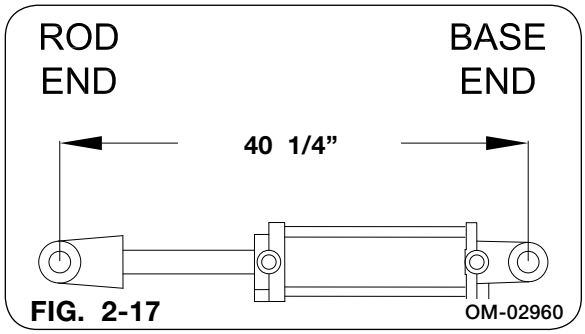


FIG. 2-17 OM-02960

NOTE: Before installing the rod end cylinder pins, see "Purging A Hydraulic System" in this section.

7. Using a safe lifting device rated for 100 lbs. minimum, secure the 4 1/2" x 30" hydraulic cylinders (75862B) with rod end ports facing up, base end to the top of the main frame assembly and the rod end to the plate/base hinge link (87706B) using 1" Dia. x 4" pins (85631) and 1/4" Dia. x 1 7/8" spiral pins (91144-165) as shown in FIG. 2-18. Parts are located in the parts box/crate (75859B).

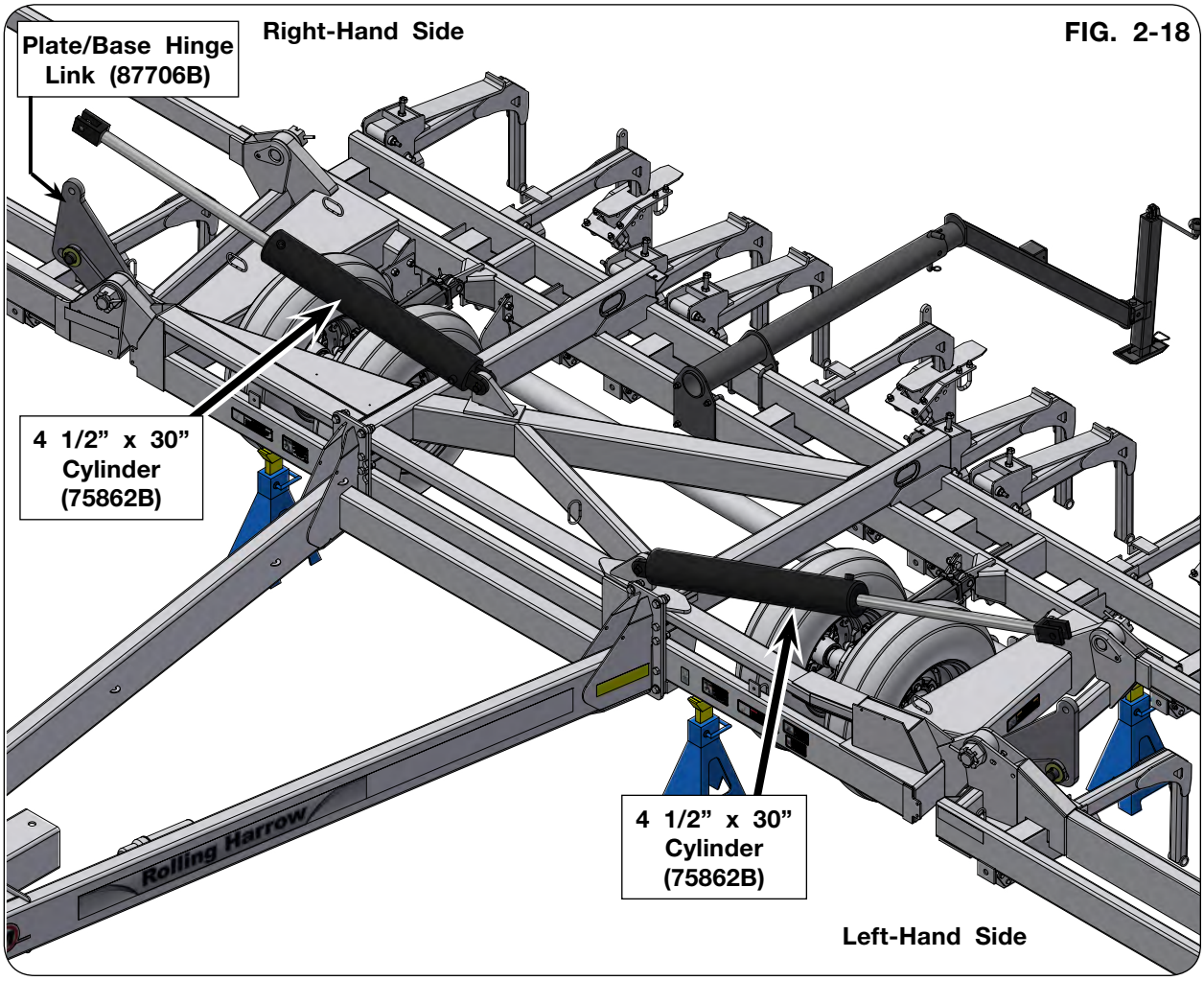


FIG. 2-18

Wing Lift Wheel Assembly

CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN THE "MAINTENANCE" SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

1. Locate the wing lift wheel assemblies (76819B and 76818B). Remove and save the hardware and straps from the wing wheel assemblies. Attach the wing wheels with hubs facing the center of machine on the 41'-45' implements. On the 39' and 45' implement the hubs must face out. The straps are to be placed against the back side of the wing tubes. See FIG. 2-19.

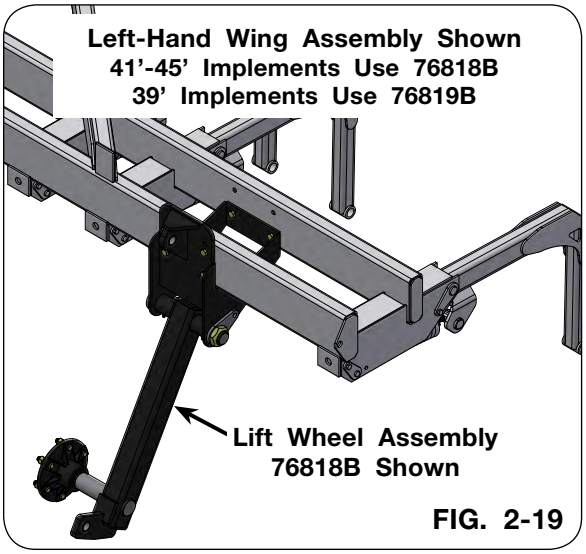


FIG. 2-19

2. Open the parts box/crate (75859B) and locate the 3" x 12" hydraulic cylinder (9501479), two 1" Dia. x 4" pins (85631), and 1/4" Dia. x 1 7/8" spiral pins (91144-165). Check that retracted cylinder length is 22 1/4". Adjust both cylinders to this dimension as necessary (FIG. 2-20).

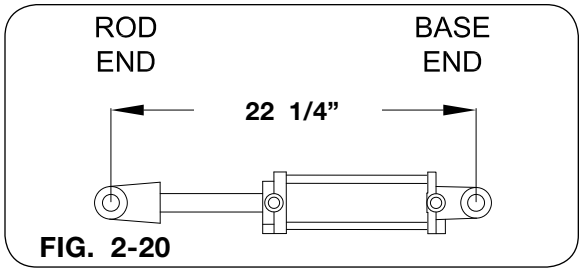


FIG. 2-20

3. With the ports facing out, secure base end of cylinder (9501479) to the wing assembly and the rod end of cylinder to the lift wheel end using 1" dia. x 4" pins (85631) and 1/4" dia. x 1 7/8" spiral pins (91144-165) as shown in FIG. 2-21.

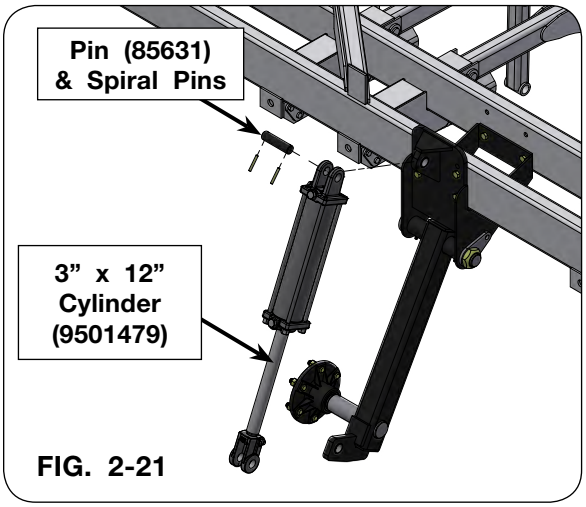


FIG. 2-21

Wing Lift Wheel Assembly (continued)

4. Mount the tire and wheel assembly (81145) to the lift wheel assembly (76819B) with the 1/2”-20UNF wheel nuts located on the hub. Torque 1/2”-20UNF wheel nuts, refer to “MAINTENANCE” Section, see FIG. 2-22.

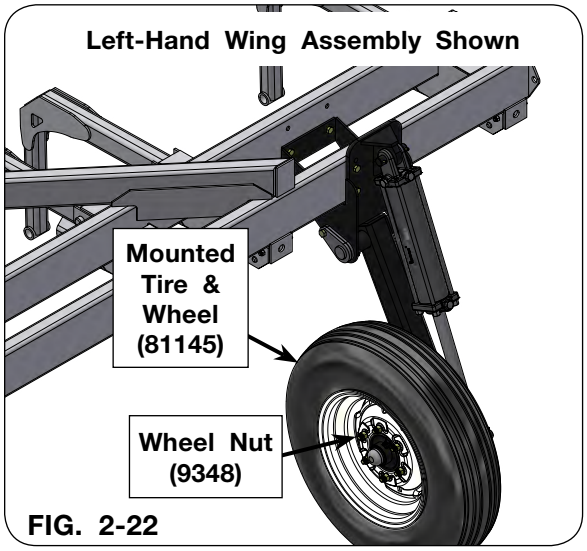


FIG. 2-22

5. In the parts box/crate (75859B) locate the 3” x 12” hydraulic cylinder (9501479), gravity latch (73118B), 1” Dia. x 4” pin (85631), 1” Dia. x 5 1/8” pin (88038), four 1/4” Dia. x 1 7/8” spiral pins (91144-165) (FIG. 3-23). Check that retracted cylinder length is 22 1/4”. Adjust both cylinders to this dimension as necessary (FIG. 2-24).

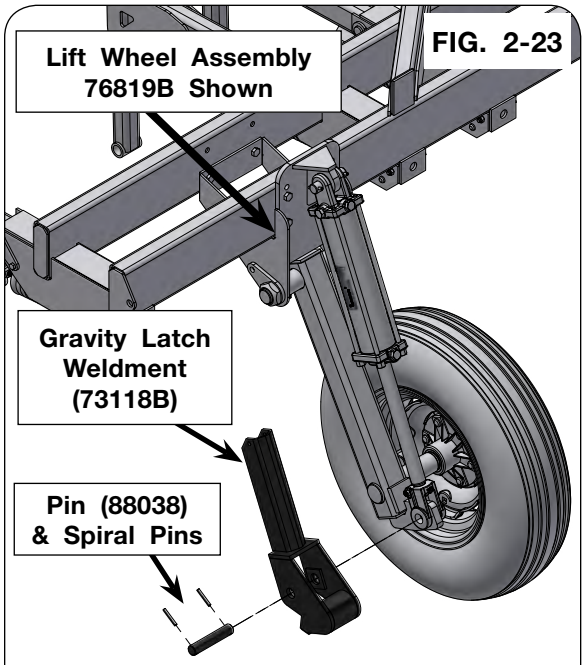


FIG. 2-23

Right-Hand Wing Assembly Shown
41’-45’ Implements Use 76819B
39’ Implements Use 76818B

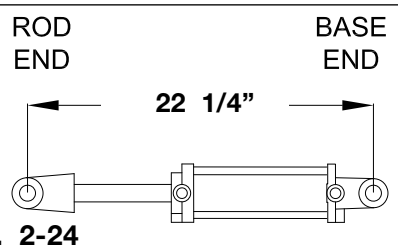


FIG. 2-24

SMV Emblem

1. Obtain the 2” x 18 3/4” plate (88259B), 2” x 7 1/4” clamp plate (64157B), SMV emblem (9829) two 1/4”-20UNC x 3” capscrews (9390-013), two 1/4”-20UNC x 3/4” capscrews, and four 1/4”-20UNC locknuts (9936) from parts box/crate (75859B).

2. Attach the SMV emblem (9829), to the plate (88259B) with two 1/4”-20UNC x 3/4” capscrews (9390-003) and 1/4”-20UNC locknuts (9936) (FIG. 2-25). Secure the SMV to the main frame assembly with clamp plate (64157B), two 1/4”-20UNC x 3” capscrews (9390-013) and 1/4”-20UNC locknuts (9936). SMV should be left of center on main frame.

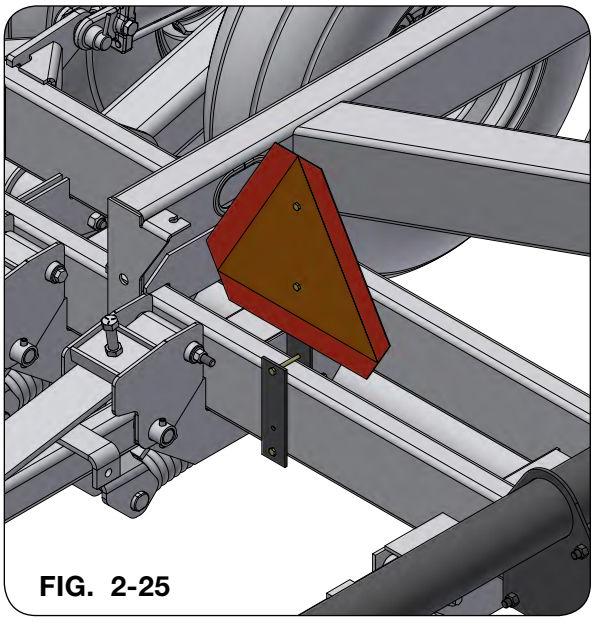


FIG. 2-25

Transport Cylinder Stops

The transport cylinder stops (73130B) can be attached to the hitch frame as shown in FIG. 2-26 with clevis pins (92955) and hairpin cotters (9514).

Transport cylinder stops should be added after the hydraulic lines have been installed.

Before transporting unit, attach the transport cylinder stops (73130B) to the main frame cylinders (FIG. 2-26).

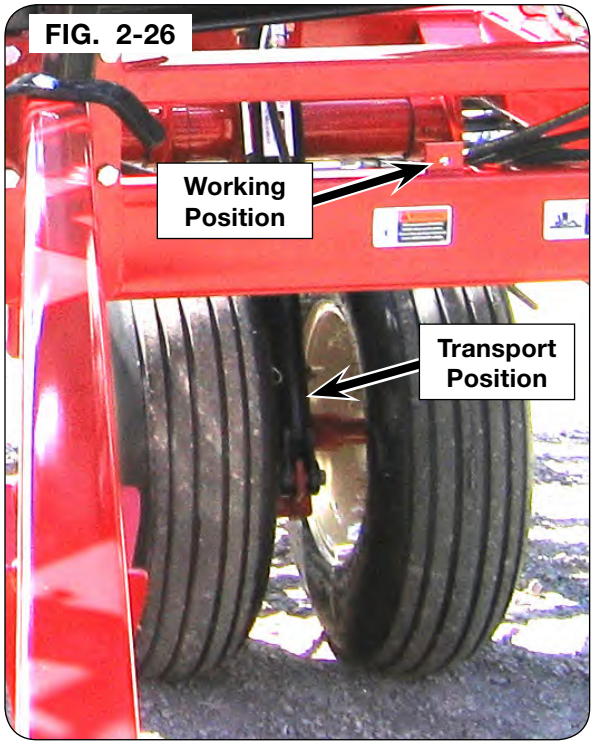


FIG. 2-26

Wing Stands

1. Mount the wing stand left-hand weldment (79249B) to the wing left-hand assembly as shown in FIG. 2-27 using 4" x 6 1/4" plate (79247B), 6 1/4" x 6 1/2" plate (79250B), six 1/2"-13UNC x 3 3/4" capscrews (9390-110), two 1/2"-13UNC x 7 1/2" U-bolts (107289), four 1/2" USS flat washers (9405-088), and ten 1/2"-13UNC lock nuts (9800). Torque hardware according to "Torque Chart" in MAINTENANCE section.

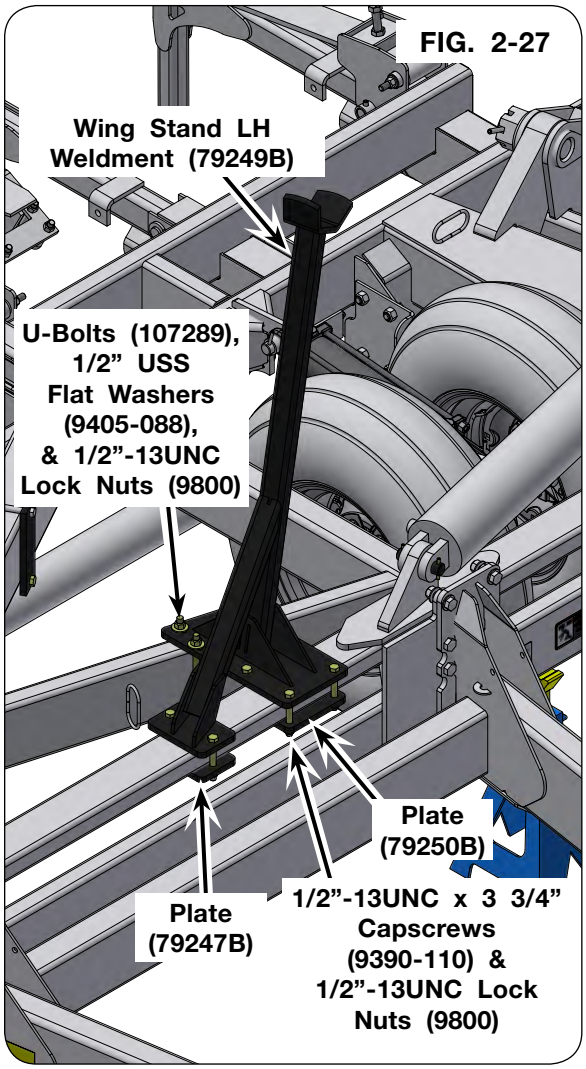


FIG. 2-27

Wing Stands (continued)

2. Loosely mount the right-hand wing stand weldment (87887B) to the center section of the main frame assembly as shown in FIG. 2-28 using 2 1/2" x 7 13/16" bar (87891B), 6" x 10" bar (87890B), six 1/2"-13UNC x 6" capscrews (9390-115) and six 1/2"-13UNC locknuts (9800). Bars and hardware are located in the part box/crate (75859B).

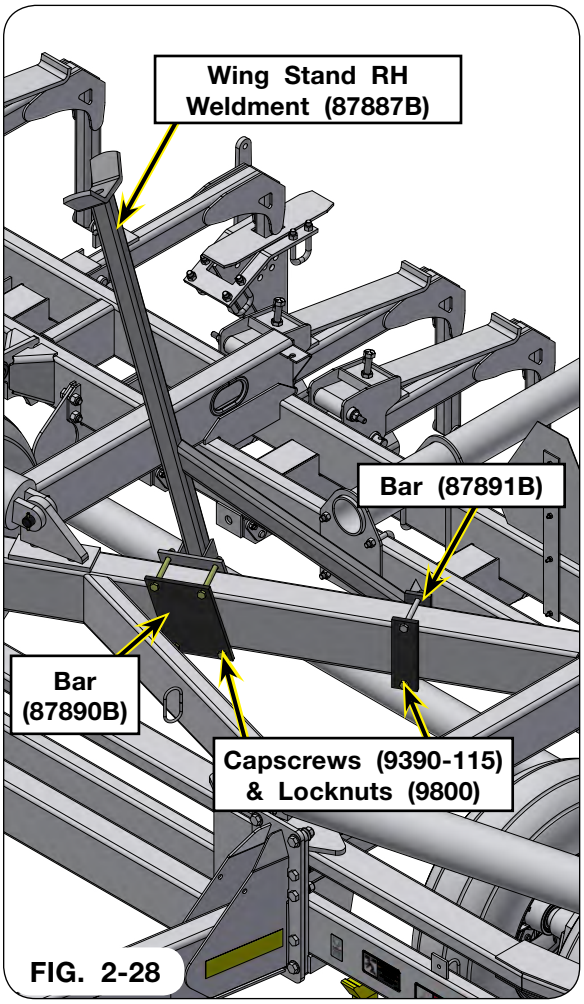


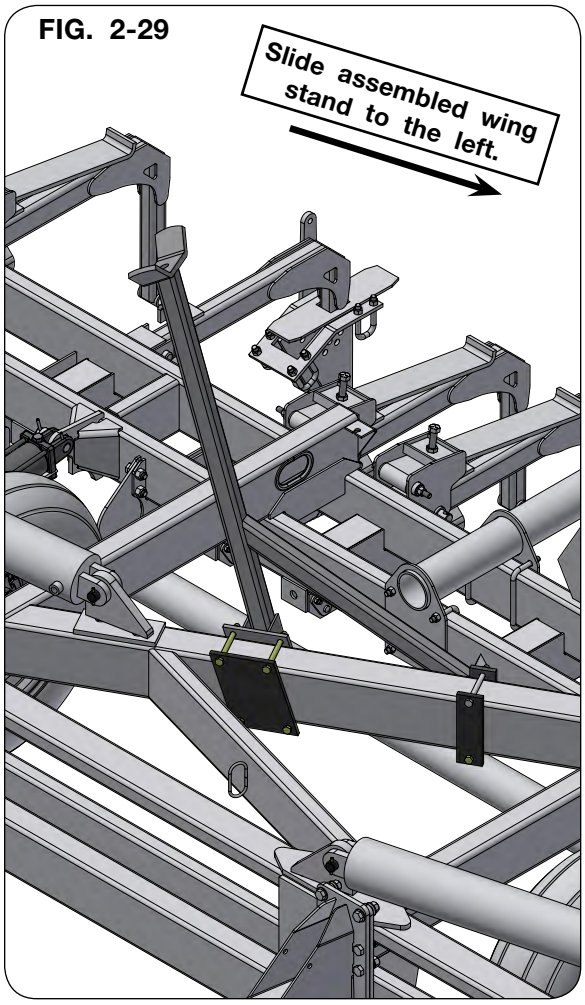
FIG. 2-28

Wing Stands (continued)

3. Slide the assembled right-hand wing stand to the left-hand side of the unit (FIG. 2-29).

4. The right-hand wing stand will be secured into the correct position once the hydraulics have been completely assembled and purged.

FIG. 2-29



Transport Marking & Light Kit (89110B)

Before installing this kit, lower machine completely to the ground and block securely. Set parking brake on tractor, release any pressure in hydraulic system, and shut tractor engine off.

Compliance with all lighting and marking laws is the responsibility of the operator at the time of travel.

Please see federal regulation 49 CFR 562; available at www.govinfo.gov for US federal law requirements.

See your Unverferth dealer for additional brackets, reflectors, or lights to meet your requirements.

NOTE: On some machines safety decals may be covered by light brackets. Contact your Unverferth dealer to order a new decal, and replace it on the machine in a visible location near the old decal in order to comply with ASABE standards.

Front, rear, left, and right are determined from the tractor operator's seat, facing forward.

Lights

1. Secure the red round light (9003877) to the bracket (73338B) with the lens facing the holes in the bracket using the nut provided with the light. Be careful not to overtighten and damage the light. Then attach the bracket (73338B) to the frame with a 1/2"-13UNC x 1" capscrew (9390-099) and 1/2"-13UNC locknut (9800).

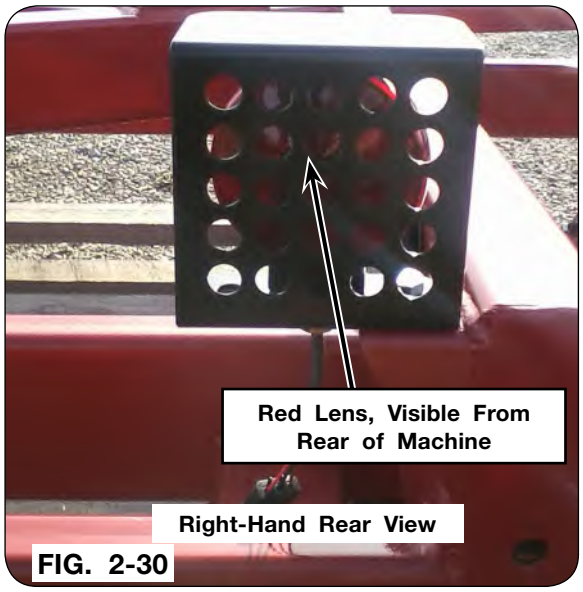


FIG. 2-30

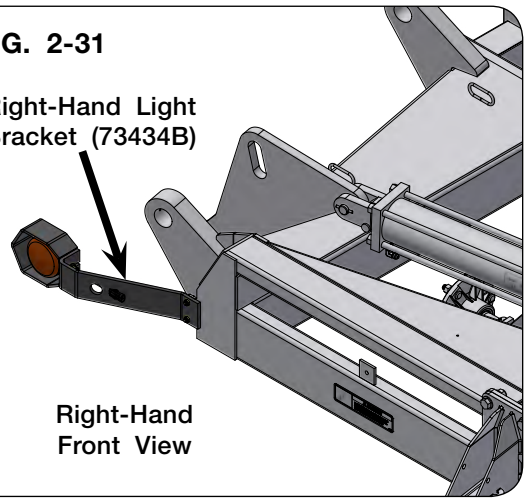
Transport Marking & Light Kit (89110B) (continued)

NOTE: Make certain lights are clearly visible and no hoses or other components obstruct view of lights from the rear of machine.

2. Secure right-hand light bracket (73434B) to the front of the unit, secure with 3/8"-16UNC x 1 1/4" capscrews (9390-056), and 3/8"-16UNC locknuts (9928) as shown in FIG. 2-31.

