



A30-S, A30-D & A40-D Auger Self-Propelled Windrower Header Unloading & Assembly Instructions



MACDON A30-S SELF-PROPELLED AUGER HEADER

INTRODUCTION

This instruction describes the unloading, set-up and pre-delivery requirements for the MacDon Model A30-S, A30-D, and A40-D Auger Headers, including a Grass Seed version. Use the table of contents to guide you to specific areas.

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

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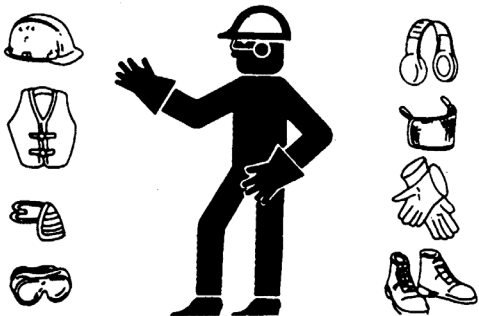
GENERAL SAFETY



CAUTION

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

- Protect yourself.



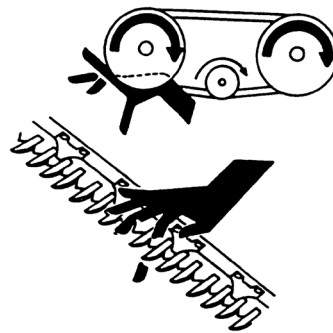
- When assembling, operating and servicing machinery, wear all the protective clothing and personal safety devices that **COULD** be necessary for the job at hand. Don't take chances.
- You may need:
 - a hard hat.
 - protective shoes with slip resistant soles.
 - protective glasses or goggles.
 - heavy gloves.
 - wet weather gear.
 - respirator or filter mask.
 - hearing protection. Be aware that prolonged exposure to loud noise can cause impairment or loss of hearing. Wearing a suitable hearing protective device such as ear muffs (A) or ear plugs (B) protects against objectionable or loud noises.



- Provide a first-aid kit for use in case of emergencies.



- Keep a fire extinguisher on the machine. Be sure the extinguisher is properly maintained and be familiar with its proper use.
- Keep young children away from machinery at all times.
- Be aware that accidents often happen when the operator is tired or in a hurry to get finished. Take the time to consider the safest way. Never ignore warning signs of fatigue.
- Wear close-fitting clothing and cover long hair. Never wear dangling items such as scarves or bracelets.
- 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.



- 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.
- Do not modify the machine. Unauthorized modifications may impair the function and/or safety and affect machine life.

(continued next page)

- 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.
- 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.
- Use adequate light for the job at hand.
- Keep machinery clean. 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.



RECOMMENDED TORQUES

A. GENERAL

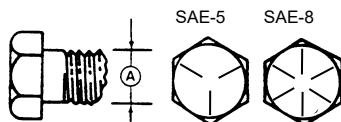
The tables shown below give correct torque values for various bolts and capscrews.

- Tighten all bolts to the torques specified in chart unless otherwise noted throughout this manual.
- Check tightness of bolts periodically, using bolt torque chart as a guide.
- Replace hardware with the same strength bolt.
- Torque figures are valid for non-greased or non-oiled threads and heads unless otherwise specified. Do not grease or oil bolts or capscrews unless specified in this manual. When using locking elements, increase torque values by 5%.

B. SAE BOLTS

BOLT DIA. "A" in.	NC BOLT TORQUE*			
	SAE 5		SAE 8	
	lbf-ft	N·m	lbf-ft	N·m
1/4	9	12	11	15
5/16	18	24	25	34
3/8	32	43	41	56
7/16	50	68	70	95
1/2	75	102	105	142
9/16	110	149	149	202
5/8	150	203	200	271
3/4	265	359	365	495
7/8	420	569	600	813
1	640	867	890	1205

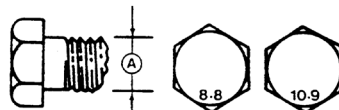
* Torque categories for bolts and capscrews are identified by their head markings.



C. METRIC BOLTS

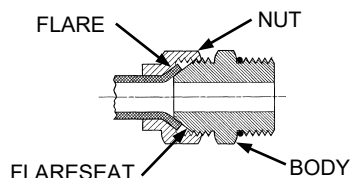
BOLT DIA. "A"	NC BOLT TORQUE*			
	8.8		10.9	
	lbf-ft	N·m	lbf-ft	N·m
M3	0.4	0.5	1.3	1.8
M4	2.2	3	3.3	4.5
M5	4	6	7	9
M6	7	10	11	15
M8	18	25	26	35
M10	37	50	52	70
M12	66	90	92	125
M14	103	140	148	200
M16	166	225	229	310
M20	321	435	450	610
M24	553	750	774	1050
M30	1103	1495	1550	2100
M36	1917	2600	2710	3675

* Torque categories for bolts and capscrews are identified by their head markings.



D. HYDRAULIC FITTINGS

FLARE TYPE

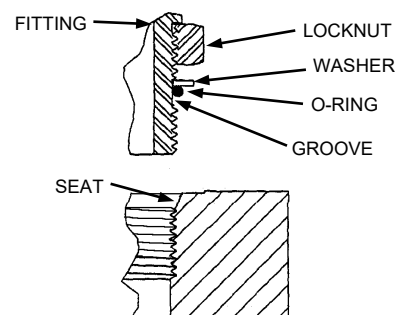


- Check flare and flare seat for defects that might cause leakage.
- Align tube with fitting before tightening.
- Lubricate connection and hand tighten swivel nut until snug.
- To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

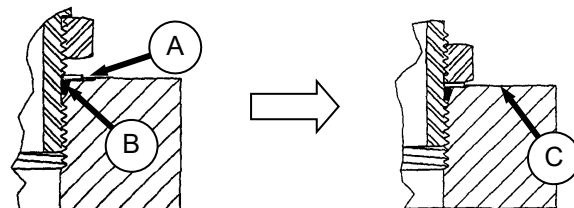
TUBE SIZE O.D. (in.)	NUT SIZE ACROSS FLATS (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)	
		lbf-ft	N·m	Flats	Turns
3/16	7/16	6	8	1	1/6
1/4	9/16	9	12	1	1/6
5/16	5/8	12	16	1	1/6
3/8	11/16	18	24	1	1/6
1/2	7/8	34	46	1	1/6
5/8	1	46	62	1	1/6
3/4	1-1/4	75	102	3/4	1/8
7/8	1-3/8	90	122	3/4	1/8

* The torque values shown are based on lubricated connections as in reassembly.

O-RING TYPE



- Inspect O-ring and seat for dirt or obvious defects.



- On angle fittings, back off the lock nut until washer (A) bottoms out at top of groove (B) in fitting.
- Hand tighten fitting until back up washer (A) or washer face (if straight fitting) bottoms on part face (C) and O-ring is seated.
- Position angle fittings by unscrewing no more than one turn.
- Tighten straight fittings to torque shown.
- Tighten angle fittings to torque shown in the following table while holding body of fitting with a wrench.

THD SIZE (in.)	NUT SIZE ACROSS FLATS (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)	
		lbf-ft	N·m	Flats	Turns
3/8	1/2	6	8	2	1/3
7/16	9/16	9	12	2	1/3
1/2	5/8	12	16	2	1/3
9/16	11/16	18	24	2	1/3
3/4	7/8	34	46	2	1/3
7/8	1	46	62	1-1/2	1/4
1-1/16	1-1/4	75	102	1	1/6
1-3/16	1-3/8	90	122	1	1/6
1-5/16	1-1/2	105	142	3/4	1/8
1-5/8	1-7/8	140	190	3/4	1/8
1-7/8	2-1/8	160	217	1/2	1/12

* The torque values shown are based on lubricated connections as in reassembly.

CONVERSION CHART

QUANTITY	INCH-POUND UNITS		FACTOR	SI UNITS (METRIC)	
	UNIT NAME	ABBR.		UNIT NAME	ABBR.
Area	acres	acres	x 0.4047 =	hectares	ha
Flow	US gallons per minute	(gpm)	x 3.7854 =	liters per min	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
Torque	pound feet or foot pounds	lbf·ft or ft·lbf	x 1.3558 =	newton meters	N·m
	pound inches or inch pounds	lbf·in. or 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 min	m/min
	feet per second	ft/s	x 0.3048 =	meters per sec	m/s
	miles per hour	mph	x 1.6063 =	kilometers 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 centimeters	cm ³ or cc
Weight	pounds	lb	x 0.4536 =	kilograms	kg

ACCRONYMS AND ABBREVIATIONS

TERM	DEFINITION
API	American Petroleum Institute
ASTM	American Society Of Testing And Materials
cc	cubic centimeters
C	Celsius
F	Fahrenheit
ft/min	feet per minute
ft/s	feet per second
gpm	U.S. gallons per minute
hp	horsepower
in.	inches
in ³	cubic inches
kg	kilograms
kPa	kilopascals
lbf.	pounds force
lbf.ft or ft·lbf	pound feet or foot pounds
lbf.in or in·lbf	pound inches or inch pounds
L/min	liters per minute

mm	millimeters
mph	miles per hour
N	Newtons
N·m	newton meters
oz.	ounces
psi	pounds per square inch
rpm	Revolutions Per Minute
SAE	Society Of Automotive Engineers

UNLOADING AND ASSEMBLY

STEP 1. UNLOAD HEADER



CAUTION

To avoid injury to bystanders from being struck by machinery, do not allow persons 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.

LIFTING VEHICLE	
Min. Lifting Capacity *	8000 lb (3630 kg)
Min. Fork Length	78 inches (1981 mm)

* At 48 inches (1220 mm) from back end of forks.

IMPORTANT

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



WARNING

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

IMPORTANT

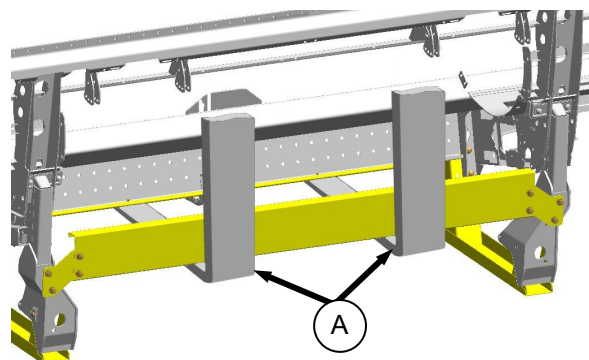
Do not unload using lean bar for lifting. Chain hook slots in lean bar are only for laying the machine over into working position after it is on the ground.

NOTE

Take care not to bend parts on back tube.



- Approach windrower from either its "topside" or "underside" and slide forks (A) in underneath lifting framework as far as possible.



NOTE

When possible, approach from the underside to minimize potential for scratching the unit.

- Remove hauler's tie down straps and chains.
- Raise windrower off deck.

IMPORTANT

Take care not to contact the other machine if load is two-wide.

- Back up until unit clears trailer and slowly lower to 6 inches (150 mm) from ground.
- Take to storage or set-up area.
- Set machine down securely on level ground. Check for shipping damage and missing parts.

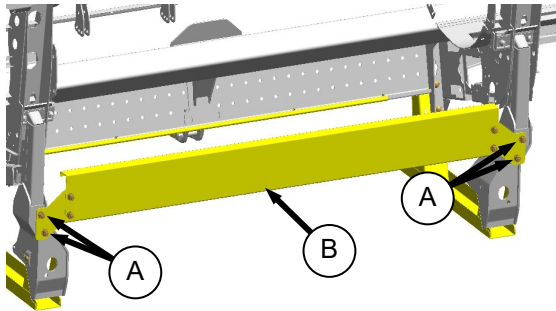
UNLOADING AND ASSEMBLY

STEP 2. REMOVE UNDERSIDE SHIPPING STAND



CAUTION

Keep feet clear when removing final bolts.



- a. Remove four bolts (A) and remove shipping stand (B). Discard stand and hardware.

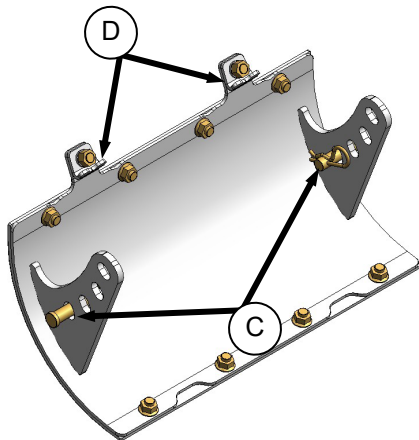
STEP 3. INSTALL ADDITIONAL SKID SHOES

If kit not supplied, proceed to STEP 4. INSTALL GAUGE ROLLERS, otherwise proceed as follows:

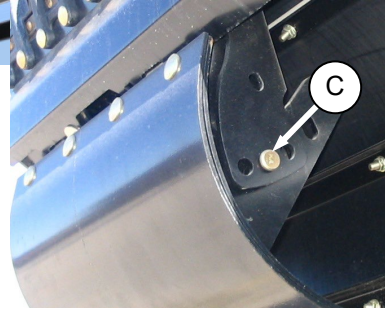
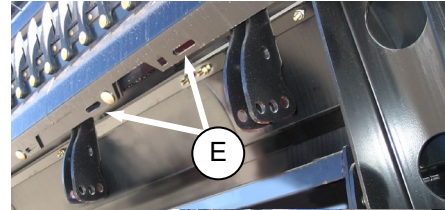
NOTE

This kit may be installed later in the header assembly sequence but it may be easier prior to laying the header down.

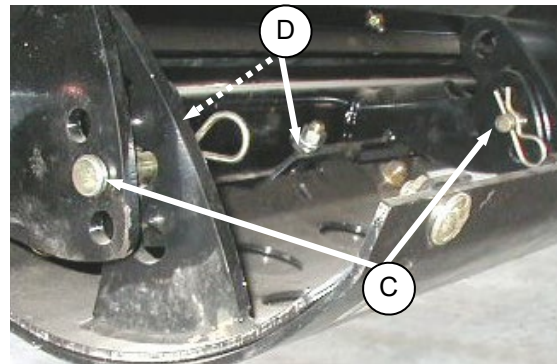
- a. Unpack skid shoe bundle.



- b. Remove two clevis pins (C) from each skid shoe.
- c. Remove nuts, bolts, and clips (D) from skid shoe.



- d. Insert tabs on skid shoe into slots (E) on cutterbar at inboard mounting locations on frame and secure with clevis pin (C).



- e. Attach clips (D) with bolts and nuts removed at step c. to secure skid shoe to cutterbar.

NOTE

Use a socket and ratchet wrench to access the nuts.

- f. Remove clevis pin (C) and adjust skid shoe to desired height. Re-install two clevis pins (C) and secure with lynch pins.
- g. Repeat above steps for opposite side. Set both skid shoes to same position.

UNLOADING AND ASSEMBLY

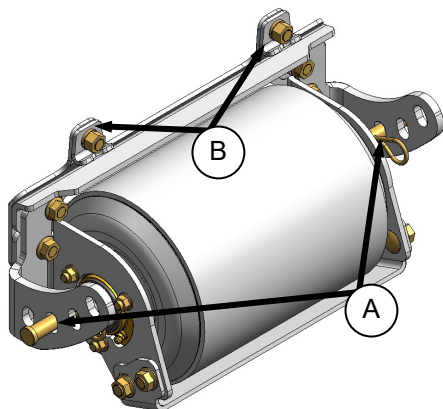
STEP 4. INSTALL GAUGE ROLLERS

If kit not supplied proceed to STEP 5. LOWER HEADER, otherwise install kit as follows:

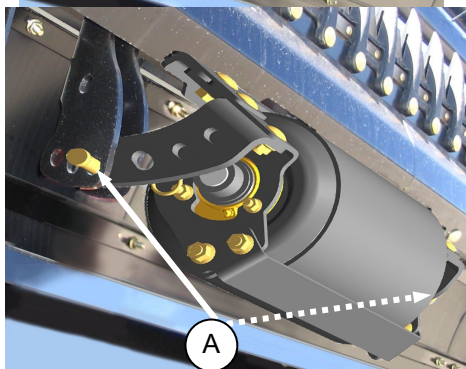
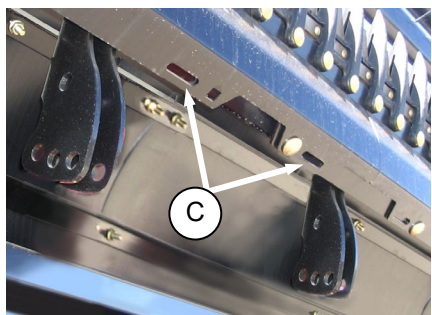
NOTE

This kit may be installed later in the header assembly sequence but it may be easier prior to laying the header down.

