

HIGHLINE MFG.
INC.

1999

BALE PRO 7800

Assembly-Operator

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Report: BMD.
Date: 2/11/99
Time: 11:03:42
By: TERRYH @ MMHA

Customer Part #:
ECN #:
ENG. Drwg. #:
Location:

Revision: B 2/11/99
Size:

Parent Part #:
Customer:

Sq/Line	Component Part #	Description	Quantity Per	Units	Engineering Drawing/Loc/Size/Irm Type ECN#	Stock Vendor #	Loc.
10-	1 30526	ELEC. LIGHT, RED&AMBER, LEFT	1.0000	EA	P		WRH
10-	2 30627	ELEC. LIGHT, RED&AMBER, RIGHT	1.0000	EA	P		WRH
10-	3 E3759	PLT. MOUNT, LIGHT	2.0000	EA	M		WRH
10-	4 48104	ELEC. HARNES9, LIGHTS, BP7800	1.0000	EA	M		WRH
10-	5 49082	MOUNT, LIGHT, TELESCOPIC, OUTER	2.0000	EA	M		WRH
10-	6 31581	BOLT, HEX, 1/4X1-1/4, UNC, GR5, ZP	8.0000	EA	P		WRH
10-	7 31050	BOLT, HEX, 5/16X3, UNC, GR5, ZP	4.0000	EA	P		WRH
10-	8 21174	NUT, NYLOCK, 1/4, UNC, ZP	8.0000	EA	P		WRH
10-	9 31177	NUT, NYLOCK, 5/16, UNC, ZP	4.0000	EA	P		WRH
10-	10 49081	MOUNT, LIGHT, TELESCOPIC, INNER	2.0000	EA	M		WRH
10-	11 31613	TIE, CABLE, NYLON, BLACK, 11-1/2, 40	6.0000	EA	P		WRH
10-	12 31043	BOLT, HEX, 3/8X1, UNC, GR5, ZP	1.0000	EA	P		WRH

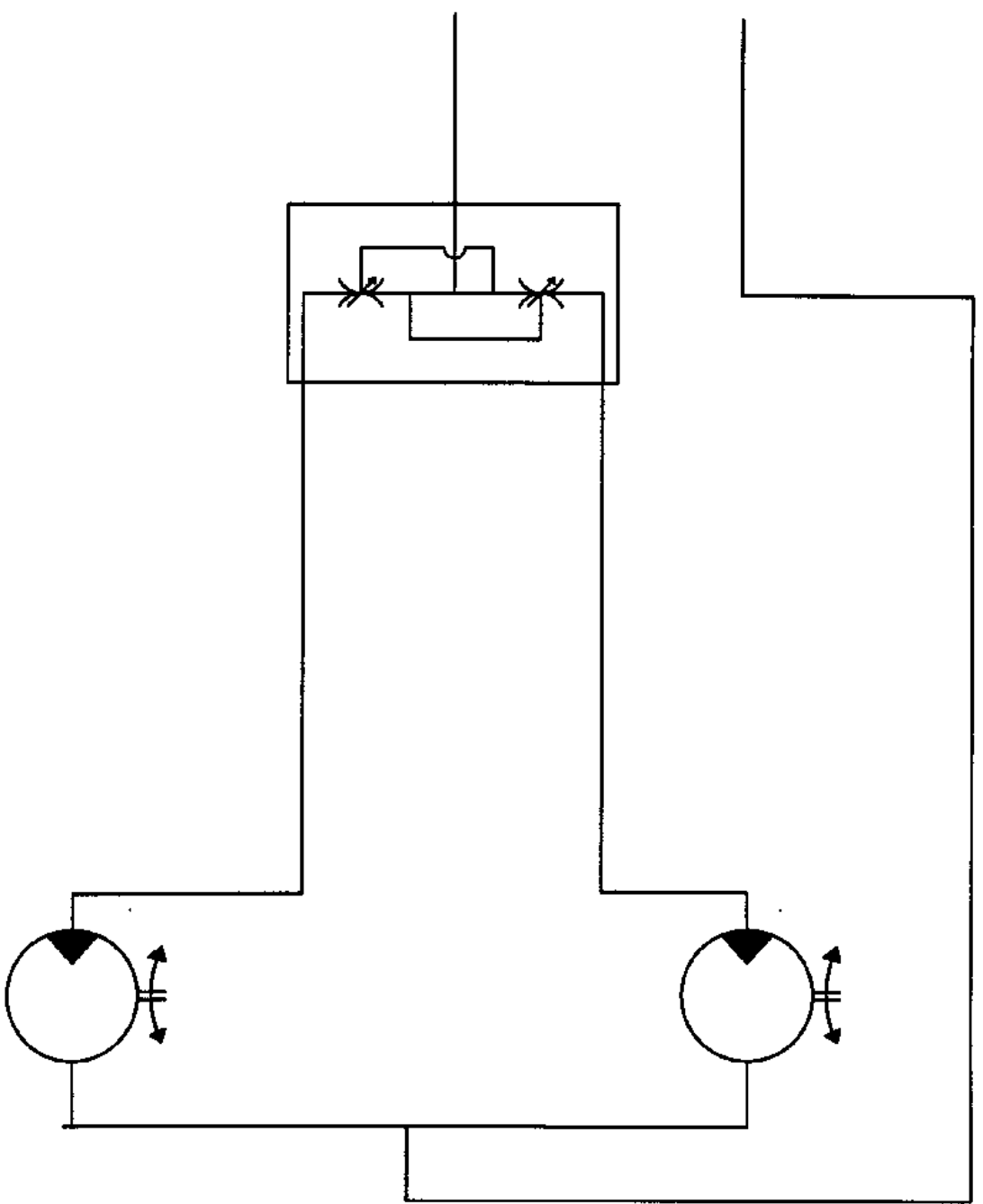
BT

ORIGINAL

FOR PRODUCTION USE

NOTES:

Highline Mfg. Inc. claims proprietary rights to the material disclosed herein. This drawing is issued for engineering information only. It may not be reproduced nor the information herein be used for any purpose without written permission from Highline Mfg. Inc. The equipment shown is protected by patents.



Default Tolerances

- 1. LINEAR DIMS. - ± .005
- 2. ANGLES & R/F - AS SHOWN
- 3. HOLE POSITION - ± .010
- 4. HOLE DIA. - ± .005
- 5. HOLE LENGTH - ± .005
- 6. HOLE SQUARE CORNERS

DIMS ARE IN INCHES

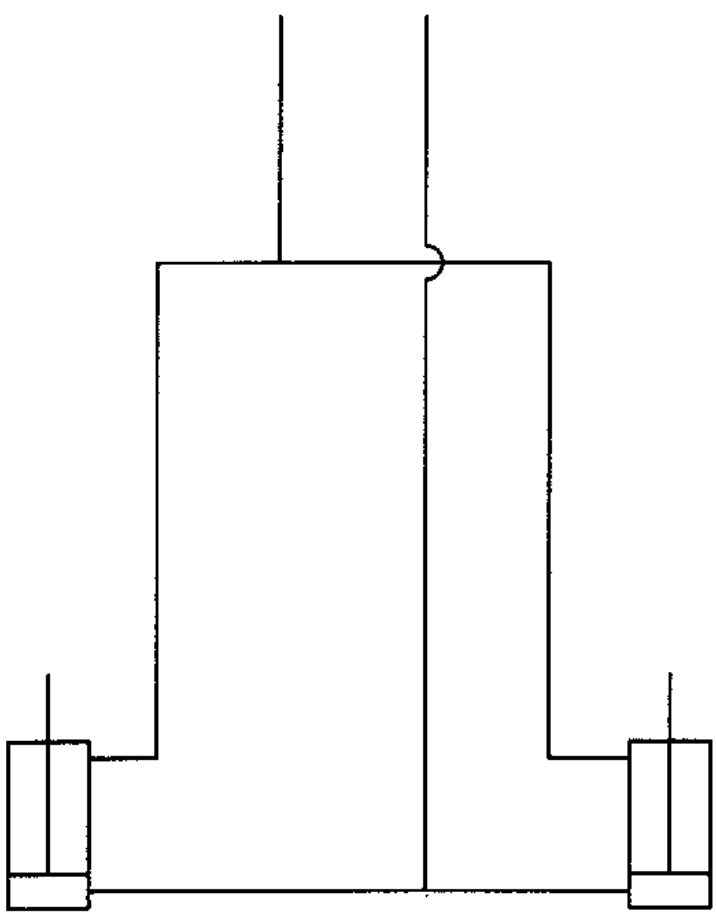
REVISONS		DATE	QUICKED BY	DESCRIPTION
A	INITIAL RELEASE	15 JAN 99	BJW	
B				
C				
D				
E				
F				

Drawn By: R.J.W.	Checked By: S.J.T.	Date: 15 JAN 99
Page: 1 of 1	Size: A	MATL:
Scale: NTS		

HIGHLINE	MFG INC	Part No: 49024	Rev: A
HYDRAULIC MOTOR SCHEMATIC			

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The equipment shown is protected by patents.



Default Tolerances

1. UNLESS OTHERWISE SPECIFIED
2. DIMENSIONS ARE IN INCHES
3. DIMENSIONS ARE IN MILLIMETERS
4. DIMENSIONS ARE IN MILLIMETERS
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10. DIMENSIONS ARE IN MILLIMETERS

UNLESS OTHERWISE SPECIFIED

ISO 2768-M

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ISO 2768-M

REV	DESCRIPTION	DATE	CHANGED BY
A	INITIAL RELEASE	15 JAN 99	BUW
B			
C			
D			
E			
F			

Engineering: SUT		Date:
Drawn By: BUW		15 JAN 99
Issue 1 of 1	Size A	WATH
Scale: NTS		

Model: BP7800

Description: HYDRAULIC CYLINDER ASSEMBLY

HIGHLINE MFG INC

Part No: 49032

Rev: A

2. President's Message

Congratulations on your purchase of the *Bale Pro 7800*! Bale Pro, a proven 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 7800*. In the manual you will find safety procedures, maintenance routines and detailed parts diagrams.

The *Bale Pro 7800* 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 7800* 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.highlinemfg.com>

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 activated.
- Do not transport Bale Pro on highway with CV extension shaft on machine or with bales in tub or on the forks
- Disconnect CV before unplugging or adjusting processor.
- Always keep safety 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.

 *Before operating the Bale Pro 7800, be sure to review all the instructions and familiarize yourself with the processor's features.*

4. Operating Instructions

Successful operation of the Bale Pro 7800 is dependent upon the quality of the bale, height of the feed rollers and flail guard and also on the operator. The following steps ensure proper operation. Please read carefully before operating your Bale Pro 7800.

1. Ensure that drawbar on tractor is extended such that the pin is 17 inches from the groove on the PTO on tractor.
2. It is recommended that hitch tongue is placed in the second hole from the top of the BP7800 hitch frame. This will ensure proper drawbar location and extend the life of the CV.
3. Ensure that the machine is properly greased at all locations (see pages 6 and 7).
4. Position the discharge deflector by means of the Adjusting handle in the upper position for bedding, and in the lower position for windrow feeding (figure 1).
5. Adjust the flail guard rods by the raising or lowering the adjusting handle (figure 1). With the handle at its highest position, the Bale Pro will process very aggressively. Lowering the handle will decrease the aggressiveness of the processor.

