MacDon

M105
Self-Propelled Windrower

Unloading and Assembly Instructions (North America)

169893 Revision A

Original Instruction

The harvesting specialists worldwide.

Published in July, 2014

Introduction

This instructional manual describes the unloading, setup, and pre-delivery requirements for MacDon M105 Self-Propelled Windrowers.

Use the Table of Contents to guide you to specific areas. Retain this instruction for future reference.

CAREFULLY READ ALL THE MATERIAL PROVIDED BEFORE ATTEMPTING TO UNLOAD, ASSEMBLE, OR USE THE MACHINE.

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

List of Revisions

The following list provides an account of major changes from the previous version of this document.

Summary of Change	Location
Added Signal Words in Safety Section.	*1 Safety, page 1*
More terms added to Definitions Section.	*4 Definitions, page 19*
Updated drive wheel images and added references to a 10-bolt wheel assembly.	• *6.2 Installing Drive Wheel, page 27* • *7.13 Final Steps, page 98*
Removed reference to walking beam grease zerk. No longer required with new design.	*6.12.2 Lubrication Points, page 65*
Restructured the header attach procedures to improve readability.	*6.11 Attaching Headers, page 42*
M105 CDM and operator console images added.	Various sections
Manual and catalog part numbers changed.	*7.12 Manuals, page 97*
Updated Trimble Mount kit and Label (GPS completion kit) location.	*7.13 Final Steps, page 98*
Updated lift linkage image to include new decal.	Various sections

1 Safety

1.1 Signal Words

Three signal words, DANGER, WARNING, and CAUTION, are used to alert you to hazardous situations. The appropriate signal word for each situation has been 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.

1.2 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 the protective clothing and personal safety devices that **COULD** be necessary for the job at hand. Don't take chances.

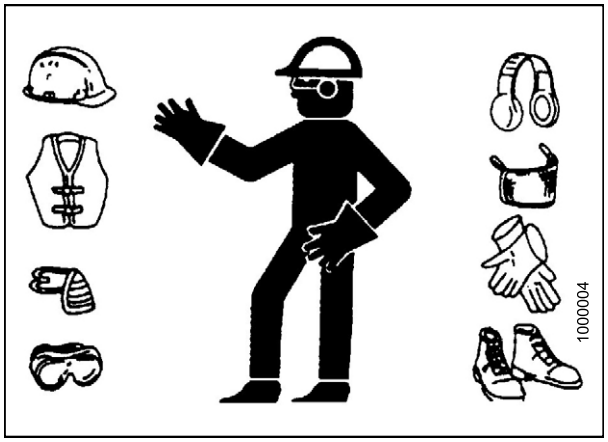


Figure 1.1: Safety Equipment

- You may need:
  - A hard hat
  - Protective footwear with slip resistant soles
  - Protective glasses or goggles
  - Heavy gloves
  - Wet weather gear
  - A respirator or filter mask
  - Hearing protection
    Be aware that exposure to loud noise can cause impairment or loss of hearing. Wearing suitable hearing protection devices such as ear muffs or ear plugs. These will help protect against objectionable or loud noises.

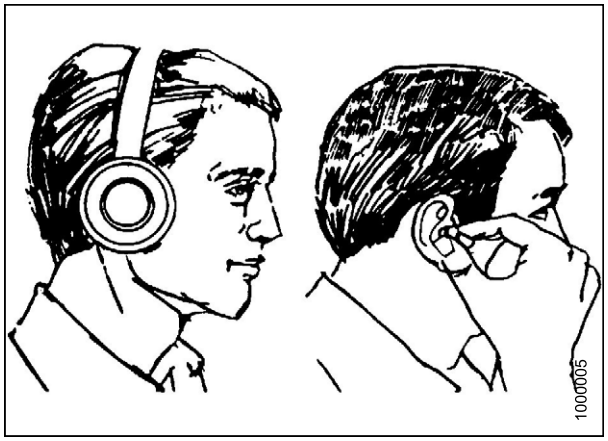


Figure 1.2: Safety Equipment

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

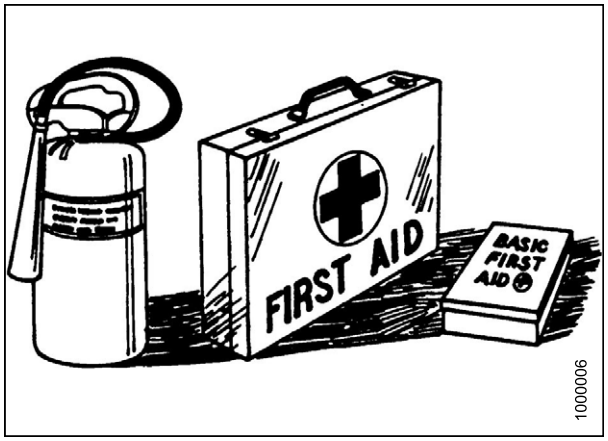


Figure 1.3: Safety Equipment

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

Figure 1.4: Safety around Equipment

- Keep hands, feet, clothing, and hair away from moving parts. Never attempt to clear obstructions or objects, from a machine while the engine is running.
- Do **NOT** modify the machine. Non-authorized modifications may impair machine function and/or safety. It may also shorten the machine's life.
- Stop the engine and remove the key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

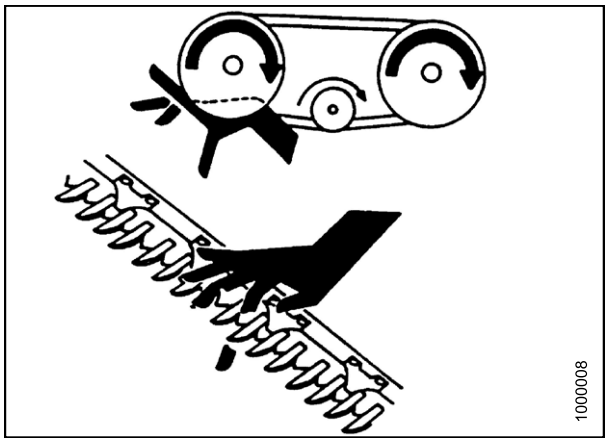


Figure 1.5: Safety around Equipment

- Keep the area used for servicing machinery 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, are 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 1.6: Safety around Equipment

1.3 Safety Signs

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

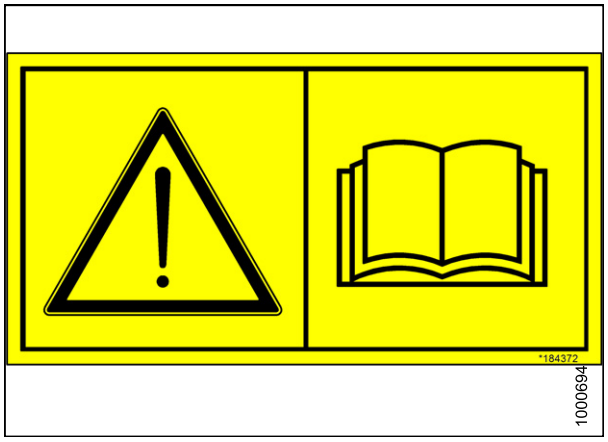


Figure 1.7: Operator's Manual Decal

2 Recommended Torques

2.1 Torque Specifications

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

- Tighten all bolts to the torques specified in chart (unless otherwise noted throughout this manual).
- Replace hardware with the same strength and grade bolt.
- Check tightness of bolts periodically, using the tables below as a guide.
- Torque categories for bolts and cap screws are identified by their head markings.

2.1.1 SAE Bolt Torque Specifications

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

Table 2.1 SAE Grade 5 Bolt and Grade 5 Free Spinning Nut

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

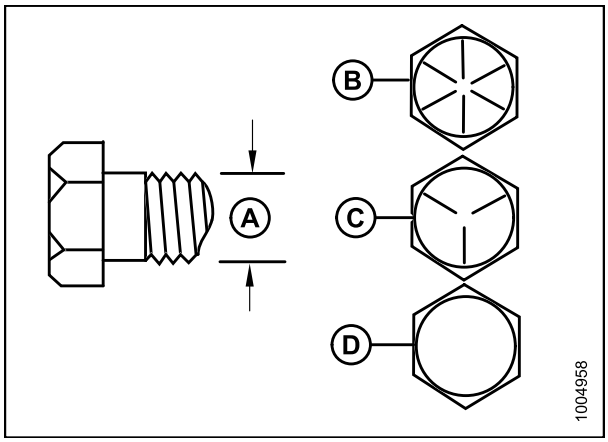


Figure 2.1: Bolt Grades

A - Nominal Size
B - SAE-8
C - SAE-5
D - SAE-2

Table 2.2 SAE Grade 5 Bolt and Grade 5 Distorted Thread Nut

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

Table 2.3 SAE Grade 8 Bolt and Grade 8 Distorted Thread Nut

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

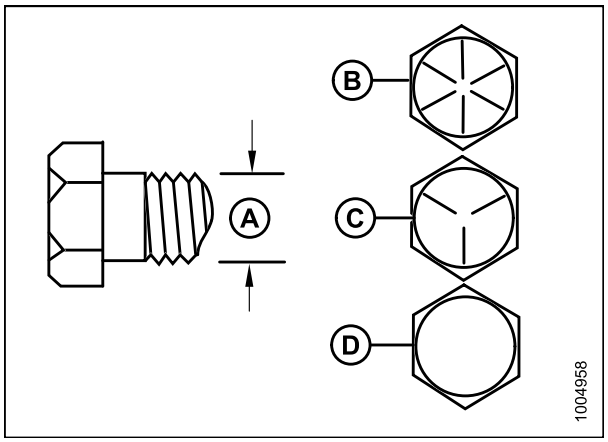


Figure 2.2: Bolt Grades

A - Nominal Size
B - SAE-8
C - SAE-5
D - SAE-2

Table 2.4 SAE Grade 8 Bolt and Grade 8 Free Spinning Nut

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

2.1.2 Metric Bolt Specifications

Table 2.5 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut

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

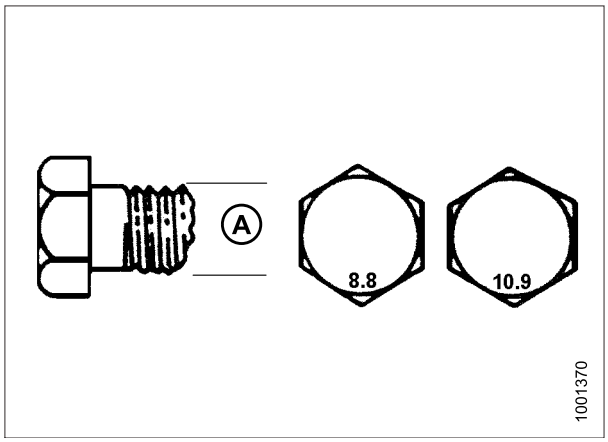


Figure 2.3: Bolt Grades

A - Nominal Size

Table 2.6 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut

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

Table 2.7 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut

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

Table 2.8 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut

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

2.1.3 Metric Bolt Specifications Bolting into Cast Aluminum

Table 2.9 Metric Bolt Bolting into Cast Aluminum

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

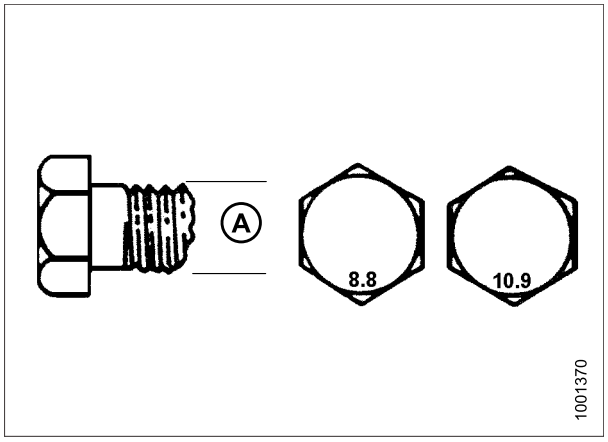


Figure 2.4: Bolt Grades

A - Nominal Size

2.1.4 Flare-Type Hydraulic Fittings

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

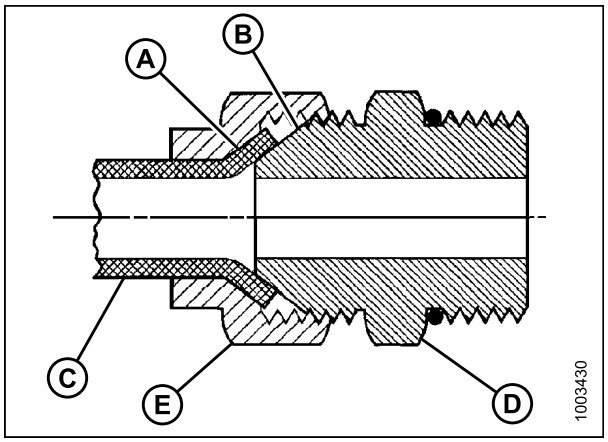


Figure 2.5: Hydraulic Fitting

A - Flare
B - Flare Seat
C - Tube
D - Body
E - Nut

Table 2.10 Flare-Type Hydraulic Tube Fittings

SAE No.	Tube Size O.D. (in.)	Thread Size (in.)	Nut Size across Flats (in.)	Torque Value[1]		Flats from Finger Tight (FFFT)	
				ft·lbf	N·m	Flats	Turns
3	3/16	3/8	7/16	6	8	1	1/6
4	1/4	7/16	9/16	9	12	1	1/6
5	5/16	1/2	5/8	12	16	1	1/6
6	3/8	9/16	11/16	18	24	1	1/6
8	1/2	3/4	7/8	34	46	1	1/6
10	5/8	7/8	1	46	62	1	1/6
12	3/4	1-1/16	1-1/4	75	102	3/4	1/8
14	7/8	1-3/8	1-3/8	90	122	3/4	1/8
16	1	1-5/16	1-1/2	105	142	3/4	1/8

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

2.1.5 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

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

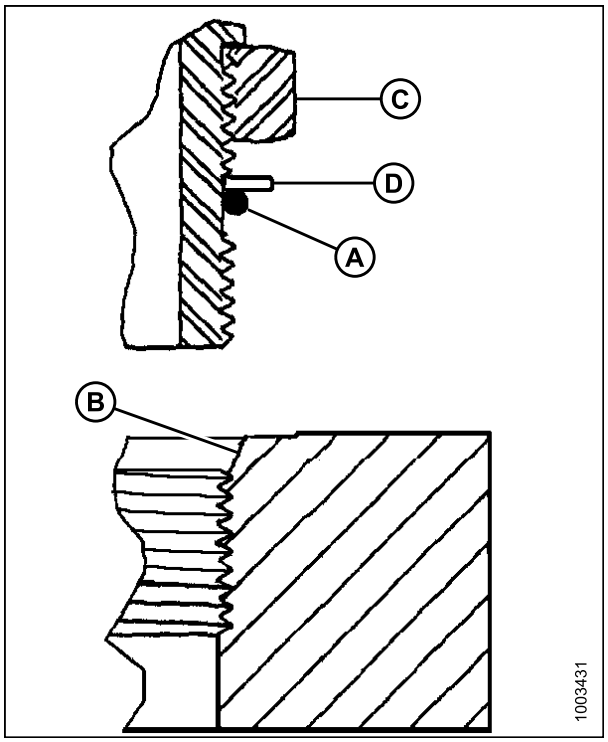


Figure 2.6: Hydraulic Fitting

A - O-Ring **B - Seat** **C - Nut**
D - Washer

5. Install fitting (B) into port until back up washer (D) and O-ring (A) contacts on 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 the fitting (B) and the other on the lock nut (C).
8. Check the final condition of the fitting.

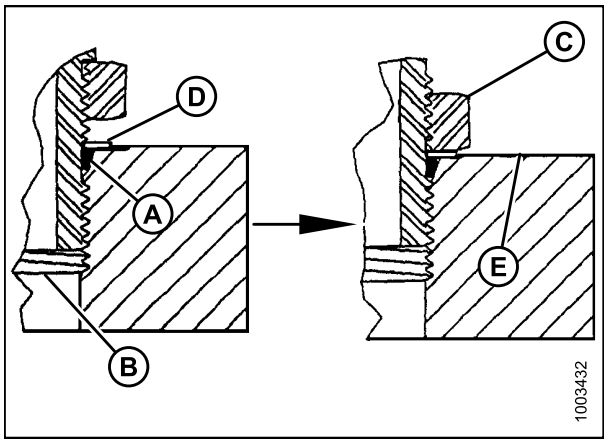


Figure 2.7: Hydraulic Fitting

A - O-Ring **B - Fitting** **C - Nut**
D - Washer **E - Part Face**

Table 2.11 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

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

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

2.1.6 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 the threads, adjust if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into port until fitting is hand tight.
5. Torque fitting (C) per value in chart. Refer to Table *2.12 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable), page 14*.
6. Check the final condition of the fitting.

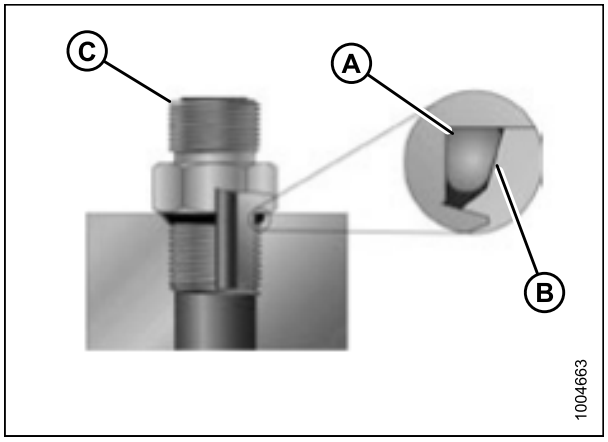


Figure 2.8: Hydraulic Fitting

Table 2.12 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

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

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

2.1.7 O-Ring Face Seal (ORFS) Hydraulic Fittings

To tighten O-ring face seal (ORFS) hydraulic fittings, follow these steps:

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

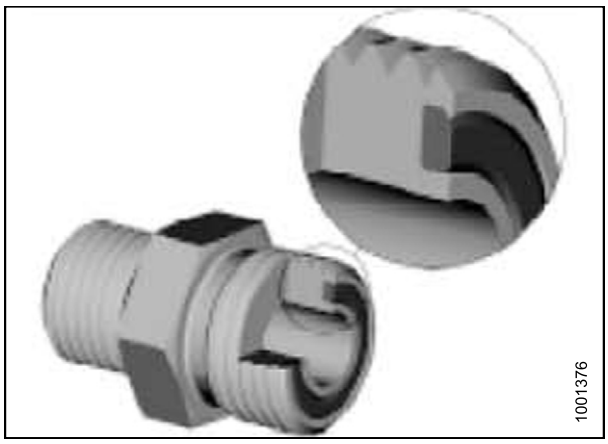


Figure 2.9: Hydraulic Fitting

2. Apply hydraulic system oil to the O-ring (B).
3. Align the tube or hose assembly so that the flat face of the 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 fitting further to the torque value in the table shown in the opposite column.

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

6. When assembling unions or two hoses together, three wrenches will be required.
7. Check the final condition of the fitting.

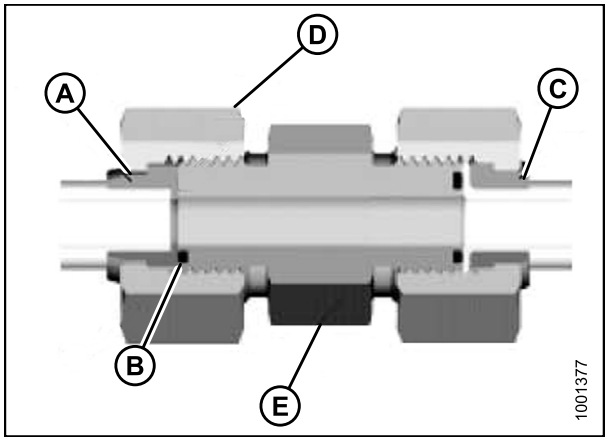


Figure 2.10: Hydraulic Fitting

A - Brazed Sleeve
B - O-Ring
C - Two Piece Sleeve
D - Nut
E - Fitting Body

Table 2.13 O-Ring Face Seal (ORFS) Hydraulic Fittings

SAE Dash Size	Thread Size (in.)	Torque Value[4]	
		ft·lbf (*in·lbf)	N·m
-3	Note[5]	–	–
-4	9/16–18	18–21	25–28
-5	Note[5]	–	–
-6	11/16-16	29–32	40–44
-8	13/16-16	41–45	55–61
-10	1–14	59–65	80–88
-12	1-3/16-12	85–94	115–127
-14	Note[5]	–	–
-16	1-7/16-12	111–122	150–165
-20	1-11/16-12	151–167	205–226
-24	2–12	232–256	315–347
-32	2-1/2-12	376–414	510–561

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

3 Conversion Chart

Quantity	Inch-Pound Units		Factor	SI Units (Metric)	
	Unit Name	Abbreviation		Unit Name	Abbreviation
Area	acres	acres	x 0.4047 =	hectares	ha
Flow	US gallons per minute	gpm	x 3.7854 =	liters per minute	L/min
Force	pounds force	lbf	x 4.4482 =	Newtons	N
Length	inch	in.	x 25.4 =	millimeters	mm
	foot	ft.	x 0.305 =	meters	m
Power	horsepower	hp	x 0.7457 =	kilowatts	kW
Pressure	pounds per square inch	psi	x 6.8948 =	kilopascals	kPa
			x .00689 =	megapascals	MPa
			÷ 14.5038 =	bar (non-SI)	bar
Torque	pound feet or foot pounds	ft·lbf	x 1.3558 =	newton meters	N·m
	pound inches or inch pounds	in·lbf	x 0.1129 =	newton meters	N·m
Temperature	degrees fahrenheit	˚F	(˚F-32) x 0.56 =	Celsius	˚C
Velocity	feet per minute	ft/min	x 0.3048 =	meters per minute	m/min
	feet per second	ft/s	x 0.3048 =	meters per second	m/s
	miles per hour	mph	x 1.6063 =	kilometres per hour	km/h
Volume	US gallons	US gal	x 3.7854 =	liters	L
	ounces	oz.	x 29.5735 =	milliliters	ml
	cubic inches	$in.^3$	x 16.3871 =	cubic centimetres	cm^3 or cc
Weight	pounds	lbs	x 0.4536 =	kilograms	kg

4 Definitions

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

Term	Definition
A-Series header	MacDon auger header.
API	American Petroleum Institute.
APT	Articulated Power Turn.
ASTM	American Society of Testing and Materials.
Bolt	A headed and externally threaded fastener that is designed to be paired with a nut.
CDM	Cab display module on a self-propelled windrower.
Center-link	A hydraulic cylinder or manually adjustable turnbuckle type link between the header and the machine to which it is attached. It is used to change header angle.
CGVW	Combined vehicle gross weight.
D-Series header	MacDon rigid draper header.
ECM	Engine control module.
Finger tight	Finger tight is a reference position where sealing surfaces or components are making contact with each other and the fitting has been tightened to a point where the fitting is no longer loose.
FFFT	Flats from finger tight.
GSL	Ground speed lever.
GVW	Gross vehicle weight.
Hard joint	A joint made with the use of a fastener where the joining materials are highly incompressible.
Header	A machine that cuts and lays crop into a windrow and is attached to a self-propelled windrower.
Hex key	A hex key or Allen key (also known by various other synonyms) is a tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in the head (internal-wrenching hexagon drive).
hp	Horsepower.
ISC	Intermediate Speed Control.
JIC	Joint Industrial Council: a standards body that developed the standard sizing and shape for original 37° flared fitting.
Knife	A cutting device which uses a reciprocating cutter. Also called a sickle.
n/a	Not applicable.
Nut	An internally threaded fastener that is designed to be paired with a bolt.
N-DETENT	The slot opposite the NEUTRAL position on operator's console.
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.
ORB	O-ring boss: a style of fitting commonly used in port opening on manifolds, pumps and motors.

DEFINITIONS

Term	Definition
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.
PTO	Power Take-Off.
RoHS (Reduction of Hazardous Substances)	A directive by the European Union to restrict the use of certain hazardous substances (such as hexavalent chromium used in some yellow zinc platings).
SAE	Society Of Automotive Engineers.
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread in one of the mating parts.
Self-Propelled (SP) Windrower	Self-propelled machine consisting of a power unit with a header.
Soft joint	A joint made with the use of a fastener where the joining materials are compressible or experience relaxation over a period of time.
spm	Strokes per minute.
Tractor	Agricultural type tractor.
Truck	A four-wheel highway/road vehicle weighing no less than 7500 lbs (3400 kg).
Tension	Axial load placed on a bolt or screw, usually measured in pounds (lb) or Newtons (N).
TFFT	Turns from finger tight.
Torque	The product of a force X lever arm length, usually measured in foot-pounds (ft·lbf) or Newton-meters (N·m).
Torque angle	A tightening procedure where the fitting is assembled to a precondition (finger tight) and then the nut is turned further a number of degrees or a number of flats to achieve its final position.
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in the bolt or screw.
UCA	Upper cross auger.
Washer	A thin cylinder with a hole or slot located in the center and is to be used as a spacer, load distribution element, or a locking mechanism.
Windrower	Power unit of a self-propelled header.
WCM	Windrower control module.

5 Unloading the Windrower

You can use one or two forklifts to unload the windrower. Refer to *5.1 Using Two Forklifts to Unload Windrower, page 21* or *5.2 Using One Forklift to Unload Windrower, page 23*.

5.1 Using Two Forklifts to Unload Windrower

Figure 5.1: Unloading Windrower

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.

Table 5.1 Lifting Vehicle

Minimum Lifting Capacity[6]	5500 lb (2500 kg)
Minimum Fork Length	78 in. (1981 mm)

IMPORTANT:

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

6. At 48 in. (1220 mm) from back end of forks.

UNLOADING THE WINDROWER

1. Move trailer onto level ground and block trailer wheels.
2. Set forklift tines to the widest possible setting.
3. Position one forklift on either side of trailer and position forks under windrower frame.

NOTE: Windrower center of gravity is approximately 55 in. (1397 mm) rearward of drive wheel center.

4. Lift with both forklifts simultaneously until windrower is clear of trailer bed.

⚠ WARNING

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

5. Drive the truck slowly forward until trailer bed is clear of windrower.
6. Lower unit slowly and simultaneously with both forklifts to the ground. If ground is soft, place wooden blocks under front shipping stands.
7. Back off forklifts.
8. Check windrower for shipping damage and check shipment for missing parts.

5.2 Using One Forklift to Unload Windrower

Two different methods can be used to unload the windrower using one forklift. Refer to *5.2.1 Method 1—Pulling from Trailer Bed, page 23*, if using a chain and pulling the windrower to a ground that is slightly lower or at the same level with the trailer bed or *5.2.2 Method 2—Lifting from Trailer Bed, page 24*, if lifting the windrower from the left or right side of the trailer bed.

5.2.1 Method 1—Pulling from Trailer Bed

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.

Table 5.2 Lifting Vehicle

Minimum Capacity[7]	5500 lb (2500 kg)

IMPORTANT:

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

Table 5.3 Chain

Type	Overhead lifting quality (1/2 in.)
Minimum Working Load	5000 lb (2270 kg)

1. Position rear of trailer against unloading dock that is the same height or slightly lower than the trailer bed.
2. Remove shipped parts from under windrower frame.
3. Set forklift tines to widest possible setting.
4. Drive forklift up to rear of windrower and place forks under the rear frame cross member.
5. Install chains from forklift mast to jacking brackets on both front legs of windrower. Chains must be the same length.

