

# TUBE•LINE™

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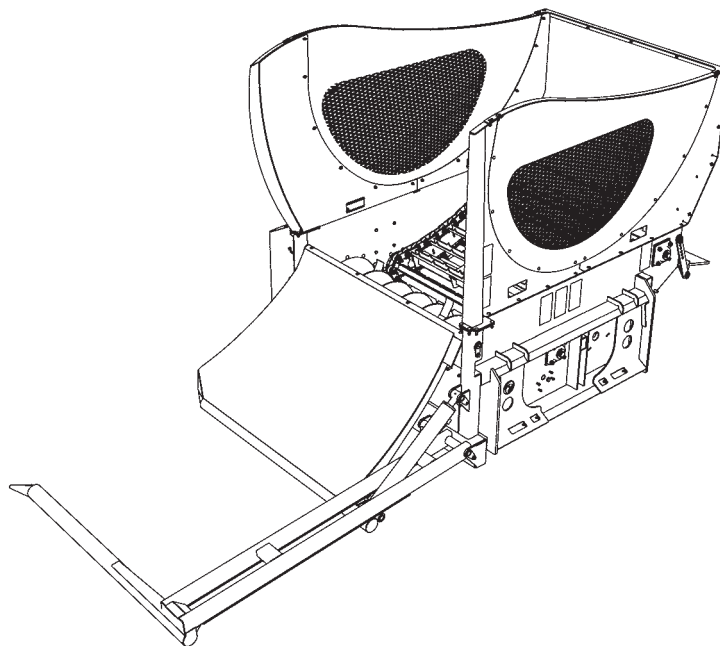
# Operator's Manual

Keep this manual with the machine at all times.

## **BALEBOSS** ROUND BALE PROCESSOR **R**

### Bale Processor Boss R

# 4520



Do not attempt to operate this machine without thoroughly reviewing this manual for safe and proper operation.



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## Principals of Operation

The Tubeline Boss R has many uses, including :

- Laying windrows in open fields.
- Filling feed bunks - fence line, circular, etc.
- Spreading forage for livestock bedding.
- Spreading mulch over perennial plants such as strawberries and mushrooms.

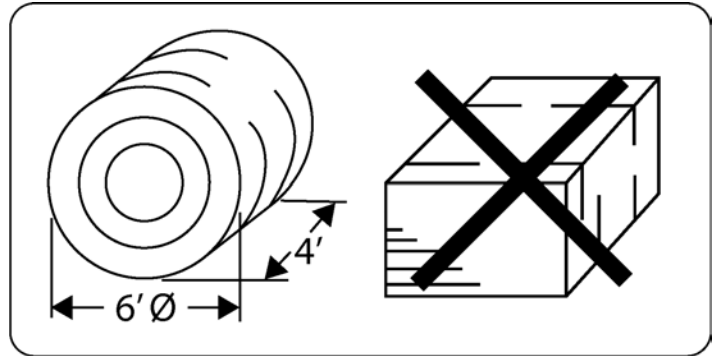
### Bale Sizes

The Tubeline Boss R was designed to load and shred large round bales. It is **NOT** square bale compatible.

Maximum bale weight is 1500lbs (680 kg).

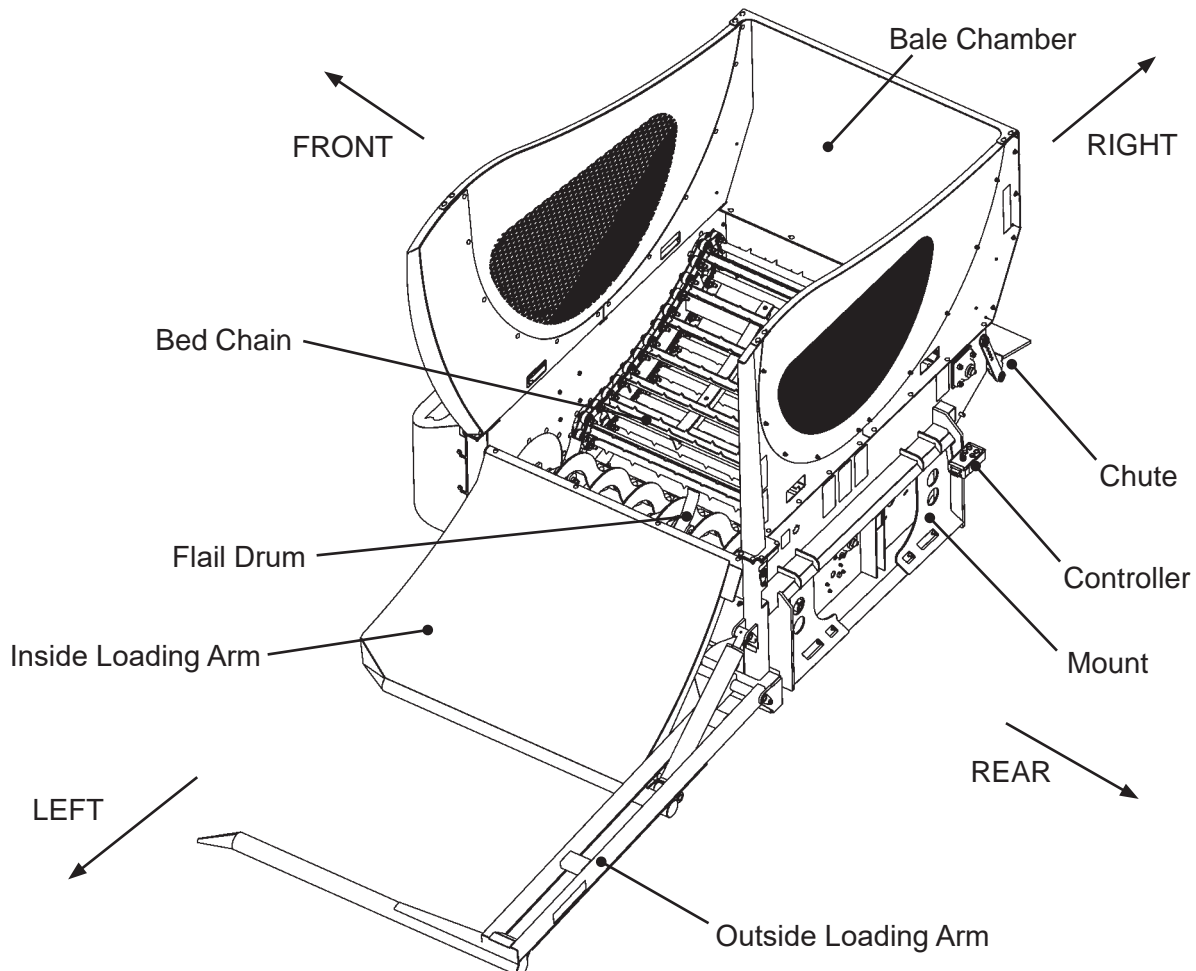
**WARNING:** Do NOT exceed loading unit capacity.

