



Auto Steer Cart Operations Manual



MONTAG MANUFACTURING, INC.

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PH 712-852-4574

Models C06B, C06M, C09B, C12B, C12T

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Read manual before operating Montag equipment

1. Introduction / General Information	5
1.1 Introduction	5
1.2 Specifications	5
1.2.1 Auto-Steer Cart	5
1.3 Machine ID	5
1.4 Warranty Information	6
2. Safety	7
2.1 Section Overview.....	7
2.2 Safety	7
2.2.1 Keep All Guards In Place.....	7
2.2.2 Keep Riders Off Equipment.....	8
2.2.3 Avoid Loss Of Control	8
2.2.4 Avoid Tipping Cart.....	8
2.2.5 Clearance	9
2.2.6 Maintenance	9
2.2.7 Hazards From Modifying Your Fertilizer Applicator.....	9
2.2.8 Safety Warning Label Locations	9
2.2.9 Safety Warning Labels.....	11
2.2.10 Safety Decal Care.....	12
2.2.11 Tire Safety.....	13
2.2.12 Lighting And Marking	13
2.3 Highway And Transportation Operation.....	13
2.3.1 Highway Safety.....	13
2.3.2 Calculating The Minimum Towing Vehicle Mass For Safe Transportation.....	14
3. Assembly.....	15
3.1 Cart Assembly Overview	15
3.2 Cart Shipping Configuration	15
3.3 Cart Assembly (Standard Carts).....	15
3.3.1 Install Axle Spacers (If Equipped).....	15
3.3.2 Install King Pin End Caps	16
3.3.3 Install Spindle Assemblies	16
3.3.4 Install Arms To Center Frame	17
3.3.5 Install Tie-Rods	17
3.3.6 Install Wheels	18
3.3.7 Install Tracks.....	18
3.3.8 Install Adjustable Hitches	19
3.3.9 Install Drift Assist Hitch (Optional)	19
3.3.10 Install Safety Chains	20
3.3.11 Install Floating Saddles (Dry Fertilizer Use Only).....	20
3.4 Dry Fertilizer - GEN 1 System Assembly	20
3.4.1 Install GEN 1 Skid On Cart (Without Optional Weigh Bars)	20
3.4.2 Install GEN 1 Skid On Cart (With Optional Weigh Bars)	21
3.5 Liquid Fertilizer System Assembly.....	22
3.5.1 Install Liquid Fertilizer Skid Onto Cart	22
3.6 Dry Fertilizer - GEN 2 System Assembly	23
3.6.1 Install GEN 2 Skid On Cart.....	23
3.7 Lighting.....	23
3.7.1 Light Kits For Carts	23
4. Connect Cart To Implement.....	24
4.1 Connect Cart To Implement.....	24
4.1.1 Mounting Hitch to Toolbar (If Applicable).....	24
4.1.2 Connect Cart (Standard Cart With Ball Hitch)	24
4.1.3 Connect Cart (Standard Cart With Knuckle Hitch).....	25

4.1.4 Align Cart	25
5. Operation of Cart	26
6. Disconnecting From Implement.....	27
6.1 Disconnect From Implement.....	27
6.1.1 Disconnect Montag System	27
6.1.2 Disconnect Cart From Implement.....	28
7. Routine Maintenance	29
7.1 Section Overview.....	29
7.2 End Of Season Inspections	29
7.3 Lubrication	29
7.3.1 Lubrication Fittings.....	29
7.4 Service Hub Bearings And Seals.....	30
8. Service And Repair.....	31
8.1 Spindle Bushings.....	31
8.2 Arm Bushings	32
8.3 Knuckle Hitches	33
8.4 Maintenance Schedule	34
9. Storage.....	34
10. Parts.....	34
11. Troubleshooting.....	34

1. INTRODUCTION / GENERAL INFORMATION

1.1 INTRODUCTION

Read and understand this manual before using your Auto-Steer Cart, and follow all of the safety instructions. Keep all manuals in a safe place inside your tractor at all times.

The Auto Steer cart was designed to "steer" itself to precisely follow in the tracks of any implement, thereby staying off crop rows.

Some components on your Auto-Steer Cart may have separate instruction manuals. Where this manual indicates that you should read another manual, and you do not have that manual, contact your dealer or Montag Manufacturing for assistance.

Information provided in this manual was current as of the issue date. Montag Manufacturing reserves the right to make design changes without further notice or liability. Please refer to the montagmfg.com website for the most current information.

1.2 SPECIFICATIONS

1.2.1 AUTO-STEER CART

Model #	Description	Max Weight Capacity	Max Series Carrying Capacity			Tire Options
			Gen 1	Gen 2	Liquid	
C06B C06M	6 Ton Cart	14,000 lbs.	6 ton + pulling cap. of 1,500 gal. NH3	2208 + pulling cap. of 1,500 gal. NH3	1200 gal. + pulling cap. of 1,500 gal. NH3	Standard: 420/85 R34" Options: 380/90 R46" 380/85 R34" 480/80 R42" 320/90 R46" 320/90 R46"
C09B	9 Ton Cart	20,000 lbs.	9 ton *	2208*	1,700 gal. *	Standard: 380/90 R46" Options: 480/80 R42"
C12B	12 Ton Cart	24,000 lbs.	9 ton + pulling cap. of 2,000 gal. NH3	2218 + pulling cap. of 2,000 gal. NH3	1,700 gal. + pulling cap. of 2,000 gal. NH3	Standard: 380/90 R46" Options: 24.5"x 32" 480/80 R42" 650/65 R38"
C12T	12 Ton Track Cart	24,000 lbs.	9 ton + pulling cap. of 2,000 gal. NH3	2218 + pulling cap. of 2,000 gal. NH3	1,700 gal. + pulling cap. of 2,000 gal. NH3	Options: TTS 30-1611 TTS 35-1813

* Not compatible for pulling NH3

1.3 MACHINE IDENTIFICATION

Effective for machines with serial #s ranging from 21996 to Current

Serial tag is located on rear side of center frame.

My serial number is _____



1.4 WARRANTY INFORMATION

MONTAG MANUFACTURING, INC.

LIMITED WARRANTY FOR NEW MONTAG EQUIPMENT

What this Limited Warranty Covers - Montag Manufacturing, Inc. ("Montag") warrants equipment manufactured by it to be free from defects in material and workmanship for the warranty period.

What this Limited Warranty Does Not Cover - Montag is not responsible for, and this limited warranty does not cover: (1) used parts, (2) any part that has been altered or modified in ways not approved by Montag, (3) depreciation or damage caused by normal wear and tear, (4) unauthorized repair or adjustments, (5) reimbursement for work completed by an unauthorized service center, (6) other equipment, crops, or property with which Montag equipment comes into contact, (7) components manufactured and warranted by other manufacturers such as tires and hydraulic equipment, (8) loss of time, loss of use, towing charges, or other incidental or consequential damages, or (9) to equipment which has been damaged as the result of, misuse, abuse, lack of proper protection during storage, accident, failure to follow the operating instructions and perform routine maintenance as provided in the operator's manual, fire, flood, "Acts of God" or other contingencies beyond Montag's control.

Warranty Term and Coverage - This limited warranty provides coverage for three years from the date the equipment is delivered to the first purchaser and extends to the original purchaser and any subsequent owner.

What Montag Will Do – (1) Montag will provide telephone consultation with a trained representative regardless of the location of the equipment. (2) For equipment located in the general geographic area served by a Montag dealer, Montag may, if Montag deems it necessary or expedient, send a trained technician to work on the equipment at the owner's place of business. (3) Equipment that requires service or repair at the Montag manufacturing facility or at an authorized Montag dealership must be transported or shipped to and from the Montag manufacturing facility or Montag authorized dealership at the owner's sole expense.

To Get Warranty Service – To get warranty service the owner must (1) report the defect to an authorized dealer and request repair within the warranty term, (2) present evidence of the warranty start date, and (3) make the product available to the dealer within a reasonable time. The owner can also contact Montag by U.S. Mail at 3816 461st Ave. Emmetsburg, Iowa 50536; by telephone at (712)-852-4572; by facsimile at (712)-852-4574; or by e-mail at support@montagmfg.com

Limitation of Implied Warranties and Other Remedies – To the extent permitted by law, Montag makes no warranties, representations or promises as to the quality, performance or freedom from defect of its equipment covered by this limited warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE TO THE EXTENT APPLICABLE, SHALL BE LIMITED IN DURATION TO THE APPLICABLE PERIOD OF WARRANTY SET FORTH IN THIS LIMITED WARRANTY. THE OWNER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ARE SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT WILL MONTAG OR ANY MONTAG DEALER BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. (Note: Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages so the above limitations may not apply to you.) This warranty gives you specific legal rights, and you have also have other rights which vary from state to state.

No Dealer Warranty – The selling dealer makes no warranty of its own and the dealer has no authority to make any representation on behalf of Montag, or to modify the terms or limitations of this warranty in any way.

2. SAFETY

2.1 SECTION OVERVIEW

This section explains the level of risk and potential hazards associated with operating and maintaining Montag fertilizer application systems. The safety signs and their locations on the machine are also identified.

2.2 SAFETY

This Owner's Manual covers the Auto-Steer Cart produced by Montag Manufacturing. Before operating or servicing the cart, you must read, understand, and follow the instructions and safety warnings in this manual. Your cart may not be equipped with some of the optional equipment shown in the illustrations in this manual.



This is the safety symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

The level of risk is indicated by the following signal words.



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



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



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



Indicates a situation that could result in damage to the machine or other property.

2.2.1 KEEP ALL GUARDS IN PLACE

Remove guards only for adjustment and maintenance, install immediately when task is completed. Do not operate meter or fan with covers removed. Do not wear loose fitting clothing that can catch in rotating equipment.



Severing hazard.

Rotating fans and moving chains can sever digits.

Always keep all guards and shields in place.

2.2.2 KEEP RIDERS OFF EQUIPMENT

Never allow people on or near the equipment while it is moving. Riders can be thrown off or under the equipment, which may result in death or serious injury. Never climb on equipment while equipment is moving. Keep children away from equipment at all times.



Never climb onto cart when it is not attached to an implement. Cart could tip, which may result in death or serious injury.



Crushing hazard.

Riders can fall from equipment, resulting in death or serious injury.

Never allow riders on the equipment.

Never climb on cart not attached to implement.

2.2.3 AVOID LOSS OF CONTROL

Transporting cart at excessive speed can result in loss of cart control, causing death or serious injury.



Danger of loss of control when transporting cart.

Remove all product from tank before transporting on roads. With empty tanks, maximum speed for cart on roads is 25 mph.