CAUTION

The front legs rest on the trailer bed on skid shoes. Ensure there are no obstructions to prevent rearward sliding of the skid shoes and watch carefully as the unit is dragged to ensure the skid shoes are not sliding sideways towards the edge of the trailer bed.

6. Drag windrower rearward off of carrier.
7. Remove chains and back off the forklift.
8. Check windrower for shipping damage and check shipment for missing parts.

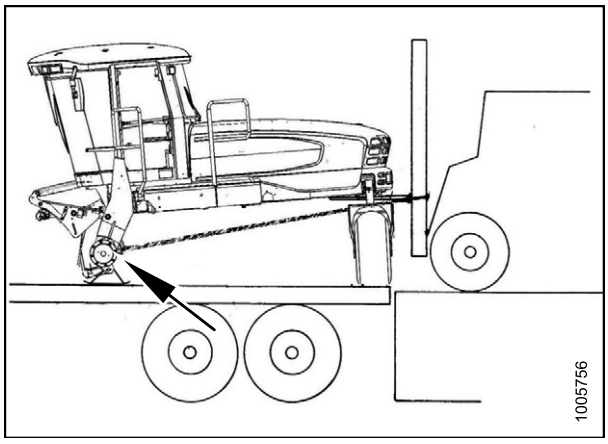


Figure 5.2: Unloading Windrower

7. At 48 in. (1220 mm) from back end of forks.

5.2.2 Method 2—Lifting from Trailer Bed

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.

Table 5.4 Lifting Vehicle

Minimum Capacity[8]	11,000 lb (4994 kg)
Minimum Fork Length	78 in. (1981 mm)

IMPORTANT:

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

WARNING

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

1. Move trailer onto level ground and block trailer wheels.
2. Set forklift tines to the widest possible setting.
3. Position forklift on left or right side of trailer and position forks (A) under windrower frame.

   NOTE: Windrower center of gravity is approximately 55 in. (1397 mm) rearward of drive wheel center.

Figure 5.3: Unloading Windrower

WARNING

Ensure forks project beyond far side of frame.

4. Lift until windrower is clear of trailer bed.
5. Slowly back forklift away from trailer until windrower is clear of trailer.
6. Lower unit slowly to the ground. If ground is soft, place wooden blocks under front shipping stands.
7. Back off forklift.
8. Check windrower for shipping damage and check shipment for missing parts.

8. At 48 in. (1220 mm) from back end of forks.

6 Assembling the Windrower

Follow each of the procedures in this chapter in order.

6.1 Repositioning Right-Hand Leg

The right cab-forward leg requires repositioning from shipping to field configuration as follows:

1. Support front of the windrower with stand (or equivalent) so that the right-hand leg is off the ground.
2. Position jack (A) under right-hand leg and raise jack slightly to take some weight off leg.

IMPORTANT:

Removal of pins will be difficult if jack is NOT positioned to take weight off leg.

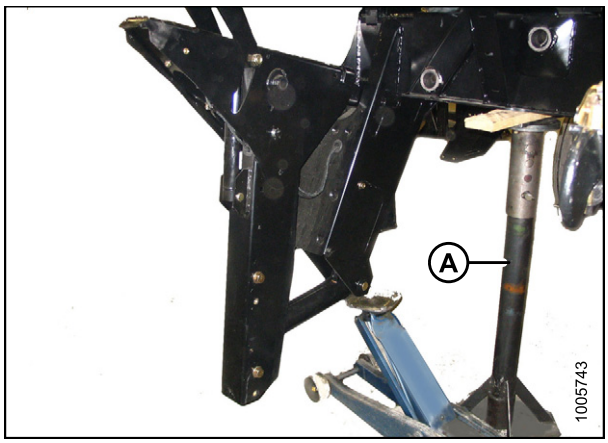


Figure 6.1: Right-Hand Leg

3. Remove two bolts, washers, and nuts (A) from frame.

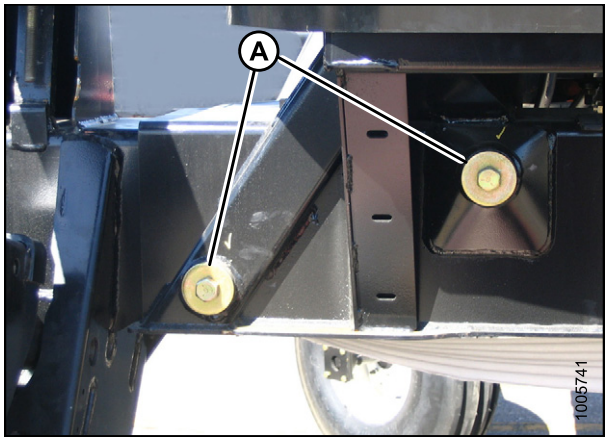


Figure 6.2: Windrower Frame

4. Adjust jack height while observing pin (A) position in bore. When pin (A) is loose, tap out pin (A) with hammer or use tool (MD #B5442) to extract pin.
5. Repeat for second pin.

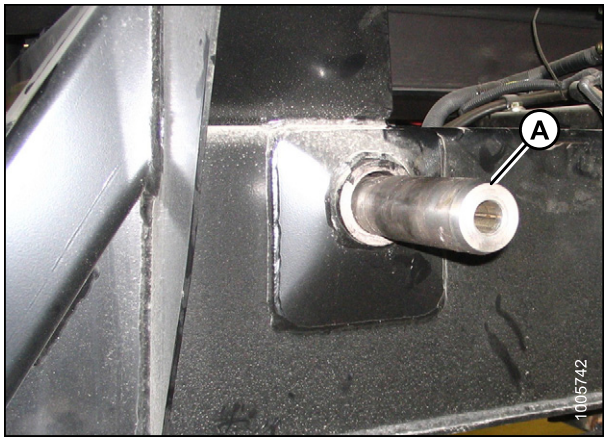


Figure 6.3: Windrower Frame

6. Move leg out to expose one hole (A).
7. Reinstall pins and secure with bolts, washers (B), and nuts (not shown). Torque nuts to 100 lbf·ft (136 N·m).
8. Lower jack and remove it from the right-hand leg.

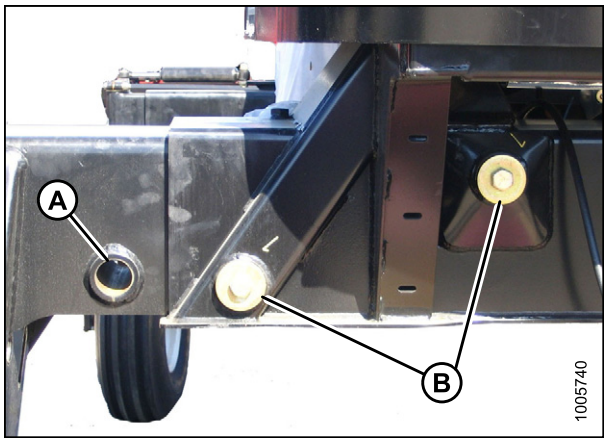


Figure 6.4: Windrower Frame

6.2 Installing Drive Wheel

1. Support the front of the windrower off the ground with stand (A).

Figure 6.5: Windrower on Stand

2. Position drive wheel (A) against wheel drive hub (B), so that air valve (C) are on the outside and tire tread (D) points forward, when windrower is in cab forward.
   For Turf tires (diamond tread), be sure arrow on sidewall points in forward rotation, when windrower in cab forward.
3. Lift wheel on hub with lifting device. Lower lifting device.

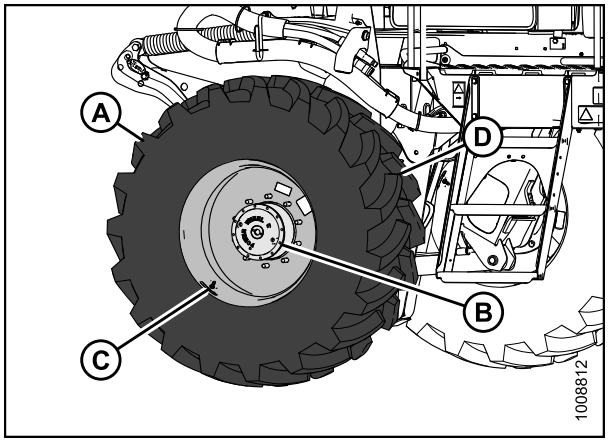


Figure 6.6: Drive Wheel Assembly

4. Line up the holes in the rim with the studs on the wheel drive hub and install wheel nuts (A).

NOTE: To avoid damage to wheel rims and studs, tighten nuts by hand, do **NOT** use an impact gun, do **NOT** use lubricant or Never-Seez® compound, and do **NOT** overtighten wheel nuts.

5. Torque drive wheel nuts to 375 ft·lbf (510 N·m) using the tightening sequence shown at right.

IMPORTANT:

Ensure that only manufacturer specified nuts (MD #205397) are used.

6. After one hour of operation, retorque the wheel nuts. Then check every hour until two consecutive checks produce no movement of the nuts.

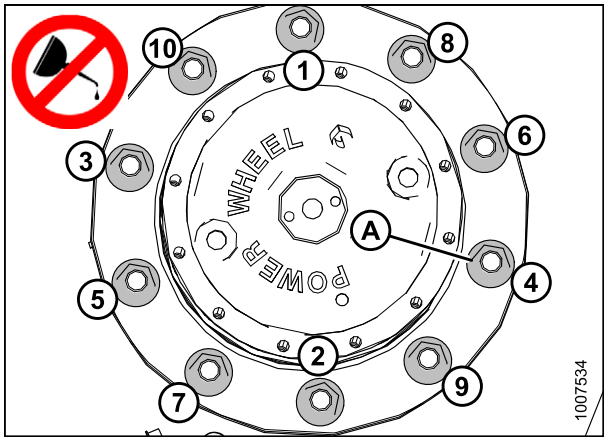


Figure 6.7: Drive Wheel Nuts

6.3 Repositioning Caster Wheels

As an option, the rear casters can be adjusted to a narrow tread width to allow loading and shipping without having to remove them.

A **NARROW TREAD** width also suits smaller headers by allowing more space to the uncut crop and provides more manoeuvrability around poles, irrigation inlets, and other obstacles.

A **WIDER TREAD** width is useful in heavy crops that produce large windrows so that run-over is reduced.

1. Raise rear of windrower slightly so that most of the weight is off the casters, using a jack or other lifting device under the frame where shown (B).

   NOTE: Lifting device should have a lifting capacity of at least 5000 lb (2270 kg).

2. Remove six bolts (A) (four on backside, two on underside) and washers from left and right sides of walking beam.

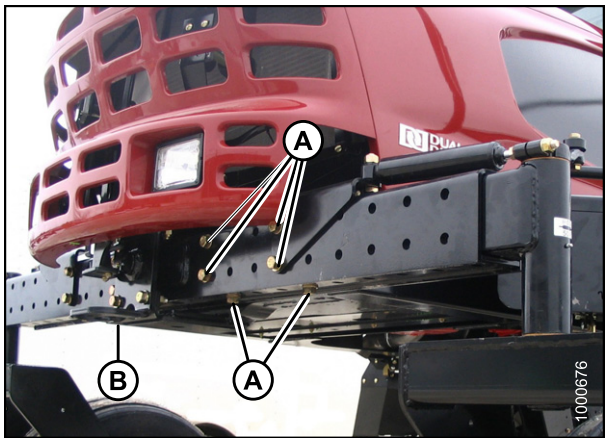


Figure 6.8: Walking Beam

3. Slide extensions outboard equal amounts and align holes at desired location.

   NOTE: Use the caster wheels to assist in moving the axle by rotating the caster so that the wheel is parallel to the axle.

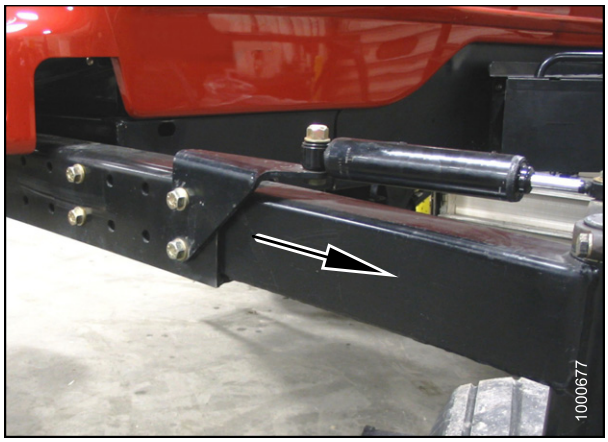


Figure 6.9: Walking Beam

IMPORTANT:

Caster wheels must be equidistant from center of windrower.

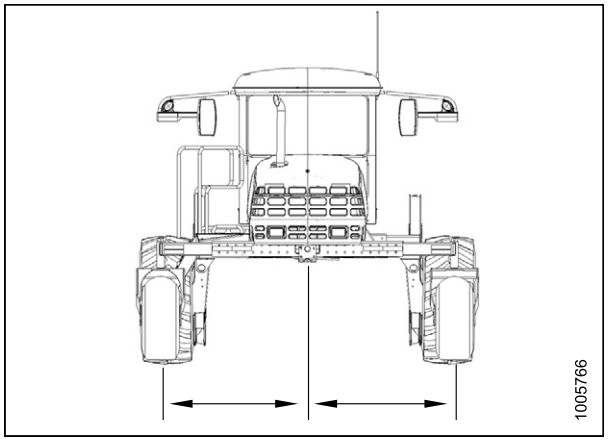


Figure 6.10: Widest Tread Width Shown

4. Position bracket (A) and install bolts (B). The two shorter bolts are installed at the back inboard locations. Torque as follows:
   a. Snug bottom bolts (C).
   b. Tighten and torque back bolts to 330 ft·lbf· (447 N·m).
   c. Tighten and torque bottom bolts to 330 ft·lbf· (447 N·m).
5. Lower windrower to ground.

IMPORTANT:

Tighten bolts after first 5 and 10 hours of operation.

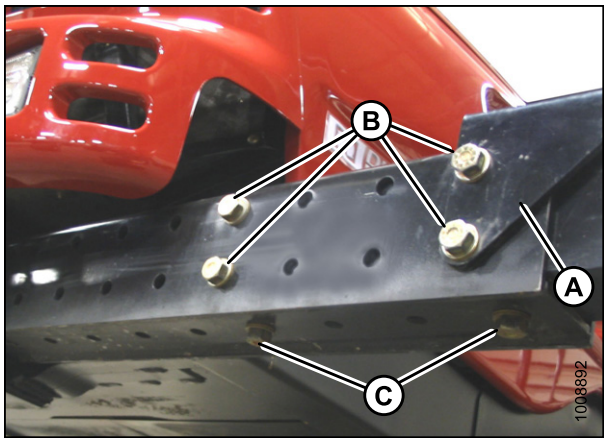


Figure 6.11: Walking Beam

6.4 Unpacking Ignition Keys

1. Remove wing nut (A) from fuse box cover (B) and remove cover.

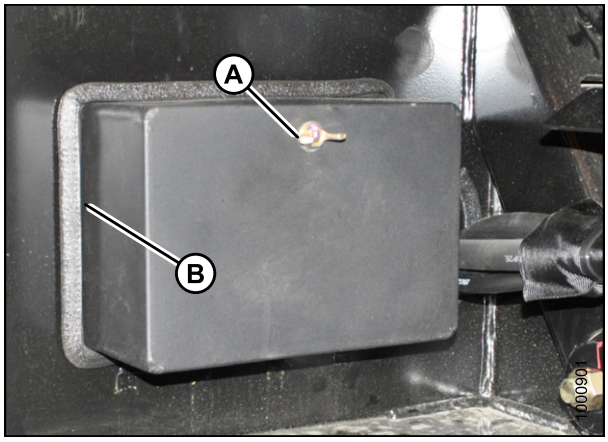


Figure 6.12: Fuse Box

2. Remove tape and keys (A) from inside cover. Discard tape.
3. Unlock cab doors and place key on console.
4. Close cab doors.
5. Reinstall cover (B) with wing nut.

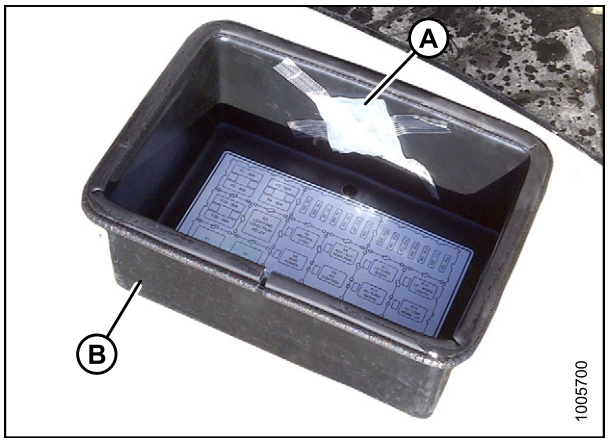


Figure 6.13: Fuse Cover

6.5 Installing Steps

1. Remove two bolts (A) securing steps to platform and remove steps.
2. Remove the remaining lower bolt (B).

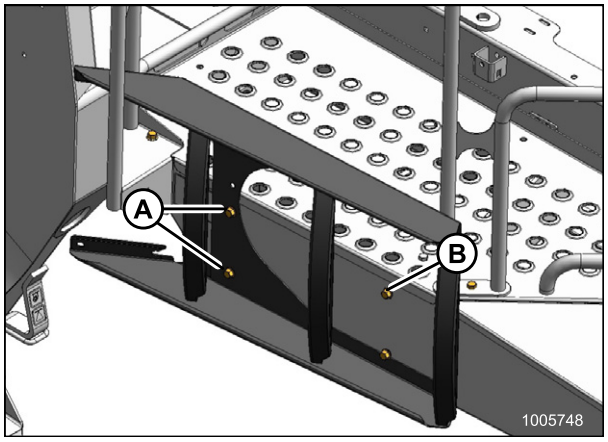


Figure 6.14: LH Steps in Shipping Position

3. Reinstall one bolt (A) in lower hole in platform. Do **NOT** thread in fully.

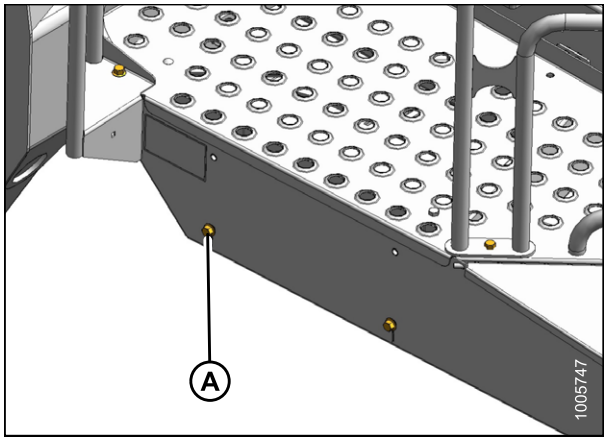


Figure 6.15: LH Platform

4. Hang step assembly on lower bolts (B). If required, back off bolts.
5. Install two bolts (A) in upper holes in step and tighten.
6. Tighten lower bolts (B).

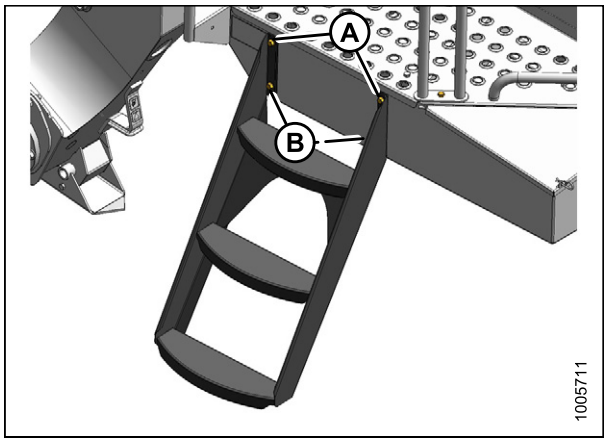


Figure 6.16: LH Steps Installed

6.6 Installing Center-Link

The windrower may have a mechanical center-link (standard) or a hydraulic center-link (optional). Refer to *6.6.1 Installing Mechanical Center-Link, page 33* or *6.6.2 Installing Hydraulic Center-Link (Optional), page 33*.

6.6.1 Installing Mechanical Center-Link

1. Remove clevis pin from center-link (A).
2. Position link (A) between mounting brackets on front frame, and attach at lower hole location (B).
3. Install clevis pin and secure with hair pin.

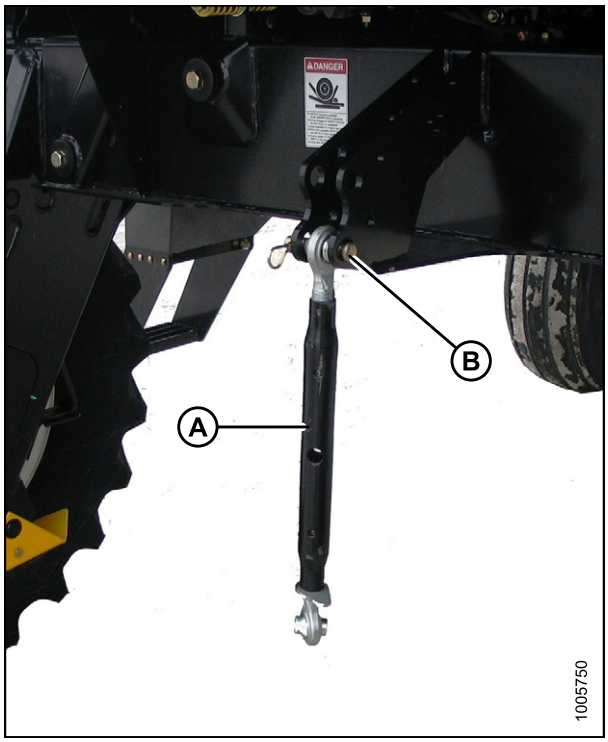


Figure 6.17: Mechanical Center-Link

6.6.2 Installing Hydraulic Center-Link (Optional)

The hydraulic center-link may be supplied in a separate kit that is included with the shipment. Refer to the installation instructions provided in the kit.

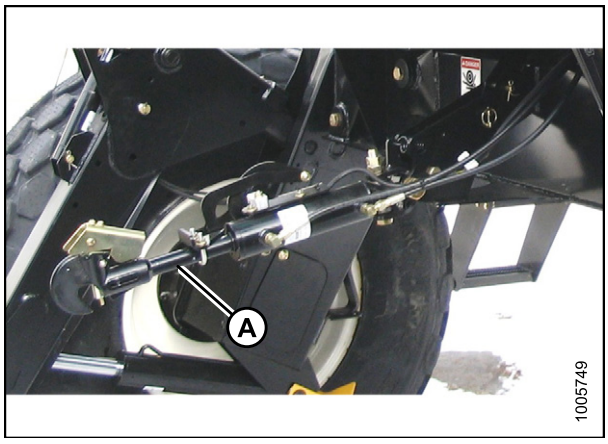


Figure 6.18: Hydraulic Center-Link

6.7 Connecting Batteries

1. Open engine compartment hood to highest position. For instructions, refer to the windrower operator's manual or windrower technical manual.
2. A battery main disconnect switch (A) is located on the battery tray. Ensure battery switch is switched to POWER OFF position.
3. Remove cable ties securing battery clamps and cables to frame.

IMPORTANT:

BATTERY IS NEGATIVE GROUNDED. Always connect red starter cable to the positive (+) terminal of battery, and black ground cable to negative (-) terminal of battery. Reversed polarity in battery or alternator may result in permanent damage to electrical system.

NOTE: Ensure that batteries are positioned so that the positive posts (C) face forward.

4. Remove plastic caps from battery posts.
5. Attach negative (black) cable clamps (B) to negative post on batteries and tighten clamps.
6. Attach positive (red) cable clamps (C) to positive post on batteries and tighten.
7. Reposition plastic covers onto clamps.
8. Switch battery switch (A) to POWER ON position.
9. Close engine compartment hood.

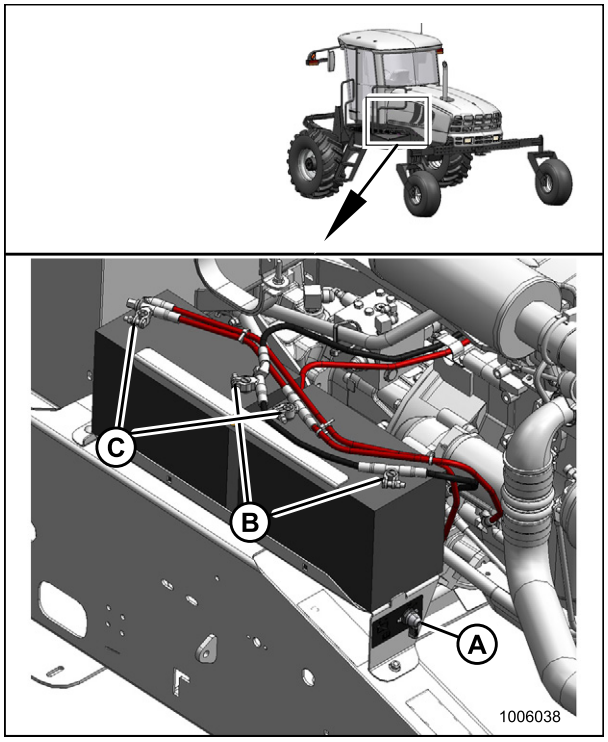


Figure 6.19: Batteries

6.8 Starting Engine

1. Check fuel level and if required, add sufficient fuel for a 15 minute run.
2. Move ground speed lever (GSL) (A) into N-DETENT.
3. Turn steering wheel until it locks.
4. Push HEADER DRIVE switch (B) to OFF.

CAUTION

Check to be sure all bystanders have cleared the area.

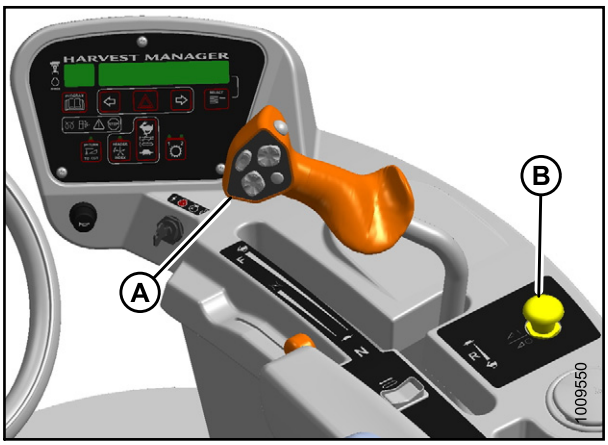


Figure 6.20: Operator Console

5. **Normal Start (All Engines):** engine temperature above 60°F (16°C).
   a. Set throttle to START position (A)—fully back.
   b. Sound horn (C) three times.
   c. Turn ignition key (B) to RUN position.
   Single loud tone sounds, engine warning lights illuminate, and the cab display module (CDM) displays "HEADER DISENGAGED" and "IN PARK".

WARNING

If starter engages with steering wheel unlocked, ground speed lever out of NEUTRAL, or header clutch engaged, DO NOT START ENGINE. Refer to technical manual.

   d. Turn ignition key (B) to START position until engine starts and then release key. Tone ceases and warning lights go out.

