

TUBE•LINE™

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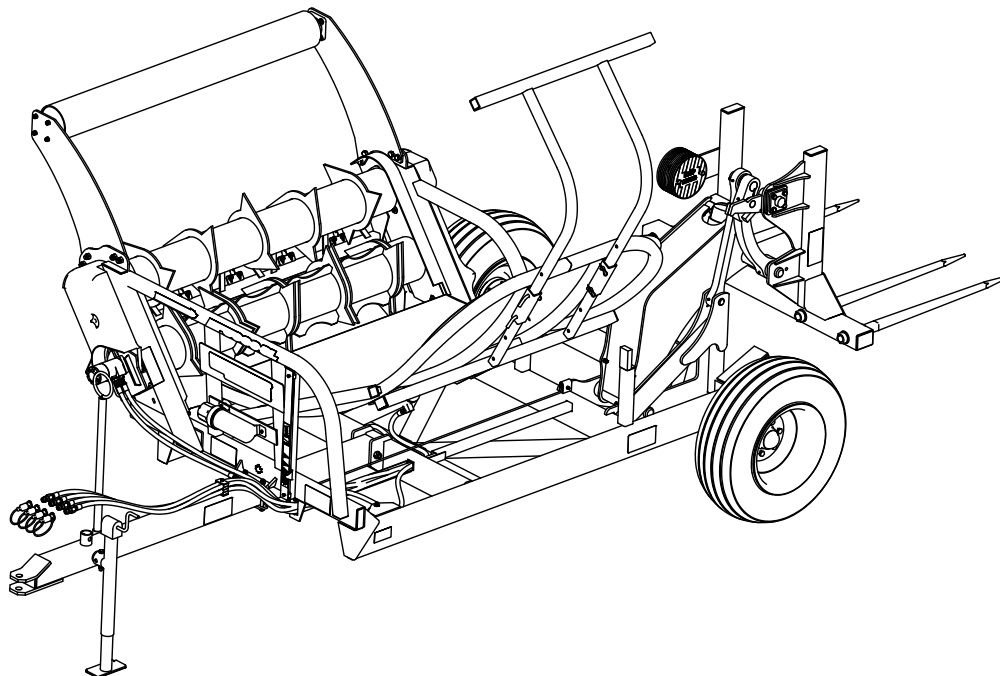
Operator's Manual

Keep this manual with the machine at all times.

BF5000SL

Self Loading Balefeeder

BF5000SL



Operator's Manual

Thank you for choosing the Tubeline Chainless Self Loading Balefeeder.
Our hope is that it will give you many years of productive service.

Please read and understand this manual and the machine before operation.

Warranty and Limitation of Liability

All equipment is sold subject to mutual agreement that it is warranted by the company to be free from defects of materials and workmanship. But the company shall not be liable for special, indirect or consequential, damages of any kind under this contract or otherwise. The company's liability shall be limited exclusively to replacing or repairing without charge, at its factory or elsewhere, at its discretion.

Any material, or workmanship defects which become apparent within one year from the date on which the equipment was purchased, and the company shall have no liability for damages of any kind. The buyer by the acceptance of the equipment will assume all liability for any damages, which may result from the use or misuse by his employees or others.

Serial Number

The implement serial number is located on the front left side of the frame. This number helps us to track changes and improvements and must be mentioned when ordering parts or requesting service. For your convenience, a space has been provided inside the front cover of this manual to record the serial number, model number, purchase date, and dealer name.

Model No: _____

Serial No: _____

Date Purchased: _____

Dealer Name: _____

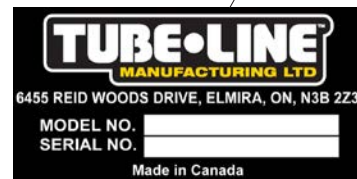
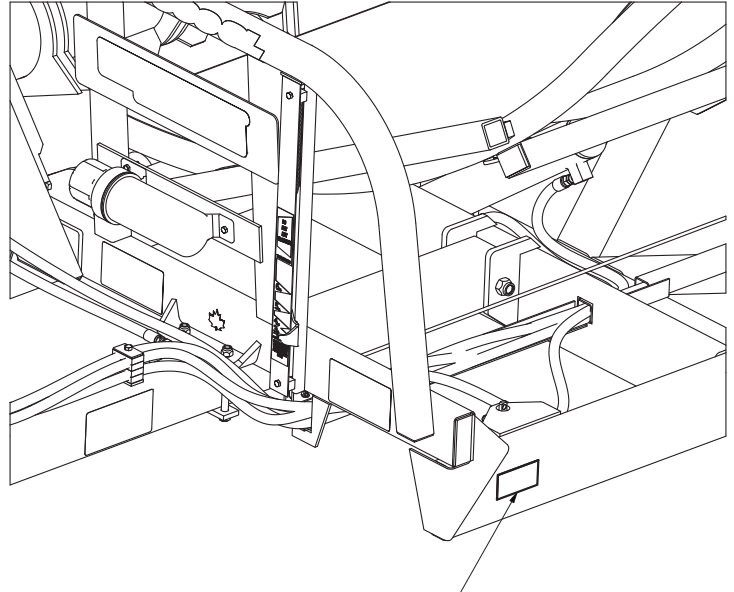


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Section 1: General Information

Usage

This machine is designed to unravel round bales in a windrow for feeding livestock. The BF5000SL works well with hay, straw, baleage and silage. This machine does not alter material length.

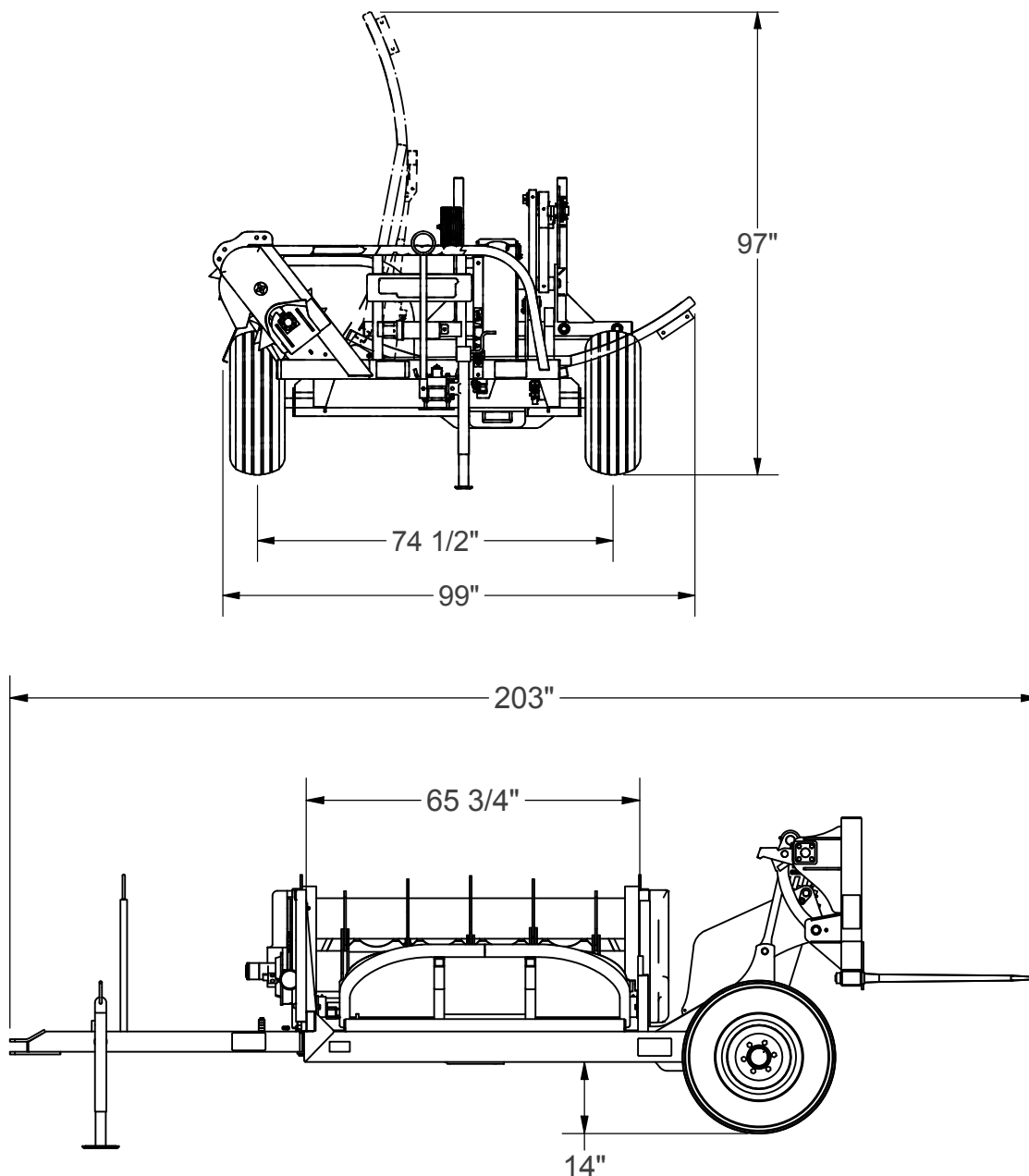
Bales

The BF5000SL can handle up to a 5' x 6' round bale. If equipped with optional bale extension this machine can feed square bales **up to 8'** long. Maximum load capacity is 4000lbs.

Power Unit Requirements

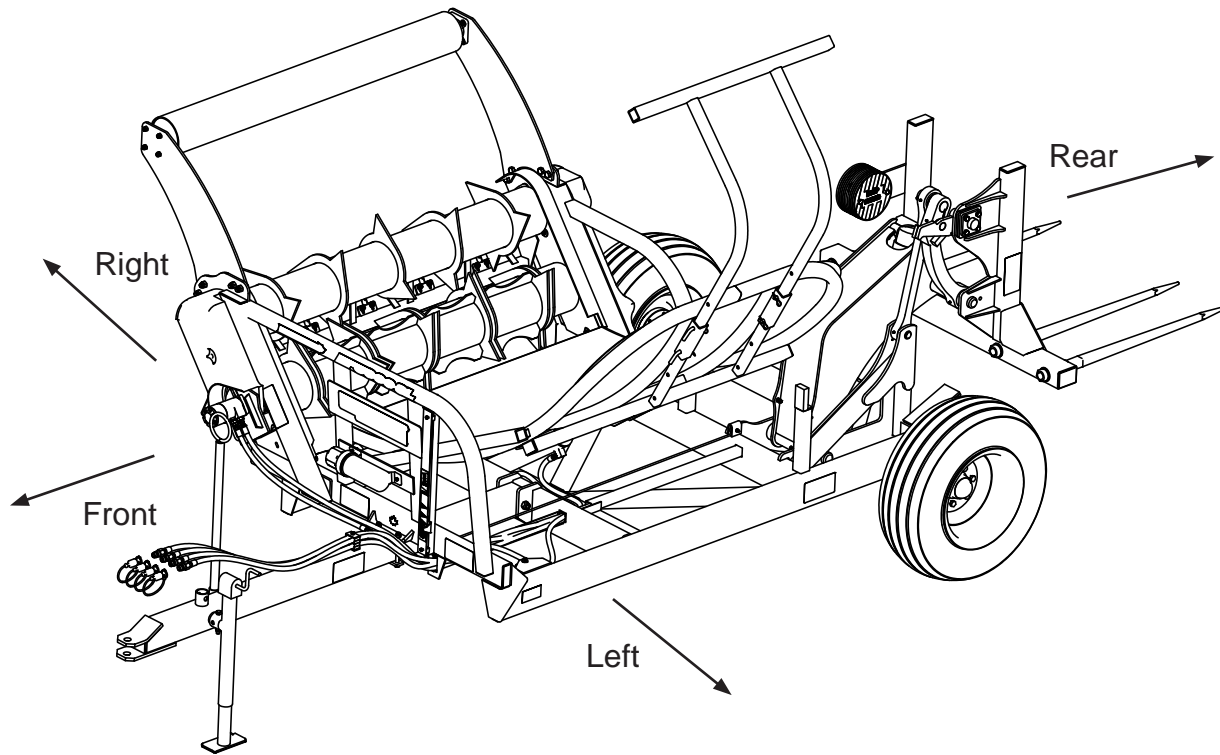
The BF5000SL requires a power unit with 8-16 GPM feed rate, a minimum of 2000PSI and a 40hp engine.

Dimensions



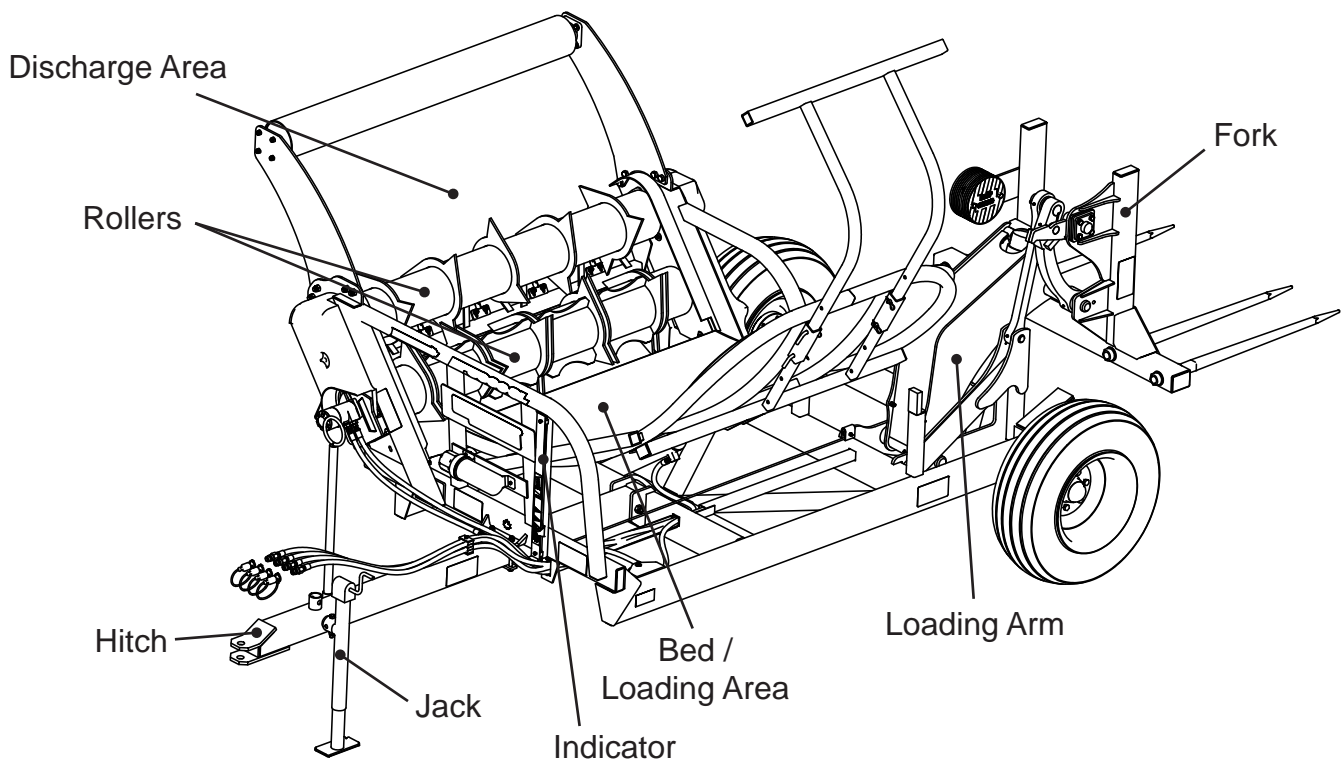
Orientation

Directional references in this manual are dependant on the operator's position from a forward pointed position while towing this machine.



