Seedbed Tillage

Perfecta®
4 FT - 8 FT. Models
S-Tine Field Cultivator
Models 10 / 12 / 14

Serial Number A59300100 & Up

Part No. 74278

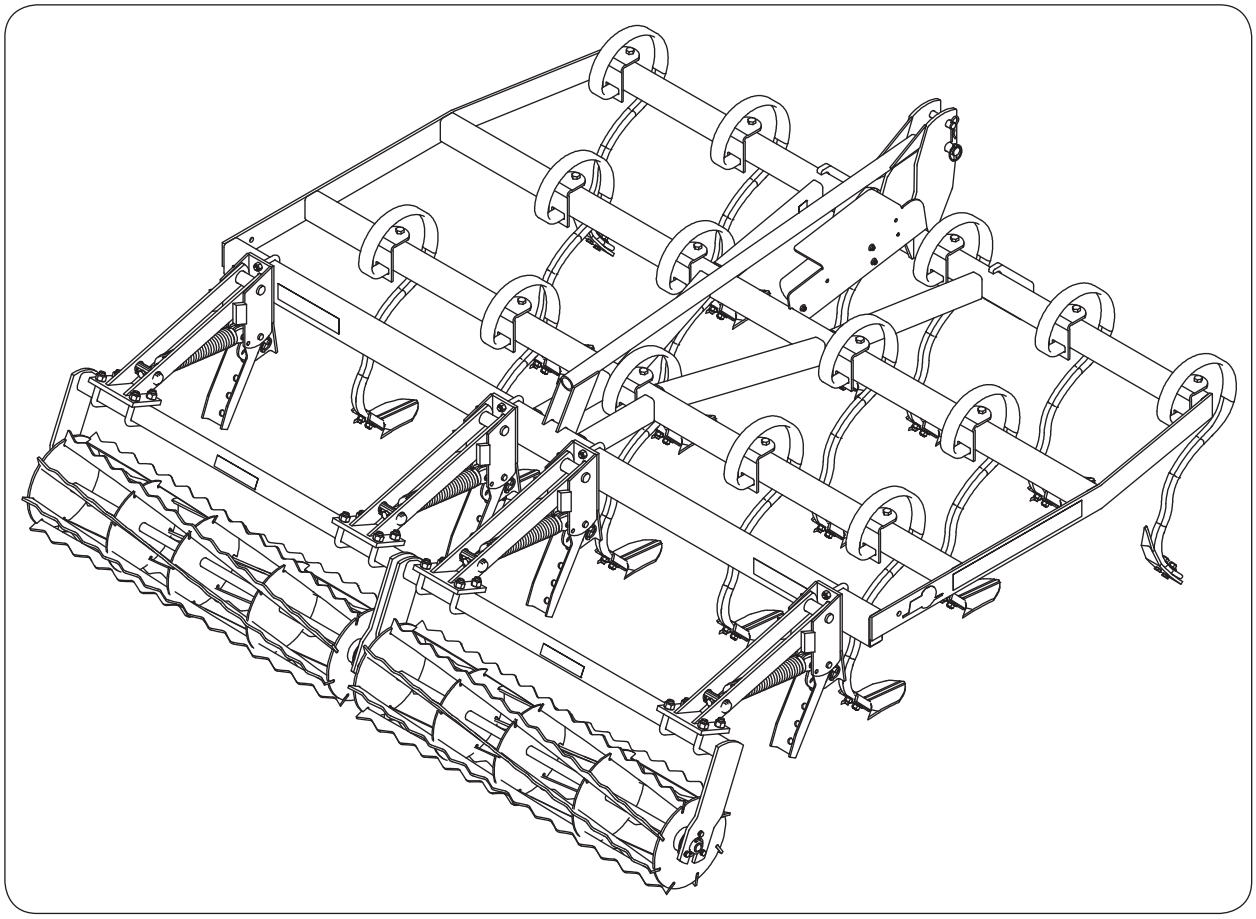
Foreword

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

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

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

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



Product Information

Please fill out and retain this portion for your records. 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.

The serial number plate is located as shown in Fig. 1.

Product _____

Serial Number _____

Date of Purchase _____

Dealer _____

City _____ State _____ Zip _____

Please supply this information when you have questions or when ordering repair or replacement parts. Your dealer needs this information to give you prompt, efficient service.

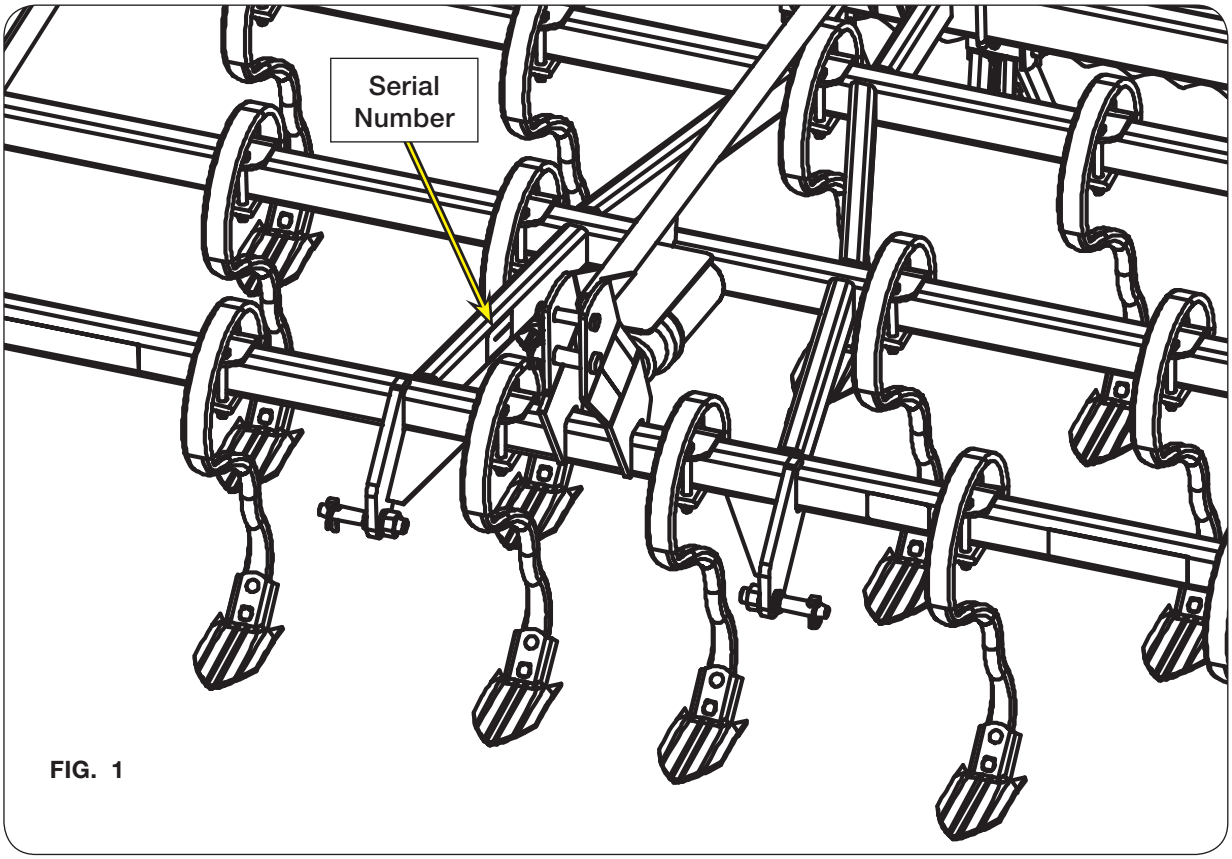


FIG. 1

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SECTION I
Safety

General Hazard Information

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

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

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

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

REMEMBER:

THINK SAFETY

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT!

SIGNAL WORDS

DANGER

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

WARNING

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

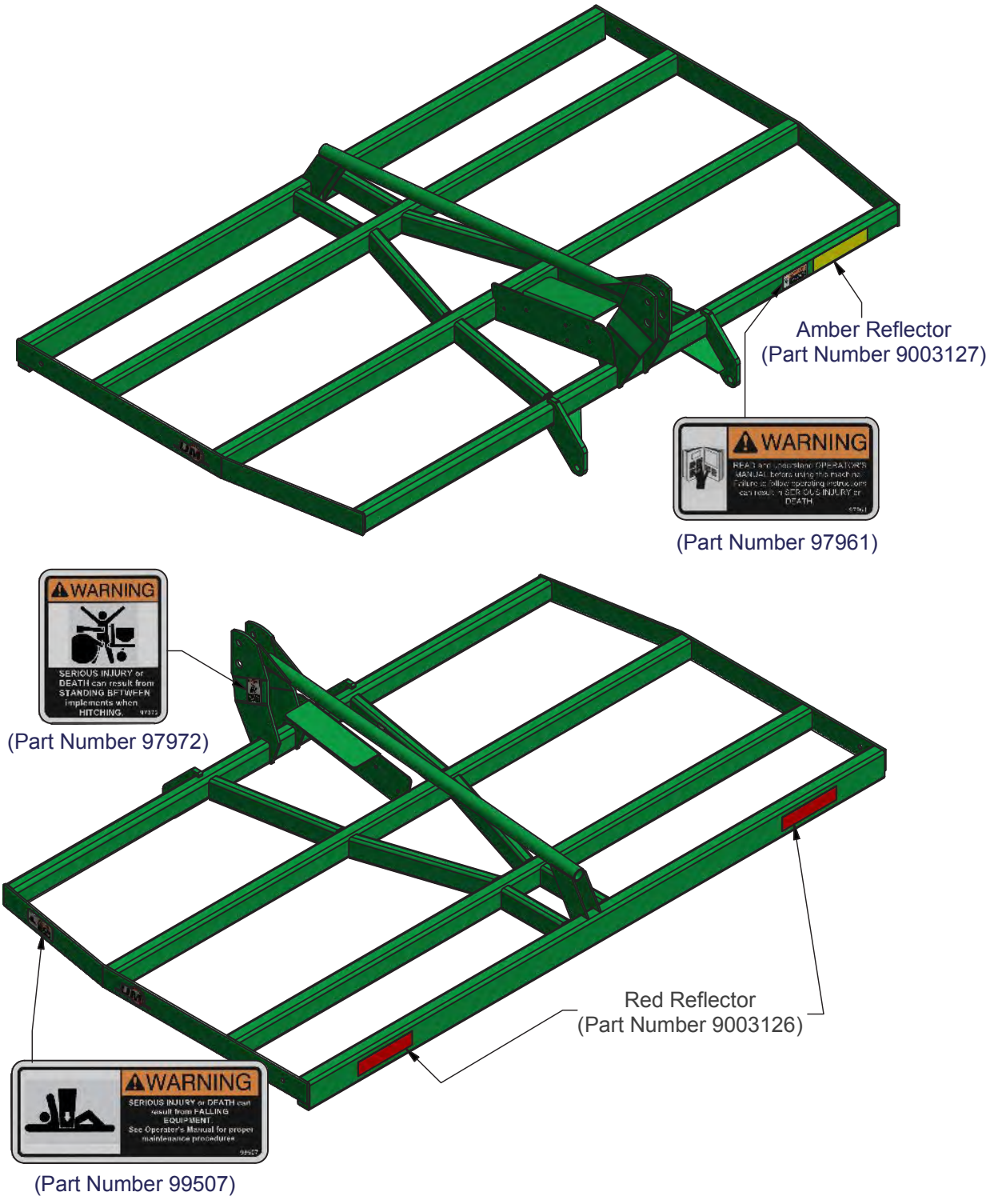
CAUTION

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

IMPORTANT

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

Safety Decals



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 towing vehicle engine off and remove key before servicing.

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

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

Before Servicing

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

- Ensure that all applicable safety decals are installed and legible.
- When working around the implement, be careful not to be cut by sharp edges.
- Explosive separation of a tire and rim can cause serious injury or death. Only properly trained personnel should attempt to service a tire and wheel assembly.
- Add sufficient ballast to tractor to maintain steering and braking control at all times. Do not exceed tractor's lift capacity or ballast capacity.

Before Operating

- 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.
- Ensure that all applicable safety decals are installed and legible.
- When working around the implement, be careful not to be cut by sharp edges.
- Add sufficient ballast to tractor to maintain steering and braking control at all times. Do not exceed tractor's lift capacity or ballast capacity.

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

- Check for proper function of all available transport lights. Make sure that all reflectors are clean and in place on machine. Make sure the SMV emblem is visible to approaching traffic.

During Transport

- Comply with all laws governing highway safety when moving machinery.
- Use transport lights as required by all laws to adequately warn operators of other vehicles.
- Use good judgment when transporting equipment on highways. Regulate speed to road conditions and maintain complete control.
- Maximum speed of implement should never exceed 20 mph. 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.

