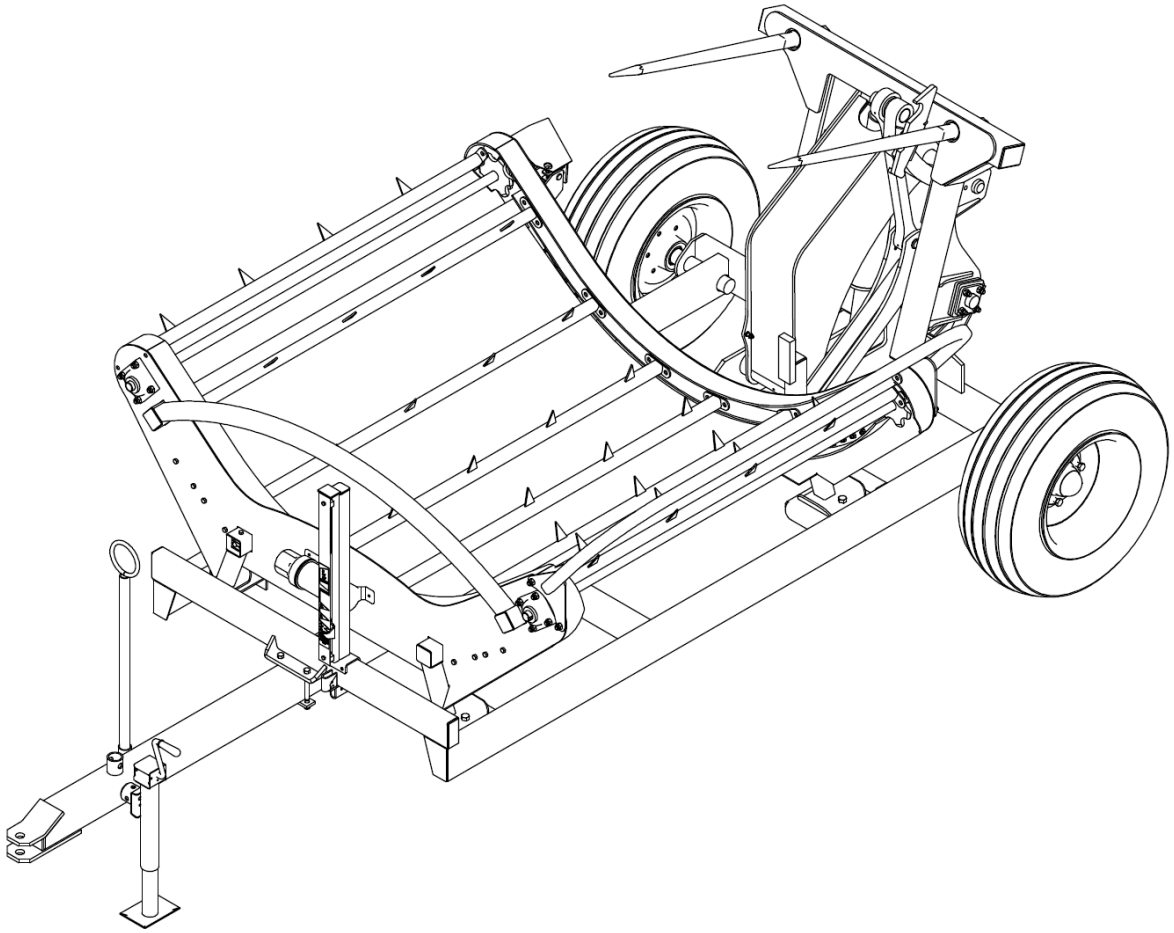
Tube-Line Bale Feeder

BF-5600SL

Operator's Manual



TUBE•LINE™
MANUFACTURING LTD.

Contents

Specifications

Weight : 1960 lbs (empty)

Capacity : 2 Bales, 2200 lbs max each.

Hydraulic Requirements : 2250-3000 per square inch (PSI),
3-16 gallons a minute (gpm)

TO THE OWNER

This manual contains information concerning the adjustment, assembly and maintenance of your Tube-Line Chain Bale Feeder. You have purchased a dependable machine, but only by proper care and operation can you expect to receive the performance and long life built into the Bale Feeder. Please have all operators read this manual carefully and keep it available for ready reference.

Your authorized dealer will instruct you in the general operation of your Bale Feeder. Your dealer's staff of factory-trained service technicians will be glad to answer any question that may arise regarding the operation of your Bale Feeder.

WARNING

This safety alert symbol indicates important safety messages in this manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.

WARNING

Pictures in this manual may show protective shielding open or removed to better illustrate a particular feature or adjustment.
Be certain, however, to close or replace all shielding before operating the machine

Improvements

Tube-Line Manufacturing Inc. is continually striving to improve its products. We reserve the right to make improvements or changes when it becomes practical and possible to do so, without incurring any obligation to make changes or additions to the equipment sold previously.

Safety
Precautionary Statements

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents read the following precautions before operating this equipment. Equipment should be operated only by those who are responsible and instructed to do so.

Carefully review the procedures given in this manual with all operators. It is important that all operators be familiar with and follow safety precautions.

1. When transporting the machine on public roads, make sure the machine is in compliance with all local road regulation.
2. Before operating the unit be sure that it is assembled correctly and in good operating condition.
3. If machine maintenance work, repairs or adjustments must be done in the field, they should be done at a spot where the ground is firm and level. Turn off the tractor and apply the parking brake. Use the proper tools and wear suitable protection (safety goggles, work gloves, etc.).
4. If any maintenance work, repairs or adjustments are done which require disassembly, always make sure that everything is reassembled or retightened as it has been prior to making repairs or adjustments.
5. Follow the schedule provided for maintenance. By following these suggestions, it will be possible to keep the machine operating safely and efficiently, to the benefit of the user.
6. 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.
7. Before applying pressure to the system, be sure all connections are tight and that hoses and connections are not damaged.
8. Fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Always protect the skin and eyes from escaping fluid under pressure. If injured by escaping fluid, obtain medical assistance at once. Serious infection or reaction can develop if medical treatment is not administered immediately.
9. Do not weld on wheels. Welding on wheels may cause high stress and a wheel failure.
10. Do not weld on wheels with a mounted tire. Welding on wheels with a mounted tire may cause the tire to burst, causing serious injury or death.
11. Before leaving the cab, engage the parking brake, shut down engine, and wait for all moving parts to stop.
12. Always keep bystanders away from machine during operation, Rotating elements may cause serious bodily injury.

General Safety

YOU are responsible for the safe operation and maintenance of your Tube-line Chain Bale Feeder. You must ensure that you and anyone else who is going to operate, maintain or work around the Bale Feeder be familiar with the operating and maintenance procedures and related safety information contained in this manual.
Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices. Review the operating instructions for this header at least once a year per OSHA regulations 1928.57. Know the meaning and location of each decal before operating the BF5600.
Watch for this symbol in this manual and on the Bale Feeder:

1. Keep a first aid kit in the cab for emergencies and know how to use it.
2. Do not allow any one to ride on the Bale Feeder while it is in motion.
3. Clear the area of bystanders, especially small children before starting the Bale Feeder.
4. Do not allow anyone to operate the Bale Feeder who has not been instructed in how to use the machine.
5. All operators should familiarize themselves with the safety section in the operator's manual.
6. Some pictures or illustrations may not show protective shields in place. Make certain that all protective shields are in place before operating the machines.