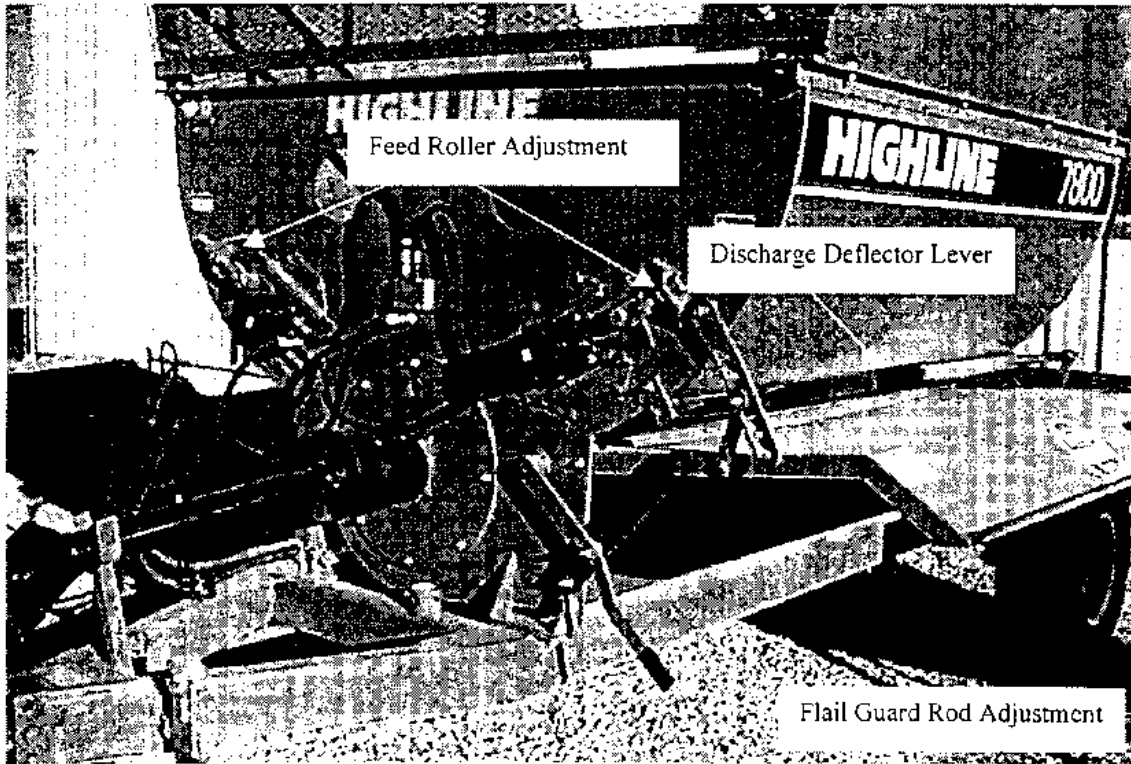


Figure 1 Manual Controls

NOTE: If the processor is too aggressive, the flails will slap back on the flail drum. Continued “backslap” can cause damage to the flail drum, flails and flail bushings. Therefore, avoid excessive “backslap” whenever possible by adjusting the flail guard rods.

6. Adjust the feed rollers with the feed roller adjusting rods to accommodate the bale size. Generally the feed rollers should be raised for larger bales and lowered for smaller bales. Major adjustments may effect the aggressiveness of the processor.
7. Before loading bale, engage PTO to ensure that the flail drum is operating properly. Start feed rollers using the hydraulic controls and check if the feed rollers turn in both directions. If your tractor has hydraulic flow control, alter flow so the feed rollers rotate at an adequate speed for the condition of your bales.
8. To load, 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 as high as possible, making sure that the bale on the forks does not interfere with the bale in the tub. This will reduce pressure on the hydraulic cylinder lift assembly. 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.

- **Do not dislodge frozen bales with forks, otherwise damage to the lift mechanism may result**
9. When ready, engage tractor PTO at idle. Increase PTO speed until it reaches 1000 RPM. Make sure that before PTO is engaged, the forks are not interfering with the bale in the tub. To process, rotate the bale by means of the feed rollers. If the bale stops rotating, reverse the direction of the feed rollers.
 10. Before stopping CV, idle tractor down to reduce flail "back slap".



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.

5. Maintenance

Please follow these maintenance steps, to ensure trouble free operation of your Bale Pro 7800

General Maintenance

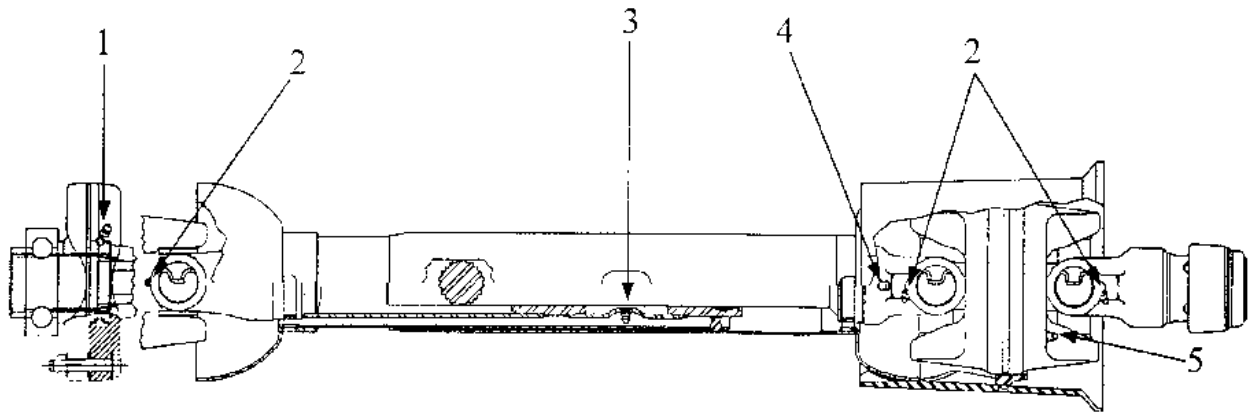
- Twine must be removed from the flail drum **at least** every 25 bales. Premature bearing failure may occur if the twine is allowed to build up on the drum.
- Flail bolts should be tightened after the first ten bales then rechecked after approximately 200 bales
- Pipe Clamps (page 22) should be checked every 50 bales, and tightened if necessary

Lubrication

Maintaining proper lubrication of the Bale Pro 7800 is crucial for trouble free operation. Figures 4 and 5 points which require regular greasing. Below is a list of the lubrication points and the frequency of greasing of these points.

- | | |
|---|---|
| <p>1. Ball Shear Assembly
Grease every 8 hours.</p> <p>2. Cross and Bearing
Grease every 8 hours.</p> <p>3. Telescopic Members
Grease every 8 hours.</p> <p>4. Ball and Socket
Grease every 8 hours.</p> <p>5. Center Housing
Grease every 24 hours.</p> <p>6. Flail Drum Bearing (Front and Rear)
Grease every fifty bales</p> | <p>7. Feed Rollers (Left and Right)
Grease every one hundred bales.</p> <p>8. Pipe Clamps (Left and Right)
Grease every one hundred bales.</p> <p>9. Wheel Hub (Left and Right)
Grease every one hundred bales.</p> <p>10. Forks (Left and Right)
Grease every one hundred bales.</p> |
|---|---|

Note: When CV is under constant angle applications, there must be a lube interval of 4 hours for 1 through 5



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

Figure 4 CV Lubrication

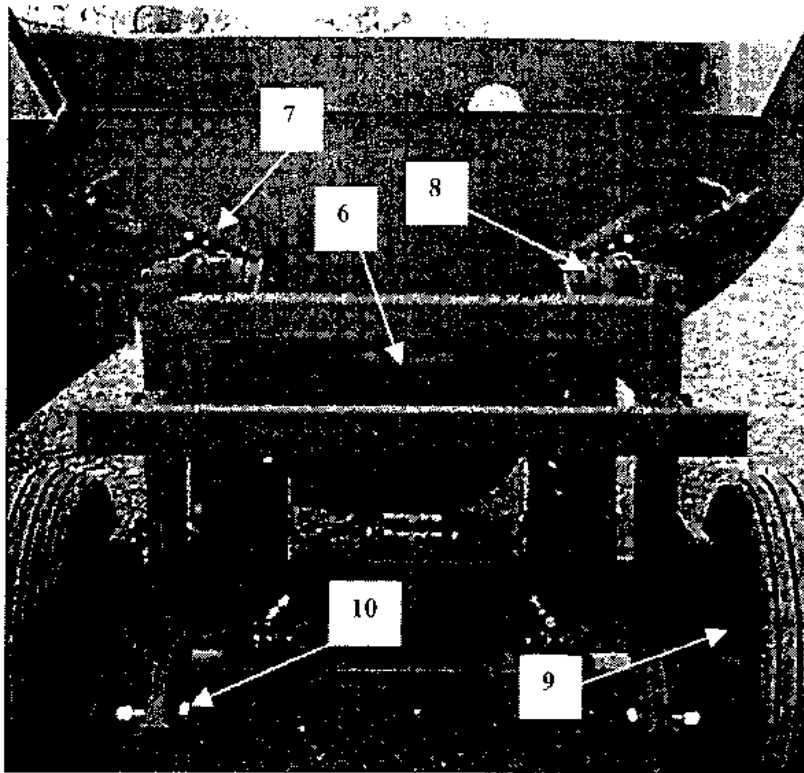
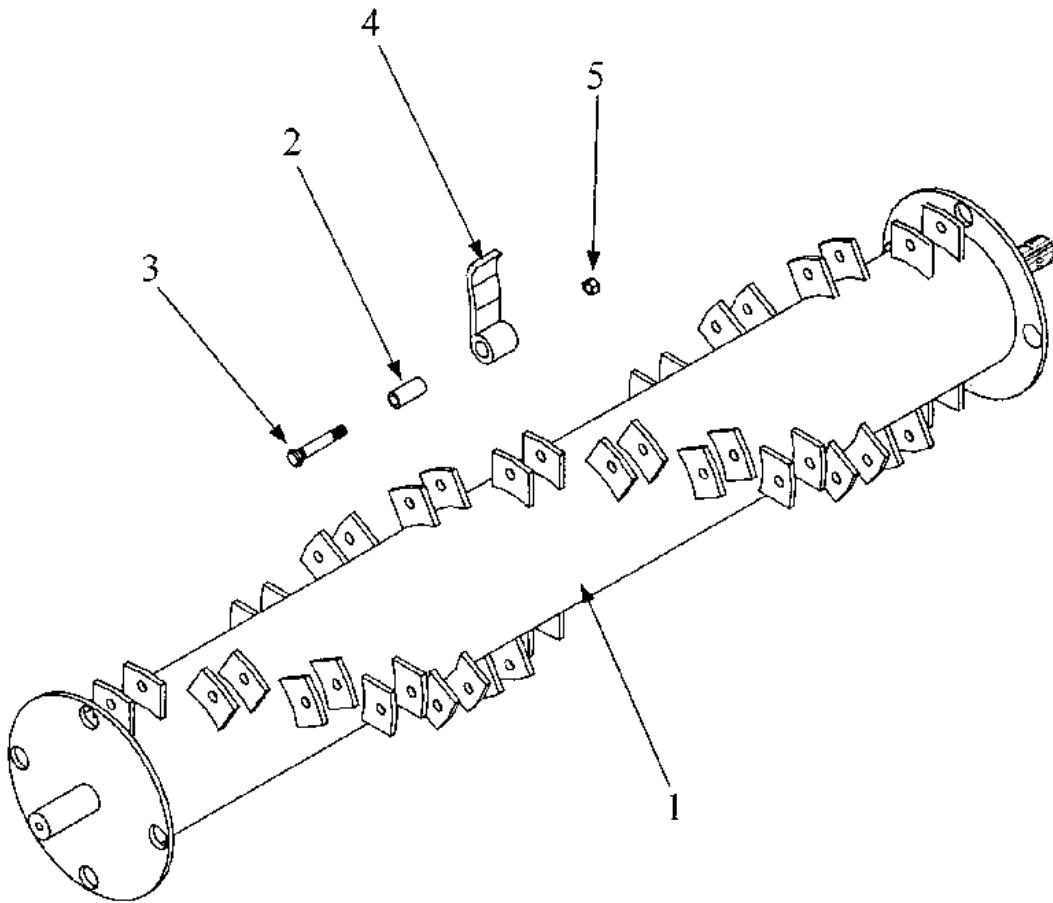


