MacDon

R113/R116
Rotary Disc Pull-Type

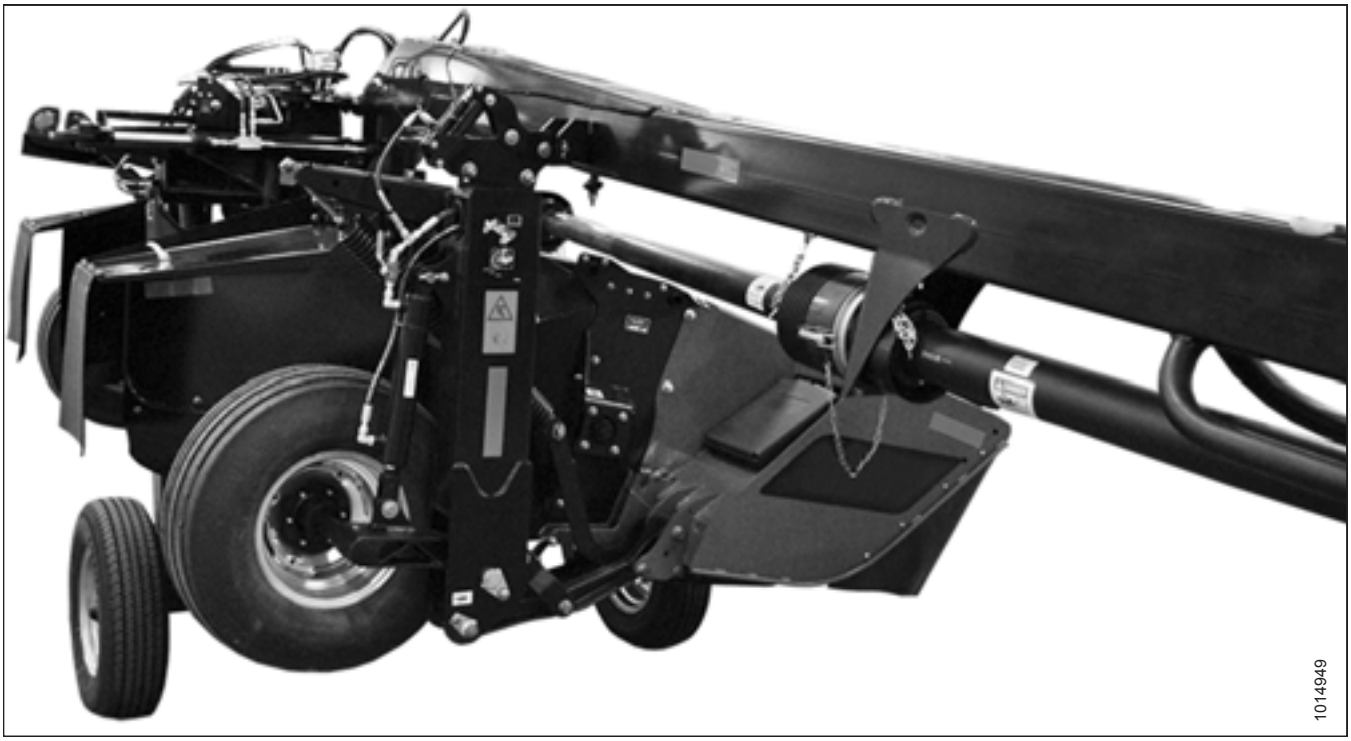
Road-Friendly Transport™ (MD #C2002) Installation Instructions

214633 Revision C

Original Instruction

The harvesting specialists.

R1 Series Rotary Disc Pull-Type with Transport Installed



Published in August 2019.

Introduction

The Road-Friendly Transport™ allows a MacDon R113/R116 Rotary Disc Pull-Type to stay within width restrictions for most roads and highways while being towed.

This document explains how to install the transport onto the R113/R116 Rotary Disc Pull-Type. A list of parts included in the kit is provided. Refer to *2 Parts List, page 5*.

NOTE:

If installing this kit on a pull-type from model year 2019 or prior, order two washers (MD #18670) separately. These washers are required to prevent damage to the slow moving vehicle (SMV) sign when reinstalling the sign.

NOTE:

If installing this kit on a pull-type from model year 2018 or prior, order one transport pin kit (MD #259258) separately. This kit is required to install the hitch pin. On pull-types equipped with finger conditioners, this kit also adds clearance for the center shield. Install the new finger conditioner center shield components before installing the Road-Friendly Transport™ kit. These Road-Friendly Transport™ kit instructions explain when to install the hitch pin components provided in the transport pin kit (MD #259258).

Installation time

The kit should take approximately 4 hours to install.

Conventions

The following conventions are followed in this document:

- Right and left are determined from the operator's position, facing the direction of travel.
- Unless otherwise noted, use the standard torque values provided in the rotary disc pull-type operator's manual or technical manual.

NOTE:

Keep your MacDon publications up-to-date. The most current version can be downloaded from our website (*www.macdon.com*) or from our Dealer-only site (*https://portal.macdon.com*) (login required).

This instruction is available in English and French and can be ordered from MacDon, downloaded from our Dealer Portal, or from our International website (*http://www.macdon.com/world*).

List of Revisions

At MacDon, we're continuously making improvements, and occasionally these improvements affect product documentation.The following list provides an account of major changes from the previous version of this document.

Section	Summary of Change	Internal Use Only
Throughout	Updated references to rotary disc pull-types according to product naming conventions.	Tech Pubs
Introduction, page i	Revised statement: • Unless otherwise noted, use the standard torque values provided in the rotary disc pull-type operator's manual or technical manual. ECN 57755 – added NOTE: • If installing this kit on a pull-type from model year 2019 or prior, order two washers (MD #18670) separately. These washers are required to prevent damage to the slow moving vehicle (SMV) sign when reinstalling the sign. ECN 56953 and ECN 57017 – added NOTE: • If installing this kit on a pull-type from model year 2018 or prior, order one transport pin kit (MD #259258) separately. This kit is required to install the hitch pin. On pull-types equipped with finger conditioners, this kit also adds clearance for the center shield. Install the new finger conditioner center shield components before installing the Road-Friendly Transport™ kit. These Road-Friendly Transport™ kit instructions explain when to install the hitch pin components provided in the transport pin kit (MD #259258).	Tech Pubs ECN 57755 ECN 56953 ECN 57017 Product Support
1.1 Signal Words, page 1	Added IMPORTANT and NOTE.	Tech Pubs
2.1 Transport Assembly Parts List, page 6	Created separate topic for the transport assembly (small parts bag not shown), and revised the parts lists as follows: • Added a footnote to clarify that three of the eleven cable ties are attached to hoses MD #246366. The remaining eight ties are included in the small parts bag. ECN 57834: • Cover assembly (non-serviceable part) no longer includes a module. • Added one cap (MD #293127) for a total quantity of one. ECN 57593: • Added one electrical cap (MD #134741) for a total quantity of one.	ECN 57834 ECN 57593

Section	Summary of Change	Internal Use Only
	• Added one electrical cap (MD #134742) for a total quantity of one. • Added one electrical harness (MD #281614) for a total quantity of one.	
2.2 Transport Assembly Parts List – Small Parts Bag, page 8	Created a topic and parts list for the small parts bag included with the transport assembly, and revised the parts list as follows: • Identified fitting MD #136149 as a separate part. ECN 56030: • Added footnote: Only used on a pull-type from model year 2017 or prior. ECN 57834: • Added two screws (MD #136313) for a total quantity of two. • Added two nuts (MD #030855) for a total quantity of two. Added footnotes: • MD #50101: Only four are used. • MD #184657: Not used.	ECN 56030 ECN 57834
2.3 Remote Control Parts List, page 10	Added topic and parts list for the remote control and harness.	Tech Pubs
3.1 Moving Hitch Swing Cylinder, page 13 • Step *1, page 13*	Added step for model years 2018 and prior.	ECN 56953 ECN 57017 Product Support
3.1 Moving Hitch Swing Cylinder, page 13 • See the NOTE below Step *6, page 13*	Revised the NOTE to read “rod end” (previously was “clevis end”): • The rod end of cylinder will be attached to the transport casting when the system is primed.	Product Support
3.2.1 Installing Latch Assembly, page 14 • Step *4, page 14* • Step *5, page 14* • Step *6, page 14*	Added steps and associated pictures to show new electrical caps.	ECN 57593
3.2.1 Installing Latch Assembly, page 14 • Step *7, page 14* • Step *8, page 14* • Step *9, page 14* • Step *11, page 15* • Step *12, page 15*	Revised steps and/or associated pictures to show new latch assembly hydraulics.	ECN 56030

Section	Summary of Change	Internal Use Only
3.2.1 Installing Latch Assembly, page 14 • Step *13, page 15*	Added part numbers for clarity: • MD #120333 • MD #18648	Tech Pubs
3.2.2 Installing Transport Assembly, page 16 • Step *1, page 16*	Revised step. Hardware is now discarded.	Tech Pubs
3.2.2 Installing Transport Assembly, page 16 • Step *3, page 16*	Added part numbers for clarity: • MD #136157 • MD #112130 • MD #136122	Tech Pubs
3.2.2 Installing Transport Assembly, page 16 • Step *10, page 17*	Added step for model years 2018 and prior.	ECN 56953 ECN 57017 Product Support
3.2.2 Installing Transport Assembly, page 16 • Figure *3.14, page 18*	Updated picture to show new cover assembly that does not include a module.	ECN 57834
3.2.2 Installing Transport Assembly, page 16 • Step *13, page 18* • Step *14, page 18*	Moved steps and associated picture from *3.2.4 Installing Transport Valve, page 21* to this section because module has to be removed and reinstalled.	ECN 57834
3.2.2 Installing Transport Assembly, page 16 • Step *15, page 18*	Added step and revised associated picture to show P-clip.	ECN 57455
3.2.2 Installing Transport Assembly, page 16 • Step *16, page 18* • Step *17, page 19*	Added steps and associated pictures.	ECN 57834
3.2.3 Installing Transport Wheels, page 20	Removed steps for relocating the axle on the right side of the transport assembly.	Tech Pubs
3.2.5 Installing Transport Swing Cylinder, page 22 • Step *2, page 22*	Added part numbers for clarity: • MD # 281101 • MD #18609	Tech Pubs
3.2.5 Installing Transport Swing Cylinder, page 22 • Step *4, page 22*	Revised step to identify dimension.	Tech Pubs
3.2.5 Installing Transport Swing Cylinder, page 22 • Step *5, page 23*	Added part numbers for clarity: • MD # 281101 • MD #18609	Tech Pubs

Section	Summary of Change	Internal Use Only
3.2.5 Installing Transport Swing Cylinder, page 22 • Step *6, page 23*	Revised the step to read “rod end” (previously was “clevis end”). Added part numbers for clarity: • MD # 281101 • MD #18609	Product Support Tech Pubs
3.2.6 Installing Transport Alignment Control, page 23	Removed a step regarding the cam assembly shipping support that was only applicable to the factory-installed transport option.	Tech Pubs
3.2.6 Installing Transport Alignment Control, page 23 • Step *5, page 24* • Step *6, page 25*	Revised steps and NOTE to clarify that the rod end of the cylinder is being installed.	Product Support
3.2.6 Installing Transport Alignment Control, page 23 • Step *9, page 26*	Corrected part number to MD #247625. Was MD #247598.	Tech Pubs
3.3.1 Installing Hydraulic Lines and Hoses, page 27	Revised NOTE: • Refer to the rotary disc pull-type operator’s manual or technical manual for hydraulic fitting installation details.	Tech Pubs
3.3.1 Installing Hydraulic Lines and Hoses, page 27 • Step *1, page 27*	Added picture to clarify step.	Tech Pubs
3.3.1 Installing Hydraulic Lines and Hoses, page 27 • Step *4, page 27*	Added IMPORTANT.	Tech Pubs
3.3.1 Installing Hydraulic Lines and Hoses, page 27 • Step *5, page 27*	Added part number of fitting for clarity.	Tech Pubs
3.3.1 Installing Hydraulic Lines and Hoses, page 27 • Step *10, page 28* • Step *11, page 28*	• Added part number MD #247781 for clarity. • Revised steps to correctly identify ports C and D.	Tech Pubs
3.3.1 Installing Hydraulic Lines and Hoses, page 27 • Step *12, page 28*	Added part number MD #30753 for clarity.	Tech Pubs
3.3.1 Installing Hydraulic Lines and Hoses, page 27 • Step *13, page 29* • Step *14, page 29*	Added part number MD #246366 for clarity.	Tech Pubs
3.3.1 Installing Hydraulic Lines and Hoses, page 27	Added part number MD #30753 for clarity.	Tech Pubs

Section	Summary of Change	Internal Use Only
• Step *17, page 29*		
3.3.1 Installing Hydraulic Lines and Hoses, page 27 • Step *35, page 32*	Added part number MD #30753 for clarity.	Tech Pubs
3.4.1 Installing Light Assemblies, page 33 • Step *3, page 33*	Added step and revised associated picture.	Tech Pubs
3.4.1 Installing Light Assemblies, page 33 • Step *4, page 33*	Revised step to reference the correct bracket.	Tech Pubs
3.4.1 Installing Light Assemblies, page 33 • Step *5, page 33*	Revised step: • Two nuts (MD #136431) and two bolts (MD #184667) from the kit are used to install the light assembly.	Tech Pubs
3.4.1 Installing Light Assemblies, page 33 • Step *6, page 33*	Added part number (MD #223185) for clarity.	Tech Pubs
3.4.1 Installing Light Assemblies, page 33 • Step *7, page 33*	Revised step to reference the correct bracket.	Tech Pubs
3.4.1 Installing Light Assemblies, page 33 • Step *8, page 34*	Added part numbers for clarity: • MD #136178 • MD #50101	Tech Pubs
3.4.4 Connecting Selector Valve and Transport Lighting Module, page 36 • Step *1, page 36*	Added step and associated picture.	ECN 57834
3.4.5 Installing Remote Control, page 36 • Figure *3.64, page 37* • Figure *3.66, page 38*	Added picture and revised associated NOTE to identify the fuse inside the remote control.	Tech Pubs
3.4.6 Installing Slow Moving Vehicle Sign, page 39 • Step *2, page 39*	Added “washers” and the NOTE to the step.	ECN 57755
3.4.6 Installing Slow Moving Vehicle Sign, page 39 • Step *3, page 39*	Added part number MD #259218 for clarity.	Tech Pubs
3.4.6 Installing Slow Moving Vehicle Sign, page 39 • Step *4, page 39*	Revised step as follows: • Parts are retrieved from the shipping bag, not reused. • Added part numbers MD #184667 and MD #136431 for clarity.	Tech Pubs

Section	Summary of Change	Internal Use Only
3.4.6 Installing Slow Moving Vehicle Sign, page 39 • Step *5, page 39*	Added “washers” to the step and revised associated picture.	ECN 57755
3.4.6 Installing Slow Moving Vehicle Sign, page 39	Removed the last two steps of this procedure because the speed decal was already attached to the bracket.	Engineering
3.5 Installing Cover, page 40 • Step *1, page 40*	Revised picture to clarify step.	Tech Pubs
5.1 Preparing Rotary Disc Pull-Type for Transport, page 47	Changed the following statement to a WARNING: • To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key from ignition before leaving operator’s seat for any reason.	Tech Pubs
5.1 Preparing Rotary Disc Pull-Type for Transport, page 47 • Step *1, page 47*	Added step.	Tech Pubs
5.1 Preparing Rotary Disc Pull-Type for Transport, page 47 • Step *2, page 47*	Replaced steps for storing the hitch jack stand with a reference section at the end of the manual.	Tech Pubs
5.1 Preparing Rotary Disc Pull-Type for Transport, page 47 • Step *3, page 48* • Step *4, page 48*	Flipped the order of these steps.	Product Support
5.2 Transporting with a Tractor, page 49	Removed step for storing the jack stand because this is completed in the previous section.	Tech Pubs
5.4 Converting from Field to Transport Mode – With Road-Friendly Transport™, page 51	Added DANGER: • Stop the power take-off (PTO) before converting the unit into transport mode. The cutting discs continue to spin after the drive is turned off. Changed the following WARNING to a CAUTION: • To prevent equipment damage, ensure cutterbar doors are properly closed before converting the machine from field to transport mode.	Tech Pubs
5.5 Converting from Transport to Field Mode – With Road-Friendly Transport™, page 56 • Step *1, page 56*	Added step. Changed the following WARNING to a CAUTION: • To prevent equipment damage, ensure cutterbar doors are properly closed before converting the machine from field to transport mode.	Tech Pubs
6.1 Attaching Rotary Disc Pull-Type to the Tractor, page 61	Added “Attaching Hitch” reference chapters.	Tech Pubs

Chapter 1: Safety

1.1 Signal Words

Three signal words, **DANGER**, **WARNING**, and **CAUTION**, are used to alert you to hazardous situations. Two signal words, **IMPORTANT** and **NOTE**, identify non-safety related information. Signal words are selected using the following guidelines:

DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

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

CAUTION

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

IMPORTANT:

Indicates a situation that, if not avoided, could result in a malfunction or damage to the machine.

NOTE:

Provides additional information or advice.

1.2 General Safety

CAUTION

The following general farm safety precautions should be part of your operating procedure for all types of machinery.

Protect yourself.

- When assembling, operating, and servicing machinery, wear all protective clothing and personal safety devices that could be necessary for the job at hand. Do **NOT** take chances. You may need the following:
  - Hard hat
  - Protective footwear with slip-resistant soles
  - Protective glasses or goggles
  - Heavy gloves
  - Wet weather gear
  - Respirator or filter mask
- Be aware that exposure to loud noises can cause hearing impairment or loss. Wear suitable hearing protection devices such as earmuffs or earplugs to help protect against loud noises.

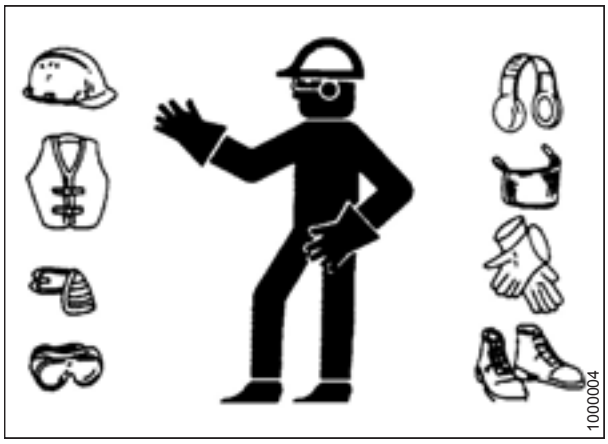


Figure 1.1: Safety Equipment

Figure 1.2: Safety Equipment

- Provide a first aid kit in case of emergencies.
- Keep a properly maintained fire extinguisher on the machine. Be familiar with its proper use.
- Keep young children away from machinery at all times.
- Be aware that accidents often happen when the Operator is tired or in a hurry. Take time to consider safest way. **NEVER** ignore warning signs of fatigue.

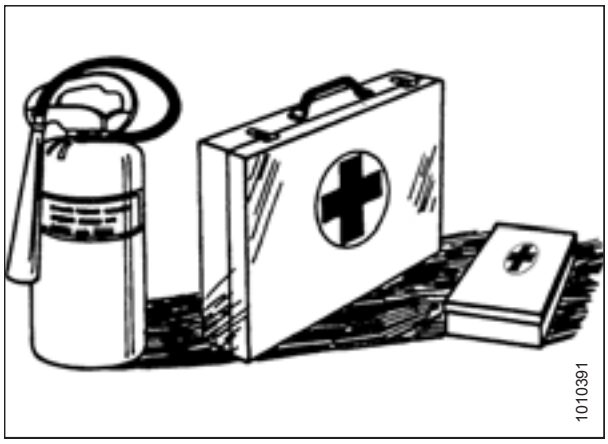


Figure 1.3: Safety Equipment

- Wear close-fitting clothing and cover long hair. **NEVER** wear dangling items such as scarves or bracelets.
- Keep all shields in place. **NEVER** alter or remove safety equipment. Make sure driveline guards can rotate independently of shaft and can telescope freely.
- Use only service and repair parts made or approved by equipment manufacturer. Substituted parts may not meet strength, design, or safety requirements.

Figure 1.4: Safety around Equipment

- Keep hands, feet, clothing, and hair away from moving parts. **NEVER** attempt to clear obstructions or objects from a machine while the engine is running.
- Do **NOT** modify the machine. Unauthorized modifications may impair machine function and/or safety. It may also shorten the machine's life.
- To avoid injury or death from unexpected startup of the machine, **ALWAYS** stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

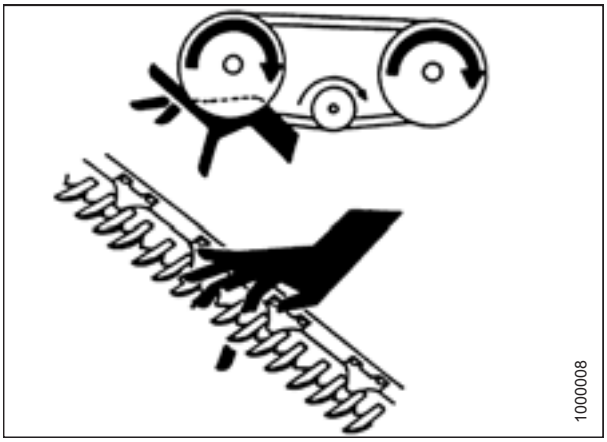


Figure 1.5: Safety around Equipment

- Keep service area clean and dry. Wet and/or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Be sure all electrical outlets and tools are properly grounded.
- Keep work area well lit.
- Keep machinery clean. Straw and chaff on a hot engine are fire hazards. Do **NOT** allow oil or grease to accumulate on service platforms, ladders, or controls. Clean machines before storage.
- **NEVER** use gasoline, naphtha, or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.
- When storing machinery, cover sharp or extending components to prevent injury from accidental contact.

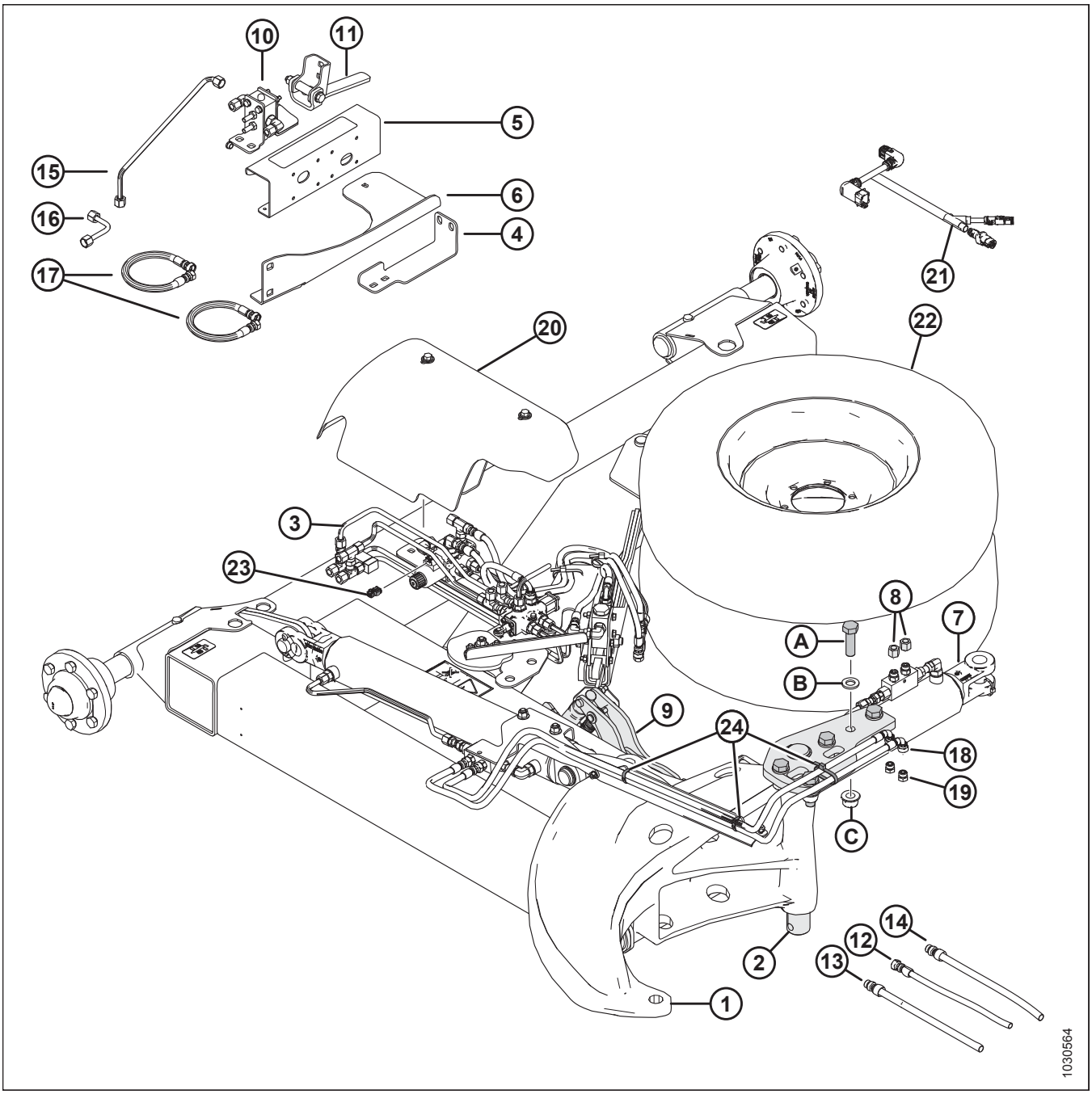
Figure 1.6: Safety around Equipment

Chapter 2: Parts List

The following parts are included in this kit.