Pressurized Oil

- Relieve the hydraulic system of all pressure before adjusting or servicing. See hydraulic power unit manual for procedure to relieve pressure.
- High-pressure fluids can penetrate the skin and cause serious injury or death. Use cardboard or wood to detect leaks in the hydraulic system. Seek medical treatment immediately if injured by high-pressure fluids.
- Hydraulic system must be purged of air before operating to prevent serious injury or death.
- Do not bend or strike high-pressure lines. Do not install bent or damaged tubes or hoses.
- Repair all oil leaks. Leaks can cause fires, personal injury, and environmental damage.
- Route hoses and lines carefully to prevent premature failure due to kinking and rubbing against other parts. Make sure that all clamps, guards and shields are installed correctly.
- Check hydraulic hoses and tubes carefully. Replace components as necessary if any of the following conditions are found:
  - End fittings damaged, displaced, or leaking.
  - Outer covering chafed/cut or wire reinforcing exposed.
  - Outer covering ballooning locally.
  - Evidence of kinking or crushing of the flexible part of a hose.

Preparing for Emergencies

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

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

Wearing Protective Equipment

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

- Wear steel-toed shoes when operating.

- Wear hearing protection when exposed to loud noises.

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

Notes

SECTION II
Setup

General Setup Information

This section contains all of the instructions required for the complete assembly of the entire field cultivator.

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

IMPORTANT

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

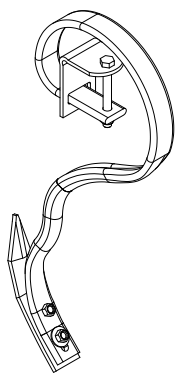
For ease of assembly, install all hardware loosely until assembly is complete and then tighten according to "Torque Chart" unless otherwise specified.

⚠ WARNING

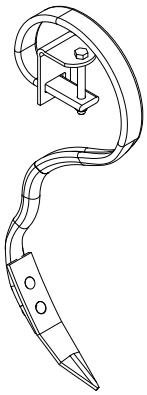
- **KNOW AND UNDERSTAND SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW "SAFETY" SECTION IN YOUR MANUAL IF NECESSARY.**
- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**
- **MOVING PARTS CAN CRUSH AND CUT. KEEP AWAY FROM MOVING PARTS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING THE IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 1,500 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

Models 12 and 14, outer S-tines on each end of the machine are equipped with 2" wide point shovel. Units are shipped as shown to prevent damage to shovel in shipment. Point must be reversed before beginning operation.

Model 12 Heavy-Duty S-Tine (94138) with Point (95848) Shown In Shipping Position



Model 12 Heavy-Duty S-Tine (94138) with Point (95848) Shown In Working Position



Rolling Harrow Assembly

When servicing mounting arm or "Rolling Harrow", it may be necessary to disassemble the unit from the main frame. Refer to the following instructions for proper installation.

NOTE: To disassemble "Rolling Harrow", reverse the following steps.

Arm Assembly

Assembly of the "One-Bar/Rolling Harrow" to the machine is best accomplished with the unit setting on the ground.

See "Overhead Layouts" for dimensions showing mounting arm locations and harrow sizes and location on rear of the machine.

NOTE: For ease of assembly, install all hardware loosely until assembly is complete, then tighten.

1. Install mounting arms onto the rear of the main frame tube with one 1/2"-13UNC U-bolt (91434) and two locknuts (9800) per arm (Fig. 3-1).

NOTE: Refer to the PARTS section for individual components of the "Rolling Harrow Basket" and "One-Bar/Leveler".

View Looking From R.H. Side

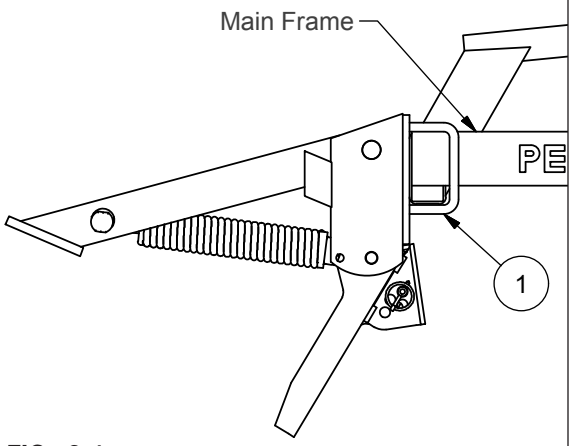


FIG. 3-1 OM-00164

Rolling Harrow Assembly (Continued)

Rolling Harrow Basket Assembly

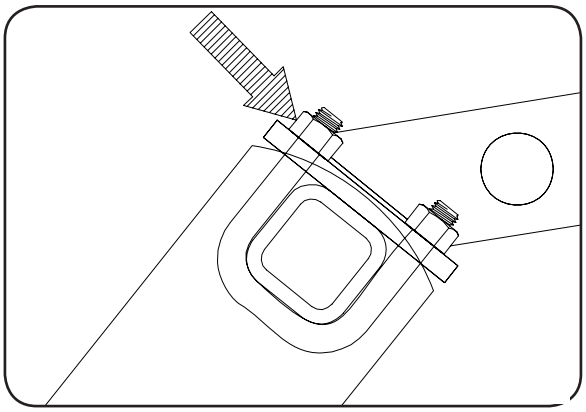
2. Refer to table (below) for determining rolling harrow basket width required, on each section.

ROLLING HARROW BASKET WIDTH	ROLLING HARROW FRAME-WIDTH
3'	35"
4'	47"
5'	59"
6'	71"

3. Position “Rolling Harrow” assembly to mounting arms, align holes and install 5/8”-11UNC U-bolt (85620) and secure with locknuts (9801) (Fig. 3-2).

IMPORTANT

- *For maximum reliability torque roller frame to arm U-bolts to 110 ft.-lbs be sure to tighten each side to have the same number of threads exposed.*



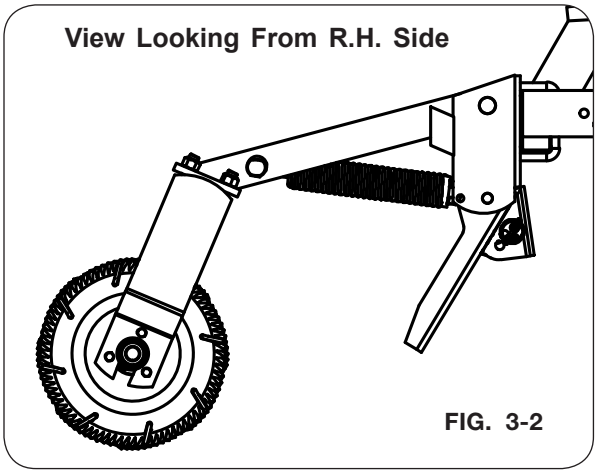


FIG. 3-2

NOTE: The basket can be set for normal (aggressive) or firming action, refer to “Field Adjustments”.

NOTE: For “One-Bar/Leveler” assembly refer to SET UP section.

Leveler Assembly

⚠ 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 1,500 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.**
- **WHEN WORKING AROUND THE IMPLEMENT, BE SURE THAT THE MACHINE IS SECURELY BLOCKED; FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

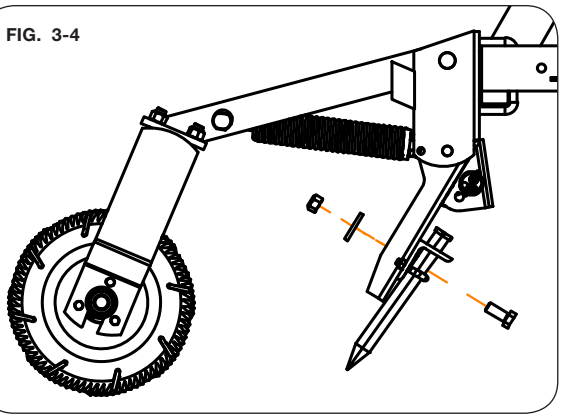
1. Using a hoist and other lifting devices/jackstands rated at 1,500 lbs minimum, raise the machine sufficiently to allow clearance for leveler bars and block under the machine.

Spiked-Tooth Assembly

2. Refer to table (below) for determining one-bar length required on each section. Refer to “Overhead Layouts” for proper one-bar sizes and locations.

ONE-BAR SIZE	ANGLE LENGTH
3'	33"
4'	45"
5'	57"
6'	69"

FIG. 3-4



3. Position one-bar assembly to mounting arms, align holes and install one 5/8”-11UNC x 1 1/4” capscrew (9390-121), backing plate (83284), and locknut (9801) at each arm (Fig. 3-3).

NOTE: Refer to OPERATIONS section for proper One-Bar/Leveler adjustments.

Leveler Assembly (Continued)

Round-Tooth Assembly

2. Refer to table (below) for determining one-bar length required, on each section.

ONE-BAR SIZE	RIGHT/LEFT LENGTH	CENTER LENGTH
3'	35 1/2"	--
4'	47 1/2"	44 1/2"
5'	59 1/2"	56 1/2"

ONE-BAR SIZE	LENGTH
6'	78"

NOTE: Refer to "One-Bar/Leveler Layouts" for mounting arm and "Y" tooth location.

3. Install "Y" tooth into proper position. Loosen capscrew and hex nut and remove standard round-tooth. Replace tooth (74676B - LH; 74672B - RH) with "Y" tooth (74671B - LH; 74670B - RH) and secure with original hardware (Fig. 3-5).

4. Position One-Bar/Leveler under machine. Refer to "One-Bar/Leveler Layouts.

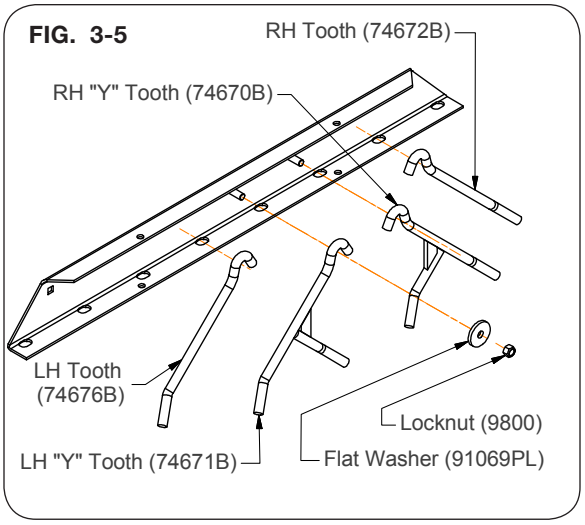
5. Mount One-Bar/Leveler by loosening proper hardware which secures tooth where arm will be located. Position 3" (9388-110) carriage bolt into drag bar. Align tooth in proper position and slide two square spacers (3788B) on bolt. Lift one-bar into position and mount in the middle or top hole of arm. Secure with a heavy washer (91069PL) and a locknut (9800) (Fig. 3-6).

NOTE: Repositioning of hardware may be required.

IMPORTANT

- *ROUND-TOOTH ONE-BAR CAN ONLY BE MOUNTED IN THE MIDDLE HOLE OF THE ARM. FAILURE TO DO SO WILL RESULT IN DAMAGE TO ONE-BAR OR MOUNTING ARM.*

FIG. 3-5



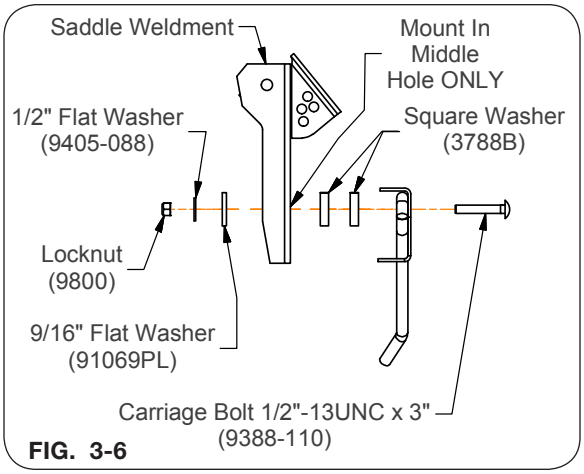


FIG. 3-6

Overhead Layouts

Use these overhead layout drawings as an assembly guide for the positioning of components onto the cultivator frame.

Note: All dimensions are in inches - unless otherwise specified.