Maximum size bale is 72" (183cm) diameter x 48" (122cm) length.

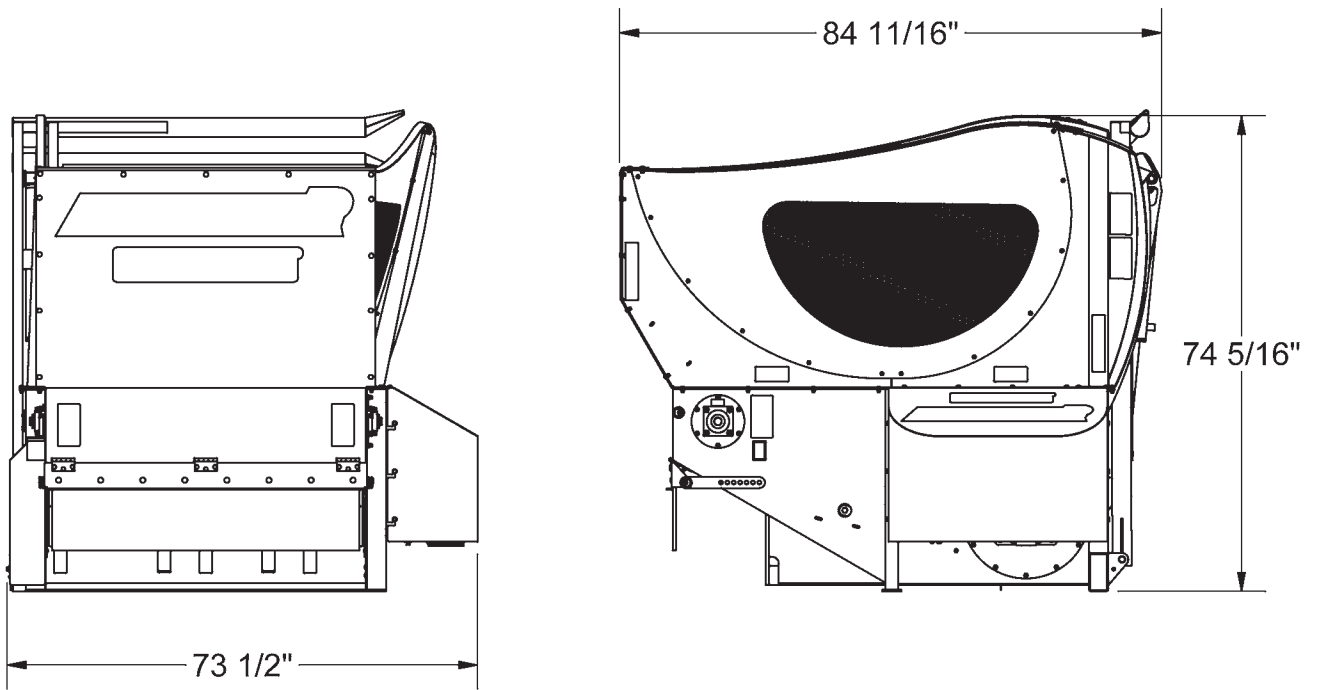


### Terminology

Throughout this manual, references may be made to :



## Machine Dimensions



## Machine Weight

This machine weighs 1900lbs (862kg) empty.

## Power Unit Specifications

**NOTE:** Exceeding any of the recommended power unit specifications CAN result in damage to your power unit and/or this product and **WILL** void all Tubeline warranties.

Minimum	Maximum (Recommended)
18 GPM at 2500 PSI	25-35 GPM at 3000 PSI

# Section 1 - Safety

## Safety Symbol



This safety alert symbol is found throughout this manual to call your attention to instructions involving yourself and others working around the machine. Failure to follow these instructions can result in injury or death. This symbol means: **Attention! Become Alert! Your Safety is involved!**

## Safety Signal Words

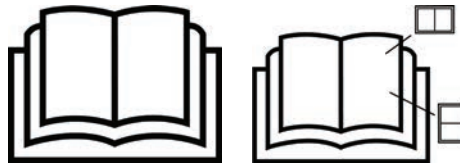
**CAUTION:** Indicates a potentially hazardous situation that may result in injury.

**WARNING:** Indicates a potentially hazardous situation that could result in serious injury or death.

**DANGER:** Indicates a hazardous situation that needs to be avoided. It is you the operator that needs to be aware of these dangers.

**NOTE:** Informative only, not hazard or safety related.

## General Safety



**WARNING:** Obey all safety instructions listed in this section and throughout this manual. Failure to obey instructions in this section could result in death or serious injury.

Before attempting any type of assembly, operation, maintenance or other work on or near this product:

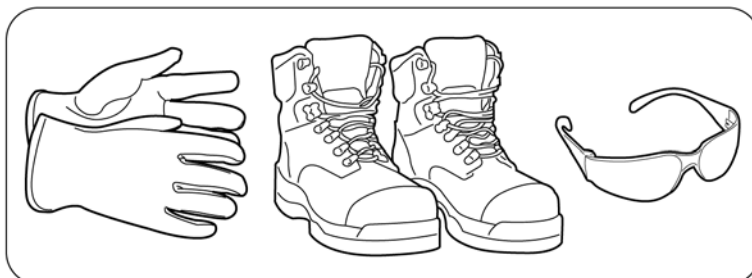
- Read and completely understand this manual.
- Read and completely understand the manuals provided with your power unit, loader and quick-attachment.
- Read and understand all safety signs on this product and on your power unit, loader and quick-attach. Know all your controls and know how to quickly stop all power unit movements, the processor movement, and the engine in case of emergency.
- Know and obey all applicable government rules, O.S.H.A regulations, local laws and other professional guidelines for your operation.
- Be physically and mentally capable of the safe operation of this type of equipment.
- Is not under the influence of drugs or alcohol. Is carefully supervised from a safe distance, especially if such person is inexperienced.
- Annually review all safety instructions.
- When maintaining this machine, work on a level surface in a well lit area. Keep the area clean and dry. Use properly grounded electrical outlets and tools. Use the right tool for the job at hand. Make sure that your tools are in good condition for performing the desired function.