2.1 Transport Assembly Parts List

Figure 2.1: Transport Assembly Parts List

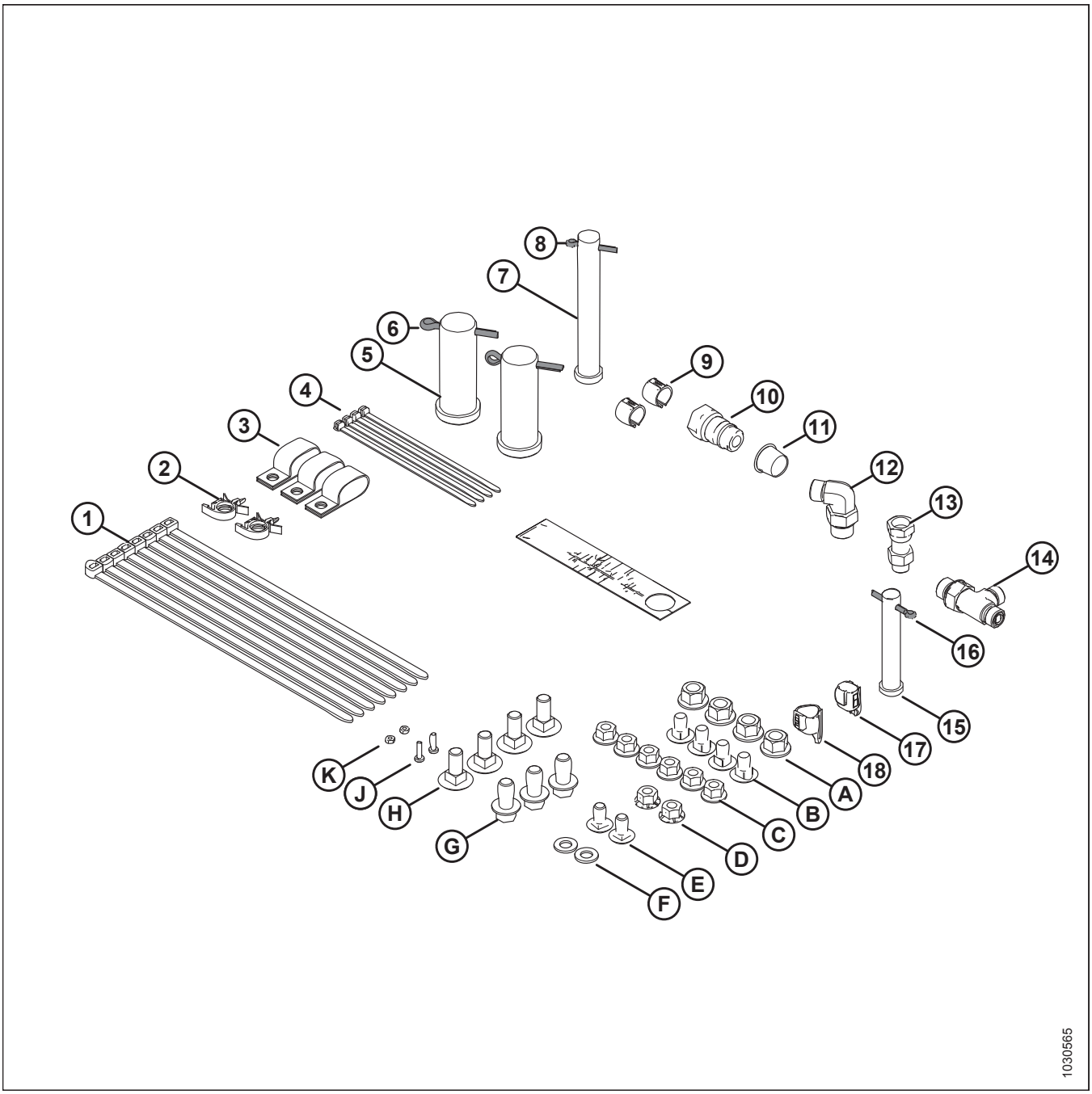


Ref	Part Number	Description	Qty
1	NSS[1]	ASSEMBLY – TRANSPORT WHEEL FRAME	1
2	NSS[1]	ASSEMBLY – PIN TRANSPORT	1
3	NSS[1]	ASSEMBLY – TRANSPORT VALVE MOUNTING	1
4	247958	BRACKET - SUPPORT	1
5	223185	ASSEMBLY – SUPPORT, DUAL LAMP, LH	1
6	259218	BRACKET – SMV, SIS SIGN	1
7	NSS[1]	ASSEMBLY – CYL, 3.5" TRANSPORT	1
8	136325	CAP - HYD SAE -6 ORFS	2
9	NSS[1]	ASSEMBLY – TONGUE-HITCH LATCH	1
10	NSS[1]	ASSEMBLY – TRANSPORT SWING COMPLETE	1
11	247625	ASSEMBLY – TRANSPORT COMPLETE PADDLE	1
12	247106	HOSE - HYD	1
13	224162	HOSE - HYD	1
14	224160	HOSE - HYD	1
15	247335	LINE - HYDRAULIC	1
16	246954	LINE - HYDRAULIC	1
17	247781	HOSE - HYD	2
18	246366	HOSE - HYD	2
19	136326	PLUG - HYD SAE -6 ORFS	2
20	NSS[1]	ASSEMBLY – COVER WITHOUT MODULE	1
21	281614	HARNESS - TRANSPORT LIGHTS	1
22	NSS[1]	WHEEL ASSEMBLY - SILVER	2
23	NSS[1]	CONNECTOR - AT06-2S-SS01, SOLID	1
24	30753[2]	FASTENER - CABLE TIE BLACK	3
		ATTACHED TO ASSEMBLY — PIN TRANSPORT:	
A	136157	BOLT - HEX HD M20X2.5X65-10.9-AA1J	5
B	112130	WASHER - HARD ASTM F436 3/4-400HV-AB3C	5
C	136122	NUT - HEX FLG CTR LOC M20X2.5-10-AA1J	5

1. Not sold seperately.
2. Ties are attached to hoses MD #246366.

2.2 Transport Assembly Parts List – Small Parts Bag

Figure 2.2: Transport Assembly – Small Parts Bag



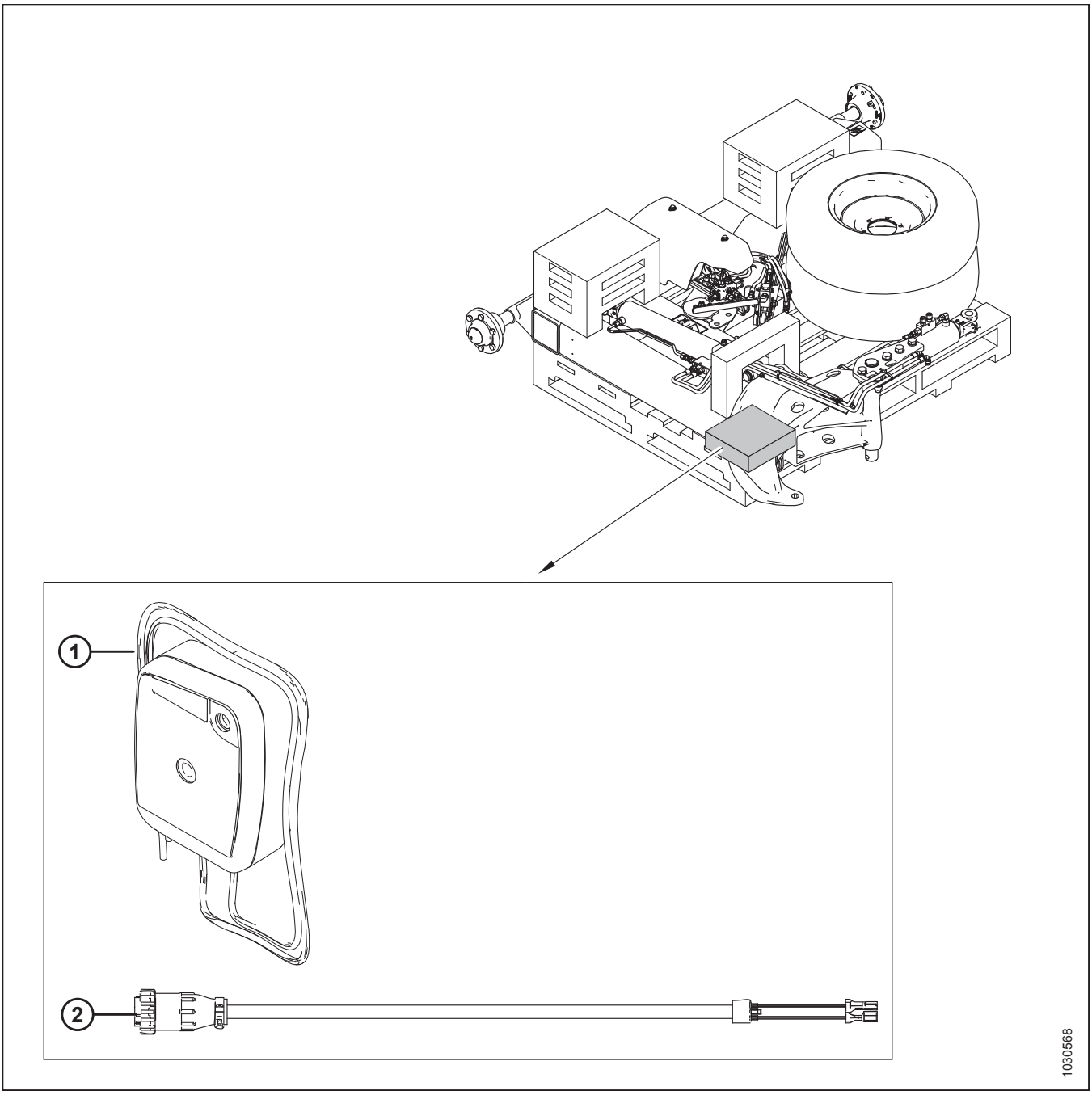
Ref	Part Number	Description	Qty
1	30753	FASTENER - CABLE TIE BLACK	8
2	184301	CLAMP	2
3	135235	CLAMP - DOUBLE HOSE INSULATED	3
4	21763	FASTENER - CABLE TIE BLACK	6
5	281101	PIN - CLEVIS	2
6	18609	PIN - COTTER 1/4 DIA X 2 ZP	2
7	120333	PIN - CLEVIS, 18.95 MM, 127 MM	1
8	18648	PIN - COTTER 3/16 DIA X 1.25 ZP	1
9	136383	COLLAR - HOSE IDENTIFICATION BLUE 1	2
10	135563	FITTING - COUPLING HYD	1
11	30340	CAP - PLASTIC	1
12	136149	FITTING - ELBOW 90°HYD CW O-RING	1
13	136147	FITTING - CONNECTOR HYD	1
14	136453[3]	FITTING - TEE HYD	1
15	19958	PIN - CLEVIS	1
16	18608	PIN - COTTER 3/16 DIA X 1.5 ZP	1
17	134741	CAP-PLUG, DEUTSCH, DT, 2 POS.	1
18	134742	CAP-PLUG, DEUTSCH, DT, 3POS.	1
A	136431	NUT - HEX FLG CTR LOC M12X1.75-10	4
B	136178	BOLT - RHSN M10X1.5X20-8.8-A3L	4
C	50101[4]	NUT - HEX FLG STVR LOC M10X1.5-10-A3L	6
D	135799	NUT - HEX FLG CTR LOC M10X1.5-10	2
E	184657[5]	BOLT - RHSSN M10X1.5X20-8.8-AA1J	2
F	184711	WASHER - FLAT REG M10-200HV-AA1J	2
G	136399	BOLT - HEX FLG HD TFL M12X1.75X25-8.8-A3L	3
H	184667	BOLT - RHSN M12X1.75X30-8.8-AA1J	4
K	136313	SCR-PAN HD M4X0.7X16-4.8-AA1J	2
J	030855	NUT-HEX M4X0.7-8-AA1J	2

3. Only used on a pull-type from model year 2017 or prior.
4. Only four are used.
5. Not used.

2.3 Remote Control Parts List

The following parts are included in this kit.

Figure 2.3: Parts List – Remote Control Parts



Ref	Part Number	Description	Qty
1	NSS[6]	ASSEMBLY - SWITCH BOX W DECAL, MD	1
2	281615	HARNESS - AUX PLUG	1

6. Not sold separately.

Chapter 3: Installation Instructions

This section describes the installation of the transport. The basic components are installed first, then hydraulic systems are connected, and the lighting and signage are installed last. Follow each procedure in order.

IMPORTANT:

Before installing the kit, lower the header to the ground and place the hitch in the mid (centered) position.

3.1 Moving Hitch Swing Cylinder

When installing the transport you will need to move the hitch swing cylinder from the left side to the right side of the hitch.

1. **For model years 2018 and prior:** If equipped with finger conditioners, install the new center shield components included in transport pin kit (MD #259258) (must be ordered separately) **BEFORE** installing the Road-Friendly Transport™ kit.
2. Disconnect the hoses at hitch swing cylinder (A), and cap openings on the cylinder and hoses.

   NOTE:

   Place a container or rag under the cylinder to catch oil.
3. Remove cotter pins (C) and (E), then remove pins (B) and (D) from the cylinder.
4. Remove cylinder (A).
5. Turn valve (F) 180°, so that fittings are pointing up.

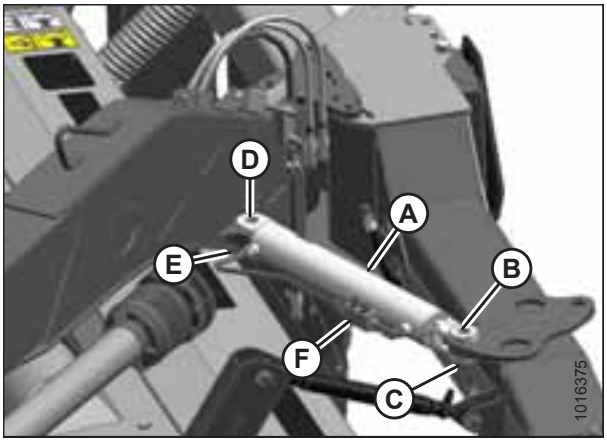


Figure 3.1: Hitch Swing Cylinder

6. Reposition cylinder (A) at the right side of the hitch, and attach the barrel end to lug (B) on the hitch with pin (C). Secure with washer and cotter pin (D).

   NOTE:

   The rod end of the cylinder will be attached to the transport casting when the system is primed.

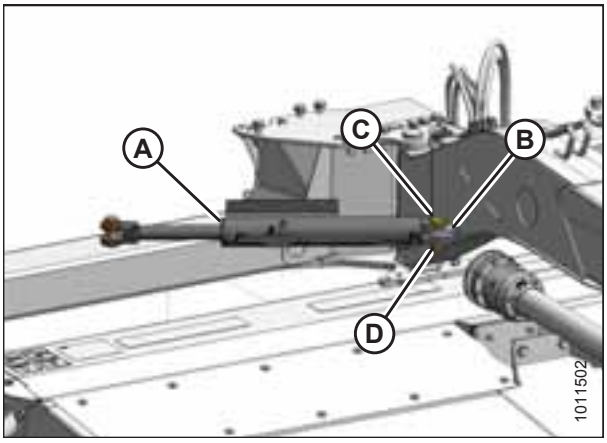


Figure 3.2: Hitch Swing Cylinder

3.2 Installing Components

This section explains how to install the basic parts of the transport system.

3.2.1 Installing Latch Assembly

1. Disconnect right light electrical connection (A).
2. Remove two bolts (B) that secure right light assembly (C) to the carrier frame.
3. Remove light assembly (C). Retain the light assembly and hardware for installation later.

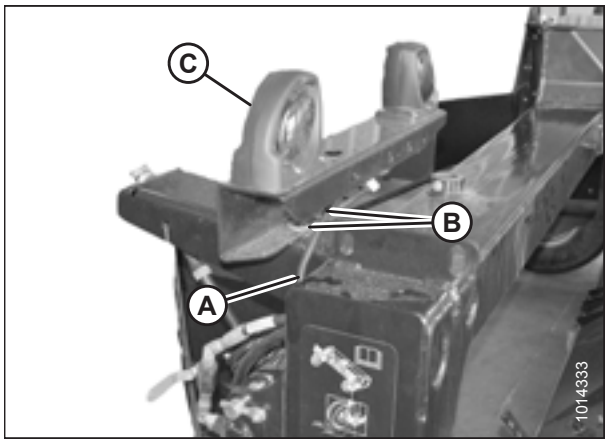


Figure 3.3: Light Bracket

4. Cap right light connector P406 with cap (A) (MD #134741).
5. Cap right light connector P403 with cap (B) (MD #134742).
6. Tuck connectors P406 and P403 into frame (C).
7. **For model year 2018 and later:** Remove cap (D) from tee fitting (E).
8. **For model year 2017 and prior:** Install tee fitting (E) (MD #136453) in place of the elbow fitting.

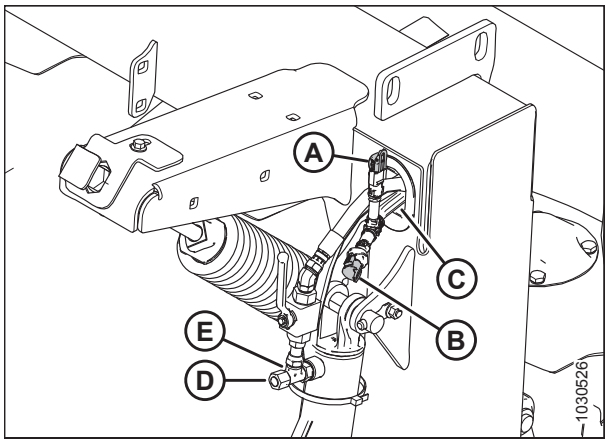


Figure 3.4: Capped Connectors

9. On the transport pallet, remove the shipping banding and packing material from latch assembly (A). Remove the latch assembly.
10. Remove two M20 mounting bolts, washers, and nuts (B) from the latch assembly, and retain for use later.

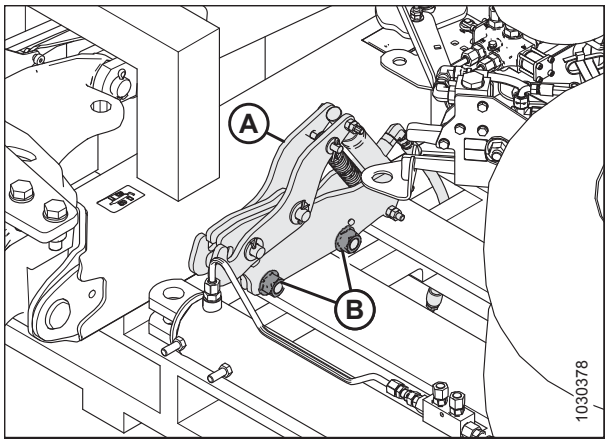


Figure 3.5: Latch Packing

11. Install latch assembly (A) onto the carrier frame as shown, and secure with the M20 bolts, washers, and nuts (B) retained in Step *10, page 14*. Do **NOT** fully tighten bolts; adjustment of the latch assembly may be necessary.
12. Attach hydraulic hose (C) from the latch assembly to tee fitting (D) as shown.

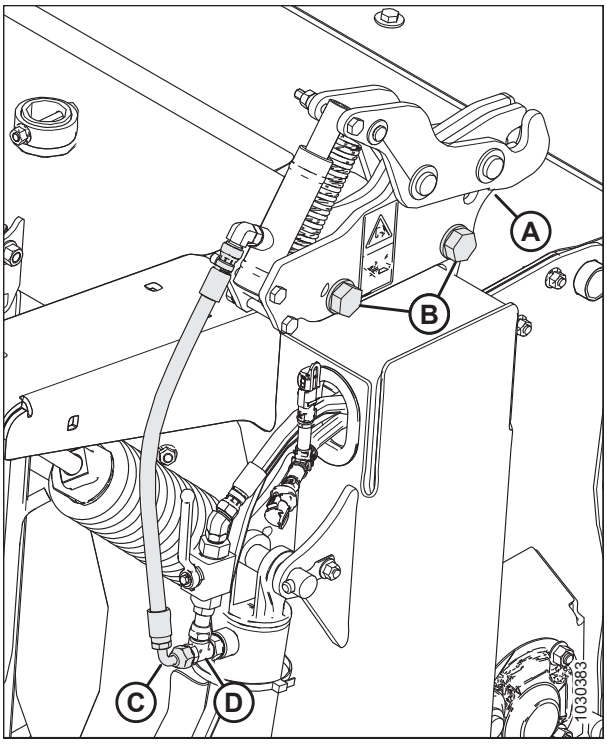


Figure 3.6: Latch Assembly

13. Retrieve clevis pin (A) (MD #120333) and cotter pin (B) (MD #18648) from the shipping bag and install onto the hitch bracket at the side of the hitch.

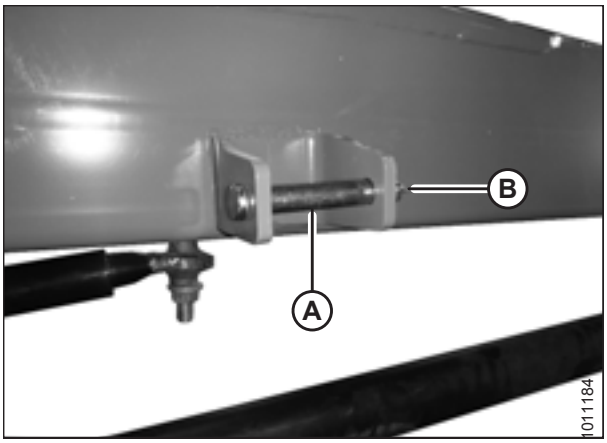


Figure 3.7: Latch Pin

3.2.2 Installing Transport Assembly

1. Remove bolts (A), hardened washers, and nuts securing slow moving vehicle (SMV) sign (B) to the carrier frame. Remove the sign. Retain the sign for reinstallation. Discard the two bolts, washers, and nuts.

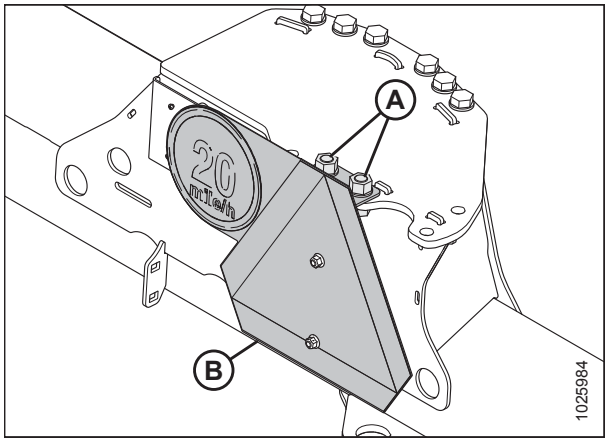


Figure 3.8: SMV Sign Attached to Carrier Frame

2. Remove transport wheels (A) from the pallet.
3. Remove five M20 hex head bolts (B) (MD #136157), washers (MD #112130), and nuts (MD #136122) in transport assembly pin (C). Do **NOT** remove the pin.