Operating

Wrapped Bales

1. The first step to processing wrapped bales is to take the wrap off, leaving the netwrap intact
2. Adjust the rear forks height till the top of t he tine frame is just below the top of the bale then back into the bale.
3. Raise the bale off the ground and over towards the feed unit. To facilitate easy removal of the net on the bales with netwrap we recommend to stop well before (approx 45 degrees) the bale settles on the bed (try no to let the bale start falling apart while removing the net). With the net removed finish lowering the bale onto the chain bed.
4. Now withdraw the forks and lower the forks right back down to the ground level. Once you hear the “clack” of the loading mechanical resetting, you can readjust the forks to pick up another bale if required.
5. ALWAYS raise the forks, whether carrying a second bale or not, to the 45 degree position (This keeps the forks safely away from animals etc.)

Hay Bales

1. For hay bales, lift the bale toward the feed chamber and remove the strings. Then lower it onto the bed.
2. Always return the forks back up immediately after loading the bale. Lower them right down to the ground, to reset, and then back up to the 45 degree position, unless loading another bale
3. If loading a second bale, raise the forks to the selected bale height, then back the forks into the bale and raise to the 45 degree angle.

Maintenance Safety

Grease Points (regularly)

- 4 Main Feeder Bearings
- Pivots (Rear boom, latch/trip arm, and cylinder pivot points)
- Hook Latch contact surface
- Trip Reset plate by left hand wheel

Use non tacky oil on both feed chains occasionally.
Grease the wheel bearings annually, earlier depending on conditions.

Service Check

(after first 10 hours of operation)

- Wheel Nuts
- Tine Nuts
- Drawbar Nuts
- Bearing Set Screws

Transporting

- Ensure rear forks are up at a safe height about 45 degree is ideal when travelling
- Side bars are included with your machine to keep the bale more secure on hills and to keep cattle away from moving mechanism.

Feeding

- Keep tractor in a low gear , start feeding the bale. Usually the bale will feed out on much better than the other.

Note : Driving in a slight circle may help see the hay feed onto the ground.
Select a higher gear to achieve thinner feed-out line if required.

Trouble Shooting

Problem : Bale starts falling apart after removing the plastic or the net wrap, even when I try removing it carefully.

Suggested Remedy :

- Remove the covering just before lowering the bale onto the feed unit.
- For very difficult bales, lower bale onto feed unit and remove the covering around the bale where you can, and collect the rest afterwards.

Problem : The chains don't turn.
Suggested Remedy :

- A string still left on the bale is wrapping around the shaft causing it to jam – remove the string.
- Hydraulic pressure is too low – check the tractor hydraulic pressure
- Chains may need the links lubricated

Problem : The bale is dropping too hard on the feed unit.
Suggested Remedy :

- Spear the bale lower down before lifting.

Problem : Bales don't stay on the feeder.
Suggested Remedy :

- Slow down the feed bars. They don't need to turn fast.
- Use side bars (if not installed already)

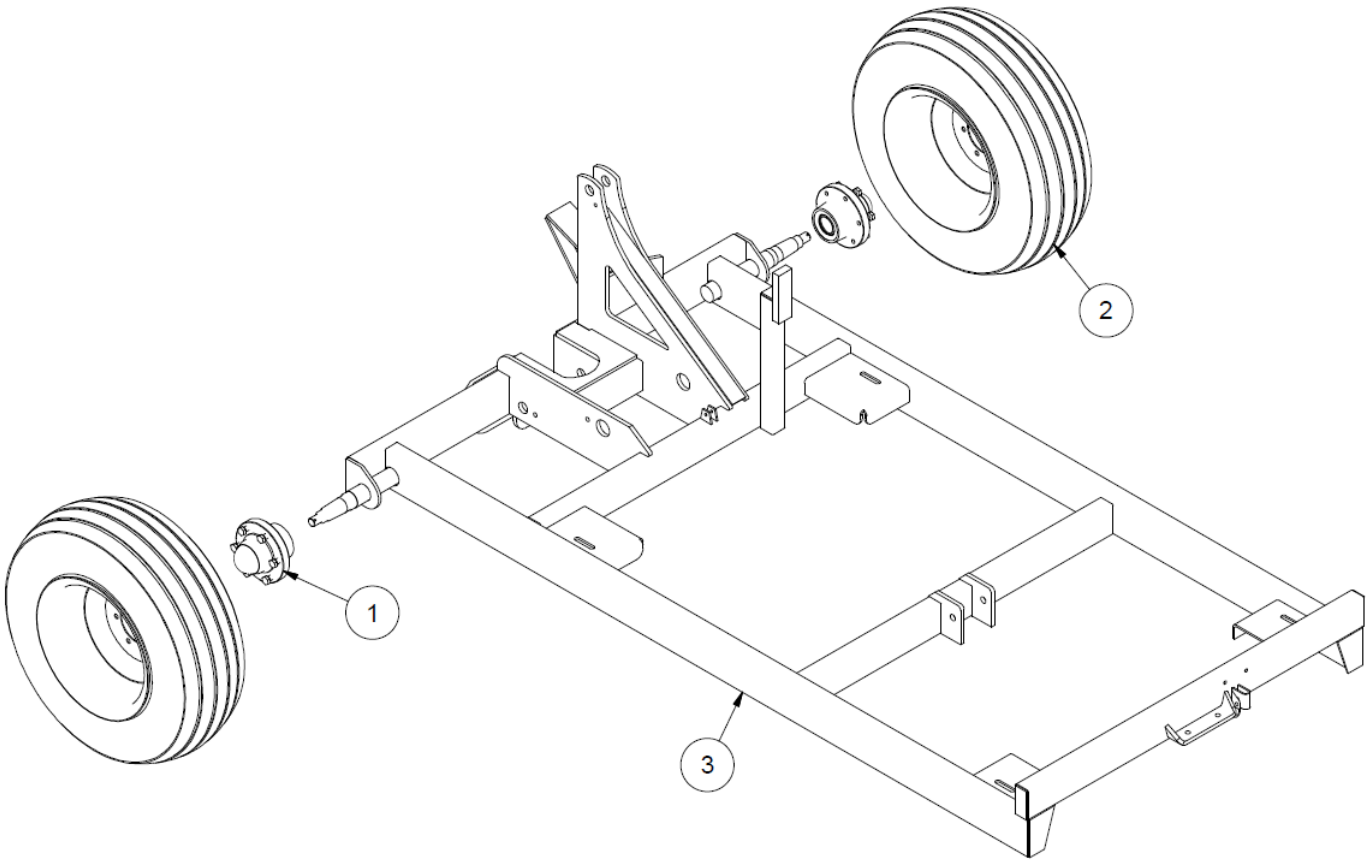
Problem : Bale rotates but hay will not feed.
Suggested Remedy :

- Feed the bale out in the other side so it "unrolls" correctly.
- Bend your existing feed teeth to a more aggressive angle

Problem : Need to feed square bales
Suggested Remedy :

