HIGHLINE MFG. INC.

'97

BALE PRO 7700

Assembly-Operator
Parts Manual

Made in Canada

Table of Contents

Warranty

Highline Mfg. Inc. warrants its products to the original owner for a period of two years from date of purchase, subject to the following provisions:

- Warranty registration must be submitted to Highline Mfg. within 30 days of purchase of the Bale Pro 7700.
- 1st year Parts & Labour
- 2nd year Parts Only

- All matters related with the warranty of products must be handled through an authorized Highline Mfg. dealer.
- Any labour subject to warranty must be authorized by a Highline Mfg. Inc. Representative, before work is started.
- Machines used for rental, custom work, industrial or construction use will be warranted for a period of 30 days from date of purchase. (Parts and Labour)
- Warranty will be void if any component of this machine is altered or modified in any way, unless written permission is given by Highline Mfg. Inc.
- Highline Mfg. Inc. will not assume any responsibility for whatever damage may occur to equipment to which this machine may be attached.
- Warranty terms and conditions are subject to provincial and state legislation.
- Warranty is limited to the Purchase value of the equipment and can never exceed MSRP

2. President's Message

Congratulations on your purchase of the *Bale Pro 7700*! Bale Pro, a well respected name in livestock feed handling equipment, is manufactured by Highline Mfg. Inc. A company with a manufacturing team that has over 25 years experience in the farm implement industry.

This operator's manual has been prepared to provide information necessary for safe and efficient operation of your *Bale Pro 7700*. In the manual you will find safety procedures, maintenance routines and detailed parts diagrams.

The *Bale Pro 7700* was designed for controlled, more aggressive processing with less bunching. A little time and effort spent in proper maintenance will increase the performance and durability of your bale processor.

In order to maintain high standards, improvements are made from time to time. Highline Mfg. Inc. reserves the right to make those changes and improvements when practical to do so without incurring any obligation to make such changes and improvements on machines sold previously.

Should the need arise, this manual will assist you in acquiring replacement parts. Should your dealer not have the parts you require in stock, the dealer will be happy to order them for you. Also if you should find that you require information not covered in this manual, feel free to consult your local dealer or Highline.

Highline Mfg. Inc. thanks and congratulates you for selecting a *Bale Pro 7700* as the machine of your choice.

Sincerely,

Raymond J. Bussière, President

PO Box 307, Vonda, Saskatchewan, S0K 4N0
Phone 1-800-665-2010 Fax (306) 258-2010
Internet Address: http://www.spectramedia.com/highline/

3. Safety Precautions

WORK SAFELY - FOLLOW THESE RULES

CAREFUL OPERATION IS THE BEST INSURANCE AGAINST AN ACCIDENT

- Keep children and adults away from discharge area while processing.
- Know the controls and what they do.
- Check machine to ensure nothing restricts moving or rotating parts.
- Ensure PTO is disengaged before starting tractor.
- Never leave tractor while PTO is engaged.
- Lower forks to ground after operation.
- Never attempt to manually remove debris while PTO is engaged. Disconnect PTO before unplugging or adjusting processor.
- Always keep safety PTO shields in place.
- Relieve pressure in hydraulic lines before disconnecting lines or performing other work on the hydraulic system.
- Never allow anyone to stand behind processor while loading bales.

4. Manual Controls

⚠ Before operating the Bale Pro 7700, be sure to review all the instructions and familiarize yourself with the processor's features.

1. Discharge chute adjustment handle.

Place in fully lowered position for windrow feeding, or raise as required for spreading.

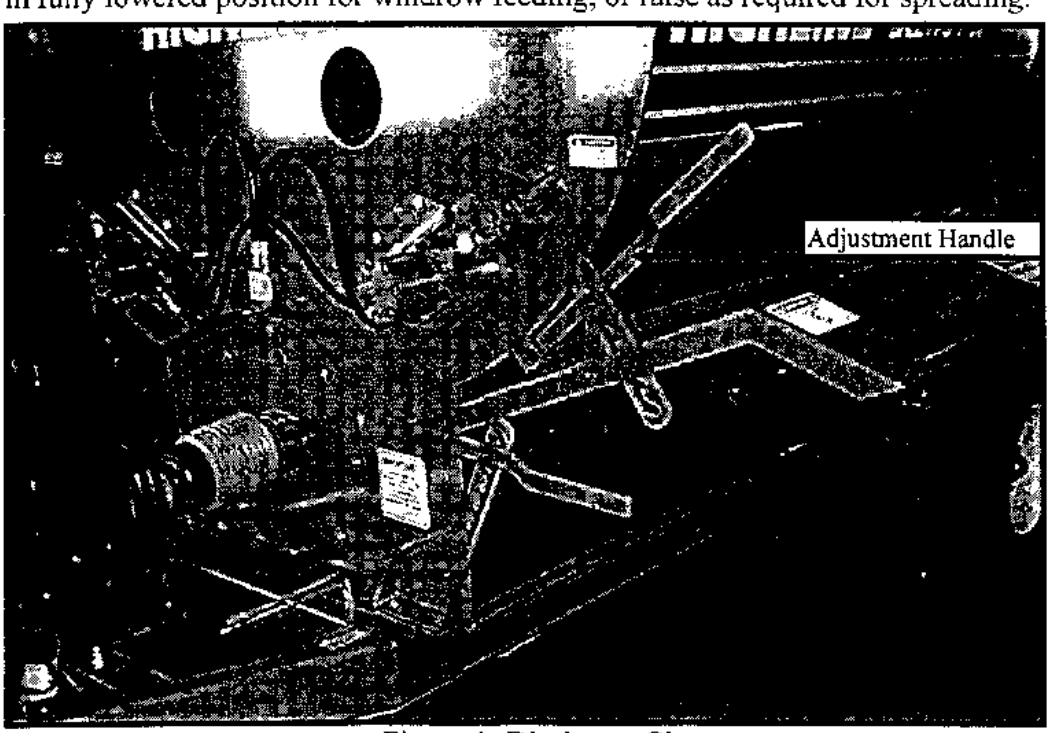


Figure 1 Discharge Chute

2. Feeder drum height adjustment.

   Using the feeder adjustment screws to change height of feeder drum changes the amount of bite taken from the bale. Larger bales require the drums to be further apart. To avoid unnecessary strain on the hydraulic motors ensure the feeder drums are level by adjusting the front and rear feeder drum adjustment screws.

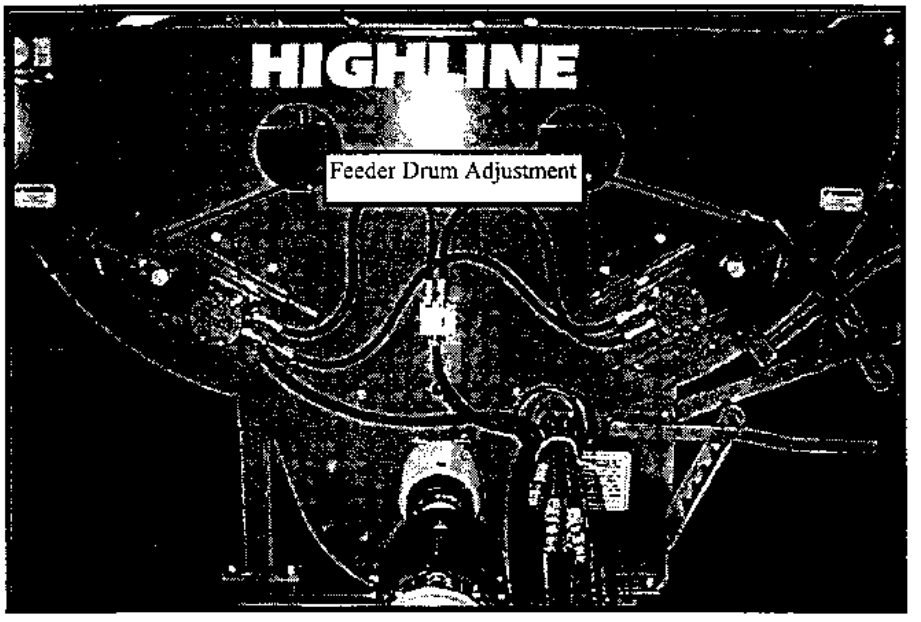


Figure 2 Feeder Drum

3. Flail drum rod height adjustment.

   Raise handle to increase the amount of bite taken out of the bale, lower to reduce the amount of bite taken from bale.

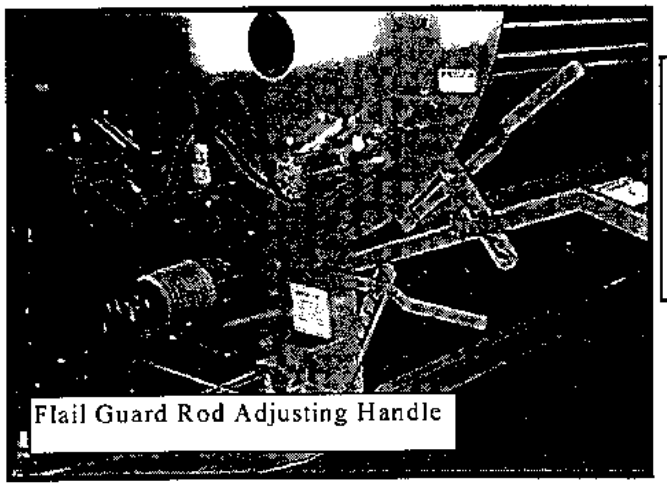


Figure 3 Flail Drum Rod Adjustment

> ⚠ **Caution:**
> Twine must be removed from the flail drum **at least** every 25 bales. Premature bearing failure may occur if the twine is allowed to build up on the drum.

4. The flail drum is activated via the PTO control in your tractor.
5. The feeder drum and fork lift are operated via the hydraulic control in your tractor.

5. Maintenance

Please follow these maintenance steps, to ensure trouble free operation of your Bale Pro 7700.

PTO Installation

Ensure that the U-joint cross on the front PTO shaft (A) is in line with the U-joint cross on the secondary PTO shaft (B). See Figure 4. Failure to do so will result in unbalanced operation and shear bolt breakage.

Lubrication

Maintaining proper lubrication of the Bale Pro 7700 is crucial for trouble free operation. Figures 4, 5 and 6 show 12 points which require regular greasing. Below is a list of the lubrication points and the frequency of greasing of these points.

1. PTO Extension Assembly
   Grease every ten bales.
2. PTO Assembly
   Grease every ten bales.
3. PTO Extension Shaft Bearing
   Grease every fifty bales
4. Feeder Drum bearing-right
   Grease every fifty bales
5. Feeder Drum Bearing-left
   Grease every fifty bales.
6. Flail drum bearing
   Grease every fifty bales
7. Fork Pivot (pipe-clamp) left
   Grease every one hundred bales.
8. Fork Pivot (pipe-clamp) right
   Grease every one hundred bales.
9. Tire Hub-left
   Greasing dependent upon travel
10. Tire Hub-right
    Greasing dependent upon travel
11. Fork-left
    Grease every one hundred bales.
12. Fork-right
    Grease every one hundred bales.