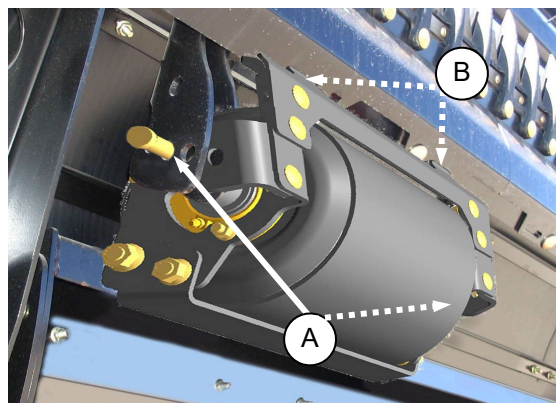
- a. Unpack gauge roller bundle.



- b. Remove two clevis pins (A) from each assembly.
- c. Remove nuts, bolts, and clips (B) from assembly.



- d. Insert tabs on roller assembly into slots (C) on cutterbar at outboard mounting locations on frame and secure with two clevis pins (A) at lowest position.



- e. Attach clips (B) with bolts and nuts removed at step c. to secure roller assembly to cutterbar.

NOTE

Use a socket and ratchet wrench to access the nuts.

- f. Remove clevis pins (A) and adjust rollers to desired height. Re-install two clevis pins (A) and secure with lynch pins.
- g. Repeat above steps for opposite side. Set both gauge rollers to same position.

UNLOADING AND ASSEMBLY

STEP 5. LOWER HEADER

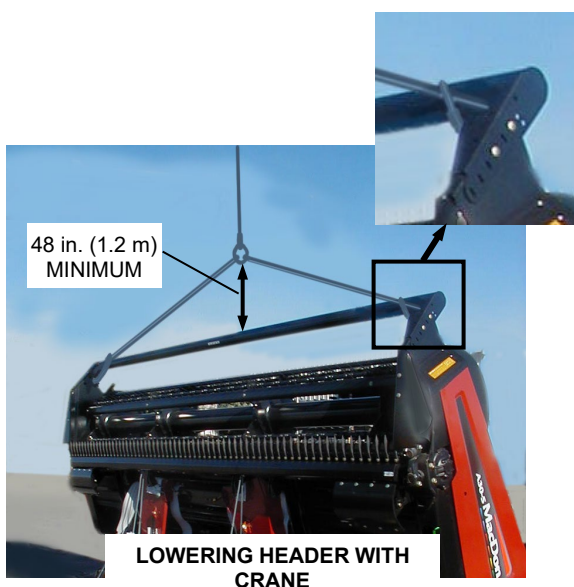
- a. Attach either a spreader bar or chain to forks.



CAUTION

Ensure spreader bar or chain is secured to the forks so that it cannot slide off the forks or towards the mast as the header is lowered to the ground.

- b. Drive lifting vehicle to approach windrower from its "underside".



- c. Attach chain hooks to lean bar at slots as shown.

IMPORTANT

See "Chain Requirements" in this section for minimum chain specifications. Also, chain length must be sufficient to provide a minimum 4 feet (1.2 m) vertical chain height.

Chain Type	Overhead Lifting Quality (1/2 Inch)
Min. Working Load	5000 lb (2270 kg)



CAUTION

Stand clear when lowering, as machine may swing.

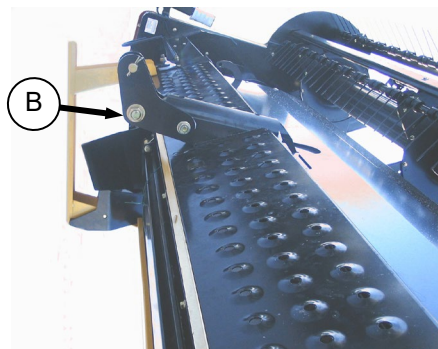
NOTE

Do not lift at lean bar when unloading from trailer. This procedure is only for laying the machine over into working position.

- d. Raise forks until lift chains are fully tensioned.



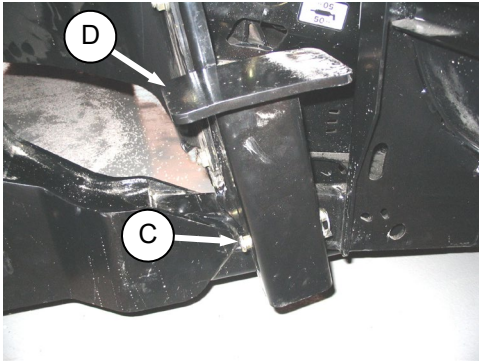
- e. Back up SLOWLY while simultaneously lowering machine so that cutterbar skid shoes rest on blocks (A).
- f. Remove chain hooks from lean bar.



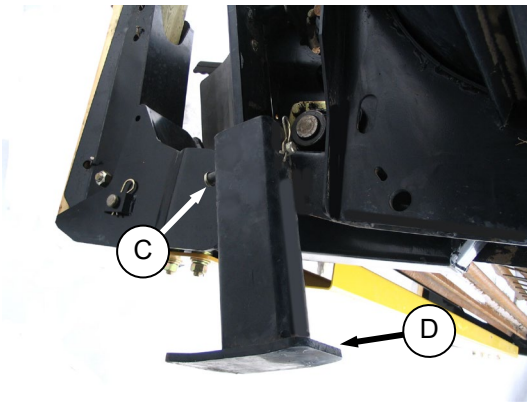
- g. Attach chain to center link anchor (B) on frame tube and raise rear of header approximately 12 inches (305 mm) off ground.

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UNLOADING AND ASSEMBLY



- h. Remove lynch pin from pin (C).
- i. Hold stand (D) and remove pin (C).



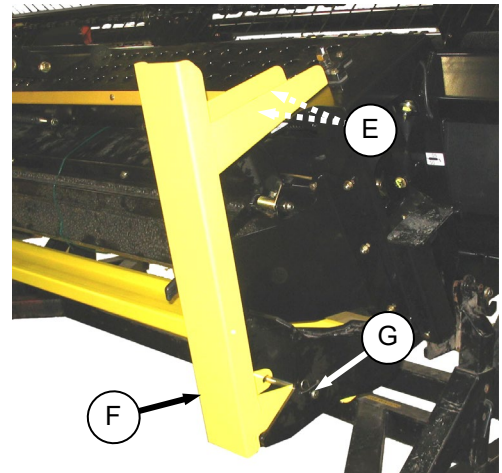
- j. Invert stand (D) and reinstall on header leg in upper hole location with pin (C). Secure pin with lynch pin.

NOTE

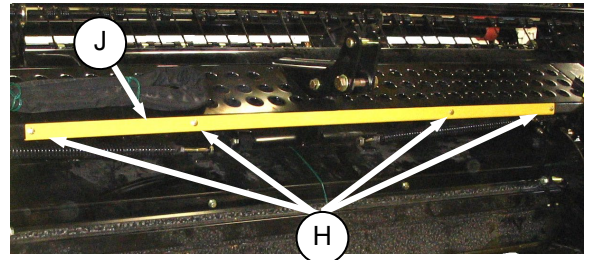
In soft conditions use a 2x4 block under stand.

- k. Lower header onto stand (D).

STEP 6. REMOVE SHIPPING STANDS



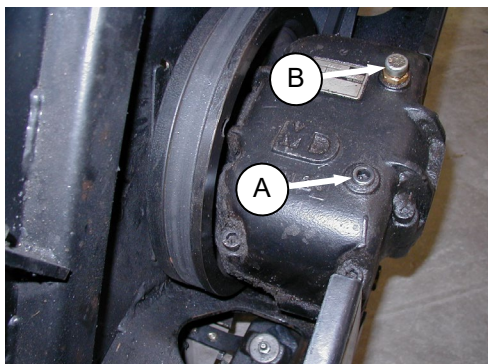
- a. Remove two bolts (E) from shipping stand (F).
- b. Remove hairpin from pin (G).
- c. Hold shipping stand (F), remove pin (G), and remove stand. Discard stand and hardware.
- d. Repeat above steps for opposite shipping stand.



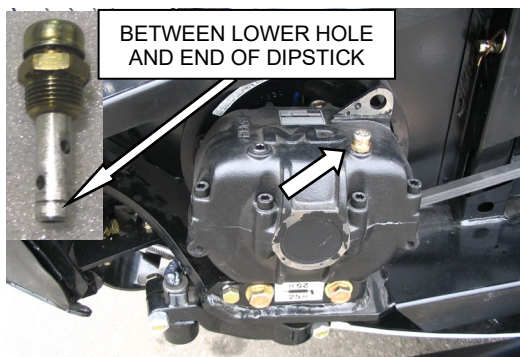
- e. Remove four bolts (H) and remove angle (J). Discard angle and hardware.

UNLOADING AND ASSEMBLY

STEP 7. REPOSITION WOBBLE BOX BREATHER



- a. Move breather (B) to back port and install plug (A) in forward port at wobble box(es).

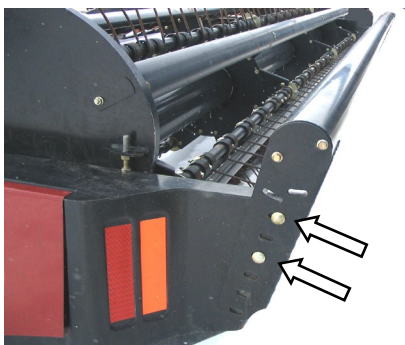


CHECK OIL LEVEL WITH TOP OF WOBBLE BOX HORIZONTAL

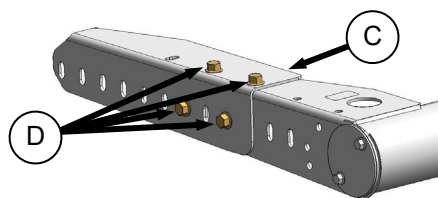
- b. Check oil level.

STEP 8. INSTALL TALL CROP DIVIDER

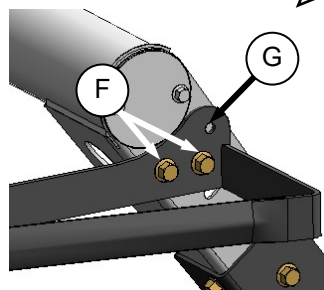
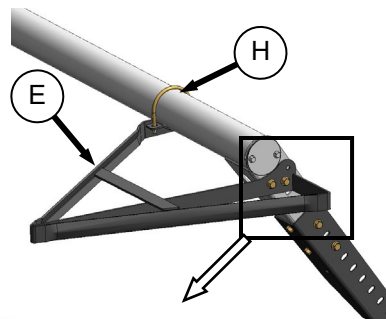
If kit not supplied, proceed to STEP 9. ADJUST LEAN BAR, otherwise proceed as follows:



- a. Remove hardware on both sides of lean bar and remove lean bar.



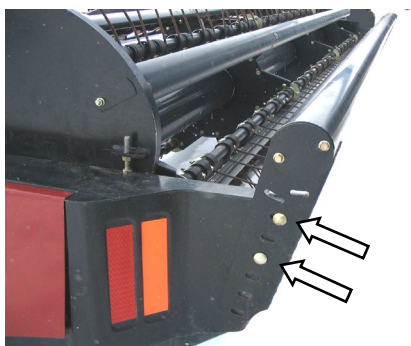
- b. Attach extensions (C) to lean bar with four bolts (D) and nuts provided.
c. Re-attach lean bar to header with existing hardware at desired location. Tighten bolts.



- d. Attach LH divider assembly (E) to LH end of lean bar with two bolts (F) and nuts provided. The divider may be positioned as shown or using the optional mounting hole (G).
e. Install U-bolt (H) and tighten all bolts.
f. Repeat for RH divider.

UNLOADING AND ASSEMBLY

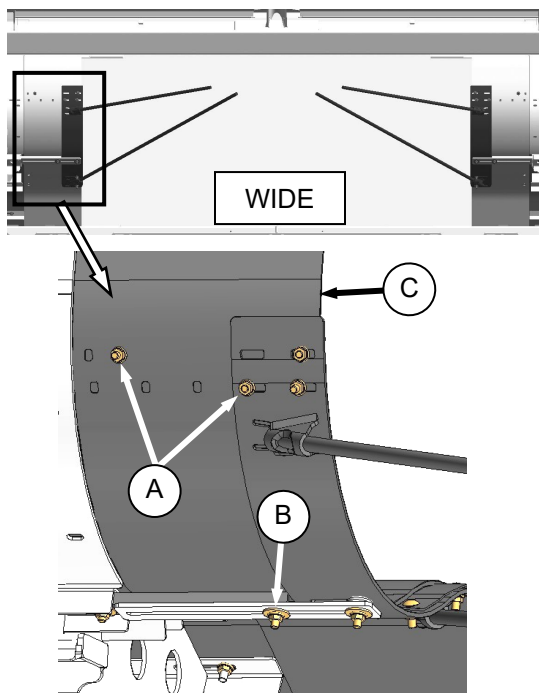
STEP 9. ADJUST LEAN BAR



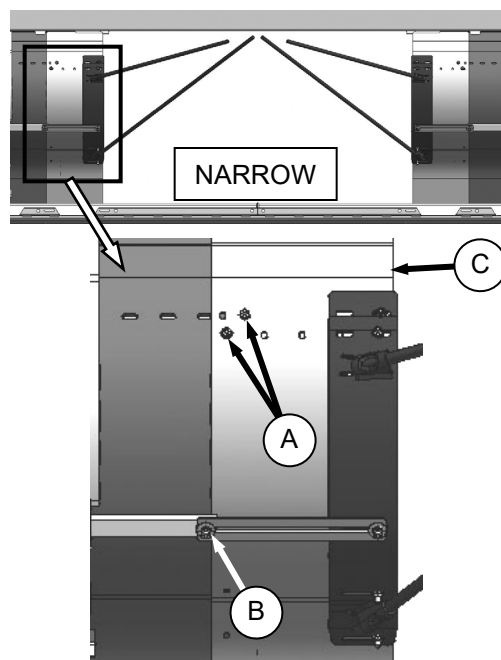
- Lean bar is fully retracted for shipping. Remove hardware on both sides and install lean bar in field position at position suitable for crop.
- Proceed to STEP 11. ADJUST TRANSPORT LIGHTS. If Grass Seed Header, proceed as follows:

STEP 10. ADJUST PAN EXTENSIONS – GRASS SEED SPECIAL

The grass seed header auger pan extensions are factory installed for the widest delivery opening. Adjust as follows:



- Remove two bolts (A), and loosen bolt (B).
- Slide pan extensions (C) and swath forming rods inboard to desired position and align holes.



- Re-install two bolts (A) and tighten bolts (A) and (B).
- Repeat for opposite pan extension.

STEP 11. ADJUST TRANSPORT LIGHTS



- Position amber light supports perpendicular to header.
- Check that pivot bolt is tight enough to hold light support in upright position yet allow light to pivot out of the way of obstructions.

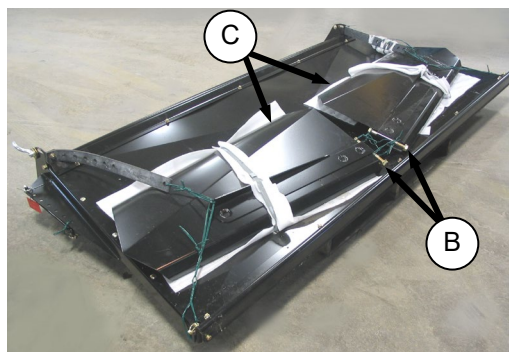
NOTE

Do not over tighten mounting hardware.

