MacDon

HM100
Harvester Mount Module

Setup, Operation, and Parts Manual

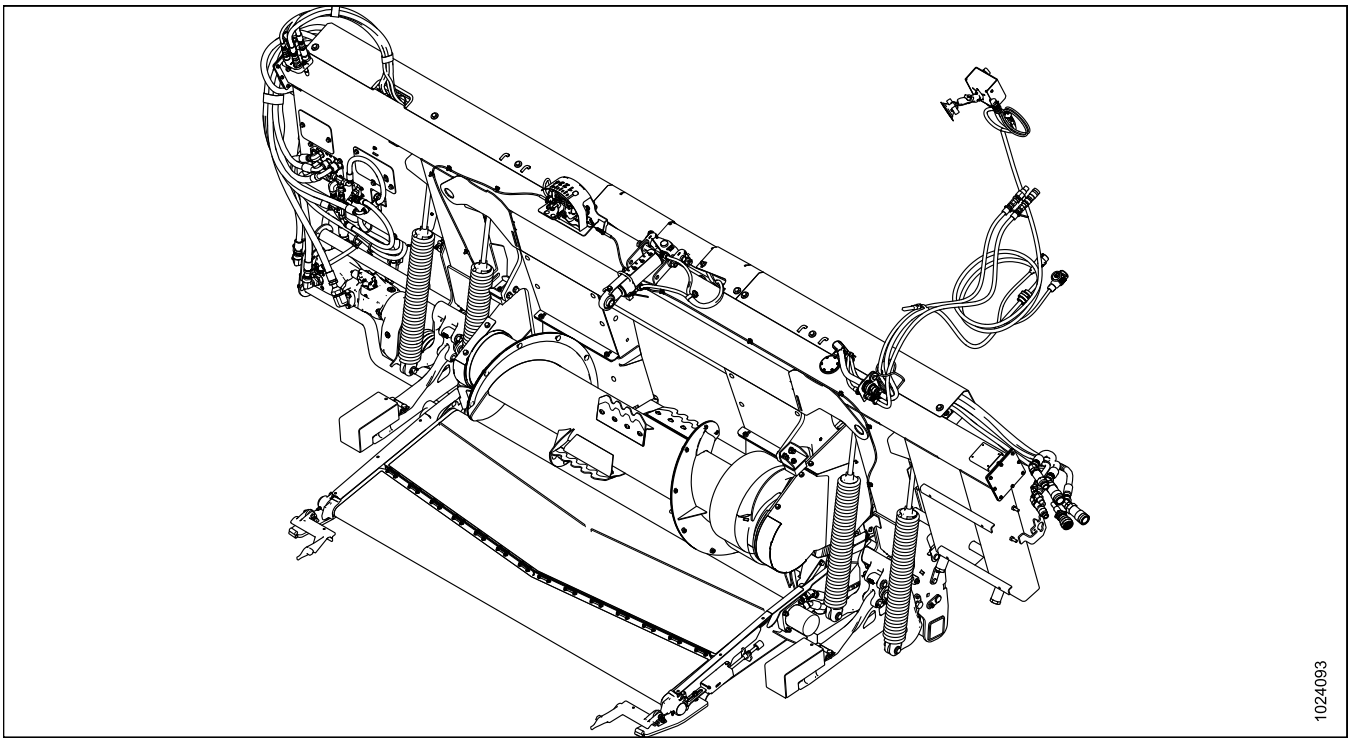
214565 Revision B

2018 Model Year

Original Instruction

The harvesting specialists.

HM100 for various CLAAS® Jaguar Forage Harvesters



Published: January 2018

Introduction

This manual contains safety information, setup instructions, operating and maintenance procedures, and parts information for the HM100 Harvester Mount Module, which when coupled with D65 Draper Header, provides a package designed to cut a variety of crops..

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.

Warranty information

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

Right and left are determined from the operator's position. The front of the header is the side that faces the crop; the back of the header is the side that connects to the forage harvester.

NOTE:

This document is not currently available in any language except English.

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. 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.

1.3 General Safety

CAUTION

The following are general farm safety precautions that 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 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.

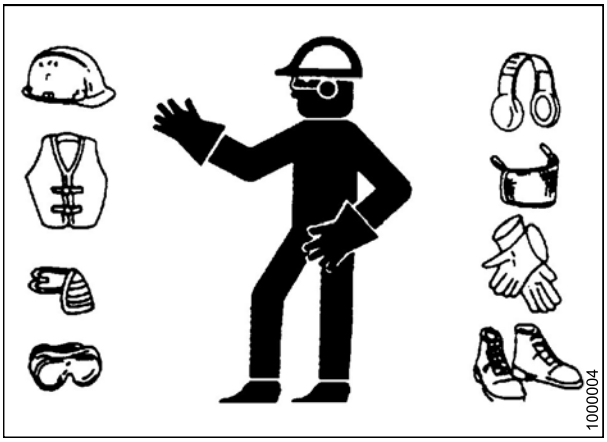


Figure 1.2: Safety Equipment

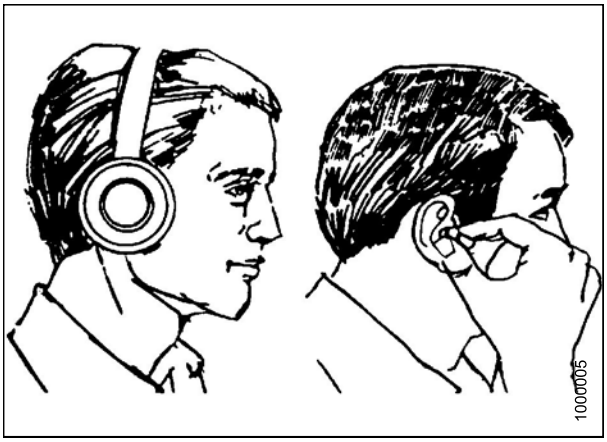


Figure 1.3: Safety Equipment

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

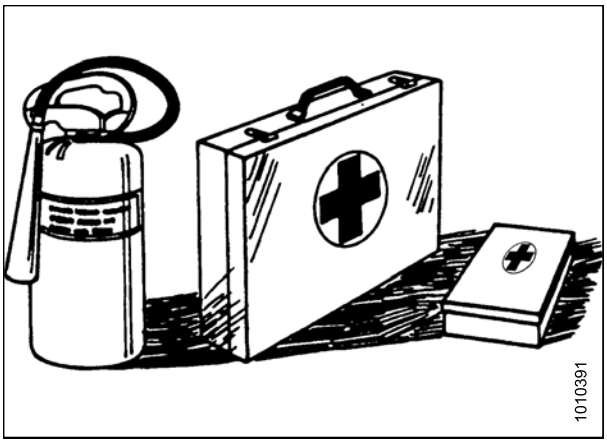


Figure 1.4: Safety Equipment

- 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 1.5: Safety around Equipment

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

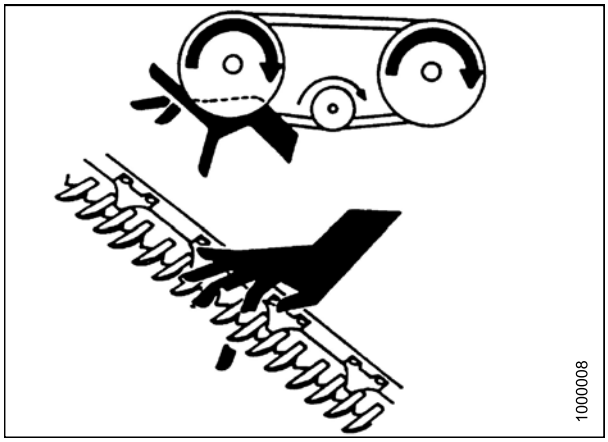


Figure 1.6: Safety around Equipment

- Keep service area clean and dry. Wet 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 is a fire hazard. 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 operator's manual and all safety items before operation and/or maintenance of 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

Figure 1.8: Safety around Equipment

- Relieve pressure from hydraulic circuits before servicing and/or disconnecting 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 area of bystanders, especially children, when carrying out any maintenance, repairs, or adjustments.
- Install transport lock or place safety stands under frame before working under machine.
- If more than one person is servicing machine at same time, be aware that rotating a driveline or other mechanically-driven component by hand (for example, accessing a lube 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 machine.
- Wear heavy gloves when working on knife components.

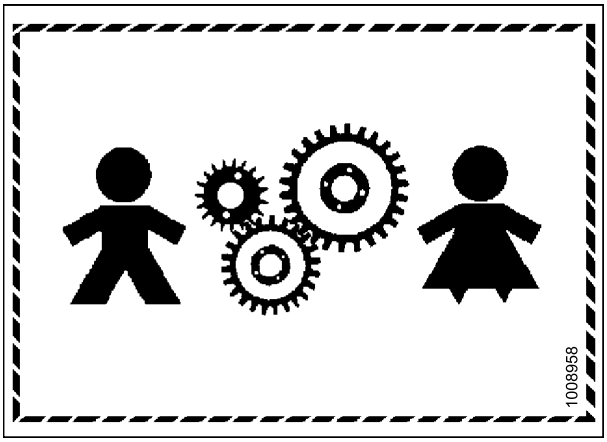


Figure 1.9: Equipment NOT Safe for Children

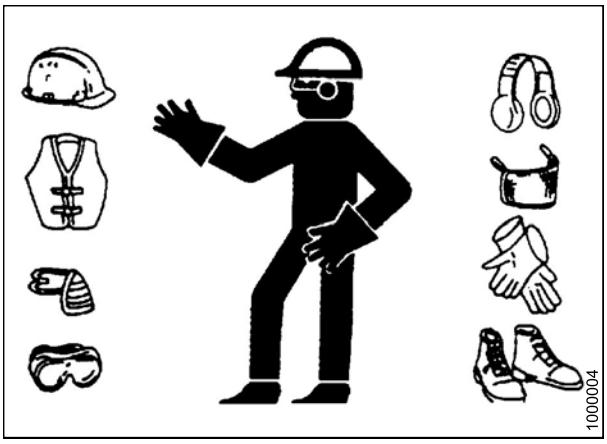


Figure 1.10: Safety Equipment

1.5 Hydraulic Safety

- Always place all hydraulic controls in Neutral before dismounting.
- Make sure that all components in 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.

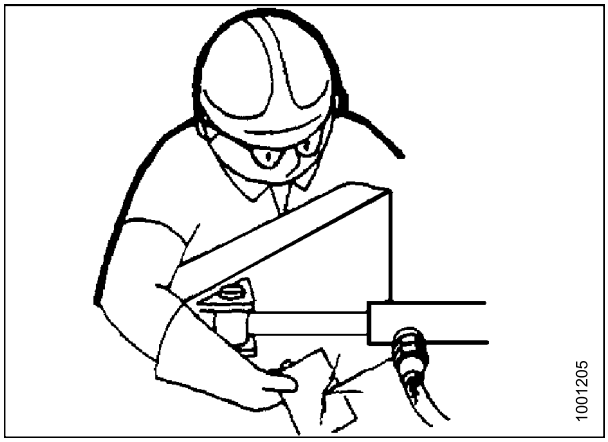


Figure 1.11: Testing for Hydraulic Leaks

- 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.

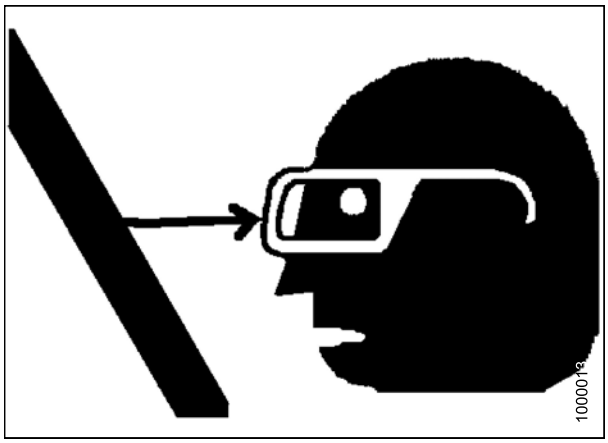


Figure 1.13: Safety around Equipment

1.6 Safety Signs

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

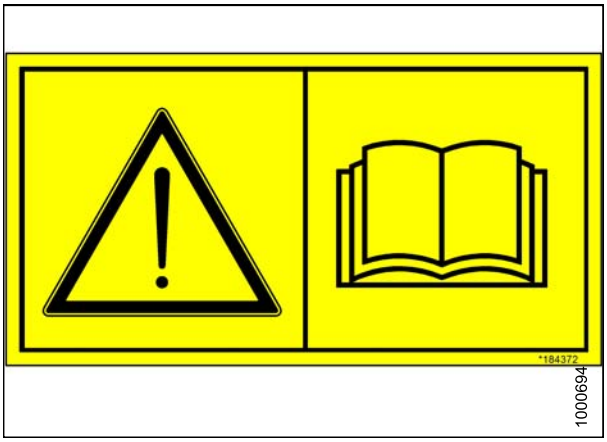


Figure 1.14: Operator's Manual Decal

1.6.1 Installing Safety Decals

1. Clean and dry installation area.
2. Decide on exact location before you remove decal backing paper.
3. Remove smaller portion of split backing paper.
4. Place decal in position and slowly peel back remaining paper, smoothing decal as it is applied.
5. Prick small air pockets with a pin and smooth out.

2 Product Overview

2.1 Definitions

The following terms and acronyms may be used in this manual.

Term	Definition
AHHC	Automatic Header Height Control
API	American Petroleum Institute
ASTM	American Society of Testing and Materials
Bolt	A headed and externally threaded fastener that is designed to be paired with a nut
Center-link	A hydraulic cylinder link between header and machine used to change header angle
CGVW	Combined gross vehicle weight
D Series header	MacDon D50, D60, and D65 rigid draper headers
DK	Double knife
DKD	Double-knife drive
Finger tight	Finger tight is a reference position where sealing surfaces or components are making contact with each other, and fitting has been tightened to a point where fitting is no longer loose
FFFT	Flats from finger tight
GVW	Gross vehicle weight
Hard joint	A joint made with use of a fastener where joining materials are highly incompressible
Hex key	A tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in head (internal-wrenching hexagon drive); also known as an Allen key and various other synonyms
hp	Horsepower
JIC	Joint Industrial Council: A standards body that developed standard sizing and shape for original 37° flared fitting
n/a	Not applicable
NPT	National Pipe Thread: A style of fitting used for low pressure port openings. Threads on NPT fittings are uniquely tapered for an interference fit
Nut	An internally threaded fastener that is designed to be paired with a bolt
ORB	O-ring boss: A style of fitting commonly used in port opening on manifolds, pumps, and motors
ORFS	O-ring face seal: A style of fitting commonly used for connecting hoses and tubes This style of fitting is also commonly called ORS, which stands for O-ring seal
rpm	Revolutions per minute
RoHS (Reduction of Hazardous Substances)	A directive by the European Union to restrict use of certain hazardous substances (such as hexavalent chromium used in some yellow zinc platings)

Term	Definition
SAE	Society of Automotive Engineers
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread into a mating part
SDD	Single-draper drive
SK	Single knife
SKD	Single-knife drive
Soft joint	A joint made with use of a fastener where joining materials are compressible or experience relaxation over a period of time
spm	Strokes per minute
Tension	Axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.)
TFFT	Turns from finger tight
Torque	The product of a force X lever arm length, usually measured in Newton-meters (Nm) or foot-pounds (lbf·ft)
Torque angle	A tightening procedure where fitting is assembled to a precondition (finger tight) and then nut is turned farther a number of degrees to achieve its final position
Torque-tension	The relationship between assembly torque applied to a piece of hardware and axial load it induces in bolt or screw
Washer	A thin cylinder with a hole or slot located in the center that is to be used as a spacer, load distribution element, or a locking mechanism

2.2 Specifications

The following symbol and letters are used in the tables below.

S: standard / O_F: optional (factory installed) / O_D: optional (dealer installed) / –: not applicable

Table 2.1 HM100 Harvester Mount Module

Harvester Mount Module				
Feed draper	Width		2 m (6.56 ft)	S
Feed draper	Speed	CLAAS	201.2– 213.4 m/min (660–700 fpm)	S
Feed auger	Width		1710 mm (67.3 in.)	S
Feed auger	Outside diameter		508 mm (20 in.)	S
Feed auger	Tube diameter		254 mm (10 in.)	S
Feed auger	Speed	31-tooth sprocket	215 rpm	S
		24-tooth sprocket	278 rpm	O
Oil reservoir capacity			110 liters (29.1 US gallons)	S
Oil type			DURATRAN™	—
Input speed		CLAAS Forage Harvester	490 rpm	
Stabilizer Wheel				O_D
Wheels			15 in.	—
Tires			P205/75 R-15	—

Table 2.2 D65 Header Specifications

Cutterbar		
Effective cutting width (distance between crop divider points)		
7.6 m (25 ft.) header	7620 mm (300 in.)	S
9.1 m (30 ft.) header	9144 mm (360 in.)	S
10.6 m (35 ft.) header	10,668 mm (420 in.)	S
Cutterbar lift range	Varies with forage harvester	—

Table 2.2 D65 Header Specifications (continued)

Knife			
Single-knife drive (all sizes): One hydraulic motor with V-belt to one heavy duty MD knife drive box			O_F
Double-knife drive 7.6–10.6 m [25–35 ft.] (timed): One hydraulic motor with two cogged belts to two heavy duty MD knife drive boxes			O_F
Knife stroke		76 mm (3 in.)	S
Single-knife speed[1]	7.6 m (25 ft.) header	1200–1450 (strokes/min.)	S
Single-knife speed	9.1 m (30 ft.) header	1200–1400 (strokes/min.)	S
Single-knife speed	10.6 m (35 ft.) header	1100–1300 (strokes/min.)	S
Double-knife speed	7.6 m (25 ft.) headers	1400–1700 (strokes/min.)	S
Double-knife speed	9.1 m and 10.6 m (30 and 35 ft.) headers	1200–1500 (strokes/min.)	S
Knife Sections			
Over-serrated / solid / bolted / 3.5 serrations per cm (9 serrations per inch)			O_F
Over-serrated / solid / bolted / 14 serrations per inch			O_F
Knife overlap at center (double-knife headers)		3 mm (1/8 in.)	S
Guards and Hold-Downs			
Guard: pointed / forged / double heat treated (DHT) Hold-down: Sheet metal / adjustment bolt			O_F
Guard: pointed / forged / case hardened (CH) Hold-down: Sheet metal / adjustment bolt			O_F
Guard: stub / forged bottom / forged top / adjustment plate			O_F
Guard: stub / forged bottom / sheet metal top / adjustment bolt			O_F
Guard Angle (Cutterbar on Ground)			
Center-link retracted	7.6 m (25 ft.) headers	10.6 degrees	S
Center-link retracted	9.1–13.7 m (30–35 ft.) headers	5.6 degrees	S
Center-link extended	7.6 m (25 ft.) headers	16.6 degrees	S
Center-link extended	9.1–13.7 m (30–35 ft.) headers	11.6 degrees	S

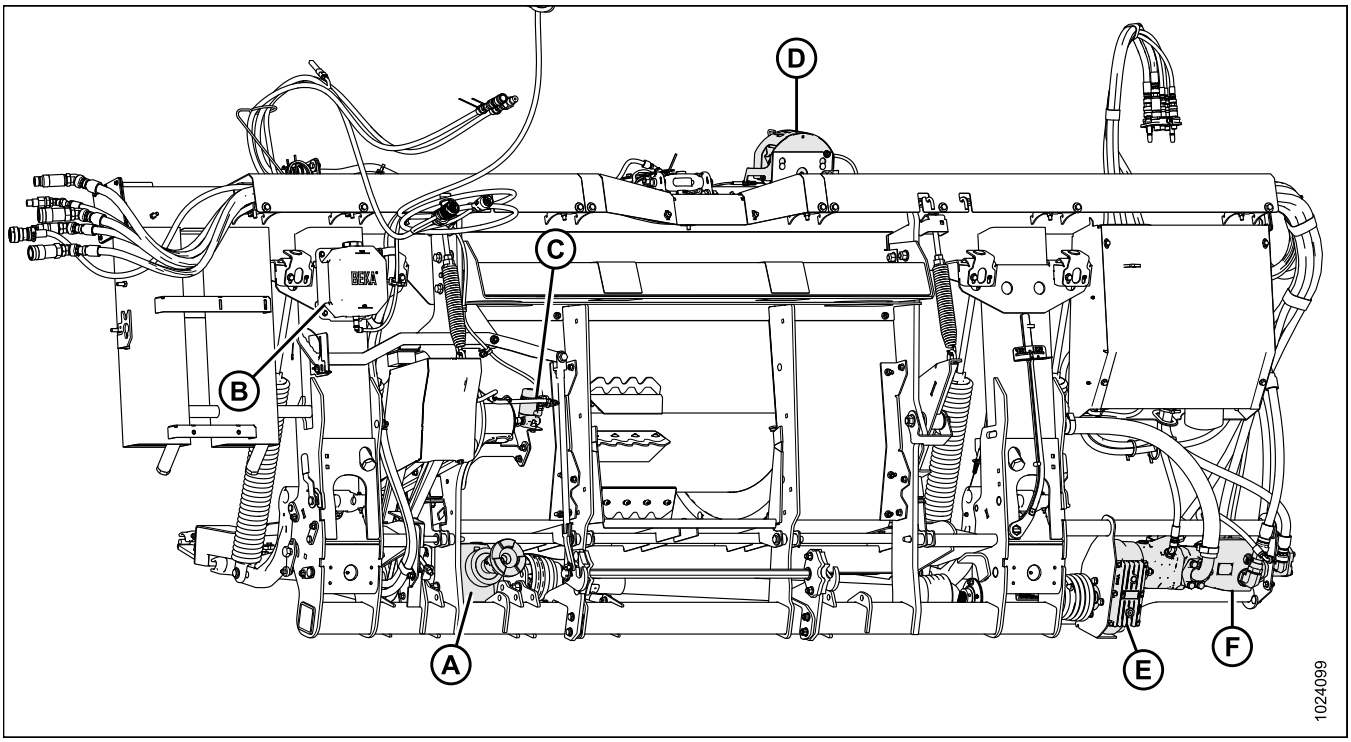
1. Under normal cutting conditions, set knife speed at the knife drive pulley between 600 and 640 rpm (1200 and 1280 spm). If set to low side of chart, you could experience knife stalling.

Table 2.2 D65 Header Specifications (continued)

Draper (Conveyor) and Decks			
Draper width		1057 mm (41-19/32 in.)	S
Draper drive		Hydraulic	S
Draper speed		203 m/min. (0–667 fpm)	S
PR15 Pick-Up Reel			S
Quantity of tine tubes		5, 6, or 9	—
Center tube diameter: All reel sizes except 10.6 m (35 ft.) single span		203 mm (8 in.)	—
10.6 m (35 ft.) single span		254 mm (10 in.)	—
Finger tip radius	Factory assembled	800 mm (31-1/2 in.)	—
Finger tip radius	Adjustment range	766–800 mm (30-3/16 – 31-1/2 in.)	—
Effective reel diameter (via cam profile)		1650 mm (65 in.)	—
Finger length		290 mm (11 in.)	—
Finger spacing (staggered on alternate bats)		150 mm (6 in.)	—
Reel drive		Hydraulic	S
Reel speed (adjustable from cab)		0–61 rpm	S
Frame and Structure			
Header width	Field mode	Cut width + 1384 mm (5.1 in.)	S

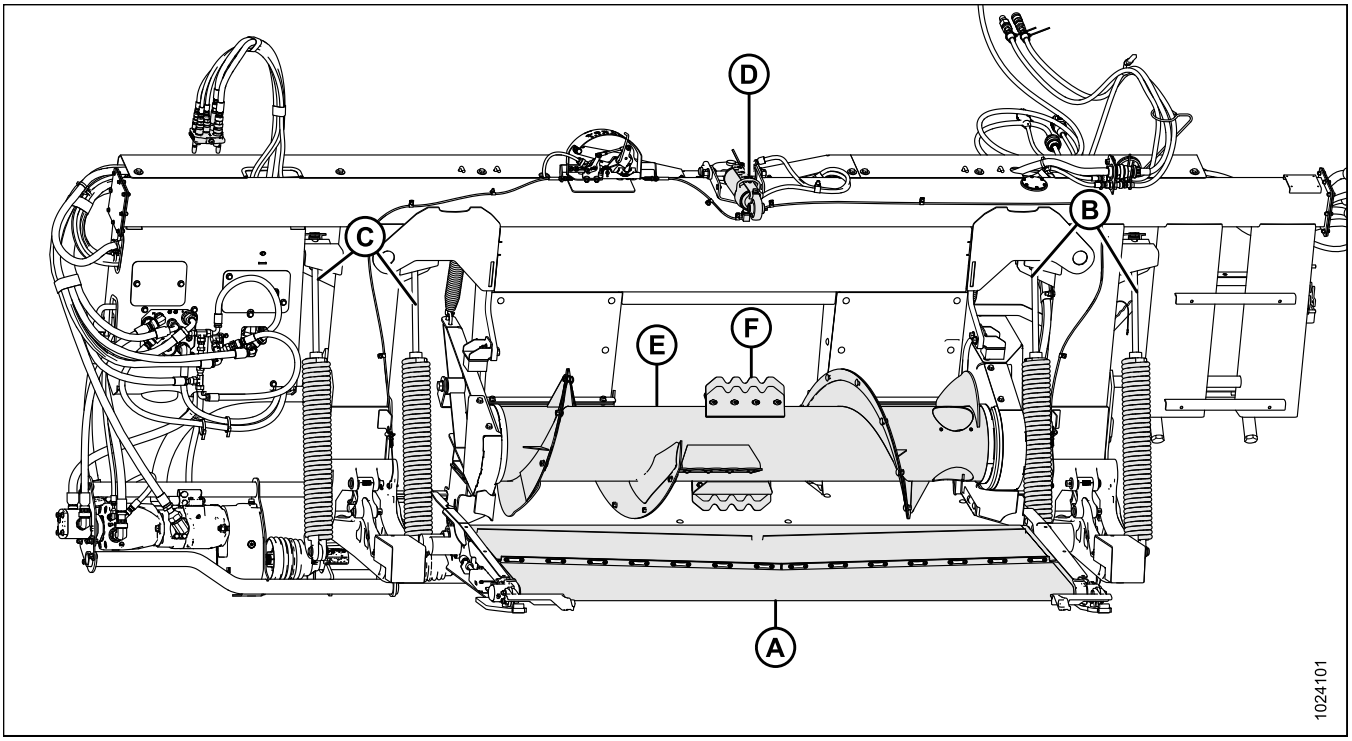
2.3 Component Identification

Figure 2.1: Back View of Harvester Mount Module Installed in Header



A - Gearbox **B - Automatic Oiler Reservoir** **C - Automatic Oiler** **D - Float Indicator**
E - Speed Increaser Gearbox **F - Hydraulic Pump**

Figure 2.2: Front View of Harvester Mount Module Installed in Header



A - Feed Deck **B - Left Float Springs** **C - Right Float Springs** **D - Center-link**

E - Feed Auger **F - Feed Auger Paddles**

3 Unloading Instructions

3.1 Unloading Harvester Mount Module from Trailer

1. Move trailer into position and block trailer wheels.
2. Lower trailer storage stands.

CAUTION

To avoid injury to bystanders from being struck by machinery, do not allow people to stand in unloading area.

CAUTION

Equipment used for unloading must meet or exceed the requirements specified below. Using inadequate equipment may result in chain breakage, vehicle tipping, or machine damage.

IMPORTANT:

Forklifts are normally rated with the load centered 610 mm (24 in.) from the back end of forks. To obtain forklift capacity for a load centered at 1220 mm (48 in.), check with your forklift distributor.

Table 3.1 Lifting Vehicle

Minimum Lifting Capacity	4082 kg (9000 lb.) load center (A) at 1220 mm (48 in.) (B) from back of forks
Minimum Fork Length (C)	1981 mm (78 in.)

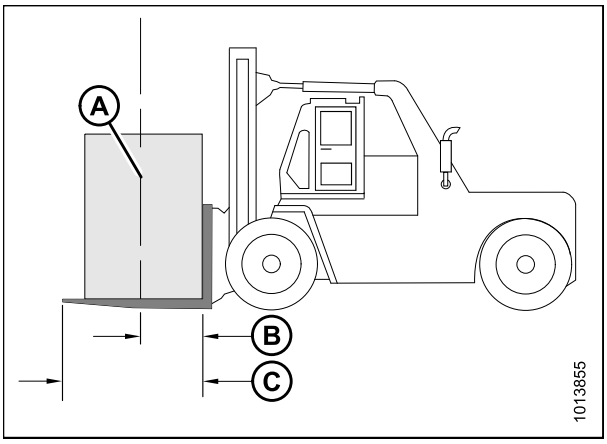


Figure 3.1: Minimum Lifting Capacity

A - Load Center of Gravity
B - Load Center 1220 mm (48 in.) from Back of Forks
C - Minimum Fork Length 1981 mm (78 in.)

3. Approach the Harvester Mount Module from behind and line up forks (A) with fork slider channels (B) under the frame.
4. Slide forks (A) underneath fork slider channels (B) as far as possible without contacting the shipping support of the opposite header.
5. Remove hauler's tie-down straps, chains, and wooden blocks.
6. Slowly raise the Harvester Mount Module off trailer deck.

WARNING

Be sure forks are secure before moving away from load. Stand clear when lifting.

7. Back up the forklift until the Harvester Mount Module clears trailer and slowly lower to 150 mm (6 in.) from ground.

8. Take Harvester Mount Module to the storage or setup area. Ensure ground is flat and free of rocks or debris that could damage the Harvester Mount Module.
9. Check for shipping damage and missing parts.

4 Attaching Header to Forage Harvester

4.1 CLAAS 494, 496, 497, 498

4.1.1 Attaching to CLAAS

DANGER

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

1. Locate the clutch coupling disc (A) on the forage harvester and header. Clean both discs and apply a multi-purpose grease to the surface of the discs.

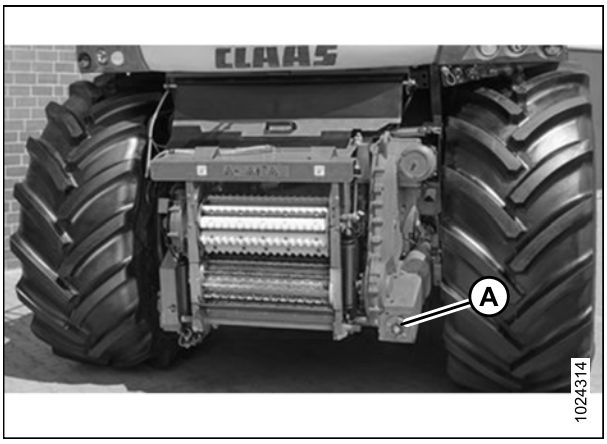


Figure 4.1: Clutch Coupling Disc: Forage Harvester

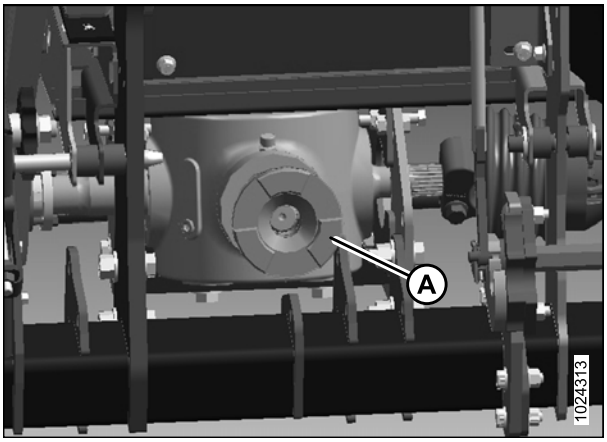


Figure 4.2: Clutch Coupling Disc: Header

2. Remove locking pin (A) from the handle on the left side of the mount module. Move handle (B) to the raised position to open the retaining hooks.

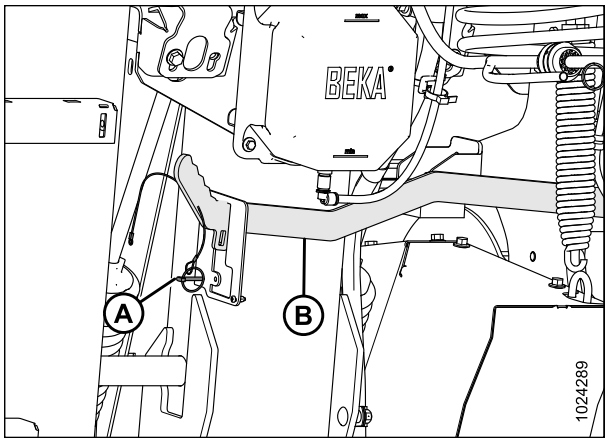


Figure 4.3: Handle Position

CAUTION

Never start or move the machine until you are sure all bystanders have cleared the area.

3. Start the engine and slowly drive up to the header, until feedroll cabinet (A) is directly under the mount module top cross member (B).
4. Raise the feeder house slightly to lift the header ensuring the feeder saddle is properly engaged in the mount module frame.

   NOTE:

   There are white decals on the mount module frame to help with hook alignment.
5. Stop the engine and remove the key from the ignition.
6. Lower handle (B) to engage the hooks onto the feedroll cabinet. Insert locking pin (B).

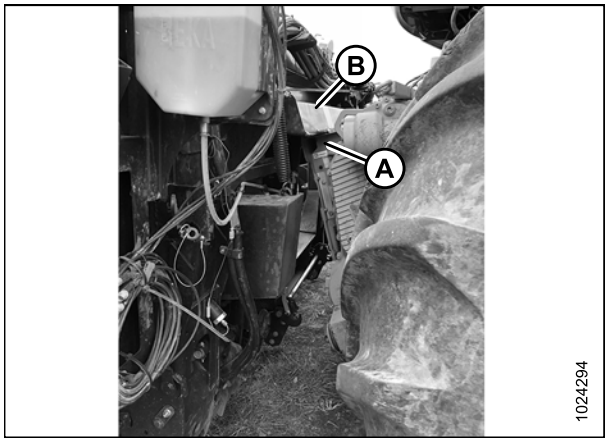


Figure 4.4: Header on Forage Harvester

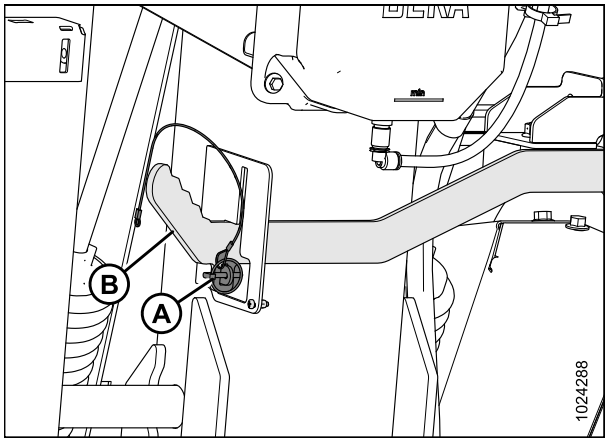


Figure 4.5: Handle Position

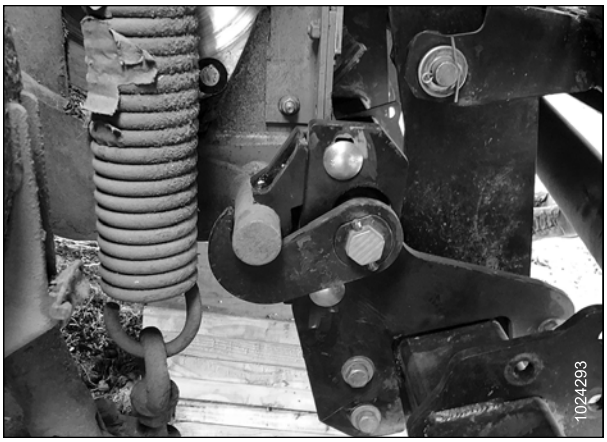


Figure 4.6: Engaging Hooks

7. Disengage both header float locks by pulling each float lock handle (A) away from the mount module and setting it in the unlocked position (B).

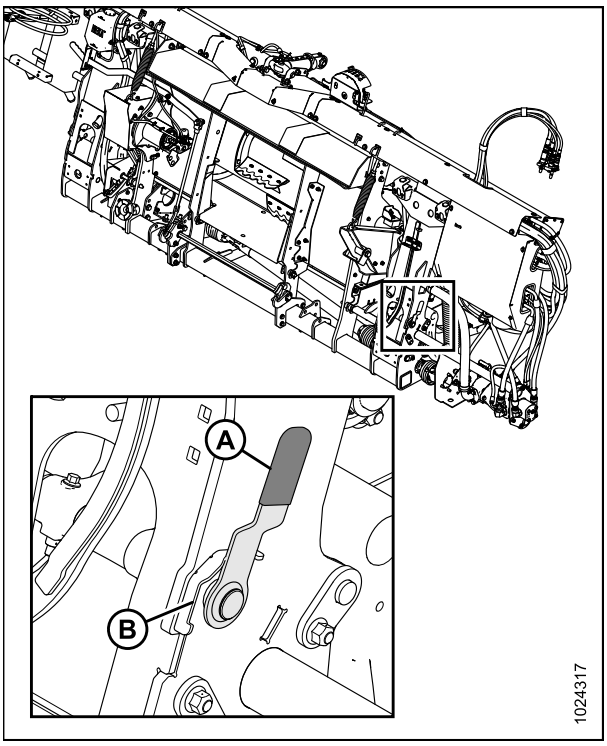


Figure 4.7: Float Lock Handle (Right Side Shown in Detail, Left Side Opposite)

4.1.2 Checking Header Drive Alignment

For proper machine operation, the forage harvester and mount module need to align properly.

DANGER

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

CAUTION

Never start or move the machine until you are sure all bystanders have cleared the area.

1. Start the engine and lower the header to the ground.
2. Engage the header in reverse. This is required to seat the header drive coupling.
3. Stop the engine and remove the key from the ignition.
4. Perform a quick check on the header drive coupling to verify there is no contact with shielding.
5. Start the engine and engage the header in forward for 30 seconds.
6. Stop the engine and remove the key from the ignition.
7. Inspect header drive coupling (A) alignment
   - The coupling should be positioned evenly and flat against each other.
   - There should be no contact between the coupling and the shields. A minimum of 3 mm (0.12 in) clearance should be around the coupling.

   NOTE:

   If adjustment is required. Refer to *4.1.3 Adjusting Header Drive Alignment, page 22*.

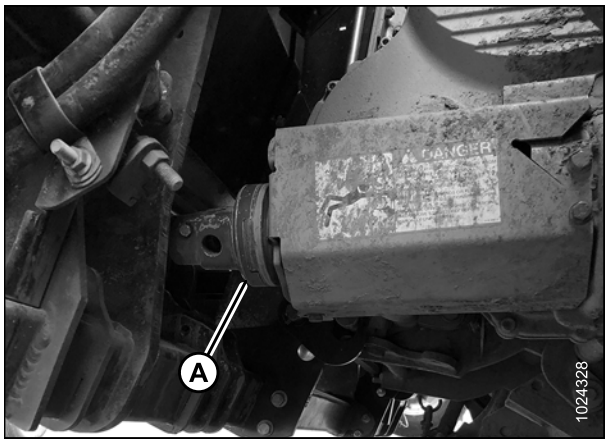


Figure 4.8: Header Drive

4.1.3 Adjusting Header Drive Alignment

DANGER

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

CAUTION

Never start or move the machine until you are sure all bystanders have cleared the area.

1. Start the engine.
2. Raise the header fully.
3. Place blocking under the Harvester Mount Module to support it.

4. Lower the header until the weight of the mount module is supported by the blocks.
5. Stop the engine and remove the key from the ignition.
6. Determine in which direction you need to adjust the coupling on the header. Follow the instructions below.

Lateral (side to side) adjustment

7. Loosen the four bolts (A) on the bottom of the gearbox.

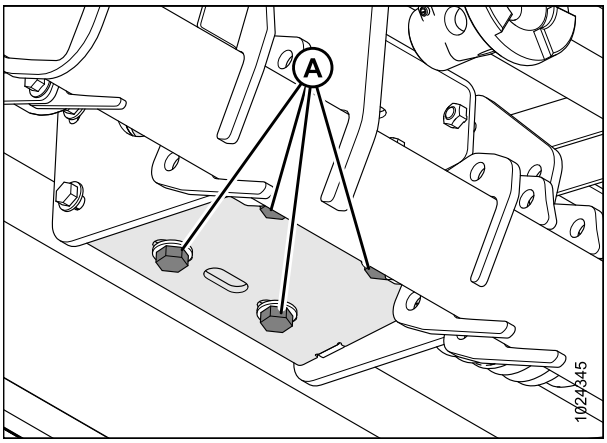


Figure 4.9: Adjusting Gearbox

8. Loosen jam nuts (B) on lateral adjustment bolts (A).
9. Adjust the appropriate lateral adjustment bolt (A) to move the gearbox in the required direction.

   NOTE:

   Factory setting: The gearbox is centered inside the gearbox mount.

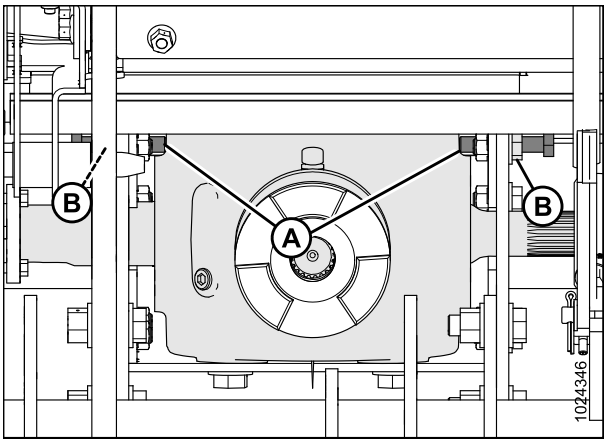


Figure 4.10: Lateral Adjustment Bolts

10. Apply high-strength threadlocker (Loctite® 262 or equivalent) to the threads on the four bolts (A) on the bottom of the gearbox. Torque to 251-311 Nm (185-229 lbf ft). If adjustment is complete, tighten the jam nuts on the lateral adjustment bolts. If you need to adjust the coupling angle, complete the next steps of the procedure.

    NOTE:

    If you made a lateral adjustment the gearbox, inspect the feed auger chain alignment. Move the drive sprocket on the primary feed auger chain over accordingly to maintain alignment.

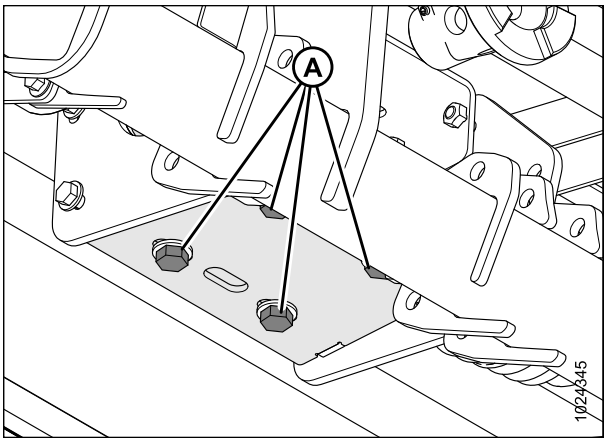


Figure 4.11: Adjusting Gearbox

Vertical (angle) adjustment

11. If not loosened previously, loosen jam nuts (B) on the lateral adjustment bolts (A).

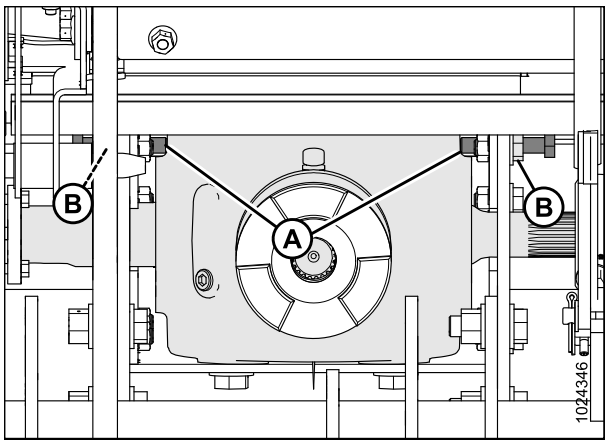


Figure 4.12: Lateral Adjustment Bolts

NOTE:

Some parts removed from illustration for clarity.