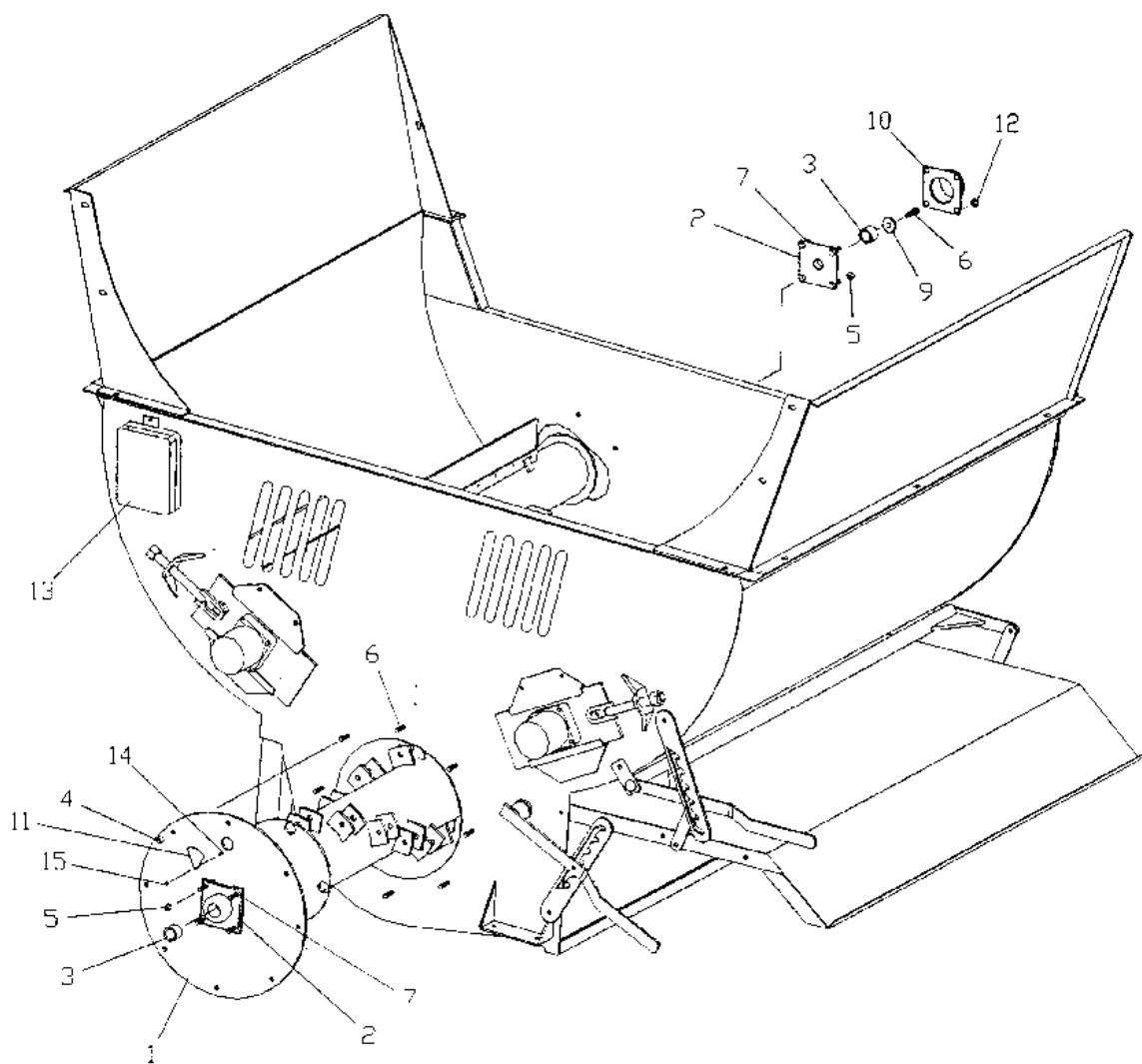
Figure 5 Assorted Lubrication Points

6. Assembly & Installations



Flail Drum Assembly

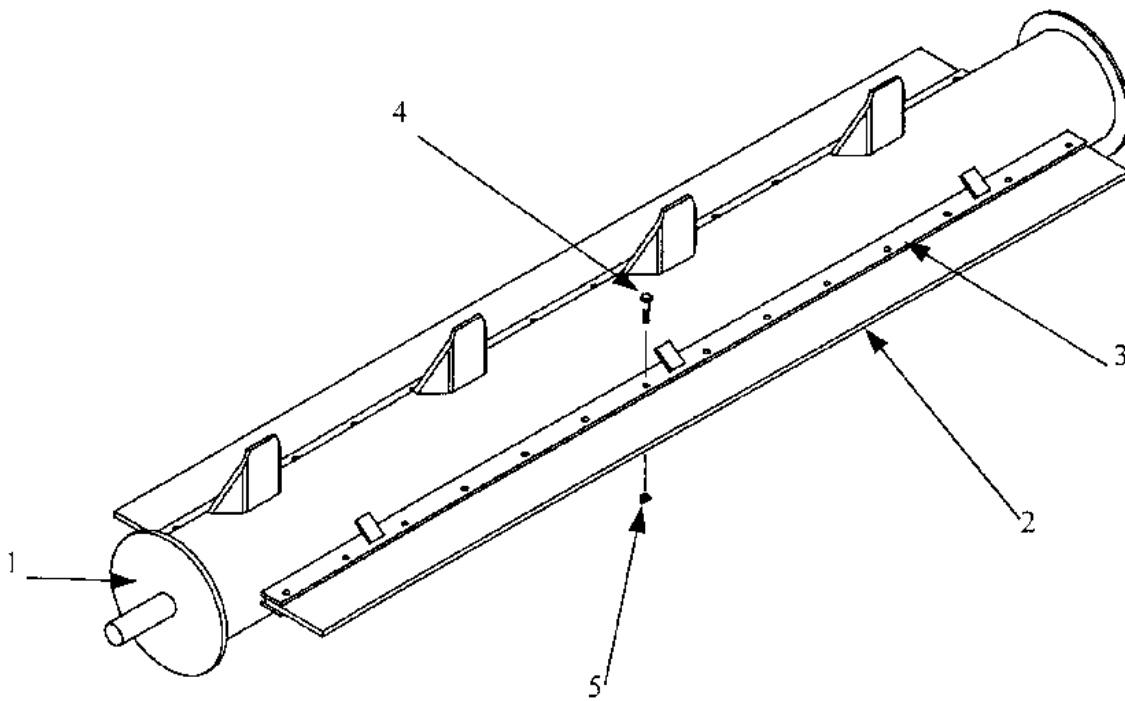
Item No.	Part No.	Description	Qty
1	49046	Flail Drum (no flails)	1
2	E2083	Flail Bushing	32
3	45099	5/8" x 3-3/4" UNF Gr. 8 Stud	32
4	E3714	Flail	32
5	31170	5/8" UNF Lock Nut	32
	49036	Flail Drum Complete (flails Installed)	1



Flail Drum Installation

Item No.	Part No.	Description	Qty
1	49039	Front Bearing Plate	1
2	92091	1-3/4" Flange Bearing	2
3	E3646	Spacer Bushing	2
4	31173	1/2" Lock Nut	8
5	31178	5/8" Lock Nut	8
6	31016	1/2" x 1-1/2" UNC Gr. 5 Bolt	9
7	31014	5/8" x 3" UNC Gr. 5 Carr. Bolt	8
9	92081	2" x 9/16" x 3/16" Washer	1
10	49054	Guard, Drum, Flail	1
11	E3722	Cover	2
12	31168	Nut, Nylock, 5/8	4
13	30528	Box, Manual	1
14	31012	1/4" x 1" UNC Gr. 5 Carr. Bolt	1
15	31174	1/4" Lock Nut	1