Terminology

Common terms used in this manual.



Section 2: Safety

NOTE: This safety alert symbol is found throughout this manual to call 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 / Safety Messages

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. Operator needs to be aware of these dangers. High probability of serious injury or death.

NOTE: Indicates an informative non-safety related message.

Safety Guidelines

Take the necessary precautions to avoid injury or death. These include:

- Have training and train new operators.
- Review the safety instructions with all users annually.
- Know where safety decals are and what they convey.
- **DO NOT** paint over, remove or deface any safety signs or warning decals on your equipment.
- Replace damaged and/or missing safety decals.
- **DO NOT** operate without fully installed shields.
- Reinstall any removed shields **BEFORE** operating.
- Inspect machine before operating.
- **DO NOT** operate this machine while under the influence of drugs or alcohol.
- **DO NOT** let children ride or operate this machine.
- Keep a first aid kit and a fire extinguisher on site in case of emergency.

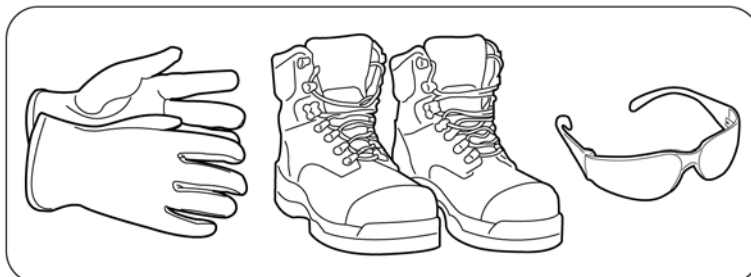
Personal Protective Equipment



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 BF5000SL.



Hydraulic Safety

Before applying pressure to the system, be sure all connections are tight and that hoses and connections are not damaged.

Ensure that all the pressure is released from the hydraulic lines before repairing. Replace or repair damaged hoses immediately.



WARNING

When checking for oil leaks use a piece of cardboard; **DO NOT** use your hand:

- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines.
- Tighten all line connections before applying pressure.
- Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Failure to comply could result in serious injury, paralysis or even death.

Maintenance Safety

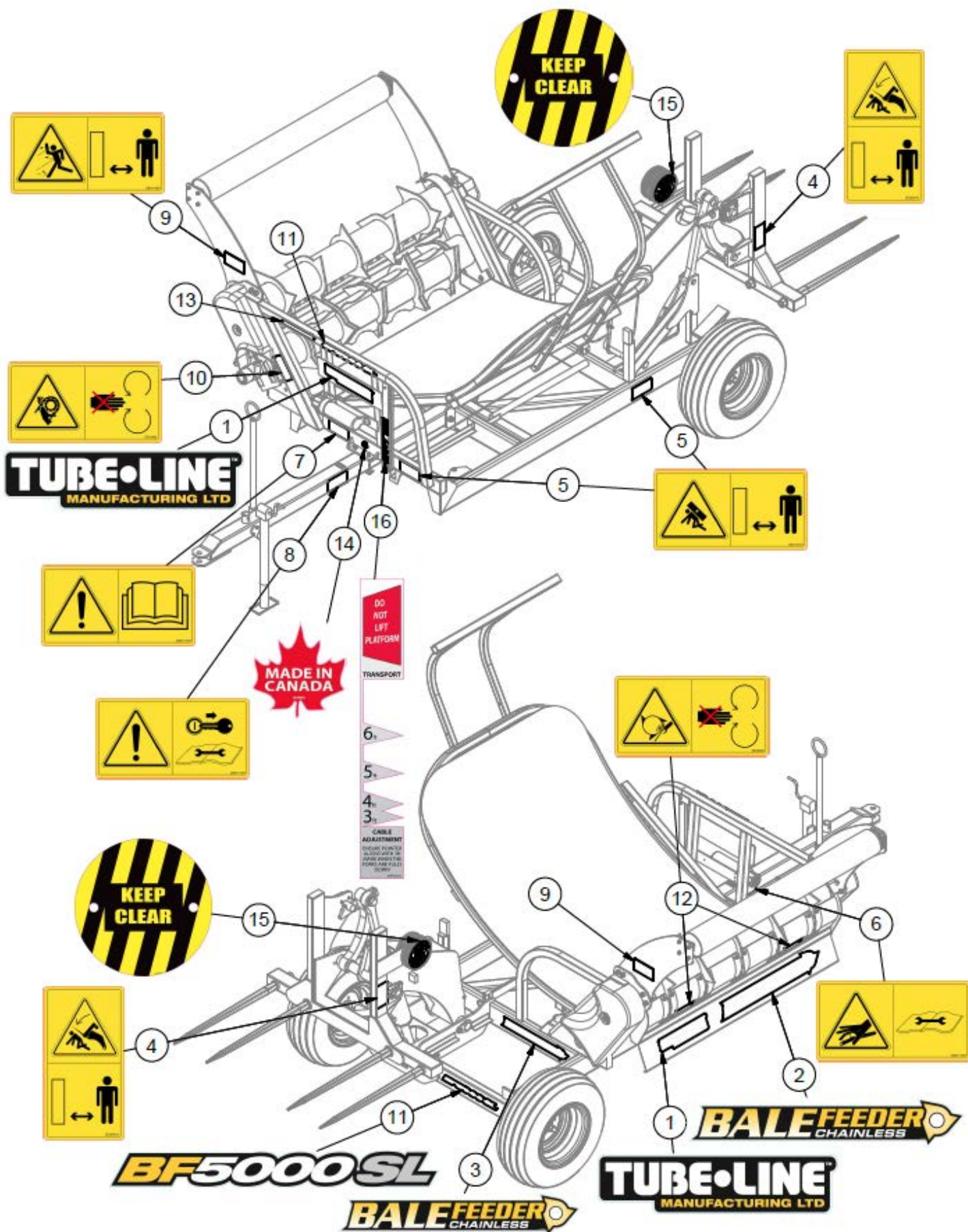
DO NOT weld on or near rotating parts. Welding close to rotating parts will cause warping and will challenge the structural integrity.

DO NOT weld on or near rotating parts. Welding close to rotating parts may cause warping thus creating high stress loads for moving or rotating parts.

DO NOT weld on wheel rims. Welding on wheel rims may cause high stress and wheel failure.

DO NOT weld on wheels with a mounted tire, Welding on wheels with a mounted tire may cause tire to burst, causing serious injury or death.

Safety Decal Locations



Safety Decal Locations

ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	DE28146	Tubeline Decal 4" x 16"
2	1	DE28702	Chainless Bale Feeder 6" x 35" Decal
3	1	DE28708	BaleFeeder Chainless Decal 23 x 4
4	2	DE39591V	ISO Decal - Stay Clear of Forks Vertical
5	2	DE41711H	ISO Decal - Angled Crush Horizontal
6	1	DE41713H	ISO Decal - High Pressure Fluid Horizontal
7	1	DE41714H	ISO Decal - Read OM Horizontal
8	1	DE41715H	ISO Decal - Remove Key Before Repair Horizontal
9	2	DE41718H	ISO Decal - Thrown Object Horizontal
10	1	DE41902	ISO Decal - Chain Entanglement
11	2	DE43022	BF5000SL Model Decal 16 x 2
12	2	DE43026	ISO Decal - Shear Point
13	1	DE43055	BaleFeeder Chainless Decal 11.5 x 2
14	1	DECANADA	Decal Made In Canada
15	2	DEPP00525	Warning Decal - Keep Clear
16	1	DEPP00547	Warning Decal - Do Not Lift Bed

Safety Decals



DE39591V - Danger from free falling bale fork.

Stand clear of bale spear path to avoid injury or death.



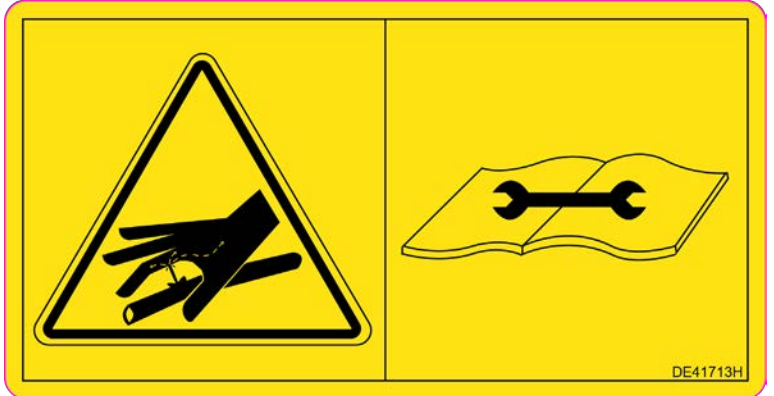
DEPP00525 - Keep clear of falling weight path.

DE41715H - Remove key from power unit and read manual maintenance section before attempting repairs.

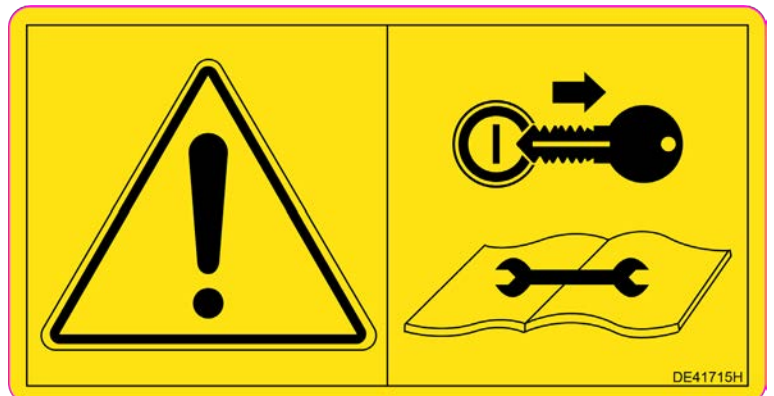
DE41713H - Hydraulic pressure puncture hazard.
Read manual maintenance section before repairing.



DE41713H - Hydraulic pressure puncture hazard.
Read manual maintenance section before repairing.



DE41714H - Read Manual Before Operating Machine.



Safety Decals

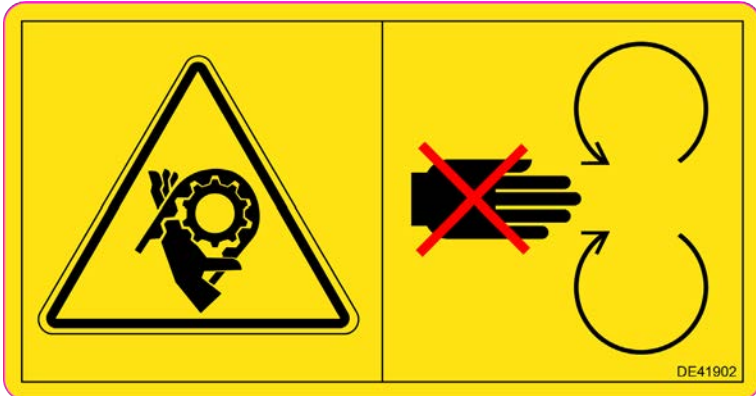
DE41718H - Thrown object hazard.

Be sure all observers are clear of discharge area while operating.



DE41902 - Chain entanglement hazard.

Keep hands clear and shields in place while operating machine.

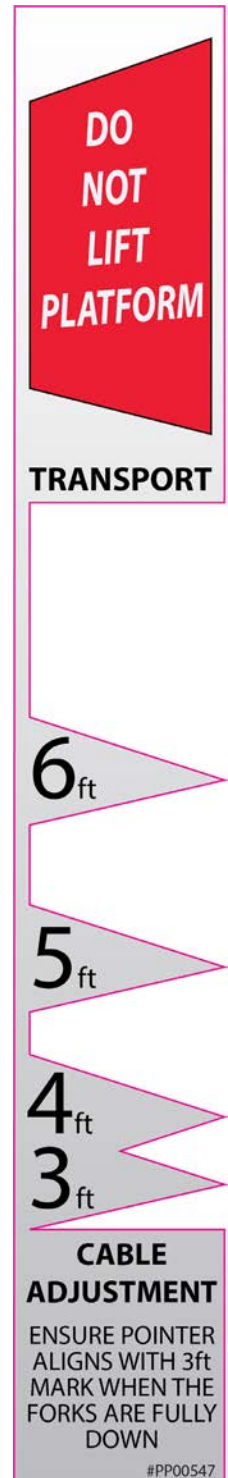


DE43026 - Beater entanglement hazard.

Keep hands clear and shields in place while operating machine.



DECANADA - This product is proudly manufactured in Canada.



DEPP00547 - Indicator decal.