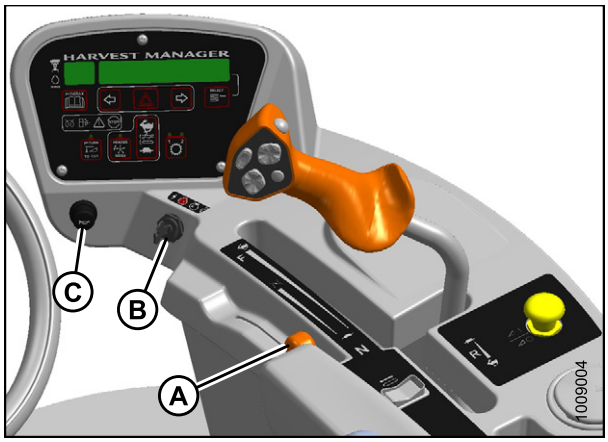


Figure 6.21: Operator Console

IMPORTANT:

- Do **NOT** operate starter for longer than 15 seconds at a time.
- If engine does **NOT** start, wait at least two minutes before trying again.
- After the third 15 second crank attempt, allow starter motor to cool for 10 minutes before further cranking attempts.
- If engine still does **NOT** start, refer to Table *6.1 Troubleshooting, page 36*.

6. **Cold Start:** engine temperature below 40°F (5°C).

   NOTE: Engines are not equipped with cold start assist system.

   Follow Step *5, page 35*.

   Engine will cycle through a period where it appears to labour until engine warms up.

   NOTE: Throttle is nonresponsive during this time as engine is in WARM UP mode. This mode will last from 30 seconds to 3 minutes depending on temperature. After engine has stabilized and is idling normally, throttle becomes active.

IMPORTANT:

Do **NOT** operate engine above 1500 rpm, until engine temperature is above 100°F (40°C).

Table 6.1 Troubleshooting

Problem	Solution
Controls not in NEUTRAL	Move GSL to NEUTRAL. Move steering wheel to locked position. Disengage header clutch.
Neutral interlock misadjusted	Refer to the windrower technical manual.
No fuel to engine	Fill empty fuel tank. Replace clogged filter.
Old fuel in tank	Drain tank. Refill with fresh fuel.
Water, dirt, or air in fuel system	Drain, flush, fill, and prime system.
Improper type of fuel	Use proper fuel for operating conditions.
Crankcase oil too heavy	Use recommended oil.
Low battery output	Have battery tested. Check battery electrolyte level.
Poor battery connection	Clean and tighten loose connections.
Faulty starter	Refer to the technical manual.
Wiring shorted, circuit breaker open	Check continuity of wiring and breaker (manual reset).
Faulty injectors	Refer to the technical manual.

6.9 Installing AM/FM Radio

Provision has been made for installation of an AM/FM radio. The mounting is designed to fit a DIN E style radio with a depth of **'X'** = 161 mm and having a 5 mm threaded stud (A) centered on the rear for support.

Provision has been made for adjustments, should the radio fall outside these parameters.

NOTE: M105 configuration is slightly different from what is shown here, but the installation procedure is the same.

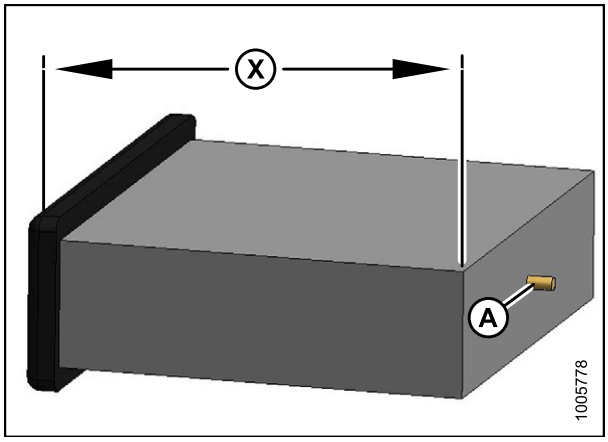


Figure 6.22: Mounting Dimension

1. Ensure the ignition is turned to the OFF position.
2. Remove radio panel by removing four screws (A).

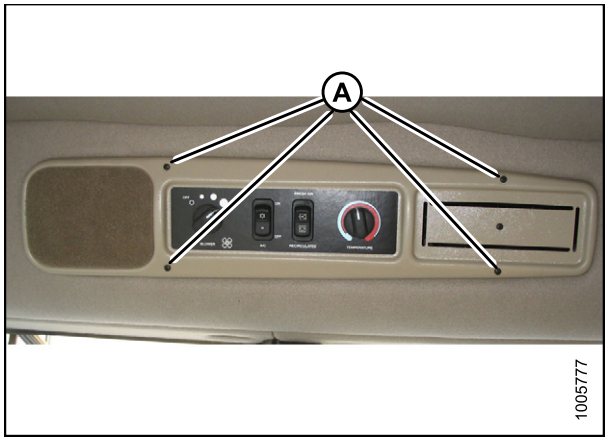


Figure 6.23: Radio Panel

3. Remove screw and nuts (A) and (C) to remove support (B) from panel. Retain metric nut (C) and lock washer.

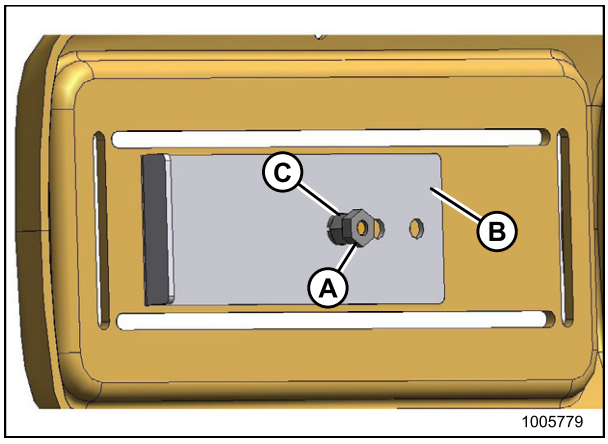


Figure 6.24: Panel Support

4. Remove the cutout by cutting the tabs (A) in the panel. Remove sharp edges on panel.

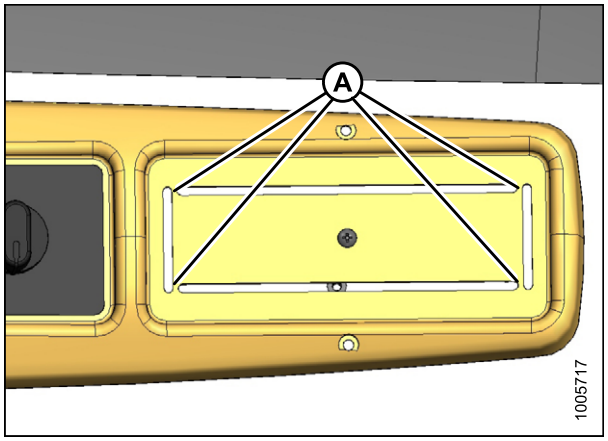


Figure 6.25: Panel

5. Position receptacle (A) (supplied with radio) in opening and secure by bending tabs (B) on receptacle against panel.

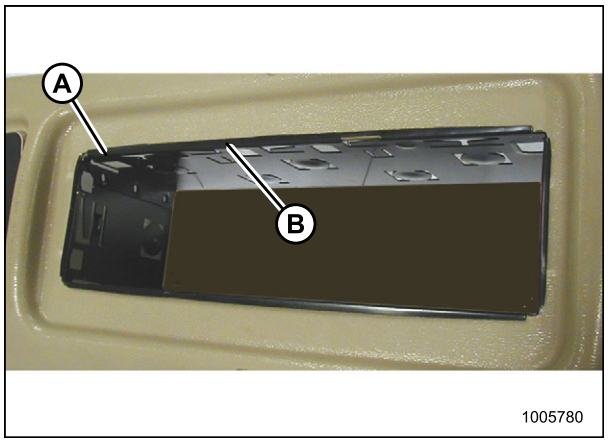


Figure 6.26: Radio Receptacle

6. Insert radio into receptacle and attach radio bezel. Ensure radio locks into position and faceplate (A) is against the panel.

Figure 6.27: Radio Installed

7. A six-pin connector for the radio is included in the wiring harness. In order to mate properly with this connector, the radio must have a six-pin connector (Packard #2977042) and have a terminal arrangement as shown at right.
8. Attach two additional wires in the wiring harness to the radio:
   a. **Circuit 503:** Red with 1/4 in. female blade terminal. This is a live wire provided for powering a radio clock/memory, if these exist on your radio.
   b. **Circuit 315:** Black ground wire attaches to radio body.
9. Plug cable from antenna into radio.

   NOTE: An approved radio package is available from Radio Engineering Industries (REI) of Omaha, Nebraska.

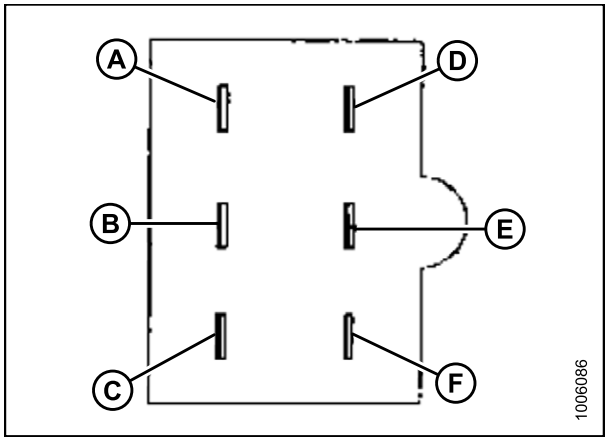


Figure 6.28: Six-Pin Connector

A - Left Speaker Power +
B - Left Speaker Ground –
C - Radio Ground –
D - Radio Power + (Live When Ignition is On)
E - Right Speaker Power +
F - Right Speaker Ground –

10. Attach stud (supplied with radio) to center rear of radio.
11. Attach support (B) to stud on back of radio chassis, with lock washer and metric nut (A) that was supplied with the support.
    Support can be attached to chassis in multiple locations to allow for proper mounting of radio.
12. Reinstall radio panel with original screws.

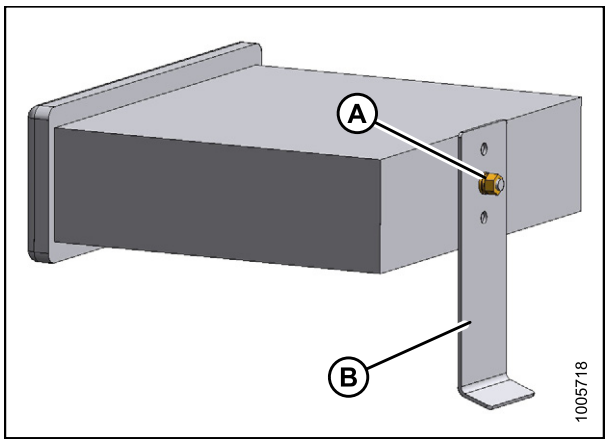


Figure 6.29: Radio and Support

13. Adjust bracket (A) if necessary by loosening nuts (B) to allow radio to slide into opening and securely capture support (C).
14. Retrieve antenna from inside cab and remove protective cover from base end.

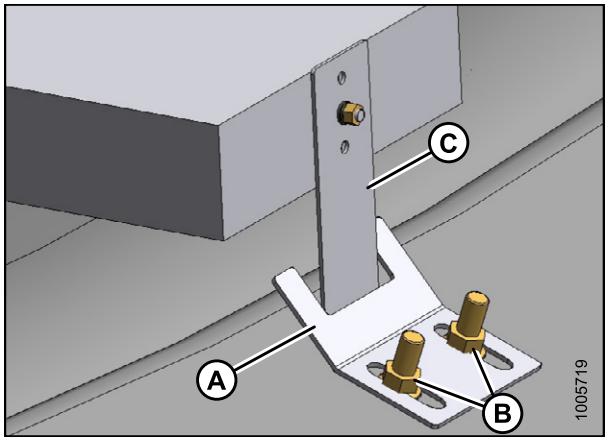


Figure 6.30: Radio and Support

15. Remove protective cover (A) from antenna mount on cab roof and thread antenna onto base until hand tight.

    NOTE: Store protective cover in cab to protect antenna mount if antenna needs to be removed.

16. Turn ignition key to ACC, switch radio ON, and check operation in accordance with instructions supplied with the radio.

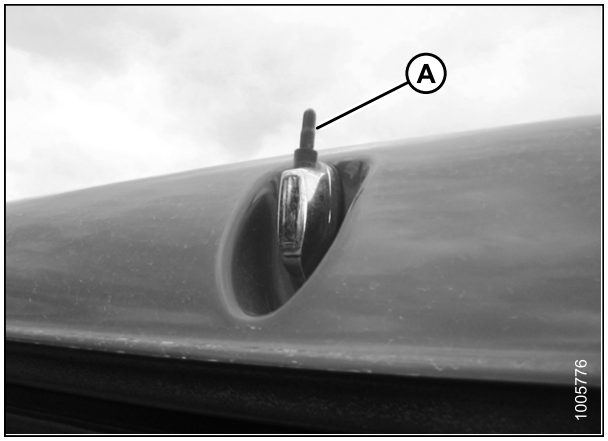


Figure 6.31: Antenna Mount on Cab Roof

6.10 Attaching Header Boots

Header boots are required to attach a D-Series Draper Header to the windrower.

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to windrower, ensure that float engagement pin is installed in storage location (B) and NOT installed at hole location (A).

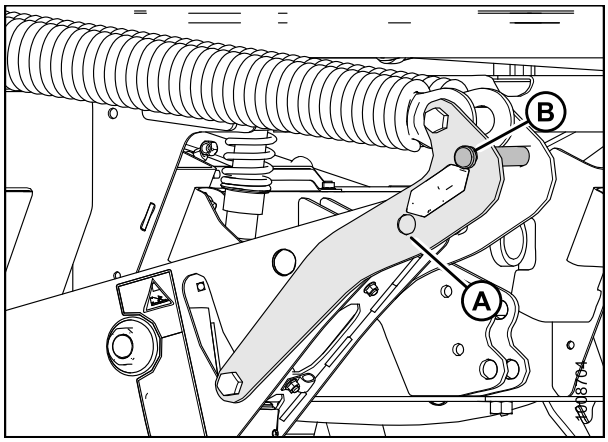


Figure 6.32: Header Lift

If **NOT** installed, attach draper header boots (supplied with header) to windrower lift linkage as follows:

1. Remove pin (B) from boot (A).

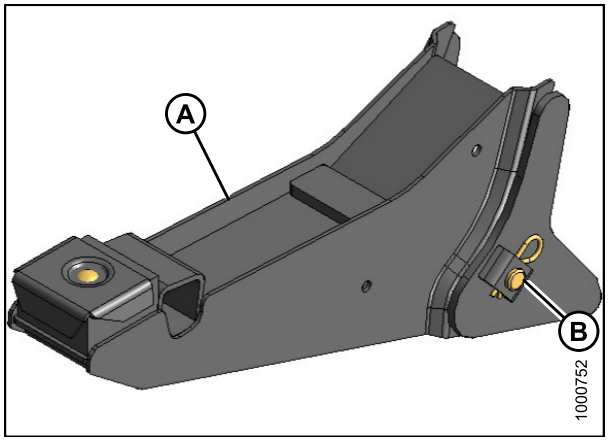


Figure 6.33: Header Boot

2. Position boot (B) on lift linkage (A) and reinstall pin (C). Pin may be installed from either side of boot.
3. Secure pin (C) with hairpin (D).
4. Repeat for opposite side.

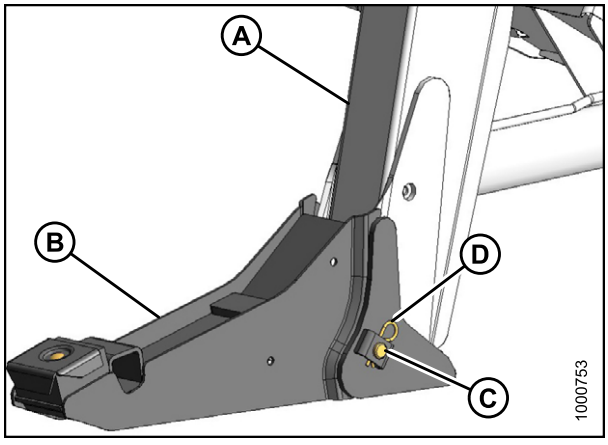


Figure 6.34: Header Boot

6.11 Attaching Headers

6.11.1 Attaching a D-Series Header

To run a D-Series draper header, the M105 Self-propelled Windrower needs to be equipped with reel drive, reel lift, and reel fore-aft hydraulics.

Windrowers equipped with D-Series hydraulics have four header drive hoses on the left-hand side, and up to five reel drive hoses on the right-hand side.

If necessary, obtain the following kits from your MacDon Dealer, and install them in accordance with instructions supplied with the kits.

Kit Description	Kit Number
Base Draper Drive kit	B5577

Refer to the procedure that is appropriate for the center-link installed on the windrower:

- *Attaching a D-Series Header: Hydraulic Center-Link, page 42*
- *Attaching a D-Series Header: Mechanical Center-Link, page 48*

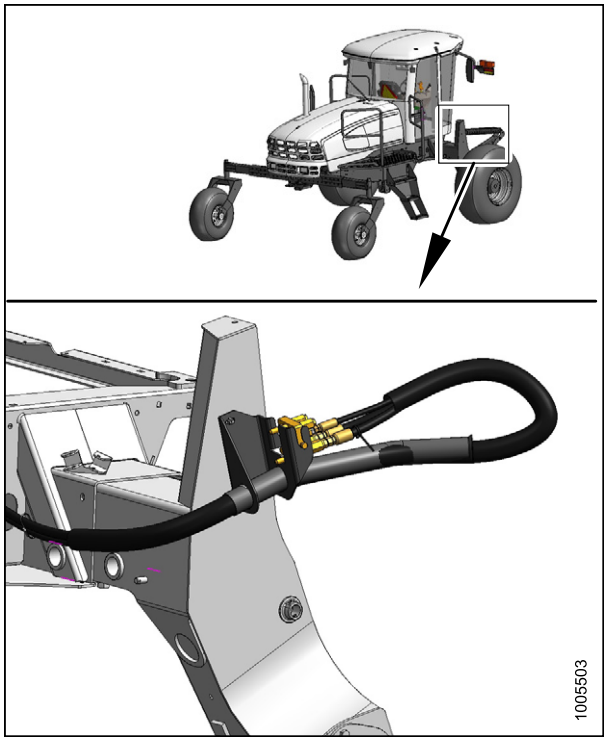


Figure 6.35: Draper Header Reel Hydraulics

Attaching a D-Series Header: Hydraulic Center-Link

NOTE: This topic assumes that draper header boots have already been attached to the windrower lift linkage. If that is not the case, refer to *6.10 Attaching Header Boots, page 41*.

To attach a D-Series header to a windrower equipped with a hydraulic center-link, follow these steps:

DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

1. Remove the hairpin (A) from pin (B) and remove the pins from both header legs.

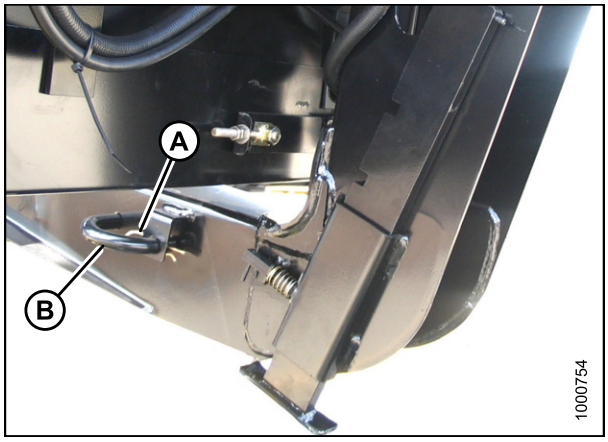


Figure 6.36: Header Leg

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Remove protective cover from exhaust stack prior to starting engine.

2. Start engine and activate HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

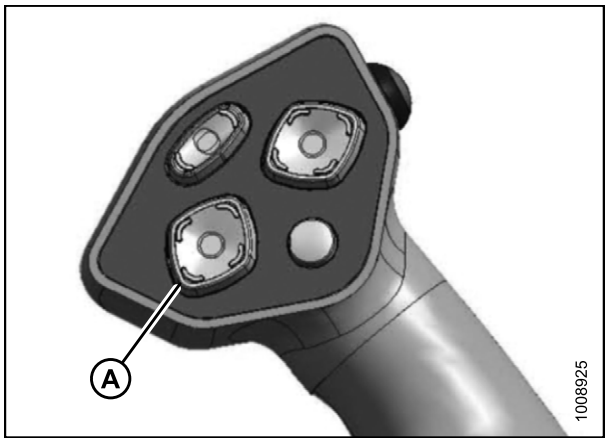


Figure 6.37: GSL

3. If necessary, relocate the pin (A) at the frame linkage as required to raise the center-link (B) so that the hook (B) is above the attachment pin on the header.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

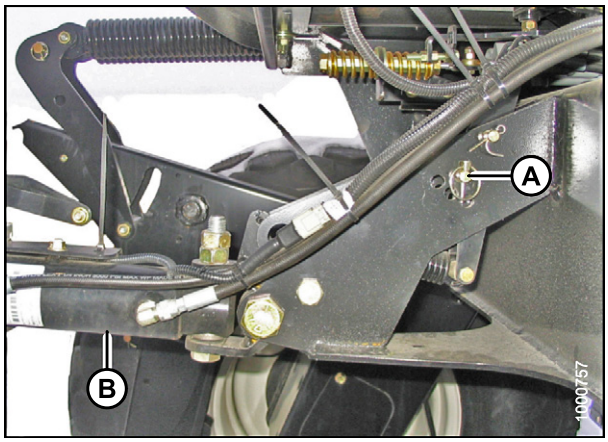


Figure 6.38: Hydraulic Center-Link

4. Slowly drive the windrower forward so the boots (A) enter the header legs (B). Continue to drive slowly forward until lift linkages contact the support plates in the header legs and the header nudges forward.
5. Ensure that lift linkages are properly engaged in header legs, contacting the support plates.

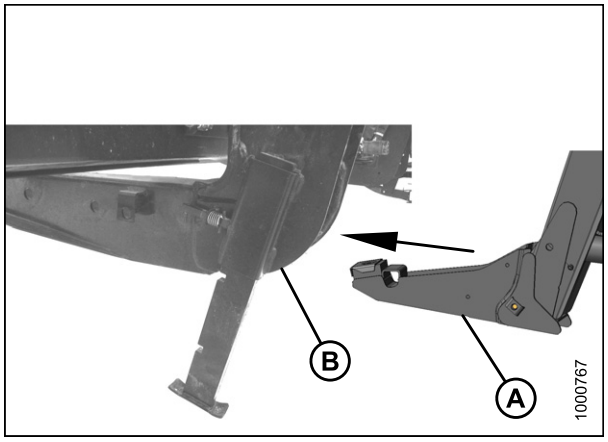


Figure 6.39: Header Leg and Boot

6. Activate HEADER TILT cylinder switches on ground speed lever (GSL) to extend or retract center-link cylinder so that the hook lines up with the header attachment pin.
7. Stop engine and remove key from ignition.

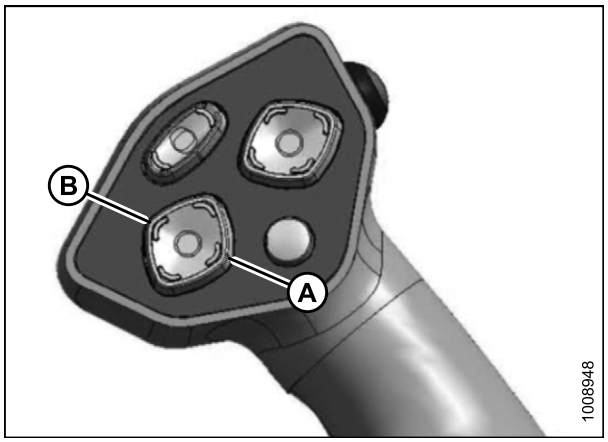


Figure 6.40: GSL

A - Header Tilt Up **B - Header Tilt Down**

8. Push down on rod end of link cylinder (B), until hook engages pin on header and is locked.

IMPORTANT:

Hook release must be down to enable self-locking mechanism. If the release is open (up), manually push it down after hook engages header pin.

9. Check that center-link (A) is locked onto header by pulling upward on rod end (B) of cylinder.

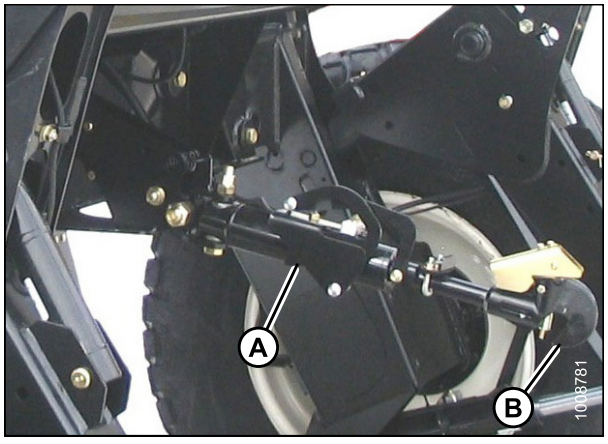


Figure 6.41: Hydraulic Center-Link

CAUTION

Check to be sure all bystanders have cleared the area.

10. Start engine and press the HEADER UP switch (A) to raise header to maximum height.

NOTE: If one end of the header does **NOT** raise fully, rephase the cylinders as follows:

a. Press and hold the HEADER UP switch until both cylinders stop moving.

b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

11. Engage safety props on both lift cylinders as follows:

a. Stop engine and remove key from ignition.

b. Pull lever (A) and rotate toward header to release and lower the cylinder stop (B) onto cylinder.

c. Repeat for the opposite lift cylinder.

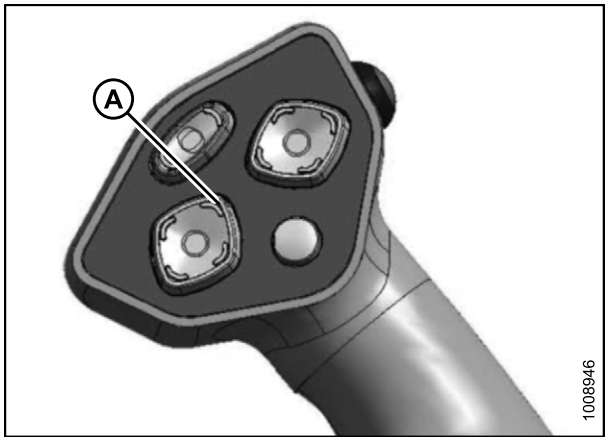


Figure 6.42: GSL

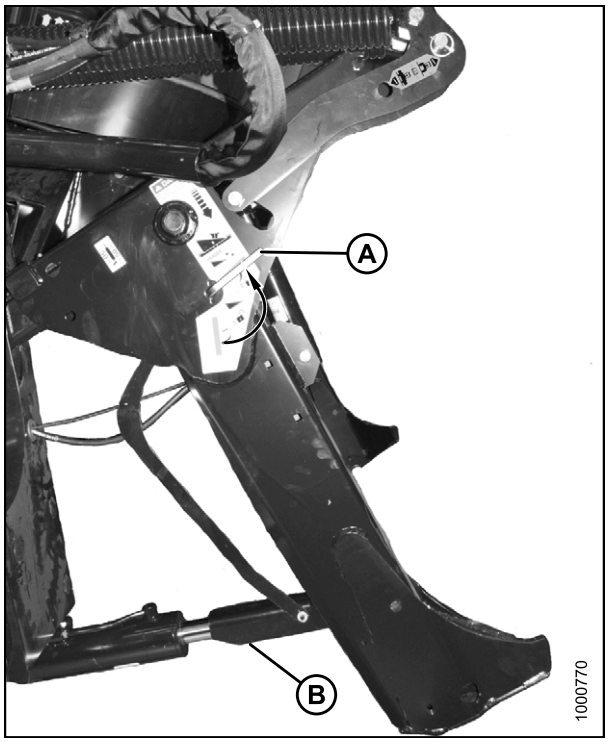


Figure 6.43: Cylinder Stop

12. Install the pin (B) through header leg, (engaging U-bracket in lift linkage) on both sides and secure with hairpin (A).
13. Raise header stand (D) to storage position by pulling spring pin (C) and lifting stand into uppermost position. Release spring pin (C).

