

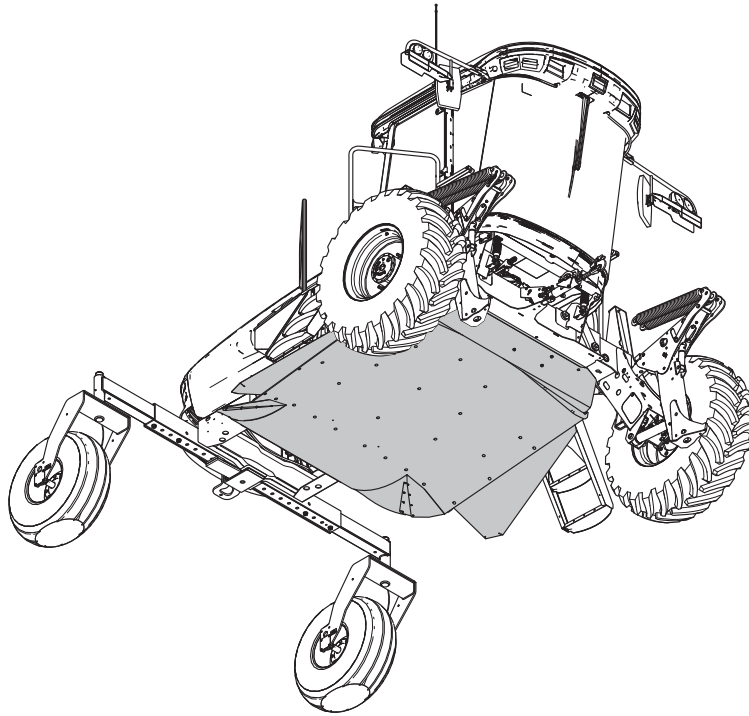
# **Swath Compressor for M Series Windrowers**

Setup, Operation, and Parts Manual

215350 Revision A

Original Instruction

## Swath Compressor for M Series Windrowers



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## Introduction

The MacDon Swath Compressor is a large, formed polyethylene sheet designed to mount to the underside of a MacDon M155, M155E4, or M205 Windrower. The MacDon Swath Compressor is designed for use with D Series Draper Headers cutting canola.

The swath compressor is compatible with M155, M155E4, or M205 Windrowers equipped with the CDM5 version of the cab display module (MD #183920) and the following minimum software requirements:

- CDM5 version 512 or newer
- WCM2 version 236 or newer
- WCM3 version 116 or newer

The swath compressor shapes the windrow and anchors it into the stubble behind the header to help prevent shelling in ripe conditions and wind damage. Excessive compression by a swath compressor or roller can increase losses from crop shelling, and may increase drying time; inadequate compression can leave a windrow prone to wind damage.

The swath compressor height can be adjusted and monitored with the cab display. Height can be adjusted for crop ripeness, yield, and the amount of compression required. The swath compressor will automatically lift up if an Operator stops and reverses the windrower.

When setting up the machine or making adjustments, review and follow the recommended machine settings in all relevant MacDon publications. Failure to do so may compromise machine function and machine life and may result in a hazardous situation.

MacDon provides warranty for Customers who operate and maintain their equipment as described in this manual. A copy of the MacDon Industries Limited Warranty Policy, which explains this warranty, should have been provided to you by your Dealer. Damage resulting from any of the following conditions will void the warranty:

- Accident
- Misuse
- Abuse
- Improper maintenance or neglect
- Abnormal or extraordinary use of the machine
- Failure to use the machine, equipment, component, or part in accordance with the manufacturer's instructions

### Conventions

- M155, M155E4, and M205 Windrowers are Dual Direction®, meaning the windrower can be driven in cab-forward or engine-forward modes. When referencing specific locations on the machine, this manual always assumes a cab-forward direction when using the terms right and left.
- Unless otherwise noted, use the standard torque values provided in Chapter 6 *Reference, page 57* of this document.

### NOTE:

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

Call your MacDon Dealer if you need assistance, information, or additional copies of this manual.

This manual is currently available in English only.

# Summary of Changes

At MacDon, we’re continuously making improvements; 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
Overall	Manual part number change, 215158_A to 215350_A.	Tech Pubs
<a href="#">2.2.6 Installing Shield Assembly, page 30</a>	Removed extra unnecessary callout from illustration. Updated illustration from 1022392 to 1033187 to show changes.	Tech Pubs

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# Chapter 1: Safety

## 1.1 Safety Alert Symbols

This safety alert symbol indicates important safety messages in this manual and on safety signs on the machine.

This symbol means:

- **ATTENTION!**
- **BECOME ALERT!**
- **YOUR SAFETY IS INVOLVED!**

Carefully read and follow the safety message accompanying this symbol.

### Why is safety important to you?

- Accidents disable and kill
- Accidents cost
- Accidents can be avoided



Figure 1.1: Safety Symbol

## **1.2 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.

### 1.3 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

In addition, take the following precautions:

- 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 1.2: Safety Equipment



Figure 1.3: 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.

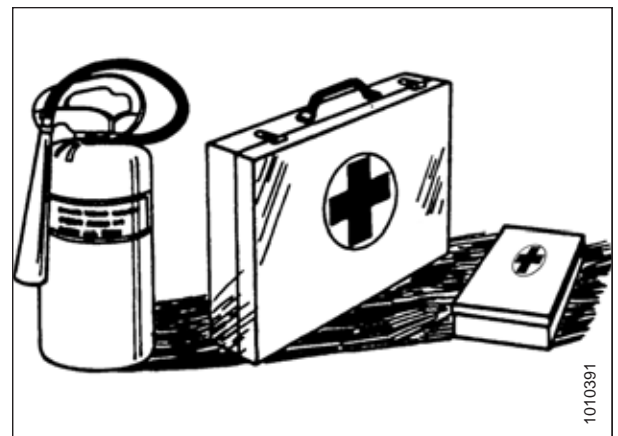


Figure 1.4: Safety Equipment

## SAFETY

- 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 1.5: 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.

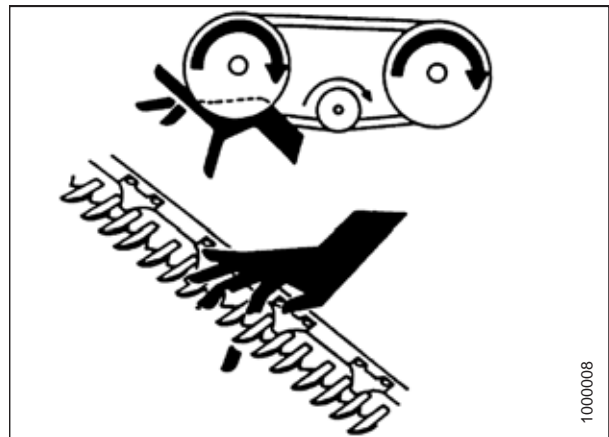


Figure 1.6: Safety around Equipment

- 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 1.7: Safety around Equipment

## 1.4 Maintenance Safety

To ensure your safety while maintaining machine:

- Review the operator's manual and all safety items before operation and/or maintenance of the machine.
- Place all controls in Neutral, stop the engine, set the park brake, remove the ignition key, and wait for all moving parts to stop before servicing, adjusting, and/or repairing.
- Follow good shop practices:
  - Keep service areas clean and dry
  - Be sure electrical outlets and tools are properly grounded
  - Keep work area well lit
- Relieve pressure from hydraulic circuits before servicing and/or disconnecting the machine.
- Make sure all components are tight and that steel lines, hoses, and couplings are in good condition before applying pressure to hydraulic systems.
- Keep hands, feet, clothing, and hair away from all moving and/or rotating parts.
- Clear the area of bystanders, especially children, when carrying out any maintenance, repairs, or adjustments.
- Install transport lock or place safety stands under the frame before working under the machine.
- If more than one person is servicing the machine at the same time, be aware that rotating a driveline or other mechanically-driven component by hand (for example, accessing a lubricant fitting) will cause drive components in other areas (belts, pulleys, and knives) to move. Stay clear of driven components at all times.
- Wear protective gear when working on the machine.
- Wear heavy gloves when working on knife components.



Figure 1.8: Safety around Equipment

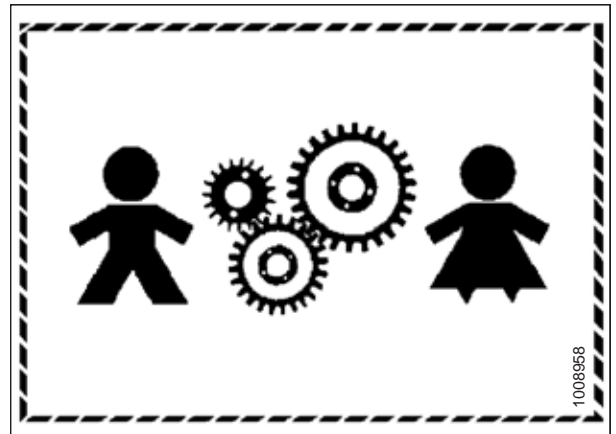


Figure 1.9: Equipment NOT Safe for Children



Figure 1.10: Safety Equipment

## 1.5 Hydraulic Safety

- Always place all hydraulic controls in Neutral before leaving the operator's seat.
- Make sure that all components in the hydraulic system are kept clean and in good condition.
- Replace any worn, cut, abraded, flattened, or crimped hoses and steel lines.
- Do **NOT** attempt any makeshift repairs to hydraulic lines, fittings, or hoses by using tapes, clamps, cements, or welding. The hydraulic system operates under extremely high-pressure. Makeshift repairs will fail suddenly and create hazardous and unsafe conditions.

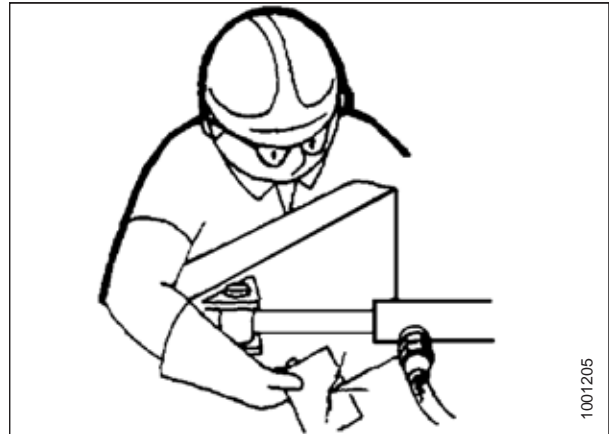


Figure 1.11: Testing for Hydraulic Leaks

- Wear proper hand and eye protection when searching for high-pressure hydraulic leaks. Use a piece of cardboard as a backstop instead of hands to isolate and identify a leak.
- If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin.



Figure 1.12: Hydraulic Pressure Hazard

- Make sure all components are tight and steel lines, hoses, and couplings are in good condition before applying pressure to a hydraulic system.

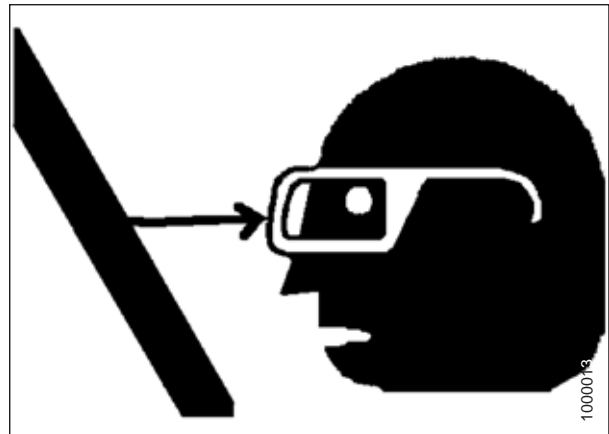


Figure 1.13: Safety around Equipment

## 1.6 Tire Safety

Service tires safely.

### WARNING

- A tire can explode during inflation, which could cause serious injury or death.
- Follow proper procedures when mounting a tire on a wheel or rim. Failure to do so can produce an explosion that may result in serious injury or death.



Figure 1.14: Overinflated Tire

### WARNING

- Do NOT remove, install, or repair a tire on a rim unless you have proper equipment and experience to perform job. Take the tire and rim to a qualified tire repair shop.
- Make sure the tire is correctly seated before inflating to operating pressure. If the tire is not correctly positioned on the rim or is overinflated, the tire bead can loosen on one side causing air to escape at high speed and with great force. An air leak of this nature can thrust the tire in any direction, endangering anyone in area.
- Do NOT stand over tire when inflating. Use a clip-on chuck and extension hose.
- Do NOT exceed maximum inflation pressure indicated on tire label.
- Never use force on an inflated or partially inflated tire.
- Make sure all air is removed from the tire before removing the tire from the rim.
- Never weld a wheel rim.
- Replace tires that have defects and replace wheel rims that are cracked, worn, or severely rusted.



Figure 1.15: Safely Inflating Tire

## 1.7 Battery Safety

### WARNING

- Keep all sparks and flames away from batteries; an explosive gas is given off by electrolyte.
- Ventilate when charging in enclosed space.



Figure 1.16: Safety around Batteries

### WARNING

- Wear safety glasses when working near batteries.
- To avoid an electrolyte loss, do NOT tip batteries more than 45°.
- Battery electrolyte causes severe burns. Avoid contact with skin, eyes, or clothing.
- Electrolyte splashed into eyes is extremely dangerous. Should this occur, force eye open, and flood with cool, clean water for 5 minutes. Call a doctor immediately.
- If electrolyte is spilled or splashed on clothing or body, neutralize it immediately with a solution of baking soda and water, then rinse with clear water.

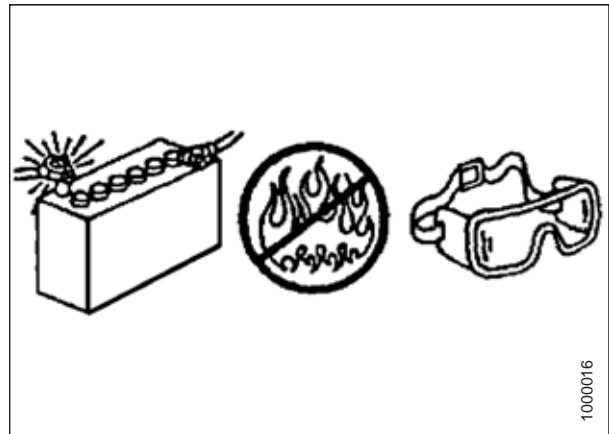


Figure 1.17: Safety around Batteries

### WARNING

- To avoid injury from a spark or short circuit, disconnect the battery ground cable before servicing any part of the electrical system.
- Do NOT operate the engine with the alternator or battery disconnected. With battery cables disconnected and the engine running, a high voltage can be built up if terminals touch frame. Anyone touching the frame under these conditions would be severely shocked.
- When working around storage batteries, remember that all of the exposed metal parts are live. Never lay a metal object across the terminals because a spark or short circuit will result.
- Keep batteries out of reach of children.

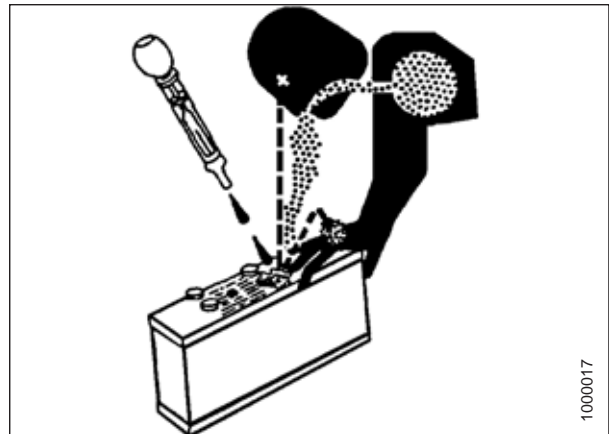


Figure 1.18: Safety around Batteries

## **1.8 Welding Precautions**

High currents and voltage spikes associated with welding can cause damage to electronic components. Before welding on any part of the windrower or an attached header, disconnect all electronic module harness connections as well as battery cables. For instructions, refer to your Dealer for proper procedures.

## 1.9 Engine Safety



### WARNING

Do NOT use aerosol starting aids such as ether. Such use could result in an explosion and personal injury.



### CAUTION

- On initial start-up of a new, serviced, or repaired engine, always be ready to stop the engine to prevent an overspeed. Do this by shutting off the air and/or fuel supply to the engine.
- Do NOT bypass or disable automatic shutoff circuits. The circuits help prevent personal injury, and prevent engine damage. Contact your Dealer for repairs and adjustments.
- Inspect the engine for potential hazards.
- Before starting the engine, ensure no one is on, underneath, or close to the engine. Ensure that people clear the area.
- All protective guards and covers must be installed if the engine must be started to perform service procedures.
- To help prevent an accident, work around rotating parts carefully.
- If a warning tag is attached to the engine start switch or controls, do NOT start engine or move controls. Consult whoever attached the warning tag before starting the engine.
- Start the engine from the operator's station. Follow the procedure in the Starting Engine section of the operator's manual. Following the correct procedure will help prevent major damage to engine components and prevent personal injury.
- To ensure that the jacket water heater (if equipped) and/or lubricant oil heater (if equipped) is working correctly, check the water temperature gauge and/or oil temperature gauge during heater operation.
- Engine exhaust contains products of combustion, which can be harmful to your health. Always start and operate the engine in a well-ventilated area. If the engine is started in an enclosed area, vent exhaust to the outside.
- Engine exhaust gases become very hot during operation and can burn people and common materials. Stay clear of the rear of machine and avoid exhaust gases when engine is running.

#### NOTE:

If the engine will be operated in very cold conditions, then an additional cold-starting aid may be required.

### 1.9.1 High-Pressure Rail



### WARNING

- Contact with high-pressure fuel may cause fluid penetration and burn hazards. High-pressure fuel spray may cause a fire hazard. Failure to follow these instructions may cause personal injury or death.
- Before disconnecting fuel lines or any other components under high-pressure between the fuel pump and high-pressure common rail fuel system, confirm that the fuel pressure is relieved.

### 1.9.2 Engine Electronics



#### WARNING

**Tampering with electronic system installation or original equipment manufacturer (OEM) wiring installation is dangerous and could result in personal injury or death and/or engine damage.**



#### WARNING

**Electrical Shock Hazard.** The electronic unit injectors use DC voltage. The engine control module (ECM) sends this voltage to the electronic unit injectors. **Do NOT** come in contact with the harness connector for the electronic unit injectors while engine is operating. Failure to follow this instruction could result in personal injury or death.

This engine has a comprehensive, programmable engine monitoring system. The ECM has the ability to monitor engine operating conditions. If conditions exceed the allowable range, the ECM will initiate immediate action.

The engine monitoring system can initiate the following actions:

- Warning
- Derate
- Shut down

Abnormalities in the following monitored conditions can limit engine speed and/or engine power:

- Engine coolant temperature
- Engine oil pressure
- Engine speed
- Intake manifold air temperature

While the engine monitoring package can vary for different engine models and different engine applications, the engine monitoring system and control will be similar for all engines. Together, two controls provide engine monitoring functions for specific engine applications.

## 1.10 Safety Signs

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or illegible.
- If the original part on which a safety sign was installed is replaced, be sure the repair part displays the current safety sign.
- Replacement safety signs are available from your MacDon Dealer Parts Department.

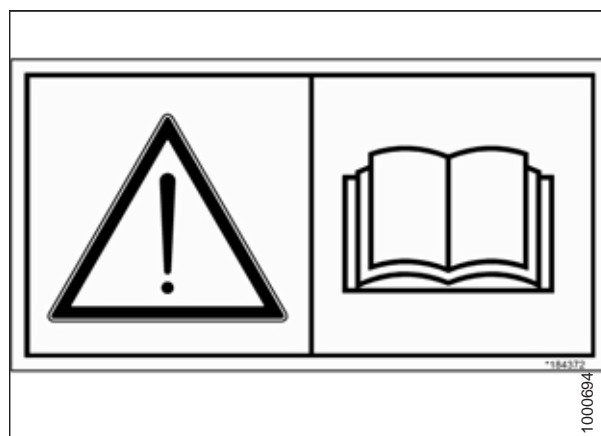


Figure 1.19: Operator's Manual Decal

### 1.10.1 Installing Safety Decals

1. Clean and dry the installation area.
2. Decide exactly where you are going to place the decal.
3. Remove the smaller portion of the split backing paper.
4. Place the decal in position and slowly peel back the remaining paper, smoothing the decal as it is applied.
5. Prick small air pockets with a pin and smooth out.

## 1.11 Safety Sign Decals

### MD #184372

General hazard pertaining to machine operation and servicing.