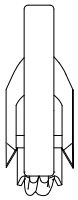
Model 10

Standard
S-Tine (9952)
with Point (9974)

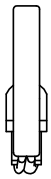
Model 10

Standard
S-Tine (9952)
with Sweep (91381)

Model 12

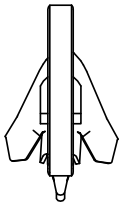


Heavy-Duty
S-Tine (94138)
with Sweep (9500465)

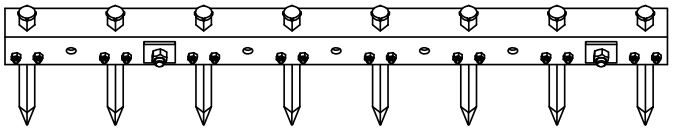


Heavy-Duty
S-Tine (94138)
with Point (95848)

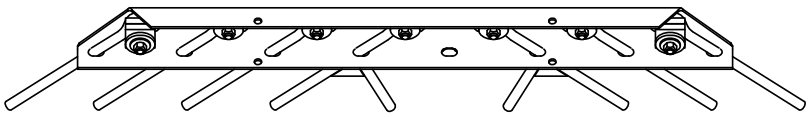
Model 14



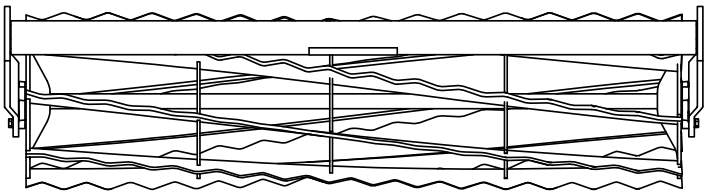
Heavy-Duty Edge
Bent S-Tine (91495)
with Sweep (93687)



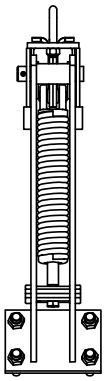
Straight Spike-Tooth One Bar Assembly



Diagonal-Tooth One Bar Assembly



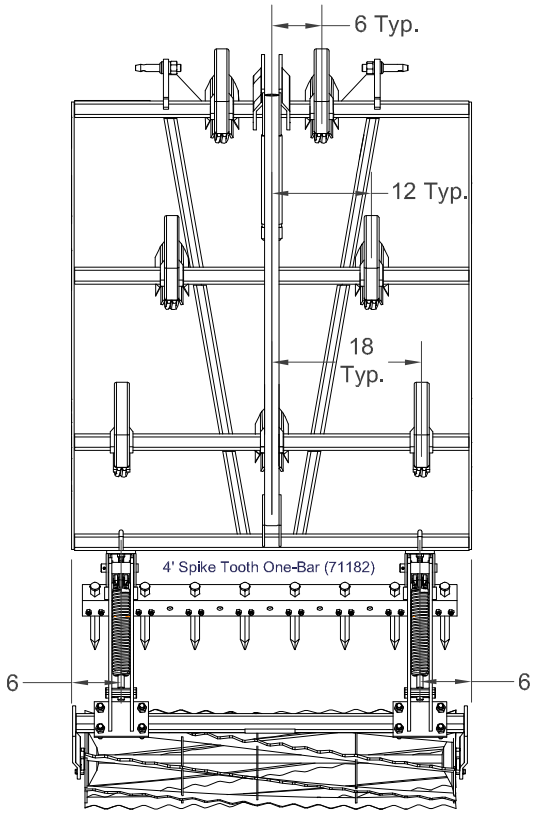
Rolling Harrow Basket

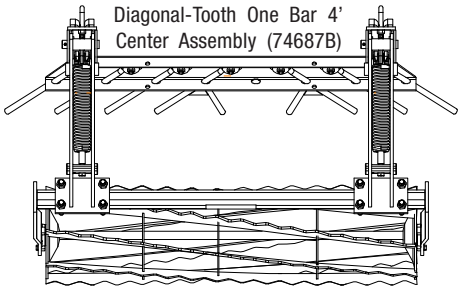


Rolling Harrow
Mounting Arm

Overhead Layouts (Continued)

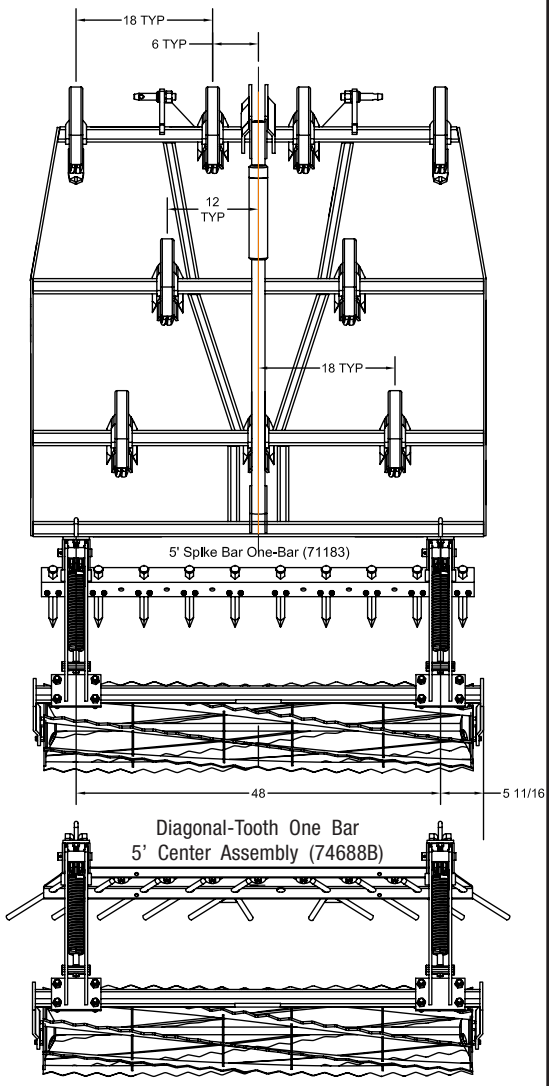
4 Ft. Frame
Model 12 Heavy-Duty S-Tines



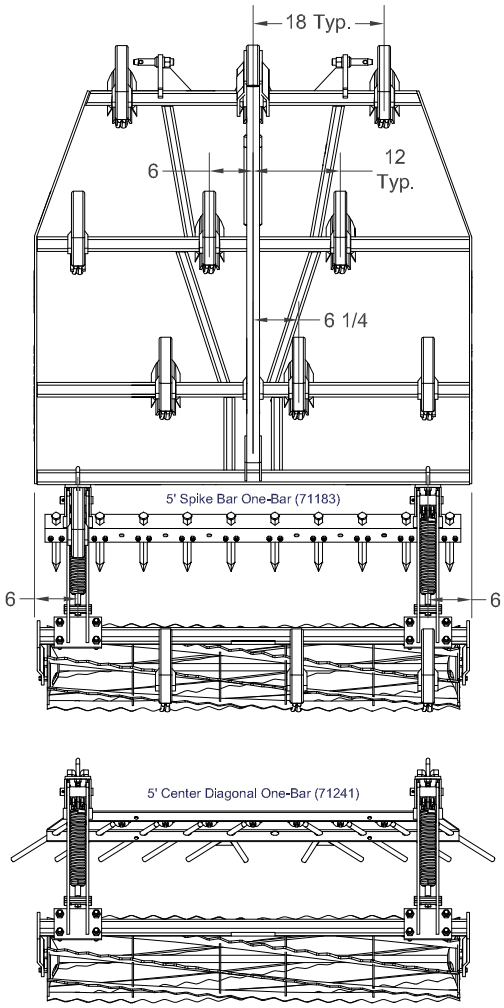


Overhead Layouts (Continued)

5 Ft. Frame
Model 12 Heavy-Duty S-Tines
(Beginning with Serial #A61580100)

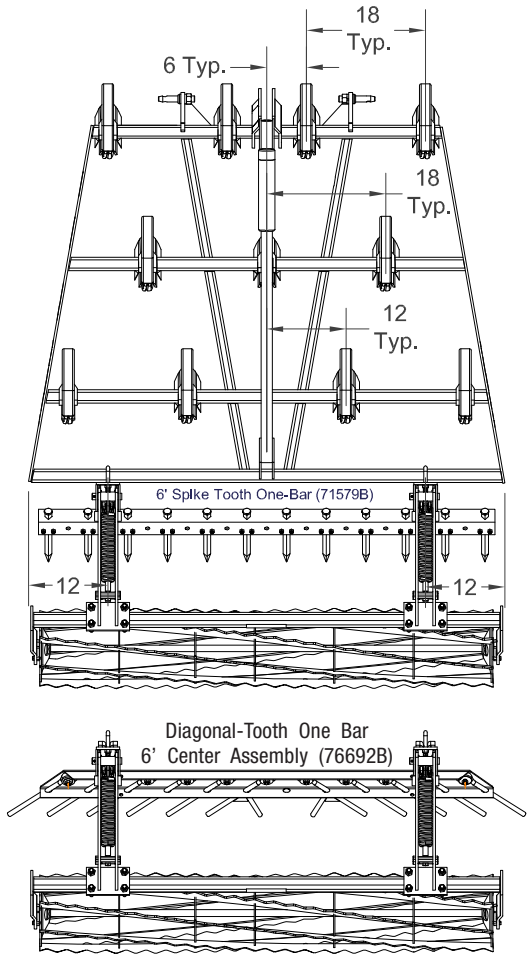


5 Ft. Frame
Model 12 Heavy-Duty S-Tines
(Prior to Serial #A61580100)



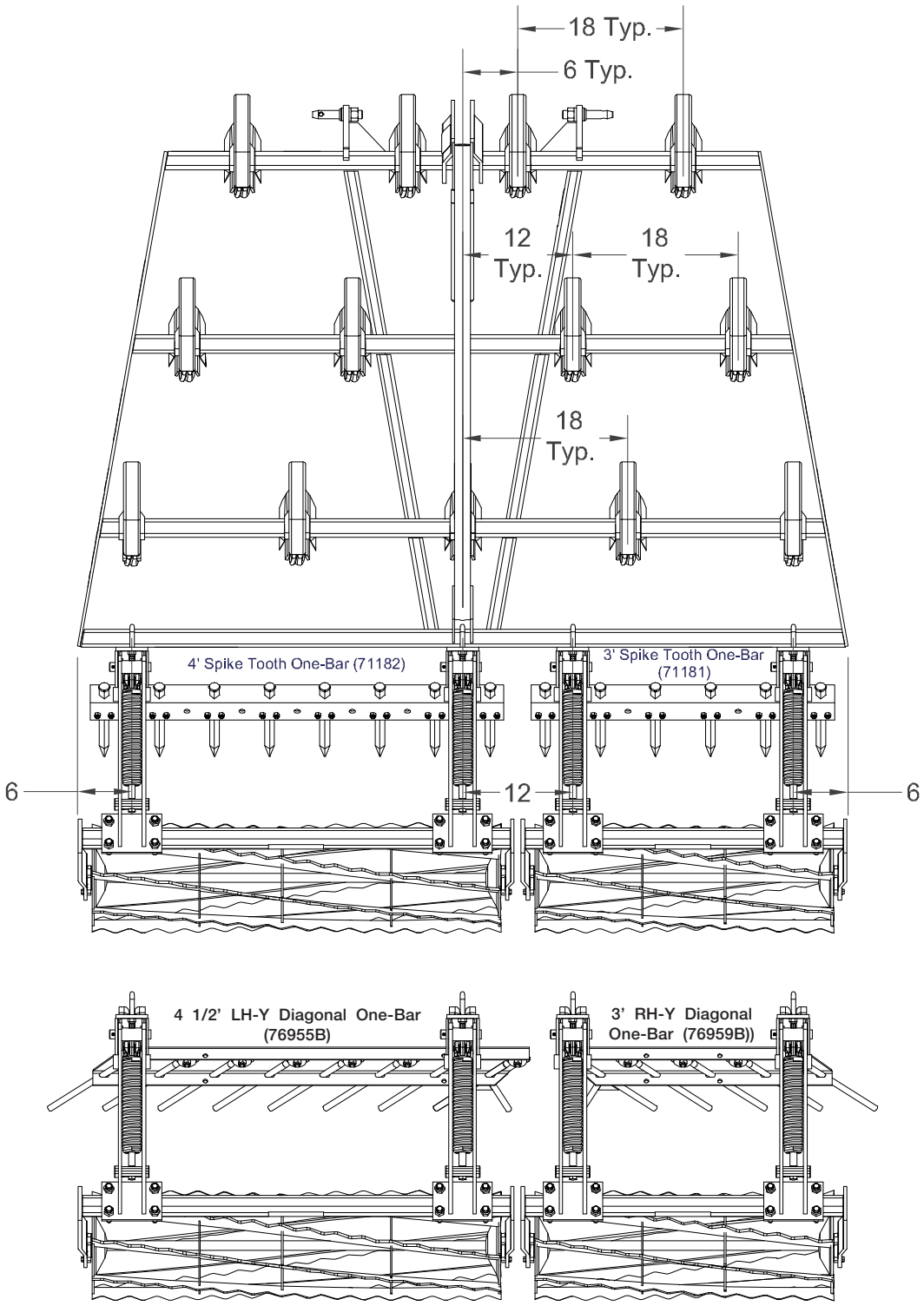
Overhead Layouts (Continued)