2.2.4 AVOID TIPPING CART

If stairs and platform are installed on rear of dry tank, tank can tip over if people climb on stairs with cart disconnected from implement, resulting in death or serious injury.



Crushing hazard.

Do not climb on tank stairs or platform when cart is disconnected from implement.

2.2.5 CLEARANCE



Collision hazard.

Know the height, width and length of the equipment.

Always be aware of clearances.

2.2.6 MAINTENANCE



Crushing hazard.

Before performing inspections, service or maintenance:

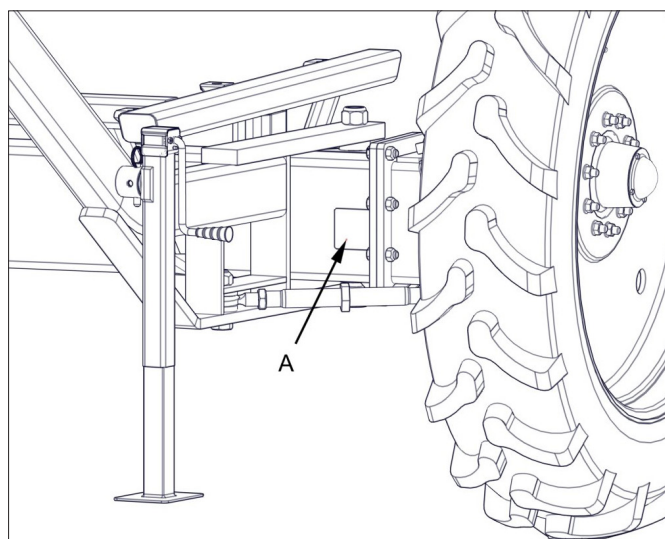
- **Park the equipment on firm, level surface.**
- **Place tractor transmission in park, turn tractor engine off and remove ignition key.**
- **Verify service locks are properly engaged or lower tool bar and lower row units to the ground or pavement.**

2.2.7 HAZARDS FROM MODIFYING YOUR AUTO-STEER CART

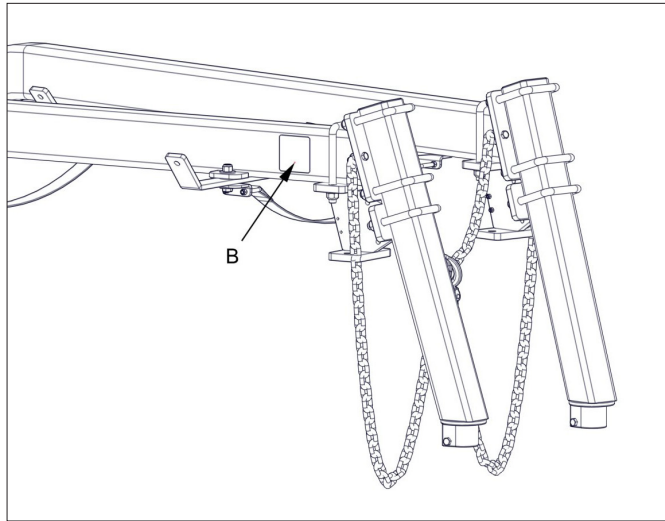
Before making any alteration, contact your dealer or Montag Manufacturing and describe the alteration you are contemplating. Altering may void the manufacturer's warranty.

2.2.8 SAFETY WARNING LABEL LOCATIONS

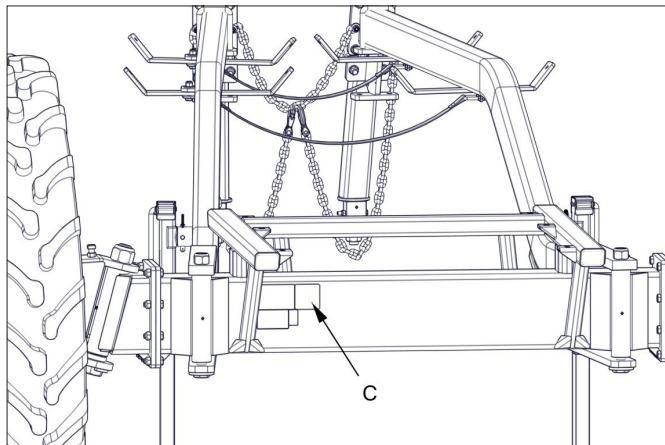
CART WARNING LABELS



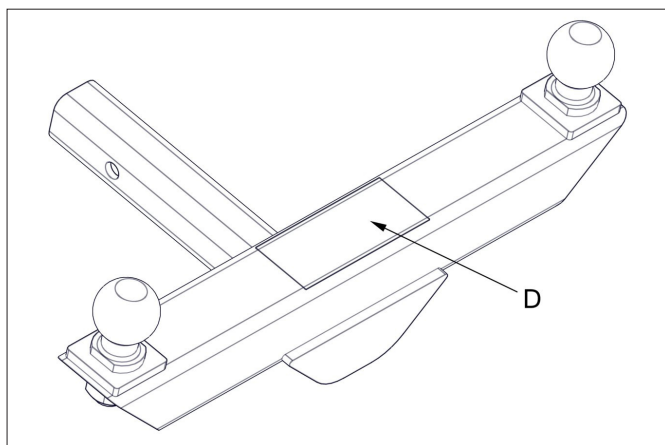
Center Frame - Tie-Rod Area



Arms



Rear Of Center Frame



Transport Receiver Hitch

2.2.9 SAFETY WARNING LABELS



Label A



Label B



Label C



Label D



To protect against death or serious injury, all labels must be on the machine and must be legible.

If any of these labels are missing or cannot be read, call Montag Manufacturing at 1-712-852-4572, or e-mail support@montagmfg.com, for replacement labels.

2.2.10 SAFETY DECAL CARE

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

How to Install Safety Signs:

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

2.2.11 TIRE SAFETY

- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called to service and/or mount tires.
- Always order and install tires and wheels with appropriate capacity to meet or exceed the weight to be placed on the equipment.
- The rims and tires should be mounted on the cart with the valve stem to the outside. Be sure you have proper tire pressure and the lug nuts are properly tightened. Follow instructions on wheel installation (Section 3.3.6).

2.2.12 LIGHTING AND MARKING

- It is the responsibility of the customer to know the lighting and marking requirements of the local highway authorities and to install and maintain the equipment to provide compliance with the regulations. Add extra lights when transporting at night or during periods of limited visibility.
- Lighting kits are available from your dealer or from the manufacturer.

2.3 HIGHWAY AND TRANSPORT OPERATIONS

2.3.1 HIGHWAY SAFETY

- 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 flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport. Various safety lights and devices are available from your dealer.
- 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.
- Use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem when driving this equipment on the road or highway.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge loading ratings. Do not cross bridges rated lower than the gross weight as which you are operating.
- Watch for obstructions overhead and to the side while transporting.
- Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the unit, etc.
- Pick the most level possible route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.
- Be extra careful when working on inclines.
- Maneuver the tractor or towing vehicle at safe speeds.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Avoid loose fill, rocks and holes; they can be dangerous for equipment operation or movement.
- Allow for unit length when making turns.
- Operate the towing vehicle from the operator's seat only.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.
- Never leave running equipment attachments unattended.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

2.3.2 CALCULATING THE MINIMUM TOWING VEHICLE MASS FOR SAFE TRANSPORTATION

CAUTION

Using a underweight tractor can cause loss of control resulting in serious injury or death.

Use the chart below to determine the minimum recommended towing vehicle mass for your specific implement configuration.

Implement should be transported with tanks empty or less than 20% filled at a speed of 25 mph or less.

CALCULATING THE MINIMUM TOWING VEHICLE MASS*							
	Gen 1 6 ton	Gen 1 9 ton	Gen 2	2208	2108	Liquid 1200	Liquid 1700
Fertilizer System Only	5200	6800	9460	4050	2700	4393	5472
Cart 6 ton	9140	X	X	7990	6640	8333	x
Cart 12 ton	9740	11340	14000	8590	7240	8933	10012
Cart 12 ton w/ tracks	12740	14340	17000	11590	10240	11933	13012
*Weight is based on implement weight with 20% tank fill, a hitch and accessories. Liquid weights based on 28% at 10.66 lbs/gal							

Customer must enter weight of toolbar and all component towed other than Montag parts to find tractor weight required.

Minimum tractor weight = weight of other towed implement(s) including tool bar, etc. + Montag system weight (from chart based on system type) / 1.5

- EXAMPLE OF GEN 2 ON KUHN 1205-1230
 MINIMUM RECOMMENDED TOWING VEHICLE MASS=TOWED WEIGHT OF IMPLEMENT/1.5
 MINIMUM RECOMMENDED TOWING VEHICLE MASS=20533+9460/1.5
 MINIMUM RECOMMENDED TOWING VEHICLE MASS = 19995 LBS
- EXAMPLE OF GEN 1 9 TON ON 12 TON CART WITH TIRES WITH A TOOL BAR WEIGHING 15000 LBS
 MINIMUM RECOMMENDED TOWING VEHICLE MASS=15000+11340/1.5
 MINIMUM RECOMMENDED TOWING VEHICLE MASS=17560 LB TRACTOR

3. ASSEMBLY

3.1 CART ASSEMBLY OVERVIEW

Cart assembly procedures are about the same regardless of cart size. The exception is the track cart which has a different spindle style configuration.

3.2 CART SHIPPING CONFIGURATION

Standard Carts are shipped with the following components for assembly:

- Center Frame
- Spindle Assemblies (Left /Right)
- Arms (2) - (Left /Right)
- Wheels (2)
- Adjustable Knuckle Hitches (2)
- Hitch Balls (2-5/16 inch) (2)
- Floating Saddles (4) (Dry fertilizer use only)
- Jacks (2)

3.3 CART ASSEMBLY (STANDARD CARTS)

3.3.1 INSTALL AXLE SPACERS (IF EQUIPPED)

Note: If cart is not equipped with axle spacers, go to 3.3.2.



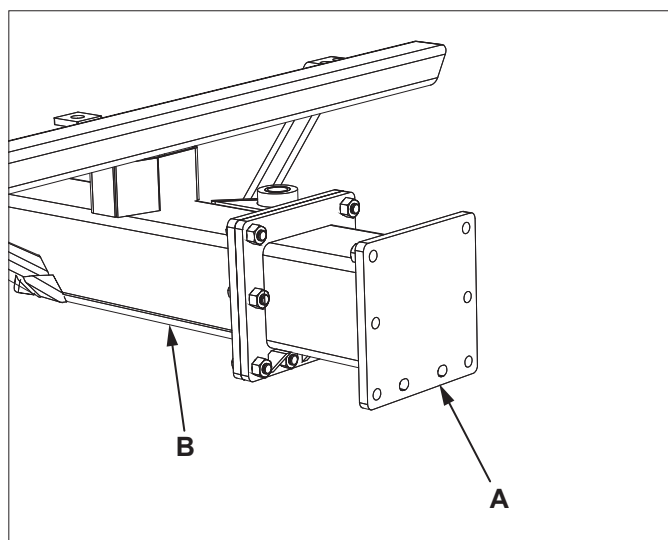
Prevent death or serious injury.