When your power unit is used during any type of assembly, operation, maintenance or other work on or near this product:

- Before leaving the operator's station or before beginning any type of work on this product, lower this product to the ground, apply your power unit's parking brake, stop the engine, remove the starter key, wait for all moving parts to stop and then relieve all pressure in the hydraulic lines. *Refer to your power unit's operator's manual for instructions on how to relieve hydraulic pressure in lines.*

- Know your loader's safe lifting and operating capacity and the weight of this product. See [pg. V](#) in this manual for the weight of this product and refer to your power unit's and loader's operator's manuals for safe operating limits. Lift capacity may be reduced if using a quick-attach.
- Never allow anyone, except the operator, to be around the power unit or this product when either is in motion.
- Do not start up unless others are clear of the work area.
- Do not allow riders on this product or the power unit.
- Do not stand or climb on this product when raised.
- Do not place any part of your body under any part of this product unless this product is securely resting on adequate blocking or on the ground. Do not use blocking made of concrete blocks, logs, buckets, barrels or any other material that could suddenly collapse or shift positions. Do not use wood or steel blocking that shows any signs of material decay. Do not use wood blocking that is warped, twisted or tapered.
- Never operate controls from the ground. Operate the controls only from the operator's station.
- Never leave the equipment unattended with the engine running or with this product raised on the loader.
- Be aware of the added weight and width of this product. Reduce travel speeds accordingly, especially when traveling over rough ground.
- Keep this product close to the ground and under control when transporting. When transporting, be sure processor does not block view of vehicle lights or road.

## Personal Protective Equipment



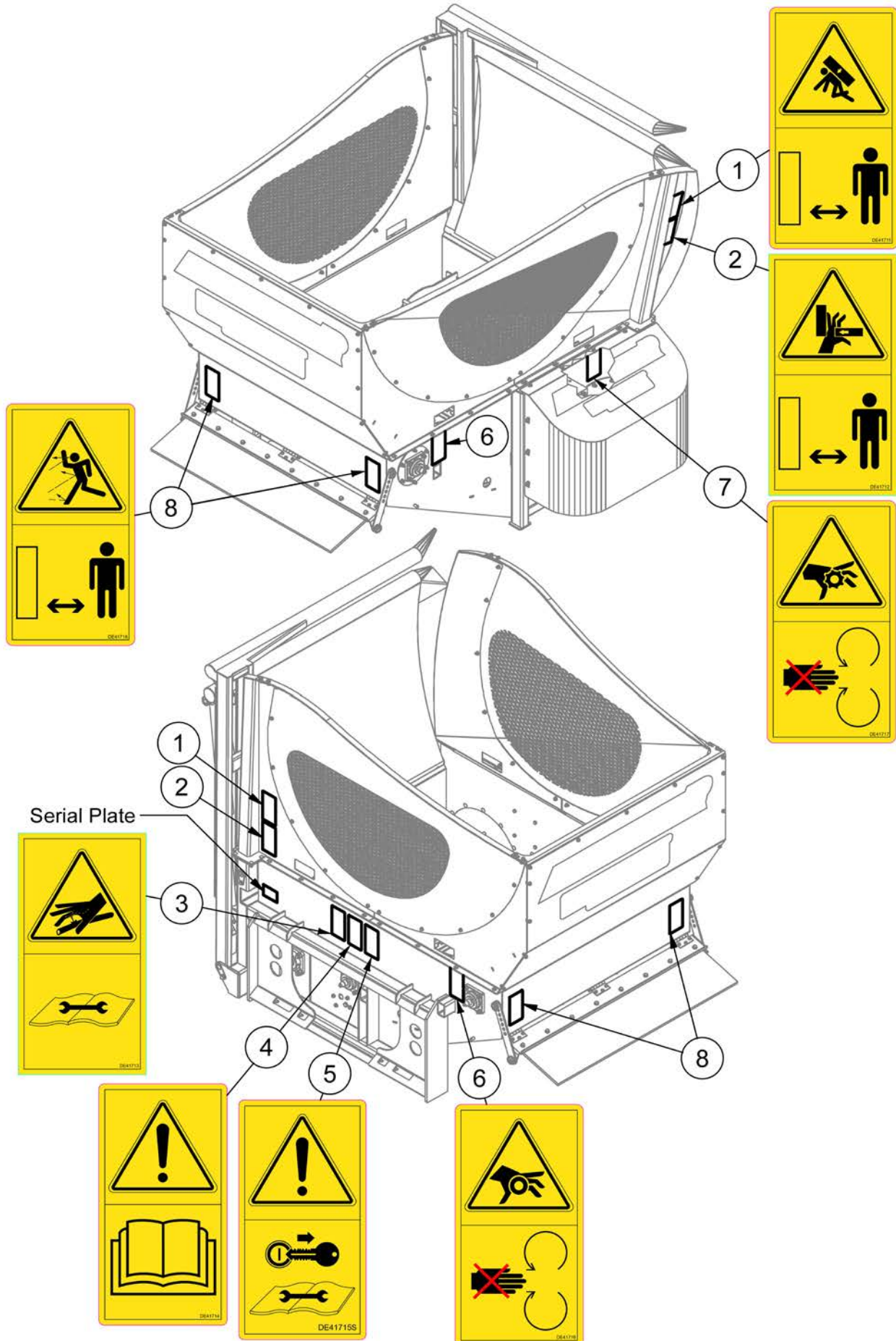
**WARNING:** Wear work boots, gloves, and safety glasses when maintaining or repairing machine.

**WARNING:** Wear work boots and ear protection when operating machine.

**DANGER:** Do not wear loose clothing when operating or maintaining the machine.



# Safety Decal Locations



ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	DE41711	Angled Crush Hazard
2	2	DE41712	Hand Pinch Point
3	1	DE41713	High Pressure Fluid
4	1	DE41714	Read Operator's Manual
5	1	DE41715	Remove Key Before Repair
6	2	DE41716	Shaft Entanglement
7	1	DE41717	Sprocket Entanglement
8	2	DE41718	Thrown Object

## Decal Installation

**NOTE:** Keep all safety signs clean and legible.

- Replace all missing, illegible or damaged safety signs.
- Replacement parts for parts with safety signs attached must also have safety signs attached.
- Safety signs are available free of charge from your dealer or from Tube-Line.

Clean the area of application with non-flammable solvent, then, wash the same area with soap and water. Allow the surface to fully dry. Remove the backing from the safety sign, exposing the adhesive surface. Apply the safety sign to the position shown in the diagram above and smooth out any bubbles.