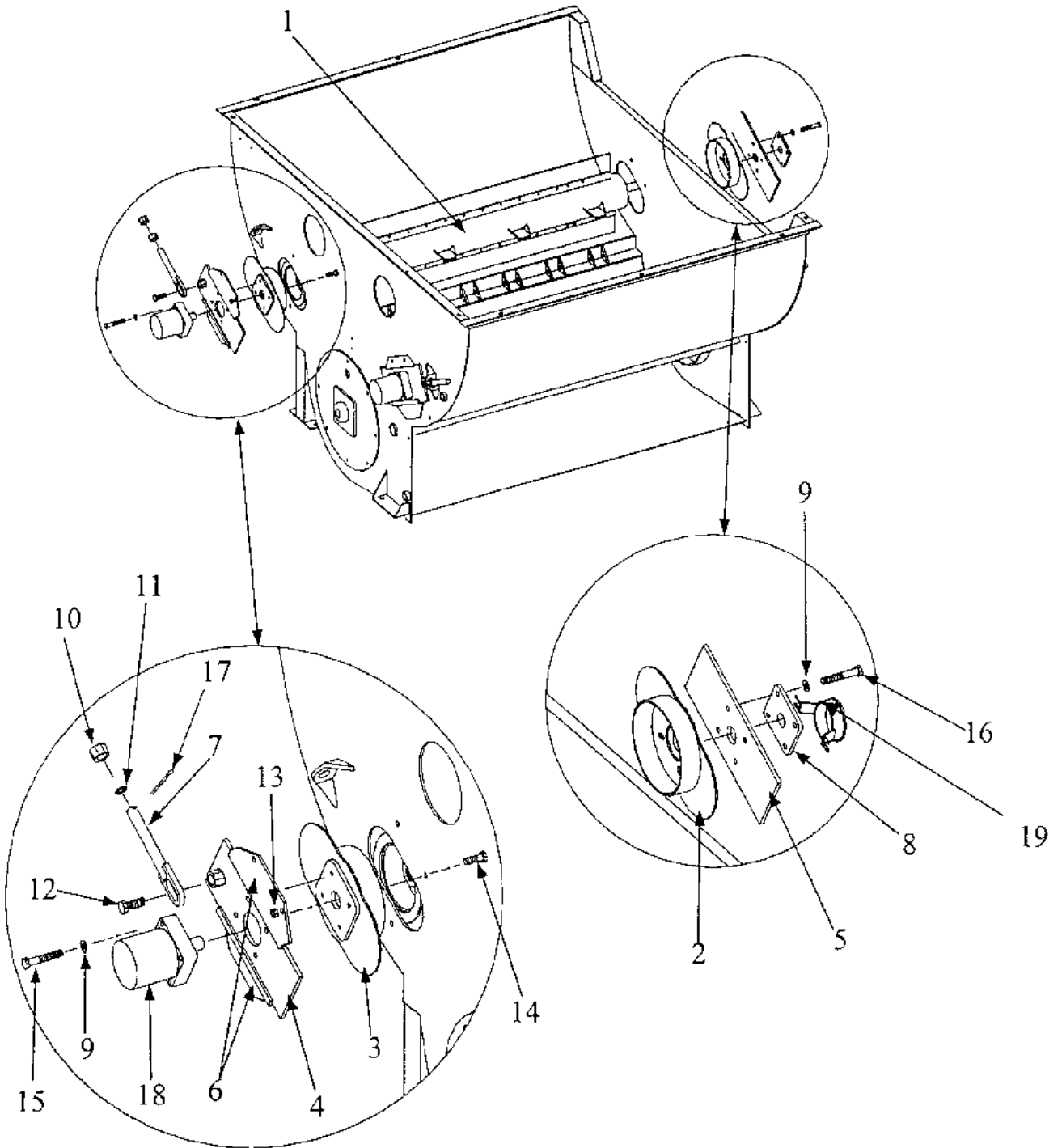
Feed Roller Assembly



Item No.	Part No.	Description	Qty
1	49048	Feed Roller	1
2	E3676	Belting	2
3	E3685	Backing Plate	2
4	31047	5/16 x 1 3/4 UNC Gr. 5 Bolt	28
5	31177	5/16 UNC Lock Nut	28
	49041	Feed Roller Complete	1

6 49048 *feed roller with out belting*

Feed Roller Installation



Feed Roller Installation Table

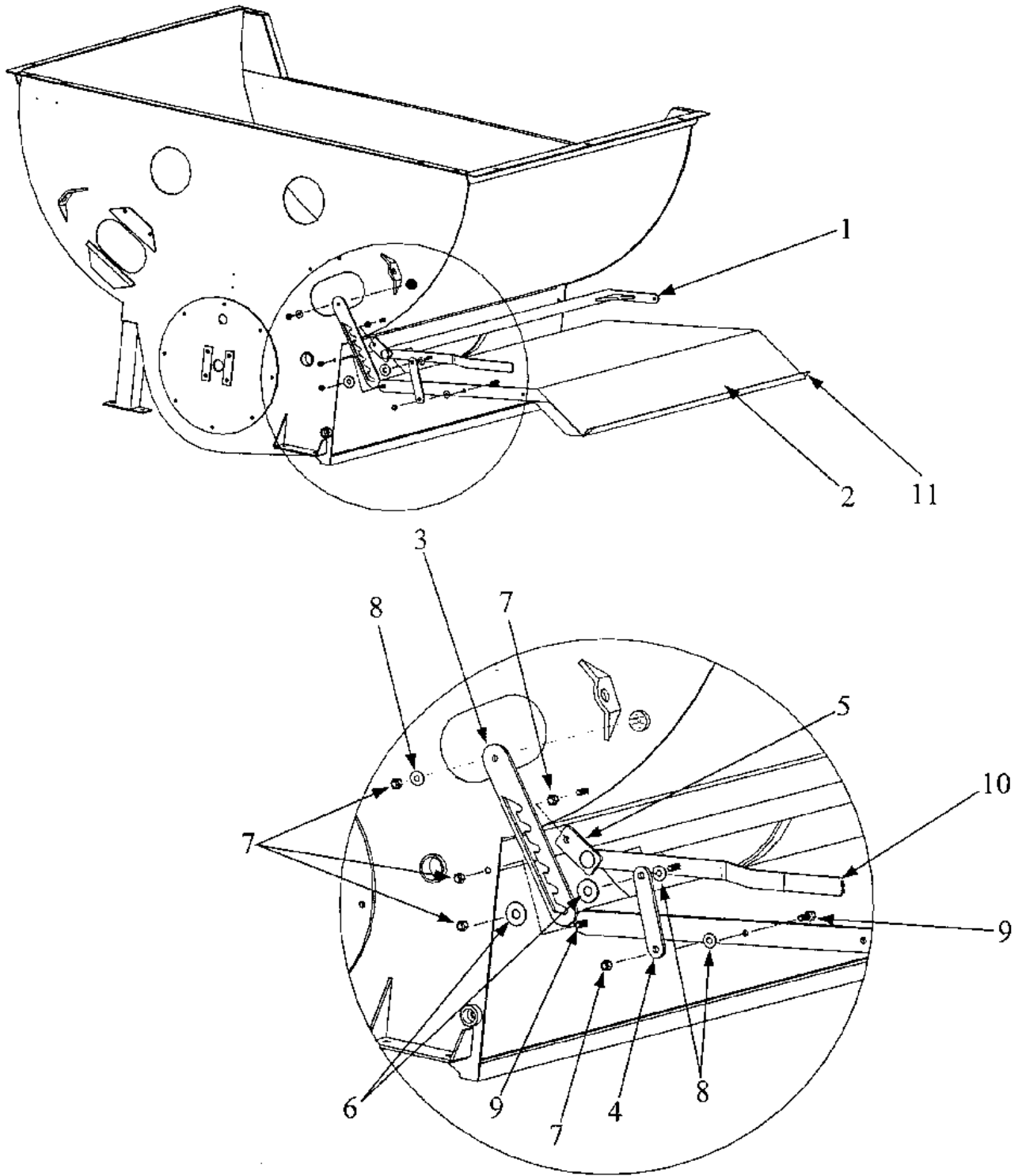
Item No.	Part No.	Description	Qty
1	49041	Feed Roller (complete)	2
2	47012	Rear Twine Guard	2
3	47019	Front Twine Guard	2
4	49015	Front Slide Plate	2
5	49016	Rear Slide Plate	2
6	E2138	Slide Plate Retainer	8
7	45127	Feed Roller Adjusting Rod	4
8	92094	1-3/8" Flange Bearing	2
9	31244	1/2" Lock Washer	16
10	31159	1" ACME Right Hand Nut	8
11	31243	1" Lock Washer	4
12	31037	1" x 1-1/2" UNC Gr. 5 Bolt	4
13	31173	1/2" Lock Nut	16
14	31016	1/2" x 1-1/2" UNC Gr. 5 Bolt	16
15	31059	1/2" x 2-1/2" Socket Head Cap Screw	8
16	31017	1/2" x 1-3/4" UNC Gr. 5 Bolt	8
17	31183	3/16" x 2" Cotter Pin	4
18	92145	Hydraulic Motor <i>RE 32070500</i>	2
18	49053	Guard, Roller, Feed	2