Center frame assembly weighs approximately 750 lbs (340 kg).

Axle spacer weighs approximately 165 lbs (75 kg).

Use adequate lifting and support devices.

1. Raise and support center frame using adequate lifting and support devices capable of supporting up to 10,000 lbs (4536 kg) total assembly weight.
2. Install axle spacer (A) to center frame (B) with $\frac{3}{4}$ -10 x 2 $\frac{1}{2}$ inch bolts and $\frac{3}{4}$ inch lock nuts. Tighten bolts to 317 lb/ft (430 Nm) of torque.



3.3.2 INSTALL KING PIN END CAPS



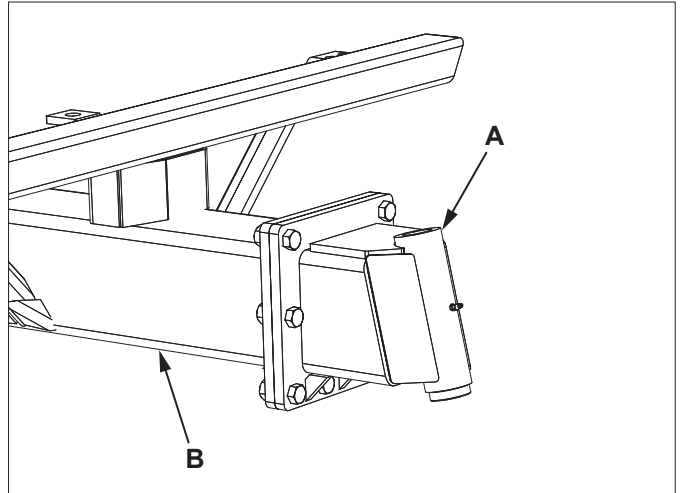
Prevent death or serious injury.

Center frame assembly weighs approximately 750 lbs (340 kg).

King pin end cap weighs approximately 100 lbs (45 kg).

Use adequate lifting and support devices.

1. Raise and support center frame using adequate lifting and support devices capable of supporting up to 10,000 lbs (4536 kg) total assembly weight.
2. Install end cap (A) to center frame (B) or optional axle spacer with $\frac{3}{4}$ -10 x 2 $\frac{1}{2}$ inch bolts and $\frac{3}{4}$ inch lock nuts. Tighten bolts to 317 lb/ft (430 Nm) of torque.
3. Repeat step 2 for other side.



3.3.3 INSTALL SPINDLE ASSEMBLIES



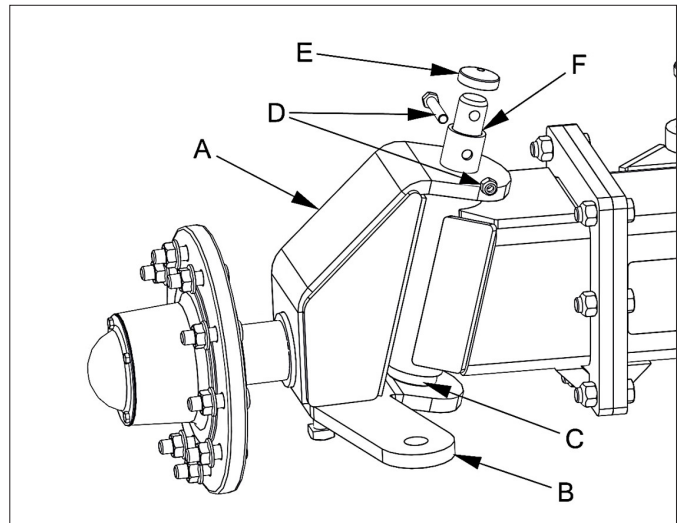
Prevent death or serious injury.

Spindle assembly weighs approximately 360 lbs (163 kg).

Use adequate lifting and support devices.

1. Raise and position spindle assembly (A) on king pin end cap.

Note: Tie-rod mounting bracket (B) faces forward.



2. Insert spindle pin from bottom through lower spindle assembly bracket. Bearing (C) must be between spindle assembly and king pin end cap as shown.
3. Secure pin with bolt and nut (D). Fill void (F) with grease and install cap (E) to cover top of shaft. Grease spindle assembly until grease comes out of the weep hole on thrust bearing (C).
4. Repeat Steps 1-3 for other side.

3.3.4 INSTALL ARMS TO CENTER FRAME

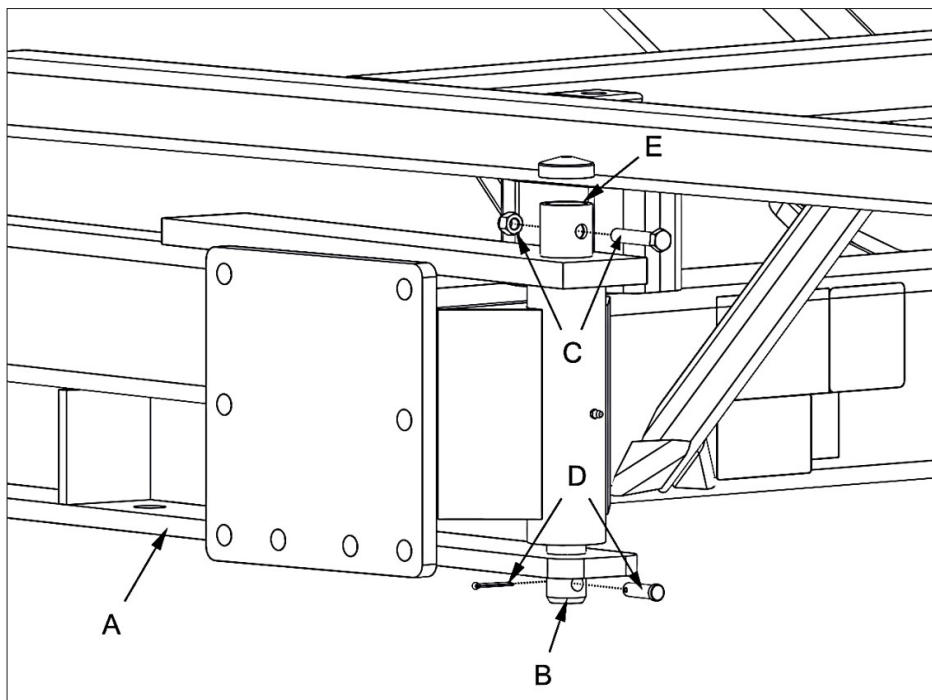


Prevent death or serious injury.

Arm assembly weighs approximately 490 lbs (222 kg).

Use adequate lifting and support devices.

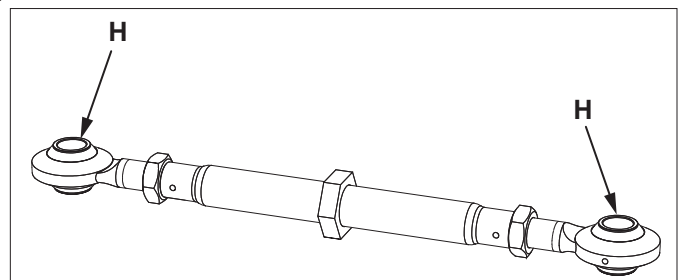
1. Position arm (A) on center frame.
2. Insert 1½ inch arm pin (B) from bottom up through brackets. Align holes and secure with bolt and nut (C).
3. Install Pin and Cotter Pin (D) on the bottom of the shaft.
4. Fill void (E) with grease and install cap. Add grease at grease fitting until cavity is full.
5. Rest free end of arm on a suitable support device and remove lifting device.
6. Repeat steps 1-5 for other side.



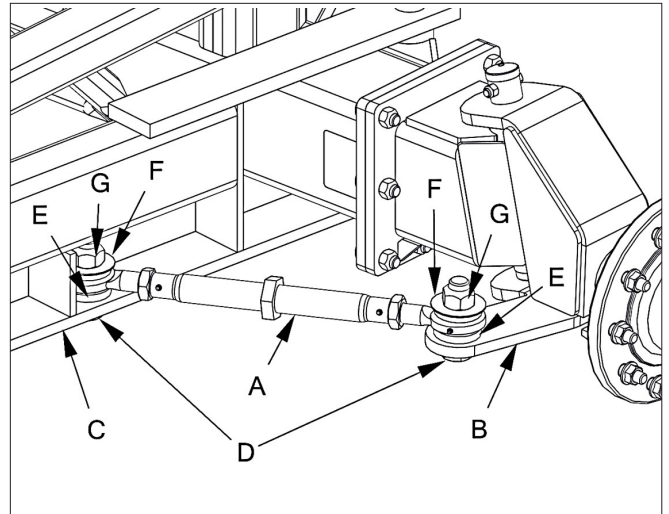
3.3.5 INSTALL TIE-RODS

Note: Install bolts from bottom (nut on top) to take advantage of strength of bolt shaft through bracket.

1. Tie rod end must be lubricated prior to installation. Rotate inner collar (H) while pumping grease into fitting to lubricate entire surface of the joint.
2. Install tie-rod (A) on spindle assembly bracket (B) and arm (C) with grease zerks facing forward.



3. Install 1¼ inch bolts (D), foam gaskets (E), washers (6 ton only) (F), and 1¼ inch nuts (G).
4. Tighten bolts to 1349 lb/ft (1829 Nm) of torque.
5. Lubricate tie rod ends again.
6. Repeat steps 1-5 for other side.
7. Tie rods will need to be checked for alignment by following instructions in 4.1.3.