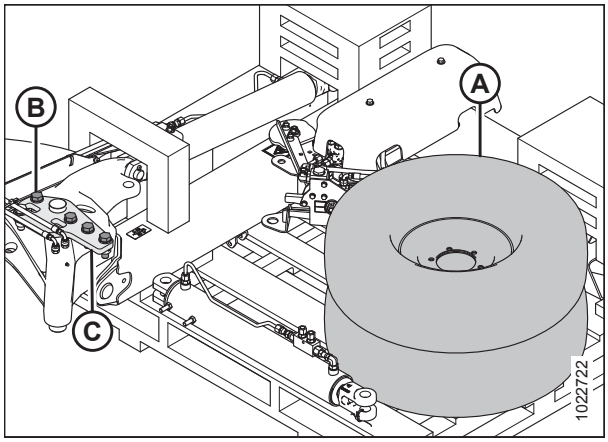


Figure 3.9: Transport Packing

4. Using a forklift, pick up the pallet holding transport assembly (A) and align it with the rear of the rotary disc pull-type.
5. Position the assembly close behind the frame and align pin (B) in transport assembly with hole (C) in the carrier. Use a soft hammer or equivalent to fully insert pin (B).

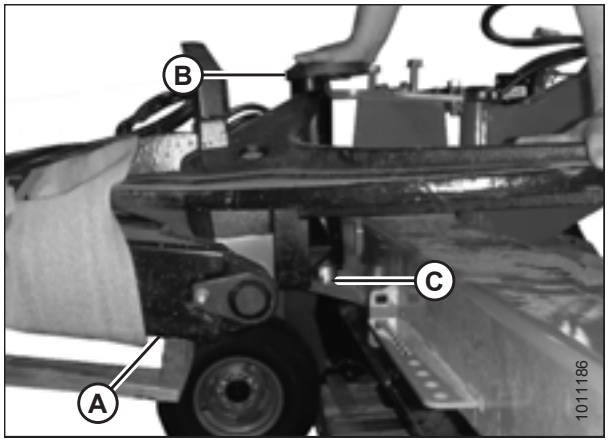


Figure 3.10: Road-Friendly Transport™

6. Install two M20 x 65 bolts (A) (MD #136157), hardened washers (MD #112130), and nuts (MD #136122).
7. Temporarily install bolts (B) to help align the assembly.

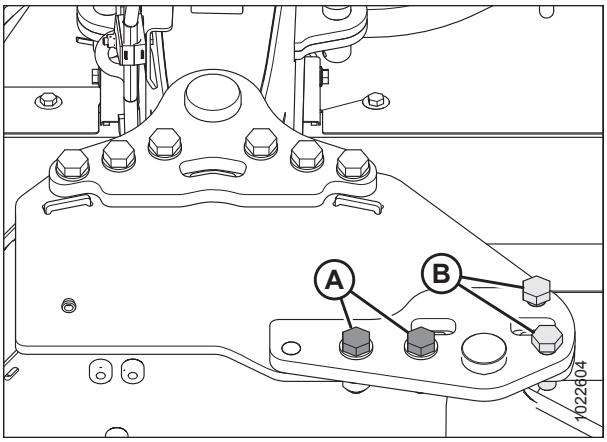


Figure 3.11: Pin Support

8. Rotate pin (A) until hole in pin aligns with holes in welded collar (B). Insert pin (C) (MD #19958) through the collar and pin.
9. Insert cotter pin (D) (MD #18608) and bend over the legs to secure it.

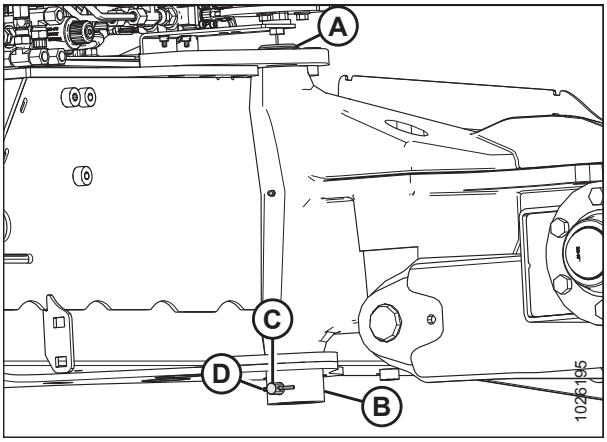


Figure 3.12: Pin Installation

10. **For model year 2018 and prior:**

    NOTE:

    Retrieve the parts in this step from the transport pin kit (MD #259258) (must be ordered separately).

    Attach pin support (A) (MD #259105) to the bottom of the carrier frame, beneath the transport pin, with two M12 hex head bolts (B) (MD #237316), two M12 flat washers (C) (MD #184714), and two M12 hex flange lock nuts (D) (MD #136431). Drill holes if necessary. Reinstall clevis and cotter pin to secure hitch pin.

    NOTE:

    Only one set of hardware shown in the illustration. The other set is hidden behind the transport tube.

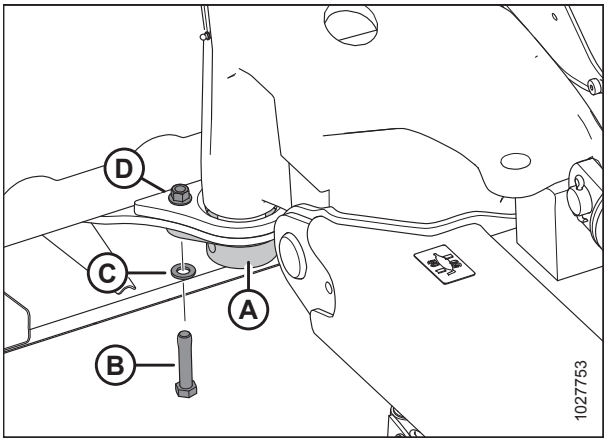


Figure 3.13: Pin Support

11. Retrieve cover assembly (B) from the shipping location.
12. Remove two bolts (A) from cover assembly (B). Retain the bolts and cover for installation later.

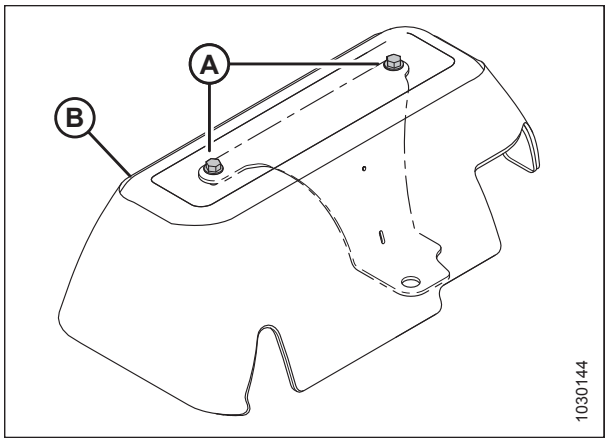


Figure 3.14: Cover Assembly

13. Disconnect plugs P102 (A) and P301 (B) from the transport lighting module.
14. Remove bolts (C) and remove the transport lighting module, complete with support bracket (D).
15. Discard P-clip (E).

    NOTE:

    Rotary disc pull-types built prior to model year 2019 are **NOT** equipped with P-clip (E).

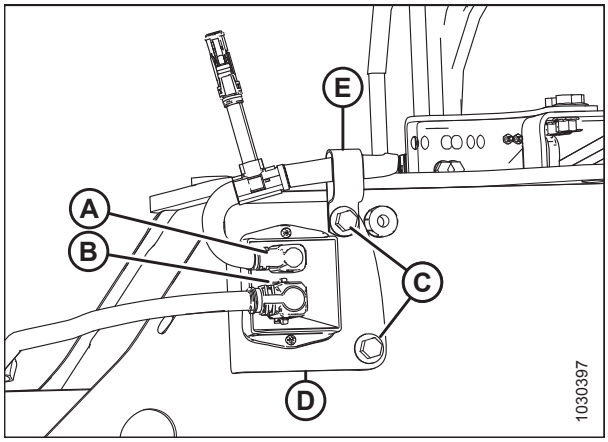


Figure 3.15: Lighting Module Harness

16. Remove two screws (A) and nuts attaching module (B) to bracket (C). Retain module (B).

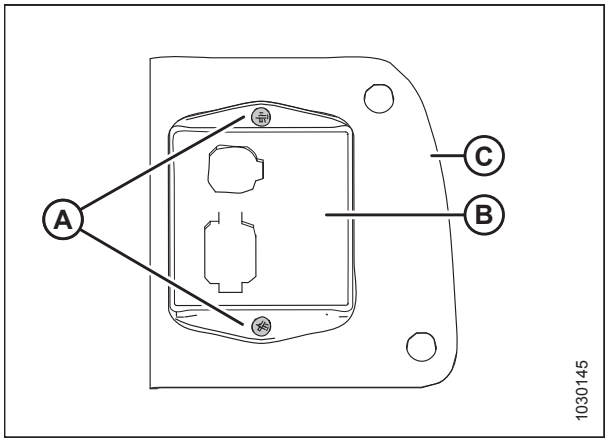


Figure 3.16: Lighting Module Attached to Bracket

17. Attach module (A) to cover assembly bracket (B) using two M4 x 16 screws (C) (MD #136313) and M4 nuts (MD #030855). Torque hardware to 3 Nm (27 lbf·in).

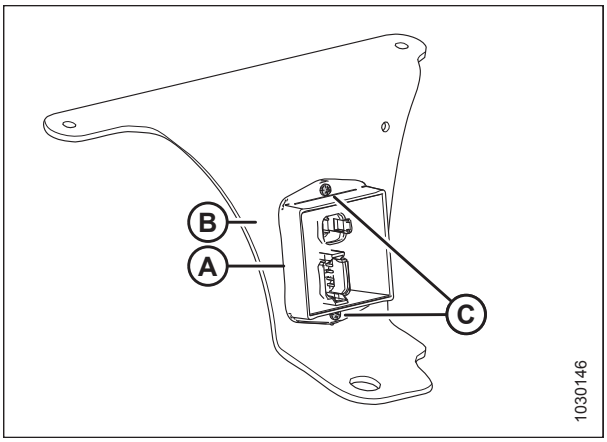


Figure 3.17: Lighting Module Attached to Bracket

18. Install cover support (B).
19. Secure cover support (B) in place with one M20 x 65 bolt (A) (MD #136157), hardened washer (MD #112130), and nut (MD #136122).

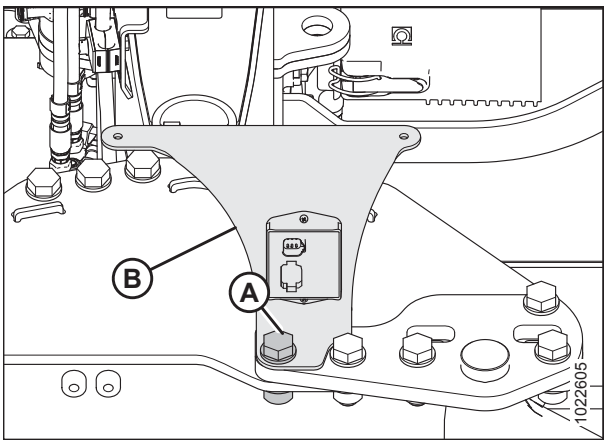


Figure 3.18: Cover Support

20. Torque bolts (A) to 461 Nm (340 lbf·ft).
21. Remove and retain bolts (B).

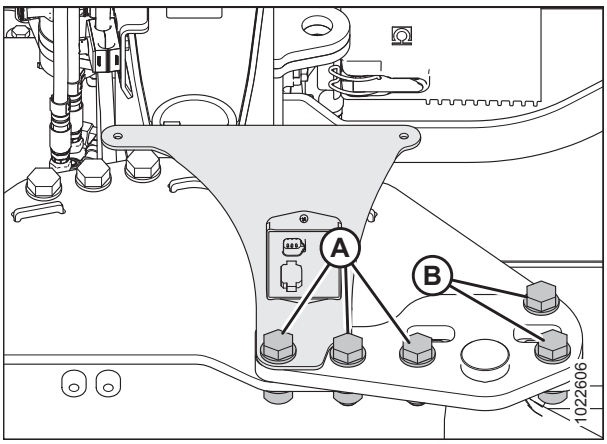


Figure 3.19: Cover Support

3.2.3 Installing Transport Wheels

1. Cut the straps securing the transport assembly to the pallet.
2. Slowly lower the forklift until transport assembly wheel spindles (A) are approximately 305 mm (12 in.) off the ground.
3. Remove wheel bolts (B) from spindle hub (A) on the left side.

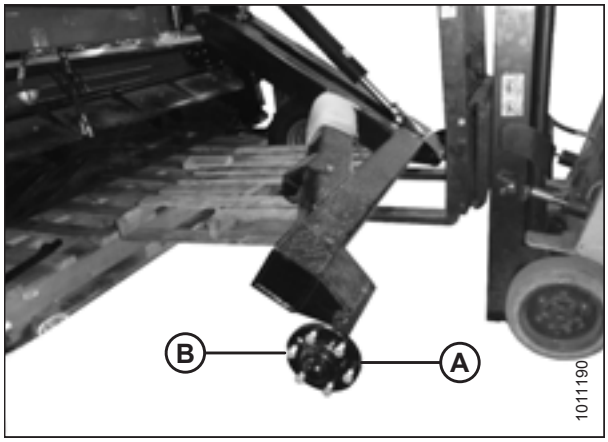


Figure 3.20: Transport Wheel

CAUTION

When installing wheel, be sure to match countersunk holes with bolt head profiles. Holes that are not countersunk do NOT correctly seat the bolts.

4. Retrieve the transport wheels and install with the wheel bolts. Ensure the valve stem faces outboard. Do **NOT** fully tighten bolts.
5. Lower the wheels to the ground and back the forklift away.
6. Torque wheel bolts to 160 Nm (120 lbf·ft) following the tightening sequence shown.

   IMPORTANT:

   Whenever a wheel is installed, check torque after one hour of operation.

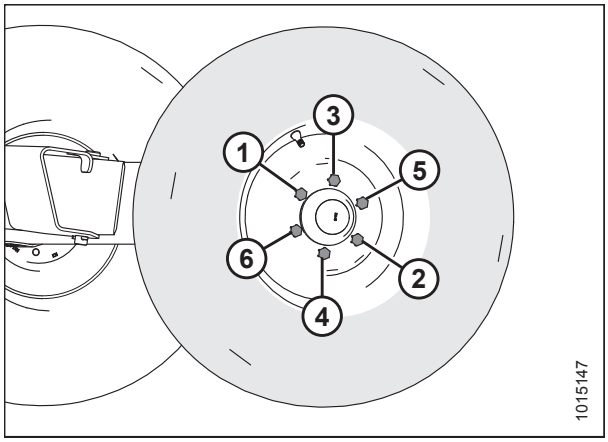


Figure 3.21: Tightening Sequence

7. Check tire pressure and adjust as required. For instructions, refer to *Checking Tire Pressure, page 20*.

Checking Tire Pressure

WARNING

- **Service tires safely.**
- **A tire can explode during inflation which could cause serious injury or death.**

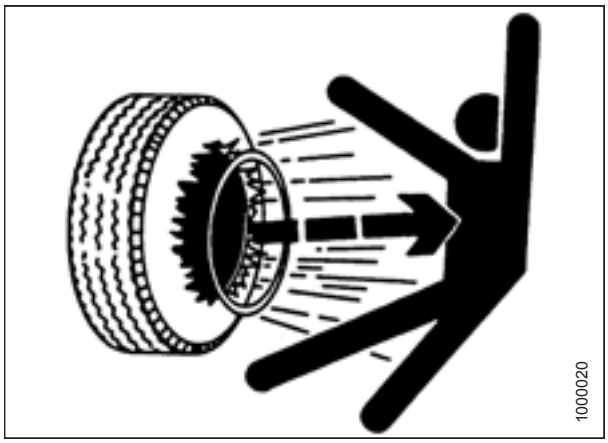


Figure 3.22: Overinflated Tire

Check tire pressure daily:

- Maximum pressure is 310 kPa (45 psi) for field wheels (A).
- Maximum pressure is 552 kPa (80 psi) for optional transport wheels (B).

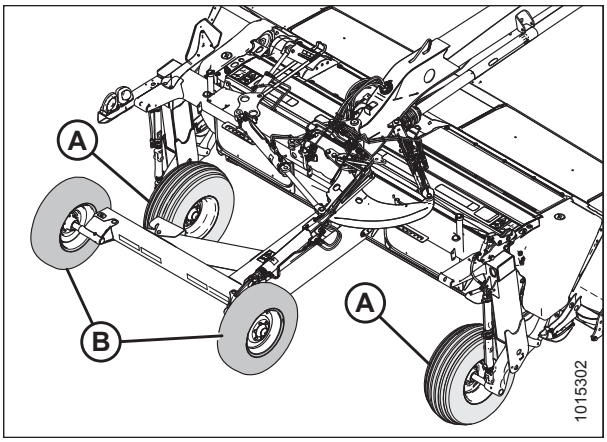


Figure 3.23: Field and Transport Wheels

3.2.4 Installing Transport Valve

NOTE:

Cover support bracket removed from illustrations for clarity.

1. Retrieve valve assembly (A) from the pallet.
2. Position valve assembly (A) on the carrier hitch pin plate as shown.
3. Install two M20 x 65 bolts (B) (MD #136157), hardened washers (MD #112130), and nuts (MD #136122).
4. Retrieve two M10 x 20 bolts (MD #136178) from the shipping bag and install bolts at location (C) with threads facing up. Install nuts (MD #50101), but do **NOT** tighten.
5. Torque bolts (B) to 461 Nm (340 lbf·ft).

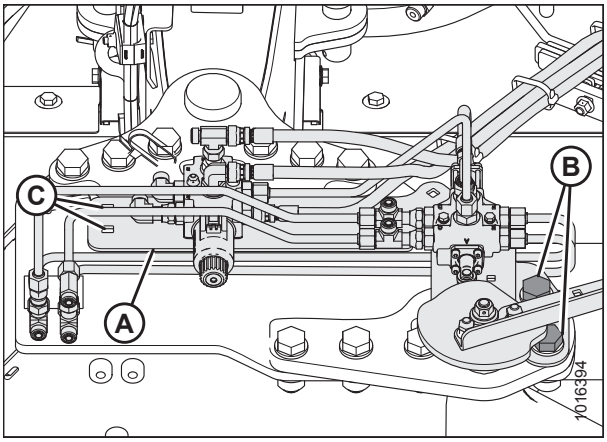


Figure 3.24: Selector Valve

6. Install support plate (A) (MD #247958) and secure it with bolts (B).
7. Install bolts (C) (MD #136399), but do **NOT** tighten.

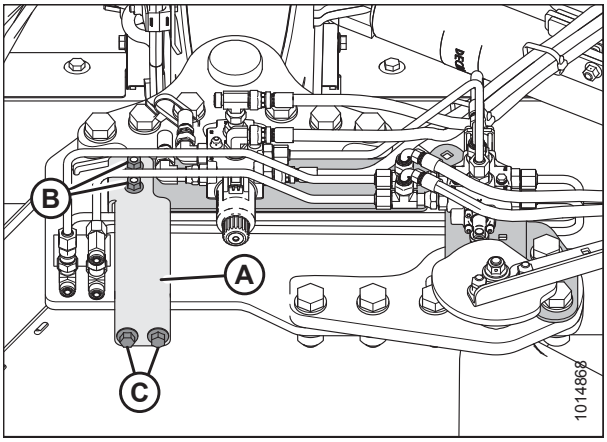


Figure 3.25: Support Plate

8. Remove nut (A) from support (D).
9. Install bolt (B) through support (D) and support (C), and then reinstall nut (A).

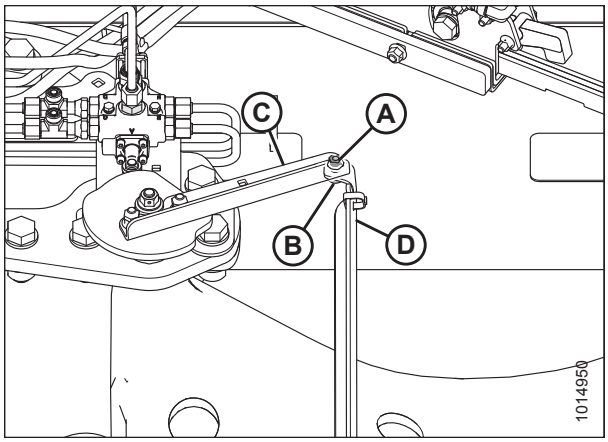


Figure 3.26: Support Plate

3.2.5 Installing Transport Swing Cylinder

1. Remove the shipping bag from the pallet.
2. Retrieve two clevis pins (MD # 281101) and two cotter pins (MD #18609) from the shipping bag.
3. Support transport swing cylinder (A). Cut the straps securing the cylinder to the pallet.

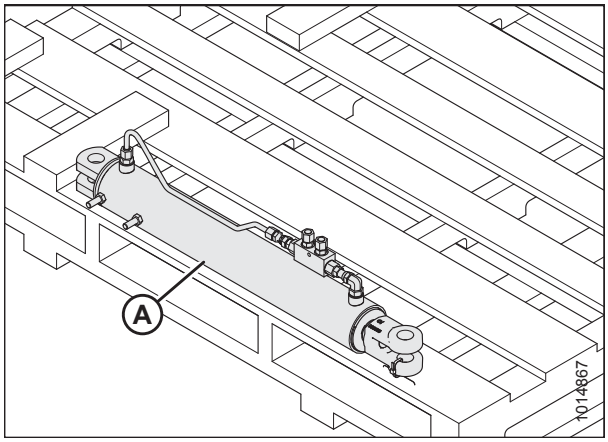


Figure 3.27: Transport Swing Cylinder

IMPORTANT:

Prime transport swing cylinder (A) **BEFORE** installing it on the carrier frame.

4. To prime the cylinder, use a hydraulic power pack or tractor hydraulics. Extend and retract transport swing cylinder (A) until all the air has been removed. Extend transport cylinder (A) to dimension (B) of 142 cm (56 in.) between center of pins.

NOTE:

If you need to adjust the cylinder length, remove bolt (C) that secures the clevis end. Rotate the clevis to lengthen or shorten distance between pins (B). When the cylinder length is correct, reinstall bolt (C) to secure the clevis end.

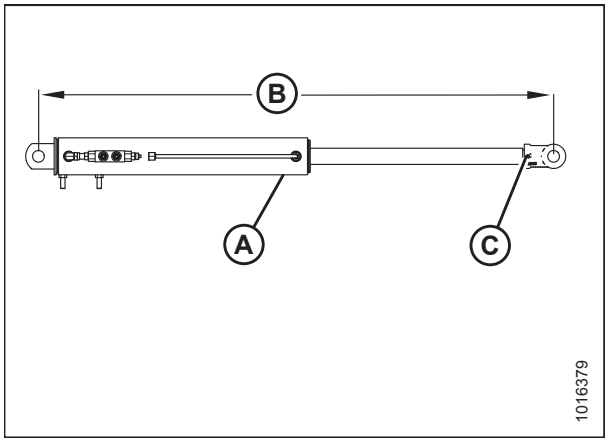


Figure 3.28: Transport Swing Cylinder

5. Install barrel end of transport swing cylinder (A) onto the carrier frame with clevis pin (B) (MD # 281101). Secure clevis pin with cotter pin (C) (MD #18609).

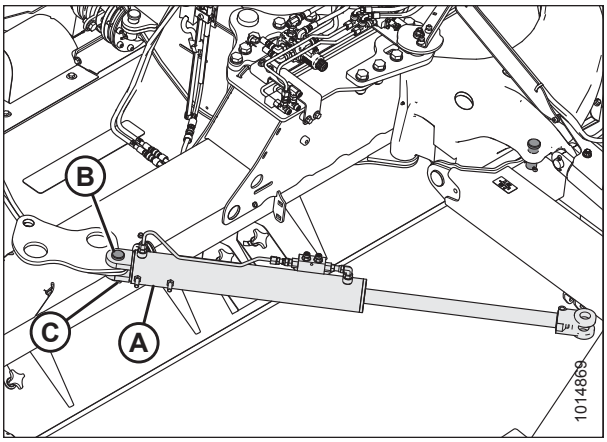


Figure 3.29: Transport Swing Cylinder

6. Connect rod end (B) of transport swing cylinder (A) to transport casting. Align holes and install clevis pin (C) (MD # 281101). Secure with cotter pin (D) (MD #18609).