32647

Seal kit

1

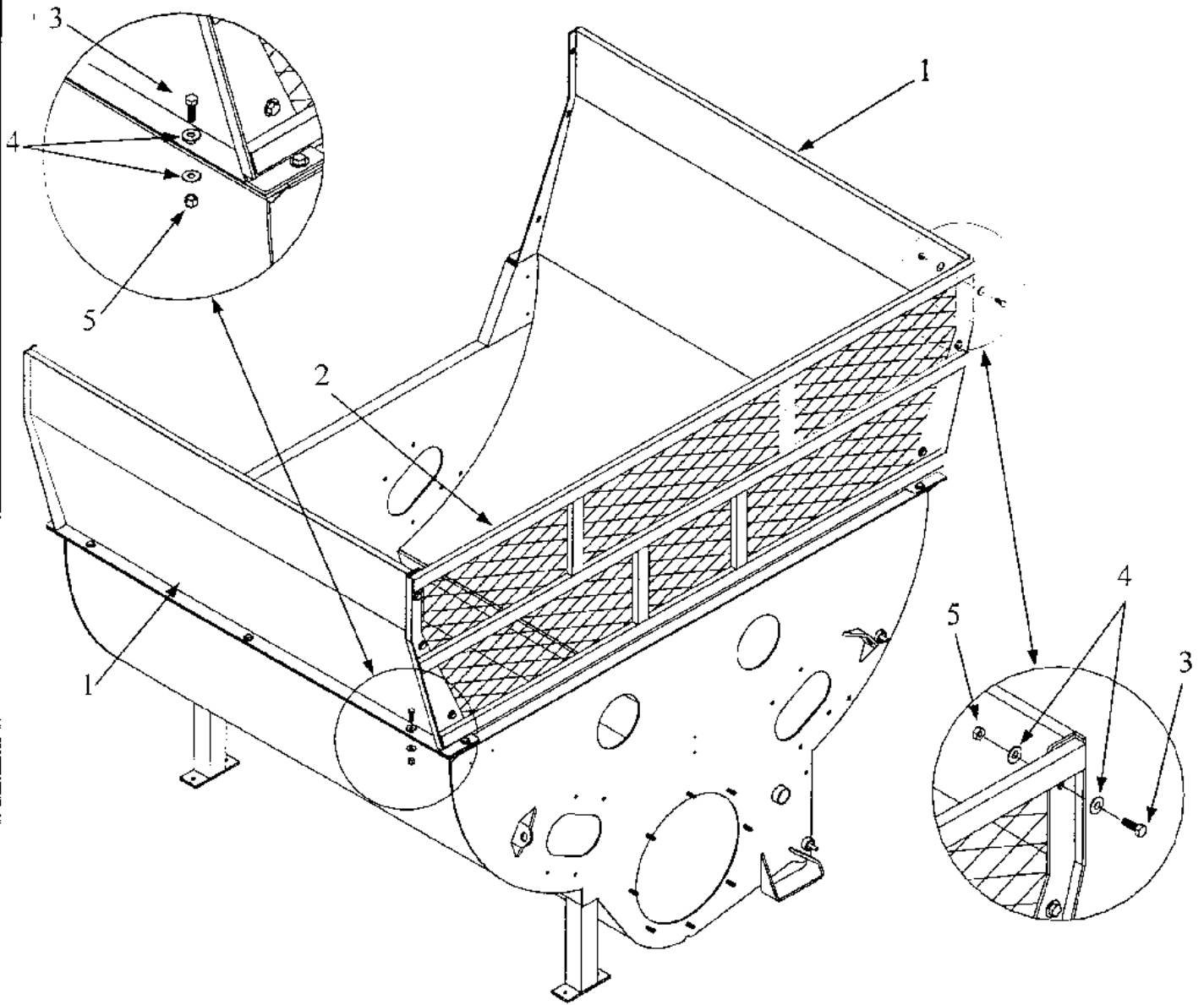
Discharge Deflector Installation



Discharge Deflector Installation Table

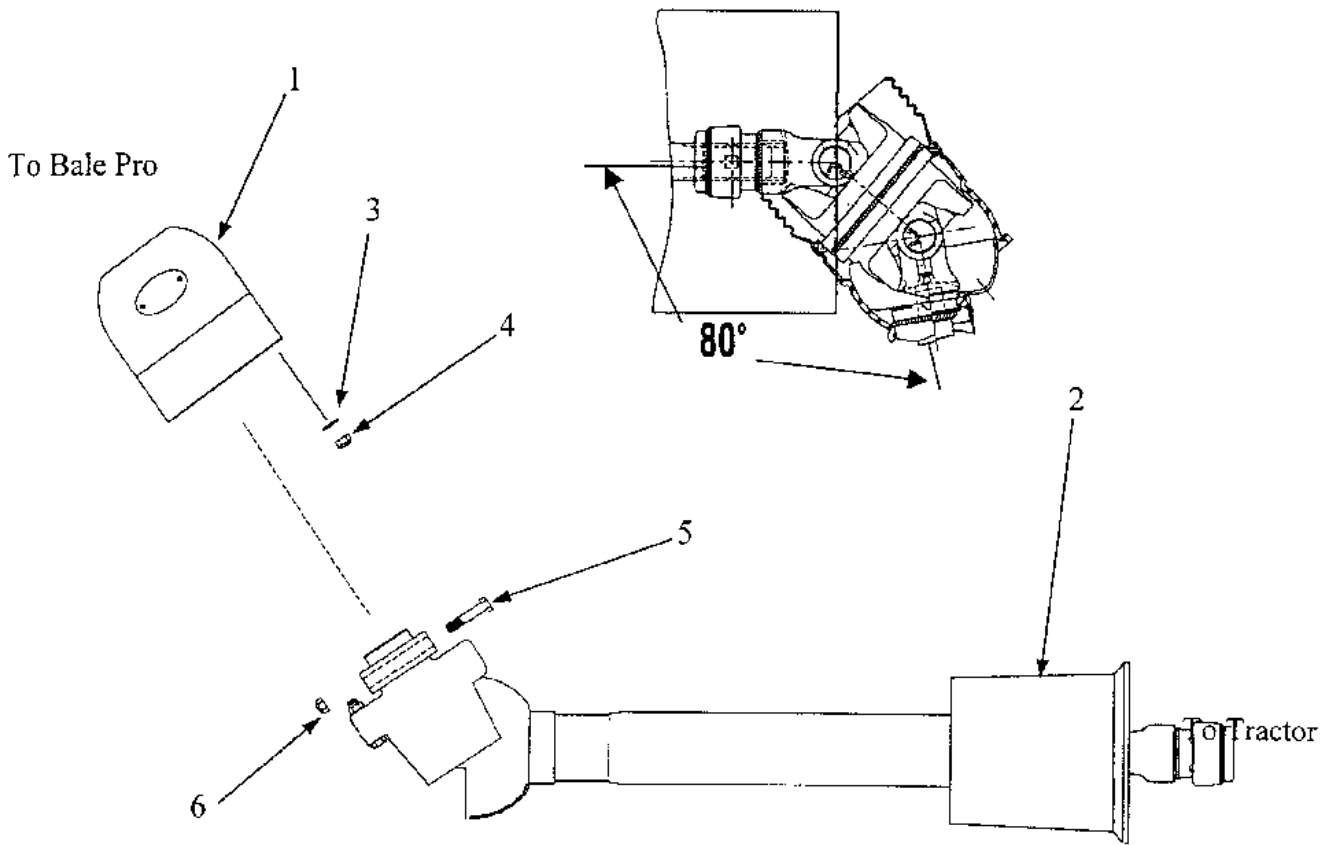
Item No.	Part No.	Description	Qty
1	49034	Discharge Lever	1
2	49035	Discharge Deflector	1
3	E2093	Adjusting Bar	1
4	E2935	Connecting Link	2
5	45197	Discharge Pivot Assembly	2
6	92081	2" x 9/16" x 3/16" Washer	2
7	31173	1/2" Lock Nut	9
8	31236	1/2" Flat Washer	3
9	31016	1/2" x 1-1/2" UNC Gr. 5 Bolt	4
10	92127	Rubber Handle Grip	1
11	92223	Rubber Cap Protector	2

Screen and Bale Deflector Installation



Item No.	Part No.	Description	Qty
1	49040	Bale Deflector	2
2	49007	Spill Screen	1
3	31016	1/2" x 1-1/2" UNC Gr. 5 Bolt	18
4	31236	1/2" Flat Washer	36
5	31173	1/2" Lock Nut	18

CV Installation

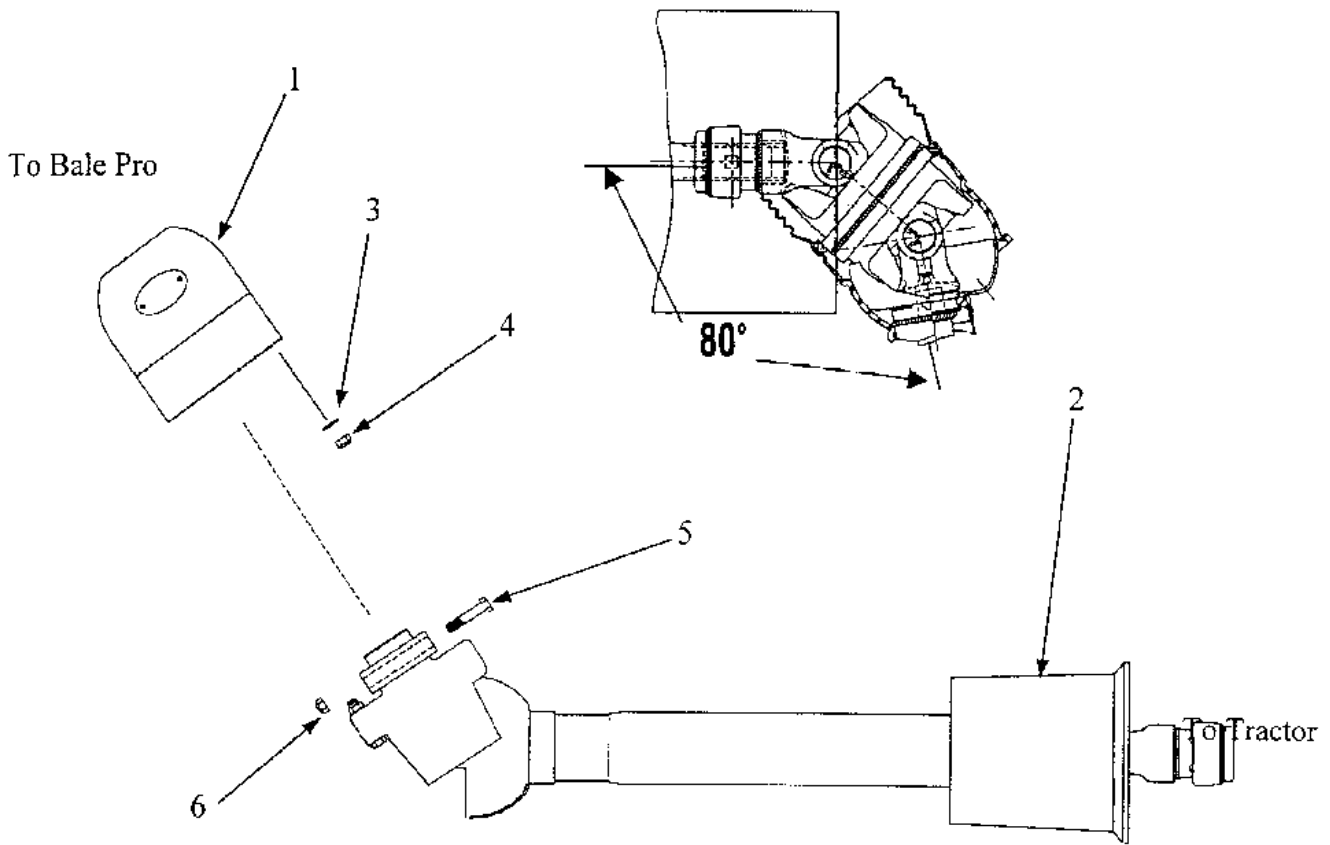


⚠ NOTE: EXCEEDING AN 80-DEGREE ANGLE BETWEEN BALE PROCESSOR AND TRACTOR WILL VOID CV WARRANTY

CV NOT TO BE USED ON THE FRONT OF BI-DIRECTIONAL TRACTOR, OTHERWISE WARRANTY WILL BE VOID

Item No.	Part No.	Description	Qty
1	30284	CV Shield	1
2	30525	CV	1
3	31240	5/8" Flat Washer	8
4	31168	5/8" Locking Jam Nut	4
5	31056	5/8" x 3-1/2" UNC Gr. 5 Bolt	2
6	31178	5/8" Lock Nut	2

CV Installation

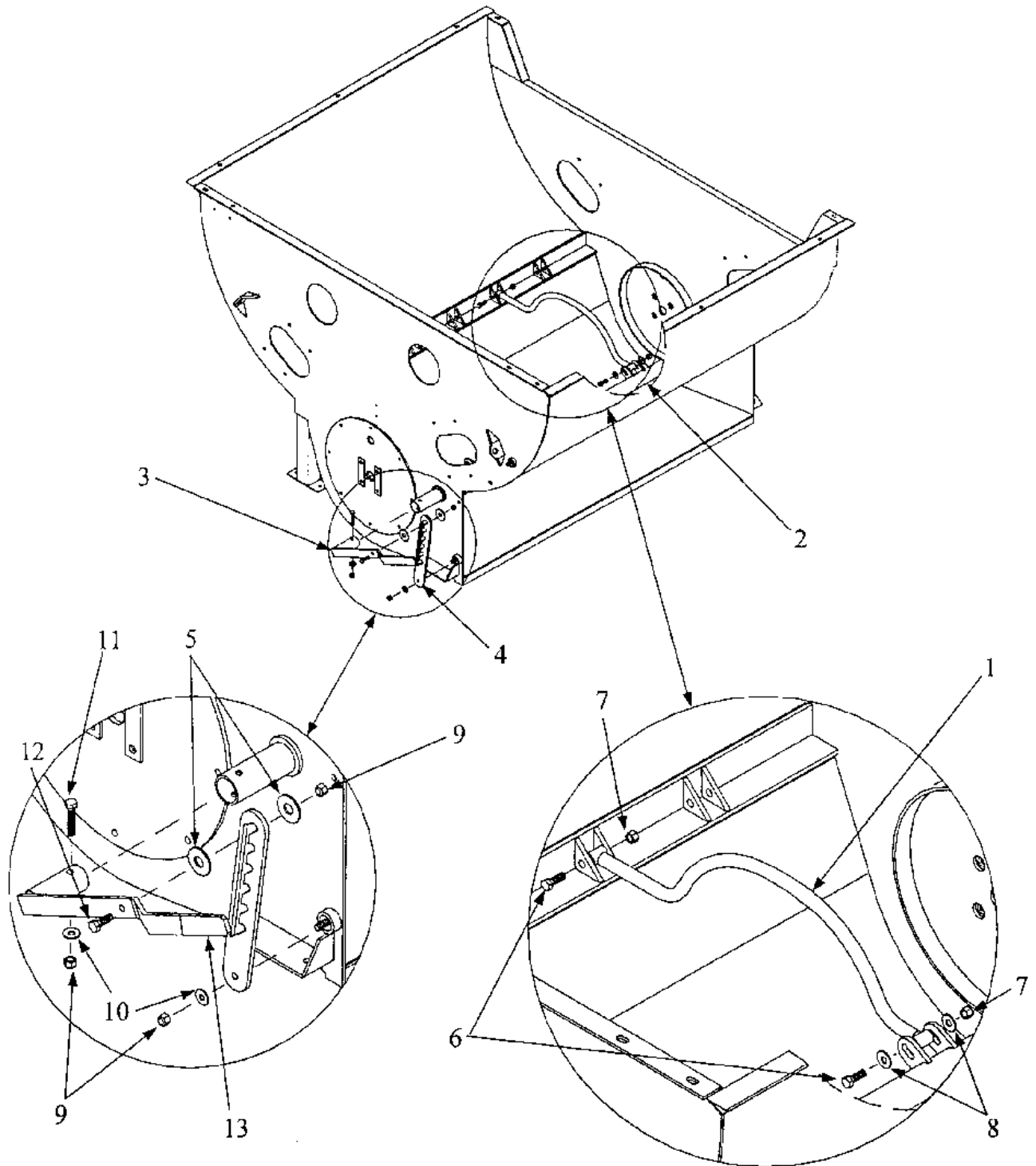


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4	31168	5/8" Locking Jam Nut	4
5	31056	5/8" x 3-1/2" UNC Gr. 5 Bolt	2
6	31178	5/8" Lock Nut	2