12. Loosen four bolts (A) on the side of the gearbox mount. Repeat on opposite side of gearbox mount.

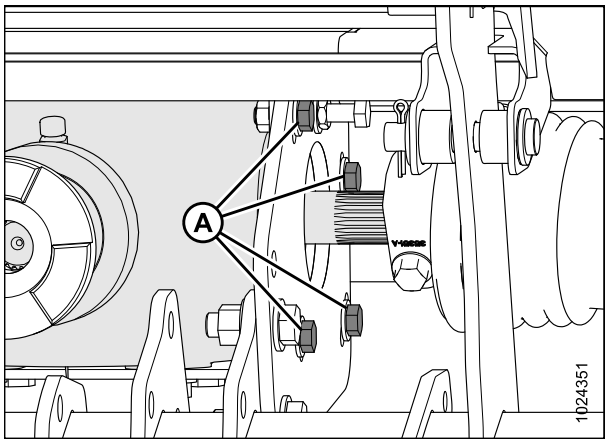


Figure 4.13: Adjusting Gearbox

13. Adjust the angle of gearbox (A).

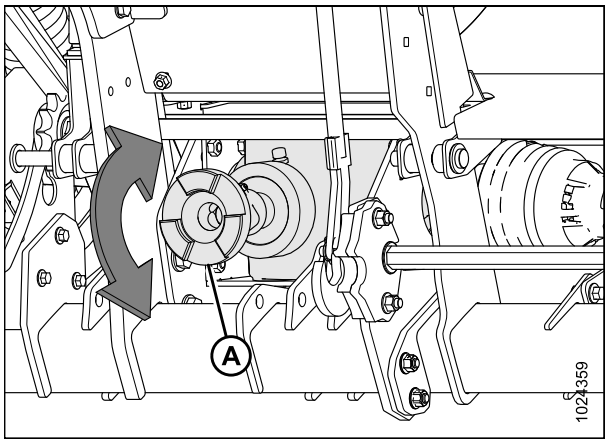


Figure 4.14: Adjusting Gearbox

14. Discs (A) and (B) should be flat against each other.

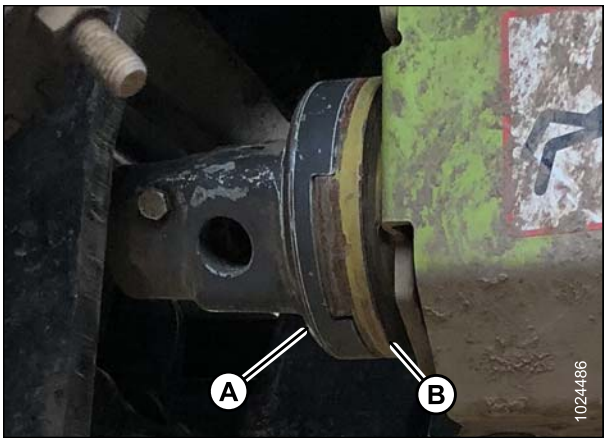


Figure 4.15: Alignment

NOTE:

Some parts removed from illustration for clarity.

15. Tighten four bolts (A) on the side of the gearbox mount. Torque to 90–120 Nm (66–89 lbf ft). Repeat on opposite side of gearbox mount.

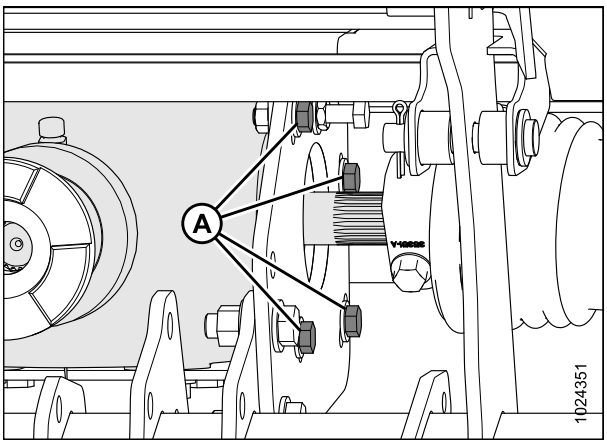


Figure 4.16: Adjusting Gearbox

16. Tighten jam nuts (B) on the lateral adjustment bolts (A).

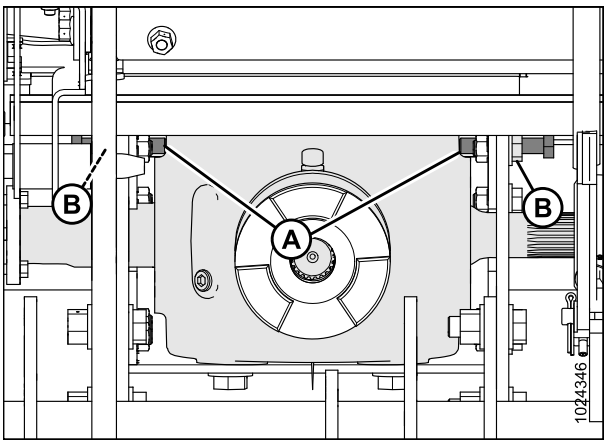


Figure 4.17: Lateral Adjustment Bolts

4.1.4 Connecting Hydraulics for CLAAS

1. Connect hydraulic lines (A) and (B).
    - If your forage harvester has flat couplers, connect them to the hydraulic connections on the forage harvester.
    - If your forage harvester has screw style couplers, remove the flat face couplers and hydraulic lines from the mount module and replace them with screw style couplers and hydraulic hoses found in one of the shipping bags. Match the red and blue colors on the hydraulic lines with the colored discs on the forage harvester's hydraulic connections.

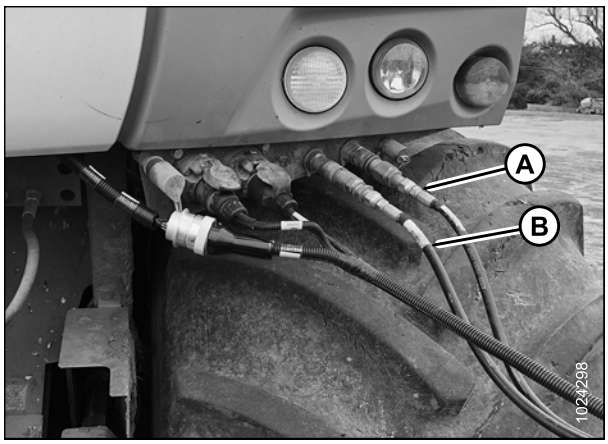


Figure 4.18: Hydraulic Connections

4.1.5 Connecting Electrical Harnesses for CLAAS

1. Connect both electrical harness's (A) and (B) to the forage harvester.

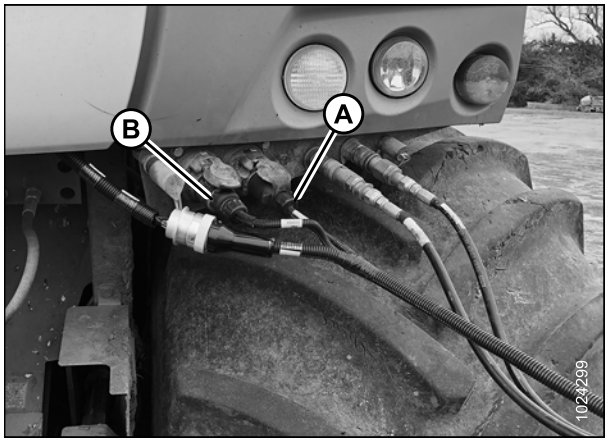


Figure 4.19: Electrical Connections

4.1.6 Installing In-Cab Controls

1. Retrieve the in-cab control and harness from the shipping location.
2. Attach in-cab controller (A) to the right cab window with the suction cup mount. .
3. Uncoil harness (B) and route it toward the bottom of the right cab door

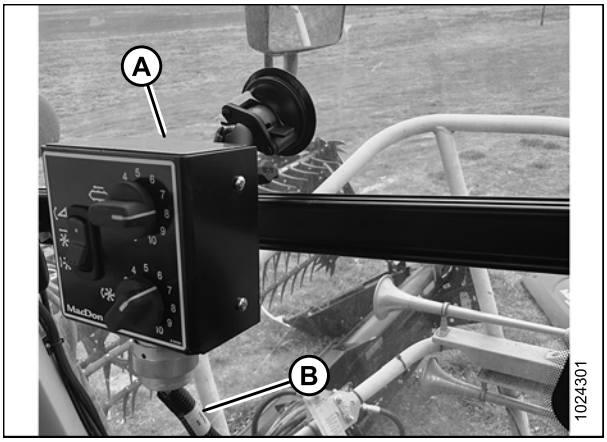


Figure 4.20: In-Cab Control Location

4. Locate branch (A) on the harness, it should be connected to harness (B), which has a power plug on the end of it.
5. Connect harness (B) to the power outlet (C).

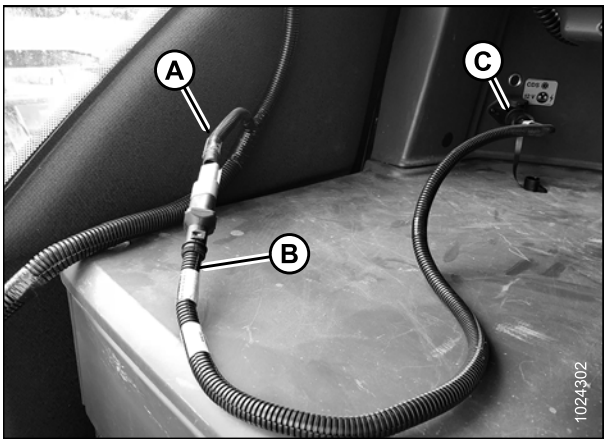


Figure 4.21: Harness Routing

6. Open the right cab door, and continue routing harness (A) out the bottom of the door close to cab pillar (B).
7. Route harness (B) close to the door frame corner at (A), then down between the cover moldings.

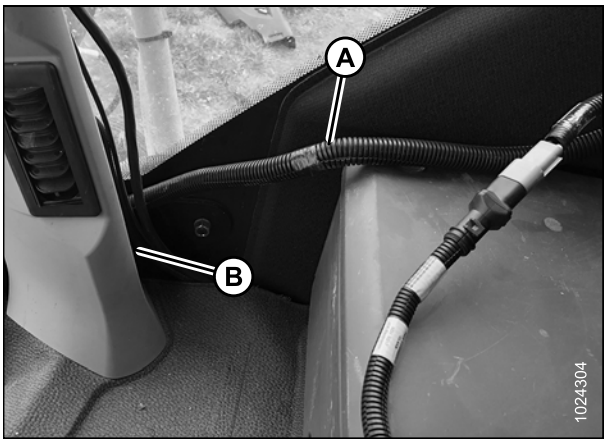


Figure 4.22: Harness Routing

8. Continue routing harness (A) from right to left. Secure using cable ties (B).

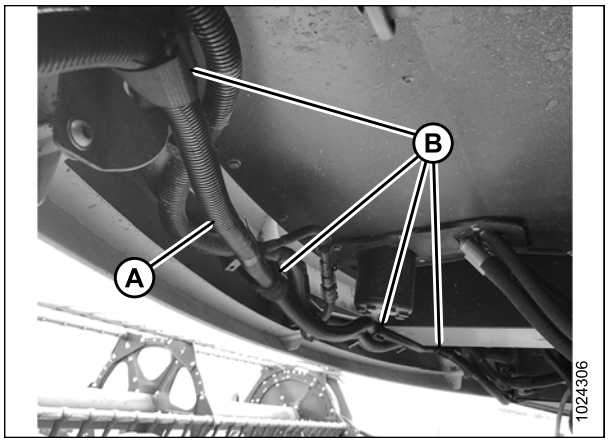


Figure 4.23: Harness Routing

9. Connect harness (A) to existing harness (B).

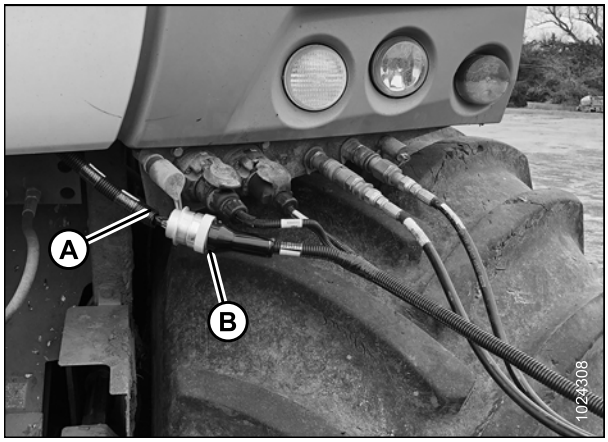


Figure 4.24: Harness Connection

4.2 Performing Predelivery Checks

DANGER

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

Perform the final checks and adjustments as listed on the **Predelivery Checklist** (yellow sheet attached to this instruction—refer to *Predelivery Checklist, page 187*) along with the header final checks and adjustments to ensure the machine is field-ready.

The completed checklist should be retained either by the Operator or the Dealer.

4.3 Storing Manuals

Place this manual in the storage case (A) in the forage harvester. The Predelivery Checklist (yellow sheet attached to this instruction—refer to *Predelivery Checklist, page 187*) should be retained by either the Dealer or the Operator.

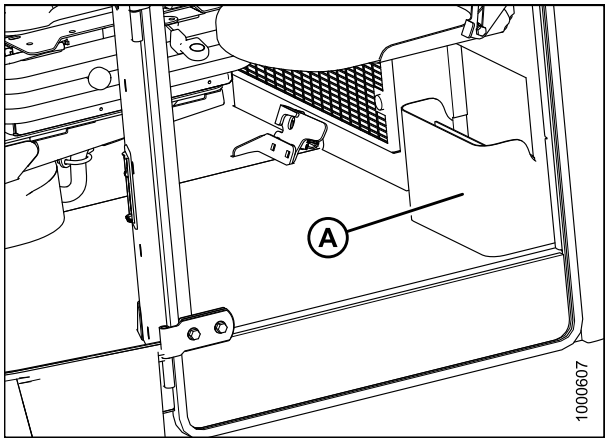


Figure 4.25: Manual Storage Case

5 Assembling Header and Harvester Mount Module

Perform all the procedures in this chapter in the order in which they are listed.

5.1 Setting up Harvester Mount Module

5.1.1 Installing Filler Cap

1. Remove filler cap from bag (A).

CAUTION

Fluid may be under pressure. Allow pressure to equalize by loosening screws and lifting the shipping cover slightly.

2. Remove yellow shipping cover (A) from the mount module frame. Discard cover. Keep screws if screws are not supplied with filler cap.

Figure 5.1: Yellow Shipping Cover

3. Remove top gasket (A) for use in the next step.

   NOTE:

   There are two gaskets—one on each side of the filler strainer flange.

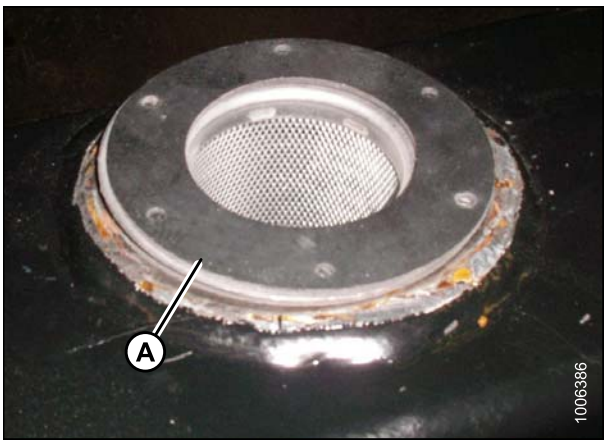


Figure 5.2: Top Gasket

4. Place gasket (A) (removed from the top of the filler strainer) onto the filler cap neck (B) and align holes.
5. Install #10-32 screws (if supplied with cap, otherwise use existing screws) into filler cap neck (B) and push screws through gasket (A).
6. Apply hydraulic pipe thread sealant (controlled strength pipe thread sealant Loctite® 565 or equivalent) to screws.

Figure 5.3: Filler Cap Neck

7. Place filler cap neck (A) (complete with screws) over opening and ensure the machine screws are aligned with the threaded holes.
8. Carefully thread in the machine screws using a cross pattern (as shown) in order to prevent cross threading of tapped holes.
9. Repeat pattern to gradually tighten screws to 3.5 Nm (31 lbf·in).

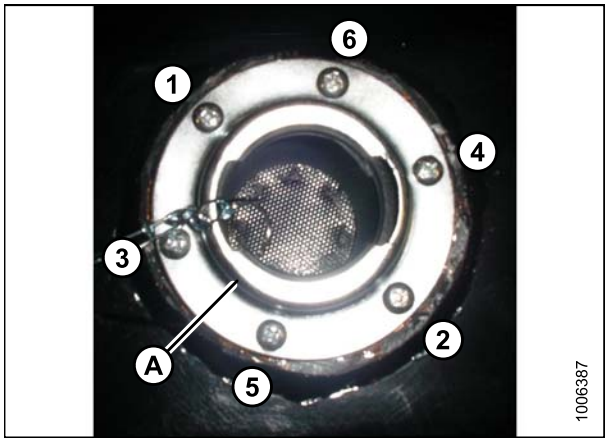


Figure 5.4: Screw Hole Locations

10. Install filler cap (A).

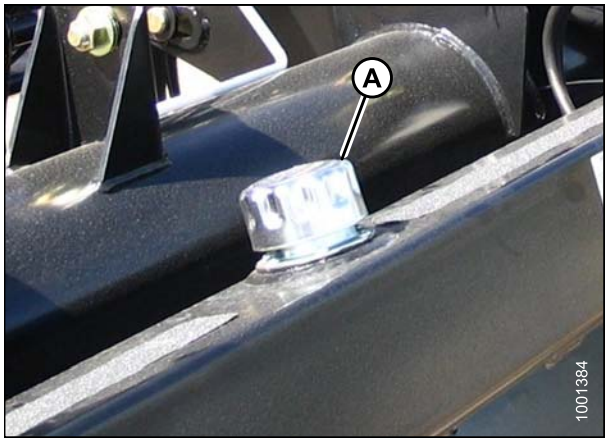


Figure 5.5: Filler Cap

5.2 Installing Grated Transition Pan

1. Unpack feed deck / transition pan bundle.
2. Position transition pan (C) into center area of header.
3. Slide tube ends (A) of transition pan into pockets on header legs (B).

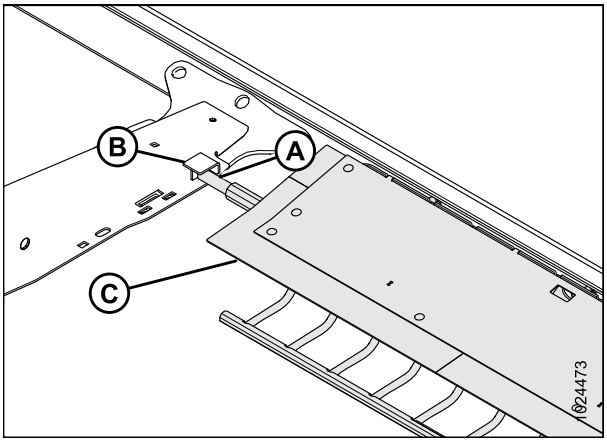


Figure 5.6: Transition Pan (View from Top)

4. Slide the front lip of transition pan (A) into cutterbar (B).
5. Hook J-bolts (C) on deck support angle (D) in cutterbar and tighten hardware to secure transition pan in place.

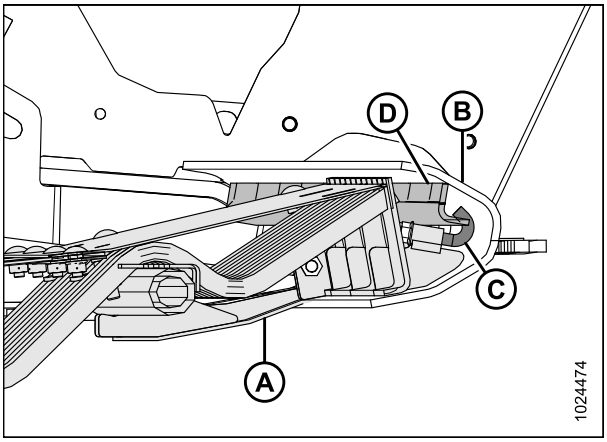


Figure 5.7: Transition Pan (View from Right Side)

5.3 Installing Harvester Mount Module into Header

DANGER

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

1. Prop up the hydraulic center-link (A) with a pin (or equivalent tool) at location (B) as shown.

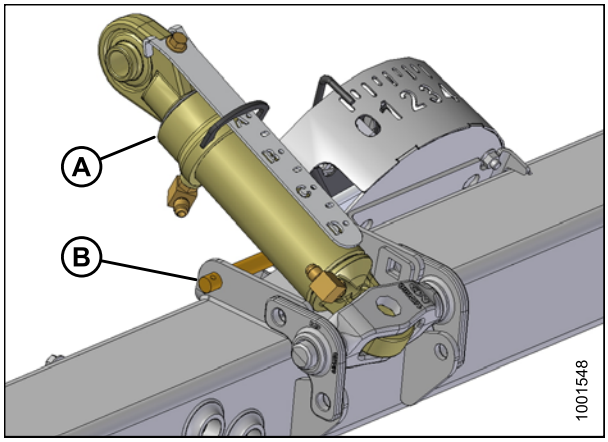


Figure 5.8: Center-Link

2. Remove ring (A) from pin (B), and remove the pins from the header legs at the delivery opening.

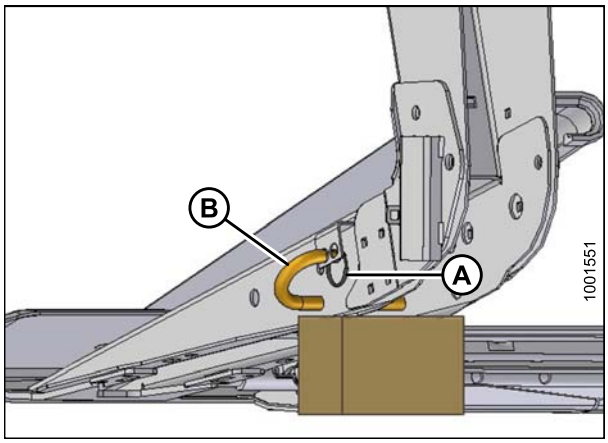


Figure 5.9: D1 Series Header – Block under Leg

3. Ensure latches (A) at the front corners of the Harvester Mount Module are rotated towards the rear of the mount module.

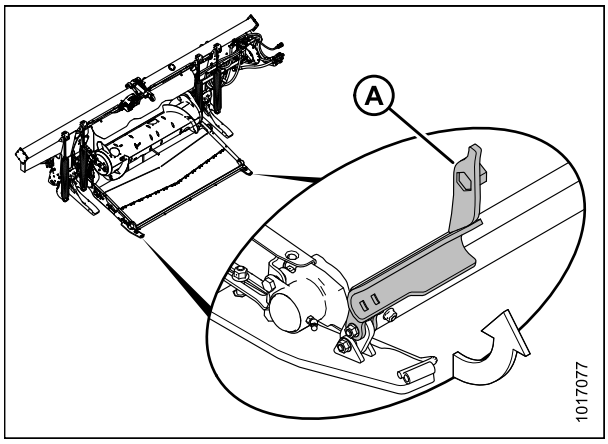


Figure 5.10: Latch

CAUTION

Be sure all bystanders are clear of machine before starting engine or engaging any header drives.

4. Start the engine, and lower the forage harvester feedroll cabinet so that mount arms (A) are aligned with header legs (B).
5. Drive slowly forward while maintaining alignment between mount arms (A) and header legs (B).
6. Keep mount arms (A) just under header legs (B) to ensure the mount arms seat properly in the header linkage supports at location (C).

   IMPORTANT:

   Keep the hydraulic hoses clear to prevent damaging them while driving into the header.
7. Drive slowly forward until mount arms (A) contact the stops in legs (C).
8. Adjust the length of center-link (A) using the header angle hydraulics to approximately align center-link eye (B) with the hole in the header bracket.
9. Shut down the engine and remove the key from the ignition.

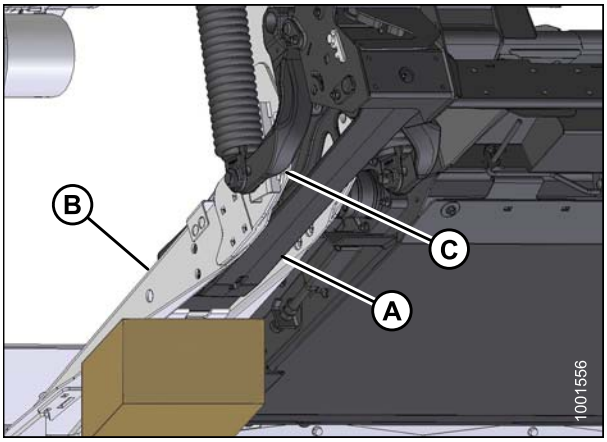


Figure 5.11: Harvester Mount Module Underside

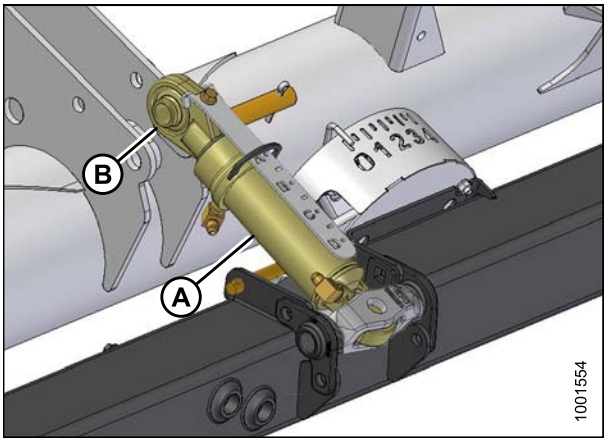


Figure 5.12: Center-Link

10. Connect the center-link as follows:
    a. Pull pin (B) part way out of bracket (C), and remove the prop from under center-link (A).
    b. Install pin (B) through center-link bracket (C), and secure with alynch pin.

CAUTION

Always connect center-link before fully raising header.

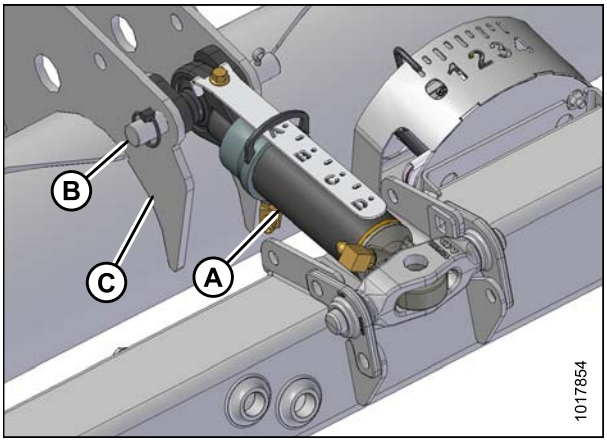


Figure 5.13: Center-Link

CAUTION

Be sure all bystanders are clear of machine before starting engine or engaging any header drives.

11. Start the engine and slowly raise the Harvester Mount Module while making sure the mount arms engage the header legs.
12. Raise the header to its full height, stop the engine, and remove the key from the ignition.
13. Place appropriate blocking under the Harvester Mount Module to support it.
14. Replace pin (B) in the header legs and secure with ring (A).

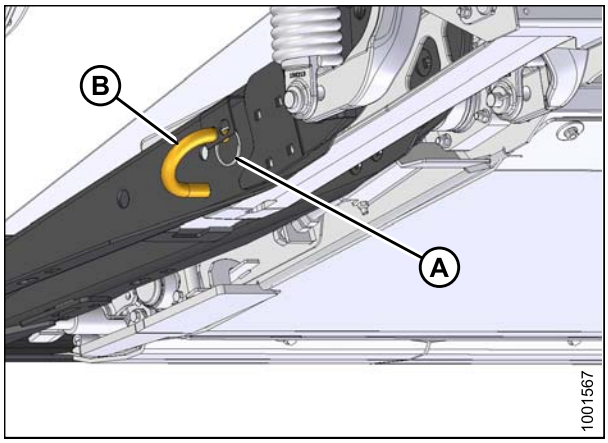


Figure 5.14: Header Leg

15. Open the cover on header receptacle (A).
16. Push in lock button (B) and pull handle (C) to half-open position.

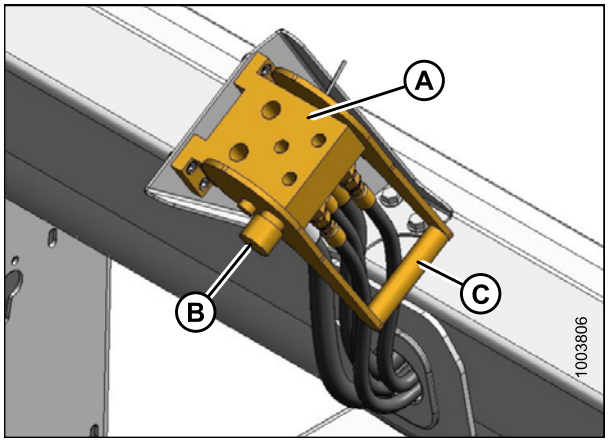


Figure 5.15: Reel Hydraulics Receptacle

17. Remove the hose bundle with multicoupler (C) from the Harvester Mount Module, place the multicoupler onto header receptacle and push handle (B) to engage connector pins.
18. Push the handle away from hoses until lock button (A) snaps out.

    NOTE:

    Raise and lower the header and reel a few times to allow trapped air to pass back to the reservoir.

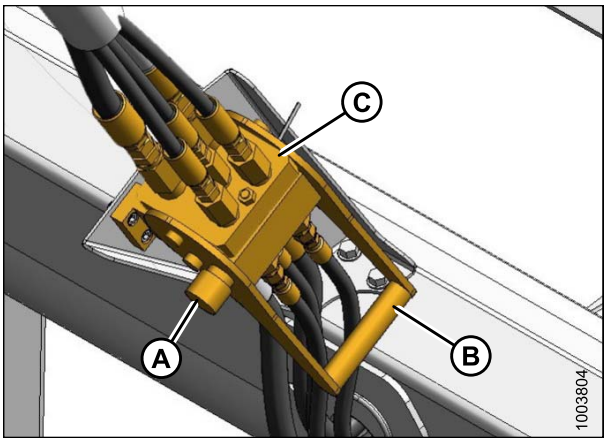


Figure 5.16: Reel Hose Connection

CAUTION

Be sure all bystanders are clear of machine before starting engine or engaging any header drives.

19. Remove the blocking from beneath the Harvester Mount Module.
20. Start the engine, and lower the header to the ground. Adjust the header angle to the steepest setting (longest center-link).
21. Raise the reel to its full height.
22. Shut down the engine and remove the key from the ignition.
23. Engage the reel safety props. Refer to the header operators manual.

WARNING

Keep hands clear of the area between guards and knife at all times.

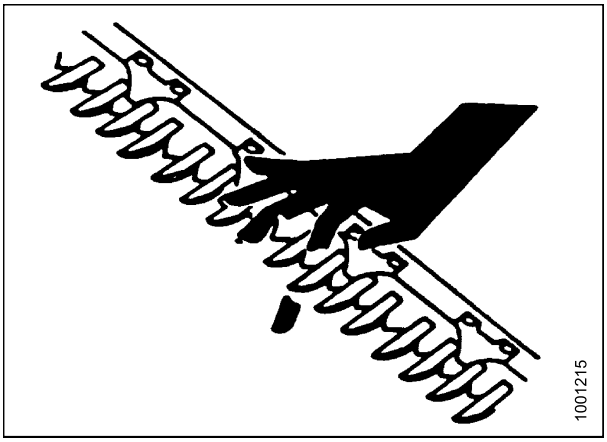


Figure 5.17: Cutterbar Hazard

24. Remove nut and bolt (A) from both sides of the opening to allow the attachment of the float module deck.
25. Rotate latch (B) forward and down to engage the transition pan tube.

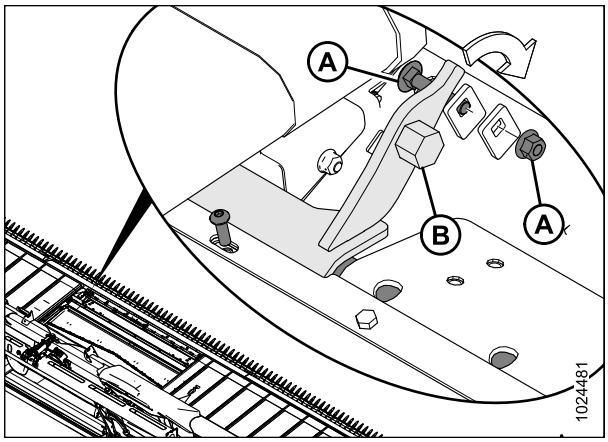


Figure 5.18: Harvester Mount Module Latch

26. Use a 24 mm (15/16 in.) wrench on hex bolt (B) to rotate latch downwards and slightly raise the feed deck. Install nut and bolt (A) to lock the latch position.
27. Repeat on the opposite side of the feed draper deck.

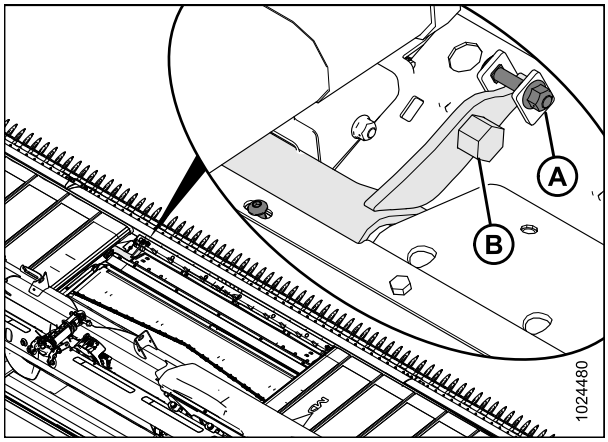


Figure 5.19: Harvester Module Latch

28. Match the colored cable ties, and connect the knife and draper drive hydraulics (A).
    - Knife Pressure – (Orange cable tie)
    - Case Drain – (Green cable tie)
    - Side Draper Pressure – (Red cable tie)
    - Knife Return – (Blue cable tie)
    - Side Draper Return– (Yellow cable tie)
29. Attach electrical connector (B) as follows:
    a. Remove the cover on the receptacle. Ensure it is clean and damage free.
    b. Align the lugs on the connector with the slots in the receptacle, push the connector onto the receptacle, and turn the collar on the connector to lock it in place.
    c. Attach the cover to the mating cover on the forage harvester wiring harness.

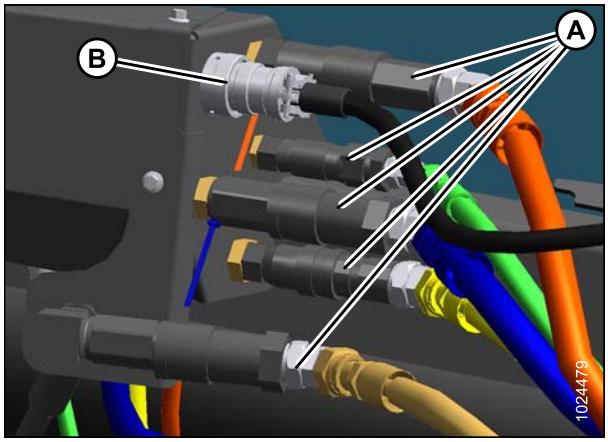


Figure 5.20: Header Connections

30. Connect the quick disconnects (if installed) as follows:

    a. Remove the covers (if installed) from the receptacles and hose ends.

    b. Check the connectors and clean if necessary.

    c. Push hose connector (A) onto mating receptacle (B) until the collar on the mating receptacle snaps into the lock position.

    NOTE:

    Ensure the hoses are clear of the driveline and adjacent structure.

    NOTE:

    It is not necessary to bleed the system by loosening fittings.

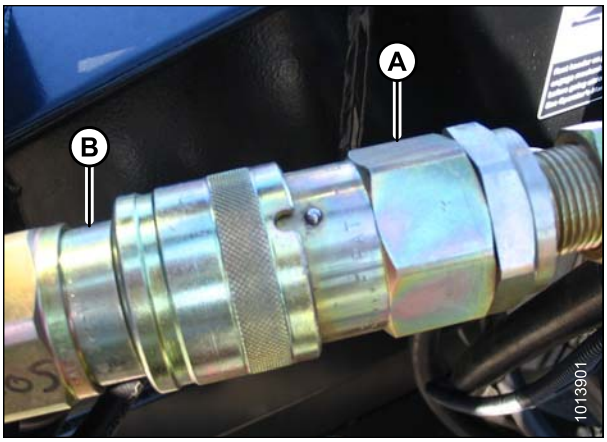


Figure 5.21: Quick Disconnect Coupling

31. Check the float and confirm the header is level. Refer to *7.4 Checking and Adjusting Header Float, page 61*

CAUTION

Be sure all bystanders are clear of machine before starting engine or engaging any header drives.

32. Start the forage harvester and perform the following inspections:
    - Raise and lower the reel to ensure the hoses are properly connected.
    - Run the header to ensure the hoses are properly connected.

33. Check for leaks.

5.4 Configuring the CEBIS Monitor

1. Using the hotkey dial on the console, select the image that looks like a header (cutting height position adjust).
2. Select type of front attachment as PICKUP (A). This will ensure proper function of Automatic Header Height Control (AHHC).

   NOTE:

   If grain cutterbar is chosen, the AHHC will deactivate when the trigger button is used to adjust the reel.

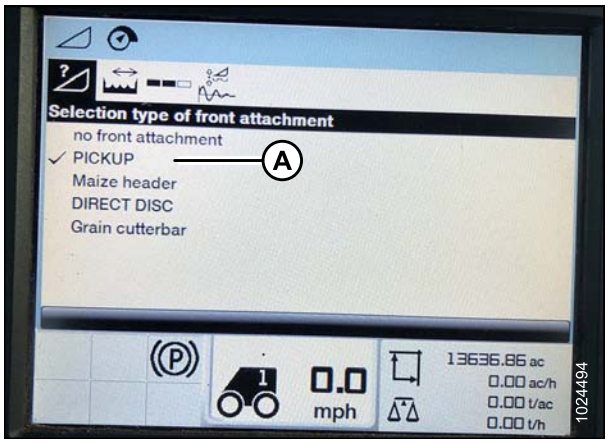


Figure 5.22: CEBIS Monitor

3. Set the width of the header. Adjust the measurement (A) on the monitor to the size of the header.

   NOTE:

   Set the measurement (A) slightly narrower than the total header width due to overlap for accurate acre counting.

Figure 5.23: CEBIS Monitor

4. This screen should be displayed once the header setup is complete.

   NOTE:

   Working width will change with header size.

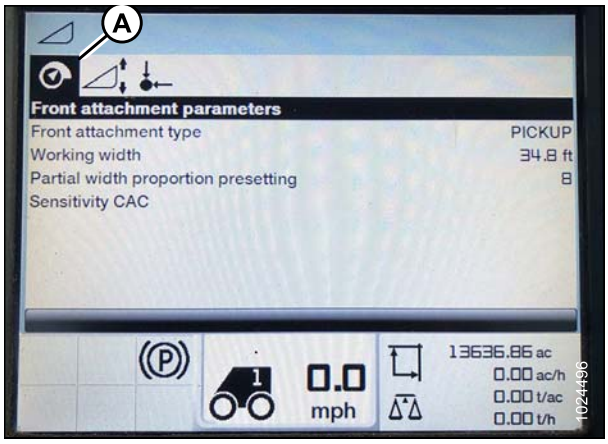


Figure 5.24: CEBIS Monitor

Learning end stops

Learning the endstops calibrates the proper range for the lift cylinders and the AHHC. It also ensures optimal performance.

5. Ensure that the following steps are completed:
    a. Area is free of bystanders
    b. Header is attached and locked to the forage harvester.
    c. Ensure header locks are properly adjusted to retain the header onto the feedroll cabinet
    d. Header electrical and hydraulic connections to the forage harvester are made
    e. Float is unlocked
    f. Reel is fully aft and fully lowered
    g. Forage harvester is prepared to engage the main drive.
6. Navigate to the FRONT ATTACHMENT HEIGHT menu (A) and select LEARNING END STOPS (B). The end stops should be learned each time a different header is installed on the forage harvester. It is not necessary when reattaching the same header after switching fields.

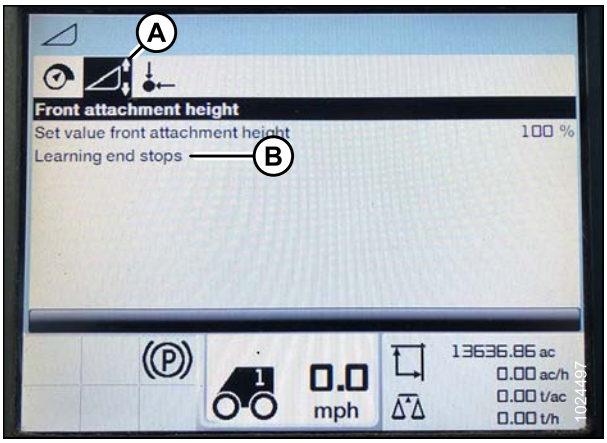


Figure 5.25: CEBIS Monitor

7. Press OK and follow the prompts on the screen.
    1. Start the main drive
    2. Raise front attachment
    3. Lower front attachment
    4. Raise front attachment
    5. Lower front attachment

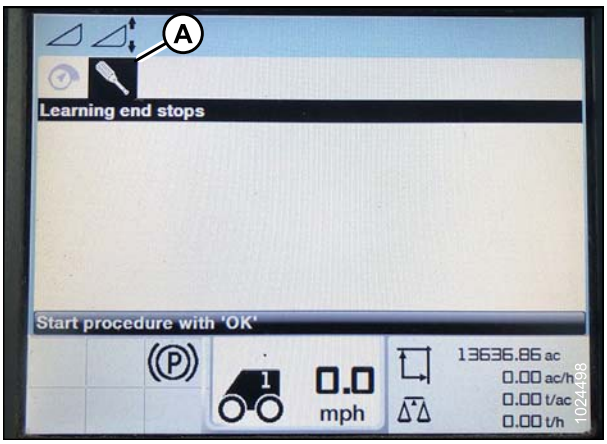


Figure 5.26: CEBIS Monitor

8. The learning procedure (A) should be successfully completed.

   NOTE:

   If the procedure was not successfully completed, these items can be checked before reattempting the procedure:

   - Ensure the header electrical connections are securely connected
   - Check accessory outlet, in-cab control box, bulkhead near chopper, and bulkhead on header are securely connected
   - Ensure the AHHC sensor connection is secure
   - Verify the output range of the AHHC sensor is 0.5-4.5V. Refer to *6.9 Auto Header Height Control (AHHC), page 53*.
   - Shut the engine off and restart the machine
   - Consult your forage harvester operators manual

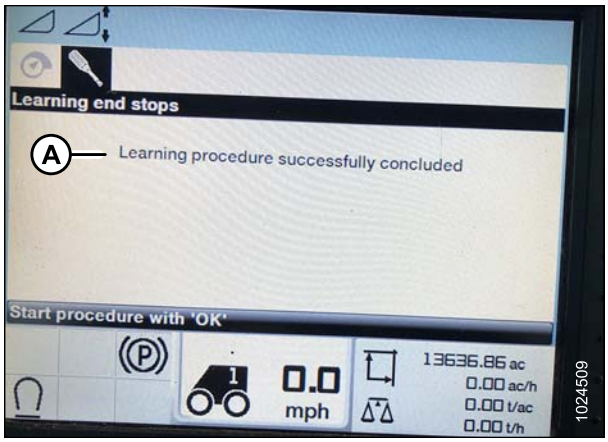
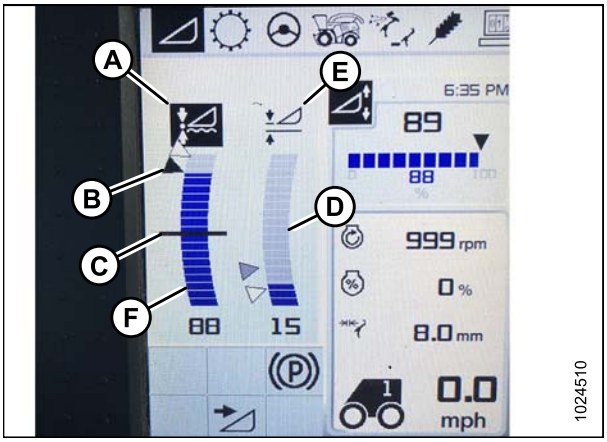


Figure 5.27: CEBIS Monitor

Presets

After the machine has the correct header selected and the end stops are learned, the presets can be configured. The draper header should use the sensor-based AHHC and NOT the pressure-based AHHC. As a result, the preset positions will be different than your Pickup Header. The AHHC allows the header to maintain a low ground pressure as well as automatically follow ground contours as it is traveling through the field.

Figure 5.28: CEBIS Monitor



The image shows the header presets set to an operating setting.

- If HEADER FLOAT ICON (A) is solid black, this indicates that the Automatic Header Height Control (AHHC) is active. The ICON (E) directly to the right, would indicate that the header was using a fixed height (Not active) preset.

