

D65, D1 Series, FD75, and FD1 Series Draper and FlexDraper® Headers

North American Vertical Knife Mounts Kit (MD #335869)
Installation Instructions

215828 Revision A
Original Instruction

Featuring MacDon FLEX-FLOAT Technology™

The Harvesting Specialists.

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Introduction

Use this kit to replace superseded vertical knife mounts (A) (MD #294722, right mount) or (MD # 294721, left mount) with new mounts (B). In addition to the new mounts, this kit also supplies all of the parts needed to install the retained vertical knife assembly onto the new mounts.

NOTE:

This document does **NOT** apply to European-configured D1 Series Draper Headers or FD1 Series FlexDraper® Headers with short outer reel support arms.

Installation time

Installation time for this kit is approximately 4 hours.

Conventions

The following conventions are used in this document:

- 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 combine.
- Unless otherwise noted, use the standard torque values provided in the header operator's manual and technical manual.

NOTE:

Keep your MacDon publications up-to-date. The most current version of this instruction can be downloaded from our Dealer-only site (<https://portal.macdon.com>) (login required).

NOTE:

This document is currently available in English only.

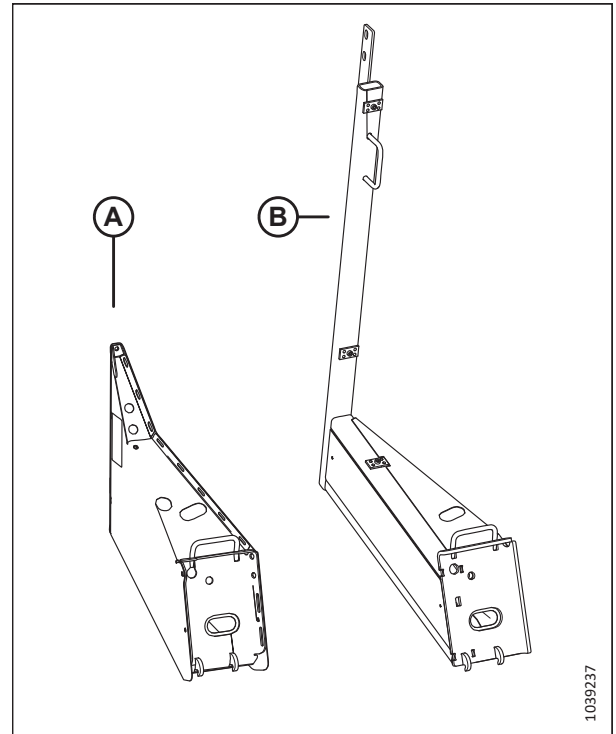


Figure 1: Old Versus New Vertical Knife Mount – Right Mount Shown

TABLE OF CONTENTS

Introduction i

Chapter 1: Safety 1

 1.1 Signal Words 1

 1.2 General Safety 2

Chapter 2: Parts List..... 4

Chapter 3: Installation Instructions 7

 3.1 Detaching Vertical Knife..... 8

 3.1.1 Detaching Vertical Knife Support Assembly from Header – Hook and Latch Connection..... 8

 3.1.2 Detaching Vertical Knife Support Assembly from Header – Bolt and Nut Connection..... 9

 3.2 Preparing Vertical Knife for Installation 12

 3.2.1 Attaching Vertical Knife Support Assembly to Header with Hook and Latch Connection..... 20

 Adjusting Hook and Latch Connection 22

 3.2.2 Attaching Vertical Knife Support Assembly to Header with Bolt and Nut Connection..... 24

 3.3 Connecting Hydraulics 26

Chapter 1: Safety

Understanding and following safety procedures consistently will help to ensure the safety of machine operators and bystanders.

1.1 Signal Words

Three signal words, **DANGER**, **WARNING**, and **CAUTION**, are used to alert you to hazardous situations. Two signal words, **IMPORTANT** and **NOTE**, identify non-safety related information.

Signal words are selected using the following guidelines:

DANGER

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

WARNING

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

CAUTION

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

IMPORTANT:

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

NOTE:

Provides additional information or advice.

1.2 General Safety

Protect yourself when assembling, operating, and servicing machinery.

CAUTION

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

Wear all protective clothing and personal safety devices that could be necessary for the job at hand. Do **NOT** take chances. You may need the following:

- Hard hat
- Protective footwear with slip-resistant soles
- Protective glasses or goggles
- Heavy gloves
- Wet weather gear
- Respirator or filter mask

In addition, take the following precautions:

- Be aware that exposure to loud noises can cause hearing impairment. Wear suitable hearing protection devices such as earmuffs or earplugs to help protect against loud noises.



Figure 1.1: Safety Equipment



Figure 1.2: Safety Equipment

- Provide a first aid kit in case of emergencies.
- Keep a properly maintained fire extinguisher on the machine. Familiarize yourself with its use.
- Keep young children away from machinery at all times.
- Be aware that accidents often happen when Operators are fatigued or in a hurry. Take time to consider the safest way to accomplish a task. **NEVER** ignore the signs of fatigue.

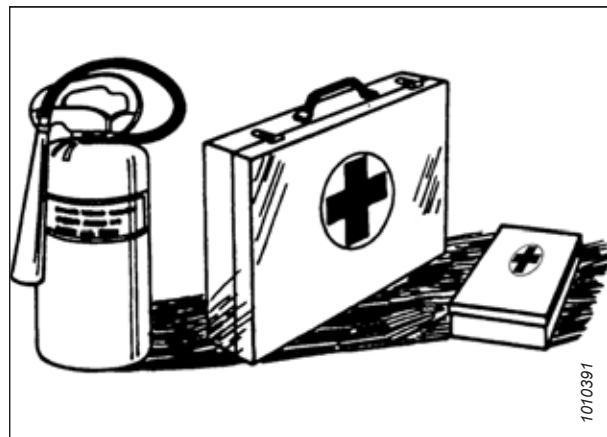


Figure 1.3: Safety Equipment

SAFETY

- Wear close-fitting clothing and cover long hair. **NEVER** wear dangling items such as hoodies, scarves or bracelets.
- Keep all shields in place. **NEVER** alter or remove safety equipment. Ensure that the driveline guards can rotate independently of their shaft, and that they can telescope freely.
- Use only service and repair parts made or approved by the equipment manufacturer. Parts from other manufacturers may not meet the correct strength, design, or safety requirements.



Figure 1.4: Safety around Equipment

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

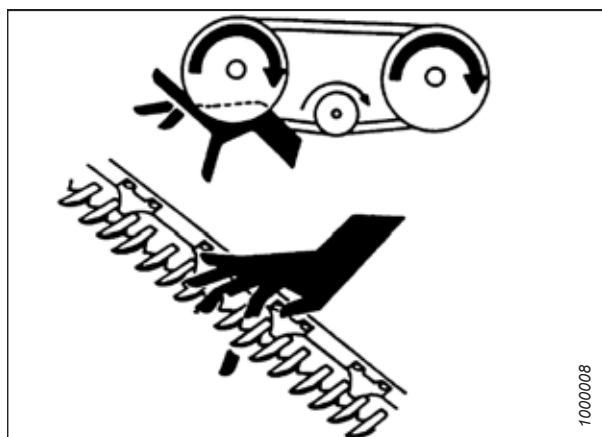


Figure 1.5: Safety around Equipment

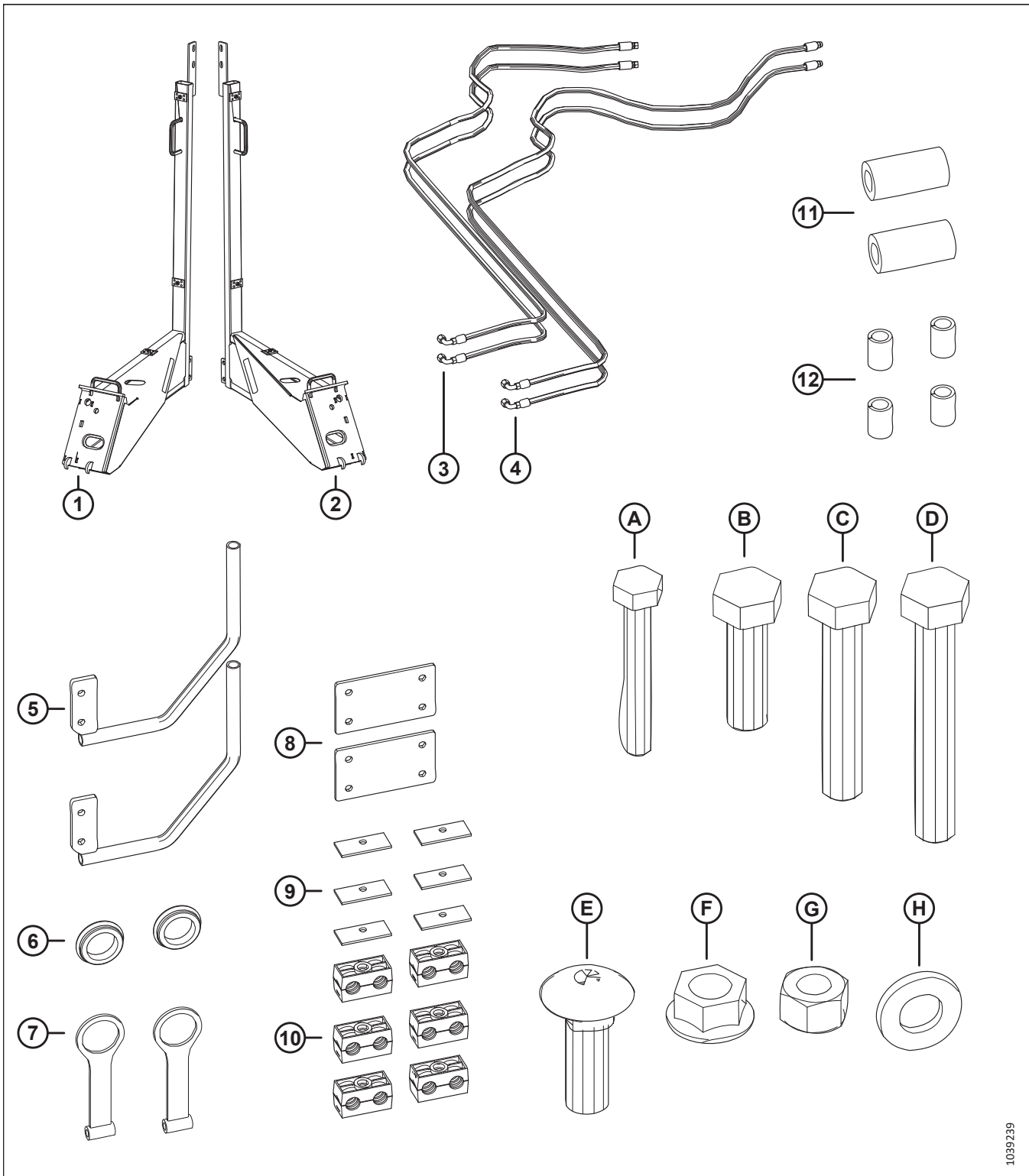
- Keep the machine service area clean and dry. Wet and/or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Ensure that all electrical outlets and tools are properly grounded.
- Keep the work area well-lit.
- Keep machinery clean. Straw and chaff on a hot engine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