3.3.6 INSTALL WHEELS

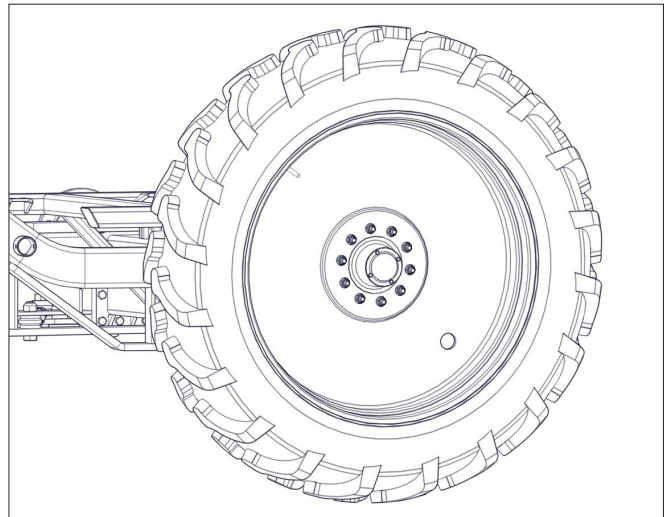


Prevent death or serious injury.

Tire/wheel assembly weighs approximately 820 lbs (372 kg).

Use adequate lifting and support devices.

1. Position wheel on spindle with an adequate lifting device. Verify valve stem side is facing out.
2. Install ¾-16 lug nuts. Tighten lug nuts to 354 lb/ft (479 Nm) of torque in a crisscross star pattern.
3. Repeat steps 1-2 for other side.
4. Check torque on lug nuts after first hour of use and again after first day of use.



3.3.7 INSTALL TRACKS

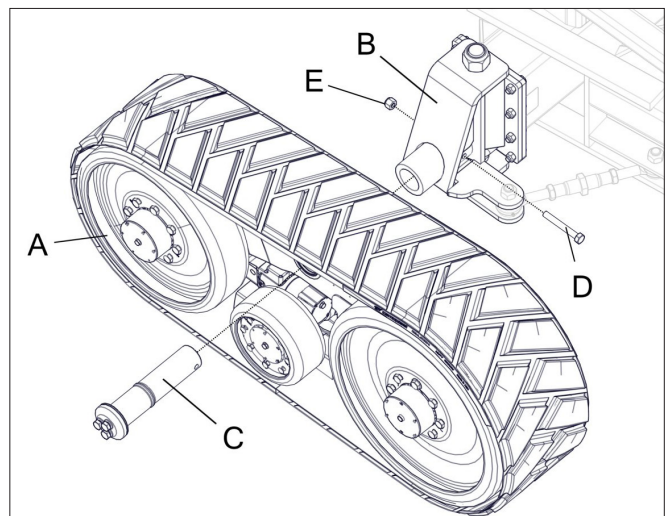


Prevent death or serious injury.

Track assembly weighs approximately 2320 lbs (1052 kg).

Use adequate lifting and support devices.

1. Line up track (A) and spindle (B) with an adequate lifting device.
2. Place shaft assembly (C) through track and spindle. Refer to track Owner's Manual for detailed assembly information.
3. Secure shaft assembly to spindle by placing bolt (D) through

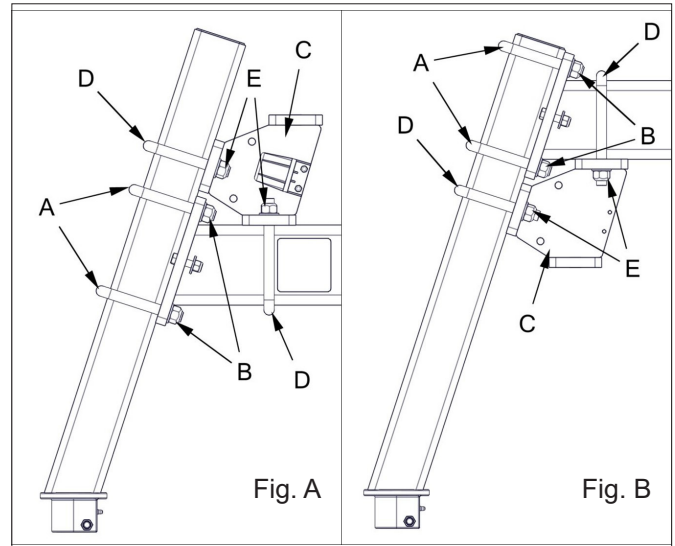


spindle and shaft. Attach nut (E) and tighten.

3.3.8 INSTALL ADJUSTABLE HITCHES

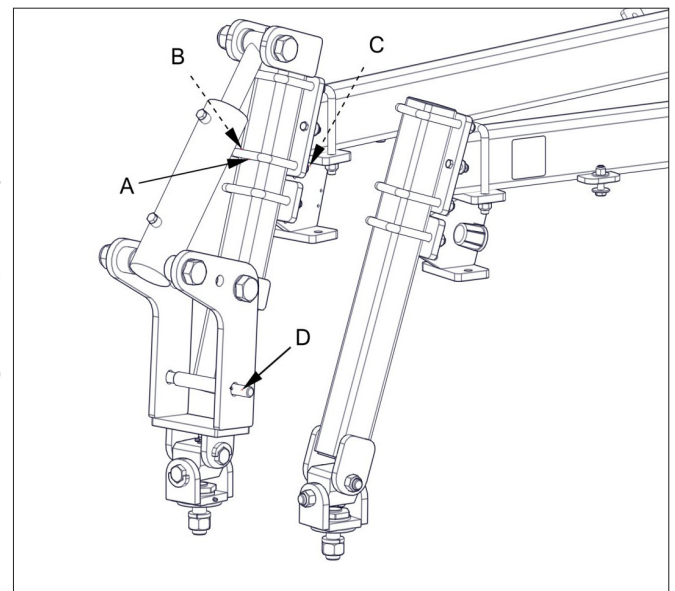
Note: Tube height shall be set with the object of having the cart arms as close to parallel to the ground when in operating position in the field. Toolbar hitch field operating height is needed to determine proper tube height. Tube mounting gusset (C) must be used (either above or below arm) with both u-bolts. This allows for greater height adjustability.

1. Install ball hitch or knuckle hitch on each arm as illustrated using two $\frac{3}{4}$ -10 x 4 wide x $5\frac{1}{2}$ inch long U-bolts (A) with lock washers and nuts (B). Tighten nuts until all four nuts are in contact with plate. Make sure the hitch location reflects the desired height of the arm.
2. Starting with top u-bolt (A), alternate tightening each nut in 25 lb/ft (34 Nm) increments until both nuts are tightened to 150 lb/ft (204 Nm) of torque. Then tighten each nut to 160 lb/ft (217 Nm) of torque. Avoid over tightening either side. Repeat tightening procedure for bottom u-bolt.
3. Place the tube mounting gusset (C) as shown, either above the arm (for a lower arm height - Fig. A), or below the arm (for a higher arm height - Fig. B). Secure with u-bolts (D), with lock washers and nuts (E). Tighten until all four nuts are in contact with the gusset plates.
4. Repeat step 2 to fully tighten nuts onto u-bolts.



3.3.9 INSTALL DRIFT ASSIST HITCH (OPTIONAL)

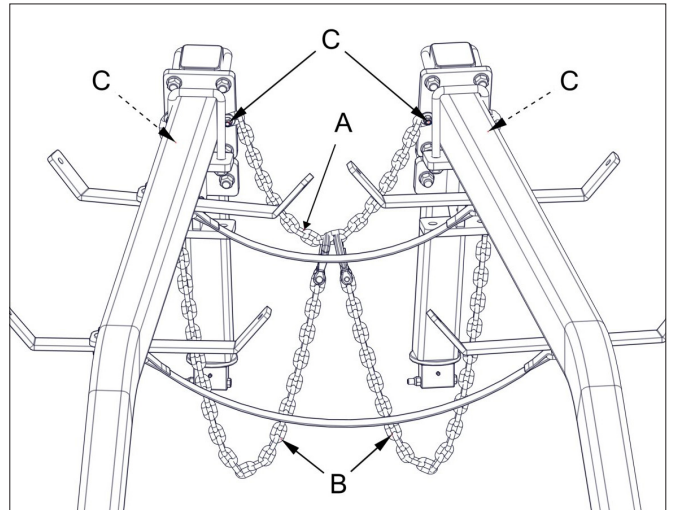
1. Install Drift Assist mechanism with the transport pin (D) in the transport position.
2. Install Drift Assist hitch on arm as illustrated using three $\frac{3}{4}$ -10 x 4 wide x $5\frac{1}{2}$ inch long u-bolts with lock washers and nuts. Tighten nuts until all six nuts are in contact with plate. Set height of knuckle to align with the knuckle height on the left arm.
3. Starting with middle U-bolt (A), alternate tightening nut (B) and nut (C) in 25 lb/ft (34 Nm) increments until each nut is tightened to 150 lb/ft (204 Nm) of torque. Then tighten each nut to 160 lb/ft (217 Nm) of torque. Avoid over tightening either side.
4. Repeat tightening procedure for top and bottom U-bolts.



3.3.10 INSTALL SAFETY CHAINS

Follow this procedure if chains were not installed at the factory.

1. Install 26 in. (660 mm) short chain (A) and long chains (B) as shown. Place four $\frac{1}{2}$ x $2\frac{1}{2}$ inch bolts (C) from front of cart through plate, long chain, washer and lock nut.
2. Tighten bolts to 90 lb/ft (121 Nm) of torque.
3. Install clevis hook on end of each long chain.



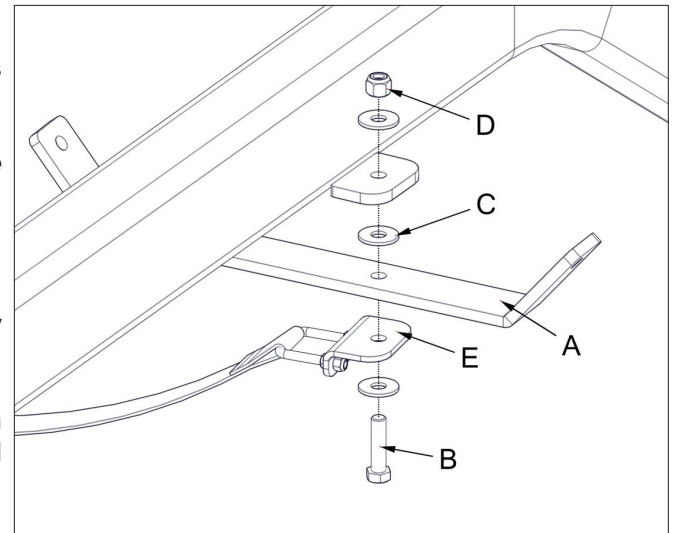
3.3.11 INSTALL FLOATING SADDLES (DRY FERTILIZER USE ONLY)

Note: Four floating saddles (A) are provided on standard carts.

1. Position floating saddles (A) under brackets on cart arms with short sides of arms to outside of cart.

Note: Floating saddles must move freely to accommodate movement of hoses. Do not fully tighten lock nuts.

