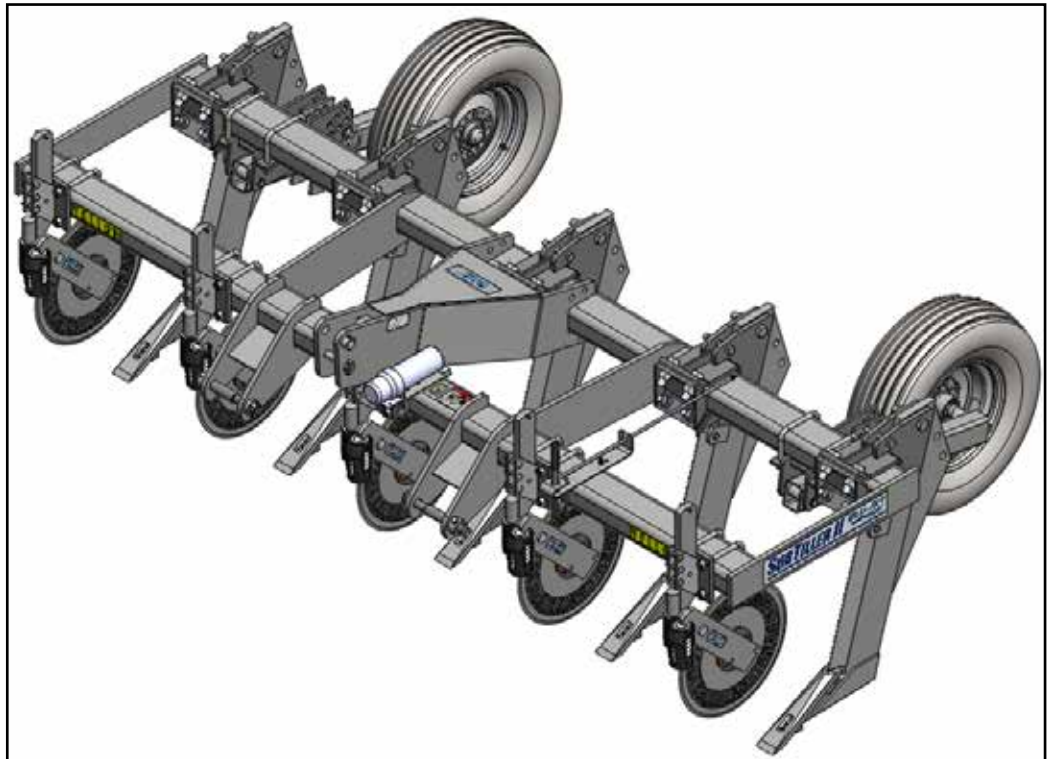


Three Point 4 x 6 x 11' Frame 5 Shank 30" Assembly and Operators Manual



\$10.00 Net

ThurstonTM Manufacturing Company



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Design specifications and features as described are subject to change without notice. BLU-JET is a registered trademark of Thurston Manufacturing Company, Thurston NE.

/BLU-JET @BLU-JET01 /SironWorks @SironWorks



**SubTiller II, 3-Point
11', Frame**

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Manual Number: 70200003
Rev. 6-13-16

SubTiller II



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SubTiller II

Welcome to Thurston Manufacturing Company. Our goal is to provide quality products and services to our customers. The company's BLU-JET products have a reputation for quality, excellence in design and proven durability. Energetic, resourceful and continuous improvement goals in Environmental, Safety, Quality, Production and Engineering keep our firm at the cutting edge of technology. We hope your BLU-JET equipment will give you years of service.

Read this manual carefully. It will instruct you on how to operate and service your machine safely and correctly. Failure to do so could result in personal injury and/or equipment damage.

SAFETY INFORMATION



DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. The sign will have the color combination of *red* and *white*.



WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. The sign will have the color combination of *orange* and *black*.



CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. The sign will have the color combination of *yellow* and *black*.

NOTE: *Indicates a special point of information.*

Carefully read and follow all safety signs. Reinstall safety signs that are damaged or missing.

Right-hand and left-hand sides of the implement are determined by facing in the direction the implement will travel when going forward.

SubTiller II**General Information:**

The BLU-JET SubTiller II lifts and fractures hardpan and wheel compaction. Shank penetrate 14" to 18", fracturing on either side of the shank. The BLU-JET SubTiller II was designed to be used in combination with Super 1200 Coulters to easily cut through residue.



Warranty is provided for customers who operate and maintain their equipment as described in this manual. Warranty registration is accomplished by the dealer completing and forwarding the **WARRANTY REGISTRATION FORM** to Thurston Manufacturing Company. It is in your best interest to insure that this has been done.



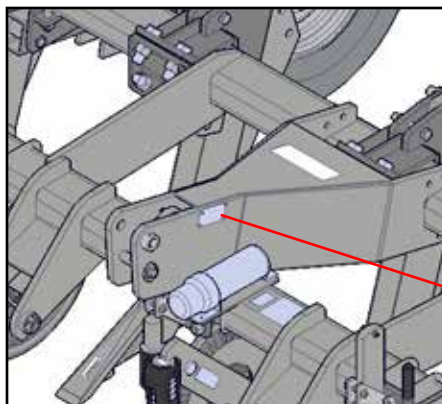
For your convenience we have four easy ways to register your warranty.

- Call our toll free number and ask for warranty registration. 1-800-658-3127
- Fax completed warranty registration form.
Fax: 402-385-3043
- Register on-line in warranty page at
www.blu-jet.com
- Complete and return registration form.

Thurston Manufacturing Company Warranty does not cover the following:

- 1) Cleaning, transporting, mailing and service call charges.
- 2) Depreciation or damage caused by normal wear, accidents, improper protection or improper use.

See complete Warranty for details.



The Serial Number



Record your implement model and serial number in the space provided below. Your dealer needs this information to give you prompt, efficient service when you order parts.

MODEL NO. _____

SERIAL NO. _____

DATE PURCHASED _____

SubTiller II**To The Dealer:**

Inspect the implement thoroughly after assembly to be certain it is functioning properly before delivering it to the customer. The following checklist is a reminder of points to cover. Check off each item as it is found satisfactory or after proper adjustment is made.

**PRE-DELIVERY CHECKLIST**

- ☐ 1. All hardware properly tightened
- ☐ 2. Lubrication of grease fittings
- ☐ 3. All decals properly located and readable
- ☐ 4. Other adjustments for machine level height, etc.
- ☐ 5. Overall condition (touch up any scratches, clean and polish)
- ☐ 6. Operator's manual

DATE SET UP _____
SIGNATURE _____

**DELIVERY**

Review the operator's manual with the customer. Explain the following:

- ☐ 1. Safe operation and service
- ☐ 2. Correct machine installation and operation
- ☐ 3. Daily and periodic lubrication and maintenance
- ☐ 4. Daily and periodic inspections
- ☐ 5. Troubleshooting
- ☐ 6. Storing machine
- ☐ 7. Thurston Manufacturing Company parts and service
- ☐ 8. Have the customer write the machine model and serial number in space provided in manual introduction.
- ☐ 9. Give customer the operator's manual and encourage the customer to read the manual carefully.
- ☐ 10. Completion and mailing of warranty registration form.

DATE DELIVERED _____
SIGNATURE _____
MODEL NO. _____
SERIAL NO. _____



Thank you for your recent purchase of a new BLU-JET implement. The primary objective of Thurston Manufacturing Company is to build and provide you with a quality product. However, in the event that a problem does occur, it is imperative that your warranty registration is on file in order to accurately respond to your specific service circumstances. For your convenience we have four easy ways to register your warranty:

**Register
Warranty
One of
Four Ways**

- **Call our toll free number and ask for warranty registration.
1-800-658-3127**
- **Fax your completed warranty registration form.
1-402-385-3043**
- **Register on-line at:
www.blu-jet.com**
- **Complete and mail the warranty registration form.**

This manual has been prepared to assist you in the assembly of your new machine and contains information pertaining to safety, operation and all of its parts. Our personnel in sales and service are always available to assist you when questions arise concerning the assembly or operation of your tool bar.

When ordering parts, please refer to part numbers and descriptions as listed throughout this book. All parts and whole goods will be shipped FOB Thurston, Nebraska, or FOB your regional distributor. Always check merchandise immediately upon receipt for damage or shortage. Note any discrepancy on carrier's bill of lading and notify Sender within 10 days. Returned goods will be subject to a 15% restocking charge. Thurston Manufacturing Company reserves the right to make improvements and modifications on equipment without obligation to change previously built equipment. All prices are subject to change without notice.



Limited Warranty

SubTiller II

Thurston Manufacturing Company warrants each new BLU-JET machine primary framework to be free from defects in material and workmanship for a period of five (5) years, normal wear of wearing parts excepted. Thurston Manufacturing Company further warrants each new BLU-JET product to be free from defects in material and workmanship, normal wear of wearing parts excepted, for a period of one (1) year. All accessories purchased and resold by Thurston Manufacturing Company will be warranted according to their respective manufacturer. Tires on BLU-JET equipment are warranted through their respective tire manufacturers and their network of dealers in your local area.

Warranty begins from date of delivery to the original purchaser and applies to all new BLU-JET products that have not been altered and are being used for the intended purpose. Negligence, abuse or modification of equipment manufactured by or purchased and resold by Thurston Manufacturing Company will void this warranty.

The obligation of Thurston Manufacturing Company to honor this warranty is limited to the repair or replacement of defective merchandise, to the original purchaser, subject to inspection of equipment in question by an authorized Thurston Manufacturing Company sales or service technician. In the USA, freight of warranty replacement parts including main frame centers and wings will be prepaid for a period of one (1) Year by Thurston Manufacturing Company. Shipments of repaired or replaced parts including main frame centers and wings after one year will be paid by the customer.

Return of defective goods must be made within thirty (30) days of failure to Thurston Manufacturing Company, Thurston, Nebraska USA or to the nearest authorized BLU-JET Distributor or Rep Sales and service outlet.

Thurston Manufacturing Company will not be held responsible for any repair charges made by customers without prior written consent and prior equipment inspection by an authorized Thurston Manufacturing Company sales or service technician.

This warranty shall not be interpreted to render liability for injury or damages of any kind, direct, consequential or contingent to person or property. This warranty does not extend to loss of crops, economic and/or commercial loss, loss because of delay in crop production or any expense incurred for labor, supplies, substitute machinery, rental or for any other reason. This warranty is subject to any existing condition of supply, which may directly affect Thurston Manufacturing Company's ability to obtain materials of manufacture and delivery of replacement parts.

Thurston Manufacturing Company reserves the right to make improvements in design and changes in specifications at any time without incurring any obligation to owners of units previously sold.

No one is authorized to alter, modify or enlarge this warranty nor its exclusions, limitations and reservations. Thurston Manufacturing Company makes no representations or warranties, expressed or implied (including implied warranties of merchantability and fitness), except for those set forth in Thurston Manufacturing Company's current applicable published warranty policies and procedures.

Layton W. Jensen, President

022398\mgmt



WARNING Thurston Manufacturing does not recommend the use of three point SUB-TILLER II on articulated four wheel drive tractors. Damage to the tractor or SUB-TILLER II will not be covered under warranty. SUB-TILLER II used with articulated four wheel drive tractors should be pull type models.

SubTiller II



RECOGNIZE SAFETY INFORMATION

- This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury. Follow recommended precautions and safe operating practices.



FOLLOW SAFETY INSTRUCTIONS

- Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs.
- Learn how to operate the machine and how to use controls properly.
- Do not let anyone operate without instruction.
- Keep your machine in proper working condition.
- Unauthorized modification to the machine may impair the function and/or safety and affect machine life.



PROTECT CHILDREN AND BYSTANDERS

- Before you back, LOOK CAREFULLY behind for children.
- Clear area of children, pets and bystanders.



HIGHWAY AND TRANSPORT OPERATIONS

Adopt safe driving practices:

- Keep the brake pedals latched together at all times. NEVER USE INDEPENDENT BRAKING WITH MACHINE IN TOW AS LOSS OF CONTROL AND/OR UPSET OF UNIT CAN RESULT.
- Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.
- Reduce speed prior to turns to avoid the risk of overturning.
- Avoid sudden uphill turns on steep slopes.
- Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.
- Do not drink and drive.
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- When driving the tractor and equipment on the road or highway under (20 mph max.) (40 kph max.) at night or during the day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.



SubTiller II



HIGHWAY AND TRANSPORT OPERATIONS

- Plan your route to avoid heavy traffic.
 - Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersection, etc.
- Be observant of bridge loading ratings. Do not cross bridges rated lower than the gross weight at which you are operating.
- Always operate equipment in a position to provide maximum visibility at all times. Makes allowances for increased length and weight of the equipment when making turns, stopping the unit, etc.



TRANSPORT SAFETY

- A safety chain will help control drawn equipment should it accidentally separate from the drawbar.
- Attach the chain to the tractor drawbar support or other anchor location. Provide only enough slack in the chain to permit turning.
- Use hydraulic cylinder transport lockup during road transportation.



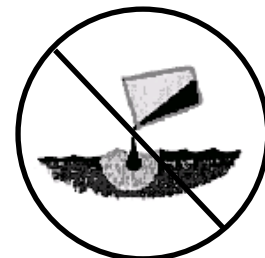
AVOID HIGH PRESSURE FLUIDS

- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.
- Search for leaks with a piece of cardboard.
- Protect hands and body from high pressure fluids.
- If an accident occurs, see a doctor immediately.



DISPOSE OF FLUIDS PROPERLY

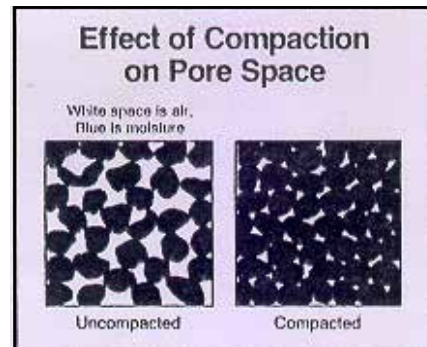
- Improperly disposing of fluids can harm the environment and ecology. Before draining any fluids, contact your local environmental agency for the proper waste disposal methods.
- Use proper container when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.
- DO NOT pour oil into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil and other harmful waste.



SubTiller II

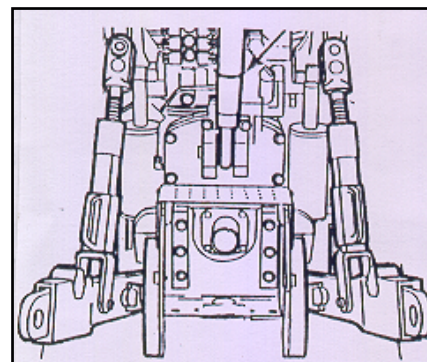
Soil Compaction

Soil Compaction is the compression of soil particles from excessive weight on moist soils. Ideal soil conditions for best Sub-Tilling results are when the soil is dry. The dryness of the soil is directly related to the amount of fracturing that can be accomplished with the BLU-JET SubTiller II. Positive results have been documented after sub-tilling in wet conditions, however, the probability of greatest response is when the soil is dry. Do not run livestock on sub-tilled soils until the ground has frozen and remove them before thawing to avoid compaction. Avoid operating tillage tools on wet sub-tilled fields. Compaction can easily reoccur.



3-Point Installation

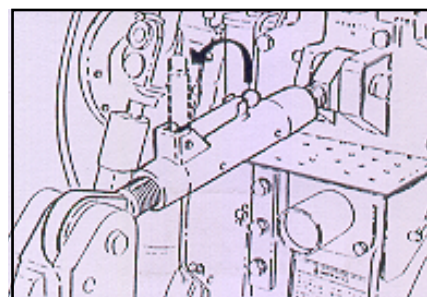
Measure tractor linkages on pull arms to insure equal length for level operation as viewed across the rear of the tractor. Check tractor tire pressure for equal inflation. Install SubTiller frame onto the tractor. Be certain that the proper pins are used in either CAT. II or CAT. III hookup.



WARNING Thurston Manufacturing does not recommend the use of three point SUBTILLER II on articulated four wheel drive tractors. Damage to the tractor or SUBTILLER II will not be covered under warranty. SUBTILLER II used with articulated four wheel drive tractors should be pull type models.

SubTiller Operation Instructions

Soil surface disturbance may be modified by using the third link adjustment. The SubTiller will normally be operated in a "level" tool bar position or slightly tipped back position. By shortening the turnbuckle and running at shallower depths, soil surface disturbance will be increased. Tractor speed should be between 4 m.p.h. and 6 m.p.h. for optimum fracturing effect.



SubTiller II**Fall Till Point**

The fall till point is designed to fracture compacted soil when operated at a depth of 14" to 18" deep. Ideally the point of the shoe should be run 1" to 2" below the compacted "zone" which generally will be found at the 8"-14" depth. Do not run the SubTiller II point too deep. This may result in wasted horsepower and a slicing effect through the hardpan rather than a lifting and shattering effect directly under the compacted zone.

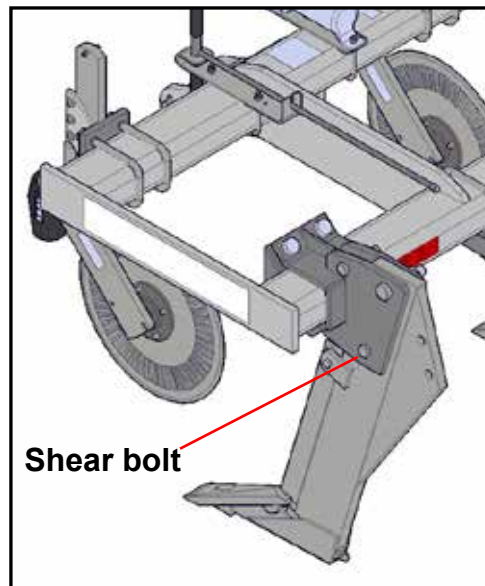
**Summer Till Point**

The summer till point is designed to penetrate the soil for air filtration and water penetration combined with a slight fracturing effect. It is ideally suited for pivot irrigated crops and also may be used successfully on dry land row crops, pasture and hay land.

By penetrating soil from 10" to 14" the summer till point is most effective. If the soil appears to be lifting the dry land row crop excessively it may be advisable to quit. In extremely hard soil when weather conditions are hot and dry, the summer till point may injure roots structures, especially when water cannot immediately be applied.

**Shanks**

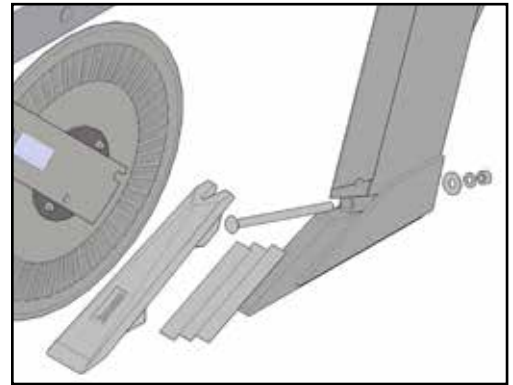
Replace the Shear bolt on the standard shank model only with 3/4" x 4 1/2" grade 2 bolts. Use of grade 8 or harder bolts will void the warranty of the machine. Do not attempt to hard surface the SubTiller II summer till or fall till points. These cast items have undergone a special heat treating process that will be modified if additional heat is encountered.



SubTiller II

Changing Points

The fall and summer points should rest flatly on metal shims placed between the lower shank and the point. **Do not tighten with impact wrench.** Over tightening can cause damage to point.



Coulters

Coulter should be adjusted to slice 3" to 4" deep during operation. Running coulters too deep may result in premature bearing failure. Grease coulters pivot shaft generously and often.



The Soil Probe

A soil probe is an effective way to test for compacted soil. The ideal time to check conditions is when the soil is at maximum moisture capacity. At this time you can most easily find out if a compacted zone exists. By applying steady pressure on the probe, a stronger resistance should be felt through the compacted layer.



| | | |
|---------------------|--------------------------------|------------------------------------------|
| SubTiller II | Frame..... | 11', 4" x 6" x 1/2" |
| | Tractor Attachment..... | 3 Point |
| | Pull Pin Kit..... | CATEGORY II & III |
| | Gauge Wheel | Pin Adjust |
| | Gauge Wheel Tire..... | 9.5L-15-6ply (Tire Pressure 32 PSI Max.) |

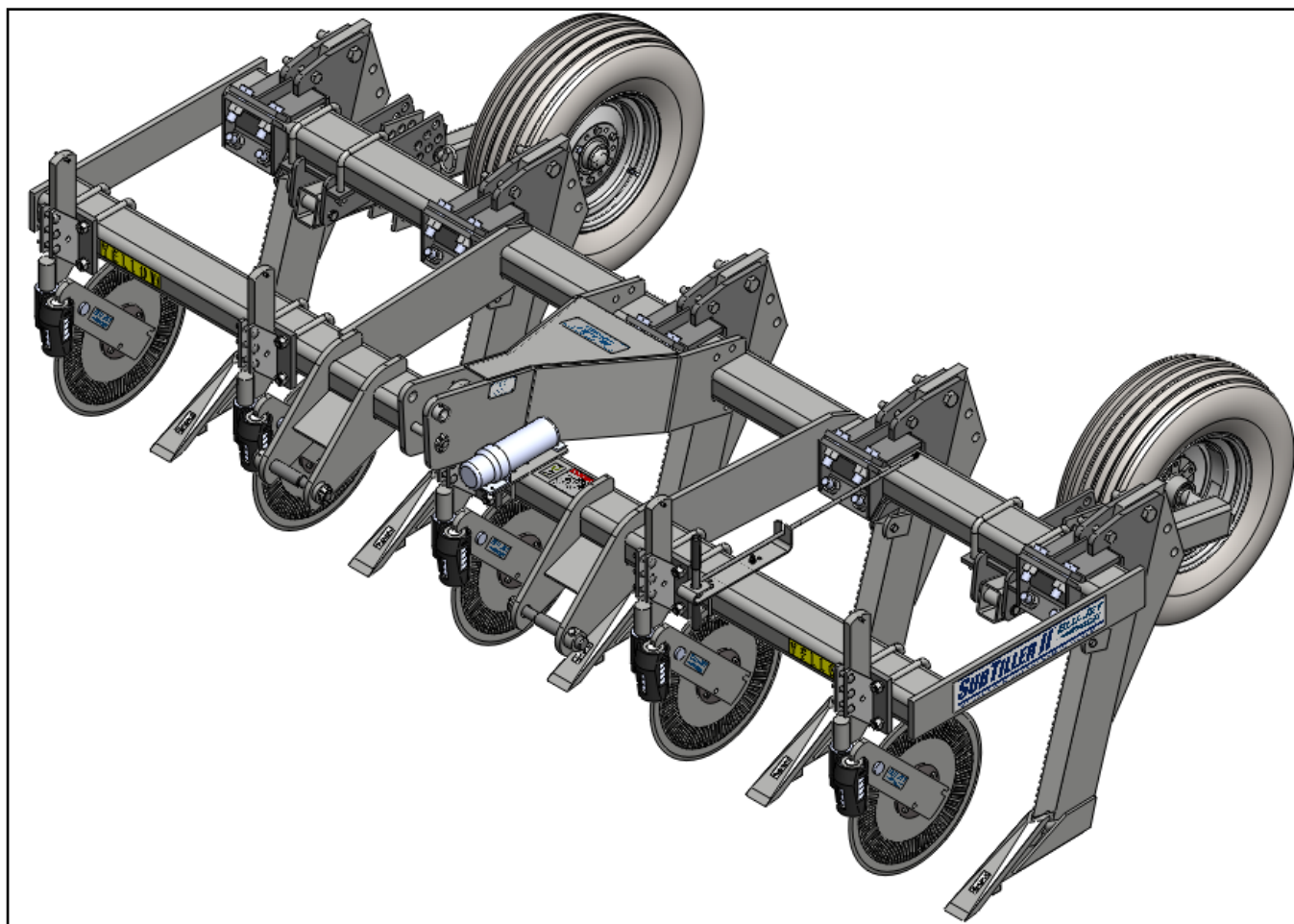
Working Depths:

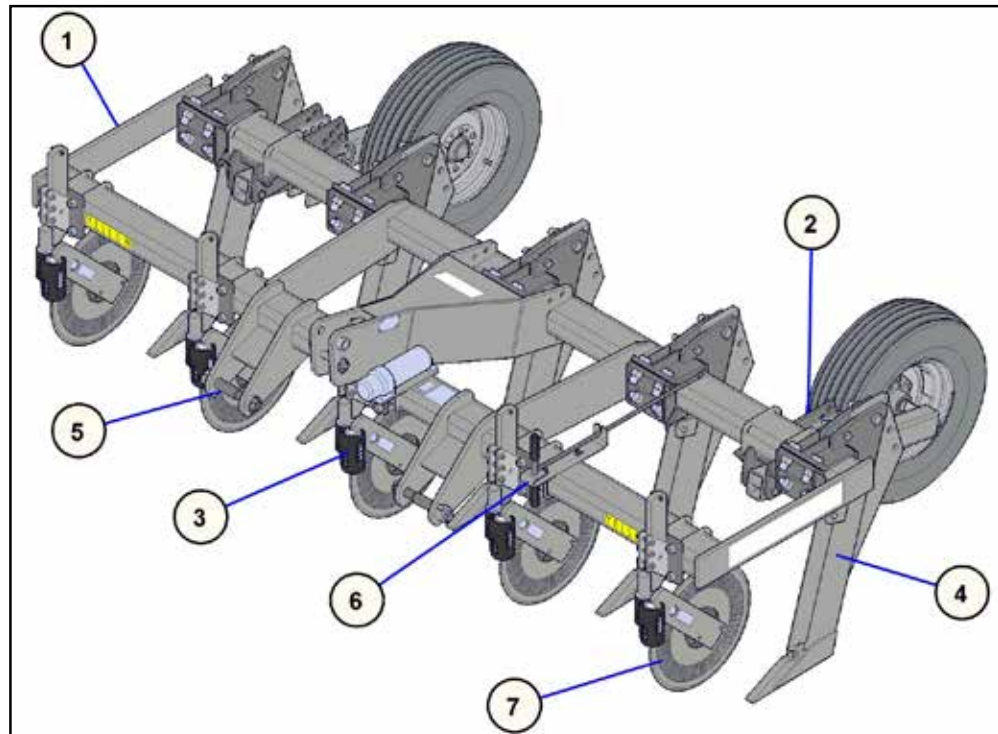
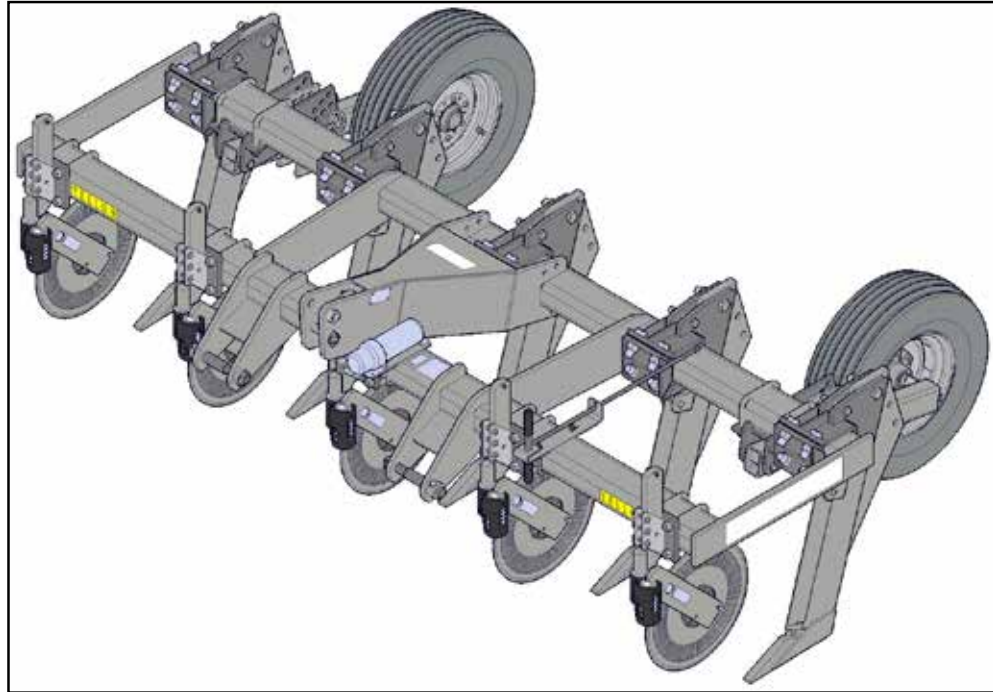
| | |
|--------------------------|--------|
| Fall Point..... | 14-18" |
| Summer Point..... | 10-18" |

| | |
|------------------------------------------------|----------------------------|
| Coulter..... | Super 1200 |
| Coulter Blade..... | 20" Fluted |
| Shank Styles..... | Shearbolt |
| Shank Material..... | 1.25" x 6" High Carbon |
| Shank Length..... | 44" |
| Under Frame Clearance At 14" Depth..... | 32" |
| Points..... | CADI Summer CADI Fall |
| Vertical Shin..... | Reversible/Replaceable |
| Warranty..... | 5 yr Frame/1 yr Components |
| Tractor Requirements..... | 30 - 50 hp. per shank |

Pull Type Kit Optional:

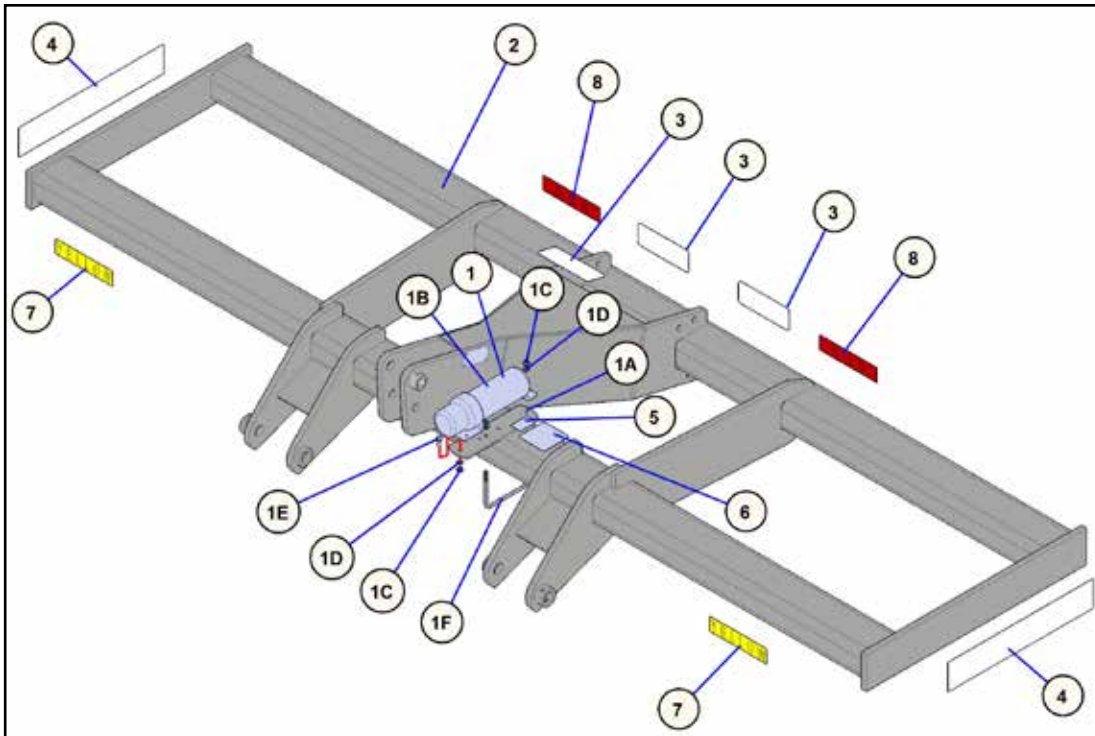
| | |
|------------------------------------|---------------------------------------------------------|
| Tongue..... | |
| Drawbar Hitch..... | Fabricated Clevis Hitch CATEGORY III Wheatland Hitch |
| Hydraulic Gauge Wheels..... | Singles and Duals |
| Gauge Wheel Tires..... | 9.5L-16, 6 Ply, (Tire Pressure 32 PSI Max.) |





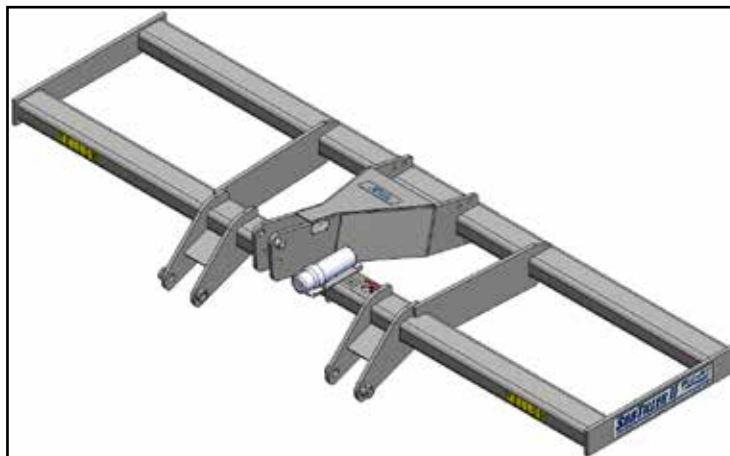
► 70210684, FRAME, 4"X 6", 11', 5 SHANK 30" BASE UNIT

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|---------------------------------------------------------|
| 1 | 1 | 70210071 | FRAME, SUBTILLER II, 11', 4" X 6", 3-POINT |
| 2 | 1 | 70210150 | GAUGE WHEEL, PIN ADJUST, 9.5L-15 WHEEL (SET OF 2) |
| 3 | 1 | 70210296 | COULTER, SUPER 1200, SUBTILLER II 3-POINT, 5 ROW |
| 4 | 1 | 70210397 | SHANK, MOUNTING, REINFORCED SHEARBOLT, SUBTILLER, 5 ROW |
| 5 | 1 | 80210202 | KIT, SUBTILLER II PULL PIN, CATEGORY II |
| 6 | 1 | AAM2717 | SOIL PROBE & MOUNTING, 6" X 4" HARDWARE |
| 7 | 5 | AP2701 | COULTER BLADE 20" FLUTED |