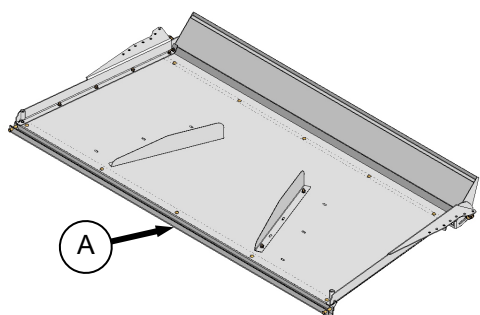
- Ensure base of light housings and bolted connections on light supports provides proper electrical grounding.

UNLOADING AND ASSEMBLY

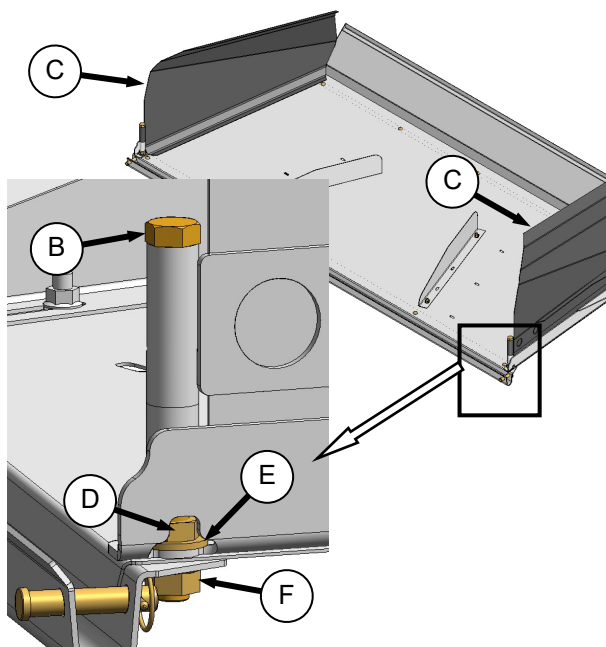
STEP 12. ASSEMBLE FORMING SHIELD



- a. Unpack and remove shipping material.

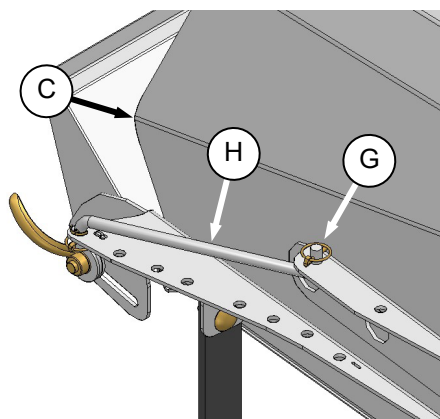


- b. Lay cover (A) upside down on a flat surface.
c. Remove bolts (B) from side deflectors (C).

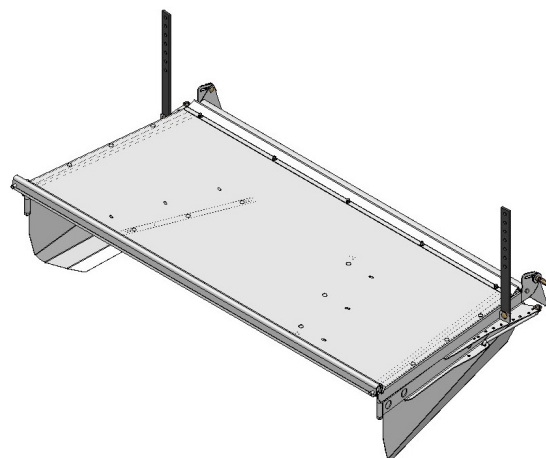


- d. Assemble side deflectors (C) to cover (A) with bolts (B), jam-nut (D), washer (E), and nut (F) from previous step.
e. Tighten flange nut (F) enough to hold deflectors (C) in position, but still allow deflectors to move.

- f. Tighten jam nut (D) against cover while holding bolt (B).



- g. Remove lynch pin (G) from adjuster rod (H) and locate rod in hole in side deflector (C). Secure with lynch pin (G).
h. Repeat for other deflector.

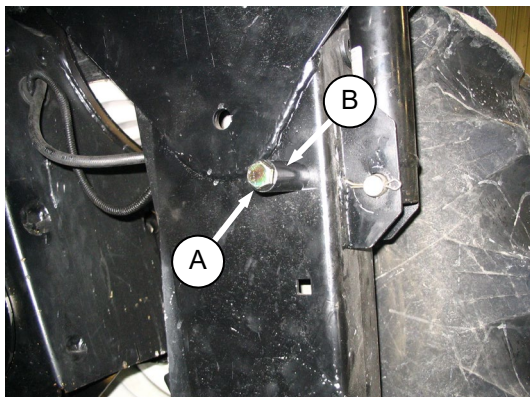


- i. Invert forming shield to installation position as shown.

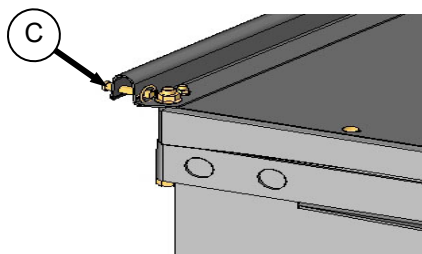
UNLOADING AND ASSEMBLY

STEP 13 INSTALL FORMING SHIELD

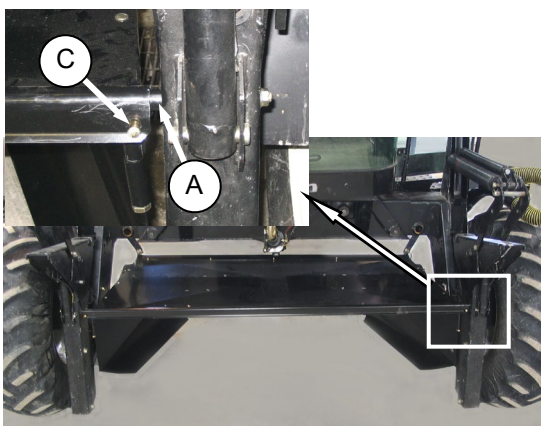
- a. Remove the header from the tractor if attached for ease of installation of the forming shield.



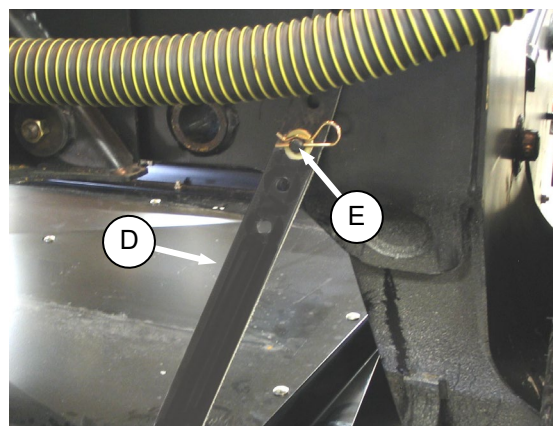
- b. Install bolt (A) with spacer (B), and nut on each leg in the upper hole. Hardware is supplied with forming shield kit.



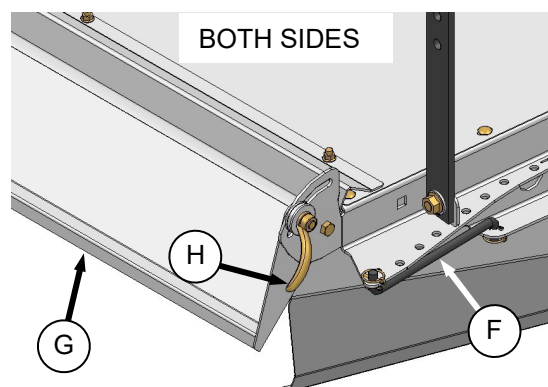
- c. Remove the two clevis pins (C) from forming shield forward end.



- d. Position forming shield under the tractor frame.
e. Locate forming shield onto bolts (A) in tractor leg and secure with clevis pins (C) and hairpin.



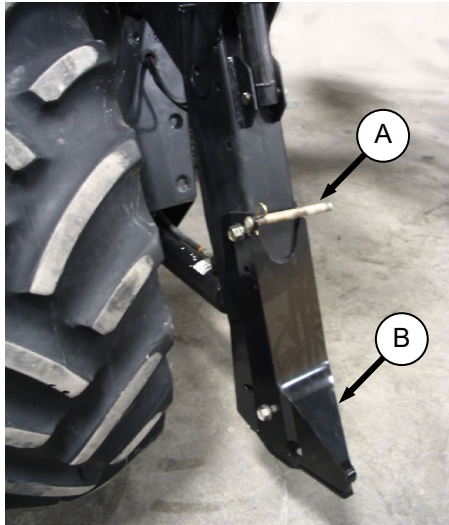
- f. Lift the aft end of the forming shield and attach straps (D) to pins (E) on tractor frame. Install washer and hairpin to secure strap. Use the middle hole and adjust height to suit the crop.



- g. Set forming shield side deflectors to desired width by repositioning adjuster bars (F). Use same hole location on both sides.
h. Adjust fluffer shield (G) to middle position. Loosen handles (H) if required.

UNLOADING AND ASSEMBLY

STEP 14. ATTACH HEADER TO TRACTOR



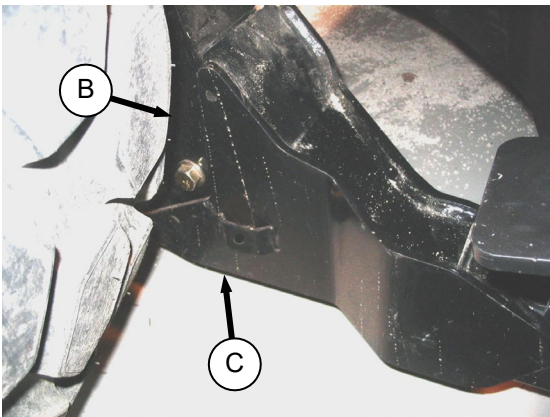
- a. Remove pin (A) from storage position on left and right tractor legs.



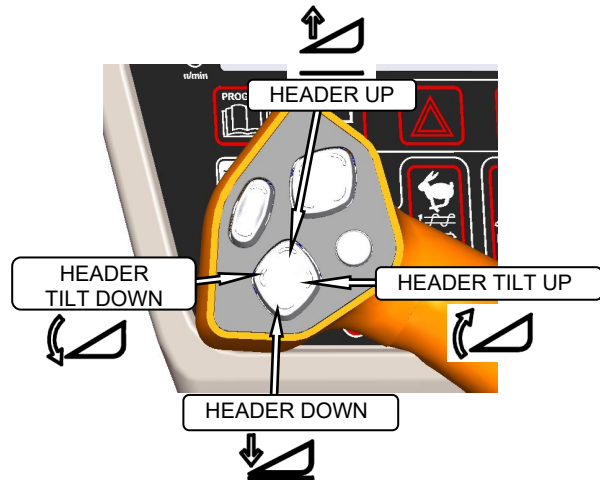
CAUTION

Check to be sure all bystanders have cleared the area.

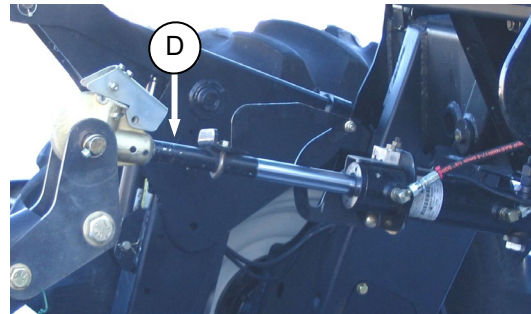
- b. Start the engine and fully retract header lift cylinders.



- c. Slowly drive tractor forward so that feet (B) enter boots (C) on the header. Continue to drive slowly forward until feet engage the boots, and header nudges forward.



- d. Activate header tilt cylinder switches on ground speed control in tractor to position center link cylinder (D) so that it can connect to header.



- e. Push down on rod end of link cylinder until hook engages pin on header and is locked.

NOTE

If optional auto-connect system is installed, activate link lift cylinder from in the cab to lower center link onto header.

- f. Raise the header fully with the header up switch on the ground speed control lever. Stop engine and remove key.



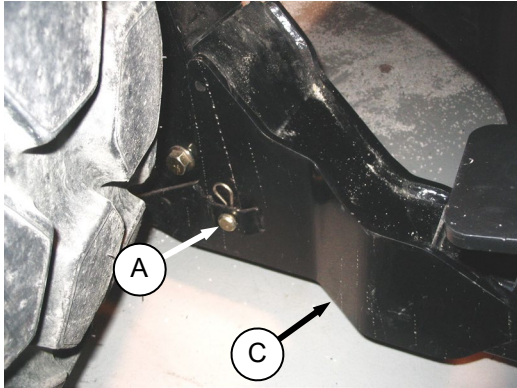
DANGER

To avoid bodily injury from fall of raised header, always engage header lift cylinder stops when working on or around raised header.

- g. Engage lift cylinder stops on both lift cylinders.

(continued next page)

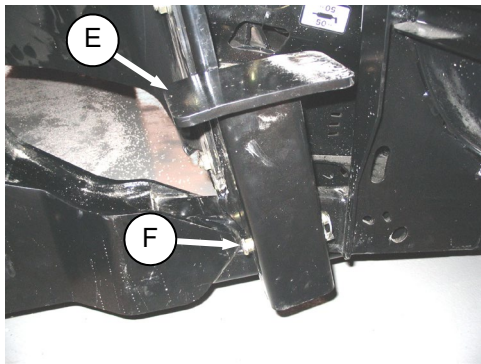
UNLOADING AND ASSEMBLY



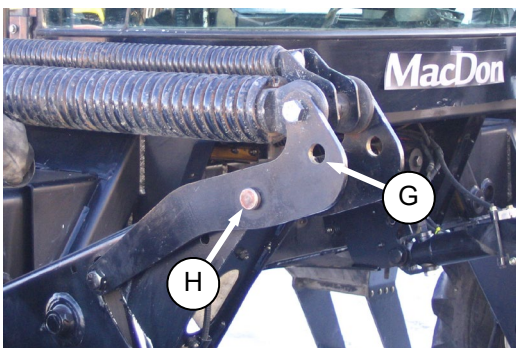
- h. Install pin (A) through boot (C) and foot on both sides and secure with hairpin.

IMPORTANT

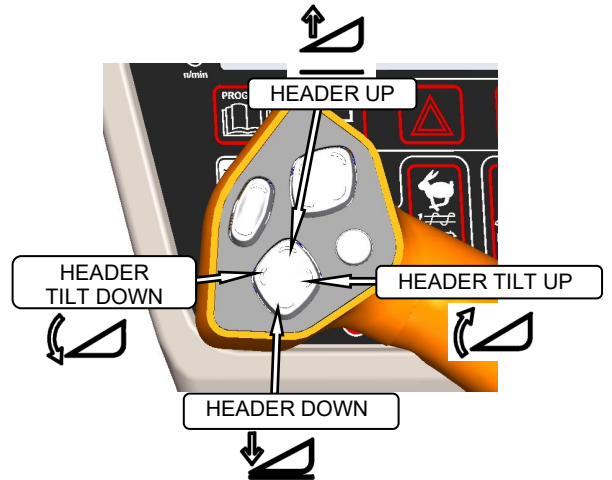
Ensure pin (A) is fully inserted and hairpin is installed behind bracket.



- i. Reposition stand (E) to storage position by pulling pin (F), inverting stand and locating on bracket. Reinsert pin (E) and secure with hairpin.



- j. Remove pin from storage position (G) in linkage and insert in hole (H) to engage float springs. Secure with hairpin.
k. Disengage lift cylinder stops.



- l. Start engine and lower header fully.
m. Activate header tilt cylinder switches on ground speed control in tractor to position header angle at the middle of adjustment range.
n. Stop engine and remove key.