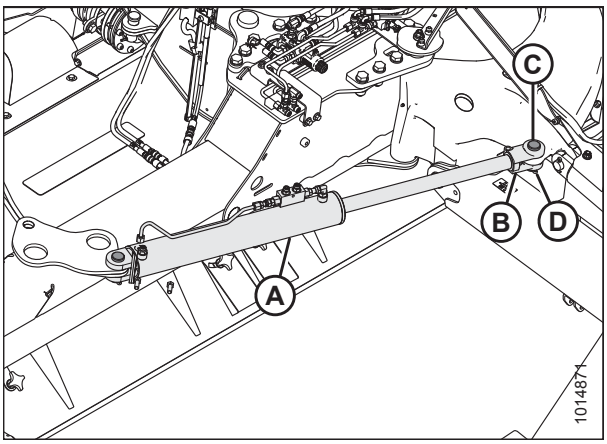


Figure 3.30: Swing Cylinder – Rear Left View

3.2.6 Installing Transport Alignment Control

1. Remove cam assembly (A) from shipping support (B).
2. Remove nuts (C) from the cam assembly.

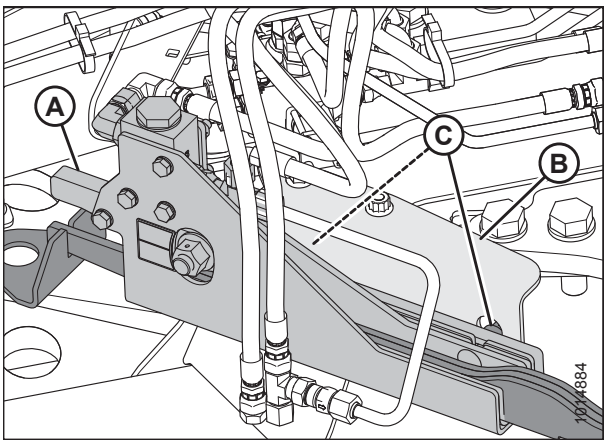


Figure 3.31: Alignment Controls – Front Right View

3. Secure cam assembly (A) onto hitch swing cylinder plate (B) with bolts and nuts (C). Torque nuts (C) to 55–60 Nm (40–45 lbf·ft).

   NOTE:

   When installing cam assembly (A), check for hose twisting. If required, loosen hose fitting to allow hose to untwist. Torque fitting when complete.

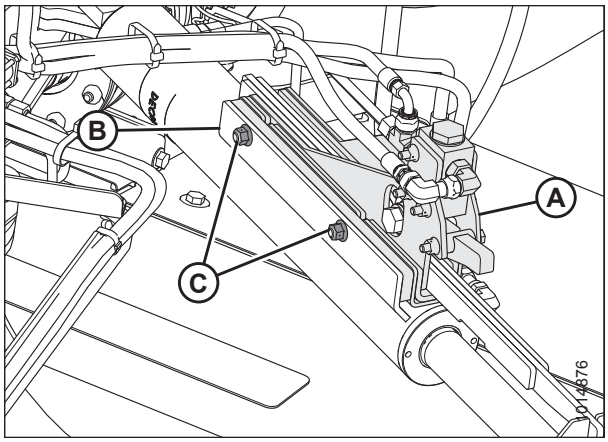


Figure 3.32: Alignment Control – Rear Right View

4. Check travel of cam arm (A) by sliding it in and out of cam assembly (B).

   NOTE:

   If the cam arm does **NOT** slide easily, loosen valve mounting bolts (C) and position valve (B) at the top of the mounting holes. Retighten valve mounting bolts (C).

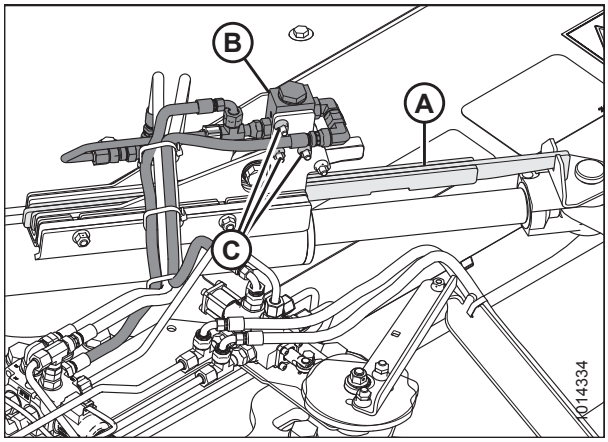


Figure 3.33: Alignment Control – Rear Right View

5. Align hole in cam arm (A) with hole in clevis (B) on the rod end of the cylinder.

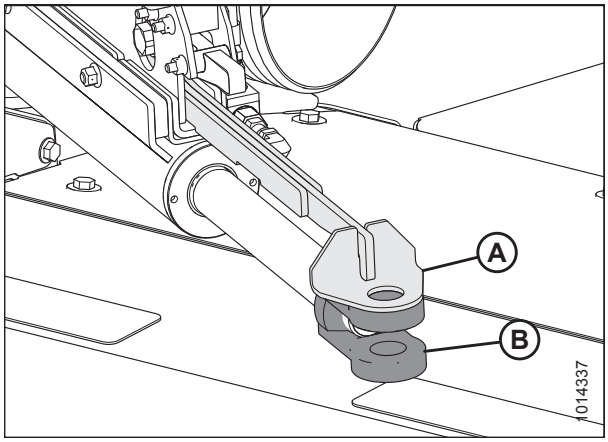


Figure 3.34: Alignment Control – Rear Right View

6. Ensure the end of cam arm (A) is parallel with clevis (B) on the rod end of the cylinder. If adjustment is required, use a bar to turn the clevis until the clevis is parallel with cam arm (A).

   NOTE:

   The rod end of the cylinder will be attached to the transport casting after the system is primed. For instructions, refer to *3.7 Priming the Hitch Swing Cylinder, page 42*.

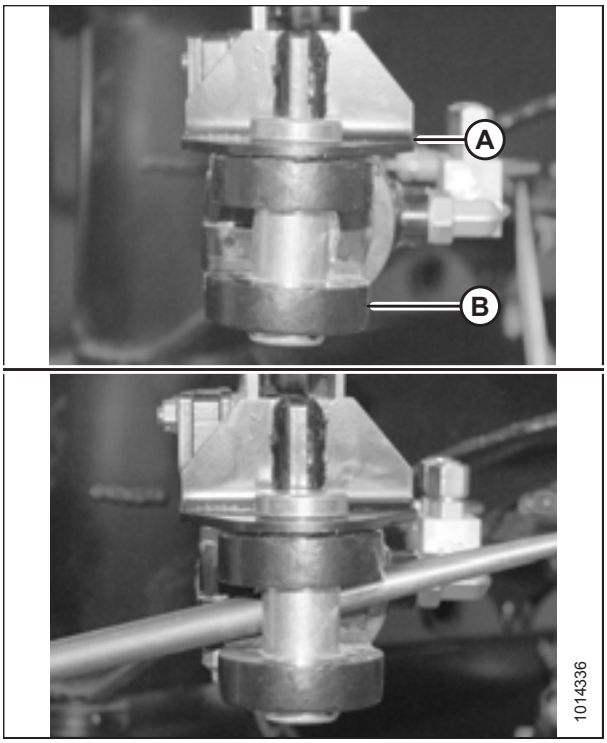


Figure 3.35: Cam Arm Alignment

7. Retrieve completion valve assembly (A) and one M12 x 25 flanged hex head bolt (MD #136399) from the shipping bag.
8. Remove bolts (B) from the standoffs on the rear of the carrier. Install valve assembly (A) behind support plate (C). Secure it to the standoffs using the three M12 x 25 flanged hex head bolts (B).

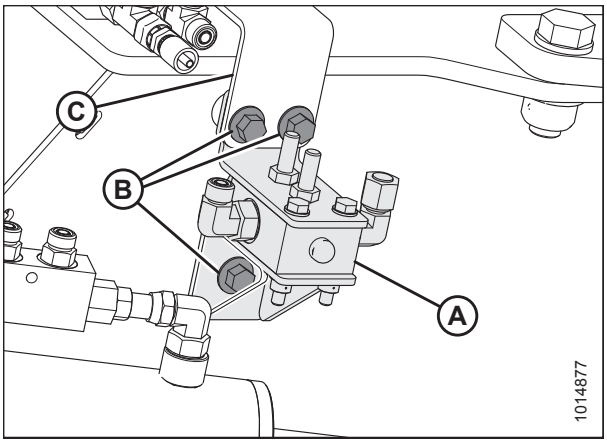


Figure 3.36: Control Valve

9. Retrieve paddle assembly (B) (MD #247625) from the shipping bag.
10. Install washers (A) (MD #184711) onto the bolts welded to the completion valve assembly.
11. Install paddle assembly (B) onto the welded bolts and secure with nuts (C) (MD #135799).

    NOTE:

    Make sure that paddle (B) is centered on the valve and moves freely.

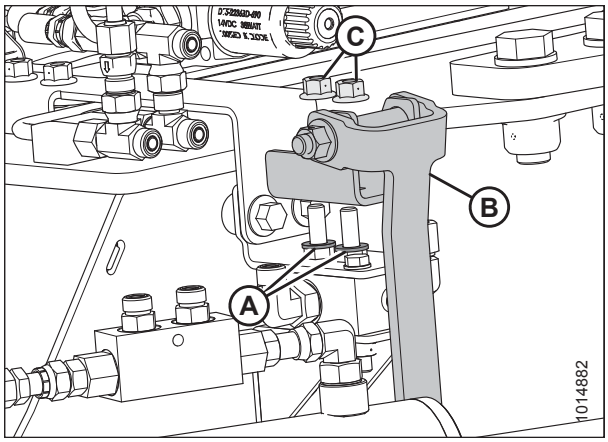


Figure 3.37: Control Valve

3.3 Installing Hydraulics

This section explains how to install the transport hydraulic control system.

3.3.1 Installing Hydraulic Lines and Hoses

NOTE:

The cover support bracket has been removed from the illustrations for clarity.

NOTE:

Refer to the pull-type operator's manual or technical manual for hydraulic fitting installation details.

1. Retrieve steel lines and hoses from shipping bag.
2. Place a container or rag under the fitting on the hitch swing cylinder to catch oil.
3. Remove existing fitting (A) from the block.
4. Remove cap (B) from tee fitting.

   IMPORTANT:

   Ensure O-ring is in place.

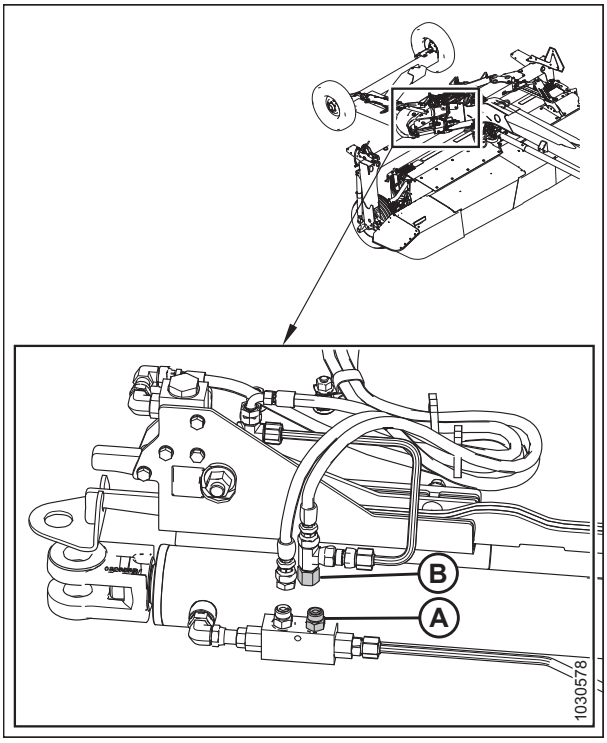


Figure 3.38: Alignment Valve Fitting

5. Retrieve ORFS-6 x ORB-6 connector (B) (MD #136147) from the shipping bag and install at location (A).

   NOTE:

   Ensure that the direction arrow on check valve (D) points away from tee fitting (C).

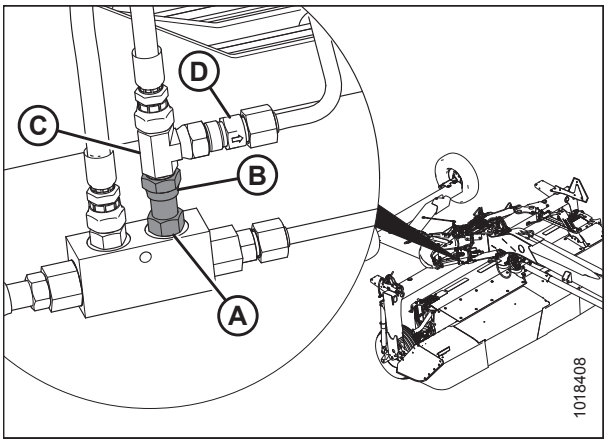


Figure 3.39: Alignment Valve Fitting

6. Remove the cap from fitting (A).
7. Remove the plug from hose (B). Install hose to fitting (A) as shown.

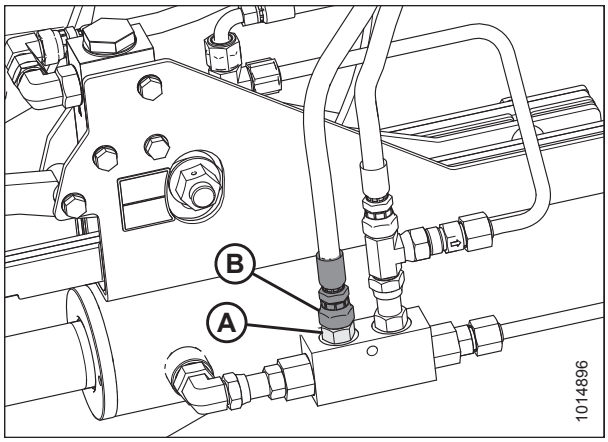


Figure 3.40: Alignment Valve Fitting

8. Install steel line (A) (MD #246954) from port A on the completion assembly to tee fitting (D).
9. Install steel line (B) (MD #247335) from port B on the completion assembly to tee fitting (C).

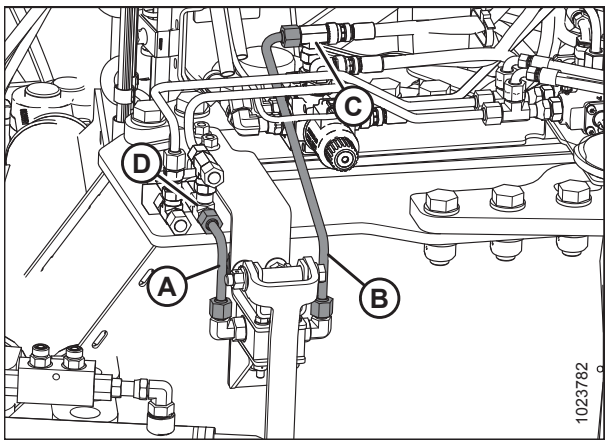


Figure 3.41: Completion Assembly Plumbing

10. Attach hose (A) (MD #247781) to steel line connecting to port D of transport swing control.
11. Attach hose (B) (MD #247781) to steel line connecting to port C of transport swing control.
12. Secure hoses (A) and (B) together with a cable tie (MD #30753).

    NOTE:

    Ensure that direction arrow on check valve (C) points toward tee fitting.

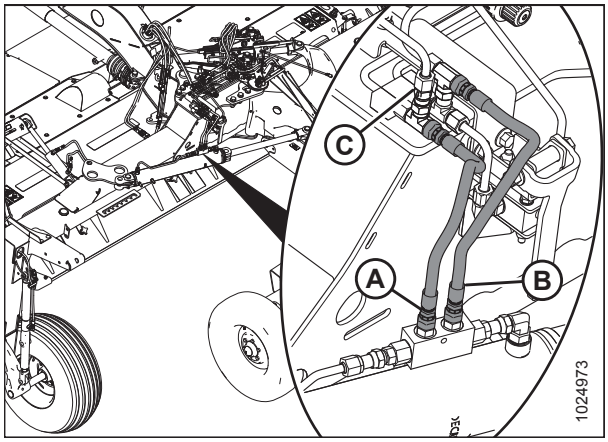


Figure 3.42: Transport Swing Cylinder

13. Install hose (A) (MD #246366) from the outer port (rod end) on the transport cylinder block to tee fitting (D) in port D of the transport swing control.
14. Install hose (B) (MD #246366) from the inner port (base end) on the transport cylinder block to tee fitting (C) in port C of the transport swing control.

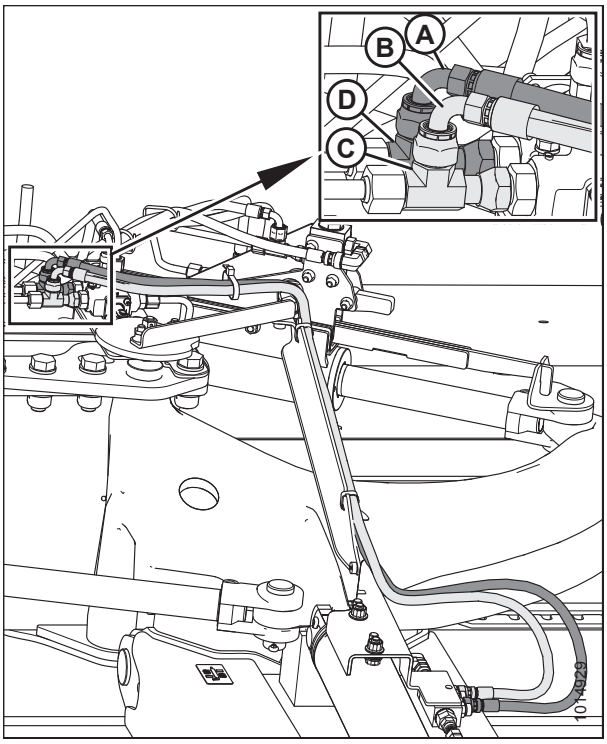


Figure 3.43: Transport Swing Control

15. Connect hose (B) (with red collar #2), from the rear of the hitch, to the fitting in port A1 on selector valve (C).
16. Connect hose (A) (with blue collar #2), from the rear of the hitch, to the fitting in port A2 of selector valve (C).
17. Secure hoses (A) and (B) together with a cable tie (MD #30753).

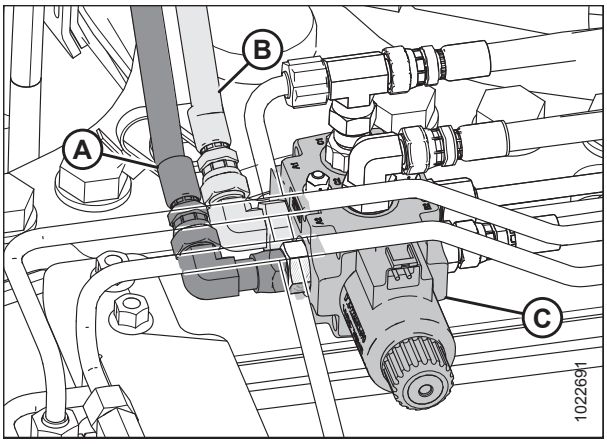


Figure 3.44: Selector Valve Supply

Installing secondary lift hose for field wheels

NOTE:

The secondary lift hose is required to lift the field wheels fully into storage position when the rotary disc pull-type is in transport mode.

Retrieve the following secondary lift hose from the shipping bag:

- **R113:** Use hose MD #224160.
- **R116:** Use hose MD #224162.

18. Retrieve the blue collars with the number one (blue collar #1) on them (MD #136383) from the shipping bag. Place one collar on each end of secondary lift hose (B).
19. Undo adjustable strap (A) around hoses at aft end of hitch.
20. Locate the green wire preinstalled in the hitch for pulling hoses through the hitch.

    NOTE:

    If you are installing a hydraulic center-link (MD #B5810), pull the hydraulic hoses through the hitch at the same time as the lift hose.

21. At the rear of the hitch, feed the male ORB end of hose (B) into access hole (C). Route the hose through the hitch to the opening at front.
22. Position long hose (A) so that the exposed length at the front of the hitch matches existing hose (B). Route the hose through guide (C).
23. At the front of the hitch, loosen nut (D) on hose clamp (E) until hose (A) can be positioned in the clamp.
24. Tighten nut (D).

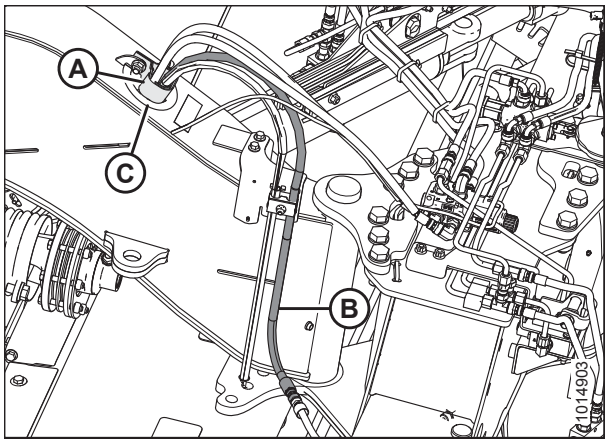


Figure 3.45: Lift Hoses

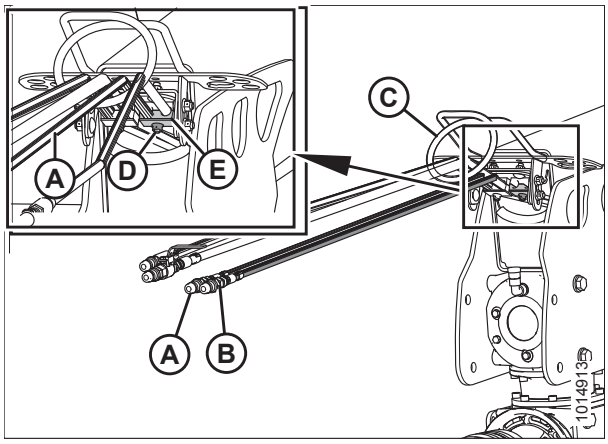


Figure 3.46: Lift Hoses

25. Retrieve ORB-8 coupler (A) (MD #135563) and plastic cap (B) (MD #30340) from the hardware bag.

26. At the forward end of the hitch, install coupling (A) and plastic cap (B) onto secondary lift hose (C). Do **NOT** attach the hoses to the tractor at this time.

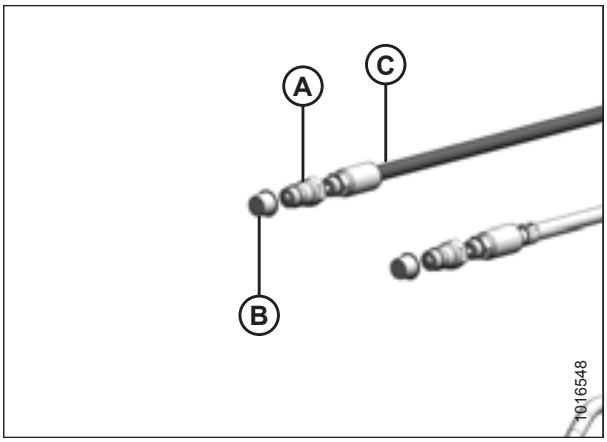


Figure 3.47: Lift Hose Fittings

27. At the rear of the hitch, secure the hoses with adjustable strap (A).

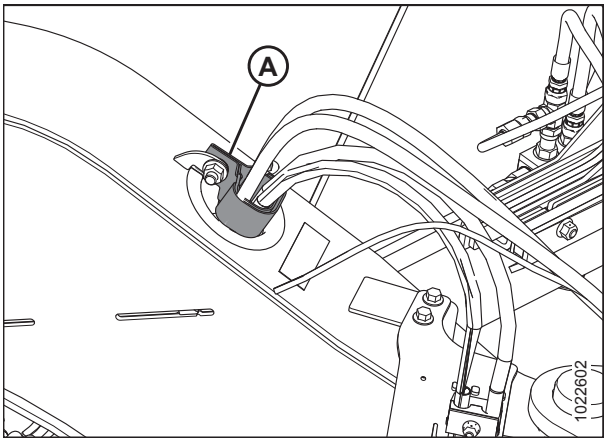


Figure 3.48: Lift Hoses

28. Route hose (A) (MD #247106) through opening (E) at the rear of the frame.
29. Feed shortest hose (A) through opening (B) in the carrier frame as shown with male end (C) at the hitch pivot.
30. Connect hose (A) (MD #247106) and hose (D) (MD #224160 or MD #224162) at the hitch pivot.