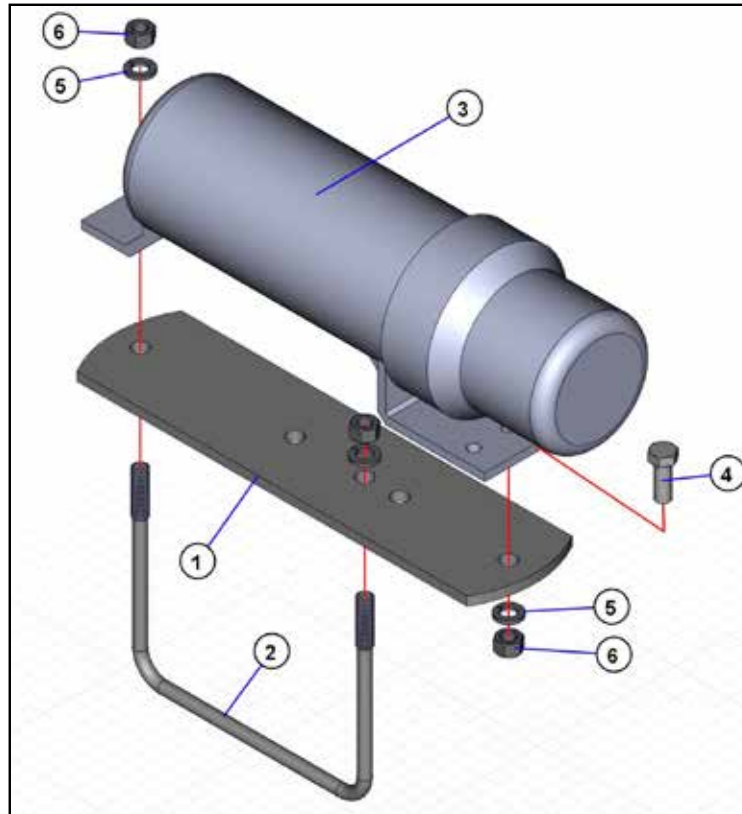


► 70210071, FRAME, SUBTILLER II, 11', 4" X 6" 3-POINT

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|----------------------------------------------|
| 1 | 1 | AAM2639 | MANUAL HOLDER WITH 6"X 4" MOUNTING |
| 1A | 1 | AM7640 | BRACKET, MOUNTING, MANUAL HOLDER |
| 1B | 1 | AP4254 | MANUAL HOLDER, BLACK |
| 1C | 3 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 1D | 3 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 1E | 1 | BP3006 | HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED |
| 1F | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 2 | 1 | AM24002 | FRAME, SUBTILLER II, 11', 3-POINT |
| 3 | 3 | AP2215 | DECAL, BLU-JET, 3" X 8" |
| 4 | 2 | AP2217 | DECAL, SUBTILLER II, 4" X 20" |
| 5 | 1 | AP2231 | DECAL, FEMA, 2-1/2" X 1-1/2" |
| 6 | 1 | AP2483 | DECAL, DANGER, FALLING FROM EQUIPMENT |
| 7 | 2 | AP2547 | DECAL, REFLECTOR, YELLOW, 2" X 9" |
| 8 | 2 | AP2548 | DECAL, REFLECTOR, RED, 2" X 9" |



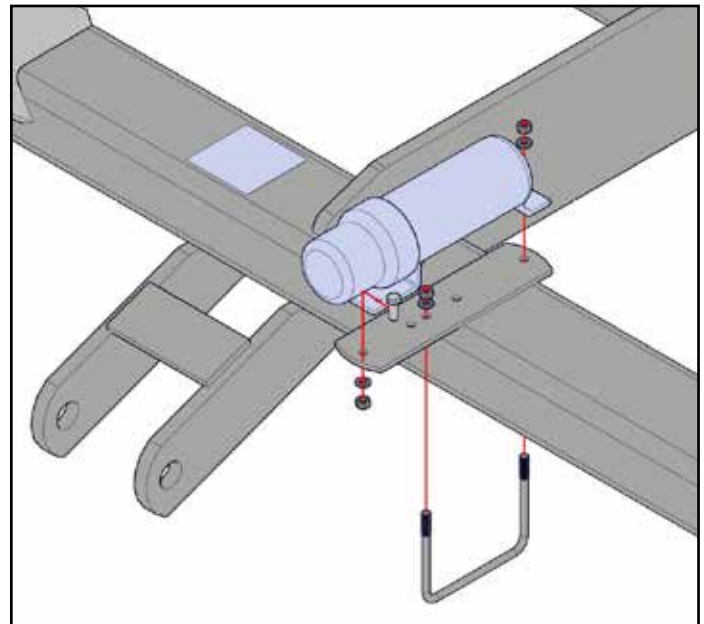
SubTiller II



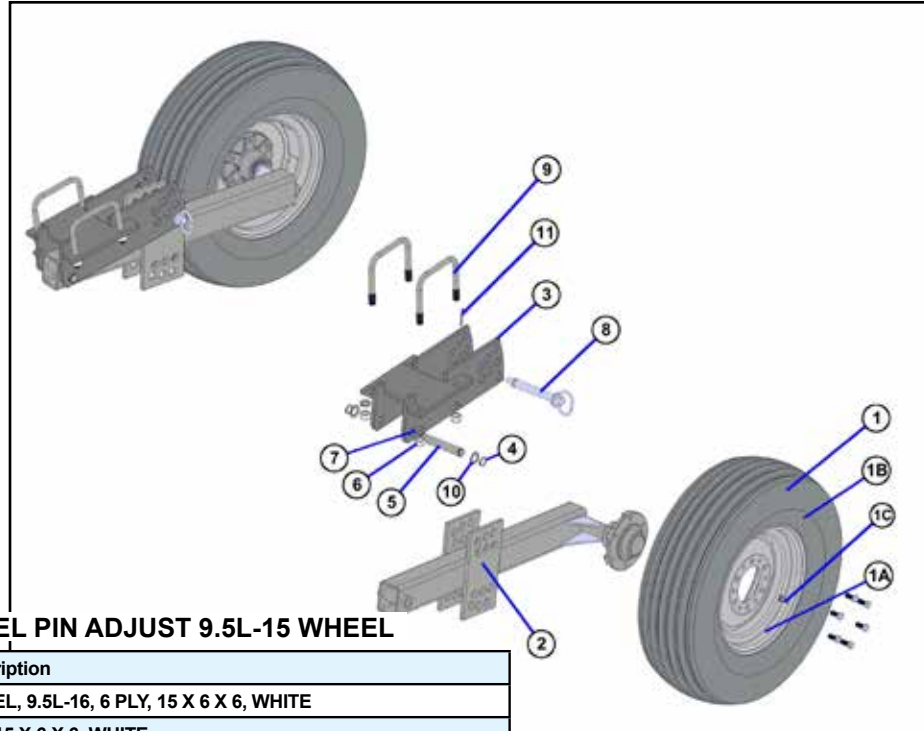
► AAM2639 MANUAL HOLDER WITH 6" X 4" MOUNTING

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|----------------------------------------------|
| 1 | 1 | AM7640 | BRACKET, MOUNTING, MANUAL HOLDER |
| 2 | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L |
| 3 | 1 | AP4254 | MANUAL HOLDER, BLACK |
| 4 | 1 | BP3006 | HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED |
| 5 | 3 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 6 | 3 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |

1. Mount (3) (AP4254) manual holder to (1) (AM7640) manual holder bracket with (4) (BP3006) 3/8" x 1" hex cap screw. Secure with (5) (BP3002) 3/8" lock washer and (6) (BP3001) 3/8" hex nut.
2. Consult row spacing page for manual holder location.
3. Attach assembly to frame with (2) (BP3045) 3/8" x 6"W x 5"L u-bolt, (5) (BP3002) 3/8" lock washers and (6) (BP3001) 3/8" hex nuts.



SubTiller II

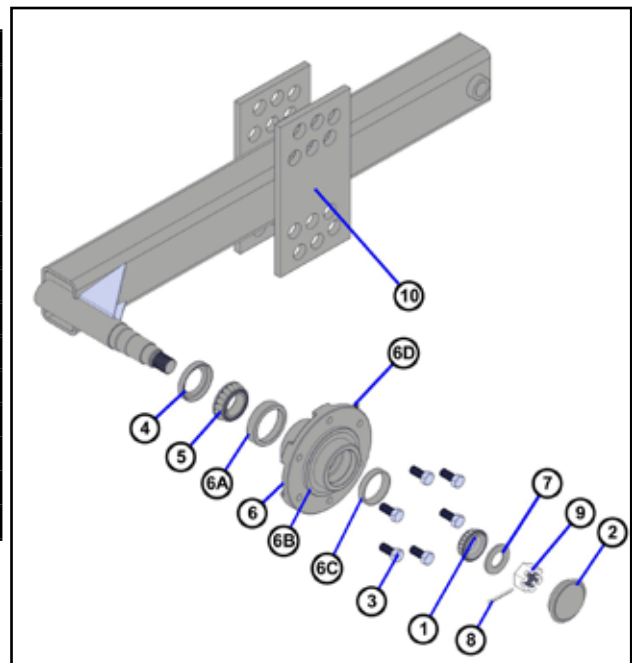


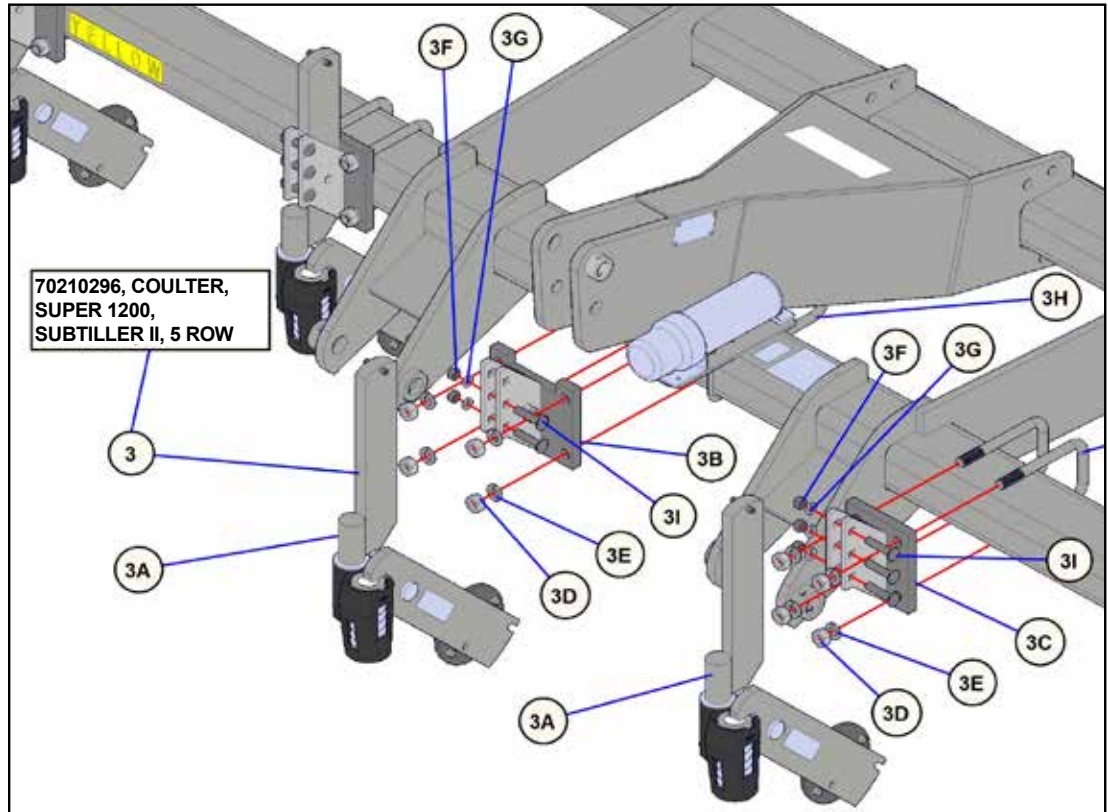
► 70210150 GAUGE WHEEL PIN ADJUST 9.5L-15 WHEEL

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|--------------------------------------------------------|
| 1 | 2 | AAM2766 | WHEEL, 9.5L-16, 6 PLY, 15 X 6 X 6, WHITE |
| 1A | 2 | AP2001 | RIM, 15 X 6 X 6, WHITE |
| 1B | 2 | AP2012 | TIRE, 9.5L-15, 6 PLY |
| 1C | 2 | AP2790 | VALVE STEM, METAL |
| 2 | 2 | AM24024 | ASSEMBLY, GAUGE WHEEL LEG, PIN ADJUST |
| 3 | 2 | AM24025 | BRACKET, PIN ADJUST GAUGE WHEEL MOUNTING |
| 4 | 4 | AP2407 | SNAP RING, 1" EXTERNAL, HEAVY DUTY |
| 5 | 2 | BM3650 | PIN, 1" X 5-9/16" |
| 6 | 8 | BP3034 | NUT, HEX, 3/4"-10, GRADE 2, PLATED |
| 7 | 8 | BP3035 | WASHER, LOCK, 3/4", PLATED |
| 8 | 2 | BP3051 | PIN, 1" X 6", HITCH, PLATED |
| 9 | 4 | BP3208 | U-BOLT, 3/4"-10 X 6"W X 5-3/4"L, PLATED |
| 10 | 4 | BP3215 | MACHINERY BUSHING, 1-1/2" OD X 1" ID, 14 GAUGE, PLATED |
| 11 | 2 | BP3511 | PIN, COTTER, 3/16" X 1-3/4" |

► AM24024 ASSEMBLY, GAUGE WHEEL LEG, PIN ADJUST

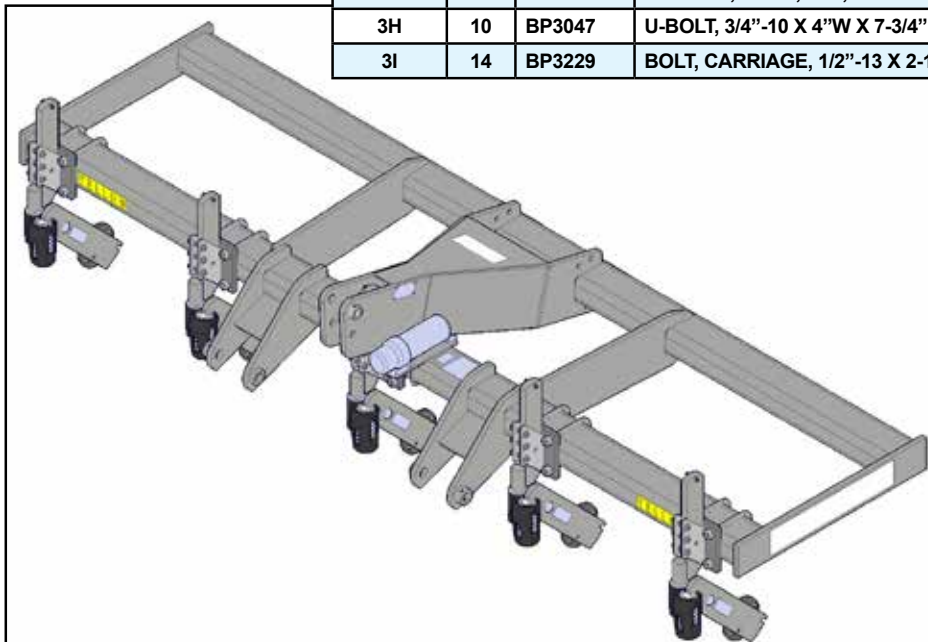
| BOM ID | Qty | Item No | Description |
|--------|-----|------------|---------------------------------------|
| 1 | 1 | AP2023 | BEARING CONE, LM 67048 |
| 2 | 1 | AP2048 | HUB CAP, 1513 |
| 3 | 6 | AP2049 | WHEEL BOLT, 1/2"-20 X 1" |
| 4 | 1 | AP2066 | GREASE SEAL, CR 16289 |
| 5 | 1 | AP2078 | BEARING CONE, JL 69349 |
| 6 | 1 | AP2123 | HUB WITH CUPS, 6 BOLT, 611301-6 |
| 6A | 1 | AP2077 | BEARING CUP, JL 69310 |
| 6B | 1 | AP2123-Hub | HUB, 6 BOLT, 611301-6 |
| 6C | 1 | AP2524 | BEARING CUP, LM 67010 |
| 6D | 1 | BP3072 | GREASE ZERK, 1/4"-28 |
| 7 | 1 | AP2146 | WASHER, SPINDLE, 2" X 1-1/16" X .134" |
| 8 | 1 | AP2426 | PIN, COTTER, 5/32" X 1-3/4" |
| 9 | 1 | AP2811 | NUT, SPINDLE, 1"-14 |
| 10 | 1 | EM3700 | WELDMENT, GAUGE WHEEL LEG, PIN ADJUST |





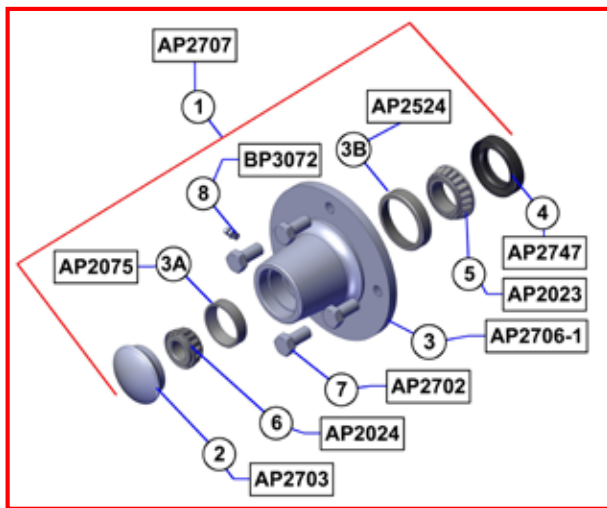
► 70210296, COULTER, SUPER 1200, SUBTILLER II 3-POINT, 5 ROW

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|---------------------------------------------------|
| 3 | 1 | 70210296 | COULTER, SUPER 1200, SUBTILLER II 3-POINT, 5 ROW |
| 3A | 5 | AAM2728 | COULTER, SUPER 1200, 16", 1 ROW |
| 3B | 1 | AM24011 | BRACKET, SUBTILLER II CENTER COULTER |
| 3C | 4 | AM24034 | BRACKET, FLATBACK |
| 3D | 20 | BP3034 | NUT, HEX, 3/4"-10, GRADE 2, PLATED |
| 3E | 20 | BP3035 | WASHER, LOCK, 3/4", PLATED |
| 3F | 14 | BP3042 | NUT, HEX, 1/2"-13, GRADE 2, PLATED |
| 3G | 14 | BP3043 | WASHER, LOCK, 1/2", PLATED |
| 3H | 10 | BP3047 | U-BOLT, 3/4"-10 X 4"W X 7-3/4"L |
| 3I | 14 | BP3229 | BOLT, CARRIAGE, 1/2"-13 X 2-1/2", GRADE 5, PLATED |



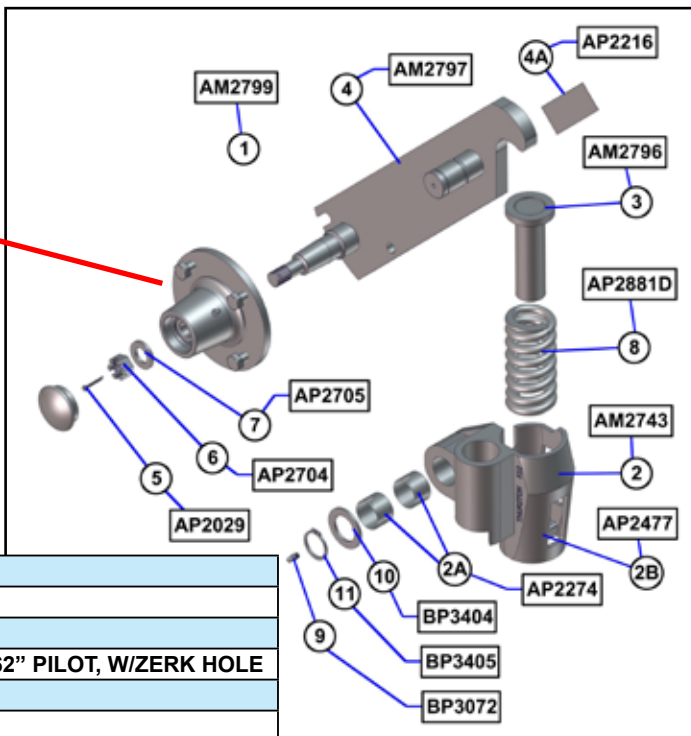
70210296 (5 Row) Super 1200 Flex Coultter and Shank Parts

SubTiller II



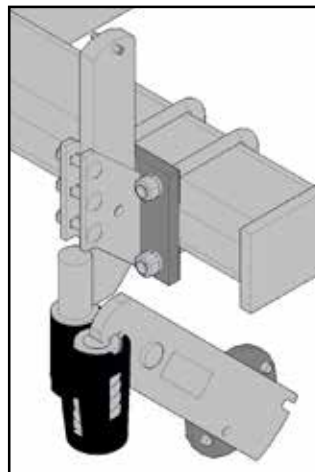
AP2707, HUB ASSEMBLY, 4 BOLT

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|------------------------------------------------------|
| 1 | 1 | AP2707 | HUB ASSEMBLY, 4 BOLT |
| 2 | 1 | AP2703 | HUB CAP, 1610 |
| 3 | 1 | AP2706-1 | HUB W/ CUPS, 4 BOLT, 5" BC, 3.62" PILOT, W/ZERK HOLE |
| 3A | 1 | AP2075 | BEARING CUP, LM 11910 |
| 3B | 1 | AP2524 | BEARING CUP, LM 67010 |
| 4 | 1 | AP2747 | GREASE SEAL, 15235TB |
| 5 | 1 | AP2023 | BEARING CONE, LM 67048 |
| 6 | 1 | AP2024 | BEARING CONE, LM 11949 |
| 7 | 4 | AP2702 | HEX CAP SCREW, 1/2"-20 X 1", GRADE 5, PLATED |
| 8 | 1 | BP3072 | GREASE ZERK, 1/4"-28 |



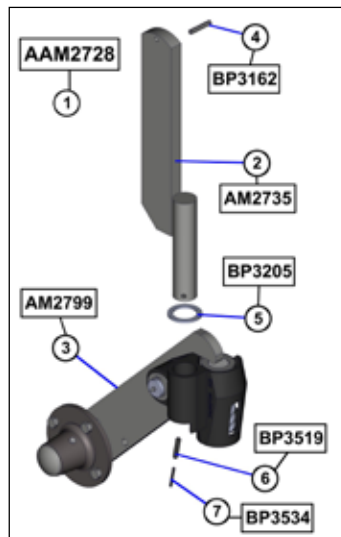
AM2799, ASSEMBLY, COULTER ARM WITH HUB & KNEE CASTING, HD

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|-------------------------------------------------------------|
| 1 | 1 | AM2799 | ASSEMBLY, COULTER ARM WITH HUB & KNEE CASTING, HD |
| 2 | 1 | AM2743 | CASTING, COULTER KNEE, HD, MACHINED WITH BUSHINGS |
| 2A | 2 | AP2274 | BUSHING, 1-17/32" OD X 1-3/8" ID" X 1" OAL |
| 2B | 1 | AP2477-1 | CASTING, COULTER KNEE, MACHINED |
| 3 | 1 | AM2796 | SPRING CAP & GUIDE, HD COULTER |
| 4 | 1 | AM2797 | COULTER ARM, HD |
| 4A | 1 | AP2216 | DECAL, BLU-JET, SMALL, 1-1/2" X 4" |
| 5 | 1 | AP2029 | PIN, COTTER, 5/32" X 1-1/2" |
| 6 | 1 | AP2704 | NUT, SPINDLE, 3/4"-16 |
| 7 | 1 | AP2705 | WASHER, SPINDLE, 1-1/2" X 13/16" X .134" |
| 8 | 1 | AP2881D | SPRING, 2.472" OD X 5.875" OAL, .468 WIRE DIAMETER |
| 9 | 1 | BP3072 | GREASE ZERK, 1/4"-28 |
| 10 | 1 | BP3404 | MACHINERY BUSHING, 2-1/8" OD X 1-3/8" ID X 10 GAUGE, PLATED |
| 11 | 1 | BP3405 | SNAP RING, 1-3/8" EXTERNAL, 5160-137 |

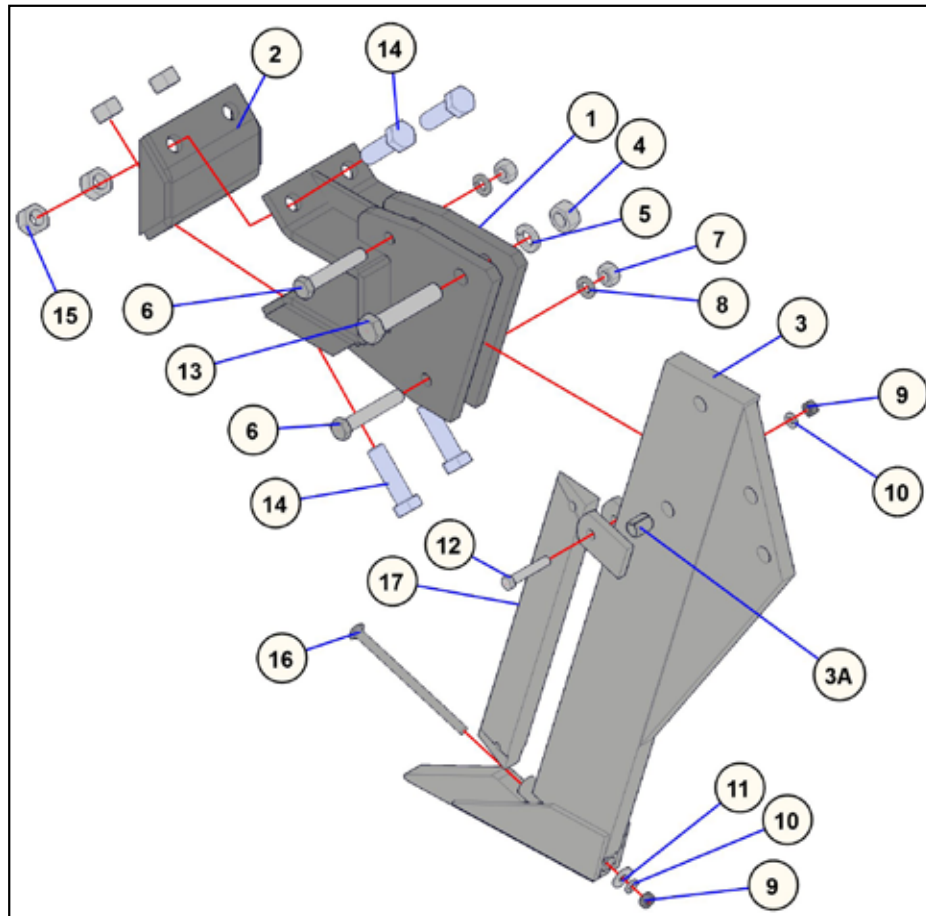


► AAM2728 COULTER, SUPER 1200, 16", 1 ROW

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|------------------------------------------------------------|
| 1 | 1 | AM2735 | COULTER SHANK, 16" |
| 2 | 1 | AM2799 | ASSEMBLY, COULTER ARM WITH HUB & KNEE CASTING |
| 3 | 1 | BP3162 | PIN, ROLL, 3/8" X 2", PLATED |
| 4 | 1 | BP3205 | MACHINERY BUSHING, 2-1/2" OD X 1-3/4" ID, 10 GAUGE, PLATED |
| 5 | 1 | BP3519 | PIN, ROLL, 3/8" X 2-1/2", PLAIN |
| 6 | 1 | BP3534 | PIN, ROLL, 7/32" X 2-1/2", PLAIN |

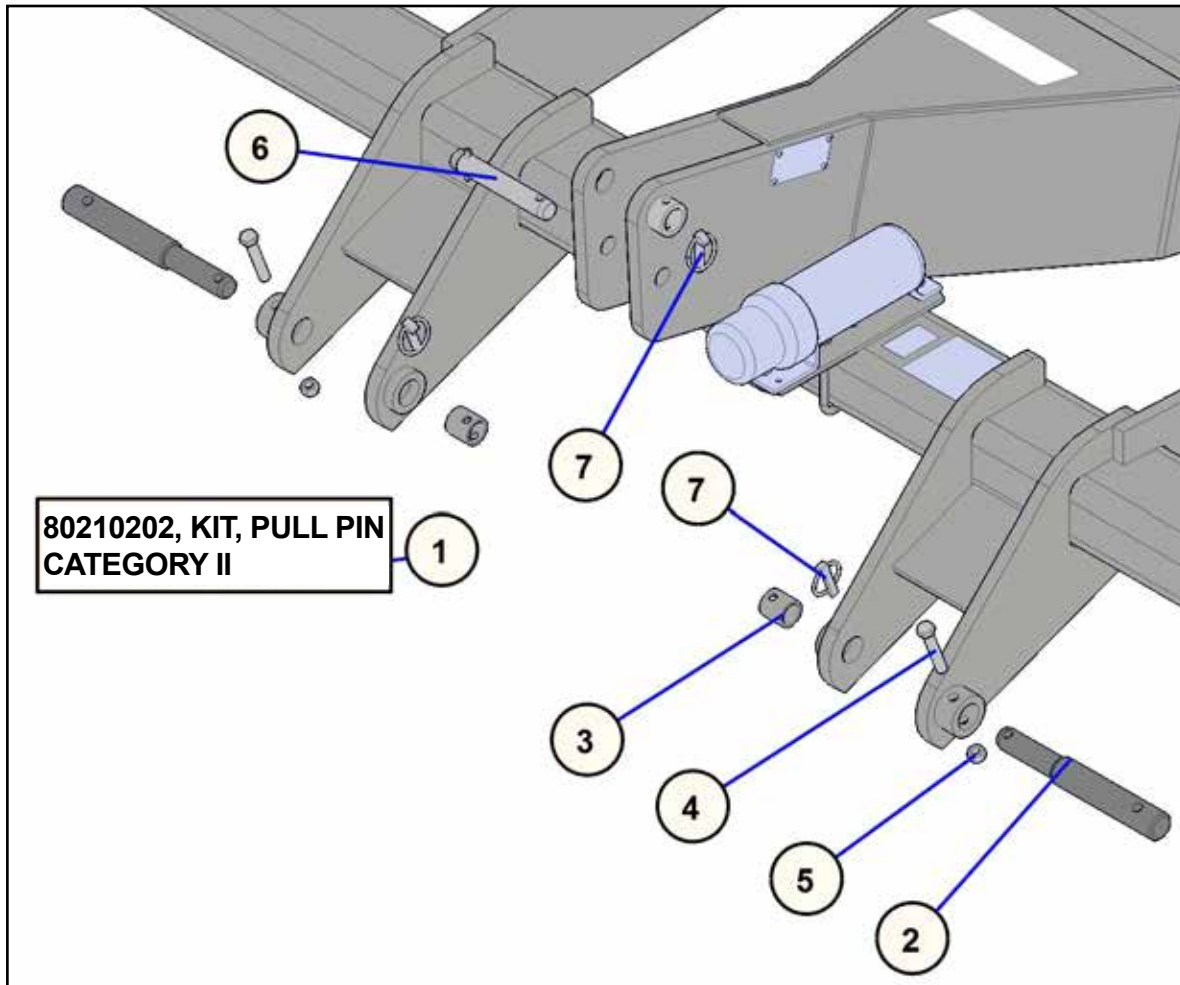


SubTiller II

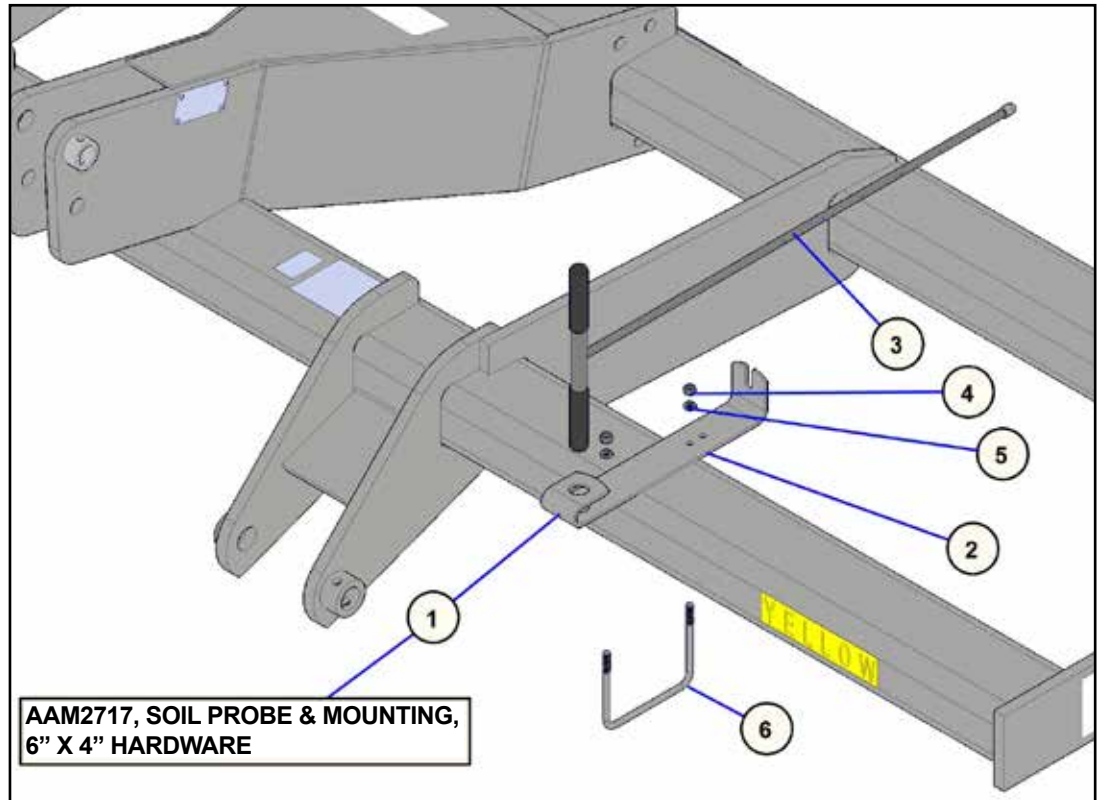


► **70210385, SHANK MOUNTING, REINFORCED SHEARBOLT, SUBTILLER II**

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|--------------------------------------------------|
| 1 | 1 | AM7550 | SHANK MOUNT, 6" X 4", SUBTILLER II |
| 2 | 1 | AM7551 | BRACKET, MOUNTING CLAMP, 4"X 6" |
| 3 | 1 | AM7553 | SHANK, SUBTILLER, REINFORCED |
| 3A | 1 | BP3528 | TENSION BUSHING, 1" X 3/4" X 1-1/4" OAL |
| 4 | 1 | BP3019 | NUT, HEX, 1"-8, GRADE 2, PLATED |
| 5 | 1 | BP3020 | WASHER, LOCK, 1", PLATED |
| 6 | 2 | BP3021 | HEX CAP SCREW, 3/4"-10 X 4-1/2", GRADE 2, PLATED |
| 7 | 2 | BP3034 | NUT, HEX, 3/4"-10, GRADE 2, PLATED |
| 8 | 2 | BP3035 | WASHER, LOCK, 3/4", PLATED |
| 9 | 2 | BP3042 | NUT, HEX, 1/2"-13, GRADE 2, PLATED |
| 10 | 2 | BP3043 | WASHER, LOCK, 1/2", PLATED |
| 11 | 1 | BP3050 | WASHER, FLAT, 1/2", PLATED |
| 12 | 1 | BP3129 | HEX CAP SCREW, 1/2"-13 X 3", GRADE 5, PLATED |
| 13 | 1 | BP3256 | HEX CAP SCREW, 1"-8 X 5", GRADE 5, PLATED |
| 14 | 4 | BP3263 | HEX CAP SCREW, 1"-8 X 3-1/2", GRADE 8, PLATED |
| 15 | 4 | BP3275 | NUT, HEX, 1"-8, GRADE 8, PLATED |
| 16 | 1 | BP3440 | BOLT, CARRIAGE, 1/2"-13 X 9", GRADE 2 |
| 17 | 1 | CP5026 | CUTTING EDGE, REVERSIBLE |


► 80210202, KIT, SUBTILLER II PULL PIN, CATEGORY II

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|----------------------------------------------|
| 1 | 1 | 80210202 | KIT, SUBTILLER II PULL PIN, CATEGORY II |
| 2 | 2 | BM3630 | PIN, CATEGORY II, LOWER LINK |
| 3 | 2 | BM3808 | BUSHING |
| 4 | 2 | BP3129 | HEX CAP SCREW, 1/2"-13 X 3", GRADE 5, PLATED |
| 5 | 2 | BP3244 | NUT, HEX LOCK, 1/2"-13, PLATED |
| 6 | 1 | BP3508 | PIN, CATEGORY II TOP LINK, 1" X 4-5/8" |
| 7 | 3 | BP3517 | LYNCH PIN, 7/16" |



► AAM2717, SOIL PROBE & MOUNTING, 6" X 4" HARDWARE

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|-----------------------------------------|
| 1 | 1 | AAM2717 | SOIL PROBE & MOUNTING, 6" X 4" HARDWARE |
| 2 | 1 | AM7646 | BRACKET, SOIL PROBE STORAGE |
| 3 | 1 | AM7647 | SOIL PROBE |
| 4 | 2 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 5 | 2 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 6 | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |

Assembly (Shank Mounting)

SubTiller II

Task

Procedures

Illustrations

Optional
Pull Type
Kit

Positioning
mainframe
on stands

NOTE:
Hydraulic
gauge wheels
must be
mounted
before shanks
can be
mounted

NOTE:
Left-hand
and
right-hand
as viewed
from the
rear.