  NOTE:

  If the background of the ICON is white, it means that the float feature is not active.

- The bar graph (F) is a combined pressure and sensor based float indicator. Pressure float is indicated below 50 on the graph and the sensor output is located above 50. Bar graph (D) shows the extension of the lift cylinders.
- Holding the left side of the Up/down button on the GSL will set the active height control preset, while holding the right side of the up/down button will set a fixed height preset. Tapping either side a second time will switch which preset is active (there are two per side)
- When TRIANGLE ICON (B) is solid black, it indicates that it is the preset being used. It is set to 88.

  NOTE:

  Note that sensor based AHHC is active above 50 on the display, or above the horizontal black line (C). With the header fully lifted, both bar graphs (F) and (D) should be fully filled.

- If bar graph (C) only goes to 50, it indicates that the sensor on the header should not be detected. This can happen if the header is hooked up with the engine running. Try cycling the key off then back on again to bring the sensor online.
- It is recommended to set both active presets close to the operating position to prevent slamming the header down on the ground if the wrong preset is selected.
- To lift the header at the end of the field, a higher fixed height preset could be selected. (The Active height control will only control the header if it is very near the ground) Alternatively, hold the header raise button.

6 Operation

6.1 Owner/Operator Responsibilities

CAUTION

- **It is your responsibility to read and understand this manual completely before operating the header. Contact your MacDon Dealer if an instruction is not clear to you.**
- **Follow all safety messages in the manual and on safety decals on the machine.**
- **Remember that YOU are the key to safety. Good safety practices protect you and the people around you.**
- **Before allowing anyone to operate the header, for however short a time or distance, make sure they have been instructed in its safe and proper use.**
- **Review the manual and all safety related items with all Operators annually.**
- **Be alert for other Operators not using recommended procedures or not following safety precautions. Correct these mistakes immediately, before an accident occurs.**
- **Do NOT modify the machine. Unauthorized modifications may impair the function and/or safety of the machine and also may reduce the length of service you receive from your machine.**
- **The safety information given in this manual does not replace safety codes, insurance needs, or laws governing your area. Be sure your machine meets the standards set by these regulations.**

6.2 Operational Safety

CAUTION

Adhere to the following safety precautions:

- **Follow all safety and operational instructions provided in your operator's manuals. If you do not have a manual, get one from your Dealer and read it thoroughly.**
- **Never attempt to start the engine or operate the machine except from the operators seat.**
- **Check the operation of all controls in a safe, clear area before starting work.**
- **Do NOT allow riders on the forage harvester.**

CAUTION

- **Never start or move the machine until you are sure all bystanders have cleared the area.**
- **Avoid travelling over loose fill, rocks, ditches, or holes.**
- **Drive slowly through gates and doorways.**
- **When working on inclines, travel uphill or downhill whenever possible. Be sure to keep transmission in gear when travelling downhill.**
- **Never attempt to get on or off a moving machine.**
- **Do NOT leave operator's station while the engine is running.**

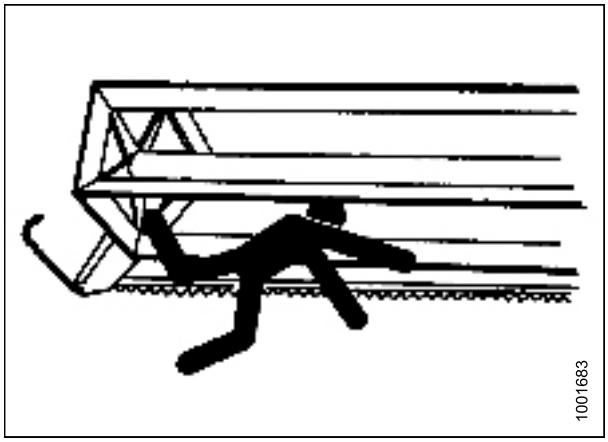


Figure 6.1: Bystander Safety

- **To avoid bodily injury or death from unexpected startup of a machine, always stop the engine and remove the key before adjusting or removing plugged material from the machine.**
- **Check for excessive vibration and unusual noises. If there is any indication of trouble, shut down and inspect the machine. Follow proper shutdown procedure. Refer to *6.7 Shutting down the Machine, page 51*.**
- **Operate only in daylight or good artificial light.**

6.3 Break-in Period

When operating the harvest module mount for the first time, operate it slowly for five minutes, watching and listening FROM THE OPERATOR'S SEAT for binding or interfering parts.

CAUTION

Before investigating an unusual sound or attempting to correct a problem, shut off engine, engage parking brake, and remove key.

NOTE:

Until you become familiar with the sound and feel of your new Harvester Mount Module, be extra alert and attentive.

After First Five Hours of Operation:

- Tighten any loose hardware.
- Check header drive alignment. Refer to *4.1.2 Checking Header Drive Alignment, page 22*.

6.4 Preseason Check

CAUTION

- **Review the operator's manual to refresh your memory on safety and operating recommendations.**
- **Review all safety signs and other decals on the header and note hazard areas.**
- **Be sure all shields and guards are properly installed and secured. Never alter or remove safety equipment.**
- **Be sure you understand and have practiced safe use of all controls. Know the capacity and operating characteristics of the machine.**
- **Check the first aid kit and fire extinguisher. Know where they are and how to use them.**

Perform the following tasks at the beginning of each operating season:

- Adjust primary feed auger drive chain. Refer to *7.7.3 Adjusting Primary Feed Auger Drive Chain Tension, page 75*.
- Perform all annual maintenance. Refer to *7.3 Maintenance Schedule, page 59*.

6.5 Daily Startup Check

CAUTION

- **Clear the area of other persons, pets, etc. Keep children away from machinery. Walk around the machine to be sure no one is under, on, or close to it.**
- **Wear close-fitting clothing and protective shoes with slip-resistant soles.**
- **Remove foreign objects from the machine and surrounding area.**
- **As well, carry with you any protective clothing and personal safety devices that COULD be necessary through the day. Don't take chances. You may need a hard hat, protective glasses or goggles, heavy gloves, a respirator or filter mask, or wet weather gear.**

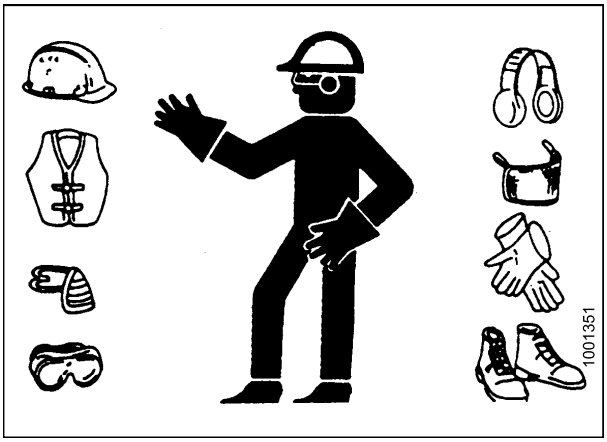


Figure 6.2: Protective Clothing and Personal Safety Devices

- **Protect against noise. Wear a suitable hearing protection device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.**

Complete the following tasks each day before start-up:

1. Check the machine for leaks or any parts that are missing, broken, or not working correctly.

   NOTE:

   Use proper procedure when searching for pressurized fluid leaks.

2. Perform all daily maintenance. Refer to *7.3 Maintenance Schedule, page 59*.

6.6 Operating the In-cab Control Box

The header tilt, reel fore/aft, and reel raise and lower are controlled by using the selector on the in-cab control box and the trigger button on the GSL. Use the selector to choose the function and activate it by toggling the trigger up or down to activate the selected circuit.

The in-cab control box has one three way switch on it. Switch (A) allows the operator to select between three different header functions;

- Header tilt (B)
- Reel fore and aft (C)
- Reel raise and lower (D)

To switch between header functions, select the function that you are wanting to operate on three way switch (A). Using the trigger switch on the backside of the multi-function lever in the cab to operate the function.

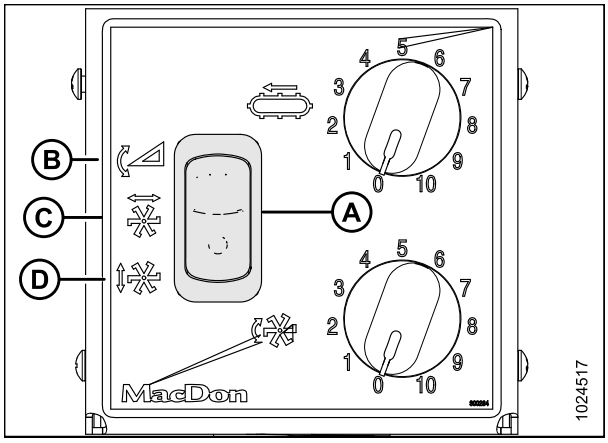


Figure 6.3: In-Cab Control Box

The in-cab control box also has two dials (A) and (B) on it. The dials allow you to increase or decrease the speed on the selected function.

- Side draper speed (A)
- Reel speed (B)

To increase or decrease draper or reel speed, turn the appropriate dial accordingly from 0 to 10, with 10 being fastest.

NOTE:

It can be useful to set the draper and reel speed to zero when resuming operation after reversing the header to clear foreign objects or plugs. This prevents a large slug of crop from entering the forage harvester at once.

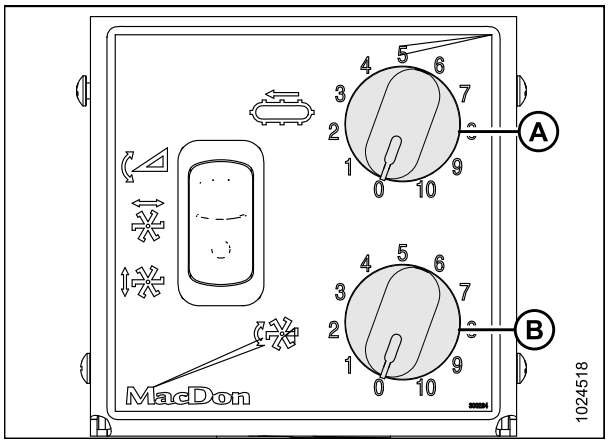


Figure 6.4: In-Cab Control Box

6.7 Shutting down the Machine

DANGER

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

To shut down, and before leaving the forage harvester seat for any reason, follow these steps:

1. Park on level ground whenever possible.
2. Lower the header fully.
3. Place all controls in NEUTRAL or PARK.
4. Disengage the header drive.
5. Lower and fully retract the reel.
6. Stop the engine and remove the key from the ignition.
7. Wait for all movement to stop.

6.8 Storing the Harvester Mount Module

At the end of each operating season, perform the following maintenance items:

⚠ CAUTION

Never use gasoline, naphtha, or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.

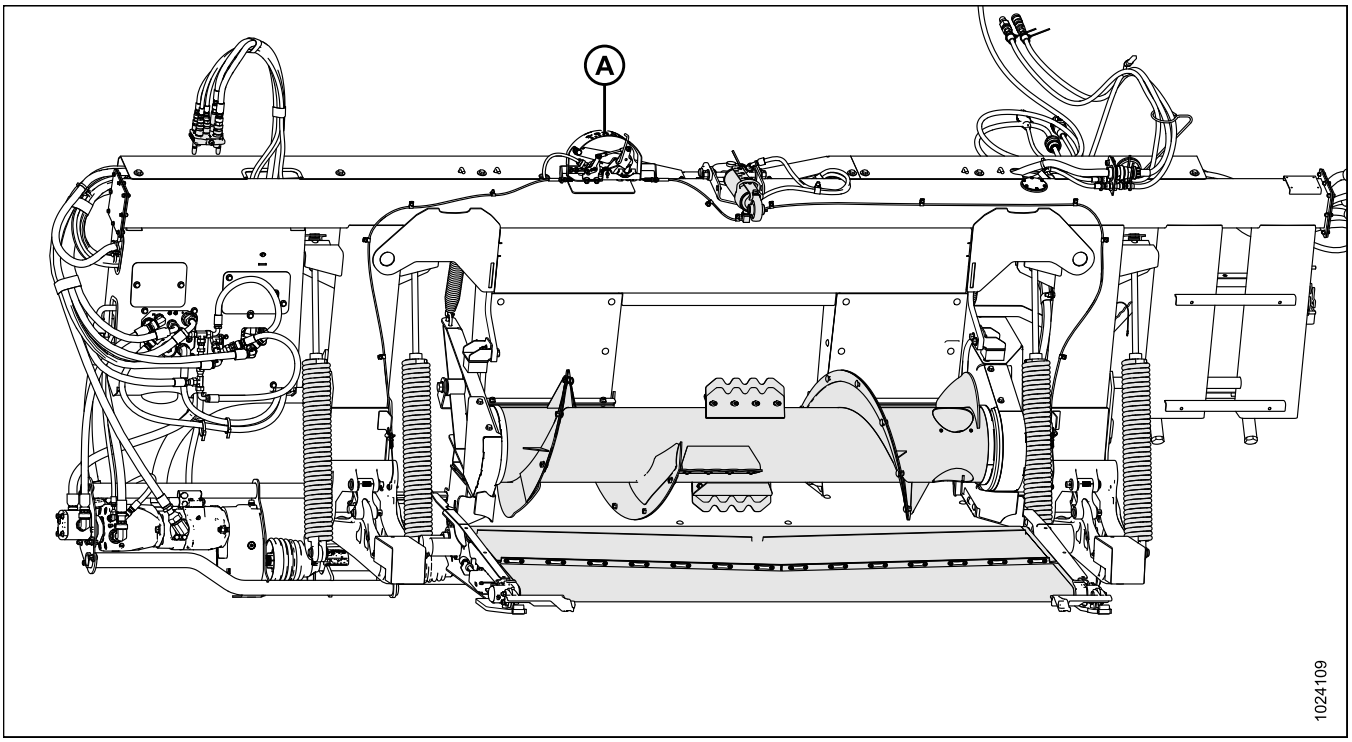
- Clean the mount module thoroughly.
- Store in a dry, protected place if possible.
- Repaint all worn or chipped painted surfaces to prevent rust.
- Loosen feed belt.
- Apply grease to exposed threads and sliding surfaces of components.
- Check for worn components and repair.
- Check for broken components and order replacement from your Dealer. Attention to these items right away will save time and effort at beginning of next season.
- Replace or tighten any missing or loose hardware.

6.9 Auto Header Height Control (AHHC)

MacDon's auto header height control (AHHC) feature works in conjunction with the AHHC option available on certain forage harvester models.

A sensor is installed in the float indicator box (A) on the FM100 Float Module. This sensor sends a signal to the forage harvester allowing it to maintain a consistent cutting height and an optimum float as the header follows ground contours. A two-sensor system is also available as an optional kit.

Figure 6.5: HM100 Float Module



The HM100 float module is factory-equipped for AHHC; however, before using the AHHC feature, you must do the following:

1. Ensure that the AHHC sensor's output voltage range is appropriate for the forage harvester.

   For more information, refer to *6.9.2 Sensor Output Voltage Range – Forage Harvester Requirements, page 54*.

2. Prepare the forage harvester to use the AHHC feature (applies only to some forage harvester models—refer to the instructions for your forage harvester).

3. Calibrate the AHHC system so that the forage harvester can correctly interpret data from the height sensor on the forage harvester float module (refer to the instructions for your forage harvester).

   NOTE:

   Once calibration is complete, you are ready to use the AHHC feature in the field. Individual forage harvester settings can improve AHHC performance (refer to your forage harvester instruction manual).

Refer to the following instructions for your specific forage harvester model:

- *6.9.3 Harvester Mount Module – CLAAS, page 54*

6.9.1 Sensor Operation

The position sensors supplied with the auto header height control (AHHC) system are hall-effect sensors containing sealed connectors. Normal operating signal voltages for the sensors fall between 10% (0.5 VDC) and 90% (4.5 VDC). An increase in sensor voltage correlates to an increase in header height.

Any sensor error results in a 0 V signal, indicating either a faulty sensor or lack of proper supply voltage.

6.9.2 Sensor Output Voltage Range – Forage Harvester Requirements

The auto header height control (AHHC) sensor output must be within a specific voltage range for each forage harvester, or the AHHC feature will not work properly.

Table 6.1 Forage Harvester Voltage Limits

Forage Harvester	Low Voltage Limit	High Voltage Limit	Range (Difference between High and Low Limits)
CLAAS	0.5 V	4.5 V	2.5 V

6.9.3 Harvester Mount Module – CLAAS

Adjusting Voltage Limits: One-Sensor System

Follow this procedure if you have checked the voltage range (either manually or from the cab) and found that the sensor voltage is not within the low and high limits or that the range between the low and high limits is insufficient.

DANGER

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

1. Follow these steps to adjust the upper voltage limit:
   a. Extend guard angle fully; the header angle indicator should be at **D**.
   b. Position header 152–254 mm (6–10 in.) above the ground; the float indicator should be at 0.
   c. Check the upper voltage limit using the forage harvester display or voltmeter. Refer to Table .
   d. Loosen sensor mounting nuts (A).
   e. Rotate sensor (B) counterclockwise to increase high voltage limit and clockwise to decrease it.
   f. Tighten sensor mounting nuts (A).

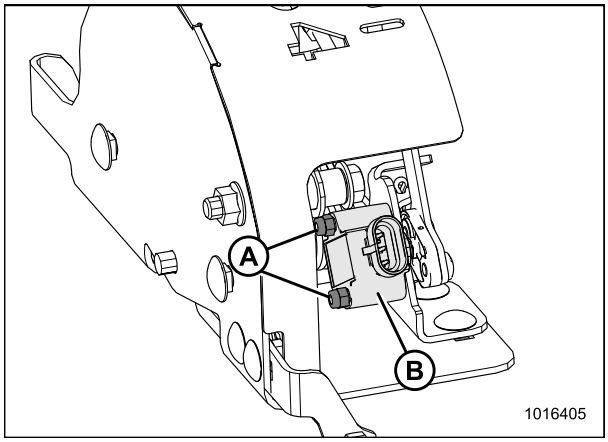


Figure 6.6: AHHC Sensor Assembly

2. Follow these steps to adjust the lower voltage limit:
   a. Extend guard angle fully; the header angle indicator should be at **D**.
   b. Fully lower header on the ground; the float indicator should be at 4.
   c. Check the lower voltage limit using the forage harvester display or voltmeter. Refer to Table .
   d. Loosen sensor mounting nuts (A).
   e. Rotate sensor (B) counterclockwise to increase low voltage limit and clockwise to decrease it.
   f. Tighten sensor mounting nuts (A).

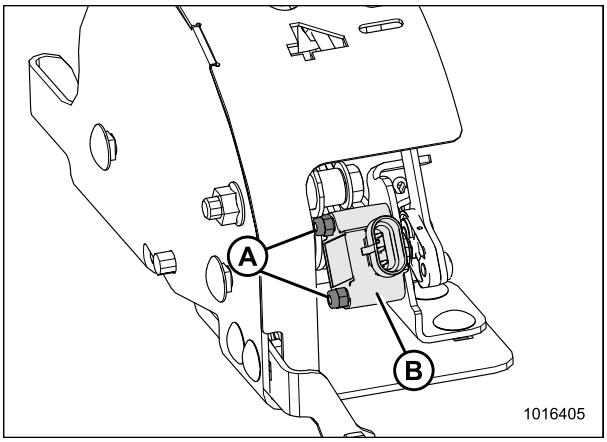


Figure 6.7: AHHC Sensor Assembly

3. After making adjustments, recheck both the upper and lower voltage limits to make sure they are within the required range according to Table .
4. If unable to get the voltage within the required range, loosen mounting bolts (A) and shift sensor assembly (B) inboard as shown.

   NOTE:

   If sensor assembly is shifted right or left, it may be necessary to repeat Steps *1, page 54* and *2, page 55* to achieve the proper voltage limits.

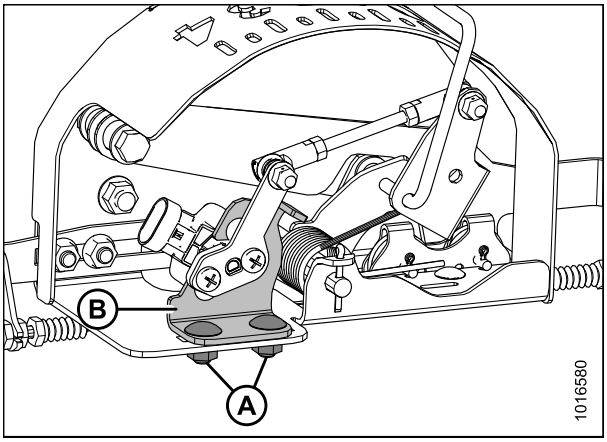


Figure 6.8: AHHC Sensor Assembly

7 Maintenance

7.1 Recommended Safety Procedures

Always follow these recommended safety procedures:

- Park on a level surface when possible. Block wheels securely if forage harvester is parked on an incline.
- Follow all recommendations in your header and forage harvester operator's manuals.
- Follow all safety sections in this manual. Refer to *1 Safety, page 1*.

7.2 Preparation for Servicing

The following instructions are provided to help you maintain your HM100 Harvester Mount Module.

Contact your MacDon Dealer for detailed maintenance and service information.

1. **Fully lower the header. If necessary to service in the raised position, always engage safety props.**
2. **Stop engine and remove key.**
3. **Engage park brake.**
4. **Wait for all moving parts to stop.**

7.3 Maintenance Schedule

The following maintenance schedule is a listing of periodic maintenance procedures, organized by service intervals. Regular maintenance is the best insurance against early wear and untimely breakdowns. Following this schedule will increase machine life. For detailed instructions, refer to the specific headings in this manual. Use the lubricant specified in the inside back cover.

Service Intervals: The recommended service intervals are in hours of operation. Where a service interval is given in more than one time frame, for example, "100 hours or Annually", service the machine at whichever interval is reached first.

IMPORTANT:

Recommended intervals are for average conditions. Service the machine more often if operated under adverse conditions (severe dust, extra heavy loads, etc.).

CAUTION

Carefully follow safety messages given under *7.2 Preparation for Servicing, page 58* and *7.1 Recommended Safety Procedures, page 57*.

Table 7.1 Service Intervals

Interval	Service
First use	Refer to *6.3 Break-in Period, page 47*.
10 hours or daily	• Check hydraulic hoses and lines. • *4.1.2 Checking Header Drive Alignment, page 22*
First 50 hours	• Change gearbox oil. Refer to *7.9.6 Changing Gearbox Oil, page 102*. • Change speed increase oil. Refer to *7.9.8 Changing Speed Increaser Gearbox Oil, page 104*.
100 hours or annually[2]	• Grease feed deck drive and idler roller bearings. • Adjust primary and secondary feed auger chain tension. Refer to *7.7.3 Adjusting Primary Feed Auger Drive Chain Tension, page 75*. • Adjust secondary chain tension. Refer to *7.7.7 Adjusting Secondary Feed Auger Drive Chain Tension, page 82* • Change gearbox oil. Refer to *7.9.6 Changing Gearbox Oil, page 102*. • Change speed increase oil. Refer to *7.9.8 Changing Speed Increaser Gearbox Oil, page 104*.
End of season	Refer to *6.8 Storing the Harvester Mount Module, page 52*.

2. Annual maintenance should be be done prior to the start of the operating season.

Table 7.2 Maintenance Record

	Action:	✓ – Check										♦ – Lubricate										
	Hour Meter Reading																					
	Date																					
	Serviced By																					
	First Use	Refer to *6.3 Break-in Period, page 47* for checklist.																				
	10 Hours or Daily																					
✓	Hydraulic hoses and lines	**NOTE:** A record of daily maintenance is not normally required, but is at the Owner/Operator's discretion.																				
	Check header drive alignment. *4.1.2 Checking Header Drive Alignment, page 22*																					
	50 Hours																					
♦																						
♦	Feed deck roller bearings																					
	100 Hours or Annually																					
✓	Feed auger drive chain tension																					

7.4 Checking and Adjusting Header Float

The header is equipped with a suspension system that floats the header over the ground to compensate for ridges, trenches, and other variations in ground contour. If the header float is not set properly, it may cause the cutterbar to push into the ground or leave uncut crop. This procedure describes how to check header float and adjust to the factory-recommended settings.

DANGER

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

Use the following guidelines when adjusting float:

- Turn each bolt pair equally. Refer to Step *12, page 65*, and repeat torque wrench reading procedure.
- Set header float as light as possible without causing excessive bouncing to prevent knife component breakage, soil scooping, or soil build-up at the cutterbar in wet conditions.
- To avoid excessive bouncing and leaving a ragged cut, use a slower ground speed with a light float setting, if necessary.
- When cutting off the ground, use the stabilizer wheels in conjunction with header float to minimize bouncing at the header ends and to control cut height. Refer to the header operator's manual.

NOTE:

If adequate header float cannot be achieved using all of the available adjustments, an optional heavy duty spring is available. See your MacDon Dealer or refer to the parts catalog for ordering information.

1. Level the header and Harvester Mount Module. If the header and Harvester Mount Module are not level, perform the following checks before adjusting the float:

   IMPORTANT:

   Do **NOT** use the Harvester Mount Module float springs to level the header.

   - Park the forage harvester on a level surface.
   - Check that the forage harvester feeder house is level. Refer to your forage harvesters manual for instructions.
   - Check that the top of the Harvester Mount Module is level with the forage harvester axle.
   - Ensure the forage harvester tires are inflated equally.

2. Position the header so that the cutterbar is 150–254 mm (6–10 in.) off the ground.

3. Extend the header angle hydraulic cylinder to between B and C on indicator (A).

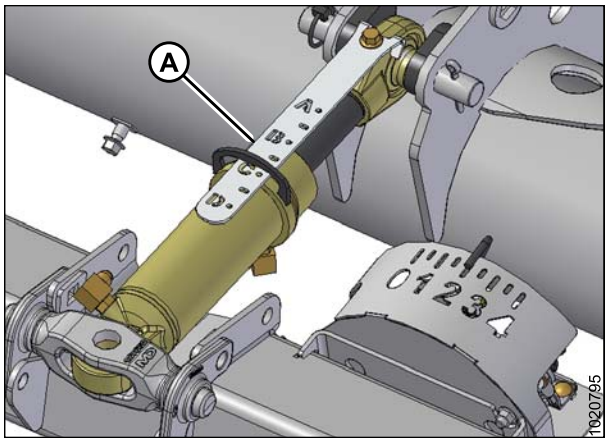


Figure 7.1: Center-Link

4. Adjust the reel fore-aft position to between 5 and 6 on position indicator decal (A) located on the reel right arm.
5. Lower the reel fully.
6. Shut down the engine, and remove the key from the ignition.

WARNING

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

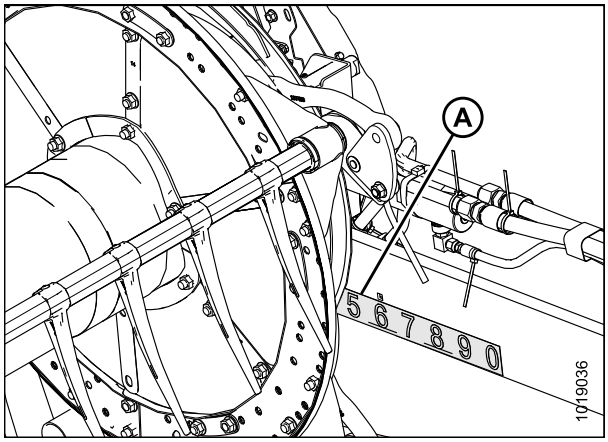


Figure 7.2: Fore-Aft Position

7. Disengage both header float locks by pulling float lock handle (A) away from the Harvester Mount Module and pushing the float lock handle down and into position (B) (UNLOCK).

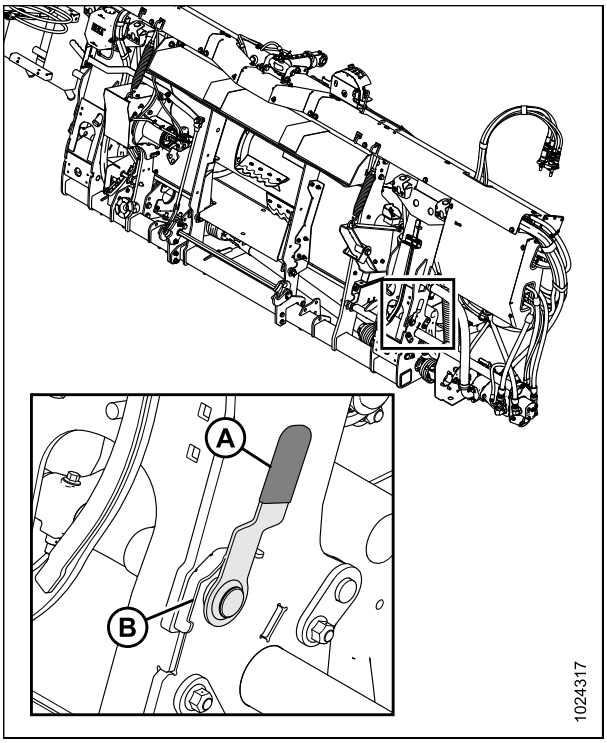


Figure 7.3: Header Float Lock (in Locked Position)

8. Place stabilizer wheels (if equipped) in storage position as follows:

   a. Support the wheel weight by lifting slightly with one hand, and pull up on handle (A) to release the lock.

   b. Lift the wheels to the desired height, and engage the support channel into slot (B) in the upper support.

   c. Push down on handle (A) to lock.

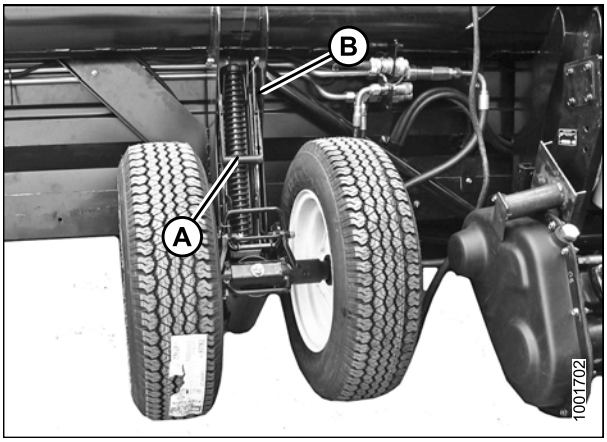


Figure 7.4: Left Wheel

9. Remove supplied torque wrench (A) from its storage position at the right side of the Harvester Mount Module frame. Pull in the direction shown to disengage the wrench from the hook.

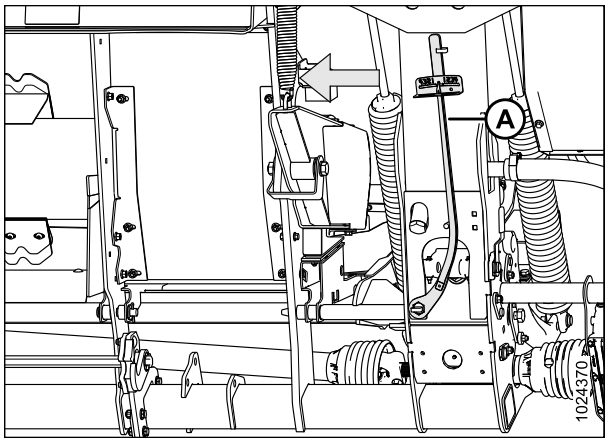


Figure 7.5: Torque Wrench Storage Location

10. Place supplied torque wrench (A) onto float lock (B). Note the position of the wrench for checking left or right side.
11. Push down on wrench to rotate bell crank (C) forward.

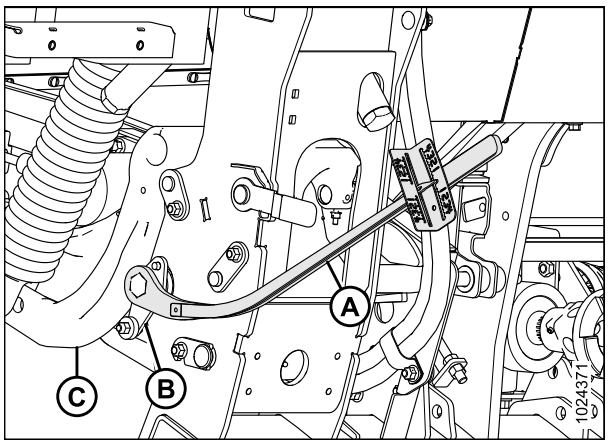


Figure 7.6: Harvester Mount Module – Left Side

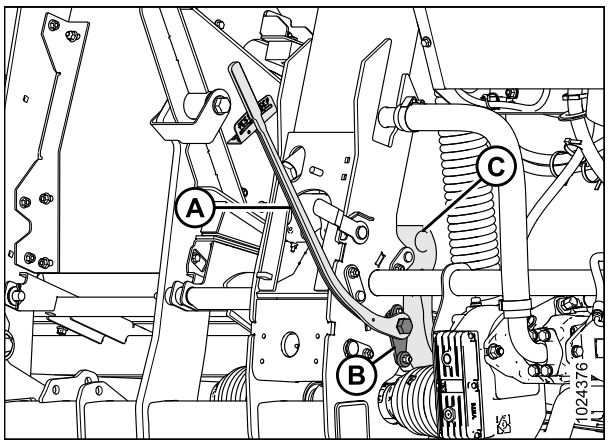


Figure 7.7: Harvester Mount Module – Right Side

12. Push down on the wrench until indicator (A) reaches a maximum reading and then begins to decrease. Note the maximum reading. Repeat at opposite side.

    NOTE:

    If you cannot use the wrench to check float, grasp the end of the header and lift. The force to lift should be as noted in the following table and should be approximately the same at both ends. Refer to table *7.4, page 65*.

13. Use the following table *7.3, page 65* as a guide for float settings using the wrench:

    - If the reading on the wrench is high, the header is heavy
    - If the reading on the wrench is low, the header is light

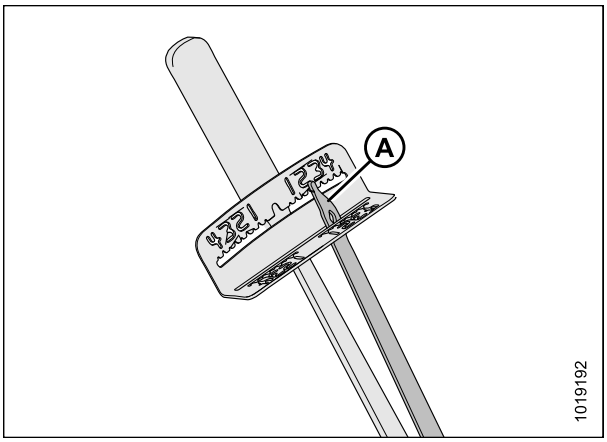


Figure 7.8: Torque Wrench

Table 7.3 Float Settings using the Wrench

Header Size	Indicator Reading	
	Cutting on the Ground	Cutting off the Ground
7.6, 9.1, and 10.7 m (25, 30, and 35 ft.)	1-1/2 to 2	2 to 2-1/2

Table 7.4 Float Settings Lifting the Ends of the Header

Force Required to Lift Header at the Ends with Lift Cylinder Fully Retracted
335–380 N (75–85 lbf) with stabilizer wheels raised (if equipped)

14. Before adjusting float spring adjustment bolts (A), rotate spring locks (B) by loosening bolts (C).
15. To increase float (decrease header weight), turn both adjustment bolts (A) on the left side clockwise. Repeat adjustment at opposite side.

    NOTE:

    Turn both right bolts equally.
16. To decrease float (increase header weight), turn left side adjustment bolts (A) counterclockwise. Repeat at opposite side.

    NOTE:

    Turn both right bolts equally.
17. Adjust the float so the wrench readings are equal on both sides of the header.
18. Lock adjustment bolts (A) with spring locks (B). Ensure bolt heads (A) are engaged in the spring lock cutouts. Tighten bolts (C) to secure spring locks in place.

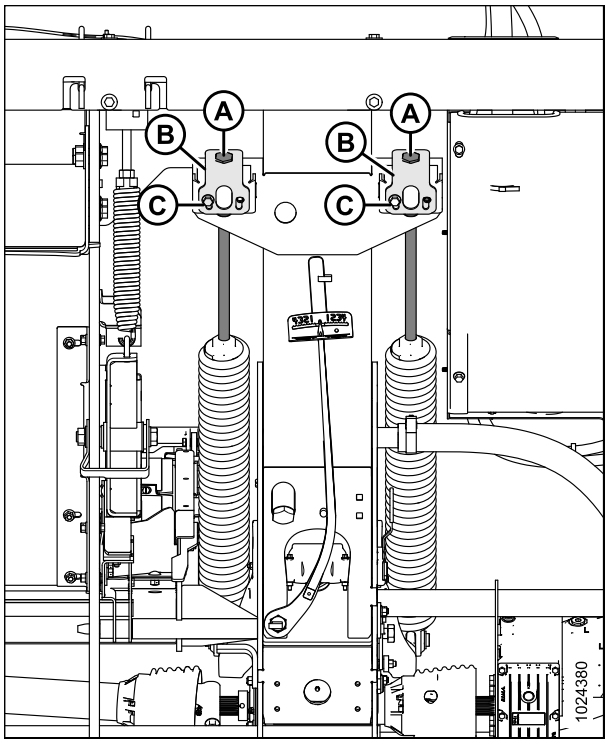


Figure 7.9: Float Adjustment (Right Side Shown)

7.5 Automatic Chain Oiler

The automatic chain oiler is located on the left side of the Harvester Mount Module. It is designed to keep chains lubricated automatically.

7.5.1 Adding Oil to the Automatic Oiler

⚠ DANGER

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

1. Lower the header to the ground.
2. Shut down the engine, and remove the key from the ignition.
3. Locate the automatic oiler reservoir (A) on the left side of the Harvester Mount Module.
4. Remove cap (B) and fill the reservoir with oil. For oil specifications, refer to the inside back cover.

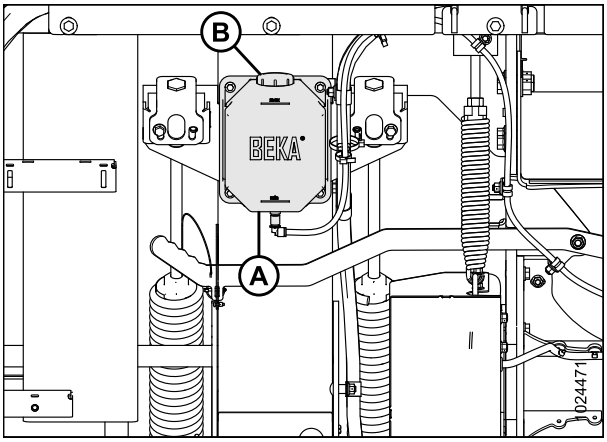


Figure 7.10: Automatic Oiler

7.5.2 Adjusting the Oil Application Rate

If the amount of oil being brushed on the chain is to great or to little, an adjustment of the application rate is required.

NOTE:

From factory, the application rate is set to 1 turn = 6 clicks = (0.015 cm^3). The maximum possible adjustment is 2.6 turns =16 clicks =0.04 cm^3

1. Locate oil pump (A) on the left side of the Harvest Mount Module.
2. Remove the oil pump cap.

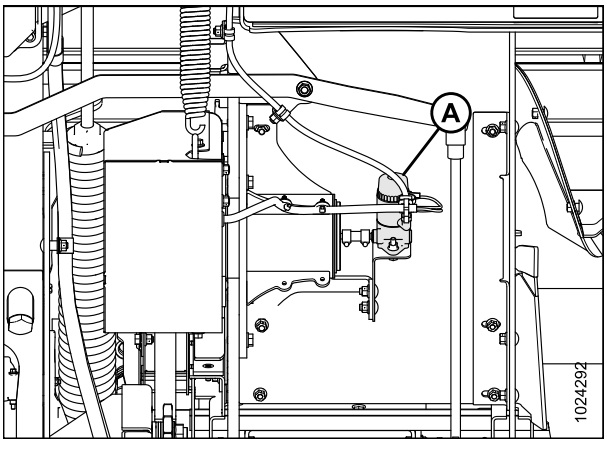


Figure 7.11: Oil Pump

3. Locate adjustment screws (A) and/or (B) for the outlet that you want to adjust.

   NOTE:

   If there are multiple application lines, he setscrews and corresponding pressure port are marked with the same color.

4. Turn screws (A) and/or (B) to adjust the oil application rate.

   - To increase rate, turn the screw clockwise.
   - To decrease rate, turn the screw counterclockwise.

   NOTE:

   One complete turn of the setscrew reduces or increase the output by 1/4 of the total volume being dispensed.

5. Reinstall the oil pump cap.

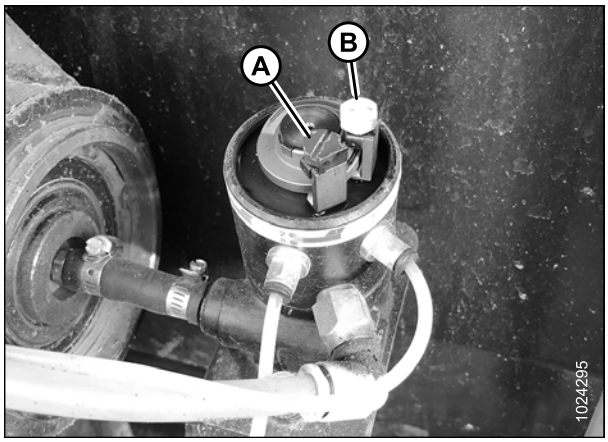


Figure 7.12: Adjustment Screws

7.6 Feed Draper

The feed draper is designed to carry crop into the feedroll cabinet.

7.6.1 Adjusting Feed Draper Tension

If the feed draper is slipping on the rollers, the tension should be adjusted.

DANGER

To avoid bodily injury or death from unexpected start-up or fall of a raised machine, always stop engine and remove key before leaving the operator's seat, and always engage safety props before going under the machine for any reason.

1. Raise the header to its full height, stop the engine, and remove key from the ignition.
2. Engage the header safety props.
3. Ensure the draper guide (rubber track on the underside of the draper) is properly engaged in the groove on the drive roller and the idler roller is between the guides.
4. Along both sides of the feed deck, loosen jam nut (A) and turn bolt (B) clockwise to increase draper tension or counterclockwise to decrease draper tension.
5. Adjust the draper tension until the white indicator (C) is centered within the indicator window on the spring box.

   IMPORTANT:

   Adjust both sides equally.
6. Tighten jam nut (A).

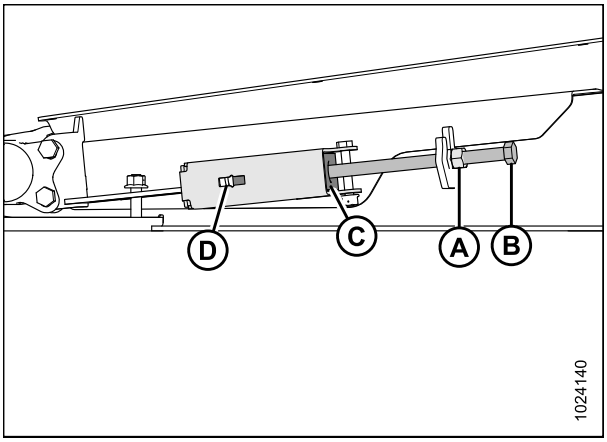


Figure 7.13: Tensioner

7.6.2 Replacing Feed Draper

Replace draper if torn, cracked, or missing slats.

DANGER

To avoid bodily injury or death from unexpected start-up or fall of a raised machine, always stop engine and remove key before leaving the operator's seat, and always engage safety props before going under the machine for any reason.

1. Raise header and reel to full height, stop the engine, and remove key from the ignition.
2. Engage reel safety props and header safety props.

3. Along both sides of the feed deck, loosen jam nut (A) and turn bolt (B) counterclockwise to decrease draper tension.

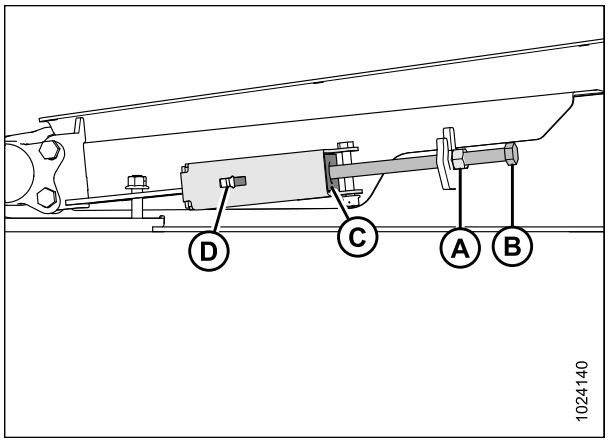


Figure 7.14: Tensioner

4. Along both sides of the feed deck, loosen jam nut (A) and turn bolt (B) clockwise to increase draper tension or counterclockwise to decrease draper tension.