6 Ft. Frame
Model 12 Heavy-Duty S-Tines



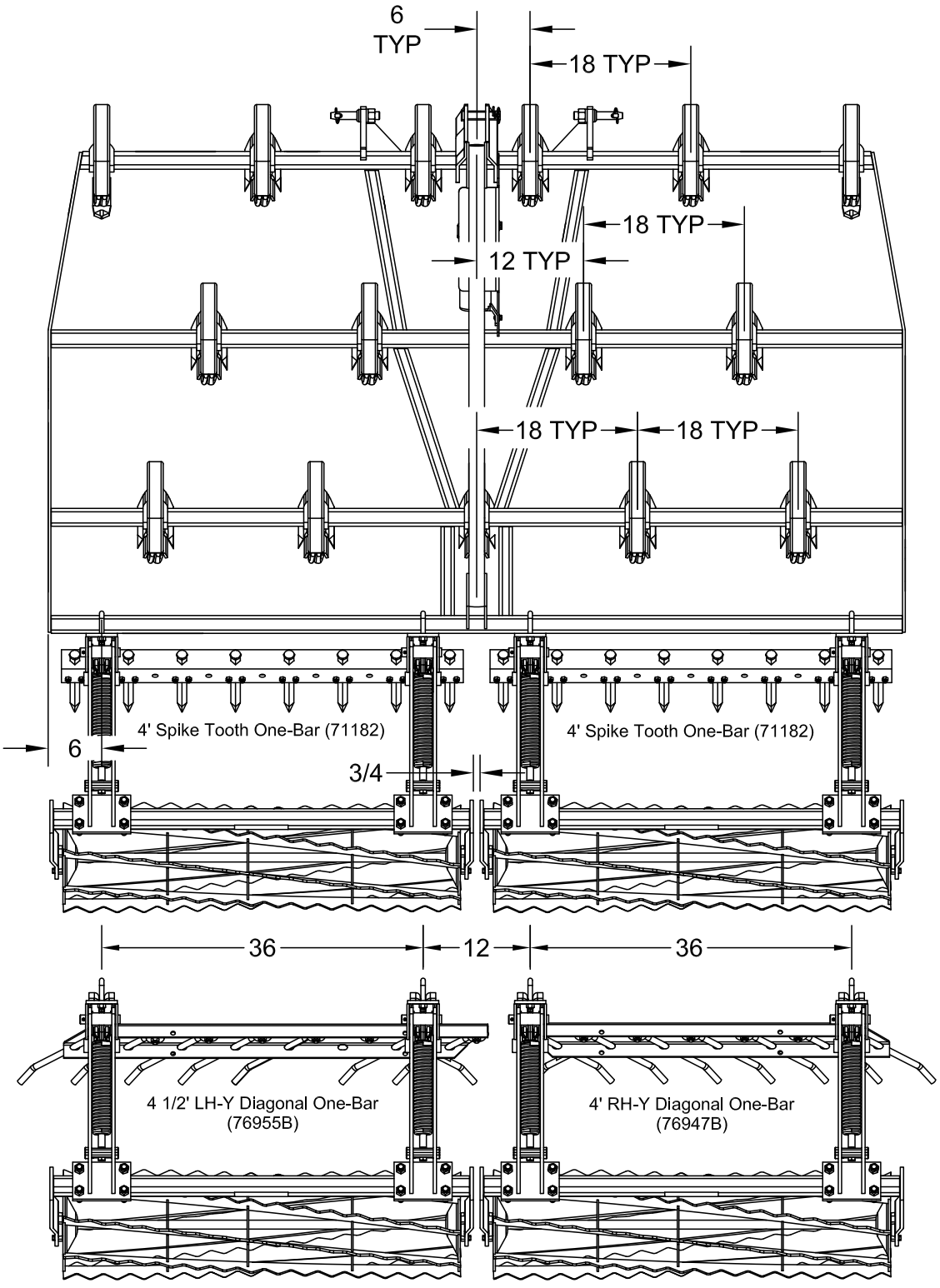
Overhead Layouts (Continued)

7 Ft. Frame
Model 12 Heavy-Duty S-Tines



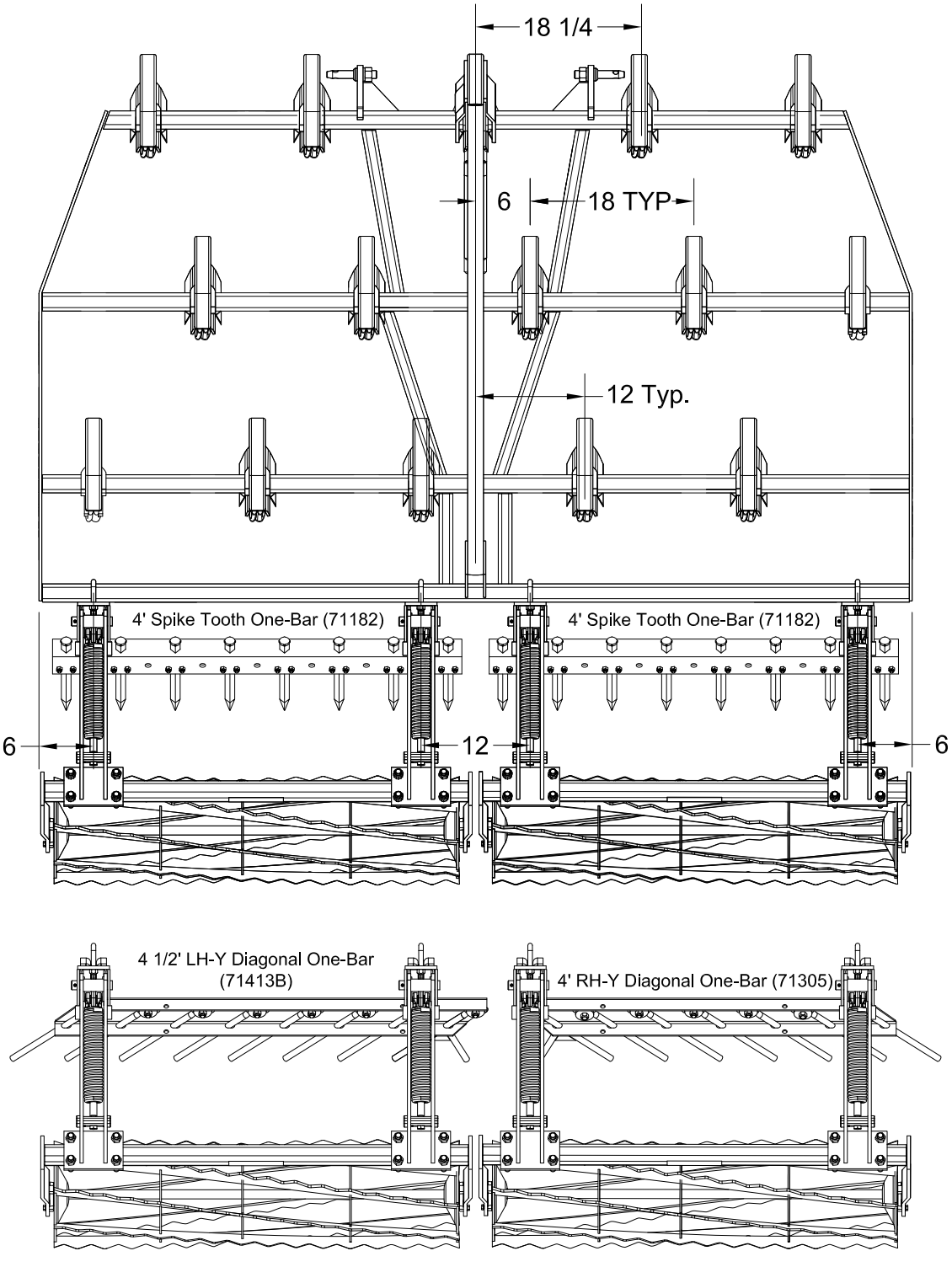
Overhead Layouts (Continued)

8 Ft. Frame
Model 12 Heavy-Duty S-Tines
(Beginning with Serial #A61580100)



Overhead Layouts (Continued)

8 Ft. Frame
Model 12 Heavy-Duty S-Tines
(Prior to Serial #A61580100)



Optional Reinforcement Disc For Aggressive Basket

WARNING

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

IMPORTANT

- *Attach the welder ground clamp as close as practical to the area where welding is to be performed. Make sure to clean the area to bare metal before attaching the grounding clamp.*
- *Disconnect implement completely from tractor before welding on equipment. Damage may occur to the electrical system.*

This option is for reinforcing the aggressive basket in rocky soils. This accessory will extend the wear life of your aggressive basket.

NOTE: For proper installation, the reinforcement discs must be welded into place.

1. Position discs inside of the aggressive basket by inserting horizontally between blades, and then rotating vertically.
2. Center reinforcement discs between original basket plates and hold into position using a locking pliers or clamps (Fig. 3-7).

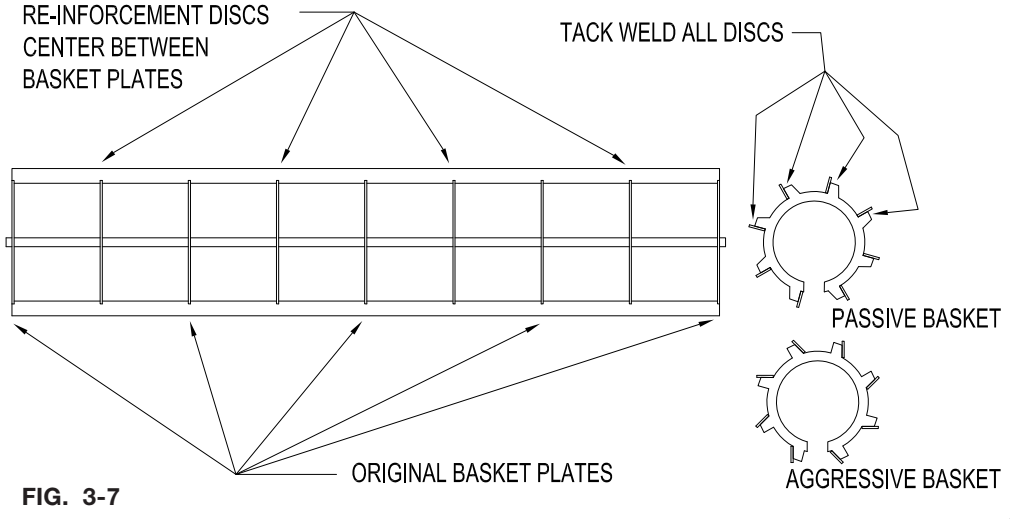


FIG. 3-7

3. Secure discs into place by tack welding. Weld where discs and basket blades are in contact (Fig. 3-7).
4. Repaint areas where welds have been made for rust protection.

SECTION III
Operations

General Operation Information

WARNING

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

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

Preparing Tractor

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

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

Check tractor hydraulic oil reservoir and add oil if needed.

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.

NOTE: In adverse field conditions which necessitate using lower gears, use the maximum front-end weights permissible to avoid possible front-end tip-up.

Sway Blocks

Sway blocks should be used and adjusted to provide movement in operating position. Cultivator should be permitted to sway while operating and should be held rigid while transporting. See your tractor operator's manual.

Preparing Tractor (continued)

Wheel Spacing

The dimension from the center of the tractor to the center of each tire should be the same. If using the PERFECTA II to cultivate in fields of row crops, set the tractor wheels so they are centered between the rows.

See your tractor operator's manual for correct tire inflation pressure and instructions for wheel ballast where required.

NOTE: When installing tractor ballast, do not exceed the maximum tire or axle carrying capacity of the tractor with all its attachments.

Drawbar Position

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

Lift Links And Center Links

Adjust the length of the lift links and center link to assure adequate clearance between the tractor tires and cultivator components. See your tractor operator's manual.

Lift Link Lateral Float

If the frame stabilizer wheels are used, adjust the lift link pins to allow the lateral float. If the frame stabilizer wheels are not used, adjust the lift link pins to prevent lateral float. See your tractor operator's manual.

Load And Depth Control

Depth control is to be maintained with the tractor's 3-point depth control.

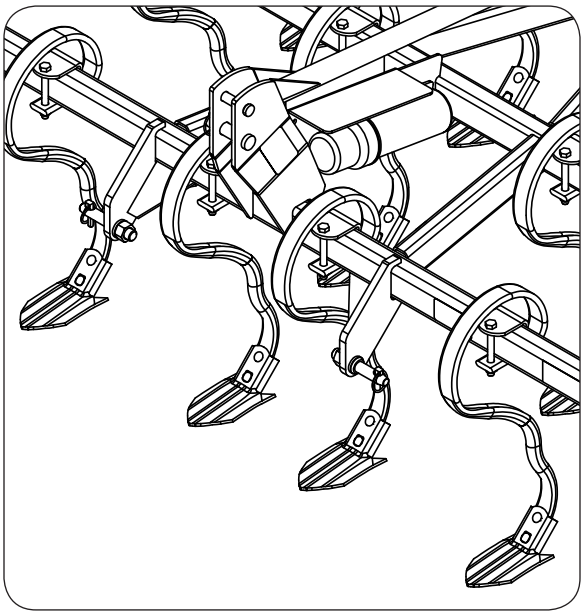
NOTE: In hard soil conditions, successive passes may be necessary to obtain the desired final tillage depth.

Preparing Field Cultivator

Mast And Hitch

The PERFECTA can be used on a tractor with a 3-point, category I, hitch.

Beginning with serial number A62650100, 3-point mast plates will have 2 holes for top link for added flexibility connecting to different tractor models and various brands of tractor quick coupler hitches.



Bolts & Nuts

Before going to the field, check all hardware for tightness. After the unit has been operated for several hours, re-check all bolts for tightness.

Pins & Retaining Rings

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

Lubrication

Lubricate as outlined in MAINTENANCE section.

NOTE: Perform the service checks as outlined in the MAINTENANCE section. Repair or replace any damaged or worn parts before operating.

Attaching Cultivator To The Tractor

WARNING

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

Back the tractor to the front of the cultivator and position the draft links in front of, and in line with, the lower hitch pins. Shut-off the engine and set the brakes on the tractor.

Connect the draft links to the front of the cultivator and adjust the length of the top link to enable installation of the hitch pins. Install pins and secure with lock pins.

Leveling Cultivator Frame

When leveling your PERFECTA, position the tractor with the cultivator on a level floor. Check the 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 PERFECTA attached to the tractor, raise the cultivator a couple of inches off the floor. Shut-off the engine and lock the brakes on the tractor. Stand at the rear of the cultivator frame and tractor axle. Level the cultivator frame from side-to-side by adjusting the lift links on the tractor 3-point hitch.