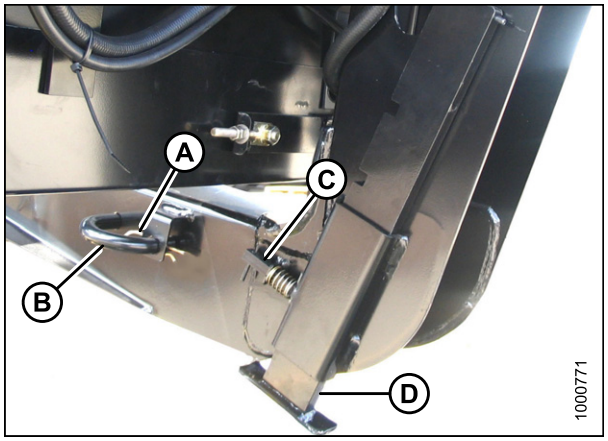


Figure 6.44: Header Leg

14. Remove clevis pin from storage position (B) in linkage and insert in hole (A) to engage float springs. Secure with hairpin.

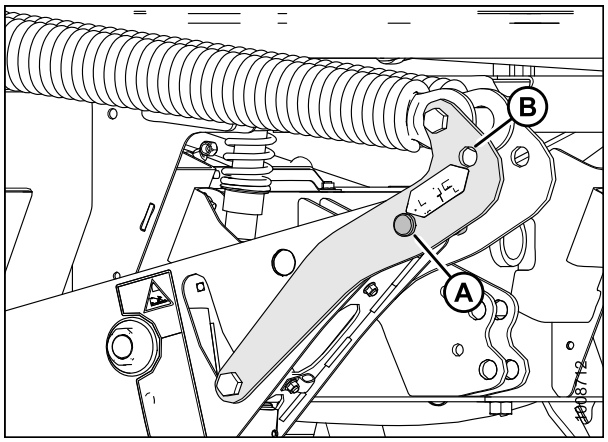


Figure 6.45: Header Lift Linkage

15. Disengage safety prop by turning lever (A) downward to release and lower stop until lever locks into vertical position.
16. Repeat for opposite safety prop.

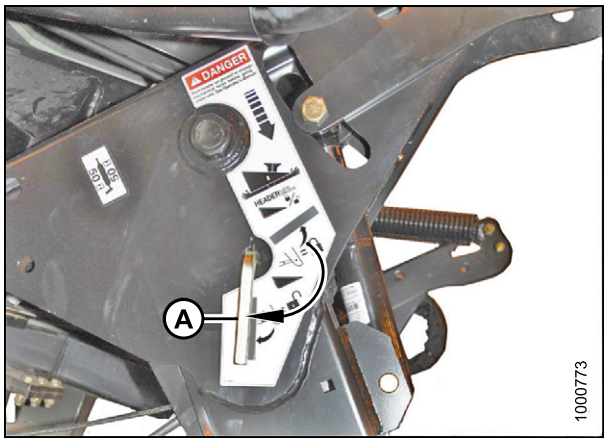


Figure 6.46: Cylinder Stop

CAUTION

Check to be sure all bystanders have cleared the area.

17. Start engine and activate HEADER DOWN switch (A) on GSL to lower header fully.
18. Stop engine and remove key.

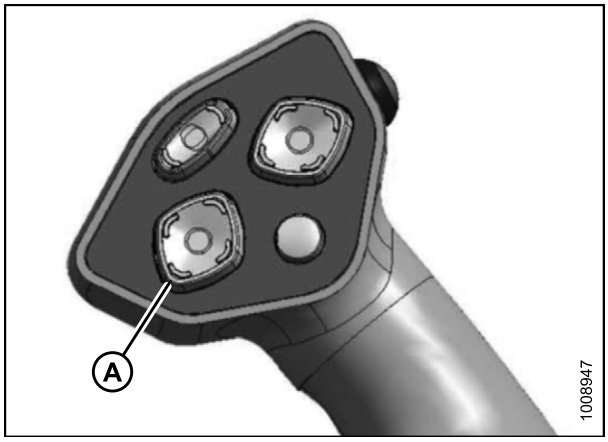


Figure 6.47: GSL

19. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the draper header operator's manual.

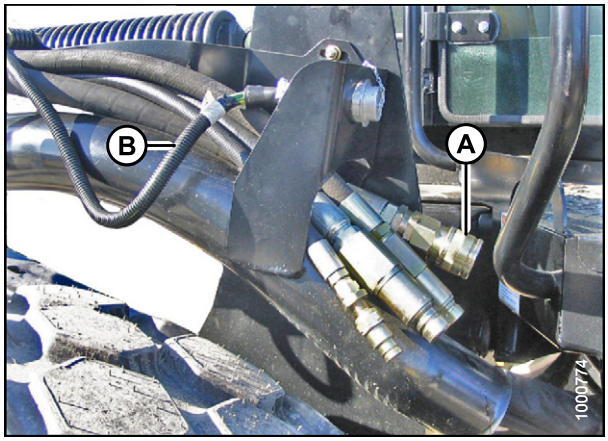


Figure 6.48: Header Drive Hoses and Harness

20. Connect reel hydraulics (A) at right-hand side of windrower. Refer to the draper header operator's manual.

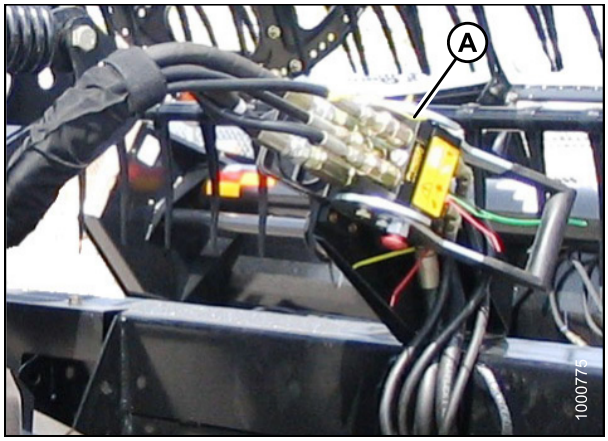


Figure 6.49: Reel Hydraulics

Attaching a D-Series Header: Mechanical Center-Link

NOTE: This topic assumes that draper header boots have already been attached to the windrower lift linkage. If that is not the case, refer to *6.10 Attaching Header Boots, page 41*.

To attach a D-Series header to a windrower equipped with a mechanical center-link, follow these steps:

DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

1. Remove the hairpin (A) from pins (B) and remove the pins from header legs.

CAUTION

Check to be sure all bystanders have cleared the area.

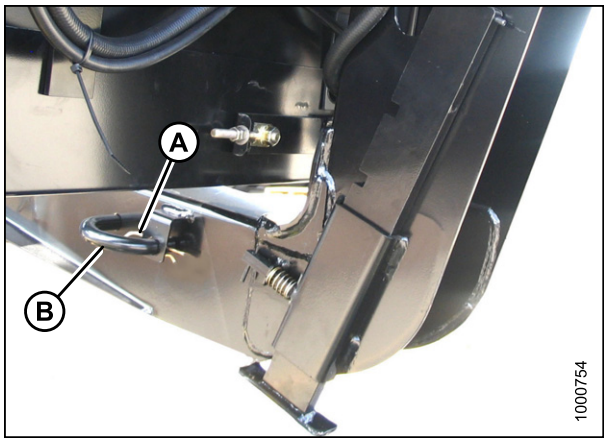


Figure 6.50: Header Leg

IMPORTANT:
Remove protective cover from exhaust stack prior to starting engine.

2. Start engine and activate HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

IMPORTANT:
If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

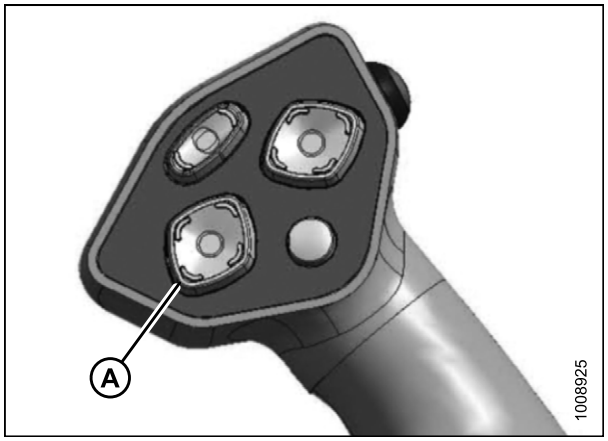


Figure 6.51: GSL

3. Slowly drive the windrower forward so the boots (A) enter the header legs (B). Continue to drive slowly forward until lift linkages contact the support plates in the header legs and the header nudges forward.
4. Ensure that lift linkages are properly engaged in header legs, contacting the support plates.

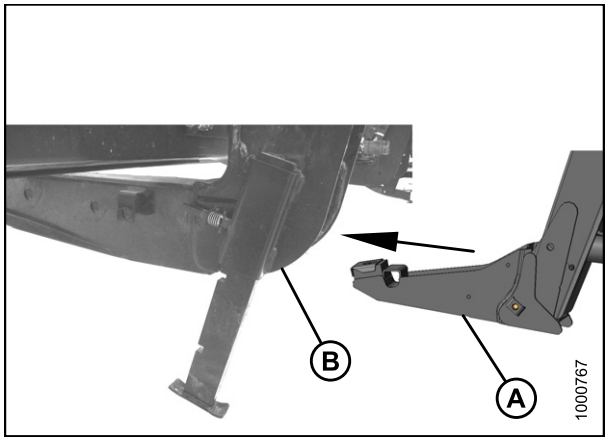


Figure 6.52: Header Leg and Boot

5. Stop engine and remove key from ignition.
6. Loosen nut (A) and rotate barrel (B) to adjust length so that the link lines-up with header bracket.
7. Install clevis pin (C) and secure with cotter pin (D).
8. Adjust link to required length for proper header angle by rotating barrel (B). Tighten nut (A) against barrel. A slight tap with a hammer is sufficient.

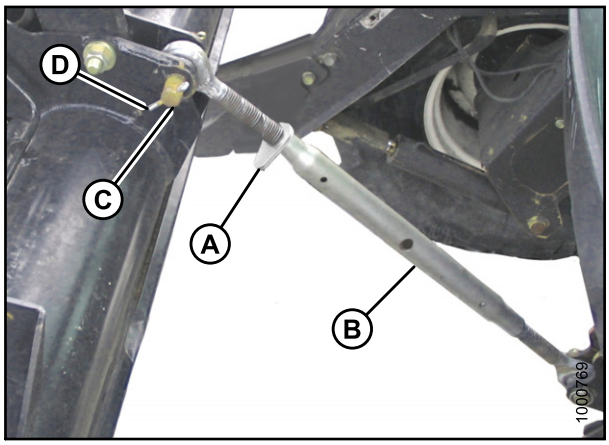


Figure 6.53: Mechanical Center-Link

CAUTION

Check to be sure all bystanders have cleared the area.

9. Press the HEADER UP switch (A) to raise header to maximum height.

NOTE: If one end of the header does **NOT** raise fully, rephase the cylinders as follows:

a. Press and hold the HEADER UP switch until both cylinders stop moving.

b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

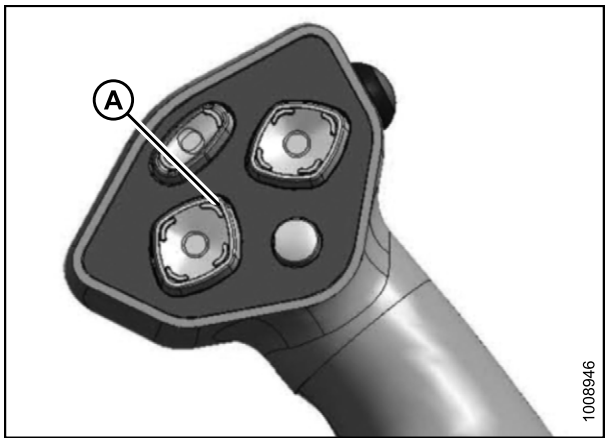


Figure 6.54: GSL

10. Engage safety props on both lift cylinders as follows:
    a. Stop engine and remove key from ignition.
    b. Pull lever (A) and rotate toward header to release and lower the safety prop (B) onto cylinder.
    c. Repeat for the opposite lift cylinder.

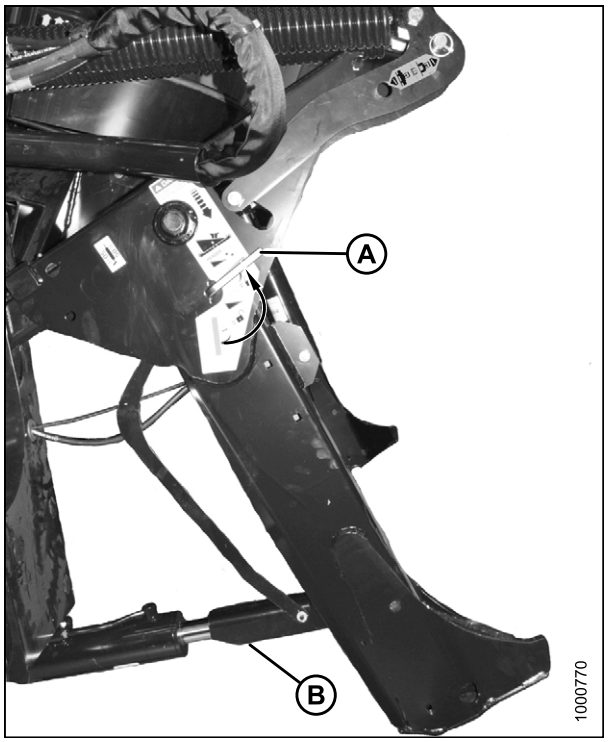


Figure 6.55: Cylinder Stop

11. Install pin (B) through header leg, (engaging U-bracket in lift linkage) on both sides and secure with a hairpin (A).
12. Raise header stand (D) to storage position by pulling spring pin (C) and lifting stand into uppermost position. Release spring pin (C).

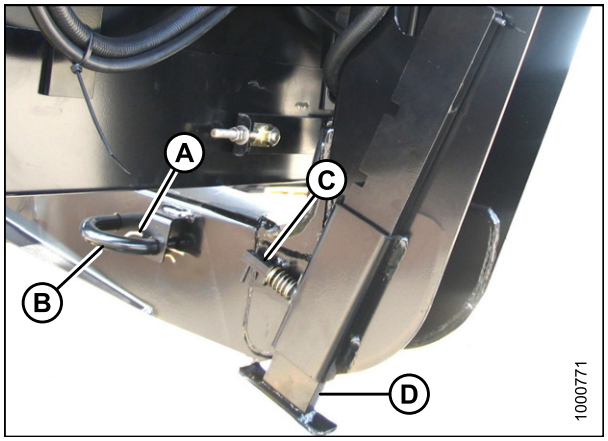


Figure 6.56: Header Leg

13. Remove clevis pin from storage position (B) in linkage and insert in hole (A) to engage float springs. Secure with hairpin.

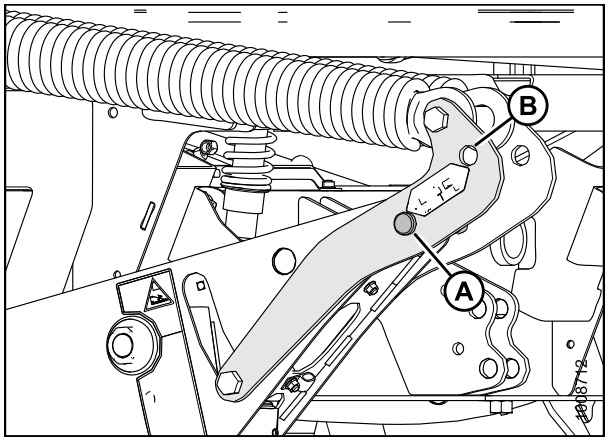


Figure 6.57: Header Lift Linkage

14. Disengage safety prop by turning lever (A) downward to release and lower stop until lever locks into vertical position.
15. Repeat for opposite safety prop.

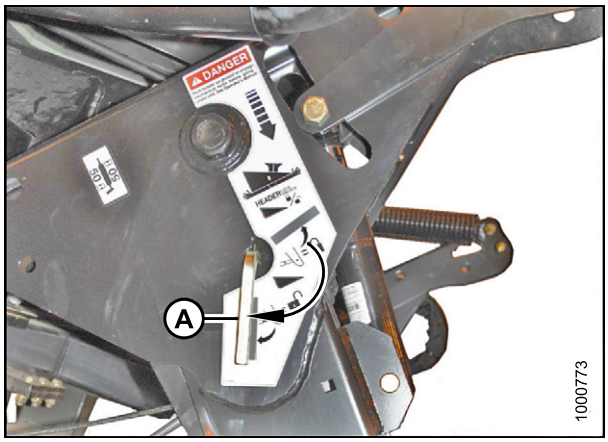


Figure 6.58: Cylinder Stop

CAUTION

Check to be sure all bystanders have cleared the area.

16. Start engine and activate HEADER DOWN switch on GSL (A) to lower header fully.
17. Stop engine and remove key.

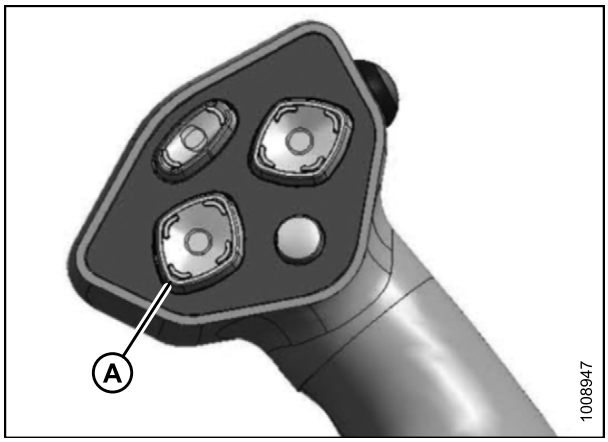


Figure 6.59: GSL

18. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the draper header operator's manual.

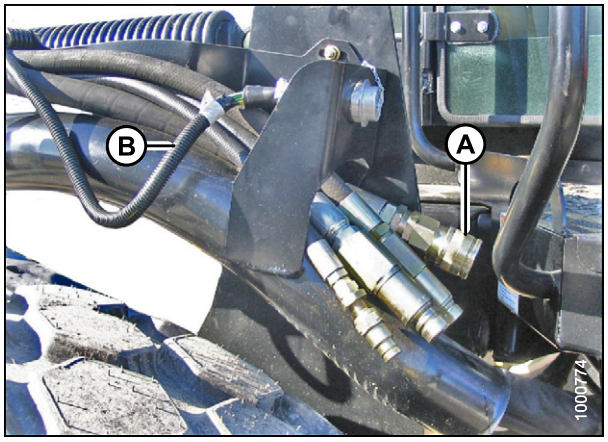


Figure 6.60: Header Drive Hoses and Harness

19. Connect reel hydraulics (A) at right-hand side of windrower. Refer to the draper header operator's manual.

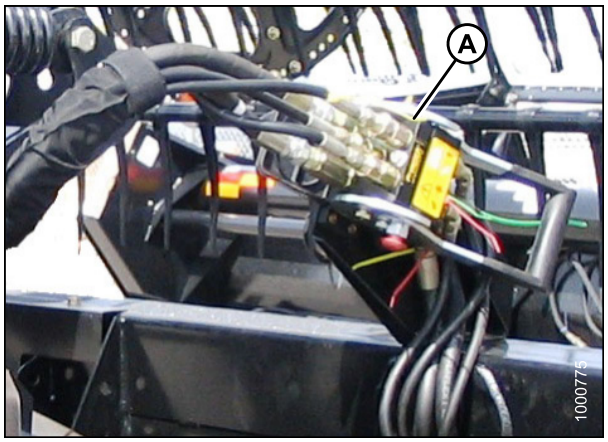


Figure 6.61: Reel Hydraulics

6.11.2 Attaching an A-Series Header

The M105 Self-propelled Windrower is factory-equipped to run an A-Series Auger Header.

Windrowers equipped with A-Series hydraulics have four header drive hoses on the left-hand side.

The attachment procedure varies depending on the type of center-link installed on the windrower. Refer to the appropriate instruction based on the type of link installed on your windrower:

- *Attaching an A-Series Header: Hydraulic Center-Link, page 53*
- *Attaching an A-Series Header: Mechanical Center-Link, page 58*

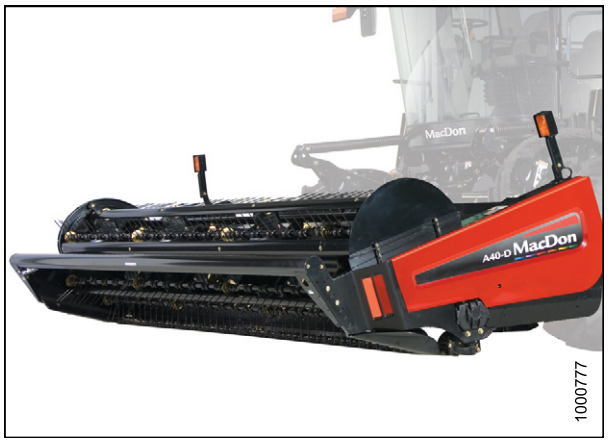


Figure 6.62: A40-D Auger Header

Attaching an A-Series Header: Hydraulic Center-Link

To attach an A-Series header to a windrower equipped with a hydraulic center-link, follow these steps:

DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

1. Remove hairpin (A) from clevis pin (B) and remove the clevis pin from left and right header boots (C) on header.

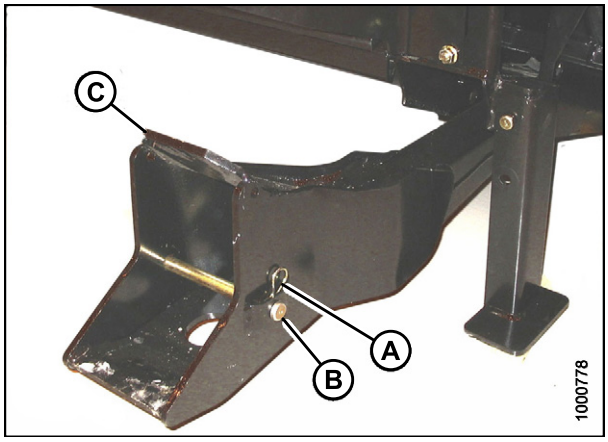


Figure 6.63: Header Boot

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to windrower, ensure that float engagement pin is installed in storage location (B) and NOT installed at hole location (A).

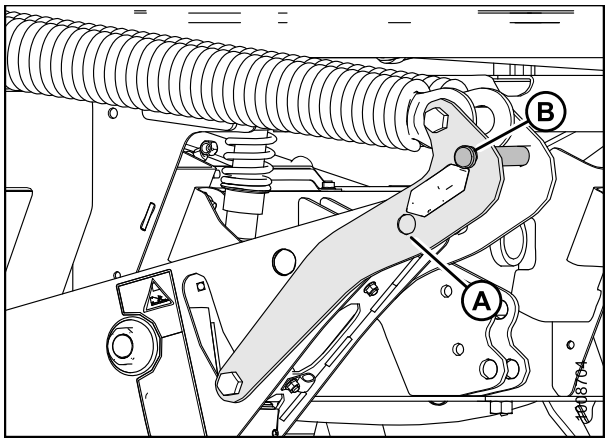


Figure 6.64: Header Lift Linkage

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

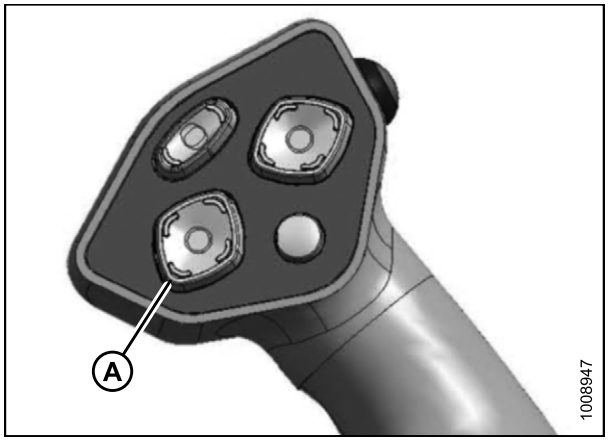


Figure 6.65: GSL

3. If necessary, relocate pin (A) at the frame linkage as required to raise the center-link (B) so that the hook is above the attachment pin on the header.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

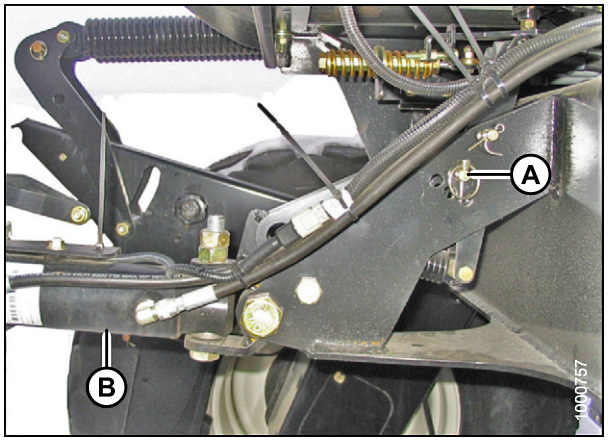


Figure 6.66: Hydraulic Center-Link without Self-Alignment Kit

4. Slowly drive the windrower forward so the feet (A) on the windrower enter the boots (B) on the header. Continue to drive slowly forward until the feet engage the boots and the header nudges forward.

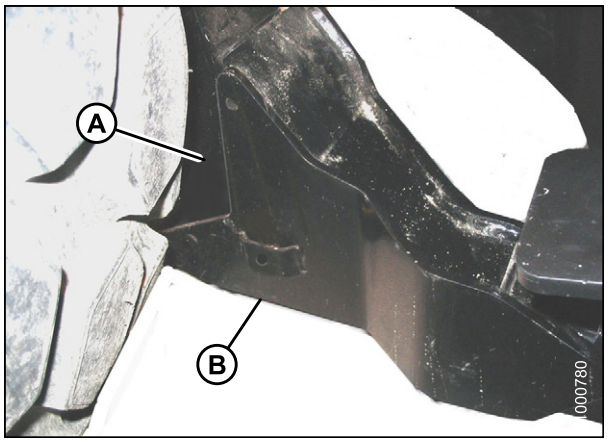


Figure 6.67: Header Boot

5. Activate HEADER TILT cylinder switches on ground speed lever (GSL) to extend or retract center-link cylinder so that the hook lines up with the header attachment pin.
6. Stop engine and remove key from ignition.

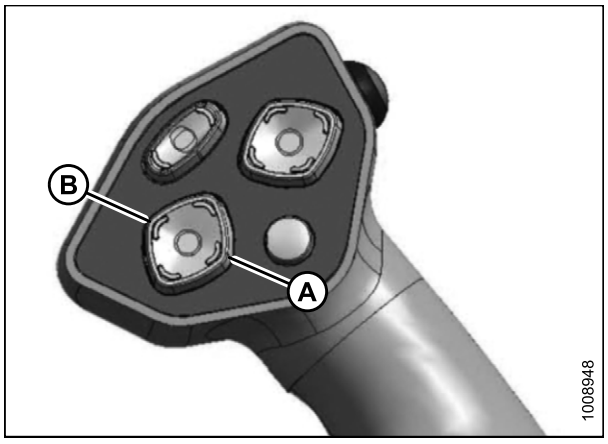


Figure 6.68: GSL

A - Header Tilt Up **B - Header Tilt Down**

7. Push down on rod end of link cylinder (B), until hook engages pin on header and is locked.

IMPORTANT:
Hook release must be down to enable self-locking mechanism. If the release is open (up), manually push it down after hook engages header pin.