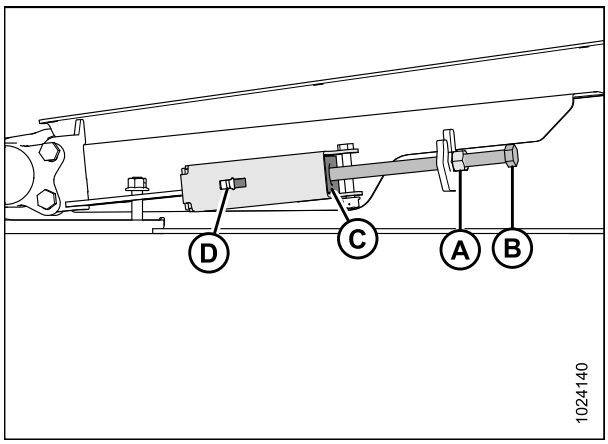


Figure 7.15: Tensioner

5. Remove nuts and screws (A), and remove the draper connector straps (B).
6. Pull the draper from the deck.

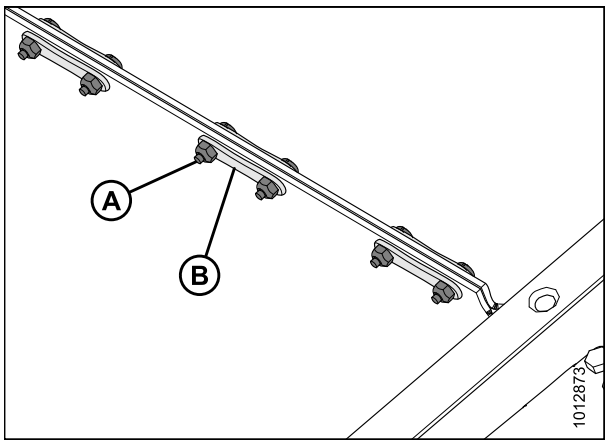


Figure 7.16: Draper Connector

7. Install new draper (A) over the drive roller (B). Make sure the draper guides fit into the drive roller grooves (C).
8. Pull draper along bottom of feed deck and over idler roller (D).

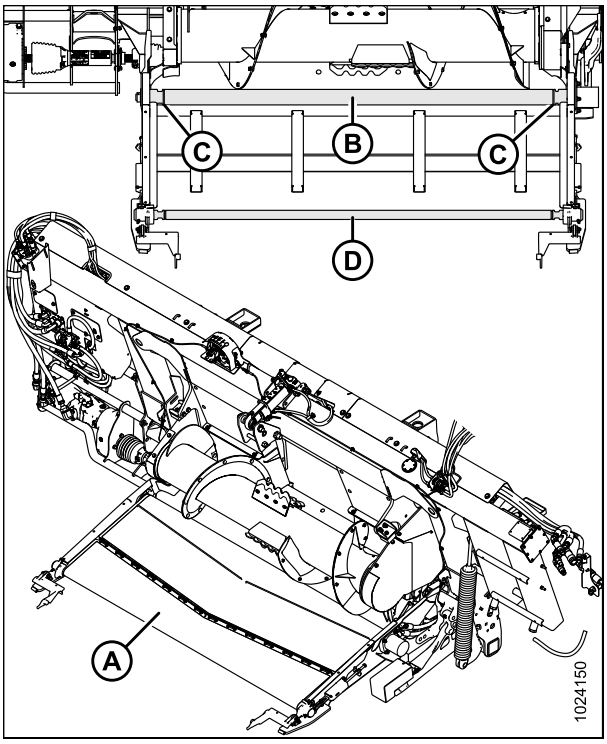


Figure 7.17: Harvester Mount Module Feed Draper

9. Connect the draper joint with the connector straps (B) and secure with nuts and screws (A). Ensure the screw heads face towards the rear of the deck, and tighten only until the end of the screws are flush with the nuts.
10. Adjust the draper tension. Refer to *7.6.1 Adjusting Feed Draper Tension, page 69*.

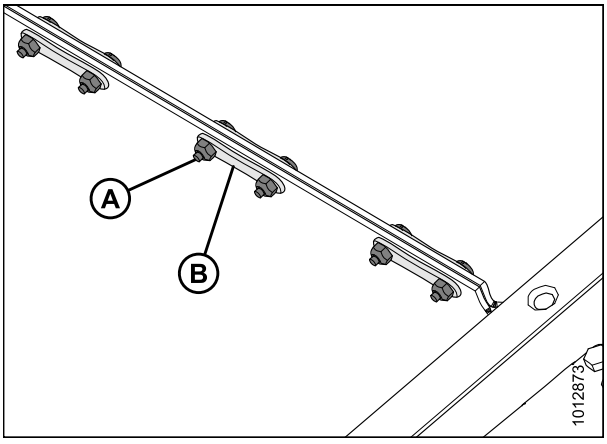


Figure 7.18: Draper Connector Straps

7.7 Feed Auger

The feed auger pulls crop into the feedroll cabinet.

7.7.1 Adjusting Feed Auger Spring Tension

If the feed auger is bouncing while feeding crop or is plugging, the spring tension may need to be adjusted so more pressure is placed on the crop being directed into the feedroll cabinet.

DANGER

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

1. Completely retract header angle hydraulic cylinder (A).

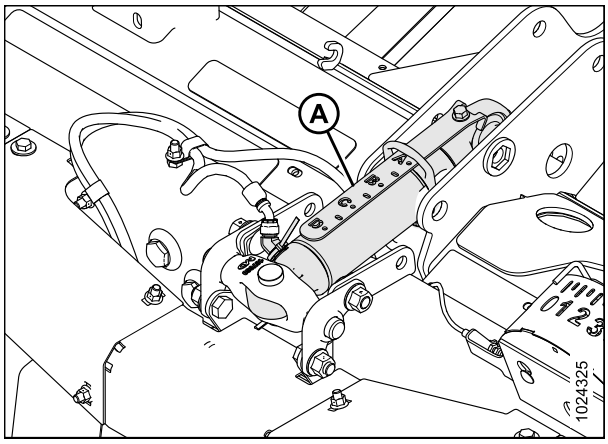


Figure 7.19: Center-Link

2. Disengage both header float locks by pulling each float lock handle (A) away from the mount module and setting it in the unlocked position (B).

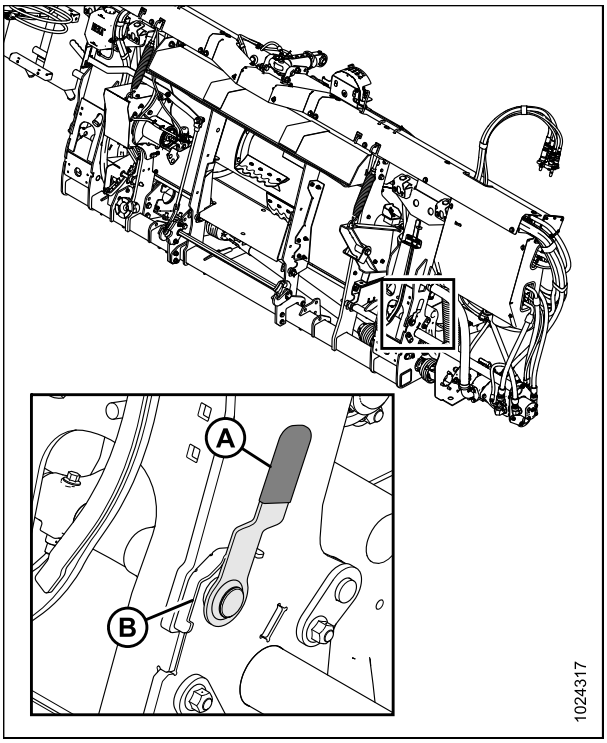


Figure 7.20: Float Lock Handle (Right Side Shown in Detail, Left Side Opposite)

3. Check that float lock linkage is on down stops (washer [A] cannot be moved) at both locations.
4. Raise or lower the header until the Harvester Mount Module is in an upright position.
5. Shut down the engine, and remove the key from the ignition.

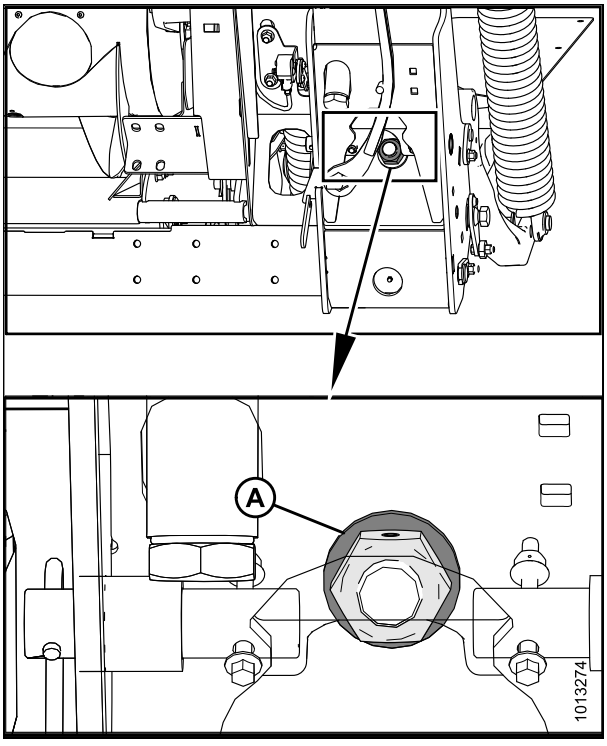


Figure 7.21: Down Stop Washer

6. Locate the feed auger tension spring (A). There is one spring on each side of the auger.

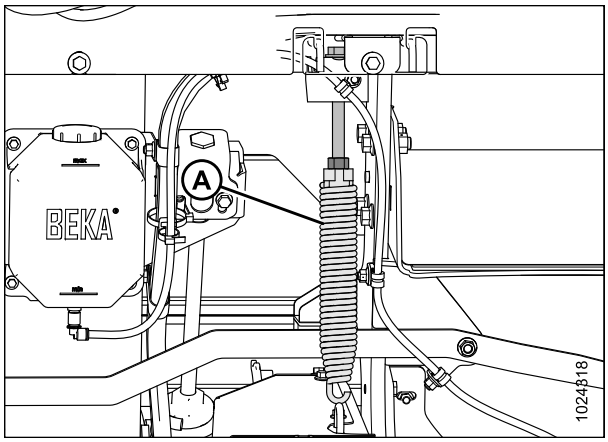


Figure 7.22: Feed Auger Tension Spring

7. Loosen jam nut (B). Turn adjustment bolt (C) to make tension adjustments.
   - To increase tension (more downward pressure), turn the adjustment bolt (C) clockwise. Repeat adjustment at opposite side.
   - To decrease float (less downward pressure), turn left adjustment bolt (C) counterclockwise. Repeat at opposite side.

NOTE:

The feed auger tension springs are set at the factory. To reset them, set dimension (A) to the values below:

- Left – 296 mm (11.65 in.)
- Right – 328 mm (12.91 in.)

8. Once the adjustment is complete, tighten the jam nut against the casting.

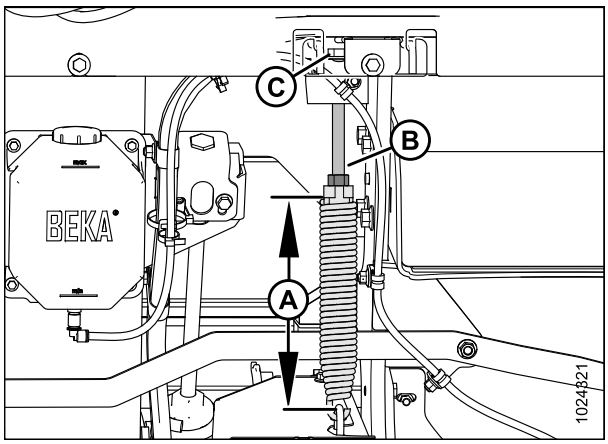


Figure 7.23: Feed Auger Tension Spring

7.7.2 Checking Primary Feed Auger Drive Chain Tension

⚠ DANGER

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

1. Lower the header to the ground.
2. Raise the reel and engage the reel safety props. For instructions, refer to the header operators manual.
3. Shut down the engine, and remove the key from the ignition.

4. On the left side of the Harvester Mount Module, locate primary feed auger chain (A).

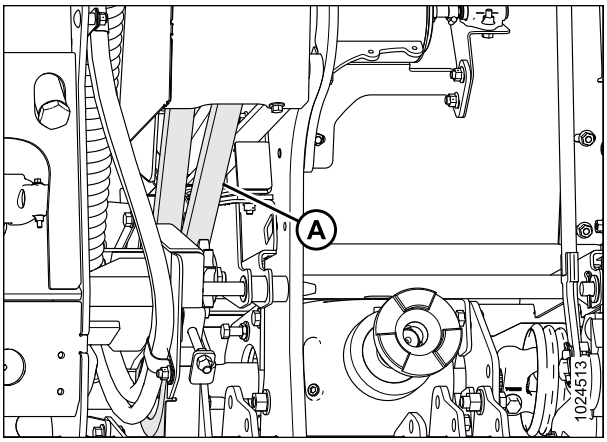


Figure 7.24: Chain

NOTE:

Parts removed for clarity.

5. On the opposite side of the idler sprocket, push on the chain at mid span (B). Total deflection of the chain should be 12.7 mm (0.5 in.).

NOTE:

If adjustment is required, refer to *7.7.3 Adjusting Primary Feed Auger Drive Chain Tension, page 75*.

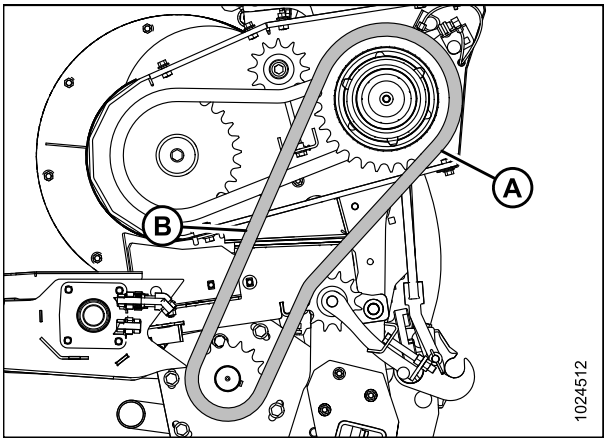


Figure 7.25: Chain

7.7.3 Adjusting Primary Feed Auger Drive Chain Tension

DANGER

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

1. Lower the header to the ground.
2. Raise the reel and engage the reel safety props. For instructions, refer to the header operator manual.
3. Shut down the engine, and remove the key from the ignition.

4. On the left side of the Harvester Mount Module, remove three bolts (B), then remove rear shield (A).

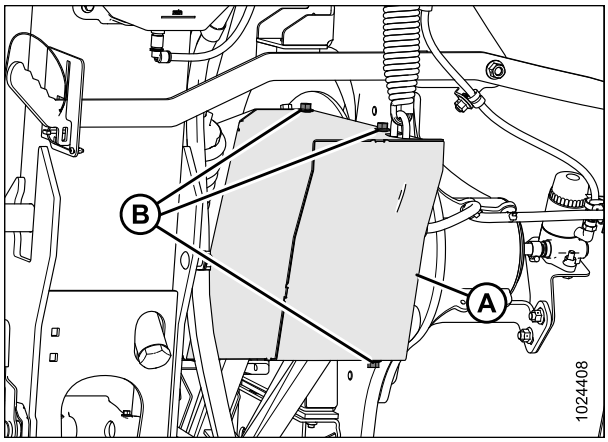


Figure 7.26: Rear Shield

5. Loosen nut (A).
6. Loosen nut (B).
7. Turn nut (B) clockwise to tension the chain. Tighten jam nut (C) to secure the setting.
8. Tighten nut (A) to secure the idler sprocket.

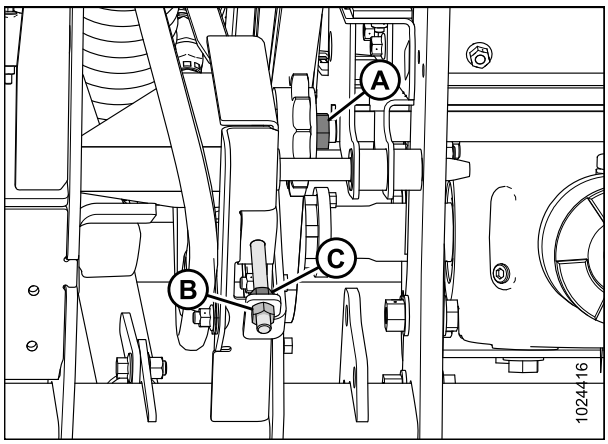


Figure 7.27: Idler Sprocket Tension Bolt

9. Install rear shield (A). Secure with three bolts (B).

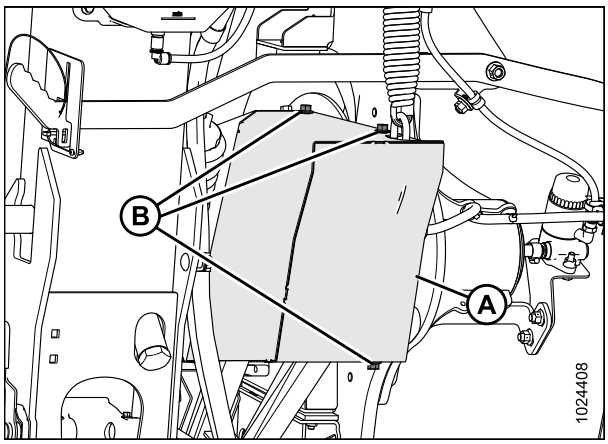


Figure 7.28: Rear Shield

7.7.4 Removing Primary Feed Auger Drive Chain

The chain tensioner can take up slack for only a single pitch. Replace the chain when the chain has worn or stretched beyond the limits of the tensioner.

DANGER

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

1. Lower the header to the ground.
2. Raise the reel and engage the reel safety props. For instructions, refer to the header operator manual.
3. Shut down the engine, and remove the key from the ignition.
4. On the left side of the Harvester Mount Module, remove three bolts (B), then remove rear shield (A).

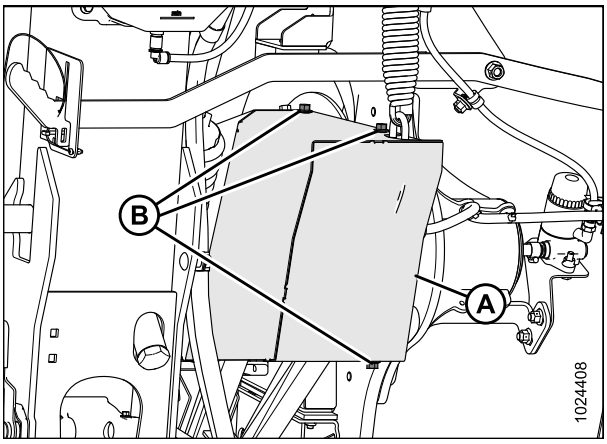


Figure 7.29: Rear Shield

5. Loosen nut (A).
6. Loosen nut (B).
7. Turn nut (C) clockwise to loosen chain tension.

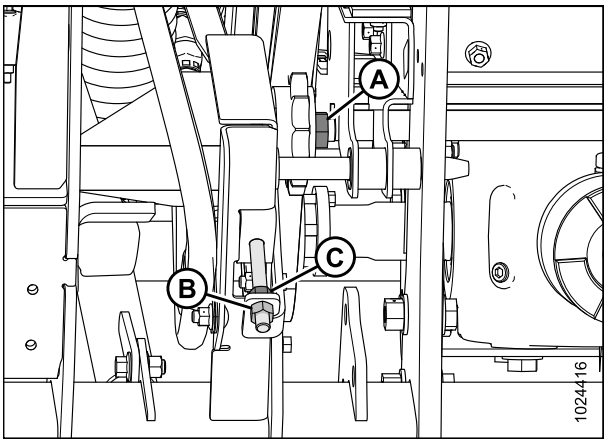


Figure 7.30: Idler Sprocket Tension Bolt

8. Locate the connecting link on chain (A) and remove it.
9. Remove chain (A).

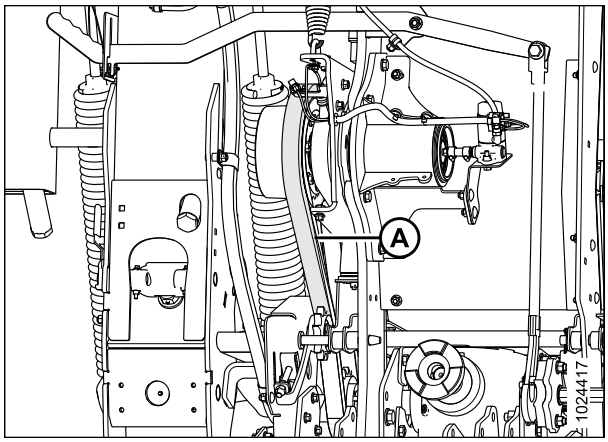


Figure 7.31: Chain

7.7.5 Installing Primary Feed Auger Drive Chain

DANGER

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

1. Lower the header to the ground.
2. Raise the reel and engage the reel safety props. For instructions, refer to the header operator manual.
3. Shut down the engine, and remove the key from the ignition.
4. Install chain (A).

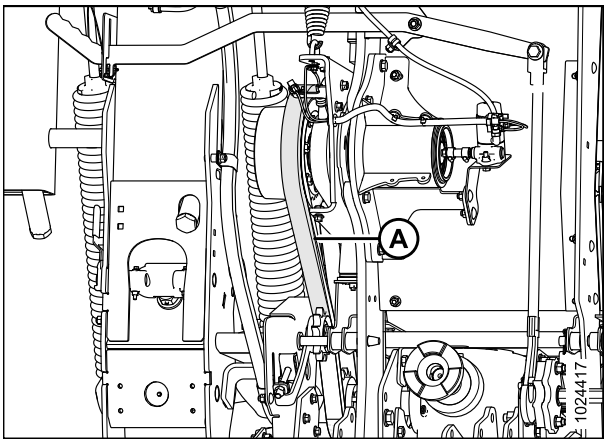


Figure 7.32: Installing Chain

NOTE:

Parts removed for clarity.

5. Route chain over the idler sprocket (D), around drive (E) and driven (C) sprockets. Connect the ends of the chain with a connecting link. Install connecting link towards the feed auger.

NOTE:

If installing the 31-tooth sprocket, a longer chain will be required. If installing the 24-tooth sprocket a shorter chain will be required. Refer to *8.8 Left Auger Arm – Service Parts, page 119*.

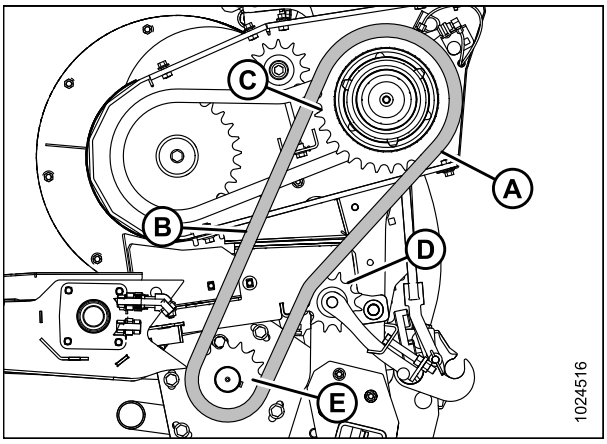


Figure 7.33: Routing Chain

6. Turn nut (B) clockwise to tension the chain. Tighten jam nut (C) to secure the setting.
7. Tighten nut (A) to secure the idler sprocket.

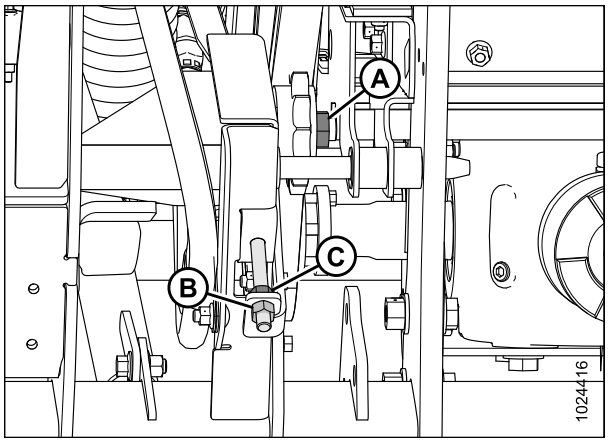


Figure 7.34: Idler Sprocket Tension Bolt

8. Install rear shield (A). Secure with three bolts (B).

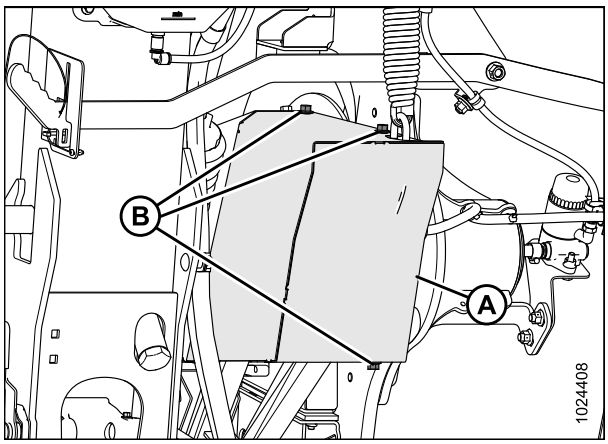


Figure 7.35: Rear Shield

7.7.6 Checking Secondary Feed Auger Drive Chain Tension

DANGER

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

1. Lower the header to the ground.
2. Raise the reel and engage the reel safety props. For instructions, refer to the header operators manual.
3. Shut down the engine, and remove the key from the ignition.

4. On the left side of the Harvester Mount Module, remove three bolts (B), then remove front shield (A).

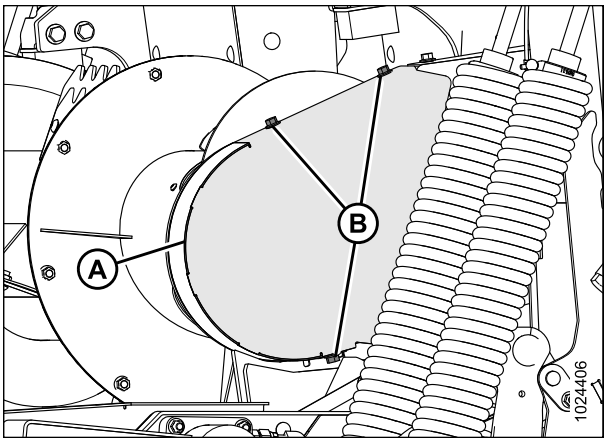


Figure 7.36: Front Shield

5. On the left side of the Harvester Mount Module, remove three bolts (B), then remove rear shield (A).

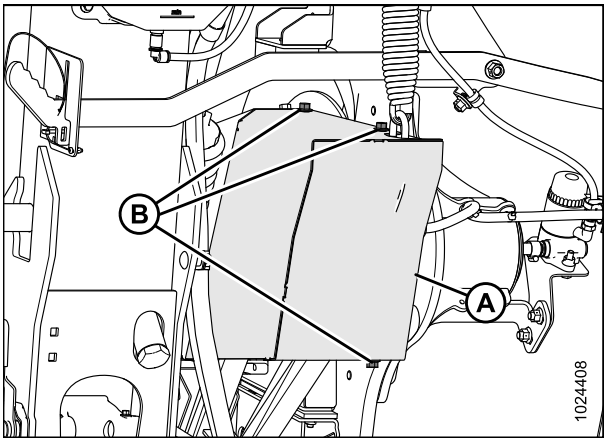


Figure 7.37: Rear Shield

NOTE:

Parts removed for clarity.

6. Locate secondary feed auger chain (A).
7. On the opposite side of the idler sprocket, push on the chain at mid span (B). Total deflection of the chain should be 19 mm (0.75 in.).

NOTE:

If adjustment is required, refer to *7.7.7 Adjusting Secondary Feed Auger Drive Chain Tension, page 82*.

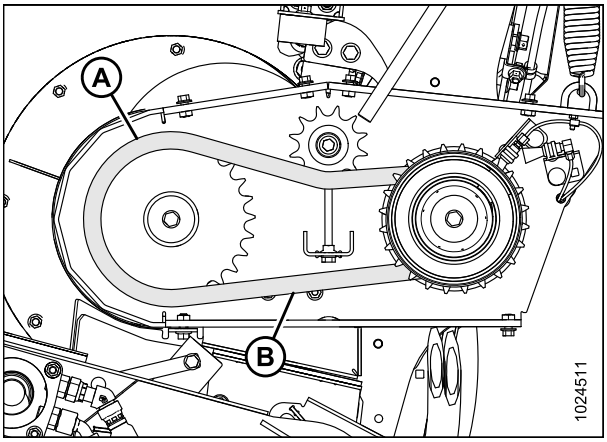


Figure 7.38: Chain

8. Install rear shield (A). Secure with three bolts (B).

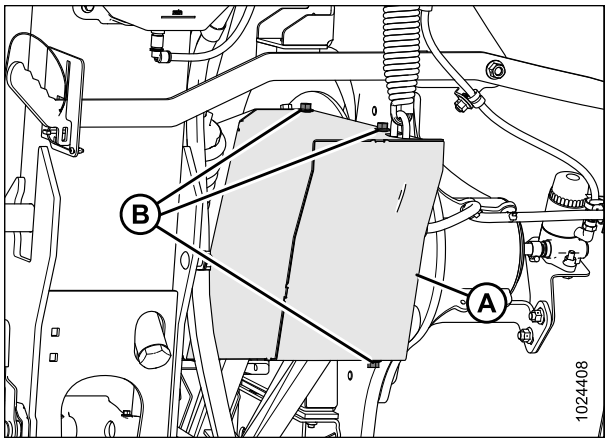


Figure 7.39: Rear Shield

9. Install front shield (A). Secure with three bolts (B).

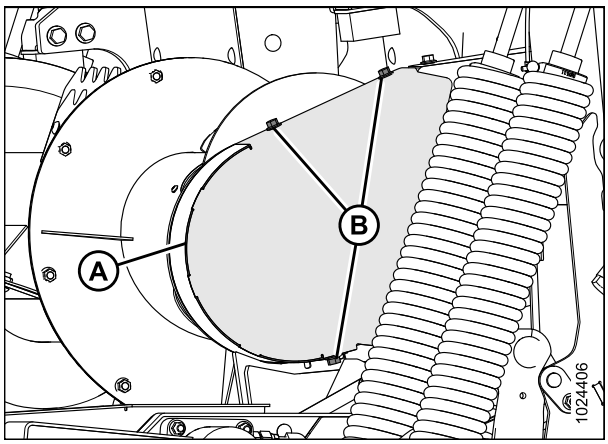


Figure 7.40: Front Shield

7.7.7 Adjusting Secondary Feed Auger Drive Chain Tension

DANGER

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

1. Lower the header to the ground.
2. Raise the reel and engage the reel safety props. For instructions, refer to the header operator manual.
3. Shut down the engine, and remove the key from the ignition.

4. On the left side of the Harvester Mount Module, remove three bolts (B), then remove front shield (A).

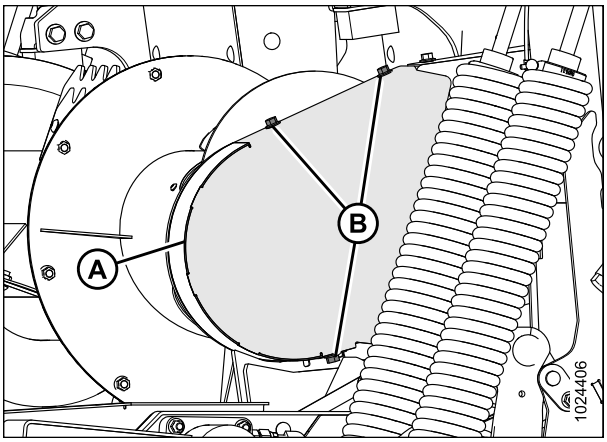


Figure 7.41: Front Shield

5. Locate feed auger idler sprocket (A).
6. Loosen nut (B)
7. Loosen nut (C)
8. Turn bolt (D) clockwise to tension the chain. Tighten jam nut (C) to secure the setting.
9. Tighten nut (B).

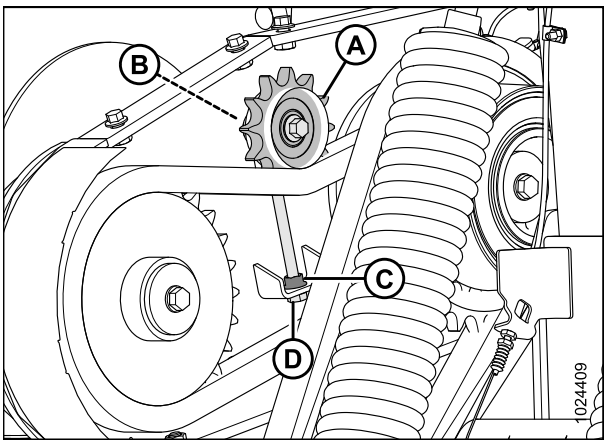


Figure 7.42: Idler Sprocket

10. Install front shield (A). Secure with three bolts (B).

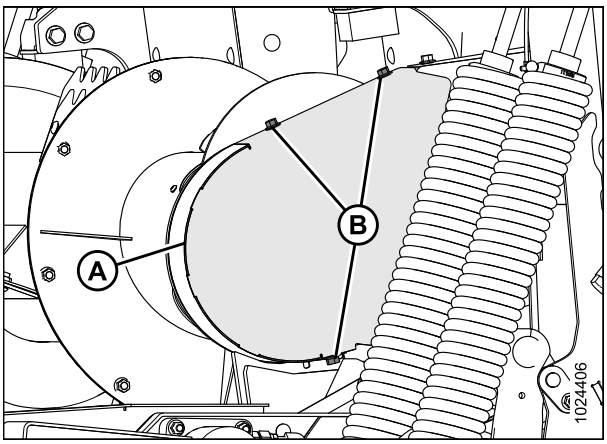


Figure 7.43: Front Shield

7.7.8 Removing Secondary Feed Auger Drive Chain

The chain tensioner can take up slack for only a single pitch. Replace the chain when the chain has worn or stretched beyond the limits of the tensioner.

DANGER

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

1. Lower the header to the ground.
2. Raise the reel and engage the reel safety props. For instructions, refer to the header operator manual.
3. Shut down the engine, and remove the key from the ignition.
4. On the left side of the Harvester Mount Module, remove three bolts (B), then remove front shield (A).

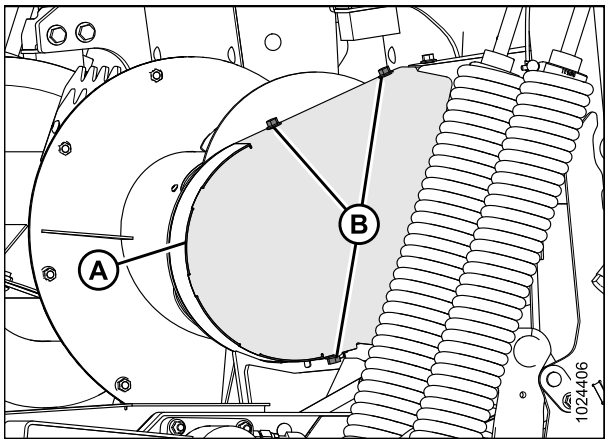


Figure 7.44: Front Shield

5. Remove three bolts (B).
6. Remove rear shield (A).

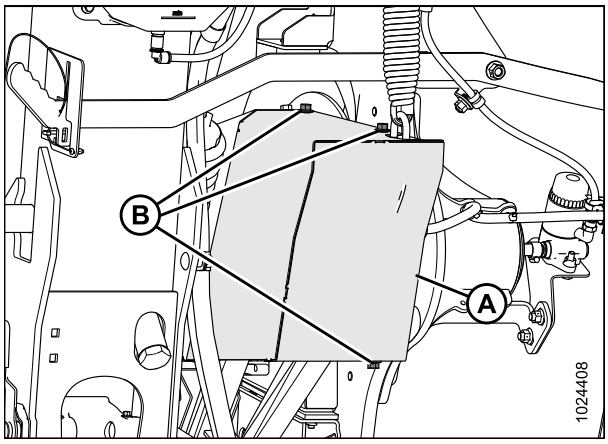


Figure 7.45: Rear Shield

7. Locate feed auger idler sprocket (A).
8. Loosen nut (B).
9. Loosen nut (C).
10. Turn bolt (D) counterclockwise to loosen chain tension.

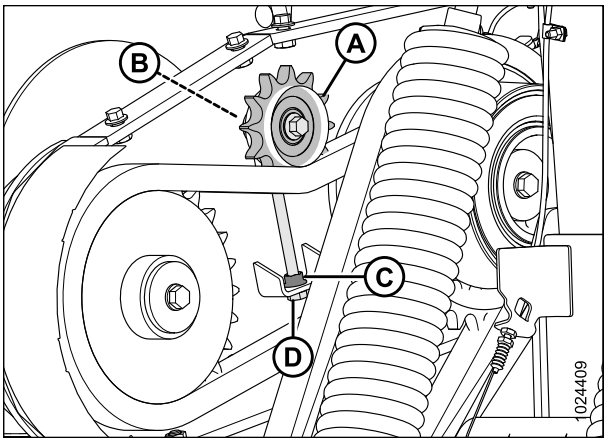


Figure 7.46: Idler Sprocket Tension Bolt

11. Locate the connecting link on chain (A) and remove it.
12. Remove chain (A).

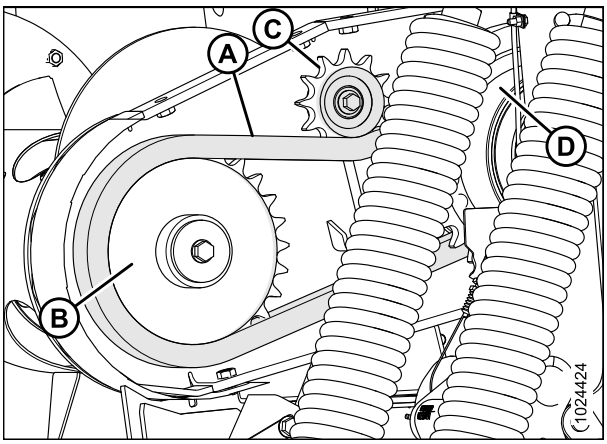


Figure 7.47: Chain

7.7.9 Installing Secondary Feed Auger Drive Chain

⚠ DANGER

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

1. Lower the header to the ground.
2. Raise the reel and engage the reel safety props. For instructions, refer to the header operator manual.
3. Shut down the engine, and remove the key from the ignition.

4. Route chain (A) over the idler sprocket (C) and around the drive (D) and driven sprockets (D). Connect the ends of the chain with a connecting link. Install connecting link towards the feed auger.

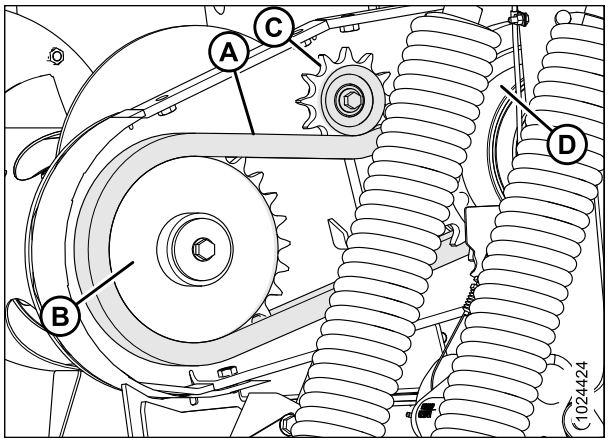


Figure 7.48: Chain

5. Locate feed auger idler sprocket (A).
6. Turn bolt (D) clockwise to tension the chain. Tighten jam nut (C) to secure the setting.
7. Tighten nut (B).

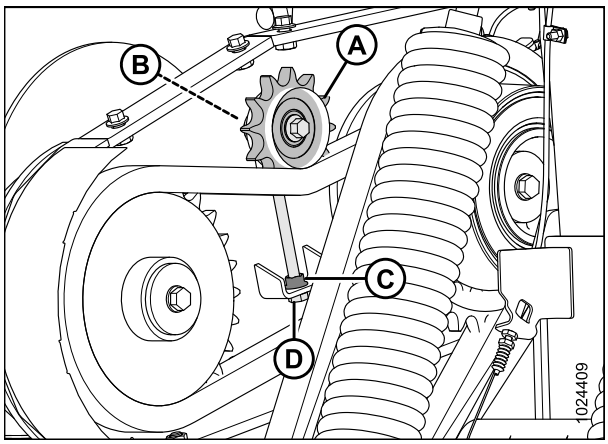


Figure 7.49: Idler Sprocket

8. Install rear shield (A). Secure with three bolts (B).

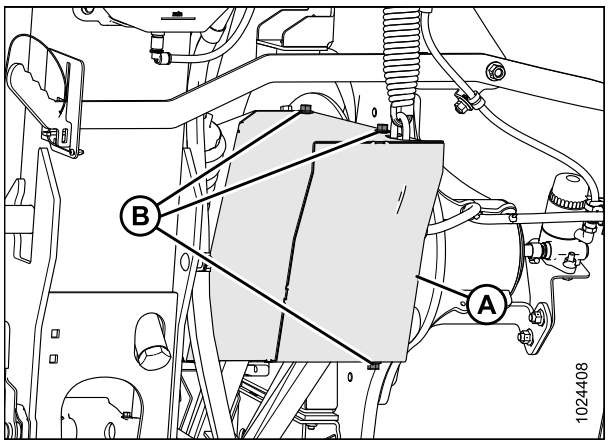


Figure 7.50: Rear Shield

9. Install front shield (A). Secure with three bolts (B).

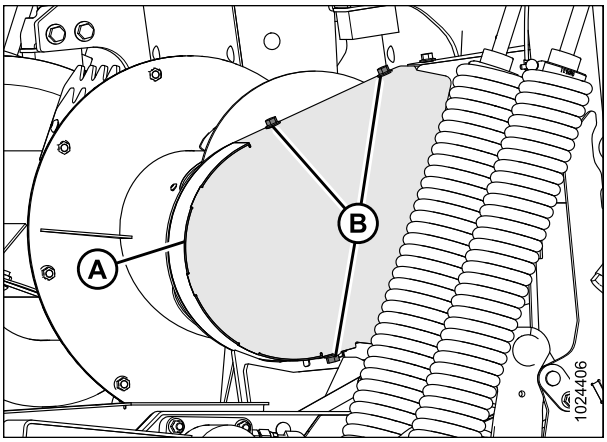


Figure 7.51: Front Shield

7.7.10 Configuring Feed Auger Speed

Depending on crop type, conditions, or length of chop, a drive sprocket change may be required to increase or decrease the feed auger speed.

Select the sprocket that best fits your application. Refer to *7.7.11 Changing Feed Auger Speed, page 87*.

Table 7.5 Sprocket Selection Based on Knife Drum Configuration and Length of Cut:

	V-max w/20 knives (V10)	V-max w/24 knives (V12)	V-max w/28 knives (V14)	V-max w/36 knives (V18)
Sprocket	**Length of Cut**			
31-tooth	18 mm (0.71 in)	15 mm (0.60 in)	13 mm (0.51 in)	10 mm (0.39 in)
24-tooth	23.5 mm (0.93 in)	20 mm (0.79 in)	16.5 mm (0.65 in)	13 mm (0.51 in)

Refer to *8.8 Left Auger Arm – Service Parts, page 119* for the sprocket part numbers.

7.7.11 Changing Feed Auger Speed

DANGER

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

1. Lower the header to the ground.
2. Lower the reel.
3. Disconnect the header from the forage harvester.
4. Shut down the engine, and remove the key from the ignition.