## Safety Decal Illustrations



**Item: 1**  
**Part No: DE41711**  
Crush hazard from bale loading arm. Stand clear while arm raised.



**Item: 2**  
**Part No: DE41712**  
Pinch point hazard from bale loading arm. Stand clear while arm in motion.



**Item: 3**  
**Part No: DE41713**

High pressure fluid hazard. Refer to Maintenance notes on [pg.5-3](#).



**Item: 4**  
**Part No: DE41714**  
Read and understand manual before operating this machine.



**Item: 5**  
**Part No: DE41715**  
Remove key from power unit before attempting repairs on this machine.



**Item: 6**  
**Part No: DE41716**  
Keep hands away from rotating shaft end.



**Item: 7**  
**Part No: DE41717**  
 Never reach into rotating sprocket area.

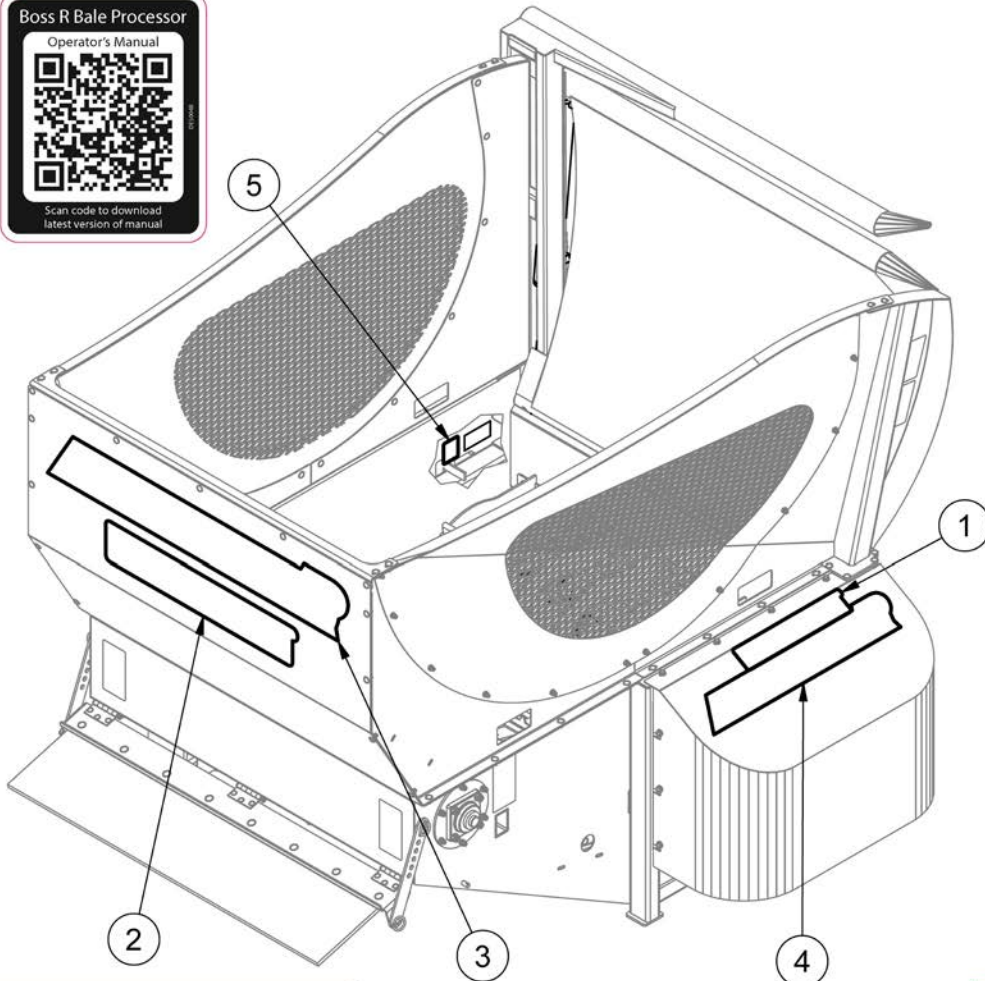


**Item: 8**  
**Part No: DE41718**  
 Thrown object hazard. Stand clear of feed path.



**Item: 9 Part No: DECANADA**  
 Manufacturer of origin decal.

### Model Decal Locations



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	DE28146	Tubeline Decal 4" x 16"
2	1	DE30837	Tubeline Decal 7.25" x 30"
3	1	DE43058	Boss R Model Decal 47" x 7.7"
4	1	DE43059	Boss R Model Decal 30" x 5.5"
5	1	DE50048	Boss R 4520 QR Decal



## Section 2: Adjustments

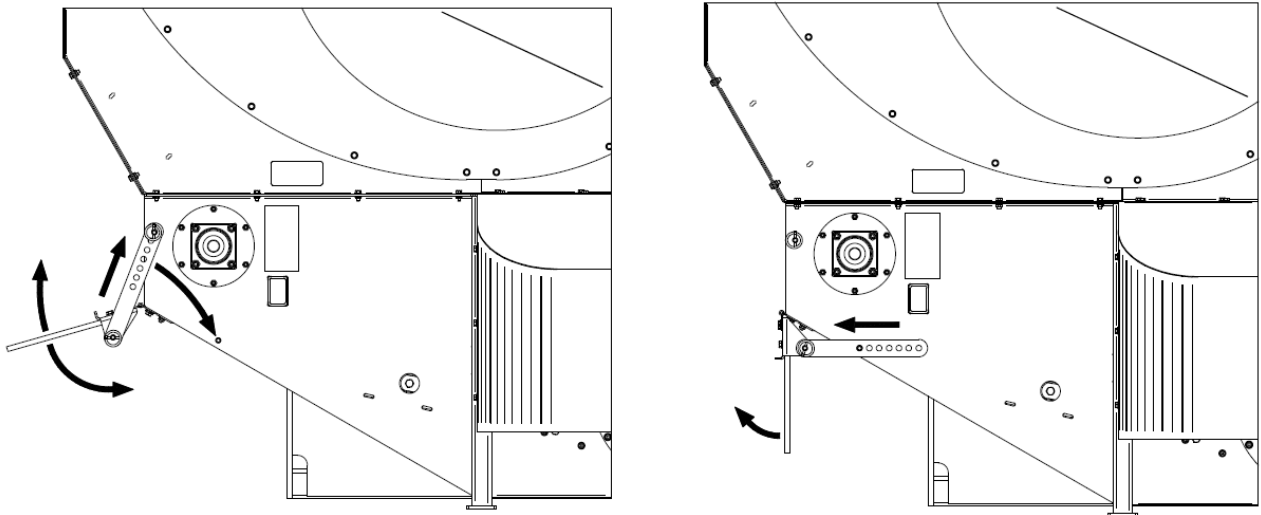
**DO NOT MODIFY YOUR SHREDDER WITHOUT CONSENT OF MANUFACTURER.**

When making repairs, use only genuine Tubeline parts or, for fasteners, hydraulic hoses or hydraulic fittings, use only properly rated parts.