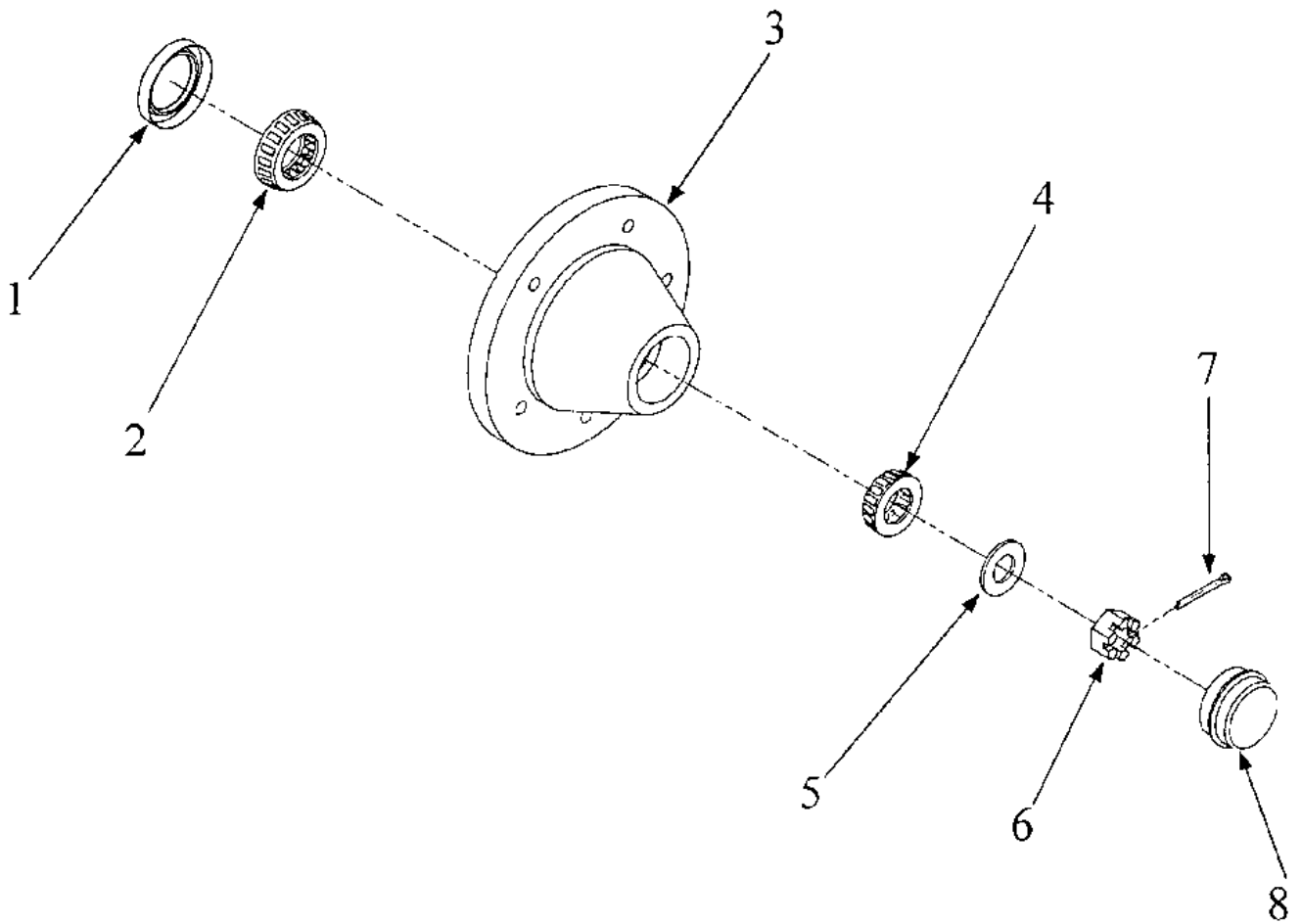
Flail Guard Rod Installation



Flail Guard Rod Installation Table

Item No.	Part No.	Description	Qty
1	49038	Flail Guard Rod	8
2	47037	Flail Guard Rod Adjusting Bar	1
3	47006	Flail Guard Adjusting Handle	1
4	E2093	Adjusting Bar	1
5	92081	2" x 9/16" x 3/16" Washer	2
6	31058	9/16" x 3/1/2" UNC Gr. 5 Bolt	16
7	31179	9/16" Lock Nut	16
8	31242	9/16 Flat Washer	16
9	31173	1/2" Lock Nut	3
10	31236	1/2" Flat Washer	2
11	31023	1/2" x 3-1/2" UNC Gr. 5 Bolt	1
12	31018	1/2" x 2-1/2" UNC Gr. 5 Bolt	1
13	92127	Rubber Handle Grip	1

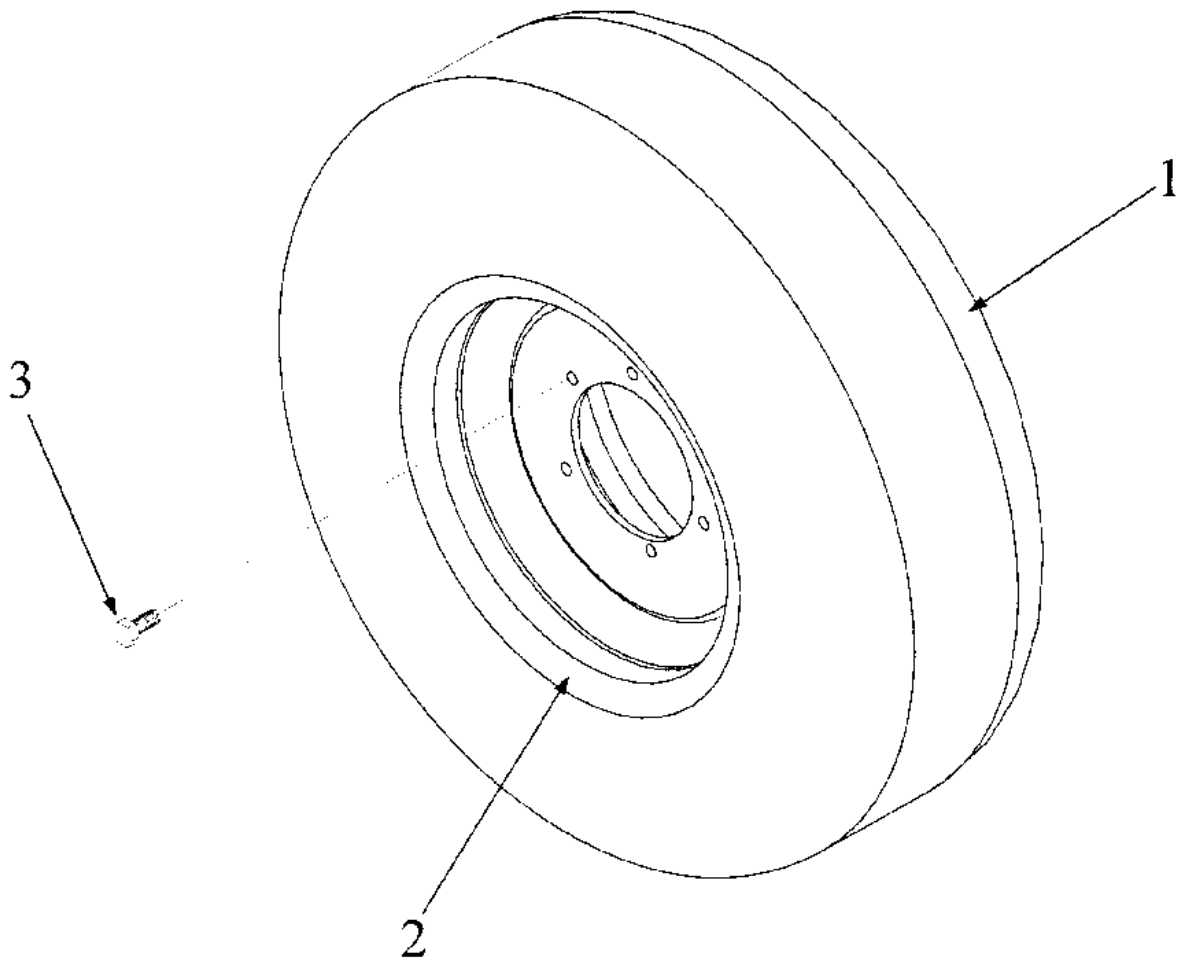
Hub Assembly



Item No.	Part No.	Description	Qty
1	32306	Oil Seal	1
2	32305	Inner Bearing	1
3	32312	H614 Hub	1
4	32300	Outer Bearing	1
5	32298	Washer	1
6	32297	Slotted Nut	1
7	31183	Cotter Pin	1
8	32299	Dust Cap	1