8. Check that center-link (A) is locked onto header by pulling upward on rod end (B) of cylinder.

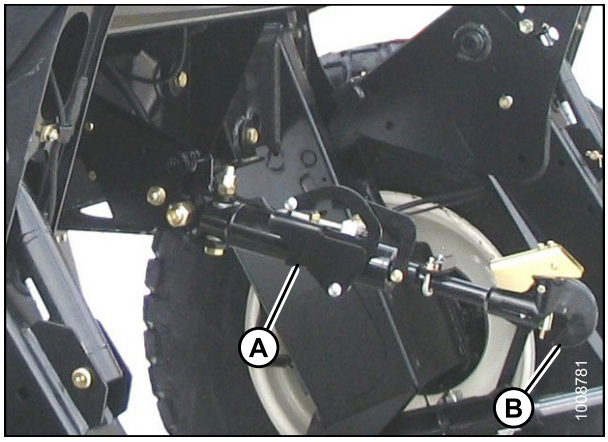


Figure 6.69: Hydraulic Center-Link

CAUTION

Check to be sure all bystanders have cleared the area.

9. Start engine and press the HEADER UP switch (A) to raise header to maximum height.

NOTE: If one end of the header does **NOT** raise fully, the lift cylinders require rephasing. If rephasing is needed, proceed as follows:

a. Press and hold the HEADER UP switch until both cylinders stop moving.

b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

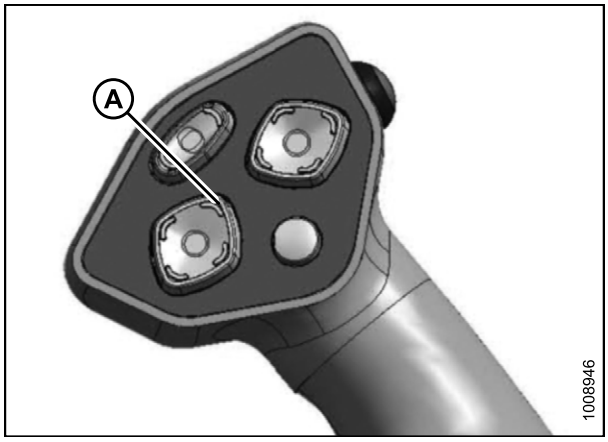


Figure 6.70: GSL

10. Engage safety props on both lift cylinders as follows:
    a. Stop engine and remove key from ignition.
    b. Pull lever (A) and rotate toward header to release and lower the safety prop (B) onto cylinder.
    c. Repeat for the opposite lift cylinder.

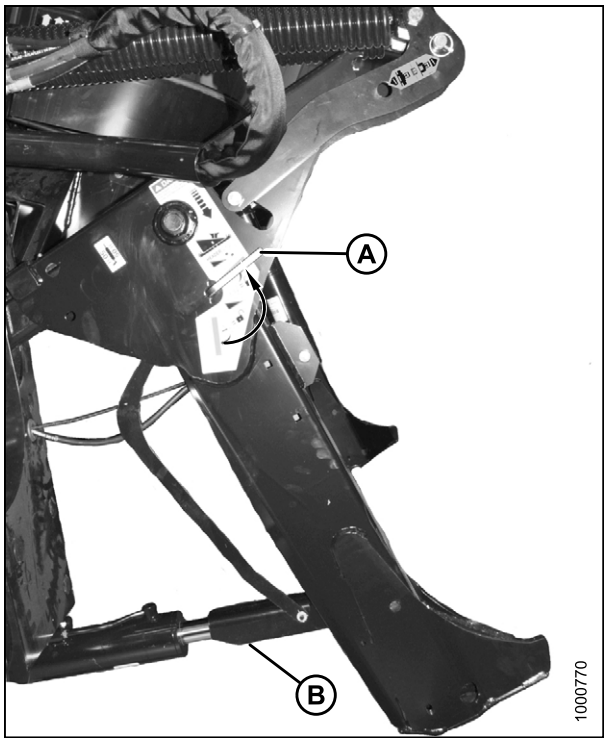


Figure 6.71: Cylinder Stop

11. Install clevis pin (A) through each boot and foot, and secure with hairpin. Do this to both sides.

IMPORTANT:

Ensure clevis pin (A) is fully inserted and hairpin is installed behind bracket.

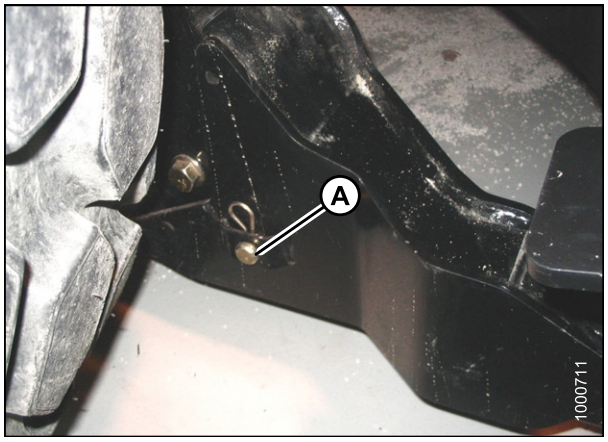


Figure 6.72: Header Boot

12. Remove lynch pin from clevis pin (A) in stand (B).
13. Hold stand (B) and remove pin (A).
14. Position stand to storage position by inverting stand and relocating on bracket as shown. Reinsert clevis pin (A) and secure with lynch pin.

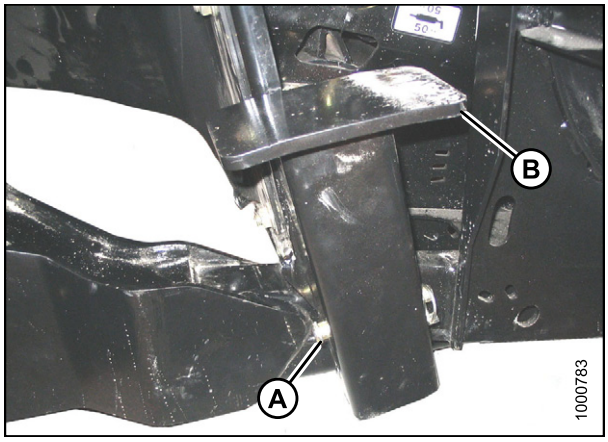


Figure 6.73: Header Stand

15. Remove clevis pin from storage position (B) in linkage, and insert in hole (A) to engage float springs. Secure with hairpin.

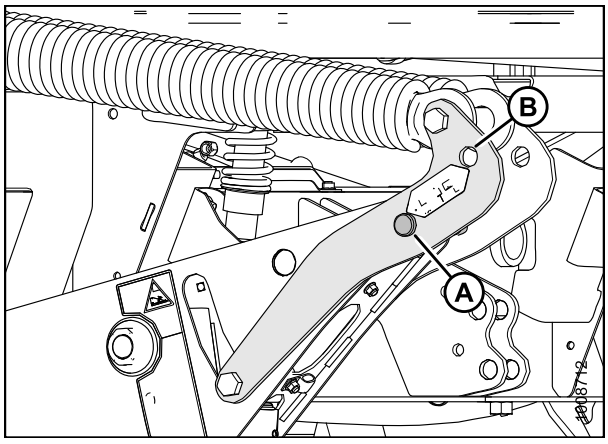


Figure 6.74: Header Lift Linkage

16. Disengage safety prop by turning lever (A) downward to release and lower safety prop until lever locks into vertical position.
17. Repeat for opposite safety prop.

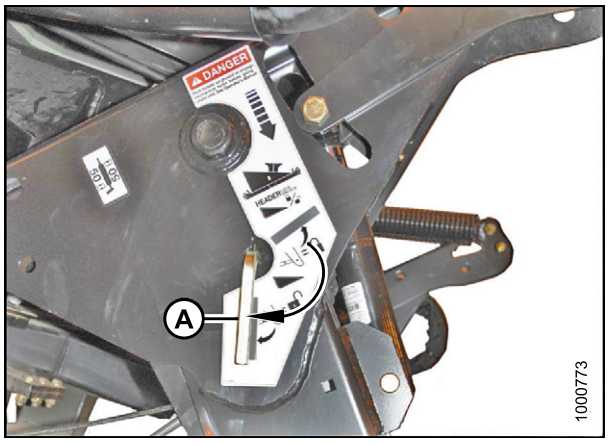


Figure 6.75: Safety Prop

CAUTION

Check to be sure all bystanders have cleared the area.

18. Start engine and activate HEADER DOWN switch (A) on GSL to lower header fully. Stop engine and remove key.

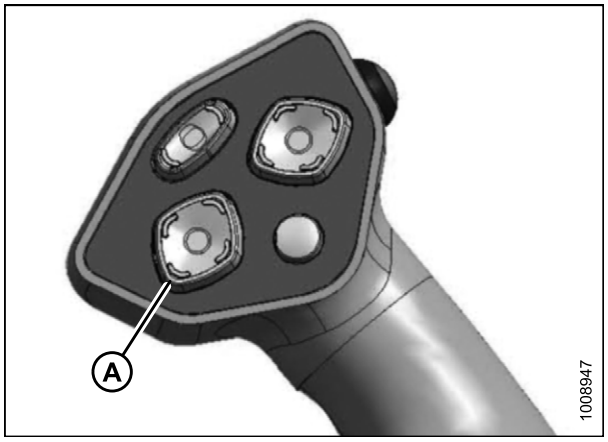


Figure 6.76: GSL

19. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the auger header operator's manual.

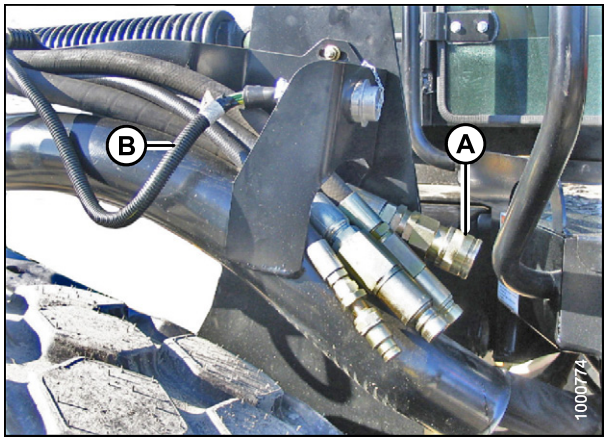


Figure 6.77: Header Drive Hoses and Harness

Attaching an A-Series Header: Mechanical Center-Link

To attach an A-Series header to a windrower equipped with a mechanical center-link, follow these steps:

DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

1. Remove hairpin (A) from clevis pin (B) and remove pin from left and right header boots (C) on header.

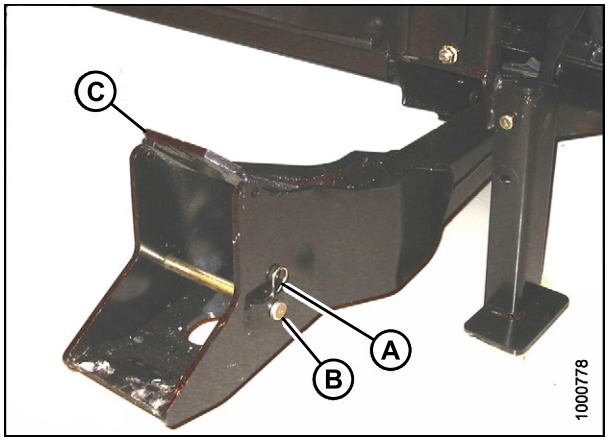


Figure 6.78: Header Boot

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to windrower, ensure that float engagement pin is installed in storage location (B) and NOT installed at hole location (A).

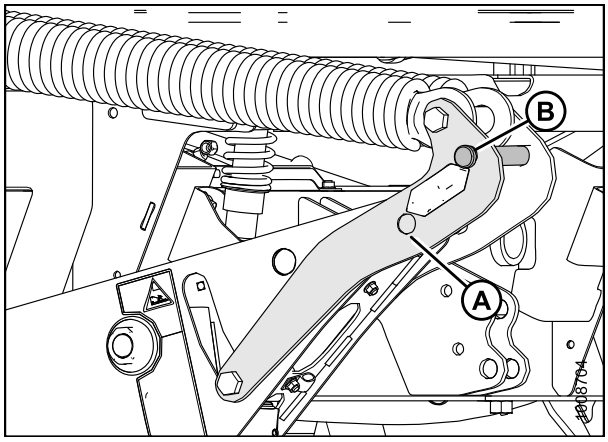


Figure 6.79: Header Lift Linkage

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

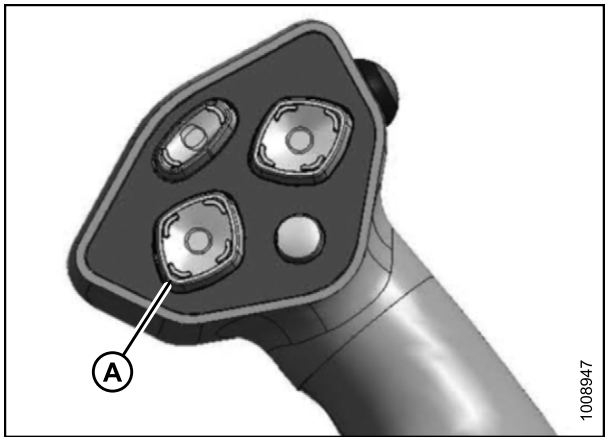


Figure 6.80: GSL

3. Slowly drive the windrower forward so the feet (A) on the windrower enter the boots (B) on the header. Continue to drive slowly forward until the feet engage the boots and the header nudges forward.

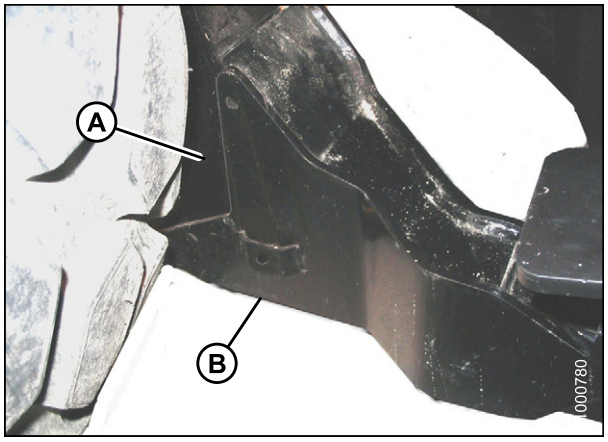


Figure 6.81: Header Boot

4. Stop engine and remove key from ignition.
5. Loosen nut (A) and rotate barrel (B) to adjust length so that the link lines-up with header bracket.
6. Install clevis pin (C) and secure with cotter pin (D).
7. Adjust link to required length for proper header angle by rotating barrel (B). Tighten nut (A) against barrel. A slight tap with a hammer is sufficient.

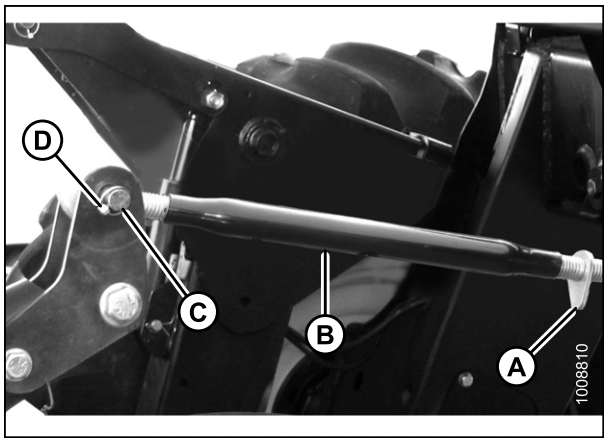


Figure 6.82: Mechanical Center-Link

CAUTION

Check to be sure all bystanders have cleared the area.

8. Start engine and press the HEADER UP switch (A) to raise header to maximum height.

NOTE: If one end of the header does **NOT** raise fully, the lift cylinders require rephasing. If rephasing is needed, proceed as follows:

   a. Press and hold the HEADER UP switch until both cylinders stop moving.

   b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

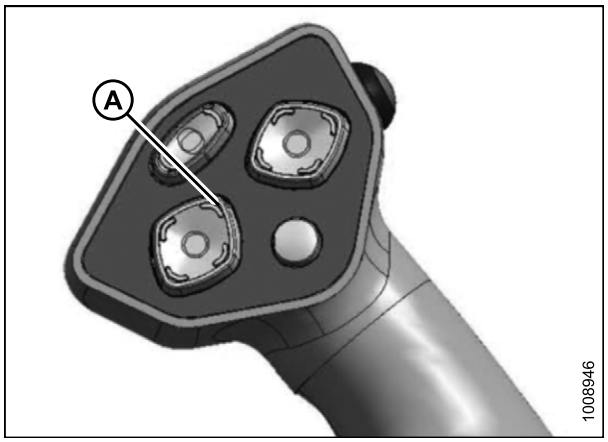


Figure 6.83: GSL

9. Engage safety props on both lift cylinders as follows:
   a. Stop engine and remove key from ignition.
   b. Pull lever (A) and rotate toward header to release and lower the safety prop (B) onto cylinder.
   c. Repeat for the opposite lift cylinder.

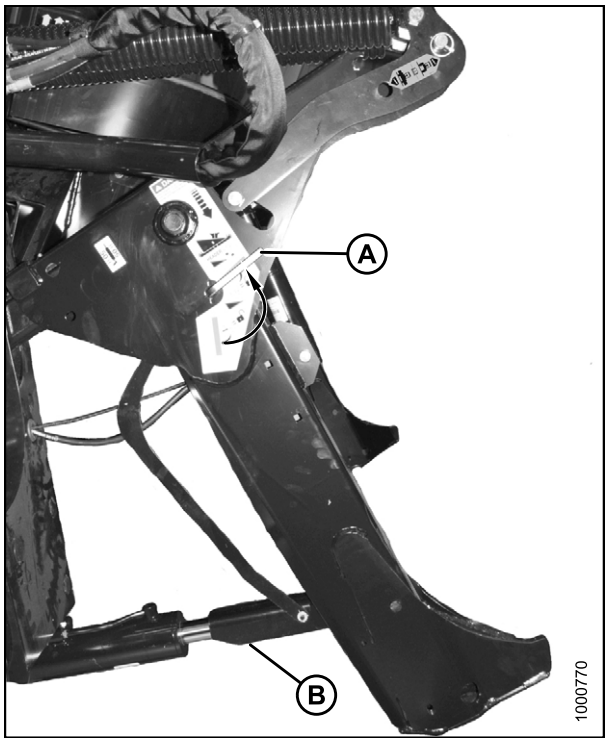


Figure 6.84: Cylinder Stop

10. Install clevis pin (A) through each boot and foot, and secure with hairpin. Do this to both sides.

IMPORTANT:

Ensure clevis pin (A) is fully inserted and hairpin is installed behind bracket.

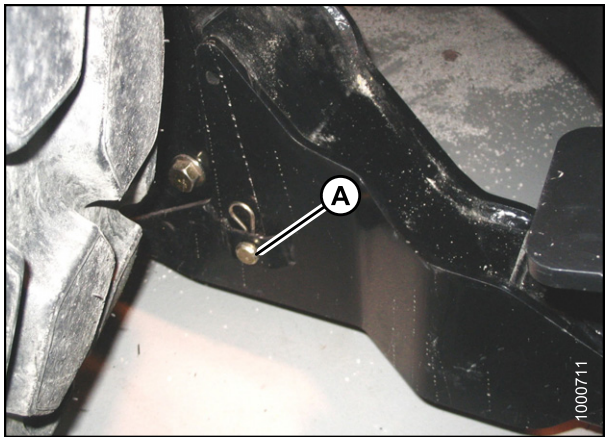


Figure 6.85: Header Boot

11. Remove lynch pin from clevis pin (A) in stand (B).
12. Hold stand (B) and remove pin (A).
13. Position stand to storage position by inverting stand and relocating on bracket as shown. Reinsert clevis pin (A) and secure with lynch pin.

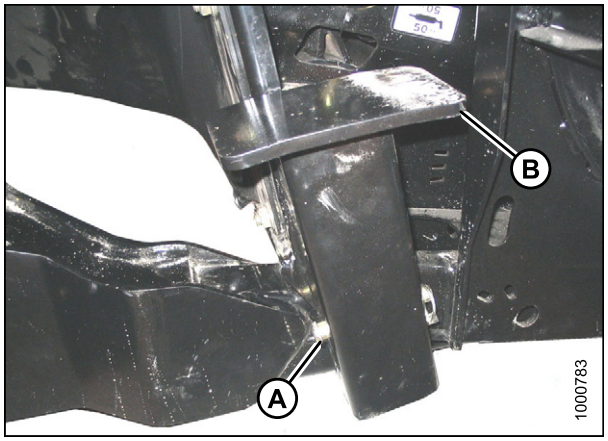


Figure 6.86: Header Stand

14. Remove clevis pin from storage position (B) in linkage, and insert in hole (A) to engage float springs. Secure with hairpin.

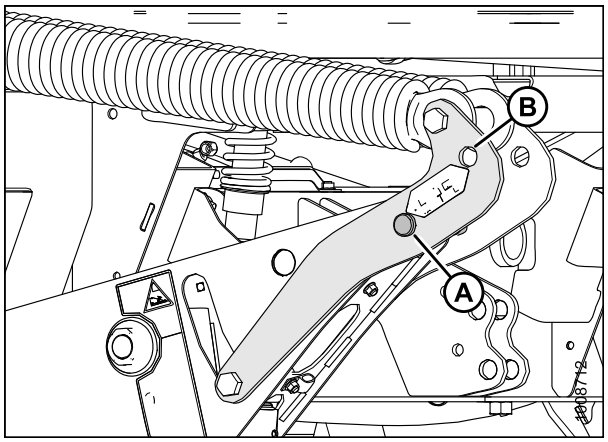


Figure 6.87: Header Lift Linkage

15. Disengage safety prop by turning lever (A) downward to release and lower safety prop until lever locks into vertical position.
16. Repeat for opposite safety prop.

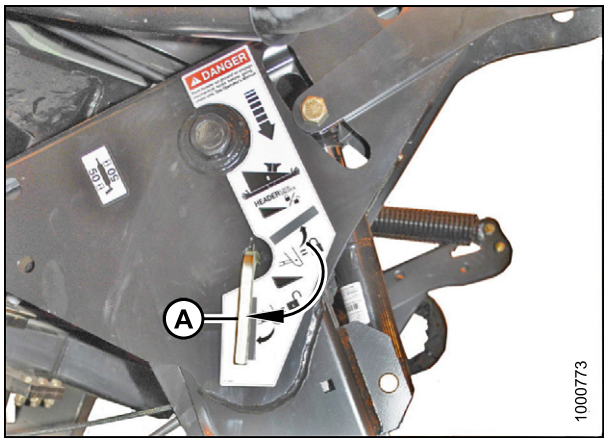


Figure 6.88: Safety Prop

CAUTION

Check to be sure all bystanders have cleared the area.

17. Start engine and activate HEADER DOWN switch (A) on GSL to lower header fully. Stop engine and remove key.

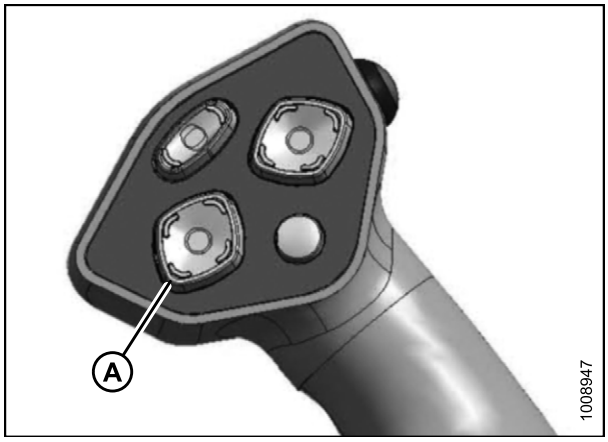


Figure 6.89: GSL

18. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the auger header operator's manual.

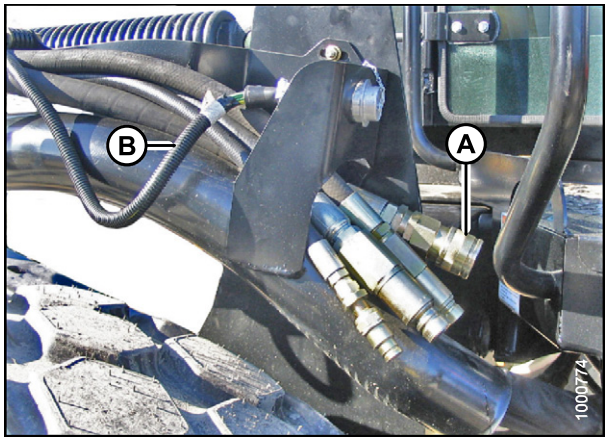


Figure 6.90: Header Drive Hoses and Harness

6.12 Lubricating the Windrower

Table 6.2 Recommended Lubricant

Spec.	Description	Use
SAE Multi-Purpose	High temperature, extreme pressure (EP2) performance with 1% max molybdenum disulphide (NLGI Grade 2) lithium base.	As required unless otherwise specified.

6.12.1 Lubrication Procedure

DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

1. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
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.

6.12.2 Lubrication Points

Refer to the following illustrations to identify various locations that require lubrication.