Replacement parts, for parts with safety signs attached, must also have safety sign attached.

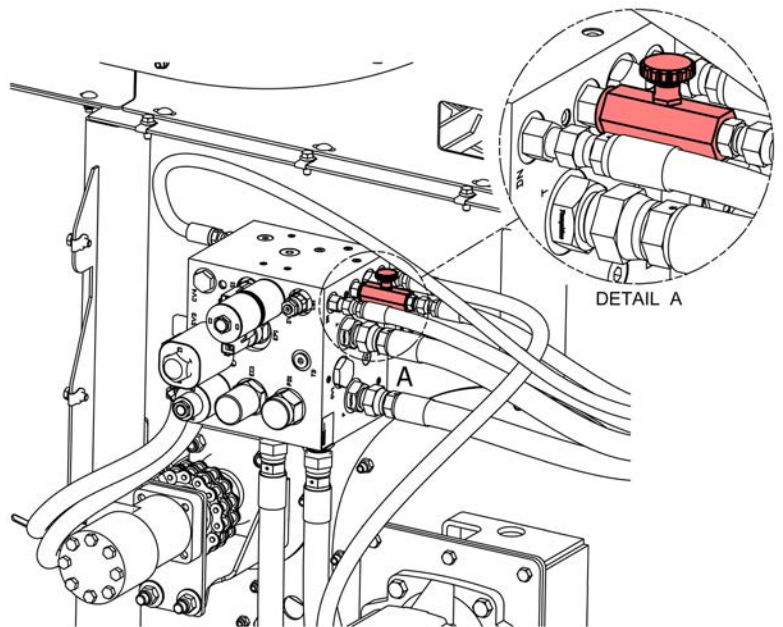
### Deflector Adjustment

How material is directed can be adjusted by unpinning linkage arms and moving them to a different hole or moving arms to different peg. As shown as below.



### Needle Valve Adjustment

Needle valve (encircled below) can be tightened or loosened to restrict or allow more hydraulic oil to flow to the bale arm. Front cover (Item 1 on [pg. 10-20](#)) must be removed before this adjustment can be made. **REINSTALL SHIELD BEFORE OPERATING.**



## Section 3 - Operation

**NOTE:** Read and understand the [Section 1 - Safety](#) BEFORE beginning any processor operation.



**DANGER:** Failure to obey the following procedure will result in death or serious injury. Avoid contacting overhead wires.

**WARNING:** Failure to obey the following procedures could result in death or serious injury.

Refer to the operator's manuals of your power unit, your loader and your quick-attach for special or detailed mounting instructions. This product should fit onto the quick-attach or loader arms of your power unit the same as the original products that were designed by your loader / quick-attach manufacturer. If this product does not fit properly, contact Tube-Line before operating. Never place your finger into the mounting plate or 3-point hitch or loader holes. A slight movement of the power unit or this product could cause serious injury.

Replace all damaged or excessively worn parts and hardware only with genuine Tube-Line parts or with properly rated fasteners, hydraulic hoses or fittings. Make certain that all locking pins, latches and connection devices are properly installed and secured. Make certain that all shields are in place and secure. Remove all foreign objects from processor.

- Never use processor on a power unit that is not equipped with a cab or ROPS, and operator restraints (seat belts or equivalent devices).
- Place this product on a firm, level surface that is large enough to safely accommodate this product, your power unit and all workers involved in the mounting process.

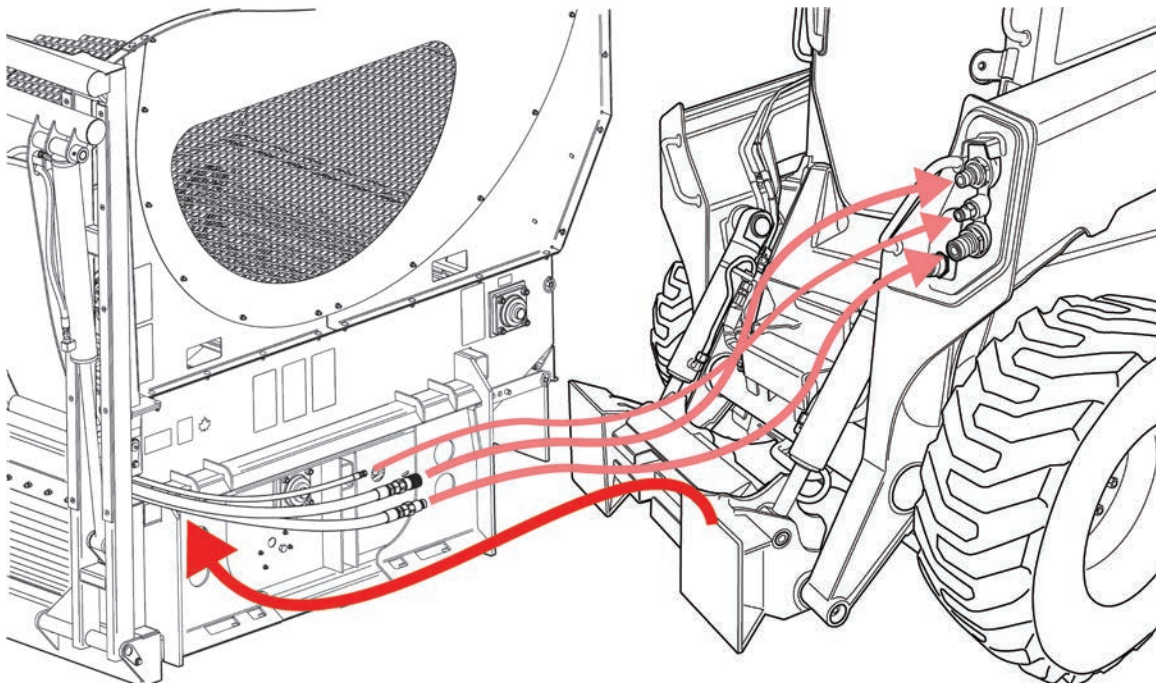
Remove all foreign objects from bales.

### Processor Hookup

Disconnect the hydraulic hose quick couplers from one another and attach the quick couplers to your power unit as per the instructions in your power unit's operator's manual.