For initial adjustment, with the implement still raised off the ground a couple of inches (being sure the bottom of the rollers clear the floor), stand at the side of the cultivator and sight across the top of the cultivator frame and floor.

If the cultivator frame is not level from front to back with the ground line, turn the center link on the tractor either in or out until the cultivator frame is parallel (or level) to the ground line.

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

Attaching Field Cultivator To Tractor

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

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

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

Be sure SMV Emblem is in place and clearly visible on rear of the tractor.

⚠ WARNING

- **ALWAYS TRAVEL AT A SPEED WHICH PERMITS COMPLETE CONTROL OF TRACTOR AND IMPLEMENT.**

⚠ CAUTION

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

IMPORTANT

- *Check transport route clearance.*

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.

Reflective tapes are provided with this implement. Red reflective tape should be in place on the back and outermost extremity of the rear frame tube on each side. Be sure these reflectors are in place and clearly visible.

Unhitching

Lower the PERFECTA field cultivator on a flat surface, clear of any debris or obstruction, and unhitch the unit.

Field Adjustments

Rolling Harrow

The “Rolling Harrow” baskets are designed to help provide an excellent seedbed when used in conjunction with the S-tines and one-bar drag tooth harrow.

Basket Running Positions

The Rolling Harrow basket assemblies consist of an aggressive basket with the blades angled forward.

Normal Position

In most cases, the baskets run with the aggressive basket positioned in the normal position for maximum penetration in normal soil conditions (Fig. 1-2).

A maximum amount of leveling and conditioning of the soil is obtained when the aggressive basket is positioned in the normal position (Fig. 1-2). This position also helps provide thorough mixing of chemicals into the top two to three inches of the soil, when used for incorporation.

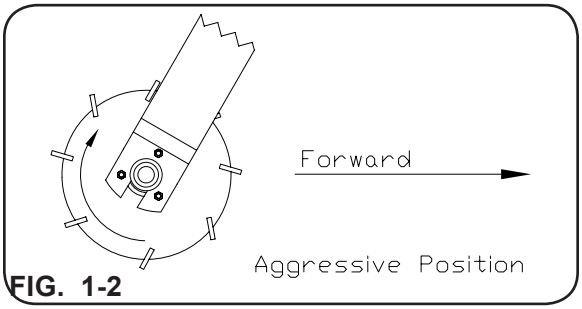


FIG. 1-2

Alternate Position

Baskets run with aggressive basket positioned in the alternate position (Fig. 1-3) for maximum firming action in light sandy soils.

A maximum amount of firming and conditioning of the soil is obtained when the aggressive basket is positioned as shown in the alternate (Fig. 1-3).

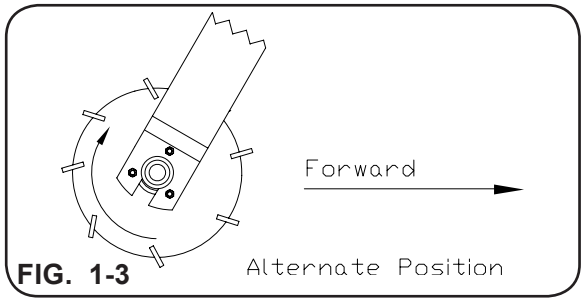


FIG. 1-3

Field Adjustments (Continued)

NOTE: Be sure to center “Rolling Harrow” frame with the arms on each section. Maintain approximately a 3/4” clearance between the roller frames before tightening U-bolts.

Working Depth

Position “X” - setting for normal S-tine working depth of 2-4 inches.

Position “Y” - setting for deeper S-tine working depth of 4-6 inches.

Additional adjustment is provided (Position “Y” - Fig. 1-4) to allow the “Rolling Harrow” working height to be raised in the field. This position allows more working depth from the S-tines, yet still maintaining the normal working action from the rolling harrow.

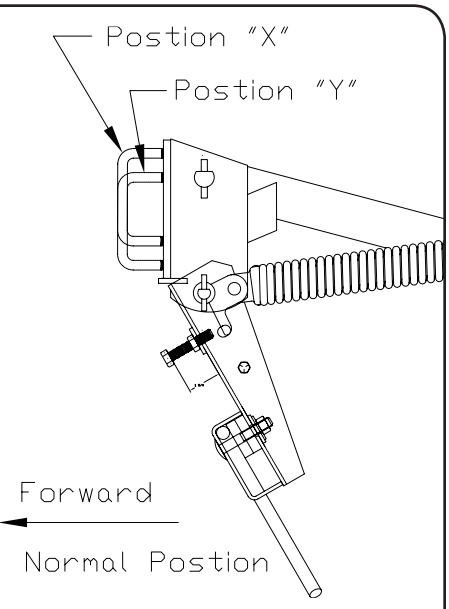


FIG. 1-4

Leveler Bar

The one-bar is designed to improve the soil leveling capabilities of your PERFECTA implement. The one-bar spring pressure can be increased, to improve ground leveling (by tightening the adjusting screw) or decreased, to improve trash flow (by loosening the adjusting screw).

Adjust Spring Pressure

A. Loosen locknut

B. TO INCREASE SPRING PRESSURE:
-- turn adjusting screw in (Fig. 1-5)
TO DECREASE SPRING PRESSURE:
-- turn adjusting screw out (Fig. 1-5)

NOTE: The initial spring pressure adjustment capscrew should be set at 3/4" minimum (Fig. 1-5).

C. Retighten locknut to maintain adjustment.

NOTE: The most effective leveling and trash flow is obtained when the one-bar/leveler is run at a more horizontal position with the spring tension decreased

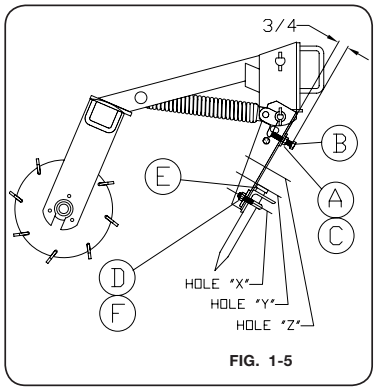


FIG. 1-5

Working Depth

HOLE "X" -- For normal S-tine working depth of 2-4 inches.

HOLE "Y" -- For deeper S-tine working depth of 4-6 inches.

HOLE "Z" -- For maximum S-tine working depth of 6-8 inches.

NOTE: Round-tooth one-bar can only be adjusted between hole "Y" and "Z" (Fig. 1-5). Additional height adjustment is provided when the PERFECTA S-tines are run at a working depth of 4 to 6 inches. If operating at a working depth of 4 to 6 inches, reposition working height of one-bar to the upper hole (Hole "Y" Fig. 1-5).

NOTE: If "Rolling Harrow" working height is adjusted for the deeper S-tine working depth, (Position "Y" - Fig. 1-4 in SET UP section), it may not be necessary to change the one-bar working height (hole "Y" - Fig. 1-5).

Leveler Bar (Continued)

Tooth Depth Adjustment

NOTE: Tooth depth adjustment is provided, but should only be adjusted to allow for tooth wear. (spiked-tooth one-bar only).

D. Loosen U-bolt on each tooth.

E. Drive teeth down to desired depth.

F. Re-tighten U-bolts.

Leveler Bar Lock-Up

In very high residue conditions or when less tillage action is desired, all types of leveler bars may be locked up so they will not contact the ground. To lock up all leveler bars:

1. Remove spring pressure from hangers by loosening the jam nut and turning out the adjusting screw until the gap between the front of the hanger and the underside of the head of the capscrew is 2 3/8". Alternatively, the adjusting screw and jam nut may be completely removed from the machine.

2. Remove the 3/8"-16UNC x 4 1/2" capscrew from the leveler bar arm.

3. Lift up the leveler bar until the hole in the bracket and slot in the arm align. Secure with 3/8"-16UNC x 4 1/2" capscrew (9390-068) and locknut (9928).

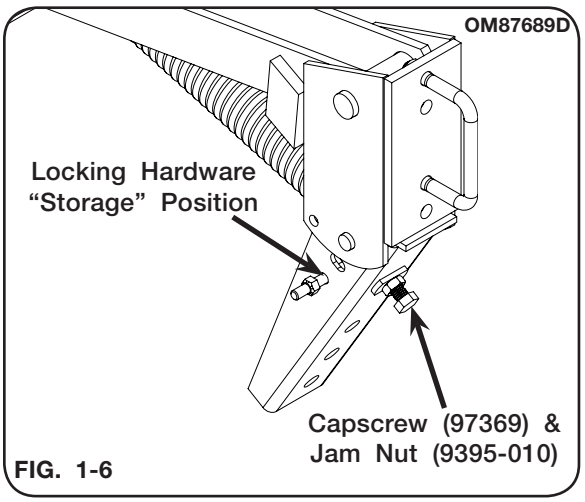


FIG. 1-6

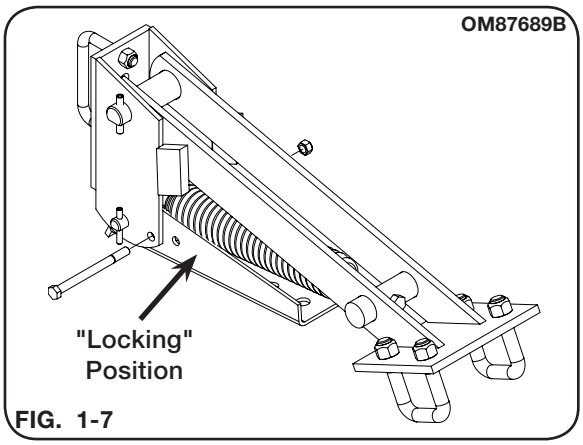


FIG. 1-7

Leveler Bar (Continued)

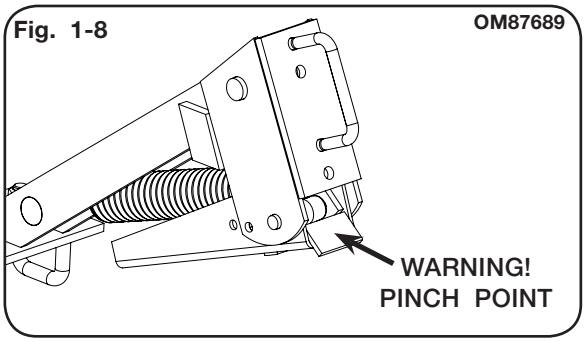


Fig. 1-8

WARNING

- **STORED ENERGY HAZARD LEVELER BAR MOUNTING ARMS ARE SPRING-LOADED AND CAN CAUSE SERIOUS INJURY IF NOT DISASSEMBLED PROPERLY. KEEP HANDS AND FINGERS AWAY FROM PINCH POINTS. FOLLOW DISASSEMBLY PROCEDURES TO PREVENT INJURY.**

Tool-Free Style Leveler Bar Lock-up

In very high residue conditions or when less tillage action is desired, all types of leveler bars may be locked up so they will not contact the ground.

To lock up tool-free style leveler bars:

1. Remove bent pin from leveler arm.
2. Raise arm to highest setting where hole in arm matches hole in adjustment casting. (See Fig 1-9)
3. Reinstall bent pin.
4. Be sure both arms are in the same setting for each leveler bar.


Fig. 1-9


Fig. 1-10

Notes

SECTION IV
Maintenance

Storage

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

Do the following before placing the implement in storage:

1. **Remove dirt and trash which could cause rusting.**
2. **Repaint any chipped or scraped areas.**
3. **Coat all earth moving surfaces with grease or suitable rust preventative.**
4. **Inspect for damage or worn parts, replace before next season.**
5. **Store implement inside, away from livestock.**
6. **Block up implement to keep tires and ground tools off ground.**
7. **Replace all worn, torn or faded decals and reflectors.**

Trouble Shooting

PROBABLE CAUSE	CORRECTION
POOR PENETRATION	
Frame not level	See OPERATIONS section for leveling instructions Adjust the tractor 3-point hitch control position.
Ground too hard for hitch control setting	See OPERATIONS section "Load and Depth Control"
Worn or dull tool points	Replace with new tool points
TRACTOR WHEELS SLIPPING	
Poor field conditions	Wait until the field is dry enough to cultivate properly
Tractor not weighted properly to utilize full horsepower	Add weight to tractor as recommended by the manufacturer. See OPERATIONS section "Preparing Tractor"
PLUGGING	
Tines not spaced correctly	See "Overhead Layouts" for correct spacing of S-tines
Poor field conditions	Wait until the field is dry enough to cultivate properly
One-bar working depth set too deep	Raise working depth. See field adjustments "One-Bar/Leveler"
One-bar spring pressure set too high	Decrease spring pressure. See field adjustments "One-Bar/Leveler"
IMPLEMENT RUNNING CROOKED IN THE FIELD	
Tines not spaced correctly	See "Overhead Layouts" for correct spacing of tines
Tires not equally inflated	Find the cause and correct. See OPERATIONS section "Preparing Tractor"
Tractor tires not properly spaced or equally inflated	Find the cause and correct. See OPERATIONS section "Wheel Spacing"
Tractor 3-point lift linkage not adjusted for level operation	Re-level the cultivator frame. See OPERATIONS section "Leveling Cultivator Frame"
Tractor 3-point lift linkage lateral float pins not set properly	Check position of lateral float pins. See OPERATIONS section "Lift Link Lateral Float"

Torque Chart

CAPSCREWS - GRADE 5

NOTE: Grade 5 capscrews can be identified by three radial dashes on head.