#### CAUTION

- Read the operator's manual and follow all safety instructions. If you do not have a manual, obtain one from your Dealer.
- Do not allow untrained persons to operate the machine.
- Review safety instructions with all Operators every year.
- Ensure that all safety signs are installed and legible.
- Make certain everyone is clear of machine before starting engine and during operation.
- Keep riders off the machine.
- Keep all shields in place and stay clear of moving parts.
- Disengage header drive, put transmission in Neutral, and wait for all movement to stop before leaving operator's position.
- Stop the engine and remove the key from ignition before servicing, adjusting, lubricating, cleaning, or unplugging machine.
- Engage locks to prevent lowering of header or reel before servicing in the raised position.
- Use slow moving vehicle emblem and flashing warning lights when operating on roadways unless prohibited by law.

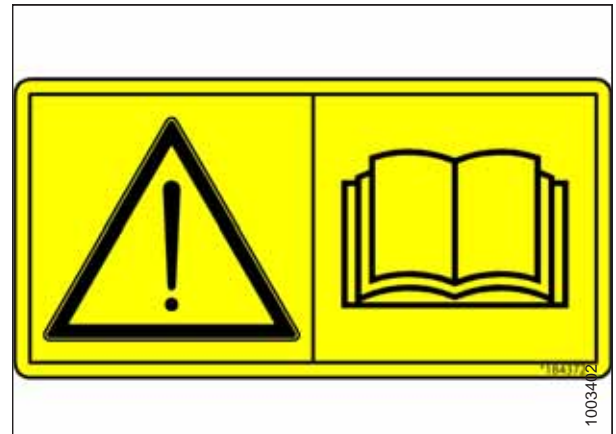


Figure 1.20: MD #184372

### MD #166466

HIGH PRESSURE HYDRAULICS

#### DO NOT GO NEAR LEAKS

- High pressure oil easily punctures skin causing serious injury, gangrene, or death.
- If injured, seek emergency medical help. Immediate surgery is required to remove oil.
- Do **NOT** use finger or skin to check for leaks.
- Lower load or relieve hydraulic pressure before loosening fittings.



Figure 1.21: MD #166466

## SAFETY

### MD #174683

PINCH POINT - MOVING PARTS

STAND CLEAR



Figure 1.22: MD #174683

### MD #291638

LOCK - SWATH COMPRESSOR DECK

- Engage lock when swath compressor is not in use.
- Lock compressor shield before servicing or working under the windrower.
- Lock compressor shield before operating in engine-forward mode.



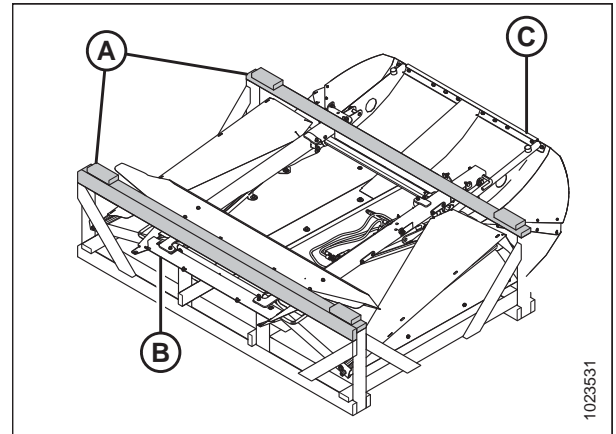
Figure 1.23: MD #291638

## Chapter 2: Installation Instructions

### 2.1 Removing Swath Compressor from Shipping Crate

Follow these steps to unpack the swath compressor from the shipping crate. Retain all parts for installation unless instructed to discard.

1. Remove top cross members (A) from the shipping crate and discard.



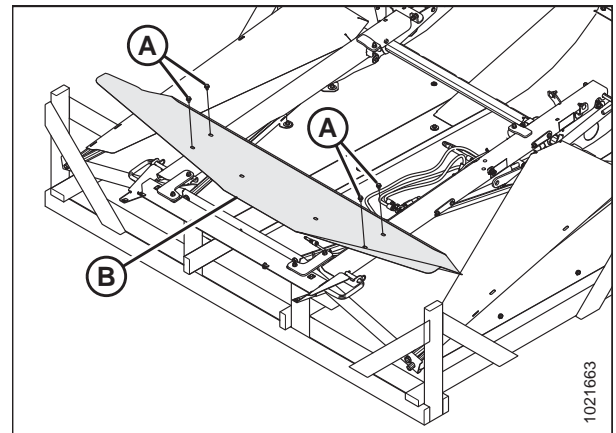
**Figure 2.1: Shipping Configuration**

A - Cross Members

B - Front

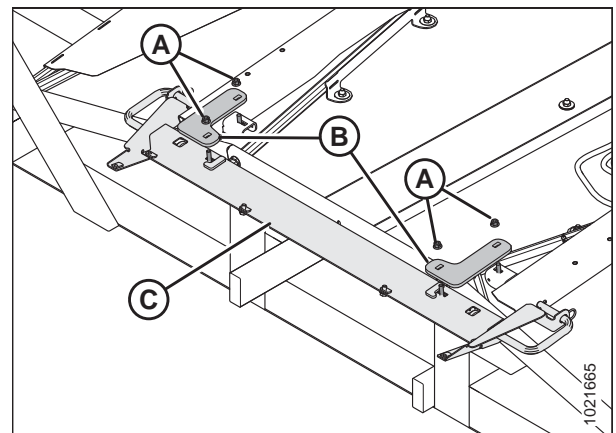
C - Rear

2. Remove four bolts (A) securing deflector (B) to the left and right supports, and remove deflector (B). Retain hardware for reinstallation.



**Figure 2.2: Front Deflector**

3. Remove four bolts and nuts (A) and remove two bar clamps (B) from front pivot support (C).



**Figure 2.3: Front Pivot Support**

## INSTALLATION INSTRUCTIONS

4. Remove bolts and nuts (B) securing front support (A) to the left and right supports.
5. Remove hairpins (C) from pivot pins (D) and pull the pivot pins to disengage them from the side supports. Remove front pivot support (A).

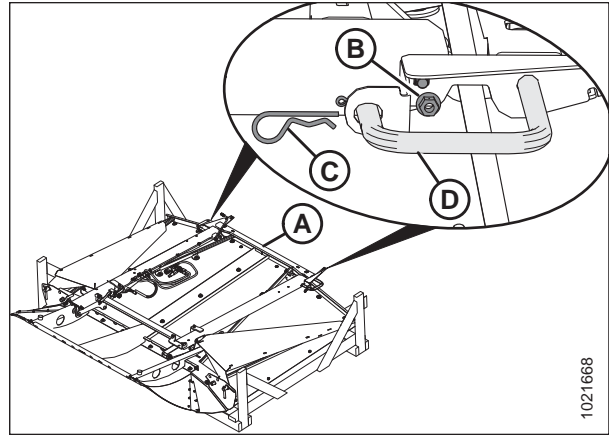


Figure 2.4: Front Pivot Support

6. Remove nut and bolt (A) and remove pivot pin (B) from the left support.

**NOTE:**

If necessary, loosen handle (C) and adjust the deflector so pin (B) can be removed.

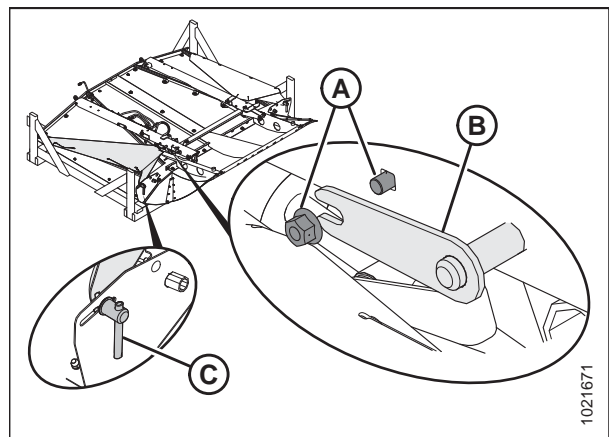


Figure 2.5: Left Support

7. Release latch (A) and remove left support (B), including the cylinder and hydraulic hoses.
8. Remove the shipping wire securing the hoses to the support.

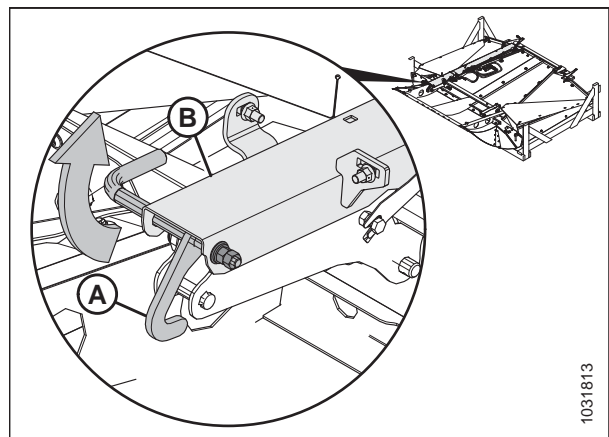


Figure 2.6: Left Support

## INSTALLATION INSTRUCTIONS

9. Remove nut and bolt (A) and remove pivot pin (B) from the right support.

**NOTE:**

If necessary, loosen handle (C) and adjust the deflector so pin (B) can be removed.

10. Remove right support (D).

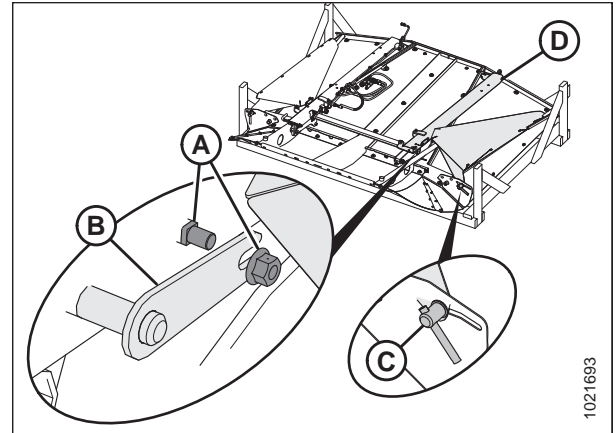


Figure 2.7: Right Support

11. Remove rock shaft (A).
12. Remove four lag screws (B) securing the swath compressor to its shipping crate. Discard the lag screws and washers.
13. Leave the swath compressor on the shipping pallet.

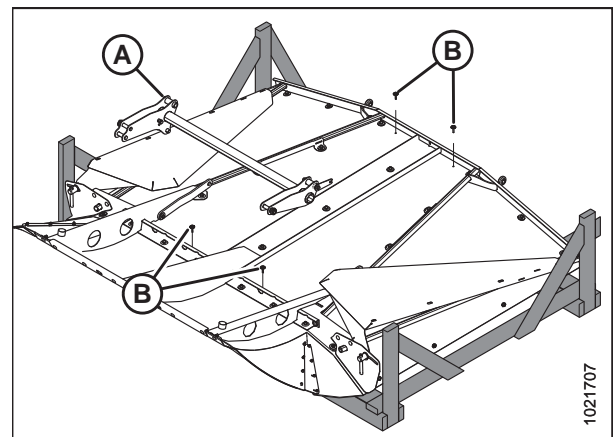


Figure 2.8: Rock Shaft

## 2.2 Installing Swath Compressor

Follow these steps to install the swath compressor onto an M155, M155E4, or M205 Self-Propelled Windrower. The swath compressor weighs approximately 180 kg (400 lb.).

### 2.2.1 Installing Frame

1. Loosely attach bar clamps (A) to each side of the front support with two M10 bolts and nuts (B).

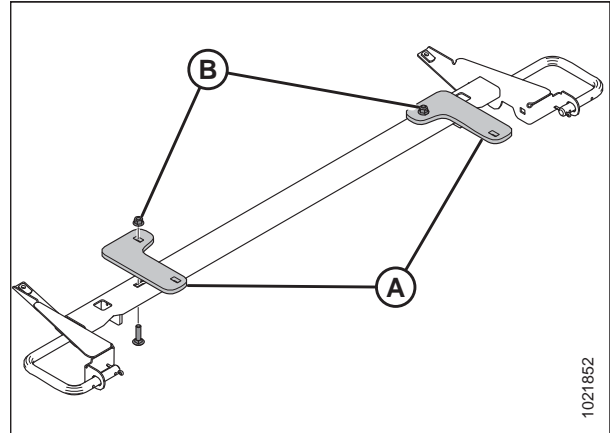


Figure 2.9: Front Support

2. Remove clamp (A) from the end of right support (B) and discard. Retain hardware (C), and repeat on the opposite side of the compressor.

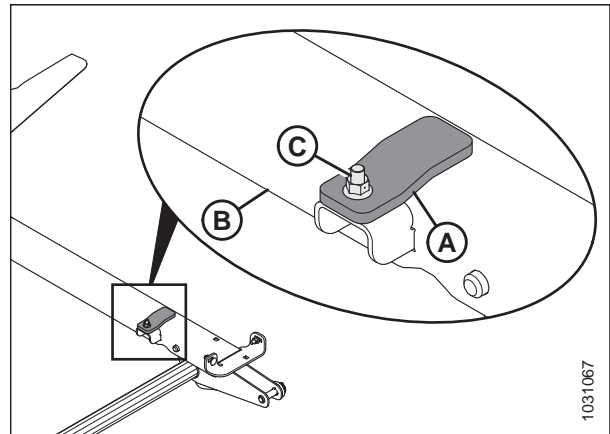


Figure 2.10: Clamp

3. Position front support (A) below the windrower frame at the cab end and adjust bar clamps (C) to hold the support in place.
4. Tighten two bolts (B) on bar clamps (C) to hold the front support in place, but do **NOT** fully tighten.

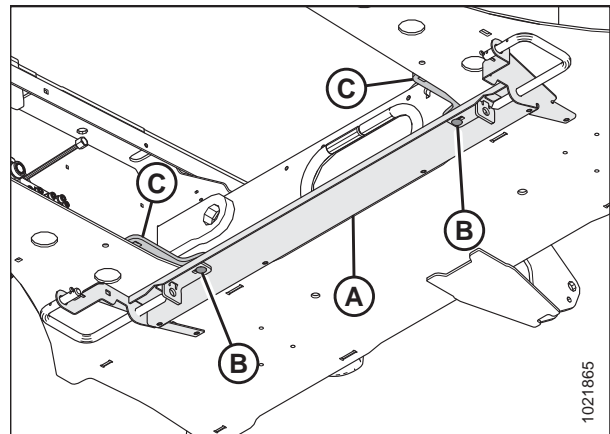


Figure 2.11: Front Support on Windrower Frame

## INSTALLATION INSTRUCTIONS

5. Locate left support (A) onto the left side of the windrower frame as shown, and temporarily clamp it in position.
6. Install M10 x 35 mm bolt (B) and nut through bar clamp (C) and M10 x 20 mm bolt (D) and nut through front support (E). Do **NOT** fully tighten bolts.

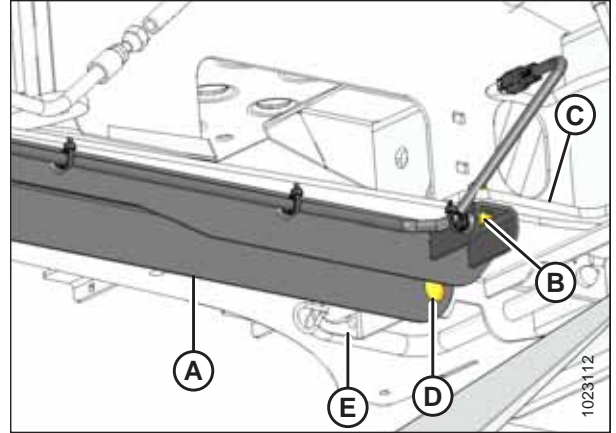


Figure 2.12: Left Support (Front)

7. Secure the rear of the left support with M10 x 35 mm bolt (C) and nut through the existing hole in the windrower frame. Do **NOT** fully tighten bolt (C).
8. At the rear of the left support, align a drill with hole in bracket (A) and drill a 10 mm (13/32 in.) hole through the frame.
9. Install M10 x 35 mm bolt (B) and nut through bracket (A) and the frame.

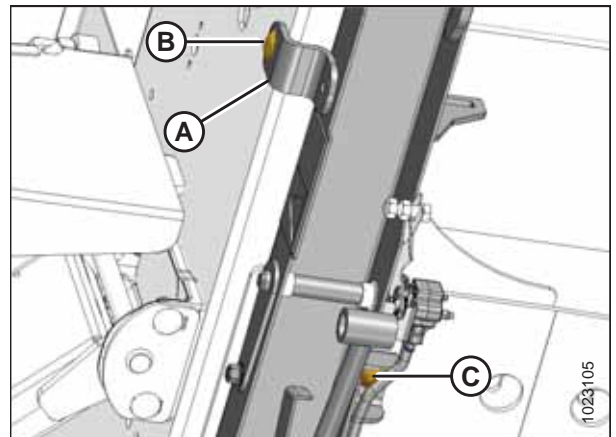


Figure 2.13: Left Support (Rear)

10. Position right support (A) onto the right side of the windrower frame as shown, and temporarily clamp it in position.
11. Remove and discard the hardware.
12. Install M10 x 35 mm bolt (B) and nut through bar clamp (C) and M10 x 20 mm bolt (D) and nut through front support (E). Do **NOT** fully tighten bolts.

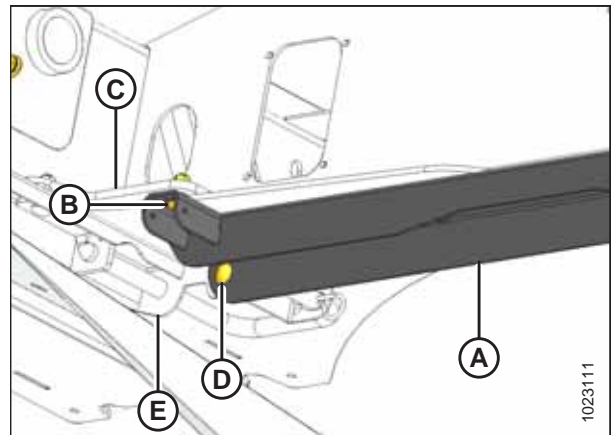


Figure 2.14: Right Support (Front)

## INSTALLATION INSTRUCTIONS

13. Secure the rear of the right support with M10 x 35 mm bolt (C) and nut through the existing hole in the windrower frame. Do **NOT** fully tighten the hardware.
14. At the rear of the right support, align a drill with hole in bracket (A) and drill a 10 mm (13/32 in.) hole through the frame.
15. Install M10 x 35 mm bolt (B) and nut through bracket (A) and the existing hole in the windrower frame. Do **NOT** fully tighten the hardware.

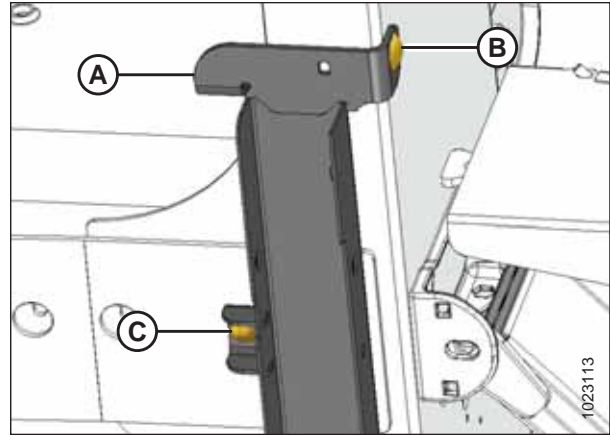


Figure 2.15: Right Support (Rear)

16. Position rock shaft lift (A) inside the left and right support channels. Insert pivot pins (B) on both sides, and secure them with M10 x 20 mm bolts and nuts (C). Tighten the hardware.

