



HAWKINS



HWT TOOLBAR OWNER'S MANUAL REVISED 01.20

DELIVERY CHECKLIST



PRE-DELIVERY/PRE-USE CHECKLIST

- 1. Ensure the owner's manual is delivered with the proper equipment.
- 2. Scrutinize all safety signs and light assemblies, ensure all are visible and properly located.
- 3. Visual inspection; walk around equipment looking for inconsistencies and irregularities.
- 4. Make sure all hardware is tightened.
- 5. Check that each grease zerk has been greased.

DELIVERY CHECKLIST

- 1. Read and understand this owner's manual.
- 2. Familiarize yourself with all safety signs.
- 3. Relocate the SMV sign into the upright and visible position.
- 4. Familiarize yourself with the equipment and its operation.
- 5. Familiarize yourself with maintenance processes and schedules.
- 6. Ensure all hardware is tight and each grease zerk is greased.
- 7. Review all accessories, options and repair parts. Always replace parts with Hawkins Ag parts only.

DELIVERY DATE _____

EQUIPMENT ROWS/SPACING _____

SERIAL NUMBER _____

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GENERAL INFORMATION



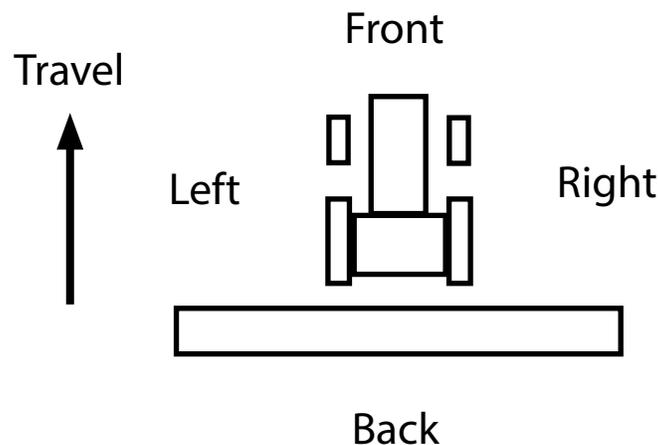
HOW TO USE THIS MANUAL

This manual is divided into sections. The first section contains a Table of Contents, General Information, and a Part Number Index. The remaining sections divide the machine into assemblies and sub-assemblies which illustrate and list all parts.

Hawkins Ag parts in this manual are specially designed for this machine and should be replaced with Hawkins Ag parts only.

Information in this manual was current at time of printing. However, due to Hawkins Ag's ongoing product improvement, production changes may cause your machine to appear slightly different in detail. Hawkins Ag reserves the right to change specifications or design without notice and without incurring obligation to install the same on machines previously manufactured.

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



MANUAL REPLACEMENT INFORMATION

Replacement manuals are available. Call the Hawkins Ag Main Office at 308.708.8185, or download a printable PDF from our website, www.HawkinsAg.com.

MANUAL REVISIONS

When this manual is revised, the modification date is printed on the front cover and on the revised page(s).

TOUCH-UP PAINT

Repaint parts where paint is worn or scratched to prevent rust. Aerosol touch-up paint is available. To order, call Hawkins Ag at 308.708.8185.



INTRODUCTION

Thank you for your purchase of a Hawkins Ag HWT Toolbar. Putting your trust in our equipment is something we don't take lightly and are humbled that you chose Hawkins Ag. Having designed all of our equipment with farmers like you in mind, we hope you enjoy years of productive use from it. Please read and understand this manual before operation.

WARRANTY INFORMATION

AGROdeviate LLC (AGROdeviate) warrants each Hawkins Ag product it manufactures to be free from defects in material and workmanship for a period not to exceed one (1) year from the date of sale to the original owner. The warranty is valid provided written notice of the alleged defect is received by AGROdeviate during said period and within ten (10) working days after its discovery.

In addition, AGROdeviate warrants each TOOLBAR FRAMEWORK to be free from defects in material and workmanship for a period not to exceed three (3) years from the date of sale to the original owner. The warranty is valid providing written notice of the alleged defect is received by AGROdeviate during said period and within ten (10) working days after its discovery.

This warranty is subject to completion of Product Registration and submission to AGROdeviate. Warranty applies only if product is installed, operated, and maintained according to product manual and instructions. Warranty will be void if the product has been subject to misuse, misapplication, neglect, collision with obstruction, or alteration.

For products, parts, and components NOT manufactured by AGROdeviate, the warranty obligations of AGROdeviate shall be limited to the Original Equipment Manufacturers' warranty. Tires on AGROdeviate equipment are warranted through the respective tire manufacturer and their network of dealers.

All returns must be pre-approved by AGROdeviate and authorization issued before return. All returns must include a copy of the original invoice in order to be processed. Any returns without a copy of the original invoice will not be eligible to receive credit.

If determined that the product is defective in material and/or workmanship, the necessary parts will be replaced and/or repaired. All warranty repair or labor is to be performed by an AGROdeviate authorized party. AGROdeviate obligation under this warranty shall be limited to repairing or replacing parts deemed defective. Warranty does not cover travel expenses. AGROdeviate will bear no other costs including loss, incurred labor, rental fees, nor other.

All returns shall be pre-paid. If warranty is approved by AGROdeviate, return freight will be credited.

This warranty by AGROdeviate LLC is expressly in lieu of all other warranties, expressed or implied, including warranty of merchantability and fitness for use. We neither assume, nor authorize, any other entity to accept for us any liability relating to the sale of our products.



SAFETY

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



**THIS SYMBOL MEANS:
-ATTENTION!
-BECOME ALERT!
-YOUR SAFETY IS INVOLVED!**

SIGNAL WORDS:

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



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



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



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

If you have questions not answered in this manual, require additional copies, or the manual is damaged, please contact Hawkins Ag, 2120 4th Ave., Holdrege, NE 68949, 308.708.8185, or visit our website: www.hawkinsag.com.



SAFETY... YOU CAN LIVE WITH IT!



EQUIPMENT SAFETY GUIDELINES

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.

Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing. Location of such decals is indicated in this booklet.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. Do not allow persons to operate or assemble the unit until they have read this manual and have developed an understanding of the safety precautions and how it works.

To prevent injury or death, use a tractor with a Rollover Protective Structure (ROPS). Do not paint over, remove or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

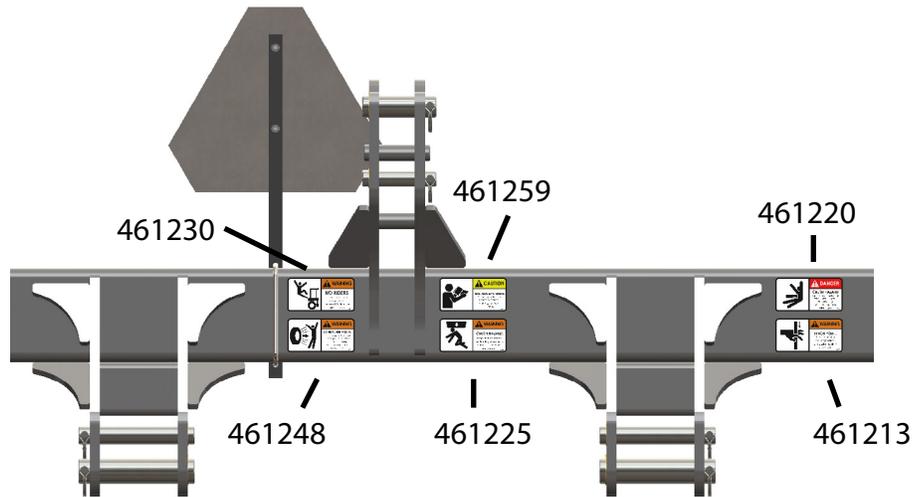
Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - DON'T TRY IT.