2. Assemble Hose Guide Strap assemblies (E) as shown, placed directly under the saddles, shorter strap to the front, longer strap to the rear of cart. Tighten $\frac{3}{8}$ " lock nuts so they are snug.
3. Install $\frac{5}{8}$ x $1\frac{1}{2}$ inch bolt (B) $\frac{5}{8}$ inch spacers (C) and $\frac{5}{8}$ inch lock nut (D). Tighten lock nut so it is snug, but saddle can still move freely.
4. Repeat steps 1-2 for other side.



3.4 GEN 1 SYSTEM ASSEMBLY

3.4.1 INSTALL GEN 1 SKID ON CART (WITHOUT OPTIONAL WEIGH BARS)

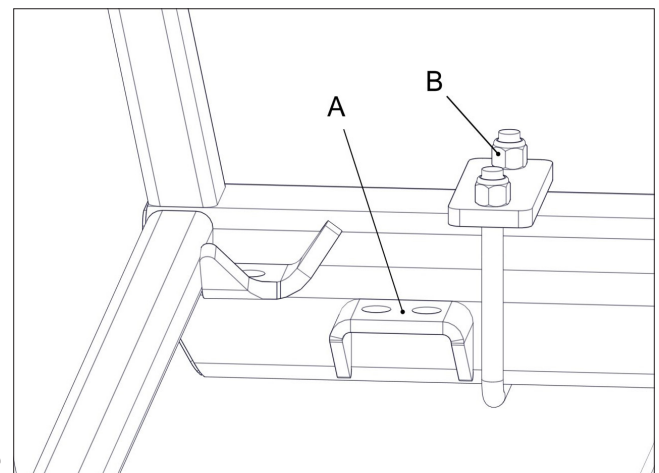
Prevent death or serious injury.

Dry fertilizer skid weighs approximately 2000 lbs. (907 kg).

Use adequate lifting and support devices.

1. Carefully position skid onto cart, with skid frame fully aligned with cart frame and ends of frames flush with each other.

Note: Install U-bolts facing up, with nuts on top. If U-bolts are



installed facing down, there may be interference with cart arms.

2. Install $\frac{5}{8}$ x 4 wide x $6\frac{1}{2}$ inch long U-bolts (B) in each corner of skid inside cart bracket (A) as shown, with lock nuts on top. Tighten lock nuts until they each contact the plate.
3. Alternate tightening nuts on each leg of U-bolt in 25 lb/ft (34 Nm) increments until each nut is tightened to 75 lb/ft (102 Nm) of torque. Then tighten each nut to 95 lb/ft (129 Nm) of torque. Avoid over tightening either side.

3.4.2 INSTALL GEN 1 SKID ON CART (WITH OPTIONAL WEIGH BARS)

1. Position weigh bars (A) on cart brackets at each corner with arrows on ends of weigh bars pointing down. Ends of bars with arrows must be farthest from cart center frame (B).
2. Install each weigh bar to bracket loosely with two $\frac{3}{4}$ x 3 inch bolts (C), through two bolt holes closest together, and $\frac{3}{4}$ inch lock nuts. Do not tighten at this time.



Prevent death or serious injury.

Fertilizer skid weighs approximately 2000 lbs (907 kg).

Use adequate lifting and support devices.

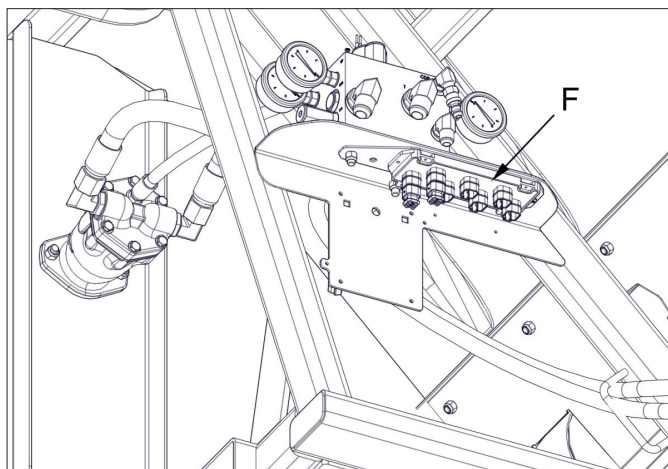
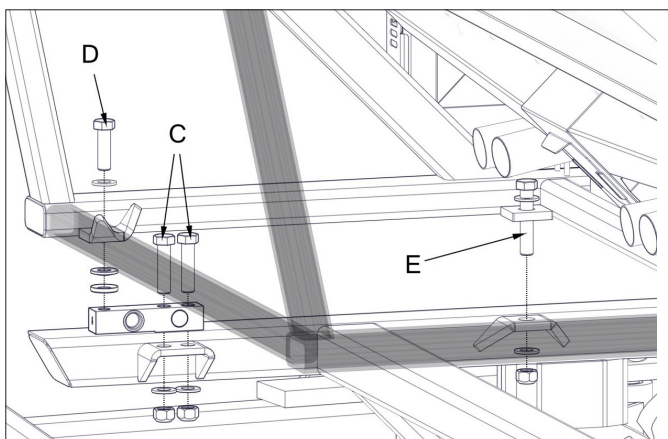
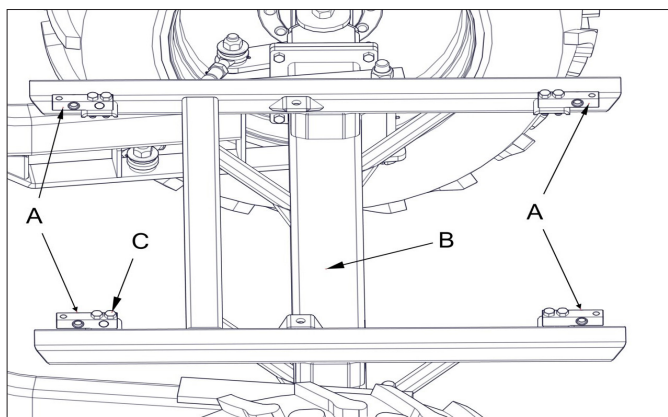
3. Position skid with fertilizer tank onto cart, with skid bolt holes aligned with bolt holes in four weigh bars.
4. Install $\frac{3}{4}$ x $2\frac{1}{2}$ inch bolts (D) with flat washers and bevelled washers as shown at each skid corner through skid brackets and weigh bars. Tighten bolts to 354 lb/ft (479 Nm) of torque.

Note: Skid with dry or liquid fertilizer tank is fastened to weigh bars. Tighten weigh bars to prevent skid from coming loose.

5. Tighten bolts (C) to 317 lb/ft (430 Nm) of torque.

Note: Back-up bolts (E) are installed as a safety measure in case any skid mounting bolts come loose or fail. Install both back-up bolts loosely. Fertilizer tank load readings will include any force applied by these bolts.

6. Install back-up bolts (E) on each side of skid below meter with washers under bolt and lock nut, but do not fully tighten bolts. Bolts must have approximately $\frac{1}{8}$ inch of play after installation.
7. Route lead from each weigh bar to junction block (F). Plug each 6 pin Deutsch connector into junction block. Connect harness from junction block to ISO Scalelink SL2140 Scale Controller, or GT400. Do not cut or pinch wires. See the Controller section of www.montagmfg.com/support/ for more information.



3.5 LIQUID FERTILIZER SYSTEM ASSEMBLY

WARNING

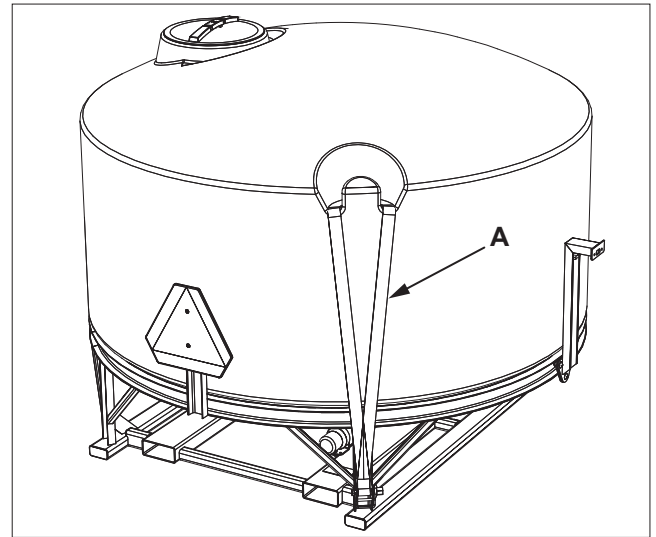
Crushing Hazard.

Be certain tie-downs straps at opposite corners of tank are routed correctly and tight before doing any assembly work.

WARNING

Fertilizer can be dangerous to people, animals, and the environment.

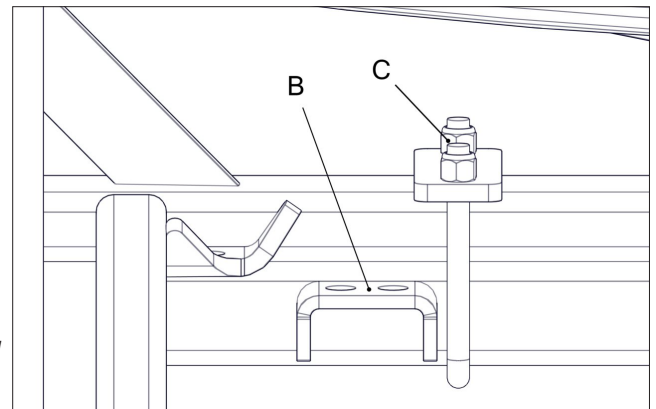
Read and follow the safety and handling instructions provided by the fertilizer manufacturer before filling fertilizer tank.



3.5.1 INSTALL LIQUID FERTILIZER SKID ONTO CART

1. Verify tie down straps (A) are routed correctly as shown and tight.
2. Carefully position skid onto cart, with skid frame fully aligned with cart frame and ends of skid frame overlapping cart frame evenly.

Note: Install U-bolts facing up, with nuts on top. If U-bolts are installed facing down, disassembly may be required if bolts need to be removed.



3. Install $\frac{5}{8}$ x 4 x 6-1/2" U-bolts (C) in each corner of skid inside cart bracket (B) as shown, with lock nuts on top. Tighten lock nuts until they each contact the plate.
4. Alternately tighten nuts on each leg of U-bolt in 25 lb increments until each nut is tightened to 75 lb/ft of torque. Then tighten each nut to 95 lb/ft of torque. Do not over tighten.