DANGER
Secure frame
to stands
before
mounting
shanks

Mounting
shank

NOTE:
Consult
row spacing
pages for
shank
locations

NOTE:
Check
shank for
(BP3528)
tension
bushing

1. Position SubTiller mainframe on sturdy stands, about 35" high on hard level surface. Clamp frame to stands to stabilize.

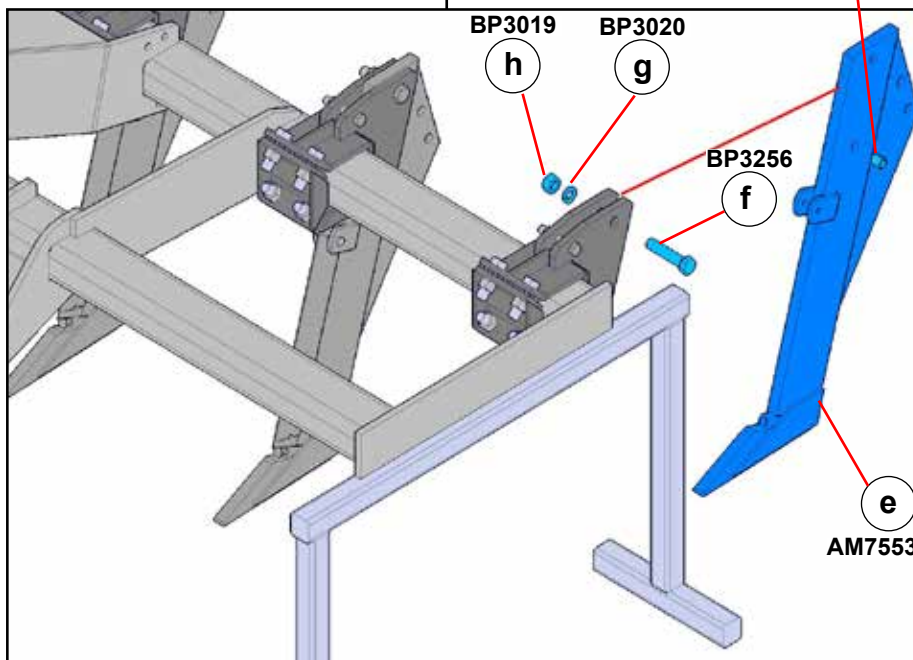
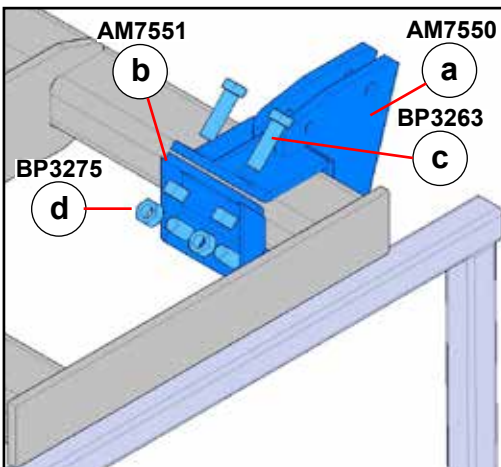
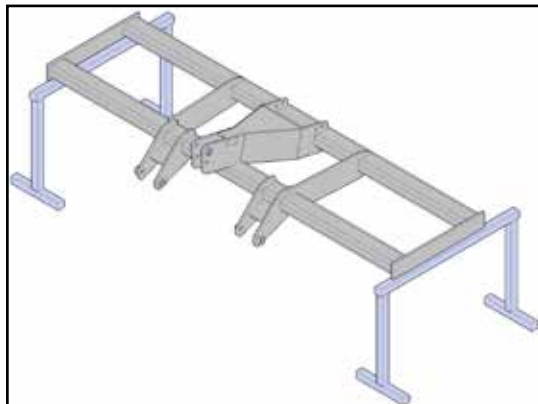
2. Consult row spacing pages and mark out rows on back bars.

3. Center (a) (AM7550) 6 x 4, shank mounts on row marks.

4. Place (b) (AM7551) mounting clamp bracket, 6 x 4 on toolbar and insert top (c) (BP3263) 1"-8 x 3-1/2" grade 8, hex capscrews. Start (d) (BP3275) 1"-8, grade 8, hex nuts on top bolts. Repeat with bottom bolts.

5. Tighten top and bottom 1" hex nuts evenly. The space between clamp and bracket should be even top and bottom.

6. Position (e) (AM7553) reinforced shank into mount. Insert (f) (BP3256) 1"-8 x 5", hex cap screw into top hole. Place (g) (BP3020) 1" lock washer and (h) (BP3019) 1"-8 grade 2 hex nut on bolt. Do not tighten until bottom bolt is inserted.



Assembly (Shank and Cutting Edge)

SubTiller II

Task

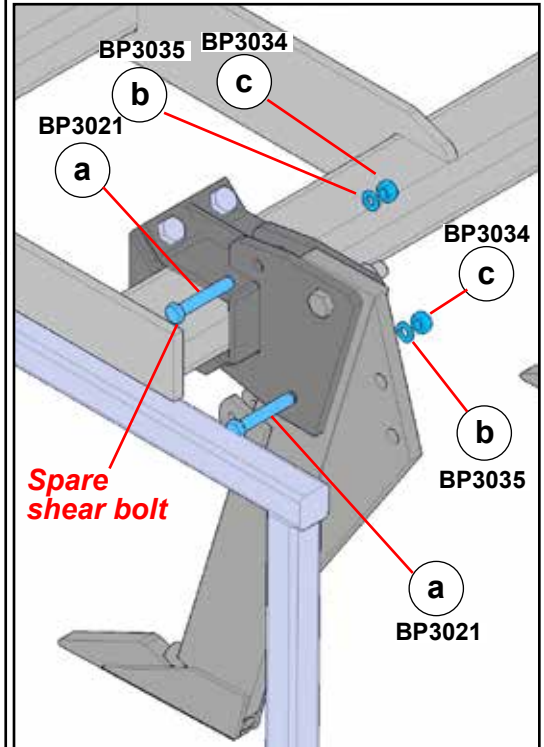
Procedures

Illustrations



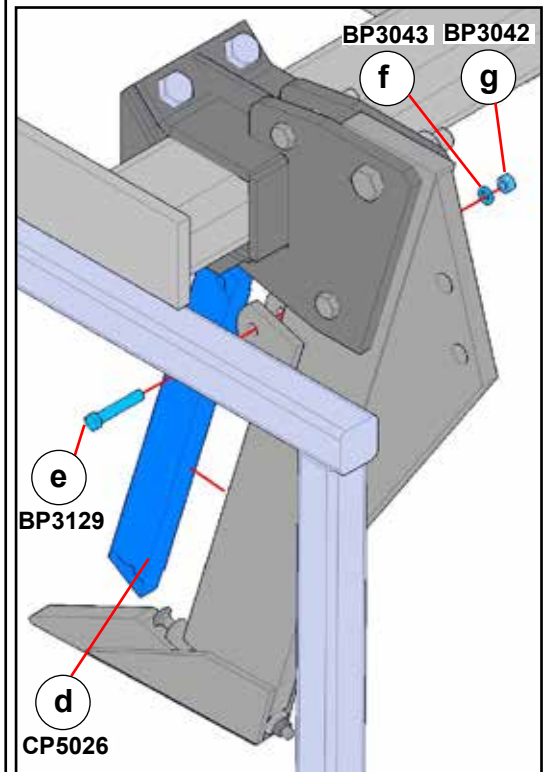
Mounting shank continued

1. Push bottom of the shank in until (a) (BP3021) 3/4"-10 x 4-1/2", grade 2, hex cap screw can be inserted. Secure with (b) (BP3035) 3/4" lock washer and (c) (BP3034) 3/4" hex nut.
2. Insert spare (a) (BP3021) 3/4"-10 x 4-1/2", grade 2, hex cap screw in storage hole at the top of mounting bracket. Secure with (b) (BP3035) 3/4" lock washer and (c) (BP3034) 3/4" hex nut.
3. Tighten the top 1" hex nut.



Mounting cutting edge

4. Attach (d) (CP5026) cutting edge to shank with (e) (BP3129) 1/2"-13 x 3", grade 5, hex cap screw, (f) (BP3043) 1/2" lock washer and (g) (BP3042) 1/2"-13, grade 2, hex nut.



Assembly (Points)

SubTiller II

Task

Procedures

Illustrations

Attaching points

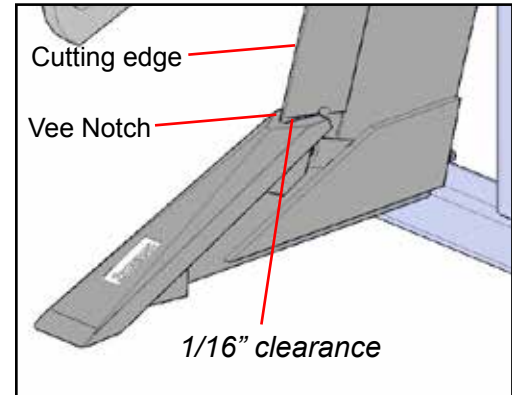
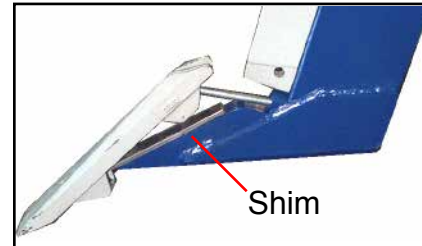
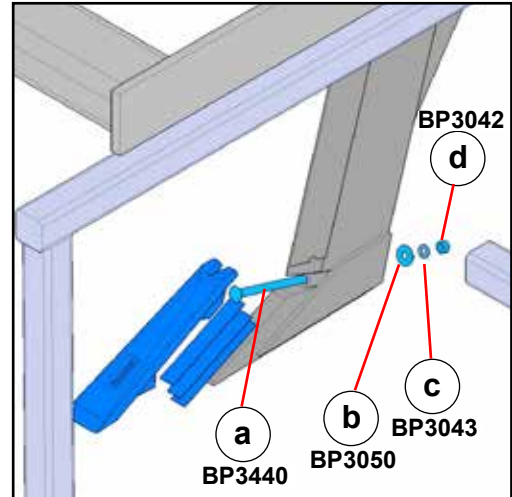
1. Insert the head of (a) (BP3440) 1/2"-13 x 9", grade 2, carriage bolt into notch in point. Start carriage bolt through hole in shank. Hook the point over the end of the shank and position Vee over cutting edge end.
2. Place (b) (BP3050) 1/2" flat washer, and (c) (BP3043) 1/2" lock washer on carriage bolt. Secure with (d) BP3042 1/2" hex nut. (Torque 1/2" hex nut 45 to 52 lb. ft.)
3. Allow 1/16" clearance between point of Vee Notch and cutting edge.
4. If cutting edge does not move loosen 1/2" hex nut and pull point back and place one shim or combination of shims to allow 1/16" clearance between point of Vee Notch and the cutting edge. Position point on shank and replace 1/2" flat washer, 1/2" lock washer and 1/2" hex nut. Tighten 1/2" hex nut and check cutting edge again. Repeat procedure if cutting edge is still tight in Vee.

Bundle: 70210153 Fall Point

| Ref. | Part No. | Req. | Description |
|------|----------|------|----------------------------------|
| | CP5079 | 1 | CADI Fall Point |
| | FK1043 | 1 | Shim Kit |
| 1. | AP2153 | 1 | Spacer 11 Gauge Galvanized Steel |
| 2. | AP2154 | 1 | Spacer 14 Gauge Galvanized Steel |
| 3. | AP2155 | 1 | Spacer 18 Gauge |

Bundle: 70210154 Summer Point

| Ref. | Part No. | Req. | Description |
|------|----------|------|----------------------------------|
| | CP5080 | 1 | CADI Summer Point |
| | FK1043 | 1 | Shim Kit |
| 1. | AP2153 | 1 | Spacer 11 Gauge Galvanized Steel |
| 2. | AP2154 | 1 | Spacer 14 Gauge Galvanized Steel |
| 3. | AP 2155 | 1 | Spacer 18 Gauge Galvanized Gauge |



Assembly (Coulters)

SubTiller II

Task

Procedures

Illustrations

- ▶ Preparing coulters for mounting

- ▶ Attaching 20" fluted blades to coulters assembly

- ▶ Placing machinery bushing on coulters shank

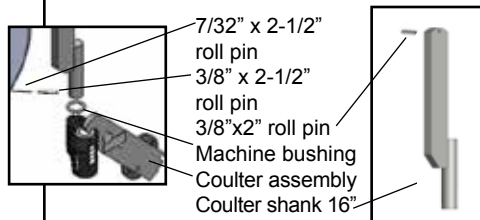
- ▶ Attaching shank to coulters assembly

1. Remove hex cap screws from coulters hub.

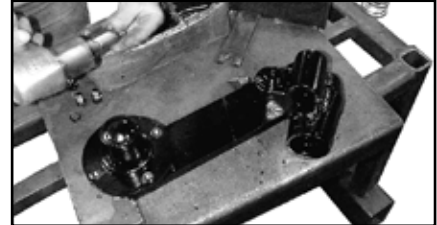
2. Place (AP2701) 20" fluted coulters blade on coulters assembly and replace hex cap screws.

3. Install (BP3205) 2-1/2" x 1-3/4" machinery bushing over (AM2735) 16" coulters shank weldment.

4. Insert the 16" coulters shank into coulters assembly. Start (BP3519) 3/8" x 2-1/2" roll pin in base of coulters shank. Insert the (BP3534) 7/32" x 2-1/2" roll pin in the end of the 3/8" roll pin and drive both pins together. Leave an equal amount of pin on both sides of the shank.



5. Install the (BP3162) 3/8" x 2" roll pin through the top hole.



▶ AAM2728 COULTER, SUPER 1200, 16", 1 ROW

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|------------------------------------------------------------|
| 1 | 1 | AM2735 | COULTER SHANK, 16" |
| 2 | 1 | AM2799 | ASSEMBLY, COULTER ARM WITH HUB & KNEE CASTING |
| 3 | 1 | BP3162 | PIN, ROLL, 3/8" X 2", PLATED |
| 4 | 1 | BP3205 | MACHINERY BUSHING, 2-1/2" OD X 1-3/4" ID, 10 GAUGE, PLATED |
| 5 | 1 | BP3519 | PIN, ROLL, 3/8" X 2-1/2", PLAIN |
| 6 | 1 | BP3534 | PIN, ROLL, 7/32" X 2-1/2", PLAIN |

Assembly (Coulters)

SubTiller II

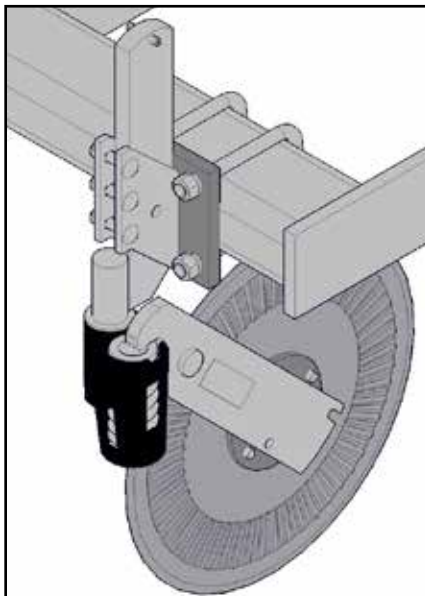
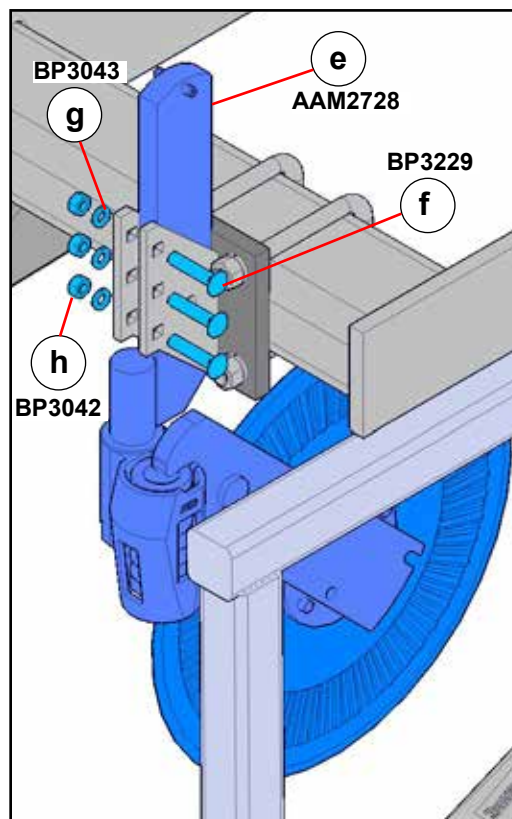
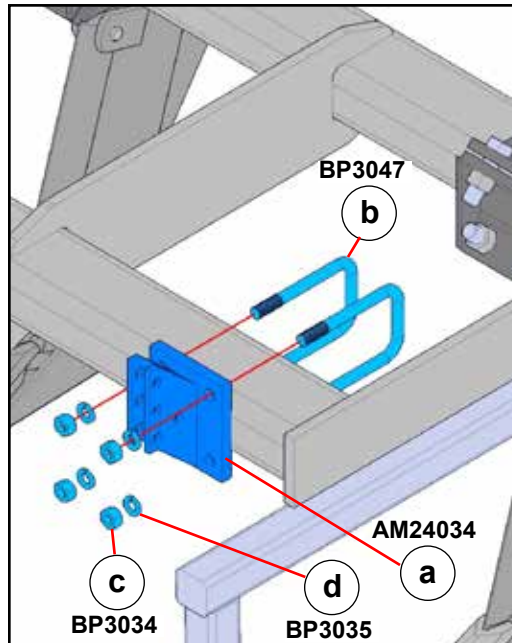
Task

Procedures

Illustrations

Mounting coulters

1. Mark out rows on toolbar and center (a) (AM24034) ST flatbacks on marks. Insert (b) (BP3047) 3/4"-10 x 4"W x 7-3/4"L, u-bolts.
2. Secure u-bolts with (d) (BP3035) 3/4" lock washers and (c) (BP3034) 3/4" hex nuts.
3. Place (e) (AAM2728) Super 1200 coulter assembly into bracket. Insert (f) (BP3229) 1/2"-13 x 2-1/2", grade 5 carriage bolts.
4. Install (g) (BP3043) 1/2" lock washers and (h) (BP3042) 1/2" hex nuts.
5. Raise coulter shank assembly in bracket and place a 3" spacer between the roll pin and the top of the bracket. Tighten the 1/2" hex nuts. *This height is a starting point.*



Assembly (Pin Adjust Gauge Wheel)

SubTiller II

Task

Procedures

Illustrations

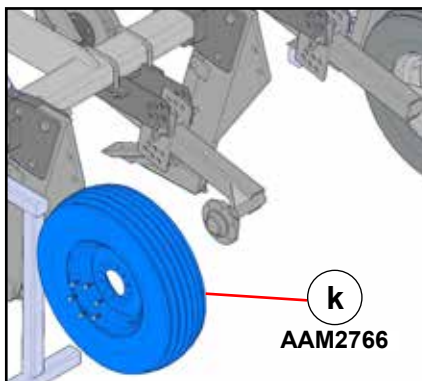
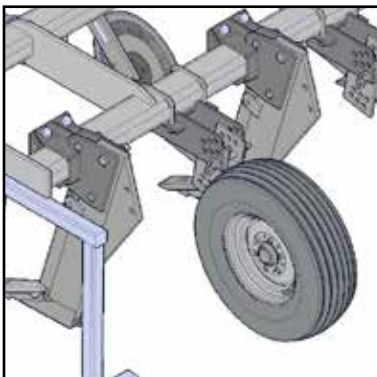
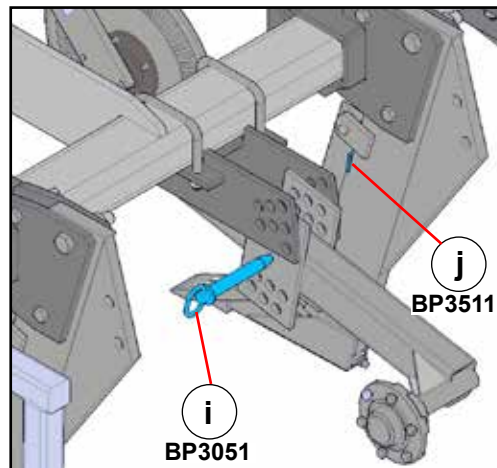
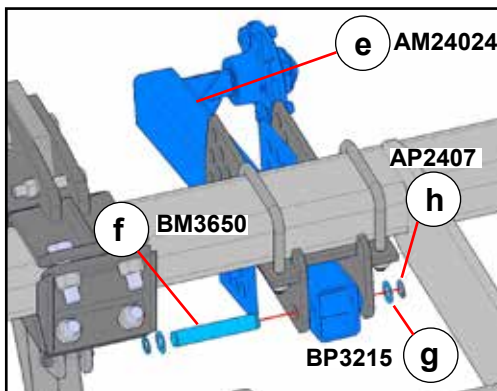
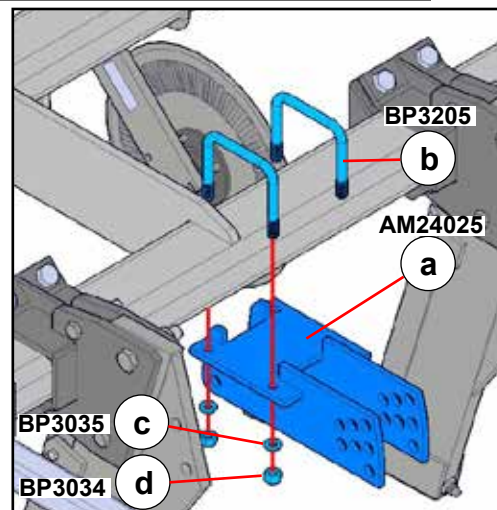


Mounting
pin adjust
gauge
wheels



NOTE:
Consult
row spacing
pages for
pin adjust
gauge
wheel
locations

1. Consult row spacing pages and mark out placement on the back bar.
2. Position (a) (AM24025) pin adjust gauge wheel bracket on mainframe and secure with two (b) (BP3205) 3/4-10 x 6"W x 5-3/4"L, u-bolts, four (c) (BP3035) 3/4" lock washers and four (d) (BP3034) 3/4" hex nuts.
3. Position (e) (AM24024) pin adjust gauge wheel assembly leg into mounting bracket and insert (f) (BM3650) 1" x 5-9/16" double grooved pin.
4. Secure pin with two (g) (BP3215) 1-1/2" machinery bushing 1-1/2" OD x 1" ID 14 GA and two (h) (AP2407) 1" snap rings heavy duty on both ends of the pin.
5. Insert (i) (BP3051) 1" x 6" pin into bottom hole on the mounting bracket. Secure with (j) (BP3511) 3/16" x 1-3/4" cotter key.
6. Remove hex cap screws from wheel leg hub and mount (k) (AAM2766) 9.5L-16 6ply tire and rim on hub. Secure with hex cap screws. Wheels face to the outside of the mainframe.



AAM2766

27

AAM2639 Manual Holder With 6" x 4" Mounting

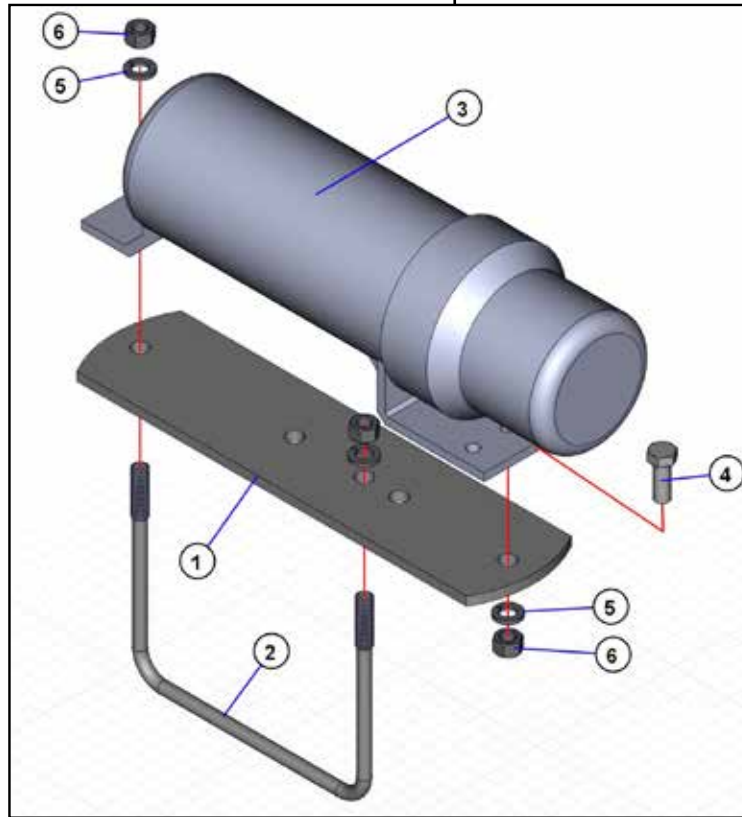
SubTiller II

Task

Procedures

Illustrations

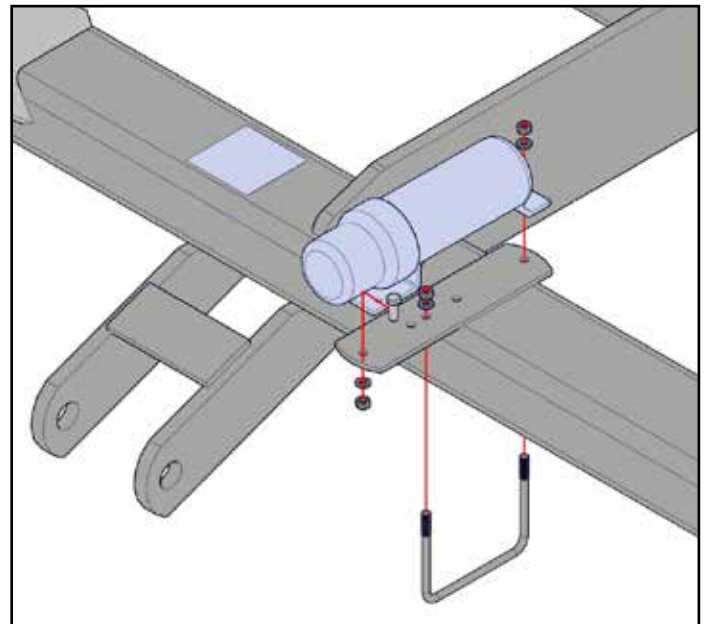
► Installation manual holder



► AAM2639 MANUAL HOLDER WITH 6" X 4" MOUNTING

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|----------------------------------------------|
| 1 | 1 | AM7640 | BRACKET, MOUNTING, MANUAL HOLDER |
| 2 | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L |
| 3 | 1 | AP4254 | MANUAL HOLDER, BLACK |
| 4 | 1 | BP3006 | HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED |
| 5 | 3 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 6 | 3 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |

1. Mount (3) (AP4254) manual holder to (1) (AM7640) manual holder bracket with (4) (BP3006) 3/8" x 1" hex cap screw. Secure with (5) (BP3002) 3/8" lock washer and (6) (BP3001) 3/8" hex nut.
2. Consult row spacing page for manual holder location.
3. Attach assembly to frame with (2) (BP3045) 3/8" x 6"W x 5"L u-bolt, (5) (BP3002) 3/8" lock washers and (6) (BP3001) 3/8" hex nuts.



