Seedbed Tillage

RIPPER-STRIPPER®
Strip-Till Subsoilers
Rigid & Folding Flex Frame
Models 332 & 312

Beginning with Serial Number A62580100

Part No. 68907

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.

Pre-Delivery Checklist

- ☐ Wheel bolts tightened
- ☐ Tire pressures checked
- ☐ Hardware tightened
- ☐ Machine lubricated
- ☐ Hydraulic hoses properly routed/fittings tight

IMPORTANT

The information, specifications, and illustrations in the manual are based on the 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.

Product Information

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

- Machine name
- Serial number

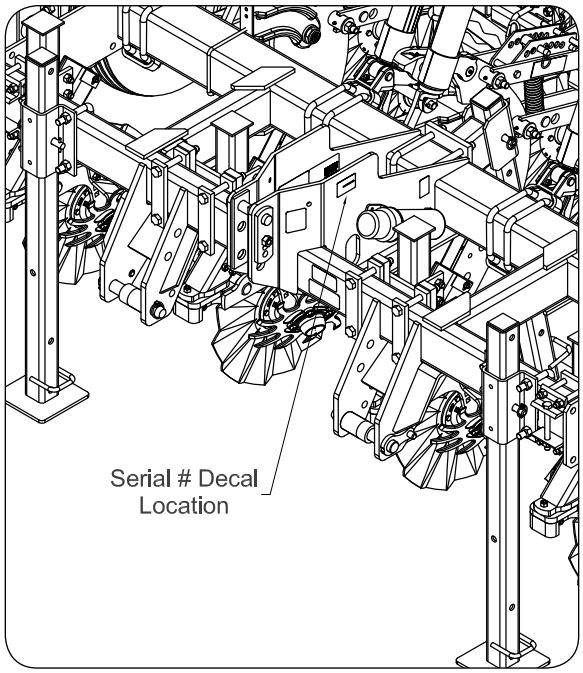
All products manufactured by Unverferth Mfg. Co., Inc. are warranted to be free from material and workmanship defects for one full year from time of consumer delivery. Your local dealer will gladly assist you with any warranty questions.

Please fill out and retain this portion for your records. The serial number plate is located on the frame as shown below.

Purchase Date _____ Model _____ Serial No. _____

Dealer _____ City _____

Dealer Contact _____ Phone _____



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WING FOLD MODIFICATION KIT #69595B
PLEASE REFER TO YOUR INSTRUCTION SHEET #69594.

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FOR 12 SHANK 36" SPACING MODEL 332 RIPPER-STRIPPER,
WING FOLD MODIFICATION KIT #69595B
PLEASE REFER TO YOUR INSTRUCTION SHEET #69594.

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

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

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

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

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

Safety Decals

WARNING

- **REPLACE LOST, DAMAGED, PAINTED, OR UNREADABLE DECALS IMMEDIATELY. IF PARTS THAT HAVE DECALS ARE REPLACED, ALSO MAKE SURE TO INSTALL NEW DECALS. THESE DECALS INFORM AND REMIND THE OPERATOR WITH OPERATIONAL INFORMATION AND SAFETY MESSAGES.**

PART NO. 95445

PART NO. 99507

PART NO. 902221

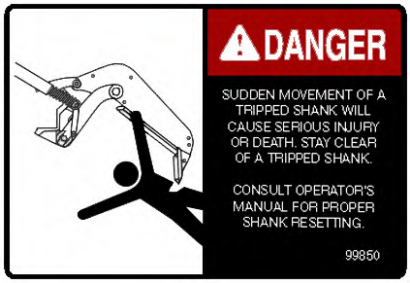
PART NO. 97048

PART NO. 97337

PART NO. 97973

PART NO. 97972

PART NO. 97961



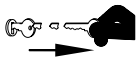
PART NO. 99850

PART NO. 900558

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.

- When working around sweeps and points, be careful not to be cut by sharp edges.
- Never attempt to operate implement unless you are in the 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.
- Sharp edges on the machine can cause injury. Be careful when working around the machine.
- 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.
- Add sufficient ballast to tractor to maintain steering and braking control at all times. Do not exceed tractor's lift capacity or ballast capacity.
- Do not stand between towing vehicle and implement during hitching.
- Always make certain everyone and everything is clear of the machine before beginning operation.
- Verify that all safety shields are in place and properly secured.
- Inspect fields for buried utility lines (electric, natural gas, water, etc.). To find buried lines in the US or Canada contact 1-888-258-0808, in the US you may also contact 811.

During Operation

- Regulate speed to field 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

- 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 machine. Make sure that the SMV emblem and SIS decal are visible to approaching traffic.
- Check for proper function of all available transport lights. Make sure that all reflectors are clean and in place on machine.
- Follow all federal, state and local regulations governing highway safety and transporting chemicals.

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 pressure before disconnecting hydraulic lines from tractor, loosening any hydraulic fittings or servicing hydraulic system. See hydraulic power unit manual for procedure to relieve pressure.

- High-pressure fluids can penetrate the skin and cause serious injury or death. 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.

SECTION II
Set Up

FOR 12 SHANK 36” SPACING MODEL 332 RIPPER-STRIPPER,
WING FOLD MODIFICATION KIT #69595B
PLEASE REFER TO YOUR INSTRUCTION SHEET #69594.

Set Up Checklist

- ☐ Wheel bolts tightened (Recheck after initial use)
- ☐ Tire pressures checked
- ☐ Hardware tightened
- ☐ Machine lubricated
- ☐ Safety and operating procedures reviewed
- ☐ Field adjustment information reviewed
- ☐ Lubrication procedures reviewed
- ☐ Warranty information reviewed
- ☐ Hydraulic hoses properly routed/fittings tight

General Set Up Information

⚠ WARNING

- **READ AND UNDERSTAND SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW THE SAFETY SECTION IN THIS MANUAL IF NECESSARY.**
- **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 6,000 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 IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

Folding Wing Extension Assembly

NOTE: For proper positioning, refer to “Overhead Layouts”, in SET UP section for Rigid & Folding Units.

IMPORTANT

- *Use the instructions (66120) provided with the main frame assembly before removing the shipping chains or straps for proper procedures on setting the machine in the working position.*

1. Using a safe lifting device and stands rated for at least 6,000 lbs. position implement onto support stands approximately 40” tall, (Fig. 2-1).
2. Secure a 1000 lbs. min. lifting device to the end of the base wing. Remove the shipping brace and lower the wings so they are level with the main frame.

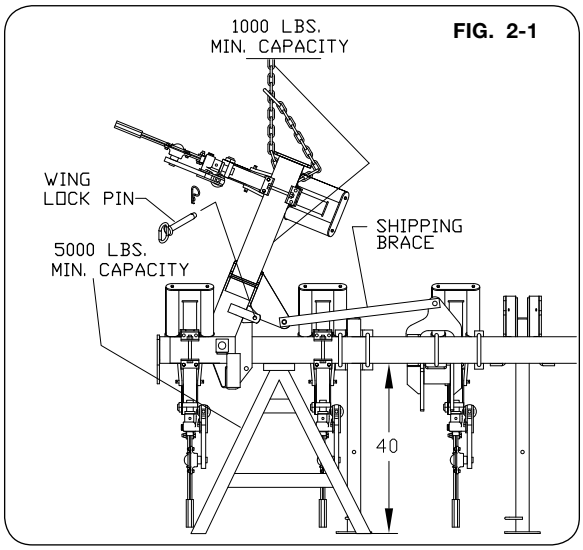


FIG. 2-1

Folding Wing Extension Assembly (continued)

NOTE: Use shims (67868 and 67869) in between the wing and wing extension for proper leveling (FIG. 2-2). Also see OPERATION section for frame and wing leveling.

IMPORTANT

- *Shim kit must not be installed when machine is equipped with optional with flex valve. Frame or cylinder damage could occur if installed!*

8, 12, & 16 Shank

3. Attach safe lifting device rated at 4,000 lbs. minimum to the wing extensions while they are bolted together. Attach the entire assembly to the right-hand base wing. Secure with eight 3/4”-10UNC x 2” long capscrews and locknuts (FIG. 2-2).

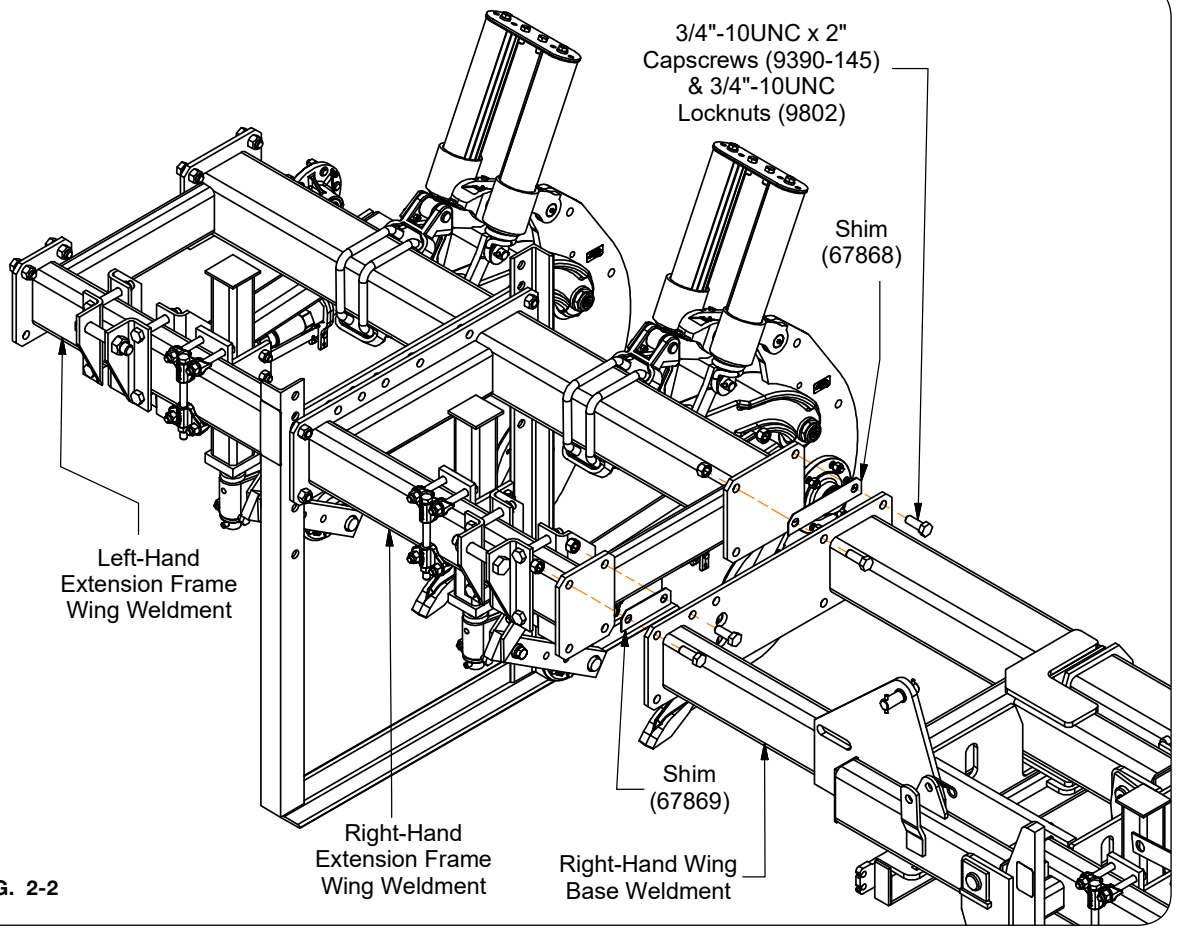


FIG. 2-2

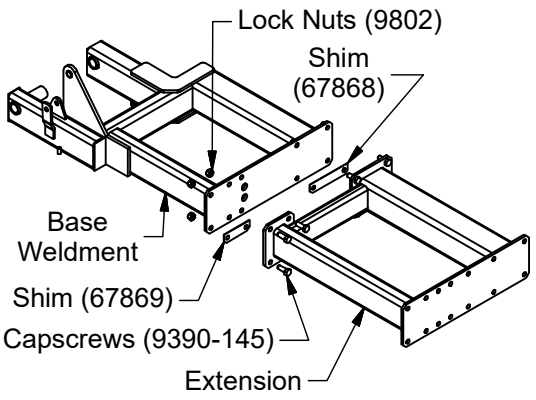
Folding Wing Extension Assembly (continued)

IMPORTANT

- *Make sure the 2-piece mounting plate is bolted to the machine. The 1-piece mounting plate should be positioned away from the machine. See FIG. 2-3.*

4. Reattach the safe lifting device to the left-hand wing.

FIG. 2-3



⚠ CAUTION

- **THE EXTENSION COULD BECOME UNSTABLE IF RESTING ON THE GROUND.**

5. Attach the left-hand extension to the left-side using seven 3/4”-10UNC x 2” capscrews (9390-145), one 3/4”-10UNC x 2 1/2” capscrew (9390-147) and eight 3/4”-10UNC locknuts (9802). See FIG. 2-2 for reference. Add shims (67868 and 67869) between wings and wing extensions for proper leveling (FIG. 2-3).

6. Remove the four 3/4”-10UNC hex jam nuts (9395-016) which secures the right-hand extension to the stand and discard nuts and shipping stand.

Combo® Coulter Blade

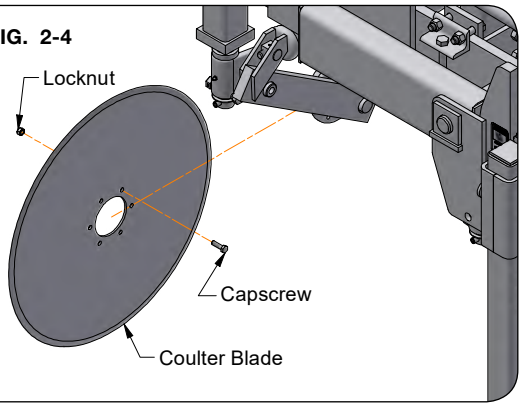
⚠ CAUTION

- **SHARP EDGES ON COULTER BLADES CAN CAUSE SERIOUS INJURY. BE CAREFUL WHEN WORKING AROUND COULTER BLADES.**

On some models, the coulter post and bracket assembly may be repositioned for shipping purposes. Before installing coulter blades, check alignment of coulter with shank. Reposition coulter unit to align with shank.

1. Install a coulter blade to each hub using six 3/8”-16UNC x 1 1/4” capscrews (9390-056) and 3/8”-16UNC locknuts (9928) (Fig. 2-5). Tighten all hardware on the frame mounting bracket to remove any slack. DO NOT torque any hardware until the slack has been removed on all capscrews and nuts.

FIG. 2-4



2. Torque hardware. Refer to “Torque Chart” in MAINTENANCE section for proper torquing.

Support Stand

WARNING

- **BE CAREFUL WHEN WORKING AROUND COULTER BLADES. FAILURE TO DO SO COULD RESULT IN PERSONAL INJURY DUE TO THE SHARP EDGES.**

1. The rear support on units with a single rear stand may be located out of position for shipping purposes. Refer to FIG. 2-5 for correct position.

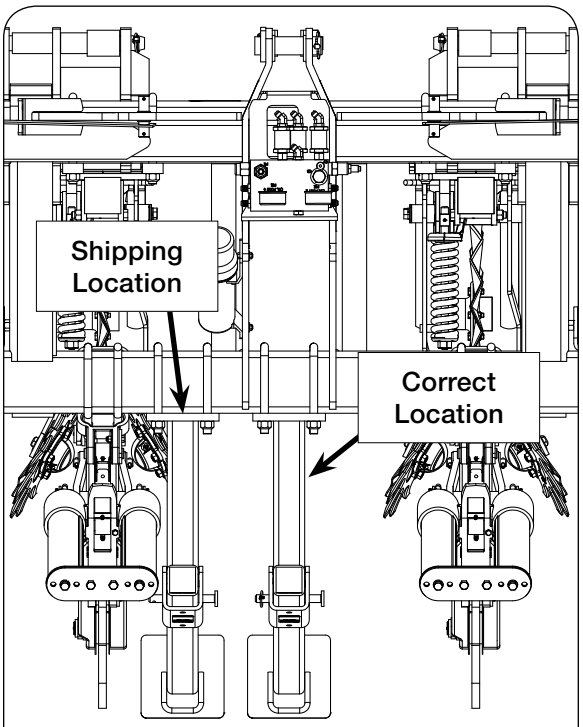


FIG. 2-5

Optional 4-Coulter Per Row (64776B)

Optional Attachment for use only with Strip-Builder or Strip-Builder with Rolling Baskets.

NOTE: An optional 4-coulter (per row) attachment is available to add to each row to increase the tillage action of the rear strip-builder unit. Each unit is provided with 2 long offset clamp tubes (63815) and 2 short offset clamp tubes (63814), allowing for different arrangements to match the users requirements. Refer to overhead layouts for options on set-up and consult your Unverferth dealer for the best arrangement for your requirements.

⚠ WARNING

- **KEEP HAND CLEAR OF PINCH POINT AREAS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **FALLING OR LOWERING EQUIPMENT CAN CAUSE SERIOUS INJURY OR DEATH. KEEP EVERYONE AWAY FROM EQUIPMENT WHEN SUSPENDED, RAISING, OR LOWERING.**
- **SHARP EDGES ON COULTER BLADES CAN CAUSE SERIOUS INJURY. BE CAREFUL WHEN WORKING AROUND COULTER BLADES.**

IMPORTANT

- *Models with 30" spacing equipped with planter attachment or lift-assist option will not accept 4 coulters per row.*
- *If installing onto stripper unit (63282) do not install long offset extension tube (63815) onto back side of stripper cross bar. Basket will contact coulter blade and damage to unit could occur.*

Select a firm, level surface for parking the machine. Lower all support stands to the same height. Lower unit with tractor's 3-point hitch until stands and shank points contact the ground.

Set parking brake and remove key from ignition before dismounting from tractor.

Remove the coulter post and blade assembly from the stripper unit by loosening u-bolts and sliding off end of frame (FIG. 2-7).

NOTE: Coulter angle is factory pre-set at 9°, to provide good soil flow, without excess ridging. Reducing angle will increase soil flow, but reduce tillage action. Blade cutting depth can also be increased when cutting angle is decreased.

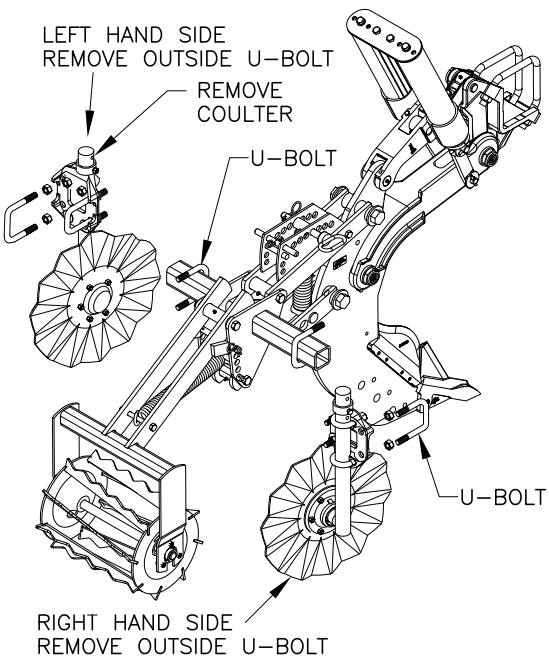


FIG. 2-7

Recommended Set Up For Rolling Basket

A. Two long offset clamp tubes (63815) on front side of both cross bars (both sides). Two short offset clamp tubes (63814) on rear side of both cross bars (both sides). Rear Coulters can be facing inward or outward. See FIG. 2-8 and FIG. 2-9.

CONFIGURATION A

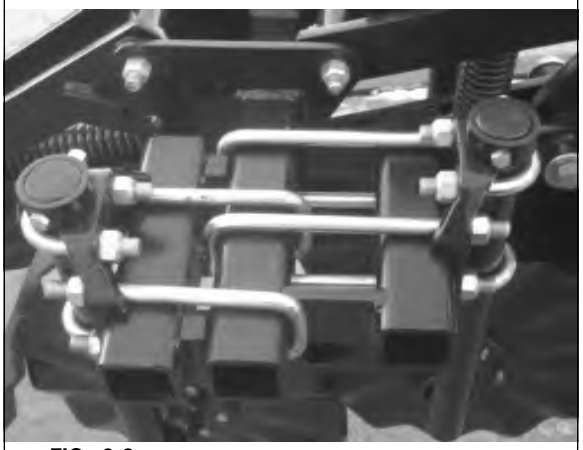


FIG. 2-8

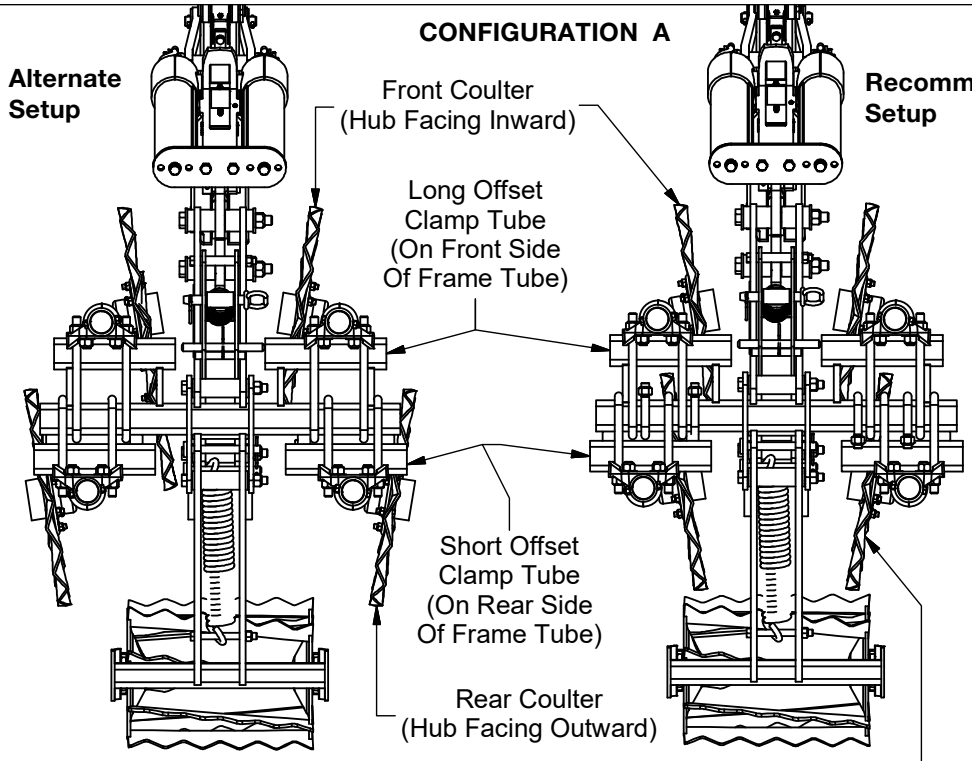


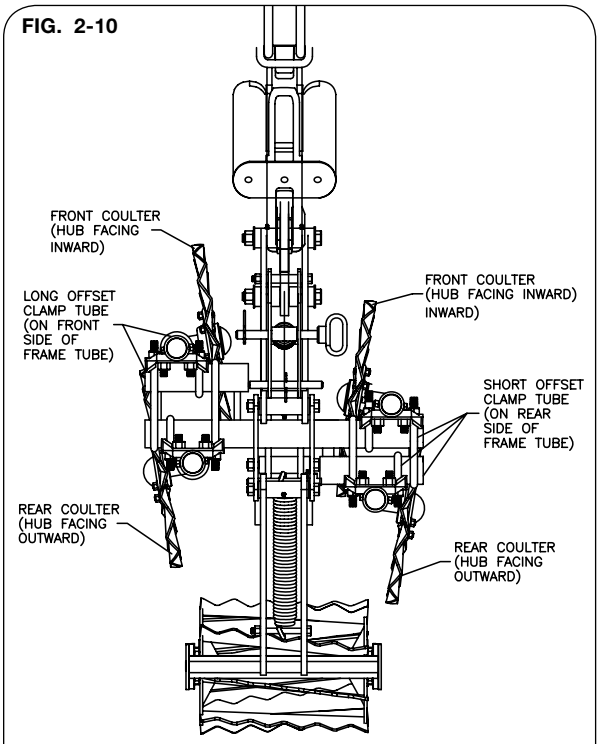
FIG. 2-9

Recommended Set Up For Rolling Basket (continued)

Alternate Set-Ups

B. One long offset clamp tube (63815) on front side of cross bar. One short offset clamp tube (63814) on rear side of cross bar. See FIG. 2-10.

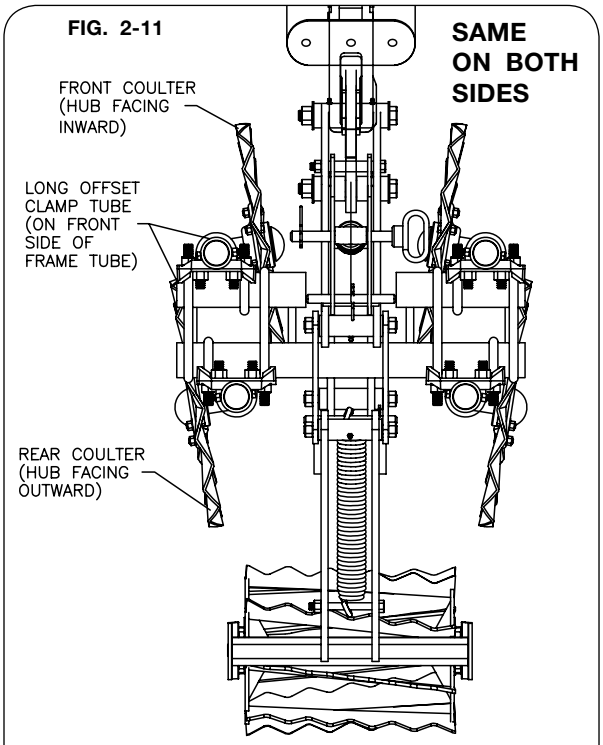
FIG. 2-10



CONFIGURATION B

C. Two long offset clamp tubes (63815) on front side of both cross bars (both sides). See FIG. 2-11.

FIG. 2-11



CONFIGURATION C

Potential Set Up For Units With Press Wheels

A. Two long offset clamp tubes (63815) on front side of both cross bars (both sides). Rear Coulters can face inward or outward. See FIG. 2-12.

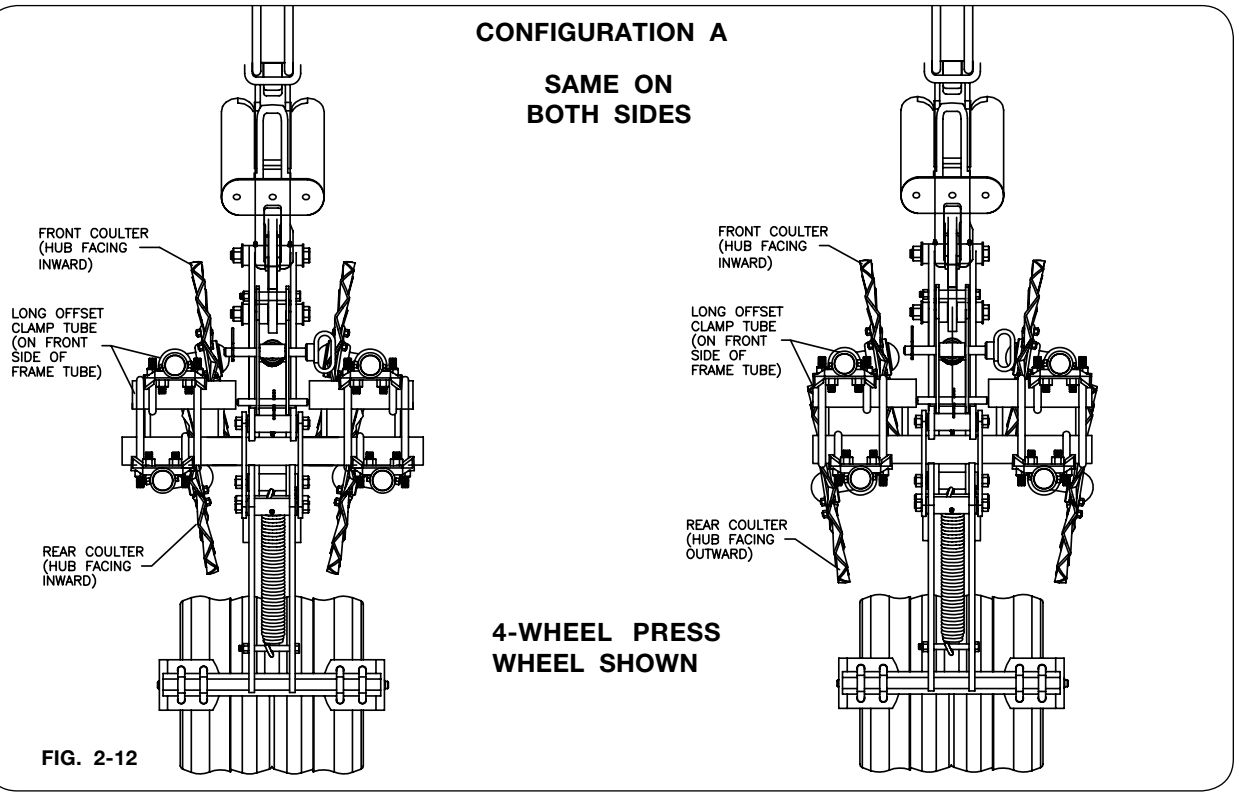


FIG. 2-12

NOTE: When setting up units with Press Wheels, use the short or long offset clamp tubes on the front side bar only. Positioning either short or long offset clamp tubes on the backside bar will cause interference between coulters and wheels, causing damage to wheels.

Stabilizer Wheel Assembly

WARNING

- **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 300 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 IMPLEMENT.**

6 SHANK 36 & 38"; 8 SHANK 40" RIGID:

1. Using a safe lifting device rated at a minimum of 300 lbs., remove the top two 3/4"-10UNC x 8" capscrews on the stabilizer wheel. Remove the stabilizer wheel and relocate it onto the front tube on the main frame. Refer to "Overhead Layout" for positioning. Tighten and torque capscrews to specifications.

6 SHANK 38" FOLDING:

1. Using a safe lifting device rated at a minimum of 300 lbs., remove the top two 3/4"-10UNC x 8" capscrews on the stabilizer wheel. Remove the stabilizer wheel and relocate it onto the rear tube on the main frame. Refer to "Overhead Layout" for positioning. Tighten and torque capscrews to specifications.

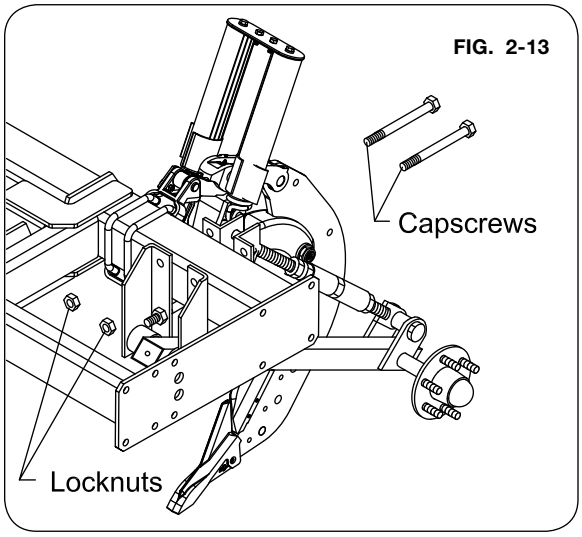


FIG. 2-13

Stabilizer Wheel Assembly (continued)

8 SHANK NARROW FOLDING ONLY:

1. Attach extension tube to the base wing, secure with four 3/4"-10UNC x 1 3/4" capscrews (9390-145) and locknuts (FIG. 2-14). Torque capscrews to specifications.

2. Using a safe lifting device rated at a minimum of 300 lbs., loosen the four 3/4"-10UNC x 8" capscrews on the stabilizer wheel and slide it onto the extension tube. Refer to "Overhead Layout" for positioning. Tighten and torque capscrews to specifications.

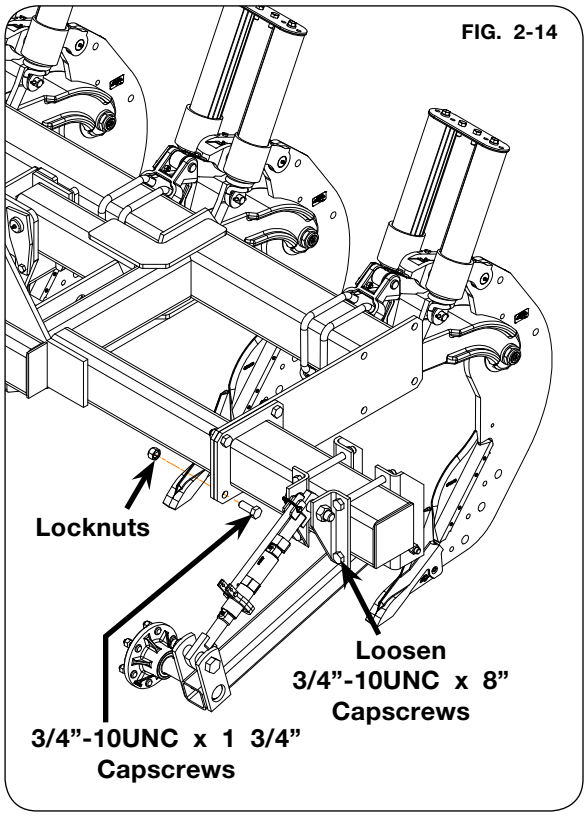


FIG. 2-14

12 SHANK WIDE & 16 SHANK FOLDING

1. Using a safe lifting device rated at a minimum of 200 lbs., loosen the four 3/4"-10UNC x 5" capscrews on the stabilizer wheel. Rotate the arm to the front and attach the turnbuckle (FIG. 2-15). Refer to "Overhead Layout" for positioning. Tighten and torque capscrews to specifications.

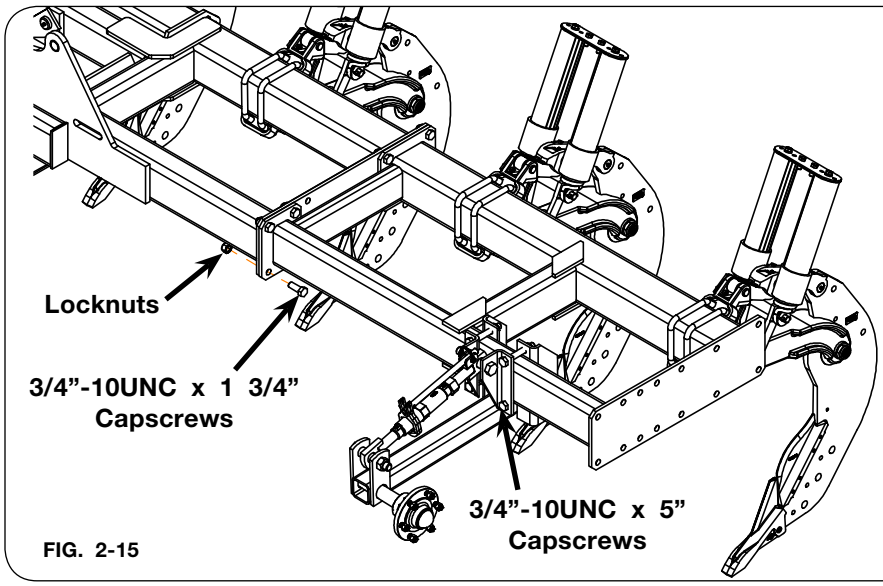


FIG. 2-15

Light and Panel Reflector Assembly

Outer Reflector Assemblies For Rigid Units

1. Reattach the reflector brackets (68958B) on the left-hand outer reflector assembly and right-hand outer reflector assembly at the top of the angle bracket with the red reflector farthest from the angle bracket as shown in FIG. 2-16 and FIG. 2-17 with 3/8”-16UNC x 1” capscrews (9390-055) and 3/8”-16UNC locknuts (9928). Secure the amber lights (9003876) to the top of the reflector assemblies.

Left-Hand Outer Reflector Assembly & Amber Light (9003876)

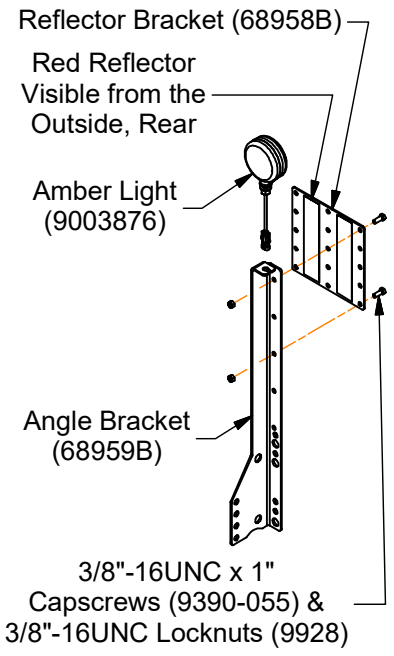


FIG. 2-16

Right-Hand Outer Reflector Assembly & Amber Light (9003876)

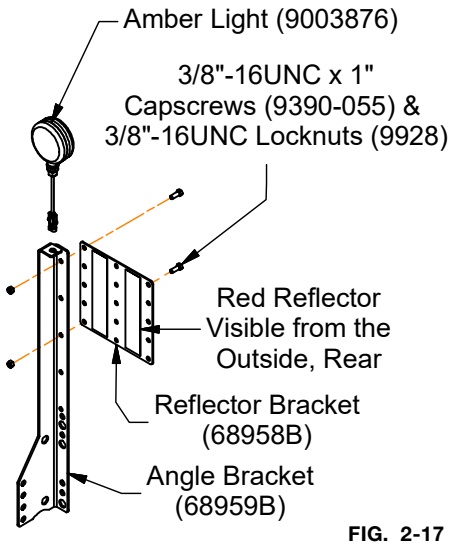


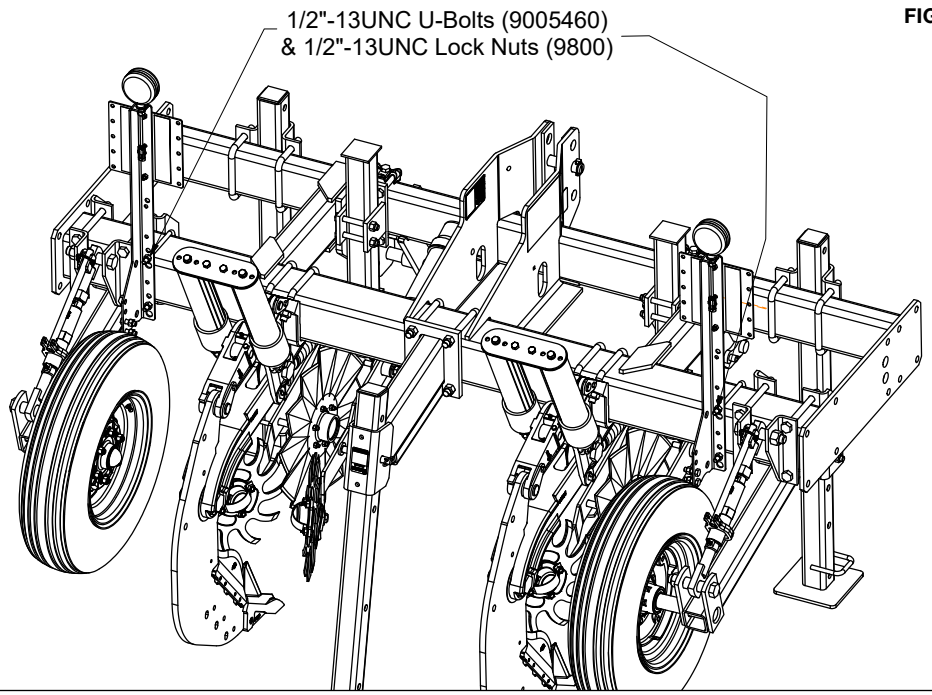
FIG. 2-17

Light and Panel Reflector Assembly (continued)

Attaching Outer Reflector Assemblies For Rigid Units

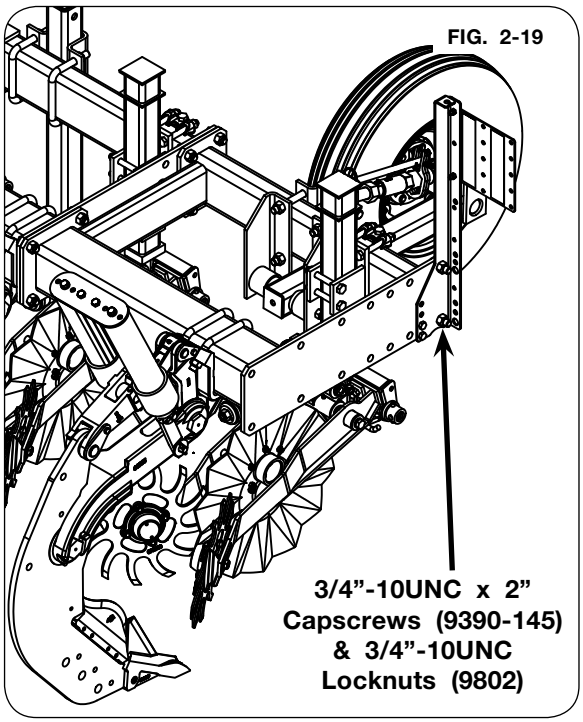
1. **ALL RIGID UNITS EXCEPT 8 SHANK 30" SPACING (FIG. 2-18A)**
   Attach the angle bracket (68959B) with the reflector bracket (68958B) to the rear of the main frame with 1/2"-13UNC U-bolt (9005460) and 1/2"-13UNC locknuts (9800) (FIG. 2-18). Refer to "OVERHEAD LAYOUTS" for proper positioning.

FIG. 2-18



RIGID 8 SHANK 30" SPACING (FIG. 2-18B)
Attach the angle bracket (68959B) with the reflector bracket (68958B) to the end plate of the extensions with 3/4"-10UNC x 2" capscrews (9390-145) and 3/4"-10UNC locknuts (9802) (FIG. 2-19). Refer to "OVERHEAD LAYOUTS" for proper positioning.

FIG. 2-19



Light and Panel Reflector Assembly (continued)

Outer Reflector Assemblies For Folding Units

1. Reattach the reflector brackets (68958B) and assemble the light bracket (68960B) on the left-hand outer reflector assembly and right-hand outer reflector assembly at the middle of the angle bracket with the red reflector farthest from the angle bracket as shown in FIG. 2-22 and FIG. 2-23 with 3/8”-16UNC x 1” capscrews (9390-055) and 3/8”-16UNC locknuts (9928). Secure the amber lights (9003876) to the light bracket.

Left-Hand Outer Reflector Assembly, light bracket (68960B), & Amber Light (9003876)

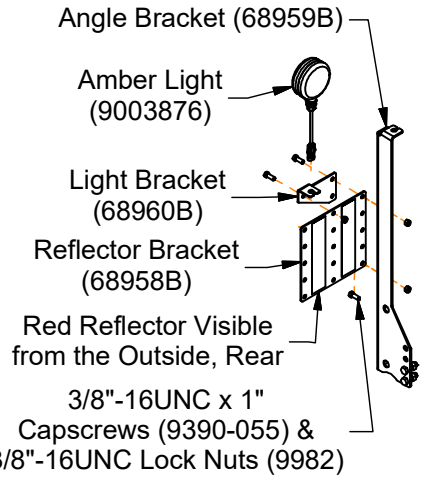


FIG. 2-22

Right-Hand Outer Reflector Assembly, light bracket (68960B), & Amber Light (9003876)

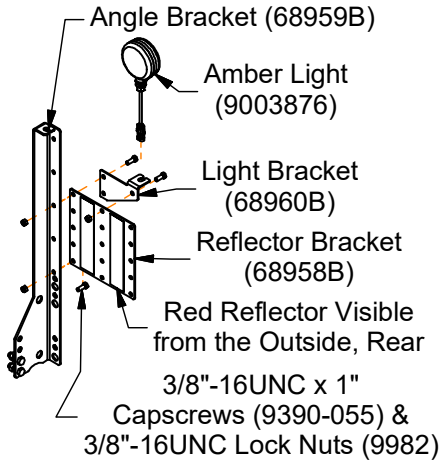


FIG. 2-23

Light and Panel Reflector Assembly (continued)

Attaching Outer Reflector Assemblies For Folding Units

1. Use 1/2”-13UNC x 1 1/2” capscrews (9390-101) and 1/2”-13UNC lock nuts (9800) to secure the outer reflector assemblies to the tabs located on the main frame with the red reflectors farthest away from angle bracket. See FIG. 2-24 through FIG. 2-25 for reference and “OVERHEAD LAYOUTS” for proper positioning.

LEFT-HAND, FRONT SHOWN

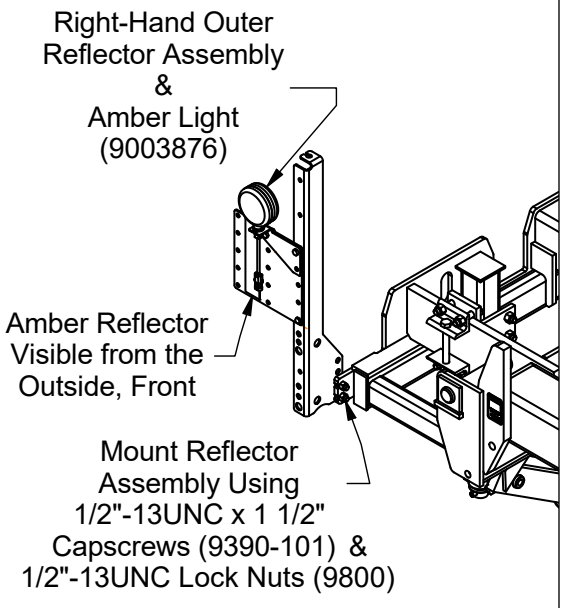


FIG. 2-24

RIGHT-HAND, FRONT SHOWN

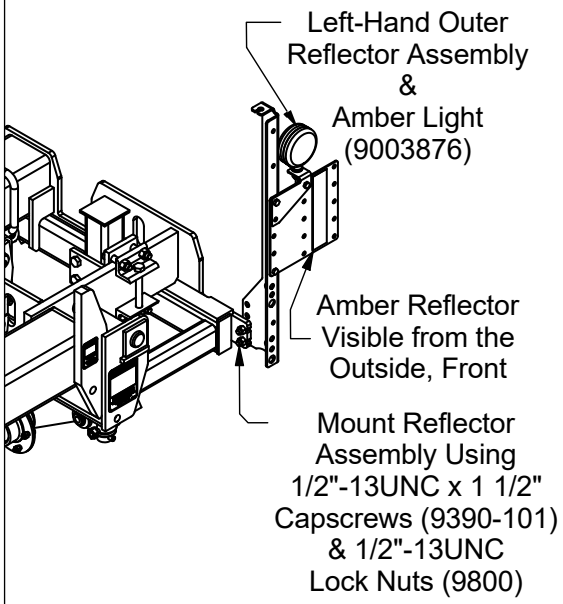


FIG. 2-25

Light and Panel Reflector Assembly (continued)

Center Reflector Assemblies & SMV Emblem
ALL Rigid, 6 & 8 Shank Folding & 12 Shank 30" Spacing Folding Units

1. Secure the SMV Emblem (9829) to the angle (69664B) with 1/4"-20UNC x 3/4" capscrews (9390-003) and 1/4"-20UNC locknuts (9936) as shown in FIG. 2-26.

2. Attach red light (9003877) to the top of the angle (69664B) with the red lens facing the same direction as the SMV.

NOTE: SMV emblem (9829) and red light (9003877) MUST be visible from the rear of the unit.

NOTE: If equipped with optional planter lift assist kit, the red center light assemblies and SMV must be relocated back behind the planter using extension harnesses supplied in kit 69405.

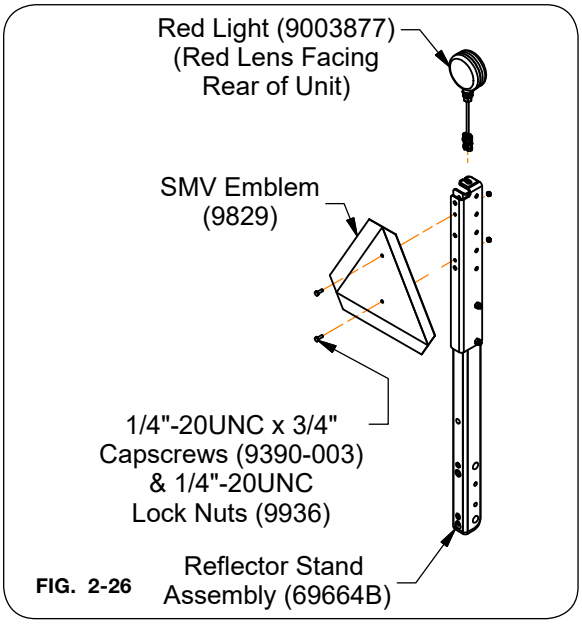


FIG. 2-26

3. Right-hand center reflector assembly is a reflector bracket (68958B) assembled to the angle (69664B). Light bracket (68960B) may be required to secure the red light (9003877) to the assembly. Assemble reflector bracket and red light as shown in FIG. 2-27.

NOTE: The RED reflector MUST be visible from the right-hand, rear side of the unit.

Right-Hand Center Reflector Assembly

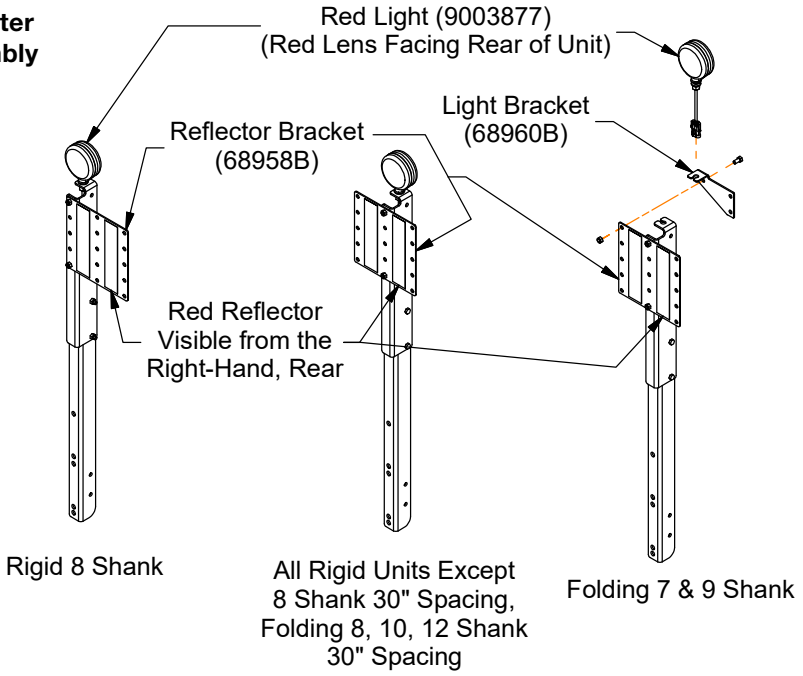


FIG. 2-27

Light and Panel Reflector Assembly (continued)

4. Attach the SMV assembly to the left-hand side of the frame with a 1/2”-13UNC U-bolt (9005460) and 1/2”-13UNC locknuts (9800) (FIG. 2-28). Refer to the OVERHEAD LAYOUTS for proper placement.

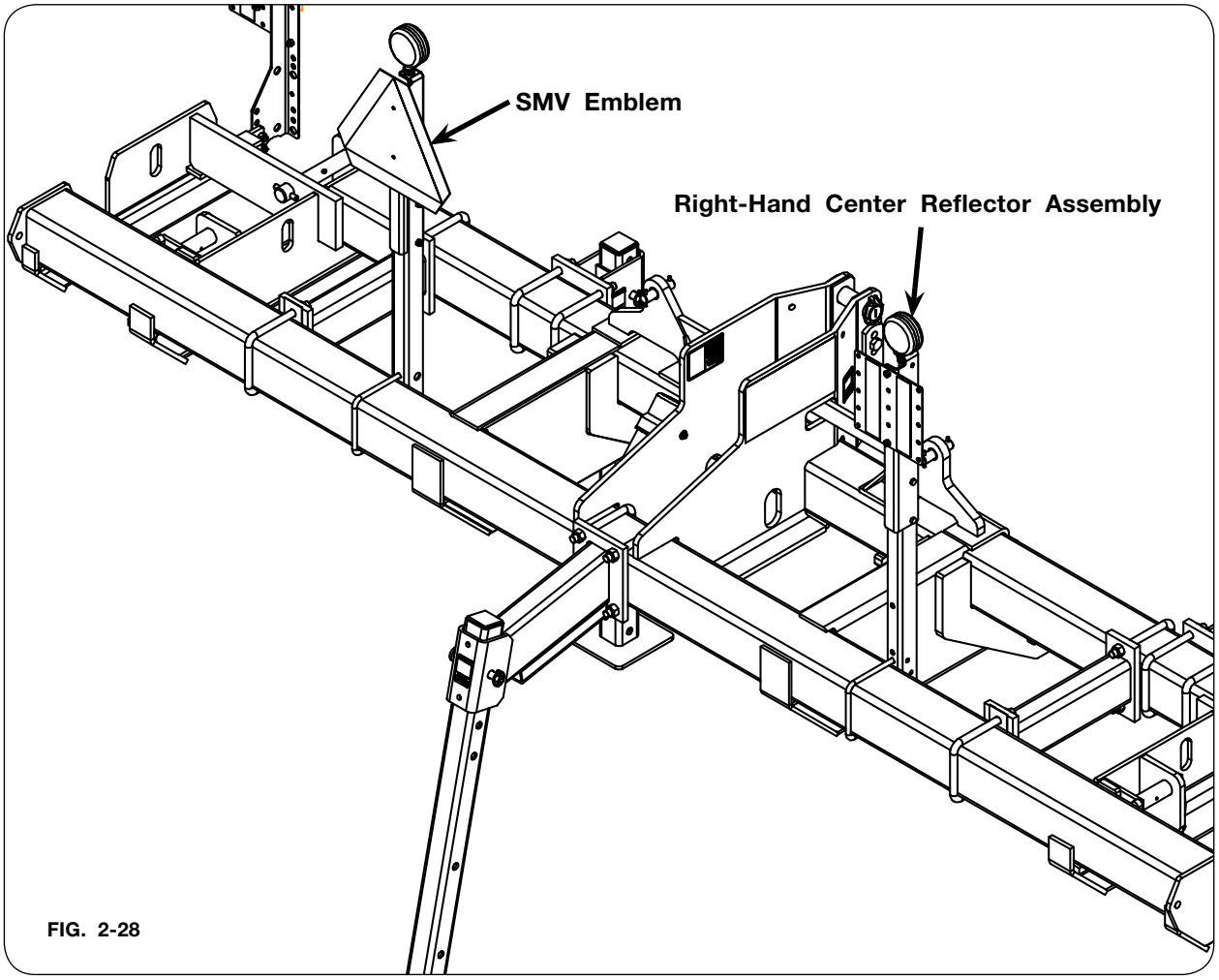


FIG. 2-28

5. Attach the right-hand center reflector assembly to the right-hand side of the frame with a 1/2”-13UNC U-bolt (9005460) and 1/2”-13UNC locknuts (9800) (FIG. 2-28). Refer to the OVERHEAD LAYOUTS for proper placement.

Light and Panel Reflector Assembly (continued)

Center Reflector Assemblies & SMV Emblem
Folding 12 Shank 36/38/40” Spacing, 16 Shank 30” Spacing

1. Secure the SMV Emblem (9829) to the angle (69664B) with 1/4”-20UNC x 3/4” capscrews (9390-003) and 1/4”-20UNC locknuts (9936) as shown in FIG. 2-29.

2. Attach red light (9003877) to the top of the angle (69664B) with the red lens facing the same direction as the SMV.

NOTE: SMV emblem (9829) and red light (9003877) MUST be visible from the rear of the unit.

NOTE: If equipped with optional planter lift assist kit, the red center light assemblies and SMV must be relocated back behind the planter using extension harnesses supplied in kit 69405.

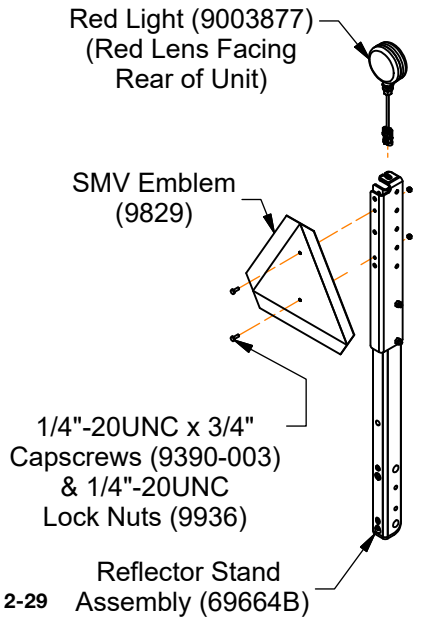


FIG. 2-29

3. Right-hand center reflector assembly is a reflector bracket (68958B) assembled to the angle (69664B). Assemble reflector bracket and red light as shown in FIG. 2-30.

NOTE: The RED reflector MUST be visible from the right-hand, rear side of the unit when installed.

Right-Hand Center Reflector Assembly

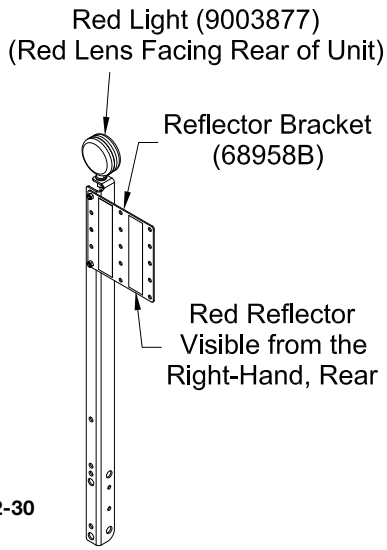


FIG. 2-30

Light and Panel Reflector Assembly (continued)

4. Left-hand center reflector assembly is a reflector bracket (68958B) assembled to the angle (69664B). Assemble reflector bracket and red light as shown in FIG. 2-31.

NOTE: The RED reflector MUST be visible from the right-hand, rear side of the unit when installed.

Left-Hand Center Reflector Assembly

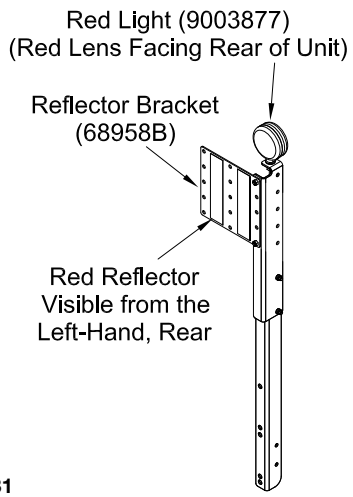


FIG. 2-31

5. Attach the left-hand center reflector assembly to the left-hand side of the frame with a 1/2”-13UNC U-bolt (9005460) and 1/2”-13UNC locknuts (9800) (FIG. 2-32). Refer to the OVERHEAD LAYOUTS for proper placement.

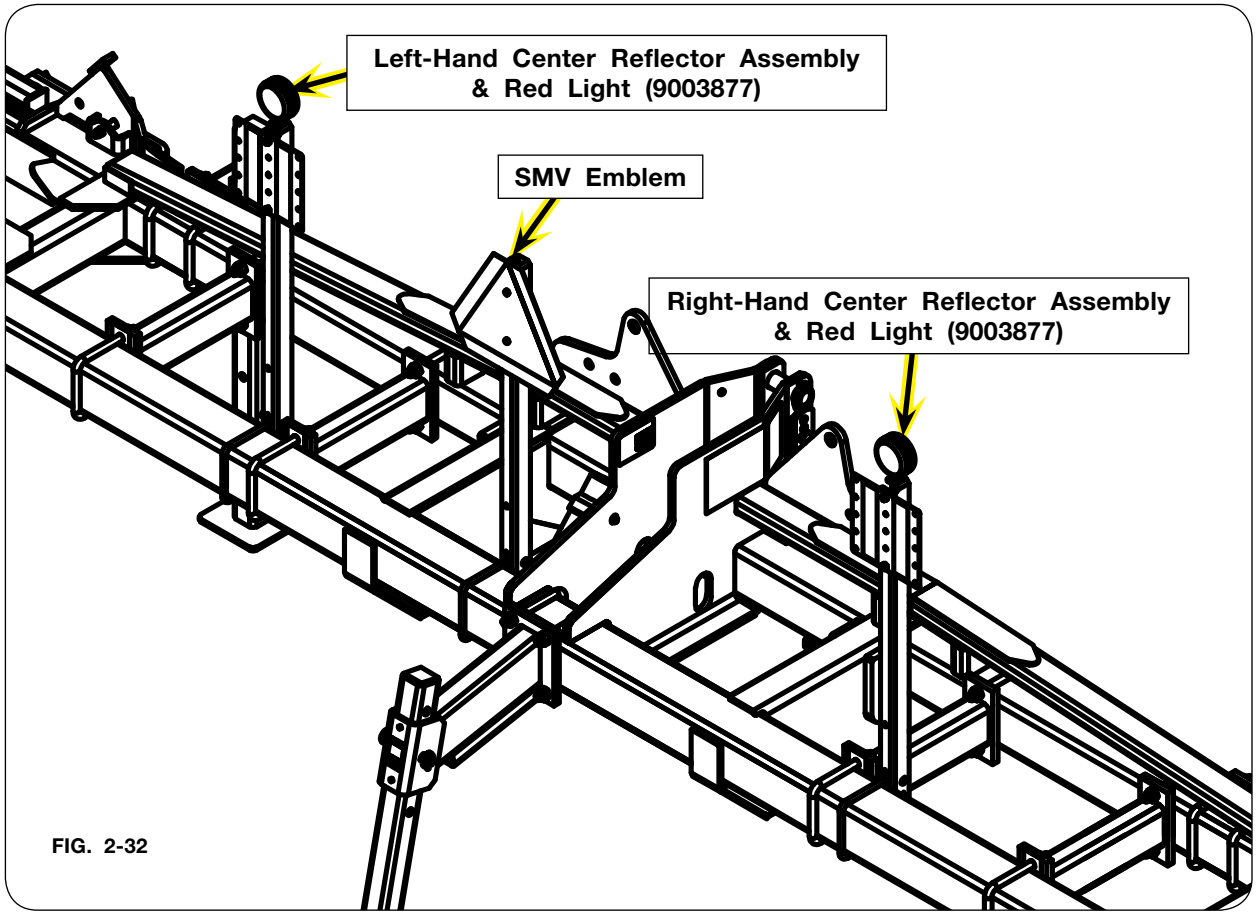


FIG. 2-32

Hydraulic Set Up — Standard Folding 8 Shank 30”, 36”, 38” & 40” Spacing

WARNING

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

1. Attach the cylinder mount assemblies (68410B) to both sides of the main frame with the 1”-8UNC x 3” capscrews and 1”-8UNC locknuts (FIG. 2-38).

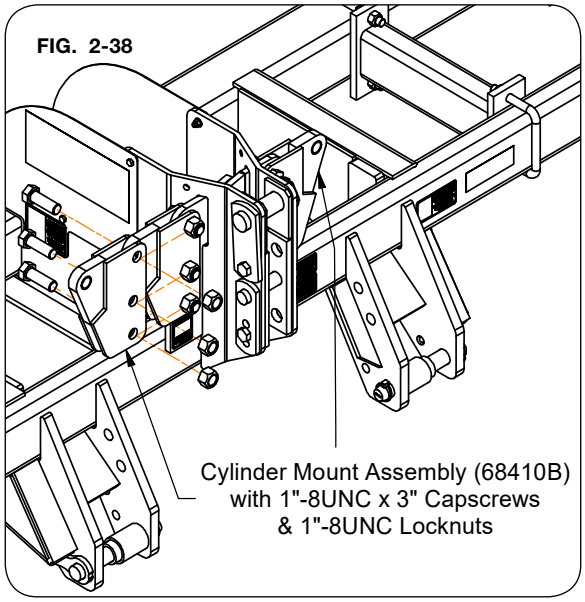


FIG. 2-38

2. Using a safe lifting device rated at a minimum of 100 lbs., attach the base end of the hydraulic cylinders (901283) to the cylinder mount assembies (68410B) with 1” Dia. x 4” pins (85631) and 1/4” Dia. x 1 7/8” spiral pins (91144-165) (FIG. 2-39).