NOTE: Tighten U-bolts to have the same number of threads exposed on each end.

SIZE	FOOT POUNDS	NEWTON METERS
1/4-20	11	15
1/4-28	13	18
5/16-18	21	28
5/16-24	23	31
3/8-16	38	52
3/8-24	40	54
7/16-14	55	75
7/16-20	60	81
1/2-13	85	115
1/2-20	95	129
9/16-12	125	170
9/16-18	140	190
5/8-11	175	237
5/8-18	210	285
3/4-10	300	407
3/4-16	330	447
7/8-9	450	610
7/8-14	490	664
1-8	680	922
1-14	715	970

S-Tine Replacement

To remove s-tine, loosen bolt and nut on s-tine clamp. Pull back on the bottom end of s-tine and rotate back until frame tube slips through s-tine.

Install s-tine onto frame tube by slipping opening in s-tine around tube and apply downward pressure on s-tine to swing into place. Install clamp and hardware. (NOTE: Bolt should be on a slight backward angle). In order to tighten clamp, apply backward pressure on s-tine to straighten bolt and tighten.

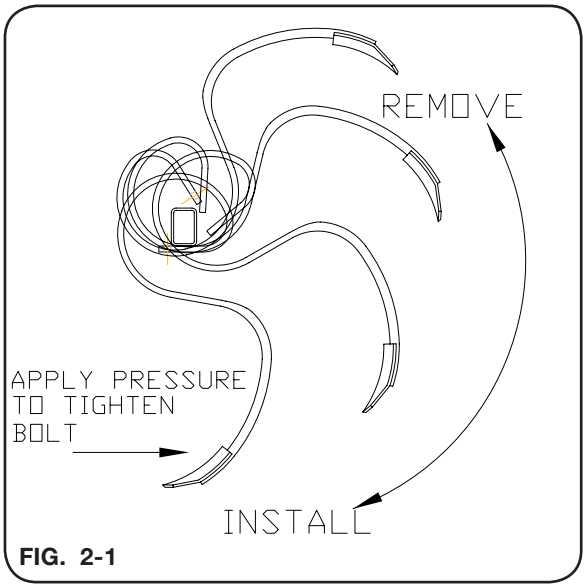


FIG. 2-1

Replacing Bearings For Rolling Harrow Baskets

WARNING

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

1. Lower the basket of the ROLLING HARROW ATTACHMENT to the ground and block the tires of the implement.
2. Remove the 5/8" locknuts and the 5/8"-11UNC u-bolts that attach the basket frame to the attachment arms.
3. Slide the basket and the frame away from the others so it can be worked on.
4. Remove the three 5/16"-18UNC carriage bolts or capscrews and the clip which hold the bearing on.
5. Use a crowbar to pry the end of the basket from out of the basket frame slot.
6. Loosen the set screw in the lock collar. Loosen lock collar by turning with punch in the opposite direction of basket travel.
7. 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 on too tight, use a bearing puller to remove the bearing.
8. File off any burrs left on the shaft. Finish with a strip of emery cloth. Make sure bearing will slide on the shaft.
9. Slide a new bearing on the shaft so the lock collar will be on the outside.
10. Pry the end of the basket into the slot of the frame.
11. Assemble the new 5/16"-18UNC capscrews through the holes in the frame and into the bearing frame housing.
12. Reassemble the basket frame and attachment arms using the u-bolts and locknuts removed in step 2.

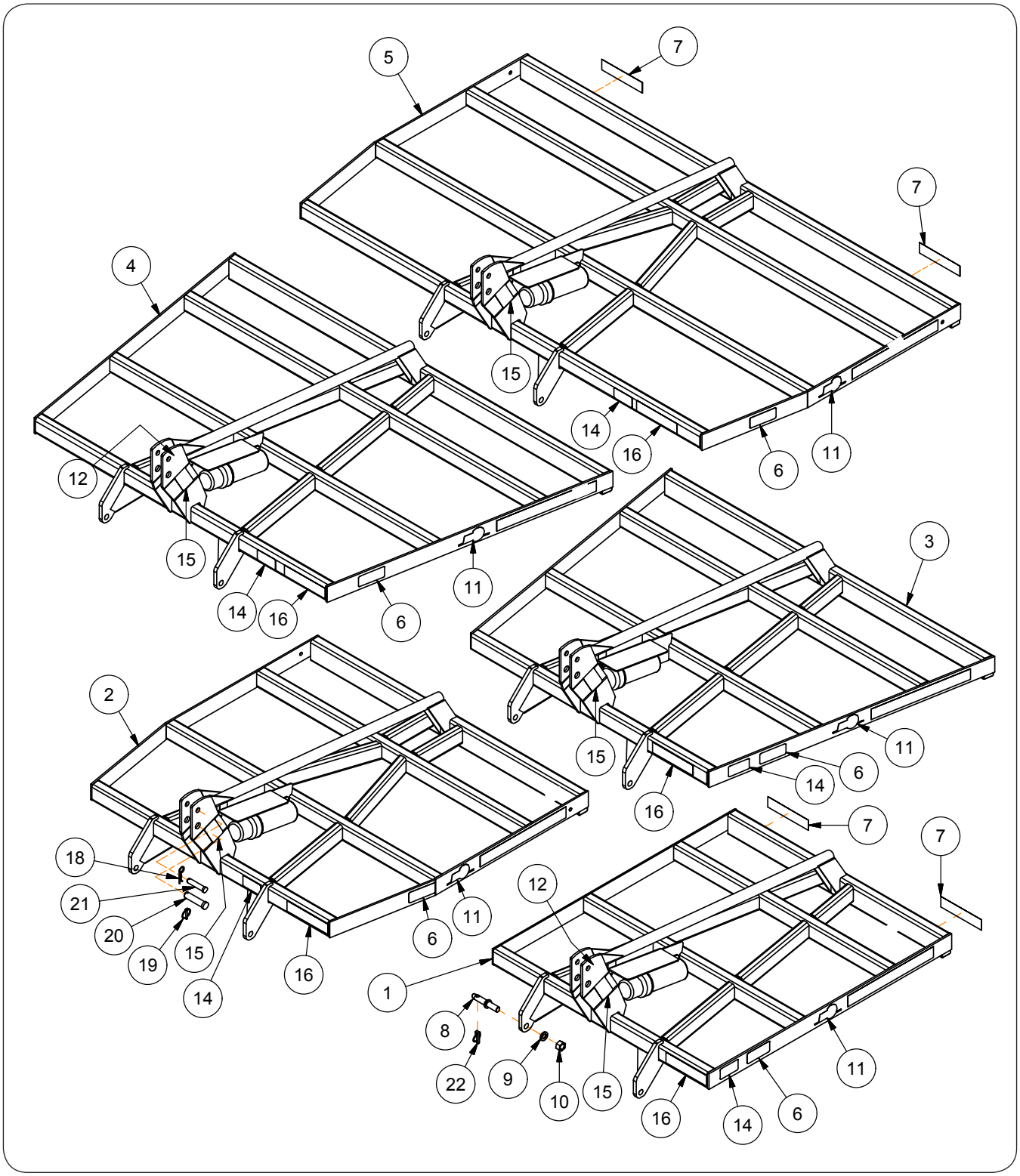
IMPORTANT

- *Tighten 5/16"-18UNC capscrews before you tighten the setscrew in the lock collar. Turn lock collar in the direction of travel. Tighten capscrews according to "Torque Chart".*
- *All ROLLING HARROW® bearings are manufactured with triple-lip seals. It is important to use Unverferth bearings for maximum life.*

Notes

SECTION V
Parts

Main Frame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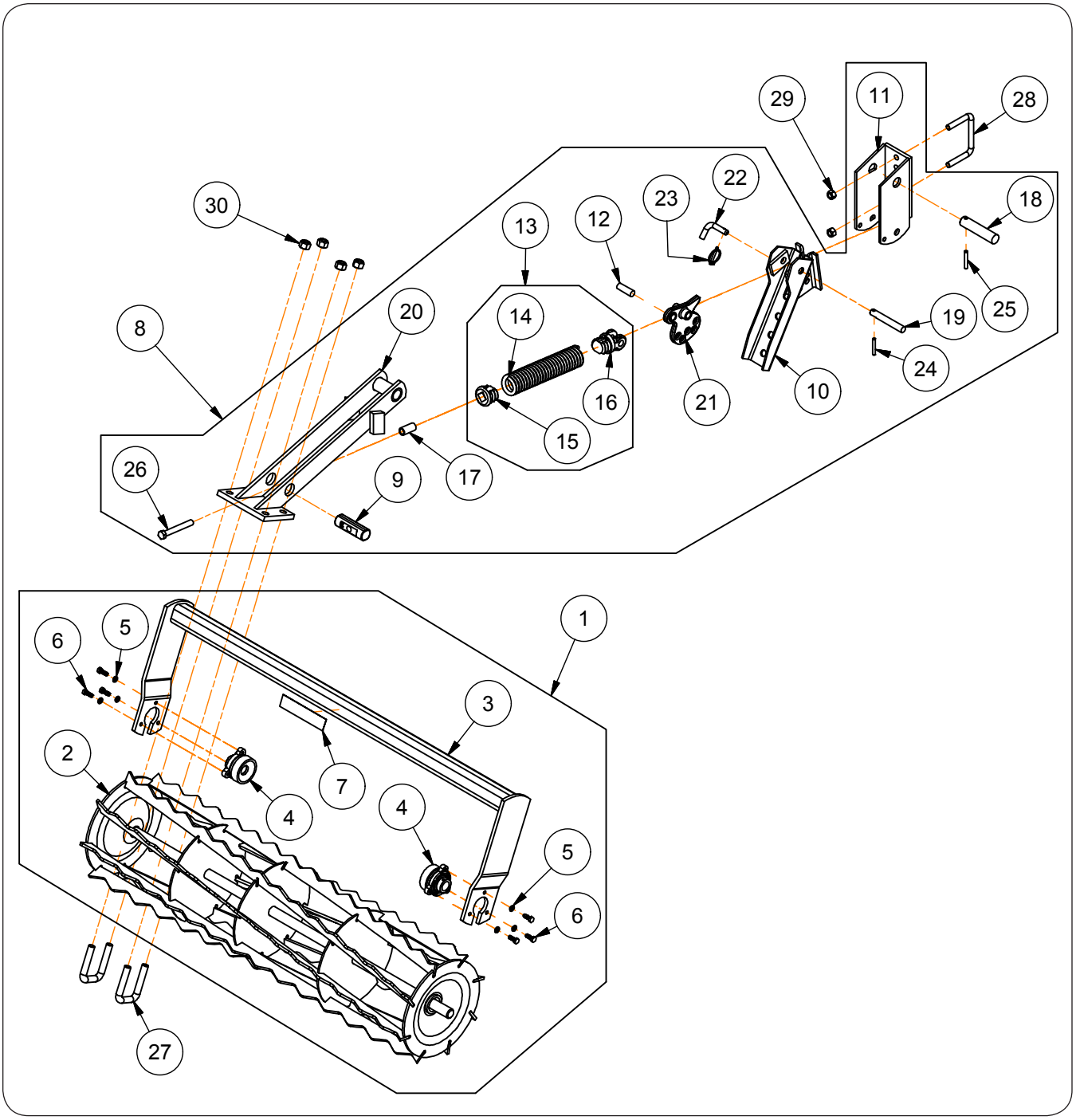
Main Frame

ITEM	PART NO.	DESCRIPTION	NOTES
1	87681G	Main Frame 4 Ft. with Decals =Green=	
	87681R	Main Frame 4 Ft. with Decals =Red=	
	87681NG	Main Frame 4 Ft. with Decals =Implement Orange=	
2	87682G	Main Frame 5 Ft. with Decals =Green=	
	87682R	Main Frame 5 Ft. with Decals =Red=	
	87682NG	Main Frame 5 Ft. with Decals =Implement Orange=	
3	87683G	Main Frame 6 Ft. with Decals =Green=	
	87683R	Main Frame 6 Ft. with Decals =Red=	
	87683NG	Main Frame 6 Ft. with Decals =Implement Orange=	
4	87684G	Main Frame 7 Ft. with Decals =Green=	
	87684R	Main Frame 7 Ft. with Decals =Red=	
	87684NG	Main Frame 7 Ft. with Decals =Implement Orange=	
5	87685G	Main Frame 8 Ft. with Decals =Green=	
	87685R	Main Frame 8 Ft. with Decals =Red=	
	87685NG	Main Frame 8 Ft. with Decals =Implement Orange=	
6	99507	Decal, WARNING "Falling Equipment"	
7	9003126	Reflector RED	
8	9947	Hitch Pin 7/8" Dia. x 5 15/32"	
9	9404-037	Lock Washer 7/8"	
10	9394-017	Hex Nut 7/8-14UNF	
11	901765	Decal, UM Swoosh	
12	91605	Decal, FEMA	
13	9500655	Decal, PERFECTA 10	
	9500656	Decal, PERFECTA 12	
	9500657	Decal, PERFECTA 14	
14	97961	Decal, WARNING "Read and Understand Manual"	
15	97972	Decal, WARNING "Crush Hazard"	
16	9003127	Reflector AMBER	
17	900522	Manual Holder - Outer Tube & Cap	
	900523	Manual Holder - Inner Tube	
18	95959	Hairpin Cotter	Beginning with Serial Number A62650100
19	91058	Klik Pin 1/4" Dia. x 1 3/4"	
20	9804	Clevis Pin 1" Dia. x 4"	
21	9981	Clevis Pin 3/4" Dia. x 3 1/2"	
22	9951	Lynch Pin	