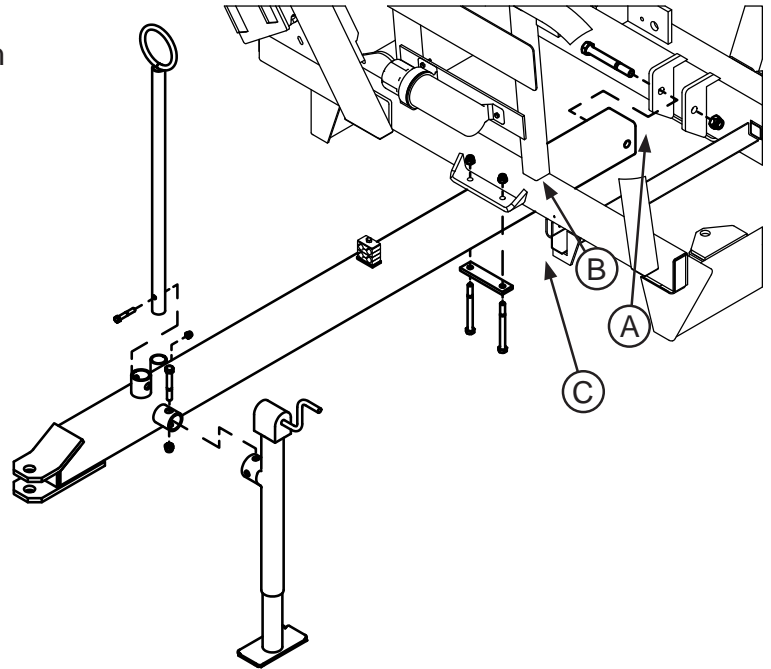
Section 3: Pre-Operation

Initial Setup

Your BF5000SL may need some pre-assembly prior to first use. In some circumstances the tongue and bale spears may be removed for shipping and need to be installed. Optional features may also be shipped separately and need to be installed. All needed fasteners are provided by manufacturer.

Hitch Installation

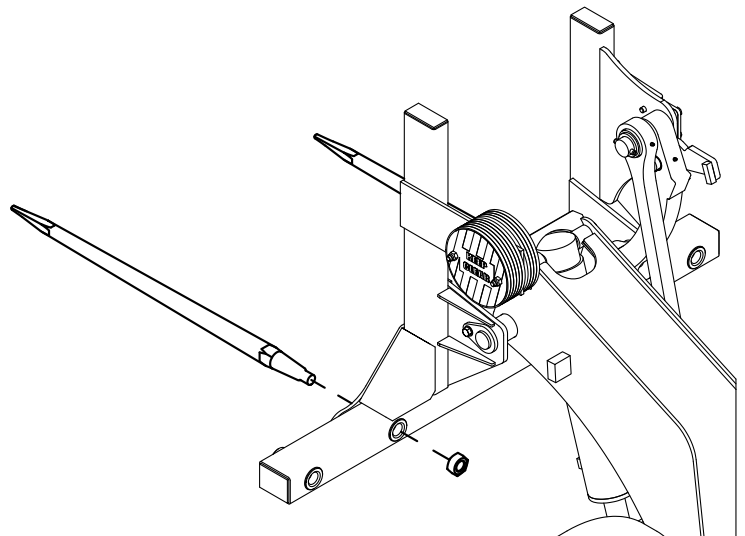
The front hitch is connected to the main frame by a 3/4" lock nut and 3/4" x 6" hex bolt through the rear of the tube **(A)** and through the front of the frame **(B)** with two 1/2" x 5.5" hex bolts, two 1/2" nuts and BF5000-245 hitch bracket **(C)**. The hose support and jack may also need to be installed as shown in illustration to left.



Bale Spear Installation

The bale spears must be attached to the bale fork to the rear of the machine.

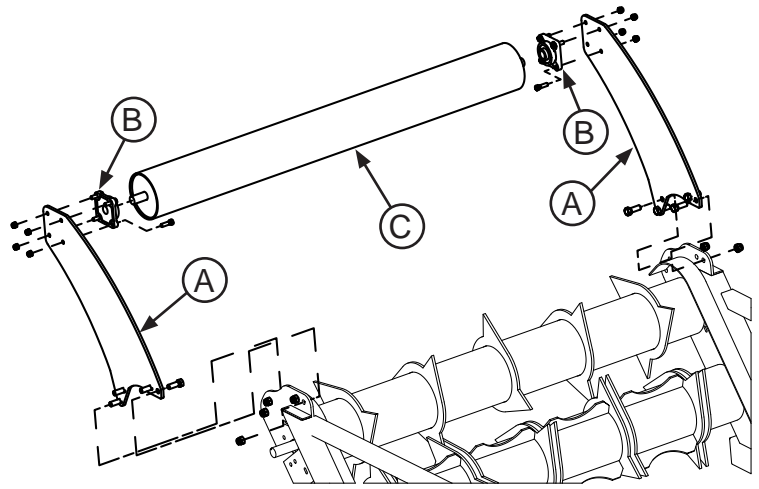
NOTE: Supplied conus nuts are the only supported fasteners to secure bale spears.



Optional Bale Bumper Installation

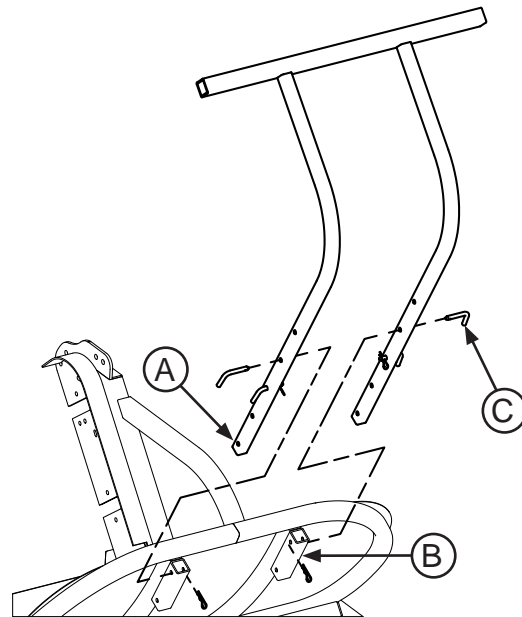
To install the optional bale bumper:

1. Secure two BF5000-260 bumper plates **(A)** to top of frame on either side of machine using four 5/8" x 1.75" hex bolts and 5/8" lock nuts per side.
2. Slide the two flange bearings **(B)** onto either side of BF5000-A20 bumper roller's shaft **(C)**.
3. Fasten the two flange bearings with four 7/16" x 1.5" bolts and 7/16" lock nuts to inside face of bumper plates.



Optional Bale Extension Installation

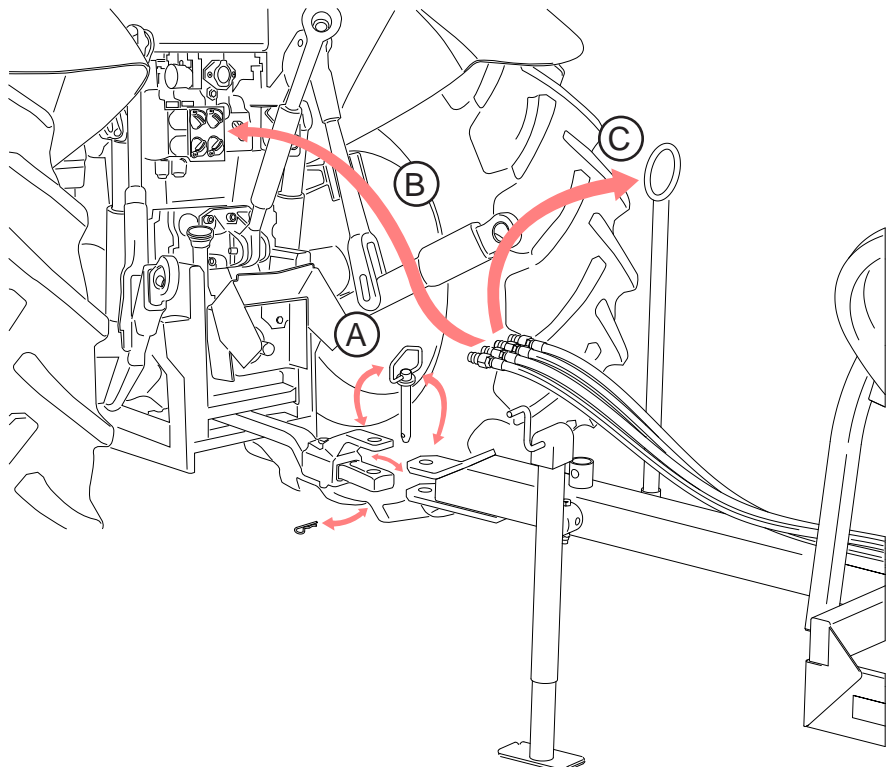
1. Slide bale extension **(A)** tube ends into tube holders **(B)** located on underside of bed frame.
2. Align holder holes and bale extension holes to desired position.
3. Secure in place with four BF5000-238 pins **(C)** and 1/8" x 1.5" hair pins.



Power Unit Hookup

- Connect hitch **(A)** to power unit drawbar with pin.
- Connect 4 hydraulic quick couplers **(B)** to power unit hydraulic outlets.
- Make sure parking brake is released before driving away.
- Raise jack when transporting.

When not in use, hydraulic hoses can be securely stored by looping them through hose support **(C)**.



Section 4: Adjustments

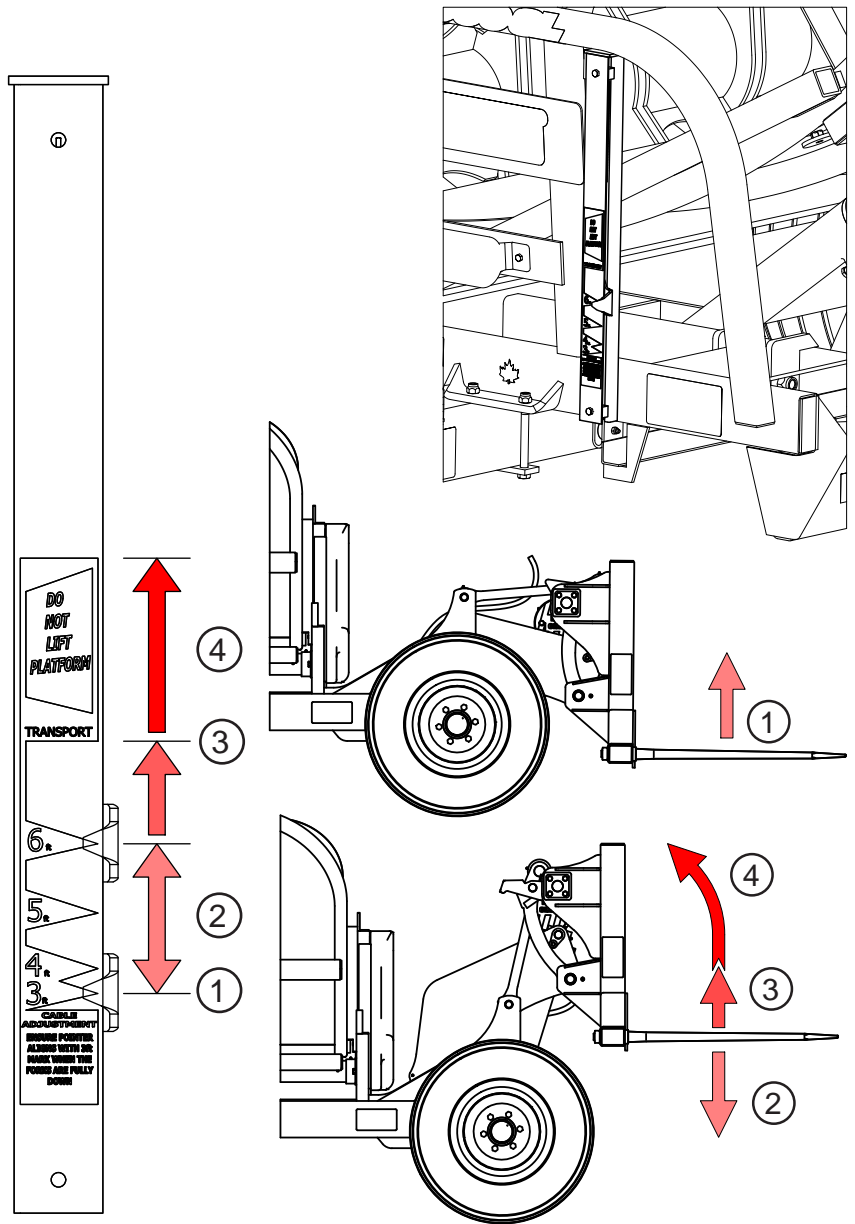
Bale Indicator

The bale indicator located on the front left of the machine is attached to the loading arm via pulleys and a cable, see [pg.9-14](#).

The bale indicator allows you to pierce bales at the right height for different bale sizes.

It may need to be adjusted as the cable stretches over time to remain accurate.

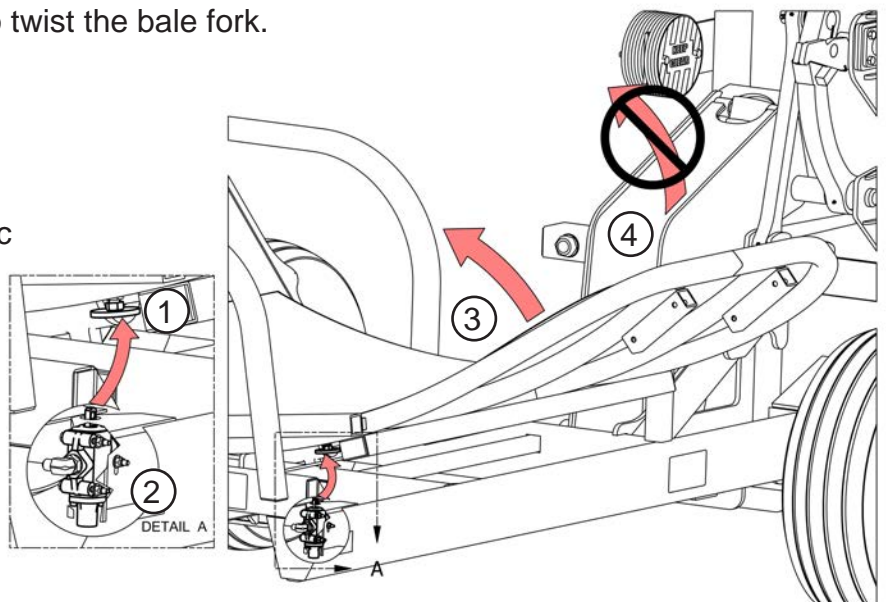
1. The bale indicator should be set so that when arrow aligns with the "3ft" mark when the bale fork is fully lowered. This is the position for loading 3' bales.
2. When the bale fork is raised to a height that the indicator arrow aligns with 4ft, 5ft, or 6ft, that is the loading position for that bale size.
3. Raise the bale fork so the indicator arrow aligns with "TRANSPORT" mark before and during transportation.
4. When a loaded bale is being placed on the bed, the indicator arrow will align with "DO NOT LIFT PLATFORM".