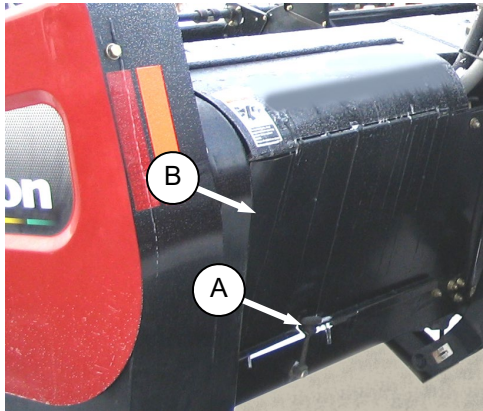
UNLOADING AND ASSEMBLY

STEP 15. ATTACH HYDRAULICS

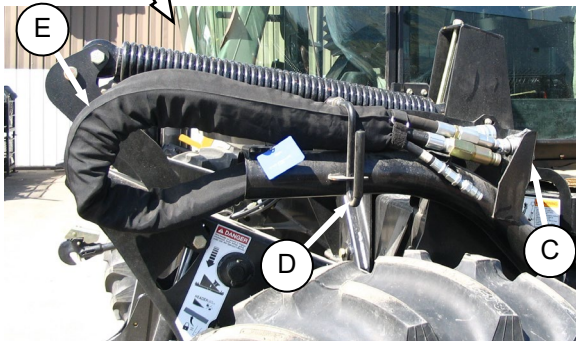


DANGER

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.



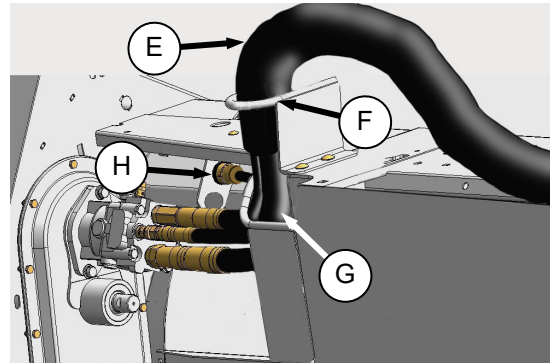
- a. Disengage rubber latch (A) and open driveline shield (B).



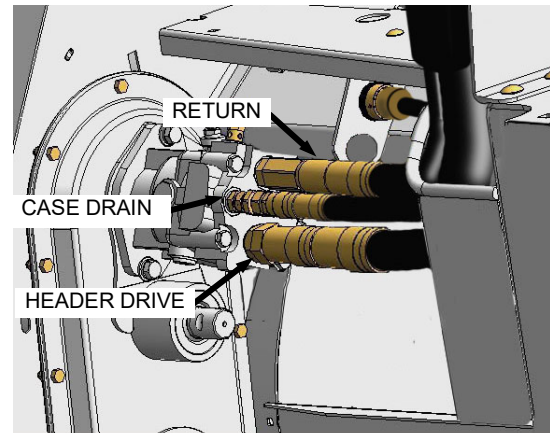
- b. Remove the cap (C) from electrical connector, and remove connector from support bracket.
- c. Disengage and rotate lever (D) counter-clockwise to fully up position to release the hose bundle (E).
- d. Move hose bundle (E) to header.
- e. Rotate lever (D) clockwise and engage in bracket to store.
- f. Refer to section A. or B. for hose attachment details on your specific header model.

A. A30-S AND A30-D HEADERS

The connections are the same for all M Series tractors.



- a. Route hoses (E) from tractor through support (F) and access hole (G) in header frame.
- b. Remove cover on header electrical receptacle (H).
- c. Push connector onto receptacle and turn collar on connector to lock it in place.
- d. Attach cover to mating cover on tractor wiring harness.
- e. Remove caps from hydraulic couplers and clean if necessary.

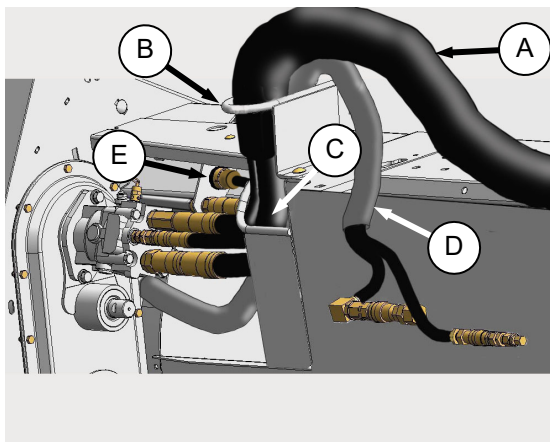


- f. Push hose connectors onto mating receptacles as shown until collars on receptacles snap into lock position.
- g. Close driveline shield before engaging header.
- h. Proceed to STEP 16. LUBRICATE THE HEADER.

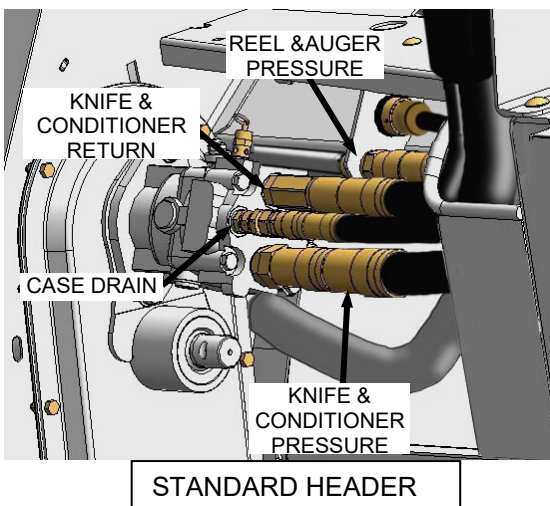
UNLOADING AND ASSEMBLY

B. A40-D HEADER

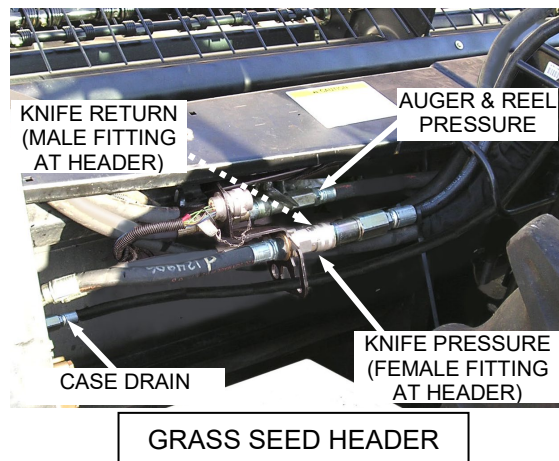
The header drive connection only powers the knife and hay conditioner on the A40-D header (knife only on grass seed header). Separate connections are required for the auger and reel as follows:



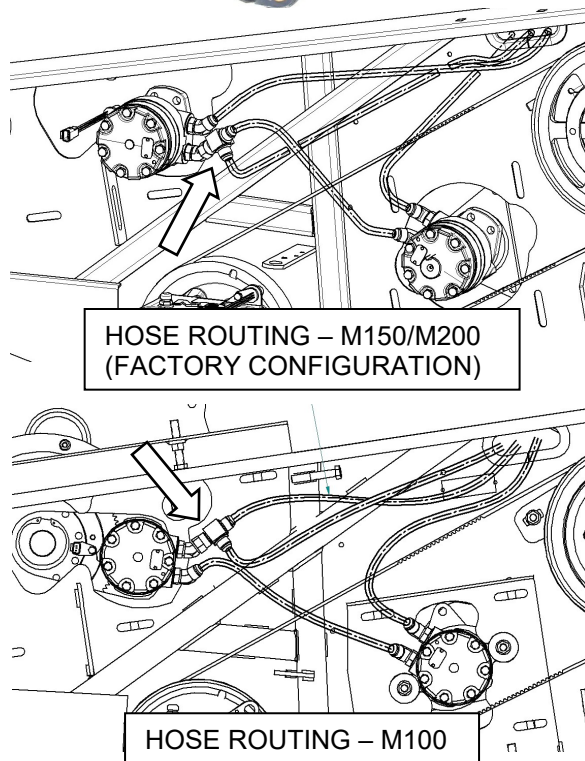
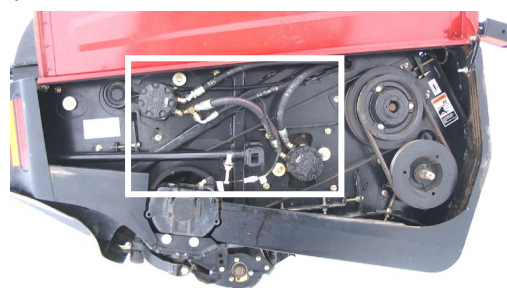
- Route hoses (A) from tractor through support (B) and access hole (C) in header frame alongside existing hose bundle (D).
- Remove cover on header electrical receptacle (E).
- Push connector onto receptacle and turn collar on connector to lock it in place.
- Attach cover to mating cover on tractor wiring harness.
- Remove caps from hydraulic couplers and clean if necessary.



- Push hose connectors onto mating receptacles as shown until collars on receptacles snap into lock position.



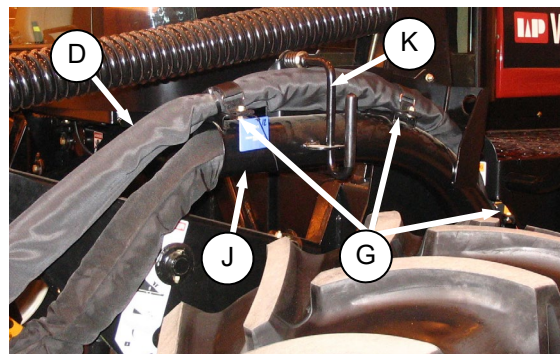
- Open header L H drive shield.



- Check hose routing at the reel motor and ensure it is as shown, depending on which tractor the header is being attached to. Change hoses as shown if header is being mounted on a M100 tractor.

(continued next page)

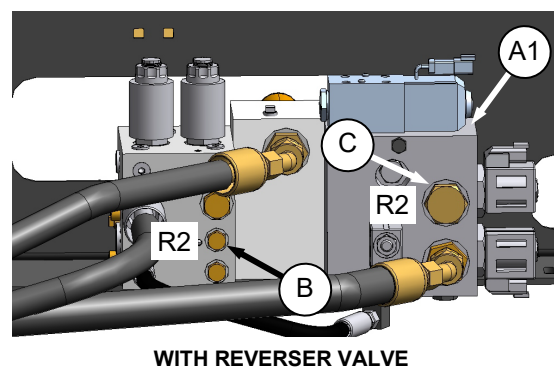
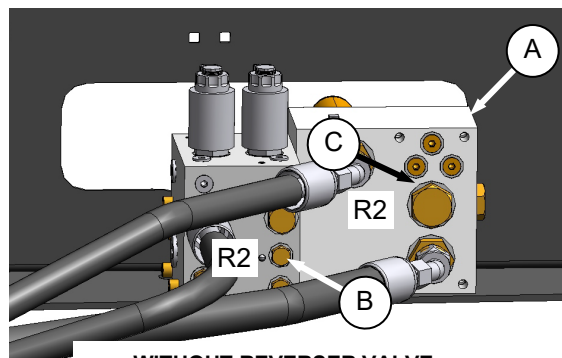
UNLOADING AND ASSEMBLY



- k. Route auger return and reel pressure hose bundle (D) from header to tractor, and locate bundle above existing hose support (J) as shown.
- l. Secure with three straps (F) and lower lever (K).

M150 & M200 VALVE BLOCK CONNECTIONS

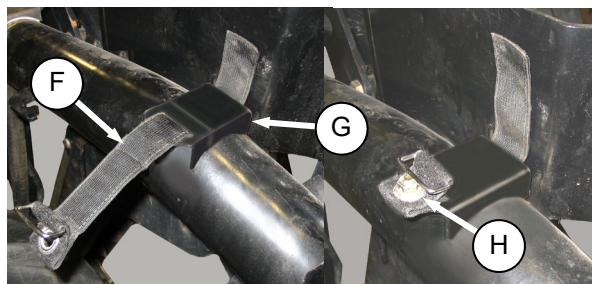
- a. Route auger return and reel pressure hoses (D) to valve block (A).



- b. Remove the plugs from ports "R2" at locations (B) and (C), on valve (A) or (A1). Ports may not be identified.

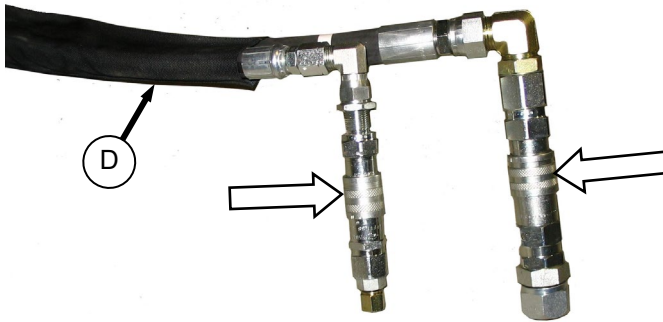
(continued next page)

- i. Move tractor left side platform to open position to expose hydraulic valve blocks.
- j. Install Velcro straps on tractor as follows if not already installed.
 1. Retrieve package of three Velcro straps shipped with the header.

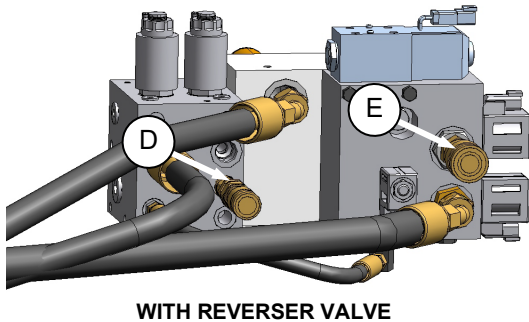
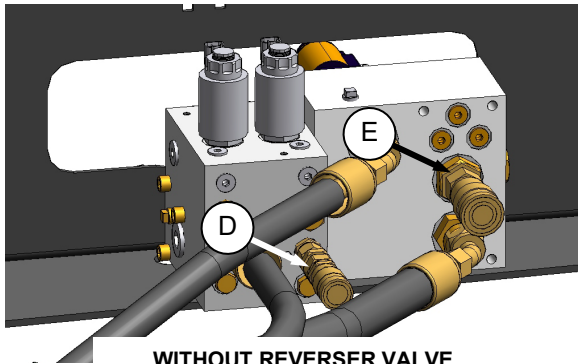


2. Locate Velcro strap (F) through slot and under bracket (G) on hose support.
3. Attach strap to bracket with ½ inch carriage bolt (H) and locking nut. Install bolt from under bracket.
4. Repeat above steps at the two other brackets on hose support.

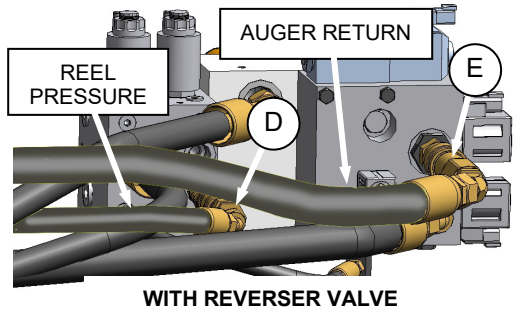
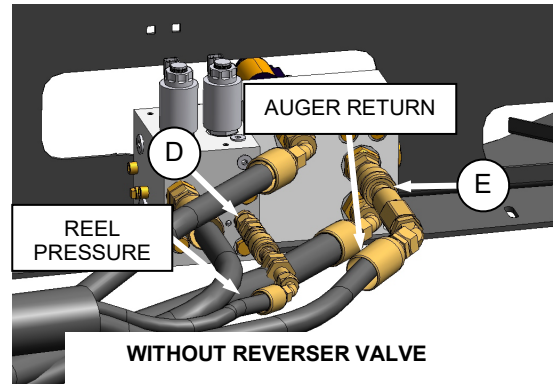
UNLOADING AND ASSEMBLY



- c. Remove female couplers from hoses (D) from header, and remove caps..



- d. Install smaller coupler (D) in port (B), and the larger (E) in port (C).



- e. Push reel pressure and auger return hose couplers onto mating receptacles (D) and (E) on valve block until collar on receptacle snaps into lock position.