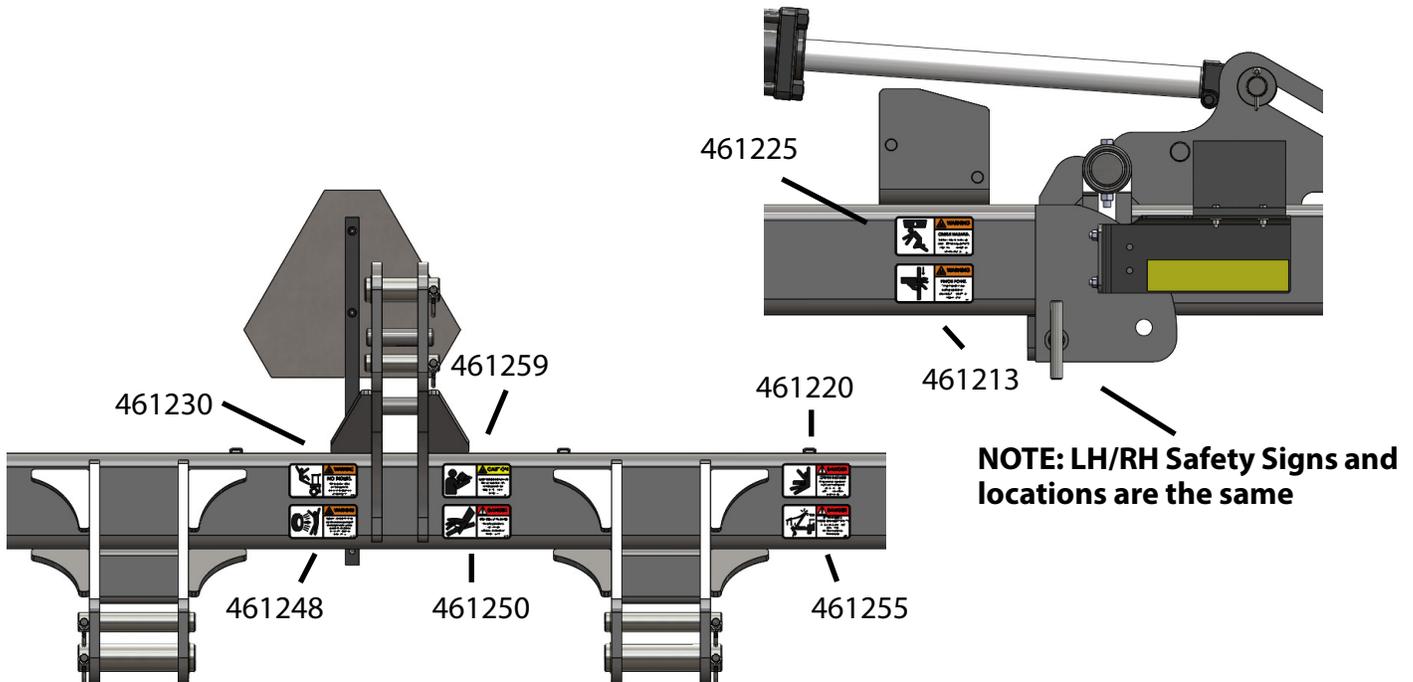
SAFETY SIGN LOCATIONS

These types of Safety Signs and locations on the equipment are shown in the illustrations below. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that require your SAFETY AWARENESS.

RIGID HWT TOOLBAR



FOLDING HWT TOOLBAR

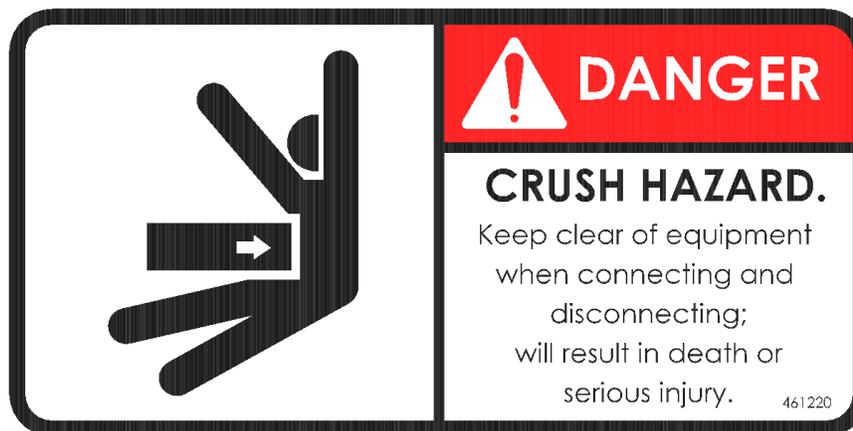




461213

PINCH POINT - WARNING

- Keep extremities clear of equipment. Object(s) can move or shift; can result in death or serious injury.
- Hazards may include, but are not limited to, hinge mechanism movement, pin movement, row unit movement and shifting, accessory movement and shifting, etc.



461220

CRUSH HAZARD - DANGER

- Keep clear of moving and shifting equipment. Equipment movement area; will result in death or serious injury.
- Hazards may include, but are not limited to, connection and disconnection of equipment, unexpected equipment shifting, etc.



461225

CRUSH HAZARD - WARNING

- Keep clear of moving and shifting equipment. Equipment can move or shift; can result in death or serious injury.
- Hazards may include, but are not limited to, folding wing movement, raised equipment movement and shifting, etc.



461230

NO RIDERS - WARNING

- Never allow riders on equipment; can result in death or serious injury.
- Hazards may include, but are not limited to, falling from equipment, falling into equipment, injury while on equipment, etc.



461248

CONTENTS UNDER PRESSURE - WARNING

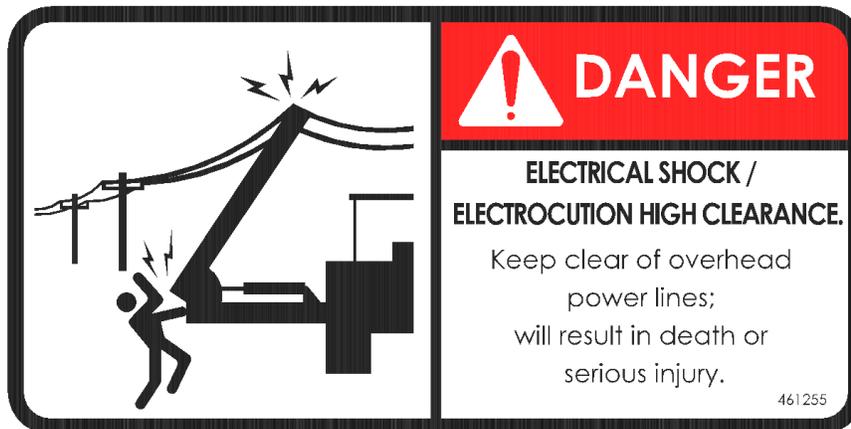
- Do not operate if damaged or improperly pressurized. Damaged or improperly pressurized components can discharge; can result in death or serious injury.
- Hazards may include, but are not limited to, damaged tire and/or rim, over pressurized tire, excessive tire wear, tire tears or punctures, ect.