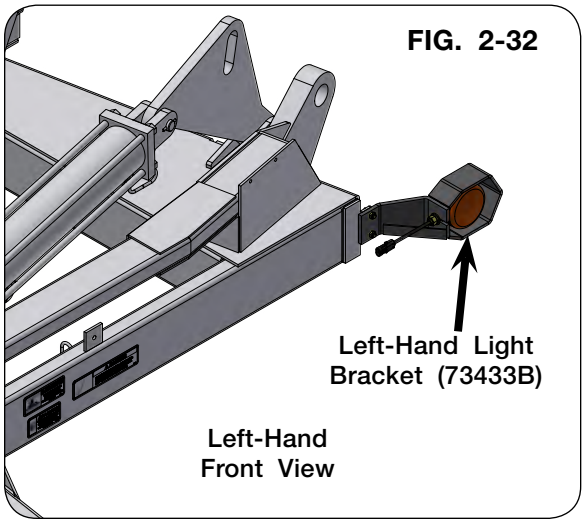
NOTE: Amber lens must always be to the outside of implement.

FIG. 2-31



3. Secure left-hand light bracket (73433B) to the front of the unit, secure with 3/8"-16UNC x 1 1/4" capscrews (9390-056), and 3/8"-16UNC locknuts (9928) as shown in FIG. 2-32.

FIG. 2-32



Transport Marking & Light Kit (89110B) (continued)

Transport Markings

NOTE: Reflectors are as important as light locations in order to comply with ASABE standards. These reflectors measure 2”x9”. Other reflectors will NOT comply with ASABE standards.

1. Inspect your Rolling Harrow for 2”x9” amber (9003127), red (9003126), and fluorescent orange (9003125) transport markings.

Be sure reflectors are in locations shown in parts section of this manual.

These reflectors are required to comply with ASABE standards. If you do not meet the ASABE standard, contact your UNVERFERTH dealer to order the reflectors needed.

Wiring Harness

When installing the harnesses, do not cut or break the wire coverings. Tie harnesses away from moving parts, such as cylinders and folding links. The wiring harnesses consist of four pieces, the main harness, the cross harness, and two extension harnesses.

The main harness has a 7-pin (round) plug conforming to SAE standards that connects to tractor or other towing vehicle. If your tractor or other towing vehicle does not have the mating socket connector, contact a respective dealer.

1. Route the main harness (89467) along the extendible tongue and the hitch frame. Allow sufficient slack at the hitch for the machine to turn (approximately 4 ft.).

2 Attach the wiring extension (86466) to the main harness (89467).

The cross harness (22790) connects to the 6-pin connector of the main harness, both red taillights, and the extension harnesses.

3. Route the legs labeled “R” to the right side of machine, and the legs labeled “L” to the left side.

4. Connect the three pin connectors on the cross harness to the 3-pin connectors on the red taillights.

5. Coil up any excess and secure harness to frame with cable ties.

The extension harnesses (86421) connect the two pin connector of the cross harness to the two pin connectors on the amber extremity lights.

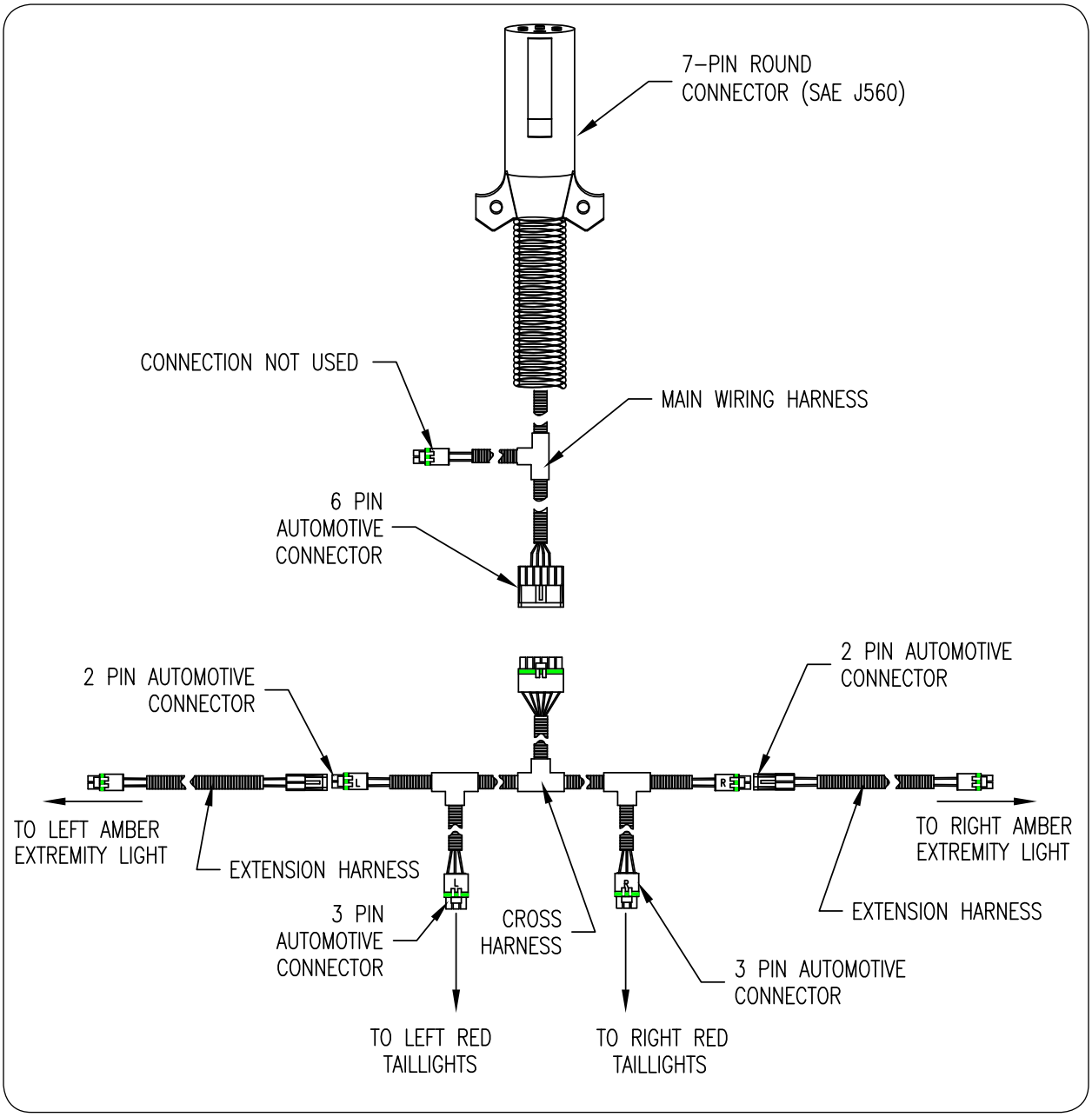
6. Route extension harnesses along the main frame and connect it to the amber extremity lights.

7. Tie the extension harnesses to the extremity light mounting bracket through the extra hole in the light bracket.

8. Coil up any excess and tie the remainder to the main frame with cable ties. Be sure to avoid contact with the fold cylinders, fold linkage, or any other moving parts.

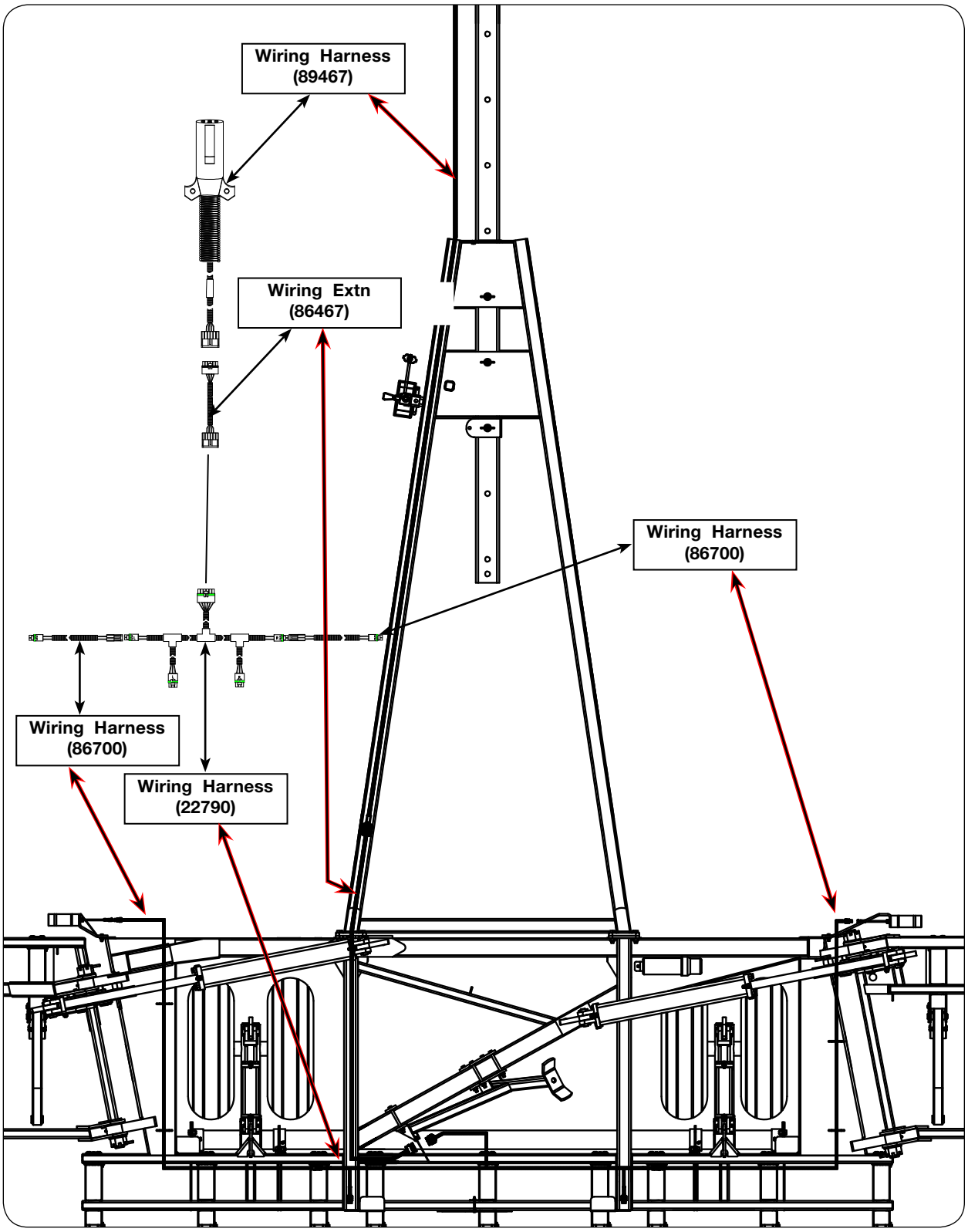
Transport Marking & Light Kit (89110B) (continued)

Wiring Harness (continued)



Transport Marking & Light Kit (89110B) (continued)

Wiring Harness Layout



Main Frame Basket Rocker Arm Assembly

1. In parts box (75859B) locate three 1 1/2" x 6" cylinders (TA0-904623-0), three 1/2"-13UNC x 2 1/4" capscrews (9390-104) and three 1/2"-13UNC locknuts (9800). Install base end of cylinder with ports facing up to the mounting bracket of the basket rocker arms using capscrews and locknuts. See FIG. 2-33

2. In parts box (75859B) locate three 1/2"-13UNC x 2 1/4" capscrews (9390-104) and three 1/2"-13UNC locknuts (9800). Attach the rod end of the cylinders to the link rocker weldment using capscrews and locknuts. See FIG. 2-33

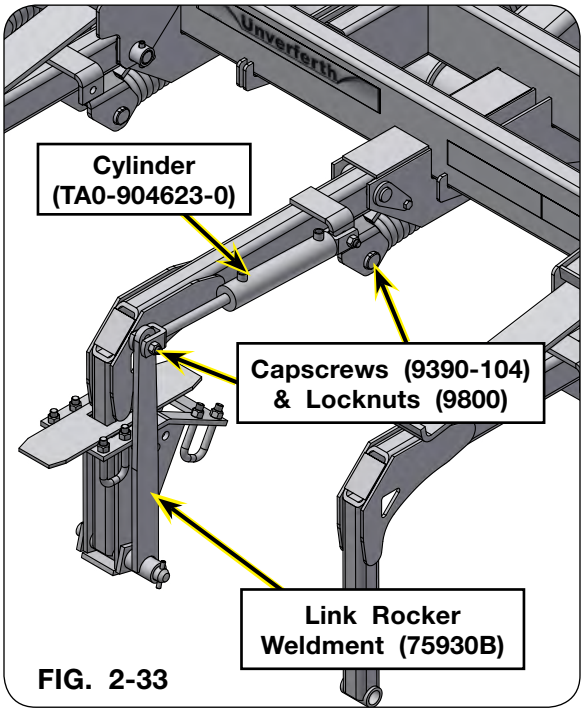


FIG. 2-33

Hydraulic Assembly

1. Install hydraulic components to the machine.

IMPORTANT

- *DO NOT USE ANY TAPE OR THREAD SEALANT AS ALL FITTINGS HAVE MECHANICAL OR O-RING SEALS. THIS PREVENTS CONTAMINATION FROM TAPE OR THREAD SEALANTS FROM ENTERING THE TRACTOR'S HYDRAULIC SYSTEM.*

NOTE: Refer to the "HOSE ROUTING DIAGRAMS" for routing and positioning of the hydraulic components onto the frame.

NOTE: Refer to the PARTS section for fitting type, hose size, and length required.

NOTE: Refer to Purging A Hydraulic System in this section for purging instructions and warnings after assembly of the hydraulic components is completed.

Purging A Hydraulic System

⚠ WARNING

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

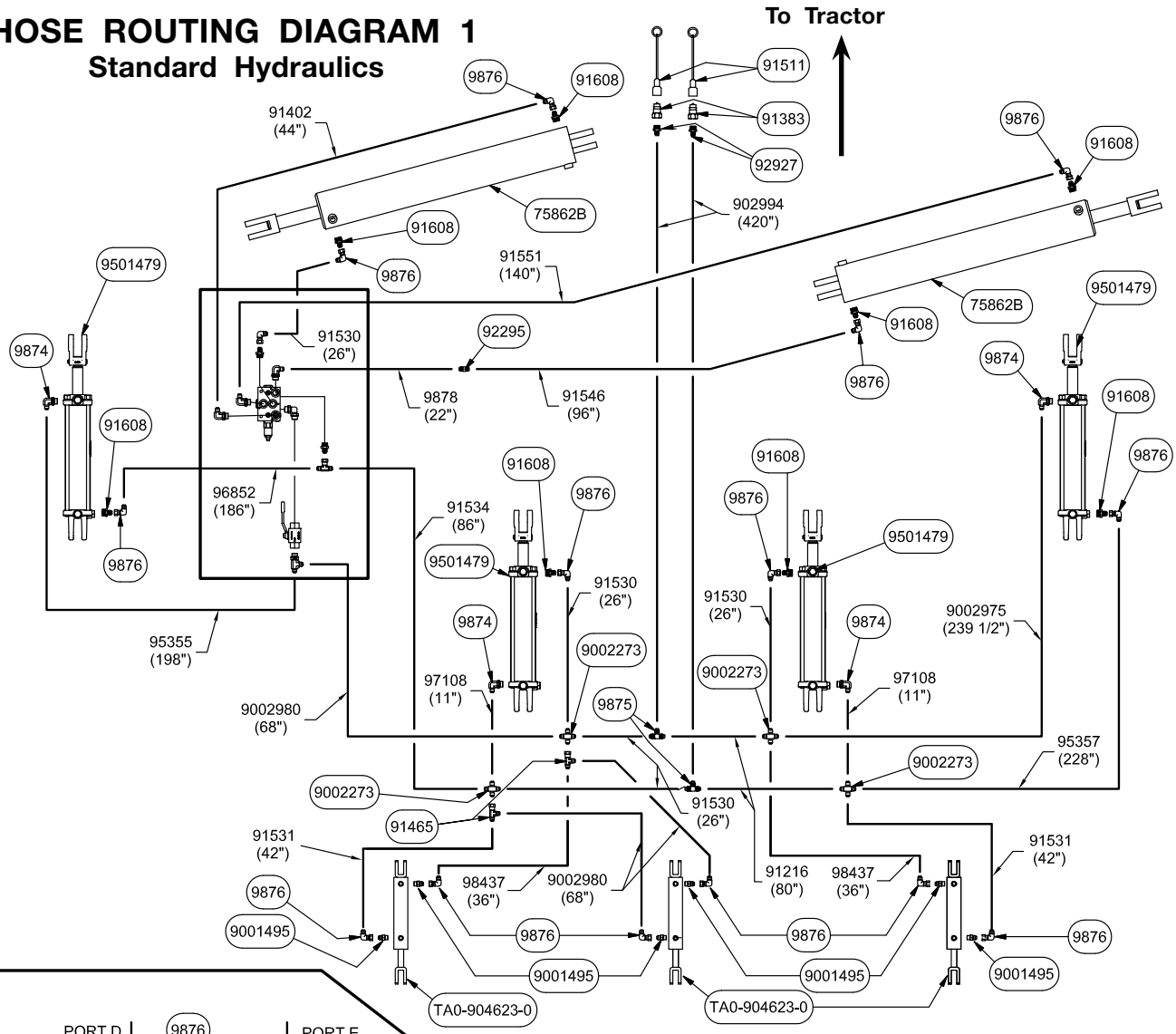
- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. LEAKS OF HIGH-PRESSURE FLUIDS MAY NOT BE VISIBLE. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

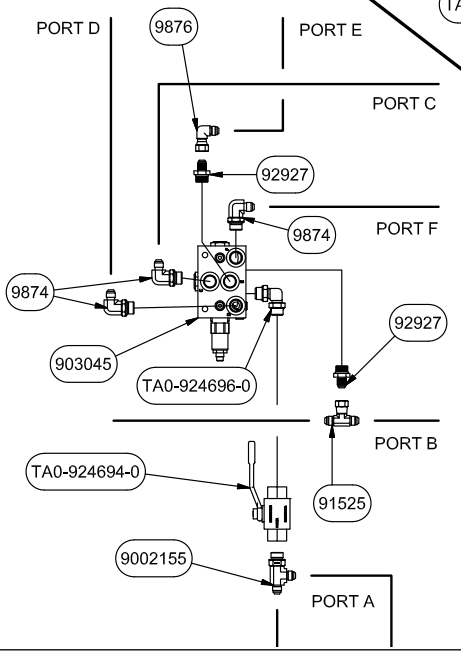
2. Purge air from system as follows:

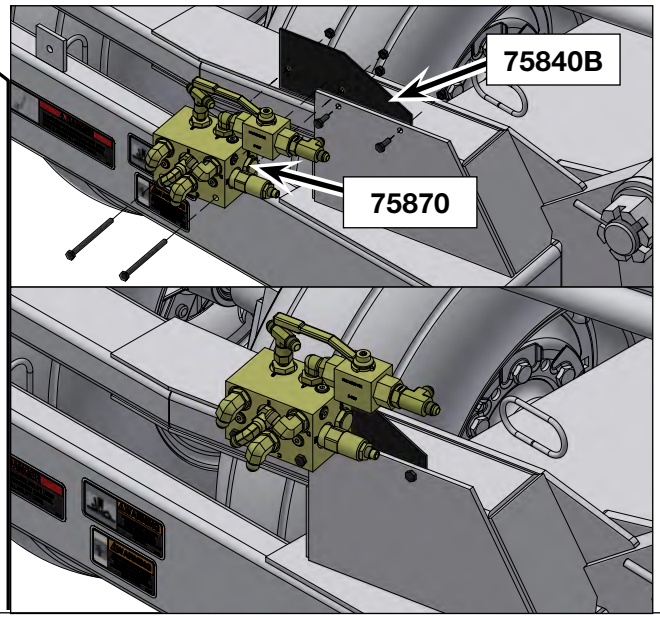
   A. Clear all personnel and objects from the area, including where the machine will have full range of motion during the hydraulic movement. Remove transport locks from the machine.
   B. Pressurize the system and maintain the system at full pressure for at least 5 seconds after the cylinder rods stop moving, or hydraulic motors have completed the required movement. Check that all movements are fully completed.
   C. Check oil reservoir in the hydraulic power source and refill as needed.
   D. Pressurize the system again to reverse the motion of step B. Maintain pressure on the system for at least 5 seconds after the cylinder rods stop moving, or hydraulic motors have completed the required movement. Check that all movements are fully completed.
   E. Check for hydraulic oil leaks using cardboard or wood. Tighten connections according to directions in the Torque Specifications in the MAINTENANCE section.
   F. Repeat steps in B, C, D, and E 10-12 times.

Hydraulic Assembly (continued)

HOSE ROUTING DIAGRAM 1
Standard Hydraulics







Hydraulic Assembly (continued)

2. With the wings unfolded and all hydraulic hoses assembled, install hose wrap (75884) to each hinge area. Wrap all hoses passing through the hose retaining ring and center wrap on the ring. Use cable ties (94037) to fasten the hose wrap on the ends and 3”-4” on each side of the ring.

3. See operations section for folding procedures. Fold the wings then slide the assembled right-hand wing stand to the right until it touches the right-hand wing assembly. Unfold the wings and slide the assembled right-hand wing stand 1” more to the right to support the right-hand wing assembly during transport (FIG. 2-34). Torque the assembled right-hand wing stand according to “Torque Chart” in MAINTENANCE section.

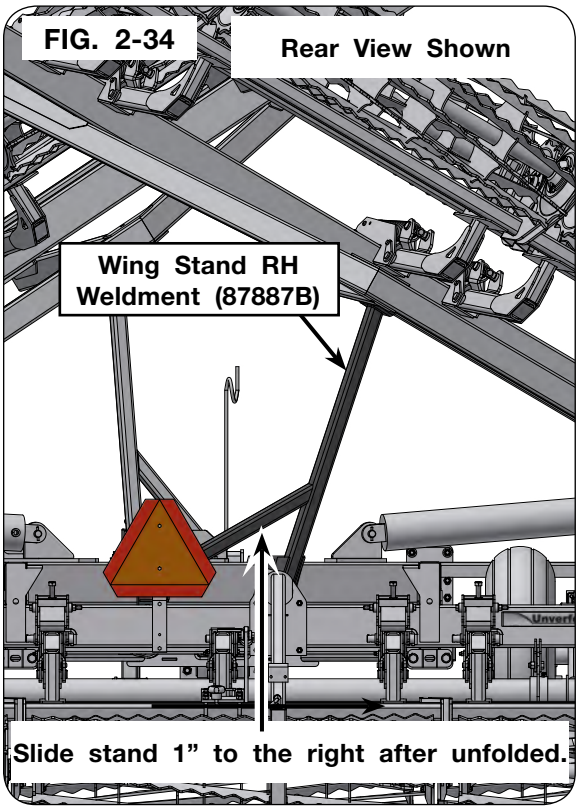
⚠ WARNING

- **HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. LEAKS OF HIGH-PRESSURE FLUIDS MAY NOT BE VISIBLE. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR’S MANUAL FOR PROPER PROCEDURES.**

4. Raise unit and fully fold wings. Check clearances for hoses, etc. Check that wings sit on rest stands when folded and that wing fold linkage is not under tension when wings are fully folded. Adjust cylinder clevises if necessary to cylinders do not load linkage when wings are fully folded.



Dual Hydraulic Kit #87922 (Optional)

A dual hydraulic kit is available for all sizes of the ROLLING HARROW implement. This kit will separate the lift and wing fold hydraulics into two different systems for better control of the lift and fold functions. Each system will then require its own remote control valve from the tractor or must be plumbed into existing circuits on the primary tillage tool.

Unverferth Manufacturing recommends that the regular machine hydraulics be completely installed before installing a dual hydraulic kit.

For dual hydraulic kit installation, park the machine on a firm, level surface, unfold the wings and lower the unit to the ground. Block the machine from any movement, set the tractor parking brake, depressurize the hydraulic system, shut off the engine and remove the ignition key.