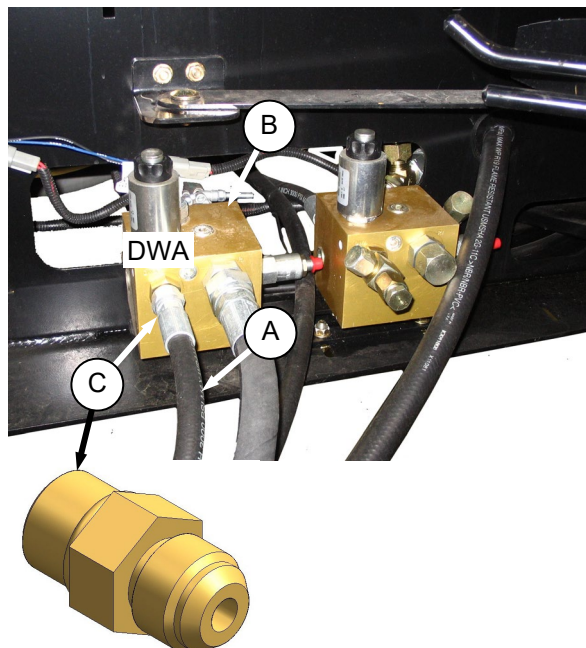
NOTE

Adjacent hoses may require slight repositioning to allow access to header hoses.

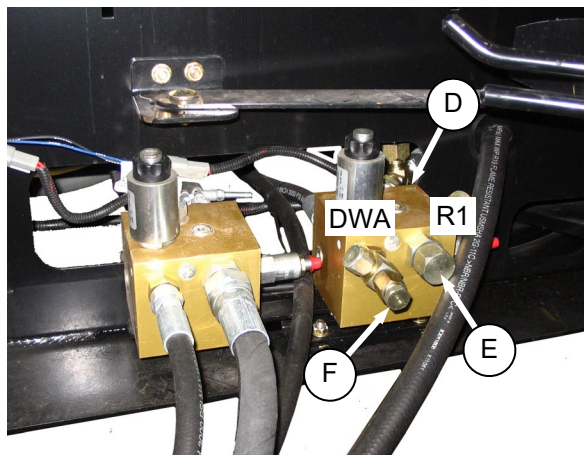
- f. Close driveline shield on header and move tractor platform to closed position before engaging header.
g. Proceed to STEP 16. LUBRICATE THE HEADER.

UNLOADING AND ASSEMBLY

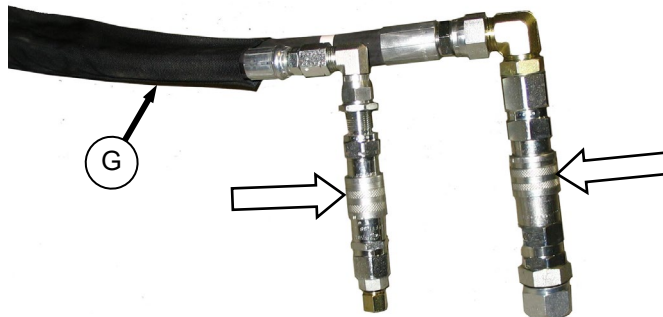
M100 VALVE BLOCK CONNECTIONS



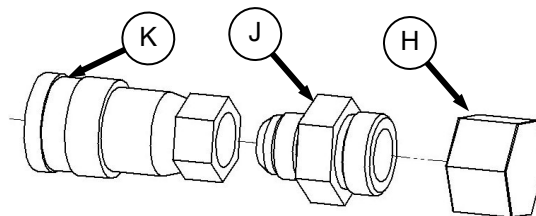
- Disconnect hose (A) from "DWA" port on valve block (B).
- Remove fitting from "DWA" port and replace with check valve (C), MacDon #167344. Do not re-install removed fitting.
- Connect hose (A) to check valve (C).



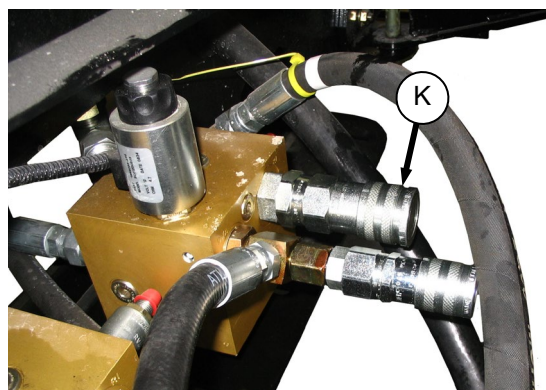
- At valve (D), remove the cap (E) from port "R1" fitting, and the plug (F) from "DWA" tee fitting. Ports may not be identified.



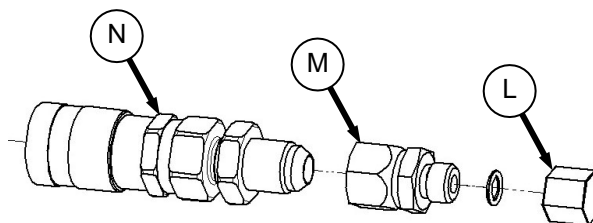
- Remove female couplers from auger return and reel pressure hoses (G) from header.



- Remove and discard the cap (H) and adapter fitting (J) from the large coupler (K).



- Install larger coupler (K) onto fitting at port "R1".



- Remove and discard the cap (L) and adapter fitting (M) from the small coupler (N).

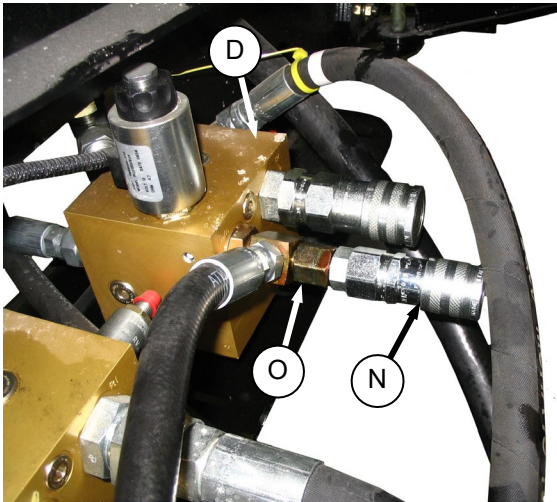
NOTE

Proceed to **ALTERNATE INSTALLATION FOR SMALL COUPLER** if coupler (N) is not as shown. Otherwise, proceed as follows:

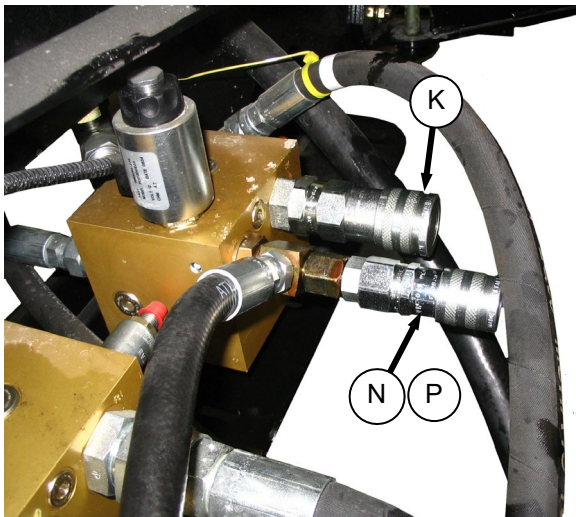
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UNLOADING AND ASSEMBLY

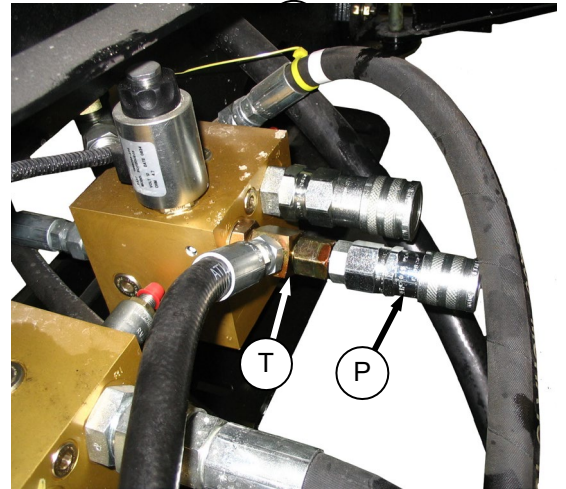
ALTERNATE INSTALLATION FOR SMALL COUPLER.



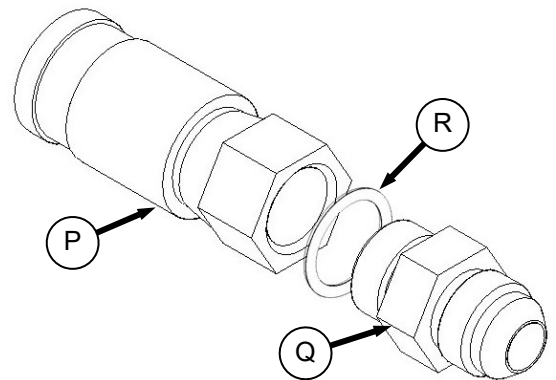
- i. Install the small coupler (N) onto the tee (O) on valve block (D).



- j. Push auger return hose coupler onto mating receptacle (K) until collar on receptacle snaps into lock position.
- k. Push reel pressure hose coupler onto mating receptacle (N) or (P) until collar on receptacle snaps into lock position.
- l. Close driveline shield on header and move tractor platform to closed position before engaging header.



1. Assemble adapter fitting (Q), MacDon #021030, with O-ring (R) into coupler (P) as shown.



2. Install the assembly (P)(Q)(R) onto tee (T) at port "DWA".
3. Go back to step j.

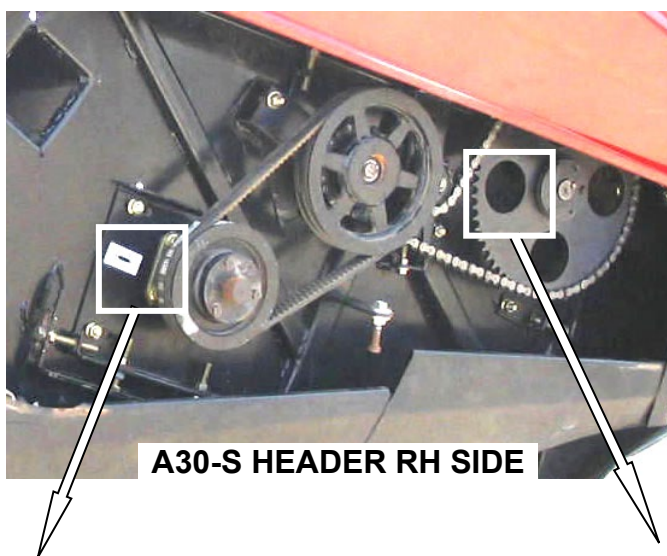
UNLOADING AND ASSEMBLY

STEP 16. LUBRICATE THE HEADER

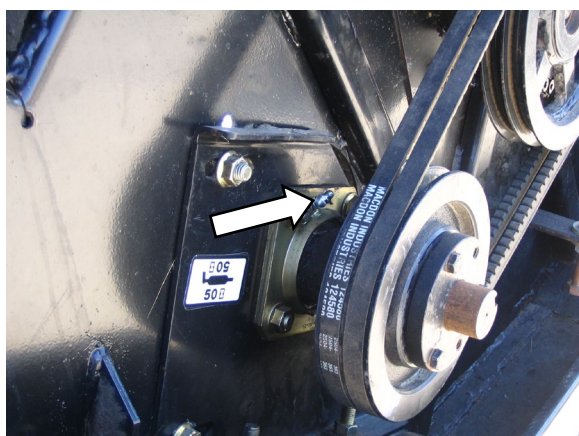
- Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
- Inject grease through fitting with grease gun until grease overflows fitting, except where noted.
- Leave excess grease on fitting to keep out dirt.
- Replace any loose or broken fittings immediately.
- If fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.
- Refer to the illustrations on following pages for lubrication points.

A30-S

High Temp. Extreme Pressure
(EP2) Performance With 1%
Max Molybdenum Disulphide
(NLGI Grade 2).Lithium Base



A30-S HEADER RH SIDE



AUGER SHAFT BEARING (1 PLC)

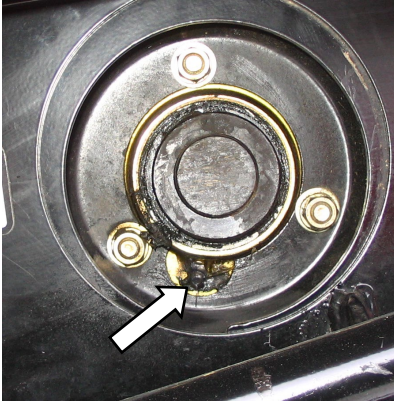


REEL SHAFT BEARING (1 PLC)

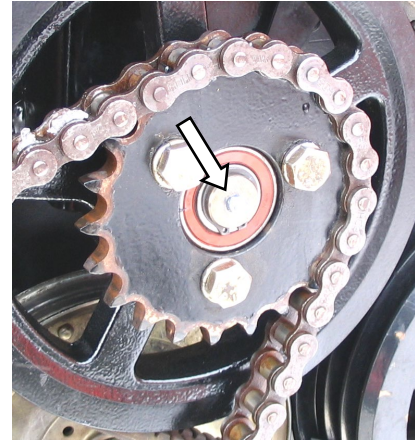
UNLOADING AND ASSEMBLY

LUBRICATE THE HEADER (Cont'd) A30-S

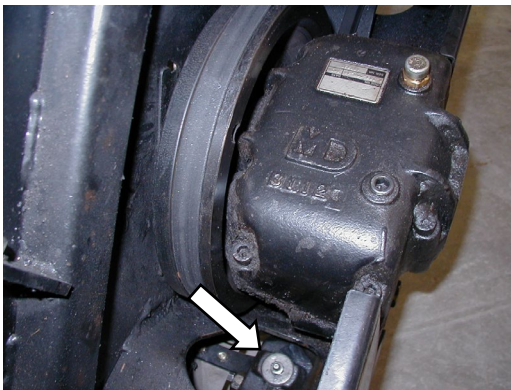
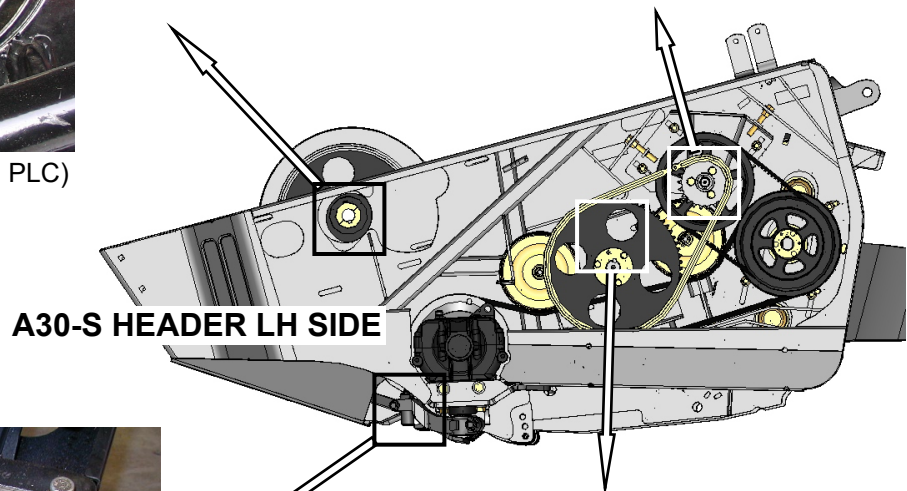
High Temp. Extreme Pressure
(EP2) Performance With 1%
Max Molybdenum Disulphide
(NLGI Grade 2).Lithium Base



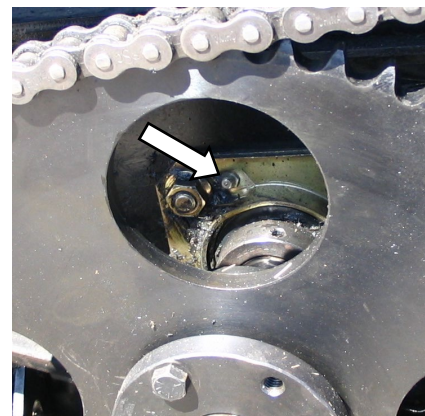
REEL SHAFT BEARING (1 PLC)



AUGER DRIVE BEARING (1 PLC)



SICKLE HEAD BEARING (1 PLC)



AUGER SHAFT BEARING (1 PLC)

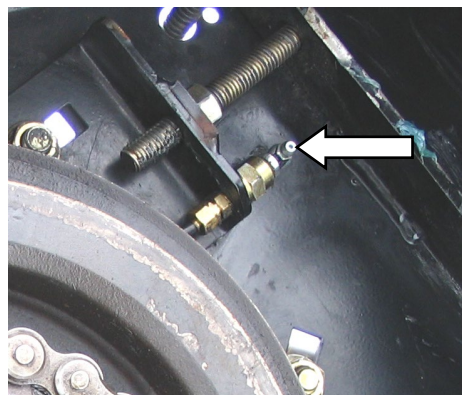
NOTE

To prevent binding and/or excessive wear caused by sickle pressing on guards, do not over grease. If more than 6 to 8 pumps of the grease gun are required to fill the cavity, replace the seal in the sickle head.