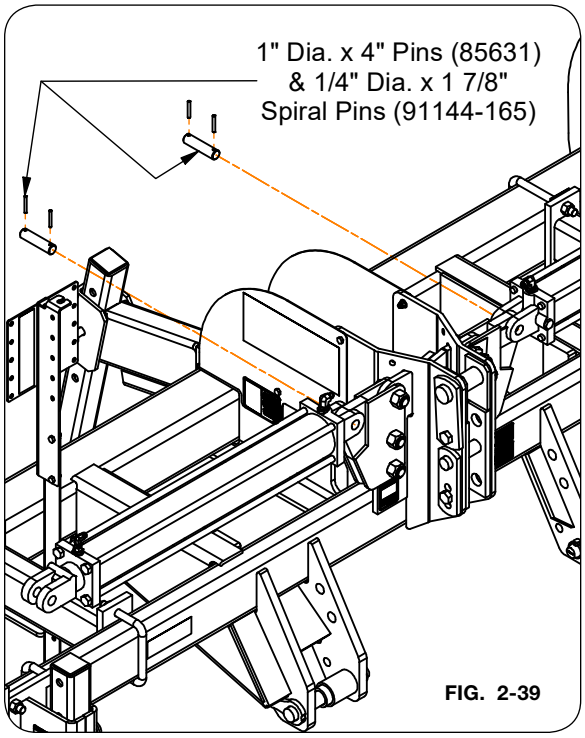
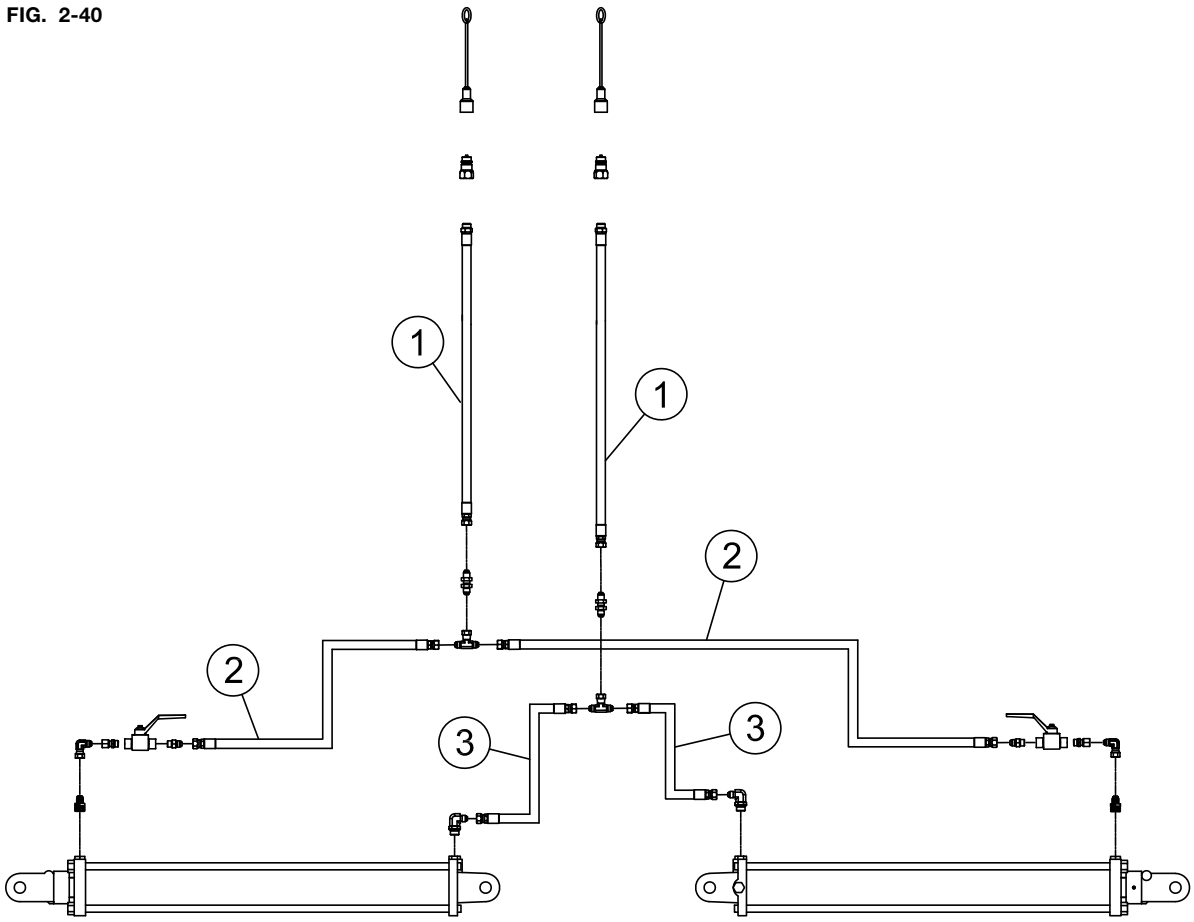


FIG. 2-39

Hydraulic Set Up — Standard (continued)
Folding 8 Shank 30”, 36”, 38” & 40” Spacing

3. Route hydraulic hoses as shown in FIG. 2-40. Tighten all fittings and hoses to specifications in “Hydraulic Fittings” in the MAINTENANCE section.

FIG. 2-40



ITEM	PART NUMBER	DESCRIPTION	QTY	NOTES
1	96975	Hose 3/8” Dia. x 72”	2	
2	9002976	Hose 3/8” Dia. x 57”	2	
3	91589	Hose 3/8” Dia. x 28”	2	

4. Purge the hydraulic system. Refer to “Purging Hydraulic System” in this section.

Hydraulic Set Up — Standard (continued)
Folding 8 Shank 30”, 36”, 38” & 40” Spacing

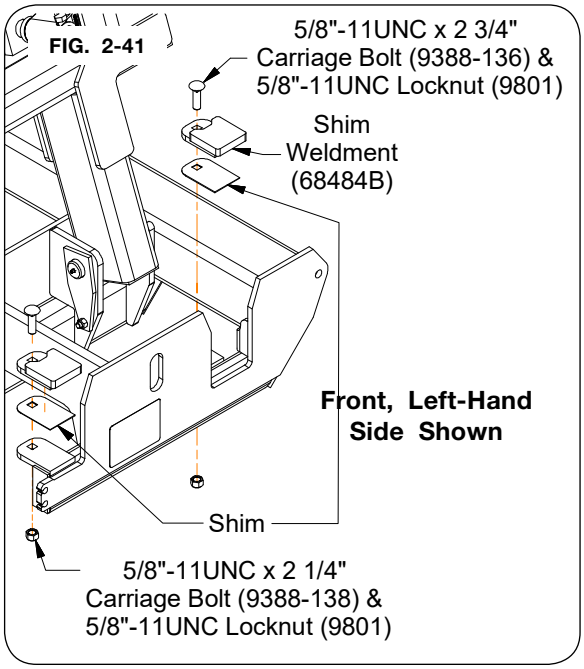
5. Add shim weldments (68484B) along with the necessary shims to the front and rear wing hinge section on both sides of the main frame with 5/8”-11UNC x 2 1/4” carriage bolts (9388-136) in the rear position, 5/8”-11UNC x 2 1/2” carriage bolts (9388-138) in the front position and 5/8”-11UNC locknuts (9801) to adjust/level the wing height (FIG. 2-41).

IMPORTANT

- *Shim kit must NOT be installed when machine is equipped with optional with flex valve. Frame or cylinder damage could occur if installed!*

NOTE: Additional shims can be stored on bottom side of mounting plate.

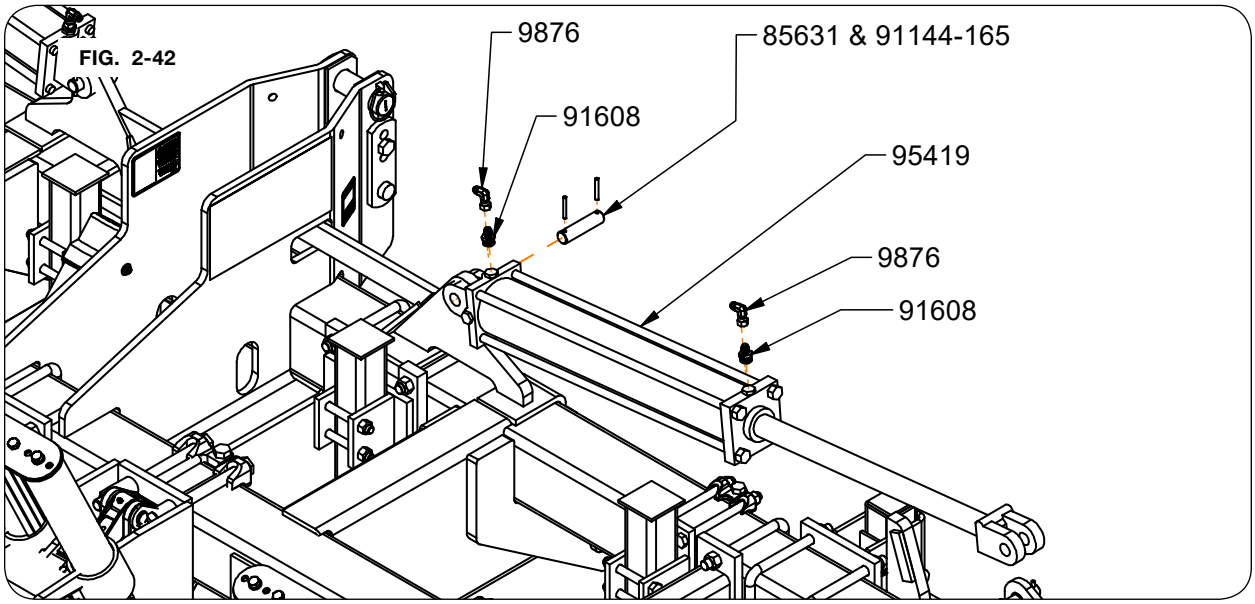
FIG. 2-41



Hydraulic Set Up — Standard
Folding 12 Shank 30” Spacing

1. Using a safe lifting device rated at a minimum of 100 lbs., attach only the base end of the hydraulic cylinder to the cylinder lug using a 1” dia. x 4” long pin (85631) and two 1/4” dia. x 1 7/8” long spiral pins (91144-165) on each side. (FIG. 2-42)

FIG. 2-42



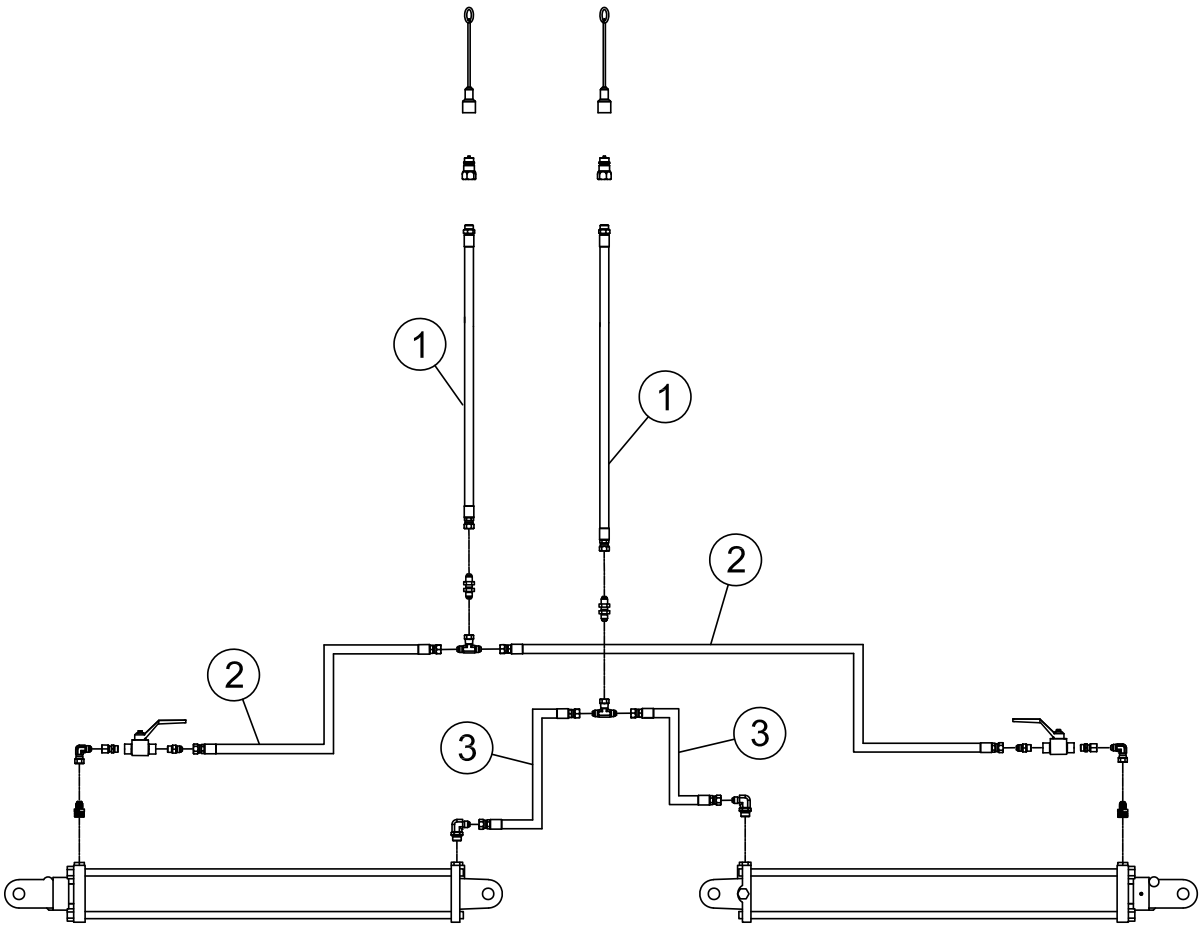
Hydraulic Set Up — Standard (continued)
Folding 12 Shank 30" Spacing

2. Attach all the hydraulic fittings, valve (if applicable), and hoses using the following hydraulic diagrams and Fig. 2-35 and Fig. 2-43. Tighten all fittings and hoses to specifications in "Hydraulic Fittings" in the MAINTENANCE section.

IMPORTANT

- *Do not use teflon tape or thread sealant as all fittings have mechanical or O-ring seals. This prevents contamination from tape or thread sealants entering the tractor's hydraulic system.*

FIG. 2-43



3. Purge the hydraulic system. Refer to "Purging Hydraulic System" in this section.

Hydraulic Set Up — Standard Hydraulics Folding 12 Shank 36”, 38” & 40” Spacing; Folding 16 Shank 30” Spacing

WARNING

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

1. Attach the cylinder anti-rotational plates (68276B) to the 4” x 48” cylinders (9501464) with 1/2”-13UNC x 1 1/2” capscrews (9390-101) and 1/2”-13UNC locknuts (9800) (FIG. 2-39).

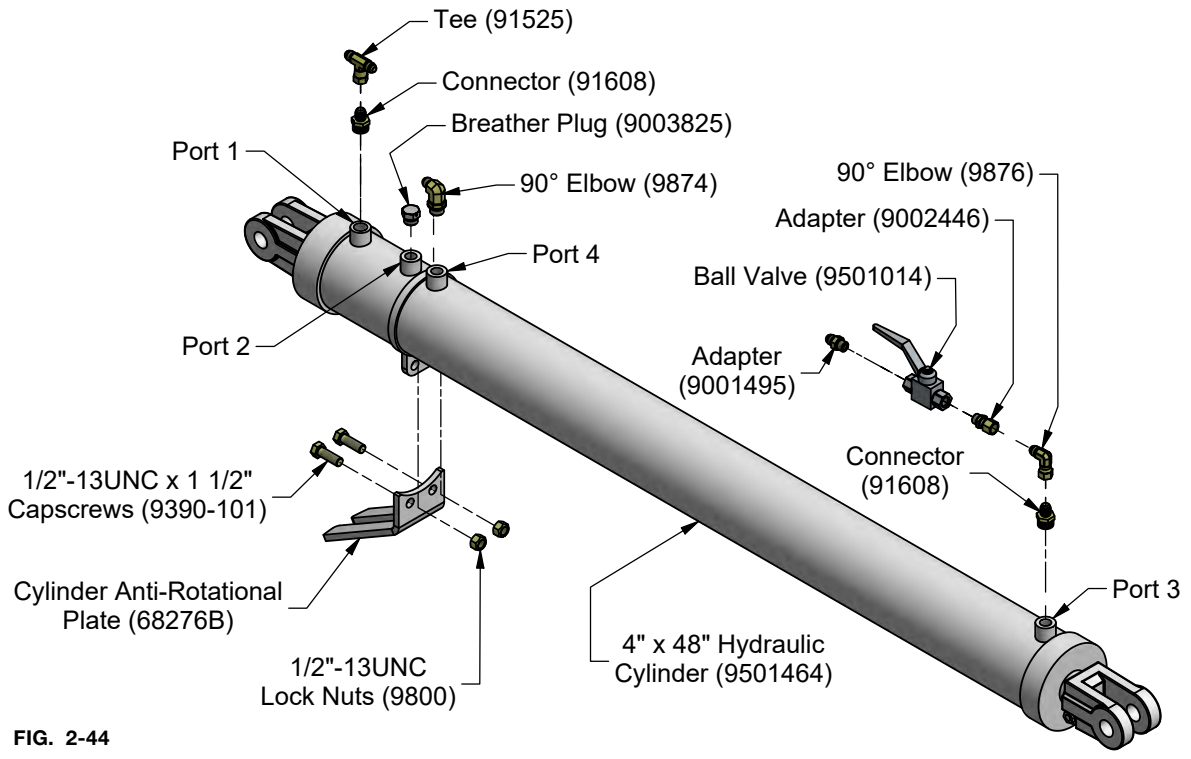


FIG. 2-44

NOTE: Tighten all fittings and hoses to specifications in “Hydraulic Fittings” in the MAINTENANCE section.

3. Purge the hydraulic system. Refer to “Purging Hydraulic System” in this section.

2. Assemble adapter (9001495), ball valve (9501014), adapter (9002446), 90° elbow (9876) and connector (91608) to cylinder port 3. (FIG. 2-44)

3. Assemble tee (91525) and connector (91608) to cylinder port 1. (FIG. 2-44)

4. Assemble 90° elbows (9874) to cylinder port 4. (FIG. 2-44)

5. Assemble breather plug (9003825) to cylinder port 2. (FIG. 2-44)

Hydraulic Set Up — Standard Hydraulics (continued)
Folding 12 Shank 36”, 38” & 40” Spacing; Folding 16 Shank 30” Spacing

6. Using a safe lifting device rated at a minimum of 150 lbs., attach the cylinders to the main frame with 1” Dia. x 4” pins (85631) and 1/4” Dia. x 1 7/8” spiral pins (91144-165) as shown in FIG. 2-45.

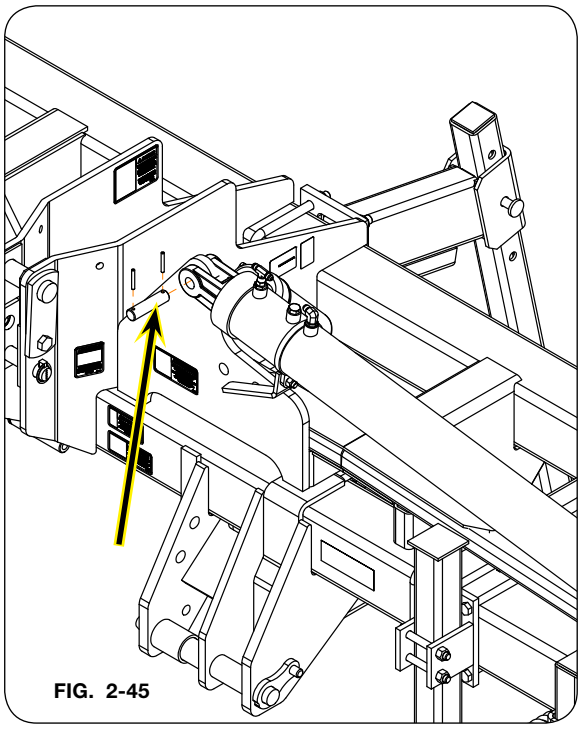


FIG. 2-45

7. Attach the two bulkhead unions with nut (95192) to the mounting plate (68521B) as shown in FIG. 2-46.

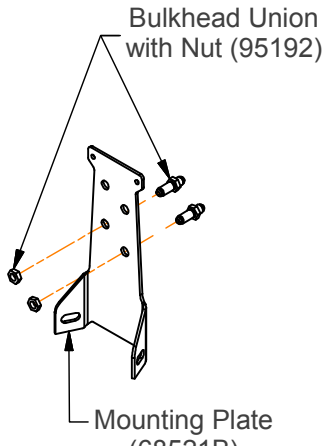
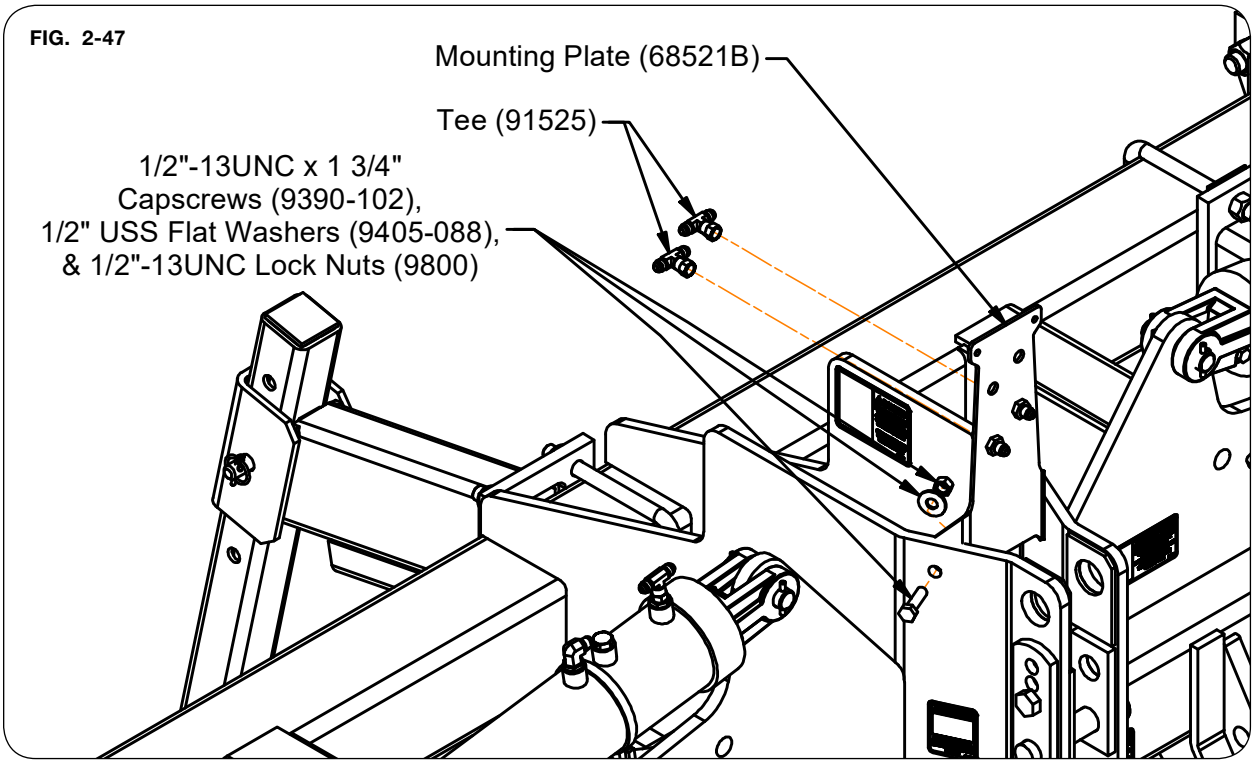


FIG. 2-46

Hydraulic Set Up — Standard Hydraulics (continued)
Folding 12 Shank 36”, 38” & 40” Spacing; Folding 16 Shank 30” Spacing

8. Assemble the tees (91525) to the mounting plate adapters (FIG. 2-47).

FIG. 2-47

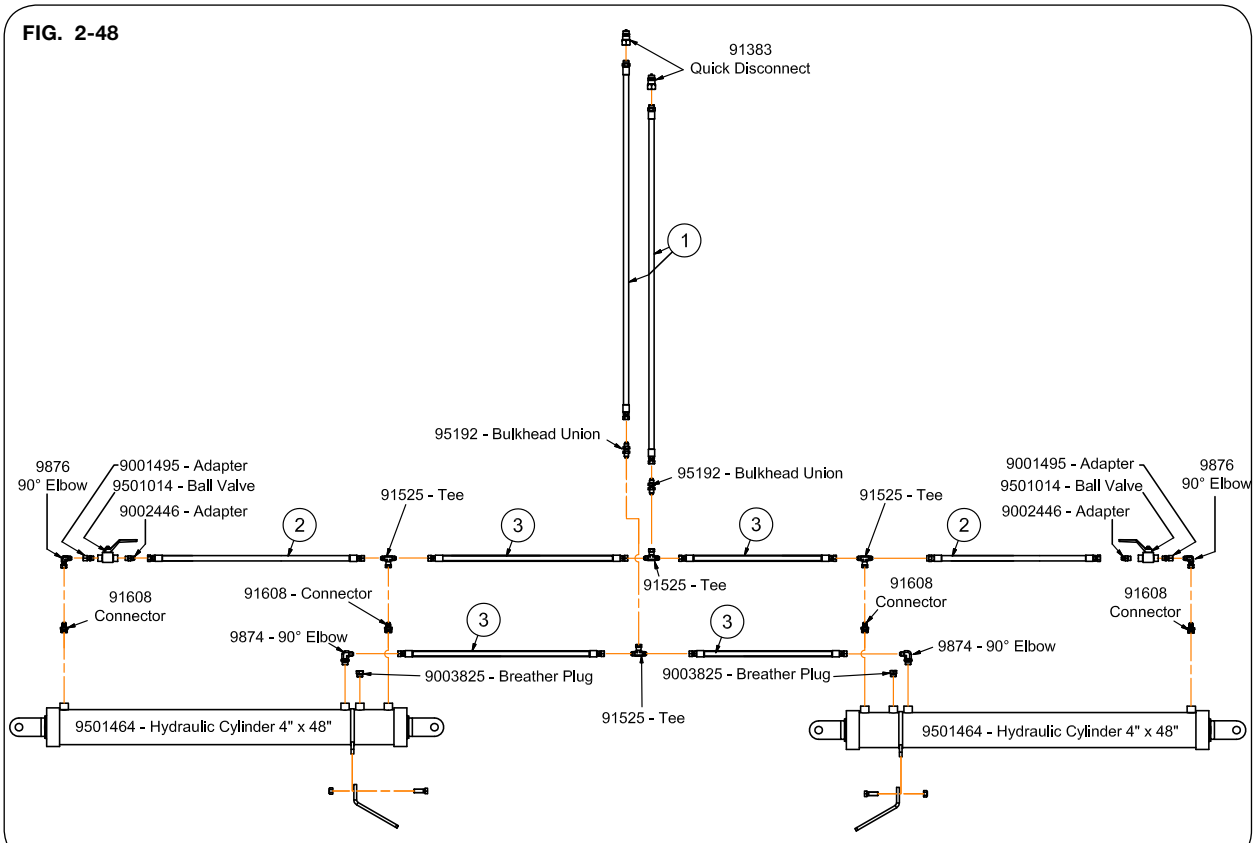


9. Secure the mounting plate (68521B) to the main frame with 1/2”-13UNC x 1 3/4” capscrews (9390-102), 1/2” USS flat washers (9405-088), and 1/2”-13UNC locknuts (9800) as shown in FIG. 2-47.

Hydraulic Set Up — Standard Hydraulics (continued)
Folding 12 Shank 36", 38" & 40" Spacing; Folding 16 Shank 30" Spacing

10. Route hydraulic hoses as shown in FIG. 2-48. Tighten all fittings and hoses to specifications in "Hydraulic Fittings" in the MAINTENANCE section.

FIG. 2-48



ITEM	PART NUMBER	DESCRIPTION	QTY	NOTES
1	9502772	Hose 3/8" Dia. x 72"	2	
2	9501677	Hose 3/8" Dia. x 54"	2	
3	9502793	Hose 3/8" Dia. x 28"	4	

11. Purge the hydraulic system. Refer to "Purging Hydraulic System" in this section.

Hydraulic Set Up — Standard Hydraulics (continued)
Folding 12 Shank 36”, 38” & 40” Spacing; Folding 16 Shank 30” Spacing

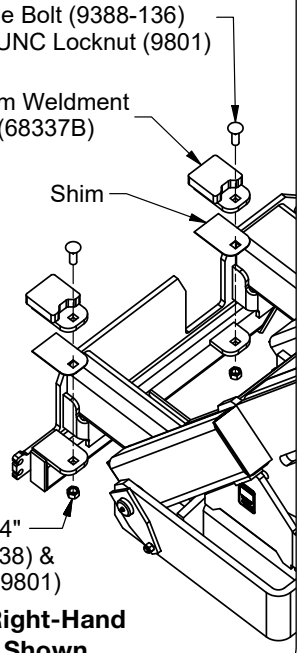
12. Add stop block (68337B) along with the necessary shims to the front and rear wing hinge section on both sides of the main frame with 5/8”-11UNC x 2 1/4” carriage bolts (9388-136) in the rear position, 5/8”-11UNC x 2 1/2” carriage bolts (9388-138) in the front position and 5/8”-11UNC locknuts (9801) to adjust/level the wing height. (FIG. 2-49).

IMPORTANT

- *Shim kit must NOT be installed when machine is equipped with optional with flex valve. Frame or cylinder damage could occur if installed!*

NOTE: There are 3 shims for each corner, you need to select the appropriate sizes as needed. (store unused on bottom side of mounting ear).

FIG. 2-49



Front, Right-Hand Side Shown

Notes

Hydraulic Set Up — Flex Hydraulics (Optional) Folding 12 Shank 36”, 38” & 40” Spacing; Folding 16 Shank 30” Spacing

⚠ WARNING

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

NOTE: Tighten all fittings and hoses to specifications in “Hydraulic Fittings” in the MAINTENANCE section.

1. Attach the fittings to the valve assembly (9503620) as shown in FIG. 2-50.

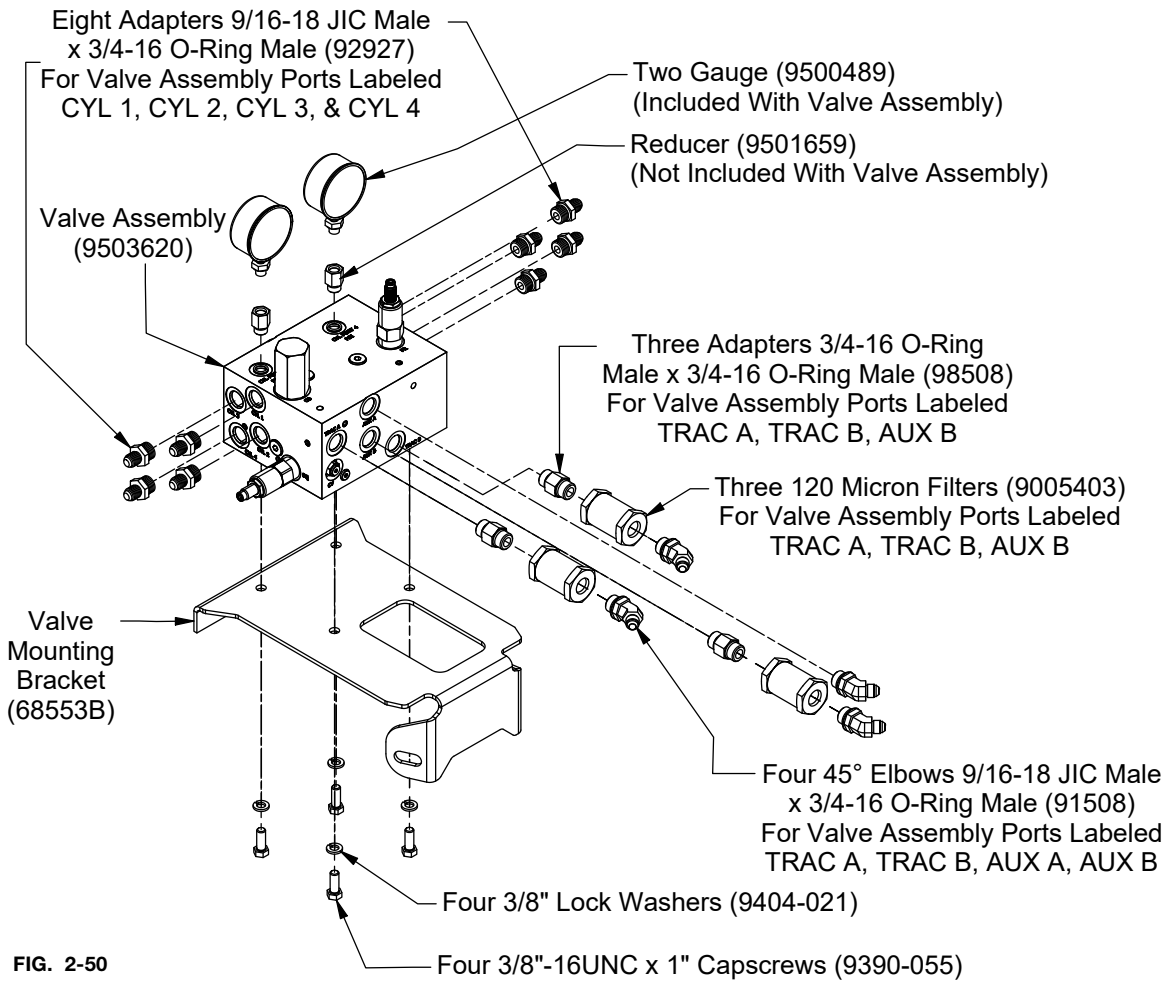


FIG. 2-50

2. Attach the valve assembly with fittings to the valve mounting bracket (68553B) with capscrews (9390-055) and lock washers (9404-021) FIG. 2-46.

Hydraulic Set Up — Flex Hydraulics Optional (continued)
Folding 12 Shank 36”, 38” & 40” Spacing; Folding 16 Shank 30” Spacing

3. Secure the valve mounting bracket to the main frame with capscrews (9390-101), flat washers (9405-088), and locknuts (9800) as shown in FIG. 2-51.

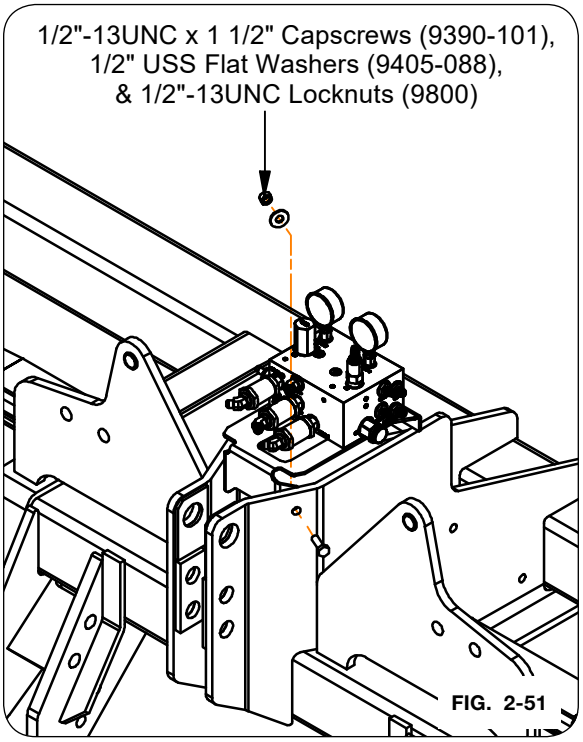


FIG. 2-51

Hydraulic Set Up — Flex Hydraulics Optional (continued)
Folding 12 Shank 36”, 38” & 40” Spacing;
Folding 16 Shank 30” Spacing

4. Attach the cylinder plates to the cylinders with 1/2”-13UNC x 1 1/2” capscrews (9390-101) and 1/2”-13UNC locknuts (9800) (FIG. 2-52).

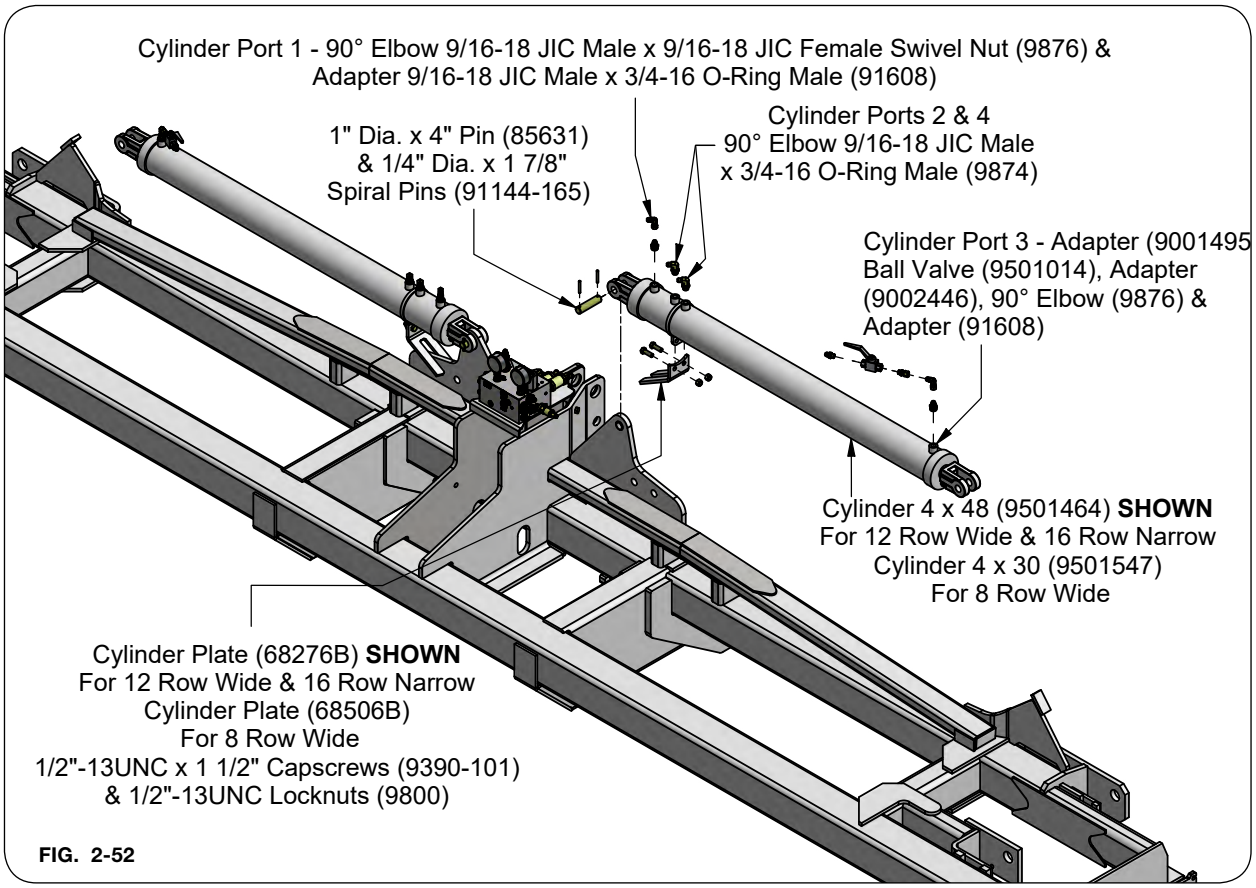


FIG. 2-52

5. Assemble adapter (9001495), ball valve (9501014), adapter (9002446), 90° elbow (9876) and connector (91608) to cylinder port 3. (FIG. 2-52)

6. Assemble 90° elbows (9876) and adapters (91608) to cylinder port 1. (FIG. 2-52)

7. Assemble 90° elbows (9874) to cylinder ports 2 and 4. (FIG. 2-52)

8. Using a safe lifting device rated at a minimum of 150 lbs., attach the cylinder to the main frame with 1” Dia. x 4” pins (85631) and 1/4” Dia. x 1 7/8” spiral pins (91144-165) as shown in FIG. 2-52.

Hydraulic Set Up — Flex Hydraulics Optional (continued)
Folding 12 Shank 36", 38" & 40" Spacing; Folding 16 Shank 30" Spacing

9. Attach the hoses to the cylinders and valve assembly as shown in FIG. 2-53. Tighten all fittings and hoses to specifications in "Hydraulic Fittings" in the MAINTENANCE section.

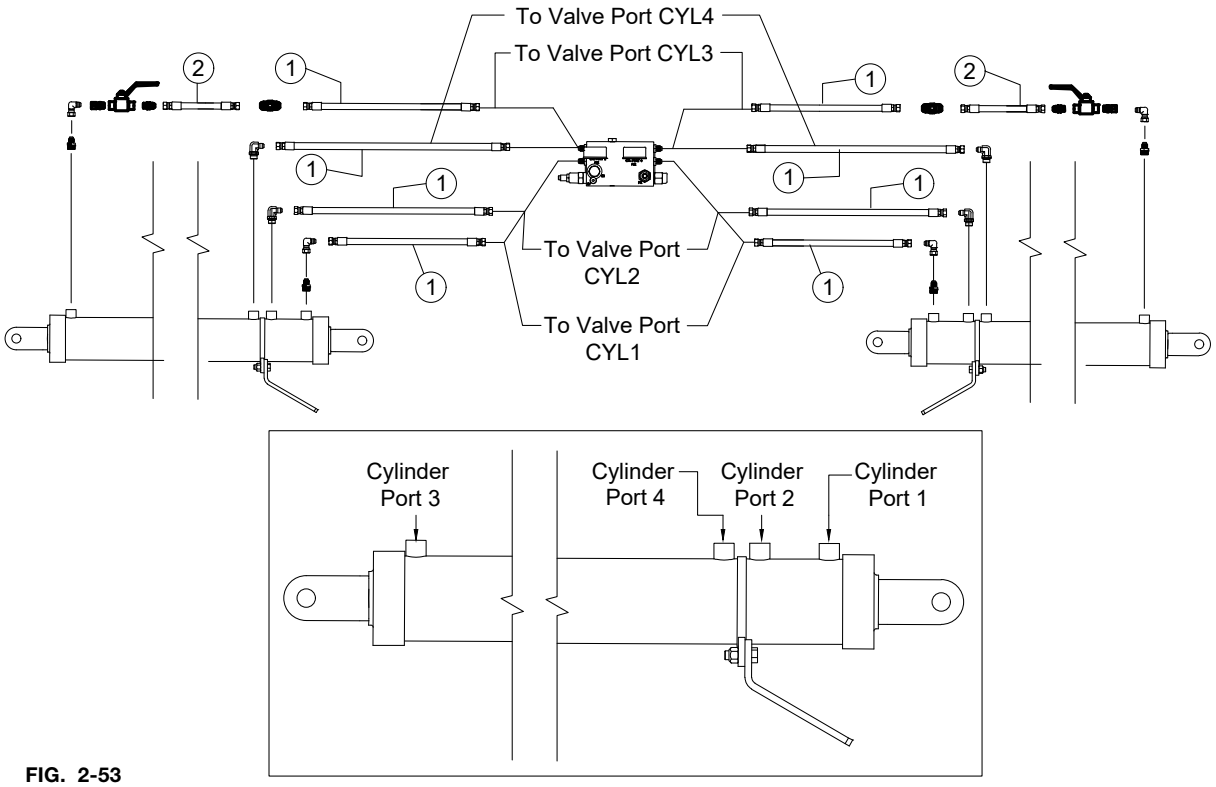
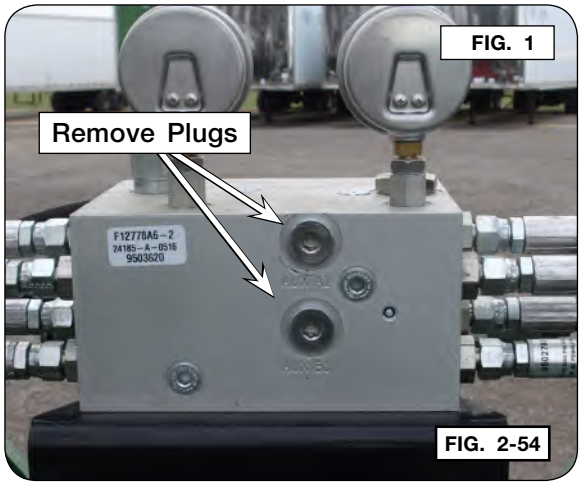


FIG. 2-53

ITEM	PART NUMBER	DESCRIPTION	QTY	NOTES
1	9502793	Hose 3/8" Dia. x 28"	8	Cylinder Port 1 to Valve Port CYL1; Cylinder Port 2 to Valve Port CYL2; Cylinder Port 3 to Connector & Hose #2; Cylinder Port 4 to Valve Port CYL4
2	9501677	Hose 3/8" Dia. x 54"	2	Hose #1 & Connector to Valve Port CYL3

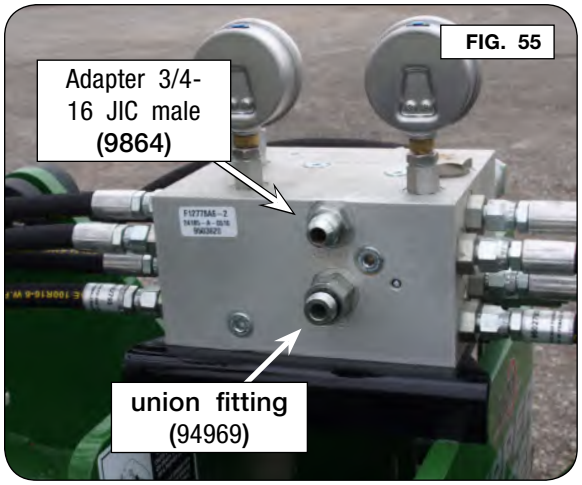
Hydraulic Set Up — Flex Hydraulics Optional (continued)
Folding 12 Shank 36", 38" & 40" Spacing

10. Remove and discard the plugs in ports AUX A1 and AUX B1. (FIG. 54)



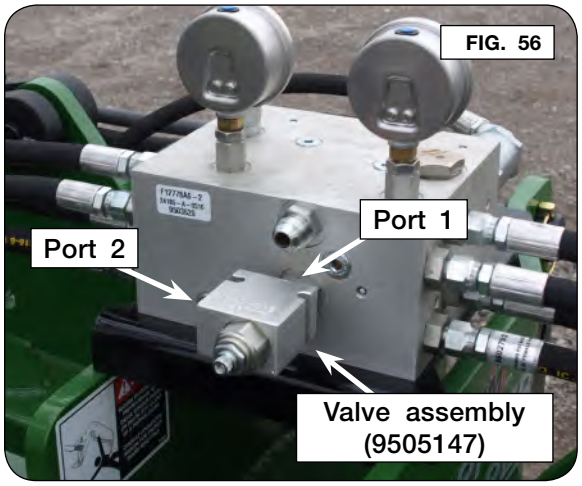
NOTE: Tighten all fittings and hoses to specifications in "Hydraulic Fittings" in the MAINTENANCE section.

11. Install Adapter 3/4-16 JIC male (9864) into port AUX A1 and the non-adjustable end of union fitting 94969 into port AUX B1 and torque to 12 ft-lbs. (FIG. 55)



12. Thread Port 1 of the pressure relief valve assembly 9505147 onto the adjustable union fitting in port AUX B1 as shown in figure 56. Torque the adjustable fitting nut to 12 ft-lbs.

NOTE: Port 1 of the relief valve assembly will attach to the union fitting and port 2 will face the left-hand side of the machine.



Hydraulic Set Up — Flex Hydraulics Optional (continued)
Folding 12 Shank 36”, 38” & 40” Spacing

13. Install 90-degree fitting 93683 onto the adapter in AUX A1. Point the JIC end toward the left-hand side of the machine as shown in figure 4. Hand tighten the JIC fittings until they are seated, then tighten an additional 1/6 turn.

14. Install 45-degree fitting 93586 into port 2 of the pressure relief valve block. Point the JIC end of the fitting downward and Torque the O-ring nut to 12 ft-lbs. (FIG. 57)

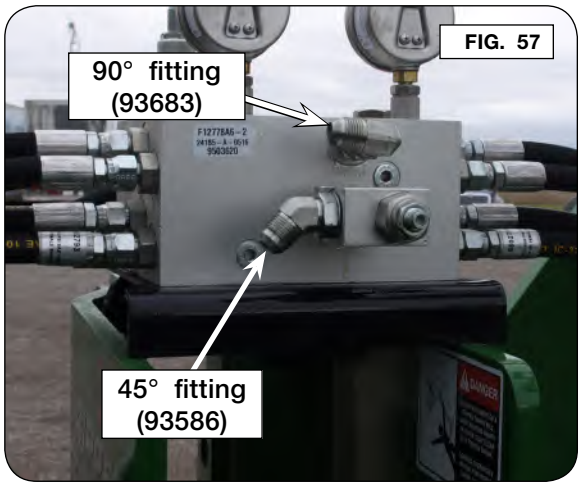


FIG. 57

15. Connect the two new fittings installed in steps 6 & 7 with the new hose 9502790. Hand tighten the JIC fittings until they are seated, then tighten an additional 1/6 turn. Ensure the hose does not twist while tightening the fittings. (FIG. 58)

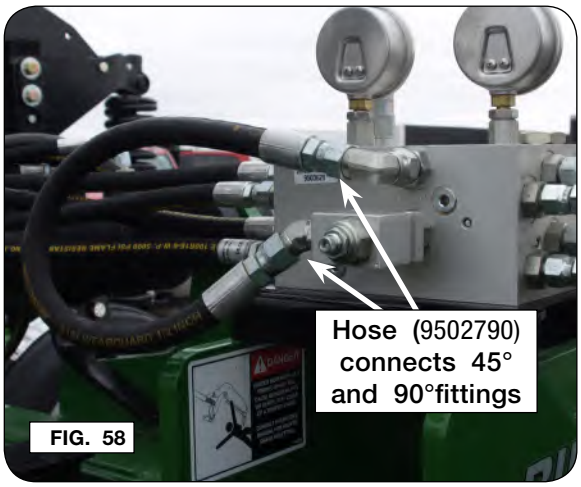


FIG. 58

Purging Hydraulic System

⚠ WARNING

- **RELIEVE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE TRACTOR OPERATOR'S MANUAL FOR PROPER PROCEDURES.**
- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

IMPORTANT

- *Flex frame configuration, wings will go below center when BOTH pistons are fully extended on each cylinder. IF Machine is not raised into transport OR system is not properly operated (hyd. valve shifts to pressure reducing mode), damage could occur.*

Purge air from system as follows:

A. Disconnect the rod end of all cylinders in a circuit and block up cylinders so the rod can completely extend and retract without contacting any other component.

B. Pressurize the system and maintain system at full pressure for at least 5 seconds after cylinder rods stop moving. Check that all cylinders have fully extended or retracted.

C. Check oil reservoir in hydraulic power source and re-fill as needed.

D. Pressurize system again to reverse the motion of step B. Maintain pressure on system for at least 5 seconds after cylinder rods stop moving. Check that cylinders have fully extended or retracted.

E. Check for hydraulic leaks using cardboard or wood. Tighten connections according to directions in Torque Specifications in MAINTENANCE section.

F. Repeat steps B, C, D, and E 3-4 times.

G. De-pressurize hydraulic system and connect cylinder rods clevises to their mating lugs.

HYDRAULIC SYSTEM CHECKS ON ALL UNITS -- CHECK THE FOLLOWING:
ROUTING OF ALL HYDRAULIC HOSES: Hoses should not be kinked, twisted, or rubbing against sharp edges.

FITTINGS AND CONNECTIONS: Check for leaks. Refer to “Hydraulic Fittings” in MAINTENANCE section.

HOSES: Be sure hoses have room to “FLEX” (for folding) in hinge areas. Hoses must be secured with cable ties.

Strip-Builder Options

- **2 Front Blades (13-Wave, Concave Notched, Concave Smooth)**
- **2 Angled Press Wheels Quad-Coulter (13-Wave)**
- **Optional Rear Rolling Harrow Basket (Straight 15" or 20" Wide, Crowfoot Conditioning Weel, or Concave 15" Wide)**
- **Rear Zone-Firmer Press Wheels (4-Wheel 16" Wide, or 5-Wheel 20" Wide)**

⚠ WARNING

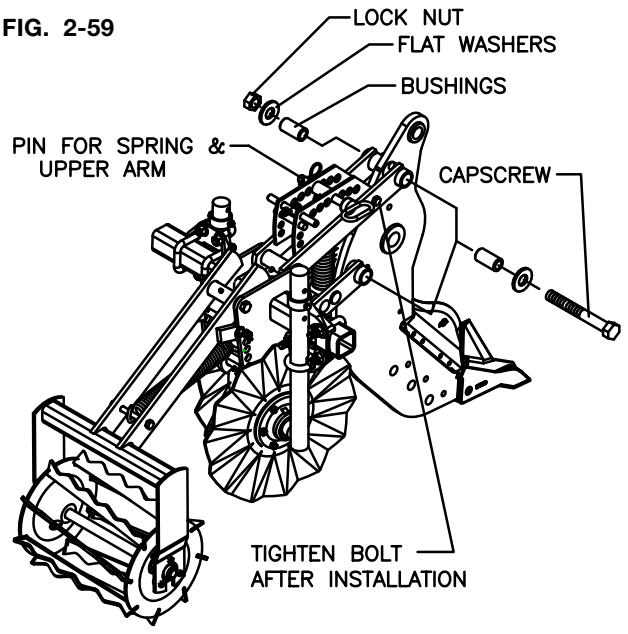
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 500 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

IMPORTANT

- *When installing rear coulter units on machines with 30" row spacing and optional rear planter lift-assist, modifications may have to be made when installing some attachments to insure adequate clearance with rear coulter cross frame tube. Refer to OPERATIONS section "Rear Coulter Assembly Adjustment" for additional information.*

1. Using a safe lifting device rates at a minimum of 500 lbs., remove the Strip-Builder assembly from pallet. Disassemble the capscrews, bushings, flat washers, and lock nuts from the front of the unit as shown in FIG. 2-59.

FIG. 2-59



STRIP-BUILDER WITH STANDARD ROLLING BASKET AND WAVY BLADE (63282) - SHOWN

Strip-Builder Options (continued)

2. If your unit is a Strip-Builder less basket (63954), rotate parallel arms into position and assemble adjustment pin to spring and upper arm.

3. Attach the Strip-Builder unit to back of shank using the hardware removed in step 1. Refer to "Torque Chart" in MAINTENANCE section for proper torquing.

4. After tightening hardware, tighten 1/2" pivot bolt. Refer to torque chart.

If your machine is a 12 row 30" size with Strip-Builders (63954 and 65478B) or Strip-Builder with rear baskets (63282 and 65477B) refer to page 2-14, "Relocation for Strip-Builder coulters on 12 row 30".

Reversing Of Rear Coulters on Strip-Builders (All Units)

If additional working width is desired on the Strip-Builders, the coulters can be reversed.

IMPORTANT

- *On 30" row spacing the rear coulters can not be reversed if unit is set up with pull type option or stabilizer wheels are installed between shanks. (If stabilizer wheels are installed between shanks, relocate stabilizer wheels to outside of machine before reversing coulters).*

1. Disassemble blade from the hub.

2. Loosen the four 5/8"-11 U-bolts (95883) holding the coulter unit in place.

3. Rotate coulter hub 180°.

4. Move the coulter toward the inside till the casting is against the frame.

5. Reposition coulter angle and retighten all U-bolts (95883).

6. Reattach the blade to the hub. Tighten all hardware. See Torque Chart in MAINTENANCE section.

7. Repeat procedure on other side of the stripper unit.

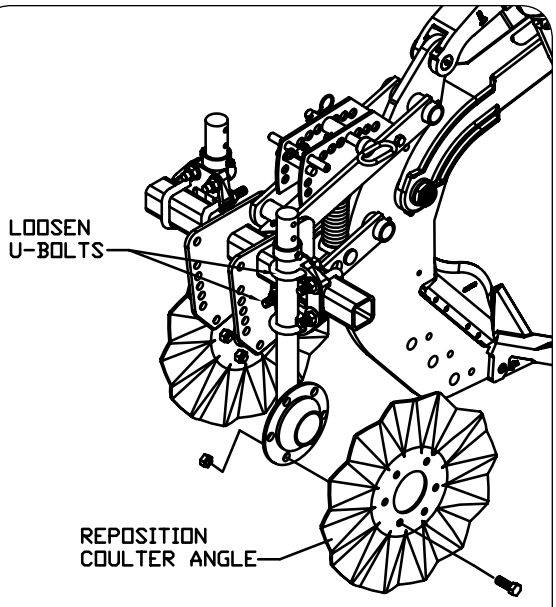
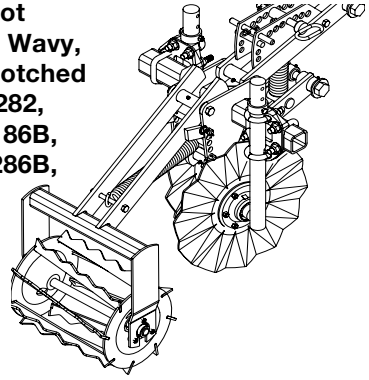


FIG. 2-60

Optional Attachments

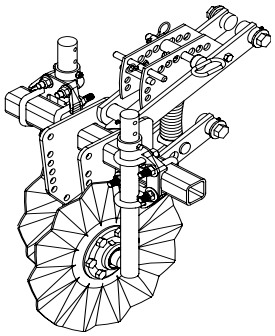
Additional Strip Builders Available

Strip-Builder With Standard or Concave Rolling Harrow Basket or Crowfoot Conditioning Wheel & Wavy, Smooth Concave or Notched Concave Blade (63282, 66184B, 66185B, 66186B, 66187B, 66796B, 67286B, 602675B)

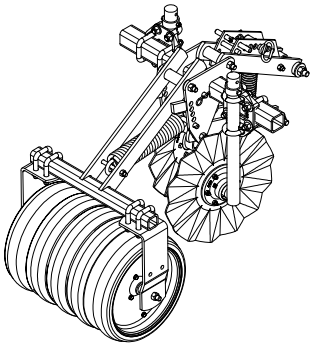


63282 Shown

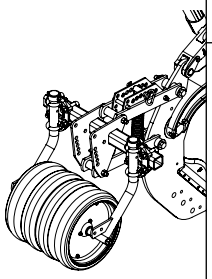
Strip-Builder (63954)



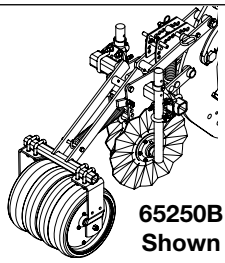
Strip-Builder w/Zone Firmer 5-Press Wheels (67293B)



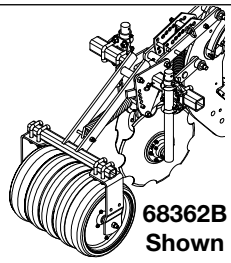
Zone Firmer With 4-Press Wheels (68082B)



Strip-Builder w/Zone Firmer 4-Press Wheels with Wavy, Smooth or Notched Blade (65250B, 67099B, 67100B); 5-Press Wheels with Notched Blade (68362B)



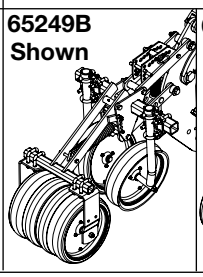
65250B Shown



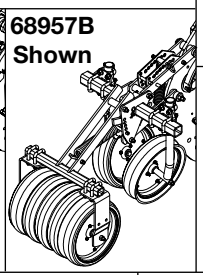
68362B Shown

Zone Firmer 4-Press Wheel w/Angled Press Wheels (65249B); Zone Firmer 5-Press Wheel w/Angled Press Wheels (68957B)

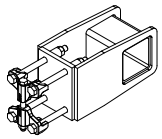
65249B Shown



68957B Shown

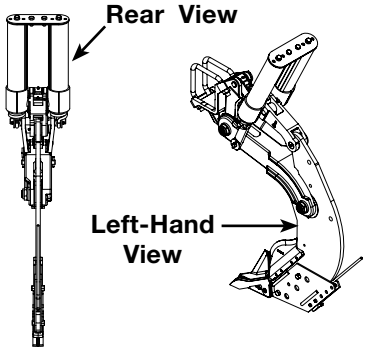


16" Stagger Kits 66952B

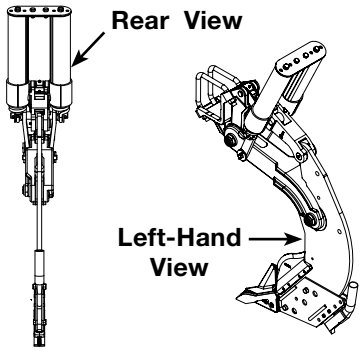


Shatter Wings 7"—67691B; 9"—67692B

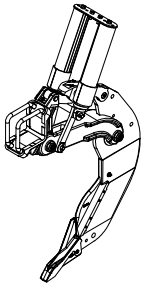
Liquid Fertilizer Attachment Complete With Shank Protector Plates 65332B



Dry Fertilizer Attachment Complete With Shank Protector Plates 67652B



Shank Protector
Steel - 64077
Plastic - 65817



Other Attachments & Accessories (Not Shown):

- Semi-Mounted Lift-Assist Wheels
- Mounted Integral Planter Mounting Arm Kit
- Lift-Assist Package For 3-Point Units
- Row Markers
- Pull-Type Conversion Kits
- 3-Point Implement Caddy
- Rear Pull Hitch
- 4 Coulters Per Row Option
- Transport Light Kits

Optional Attachments (continued)

Zone Firmer (65249B) With Lead Angled Press Wheel & 4-Wheel Press Wheel & Zone Firmer (68957B) With Lead Angled Press Wheel & 5-Wheel Press Wheel

⚠ WARNING

- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING 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 500 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

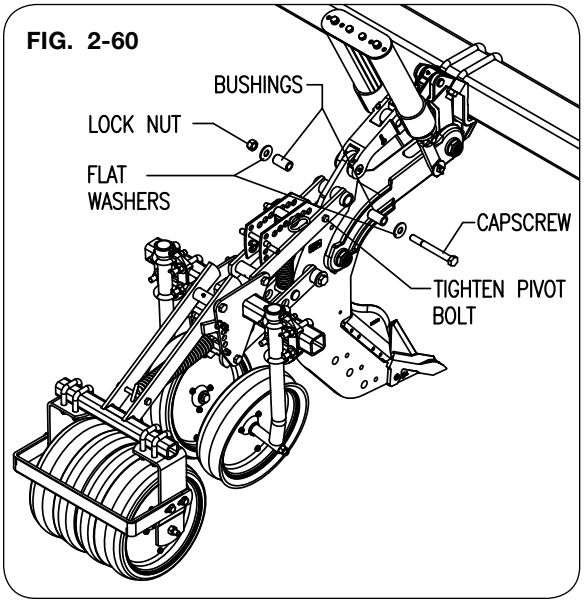
1. Using a safe lifting device rated at 500 lbs., remove the ZONE FIRMER ATTACHMENT frame assembly from the pallet. Disassemble the capscrews, bushings, flat washers, and locknuts from the front of the unit as shown in FIG. 2-60.

2. Attach a safe lifting device rating at a minimum 500 lbs. to the rear frame weldment on the Zone Firmer unit.

3. Attach Zone Firmer unit to back of the shank using the hardware removed in step 1. Refer to Torque Chart in MAINTENANCE section for proper tightening of hardware.

4. Tighten 1/2” pivot bolt. See FIG. 2-60.

FIG. 2-60



IMPORTANT

- *The 2 1/2” cross tube on the Zone Firmer frame must be trimmed to permit clearance with some other attachments (e.g., lift-assist wheels, rear hitch, etc.). See operator’s manual on these attachments for modification procedures.*

Optional Attachments (continued)

4-Wheel Zone Firmer (68082B)

⚠ WARNING

- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING 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 500 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

1. Using a safe lifting device rated for 500 lbs., remove Zone Firmer assembly from pallet. Disassemble capscrews, bushings, flat washers, and locknuts from the front of the unit as shown in FIG. 2-62.

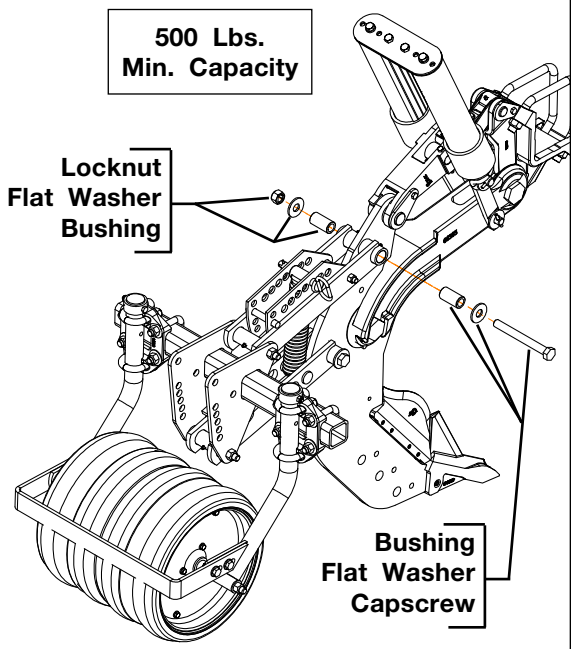


FIG. 2-62

Optional Attachments (continued)

4-Wheel Zone Firmer (68082B) (continued)

IMPORTANT

- *The 2 1/2" cross tube on the Zone Firmer frame must be trimmed to permit clearance with some other attachments (e.g., lift-assist wheels, rear hitch, etc.). See operator's manual on these attachments for modification procedures.*

2. Rotate parallel arms into position and assemble adjusting pin to spring and upper arm.

3. Attach Zone Firmer unit to back of the shank using the hardware removed in step 1. Refer to Torque Chart in MAINTENANCE section for proper tightening of hardware.

4. Tighten 1/2" pivot bolt. See FIG. 2-63.

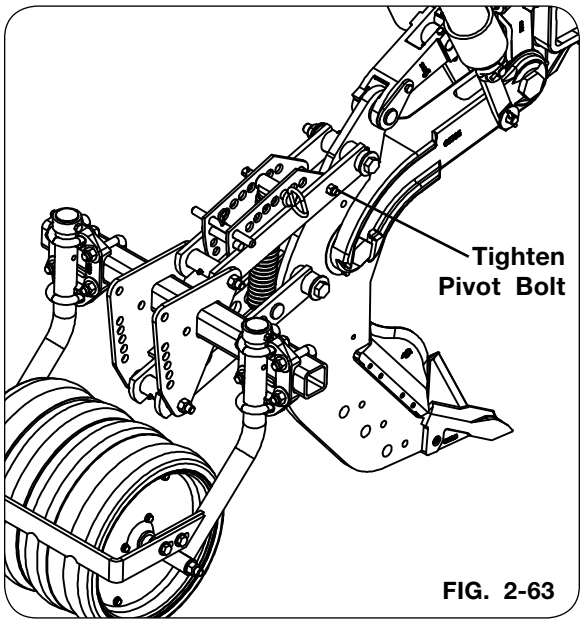


FIG. 2-63

6. Position Optional scraper bar until light contact is made with firmer wheels, see FIG. 2-64.

NOTE: Be sure to rotate wheel 360° to make sure contact between scraper bar and firmer wheels is not too tight or loose and to check wheel shape for any distortion.