⚠ WARNING

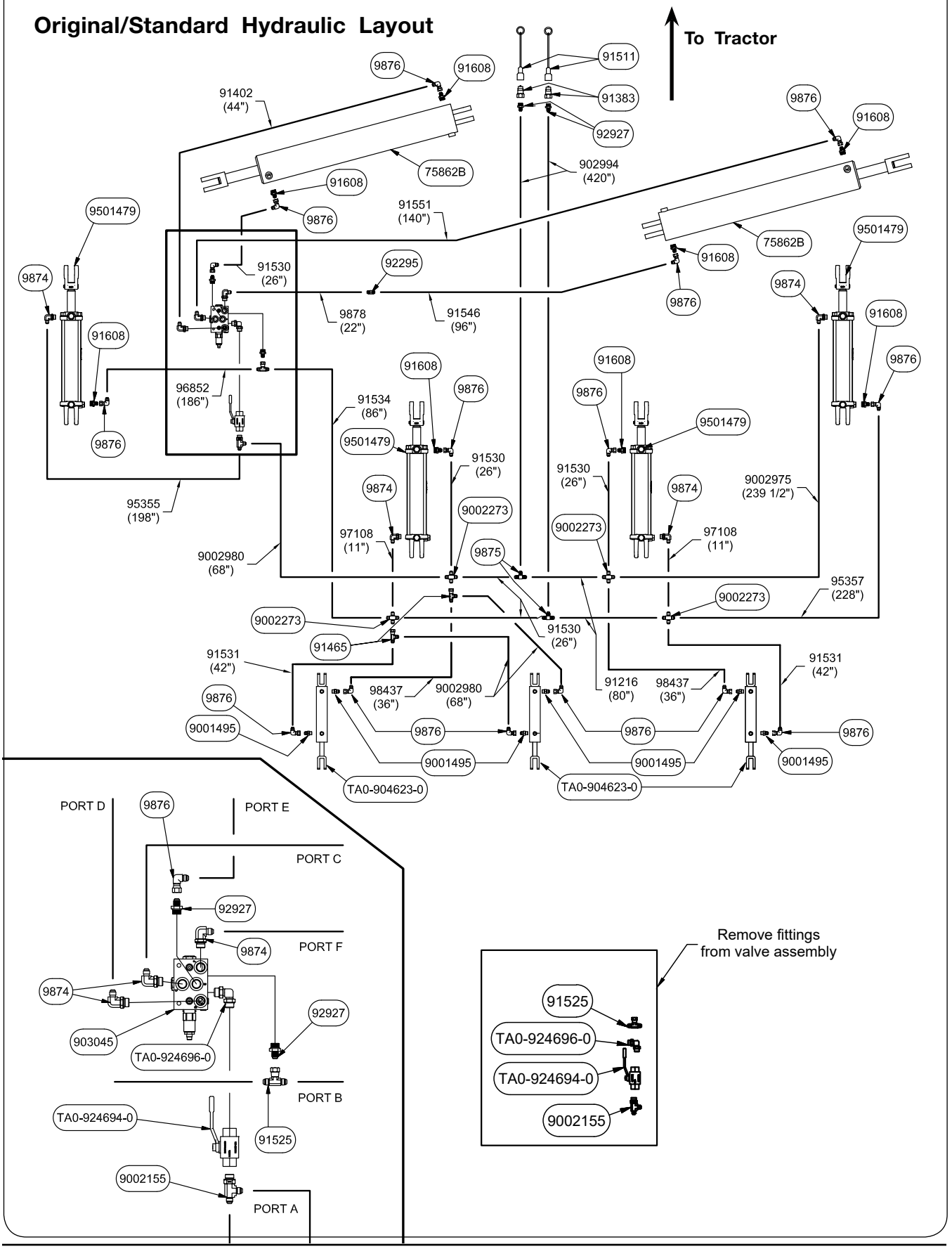
- **HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. LEAKS OF HIGH-PRESSURE FLUIDS MAY NOT BE VISIBLE. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

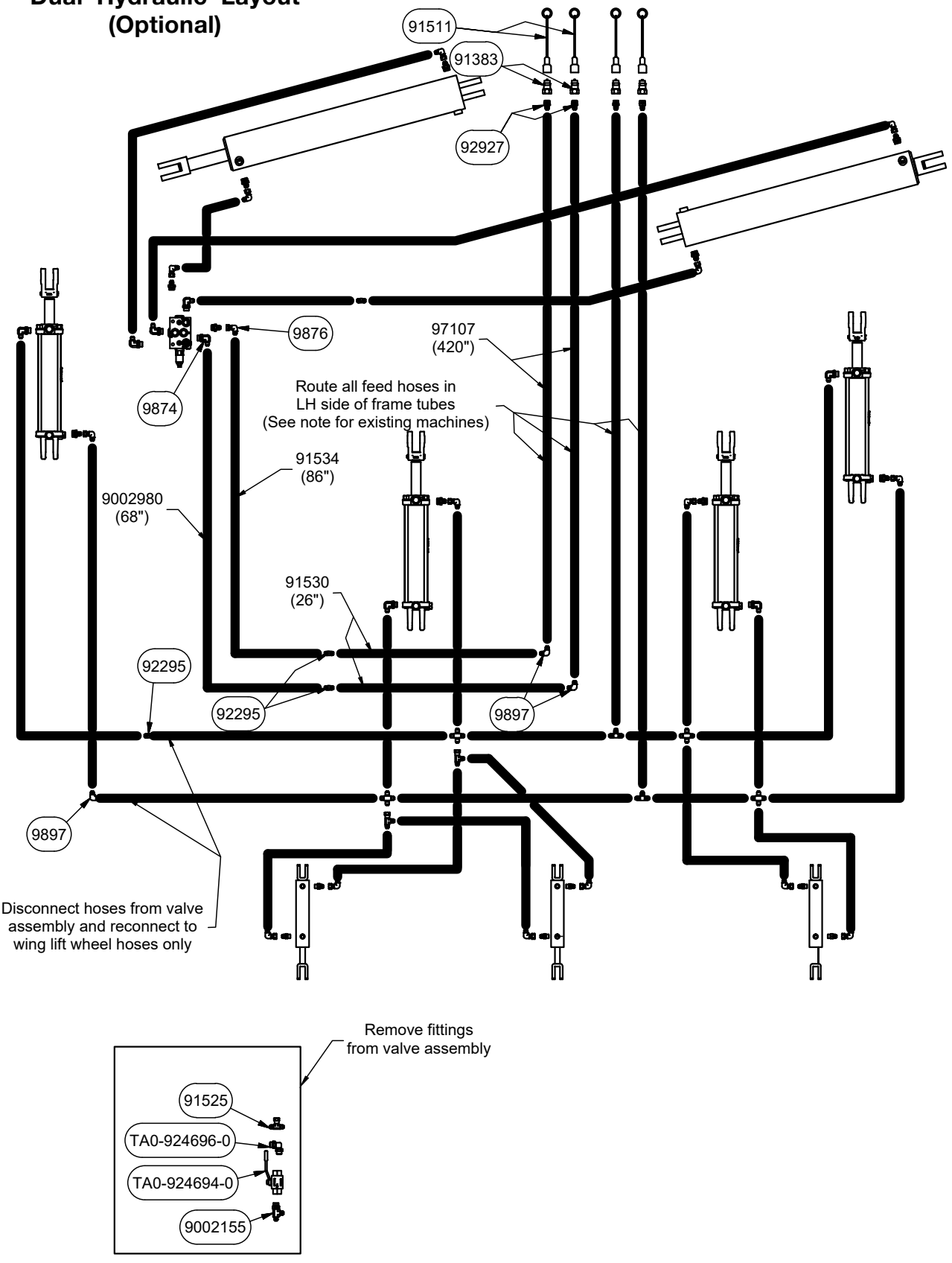
Dual Hydraulic Kit #87922 (Optional) (continued)

Original/Standard Hydraulic Layout



Dual Hydraulic Kit #87922 (Optional) (continued)

Dual Hydraulic Layout (Optional)



Pilot Check Valve (Part #91240) (Optional)

This option is for use with primary tillage tools having rephasing hydraulic cylinders. This option prevents the ROLLING HARROW implement from drifting down from the transport position.

⚠ WARNING

- **HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. LEAKS OF HIGH-PRESSURE FLUIDS MAY NOT BE VISIBLE. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

Depressurize the hydraulic systems of the primary tillage tool and the ROLLING HARROW soil conditioner before beginning valve installation.

Install the pilot operated check valve onto the rear of the primary tillage tool. Connections from the rephase system must be installed into the ports of the valve that are closest together. Connections to the ROLLING HARROW implement's hydraulic system go into the other two ports.

Purge hydraulic system before use. Refer to primary tillage tool manual to purge that system. Refer to Purging A Hydraulic System in this section.

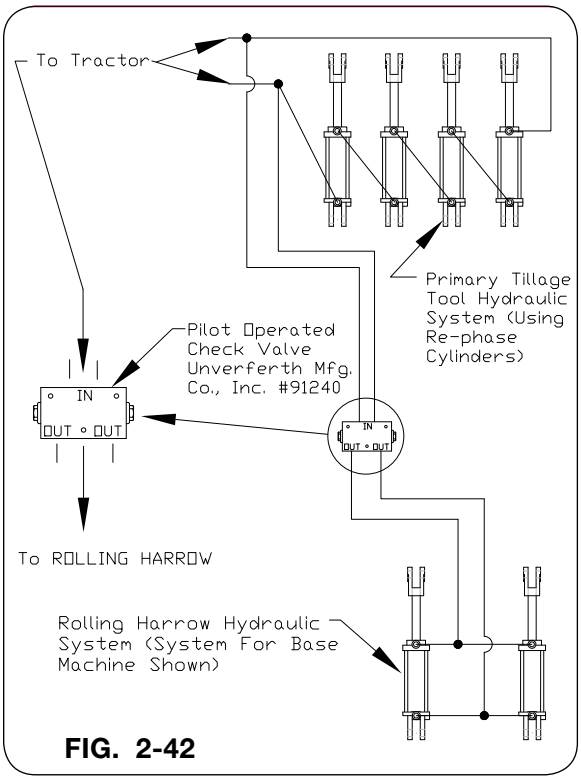


FIG. 2-42

Drum Scraper Assembly

1. Locate scrapers, bar mounts and hardware bags.

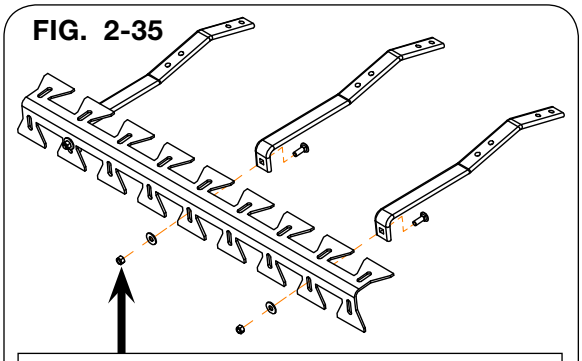
2. Install arm (75564B) to scraper using 1/2"-13UNC x 1 1/2" carriage bolts (9388-104) passing bolt through arm first. (FIG. 2-35)

NOTE: 4' baskets require 2 bar mounts.
5' Baskets require 3 bar mounts.
6' baskets require 4 bar mounts.

3. Install 1/2" USS flat washers (9405-088) and 1/2"-13UNC locknuts (9800) on scraper. (FIG. 2-35)

4. Slide arm all the way to the bottom of the scraper slot.

FIG. 2-35



Bar Mounts (75564B), Scraper, Carriage Bolts (9388-104), Flat Washers (9405-088), & Locknuts (9800)

5. Lay bar mounts/scraper assembly on top of basket frame near working position. (FIG. 2-36)

6. Install U-bolts (901837) from bottom of basket frame through arm. (FIG. 2-36)

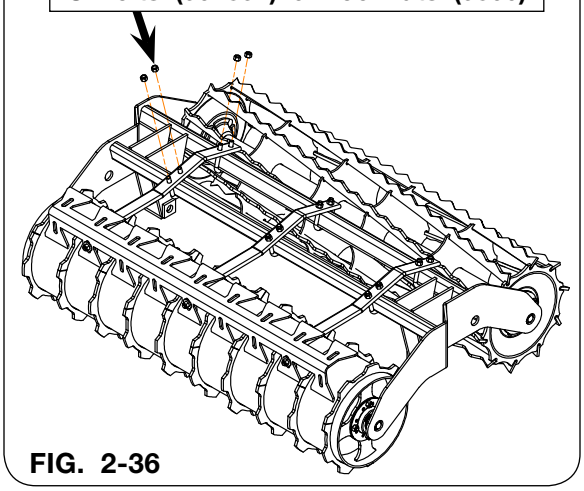
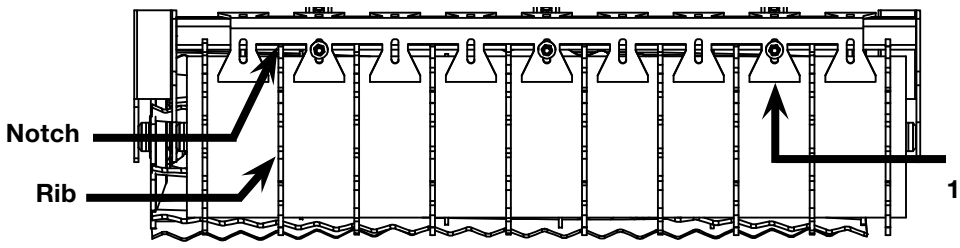


FIG. 2-36

7. Center notch in scraper over ribs on drums and secure scraper assembly with four 1/2"-13UNC locknuts per bar mount. (FIG. 2-37)

Center Notch In Scraper Over Ribs On Drum Roller

FIG. 2-37



8. Adjust scraper down to within 1/8" of the drum by loosening the locknuts on the carriage bolts, re-position scraper and secure with locknuts. (Some conditions may require the scraper to touch the drum to effectively scrape. Keep contact pressure to a minimum to prevent excessive wear to the scraper or drum.) Torque locknuts, refer to Torque Chart in MAINTENANCE section.

Basket & Frame Assembly

⚠ WARNING

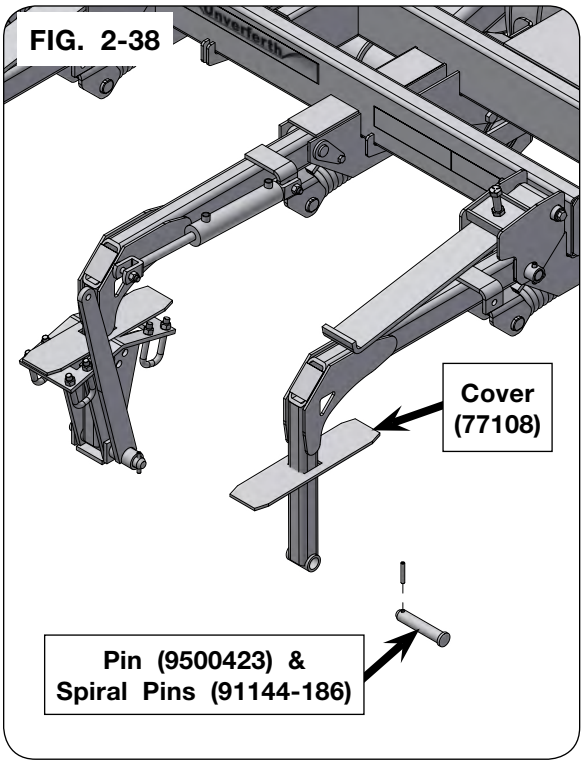
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING THE IMPLEMENT.**
- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 750 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

1. Connect the Rolling Harrow implement to a tractor. Raise the machine, but keep the wings unfolded. Install transport locks on main frame axle cylinders. Block the wings to remain level with the main frame. Lower machine onto transport locks and blocking. Relieve hydraulic oil pressure, see the power unit Operator's Manual for the proper procedure. Block the wheels on the machine to keep it from moving. Set the vehicle parking brake, shut off the engine and remove the ignition key.

2. Locate in parts box/crate (75859B) the rubber basket/arm pivot covers (77108). There is a rubber cover for each basket mounting arm on the machine. Install rubber basket arm pivot covers over bent arms. See FIG. 2-38.

3. Locate in the parts box the 1" Dia. x 5 1/8" basket mounting pins (9500423) and 5/16" Dia. x 2" spiral pins (91144-186). See FIG. 2-38.

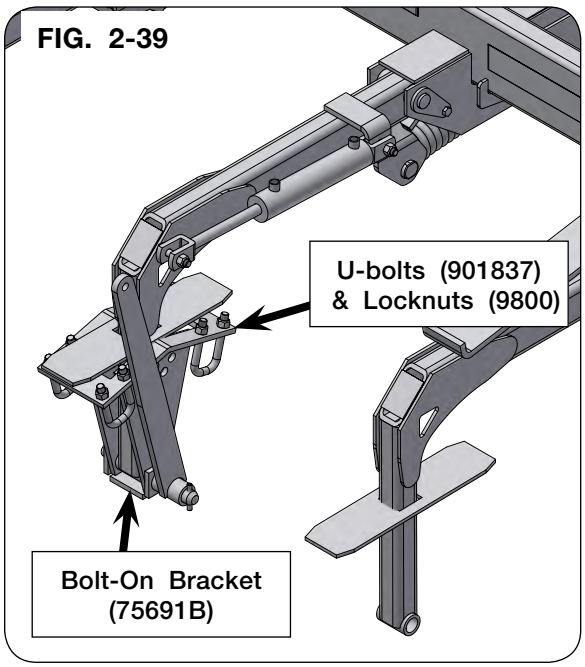
FIG. 2-38



Basket & Frame Assembly (continued)

4. Remove and save the U-bolts and locknuts from the main frame basket bolt-on mounting brackets (FIG. 2-39).

FIG. 2-39



Basket & Frame Assembly (continued)

5. Using a safe lifting device and supports rated at a minimum of 750 lbs., lift basket assembly into position on the mounting arms. Identify baskets and mating wings using Table 3-2, FIG. 2-41, and FIG. 2-40. Units with two baskets may be assembled in either direction. Units with drums have the drums mounted to the rear. Install the basket mounting pins and spiral pins. Also install the previously removed U-bolts to each bolt-on bracket.

6. Repeat for each basket/drum assembly.

FIG. 2-40

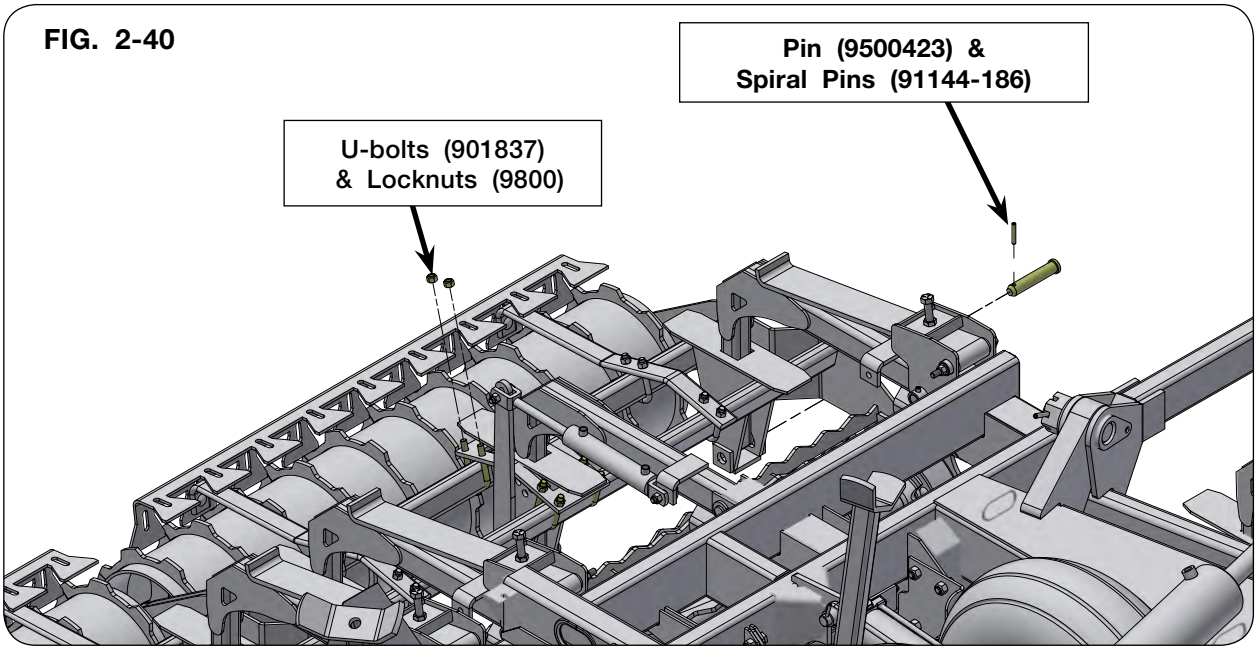
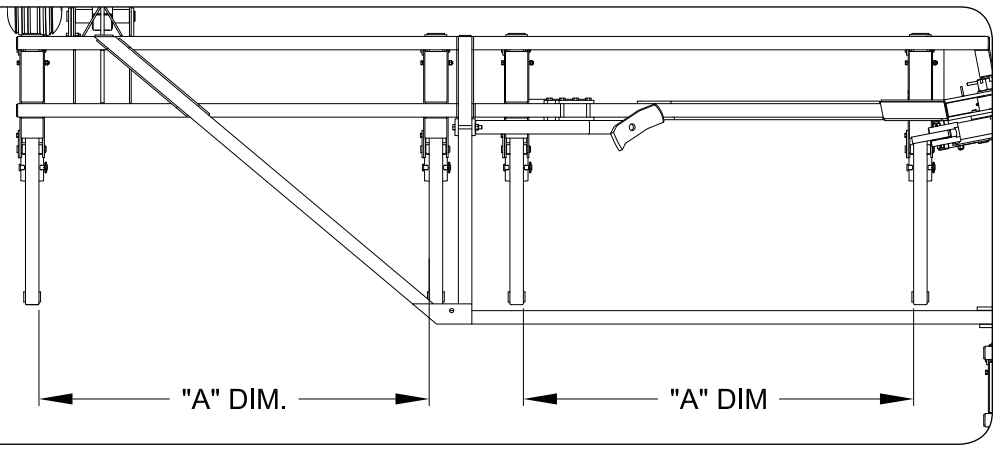


TABLE 3-2		
"A" DIM. (FIG. 2-41)	BASKET WIDTH	FRAME WIDTH
34"	4'	47"
46"	5'	59"
58"	6'	71"

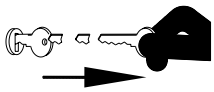
FIG. 2-41

12' LH Wing Assembly Shown



Main Frame Weight Transfer Spring

1. Park the unit on a firm, level surface. Unfold the wings into the working position, and lower the machine onto the transport stops. Block the wheels on the machine to keep it from moving. Set the vehicle parking brake, shut off the engine and remove the ignition key.



2. Using a safe lifting device and supports rated at a minimum of 600 lbs., support the affected basket and frame assembly to remove pressure from the bent arm pivot pins. (FIG. 2-57)

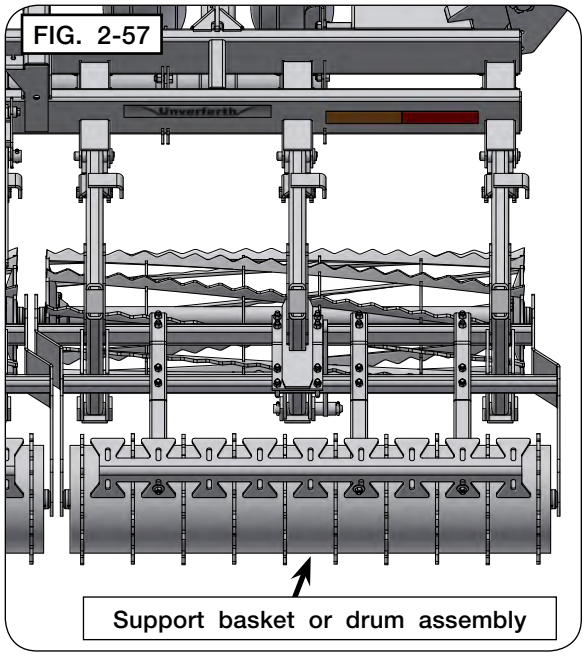


FIG. 2-57

3. Loosen the bolt attaching the spring to the trunnion to allow the spring to swing away from the trunnion. (FIG. 2-58) Remove and retain the trunnion and bolt from the bent arm.

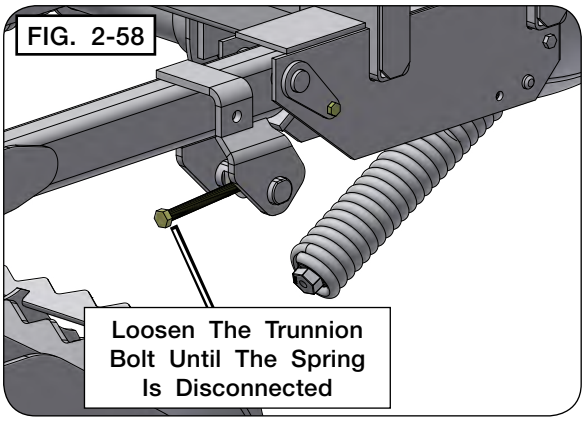


FIG. 2-58

4. Remove the bolt holding the tear-drop of the bent arm pivot pin. Remove the tear-drop pin from the arm. The bolt and pin can be discarded. (FIG. 2-59)

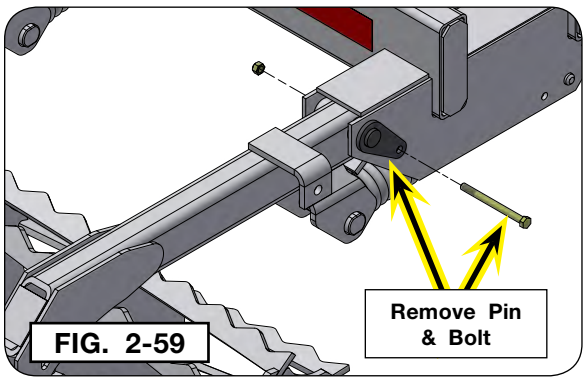


FIG. 2-59

Main Frame Weight Transfer Spring (continued)

5. Remove the roll pin and pivot pin from the spring assembly. Place the assembly into position on the bent arm. (FIG. 2-60)

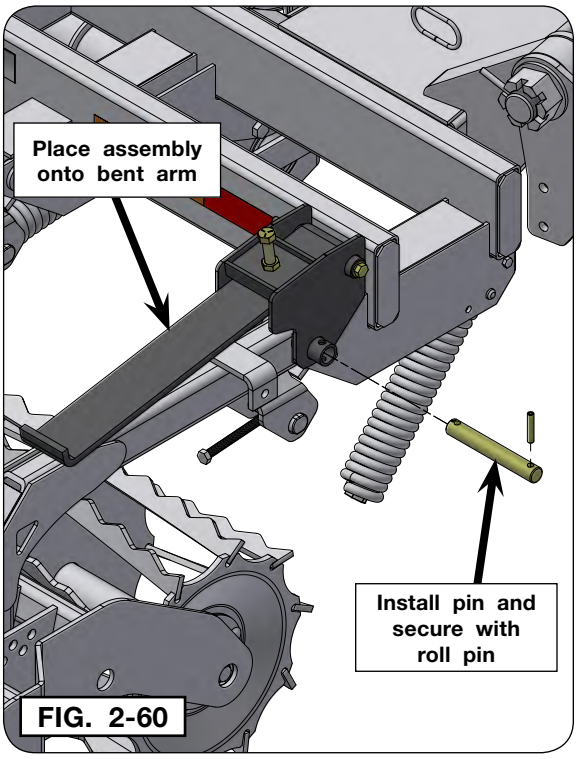


FIG. 2-60

6. Install the new pivot pin through the spring assembly and bent arm pivot. Secure the pin with the supplied roll pin. (FIG. 2-60)

7. Repeat steps 3-6 for the other bent arms.

8. Install the trunnion into the arms. For each arm, swing the spring back into position against the trunnion and insert the bolt and washer through the trunnion and thread into the spring cap. Tighten the bolt until it bottoms out to achieve proper tension. Remove the safe lifting device.

9. Use the adjustment bolts to apply the proper amount of spring assist to each arm. On each assembly, loosen the jam nut on the adjustment bolt. (FIG. 2-62) Tighten the adjustment bolt per the below chart and FIG. 2-63. Once the bolts have been adjusted, tighten the jam nuts and torque to 120-135 ft.-lbs.