5. On the left side of the Harvester Mount Module, remove three bolts (B), then remove rear shield (A).

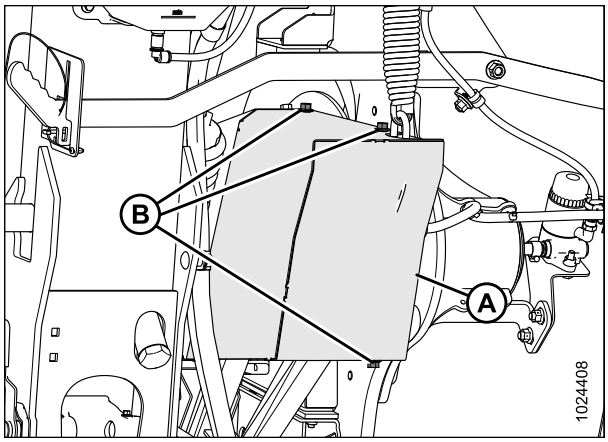


Figure 7.52: Rear Shield

6. Loosen nut (A).
7. Loosen nut (B).
8. Turn nut (C) clockwise to loosen chain tension.

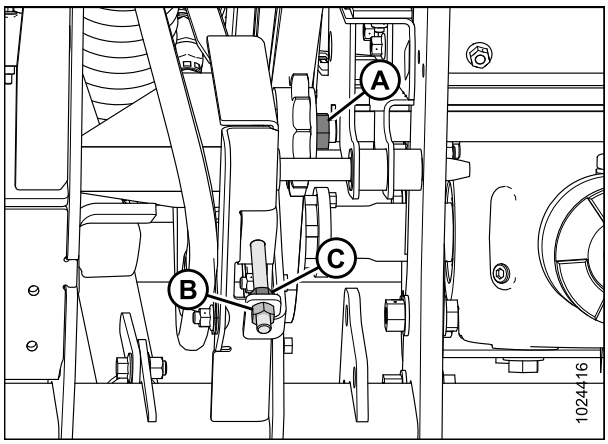


Figure 7.53: Idler Sprocket Tension Bolt

9. Locate the connecting link on chain (A) and remove it.
10. Remove chain (A).

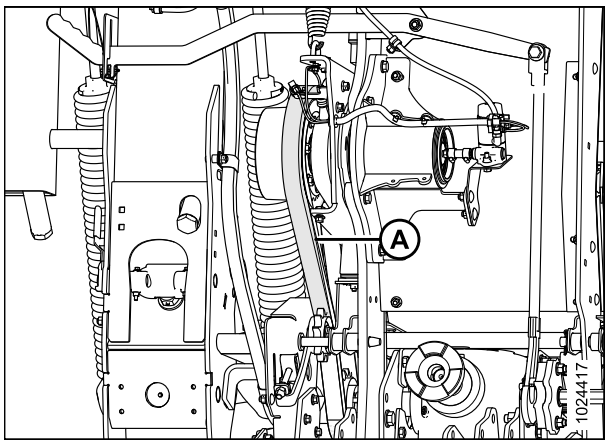


Figure 7.54: Chain

11. Remove bolt (B) that secures the clutch assembly (A) to the intermediate shaft.
12. Remove clutch assembly (A).

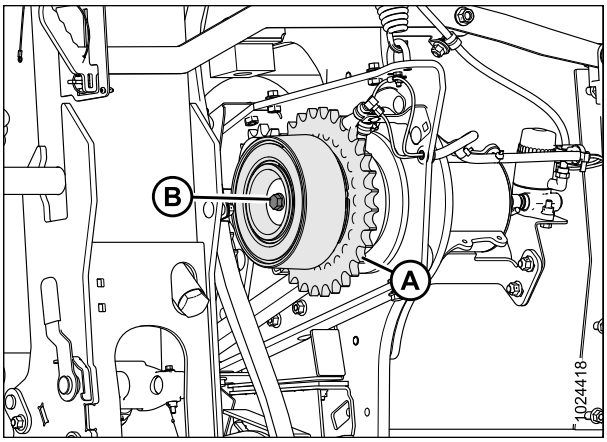


Figure 7.55: Clutch Assembly

13. Remove the six M12 X 1.75 X 40 bolts (A) that secure the sprocket (B) to the clutch (C).

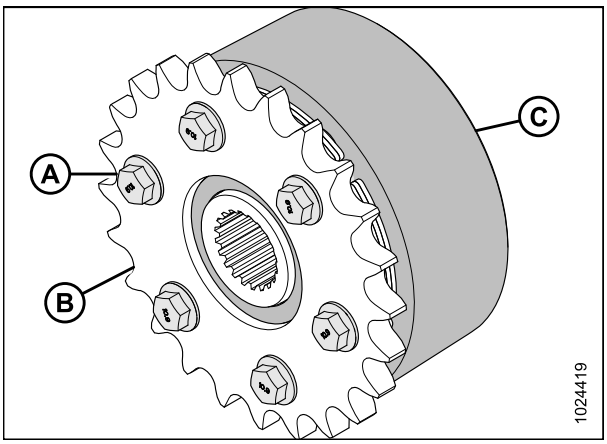


Figure 7.56: Clutch Assembly

14. Install new sprocket (B) onto clutch (C). Secure it with six M12 X 1.75 X 40 bolts (A).

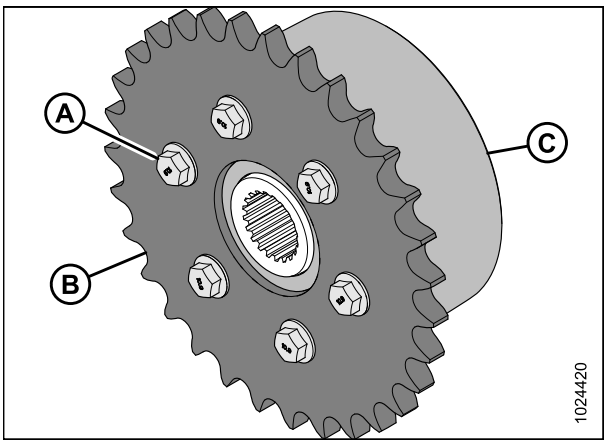


Figure 7.57: Clutch Assembly

15. Install the clutch assembly (A) onto the intermediate shaft. Secure with bolt (B) and washer. Apply medium-strength threadlocker (Loctite® 243 or equivalent) to threads.

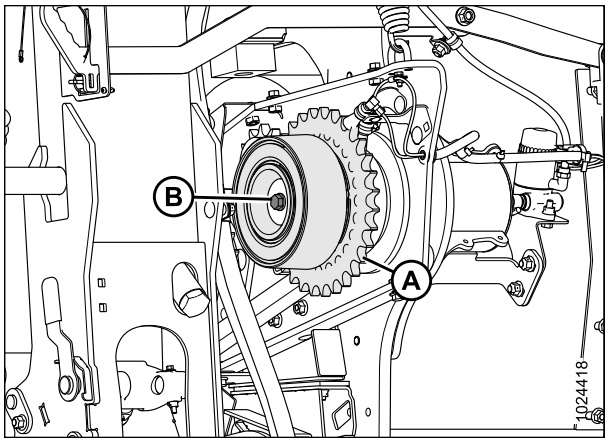


Figure 7.58: Clutch Assembly

16. Install chain (A).

NOTE:

A change in sprocket size will require a different chain. Refer to *8.8 Left Auger Arm – Service Parts, page 119*.

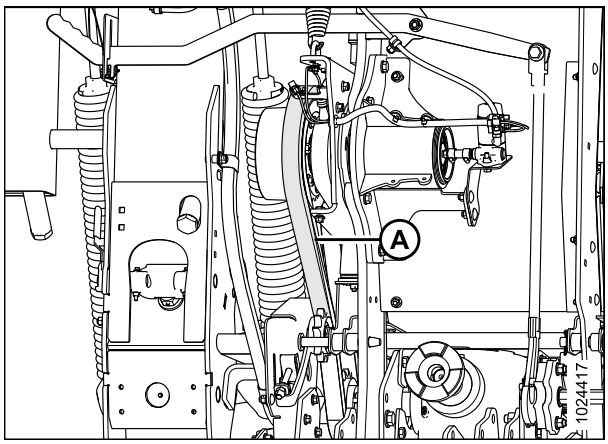


Figure 7.59: Installing Chain

17. Adjust the location of oiler brush (A), so that it contacts chain (B).

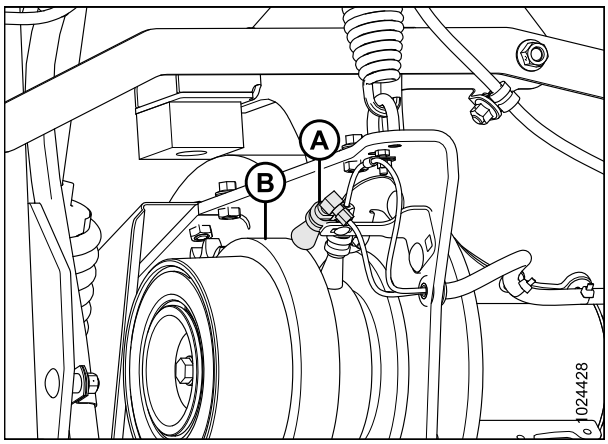


Figure 7.60: Oiler

18. Turn nut (B) clockwise to tension the chain. Tighten jam nut (C) to secure the setting.
19. Tighten nut (A) to secure the idler sprocket.

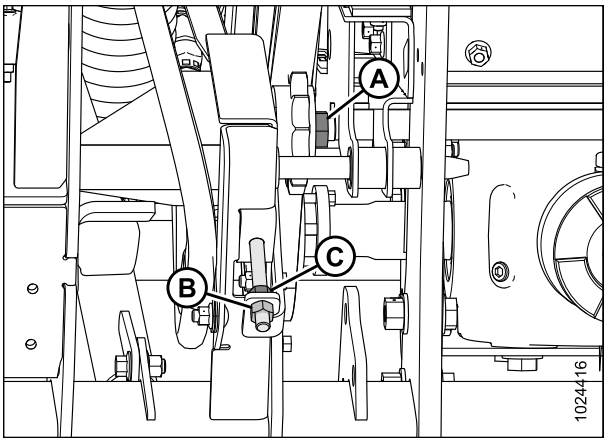


Figure 7.61: Idler Sprocket Tension Bolt

20. Install rear shield (A). Secure with three bolts (B).

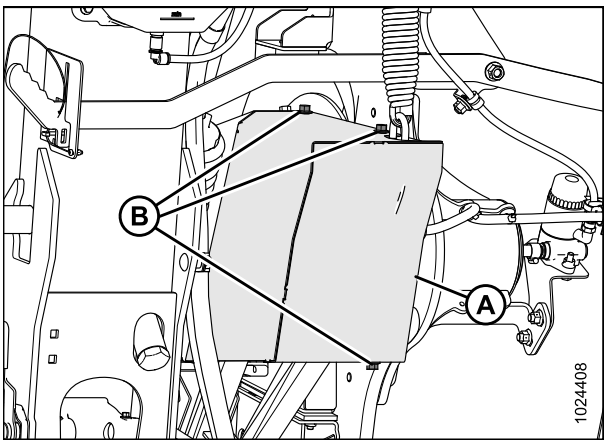


Figure 7.62: Rear Shield

7.7.12 Configuring Feed Auger Paddle Options

Depending on crop type or conditions, a paddle change maybe required.

Table 7.6 Feed Auger Paddle Options

Long paddles	• Good for all crops; in general are preferred in shorter, lighter yielding crop to help feed the chopper • Can be more prone to auger wrapping in wet winter forage mixes that consist of peas and oats • Are more useful when reversing out auger plugs, if auger plugging is a recurring issue
Short paddles	• Can be used in high yielding crops/longer stemmed crops like sorghum • Less likely to wrap in all crops • Are not able to as effectively reverse out auger plugs • Generally allow more room for material to flow under auger
Rubber belting paddles[3]	• Possible option for headlage and/or lighter crops • Belting would be added to short paddles and would extend to the length of the long paddles • Less likely to wrap than long paddles • Won't be as effective in backing out plugs as long paddles

Refer to *8.11 Auger Assembly – Service Parts, page 127*.

7.7.13 Changing Feed Auger Paddle Options

DANGER

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

1. Lower the header to the ground.
2. Raise the reel and engage the reel safety props. For instructions, refer to the header operator manual.
3. Shut down the engine, and remove the key from the ignition.

3. See your dealer

4. Locate paddle (A) on the feed auger.
5. Remove four M10 X 1.5 X 20 screws (B).
6. Install new paddle (A).
7. Install four M10 X 1.5 X 20 screws (B). Ensure the paddle is tight against the flighting before tightening the hardware.
8. Repeat above steps for the remaining paddles on the feed auger.

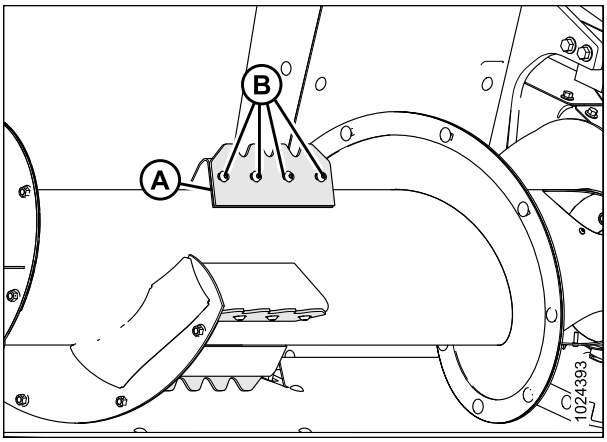


Figure 7.63: Feed Auger Paddle

7.8 Lubrication

7.8.1 Greasing Procedure

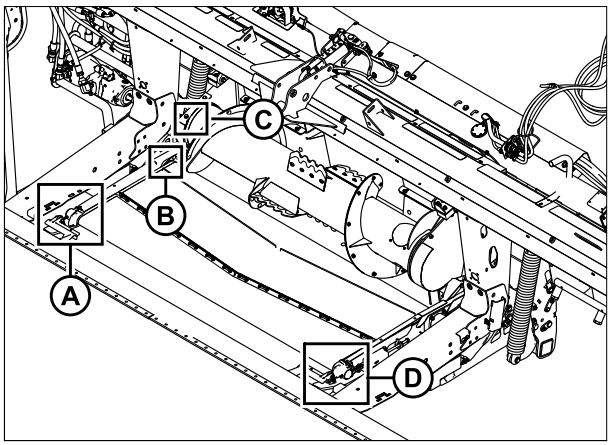
CAUTION

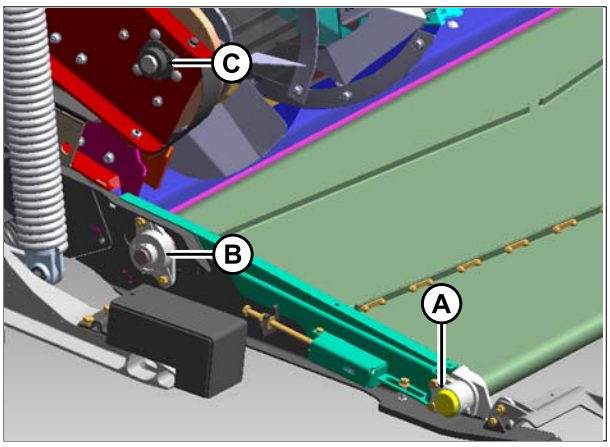
To avoid personal injury, before servicing header or opening drive covers, follow procedures in *7.2 Preparation for Servicing, page 58*.

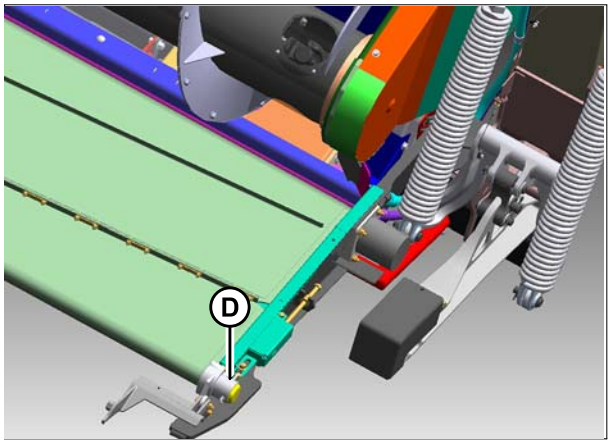
1. To avoid injecting dirt and grit, wipe grease fitting with a clean cloth before greasing. For various locations of grease fittings, refer to *7.8.2 Lubrication Points, page 95*.
2. Inject grease through fitting with grease gun until grease overflows fitting, except where noted.
3. Leave excess grease on fitting to keep out dirt.
4. Replace any loose or broken fittings immediately.
5. If fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

7.8.2 Lubrication Points

Figure 7.64: Lubrication Points







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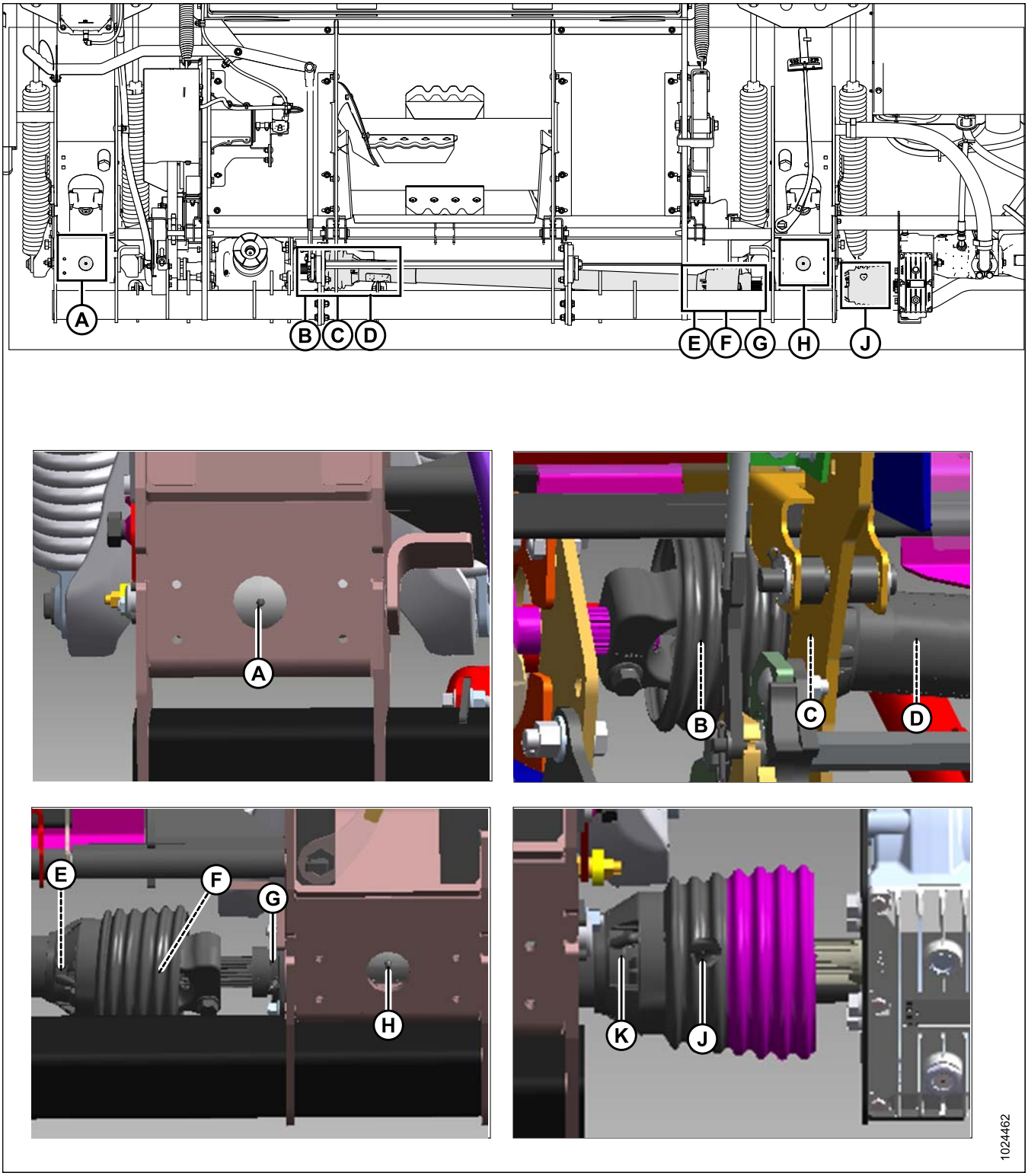
A - Idler Roller Bearing (50 hrs)
B - Drive Roller Bearing (50 hrs)
C - Feed Auger Bearing (250 hrs)
D - Idler Roller Bearing (50 hrs)

Figure 7.65: Lubrication Points



A - Linkage Pin (100 hrs)

B - U-Joint (250 hrs)

C - Power Take Off (PTO) Cover (100 hrs)

D - PTO Shaft (250 hrs)

E - Power Take Off (PTO) Cover (100 hrs)

F - U-Joint (250 hrs)

Figure 7.65 Lubrication Points (continued)

G - Bearing (250 hrs) **H - Linkage Pin (100 hrs)** **J - U-Joint (250 hrs)**

K - Power Take Off (PTO) Cover (100 hrs)

7.9 Hydraulics

The Harvester Mount Module's hydraulic system drives the feed draper, header drapers, reel drive, and knife drives. The forage harvester's hydraulic system operates the reel raise, lower, fore, aft, and tilt.

The Harvester Mount Module frame acts as an oil reservoir. Refer to inside back cover for oil requirements.

7.9.1 Checking Oil Level in Hydraulic Reservoir

Check the hydraulic oil level in the reservoir every 25 hours.

DANGER

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

1. Park the equipment on level ground
2. Check the oil level using the lower sight (A) and the upper sight (B) with the cutterbar just touching the ground and with center-link retracted.

   NOTE:

   Check the level when the oil is cold.
3. Ensure the oil is at the appropriate level for the terrain as follows:
   - **Hilly terrain :** Maintain level so lower sight (A) is full, and upper sight (B) is up to one-half filled.
   - **Normal terrain :** Maintain level so lower sight (A) is full, and upper sight (B) is empty.

   NOTE:

   It may be necessary to slightly reduce the oil level when ambient temperatures are above 35°C (95°F) to prevent overflow at the breather when normal operating temperatures are reached.

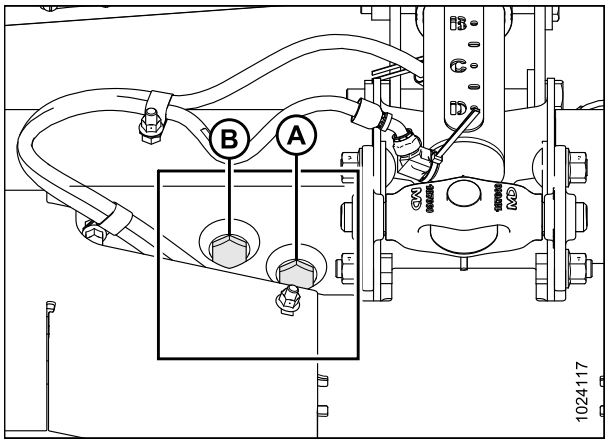


Figure 7.66: Oil Level Sight Glass

7.9.2 Adding Oil to Hydraulic Reservoir

Follow this procedure to top up the oil in the hydraulic reservoir. To change the hydraulic oil, refer to *7.9.3 Changing Oil in Hydraulic Reservoir, page 99*.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. Clean any dirt or debris from filler cap (A).
3. Loosen and remove filler cap (A) by turning it counterclockwise.
4. Add oil and fill to the required level. Refer to inside back cover for specifications.
5. Reinstall filler cap (A).
6. Recheck oil level. Refer to *7.9.1 Checking Oil Level in Hydraulic Reservoir, page 98*.

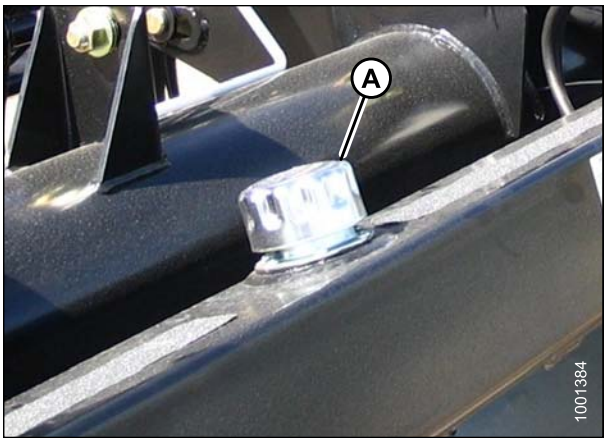


Figure 7.67: Oil Reservoir Filler Cap

7.9.3 Changing Oil in Hydraulic Reservoir

Change the hydraulic oil in the reservoir every 1000 hours or 3 years (whichever comes first).

DANGER

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

1. Start the engine.
2. Engage the header to warm up the oil.
3. Shut down the engine, and remove the key from the ignition.

4. Place a suitably sized container (at least 40 liters [10 gallons]) under oil drain plug (A) located on the back of the mount module frame. There is one hydraulic reservoir on the right of the feedroll cabinet and three on the left.

   NOTE:

   All four reservoirs must be drained individually, when completing an oil change.

5. Remove oil drain plugs (A) with a 1-1/2 in. hex socket and allow the oil to drain.
6. Replace oil drain plugs (A) when reservoir is empty.
7. Change the oil filter if required. Refer to *7.9.4 Changing Oil Filter, page 100*.
8. Add oil to the reservoir. Refer to *7.9.2 Adding Oil to Hydraulic Reservoir, page 99*. For specifications, refer to the inside back cover.

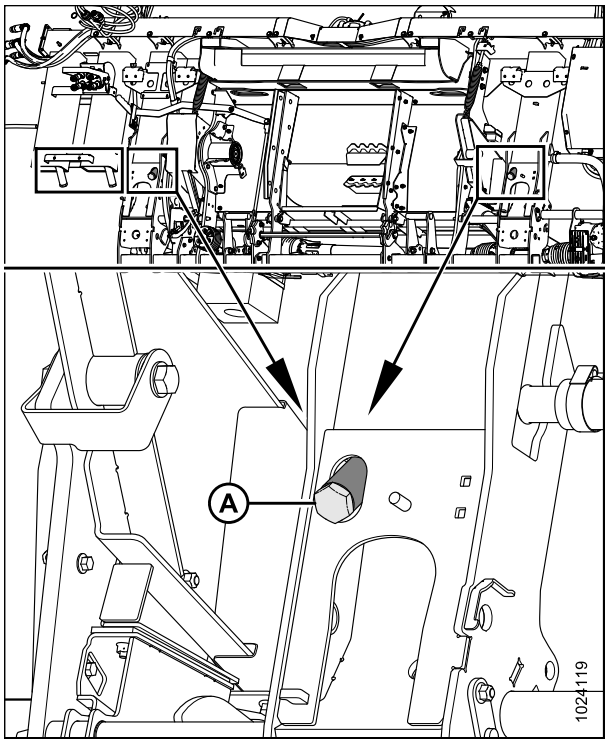


Figure 7.68: Reservoir Drain

7.9.4 Changing Oil Filter

Change the oil filter after the first 50 hours of operation and every 250 hours thereafter.

Obtain filter part MD #202986 from your MacDon Dealer.

DANGER

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

1. Locate cover (B) on the right side of the Harvester Mount Module.
2. Remove four bolts (A).
3. Remove cover (B).

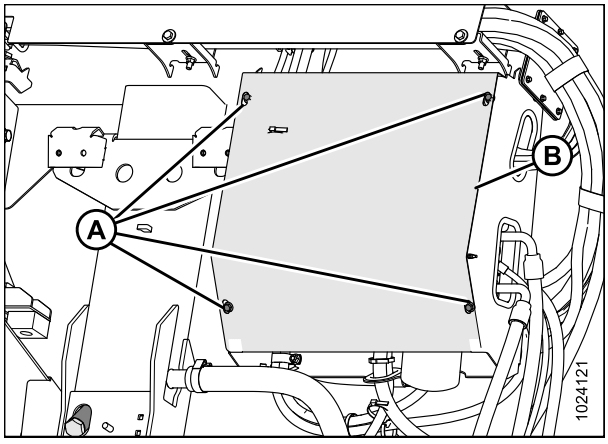


Figure 7.69: Cover

4. Clean around the mating surfaces of filter (B) and manifold (A).
5. Place a suitably sized container (approximately 1 liter [0.26 gallons]) under oil drain spout (C) to collect oil runoff.
6. Remove spin-off filter (B) and clean the exposed filter port in manifold (A).
7. Apply a thin film of clean oil to the O-ring provided with the new filter.
8. Turn the new filter into manifold (A) until the O-ring contacts the mating surface. Tighten the filter an additional 1/2 to 3/4 turn by hand.

   IMPORTANT:

   Do **NOT** use a filter wrench to install the new filter. Overtightening can damage the O-ring and filter.
9. Install cover (B). Secure it with four bolts (A).

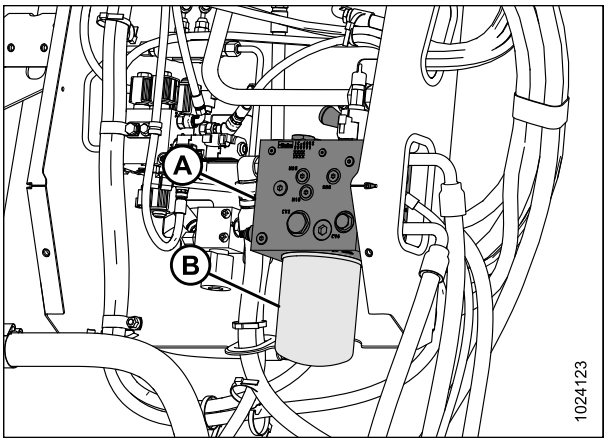


Figure 7.70: Hydraulic Filter

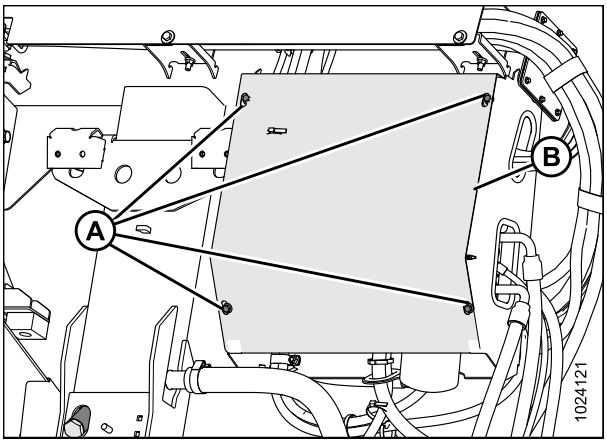


Figure 7.71: Cover

7.9.5 Checking and Adding Gearbox Oil

⚠ DANGER

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

1. Park the equipment on level ground
2. Adjust header so that the cutterbar is on the ground and in operating position.

3. Extend header angle hydraulic cylinder (A) to B on the indicator.
4. Set float indicator (B) to 2 on the indicator.
5. Shut down the engine, and remove the key from the ignition.

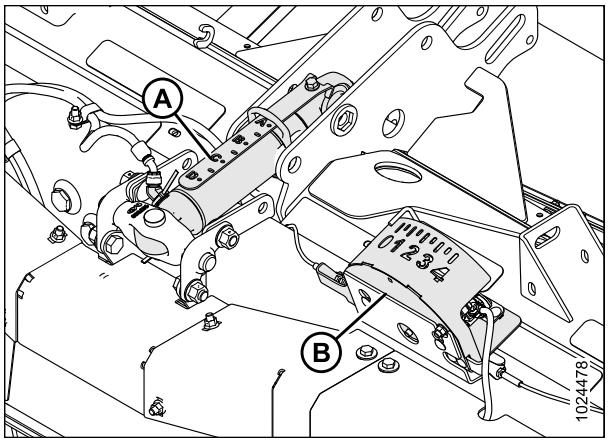


Figure 7.72: Center-Link

NOTE:

Gearbox (C) should be close to 25° degrees (A) angled up from being parallel with the ground.

6. Remove oil plug (B).
7. Ensure lubricant slightly runs out of hole (B).
8. If necessary, add lubricant to gearbox through hole (B) until lubricant runs out of the hole. Refer to the inside back cover for lubricant information.
9. Reinstall plugs and tighten.

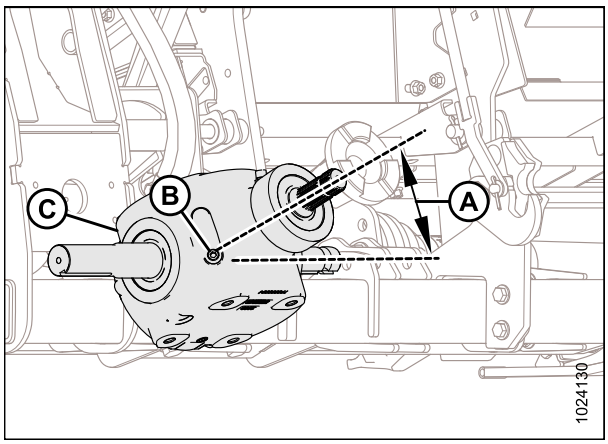


Figure 7.73: Gearbox

7.9.6 Changing Gearbox Oil

DANGER

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

1. Park the equipment on level ground
2. Adjust header so that the cutterbar is on the ground and in operating position.

3. Extend header angle hydraulic cylinder (A) to B on the indicator.
4. Set float indicator (B) to 2 on the indicator.
5. Shut down the engine, and remove the key from the ignition.

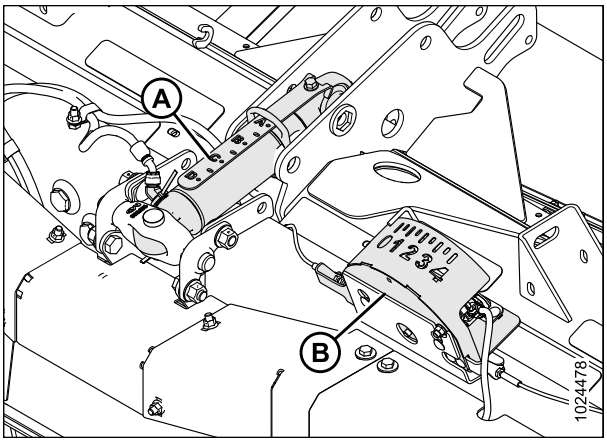


Figure 7.74: Center-Link

NOTE:

Gearbox (C) should be close to 25° degrees (A) angled up from being parallel with the ground.

6. Place an empty 5 liter (5.3 qts [US]) container underneath the gearbox.
8. Remove drain plug (E), and completely drain the oil from the gearbox.
9. Reinstall drain plug (E).
10. Remove oil plug (B). Add lubricant to gearbox through hole (B) until lubricant runs out of the hole. Refer to the inside back cover for lubricant information.
11. Reinstall plugs and tighten.

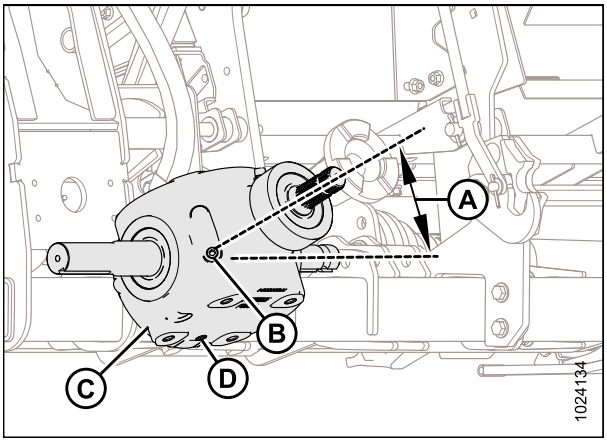


Figure 7.75: Gearbox

7.9.7 Checking and Adding Speed Increaser Gearbox Oil

DANGER

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

1. Park the equipment on level ground
2. Adjust the header, so the top of the speed increaser gearbox is parallel with the ground.
3. Shut down the engine, and remove the key from the ignition.

4. Remove oil plug (B).
5. Ensure lubricant slightly runs out of hole (B).
6. If necessary, remove plug (A) and add lubricant to gearbox through hole (A) until lubricant runs out of hole (B). Refer to the inside back cover for lubricant information.
7. Reinstall plugs and tighten.

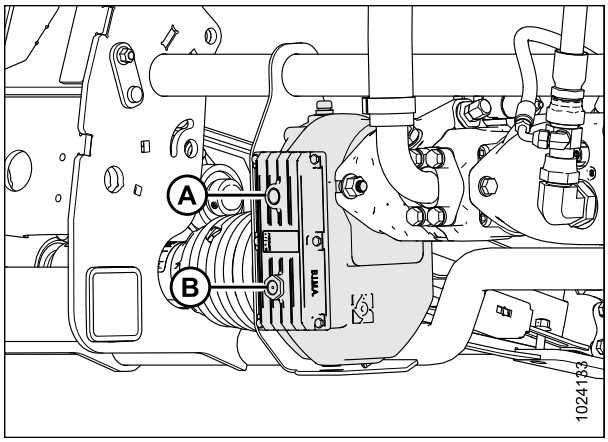


Figure 7.76: Speed Increaser Gearbox

7.9.8 Changing Speed Increaser Gearbox Oil

⚠ DANGER

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

1. Park the equipment on level ground
2. Adjust the header, so the top of the speed increaser gearbox is parallel with the ground.
3. Shut down the engine, and remove the key from the ignition.
4. Place an empty 5 liter (5.3 qts [US]) container underneath the gearbox.
5. Remove drain plug (C), and completely drain the oil from the gearbox.
6. Reinstall drain plug (C).
7. Remove oil plug (B).
8. Remove plug (A) and add lubricant to gearbox through hole (A) until lubricant runs out of hole (B). Refer to the inside back cover for lubricant information.
9. Ensure lubricant slightly runs out of hole (B).
10. Reinstall plugs and tighten.

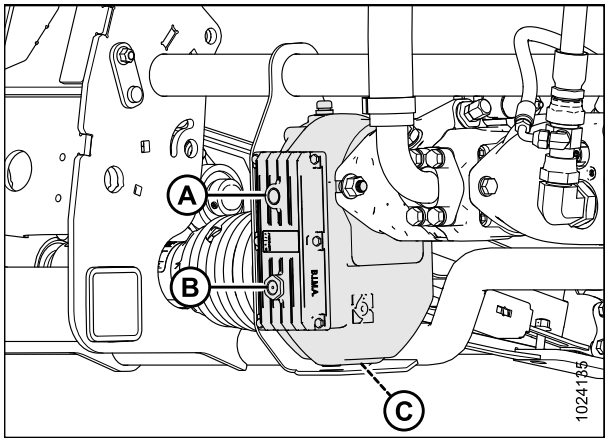


Figure 7.77: Speed Increaser Gearbox

8 Repair Parts

This chapter lists all the replacement parts that can be ordered for a MacDon Harvester Mount Module.

Bold text is used to indicate updates made at the current revision level. With each new revision of the manual, previous revisions are returned to regular text.

In this manual, right and left are determined from the operator’s position, facing forward with the in cab-forward position. An arrow is sometimes used in illustrations to indicate cab-forward position.

8.1 Abbreviations

The following abbreviations are used in this manual.

A/R – as required (quantity varies)
C/W – complete with
CSK – countersink
DK – double knife
DT – distorted thread
FLG – flange
I.D. – inside diameter
LH – left hand (determined from Operator's position, facing forward)
NC – national coarse thread
NF – national fine thread
NSS – not serviced separately
O.D. – outside diameter
OPT – optional
PT – pull-type (mower conditioner)
REF – reference, part number called up elsewhere in manual
RH – right hand (determined from Operator's position, facing forward)
RHSN – round head, square neck or square neck carriage bolt
RHSSN – round head, short, square neck
SMV – slow moving vehicle
SP – self-propelled (header)

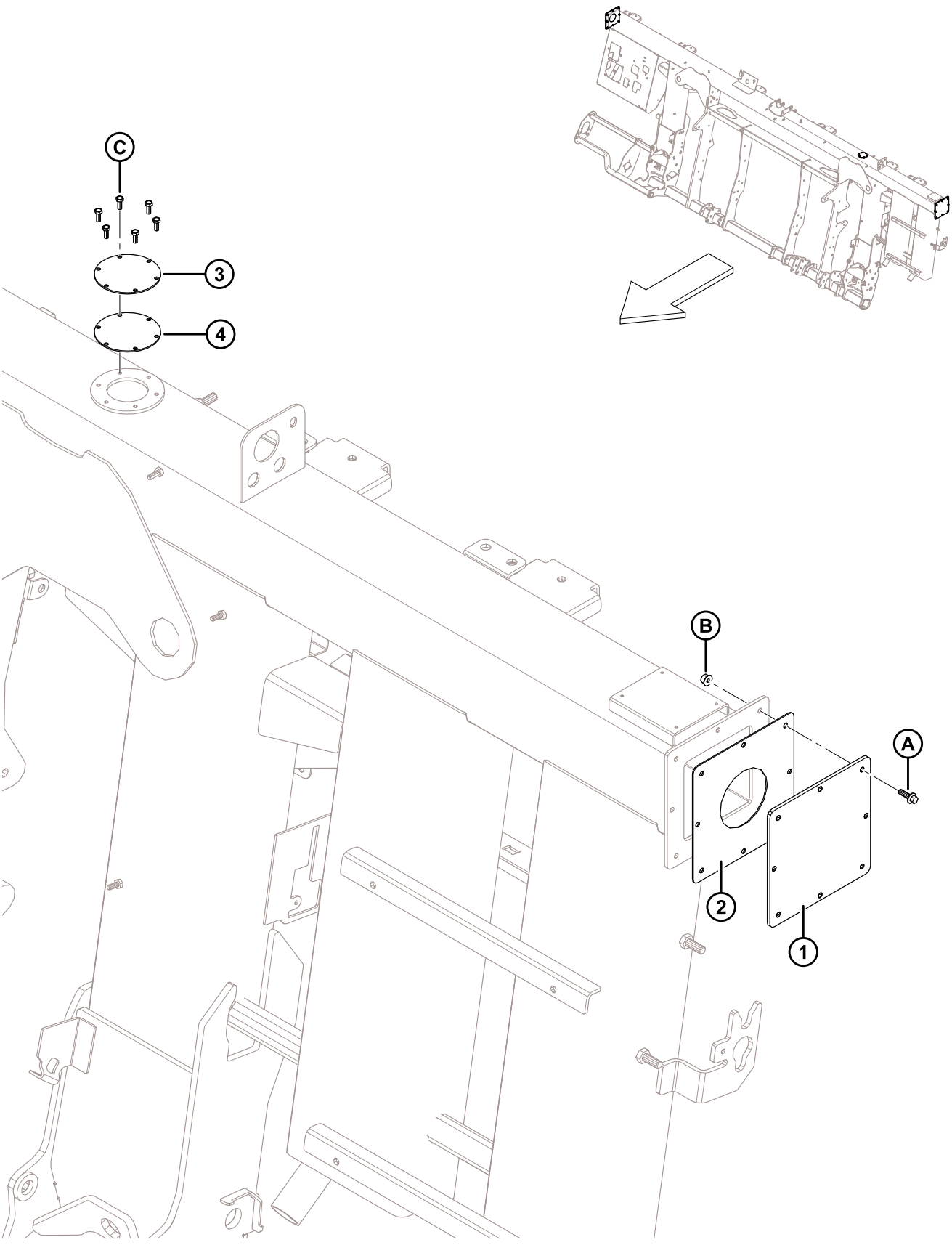
8.2 Serial Number Breaks

The side of the serial number on which the dash (–) appears determines whether the part is used "up to" or "after" the serial number given.