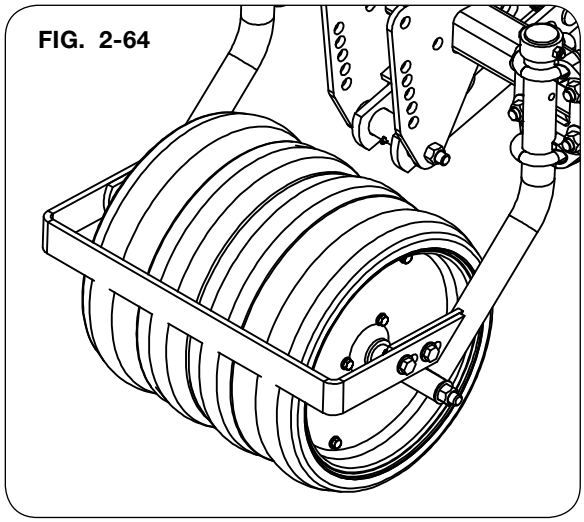


FIG. 2-64

Optional Attachments (continued)

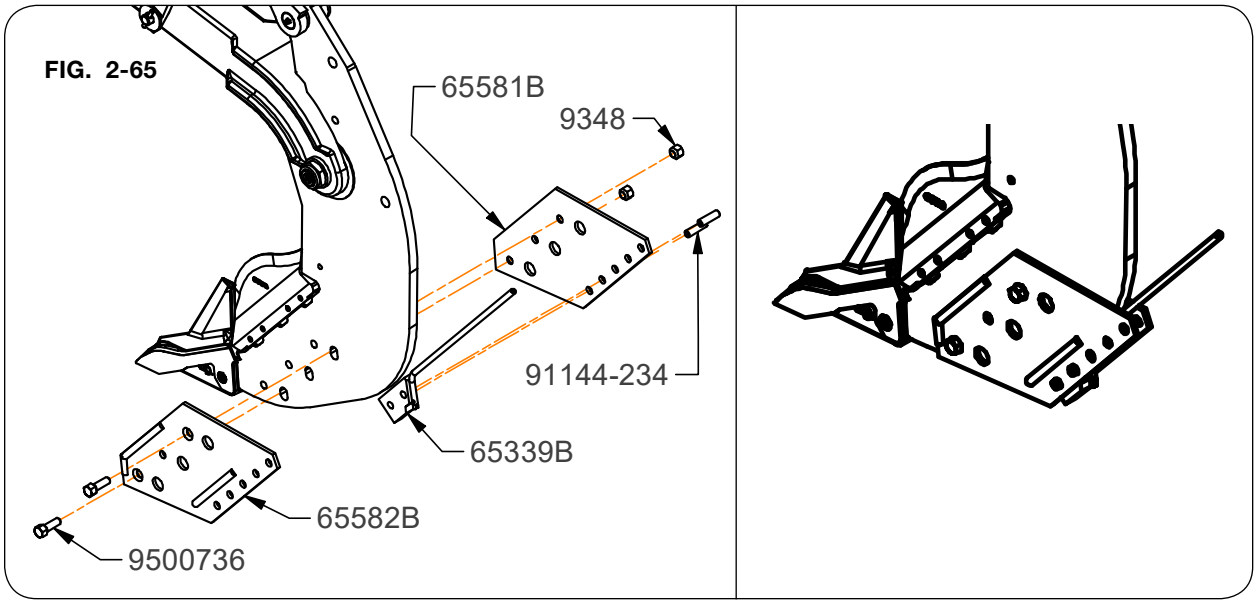
Liquid Fertilizer Attachment (65332B) With Shank Protector Plates

WARNING

- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**

1. Disassemble the bolts (9500736) and nuts (9348) only from the liquid fertilizer attachment.
2. Attach the liquid fertilizer attachment to the shank using the existing holes as shown in FIG. 2-65. Secure using bolts (91831) and nuts (9348) previously removed.
3. Tighten hardware according to the “Torque Chart” in the Maintenance section

FIG. 2-65



Depth Adjustment

1. Remove the spiral pins (91144-234) and set the injector tube (65539B) depth.
2. Secure injector tube (65539B) using the spiral pins (91144-234) previously removed.

Optional Attachments (continued)

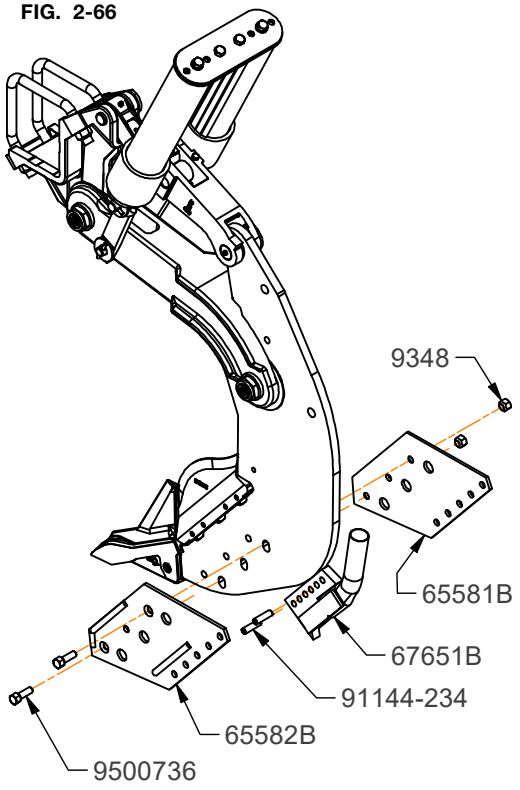
Dry Fertilizer Attachment (67652B) w/ Shank Protector Plates

WARNING

- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**

1. Disassemble the bolts (9500736) and nuts (9348) only from the liquid fertilizer attachment.
2. Attach the dry fertilizer attachment to the shank using the existing holes as shown in FIG. 2-66. Secure using bolts (91831) and nuts (9348) previously removed.
3. Tighten hardware according to the “Torque Chart” in the Maintenance section

FIG. 2-66



DRY FERTILIZER ATTACHMENT

Depth Adjustment

1. Remove the spiral pins (91144-234) and set the injector tube (67651B) depth.
2. Secure injector tube (67651B) using the spiral pins (91144-234) previously removed.

Optional Attachments (continued)

Shank Protectors

⚠ WARNING

- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

Shank Protector (64077)

To protect and extend the life of your shanks, in highly abrasive soils, shank protectors are available. Simply bolt to side of shank using hardware provided.

NOTE: Shank protectors should always be held in place using a minimum of two bolts.

NOTE: If installing shatter wings on shanks with shank protectors installed, the 2 1/4" long capscrews need to be replaced with 2 3/4" capscrews.

Shank Protector (65817)

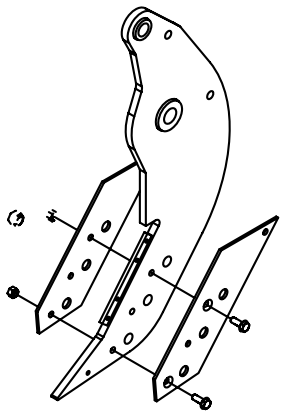
To protect and extend the life of your shanks, in highly abrasive soils, shank protectors are available. Simply bolt to side of shank using hardware provided.

Attach the wear guard upper section (65823) to the shank using 3/8" flange screw and 3/8" flange nut (FIG. 2-68).

Align the wear guard lower section (65824) with the bottom side of the wear guard upper section (65823) and secure into position with the notched wear bar (65947B) (FIG. 2-69).

NOTE: Wear bar (65947B) with notched ends is required with the plastic wear guards. Any wear bar without notched ends will not work with the plastic wear guards.

FIG. 2-67



Shank Protector (65817)

PLASTIC

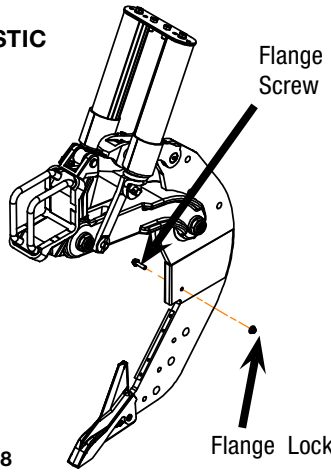
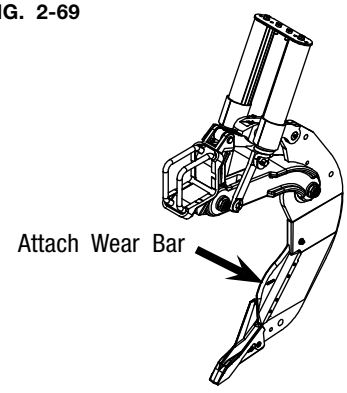


FIG. 2-68

FIG. 2-69



Optional Attachments (continued)

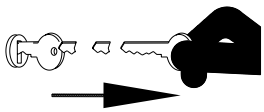
16” Stagger Kits (66952B)

Stagger kits are available to offset the shanks and maximize material flow. Stagger kits should be installed on every other shank for maximum material flow.

⚠ WARNING

- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**
- **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 500 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 IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

1. Mount the Ripper-Stripper implement to a tractor. Securely block the unit with appropriately rated jack stands so the shank points are 2-3” from the ground. Unfold the wings on folding machines. Shut off the tractor, set the parking brake and remove the ignition key.



2. Remove any finishing attachments from the shank (Strip-Builders, Zone Firmers, etc.).

3. Support the shank to be moved rearward with a safe lifting device rated at 500 lbs. minimum. Remove the shank from the machine. See FIG. 2-70.

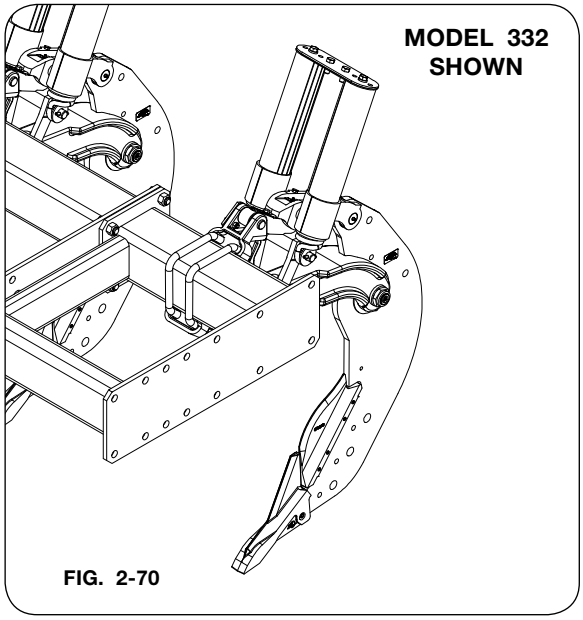


FIG. 2-70

Optional Attachments (continued)

4. Attach the bracket (66952B) to the frame in the same location as the removed shank. Secure with clamps (66737B), spacers (67015B) and (66837), capscrews (9390-459) and locknuts (98420). Torque all screws to 240 ft.-lbs. Torque all hardware evenly so cast clamps are square to the frame.

5. Mount the shank removed in step 3 to the bracket. Check that lateral shank spacing is same as other shanks on the machine. Tighten all hardware to torque chart in MAINTENANCE section. See FIG. 2-71.

6. Repeat steps 1-5 on each shank to be repositioned.

The stagger kits is now ready to use. Maintain torque on all mounting hardware.

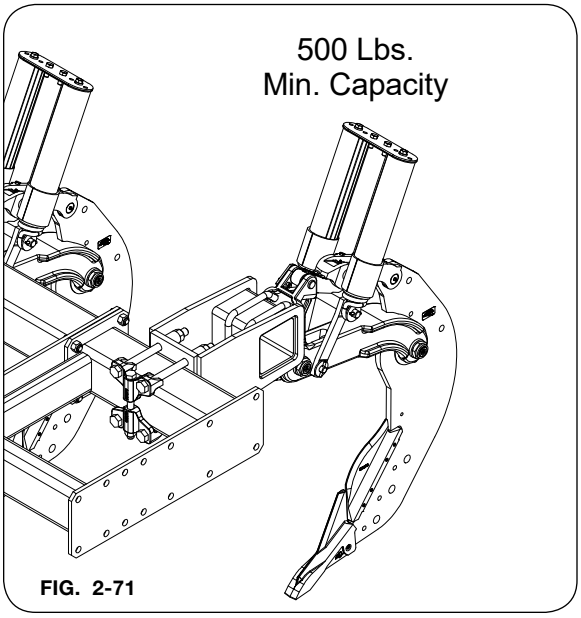


FIG. 2-71

Shatter Wing Package for 7” (67691B) or 9” (67692B)

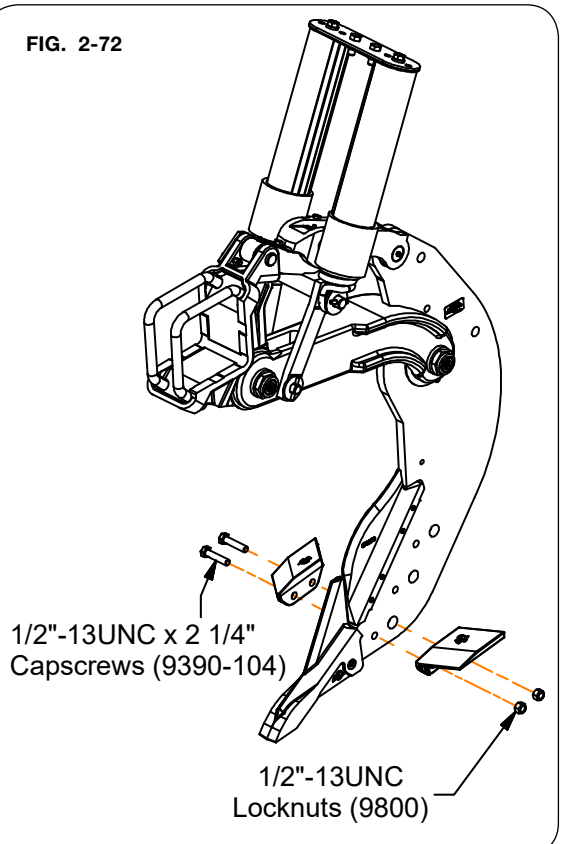
For initial installation, position shatter wings in bottom hole pattern with the rear capscrew positioned on the bottom of the large hole in the shank. This will provide minimal soil disturbance.

Secure the shatter wings to the shank with the beveled edge facing upward. Retain into position using two 1/2”-13UNC x 2 1/4” capscrews and 1/2”-13UNC locknuts (FIG. 2-72).

For increased soil disturbance, adjust the angle of the wings by loosening the bolts and pivoting back of wing upward to desired angle (see adjustments). Retighten hardware after adjustments.

If installing shatter wings on shanks with shank protectors installed, the 2 1/4” long capscrews need to be replaced with the 2 3/4” capscrews (furnished with the kit). See FIG. 2-72.

FIG. 2-72



Optional Attachments (continued)

Floating Row Cleaner #68164B

WARNING

- **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 200 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 IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

NOTE: 3-point machines with 30” shank spacing will accept optional floating row cleaners. Pull-type units with 30” spacing will not accept row cleaners.

Unverferth subsoilers with wider 36”/38”/40” spacings and pull-type option will accept row cleaners.

1. Park machine on a firm level surface. Unfold the wings and then completely disconnect machine from tractor.

2. Remove the roll pin 1/2” dia. x 2 1/2” (9392-210), and machinery washer (96581) from the bottom of the coulter post (FIG. 2-73).

3. Install the spring keeper (68100B) onto the bottom of the coulter post and secure into position with the roll pin 1/2” dia. x 2 1/2” (9392-210) as shown in FIG. 2-74.

4. Remove the capscrews (9390-120) from the swivel coulter pivot shaft as shown in FIG. 2-74.

FIG. 2-73

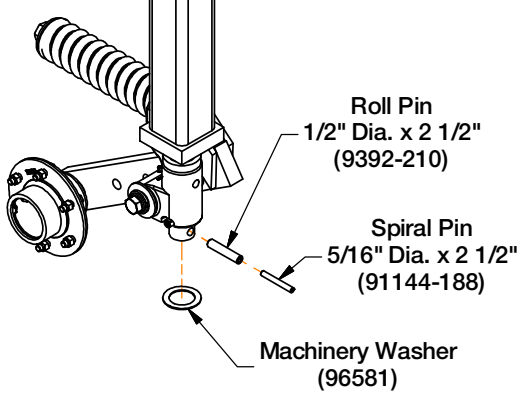
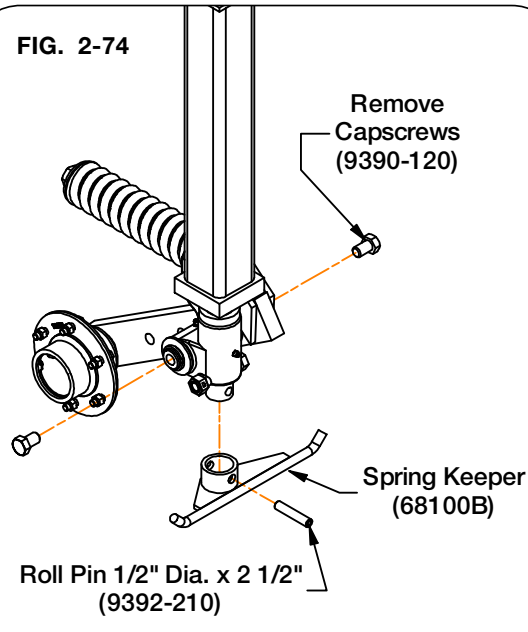


FIG. 2-74



Optional Attachments (continued)

5. Insert the hardened bushings (67984) into the frame assembly (68154B) (FIG 2-75).

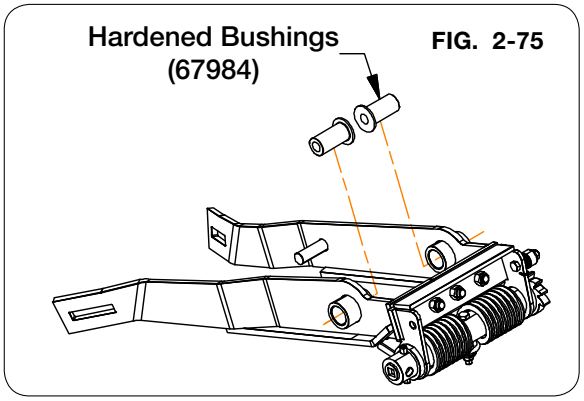


FIG. 2-75

6. Place the frame assembly with bushings around the swivel coulter assembly as shown in FIG. 2-75. Make sure the lift pin located on the left-hand arm is resting on the coulter arm.

7. Secure frame assembly to the swivel coulter assembly with flat washers 5/8" (9405-100), 5/8"-11UNC lock nut (9801), and capscrews 5/8"-11UNC x 12" (9390-447) (FIG. 2-76.

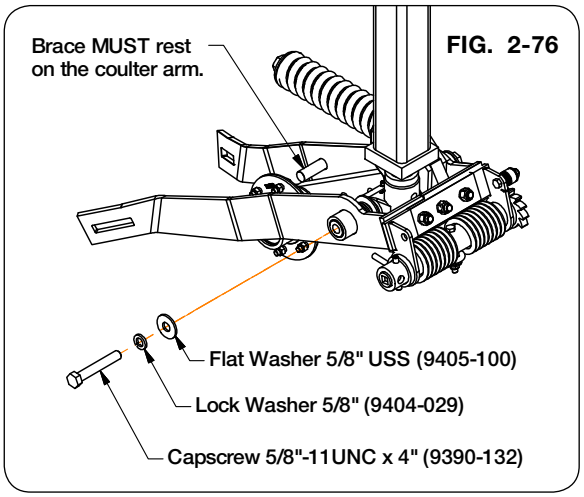


FIG. 2-76

8. Install the hub/spindle assemblies onto the frame assembly as shown in FIG. 2-76. Note the direction the wheels are rotating. Scrapers should be positioned towards the rear as shown in FIG. 2-77.

9. Tighten all hardware according to "Torque Chart" in your operator's manual.

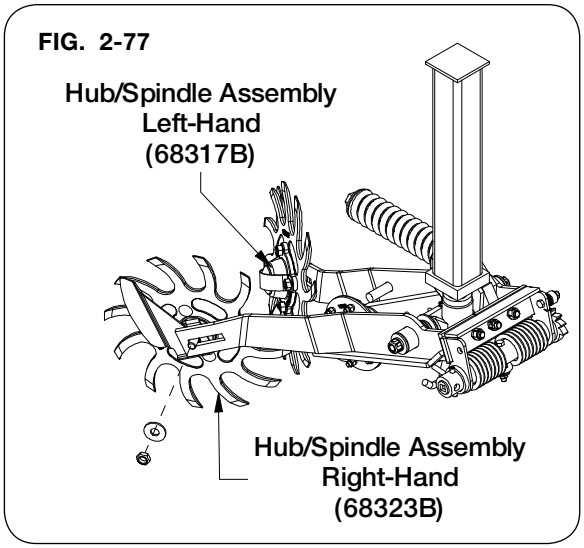
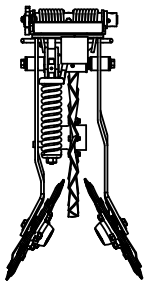


FIG. 2-77

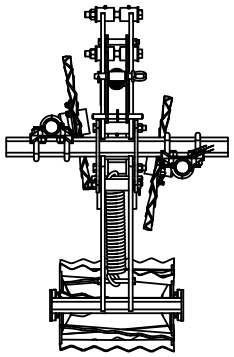
NOTE: Floating row cleaner attachment requires coulters be equipped with bolts threaded into the main coulter pivot shaft. If not, order coulter assembly 65855B (straight post) or 68184B (offset post)

Overhead Layouts

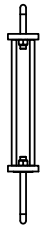
Lead Coulter



Row Cleaner
and Coulter



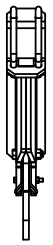
Shank Attachment



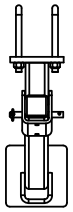
Support Tube

Auto-Reset Shank
(67748)

Shear-Bolt Shank
(63938B)



Shear-Bolt Shank
(67192) For Units with
Row Cleaners

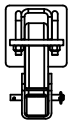


Rear Storage Stand

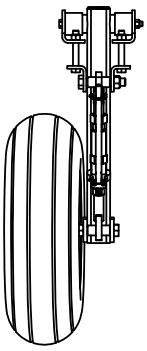
Flush Clamp

Offset Flush Clamp

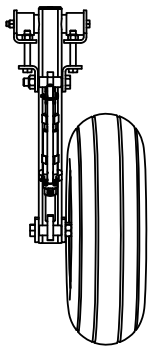
Front Storage Stand
For All Rigid Units



Front Storage Stand
For All Folding Units



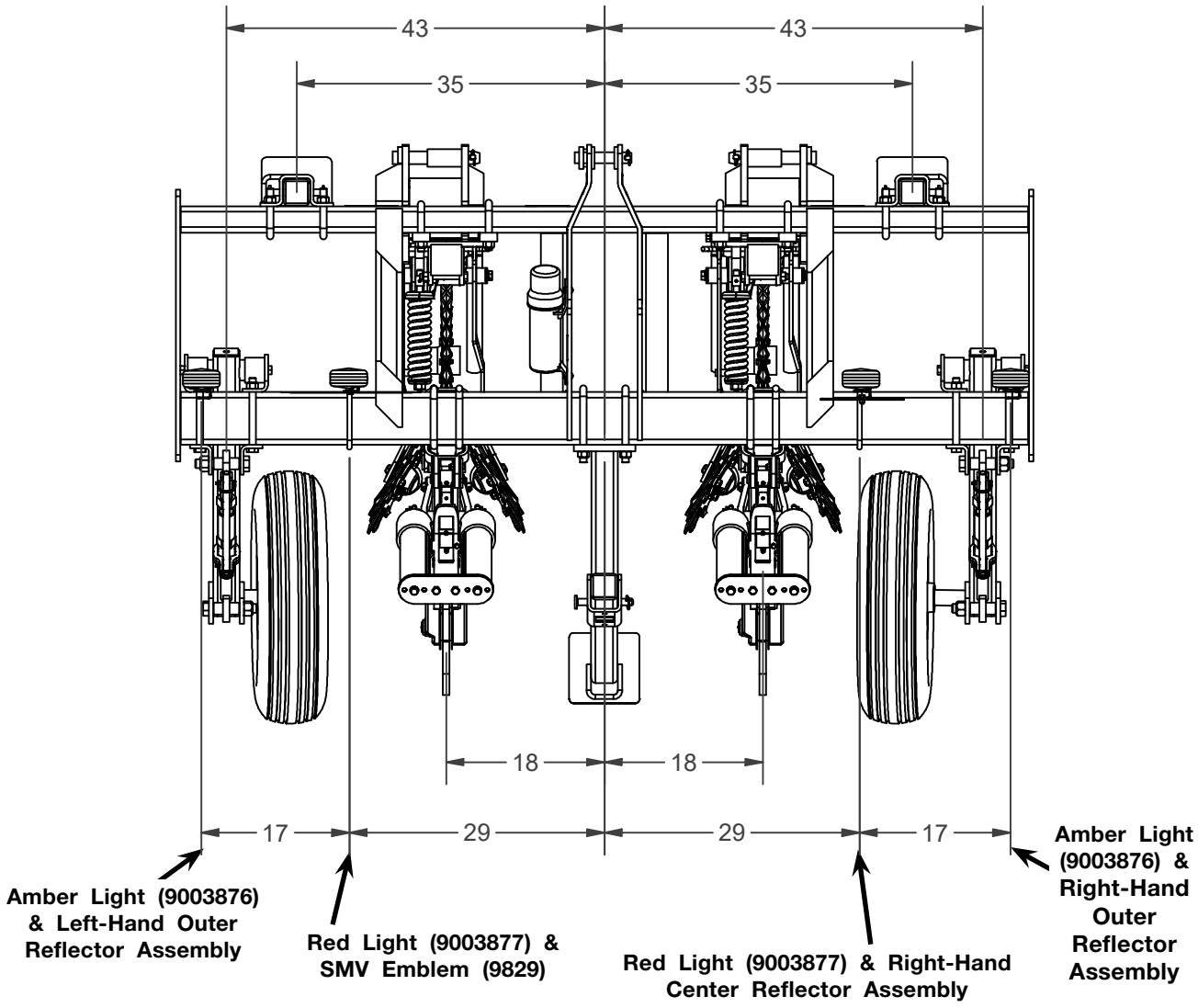
Stabilizer Wheel
67312B (Less Wheel & Tire)



Stabilizer Wheel
67311B (Less Wheel & Tire)

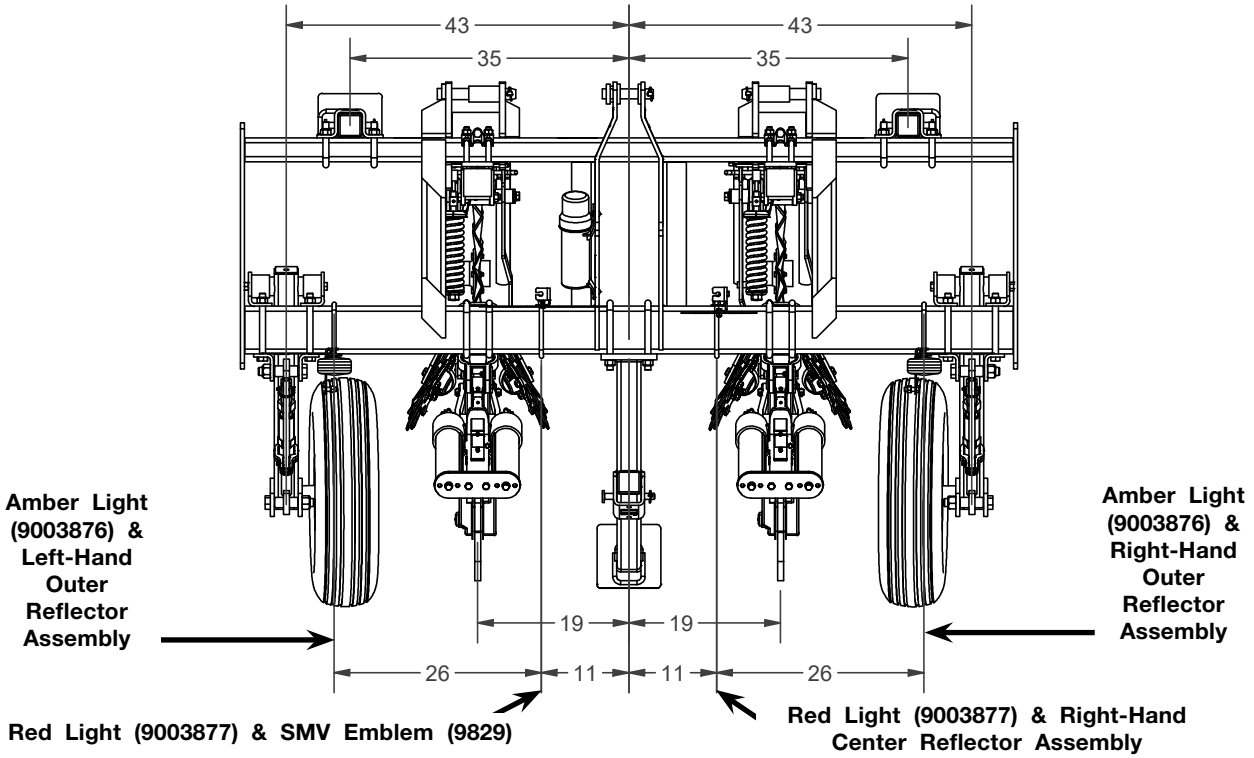
Overhead Layouts — Rigid Units — 2 Shank Wide (36” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



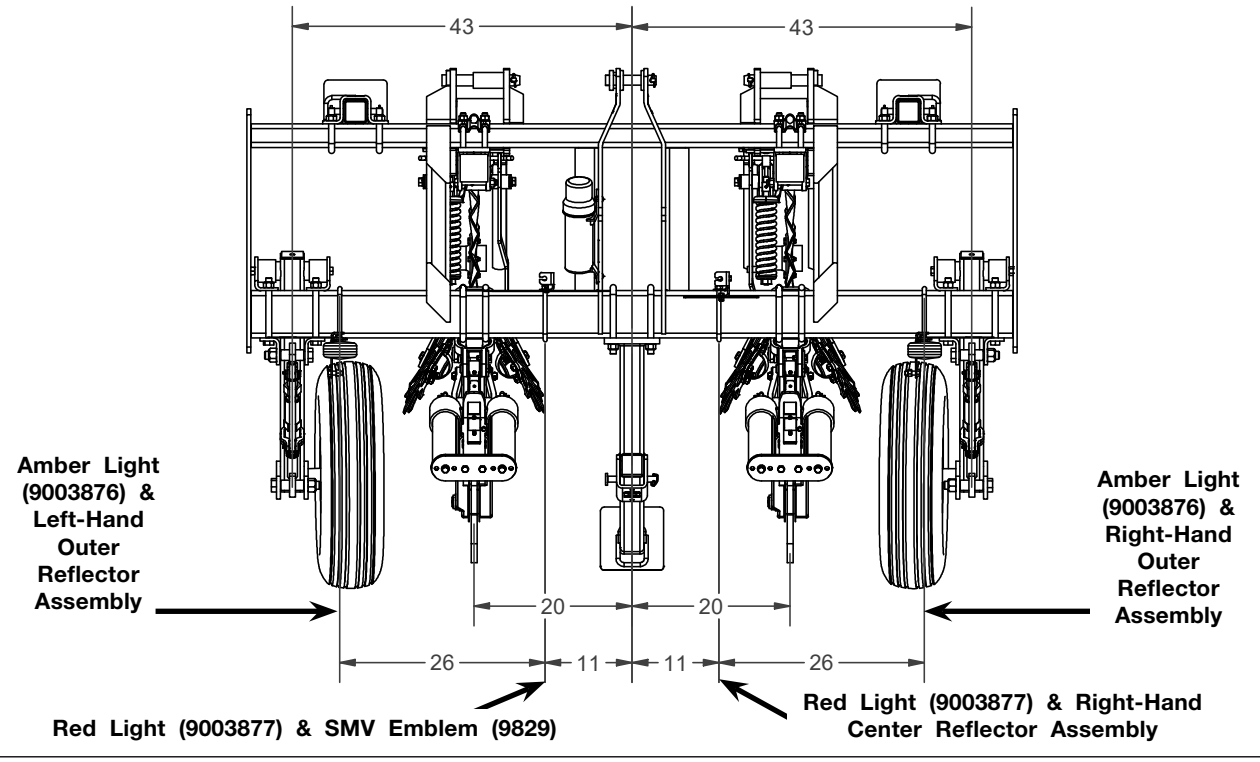
Overhead Layouts — Rigid Units — 2 Shank Wide (38” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



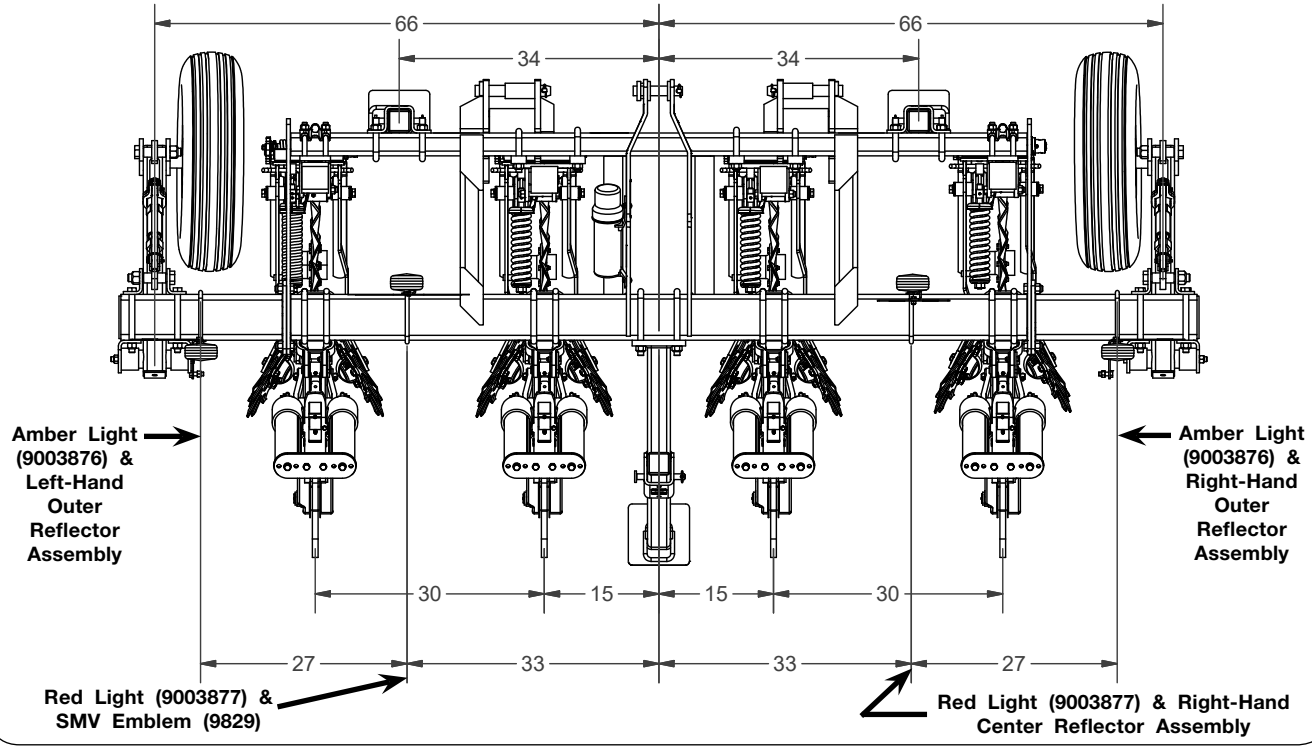
Overhead Layouts — Rigid Units — 2 Shank Wide (40” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



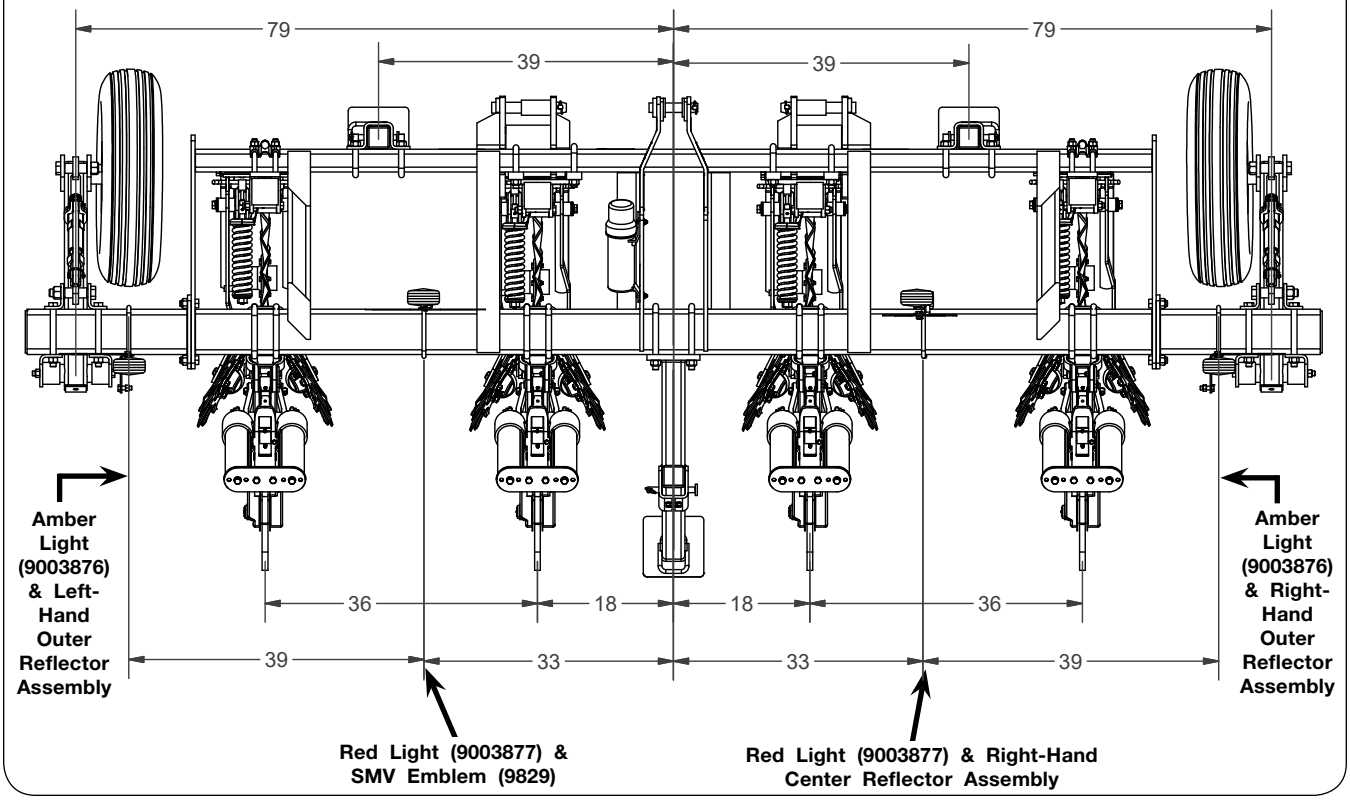
Overhead Layouts — Rigid Units — 4 Shank Wide (30” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



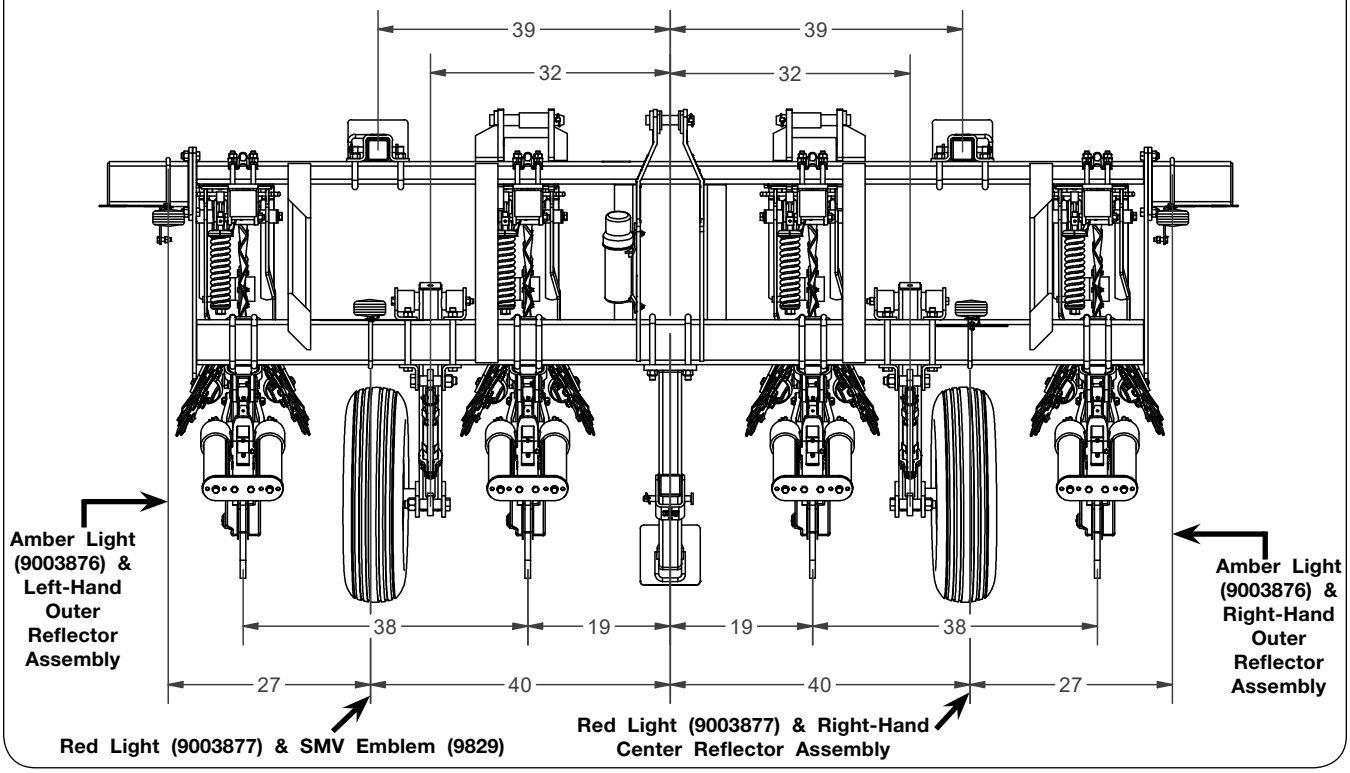
Overhead Layouts — Rigid Units — 4 Shank Wide (36” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



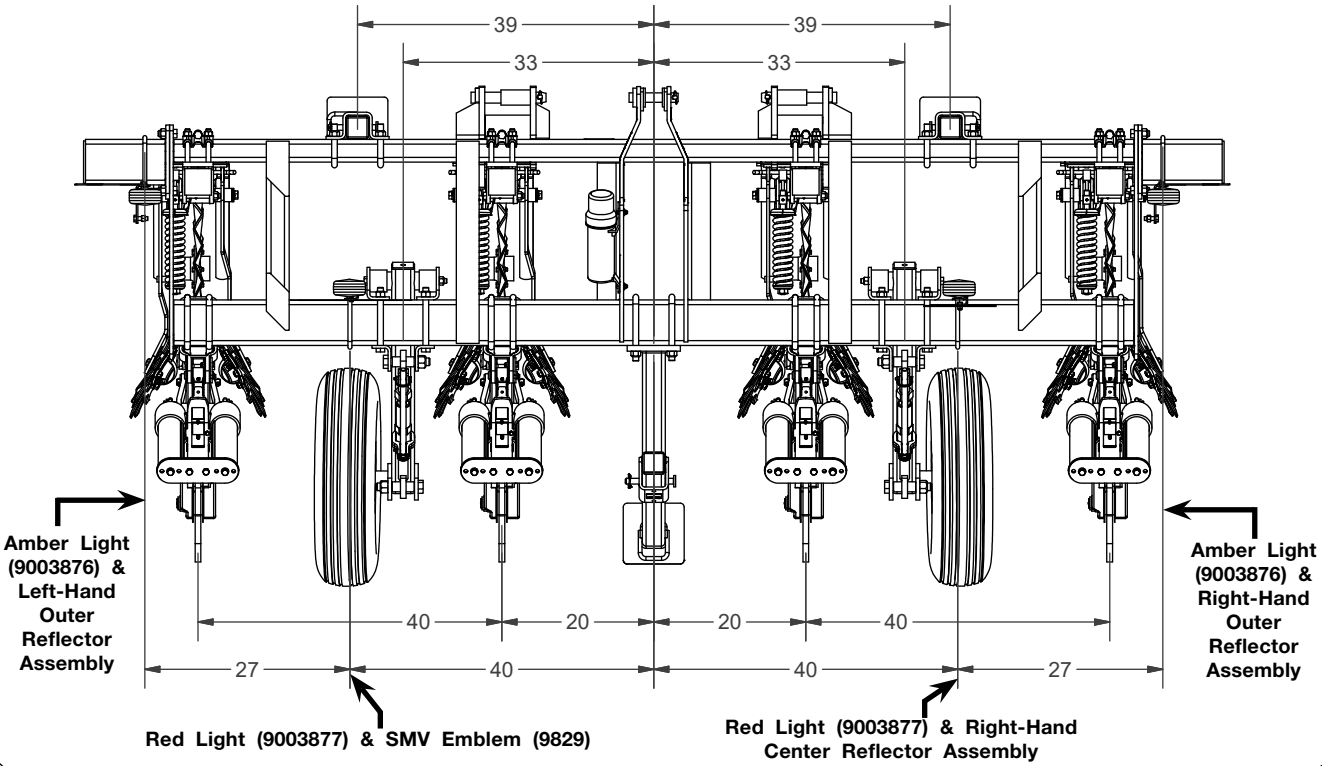
Overhead Layouts — Rigid Units — 4 Shank Wide (38” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



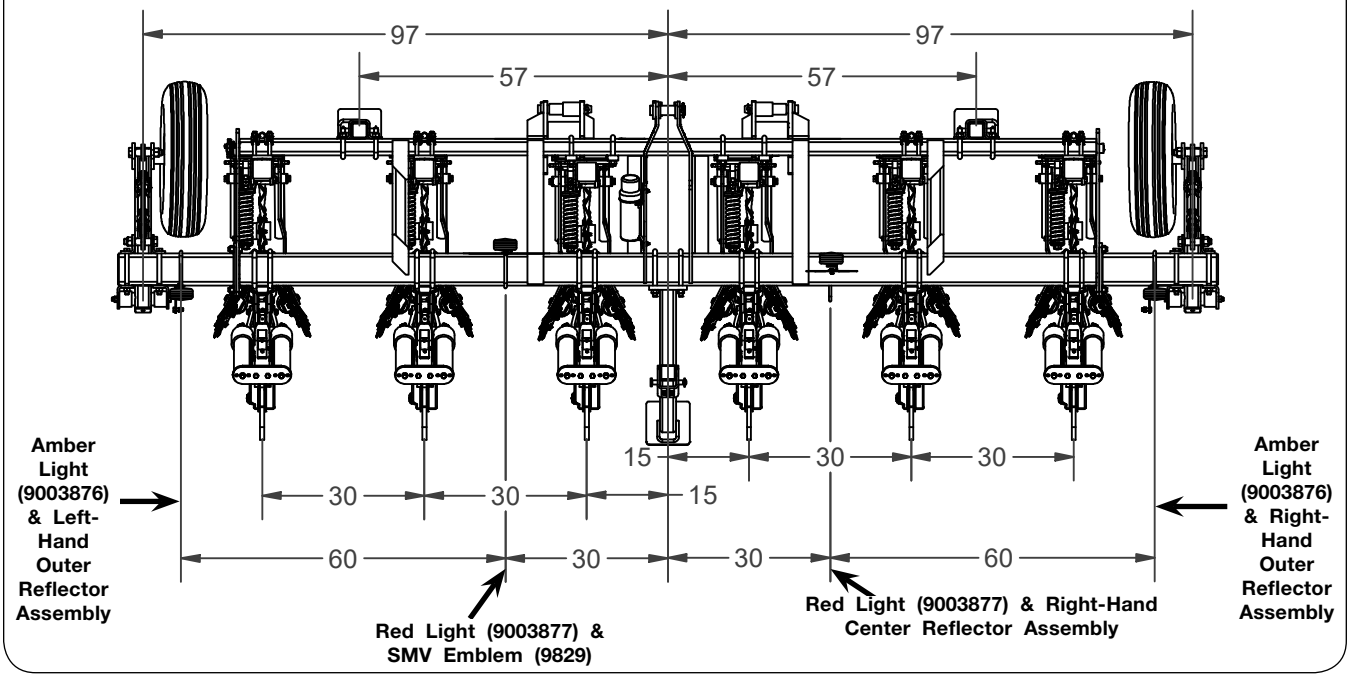
Overhead Layouts — Rigid Units — 4 Shank Wide (40” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



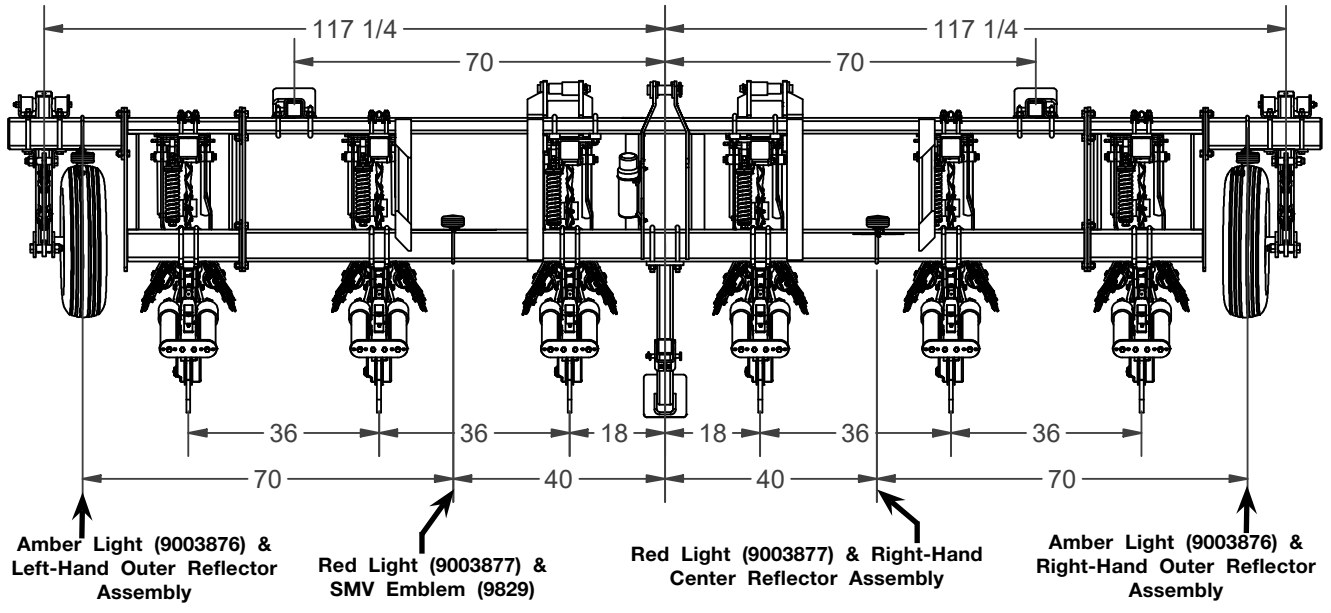
Overhead Layouts — Rigid Units — 6 Shank Narrow (30” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



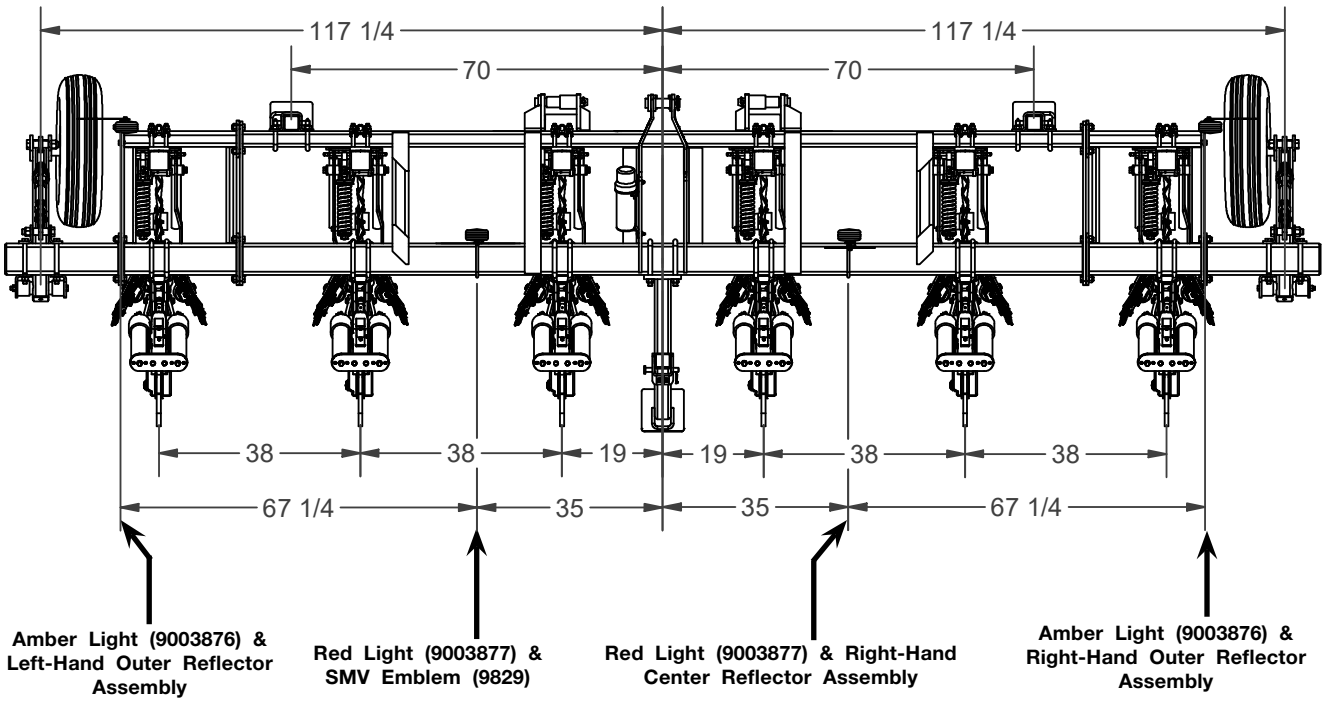
Overhead Layouts — Rigid Units — 6 Shank Wide (36” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



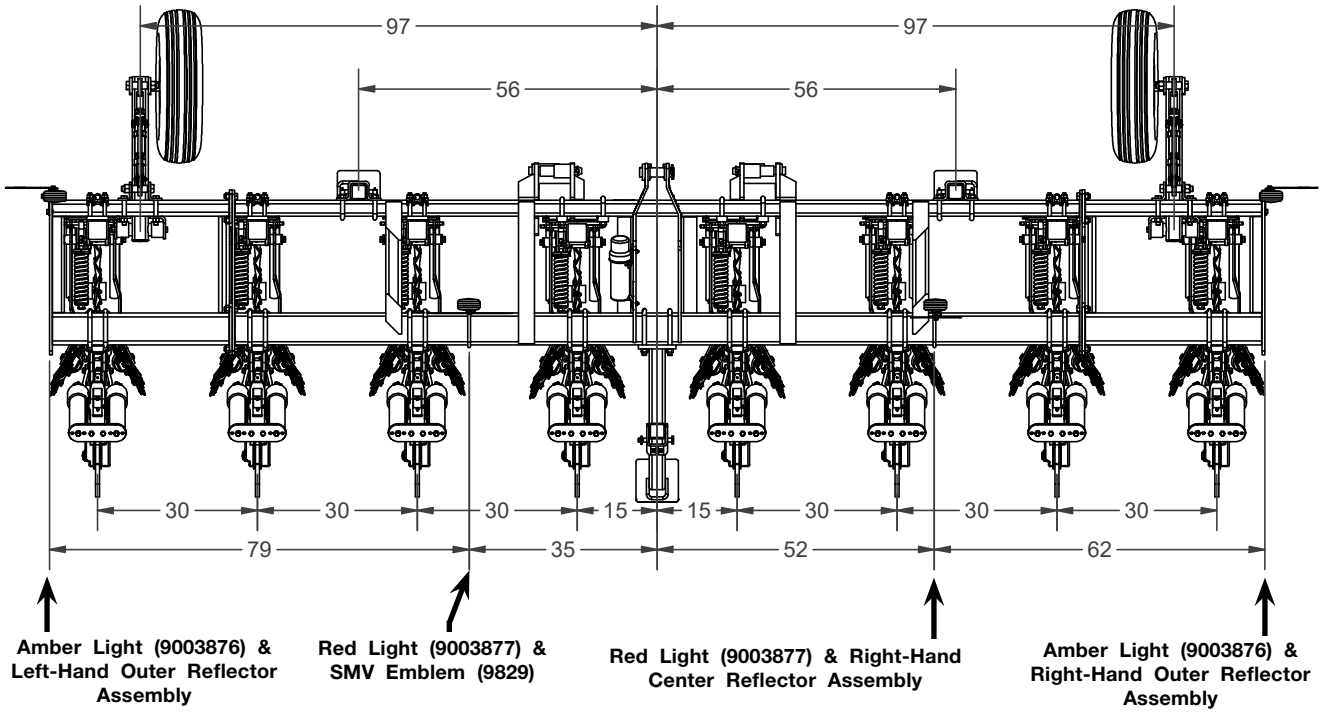
Overhead Layouts — Rigid Units — 6 Shank Wide (38” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



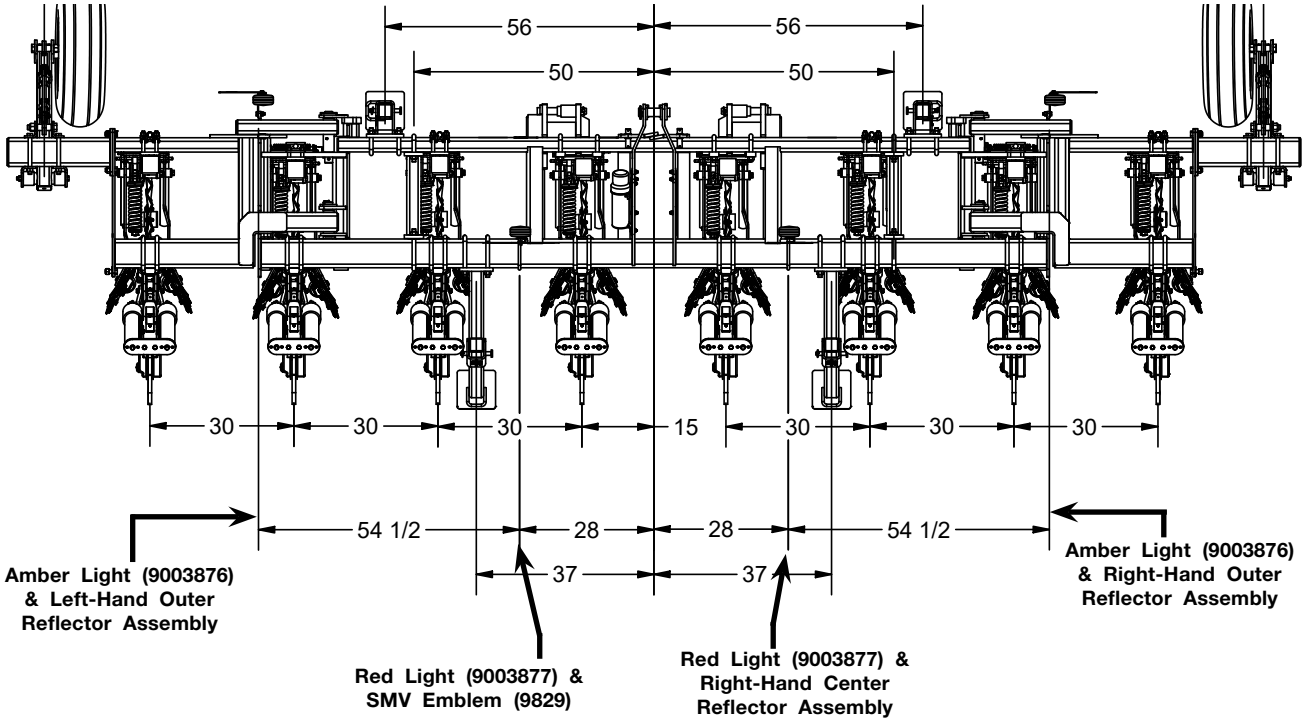
Overhead Layouts — Rigid Units — 8 Shank Narrow (30” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



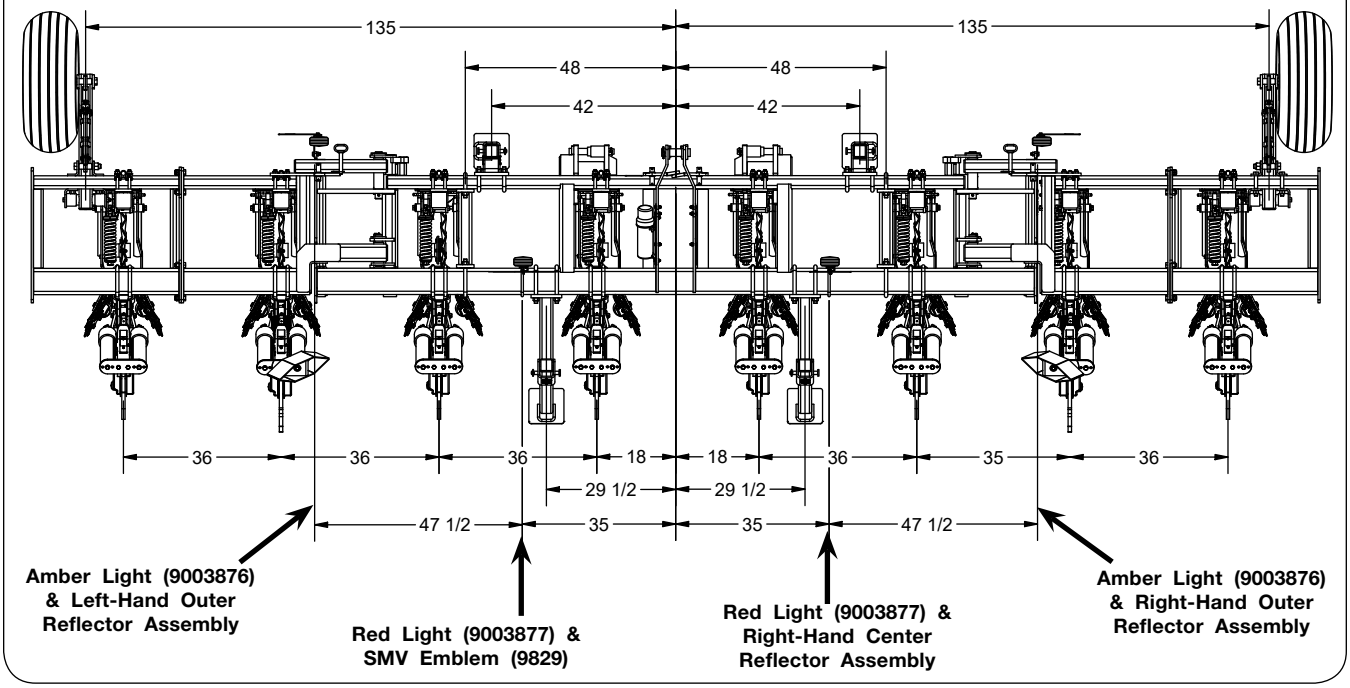
Overhead Layouts — Folding Units — 8 Shank Narrow (30” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



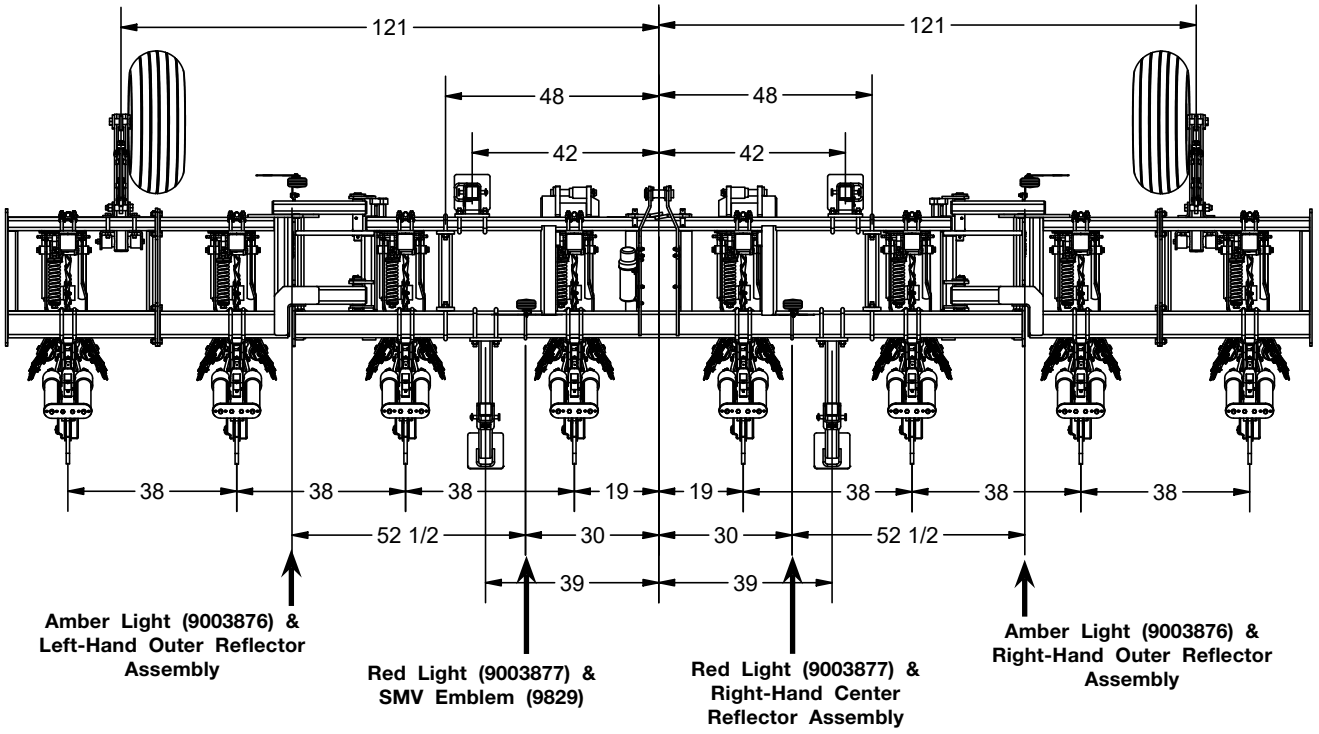
Overhead Layouts — Folding Units — 8 Shank Wide (36” Spacing)