3.6 GEN 2 SYSTEM ASSEMBLY

3.6.1 INSTALL GEN 2 SKID ON CART

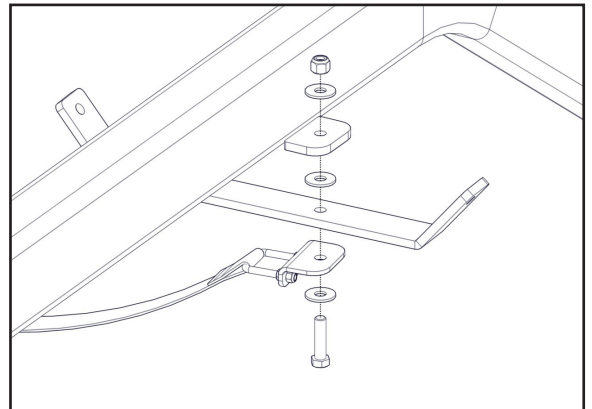
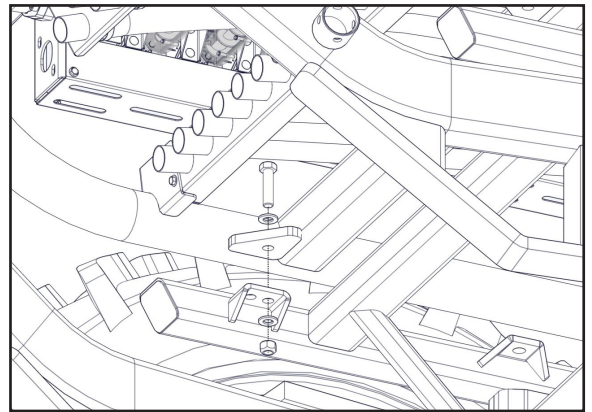


Prevent death or serious injury.

Dry fertilizer skid weighs approximately 4700 lbs (2132 kg).

Use adequate lifting and support devices.

1. Carefully position skid onto cart, with skid frame fully aligned with cart frame and four mounting brackets on skid aligned with four mounting brackets on cart. Mount fan end to the front of cart.
2. Install (4) $\frac{3}{4}$ " x 1.75 bolts from kit K002016 in each mounting bracket as shown. Tighten lock nuts until they each contact the plate.
3. Alternate tightening nuts on bolt until each nut is tightened to 317 lb./ft. (430 Nm) of torque.
4. Attach the two hose guide strap saddle assemblies on the cart as shown in the drawing (see 3.3.10).

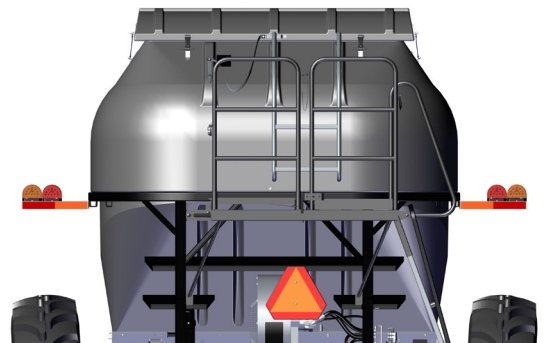


3.7 LIGHTING

3.7.1 LIGHT KITS FOR CARTS

Gen 1 light kit (A002184AA)

Required for all carts with Gen 1 or liquid units, carts with wheelbases 152"-160", and C12BA carts with wheelbases over 120" also require K002067.



Gen 2 light kit (A002216AA)

Required for all carts with Gen 2 units, carts with wheelbases 152"-160", and C12BA carts with wheelbases over 120" also require K002067.



Refer to Light Kits and Extensions Manual at www.montagmfg.com

4. CONNECT CART TO IMPLEMENT

4.1 CONNECT CART TO IMPLEMENT



Risk of loss of control when transporting cart.

Remove all product from tank before transporting on roads. With empty tanks, maximum speed for cart on roads is 25 mph.

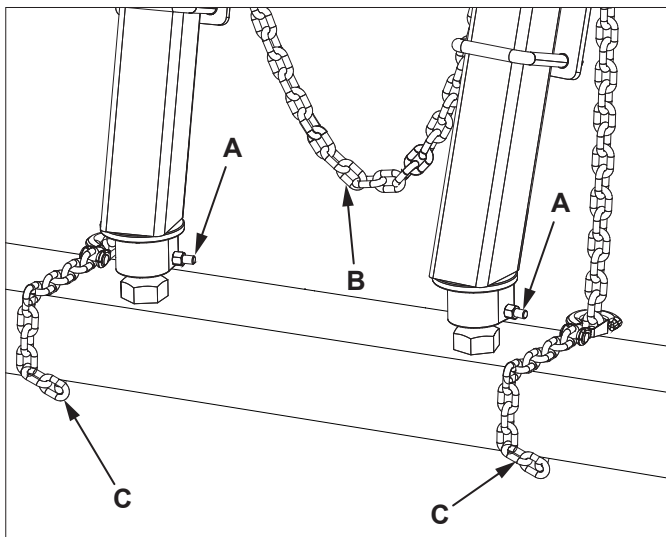
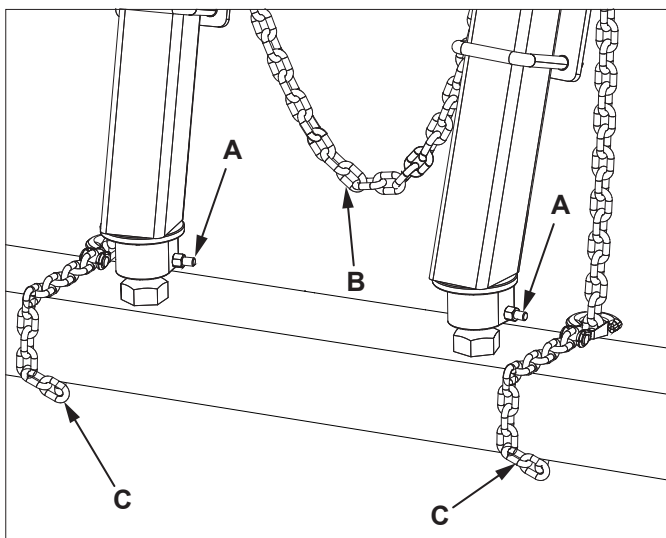
Maximum speed for cart with full tank is 10 mph.

4.1.1 MOUNTING HITCH TO TOOLBAR (IF APPLICABLE)

1. To avoid contact of tires into toolbar when turning, the hitch distance from center of balls to back most part of tooling on toolbar can be no more than 4'6".
2. Follow additional instructions provided with the hitch.

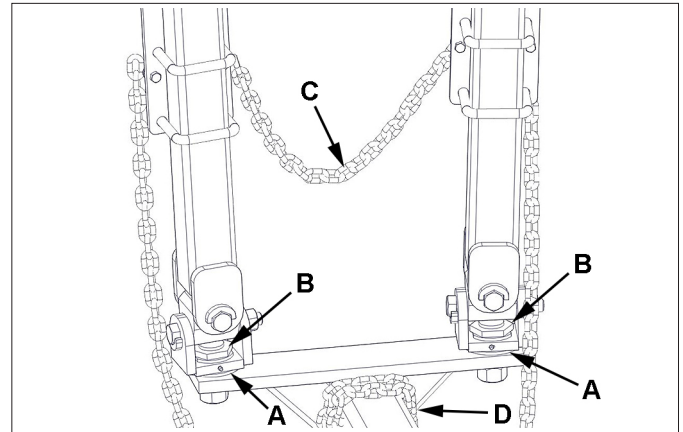
4.1.2 CONNECT CART (STANDARD CART WITH BALL HITCH)

1. Install two $2\frac{5}{16}$ inch (30K) hitch balls on implement at 22" center spacing. Tighten as recommended by manufacturer.
2. Back implement up to cart.
3. Lower adjustable hitch height as needed with jacks to engage ball hitches.
4. Install $\frac{1}{2}$ x $4\frac{1}{2}$ inch bolts (A) to fasten arms to ball hitches. Tighten bolts to 57 lb/ft (77 Nm) of torque.
5. Verify chain (B) is installed between two arms to keep arms together if they disconnect from hitch.
6. Wrap long chains (C) around frame as shown. Hook chain and engage hook safety lock.
7. Retract and remove jacks from cart.



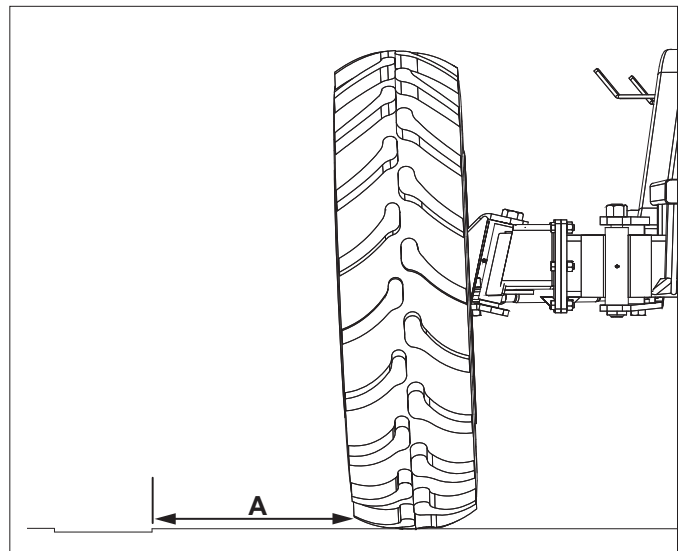
4.1.3 CONNECT CART (STANDARD CART WITH KNUCKLE HITCH OR DRIFT ASSIST HITCH)

1. Back implement up to cart.
2. Place large bottom washers (A) over holes on hitch plate.
3. Lower adjustable hitch height as needed with jacks to engage $1\frac{3}{8}$ inch knuckle bolts (B) through washers and hitch plate holes.
4. Install $1\frac{3}{8}$ inch lock washers and nuts on bolts. Tighten to 559 lb/ft (758 Nm) of torque.
5. Verify chain (C) is installed between two arms to keep arms together if they disconnect from hitch.
6. Wrap long chains around frame as shown. Hook chain and engage hook safety lock.
7. Retract and remove jacks from cart.



