

HIGHLINE MFG.
INC.

1997

BALE PRO HITCH

**Assembly-Operator
Parts Manual**

'97

Memo

To: All Departments
From: Shane Tulik
CC: Mario Piche
Date: 12/23/98
Re: Manitoba Highways and Transportation – Lighting and Marking

As discussed previously, legislation was passed in Manitoba requiring lighting and marking on all agricultural equipment. This legislation applies to all equipment manufactured on or after January 1, 1998 and must be adhered to for all machines sold into Manitoba. The following Highline machines are affected by this legislation:

1. 500BM Balemover
2. 700BM Balemover
3. 1400BM Balemover
4. Balepro Hitch
5. Topgun
6. BP6800 Baleprocessor
7. BP7800 Baleprocessor
8. XL6084 Rockpicker
9. XL78 Rockpicker.

I would like to again express the need to address this situation immediately by supplying either the dealers or the end user with the required lighting and marking in order to meet the Manitoba legislation. The details of supplying the safety kits will be shared by the sales, production, and customer service departments. These measures will supply the equipment owners with the necessary safety equipment and will allow us to retroactively meet and exceed the required legislation by following ASAE S279.10. The following light kits can be found in CMS:

Model	Light Kit Part No.	Other Requirements
[REDACTED]	[REDACTED]	reflectors
1400BM Balemover	40169	reflectors
[REDACTED]	[REDACTED]	[REDACTED]
Topgun	48089	reflectors
BP6800 Baleprocessor	48101	reflectors
BP7800 Baleprocessor	48103	reflectors
XL78 Rockpicker	To be completed	reflectors
XL6084 Rockpicker	To be completed	reflectors

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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:

- 1st year Warranty covers Parts & Labor
- 2nd year Warranty covers Parts Only
- Warranty registration must be submitted to HIGHLINE Mfg. Inc. within 30 days of purchase.
- Highline Mfg. Inc. is not liable for any damages to this equipment resulting from use of this equipment that is inconsistent with this manual and such is not covered under this warranty.
- Warranty will be void, and Highline Mfg. Inc. will not be liable in any way, if the equipment is used for any other purpose than the intended agricultural application.
- All warranty service must be handled through an authorized HIGHLINE Mfg. Inc. dealer. At the time of requesting warranty service, the purchaser must present evidence of the delivery date of the equipment. The purchaser shall pay any premium for requested overtime, any charge for making service calls, and any charges incurred in transporting the equipment to and from the location of the warranty service. Freight costs associated with warranty repairs are not reimbursable.
- Any labor subject to warranty must be authorized by a HIGHLINE Mfg. Inc. Representative, before work is started.
- Warranty will be void if any component of this equipment is altered or modified in any way, unless written permission is given by HIGHLINE Mfg. Inc.
- Equipment used for rental, custom work, industrial or construction use will not be warranted by Highline Mfg. Inc.
- HIGHLINE Mfg. Inc. will not assume any responsibility for any damage occurring to equipment which this equipment may be attached.
- Warranty terms and conditions are subject to provincial and state legislation.
- Warranty is limited to the Purchase price paid for the equipment, up to the Manufacturers suggested retail price. **ANY LIABILITY RESULTING FROM THE WORKMANSHIP OF THIS EQUIPMENT** is limited to the purchased price paid. Highline Mfg. Inc. assumes no responsibility whatsoever for liability resulting from the misuse or improper operation and maintenance of this equipment.

President's Message

The Bale Pro product line is a proven name in livestock feed handling equipment. The 500 Bale Mover and 700 Bale Mover are proven names in the bale handling field. Each of the above products are manufactured by **Highline Mfg. Inc.** The Bale Pro Hitch was designed to join the Bale Pro Series and Bale Movers together to better enhance the livestock feeding handling process. A little time and effort spent in proper maintenance will assure the performance and durability of your Bale Pro Hitch.

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

In order to maintain high standards, changes or improvements are made from time to time. **Highline Mfg. Inc.** reserves the right to make those changes and add 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. If you should find that you require information not covered in this manual, feel free to consult your local dealer or **Highline Mfg. Inc.**

Highline Mfg. Inc. thanks and congratulates you for selecting a Bale Pro Hitch as the machine for combining your feed handling needs.



Raymond Bussiere
President

Safety Precautions

CAREFUL OPERATION IS THE BEST INSURANCE AGAINST AN ACCIDENT

- Always disengage PTO and hydraulic motors before dismounting tractor.
- Keep yourself and others clear of rotating parts to prevent injury.
- Never allow anyone to stand near the bale mover while loading or unloading bales.
- Never attempt to manually remove bales from rails while hydraulic motors are engaged. Disconnect hydraulic motors before cleaning the bale mover.
- Never attempt to manually remove debris while PTO is engaged. Disengage PTO before unplugging or adjusting processor.
- Remove transport locks before lowering forks. To remove transport locks, raise forks to slacken transport chain and remove transport pin. **DO NOT** lower forks when transport locks are in position otherwise sever damage **WILL** occur.
- Relieve pressure in hydraulic lines before disconnecting lines or performing maintenance on the hydraulic system.