WARNING: Lifting the bed while the indicator is in this area may cause the bale to twist the bale fork.

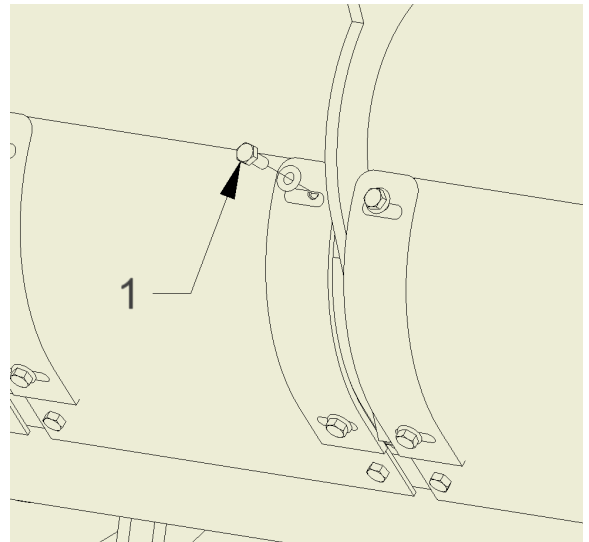
Bed Stop

The bed stop (1) is used to trigger the diverter valve (2) which allows hydraulic pressure to the loading arm. When the bed (3) is raised the diverter valve shuts off pressure to the loading arm (4) which keeps the arm from being raised and damaging itself or the bed.



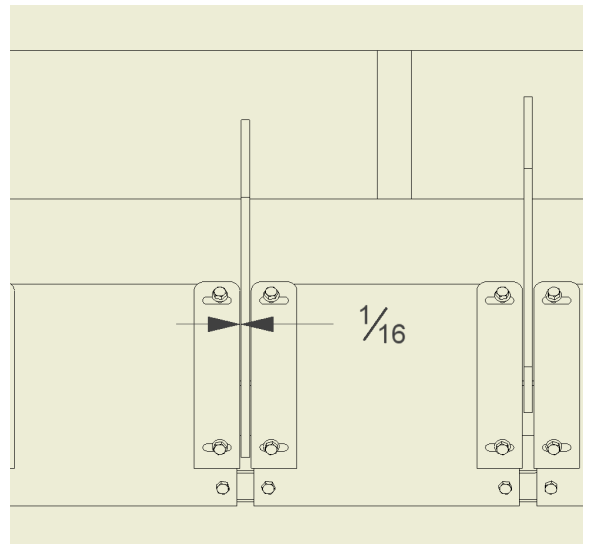
Beater Guide

1. Loosen 5/16-18 bolt **(1)**, and 5/16-18 nuts.



2. Adjust slot opening guide to 1/16" from beater.

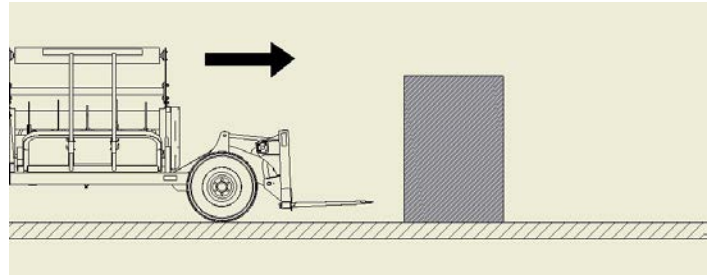
3. Retighten fasteners.



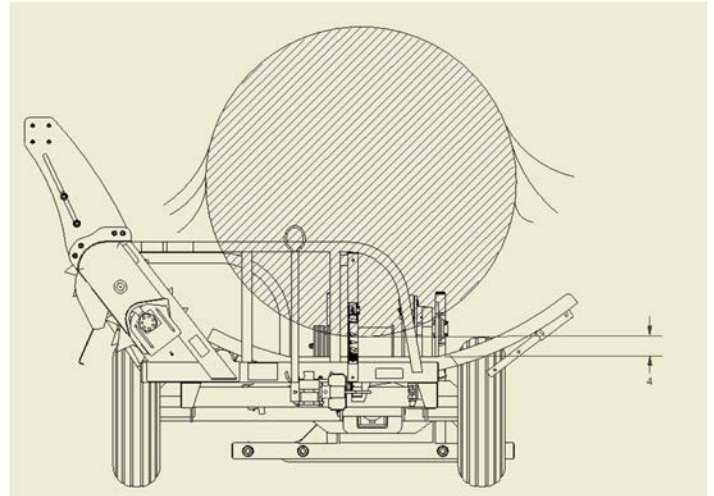
Section 5: Operation

Loading Bales

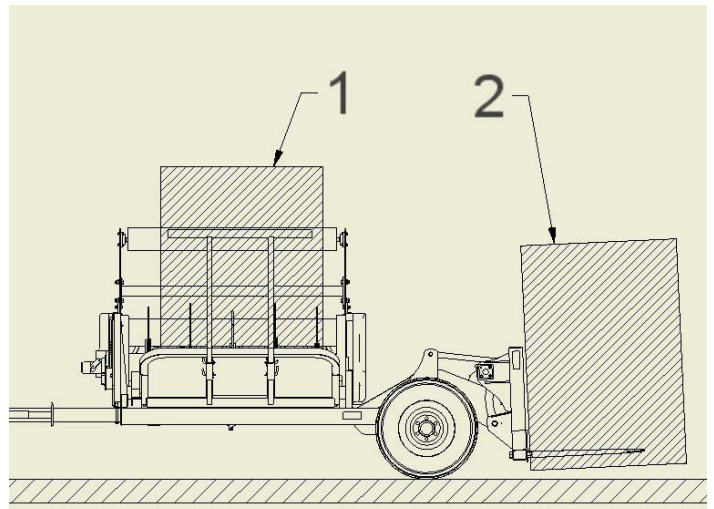
1. With rear fork assembly down reverse the unit and pierce bale.



2. Apply hydraulic pressure to loading arm circuit, lifting the bale onto the bed.
3. If bale has plastic or net wrap covering it can be easily removed once the bale is off the ground.



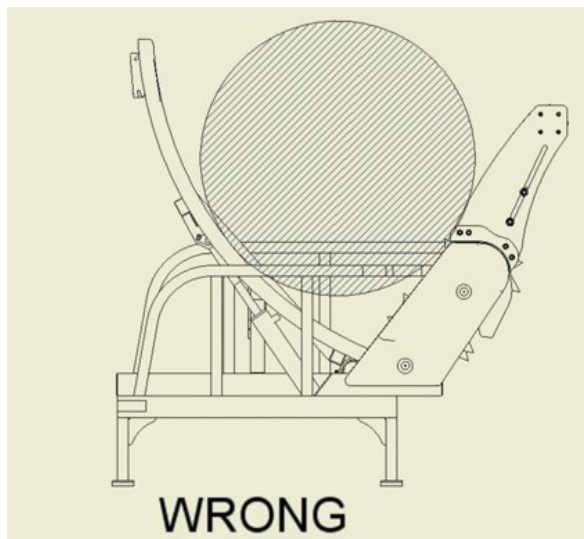
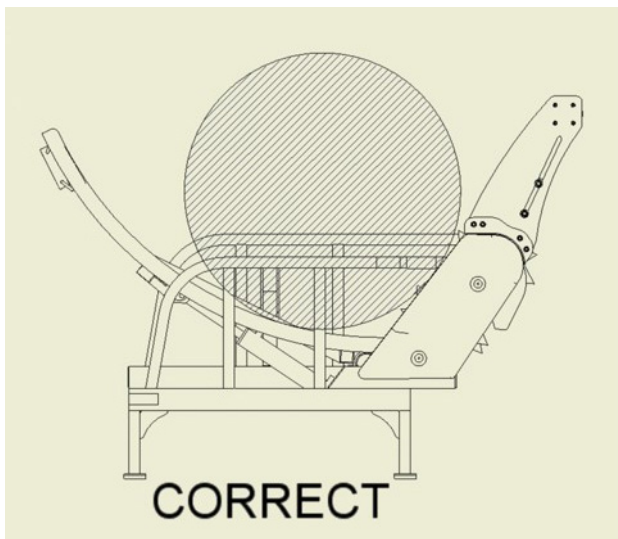
4. After bale is on bed, retract the loading arm cylinder which will lower the bale fork into loading position for the next bale.



Feeding

When a bale is securely on the loading bed and the loading arm fully lowered, feeding operation can begin.

Use the power unit's hydraulic controls to raise the bed in consistent manner. The bale will feed best when it is allowed the time to unravel and flow over the beaters. If the bed is raised too quickly the bale can ride up and either refuse to unroll or plug the beaters. Simply lower the bed until bale lowers and raise bed at a slower pace if this occurs.



Section 6: Maintenance

This section gives full details of the procedures necessary to maintain the Tubeline Self Loading Bale Feeder at peak efficiency. Complete all checks and services in this section at the hour interval shown.

Note: Failure to complete the required maintenance at the interval shown can cause unnecessary downtime.

The recommended lubrication intervals are for average conditions. Perform lubrication more often when operating under adverse conditions.



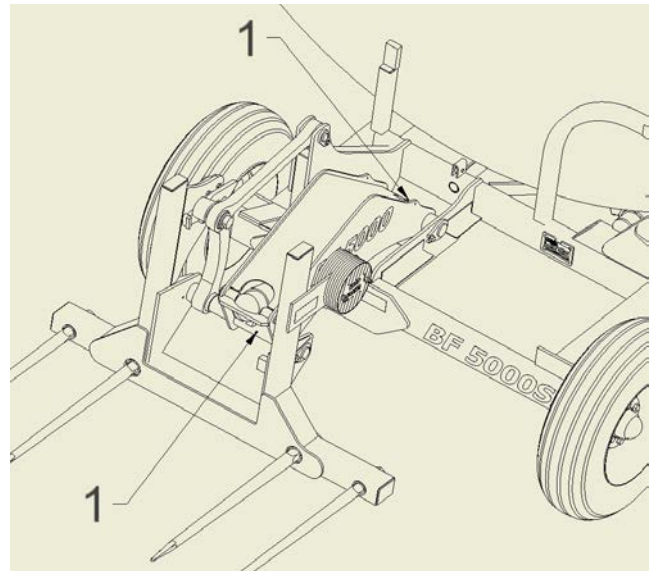
WARNING

Before lubricating the BF5000SL Bale Feeder always observe the following precautions:

Turn off tractor, set parking brake, remove key and wait for all moving parts to stop before leaving cab. Failure to comply could result in death or serious injury.

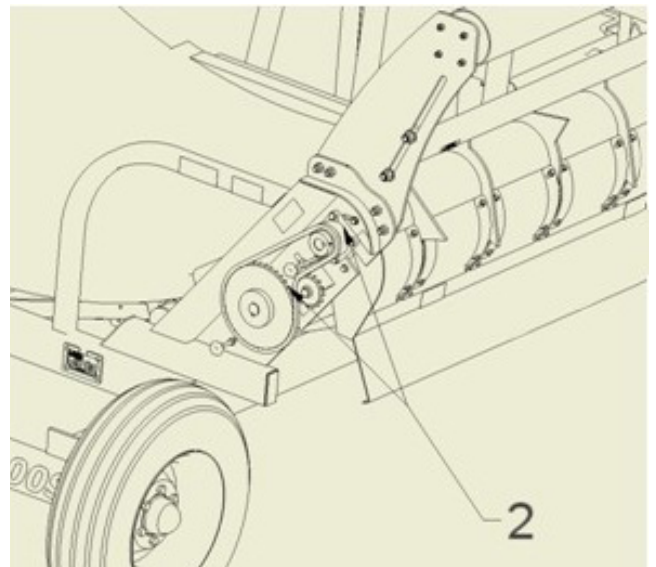
Grease Point - Loading Arm Assembly

Apply 3 strokes of grease every 25 hours at point (1) (2 locations).



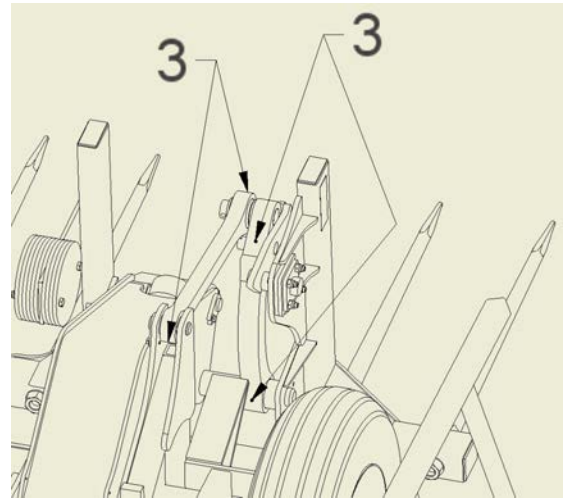
Grease Point - Beatering Bearings

Apply 3 strokes of grease every 50 hours at point (2) (4 locations).



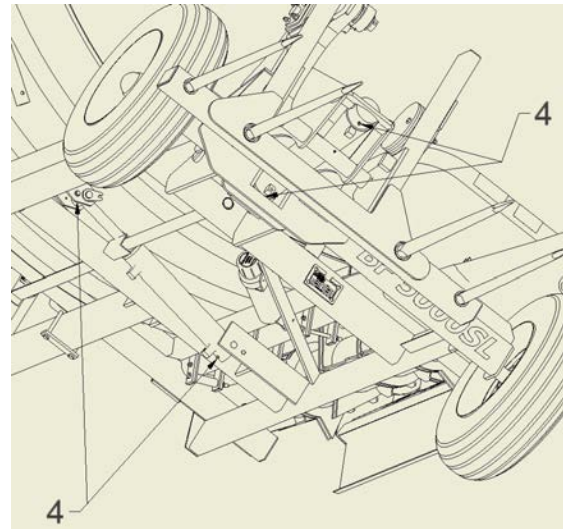
Grease Point - Linkage Assembly

Apply 3 strokes of grease every 25 hours at point (3) (4 locations).