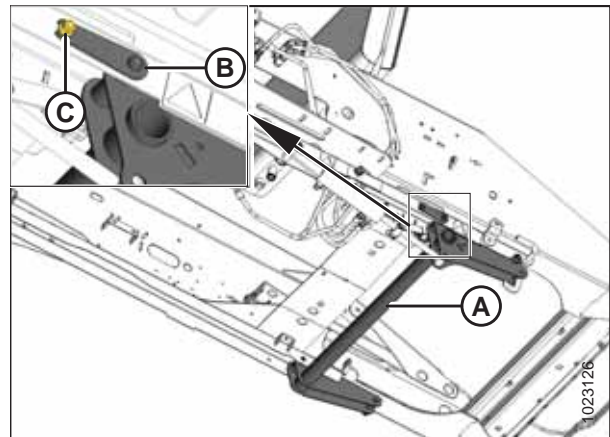


Figure 2.16: Rock Shaft

17. Ensure sensor arm (A) engages bolt (B) on the left rock shaft lift support, and ensure it is not bent or damaged.

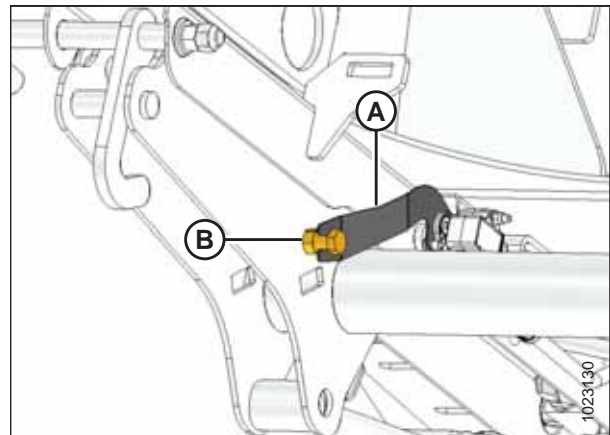


Figure 2.17: Sensor on Left Support

## INSTALLATION INSTRUCTIONS

18. Tighten six bolts (A) and torque to 39 Nm (29 lbf·ft).
19. Ensure front clamps (B) engage the windrower frame as much as possible and torque four bolts (C) to 39 Nm (29 lbf·ft).

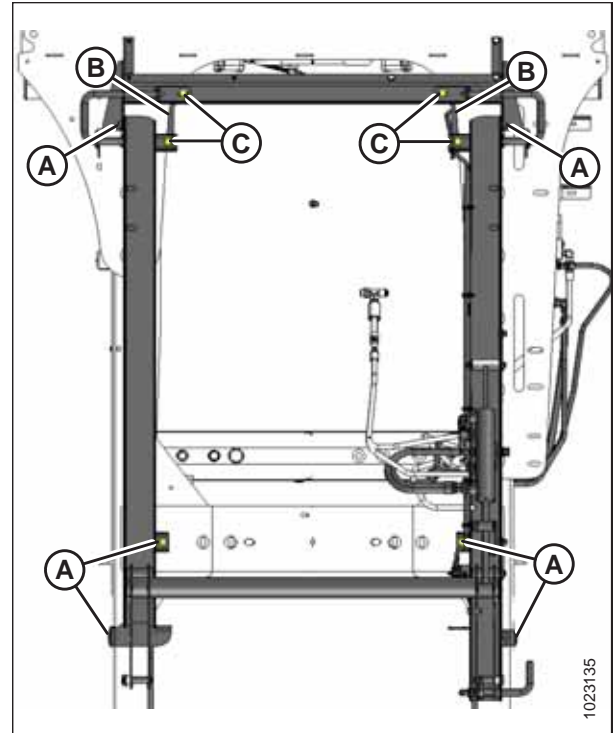


Figure 2.18: View from below Windrower

### 2.2.2 Installing Reverse Switch and Harness

Refer to the following procedures to install the reverse switch and harness on your windrower depending on the model year of your machine:

- [Installing Reverse Switch and Harness – Model Year 2017 and Prior, page 21](#)
- [Installing Reverse Switch and Harness – Model Year 2018 and Later, page 24](#)

#### *Installing Reverse Switch and Harness – Model Year 2017 and Prior*

Complete the following procedure to install the reverse switch and harness from the completion kit on M155, M155E4, and M205 windrowers built for model year 2017 and prior:

1. Install reverse switch (A) onto the existing bracket as shown with two M6 x 16 mm bolts and flanged lock nuts (B). Align switch support (C) with the existing bracket before tightening nuts.

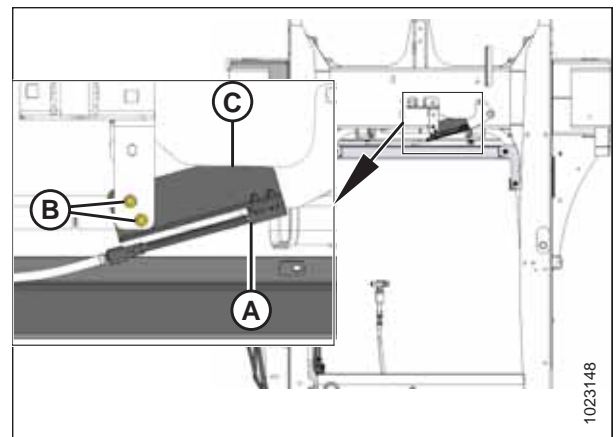


Figure 2.19: Reverse Switch (View From Top)

## INSTALLATION INSTRUCTIONS

2. Open the left cab-forward side platform.
3. Locate the harness bundle that contains three-pin plug P97 (A). If the plug is attached to a pressure sensor, remove the plug. Otherwise cut the cable tie securing P97 (A) to the wire bundle.

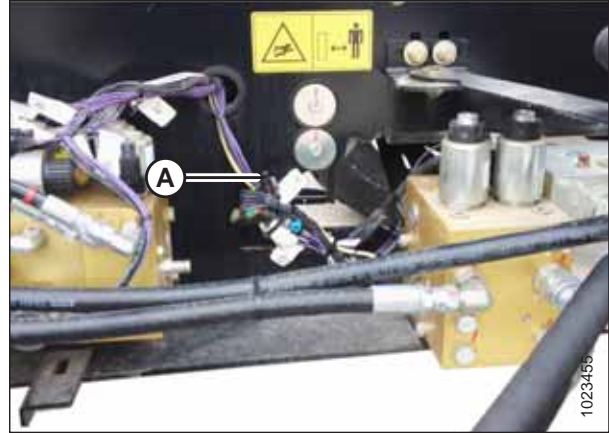


Figure 2.20: Windrower Chassis Harness

**NOTE:**

P97 (A) may be in use on a windrower equipped with a reel circuit pressure transducer. If so, disable the reel circuit pressure transducer in the CDM.

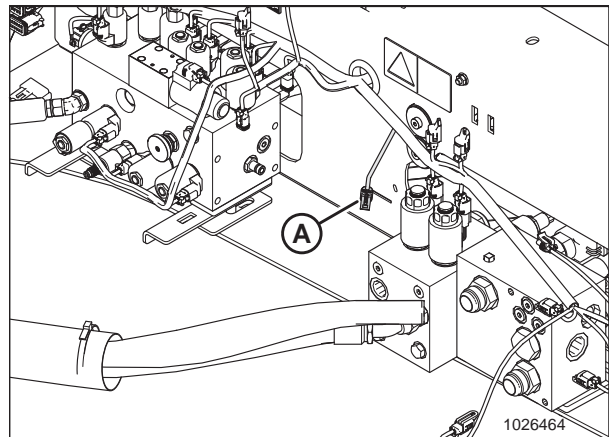


Figure 2.21: Location of P97 on Windrower Chassis Harness (View from Left)

4. Route swath compressor completion harness (A) along the forward cross-member. Connect swath compressor connector P97A (B) to plug P97 on the chassis harness shown in the illustration at right.

**NOTE:**

P97 may need to be repositioned underneath the windrower.

5. Connect swath compressor height sensor plug P97B (C) to existing connector P560A on the compressor harness.
6. Connect swath compressor reverse switch plug P108 (D) on the compressor harness to the reverse switch connector DTM04-2P.
7. Route single wire (E) to the main system harness and into the cab at the left rear corner.

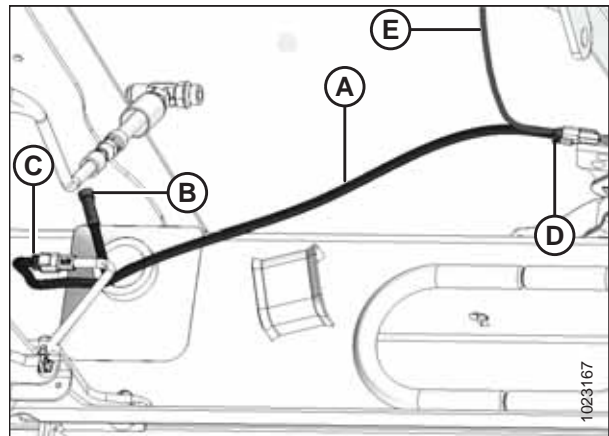


Figure 2.22: Swath Compressor Completion Harness

## INSTALLATION INSTRUCTIONS

8. Enter the cab and locate the manual holder (A) beneath the trainer's seat. The windrower control module (WCM) (B) is just above the manual holder.



Figure 2.23: Manual Holder and WCM

9. Gently move upholstery (C) on both sides of manual holder (A). Remove two nuts (B) and remove the manual holder.

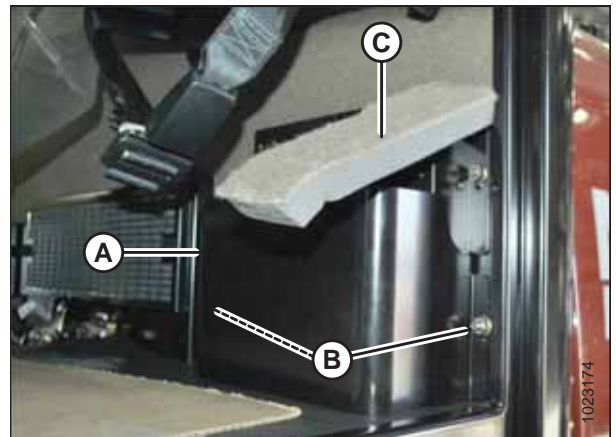


Figure 2.24: Upholstery and Hardware

10. Remove P35 plug (A) from the WCM.



Figure 2.25: WCM and Wiring Harnesses

## INSTALLATION INSTRUCTIONS

11. Retrieve single wire (A) from the swath compressor and insert it in position 24 (B) on the harness side of plug P35. Secure wire (A) to existing harness (C) with a plastic cable tie.
12. Attach plug P35 to the WCM.

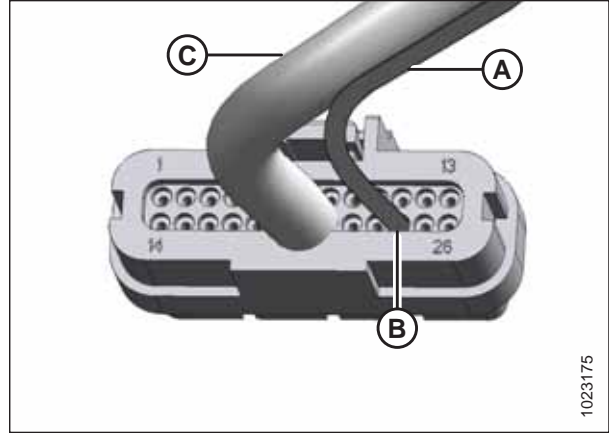


Figure 2.26: P35 Plug

13. Reposition manual holder (A) and secure with two nuts (B). Replace upholstery (C).
14. Secure the swath compressor harness to the existing harness above the forward cross member.

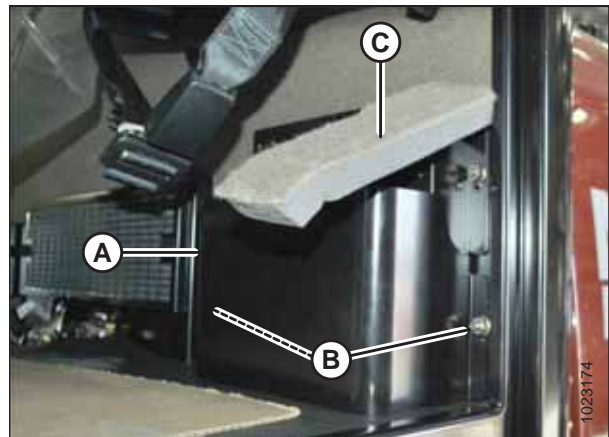


Figure 2.27: Upholstery and Hardware

### *Installing Reverse Switch and Harness – Model Year 2018 and Later*

Complete the following procedure to install the reverse switch and harness from the completion kit on M155, M155E4, and M205 windrowers built for model year 2018 and later:

1. Install reverse switch (A) onto the existing bracket as shown with two M6 x 16 mm bolts and flanged lock nuts (B). Align switch support (C) with the existing bracket before tightening nuts.
2. Plug reverse switch (A) into plug P108 on the chassis harness (D).

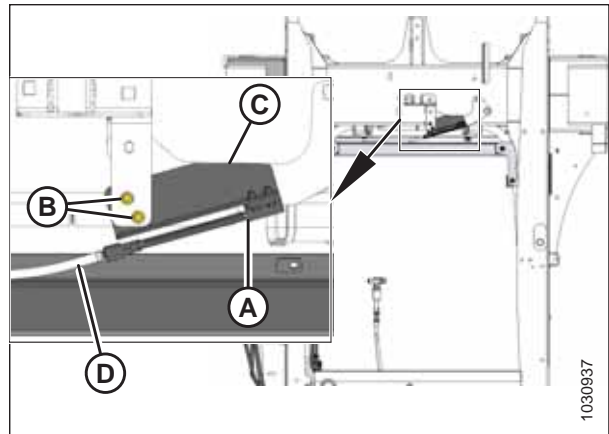


Figure 2.28: Reverse Switch (View From Top)

## INSTALLATION INSTRUCTIONS

3. Open the left cab-forward side platform.
4. Locate the harness bundle that contains three-pin plug P97 (A). If the plug is attached to a pressure sensor, remove the plug. Otherwise cut the cable tie securing P97 (A) to the wire bundle.

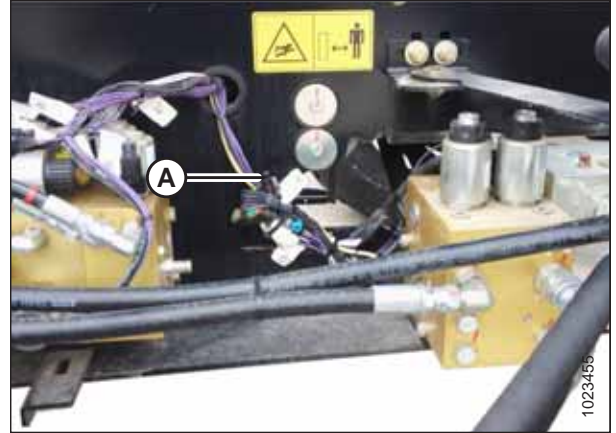


Figure 2.29: Windrower Chassis Harness

**NOTE:**

P97 (A) may be in use on a windrower equipped with a reel circuit pressure transducer. If so, disable the reel circuit pressure transducer in the CDM.

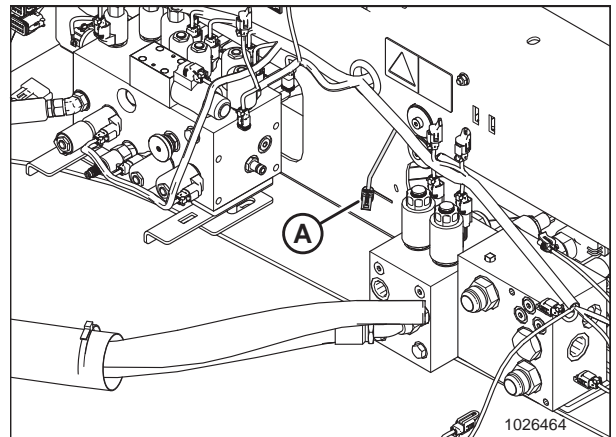


Figure 2.30: Location of P97 on Windrower Chassis Harness (View from Left)

5. Retrieve shorter swath compressor completion harness (A) from kit and connect swath compressor connector P97C (B) to plug P97 on the chassis harness.

**NOTE:**

P97 may need to be repositioned underneath the windrower.

6. Connect swath compressor height sensor plug P97D (C) to existing connector P560A on the swath compressor harness.

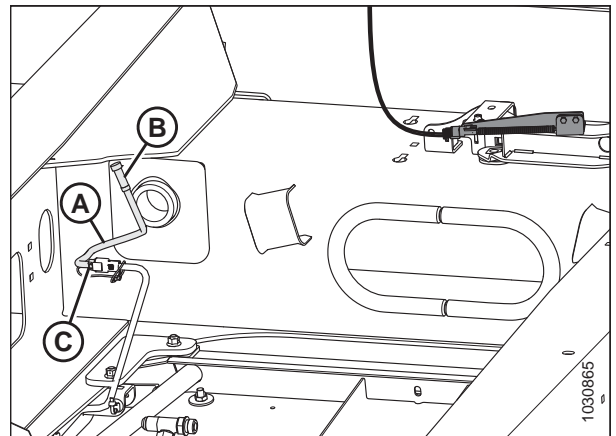


Figure 2.31: Swath Compressor Completion Harness

### 2.2.3 Installing Auxiliary Lift Manifold

1. Remove fitting (A) and plug (B) from the lift manifold, and retain for reinstallation.
2. Apply grease to O-rings (supplied with lift manifold) and install them in the countersunk port holes where the plug and fitting were removed.

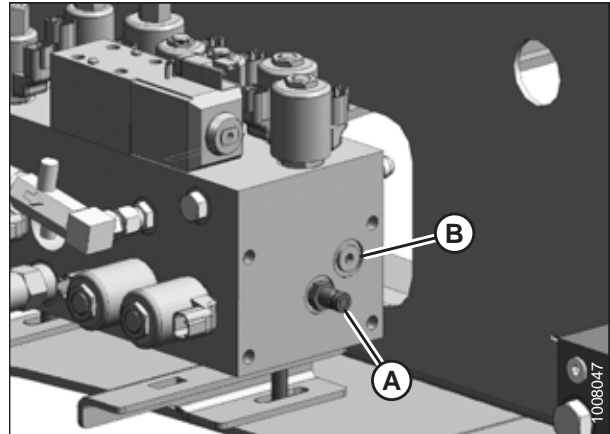


Figure 2.32: Lift Manifold Block

3. Assemble the smooth side of new lift manifold (C) onto the existing lift manifold with four 3/8 in. bolts (D) provided in the kit. Use the longer bolts if there are two existing lift manifolds.

**NOTE:**

If installing new lift manifold (C) onto a windrower paired with a draper header with reel fore-aft, the windrower will already have an auxiliary lift manifold. The new lift manifold is mounted next to the existing one.

4. Torque bolts to 34 Nm (25 lbf-ft).
5. Install fitting (A) and plug (B) (removed in Step 1 ) into new lift manifold. If plug (B) is damaged on removal, an extra plug is provided in the kit.
6. Install 90° elbow fitting (A) into port K on new lift manifold (B).

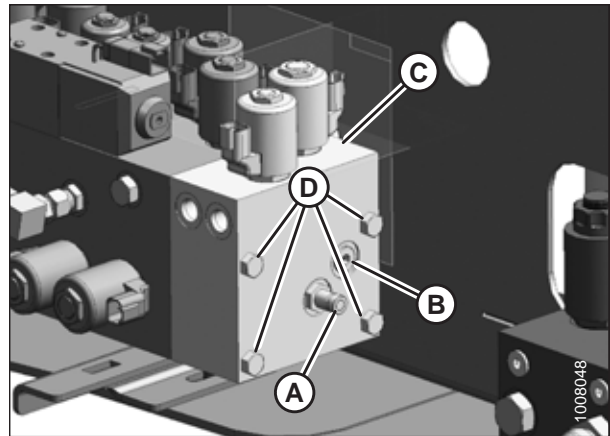


Figure 2.33: New Lift Manifold Block

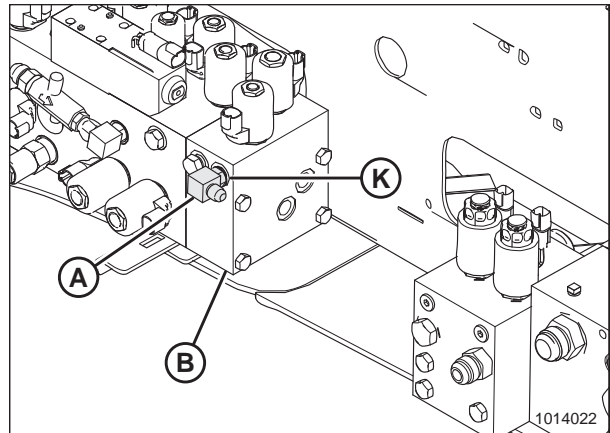


Figure 2.34: New Lift Manifold

## INSTALLATION INSTRUCTIONS

7. Connect plugs P55 (A) and P59 (B) from the windrower chassis harness to the solenoids on new lift manifold (C) as shown in the illustration at right.