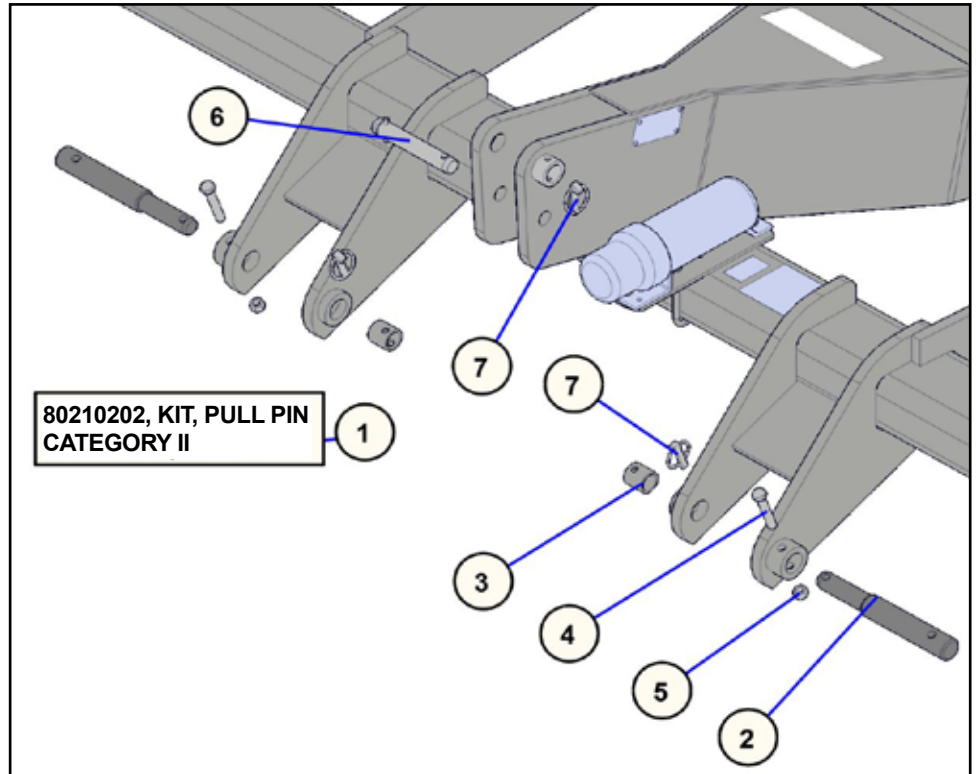
SubTiller II

Task

Procedures

Illustrations

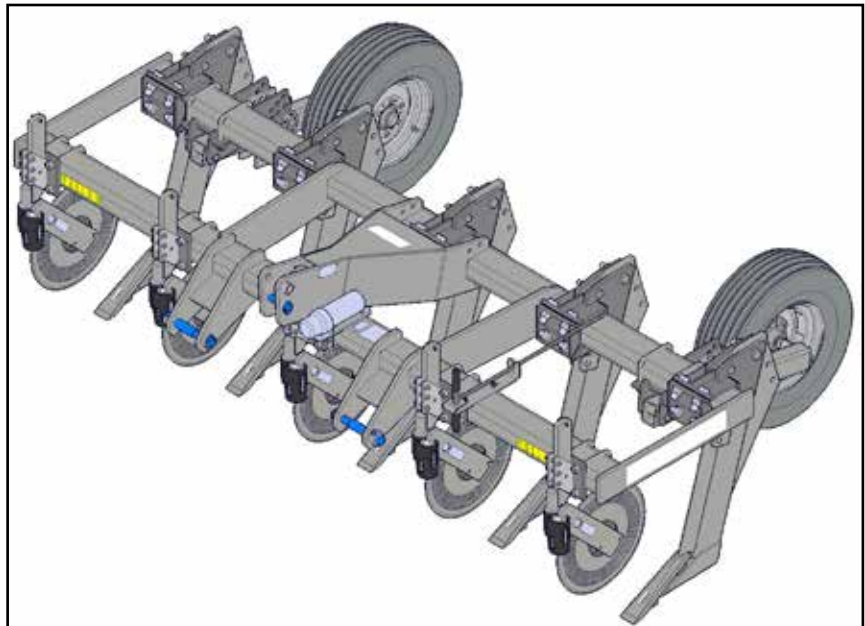
Installation pull pins



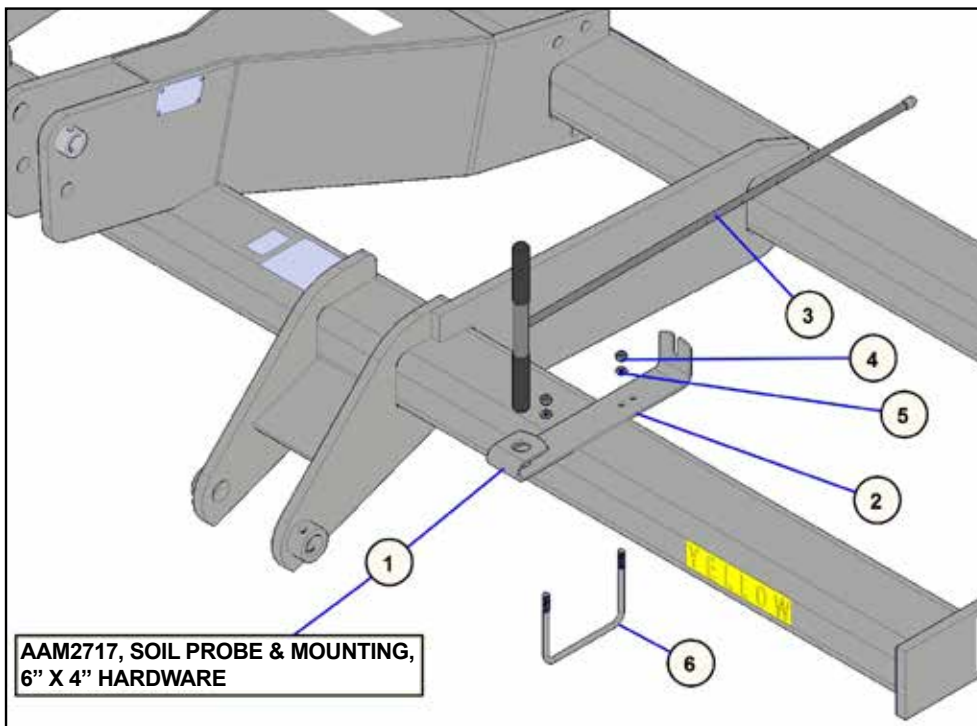
80210202, KIT, SUBTILLER II PULL PIN, CATEGORY II

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|----------------------------------------------|
| 1 | 1 | 80210202 | KIT, SUBTILLER II PULL PIN, CATEGORY II |
| 2 | 2 | BM3630 | PIN, CATEGORY II, LOWER LINK |
| 3 | 2 | BM3808 | BUSHING |
| 4 | 2 | BP3129 | HEX CAP SCREW, 1/2"-13 X 3", GRADE 5, PLATED |
| 5 | 2 | BP3244 | NUT, HEX LOCK, 1/2"-13, PLATED |
| 6 | 1 | BP3508 | PIN, CAT II TOP LINK, 1" X 4-5/8" |
| 7 | 3 | BP3517 | LYNCH PIN, 7/16" |

1. Install pull pins.



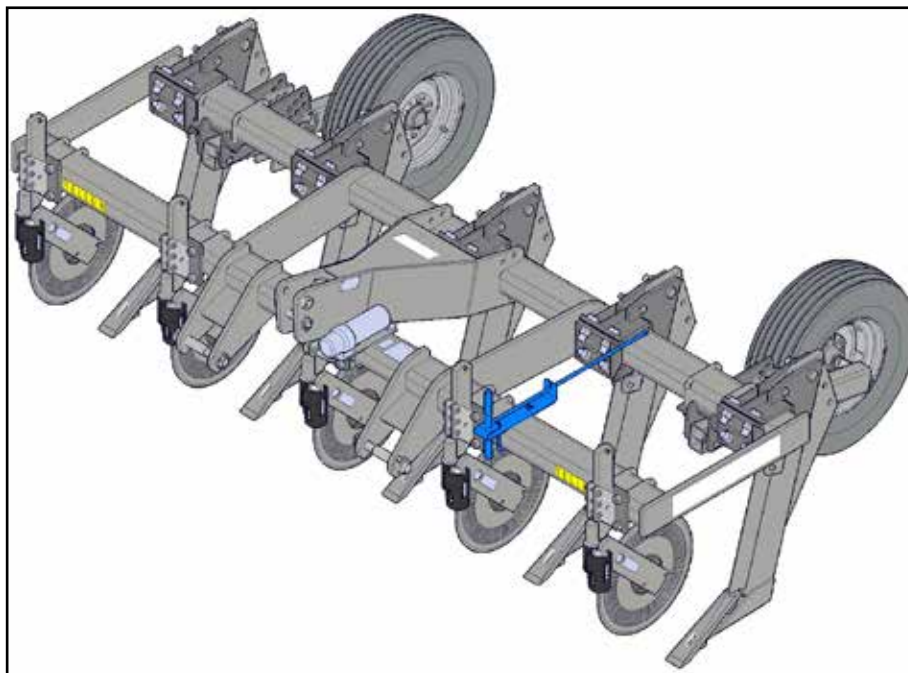
► **Installation of soil probe**



► **AAM2717, SOIL PROBE & MOUNTING, 6 X 4 HARDWARE**

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|-----------------------------------------|
| 1 | 1 | AAM2717 | SOIL PROBE & MOUNTING, 6" X 4" HARDWARE |
| 2 | 1 | AM7646 | BRACKET, SOIL PROBE STORAGE |
| 3 | 1 | AM7647 | SOIL PROBE |
| 4 | 2 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 5 | 2 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 6 | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |

1. Install soil probe.



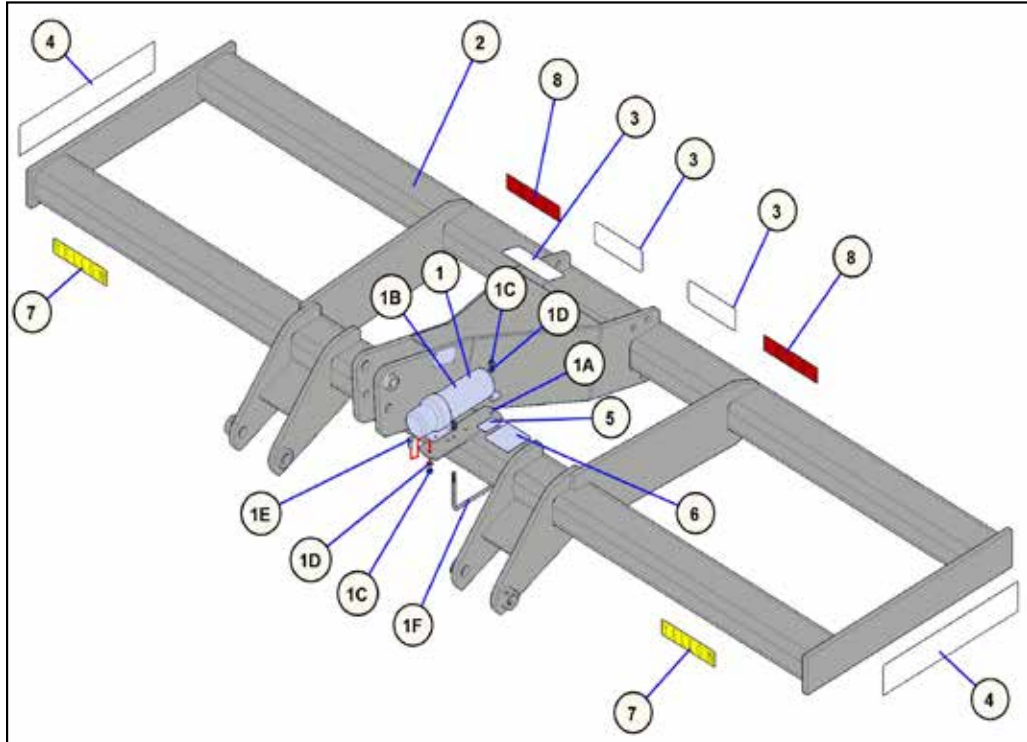
SubTiller II

Task

Procedures

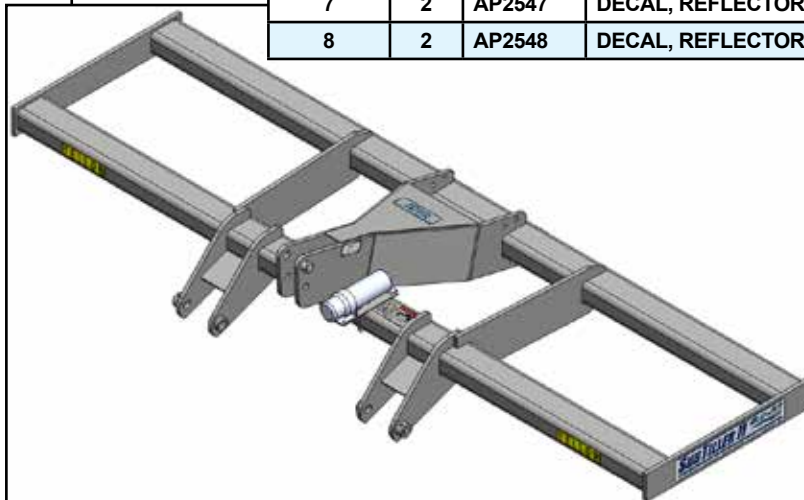
Illustrations

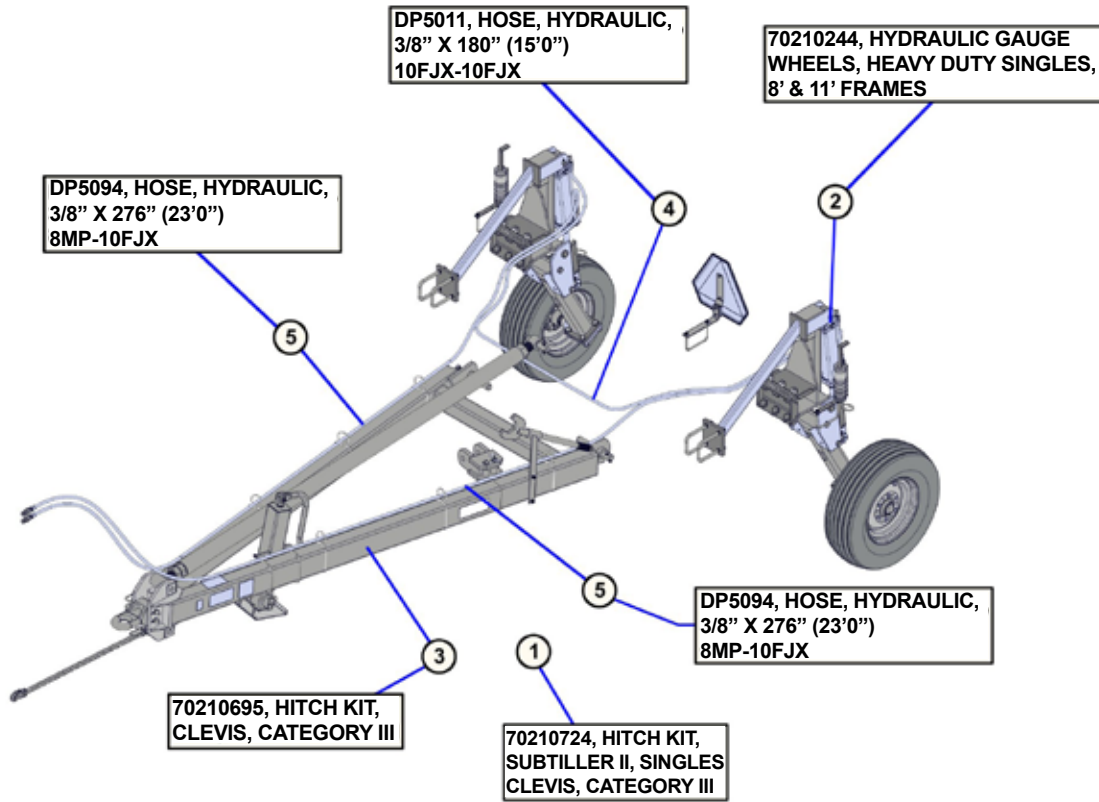
► Decal installation



► 70210071, FRAME, SUBTILLER II, 11', 4" X 6" 3-POINT

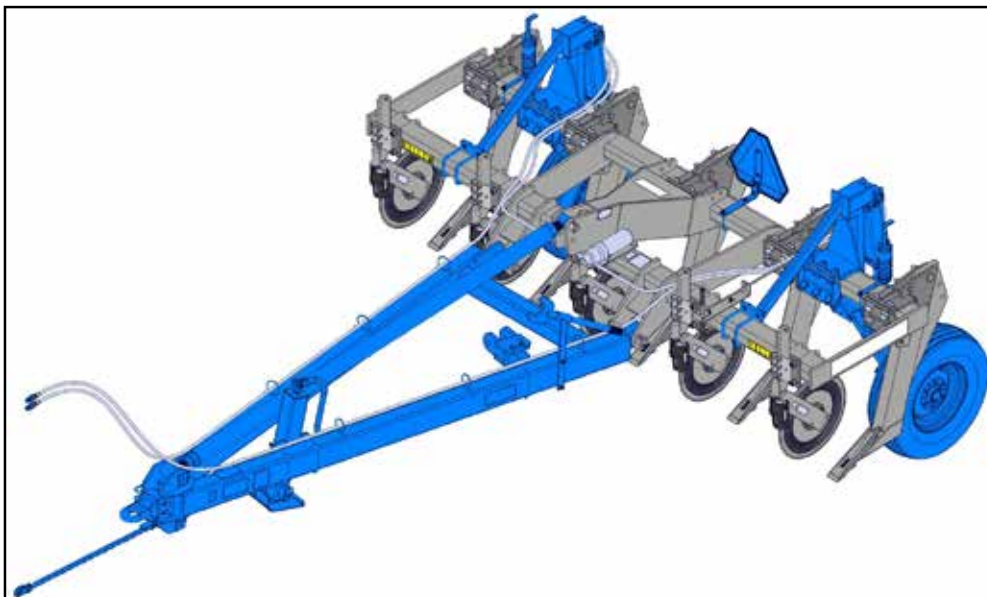
| BOM ID | Qty | Item No | Description |
|--------|-----|---------|----------------------------------------------|
| 1 | 1 | AAM2639 | MANUAL HOLDER WITH 6"X 4" MOUNTING |
| 1A | 1 | AM7640 | BRACKET, MOUNTING, MANUAL HOLDER |
| 1B | 1 | AP4254 | MANUAL HOLDER, BLACK |
| 1C | 3 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 1D | 3 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 1E | 1 | BP3006 | HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED |
| 1F | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 2 | 1 | AM24002 | FRAME, SUBTILLER II, 11', 3-POINT |
| 3 | 3 | AP2215 | DECAL, BLU-JET, 3" X 8" |
| 4 | 2 | AP2217 | DECAL, SUBTILLER II, 4" X 20" |
| 5 | 1 | AP2231 | DECAL, FEMA, 2-1/2" X 1-1/2" |
| 6 | 1 | AP2483 | DECAL, DANGER, FALLING FROM EQUIPMENT |
| 7 | 2 | AP2547 | DECAL, REFLECTOR, YELLOW, 2" X 9" |
| 8 | 2 | AP2548 | DECAL, REFLECTOR, RED, 2" X 9" |



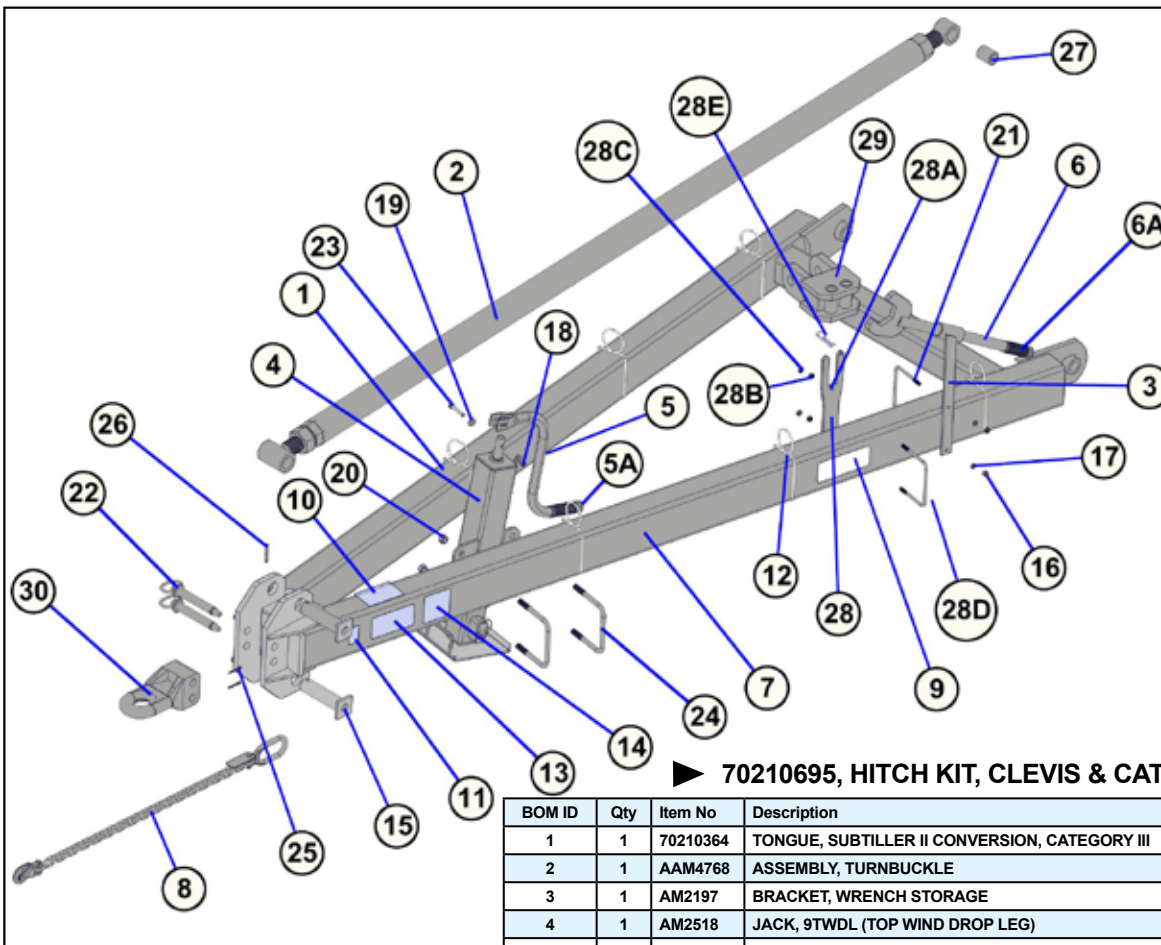


► 70210724, HITCH KIT, SINGLES, CLEVIS & CATEGORY III

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|-------------------------------------------------------------|
| 1 | 1 | 70210724 | HITCH KIT, SUBTILLER II, SINGLES, CLEVIS & CATEGORY III |
| 2 | 1 | 70210244 | HYDRAULIC GAUGE WHEELS, HEAVY DUTY SINGLES, 8' & 11' FRAMES |
| 3 | 1 | 70210695 | HITCH KIT, SUBTILLER II, CLEVIS & CATEGORY III |
| 4 | 1 | DP5011 | HOSE, HYDRAULIC, 3/8" X 180" (15' 0"), 10FJX-10FJX |
| 5 | 2 | DP5094 | HOSE, HYDRAULIC, 3/8" X 276" (23' 0"), 8MP-10FJX |



70210695, Hitch Kit, Clevis & Category III



► 70210695, HITCH KIT, CLEVIS & CATEGORY III

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|--------------------------------------------------|
| 1 | 1 | 70210364 | TONGUE, SUBTILLER II CONVERSION, CATEGORY III |
| 2 | 1 | AAM4768 | ASSEMBLY, TURNBUCKLE |
| 3 | 1 | AM2197 | BRACKET, WRENCH STORAGE |
| 4 | 1 | AM2518 | JACK, 9TWDL (TOP WIND DROP LEG) |
| 5 | 1 | AM2526 | CRANK WITH GRIP |
| 5A | 1 | AP2413 | GRIP, JACK HANDLE |
| 6 | 1 | AM4759 | TURNBUCKLE WRENCH, 3-1/16" |
| 6A | 1 | AP2413 | GRIP, WRENCH HANDLE |
| 7 | 1 | AM7224 | TONGUE, CATEGORY III |
| 8 | 1 | AP2150 | TRANSPORT CHAIN, 20,000#, 3/8" |
| 9 | 2 | AP2215 | DECAL, BLU-JET, 3" X 8" |
| 10 | 1 | AP2222 | DECAL, STAND CLEAR OF TONGUE, TONGUE LIGHT |
| 11 | 1 | AP2231 | DECAL, FEMA, 2-1/2" X 1-1/2" |
| 12 | 6 | AP2282-1 | HOSE RETAINER, 4" X 6", WITH PLASTIC CAPS |
| 13 | 1 | AP2469 | DECAL, SAFETY CHAIN |
| 14 | 1 | AP2914 | DECAL, WARNING, HIGH-PRESSURE FLUID |
| 15 | 2 | BM3610 | PIN, 1-3/4" X 6-1/8" WITH ANTI-ROTATION HEAD |
| 16 | 2 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 17 | 2 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 18 | 1 | BP3003 | NUT, HEX LOCK, 3/8"-16, GRADE 2, PLATED |
| 19 | 2 | BP3015 | WASHER, FLAT, 3/8", PLATED |
| 20 | 4 | BP3038 | NUT, HEX, 5/8"-11, GRADE 2 |
| 21 | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 22 | 2 | BP3051 | PIN, 1" X 6", PLATED |
| 23 | 1 | BP3096 | HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED |
| 24 | 2 | BP3099 | U-BOLT, 5/8"-11 X 6"W X 6"L, PLATED |
| 25 | 2 | BP3511 | PIN, COTTER, 3/16" X 1-3/4" |
| 26 | 2 | BP3519 | PIN, ROLL, 3/8" X 2-1/2" |
| 27 | 1 | EM3735 | BUSHING |
| 28 | 1 | AAM2424 | BRACKET, STORAGE, SECOND HITCH, 6" MOUNTING |
| 28A | 1 | AM2145 | BRACKET, HITCH STORAGE, 6" MOUNTING |
| 28B | 2 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 28C | 2 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 28D | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 28E | 1 | BP3500 | PIN, HAIR CLIP, 3/16" |
| 29 | 1 | AM2144 | HITCH, CLEVIS |
| 30 | 1 | AP2850 | PERFECT HITCH, CATEGORY III, BLACK |

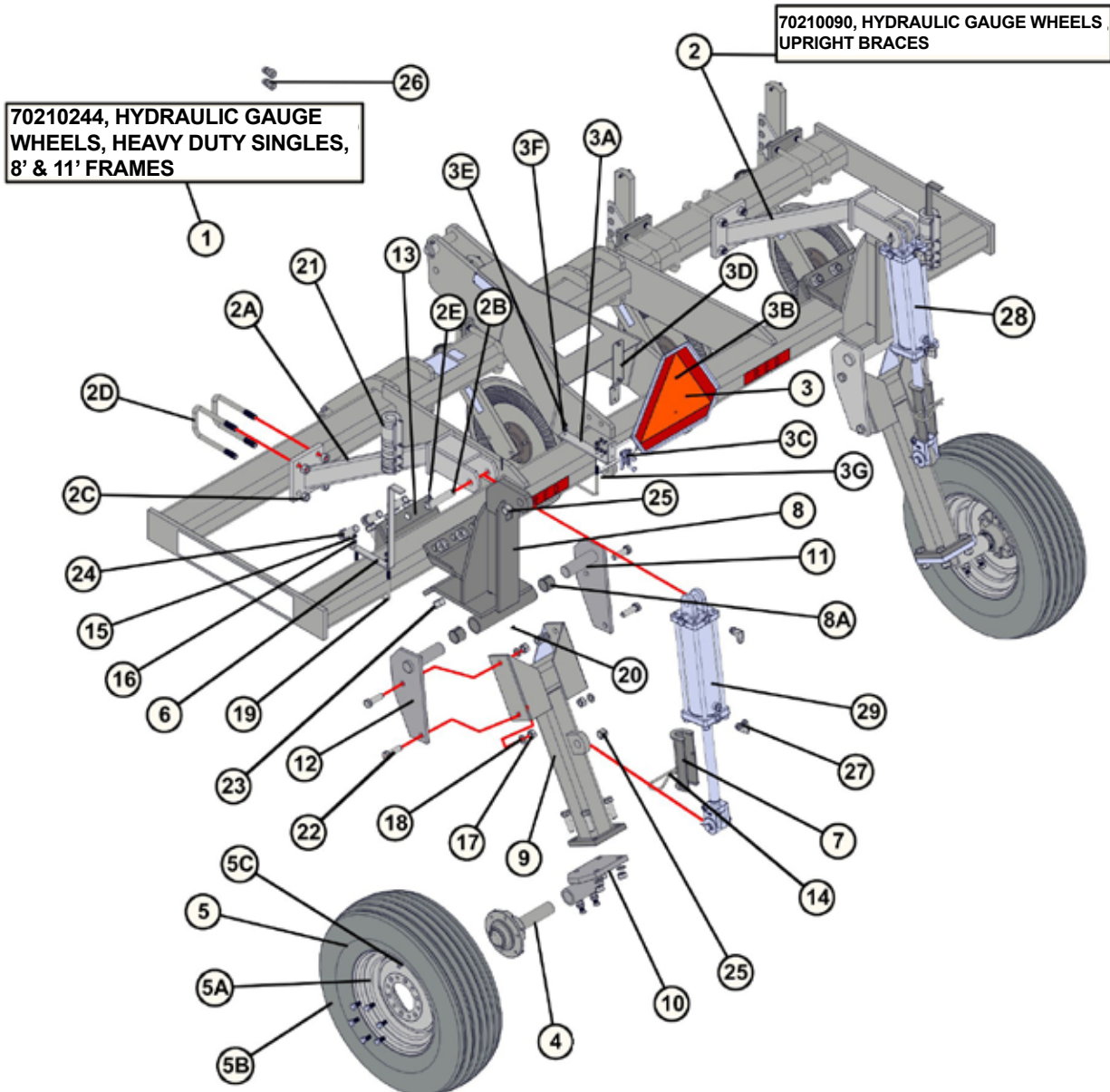
70210244, Hydraulic Gauge Wheels, Heavy Duty Singles, 8' & 11' Frames

SubTiller II

Task

Procedures

Illustrations





70210244, Hydraulic Gauge Wheels, Heavy Duty Singles, 8' & 11' Frames

SubTiller II

| Task | Procedures | Illustrations |
|------|------------|---------------|
|------|------------|---------------|

► **70210244, HYD GAUGE WHEELS, HEAVY DUTY SINGLES, 8' & 11' FRAMES**

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|-------------------------------------------------------------|
| 1 | 1 | 70210244 | HYDRAULIC GAUGE WHEELS, HEAVY DUTY SINGLES, 8' & 11' FRAMES |
| 2 | 1 | 70210090 | HYDRAULIC GAUGE WHEEL UPRIGHT BRACE |
| 2A | 2 | AM2760 | BRACE, SUBTILLER II, CYLINDER UPRIGHT |
| 2B | 2 | BM3560 | PIN, 1" X 4-1/8" |
| 2C | 8 | BP3034 | NUT, HEX, 3/4"-10, GRADE 2, PLATED |
| 2D | 4 | BP3047 | U-BOLT, 3/4"-10 X 4"W X 7-3/4"L |
| 2E | 4 | BP3511 | PIN, COTTER, 3/16" X 1-3/4" |
| 3 | 1 | AAM2098 | SMV KIT, 4" X 6" (SLOW MOVING VEHICLE) |
| 3A | 1 | AM4077 | BRACKET, SMV MOUNTING |
| 3B | 1 | AP2542 | SMV SIGN |
| 3C | 1 | AP2543 | SMV MOUNTING SOCKET |
| 3D | 1 | AP2544 | SMV MOUNTING SPADE |
| 3E | 2 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 3F | 2 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 3G | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 4 | 2 | AAM2709 | ASSEMBLY, HUB AND SPINDLE, 611 HUB, 1-3/4" X 11" |
| 5 | 2 | AAM2766 | WHEEL, 9.5L-16, 6 PLY, 15 X 6 X 6, WHITE |
| 5A | 2 | AP2001 | RIM, 15 X 6 X 6, WHITE |
| 5B | 2 | AP2012 | TIRE, 9.5L-15, 6 PLY |
| 5C | 2 | AP2790 | VALVE STEM, METAL |
| 6 | 2 | AM2090 | BRACKET, DEPTH COLLAR & LOCKUP STORAGE |
| 6A | 1 | AP2413 | GRIP, JACK HANDLE |
| 7 | 2 | AM3039 | TRANSPORT CYLINDER LOCK |
| 8 | 2 | AM3346 | CYLINDER, UPRIGHT |
| 8A | 4 | BP3538 | TENSION BUSHING, 2" X 1-3/4" X 1-1/2" OAL |
| 9 | 2 | AM5018 | WHEEL LEG, BOLT ON SPINDLE LOOP, SUBTILLER II |
| 10 | 2 | AM5019 | BOLT ON ADAPTER, SINGLE WHEEL, 1-3/4" LOOP |
| 11 | 2 | AM5038 | BRACKET, PIVOT ARM, "A" HYDRAULIC GAUGE WHEEL |
| 12 | 2 | AM5039 | BRACKET, PIVOT ARM, "B" HYDRAULIC GAUGE WHEEL |
| 13 | 2 | AM5049 | BRACKET, CYLINDER UPRIGHT CLAMP |
| 14 | 2 | BM3520 | CLIP PIN, TRANSPORT LOCK |
| 15 | 4 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 16 | 4 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 17 | 16 | BP3034 | NUT, HEX, 3/4"-10, GRADE 2, PLATED |
| 18 | 16 | BP3035 | WASHER, LOCK, 3/4", PLATED |
| 19 | 2 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 20 | 2 | BP3072 | GREASE ZERK, 1/4"-28 |
| 21 | 2 | BP3076 | DEPTH COLLAR SET, 1-1/4" TO 1-1/2" |
| 22 | 16 | BP3140 | HEX CAP SCREW, 3/4"-10 X 2-1/2", GRADE 5, PLATED |
| 23 | 12 | BP3275 | NUT, HEX, 1"-8, GRADE 8, PLATED |
| 24 | 12 | BP3290 | HEX CAP SCREW, 1"-8 X 3", GRADE 8, PLATED |
| 25 | 4 | BP3516 | TENSION BUSHING, 1-1/4" X 1" X 1" OAL |
| 26 | 2 | DP4007 | MALE TIP 1/2" QUICK COUPLER 8FP |
| 27 | 4 | DP4143 | ADAPTER, 10MJIC-8MSAE, 90 DEGREE |
| 28 | 1 | DP4485 | RE-PHASING CYLINDER, 3-3/4 X 12, PMS-AM-2558 |
| 29 | 1 | DP4486 | RE-PHASING CYLINDER, 4 X 12, PMS-AM-2552A |

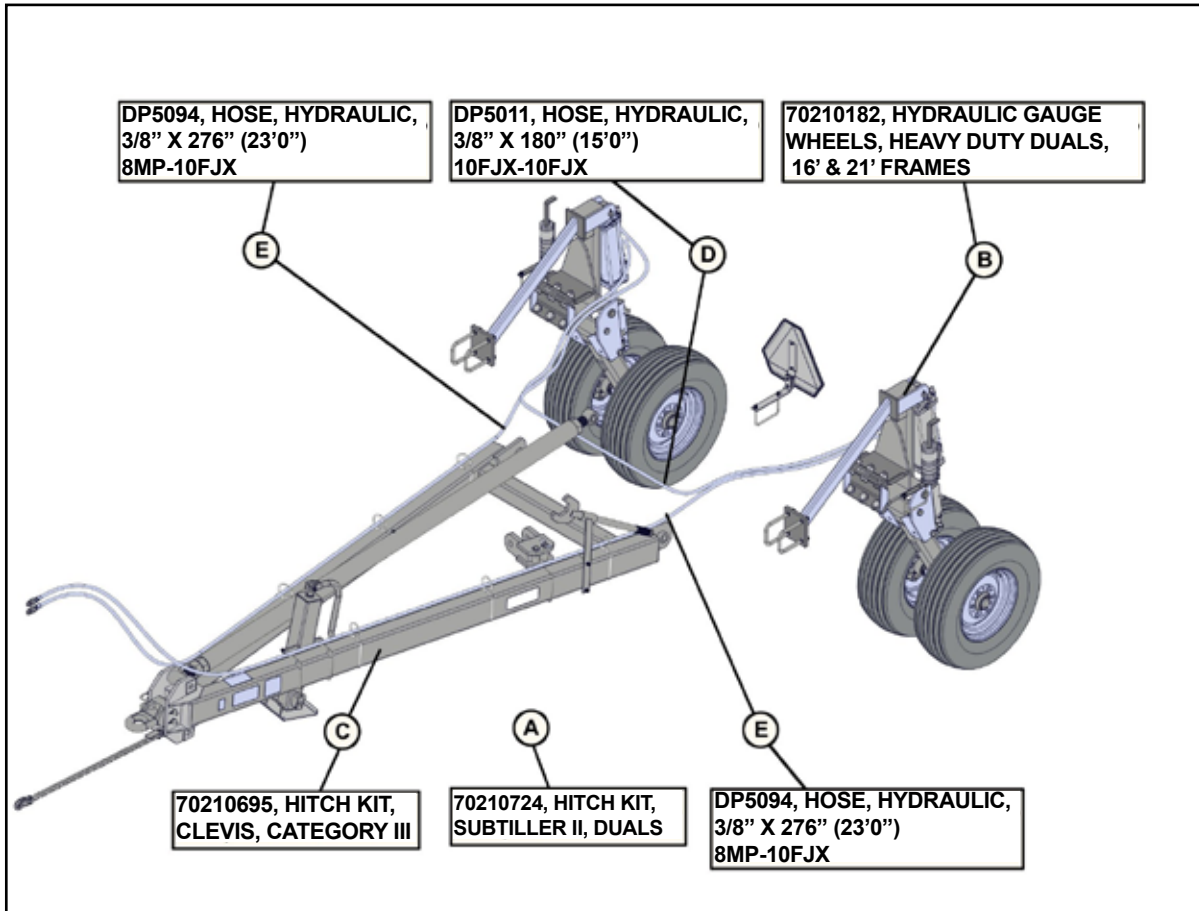
70210725, Hitch Kit, SubTiller II, Duals