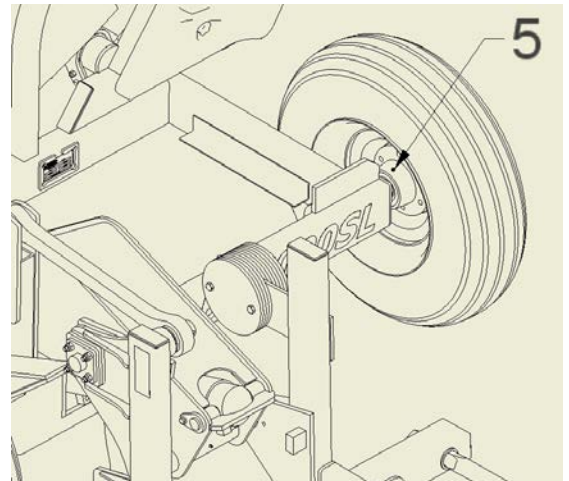
Grease Point - Cylinder Pivot

Apply 3 strokes of grease every 50 hours at point (4) (4 locations).



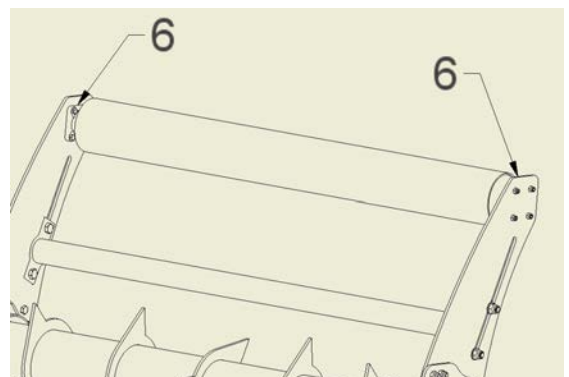
Grease Point - Hub

Apply 3 strokes of grease every 50 hours at point (5) (2 locations).



Grease Point - Bumper Bearing (if equipped)

Apply 3 strokes of grease every 50 hours at point (6) (2 locations).



Complete all checks and services in this section at the hour interval shown.

NOTE: Failure to complete the required maintenance at intervals shown can cause unnecessary downtime.

The recommended intervals are for average conditions. Perform maintenance more often when operating the Tube-Line Accelerator under adverse conditions.

General checking of bolts, security pins and split pins must be carried out initially after the first 8 hours of use. Subsequently, check every 50 hours and whenever the machine is laid up for extended periods.



WARNING

Before performing any adjustments or maintenance on the Tube-Line, observe these safety precautions:

Turn off tractor, set parking brake, remove key and wait for all moving parts to stop before leaving cab.

Read [Maintenance Safety, pg.2-2](#).

Failure to comply could result in death or serious injury.

Daily Maintenance

Careful inspection and service of the Bale Feeder prior to operation each day will prevent needless breakdowns and delays in the field. Make the following checks and adjustments.

1. Be alert for loose hardware and tighten or replace as required.
2. Lubricate the BF5000SL according to the instruction in the “Lubrication” section of this manual.

Preseason Service

Prior to beginning the harvest after offseason storage, take the following steps be certain the Tube-line BF5000 is in good condition.

Check slot opening guide, make sure it is tight and that the beater blades are clear.

Refer to [Beater Guide, pg.4-2](#).

Lubricate the Tube-line BF5000 according to [Grease Points, pg.6-1](#).

Tighten or replace any damaged or missing fasteners.

End of Season Service

Prior to storing the Tube-line BF5000 during the off season, follow these steps to ensure easier preparation for the next season and longer Tube-line BF5000 life

- Pack all grease points with grease. Refer to [Grease Points, pg.6-1](#).
- Remove all crop material from the BF5000.

Section 7: Troubleshooting

Round Bale Problems

Problem: The rotors turn, but the bale refuses to turn.

Cause: The platform is not raised high enough.

Remedy : Raise bed to push bale against both beaters. Refer to [Feeding, pg.5-2](#).

Problem: Crop material jams between top beater and wiper.

Cause: Too much gap between beater blade guides.

Remedy: Adjust wiper guides. Refer to [Beater Guide, pg.4-2](#).

Problem: Several biscuits coming out at once.

Cause: The bed is too high.

Remedy: Lower the bed. The crop material was baled when wet, reverse beaters 2 turns then forward again. Refer to [Feeding, pg.5-2](#).

General Problems

Problem: The bale is dropping too hard onto platform.

Cause: Too much clearance between ground and loading fork bale spear.

Remedy : Spear bale lower to ground when loading. Refer to [Loading, pg.5-1](#).

Problem: Bale fork does not trip before the bale rests on the platform.

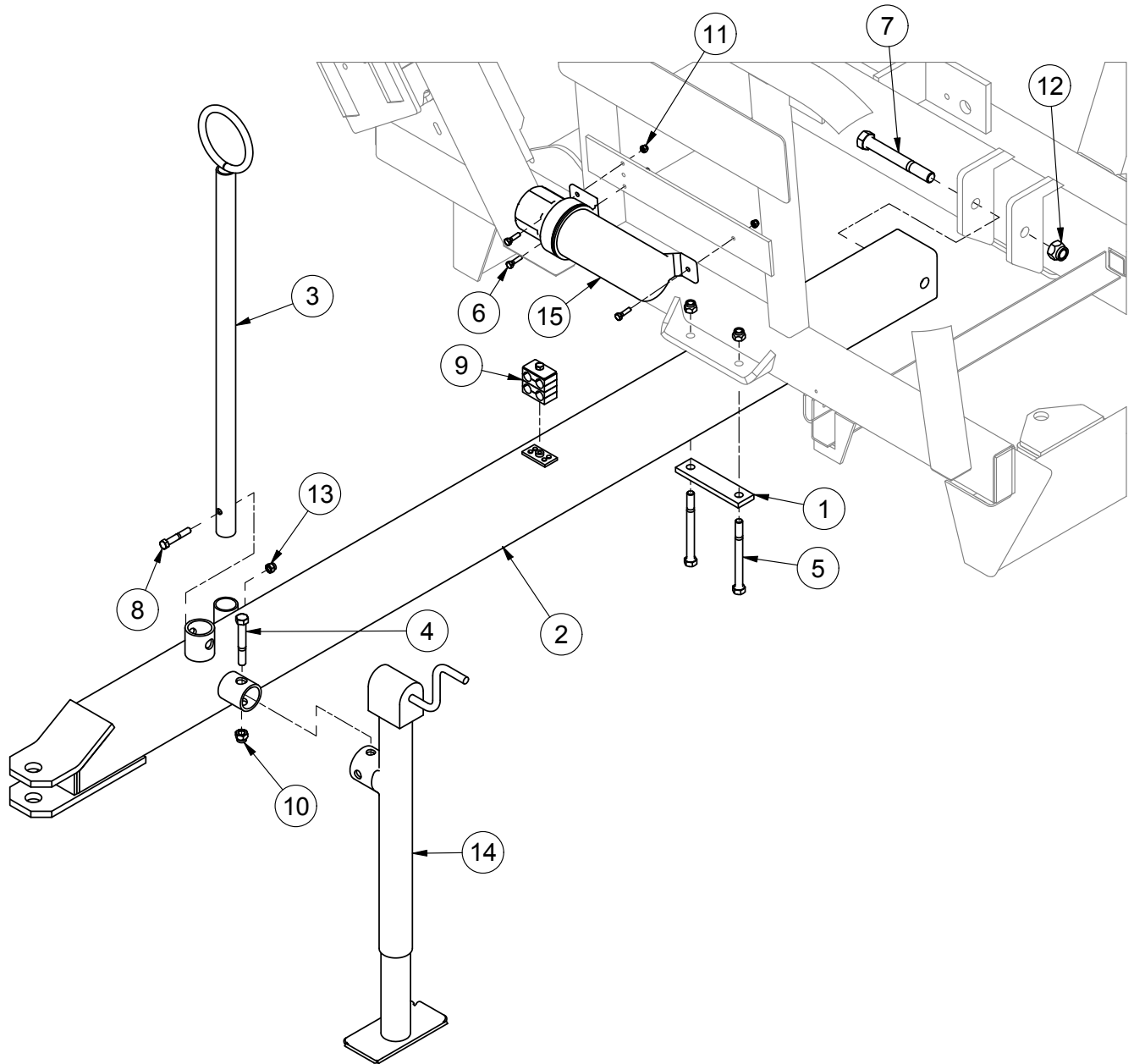
Cause: Bale hits loading bed too soon, not allowing the bale fork weights to trip and pull the spears out of bale.

Remedy: Spear bale higher when loading. Refer to [Loading, pg.5-1](#).

Section 9: Parts Breakdowns & Lists

Illustrations may differ slightly from actual machine.

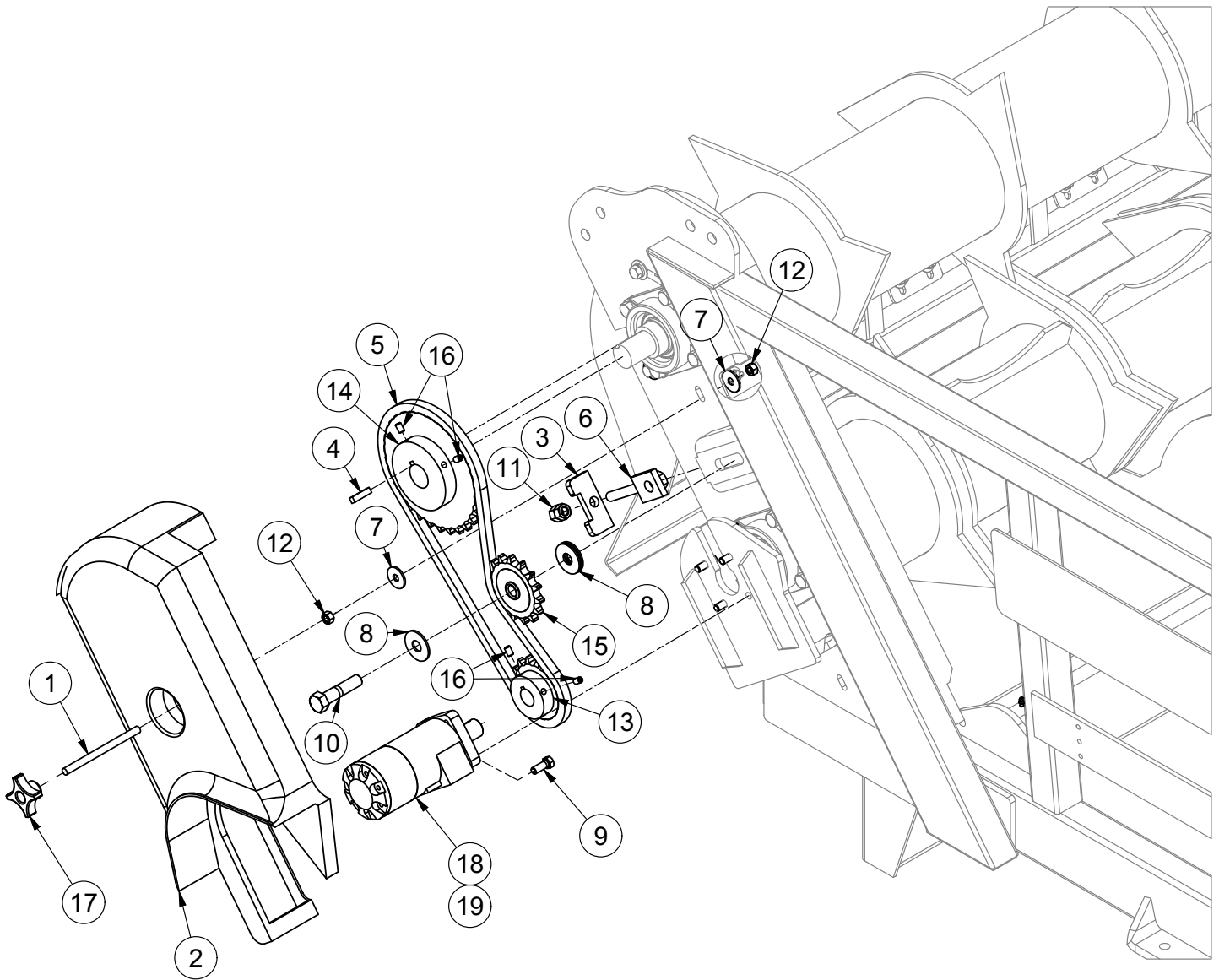
Hitch



Hitch

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BF5000-245	Hitch Bracket
2	1	BF5000-SL-04	Front Hitch
3	1	BF5000-SL-11	Hose Support
4	1	HB 1/2-13X3.5 Z5	Hex Bolt 1/2-13x3 1/2 Grade 5 Zinc Plated Hex Cap Screw
5	2	HB 1/2-13X5.5 Z5	Hex Bolt 1/2-13x5 1/2 Grade 5 Zinc Plated Hex Cap Screw
6	3	HB 1/4-20X1 Z5	Hex Bolt 1/4-20x1 Grade 5 Zinc Plated Hex Cap Screw
7	1	HB 3/4-10X6 Z5	Hex Bolt 3/4-10x6 Grade 5 Zinc Plated Hex Cap Screw
8	1	HB 3/8-16X2.25 Z5	Hex Bolt 3/8-16x2 1/4 Grade 5 Zinc Plated Hex Cap Screw
9	1	LA-HOSE CLAMP	Hose Clamps for 3/8 Hose
10	3	LN 1/2 N	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
11	3	LN 1/4 N	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut
12	1	LN 3/4 N	LN 3/4-10 Zinc Plated Nylon Insert Lock Nut
13	1	LN 3/8 N	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
14	1	PP00302	Implement Jack 15"
15	1	TL5X2-201-111	Operator's Manual Holder