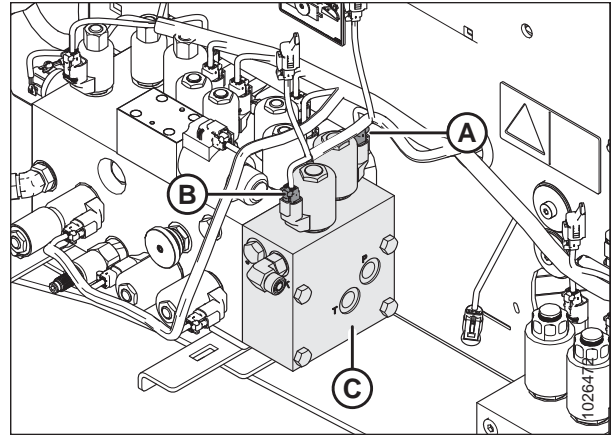


Figure 2.35: New Lift Manifold

### 2.2.4 Connecting Hydraulics

1. Remove and discard quick disconnect couplers (A) and elbows from the three hoses on the swath compressor.

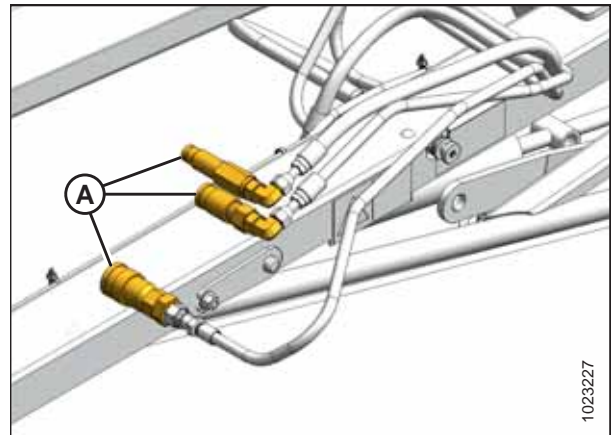


Figure 2.36: Quick Disconnects

2. Remove hose (A) and fitting (B) from charge pump (C).

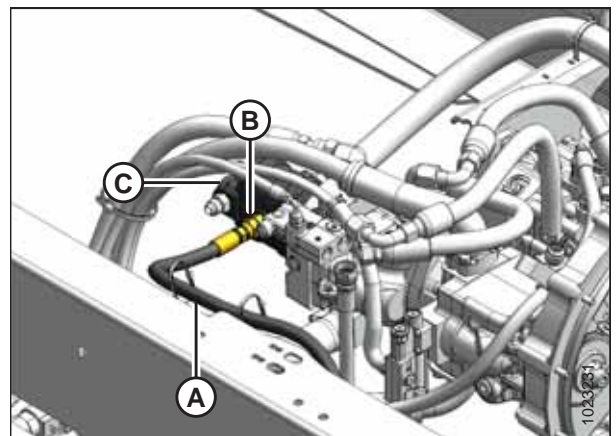


Figure 2.37: M Series Hydraulics

## INSTALLATION INSTRUCTIONS

3. Install tee (A) on charge pump, and reconnect hose (B) to tee (A).
4. Retrieve new hose (C) from the shipment and connect it to tee (A) and hose (D) from the pressure-reducing valve forward fitting.

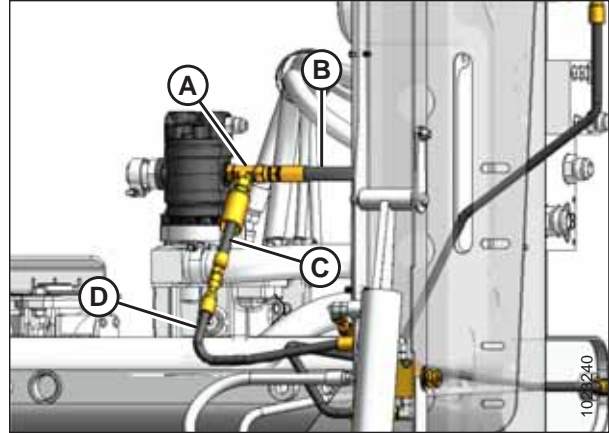


Figure 2.38: Hose Connections (View from under Windrower)

5. Connect hose (A) from the barrel end of cylinder (B) to elbow (C) on the lift manifold.
6. Remove and discard the plug from the tank at location (D). Install elbow (E).
7. Connect hose (F) from pressure-reducing valve (G) to elbow (E) on the tank.

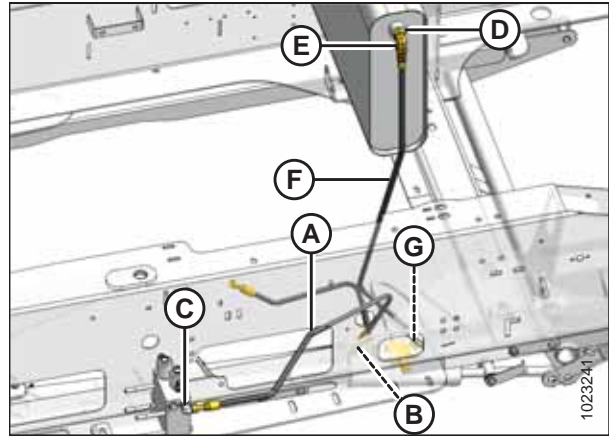


Figure 2.39: Hose Connections

### 2.2.5 Installing Rocker Switch

1. Inside the windrower cab, remove cover (A) from the console by removing five screws (B).

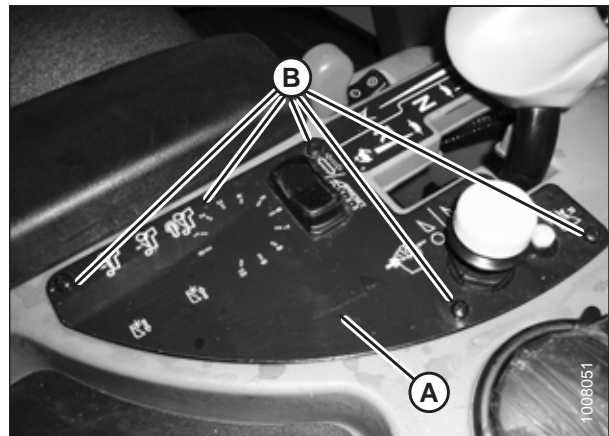


Figure 2.40: Console Control Plate

## INSTALLATION INSTRUCTIONS

2. Remove the knockout in cover (A) for the rocker switch and file down the burrs.

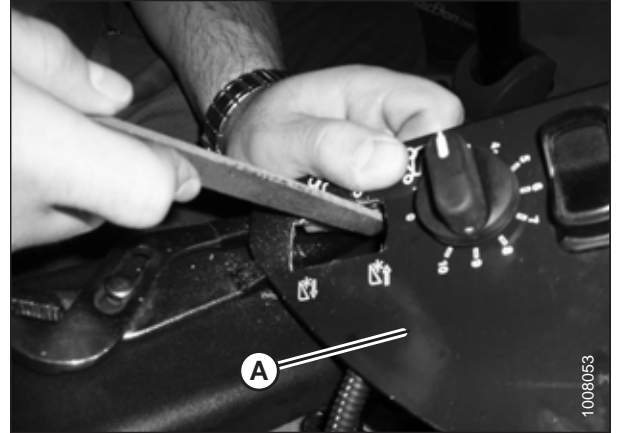


Figure 2.41: Console Control Plate

3. Install rocker switch (A) (MD #109575) into the cover. The side with the prongs should be next to the operator's seat.

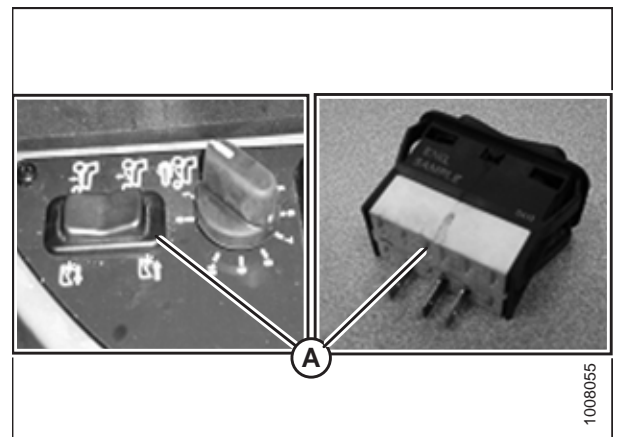


Figure 2.42: Rocker Switch

4. Install the rocker switch into plug (A). The plug comes prewired into the windrower console.

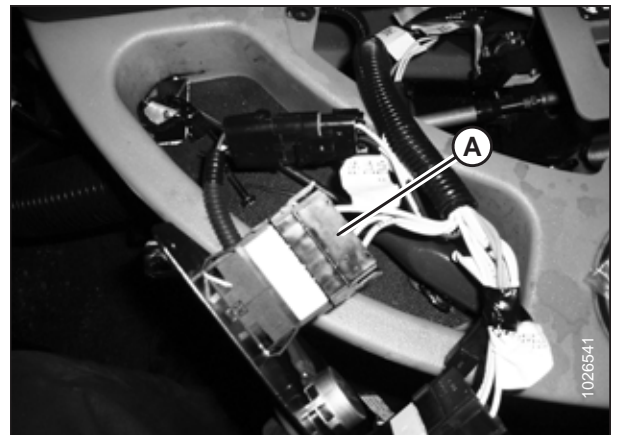


Figure 2.43: Rocker Switch

## INSTALLATION INSTRUCTIONS

- Reinstall cover (A) with five screws (B).

### NOTE:

Refer to [3.1 Activating the Swath Compressor](#), page 35 to program the cab display module for control of swath compressor functions.

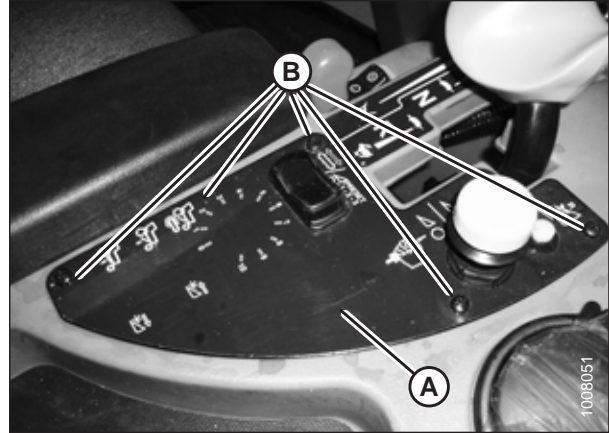


Figure 2.44: Console Control Plate

### 2.2.6 Installing Shield Assembly



### 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.

- Start the engine and the raise header legs. Press SWATH COMPRESSOR LOWER switch (A) to fully retract the swath compressor cylinder.
- Shut down the engine, and remove the key from the ignition.

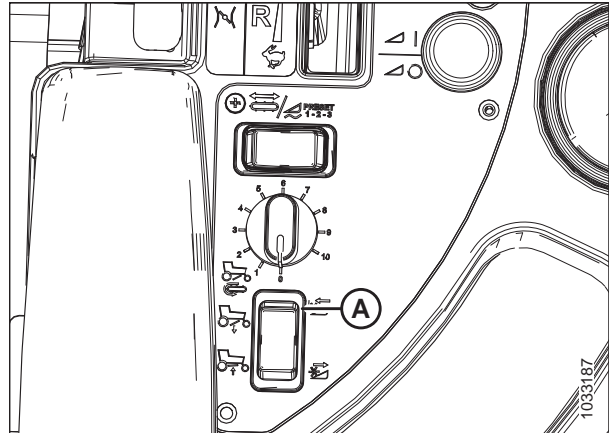


Figure 2.45: Windrower Console Switches

- Position the forklift with its forks over the front of the compressor shield, and attach lifting straps (A) through the front and back of the shield frame. Lift the swath compressor shield out of its shipping crate.

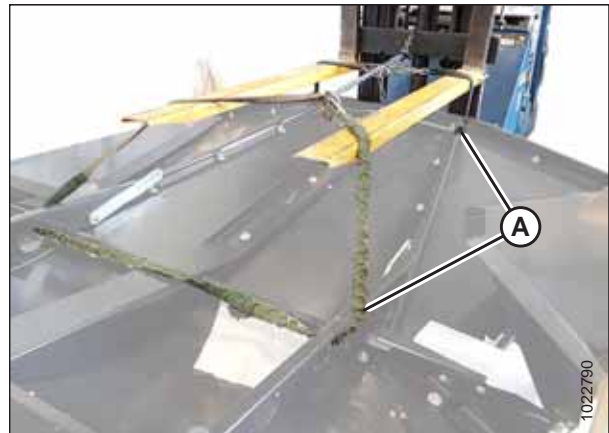
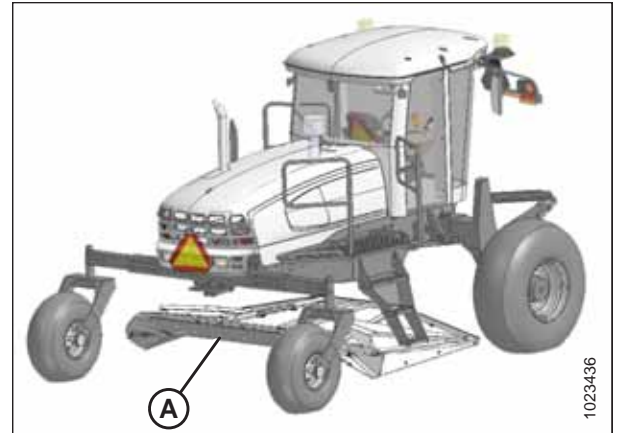


Figure 2.46: Lifting Swath Compressor Shield

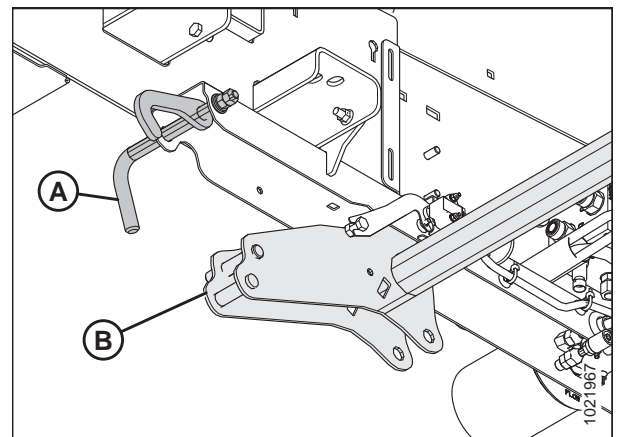
## INSTALLATION INSTRUCTIONS

4. Approach the windrower from the front and move shield (A) under the windrower. Lower it to the ground. Remove the lifting straps and back the forklift clear of the windrower.



**Figure 2.47: Compressor Shield under Windrower**

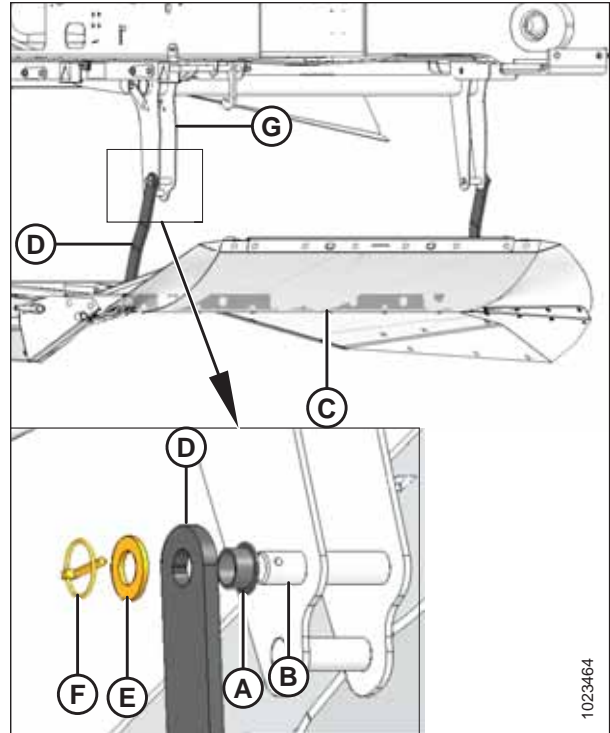
5. To make connecting the lowering arms easier, turn lock handle (A) counterclockwise and rotate rock shaft (B) so that the supports are vertical.



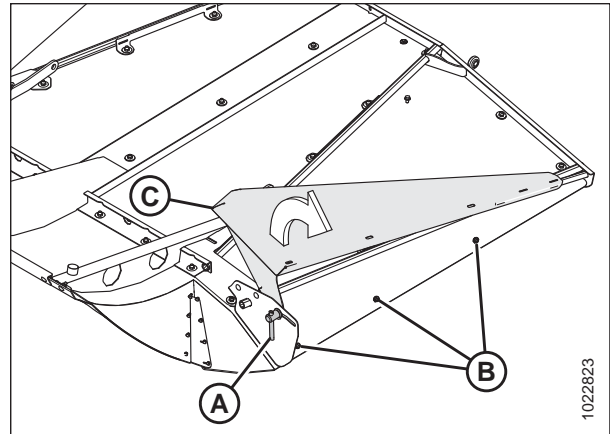
**Figure 2.48: Rock Shaft and Lock**

## INSTALLATION INSTRUCTIONS

6. Ensure bushings (A) are installed onto pins (B) on both sides of the rock shaft.
7. Position the floor jack or equivalent under swath compressor shield cross member (C).
8. Raise the shield sufficiently to connect lowering arm (D) to pin (B) on rock shaft (G).
9. Secure lowering arm (D) to rock shaft (G) with washer (E) and lynch pin (F). Repeat on the opposite side.



10. Loosen handle (A) and remove three bolts and nuts (B) from side deflector (C). Retain the hardware.



## INSTALLATION INSTRUCTIONS

11. Rotate side deflector (A) into working position, and secure it to the compressor shield with three retained bolts and nuts (B) from the previous step. Install the bolts with their heads facing the crop.
12. Torque nuts (B) to 22 Nm (15 lbf·ft).
13. Position the side deflector and tighten adjustment handle (C). Repeat on the opposite side.

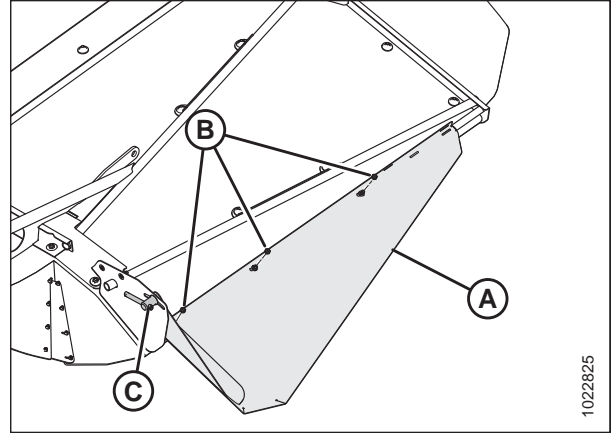


Figure 2.51: Side Deflector Working Position

14. Push rear side (A) of shield down while another installer lifts the shield's front side (D).
15. Align ball joints (C) with pins (B) at the front of the shield, and insert pins (B). Use a rubber mallet if the pins are difficult to install.

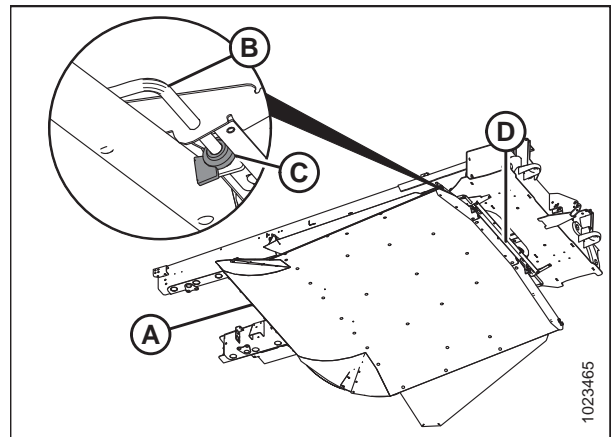


Figure 2.52: Front Pivot Pins

16. Install hairpin (A) to secure pivot pin (B). Repeat on the opposite side.

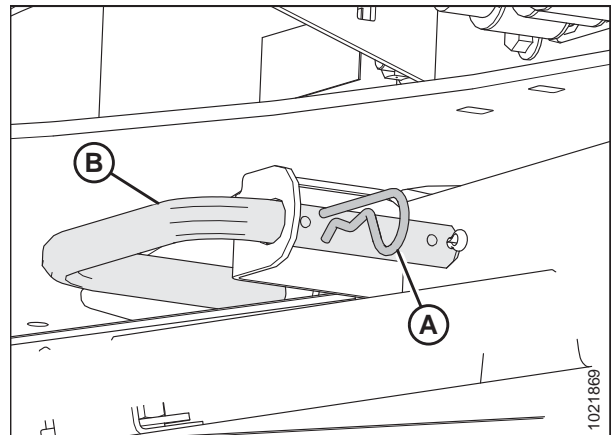


Figure 2.53: Front Pivot Pins

## INSTALLATION INSTRUCTIONS

17. Align the rod end of hydraulic cylinder (A) with the holes in the rock shaft and secure with pin (B). Ensure the plate on the pin engages slot (E) in the rock shaft support.
18. Secure the pin with washer (C) and lynch pin (D).