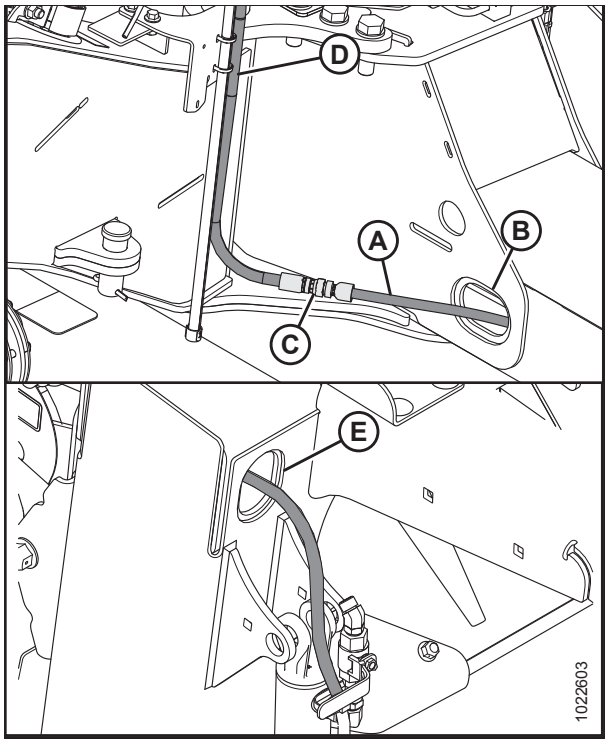


Figure 3.49: Lift Hose

31. Retrieve ORFS-6 x ORB-8 elbow (MD #136149) from the hardware bag.
32. Remove the plug at the base of the lift cylinder and install elbow (A) as shown.
33. Connect hose (B) to elbow (A) and tighten.
34. Tighten the remaining connections.
35. Secure hose (B) to the cylinder with a cable tie (C) (MD #30753).

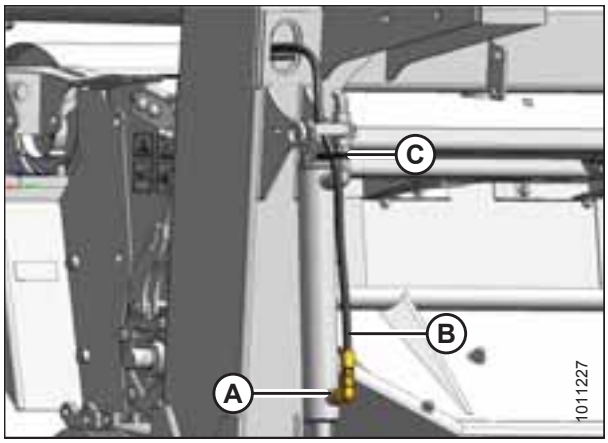


Figure 3.50: Lift Cylinder

3.4 Installing Electrical Components

3.4.1 Installing Light Assemblies

1. Disconnect the wiring harnesses at the left light assembly; there are two connectors per assembly.
2. Remove left light assembly (A).

   NOTE:

   The right light assembly was removed earlier.
3. Remove lamps (B). Retain lamps and hardware for installation.

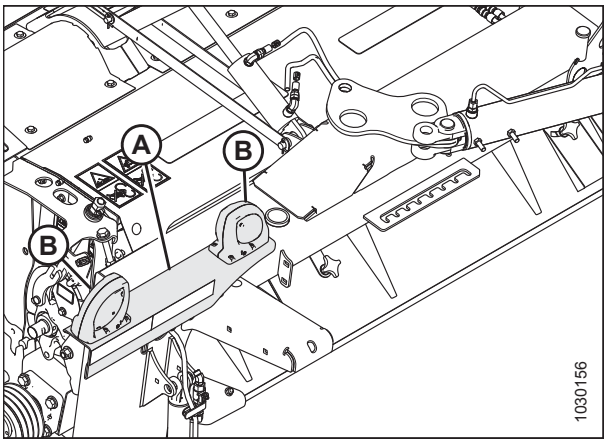


Figure 3.51: Transport Lighting

4. Remove red lamp (C) from the right light assembly (removed in an earlier procedure). Align red lamp (C) with the predrilled holes in the right lamp bracket, next to amber lamp. Secure the red lamp with existing hardware, as shown.
5. Install right light assembly (A) on the left float spring mount using two nuts (MD #136431) and two bolts (MD #184667) from the shipping bag. Red lamp (C) should be towards rear of machine when in transport mode.

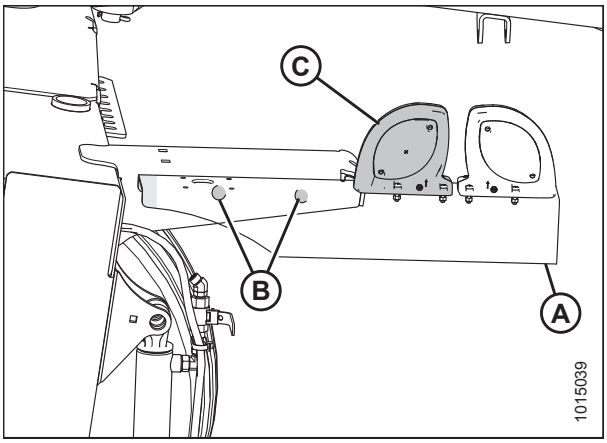


Figure 3.52: Left Side of Carrier

6. Retrieve new light bracket (C) (MD #223185) from shipment.
7. Install amber lamp (A) and red lamp (B) onto new bracket (C), previously removed from the left lamp bracket, with hardware provided.

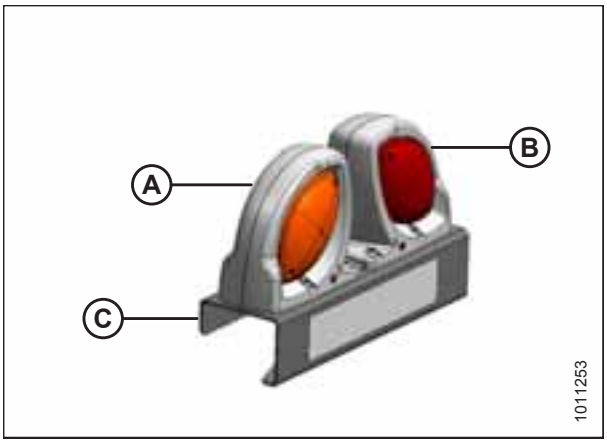


Figure 3.53: Light Assembly

8. Install light assembly (A) onto the header left end with two M10 x 20 carriage bolts (B) (MD #136178) and lock nuts (MD #50101) from the shipping bag. Ensure the amber lamp faces the front of header and reflector faces outboard.

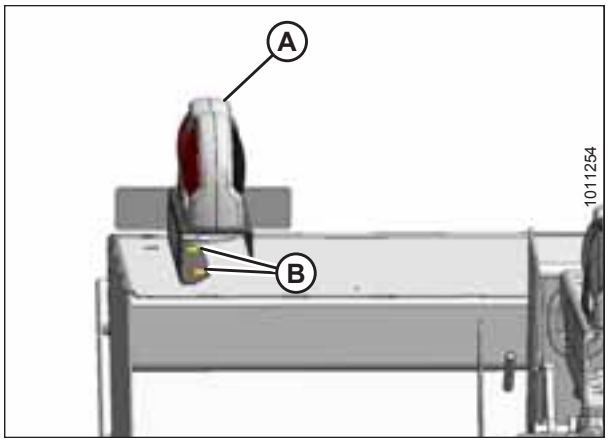


Figure 3.54: Header Left Side Lighting

3.4.2 Installing Left Transport Harness

1. Retrieve transport harness (A) (MD #281614) from the shipping bag.
2. Route connectors P201 and P202 on the end of harness (A) to cover support (D).
3. Using a draw tape or equivalent, route connectors P401 and P404 on the other end of the harness (A) through opening (B) at front of carrier to opening (C) adjacent to center-link.
4. Route the harness until the plugs reach the left light assembly (E) on the header.

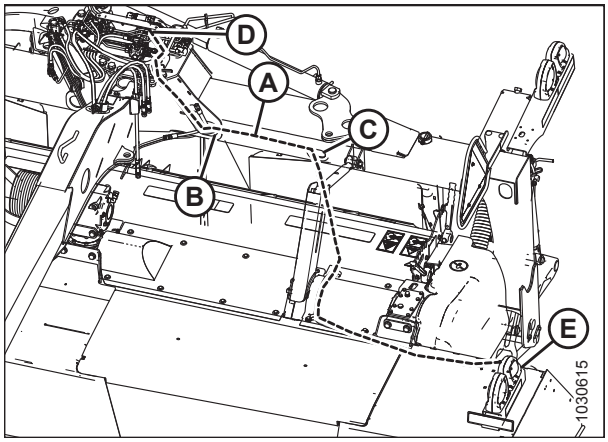


Figure 3.55: Harness Routing

5. Locate plug P301 (D) on harness (E) (MD #281613)[7]. It was disconnected from the lighting module.
6. Connect plug P201 (B) on harness (A) (MD #281614) into the lower output receptacle on the lighting module.
7. Connect plug P301 (D) to receptacle P202 (C).

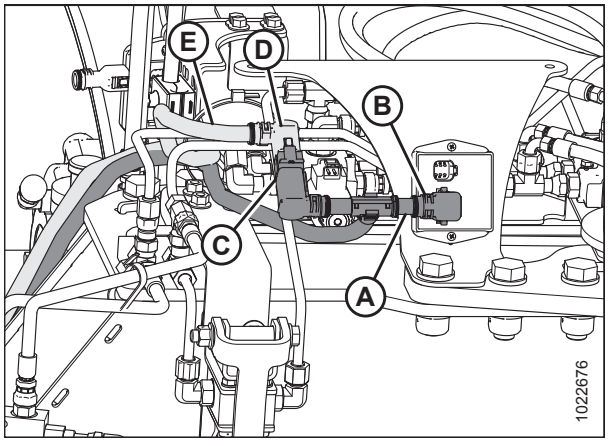


Figure 3.56: Harness Connection

7. Part number is for reference only. Part is not included in the kit.

8. Route harness (A) to light (B) on header as shown.
9. Retrieve p-clips(MD #135235), plastic clamps (MD #184301) , and cable ties (MD #21763) from the shipping bag.
10. Remove bolts (C) on header at locations shown.
11. Secure harness (A) with p-clips (MD #135235), existing bolts (C), and plastic clamp (D) (MD #184301) into existing holes.

    NOTE:

    R113: Harness for rotary disc pull-type is secured with one plastic clamp (D) (MD #184301).

    NOTE:

    R116: Harness for rotary disc pull-type is secured with two plastic clamps (MD #184301).
12. Secure harness (A) to the light bracket with two cable ties (E) (MD #21763).
13. Push any excess harness into the carrier frame.
14. Connect plug P401 and P404 into light (B).

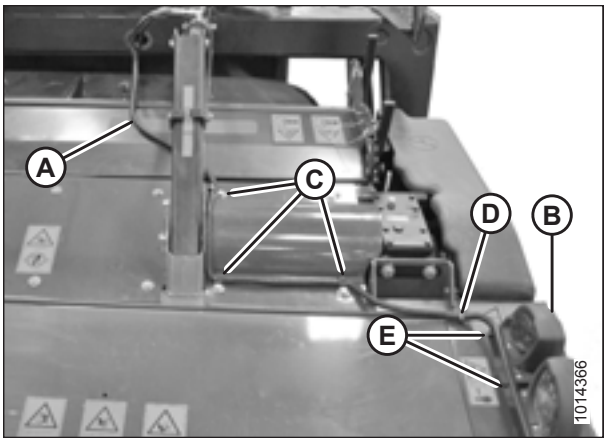


Figure 3.57: Harness Routing – R113 Shown, R116 Similar

3.4.3 Connecting Right Transport Harness

1. Route transport harness (A) from opening (B) into light bracket (C) and plug it into the light connectors.
2. Secure harness (A) to the light bracket with two cable ties (D) (MD #21763).
3. Push any excess harness into the carrier frame.

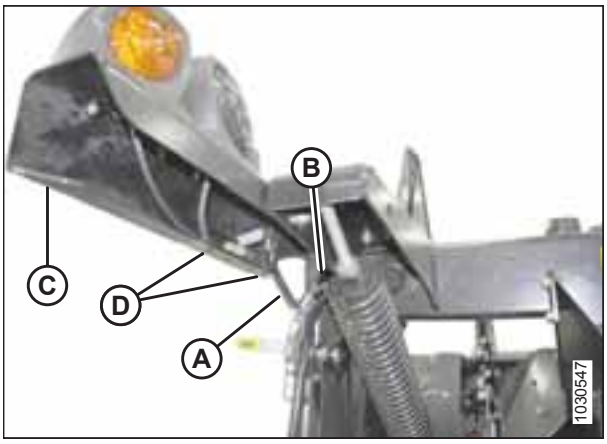


Figure 3.58: Transport Light

3.4.4 Connecting Selector Valve and Transport Lighting Module

1. Remove valve connector plug (A).

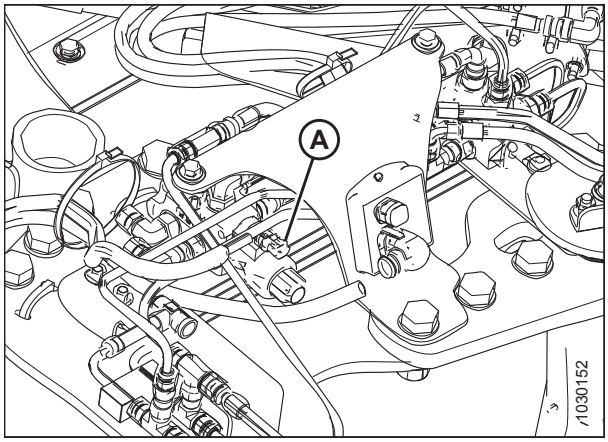


Figure 3.59: Connector Plug

2. Locate plugs P102 (A) and P502 (B) on the transport harness at the header end of the hitch. Route plugs P102 (A) and P502 (B) towards selector valve (C).
3. Connect plug P502 (B) to the receptacle on selector valve (C).
4. Connect plug P102 (A) to the upper input receptacle on transport lighting module (D).

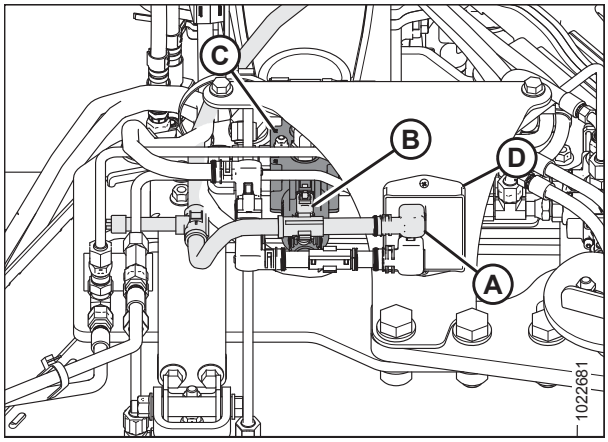


Figure 3.60: Selector Valve Supply

3.4.5 Installing Remote Control

1. Retrieve remote control (A) with wiring harness.
2. Place remote control (A) on hitch temporarily.

Figure 3.61: Remote Control on Top of Hitch

3. Locate connector (C) that branches off seven-pole transport plug (A) and attach it to remote wiring harness (B).

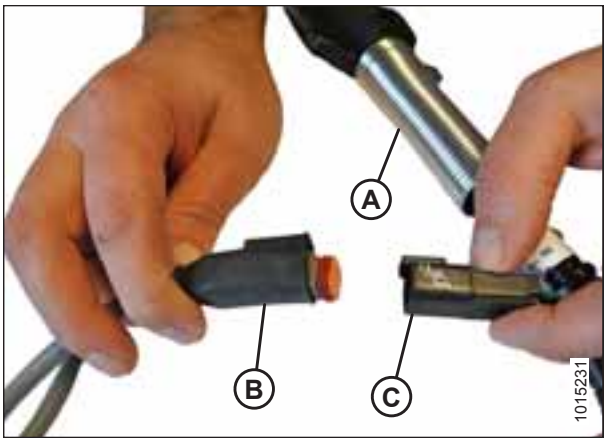


Figure 3.62: Transport Harness

4. ***If your tractor has a three-pin auxiliary power connection:***

   NOTE:

   The remote control has internal protection which prevents damage caused by incorrect wiring, short circuits, or overload conditions.

   Connect two wires (B) from three-pin auxiliary connector (A) (MD #281615) to remote control wires (C) on the remote control, wrap connections with electrical tape, and proceed to Step *6, page 38*.

   - The wire with no tag connects to the tractor ground.
   - The wire with the red tag connects to the tractor power.

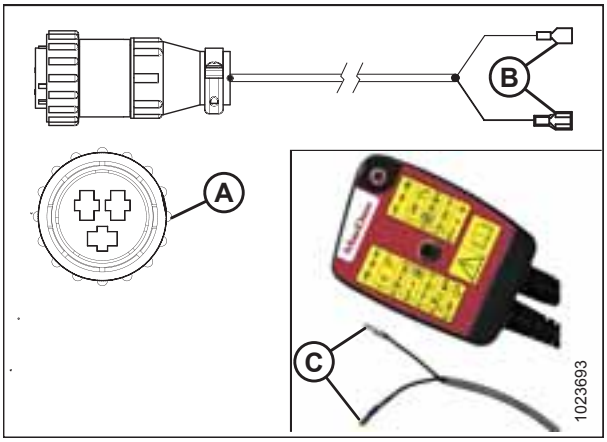


Figure 3.63: Three-Pin Auxiliary Connector

   NOTE:

   If connections are reversed, the lamp will not illuminate when the toggle switch is in field mode. Try the following to correct the issue:

   - Check if 10 amp fuse (A) located inside the transport control box has blown.
   - Check for short in wires to solenoid valve on header.
   - Check for incorrect wire connections (reversed) at the power supply or solenoid valve.

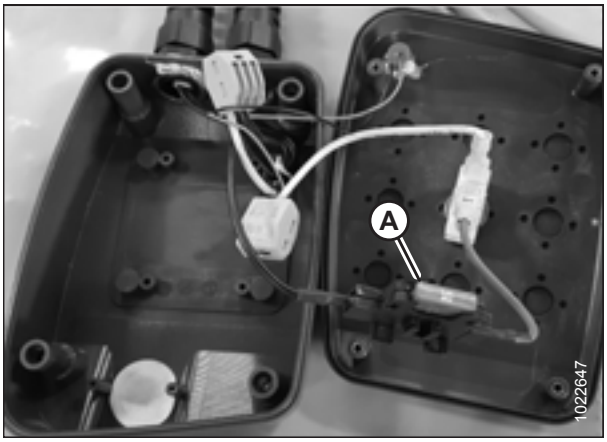


Figure 3.64: Control Box Interior

5. ***If your tractor does NOT have a three-pin auxiliary power connection:***

   NOTE:

   The remote control has internal protection which prevents damage caused by incorrect wiring, short circuits, or overload conditions.

   Connect remote control wires (A) to the tractor's power supply:

   - Connect wire (B) with no tag to tractor ground.
   - Connect wire (C) with the red tag to tractor power.

   NOTE:

   If the red tag is missing, identify the power by locating the wire with the number 1 printed on it. The ground wire has a number 2 printed on it.

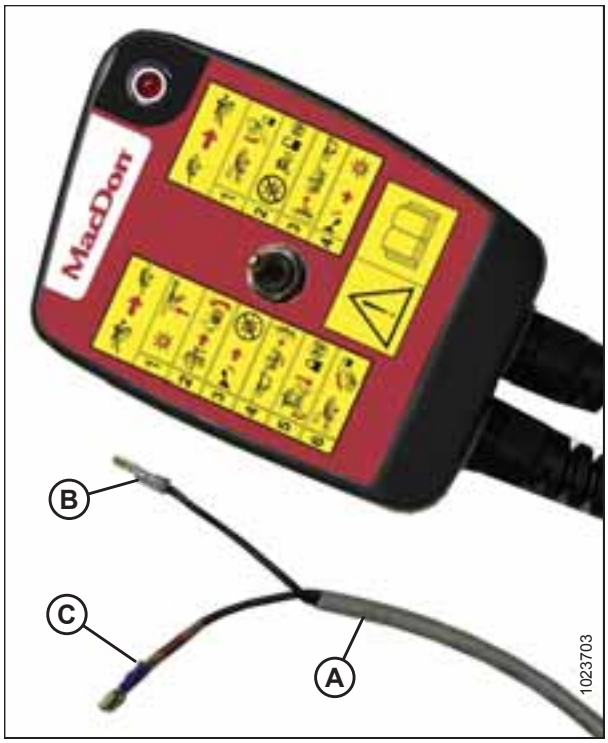


Figure 3.65: Remote Control

   NOTE:

   If connections are reversed, the lamp will not illuminate when the toggle switch is in field mode. Try the following to correct the issue:

   - Check if 10 amp fuse (A) located inside the transport control box has blown.
   - Check for short in wires to solenoid valve on header.
   - Check for incorrect wire connections (reversed) at the power supply or solenoid valve.

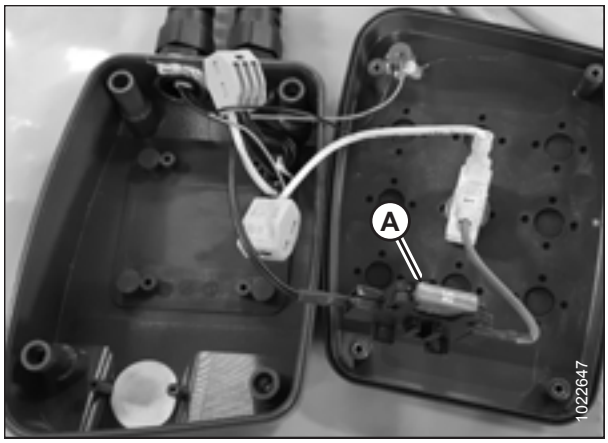


Figure 3.66: Control Box Interior

6. Place the remote control inside the tractor cab.

3.4.6 Installing Slow Moving Vehicle Sign

1. Retrieve the slow moving vehicle (SMV) sign that was previously removed.
2. Remove bolts (A), and discard existing bracket (B). Retain the two bolts, nuts, and washers.

   NOTE:

   For model year 2019 and prior: Pull-types are **NOT** equipped with washers. Order two washers (MD #18670) separately.

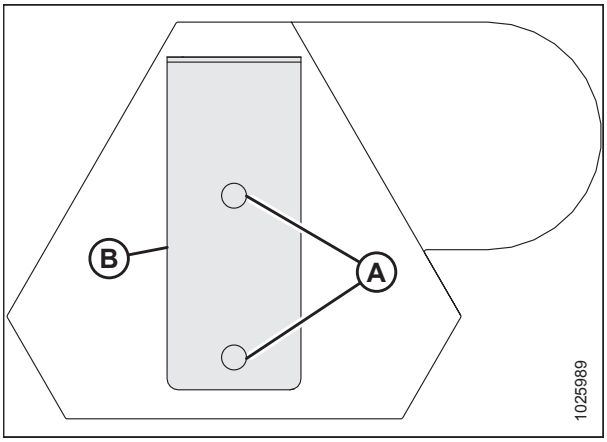


Figure 3.67: SMV Sign

3. Retrieve bracket (A) (MD #259218).
4. Attach bracket (A) to left end float spring member with M12 bolts (B) (MD #184667) and nuts (MD #136431) retrieved from the shipping bag.
5. Attach sign (C) to bracket (A) and secure with two bolts (D), washers (E), and nuts (F).

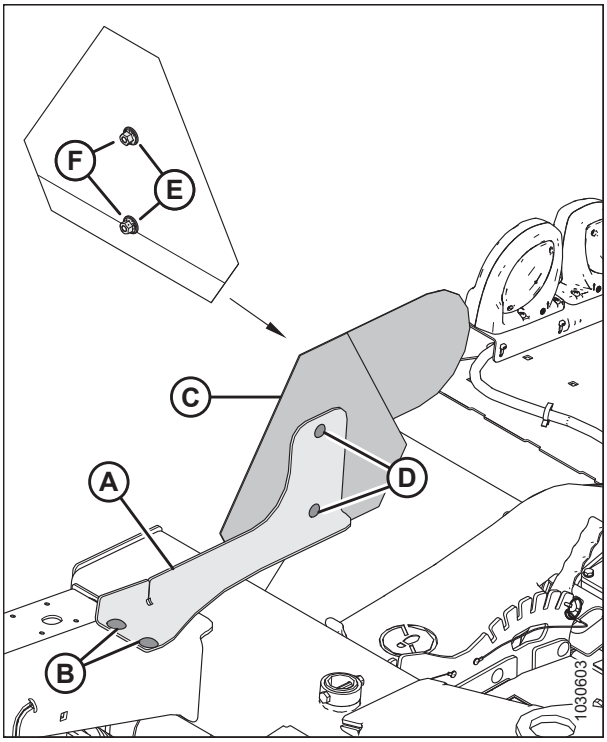


Figure 3.68: SMV Sign

3.5 Installing Cover

1. Install cover (A) onto the cover support.
2. Install bolts (B). Torque to 55–65 Nm (41–48 lbf·ft).

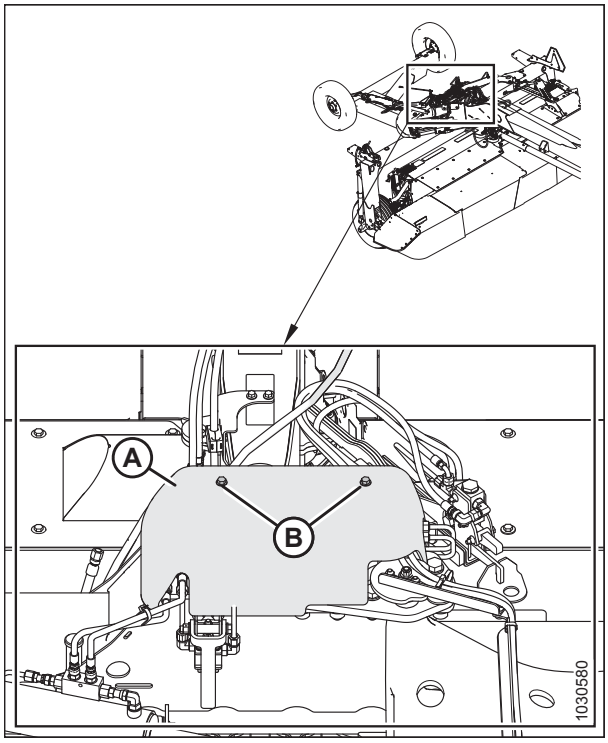


Figure 3.69: Cover

3.6 Connecting Hydraulics

WARNING

Do NOT use remote hydraulic system pressures over 20,684 kPa (3000 psi). Check your tractor operator's manual for remote system pressure.