Note: Use low-temperature grease when the temperature reaches below 0 degrees Celsius (32 degrees Fahrenheit)

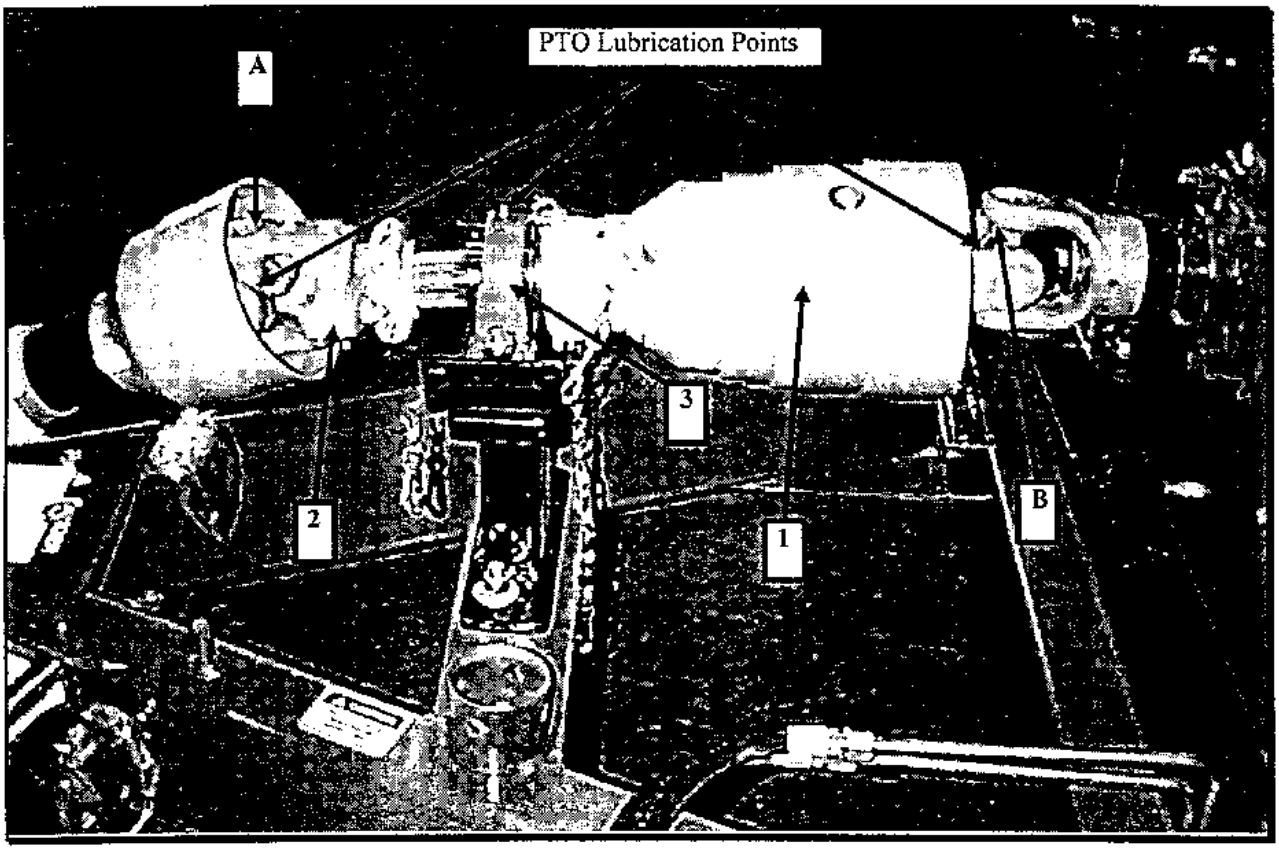
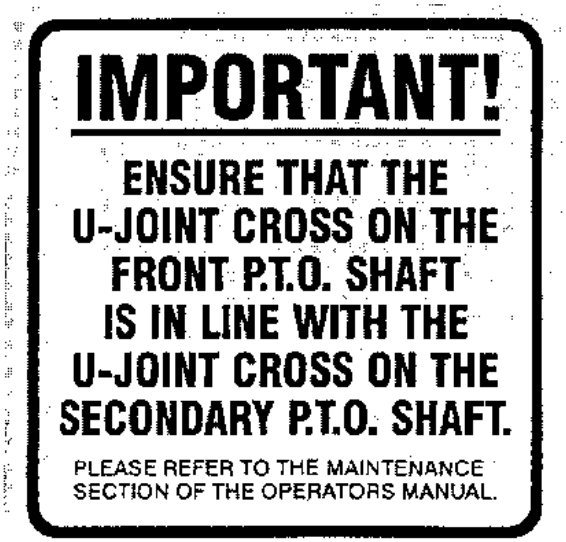


Figure 4 PTO Installation & Lubrication



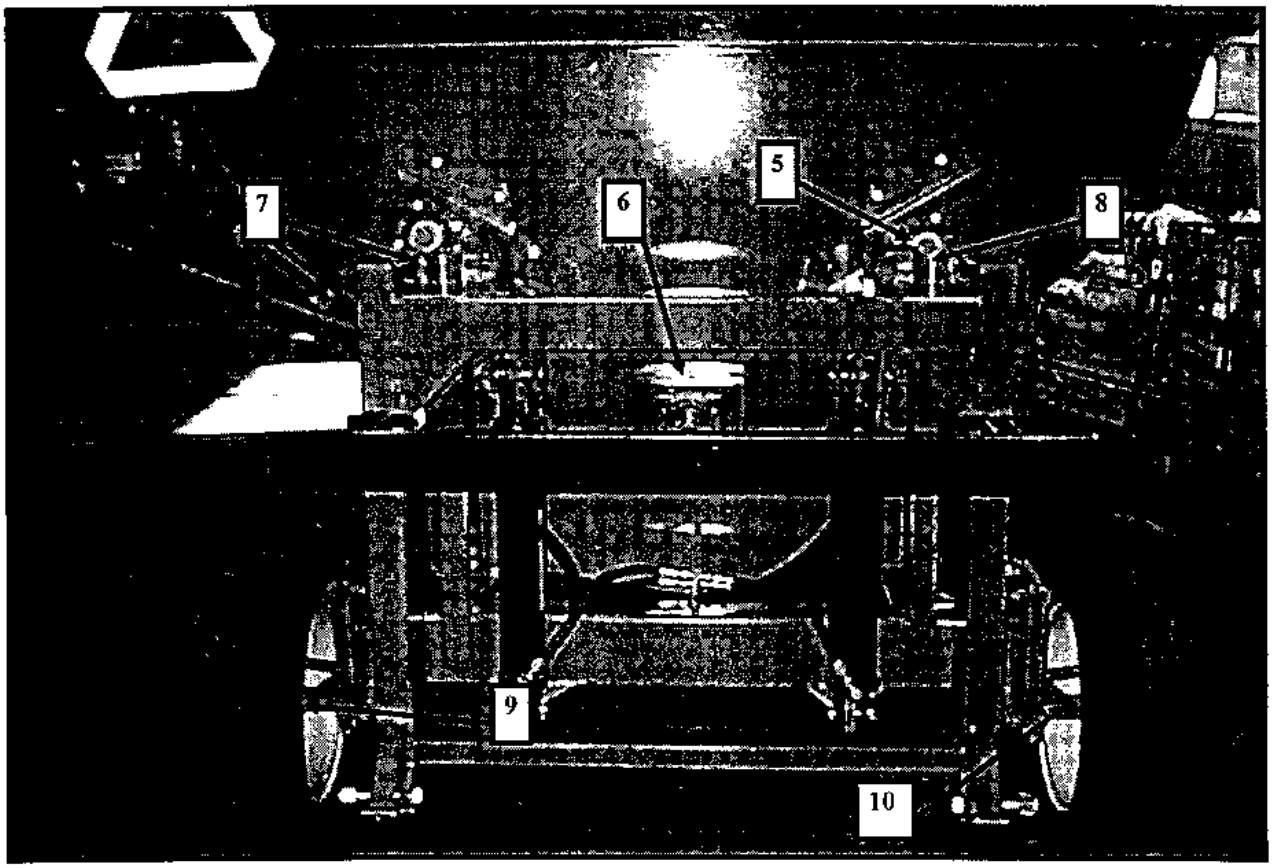


Figure 5 Assorted Lubrication Points

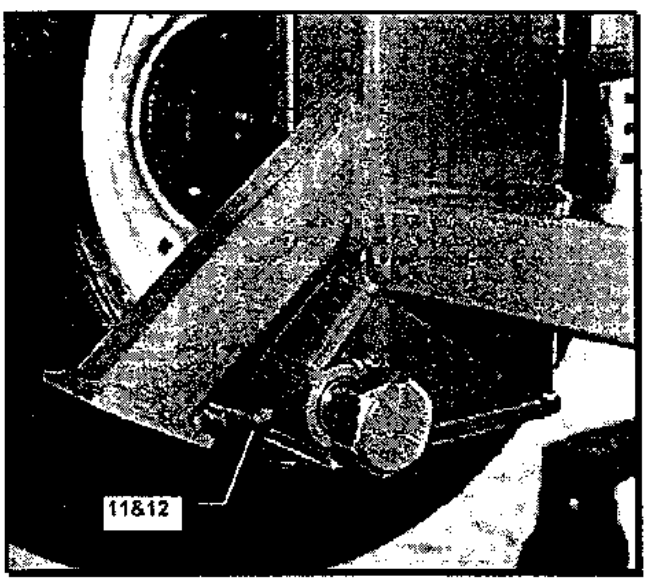


Figure 6 Fork Lubrication Points

General Maintenance

Flail bolts should be tightened after the first ten bales then rechecked after approximately 200 bales, Figure 7. If twine is not cut from the bale before processing, it will wrap around the flail drum. Periodic removal of this twine is required to allow free movement of the flail. If a flail requires replacing, also replace the opposite flail to keep the drum in balance. Damaged and broken flails should be replaced as soon as possible.