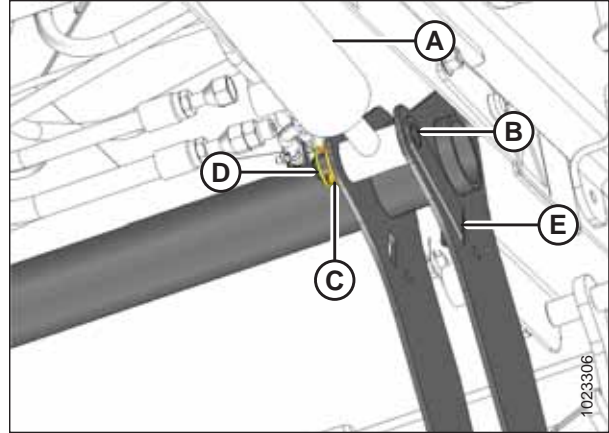


Figure 2.54: Rock Shaft

19. Position front deflector (A) onto front support (B) and remove two existing bolts (C). Do **NOT** discard bolts (C).
20. Secure deflector (A) to the support using two M10 hex head bolts (C) retained from the previous step and four M10 hex head bolts (D) that secured the deflector to the frame for shipping purposes. Center the deflector with the main shield before tightening bolts (C) and (D).

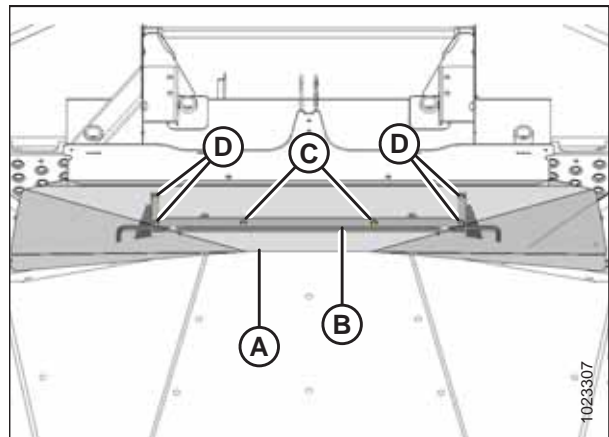


Figure 2.55: Front Deflector (View from under Shield)

## Chapter 3: Operation

### 3.1 Activating the Swath Compressor

An optional swath compressor (MD #C2061) is available through your MacDon Dealer. Before using the swath compressor, you must activate it on the cab display module (CDM).

**NOTE:**

- CDM5 (version 512 or later) and WCM2 (version 237 or later), or WCM3 (version 116 or later), are required to operate the swath compressor.
- The Double Windrow Attachment (DWA) system must be disabled in the CDM when setting up the swath compressor.
- Users can activate and set up the swath compressor via in-cab controls without a header attached to the windrower.

Use the following procedure when installing and setting up the swath compressor:



#### CAUTION

Check to be sure all bystanders have cleared the area.

1. Turn the ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
  - WINDROWER SETUP? is displayed on the upper line.
  - NO/YES is displayed on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
  - SET KNIFE SPEED? is displayed on the upper line.
4. Press SELECT (B) until SWATH COMPR INSTALL? is displayed on the upper line.
  - NO/YES is displayed on the lower line.
5. Press right arrow (A) to select YES. Press SELECT (B).
6. Press SELECT (B) until CALIBRATE SENSORS is displayed on the upper line. NO/YES is displayed on the lower line.
7. Press right arrow (A) to select YES. Press SELECT (B).
  - TO CALIBRATE SELECT is displayed on the upper line.
  - HEADER HEIGHT is displayed on the lower line.
8. Press right arrow (A) to scroll through choices until SWATH COMPR HT is displayed. Press SELECT (B).
  - SWATH SENSOR CAL is displayed on the upper line.
  - SWATH UP TO START is displayed on the lower line.



Figure 3.1: Programming Buttons



Figure 3.2: Swath Compressor Controls

## OPERATION

9. Press switch (A) on the console to raise the swath compressor.
  - CALIBRATING SWATH is displayed on the upper line.
  - FORM UP and flashing HOLD is displayed on the lower line until the system has completed reading the signal with the swath compressor fully raised.
  - SWATH FORM UP and DONE (with buzzer) is displayed on the lower line when complete.
  - SWATH SENSOR CAL is displayed on the upper line.
  - PRESS SWATH DOWN is displayed on the lower line.
10. Press switch (B) on the console to lower the swath compressor.
  - CALIBRATING SWATH is displayed on the upper line.
  - FORM DOWN and HOLD is displayed on the lower line.
  - SWATH FORM COMPLETE flashes for 2 seconds on the lower line (with a buzzer sounding) when the calibration is finished.
11. Press PROGRAM (A) to exit programming mode or press SELECT (B) to proceed to the next windrower setup action.

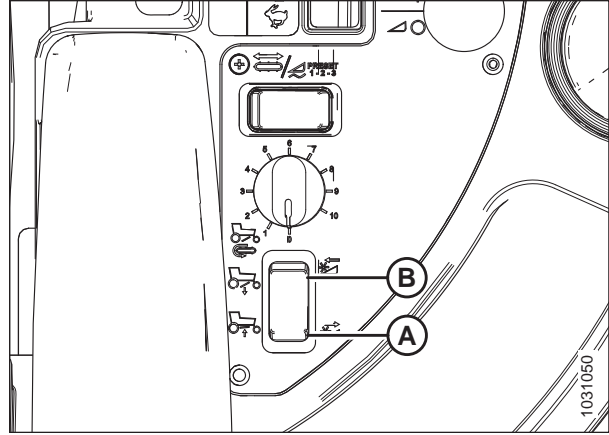


Figure 3.3: Swath Compressor Switch



Figure 3.4: CDM Programming Buttons

## 3.2 Using the Swath Compressor

The following topic explains how to use the swath compressor, and describes the automated raise/lower functions.

### WARNING

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

1. To disengage the lock, rotate handle (A) on the left rear support counterclockwise.

#### IMPORTANT:

- The lock prevents the swath compressor from lowering inadvertently when not in use, either due to operator error or loss of hydraulic pressure.
- Engage the lock when operating in engine-forward mode.
- Disengage the lock before using the swath compressor.

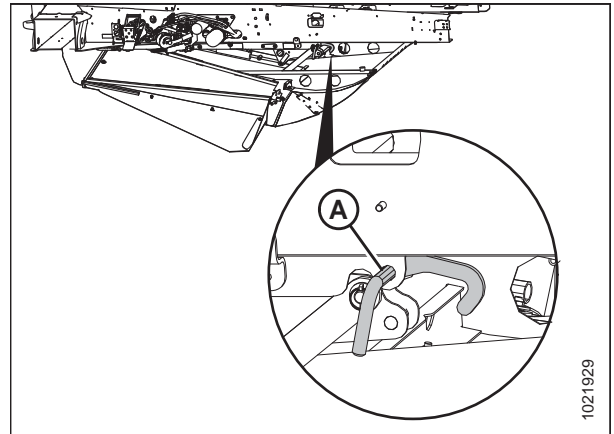


Figure 3.5: Swath Compressor Lock

### CAUTION

Check to be sure all bystanders have cleared the area.

2. Start the windrower in cab-forward mode.
3. Press SELECT switch (B) on the CDM to show SWATH COMPR HT (A) on the display. The height is displayed using an arbitrary scale from 0 to 10. Fully raised is 0.

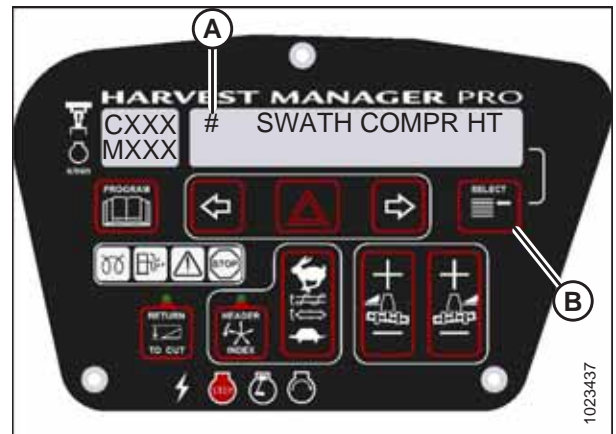


Figure 3.6: CDM Display

## OPERATION

- Lower the swath compressor by pressing button (A) on the operator's console, and raise it by pressing button (B). The CDM display indicates the position of the swath compressor. When the swath compressor is at the desired height, release the switch to stop the swath compressor's movement.

### NOTE:

The last position set with the console buttons becomes the target height. When an adjustment is made, the display shows the target value. The system immediately adjusts to attain the target position. After the last adjustment, the display shows target value for 5 seconds, then the display reverts to the previous screen.

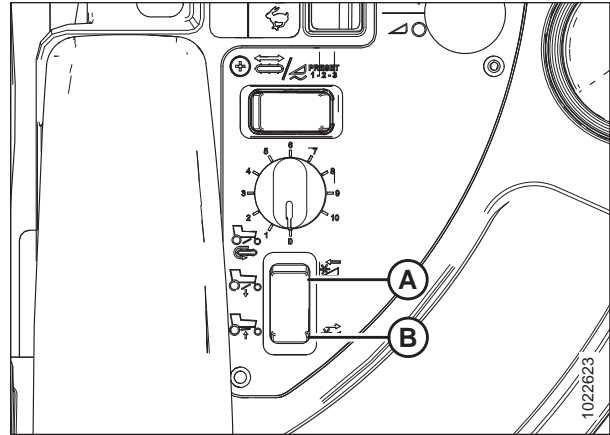


Figure 3.7: Operator's Console

### *Swath compressor automated functions: header engaged, cab-forward*

- When a ground speed higher than 2.5 km/h (1.6 mph) is detected, the swath compressor lowers to target height.
- During deceleration when ground speed transitions through 1.6 km/h (1 mph), the swath compressor is fully raised.
- When a ground speed is faster than 1.6 km/h (1 mph) and the HEADER ENGAGE switch is OFF, the swath compressor will fully raise.
- The swath compressor remains fully raised in engine-forward mode.

## 3.2.1 Setting up the Swath Compressor

Operate the windrower in crop and use the following procedure to determine the settings for the crop and crop conditions.

### CAUTION

Park on a flat, level surface with the ground speed lever (GSL) in N-DETENT position and the steering wheel in locked position (centered). Wait for the cab display module (CDM) to beep and display an "In Park" message to confirm the park brakes have engaged.

### 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.

- Rotate handle (A) counterclockwise to disengage the lock on the left rear support.
- Start the engine, set ground speed lever (GSL) in N-DETENT, and ensure that the header is disengaged.

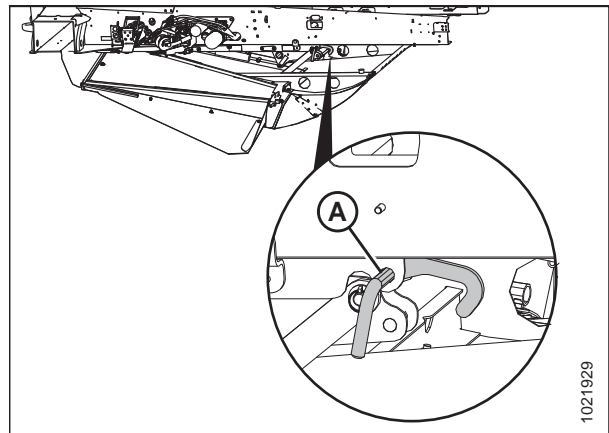


Figure 3.8: Swath Compressor Lock

## OPERATION

3. Adjust the swath compressor position to the target (or preferred) operating height using controls (A) and (B) on the console. Set the target operating height to 6 if there is no preferred operating height.
4. Engage and then disengage the header. The swath compressor will raise fully.

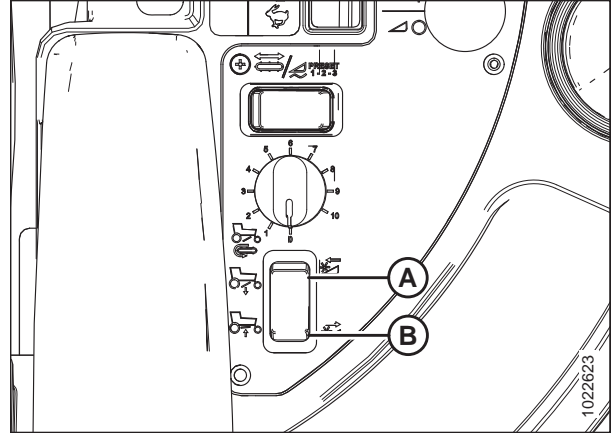


Figure 3.9: Operator's Console

5. Engage the header and begin cutting crop. When the ground speed exceeds 2.5 km/h (1.6 mph), the swath compressor will lower to target (or preferred) height (A).
6. Stop the windrower and check the formation of the windrow.
  - If necessary, adjust target height (A).
  - If the edges of the windrow are not sufficiently pressed into the stubble, adjust the side deflectors. For instructions, refer to [3.2.3 Adjusting Side Deflectors, page 40](#).
  - If the swath compressor shield raises too easily in dense windrows, adjust the compression. For instructions, refer to [3.2.2 Adjusting Compression, page 40](#).



Figure 3.10: Display

### 3.2.2 Adjusting Compression

The swath compressor automatically raises when the load on the shield exceeds the compression setting. When load decreases, the compressor deck automatically returns to the target height. The compression setting is set at the factory to suit most crop conditions and can be adjusted as follows:

1. Loosen jam nut (A) to allow adjustment knob (B) to turn.  
Do **NOT** remove the nut.
  - For a more compact windrow with higher wind resistance, turn adjuster knob (B) clockwise to increase cut crop compression.
  - To minimize crop shelling and decrease cut crop compression, turn adjuster knob (B) counterclockwise.

**NOTE:**

Start with the lowest compression (with the adjuster knob fully turned counterclockwise) and increase the compression setting in 1/2 turn increments as required.

2. Tighten jam nut (A) sufficiently to maintain the setting.

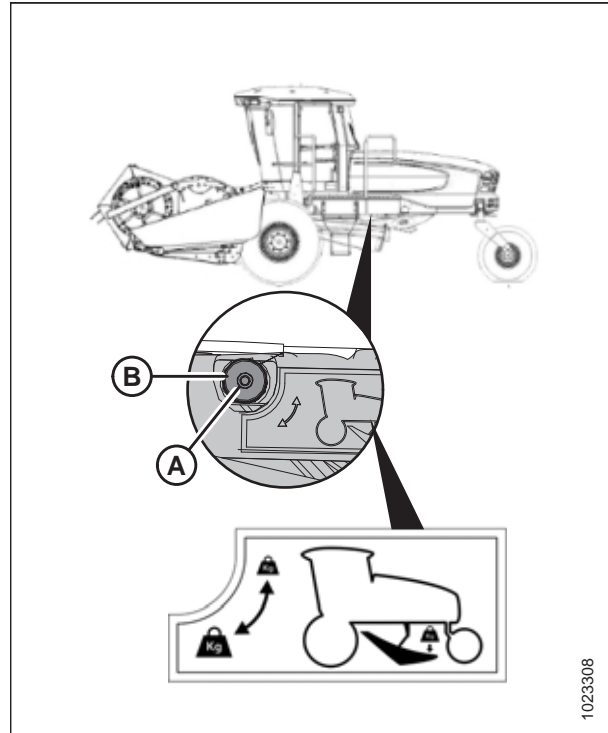


Figure 3.11: Compression Adjustment

### 3.2.3 Adjusting Side Deflectors

To reduce wind damage to the windrow, adjust the side deflectors to ensure the edges of the windrows are tucked in and anchored to the stubble.

1. To adjust swath compressor side deflectors (A), loosen handles (B) and move deflectors to the desired position. To ensure windrow placement is centered, set both side deflectors to the same position.
2. Tighten handles (B) when adjustment is complete.

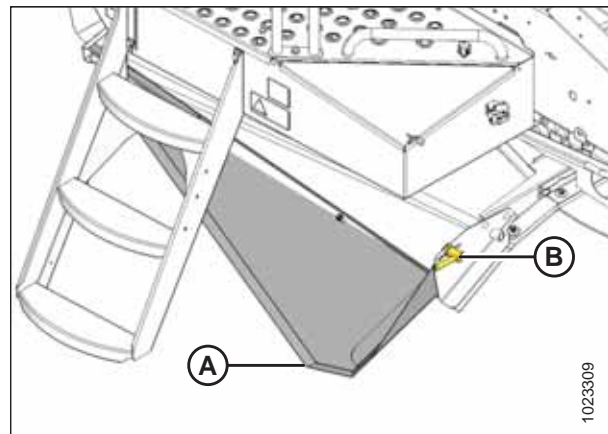


Figure 3.12: Swath Compressor Side Deflectors

### 3.2.4 Locking and Unlocking the Swath Compressor

The swath compressor lock is located on the left cab-forward side of the swath compressor frame. When engaged, the lock prevents the compressor shield from lowering.

1. Turn lock handle (A) clockwise to engage the swath compressor lock under the following conditions:
  - Swath compressor is not in use
  - Windrower is being serviced
  - Windrower is in engine-forward mode
2. Turn handle (A) counterclockwise to disengage the lock before operating the swath compressor.

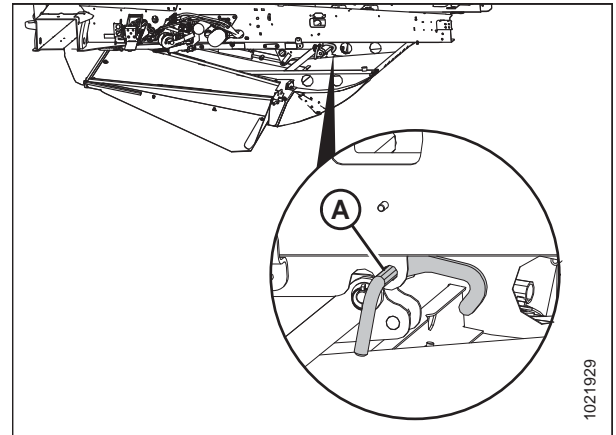


Figure 3.13: Swath Compressor Lock



## Chapter 4: Maintenance

The swath compressor does not require any scheduled maintenance or servicing. If it's necessary to replace components, refer to *5 Illustrated Parts Lists, page 45* in this manual.

### 4.1 Removing Swath Compressor Shield

Windrower service or maintenance procedures may require access under the machine. Do **NOT** sit on the swath compressor shield to service the windrower. Remove the shield as follows:

#### **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.

1. Disengage swath compressor lock (A).
2. Start the windrower and fully lower the swath compressor.
3. Shut down the engine, and remove the key from the ignition.