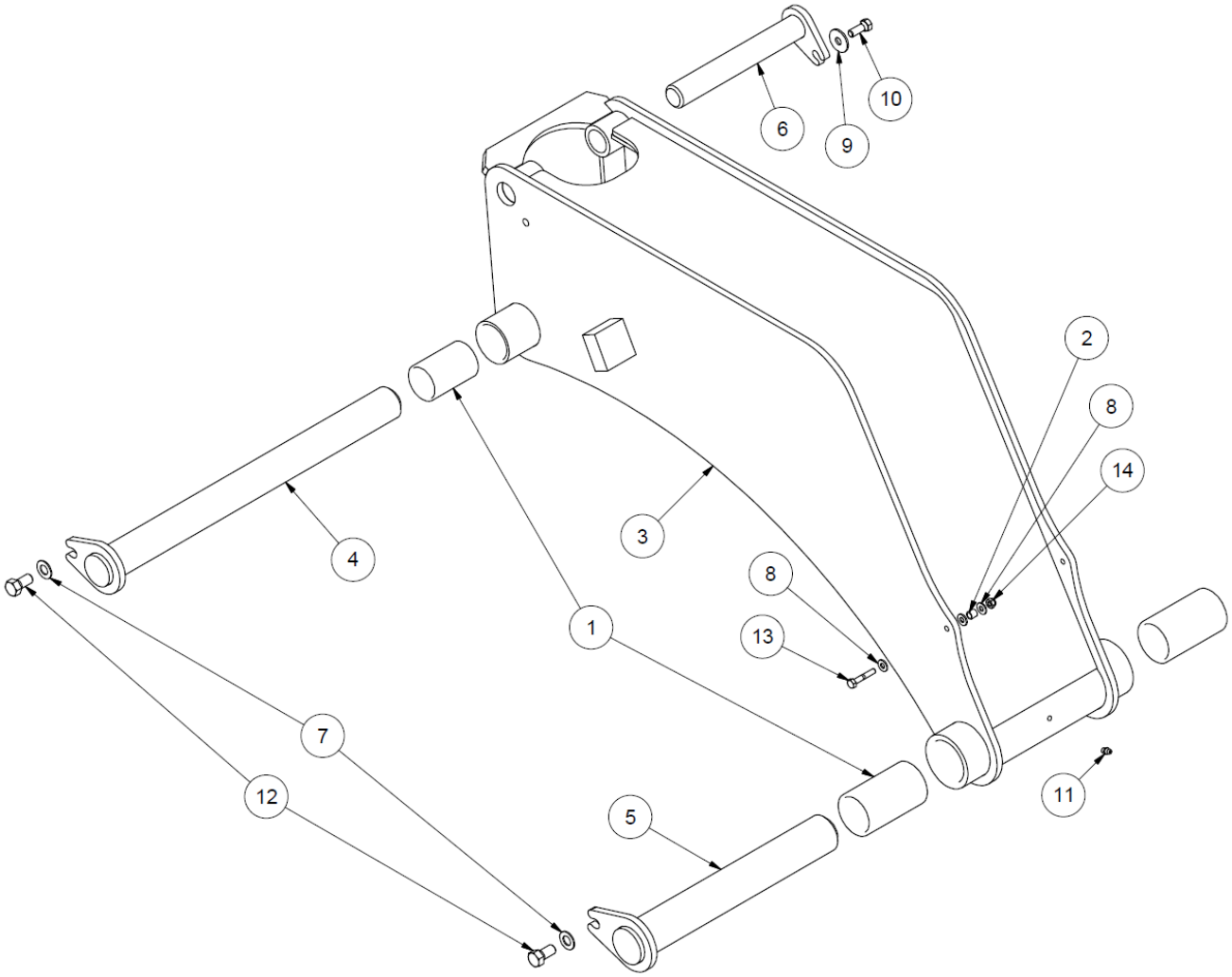
- Make sure side bars are installed

BF5600
Frame Assembly



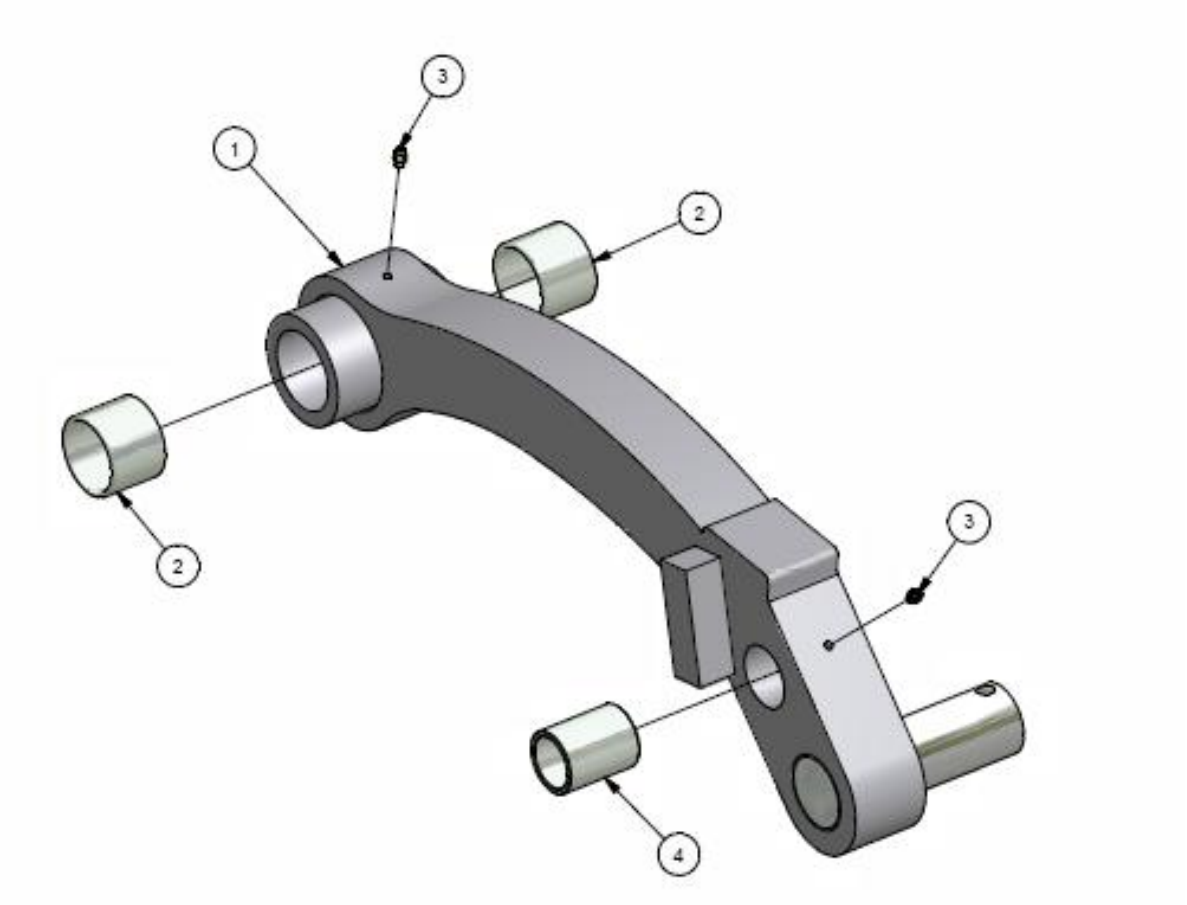
Item	Qty	Part #	Description
1	2	BF-5000-055	6000lb Hub w/ Parts
2	2	WHE 11LX15X8	Wheel (11.5L 15 Tire & Rim)
3	1	27506	Trailer Frame