Figure 1.6: Safety around Equipment

Chapter 2: Parts List

Parts lists are provided in so that you can confirm that you have received all the parts before you begin installation.



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PARTS LIST

Ref	Part Number	Description	Quantity
1	335866	SUPPORT ASSEMBLY – RH LONG	1
2	335864	SUPPORT ASSEMBLY – LH LONG	1
3	335759	HOSE – HYD	2
4	335760	HOSE – HYD	2
5	335785	DIVIDER – TUBE WELDMENT	2
6	172877	GROMMET – 2.38" I.D.	2
7	335784	ASSEMBLY – HOSE BRACKET	2
8	335779	SUPPORT – MOTOR BRACKET	2
9	232233	CLAMP – COVER PLATE	6
10	202991	CLAMP – TUBING	6
11	335810	TUBE – SPACER	2
12	335867	SPACER – SPLIT	4
A	184655	BOLT – HEX HD M8 X 1.25 X 55-8.8-AA1J	6
B	184669	BOLT – HEX HD M12 X 1.75 X 40-8.8-AA1J	4
C	252541	BOLT – HEX HD TFL M12 X 1.75 X 65-8.8-AA3L	4
D	184674	BOLT – HEX HD TFL M12 X 1.75 X 80-8.8-AA1J	4
E	21469	BOLT – RHSN 1/2-13 X 1.5-GR5 AA1J ¹	2
F	50186	NUT – FLG LK DT 1/2-13 UNC GR5 AA1J ¹	2
G	136759	NUT – HEX CTR LOC M12 X 1.75-8-AA1J	4
H	30636	WASHER – FLAT NARROW M12-STL-SOFT-AA1J	20

-
1. Only used if attaching the vertical knife mount to the header using a hook-and-latch connection. This part is **NOT** used if using a bolt-and-nut connection.

Chapter 3: Installation Instructions

DANGER

To avoid bodily injury or death from unexpected start-up or fall of a raised machine, always stop the engine and remove the key from the ignition before making adjustments to the machine. If it is impossible to engage safety props and impractical to block the header, NEVER climb onto or go underneath an unsupported header.

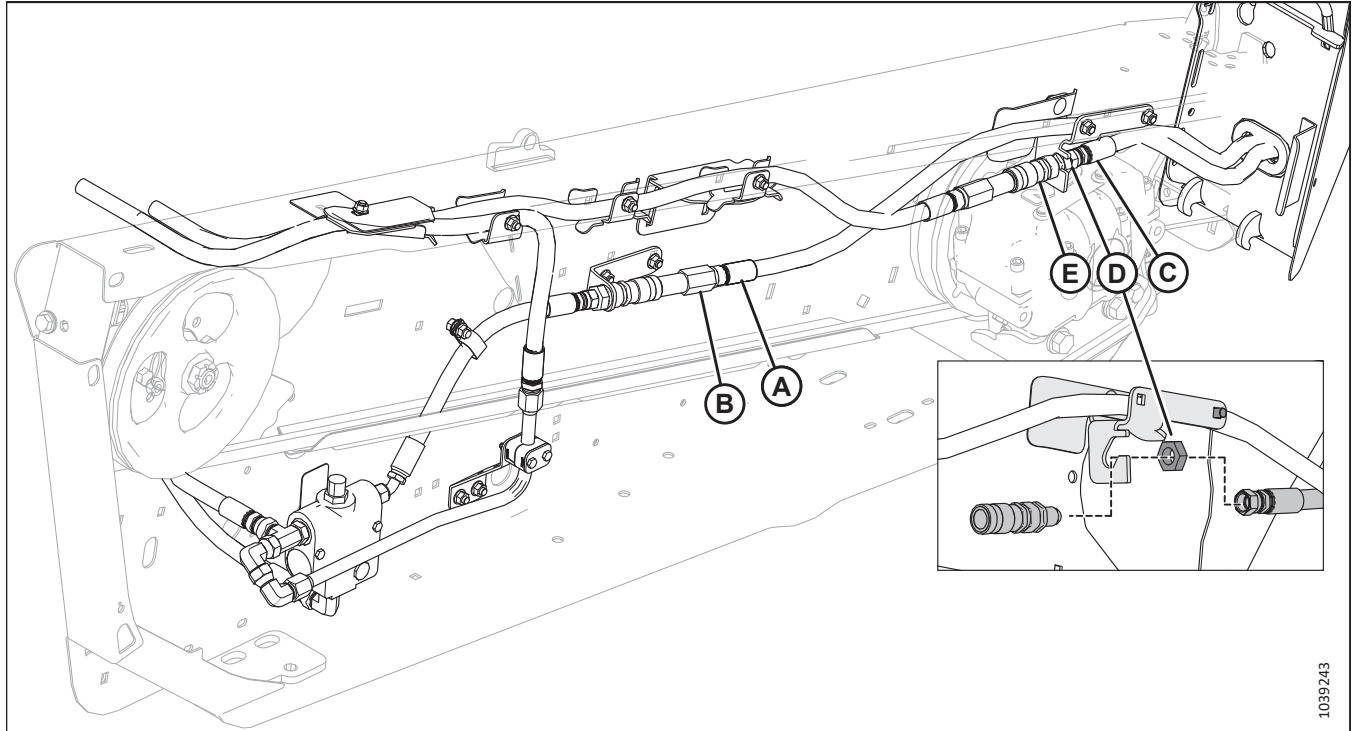


Figure 3.1: Double-Reel FD1 Series FlexDraper® Header with Both Kits (Left and Right Mounts) Installed – Other Headers are Similar

IMPORTANT:

To prevent contamination and undue wear or damage:

- Work in a clean area with a concrete floor.
 - Clean all components thoroughly before attempting any of the following steps.
 - Do not remove protective plugs/caps from a hydraulic line until immediately before connecting the line.
 - Collect and responsibly dispose of spilled oil when disassembling components and during uncoupling.
 - Adjust the header skid shoes downward to prevent knives and/or lower deflectors from touching the ground.
1. Lower the reel. Raise the header approximately 420 mm (16 in.) off the ground.
 2. Shut down the engine, and remove the key from the ignition.
 3. Engage the safety props. For instructions, refer to your combine operator's manual.
 4. Open both the left and right endshields. For instructions, refer to your header operator's manual.
 5. Disconnect vertical knife hose (A) from male quick coupler (B). Disconnect vertical knife hose (C) from jam nut (D) and female quick coupler (E). Cap the quick couplers to prevent contamination.