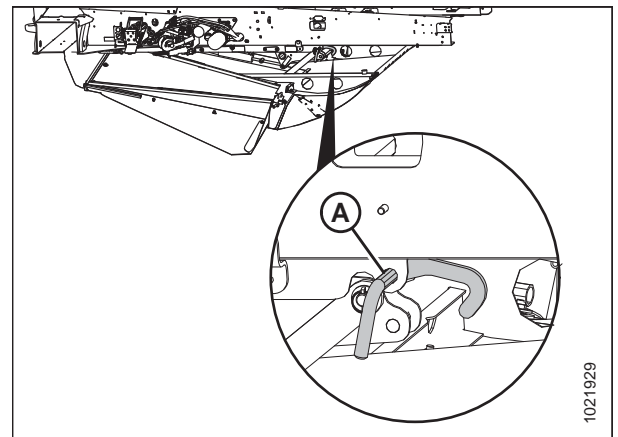


Figure 4.1: Swath Compressor Lock

4. At the front of the swath compressor, remove hairpin (A) from pivot pin (B) on both sides of the frame.

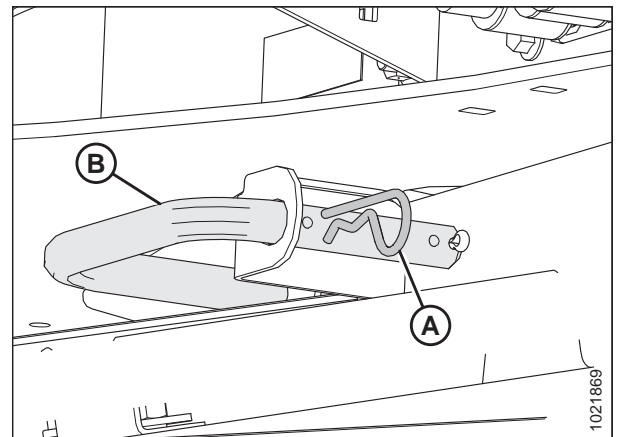
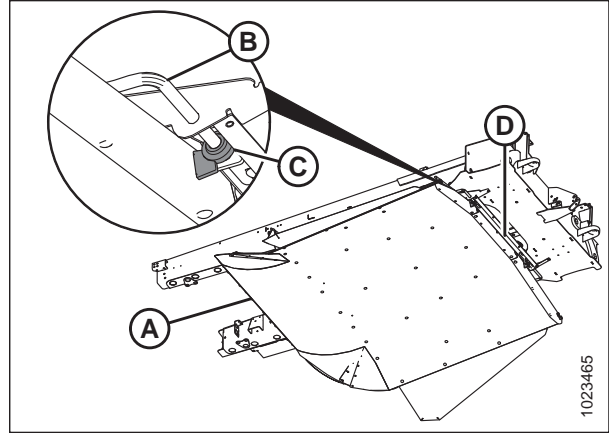


Figure 4.2: Forward Pivot Pin

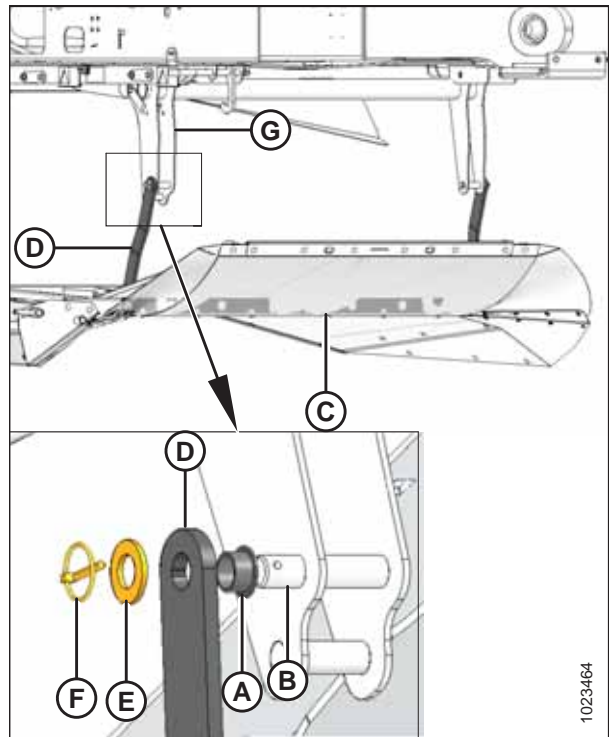
## MAINTENANCE

5. Push down on shield's rear side (A) while another person supports front side (D). Pull pivot pins (B) from ball joints (C) on both sides of the frame. To avoid misplacing parts, reinstall the hairpins into the pivot pins.
6. Lower the front end of the shield to the ground.



**Figure 4.3: Front Pivot Pins**

7. Support the shield under support (C) at the back end with a floor jack (or equivalent).
8. Remove lynch pins (F) and washers (E) from pins (B) on both ends of rock shaft (G).
9. Remove lowering arms (D) from rock shaft (G).
10. Store bushings (A), washers (E) and lynch pins (F) on pins (B).
11. Lower the back end of the shield to the ground and move the jack away from the work area.
12. Start the windrower and fully raise the swath compressor lift mechanism. Slowly drive the windrower away from the shield.

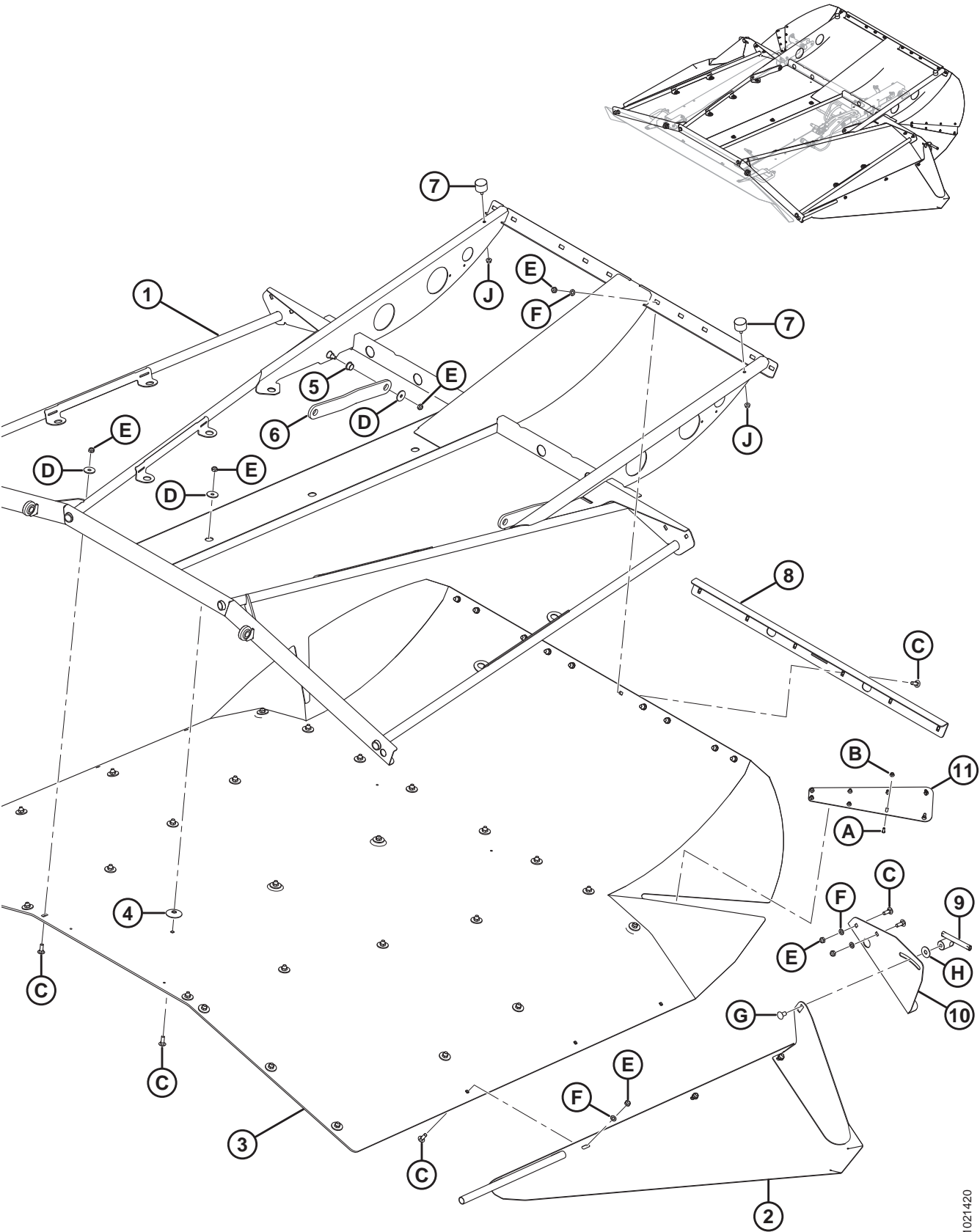


**Figure 4.4: Disconnecting Lowering Arms**

## Chapter 5: Illustrated Parts Lists

This section lists the replacement parts for the M Series windrower swath compressor.

5.1 Swath Compressor Frame

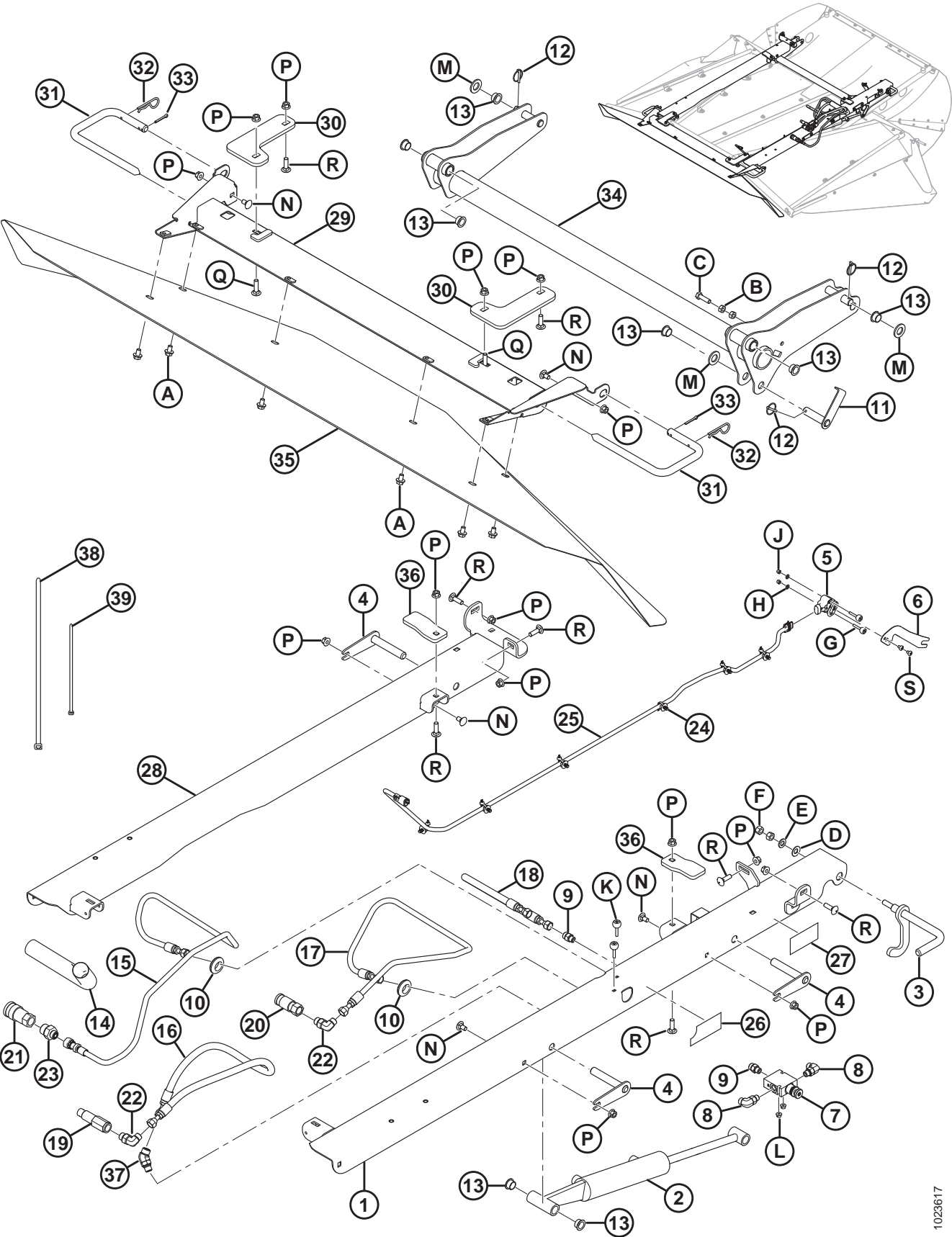


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**ILLUSTRATED PARTS LISTS**

<b>Ref</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty</b>	<b>Serial Number</b>
1	306165	SUPPORT – DEFLECTORS, WELDMENT	1	
2	277410	DEFLECTOR – LH WELDMENT	1	
	277411	DEFLECTOR – RH WELDMENT	1	
3	277323	SHEET – SWATH COMPRESSOR	1	
4	128697	DISC – RETAINER	21	
5	128737	BUSHING – FLANGE	2	
6	128729	ARM – LOWER	2	
7	203350	BUMPER – RUBBER	2	
8	128740	ANGLE – REAR TOP	1	
9	247693	ASSEMBLY – HANDLE	2	
10	277405	SUPPORT – REAR DEFLECTOR, LH	1	
	277414	SUPPORT – REAR DEFLECTOR, RH	1	
11	277409	STRAP – JOINING	2	
A	191393	BOLT – HEX SOC M6 X 1 X 20-12.9-AB0R	16	
B	152668	NUT – HEX FLG CTR LOC M6 X 1-8-A2L	16	
C	252872	SCREW – FLG BTN HD M10 X 30-10.9-AA1J	49	
D	16652	WASHER – FLAT	31	
E	184692	NUT – HEX NYLOC M10 X 1.5-8-A3L	51	
F	184711	WASHER – FLAT REG M10-200HV-A3L	20	
G	152439	BOLT – RHSSN M12 X 1.75 X 25-8.8-A3L	2	
H	32247	WASHER – FLAT	2	
J	135337	NUT – HEX FLG CTR LOC M8 X 1.25-8-A2L	2	

5.2 Swath Compressor Hydraulics and Supports

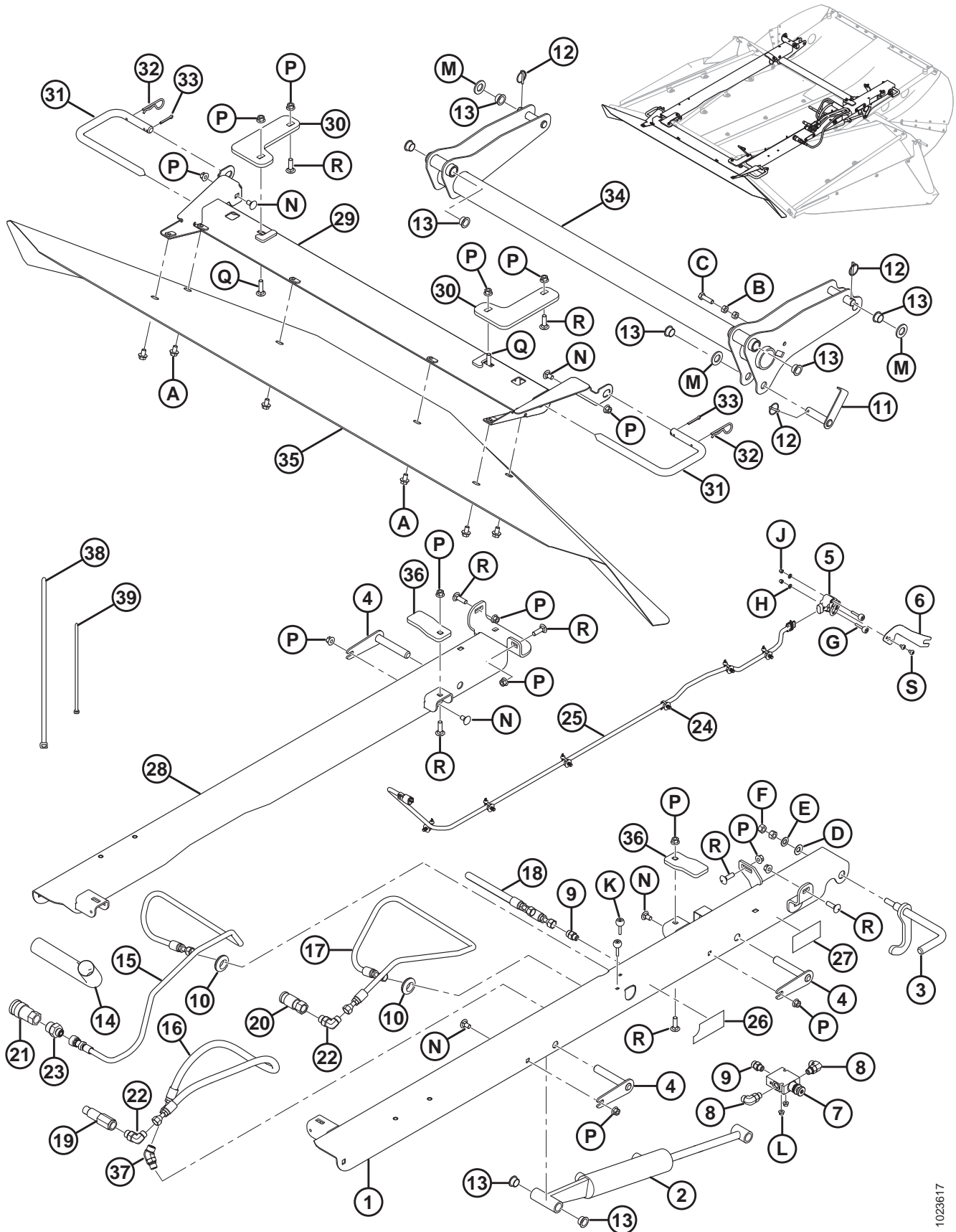


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**ILLUSTRATED PARTS LISTS**

<b>Ref</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty</b>	<b>Serial Number</b>
1	128780	SUPPORT – LH WELDMENT	1	
2	128764	CYLINDER	1	
3	128768	LEVER – LOCK PIN WELDMENT	1	
4	128788	PIN – PIVOT, WELDMENT	3	
5	128994	ROTARY SENSOR HV	1	
6	128773	ARM – SENSOR	1	
7	128789	VALVE – PRESSURE REDUCING	1	
8	136095	FITTING – ELBOW 90° HYD	2	
9	135778	FITTING – ADAPTER	2	
10	42046	GROMMET	2	
11	277331	PIN – CYLINDER, WELDMENT	1	
12	50193	PIN – LYNCH	3	
13	128737	BUSHING – FLANGE	10	
14	112940	SLEEVE	1	
15	277042	HOSE – HYD, .25 IN. I.D., 1400 MM LG, 100R17, METAL REIN.	1	
16	277041	HOSE – HYD, .25 IN. I.D., 1220 MM LG, 100R17, METAL REIN.	1	
17	277044	HOSE – HYD, .25 IN. I.D., 1200 MM LG, 100R17, METAL REIN.	1	
18	232597	HOSE – HYD, .25 IN. I.D., 490 MM LG, 100R17, METAL REIN.	1	
19	135386	COUPLER – MALE HYD. 3/8 IN. FLAT FACE	1	
	111978	SEAL KIT		
20	135312	COUPLER – FEMALE HYD. 3/8 IN. FLAT FACE	1	
21	135474	COUPLER – HYDRAULIC, 1/2 IN. FEMALE FF	1	
22	136149	FITTING – ELBOW 90° HYD CW O-RING	2	
23	136194	FITTING – ADAPTER	1	
24	136655	FASTENER – FIR TREE MT W/ TIE	6	
25	209256	HARNESS – SWATH COMPRESSOR	1	
26	128973	DECAL – DOWN FORCE	1	
27	128974	DECAL – UP LOCK	1	
28	128781	SUPPORT – RH WELDMENT	1	
29	128762	SUPPORT – FRONT PIVOT, WELDMENT	1	
30	128776	BAR – CLAMP	2	
31	128756	PIN – PIVOT	2	
32	13125	PIN – HAIR	2	
33	18648	PIN – COTTER 3/16 DIA X 1.25 ZP	2	
34	128770	ROCKSHAFT – LIFT, WELDMENT	1	
35	128699	DEFLECTOR – FRONT	1	
36	277435	BAR – CLAMP	2	
37	136144	FITTING – ELBOW 45° HYD	1	