Example:

- –162249 Used on machines up to and including serial number 166249
- 166250– Used on machines including and after serial number 166250

8.3 Frame and Components



Ref	Part Number	Description	Qty	Serial Number
1	240101	PLATE – END COVER	2	
2	187112	GASKET	2	
3	220273	CAP	1	
4	174990	GASKET	1	
A	136324	BOLT – HEX FLG HD TFL M6 X 1 X 20-10.9-A2L		
B	152668	NUT – HEX FLG CTR LOC M6 X 1-8		
C	135873	SCREW – MACH #10-32 x 0.5 IN. HEX		

8.4 Feed Deck

Not available at time of publishing

1024493

Ref	Part Number	Description	Qty	Serial Number
1	300404	FRAME – FEED DECK	1	
2	213272	HOUSING – FL206 AND BEARING	1	
3	213279	COVER – DRIVE ROLLER	1	
4	282254	SUPPORT – IDLER ADJ WELDT LH	1	
	282255	SUPPORT – IDLER ADJ WELDT RH	1	
5	213734	RETAINER – SPRING	2	
6	287587	SPRING – COMPRESSION	2	
7	231647	ROLLER – IDLER WELDT	1	
8	287885	HOUSING – LH IDLER CUP ASSY	1	
	287883	HOUSING – RH IDLER CUP ASSY	1	
9	100862	SEAL – OIL	4	
10	118185	BEARING – BALL CYL, 52 MM O.D., 25 MM I.D.	2	
11	118011	RING – RETAINING INTERNAL	2	
12	21301	FITTING – LUBRICATION	2	
13	133372	CAP – DUST	2	
14	187732	LINK – HOOK ASSY	2	
15	295934	DRAPER – 1988 (78.3 IN.) W X 1712 LG	1	
16	130283	STRAP – DRAPER CONN	15	
17	159197	MOTOR – HYD 4.0 CID (WITH 921 PSI RELIEF)	1	
	37181	SEAL KIT		
	159606	VALVE – RELIEF (921 PSI)		
	159607	VALVE – RELIEF (1200 PSI)		
18	213418	SUPPORT – LH ADAPTER LINK MACH	1	
	213419	SUPPORT – RH ADAPTER LINK MACH	1	
19	282978	STOP – UHMW STRIP	2	
20	300337	PAN – AUGER	1	
21	20312	PIN – CLEVIS	2	
22	18608	PIN – COTTER 3/16 DIA X 1.5 ZP	2	
23	287933	ROLLER – DRIVE COATED	1	

Not
available
at
time of
publishing

1024493

Ref	Part Number	Description	Qty	Serial Number
A	136248	BOLT – RHSSN TFL M10 X 1.5 X 35-8.8-AA1J		
B	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
C	252701	BOLT – RHSSN TFL M10 X 1.5 X 60-8.8-AA3L		
D	184655	BOLT – HEX HD M8 X 1.25 X 55-8.8-AA1J		
E	135337	NUT – HEX FLG CTR LOC M8 X 1.25-8-A2L		
F	135319	BOLT – HEX HD M10 X 1.5 X 40-8.8-A3L		
G	252272	BOLT – HEX HD TFL M12 X 1.75 X 180-10.9-AA3L		
H	184694	NUT – HEX M12 X 1.75-8-A3L		
J	136036	NUT – HEX SMTH FLG M12 X 1.75-8-A3L		
K	152520	NUT – HEX FLG TECH LOC M16 X 2-10-A3L		
L	21561	BOLT – HH 3/8 NC X 1.5 LG GR 5 ZP		
M	30228	NUT – FLG DT SMTH FACE 0.375-16 UNC		
N	49671	SCREW – BUTTON HD RIB NK		
P	30669	NUT – CSK CENTER LOCK		
Q	20078	BOLT – HH 3/8 NC X 1.75 LG GR 5 ZP		
R	136492	SCREW – HEX SOC CSK HD TFL M8 X 1.25 X 25-10.9-AA1J		
S	184657	BOLT – RHSSN M10 X 1.5 X 20-8.8-AA1J		
T	184662	BOLT – RHSN TFL M10 X 1.5 X 30-8.8-AA1J		
U	136496	BOLT – HEX FLG HD TFL M10 X 1.5 X 20-A2-70-SS		
V	18601	WASHER – FLAT SAE		

8.5 Drives

Not available at time of publishing

1024493

Ref	Part Number	Description	Qty	Serial Number
1	NSS	SHAFT – PUMP GEARBOX TELESCOPING DRIVE	1	
2	300286	SPEED INCREASER	1	
3	300024	PUSH BAR – WELD'T	1	
4	300670	CHAIN – 80 ROLLER 70 PITCHES W/CL	1	
5	282937	SPROCKET – 16T80	1	
6	282938	HUB – TAPER LOCK	1	
7	150438	BEARING – BALL SPH OD CW LC (1-3/8 IN. BORE)	1	
8	21938	FLANGE – CW LUBE FITTING	1	
9	30602	FLANGE	1	
10	NSS	SUPPORT – WELDMENT IDLER	1	
11	300238	SHAFT – MACHINED, IDLER	1	
12	300621	SUPPORT – TENSIONER	1	
13	282020	SPROCKET IDLER – TSUBAKI 12T80	1	
14	300287	SHAFT – PUMP GEARBOX DRIVE SHAFT	1	
15	300671	CHAIN – 80 ROLLER 66 PITCHES W/CL	1	
16	8275	SPACER	1	
17	REF	GEARBOX ASSEMBLY [4]	1	
A	184662	BOLT – RHSN TFL M10 X 1.5 X 30-8.8-AA1J		
B	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
C	50155	BOLT – HEX HD TFL M12 X 1.75 X 25-8.8-AA1J		
D	30633	WASHER – LOC SPRING M12-CS-1055-1065-A2L		
E	136431	NUT – HEX FLG CTR LOC M12 X 1.75-10		
F	148798	BOLT – HEX FLG HD M12 X 1.75 X 30-10.9-AA1J		
G	184665	BOLT – HEX FLG HD M10 X 1.5 X 30-10.9-AA1J		
H	300669	NUT – JAM		
J	135659	NUT – HEX M12 X 1.75-8-BO		
K	135367	NUT – FLG DT SMTH FACE 0.75-10 UNC GR. G		
L	112130	WASHER – HARD ASTM F436 3/4-400HV-AB3C		

4. Refer to Sections *8.6 Gearbox Assembly – CLAAS, page 115* and .

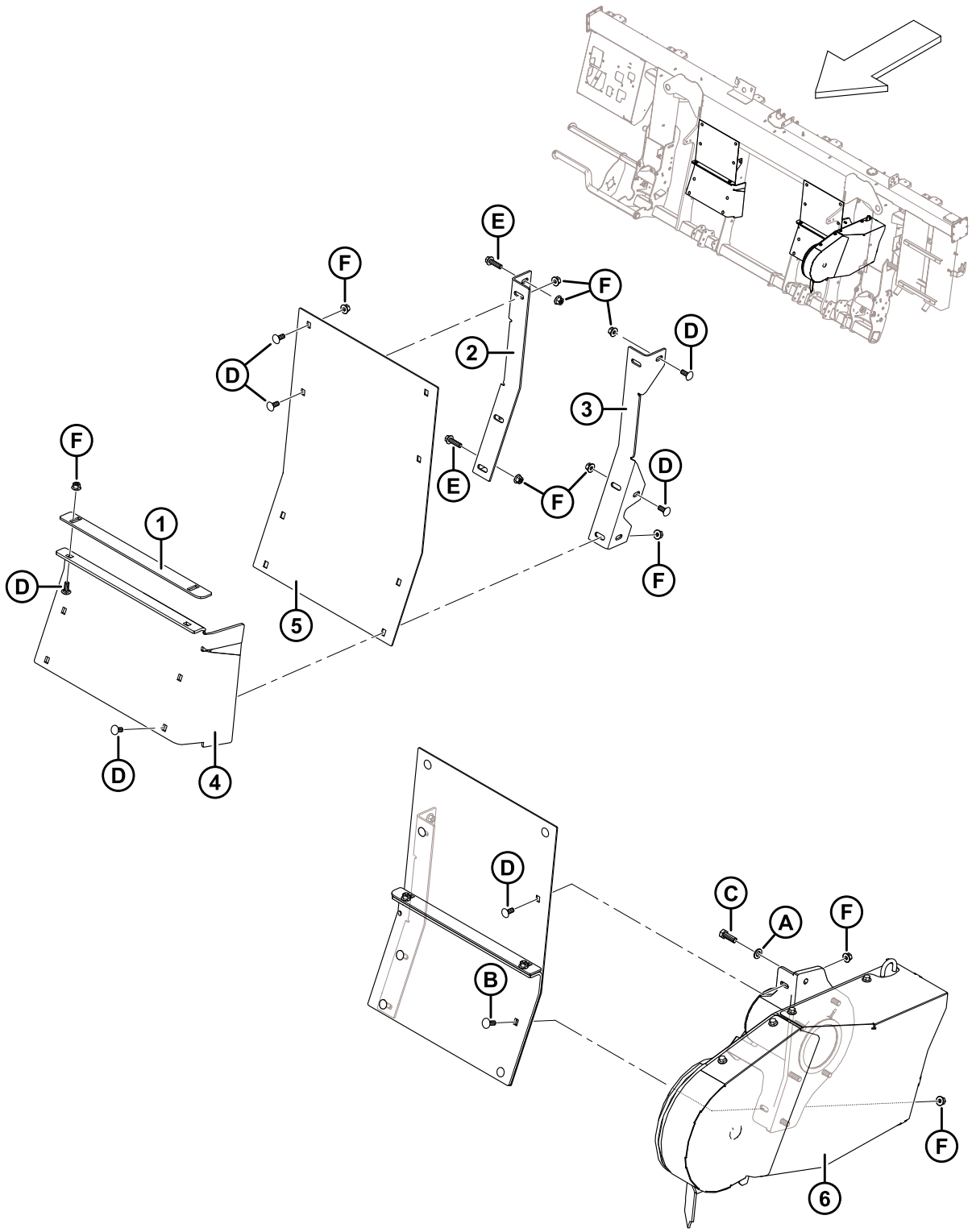
8.6 Gearbox Assembly – CLAAS

Not available at time of publishing

1024493

Ref	Part Number	Description	Qty	Serial Number
1	300711	SUPPORT – GEARBOX MOUNT	1	
2	300294	GEARBOX – 1:1.35	1	
3	282728	COUPLING – GEARBOX CLAAS	1	
A	184681	BOLT – HEX HD M16 X 2 X 50-8.8-A3L		
B	136476	NUT – HEX CTR LOC M16 X 2-8		
C	30441	WASHER – HARDENED ASTM F436 5/8		

8.7 Left Auger Arm

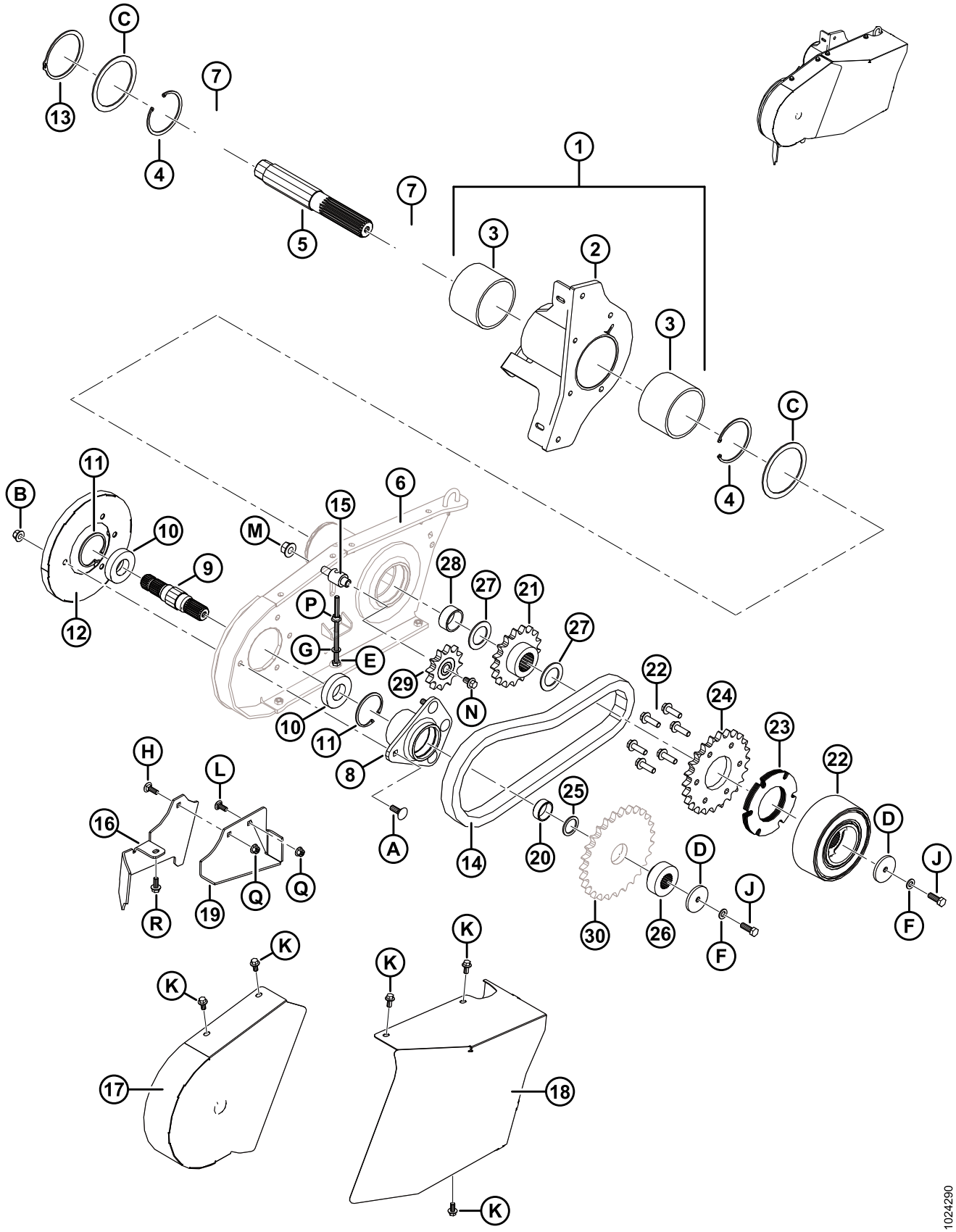


1024287

Ref	Part Number	Description	Qty	Serial Number
1	300336	PLATE – STRIPPER	2	
2	300335	SUPPORT – BACKSHEET LH FLANGE	1	
3	300334	SUPPORT – BACKSHEET RH FLANGE	2	
4	300332	WLDT – WEAR PLATE, RHS	1	
	300329	WLDT – WEAR PLATE, LHS	1	
5	300323	SHEET – AUGER BACKSHEET	2	
6	300253	ASSEMBLY – LHS AUGER ARM [5]	1	
A	184714	WASHER – FLAT REG M12-300HV		
B	184662	BOLT – RHSN TFL M10 X 1.5 X 30-8.8-AA1J		
C	152730	BOLT – HEX HD TFL M12 X 1.75 X 35-10.9-A3L		
D	136506	BOLT – RHSSN M10 X 1.5 X 25-8.8-A3L		
E	136211	BOLT – HEX FLG HD M10 X 1.5 X 35-8.8-A3L		
F	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		

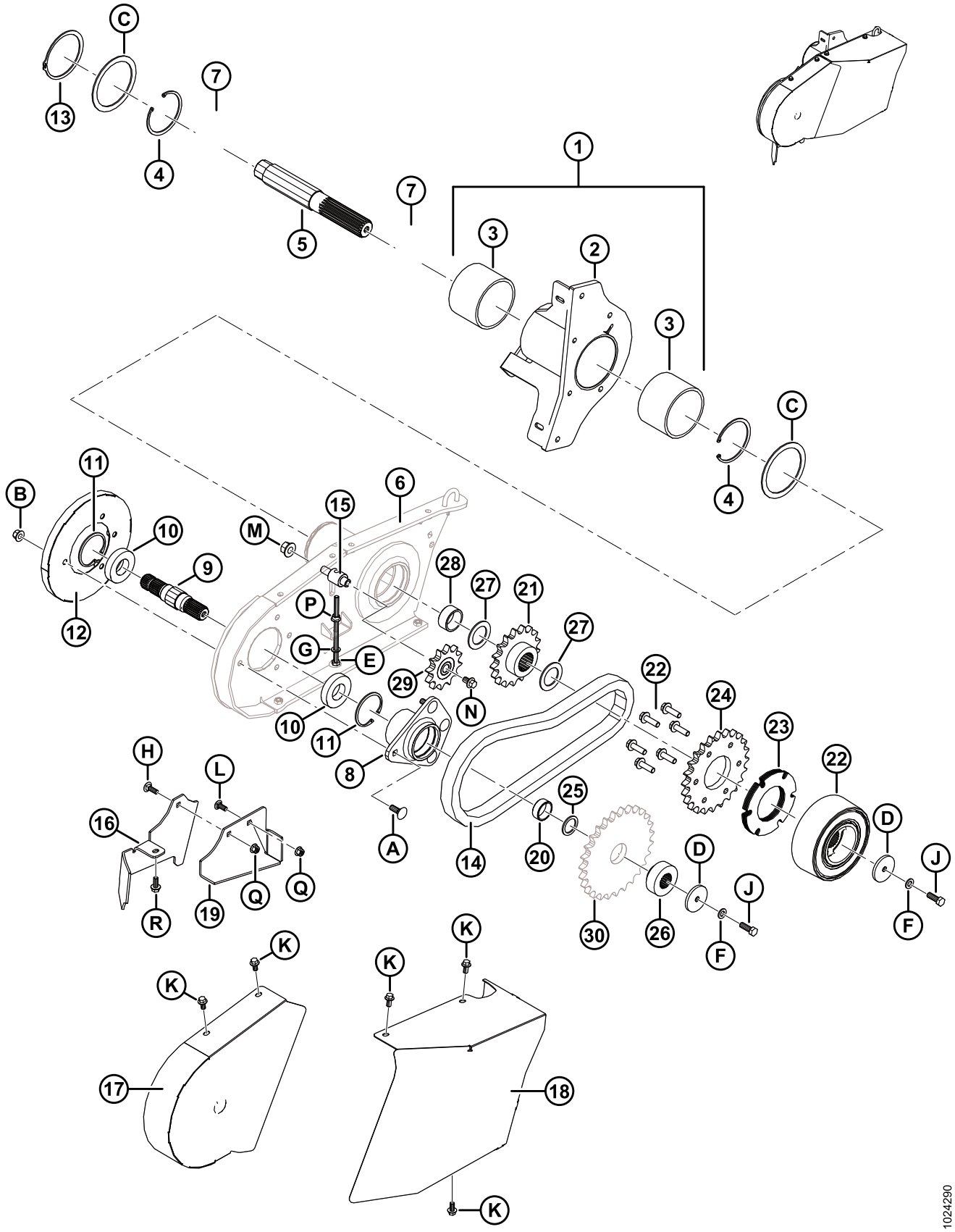
5. Refer to Section *8.8 Left Auger Arm – Service Parts, page 119* for sevice parts.

8.8 Left Auger Arm – Service Parts



Ref	Part Number	Description	Qty	Serial Number
	300253	ASSEMBLY – LHS AUGER ARM [6]		
1	300256	ASSY – REAR HOUSING	1	
2	300710	SUPPORT – REAR HOUSING, MACHINED	1	
3	282883	BUSHING – REAR SUPPORT	2	
4	300690	RING – INT RETAINING, 3.938 IN. BORE, 2.77 MM THICK	2	
5	300510	SHAFT – MACHINED, DRIVE	1	
6	NSS	SUPPORT – LH AUGER ARM WLDT	1	
7	282928	BEARING – BALL	2	
8	292732	MACHINED – HOUSING	1	
9	292619	SHAFT	1	
10	17962	BEARING – BALL CYL O.D. 40 MM BORE	2	
11	17430	RING – INT RETAINING	2	
12	282470	COVER – LHS SHIELD WLDT	1	
13	282283	RING – INT RETAINING	1	
14	300672	CHAIN – 80 ROLLER 54 PITCHES W/CL	1	
15	300498	SHAFT – MACHINED, IDLER	1	
16	300462	SHIELD – LHS AUGER PAN	1	
17	300380	SHIELD – AUGER DRIVE	1	
18	300379	GUARD – AUGER DRIVE	1	
19	282985	WEDGE – DOWNSTOP, LHS	1	
20	282958	SPACER – AUGER SHAFT	1	
21	282913	ASSEMBLY – DRIVE SPROCKET WLDT	1	
22	282085	CLUTCH – WEASLER AUTOMATIC [7]	1	
23	282299	PLATE – CLUTCH SPACER	5	
24	282339	SPROCKET – TSUBAKI 24T80, MACHINED	1	
	282907	SPROCKET – TSUBAKI 31T80, MACHINED	1	
25	282900	SPACER – DRIVE SHAFT, THIN	1	
26	282587	ASSEMBLY – AUGER DRIVE SPROCKET WLDT	1	
27	282298	SPACER – DRIVE SHAFT, THIN	2	
28	282295	SPACER – REAR SHAFT	1	
29	282020	SPROCKET IDLER – TSUBAKI 12T80	1	
30	NSS	SPROCKET – NTL 27T80	1	

6. Includes all listed parts and hardware.
7. Includes six M12 bolts (not serviced separately).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18
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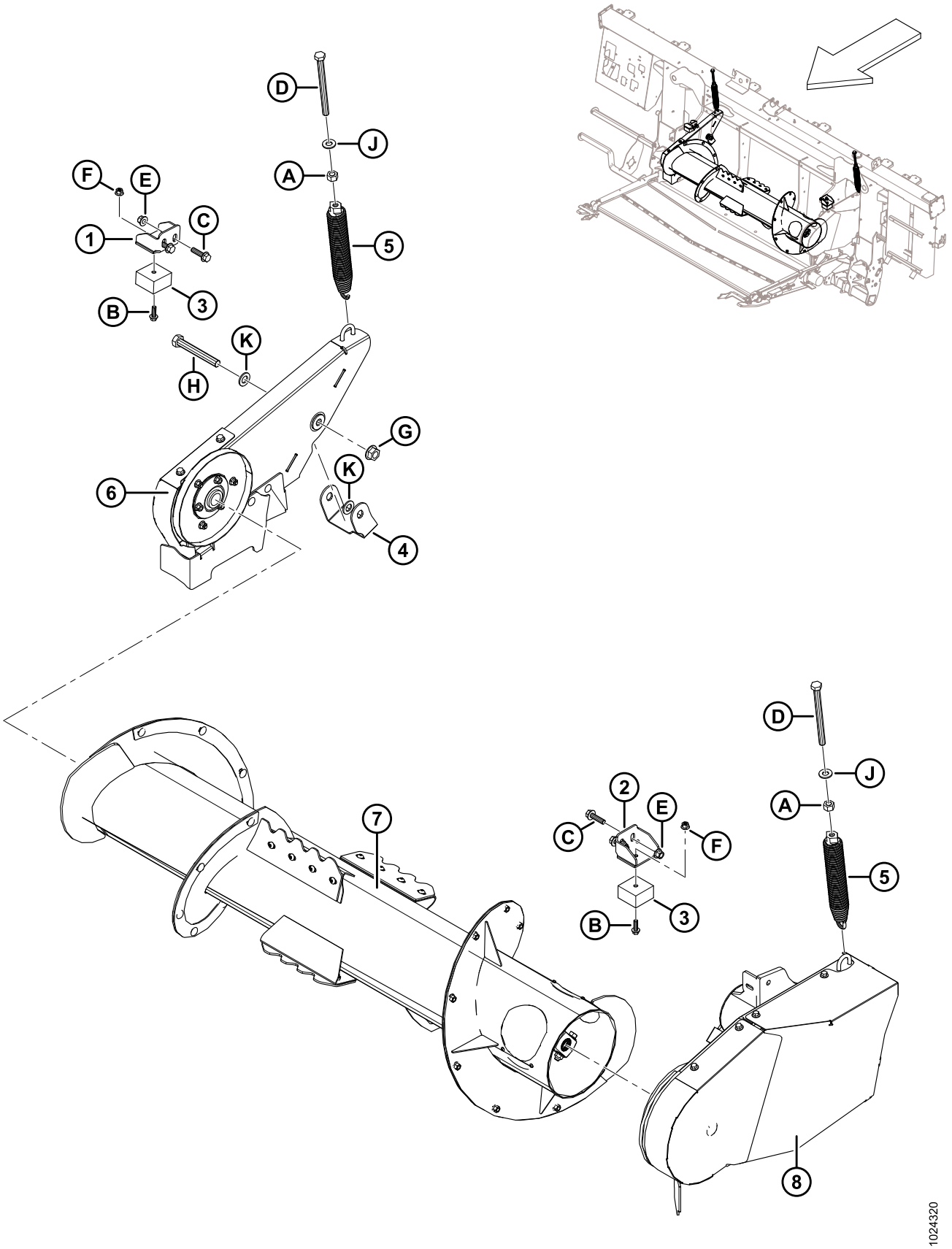
1024290

Ref	Part Number	Description	Qty	Serial Number
A	136291	BOLT – RHSN TFL M12 X 1.75 X 35-8.8-A3L		
B	136431	NUT – HEX FLG CTR LOC M12 X 1.75-10		
C	282394	WASHER – THRUST		
D	282816	WASHER – RETAINING		
E	252164	BOLT – HEX HD TFL M10 X 180-8.8		
F	184714	WASHER – FLAT REG M12-300HV		
G	184711	WASHER – FLAT REG M10-200HV-AA1J		
H	184662	BOLT – RHSN TFL M10 X 1.5 X 30-8.8-AA1J		
J	152730	BOLT – HEX HD TFL M12 X 1.75 X 35-10.9-A3L		
K	152655	BOLT – HEX FLG HD M10 X 1.5 X 20-8.8-A3L		
L	136506	BOLT – RHSSN M10 X 1.5 X 25-8.8-A3L		
M	136440	NUT – HEX FLG CTR LOC M16 X 2-10-A3L		
N	136398	BOLT – HEX FLG HD TFL M12 X 1.75 X 20-8.8-A3L		
P	135927	NUT – HEX SMTH FLG M10 X 1.5-8-A3L		
Q	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
R	135783	BOLT – HEX FLG HD TFL M10 X 1.5 X 25-10.9-AA1J		

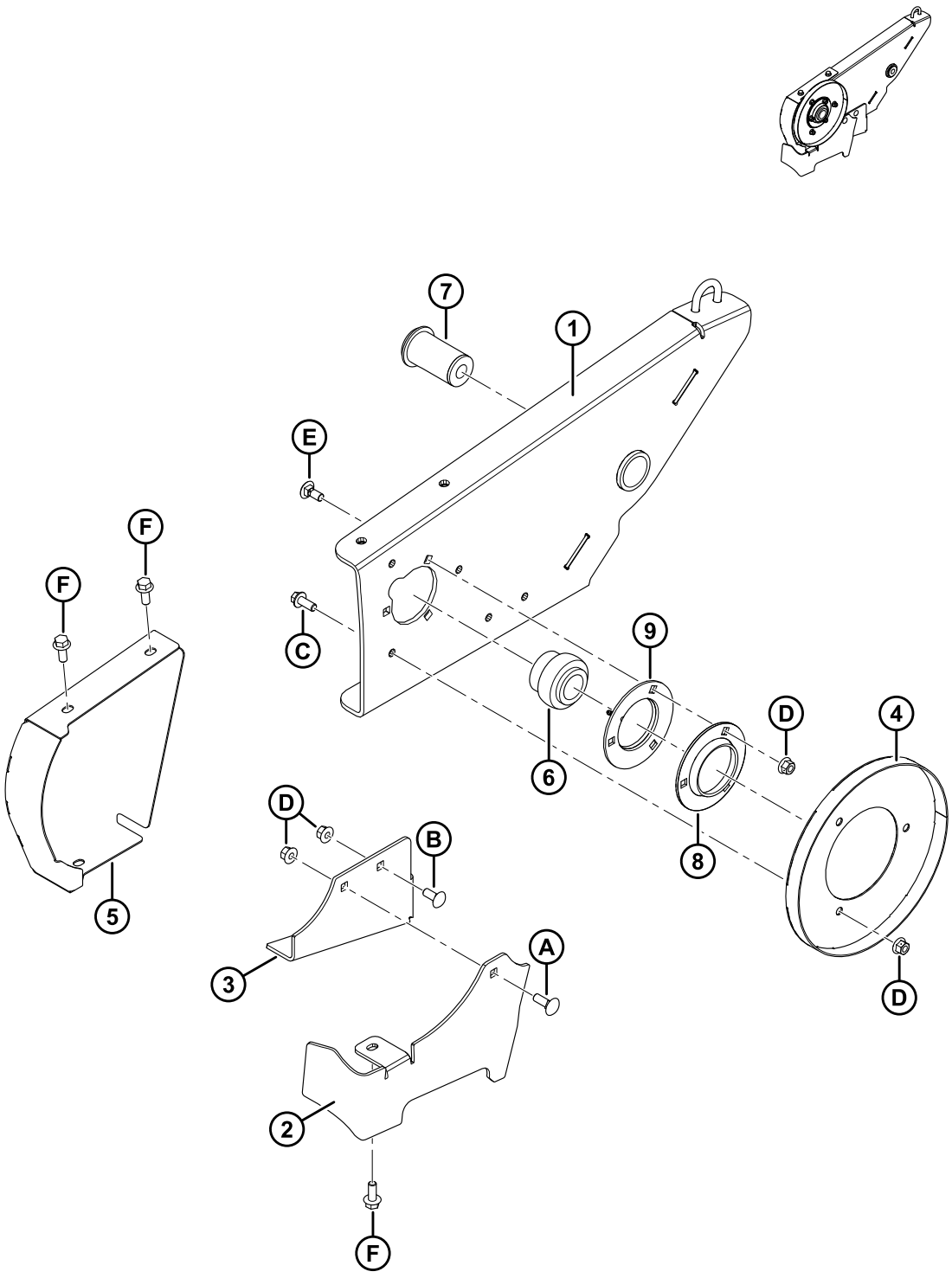
8.9 Right Auger Arm and Auger Assembly



Ref	Part Number	Description	Qty	Serial Number
1	300697	BRACKET – AUGER STOP RHS	1	
2	300691	BRACKET – AUGER STOP LHS	1	
3	152266	STOP – RUBBER	2	
4	282931	SUPPORT – RHS HINGE	1	
5	222664	ASSEMBLY – SPRING	2	
6	300254	ASSY – RHS AUGER ARM [8]	1	
7	300682	ASSEMBLY – AUGER [9]	1	
8	REF	ASSEMBLY – LHS AUGER ARM [10]	1	
A	184699	NUT – HEX M16 X 2-8-A3L		
B	184665	BOLT – HEX FLG HD M10 X 1.5 X 30-10.9-AA1J		
C	148799	BOLT – HEX FLG HD M12 X 1.75 X 45-10.9-AA1J		
D	136504	BOLT – HEX HD TFL M16 X 2 X 190-8.8-AA1J		
E	136431	NUT – HEX FLG CTR LOC M12 X 1.75-10		
F	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
G	135367	NUT – FLG DT SMTH FACE 0.75-10 UNC GR. G		
H	30549	BOLT – HH 3/4 NC X 5.5 LG GR 5 ZP		
J	30441	WASHER – HARDENED ASTM F436 5/8		
K	18601	WASHER – FLAT SAE		

8. Refer to Section *8.10 Right Auger Arm – Service Parts, page 125* for service parts.
9. Refer to Section *8.11 Auger Assembly – Service Parts, page 127* for service parts.
10. Refer to Section *8.8 Left Auger Arm – Service Parts, page 119* for sevice parts.

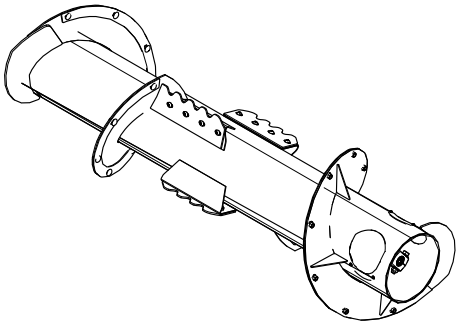
8.10 Right Auger Arm – Service Parts

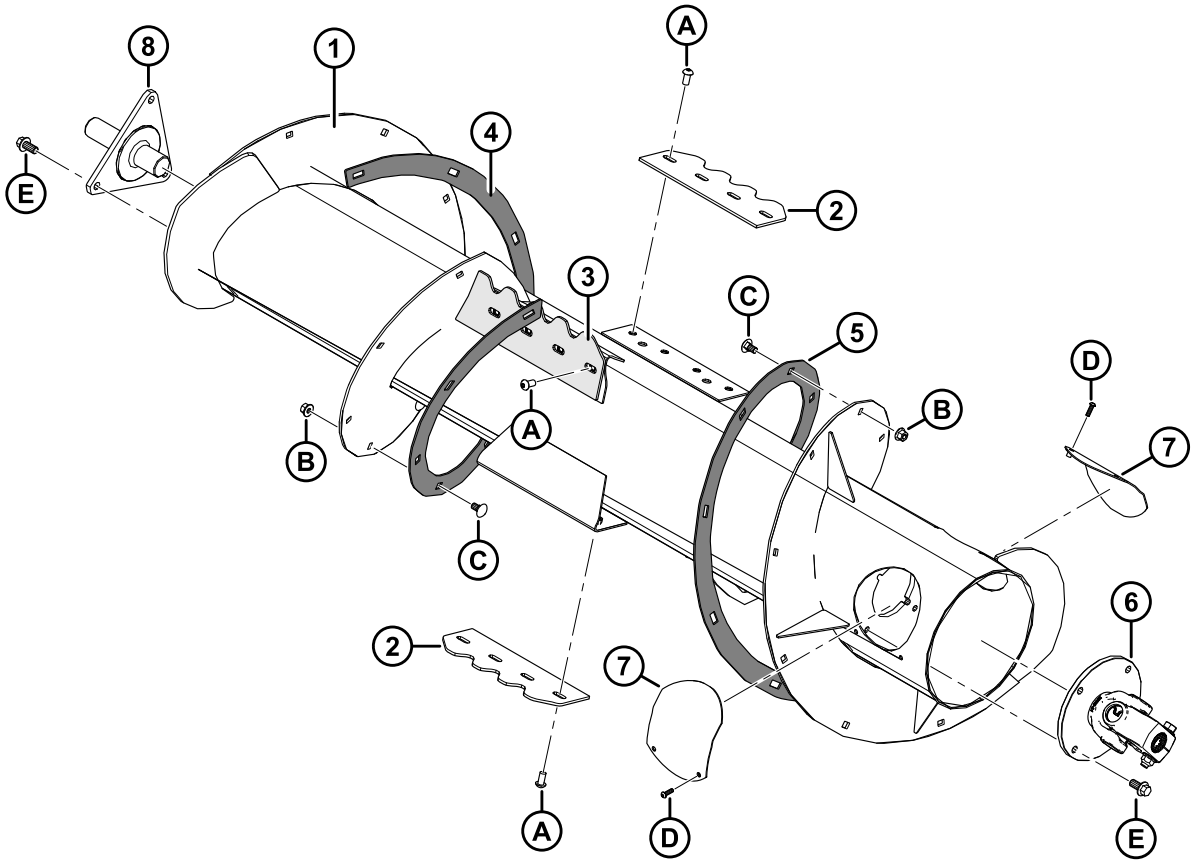


Ref	Part Number	Description	Qty	Serial Number
	300254	ASSY – RHS AUGER ARM [11]	1	
1	300506	SUPPORT – RHS ARM WLDT	1	
2	300487	SHIELD – RHS AUGER PAN	1	
3	300001	WEDGE – DOWNSTOP, RHS	1	
4	282984	COVER – RHS SHIELD WLDT	1	
5	282979	SHIELD – RHS ARM	1	
6	150438	BEARING – BALL SPH OD CW LC (1-3/8 IN. BORE)	1	
7	149342	BUSHING – RUBBER	1	
8	30602	FLANGE	1	
9	21938	FLANGE CW LUBE FITTING	1	
A	184662	BOLT – RHSN TFL M10 X 1.5 X 30-8.8-AA1J		
B	136506	BOLT – RHSSN M10 X 1.5 X 25-8.8-A3L		
C	136312	BOLT – HEX FLG HD TFL M10 X 1.5 X 25-10.9-AA1J		
D	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
E	135785	BOLT – RHSN M10 X 1.5 X 25-8.8-AA1J		
F	135783	BOLT – HEX FLG HD TFL M10 X 1.5 X 25-10.9-AA1J		

11. Includes all listed parts and hardware.

8.11 Auger Assembly – Service Parts





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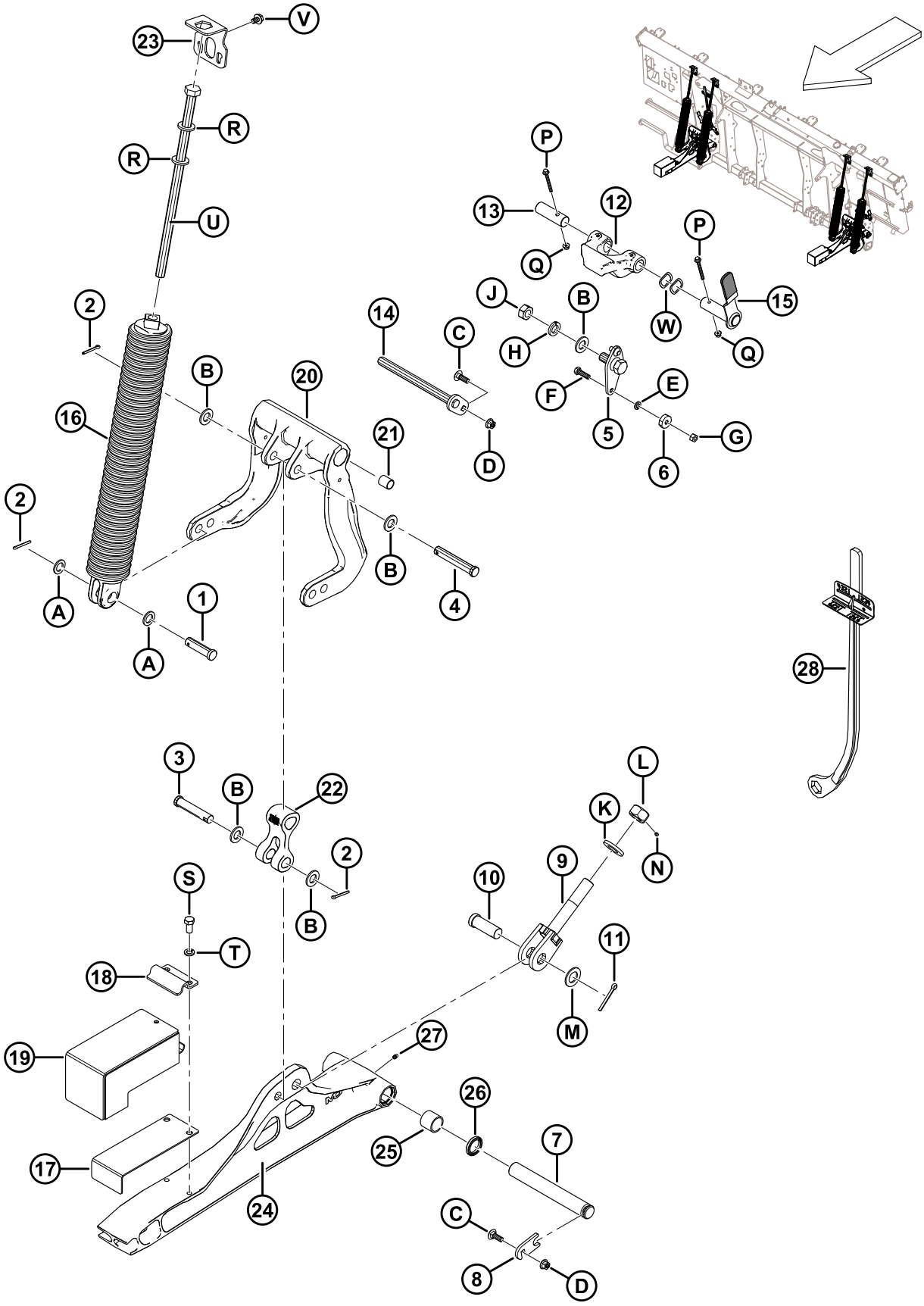
Ref	Part Number	Description	Qty	Serial Number
	300682	ASSEMBLY – AUGER [12]	1	
1	300421	ASSEMBLY – AUGER WLDT FA 18	1	
2	300425	PLATE – AUGER PADDLE	2	
	300490	PLATE – PADDLE, SHORT	2	
3	300426	PLATE – PADDLE, TALL	2	
	300489	PLATE – PADDLE, SHORT, OUTER	2	
4	300443	FLIGHTING – WEAR STRIP LH HELIX	1	
5	300444	FLIGHTING – WEAR STRIP RH HELIX	1	
6	300289	UNIVERSAL JOINT – 35E	1	
7	248291	COVER WELDMENT	2	
8	143153	SHAFT – MACHINING	1	
A	135723	SCREW – HEX SOC BTN HD M10 X 1.5 . 20-10.9-A3L		
B	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
C	136178	BOLT – RHSN M10 X 1.5 X 20-8.8-A3L		
D	191393	SCREW – HEX SOC BTN HD M6 X 1 X 20		
E	148800	BOLT – HEX FLG HD M12 X 1.75 X 25 X SPCL-10.9		

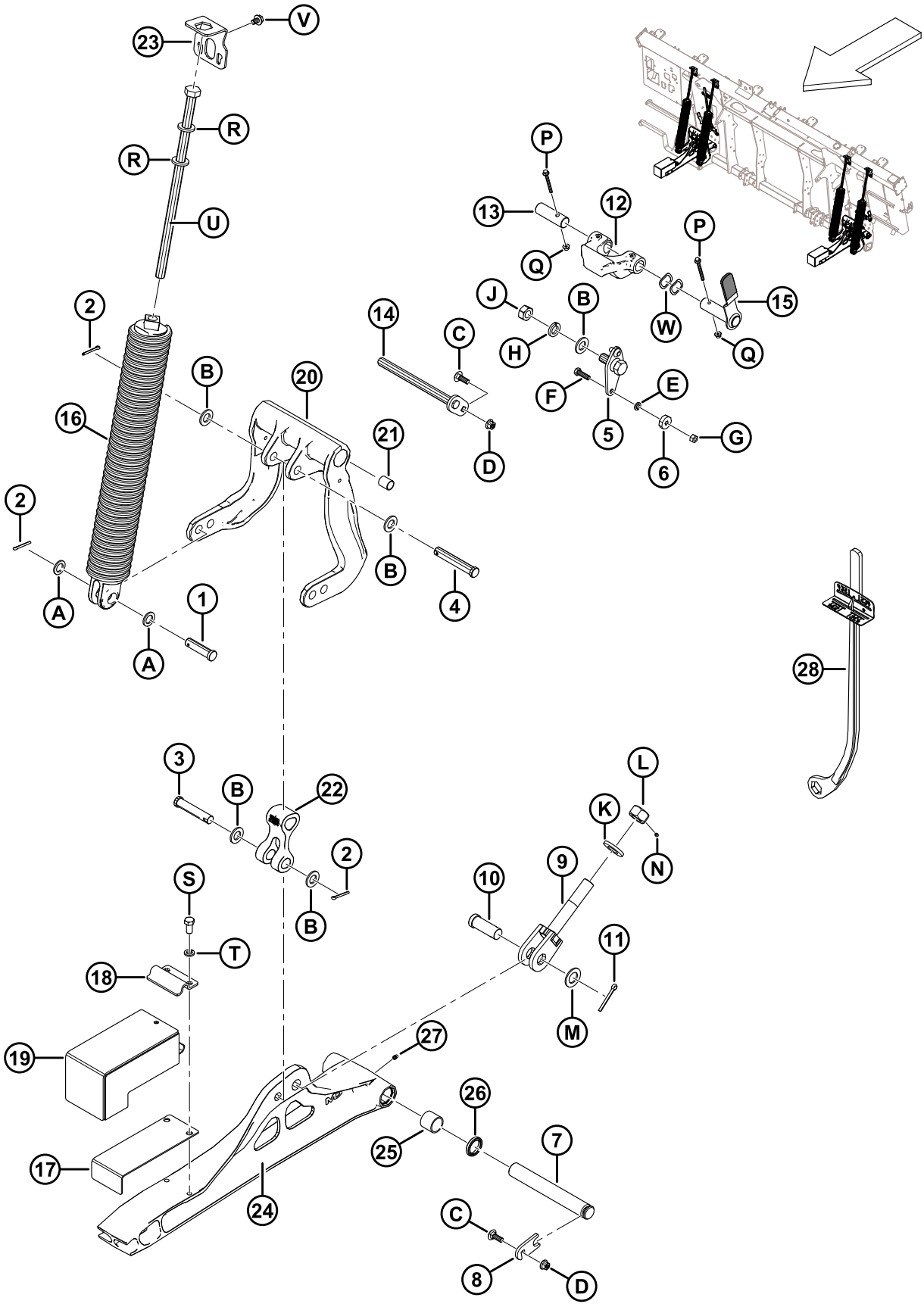
12. Includes all listed parts and hardware.