SubTiller II

Task

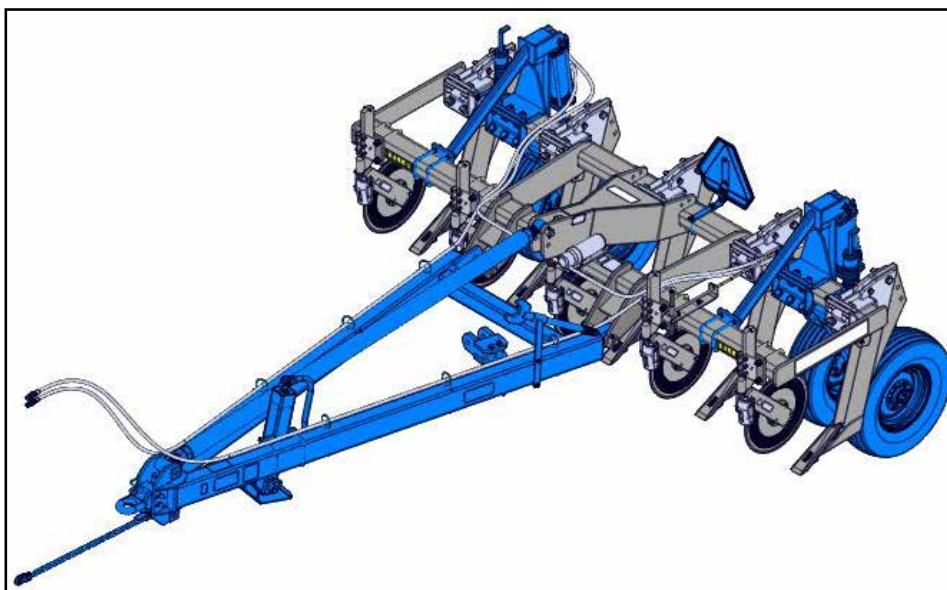
Procedures

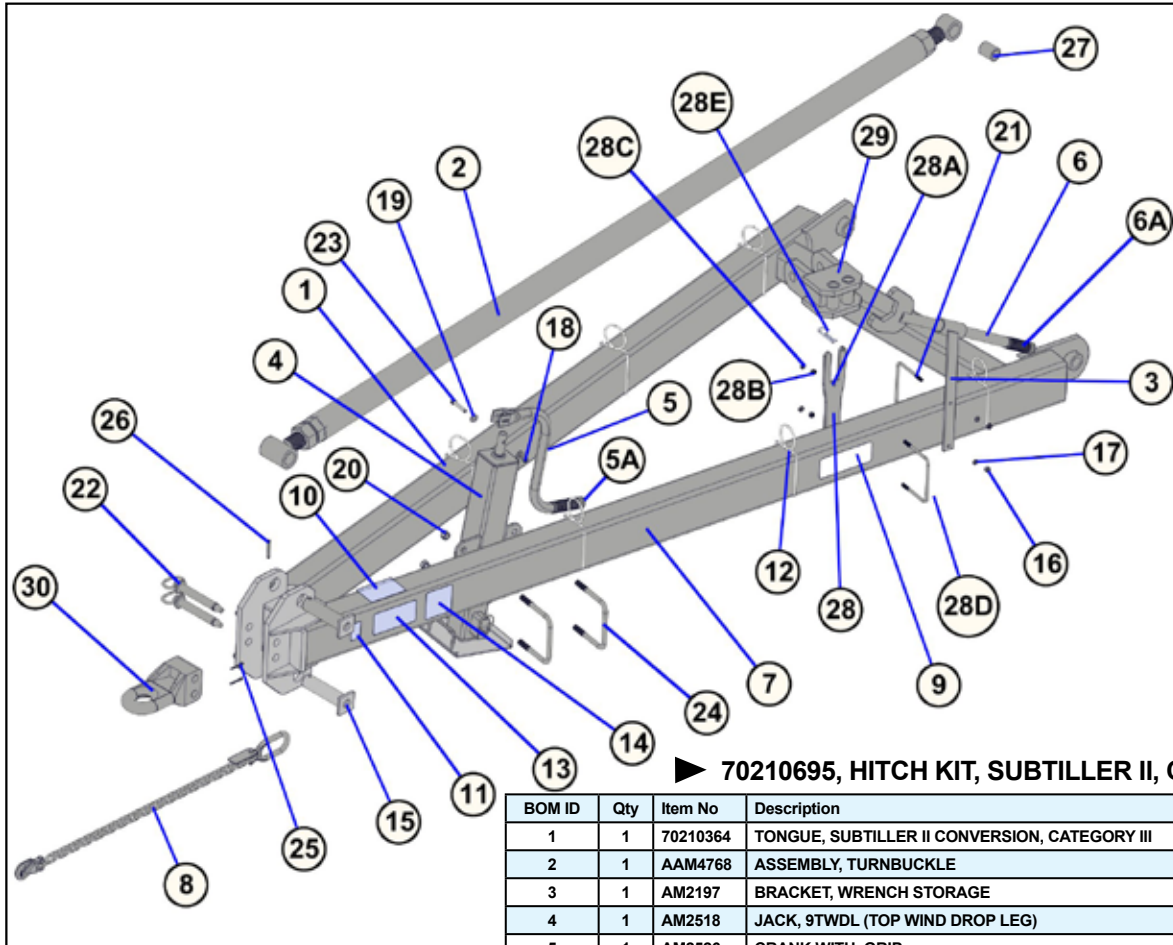
Illustrations



► 70210725, HITCH KIT, SUBTILLER II, DUALS

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|------------------------------------------------------------|
| A | 1 | 70210725 | HITCH KIT, SUBTILLER II, DUALS |
| B | 1 | 70210182 | HYDRAULIC GAUGE WHEELS, HEAVY DUTY DUALS, 16' & 21' FRAMES |
| C | 1 | 70210695 | HITCH KIT, SUBTILLER II, CLEVIS & CATEGORY III |
| D | 1 | DP5011 | HOSE, HYDRAULIC, 3/8" X 180" (15' 0"), 10FJX-10FJX |
| E | 2 | DP5094 | HOSE, HYDRAULIC, 3/8" X 276" (23' 0"), 8MP-10FJX |





► 70210695, HITCH KIT, SUBTILLER II, CATEGORY III

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|--------------------------------------------------|
| 1 | 1 | 70210364 | TONGUE, SUBTILLER II CONVERSION, CATEGORY III |
| 2 | 1 | AAM4768 | ASSEMBLY, TURNBUCKLE |
| 3 | 1 | AM2197 | BRACKET, WRENCH STORAGE |
| 4 | 1 | AM2518 | JACK, 9TWDL (TOP WIND DROP LEG) |
| 5 | 1 | AM2526 | CRANK WITH GRIP |
| 5A | 1 | AP2413 | GRIP, JACK HANDLE |
| 6 | 1 | AM4759 | TURNBUCKLE WRENCH, 3-1/16" |
| 6A | 1 | AP2413 | GRIP, WRENCH HANDLE |
| 7 | 1 | AM7224 | TONGUE, CATEGORY III |
| 8 | 1 | AP2150 | TRANSPORT CHAIN, 20,000#, 3/8" |
| 9 | 2 | AP2215 | DECAL, BLU-JET, 3" X 8" |
| 10 | 1 | AP2222 | DECAL, STAND CLEAR OF TONGUE, TONGUE LIGHT |
| 11 | 1 | AP2231 | DECAL, FEMA, 2-1/2" X 1-1/2" |
| 12 | 6 | AP2282-1 | HOSE RETAINER, 4" X 6", WITH PLASTIC CAPS |
| 13 | 1 | AP2469 | DECAL, SAFETY CHAIN |
| 14 | 1 | AP2914 | DECAL, WARNING, HIGH-PRESSURE FLUID |
| 15 | 2 | BM3610 | PIN, 1-3/4" X 6-1/8" WITH ANTI-ROTATION HEAD |
| 16 | 2 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 17 | 2 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 18 | 1 | BP3003 | NUT, HEX LOCK, 3/8"-16, GRADE 2, PLATED |
| 19 | 2 | BP3015 | WASHER, FLAT, 3/8", PLATED |
| 20 | 4 | BP3038 | NUT, HEX, 5/8"-11, GRADE 2 |
| 21 | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 22 | 2 | BP3051 | PIN, 1" X 6", PLATED |
| 23 | 1 | BP3096 | HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED |
| 24 | 2 | BP3099 | U-BOLT, 5/8"-11 X 6"W X 6"L, PLATED |
| 25 | 2 | BP3511 | PIN, COTTER, 3/16" X 1-3/4" |
| 26 | 2 | BP3519 | PIN, ROLL, 3/8" X 2-1/2" |
| 27 | 1 | EM3735 | BUSHING |
| 28 | 1 | AAM2424 | BRACKET, STORAGE, SECOND HITCH, 6" MOUNTING |
| 28A | 1 | AM2145 | BRACKET, HITCH STORAGE, 6" MOUNTING |
| 28B | 2 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 28C | 2 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 28D | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 28E | 1 | BP3500 | PIN, HAIR CLIP, 3/16" |
| 29 | 1 | AM2144 | HITCH, CLEVIS |
| 30 | 1 | AP2850 | PERFECT HITCH, CATEGORY III, BLACK |

70210182, Hydraulic Gauge Wheels, Heavy Duty Duals, 16' & 21' Frames

SubTiller II

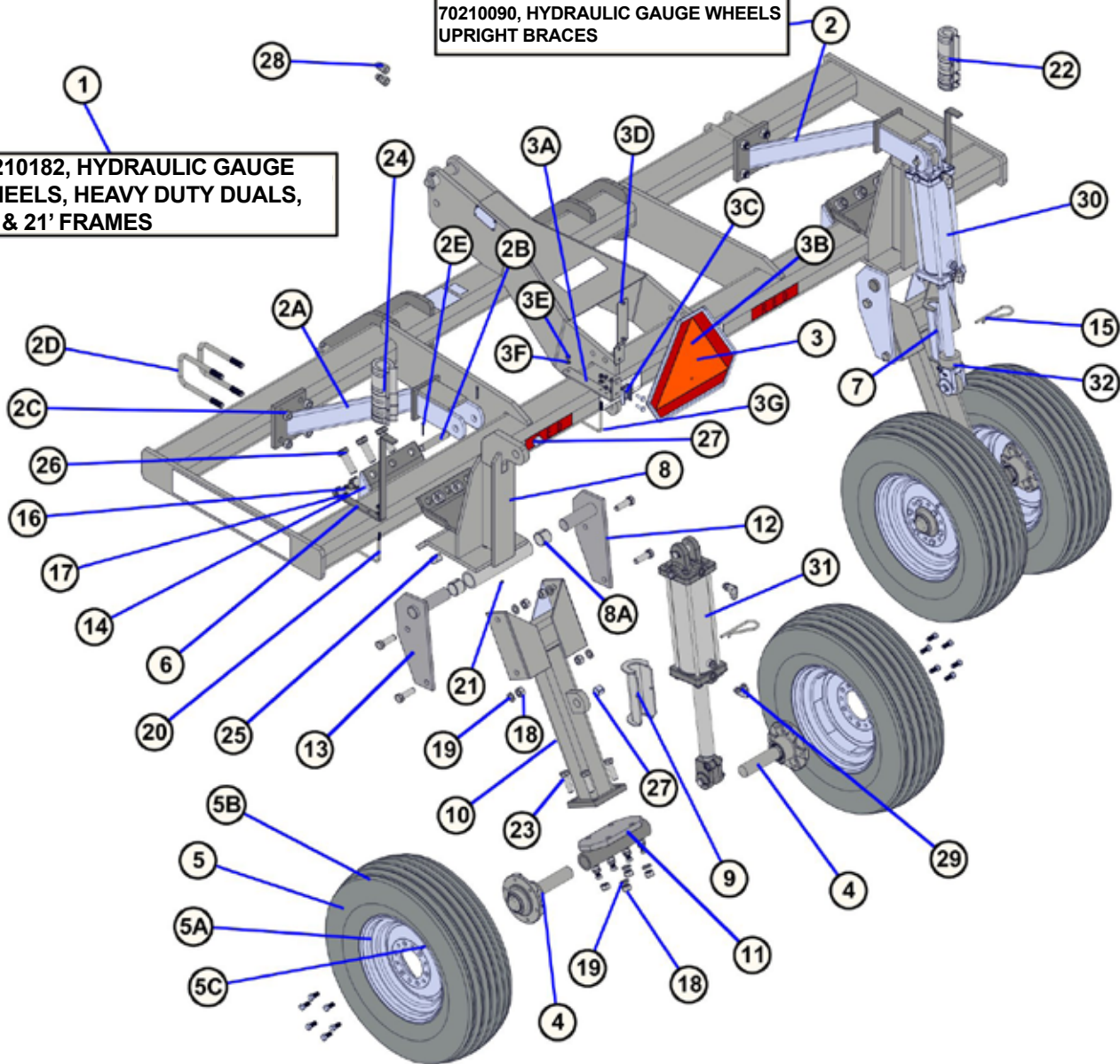
Task

Procedures

Illustrations

70210090, HYDRAULIC GAUGE WHEELS
UPRIGHT BRACES

70210182, HYDRAULIC GAUGE
WHEELS, HEAVY DUTY DUALS,
16' & 21' FRAMES



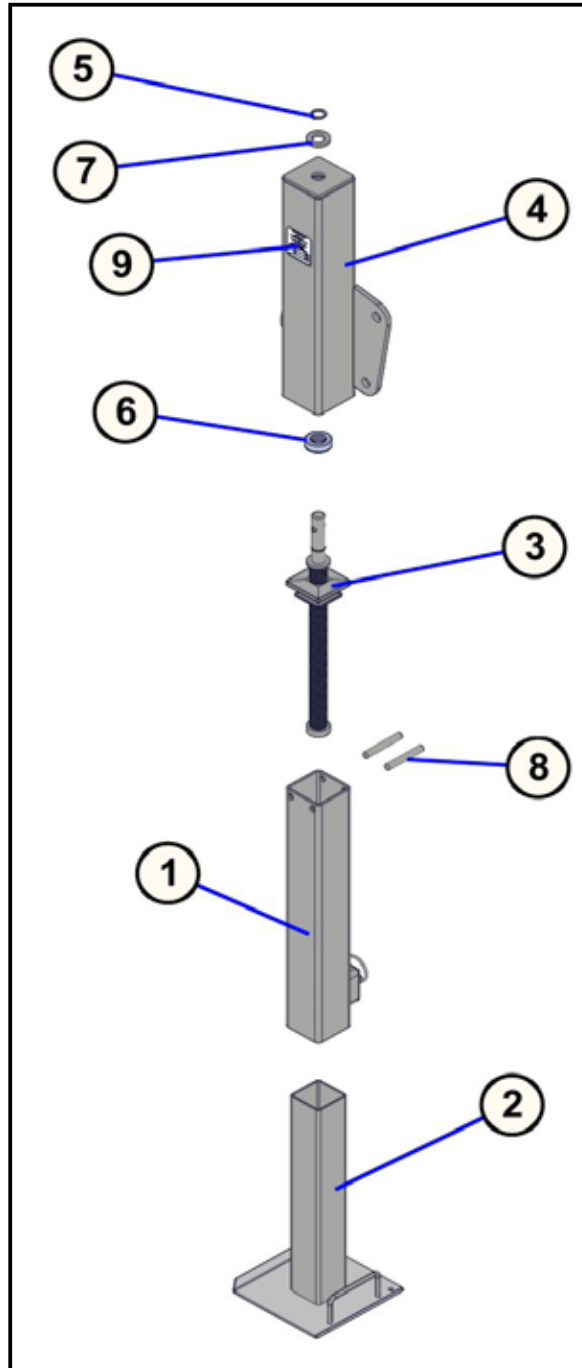
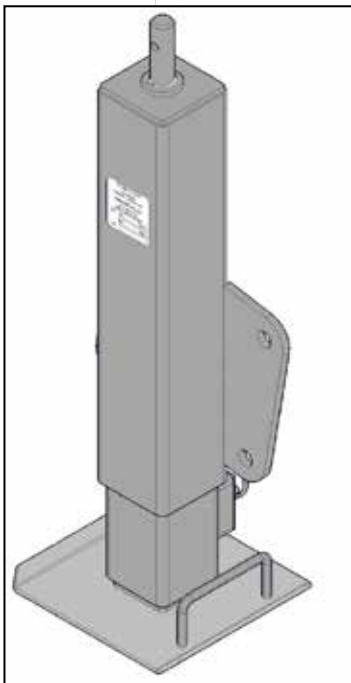


70210182, Hydraulic Gauge Wheels, Heavy Duty Duals, 16' & 21' Frames

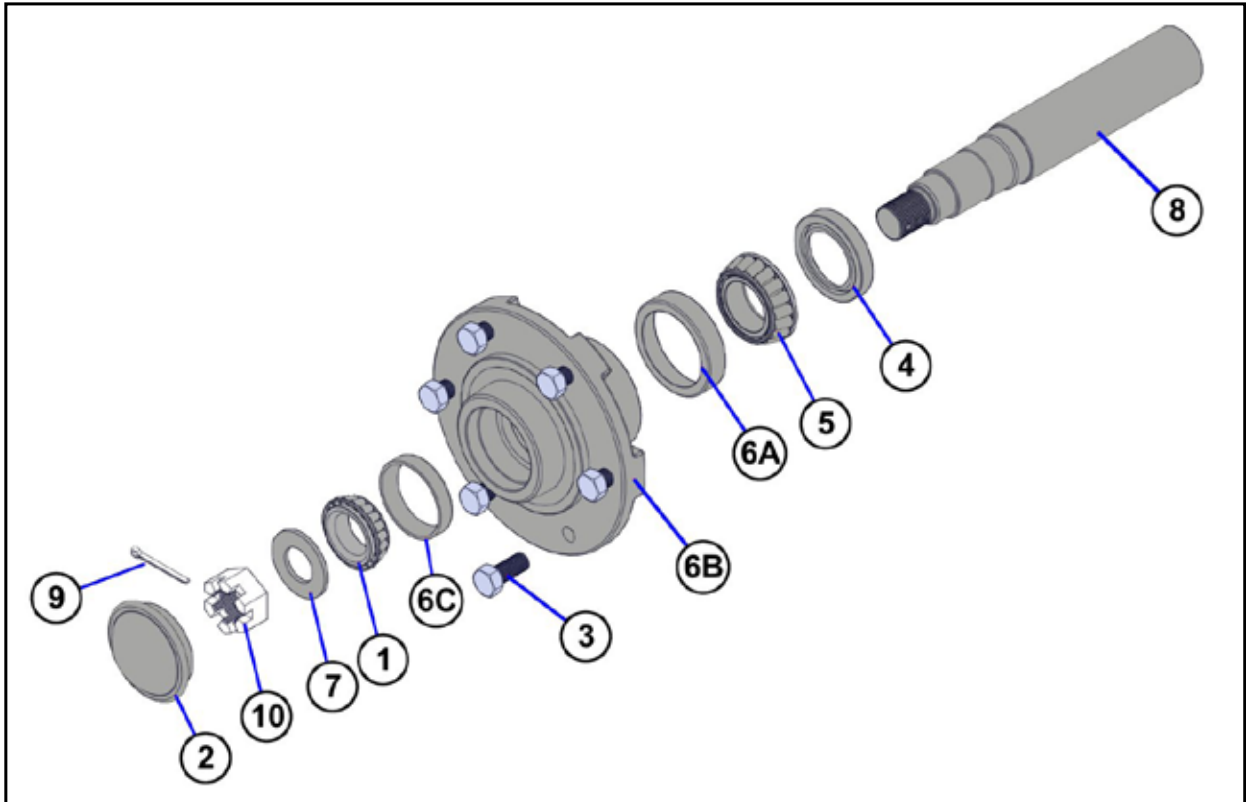
SubTiller II

| Task | Procedures | Illustrations |
|------|------------|---------------|
|------|------------|---------------|

| BOM ID | Qty | Item No | Description |
|--------|-----|----------|------------------------------------------------------------|
| 1 | 1 | 70210182 | HYDRAULIC GAUGE WHEELS, HEAVY DUTY DUALS, 16' & 21' FRAMES |
| 2 | 1 | 70210090 | HYDRAULIC GAUGE WHEEL UPRIGHT BRACE |
| 2A | 2 | AM2760 | BRACE SUBTILLER II CYLINDER UPRIGHT |
| 2B | 2 | BM3560 | PIN, 1" X 4-1/8" |
| 2C | 8 | BP3034 | NUT, HEX, 3/4"-10, GRADE 2, PLATED |
| 2D | 4 | BP3047 | U-BOLT, 3/4"-10 X 4"W X 7-3/4"L |
| 2E | 4 | BP3511 | PIN, COTTER, 3/16" X 1-3/4" |
| 3 | 1 | AAM2098 | SMV KIT, 4" X 6" (SLOW MOVING VEHICLE) |
| 3A | 1 | AM4077 | BRACKET, SMV MOUNTING |
| 3B | 1 | AP2542 | SMV SIGN |
| 3C | 1 | AP2543 | SMV MOUNTING SOCKET |
| 3D | 1 | AP2544 | SMV MOUNTING SPADE |
| 3E | 2 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 3F | 2 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 3G | 1 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 4 | 4 | AAM2709 | ASSEMBLY, HUB AND SPINDLE, 611 HUB, 1-3/4" X 11" |
| 5 | 4 | AAM2766 | WHEEL, 9.5L-16, 6 PLY, 15 X 6 X 6, WHITE |
| 5A | 4 | AP2001 | RIM, 15 X 6 X 6, WHITE |
| 5B | 4 | AP2012 | TIRE, 9.5L-15, 6 PLY |
| 5C | 4 | AP2790 | VALVE STEM, METAL |
| 6 | 2 | AM2090 | BRACKET, DEPTH COLLAR & LOCKUP STORAGE |
| 7 | 1 | AM3039 | TRANSPORT CYLINDER LOCK |
| 8 | 2 | AM3346 | CYLINDER, UPRIGHT |
| 8A | 4 | BP3538 | TENSION BUSHING, 2" X 1-3/4" X 1-1/2" OAL |
| 9 | 1 | AM4721 | TRANSPORT LOCK, 1-3/4" & 2" CYLINDER ROD |
| 10 | 2 | AM5018 | WHEEL LEG, BOLT ON SPINDLE LOOP, SUBTILLER II |
| 11 | 2 | AM5020 | BOLT ON ADAPTER, DUAL WHEEL, 1-3/4" LOOP |
| 12 | 2 | AM5038 | BRACKET, PIVOT ARM, "A" HYDRAULIC GAUGE WHEEL |
| 13 | 2 | AM5039 | BRACKET, PIVOT ARM, "B" HYDRAULIC GAUGE WHEEL |
| 14 | 2 | AM5049 | BRACKET, CYLINDER UPRIGHT CLAMP |
| 15 | 2 | BM3520 | CLIP PIN, TRANSPORT LOCK |
| 16 | 4 | BP3001 | NUT, HEX, 3/8"-16, GRADE 2, PLATED |
| 17 | 4 | BP3002 | WASHER, LOCK, 3/8", PLATED |
| 18 | 16 | BP3034 | NUT, HEX, 3/4"-10, GRADE 2, PLATED |
| 19 | 15 | BP3035 | WASHER, LOCK, 3/4", PLATED |
| 20 | 2 | BP3045 | U-BOLT, 3/8"-16 X 6"W X 5"L, PLATED |
| 21 | 2 | BP3072 | GREASE ZERK, 1/4"-28 |
| 22 | 1 | BP3076 | DEPTH COLLAR SET, 1-1/4" TO 1-1/2" |
| 23 | 16 | BP3140 | HEX CAP SCREW, 3/4"-10 X 2-1/2", GRADE 5, PLATED |
| 24 | 1 | BP3218 | DEPTH COLLAR SET, 1-3/4" TO 2" |
| 25 | 12 | BP3275 | NUT, HEX, 1"-8, GRADE 8, PLATED |
| 26 | 12 | BP3290 | HEX CAP SCREW, 1"-8 X 3", GRADE 8, PLATED |
| 27 | 4 | BP3516 | TENSION BUSHING, 1-1/4" X 1" X 1" OAL |
| 28 | 2 | DP4007 | MALE TIP 1/2" QUICK COUPLER 8FP |
| 29 | 4 | DP4143 | ADAPTER, 10MJIC-8MSAE, 90 DEGREE |
| 30 | 1 | DP4486 | RE-PHASING CYLINDER, 4 X 12, PMS-AM-2552A |
| 31 | 1 | DP4487 | RE-PHASING CYLINDER, 4-1/2 X 12, PMS-AM-2546 |
| 32 | 1 | EM2697 | SPACER |

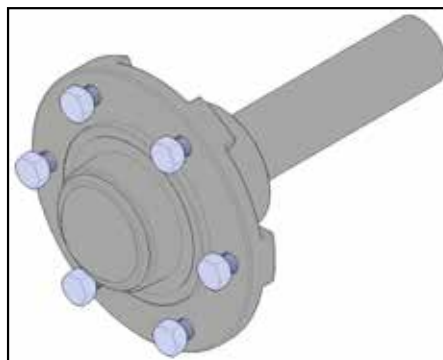

► AM2518 JACK, 9TWDL TOP WIND DROP LEG

| BOM ID | Qty | Item No | Description |
|--------|-----|---------|-----------------------------------------|
| 1 | 1 | AM2524 | INTERMEDIATE TUBE WITH PLUNGER ASSEMBLY |
| 2 | 1 | AM2525 | DROP LEG WITH PAD & HANDLE |
| 3 | 1 | AM2534 | SCREW ASSEMBLY, 4" |
| 4 | 1 | AM2539 | TOP TUBE, WITH BOLT ON MOUNTING |
| 5 | 1 | AP2407 | SNAP RING, 1" EXTERNAL, HEAVY DUTY |
| 6 | 1 | AP2410 | THRUST BEARING, NICE 609 |
| 7 | 1 | EM1736 | BEARING SEAT |
| 8 | 2 | EM1739 | ROD |
| 9 | 1 | EM3016 | 9000# LABEL |



► AAM2709 ASSEMBLY, HUB AND SPINDLE, 611 HUB, 1-3/4" X 11"

| BOM ID | Qty | Item No | Description |
|--------|-----|------------|---------------------------------------|
| 1 | 1 | AP2023 | BEARING CONE, LM 67048 |
| 2 | 1 | AP2048 | HUB CAP, 1513 |
| 3 | 6 | AP2049 | WHEEL BOLT, 1/2"-20 X 1" |
| 4 | 1 | AP2066 | GREASE SEAL, CR 16289 |
| 5 | 1 | AP2078 | BEARING CONE, JL 69349 |
| 6 | 1 | AP2123 | HUB WITH CUPS, 6 BOLT, 611301-6 |
| 6A | 1 | AP2077 | BEARING CUP, JL 69310 |
| 6B | 1 | AP2123-Hub | HUB, 6 BOLT, 611301-6 |
| 6C | 1 | AP2524 | BEARING CUP, LM 67010 |
| 6D | 1 | BP3072 | GREASE ZERK, 1/4"-28 |
| 7 | 1 | AP2146 | WASHER, SPINDLE, 2" X 1-1/16" X .134" |
| 8 | 1 | AP2167 | SPINDLE, 1-3/4" X 11", S7203-F-00 |
| 9 | 1 | AP2426 | PIN, COTTER, 5/32" X 1-3/4" |
| 10 | 1 | AP2811 | NUT, SPINDLE, 1"-14 |



Assembly (Hydraulic Gauge Wheels)

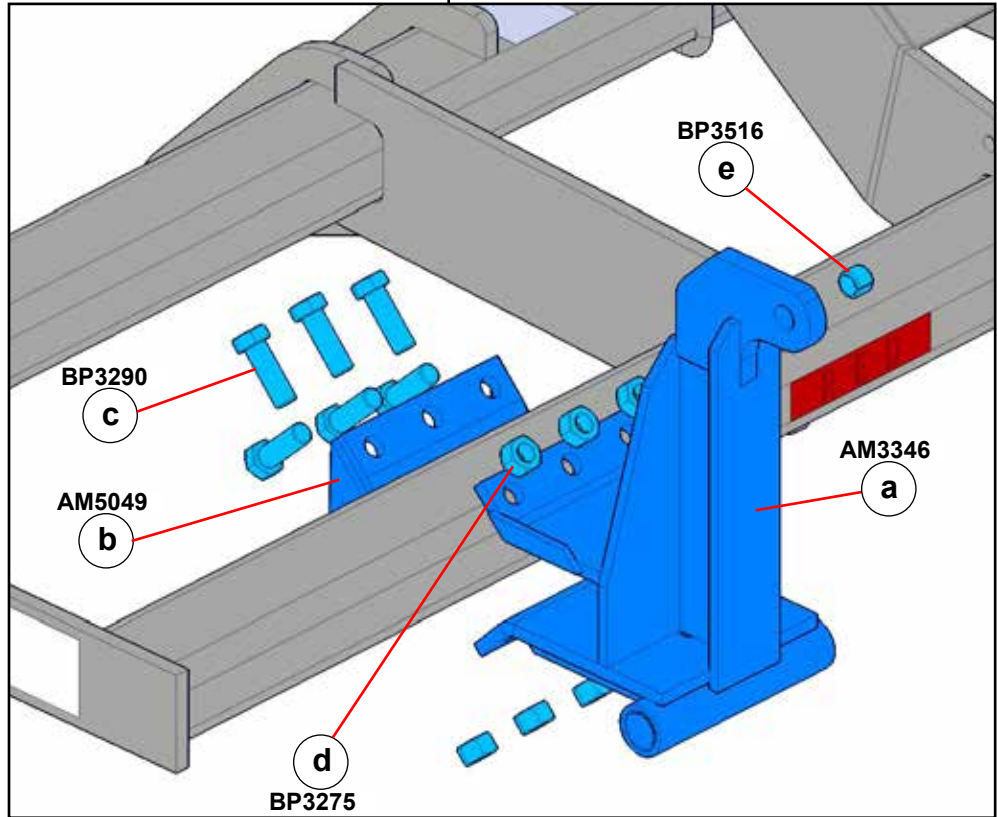
SubTiller II

Task

Procedures

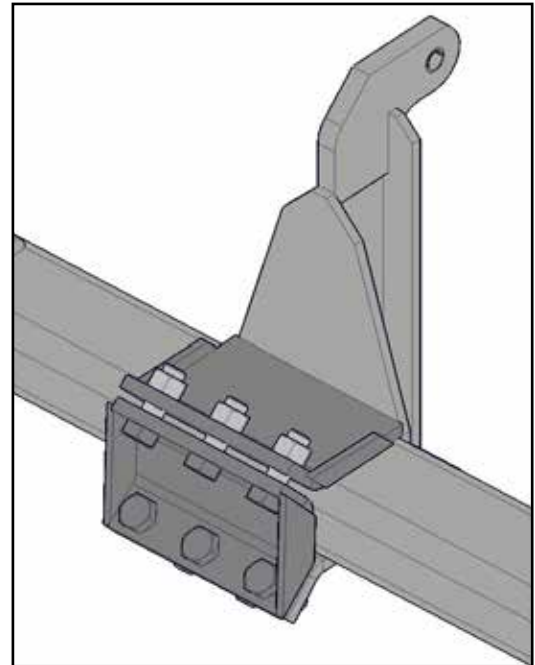
Illustrations

► Mounting cylinder uprights



► **NOTE:**
Consult row spacing pages for cylinder upright locations

1. Consult row spacing drawings for (a) (AM3346) cylinder upright placement.
2. Center upright and install (b) (AM5049) cylinder upright clamp bracket with six (c) (BP3290) 1" x 3", grade 8, hex cap screws and (d) (BP3275) 1", grade 8, hex nuts.
3. Tighten top and bottom 1" hex nuts evenly. The space between clamp and bracket should be even.
4. Install (e) (BP3516) 1-1/4" x 1" x 1" tension bushing in top hole of each upright.



Assembly (Hydraulic Gauge Wheels)

SubTiller II

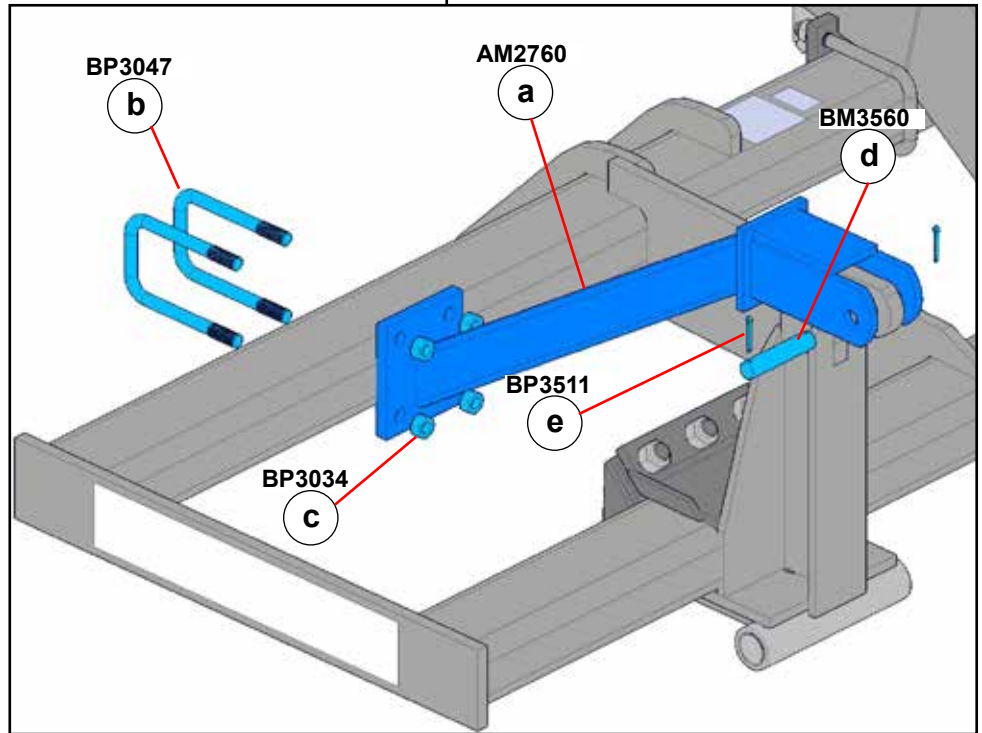
Task

Procedures

Illustrations

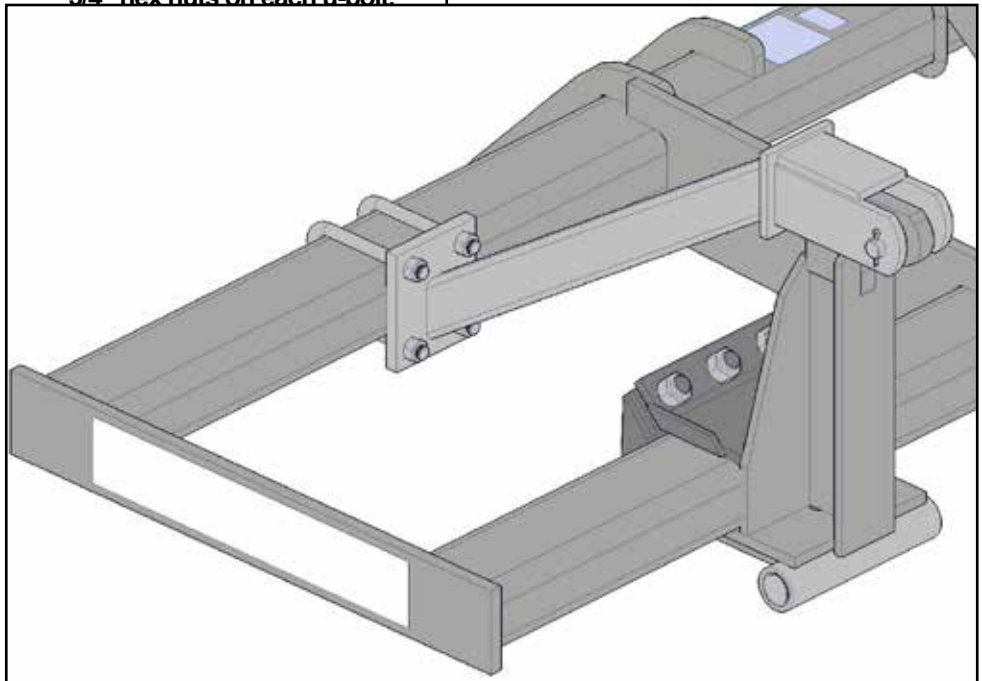


Mounting upright brace



1. Position (a) (AM2760) SUB-TILLER II upright brace behind cylinder upright.
2. Insert (b) (BP3047) 3/4" x 4"W x 7-3/4"L, u-bolts over frame into brace. Start (c) (BP3034) 3/4" hex nuts on each u-bolt.