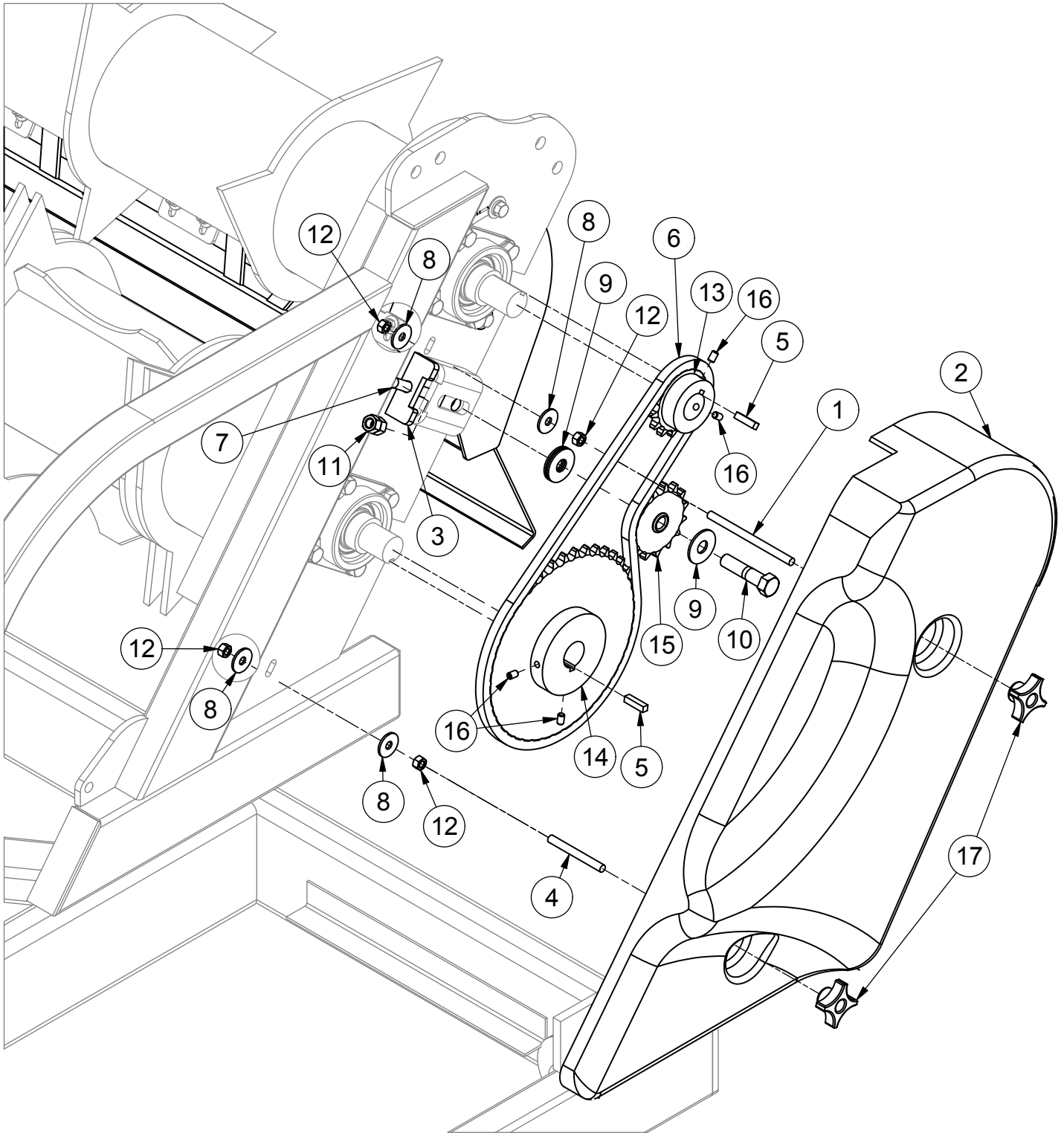
Front Chain Drive



Front Chain Drive

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BF5000-106	Tightener Rod
2	1	BF5000-108	Bale Feeder Small Guard
3	1	BF5000-246	Chain Tightener Bracket
4	1	BF5000-253	Key
5	1	BF5000-254	Chain #60H Roller - 28.5 Links
6	1	BF5000-A17	Slide
7	2	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
8	4	FW 5/8	Flatwasher - 5/8" Zinc Plated USS
9	4	HB 3/8-16X1 Z5	Hex Bolt 3/8-16x1 Grade 5 Zinc Plated Hex Cap Screw
10	1	HB 5/8-11X2.75 Z5	Hex Bolt 5/8-11x2 3/4 Grade 5 Zinc Plated Hex Cap Screw
11	2	HN 1/2	Hex Nut 1/2"-13 Grade 5 Zinc Plated Finished
12	2	HN 3/8	Hex Nut 3/8"-16 Grade 5 Zinc Plated Finished
13	1	SPR60B15-1	Sprocket 60B15 1.0 Bore Idler 1/4 Keyway- 2 Set Screws
14	1	SPR60B30F-1.38	60B30F 1-3/8" KW 2SS 5/16 Keyway
15	1	SRP60A15	Sprocket 60B15 5/8 Bore Idler
16	4	SS 516X12	Allan Head Set Screw, 5/16-18 x 1/2
17	1	TL5X2-100-104	Switch Adjuster Screw
18	1	VAL 1008	Motor, Hydraulic - EAT101-1008-009
19	1	SKMLHPQUDE	Seal Kit for 200 & 400 Series Motors

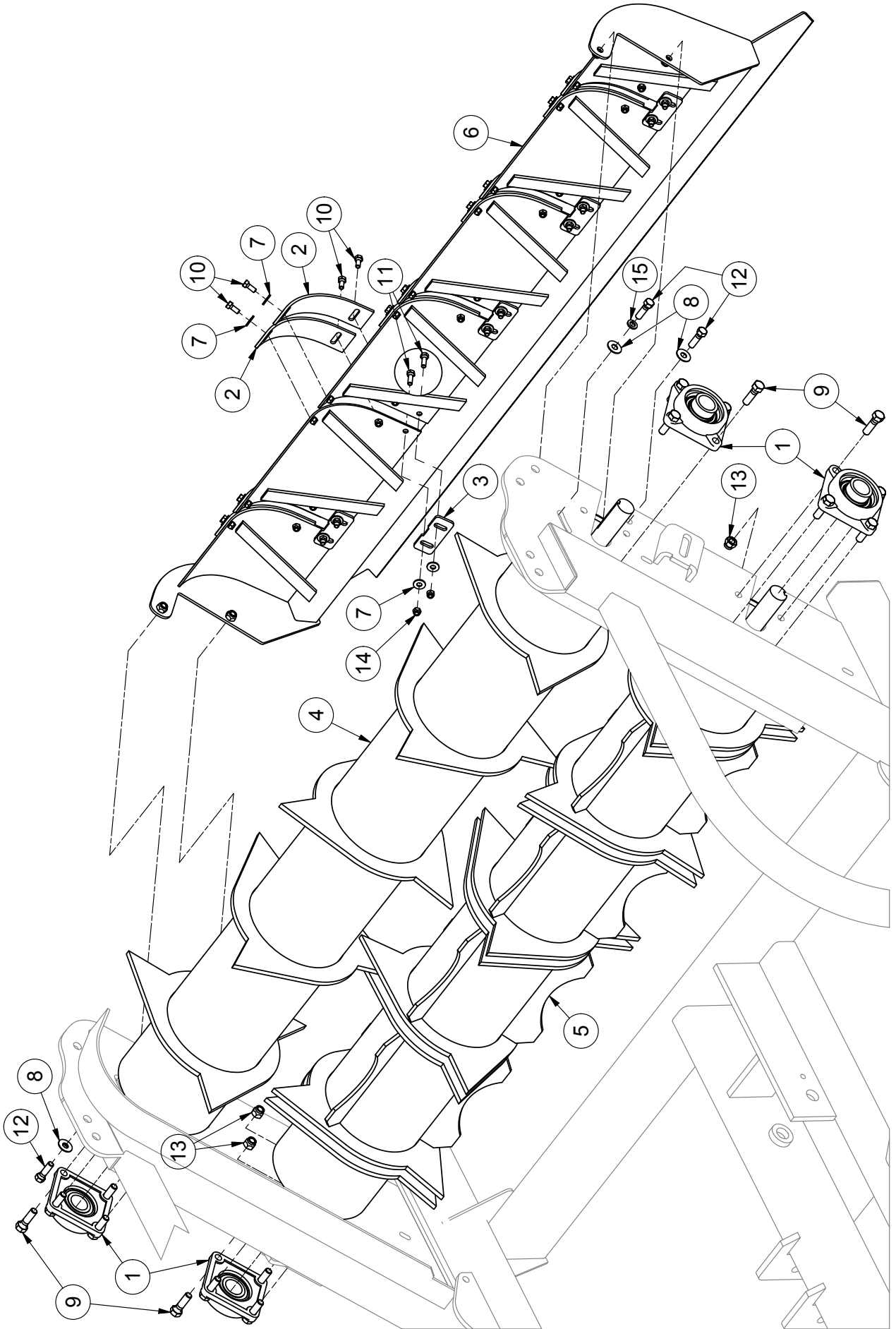
Rear Apron Chain



Rear Apron Chain

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BF5000-106	Tightener Rod
2	1	BF5000-109	Bale Feeder Large Guard
3	1	BF5000-246	Chain Tightener Bracket
4	1	BF5000-250	Bottom Tightener Rod
5	2	BF5000-253	Key
6	1	BF5000-255	Chain #60H - 32 Links
7	1	BF5000-A17	Slide
8	4	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
9	4	FW 5/8	Flatwasher - 5/8" Zinc Plated USS
10	1	HB 5/8-11X2.75 Z5	Hex Bolt 5/8-11x2 3/4 Grade 5 Zinc Plated Hex Cap Screw
11	2	HN 1/2	Hex Nut 1/2"-13 Grade 5 Zinc Plated Finished
12	4	HN 3/8	Hex Nut 3/8"-16 Grade 5 Zinc Plated Finished
13	1	SPR60B15-1.38	60B15- 1.38 Bore 5/16 KW @ Set Screw
14	1	SPR60B42F-1.38	Sprocket - 60B42F 1 3/8" KW 2SS 5/16 Keyway
15	1	SRP60A15	Sprocket 60B15 5/8 Bore Idler
16	4	SS 516X12	Allan Head Set Screw, 5/16-18 x 1/2
17	2	TL5X2-100-104	Switch Adjuster Screw

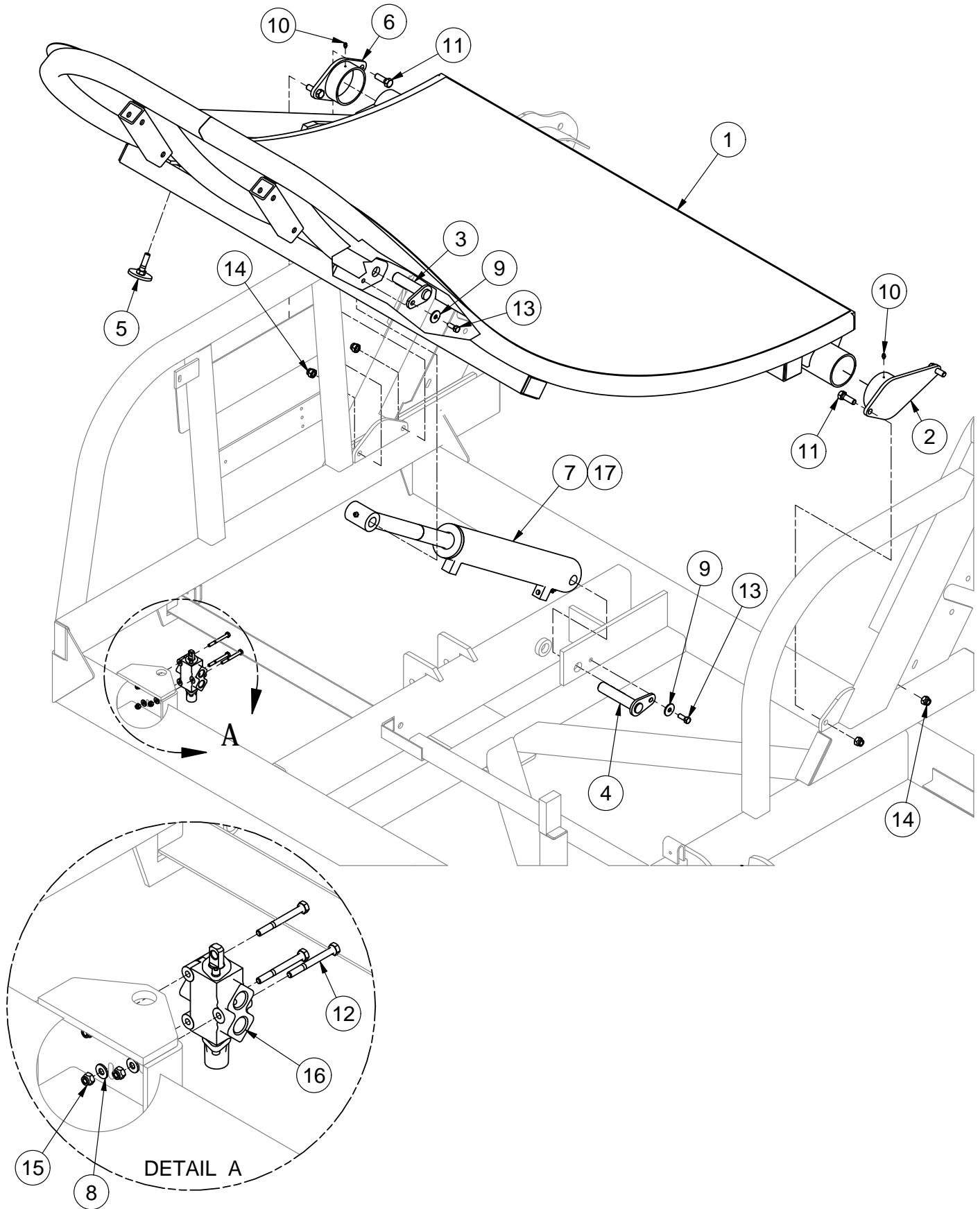
Beaters



Beaters

ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	BEA UCF207-22	Flange Block, UCF207-22 1.38" Diameter, National 4-Bolt
2	10	BF5000-100	Slot Opening Guide
3	5	BF5000-101	Inside Bracket Guide
4	1	BF5000-A01	Top Drum
5	1	BF5000-A02	Bottom Drum
6	1	BF5000-A03	Large Wiper
7	10	FW 5/16	Flatwasher - 5/16" Zinc Plated USS
8	4	FW 7/16	Flatwasher - 7/16" Zinc Plated USS
9	16	HB 1/2-13X1.75 Z5	Hex Bolt 1/2-13x1 3/4 Grade 5 Zinc Plated Hex Cap Screw
10	20	HB 5/16-18X0.75 Z5	Hex Bolt 5/16-18x3/4 Grade 5 Zinc Plated Hex Cap Screw
11	10	HB 5/16-18X1 Z5	Hex Bolt 5/16-18x1 Grade 5 Zinc Plated Hex Cap Screw
12	4	HB 7/16-14X1.5 Z5	Hex Bolt 7/16-14x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
13	16	LN 1/2 N	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
14	10	LN 5/16 N	LN 5/16-18 Zinc Plated Nylon Insert Lock Nut
15	2	LW 7/16	LW - 7/16" Zinc Plated Medium Split