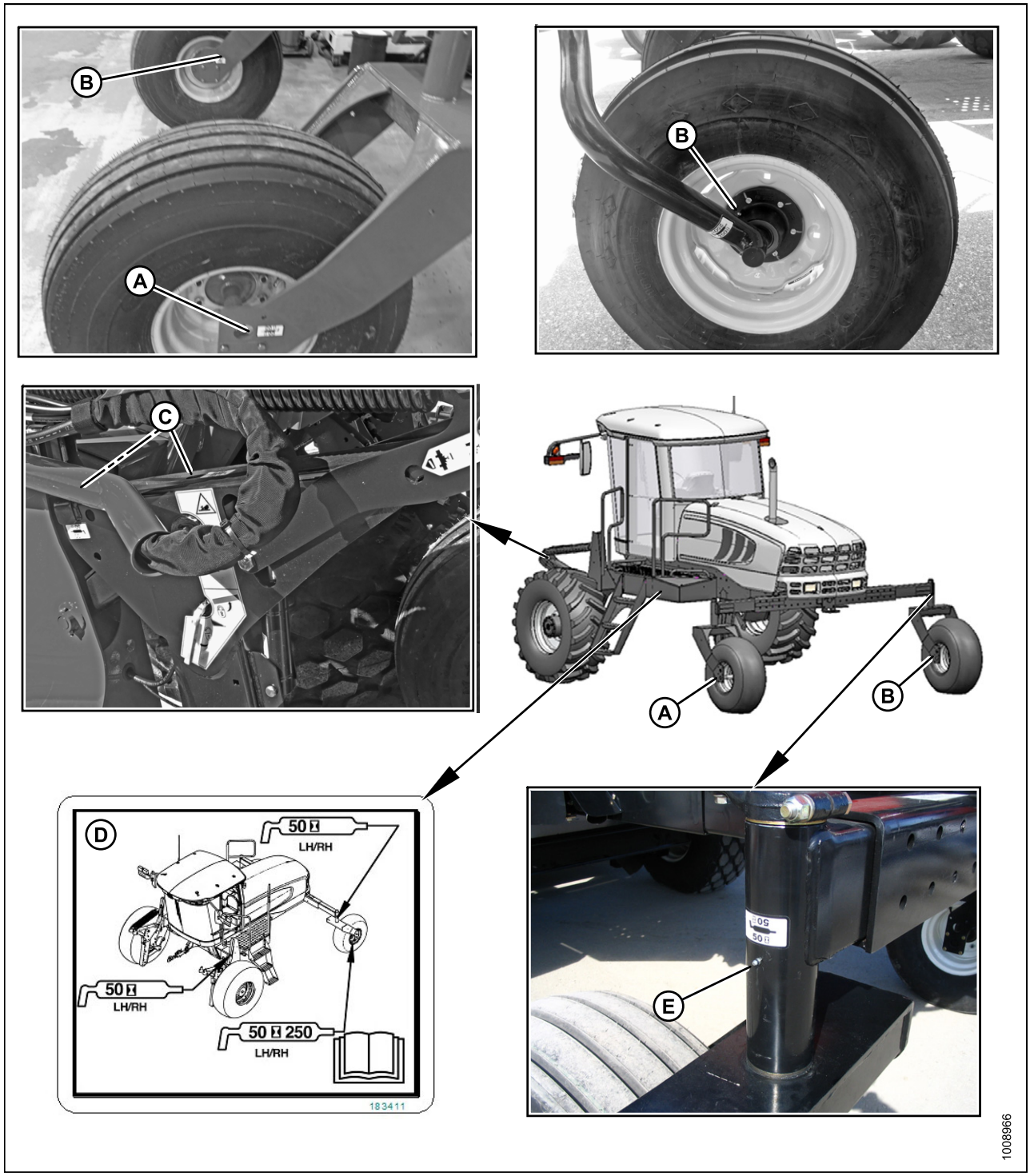


Figure 6.91: Lubrication Points

A - Forked Caster Wheel Bearing (2 Places) (Outer—Both Wheels)
B - Forked/Formed Caster Wheel Bearing (2 Places) (Inner—Both Wheels) (50 Hrs/250 Hrs)
C - Top Link (2 Places) (Both Sides)
D - Lubrication Decal (MD #183411)
E - Caster Pivot (Both Sides)

6.13 Cab Display Module (CDM) Programming

Figure 6.92: CDM

A - Side Display
B - Main Display
C - Select Switch
D - Menu Item Scroll Forward
E - Menu Item Scroll Backward
F - Program Switch

A – SIDE DISPLAY displays software revision status.

- Upper Line – C### (CDM)
- Lower Line – M### (WCM)

B – MAIN DISPLAY displays menu item and selection.

- Upper Line – Menu Item
- Lower Line – Selection

C – SELECT SWITCH places monitor into Program Mode with PROGRAM switch. Press to accept menu item and advance to next item.

D – MENU ITEM SCROLL FORWARD displays value under menu item.

- Push to scroll forward
- Hold down for fast scroll[9]

E – MENU ITEM SCROLL BACKWARD displays value under menu item.

- Push to scroll backward
- Hold down for fast scroll[9]

F – PROGRAM SWITCH places monitor into program mode. Press while pressing SELECT switch.

9. Fast scroll applies only when changing KNIFE SPEED, OVERLOAD PRESSURE, and TIRE SIZE.

NOTE: Contact your MacDon Dealer for information regarding software updates to the electronic modules. Your Dealer will have the necessary interface tools and access to the latest software upgrades.

IMPORTANT:

Header must be attached to the windrower so that the CDM can detect the type of header (Header ID) and adjust the programming mode accordingly.

Proceed as follows to program the CDM:

NOTE: Pressing PROGRAM at any time will cancel the programming mode/menus and return back to the main operating displays. For detailed programming menu selection, refer to *6.13.1 Detailed Programming Menu Flow Chart, page 68*.

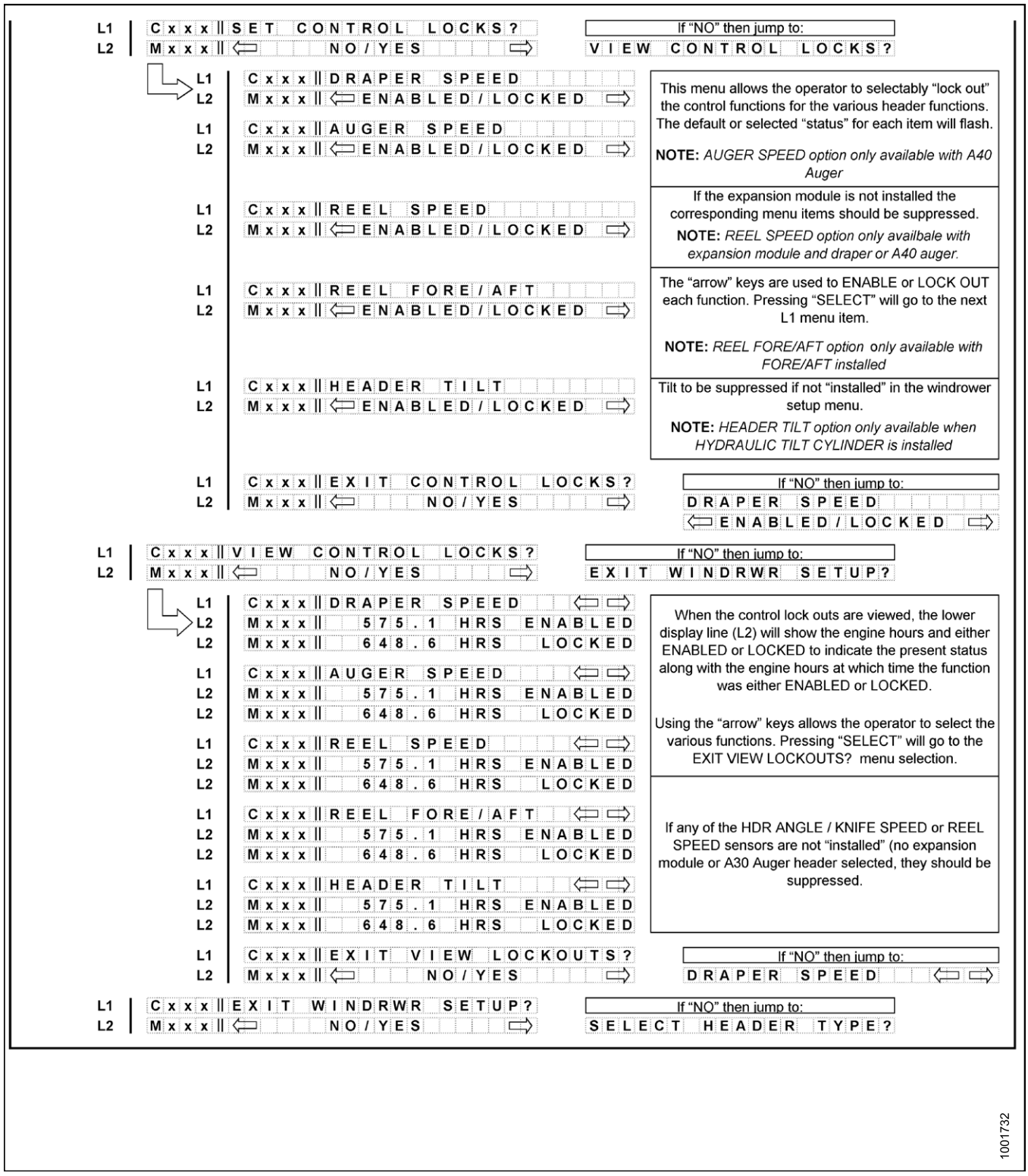
1. Turn ignition key to RUN or start the engine.
2. On CDM, press PROGRAM and SELECT to enter programming mode.
3. Press SELECT. WINDROWER SETUP? with header width displayed on upper line.
4. Press left or right arrow to change value on lower line.
5. Press SELECT to advance to the next L1 item and press arrow keys to change values.
6. Set the following functions:

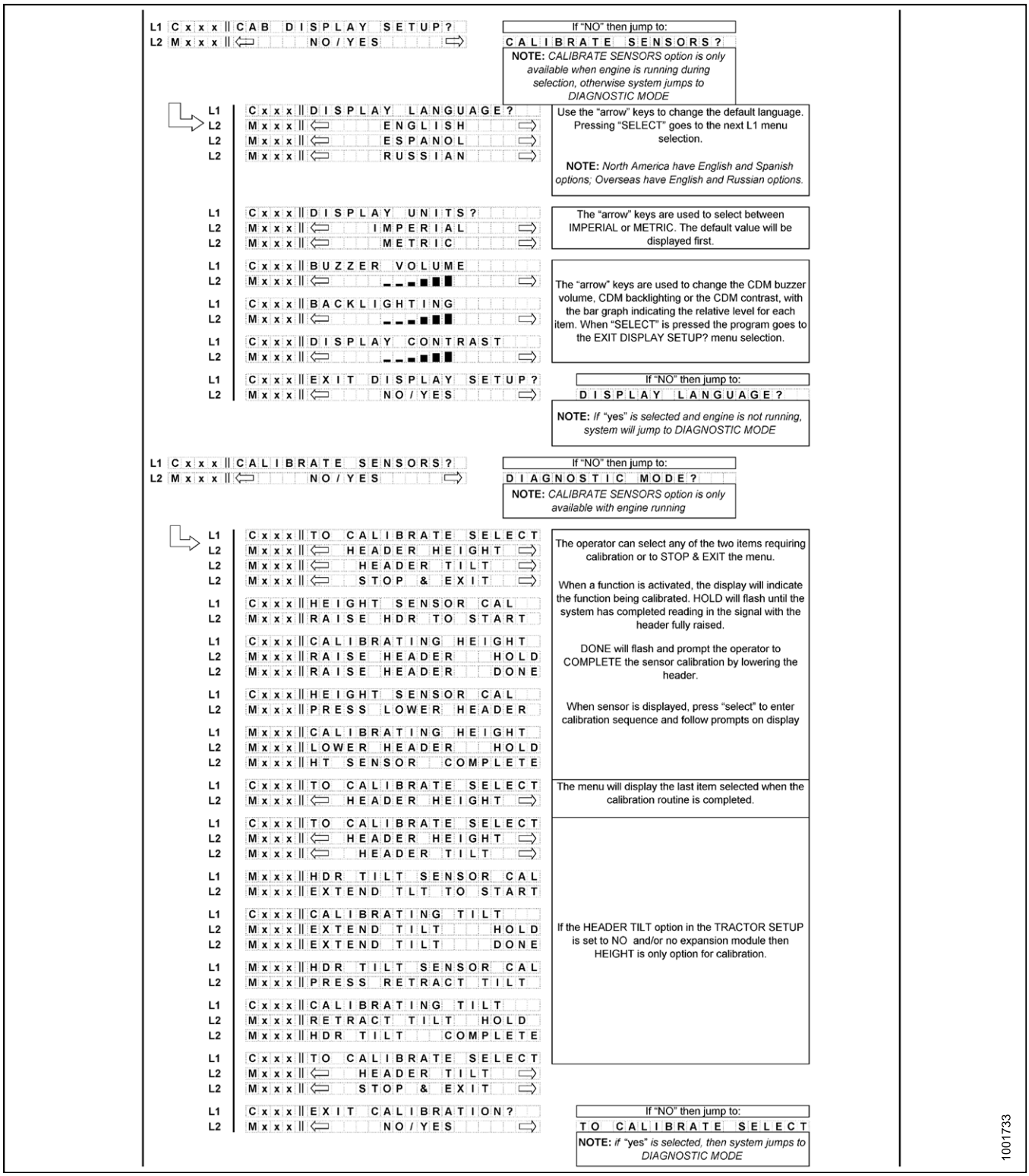
   NOTE: The following can be set by the Dealer provided that the header is installed and other information needed is available.

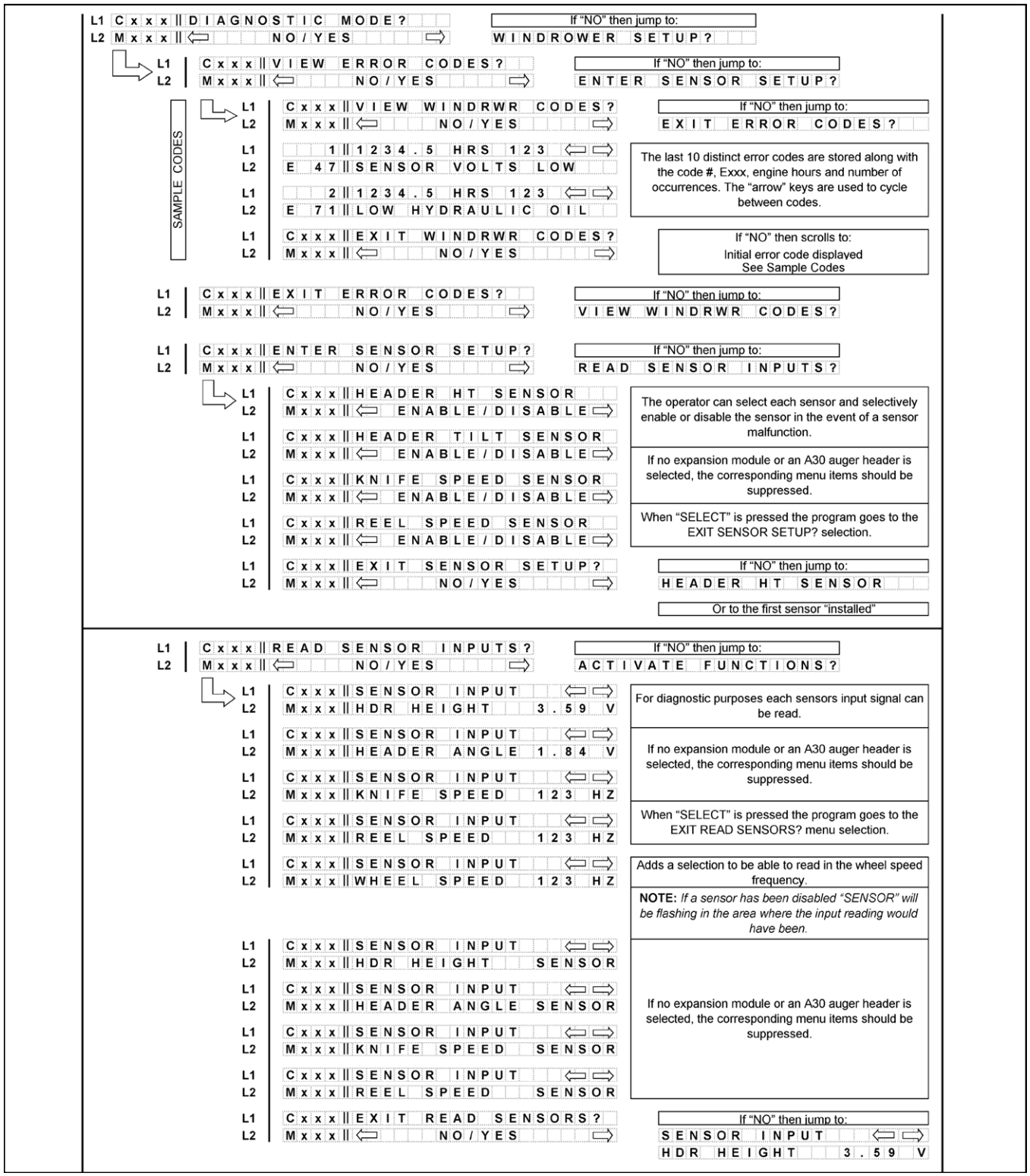
   - TILT CYL INSTALLED?
   - DISC BLK INSTALLED?
   - HDR CUT WIDT?
   - HAY CONDITIONER?
   - SET TIRE SIZE?
7. Press PROGRAM to exit programming mode when finished entering values.

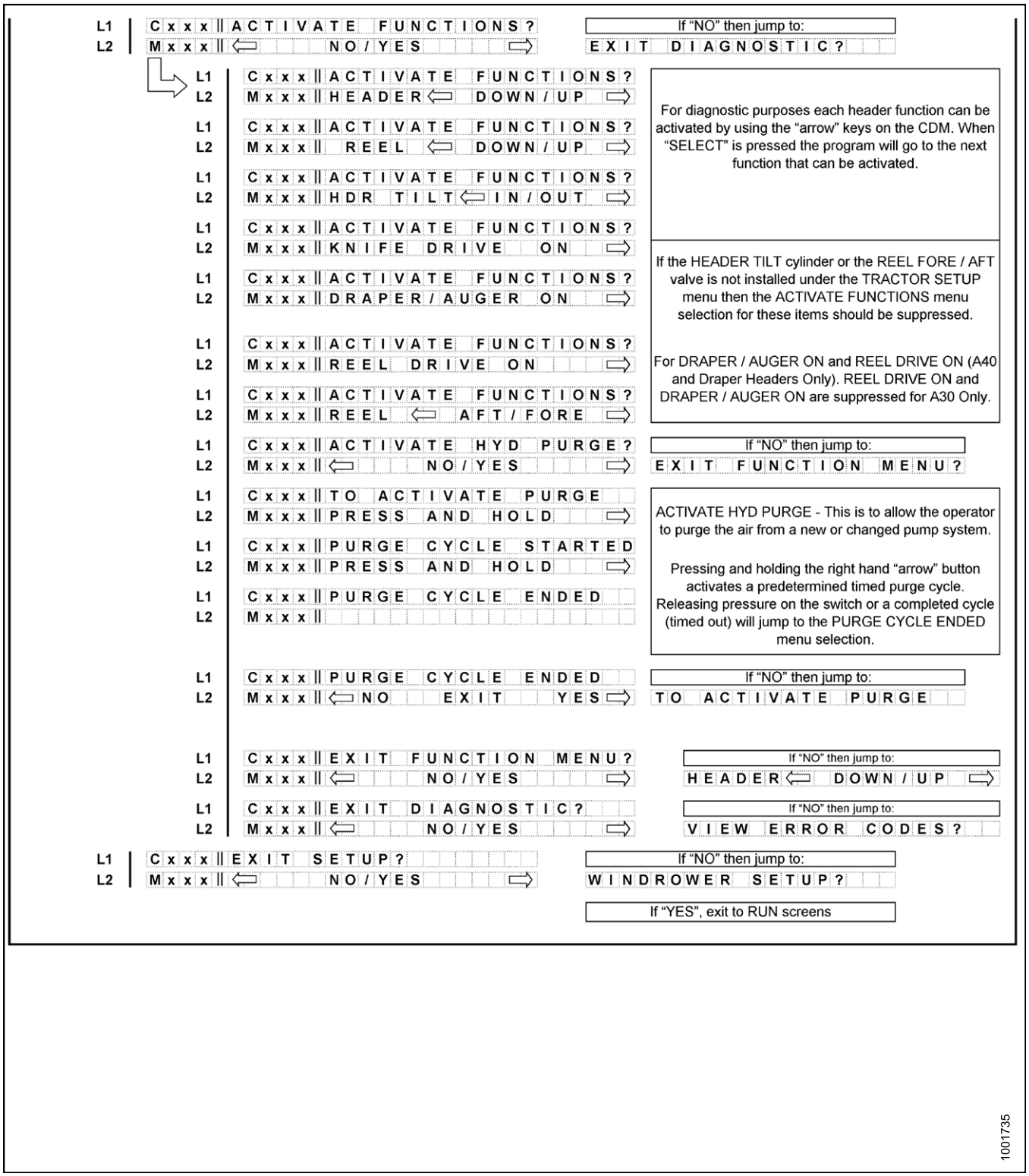
6.13.1 Detailed Programming Menu Flow Chart

The programming menu flow chart is current for cab display module (CDM) software C107 and windrower control module (WCM) software M102.


L1 Cxxx SET CONTROL LOCKS?
L2 Mxxx ⇦ NO/YES ⇨
If "NO" then jump to:
VIEW CONTROL LOCKS?
L1 Cxxx DRAPER SPEED
L2 Mxxx ⇦ ENABLED/LOCKED ⇨
L1 Cxxx AUGER SPEED
L2 Mxxx ⇦ ENABLED/LOCKED ⇨
L1 Cxxx REEL SPEED
L2 Mxxx ⇦ ENABLED/LOCKED ⇨
L1 Cxxx REEL FORE/AFT
L2 Mxxx ⇦ ENABLED/LOCKED ⇨
L1 Cxxx HEADER TILT
L2 Mxxx ⇦ ENABLED/LOCKED ⇨
This menu allows the operator to selectably "lock out" the control functions for the various header functions. The default or selected "status" for each item will flash.
NOTE: AUGER SPEED option only available with A40 Auger
If the expansion module is not installed the corresponding menu items should be suppressed.
NOTE: REEL SPEED option only availbale with expansion module and draper or A40 auger.
The "arrow" keys are used to ENABLE or LOCK OUT each function. Pressing "SELECT" will go to the next L1 menu item.
NOTE: REEL FORE/AFT option only available with FORE/AFT installed
Tilt to be suppressed if not "installed" in the windrower setup menu.
NOTE: HEADER TILT option only available when HYDRAULIC TILT CYLINDER is installed
L1 Cxxx EXIT CONTROL LOCKS?
L2 Mxxx ⇦ NO/YES ⇨
If "NO" then jump to:
DRAPER SPEED
⇦ ENABLED/LOCKED ⇨
L1 Cxxx VIEW CONTROL LOCKS?
L2 Mxxx ⇦ NO/YES ⇨
If "NO" then jump to:
EXIT WINDRWR SETUP?
L1 Cxxx DRAPER SPEED ⇦ ⇨
L2 Mxxx 575.1 HRS ENABLED
L2 Mxxx 648.6 HRS LOCKED
L1 Cxxx AUGER SPEED ⇦ ⇨
L2 Mxxx 575.1 HRS ENABLED
L2 Mxxx 648.6 HRS LOCKED
L1 Cxxx REEL SPEED ⇦ ⇨
L2 Mxxx 575.1 HRS ENABLED
L2 Mxxx 648.6 HRS LOCKED
L1 Cxxx REEL FORE/AFT ⇦ ⇨
L2 Mxxx 575.1 HRS ENABLED
L2 Mxxx 648.6 HRS LOCKED
L1 Cxxx HEADER TILT ⇦ ⇨
L2 Mxxx 575.1 HRS ENABLED
L2 Mxxx 648.6 HRS LOCKED
When the control lock outs are viewed, the lower display line (L2) will show the engine hours and either ENABLED or LOCKED to indicate the present status along with the engine hours at which time the function was either ENABLED or LOCKED.
Using the "arrow" keys allows the operator to select the various functions. Pressing "SELECT" will go to the EXIT VIEW LOCKOUTS? menu selection.
If any of the HDR ANGLE / KNIFE SPEED or REEL SPEED sensors are not "installed" (no expansion module or A30 Auger header selected, they should be suppressed.
L1 Cxxx EXIT VIEW LOCKOUTS?
L2 Mxxx ⇦ NO/YES ⇨
If "NO" then jump to:
DRAPER SPEED ⇦ ⇨
L1 Cxxx EXIT WINDRWR SETUP?
L2 Mxxx ⇦ NO/YES ⇨
If "NO" then jump to:
SELECT HEADER TYPE?
1001732


L1 C x x x || CAB DISPLAY SETUP?
L2 M x x x || ⇦ NO / YES ⇨
If "NO" then jump to:
CALIBRATE SENSORS?
NOTE: CALIBRATE SENSORS option is only available when engine is running during selection, otherwise system jumps to DIAGNOSTIC MODE
L1 C x x x || DISPLAY LANGUAGE?
L2 M x x x || ⇦ ENGLISH ⇨
L2 M x x x || ⇦ ESPANOL ⇨
L2 M x x x || ⇦ RUSSIAN ⇨
Use the "arrow" keys to change the default language. Pressing "SELECT" goes to the next L1 menu selection.
NOTE: North America have English and Spanish options; Overseas have English and Russian options.
L1 C x x x || DISPLAY UNITS?
L2 M x x x || ⇦ IMPERIAL ⇨
L2 M x x x || ⇦ METRIC ⇨
The "arrow" keys are used to select between IMPERIAL or METRIC. The default value will be displayed first.
L1 C x x x || BUZZER VOLUME
L2 M x x x || ⇦ ⇨
L1 C x x x || BACKLIGHTING
L2 M x x x || ⇦ ⇨
L1 C x x x || DISPLAY CONTRAST
L2 M x x x || ⇦ ⇨
The "arrow" keys are used to change the CDM buzzer volume, CDM backlighting or the CDM contrast, with the bar graph indicating the relative level for each item. When "SELECT" is pressed the program goes to the EXIT DISPLAY SETUP? menu selection.
L1 C x x x || EXIT DISPLAY SETUP?
L2 M x x x || ⇦ NO / YES ⇨
If "NO" then jump to:
DISPLAY LANGUAGE?
NOTE: If "yes" is selected and engine is not running, system will jump to DIAGNOSTIC MODE
L1 C x x x || CALIBRATE SENSORS?
L2 M x x x || ⇦ NO / YES ⇨
If "NO" then jump to:
DIAGNOSTIC MODE?
NOTE: CALIBRATE SENSORS option is only available with engine running
L1 C x x x || TO CALIBRATE SELECT
L2 M x x x || ⇦ HEADER HEIGHT ⇨
L2 M x x x || ⇦ HEADER TILT ⇨
L2 M x x x || ⇦ STOP & EXIT ⇨
The operator can select any of the two items requiring calibration or to STOP & EXIT the menu.
When a function is activated, the display will indicate the function being calibrated. HOLD will flash until the system has completed reading in the signal with the header fully raised.
DONE will flash and prompt the operator to COMPLETE the sensor calibration by lowering the header.
When sensor is displayed, press "select" to enter calibration sequence and follow prompts on display
L1 C x x x || HEIGHT SENSOR CAL
L2 M x x x || RAISE HDR TO START
L1 C x x x || CALIBRATING HEIGHT
L2 M x x x || RAISE HEADER HOLD
L2 M x x x || RAISE HEADER DONE
L1 C x x x || HEIGHT SENSOR CAL
L2 M x x x || PRESS LOWER HEADER
L1 M x x x || CALIBRATING HEIGHT
L2 M x x x || LOWER HEADER HOLD
L2 M x x x || HT SENSOR COMPLETE
L1 C x x x || TO CALIBRATE SELECT
L2 M x x x || ⇦ HEADER HEIGHT ⇨
The menu will display the last item selected when the calibration routine is completed.
L1 C x x x || TO CALIBRATE SELECT
L2 M x x x || ⇦ HEADER HEIGHT ⇨
L2 M x x x || ⇦ HEADER TILT ⇨
L1 M x x x || HDR TILT SENSOR CAL
L2 M x x x || EXTEND TLT TO START
L1 C x x x || CALIBRATING TILT
L2 M x x x || EXTEND TILT HOLD
L2 M x x x || EXTEND TILT DONE
L1 M x x x || HDR TILT SENSOR CAL
L2 M x x x || PRESS RETRACT TILT
L1 C x x x || CALIBRATING TILT
L2 M x x x || RETRACT TILT HOLD
L2 M x x x || HDR TILT COMPLETE
If the HEADER TILT option in the TRACTOR SETUP is set to NO and/or no expansion module then HEIGHT is only option for calibration.
L1 C x x x || TO CALIBRATE SELECT
L2 M x x x || ⇦ HEADER TILT ⇨
L2 M x x x || ⇦ STOP & EXIT ⇨
L1 C x x x || EXIT CALIBRATION?
L2 M x x x || ⇦ NO / YES ⇨
If "NO" then jump to:
TO CALIBRATE SELECT
NOTE: if "yes" is selected, then system jumps to DIAGNOSTIC MODE
1001733