**WARNING:** Do not operate this machine without connecting the case drain hose.



- Carefully raise the loading arm and to check hose clearances and to check any interference.
- Be sure all connection points are properly secured.
- Know your power unit's safe operating weight limit and the weight of your loader attachment.

**NOTE:** Refer to your power unit's operator's manual for safe operating limit and use of counterweight.

## Pre-Operation

Run machine through cycle without bale in chamber to confirm all functions are in good working order.

Never lift this product above the operator's eye level OR to a height where visibility is obstructed, whichever is lower.

## Control Functions

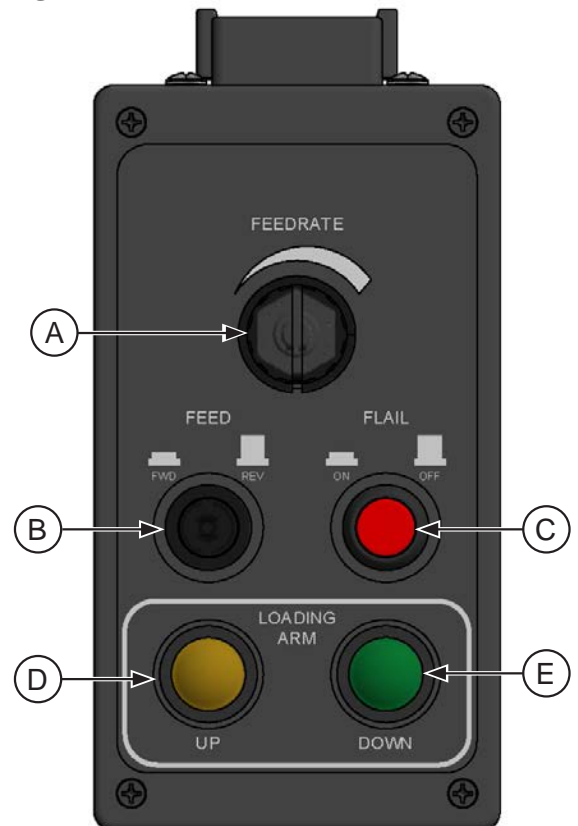
**A** - Twist knob turns clockwise to speed up bed chain, whereas turning counter-clockwise will slow down and/ or stop the bed chain.

**B** - A black button that, when pushed in, will move the bed chain forward when in use. If black button is in raised position, the bed chain will reverse when engaged (move bale away from flail motor).

**C** - A red button that allows the flail drum to turn when pressed, or stops flail drum from operating if button is in raised position.

**D** - A yellow push button that must be held to raise the loading arm. Releasing button will stop the upward motion of the loading arm.

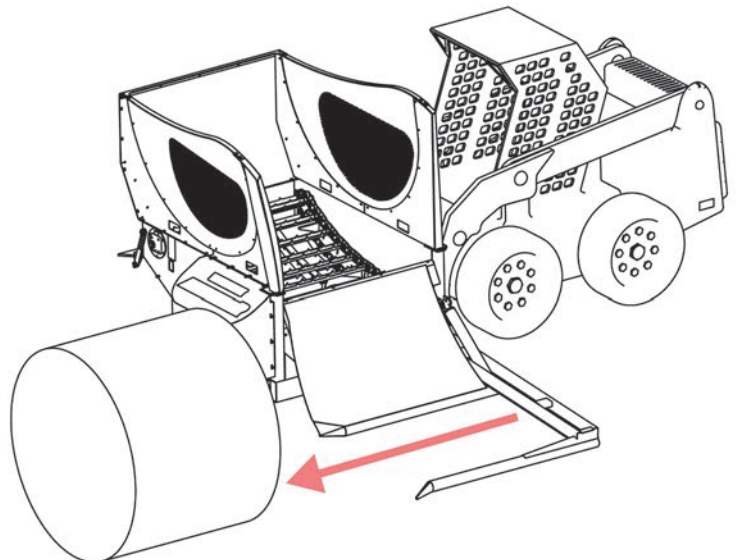
**E** - A green push button that must be held to lower the loading arm. Releasing button will stop the lowering of the loading arm.



## Loading Bales

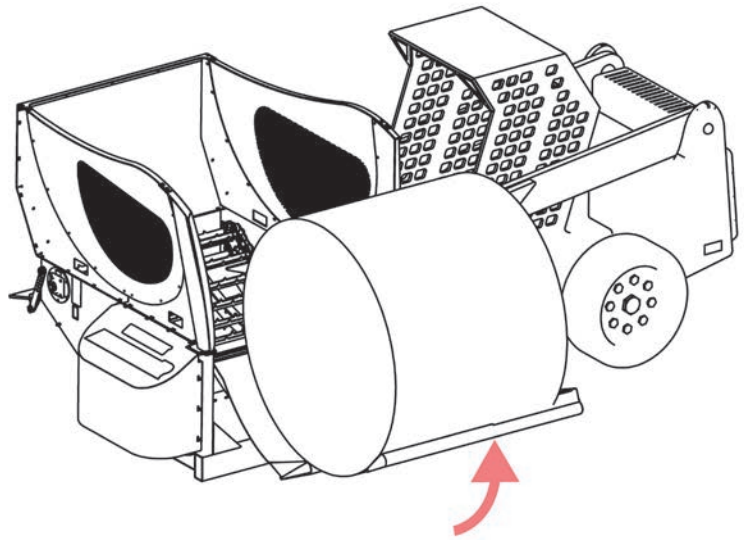
When using the loading arm to load a bale into the Boss R 4520, keep loading implement at idle and a low oil flow rate. Use caution when raising loaded processor. Objects could fall from processor toward bystanders or operator.

- Lower loading arm completely to ground.
- Drive forward into bale using the loading arm as a fork. **DO NOT SPEAR BALE. DO NOT PUSH BALES WITH LOADING ARM.**
- With bale completely on loading arm forks, raise the loading arm to a position (usually around half way) where the bale is being cradled by the inner loading arm. The bale should be partially overhanging the bale chamber.



**NOTE:** Bale chamber width is only slightly wider than the bale.

- Cut strings or netwrap from bale when it is partially into bale chamber. This will ensure loose material falls into bale chamber. Strings or netwrap can be pulled off from the top of bale.
- Fully raise loading arm to push entire bale into bale chamber. Use the bucket angle to ensure the bale is against the backside of the chamber, **FORCING MISALIGNED BALE INTO CHAMBER MAY DAMAGE MACHINE.**
- Drive slowly through gates and doors.