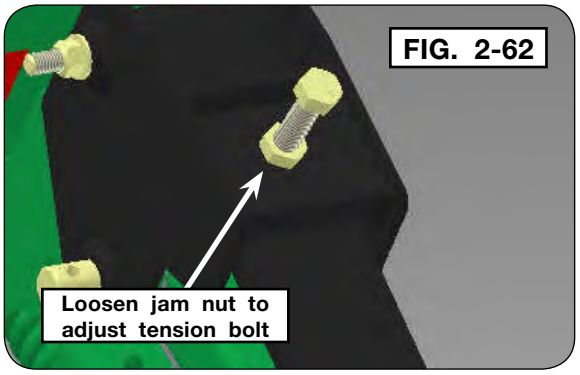


FIG. 2-62

Location	Spring Assist Bolt Setting
Right-Hand Basket	Tighten the bolt until it contacts the leaf spring.
Center Basket	Tighten the bolt to one revolution past contact with the leaf spring
Left-Hand Basket	Tighten the bolt to two revolutions past contact with the leaf spring

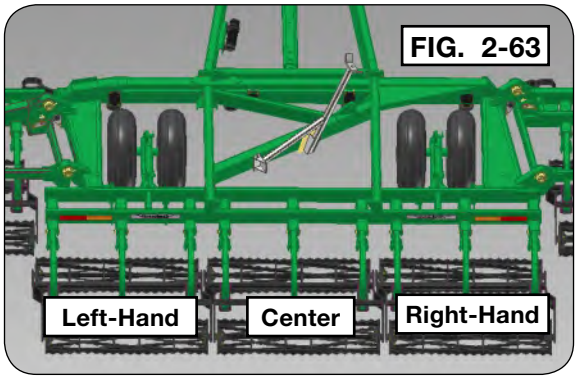


FIG. 2-63

10. Adjust the springs as needed to achieve a level main frame. Turning a bolt clockwise will raise that area of the main frame and turning it counter-clockwise will lower that area of the main frame. Make adjustments at 1/4 of a revolution at a time. **DO NOT exceed 3 revolutions past contact with the leaf spring.**

Notes

SECTION III
Operation

General Operation Information

WARNING

- **READ AND UNDERSTAND SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW "SAFETY" SECTION IN THIS MANUAL IF NECESSARY.**

Read this operation section thoroughly. Acquaint yourself with the adjustments required to obtain efficient and trouble-free operations.

Preparing Tractor

Follow these recommendations if the Rolling Harrow implement will be connected directly to a tractor.

Before operating implement refer to tractor operator's manual for information concerning safe methods of operation, hydraulics, hitch adjustment, tire inflation, wheel adjustments, and tractor weights.

Check tractor brakes and transport lights. Make sure they are in proper working order.

Check tractor hydraulic oil reservoir and add oil if needed.

Be sure tractor drawbar has sufficient capacity to operate the Rolling Harrow soil conditioner.

Adjust the tractor drawbar vertically so the top side of the bar is approximately 17 inches from the ground, and lock on centerline of tractor.

Secure the tractor 3-Point linkage so that it does not swing into the tractor tires or onto the hoses.

Preparing Primary Tillage Tool

Follow these recommendations if the Rolling Harrow soil conditioner will be connected to another tillage tool.

Refer to the units "Operator's Manual" for specifications, setup, maintenance, and operating procedures of this unit.

Confirm that the rear hitch of the primary tillage tool has sufficient capacity to operate the Rolling Harrow implement.

Be sure the rear hitch is securely attached to the primary tillage tool frame. Check hitch every day of use for loose, broken, or worn components.

Rear Hitch Height On Primary Tillage Tool

For maximum performance and adjustability of your implement, it is recommended the rear hitch height of the primary tillage tool (FIG. 3-1) be approximately 16 to 24 inches (20" nominal) from the ground line when in the field.

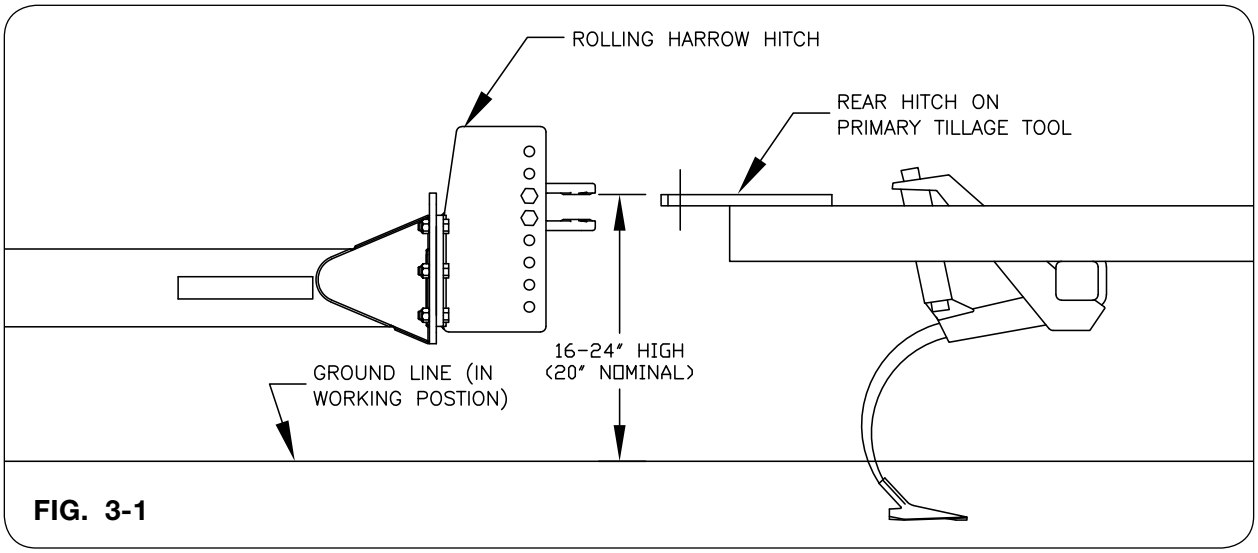


FIG. 3-1

Preparing Rolling Harrow Implement

Perform the service checks as outlined below. Repair or replace any damaged or worn parts before operating.

Tire Pressure

Check tire pressure, see “MAINTENANCE” section for recommended air pressure. Be sure tire pressure is equal in all tires.

⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN THE "MAINTENANCE" SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Tire manufacturers’ phone numbers and web sites are listed in the “MAINTENANCE” Section of this manual for your convenience.

Pins

Before going to the field, check that all pins are in place and are in good condition. Replace any worn, damaged, or missing pins.

Check that locking hardware for pins are in place and tight.

Hydraulics

Check routing of all hydraulic hoses. Hoses should not be kinked, twisted, or rubbing against sharp edges. Hoses should be secure with tie straps.

Check hoses and fittings for hydraulic leaks. Tighten or replace as required.

Lubrication

Lubricate unit as outlined in MAINTENANCE section.

Attaching To Primary Tillage Tool or Tractor

Before attaching the ROLLING HARROW implement to your primary tillage tool or tractor, adjust the extended length of the hitch tube to give adequate turning clearance between the two machines when turning on the ends.

To Lengthen:

1. Unfold the machine and lower to the ground.
2. Remove the pin from the rear tongue tube stop collar.
3. Reset the rear tongue tube stop collar to the desired tongue extended length and reinsert the pin.
4. Remove the two vertical pins that attach the tongue to the A-frame.
5. Pull the machine forward until the rear tongue stop collar contacts the A-frame.
6. Reinsert the two vertical pins that attach the tongue to the A-frame.

To Shorten:

1. Unfold the machine and lower to the ground.
2. Remove the two vertical pins that attach the tongue to the A-frame.
3. Back the machine until the front tongue stop collar contacts the A-frame.
4. Reinsert the two vertical pins that attach the tongue to the A-frame.

If unit is parked in the raised position, turn handle on jack to remove pressure and rotate jack into “Transport Position”.

Attaching To Primary Tillage Tool or Tractor

Hydraulic Hook-Up

The unit's hydraulic system may be connected to a 2-way control valve on the back of a tractor or to an existing circuit on the primary tillage tool.

⚠ WARNING

- **ALWAYS RELIEVE HYDRAULIC SYSTEM PRESSURE BEFORE DISCONNECTING HOSES FROM TRACTOR OR SERVICING HYDRAULIC SYSTEM. SEE TRACTOR OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

- **HYDRAULIC CYLINDERS MUST BE PURGED BEFORE HYDRAULIC SYSTEMS MAY BE USED. FAILURE TO DO THIS COULD RESULT IN SERIOUS INJURY.**

- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**

NOTE: Refer to SETUP section for purging process.

NOTE: Refer to MAINTENANCE section when checking hydraulic circuit operation.

HYDRAULIC HOOK-UP INTO A CIRCUIT USING REPHASE CYLINDERS:

If the unit's hydraulic system is connected to an existing hydraulic circuit using rephase cylinders on the primary tillage tool, Unverferth Manufacturing recommends installing the optional #91240 pilot check valve between the two hydraulic systems. This valve prevents the unit's lift system from bypassing oil through the rephase system and leaking down from the transport position. See your Unverferth dealer to order this valve. See SETUP section for hydraulic hook-up.

Raise unit into transport position and install cylinder transport locks (FIG. 3-2).

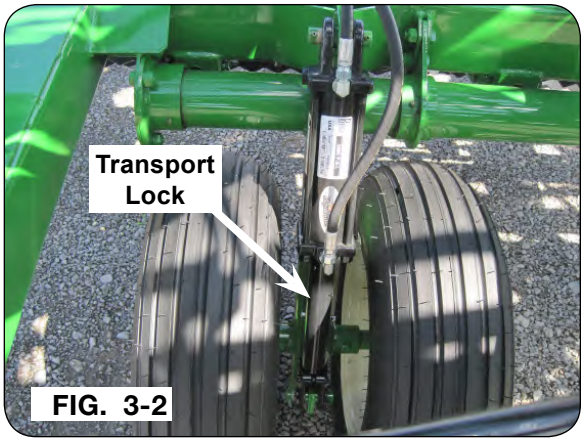


FIG. 3-2

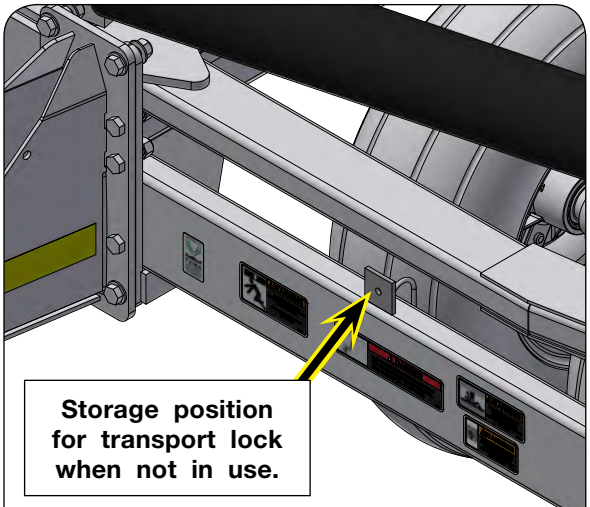


FIG. 3-3

Unfolding The Wings

DANGER

- **KEEP CLEAR OF POWER LINES WHEN FOLDING/UNFOLDING WINGS. WINGS MAY BECOME TALLER THAN SOME POWER LINES DURING THE FOLD CYCLE CAUSING ELECTROCUTION AND SERIOUS INJURY OR DEATH.**

IMPORTANT

- *Follow one of these procedures to avoid damaging the Rolling Harrow implement during the wing unfolding process.*

If transport locks will be removed before unfolding:

1. Fully raise the unit and remove the transport locks from the lift cylinders.
2. Park the unit on a loose surface (soil, gravel, etc.). Do not unfold the wings with the unit parked on concrete, asphalt, or similar packed surfaces.
3. Activate the unit's hydraulic system to lower the machine/unfold the wings. The machine should lower itself to the ground before the wings start to unfold.
4. As the wing baskets approach the ground, slowly pull the unit forward. This will prevent the unit's baskets and leveler bar teeth from jamming sideways into the ground and possibly damaging the unit.
5. Reverse oil flow once the wings have unfolded. Wing transport wheel gravity latches should release.
6. Lower the machine to the field working position.

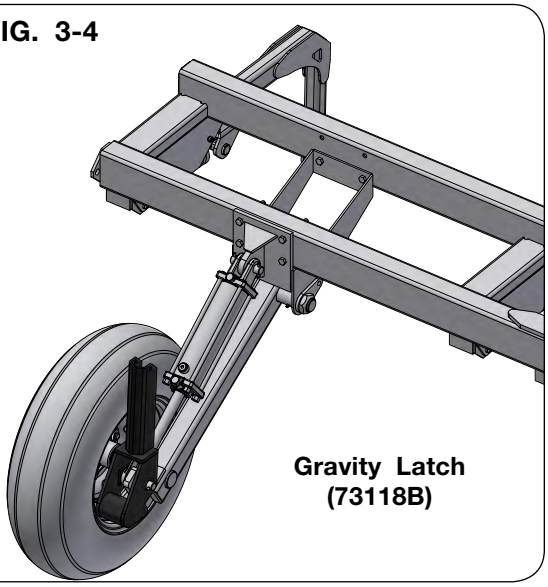
NOTE: Gravity latch (73118B) should automatically engage when wings fold-up.

If transport locks will be removed after unfolding:

1. Activate the units hydraulic system to lower the machine/unfold the wings. The machine should lower itself onto the transport locks before the wings start to unfold. BOTH TRANSPORT LOCKS MUST BE INSTALLED.
2. Fully unfold the wings. Once the wings have unfolded, reverse the oil flow through the hydraulic system to fully extend the wheel lift cylinders. Transport wheel gravity latches should release.
3. Remove the transport locks from the lift cylinders.
4. Lower the machine to the field working position.

NOTE: Gravity latch (73118B) should automatically engage when wings fold-up.

FIG. 3-4



Transport Chain

CAUTION

- **ALWAYS USE TRANSPORT CHAIN WHEN TRANSPORTING IMPLEMENTS. FAILURE TO USE CHAIN COULD CAUSE PERSONAL INJURY OR DAMAGE IF IMPLEMENTS BECOME DISENGAGED.**

FIG. 3-5 shown with hook-up between tractor and Rolling Harrow implement. Always use intermediate support when connecting the implement directly to a tractor. DO NOT use the intermediate support as the chain attaching point. FIG. 3-6 shows how the transport chain must be installed between primary tillage tool and ROLLING HARROW implement.

Transport chain should have a minimum rating equal to the gross weight of implement and all attachments. Use only ASABE approved chains. Allow no more slack in chain than necessary to permit turning.

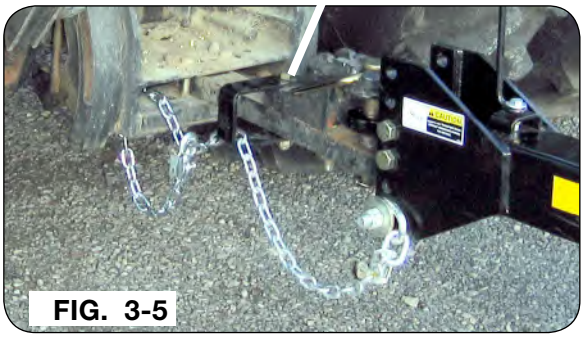


FIG. 3-5

CAUTION

- **REPLACE TRANSPORT CHAIN IF ANY LINK OR END FITTING IS BROKEN, STRETCHED, OR DAMAGED. DO NOT WELD TRANSPORT CHAIN.**

IMPORTANT

- *FIG. 3-6 is a typical rear hitch representation. Actual rear hitch may vary.*

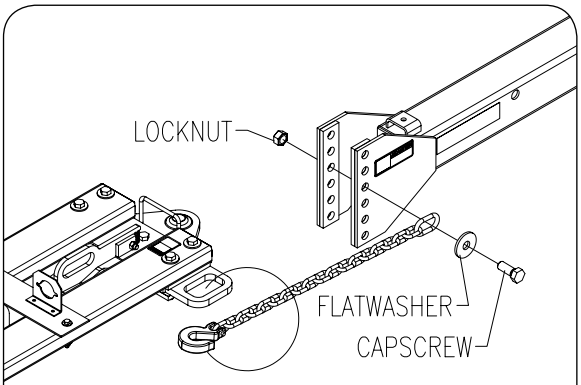


FIG. 3-6

Transporting

⚠ WARNING

- **THE ROLLING HARROW IMPLEMENT WILL INCREASE THE OVERALL LENGTH OF THE PRIMARY TILLAGE TOOL. USE EXTREME CAUTION WHEN TURNING TO AVOID BYSTANDERS, OBSTACLES, ETC. REDUCE GROUND SPEEDS TO AVOID DAMAGE TO ROLLING HARROW OR PRIMARY TILLAGE TOOL.**

Before unit is transported, be sure the jackstand is in the "Transport Position" see "Jack Assembly" in SETUP section.

⚠ CAUTION

- **INSTALL HYDRAULIC CYLINDER TRANSPORT LOCKS BEFORE TRANSPORTING (FIG. 3-7).**

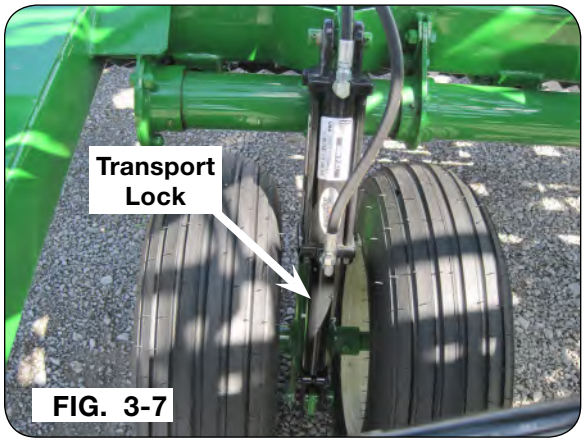


FIG. 3-7

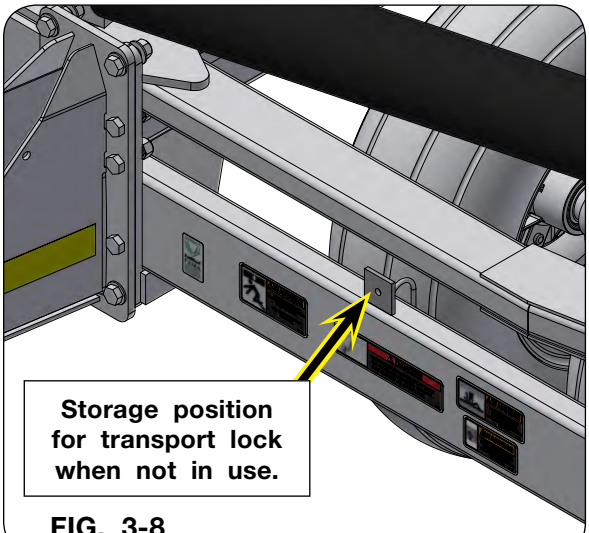


FIG. 3-8

Comply with all state and local laws governing highway safety and regulations when moving machinery on public roads.

Be sure SMV Emblem is in place and clearly visible on the rear of the implement. See SMV Emblem in SETUP section.

⚠ CAUTION

- **USE APPROVED ACCESSORY LIGHTS AND REFLECTORS WHEN TRANSPORTING AT NIGHT, DURING PERIODS OF POOR VISIBILITY AND AS REQUIRED BY LOCAL LAW.**

Check with local authorities to insure lights and reflectors comply with local standards.

Transporting (continued)

For safe transporting of these implements, the transport speed should never exceed 10 M.P.H. in the field or over rough terrain. Reduce transport speed to maintain full control of the implement and tractor at all times.

NOTE: Unverferth Manufacturing has designed the transport lighting and marking kit to meet United States federal law and ASABE standards at the time of manufacture. Machine modifications, including additional features or changes to the intended configurations, may require updates to the lighting and marking as well.

Compliance with all laws are the responsibility of the operator at the time of travel.

Please see federal regulation 49 CFR 562; available at www.govinfo.gov for US federal law requirements.

See your Unverferth dealer for additional brackets, reflectors, or lights to meet your requirements.

Unhitching

⚠ WARNING

- **RISING OR FALLING TONGUE CAN CAUSE SERIOUS INJURY OR DEATH. USE JACK TO SUPPORT IMPLEMENT BEFORE REMOVING HITCH PIN.**

- **IF UNIT IS UNHOOKED IN THE TRANSPORT POSITION, INSTALL HYDRAULIC CYLINDER TRANSPORT LOCKS AND LOWER JACKSTAND TO GROUND BEFORE UNHOOKING UNIT.**

Refer to “Jack Assembly” in SETUP section for positioning of jackstand into “Parked Position”.

⚠ CAUTION

- **KEEP HANDS AND FEET AWAY FROM JACKSTAND WHEN LOWERING.**

When parking the implement, be sure to only load one jack. Two jacks are provided to insure stability of the machine in any situation. Lower both jacks in parked position. If the machine is tongue heavy turn the front jack handle to transfer the tongue weight. If the unit is rear heavy turn the rear jack handle to transfer the tongue weight. Turn the handle of the non-loaded jack until the foot slightly touches the ground to prevent tipping of the machine in case of weight transfer.

Remove hitch pin.

⚠ WARNING

- **ALWAYS RELIEVE HYDRAULIC SYSTEM PRESSURE BEFORE DISCONNECTING HOSES FROM TRACTOR OR SERVICING HYDRAULIC SYSTEM. SEE TRACTOR OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

Disconnect the hydraulic hoses. Install dust covers over the hose plugs and outlets.

Before unhitching the primary tillage tool, refer to the unit’s operator’s manual for unhitching procedures.

Field Adjustments

Rolling Harrow Basket

The Rolling Harrow basket is designed to provide an excellent seedbed when used with your primary tillage tool.

For maximum field performance, the Rolling Harrow should be run with the transport wheels in the “Raised” position. This allows maximum transfer of weight to the baskets, thus providing for better leveling and ground working action by allowing the unit to more closely follow the ground contour.

Basket Pitch Adjustment (Optional)

In some conditions, it may be desirable to limit the float of the basket frame. Only limit the float sufficiently to improve performance. Excessive float limitation may damage the machine.

⚠ WARNING

- **WHEN WORKING AROUND THE MACHINE, BE SURE IT IS SECURELY BLOCKED; FAILURE TO DO SO COULD RESULT IN TIPPING OR MOVEMENT OF MACHINE, CAUSING SEVERE BODILY HARM.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 100 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

1. Park the unit on a firm, level surface. Unfold the wings into the field working position. Set the vehicle parking brake.
2. Raise the machine off the ground and insert the transport cylinder locks. Lower and rest the machine on the transport cylinder stops. Block the wheels on the machine to keep it from moving.

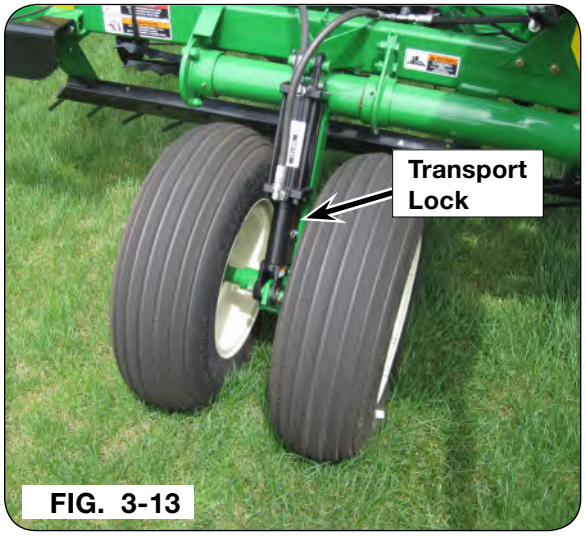
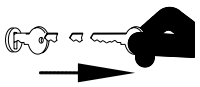


FIG. 3-13

3. Shut off the engine and remove the ignition key.



Basket Pitch Adjustment (Optional) (continued)

4. Install pin and spacer in the second hole from the rear with the plate facing the mounting arm. Reposition into alternate holes as necessary for field conditions.

NOTE: Place the pins and spacers in the storage box when not in use.

IMPORTANT

- *Only install the pin and spacer on the rear side of the basket arm. Installation of the pins on the front side of the arm could result in damage to the basket, frame, or other components*

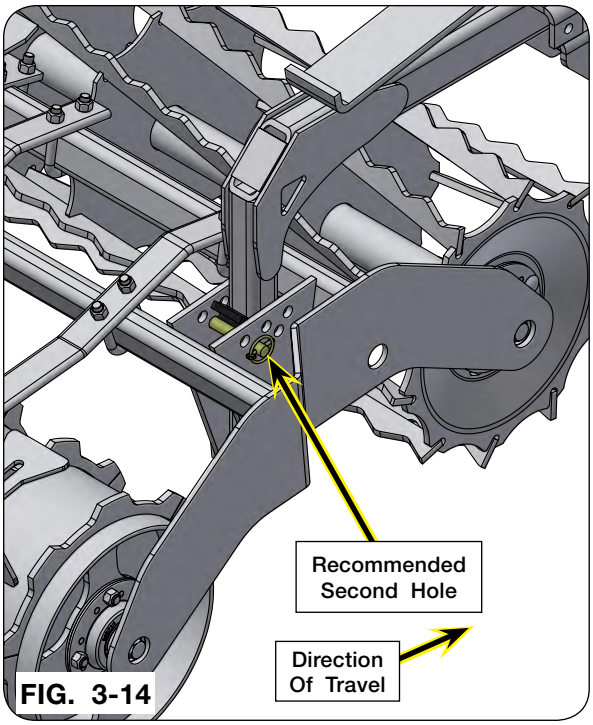


FIG. 3-14

Notes

SECTION IV
Maintenance

Storage

Your implement is an important investment. Spend a little time to protect it from destructive rust and corrosion. You will be repaid in longer service life and better performance.

Do the following before placing the implement in storage:

1. Remove dirt and trash which could cause rusting.
2. Repaint any chipped or scraped areas.
3. Lubricate wing pivots daily (FIG. 4-1).