L1 Cxxx DIAGNOSTIC MODE?
L2 Mxxx NO/YES
If "NO" then jump to:
WINDROWER SETUP?
L1 Cxxx VIEW ERROR CODES?
L2 Mxxx NO/YES
If "NO" then jump to:
ENTER SENSOR SETUP?
SAMPLE CODES
L1 Cxxx VIEW WINDRWR CODES?
L2 Mxxx NO/YES
If "NO" then jump to:
EXIT ERROR CODES?
L1 1 1234.5 HRS 123
L2 E 47 SENSOR VOLTS LOW
L1 2 1234.5 HRS 123
L2 E 71 LOW HYDRAULIC OIL
The last 10 distinct error codes are stored along with the code #, Exxx, engine hours and number of occurrences. The "arrow" keys are used to cycle between codes.
L1 Cxxx EXIT WINDRWR CODES?
L2 Mxxx NO/YES
If "NO" then scrolls to:
Initial error code displayed
See Sample Codes
L1 Cxxx EXIT ERROR CODES?
L2 Mxxx NO/YES
If "NO" then jump to:
VIEW WINDRWR CODES?
L1 Cxxx ENTER SENSOR SETUP?
L2 Mxxx NO/YES
If "NO" then jump to:
READ SENSOR INPUTS?
L1 Cxxx HEADER HT SENSOR
L2 Mxxx ENABLE/DISABLE
The operator can select each sensor and selectively enable or disable the sensor in the event of a sensor malfunction.
L1 Cxxx HEADER TILT SENSOR
L2 Mxxx ENABLE/DISABLE
If no expansion module or an A30 auger header is selected, the corresponding menu items should be suppressed.
L1 Cxxx KNIFE SPEED SENSOR
L2 Mxxx ENABLE/DISABLE
L1 Cxxx REEL SPEED SENSOR
L2 Mxxx ENABLE/DISABLE
When "SELECT" is pressed the program goes to the EXIT SENSOR SETUP? selection.
L1 Cxxx EXIT SENSOR SETUP?
L2 Mxxx NO/YES
If "NO" then jump to:
HEADER HT SENSOR
Or to the first sensor "installed"
L1 Cxxx READ SENSOR INPUTS?
L2 Mxxx NO/YES
If "NO" then jump to:
ACTIVATE FUNCTIONS?
L1 Cxxx SENSOR INPUT
L2 Mxxx HDR HEIGHT 3.59 V
For diagnostic purposes each sensors input signal can be read.
L1 Cxxx SENSOR INPUT
L2 Mxxx HEADER ANGLE 1.84 V
If no expansion module or an A30 auger header is selected, the corresponding menu items should be suppressed.
L1 Cxxx SENSOR INPUT
L2 Mxxx KNIFE SPEED 123 HZ
L1 Cxxx SENSOR INPUT
L2 Mxxx REEL SPEED 123 HZ
When "SELECT" is pressed the program goes to the EXIT READ SENSORS? menu selection.
L1 Cxxx SENSOR INPUT
L2 Mxxx WHEEL SPEED 123 HZ
Adds a selection to be able to read in the wheel speed frequency.
NOTE: If a sensor has been disabled "SENSOR" will be flashing in the area where the input reading would have been.
L1 Cxxx SENSOR INPUT
L2 Mxxx HDR HEIGHT SENSOR
L1 Cxxx SENSOR INPUT
L2 Mxxx HEADER ANGLE SENSOR
L1 Cxxx SENSOR INPUT
L2 Mxxx KNIFE SPEED SENSOR
L1 Cxxx SENSOR INPUT
L2 Mxxx REEL SPEED SENSOR
If no expansion module or an A30 auger header is selected, the corresponding menu items should be suppressed.
L1 Cxxx EXIT READ SENSORS?
L2 Mxxx NO/YES
If "NO" then jump to:
SENSOR INPUT
HDR HEIGHT 3.59 V


L1 Cxxx ACTIVATE FUNCTIONS?
L2 Mxxx NO / YES
If "NO" then jump to:
EXIT DIAGNOSTIC?
L1 Cxxx ACTIVATE FUNCTIONS?
L2 Mxxx HEADER DOWN / UP
L1 Cxxx ACTIVATE FUNCTIONS?
L2 Mxxx REEL DOWN / UP
L1 Cxxx ACTIVATE FUNCTIONS?
L2 Mxxx HDR TILT IN / OUT
L1 Cxxx ACTIVATE FUNCTIONS?
L2 Mxxx KNIFE DRIVE ON
L1 Cxxx ACTIVATE FUNCTIONS?
L2 Mxxx DRAPER / AUGER ON
L1 Cxxx ACTIVATE FUNCTIONS?
L2 Mxxx REEL DRIVE ON
L1 Cxxx ACTIVATE FUNCTIONS?
L2 Mxxx REEL AFT / FORE
For diagnostic purposes each header function can be activated by using the "arrow" keys on the CDM. When "SELECT" is pressed the program will go to the next function that can be activated.
If the HEADER TILT cylinder or the REEL FORE / AFT valve is not installed under the TRACTOR SETUP menu then the ACTIVATE FUNCTIONS menu selection for these items should be suppressed.
For DRAPER / AUGER ON and REEL DRIVE ON (A40 and Draper Headers Only). REEL DRIVE ON and DRAPER / AUGER ON are suppressed for A30 Only.
L1 Cxxx ACTIVATE HYD PURGE?
L2 Mxxx NO / YES
If "NO" then jump to:
EXIT FUNCTION MENU?
L1 Cxxx TO ACTIVATE PURGE
L2 Mxxx PRESS AND HOLD
L1 Cxxx PURGE CYCLE STARTED
L2 Mxxx PRESS AND HOLD
L1 Cxxx PURGE CYCLE ENDED
L2 Mxxx
ACTIVATE HYD PURGE - This is to allow the operator to purge the air from a new or changed pump system.
Pressing and holding the right hand "arrow" button activates a predetermined timed purge cycle. Releasing pressure on the switch or a completed cycle (timed out) will jump to the PURGE CYCLE ENDED menu selection.
L1 Cxxx PURGE CYCLE ENDED
L2 Mxxx NO EXIT YES
If "NO" then jump to:
TO ACTIVATE PURGE
L1 Cxxx EXIT FUNCTION MENU?
L2 Mxxx NO / YES
If "NO" then jump to:
HEADER DOWN / UP
L1 Cxxx EXIT DIAGNOSTIC?
L2 Mxxx NO / YES
If "NO" then jump to:
VIEW ERROR CODES?
L1 Cxxx EXIT SETUP?
L2 Mxxx NO / YES
If "NO" then jump to:
WINDROWER SETUP?
If "YES", exit to RUN screens
1001735

7 Performing Predelivery Checks

Perform the final checks and adjustments as listed on the Predelivery Checklist (yellow sheet attached to back of instruction), to ensure the machine is field-ready. Refer to the following pages for detailed instructions as indicated on the Checklist.

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

NOTE: The majority of checks and adjustments are performed during the assembly procedures. The following additional inspections should be performed after assembly is complete.

7.1 Recording Serial Numbers

1. Record windrower and engine serial numbers on the Checklist.

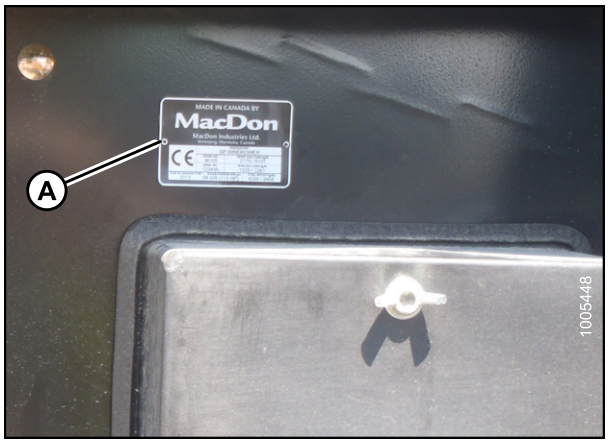


Figure 7.1: M105 Serial Number Location

A - Serial Number Plate

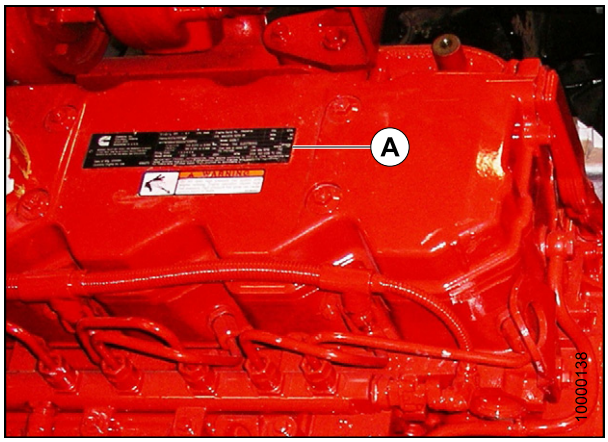


Figure 7.2: Engine Serial Number Location

A - Serial Number Plate

7.2 Checking Wheel Drive Lubricant Level

Check the wheel drive lubricant level every 200 hours or annually.

NOTE: The windrower should be on level ground when checking lubricant level.

1. Position windrower so that plugs (A) and (B) are horizontally aligned with the center (C) of the hub.
2. Remove plug (A) or (B). The lubricant should be visible through the port or running out slightly.
3. Reinstall plugs and tighten.

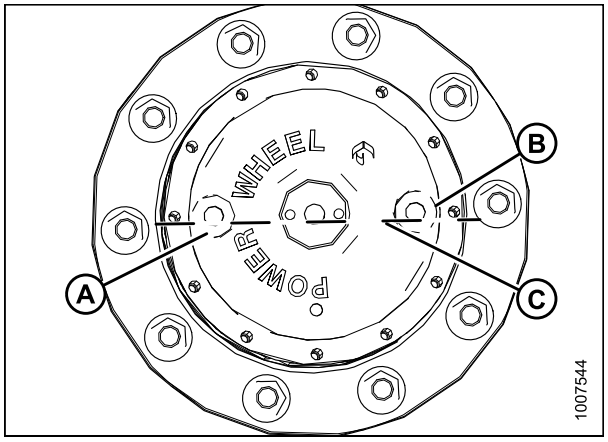


Figure 7.3: Wheel Drive Assembly

7.3 Tire Pressures and Ballast Requirements

7.3.1 Checking Tire Pressures

Measure tire pressure with a gauge:

Tire Type	Size	Pressure
Bar	18.4–26	32 psi (221 kPa)
	600/65R28	26 psi (179 kPa)
Turf	18.4–26	35 psi (241 kPa)
	23.1–26	20 psi (138 kPa)
	580/70R26	24 psi (165 kPa)
Rear	All	10 psi (60 kPa)

7.3.2 Checking Tire Ballast

Fluid ballasting of rear caster tires is recommended to provide adequate machine stability when using large headers on the windrower.

Also, the machine stability varies with different attachments, windrower options, terrains, and operators' driving techniques.

Ballast capability per tire is at a maximum fill of 75% or when the fluid is level with the valve stem when the stem is positioned at the "12 o'clock" position.

Fluid can be added to any level up to maximum fill, but always add an equal amount of fluid on both sides.

Table 7.1 Fluid per Tire

Tire Size	Fluid per Tire at 75% Fill U.S. Gal. (litres)	Total Weight of BOTH Tires lb (kg)[10]
7.5 x 16	10 (38)	200 (91)
10 x 16	18 (69)	380 (170)
16.5 x 16.1	41 (158)	830 (377)

10. Weights are given for typical calcium chloride and water mixtures. Weight is reduced by 20% if only water is used (for areas that do not require antifreeze protection).

Table 7.2

Header Description		Rec. Tire Size	Recommended Ballast			
			Level Ground		Hills	
Type	Size		Per Tire	Both Tires	Per Tire	Both Tires
			U.S. Gal. (liters)	lb (kg)[11]	U.S. Gal. (liters)	lb (kg)[11]
A-Series, all options	All	7.5 x 16 10 x 16 16.5 x 16.1	0			
D-Series	25 FT and down					
	30 FT SR or DR without conditioner 35 FT SR		0		10 (38)	200 (91)
	30 FT DR with steel fingers and conditioner 35 FT DR (5- or 6-bat)	Level ground: 10 x 16 16.5 x 16.1 Hills: 16.5 x 16.1	18 (69)	380 (170)	30 (115)	630 (288)

11. If only water is used, increase volume of water by 20% (up to maximum allowable fill per tire) to compensate.

7.4 Checking Engine Air Intake

1. Check that air cleaner cap is firmly attached and that latches (A) and clamps (B) are secure.

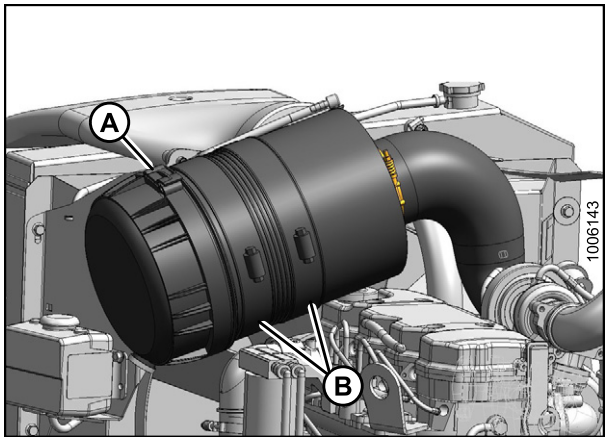


Figure 7.4: Air Intake System

2. Check constant torque spring clamp (A) at back of air cleaner. Hold 0.018 in. (0.46 mm) gauge between middle coils, and tighten clamp until gauge is snug. Remove gauge.

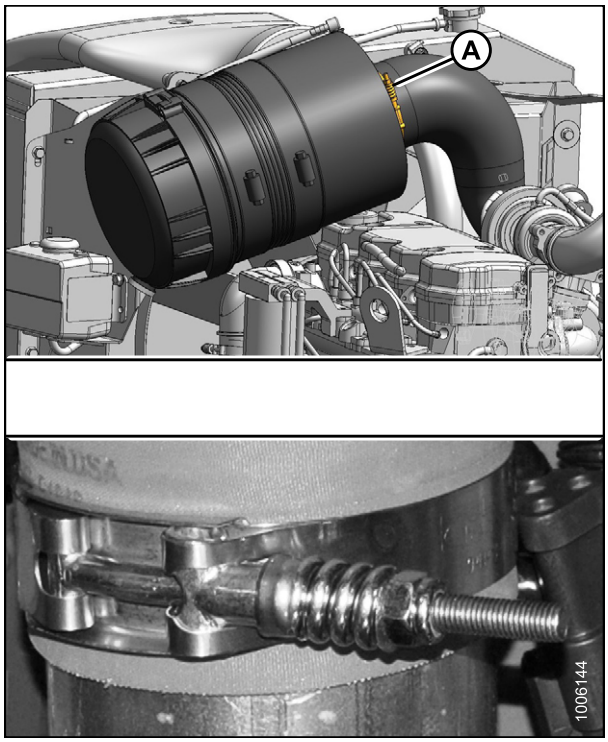


Figure 7.5: Air Intake System

3. Check constant torque clamps (A) on charge air cooling duct connections at turbocharger outlet and engine air intake. Hold 0.018 in. (0.46 mm) gauge between middle coils of clamp and tighten clamp until gauge is snug. Remove gauge.

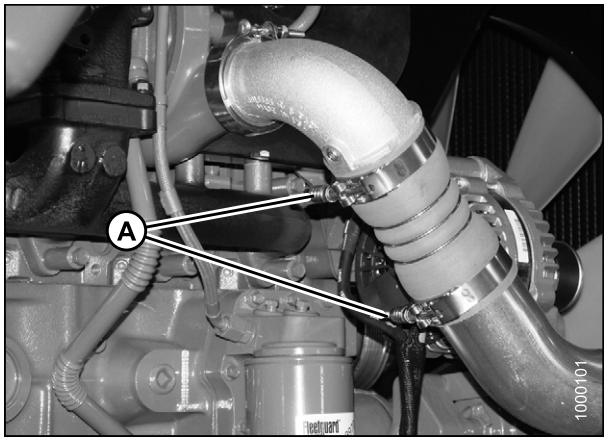


Figure 7.6: Air Intake System

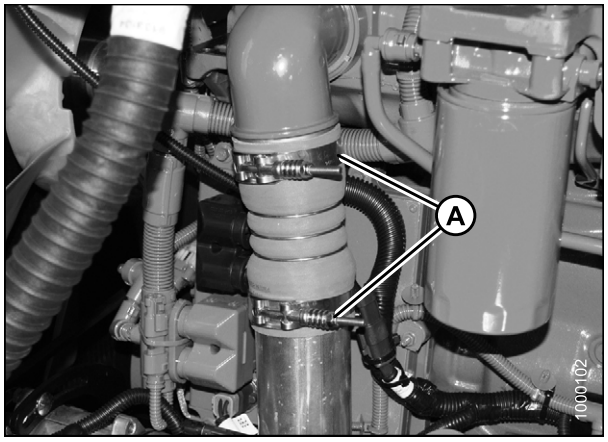


Figure 7.7: Air Intake System

7.5 Checking Hydraulic Oil

Follow these steps to check the hydraulic oil:

1. Turn filler cap counterclockwise (A) to loosen bung, and remove dipstick.

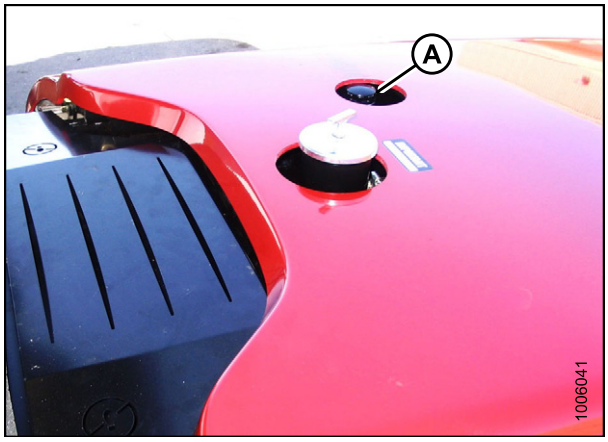


Figure 7.8: Engine Hood

2. Check that level is between LOW and FULL marks.
3. Reinstall dipstick and filler cap, and turn clockwise to tighten/lock.

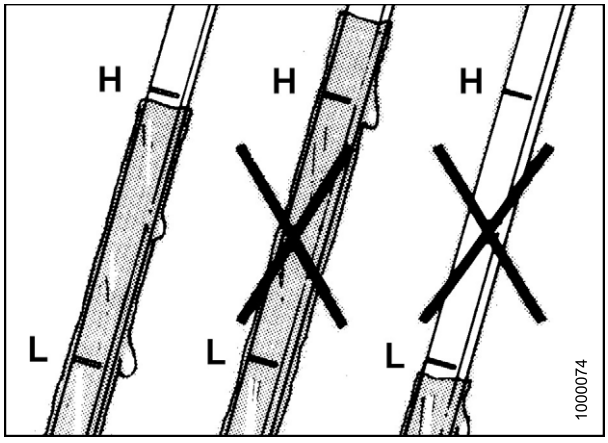


Figure 7.9: Checking Hydraulic Oil

7.6 Checking Fuel Separator

1. Place a container under the filter drain (A).
2. Turn drain valve by hand 1-1/2 to 2 turns counterclockwise, until draining occurs.
3. Drain the filter sump of water and sediment, until clear fuel is visible. Clean as necessary.
4. Turn the valve clockwise to close the drain (A).
5. Safely dispose of fluid in container.

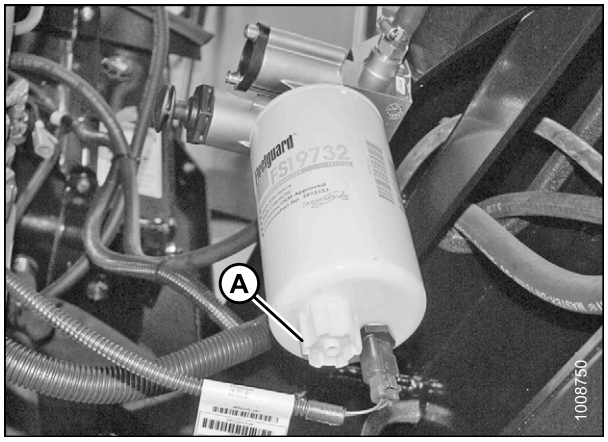


Figure 7.10: Fuel Filter

7.7 Checking Engine Coolant

1. Check the coolant level in the coolant recovery tank (A). Tank should be at least one-half full.
2. Check coolant concentration in the radiator. Coolant shall be rated for temperatures of -30°F (-34°C).

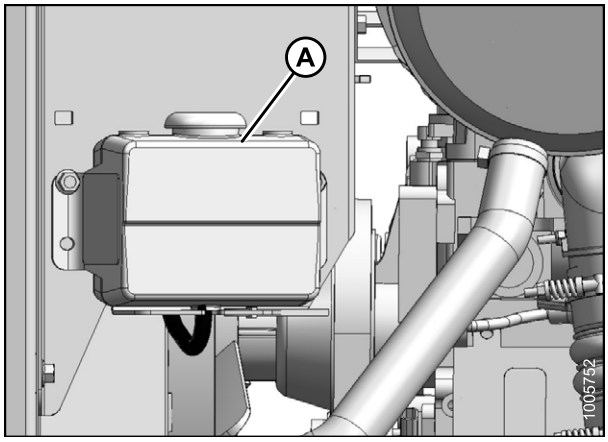


Figure 7.11: Coolant Recovery Tank

7.8 Checking Air Conditioning (A/C) Compressor Belt

Tension on A/C compressor belt (A) should be such that a force of 8–12 lbf (35–55 N) deflects the belt 3/16 in. (5 mm) at mid-span.

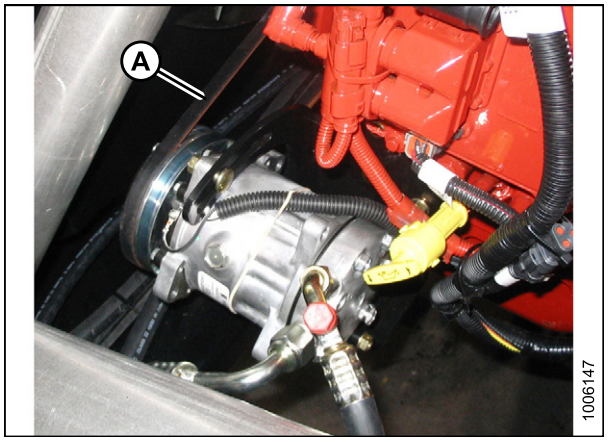


Figure 7.12: A/C Compressor Belt

7.9 Checking Safety System

A properly functioning system should operate as follows:

- The starter should engage **ONLY** when the ground speed lever (GSL) is in N-DETENT, the steering wheel is locked in the CENTER position, and the HEADER DRIVE switch is in the OFF position.
- Under the above conditions, the brake should engage and the machine should not move after engine start-up.
- The steering wheel should **NOT** lock with the engine running and the GSL out of the N-DETENT.
- The machine should **NOT** move with the engine running and with the steering wheel still centered, when the GSL is pulled straight out of N-DETENT (not in forward or reverse).

If the system does not function as described above, refer to the operator's manual.

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

To check that the safety system is operating properly, follow these steps:

1. With the engine shut down and the HEADER DRIVE switch engaged, try to start the engine. The cab display module (CDM) should display "HEADER ENGAGED" on the upper line and "DISENGAGE HEADER' on the lower line.
   If the engine turns over, the system requires adjustment. Refer to the operator's manual for adjustment procedures.
2. With the engine shut down, do the following:
   a. Open engine compartment hood.
   b. Pry the steering interlock away from pintle arms (A) by inserting a wedge or pry bar between one of the interlock channels (B) and pintle arm.
   c. Insert a wood block approximately 3/4 in. (19 mm) thick, between the other channel and pintle arm, so that the interlock channel is clear of the pintle arm.
   d. Turn the steering wheel off center and move the GSL in N-DETENT.
   e. Try to start the engine. The CDM should flash "CENTER STEERING", accompanied by a short beep with each flash and the engine should not turn over.
      If the engine turns over, the system requires adjustment. Refer to the operator's manual for adjustment procedures.
   f. Remove key.
   g. Remove wood block previously inserted and close hood.

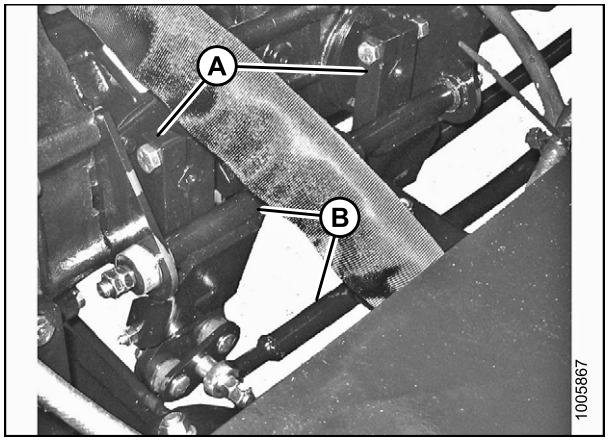


Figure 7.13: Pintle Arms

3. With the engine shut down, steering wheel centered, and the GSL in NEUTRAL but not in N-DETENT, try to start the engine. The CDM should flash “CENTER STEERING” on the upper line and “PLACE GSL INTO N” on the lower line accompanied by a short beep with each flash and the engine should not turn over.
   If the engine turns over, the system requires adjustment. Refer to the operator’s manual for adjustment procedures.

7.10 Operational Checks

A battery main disconnect switch (A) is located on the left-hand frame rail on the battery tray, and can be accessed by raising the engine compartment hood.

Ensure switch is switched to POWER ON position.

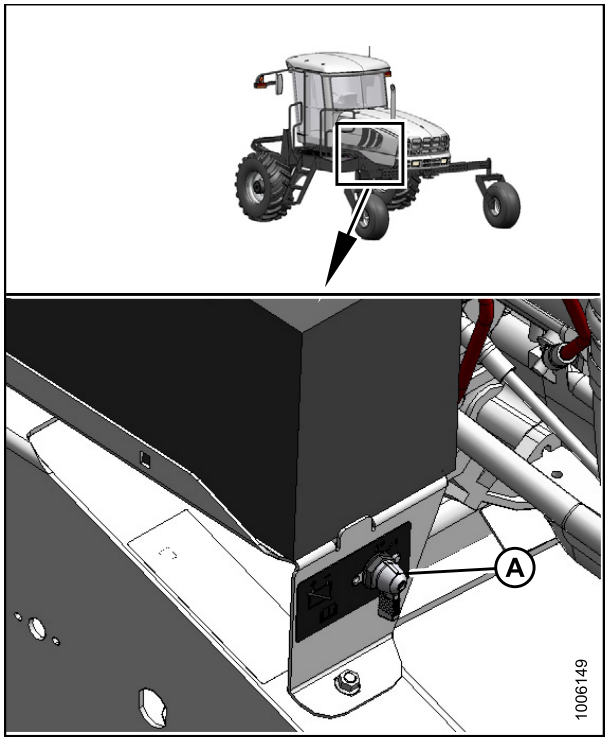


Figure 7.14: Battery Switch

7.10.1 Checking Engine Warning Lights

1. Turn ignition key (A) to RUN position. A single loud tone beeps and the engine warning lights (B) illuminate.
2. Turn ignition key (A) to OFF position.