461250

HIGH PRESSURE FLUID - DANGER

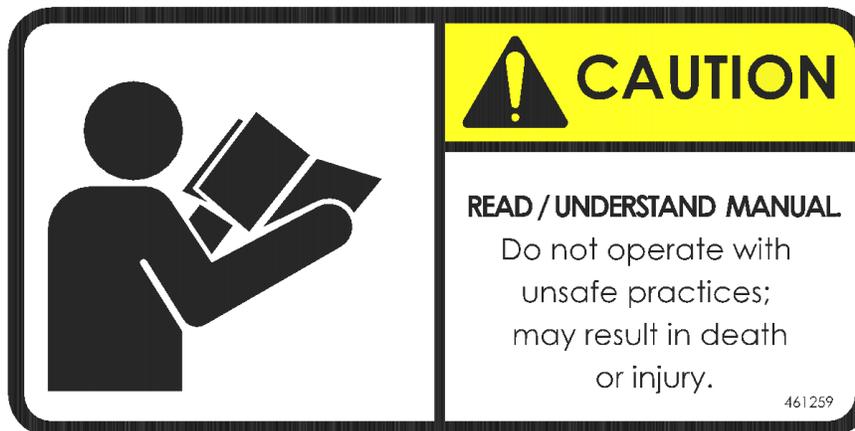
- Use safe practices. Fluid injection can occur; will result in death or serious injury.
- Hazards may include, but are not limited to, injury beyond the entry point, over pressurized components, damaged components, components with excessive wear, swollen components, ect.



461255

ELECTRICAL SHOCK/ELECTROCUTION HIGH CLEARANCE-DANGER

- Keep clear of overhead power lines, maintain 20-foot minimum distance. Electrical shock and/or electrocution can occur; will result in death or serious injury.
- Hazards may include, but are not limited to, high clearance equipment, low clearance power lines, lack of awareness of surroundings, etc.



461259

READ/UNDERSTAND MANUAL - CAUTION

- Do not operate without a complete understanding of the owner's manual. Do not operate with unsafe practices; may result in death or injury.
- Hazards may include, but are not limited to, compromising the safety of yourself and/or others, lack of awareness, damage to equipment, etc.



SAFETY SIGN CARE

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs are available from Hawkins Ag.

HOW TO INSTALL SAFETY SIGNS

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with the exposed stick backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.

REMEMBER: If Safety Signs have been damaged, removed, become illegible or parts replaced without decals, new decals must be applied. New decals are available from Hawkins Ag.

**Hawkins Ag
2120 4th Ave.
Holdrege, NE 68949**

**308.708.8185
www.hawkinsag.com**



REMEMBER

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact Hawkins Ag.



BEFORE OPERATION

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- It is recommended that suitable eye protection be worn.
- The operator may come in contact with certain materials which may require specific safety equipment (ie: extremely dusty, molds, fungus, bulk fertilizers).
- Keep bolts tightened to specific torque listed on **Bolt Torque Chart**.
- Give the unit a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.
- Be sure that there are no tools lying on or near the equipment.
- Do not use the unit until you are sure that the area is clear, especially children and animals.
- Because it is possible that this equipment may be used in dry areas or in the presence of combustibles, special precautions should be taken to prevent fires and fire fighting equipment should be readily available.
- Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.



DURING OPERATION

- Keep hands, feet, and clothing clear of moving parts.
- Do not clean, lubricate or adjust your equipment while it is moving.
- Be especially observant of the operating area and terrain - watch for holes, rocks or other hidden hazards. Always inspect the area prior to operation.
- Periodically clear the equipment of brush, twigs or other materials to prevent buildup of dry combustible materials.
- Do not walk or work under raised components or attachments unless securely positioned and blocked.
- Keep all bystanders, pets and livestock clear of the work area.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.



FOLLOWING OPERATION

- Store the unit in an area away from human activity.
- Do not park equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.
- Do not permit children to play on or around the stored unit.
- Make sure all parked machines are on a hard, level surface.



PERFORMING MAINTENANCE

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Before working on this machine, stop the towing vehicle, set the brakes, shut off the engine and remove the ignition keys.
- Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.
- Always use the proper tools or equipment for the job at hand.
- Use extreme caution when making adjustments.
- Follow the torque chart in this manual when tightening bolts.
- Replace all shields and guards after servicing and before moving.
- After servicing, be sure all tools, parts and service equipment are removed.
- Never replace hex bolts with less than Grade 5 bolts unless otherwise specified. Refer to **Bolt Torque Chart** for head identification marking.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.
- If equipment has been altered in any way from the original design, the manufacturer does not accept any liability for injury or warranty.
- A first aid kit should be kept readily accessible while performing maintenance on this equipment.



BEFORE FIRST USE

DELIVERED ASSEMBLED

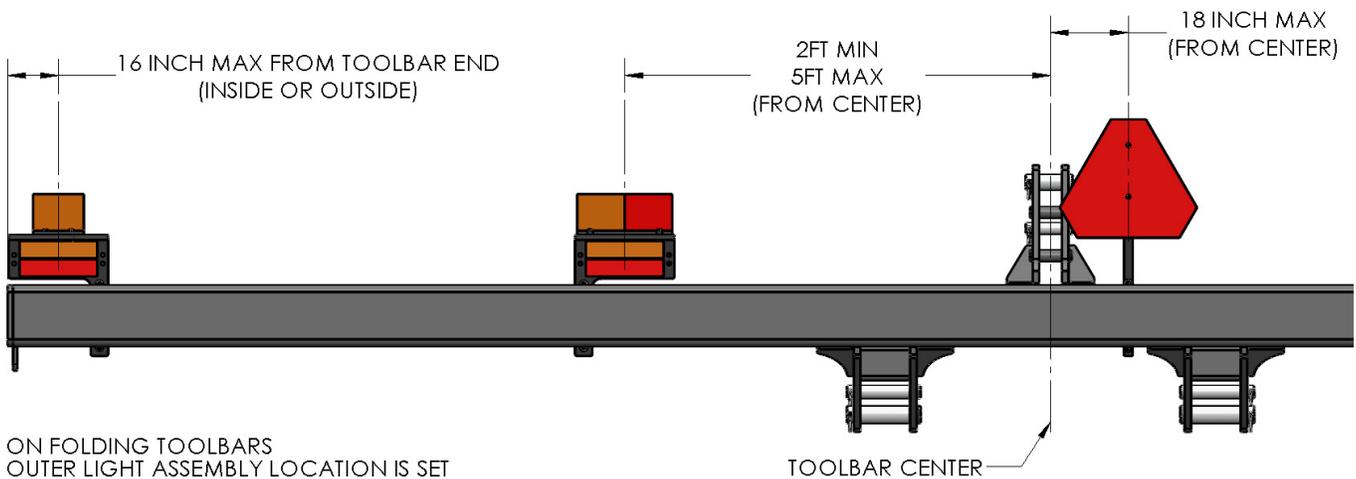
Hawkins Ag HWT Toolbars leave the factory fully assembled. Hydraulics are installed and tested, wing locking pins are installed in the locked position, hitch pins are installed, leveling bolts are set at level, the light kit is installed and the SMV sign is set down for transportation

NOTE: The above is typical; however, some shipping circumstances or customer requests may require alteration to the typical delivery configuration.