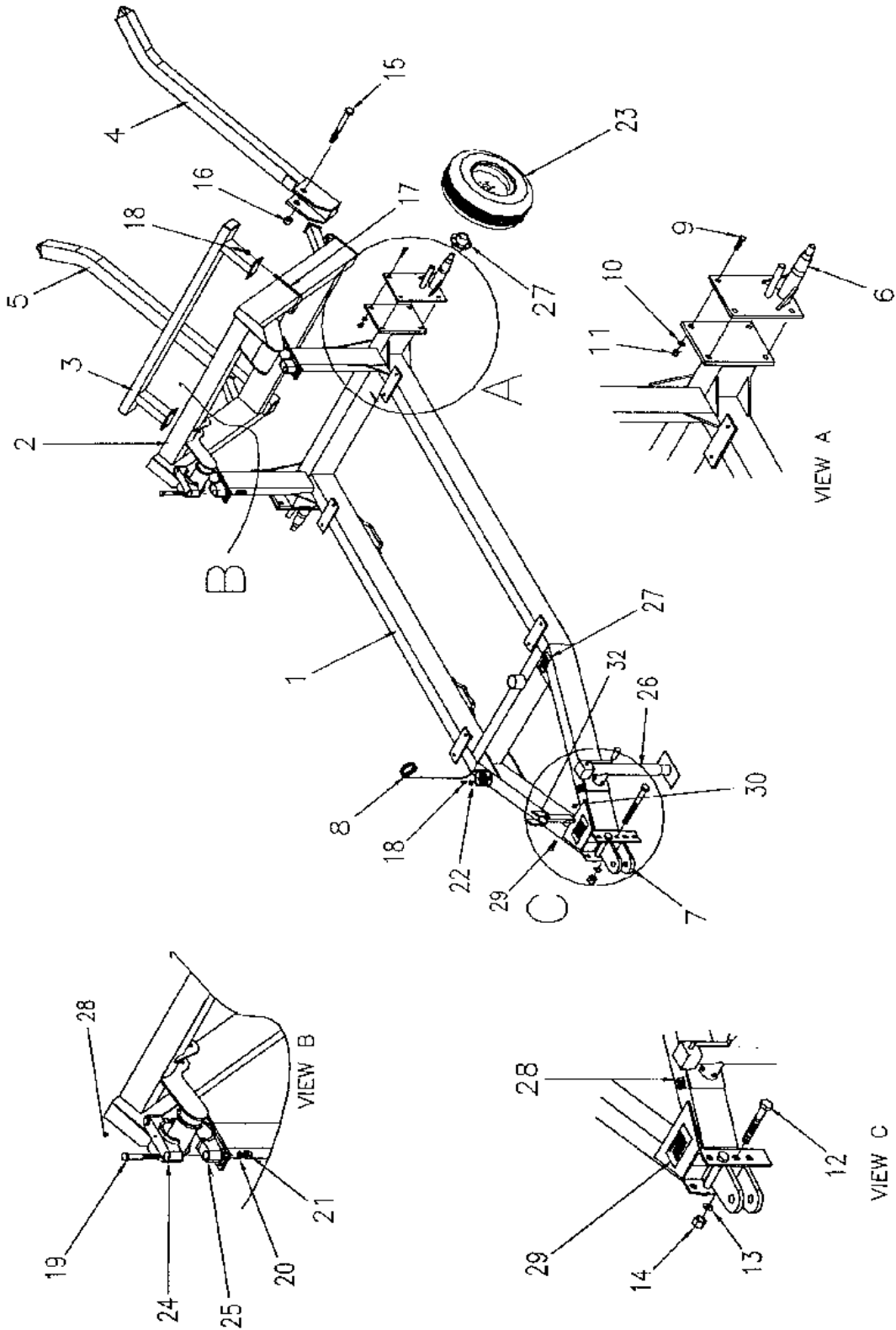
7/6

Wheel Assembly



Item No.	Part No.	Description	Qty
1	45226	12.5L - 15FI D Ply Tire	1
2	45227	15 x 10lb, 3800lb Rim	1
3	32301	Wheel Bolt	6
Not Shown	92005	Valve Stem	1

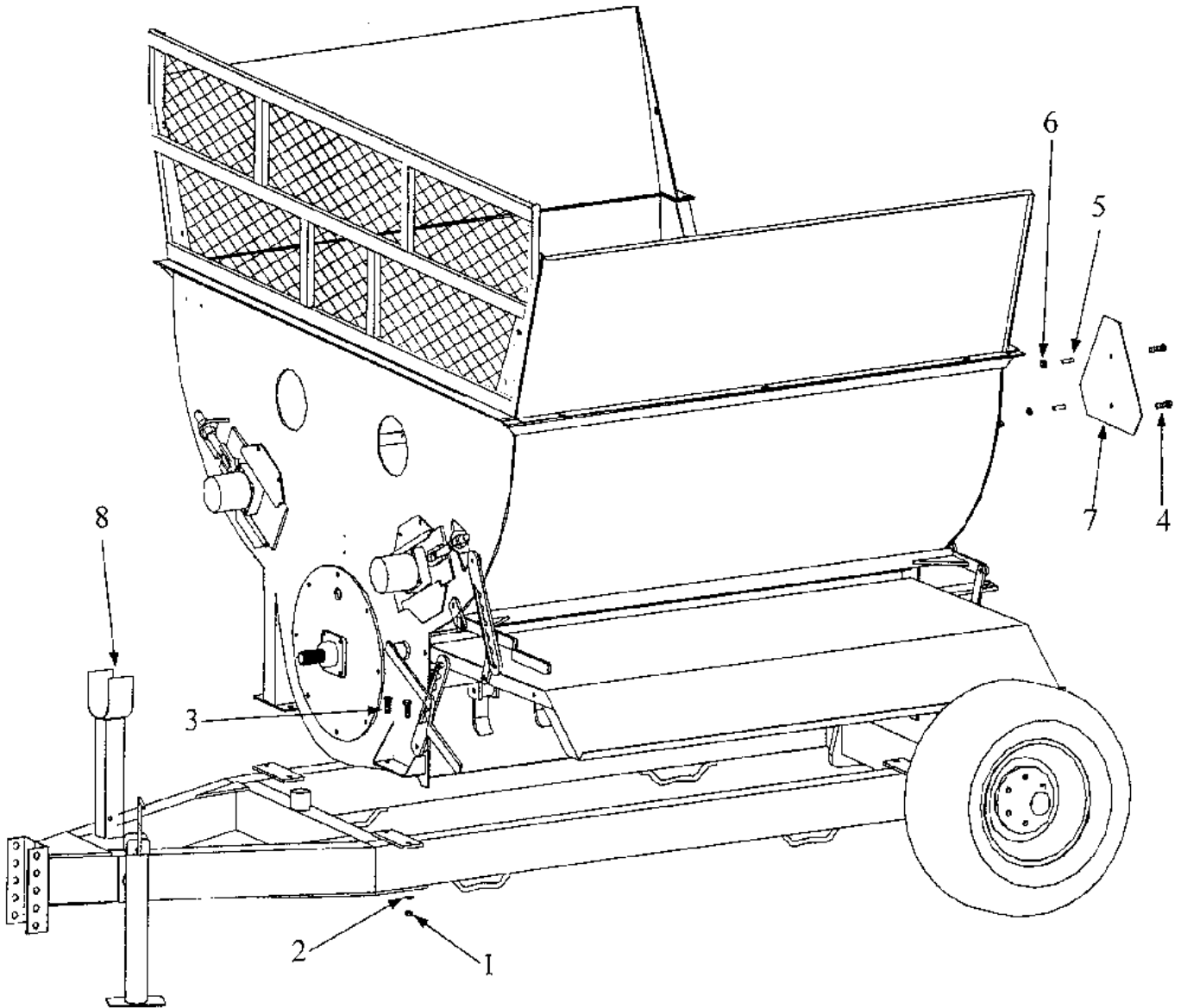
Cart Assembly



Cart Assembly Table

Item No.	Part No.	Description	Qty
1	49043	Frame	1
2	45192	Loading Assembly	1
3	45087	Bumper	1
4	45142	Left Fork	1
5	45143	Right Fork	1
6	49044	Axle Assembly	2
7	45060	Hitch Tongue	1
8	30206	Hydraulic Hose Holder	1
9	31040	3/4" x 2-1/2" UNC Gr. 5 Bolt	8
10	31246	3/4" Lock Washer	8
11	31167	3/4" UNC Nut	8
12	31038	1" x 7-1/2" UNC Gr. 5 Bolt	2
13	31243	1" Lock Washer	2
14	31162	1" UNC Nut	2
15	31034	1-1/4" x 6" UNC Gr. 5 Bolt	2
16	31171	1-1/4" Lock Nut	2
17	31061	1/2" x 3" x 7" U Bolt	2
18	31173	1/2" Lock Nut	5
19	31057	5/8" x 4-1/2" UNC Gr. 5 Bolt	4
20	31240	5/8" Flat Washer	4
21	31178	5/8" Lock Nut	4
22	31236	1/2" Flat Washer	1
23	49045	Wheel Assembly (complete)	2
24	30230	Top Pipe Clamp	2
25	30231	Bottom Pipe Clamp	2
26	92095	5000 lb. Hitch Jack	1
27	45228	H614 Hub	2
28	30207	1/4-28 Grease Zerk	2
29	30374	3/8" x 3 UNC Gr. 5 Bolt	1
30	31176	3/8" Lock Nut	1
31	31183	3/16" x 2 CotterPin (For Hub)	2
32	49020	CV Support	1

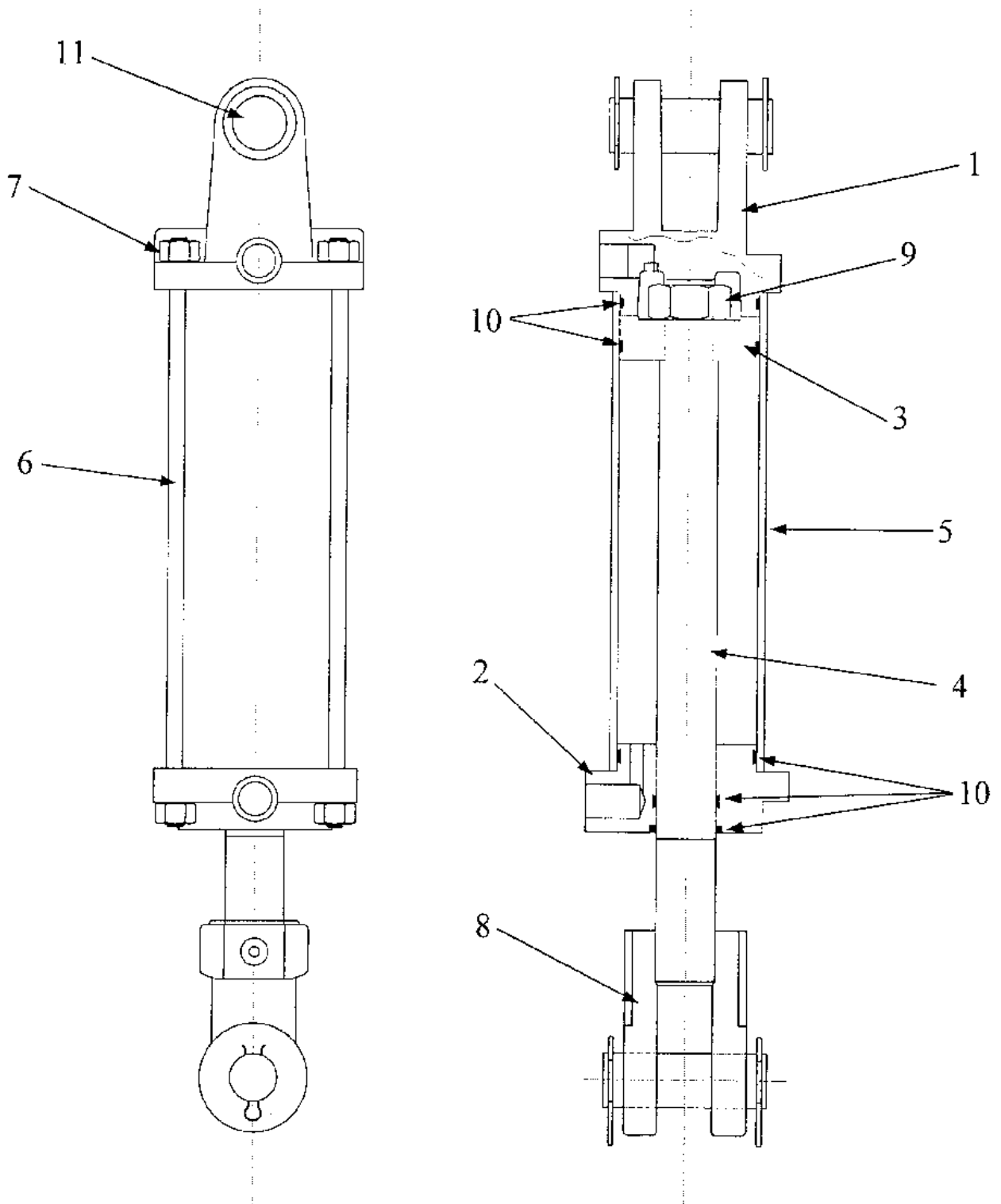
Tub on Cart Installation



Tub On Cart Installation Table

Item No.	Part No.	Part No.	Qty
1	31173	1/2" UNC Lock Nut	8
2	31236	1/2" Flat Washer	16
3	31017	1/2" x 1-3/4" UNC Gr. 5 Bolt	8
4	31030	1/4"x 2" UNC Gr. 5 Bolt	2
5	E3254	Spacer Bushing	2
6	31030	1/4" Lock Nut	2
7	92028	Slow Moving Sign	1
8	49020	CV Support	1