NOTE:

Refer to the numbered/colored bands on the hoses to identify lift, swing/transport, and tilt hose sets.

Table 3.1 Hydraulic System Hoses

System	Hose Identification	Tractor Hydraulics
Lift (A)	Red #1 - pressure Blue #1 - return (only with transport installed)	Control 1
Swing/ Transport (B)	Red #2 - pressure Blue #2 - return	Control 2
Tilt (C)[8]	Red #3 - pressure Blue #3 - return	Control 3

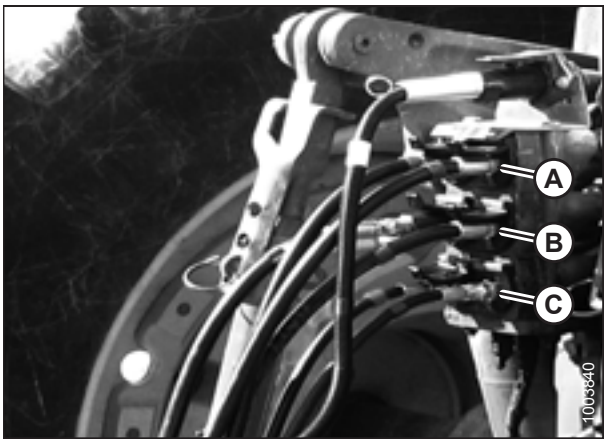


Figure 3.70: Hydraulic Connections

1. Connect the lift cylinder hose (red collar with #1) to the tractor's hydraulic receptacle. Connect the second hose (blue collar with #1) only when the transport is installed. Refer to Table *3.2, page 41* to confirm the system is functioning correctly.

Table 3.2 Lift System

Control Lever Position	Cylinder Movement	Rotary Disc Pull-Type Movement
Forward	Retract	Lower
Backward	Extend	Raise

2. Connect the two hitch swing cylinder hoses (collars with #2) to the tractor hydraulic receptacles. Refer to Table *3.3, page 41* to confirm the system is functioning correctly.

Table 3.3 Hitch Swing and Transport System

Control Lever Position	Cylinder Movement	Rotary Disc Pull-Type Direction
Forward	Extend	Right
Backward	Retract	Left

3. For machines with hydraulic center-link only, connect the two tilt cylinder hoses (collars with #3) to the tractor hydraulic receptacles. Refer to Table *3.4, page 41* to confirm the system is functioning correctly.

Table 3.4 Tilt System

Control Lever Position	Cylinder Movement	Rotary Disc Pull-Type Movement
Forward	Retract	Lower
Backward	Extend	Raise

8. Available with hydraulic tilt option installed.

3.7 Priming the Hitch Swing Cylinder

NOTE:

The hitch swing cylinder must be primed before it is connected to the rear arm link.

1. Move the transport switch on the remote control to lower position (B) and ensure that light (A) is illuminated. The hitch swing circuit will now be active.

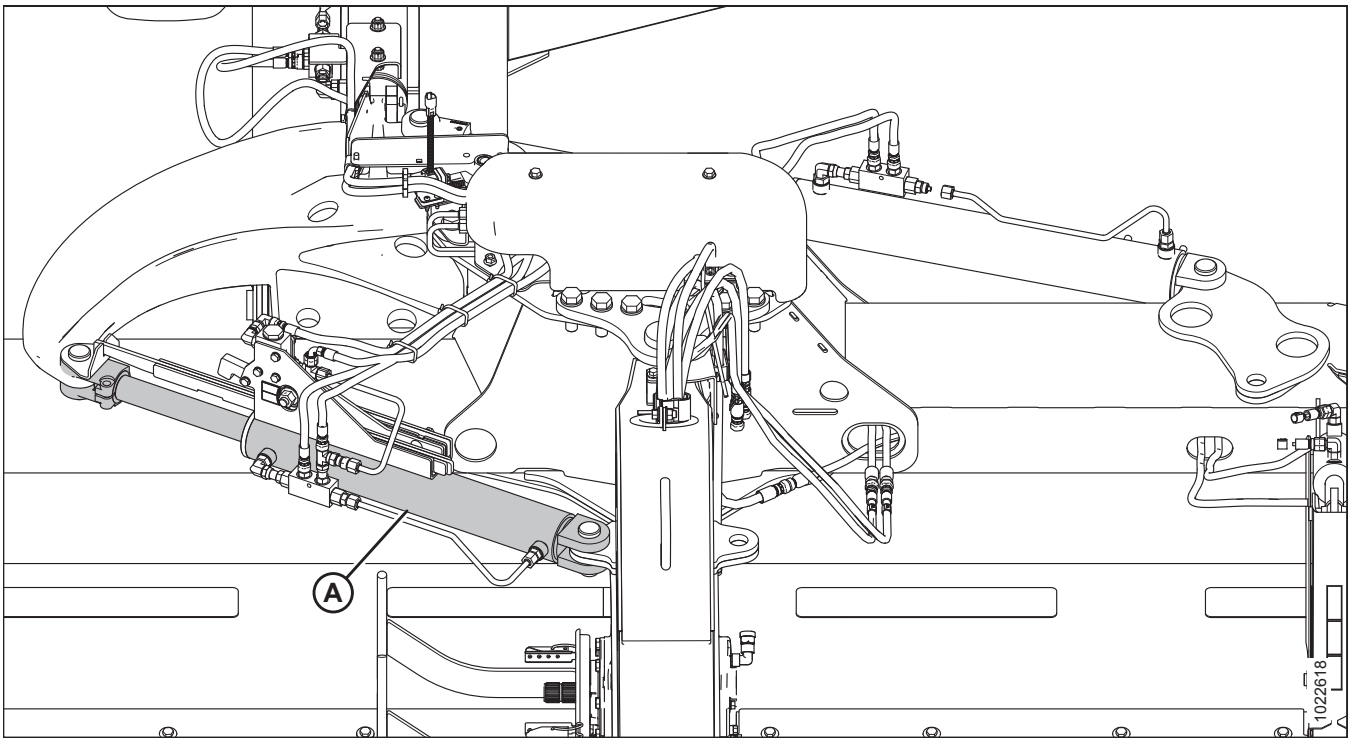
Figure 3.71: Remote Control

NOTE:

Ensure there is no contact with the rear link arm when the hitch swing cylinder extends.

2. With the cylinder disconnected from the rear arm link, using the tractor's hydraulics, extend and retract swing cylinder (A) several times to purge any air in the cylinder.

Figure 3.72: Hydraulic System



3. Align the clevis pinholes in cylinder clevis (B), cam arm (C), and rear link arm (A).
4. Install clevis pin (D) and secure with cotter pin (E) (not shown).

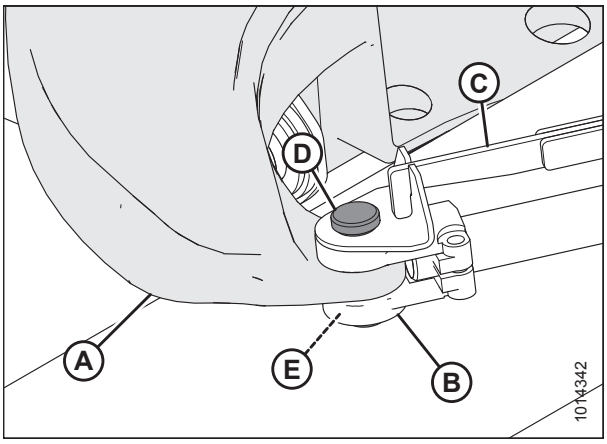


Figure 3.73: Rear Arm Link

Chapter 4: Checking and Adjusting the Cam on the Transport Deploy / Swing Mechanism

Cam angle (A) on the transport deploy/swing mechanism assembly is factory-set to 112°. It may be necessary to adjust the cam angle if the transport does **NOT** properly deploy. When the system is functioning properly, the header should start to rotate as the transport wheels reach the end of their travel (beneath the header).

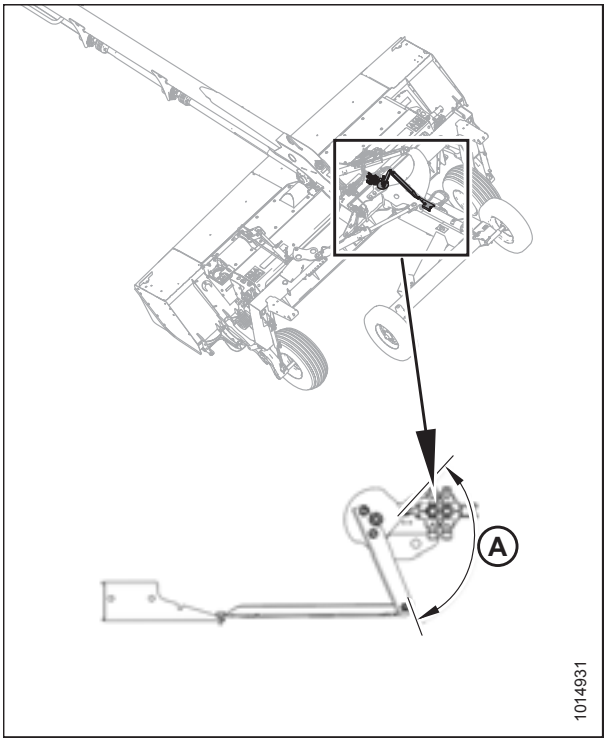


Figure 4.1: Transport Deploy / Swing Mechanism Assembly

1. Loosen two M10 jam nuts (A), two M10 hex flange nuts (B), and rotate cam plate (C) to achieve the proper angle. Reposition cam as follows:
   - Rotate **COUNTERCLOCKWISE** if the transport tires deploy too close to the header tires, before the transport wheels are fully under the header.
   - Rotate **CLOCKWISE** if the tires go underneath the header, but the header does not begin to rotate.
2. Tighten two M10 hex flange nuts (B) and two M10 jam nuts (A).
3. To test the transport deploy/swing mechanism, refer to:
   - *5.5 Converting from Transport to Field Mode – With Road-Friendly Transport™, page 56*
   - *5.4 Converting from Field to Transport Mode – With Road-Friendly Transport™, page 51*

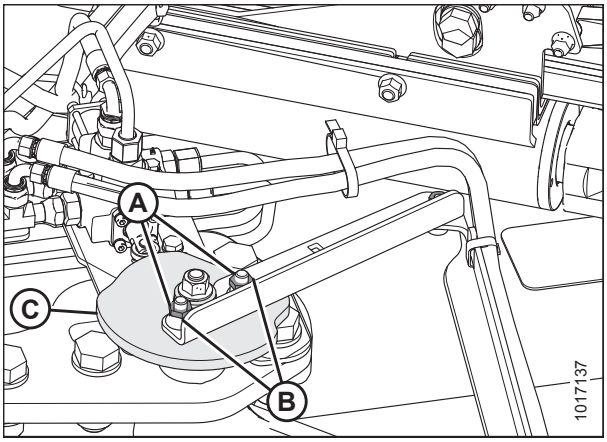


Figure 4.2: Transport Deploy / Swing Mechanism Assembly

Chapter 5: Transporting the Rotary Disc Pull-Type

You can transport the rotary disc pull-type using a tractor in either field mode or transport mode.

- To prepare a rotary disc pull-type for towing with a tractor in field mode without using the Road-Friendly Transport™ option, refer to *5.1 Preparing Rotary Disc Pull-Type for Transport, page 47*.
- To prepare a rotary disc pull-type for towing with a tractor using the Road-Friendly Transport™ option, refer to *5.4 Converting from Field to Transport Mode – With Road-Friendly Transport™, page 51*.

CAUTION

- **Obey all highway traffic regulations in your area when transporting on public roads. Use flashing amber lights unless prohibited by law.**
- **Be aware of roadside obstructions, oncoming traffic, and bridges.**
- **Travel at safe speeds to ensure complete machine control and stability at all times. Do NOT exceed 32 km/h (20 mph). Reduce speed for corners and slippery conditions.**
- **Use tractor lights and rotary disc pull-type flashing amber and red taillights when transporting on roads in order to provide adequate warning to operators of other vehicles.**
- **Do NOT transport the rotary disc pull-type on a road or highway at night or in reduced visibility conditions such as rain or fog.**
- **Ensure that hitch on transporting vehicle is capable of handling a 907 kg (2000 lb.) static vertical load.**
- **Do NOT tow with any highway-capable vehicle. Use only an agricultural tractor with a sufficient weight such that the fully loaded implement weighs no more than 1.5 times the weight of the tractor.**

5.1 Preparing Rotary Disc Pull-Type for Transport

Follow these instructions to prepare the rotary disc pull-type for transport without deploying the optional Road-Friendly Transport™ system.

WARNING

To avoid bodily injury or death from unexpected startup of the machine, always stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

WARNING

Do NOT tow unless the hitch swing cylinder is fully charged. If hitch swing cylinder is not fully charged, loss of control, injury, or death could result.

1. Shut down the engine, and remove the key from the ignition.
2. Connect the rotary disc pull-type hitch to the tractor, and store the jack stand. For instructions, refer to *6.1 Attaching Rotary Disc Pull-Type to the Tractor, page 61*.

3. Connect the hitch swing cylinder hoses (collars with #2) to tractor's hydraulic circuit (A). For instructions, refer to *3.6 Connecting Hydraulics, page 41*.

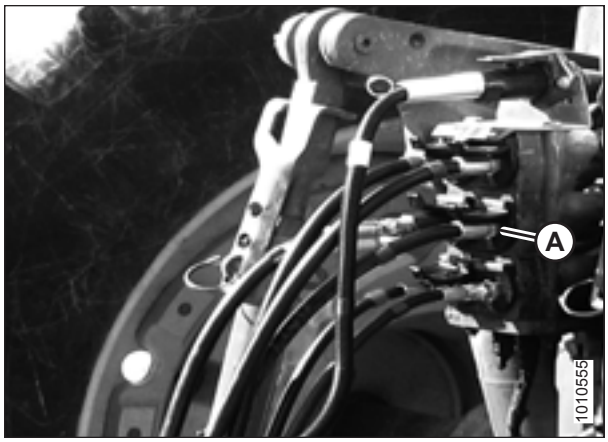


Figure 5.1: Hydraulic Connection

4. Raise the rotary disc pull-type fully and close the lift cylinder lock-out valve by turning handle (A) to the closed position (90° to the hose). Repeat on the opposite side.
5. Swing the rotary disc pull-type completely to the left, then completely to the right. Repeat three or four times to charge the hitch swing circuit.
6. Swing the rotary disc pull-type so that it is centered behind the tractor.

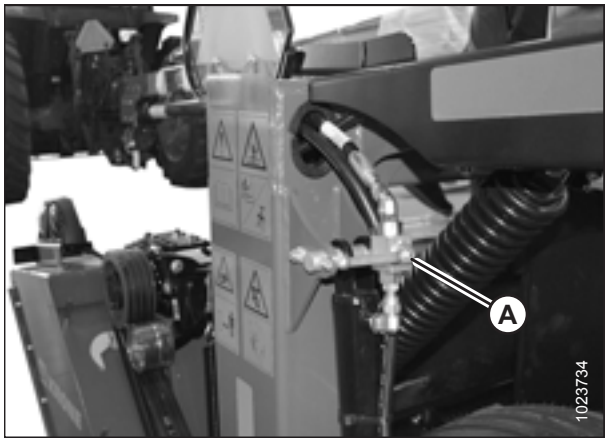


Figure 5.2: Cylinder Lock-Out Valve

7. Close the hitch swing lock-out valve by turning handle (A) to the closed position (90° angle to the hose).
8. Ensure tires are properly inflated.
9. Ensure the slow moving vehicle (SMV) sign, reflectors, and lights are clean and visible at rear of rotary disc pull-type.
10. Refer to *5.2 Transporting with a Tractor, page 49* for transport instructions.

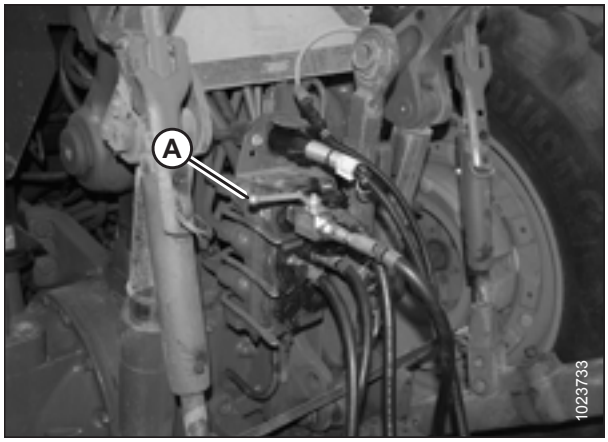


Figure 5.3: Hitch Swing Lock-Out Valve Shown in Closed Position

5.2 Transporting with a Tractor

If towing endwise with the optional Road-Friendly Transport™ system, refer to *5.4 Converting from Field to Transport Mode – With Road-Friendly Transport™, page 51*.

1. Before transporting the rotary disc pull-type with a tractor, ensure the machine is prepared for transport. Refer to *5.1 Preparing Rotary Disc Pull-Type for Transport, page 47* for instructions.
2. Ensure hitch safety chain is properly connected to the tractor. Provide only enough slack in chain to permit turning.
3. Ensure the hydraulic hoses are securely stored on the hitch.

   NOTE:

   The primary driveline and hydraulic hoses do not need to be attached to the tractor for towing.
4. Ensure the hitch swing lock-out and the two lift-cylinder lock-out valves are closed (handle 90° to the hose).

   NOTE:

   Keep the slow moving vehicle (SMV) sign, reflectors, and lights clean and visible at rear of rotary disc pull-type.
5. Ensure tires are properly inflated.

   IMPORTANT:

   Do **NOT** exceed 32 km/h (20 mph).

5.3 Transport Lighting

5.3.1 Lighting – With Road-Friendly Transport™ Option

The rotary disc pull-type is equipped with two bidirectional amber lights (A) that function as flashing hazard lights and turn signals.

Red lights (B) located on the inboard side of the amber lights function as both tail and brake lights. Refer to the rotary disc pull-type operator's manual for information about connecting the electrical harness to the tractor.

Amber reflective tape is applied to various locations on the front and sides of the rotary disc pull-type, hitch, and carrier frame. Red reflective tape is applied to the rear of the rotary disc pull-type.

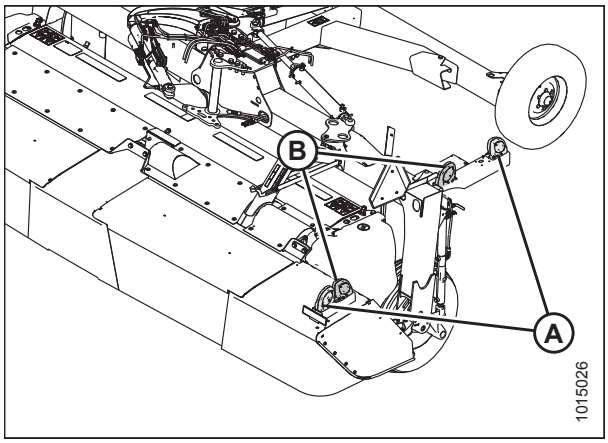


Figure 5.4: Lighting Locations – with Road-Friendly Transport™

5.3.2 Lighting – Without Road-Friendly Transport™ Option

The rotary disc pull-type is equipped with two bidirectional amber lights (A) located on the outboard edges of the carrier frame that function as flashing hazard lights and turn signals.

Red lights (B) located on the inboard side of the amber lights function as both tail and brake lights. Refer to the rotary disc pull-type operator's manual for information about connecting the electrical harness to the tractor.

Amber reflective tape is applied to various locations on the front and sides of the rotary disc pull-type, hitch, and carrier frame. Red reflective tape is applied to various locations on the rotary disc pull-type.

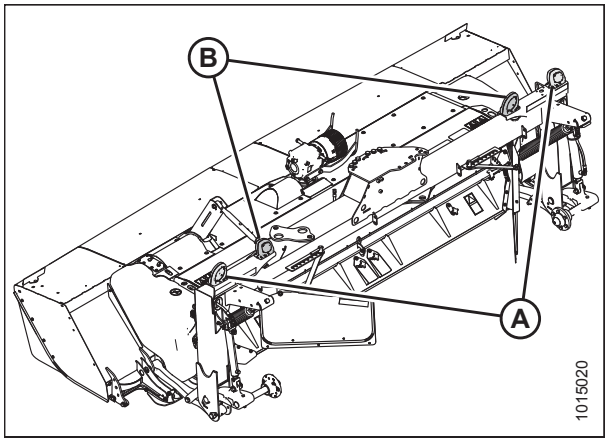


Figure 5.5: Lighting Locations

5.4 Converting from Field to Transport Mode – With Road-Friendly Transport™

DANGER

To prevent serious injury or death, do NOT convert the machine into, or from transport mode until all people, animals, and objects are clear of the unit's rotational range.

DANGER

Stop the power take-off (PTO) before converting the unit into transport mode. The cutting discs continue to spin after the drive is turned off.

CAUTION

To prevent equipment damage, ensure cutterbar doors are properly closed before converting the machine from field to transport mode.

IMPORTANT:

In some jurisdictions, having tall crop dividers installed can make the rotary disc pull-type too wide for public roads when in transport mode. If necessary, remove the dividers, and reinstall them after the machine is transported. For instructions, refer to the rotary disc pull-type operator's manual.

1. Clear bystanders from the area and start tractor. Do **NOT** operate the rotary disc pull-type.
2. Following the steps on field-to-transport decal (A), move transport switch to lower position (C) and ensure that light (B) is illuminated.

Figure 5.6: Control Box

3. While the light is illuminated, raise the rotary disc pull-type fully by extending the field wheel cylinders.

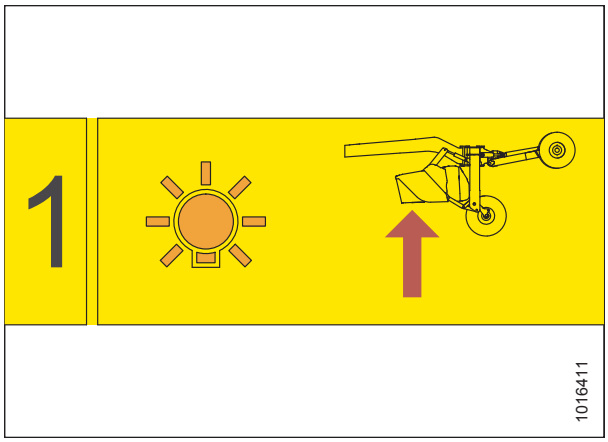


Figure 5.7: Raising Rotary Disc Pull-Type

4. Operate the hitch swing control lever to rotate the rotary disc pull-type to the right until the cam bearing nut is aligned with the green section of the transport alignment gauge decal.

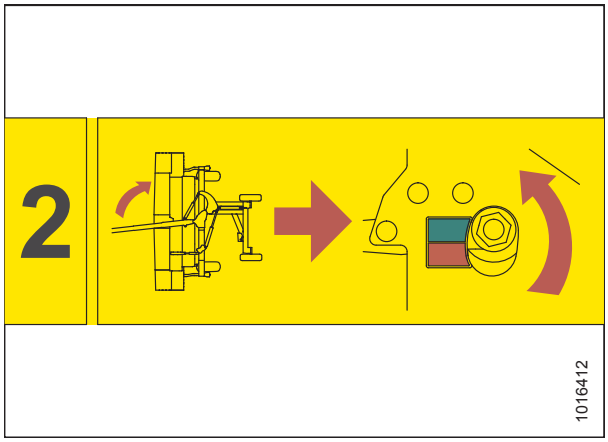


Figure 5.8: Rotary Disc Pull-Type Rotation

5. Move the transport switch to the upper position and ensure that the light is **NOT** illuminated. The hitch swing circuit is now deactivated and the transport circuit is active.