4.1.4 ALIGN CART

1. Initial alignment check: Pull cart a short distance on a dirt surface. Measure and note the distance (A) of each cart wheel from implement wheel track. If left tire distance is less than right tire distance, cart is tracking to the left.
2. Toe-in check: Measure and note distance between tire centerlines, at a point level with wheel hub, on front and rear of tires.
3. Determine and make correction: If tire centerline measurement at front is not the same as measurement at rear, split the difference and apply it to a wheel based on which way cart is tracking. For example, if centerline measurement at rear of tires is 122 inches (3099 mm), and the measurement at the front of tires is 118 inches (2997 mm), adjustment will be 2 inches (51 mm). If cart was determined to be tracking to left in step 1, extending right tie-rod to make centerline measurement of 120 inches (3048 mm) would correct tracking to the left as well as the toe-in problem.
4. Repeat step 1-3 to verify correct alignment.
5. Once completed, torque tie rod jam nut to 425 ft.lbs. Mark with tongue seal for visible indicator if nut has moved. Cart alignment should be re-checked after 25 miles or 100 acres.



5. OPERATION OF CART

5.1 OPERATION OF CART

WARNING

Risk of loss of control when transporting cart.

Remove all product from tank before transporting on roads. With empty tanks, maximum speed for cart on roads is 25 mph.

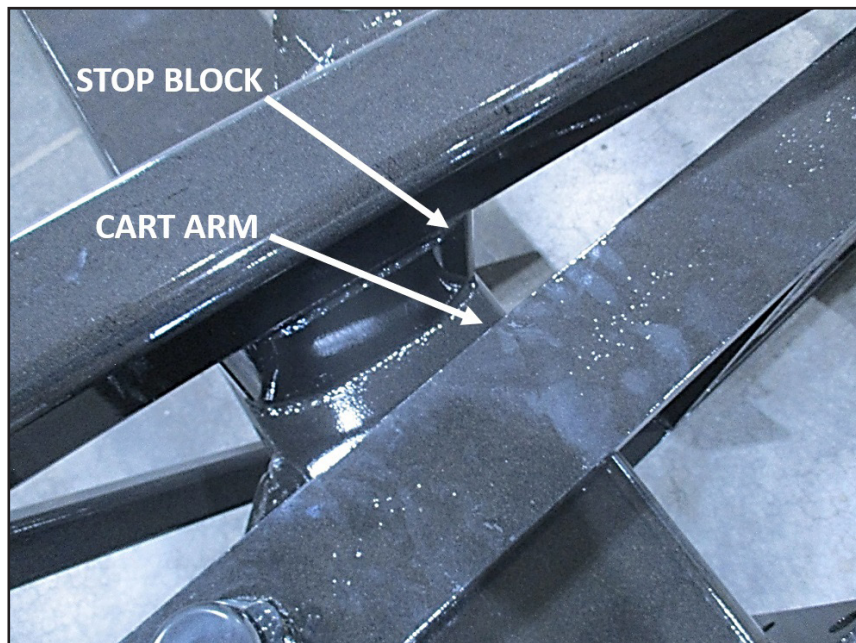
Maximum speed for cart with full tank is 10 mph.

WARNING

Fertilizer can be dangerous to people, animals, and the environment.

Read and follow the safety and handling instructions provided by the fertilizer manufacturer before working around fertilizer system.

1. The cart is designed to carry the implement on the road empty at normal implement speeds (25 mph or less). Travel through the field at normal operating speeds (10 MPH or less) and normal conditions. The cart should not be loaded past the cart capacity rating. When going through pivot tracks, speed should be reduced accordingly. When approaching deep ravines or ditches, an alternate path should be chosen.
2. Turning radius is limited, therefore care should be taken to not exceed minimum turning range. Minimum turning radius changes depending upon the tractor type and entire system set-up. The arms should not contact the stop block in order to avoid damage to the cart arms. It is of greater concern when using a track tractor or when backing up the implement.
3. A general rule when backing is to follow the cart and not the toolbar.



6. DISCONNECT CART TO IMPLEMENT

6.1 DISCONNECT FROM IMPLEMENT

WARNING

Crushing hazard.

The hitch may have a negative draft load (upward force).

Before disconnecting from tractor:

- Park the equipment on firm, level surface.
- Place tractor transmission in park, turn tractor engine off and remove ignition key.
- Block the wheels.
- Verify service locks are properly engaged or lower tool bar and lower row units to the ground or pavement.
- Remove all product from tank.

WARNING

Fertilizer can be dangerous to people, animals, and the environment.

Read and follow the safety and handling instructions provided by the fertilizer manufacturer before working around fertilizer system.

6.1.1 DISCONNECT MONTAG SYSTEM

WARNING

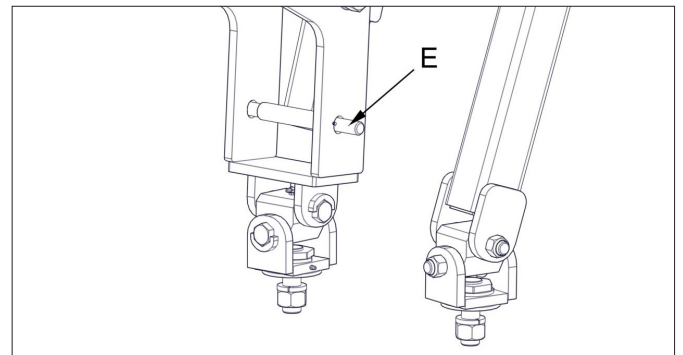
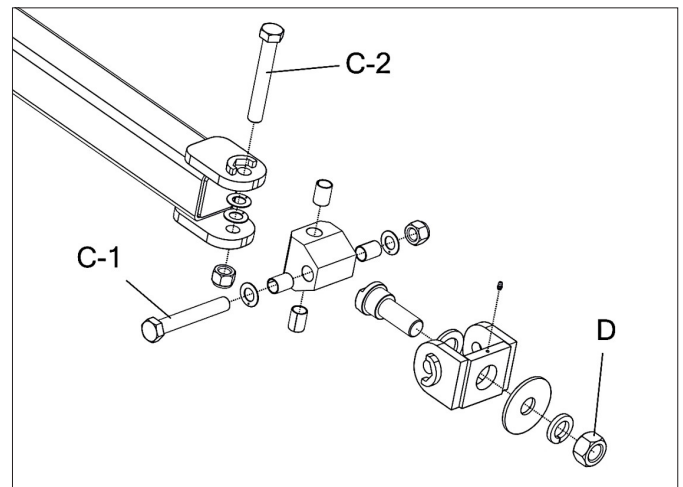
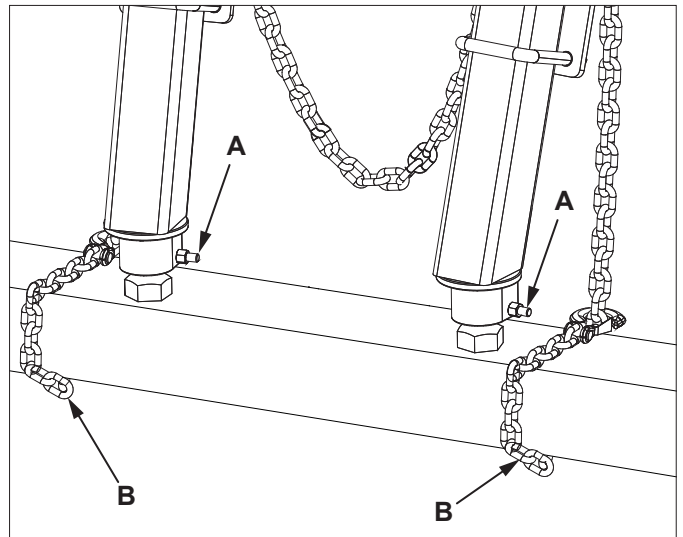
Pressurized fluids can penetrate the skin.

Relieve all hydraulic pressure before disconnecting hydraulic hoses.

1. Disconnect implement ISO Plug from tractor. Disconnect all other electrical harnesses connected between the tractor and the cart, including the lighting connector.
2. Relieve hydraulic pressure and disconnect pressure hose, return hose, case drain hose and drift assist hoses, if used, from tractor.

6.1.2 DISCONNECT CART FROM IMPLEMENT

1. Install jacks on cart and remove weight from implement hitch.
2. Disconnect and remove chains (B) from implement.
3. Label and disconnect all air hoses.
4. Remove bolts (A) from ball hitches.
5. If using DriftAssist, put transport pin (E) in transport position. Remove bolt (C-1) or nut (D) on knuckle hitches.
6. Lift cart from hitch with jacks.



7. ROUTINE MAINTENANCE

7.1 SECTION OVERVIEW

Montag Manufacturing uses some components produced by other manufacturers. Refer to the OEM manufacturer's information for specific maintenance instructions. If you do not have the manufacturer's information, contact your dealer or Montag Manufacturing for assistance.

Routine inspections, maintenance and service must be performed on your machine on a regular basis to insure safe and reliable operation. Inspections can be performed by a person trained in spotting potential problems. Service and repairs must be performed by a trained, qualified technician.

Note: In addition to this manual, also check the relevant component manufacturer's manual.



Crushing hazard.

Before performing inspections, service or maintenance:

- **Park the equipment on firm, level surface.**
- **Place tractor transmission in park, turn tractor engine off and remove ignition key.**
- **Block the wheels.**
- **Lower all equipment to the ground or pavement.**

7.2 END OF SEASON INSPECTIONS

Perform the following inspections at the end of each season. Repair or replace worn and damaged parts.

- Inspect hoses.
- Inspect knuckle hitches.
- inspect hydraulic hoses.

7.3 LUBRICATION

7.3.1 LUBRICATION FITTINGS

1. Lubricate the following grease fittings at the beginning and end of each season, and after every 1000 acres of use.

All carts except the drift assist and knuckle hitch carts have ten fittings:

- One at each pin for the spindle assembly to center frame.
- One at each pin for arm to center frame,
- One at each hitch to ball connection.
- Carts equipped with knuckle hitches or drift assist have one additional fitting on each knuckle hitch swivel.

2. Lubricate the following grease fittings at the beginning and end of each season, and every week or after every 1000 acres of use, whichever comes first.

- One on each tie rod end.

3. Lubricate using 274 Moly EP Synthetic Plus or equivalent grease.

7.4 SERVICE HUB BEARINGS AND SEALS

Note: Perform this service every three years or 5000 acres of use, whichever comes first.

⚠ WARNING

Prevent death or serious injury.

Cart assembly weighs up to 13140 lbs (5960 kg) depending on configuration.

Tire/wheel assembly weighs approximately 820 lbs (372 kg).

Spindle assembly weighs approximately 360 lbs (163 kg).