3.1 Detaching Vertical Knife

To detach the vertical knife mount(s) from the header, refer to the appropriate procedure below:

- [3.1.1 Detaching Vertical Knife Support Assembly from Header – Hook and Latch Connection, page 8](#)
- [3.1.2 Detaching Vertical Knife Support Assembly from Header – Bolt and Nut Connection, page 9](#)

3.1.1 Detaching Vertical Knife Support Assembly from Header – Hook and Latch Connection

1. Lift safety latch (C).
2. Unlatch hook (A) and from quick latch connection (B).

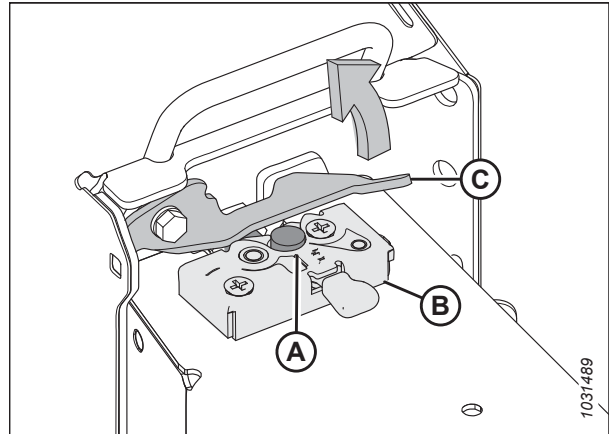


Figure 3.2: Quick Latch – Right Side Shown, Left Opposite

3. Remove the vertical knife support assembly.

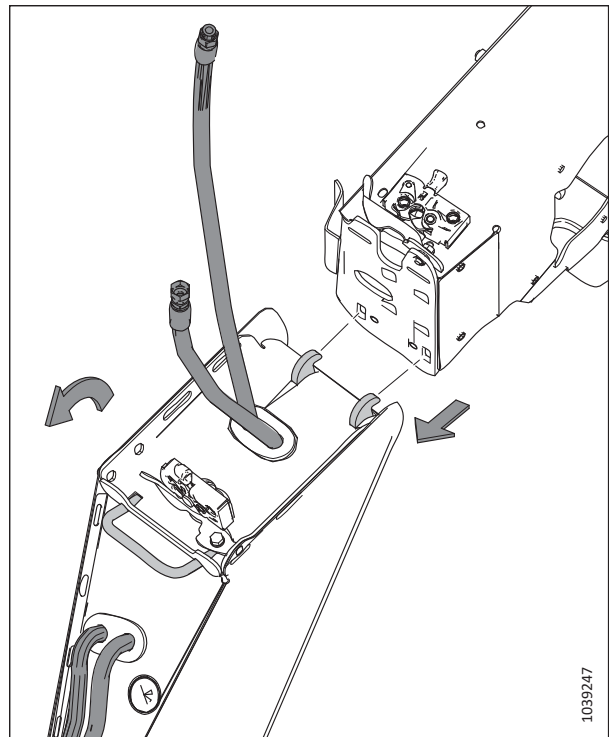


Figure 3.3: Vertical Knife and Mount Set into Endsheets Panel – Right Side Shown, Left Opposite

INSTALLATION INSTRUCTIONS

4. Remove bottom access plate (A) from the vertical knife support assembly.

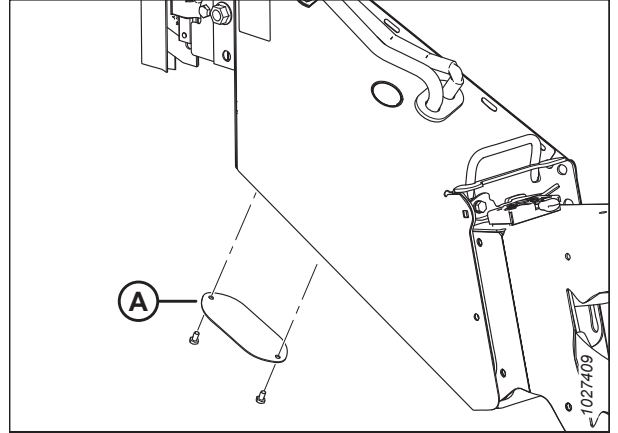


Figure 3.4: Access Plate – Right Knife Shown, Left Opposite

5. Remove and retain latch hook (A) and nuts (B).

NOTE:

You will only need one of the nuts for reinstallation.

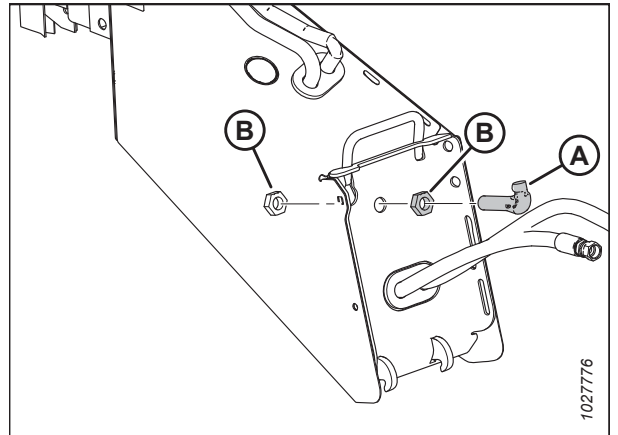


Figure 3.5: Setting Divider Safety Latch – Right Endsheets Panel Shown, Left Opposite

3.1.2 Detaching Vertical Knife Support Assembly from Header – Bolt and Nut Connection

NOTE:

Two people are needed for this procedure: one to hold the vertical knife assembly while the other removes the bolt and nut.

INSTALLATION INSTRUCTIONS

1. Remove and retain washer (A) and nut (B) from bolt (C).

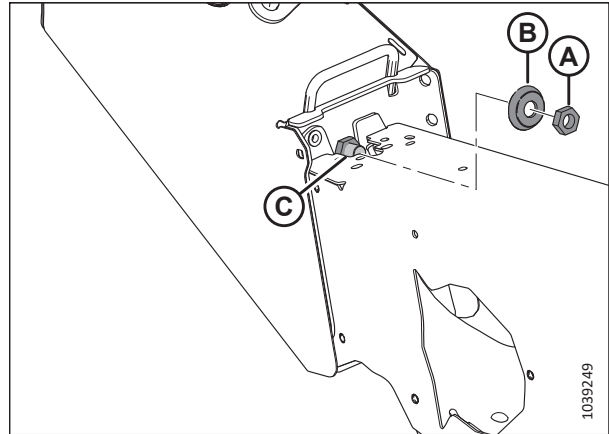


Figure 3.6: Bolting Vertical Knife Support Assembly to Header Endsheet Panel – Right Knife Shown, Left Opposite

2. Remove the vertical knife support assembly.

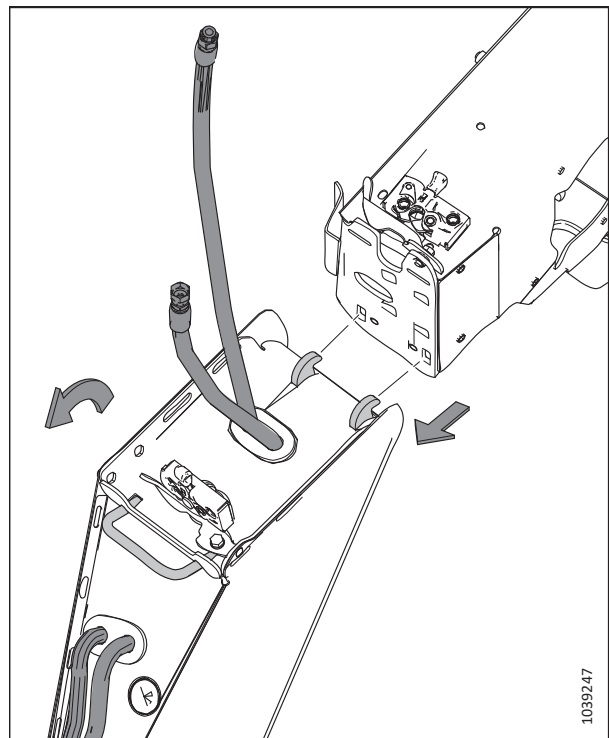


Figure 3.7: Vertical Knife and Mount Set into Endsheets Panel – Right Side Shown, Left Opposite

INSTALLATION INSTRUCTIONS

3. Remove bottom access plate (A).
4. Remove and retain bolt (B) and nut (C).

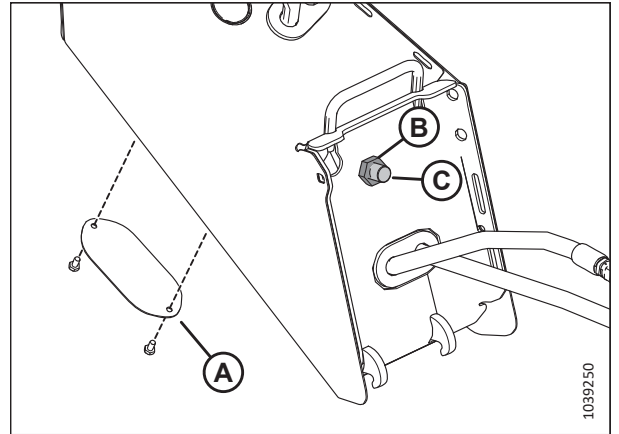


Figure 3.8: Bolt and Washer Connection – Right Knife Shown, Left Opposite

3.2 Preparing Vertical Knife for Installation

This procedure only applies to right Ziegler vertical knives (Ziegler part number 70-080613) and left Ziegler vertical knives (Ziegler part number 70-080614).