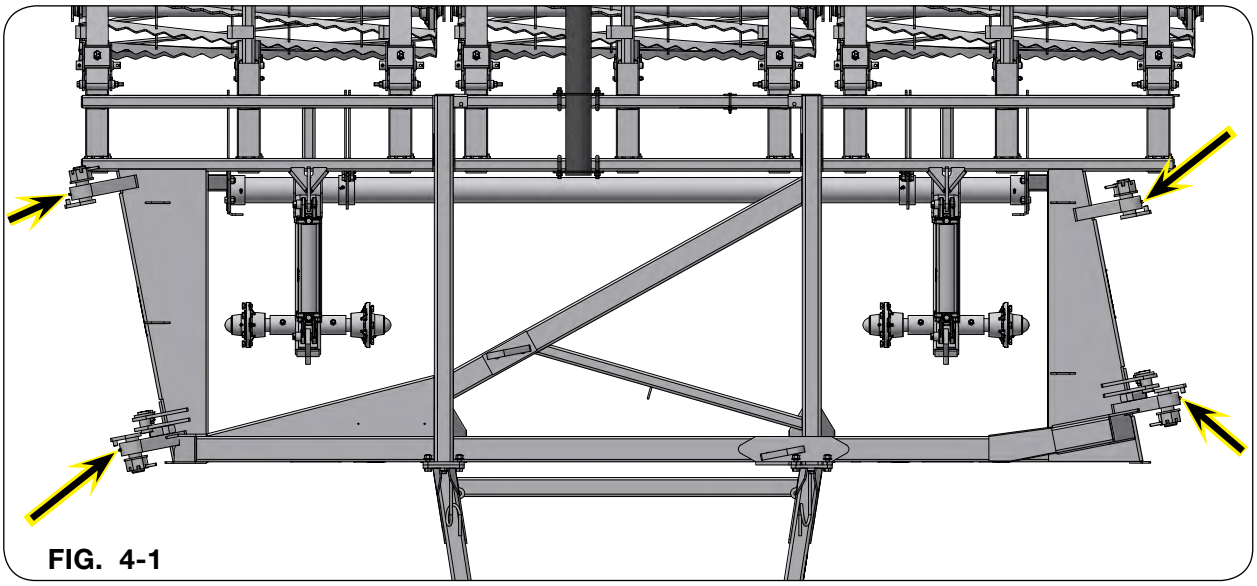


FIG. 4-1

4. Coat all earth moving surfaces with grease or suitable rust preventative.
5. Inspect for damage or worn parts, replace before next season.
6. Store implement inside, away from livestock.
7. Block up implement to keep tires and ground tools off ground.
8. Replace all worn, torn or faded decals and reflectors.

To save storage space, the telescopic tongue may be pushed into the A-frame. The tongue will need to be lengthened to the proper working length when the machine is used again.

DO NOT store the machine with the wings folded and the base frame lowered to the ground. This can damage the base frame basket springs.

Lubrication

Be sure to lubricate the indicated points of the Rolling Harrow implement as outlined.

LOCATION	SEASON		HOURS
	BEGINNING	END	
AXLE & WING TRANSPORT WHEELS - 12 lube fittings - grease gun	✓	✓	8
WING HINGE POINTS - 4 lube fitting - grease gun	✓	✓	8
WHEEL HUBS - repack All bearings	✓		

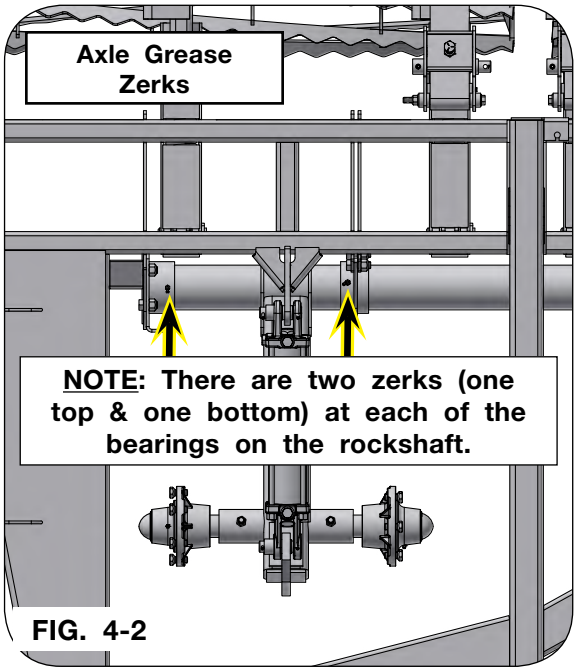


FIG. 4-2

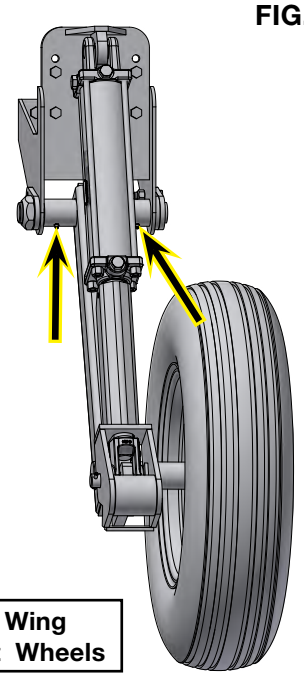


FIG. 4-3

Hydraulic System

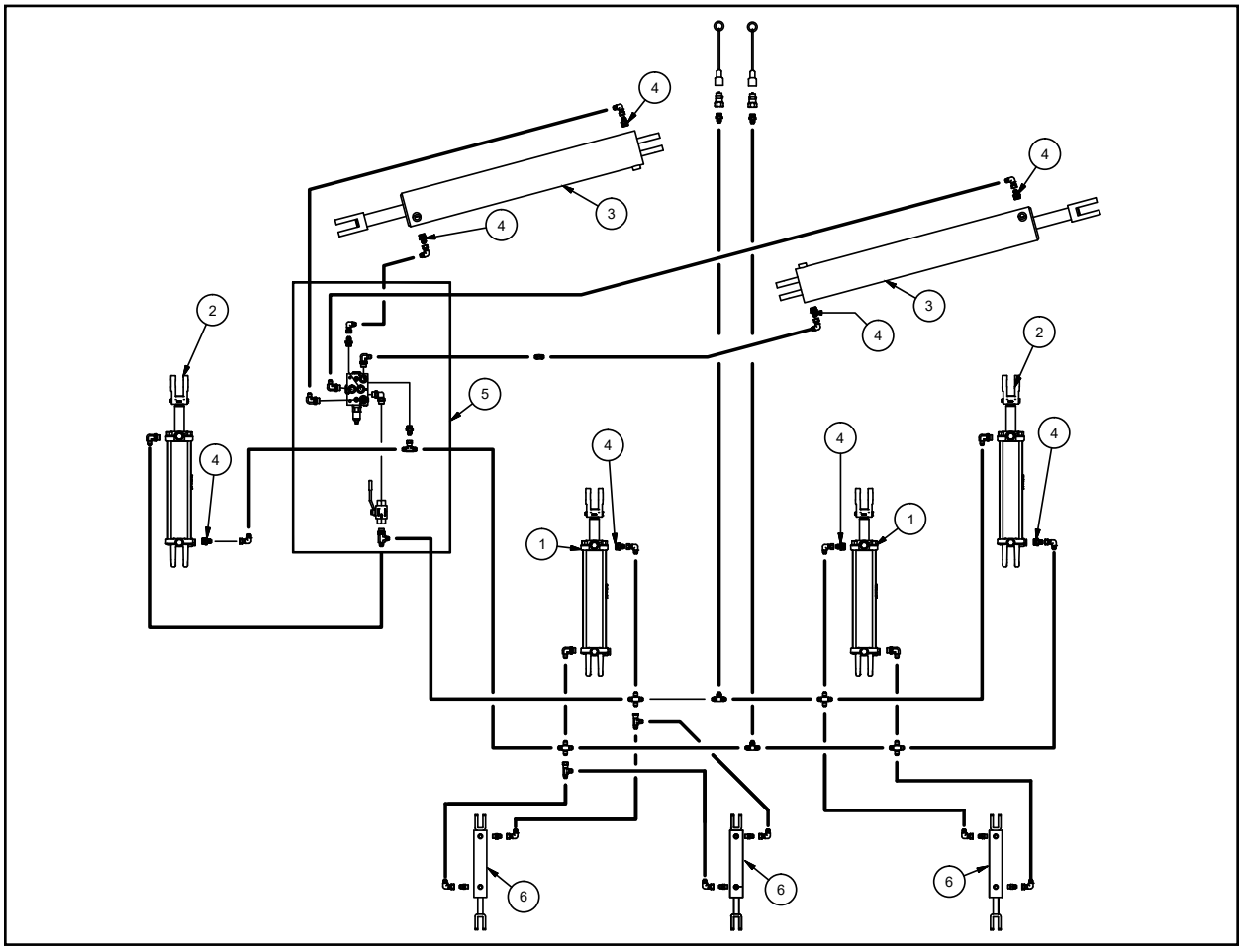
NOTE: For plumbing diagram, refer to "Hydraulic Diagram 1". Refer to PARTS section for hydraulic components detail listing.

OPERATION

All cylinders are double action cylinders. They are all teed together into one circuit. Depending on machine configuration the machine may lift first and then fold, or fold first and then lift. In some cases it may even lift and fold at the same time.

When hydraulic oil is directed in the opposite direction, the wheel axle cylinders will typically retract first, followed by extending of the wing fold cylinders.

HYDRAULIC DIAGRAM #1



ITEM	DESCRIPTION	QTY	NOTES
1	Base Wheel Cylinder	2	Cylinder 3 x 12
2	Wing Wheel Cylinder	2	Cylinder 3 x 12
3	Wing Fold Cylinder	2	Cylinder 4 1/2 x 30
4	Orifices	8	with 0.060" Restrictor
5	Valve Assembly	1	Located on LH side of base
6	Main Frame Basket Rocker Cylinders	3	Cylinder 1 1/2 x 6

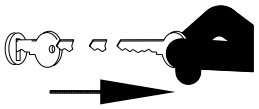
All hoses, cylinders, and fittings are rated for a minimum of 3000PSI. Any replacement components must be rated for 3000PSI minimum.

Replacing Basket/Drum Bearings

WARNING

- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

1. Unverferth Manufacturing bearing replacement kit (74006) is available for the ROLLING HARROW soil conditioner.
2. Park unit on a firm level surface. Unfold wings, lower the implement to the ground, set the tractor parking brake, depressurize the hydraulic system, shut off the engine, and remove the ignition key.



3. Remove pin (9500423) from the basket/drum assembly with the worn bearing. Using the tractor hydraulic system, raise the unit to transport height. Install transport stops on lift cylinders. Set tractor parking brake, depressurize the hydraulic system, shut off the engine and remove the ignition key.
4. Roll the basket/drum assembly from under the machine.
5. Remove the 5/8"-11UNC x 1 1/4" capscrew (900872) from the stub shaft (74280) on the worn bearing. Place pry bar between the head of the stub shaft and the basket/drum weldment to prevent the head of the stub shaft from turning.
6. Push the stub shaft into the basket/drum weldment so the shaft disengages the basket/drum frame side plate.
7. Repeat steps 4 & 5 for the capscrew and stub shaft on the other end of the basket/drum and roll the basket/drum away from the frame.
8. Remove the 1/2"-13UNC x 1 1/4" carriage bolts from the bearing and basket/drum. Remove bearing from the basket/drum and remove stub shaft from bearing.
9. Inspect the square recess for the stub shaft in the frame side plate. Remove dirt and debris from this area and make certain edges are not worn or rounded. Repair or replace frame as needed.

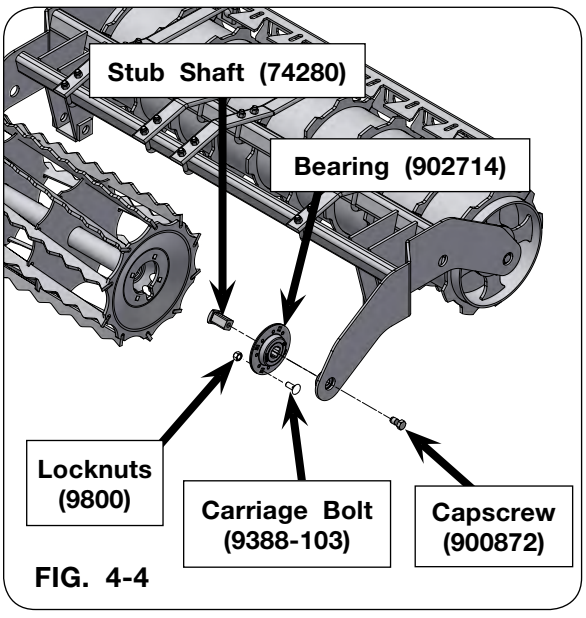


FIG. 4-4

Replacing Basket/Drum Bearings (continued)

10. Discard worn bearing and used mounting hardware. Examine inner race of replacement bearing. If the inner race protrudes beyond the housing more on one side than the other, install the bearing in the basket/drum such that this side is facing the frame side plate. Insert the stub shaft into the bearing and mount the bearing to the basket/drum with the new carriage bolts. Torque locknuts on carriage bolts to 70-75 ft.-lbs.

11. Push the basket/drum back into the frame. Align the hole in the stub shaft with the hole in the frame side plate. Thread the new 5/8”-11UNC x 1 1/4” capscrew into the stub shaft until the epoxy begins to engage.

12. Use a pry bar to force the head of the stub shaft against the inner race of the bearing. This may flex the side plate of the frame away from the basket/drum; this is acceptable. While maintaining pressure on the head of the stub shaft, use the 5/8”-11UNC x 1 1/4” capscrew to rotate the stub shaft until the end of it engages in the square recess of the frame side plate. Often there will be an audible click when the shaft engages and the side plate moves toward the basket/drum. Use the pry bar to prevent the stub shaft from turning and torque the 5/8”-11UNC x 1 1/4” capscrew to 150-160 ft.-lbs.

IMPORTANT

- *The stub shaft MUST fully engage the square recess in the frame side plate to prevent machine damage. Make certain the stub shaft is fully engaged before tightening the 5/8”-11UNC x 1 1/4” capscrew.*

13. Reinstall basket/drum assembly on machine with pins (9500423).

Hub Maintenance

1. Use grease to lubricate the Seal Lip.

2. Assemble the hub onto the spindle. Rotate the hub while doing this so that the seal lip does not fold under as the lip goes on the seal lip of the spindle.

3. Be sure the outer bearing cone slides on the spindle and into the bearing cup.

4. Assemble the washer and the nut onto the spindle and tighten the nut to 20-25 ft-lbs. Rotate the hub while tightening the nut.

5. Back off the spindle nut until it becomes loose.

6. While rotating the hub retighten the nut to remove all CLEARANCE. Line up the next slot in the nut with the hole in the spindle. Insert the cotter pin and bend the cotter pin. Insert the hub cap.

Troubleshooting — Hydraulics Not Functioning Properly

PROBABLE CAUSE	CORRECTION
Incorrect hose hook-up to tractor control levers	Refer to Tractor Operator's Manual for valve and control lever arrangement
Insufficient tractor hydraulic pressure	A. Check hydraulic reservoir oil level B. Refer to tractor "Operator's Manual" or hydraulic system recommendations
Hydraulic components leaking oil	Find cause and correct, see MAINTENANCE section hydraulic systems
Hydraulic hoses kinked or twisted	Find cause and correct
Malfunction of hydraulic cylinders	
A. Cylinder leakage	A. Repair or replace cylinders. See PARTS section for cylinder or seal kit part numbers
B. Orifice in wing-fold cylinders plugged	B. Remove contamination from system (flush system)
Unit "Bleeding Down" when hooked into primary tillage tools hydraulic system (with rephase cylinders)	Install pilot operated check valve, refer to OPERATIONS section
Wings raise when unit is raised off the ground	Normal Operation - wing fold operation can be shut off by utilizing the wing-fold lock-out kit or installing dual hydraulic hose option. See your ROLLING HARROW dealer
Wings do not fold/unfold in sync.	A. Some discrepancy in wing fold is normal. B. For large discrepancy - check hose and valve routing. C. Verify wing rests are in the correct location. Right-hand rest may need to be slid to the right to allow both wings to unfold at the same time.

Complete Torque Chart

Capscrews - Grade 5

NOTE:

- Grade 5 capscrews can be identified by three radial dashes on the head.

- For wheel torque requirements, refer to Wheels and Tires.
- Tighten U-bolts evenly and equally to have the same number of threads exposed on each end.

SIZE	FOOT POUNDS	NEWTON METERS
1/4-20 1/4-28	8-10 9-11	11-13 12-15
5/16-18 5/16-24	15-17 17-19	20-23 23-26
3/8-16 3/8-24	25-28 28-31	34-38 38-42
7/16-14 7/16-20	40-45 45-50	54-61 61-68
1/2-13 1/2-20	62-68 68-75	84-92 92-102
9/16-12 9/16-18	90-98 100-110	122-133 134-148
5/8-11 5/8-18	120-135 124-137	162-183 168-186
3/4-10 3/4-16	200-220 210-230	270-300 285-310
7/8-9 7/8-14	330-350 360-380	425-475 460-515
1-8 1-14	500-525 540-560	675-710 730-760
1 1/8-7 1 1/8-12	600-635 665-700	815-860 920-950
1 1/4-7 1 1/4-12	850-895 940-990	1150-1215 1275-1340
1 3/8-6 1 3/8-12	1125-1175 1280-1335	1525-1590 1735-1810
1 1/2-6 1 1/2-12	1500-1560 1685-1755	2035-2115 2285-2380

IMPORTANT

- *Follow these torque recommendations except when specified in text.*

Complete Torque Chart

Capscrews - Grade 8

NOTE:

- Grade 8 capscrews can be identified by six radial dashes on the head.
- For wheel torque requirements, refer to Wheels and Tires.
- Tighten U-bolts evenly and equally to have the same number of threads exposed on each end.

SIZE	FOOT POUNDS	NEWTON METERS
5/16-18 5/16-24	20-22 21-23	27-30 28-31
3/8-16 3/8-24	35-39 36-41	47-53 49-55
7/16-14 7/16-20	54-58 55-60	73-78 75-80
1/2-13 1/2-20	82-88 94-99	110-120 125-135
9/16-12 9/16-18	127-134 147-155	170-180 199-210
5/8-11 5/8-18	160-170 165-175	215-230 225-235
3/4-10 3/4-16	280-295 330-365	380-400 445-495
7/8-9 7/8-14	410-430 420-440	555-580 570-595
1-8 1-14	630-650 680-700	850-880 920-950
1 1/8-7 1 1/8-12	900-930 930-950	1220-1260 1260-1290
1 1/4-7 1 1/4-12	1250-1300 1280-1320	1695-1760 1735-1790

IMPORTANT

- *Follow these torque recommendations except when specified in text.*

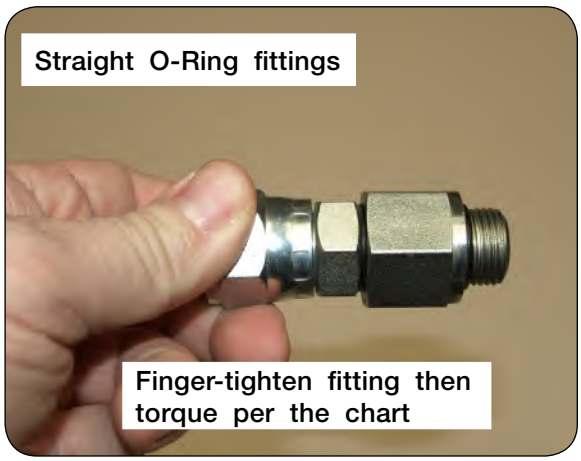
Hydraulic Fittings – Torque and Installation

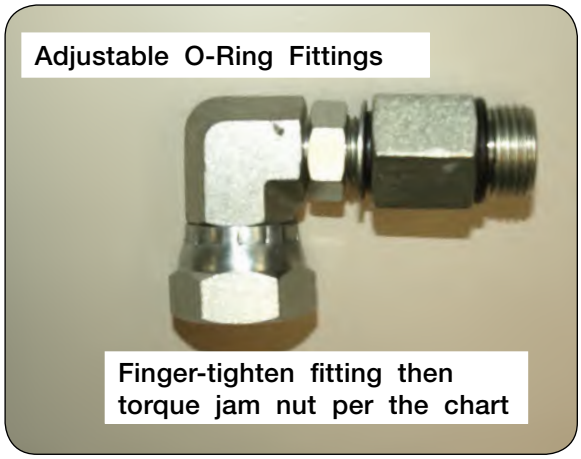
Tightening O-Ring Fittings

1. Inspect components for damage or contamination. Do not connect any other type of fitting to an O-ring fitting.
2. For adjustable fittings, insure the jam nut and washer are fully backed up.
3. Lubricate the O-ring and threads on the fitting.
4. Turn the fitting into the port until it is finger tight.
5. For adjustable fittings, set in the desired position.
6. Using a wrench, torque the fitting to the value in the below table. For adjustable fittings the jam nut will be tightened.

NOTE: Never use a power tool to install a fitting.

Dash Size	Thread Size	Straight Stud Torque (Ft-Lbs)	Adjustable Stud Torque (Ft-Lbs)
-5	1/2-20	14-19	10-14
-6	9/16-18	18-24	12-16
-8	3/4-16	27-43	20-30
-10	7/8-14	36-48	30-36
-12	1-1/16-12	65-75	44-54
-14	1-3/16-12	75-99	53-70
-16	1-5/16-12	85-123	59-80
-20	1-5/8”-12	115-161	75-100
-24	1-7/8”-12	125-170	105-125





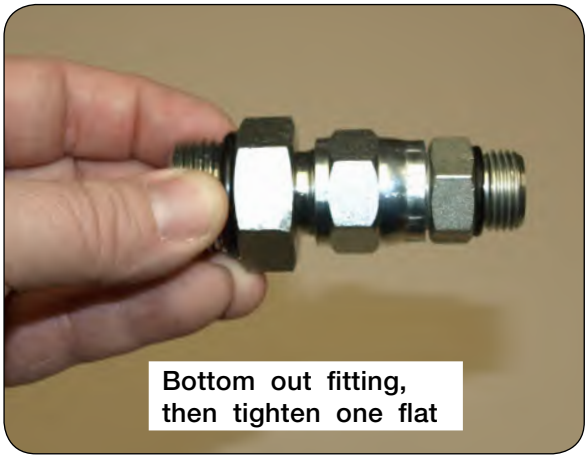
Hydraulic Fittings – Torque and Installation

Tightening JIC Fittings

1. Inspect all components for damage or contamination. Do not connect any other type of fitting to a JIC fitting.
2. Lubricate the threads.
3. Turn the fitting into the port until it bottoms out.
4. Use one wrench on the fixed hex on the hose to prevent twisting and a second on the swivel. Tighten the fitting another 60 degrees (or one flat)

NOTE: Never use a power tool to install a fitting

JIC fittings



Bottom out fitting, then tighten one flat

Wheels and Tires

Wheel Nut Torque

⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. TORQUE WHEEL NUTS/BOLTS TO VALUES IN TABLE. CHECK TORQUE BEFORE INITIAL USE, AFTER ONE HOUR OF USE, AND EACH HOUR UNTIL WHEEL NUTS/BOLTS MAINTAIN TORQUE VALUE. CHECK TORQUE EVERY 10 HOURS OF USE THEREAFTER. AFTER EACH WHEEL REMOVAL START TORQUE PROCESS FROM BEGINNING. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

Failure to check torque before first use may damage wheel nut/bolt seats. Once seats are damaged, it will become impossible to keep nuts/bolts tight. Tighten nuts/bolts to the applicable torque value shown below. Start all nuts/bolts by hand to prevent cross threading. Torque nuts/ bolts in the recommended sequence as shown in Diagram 1.

NOTE: Do not use anti-seize on wheel hardware.

WHEEL HARDWARE	
SIZE	FOOT-POUNDS
1/2-20 (UNF)	75 Ft.-Lbs.
9/16-18 (UNF)	110 Ft.-Lbs.

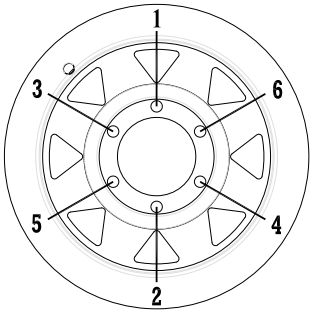


Diagram 1 - 6 bolt

Tire Pressure

- The following is to be used as a general guide for tire inflation and figures can vary depending on specific brand of tire used. **It is important that tires are inspected after unit is loaded.** Start with minimum pressure indicated. The tire should stand up with no side-wall buckling or distress as tire rolls. Record the pressure needed to support the full load and maintain this pressure to achieve proper tire life. **Do not exceed maximum recommended tire pressure.**

Recommended....44 PSI maximum

Wheels and Tires (continued)

Tire Warranty

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Following are phone numbers and Websites for your convenience:

Carlisle
www.carlisletire.com
Phone 800-260-7959
Fax 800-352-0075

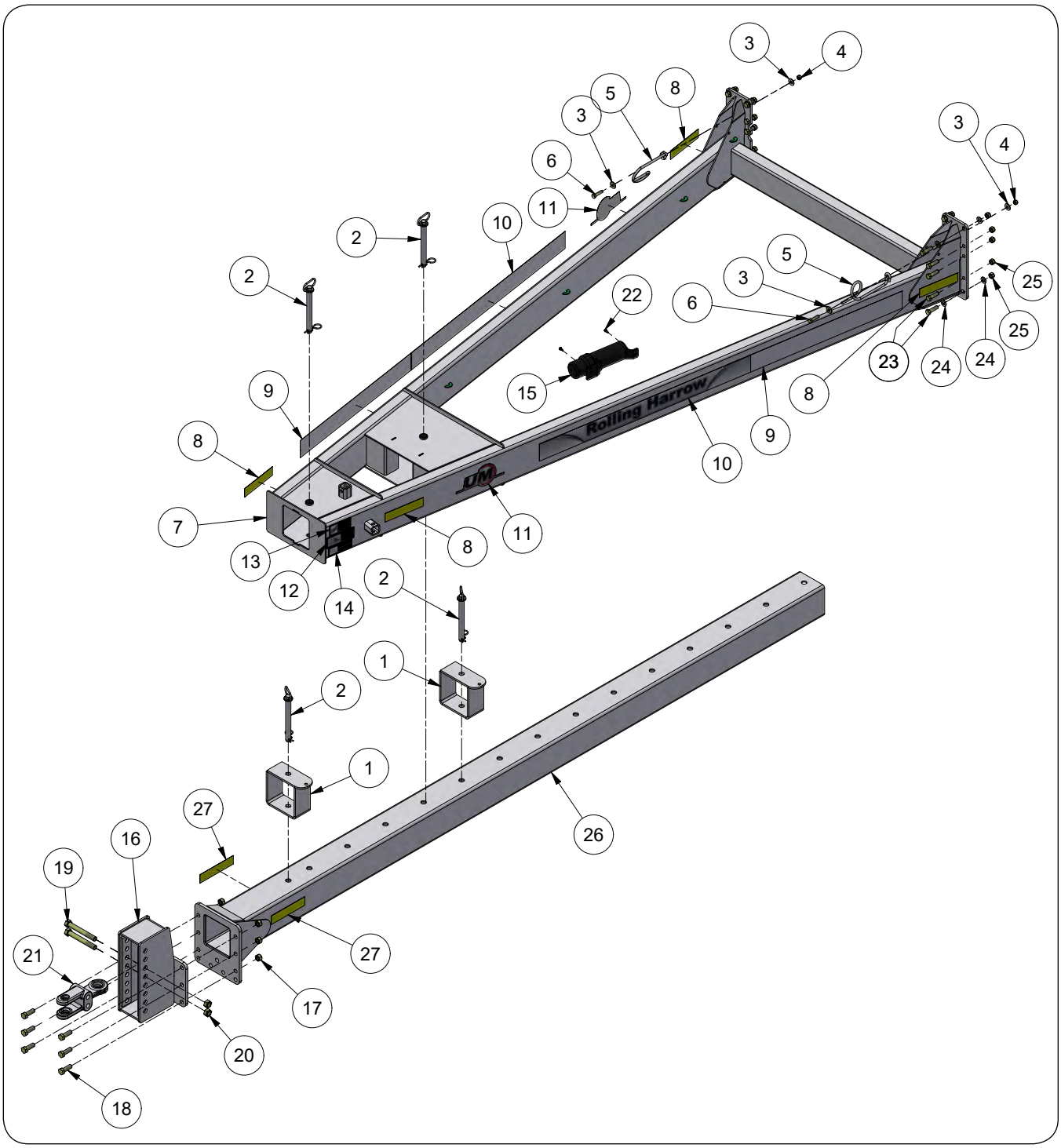
Greenball
www.greenball.com
Phone nearest location:
California 800-937-5204
Georgia 800-283-4569
Florida 800-935-0200
Indiana 800-426-4068
Tennessee 800-946-9412
Ohio 800-840-7295
Pennsylvania 800-869-6787

Notes

SECTION V
Parts

Combination Hitch Components

Please visit www.unverferth.com/parts/ for the most current parts listing.