# ILLUSTRATED PARTS LISTS



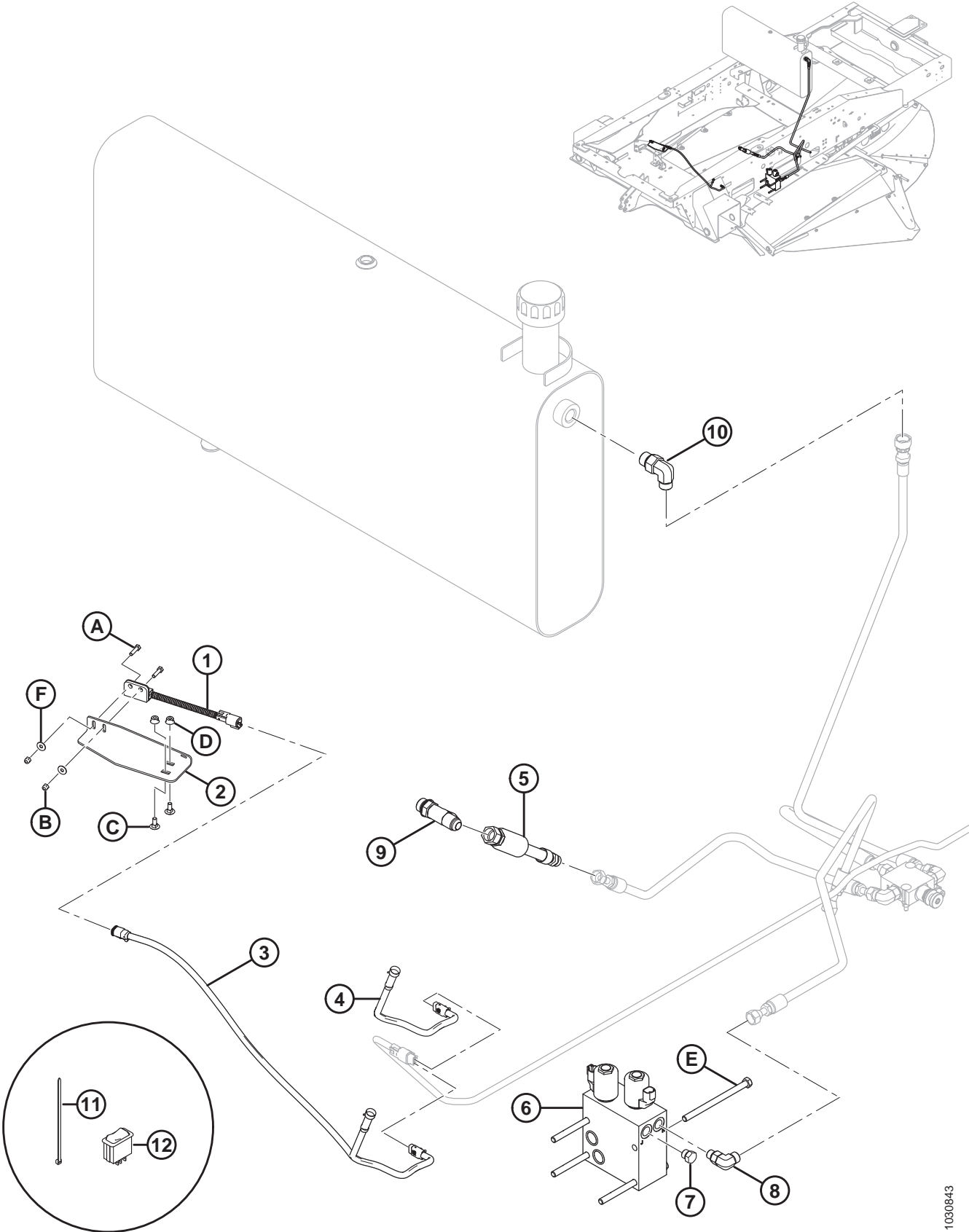
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# ILLUSTRATED PARTS LISTS

Ref	Part Number	Description	Qty	Serial Number
38	30753	FASTENER – CABLE TIE, BLACK, 305 MM LG <sup>1</sup>	2	
39	21763	FASTENER – CABLE TIE, BLACK, 160 MM LG <sup>1</sup>	1	
A	136151	BOLT – HEX FLG HD TFL M10 X 1.5 X 16-8.8-A3L	6	
B	30505	NUT – HEX M10 X 1.5-10-A3L	2	
C	30628	BOLT – HEX HD M10 X 1.5 X 35-8.8-A3L	1	
D	184595	WASHER – CONICAL SPRING 1/2 IN.	1	
E	184714	WASHER – FLAT REG M12-300HV-A3L	1	
F	184694	NUT – HEX M12 X 1.75-8-A3L	2	
G	136604	BOLT – RHSN TFL M5 X 0.8 X 40-8.8-AA1J	2	
H	184701	WASHER – FLAT LARGE M5-200HV	2	
J	197230	NUT – HEX NYLOC M5 X 0.8-8-A2L	2	
K	136731	BOLT – RHSN M6 X 1 X 45-8.8-A2L	2	
L	152668	NUT – HEX FLG CTR LOC M6 X 1-8-A2L	2	
M	18601	WASHER – SAE FLAT 13/16 I.D. X 1.5 IN. O.D. ZP	3	
N	136178	BOLT – RHSN M10 X 1.5 X 20-8.8-A3L	4	
P	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10-A3L	12	
Q	152732	BOLT – RHSN M10 X 1.5 X 40-8.8-A3L	2	
R	135691	BOLT – RHSN TFL M10 X 1.5 X 35-8.8-A3L	8	
S	252291	SCREW – PAN HD M6 X 1 X 8-8.8-A2L	2	

1. Shipped in manual bag.

5.2.1 M Series Swath Compressor Completion



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## ILLUSTRATED PARTS LISTS

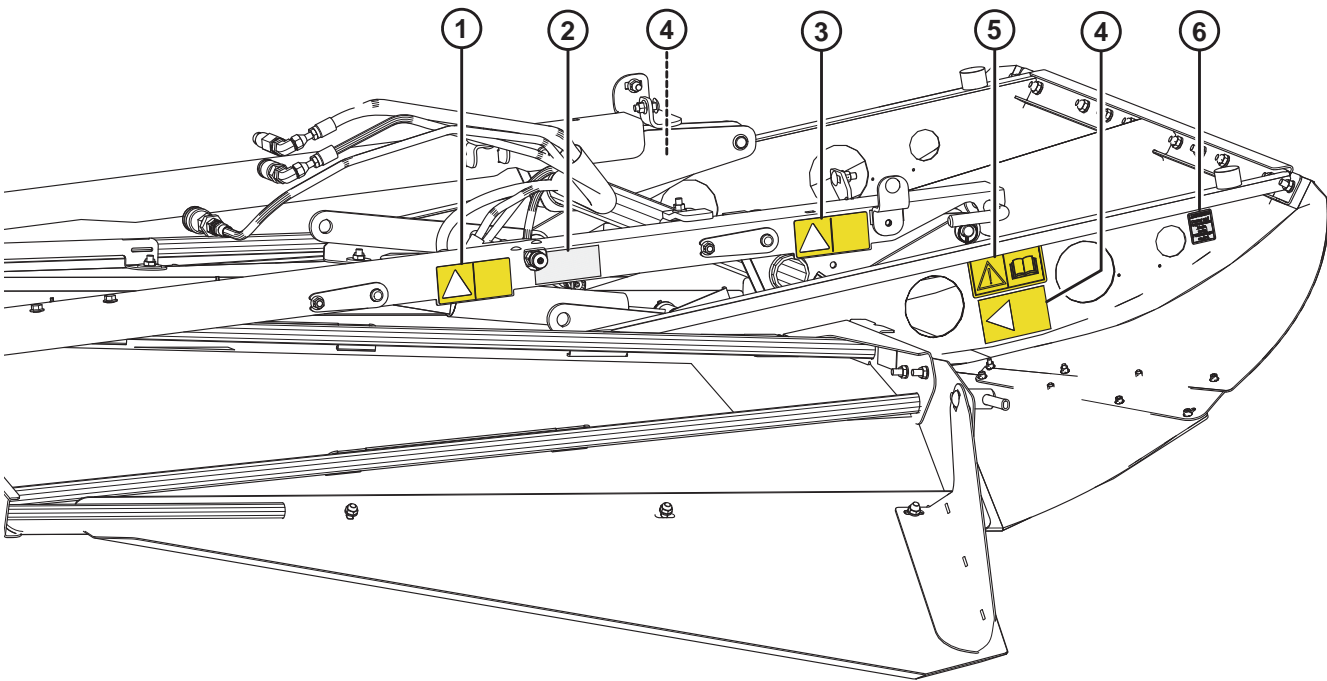
**NOTE:**

This supplemental parts list is applicable only to M155, M155E4, and M205 Windrowers.

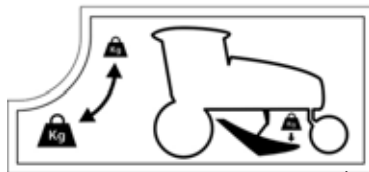
Ref	Part Number	Description	Qty	Serial Number
1	200974	SWITCH – PROXIMITY	1	
2	128681	SUPPORT – F/R SWITCH	1	
3	128972	HARNESS – 5-SERIES SWATH COMP <sup>2</sup>	1	
4	306261	HARNESS – 5-SERIES SWATH COMP <sup>3</sup>	1	
5	277043	HOSE – HYD, .375 IN. I.D., 200 MM LG, 100R17, METAL REIN.	1	
6	139974	VALVE BLOCK – AUX LIFT (REEL FORE AFT-DWA)	1	
7	30994	PLUG – HEX CW O-RING	1	
8	136095	FITTING – ELBOW 90° HYD	1	
9	50019	FITTING – TEE HYD STR THD RUN TEE CW O-RING	1	
10	135917	FITTING – ELBOW 90° HYD	1	
11	21763	FASTENER – CABLE TIE, BLACK, 160 MM LG	5	
12	109575	SWITCH – ROCKER, ON-OFF-ON	1	
A	184640	BOLT – HEX HD M5 X 0.8 X 20-8.8-A2L		
B	197230	NUT – HEX NYLOC M5 X 0.8-8-A2L		
C	136748	BOLT – RHSN M6 X 1 X 16-8.8-A2L		
D	152668	NUT – HEX FLG CTR LOC M6 X 1-8-A2L		
E	10948	BOLT – HH 3/8 NC X 5.5 LG GR 5 ZP		
F	184701	WASHER – FLAT LARGE M5-200HV-A2L		

2. Completion harness MD #128972 is required for model year 2017 windrowers and prior. If a swath compressor has previously been installed on the windrower using harness MD #128972 but requires a chassis harness replacement, use harness MD #306261 to complete the swath compressor installation.
3. Completion harness MD# 306261 is required for model year 2018 windrowers and later.

## 5.3 Decals



1



2



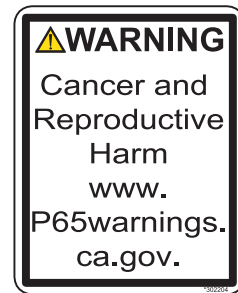
3



4 x2



5



6

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# ILLUSTRATED PARTS LISTS

Ref	Part Number	Description	Qty	Serial Number
1	166466	DECAL – HIGH PRESSURE FLUID	1	
2	128973	DECAL – DOWN FORCE	1	
3	291638	DECAL – DECK LOWER LOCK <sup>4</sup>	1	
4	174683	DECAL – PINCH POINT	2	
5	184372	DECAL – READ MANUAL	1	
6	302204	DECAL – CA PROPOSITION 65	1	

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4. May not be exactly as shown.



## Chapter 6: Reference

### 6.1 Torque Specifications

The following tables provide correct torque values for various bolts, cap screws, and hydraulic fittings.

- Tighten all bolts to torque values specified in charts (unless otherwise noted throughout this manual).
- Replace hardware with same strength and grade of bolt.
- Use torque value tables as a guide and periodically check tightness of bolts.
- Understand torque categories for bolts and cap screws by using their identifying head markings.

#### ***Jam nuts***

When applying torque to finished jam nuts, multiply the torque applied to regular nuts by  $f=0.65$ .

#### ***Self-tapping screws***

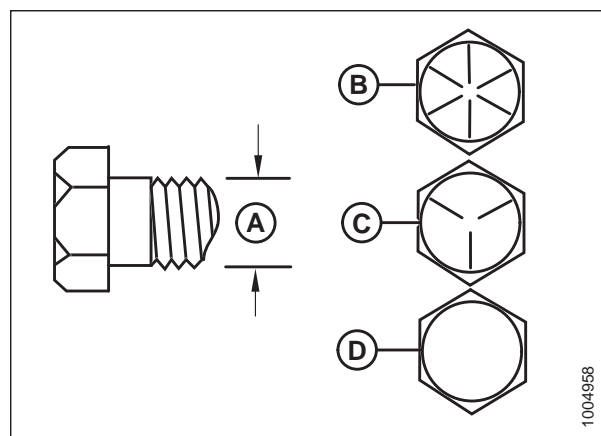
Standard torque is to be used (**NOT** to be used on critical or structurally important joints).

#### 6.1.1 SAE Bolt Torque Specifications

Torque values shown in following tables are valid for non-greased, or non-oiled threads and heads; therefore, do **NOT** grease or oil bolts or cap screws unless otherwise specified in this manual.

**Table 6.1 SAE Grade 5 Bolt and Grade 5 Free Spinning Nut**

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
1/4-20	11.9	13.2	*106	*117
5/16-18	24.6	27.1	*218	*241
3/8-16	44	48	32	36
7/16-14	70	77	52	57
1/2-13	106	118	79	87
9/16-12	153	170	114	126
5/8-11	212	234	157	173
3/4-10	380	420	281	311
7/8-9	606	669	449	496
1-8	825	912	611	676



**Figure 6.1: Bolt Grades**

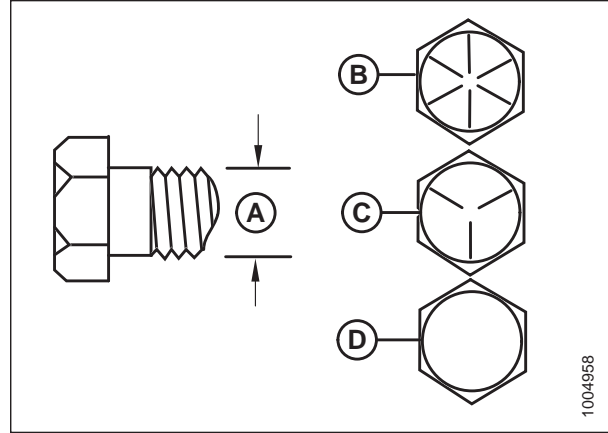
A - Nominal Size  
C - SAE-5

B - SAE-8  
D - SAE-2

## REFERENCE

**Table 6.2 SAE Grade 5 Bolt and Grade F Distorted Thread Nut**

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
1/4-20	8.1	9	*72	*80
5/16-18	16.7	18.5	*149	*164
3/8-16	30	33	22	24
7/16-14	48	53	35	39
1/2-13	73	80	54	59
9/16-12	105	116	77	86
5/8-11	144	160	107	118
3/4-10	259	286	192	212
7/8-9	413	456	306	338
1-8	619	684	459	507



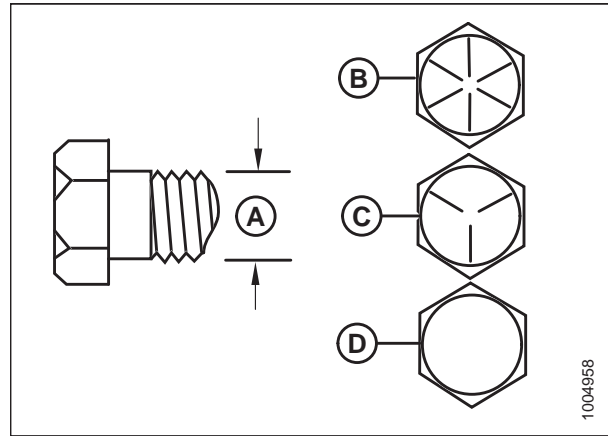
**Figure 6.2: Bolt Grades**

A - Nominal Size  
C - SAE-5

B - SAE-8  
D - SAE-2

**Table 6.3 SAE Grade 8 Bolt and Grade G Distorted Thread Nut**

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
1/4-20	16.8	18.6	*150	*165
5/16-18	24	26	18	19
3/8-16	42	46	31	34
7/16-14	67	74	50	55
1/2-13	102	113	76	84
9/16-12	148	163	109	121
5/8-11	204	225	151	167
3/4-10	362	400	268	296
7/8-9	583	644	432	477
1-8	874	966	647	716



**Figure 6.3: Bolt Grades**

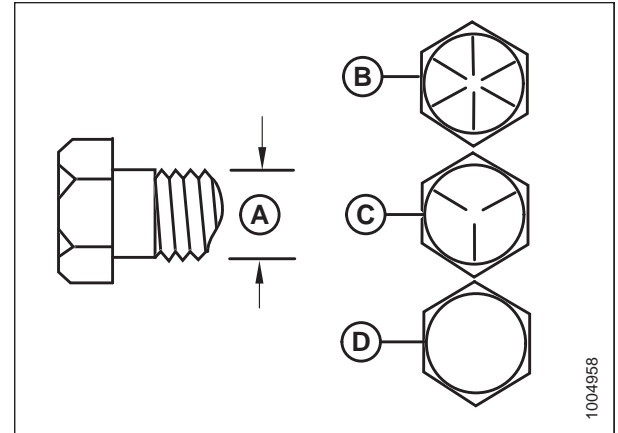
A - Nominal Size  
C - SAE-5

B - SAE-8  
D - SAE-2

## REFERENCE

**Table 6.4 SAE Grade 8 Bolt and Grade 8 Free Spinning Nut**

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
1/4-20	16.8	18.6	*150	*165
5/16-18	35	38	26	28
3/8-16	61	68	46	50
7/16-14	98	109	73	81
1/2-13	150	166	111	123
9/16-12	217	239	160	177
5/8-11	299	330	221	345
3/4-10	531	587	393	435
7/8-9	855	945	633	700
1-8	1165	1288	863	954



**Figure 6.4: Bolt Grades**

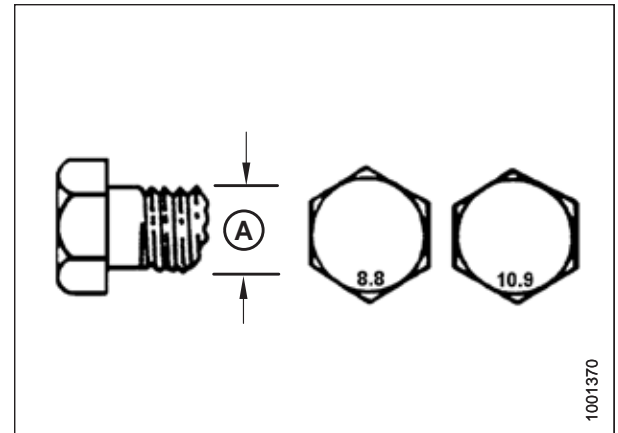
A - Nominal Size  
C - SAE-5

B - SAE-8  
D - SAE-2

## 6.1.2 Metric Bolt Specifications

**Table 6.5 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut**

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
3-0.5	1.4	1.6	*13	*14
3.5-0.6	2.2	2.5	*20	*22
4-0.7	3.3	3.7	*29	*32
5-0.8	6.7	7.4	*59	*66
6-1.0	11.4	12.6	*101	*112
8-1.25	28	30	20	23
10-1.5	55	60	40	45
12-1.75	95	105	70	78
14-2.0	152	168	113	124
16-2.0	236	261	175	193
20-2.5	460	509	341	377
24-3.0	796	879	589	651

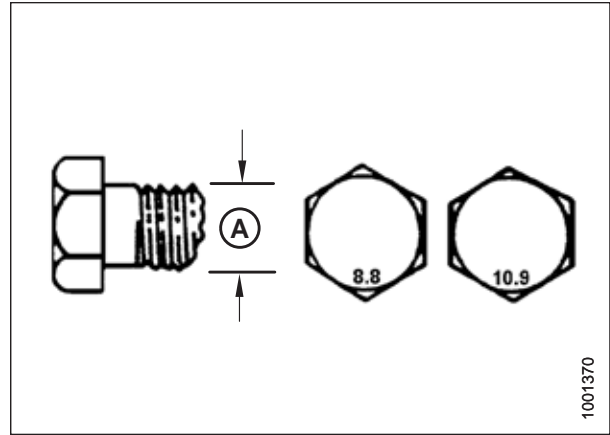


**Figure 6.5: Bolt Grades**

## REFERENCE

**Table 6.6 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut**

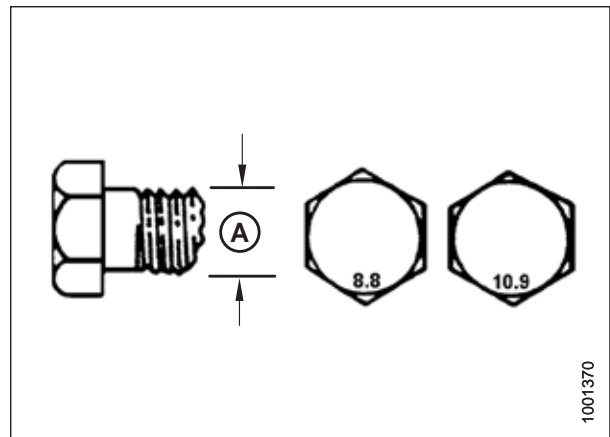
Nominal Size (A)	Torque (Nm)		Torque (lbf·ft) (*lbf·in)	
	Min.	Max.	Min.	Max.
3-0.5	1	1.1	*9	*10
3.5-0.6	1.5	1.7	*14	*15
4-0.7	2.3	2.5	*20	*22
5-0.8	4.5	5	*40	*45
6-1.0	7.7	8.6	*69	*76
8-1.25	18.8	20.8	*167	*185
10-1.5	37	41	28	30
12-1.75	65	72	48	53
14-2.0	104	115	77	85
16-2.0	161	178	119	132
20-2.5	314	347	233	257
24-3.0	543	600	402	444