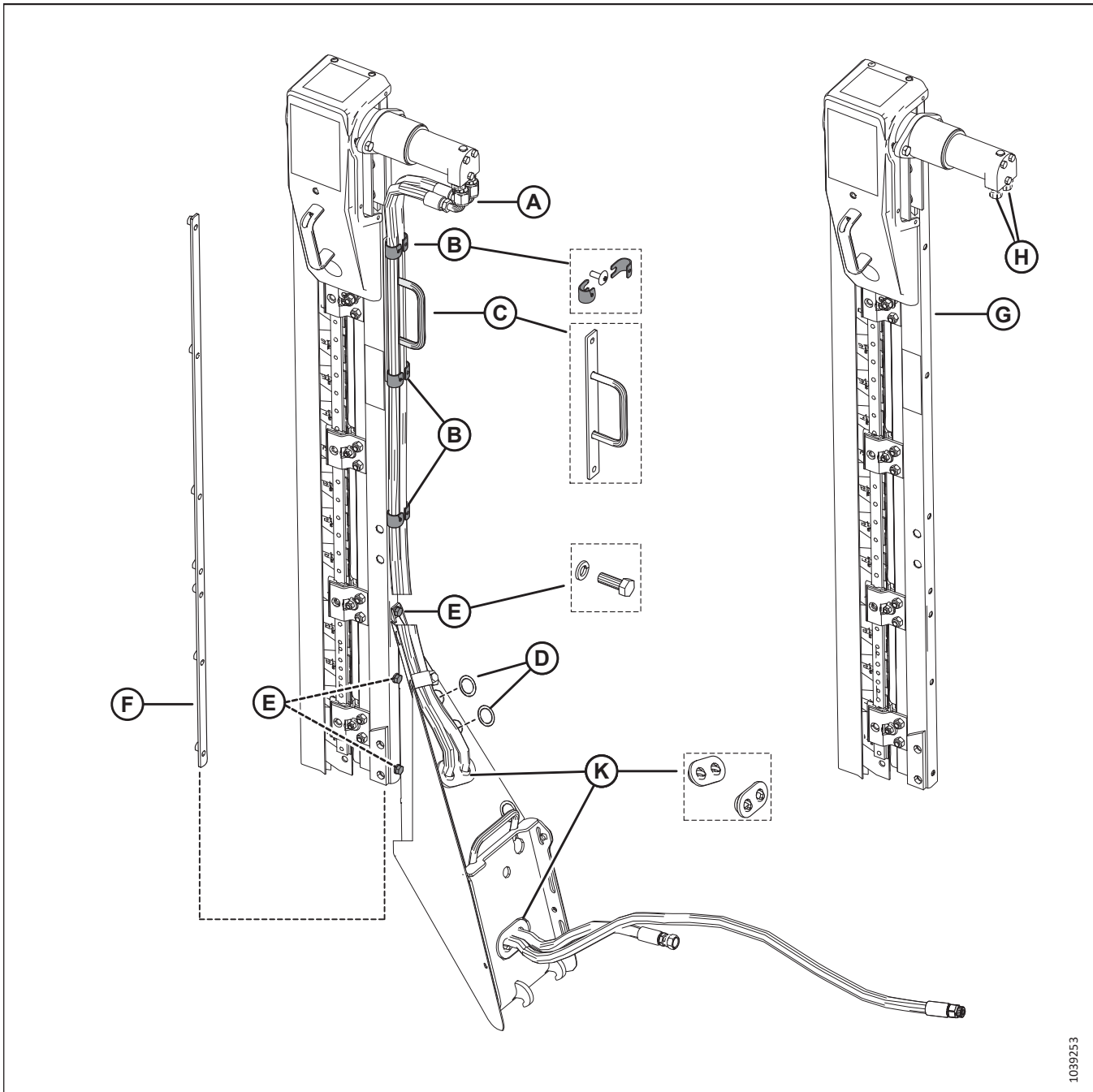


Figure 3.9: Removal of Vertical Knife Parts

1. Disconnect both hoses (A) from the motor. Remove and discard three clips and hardware (B), and handle (C).
2. Remove and discard two covers (D). Remove and discard mounting hardware (E). Remove plate (F) from inside the knife and discard it. Remove and retain both grommets (K).
3. You should be left with two grommets (K), and knife assembly (G) with two fittings (H) installed in the motor. Cap the fittings to prevent contamination.

INSTALLATION INSTRUCTIONS

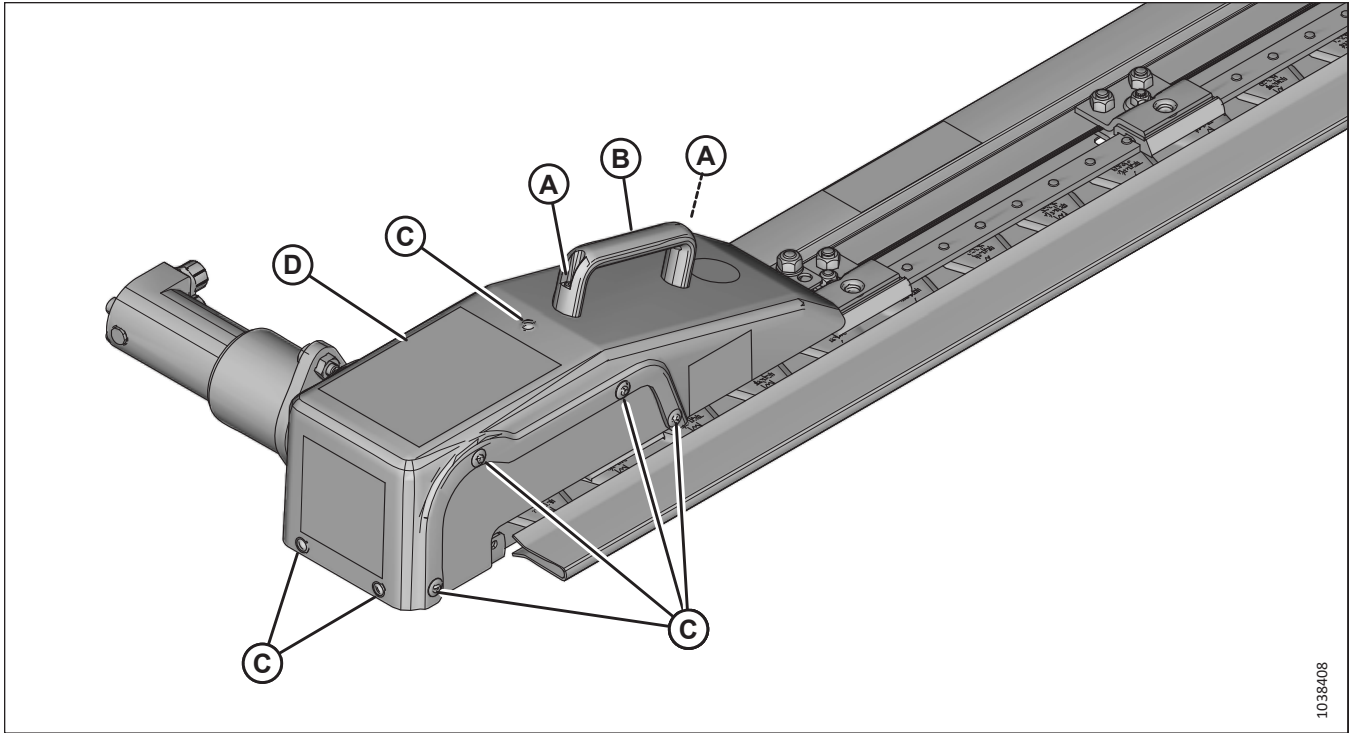


Figure 3.10: Left Knife

4. Remove two screws (A) from handle (B). Set the screws and the handle aside.
5. Remove remaining screws (C) from cover (D). Set the screws and the cover aside.

INSTALLATION INSTRUCTIONS

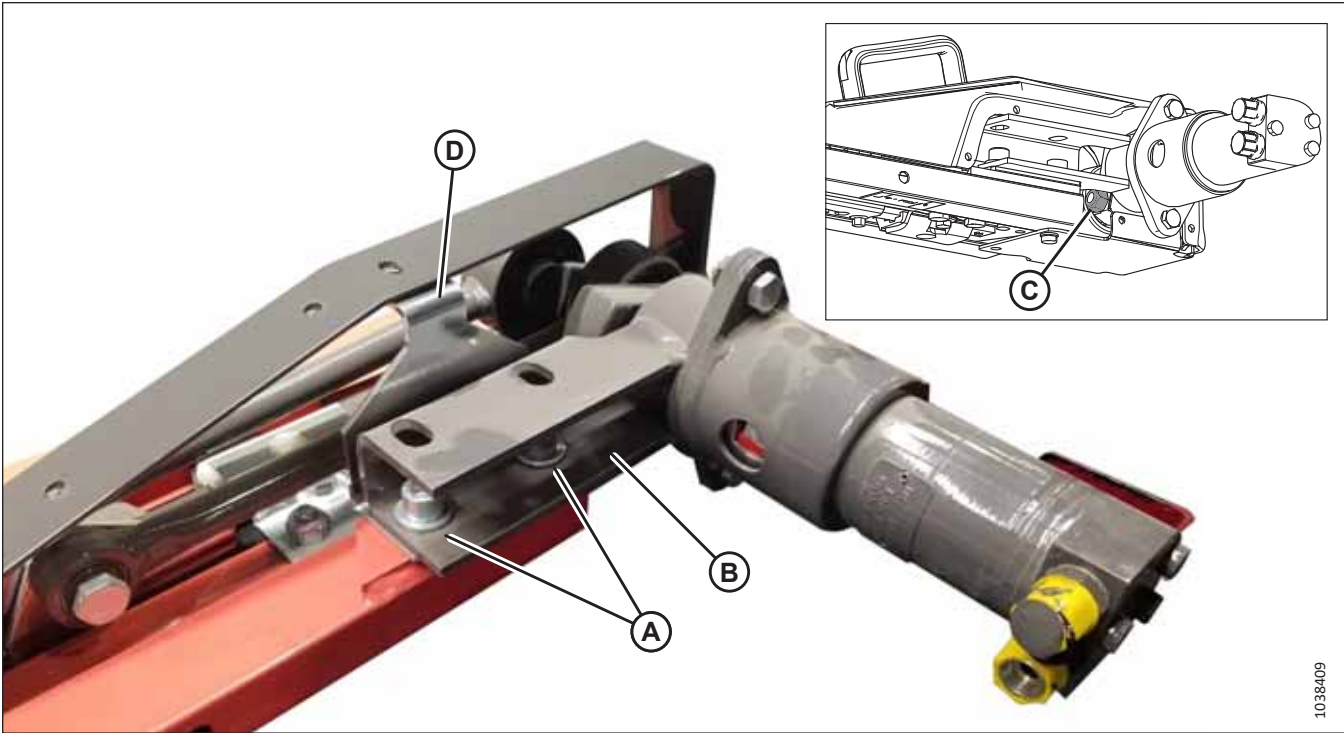


Figure 3.11: Left Knife

6. Remove two bolts (A) from motor mount (B).
7. Remove bolt and nut (C) from the motor rod clamp.
8. Remove and discard bracket (D).