3. Adjust brace and insert (d) (BM3560) 1" x 4-1/8" pin. Secure with two (e) (BP3511) 3/16" x 1-3/4" cotter pins after cylinders are installed.
4. Tighten 3/4" hex nuts on u-bolts.



Assembly (Hydraulic Gauge Wheels)

SubTiller II

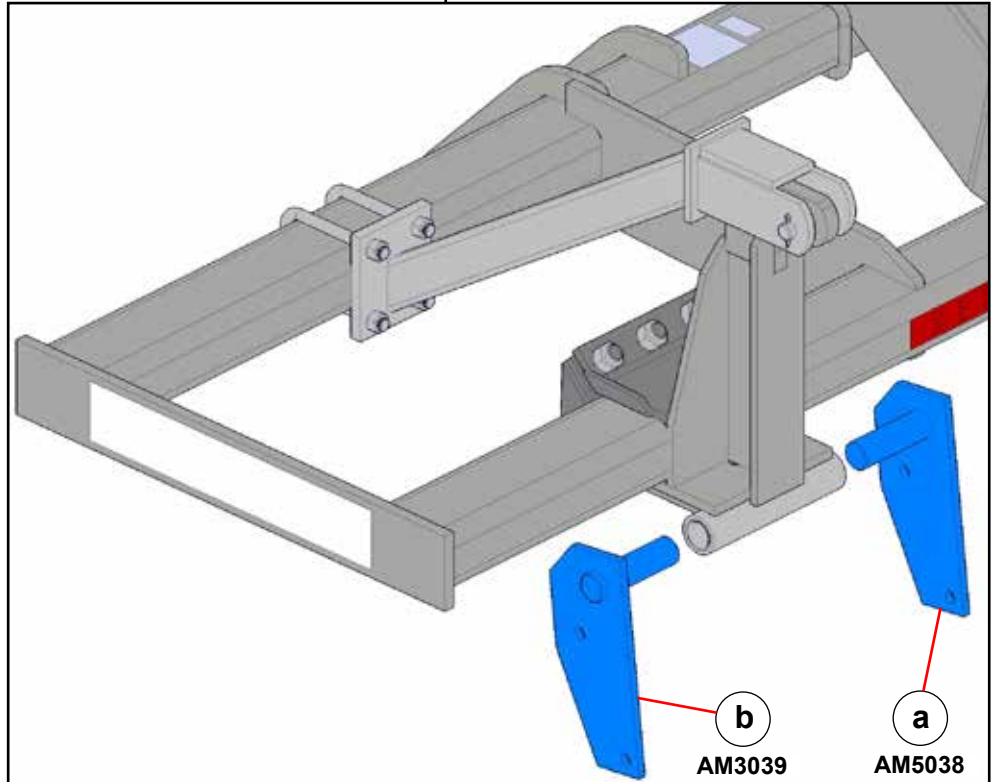
Task

Procedures

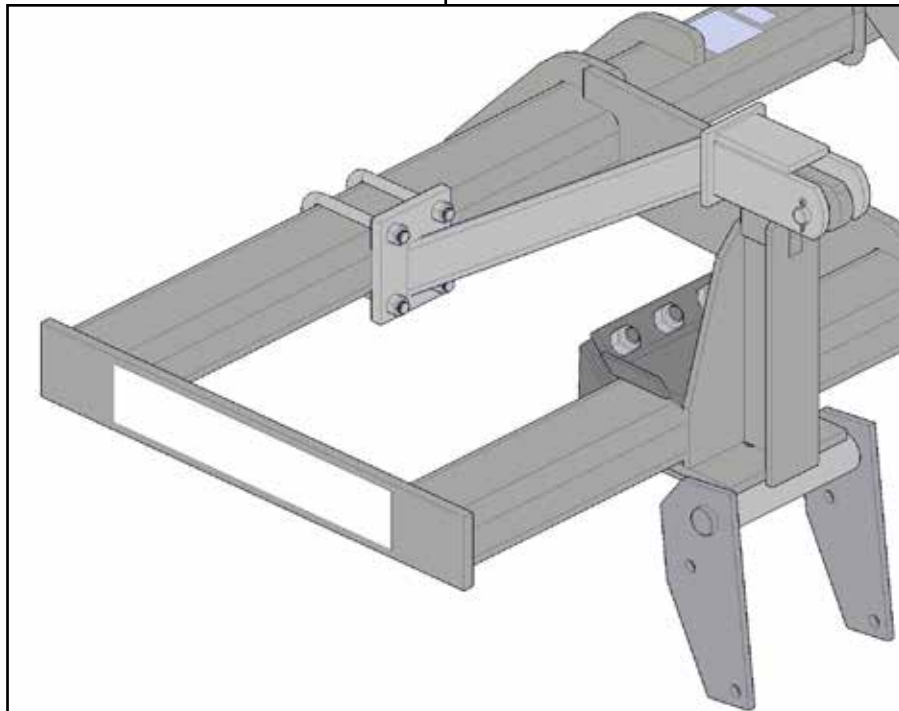
Illustrations

Inserting
pivot
brackets

NOTE:
Left-hand
and
right-hand
as viewed
from the
rear.



1. Insert (a) (AM5038) pivot arm bracket "A" into right-hand side from the rear, of the upright.
2. Insert (b) (AM5039) pivot arm bracket "B" into left-hand side from the rear, of the upright.



Assembly (Hydraulic Gauge Wheels)

SubTiller II

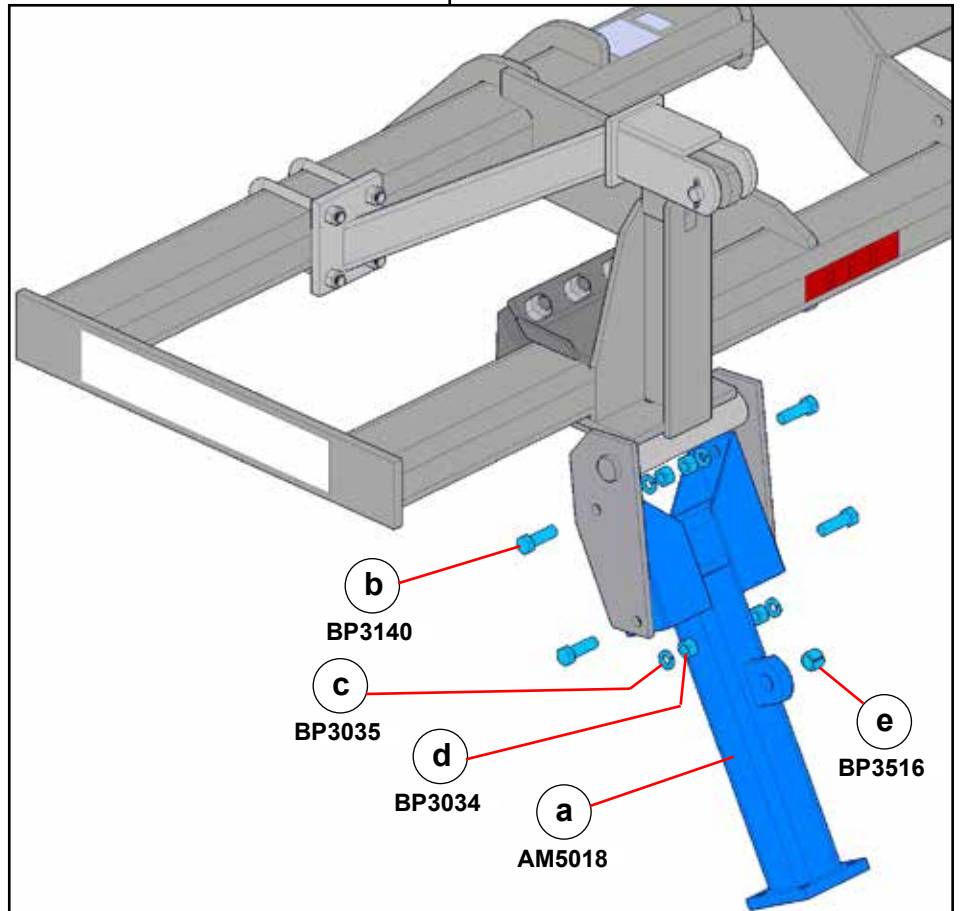
Task

Procedures

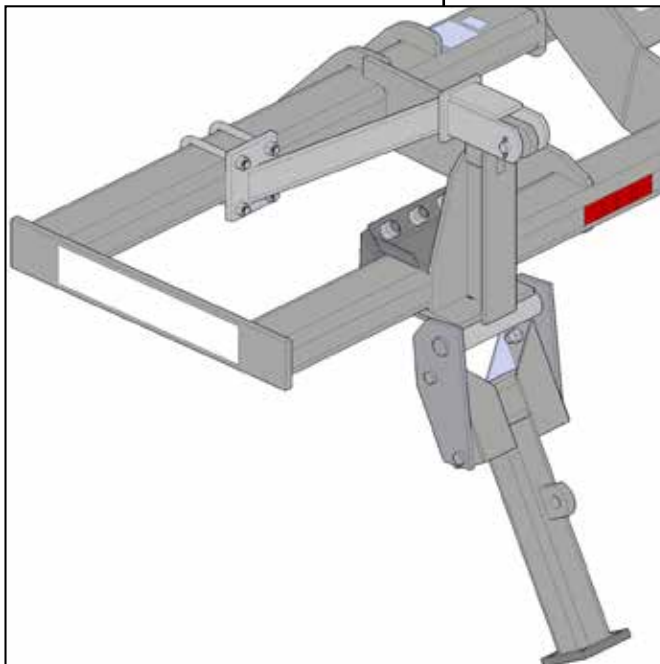
Illustrations



Mounting
wheel leg



1. Position (a) (AM5018) wheel leg bolt-on spindle loop between pivot brackets.
2. Insert (b) (BP3140) 3/4" x 2-1/2" hex cap screws.
3. Secure with (c) (BP3035) 3/4" lock washers and (d) (BP3034) 3/4" hex nuts.
4. Install (e) (BP3516) 1-1/4" x 1" x 1" tension bushing in wheel leg weldment.



Assembly (Hydraulic Single Gauge Wheels)

SubTiller II

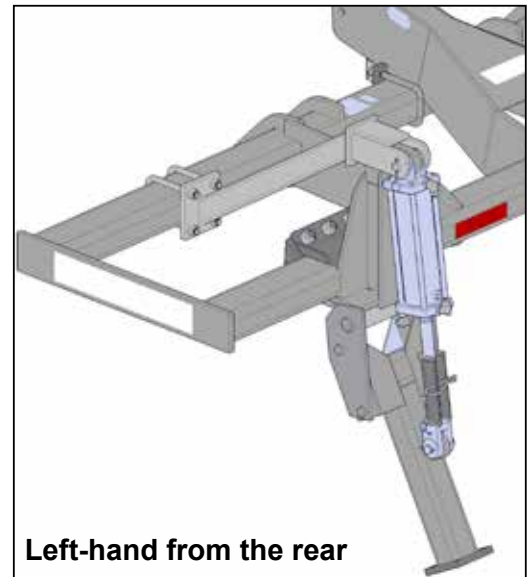
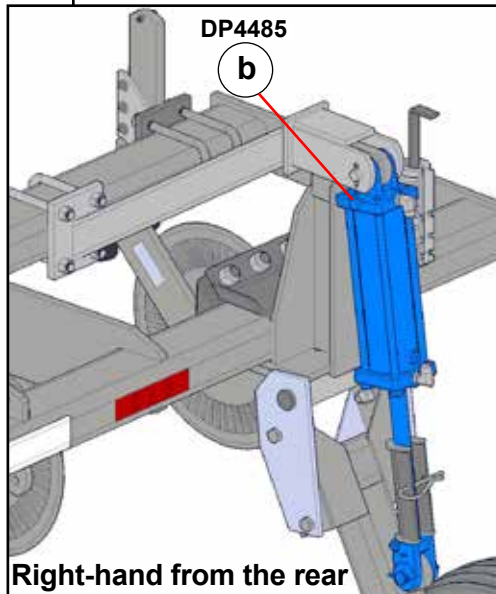
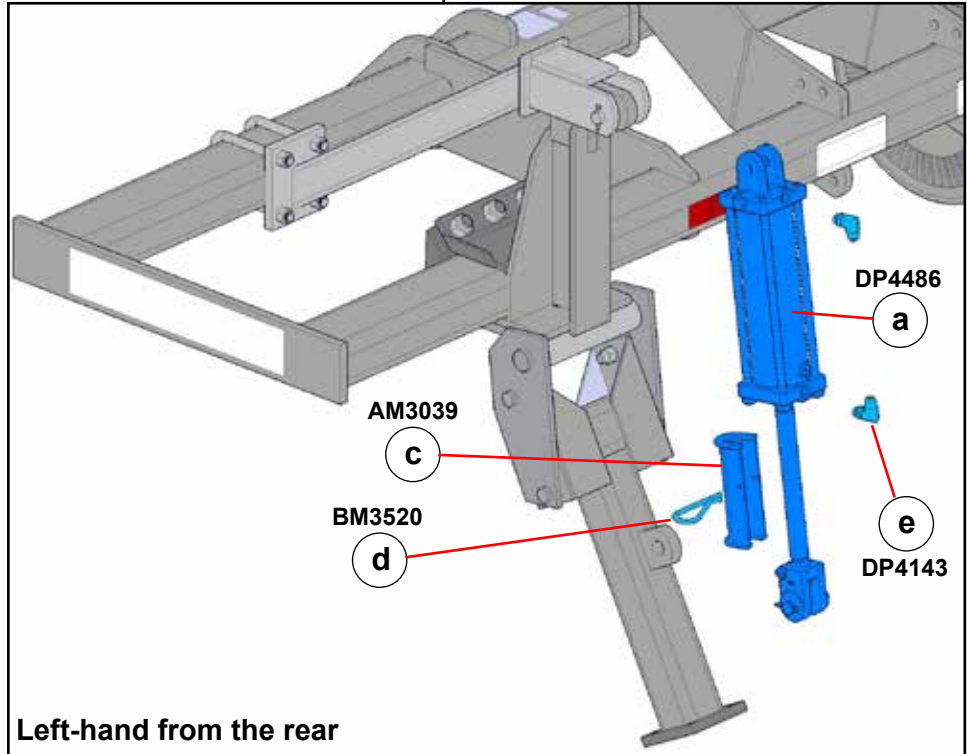
Task

Procedures

Illustrations

Mounting cylinders

NOTE:
Left-hand
and
right-hand
as viewed
from the
rear.



1. Remove upright cylinder pins and install (a) (DP4486) 4 x 12" rephasing cylinder on the left-hand side from the rear.
2. Remove upright cylinder pins and install (b) (DP4485) 3-3/4" x 12" rephasing cylinder on the right-hand side from the rear.

3. Install (c) (AM3039) transport cylinder locks and secure with (d) (BM3520) transport lock clip pins.
4. Install (e) (DP4143) 10MJIC-8MSAE, 90 degree adapters in both cylinders.

Assembly (Hydraulic Single Gauge Wheels)

SubTiller II

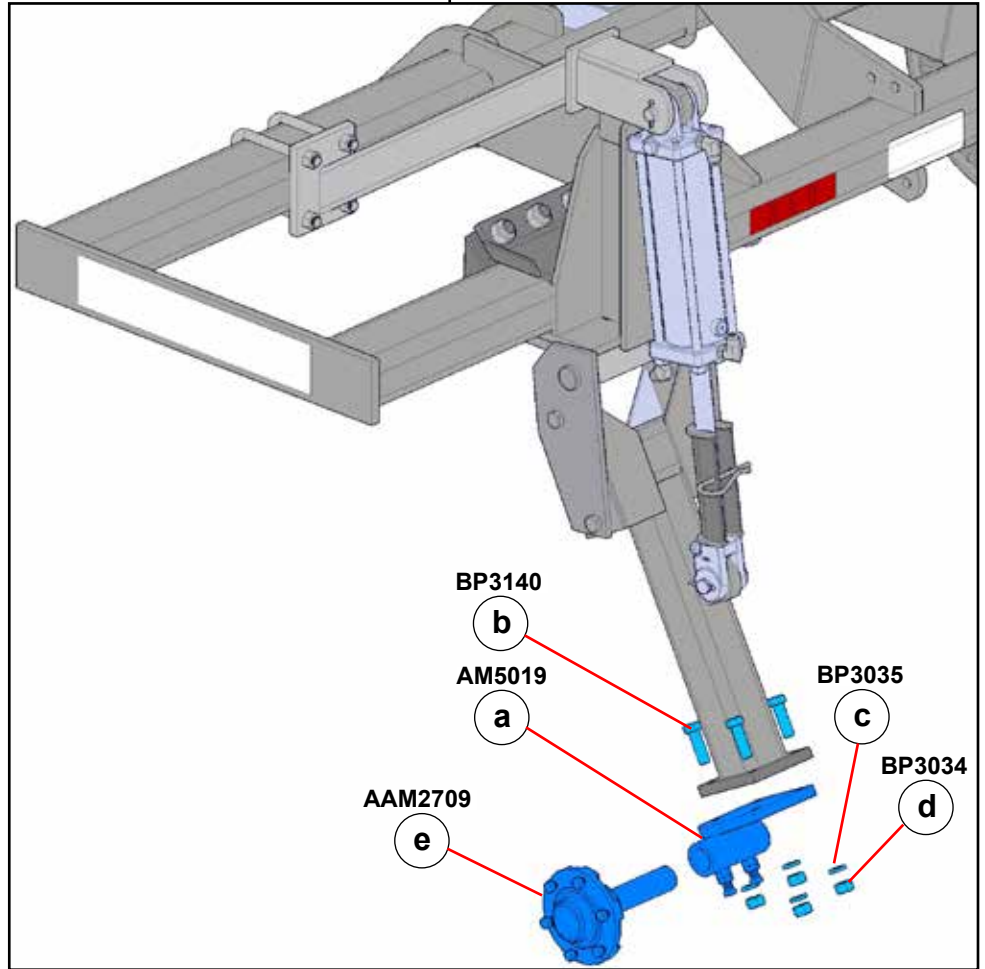
Task

Procedures

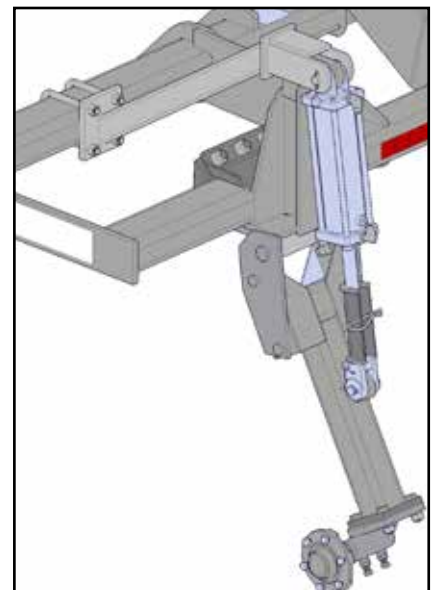
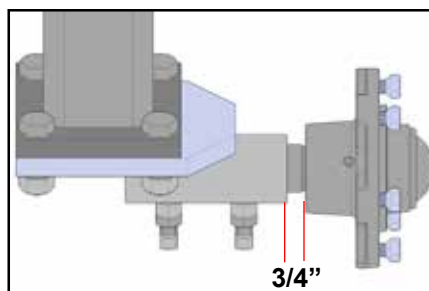
Illustrations



Mounting
single
wheel
bolt-on
adapter and
hub and
spindle



1. Mount (a) (AM5019) single wheel bolt-on adapter to wheel leg with (b) (BP3140) 3/4" x 2-1/2" hex cap screws (c) (BP3035) 3/4" lock washers and (d) (BP3034) 3/4" hex nuts.
2. Turn set screws out and insert (e) (AAM2709) 1-3/4" x 11", 611 hub and spindle.
3. Allow 3/4" inch between the hub and bracket weldment.



Assembly (Hydraulic Single Gauge Wheels)

SubTiller II

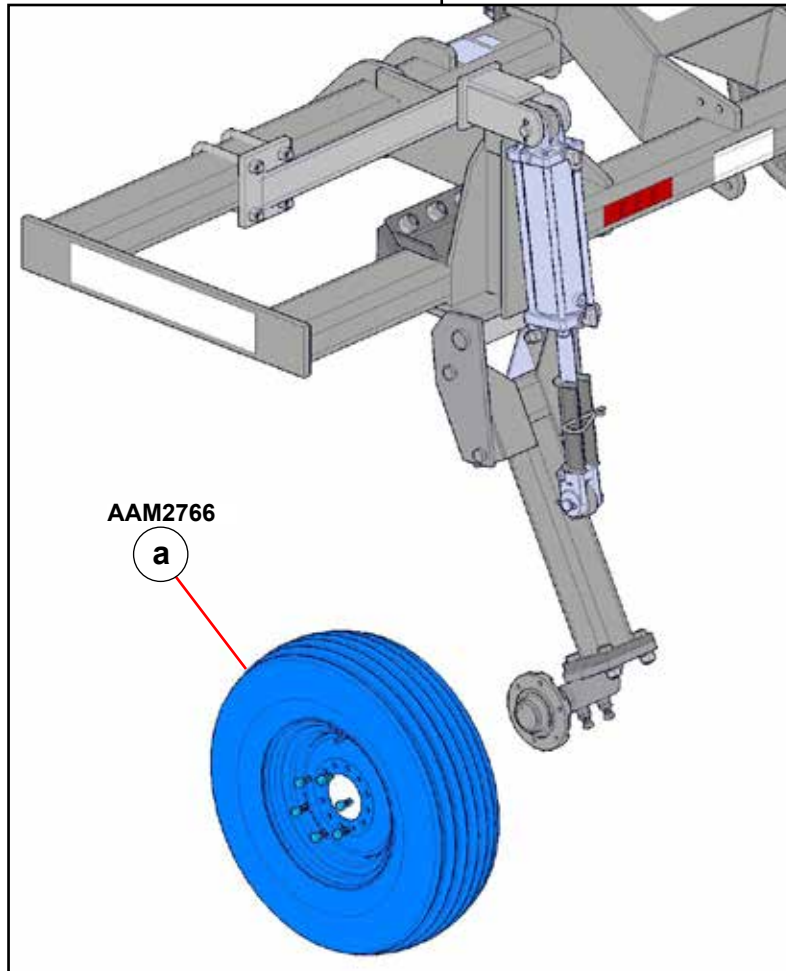
Task

Procedures

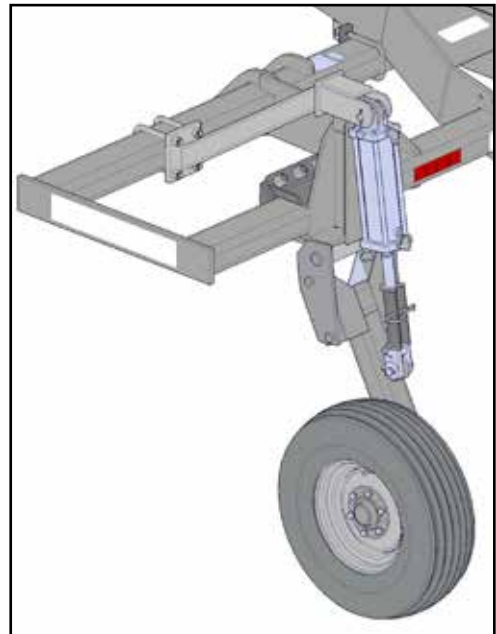
Illustrations



**Mounting
wheels**



1. Remove wheel bolts and mount (a) (AAM2766) 9.5L-16, 6 ply, 15 x 6 x 6, wheel. Valve stem to the outside.



Assembly (Hydraulic Dual Gauge Wheels)

SubTiller II

Task

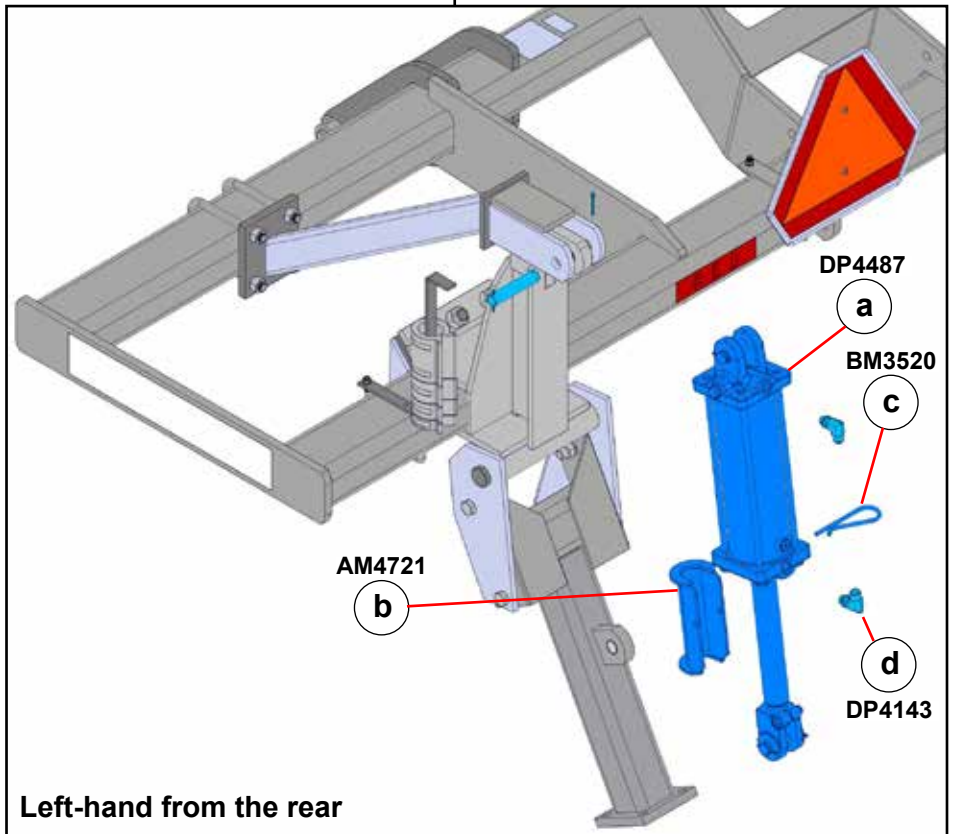
Procedures

Illustrations

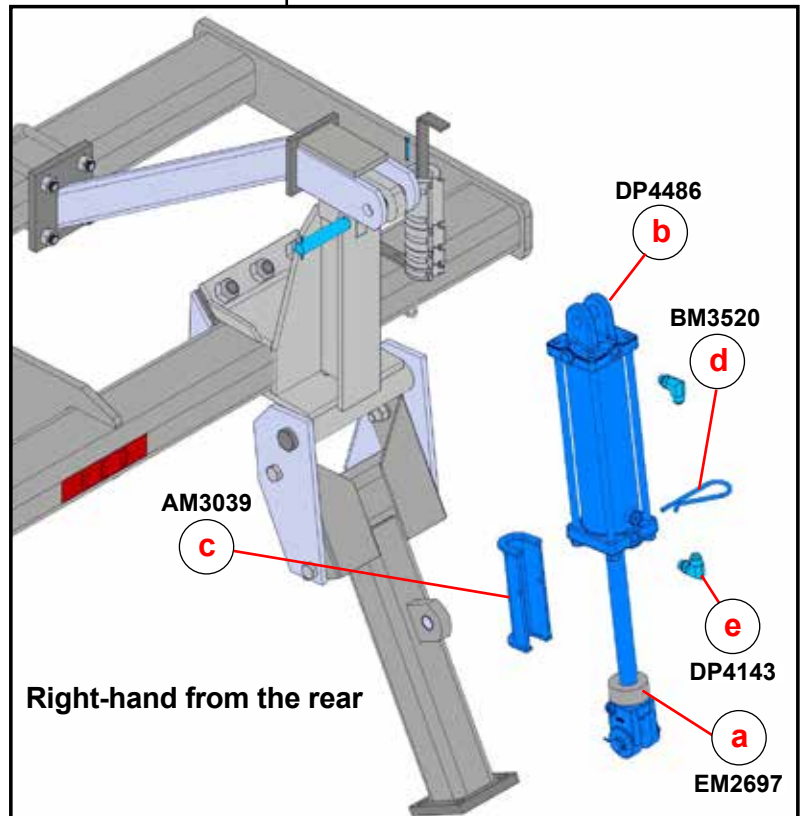
Mounting cylinders

NOTE:
Left-hand
and
right-hand
as viewed
from the
rear.

1. Remove upright cylinder pins and install (a) (DP4487) 4-1/2" x 12" rephasing cylinder on the left-hand side from the rear.
2. Install (b) (AM4721) transport cylinder lock, 1-3/4" x 2" cylinder rod and secure with (c) (BM3520) transport lock clip pins.
3. Install (d) (DP4143) 10MJIC-8MSAE, 90 degree adapters.



4. Remove clevis and install (a) (EM2697) hydraulic spacer.
5. Remove upright cylinder pins and install (b) (DP4486) 4 x 12" rephasing cylinder on the left-hand side from the rear.
6. Install (c) (AM3039) transport cylinder locks and secure with (d) (BM3520) transport lock clip pins.
7. Install (e) (DP4143) 10MJIC-8MSAE, 90 degree adapters.



Assembly (Hydraulic Dual Gauge Wheels)

SubTiller II

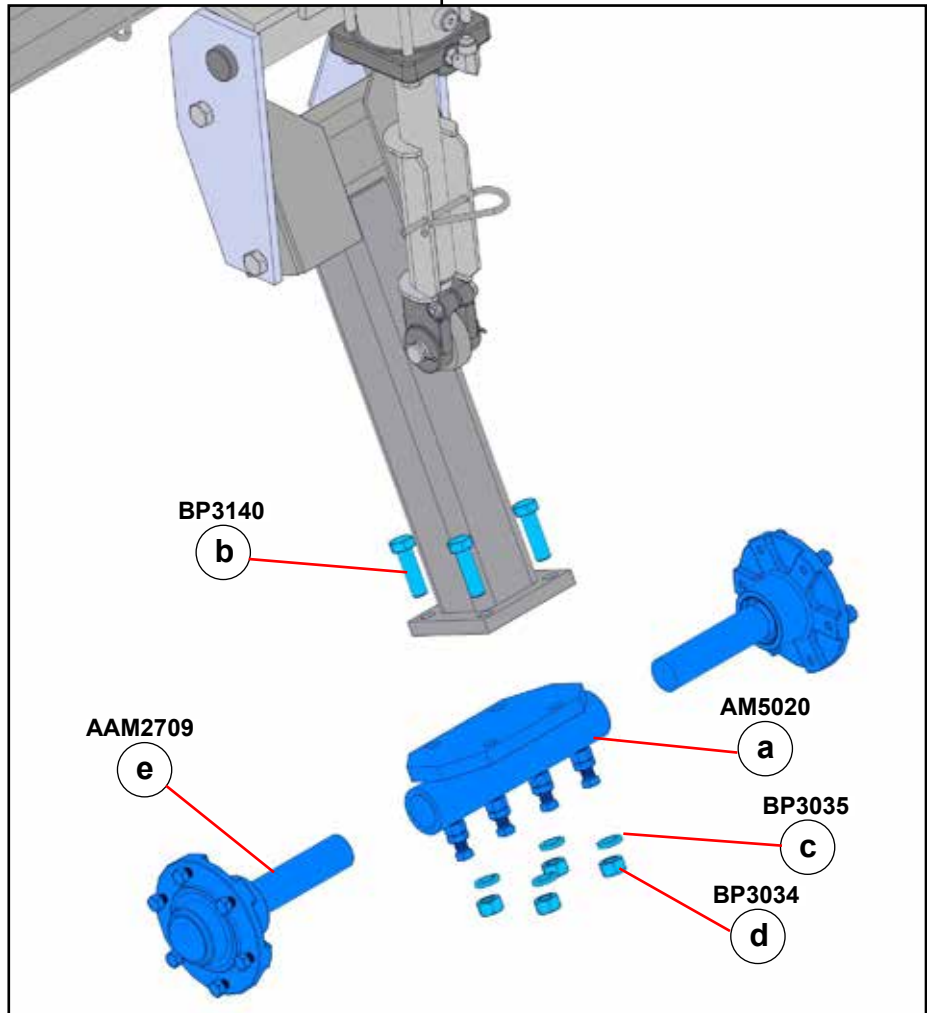
Task

Procedures

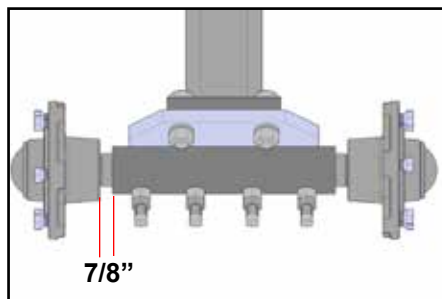
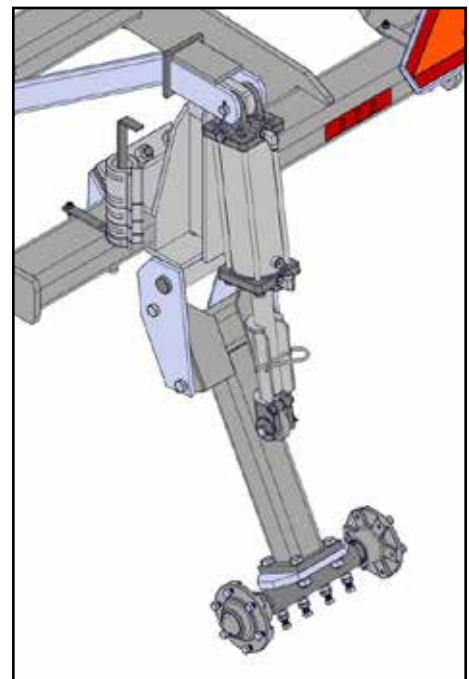
Illustrations



Mounting dual wheel bolt-on adapter and hub and spindle



1. Mount (a) (AM5020) dual wheel bolt-on adapter 1-3/4" loop to wheel leg with (b) (BP3140) 3/4" x 2-1/2" hex cap screws (c) (BP3035) 3/4" lock washers and (d) (BP3034) 3/4" hex nuts.
2. Turn set screws out and insert (e) (AAM2709) 1-3/4" x 11", 611 hub and spindle.
3. Allow 7/8" inch between the hub and bracket weldment.