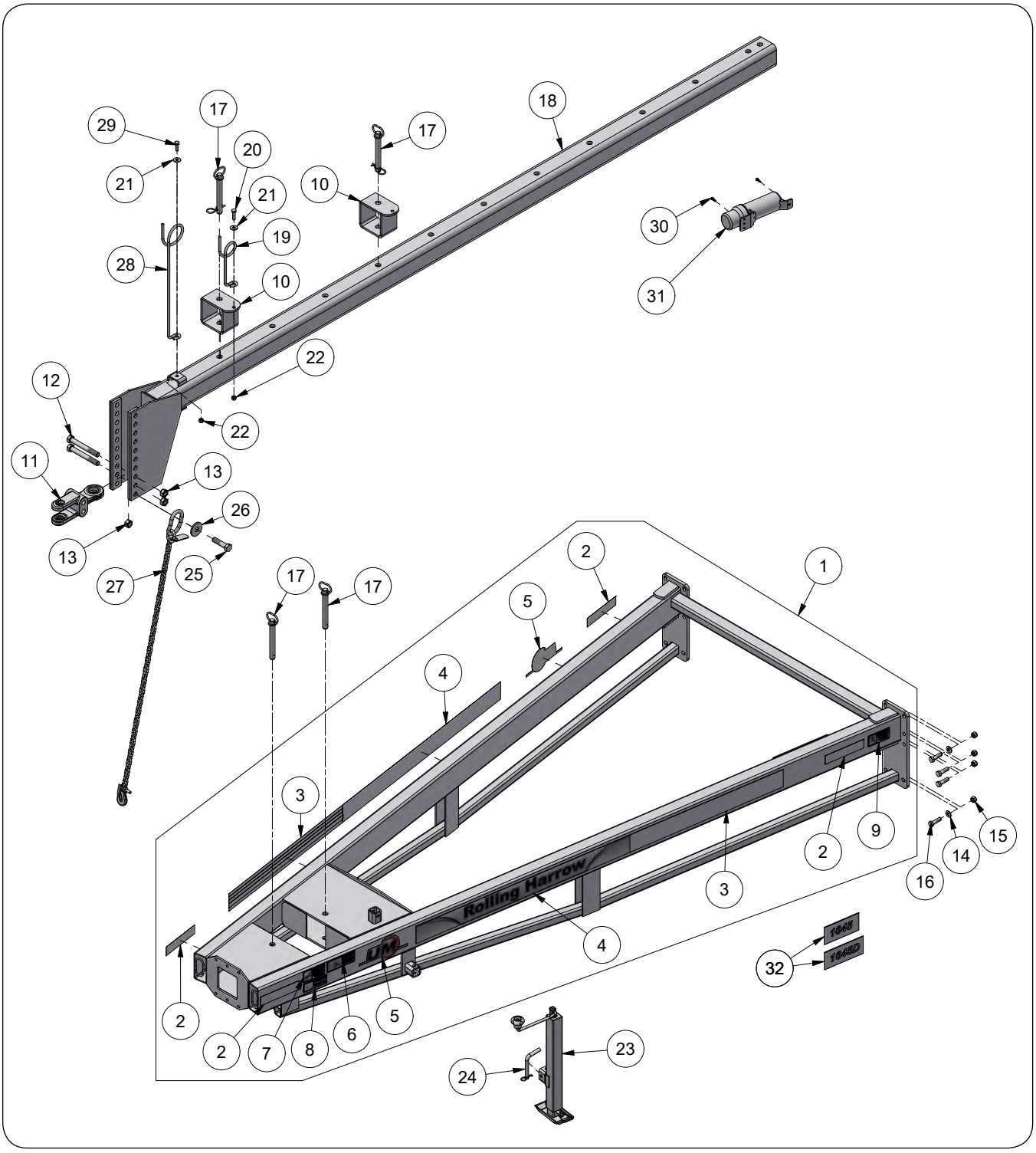


Combination Hitch Components

Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NUMBER	DESCRIPTION	QTY	NOTES
1	78085B	Stop Weldment =Black=	2	
2	9502801	Hitch Pin 1" Dia. w/Hairpin	4	
3	9405-088	Flat Washer 1/2"	4	
4	9800	Lock Nut, 1/2"-13UNC	2	
5	902979B	Hose Holder =Black=	2	
6	9390-103	Capscrew, 1/2"-13UNC x 2" G5	2	
7	78575G	Hitch A-Frame Assembly =Green=	1	Includes Items 8-14
	78575R	Hitch A-Frame Assembly =Red=		
8	9003127	Reflector 2 x 9 =Amber=	4	
9	900706	Decal, Stripe (4 x 36)	2	
10	901129	Decal, Rolling Harrow	2	
11	901607	Decal, UM Oval Logo	2	
12	94094	Decal, WARNING (Rising or Falling Tongue...)	1	
13	95445	Decal, WARNING (High-Pressure...)	1	
14	97575	Decal, CAUTION (Transport Chain)	1	
15	900552	Manual Holder	1	
16	78138G	Clevis Hitch Weldment =Green=	1	
	78138R	Clevis Hitch Weldment =Red=		
17	9802	Lock Nut, 3/4"-10UNC	6	
18	9390-146	Capscrew, 3/4"-10UNC x 2 1/4" G5	6	
19	9390-178	Capscrew, 7/8"-9UNC x 7" G5	2	
20	91141	Lock Nut, 7/8"-9UNC	2	
21	83301B	Hitch Clevis	1	
22	97420	Flange Screw, 1/4"-20UNC x 3/4"	20	
23	9390-125	Capscrew, 5/8"-11UNC x 2 1/4" G5	20	
24	9405-098	Flat Washer, 5/8" SAE	16	
25	9801	Lock Nut, 5/8"-11UNC	20	
26	79877G	Tongue Weldment w/Decal =Green=	1	Includes Item 27
	79877R	Tongue Weldment w/Decal =Red=		
27	9003127	Reflector 2 x 9 =Amber=	2	

Hitch Components

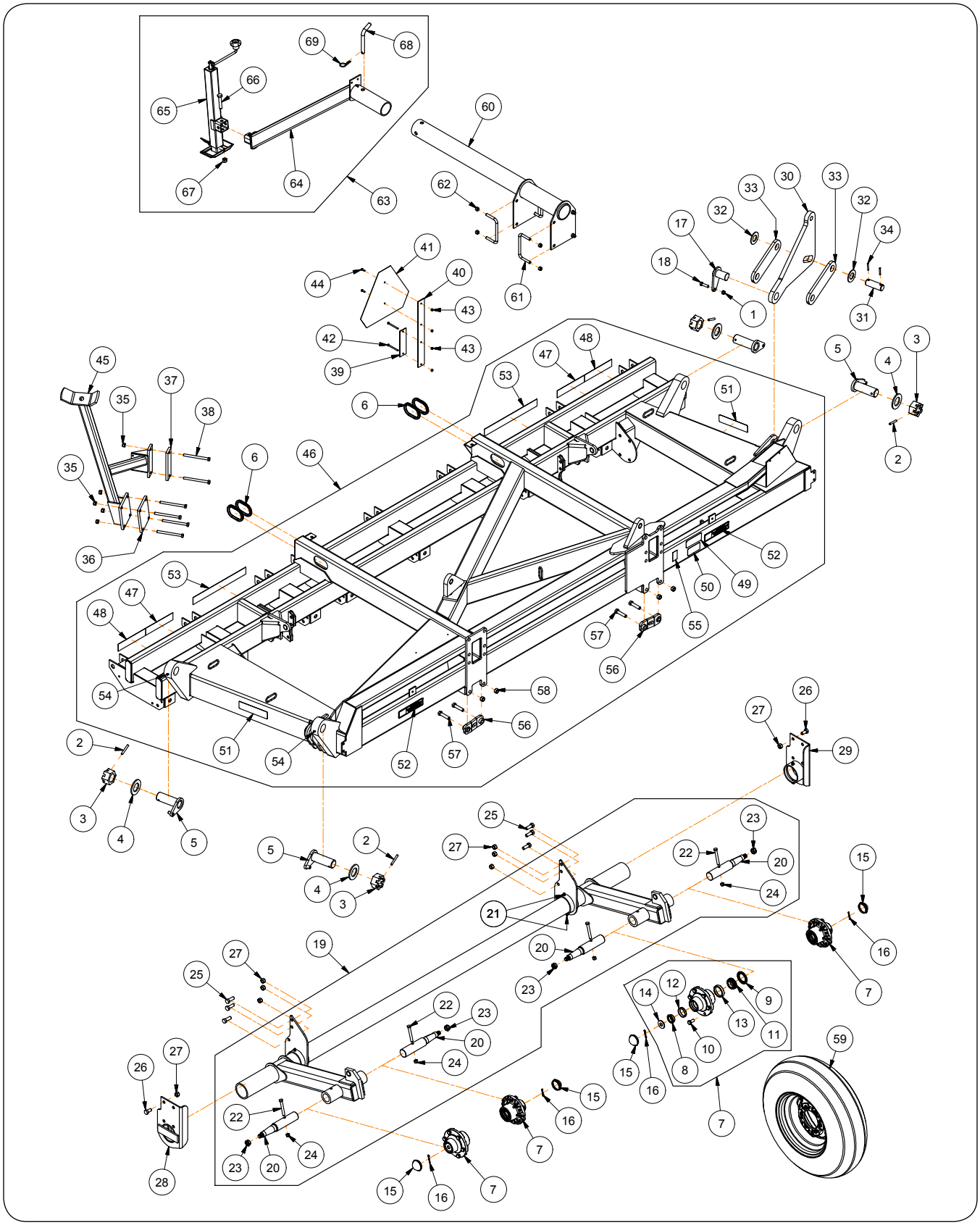


Hitch Components

ITEM	PART NO.	DESCRIPTION	QTY.	NOTES
1	74287G	Hitch A-Frame Assembly w/Decals - Model 1645/1645D (Green)	1	Includes Items 2 through 9
	74287R	Hitch A-Frame Assembly w/Decals - Model 1645/1645D Red)		
2	9003127	Reflector (Amber)	4	
3	900706	Decal, Stripe 36" Lg.	2	
4	901129	Decal, "ROLLING HARROW"	2	
5	901607	Decal, "UM"	2	
6	94094	Decal, "WARNING" (Rising or Falling Tongue)	1	
7	95445	Decal, "WARNING" (High Pressure Oil)	1	
8	97575	Decal, "CAUTION" (Always Use Transport Chain)	1	
9	98229	Decal, "WARNING" (Falling or Lowering Equipment)	1	
10	89045G	Stop Weldment =Green=	2	
	89045R	Stop Weldment =Red=		
11	83301B	Hitch Clevis	1	
12	9390-178	Capscrew 7/8-9UNC x 7"	2	Grade 5
13	91141	Locknut 7/8-9UNC	3	
14	9405-098	Flat Washer, 5/8	8	
15	9801	Locknut 5/8-11UNC	16	
16	9390-125	Capscrew 5/8-11UNC x 2 1/4"	16	Grade 5
17	93950	Hitch Pin 1" Dia. w/Hairpin	4	
18	76392G	Hitch Tube Assembly - 15' Base (Green)	1	
	76392R	Hitch Tube Assembly - 15' Base (Red)		
19	902979B	Hose Holder	1	
20	9390-102	Capscrew 1/2-13UNC x 1 3/4	1	Grade 5
21	9405-088	Flat Washer 1/2"	2	
22	9800	Locknut 1/2-13UNC	2	
23	901061	Jack 5000#	1	
24	84979	Bent Pin 5/8" Dia. x 4 w/Hairpin	1	
25	9390-170	Capscrew 7/8-9UNC x 3 1/2"	1	Grade 5
26	85723	Washer	1	
27	97436	Chain w/Hook	1	
28	9661	Hose Holder	1	
29	9390-101	Capscrew 1/2-13UNC x 1 1/2"	1	Grade 5
30	9512	Screw/Self Drilling 1/4-14x1	2	
31	900552	Manual Tube Holder	1	
32	9501494	Decal, "1645"	2	
	9501495	Decal, "1645D"		

Main Frame Components

Please visit www.unverferth.com/parts/ for the most current parts listing.



Main Frame Components

Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	9800	Locknut 1/2-13UNC	26	
2	91144-210	Spiral Pin 3/8" Dia. x 2 3/4	4	
3	9393-048	Slotted Nut 2-4.5 UNC	4	
4	9405-164	Flat Washer 2.125 ID	4	
5	88497	Pin Weldment 2" Dia. x 5 7/8	4	
6	87754	U-Channel	4	
7	9500003B	Hub Assembly With Grease Zerk	4	Includes Items 8 through 14
8	9165	Bearing Cone #LM67048	1	
9	9230	Seal	1	
10	9231	Wheel Bolt 9/16-18UNF x 1 1/8	6	
11	9247	Bearing Cone #LM501349	1	
12	9345	Bearing Cup #LM67010	1	
13	9349	Bearing Cup #LM501310	1	
14	9234	Flat Washer (Hardened)	1	
15	9162	Hub Cap	4	
16	9391-035	Cotter Pin 5/32" Dia. x 1 1/2	4	
17	87862	Base Link Pin Weldment	2	
18	91299-102	Capscrew 1/2-13UNC x 1 3/4	2	Grade 8
19	75932B	Axle Assembly with Spindles	1	Includes Items 20 through 24
20	88361	Spindle 2" Dia. x 12"	4	
21	93415	90 Degree Zerk	4	
22	9390-110	Capscrew 1/2-13UNC x 3 3/4	4	
23	9393-016	Slotted Nut 3/4-16UNF Grade 2	4	
24	9800	Locknut 1/2-13UNC	4	
25	9390-123	Capscrew 5/8-11UNC x 1 3/4	6	
26	9390-121	Capscrew 5/8-11UNC x 1 1/4	8	
27	9801	Locknut 5/8-11UNC	14	
28	75635B	Bearing Housing Right-Hand with Zerks	1	Includes Zerk
	93415	90 Degree Zerk	2	
29	75637B	Bearing Housing Left-Hand with Zerks	1	Includes Zerk
	93415	90 Degree Zerk	2	
30	87706B	Plate/Base Hinge Link	2	
31	87872B	Pin 1 1/2 Dia. x 4 3/8	2	
32	9405-140	Flat Washer 1 1/2	4	
33	87705B	Plate/Fold Link	4	
34	91144-165	Spiral Pin 1/4 Dia. x 1 7/8	12	
35	9800	Locknut 1/2-13UNC	12	
36	87890B	Bar 6 x 10	1	
37	87891B	Bar 2 1/2 x 7 13/16	1	
38	9390-115	Capscrew 1/2-13UNC x 6 (Grade 5)	6	
39	64157B	Clamp Plate 2 x 7 1/4	1	
40	88259B	Strip 2 x 18 3/4	1	
41	9829	SMV Emblem	1	

(Continued on next page)

Main Frame Components (continued)

Please visit www.unverferth.com/parts/ for the most current parts listing.

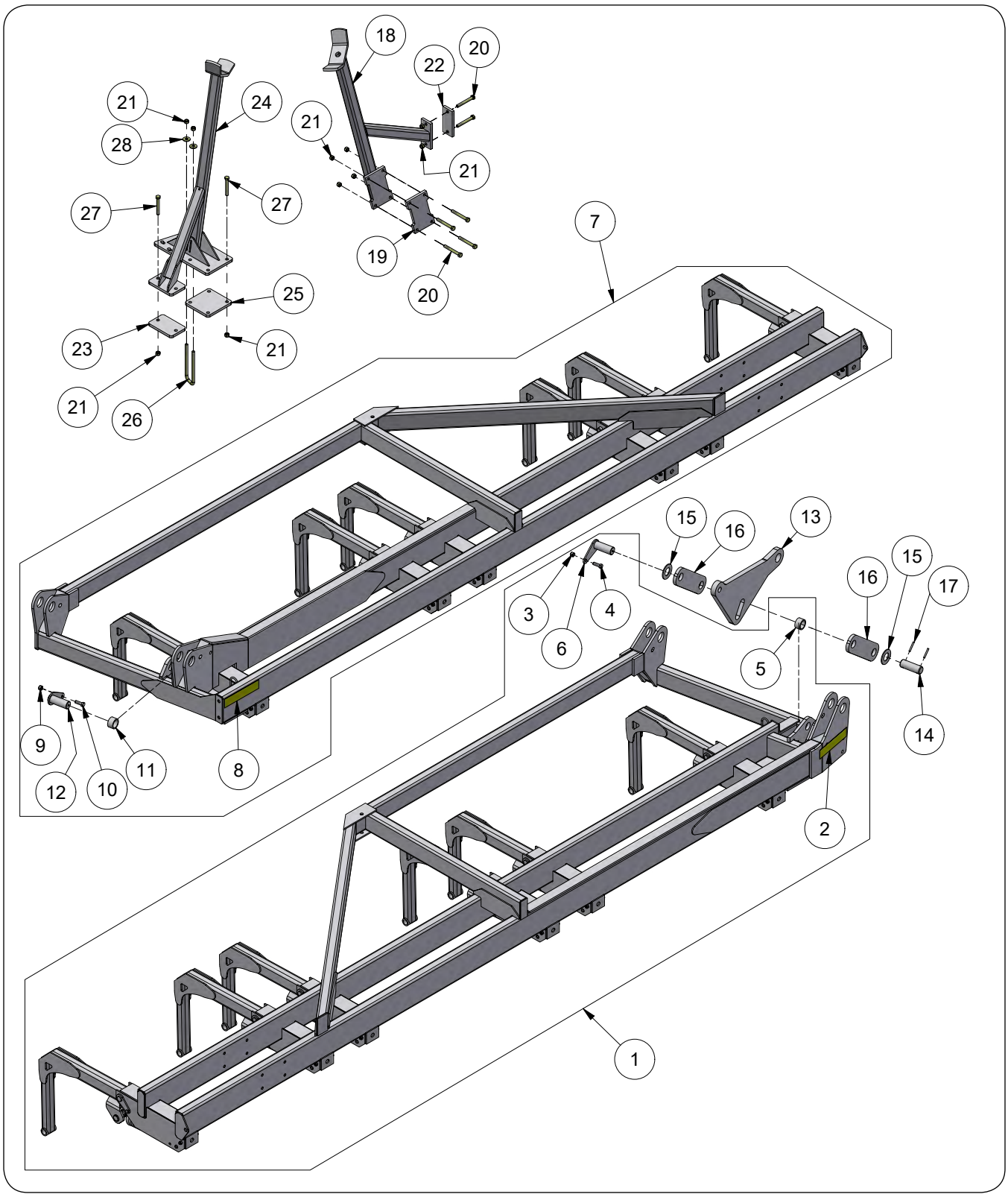
ITEM	PART NO.	DESCRIPTION	QTY	NOTES
42	9390-013	Capscrew 1/4-20UNC x 3 (Grade 5)	2	
43	9936	Locknut 1/4-20UNC	4	
44	9390-003	Capscrew 1/4-20UNC x 3/4	2	
45	87887B	Wing Stand RH Weldment	1	
46	74106G	Service Main Frame 15' Base =Green=	1	Includes Items 47 through 55
	74106R	Service Main Frame 15' Base =Red=		
47	9003125	Fluorescent Strip (Orange)	2	
48	9003126	Fluorescent Strip (Red)	2	
49	95605	Decal, "WARNING" (Falling Equipment...)	1	
50	97961	Decal, "WARNING" (Manual...)	1	
51	95136	Decal, "WARNING" (Folding/Unfolding Wings...)	2	
52	901891	Decal, "DANGER"	2	
53	901576	Decal, Unverferth	2	
54	91160	Grease Zerk	4	
55	91605	Decal FEMA	1	
56	74141B	Adapter Bracket	2	
57	9390-127	Capscrew 5/8-11UNC x 2 3/4	4	Grade 5
58	9801	Locknut 5/8-11UNC	4	
59	60911	Mounted Tire & Wheel (TL 9.5LB15 8-Ply Tire) (Includes Valve Stem) (Off White)	4	
	60911SM	Mounted Tire & Wheel (TL 9.5LB15 8-Ply Tire) (Includes Valve Stem) (Silver Mist)	4	
	W815-6-08	Implement Wheel Only (Off White)	-	
	W815-6-08SM	Implement Wheel Only (Silver Mist)	-	
	9002500	Valve Stem Only	-	
60	75897G	Jack Mount Weldment (Green)	1	
	75897R	Jack Mount Weldment (Red)		
61	97235	U-Bolt 1/2-13UNC	4	
62	9800	Locknut 1/2-13UNC	8	
63	87755B	Jack Stand Assembly (Black)	1	
64	87095B	Jack Stand Weldment	1	
65	901061	Drop Leg Jack	1	
66	9390-129	Capscrew 5/8-11UNC x 3 1/4	1	
67	9801	Locknut 5/8-11UNC	1	
68	9501179	Bent Pin	1	
69	95959	Hairpin Cotter	1	

Notes

Please visit www.unverferth.com/parts/ for the most current parts listing.

Wing Components

Please visit www.unverferth.com/parts/ for the most current parts listing.



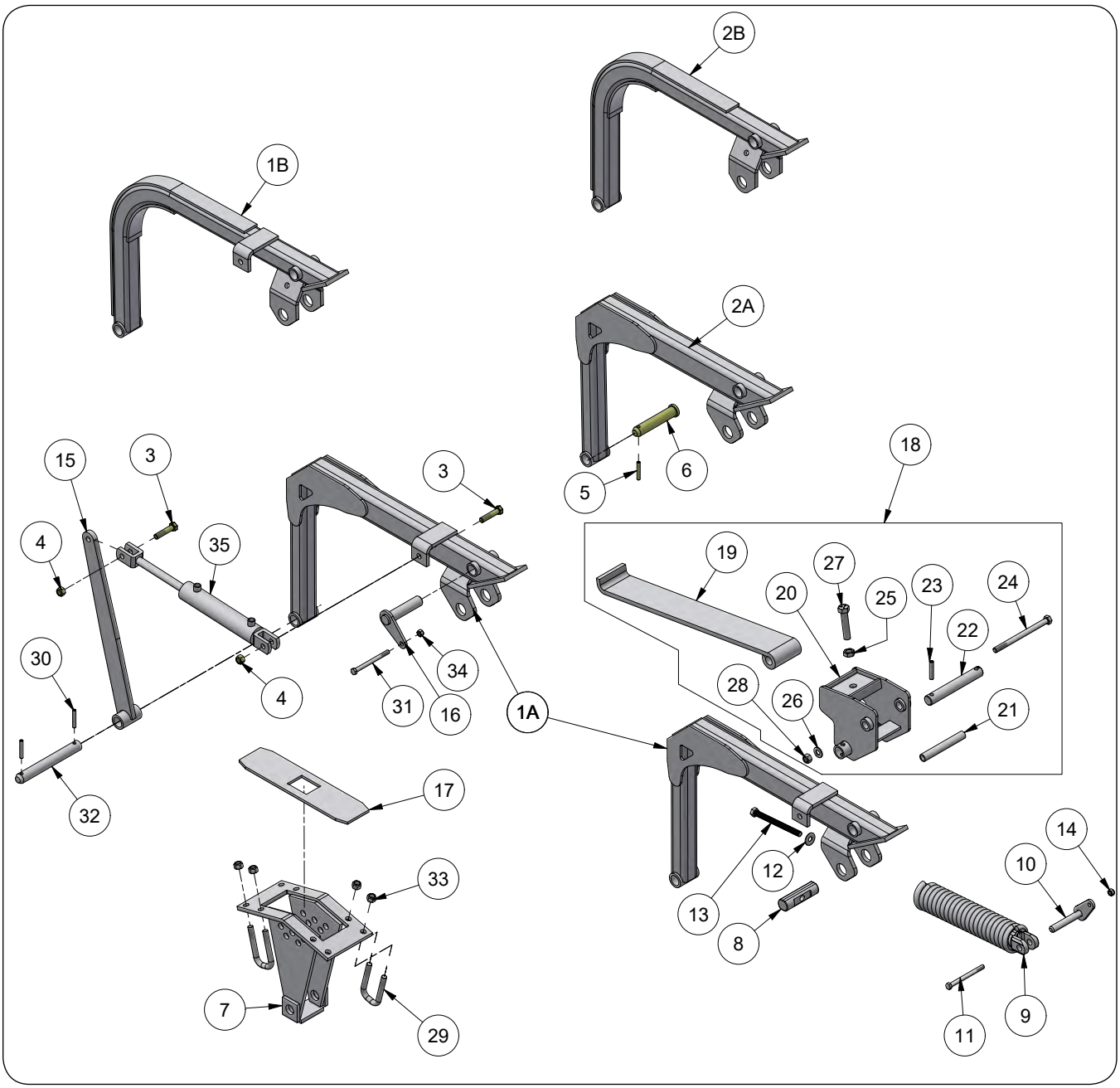
Wing Components

Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION	QTY.	NOTES
1	700270G	Wing 12' RH Asy =Green=	1	Includes Items 2-6
	700270R	Wing 12' RH Asy =Red=		
	700282G	Wing 13' RH Asy =Green=		
	700282R	Wing 13' RH Asy =Red=		
	700284G	Wing 14' RH Asy =Green=		
	700284R	Wing 14' RH Asy =Red=		
	700285G	Wing 15' RH Asy =Green=		
	700285R	Wing 15' RH Asy =Red=		
2	9003127	Reflector (Amber)	1	
3	9800	Locknut/Top, 1/2"-13UNC	1	
4	9390-101	Capscrew, 1/2"-13UNC x 1 1/2" G5	1	
5	87864	Spacer	1	
6	87867	Wing Link Pin, 1 1/2" Dia.	1	
7	700269G	Wing 12' LH Asy =Green=	1	Includes Items 8-12
	700269R	Wing 12' LH Asy =Red=		
	700281G	Wing 13' LH Asy =Green=		
	700281R	Wing 13' LH Asy =Red=		
	700283G	Wing 14' LH Asy =Green=		
	700283R	Wing 14' LH Asy =Red=		
	700286G	Wing 15' LH Asy =Green=		
	700286R	Wing 15' LH Asy =Red=		
8	9003127	Reflector (Amber)	1	
9	9800	Locknut/Top, 1/2"-13UNC	1	
10	9390-101	Capscrew, 1/2"-13UNC x 1 1/2" G5	1	
11	87864	Spacer	1	
12	87867	Wing Link Pin, 1 1/2" Dia.	1	
13	87706B	Plate/Base Hinge Link	2	
14	87872B	Pin, 1 1/2" Dia. x 4 3/8"	2	
15	9405-140	Flat Washer, 1 1/2"	4	
16	87705B	Plate/Fold Link	4	
17	91144-165	Spiral Pin, 1/4" Dia. x 1 7/8"	4	
18	79249B	Wing Stand Left-Hand Weldment	1	
19	87881B	Bar, 5" x 9 15/16"	1	
20	9390-111	Capscrew, 1/2"-13UNC x 4" G5	6	
21	9800	Locknut/Top, 1/2"-13UNC	16	
22	87885B	Bar, 2 1/2" x 5 13/16"	1	
23	79247B	Plate, 4" x 6 1/4"	1	
24	79249B	Wing Rest Weldment =Black=	1	
25	79250B	Plate, 6 1/4" x 6 1/2"	1	
26	107289	U-Bolt, 1/2"-13UNC x 7 1/2", 2 5/8" C/C	2	
27	9390-110	Capscrew, 1/2"-13UNC x 3 3/4" G5	6	
28	9405-088	Flat Washer, 1/2" USS	4	

Basket/Drum Mounting Arms & Weight Transfer Components

Please visit www.unverferth.com/parts/ for the most current parts listing.