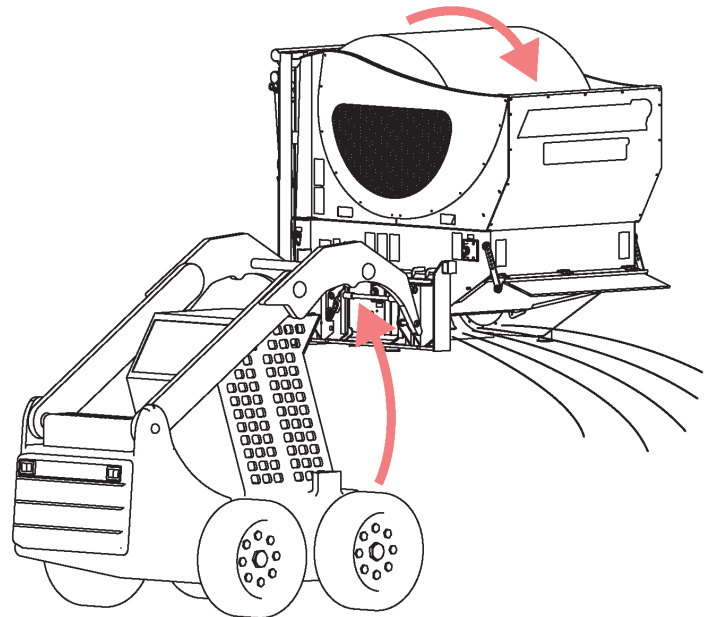


**DANGER: NEVER LOAD BALES WHILE FLAIL DRUM ROTATING.**

## Shredding

For best results keep the bale turning while shredding, misaligned bale will cause uneven feed.

- Start flail drum to full RPM with bed chain stopped.
- Raise the machine off the ground to desired height.
- Slowly increase the bed chain speed in the direction of the flail drum.
- As bale is being fed through the flail drum, adjust the bed chain speed with the control panel and the flail drum speed.
- Adjust discharge deflector to spread forage at desired width.



## Post Operation

- Always lower the processor to the ground; set the parking brake; stop the engine; remove ignition key and wait for all moving parts to stop before leaving the operator's seat.
- Twine build-up should be kept to a minimum to reduce fire hazard and keep the machine in balance.



## Section 4 - Maintenance

Regular maintenance is the key to long equipment life and safe operation. It is very important that these maintenance functions be performed as described below.



Read and understand the safety instructions [Section 1 - Safety](#) before beginning any processor maintenance.

**NOTE:** The flail drum on this machine is a fully balanced assembly. If for any reason the flails must be removed, they must be returned to the same position they were taken from. If this is not done a balance problem will result in causing machine vibration. Number flails and inserts and their positions before you do any work.

### Before First Use

Inspect the attachment for shipping damage. If damage does exist, do not operate until the damaged parts have been replaced or repaired.

### Before Each Use

- Check for loose or badly worn parts.
- Conveyor chain should be adjusted to allow chain slack 1" (2.54 cm) to 1½" (3.8 cm).
- Make sure that all hydraulic fittings are tightened and that there are no leaks in any fittings or hoses.
- Inspect flail drum and bed chain for twine or wire build-up.
- Check for cylinder wear and broken flails and flail bracket wear. Replace with new flails to keep machine in balance.
- Make sure that all safety signs are in place, are clean and are legible. Refer to Safety Decals, [pg. 1-3](#)).

### After Every 10 Hours of Operation

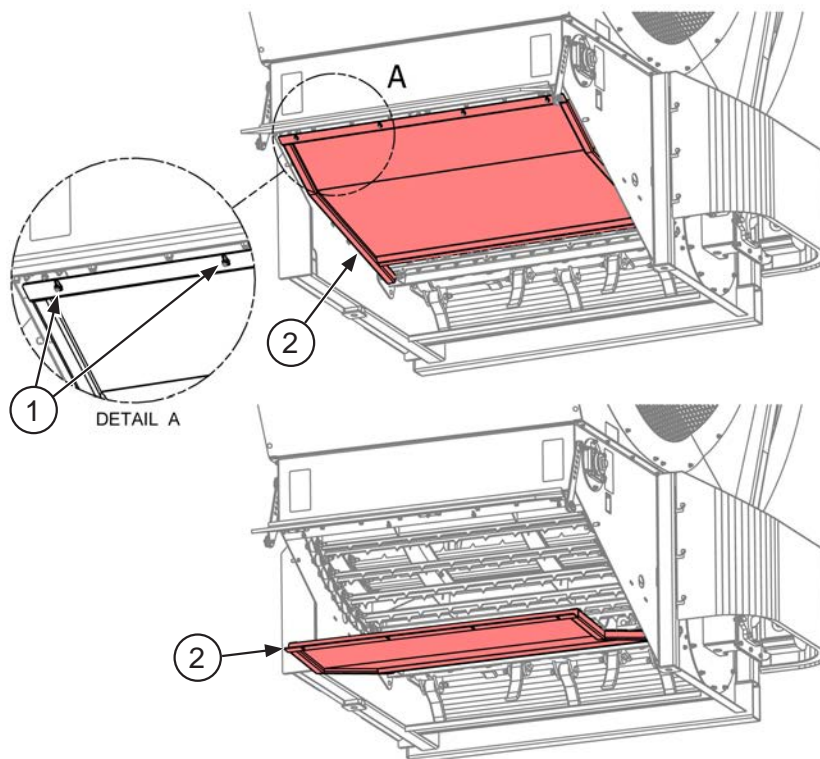
- Grease all roller bearings ([refer to diagram on pg.4-3](#)).
- Inspect and tighten Allen screws on bearing.
- Wear safety glasses and use metal or wood when searching for leaks. Do not use your hands.
- Steam-clean the power unit before any installation is made to the hydraulic system.
- Remove any attachment from the power unit and position on a level surface.