UNLOADING AND ASSEMBLY

LUBRICATE THE HEADER (Cont'd) A30-D

High Temp. Extreme Pressure
(EP2) Performance With 1%
Max Molybdenum Disulphide
(NLGI Grade 2).Lithium Base



CROSS SHAFT BEARING (1 PLC)



REEL SHAFT BEARING (1 PLC)

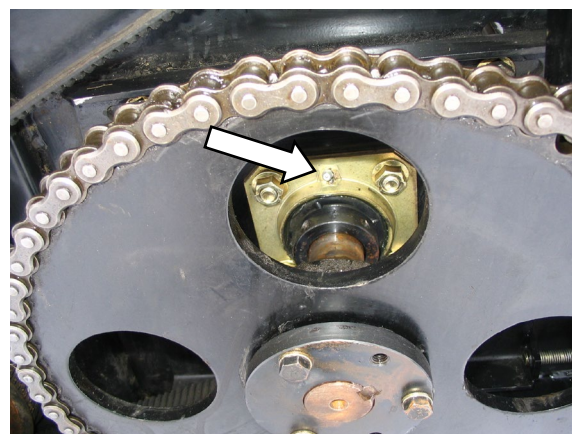
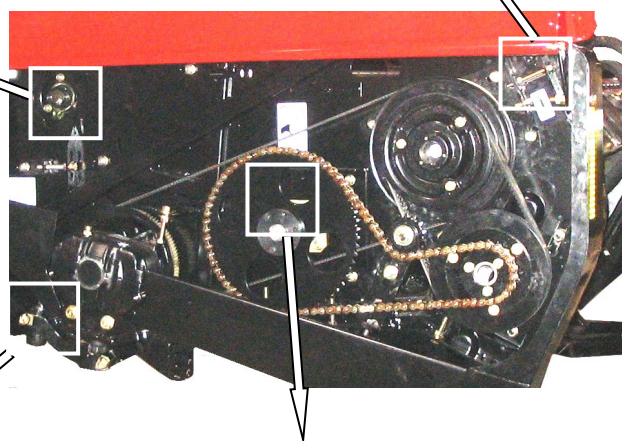


SICKLE HEAD BEARING (1 PLC)

NOTE

To prevent binding and/or excessive wear caused by sickle pressing on guards, do not over grease. If more than 6 to 8 pumps of the grease gun are required to fill the cavity, replace the seal in the sickle head.

A30-D HEADER LH SIDE

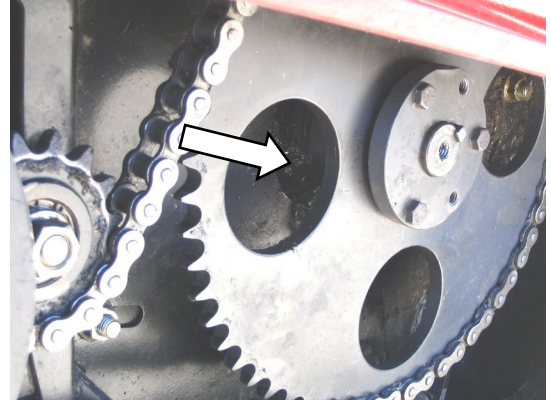


AUGER SHAFT BEARING (1 PLC)

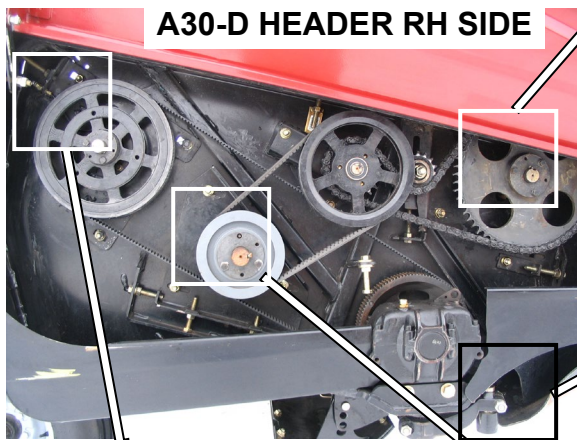
UNLOADING AND ASSEMBLY

LUBRICATE THE HEADER (Cont'd) A30-D

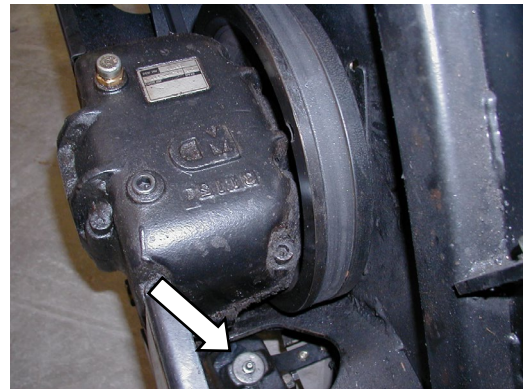
High Temp. Extreme Pressure
(EP2) Performance With 1%
Max Molybdenum Disulphide
(NLGI Grade 2).Lithium Base



REEL SHAFT BEARING (1 PLC)



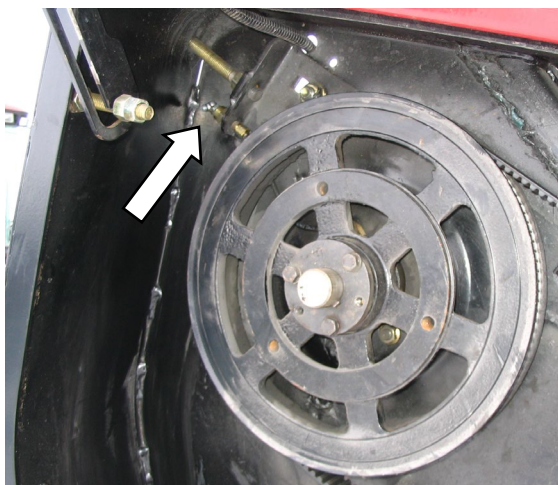
A30-D HEADER RH SIDE



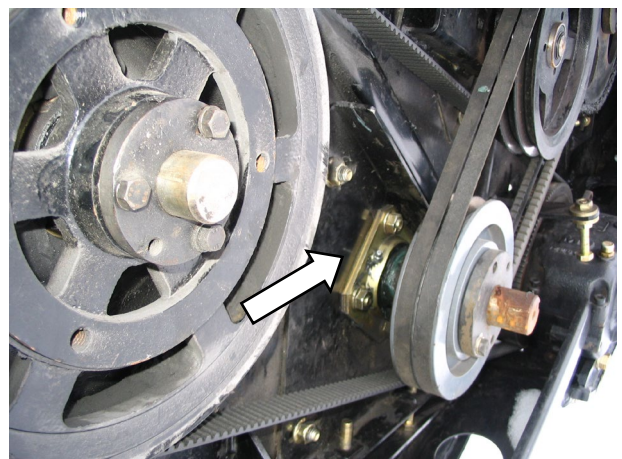
SICKLE HEAD BEARING (1 PLC)

NOTE

To prevent binding and/or excessive wear caused by sickle pressing on guards, do not over grease. If more than 6 to 8 pumps of the grease gun are required to fill the cavity, replace the seal in the sickle head.



SICKLE DRIVE BEARING (1 PLC)



AUGER SHAFT BEARING (1 PLC)

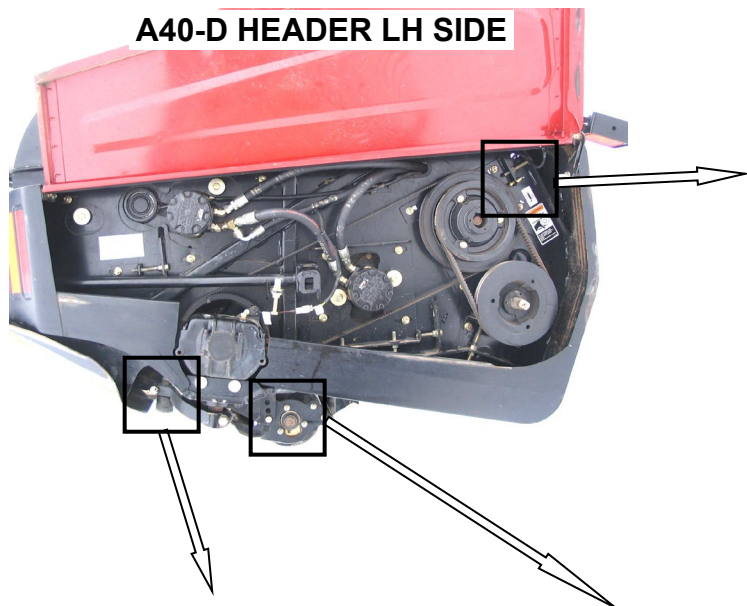
UNLOADING AND ASSEMBLY

LUBRICATE THE HEADER (Cont'd) A40-D

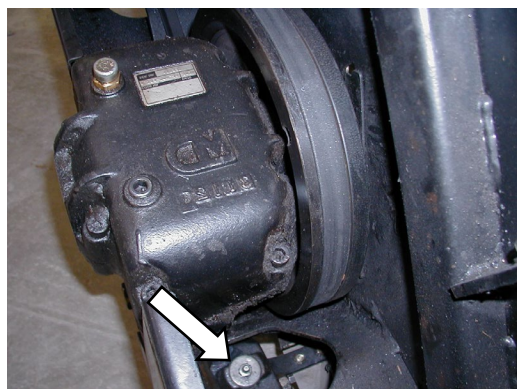
High Temp. Extreme Pressure
(EP2) Performance With 1%
Max Molybdenum Disulphide
(NLGI Grade 2).Lithium Base



A40-D HEADER LH SIDE



SICKLE DRIVE BEARING (1 PLC)



SICKLE HEAD BEARING (1 PLC)

NOTE

To prevent binding and/or excessive wear caused by sickle pressing on guards, do not over grease. If more than 6 to 8 pumps of the grease gun are required to fill the cavity, replace the seal in the sickle head.

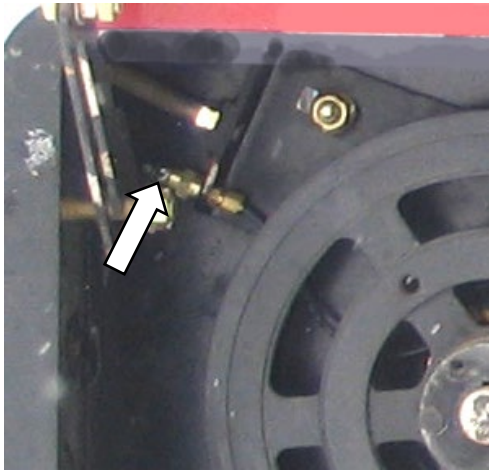


GAUGE ROLLER BEARINGS (2 PLCS)
BOTH SIDES – IF INSTALLED

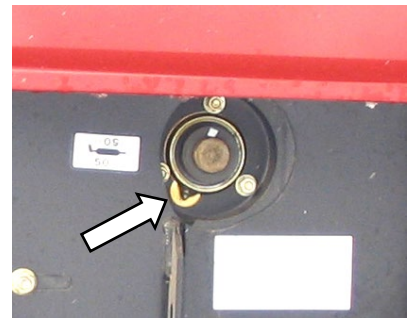
UNLOADING AND ASSEMBLY

LUBRICATE THE HEADER (Cont'd) A40-D

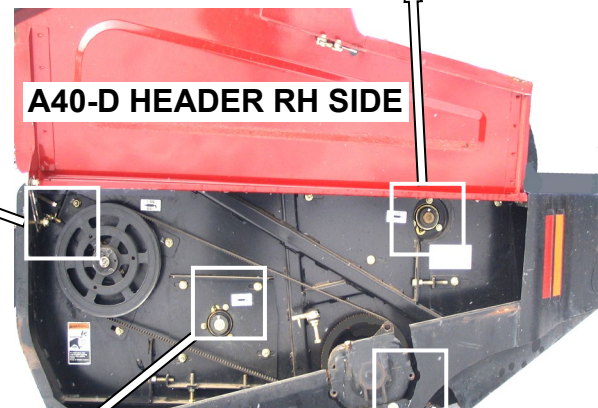
High Temp. Extreme Pressure
(EP2) Performance With 1%
Max Molybdenum Disulphide
(NLGI Grade 2).Lithium Base



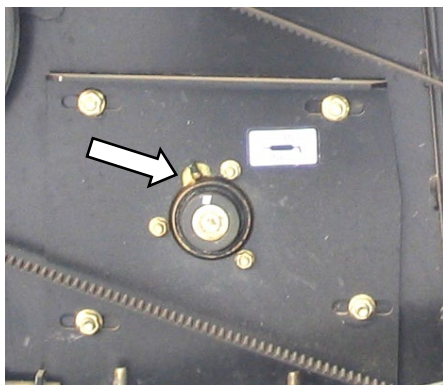
SICKLE DRIVE BEARING (1 PLC)



REEL SHAFT BEARING (1 PLC)



A40-D HEADER RH SIDE



AUGER SHAFT BEARING (1 PLC)



SICKLE HEAD BEARING (1 PLC)

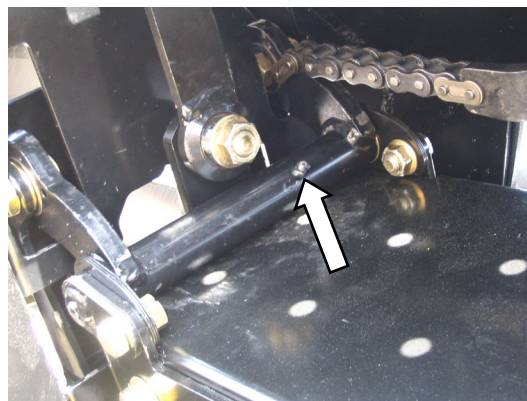
NOTE

To prevent binding and/or excessive wear caused by sickle pressing on guards, do not over grease. If more than 6 to 8 pumps of the grease gun are required to fill the cavity, replace the seal in the sickle head.