INSTALLATION INSTRUCTIONS

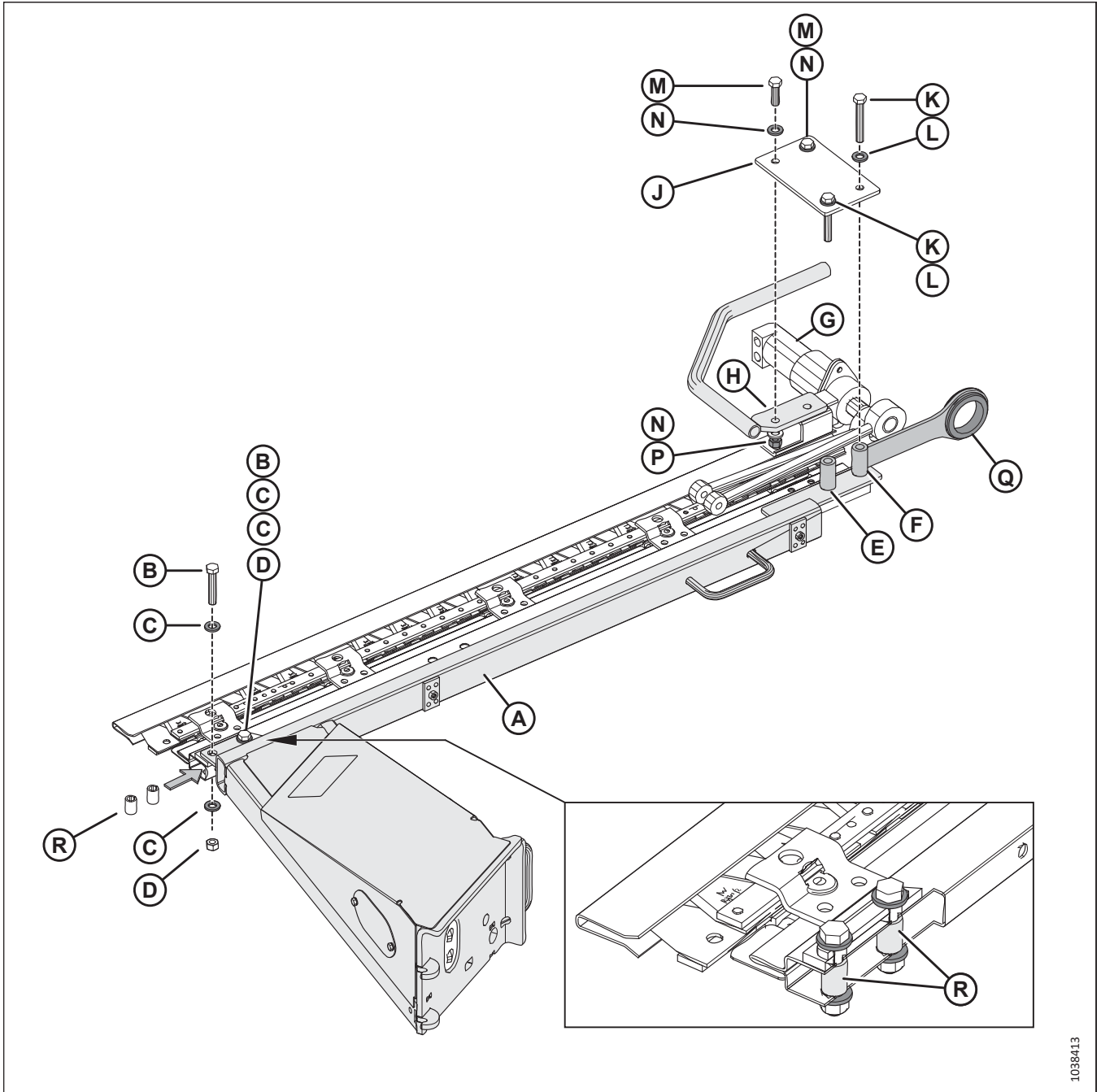


Figure 3.12: Left Knife

9. Insert two spacers (R) (MD #335867) into the bottom of the knife and align them with the mounting holes.
10. Secure support assembly (A) to the knife using bolts (B) (MD #252541), washers (C) (MD #30636), spacers (R), and nuts (D) (MD #136759).

NOTE:

The left support assembly is MD #335864. The right support assembly is MD #335866.

11. Align spacer (E) (MD #335810) and hose bracket (F) (MD #335784) with the holes in the support assembly and the knife.

INSTALLATION INSTRUCTIONS

12. Flip motor mount (G) (and motor) 180° over the vertical knife. Place divider (H) (MD #335785) on top of the motor mount. Align the mounting holes.
13. Secure cover (J) (MD #335779) to the spacer and the hose bracket using bolts (K) (MD #184674) and washers (L) (MD #30636).
14. Secure the cover to the divider and the motor mount using bolts (M) (MD #184669), washers (N) (MD #30636), and nuts (P) (MD #136759).
15. Insert grommet (Q) (MD #172877) into the hose bracket.

INSTALLATION INSTRUCTIONS

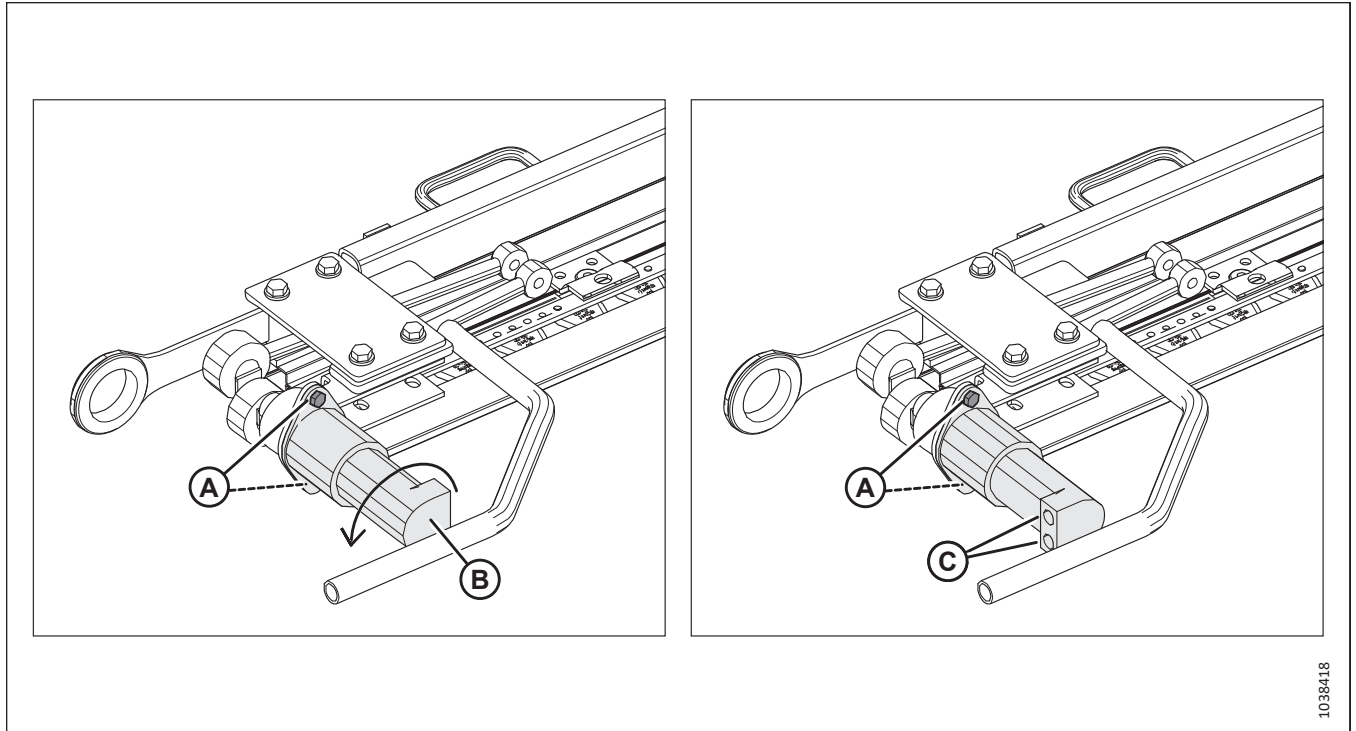


Figure 3.13: Left Knife

16. Remove two bolts (A) from the flange of the motor and rotate motor (B) 180° so that ports (C) point up as shown. Reinstall bolts (A).