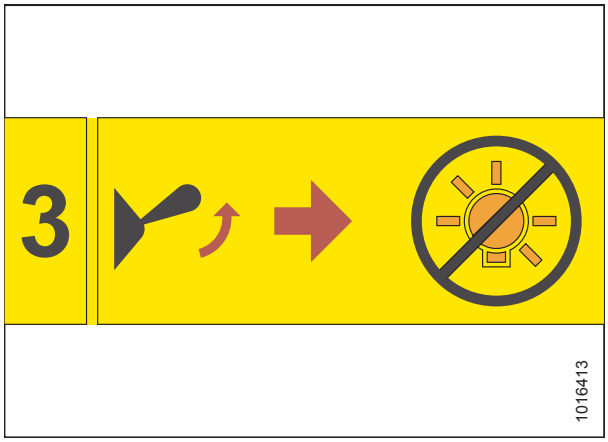


Figure 5.9: Transport Switch

6. Operate the hitch swing control lever to lower transport wheels (A) and hold the lever until the rotary disc pull-type is lifted off the ground.
7. Continue to hold the hitch swing control lever so that rotary disc pull-type (B) rotates to the left and under the hitch.
8. Release the hitch swing control lever when rotary disc pull-type (C) stops rotating.

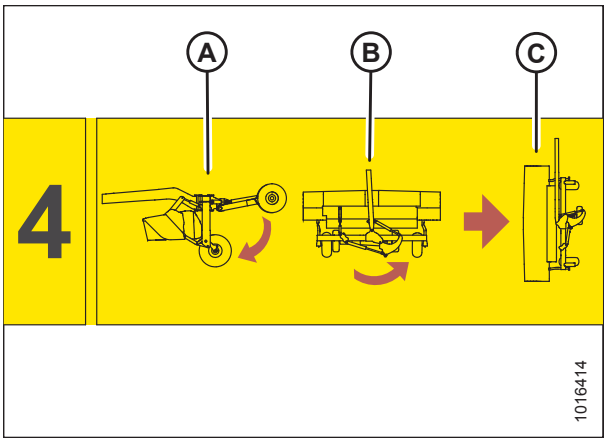


Figure 5.10: Transport Assembly Rotation

9. Operate the lift control lever to lower the rotary disc pull-type onto the transport assembly, raise the field wheels, and engage the transport latch onto the hitch.

   IMPORTANT:

   Once the latch has engaged, do **NOT** operate any hydraulic circuits.

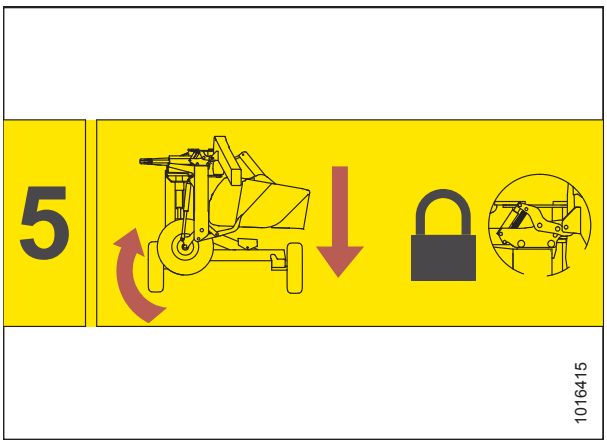


Figure 5.11: Transport Assembly Lowering

10. Close the steering lock-out valve and the two lift cylinder lock-out valves by turning the handles to the closed position. For instructions, refer to Figure *5.13, page 54* and Figure *5.14, page 54*.

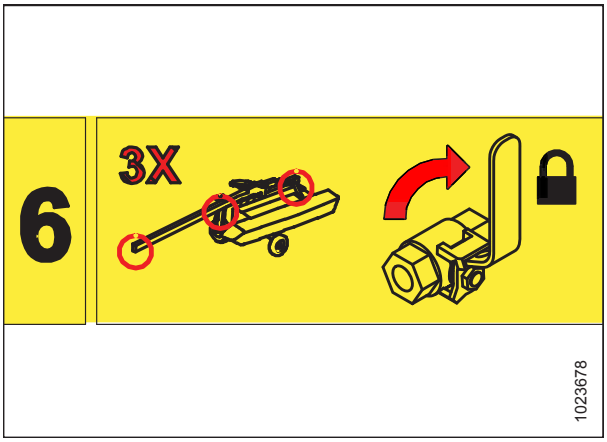


Figure 5.12: Hydraulic Lockout

Steering lock-out: Close the valve by turning handle (A) to the closed position (90° to the hose).

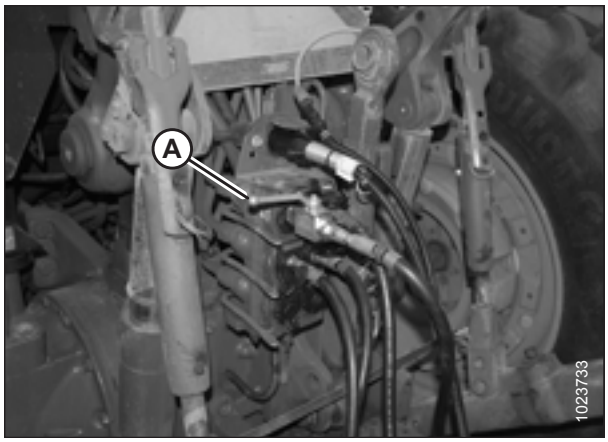


Figure 5.13: Steering Lock-Out Valve

Lift cylinder lock-out: Close the valve by turning handle (A) to the closed position (90° to the hose). Repeat on opposite side.

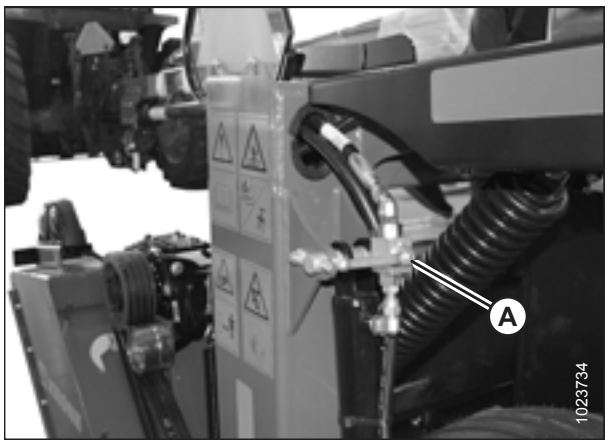


Figure 5.14: Lift Cylinder Lock-Out Valve

11. Activate hazard lights (A) on the rotary disc pull-type. Ensure all lights are working.
12. Ensure that slow moving vehicle sign (B) is visible from behind the rotary disc pull-type.

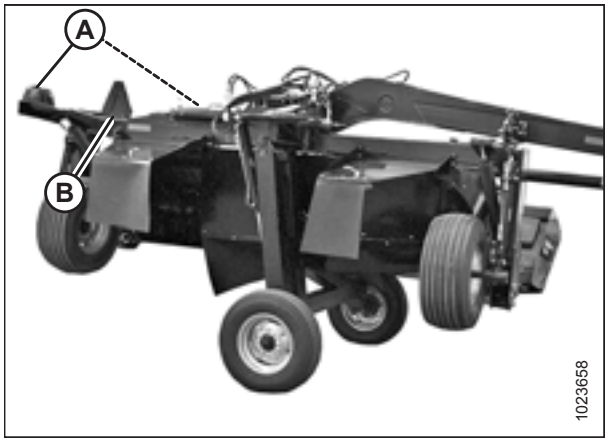


Figure 5.15: Transport Mode

13. Once field-to-transport conversion (A) is complete, leave the switch in upper position (C). Ensure that light (B) is **NOT** illuminated.

Figure 5.16: Control Box

5.5 Converting from Transport to Field Mode – With Road-Friendly Transport™

DANGER

To prevent serious injury or death, do NOT convert the machine into, or from transport mode until all people, animals, and objects are clear of the unit's rotational range.

CAUTION

To prevent equipment damage, ensure cutterbar doors are properly closed before converting the machine from field to transport mode.

1. Clear bystanders from the area and start tractor. Do **NOT** operate the rotary disc pull-type.
2. Following the steps on transport-to-field decal (A), move the transport switch to upper position (C) and ensure that light (B) is **NOT** illuminated.

Figure 5.17: Control Box

3. Open the steering lock-out valve and the two lift cylinder lock-out valves by turning the handles to the open position.

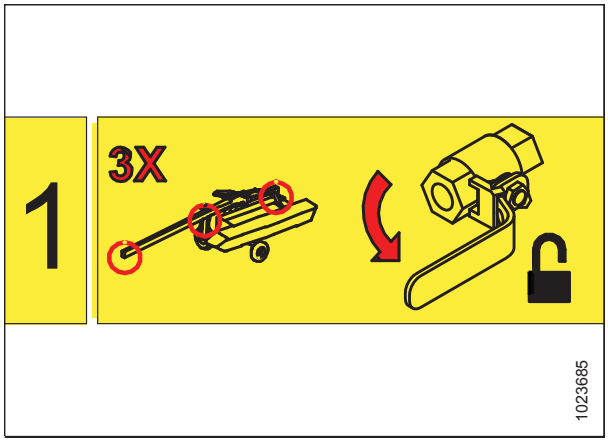


Figure 5.18: Hydraulic Lockout

Steering lock-out: Open the valve by turning handle (A) to the open position (in line with the hose).

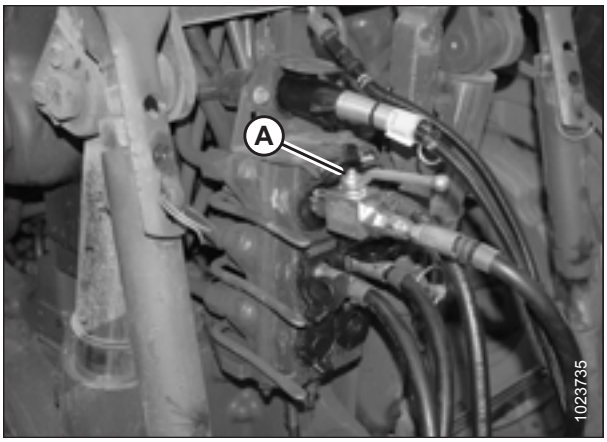


Figure 5.19: Steering Lock-Out Valve

Lift cylinder lock-out: Open the valve by turning handle (A) to the open position (in line with the hose). Repeat on opposite side.

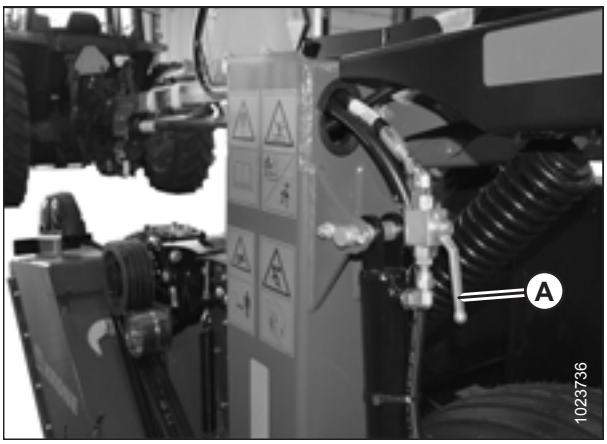


Figure 5.20: Lift Cylinder Lock-Out Valve

4. While the light is **NOT** illuminated, operate the lift control lever (as if raising the rotary disc pull-type) to fully extend the lift cylinders and raise the cutterbar off the transport assembly support. The carrier frame latch will automatically open.

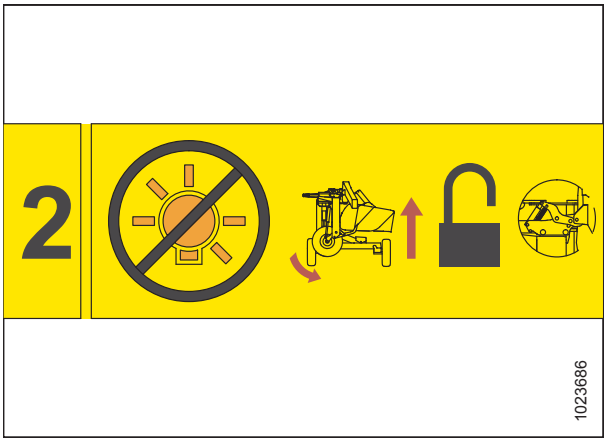


Figure 5.21: Raising Rotary Disc Pull-Type

5. Operate the hitch swing control lever to rotate the rotary disc pull-type to the right. The rotary disc pull-type will stop when it reaches operating position.

   NOTE:

   A sequenced movement transitions the rotary disc pull-type from transport to field mode. This is accomplished by the rear transport swing cylinder, and the transport deploy cylinder. During the transition, continue to hold the hitch swing lever in the active position to allow oil to be supplied to the two cylinders sequentially.

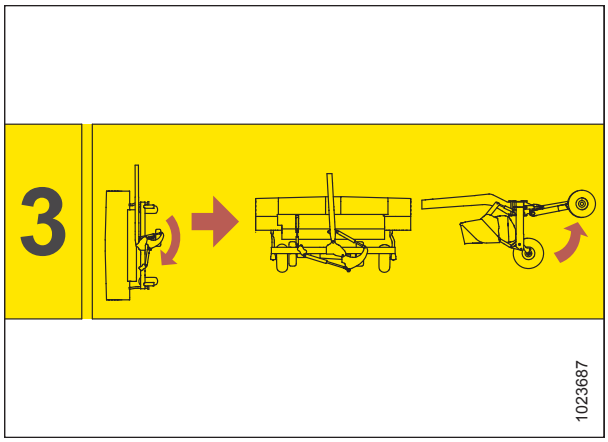


Figure 5.22: Rotary Disc Pull-Type Rotation

6. Continue operating the hitch swing control lever to fully raise the transport assembly and lower the rotary disc pull-type onto the field wheels.
7. Move transport switch to the lower position and ensure that the light on the control box is illuminated. Transport conversion is now complete and the hitch swing circuit is active.

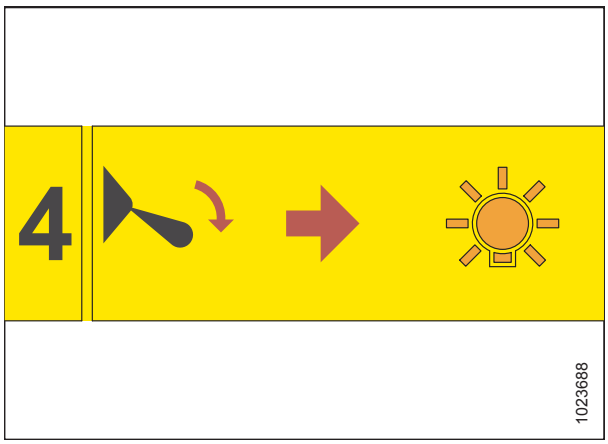


Figure 5.23: Transport Switch

8. Once transport-to-field conversion (A) is complete, leave the switch in lower position (C). Ensure that light (B) is illuminated.

Figure 5.24: Control Box

Chapter 6: Reference

6.1 Attaching Rotary Disc Pull-Type to the Tractor

Refer to the attachment procedure that applies to your tractor:

- *6.1.1 Attaching with Drawbar Hitch, page 61*
- *6.1.2 Attaching with Two-Point Hitch, page 68*

6.1.1 Attaching with Drawbar Hitch

WARNING

To avoid bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before making adjustments to the machine.

1. Remove lynch pin (A) from clevis pin (B), and remove the clevis pin from the rotary disc pull-type hitch.

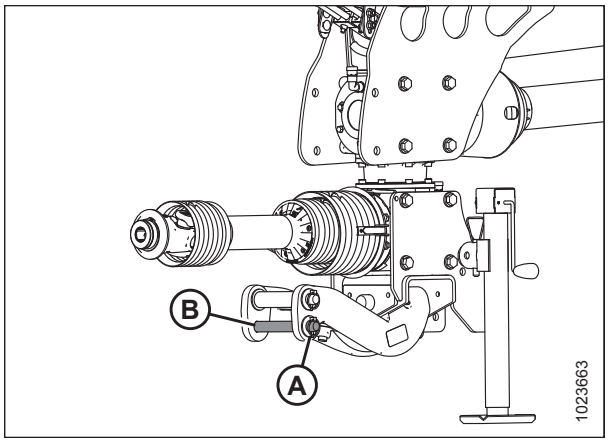


Figure 6.1: Rotary Disc Pull-Type Hitch – Model Year 2018 and Prior

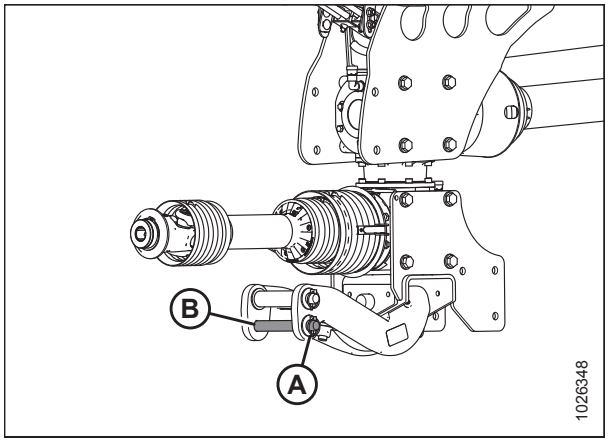


Figure 6.2: Rotary Disc Pull-Type Hitch – Model Year 2019

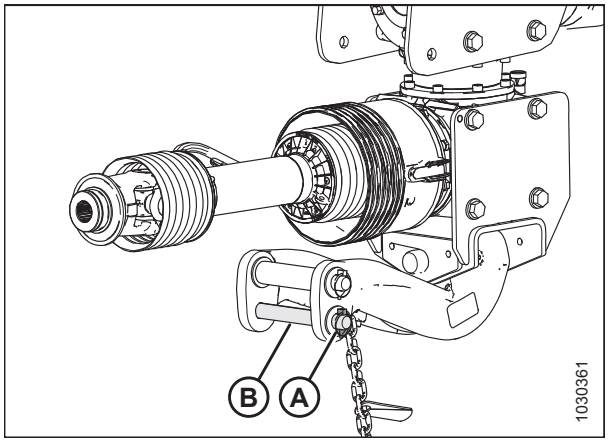


Figure 6.3: Rotary Disc Pull-Type Hitch – Model Year 2020 and Later

2. Move the tractor to position drawbar hitch adapter (A) under pin (B) in the hitch. Adjust height as necessary with jack.
3. Shut down the engine, and remove the key from the ignition.

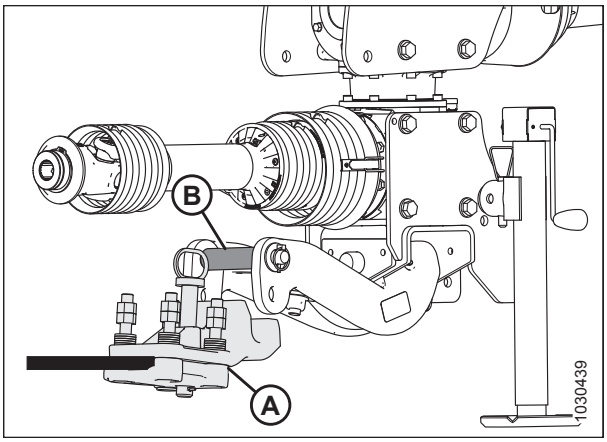


Figure 6.4: Rotary Disc Pull-Type Hitch

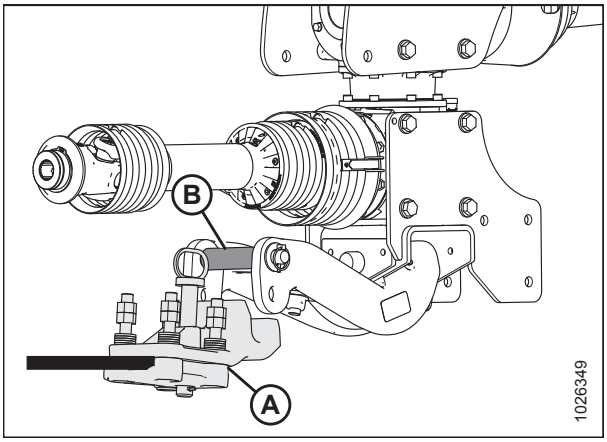


Figure 6.5: Rotary Disc Pull-Type Hitch

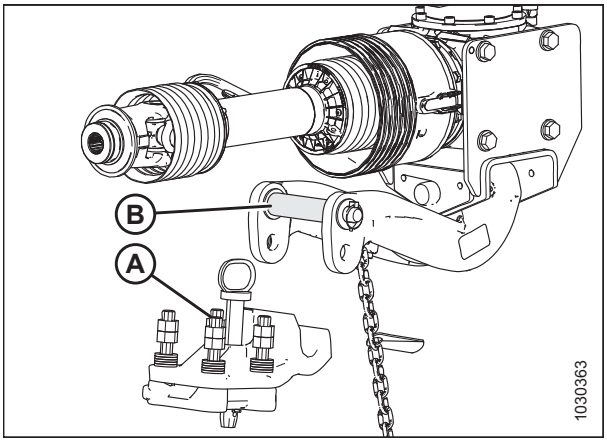


Figure 6.6: Rotary Disc Pull-Type Hitch – Model Year 2020 and Later

4. Lower the hitch with the jack so that pin (A) engages drawbar hitch adapter (B).
5. Install clevis pin (C) and secure with lynch pin (D).

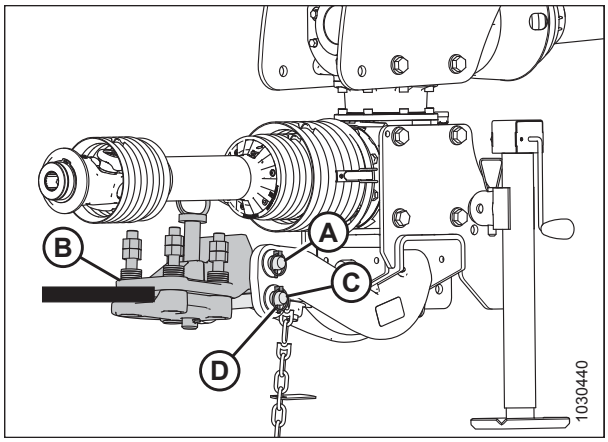


Figure 6.7: Rotary Disc Pull-Type Hitch – Model Year 2018 and Prior

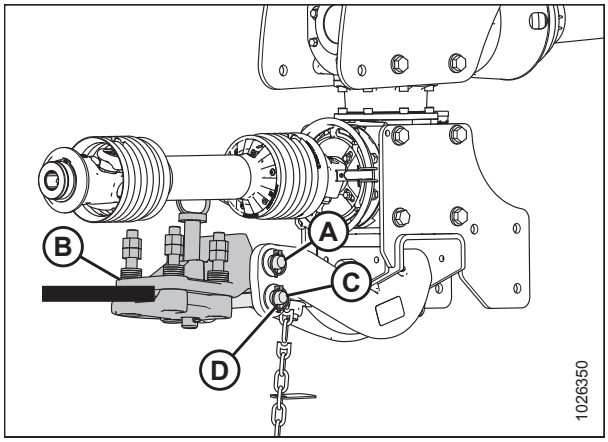


Figure 6.8: Rotary Disc Pull-Type Hitch – Model Year 2019

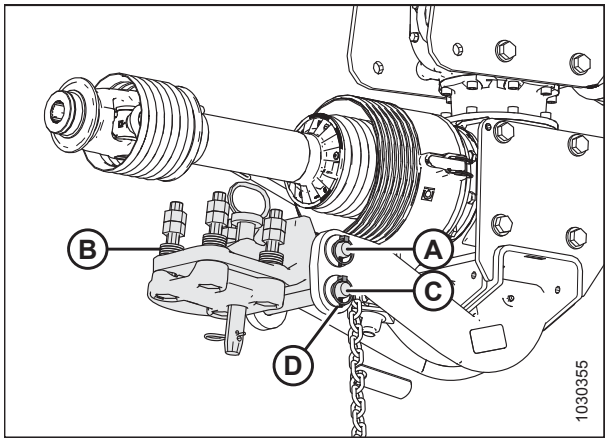


Figure 6.9: Rotary Disc Pull-Type Hitch – Model Year 2020 and Later

6. Position primary driveline (A) onto the tractor power take-off (PTO).
7. Pull back collar (B) on driveline (A), and push the driveline until it locks. Release collar.
8. Route safety chain (C) from the rotary disc pull-type through chain support (D) on the drawbar hitch adapter and around the tractor drawbar support. Lock hook on chain.