Figure 7.15: Cab DIsplay Module (CDM)

7.10.2 Checking Fuel Level

1. Turn ignition key (A) to RUN.
2. Check fuel level by pressing the selector switch (B) on the cab display module (CDM) until FUEL LEVEL is displayed at (C). If required, add sufficient fuel for a 15 minute run.

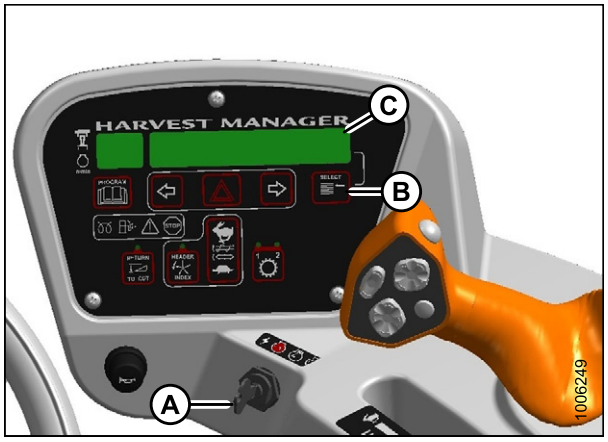


Figure 7.16: CDM

7.10.3 Checking Engine Startup

1. Start the engine. For instructions, refer to *6.8 Starting Engine, page 35*.
   The brakes should engage and the machine should not move after engine start-up.
2. Ensure the steering wheel is centered. Move ground speed lever (GSL) (A) straight out of N-DETENT (neither forward nor reverse). The machine should not move.
3. With the GSL out of N-DETENT, check that the steering wheel is free to move.
4. If the machine does not function as described above, the system requires adjustment. Refer to the windrower technical manual.

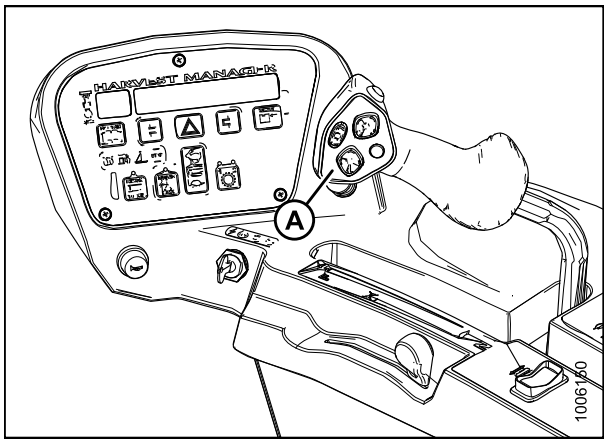


Figure 7.17: Operator Console

7.10.4 Checking Engine Speed

Check engine speed on cab display module (CDM) (A).

Idle rpm	Maximum rpm (No Load)
1100	2270–2330

Figure 7.18: CDM

7.10.5 Checking Cab Display Module (CDM) Display

1. Check CDM display (A) is working by pushing SELECT (B) on CDM, or SELECT button (C) on ground speed lever (GSL).

Figure 7.19: CDM

7.10.6 Checking Electrical System

Push the SELECT button on the ground speed lever (GSL) or the SELECT switch on the cab display module (CDM) to display VOLTS. The display indicates the condition of the battery and alternator. Refer to following table.

Ignition	Engine	Reading	Indicated Condition
ON	Running	13.8–15.0	Normal
		>16.0 (see note)	Regulator out of adjustment
		<12.5 (see note)	Alternator not working OR Regulator out of adjustment
	Shut down	12.0	Battery normal

NOTE: Display flashes voltage reading with single loud tone. Repeats every 30 minutes until condition is fixed.

7.10.7 Checking Operator's Presence System

1. With the windrower engine running, place the ground speed lever (GSL) (A) in NEUTRAL and turn the steering wheel until it locks.

CAUTION

Check to be sure all bystanders have cleared the area.

2. With everyone clear of the machine, engage HEADER DRIVE switch.
3. After header drives are running, stand up out of the seat. In approximately 5 seconds the header should shut off. If not, the Operator Presence System requires adjustment. Refer to the technical manual.

NOTE: To restart the header, move the HEADER DRIVE switch to the OFF position and back to the ON position again.

4. With the windrower moving at **LESS THAN** 5 mph (8 km/h), stand up out of the seat.
   The CDM will flash “NO OPERATOR” on the upper line and “ENGINE SHUTDOWN 5…4…3…2…1…0” on the lower line accompanied by a steady tone. At “0”, the engine shuts down.

   If the engine does not shut down, the Operator Presence System requires adjustment. Refer to the technical manual.
5. With the windrower moving at **MORE THAN** 5 mph (8 km/h), stand up out of the seat. The CDM beeps once and displays “NO OPERATOR” on the lower line. If not, the Operator Presence System requires adjustment. Refer to the technical manual.

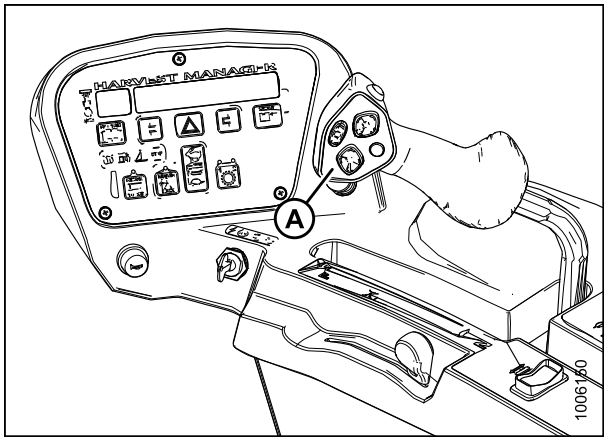


Figure 7.20: Operator Console

7.10.8 Checking Exterior Lights

1. Switch FIELD lights (A) ON and check that all lights shown are functioning as shown at right.

Figure 7.21: Exterior Light Switches

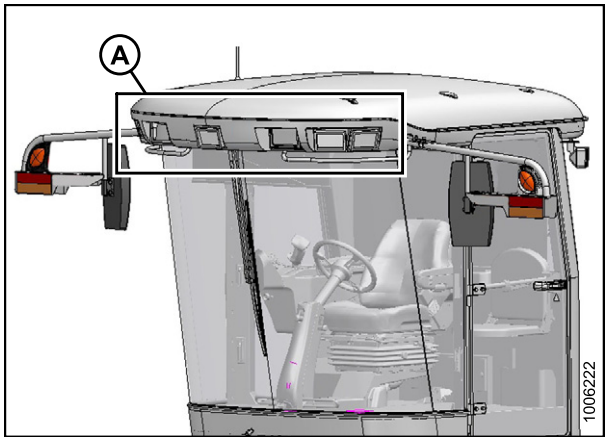


Figure 7.22: Front: Cab-Forward Mode

A - Field Lights

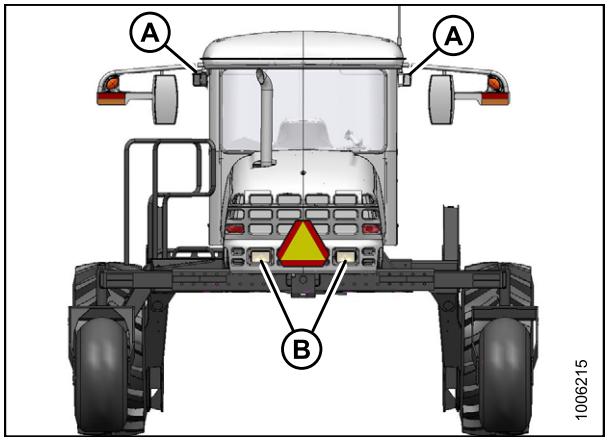


Figure 7.23: Rear: Cab-Forward Mode

A - Field Lights **B - Swath Lights**

2. Activate HIGH/LOW switch (A).
3. Switch ROAD lights (B) ON and check that all lights shown are functioning as shown at right.
4. Activate HIGH/LOW switch (A).
5. Activate turn signals and hazard warning lights with switches on the Cab display module (CDM).

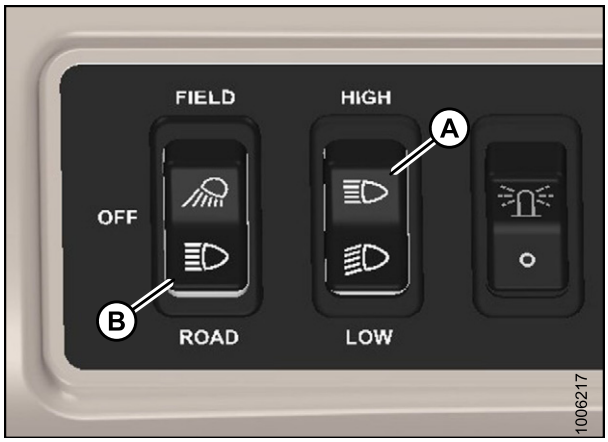


Figure 7.24: Exterior Light Switches

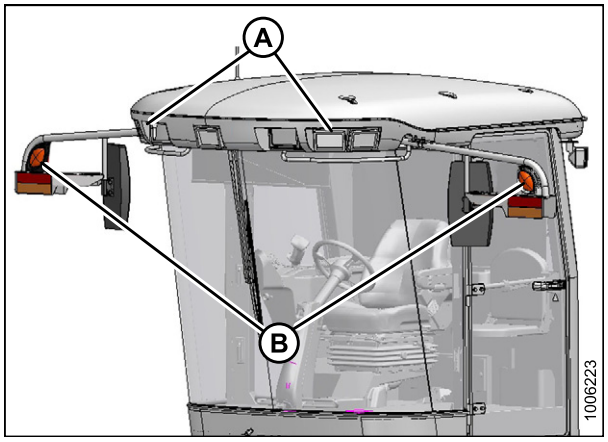


Figure 7.25: Front: Cab-Forward Mode

A - High/Low Lights
B - Turn Signals/Hazard Warning Lights—Amber

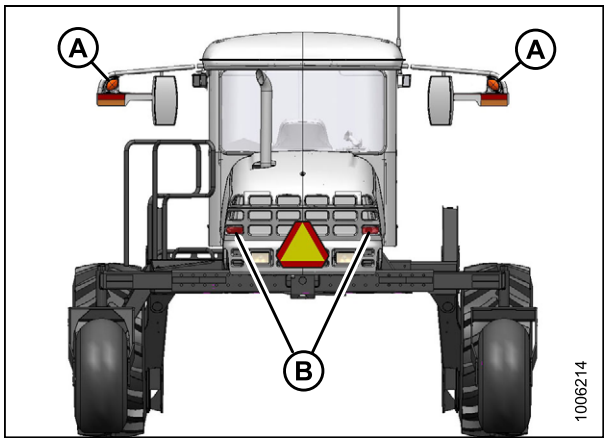


Figure 7.26: Rear: Cab-Forward Mode

A - Turn Signals/Hazard Warning Lights—Amber
B - Tail Lights—Red

6. Switch beacons (A) ON (if installed) and check that they are working properly. The ignition switch must be at RUN, but the engine does NOT need to be running.

Figure 7.27: Exterior Light Switches

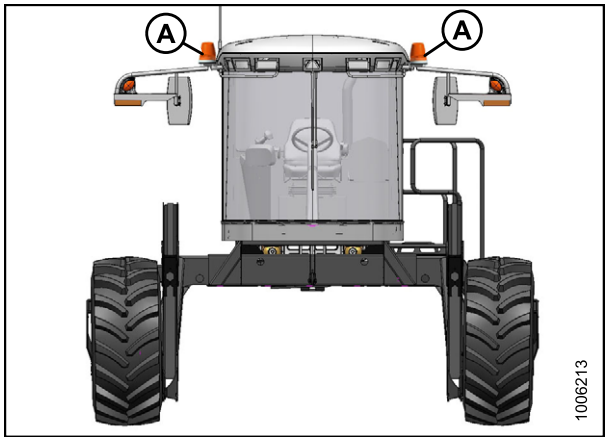


Figure 7.28: Front: Cab-Forward Mode

A - Beacon Lights—Amber

7.10.9 Checking Horn

1. Push HORN button (A) and listen for horn.

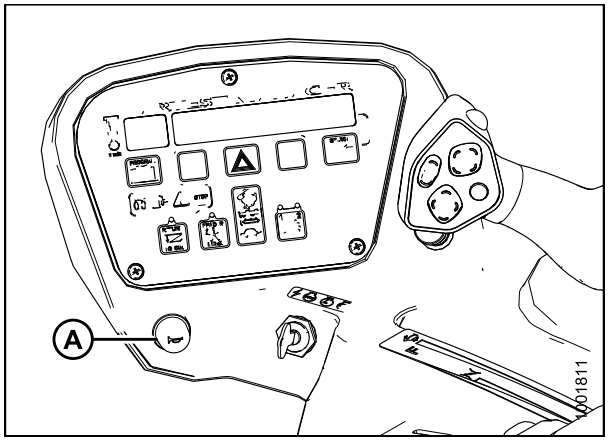


Figure 7.29: Horn Location

7.10.10 Checking Interior Lights

1. Switch lights ON and OFF with switches on each light. Interior lights only work with ROAD or FIELD light switch ON.

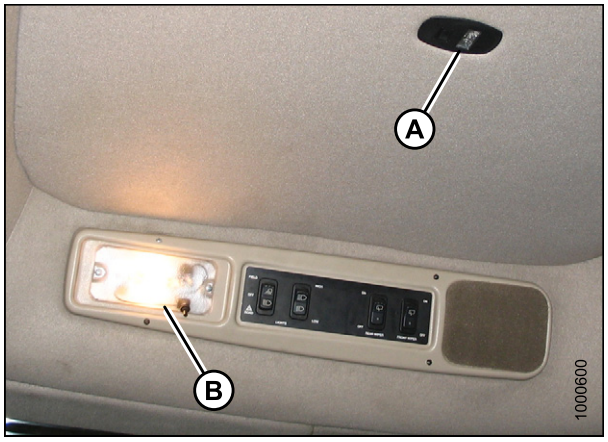


Figure 7.30: Interior Lights and Switches

A - Ambient Light in Roof Liner B - Interior Light

7.10.11 Checking Air Conditioning (A/C) and Heater

Figure 7.31: A/C Controls

A - Temperature Control B - Blower Switch C - Air Conditioning Switch

- **Temperature control** – Controls cab temperature. To increase temperature, turn knob clockwise. To decrease temperature, turn knob counterclockwise.
- **Blower switch** – Controls blower speed. Switch settings are OFF, LO, MEDIUM, and HI.

- **Air conditioning switch** – Controls A/C system. When set to ON, A/C operates with blower switch on. When set to OFF, the A/C system does not operate.

IMPORTANT:

To distribute the oil throughout the A/C system, perform the following steps whenever the machine is first started after storage for more than one week:

1. With the engine running, turn BLOWER switch to the first position, turn TEMPERATURE CONTROL switch to maximum heating and A/C control to OFF.
2. Click A/C switch from the OFF to the ON position for one second, then back to OFF for 5 to 10 seconds. Repeat this step ten times.

7.11 Knife Speed

The knife speed is manually set by making adjustments to the knife drive pump, and has been pre-set at the lowest knife rpm. For optimum performance, adjust the knife speed according to the header being used. Refer to Table *7.3 Knife Speed Setting, page 94*.

NOTE: The knife speed should be set within the range specified for each header.

Table 7.3 Knife Speed Setting

Header Description		Knife Speed			
Type	Size (ft.)	Minimum		Maximum	
		rpm[12]	spm[13]	rpm[12]	spm[13]
Draper DK	15	750	1500	950	1900
	20, 25	700	1400	850	1700
	30	600	1200	700	1600
	35			650	1400
Draper SK	20, 25			750	1500
	30			700	1400
	35	550	1100	650	1300
Grass Seed	All	700	1400	975	1950
Auger A40D					
Auger A30D		775	1550	925	1850
Auger A30S		625	1250	775	1550

7.11.1 Setting Knife Speed

1. Start engine. Refer to *6.8 Starting Engine, page 35*.
2. Move throttle to adjust engine speed to IDLE.
3. Set The Intermediate Speed Control (ISC) to OFF. Refer to *6.13 Cab Display Module (CDM) Programming, page 66*.

12. Speed of knife drive box pulley
13. Strokes per minute of knife (rpm x 2)

4. Push down on the yellow knob (A) and pull up on the black ring at the base of the switch.

NOTE: A slight delay between switch ON and operating speed is normal.

5. Run the engine at maximum rpm.

NOTE: To disengage the header drive, push down on the yellow knob.

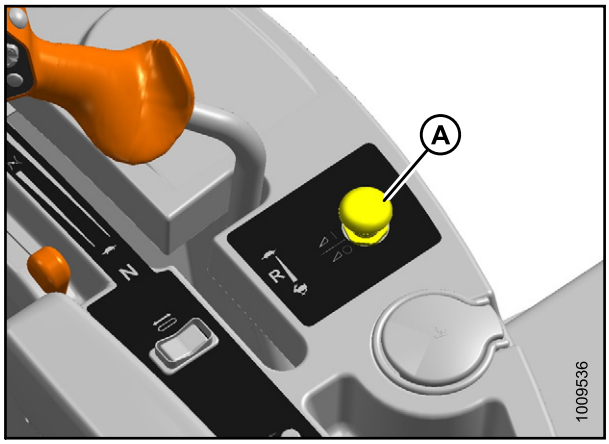


Figure 7.32

6. Press SELECTOR button (A) on the GSL until the CDM (B) displays the knife speed in strokes per minute (spm). This indicates that Optional Sensors Expansion Module (MD #B4666) is installed.

NOTE: If knife speed is not displayed, the module is **NOT** installed. Refer to Step *6., Adjusting Knife Speed, page 96*

7. Compare the reading to the Table *7.3 Knife Speed Setting, page 94*.

8. If required, adjust knife speed. Refer to *7.11.2 Adjusting Knife Speed, page 95*.

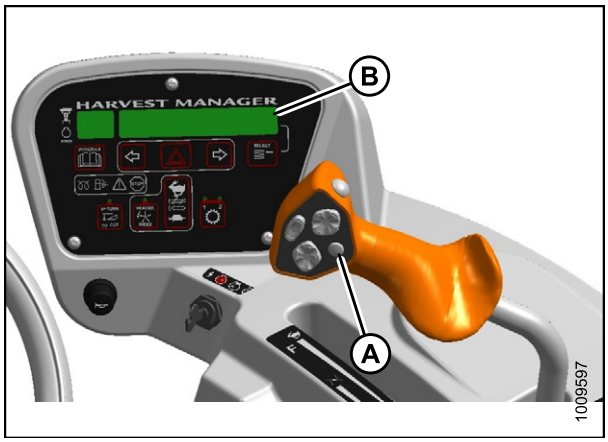


Figure 7.33

A - Display Selector for Upper Line **B - Display**

7.11.2 Adjusting Knife Speed

DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

1. Shut down engine and open engine hood.

2. Loosen jam nut (A).

NOTE: The adjuster screw (B) may have a protective cover. Remove cover.

3. Turn adjuster screw (B) clockwise (screw in) to decrease knife speed, and counterclockwise (screw out) to increase the knife speed.

NOTE: One turn of the adjuster screw (B) will change the knife speed by approximately 116 strokes per minute (spm) or the sickle drive box pulley speed by 58 revolutions per minute (rpm).

4. Once adjustment has been made, tighten jam nut (A).

5. Close hood, start engine, and recheck knife speed.

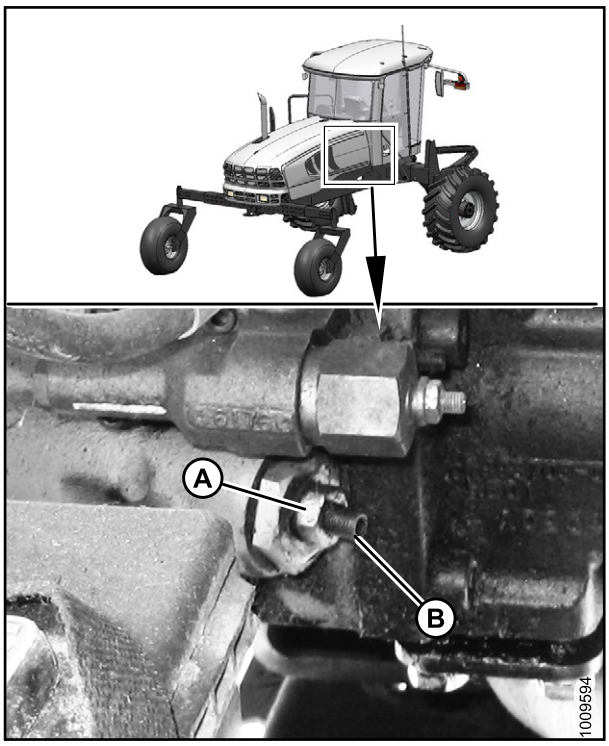


Figure 7.34

6. For windrowers **NOT** equipped with the Optional Sensors Expansion Module (MD #B4666), do the following:

   a. Check sickle drive box pulley (A) speed with a hand-held tachometer.

   b. Multiply the rpm reading by two for the knife speed in strokes per minute.

   c. Compare reading to Table *7.3 Knife Speed Setting, page 94*.

   d. If required, adjust knife speed. Refer to Steps *1., Adjusting Knife Speed, page 95* to *5., Adjusting Knife Speed, page 96*.

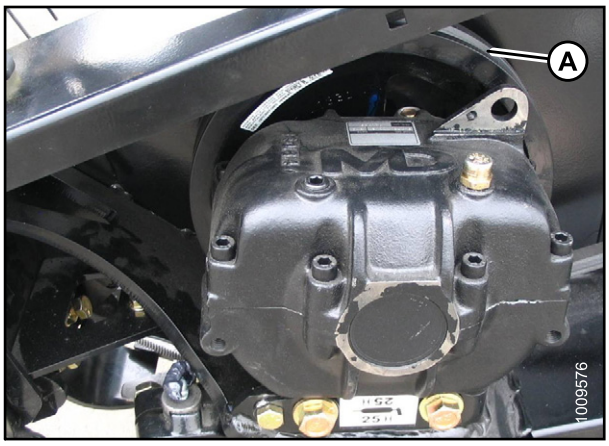


Figure 7.35

7.12 Manuals

The following manuals are stored in the manual storage case behind the operator's seat:

Figure 7.36: Manual Storage Case

Macdon Part Number	
Operator's Manual	169890
Parts Catalog	169891
Quick Card	169892
Engine Manual	166240

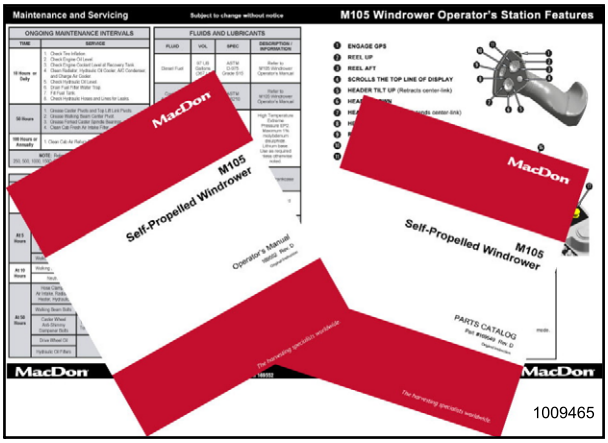


Figure 7.37: Manuals and Quick Card

7.13 Final Steps

1. Once all predelivery checks are complete, remove plastic coverings from cab display module (CDM) and seats.
2. Locate Trimble Display Mount kit and Label (GPS completion kit) that is in a bag in cab. If not yet for installation, place kit in toolbox for safekeeping.
3. AFTER machine is delivered to end user, remove decal (MD #166705) from windshield.

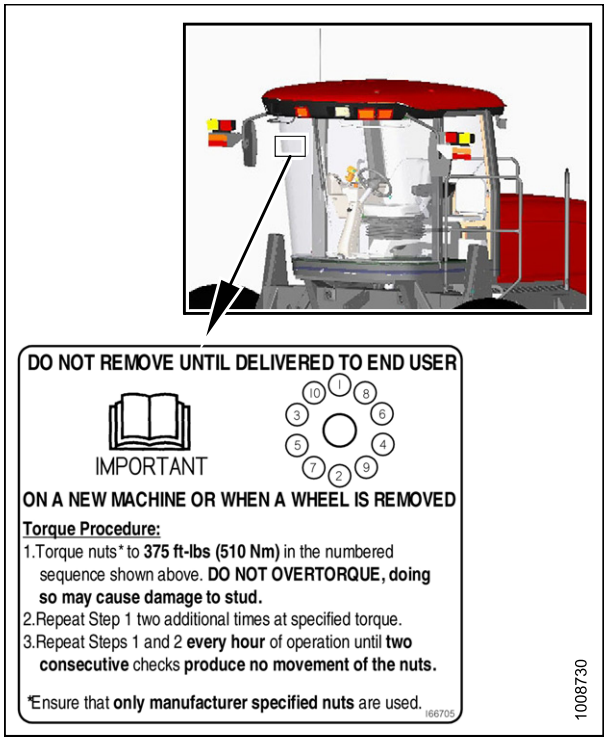


Figure 7.38: Windshield Decal (MD #166705)

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.

Windrower Serial Number: **Engine Serial Number:**

Table 1 M105 Self-Propelled Windrower Predelivery Checklist

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	—
	Check for loose hardware. Tighten to required torque.	*2 Recommended Torques, page 5*
	Check tire air pressures, and adjust as required.	*7.3.1 Checking Tire Pressures, page 75*
	Check final drive hub lubricant level.	*7.2 Checking Wheel Drive Lubricant Level, page 74*
	Check engine coolant level and strength at reserve tank.	*7.7 Checking Engine Coolant, page 81*
	Check air cleaner and clamps.	*7.4 Checking Engine Air Intake, page 77*
	Check hydraulic oil level, and check for leaks along lines.	*7.5 Checking Hydraulic Oil, page 79*
	Check fuel separator for water and foreign material. Drain and clean as necessary. Add fuel.	*7.6 Checking Fuel Separator, page 80*
	Check tension of air conditioning compressor belt.	*7.8 Checking Air Conditioning (A/C) Compressor Belt, page 82*
	Check that machine is completely lubricated.	*6.12 Lubricating the Windrower, page 64*
	Check Neutral interlock system.	*7.9 Checking Safety System, page 83*
	Check engine warning lights at cab display module (CDM).	*7.10.1 Checking Engine Warning Lights, page 85*
START ENGINE AND RUN TO OPERATING TEMPERATURE.		*7.10.3 Checking Engine Startup, page 86*
	Check CDM for operation.	*7.10.5 Checking Cab Display Module (CDM) Display, page 87*
	Check Operator's Presence System.	*7.10.7 Checking Operator's Presence System, page 88*
	Check alternator charge rate at instrument console.	*7.10.6 Checking Electrical System, page 87*
	Check that air conditioning is functioning properly.	*7.10.11 Checking Air Conditioning (A/C) and Heater, page 92*
	Check that heater is functioning properly.	*7.10.11 Checking Air Conditioning (A/C) and Heater, page 92*
	Check that interior lights are functioning properly.	*7.10.10 Checking Interior Lights, page 92*
	Check maximum (no load) engine speed at CDM.	*7.10.4 Checking Engine Speed, page 86*

PREDELIVERY CHECKLIST

✓	Item	Reference
	Check that exterior lights are functioning properly.	*7.10.8 Checking Exterior Lights, page 88*
	Complete the header's Predelivery Checklist (if applicable).	—
	Check that manuals are with the windrower.	*7.12 Manuals, page 97*
	Check that plastic coverings from cab interior have been removed.	*7.13 Final Steps, page 98*

Date Checked: **Checked by:**

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