Auto-Reset Shanks with Floating Row Cleaners



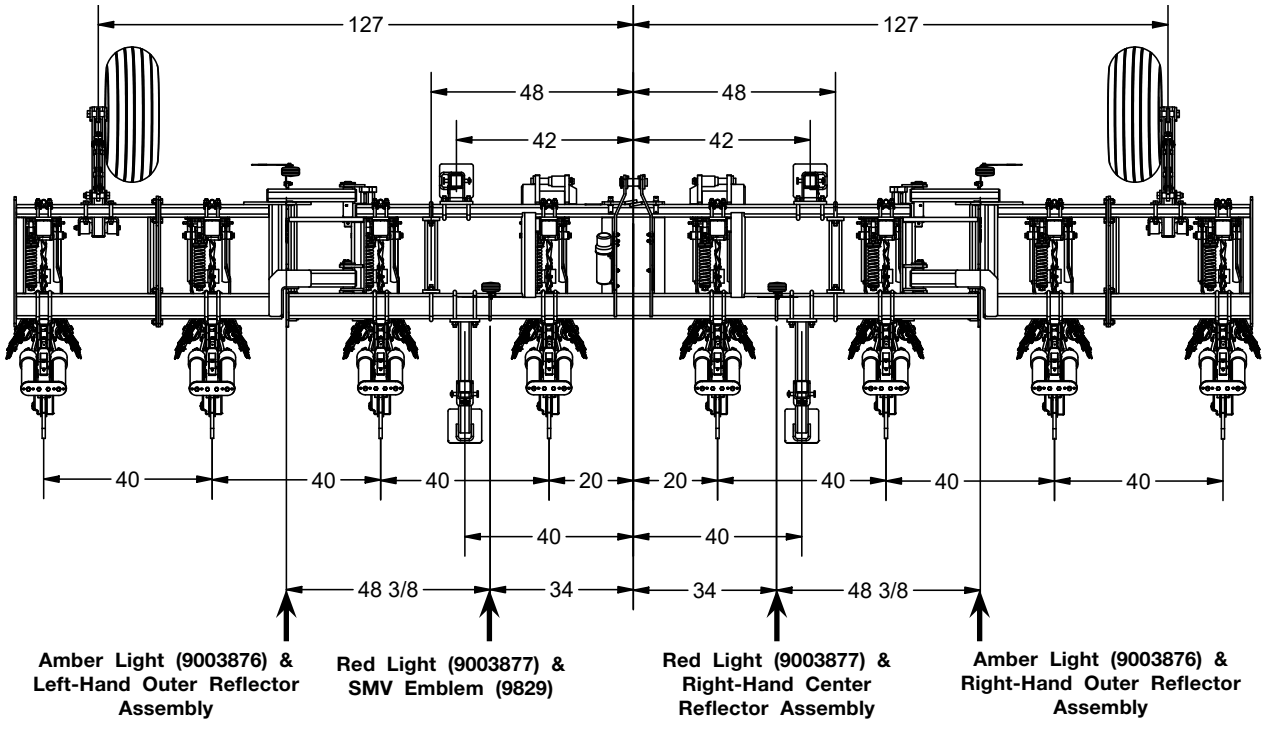
Overhead Layouts — Folding Units — 8 Shank Wide (38” Spacing)

Auto-Reset Shanks with Floating Row Cleaners

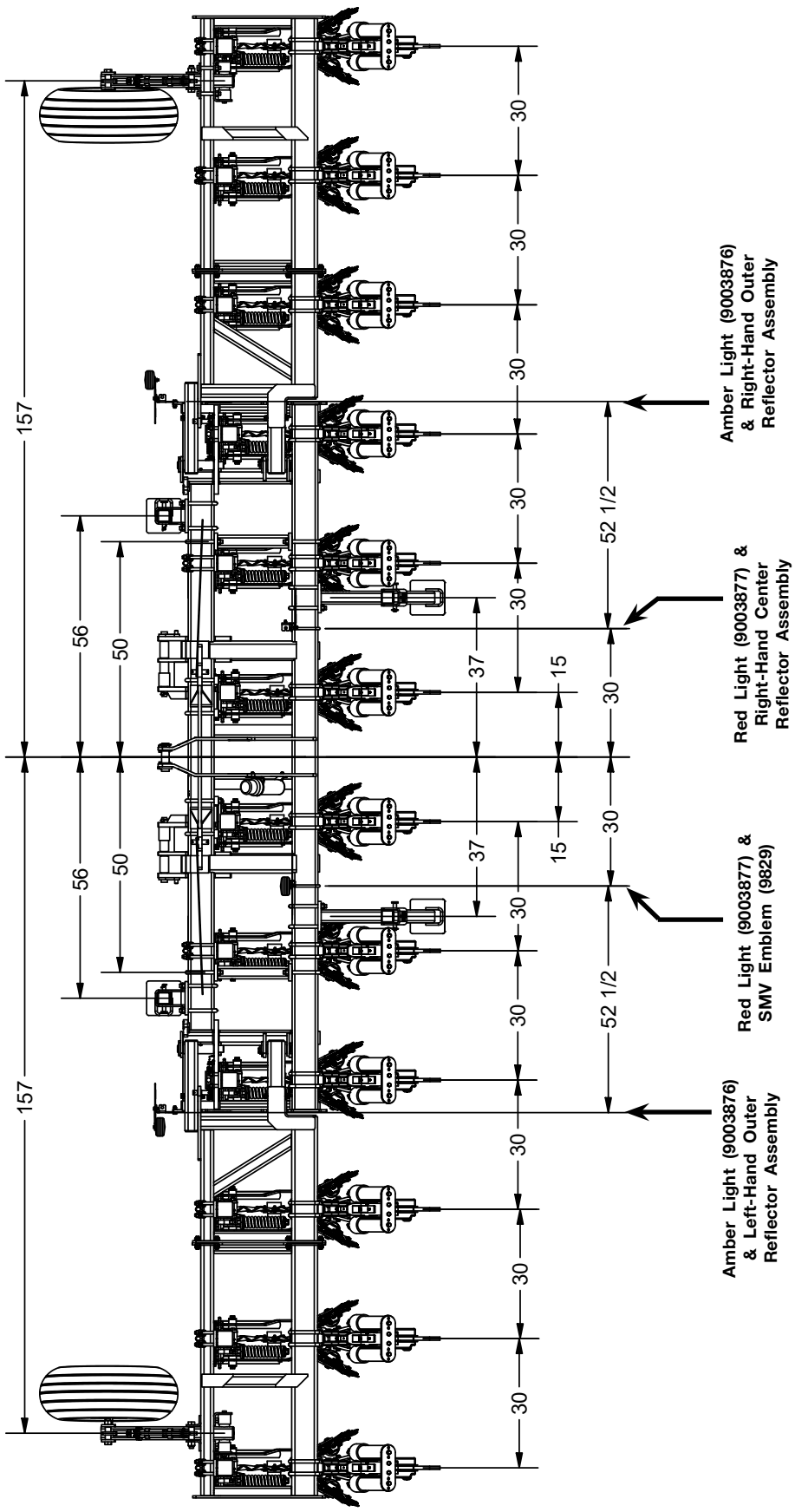


Overhead Layouts — Folding Units — 8 Shank Wide (40” Spacing)

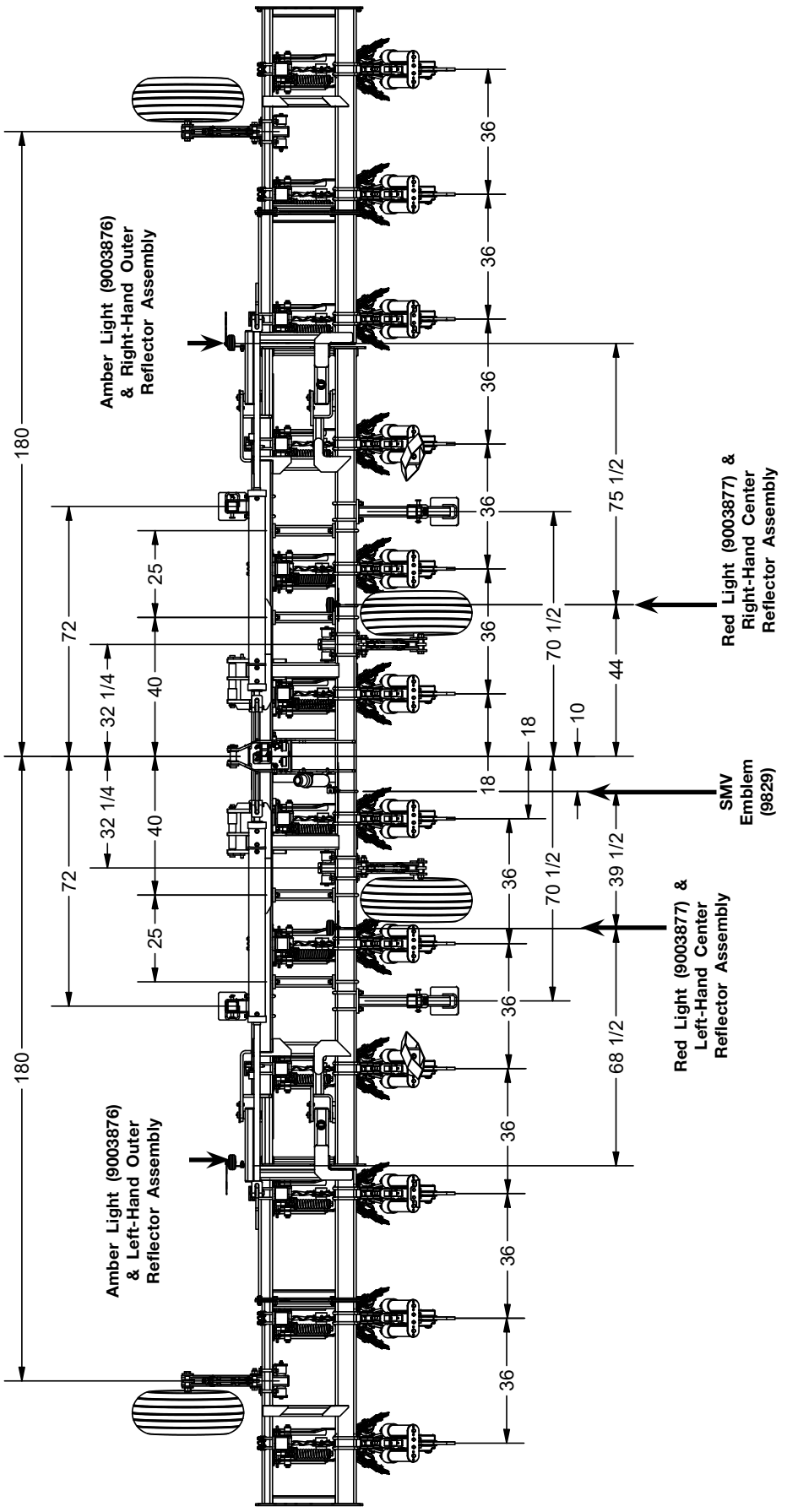
Auto-Reset Shanks with Floating Row Cleaners



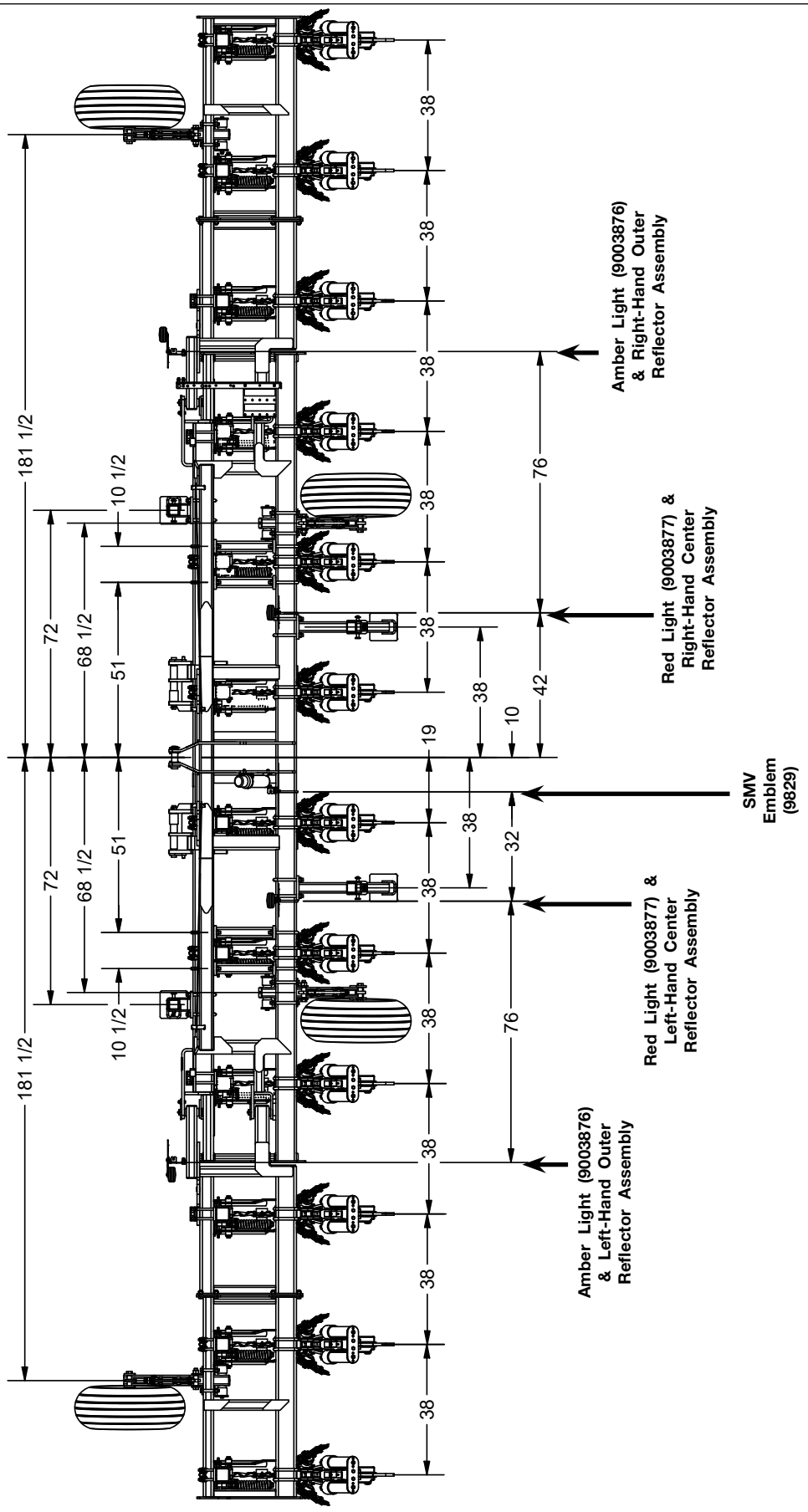
Overhead Layouts — Folding Units — 12 Shank Narrow (30" Spacing)



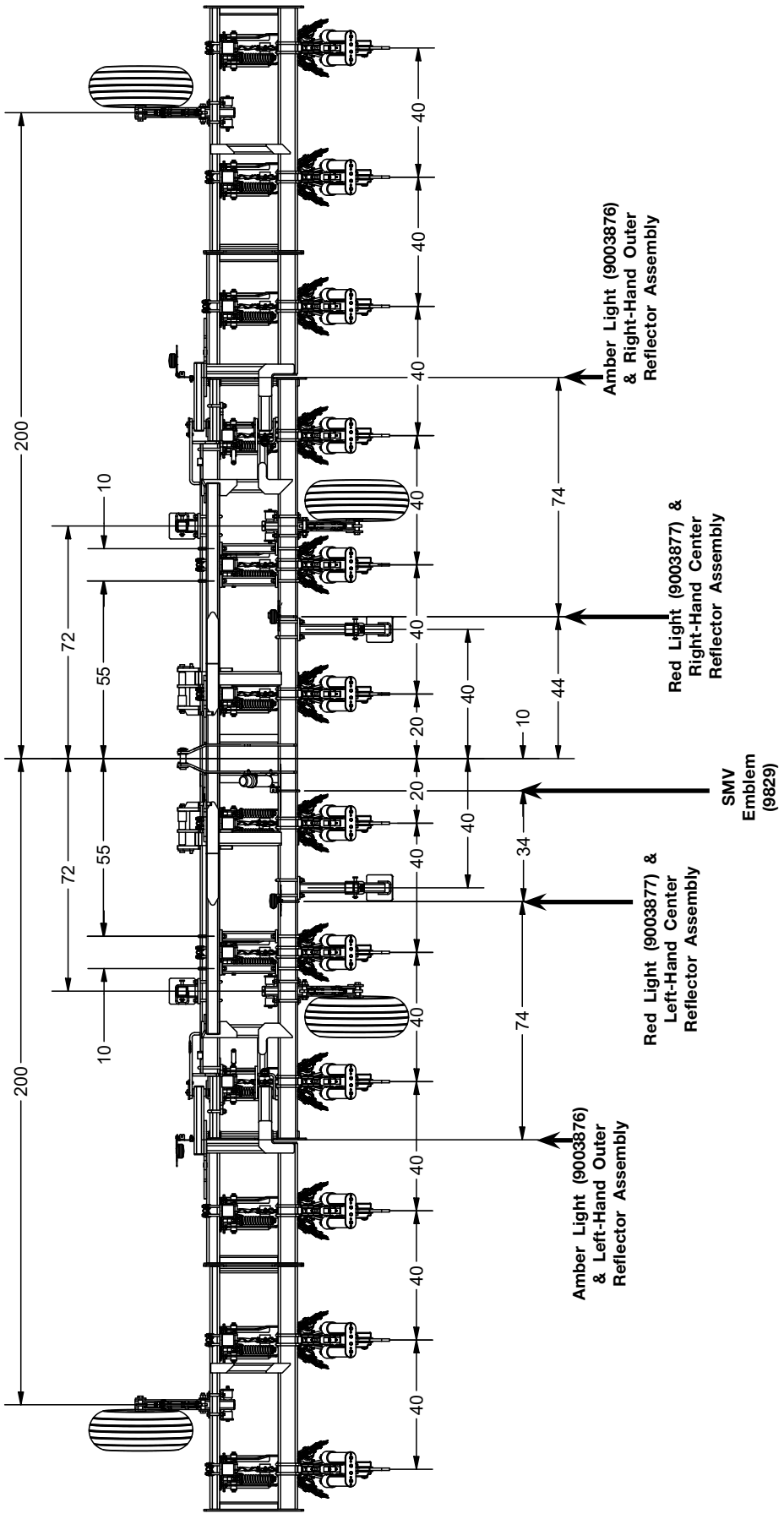
Overhead Layouts — Folding Units — 12 Shank Wide (36" Spacing)



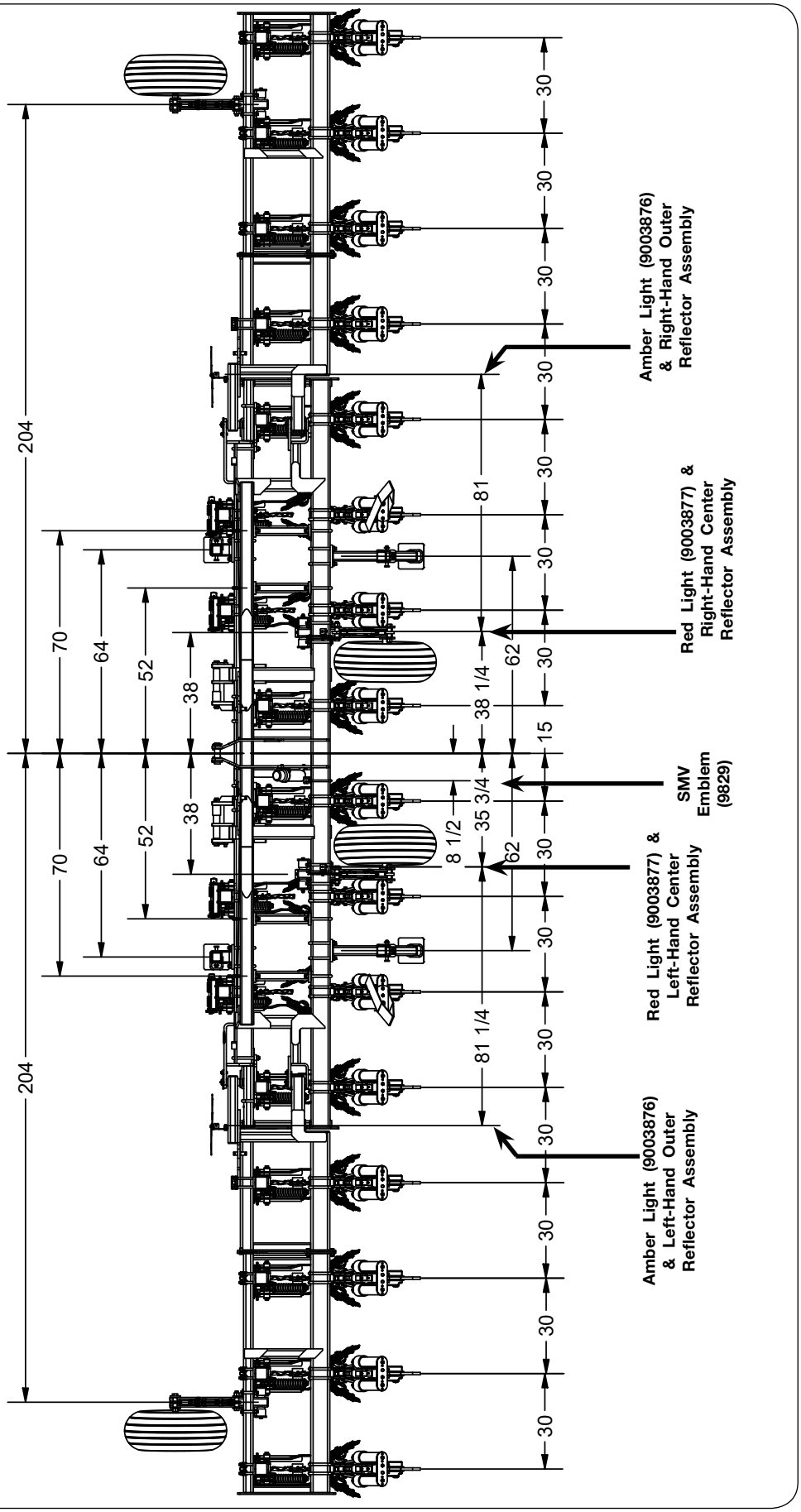
Overhead Layouts — Folding Units — 12 Shank Wide (38" Spacing)



Overhead Layouts — Folding Units — 12 Shank Wide (40" Spacing)



Overhead Layouts — Folding Units — 16 Shank Narrow (30" Spacing)



Notes

SECTION III
Operation

Implement Overview

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.

The RIPPER-STRIPPER deep-tillage tool is capable of shattering hardpan up to 18" deep. It can be equipped with a variety of coulters, shanks, and finishing attachments for optimum field performance.

The RIPPER-STRIPPER tool is available with two shank options:

A shear-bolt shank on the 312 model (FIG. 3-1). This should be used in areas without rocks or obstructions. The trip force of the shank is 7,500 lbs.

An auto-reset shank equipped on the model 332 (FIG. 3-2). This should be used in areas with a moderate levels of rocks and obstructions. The trip force of 6,000 lbs is higher than the reset force, allowing the shank to stay engaged or return to the working position after tripping.

Model 312
Shear-Bolt Shank

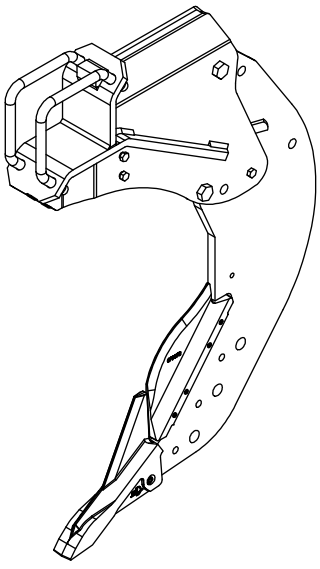


FIG. 3-1

Model 332
Auto-Reset Shank

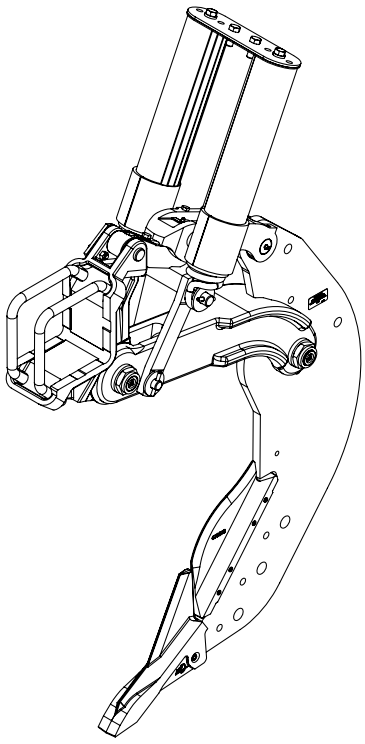


FIG. 3-2

Preparing 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 warning lights. Make sure they are in proper working order.

Check tractor hydraulic oil reservoir and add oil if needed.

⚠ WARNING

- **TRANSPORTING THE IMPLEMENT SIGNIFICANTLY CHANGES THE WEIGHT AND BALANCE OF YOUR TRACTOR. MAKE SURE THE TRACTOR IS PROPERLY BALLASTED.**

Front-End Weights

Use front-end weights as needed to provide effective steering control and front-end stability. See your tractor operator's manual for recommendations on ballasting procedures.

⚠ WARNING

- **DO NOT EXCEED THE TRACTOR'S LIFT CAPACITY OR BALLAST RECOMMENDATIONS.**

Note: Warranty consideration will only be given on items manufactured by Unverferth Mfg. Co., Inc.

Horsepower Requirements

The power requirement for this unit is 20-40 hp. per shank, depending on the depth of penetration and ground conditions. Select a tractor with sufficient power to operate this machine.

Sway Blocks

Sway blocks should be used and adjusted to limit movement in operating position. Your implement should be permitted to sway very little while operating and should be held rigid while transporting. See your tractor operator's manual.

Wheel Spacing

Set tractor wheels so they are equally spaced from center of tractor. If using the tool to penetrate in fields of row crops, set tractor wheels so they are centered between the rows.

See your tractor operator's manual for correct tire inflation pressure.

Drawbar Position

Place the drawbar in the short, center position to provide maximum clearance between drawbar and tool.

Attaching To Tractor

IMPORTANT

- *Operating a 3-point implement with an articulated four-wheel drive or track tractor requires the operator to drive straight to prevent damage to the implement. Sudden turns or steering corrections when the implement is in the ground can exert extreme forces through the implement's frame and/or shank components. Improper operation can void the implement's warranty. For these applications, customers are recommended to order an optional pull type conversion package or caddy.*

Mast and Hitch

The RIPPER-STRIPPER implement should be used on a tractor with the appropriate hitch connection (see table below).

NOTE: N QC refers to Narrow Quick Attach Coupler. QC refers to Quick Attach Coupler.

Hitch Type	Machine Type			
	Rigid 2 & 4 Shank	Rigid 6 & 8 Shank	Folding 8-30 to 12-30	Folding 12-36 to 16-30
CAT II - 3PT	X*			
CAT II - QC	X			
CAT III - 3PT	X	X	X	X
CAT III - QC	X	X	X	X
CAT III - N QC	X	X	X	X
CAT IV - N		X		
CAT IV - N QC	X	X	X	X
CAT IV				X
CAT IV - QC				X

*Use with the optional pin package (63869) on rigid models only.

IMPORTANT

- *Machine damage could occur if the CAT II pin package is used with a tractor rated higher than a CAT II.*

Bolts And Nuts

Before operating, check all hardware for tightness. Re-check all bolts for tightness after the unit has been operated for several hours.

Pins And Retaining Rings

Before operating, check that all pins and retaining rings are in place and in good condition. Replace any worn, damaged, or missing pins, and retaining rings.

Attaching To Tractor (continued)

Pin Assembly (67188B & 67187B)

Pin assembly (67188B) is used for replacement only on 1 1/4" diameter holes and contains a spacer which can be placed on the inside or outside depending on style of unit. Pin assembly (67187B) is used for replacement only on 1 3/4" diameter holes.

The spacer should be placed on the inside when used on all older style folding units and on Rigid units with a 1 1/4" top hole on the main frame, see FIG. 3-3.

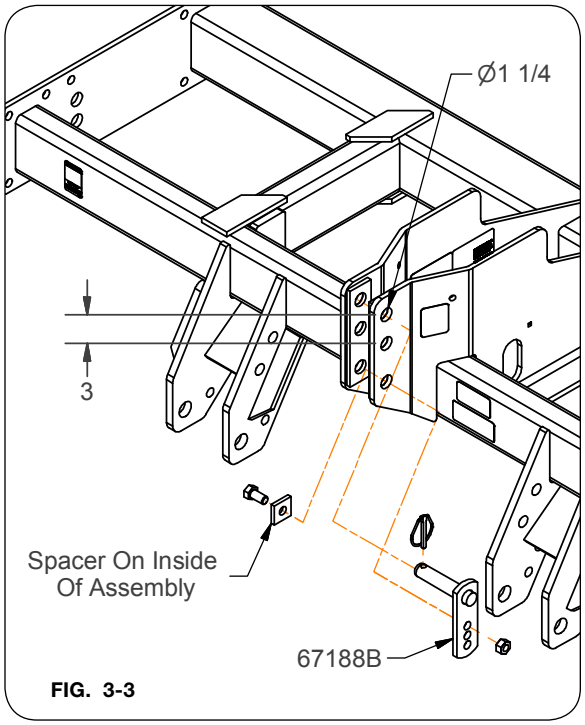


FIG. 3-3

The spacer should be placed on the outside when used on all current style folding units with a 1 3/4" top hole on the main frame. Pin assembly (67187B) is to be used in the 1 3/4" top hole. See FIG. 3-4.

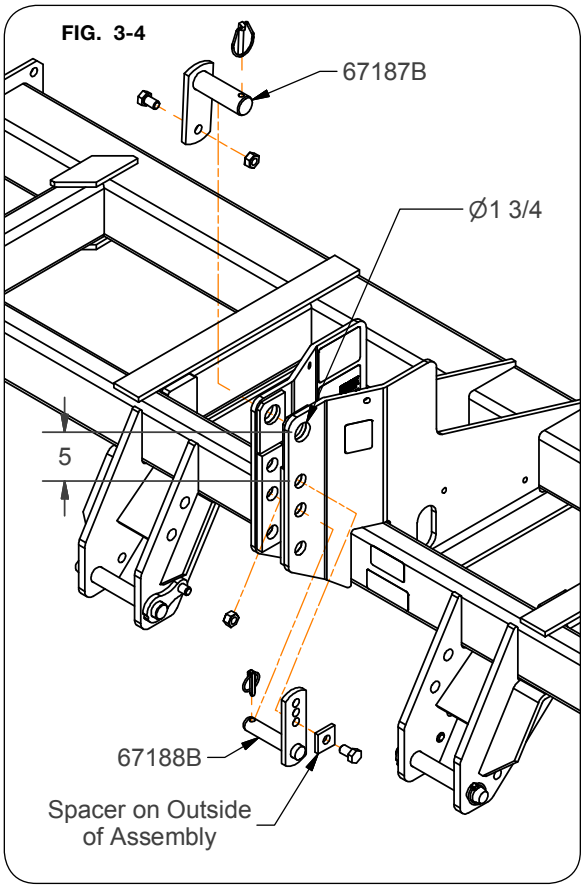


FIG. 3-4

Attaching To Tractor (continued)

Tractor Without Quick Attach Coupler

WARNING

- **DO NOT STAND BETWEEN TRACTOR AND IMPLEMENT DURING HITCHING.**

IMPORTANT

- *Before attaching tractor to implement, check mast pins for any wear or damage. Replace any worn or damaged pins.*

Attach the unit to the tractor as specified in the tractor's operator's manual. Use the appropriate size hitch pins and lock in place.

Back the tractor up to the front of the implement and position the draft links in front of, and in line with, the lower hitch pins (FIG. 3-5).

Set parking brake, shut-off the engine and remove key from ignition before dismounting from tractor.

CAT-II STANDARD (OPTIONAL ON 4 SHANK RIGID FRAME MODELS ONLY):

IMPORTANT

- *When a category II standard hitch is used, an optional pin package (63869) must be installed. Refer to FIG. 1-5 for proper installation of pins.*

LOWER LINKS: Install new pins.

TOP LINKS: Remove standard pin and insert new pin, and bushing into the lowest set of holes. Use existing klik pins.

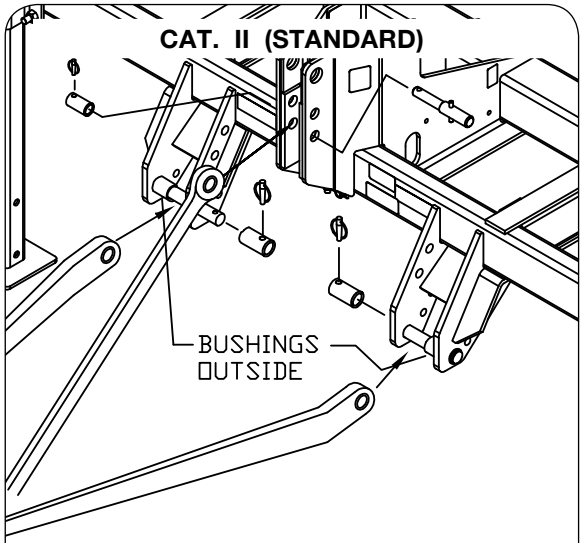


FIG. 3-5

Attaching To Tractor (continued)

CAT-III, CAT-III-N, CAT-IV-N:

Connect the draft links to the front of the machine. Install pins and secure with klik-pins.

Position hitch bushings to match the tractor's lower link spacing. See FIG. 3-6 and FIG. 3-7. Adjust tractor's sway blocks as required. See tractor operator's manual.

FOR ALL RIGID - CAT. III (STANDARD)

TOP LINK:
RIGID - TOP HOLE (CAT. III)
FOLDING - MIDDLE HOLE (CAT. III)

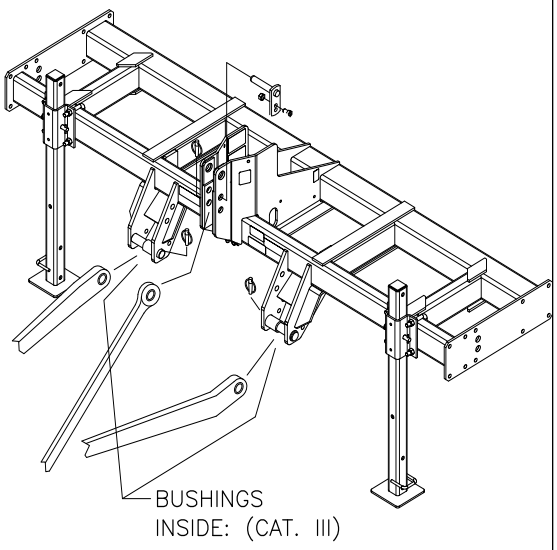
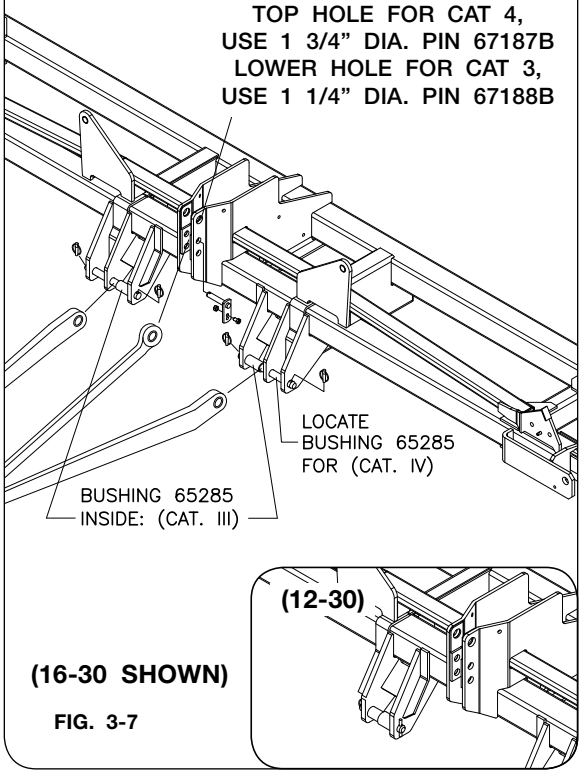


FIG. 3-6

FOR ALL FOLDING - CAT-III, CAT-IV



(16-30 SHOWN)

FIG. 3-7

Attaching To Tractor (continued)

Tractor With Quick Attach Coupler

WARNING

- **DO NOT STAND BETWEEN TRACTOR AND IMPLEMENT DURING HITCHING.**

Lower the coupler to allow jaws to pass under mast and hitch pins.

Back the tractor to front of the implement until the jaws are under their respective hitch pins.

Set parking brake, shut-off engine and remove key from ignition before dismounting from tractor.

Position the implement's hitch bushing to match the tractor quick attach coupler and raise the coupler to firmly seat jaws. Lock the jaw latches into place (FIG. 3-8 and 3-9).

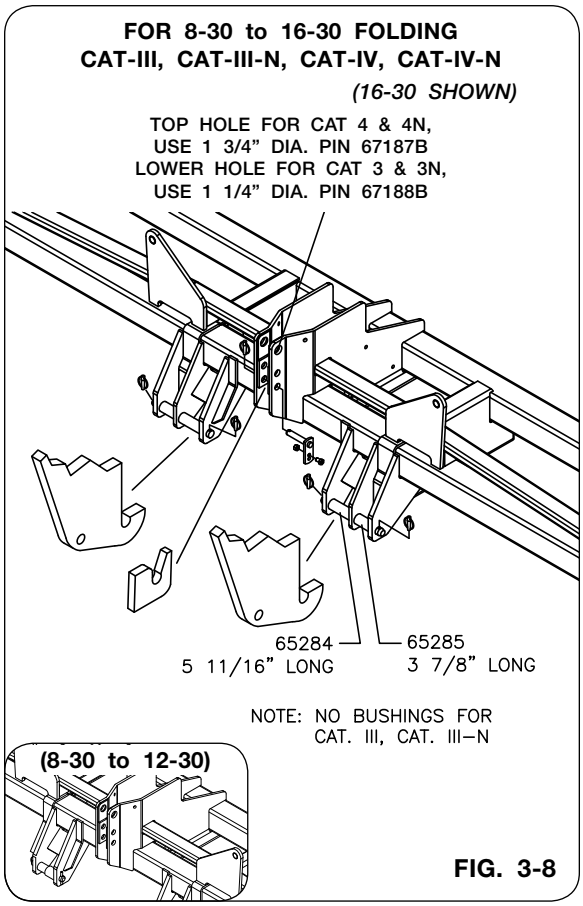
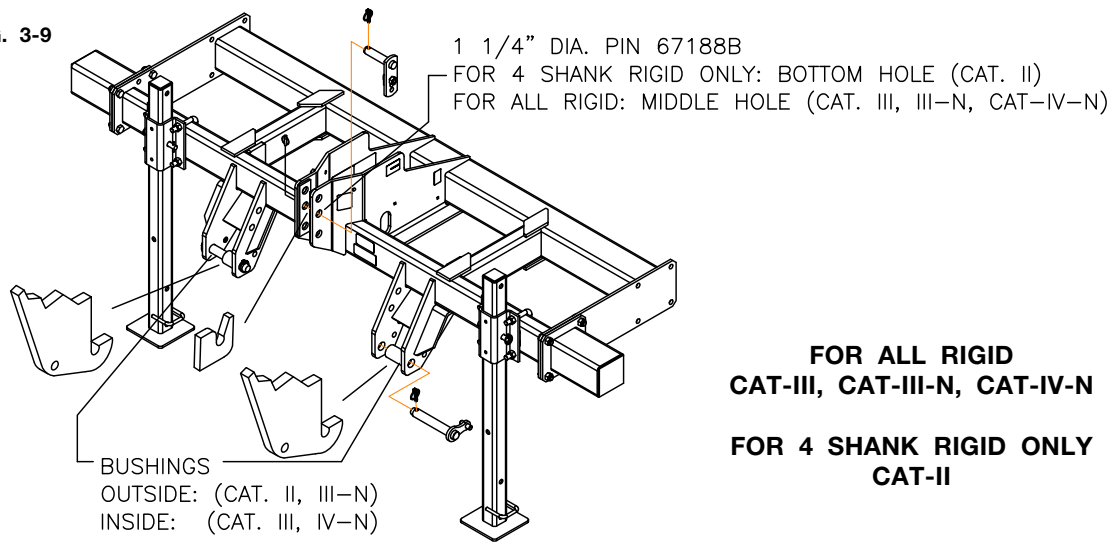


FIG. 3-8

FIG. 3-9



FOR ALL RIGID
CAT-III, CAT-III-N, CAT-IV-N

FOR 4 SHANK RIGID ONLY
CAT-II

Operating Wings

⚠ WARNING

- **MOVING WINGS CAN CAUSE SERIOUS INJURY OR DEATH. KEEP AWAY FROM FOLDING AND UNFOLDING WINGS.**
- **FALLING OR LOWERING EQUIPMENT CAN CAUSE SERIOUS INJURY OR DEATH. KEEP EVERYONE AWAY FROM EQUIPMENT WHEN SUSPENDED, RAISING, OR LOWERING.**

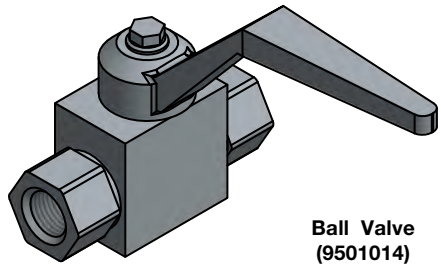
Folding

Before folding wings, be sure markers are fully retracted and locked into transport position. On shear-bolt machines (Model 312) replace any shear-bolts that have sheared on any of the shanks located on the wings before folding wings.

Place the wing ball valves (9501014) in the “OPEN POSITION”. FIG. 3-11.

Raise unit to transport position. Fold wings so that the hydraulic cylinders are fully retracted.

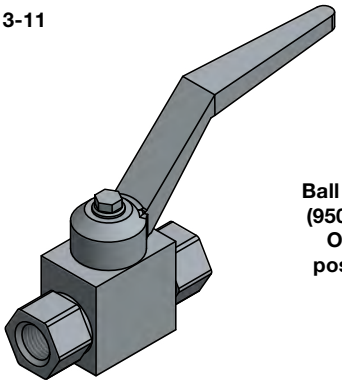
Place the wing ball valves (9501014) in the “CLOSED POSITION” FIG. 3-10.



Ball Valve (9501014) Closed position

FIG. 3-10

FIG. 3-11



Ball Valve (9501014) Open position

Unfolding

Place the wing ball valves (9501014) in the “OPEN POSITION”. FIG. 3-11.

Raise unit to transport position. Unfold wings so the hydraulic cylinders are fully EXTENDED.

Place the wing ball valves (9501014) in the “CLOSED POSITION” FIG. 3-10.

Transporting

DANGER

- **ELECTROCUTION WILL CAUSE SERIOUS INJURY OR DEATH. THE IMPLEMENT IS NOT INSULATED. KEEP AWAY FROM ALL ELECTRICAL LINES AND DEVICES. ELECTROCUTION CAN OCCUR WITHOUT DIRECT CONTACT.**

WARNING

- **INADVERTENT LOWERING OF THE WINGS CAN CAUSE SERIOUS INJURY OR DEATH. INSTALL WING TRANSPORT LOCKS BEFORE TRANSPORTING.**
- **USE TRANSPORT LIGHTS AS REQUIRED BY ALL LAWS TO ADEQUATELY WARN OPERATORS OF OTHER VEHICLES.**
- **ALWAYS TRAVEL AT A SPEED WHICH PERMITS COMPLETE CONTROL OF TRACTOR AND IMPLEMENT.**

For safe transporting of this implement, 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. Do not exceed 20 m.p.h. when transporting the implement on the highway.

Comply with all all laws governing highway safety and regulation when moving machinery on public roads.

Be sure SMV Emblem, lights and reflectors are in place and clearly visible to approaching traffic.

Unhitching From Tractor

Select a firm, level surface for parking the machine. Lower all support stands to the same height. Lower unit with tractor's 3-point hitch until stands and shank points contact the ground.

Set parking brake and remove key from ignition before dismounting from tractor.

Place the wing ball valves (9501014) in the "CLOSED POSITION" on winged machines. Depressurize the hydraulic system according to tractor operator's manual.

WITH QUICK ATTACH COUPLER

1. Disconnect hoses (if applicable), release latches, lower 3-point and drive away slowly.

LESS QUICK ATTACH COUPLER

2. Disconnect hoses (if applicable), remove pins, lower 3-point and drive away slowly.

WARNING

- **FALLING OR LOWERING EQUIPMENT CAN CAUSE SERIOUS INJURY OR DEATH. KEEP EVERYONE AWAY FROM EQUIPMENT WHEN RAISING OR LOWERING.**
- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

Leveling Frame

For best results, when leveling the implement, position the tractor with implement on a level floor. Check tractor tire pressure and inflate equally from side-to-side. See your tractor operator's manual for correct tire inflation pressure.

Side-to-Side Leveling

With the implement attached to tractor, raise the unit 1 to 2 inches off the floor. Shut-off engine and lock brakes on tractor. Measure to the bottom edge of the rear frame tube on each side of the machine. Frame will be level when dimension "A" is the same as dimension "B", FIG. 3-12. Level frame from side to side by adjusting the lift links on tractor 3-point hitch.

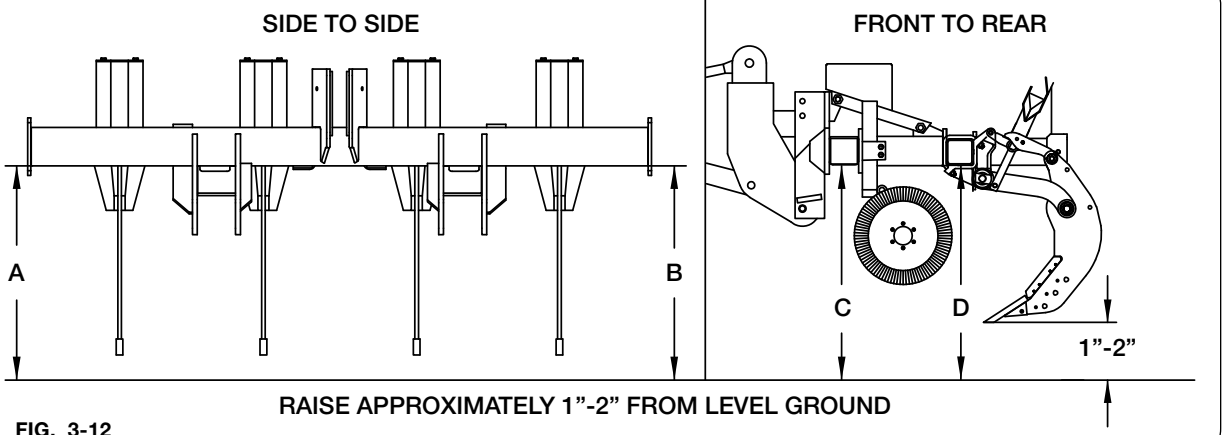


FIG. 3-12

Before adjusting 3-point links see your tractor operator's manual for correct adjustment procedures and safety requirements.

Front-to-Rear Leveling

Before setting the coulter and stabilizer wheels it is necessary to level the frame from the front to the rear.

For initial adjustment keep the machine raised off the ground 1 to 2 inches (being sure bottom of shanks clear floor). Measure to the bottom of the front frame tube and the rear frame tube.

If frame is not level from front to rear with ground line, extend or retract the tractor top link until frame is parallel (or level) to the ground line. Frame will be level when dimension "C" is the same as dimension "D".

Before adjusting 3-point links see your tractor operator's manual for correct adjustment procedures and safety requirements.

Further front to back adjustment will be required once machine is operated in the field. When properly leveled, all shanks will enter the ground to a uniform depth.

Leveling Wings (8-30",36",38",40" & 12-30",36",38",40") & 16-30"

Adjustment Procedures

Check for levelness of machine in the field. The wing tips should be operating at the same working depth as the center section of the machine. If the wing tips are running deeper than the center section, shims may be needed. Shims are provided for adjusting/leveling wing height in the field. The cylinder rod end must also be adjusted.

IMPORTANT

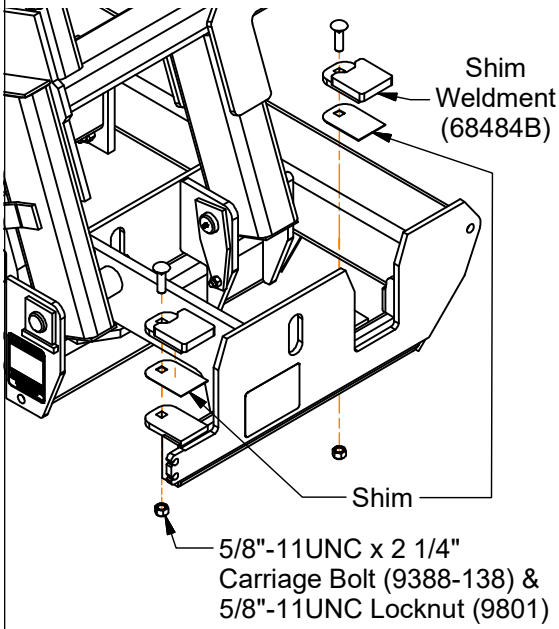
• *Shim kit must NOT be installed when machine is equipped with optional with flex valve. Frame or cylinder damage could occur if installed!*

NOTE: There are 3 shims for each corner, you need to select the appropriate sizes as needed. (Store unused shims on bottom side of mounting ear).

Determine shim requirements as follows:

Wing Tip Distance Below Level	Approximate Shim Thickness Required
1/2"	1/16"
1"	1/8"
1 1/2"	1/16" & 1/8"
2"	1/4"
2 1/2"	1/16" & 1/4"

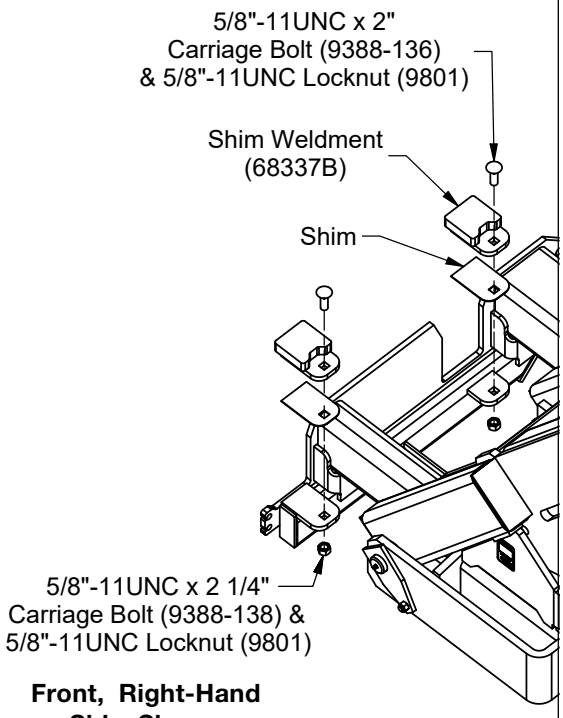
Hydraulic — Standard Folding 8 Shank 30", 36", 38" & 40" Spacing; Folding 12 Shank 30" Spacing



Front, Left-Hand Side Shown

FIG. 3-13

Hydraulic — Standard Folding 12 Shank 36", 38" & 40" Spacing; Folding 16 Shank 30" Spacing



Front, Right-Hand Side Shown

FIG. 3-14

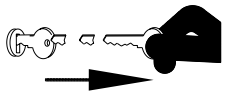
Leveling Wings (continued)

Adjusting Cylinder Clevis End

WARNING

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

Adjust the cylinder clevis end when installing the shims as follows:



1. Unfold the machine completely. Lower the machine within 1”-2” from the ground. Set parking brake on tractor, release any pressure in hydraulic system, shut tractor engine off, and remove the ignition key.
2. Remove the clevis pin (FIG. 3-15).

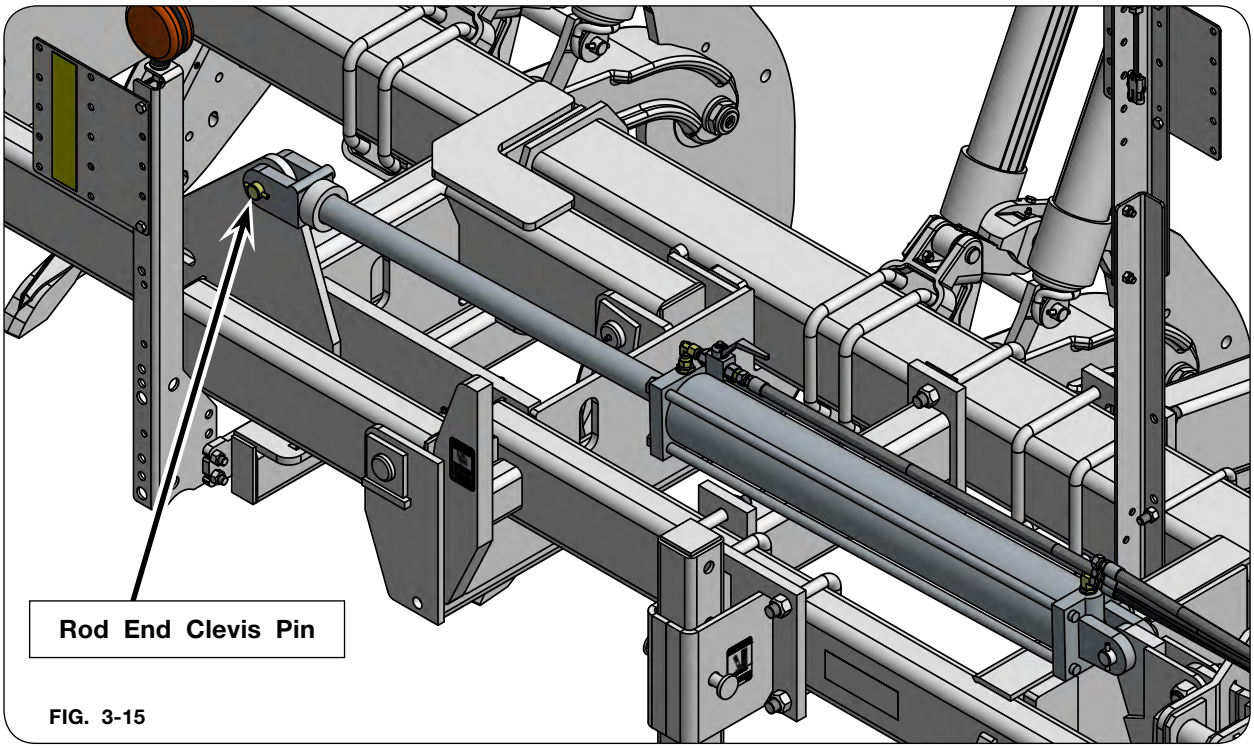


FIG. 3-15

3. Using a safe lifting device rated at a minimum of 50 lbs., swing cylinder up and block.
4. Using the tractor, extend the hydraulic cylinder completely.
5. Turn off tractor and remove ignition key.
6. Loosen the bolt on the cylinder clevis, and adjust cylinder clevis until the length allows the clevis hole to match the fold lug at full hydraulic extension. Adjust the clevis out 1/2-1 full turn to have slight down pressure pushing the wing onto the shims.
7. Install the clevis pin and tighten the clevis bolt.

Flex Hydraulic (Optional) — Field Operation

The flex wing option features dual function cylinders that are designed with two separate chambers in one cylinder body. The longer 48" cylinder end folds the wings and allows wing flex. The shorter cylinder end activates wing tip-up for turning around on the ends.

The flex wing option allows wings to flex 5 degrees below center and 15 degrees above center. Relief valve cartridges inside the valve block assembly work with tractor hydraulics to allow the wings to float up or down in the field. Wing down-pressure can be added in difficult soil conditions where wing shank depth is not consistent.

IMPORTANT

If the Flex Frame Hydraulics are installed on the machine, the hydraulic valve operating the long end of the cylinder must run in FLOAT (no down pressure) or CONTINUOUS (down pressure active) to prevent potential cylinder damage. DO NOT operate the long end of the flex wing cylinder in NEUTRAL.

Tractor SCV Settings

The implement flex frame option requires 2 sets of tractor SCV outlets.

Aux A and B Ports on Valve

The short end of the cylinder tilts the wings to level when turning on the ends of the field. This outlet is engaged at the same time as the machine raise to allow the wings to tilt up while the machine is raised and turning on the ends. This outlet also tilts the wings down when the machine is lowered. After the machine is fully lowered, the SCV for this function should be OFF. Set hydraulic flow to 6–10 GPM. Do not plumb this function into the lift/lower hydraulic circuit on the tractor.

Trac A and B Ports on Valve

The long end of the cylinder folds and unfolds the wings between transport position to field working position. During field operation, tractor hydraulics must be operated in FLOAT or CONTINUOUS (for down pressure) so the 48" cylinder rod can piston in/out when wings raise/lower with field contours.. Set hydraulic flow to 6–10 GPM.

Flex Hydraulic (Optional) — Field Operation

Unfolding

1. With the machine raised, ensure the wing tip-up end of the cylinders are fully retracted. These are the shorter of the two cylinder ends. If the rods are not retracted, engage the retract function on the SCV. (The hoses are connected to the Aux A / Aux B ports on the flex wing block)

2. Unfold the wings by extending the longer end of the cylinders. (The hoses are connected to the Trac A and Trac B ports on the flex wing block)

3. Put the longer end of the cylinders into either FLOAT or CONTINUOUS (for down pressure) in the extend direction on the tractor SCV.

Folding

1. With the machine raised, fully retract the tip-up end of the cylinders. (The hoses are connected to the Aux A / Aux B ports on the flex wing block)

2. Fold the wings by retracting the longer end of the cylinders. (The hoses are connected to the Trac A and Trac B ports on the flex wing block)

3. Relieve pressure from the hydraulic system. See the tractor operator's manual for the proper procedure.

Lowering Machine

1. Ensure machine is in the working position, with short end of cylinders retracted.

2. Lower the machine to working depth and extend the shorter wing tip-up cylinder end to lower the wings. Shut off the wing tip-up SCV once cylinders are fully extended. (Typical timer setting to disengage wing tip up is 4-5 seconds)

Raising Machine

1. Raise the machine from the soil and retract the shorter wing tip-up cylinder end to raise the wings to level. (Typical timer setting to engage wing tip-up is 4-5 seconds) Set that SCV to CLOSED.

Down Pressure

1. If down pressure is required for the wings to properly follow field contours, place tractor hydraulics for the longer end of the cylinders to 8 GPM.

2. Set the hydraulics for the longer end of the cylinders to CONTINUOUS.

3. Refer to MAINTENANCE section of your owner's manual for adjusting wing down pressure.

NOTE: The lowering and raising procedure will remain the same.

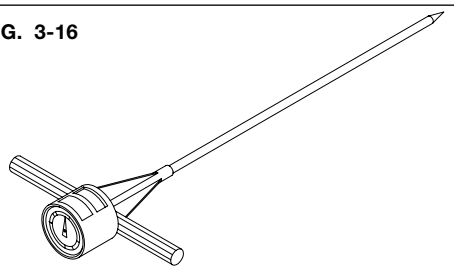
Preparing Implement

Depth of Penetration

Before adjusting the depth of your coulter and shank, first test your soil for the depth of the hardpan. For optimum performance from your implement, the penetration of the shank should be 2-3 inches below the hardpan. The hardpan is the area in your soil which acts as a barrier preventing the roots of your crops from benefiting from the water and nutrients below this area.

To determine the precise location of the hardpan, a "penetrometer" should be used (FIG. 3-16). For more information on this device, refer to your local Unverferth dealer or contact us, at Unverferth Mfg. Co., Inc.

FIG. 3-16



An alternate method of locating the hardpan is to dig a hole to a depth of 24" or greater. Using a knife, slice the side wall of the hole vertically downward. You will be able to feel an increase in resistance upon entering the hardpan from the top. Repeat the knife slice from the bottom of the hole upward to determine the bottom of the hardpan.

Once the depth of the hardpan is determined, adjust the stabilizer wheels so that the shank will penetrate at least 2-3 inches below this barrier. To adjust the stabilizer wheel, loosen the locking nut and rotate turnbuckle to the proper position (FIG. 3-17). To ensure proper depth, rest shank tips on a level surface.

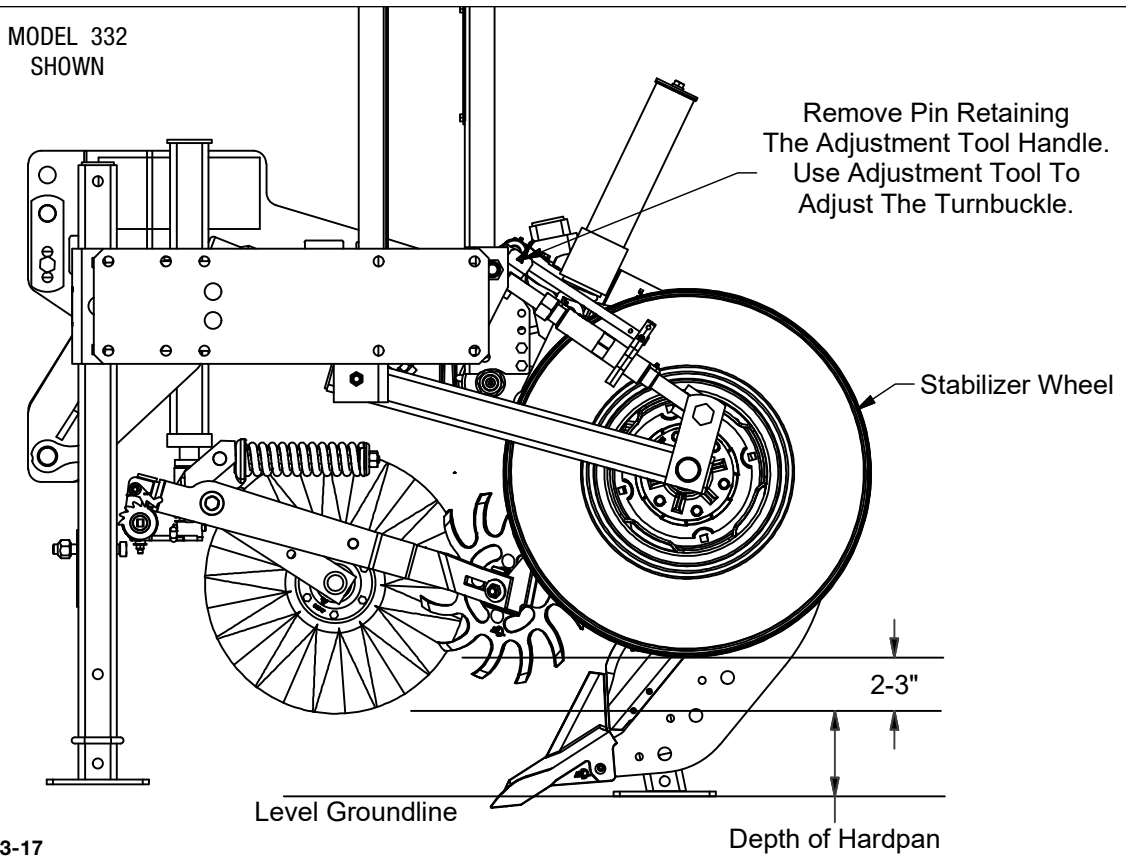


FIG. 3-17

Preparing Implement (continued)

Raise stabilizer wheel so that it is approximately 2-3 inches more than the determined depth of the hardpan, and retighten locking nut.

IMPORTANT

- *It is recommended that the stabilizer wheels are 1/2" to 1" off the ground during operation. This transfers more draft and weight onto the tractor rear tires for maximum traction.*

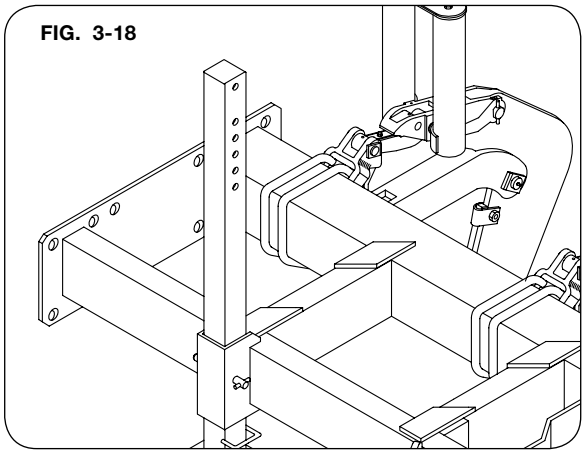
Support Stand

⚠ WARNING

- **FALLING OR LOWERING EQUIPMENT CAN CAUSE SERIOUS INJURY OR DEATH. KEEP EVERYONE AWAY FROM EQUIPMENT WHEN SUSPENDED, RAISING, OR LOWERING.**

Before field operation can begin, support stands must be raised and locked into position. Raise unit into transport position and raise support stand by removing pin, raising the support stand and reinstalling the pin into the bottom hole (FIG. 3-18).

FIG. 3-18



Shanks

Your shanks can be adjusted horizontally for proper alignment.

Horizontal Adjustment (All Models)

⚠ CAUTION

- **ENSURE SHANKS HAVE BEEN GREASED PRIOR TO INITIAL USE.**

When positioning shanks from side-to-side, loosen hardware so that the shank can be moved. When repositioned, be sure to securely tighten hardware.

NOTE: For proper positioning, refer to layouts in SETUP section.

NOTE: Be sure to align coulter and shank. Failure to do so, may result in plugging and excessive surface ground disturbance.

NOTE: For Models 312 and 332 torque 3/4" shank mounting V-bolts to 240 ft. lbs. Do not over or under tighten.

Model 332 Shown

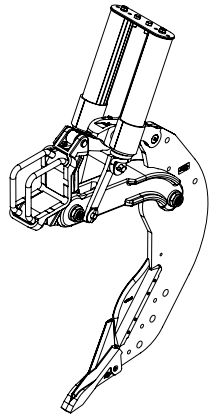


FIG. 3-19

Re-Setting a Tripped Shank

⚠ DANGER

- **SUDDEN MOVEMENT OF A TRIPPED SHANK WILL CAUSE SERIOUS INJURY OR DEATH STAY AWAY FROM A TRIPPED SHANK.**

In some cases, an auto-reset (Model 332) shank may not reset after striking a rock or buried obstruction. The shank springs store a tremendous amount of energy; keep all persons away from a tripped shank.

Follow this procedure to reset a tripped shank:

For Model 332 (Auto-Reset Shank):

1. Lower the unit into the ground and pull forward until the point of the tripped shank contacts the soil surface.
2. Torque front and rear pivot bolts to 400 ft-lbs. See FIG. 3-20. Loosen 1/2 turn. Keep all persons away from the shank, pull forward and raise the machine. The shank should automatically reset.
3. If the shank does not reset, re-insert the machine into the ground, as in Step 1. Loosen the pivot bolts another 1/4 turn. Clear all bystanders, pull forward and raise the machine. The shank should automatically reset. If it does not, repeat this procedure until it does.
4. After shank has reset, inspect trip mechanism and pull arm for wear or damage that would cause the malfunction. Replace components as needed. Re-torque pivot bolts to 225-275 ft-lbs. then loosen front pivot bolt 1/4 turn. Check shank for side play and retighten as required to minimize lateral movement.