Assembly (Hydraulic Dual Gauge Wheels)

SubTiller II

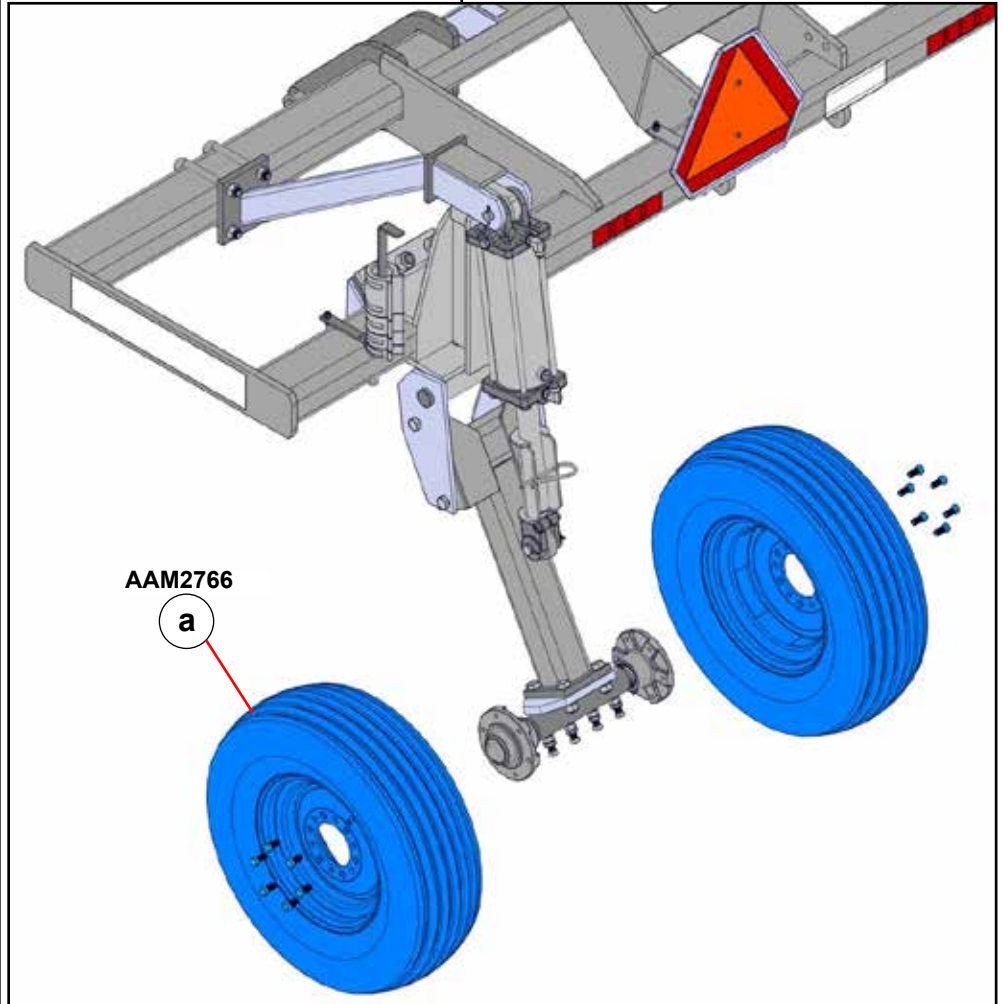


Task

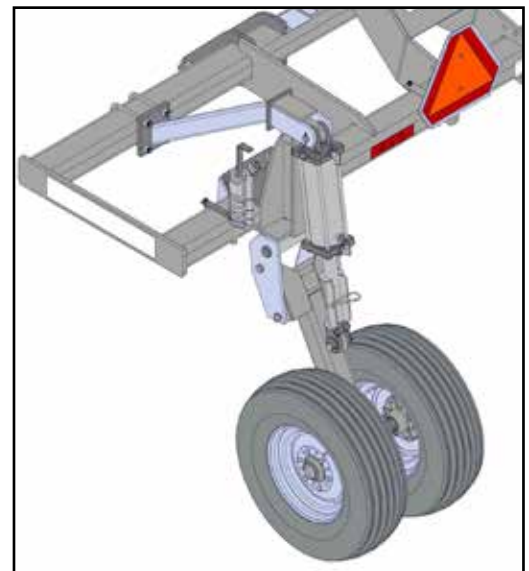
Mounting wheels

Procedures

Illustrations



1. Remove wheel bolts and mount (a) (AAM2766) 9.5L-16, 6 ply, 15 x 6 x 6, wheels. Valve stem to the outside.



Assembly (Hydraulic Gauge Wheels)

SubTiller II

| Task | Procedures | Illustrations |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>► Mounting depth collar brackets and SMV</p> | <ol style="list-style-type: none"> Position (a) (AM2090) depth collar brackets near uprights. Secure with (b) (BP3045) 3/8" x 6"W x 5"L u-bolt, (c) (BP3002) 3/8" lock washers, and (d) (BP3001) 3/8" hex nuts. Place (e) (BP3076) 1-1/4" to 1-1/2" winged depth collar sets on each bracket. Place (f) (AAM2098) 4 x 6 SMV kit near center of tool bar. Mount (g) (AM4077) SMV bracket with (b) (BP3045) 3/8" x 6"W x 5"L u-bolt, (c) (BP3002) 3/8" lock washers, and (d) (BP3001) 3/8" hex nuts. Attach (h) (AP2543) SMV mounting socket to bracket with hardware provided. Install (i) (AP2542) SMV sign to (j) (AP2544) SMV mounting spade and insert into mounting socket. | <p>The diagram is an exploded view of the hydraulic gauge wheel assembly. It shows the following components and their labels:</p> <ul style="list-style-type: none"> BP3076 (e): Winged depth collar set. BP3002 (c): 3/8" lock washers. BP3001 (d): 3/8" hex nuts. AM4077 (g): SMV bracket. BP3045 (b): 3/8" x 6"W x 5"L u-bolt. AM2090 (a): Depth collar bracket. AP2543 (h): SMV mounting socket. AP2542 (i): SMV sign. AP2544 (j): SMV mounting spade. AAM2098 SMV Kit (f): 4 x 6 SMV kit. |

Assembly (Hydraulic Gauge Wheels)

SubTiller II

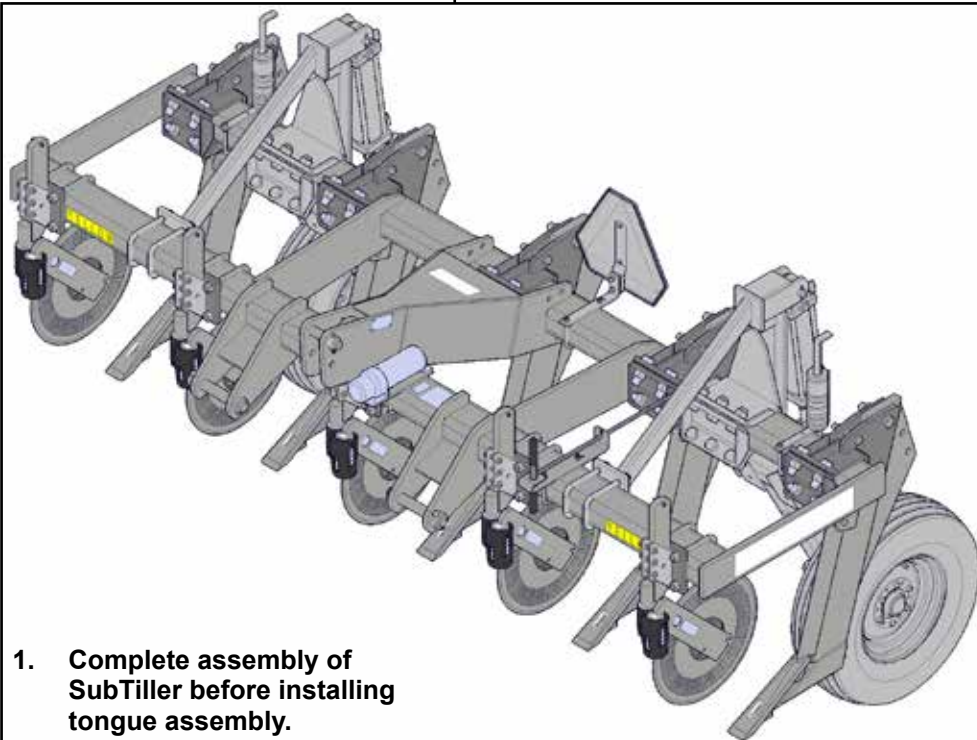
Task

Procedures

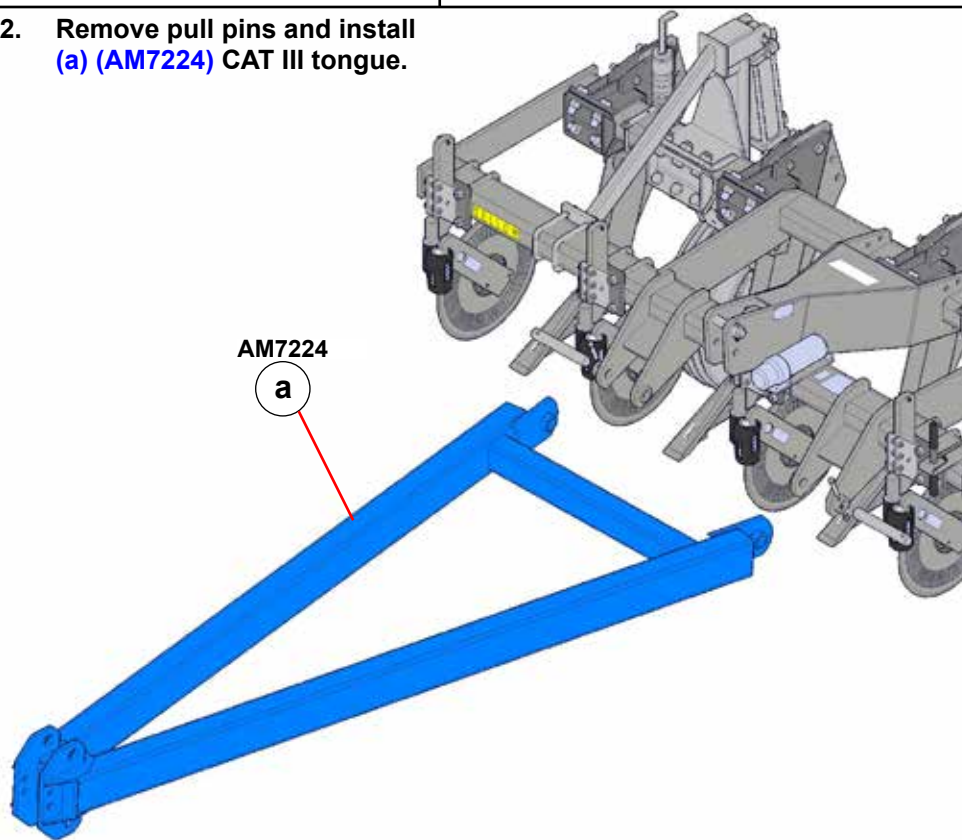
Illustrations



**Mounting
tongue
assembly**



2. Remove pull pins and install (a) (AM7224) CAT III tongue.



Assembly (Hydraulic Gauge Wheels)

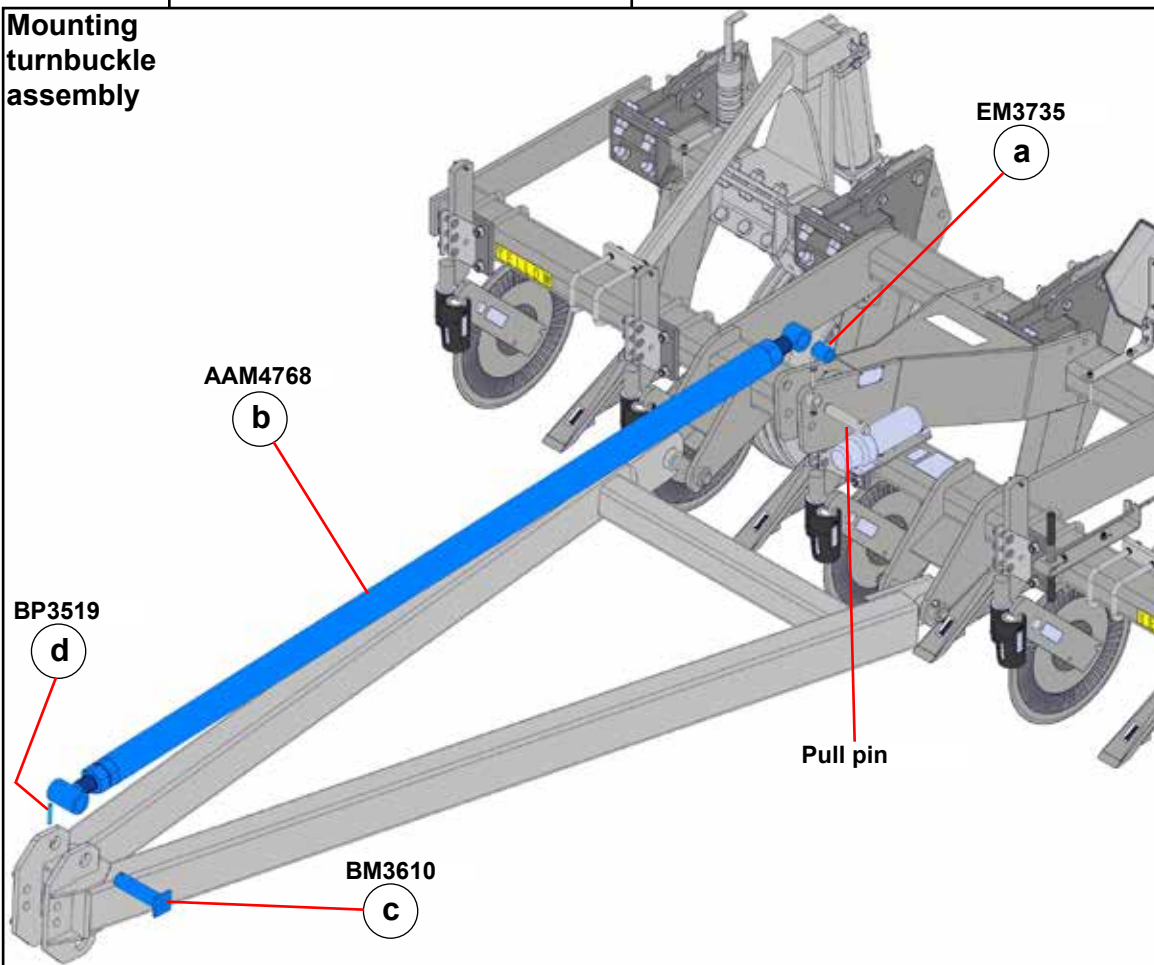
SubTiller II

Task

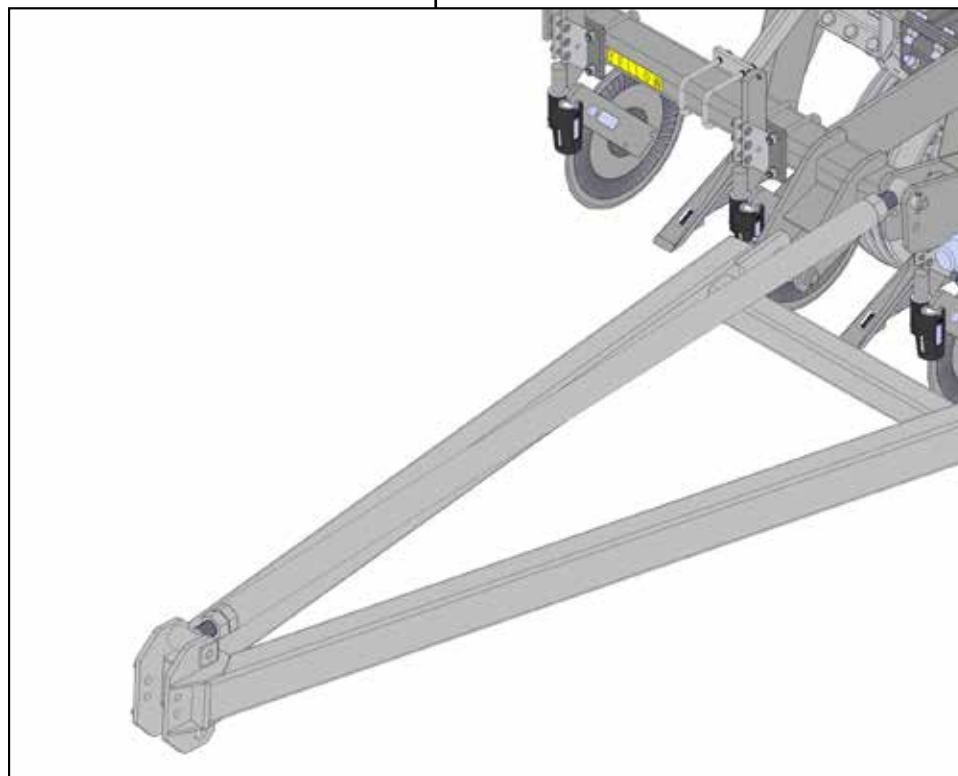
Procedures

Illustrations

Mounting turnbuckle assembly



1. Insert (a) (EM3735) bushing before attaching (b) (AAM4768) turnbuckle assembly to 3rd link. Secure with pull pin.
2. Raise tongue and attach turnbuckle to hitch end with (c) (BM3610) 1-3/4\" x 6-1/8\" pin. Secure with (d) (BP3519) 3/8\" x 2-1/2\" roll pin.
3. Place tongue on support until jack is installed.



Assembly (Hydraulic Gauge Wheels)

SubTiller II

Task

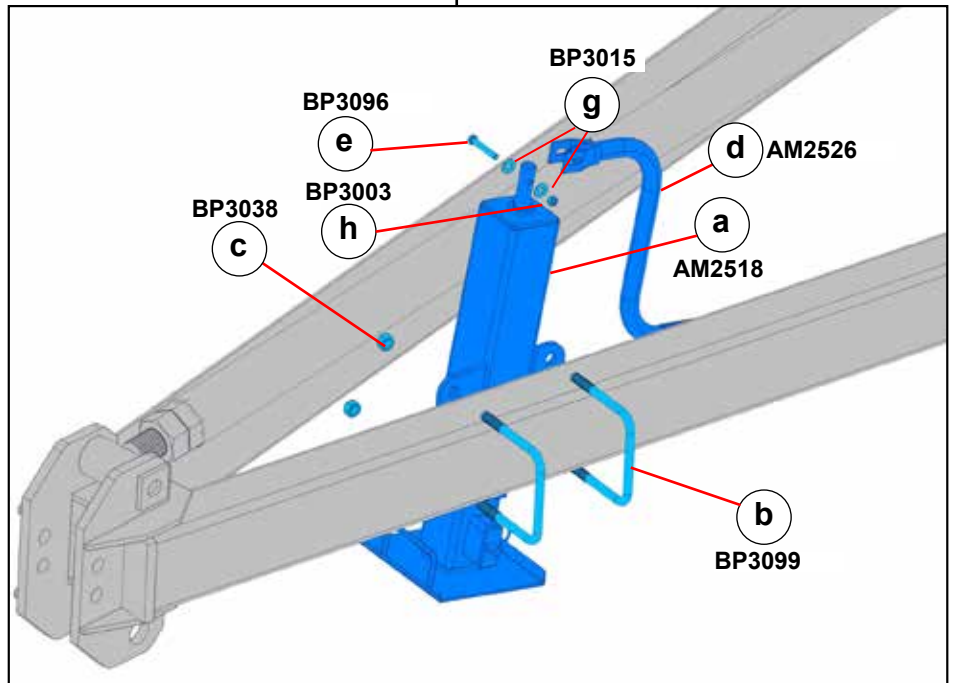
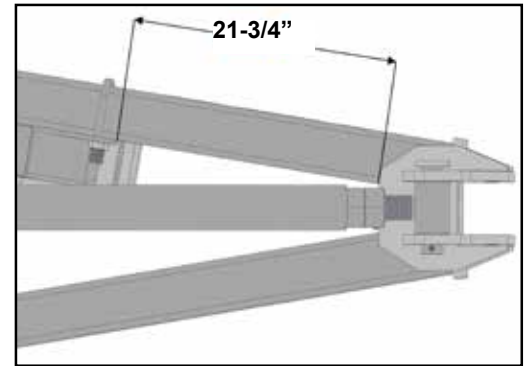
Procedures

Illustrations



Mounting
jack

1. Position (a) (AM2518) 9TW-25DL top wing DL jack on tongue, 21-3/4" from hitch plate on tongue weldment. Insert (b) (BP3099) 5/8" x 6"W x 6"L u-bolts. Secure with (c) (BP3038) 5/8" hex nuts.



2. Attach (d) (AM2526) jack handle with (e) (BP3096) 3/8" x 2-1/2" hex cap screw, two (g) (BP3015) 3/8" flat washers and (h) (BP3003) 3/8" hex lock nut.

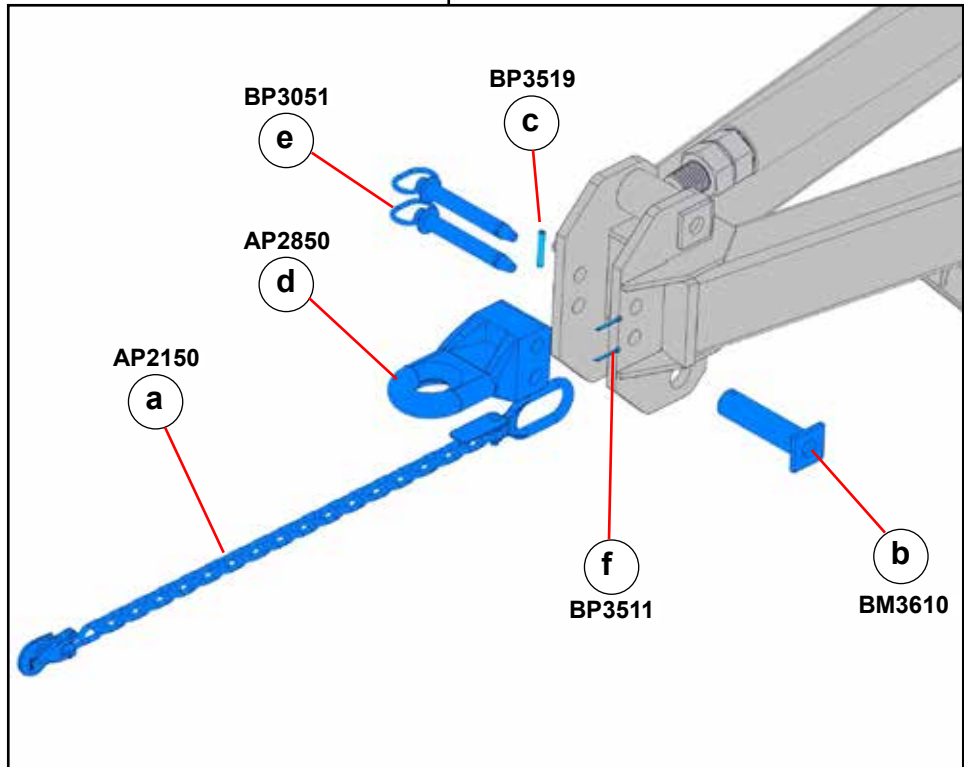
Assembly (Hydraulic Gauge Wheels)

SubTiller II

Task Mounting hitch and transport chain

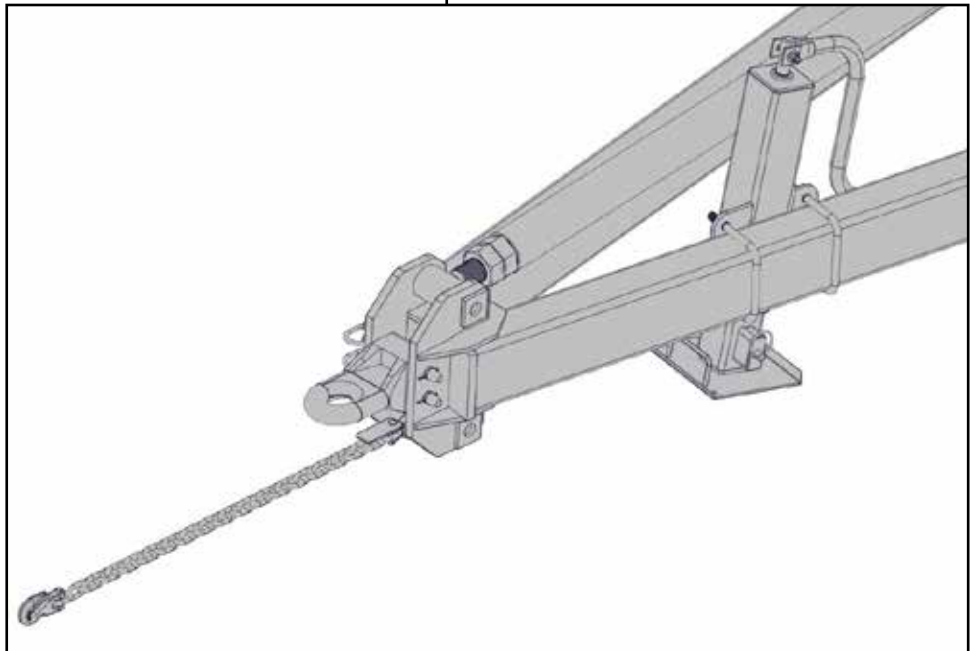
Procedures

Illustrations



1. Install (a) (AP2150) 20,000# transport chain in bottom hitch hole with (b) (BM3610) 1-3/4" x 6-1/8" pin. Secure pin with (c) (BP3519) 3/8" x 2-1/2" roll pin.

2. Attach (d) (AP2850) CAT III perfect hitch with (e) (BP3051) 1" x 6" hitch pins. Secure with (f) (BP3511) 3/16" x 1-3/4" cotter pins.



Assembly (Hydraulic Gauge Wheels)

SubTiller II

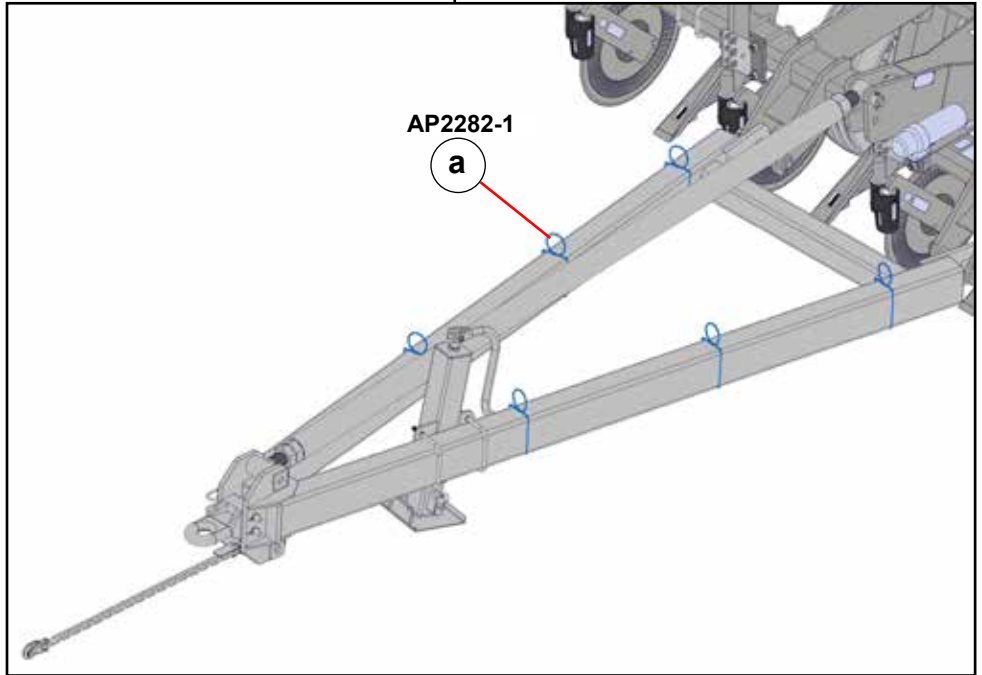
Task

Procedures

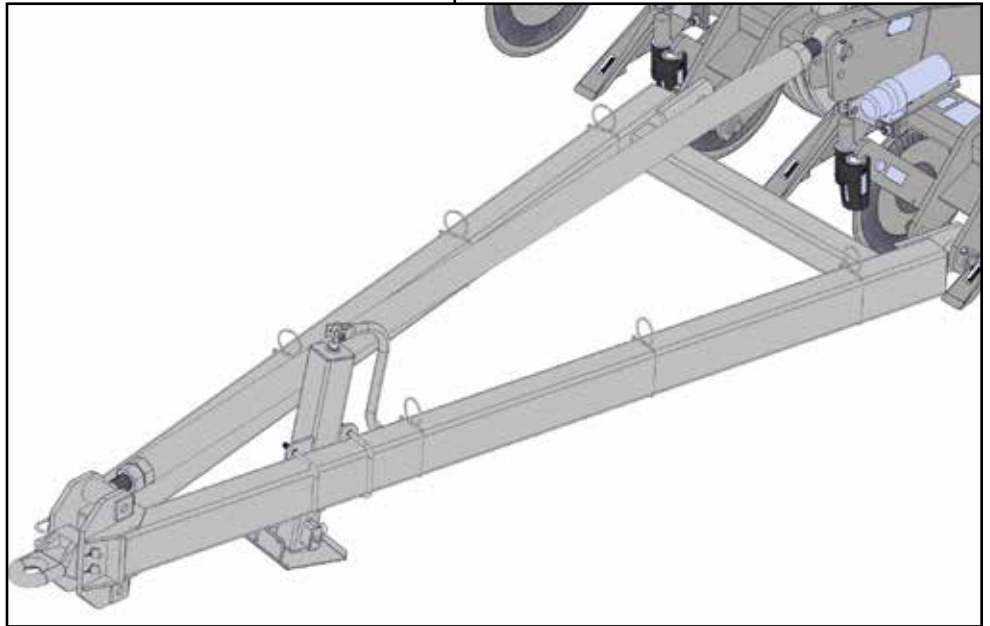
Illustrations



**Installing
hose
retainers**



1. Mount (a) (AP2282-1) 4 x 6 hose retainers on both sides of the tongue.



Assembly (Hydraulic Gauge Wheels)

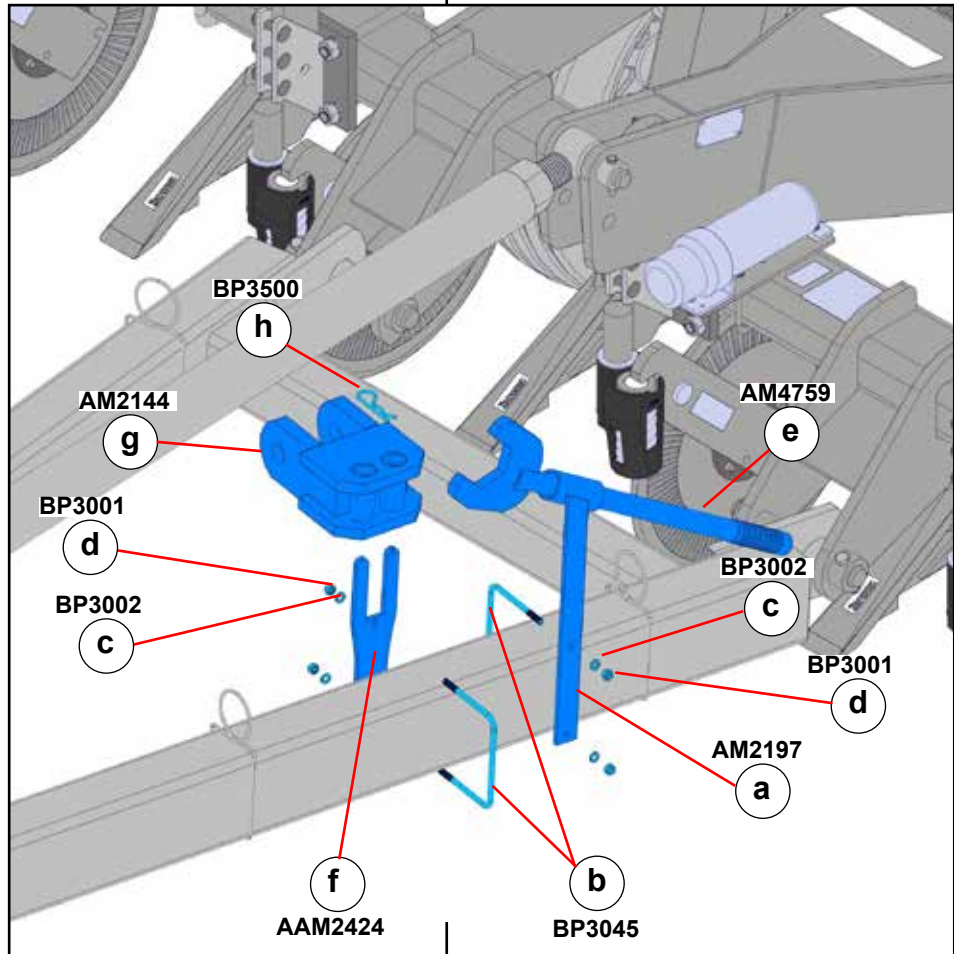
SubTiller II

Task

Procedures

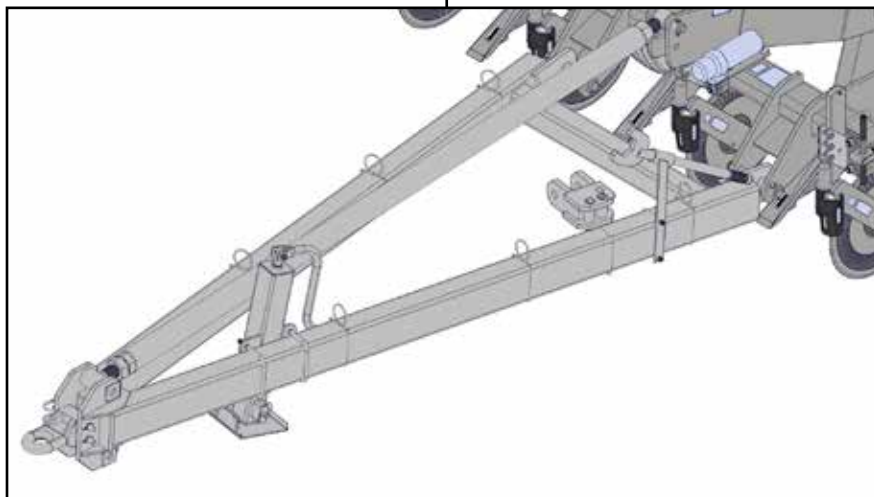
Illustrations

**Mounting
wrench
and hitch
storage
brackets**



1. Mount **(a) (AM2197)** wrench storage bracket with **(b) (BP3045)** 3/8" x 6"w x 5"L u-bolt, **(c) (BP3002)** 3/8" lock washers and **(d) (BP3001)** 3/8" hex nuts. Insert **(e) (AM4759)** turnbuckle wrench into holder.