8.12 Float Linkage and Components



Ref	Part Number	Description	Qty	Serial Number
1	30463	PIN – CLEVIS, 18.89 MM, 58 MM, ZN PL	4	
2	18608	PIN – COTTER 3/16 DIA X 1.5 ZP	8	
3	20312	PIN – CLEVIS, 18.89 MM, 82 MM, ZN PL	2	
4	156741	PIN – CLEVIS	2	
5	125654	PIVOT WELDMENT – FLOAT	2	
6	18867	BEARING – BALL CYL O.D. C/W TWO SEALS	2	
7	248261	PIN	2	
8	212250	PLATE – PIN LOCK	2	
9	220679	BOLT WELDT	2	
10	135995	PIN – CLEVIS, 25.3 MM, 51 MM, ZN PL	2	
11	18609	PIN – COTTER 1/4 DIA X 2 ZP	2	
12	301513	DOWNSTOP – CASTING, MACHINED	2	
13	240455	PIN – PIVOT (STRAIGHT, 80 MM, 1 IN., ZN PL)	2	
14	248732	PIN – PIVOT WELDT	2	
15	287700	HANDLE ASSY – FLOAT LOCK	2	
	287701	GRIP – HANDLE		
16	213022	SPRING ASSEMBLY	4	
17	125145	PLATE – LEAF SPRING	2	
18	125146	CLAMP	2	
19	174775	ASSY – RUBBER BLOCK	2	
20	156839	LEVER – BELLCRANK WITH BUSHINGS	2	
21	156501	BUSHING – PLASTIC	2	
22	156574	LINK – ARM	2	
23	282961	LOCK – SPRING	4	
24	174816	LINK – LOWER, C/W BEARINGS [13]	2	
25	100500	BEARING – NEEDLE	4	
26	113221	SEAL	4	
27	18671	FITTING – LUBE 1/4-28 UNF	2	
28	229510	TOOL – WRENCH WELDMENT	1	

13. Includes two needle bearings (MD #100500), two seals (MD #113221), and lube fitting (MD #18671).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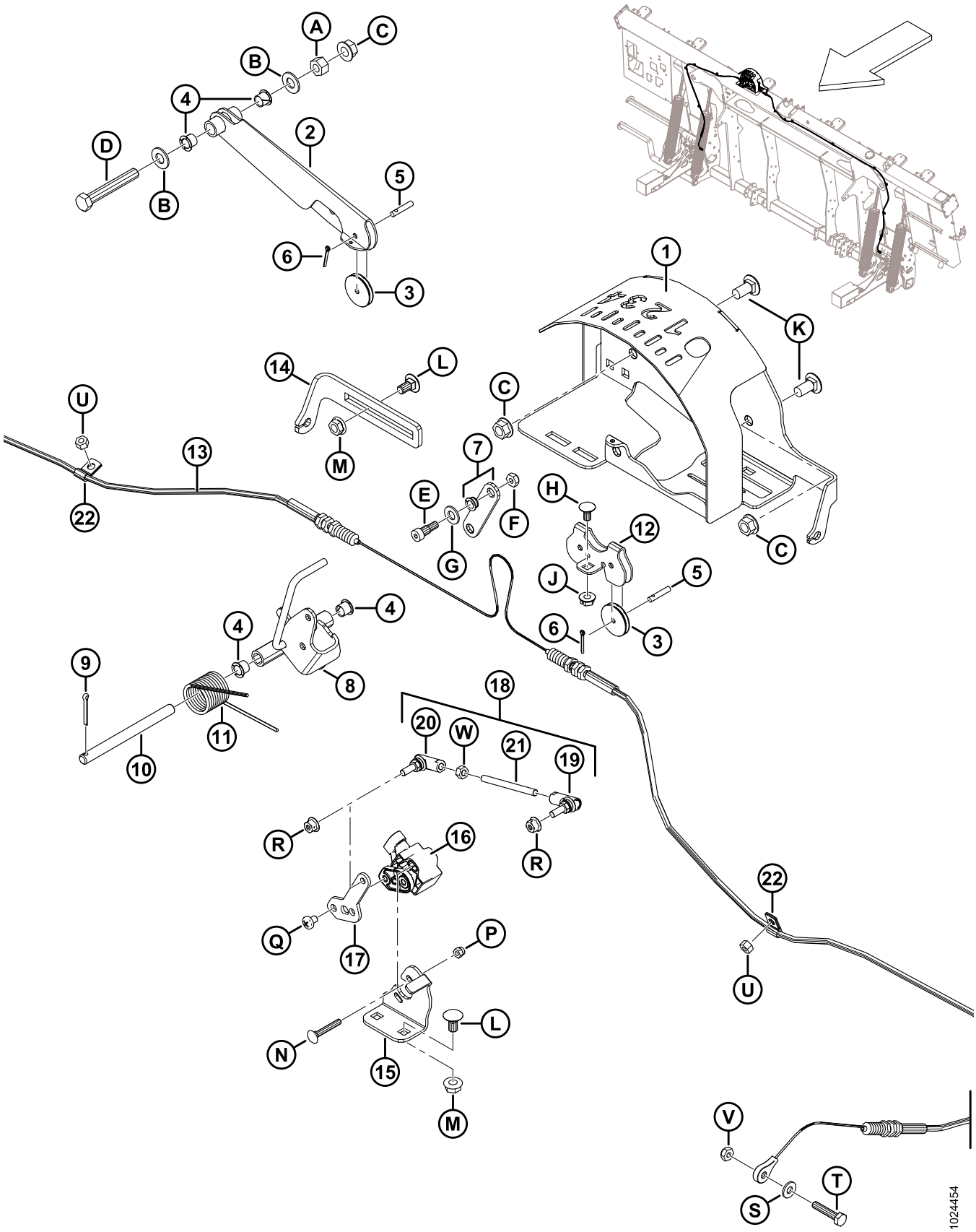
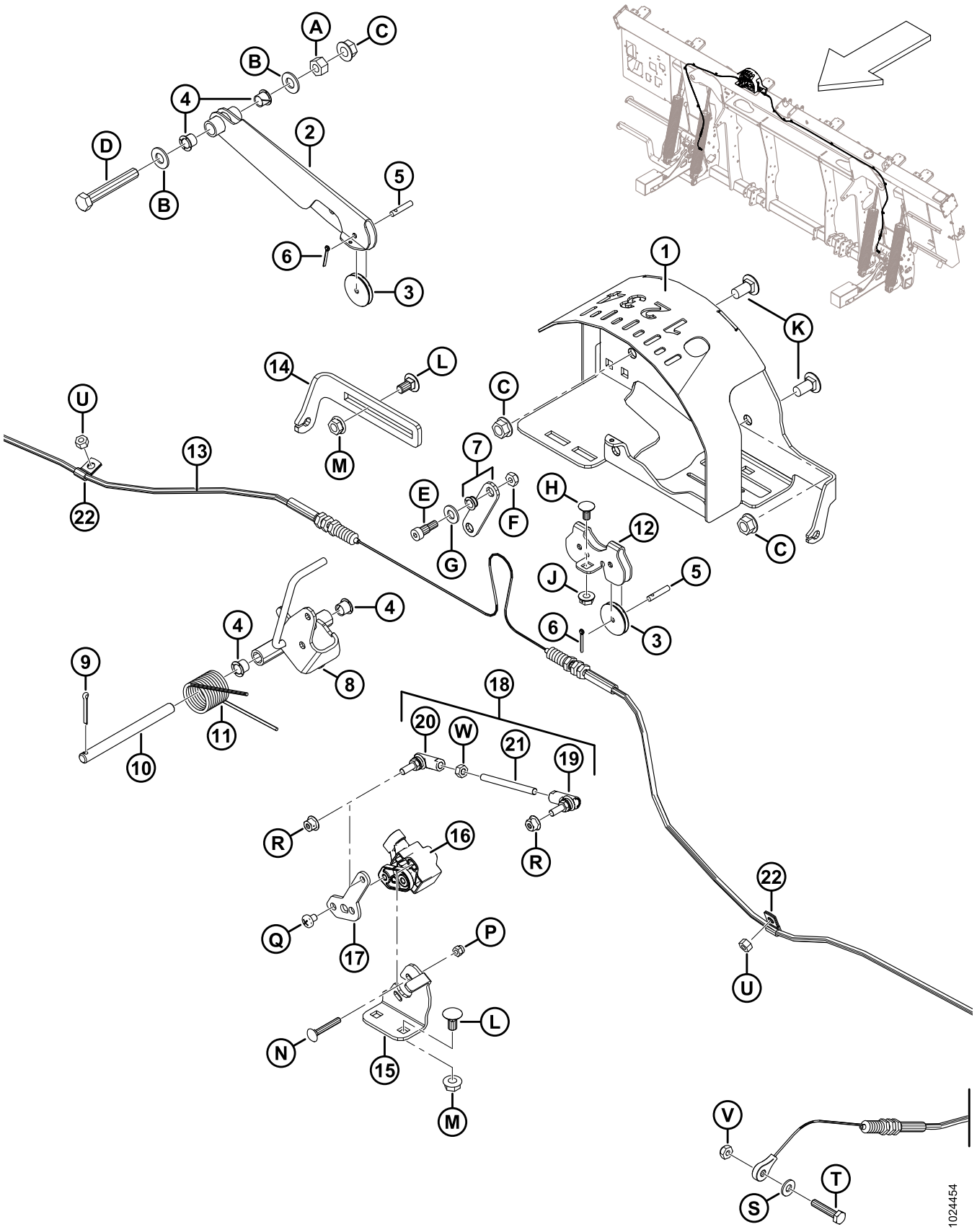
Ref	Part Number	Description	Qty	Serial Number
A	1709	WASHER – FLAT		
B	18601	WASHER – FLAT SAE		
C	184662	BOLT – RHSN TFL M10 X 1.5 X 30-8.8-AA1J		
D	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
E	18637	WASHER – REG. LOCK 3/8 IN. NOM. I.D. ZP		
F	21264	BOLT – HH 3/8 NC X 1.25 LG GR 5 ZP		
G	18590	NUT – HEX 3/8-16 UNC GR 5 ZP		
H	18640	WASHER – REG. LOCK 3/4 IN. NOM. I.D. ZP		
J	102636	NUT – HEX DT .750-10 UNC SIDE LOCK		
K	31774	WASHER – FLAT 1-1/8-30HRC-AC0C		
L	133047	NUT – DOWNSTOP, MACHINING		
M	156743	WASHER – FLAT		
N	136596	SCREW – SET CUP POINT 1/4-20 X 1/4		
P	136704	BOLT – HEX FLG HD M6 X 1 X 60-8.8-AA2L		
Q	152668	NUT – HEX FLG CTR LOC M6 X 1-8		
R	21540	WASHER – HARD ASTM F436 M20-340HV-AB2C		
S	21575	BOLT – HH 1/2 NC X 1.0 LG GR 5 ZP		
T	18638	WASHER – REG. LOCK 1/2 IN. NOM. I.D. ZP		
U	252198	BOLT – HEX HD M20 X 2.5 X 450-SPCL-8.8-AA1J		
V	136151	BOLT – HEX FLG HD TFL M10 X 1.5 X 16-8.8-A3L		
W	252564	WASHER – WAVE		

8.13 Float Indicator and Auto Header Height Control



Ref	Part Number	Description	Qty	Serial Number
1	187641	HOUSING – INDICATOR WELDT	1	
2	187655	ARM – INDICATOR WELDT	1	
3	187653	PULLEY – CONTROL	3	
4	276381	BUSHING – PLASTIC (9.55 MM I.D., 13.5 MM O.D., 9.53 MM WIDE)	4	
5	276863	PIN – STRAIGHT (4.76 MM, 25 MM, STAINLESS STEEL)	2	
6	18604	PIN – COTTER 3/32 DIA X 3/4 ZP	3	
7	187694	LINK – INDICATOR CW BUSHINGS [14]	1	
8	276048	INDICATOR – POINTER WELDMENT	1	
9	18605	PIN – COTTER 1/8 DIA X 1 ZP	1	
10	276281	PIN – STRAIGHT (9.5 MM, 116 MM, STAINLESS STEEL)	1	
11	156843	SPRING – TORSION	1	
12	187708	SUPPORT – INDICATOR PULLEYS	1	
13	300603	CABLE – FLOAT INDICATOR	1	
14	276298	SUPPORT – AHHC CABLE ADJUSTER	1	
15	276043	SUPPORT – SENSOR MOUNT	1	
16	248643	ROTARY SENSOR – DUAL OUTPUT	1	
17	276044	ARM – SENSOR	1	
18	276057	LINKAGE ASSEMBLY [15]	1	
19	291484	BALL JOINT – RH THREAD	1	
20	291485	BALL JOINT – LH THREAD	1	
21	232650	ROD – THREADED	1	
22	300619	CLAMP – INSULATED 3/16 IN.	11	

14. Includes two bushings (MD #156969).
15. Includes ball joints (MD #291484, 291485), rod (MD #232650), and nut (MD #136613).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Ref	Part Number	Description	Qty	Serial Number
A	18590	NUT – HEX 3/8-16 UNC GR 5 ZP		
B	18598	WASHER – SAE FLAT 13/32 I.D. X 13/16 IN. O.D. ZP		
C	30228	NUT – FLG DT SMTH FACE 0.375-16 UNC		
D	21102	BOLT – HH 3/8 NC X 2.5 LG GR 5 ZP		
E	135423	BOLT – SHOULDER 5/16 DIA X 3/8 X 1/4-20 UNRC		
F	18724	NUT – HEX LOCK DT 1/4-20 UNC ZP		
G	18597	WASHER – SAE FLAT 11/32 I.D. X 11/16 IN. O.D. ZP		
H	21926	BOLT – RHSN 1/4-20 X .5-GR5-ZP		
J	135248	NUT – HEX FLG CTR LOC		
K	21863	BOLT – RHSSN 3/8 NC X 0.75 LG GR 5 ZP		
L	135305	BOLT – RHSN 5/16-18 X .63-GR5-ZP		
M	30280	NUT – FLG SIDE LK SMTH FACE 5/16 NC GR 5 ZP		
N	197229	BOLT – RHSN M5 X 0.8 X 35-4.6-A2L		
P	197230	NUT – HEX NYLOC M5 X 0.8-8-A2L		
Q	158704	SCREW – PAN HD M6 X 1 X 8-4.8-A2L		
R	152668	NUT – HEX FLG CTR LOC M6 X 1-8-A2L		
S	18596	WASHER – SAE FLAT 9/32 I.D. X 5/8 IN. O.D. ZP		
T	30942	BOLT – HH 1/4 NC X 1.25 LG GR 5 ZP		
U	136773	NUT – HEX CTR LOC M6 X 1-8-AA3L		
V	18724	NUT – HEX LOCK DT 1/4-20 UNC ZP		
W	136613	NUT – HEX LH ISO 4032 M6 X 1-8		

8.14 Hydraulic Assembly

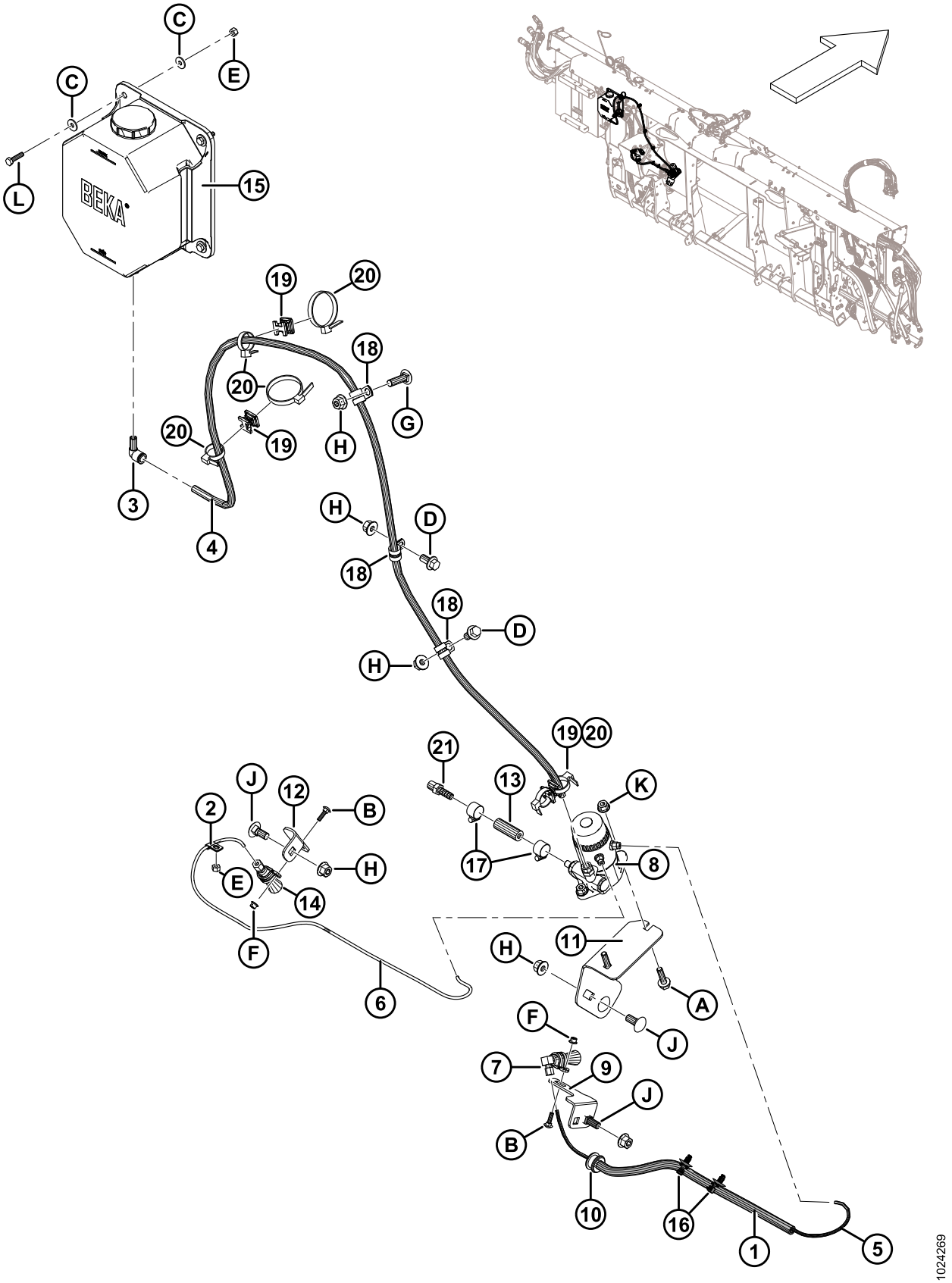
Not available at time of publishing

1024493

Ref	Part Number	Description	Qty	Serial Number
1	300756	MOULDING	1	
2	300617	COVER – PLATE	1	
3	300566	COVER – PLATE	1	
4	300469	SUPPORT – PUMP LOWER	1	
5	300429	PANEL – COVER	1	
6	282846	SUPPORT – PUMP UPPER	1	
7	REF	ASSEMBLY – PUMP W/ FITTINGS [16]		
8	REF	ASSEMBLY – MANIFOLDS HYD [17]		
9	REF	ASSEMBLY – HYD FORAGE ADAPTER [18]		
A	252801	NUT – HEX FLG TOP LOC M14 X 2-10-AA1J		
B	152668	NUT – HEX FLG CTR LOC M6 X 1-8		
C	152655	BOLT – HEX FLG HD M10 X 1.5 X 20-8.8-A3L		
D	136704	BOLT – HEX FLG HD M6 X 1 X 60-8.8-AA2L		
E	136434	BOLT – HEX FLG HD M6 X 1 X 50-8.8-A2L		
F	136312	BOLT – HEX FLG HD TFL M10 X 1.5 X 25-10.9-AA1J		
G	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10-A3L		
H	135785	BOLT – RHSN M10 X 1.5 X 25-8.8-A3L		

16. Refer to Section *8.19 Hydraulics – Pump Assembly, page 148*.
17. Refer to Section *8.20 Hydraulics – Manifolds Assembly, page 151*.
18. Refer to Sections *8.18 Hydraulics – Forage Adapter Frame Components, page 146* and .

8.15 Auto Chain Oiler Assembly



Ref	Part Number	Description	Qty	Serial Number
1	300648	CONDUIT	1	
2	300619	CLAMP – INSULATED 3/16 IN.	1	
3	300583	FITTING – PLASTIC	1	
4	300521	TUBE – FLEXIBLE, OILER 10 MM	1	
5	300518	TUBE – FLEXIBLE, OILER 4 MM	1	
6	300514	TUBE – FLEXIBLE, OILER 4 MM	1	
7	300511	ASSEMBLY – OIL BRUSH	1	
8	300509	PUMP – CHAIN OILER	1	
9	300431	SUPPORT – BRUSH	1	
10	300342	GROMMET	1	
11	300328	SUPPORT – PUMP	1	
12	300324	SUPPORT – BRUSH	1	
13	300019	HOSE – PUMP DRIVE SHAFT	1	
14	282964	ASSEMBLY – OIL BRUSH	1	
15	282963	RESERVOIR – CHAIN OILER	1	
16	136655	FASTENER – FIR TREE MT W/ TIE	2	
17	136541	CLAMP – LINED, SS, 11–20 MM RANGE	2	
18	136410	CLAMP – INSULATED 3/8 IN.	3	
19	134442	SPACER – DUAL SWIVEL SADDLE	3	
20	30753	FASTENER – CABLE TIE, BLACK	6	
21	21046	FITTING – BARBED 1/4 NPT X 3/8 I.D. HOSE	1	
A	252655	BOLT – HEX FLG HD TFL M8 X 1.25 X 30-8.8-AA1J		
B	197225	BOLT – RHSN M5 X 0.8 X 20-4.6-A2L		
C	184706	WASHER – FLAT LARGE M6-200HV		
D	152655	BOLT – HEX FLG HD M10 X 1.5 X 20-8.8-A3L		
E	136773	NUT – HEX CTR LOC M6 X 1-8-AA3L		
F	136635	NUT – HEX FLG CTR LOC M5 X 0.8-8-AA1J		
G	136248	BOLT – RHSSN TFL M10 X 1.5 X 35-8.8-AA1J		
H	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
J	135785	BOLT – RHSN M10 X 1.5 X 25-8.8-AA1J		
K	135337	NUT – HEX FLG CTR LOC M8 X 1.25-8-A2L		
L	135301	BOLT – HEX HD M6 X 1 X 25-8.8-A2L		

8.16 Drive Manifold Assembly

Not available at time of publishing

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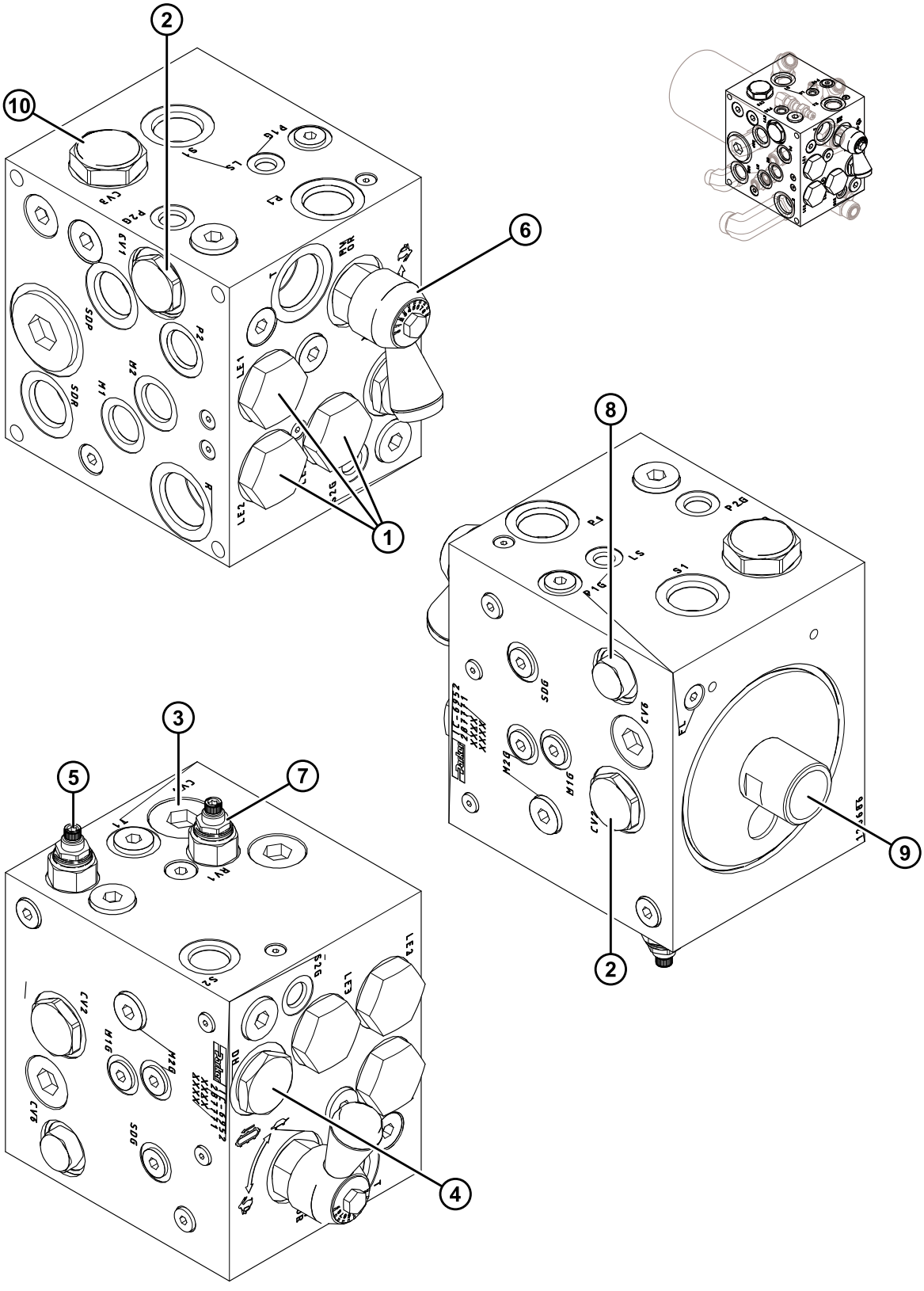
Ref	Part Number	Description	Qty	Serial Number
1	287771	ASSEMBLY – MANIFOLD, DRIVE [19]	1	
2	276631	VALVE – FLOW CONTROL	1	
	252351	SEAL KIT		
3	220907	VALVE – RELIEF	1	
	220908	SEAL KIT		
4	209045	COIL – SOLENOID	1	
5	184461	FITTING – ADAPTER 10 MORFS X 10 MORB	1	
	44210	O-RING – #10 ORB		
	135867	O-RING – #10 ORFS		
6	136303	FITTING – ELBOW 90° HYD	1	
	44210	O-RING – #10 ORB		
	135868	O-RING – #16 ORFS		
7	136190	FITTING – ELBOW 90° HYD	1	
	135554	O-RING – #16 ORFS		
8	136089	FITTING – ELBOW 90° HYD	1	
	44210	O-RING – #10 ORB		
	135867	O-RING – #10 ORFS		
9	135917	FITTING – ELBOW 90° HYD	1	
	44210	O-RING – #10 ORB		
	135866	O-RING – #8 ORFS		
10	135890	FITTING – ELBOW 90° HYD	2	
	30971	O-RING – #12 ORB		
	135866	O-RING – #8 ORFS		
11	135791	FITTING – ADAPTER	1	
	50220	O-RING – #16 ORB		
	135554	O-RING – #16 ORFS		
12	135789	FITTING – ADAPTER	1	
	50220	O-RING – #16 ORB		
	135868	O-RING – #16 ORFS		
13	135788	FITTING – ADAPTER	2	
	30971	O-RING – #12 ORB		
	135868	O-RING – #16 ORFS		
14	135775	FITTING – ADAPTER	1	
	50223	O-RING – #4 ORB		
	135957	O-RING – #4 ORFS		

19. Refer to Section *8.17 Drive Manifold Assembly – Service Parts, page 144* for service parts.

Ref	Part Number	Description	Qty	Serial Number
15	30994	PLUG – HEX CW O-RING	2	

8.17 Drive Manifold Assembly – Service Parts



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Ref	Part Number	Description	Qty	Serial Number
	287771	ASSEMBLY – MANIFOLD, DRIVE [20]		
1	287466	VALVE – LOGIC ELEMENT-16	3	
	220963	SEAL KIT		
2	287467	VALVE – VENTED CHECK-12	2	
	220965	SEAL KIT		
3	287468	VALVE – BYPASS, 25 PSI [21]	1	
4	287469	VALVE – DIVERTER	1	
	287473	SEAL KIT		
5	220951	VALVE – P.O. RELIEF, 2500 PSI	1	
	220960	SEAL KIT		
6	287470	VALVE – NEEDLE	1	
	287193	HANDLE – FLOW CONTROL		
	220962	SEAL KIT		
7	287613	VALVE – RELIEF, 1500 PSI	1	
	220960	SEAL KIT		
8	287471	VALVE – CHECK-08	1	
	220965	SEAL KIT		
9	245160	FITTING – FILTER ADAPTER	1	
10	287472	VALVE – CHECK REG-16, 8 PSI	1	
	220961	SEAL KIT		

20. Refer to Section .
21. Bypass valve (MD #287468) is located underneath plug.

8.18 Hydraulics – Forage Adapter Frame Components

Not available at time of publishing

1024493

Ref	Part Number	Description	Qty	Serial Number
1	133942	CAP – OIL FILLER	1	
2	300755	MOULDING	1	
3	300616	MOULDING	1	
4	300615	MOULDING	1	
5	300614	MOULDING	1	
6	300613	MOULDING	1	
7	300752	HOLDER – MULTICOUPLER	1	
8	300644	ASSY – HYD SUPPORT	2	
9	300620	SUPPORT – HYDRAULICS	4	
10	300618	SUPPORT – SD RETURN	1	
11	300546	COVER – HYD MIDDLE	1	
12	300545	COVER – HYD MIDDLE LH	1	
13	300544	COVER – HYD MIDDLE RH	1	
14	300543	COVER – HYDRAULICS RH	1	
15	300542	COVER – HYDRAULICS LH	1	
16	300315	PLATE – CLIP MOUNT	1	
17	300208	SUPPORT – HOSE	1	
18	187730	CASTING – PIVOT	2	
19	187660	PIVOT – MACHINING	1	
20	187242	SIGHT GLASS	2	
21	182002	SPACER	1	
22	156051	PLUG – #16 ORB	4	
A	30627	BOLT – HEX HD TFL M10 X 1.5 X 25-8.8-A3L		
B	184583	WASHER – FLAT, 10.3 MM I.D., 38 MM O.D., 2.8 MM THICK		
C	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
D	25903	WASHER – FLAT, 13/32 IN. I.D., 1 IN. O.D., 11 GA		
E	184712	WASHER – FLAT LARGE M10-200HV		

8.19 Hydraulics – Pump Assembly

Not available at time of publishing

1024493

Ref	Part Number	Description	Qty	Serial Number
1	282834	PUMP ASSEMBLY – FORAGE ADAPTER	1	
2	252554	FITTING – TEE HYD, GAUGEPORT	1	
	135868	O-RING – #16 ORFS		
3	252208	FITTING – 90° 16-16 CODE 61-ORFS	1	
	112868	O-RING – #16 FLANGE		
	135554	O-RING – #16 ORFS		
4	242212	FITTING – ELBOW 45° HYD	1	
	44209	O-RING – #8 ORB		
	135866	O-RING – #8 ORFS		
5	213504	FITTING – HYD 90 ELBOW CODE 61	1	
6	208653	FITTING – ELBOW 90 DEG HYD	1	
	50223	O-RING – #4 ORB		
7	191705	FITTING – ADAPTER 6 MORFS X 8 MORB	1	
	44209	O-RING – #8 ORB		
	135865	O-RING – #6 ORFS		
8	136766	FITTING – ELBOW 90° HYD 20-16	1	
	50222	O-RING – #20 ORB		
	135554	O-RING – #16 ORFS		
9	136337	FITTING – ELBOW 90° HYD	1	
	50223	O-RING – #4 ORB		
	135865	O-RING – #6 ORFS		
10	136249	FITTING – ELBOW 90° HYD	1	
	135865	O-RING – #6 ORFS		
11	135888	FITTING – ELBOW 90° HYD	1	
	135868	O-RING – #16 ORFS		
12	135821	FITTING – ELBOW 90° HYD	2	
	30971	O-RING – #12 ORB		
	135868	O-RING – #16 ORFS		
13	135789	FITTING – ADAPTER	1	
	50220	O-RING – #16 ORB		
	135868	O-RING – #16 ORFS		
14	135775	FITTING – ADAPTER	1	
	50223	O-RING – #4 ORB		
	135957	O-RING – #4 ORFS		
15	112866	KIT – SPLIT FLANGE, 1 IN. CD 61	1	
	112868	O-RING – #16 FLANGE		

Ref	Part Number	Description	Qty	Serial Number
16	194033	FLANGE – HALF SPLIT 1 INCH, CODE 61	2	
17	136246	KIT – SPLIT FLANGE, 1.5 IN. CD 61	1	
	135400	O-RING – 1.859 IN. I.D. X 0.139 IN. WALL		
18	136106	FLANGE – HALF SPLIT 1.5 INCH, CODE 61	2	
A	21264	BOLT – HH 3/8 NC X 1.25 LG GR 5 ZP		
B	18637	WASHER – REG. LOCK 3/8 IN. NOM. I.D. ZP		
C	252642	BOLT – HH 1/2-13 X 1.75-GR8-AA3L		
D	18638	WASHER – REG. LOCK 1/2 IN. NOM. I.D. ZP		

8.20 Hydraulics – Manifolds Assembly

Not available at time of publishing

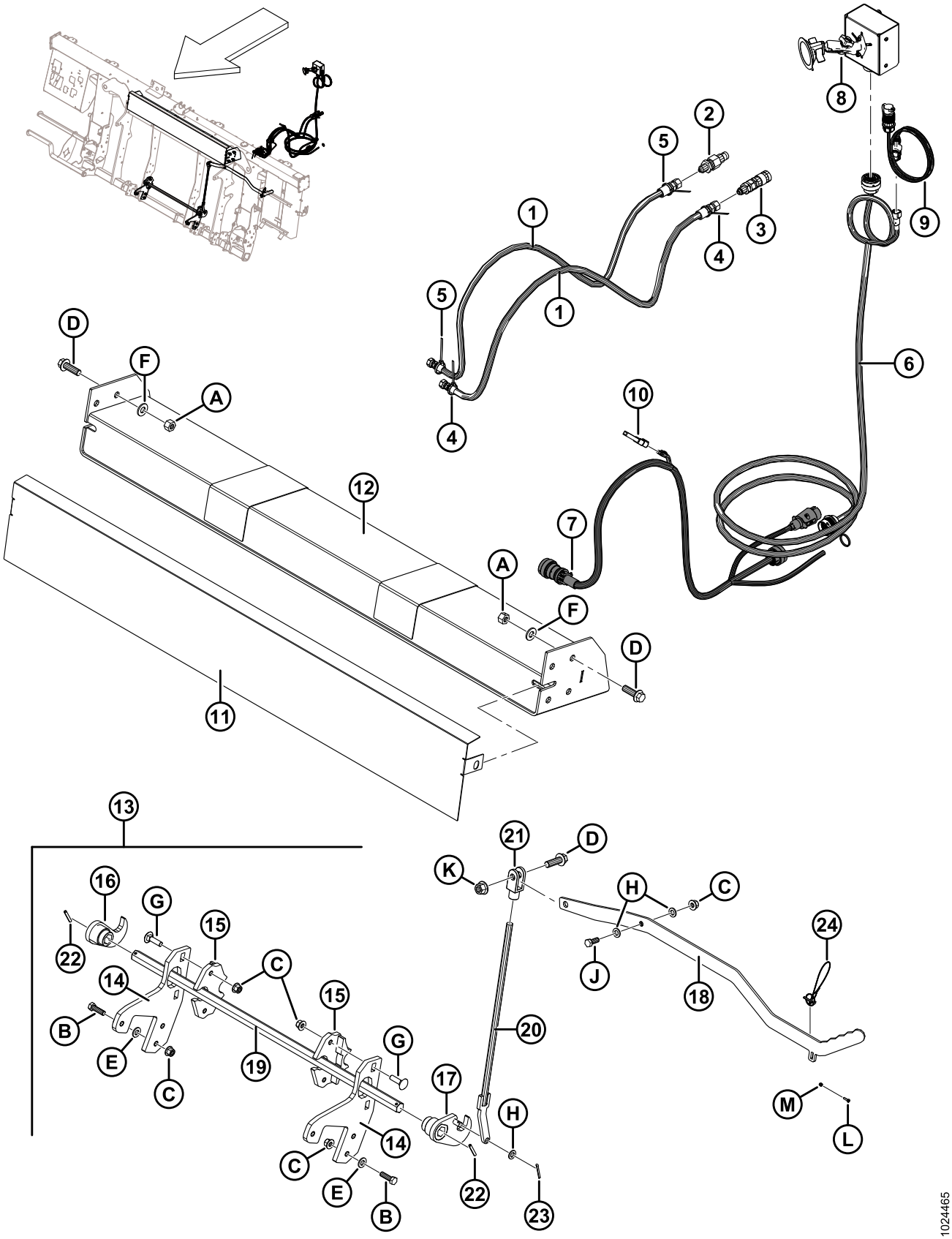
1024493

Ref	Part Number	Description	Qty	Serial Number
1	REF	ASSEMBLY – MANIFOLD, DRIVE MOD [22]	1	
2	300565	ASSEMBLY – MANIFOLD, SELECTOR	1	
3	213366	MANIFOLD – CLAAS SELECTOR	1	
	287462	COIL – 12VCD, .625 IN.		
	287456	VALVE – 3-POS 4-WAY		
	287464	SEAL KIT (FOR VALVE MD #287456)		
	287461	COIL – 12VDC, .500 IN.		
	287460	VALVE – NC POPPET		
	287465	SEAL KIT (FOR VALVE MD #287460)		
	279228	VALVE – CARTRIDGE, PO CHECK		
	287463	SEAL KIT (FOR VALVE MD #279228)		
	163184	O-RING		
4	213363	MANIFOLD – SELECTOR VALVE	1	
	287449	COIL – 12VDC, .625 IN.		
	287450	VALVE – POPPET		
	287451	SEAL KIT – POPPET VALVE		
5	136095	FITTING – ELBOW 90° HYD	1	
	50219	O-RING – #6 ORB		
	135865	O-RING – #6 ORFS		
6	135778	FITTING – ADAPTER	6	
	50219	O-RING – #6 ORB		
	135865	O-RING – #6 ORFS		
7	300417	LINE – RETURN	1	
8	300416	LINE – HYD	1	
9	300415	LINE – HYD	1	
10	242359	FITTING – ELBOW HYD	1	
	44209	O-RING – #8 ORB		
11	202986	ELEMENT – HYDRAULIC FILTER	1	
12	170617	VALVE – REEL SPEED	1	
13	148851	VALVE – PRESSURE BALANCE	1	
14	136459	FITTING – HYD TEE	1	
	135866	O-RING – #8 ORFS		

22. Refer to Section *8.16 Drive Manifold Assembly, page 141* for service parts.

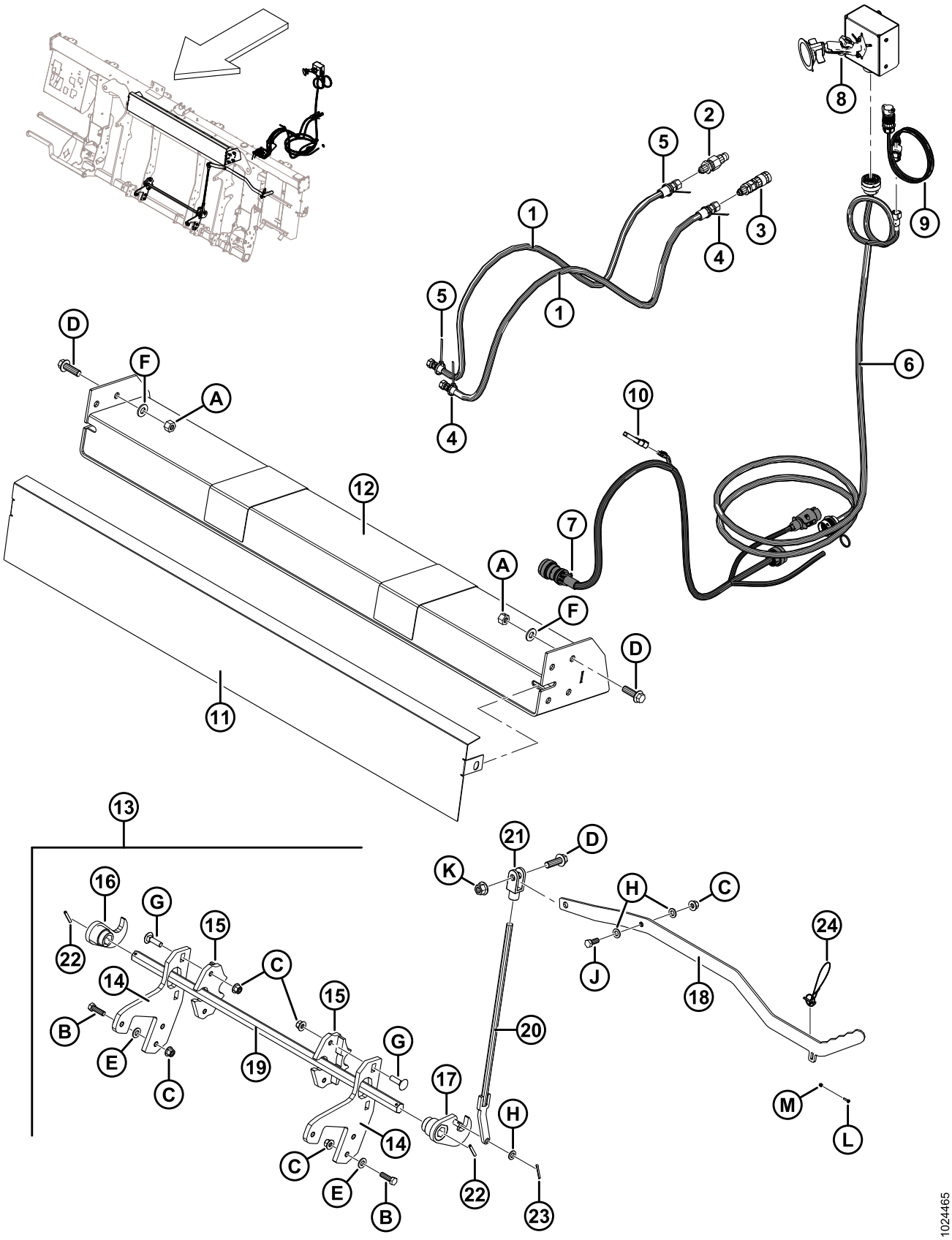
Ref	Part Number	Description	Qty	Serial Number
15	136220	FITTING – ELBOW 90° HYD	1	
	44209	O-RING – #8 ORB		
	135866	O-RING – #8 ORFS		
16	135778	FITTING – ADAPTER	2	
	50219	O-RING – #6 ORB		
	135865	O-RING – #6 ORFS		
17	135776	FITTING – ADAPTER	2	
	50219	O-RING – #6 ORB		
	135957	O-RING – #4 ORFS		

8.21 Harvest Mount Module Completion Package – CLAAS



Ref	Part Number	Description	Qty	Serial Number
1	300056	HOSE – HYD, 1/4 IN. I.D., 1524 MM LG, 100R17, METAL REIN.	2	
2	135237	COUPLER – MALE HYD. 3/8 IN. FLAT FACE BULKHEAD	1	
	111978	SEAL KIT – 3/8 MALE		
3	135213	COUPLER – FEMALE HYD. 3/8 IN. FLAT FACE BULKHEAD	1	
4	40702	FASTENER – CABLE TIE, RED	2	
5	40703	FASTENER – CABLE TIE, BLUE	2	
6	300529	HARNESS – CHOPPER, CAB	1	
7	300531	HARNESS – CHOPPER, CLAAS	1	
8	300263	CONTROL – CONSOLE ASSY [23]	1	
9	300595	HARNESS – PWR CONNECT, CLAAS	1	
10	300536	REGULATOR – VOLTAGE, (+) 5VDC	1	
11	300311	SHROUD – DEBRIS	1	
12	300164	ATTACHMENT	1	
13	300438	LATCH – ASSY [24]	1	
14	300523	PLATE – CLAAS LATCH FLANGE	2	
15	300473	SUPPORT – CATCH	2	
16	300480	HOOK – RHS	1	
17	300476	HOOK – LATCH LH	1	
18	300439	HANDLE – CLAAS LATCH	1	
19	300726	SUPPORT	1	
20	300449	SUPPORT – WELDT	1	
21	300442	CLEVIS	1	
22	2146	PIN – SPRING 1/4 DIA X 1.75 LG	2	
23	18607	PIN – COTTER 5/32 DIA X 1.5 ZP	1	
24	135945	LYNCH PIN C/W LANYARD 3/16 PIN	1	

23. For service parts, refer to Section *8.23 Control Assembly, page 160*.
24. Includes items #14–24 and hardware.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Ref	Part Number	Description	Qty	Serial Number
A	136476	NUT – HEX CTR LOC M16 X 2-8		
B	136457	BOLT – HEX HD TFL M12 X 1.75 X 40-8.8-A3L		
C	136431	NUT – HEX FLG CTR LOC M12 X 1.75-10		
D	136101	BOLT – HEX FLG HD TFL M16 X 2 X 50-10.9-A3L		
E	135369	WASHER – HARDENED ASTM F436 1/2		
F	30441	WASHER – HARDENED ASTM F436 5/8		
G	184668	BOLT – RHSN TFL M12 X 1.75 X 45-SPCL-8.8-AA1J		
H	184714	WASHER – FLAT REG M12-300HV		
J	30630	BOLT – HEX HD TFL M12 X 1.75 X 30-8.8-A3L		
K	136440	NUT – HEX FLG CTR LOC M16 X 2-10-A3L		
L	136313	SCREW – PAN HD IXO 7045 M4 X 0.7 X 16-4.8-A2L		
M	197320	NUT – HEX NYLOC M4 X 0.7-8-A2L		