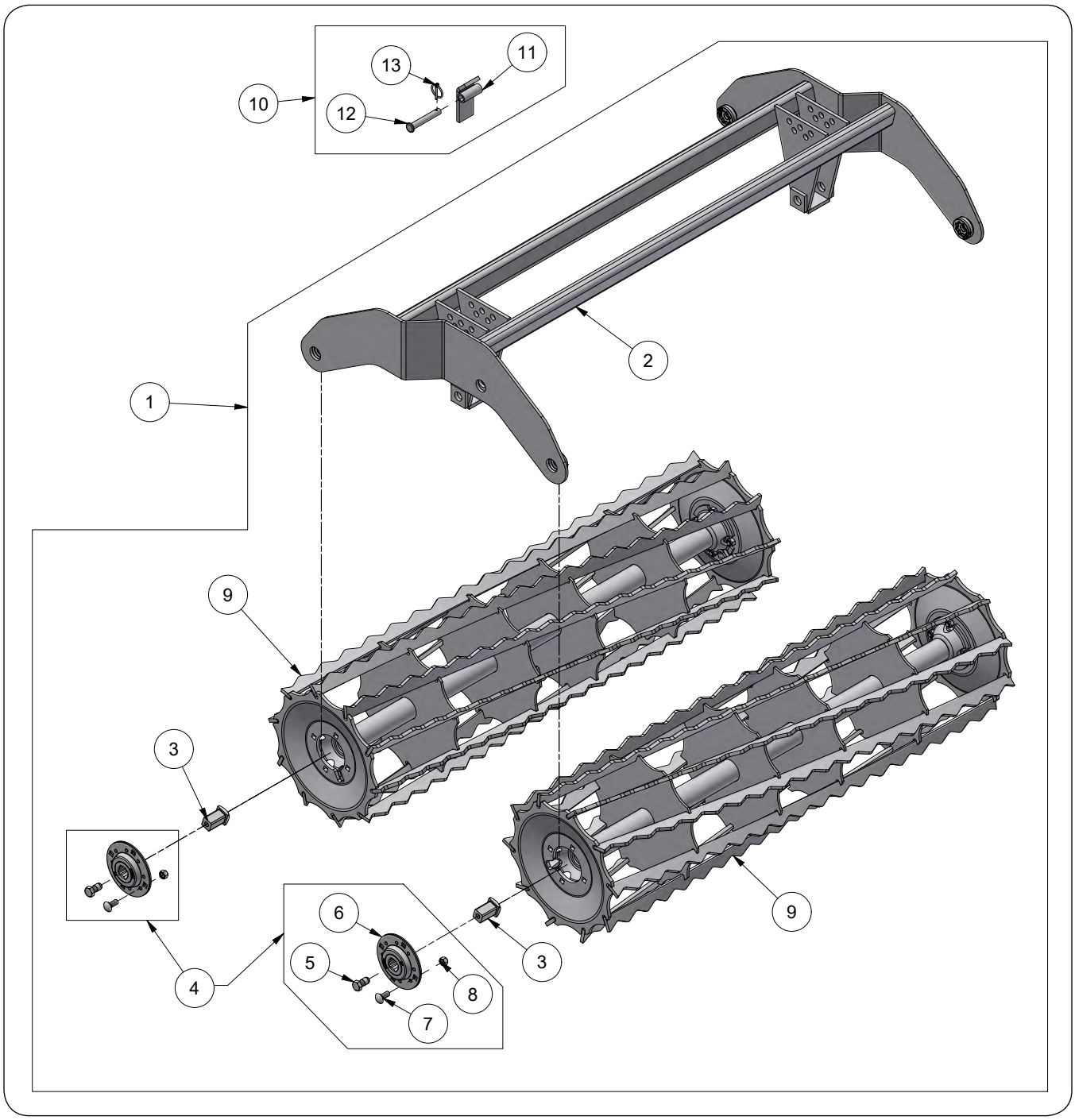
Basket/Drum Mounting Arms & Weight Transfer Components

Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION	QTY. PER MODEL				NOTES
			39 FT.	41 FT.	43 FT.	45 FT.	
1A	77858G	Main Frame Welded Arm Weldment Tall/Long =Green= (Gen 4)	9	9	9	9	
	77858R	Main Frame Welded Arm Weldment Tall/Long =Red= (Gen 4)					
1B	77078G	Main Frame Bent Arm Weldment Tall/Long =Green= (Gen 3)					
	77078R	Main Frame Bent Arm Weldment Tall/Long =Red= (Gen 3)					
2A	77875G	Wing Welded Arm Weldment Tall =Green= (Gen 4)	8	12	12	12	
	77875R	Wing Welded Arm Weldment Tall =Red= (Gen 4)					
2B	77077G	Wing Bent Arm Weldment Tall =Green= (Gen 3)					
	77077R	Wing Bent Arm Weldment Tall =Red= (Gen 3)					
3	9390-104	Capscrew, 1/2"-13UNC x 2 1/4" G5	6	6	6	6	
4	9800	Locknut/Top, 1/2"-13UNC	149	139	149	159	
5	91144-186	Spiral Pin, 5/16" Dia. x 2"	20	24	24	24	
6	9500423	Pin, 1" Dia. x 5 1/8"	14	18	18	18	
7	75691B	Bolt-On Basket Bracket	3	3	3	3	
8	74850	Trunnion, 1 1/4" Dia. x 4 1/4"	17	21	21	21	
9	75473B	Spring Assembly, 2 13/16" Dia. x 14 1/4"	17	21	21	21	
10	86251B	Pin-Link Weldment, 5/8" Dia. x 3 7/8"	17	21	21	21	
11	9390-068	Capscrew, 3/8"-16UNC x 4 1/2" G5	17	21	21	21	
12	9405-082	Flat Washer, 7/16" USS	17	21	21	21	
13	97171	Capscrew, 1/2"-13UNC x 6" G5	17	21	21	21	
14	9928	Locknut/Top, 3/8"-16UNC	51	63	63	63	
15	75930B	Link Weldment Basket Rocker	3	3	3	3	
16	76331B	Pin Weldment, 1" Dia. x 4 5/16"	17	21	21	21	
17	77108	Cover (Rubber Pad)	14	18	18	18	
18	78061G	Weight Transfer Assembly =Green=	6	6	6	6	Includes items 19-28
	78061R	Weight Transfer Assembly =Red=					
19	31976G	Spring =Green=	6	6	6	6	
	31976R	Spring =Red=					
20	78055G	Spring Mount Weldment =Green=	6	6	6	6	
	78055R	Spring Mount Weldment =Red=					
21	78786	Spacer Tube	6	6	6	6	
22	88376	Pin, 1" Dia. x 7"	6	6	6	6	
23	91144-207	Spiral Pin, 3/8" Dia. x 2"	6	6	6	6	
24	9390-117	Capscrew, 1/2"-13UNC x 7" G5	6	6	6	6	
25	9395-014	Hex Jam Nut, 5/8"-11UNC G5	6	6	6	6	
26	9405-086	Flat Washer, 1/2" SAE	6	6	6	6	
27	97601	Capscrew, 5/8"-11UNC x 3" G5	6	6	6	6	
28	9800	Locknut/Top, 1/2"-13UNC	6	6	6	6	
29	901837	U-Bolt, 1/2"-13UNC	12	12	12	12	
30	91144-186	Spiral Pin, 5/16" Dia. x 2"	6	6	6	6	
31	9390-068	Capscrew, 3/8"-16UNC x 4 1/2" G5	3	3	3	3	
32	9501583	Pin, 1" Dia. x 8 1/8"	3	3	3	3	
33	9800	Locknut/Top, 1/2"-13UNC	30	30	30	30	
34	9928	Locknut/Top, 3/8"-16UNC	3	3	3	3	
35	TA0-904623-0	Cylinder, 1 1/2" x 6"	3	3	3	3	

Basket Components - Model 1645

Please visit www.unverferth.com/parts/ for the most current parts listing.



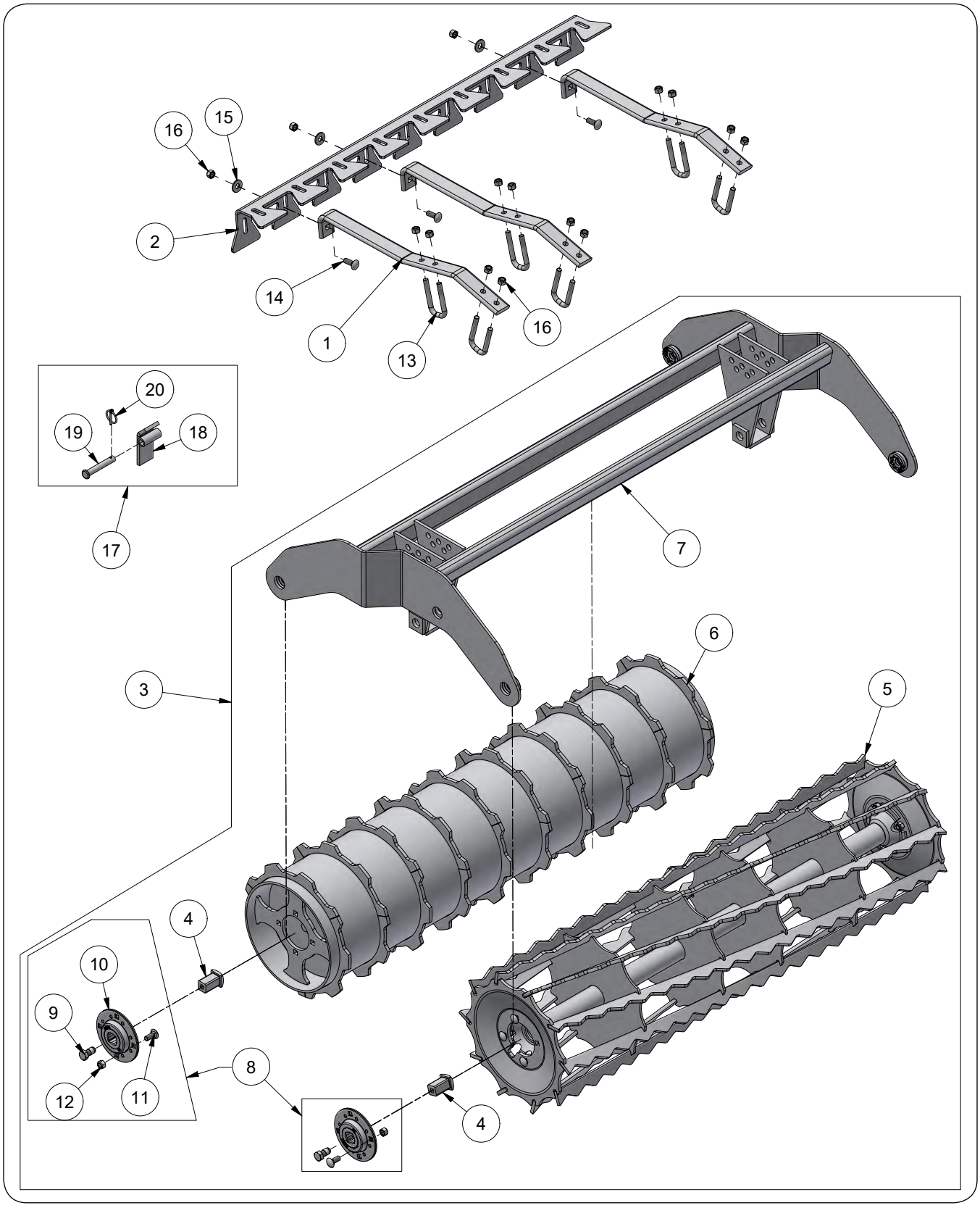
Basket Components - Model 1645

Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION	QTY. PER MODEL				
			39 FT.	41 FT.	43 FT.	45 FT.	NOTES
1	77084B	Basket & Frame 4' Assembly	-	4	2	-	Includes Items 2-9
	77085B	Basket & Frame 5' Assembly SHOWN	3	5	7	9	
	77086B	Basket & Frame 6' Assembly	4	-	-	-	
2	77080B	Frame 4' Weldment	-	4	2	-	
	77081B	Frame 5' Weldment SHOWN	3	5	7	9	
	77082B	Frame 6' Weldment	4	-	-	-	
3	74280	Bearing Bolt	28	36	36	36	
4	74006	Bearing Kit	-	-	-	-	Includes Items 5-8
5	900872	Capscrew 5/8-11UNC x 1 1/4	28	36	36	36	
6	902714	Flange Bearing	28	36	36	36	
7	9388-103	Carriage Bolt 1/2-13UNC x 1 1/4	112	144	144	144	
8	9800	Locknut 1/2-13UNC	112	144	144	144	
9	75342B	Basket 4' Aggressive Weldment	-	8	4	-	
	75343B	Basket 5' Aggressive Weldment SHOWN	6	10	14	18	
	75344B	Basket 6' Aggressive Weldment	8	-	-	-	
10	77660B	Basket Pivot Limit (Pair)	3	3	3	3	Includes Items 11-13
11	77042B	Basket Pitch Adjustment Bushing	2	2	2	2	
12	91523	Clevis Pin 5/8" Dia. x 4"	2	2	2	2	
13	9093	Klik Pin 3/16" Dia.	2	2	2	2	

Basket/Drum Components - Model 1645D

Please visit www.unverferth.com/parts/ for the most current parts listing.



Basket/Drum Components - Model 1645D

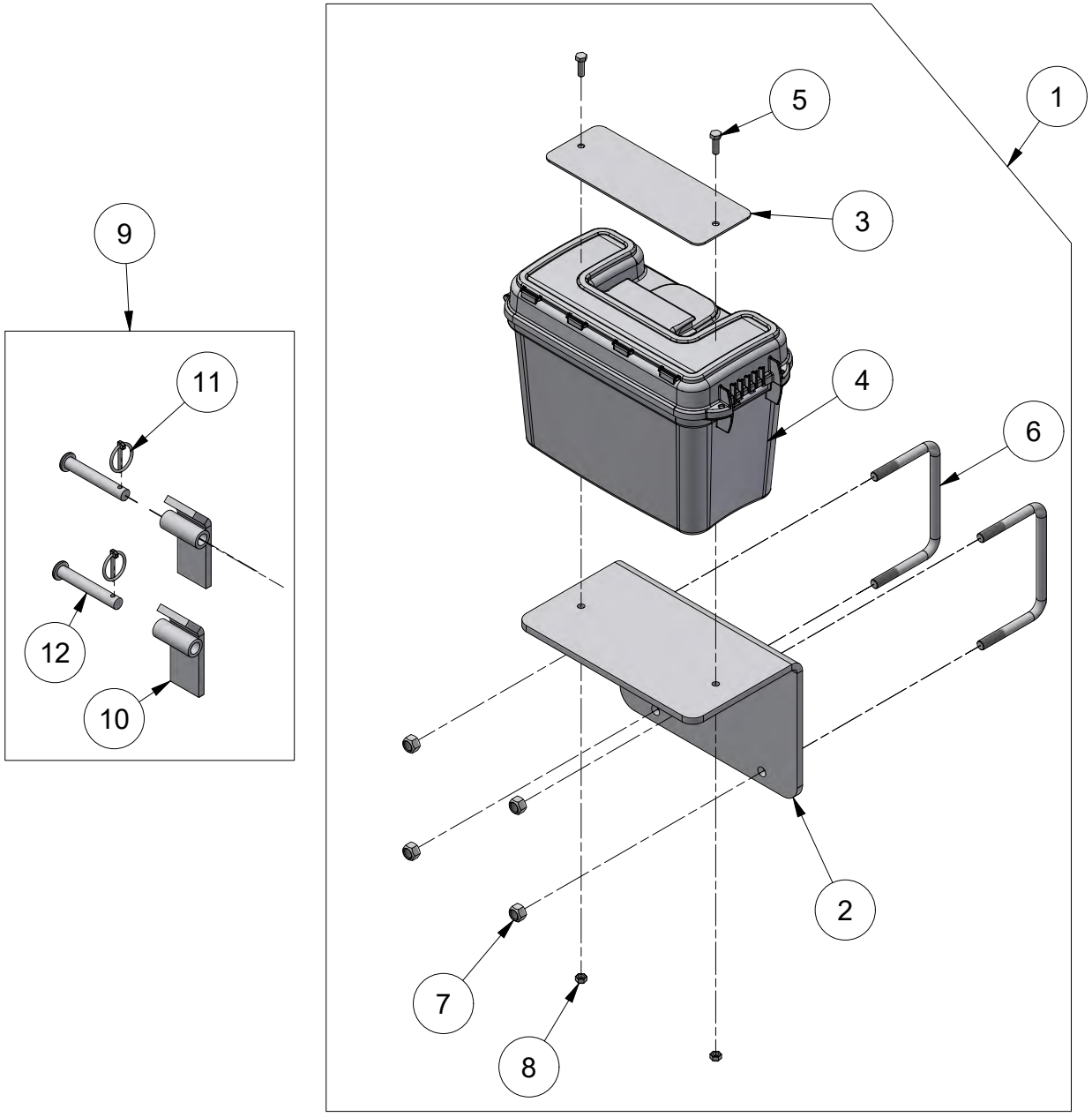
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION	QTY. PER MODEL				NOTES
			39 FT.	41 FT.	43 FT.	45 FT.	
1	75564B	Drum Scraper Bar Mount	25	23	25	27	
2	76971B	Drum Scraper 2'	4	-	-	-	
	76969B	Drum Scraper 4'	4	4	2	-	
	76970B	Drum Scraper 5'	3	5	7	9	
3	77088B	Basket/Drum & Frame 4' Assembly	-	4	2	-	
	77089B	Basket/Drum & Frame 5' Assembly	3	5	7	9	Includes Items 4-12
	77090B	Basket/Drum & Frame 6' Assembly	4	-	-	-	
4	74280	Bearing Bolt, 1.125" Square x 2 1/16"	28	36	36	36	
5	75342B	Basket 4' Aggressive Weldment	-	4	2	-	
	75343B	Basket 5' Aggressive Weldment SHOWN	3	5	7	9	
	75344B	Basket 6' Aggressive Weldment	4	-	-	-	
6	75529B	Drum Roller 4' Weldment	-	4	2	-	
	75528B	Drum Roller 5' Weldment	3	5	7	9	
	75527B	Drum Roller 6' Weldment	4	-	-	-	
7	77080B	Frame 4' Weldment	-	4	2	-	
	77081B	Frame 5' Weldment SHOWN	3	5	7	9	
	77082B	Frame 6' Weldment	4	-	-	-	
8	74006	Bearing Kit	-	-	-	-	Includes Items 9-12
9	900872	Capscrew. 5/8"-11UNC x 1 1/4" G5	28	36	36	36	
10	902714	Flange Bearing, 1 1/8" Square Bore	28	36	36	36	
11	9388-103	Carriage Bolt, 1/2"-13UNC x 1 1/4" G5	112	144	144	144	
12	9800	Locknut/Top, 1/2"-13UNC	112	144	144	144	
13	901837	U-Bolt, 1/2"-13UNC	50	46	50	54	
14	9388-104	Carriage Bolt, 1/2"-13UNC x 1 1/2"	25	23	25	27	
15	9405-088	Flat Washer, 1/2" USS	25	23	25	27	
16	9800	Locknut/Top, 1/2"-13UNC	149	139	149	159	
17	77660B	Basket Pivot Limit (Pair)	3	3	3	3	Includes Items 18-20
18	77042B	Basket Pitch Adjustment Bushing	2	2	2	2	
19	91523	Clevis Pin 5/8" Dia. x 4"	2	2	2	2	
20	9093	Klik Pin 3/16" Dia.	2	2	2	2	

Basket Pin Up & Storage Box Components

Please visit www.unverferth.com/parts/ for the most current parts listing.

Model 1645D - Standard
Model 1645 - Optional

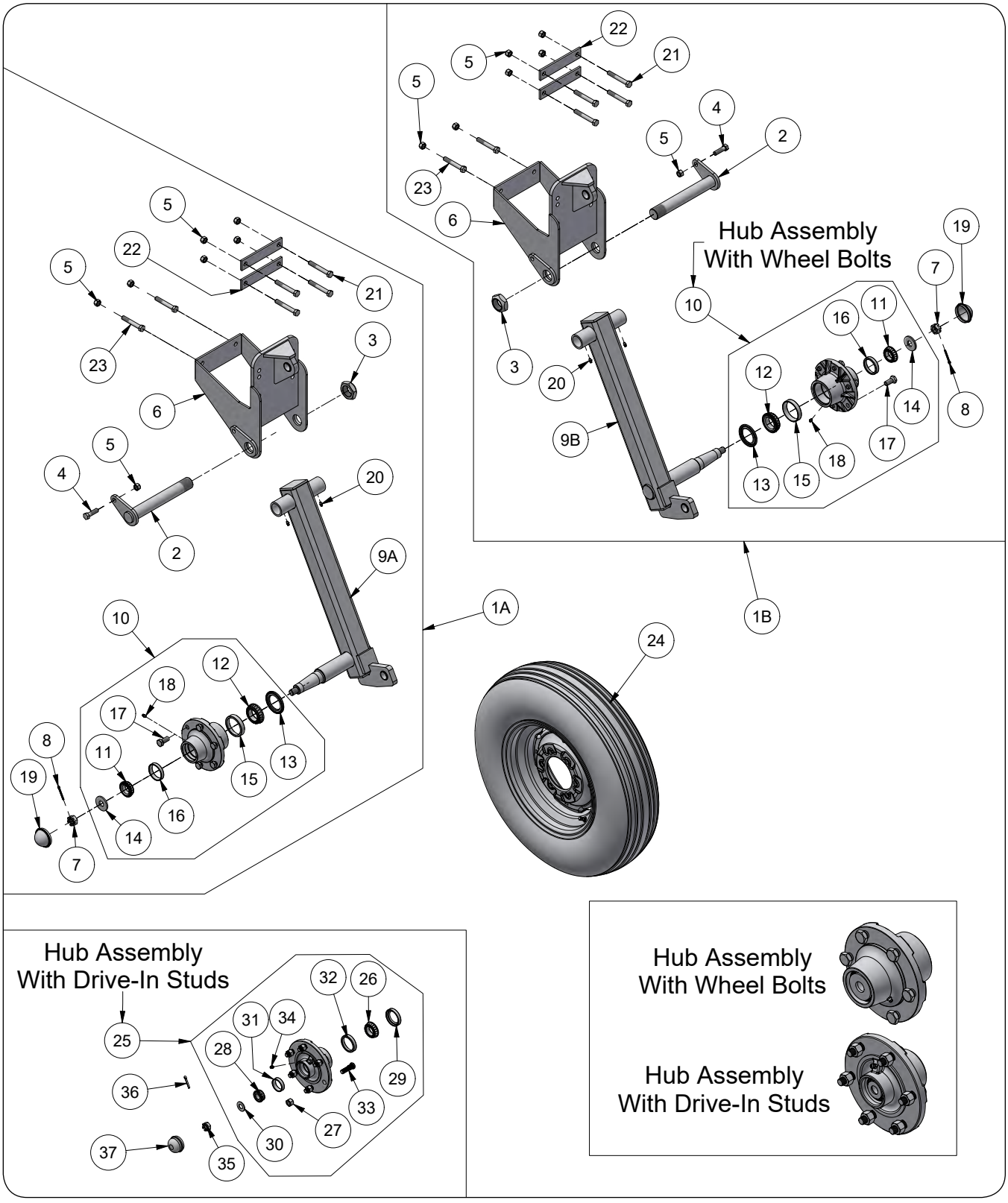


Basket Pin Up & Storage Box Components

Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NUMBER	DESCRIPTION	QTY	NOTES
1	77401B	Storage Box Bracket Assembly	1	Includes Items 2 through 8
2	77400B	Stroage Box Bracket =Black=	1	
3	27741B	Plate 4" x 11"	1	
4	902456	Storage Box	1	
5	9390-030	Capscrew, 5/16"-18UNC x 1" G5	2	
6	9502320	U-Bolt, 1/2"-13UNC x 4 1/16"	2	
7	9800	Lock Nut/Top, 1/2"-13UNC	4	
8	9807	Lock Nut/Top, 5/16"-18UNC	2	
9	77660B	Basket Pivot Limit {PAIR}	1	Includes Items 10, 11, 12
10	77042B	Basket Pin Up Bushing Weldment =Black=	2	
11	9093	Klik Pin 3/16" Dia. x 1 9/16"	2	
12	91523	Clevis Pin 5/8" Dia. x 4"	2	