BF5600
Self Loading Assembly



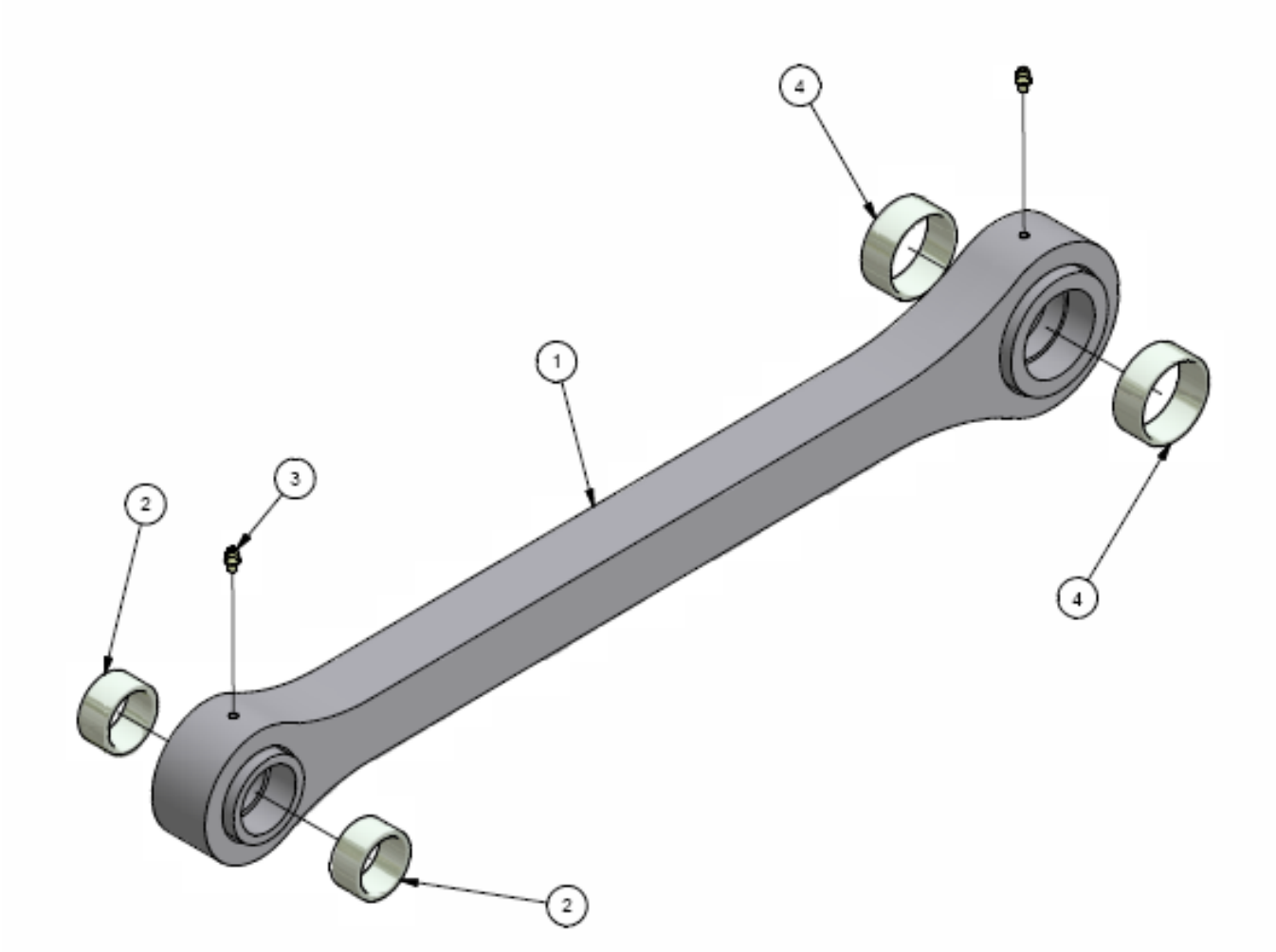
Item	Qty	Part #	Description
1	3	BF-5000-204	Arm Pivot Bushing
2	1	BF-5000-269	Cable Spacer
3	1	BF-5000-SL-02	Loader Arm
4	1	BF-5000-A07	Fork Pin
5	1	BF-5000-A08	Loader Arm Pin
6	1	BF-5000-A12	Loader Top Cyl. Pin
7	2	Obtain Locally	FW 1/2 Flat Washer
8	3	Obtain Locally	FW 1/4 Flat Washer
9	1	Obtain Locally	FW 3/8 Flat Washer
10	1	Obtain Locally	HB 3/8 X 1
11	2	Obtain Locally	1/4-28 Grease Zerk
12	2	Obtain Locally	HB 1/2 X 1 Hex Bolt
13	1	Obtain Locally	HB 1/4 X 1 1/2 Hex Bolt
14	1	Obtain Locally	LN 1/4 Lock Nut

BF5600
Self Loading Assembly



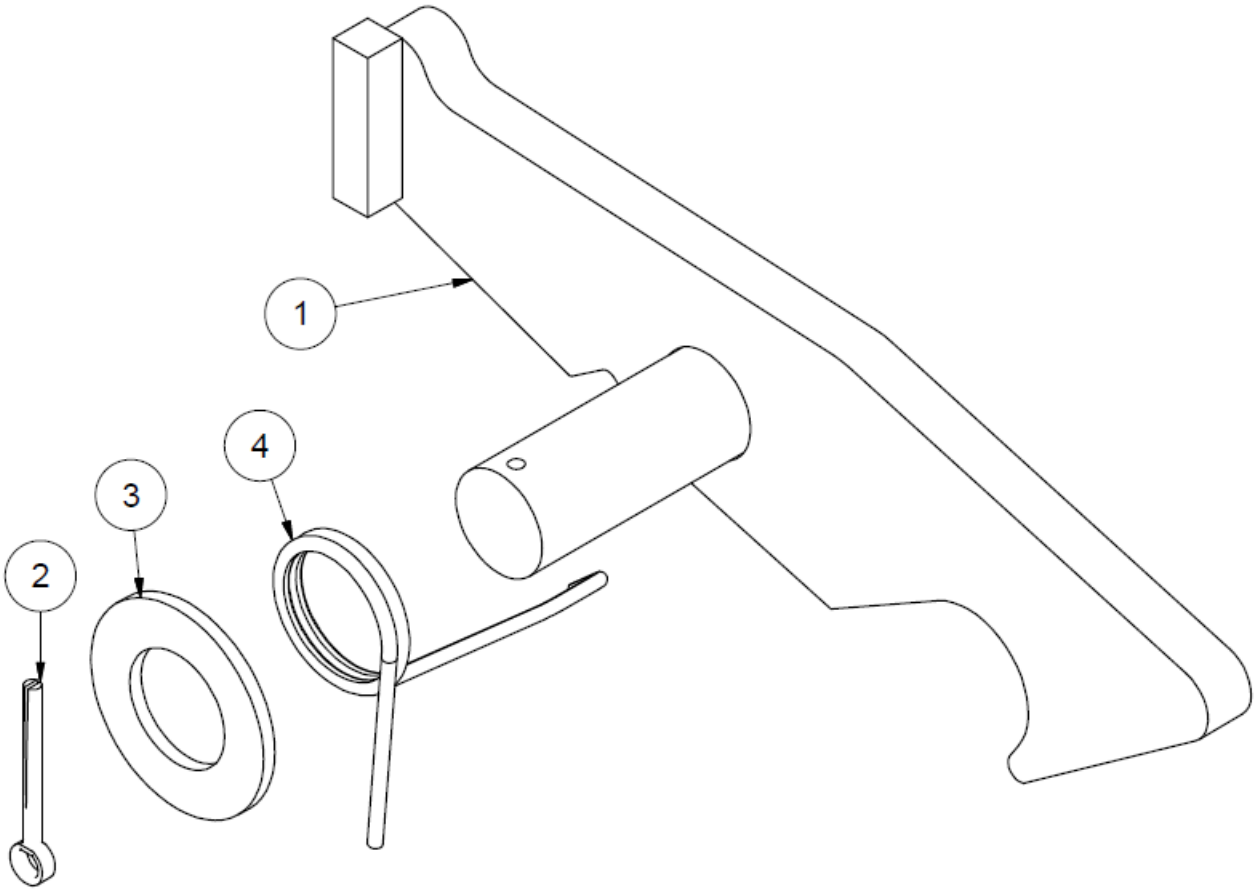
Item	Qty	Part #	Description
1	1	BF-5000-SL-08	Arm Assembly
2	2	BF-5000-241	Loader Arm Bushing
3	2	Obtain Locally	3/16 Knock in Grease Zerk
4	1	BF-5000-242	Latch Bushing