INSTALLATION INSTRUCTIONS



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Figure 3.14: Left Knife

17. Trim the plastic cover on motor side (A) and other side (B) along the grooved edges as shown.

18. Reinstall the cover and the handle.

INSTALLATION INSTRUCTIONS

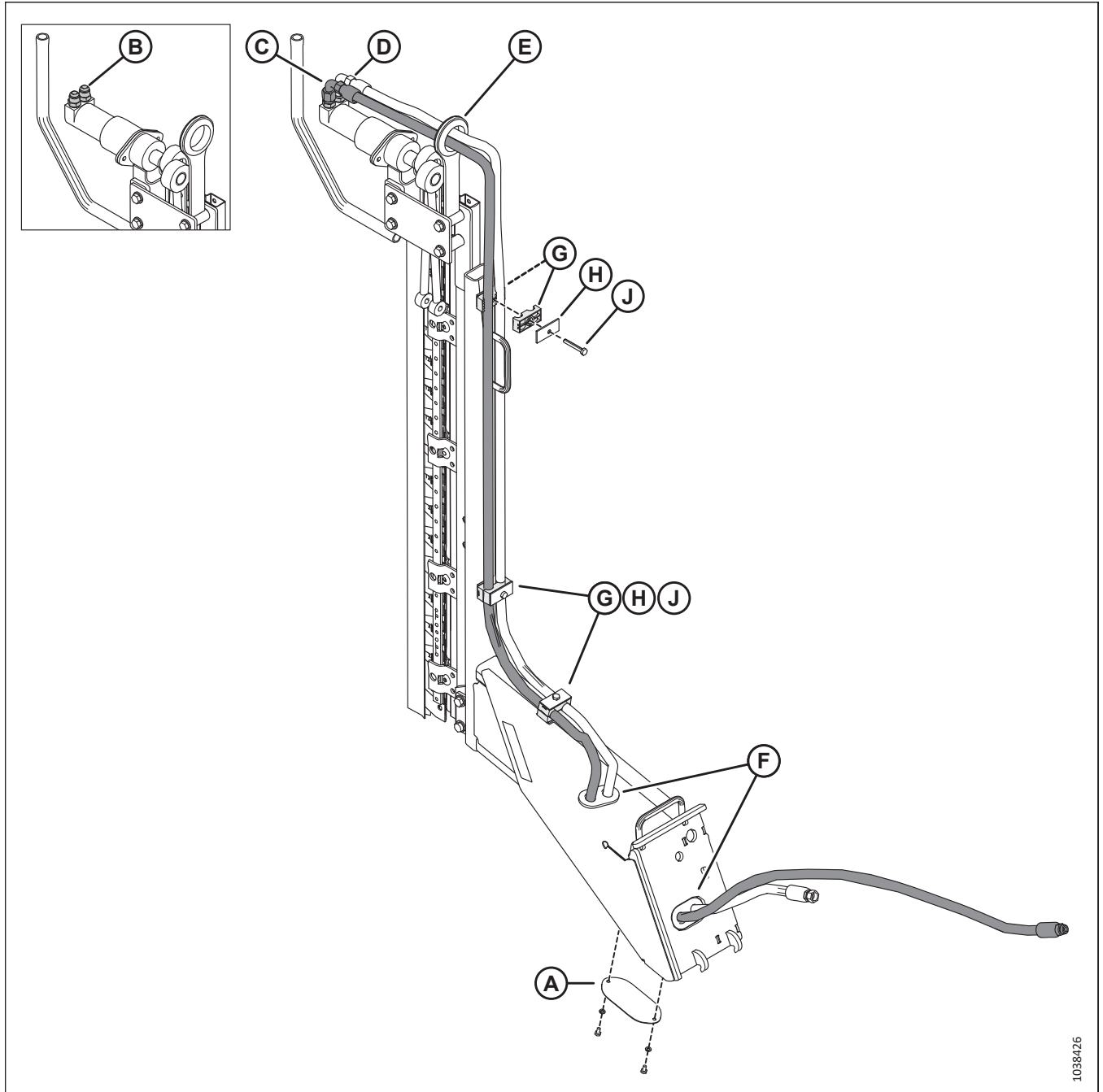


Figure 3.15: Left Knife

19. Remove bottom access plate (A) from the support assembly and set it aside. This plate will be reinstalled later in these kit instructions.
20. Remove the caps from both adapter fittings (B).
21. Connect the 90° end of hose (C) (MD #335760) to the outboard adapter fitting. Connect the 90° end of hose (D) (MD #335759) to the inboard adapter fitting.
22. Route the two hoses through bracket (E) and grommets (F) (retained from Step 2, page 12).
23. Install clamps (G) (MD #202991) over the hoses. Secure the clamps to the support assembly using covers (H) (MD #232233) and bolts (J) (MD #184655).

INSTALLATION INSTRUCTIONS

24. **If equipped with a quick latch connection:** Retrieve latch hook (A) and one of the jam nuts (B) retained during Step 5, [page 9](#). Attach the latch hook to the support assembly using one jam nut and weld nut (C). Proceed to [3.2.1 Attaching Vertical Knife Support Assembly to Header with Hook and Latch Connection, page 20](#).

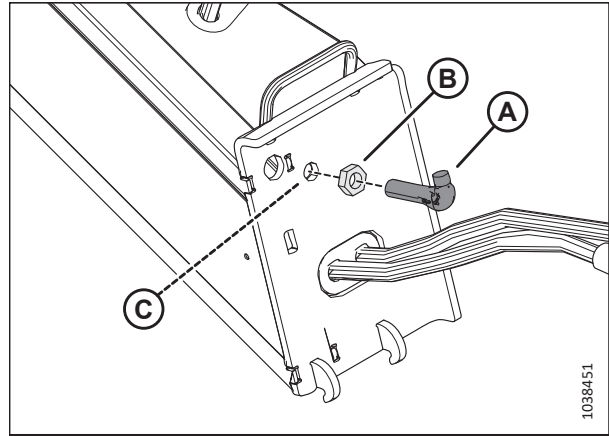


Figure 3.16: Latch Hook – Right Knife Support Assembly Shown, Left Opposite

25. **If equipped with a bolt and Nut Connection:** Retrieve bolt (A) and nut (B) retained during Step 4, [page 11](#). Insert the bolt from the inside of the support assembly and secure it with nut (B) on the exterior of the support assembly. Proceed to [3.2.2 Attaching Vertical Knife Support Assembly to Header with Bolt and Nut Connection, page 24](#).

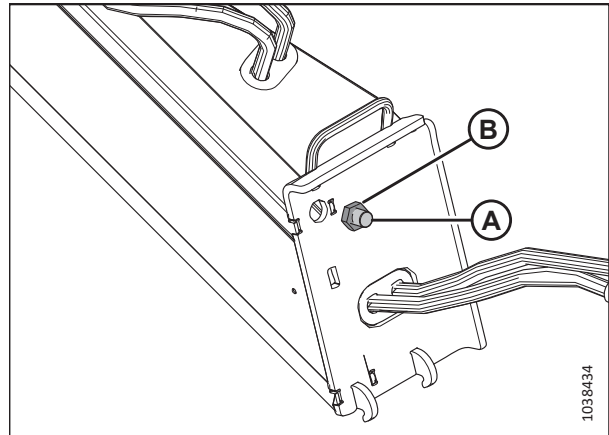


Figure 3.17: Bolt and Nut Connection – Right Knife Shown, Left Opposite

3.2.1 Attaching Vertical Knife Support Assembly to Header with Hook and Latch Connection

Connecting the vertical knife mount to a header using a hook and latch connection allows for a less rigid connection.

WARNING

It is necessary to use significant force to latch the knife assembly to the header endsheet. Do NOT attempt latching without first installing the shield to cover the knife sections so that you don't cut your hands or fingers on knife sections. Wear heavy gloves when handling the knife.

INSTALLATION INSTRUCTIONS

1. Raise the header cutterbar approximately 420 mm (16 in.) off the ground.
2. Engage hooks (A) in the two holes near the bottom of the header endsheet panel, and rest the vertical knife on the ground while feeding hydraulic hoses (B) through slot (C) in the end panel.
3. Lift the vertical knife assembly into place using the two supports (D) on the vertical knife.

NOTE:

Only one of the supports is visible in the illustration at right. The second one is closer to the top of the vertical knife.

NOTE:

Keep the top portion of the vertical knife mount away from the endsheet panel until the hydraulic hoses are routed through endsheet panel slot.

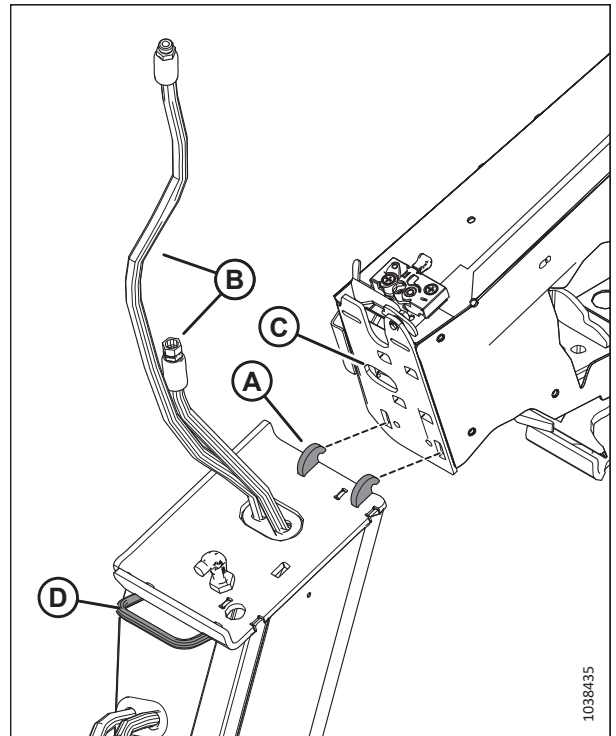


Figure 3.18: Vertical Knife and Mount Set into Endsheet Panel – Right Side Shown, Left Opposite

4. Loosen securing bolt (A) on divider safety latch (B) so the safety latch can be rotated up and away from the header endsheet panel.