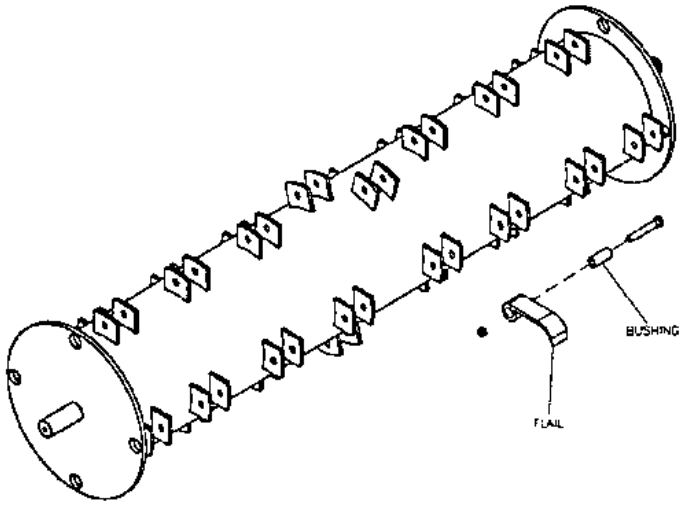


Figure 7. Flail Drum

⚠Caution:

Check the pipe-clamp bolts every 50 bales and tighten them if they become loose.(Figure 8)

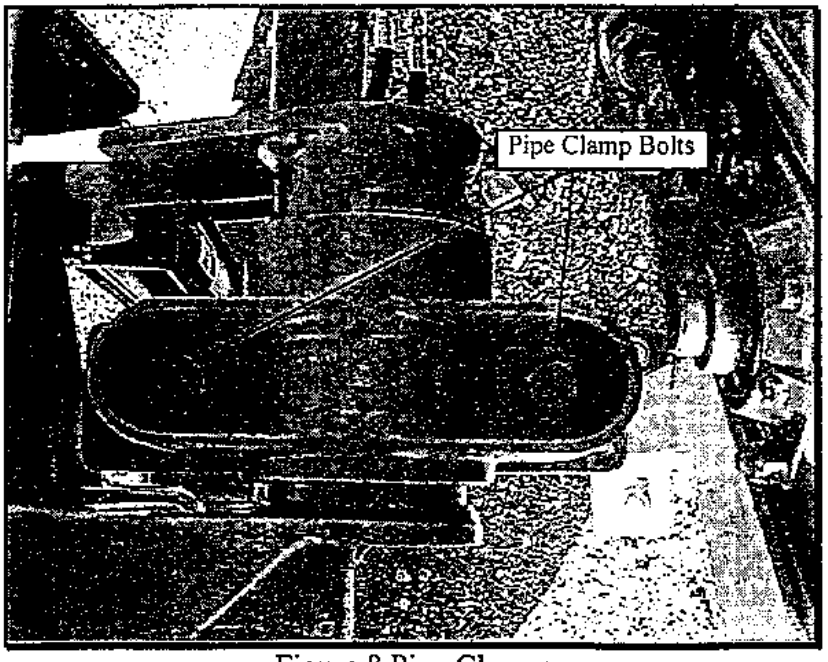


Figure 8 Pipe Clamps

6. Operating Instructions

Successful operation of the Bale Pro 7700 is dependent upon the quality of the bale, height of the feeder drum and flail guard and also on the operator. The following steps ensure proper operation. Read carefully before operation of your Bail Pro 7700.

1. Before loading bale, engage PTO drive to check the flail drum if it is operating adequately. Start feed rollers using the hydraulics and check if the feed rollers turn clockwise and counter clockwise. If your tractor has hydraulic flow control, alter flow so the feed rollers rotate at an adequate speed for the conditions of your bales.

2. To load,disengage PTO, lower forks **completely** and back up to bale **slowly**. Raise forks until bale falls into the processor. Another bale may be loaded onto the forks while a bale is in the processor. If a bale is loaded on the forks while one is shredded, raise the forks approximately to a 45° angle to reduce pressure on the hydraulic cylinder lift. Orientation of the bale during loading causes the hay/straw to discharge from the processor differently. If the bale is shredded in the same direction as it was baled, the hay/straw will generally come off in layers. If the bale is shredded in the opposite way, feeding may be uneven.

3. Before engaging flail drum, check that the forks are not interfering with the rotating bale and position the discharge deflector for your application. For spreading bedding the deflector is placed up and for feeding in rows the deflector is placed down.

4. When ready, engage the PTO, increase engine speed until the **PTO RPM** is between 1000 to 1050 RPM. 1000 rpm is a recommended flail drum operating speed however this varies depending upon the bale quality, hay/straw type and weather. Do not allow flail drum RPM to drop such that the flails start to "backslap". Repeated backslap may cause damage to flails and flail drum. Next, rotate feed rollers. In most cases the feed drums need to be turning periodically to prevent the flail drum from overloading.

5. If the feed rate is too fast, two items may be changed.

a. Raise flail guard rods by means of adjusting handle, Raise handle to increase the amount of bite taken out of a bale, lower handle to decrease amount of bite taken.

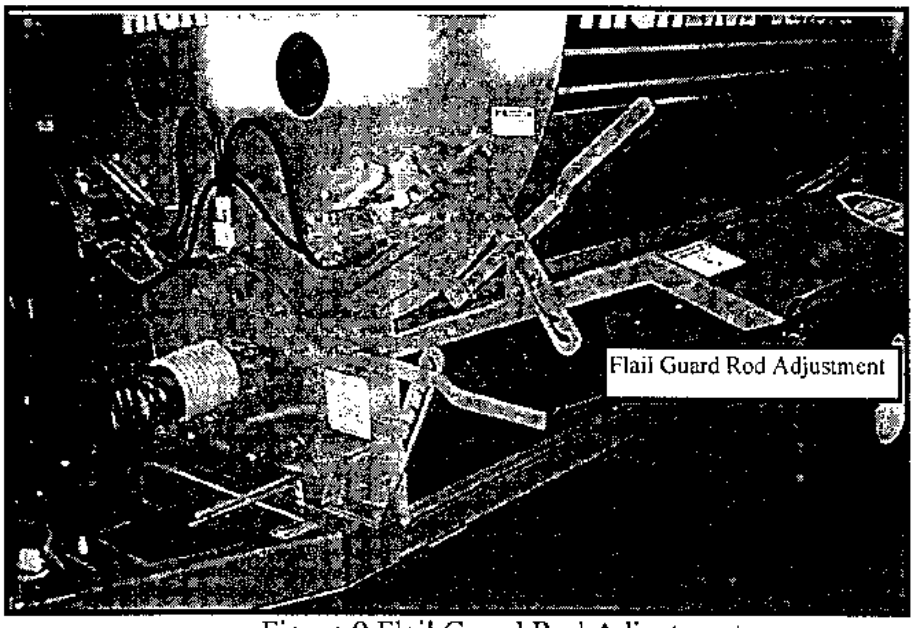


Figure 9 Flail Guard Rod Adjustment

b. Raise Feeder Drum using adjusting bolts on the front and rear of the processor. This decreases the amount the flail penetrates the bale.

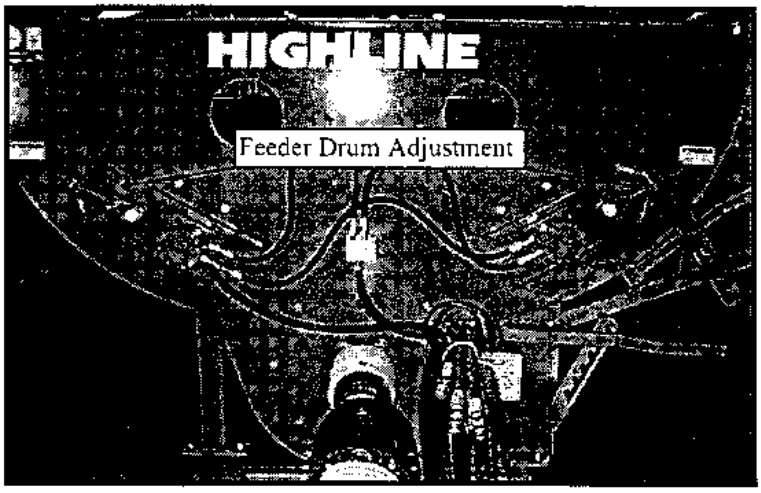


Figure 10 Feed Drum Adjustment

6. If the feed rate is too slow, the same two items may be altered however "back slap" may occur if the feed rate is too high.

7. If the bale quits turning or straw bunches up one side, reverse feed drums in opposite direction and periodically alternate direction. If the bale is loaded on end rather than on its side, it is better to keep reversing the feed drums back and forth to prevent spillage.

8. Before stopping PTO, idle tractor down to reduce flail "back slap", and prevent shear bolt breakage.

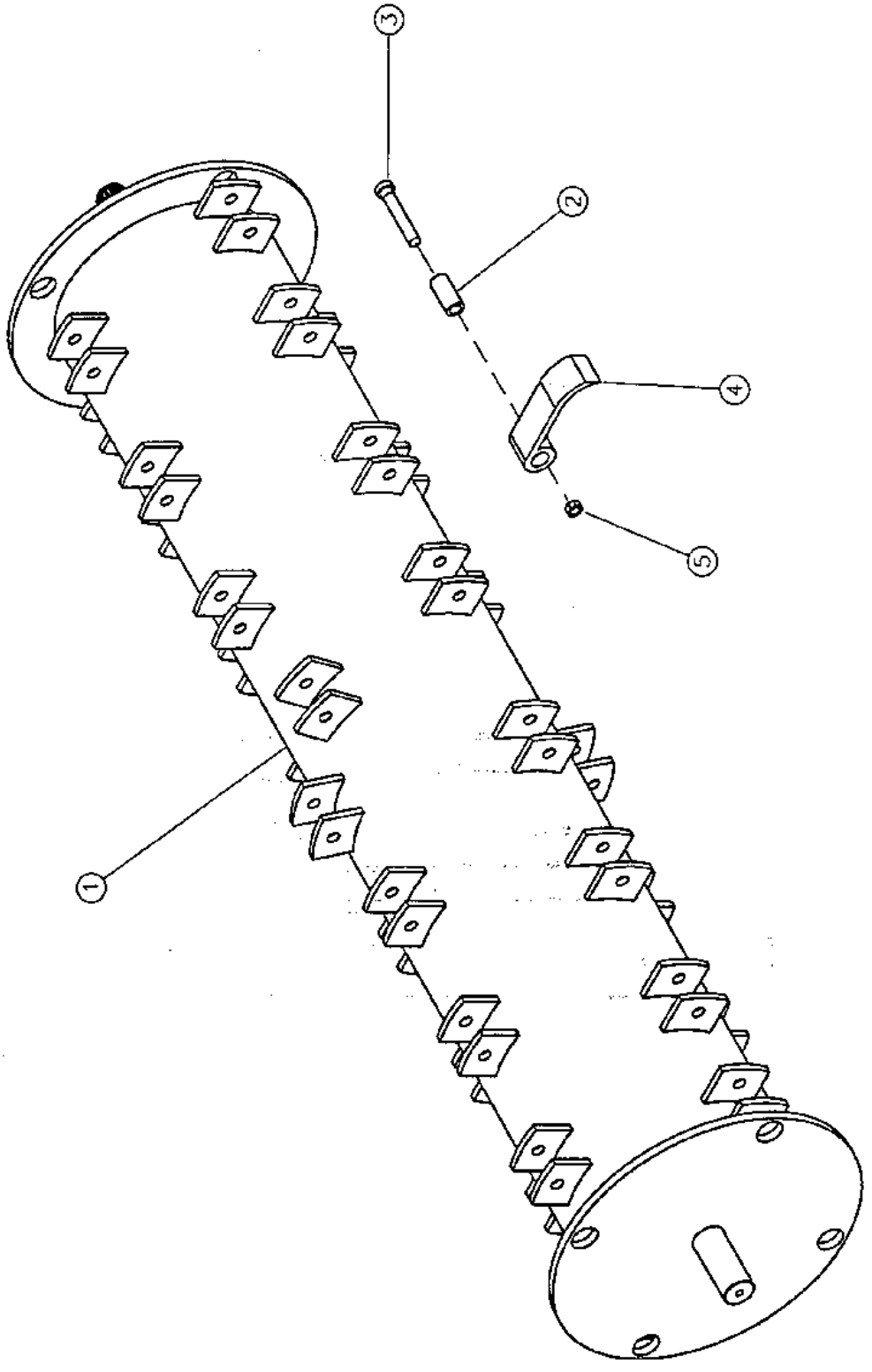
⚠**WARNING:** Warranty will be void if any component of this machine is altered or modified in any way, unless written permission is given by Highline Mfg. Inc.