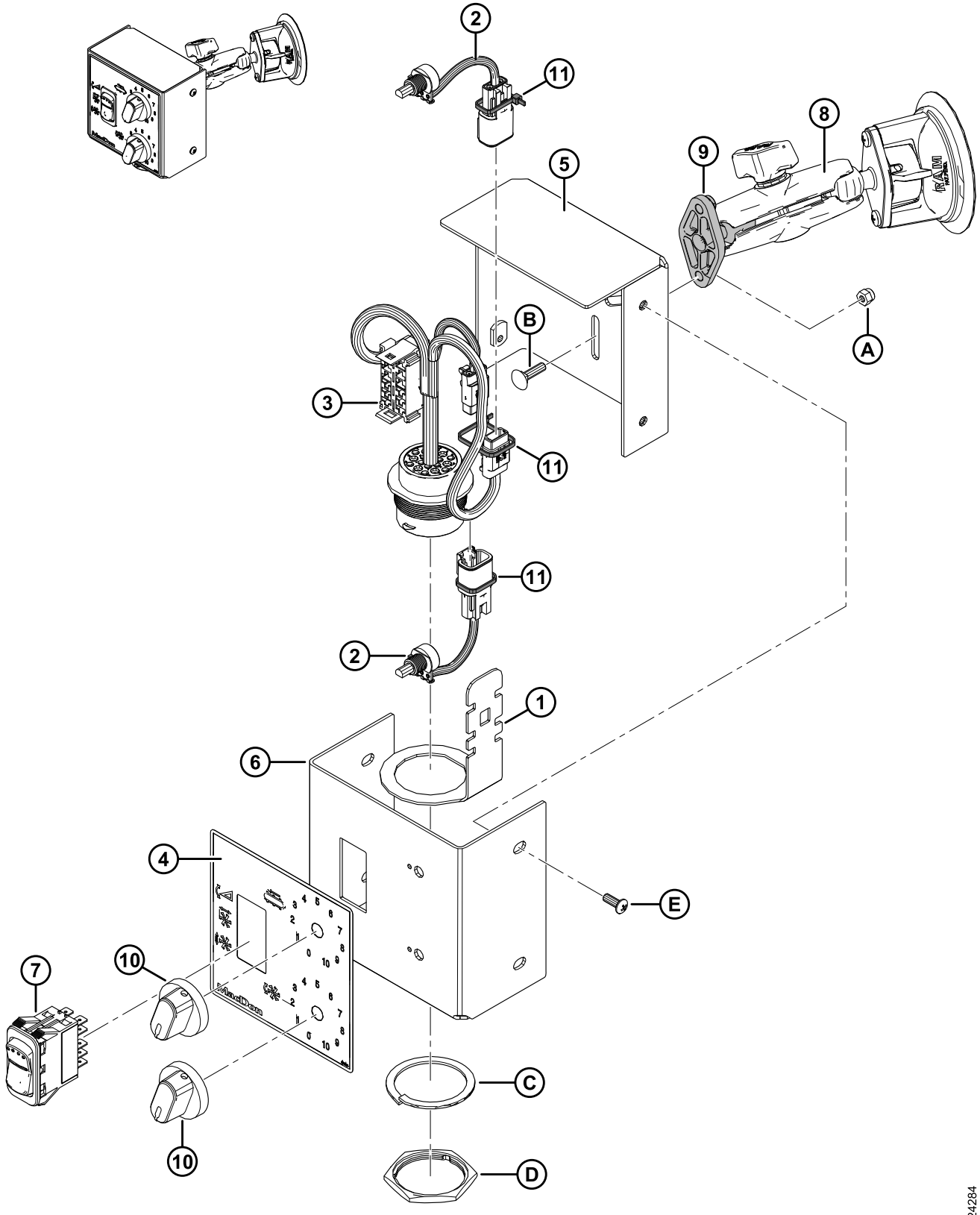
8.22 Header Completion

Not available at time of publishing

1024493

Ref	Part Number	Description	Qty	Serial Number
1	300605	PAN – GRATED TRANSITION WELDT	1	
2	300608	ASSY – COVER LHS	1	
	300612	ASSY – COVER RHS	1	
3	300611	ASSY – COVER	1	
A	30228	NUT – FLG DT SMTH FACE 0.375-16 UNC		
B	156868	J-BOLT – 3/8 NC		
C	18590	NUT – HEX 3/8-16 UNC GR 5 ZP		
D	252178	BOLT – HEX HD TFL M10 X 1.5 X 35-8.8-BO		
E	184648	BOLT – RHSN M8 X 1.25 X 25-8.8-A3L		
F	135337	NUT – HEX FLG CTR LOC M8 X 1.25-8-A2L		
G	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		

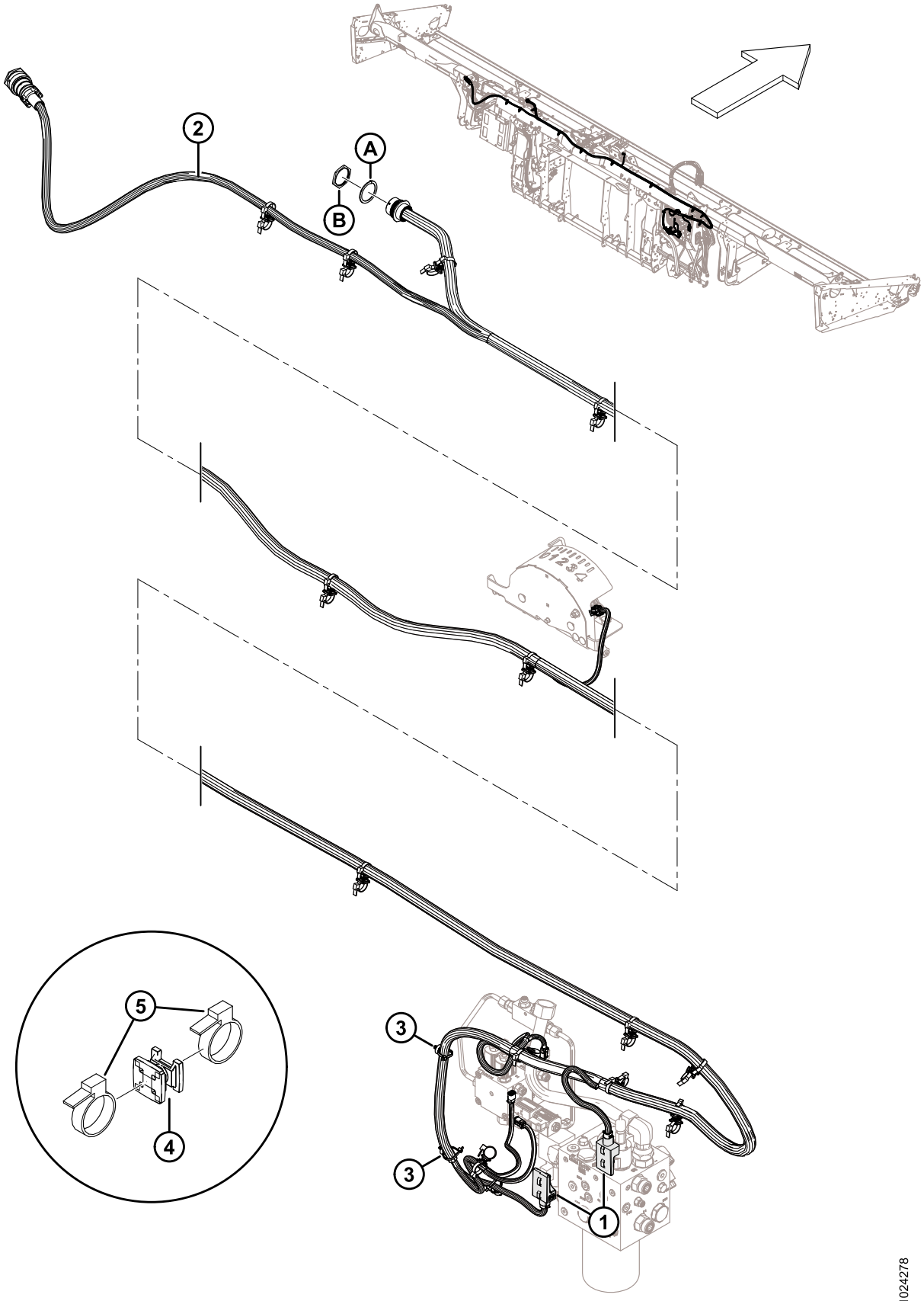
8.23 Control Assembly



Ref	Part Number	Description	Qty	Serial Number
	300263	CONTROL – CONSOLE ASSY [25]		
1	300687	SUPPORT – CONNECTOR	1	
2	300537	ASSEMBLY – CONTROL POT.	2	
3	300533	HARNESS – CAB CONTROL BOX	1	
4	NSS	DECAL – CONTROLS	1	
5	NSS	COVER – CONTROL CONSOLE WELDT	1	
6	300265	PANEL – CONTROL CONSOLE	1	
7	300259	SWITCH – ROCKER	1	
8	287859	BASE – SUCTION CUP WITH ARM	1	
9	287749	BASE – BALL MOUNT	1	
10	109773	KNOB – PLASTIC	2	
11	16661	FASTENER – CABLE TIE, BLACK	3	
A	197230	NUT – HEX NYLOC M5 X 0.8-8-A2L		
B	197225	BOLT – RHSN M5 X 0.8 X 20-4.6-A2L		
C	134011	WASHER – LOCK SPRING, DEUTSCH HD, SIZE 24		
D	134010	NUT – PANEL, HD30, SIZE 24		
E	42284	SCREW – MACHINE PHILIPS #10 NC X 0.5 LG GR 2		

25. Includes all listed parts and hardware.

8.24 Electrical Components

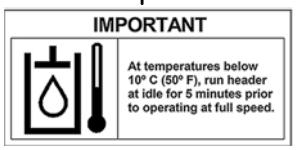


Ref	Part Number	Description	Qty	Serial Number
1	300540	VALVE DRIVER – PWM	2	
2	300525	HARNESS – ADAPTER	1	
3	136655	FASTENER – FIR TREE MT W/ TIE	3	
4	134442	SPACER – DUAL SWIVEL SADDLE	13	
5	30753	FASTENER – CABLE TIE, BLACK	26	
A	134011	WASHER – LOCK SPRING, DEUTSCH HD, SIZE 24	1	
B	134010	NUT – PANEL, HD30, SIZE 24	1	

8.25 Decals

1

2



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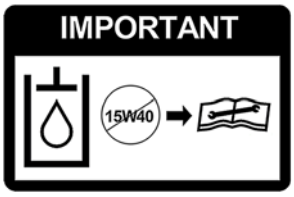

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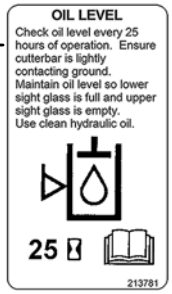

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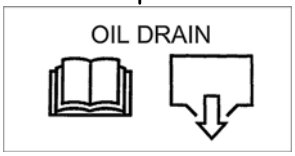

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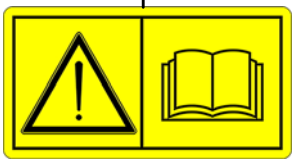

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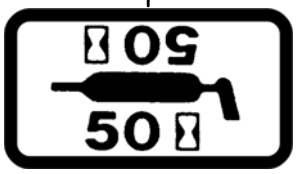

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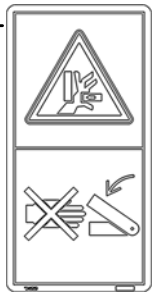

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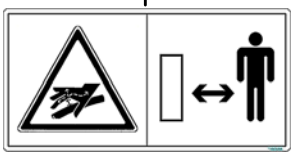

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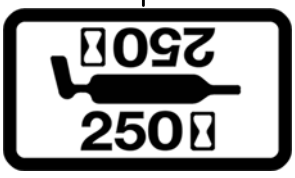

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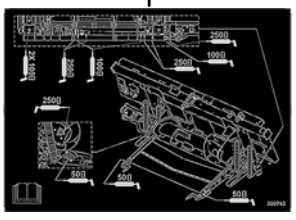

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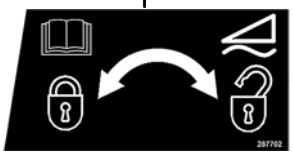

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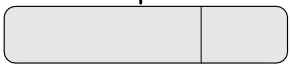

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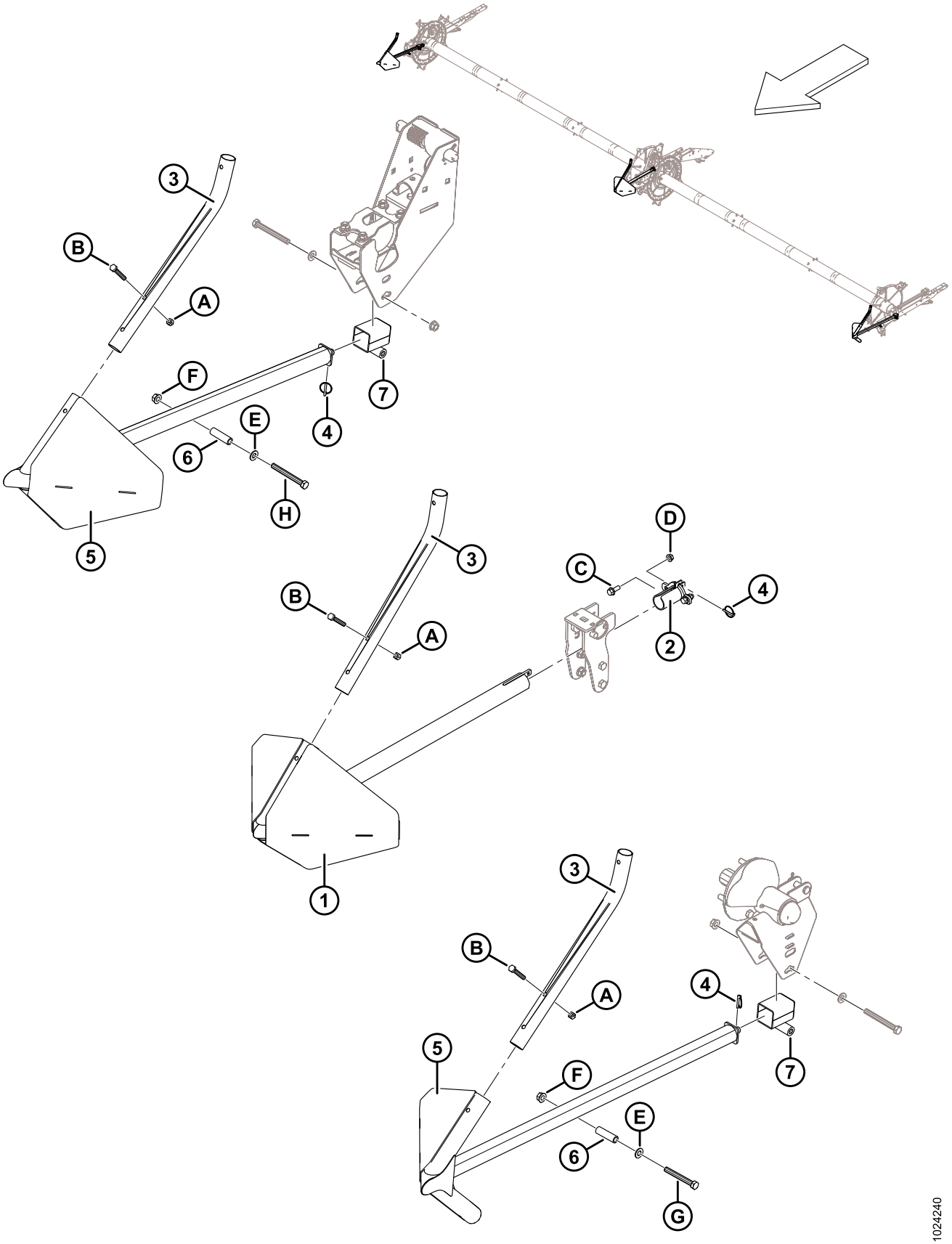
Ref	Part Number	Description	Qty	Serial Number
1	32070	DECAL – PATENT NUMBER		
2	133086	DECAL – IMPORTANT: OIL OPERATING TEMPERATURE		
3	213783	DECAL – OIL, IMPORTANT		
4	213781	DECAL – ADAPTER, OIL LEVEL		
5	133537	DECAL – ADAPTER, OIL DRAIN		
6	184372	DECAL – READ MANUAL		
7	23165	DECAL – 50 HR LUBE		
	115759	DECAL – GREASE 100 HR		
8	246959	DECAL – PINCH POINT		
9	174436	DECAL – HIGH PRESSURE FLUID		
10	166466	DECAL – HIGH PRESSURE FLUID		
11	184397	DECAL – WARNING: DO NOT OPEN		
12	166452	DECAL – WARNING, MOVING PARTS		
13	184404	DECAL – WARNING, SHIELD OPEN		
14	183412	DECAL – 250 HR LUBE		
15	300743	DECAL – GREASE, HM100		
16	287702	DECAL – FLOAT LOCK, LH		
	287705	DECAL – FLOAT LOCK, RH		
17	140225	STRIP – ANTI-SLIP (50 X 550 MM)		
	174131	STRIP – ANTI-SLIP (50 X 250 MM)		

8.26 (Option) Cooling Package

Ref	Part Number	Description	Qty	Serial Number
	B6579	COOLING PACKAGE [26]		
1	300642	HOSE – HYD, REEL RETURN	1	
2	300641	HOSE – HYD, FAN RETURN	1	
3	300640	HOSE – HYD, FAN CASE DRAIN	1	
4	300577	CLAMP – DBL INSULATED 3/4 IN.	3	
5	NSS	SHROUD – HX	1	
6	282145	FAN – HYDRAULIC	1	
7	282462	MOTOR – HX	1	
8	242212	FITTING – ELBOW 45° HYD	1	
	44209	O-RING – #8 ORB		
	135866	O-RING – #8 ORFS		
9	136347	FITTING – ELBOW 90° HYD	1	
	30971	O-RING – #12 ORB		
	135867	O-RING – #10 ORFS		
10	136095	FITTING – ELBOW 90° HYD	1	
	50219	O-RING – #6 ORB		
	135865	O-RING – #6 ORFS		
11	135444	CINCH STRAP 6 IN. LG	8	
12	135443	CINCH STRAP 4 IN. LG	2	
13	30753	FASTENER – CABLE TIE, BLACK	3	
A	135799	NUT – HEX FLG CTR LOC M10 X 1.5-10		
B	136151	BOLT – HEX FLG HD TFL M10 X 1.5 X 16-8.8-A3L		
C	136300	BOLT – HEX FLG HD TFL M8 X 1.25 X 20-8.8-AA3L		
D	135337	NUT – HEX FLG CTR LOC M8 X 1.25-8-A2L		

26. Kits available through Whole Goods only.

8.27 (Option) Reel Dividers



Ref	Part Number	Description	Qty	Serial Number
	B6580	REEL DIVIDERS [27]		
1	300154	DIVIDER – CENTER WELDT	1	
2	300170	GUIDE – DIVIDER CENTER WELDT	1	
3	300180	DIVIDER	3	
4	50193	PIN – LYNCH	3	
5	300178	DIVIDER – L/R WELDT	2	
6	158172	SPACER	2	
7	300184	DIVIDER – REEL MOUNT LHS	1	
	300174	DIVIDER – REEL MOUNT RHS	1	
A	135800	NUT – HEX CTR LOC SPCL M10 X 1.5-9-A3L		
B	108172	BOLT – HEX HD M10 X 1.5 X 65-8.8-A3L		
C	135966	BOLT – HH FLG (SMTH FACE) 3/8 NC X 1.0 GR 5 ZP		
D	30228	NUT – FLG DT SMTH FACE 0.375-16 UNC		
E	18599	WASHER – SAE FLAT 17/32 I.D. X 1-1/16 IN. O.D. ZP		
F	50186	NUT – FLG LOCK SMTH FACE DT 0.500-13 UNC GR 5		
G	21589	BOLT – HH 1/2 NC X 4.0 LG GR 5 ZP		
H	30209	BOLT – HH 1/2 NC X 4.5 LG GR 5 ZP		

27. Kits available through Whole Goods only.

9 Options and Attachments

The following options and attachments are available for use with your Harvester Mount Module and header. See your MacDon Dealer for availability and ordering information.

9.1 Harvester Mount Module

9.1.1 Cooling Package

The cooling package allows Harvester Mount Module to operate with more hydraulic cooling capacity.

Installation instructions are included in the kit.

MD #B6579

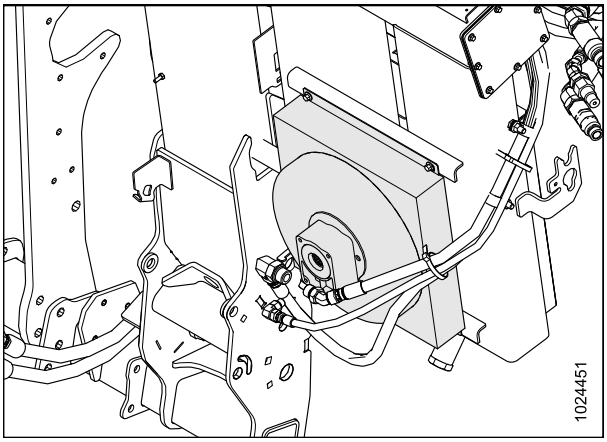


Figure 9.1: Cooling Package

9.2 Reel

9.2.1 Reel Dividers

The reel dividers allow the crop to be divided.

Installation instructions are included in the kit.

MD #B6580

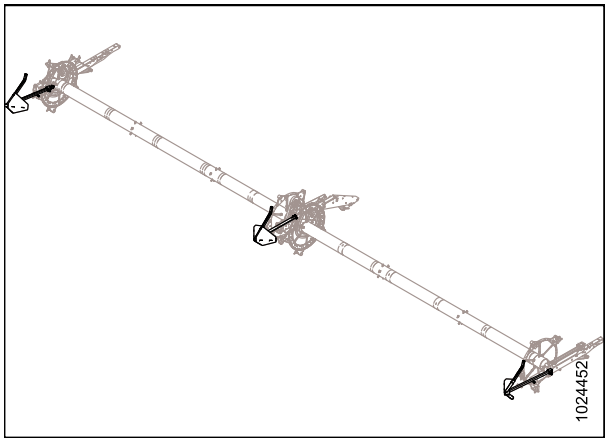


Figure 9.2: Reel Dividers

9.3 Header

9.3.1 AR Skid Shoes

The AR skid shoes are made with a harder material to improve wear characteristics the header to operate.

Installation instructions are included in the kit.

MD #B6583

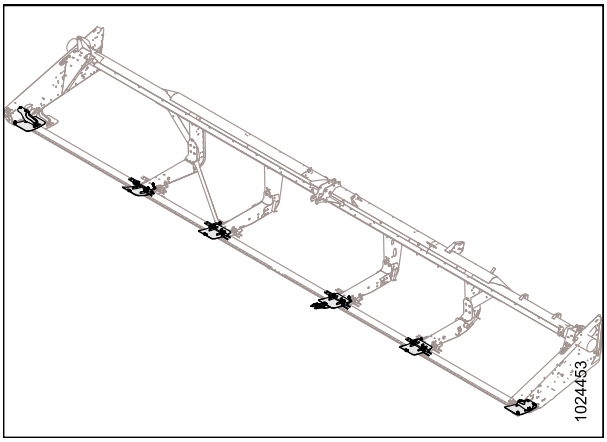


Figure 9.3: AR Skid Shoes

10 Reference

10.1 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).

10.1.1 Metric Bolt Specifications

Table 10.1 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

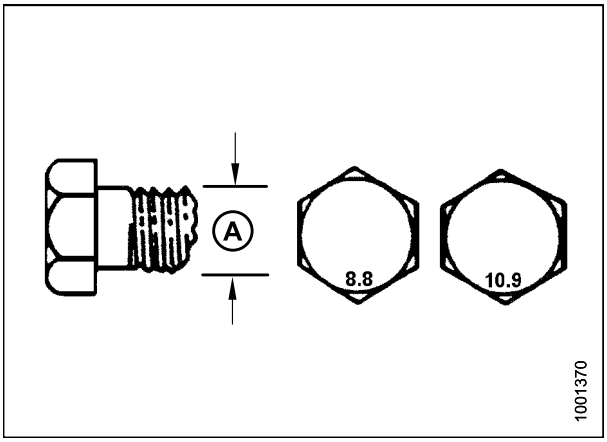


Figure 10.1: Bolt Grades

Table 10.2 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

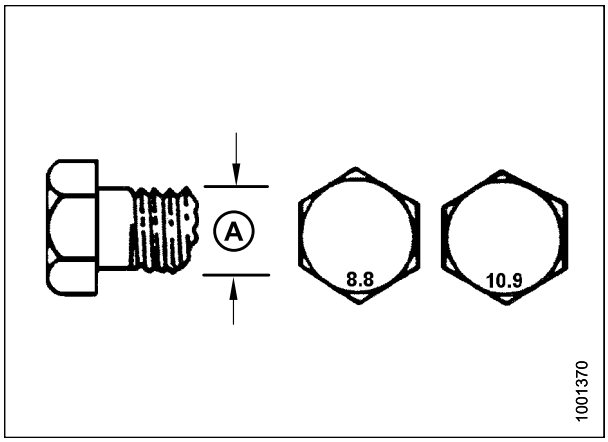


Figure 10.2: Bolt Grades

Table 10.3 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

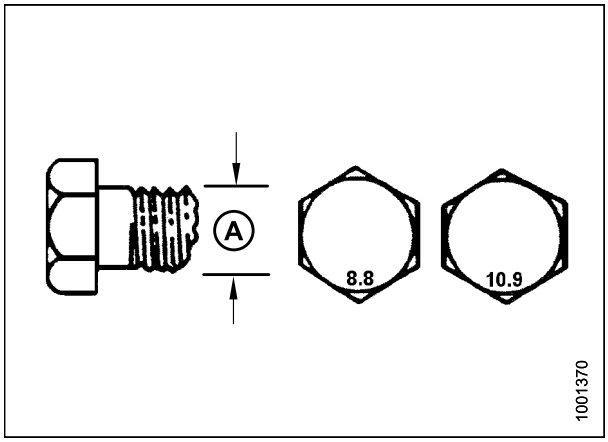


Figure 10.3: Bolt Grades

Table 10.4 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

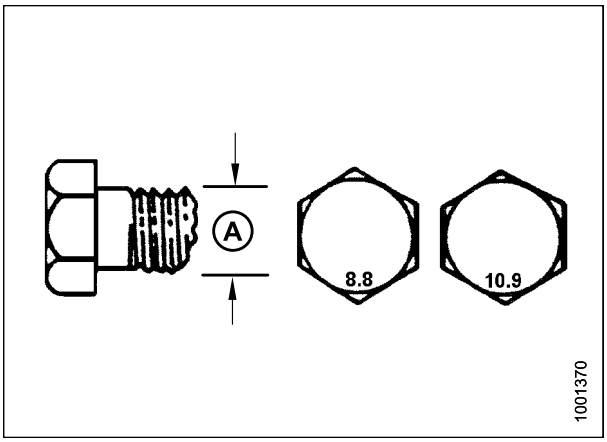


Figure 10.4: Bolt Grades

10.1.2 Metric Bolt Specifications Bolting into Cast Aluminum

Table 10.5 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	–	–	–	–

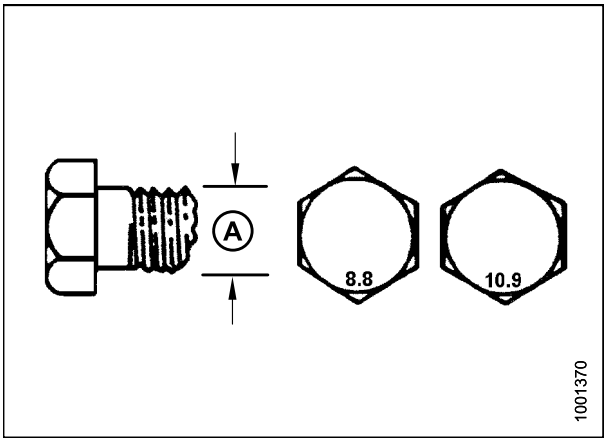


Figure 10.5: Bolt Grades

10.1.3 O-Ring Boss (ORB) 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).

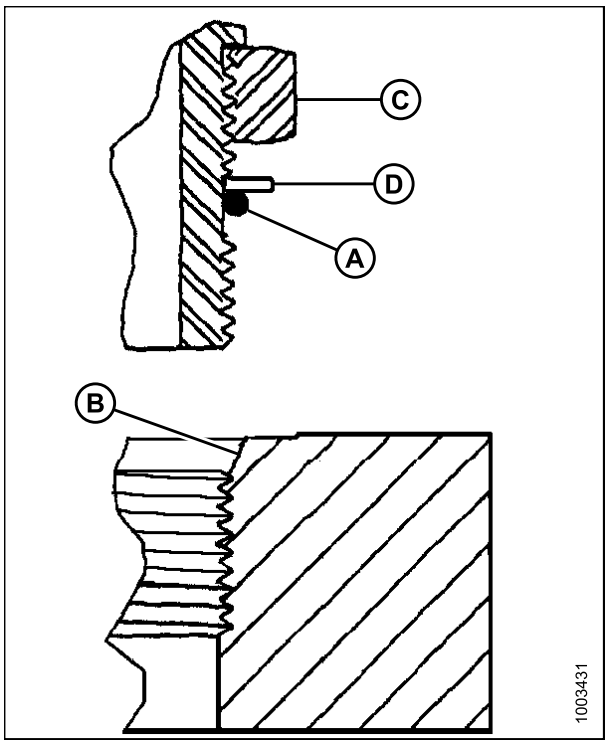


Figure 10.6: Hydraulic Fitting

5. Install fitting (B) into port until back up 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.

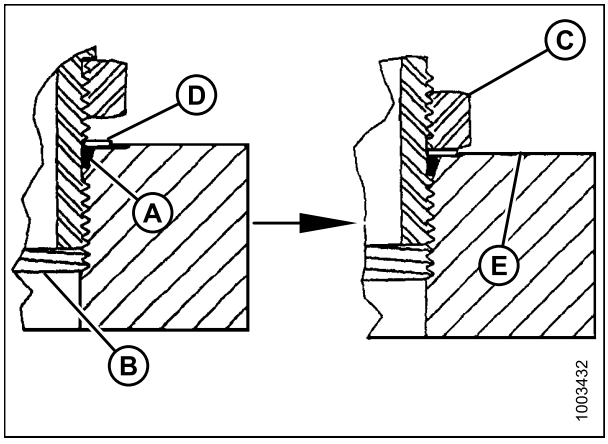


Figure 10.7: Hydraulic Fitting

Table 10.6 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

SAE Dash Size	Thread Size (in.)	Torque Value[28]	
		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

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

10.1.4 O-Ring Boss (ORB) 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 *10.7, page 178*.
6. Check final condition of fitting.

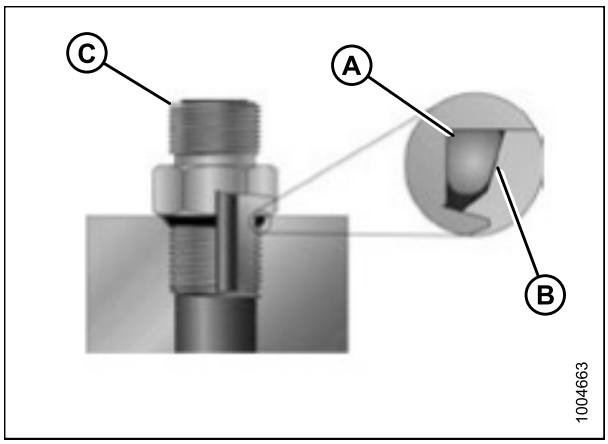


Figure 10.8: Hydraulic Fitting

Table 10.7 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

SAE Dash Size	Thread Size (in.)	Torque Value[29]	
		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

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

10.1.5 O-Ring Face Seal (ORFS) Hydraulic Fittings

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

Figure 10.9: 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 *10.8, page 179*.

   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.

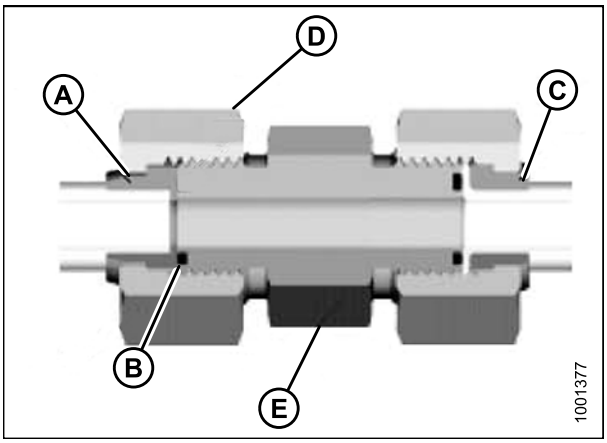


Figure 10.10: Hydraulic Fitting

Table 10.8 O-Ring Face Seal (ORFS) Hydraulic Fittings

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value[30]	
			Nm	lbf·ft
-3	Note[31]	3/16	–	–
-4	9/16	1/4	25–28	18–21
-5	Note[31]	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

30. Torque values and angles shown are based on lubricated connection as in reassembly.
31. O-ring face seal type end not defined for this tube size.

Table 10.8 O-Ring Face Seal (ORFS) Hydraulic Fittings (continued)

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value[32]	
			Nm	lbf·ft
-14	Note[31]	7/8	–	–
-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

10.1.6 Tapered Pipe Thread Fittings

Assemble pipe fittings as follows:

1. Check components to ensure that fitting and port threads are free of burrs, nicks and 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 (T.F.F.T.) values are shown in Table *10.9, page 180*. Make sure that tube end of a shaped connector (typically 45º or 90º) 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 10.9 Hydraulic Fitting Pipe Thread

Tapered Pipe Thread Size	Recommended T.F.F.T.	Recommended F.F.F.T.
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

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

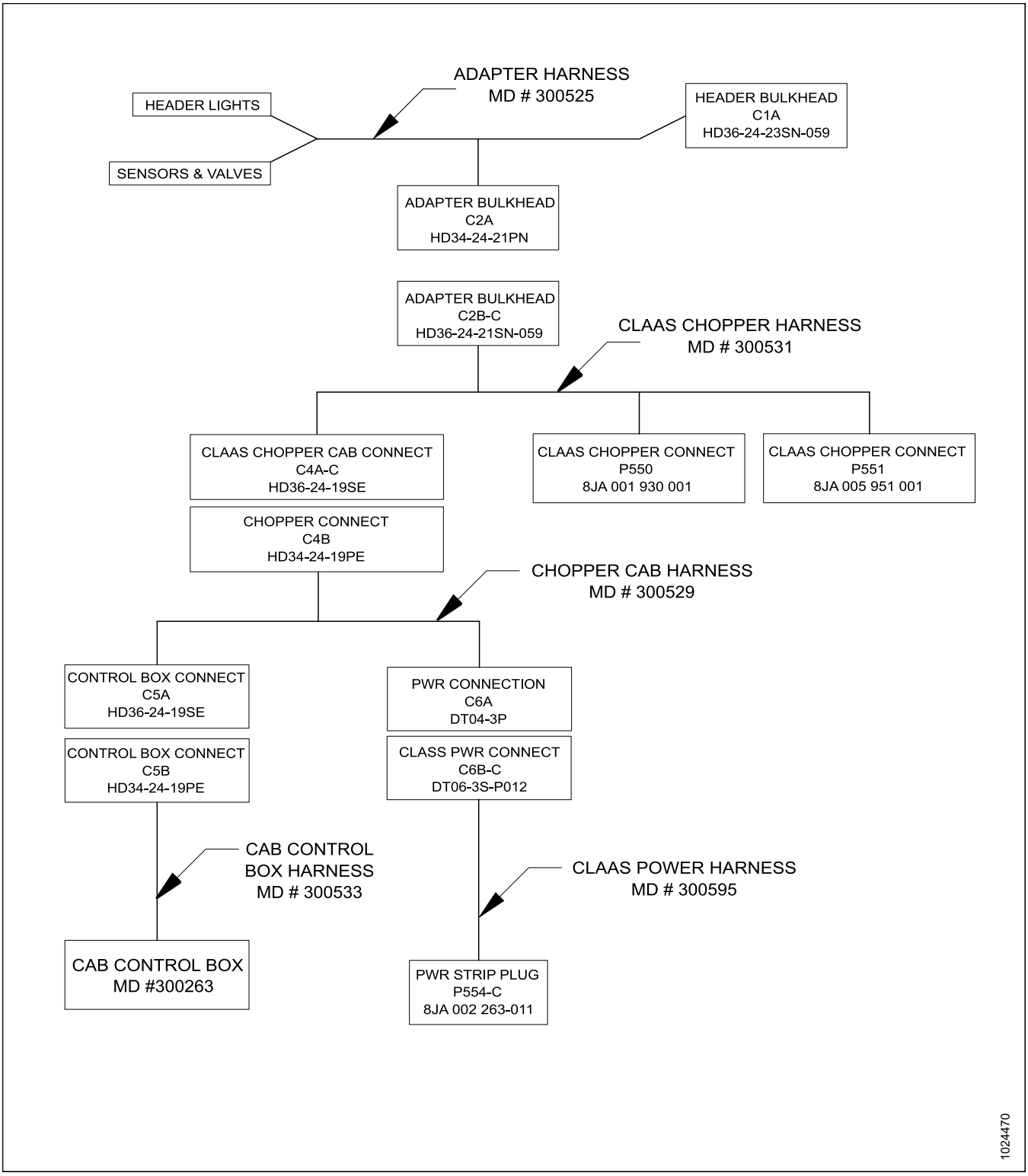
10.2 Conversion Chart

Table 10.10 Conversion Chart

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

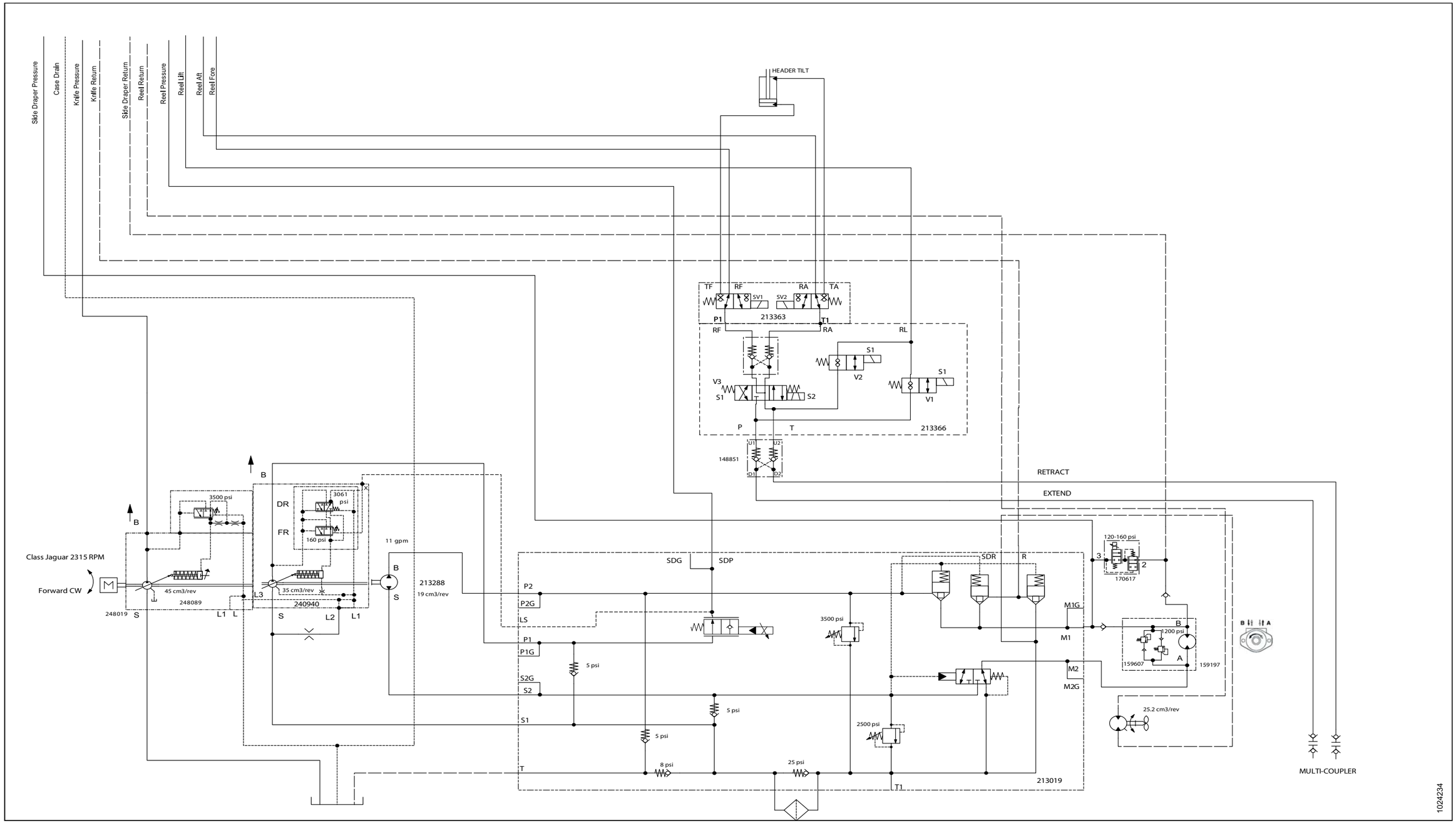
10.3 Schematics – Electrical Harness Layout

Figure 10.11: Electrical Harness Layout



10.4 Schematics - Hydraulic

Hydraulic Schematic



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

Carefully follow the instructions given. Be alert for safety related messages that bring your attention to hazards and unsafe practices.

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping material is removed.	*3.1 Unloading Harvester Mount Module from Trailer, page 17*
	Check for loose hardware. Tighten to required torque.	*10.1 Torque Specifications, page 173*
	Check hydraulic fluid level in reservoir.	*7.9.1 Checking Oil Level in Hydraulic Reservoir, page 98*
	Check gearbox fluid levels.	• *7.9.5 Checking and Adding Gearbox Oil, page 101* • *7.9.7 Checking and Adding Speed Increaser Gearbox Oil, page 103*
	Check that bearings and drivelines have been greased.	*7.8.2 Lubrication Points, page 95*
	Check feed draper tension.	*7.6.1 Adjusting Feed Draper Tension, page 69*
	Check fluid level in the automatic chain oiler	*7.5.1 Adding Oil to the Automatic Oiler, page 67*
	Check that header float has been set correctly.	*7.4 Checking and Adjusting Header Float, page 61*

Date Checked: **Checked by:**

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Recommended Fluids and Lubricants

Ensure your machine operates at top efficiency by using clean fluids and lubricants only.

- Use clean containers to handle all fluids and lubricants.
- Store fluids and lubricants in an area protected from dust, moisture, and other contaminants.

Lubricant	Specification	Description	Use	Capacities
Grease	SAE multipurpose	High temperature extreme pressure (EP) performance with 1% max. Molybdenum Disulphide (NLGI Grade 2) lithium base	As required unless otherwise specified	—
Grease	SAE multipurpose	High temperature extreme pressure (EP) performance with 10% max. Molybdenum Disulphide (NLGI Grade 2) lithium base	Driveline slip-joints	—
Gear	SAE 80W90	Gear lube	Gearbox (MD #300294)	2 liters (2.1 quarts)
Gear	SAE 80W90	API service class GL-5	Speed increaser gearbox (MD #300286)	1.1 liters (1.2 quarts)
Hydraulic Oil	Single grade trans-hydraulic oil. Recommended brands: • Petro-Canada Duratran • John Deere Hy-Gard J20C • Case Hy-Tran Ultraction • AGCO Power Fluid 821 XL	Lubricant trans / hydraulic oil	Header drive systems reservoir	110 liters (29.1 US gallons)
Oil	Bio-Multi-:Luber Oil or SAE 40		Auto Chain Oiler	4.2 liters (1.11 USgal-lons)

MacDon

MacDon Industries Ltd.
680 Moray Street
Winnipeg, Manitoba
Canada R3J 3S3
t. (204) 885-5590
f. (204) 832-7749

MacDon, Inc.
10708 N. Pomona Avenue
Kansas City, Missouri
United States 64153-1924
t. (816) 891-7313
f. (816) 891-7323

MacDon Australia Pty. Ltd.
A.C.N. 079 393 721
P.O. Box 243, Suite 3, 143 Main Street
Greensborough, Victoria, Australia 3088
t. 03 9432 9982
f. 03 9432 9972

MacDon Brasil Agribusiness Ltda.
Rua Grã Nicco, 113, sala 202, B. 02
Mossunguê, Curitiba, Paraná
CEP 81200-200 Brasil
t. +55 (41) 2101-1713
f. +55 (41) 2101-1699

LLC MacDon Russia Ltd.
123317 Moscow, Russia
10 Presnenskaya nab, Block C
Floor 5, Office No. 534, Regus Business Centre
t. +7 495 775 6971
f. +7 495 967 7600

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