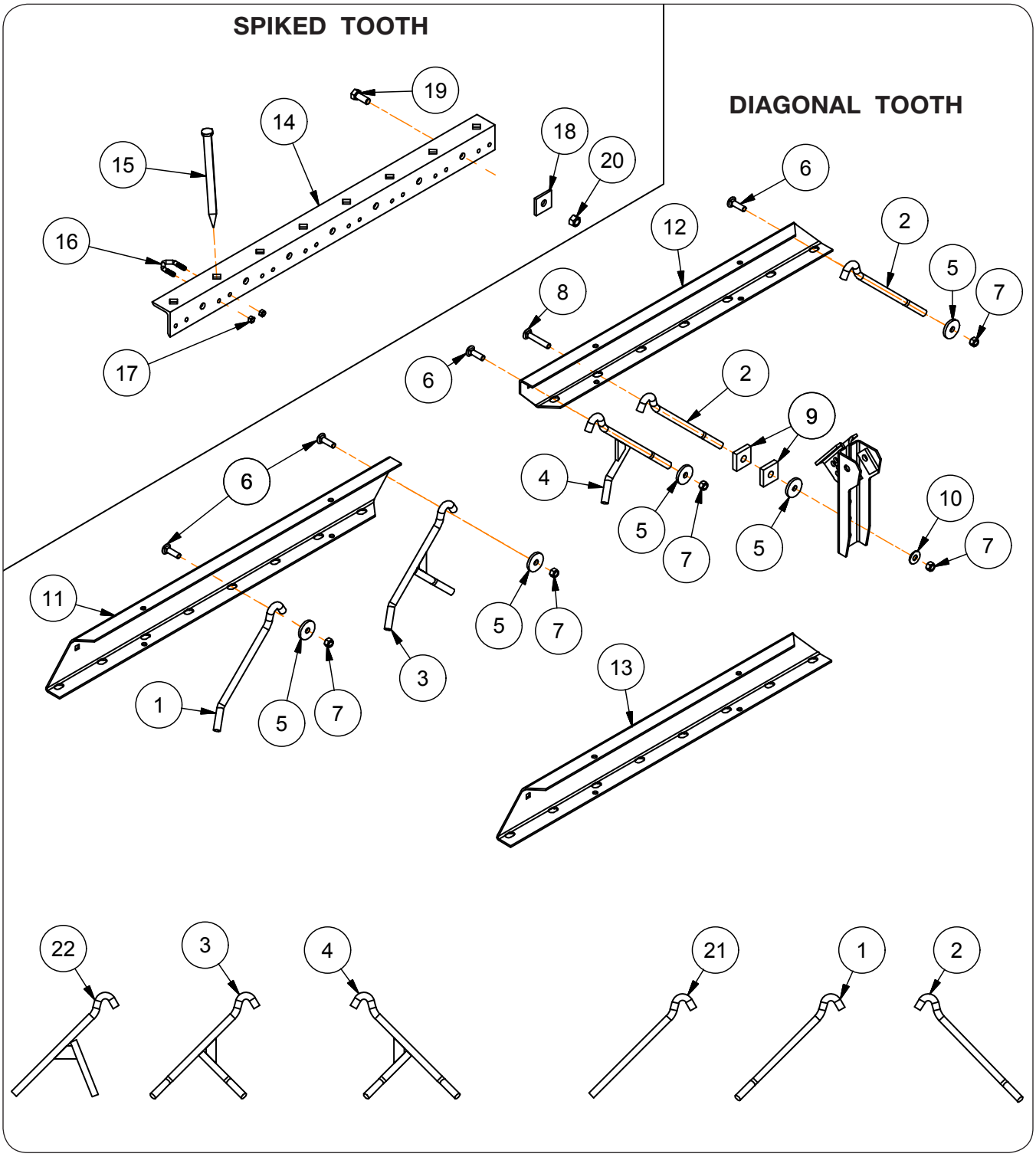
Rolling Harrow Basket Components



Rolling Harrow Basket Components

ITEM	PART NO.	DESCRIPTION	NOTES
1	81323	3 Ft. Basket Assembly	
	81324	4 Ft. Basket Assembly	
	81325	5 Ft. Basket Assembly	
	86388B	6 Ft. Basket Assembly	
2	81121	3 Ft. Aggressive Roller	
	81123	4 Ft. Aggressive Roller	
	81125	5 Ft. Aggressive Roller	
	71423B	6 Ft. Aggressive Roller	
3	81326	3 Ft. Rolling Harrow Frame	
	81327	4 Ft. Rolling Harrow Frame	
	81328	5 Ft. Rolling Harrow Frame	
	71364B	6 Ft. Rolling Harrow Frame	
4	87181	Flange Bearing Assembly	Includes Items 5 & 6
5	9404-019	Lock Washer 5/16”	
6	97321	Capscrew 5/16”-18UNC x 7/8" (Epoxy Lock)	
7	92256	Decal, Roller Action	
8	84762	Mounting Arm Assembly	
9	67173	Trunnion	
10	74848B	Saddle Weldment =Black=	
11	81308B	Mounting Bracket	
12	81321	Pin 5/8" Dia. x 1 7/8"	
13	82251B	Spring Assembly	
14	9798B	Spring	
15	8001B	Spring Plug	
16	81249B	Spring Clevis	
17	84259PL	Spacer Tube	
18	84356	D-Pin 1" Dia. x 4 1/2"	
19	84371	D-Pin 5/8" Dia. x 4 3/8"	
20	86825B	Arm Weldment	
21	89256	Link	
22	902450	Bent Pin 1/2” Dia.	
23	9093	Klik Pin 3/16” Dia.	
24	91144-165	Spiral Pin 1/4" Dia. x 1 7/8"	
25	91144-186	Spiral Pin 5/16" Dia. x 2"	
26	91552	Full Threaded Bolt 1/2”-13UNC x 4"	
27	85620	U-Bolt 5/8”-11UNC	
28	91434	U-Bolt 1/2”-13UNC	
29	9800	Locknut 1/2”-13UNC	
30	9801	Locknut 5/8”-11UNC	

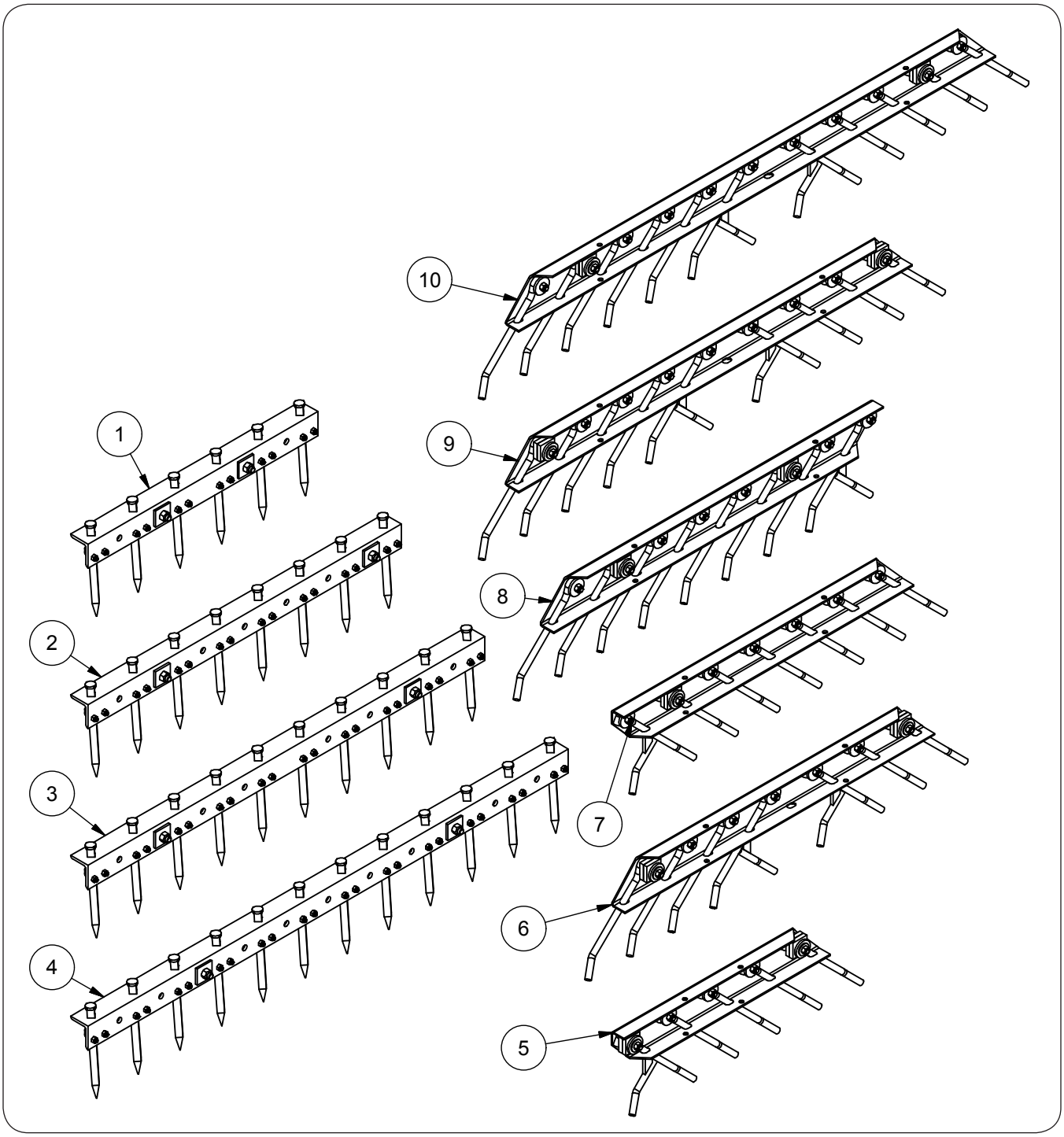
Leveler Bar Components



Leveler Bar Components

ITEM	PART NUMBER	DESCRIPTION	NOTES
1	74676B	Diagonal Bent Left-Hand Tooth	
2	74672B	Diagonal Bent Right-Hand Tooth	
3	74671B	Diagonal Bent Left-Hand “Y” Tooth	
4	74670B	Diagonal Bent Right-Hand “Y” Tooth	
5	91069PL	Flat Washer 2" OD	
6	9388-105	Carriage Bolt 1/2”-13UNC x 1 3/4” Gr5	
7	9800	Locknut/Top 1/2”-13UNC	
8	9388-110	Carriage Bolt 1/2”-13UNC x 3" Gr5	
9	3788B	Spacer (Required In Two Places)	
10	9405-088	Flat Washer 1/2” USS	
11	71259B	4 Ft. Diagonal Bent Tooth Leveler-Bar Left-Half	
12	71313B	3 Ft. Diagonal Bent Tooth Leveler-Bar Right-Hand-Y	
	71301B	4 Ft. Diagonal Bent Tooth Leveler-Bar Right-Hand Y	
13	71254B	4 Ft. Diagonal Bent Tooth Leveler-Bar Center	
	71255B	5 Ft. Diagonal Bent Tooth Leveler-Bar Center	
	71583B	6 Ft. Diagonal Bent Tooth Leveler-Bar Center	
14	71184B	3 Ft. Spike Tooth Leveler-Bar	
	71185B	4 Ft. Spike Tooth Leveler-Bar	
	71186B	5 Ft. Spike Tooth Leveler-Bar	
	71580B	6 Ft. Spike Tooth Leveler-Bar	
15	9634-P	Diamond-Shaped Spike Tooth	
16	9635	V-Bolt 3/8-16	
17	9928	Locknut 3/8-16UNC	
18	83284	Square Washer	
19	9390-122	Capscrew 5/8-11 x 1 1/2" Lg.	
20	9801	Hex Nut 5/8-11	
21	71088B	Diagonal Round Tooth (For Service ONLY)	
22	71142B	Diagonal Round “Y” Tooth (For Service ONLY)	