IMPORTANT:

If the tractor has a three-point hitch, lift the links as far as possible to prevent damage to the hitch.

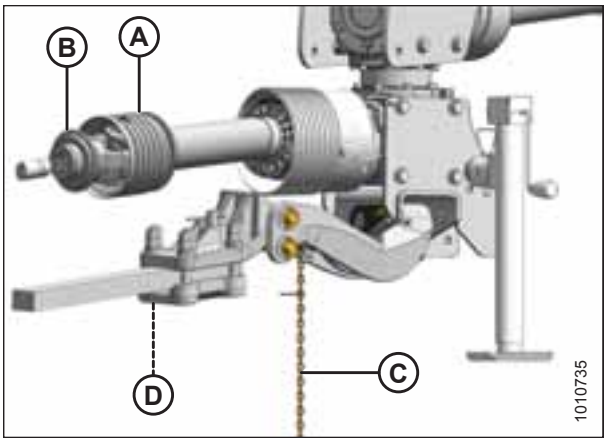


Figure 6.10: Primary Driveline – Model Year 2018 and Prior

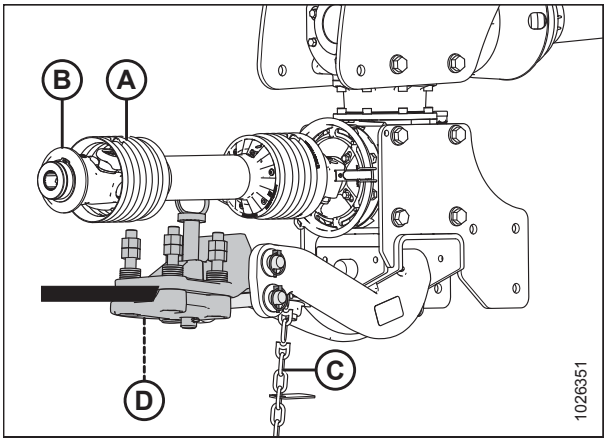


Figure 6.11: Primary Driveline – Model Year 2019

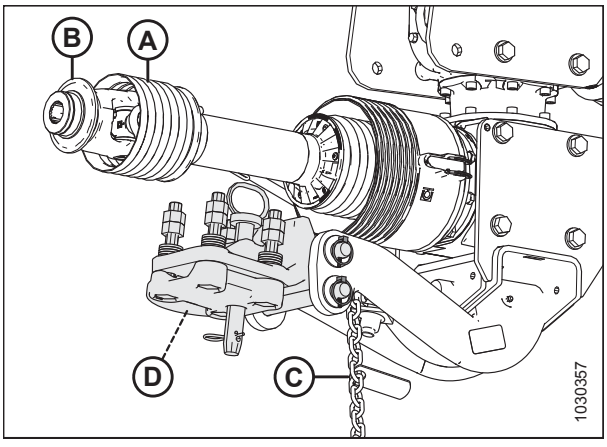


Figure 6.12: Primary Driveline – Model Year 2020 and Later

9. Raise jack (A), and remove pin (B).

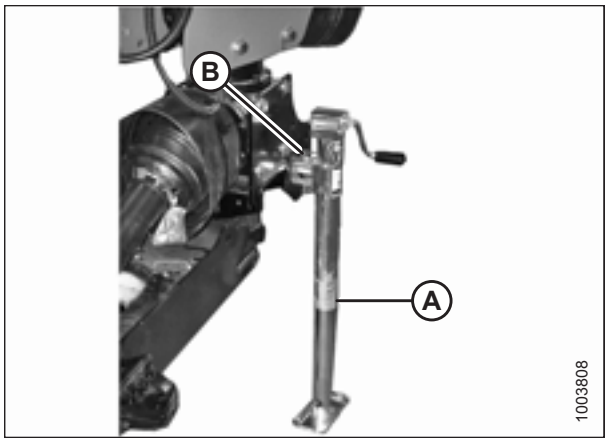


Figure 6.13: Hitch Jack – Model Year 2018 and Prior

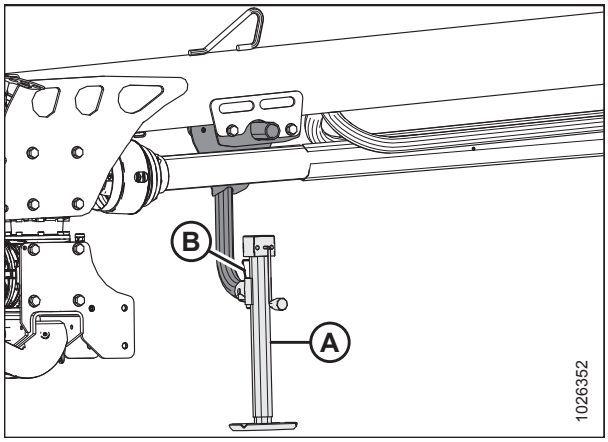


Figure 6.14: Hitch Jack – Model Year 2019

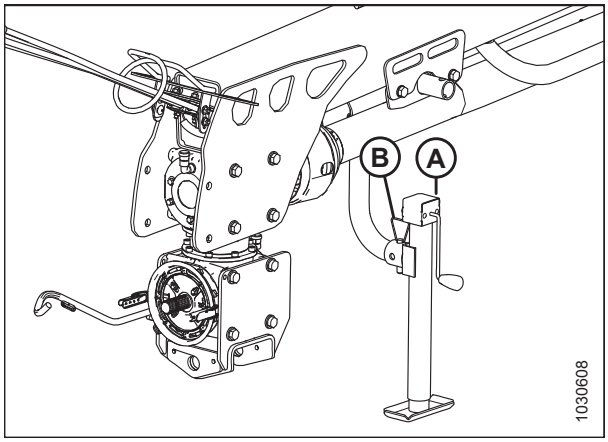


Figure 6.15: Hitch Jack – Model Year 2020 and Later

10. Move jack (A) to storage position on top of hitch, and secure with pin (B).
11. Proceed to *3.6 Connecting Hydraulics, page 41*.

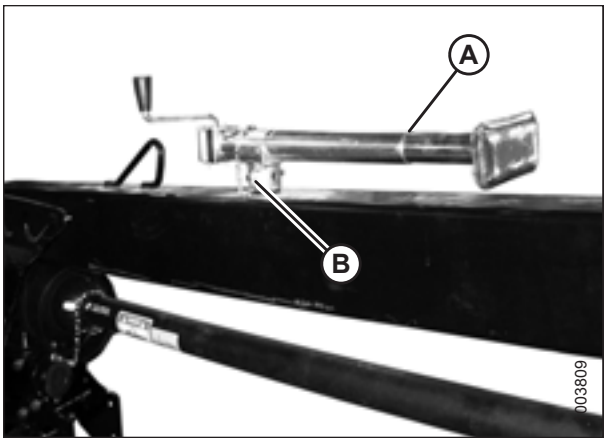


Figure 6.16: Drawbar Jack Storage – Model Year 2018 and Prior

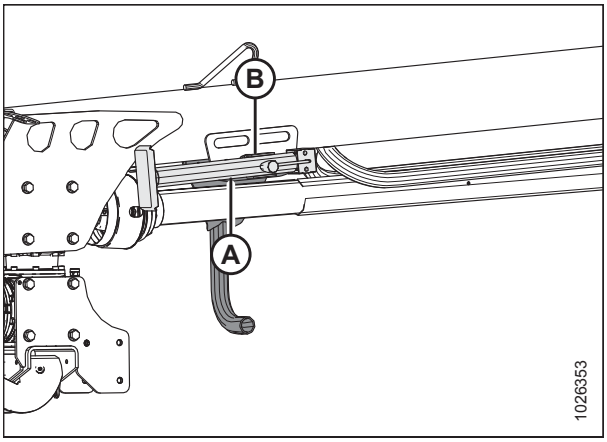


Figure 6.17: Drawbar Jack Storage – Model Year 2019

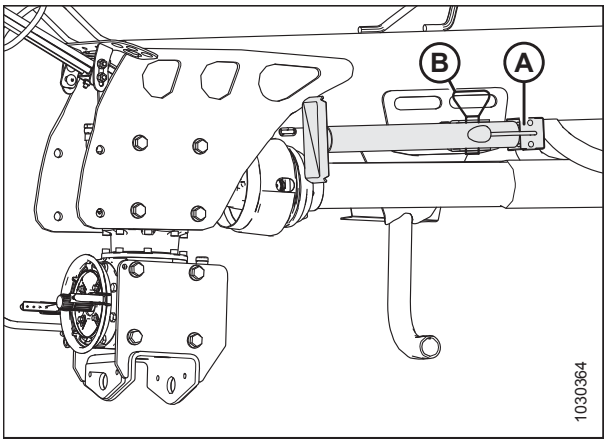


Figure 6.18: Drawbar Jack Storage – Model Year 2020 and Later

6.1.2 Attaching with Two-Point Hitch

Follow these steps to attach category II, IIIN, and III two-point hitches:

WARNING

To avoid bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before making adjustments to the machine.

1. Position tractor and align tractor hitch arms (A) with hitch adapter (B).
2. Shut down the engine, and remove the key from the ignition.
3. Remove lynch pins (C) and washers from the hitch adapter.
4. Secure hitch arms (A) onto adapter pins (D) with lynch pins (C).

   NOTE:

   If the tractor is equipped with a category III hitch, use a bushing (MD #224322) on each hitch pin (D).

   NOTE:

   If using a category III hitch, a longer driveshaft may be required.
5. Install anti-sway bars (not shown) on the tractor hitch to stabilize lateral movement of hitch arms (A). For instructions, refer to your tractor operator's manual.

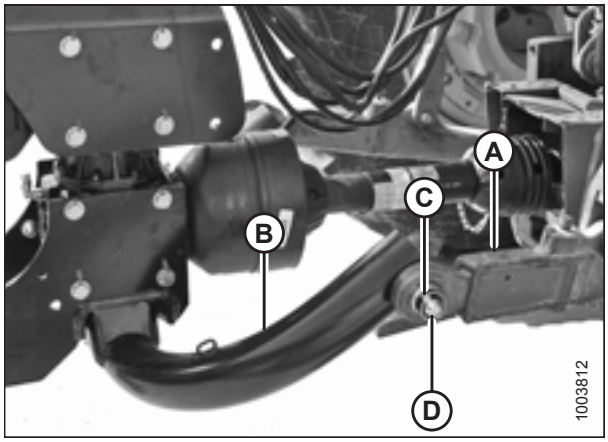


Figure 6.19: Two-Point Hitch Configuration

6. Check distance (C) between tractor primary power take-off (PTO) shaft (A) and rotary disc pull-type hitch gearbox shaft (B) without the front half of the driveline attached.
7. Ensure that distance measurement (C) does **NOT** exceed the dimensions listed in Table *6.1, page 69*.

Table 6.1 Distance between Hitch Gearbox and Tractor PTO

Driveline Shaft Size	Distance (C)[9]
34 mm (1 3/8 in.)	650 mm (25 9/16 in.)
43 mm (1 3/4 in.)	750 mm (29 1/2 in.)

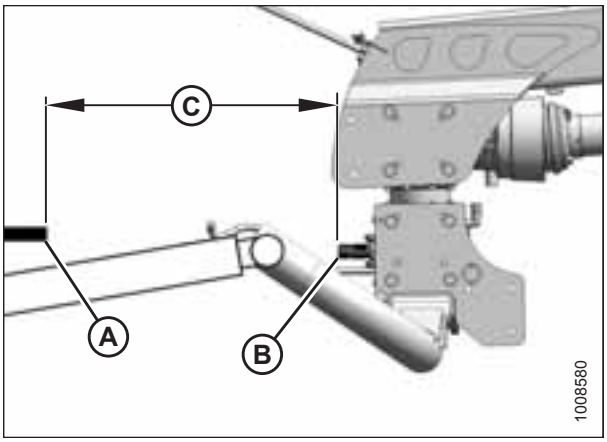


Figure 6.20: Allowable Driveline Length – Model Year 2019 and Prior

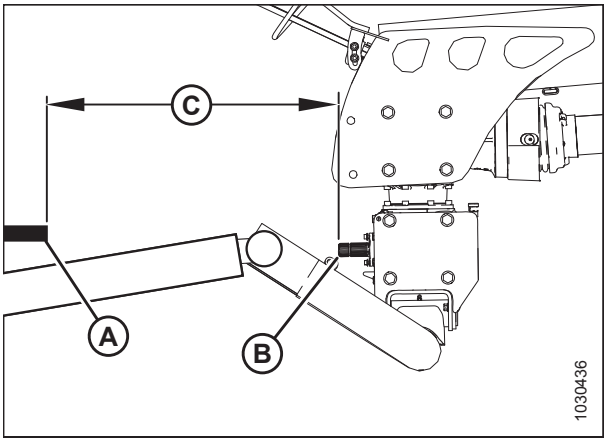


Figure 6.21: Allowable Driveline Length – Model Year 2020 and Later

8. Position primary driveline (A) onto the tractor's PTO shaft, making sure that the driveline is approximately level.
9. Pull back the collar on driveline (A) and push the driveline until it locks. Release the collar.

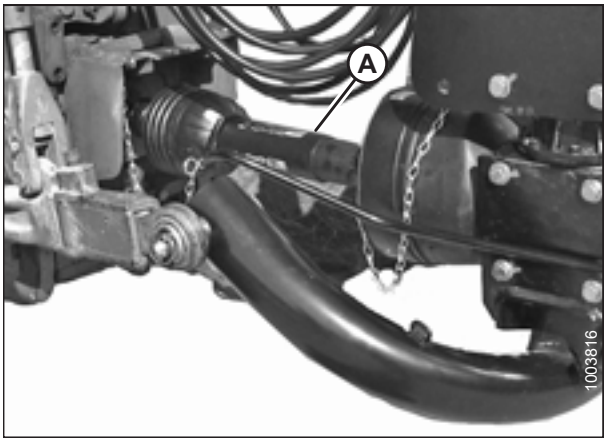


Figure 6.22: Driveline Attached to Tractor PTO

9. If distance (C) is greater than the values shown, a longer driveline is required. Refer to the rotary disc pull-type operator's manual, options and attachments section for ordering information.

For model year 2019 and prior:

CAUTION

Check to be sure all bystanders have cleared the area.

10. Clear bystanders from the area and start tractor. Do **NOT** operate the rotary disc pull-type.
11. Start the tractor and raise the hitch so that stand (A) is off the ground.
12. Shut down the engine, and remove the key from the ignition.
13. Remove inner hairpin (B) and pull lock (C) to release stand (A).

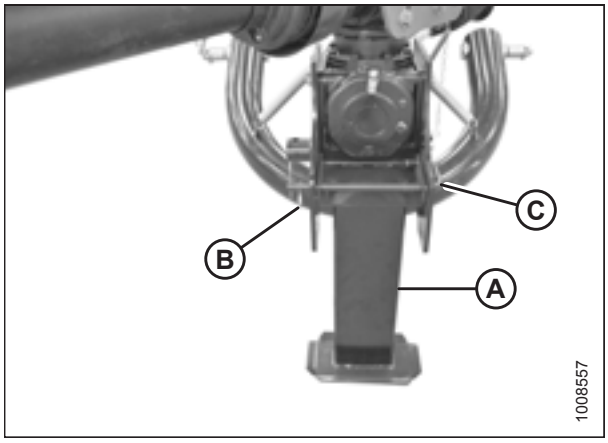


Figure 6.23: Hitch Stand

14. Raise stand (A), rotate lock (B) clockwise to vertical position, and re-engage lock (B) to hold the stand in the storage location.

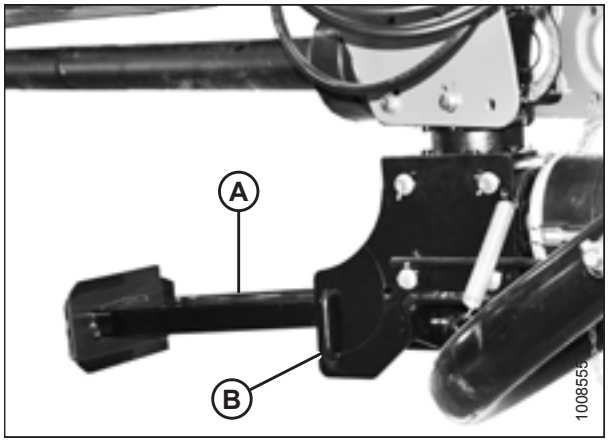


Figure 6.24: Hitch Stand

15. Secure lock with lynch pin (A).

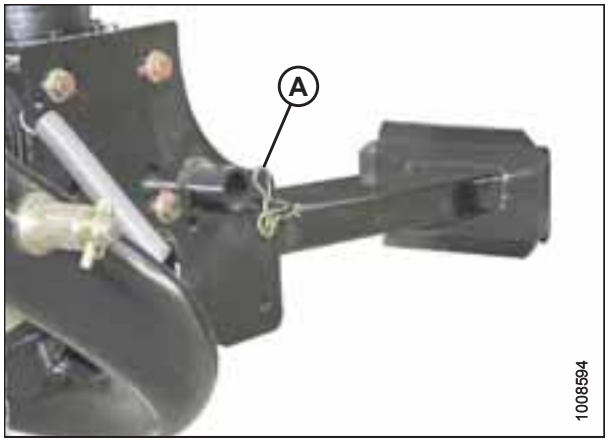


Figure 6.25: Hitch Stand

For model year 2020 and later:

CAUTION

Check to be sure all bystanders have cleared the area.

16. Clear bystanders from the area and start the tractor. Do **NOT** operate the pull-type.
17. Raise the hitch so that stand (A) is off the ground.
18. Shut down the engine, and remove the key from the ignition.
19. Remove inner hairpin (B) to release stand (A).

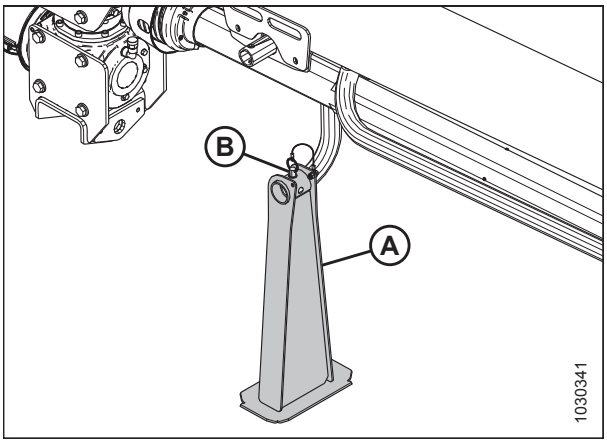


Figure 6.26: Hitch Stand in Working Position

20. Rotate stand (A) upward and into storage position.

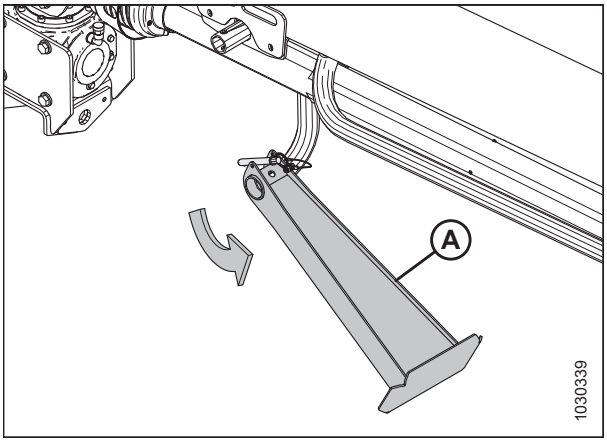


Figure 6.27: Repositioning Hitch Stand

21. Insert pin (A) and secure stand (B) in storage position.

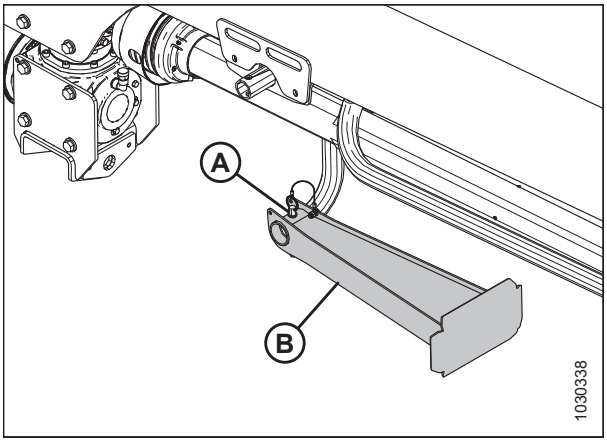
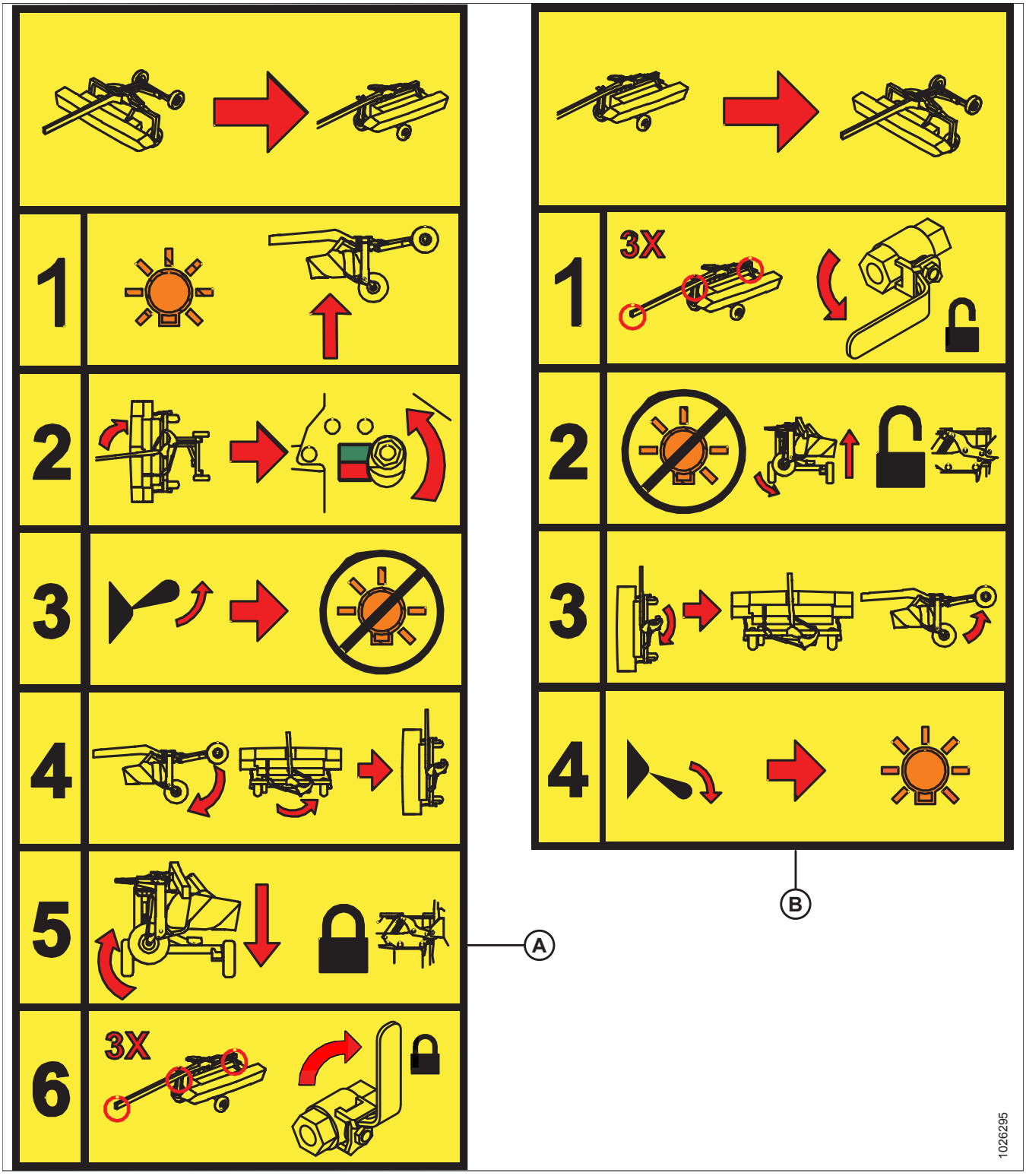


Figure 6.28: Hitch Stand in Storage Position

6.2 Converting Road-Friendly Transport™ Decal



A - Converting From Field to Transport

B - Converting From Transport to Field

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