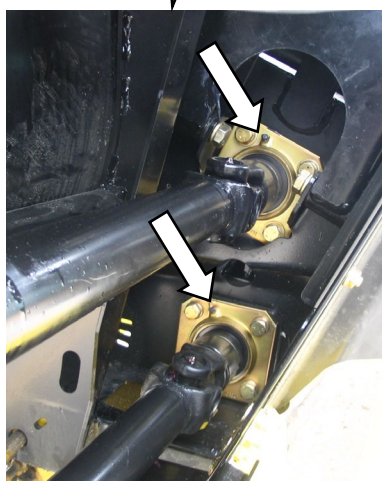
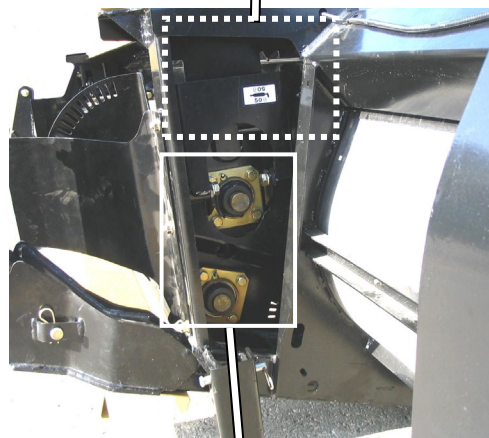
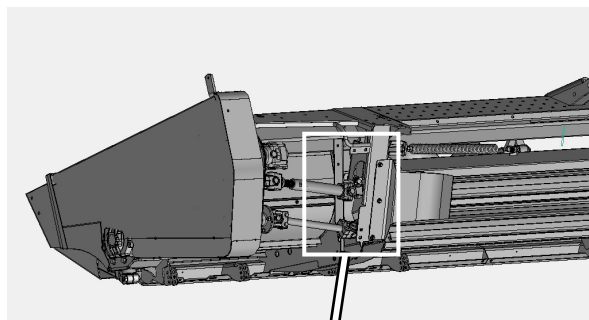
UNLOADING AND ASSEMBLY

LUBRICATE THE HEADER (Cont'd) HAY CONDITIONER

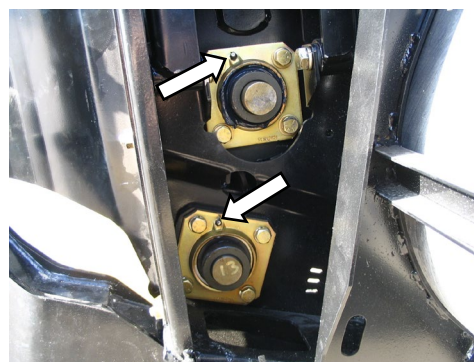
High Temp. Extreme Pressure
(EP2) Performance With **1%
Max** Molybdenum Disulphide
(NLGI Grade 2).Lithium Base



ROLL PIVOT (1 PLC BOTH SIDES)



ROLL SHAFT BEARINGS (2 PLCS)



ROLL SHAFT BEARINGS (2 PLCS)

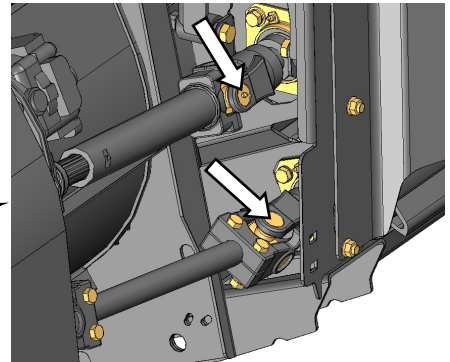
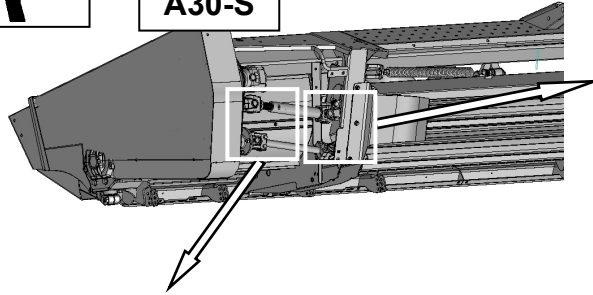
UNLOADING AND ASSEMBLY

LUBRICATE THE HEADER (Cont'd) DRIVELINES

High Temp. Extreme Pressure
(EP2) Performance With 1%
Max Molybdenum Disulphide
(NLGI Grade 2).Lithium Base

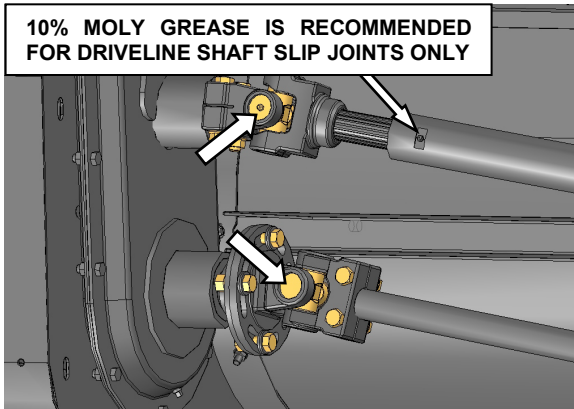


A30-S

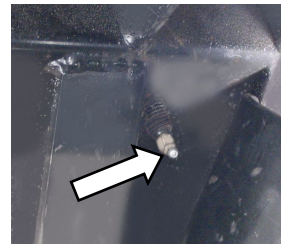


DRIVELINE UNIVERSALS (2 PLCS)

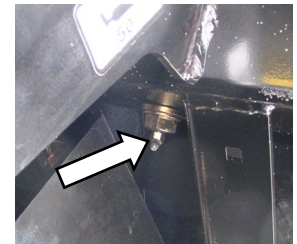
**10% MOLY GREASE IS RECOMMENDED
FOR DRIVELINE SHAFT SLIP JOINTS ONLY**



DRIVELINE UNIVERSALS (2 PLCS)
DRIVELINE SHAFTS (1 PLC)

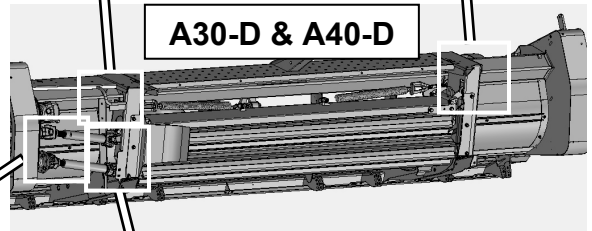


CROSS SHAFT (1 PLC)

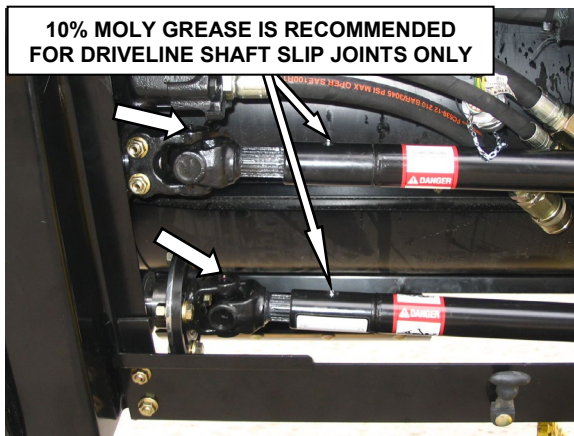


CROSS SHAFT (1 PLC)

A30-D & A40-D



**10% MOLY GREASE IS RECOMMENDED
FOR DRIVELINE SHAFT SLIP JOINTS ONLY**



DRIVELINE UNIVERSALS (2 PLCS)
DRIVELINE SHAFTS (2 PLCS)



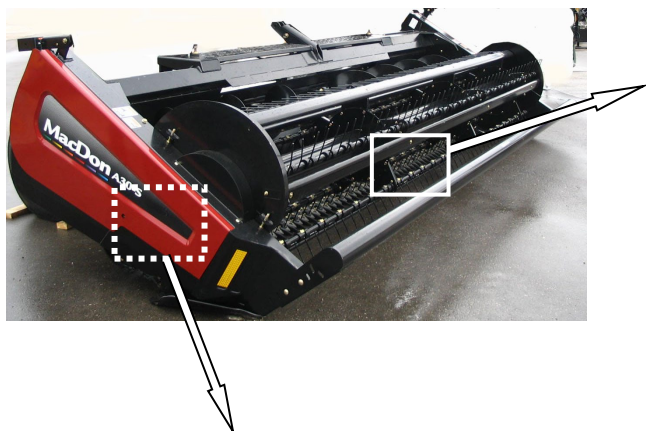
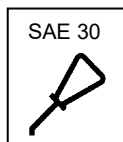
DRIVELINE UNIVERSALS (2 PLCS)

UNLOADING AND ASSEMBLY

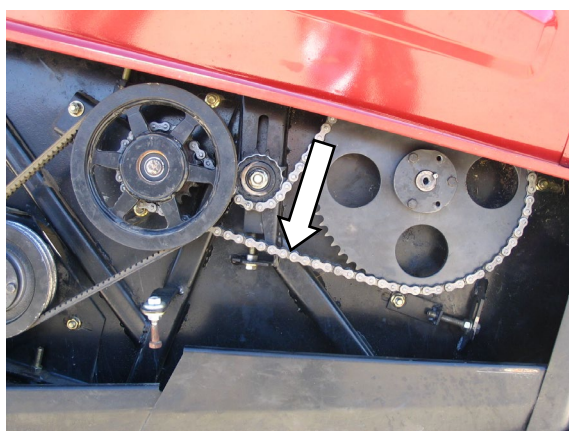
LUBRICATE THE HEADER (Cont'd)

OILING

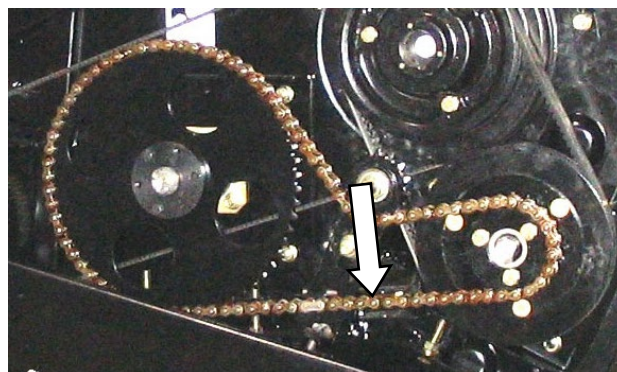
Apply oil to upper edge of lower spans when oiling chains.



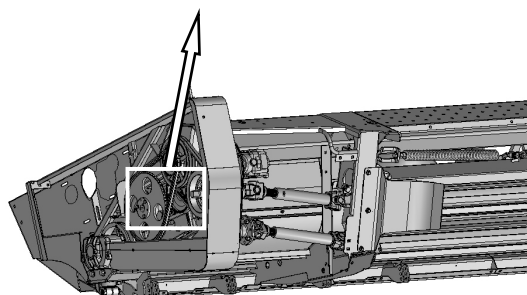
OIL KNIFE DAILY EXCEPT IN SANDY SOIL



REEL DRIVE CHAIN (1 PLC)



AUGER DRIVE CHAIN (1 PLC)



PRE-DELIVERY CHECKS

STEP 17. PERFORM PRE-DELIVERY CHECKS



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.

IMPORTANT

To avoid machine damage, check that no shipping dunnage has fallen down between auger and pans.

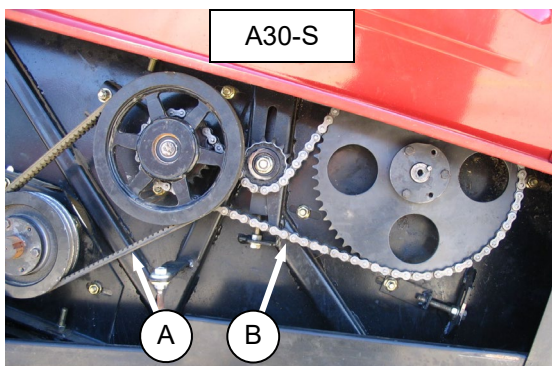
- Perform the final checks and adjustments as listed on the "Pre-Delivery Checklist" (yellow sheet) to ensure the machine is field-ready. Refer to the following pages for detailed instructions as indicated on the checklist.
- The completed checklist should be retained either by the operator or the dealer.

A. DRIVE BELTS AND DRIVE CHAINS

The drive systems for each of the three models of auger headers differ slightly and therefore require different procedures for checking and making any necessary adjustments. Refer to the appropriate section for your particular header.

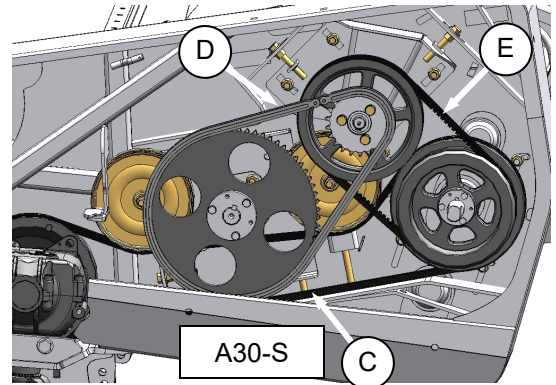
I. A30-S SINGLE KNIFE

- Open shield on header RH side.



- Reel drive belts (A)** should deflect 3/16 in. (4 mm) when a load of 8-12 lbf (35-40 N) is applied to each belt at mid-span.
- Reel drive chain (B)** slack should be 1/4 in. (6 mm).
- Close shield.

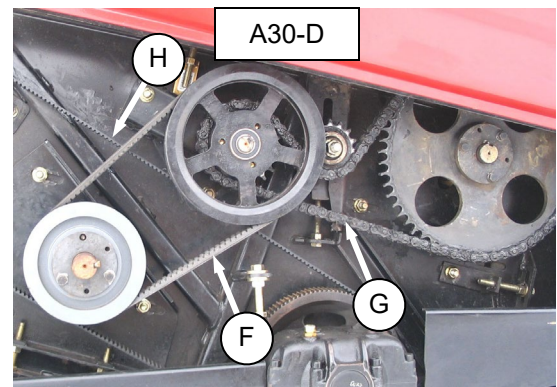
- Open shield on header LH side.



- Sickle drive belt (C)** should deflect 1/4 inch (6 mm) when a load of 20 lbf (80 N) is applied at mid-span.
- Auger drive chain (D)** deflection at midspan should be 1/4 inch (6 mm).
- Auger drive belts (E)** belt should deflect 3/16 in. (4 mm) when a load of 8-12 lbf (35-40 N) is applied to each belt at mid-span.
- Close shield.
- Proceed to Section B, AUGER STRIPPER BAR CLEARANCE.

II. A30-D DOUBLE KNIFE

- Open shield on header RH side.

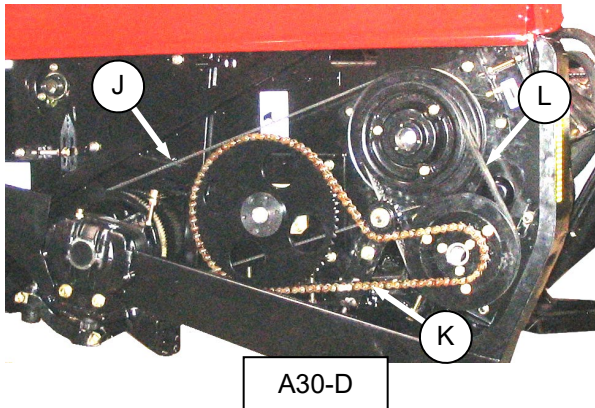


- Reel drive belt (F)** should deflect 3/16 in. (4 mm) when a load of 8-12 lbf (35-40 N) is applied to each belt at mid-span.
- Reel drive chain (G)** slack should be 1/4 in. (6 mm).
- Sickle drive belt (H)** should deflect 0.55 inch (14 mm) when a load of 5-6.5 lbf (22-30 N) is applied at mid-span.
- Close shield.

(continued next page)

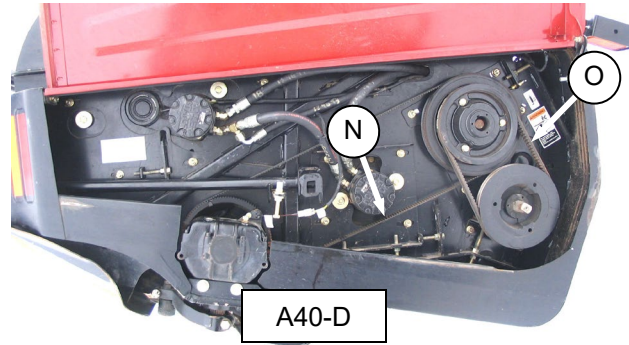
PRE-DELIVERY CHECKS

- f. Open shield on header LH side.



- g. **Sickle drive belt (J)** should deflect 0.55 inch (14 mm) when a load of 5-6.5 lbf (22-30 N) is applied at mid-span).
- h. **Auger drive chain (K)** deflection should be $\frac{1}{4}$ inch (6 mm).
- i. **Auger drive belts (L)** should deflect $\frac{3}{16}$ in. (4 mm) when a load of 8-12 lbf (35-40 N) is applied to each belt at mid-span.
- j. Close shield.
- k. Proceed to Section B, AUGER STRIPPER BAR CLEARANCE.