LIGHT KIT GUIDE AND RELOCATION

The light kit is installed at the factory. However, due to shipping requirements and other circumstances, some positions are altered and SMV sign or lights may need relocated before use. Typically, the SMV sign is the only component that needs relocated; please check all components. Check that all forward-facing reflectors and lights are visible from the front and all rear-facing reflectors and lights are visible from the rear. Please refer to the depiction below for component locations.

RIGID TOOLBAR LEFT FROM REAR SHOWN
LH AND RH LOCATIONS ARE IDENTICAL AND OPPOSITE





SET-UP

3-POINT ATTACHMENT

Hawkins Ag HWT Toolbar 3-Point hitches are configured for combination CAT 3/3N/4N or CAT 4N only. When connecting, remove unused pins and ensure connection is secure and tractor is correctly ballasted before lifting equipment.



Use caution when working between and/or around moving and shifting equipment.

HYDRAULIC CONNECTION

Hydraulic lines connect using agricultural quick couplings. **Before connection or disconnection, release all hydraulic pressure.** To connect, insert male quick coupler. Ensure connection is secure before applying hydraulic pressure. To disconnect, remove male quick coupler.



Use caution, hydraulic fluid may leak or spray when connecting or disconnecting.

LIGHT PLUG CONNECTION

Lights are connected using a standard 7-pin connector. To connect, simply lift receptacle cover, align plug and insert. To disconnect, lift receptacle cover and remove plug.

TOOLBAR STAND USE

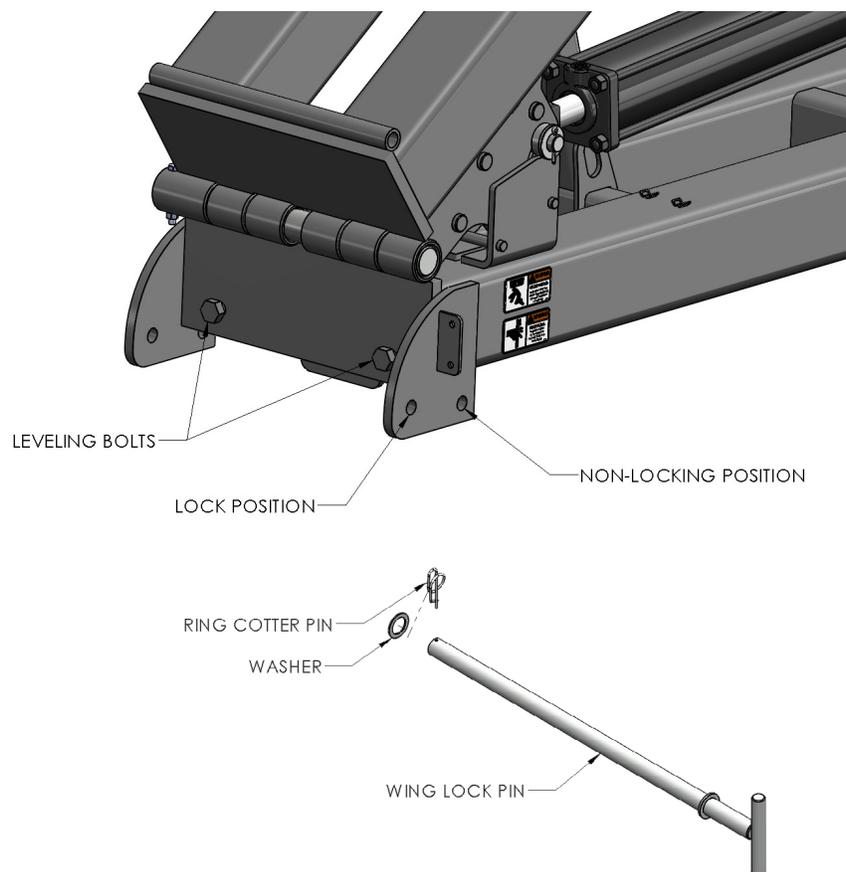
Toolbar stands are used for equipment storage and should be raised during use. After proper 3-Point connection, lift the toolbar until the toolbar stands are no longer in contact with the ground. Then, remove the locking pin, raise the toolbar stand and replace the locking pin.



SET-UP

WING LOCK PINS AND LEVELING BOLTS

Wing lock pins and leveling bolts hold folding toolbars level. Remove the wing lock pins from the lock position and place in the non-locking position before folding the wing(s). To move wing lock pin position, pull ring cotter pin and slide washer off. Then, pull the pin out of the toolbar and reinsert it into the desired position. Slide washer over the end of the wing lock pin and reinsert the ring cotter pin. Leveling bolts are used to set the down stop of the wings. To stop the wings lower than the factory set position, tighten the bolts. To stop the wings higher than the factory set position, loosen the bolts. It is recommended to adjust leveling bolts a quarter to a half turn at a time, each time checking the results.



MOUNTING IMPLEMENTS AND OTHER EQUIPMENT

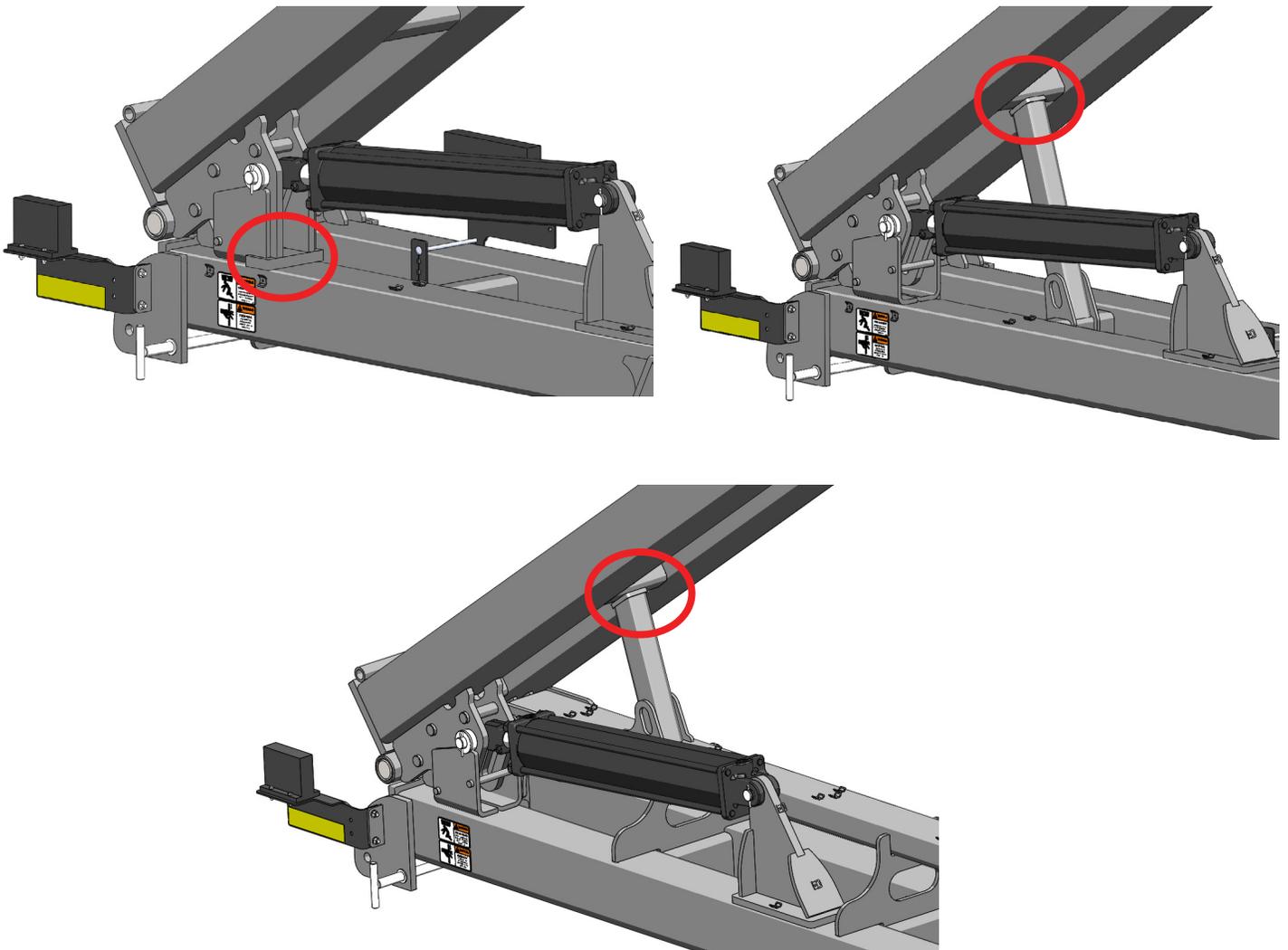
Before mounting implements and other equipment, select an appropriate area. An appropriate area should be flat, level and have adequate space to move around all equipment and obstacles. Secure the toolbar to multiple sawhorses and/or stands. Ensure that these sawhorses and/or stands can safely hold the weight of the toolbar as-well-as the implements and/or equipment that's intended to be mounted. Also, ensure that the toolbar is secured and supported adequately to prevent it from tipping over caused by mounting implements and/or equipment that may shift the load. Keep the area clean and always use safe practices.