BF5600
Self Loading Assembly



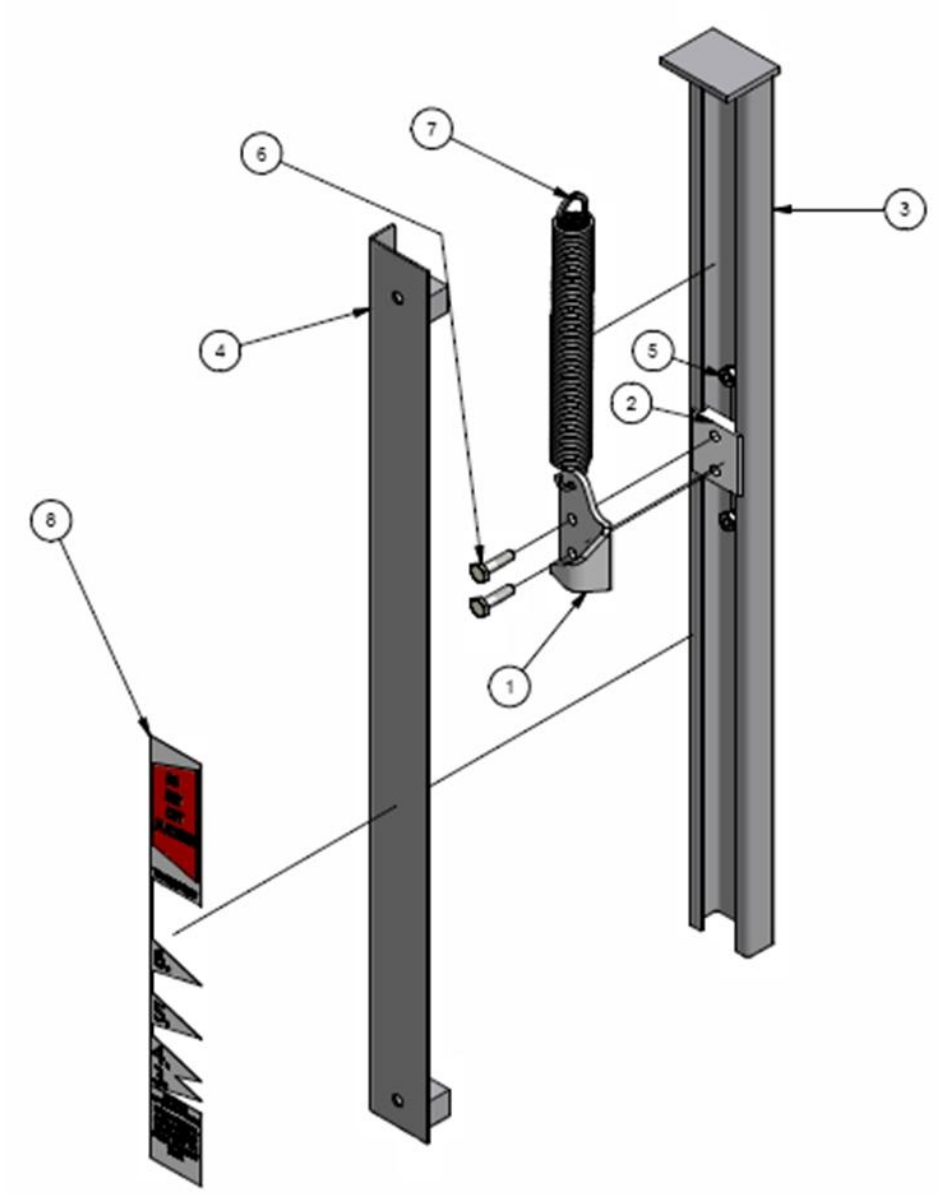
Item	Qty	Part #	Description
1	1	BF-5000-SL-09	Top Loader arm
2	2	BF-5000-243	Small Loader Arm Bushing
3	2	Obtain Locally	3/16 Knock in Grease Zerk
4	2	BF-5000-244	Large Loader Arm Bushing

BF5600
Latch Assembly



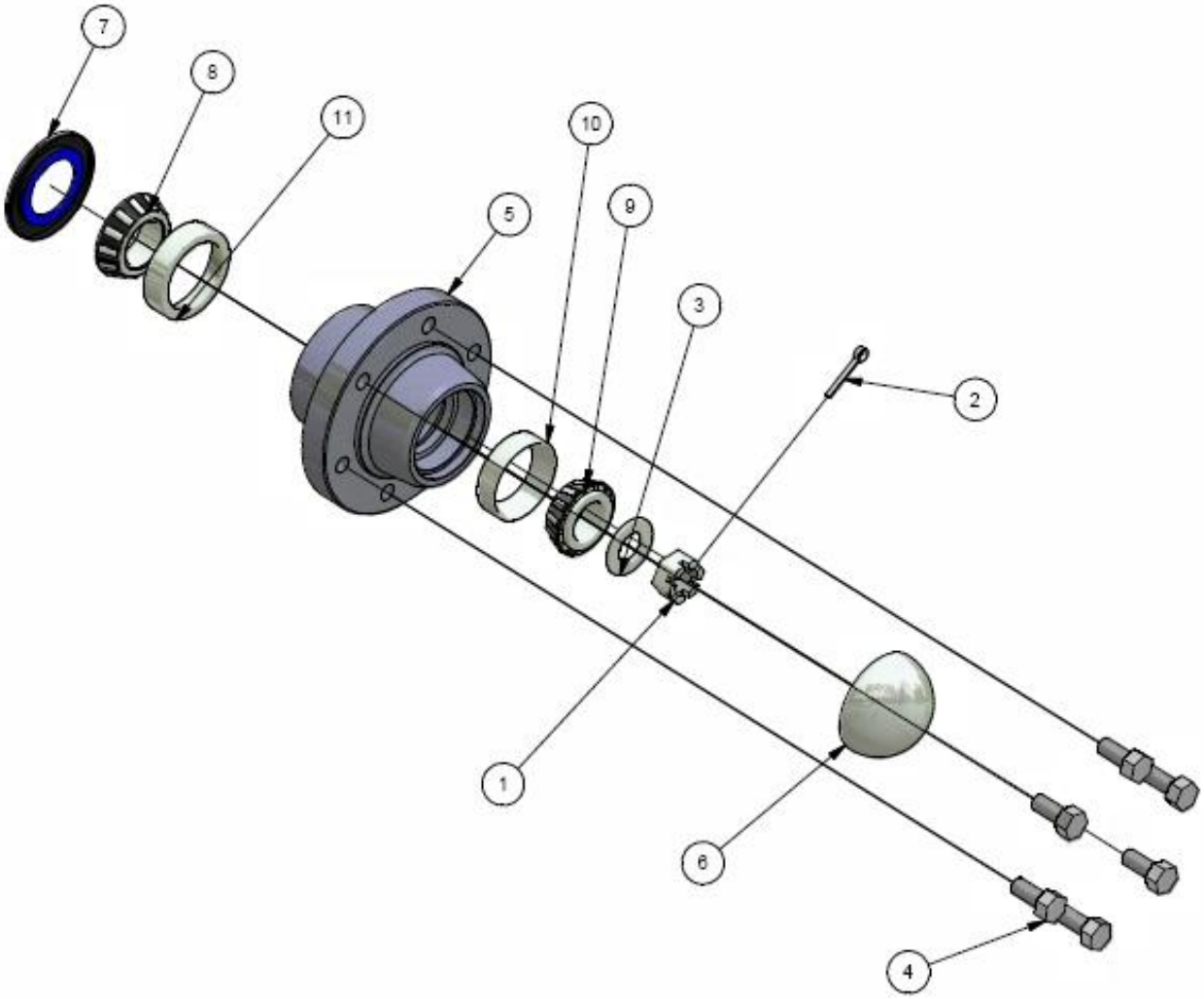
Item	Qty	Part #	Description
1	1	BF-5000-SL-10	Loader Hook
2	1	Obtain Locally	3/16 Cotter Pin
3	1	Obtain Locally	FW 1 1/4 Flat Washer
4	1	PP-00524	Torsion Spring