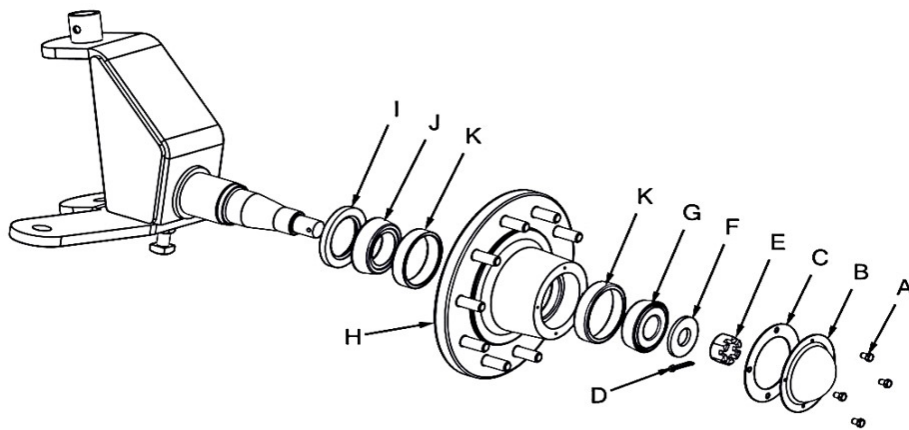
Use adequate lifting and support devices.

Crushing hazard.

Before performing inspections, service or maintenance:

- **Park the equipment on firm, level surface.**
- **Place tractor transmission in park, turn tractor engine off and remove ignition key and place do not operate tag on ignition switch.**
- **Do not disconnect cart from implement for servicing.**
- **Block the wheels.**
- **Lower all equipment to the ground or pavement.**

1. Remove all product from tank.
2. Raise and support cart using adequate lifting and support devices.
3. Remove wheel using an adequate lifting device.
4. Remove 4 bolts (A), remove hub cap (B) and seal (C). Discard seal.
5. Remove cotter pin (D), slotted nut (E), washer (F) and outer bearing (G).
6. Remove hub (H) from spindle.
7. Remove seal (I) and inner bearing (J) from hub. Discard seal.
8. Clean and inspect bearings, bearing cups (K), hub and spindle.



-
9. Replace any parts that are damaged or worn.
 10. If a bearing or bearing cup must be replaced, replace both bearings and bearing cups. Do not install a new bearing in a used bearing cup. Use a press and correct size drivers to remove and install bearing cups in hub.
 11. Lubricate and install inner bearing.
 12. Install new inner seal with flat side facing up, away from the hub with a press installation tool.
 13. Install hub on spindle.
 14. Install outer bearing, washer and shaft nut.

NOTICE

Prevent damage to hub seals.

Do not use air or electric power tools on slotted nut.

15. Tighten slotted nut.
16. Loosen slotted nut ½ turn, then tighten adequately to preload bearing.
17. Align hole in spindle and install new cotter pin. Bend open end of cotter pin.
18. Install gasket and hub cap. Install four hub cap bolts. Tighten bolts.
19. install wheel following 3.3.6 instructions.

8. SERVICE AND REPAIR

8.1 SPINDLE BUSHINGS

Note: Spindle assembly has bushings at top and bottom of pin sleeves. Bushings should be replaced in pairs (top and bottom of sleeve together).

WARNING

Prevent death or serious injury.

Cart assembly weighs up to 13140 lbs (5960 kg), depending on configuration.

Tire/wheel assembly weighs approximately 820 lbs (372 kg).

Spindle assembly weighs approximately 360 lbs (163 kg).

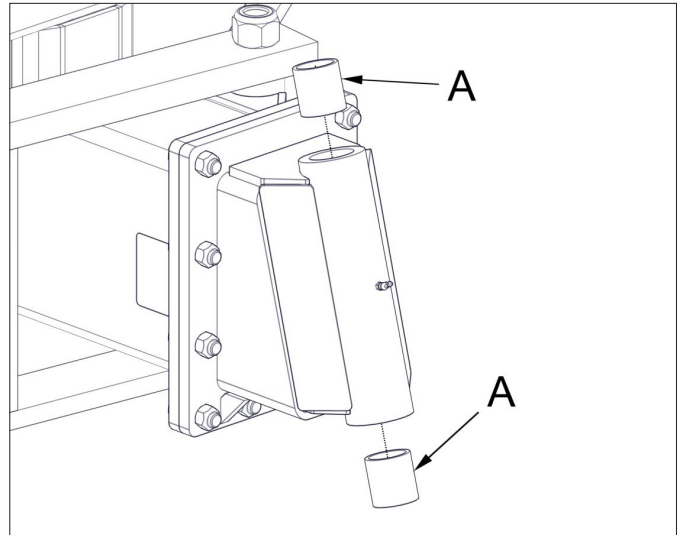
Use adequate lifting and support devices.

1. Remove all product from tank.
2. Raise and support cart using adequate lifting and support devices.
3. Remove wheel using an adequate lifting device.
4. Remove spindle assembly using an adequate lifting device.

5. Remove bushing (A).

Note: To avoid damaging bushing, install with a non-marring implement, such as a rubber mallet, or with a block of wood to protect bushing during installation.

6. Install new bushing with a non-marring implement until outer end of bushing is flush with pin sleeve.
7. Install spindle assembly. (See Section 3.3.3)
8. Install wheel. (See Section 3.3.6)
9. Remove cart supports and lower cart.



8.2 ARM BUSHINGS

Note: Arm assembly has bushings at top and bottom of pin sleeves. Bushings should be replaced in pairs (top and bottom of sleeve together).



Prevent death or serious injury.

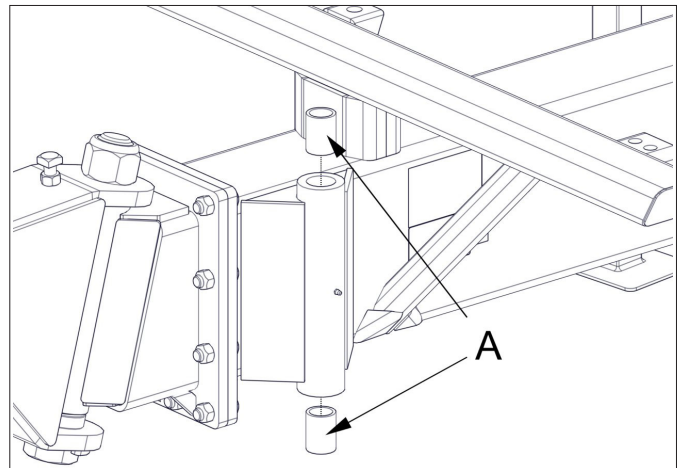
Arm assembly weighs approximately 470 lbs (213 kg).

Use adequate lifting and support devices.

1. Remove all product from tank.
2. Remove arm assembly using an adequate lifting device. Remove only one arm assembly at a time and ensure opposite arm is adequately secured to prevent cart from tipping over.
3. Remove bushing (A).

Note: To avoid damaging bushing, install with a non-marring implement, such as a rubber mallet, or with a block of wood to protect bushing during installation.

4. Install new bushing with a non-marring implement until outer end of bushing is flush with pin sleeve.
5. Install arm assembly. (See Section 3.3)



8.3 KNUCKLE HITCHES



Crushing hazard.

The hitch may have a negative draft load (upward force).

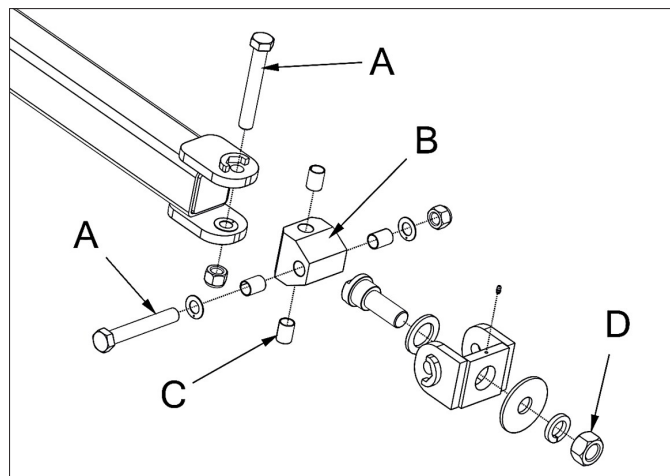
Before disconnecting from tractor:

- **Park the equipment on firm, level surface.**
- **Place tractor transmission in park, turn tractor engine off and remove ignition key.**
- **Block the wheels.**
- **Verify service locks are properly engaged or lower tool bar and lower row units to the ground or pavement.**
- **Remove all product from tank.**

1. Remove lock nuts, washers and bolts (A).
2. Remove knuckle universal joint (B).
3. Remove universal joint, bolts, washers and lock nuts.
4. Remove old bushings (C).

Note: To avoid damaging bushing, install with a non-marring implement, such as a rubber mallet, or with a block of wood to protect bushing during installation.

5. Install new bushing with a non-marring implement until outer end of bushing is flush with pin sleeve.
6. Reassemble universal joint.
7. Torque nuts (D) to 700 ft. lbs. (949 Nm) or use thread locker.
8. Lubricate universal joint with a recommended grease.
9. Tighten nut until it makes full contact with plate. Do not overtighten as this can damage parts.



8.4 MAINTENANCE SCHEDULE

Schedule follows time increment of whatever comes first.			
	Beginning/ending season, and every week or 1000 hours	Beginning/ending season or 1000 hours	Every 3 years or 5000 acres
Lubricate tie rod ends	X		
Lubricate all other fittings		X	
Service hub bearings and seals			X

9. STORAGE

1. Cart should be cleaned by power washing to prevent fertilizer from causing corrosion during off season. Care should be taken to avoid areas where grease would be removed, decals would be damaged, or electrical connections.
2. Lubrication instructions should be followed, and complete any service or repair.
3. Montag Auto Steer Cart should be stored in a location and manner where it is not subject to damage. It is recommended that the cart is not disassembled for storage.

10. PARTS

Refer to our Carts - Parts Manual in the Support section of our website at www.montagmfg.com

11. TROUBLESHOOTING

Problem	Possible Cause	Solution
Cart not tracking correctly.	Alignment is not correct.	Follow alignment procedures (Section 4.1.3).
Cart arms not level in field position.	Hitch is out of adjustment.	Follow adjustment procedures (Section 3.3.8).
Hitch is at limit of adjustment.	Gusset may be in wrong location for desired adjustment.	Move gusset to opposite of cart arm (Section 3.3.8).
Tracks wearing unevenly.	Track tension is out of adjustment.	Adjust track tension per Camso manual instructions.
Tracks wearing excessively.	Roading is too fast/long.	Do not transport above 15 MPH. See Camso operator's manual.

NOTES



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