Operating Notes

Operating Notes

7. Assembly & Installations

Flail Assembly

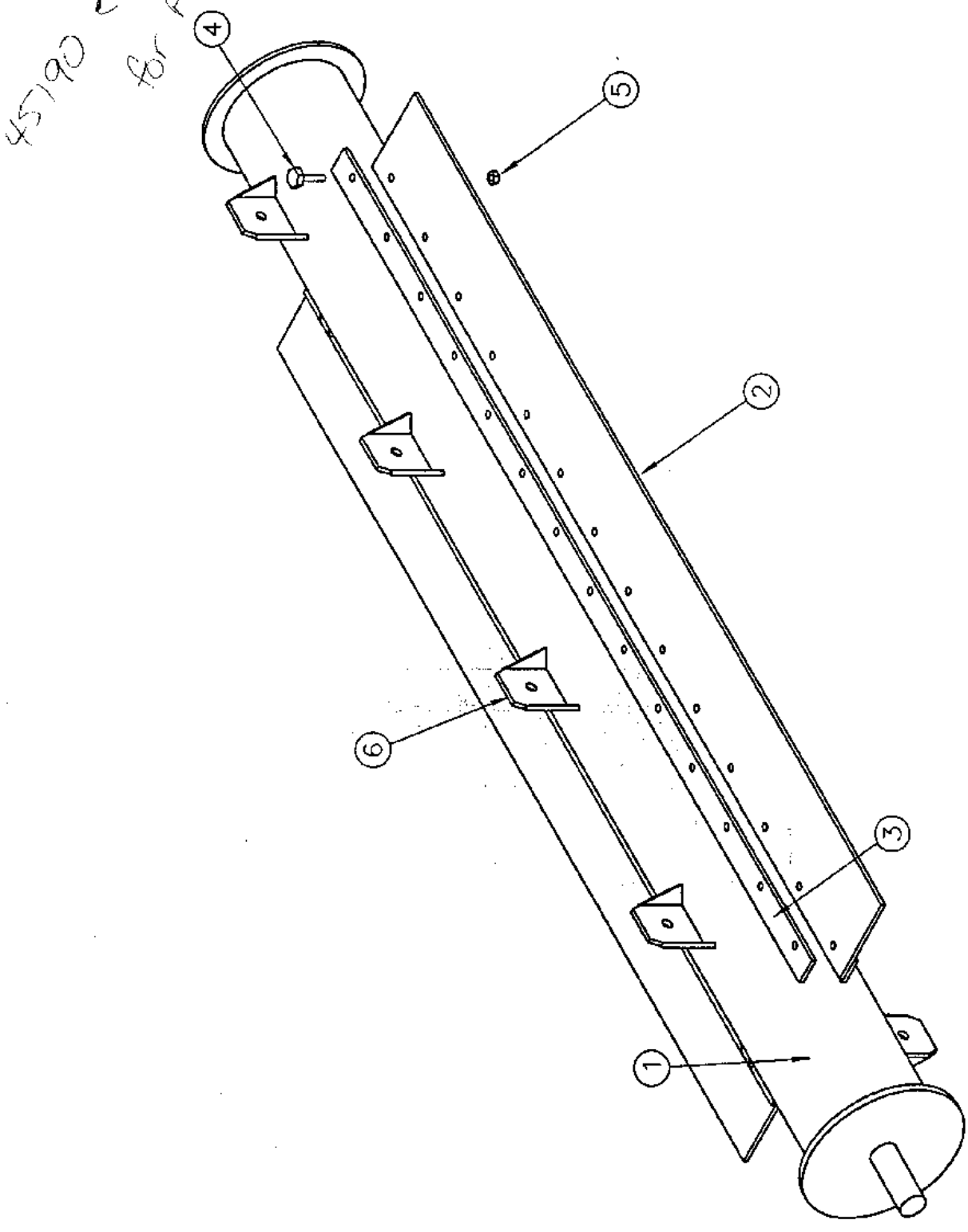


Item No.	Part No.	Description
1	47013	Flail Drum 7700 Model
2	E2083	Flail Bushing
3	45099	5/8" x 3-3/4" UNF GR. 8 Stud
4	E3552	Flail
5	SLNF10	5/8" UNF Locknut

⚠ NOTE: If a flail requires replacing, also replace the opposite flail to keep the drum in balance.