BF5600
Indicator Assembly



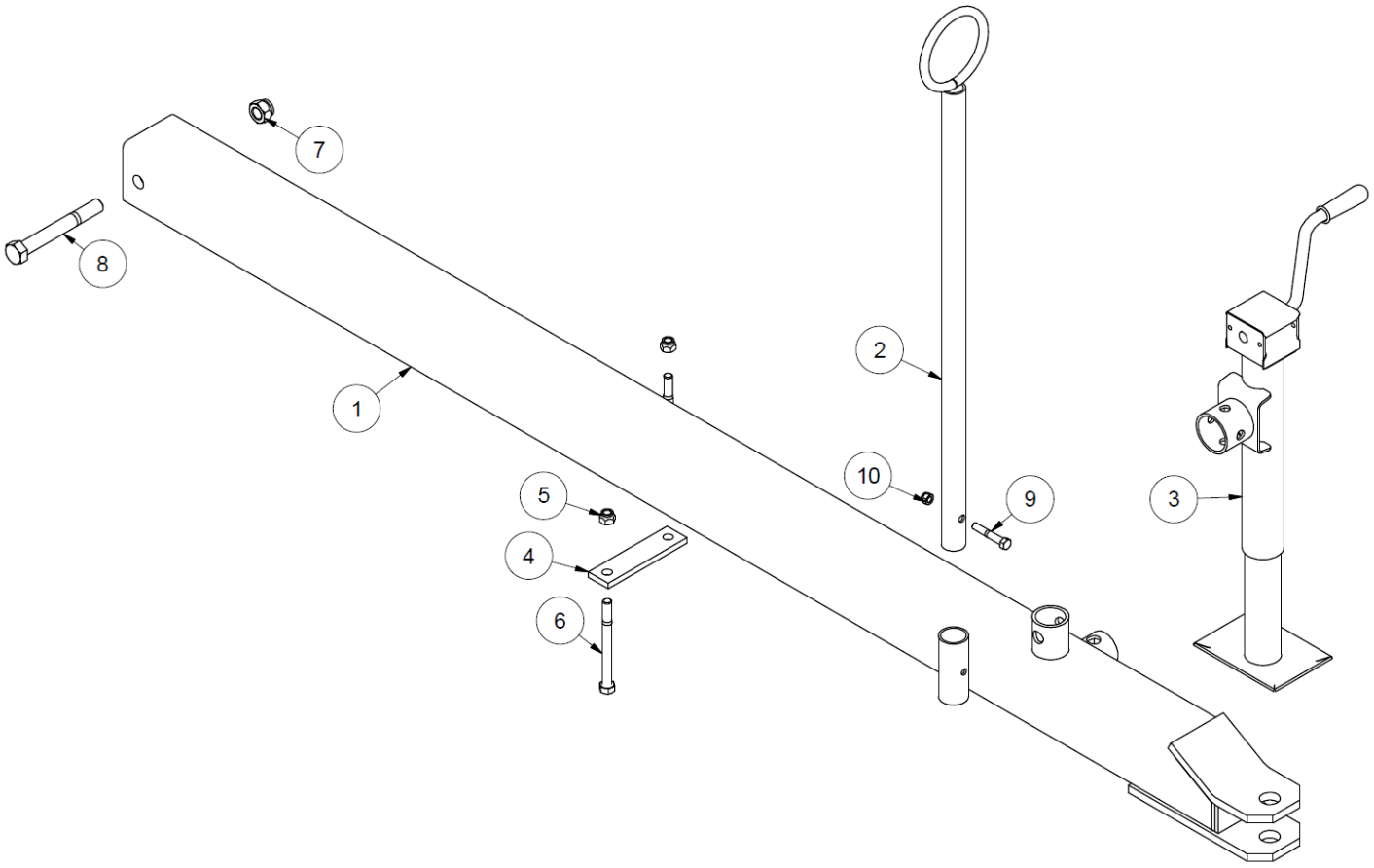
Item	Qty	Part #	Description
1	1	BF-5000-182	Indicator
2	1	BF-5000-183	Indicator Slider
3	1	BF-5000-SL-06	Indicator Assembly aa
4	1	BF-5000-SL-07	Indicator Assembly bb
5	2	Obtain Locally	LN 1/4 Lock Nut
6	2	Obtain Locally	Gr.3 1/4 x 1 Hex Cap Screw
7	1	PP-00491	Spring
8	1	PP-00547	Decal - Lift Platform

BF5600
6000lb Hub Assembly



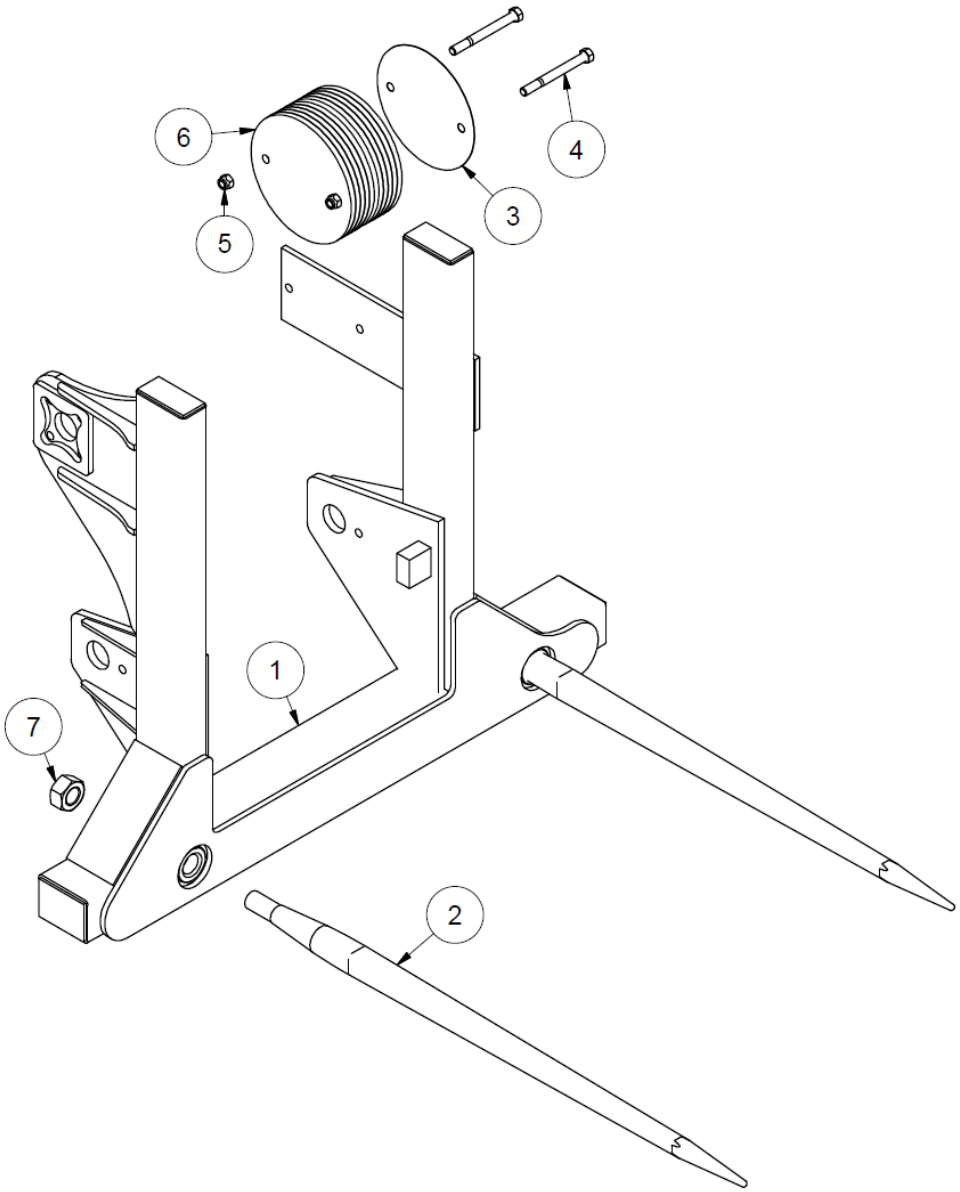
Item	Qty	Part #	Description
1	1	PP-00025	1-UNC Castle Nut
2	1	PP-00028	3/16 x 2 Brass Cotter Pin
3	1	PP-00030	1 Flat Washer
4	6	PP-00031	9/16-18 UNF x 1.75 Wheel Stud
5	1	PP-00527	6000lbs Hub
6	1	PP-00528	D-6000 Dust Cap
7	1	PP-00529	Grease Seal cr20148
8	1	PP-00530	Inner Cone
9	1	PP-00531	Outer Cone
10	1	PP-00532	Outer Cup
11	1	PP-00533	Inner Cup