Shanks (continued)

Lower Pull Arm (Model 332)

(AFTER INITIAL BREAK IN PERIOD)

After an initial break-in period (approximately 20 acres per shank) it may be necessary to retighten the pivot nuts (FIG. 3-20) to eliminate side to side movement of shank.

Proceed as follows:

1. With machine sitting firmly on the ground, tighten both (front and back) pivot nuts to 400 ft. lbs.

2. Loosen front pivot nut 1/4 turn.

3. Check for side play in shank (by prying on back of shank laterally to check for side to side movement). When properly adjusted, shank should have little side to side movement.

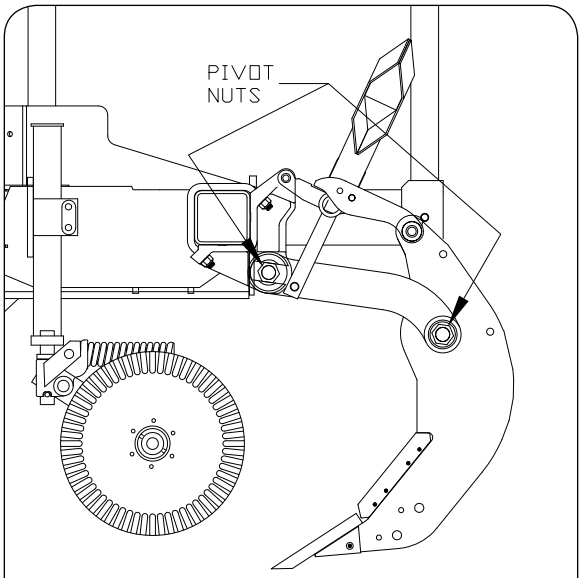


FIG. 3-20

Coulters

Combo Coulter

Your heavy-duty Combo coulter is designed to cut residue and to start an initial cut for the shank. The Combo coulter can be adjusted vertically for depth.

Vertical Position

To adjust the vertical positioning refer to the following steps:

⚠ WARNING

- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**

1. Determined how deep the shank will operate (page 3-16).

2. Lower the Ripper-Stripper, machine should be level, shank points resting on the ground.

3. The coulter blade will operate 4-6" deep in the soil. Subtract the blade working depth from the shank working depth. (i.e. - If the shank operates 14" deep, coulter blades 5" deep, distance from the ground to the bottom of the blade should measure 9"). Adjust coulter height accordingly.

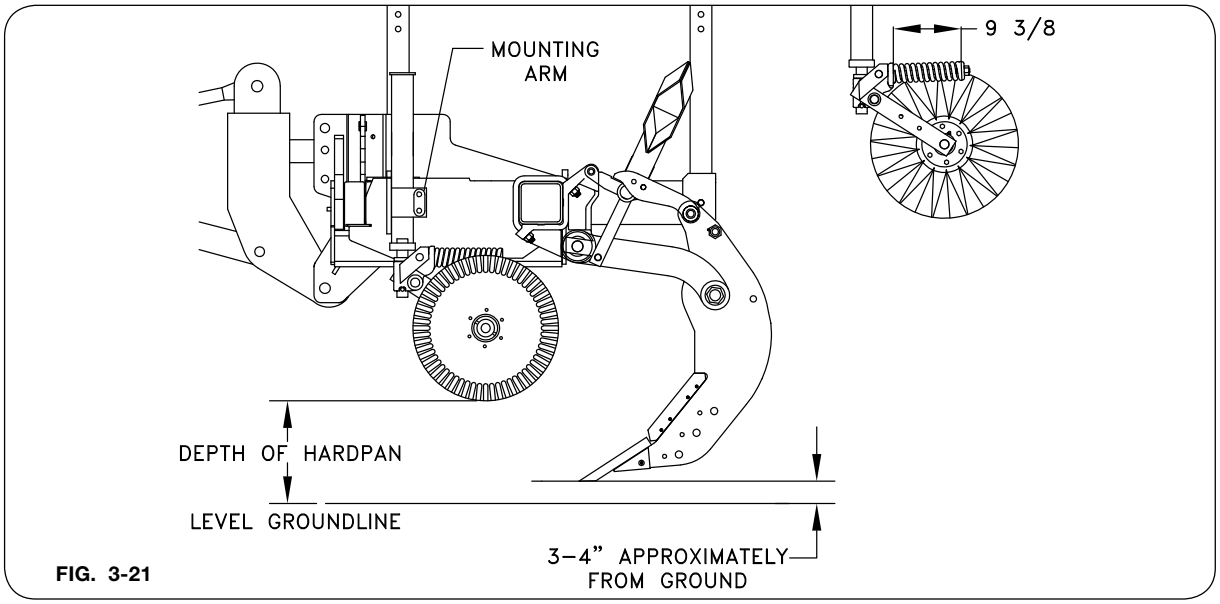


FIG. 3-21

4. After positioning, retighten hardware and be sure depths of all Combo coulters are the same.

NOTE: Recommended Combo coulter depth is between 3-6". If rocks are present in fields, shallower depths should be used.

NOTE: Wavy coulters are used on the front coulter. These blades help to cut the soil deeper ahead of the shank resulting in less soil disturbance.

The coulter springs are preset at the factory at 9 3/8". This measurement is the total amount of exposed spring.

NOTE: Adjusting the spring below 9 3/8" could cause premature part failure and void any warranty considerations.

Coulters (continued)

Procedure For Reversing Rear Coulters

Refer to "Rear Coulter Assembly Adjustments" in SETUP section for additional information, if unit is set up with pull type option or planter attachment.

IMPORTANT

- *On units with 30" row spacing the rear coulters cannot be reversed if unit is set up with pull-type option or planter attachment, or stabilizer wheels are installed between shanks. (If stabilizer wheels are installed between shanks relocate stabilizer wheels to outside of machine before reversing coulters).*

1. Disassemble blade from the hub.
2. Loosen the four 5/8"-11UNC U-bolts (95883) holding the coulter unit in place.
3. Rotate coulter hub 180°.
4. Move the coulter toward the inside until the casting is against the frame.
5. Reposition coulter angle and retighten all U-bolts (95883).
6. Reattach the blade to the hub. Tighten all hardware to torque chart in MAINTENANCE section.

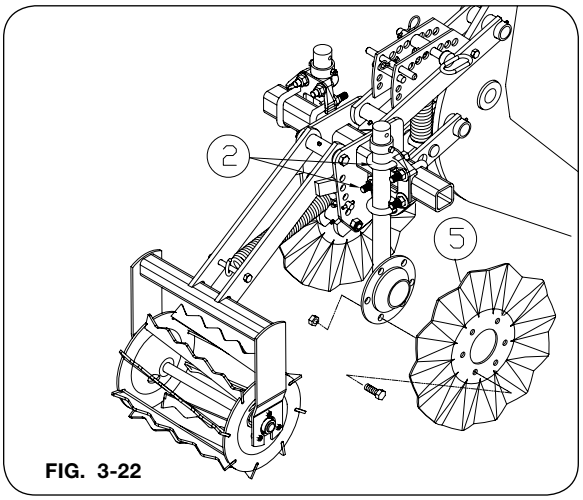


FIG. 3-22

7. Repeat procedure on other side of the stripper unit.

Coulters (continued)

Rear Coulter

NOTE: Level the main frame in field working position from front-to-back and side-to-side before beginning any adjustments.

Rear Coulter Spring Pressure

The rear coulter pressure can be adjusted by placing the hitch pin in the appropriate hole (FIG. 3-23).

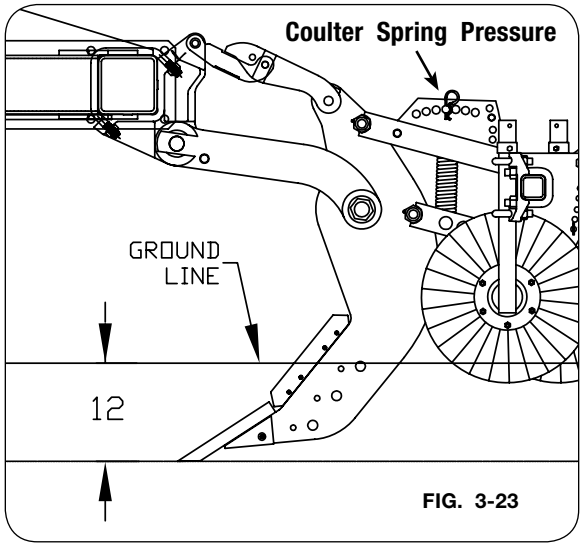


FIG. 3-23

Working Depth

The rear coulter depth can be adjusted by placing pin and hair pin in the appropriate hole (FIG. 3-24).

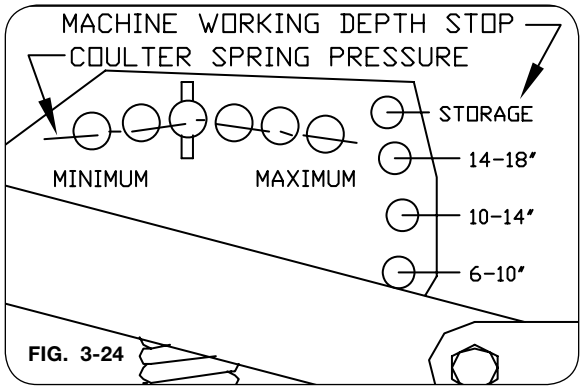


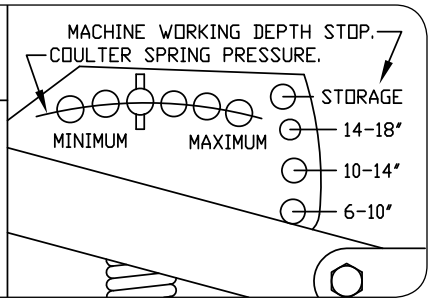
FIG. 3-24

UNVERFERTH MFG. CO. INC.
P.O. BOX 357 KALIDA, OHIO USA 45853

ADJUSTMENT PROCEDURES

1. LEVEL MAIN FRAME IN FIELD WORKING POSITION-FRONT TO BACK & SIDE TO SIDE.
2. DETERMINE MACHINE WORKING DEPTH & SET MACHINE WORKING DEPTH STOP.
3. SET COULTER ANGLE AND CUTTING WIDTH -EVENLY FROM SIDE TO SIDE.
4. SET COULTER SPRING PRESSURE.
5. SET ROLLING BASKET SPRING PRESSURE.
6. ADJUST COULTER ANGLE AND CUTTING WIDTH IF REQUIRED.
7. ADJUST COULTER SPRING PRESSURE IF REQUIRED.

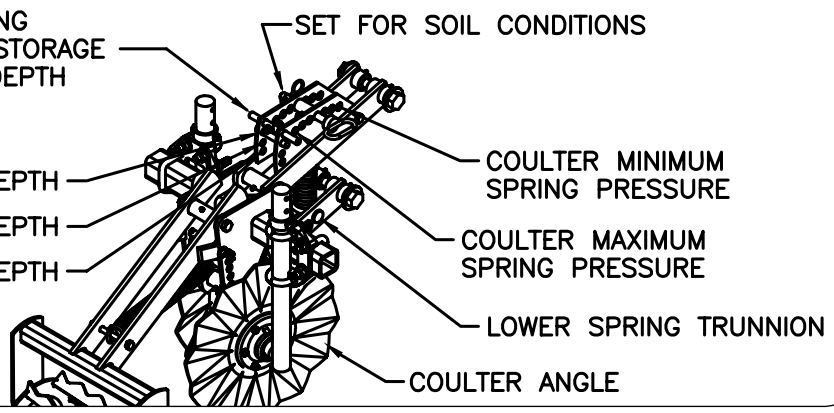
96582



Optional Attachments

Strip-Builder With Standard or Concave Rolling Harrow Basket & Wavy, Smooth Concave or Notched Concave Blade (63282, 66184B, 66185B, 66186B, 66187B) Zone-Firmer 5-Wheel Press Wheels (65250B)

FIG. 3-25



Adjustments For Optional Strip-Builder Units

After adjusting machine for levelness and working depth, the following adjustments should be made to your strip-till units.

1. Set working depth of unit to match machine working depth.

2. Set coulter spring pressure according to soil conditions.

IMPORTANT

- *The 2 1/2" cross tube on the Strip-Builder frame must be trimmed to permit clearance with some other attachments (e.g., lift-assist wheels, rear hitch, etc.). See operator's manual on these attachments for modification procedures.*

NOTE: The coulter spring pressure setting will influence the coulter working depth. If less down pressure is required, the lower spring trunnion can be relocated to the rear hole to decrease spring pressure.

3. Adjust coulter angle if necessary.

NOTE: Coulter angle is pre-set at 9° at factory, this should provide good soil flow, without excess ridging. Reducing angle will minimize soil flow and disturbance.

NOTE: The Coulter spring pressure may need to be readjusted, if coulter angle is changed.

NOTE: Coulters may be spaced wider to pull more soil into the strip. In addition, coulter angle may be increased to aid in the aggressiveness of these coulters. If additional working width is desired, see "Procedure for reversing rear coulters" in the SET UP section.

Optional Attachments (continued)

IMPORTANT

- *If adjusting coulters outward (to increase strip working width) be sure to check clearance between stabilizer wheel tires and coulter blades. Maintain minimum of 2-3" clearance between coulter blades and tire at all times.*
- *On units with 30" row spacing the rear coulters cannot be reversed if unit is set up with pull-type option or planter attachment, or stabilizer wheels are installed between shanks. (If stabilizer wheels are installed between shanks, relocate stabilizer wheels to outside of machine before reversing coulters).*

NOTE: 20" wavy coulter blades are furnished on the front coulter. These blades help to cut the soil deeper ahead of the shank resulting in less soil disturbance.

4. **Set rear basket or firmer wheels spring pressure, according to soil conditions.**

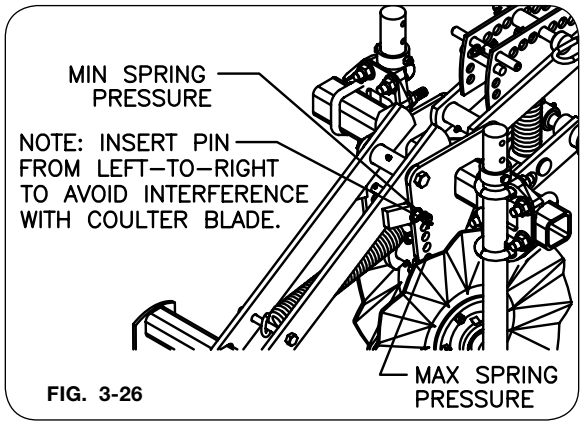


FIG. 3-26

Optional Attachments (continued)

Strip-Builder Less Rolling Basket (63954)

Adjustments For Optional Strip-Builder Units

After adjusting machine for levelness and working depth, the following adjustments should be made to your strip-till units.

1. Set working depth of unit to match machine working depth.

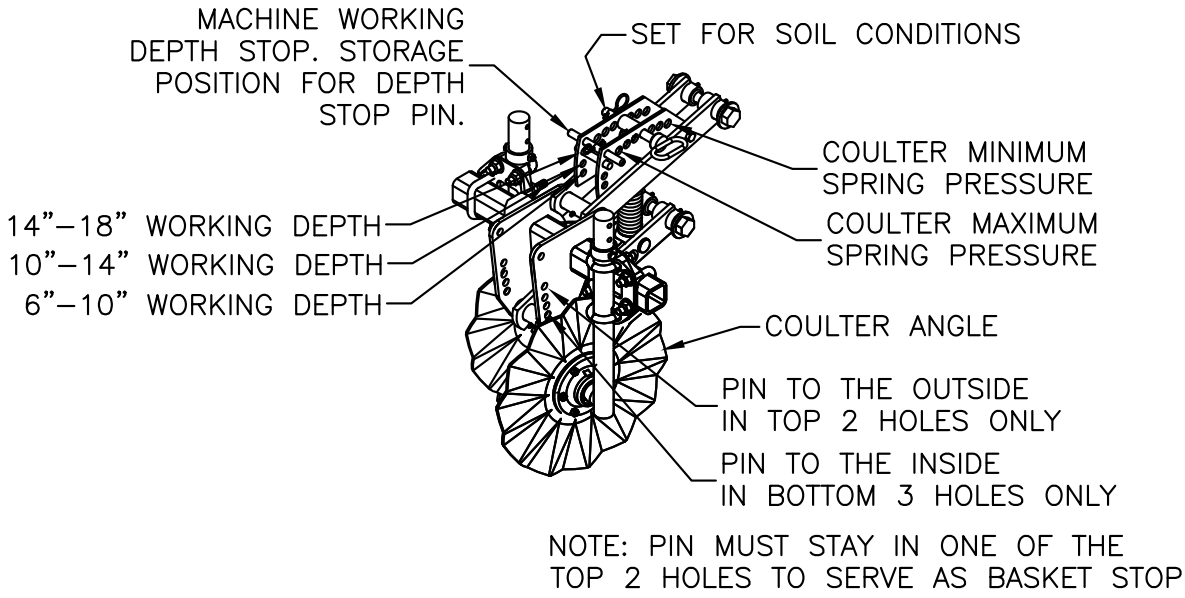


FIG. 3-27

2. Set coulter spring pressure according to soil conditions.

IMPORTANT

- *The 2 1/2" cross tube on the Strip-Builder frame must be trimmed to permit clearance with some other attachments (e.g., lift-assist wheels, rear hitch, etc.). See operator's manual on these attachments for modification procedures.*

NOTE: This setting will influence the coulter working depth. If less down pressure is required, the lower spring trunnion can be relocated to the rear hole to decrease spring pressure.

3. Adjust coulter angle if necessary.

NOTE: Angle is pre-set at 9° at factory, this should provide good soil flow, without excess ridging. Reducing angle will minimize soil flow and disturbance.

NOTE: Spring pressure may need to be readjusted, if coulter angle is adjusted.

Optional Attachments (continued)

NOTE: Coulters may be spaced wider to pull more soil into the strip. In addition, coulter angle may be increased to aid in the aggressiveness of these coulters. If additional working width is desired, see "Procedure for reversing rear coulters" SETUP Section.

IMPORTANT

- *If adjusting coulters outward (to increase strip width worked) be sure to check clearance between stabilizer wheel tires and coulter blades. Maintain minimum of 2-3" clearance between coulter blades and tire at all times.*

- *On units with 30" row spacing the rear coulters cannot be reversed if unit is set up with pull-type option or planter attachment, or stabilizer wheels are installed between shanks. (If stabilizer wheels are installed between shanks, relocate stabilizer wheels to outside of machine before reversing coulters).*

NOTE: 20" rippled or 24" straight coulters are available on the front coulter. These blades help to cut the soil deeper ahead of the shank resulting in less soil disturbance.

Optional Attachments (continued)

Zone Firmer Assembly 68082B

Adjustments For Optional Zone Firmer 68082B)

After adjusting machine for levelness and working depth, the following adjustments should be made to your Zone Firmer units:

1. Set working depth of unit to match machine working depth.

2. Set Zone Firmer down pressure according to soil conditions.

IMPORTANT

- *The 2 1/2" cross tube on the Zone Firmer frame must be trimmed to permit clearance with some other attachments (e.g., lift-assist wheels, rear hitch, etc.). See operator's manual on these attachments for modification procedures.*

NOTE: 20" rippled coulters are available on the front coulter. These blades help to cut the soil deeper ahead of the shank resulting in less soil disturbance.

3. **4-Wheel Zone Firmer (68082B) ONLY:**
   If additional down pressure is desired, the lower spring trunnion can be relocated to front hole to increase working pressure (FIG. 3-28).

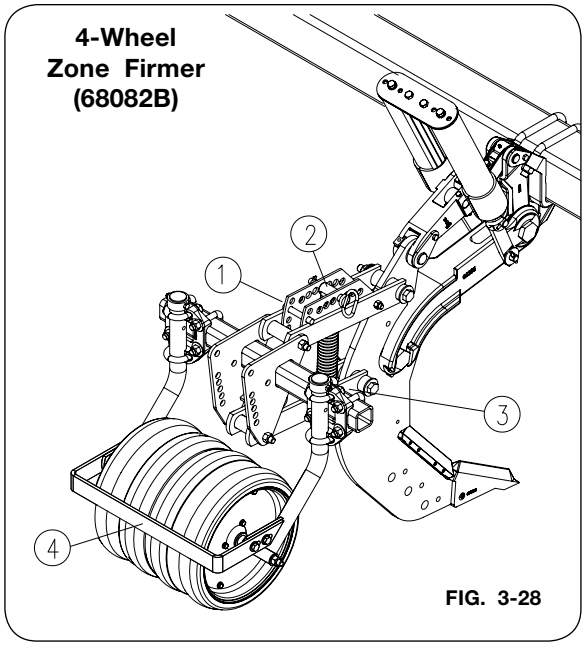


FIG. 3-28

4. Adjust scraper bar (68083B) so light contact is made with firmer wheels.

NOTE: Be sure to rotate wheel 360° to make sure contact between scraper bar and firmer wheels is not too tight or loose and to check wheel shape for any distortion.

Optional Attachments (continued)

Shatter Wings - 7” Pkg. (67691B) & 9” Pkg. (67692B)

This option can be set to operate in either of the 2 locations provided.

For Minimum Disturbance Of Top Soil
Position shatter wings in the lower location with wings set in the flat position.

For Maximum Disturbance Of Top Soil
Position shatter wings in the upper location with wings set in maximum up position.

For Increased Soil Disturbance
Adjust the angle of the wings by loosening the 1/2”-13UNC x 2 1/4” Lg. capscrews and pivoting wings to desired angle. Retighten capscrews to torque chart in MAINTENANCE section.

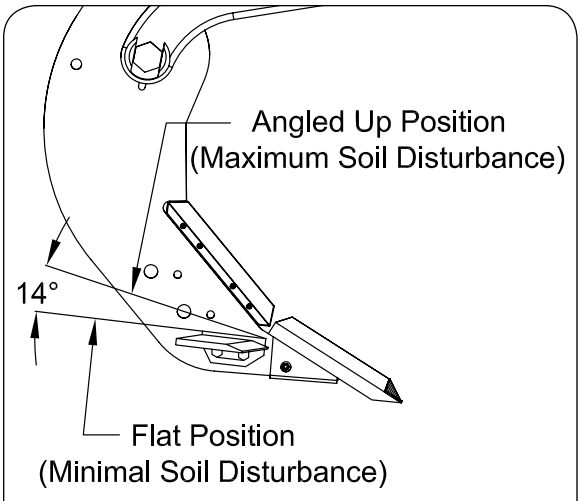


FIG. 3-29

SECTION IV
Maintenance

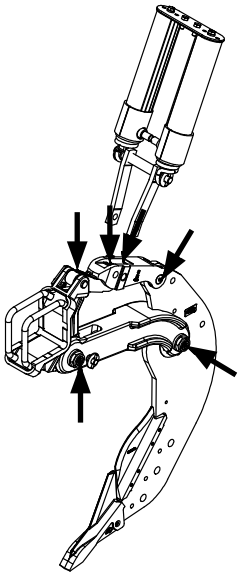
Daily Service

Lubrication Points

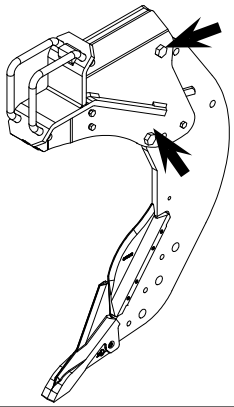
LOCATION	SEASON		HOURS
	BEGINNING	END	
AUTO-RESET SHANK - 1 lube fitting; grease gun	✓	✓	8*
SHEAR-BOLT SHANK - 2 pivot pins; oil can	✓	✓	8*
BASE WING HINGE POINTS - 4 lube fittings; grease gun	✓		8*
STABILIZER WHEEL HUB - repack bearings	✓		8*
COMBO COULTER ARM - 1 lube fitting; grease gun	✓	✓	8
COULTER & ROW CLEANER HUBS - 1 lube fitting; repack bearings	✓		50
CLEVIS ARMS - 6 lube fittingS; grease gun	✓		8
ROLLING HARROW FRAME - 1 lube fitting; grease gun	✓		8

* This figure can vary depending on the frequency of shanks tripping. The figure shown is based on normal conditions.

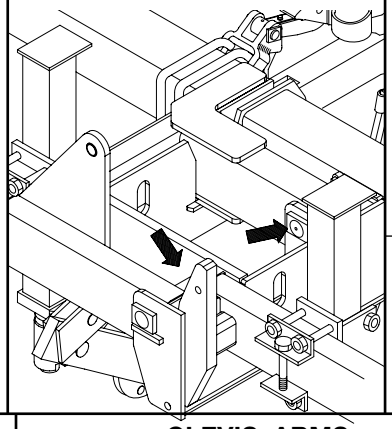
AUTO-RESET SHANK



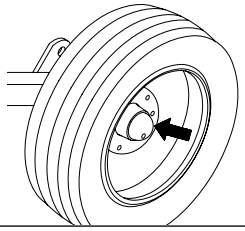
SHEAR-BOLT SHANK



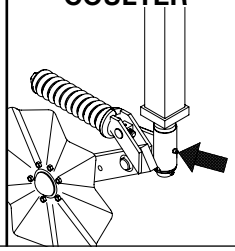
BASE WING HINGE POINTS



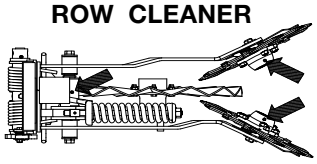
STABILIZER WHEEL HUB



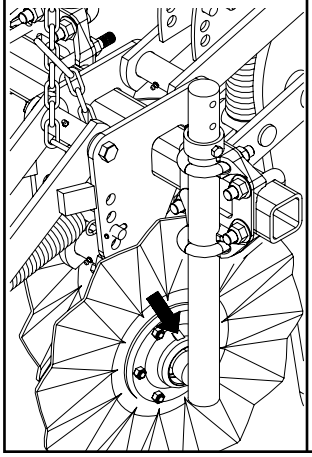
COMBO COULTER



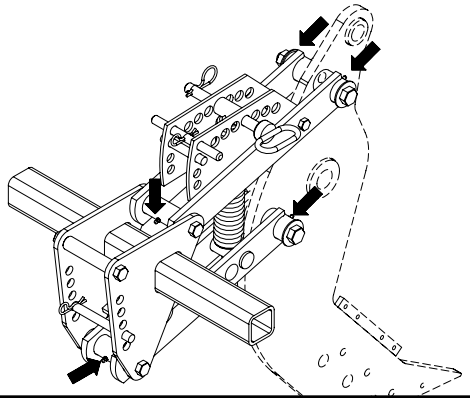
ROW CLEANER



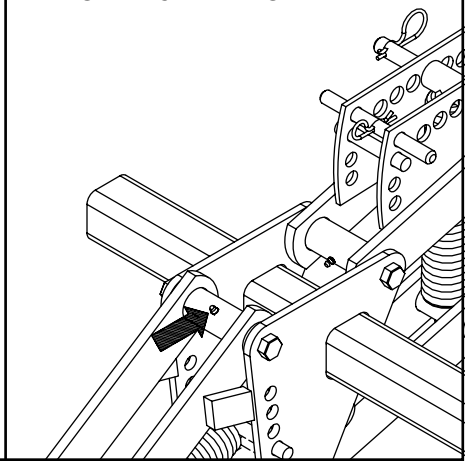
COULTER HUB



CLEVIS ARMS



ROLLING HARROW FRAME



Daily Service

Beginning of Day

NOTE: Before initial use, ensure all lubrication points have been greased.

Check all U-bolts and bolts for tightness. This is especially important during the first days of operation. See “Torque Chart” in this section.

IMPORTANT

- *Inspect mast pins for any wear or damage. Replace any worn or damaged pins.*

Perform any daily lubrication outlined in “Lubrication” in this section.

Check stabilizer tire air pressure and inflate to correct pressure, if necessary.

IMPORTANT

- *To assure level penetration of shanks, both tires must be inflated to the same pressure.*

Tighten deep till shank pivot bolts to 225-275 ft.-lbs. after the initial 50 acres to remove side play (Point A Fig 4-1).

Tighten until side-to-side play in shank is eliminated. Do not over-tighten. Over-tightening will prevent shank from freely resetting after tripping.

Before adjusting see OPERATION section for procedures.

NOTE: Re-check torque of pivot nuts on shank assembly daily during the first week of operation due to initial wear in casting. After first week, check annually.

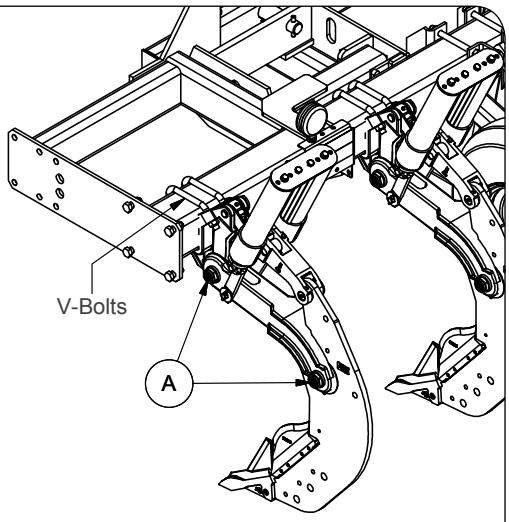


FIG. 4-1

End of Day

Clean off dirt and residue which may have accumulated on implement during operation.

Check implement for damage which could have occurred during operation, and repair.

Annual Service

Beginning of Season

WARNING

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

Check all bolts, U-bolts, and wheel bolts for tightness. Refer to “Torque Chart” in this section.

Lubricate implement (see “Lubrication” in this section).

Check air pressure in tires and inflate to correct pressure if necessary (see “Daily Service” in this section).

End of Season

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.

Perform the following before placing the implement in storage:

1. Remove dirt and residue which could cause rusting.
2. Repaint any chipped or scraped areas.
3. Lubricate implement (see “Lubrication” in this section).
4. Coat all earth moving surfaces with grease or suitable rust preventatives.
5. Inspect for damaged parts. Replace before next season.
6. Store implement inside, away from livestock.
7. Use blocking to keep implement tires and points up off bare ground.
8. Replace all worn, torn or faded decals and reflectors.

Shank Replacement - Models 312 & 332

⚠ WARNING

- **BE SURE THAT THE IMPLEMENT IS SECURELY BLOCKED TO PREVENT FALLING. FAILURE TO DO SO COULD RESULT IN INJURY OR DEATH.**
- **CHANGE ONLY ONE SHANK AT A TIME. IF PRESSURE IS RELIEVED ON ALL SHANKS, THE UNIT COULD TIP OVER BACKWARDS.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING 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 100 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

⚠ CAUTION

- **WEAR BAR IS RETAINED TO THE SHANK BY THE POINT. KEEP A HOLD OF THE WEAR BAR AS THE POINT IS REMOVED TO PREVENT PERSONAL INJURY.**

The auto-reset shank and shear bolt shank have a replaceable wear bar, point point and tip which, after a period of time, will need to be replaced (Fig 2-2). To replace these components on your machine, refer to the following guidelines:

Wear Bar Replacement\

1. With the implement attached to a tractor, find a firm, level surface and unfold the wings, if applicable. Lower the unit's jack stands until they are 1-2 inches below the points, and lower the machine to the ground so that the stands support the entire implement and all points are off the ground. Shut off the tractor engine, set the parking brake, and remove the ignition key.
2. Remove spiral pins which secure wear bar to the shank.
3. Replace with new wear bar (63560B or 63559B) and secure with new spiral pins.

NOTE: The wear bars are reversible and should be rotated or replaced often for maximum life of shank.

Point Replacement

1. Use pin punch to remove spiral pin which secures point.
2. Replace worn point with new point (67021B or 67951B) and reinstall new spiral pin. (Be sure to install new spiral pin (91144-205 or 91144-234) to securely hold point in place.)

Note: Periodically check the lower half of the shank for wear - excessive shank wear will occur if point and wear bar are not replaced (or reversed).

Shank Replacement - Model 332

Shank Spring

If the attachments are on the back of the shanks, remove them before proceeding. See the Attachment Section of this operator's manual.

⚠ WARNING

- **BE SURE THAT THE IMPLEMENT IS SECURELY BLOCKED TO PREVENT FALLING. FAILURE TO DO SO COULD RESULT IN INJURY OR DEATH.**
- **CHANGE ONLY ONE SHANK AT A TIME. IF PRESSURE IS RELIEVED ON ALL SHANKS THE UNIT COULD TIP OVER BACKWARDS.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**

NOTE: Grease all lubrication points after servicing components.

1. With the Ripper-Stripper implement attached to a tractor, find a firm, level surface and unfold the wings, if applicable. Lower the unit's jack stands until they are 1-2 inches below the points, and lower the machine to the ground so that the stands support the entire Ripper-Stripper and all points are off the ground. Shut off the tractor engine, set the parking brake, and remove the ignition key.

⚠ WARNING

- **STORED ENERGY HAZARD. WHEN SPRING PRESSURE IS RELEASED, THE SPRING TUBES WILL PIVOT AND MAY CAUSE INJURY. ALLOW SPRING CANS TO ROTATE BACKWARDS AND REST INTO POSITION.**

3. Remove all tension from springs by removing capscrews.

IMPORTANT

- *To prevent binding and possible damage, remove spring pressure equally and evenly from side-to-side.*

4. Remove capscrew holding top plate. Remove top plate and set aside.

5. Remove pin holding lower end of spring into position (use caution, springs may fall to the ground). Observe the position and location of parts along with the direction the spring guide tubes are positioned inside the springs before removing pin.

6. Remove springs, noting the washer position.

7. Install washers to the new spring assemblies into the spring tubes and fasten the spring tube brace removed in step 4. Install pin holding lower end of spring. Be sure to install all components in the same position and direction as removed in step 5.

8. Finally, when adding tension to the spring, tighten capscrew so that the top of the spring is secure against the top of the spring tube.

Shear Bolt - Model 312

Shear Bolt Replacement

The shear bolt should shear only when the shank encounters an obstacle.

⚠ WARNING

- **BE SURE THAT THE IMPLEMENT IS SECURELY BLOCKED TO PREVENT FALLING. FAILURE TO DO SO COULD RESULT IN INJURY OR DEATH.**
- **CHANGE ONLY ONE SHANK AT A TIME. IF PRESSURE IS RELIEVED ON ALL SHANKS, THE UNIT COULD TIP OVER BACKWARDS.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**

IMPORTANT

- *On the wing fold units, be sure to replace the shear-bolt on the shanks on the wing before folding the wings. Damage to the equipment could occur.*

1. With the Ripper-Stripper implement attached to a tractor, find a firm, level surface and unfold the wings, if applicable. Lower the unit's jack stands until they are 1-2 inches below the points, and lower the machine to the ground so that the stands support the entire implement and all points are off the ground. Shut off the tractor engine, set the parking brake, and remove the ignition key.

2. Remove any remaining portions of the shear bolt from the shank assembly. Inspect shear bolt holes in the shank and the pull arm weldments. Severely distorted holes will result in shorter shear bolt life and should be repaired or replaced.

IMPORTANT

- *For ease of alignment when replacing shear-bolt use a 7/16" dia. drift pin to drive through hole before installing new shear-bolt (9390-087).*

3. Align the holes and install UNVERFERTH shear bolt (9390-087) and locknut (9799). Additional shear bolts are stored in the shank assembly. Do not use a different size or different grade of shear bolt; unsatisfactory performance and or shank damage may occur. Tighten the nut to 55 ft.-lbs.

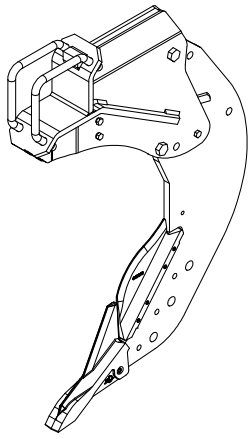


FIG. 4-2

Auto-Reset Shank Toggle Replacement - Model 332

⚠ WARNING

- **BE SURE THAT THE IMPLEMENT IS SECURELY BLOCKED TO PREVENT FALLING. FAILURE TO DO SO COULD RESULT IN INJURY OR DEATH.**
- **CHANGE ONLY ONE SHANK AT A TIME. IF PRESSURE IS RELIEVED ON ALL SHANKS, UNIT COULD TIP OVER BACKWARDS.**
- **STORED ENERGY HAZARD WHEN SPRING PRESSURE IS RELEASED, THE SPRING TUBES WILL PIVOT AND MAY CAUSE INJURY. ALLOW SPRING CANS TO ROTATE BACKWARDS AND REST INTO POSITION.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

If the attachments are on the back of the shanks, remove them before proceeding. See the Attachment Section of this operator's manual.

1. With the implement attached to a tractor, find a firm, level surface and unfold the wings, if applicable. Lower the unit's jack stands until they are 1-2 inches below the points, and lower the machine to the ground so that the stands support the entire Ripper-Stripper and all points are off the ground. Shut off the tractor engine, set the parking brake, and remove the ignition key.

3. Remove all tension from springs by removing capscrews.

IMPORTANT

- *TO PREVENT BINDING AND POSSIBLE DAMAGE, REMOVE SPRING PRESSURE EQUALLY AND EVENLY FROM SIDE TO SIDE.*

4. Remove capscrew holding top plate. Remove top plate and set aside.

5. Remove pin holding lower end of spring into position (use caution, springs may fall to ground). Note position and location of parts. Also note the direction the spring guide tubes are positioned inside springs before removing pin.

6. Remove springs, note washer position.

7. Remove spring tubes by spreading.

8. Using punch and hammer, remove roll-pin holding rear pin into position and remove rear pin.

9. Remove toggle assembly by removing front pin.

10. Replace toggle assembly.

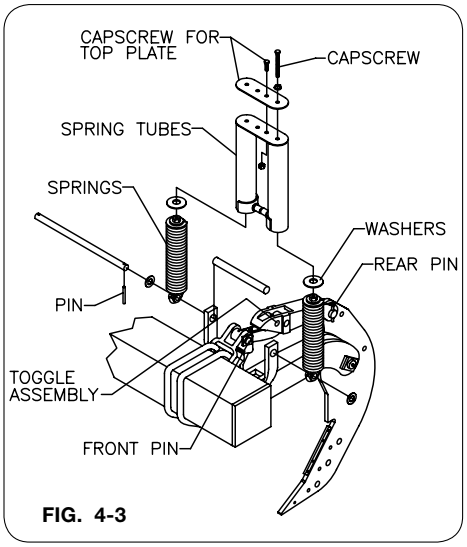


FIG. 4-3

11. Reverse procedures for reassembly. Tighten springs equally and evenly to prevent damage. Capscrew should draw the spring completely to the top of the canister.

Combo Coulter Spring Replacement All Models

The following guidelines are for replacing the spring on the coulters.

⚠ WARNING

- **BE SURE THAT THE IMPLEMENT IS SECURELY BLOCKED TO PREVENT FALLING. FAILURE TO DO SO COULD RESULT IN INJURY OR DEATH.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

⚠ CAUTION

- **SHARP EDGES ON COULTER BLADES CAN CAUSE INJURY. BE CAREFUL WHEN WORKING AROUND COULTER BLADES.**

IMPORTANT

- *The spring should only be adjusted when repairs are being made. The springs have been preset before leaving the factory.*

1. Loosen the set screw retaining the spring bolt on the coulter arm (FIG. 4-4).
2. Slowly unscrew the spring bolt which will relieve spring pressure (FIG. 4-4).
3. Once the bolt is removed, replace with new spring and re-insert bolt.

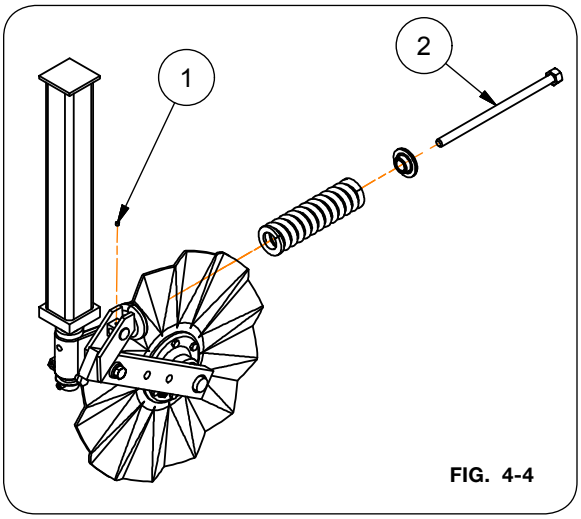


FIG. 4-4

4. Tighten bolt until a deflection of 1” is obtained on spring (FIG. 4-5).

The coulter springs are preset at the factory to 9 3/8”. This measurement is the total amount of exposed spring.

NOTE: Adjusting the spring below 9 3/8” could cause premature part failure and void any warranty considerations.

5. Tighten set screw to secure bolt.

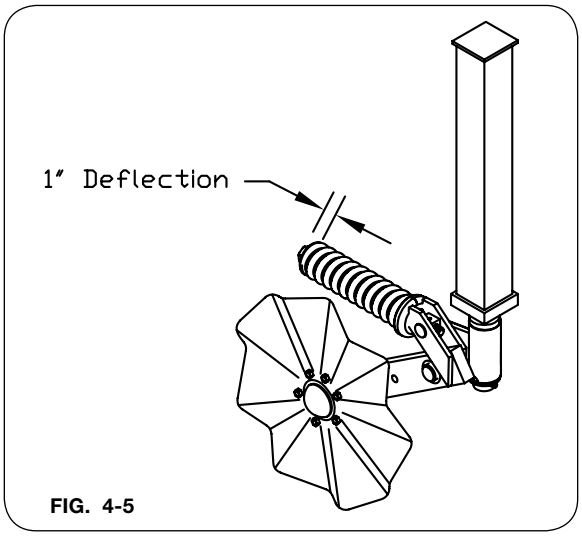


FIG. 4-5

Hub Adjustment and Replacement For Combo Coulters and Rear Coulters

Park the unit on a firm, level surface. 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.

After the first 100 acres, the hubs should be checked for tightness and wear.

⚠ WARNING

- **BE SURE THAT THE IMPLEMENT IS SECURELY BLOCKED TO PREVENT FALLING. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

⚠ CAUTION

- **BE CAREFUL WHEN WORKING AROUND THE COULTER BLADES. FAILURE TO DO SO COULD RESULT IN PERSONAL INJURY DUE TO SHARP EDGES.**

IMPORTANT

- *Do not allow dirt and debris to contaminate the hub and its internal components. Neglecting to do so could result in failure of the hub and its components due to excessive wear.*

1. Remove the blade.
2. Attach a C-clamp and apply pressure to both sides of the coulter hub. Fig. 4-6.

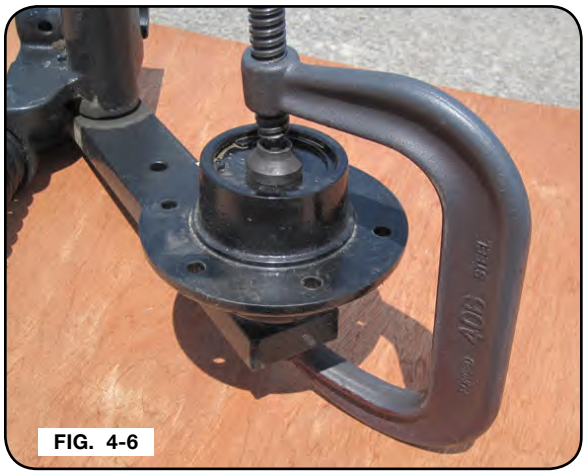


FIG. 4-6

NOTE: Early production coulters with domed hub caps are not equipped with a snap ring. Use a pry bar or screwdriver to remove the hub cap and proceed to step 4.

Hub Adjustment and Replacement For Combo Coulters and Rear Coulters (continued)

3. Remove the retaining ring and hub cap. Refer to Fig. 4-7.

4. Remove the C-ring or roll pin securing the slotted nut.

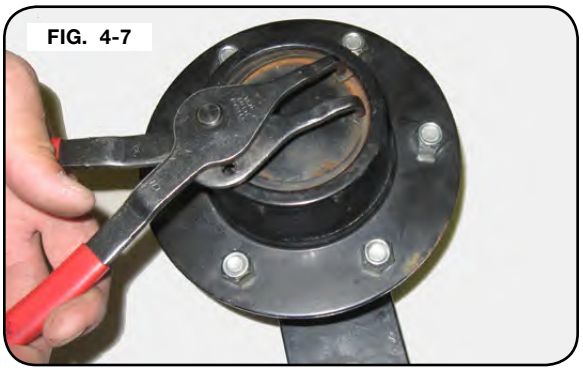


FIG. 4-7

IMPORTANT

- *Removal of the C-ring is best accomplished by using two screwdrivers or similar tools and prying on the outside ends to spread the ring. If the ring is damaged discard and replace.*

- *When removing the hub and its components, be sure to keep them free of debris and dirt. Failure to do so will result in contamination of the hub and bearing failure.*

5. Unscrew the nut and carefully remove the hub from the spindle.

6. Remove the components, clean and inspect for any damage or wear. If even the slightest imperfection exists, replace the component(s). Once the hub is dismantled, always replace the bearing and seal assembly, O-ring, and triple lip seal.

NOTE: Hubs equipped with domed hub caps will not accept the secondary triple lip seal 93987 and should only use the combination bearing with seal 901145.

IMPORTANT

- *Always replace the O-rings and seals if dismantling the hub. Failure to do so could result in premature failure of the hub and its components.*

7. Replace any damaged parts before reassembling the components. Be sure to remove any debris or dirt and repack the bearings with an SAE approved hub grease.

8. Assemble the O-ring to spindle. Lubricate seal with grease.

IMPORTANT

- *Rotate the coulter hub when torquing the slotted nut. Doing this will prevent flats from forming on the bearings.*

- *Assembly of the C-ring is best accomplished by the use of a hog ring type pliers or similar tool. After the installation be sure the C-ring will lay flat against the spindle retaining the nut to allow for proper installation of the hub cap.*

9. While rotating hub, slide the hub, seal, and bearing onto spindle. Make sure not to damage seal. Be sure outer bearing and washer slide on the spindle and bearing seats in the cup.

NOTE: Press seal into hub with metal side of seal facing out on hub.

Hub Adjustment and Replacement For Combo Coulters and Rear Coulters (continued)

10. Assemble nut to spindle. While rotating hub, tighten nut to 40 Ft.-Lbs. DO NOT rotate hub again until step 14.

11. Back off nut until it becomes loose without rotating the hub.

12. Finger tighten nut without rotating the hub.

13. Tighten nut to align the next notch with hole in the spindle.

14. Check for looseness in the hub. It should not wiggle. If it does, tighten the nut one more slot and repeat this step.

15. Check hub rotation for excessive drag. There should be slight resistance. if there is cexcessive drag, repeat procedures start with step 10.

16. Install C-ring and verify it has clearance to the hub cap. Ring should be tight to nut/spindle.

17. Add moly scent 2 grease through hub zerk until grease extends above the washer all around the cavity. Also add grease to pivot arm zerk.

18. install O-ring. Reinstall the hub cap, retaining ring and blade.

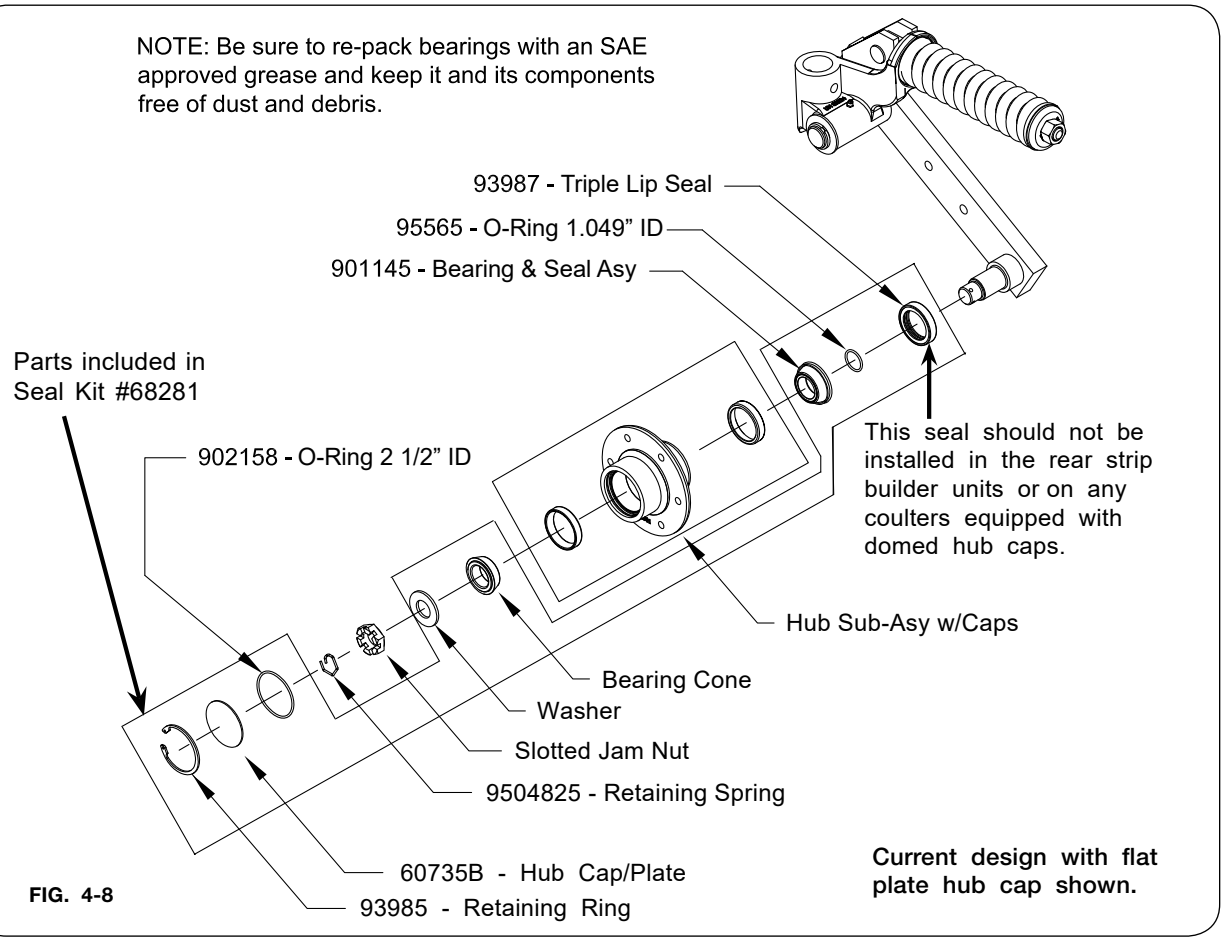


FIG. 4-8

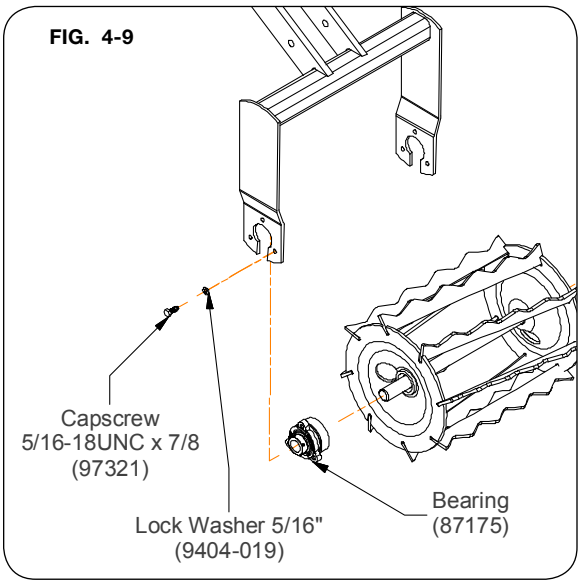
Replacing Bearings In Rolling Harrow Baskets

⚠ WARNING

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

1. Lower implement to the ground and securely block to prevent tipping, or moving. Shut off tractor, set parking brake, and remove ignition key.
2. Install block under each basket to support weight of basket.
3. Remove the three 5/16-18UNC carriage bolts or capscrews and the clip which hold the bearing on.
4. Use a crowbar to pry the end of the basket out of the basket frame slot.
5. Loosen the set screw in the lock collar. Loosen lock collar by turning with punch in direction of basket travel.
6. Place a punch through the hole in the end plate on the basket and use a hammer to remove the bearing. If the bearing is still tight on the shaft, use a bearing puller to remove the bearing.
7. File off any burrs left on the shaft. Finish with a strip of emery cloth. Make sure bearing will slide on the shaft.
8. Slide a new bearing (87175) on the shaft with the lock collar on the outside (FIG. 4-9).
9. Pry the end of the basket into the slot of the frame (Fig 4-9).
10. Assemble the new 5/16-18 capscrews through the holes in the frame and into the bearing housing (FIG. 4-9).

FIG. 4-9



IMPORTANT

- *Tighten screws in bearing before tightening setscrew in lock collar. Tighten lock collar on shaft in direction of rotation. Tighten screws according to Torque Chart, in this section.*

Use UNVERFERTH bearing repair kit (87181) with triple lip seals for maximum life.

Adjusting Wing Down Pressure In The Field For Units with Flex Hydraulic Option Only

⚠ WARNING

- **RELIEVE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE TRACTOR OPERATOR'S MANUAL FOR PROPER PROCEDURES.**
- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING THE IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

Due to many field factors, it may be necessary to adjust wing down pressure.

The adjustment Allen screw is located on top of pressure cartridge in valve PR port, can increase or decrease pressure as needed (Fig. 4-10):

IF WINGS DO NOT MAINTAIN SHANK DEPTH-INCREASE HYDRAULIC OPERATING PRESSURE. (tighten screw 1/4 turn clockwise).

IF CENTER SECTION RAISES OUT OF THE GROUND, OR WINGS DO NOT FLOAT IN FIELD, DECREASE HYDRAULIC OPERATING PRESSURE. (loosen screw 1/4 turn counter-clockwise).

Pressure setting can be increased (screw turned in) or decreased (screw turned out) at a rate of 125 PSI –PER QUARTER TURN. Only adjust the screw 1/4 turn each time. Check machine in field performance after each adjustment/repeat if necessary.

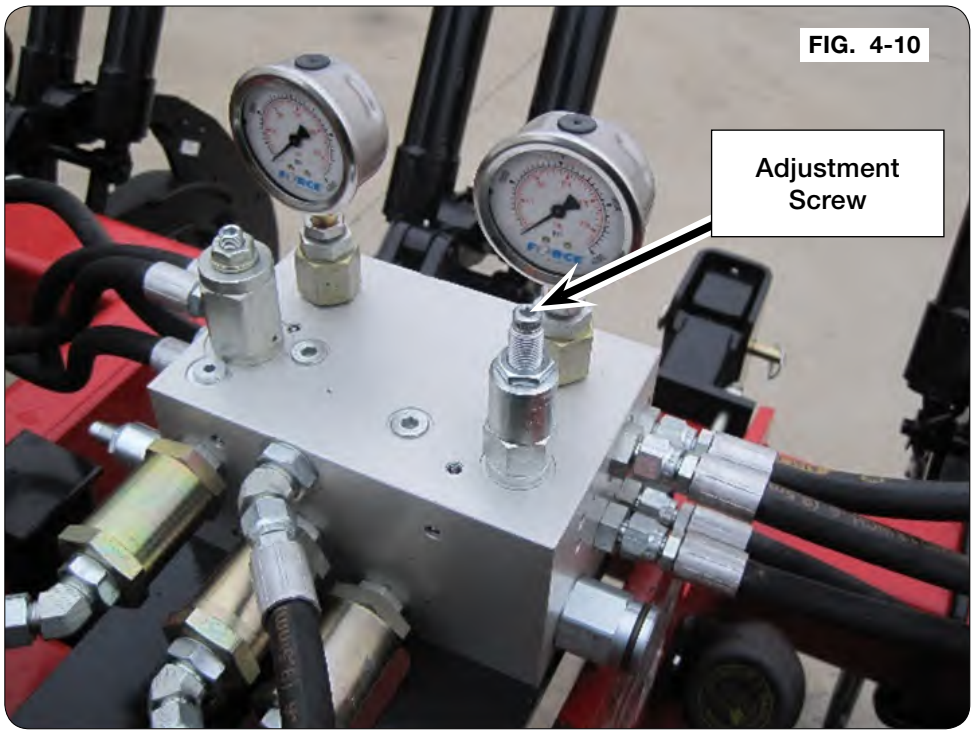


FIG. 4-10

Optional Row Cleaner Adjustments

Adjustments

The row cleaner features adjustable spring down pressure. The row cleaner wheels can also be adjusted front-to-rear, or adjusted closer to/ farther from the coulter blade.

Adjustable Spring Pressure

NOTE: Run coulter blade depth 3”-5”. Set row cleaner wheel down pressure to adequately sweep residue aside while minimizing surface soil movement.

1. Insert a 1/2” drive ratchet into the square hole in the pivot pipe as shown in FIG 4-11. Turn the ratchet counter-clockwise to increase spring down pressure. Position locking plate into tooth gear to retain setting as shown in FIG. 4-12.

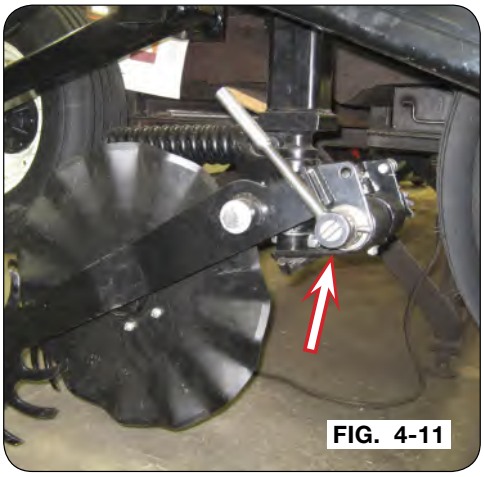


FIG. 4-11

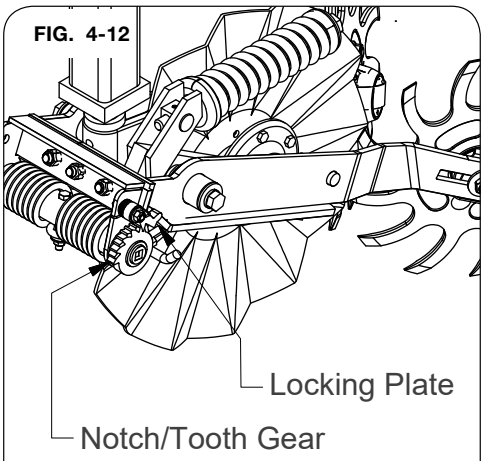


FIG. 4-12

Loading On Row Cleaner Wheels	
Notch #1	0 lbs.
Notch #2	37 lbs.
Notch #3	63 lbs.
Notch #4	83 lbs.
Notch #5	100 lbs.

Front-To-Rear Adjustment

Wavy Coulter Blades

Set the row cleaner wheels as far back as possible for adequate sweeping of residue as shown in FIG. 4-13.

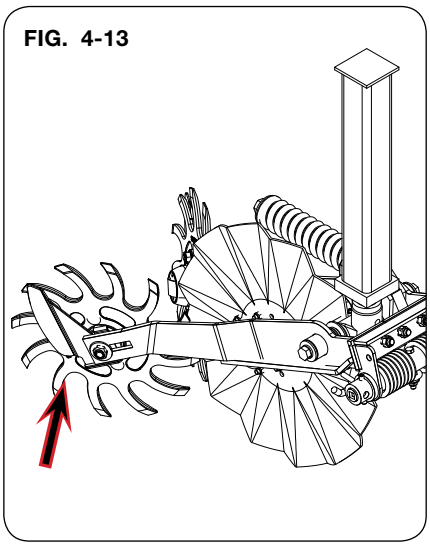


FIG. 4-13

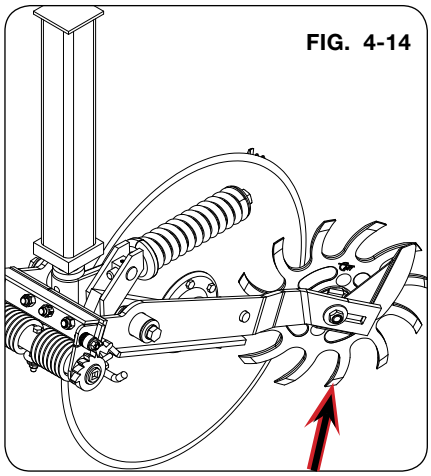


FIG. 4-14

Tooth Wheel Hub Adjustment and Replacement

After the first 100 acres, the hubs should be checked for tightness and wear.

⚠ WARNING

- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE MACHINE IS SECURELY BLOCKED.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING THE IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

⚠ CAUTION

- **BE CAREFUL WHEN WORKING AROUND COULTER BLADES. FAILURE TO DO SO COULD RESULT IN PERSONAL INJURY DUE TO THE SHARP EDGES.**

IMPORTANT

- *Do not allow dirt and debris to contaminate the hub and its internal components. Neglecting to do so could result in failure of the hub and its components due to excessive wear.*

1. Check the tooth wheel hub and bearing for looseness or wobble by gripping the ends of the blade. Rotate and laterally push and pull on the coulter blade. A tight hub will have no wobble and will rotate smoothly with a slight resistance.
2. If there is wobble in the hub, the hub must be tightened to the spindle. To do this, remove hub cap (9501381). vTorque nut (9397-016) to 20 ft.-lbs. and back off 1/4 of a turn. Apply a light coating of thread sealant to the O.D. of the hub cap and tighten onto the hub.
3. After tightening, retest the hub for wobble by repeating Step #1. If wobble still exists, continue with the following guidelines.

   A. Remove the hub cap and jam nut from the spindle.

IMPORTANT

- *When removing the hub and its components, be sure to keep them free of debris and dirt. Failure to do so will result in contamination of hub and bearing failure.*

   B. Remove the slotted nut, bearing spacer, machine key, and the hub from the spindle.

   C. Remove the components, clean, and inspect for any damage or wear. If even the slightest imperfection exists, replace the component(s). Once the hub is dismantled, always replace the bearing and seal assembly, o-ring, and triple lip seal.

IMPORTANT

- *Always replace the seal if dismantling the hub. Failure to do so could result in premature failure of hub and its components.*

   D. Replace any damaged parts before reassembling the components. Be sure to remove any debris or dirt and repack bearings with an SAE approved hub grease.

   E. If applicable, press bearing cup and retaining ring together into the hub until the retaining rings snap into place.

Tooth Wheel Hub Adjustment and Replacement (continued)

F. Assemble seal and bearings into hub and position onto spindle.

G. Apply grease to the I.D. of the seal (95680). While rotating the hub, place the hub on the spindle and seal cover (68284) making sure not to damage the seal. Assemble the washer and nut. Torque the jam nut (9397-016) to 20 ft.-lbs. and back off 1/4 of a turn. Apply a light coating of thread sealant to the O.D. of the hub cap and tighten onto the hub.

IMPORTANT

- *Rotate coulter hub when torquing slotted nut. Doing this will prevent flats from forming on bearings.*

H. To replace a worn tooth wheel (67280B), remove jam nut (9397-015) and washer (9405-098). This will release the hub/spindle assembly from the mounting plate (68067B left-hand or 68069B right-hand).

I. Remove the four locknuts (94981) and carriage bolts (9388-103). Replace and reinstall tooth wheel (67280B) and hardware.

J. Reinstall the hub/spindle assembly onto the mounting plate using washer (9405-098) and jam nut (9397-015). Position it centered in the slot. Torque the jam nut to 90-110 ft.-lbs.

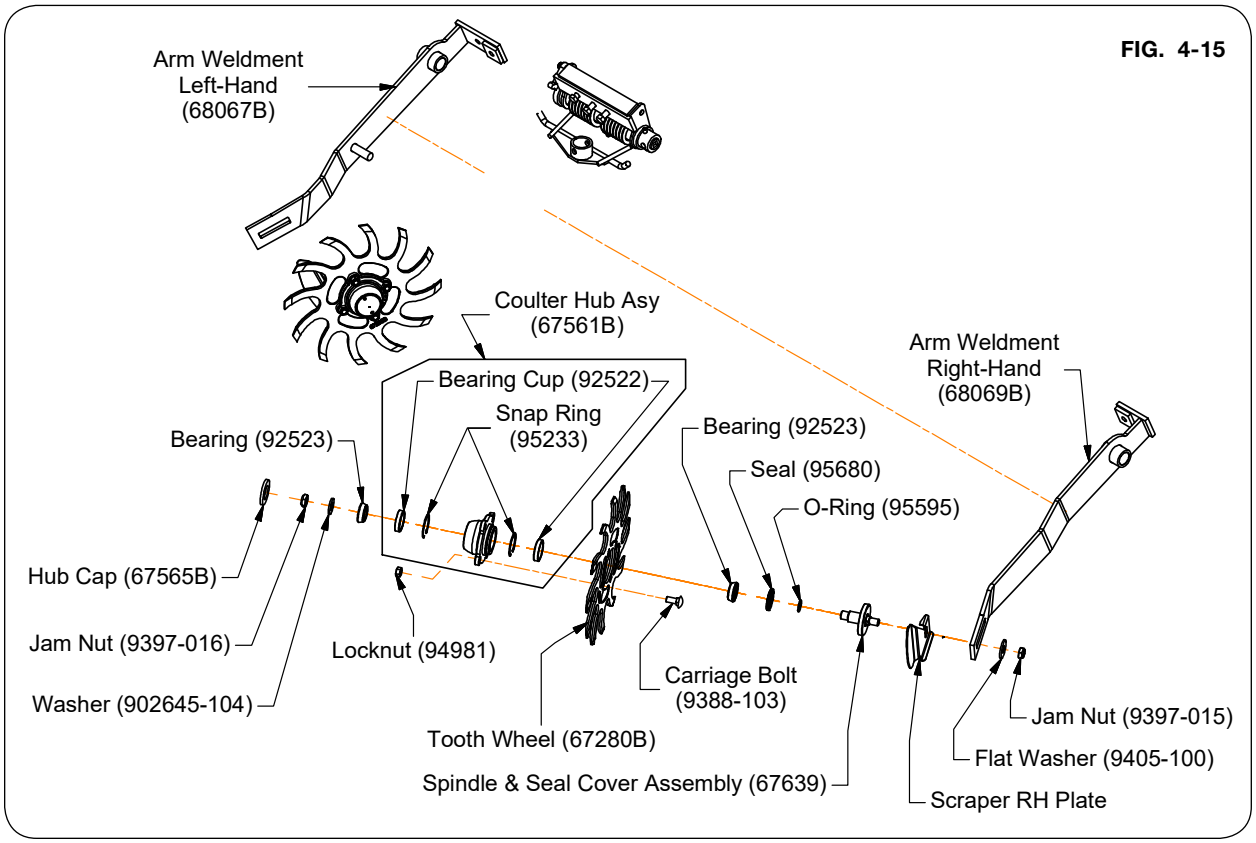


FIG. 4-15

Troubleshooting

PROBABLE CAUSE	CORRECTION
Poor Penetration	
Frame is not level	See the OPERATION section "Leveling Frame" for instructions
Ground is too hard for hitch control setting	Adjust the hitch control position. See the OPERATION section "Load and Depth control"
Worn or dull tool points	Replace with new tool points
Plugging	
Coulters are not spaced correctly	See "Overhead Layouts" for correct spacing of shanks in SETUP section
Poor field conditions	Wait until the field is dry enough to till properly without excessive slippage
Machine not level	Level Machine
Coulters are not penetrating deep enough	Lower the coulters
Coulter blades not cutting residue	Wait until the field is dry enough to allow blades to cut through residue
Implement Running Crooked In Field	
Shanks are not spaced correctly	See "Overhead Layouts" for correct spacing of the shanks
Stabilizer wheels are not adjusted equally from side-to-side	Check the side-to-side adjustment and correct
Tractor tires are not properly spaced or equally inflated	Find the cause and correct. See OPERATION section "Wheel Spacing"
Tractor 3-point lift linkage is not adjusted for level operation	Re-level Ripper-Stripper frame. See OPERATION section "Leveling Frame"
Tractor 3-point lift linkage lateral float pins are not set properly	Check the position of the lateral float pins. See OPERATION section "Left Link Lateral Float"

Troubleshooting (continued)

PROBABLE CAUSE	CORRECTION
Shanks Not Resetting Into Ground After Tripping	
Ground conditions hard or the unit is being operated very deep	While moving, raise Ripper-Stripper slightly to reset, then lower and resume operation
Pivot nuts on front and rear of pull arm are overtightened	Refer to OPERATION section for adjustment procedure
Shank Leading Off Row Center	
Main pivots not properly tightened	Tighten until side-to-side play in shank is eliminated. Take care not to over-tighten, not allowing shank to freely reset after tripping.
Excessive Soil Disturbance	
Main frame not level, running downhill	Level main frame, run up to 5° uphill
Coulters are not properly aligned with shanks	Re-align/position coulter to run centered with shank
Coulters are not cutting deep enough	Lower coulters to cut deeper Install larger diameter blades
Shanks are operating at shallow depths	Operate at depth to get under hardpan. This may require larger tractor or smaller tool.
Dry soil conditions	Wait for additional rain
Running implement too fast	Slower speeds create less disturbances
Specific soils may create more surface disturbance with flat point	Install raised-center points for less surface disturbance
Too much sealing	Decrease down pressure, decrease coulter angle, raise coulters, or move coulters apart
Not enough sealing	Increase down pressure, increase coulter angle, increase coulter depth, or move coulters closer
Coulter not moving	Decrease coulter angle, decrease spring pressure, decrease coulter depth, or move coulters apart

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 applicable torque value shown in table. Start all nuts/bolts by hand to prevent cross threading. Torque nuts in the recommended sequence as shown in Fig. 4-16.