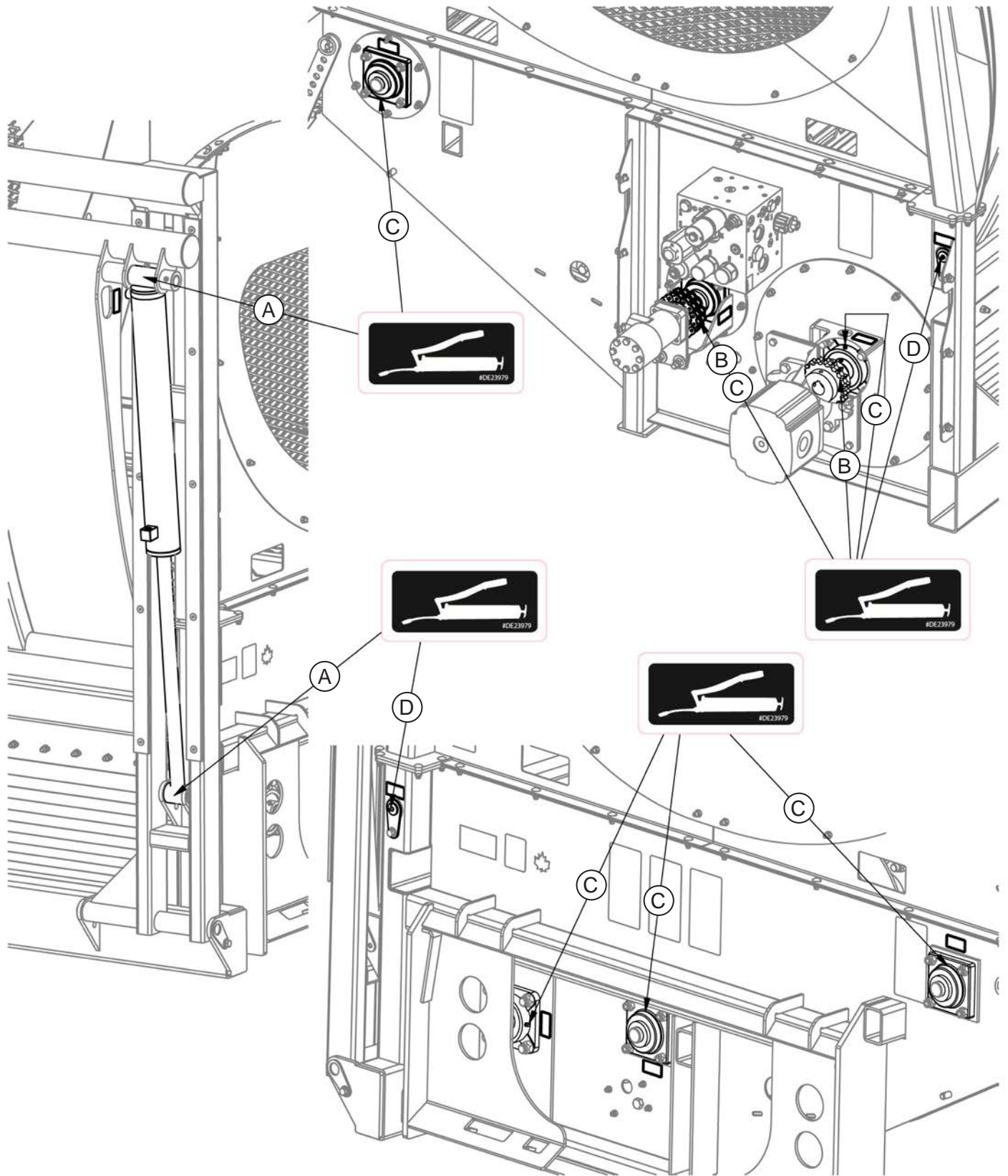
## Pan Cleanout

Over time material can build up in the bed chain area. This should be emptied out occasionally and before storing for winter. To empty this area:

1. Remove and store 4 5/16" locknuts (1) from top lip of pan (2).
2. Lower pan to access bed chain area.
3. Wear gloves and remove material by hand, being careful to avoid sharp edges on slats.
4. Raise pan and reinstall 4 5/16" locknuts.














## Grease Points



ITEM	QTY	AREA	TIMELINE
A	2	Loading Arm Cylinder Ends	Weekly
B	2	Chain Sprockets	Weekly
C	6	Flange Bearings	Weekly
D	2	Pins	Monthly

# Imperial Torque Values

SAE Grade and Head Markings	NO MARK	1 or 2 <sup>b</sup> 	5 	5.1 	5.2 	8 	8.2 
	NO MARK	2 	5 		8 		

Size	Grade 1				Grade 2 <sup>b</sup>				Grade 5, 5.1, or 5.2				Grade 8 or 8.2			
	Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>	
	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft
1/4	3.7	2.8	4.7	3.5	6	4.5	7.5	5.5	9.5	7	12	9	13.5	10	17	12.5
5/16	7.7	5.5	10	7	12	9	15	11	20	15	25	18	28	21	35	26
3/8	14	10	17	13	22	16	27	20	35	26	44	33	50	36	63	46
7/16	22	16	28	20	35	26	44	32	55	41	70	52	80	58	100	75
1/2	33	25	42	31	53	39	67	50	85	63	110	80	120	90	150	115
9/16	48	36	60	45	75	56	95	70	125	90	155	115	175	130	225	160
5/8	67	50	85	62	105	78	135	100	170	125	215	160	240	175	300	225
3/4	120	87	150	110	190	140	240	175	300	225	375	280	425	310	550	400
7/8	190	140	240	175	190	140	240	175	490	360	625	450	700	500	875	650
1	290	210	360	270	290	210	360	270	725	540	925	675	1050	750	1300	975
1-1/8	400	300	510	375	400	300	510	375	900	675	1150	850	1450	1075	1850	1350
1-1/4	570	425	725	530	570	425	725	530	1300	950	1650	1200	2050	1500	2600	1950
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2150	1550	2700	2000	3400	2550
1-1/2	1000	725	1250	925	990	725	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent

them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

<sup>a</sup> "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

<sup>b</sup> Grade 2 applies for hex cap screws (not hex bolts) up to 152 mm (6-in.) long. Grade 1 applies for hex cap screws over 152 mm (6-in.) long, and for all other types of bolts and screws of any length.

# Metric Torque Values

Property Class and Head Markings	4.8		8.8		9.8		10.9		12.9	
Property Class and Nut Markings	5		10		10		10		12	

Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>	
	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to the strength of the original.

Make sure fasteners threads are clean and that you

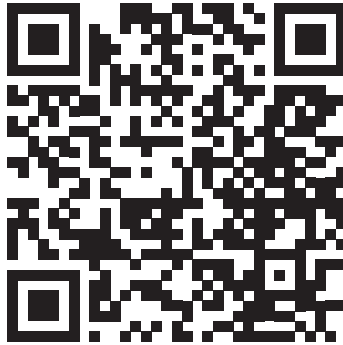
properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

a "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

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**Proposition 65 Warning**

Battery posts, terminals, and similar parts may contain lead which are known to the State of California to cause cancer and reproductive harm. Wear gloves and wash hands after handling.

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