BF5600
Drawbar Assembly



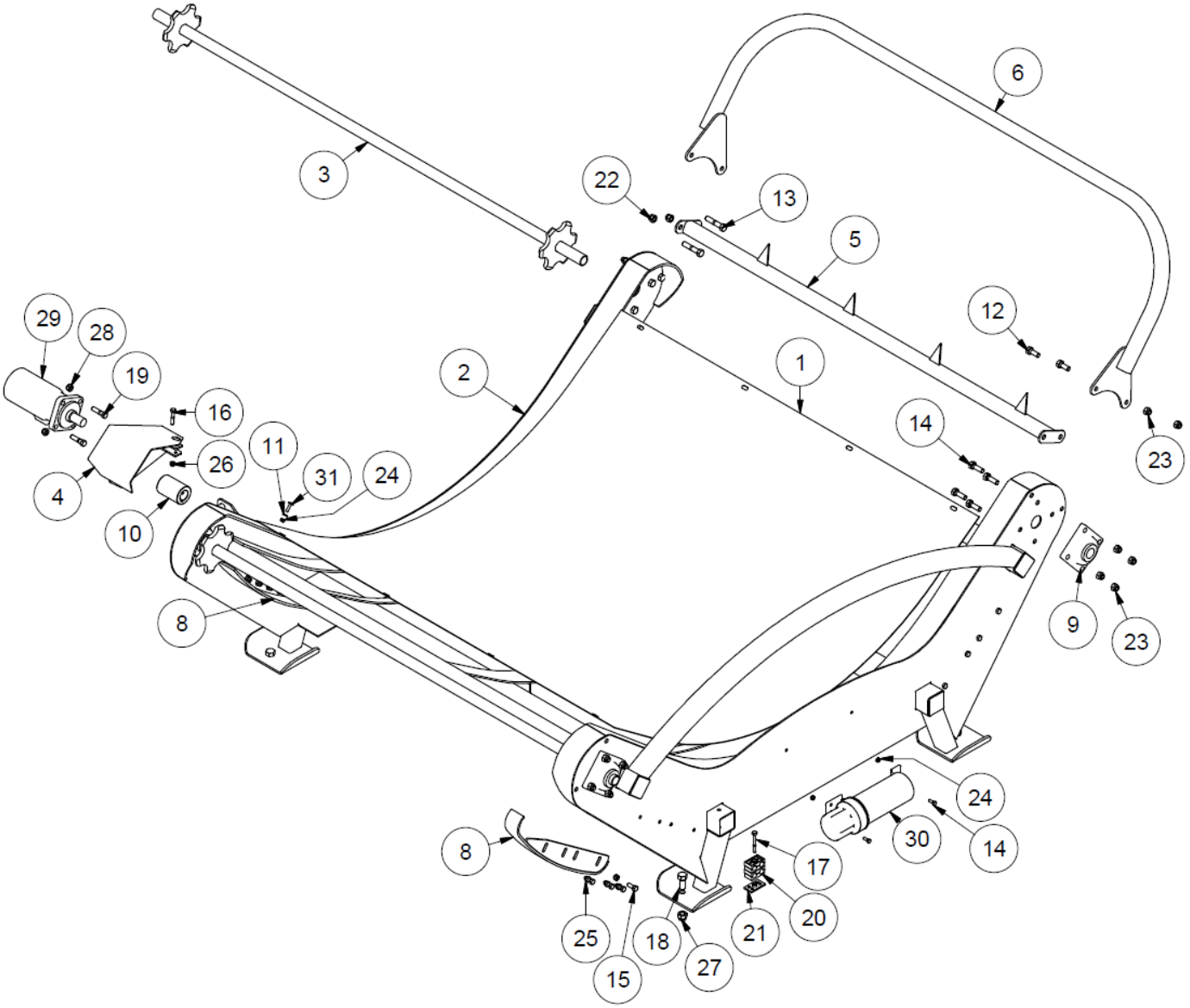
Item	Qty	Part #	Description
1	1	BF-5000-SL-04	Front Hitch
2	1	BF-5000-SL-11	Hose Support
3	1	25719	Jack
4	1	BF-5000-245	Hitch Bracket
5	2	Obtain Locally	LN .5 Lock Nut
6	2	Obtain Locally	HB .5 X 5.5 Hex Bolt
7	1	Obtain Locally	LN .75 Lock Nut
8	1	Obtain Locally	HB .75 X 6 Lock Nut
9	1	Obtain Locally	HB .375 X 2.25 Hex Bolt
10	1	Obtain Locally	LN .375 Lock Nut

BF5600
Tine Assembly



Item	Qty	Part #	Description
1	1	28217	Fork Frame
2	2	22077	Tine
3	1	PP-00525	Keep Clear Decal
4	2	Obtain Locally	HB .5 X 5 Hex Bolt
5	2	Obtain Locally	LN .5 Lock Nut
6	10	BF-5000-175	Counterweight
7	2	Obtain Locally	M28 Nut