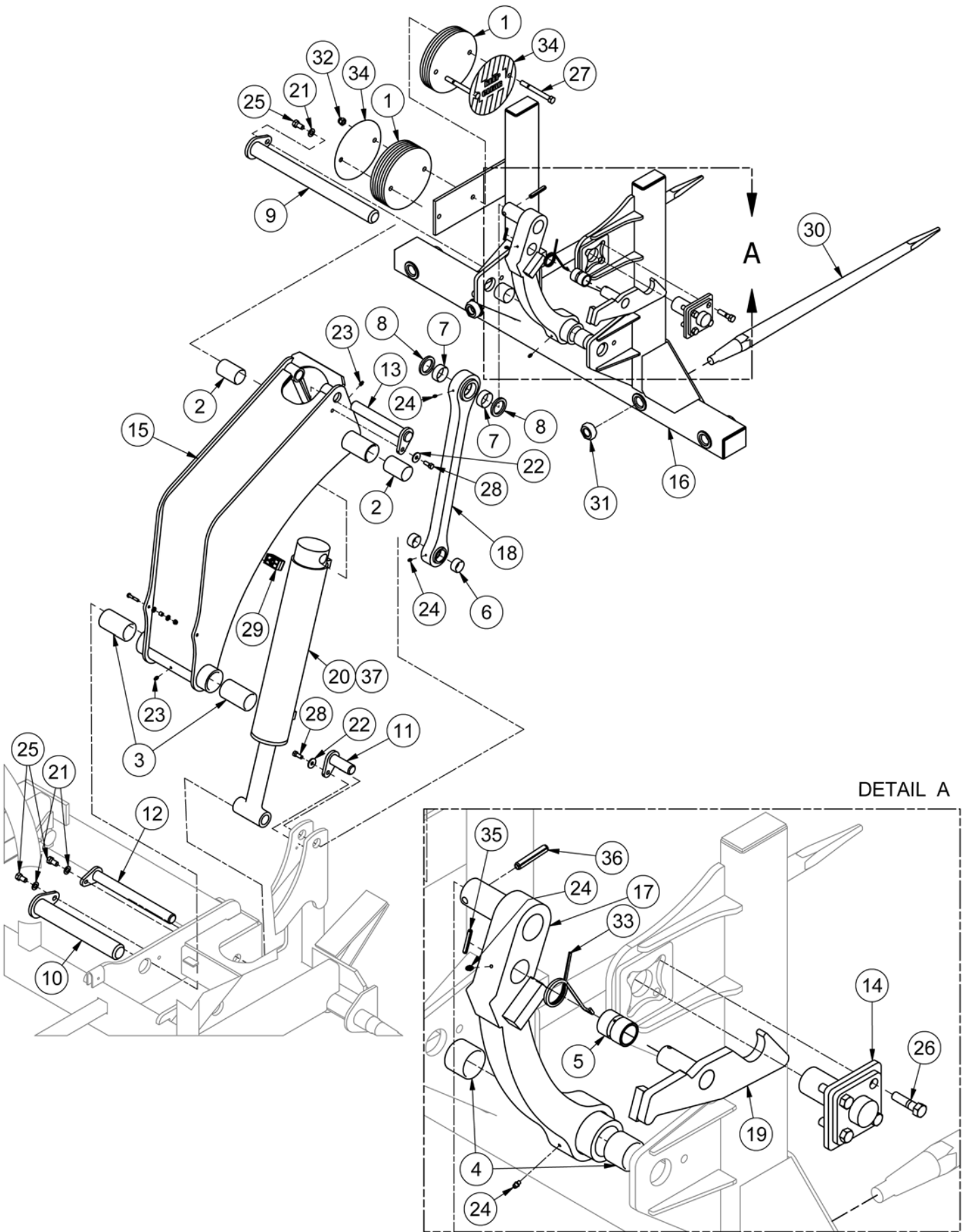
Bed



Bed

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BF5000-06B	Bed Assembly
2	1	BF5000-22b	Pivot Tab
3	1	BF5000-A14	Bed Cylinder Pin
4	1	BF5000-A15	Frame Cylinder Pin
5	1	BF5000-A16	Stop Pad
6	1	BF5000-A21B	Pivot Tab
7	1	CYL 3001401	Hydraulic Cylinder - 3" X 14" X 1.5"
8	3	FW 1/4	Flatwasher - 1/4" Zinc Plated USS
9	2	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
10	2	GR 3/16D	3/16 Drive Straight Grease Fitting
11	4	HB 1/2-13X1.5 Z5	Hex Bolt 1/2-13x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
12	3	HB 1/4-20X2.5 Z5	Hex Bolt 1/4-20x2 1/2 Grade 5 Zinc Plated Hex Cap Screw
13	2	HB 3/8-16X1 Z5	Hex Bolt 3/8-16x1 Grade 5 Zinc Plated Hex Cap Screw
14	4	LN 1/2 N	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
15	3	LN 1/4 N	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut
16	1	PP00566	Diverter Valve DA5/3A 12MESLB-SAE
17	1	SK 03-14AG	Seal Kit for 3" Cylinder (Frankor) Cylinder 300401

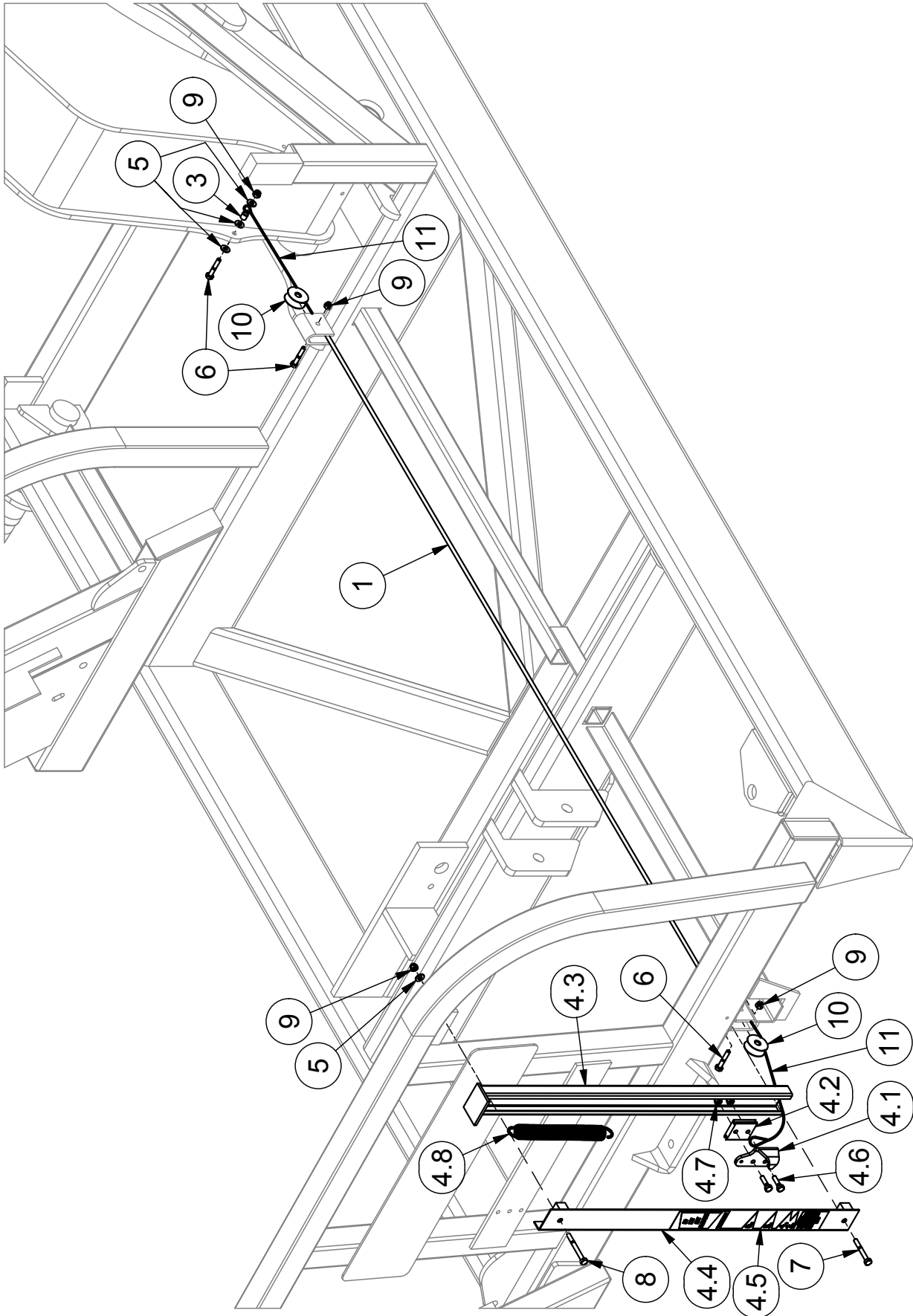
Loading Arm



Loading Arm

ITEM	QTY	PART NUMBER	DESCRIPTION
1	10	BF5000-175	Weight
2	2	BF5000-239	Fork Bushing
3	2	BF5000-240	Arm Pivot Bushing
4	2	BF5000-241	Loader Arm Bushing
5	1	BF5000-242	Latch Bushing
6	2	BF5000-243	Small Loader Arm Bushing
7	2	BF5000-244	Large Loader Arm Bushing
8	2	BF5000-257	Spacer
9	1	BF5000-A07	Fork Pin
10	1	BF5000-A08	Loader Arm Pin
11	1	BF5000-A09	Top Loader Arm Pin
12	1	BF5000-A11	Loader Cyl Bottom Pin
13	1	BF5000-A12	Loader Top Cyl Pin
14	1	BF5000-A13	Latch Pin
15	1	BF5000-SL-02	Loader Arm
16	1	BF5000-SL-03	Fork Frame
17	1	BF5000-SL-08	Arm Assembly
18	1	BF5000-SL-09	Top Loader Arm
19	1	BF5000-SL-10	Loader Hook
20	1	CYL 4001901	Hydraulic Cylinder - 4" X 19" X 2.0" Bore
21	3	FW 1/2	Flatwasher - 1/2" Zinc Plated USS
22	2	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
23	2	GR 1/4 X 28	Grease Fitting 1/4-28 Straight Standard Zerk
24	4	GR 3/16D	3/16 Drive Straight Grease Fitting
25	3	HB 1/2-13X1 Z5	Hex Bolt 1/2-13x1 Grade 5 Zinc Plated Hex Cap Screw
26	4	HB 1/2-13X2 Z5	Hex Bolt 1/2-13x2 Grade 5 Zinc Plated Hex Cap Screw
27	2	HB 1/2-13X5 Z5	Hex Bolt 1/2-13x5 Grade 5 Zinc Plated Hex Cap Screw
28	2	HB 3/8-16X1 Z5	Hex Bolt 3/8-16x1 Grade 5 Zinc Plated Hex Cap Screw
29	1	LA-HOSE CLAMP	Hose Clamps for 3/8 Hose
30	2	LA-SDE32	Bale Spear - 39"
31	2	LA-SDENU	Conus II Nut
32	2	LN 1/2 N	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
33	1	PP00524	Torsion Spring
34	2	PP00525	Warning Decal - Keep Clear
35	1	RP 1/4 x 1 1/2	Pin - Roll Pin 1/4 x 1 1/2
36	1	RP 7/16 x 2 1/2	Pin - Roll Pin 7/16 x 2 1/2
37	1	SK 04-19AG	Seal Kit for 4" Cylinder 2" Rod