FOLDING FUNCTION

Ensure wing lock pins are in the non-locking position before folding and unfolding the wings. To fold each wing, pressurize the rod hose. When the wing is near vertical, slow to let the wing and any equipment shift gradually. Once the wing and wing stop are in full contact, disengage the SCV. Do not continue folding once the wing and wing stop are in full contact. To unfold each wing, pressurize the base hose. When the wing is near vertical, slow to let the wing and any equipment shift gradually. Continue until the cylinder is at the end of its stroke and disengage the SCV.

Wing stop style and position vary depending on specific toolbar configuration. Refer to the images below for wing and wing stop contact points.





HWT TOOLBAR DO'S AND DON'TS

- DO follow all safety precautions in this manual.
- DO locate and familiarize yourself with the various Safety Signs and instructional decals prior to operation.
- DO inspect equipment for damage and wear before use; repair as needed.
- DO use caution when connecting pressurized systems, such as hydraulics and pneumatics.
- DO follow recommend maintenance.
- DO level the toolbar for optimum performance.
- DO lift implements completely out of the soil before turning the unit.
- DO use caution when moving large equipment. Using a spotter is recommended when working around obstacles on the ground and/or overhead.
- DON'T fold the toolbar with locking pins in the locked position.
- DON'T over-pressurize the hydraulic system; HWT Toolbar hydraulics are designed for 3,000 PSI MAX working pressure.
- DON'T exceed the limits of a piece of machinery.
- DON'T modify equipment from factory build; modification may compromise equipment safety and integrity.



MAINTENANCE

- Proper maintenance will ensure longevity and optimum performance of your Hawkins Ag equipment.
- Visual inspection is recommended before each use. Check for loose bolts, worn parts, cracked welds and other damage. Replace and repair as needed.
- In addition to visual inspection before each use, carefully inspect hydraulic components every 100 hours for leaks, excessive wear, swelling and damage. Leaks should be corrected by tightening the fittings according to the **Hydraulic Fitting Torque Chart** or replacing components. Replace any components showing signs of excessive wear, swelling or damage.
- Always replace bolts with the same grade, refer to **Bolt Torque Chart** for grade identification. Tighten bolts according to **Bolt Torque Chart**.
- Always replace parts with Hawkins Ag parts only.
- We recommend greasing each grease zerk on the toolbar hinge every 100 hours. Grease all attachment grease zerks every 20 hours, or according to specified lubrication schedule.
- Before long-term storage (3 months or more) clean debris from equipment and touch-up paint to prevent corrosion.
- Store in a flat dry place away from human activity and livestock.
- After long-term storage (3 months or more) visually inspect equipment and carefully inspect all components. Especially parts more easily affected by weather damage, such as hydraulic hoses and wiring. Repair and replace as needed before use.

TROUBLESHOOTING

Troubleshooting		
Problem	Possible Cause	Solution
Will not fold.	Lock pin(s) is in the lock position.	Put lock pin(s) into non-locking position.
	Hydraulics are disconnected.	Connect hydraulics.
	Hydraulics are damaged.	Repair or replace hydraulics.
Shuttering when folding.	Hinges need maintenance.	Grease the zerks on hinges.
Implements not engaging properly.	Toolbar is not level.	Level toolbar.
Odd wear on implements.	Implements are engaged while turning.	Lift completely out of soil before turning.
Corners and ends have gouges in the soil.	Implements are engaged while turning.	Lift completely out of soil before turning.
Wing(s) lifting out of ground.	Lock pin(s) not inserted.	Insert lock pin(s).



CHECKING BOLT TORQUE

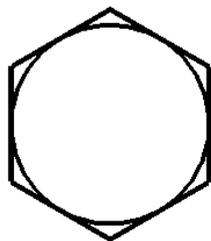
The table shown below gives correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same grade bolt.

BOLT TORQUE CHART

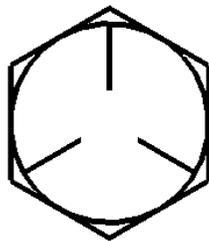
Torque Specifications						
Bolt Diameter	Bolt Torque*					
	SAE Grade 2		SAE Grade 5		SAE Grade 8	
INCH	lbft	(Nm)	lbft	(Nm)	lbft	(Nm)
1/4	6	(8)	9	(12)	12	(17)
5/16	10	(13)	19	(25)	27	(36)
3/8	20	(27)	33	(45)	45	(63)
7/16	30	(41)	53	(72)	75	(100)
1/2	45	(61)	80	(110)	115	(155)
9/16	70	(95)	115	(155)	165	(220)
5/8	95	(128)	160	(215)	220	(305)
3/4	165	(225)	290	(390)	400	(540)
7/8	170	(230)	420	(570)	650	(880)
1	226	(345)	630	(850)	970	(1320)

BOLT HEAD IDENTIFICATION

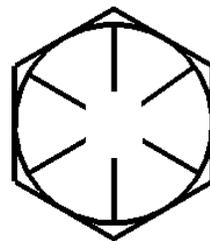
Grade 2



Grade 5



Grade 8





HYDRAULIC FITTING IDENTIFICATION

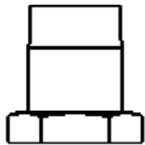
Hydraulic fitting styles, types and sizes are numerous and at times easily confused. The chart below shows the most common types and sizes of hydraulic fittings for the industry, male ends depicted. This chart is printed at 1 to 1 for ease of identification.