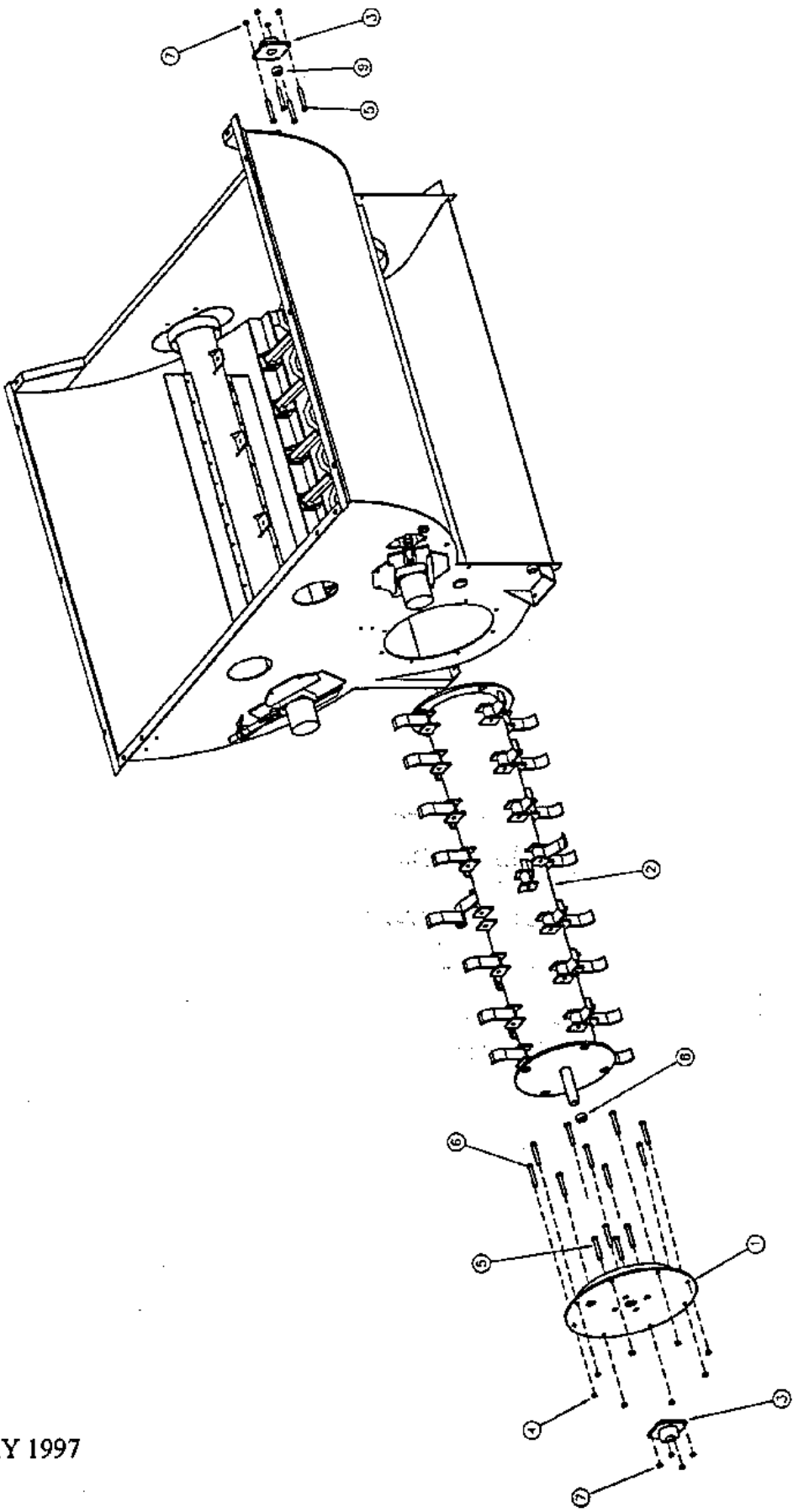
Feed Roller

45190 extension kit for Feed Roller



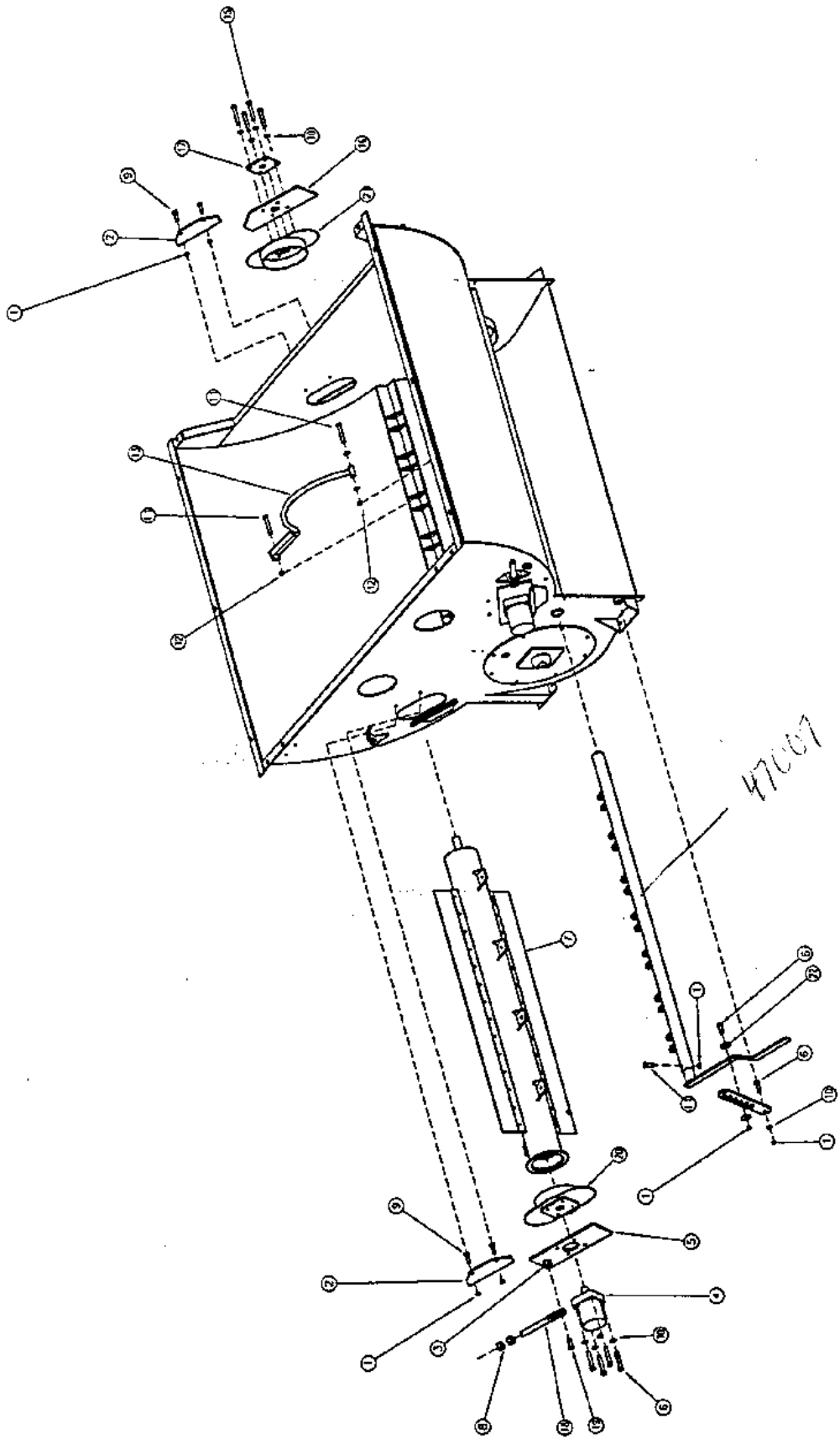
Item No.	Part No.	Description
1	47011	Feed Drum Complete
2	E3253	3/8"x5"X55" Belting
3	E3252	3/8"x1-1/2"x55" Back Plate
4	B5C0528P	5/16"x1 3/4" Bolt UNC Gr. 5
5	LNC05	5/16" UNC Lock Nut
6	E3085	Feed Roller Lug

Flail Drum Installation



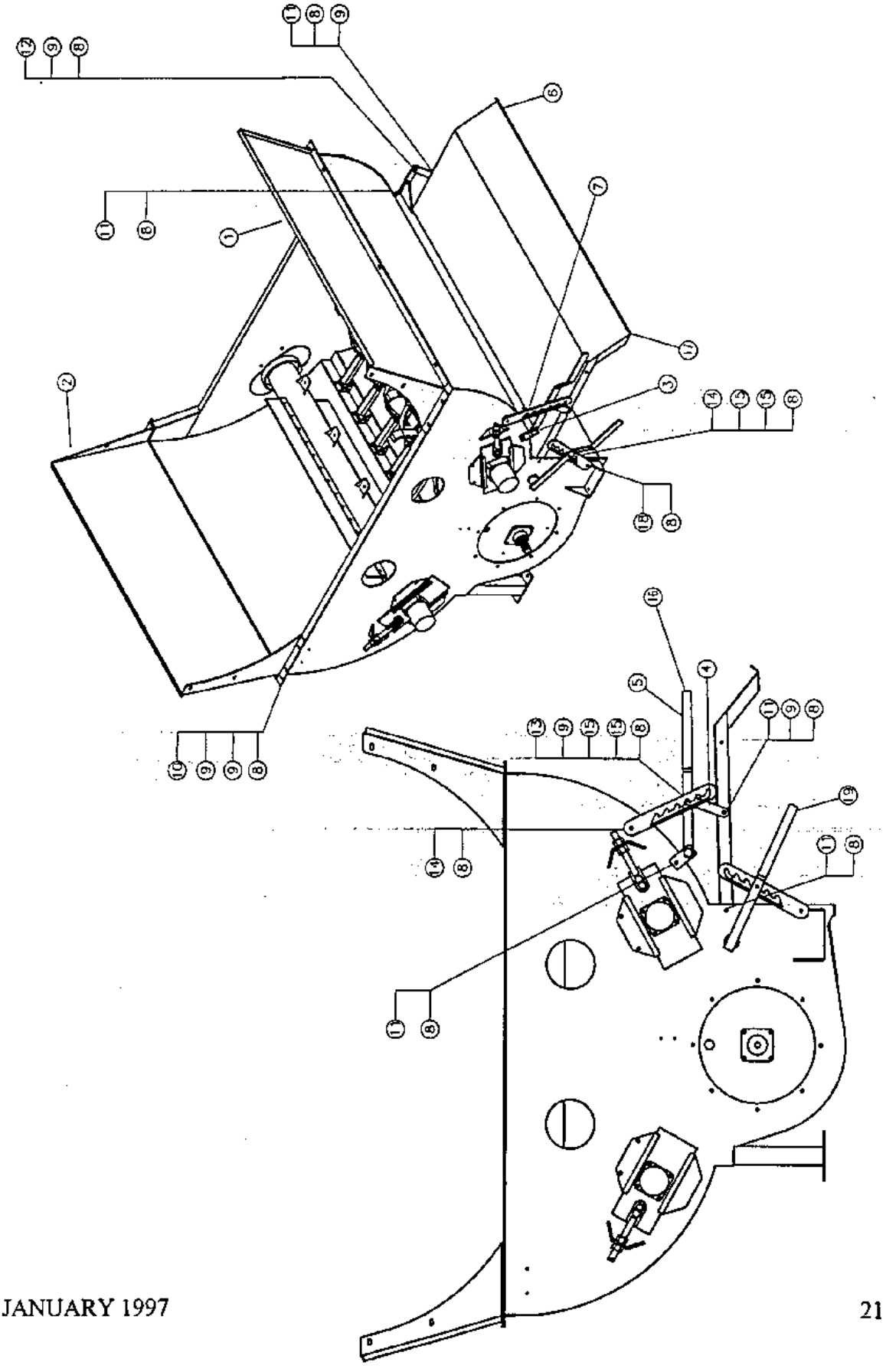
Item No.	Part No.	Description
1	47010	Front Plate with Shield
2	47013	Flail Drum Complete
3	92091	1-3/4" Flange Bearing
4	31173	LNC08 1/2" Locknut
5	31013	C5C1040 5/8"x2-1/2" UNC Carriage Bolt
6	31016	B5C0840P 1/2"x2-1/2" UNC GR 5 Bolt
7	31169	SLNC10 5/8" Stover Locknut
8	E2974	2 1/4" OD x .250" x 7/8" Seamless
9	E2973	2 1/4" OD x .250" x 1/4" Seamless

Feed Drum Installation



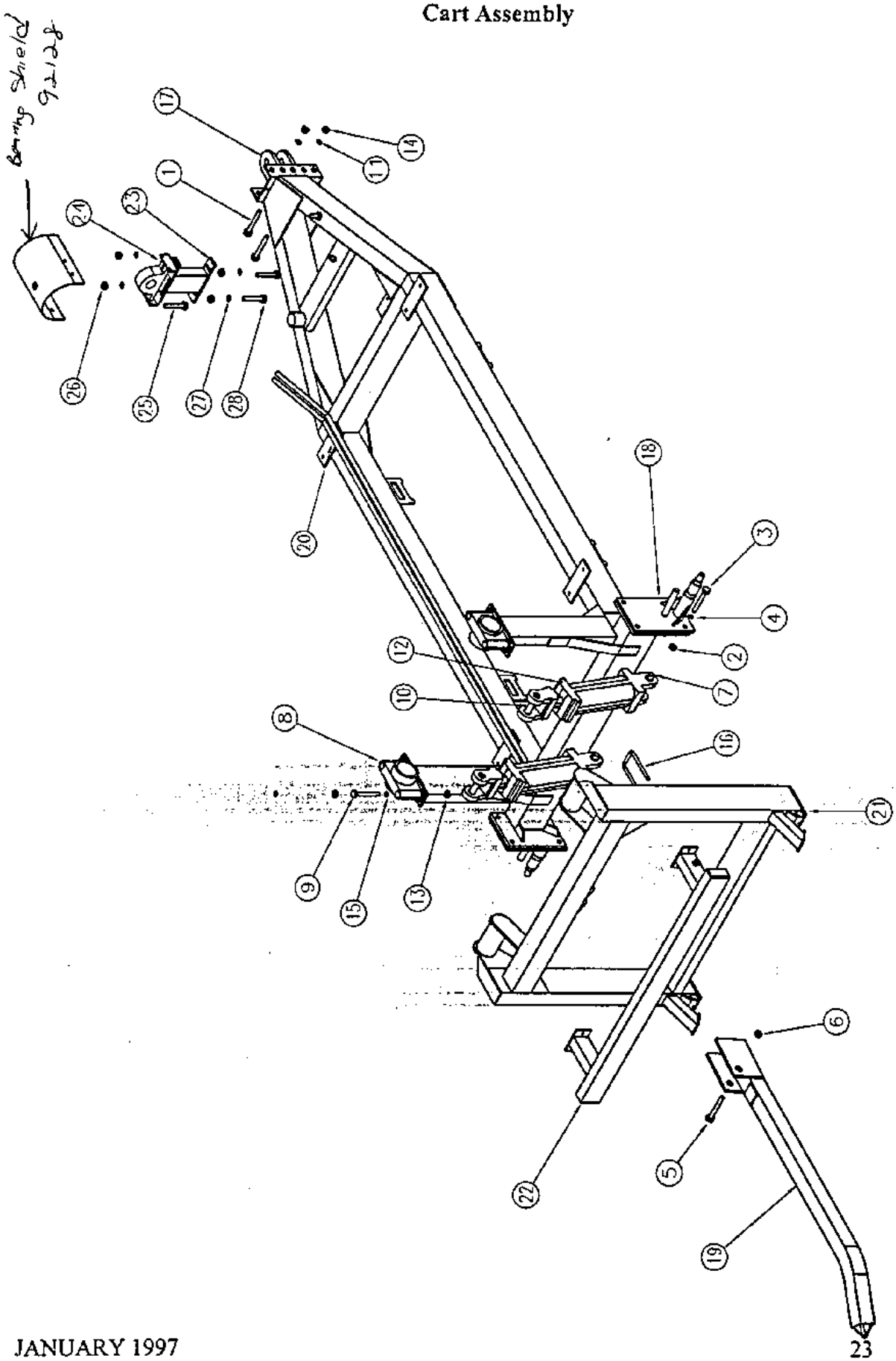
Item No.	Part No.	Description
1 31173	LNC08	1/2" Lock Nut
2	E3227	Top Slide Plate Retainer
3	NC16P	1" Nut
4	92045	Hydraulic Motor RE 32070 500
5	E2073	Feed Roller Motor Mounts
6 31016	B5C0840P	1/2"x2-1/2" UNC GR 5 Bolt
7	47011	Feed Roller
8	NRAHCME16	1" ACME Right Hand Nut
9 31832	B5C0820P	1/2"x1-1/4" UNC GR 5 Bolt
10 31236	FW08	1/2" Flatwasher
11 31023	B5C0856P	1/2"x3-1/2" UNC GR 5 Bolt
12 31174	LNC09	9/16" Locknut
13	47008	Flail Guard Rod
14	B5C0964P	9/16"x4" UNC GR 5 Bolt
15 31018	B5C0828P	1/2"x1-3/4" UNC GR 5 Bolt
16	E2074	Feed Roller Bearing Mount
17	92094	1-3/8" Flange Bearing
18	45127	Feed Drum Adjusting Rod
19 31037	B5C1624P	1"x1-1/2" UNC GR 5 Bolt
20	47019	Twine Guard (Front)
21	47012	Twine Guard (Rear)
22	92081	2" OD X 9/16" ID Washer
	32647	SEAL KIT