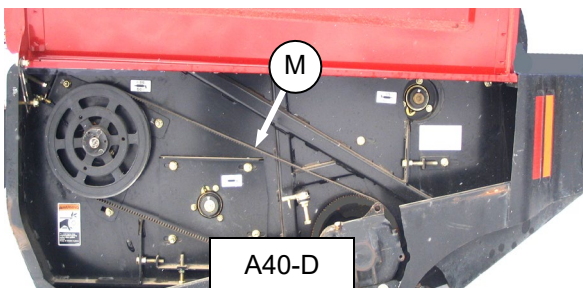
- c. Open shield on header LH side.



- d. **Sickle drive timing belt (N)** should deflect 0.55 inch (14 mm) when a load of 5-6.5 lbf (22-30 N) is applied at mid-span).
- e. **Sickle drive V-belts (O)** should deflect $\frac{3}{16}$ in. (4 mm) when a load of 8-12 lbf (35-40 N) is applied to each belt at mid-span.
- f. Close shields.

III. A40-D DOUBLE KNIFE

- a. Open shield on header RH side.

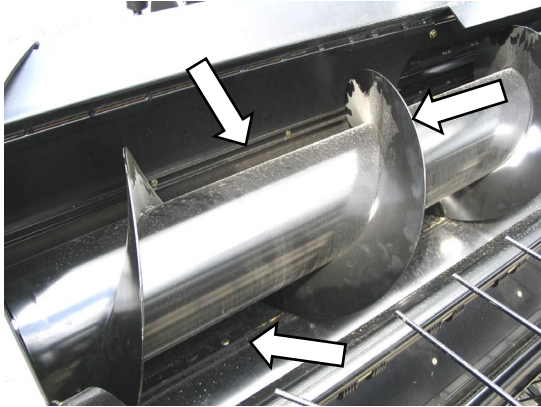


- b. **Sickle drive timing belt (M)** should deflect 0.55 inch (14 mm) when a load of 5-6.5 lbf (22-30 N) is applied at mid-span).

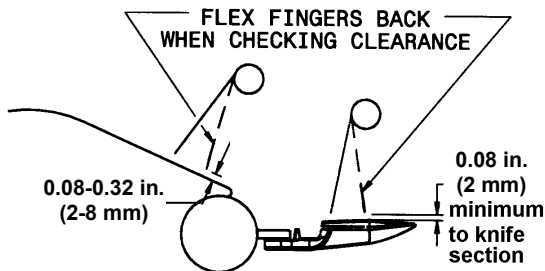
PRE-DELIVERY CHECKS

B. AUGER STRIPPER BAR CLEARANCE

- a. Check for signs of auger flighting rubbing stripper bars after run-up.



C. REEL TINE TO HEADER PAN CLEARANCE



IMPORTANT

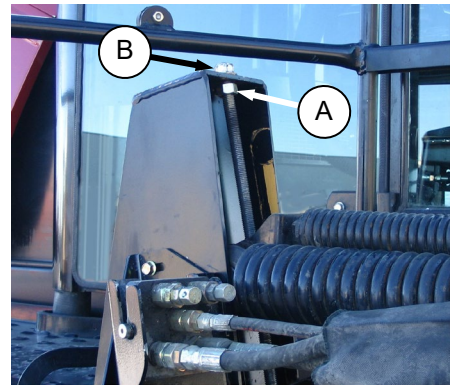
The above dimensions are provided as guidelines. Tines may slightly contact the guards but not the knife sections or the auger pan.

- a. Rotate reel slowly by hand and check finger clearance at knife and pan. Flex fingers to simulate crop-loaded position to ensure fingertip clearances to knife sections and auger pan are adequate for working conditions.
- b. Check that the reel rotates freely.

D. HEADER FLOTATION

The windrower float springs are not used to level the header. To adjust float, refer to illustration below and proceed as follows:

- a. Check float by grasping the lean bar and lifting. The force to lift should be 75-85 lbf (335-380 N) and should be approximately the same at both ends.
- b. Perform the following steps to adjust the float if necessary:
 1. Raise the header fully, shut down the engine, and remove the key.

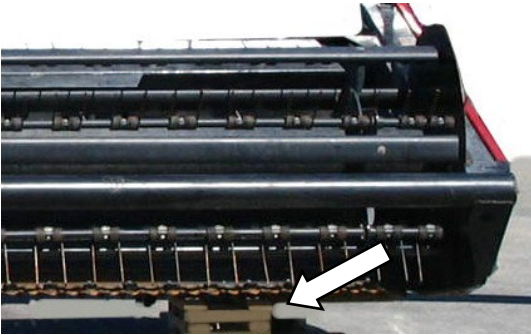


2. Loosen nut (A) on linkage spring drawbolt.
3. Turn drawbolt (B) clockwise to increase float (makes header lighter) or counterclockwise to decrease float (makes header heavier).
4. Tighten nut (A) to lock drawbolt.
5. Recheck the float.

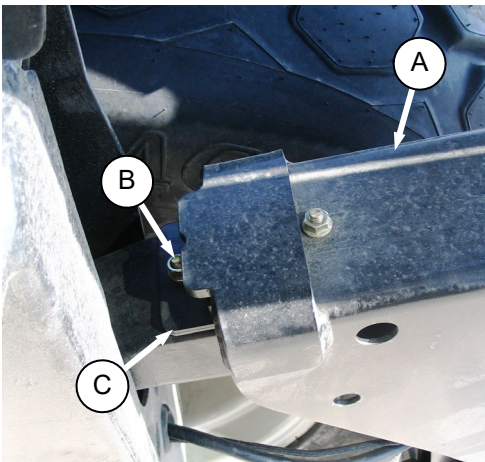
PRE-DELIVERY CHECKS

E. LEVEL THE HEADER

- a. Park windrower on level ground.
- b. Increase header angle to maximum with header tilt switch in tractor.
- c. Lower header onto ground so that linkage (A) lifts at tractor leg. If necessary, place wooden blocks under header cutterbar and header legs.



- d. Shut down the engine and remove the key.



- e. Remove nut, washer and bolt (B) that attaches shims (C) to link at the header high end.
- f. Remove one or both shims (C) and reinstall the hardware (B).
- g. Check level of header.
- h. If additional levelling is required, install the removed shim on the opposite linkage.

NOTE

If required, additional shims are available from your dealer.

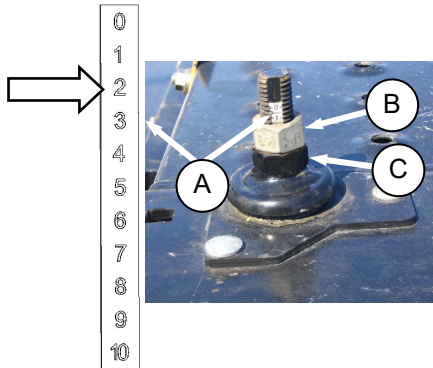
NOTE

Float does not require adjustment after levelling header.

PRE-DELIVERY CHECKS

F. CONDITIONER ROLLS

- a. Lower header fully.

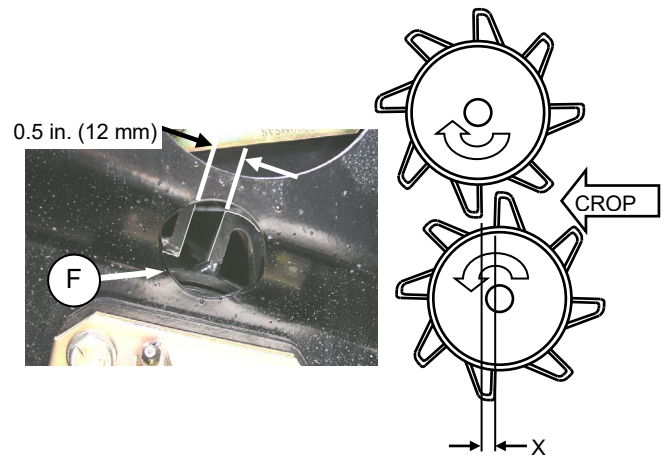
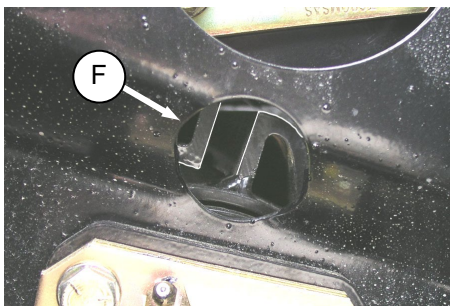
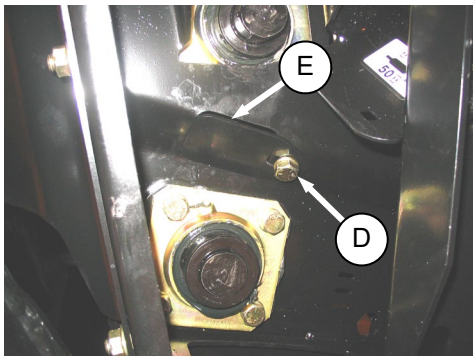


- b. Check roll gap is mark 2 on the decal (A).
c. If required, adjust the gap by loosening nut (B) and turning adjuster (C). Re-tighten nut (B).

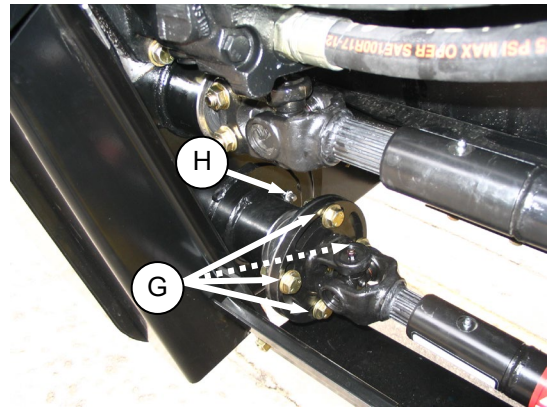
NOTE

When adjusting roll gap, be sure that the decal reading is the same on both sides of the conditioner roll to achieve consistent intermesh across the rolls.

- d. Loosen bolt (D) and rotate cover (E) to expose access port (F).



- e. Check roll timing by examining distance 'X' at each end of the rolls (F). Each steel bar on one roll should be centered between two bars of the other roll so that distance "X" is 0.5 inches (12 mm).
f. If required, adjust the roll timing as follows:



1. Loosen four bolts (G) in slots of yoke plate on lower roll universal shaft.
 2. Turn rolls to achieve best timing.
 3. When roll timing is satisfactory, tighten bolts (G) to secure the position.
 4. Reposition cover (E) and tighten bolt (D).
- g. Check oil level in conditioner gearbox. Oil is at required level when it runs out of check plug (H).

PRE-DELIVERY CHECKS

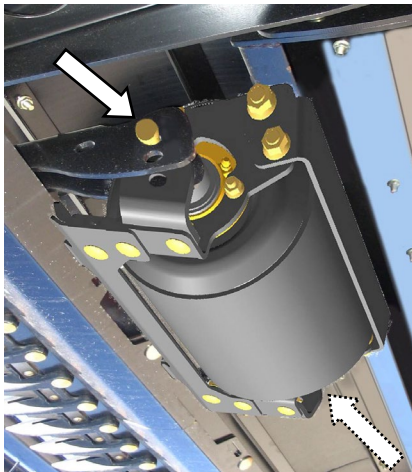
G. SKID SHOES/GAUGE ROLLERS



WARNING

To avoid bodily injury or death from unexpected start-up or fall of raised machine, stop engine, remove key and engage lift cylinder lockout valves before going under machine to adjust skid shoes or for any reason.

- a. Raise header and engage lift cylinder lockouts.



- b. Check that pins are installed in the same position in all skid shoes/gauge rollers.

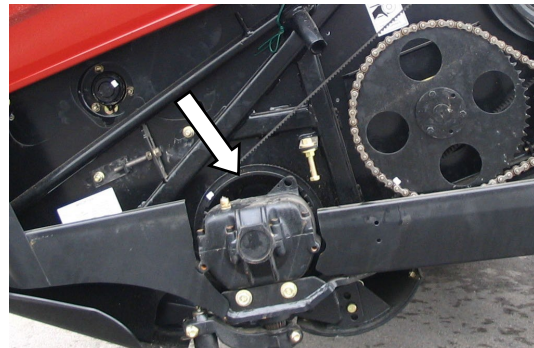
H. LIGHTS

The hazard lights, which are mounted on both ends of the header, are activated by switches in the M Series tractor cab. Check for operation during run-up.



- a. Check that pivot bolt is tight enough to hold light support in upright position yet allow light to pivot out of the way of obstructions.

I. WOBBLE BOX



- a. Check actual speed of wobble box pulley using a hand-held optical tachometer during run-up. Speed should be 775 rpm for A30-S, and 950 rpm for A30-D and A40-D with the engine at 2600 rpm.

PRE-DELIVERY CHECKS

J. RUN-UP THE HEADER



CAUTION

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



CAUTION

Clear the area of other persons, pets etc. Keep children away from machinery. Walk around the machine to be sure no one is under, on or close to it.



CAUTION

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

Refer to M Series Unloading & Assembly Instructions, Form #169018, or M150 & M200 Self-Propelled Windrower Operator's Manual, Form #169017 for tractor operating instructions.

- a. Operate the machine slowly for 5 minutes, watching and listening FROM THE TRACTOR SEAT for binding or interfering parts.
- b. Run the machine for 15 minutes at maximum engine operating rpm and perform the run-up check as listed on the "Pre-Delivery Checklist" (yellow sheet attached to this instruction) to ensure the machine is field-ready.

K. MANUALS

- a. Place Operator's Manual – Form #169000 and Parts Catalog – Form #169002 in storage case in the tractor.
- b. This instruction may be kept for future reference.
- c. The yellow checklist should be retained by either the dealer or the operator.

NOTES

NOTES

Self-Propelled Auger Header Model A30-S, A30-D, & A40-D Pre-Delivery Checklist

Perform these checks and adjustments prior to delivery to your customer. Refer to Set-Up Instructions for adjustment details. The completed checklist should be retained either by the customer or the dealer.



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

Header Serial Number: _____

✓	ITEM	PAGE
<input type="checkbox"/>	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	--
<input type="checkbox"/>	Check for loose hardware. Tighten to required torque if applicable.	4
<input type="checkbox"/>	Check sickle drive belt tension.	33
<input type="checkbox"/>	Check reel drive belt and chain tension. (Not applicable to A40-D).	33
<input type="checkbox"/>	Check auger drive belt and chain tension. (Not applicable to A40-D).	33
<input type="checkbox"/>	Check reel tine to header pan clearance.	35
<input type="checkbox"/>	Check header angle to middle of adjustment range.	17
<input type="checkbox"/>	Check that header is level.	36
<input type="checkbox"/>	Check header flotation. (75-85 lbf (335-380 N·m)).	35
<input type="checkbox"/>	Check conditioner roll gap, timing, and alignment.	37
<input type="checkbox"/>	Check lean bar is adjusted at a setting appropriate for first crop.	13
<input type="checkbox"/>	Check skid shoes are evenly adjusted at a setting appropriate for first crop.	38
<input type="checkbox"/>	Check wobble box lube level and breather position.	12
<input type="checkbox"/>	Check rear and side forming shields evenly set to desired position.	15
<input type="checkbox"/>	Grease all bearings and drivelines.	24-32
<input type="checkbox"/>	Check conditioner gear case lube level.	37
<input type="checkbox"/>	Check roll intermesh hardware is securely tightened.	37
<input type="checkbox"/>	Check hydraulic hose and wiring harness routing.	18-19
<input type="checkbox"/>	RUN-UP PROCEDURE	39
<input type="checkbox"/>	Check hydraulic hose and wiring harness routing for clearance when raising or lowering header.	--
<input type="checkbox"/>	Check speed of wobble box pulley.	38
<input type="checkbox"/>	Check amber flasher and signal lights are functional.	38
<input type="checkbox"/>	POST RUN-UP CHECKS. STOP ENGINE.	--
<input type="checkbox"/>	Check for hydraulic leaks.	--
<input type="checkbox"/>	Check belt and chain drives for idler alignment and heated bearings.	33-34
<input type="checkbox"/>	Check knife sections for discolouration caused by misalignment of components.	--
<input type="checkbox"/>	Check auger stripper bar clearance.	35
<input type="checkbox"/>	Check manuals in tractor cab.	39

Date Checked: _____

Checked by: _____



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