NPTF (National Pipe Taper Fuel) uses tapered threads to create a seal.

ORB (O-Ring Boss) uses an O-ring to seal after threads.

JIC (Joint Industry Council) 37-degree flare sealing surface before threads.

ORFS (O-Ring Face Seal) uses an O-ring to seal before threads.



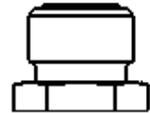
-4 NPTF



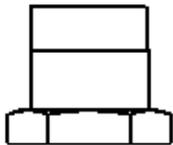
-4 ORB



-4 JIC



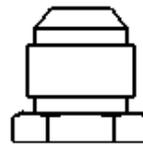
-4 ORFS



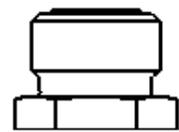
-6 NPTF



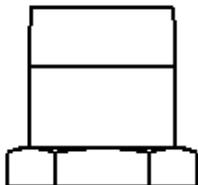
-6 ORB



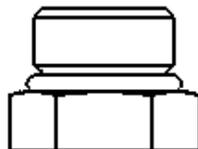
-6 JIC



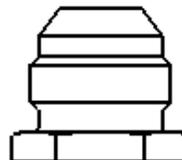
-6 ORFS



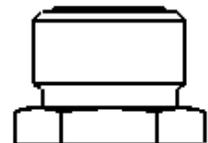
-8 NPTF



-8 ORB



-8 JIC

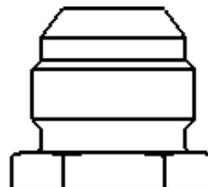


-8 ORFS

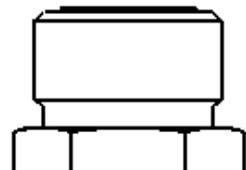
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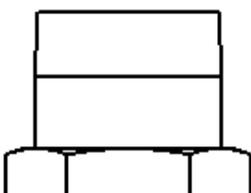
-10 ORB



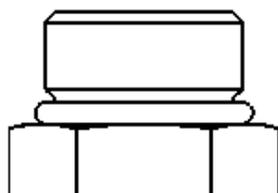
-10 JIC



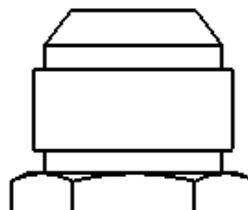
-10 ORFS



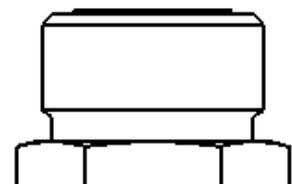
-12 NPTF



-12 ORB



-12 JIC

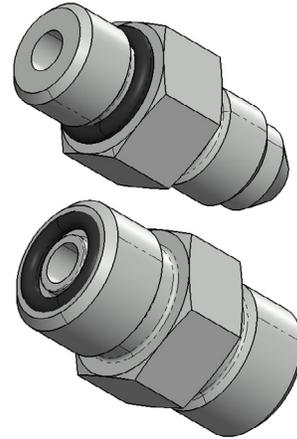


-12 ORFS



CHECKING HYDRAULIC FITTINGS

- Before connecting hydraulic fittings, check that fittings are clean and undamaged. Replacement fittings and hoses are available from Hawkins AG.
- Ensure O-ring(s) are installed properly as shown in the image. (ORB fitting above, ORFS fitting below)
- “Wet Torque” fittings according to the chart below. Wet Torque is the process of lubricating all threads, O-rings and sealing surfaces with the hydraulic fluid used in the system. Then tightening to a specified torque.
- Do not force fittings together. Ensure male and female are of the same type and size, align sealing surfaces and threads properly.
- Do not apply force to a connection or use the connection as support. Doing so may damage components and/or cause the connection to leak.

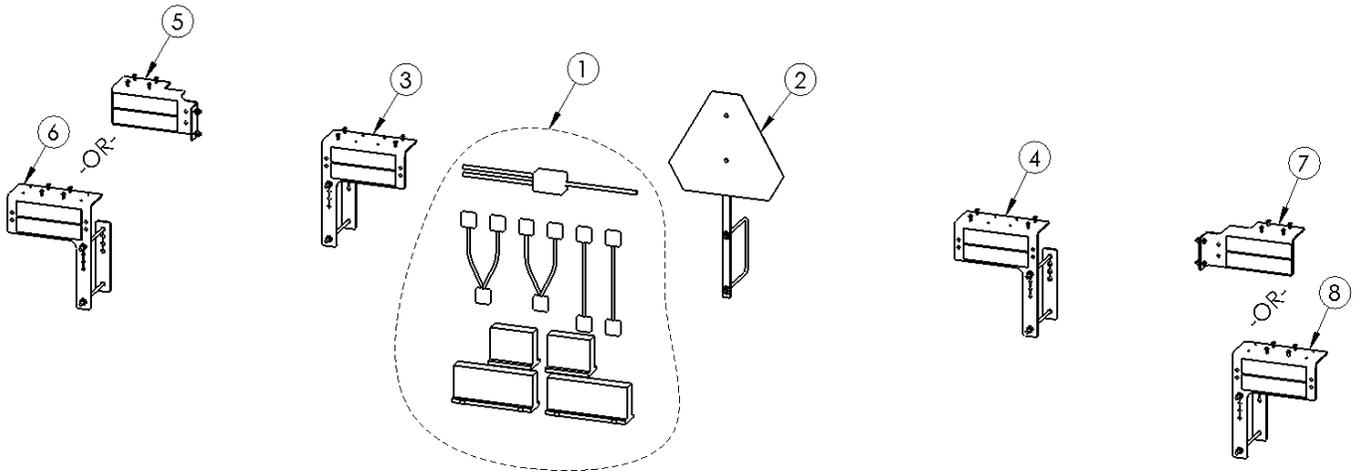


HYDRAULIC FITTING TORQUE CHART

Dash Size	Torque lbft (Nm)			
	NPTF	ORB	JIC	ORFS
-4	12-16 (16-22)	10-15 (14-20)	11-13 (15-18)	10-12 (14-16)
-6	14-32 (19-43)	17-21 (23-28)	20-22 (27-30)	18-20 (24-27)
-8	32-40 (43-54)	30-35 (41-47)	43-47 (58-64)	32-35 (43-47)
-10	-	30-35 (41-47)	55-65 (75-88)	45-50 (61-68)
-12	40-48 (54-65)	30-35 (41-47)	80-90 (108-122)	65-70 (88-95)