Shield Installation



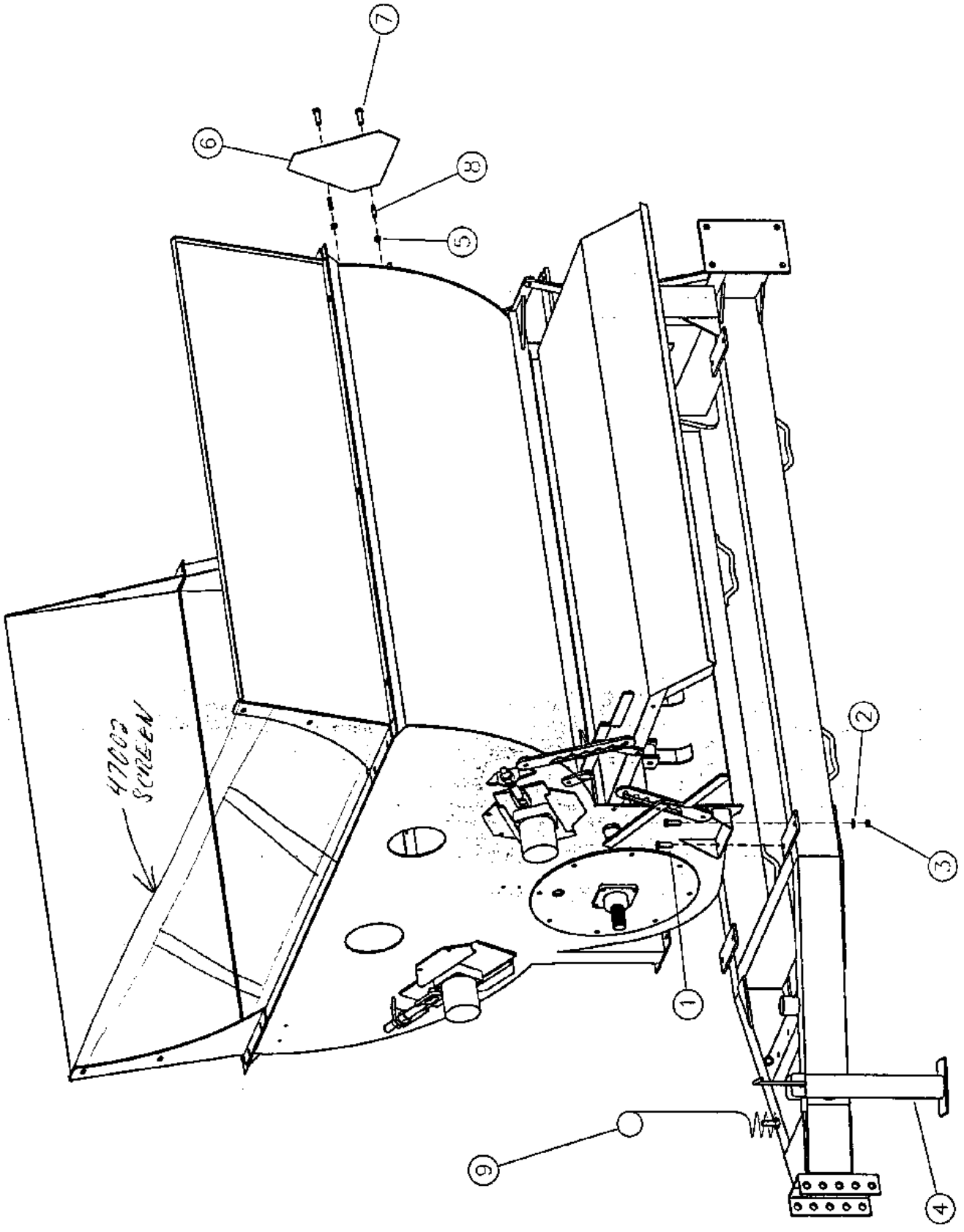
Item No.	Part No.	Description
1	45065	Left Bale Deflector
2	45083	Right Bale Deflector
3	47005	Deflector Arm Pivot
4	E2935	Deflector Link
5	E3515	Deflector Shield Lever
6	47003	Discharge Deflector
7	E2093	Deflector Adjusting Bar
8 3113	LNC08	1/2" UNC Lock Nut
9 3123C	FW08P	1/2" Flat Washer
10 3216	B5C0824P	1/2"x1-1/2" UNC GR 5 Bolt
11 3286	C5C0824P	1/2"x1-1/2" UNC GR 5 Carriage Bolt
12 3018	B5C0828P	1/2"x1-3/4" UNC GR 5 Bolt
13 3009	C5C0832P	1/2"x2" UNC GR 5 Bolt Carriage Bolt
14	C5C0836P	1/2"x2-1/4" UNC GR 5 Carriage Bolt
15	92081	2"OD x 9/16"ID Washer
16	92127	Rubber Handle Grip
17	92223	Rubber Cap Protectors
18	C50840P	1/2"x2-1/2" UNC GR 5 Carriage Bolt
19	E3519	Flail Guard Rod Adjusting Handle

Cart Assembly



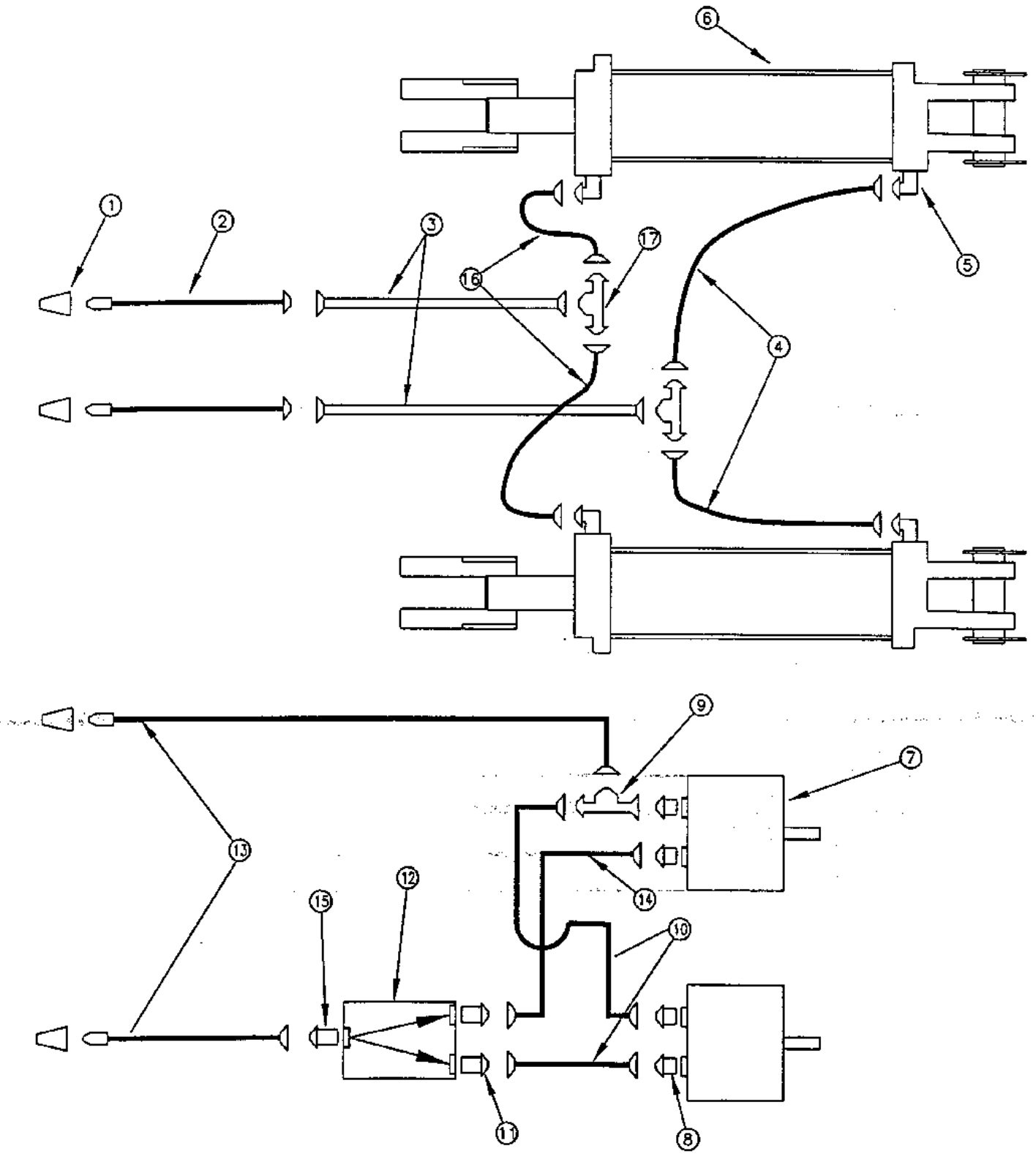
Item No.	Part No.	Description
1 31978	B5C16120P	1"x7-1/2" UNC GR 5 Bolt
2 31167	NC12P	3/4" UNC Nut
3 31040	B5C1240P	3/4"x2-1/2" UNC GR 5 Bolt
4 31246	LW12P	3/4" Lockwasher
5 31034	B5C2096P	1-1/4" x 6" UNC GR 5 Bolt
6 31171	LNC20	1-1/4 " UNC Locknut
7	90990	1" Bottom Pin
8	500201	Pipe Clamp TOP 30230 BOTTOM 30230 Case # 32467
9	B5C1080P	5/8"x5" UNC GR 5 Bolt
10	45185	Top Cylinder Pin
11 31243	LW16P	1" Lockwasher
12	90133	3" x 16" Hydraulic Cylinder
13 31178	LNC10	5/8" UNC Lock Nut
14 31162	NC16P	1" UNC Nut
15 31240	FW10P	5/8" Flatwasher
16	UB0848112	3"x7" Clamp
17	45060	Double Hitch Tongue
18	45081	Axle Plate and Spindle
19	45143	Right Fork
	45142	Left Fork
20	801702	Hydraulic Line Clamp
21	45192	Fork Mechanism
22	45087	Bumper
23	~~45169~~ 45149	PTO Stub Stand 45149
24	92031	1 3/4" Pillow Block
25	BC50948P	1 9/16" x 3" UNC Gr 5 Bolt
26	LN09	9/16" Locknut
27 31242	FW09	9/16" Flatwasher
28 31151	BC50932P	9/16" x 2"