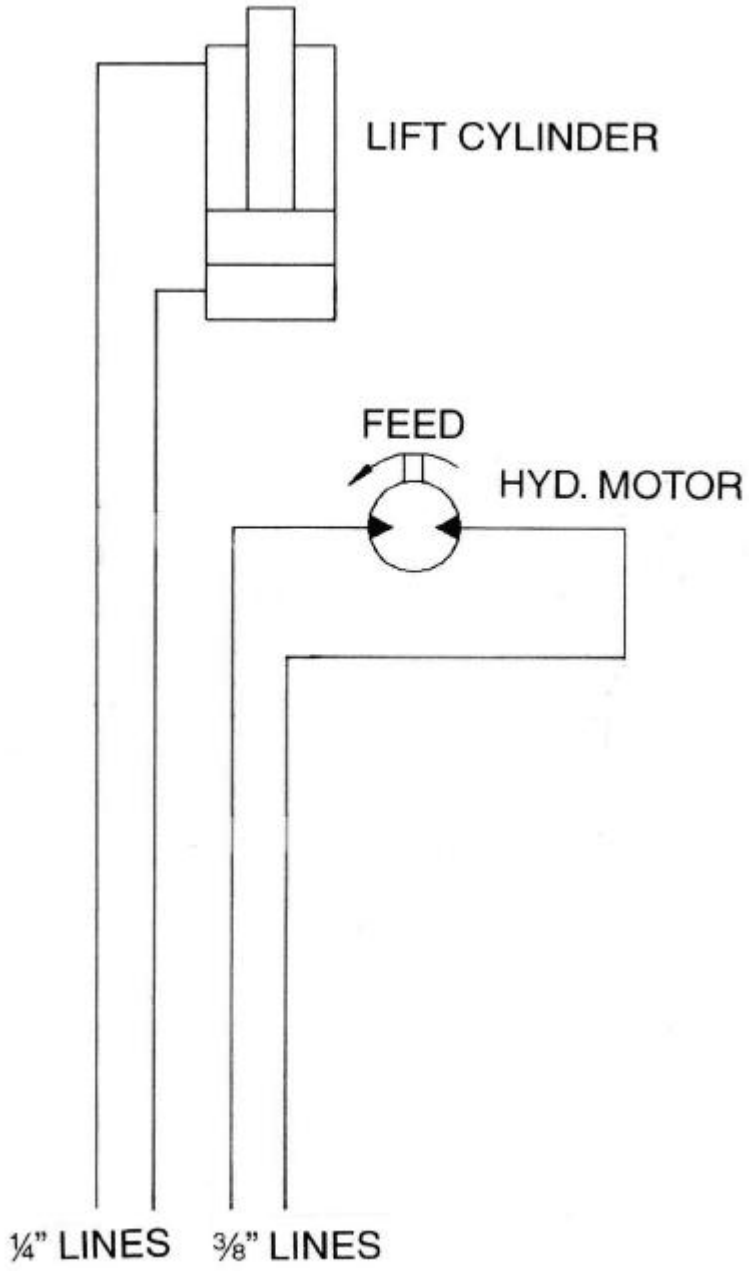
BF5600
Feeder Assembly



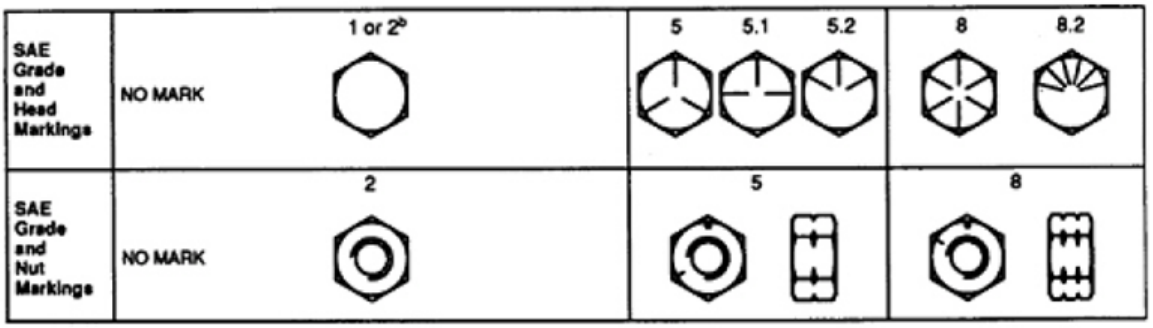
BF5600
Feeder Assembly

Item	Qty	Part #	Description
1	1	26955	Deck
2	1	27000	Deck Frame
3	2	27001	Drive Shaft
4	1	27003	Motor Mount
5	8	27107	Chain Tube
6	1	27111	Bale Guide
7	1	28204	Left Chain Tightener
8	1	28204M	Right Chain Tightener
9	4	BEA UCF207-20	4 Bolt Flange Bearing
10	1	COU20552-1	Shaft Coupler
11	11	Obtain Locally	FW 1/4 Flat Washer
12	4	Obtain Locally	HB 1/2 X 1 1/4 Hex Bolt
13	6	Obtain Locally	HB 1/2 X 2 1/2 Hex Bolt
14	2	Obtain Locally	HB 1/4 X 3/4 Hex Bolt
15	19	Obtain Locally	HB 3/8 X 1 Hex Bolt
16	1	Obtain Locally	HB 5/16 X 1 3/4 Hex Bolt
17	1	Obtain Locally	HB 5/16 X 2 /2 Hex Bolt
18	4	Obtain Locally	HB 5/8 X 1 1/2 Hex Bolt
19	2	Obtain Locally	HB 7/16 X 1 3/4 Hex Bolt
20	4	LA-HOSE CLAMP 1	Hose Clamp
21	1	LA-HOSE CLAMP 2	Hose Clamp Base
22	30	Obtain Locally	LN 1/2 Lock Nut
23	11	Obtain Locally	LN 1/4 Lock Nut
24	17	Obtain Locally	LN 3/8 Lock Nut
25	1	Obtain Locally	LN 5/16 Lock Nut
26	4	Obtain Locally	LN 5/8 Lock Nut
27	2	Obtain Locally	LN 7/16 Lock Nut
28	1	VAL MLH	Hydraulic Motor
29	1	TL5X2-201-111	Manual Holder
30	8	Obtain Locally	CB 1/4 X 1 Carriage Bolt
31	2	CHAIN ZC60	Feed Chain (30 Links w/ Connector)

BF5600
Hydraulic Schematic



UNIFIED INCH BOLT AND CAP SCREW TORQUE VALUES



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.

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.

[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.

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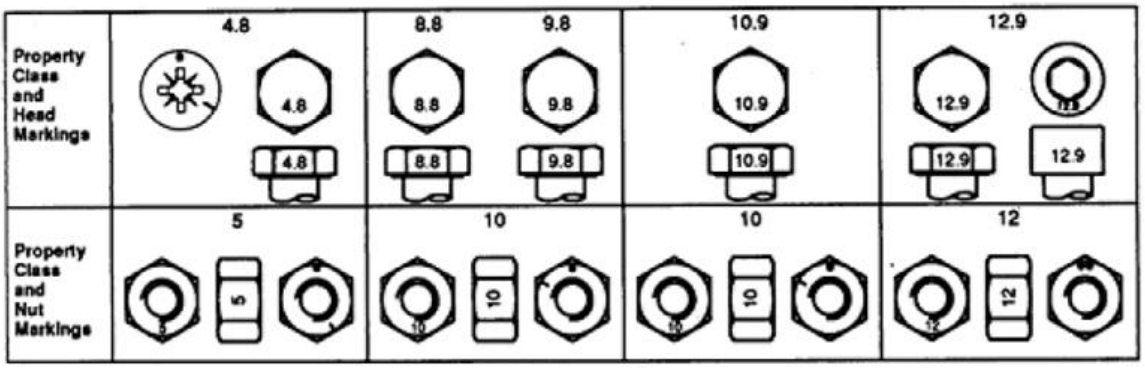
METRIC BOLT AND CAP SCREW TORQUE VALUES



Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
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	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

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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.

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