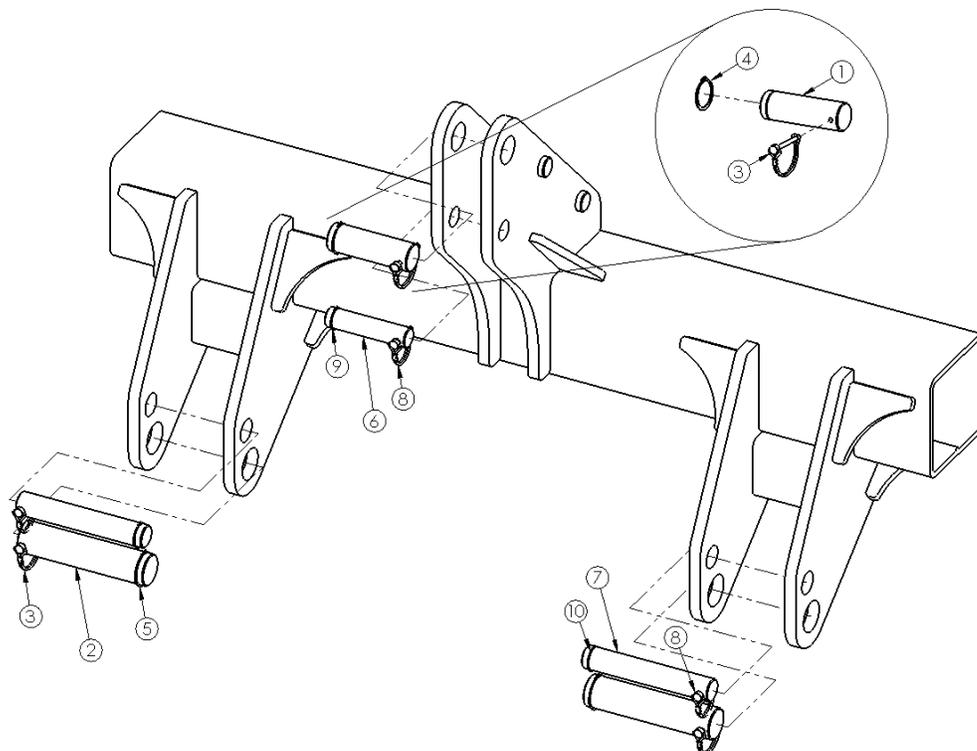
LIGHT KIT



Item Number	Part #	Description	Quantity
1	302836	LIGHT AND WIRING HARNESS ASSEMBLY	1
2	302851	SMV SIGN ASSEMBLY	1
3	302855	INNER BRACKET LH ASSEMBLY (RED, ORANGE) POSITION MAY VARY	1
4	302854	INNER BRACKET RH ASSEMBLY (RED, ORANGE) POSITION MAY VARY	1
5	302859	OUTER BRACKET LH ASSEMBLY FOLDING (RED, ORANGE, AMBER)	1
6	302861	OUTER BRACKET LH ASSEMBLY (RED, ORANGE, AMBER) POSITION MAY VARY	1
7	302858	OUTER BRACKET RH ASSEMBLY FOLDING (RED, ORANGE, AMBER)	1
8	302862	OUTER BRACKET RH ASSEMBLY (RED, ORANGE, AMBER) POSITION MAY VARY	1
NOT SHOWN	302840	COMPLETE RIGID BAR LIGHT KIT	1
NOT SHOWN	302860	COMPLETE FOLDING BAR LIGHT KIT	1



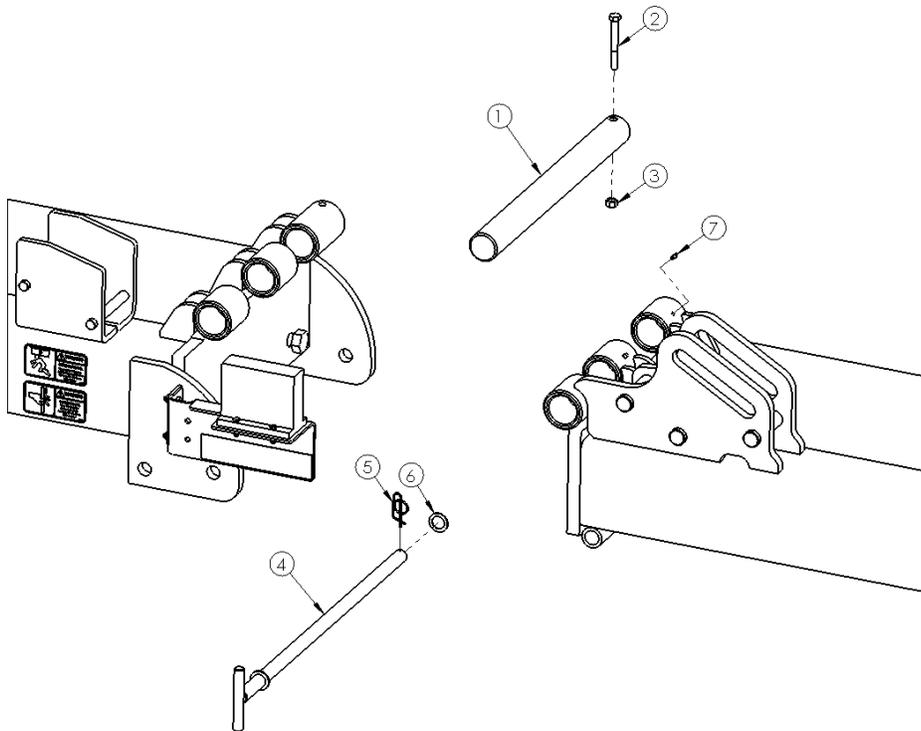
HITCH PINS



Item Number	Part #	Description	Quantity
1	315151	TOP HITCH PIN 4N	1
2	315153	LOWER HITCH PIN 4N	2
3	315161	LOCKING PIN LARGE	3
4	315155	RETAINING RING 1 3/4	1
5	315157	RETAINING RING 2	2
6	315152	TOP HITCH PIN 3N, 3	1
7	315154	LOWER HITCH PIN 3N, 3	2
8	315162	LOCKING PIN SMALL	3
9	315156	RETAINING RING 1 1/4	1
10	315158	RETAINING RING 1 7/16	2
NOT SHOWN	315150	HITCH PIN PACK 3N, 3-4N	1
NOT SHOWN	315165	HITCH PIN PACK 4N ONLY	1