Tub on Cart Installation



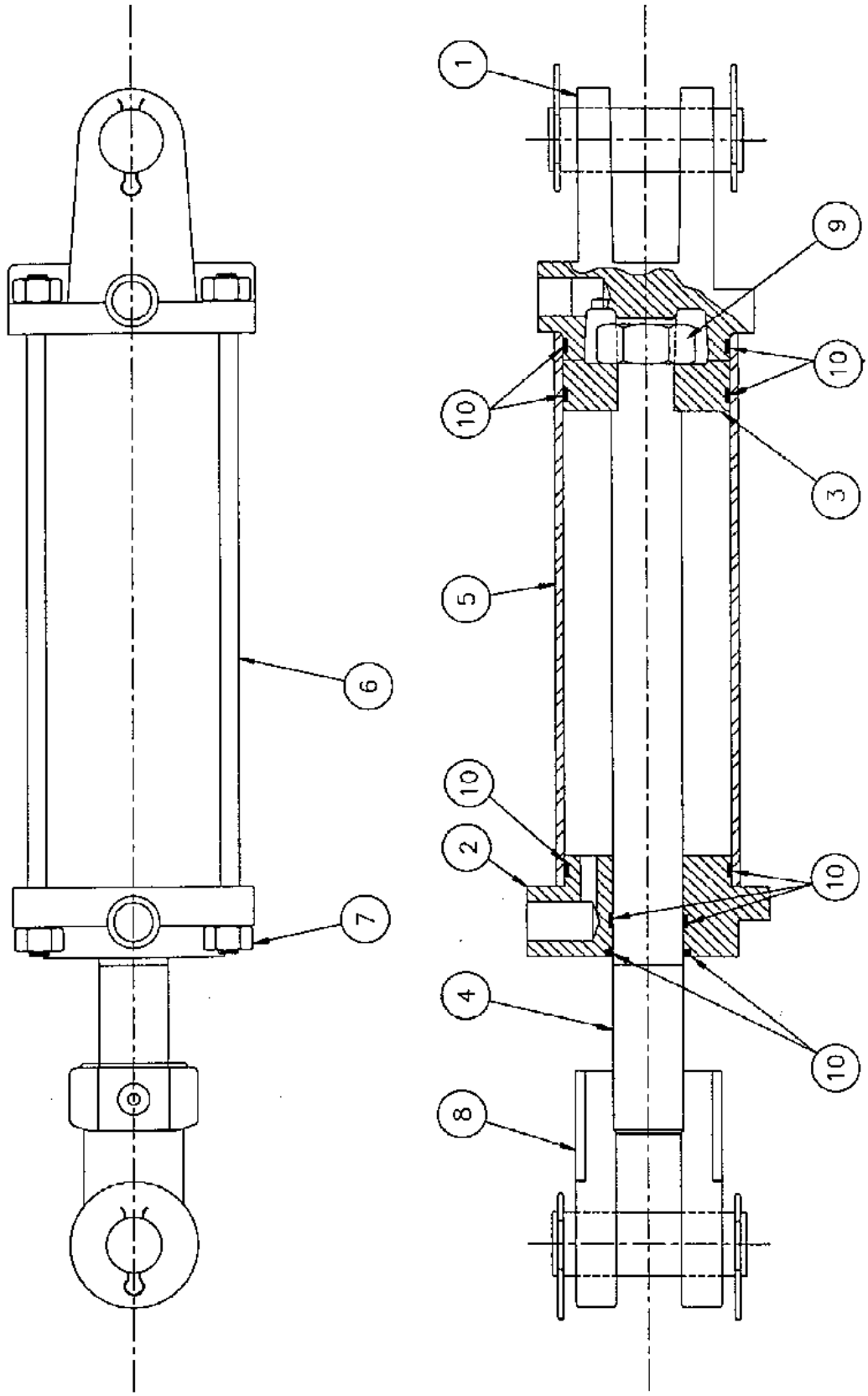
Item No.	Part No.	Description
1	B5C0824P	1/2"x1-1/2" UNC GR 5 Bolt
2	FW08P	1/2" Flat Washer
3	LNC08P	1/2" UNC Locknut
4	92095	5000 lb. x 15" Hitch Jack
5	B5C0412P	1/4" Locknut
6	92028	Slow Moving Sign
7	B5C0432P	1/4"x3" UNC GR 5 Bolt
8	E3573	Spacer
9	500001	Hose Holder

Hydraulic Layout



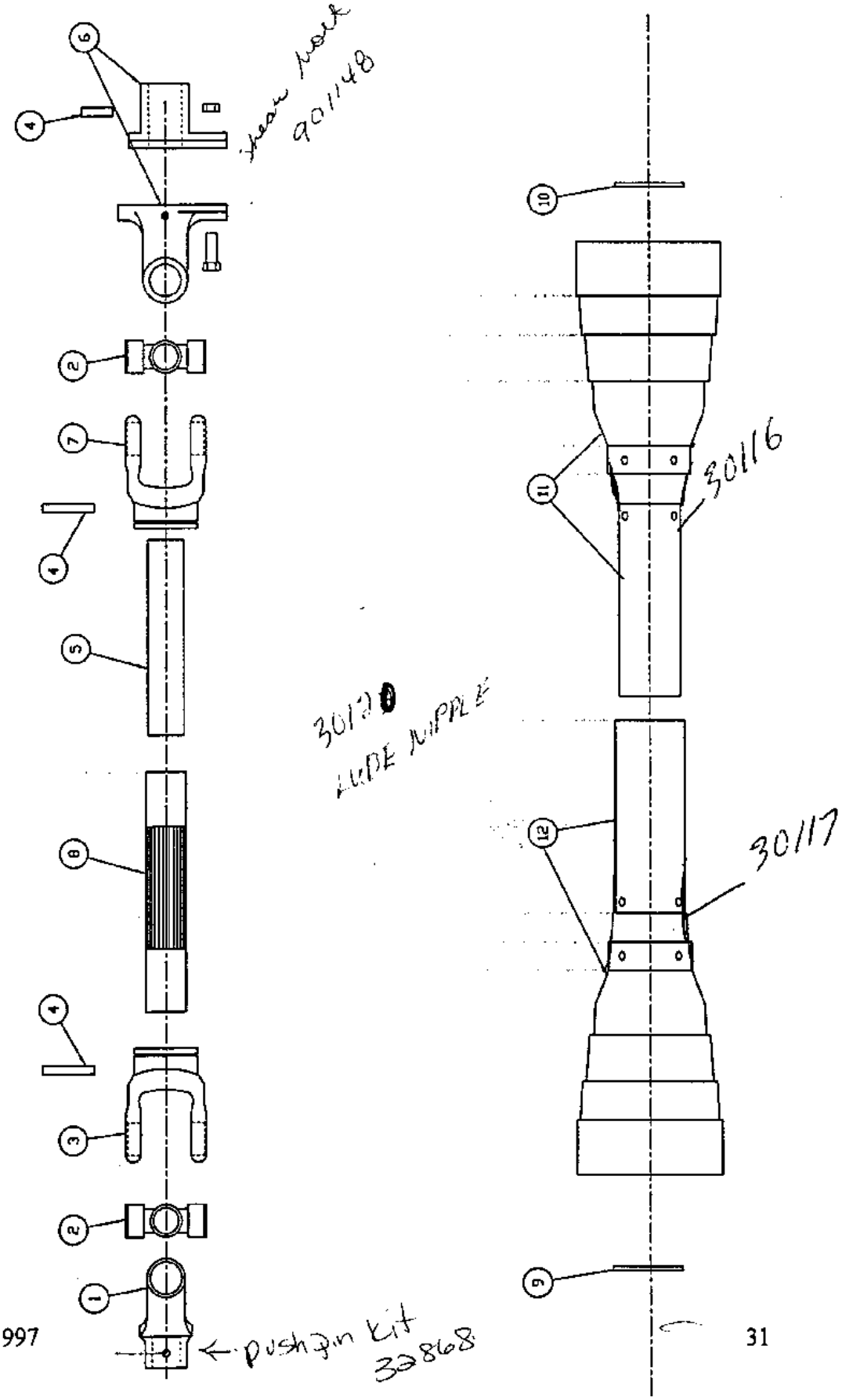
Item No.	Part No.	Description
1	601217	1/2" Pioneer end
2	601003	3/8"x96" 1/2" MNPT - 1/2" MJIC hose
3	90444	1/2"x116-1/2" Steel Lines
4	90333	3/8"x28" 1/2" FJIC 1/2" FJIC hose
5	849FS0808	90 deg. 1/2" MNPT - 1/2" MJIC
6	90133	3" x 16" Hydraulic Cylinder
7	92145	Hydraulic Motor
8	848FS00810	1/2" MJIC - 7/8" MORB
9	871FS08	1/2" FJIC - 1/2" MJIC - 1/2" MJIC" Tee
10	90240	3/8"x36" 1/2" FJIC - 1/2" FJIC hose
11	848FS00806	1/2" MJIC -9/16" MORB
12	92101	Flow Divider
13	601034	3/8"x96" 1/2" MNPT - 1/2" FJIC hose
14	90271	3/8"x42" 1/2" FJIC - 1/2" FJIC hose
15	849FSO0806	90 deg. 1/2" MJIC -9/16" MORB
Optional	61SA0808062	Restrictor
16	90332	3/8"x20" 1/2" FJIC 1/2" FJIC hose
17	844FS08	1/2" MJIC - 1/2" MJIC - 1/2" MJIC" Tee