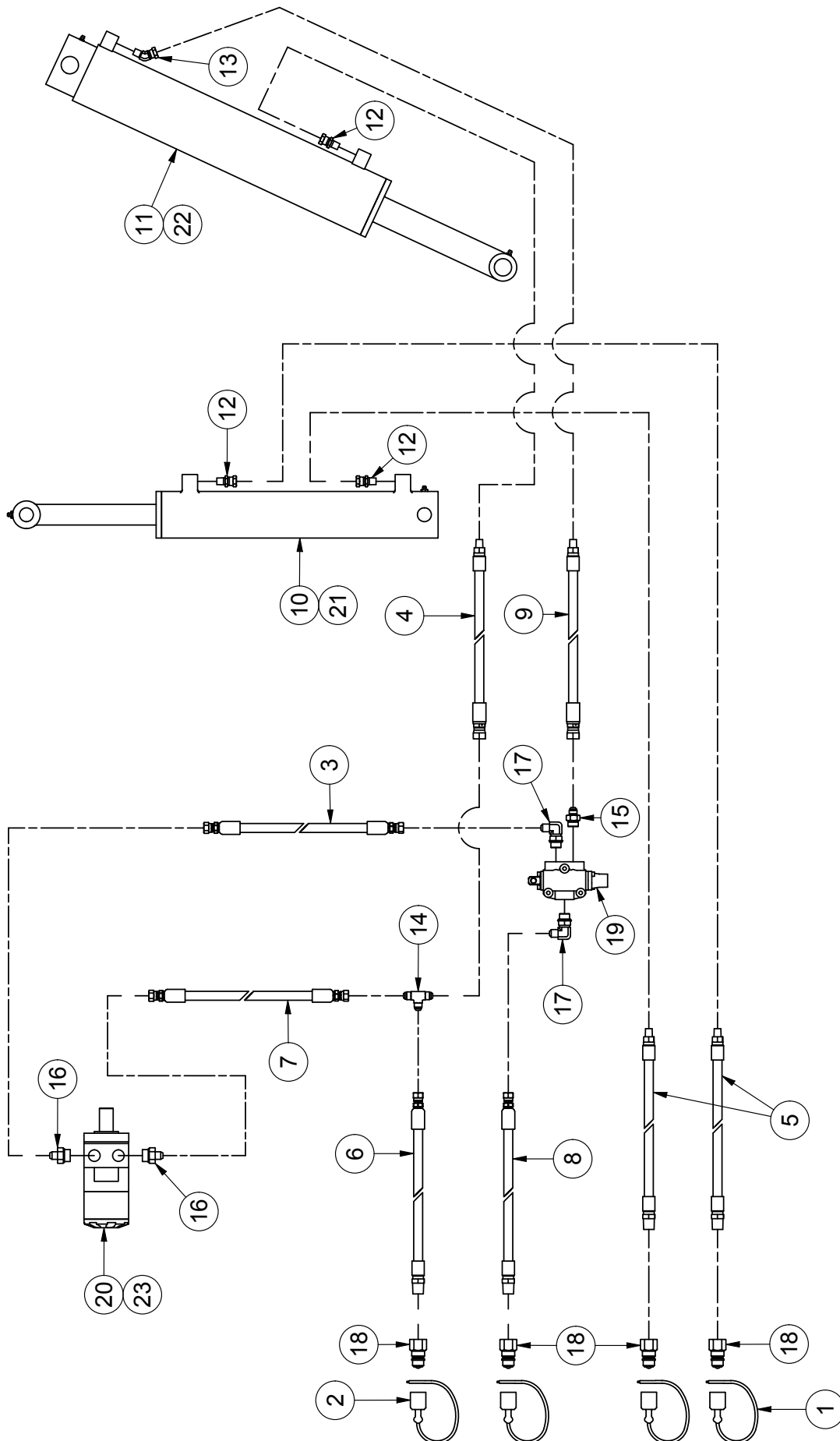
Indicator



Indicator

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BF5000-235	Cord Protector
3	1	BF5000-269	Cable Spacer
4	1	BF5000-SL-05	Indicator Assembly
4.1	1	BF5000-182	Indicator
4.2	1	BF5000-183	Indicator Slide
4.3	1	BF5000-SL-06	Indicator Assembly
4.4	1	BF5000-SL-07	Indicator Assembly BB
4.5	1	DEPP00547	Warning Decal - Do Not Lift Bed
4.6	2	HB 1/4-20X1 Z5	Hex Bolt 1/4-20x1 Grade 5 Zinc Plated Hex Cap Screw
4.7	2	LN 1/4 N	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut
4.8	1	PP00491	Spring 8.5 X 1.0 X .105
5	4	FW 1/4	Flatwasher - 1/4" Zinc Plated USS
6	3	HB 1/4-20X1.5 Z5	Hex Bolt 1/4-20x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
7	1	HB 1/4-20X2 Z5	Hex Bolt 1/4-20x2 Grade 5 Zinc Plated Hex Cap Screw
8	1	HB 1/4-20X2.5 Z5	Hex Bolt 1/4-20x2 1/2 Grade 5 Zinc Plated Hex Cap Screw
9	4	LN 1/4 N	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut
10	2	PP00423	Rope Pulley
11	1	PP00580	Cable - 1/8 Galvanized Braided

Hydraulic Layout

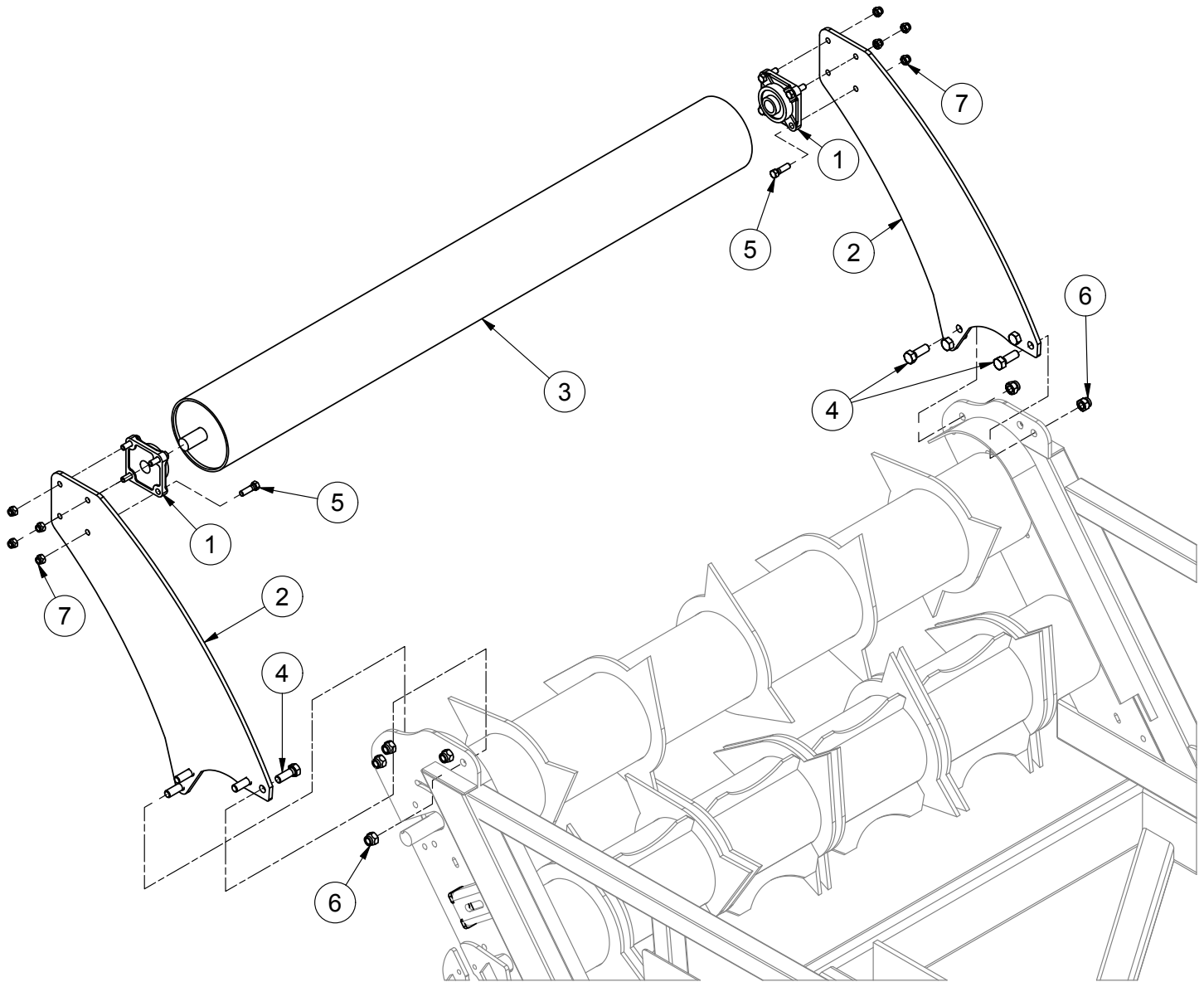


Hydraulic Layout

ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	22946-2	Dust Cap, 1/2", Female, Yellow Colour
2	2	22946-3	Dust Cap, 1/2", Female, Blue Colour
3	1	24114	HH64 - 6AT1(6FJ,6FJX) HCL 64
4	1	27553	HH116 - 6AT1(6FJX,4MP) HCL 116"
5	2	28694	HH185 - 6AT1(4MP,8MP) HCL 185"
6	1	28695	HH120 - 6AT1(6FJX,8MP) HCL 120"
7	1	28696	HH34 - 6AT1(6FJX,6FJX) HCL 34"
8	1	28697	HH146 - 6AT1(6FJX,8MP) HCL 146"
9	1	28698	HH120 - 6AT1(6FJX,4MP) HCL 120"
10	1	CYL 3001401	Hydraulic Cylinder - 3" X 14" X 1.5"
11	1	CYL 4001901	Hydraulic Cylinder - 4" X 19" X 2.0" Bore
12	3	HF 1404-4-4	Male NPT X Female NPSM Adapter
13	1	HF 1503-4-4	Hyd. Forged Fitting MPT to FPT 45 Degree
14	1	HF 2603-6-6-6	Male JIC Tee
15	1	HF 6400-6-8	Hyd Fitting -Male JIC - Male ORB
16	2	HF 6400-6-10	Hydraulic Fitting - Male JIC - Male ORB
17	2	HF 6801-6-8	Hyd Fitting - Male JIC - Male ORB 90 Degree
18	4	HF 8010-4	Quickcoupler 1/2" Male Tip
19	1	PP00566	Diverter Valve DA5/3A 12MESLB-SAE
20	1	VAL 1008	Motor, Hydraulic - EAT101-1008-009
21	1	SK 03-14GA	Seal Kit for 3" Cylinder (Frankor) Cylinder 300401
22	1	SK 04-19AG	Seal Kit for 4" Cylinder 2" Rod
23	1	SKMLHPQUDE	Seal Kit for 200 & 400 Series Motors

Section 10: Options

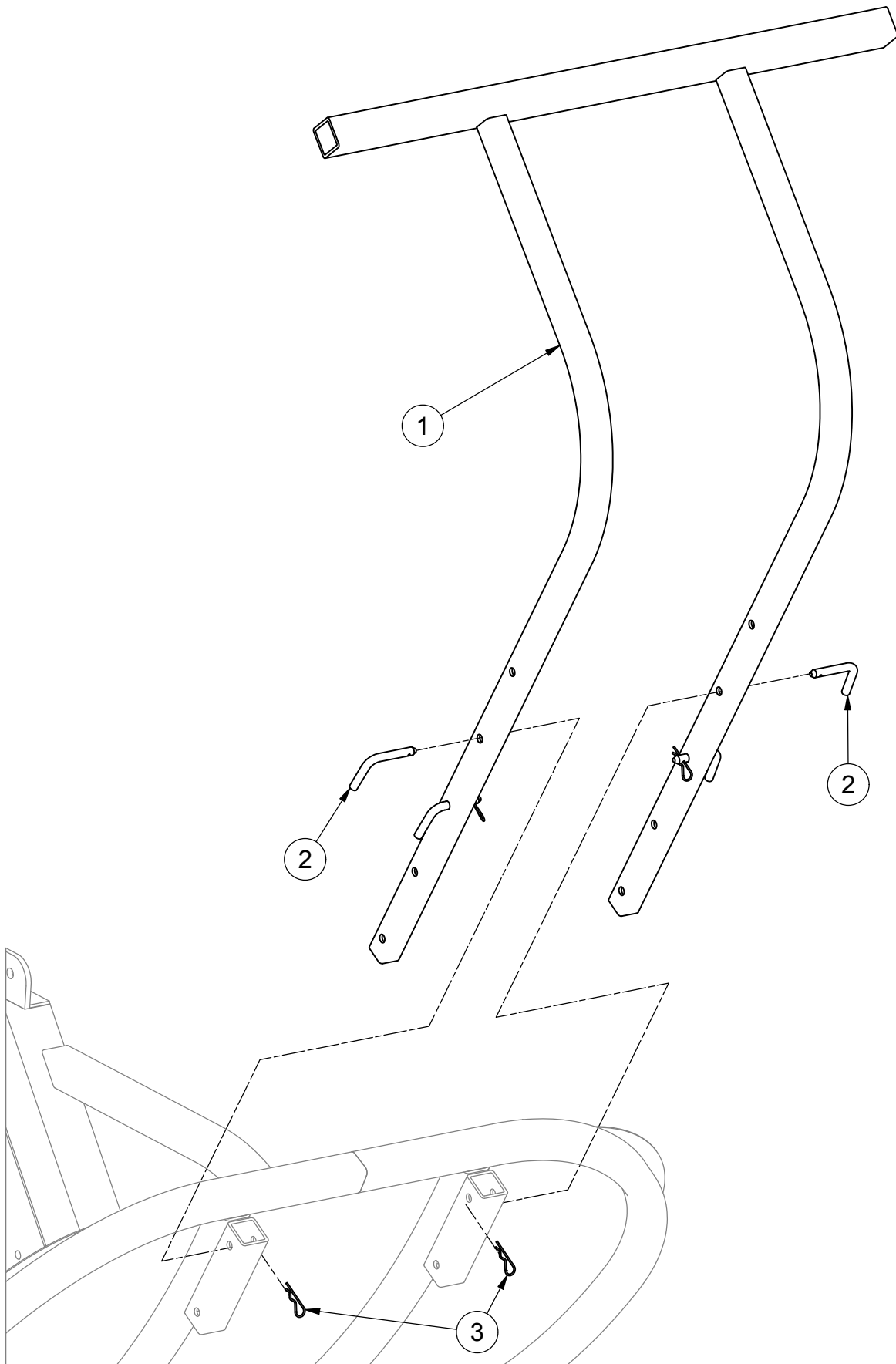
Bale Bumper



Bale Bumper

ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	BEA UCF206-18	Flange Block, UCF206-18 National 4-Bolt 1.12" Bearing
2	2	BF5000-260	Bumper Plate
3	1	BF5000-A20	Bumper Roller
4	8	HB 5/8-11X1.75 Z5	Hex Bolt 5/8-11x1 3/4 Grade 5 Zinc Plated Hex Cap Screw
5	8	HB 7/16-14X1.5 Z5	Hex Bolt 7/16-14x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
6	8	LN 5/8 N	LN 5/8-11 Zinc Plated Nylon Insert Lock Nut
7	8	LN 7/16 N	LN 7/16-14 Zinc Plated Nylon Insert Lock Nut

Bale Extension














Bale Extension

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BF5000-A10	Bale Extension
2	4	BF5000-238	Bale Extension Pin
3	4	HP .125X1.5	Pin Hitch - .125 X 1.5

Torque Values - Imperial

UNIFIED INCH BOLT AND CAP SCREW TORQUE VALUES

SAE Grade and Head Markings	1 or 2 ^b	5	5.1	5.2	8	8.2
	NO MARK 					
SAE Grade and Nut Markings	2	5		8		
	NO MARK 					

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Size	Grade 1				Grade 2 ^b				Grade 5, 5.1, or 5.2				Grade 8 or 8.2			
	Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a	
	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.

^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.

^b 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.

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.

DX.TORQ1 -19-20JUL04

Torque Values - Metric

METRIC BOLT AND CAP SCREW 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 ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a	
	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.

^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.

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.

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