HINGE ASSEMBLY

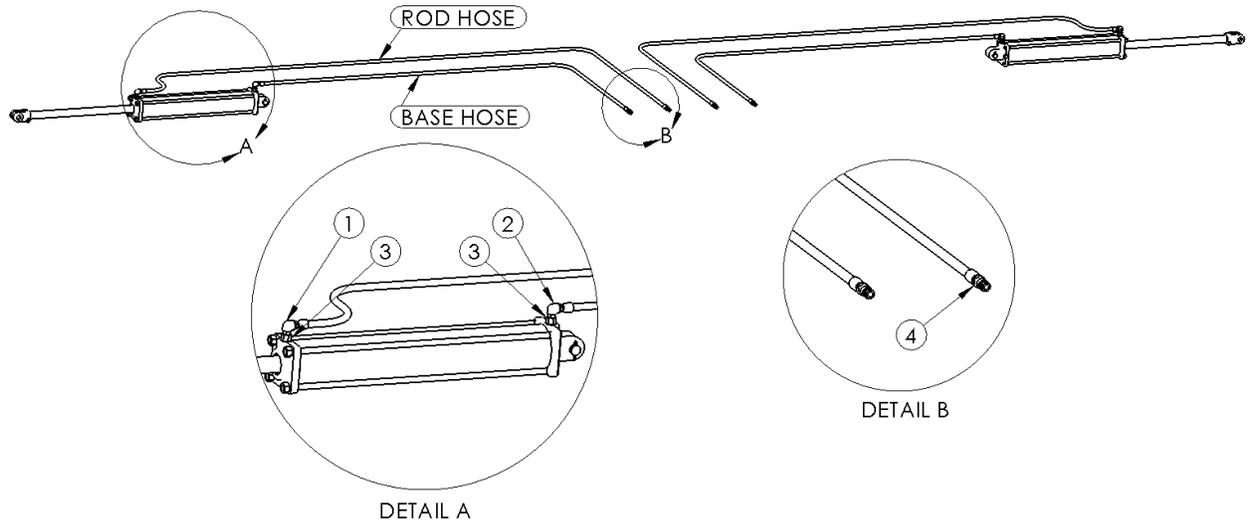


*Only on Narrow HWT Toolbars

Item Number	Part #	Description	Quantity
1	306066	HWT HINGE PIN STANDARD (9" BETWEEN TUBES)	2
2	411193	1/2-13 X 4 GR5 BOLT	2
3	410008	1/2-13 CENTER LOCK NUT	2
4	306082	WING LOCKING PIN STANDARD (9" BETWEEN TUBES)	2
4	306260	WING LOCKING PIN NARROW (4.5" BETWEEN TUBES)	2
5	416309	RING COTTER PIN	2
6	413115	1 X 14GA WASHER	2
7	450004	GREASE ZERK 1/4 DRIVE-IN	6
8	306270	HWT HINGE PIN NARROW (4.5" BETWEEN TUBES)	2
9	305115	3/4-10 X 1 1/2 GR5 BOLT	2
10	413512	3/4 LOCK WASHER	2
11	413072	3/4 FLAT WASHER	2



HYDRAULIC SYSTEM

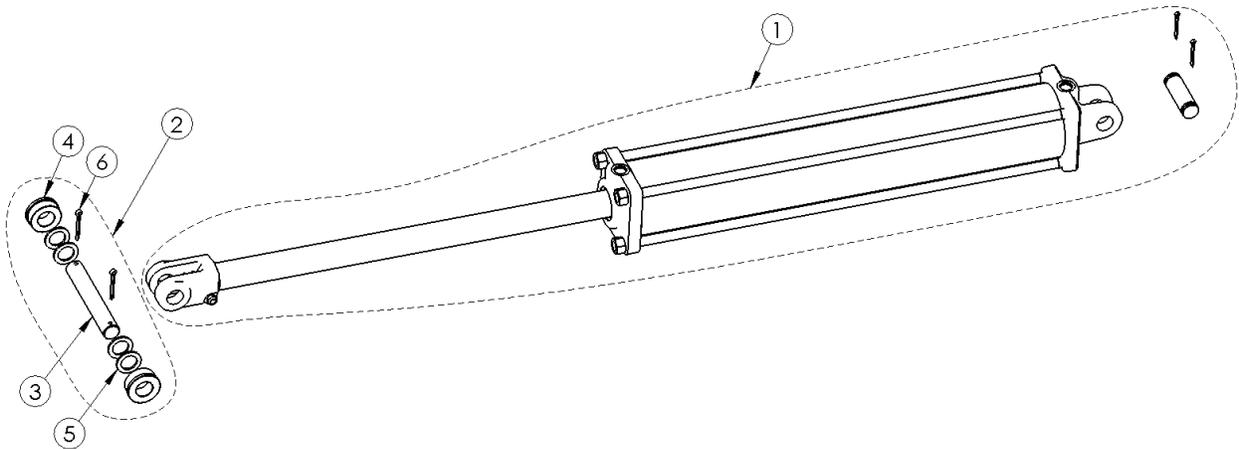


Item Number	Part #	Description	Quantity
1	457241	RESTRICTION FITTING -8 MALE ORB X -8 FEMALE ORB ELBOW	2
2	457261	-8 MALE ORB X -8 FEMALE ORB ELBOW	2
3	457274	-10 MALE ORB X -8 FEMALE ORB STRAIGHT	4
4	457240	1/2" MALE AG TIP QUICK COUPLER	4

NOTE: FOR HOSE INFORMATION, SEE PAGE 26



HYDRAULIC SYSTEM



Item Number	Part #	Description	Quantity
1	315950	5X30TIE ROD CYLINDER (BASE CLEVIS PIN INCLUDED)	2
2	306120	CYLINDER PIN ASSEMBLY (ROD END)	2
3	306117	ROD CLEVIS PIN	2
4	306118	CLEVIS PIN GUIDE	4
5	321672	1 1/4 X 10 GA WASHER	8
6	416005	1/4 X 2 COTTER PIN	4

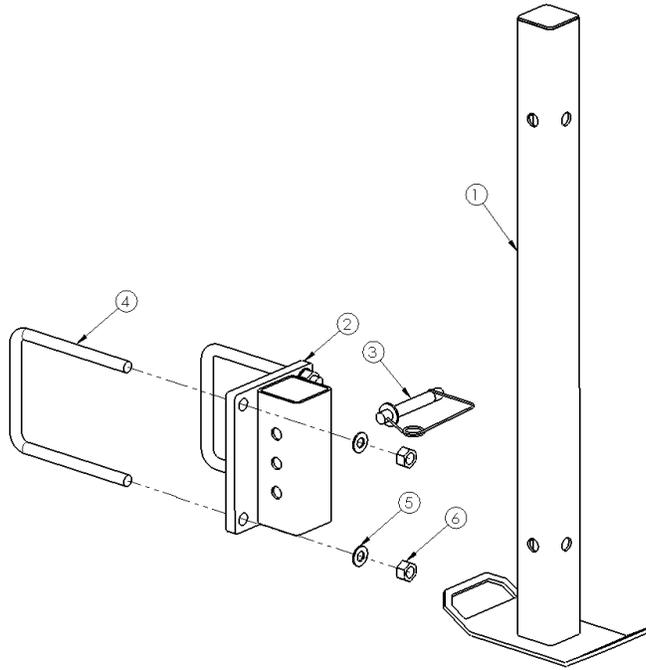


HOSE ASSEMBLY

Toolbar Size	Base Hose (Base Port - Unfold)	Rod Hose (Rod Port - Fold)
12 ROW 30 ON-ROW	120 INCH	148 INCH
12 ROW 30 INTER-ROW	120 INCH	148 INCH
12 ROW 36 ON-ROW	120 INCH	148 INCH
12 ROW 36 INTER-ROW	148 INCH	176 INCH
12 ROW 38/40 ON-ROW	148 INCH	176 INCH
12 ROW 38/40 INTER-ROW	148 INCH	176 INCH
16 ROW 30 ON-ROW	148 INCH	176 INCH
16 ROW 30 INTER-ROW	148 INCH	176 INCH
16 ROW 36 ON-ROW	148 INCH	204 INCH
16 ROW 36 INTER-ROW	176 INCH	204 INCH
16 ROW 38/40 ON-ROW	176 INCH	204 INCH
16 ROW 38/40 INTER-ROW	204 INCH	232 INCH
18 ROW 38/40 ON-ROW	204 INCH	232 INCH
18 ROW 38/40 INTER-ROW	232 INCH	260 INCH



BAR STAND ASSEMBLY



Item Number	Part #	Description	Quantity
1	315203	BAR STAND LEG	1
2	315201	BAR STAND MOUNT	1
3	416230	SNAP LOCK PIN	1
4	415004	3/4-10 U-BOLT 7W X 9H	2
5	413072	3/4 FLAT WASHER SAE	4
6	412062	3/4-10 NUT GR5	4



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