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

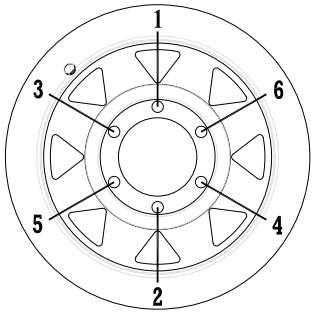


Fig. 4-16 - 6 Bolt

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.**

TIRE	INFLATION
7.60 x 15 - 8 Ply	max. 52 PSI
9.5 x 15 - 8 Ply	max. 44 PSI
12.5 x 15 - 10 Ply	max. 44 PSI

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:

Firestone	www.firestoneag.com Phone 800-847-3364
Carlisle	www.carlisletire.com Phone 800-260-7959 Fax 800-352-0075
Greenball	www.greenball.com Phone 866-767-9637

Complete Torque Chart

U-BOLTS - GRADE 7

Torque 3/4”-10UNC U-Bolts to 240 Ft.-Lbs.
Torque 3/4”-10UNC Shank Mount V-bolts to 240 Ft.-Lbs.

EXTENSION HARDWARE

Model 122 - Vertical Bolts: Torque 3/4”-10UNC to 240 ft.-lbs.
Model 122 - Horizontal Bolts: Torque 7/8”-9UNC to 240 ft.-lbs.

PULL-ARM HARDWARE

Model 122 Pull Arm Front Pin: Locknut 1 1/2”-12UNF torque to 250-300 ft.-lbs.
Model 122 Pull Arm Rear Screws: Capscrews (1”-8UNC x 2” Grade 8) torque to 500-520 ft.-lbs.

Model 132 Pull Arm Pins: Thin Collar Locknut 1 1/4”-12UNF torque to 225-275 ft.-lbs.

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.*

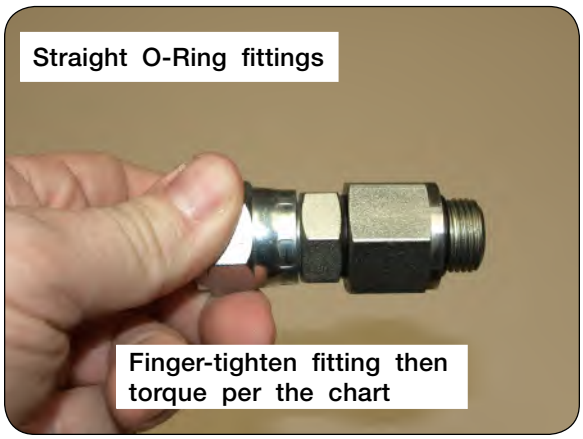
Hydraulic Fittings

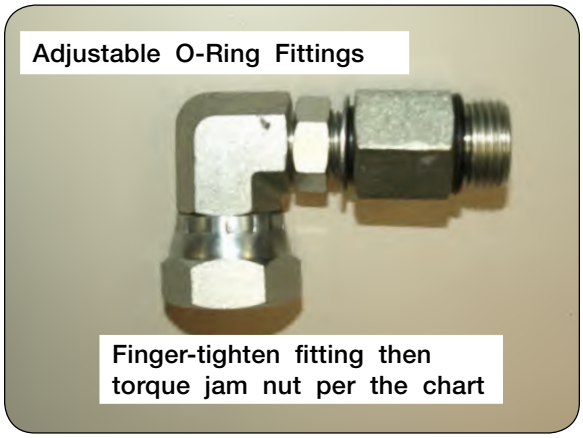
Tightening O-Ring Fittings

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





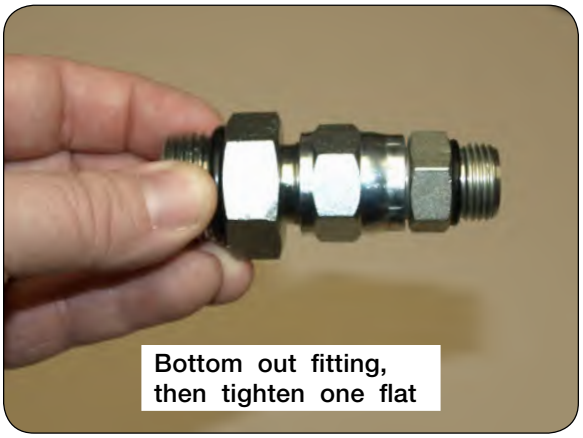
Hydraulic Fittings

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

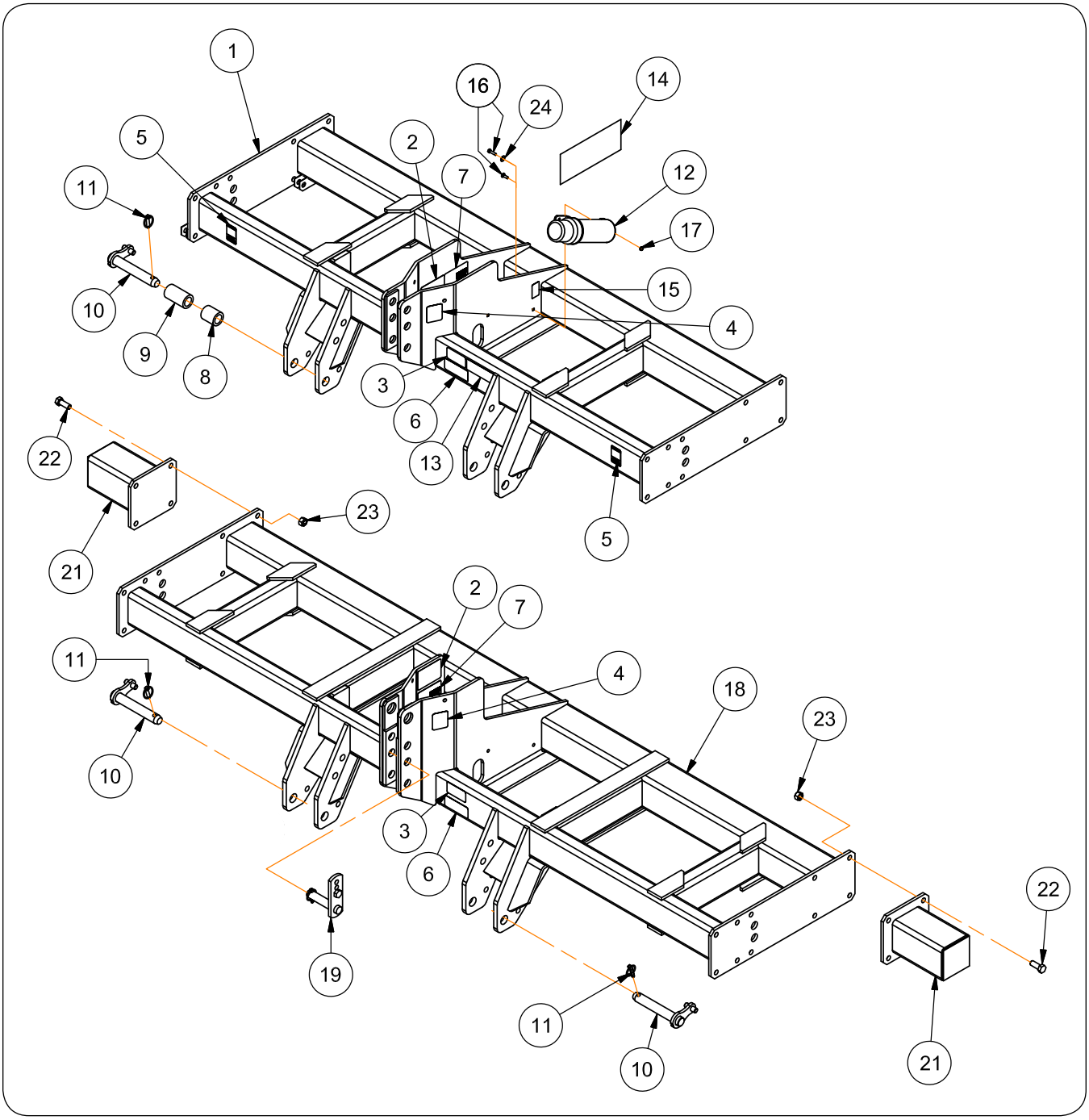

Bottom out fitting, then tighten one flat

SECTION V
Parts

FOR 12 SHANK 36" SPACING MODEL 332 RIPPER-STRIPPER,
WING FOLD MODIFICATION KIT #69595B
PLEASE REFER TO YOUR INSTRUCTION SHEET #69594.

Rigid Main Frame — 2 & 4 Shank

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



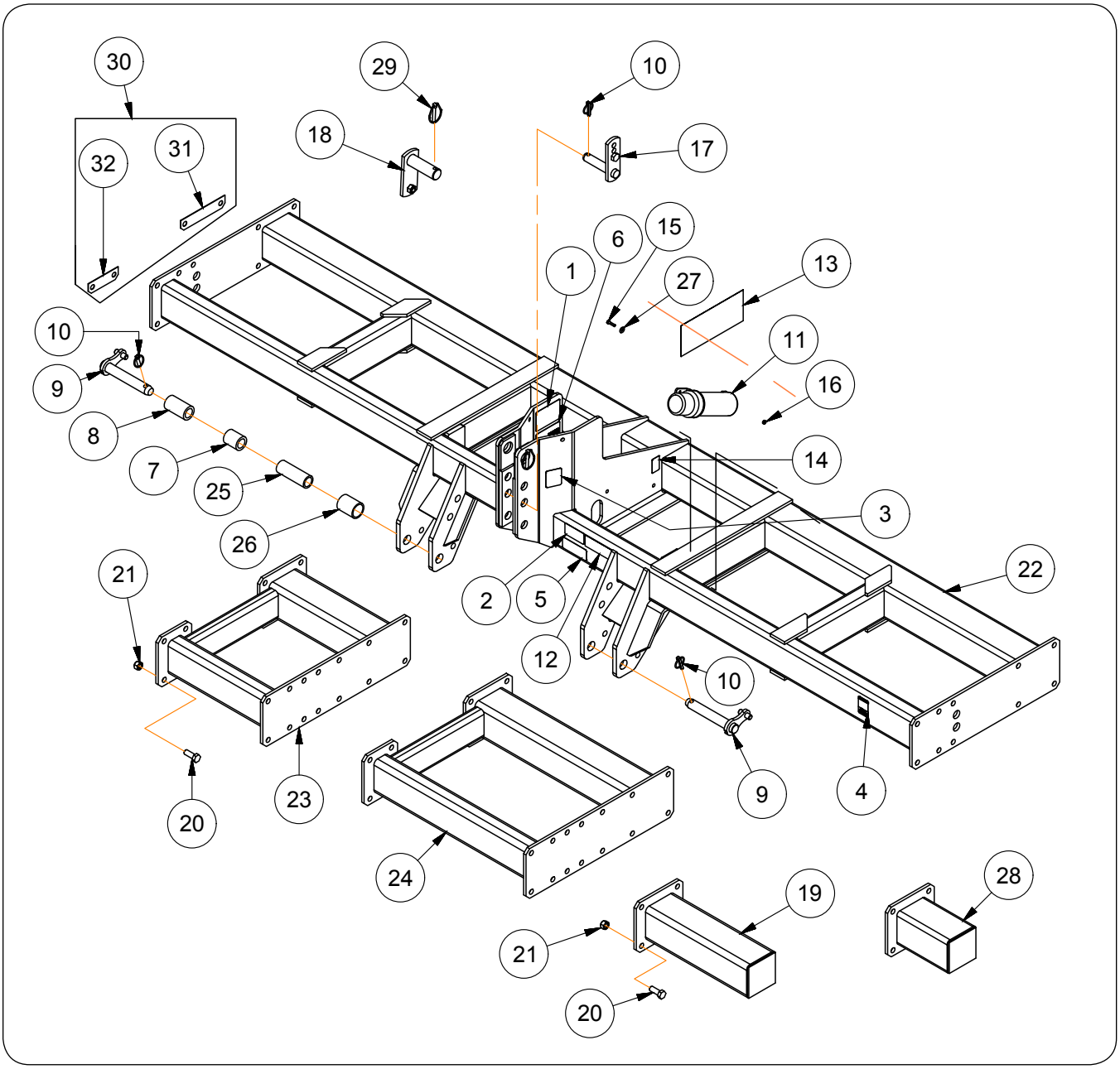
Rigid Main Frame — 2 & 4 Shank

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

ITEM	PART NO.	DESCRIPTION	2 SHANK QTY			4 SHANK QTY			
			36"	38"	40"	30"	36"	38"	40"
1	63845G	Main Frame (w/Decals) =Green=	1	1	1	1	-	-	-
	63845R	Main Frame (w/Decals) =Red=							
2	9003164	Decal, DANGER (Compressed Spring)	2	2	2	2	2	2	2
3	97961	Decal, WARNING (Read & Understand)	1	1	1	1	1	1	1
4	97972	Decal, WARNING (Crush Hazard)	2	2	2	2	2	2	2
5	97973	Decal, WARNING (Crush Hazard)	2	2	2	2	2	2	2
6	99507	Decal, WARNING (Falling Equipment)	1	1	1	1	1	1	1
7	99850	Decal, DANGER (Tripped Shanks)	2	2	2	2	2	2	2
8	61315	Spacer Tube	2	2	2	2	2	2	2
9	65285	Bushing 2 1/2" Dia. x 4/Lower Spacer CAT III	2	2	2	2	2	2	2
10	69695	Pin Weldment/Anti-Rotational Pin	2	2	2	2	2	2	2
11	95031	Klik-Pin 7/16" Dia. x 2"	3	3	3	3	3	3	3
12	900552	Manual Holder	1	1	1	1	1	1	1
13	9500592	Decal, MODEL 312	2	2	2	2	2	2	2
	9500593	Decal, MODEL 332							
14	9500594	Decal, RIPPER-STRIPPER	2	2	2	2	2	2	2
15	91605	Decal, FEMA	1	1	1	1	1	1	1
16	9388-025	Carriage Bolt 5/16-18UNC x 1	2	2	2	2 Auto-Reset ONLY	-	-	-
	9390-031	Capscrew 5/16-18UNC x 1 1/4	-	-	-	2 Shear-Bolt ONLY	2	2	2
17	9397-008	Elastic Jam Nut 5/16-18UNC	2	2	2	2	2	2	2
18	67430G	Main Frame (w/Decals & Mast Pins) =Green=	-	-	-	-	1	1	1
	67430R	Main Frame (w/Decals & Mast Pins) =Red=							
19	67188B	Mast Pin Asy 1 1/4" Dia.	1	1	1	1	1	1	1
20	9936	Locknut 1/4-20UNC	4	4	4	4	4	4	4
21	62567G	Extension Tube 11' Weldment =Green=	2	2	2	2 Auto-Reset ONLY	2	2	2
	62567R	Extension Tube 11' Weldment =Red=							
22	9390-145	Capscrew 3/4-10UNC x 2" (Grade 5)	8	8	8	-	8	8	8
23	9802	Locknut 3/4-10UNC	8	8	8	-	8	8	8
24	9405-070	Flat Washer 5/16" USS	-	-	-	2 Shear-Bolt ONLY	2	2	2
	97301	12 oz. Crimson Red Spray Touch-Up Paint	-	-	-	-	-	-	-
	97015	12 oz. Implement Green Spray Touch-Up Paint							

Rigid Main Frame — 6 & 8 Shank

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



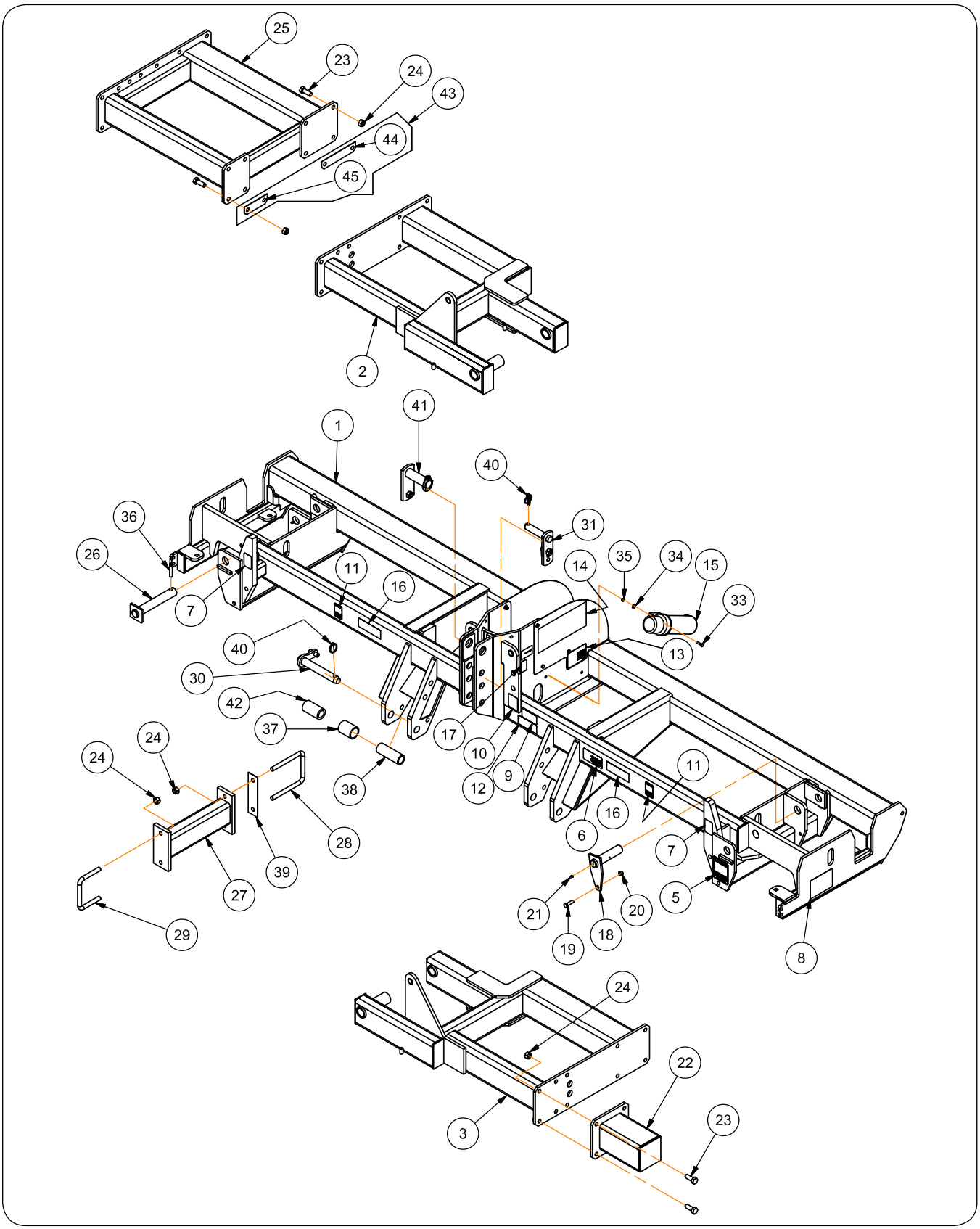
Rigid Main Frame — 6 & 8 Shank

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

ITEM	PART NO.	DESCRIPTION	6 SHANK			8 SHANK
			30"	36"	38"	30"
1	9003164	Decal, DANGER (Compressed Spring)	2	2	2	2
2	97961	Decal, WARNING (Read & Understand)	1	1	1	1
3	97972	Decal, WARNING (Crush Hazard)	2	2	2	2
4	97973	Decal, WARNING (Crush Hazard)	2	2	2	2
5	99507	Decal, WARNING (Falling Equipment)	1	1	1	1
6	99850	Decal, DANGER (Tripped Shanks)	2	2	2	2
7	61315	Spacer Tube	2	2	2	2
8	65285	Bushing 2 1/2" Dia. x 4/Lower Spacer CAT III	2	2	2	2
9	69695	Pin Weldment/Anti-Rotational Pin	2	2	2	2
10	95031	Klik-Pin 7/16" Dia. x 2"	3	3	3	3
11	900552	Manual Holder	1	1	1	1
12	9500592	Decal, MODEL 312	2	2	2	2
	9500593	Decal, MODEL 332				
13	9500594	Decal, RIPPER-STRIPPER	2	2	2	2
14	91605	Decal, FEMA	1	1	1	1
15	9390-031	Capscrew 5/16-18UNC x 1 1/4	2	2	2	2
16	9397-008	Elastic Jam Nut 5/16-18UNC	2	2	2	2
17	67188B	Mast Pin Asy 1 1/4" Dia.	1	1	1	1
18	67187B	Pin Sub Assembly/Mast Pin Asy 1 3/4" Dia.	1	1	1	1
19	65623G	Extension Tube 22' Weldment =Green=	2	-	-	-
	65623R	Extension Tube 22' Weldment =Red=				
20	9390-145	Capscrew 3/4-10UNC x 2" (Grade 5)	-	16	16	16
21	9802	Locknut 3/4-10UNC	-	16	16	16
22	67437G	Main Frame (w/Decals & Mast Pins) =Green=	1	1	1	1
	67437R	Main Frame (w/Decals & Mast Pins) =Red=				
23	64032G	Extension Frame 19" Weldment =Green=	-	2	2	-
	64032R	Extension Frame 19" Weldment =Red=				
24	63184G	Extension Frame 31" Weldment =Green=	-	-	-	2
	63184R	Extension Frame 31" Weldment =Red=				
25	65284	Bushing 2" Dia. x 5 11/16/Lower Spacer CAT IV	2	2	2	2
26	64428	Bushing 2 1/2" Dia. x 3 1/8/Lower Spacer CAT IV	2	2	2	2
27	9405-070	Flat Washer 5/16" USS	2	2	2	2
28	62567G	Extension Tube 11" Weldment =Green=	2	2	2	2
	62567R	Extension Tube 11" Weldment =Red=				
29	9501028	Lynch Pin	1	1	1	1
30	67870	Shim Kit (Includes items 42 & 43)	1	1	1	1
31	67868	Shim 2 x 9 1/4	1	1	1	1
32	67869	Shim 2 x 6 1/4	1	1	1	1
	97301	12 oz. Crimson Red Spray Touch-Up Paint	-	-	-	-
	97015	12 oz. Implement Green Spray Touch-Up Paint				

Folding Main Frame — 6 & 8 Shank

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



Folding Main Frame — 6 & 8 Shank

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

ITEM	PART NO.	DESCRIPTION	ITEM	NOTES
1	69222G	Main Frame, Flex w/Decals =Green=	1	
	69222R	Main Frame, Flex w/Decals =Red=		
2	68404G	Wing Base 45" (Right-Hand) =Green=	1	
	68404R	Wing Base 45" (Right-Hand) =Red=		
3	68405G	Wing Base 45" (Left-Hand) =Green=	1	
	68405R	Wing Base 45" (Left-Hand) =Red=		
4	9003164	Decal, DANGER "Spring..."	2	
5	902221	Decal, DANGER "Electrocution Hazard"	1	
6	95445	Decal, WARNING! "Do not use hands..."	1	
7	97048	Decal, WARNING! "Pinch Points..."	2	
8	97337	Decal, WARNING! "Never Stand..."	2	
9	97961	Decal, WARNING! "Read & Understand..."	1	
10	97972	Decal, WARNING! "Crushing Hazard..."	2	
11	97973	Decal, WARNING! "Crushing..."	2	
12	99507	Decal, WARNING! "Falling Equipment..."	1	
13	99850	Decal, DANGER! A tripped...	2	
14	9500594	Decal, RIPPER-STRIPPER	2	
15	900552	Manual Holder	1	
16	9500592	Decal, MODEL 312	2	
	9500593	Decal, MODEL 332		
17	91605	Decal, FEMA	1	
18	63223	Pin Weldment 1 5/8" Dia. x 7 1/4	2	
19	9390-102	Capscrew 1/2-13UNC x 1 3/4"	2	Grade 5
20	9800	Locknut 1/2-13UNC	2	
21	91160	Grease Zerk	2	
22	62567G	Extension Tube 11" =Green=	2	For 8 Shank 30"
	62567R	Extension Tube 11" =Red=		
23	9390-145	Capscrew 3/4-10UNC x 2"	24	Grade 5
24	9802	Locknut 3/4-10UNC	32	
25	63345G	Extension Frame 31" =Green=	2	For 8 Shank 36, 38, 40"
	63345R	Extension Frame 31" =Red=		
26	63220	Pin Weldment 1 5/8" Dia. x 10 3/4	2	
27	61303G	Support Tube 18" =Green=	2	
	61303R	Support Tube 18" =Red=		
28	94090	U-Bolt 3/4-10UNC x 8"	2	
29	94012	U-Bolt 3/4-10UNC x 5"	2	
30	68108	Pin Weldment 1 7/16" Dia. x 10 3/8"	2	
31	67188B	Mast Pin Assembly 1 1/4" Dia. x 7 1/2	1	
32	N/A	N/A	N/A	

(Continued on next page)

Folding Main Frame — 6 & 8 Shank (continued)

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

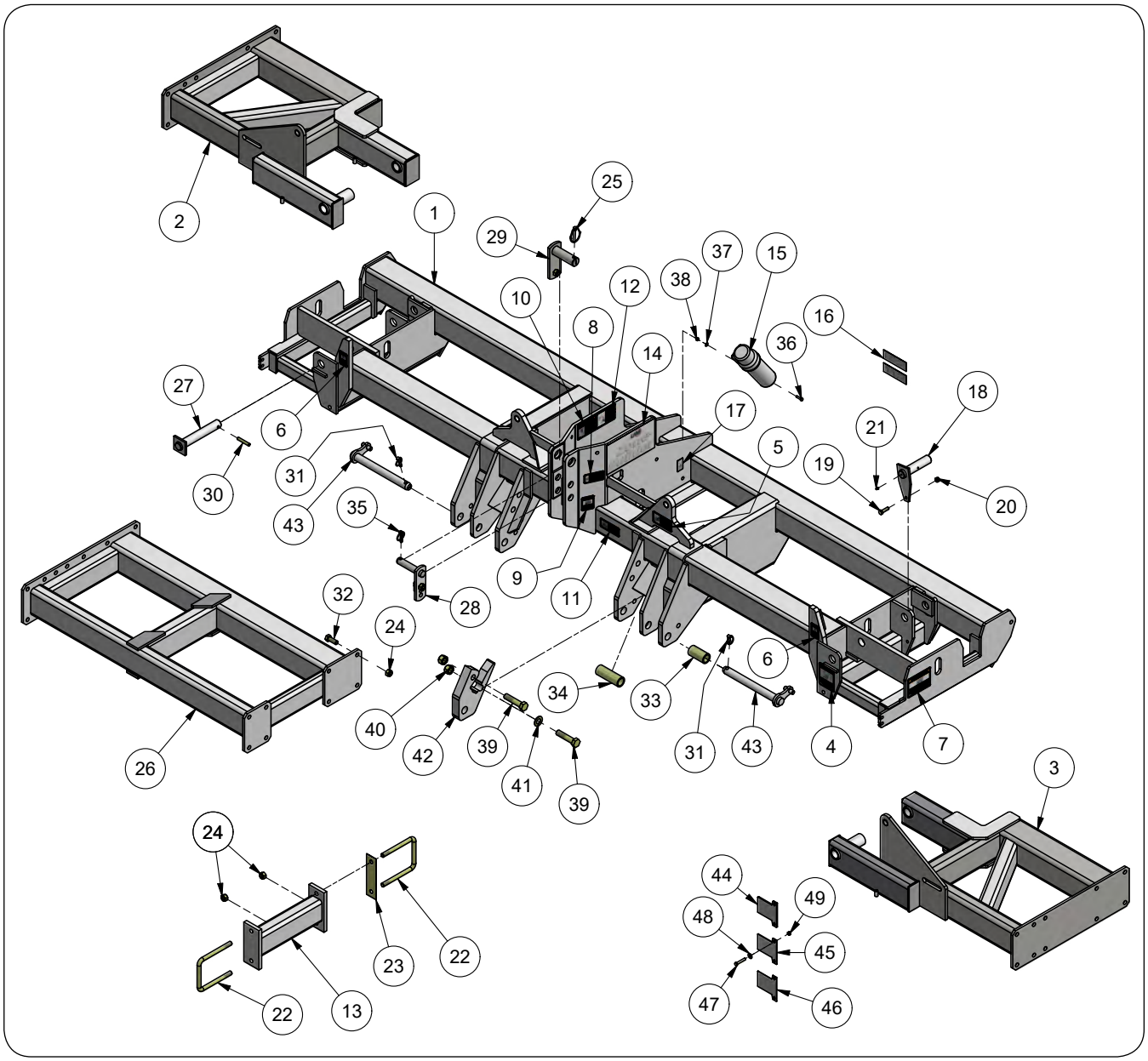
ITEM	PART NO.	DESCRIPTION	ITEM	
33	9390-031	Capscrew 5/16-18UNC x 1 1/4"	2	Grade 5
34	9405-070	Flat Washer 5/16	2	
35	9397-008	Elastic Nut 5/16-18UNC	2	
36	91144-239	Spiral Pin 1/2 x 3"	2	
37	64428	Bushing 2 1/2" OD x 3 1/8"	2	
38	65284	Bushing 2" OD x 5 11/16" (Lower CAT IV)	2	
39	62643	Shim	2	
40	95031	Lynch/Klik Pin 7/16 x 2"	3	
41	67187B	Mast Pin 1 3/4" Dia. w/Lynch Pin	1	
	9501028	Lynch Pin	1	
42	65285	Lower Bushing 2" OD x 3 7/8"	2	
43	67870	Shim Kit (Includes items 59 & 60)	2	
44	67868	Shim 2 x 9 1/4	1	
45	67869	Shim 2 x 6 1/4	1	
	97301	12oz. Crimson Red Spray Touch-Up Paint	-	
	97015	12oz. Implement Green Spray Touch-Up Paint	-	

Notes

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

Folding Main Frame — 12 Shank 30" Spacing

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



ITEM	PART NO.	DESCRIPTION	QTY.	NOTES
1	67432G	Main Frame w/Decals =Green=	1	
	67432R	Main Frame w/Decals =Red=		
2	67427G	Wing Base (Right-Hand) =Green=	1	
	67427R	Wing Base (Right-Hand) =Red=		
3	67428G	Wing Base (Left-Hand) =Green=	1	
	67428R	Wing Base (Left-Hand) =Red=		
4	902221	Decal, DANGER	1	
5	95445	Decal, WARNING! Do not use hands...	1	
6	97048	Decal, WARNING! Pinch Points...	1	
7	97337	Decal, WARNING! Never Stand...	2	
8	97961	Decal, WARNING! Read & Understand...	1	

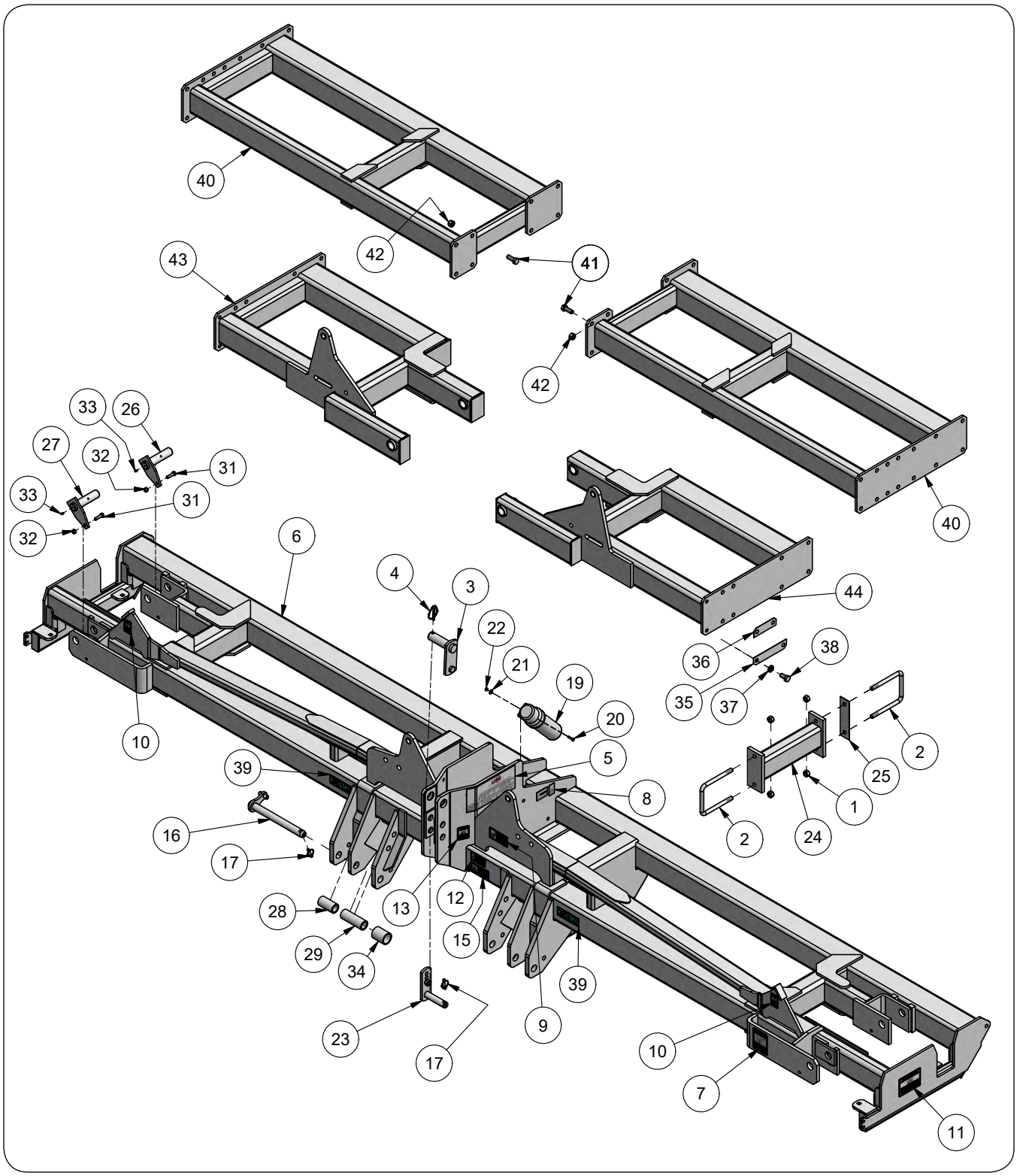
Folding Main Frame — 12 Shank 30” Spacing

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

ITEM	PART NO.	DESCRIPTION	QTY.	NOTES
9	97972	Decal, WARNING! Crushing Hazard...	1	
10	9003164	Decal, DANGER! Spring...	1	
11	99507	Decal, WARNING! Falling Equipment...	1	
12	99850	Decal, DANGER! A tripped...	1	
13	61303G	Support Tube 18” =Green=	2	
	61303R	Support Tube 18” =Red=		
14	903208	Decal, ZONE-BUILDER	1	
15	900552	Manual Holder	1	
16	9500592	Decal, MODEL 312	1	
	9500593	Decal, MODEL 332		
17	91605	Decal, FEMA	1	
18	63223	Pin Weldment 1 5/8” Dia. x 7 1/4”	2	
19	9390-102	Capscrew (Grade 5) 1/2-13UNC x 1 3/4”	2	
20	9800	Locknut 1/2-13UNC	2	
21	91160	Grease Zerk	2	
22	94090	U-Bolt 3/4-10UNC x 8”	4	
23	62643	Shim	2	
24	9802	Locknut 3/4-10UNC	24	
25	9501028	Lynch Pin	1	
26	63245G	Extension Frame 57” =Green= For 12 Shank	2	
	63245R	Extension Frame 57” =Red= For 12 Shank		
27	63220	Pin Weldment 1 5/8” Dia. x 10 3/4	2	
28	67188B	Mast Pin Assembly 1 1/4” Dia. x 7 1/2	1	
29	67187B	Mast Pin 1 3/4” Dia.	1	
30	91144-239	Spiral Pin 1/2 x 3” Lg.	2	
31	9951	Lynch/Klik Pin 7/16” Dia. x 1 3/4”	2	
32	9390-145	Capscrew (Grade 5) 3/4-10UNC x 2”	16	
33	65285	Lower Bushing 2” Dia. x 3 7/8 (CAT IV)	2	
34	65284	Bushing 2 x 5 11/16” (Lower CAT IV)	2	
35	95031	Lynch/Klik Pin 7/16” Dia. x 2”	1	
36	9390-031	Capscrew (Grade 5) 5/16-18UNC x 1 1/4”	2	
37	9405-070	Flat Washer 5/16	2	
38	9397-008	Elastic Nut 5/16-18UNC	2	
39	91299-192	Capscrew 1-8UNC x 4 1/2	4	
40	9663	Locknut 1-8UNC	4	
41	9405-116	Flat Washer 1” SAE	2	
42	66990B	Lower Mast Plate	2	
43	69657	Pin 1 7/16” Dia. x 15 7/16”	2	
44	65896B	Shim .25” Thick	2	
45	65897B	Shim .140” Thick	2	
46	65898B	Shim 14 Ga. Thick	2	
47	9390-060	Capscrew 3/8-16UNC x 2 1/4	4	
48	9405-076	Flat Washer 3/8” USS	4	
49	9928	Locknut 3/8”	4	
	97301	12oz. Crimson Red Spray Touch-Up Paint	-	
	97015	12oz. Implement Green Spray Touch-Up Paint	-	

Folding Main Frame — 12 Shank (36/38/40" Spacing) & 16 Shank

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



Folding Main Frame — 12 Shank (36/38/40" Spacing) & 16 Shank

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	9802	Locknut 3/4-10UNC	32	
2	94090	U-Bolt 3/4-10UNC x 8"	4	
3	67187B	Mast Pin 1 3/4" Dia. w/Lynch Pin	1	
4	9501028	Lynch Pin	1	
5	9500594	Decal, RIPPER-STRIPPER	2	
6	68532G	Main Frame, Flex w/Decals =Green=	1	
	68532R	Main Frame, Flex w/Decals =Red=		
7	902221	Decal, DANGER! "Electrocution Hazard..."	2	
8	91605	Decal, FEMA	1	
9	95445	Decal, WARNING! "Do not use hands..."	2	
10	97048	Decal, WARNING! "Pinch Points..."	2	
11	97337	Decal, WARNING! "Never Stand..."	2	
12	97961	Decal, WARNING! "Read & Understand..."	1	
13	97972	Decal, WARNING! "Crushing Hazard..."	2	
14	N/A	N/A	N/A	
15	99507	Decal, WARNING! "Falling Equipment..."	1	
16	69657	Pin 1 7/16" Dia. x 15 1/8"	2	
17	9951	Lynch/Klik Pin 7/16" Dia. x 1 3/4"	3	
18	N/A	N/A	N/A	
19	900552	Manual Holder	1	
20	9390-031	Capscrew 5/16-18UNC x 1 1/4"	2	Grade 5
21	9405-070	Flat Washer 5/16	2	
22	9397-008	Elastic Nut 5/16-18UNC	2	
23	67188B	Mast Pin Assembly 1 1/4" Dia. x 7 1/2	1	
24	61303G	Support Tube 18" =Green=	4	
	61303R	Support Tube 18" =Red=		
25	62643	Shim	2	
26	64277	Pin Lock Weldment (Rear)	2	
27	64279	Pin Lock Weldment (Front)	2	
28	65285	Bushing 2" OD x 3 7/8"	2	
29	65284	Bushing 2" OD x 5 11/16" (Lower CAT IV)	2	
30	N/A	N/A	N/A	
31	9390-102	Capscrew 1/2-13UNC x 1 3/4"	4	Grade 5
32	9800	Locknut 1/2-13UNC	4	
33	91160	Grease Zerk	4	
34	64428	Bushing 2 1/2" OD x 3 1/8"	2	
35	67868	Shim 2 x 9 1/4	4	

(Continued on next page)

Folding Main Frame — 12 Shank & 16 Shank (continued)

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

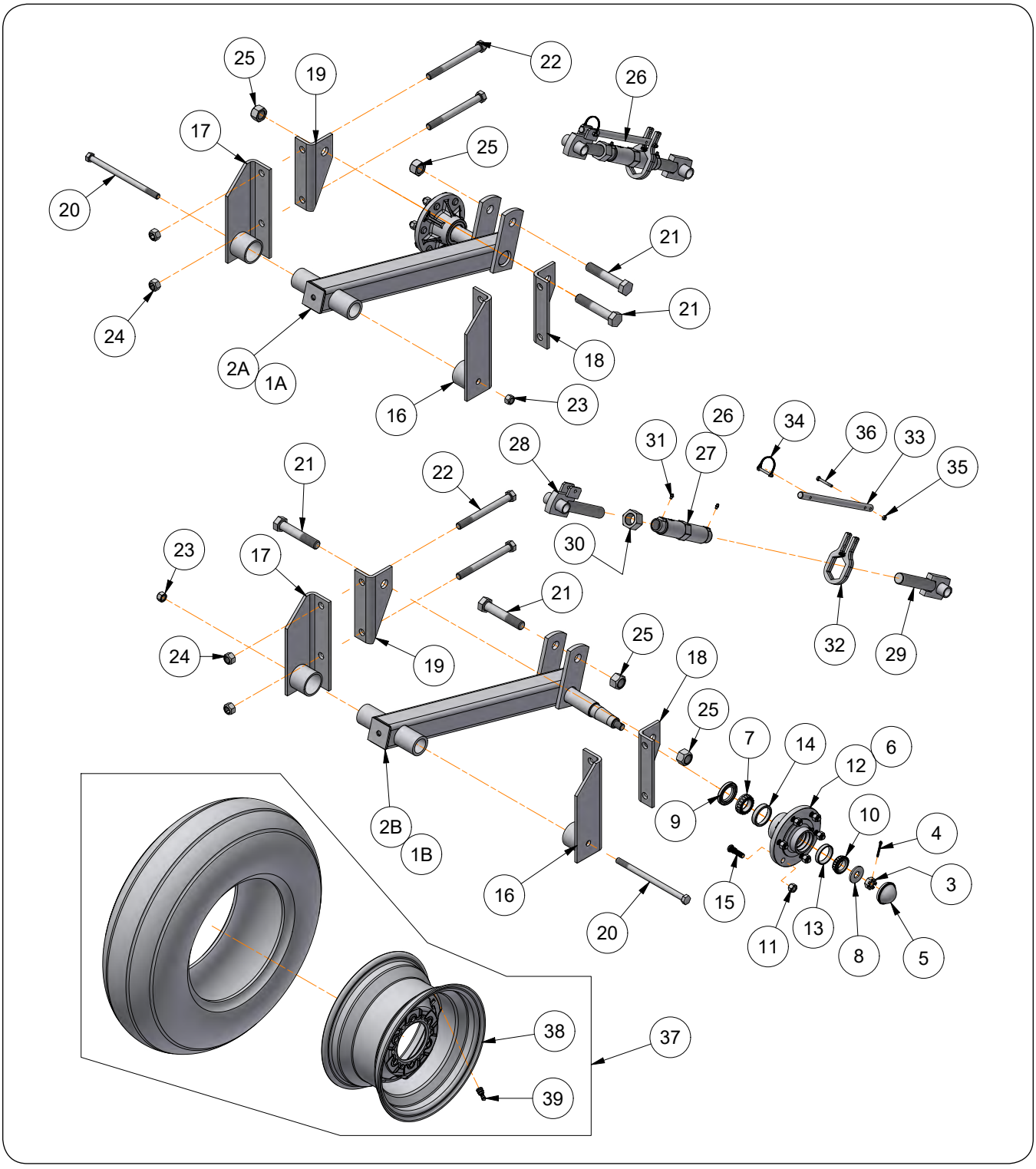
ITEM	PART NO.	DESCRIPTION	QTY	NOTES
36	67869	Shim 2 x 6 1/4	4	
37	9404-034	Lock Washer 3/4"	4	
38	9390-143	Capscrew 3/4"-10UNC x 1 1/2" Gr5	4	
39	9500592	Decal, MODEL 312	2	
	9500593	Decal, MODEL 332		
40	64388G	Extension Frame 74"=Green=	2	For 12 Shank 40" & 16 Shank
	64388R	Extension Frame 74" =Red=		
	63245G	Extension Frame 57" =Green=		For 12 Shank 36 & 38"
	63245R	Extension Frame 57" =Red=		
41	9390-145	Capscrew 3/4-10UNC x 2"	16	Grade 5
42	9802	Locknut 3/4-10UNC		
43	68389G	Wing Base (Right-Hand) =Green=	1	
	68389R	Wing Base (Right-Hand) =Red=		
44	68390G	Wing Base (Left-Hand) =Green=	1	
	68390R	Wing Base (Left-Hand) =Red=		
	97301	12oz. Crimson Red Spray Touch-Up Paint	-	
	97015	12oz. Implement Green Spray Touch-Up Paint	-	

Notes

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

Stabilizer Wheel

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



PART NO.	DESCRIPTION	NOTES
66299B	Stabilizer Wheel Bundle (Pair) w/Tire & Wheel (Tire 12.5LB15)	Includes Items 1 through 39
67490B	Stabilizer Wheel Bundle (Pair) w/Tire & Wheel (Tire 9.5LB15)	

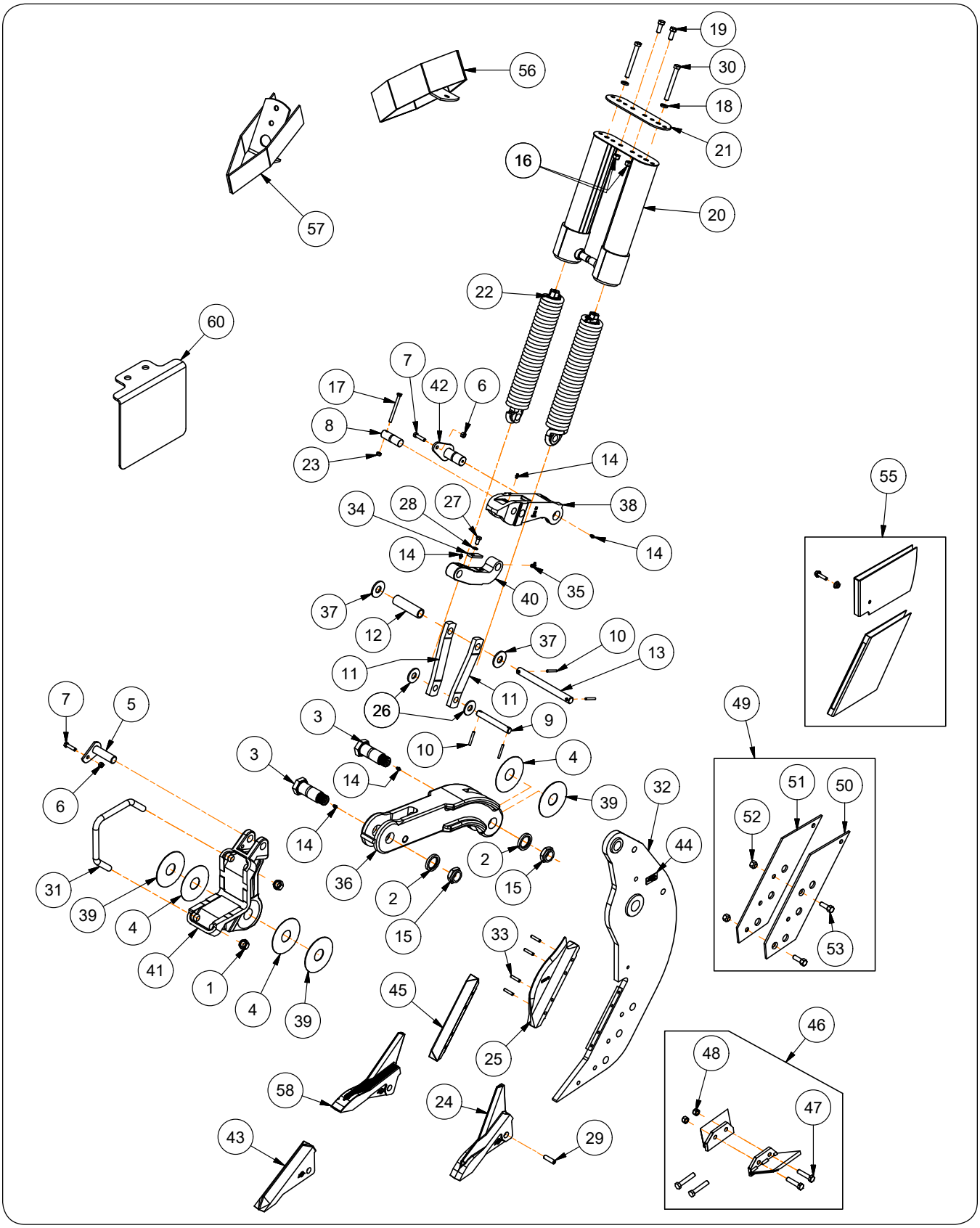
Stabilizer Wheel

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

ITEM	PART NO.	DESCRIPTION	QTY
1A	67311B	Stabilizer Wheel Right-Hand Assembly less Wheel & Tire	1
1B	67312B	Stabilizer Wheel Left-Hand Assembly less Wheel & Tire	1
2A	63624	Arm Hub Assembly Right-Hand (Includes Items 3 through 15)	1
2B	63623	Arm Hub Assembly Left-Hand (Includes Items 3 through 15)	1
3	9393-016	Slotted Nut 3/4-16UNF	2
4	9391-035	Cotter Pin 5/32" Dia. x 1 1/2	2
5	9768B	Hub Cap	2
6	NA	Hub Assembly (Includes Items 7 through 15)	2
7	9166	Inner Cone	2
8	9234	Washer	2
9	9168	Seal	2
10	9165	Outer Cone	2
11	9348	Tapered Nut 1/2-20UNF	12
12	NA	Hub Subassembly (Includes Items 13-15)	2
13	9345	Outer Cup	2
14	9346	Inner Cup	2
15	9347	Drive-In Stud 1/2-20UNF x 1 7/8	12
16	60909	Pivot Bracket Right-Hand	2
17	60910	Pivot Bracket Left-Hand	2
18	60890	Plate Right-Hand	2
19	60891	Plate Left-Hand	2
20	9390-444	Hex Capscrew 5/8-11UNC x 10 1/2	2
21	9390-194	Hex Capscrew 1"-8UNC x 5 1/2	4
22	9390-161	Hex Capscrew 3/4-10UNC x 8 (For Rear Bar Mounting)	8
	9390-155	Hex Capscrew 3/4-10UNC x 5 (For Front Bar Mounting)	
23	9801	Locknut 5/8-11UNC	2
24	9802	Locknut 3/4-10UNC	82
25	9663	Locknut 1"-8UNC	4
26	66833	Turnbuckle Assembly (Includes Items 27-36)	2
27	62324	Turnbuckle	2
28	66832	Adjusting Rod Weldment Right-Hand	2
29	60907	Adjusting Rod Weldment Left-Hand	2
30	9394-024	Hex Nut 1 1/4-7UNC	2
31	91160	Grease Zerk	4
32	67957	Wrench Body	2
33	66830	Rod Handle	2
34	9000936	Lynch Pin	2
35	9936	Locknut 1/4-20UNC	2
36	9390-009	Capscrew 1/4-20UNC x 2	2
37	11895	Tire & Wheel Assembly (Tire 12.5LB15)	2
38	W1015-6-98RG	10 x 15 Wheel	2
37	60911	Tire & Wheel Assembly (Tire 9.5LB15)	2
38	W815-6-08	8 x 15 Wheel	2
37	81145	Tire & Wheel Assembly (Tire 7.6B15)	2
38	W615-6	6 x 15 Wheel	2
39	9002500	Valve Stem With Cap	2

Auto-Reset Shank — Model 332

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



Auto-Reset Shank — Model 332

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
	67748B	Angled Shank Assembly Complete	-	Includes Items 1 through 42
1	97025	Locknut 3/4"-10UNC	4	
2	85791	Beveled Flat Washer	2	
3	86749B	Pull Pin 1 1/2" Dia.	2	
4	63098B	Washer 5" O.D. (Hardened)	3	
5	63157B	Front Pivot Pin	1	
6	9928	Locknut 3/8"-16UNC	2	
7	9390-057	Capscrew 3/8"-16UNC x 1 1/2"	2	
8	801310B	Middle Toggle Pin	1	
9	63144B	Bottom Spring Pin 3/4" Dia. x 5 3/4"	1	
10	91144-165	Spiral Pin 1/4" Dia. x 1 7/8"	2	
11	63145B	Spring Strap	2	
12	63313PL	Roller	1	
13	63091B	Top Spring Pin 7/8" Dia. x 9 9/16"	1	
14	91160	Zerk (1/4-28)	5	
15	96976-048	Thin Collar Locknut 1 1/4-12	2	
16	9800	Locknut 1/2"-13UNC	2	
17	9390-041	Capscrew 5/16"-18UNC x 3 3/4"	1	Grade 5
18	9404-026	Lock Washer 1/2"	2	
19	9390-100	Capscrew 1/2"-13UNC x 1 1/4"	2	
20	801302B	Outer Spring Can	1	
21	801318B	Spring Canister Cap	1	
22	67896B	Extension Spring Assembly	2	
23	9807	Locknut 5/16"-18UNC	1	
24	67385B	Point (Shark Fin)	1	
25	67907B	Wear Bar	1	
26	9405-105	Flat Washer 3/4" Dia.	2	
27	9390-053	Capscrew 3/8"-16UNC x 3/4"	1	
28	9404-021	Lock Washer 3/8"	1	
29	91144-234	Spiral Pin 1/2" Dia. x 1 3/4"	1	
30	93400	Capscrew 1/2"-13UNC x 4 1/2"	2	Full Threaded Grade 5
31	94135B	V-Bolt 3/4-10UNC	2	
32	69845B	Angled Shank	1	
33	91144-182	Spiral Pin 5/16" Dia. x 1 1/2"	4	
34	64672B	Shim	1	
35	93415	90° Zerk 1/4-28	1	
36	68393B	Pull Arm Service Kit	1	Includes Items 4 & 39

(Continued on next page)

Auto-Reset Shank — Model 332 (continued)

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

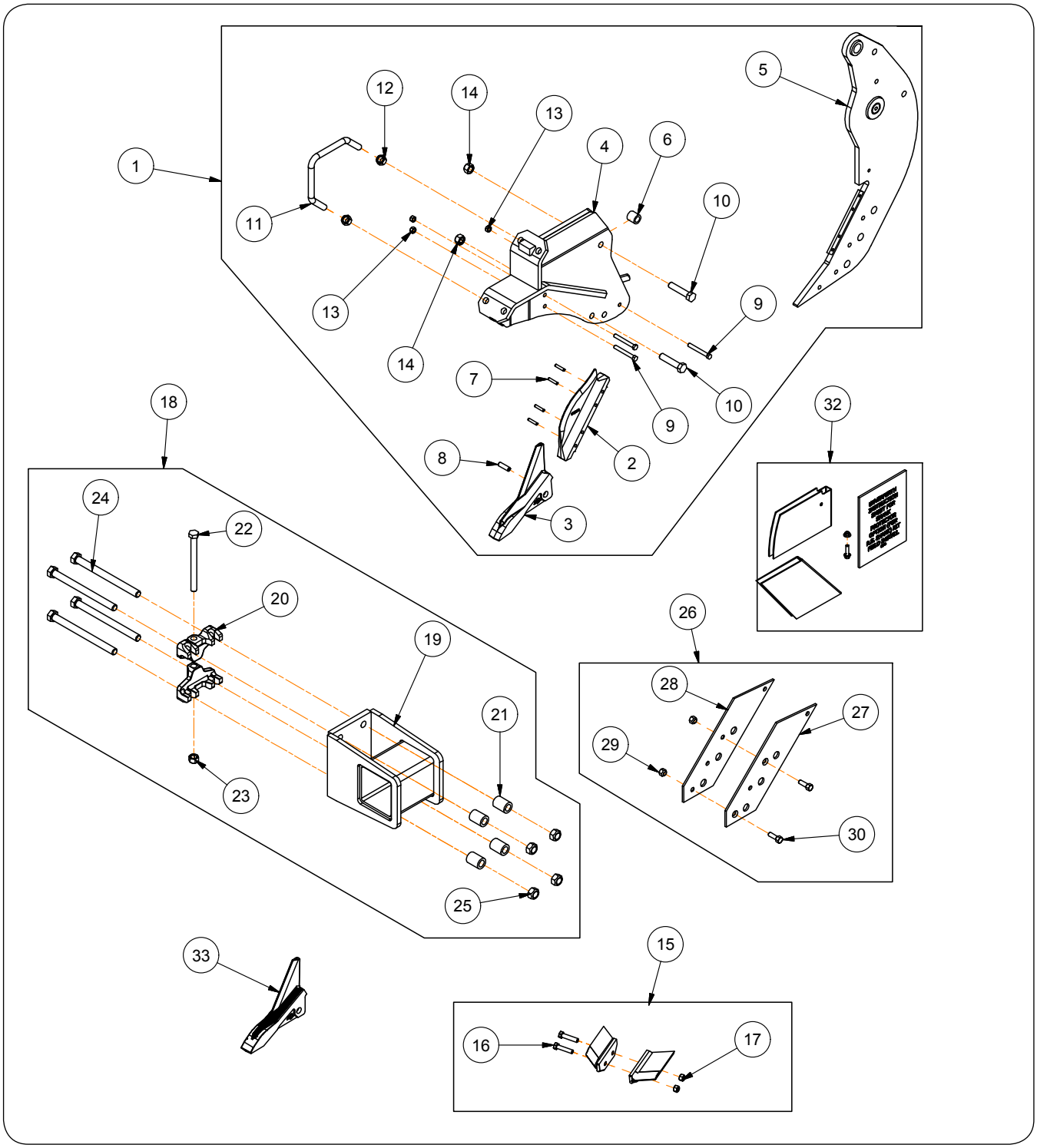
ITEM	PART NO.	DESCRIPTION	QTY	NOTES
37	9405-112	Flat Washer 7/8" Dia.	2	
38	64784B	Outer Toggle	1	Includes Items 6, 7, 17, 23, 34, & 42
39	66834B	Washer 5" O.D. (Hardened)	2	
40	64357B	Inner Toggle	1	
	64353B	Inner Toggle Assembly		Includes Items 14, 27, 28, 34, & 35
41	83291B	Shank Mount =Black=	1	
42	66926B	Pin Weldment 1 1/4" Dia. x 2 3/4"	1	
43	67021B	Point/Point (Raised Center)	-	
44	67669	Decal, IMPORTANT "Grease All Points"	1	
45	65947B	Wear Bar	-	
	903192	Poly Wear Bar		
46	67691B	Shatter Wing 7" Bundle (Optional)	1	
	67692B	Shatter Wing 9" Bundle (Optional)	1	
47	9390-104	Capscrew 1/2"-13UNC x 2 1/4"	2	Grade 5
	9390-106	Capscrew 1/2"-13UNC x 2 3/4"	2	Grade 5
48	9800	Locknut 1/2"-13UNC	2	
49	64077	Wear Guard Assembly	1	
50	64047B	Plate, Right-Hand	1	
51	64048B	Plate, Left-Hand	1	
52	9348	Beveled Nut 1/2"-20UNF	2	
53	9500736	Bolt 1/2"-20UNF x 1 3/8"	2	Grade 5
54	67951B	Point (Shark Fin) with Chrome Cap	1	
55	65817	Shank Protector Kit	1	
	65823	Upper Plastic Wear Guard		
	65824	Lower Plastic Wear Guard		
56	63525	Deflector Bracket for Auto-Reset Shank	2	8 Shank, 36" Spacing & 12 Shank, 36" Spacing
57	68514B	Deflector Bracket for Auto-Reset Shank	2	16 Shank, 30" Spacing
58	67951B	Point (Shark Fin) w/Hard Weld	-	
59	65117	Shank Tip Weld-On Replacement Package	-	Prior to Serial Number A665700166
	602402	Shank Tip Replacement Package	-	Beginning with Serial Number A665700166
60	68804B	Deflector Plate	2	

Notes

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

Shear-Bolt Shank — Model 312

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



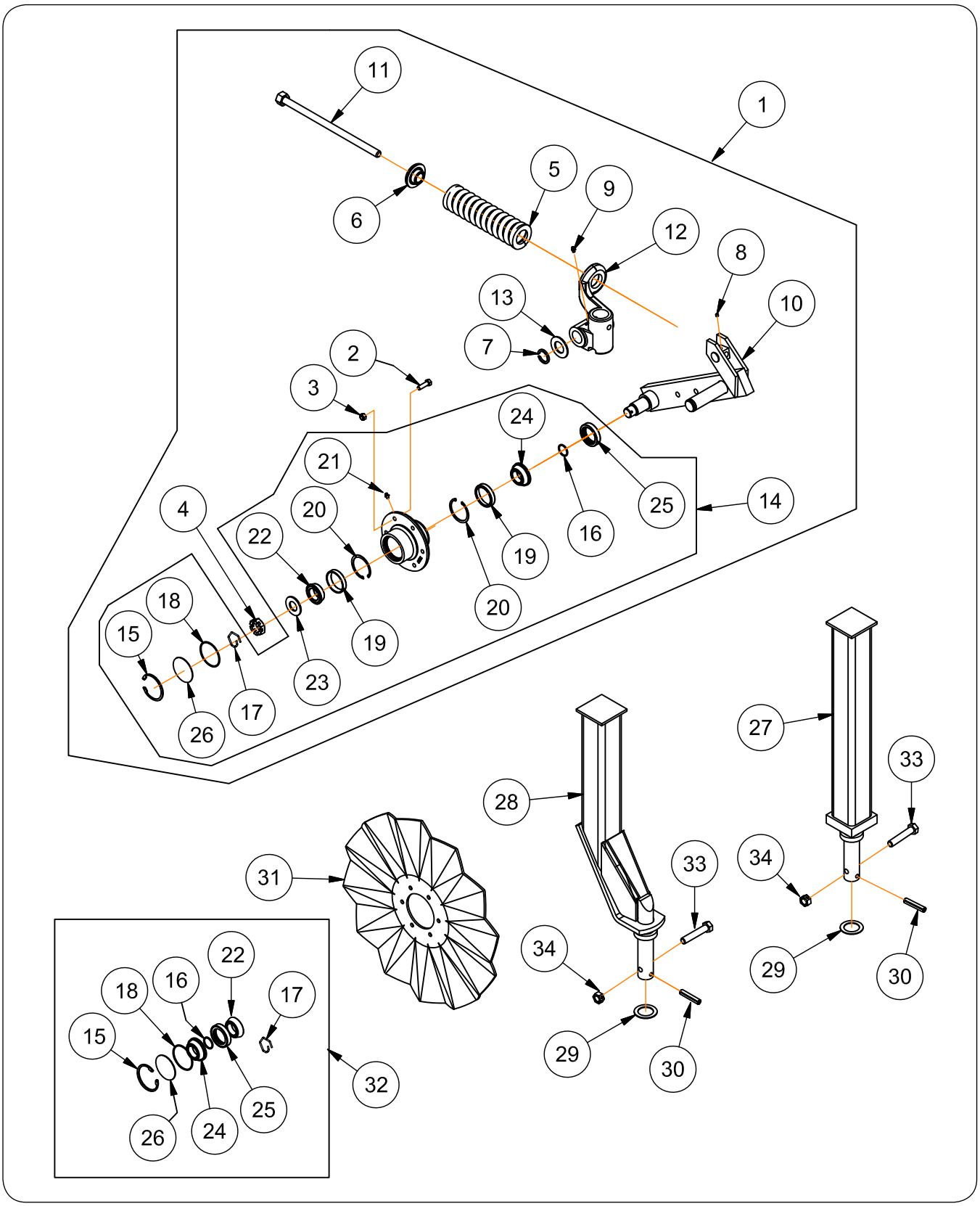
Shear-Bolt Shank — Model 312

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	67192B	Shear-Bolt Shank Asy	1	Includes Items 2-14
2	67907B	Wear Bar (SHOWN)	1	
	65947B	Wear Bar		
	903192	Poly Wear Bar		
3	67385B	Point (Shark Fin) (SHOWN)	1	
	67021B	Point/Point (Raised Center, Hard Weld Tip & Boot)	1	
4	67049B	Bracket Weldment	1	
5	64005B	Shank	1	
6	71415	Bushing	1	
7	91144-182	Spiral Pin 5/16 x 1 1/2" Lg.	4	
8	91144-234	Spiral Pin 3/8 x 1 3/4" Lg.	1	Serial #A43680334 & Up
9	9390-088	Capscrew (Shear Bolt) 7/16-14UNC x 3 1/2	3	
10	9390-151	Capscrew 3/4-10UNC x 3 1/2" Lg.	2	Grade 5
11	94135B	V-Bolt 3/4-10UNC	2	
12	97025	Locknut 3/4-10UNC	4	
13	9799	Locknut 7/16-14UNC	1	
14	9802	Locknut 3/4-10UNC	2	
15	67691B	Shatter Wing 7" Bundle (Optional)	1	Includes Items 16 through 17
	67692B	Shatter Wing 9" Bundle (Optional)		
16	9390-104	Capscrew 1/2-13UNC x 2 1/4" Lg.	2	Grade 5
	9390-106	Capscrew 1/2-13UNC x 2 3/4" Lg.		Grade 5
17	9800	Locknut 1/2-13UNC	2	
18	66952B	Frame Extension 16"	1	Includes Items 19 through 25
19	N/A	16" Extension Weldment	1	
20	66737B	Clamp	2	
21	66837	Spacer Tube, 2"	4	
22	9390-448	Capscrew 3/4-10UNC x 8 1/2	1	Grade 5
23	9802	Locknut, 3/4-10UNC	1	Grade 5
24	9390-459	Capscrew 7/8-9UNC x 11	4	Grade 5
25	98420	Locknut, 7/8-9UNC	4	Grade 5
26	64077	Wear Guard Assembly	1	Includes Items 27 through 30
27	64047B	Plate, Right-Hand	1	
28	64048B	Plate, Left-Hand	1	
29	9348	Beveled Nut 1/2-20	2	
30	9500736	Bolt 1/2-20UNF x 1 3/8"	2	
32	65817	Shank Protector Kit	1	
	65823	Upper Plastic Wear Guard		
	65824	Lower Plastic Wear Guard		
33	67951B	Point (Shark Fin with Hard Weld)	1	