2. Attach **(f) (AAM2424)** hitch storage bracket with **(b) (BP3045)** 3/8" x 6"w x 5"L u-bolt, **(c) (BP3002)** 3/8" lock washers and **(d) (BP3001)** 3/8" hex nuts. Secure **(g) (AM2144)** clevis hitch to bracket with **(h) (BP3500)** 3/16" hair pin clip.



SubTiller II

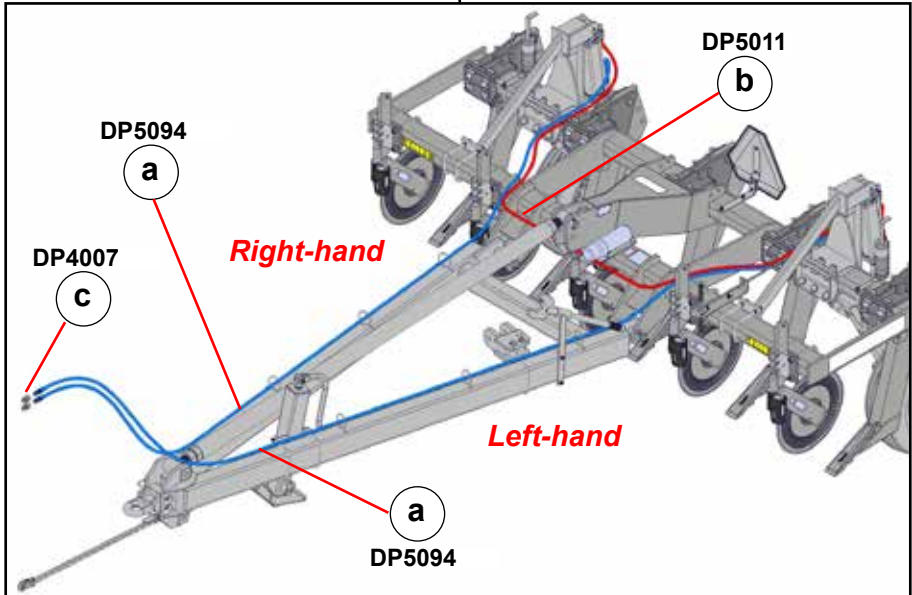
Task

Procedures

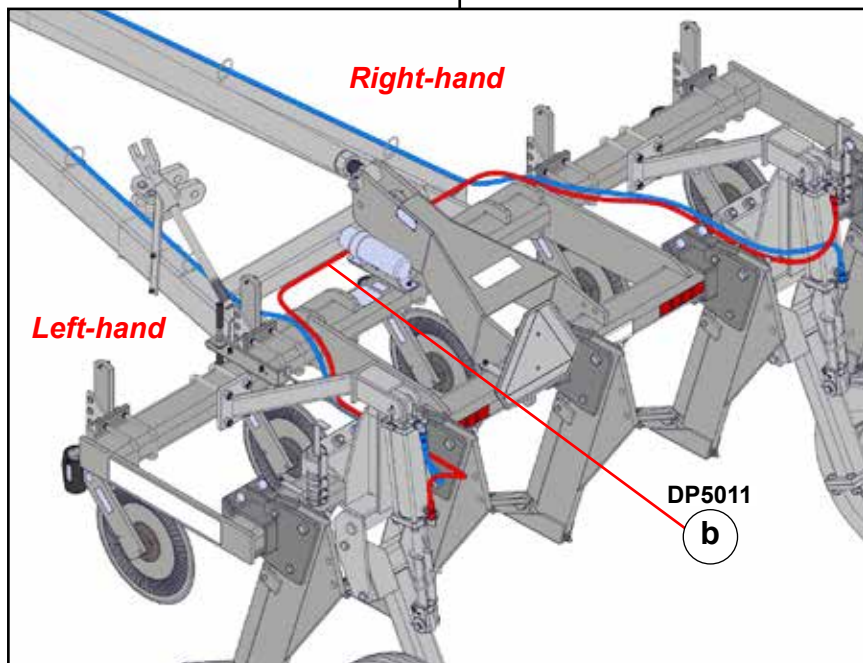
Illustrations

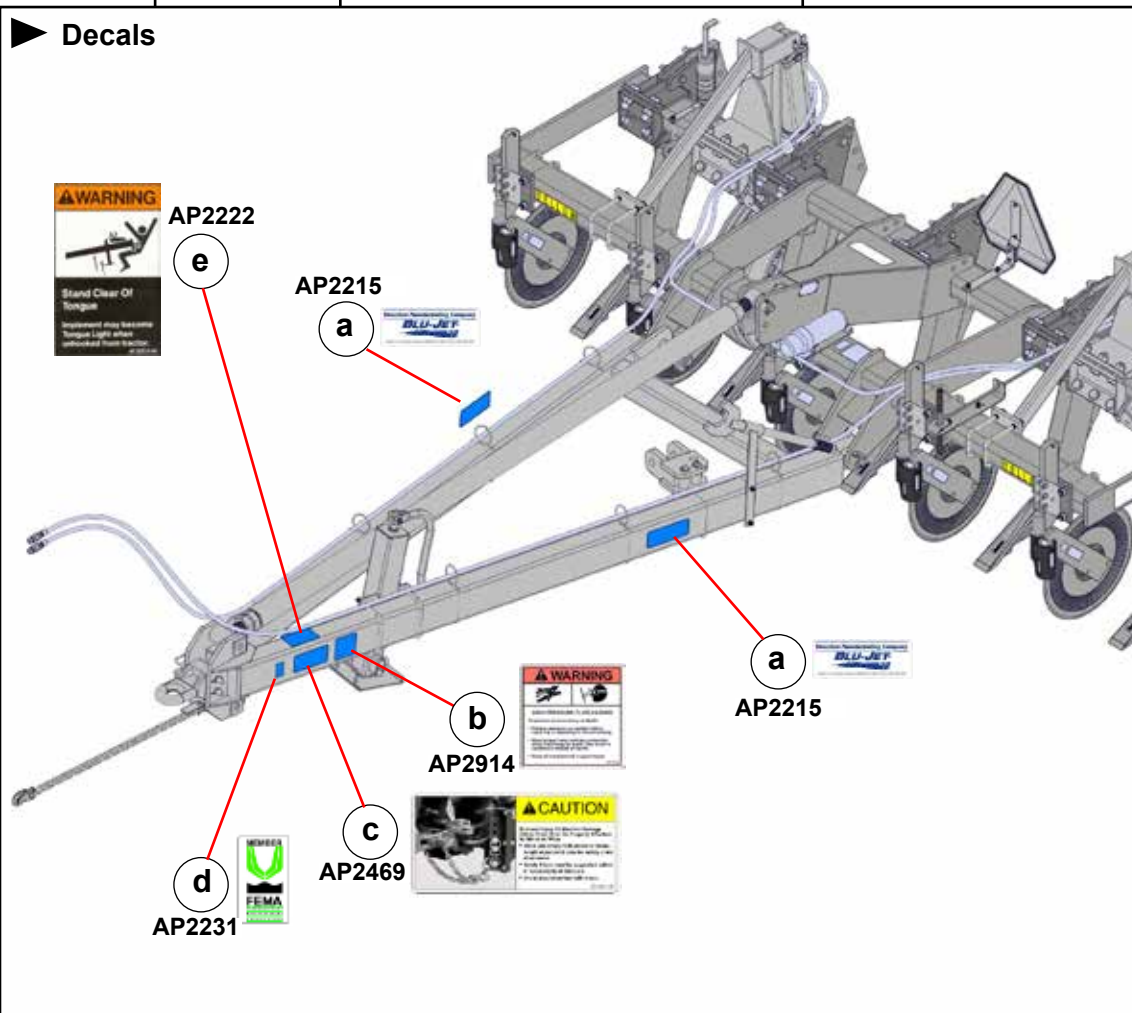
Attaching hydraulic hoses for singles and duals

NOTE:
Left-hand and right-hand as viewed from the rear.



1. Attach (a) (DP5094) 3/8" x 276" (23' 0"), hose to **rod** end of right-hand cylinder. Extend hose down right-hand side of tongue to hitch.
2. Install (c) (DP4007) 1/2" male tip quick coupler 8FP on hose.
3. Attach (a) (DP5094) 3/8" x 276" (23' 0") hose to **butt** end of left-hand cylinder. Extend hose down left-hand side of tongue to hitch.
4. Install (c) (DP4007) 1/2" male tip quick coupler 8FP on hose.
5. Attach (b) (DP5011) 3/8" x 180" (15' 0"), hose to **butt** end of right-hand cylinder. Extend to left-hand cylinder and attach to **rod** end.



► Decals


- a. AP2215 2 Decal, BLU-JET, 3" x 8"
- b. AP2914 1 Decal, Warning, High Pressure Fluid
- c. AP2469 1 Decal, Safety Chain
- d. AP2231 1 Decal, FEMA, 2-1/2" x 1-1/2"
- e. AP2222 1 Decal, Stand Clear Of Tongue, Tongue Light



Hydraulic Repair Kits

SubTiller II

| Task | Procedures | | | Illustrations | | | |
|------------------------|---------------|--------------------------|----------------------|----------------------|----------------------|-------------------------|-------------------------|
| MFG # | Bore/ | | | | | | |
| TMC # | Stroke | Repair Kit | Clevis | Butt | Gland | | |
| PMS-AM-2558 DP 4485 | 3-3/4" X 12" | PMCK-AM-2558A DP 4467 | 100000577 DP 3996 | 141800009 DP 4297 | 081800022 DP 4280 | | |
| PMS-AM-2552 DP 4486 | 4" X 12" | PMCK-AM-2552A DP 4468 | 100000577 DP 3996 | 141900037 DP 4270 | 081900374 DP 4279 | | |
| PMS-AM-2546 DP 4487 | 4-1/2" X 12" | PMCK-AM-2546 DP 4469 | 100000326 DP 4115 | 142000004 DP 4219 | 082000092 DP 4278 | | |
| MFG # | Bore/ | | | | | | |
| TMC # | Stroke | Piston | Piston Rod | Barrel | 4 Req Tie Rod | 2 Req Clevis Pin | 4 Req Cotter Pin |
| PMS-AM-2558 DP 4485 | 3-3/4" X 12" | 071800021 DP 4234 | 010700698 DP 3998 | 061800022 DP 4339 | 170301172 DP 4349 | 190400004 BP 3514 | 220001504 BP 3511 |
| PMS-AM-2552 DP 4486 | 4" X 12" | 071900273 DP 4232 | 010700698 DP 3998 | 061900598 DP 4340 | 170301172 DP 4349 | 190400004 BP 3514 | 220001504 BP 3511 |
| PMS-AM-2546 DP 4487 | 4-1/2" X 12" | 072000097 DP 4233 | 011100737 DP 4218 | 062000080 DP 4341 | 170301175 DP 4350 | 190400004 BP 3514 | 220001504 BP 3511 |

SubTiller II

With cylinder removed from machine, clean, drained of oil and fully retracted, proceed as follows:

Disassembly:

1. Secure cylinder in vice or other method to prevent rotation. With the immediate area clean of dirt so parts can be laid out.
2. Remove tie-rod nuts, item (1).
3. Pull rod assembly from cylinder. Remove tube item (3).
4. Loosen nut, item (4), and remove clevis, item (5), from rod assembly.
5. Place rod assembly in vice with copper or brass jaws so as not to damage.
6. Remove all seals from items (6), (8), and (9) for replacement. Clean and inspect all parts, for damage (nicks, scratches, cracks and etc.) replace as necessary. If you have any question please contact Prince Hydraulics (712) 235-1220.

Reassembly:

1. Replace all seals in items (6), (8), and (9). Do not replace small O-ring on ID of piston item, (8) until ready to attach rod, item (2).
2. Place small ID O-ring seal for piston over rod turndown and apply light coat of grease to seal. Slip piston, item (8) onto turndown with ID counter bore towards rod shoulder. Take care not to pinch O-ring between piston and rod shoulder. Replace nut, item (7), and secure.
3. Apply light coat of grease to seals in gland, item (6), and slip gland over rod end, carefully so as not to damage seals. Slip entire assembly into lightly oiled tube, item (3), piston first. Insure tube slips up over OD seals of gland.
4. Take total assembly in step 3 and slip tube over OD seal on butt, item (9). Align ports in butt and gland and apply nuts, item (1), to tie-rods and torque uniformly.

Tierod

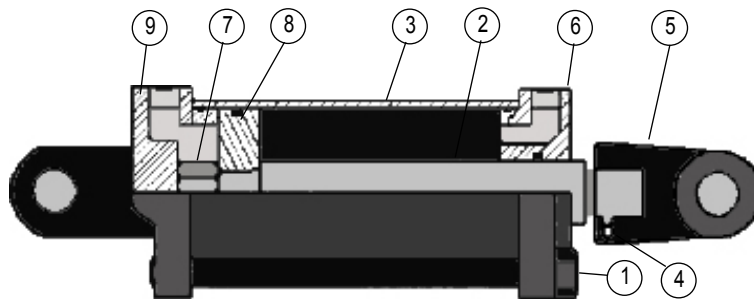
3/8" tierods 20-23 ft./lbs. (27-31 Nm)

1/2" tierods 45-52 ft./lbs. (61-70 Nm)

5/8" tierods 95-105 ft./lbs. (129-142 Nm)

3/4" tierods 150-165 ft./lbs (203-224 Nm)

5. Test for leaks and reinstall in machine. If you have any problems contact Prince Hydraulics (712) 235-1220.



WARNING Make sure you perform the required service and adjustments correctly. Failure will damage machine or injure operator.

6. The hydraulic system **MUST** have the air removed from the system after initial machine set-up or following the repair or replacement of any part of the system.
7. Connect implement to the tractor drawbar correctly before operating or making any adjustments.



Torque Specifications








SubTiller II

Task

Procedures

Illustrations

NOTE: Use these torque's unless special torque's are specified. Values are for UNC and UNF thread fasteners, plated or un-plated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, moly-disulphide or other extreme pressure lubricant is used.

| SAE Grade No. | 2 | | | | 5 | | | | *8 | | | |
|---------------------------------------|-----------------------------------------------------------------------------------|------|---------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|
| Bolt head identification (see Note 1) |  | | | |    | | | |    | | | |
| Bolt Size | LB FT | | Nm | | LB FT | | Nm | | LB FT | | Nm | |
| | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| 1/4 | 5 | 6 | 7 | 8 | 9 | 11 | 12 | 15 | 12 | 15 | 16 | 20 |
| 5/16 | 10 | 12 | 14 | 16 | 17 | 20.5 | 23 | 28 | 24 | 29 | 33 | 39 |
| 3/8 | 20 | 23 | 27 | 31 | 35 | 42 | 48 | 57 | 45 | 54 | 61 | 73 |
| 7/16 | 30 | 35 | 41 | 47 | 54 | 64 | 73 | 87 | 70 | 84 | 95 | 114 |
| 1/2 | 45 | 52 | 61 | 70 | 80 | 96 | 109 | 130 | 110 | 132 | 149 | 179 |
| 9/16 | 65 | 75 | 88 | 102 | 110 | 132 | 149 | 179 | 160 | 192 | 217 | 260 |
| 5/8 | 95 | 105 | 129 | 142 | 150 | 180 | 203 | 244 | 220 | 264 | 298 | 358 |
| 3/4 | 150 | 185 | 203 | 251 | 270 | 324 | 366 | 439 | 380 | 456 | 515 | 618 |
| 7/8 | 160 | 200 | 217 | 271 | 400 | 480 | 542 | 651 | 600 | 720 | 814 | 976 |
| 1 | 250 | 300 | 339 | 406 | 580 | 696 | 787 | 944 | 900 | 1080 | 1220 | 1464 |
| 1 1/8 | | | | | 800 | 880 | 1085 | 1193 | 1280 | 1440 | 1736 | 1953 |
| 1 1/4 | | | | | 1120 | 1240 | 1519 | 1681 | 1820 | 2000 | 2468 | 2712 |
| 1 3/8 | | | *Thick nuts must be used with Grade 8 bolts | | 1460 | 1680 | 1980 | 2278 | 2380 | 2720 | 3227 | 3688 |
| 1 1/2 | | | | | 1940 | 2200 | 2631 | 2983 | 3160 | 3560 | 4285 | 4827 |

NOTE 1: Bolt head identification mark as per grade. Manufacturing marks will vary.

STANDARD TORQUE DATA HYDRAULIC TUBES AND FITTINGS

O-ring boss Plugs, Adjustable Fitting
Lock nuts, Swivel JIC-37 degree Seats

| SIZE | LB FT | | Nm | |
|------|-------|------|------|------|
| | Min. | Max. | Min. | Max. |
| 4 | 6 | 10 | 8 | 14 |
| 5 | 10 | 15 | 14 | 20 |
| 6 | 15 | 20 | 20 | 27 |
| 8 | 25 | 30 | 34 | 41 |
| 10 | 35 | 40 | 47 | 54 |
| 12 | 60 | 70 | 81 | 95 |
| 14 | 70 | 80 | 95 | 109 |
| 16 | 80 | 90 | 108 | 122 |
| 20 | 95 | 115 | 129 | 156 |
| 24 | 120 | 140 | 163 | 190 |
| 32 | 250 | 300 | 339 | 407 |

Above torque figures are recommended for plain, cadmium or zinc plated fittings, dry or wet installation and swivel nuts either swaged or brazed.

Shank Wear Plate Kit

SubTiller II

Task

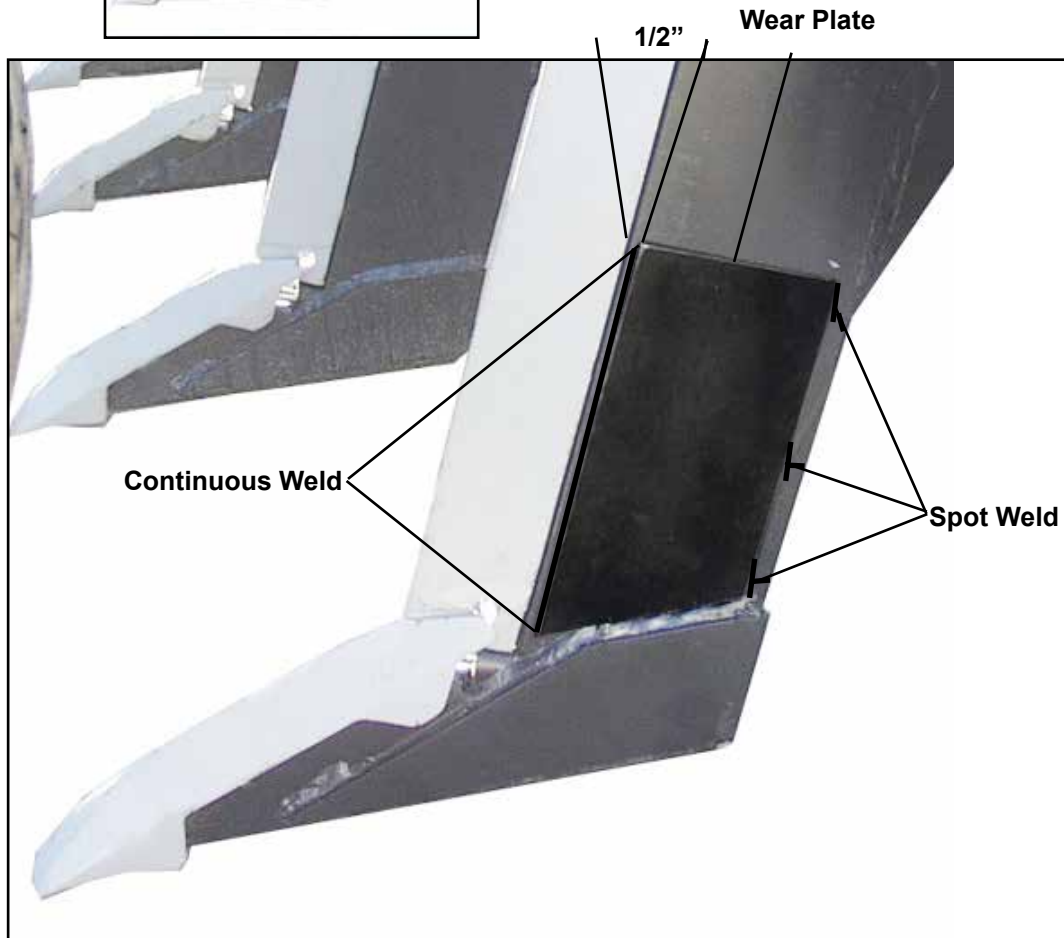
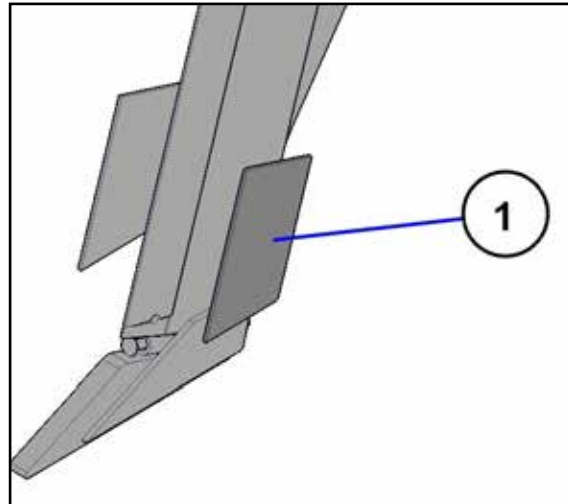
Procedures

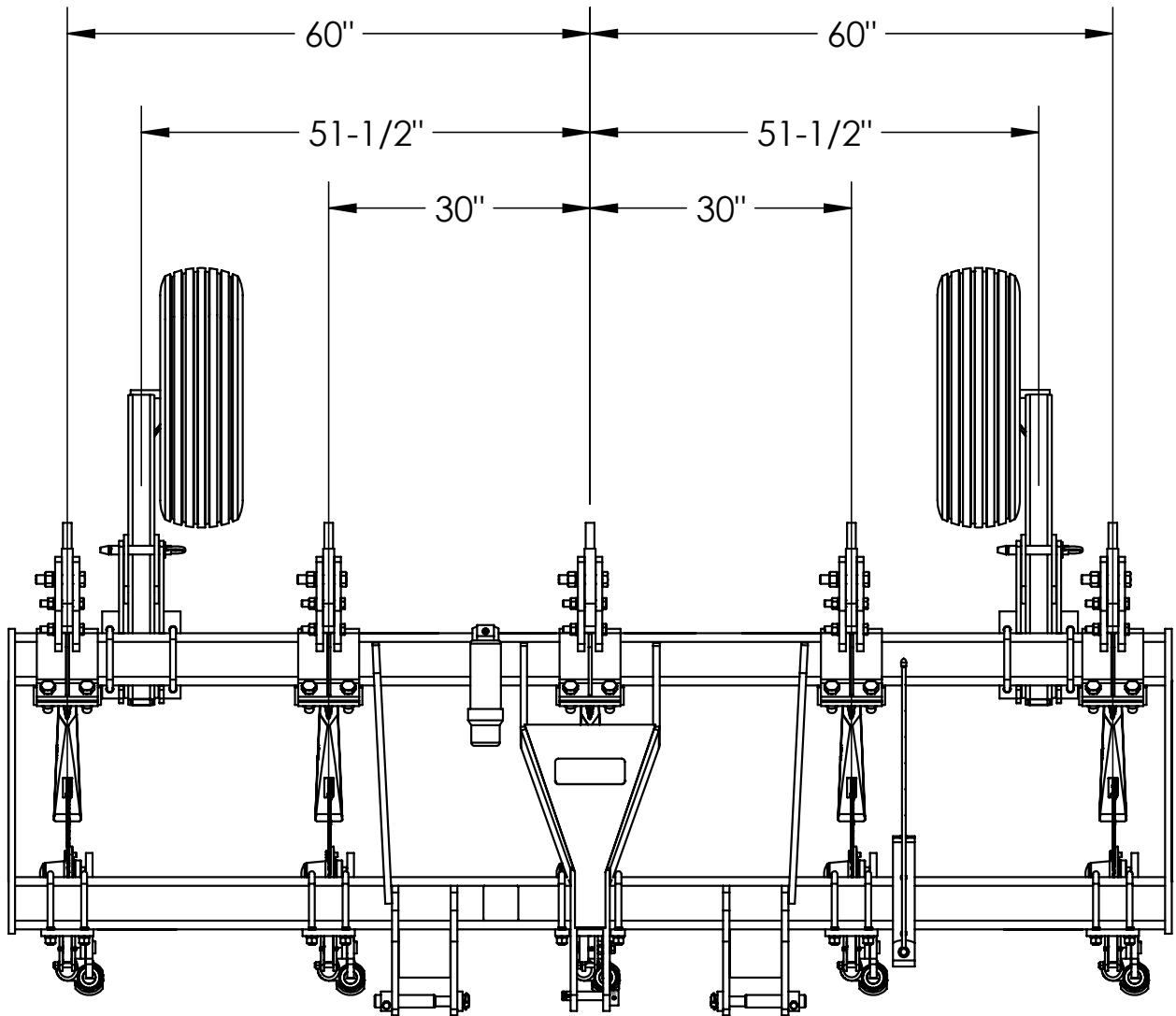
Illustrations



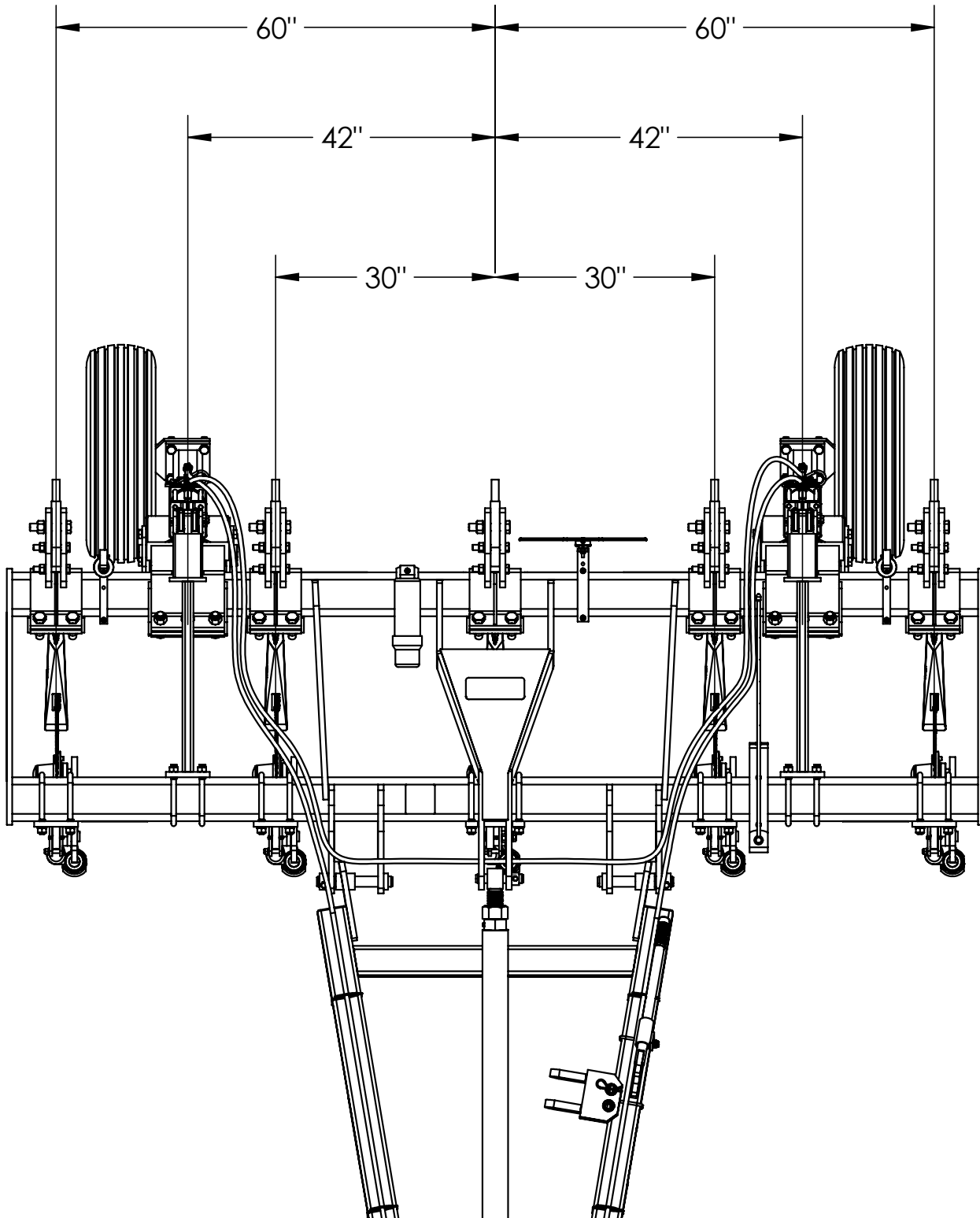
Installing shank wear plates

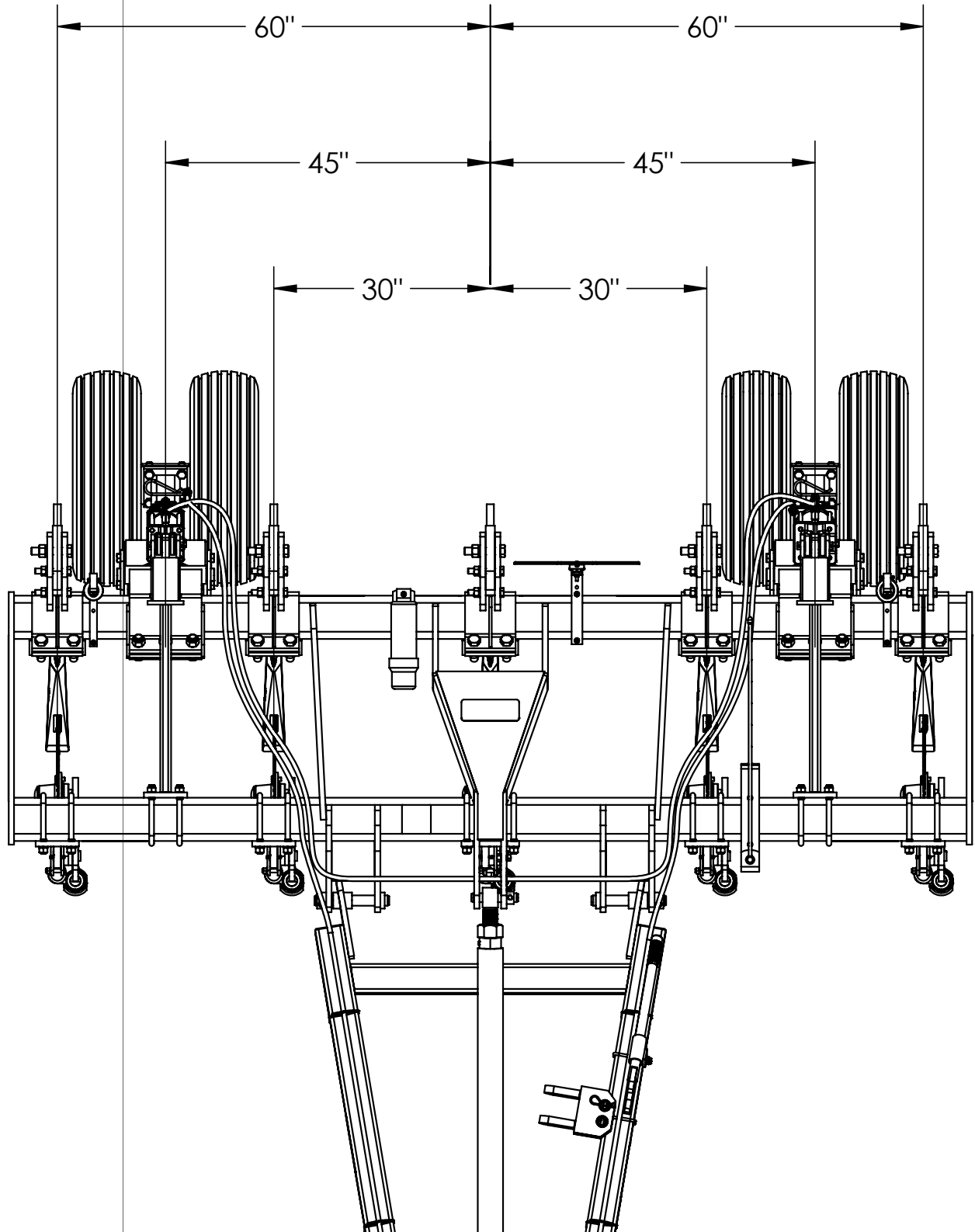
1. Place **(1) (EM6208)** ST shank wear plate on both sides of the shank. Plates should touch weld on the foot of the shank.
2. Position the plates 1/2" back from the leading edge of the shank. Clamp plates and spot weld the rear of the plate in three places.
3. Weld continuous bead down the front of the wear plate.



SubTiller II

SubTiller II



SubTiller II



Notes

SubTiller II