**Figure 6.6: Bolt Grades**

**Table 6.7 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut**

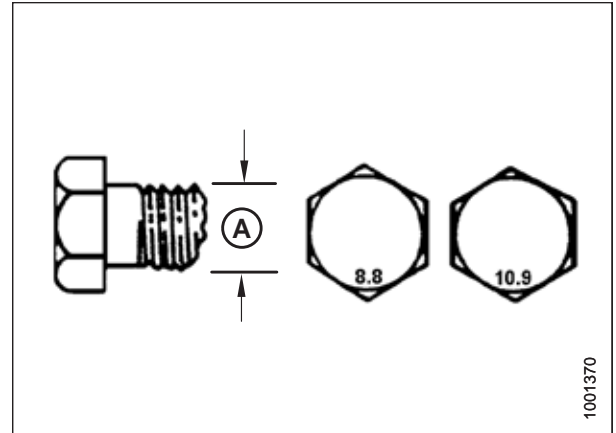
Nominal Size (A)	Torque (Nm)		Torque (lbf·ft) (*lbf·in)	
	Min.	Max.	Min.	Max.
3-0.5	1.8	2	*18	*19
3.5-0.6	2.8	3.1	*27	*30
4-0.7	4.2	4.6	*41	*45
5-0.8	8.4	9.3	*82	*91
6-1.0	14.3	15.8	*140	*154
8-1.25	38	42	28	31
10-1.5	75	83	56	62
12-1.75	132	145	97	108
14-2.0	210	232	156	172
16-2.0	326	360	242	267
20-2.5	637	704	472	521
24-3.0	1101	1217	815	901



**Figure 6.7: Bolt Grades**

**Table 6.8 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut**

Nominal Size (A)	Torque (Nm)		Torque (lbf·ft) (*lbf·in)	
	Min.	Max.	Min.	Max.
3-0.5	1.3	1.5	*12	*13
3.5-0.6	2.1	2.3	*19	*21
4-0.7	3.1	3.4	*28	*31
5-0.8	6.3	7	*56	*62
6-1.0	10.7	11.8	*95	*105
8-1.25	26	29	19	21
10-1.5	51	57	38	42
12-1.75	90	99	66	73
14-2.0	143	158	106	117
16-2.0	222	246	165	182
20-2.5	434	480	322	356
24-3.0	750	829	556	614

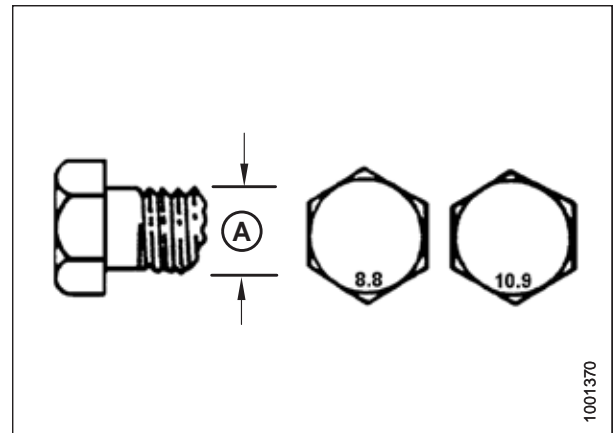


**Figure 6.8: Bolt Grades**

### 6.1.3 Metric Bolt Specifications Bolting into Cast Aluminum

**Table 6.9 Metric Bolt Bolting into Cast Aluminum**

Nominal Size (A)	Bolt Torque			
	8.8 (Cast Aluminum)		10.9 (Cast Aluminum)	
	Nm	lbf·ft	Nm	lbf·ft
M3	—	—	—	1
M4	—	—	4	2.6
M5	—	—	8	5.5
M6	9	6	12	9
M8	20	14	28	20
M10	40	28	55	40
M12	70	52	100	73
M14	—	—	—	—
M16	—	—	—	—



**Figure 6.9: Bolt Grades**

### 6.1.4 Flare-Type Hydraulic Fittings

1. Check flare (A) and flare seat (B) for defects that might cause leakage.
2. Align tube (C) with fitting (D) and thread nut (E) onto fitting without lubrication until contact has been made between flared surfaces.
3. Torque fitting nut (E) to specified number of flats from finger tight (FFFT) or to a given torque value in Table 6.10, page 62.
4. Use two wrenches to prevent fitting (D) from rotating. Place one wrench on fitting body (D), and tighten nut (E) with other wrench to torque shown.
5. Assess final condition of connection.

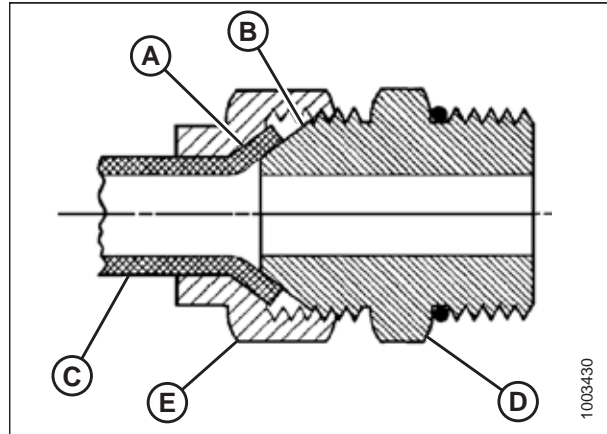


Figure 6.10: Hydraulic Fitting

Table 6.10 Flare-Type Hydraulic Tube Fittings

SAE Dash Size	Thread Size (in.)	Torque Value <sup>5</sup>		Flats from Finger Tight (FFFT)	
		Nm	lbf·ft	Tube	Swivel Nut or Hose
-2	5/16-24	4-5	3-4	—	—
-3	3/8-24	7-8	5-6	—	—
-4	7/16-20	18-19	13-14	2 1/2	2
-5	1/2-20	19-21	14-15	2	2
-6	9/16-18	30-33	22-24	2	1 1/2
-8	3/4-16	57-63	42-46	2	1 1/2
-10	7/8-14	81-89	60-66	1 1/2	1 1/2
-12	1 1/16-12	113-124	83-91	1 1/2	1 1/4
-14	1 3/16-12	136-149	100-110	1 1/2	1 1/4
-16	1 5/16-12	160-176	118-130	1 1/2	1
-20	1 5/8-12	228-250	168-184	1	1
-24	1 7/8-12	264-291	195-215	1	1
-32	2 1/2-12	359-395	265-291	1	1
-40	3-12	—	—	1	1

5. Torque values shown are based on lubricated connections as in reassembly.

### 6.1.5 O-Ring Boss Hydraulic Fittings – Adjustable

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Back off lock nut (C) as far as possible. Ensure that washer (D) is loose and is pushed toward lock nut (C) as far as possible.
3. Check that O-ring (A) is **NOT** on threads and adjust if necessary.
4. Apply hydraulic system oil to O-ring (A).

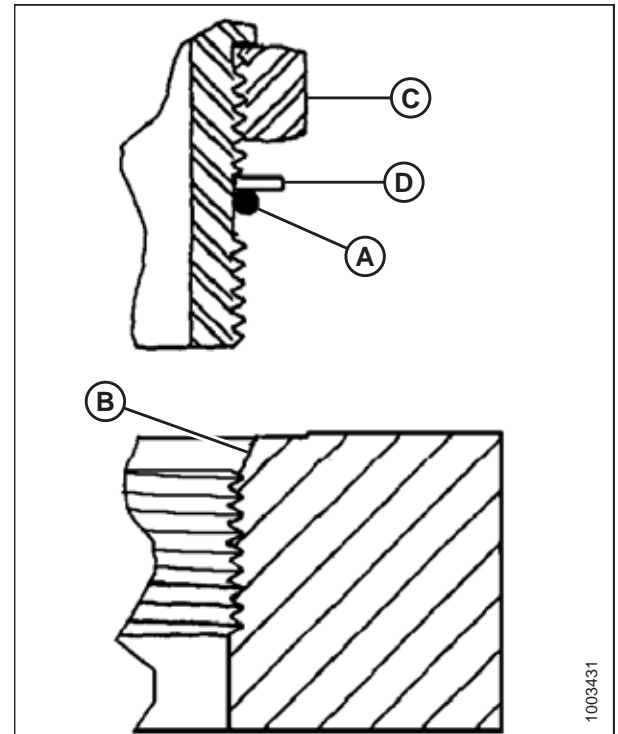


Figure 6.11: Hydraulic Fitting

5. Install fitting (B) into port until backup washer (D) and O-ring (A) contact part face (E).
6. Position angle fittings by unscrewing no more than one turn.
7. Turn lock nut (C) down to washer (D) and tighten to torque shown. Use two wrenches, one on fitting (B) and other on lock nut (C).
8. Check final condition of fitting.

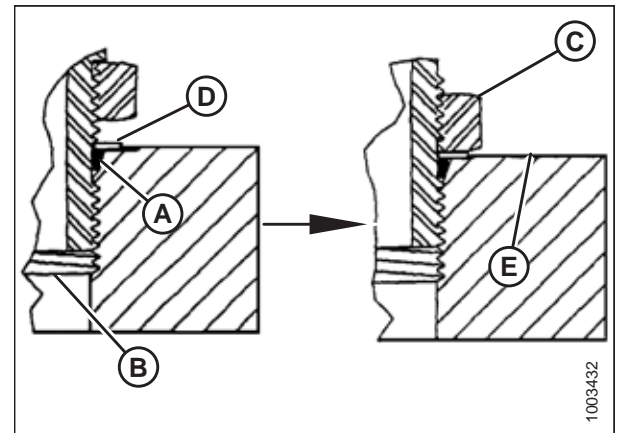


Figure 6.12: Hydraulic Fitting

## REFERENCE

**Table 6.11 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable**

SAE Dash Size	Thread Size (in.)	Torque Value <sup>6</sup>	
		Nm	lbf·ft (*lbf·in)
-2	5/16-24	6-7	*53-62
-3	3/8-24	12-13	*106-115
-4	7/16-20	19-21	14-15
-5	1/2-20	21-33	15-24
-6	9/16-18	26-29	19-21
-8	3/4-16	46-50	34-37
-10	7/8-14	75-82	55-60
-12	1 1/16-12	120-132	88-97
-14	1 3/8-12	153-168	113-124
-16	1 5/16-12	176-193	130-142
-20	1 5/8-12	221-243	163-179
-24	1 7/8-12	270-298	199-220
-32	2 1/2-12	332-365	245-269

---

6. Torque values shown are based on lubricated connections as in reassembly.

### 6.1.6 O-Ring Boss Hydraulic Fittings – Non-Adjustable

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on threads and adjust if necessary.
3. Apply hydraulic system oil to O-ring.
4. Install fitting (C) into port until fitting is hand-tight.
5. Torque fitting (C) according to values in Table 6.12, page 65.
6. Check final condition of fitting.

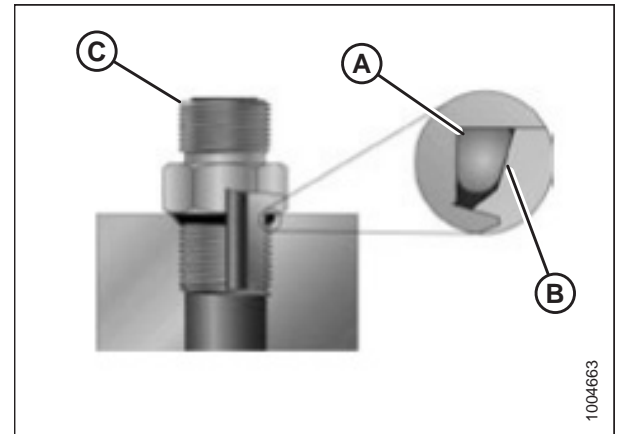


Figure 6.13: Hydraulic Fitting

Table 6.12 O-Ring Boss (ORB) Hydraulic Fittings – Non-Adjustable

SAE Dash Size	Thread Size (in.)	Torque Value <sup>7</sup>	
		Nm	lbf·ft (*lbf·in)
-2	5/16-24	6-7	*53-62
-3	3/8-24	12-13	*106-115
-4	7/16-20	19-21	14-15
-5	1/2-20	21-33	15-24
-6	9/16-18	26-29	19-21
-8	3/4-16	46-50	34-37
-10	7/8-14	75-82	55-60
-12	1 1/16-12	120-132	88-97
-14	1 3/8-12	153-168	113-124
-16	1 5/16-12	176-193	130-142
-20	1 5/8-12	221-243	163-179
-24	1 7/8-12	270-298	199-220
-32	2 1/2-12	332-365	245-269

7. Torque values shown are based on lubricated connections as in reassembly.

### 6.1.7 O-Ring Face Seal Hydraulic Fittings

1. Check components to ensure that sealing surfaces and fitting threads are free of burrs, nicks, scratches, or any foreign material.



Figure 6.14: Hydraulic Fitting

2. Apply hydraulic system oil to O-ring (B).
3. Align tube or hose assembly so that flat face of sleeve (A) or (C) comes in full contact with O-ring (B).
4. Thread tube or hose nut (D) until hand-tight. The nut should turn freely until it is bottomed out.
5. Torque fittings according to values in Table 6.13, page 66.

**NOTE:**

If applicable, hold hex on fitting body (E) to prevent rotation of fitting body and hose when tightening fitting nut (D).

6. Use three wrenches when assembling unions or joining two hoses together.
7. Check final condition of fitting.

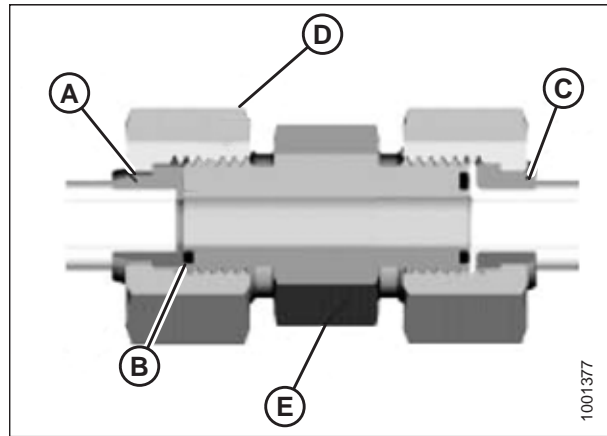


Figure 6.15: Hydraulic Fitting

**Table 6.13 O-Ring Face Seal (ORFS) Hydraulic Fittings**

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value <sup>8</sup>	
			Nm	lbf·ft
-3	Note <sup>9</sup>	3/16	–	–
-4	9/16	1/4	25–28	18–21
-5	Note <sup>9</sup>	5/16	–	–
-6	11/16	3/8	40–44	29–32
-8	13/16	1/2	55–61	41–45
-10	1	5/8	80–88	59–65
-12	1 3/16	3/4	115–127	85–94
-14	Note <sup>9</sup>	7/8	–	–

8. Torque values and angles shown are based on lubricated connection as in reassembly.

9. O-ring face seal type end not defined for this tube size.

## REFERENCE

**Table 6.13 O-Ring Face Seal (ORFS) Hydraulic Fittings (continued)**

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value <sup>10</sup>	
			Nm	lbf·ft
-16	1 7/16	1	150–165	111–122
-20	1 11/16	1 1/4	205–226	151–167
-24	1–2	1 1/2	315–347	232–256
-32	2 1/2	2	510–561	376–414

### 6.1.8 Tapered Pipe Thread Fittings

Assemble pipe fittings as follows:

1. Check components to ensure that fitting and port threads are free of burrs, nicks, scratches, or any form of contamination.
2. Apply pipe thread sealant (paste type) to external pipe threads.
3. Thread fitting into port until hand-tight.
4. Torque connector to appropriate torque angle. The turns from finger tight (TFFT) and flats from finger tight (FFFT) values are shown in Table 6.14, page 67. Make sure that tube end of a shaped connector (typically 45° or 90°) is aligned to receive incoming tube or hose assembly. Always finish alignment of fitting in tightening direction. Never back off (loosen) pipe threaded connectors to achieve alignment.
5. Clean all residue and any excess thread conditioner with appropriate cleaner.
6. Assess final condition of fitting. Pay special attention to possibility of cracks to port opening.
7. Mark final position of fitting. If a fitting leaks, disassemble fitting and check for damage.

**NOTE:**

Overtorque failure of fittings may not be evident until fittings are disassembled.

**Table 6.14 Hydraulic Fitting Pipe Thread**

Tapered Pipe Thread Size	Recommended TFFT	Recommended FFFT
1/8–27	2–3	12–18
1/4–18	2–3	12–18
3/8–18	2–3	12–18
1/2–14	2–3	12–18
3/4–14	1.5–2.5	12–18
1–11 1/2	1.5–2.5	9–15
1 1/4–11 1/2	1.5–2.5	9–15
1 1/2–11 1/2	1.5–2.5	9–15
2–11 1/2	1.5–2.5	9–15

10. Torque values and angles shown are based on lubricated connection as in reassembly.

## 6.2 Conversion Chart

Table 6.15 Conversion Chart

Quantity	SI Units (Metric)		Factor	US Customary Units (Standard)	
	Unit Name	Abbreviation		Unit Name	Abbreviation
Area	hectare	ha	$\times 2.4710 =$	acre	acres
Flow	liters per minute	L/min	$\times 0.2642 =$	US gallons per minute	gpm
Force	Newton	N	$\times 0.2248 =$	pound force	lbf
Length	millimeter	mm	$\times 0.0394 =$	inch	in.
Length	meter	m	$\times 3.2808 =$	foot	ft.
Power	kilowatt	kW	$\times 1.341 =$	horsepower	hp
Pressure	kilopascal	kPa	$\times 0.145 =$	pounds per square inch	psi
Pressure	megapascal	MPa	$\times 145.038 =$	pounds per square inch	psi
Pressure	bar (Non-SI)	bar	$\times 14.5038 =$	pounds per square inch	psi
Torque	Newton meter	Nm	$\times 0.7376 =$	pound feet or foot pounds	lbf-ft
Torque	Newton meter	Nm	$\times 8.8507 =$	pound inches or inch pounds	lbf-in
Temperature	degrees Celsius	°C	$(^{\circ}\text{C} \times 1.8) + 32 =$	degrees Fahrenheit	°F
Velocity	meters per minute	m/min	$\times 3.2808 =$	feet per minute	ft/min
Velocity	meters per second	m/s	$\times 3.2808 =$	feet per second	ft/s
Velocity	kilometers per hour	km/h	$\times 0.6214 =$	miles per hour	mph
Volume	liter	L	$\times 0.2642 =$	US gallon	US gal
Volume	milliliter	mL	$\times 0.0338 =$	ounce	oz.
Volume	cubic centimeter	cm <sup>3</sup> or cc	$\times 0.061 =$	cubic inch	in. <sup>3</sup>
Weight	kilogram	kg	$\times 2.2046 =$	pound	lb.

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# Predelivery Checklist

Perform these checks and adjustments prior to delivery to your Customer. The completed checklist should be retained by either the Operator or the Dealer.



## CAUTION

Follow the instructions carefully. Pay attention to safety-related messages, and avoid unsafe practices.

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	—
	Check for loose hardware. Tighten to required torque.	<a href="#">6.1 Torque Specifications, page 57</a>
	Raise and lower swath compressor to check for linkage binding. Rubber bumpers at rear should contact windrower frame when fully raised. If binding occurs, adjust by adding/removing washers (MD #30635) where rear supports are fastened to the outside of frame.	<a href="#">2.2.1 Installing Frame, page 18</a>
	Ensure sensor arm does not bind when raising or lowering the swath compressor.	<a href="#">2.2.1 Installing Frame, page 18</a>
	Check hydraulic hose and electrical harness routing for clearance when raising or lowering swath compressor. Adjust as necessary.	<a href="#">2.2.4 Connecting Hydraulics, page 27</a> <a href="#">2.2.2 Installing Reverse Switch and Harness, page 21</a>
	Ensure hydraulic hoses are secured in place with cable ties.	<a href="#">2.2.4 Connecting Hydraulics, page 27</a>
	Ensure swath compressor lock is functioning properly.	<a href="#">3.2.4 Locking and Unlocking the Swath Compressor, page 41</a>
	Check for hydraulic leaks.	—
	Ensure side deflectors are set evenly to desired position.	<a href="#">3.2.3 Adjusting Side Deflectors, page 40</a>
	Ensure latest software version is installed in windrower.	Refer to windrower operator's manual.

Date checked: \_\_\_\_\_ Checked by: \_\_\_\_\_





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