Combo Lead Coulter (Left-Hand)

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



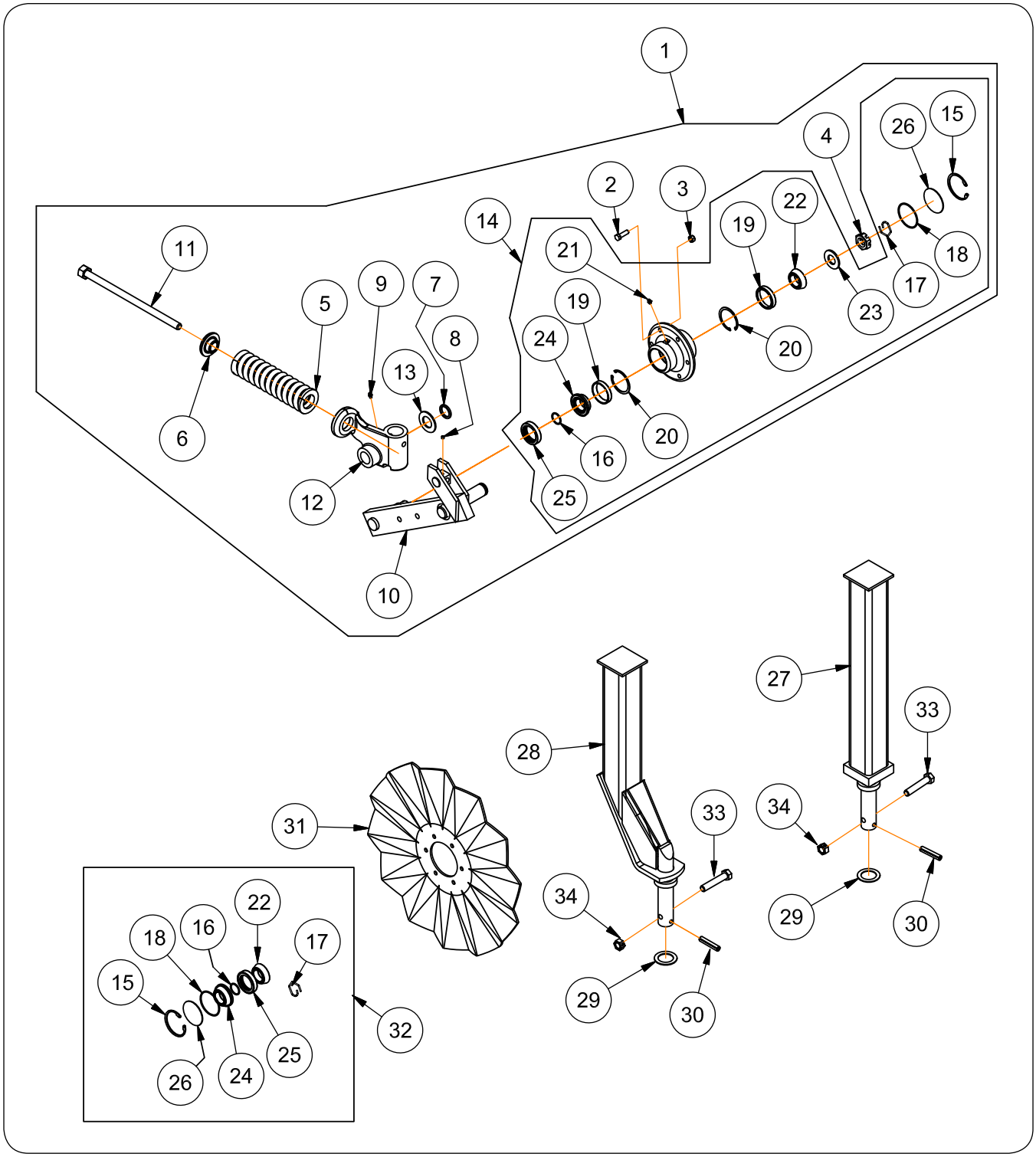
Combo Lead Coulter (Left-Hand)

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	65854B	Coulter Left-Hand Subassembly	1	Includes Items 2 through 26
2	9390-056	Capscrew 3/8-16 x 1 1/4" Lg.	6	
3	9928	Locknut 3/8-16	6	
4	94795	Slotted Jam Nut 1-14	1	
5	94756B	Spring	1	
6	82826B	Spring Washer	1	
7	94144	Retaining Ring 1 1/4"	1	
8	9399-057	Set Screw 1/4-20 x 1/4" Lg.	1	
9	91160	Grease Zerk	1	
10	65852B	Coulter Arm LH Weldment	1	
11	83371B	Spring Rod Weldment	1	
12	82823B	Coulter LH Swivel Bracket	1	
13	92528B	Bushing	1	
14	64533	Hub 6 Bolt Assembly	2	Includes Items 15 through 26
15	93985	Retaining Ring	1	
16	95565	O-ring 1.049 I.D.	1	
17	9504825	Retaining Spring 1/8" dia. x 1 3/4"	1	
18	902158	O-Ring	1	
19	9345	Bearing Cup	2	
20	94796	Retaining Ring 2 1/2"	2	
21	91160	Grease Zerk	1	
22	9165	Bearing Cone #LM67048	1	
23	94800	Washer (1.01" ID)	1	
24	901145	Seal & Bearing Kit	1	
25	93987	Triple Lip Seal	1	
26	60735B	Hub Cap	1	
27	68090B	Straight Post (Auto-Reset Shanks)	1	
	65855B	Complete Coulter Assembly (Straight Post)	-	Includes Straight Post, 1, 29, 30, 33, 34
28	68105B	Offset Post (Shear-Bolt Shanks)	1	
	68184B	Complete Coulter Assembly (Offset Post)	-	Includes Offset Post, 1, 29, 30, 33, 34
29	96581	Machinery Washer	2	
30	9392-210	Roll Pin 1/2" Dia. x 2 1/2"	2	
31	93932	Coulter Blade (8 Wave) 1.81" Wide x 17" Dia.	1	
	93930	Coulter Blade (8 Wave) 1" Wide x 18" Dia.		
	93931	Coulter Blade (13 Wave) .83" Wide x 18" Dia.		
	93938	Coulter Blade (13 Wave) 1" Wide x 20" Dia.		
	93934	Coulter Blade (Ripple) .83" Wide x 20" Dia.		
32	68281	Seal Kit	-	Includes Items 15, 16, 17, 18, 22, 24, 25, 26
33	9390-129	Capscrew 5/8-11UNC x 3 1/4	2	
34	95905	Locknut 5/8-11UNC	2	

Combo Lead Coulter (Right-Hand)

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



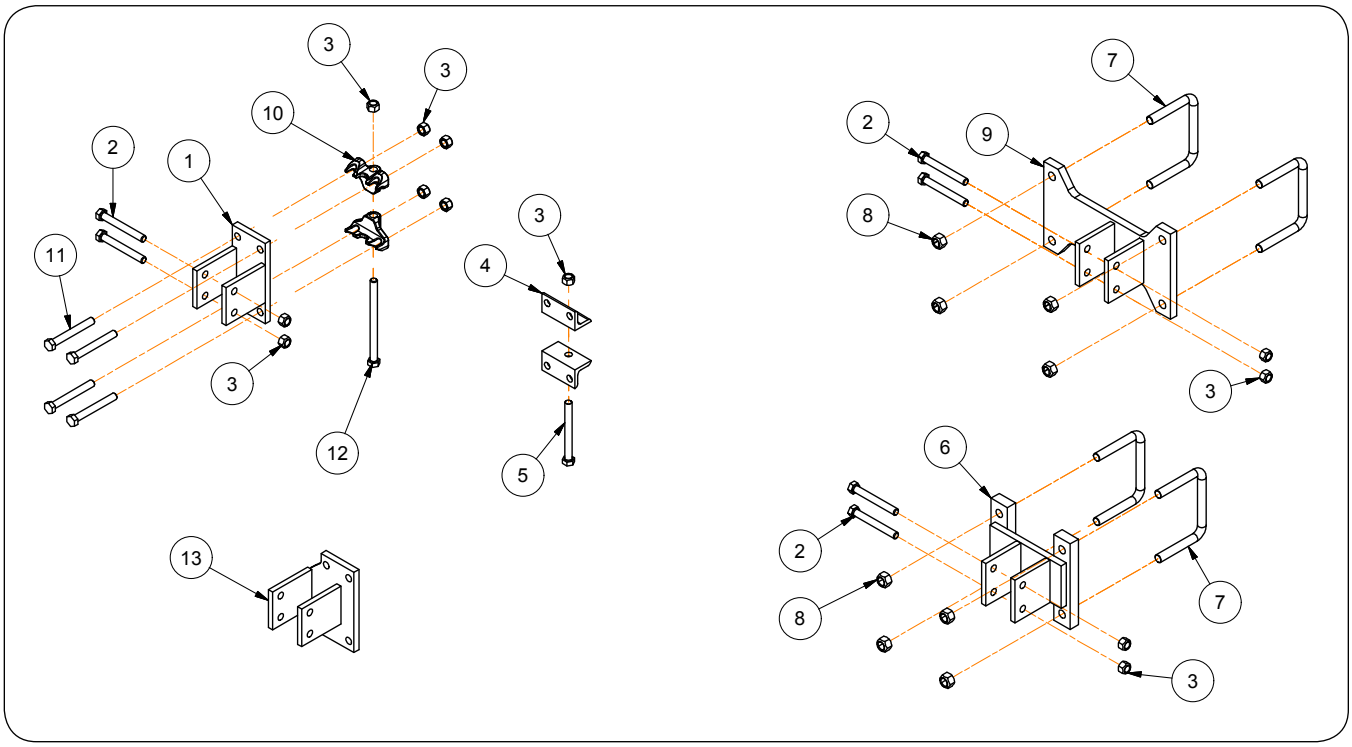
Combo Lead Coulter (Right-Hand)

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	64055	Coulter Right-Hand Subassembly	1	Includes Items 2 through 26
2	9390-056	Capscrew 3/8-16 x 1 1/4" Lg.	6	
3	9928	Locknut 3/8-16	6	
4	94795	Slotted Jam Nut 1-14	1	
5	94756B	Spring	1	
6	82826B	Spring Washer	1	
7	94144	Retaining Ring 1 1/4"	1	
8	9399-057	Set Screw 1/4-20 x 1/4" Lg.	1	
9	91160	Grease Zerk	1	
10	83305B	Coulter Arm RH Weldment	1	
11	83371B	Spring Rod Weldment	1	
12	82824B	Coulter RH Swivel Bracket	1	
13	92528B	Bushing	1	
14	64533	Hub 6 Bolt Assembly	2	Includes Items 15 through 26
15	93985	Retaining Ring	1	
16	95565	O-ring 1.049 I.D.	1	
17	9504825	Retaining Spring 1/8" dia. x 1 3/4"	1	
18	902158	O-Ring	1	
19	9345	Bearing Cup	2	
20	94796	Retaining Ring 2 1/2"	2	
21	91160	Grease Zerk	1	
22	9165	Bearing Cone #LM67048	1	
23	94800	Washer (1.01" ID)	1	
24	901145	Seal & Bearing Kit	1	
25	93987	Triple Lip Seal	1	
26	60735B	Hub Cap	1	
27	68730B	Vertical Post Straight Assembly	1	Includes Items 29, 30, 33, 34
28	68105B	Offset Post (Shear-Bolt Shanks)	1	
29	96581	Machinery Washer	2	
30	9392-210	Roll Pin 1/2" Dia. x 2 1/2"	2	
31	93932	Coulter Blade (8 Wave) 1.81" Wide x 17" Dia.	1	
	93930	Coulter Blade (8 Wave) 1" Wide x 18" Dia.		
	93931	Coulter Blade (13 Wave) .83" Wide x 18" Dia.		
	93938	Coulter Blade (13 Wave) 1" Wide x 20" Dia.		
	93934	Coulter Blade (Ripple) .83" Wide x 20" Dia.		
32	68281	Seal Kit	-	Includes Items 15, 16, 17, 18, 22, 24, 25, 26
33	9390-129	Capscrew 5/8-11UNC x 3 1/4	2	
34	95905	Locknut 5/8-11UNC	2	

Flush Clamps

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



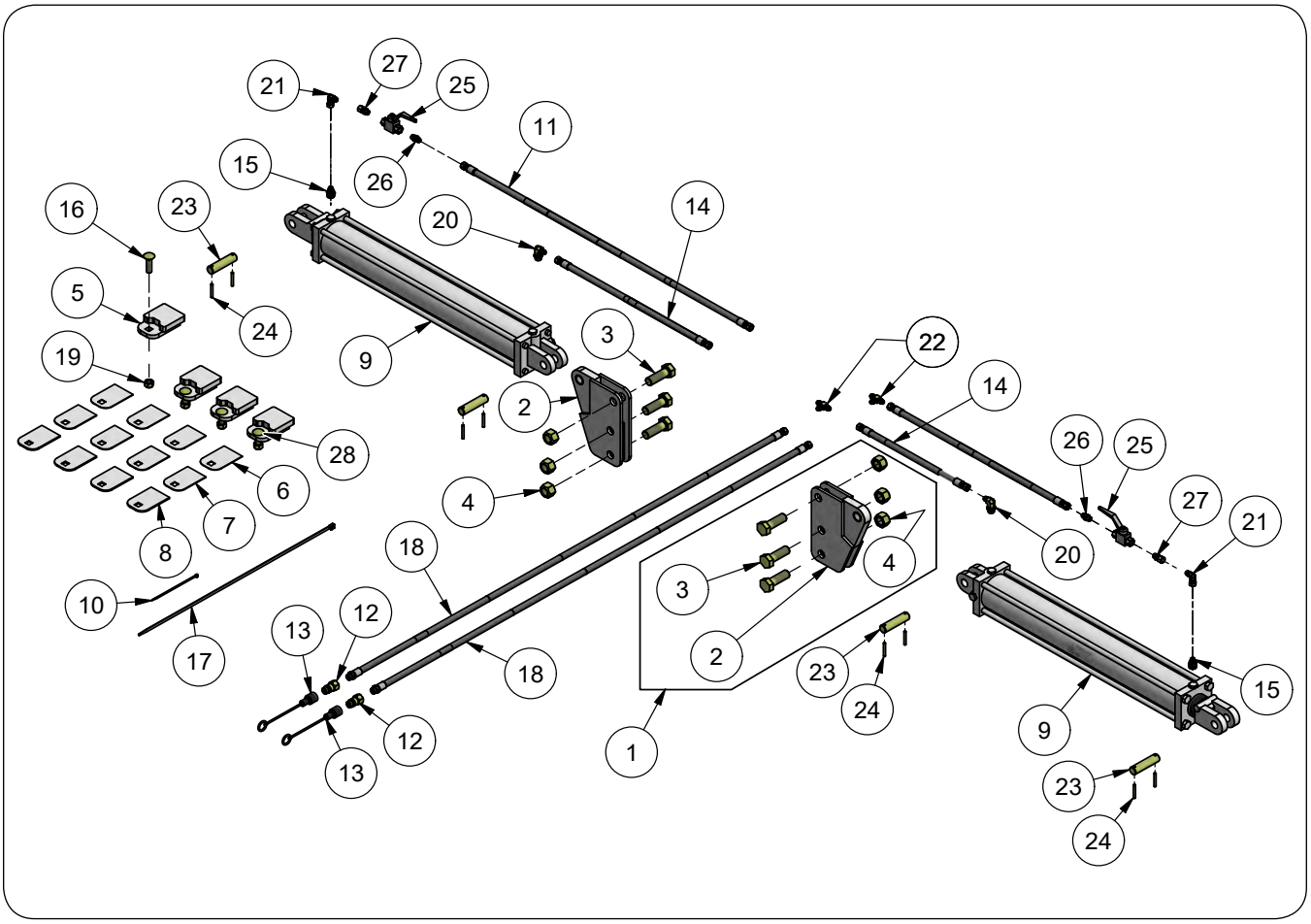
Flush Clamps

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

ITEM	PART NO.	DESCRIPTION	4 SHANK			6 SHANK			8 SHANK			12 SHANK				16 SHANK
		Spacing	30"	36"	38"	30"	36"	38"	36"	38"	40"	30"	36"	38"	40"	30"
1	60245	6" Flush Clamp Weldment	2	2	4	4	4	6	6	8	8	12	12	12	12	12
	60205	Flush Bracket Bundle Includes Items 1, 2, 3, 4, 5, 13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9390-134	Capscrew 5/8-11 x 5"	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	9801	Locknut 5/8-11	18	28	28	32	32	42	46	56	56	74	66	70	68	92
4	60271	Angle Bracket (For Service Only)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9390-136	Capscrew 5/8-11 x 6"	2	2	4	4	4	6	6	8	8	10	10	14	12	12
6	62546	Offset Bracket Weldment	2	2	-	2	2	-	2	-	-	2	2	-	-	2
	63063	Offset Bracket Bundle Includes Items 2, 3, 6, 7, 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	94012	U-Bolt 3/4-10 x 5"	4	4	-	4	4	-	4	-	-	4	-	-	2	2
	94090	U-Bolt 3/4-10 x 8"	-	-	-	-	-	-	-	-	-	-	4	-	2	6
8	9802	Locknut 3/4-10	8	8	-	8	8	-	8	-	-	8	8	-	16	24
9	64425B	Mounting Bracket	-	-	-	-	-	-	-	-	-	-	-	-	2	2
10	67922B	Extension Clamp	4	4	8	8	8	12	12	16	16	24	24	28	24	24
11	9390-134	Capscrew 5/8-11 x 5"	16	16	24	28	28	36	32	48	48	64	40	40	40	56
	9390-128	Capscrew 5/8-11 x 3"	-	-	-	-	-	-	-	-	-	8	-	-	-	-
	9390-135	Capscrew 5/8-11 x 5 1/2"	-	-	-	-	-	-	8	-	-	-	-	-	-	-
	9390-137	Capscrew 5/8-11 x 6 1/2"	-	-	-	-	-	-	-	-	-	-	8	8	-	8
	9390-140	Capscrew 5/8-11 x 8"	-	-	-	-	-	-	-	-	-	-	8	8	16	16
12	9390-441	Capscrew 5/8-11 x 8 1/2"	2`	2	4	4	4	6	6	8	8	10	10	14	12	12
13	68520B	6" Offset Flush Clamp Weldment	-	-	-	-	-	-	-	-	-	-	-	2	-	-

Standard Folding Hydraulic Components — 8 Wide

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



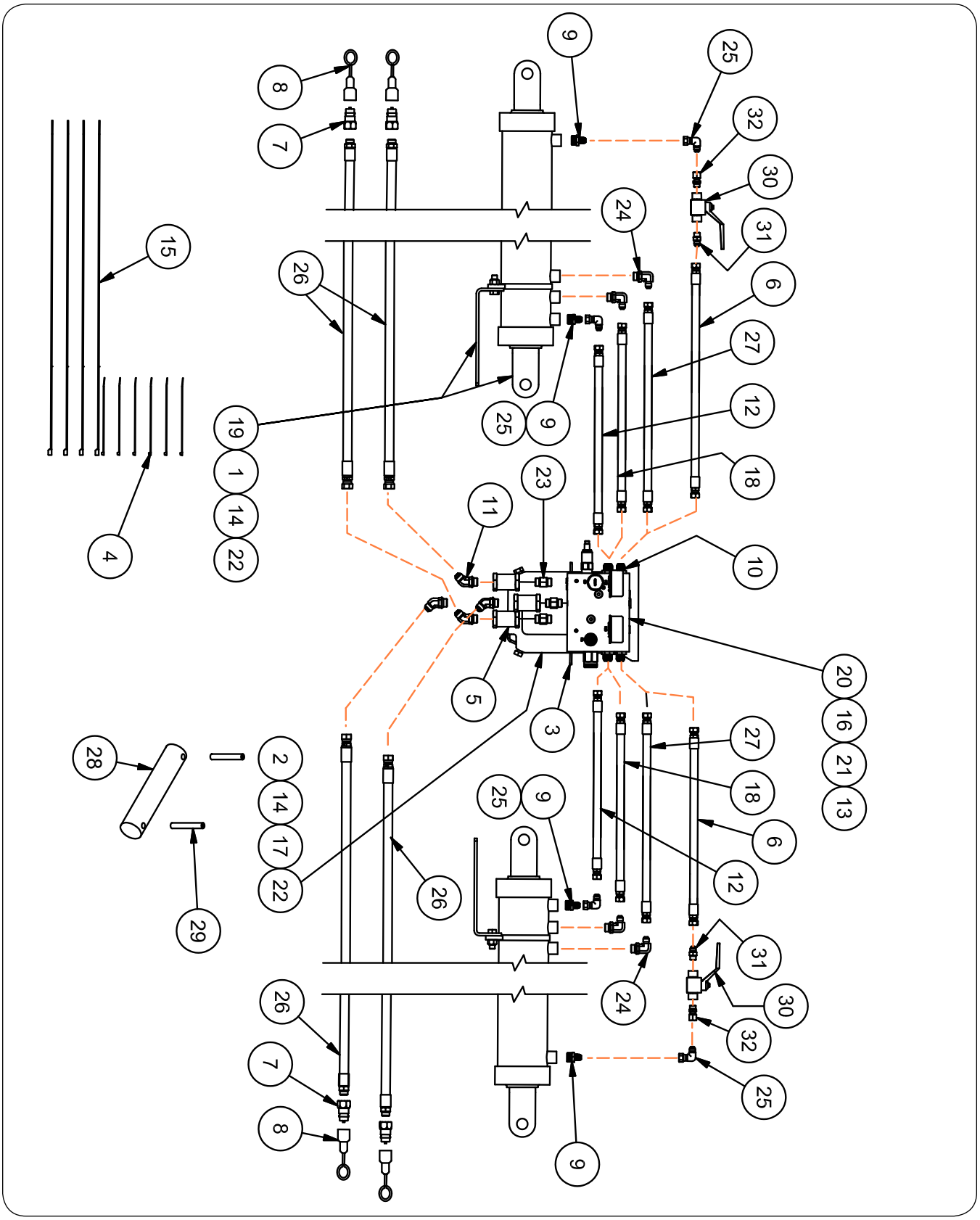
Standard Folding Hydraulic Components — 8 Wide

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

ITEM	PART NO.	DESCRIPTION	QTY
	69055B	Hydraulic Rigid Wing Fold Package	-
1	68410B	Cylinder Mount Assembly (NOT SHOWN) (Includes items 2, 3, & 4)	2
2	68408B	Cylinder Mount Weldment	1
3	9390-187	Capscrew 1"-8UNC x 3" GR5	3
4	9663	Top/Locknut 1"-8UNC	3
5	68484B	Shim Weldment =Black=	4
6	68815B	Shim 14Ga. x 3 x 4 1/2	4
7	68816B	Shim 12Ga. x 3 x 4 1/2	4
8	68817B	Shim 7Ga. x 3 x 4 1/2	4
9	69056B	Cylinder Assembly (4 x 30) includes Cylinder Stop & Set Screw	2
	73759B	Cylinder Stop	-
	9399-057	Set Screw 1/4"-20UNC x 1/4" Cup Point	-
10	9000106	Cable Tie 7 1/2"	4
11	9002976	Hose 3/8" x 57 (9/16-18 JIC Female Swivel x 9/16-18 JIC Female Swivel)	2
12	91383	Male Tip Coupling 3/4-16	2
13	91511	Dust Cap/ISO Coupler	2
14	9502793	Hose 3/8" x 28" (9/16-18 JIC Female Swivel x 9/16-18 JIC Female Swivel)	2
15	91608	Adapter 9/16-18 JIC Male x 3/4-16 O-Ring Male (w/.060 Restrictor)	2
16	9388-138	Carriage Bolt 5/8"-11UNC x 2 3/4" GR5	2
17	94038	Cable Tie 32"	4
18	9502772	Hose 3/8" x 72" (9/16-18 JIC Female Swivel x 3/4-16 O-Ring Male)	2
19	9801	Top Locknut 5/8"-11UNC	4
20	9874	90° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Male	2
21	9876	90° Elbow 9/16-18 JIC Male x 9/16-18 JIC Female Swivel Nut	2
22	9875	Tee 9/16-18 JIC Male x 9/16-18 JIC Male x 9/16-18 JIC Male	2
23	85631	Pin 1" Dia. x 4"	4
24	91144-165	Spiral Pin 1/4" Dia. x 1 7/8"	8
25	9501014	Ball Valve	2
26	9001495	Adapter, 9/16-18 JIC Male x 9/16-18 O-Ring Male	2
27	9002446	Adapter, 9/16-18 O-Ring Male x 9/16-18 JIC Female	2
28	9388-136	Carriage Bolt 5/8"-11UNC x 2 1/4" GR5	2

Flex Folding Hydraulic (Optional) — 8 Wide

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



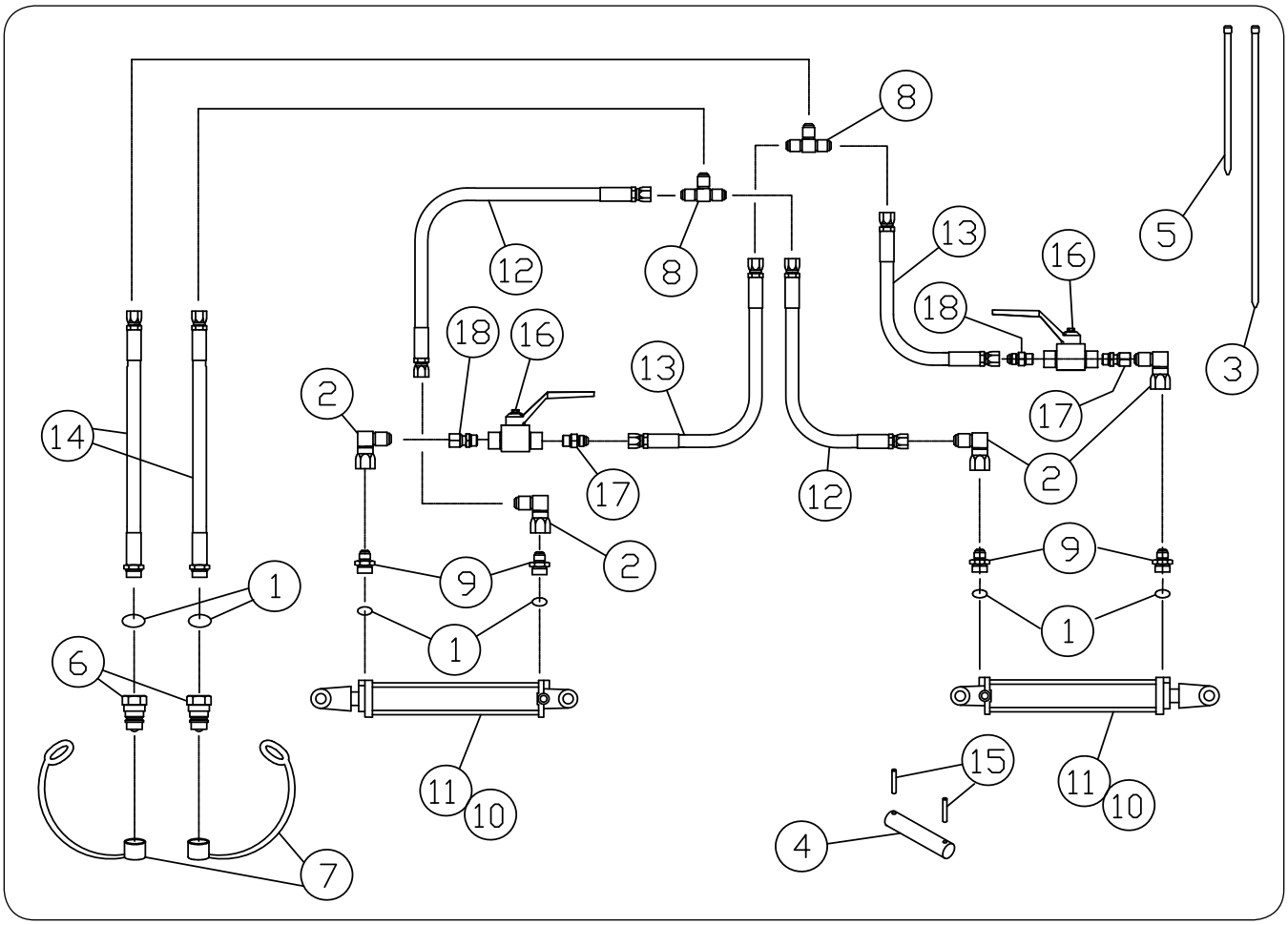
Flex Folding Hydraulic (Optional) — 8 Wide

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

ITEM	PART NO.	DESCRIPTION	QTY
	68669B	Hydraulic Flex Wing Fold Package	-
1	68506B	Cylinder Anti-Rotational Plate	2
2	68553B	Valve Mount Plate	1
3	68693B	Support Bracket	1
4	9000106	Cable Tie 7 1/2"	6
5	9005403	120 Micron Hydraulic Filter	3
6	9501700	Hydraulic Hose 3/8" Dia. x 48”	2
7	91383	Male Tip Coupling	4
8	91511	Dust Cap	4
9	91608	Adapter 9/16-18 JIC Male x 3/4-16 O-Ring Male w/ .060 Restrictor	4
10	92927	Adapter 9/16-18 JIC Male x 3/4-16 O-Ring Male	8
11	93586	45° Elbow 3/4-16 JIC Male x 3/4-16 O-Ring Male	4
12	9501699	Hose 3/8" Dia. x 18”	2
13	9390-055	Capscrew 3/8"-16UNC x 1" Gr5	4
14	9390-101	Capscrew 1/2"-13UNC x 1 1/2" Gr5	6
15	94038	Cable Tie 32"	4
16	9404-021	Lock Washer 3/8"	4
17	9405-088	Flat Washer 1/2" USS	2
18	9503721	Hydraulic Hose 3/8" Dia. x 18”	2
19	9501547	Hydraulic Cylinder 4 x 30 (Twin)	2
20	9503620	Valve Assembly	1
21	9501659	Hydraulic Reducer	2
22	9800	Top Locknut 1/2"-13UNC	6
23	98508	Adapter/Union	3
24	9874	90° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Male	4
25	9876	90° Elbow 9/16-18 JIC Male x 9/16-18 JIC Female Swivel Nut	4
26	98852	Hydraulic Hose 1/2” Dia. x 72” (3/4-16 JIC Female x 3/4-16 O-Ring Male)	4
27	9503641	Hydraulic Hose 3/8" Dia. x 20” (9/16-18 JIC Female x 9/16-18 JIC Female)	2
28	85631	Pin 1” Dia. x 4”	4
29	91144-165	Spiral Pin 1/4” Dia. x 1 7/8”	8
30	9501014	Ball Valve	2
31	9001495	Adapter, 9/16-18 JIC Male x 9/16-18 O-Ring Male	2
32	9002446	Adapter, 9/16-18 O-Ring Male x 9/16-18 JIC Female	2

Folding Hydraulic Components - 12 Narrow Shank

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



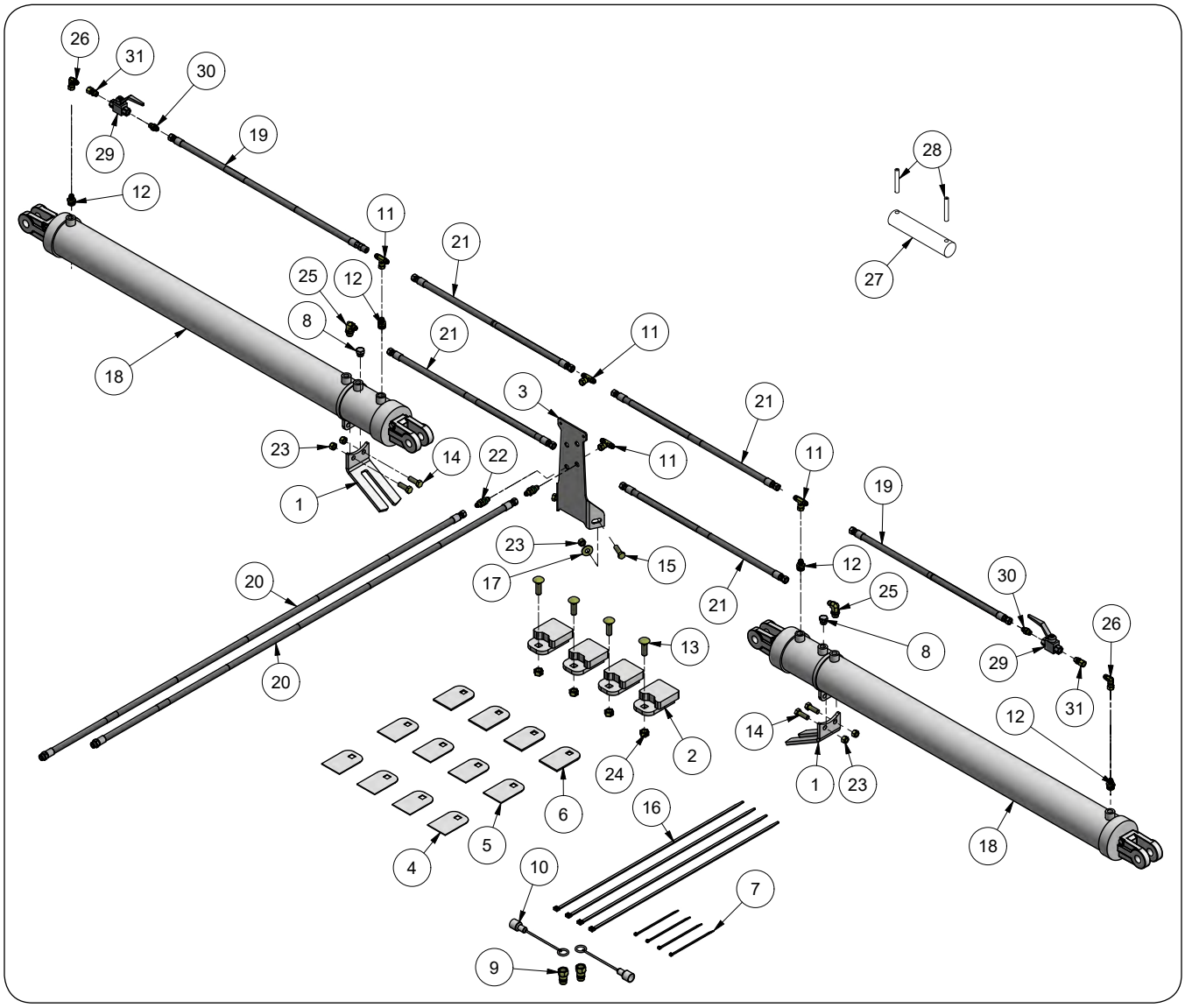
Folding Hydraulic Components - 12 Narrow Shank

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

ITEM	PART NO.	DESCRIPTION	QTY.
1	9840	"O"-Ring	A/R
2	9876	90° Swivel Elbow (9/16-18 JIC Male x 9/16-18 JIC Female)	4
3	94038	Cable Tie 32" Long	A/R
4	85631	Pin 1" Dia. x 4" Long	4
5	9000106	Cable Tie 6" Long	A/R
6	91383	Quick Disconnect (3/4-16 O-Ring Female)	2
7	91511	Dust Cap	2
8	9875	Tee (9/16-18 JIC Male x 9/16-18 JIC Male x 9/16-18 JIC Male)	2
9	91608	Orifice Connector (9/16-18 JIC Male x 3/4-16 O-Ring Male w/Restrictor)	4
10	95407	Seal Kit for 4 x 24 Cylinder	-
11	95419	Hydraulic Cylinder 4 x 24	2
	65815	Replacement Clevis End	-
12	9502776	Hydraulic Hose 3/8" Dia. x 32" Long (9/16-18 JIC Female x 9/16-18 JIC Female)	2
13	9501701	Hydraulic Hose 3/8" Dia. x 63" Long (9/16-18 JIC Female x 9/16-18 JIC Female)	2
14	9502772	Hydraulic Hose 3/8" Dia. x 72" Long (9/16-18 JIC Female x 3/4-16 O-Ring Male)	2
15	91144-165	Spiral Pin 1/4" Dia. x 1 7/8" Long	8
16	9501014	Ball Valve	2
17	9001495	Adapter, 9/16-18 JIC Male x 9/16-18 O-Ring Male	2
18	9002446	Adapter, 9/16-18 O-Ring Male x 9/16-18 JIC Female	2

Hydraulics - Standard
12 Wide/16 Narrow - Beginning with Serial #A65700217

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



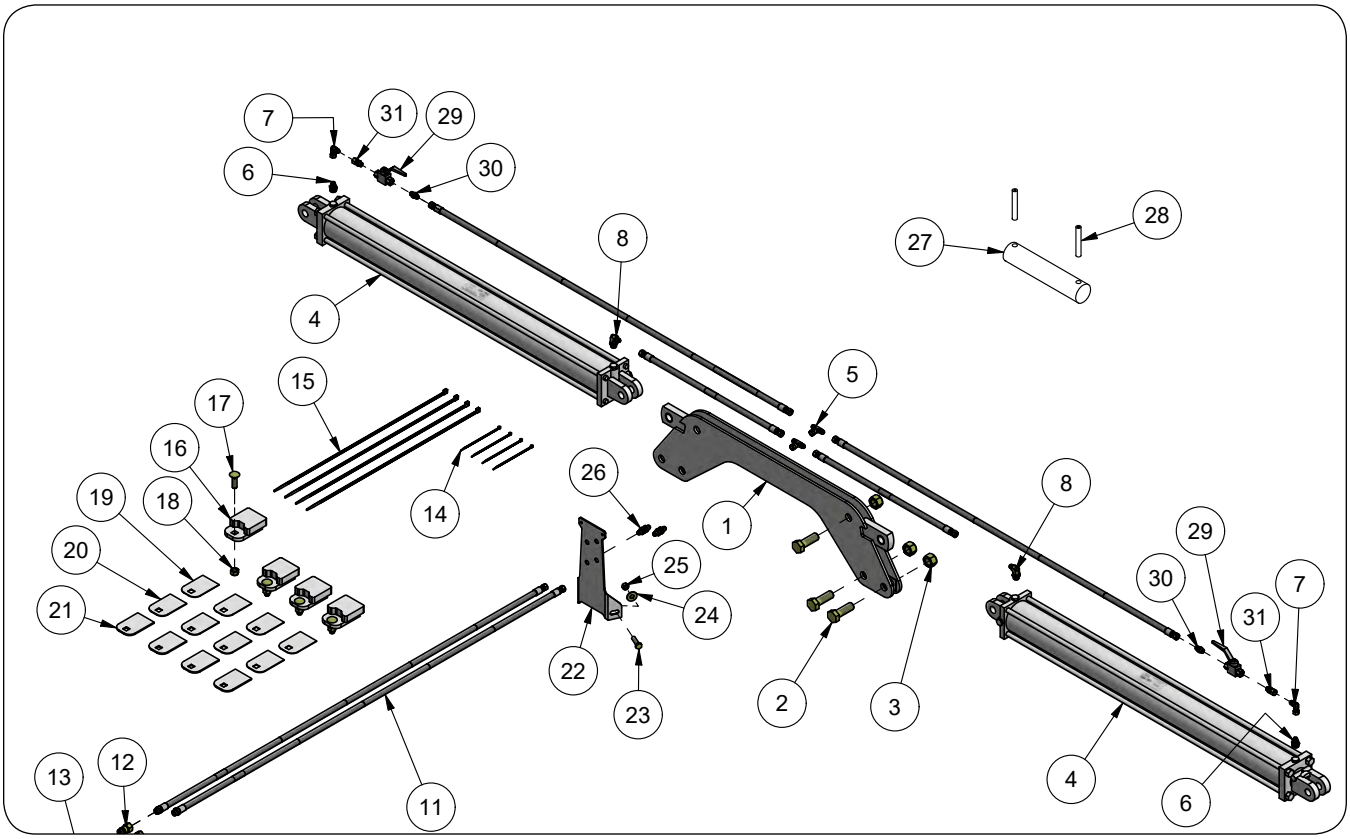
Hydraulics - Standard
12 Wide/16 Narrow - Beginning with Serial #A65700217

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

ITEM	PART NO.	DESCRIPTION	QTY
1	68276B	Cylinder Anti-Rotational Plate	2
2	68337B	Stop Block =BLACK=	4
3	68521B	Mounting Plate =BLACK=	1
4	68815B	Shim 14 GA.	4
5	68816B	Shim 12 GA.	4
6	68817B	Shim 7 GA.	4
7	9000106	Cable Tie 6" Long	AR
8	9003825	Breather Plug	2
9	91383	Quick Disconnect	2
10	91511	Dust Cap	2
11	91525	Tee	4
12	91608	Orifice Connector	2
13	9388-135	Carriage Bolt 5/8"-11UNC x 2" Gr5	4
14	9390-101	Capscrew 1/2"-13UNC x 1 1/2" Gr5	4
15	9390-102	Capscrew 1/2"-13UNC x 1 3/4" Long	2
16	94038	Cable Tie 32" Long	AR
17	9405-088	Flat Washer 1/2"	2
18	9501464	Hydraulic Cylinder 4 x 48 (Twin)	2
19	9501677	Hydraulic Hose 3/8" x 54" (9/16-18 JIC Female x 9/16-18 JIC Female)	2
20	9502772	Hydraulic Hose 3/8" x 72" (9/16-18 JIC Female x 3/4-16 O-Ring Male)	2
21	9502793	Hydraulic Hose 3/8" x 28" (9/16-18 JIC Female x 9/16-18 JIC Female)	4
22	95192	Bulkhead Union 9/16-18 JIC Male x 9/16-18 JIC Male (Threaded with Nut)	2
23	9800	Locknut 1/2"-13UNC	6
24	95905	Locknut/Center 5/8"-11UNC	4
25	9874	90° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Adj. Male	2
26	9876	90° Swivel Elbow	2
27	85631	Pin 1" Dia. x 4"	4
28	91144-165	Spiral Pin 1/4" Dia. x 1 7/8"	8
29	9501014	Ball Valve	2
30	9001495	Adapter, 9/16-18 JIC Male x 9/16-18 O-Ring Male	2
31	9002446	Adapter, 9/16-18 O-Ring Male x 9/16-18 JIC Female	2
-	9504043	JD Hydrolic Seal Kit - for 9501464 Cylinder (Not Pictured)	-
-	9504985	Bailey Seal Kit - for 9501464 Cylinder (Not Pictured)	-

Hydraulics - Standard
12 Wide/16 Narrow - Prior to Serial #A65700217

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



Hydraulics - Standard
12 Wide/16 Narrow - Prior to Serial #A65700217

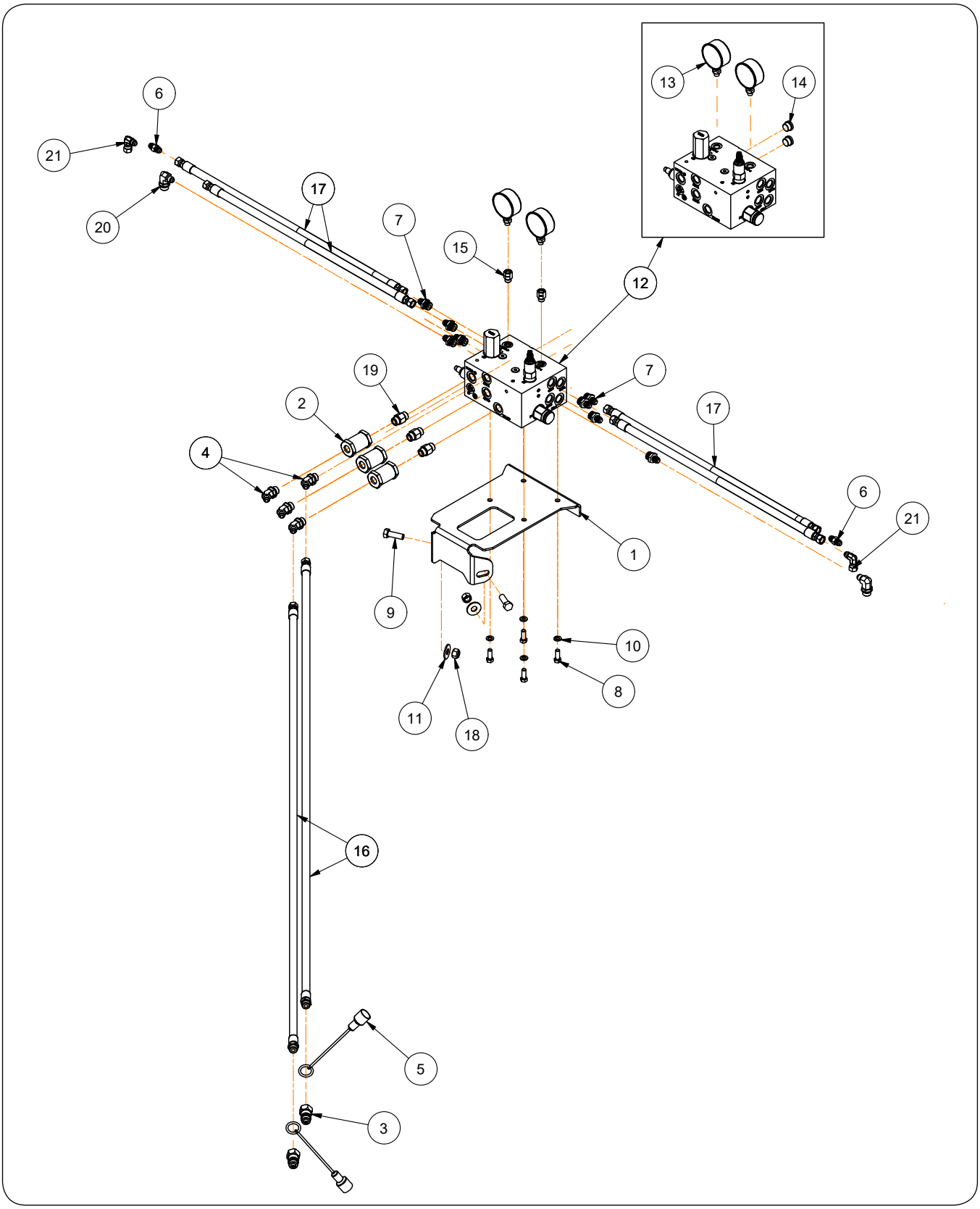
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION	QTY
	68798G	Hydraulic Rigid Wing Fold Package =GREEN=	-
	68798R	Hydraulic Rigid Wing Fold Package =RED=	
1	68399G	Cylinder Mount Weldment =GREEN=	1
	68399R	Cylinder Mount Weldment =RED=	
2	9390-187	Capscrew 1"-8UNC x 3" Gr5	6
3	9663	Locknut/Top 1"-8UNC	6
4	68533B	Hydraulic Cylinder 4 x 48	2
	9399-057	Set Screw 1/4"-20UNC x 1/4"	-
	95407	Seal Kit for 4 x 48 Cylinder	-
5	91525	Tee	2
6	91608	Orifice Connector	2
7	9876	90° Swivel Elbow	2
8	9874	90° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Adj. Male	2
9	9501680	Hydraulic Hose 3/8" x 26"	2
10	9501685	Hydraulic Hose 3/8" x 80"	2
11	96975	Hydraulic Hose 3/8" x 72"	2
12	91383	Quick Disconnect	2
13	91511	Dust Cap	2
14	9000106	Cable Tie 6" Long	A/R
15	94038	Cable Tie 32" Long	A/R
16	68337B	Shim Weldment =BLACK=	4
17	9388-135	Carriage Bolt 5/8"-11UNC x 2" Gr5	4
18	9801	Locknut/Top 5/8"-11UNC	4
19	68815B	Shim 14 GA.	4
20	68816B	Shim 12 GA.	4
21	68817B	Shim 7 GA.	4
22	68521B	Mounting Plate =BLACK=	1
23	9390-102	Capscrew 1/2-13 x 1 3/4" Long	2
24	9405-088	Flat Washer 1/2"	2
25	9800	Locknut 1/2-13	2
26	95192	Bulkhead Union 9/16-18 JIC Male x 9/16-18 JIC Male (Threaded with Nut)	2
27	85631	Pin 1" Dia. x 4"	4
28	91144-165	Spiral Pin 1/4" Dia. x 1 7/8"	8
29	9501014	Ball Valve	2
30	9001495	Adapter, 9/16-18 JIC Male x 9/16-18 O-Ring Male	2
31	9002446	Adapter, 9/16-18 O-Ring Male x 9/16-18 JIC Female	2

Flex Folding Hydraulic Kit (Optional)

12 Wide/16 Narrow Beginning with Serial Number A65700217

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



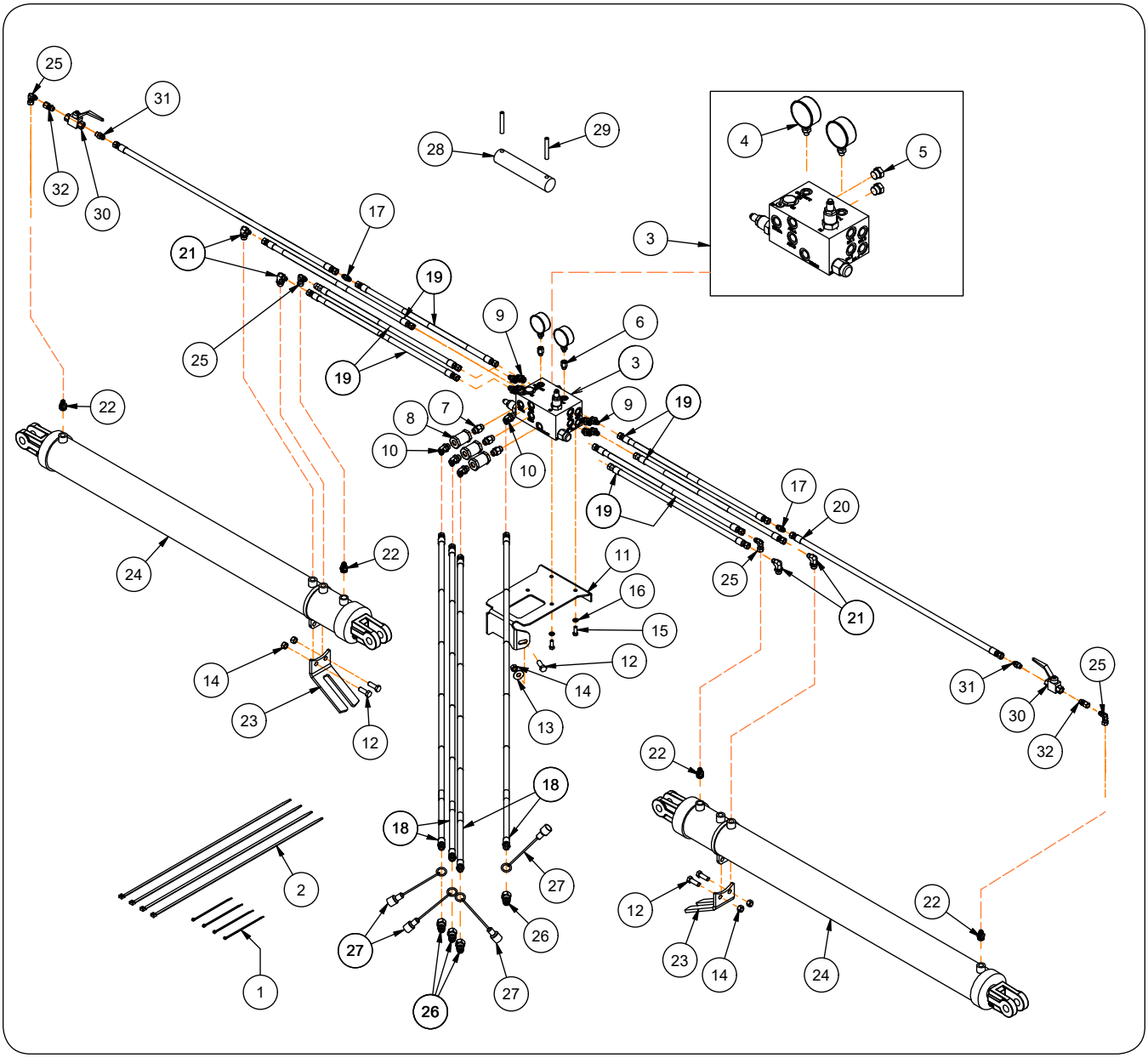
Flex Folding Hydraulic Kit (Optional)
12 Wide/16 Narrow Beginning with Serial Number A65700217

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	68553B	Valve Mount Plate	1	
2	9005403	120 Micron Hydraulic Filter	3	
3	91383	Male Tip Coupling	2	
4	91508	45° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Male	4	
5	91511	Dust Cap	2	
6	92295	Adpater 9/16-18 JIC Male x 9/16-18 JIC Male	2	
7	92927	Adapter 9/16-18 JIC Male x 3/4-16 O-Ring Male	8	
8	9390-055	Capscrew 3/8"-16UNC x 1" Gr5	4	
9	9390-101	Capscrew 1/2"-13UNC x 1 1/2" Gr5	2	
10	9404-021	Lock Washer 3/8"	4	
11	9405-088	Flat Washer 1/2" USS	2	
12	9503620	Valve Assembly	1	
13	9500489	Pressure Gauge	2	
14	98048	Plug	2	
15	9501659	Hydraulic Reducer	2	
16	9502772	Hydraulic Hose 3/8" Dia. x 72"	2	
17	9502793	Hydraulic Hose 3/8" Dia. x 28"	4	
18	9800	Top Locknut 1/2"-13UNC	2	
19	98508	Adapter/Union 3/4"-16 O-Ring Male x 3/4"-16 O-Ring Male	3	
20	9874	90° Elbow 9/16"-18 JIC Male x 3/4"-16 O-Ring Male	2	
21	9876	90° Elbow 9/16"-18 JIC Male x 9/16"-18 JIC Female	2	

Flex Folding Hydraulic Kit (Optional)
12 Wide/16 Narrow Prior to Serial Number A65700217

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



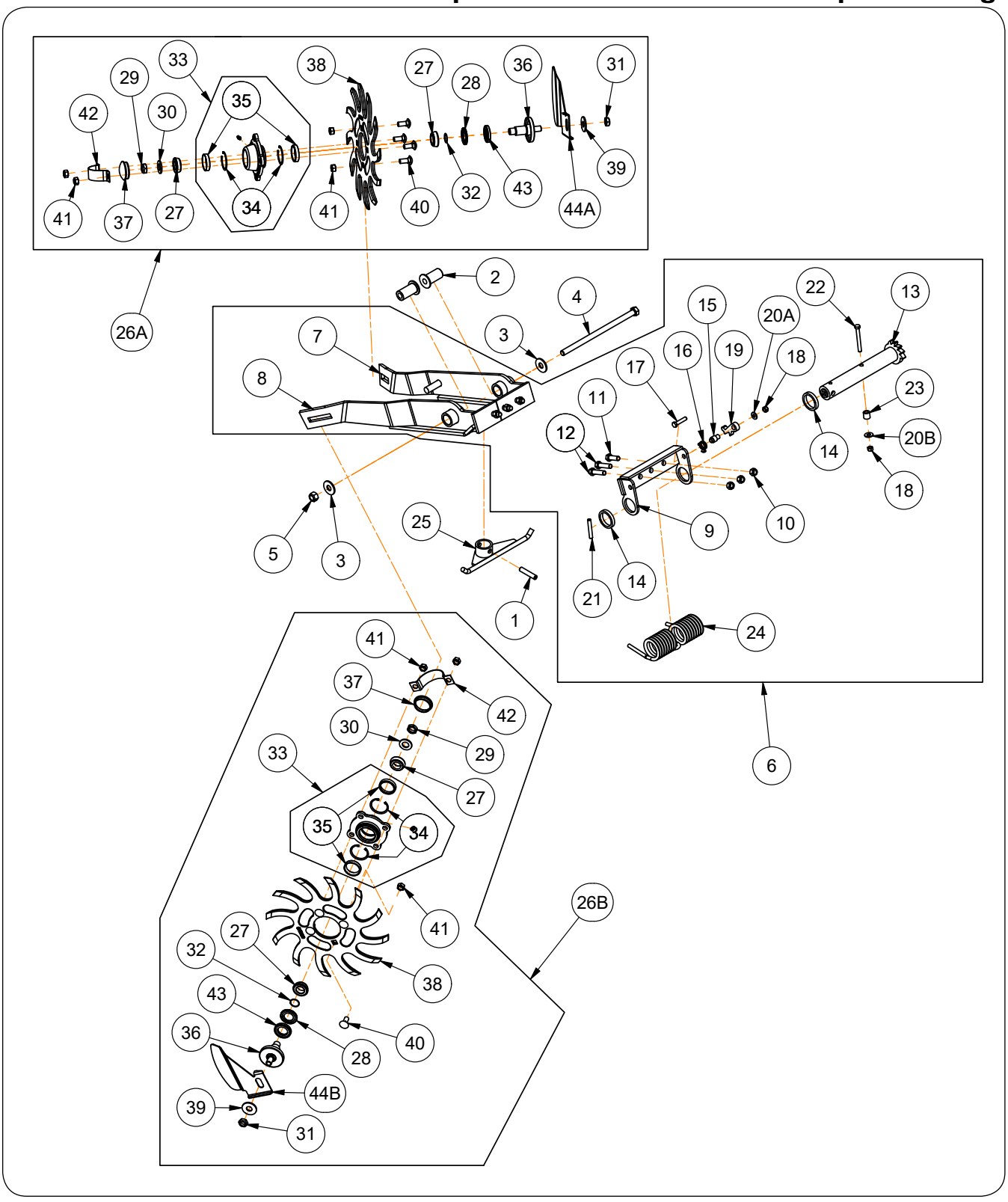
Flex Folding Hydraulic Kit (Optional)
12 Wide/16 Narrow Prior to Serial Number A65700217

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

ITEM	PART NO.	DESCRIPTION	QTY
1	9000106	Cable Tie 7 1/2"	4
2	94038	Cable Tie 32"	4
3	9503620	Valve Assembly	1
4	9500489	Pressure Gauge	2
5	98048	Plug	2
6	9501659	Hydraulic Reducer	2
7	98508	Adapter/Union	3
8	9005403	120 Micron Hydraulic Filter	3
9	92927	Adapter 9/16-18 JIC Male x 3/4-16 O-Ring Male	8
10	91508	45° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Male	4
11	68553B	Valve Mount Plate	1
12	9390-101	Capscrew 1/2"-13UNC x 1 1/2" Gr5	6
13	9405-088	Flat Washer 1/2" USS	2
14	9800	Top Locknut 1/2"-13UNC	6
15	9390-055	Capscrew 3/8"-16UNC x 1" Gr5	4
16	9404-021	Lock Washer 3/8"	4
17	92295	Adpater 9/16-18 JIC Male x 9/16-18 JIC Male	2
18	9502772	Hydraulic Hose 3/8" Dia. x 72”	4
19	9502793	Hydraulic Hose 3/8" Dia. x 28”	8
20	9501677	Hydraulic Hose 3/8" Dia. x 54”	2
21	9874	90° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Male	4
22	91608	Adapter 9/16-18 JIC Male x 3/4-16 O-Ring Male w/ .060 Restrictor	4
23	68276B	Cylinder Anti-Rotational Plate	2
24	9501464	Hydraulic Cylinder 4 x 48 (Twin)	2
25	9876	90° Elbow 9/16-18 JIC Male x 9/16-18 JIC Female Swivel Nut	4
26	91383	Male Tip Coupling	4
27	91511	Dust Cap	4
28	85631	Pin 1” Dia. x 4”	4
29	91144-165	Spiral Pin 1/4” Dia. x 1 7/8”	8
30	9501014	Ball Valve	2
31	9001495	Adapter, 9/16-18 JIC Male x 9/16-18 O-Ring Male	2
32	9002446	Adapter, 9/16-18 O-Ring Male x 9/16-18 JIC Female	2

Optional Floating Row Cleaner (68164B)

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



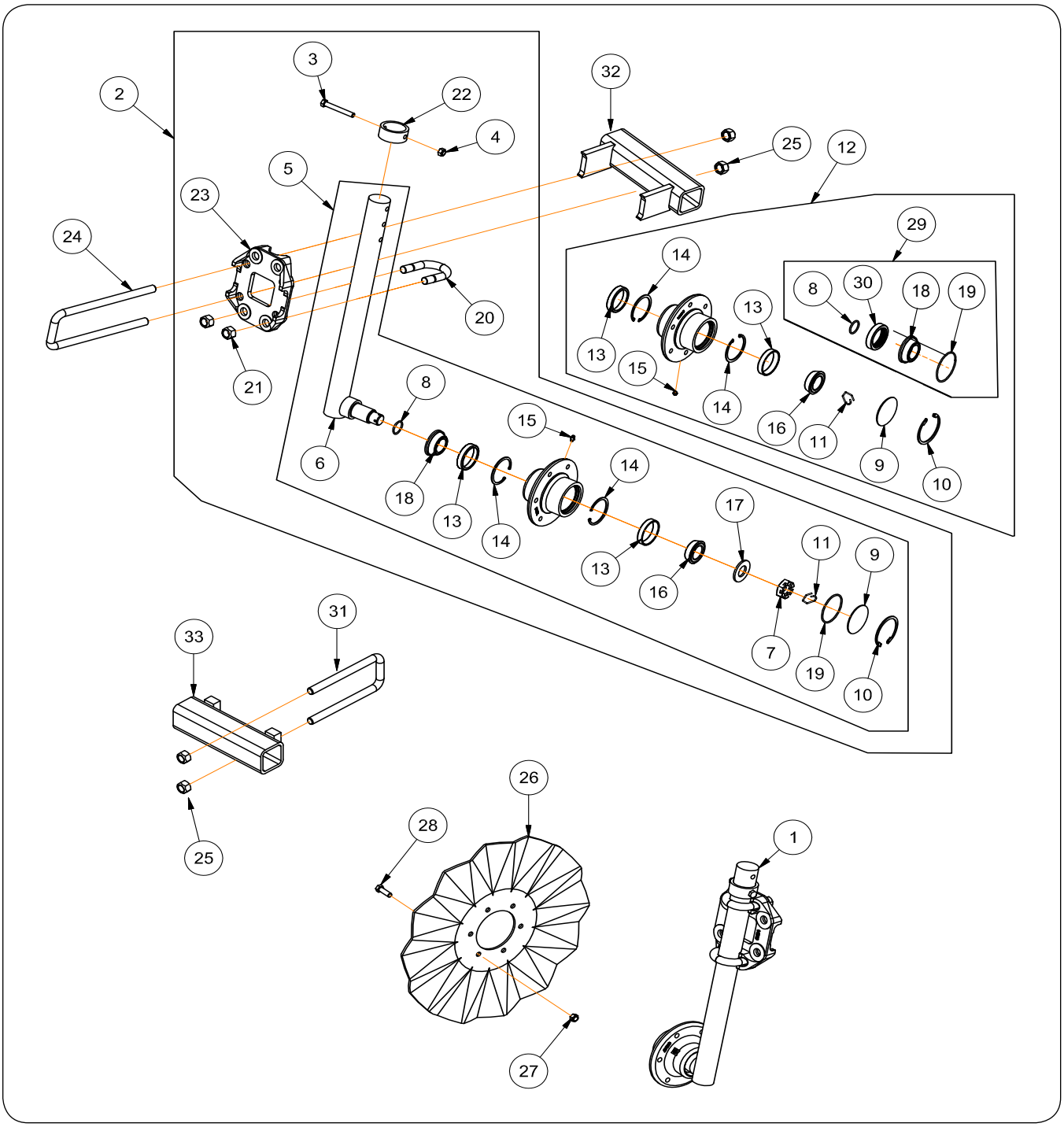
Optional Floating Row Cleaner (68164B)