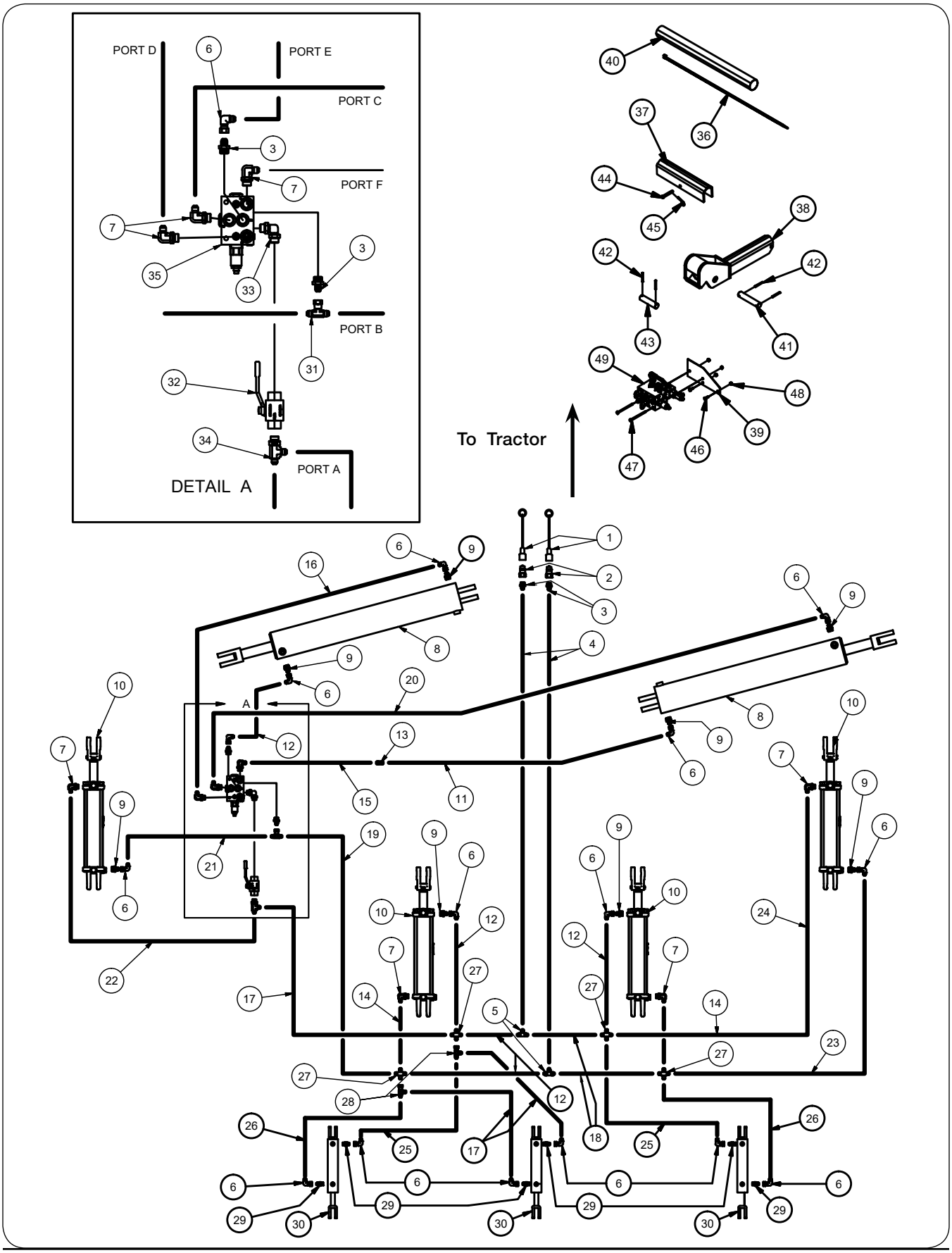
Wing Lift Wheel & Hub Components



Wing Lift Wheel & Hub Components

ITEM	PART NO.	DESCRIPTION	QTY.	NOTES
1A	76818B	Lift Wheel Assembly Right-Hand (Hub Assembly With Wheel Bolts)	1	Includes Items 2 through 8, 9A, 10 through 23
1B	76819B	Lift Wheel Assembly Left-Hand (Hub Assembly With Wheel Bolts)	1	Includes Items 2 through 8, 9B, 10 through 23
2	89261	Pin Weldment & Nut	1	Includes item #3
3	9397-022	Elastic Jam Nut, 1 1/2"-12UNF	1	
4	9390-102	Capscrew, 1/2"-13UNC x 1 3/4" G5	1	
5	9800	Locknut/Top, 1/2"-13UNC	1	
6	75641B	Wheel Bracket	1	
7	9393-016	Slotted Nut, 3/4"-16UNF G2	1	For Hub Assembly With Wheel Bolts
8	9391-035	Cotter Pin, 5/32" Dia. x 1 1/2"	1	For Hub Assembly With Wheel Bolts
9A	76822B	Axle Weldment Right-Hand **(SHOWN)** (For Hub Assembly With Wheel Bolts)	1	
	76820B	Axle Weldment Right-Hand & Hub Assembly (Replacement For Hub Assembly With Drive-In Studs)		
9B	76823B	Axle Weldment Left-Hand **(SHOWN)** (For Hub Assembly With Wheel Bolts)	1	
	76821B	Axle Weldment Left-Hand & Hub Assembly (Replacement For Hub Assembly With Drive-In Studs)		
10	9500003B	Hub Assembly With Wheel Bolts	1	Includes Items 11 through 18
11	9165	Bearing Cone #LM67048	1	
12	9247	Bearing Cone #LM501349	1	
13	9230	Seal	1	
14	9234	Flat Washer	1	
15	9349	Bearing Cup #LM501310	1	
16	9345	Bearing Cup #LM67010	1	
17	9231	Wheel Bolt, 9/16"-18UNF x 1 1/8"	6	
18	91160	Grease Zerk	1	
19	9162	Hub Cap	1	For Hub Assembly With Wheel Bolts
20	91160	Grease Zerk, 1/4-28	4	
21	9390-109	Capscrew, 1/2"-13UNC x 3 1/2"	4	
22	73722PL	Bar	2	
23	9390-108	Capscrew, 1/2"-13UNC x 3 1/4"	2	
24	81145	Mounted Tire & Wheel (7.6-15 8-Ply Tire) (Includes Valve Stem) (Off White)	2	
	81145SM	Mounted Tire & Wheel (7.6-15 8-Ply Tire) (Includes Valve Stem) (Silver Mist)		
	W615-6	Implement Wheel Only (Off White)	-	
	W615-6SM	Implement Wheel Only (Silver Mist)		
	9002500	Valve Stem Only	-	
25	9500001B	Hub Assembly With Drive-In Studs	1	Includes Items 26 through 34
26	9165	Bearing Cone #LM67048	1	
27	9348	Beveled Nut, 1/2"-20UNF	6	
28	9789	Bearing Cone #LM11949	1	
29	9790	Seal	1	
30	9791	Flat Washer	1	
31	9784	Bearing Cup # LM11910	1	
32	9345	Bearing Cup #LM67010	1	
33	9347	Wheel Bolt, 1/2"-20UNF x 1 7/8" G5	6	
34	9504710	Grease Zerk	1	
35	9393-014	Slotted Nut, 5/8"-18UNF G2	1	For Hub Assembly with Drive-In Studs
36	9391-043	Cotter Pin, 3/16" Dia. x 1 1/4"	1	For Hub Assembly with Drive-In Studs
37	9787	Hub Cap	1	For Hub Assembly with Drive-In Studs

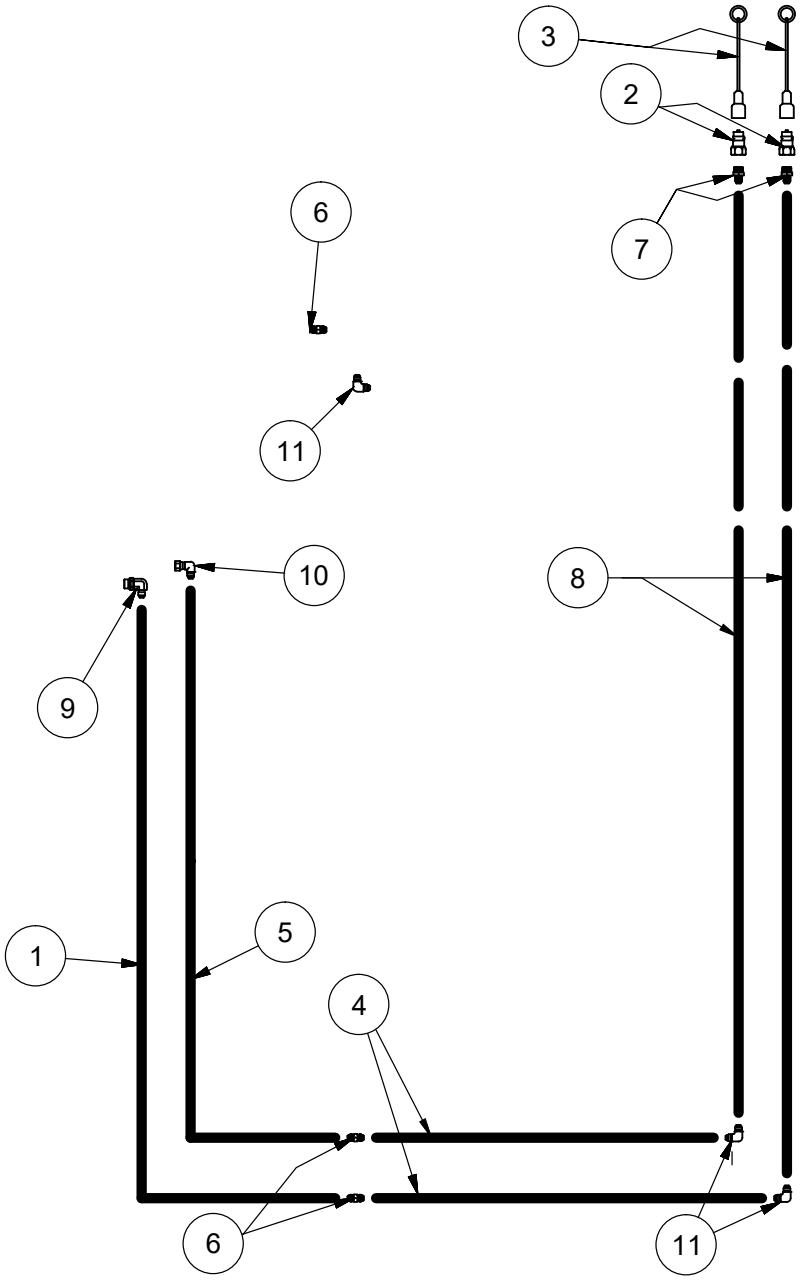
Standard Hydraulic Components



Standard Hydraulic Components

ITEM	PART NO	DESCRIPTION	QTY
1	91511	Dust Cap	2
2	91383	Male Tip Coupling 3/4-16 O-Ring Female Thread (3000 PSI)	2
3	92927	Adapter 9/16-18 JIC Male x 3/4-16 O-Ring Male	4
4	9501693	Hose 3/8 x 420 (3000 PSI)	2
5	9875	Tee 9/16-18 JIC Male x 9/16-18 JIC Male x 9/16-18 JIC Male	2
6	9876	90° Elbow 9/16-18 JIC Male x 9/16-18 JIC Female	15
7	9874	90° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Male	7
8	75862B	Hydraulic Cylinder 4 1/2 x 30 (3000 PSI)	2
	9502596	Seal Kit	-
9	91608	Adapter 9/16-18 JIC Male x 3/4-16 O-Ring Male Boss w/.060" Restrictor	8
10	9501479	Cylinder 3 x 12 (3000 PSI)	4
	9003772	Seal Kit	-
11	9501687	Hose 3/8 x 96 (3000 PSI)	1
12	9501680	Hose 3/8 x 26 (3000 PSI)	5
13	92295	Adapter 9/16-18 JIC Male x 9/16-18 JIC Male	1
14	9501678	Hose 3/8 x 11 (3000 PSI)	2
15	9501679	Hose 3/8 x 22 (3000 PSI)	1
16	9501683	Hose 3/8 x 44 (3000 PSI)	1
17	9501684	Hose 3/8 x 68 (3000 PSI)	3
18	9501685	Hose 3/8 x 80 (3000 PSI)	2
19	9501686	Hose 3/8 x 86 (3000 PSI)	1
20	9501688	Hose 3/8 x 140 (3000 PSI)	1
21	9501689	Hose 3/8 x 186 (3000 PSI)	1
22	9501689	Hose 3/8 x 198 (3000 PSI)	1
23	9501691	Hose 3/8 x 228 (3000 PSI)	1
24	9501692	Hose 3/8 x 239 1/2 (3000 PSI)	1
25	9501681	Hose 3/8 x 36 (3000 PSI)	2
26	9501682	Hose 3/8 x 42 (3000 PSI)	2
27	9002273	Cross 9/16-18 JIC Male x 9/16-18 JIC Male x 9/16-18 JIC Male x 9/16-18 JIC Male	4
28	91465	Tee 9/16-18 JIC Male x 9/16-18 JIC Female x 9/16-18 JIC Male	2
29	9001495	Adapter 9/16-18 JIC Male x 9/16-18 O-Ring Male	6
30	TA0-904623-0	Cylinder 1 1/2 x 6	3
31	91525	Tee 9/16-18 JIC Male x 9/16-18 JIC Male x 9/16-18 JIC Female	1
32	TA0-924694-0	Ball Valve w/Handle	1
33	TA0-924696-0	90° Elbow 3/4-16 O-Ring Male x 3/4-16 O-Ring Male	1
34	9002155	Tee 9/16-18 JIC Male x 3/4-16 O-Ring Male x 9/16-18 JIC Male	1
35	903045	Valve Assembly Divider/Relief/Pilot Check	1
36	94038	Cable Tie 32" Long	28
37	73130B	Stop (For Main Frame Wheel Cylinders)	2
38	73118B	Gravity Latch Weldment	2
39	75840B	Mounting Plate For Valve Assembly	1
40	75884	Velcro Hose Wrap	A/R
41	88038	Pin 1" Dia. x 5 1/8 (For Gravity Latch Weldment ONLY)	2
42	91144-165	Spiral Pin 1/4" Dia. x 1 7/8	24
43	85631	Pin 1" Dia. x 4	9
44	92955	Clevis Pin 3/8" Dia. x 3 (For Main Frame Wheel Cylinders)	2
45	9514	Hairpin Cotter (For Main Frame Wheel Cylinders)	2
46	9390-003	Capscrew 1/4-20UNC x 3/4	2
47	9390-016	Capscrew 1/4-20UNC x 3 3/4	2
48	9936	Locknut 1/4-20UNC (For Mounting Flow Divider Valve)	4
49	75870	Divider/Combiner Lock Valve Assembly with Fittings	1
50	9840	"O"-Ring (For Repairs ONLY - NOT SHOWN)	-

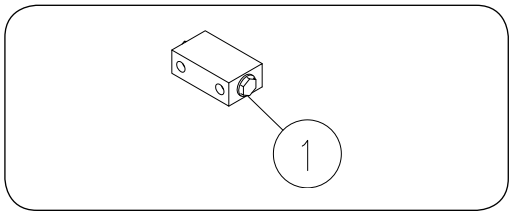
Dual Hydraulic Kit #87922 (Optional)



Dual Hydraulic Kit #87922 (Optional)

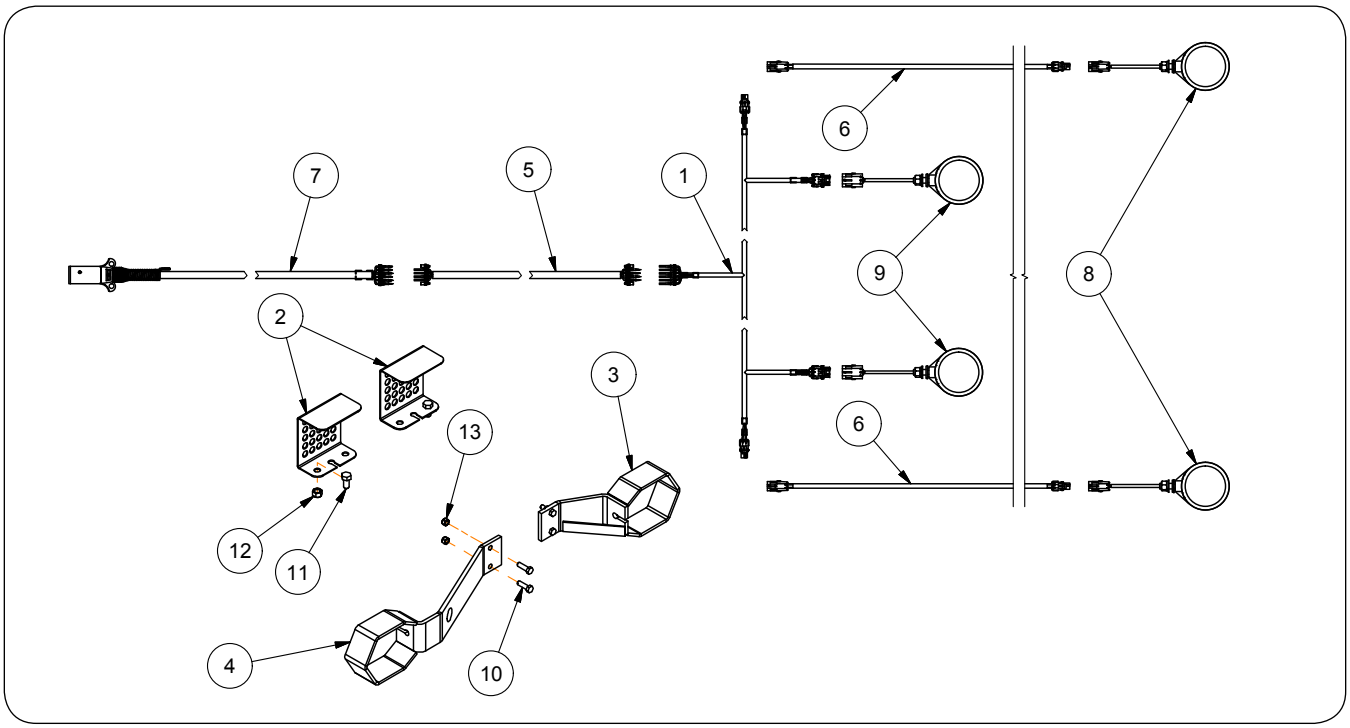
ITEM	PART NO.	DESCRIPTION	QTY.	NOTES
	87922	Dual Hydraulic Kit	-	
1	9501684	Hose 3/8 x 68	1	
2	91383	Male Tip Coupling	2	
3	91511	Dust Cap	2	
4	9501680	Hose 3/8 x 26	2	
5	9501686	Hose 3/8 x 86	1	
6	92295	Adapter 9/16-18 JIC Male x 9/16-18 JIC Male	3	
7	92927	Adapter 9/16-18 JIC Male x 3/4-16 O-Ring Male	2	
8	97107	Hose 3/8 x 420	2	
9	9874	90° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Male	1	
10	9876	90° Elbow 9/16-18 JIC Male x 9/16-18 JIC Female	1	
11	9897	90° Elbow 9/16-18 JIC Male x 9/16-18 JIC Male	3	

Lock/Check Valve (Optional)



ITEM	PART NO.	DESCRIPTION	NOTES
1	91240	Lock/Check Valve	Connecting Rolling Harrow to lead machine that uses rephase hydraulics

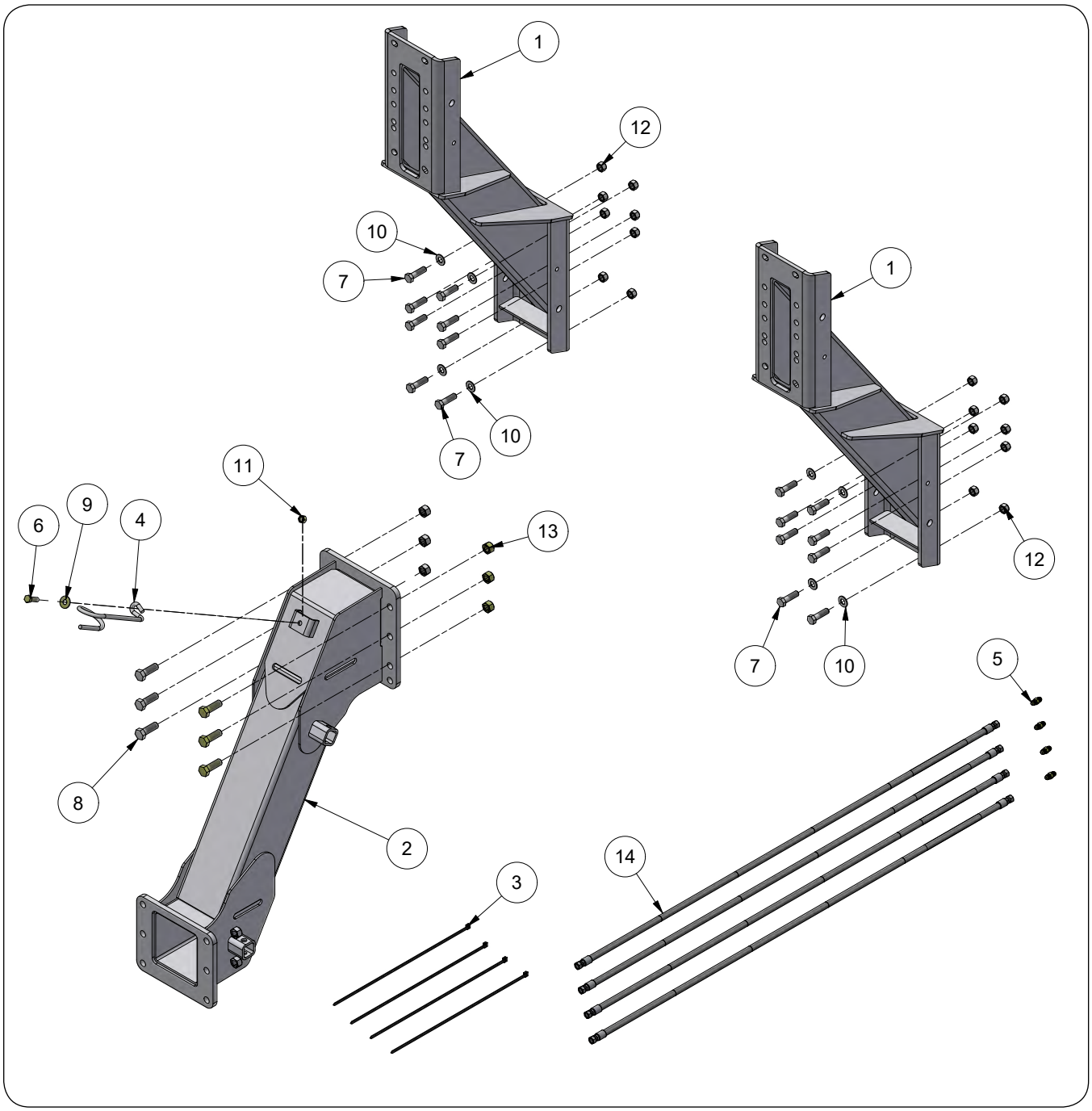
Transport Marking & Light Kit (89110B)



ITEM	PART NO.	DESCRIPTION	QTY.	NOTES
	89110B	Lights/Transport Marking Package	-	
1	22790	Wiring Harness/132" 3-T	1	
2	73338B	Light Bracket	2	
3	73433B	LH Light Bracket	1	
4	73434B	RH Light Bracket	1	
5	86467	Wiring Extension 120" - 6 Pin	1	
6	86700	Wiring Extension 120" - 2 Pin	2	
7	89467	Main Wiring Harness/336"	1	
8	9003876	Light - Amber	2	
9	9003877	Light - Red	2	
10	9390-056	Capscrew 3/8-16UNC x 1 1/4	4	Grade 5
11	9390-099	Capscrew 1/2-13UNC x 1	2	Grade 5
12	9800	Locknut 1/2-13UNC	2	
13	9928	Locknut 3/8-16UNC	4	

Gooseneck Hitch Components — Cross Fold Model

Please visit www.unverferth.com/parts/ for the most current parts listing.



Gooseneck Hitch Components — Cross Fold Model

Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NUMBER	DESCRIPTION	NOTES
1	78045G	Gooseneck Extension Weldment =Green=	
	78045R	Gooseneck Extension Weldment =Red=	
2	79870G	Gooseneck Drop-down Hitch Weldment =Green=	
	79870R	Gooseneck Drop-Down Hitch Weldment =Red=	
3	9000104	Cable Tie 21 1/2”	
4	902979B	Hose Holder =Black=	
5	92295	Adapter, 9/16”-18 JIC Male x 9/16”-18 JIC Male	
6	9390-101	Capscrew, 1/2”-13UNC x 1 1/2” G5	
7	9390-125	Capscrew, 5/8”-11UNC x 2 1/4” G5	
8	9390-146	Capscrew, 3/4”-10UNC x 2 1/4” G5	
9	9405-088	Flat Washer 1/2”	
10	9405-098	Flat Washer, 5/8” SAE	
11	9800	Lock Nut, 1/2”-13UNC	
12	9801	Lock Nut, 5/8”-11UNC	
13	9802	Lock Nut, 3/4”-10UNC	
14	9504072	Hydraulic Hose, 3/8” Dia. x 66” (9/16”-18 JIC Female x 9/16”-18 JIC Female)	

Unverferth®
Manufacturing Company, Inc.

www.unverferth.com

L:\MANUALS\ROLLINGHARROW1645/1645D\\75714.indd////March 2016-0//September 2016-1//October 2017-2//May 2019-3//April 2022-4/August 2024-5