Cylinder Assembly



Item No.	Part No.	Description
1	90991	Clevis Cap
2	90992	Rod Cap
3	90706	Piston
4	90846	1-1/2" Rod
5	90993	Cylinder Tube
6	90994	1/2" Tie Rod
7	90800	1/2" UNF Nut
8	90849	Rod Clevis
9	90722	1-14 UNS Nut
10	90676	Seal Kit
NA	90133	3"x16" 1-1/2" Rod Cylinder Complete

PTO Assembly

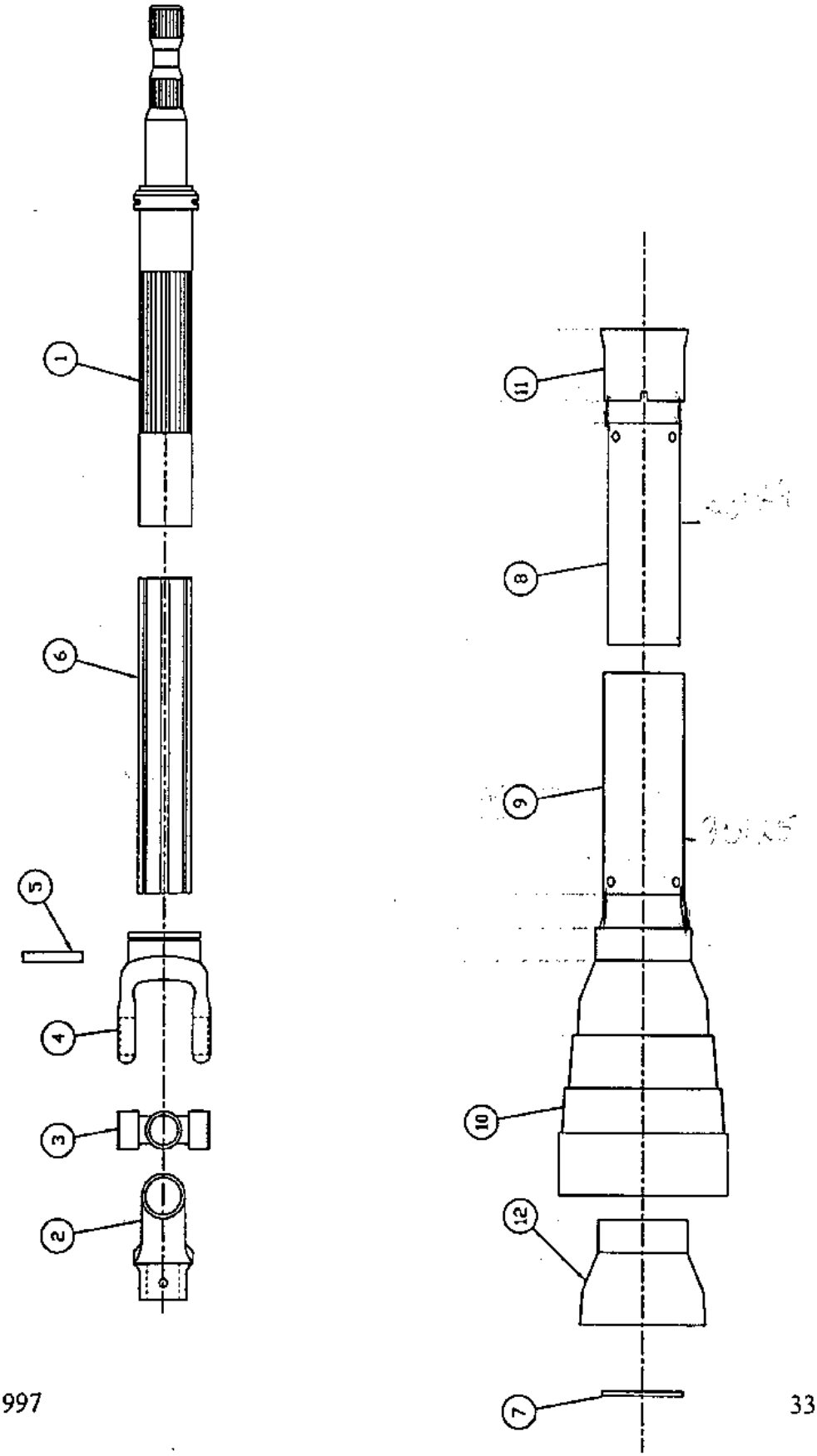


Item No.	Part No.	Description
1	30105	Yoke (tractor side) 1 3/8" (21) Spline
2	30106	Cross and Bearing
3	30107	Profile Yoke (tractor side)
4	30108	Spring Pin - use 32865
5	30109	Inner Tube
6	30110	Shear Bolt Clutch
	30111	Clamp Bolt Side 1 3/4" (20) Spline
7	30112	Profile Yoke (implement side)
8	30113	Center Tube
9	30114	Bearing (tractor side)
10	30115	Bearing (implement side)
11	30116	Safetyguard Inner
12	30117	Safetyguard Outer
	30121	PTO Assembly Complete - Bondioli

32922 - PTO, Assembly, - Omega Complete

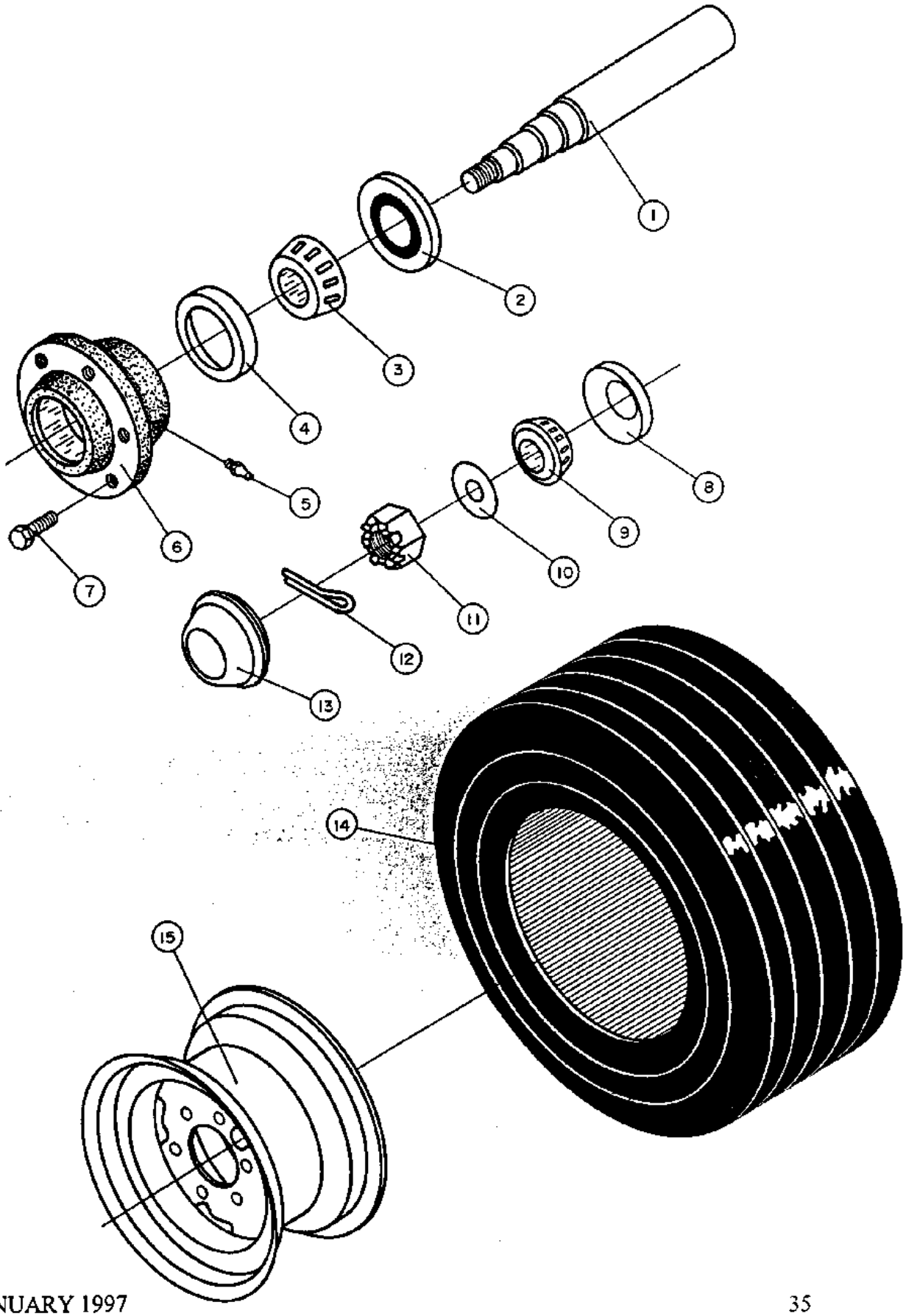
30120 - Red grease clip

PTO Extension Assembly



Item No.	Part No.	Description
1	30122	Shaft with Profile End 1 3/4" (20) Spline
2	30123	Quick Release Yoke 1 3/4" (20) Spline
3	30106	Cross and Bearing Set
4	30112	Profile Yoke
5	30108	Spring Pin
6	30113	Profile Tube
7	30115	Bearing
8	30124	Plastic Tube Inner
9	30125	Plastic Tube Outer
10	30126	Flexable Ring
11	30127	Cap Inner
12	30128	Cap
	30130	PTO Extension Assembly Complete - Bondioli
	32921 - 30124	PTO, extension Assembly Complete - Omega Inner
	30125	Outer

Hub & Wheel Assembly



Item No.	Part No.	Description
1	301008	SE16 Spindle only
2	301011	SE16 Grease Seal
3	301010	LM603049 Inner cone
4	301009	LM603012 Inner cup
5	91700	1/8 NPT Straight Zerk
6	301017	H614 Hub
7	301006	WB12 Wheel Bolt 9/16"
8	301004	LM48510 Outer cup
9	301005	LM48548 Outer Cone
10	301003	WA17 Washer 1" ID x 2"OD
11	301002	Castellated Nut 1" 14 UNS
12	CP0324	3/16" x 1-1/2" Cotter Pin
13	301001	DC15 Dust Cap
14	301013	11L x 15 6 PLY Tubeless
15	91050	15 x 8 x 6 RIM

45228 614 HUB COMPLETE

8. Specifications

Recommended Minimum Horsepower Required:	100 HP
Capacity:	6' diameter bale
Height:	100"
Width	115"
Weight	4500 lb.
PTO Requirements:	1000 R.P.M.
Dual Hydraulics:	2200 psi. Max.