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	9392-210	Roll Pin 1/2" Dia. x 2 1/2	1	
2	67984	Bushing Hardened	2	
3	9405-100	Flat Washer 5/8" USS	2	
4	9390-447	Capscrew 5/8"-11UNC x 12" G5	1	
5	9801	Lock Nut/Top, 5/8"-11UNC	1	
6	68154B	Row Cleaner Frame Assembly	1	
7	68068B	Arm Weldment Left-Hand	1	
8	68069B	Arm Weldment Right-Hand	1	
9	68088B	Frame Weldment	1	
10	9800	Locknut 1/2-13UNC	3	
11	9390-101	Capscrew 1/2-13UNC x 1 1/2	1	Grade 5
12	9390-103	Capscrew 1/2-13UNC x 2	2	Grade 5
13	68089B	Winch Weldment	1	
14	68099	Spacer/Tube 2 1/4" Dia. x 3/8	2	
15	68098	Tube/Bar	1	
16	9501062	Torsion Spring Right-Hand Wound	1	
17	91299-058	Capscrew 3/8-16UNC x 1 3/4	1	Grade 8
18	9928	Locknut 3/8-16UNC	2	
19	68097	Lock Plate 1 1/2 x 2 21/32	1	
20A	9405-070	Flat Washer 5/16" USS	1	
20B	9405-076	Flat Washer 3/8" USS	1	
21	91144-209	Spiral Pin 3/8" Dia. x 2 1/2	1	
22	9390-064	Capscrew 3/8-16UNC x 3 1/4	1	Grade 5
23	68096	Tube 3/4" Dia. x 3/4	1	
24	9501065B	Torsion Spring Double	1	
25	68100B	Spring Keeper Weldment	1	
26A	68317B	Hub/Spindle Asy Left-Hand w/Row Cleaner Wheel & Scraper	1	Includes Items 27-43 & 44A
26B	68323B	Hub/Spindle Asy Right-Hand w/Row Cleaner Wheel & Scraper	1	Includes Items 27-43 & 44B
27	92523	Bearing Cone 1" Dia. Bore (L44643)	2	
28	95680	Seal/3 Lip	1	
29	9397-016	Elastic Jam Nut 3/4-16UNF	1	
30	902645-104	Flat Washer 3/4" SAE	1	Grade 8
31	9397-015	Elastic Jam Nut 5/8-18UNF	1	
32	95595	O-Ring	1	
33	68318B	Coulter Hub 4-Bolt w/Bearing Cups	1	Includes Items 34 & 35
34	95233	Retaining Ring 2" Bore	2	
35	92522	Bearing Cup (L44610)	2	
36	68284	Spindle & Seal Cover Assembly	1	
37	9501381	Hub Cap	1	
38	67280B	Row Cleaner Wheel (12 Tooth Open Profile)	1	
39	9405-100	Flat Washer 5/8" USS	4	
40	9388-103	Carriage Bolt 1/2-13UNC x 1 1/4	4	Grade 5
41	94981	Locknut 1/2-13UNC	1	
42	68315	Strap	1	
43	9501380	Oil Seal	1	
44A	68103	Scraper Left-Hand	1	
44B	68104	Scraper Right-Hand	1	

Quad-Coulter (64776B)

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



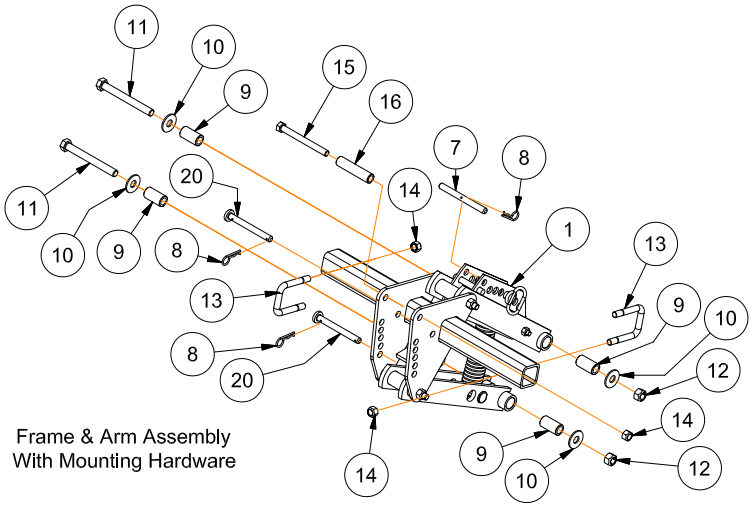
Quad-Coulter (64776B)

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	63047	Coulter SubAssembly Right-Hand	1	Includes Items 3 through 23
2	63048	Coulter SubAssembly Left-Hand	1	Includes Items 3 through 23
3	9390-062	Capscrew 3/8-16UNC x 2 3/4	2	Grade 5
4	9928	Locknut 3/8-16UNC	2	
5	62806	Post & Hub Assembly	2	Includes Items 6 through 19
6	62792	Spindle Post Weldment	2	
7	94795	Slotted Jam Nut 1-14UNS	2	
8	95565	O-Ring 1.049 ID	2	
9	60735B	Hub Cap	2	
10	93985	Retaining Ring 2 9/16	2	
11	9504825	Retaining Spring 1/8" dia. x 1 3/4"	2	
12	64533	Hub 6 Bolt Assembly	2	Includes Items 9, 10, 11, 13, 14, 15, 16, & 29
13	9345	Bearing Cup #LM67010	2	
14	94796	Retaining Ring 2 1/2	2	
15	91160	Grease Zerk	2	
16	9165	Bearing Cone #LM67048	2	
17	94800	Bushing	2	
18	901145	Bearing & Seal Assembly	2	
19	902158	O-ring 2.487"	2	
20	95883	U-bolt 5/8-11UNC x 3	4	
21	9801	Locknut 5/8-11UNC	8	
22	62823B	Tube	2	
23	62594	Clamp Mounting Clamp	2	
24	97210	U-Bolt 5/8-11UNC x 9 1/2	2	
25	9801	Locknut 5/8-11UNC	8	
26	93931	Blade - Wave	2	
27	9928	Locknut 3/8-16UNC	12	
28	9390-056	Capscrew 3/8-16UNC x 1 1/4	12	Grade 5
29	68281	Seal Kit	2	Includes Items 8, 19, 20, & 30
30	93987	Triple Lip Seal	2	
31	97209	U-Bolt 5/8-11UNC x 7 1/2	2	
32	63815	Tube Weldment w/Long Legs	1	
33	63814	Tube Weldment w/Short Legs	1	

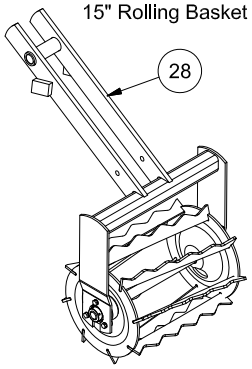
Shank Attachments

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

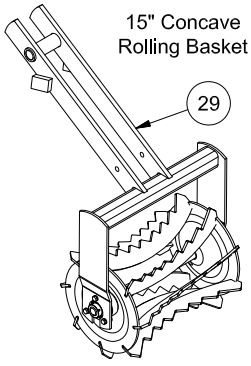


Frame & Arm Assembly
With Mounting Hardware

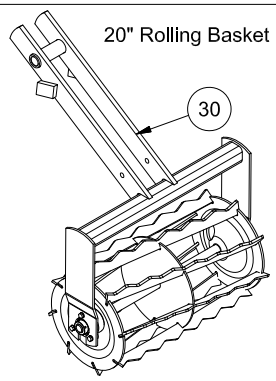
15" Rolling Basket



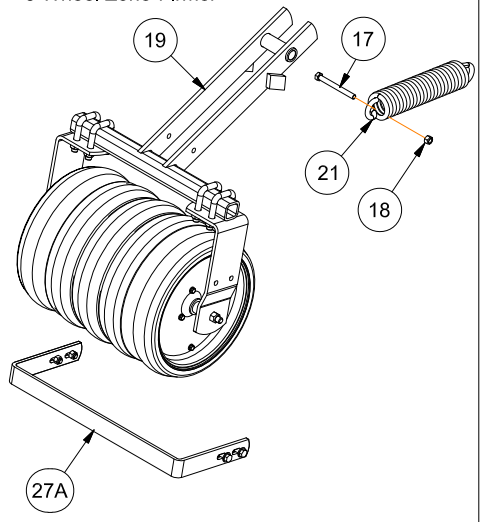
15" Concave
Rolling Basket



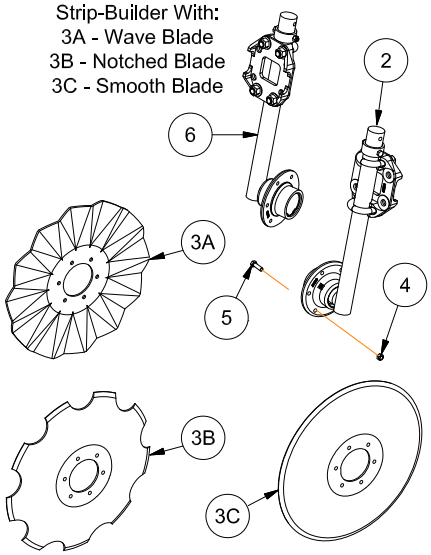
20" Rolling Basket



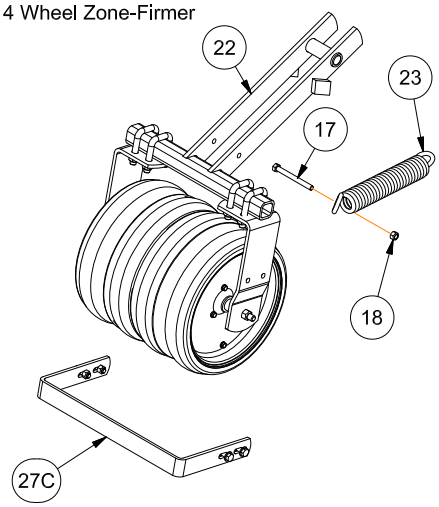
5 Wheel Zone-Firmer



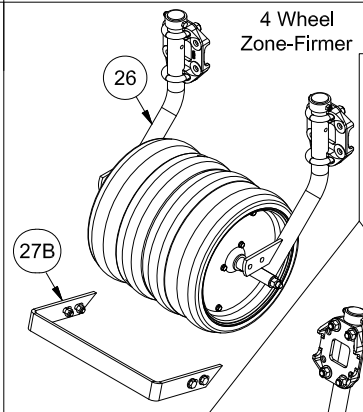
Strip-Builder With:
3A - Wave Blade
3B - Notched Blade
3C - Smooth Blade



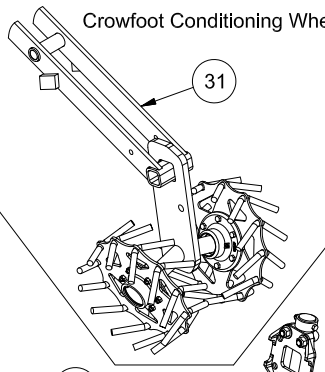
4 Wheel Zone-Firmer

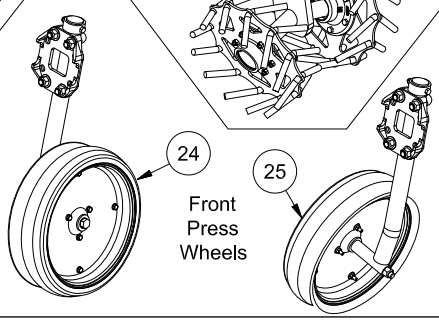


4 Wheel
Zone-Firmer



Crowfoot Conditioning Wheels





Front
Press
Wheels

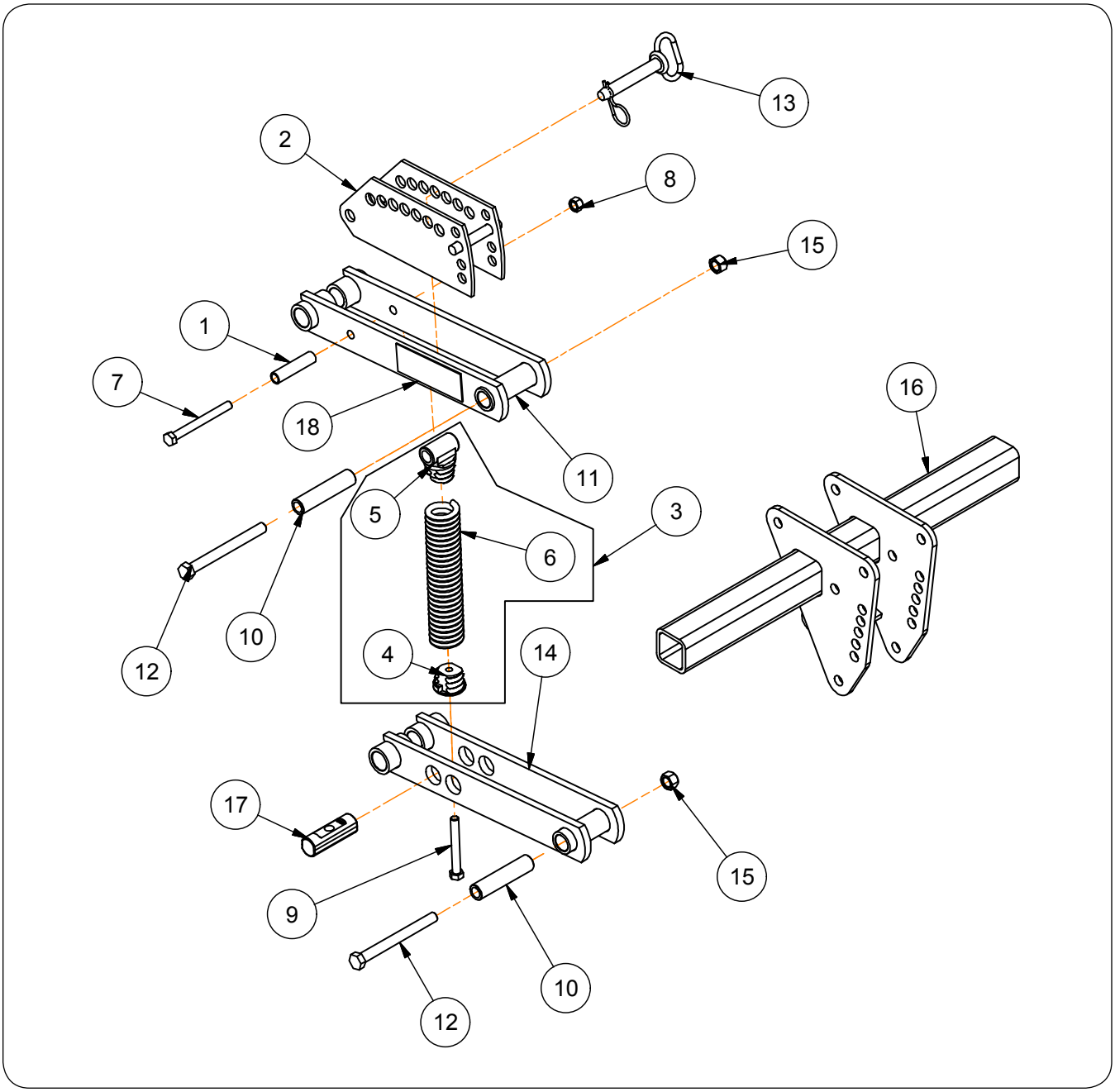
Shank Attachments

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

ITEM	PART NO.	DESCRIPTION	63954 — Strip-Builder w/ Wave Blades	67293B — Strip-Builder w/ Wave Blades & Zone Firmer (5 Wheel)	65250B — Strip-Builder w/ Wave Blades & Zone Firmer (4 Wheel)	67099B — Strip-Builder w/Notched Blades & Zone Firmer (4 Wheel)	67100B — Strip-Builder w/ Smooth Blades & Zone Firmer (4 Wheel)	65249B — Zone Firmer (4 Wheel) & Lead Press Wheels	68082B — Zone Firmer (4 Wheel)	63282 — Strip-Builder w/ Wave Blades & 15" Rolling Basket	66796B — Strip-Builder w/ Wave Blades & 15" Concave Rolling Basket	66184B — Strip-Builder w/ Notched Blades & 15" Rolling Basket	66185B — Strip-Builder w/ Notched Blades & 15" Concave Rolling Basket	66186B — Strip-Builder w/ Smooth Blades & 15" Rolling Basket	66187B — Strip-Builder w/ Smooth Blades & 15" Concave Rolling Basket
1	63163	Frame & Arm Assembly	1	1	1	1	1	1	1	1	1	1	1	1	1
2	63047	Coulter RH Rear SubAsy	1	1	1	1	1	-	-	1	1	1	1	1	1
3A	93931	Blade - Wave	2	2	2	-	-	-	-	2	2	-	-	-	-
3B	900586	Blade - Notched	-	-	-	2	-	-	-	-	-	2	2	-	-
3C	900598	Blade - Smooth	-	-	-	-	2	-	-	-	-	-	-	2	2
4	9928	Locknut 3/8-16UNC	12	12	12	12	12	-	-	12	12	12	12	12	12
5	9390-056	Capscrew (Grade 5) 3/8-16UNC x 1 1/4	12	12	12	12	12	-	-	12	12	12	12	12	12
6	63048	Coulter LH Front SubAsy	1	1	1	1	1	-	-	1	1	1	1	1	1
7	62811	Pin 5/8" Dia. x 6 5/8	1	1	1	1	1	1	1	1	1	1	1	1	1
8	9806	Hairpin Cotter Pin	3	3	3	3	3	3	1	3	3	3	3	3	3
9	63854	Tube 2 5/16	4	4	4	4	4	4	4	4	4	4	4	4	4
10	9405-106	Flat Washer 3/4" USS	4	4	4	4	4	4	4	4	4	4	4	4	4
11	9390-159	Capscrew (Grade 5) 3/4-10UNC x 7	2	2	2	2	2	2	2	2	2	2	2	2	2
12	9802	Locknut 3/4-10UNC	2	2	2	2	2	2	2	2	2	2	2	2	2
13	94015	U-Bolt 5/8-11UNC	4	4	4	4	4	4	4	4	4	4	4	4	4
14	9801	Locknut 5/8-11UNC	9	9	9	9	9	9	8	9	9	9	9	9	9
15	9390-137	Capscrew (Grade 5) 5/8-11UNC x 6 1/2	1	1	1	1	1	1	-	1	1	1	1	1	1
16	63855	Tube 4 9/16	1	1	1	1	1	1		1	1	1	1	1	1
17	9390-113	Capscrew (Grade 5) 1/2-13UNC x 5	-	1	1	1	1	1	-	1	1	1	1	1	1
18	9800	Locknut 1/2-13UNC	-	1	1	1	1	1	-	1	1	1	1	1	1
19	67160B	Press Wheel Asy	-	1	-	-	-	-	-	-	-	-	-	-	-
20	65352	Clevis Pin 5/8" Dia. x 6 1/2"	2	2	2	2	2	2	-	2	2	2	2	2	2
21	902237B	Spring/Extn 14.72"	-	1	-	-	-	-	-	-	-	-	-	-	-
22	65246B	Press Wheel Asy	-	-	1	1	1	1	-	-	-	-	-	-	-
23	97083B	Spring/Extn 14 3/8"	-	-	1	1	1	1	-	1	1	1	1	1	1
24	64606B	Press Wheel RH Asy	-	-	-	-	-	1	-	-	-	-	-	-	-
25	64607B	Press Wheel LH Asy	-	-	-	-	-	1	-	-	-	-	-	-	-
26	64638B	Press Wheel Asy	-	-	-	-	-	-	1	-	-	-	-	-	-
27A	67182B	Scraper Bar Bundle	-	1	-	-	-	-	-	-	-	-	-	-	-
27B	68083B	Scraper Bar Bundle	-	-	-	-	-	-	1	-	-	-	-	-	-
27C	65264B	Scraper Bar Bundle	-	-	1	1	1	1	-	-	-	-	-	-	-
28	62740	Basket & Frame 15"	-	-	-	-	-	-	-	-	-	-	-	-	-
29	65918B	Basket & Frame 15" Concave	-	-	-	-	-	-	-	-	-	-	-	-	-
30	67148B	Basket & Frame 20"	-	-	-	-	-	-	-	-	-	-	-	-	-
31	602015B	Crowfoot Conditioning Wheel	-	-	-	-	-	-	-	-	-	-	-	-	-

Shank Attachment Frame & Arm Assembly

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



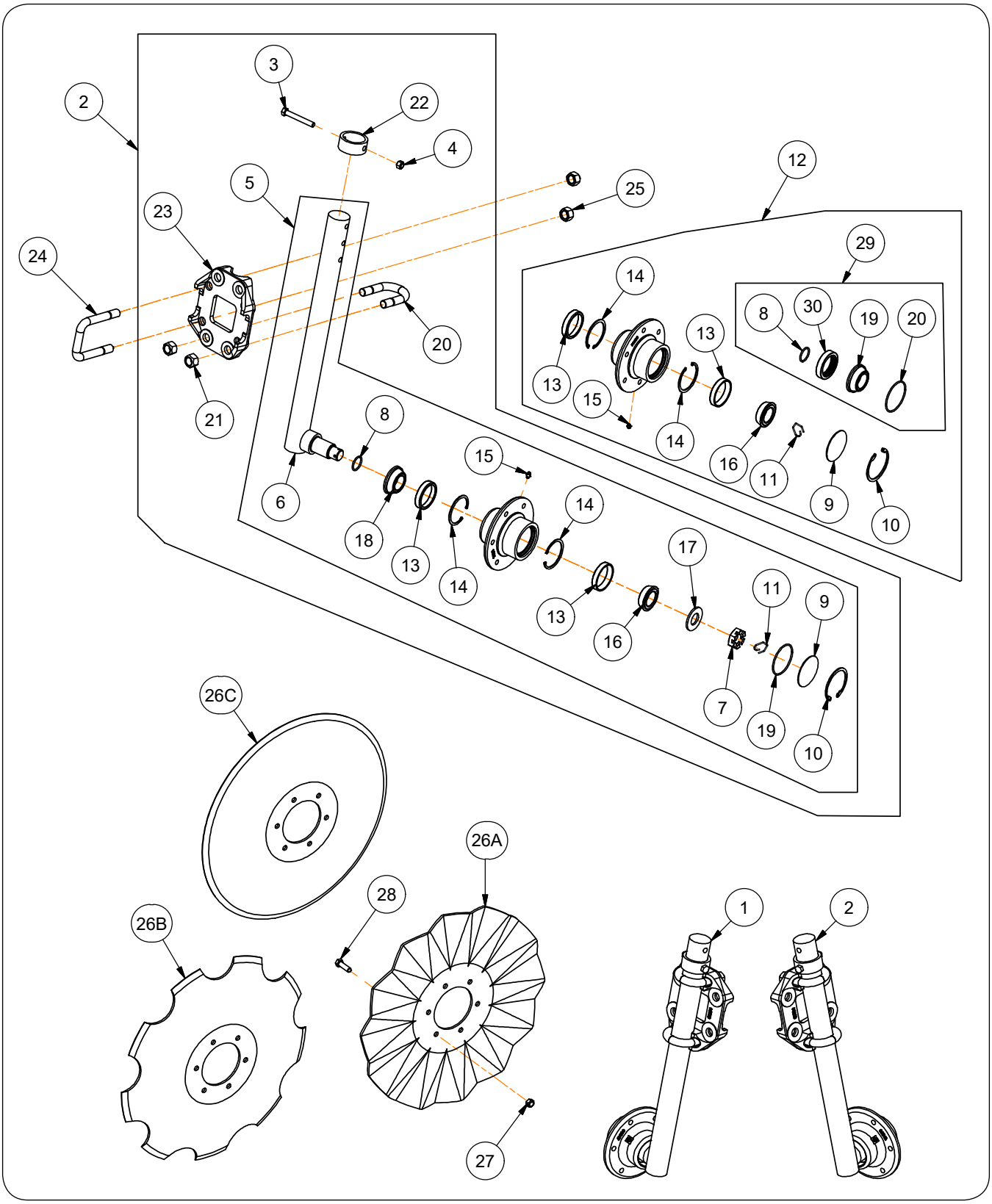
Shank Attachment Frame & Arm Assembly

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

ITEM	PART NO.	DESCRIPTION	QTY
	63163	Frame & Arm Assembly	-
1	62810	Tube 3 3/16 Lg.	1
2	62721	Adjustable Link	1
3	8235	Spring Assembly	1
4	8001B	Spring Plug	1
5	8002B	Spring Plug	1
6	9798B	Extension Spring	1
7	9390-113	Capscrew 1/2-13 x 5" Lg. (Gr. 5)	1
8	9800	Locknut 1/2-13	1
9	91552	Full Threaded Capscrew 1/2-13 x 4" Lg.	1
10	63855	Tube 4 9/16" Lg.	2
11	63967B	Top Clevis Arm (with Decals)	1
12	9390-137	Capscrew 5/8-11 x 6 1/2" Lg. (Gr. 5)	2
13	97035	Hitch Pin 4 1/4" Lg. & Hairpin (95959)	1
14	65471	Bottom Clevis Arm	1
15	9801	Locknut 5/8-11	2
16	63966B	Frame Weldment	1
17	67173	Trunnion	1
18	901909	Decal, Adjustment Procedures	1

Strip-Builder Components

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



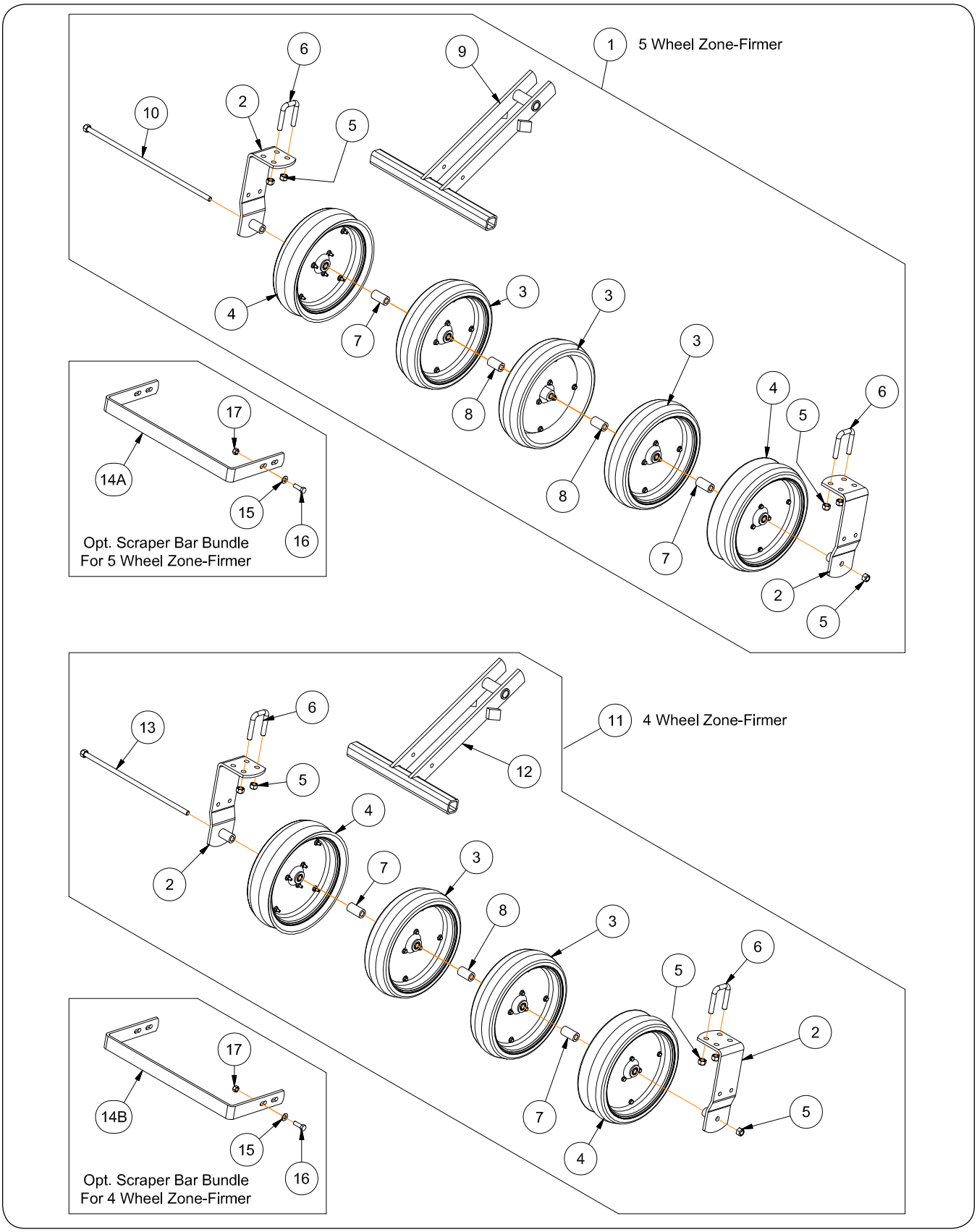
Strip-Builder Components

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	63047	Coulter SubAssembly Right-Hand	1	Includes Items 3 through 23
2	63048	Coulter SubAssembly Left-Hand	1	Includes Items 3 through 23
3	9390-062	Capscrew 3/8-16UNC x 2 3/4 (Grade 5)	1	
4	9928	Locknut 3/8-16UNC	1	
5	62806	Post & Hub Assembly	1	Includes Items 6 through 19
6	62792	Spindle Post Weldment	1	
7	94795	Slotted Jam Nut 1-14UNS	1	
8	95565	O-Ring 1.049 ID	1	
9	60735B	Hub Cap	1	
10	93985	Retaining Ring 2 9/16	1	
11	9504825	Retaining Spring 1/8" dia. x 1 3/4"	1	
12	64533	Hub 6 Bolt Assembly	-	Includes Items 9, 10, 11, 13, 14, 15, 16, & 29
13	9345	Bearing Cup #LM67010	2	
14	94796	Retaining Ring 2 1/2	2	
15	91160	Grease Zerk	1	
16	9165	Bearing Cone #LM67048	1	
17	94800	Bushing	1	
18	901145	Bearing & Seal Assembly	1	
19	902158	O-ring 2.487"	1	
20	95883	U-bolt 5/8-11UNC x 3	4	
21	9801	Locknut 5/8-11UNC	4	
22	62823B	Tube	1	
23	62594	Clamp Mounting Clamp	1	
24	94015	U-Bolt 5/8-11UNC	2	
25	9801	Locknut 5/8-11UNC	4	
26A	93931	Blade - Wave	1	
26B	900586	Blade - Notched		
26C	900598	Blade - Smooth		
27	9928	Locknut 3/8-16UNC	6	
28	9390-056	Capscrew 3/8-16UNC x 1 1/4	6	Grade 5
29	68281	Seal Kit	-	Includes Items 8, 9, 10, 11, 16, 18, 19, & 30
30	93987	Triple Lip Seal	1	

4 & 5 Wheel Zone-Firmer Components

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



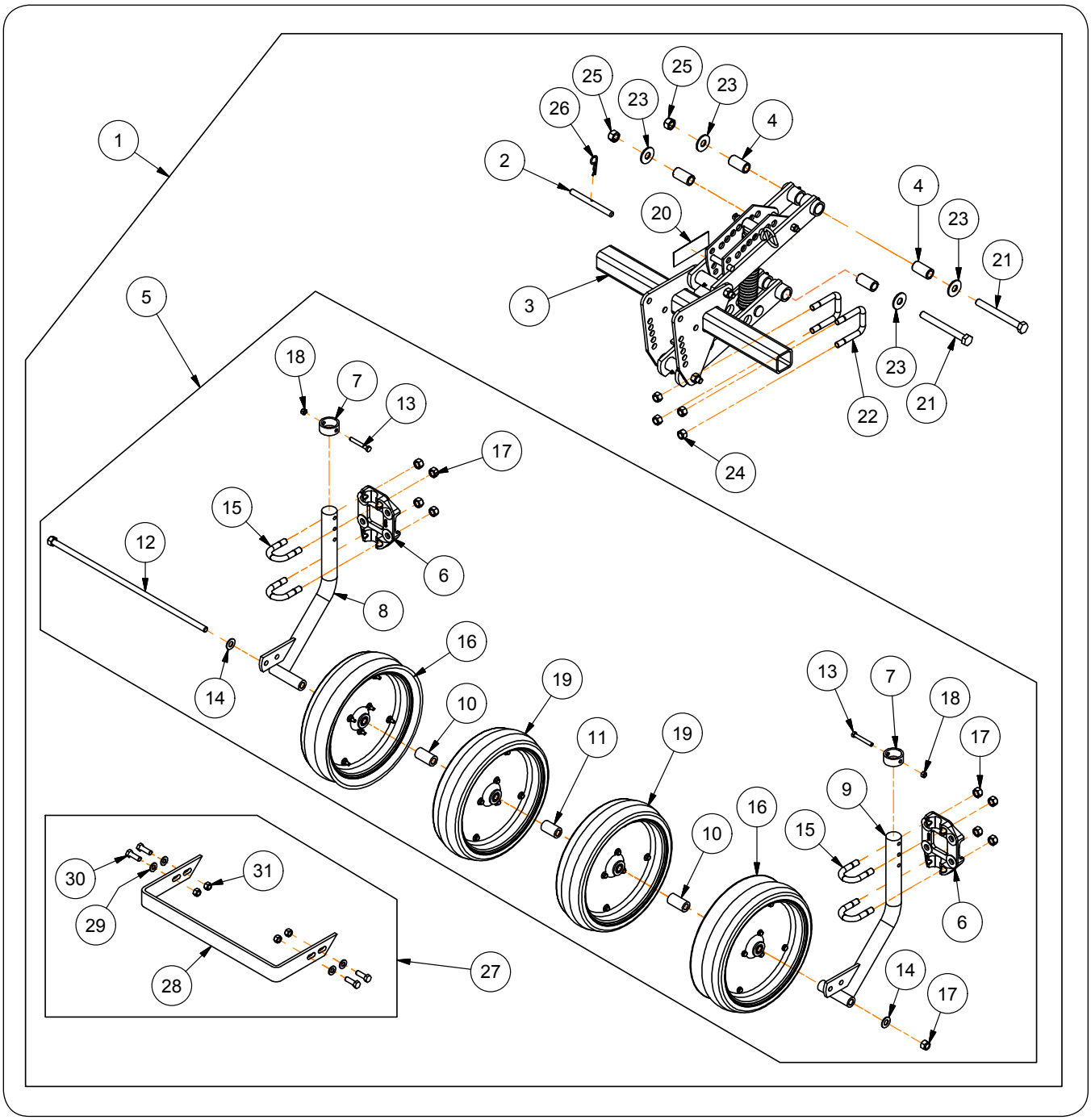
4 & 5 Wheel Zone-Firmer Components

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

ITEM	PART NO.	DESCRIPTION	QTY
1	67160B	5 Wheel Zone Firmer	1
2	64599B	Plate Weldment	2
3	99712	Tire & Wheel Assembly	3
4	97520	Offset Tire & Wheel	2
5	9801	Locknut 5/8-11UNC	9
6	85620	U-Bolt 5/8-11UNC	4
7	64598	Tube 2 3/8" Long	2
8	65251	Tube 2 1/8" Long	2
9	67161B	Frame Weldment	1
10	67163	Rod Weldment	1
11	65246B	4 Wheel Zone Firmer	1
12	65273B	Frame Weldment (17" Wide)	1
13	65248	Rod Weldment	1
14A	67182B	Scraper Bar Bundle (5-Wheel)	-
	67183B	Scraper Bar	1
14B	65264B	Scraper Bar Bundle (4-Wheel)	-
	65263B	Scraper Bar	1
15	9405-086	Flat Washer 1/2" SAE	4
16	9390-101	Capscrew 1/2-13UNC x 1 1/2	4
17	9800	Locknut 1/2-13UNC	4

4 Wheel Zone-Firmer Components

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



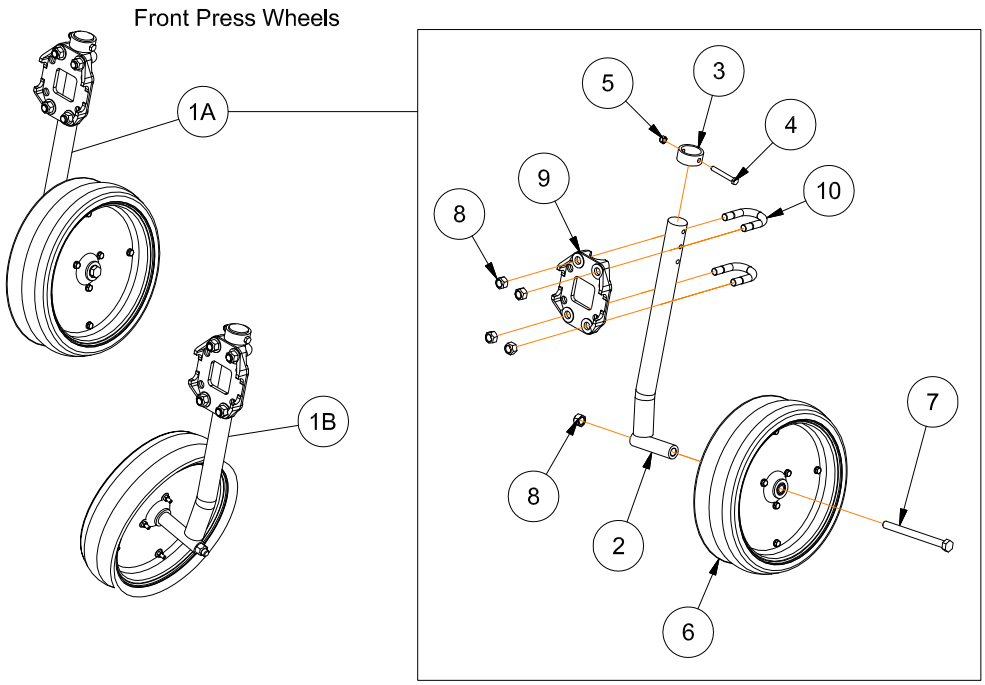
4 Wheel Zone-Firmer Components

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

ITEM	PART NO.	DESCRIPTION	QTY
1	68082B	Zone Firmer Assembly 4-Wheel (16" Wide)	-
2	62811	Pin 5/8" Dia. x 6 5/8	1
3	63163	Frame & Arm Assembly	1
4	63854	Tube 1 1/4" Dia. x 2 5/16	4
5	68079B	Press Wheel Assembly 4-Wheel (16" Wide)	1
6	62594	Clamp Mounting Casting	2
7	62823B	Tube 1" Long	2
8	64216B	Axle Post Weldment Left-Hand	1
9	64217B	Axle Post Weldment Right-Hand	1
10	64598	Tube 2 3/8" Long	2
11	65251	Tube 1 1/4" Dia. x 2 1/8	1
12	68080	Tie Rod Weldment 5/8" Dia. x 25 1/4	1
13	9390-062	Capscrew 3/8-16UNC x 2 3/4 (Grade 5)	2
14	9405-098	Flat Washer 5/8" SAE	2
15	95883	U-Bolt 5/8-11UNC	4
16	97520	Offset Tire & Wheel	2
17	9801	Locknut 5/8-11UNC	9
18	9928	Locknut 3/8-16UNC	2
19	99712	Tire & Wheel Assembly	2
20	901909	Decal, Adjustment Procedures	1
21	9390-159	Capscrew 3/4-10UNC x 7 (Grade 5)	2
22	94015	U-Bolt 5/8-11UNC x 3 7/8 (Grade 5)	4
23	9405-106	Flat Washer 3/4 USS	4
24	9801	Locknut 5/8-11UNC	8
25	9802	Locknut 3/4-10UNC	2
26	9806	Hairpin Cotter for 5/8-3/4" Dia. Shafts	1
27	68083B	Scraper Bar Bundle	-
28	68084B	Scraper Bar	1
29	9405-086	Flat Washer 1/2" SAE	4
30	9390-101	Capscrew 1/2-13UNC x 1 1/2	4
31	9800	Locknut 1/2-13UNC	4

Front Angled Press Wheel Components

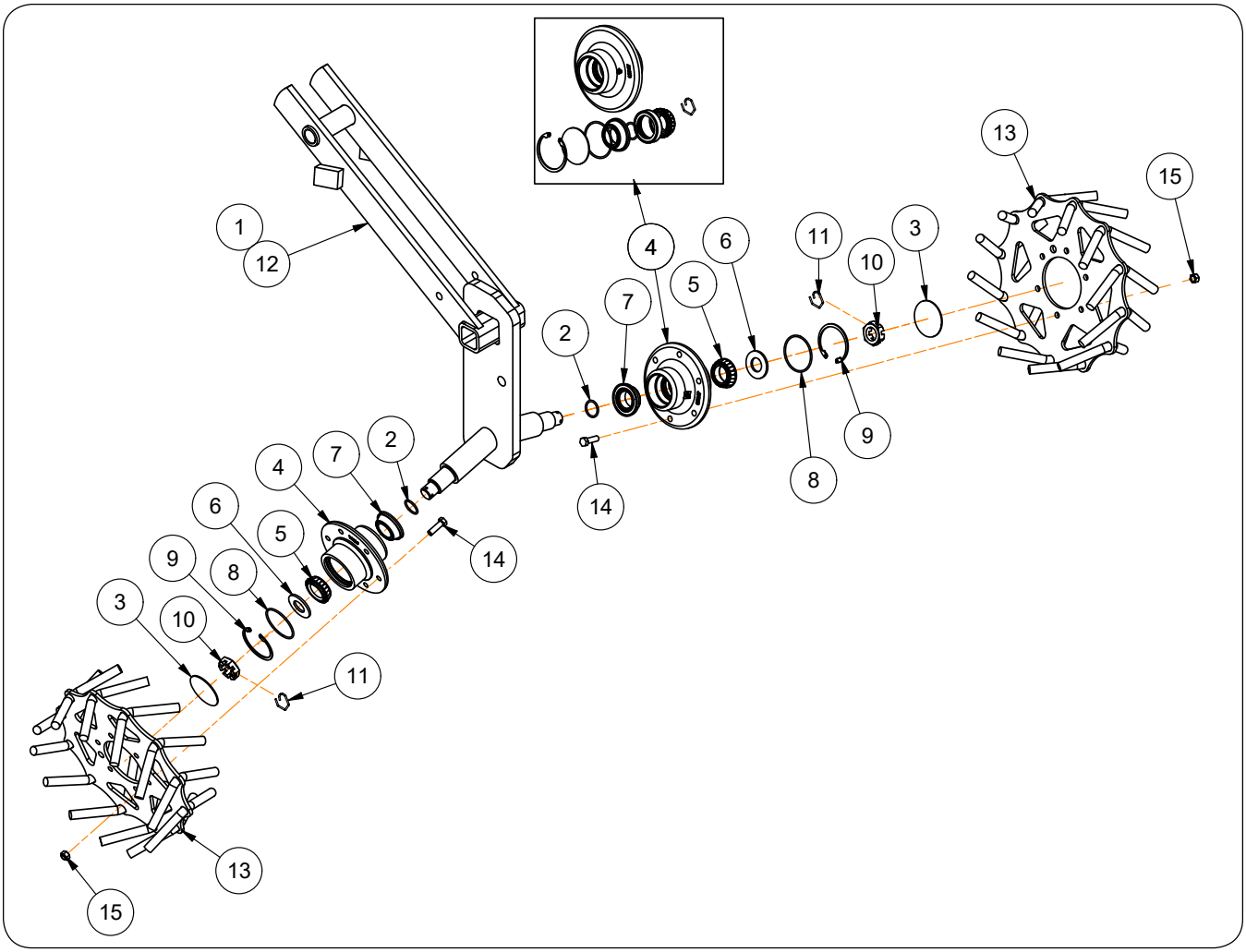
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY
1A	64606B	Front Angled Press Wheel Right-Hand Assembly	1
1B	64607B	Front Angled Press Wheel Left-Hand Assembly	1
2	64605B	Post Weldment	2
3	62823B	Tube 1" Long	2
4	9390-062	Capscrew 3/8-16UNC x 2 3/4 (Grade 5)	2
5	9928	Locknut 3/8-16UNC	2
6	97520	Offset Tire & Wheel	2
7	9390-139	Capscrew 5/8-11UNC x 7 1/2 (Grade 5)	2
8	9801	Locknut 5/8-11UNC	10
9	62594	Clamp Mounting Casting	2
10	95883	U-Bolt 5/8-11UNC	4

Crowfoot Conditioning Wheel Components

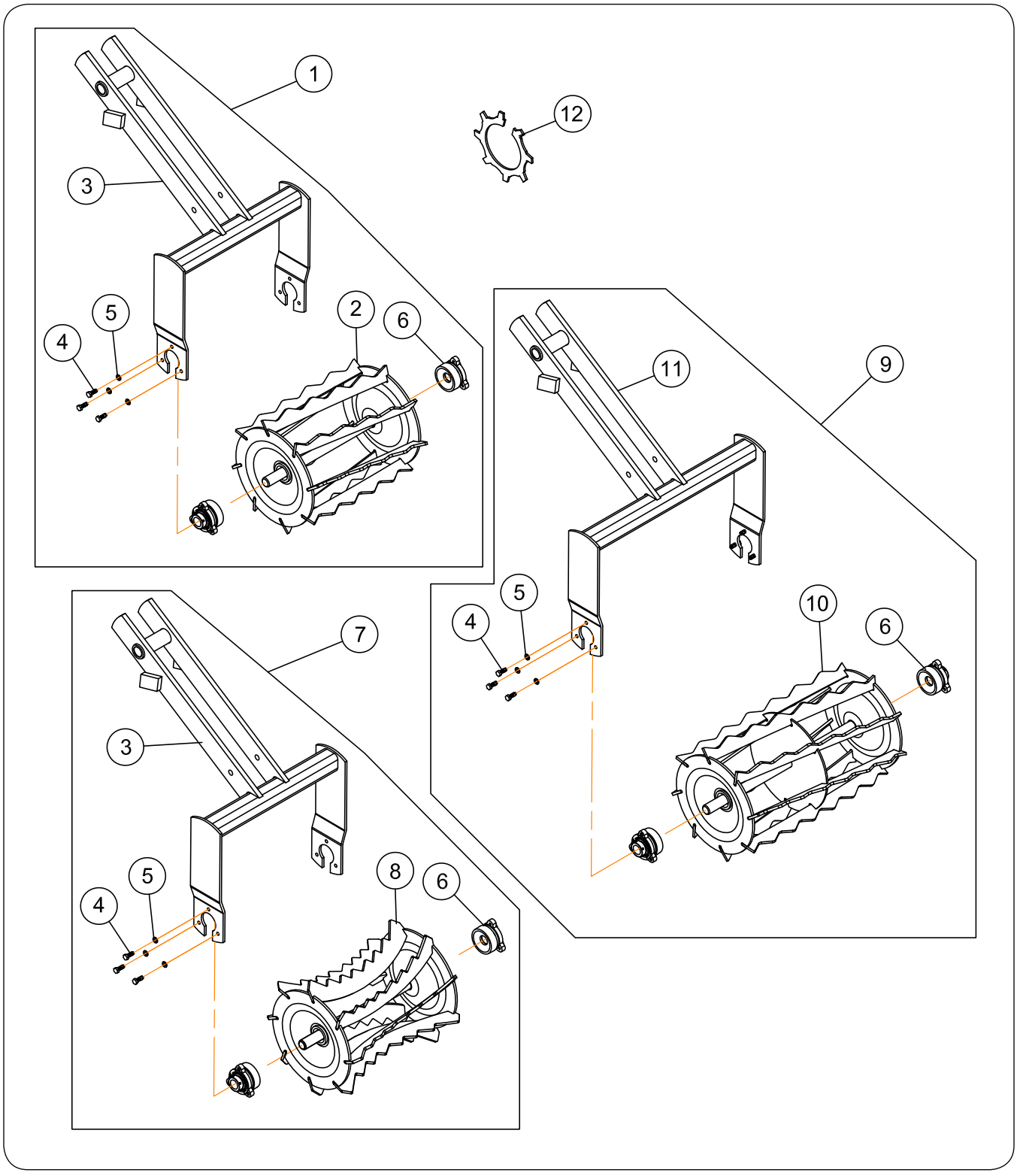
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY	
	602015B	Crowfoot Conditioning Wheel Attachment	-	Includes Items 1-15
1	601987B	Basket Arm Assembly	1	includes items 2-12
2	95565	O-Ring 1.049" ID	2	
3	60735B	Hub Cap	2	
4	64533	Hub 6-Bolt Assembly w/Seal Kit	2	Includes Items 2, 3, 5, 7, 8, 9, 11
5	9165	Bearing Cone #LM67048	1	
6	94800	Bushing	1	
7	901145	Bearing and Seal Assembly	1	
8	902158	O-Ring 2.487" ID	2	
9	93985	Retaining Ring 2 9/16" Dia.	2	
10	94795	Slotted Jam Nut, 1-14UNS	2	
11	9504825	Retaining Spring 1/8" dia. x 1 3/4"	2	
12	601986B	Basket Arm Weldment	1	
13	601874B	Crowfoot Conditioning Wheel	2	
14	9390-056	Capscrew, 3/8"-16UNC x 1 1/4" G5	12	
15	9928	Lock Nut/Top, 3/8"-16UNC	12	

Rolling Harrow Basket Components

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



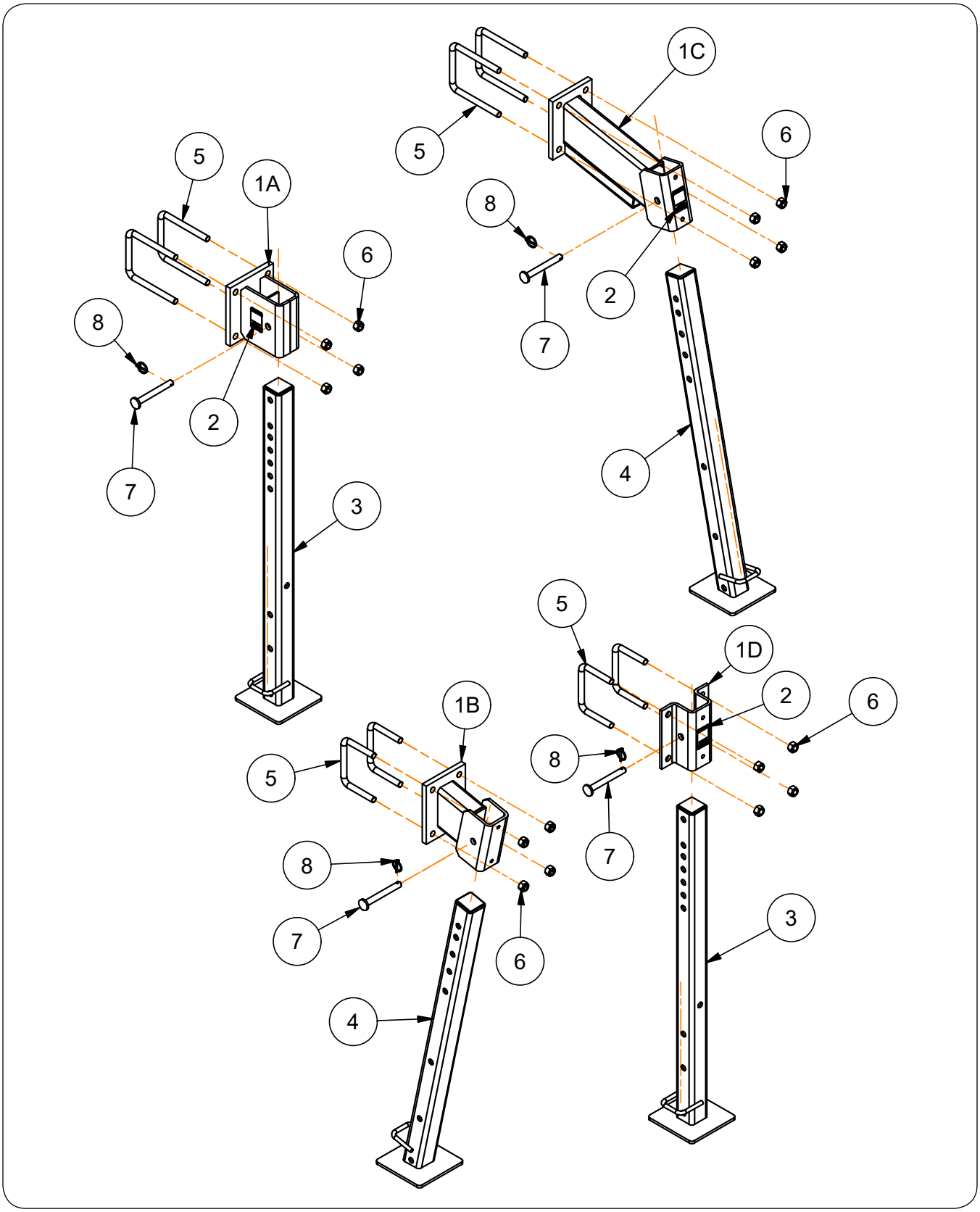
Rolling Harrow Basket Components

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

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	62740	15" Aggressive/Standard Blade Basket Assembly	1	Includes Items 2 through 6
2	62800	15" Aggressive/Standard Blade Basket	1	
3	65272B	Basket Frame Weldment 15"	1	
4	97321	Capscrew 5/16-18 x 7/8" Lg. (Gr. 5)	6	
5	9404-019	5/16 Lock Washer	6	
6	87181	Bearing Repair Kit with Hardware	2	
7	65918B	15" Concave Blade Basket Assembly	1	Includes Items 3 through 6 & 8
8	65919B	15" Concave Blade Basket	1	
9	67148B	20" Aggressive/Standard Blade Basket Assembly	1	Includes Items 4 though 6, 10 & 11
10	84432	Aggressive Basket Weldment	1	
11	67147B	Basket Frame Weldment 20"	1	
12	74964	Reinforcing Disc Weld-In For Item #2	-	

Storage Stand

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



Storage Stand

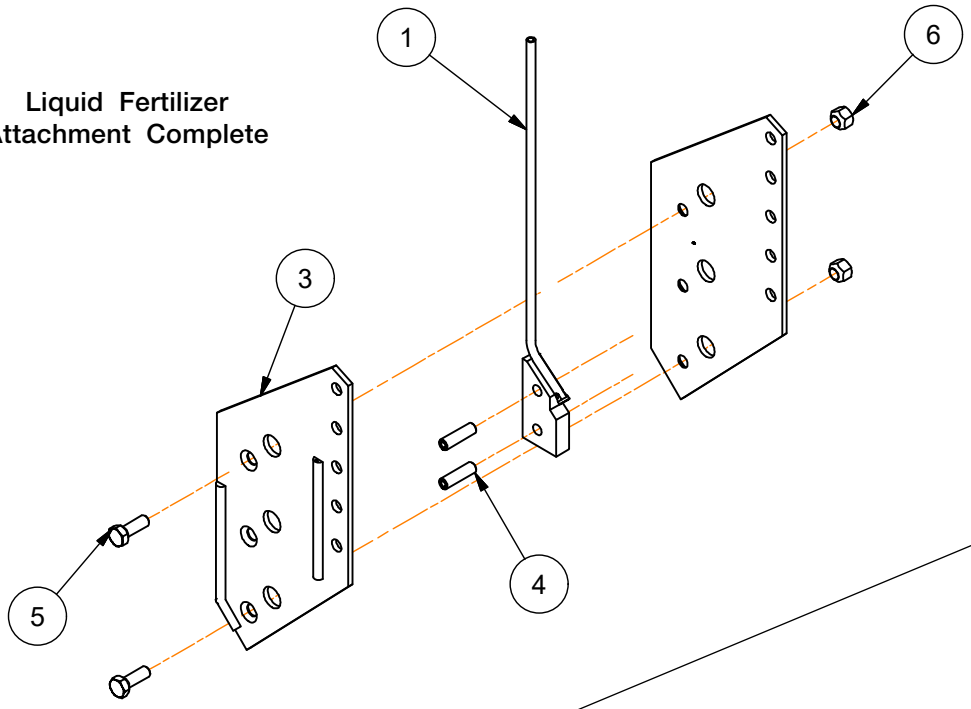
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1A	77341B	Storage Stand Mounting Bracket Weldment =Black=	1	Includes Item 2
1B	63573	Storage Stand Mounting Bracket Weldment =Black=	1	
1C	602034B	Storage Stand Mounting Bracket Weldment =Black=	1	
1D	60850	Mounting U-Bracket =Black=	1	
2	97973	Decal, WARNING "Crush Hazard"	1	
3	63529	Storage Stand 48" Weldment =Black=	1	
4	63571	Angled Storage Stand Weldment =Black=	1	
5	94090	U-Bolt 3/4"-10UNC x 8"	2	
	94012	U-Bolt 3/4"-10UNC x 5"	2	
6	9802	Locknut 3/4"-10UNC	4	
7	9500153	Clevis Pin, 3/4" Dia. x 6 3/8"	1	
8	9093	Klik-Pin, 3/16" Dia. x 1 9/16"	1	

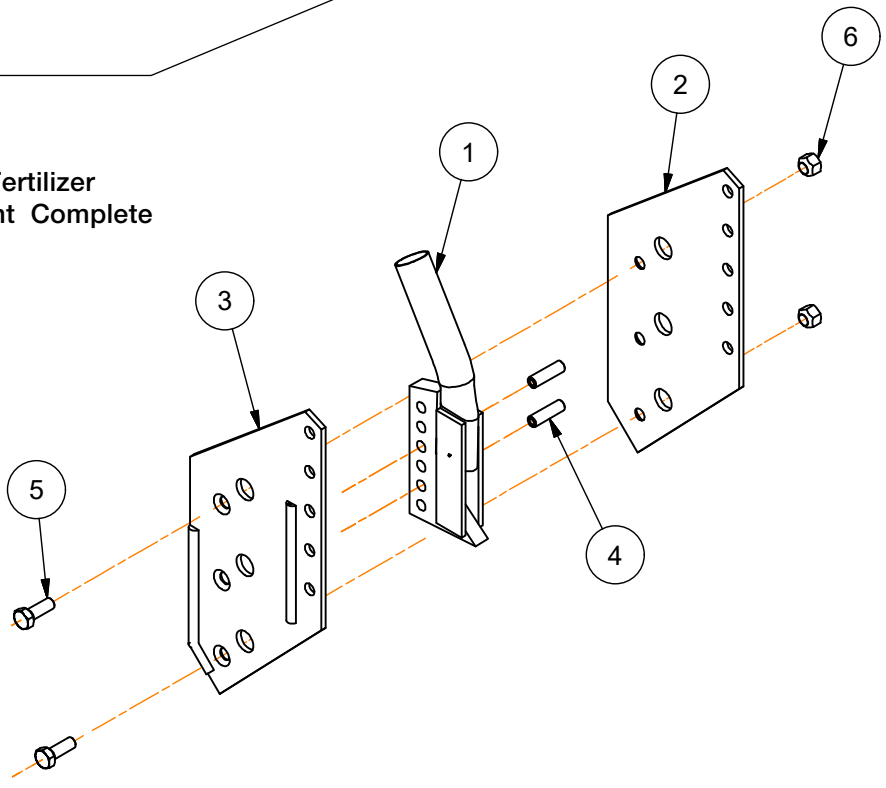
Fertilizer Attachments (Optional)

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

Liquid Fertilizer
Attachment Complete



Dry Fertilizer
Attachment Complete



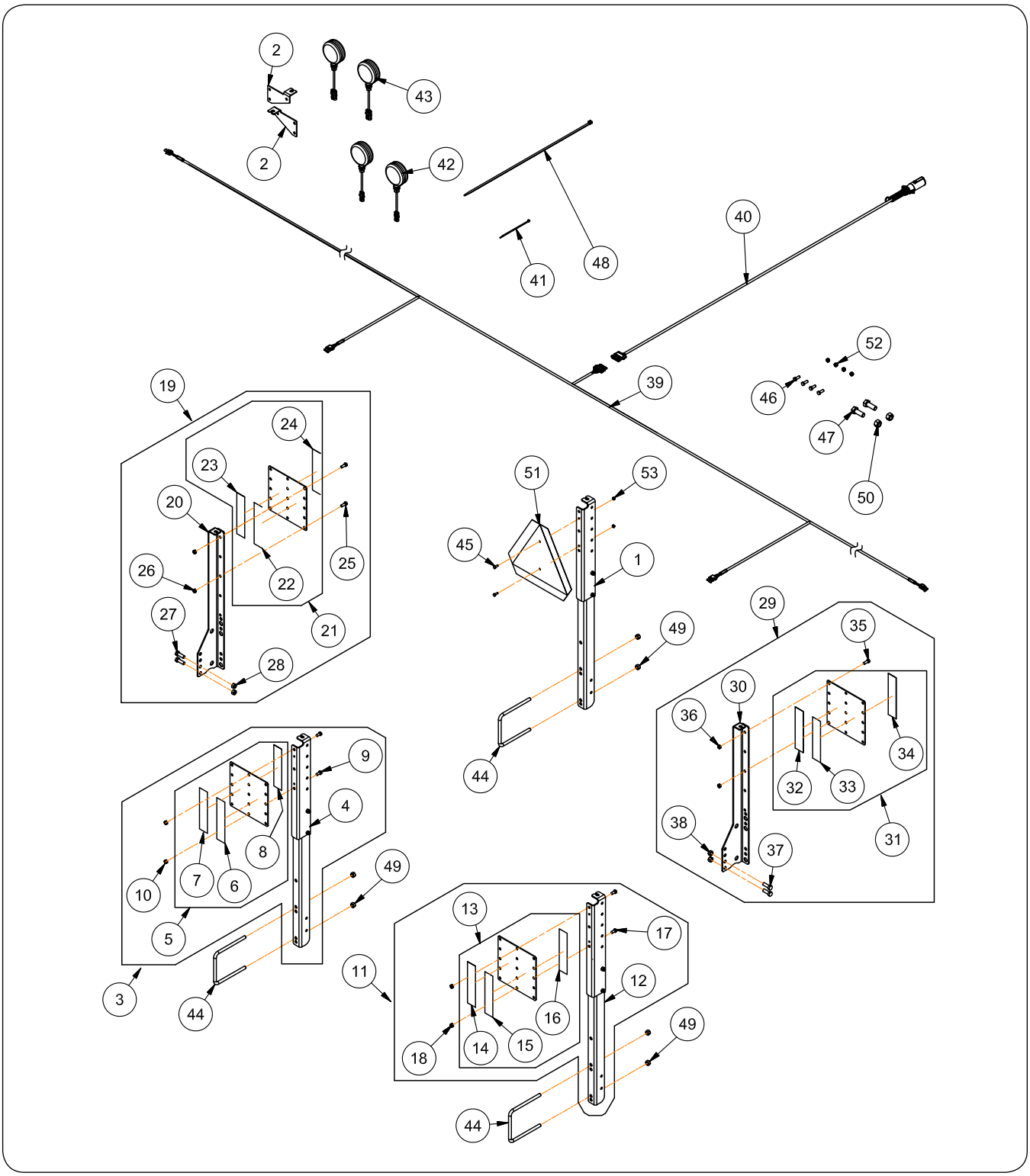
Fertilizer Attachments (Optional)

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

ITEM	PART NO.	DESCRIPTION	QTY
	65332B	Liquid Fertilizer Attachment Complete	1
	67652B	Dry Fertilizer Attachment Complete	
1	65339B	Injector Tube Weldment (Liquid)	1
	67651B	Injector Tube Weldment (Dry)	
2	65581B	Wear Guard Weldment RH	1
3	65582B	Wear Guard Weldment LH	1
4	91144-234	Spiral Pin 1/2" Dia. x 1 3/4	2
5	9500736	Bolt 1/2-20UNF x 1 3/8	2
6	9348	Bevel Nut 1/2-20UNF	2

Reflector & Lighting Components

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



ITEM	PART NO.	DESCRIPTION	12W & 16N Shank 68963B	4/6/8/12N Shank 69054B	2 Shank Option 69409B
1	69664B	Formed Angle	1	1	1
2	68960B	Light Bracket	2	2	-

Reflector & Lighting Components

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

ITEM	PART NO.	DESCRIPTION	12W & 16N Shank 68963B	4/6/8/12N Shank 69054B	2 Shank Option 69409B
3	N/A	Left-Hand Center Reflector Assembly	1	-	-
4	69664B	Formed Angle	1	-	-
5	68958B	Reflector Bracket	1	-	-
6	9003125	Decal, Fluorescent Orange	1	-	-
7	9003126	Red Reflector	1	-	-
8	9003127	Amber Reflector	1	-	-
9	9390-053	Capscrew, 3/8"-16UNC x 3/4" G5	2	-	-
10	9928	Lock Nut, 3/8"-16UNC	2	-	-
11	N/A	Right-Hand Center Reflector Assembly	1	1	-
12	69664B	Formed Angle	1	1	-
13	68958B	Reflector Bracket	1	1	-
14	9003125	Decal, Fluorescent Orange	1	1	-
15	9003126	Red Reflector	1	1	-
16	9003127	Amber Reflector	1	1	-
17	9390-053	Capscrew, 3/8"-16UNC x 3/4" G5	2	2	-
18	9928	Lock Nut, 3/8"-16UNC	2	2	-
19	N/A	Left-Hand Outer Reflector Assembly	1	1	1
20	68959B	Formed Angle	1	1	1
21	68958B	Reflector Bracket	1	1	1
22	9003125	Decal, Fluorescent Orange	1	1	1
23	9003126	Red Reflector	1	1	1
24	9003127	Amber Reflector	1	1	1
25	9390-055	Capscrew, 3/8"-16UNC x 1" G5	2	2	2
26	9928	Lock Nut, 3/8"-16UNC	2	2	2
27	9390-101	Capscrew, 1/2"-13UNC x 1-1/2" G5	2	2	2
28	9800	Lock Nut, 1/2"-13UNC	2	2	2
29	N/A	Right-Hand Outer Reflector Assembly	1	1	1
30	68959B	Formed Angle	1	1	1
31	68958B	Reflector Bracket	1	1	1
32	9003125	Decal, Fluorescent Orange	1	1	1
33	9003126	Red Reflector	1	1	1
34	9003127	Amber Reflector	1	1	1
35	9390-055	Capscrew, 3/8"-16UNC x 1" G5	2	2	2
36	9928	Lock Nut, 3/8"-16UNC	2	2	2
37	9390-101	Capscrew, 1/2"-13UNC x 1-1/2" G5	2	2	2
38	9800	Lock Nut, 1/2"-13UNC	2	2	2
39	69407	Wiring Harness	1	1	1
40	86466	Main Wiring Harness	1	1	1
41	9000106	Cable Tie 7 1/2"	8	8	8
42	9003876	Amber Round Light	2	2	2
43	9003877	Red Round Light	2	2	2
44	9005460	U-Bolt	3	4	1
45	9390-003	Capscrew, 1/4"-20UNC x 3/4" G5	2	2	2
46	9390-055	Capscrew, 3/8"-16UNC x 1" G5	4	4	-
47	9390-145	Capscrew, 3/4"-10UNC x 2" G5	4	4	4
48	94038	Cable Tie 32"	12	12	8
49	9800	Lock Nut, 1/2"-13UNC	6	8	2
50	9802	Lock Nut, 3/4"-10UNC	4	4	4
51	9829	SMV Emblem	1	1	1
52	9928	Lock Nut, 3/8"-16UNC	4	4	-
53	9936	Lock Nut, 1/4"-20UNC	2	2	2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