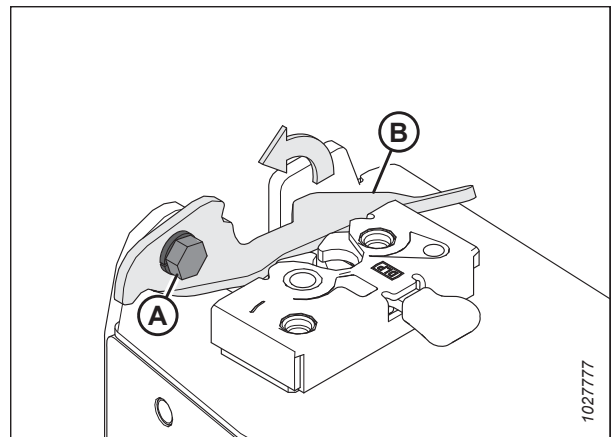


Figure 3.19: Divider Safety Latch – Right Endsheet Panel Shown, Left Opposite

INSTALLATION INSTRUCTIONS

- Align the vertical knife support assembly with the header endsheet panel, and insert latch hook (A) into quick latch (B) installed on the header.

NOTE:

The divider safety latch has been removed from the illustration for clarity.

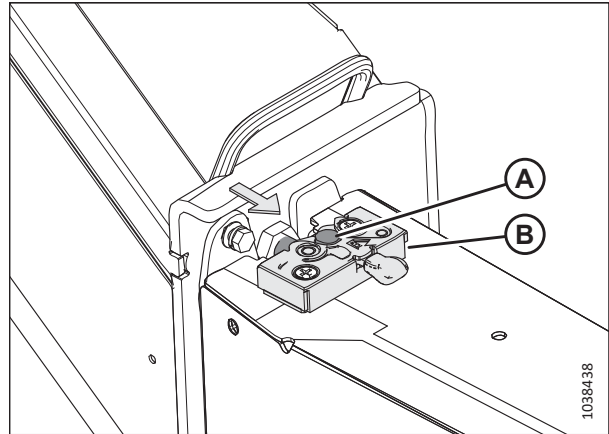


Figure 3.20: Inserting Latch Hook in Quick Latch – Right Endsheets Panel Shown, Left Opposite

- Rotate divider safety latch (A) down so that it holds latch hook (B) in quick latch (C) on the header.
- Tighten bolt (D) on divider safety latch (A) to hold latch hook (B) in place.

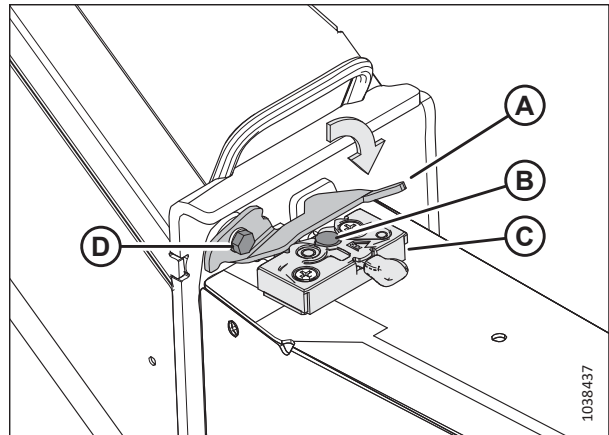


Figure 3.21: Setting Divider Safety Latch – Right Endsheets Panel Shown, Left Opposite

Adjusting Hook and Latch Connection

The hook and latch connection will need to be adjusted in order to achieve an ideal connection between the vertical knife mount and the header endsheet panels.

WARNING

It is necessary to use significant force to latch the knife assembly to the header endsheet. Do NOT attempt latching without first installing the shield to cover the knife sections so that you don't cut your hands or fingers on knife sections. Wear heavy gloves when handling the knife.

INSTALLATION INSTRUCTIONS

1. Lift safety latch (C).
2. Unlatch hook (A) from quick latch connection (B).

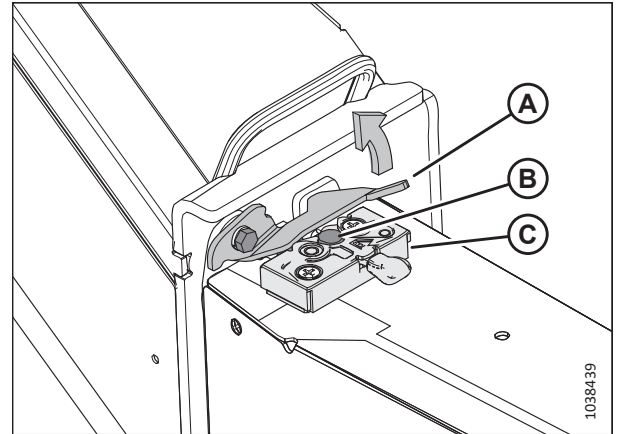


Figure 3.22: Quick Latch – Right Side Shown, Left Opposite

3. Loosen the hook's outer jam nut (A) and turn hook (B) into the face of the vertical knife support assembly by one turn. Secure jam nut (A).
4. Relatch vertical knife mount hook (B) in quick latch (C) on the endsheet panel.
5. Repeat the previous steps until the vertical knife support assembly will not latch.

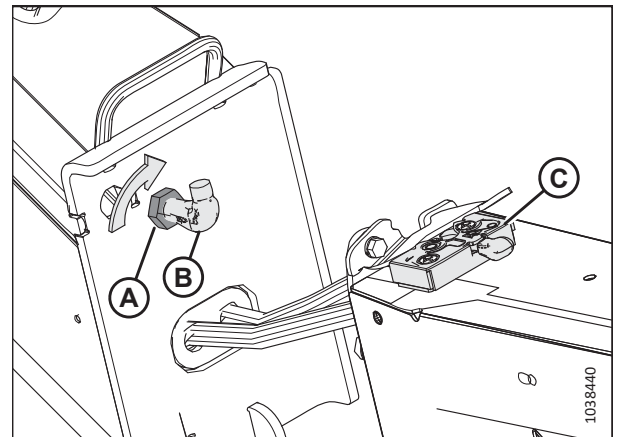


Figure 3.23: Hook and Outer Jam Nut – Right Side Shown, Left Opposite

6. Loosen outer jam nut (A) and back hook (B) out from the face of the vertical knife support assembly by one turn. This final adjustment ensures there is no excess play in the hook and latch connection or between the support assembly and the header endsheet panel.
7. Tighten jam nut (A), and latch the vertical knife support assembly into place in the endsheet panel's quick latch (C).

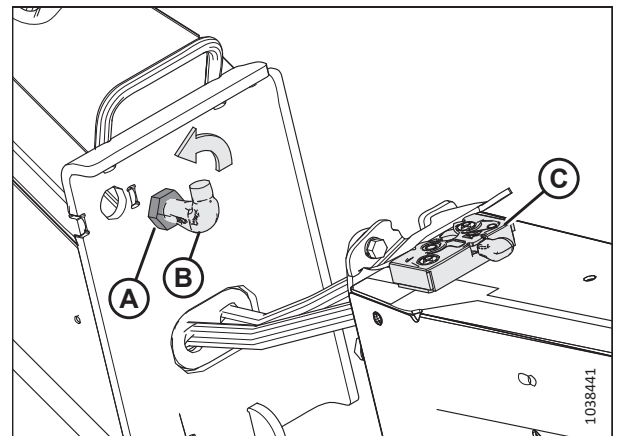


Figure 3.24: Hook and Outer Jam Nut – Right Side Shown, Left Opposite

INSTALLATION INSTRUCTIONS

8. Install bolt (A) (MD #21469) through the endsheet and knife mount, and secure it with nut (B) (MD #50186).

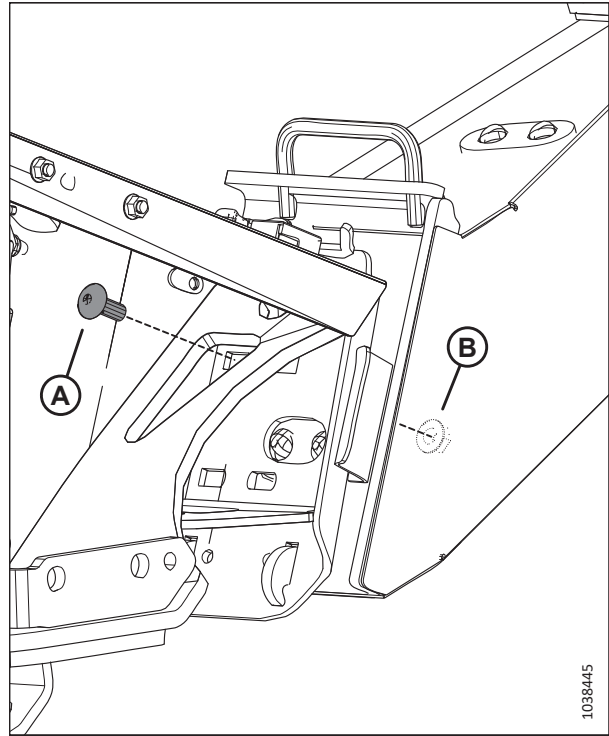


Figure 3.25: Safety Bolt – Right Endsheets Panel Shown, Left Opposite

9. Reinstall bottom access plate (A) onto the vertical knife support assembly.

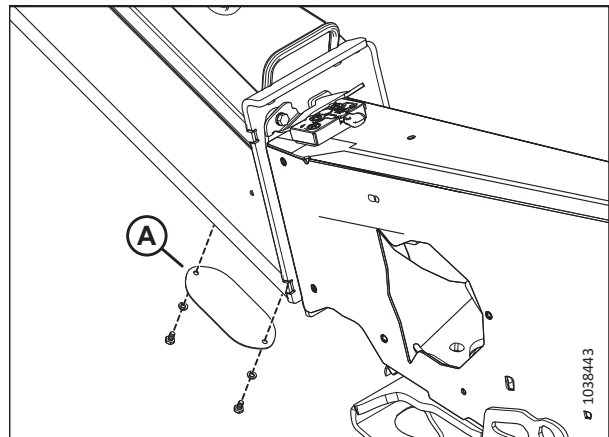


Figure 3.26: Access Plate – Right Knife Shown, Left Opposite

3.2.2 Attaching Vertical Knife Support Assembly to Header with Bolt and Nut Connection

Connecting the vertical knife support assembly to a header using a bolt and nut connection allows for a more rigid connection.