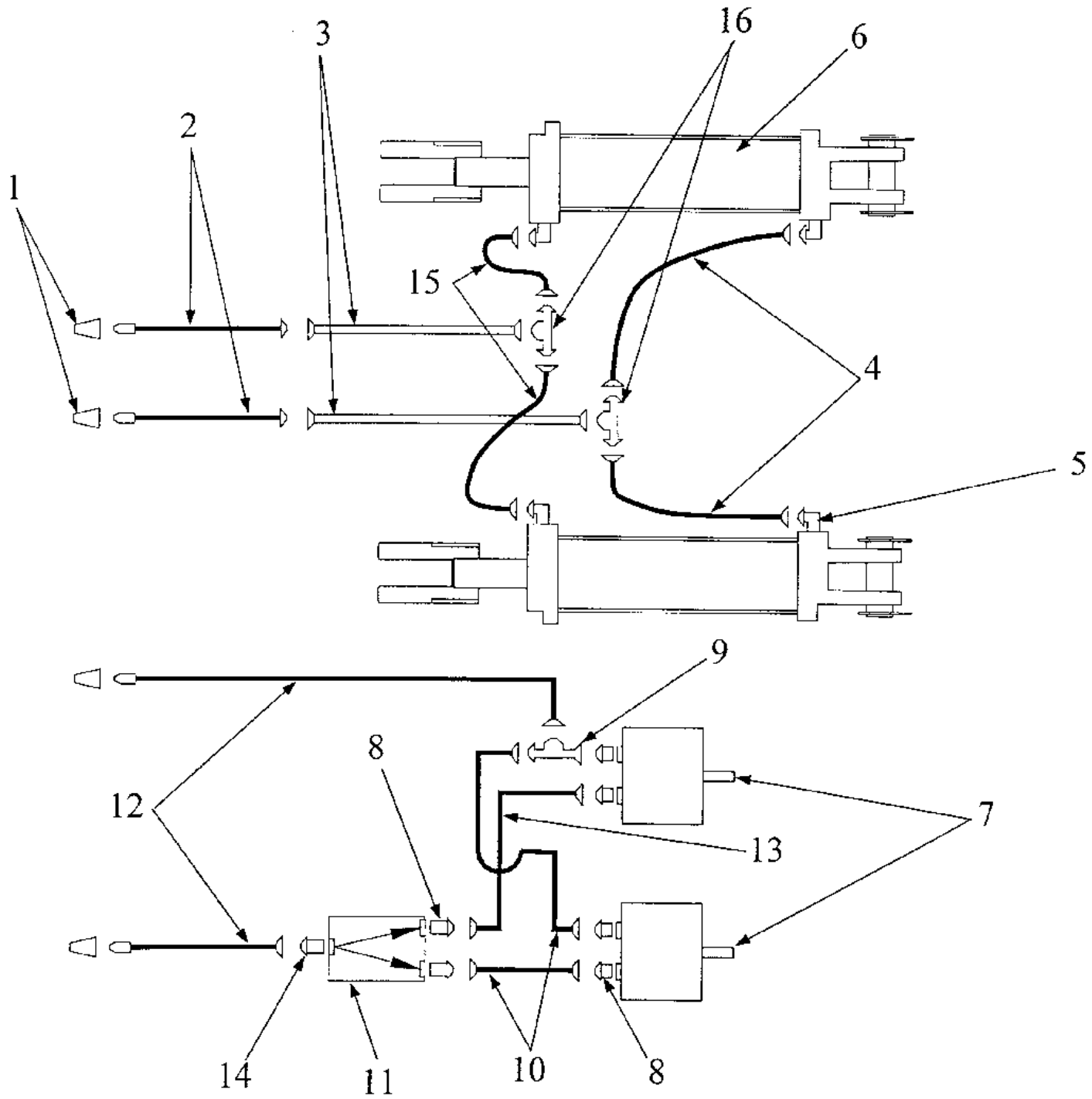
Cylinder Assembly



Cylinder Assembly Table

Item No.	Part No.	Description	Qty
1	90991	Clevis Cap	1
2	90992	Rod Cap 4066 ⁹	1
3	90706	Piston	1
4	90846	1-1/2" Rod	1
5	90993	Cylinder Tube	1
6	90994	1/2" Tie Rod	4
7	90800	1/2" UNF Nut	4
8	90849	Rod Clevis	1
9	90722	1-14 UNF Nut	1
10	90676	Seal Kit	1
11	45185	Top Cylinder Pin	1
	90133	3" x 16" - 1-1/2" Rod Cylinder	2

Hydraulic Layout

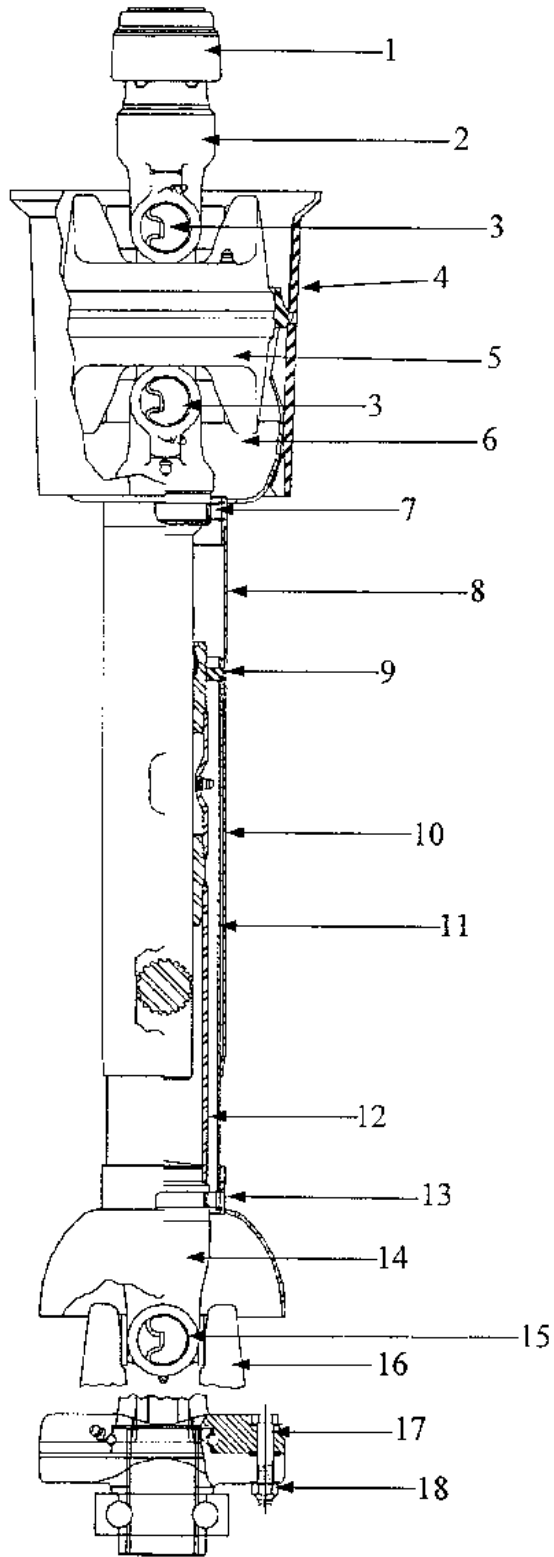


Hydraulic Layout Table

Item No.	Part No.	Description	Qty
1	30209	1/2" Pioneer End	4
2	30280	3/8" x 96" 8MP - 8MJX Hose	2
3	30370	1/2" Steel Line	2
4	90333	3/8" x 28" 8FJX Hose	2
5	30212	8MP - 8MJ90 Fitting	4
6	90133	3" x 16" - 1-1/2" Rod Hydraulic Cylinder	2
7	92145	Hydraulic Motor	2
8	30204	10MB - 8MJ Fitting	6
9	30150	8FJXR - 8MJT	1
10	90240	3/8" x 36" 8FJX Hose	2
11	45232	Flow Divider	1
12	30281	1/2" x 96" 8MP - 8FJX Hose	2
13	90271	3/8" x 42" 8FJX Hose	1
14	30145	10MBX - 8MJ90 Fitting	1
15	90332	3/8" x 20" 8FJX Hose	2
16	30313	8MJT Fitting	2

Complete Assy. 45231

CV Assembly



CV Assembly Table

Item No.	Part No.	Description	Qty
1	31247	Auto Lock Repair Kit	1
2	31248	Auto Lock Assembly	1
3	31249	Cat 5 Cross and Bearing	2
4	31250	Bell Extension with Nylon Centrizer	1
5	31251	CV Center Housing Assembly	1
6	31252	Yoke and Shaft	1
7	████████	Nylon Repair Kit 31253	1
8	31254	Safety Sign	1
9	31255	Centrizer	1
10	████████	Outer Guard 31256	1
11	████████	Inner Guard 31257	1
12	31258	Safety Sign	1
13	████████	Nylon Repair Kit 31259	1
14	████████	Yoke, Tube and Slip Sleeve 31260	1
15	31261	44R Cross and Bearing	1
16	31262	Ball Shear Assembly	1
17	████████	5/16 - 18 x 2" Bolt 31263	2
18	████████	5/16 - 18 Locknut 31264	2

7. Specifications

Recommend	
Minimum Horsepower required:	130 HP
Capacity:	2 bales - 6' + long, 6' + diameter or smaller
Flail Drum Length	82-1/4"
Flail Drum Diameter	24-3/4" Balanced
Flails	30 - 1/2" x 6-7/16" Tempered Spring Steel
Tires	2 - 12.5L x 15 Highway Service
Height:	108" (Fully Assembled)
Width	104-1/2"
Length	191"
Weight	4400 lb.
CV Requirements:	1000 R.P.M.
Dual Hydraulics	Dual Remote, 2000 psi
Cylinders	2 - 3" x 16", 1-1/2" Rod Diameter.