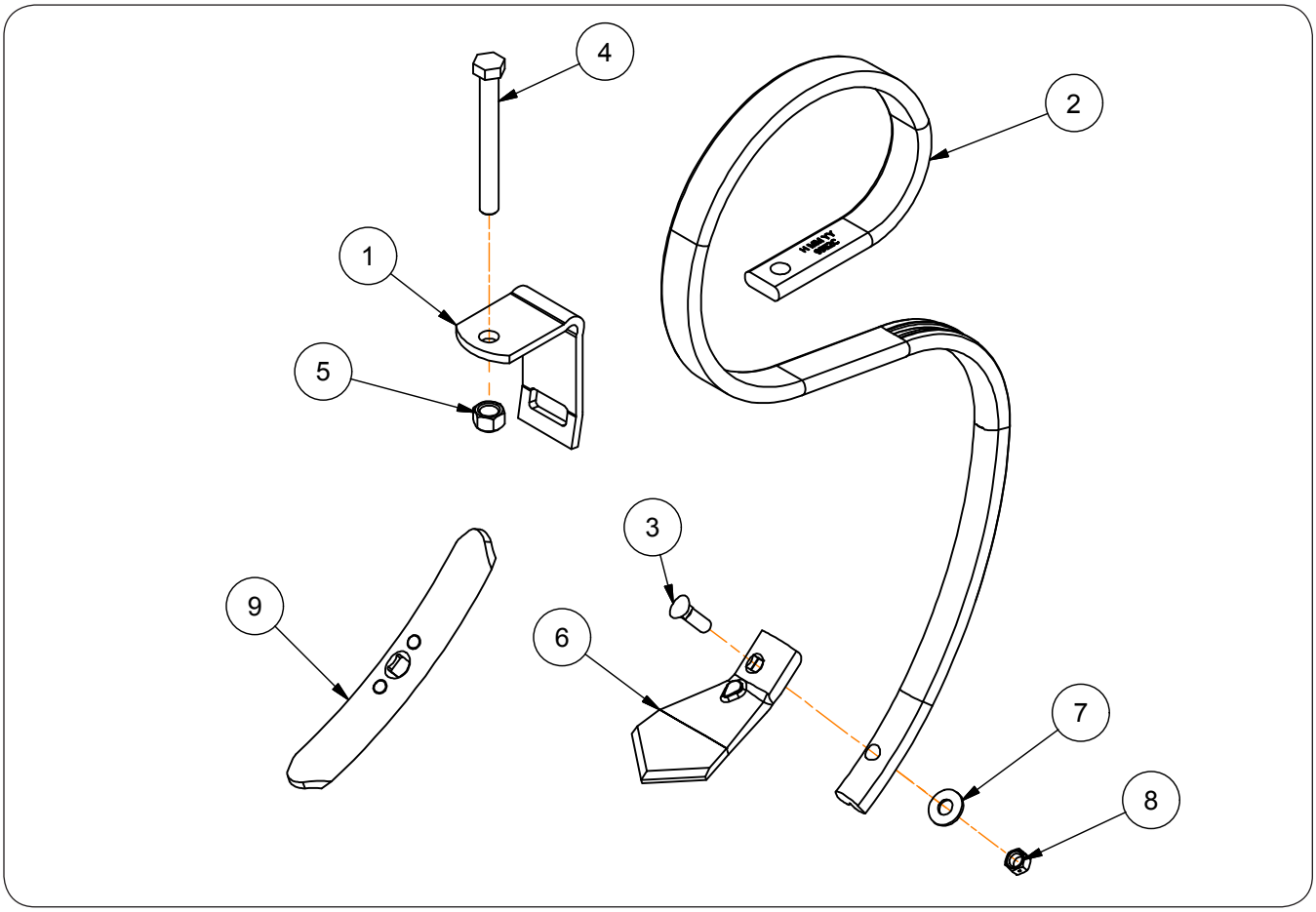
Leveler Bar Assemblies



Leveler Bar Assemblies

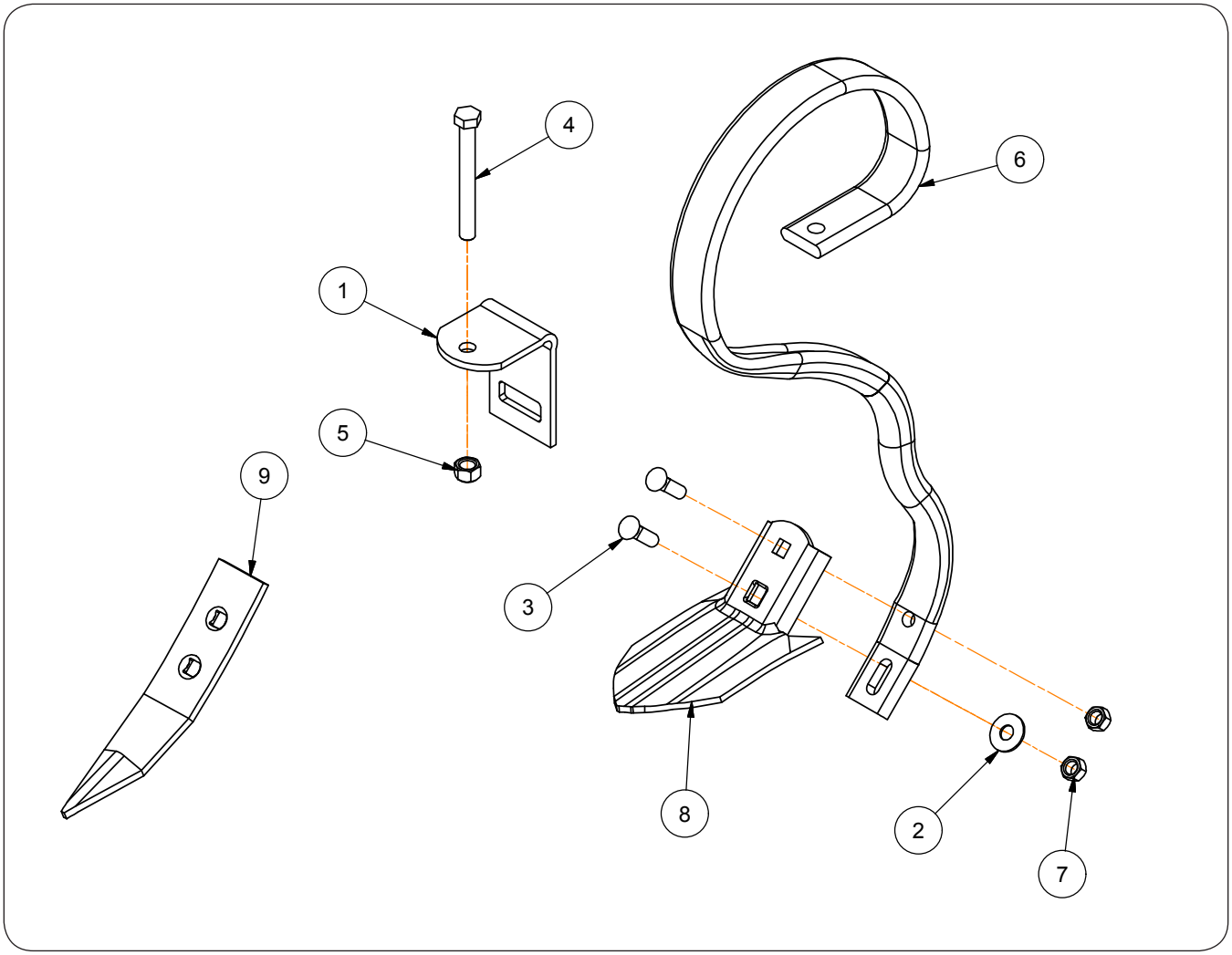
ITEM	PART NO.	DESCRIPTION
1	71181	Straight Spike-Tooth One Bar 3' Assembly
2	71182	Straight Spike-Tooth One Bar 4' Assembly
3	71183	Straight Spike-Tooth One Bar 5' Assembly
4	71579B	Straight Spike-Tooth One Bar 6' Assembly
5	76959B	Diagonal-Tooth One Bar 3' RH-Y Assembly
6	74687B	Diagonal-Tooth One Bar 4' CTR Assembly
7	76947B	Diagonal-Tooth One Bar 4' RH-Y Assembly
8	76955B	Diagonal-Tooth One Bar 4 1/2' LH-Y Assembly
9	74688B	Diagonal-Tooth One Bar 5' CTR Assembly
10	76692B	Diagonal-Tooth One Bar 6' CTR Assembly

S-Tines, Sweeps, & Shovels — Standard Model 10



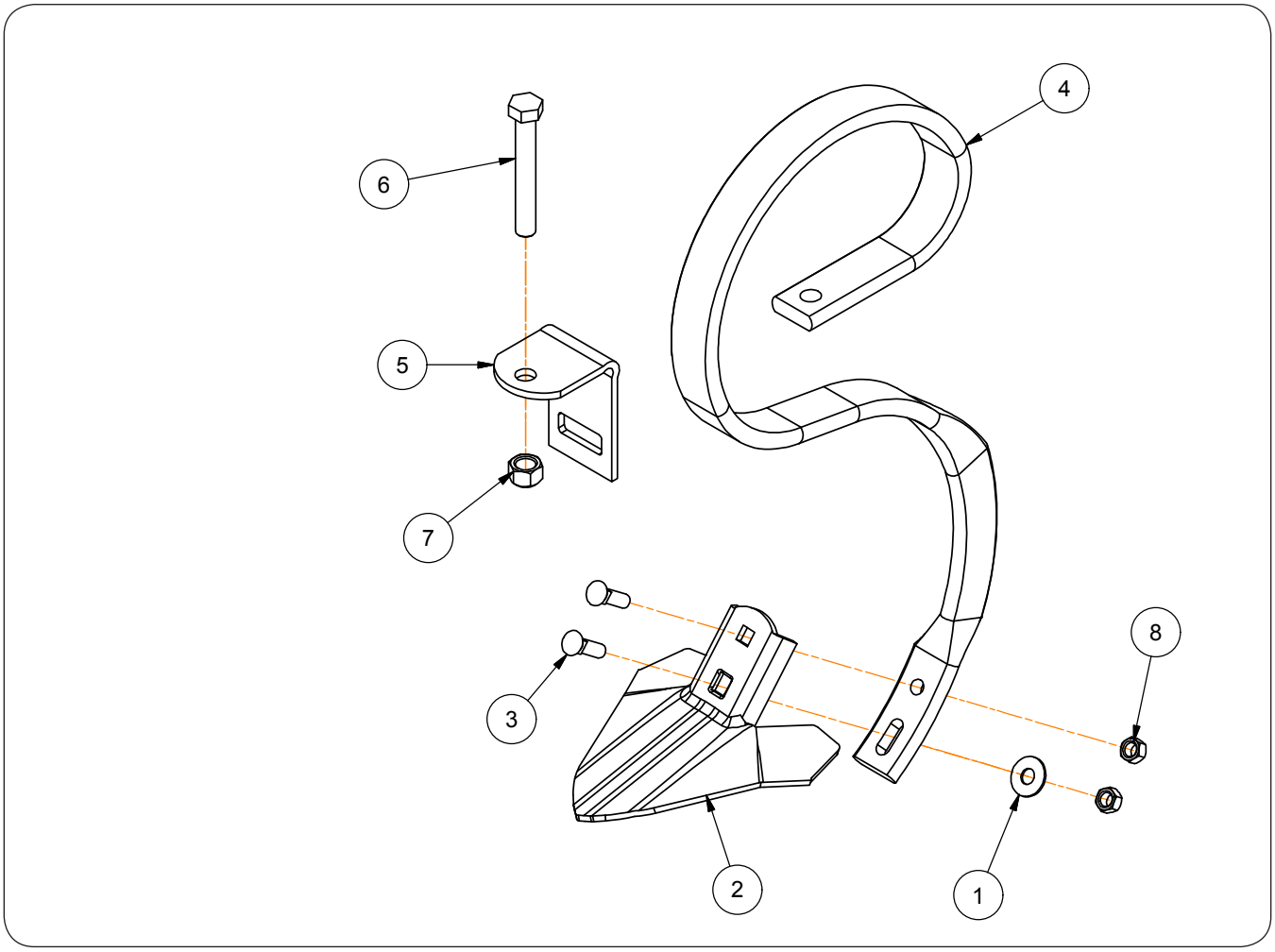
ITEM	PART NO.	DESCRIPTION	NOTES
1	82065	Clamp	
2	9952	S-Tine 1 1/4 x 1/2 (32 x 12 M.M.)	
3	9823	Plow Bolt 3/8-16UNC x 1 1/2" Lg.	Grade 8
4	9390-112	Capscrew 1/2-13UNC x 4 1/2" Lg.	Grade 5
5	9800	Locknut 1/2-13UNC	
6	91381	Goosefoot Shovel 2 3/4”	
7	9005471	Flat Washer 3/8”	Hardened
8	902875	Locknut 3/8-16UNC	
9	9974	Point	

S-Tines, Sweeps, & Shovels — Heavy-Duty Model 12



ITEM	PART NO.	DESCRIPTION	NOTES
1	83417	Clamp	
2	9405-082	Flat Washer 7/16" USS	
3	91411	Plow Bolt 7/16-14UNC x 1 1/2" #3 Flat Head	Grade 5
4	9390-112	Capscrew 1/2-13UNC x 4 1/2"	Grade 5
5	9800	Locknut 1/2-13UNC	
6	94138	S-Tine H.D. Edge Rolled (High Residue)	
7	9799	Locknut 7/16-14UNC	
8	9500465	Sweep 4”	
9	95848	Point Shovel (Non-Reversible)	

S-Tines, Sweeps, & Shovels — Heavy-Duty Edge Bent Model 14



ITEM	PART NO.	DESCRIPTION	NOTES
1	9405-082	Flat Washer 7/16" USS	
2	93687	Sweep 7”	
3	91411	Plow Bolt 7/16-14UNC x 1 1/2" #3 Flat Head	Grade 5
4	91495	S-Tine with Edge Flattened For Trash Clearance	
5	82066	Clamp	
6	9390-133	Capscrew 5/8-11UNC x 4 1/2"	Grade 5
7	9801	Locknut 5/8-11UNC	
8	9799	Locknut 7/16-14UNC	

Notes

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