WARNING

It is necessary to use significant force to latch the knife assembly to the header endsheet. Do NOT attempt latching without first installing the shield to cover the knife sections so that you don't cut your hands or fingers on knife sections. Wear heavy gloves when handling the knife.

INSTALLATION INSTRUCTIONS

NOTE:

Two people are needed for this procedure: one to hold the vertical knife and support assembly in place while the other installs the bolt and nut.

1. Raise the header cutterbar approximately 420 mm (16 in.) off the ground.
2. Engage hooks (A) in holes near the bottom of the header endsheet panel, and rest the knife on the ground while feeding hydraulic hoses (B) through slot (C) in the endsheet panel.
3. Lift the vertical knife assembly into place using two supports (D) on the vertical knife.

NOTE:

Only one of supports (D) is shown in the illustration. The second one is closer to the top of the vertical knife.

NOTE:

Keep the top portion of the vertical knife support assembly away from the endsheet panel until the hydraulic hoses are routed through the endsheet panel slot.

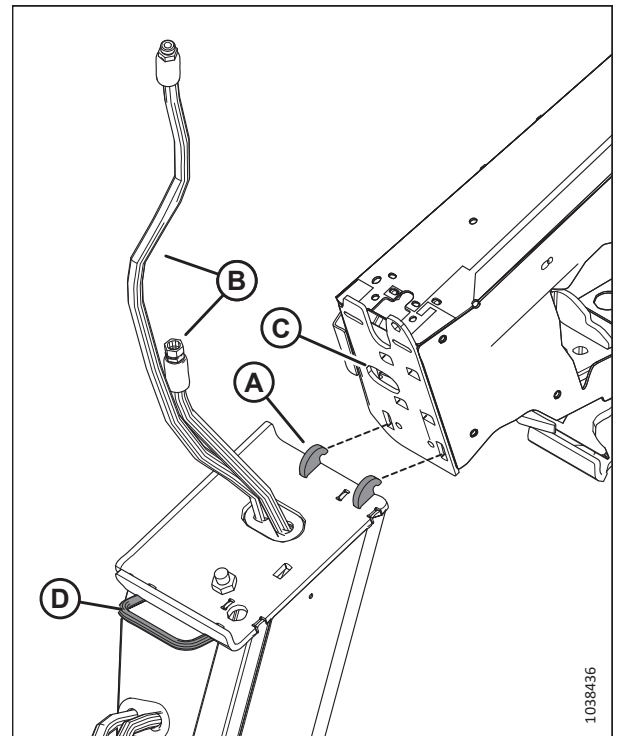


Figure 3.27: Vertical Knife and Support Assembly Set into Endsheets Panel – Right Side Shown, Left Opposite

4. Remove jam nut (A) from the outside of the vertical knife support assembly, but keep bolt (B) in place.
5. Align the vertical knife support assembly with header endsheet panel (C). Bolt (B) should slot into the header endsheet panel.
6. Retrieve washer (D) and nut (E) retained during Step 1, page 10. Install washer (D) and jam nut (E) on bolt (B), securing the vertical knife support assembly to the header endsheet panel.
7. Reinstall bottom access plate (F).

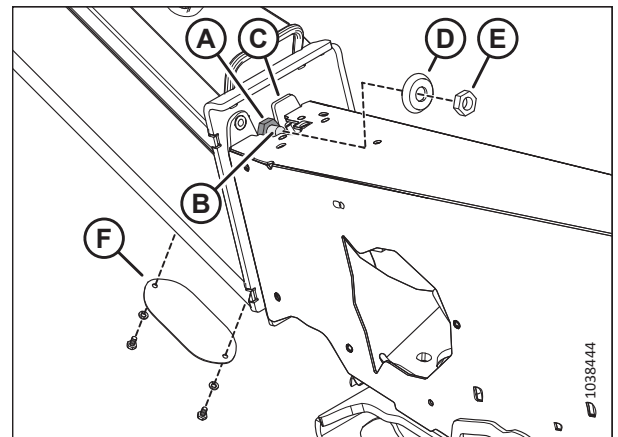


Figure 3.28: Bolting Vertical Knife Support Assembly to Header Endsheets Panel – Right Knife Shown, Left Opposite

3.3 Connecting Hydraulics

Connect the vertical knife hoses to the quick couplers.

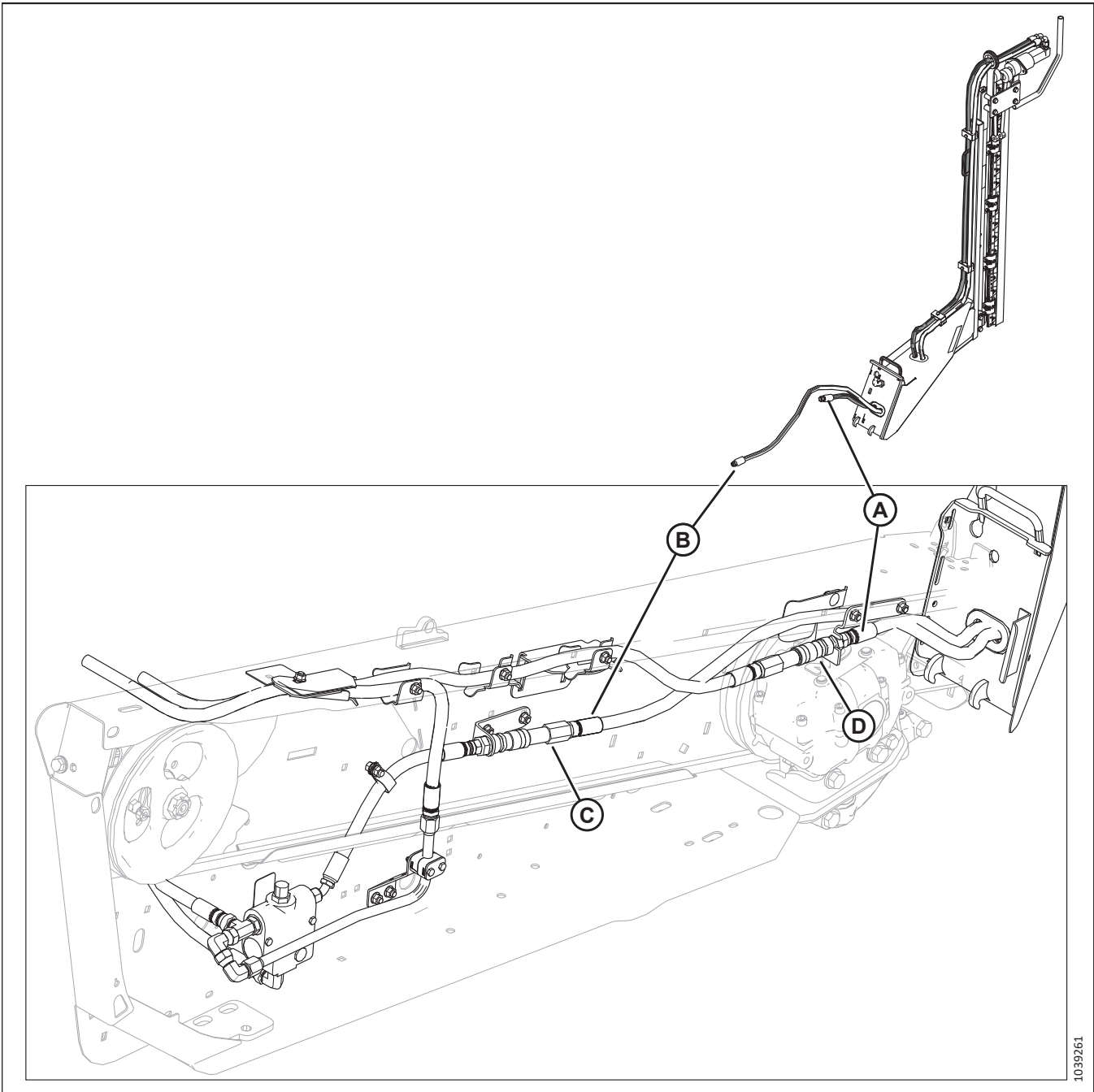


Figure 3.29: Hydraulic Hose Installation and Routing for Right Endsheet Panel on a Double-Reel FD1 Series FlexDraper® Header – Other Headers are Similar

1. Connect shorter hose (A) to female quick coupler/jam nut (D).
2. Connect longer hose (B) to male quick coupler (C).
3. Repeat this procedure on the opposite side of the header.

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