1.0 Pre-delivery & Installation Instructions

1.1 General Description of Bale Pro Hitch

The Bale Pro Hitch is 3'4" wide and 16'9" long. The bale processor is driven by the tractor PTO drive. A total of 3 sets of hydraulic lines are required to operate a fully installed bale processor, bale mover, and bale pro hitch. One set of hydraulic lines is required for engaging the bale processor, one set for operating the bale mover hydraulic motors and bale pro hitch forks, and one set for operation of the bale mover solenoid

1.2 Pre-Delivery Check List

The following is a list of parts required to assembled a Bale Pro Hitch. If any parts are not included contact your authorized Highline dealer or **HIGHLINE Mfg Inc.**

Quantity	Description	Part No.
1	FRAME,BP HITCH	25000
1	BRACKET,MOUNTING,FORK	25001
1	PIVOT,FORK	25002
2	SPACER,BRACKET,MOUNT	25005
2	FORK,SIDE	25006
1	EXTENSION HARNESS,BPH(97)	25007
1	PIN,PIVOT,FORK	25008
1	HITCH,DOUBLE,TONGUE	45060
2	FORK,BP HITCH	45173
1	HOLDER,HOSE,HYDRAULIC,1/2	30206
2	ZERK,GREASE,1/4-28	30207
2	CLAMP,PIPE,TOP	30230
2	CLAMP,PIPE,BOTTOM	30231
2	UBOLT,1/2X4X5 1/2 LEG	30272
2	UBOLT,1/2X3X7 LEG	30276
1	BOX,CONTROL,BP HITCH(97)	92073
1	7000LB HITCH JACK	92088
2	1 X 7.5 UNC GR5 PLTD	B5C16120P
8	3/4 X 6 UNC GR5 PLTD	B5C1296P
4	5/8 X X4 1/2 UNC GR5 PLTD	B5C1072P
8	1/2 X 1 1/2 UNC GR5 PLTD	B5C0824P
2	1" UNC LOCKNUT	LNC16
8	3/4" UNC LOCKNUT	LNC12
4	5/8" UNC LOCKNUT	LNC10
17	1/2" UNC LOCKNUT	LNC08
4	5/8" FLAT WASHET PLTD	FW10P
17	1/2 FLAT WASHER PLTD	FW08P
1	1/4" X 2 1/2" COTTERPIN	CP0440

2.0 Operating Instructions

2.1 Pre-start Instructions

Transport chains need to be removed before operation of the forks. To remove transport chains, raise forks slightly and remove transport pins. **DO NOT** lower forks when transport chains are in position otherwise severe damage **WILL** occur.

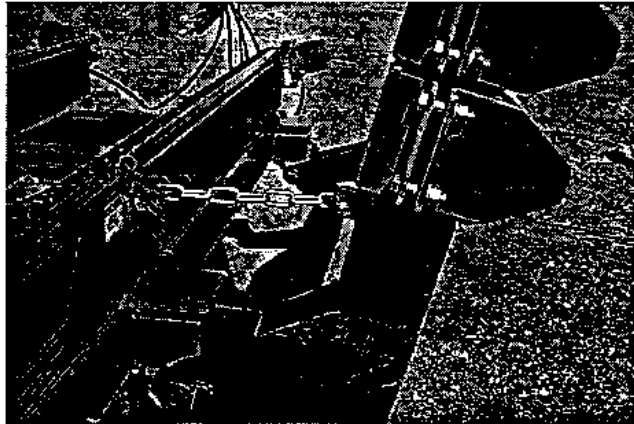


Figure 1. Locks in Transport Position

2.3 Transporting Instructions

To ensure safe transport of the Bale Pro Hitch, the forks should be all the way down in the transport position. The Bale mover forks should be all the way up with the transport chain in position. To put transport chains in place, raise the forks until the transport pin can be put in place safely. Lower forks to take the slack up in the transport chains.

2.2 Field Instructions

For proper operation of the Bale Pro Hitch, the bale being loaded into the Bale Pro should be all the way forward on the Bale mover.

3.0 Maintenance Instructions

To ensure long operating life of your Bale Pro Hitch, follow this maintenance procedure.

- Periodically check all bolts for tightness.
- Grease the following point as described.

Grease Locations

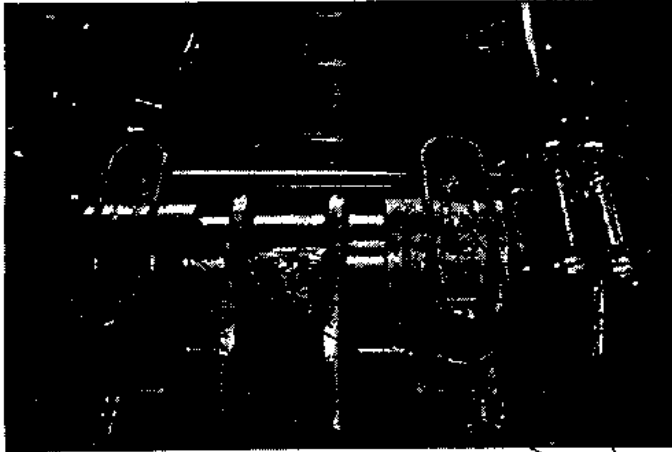


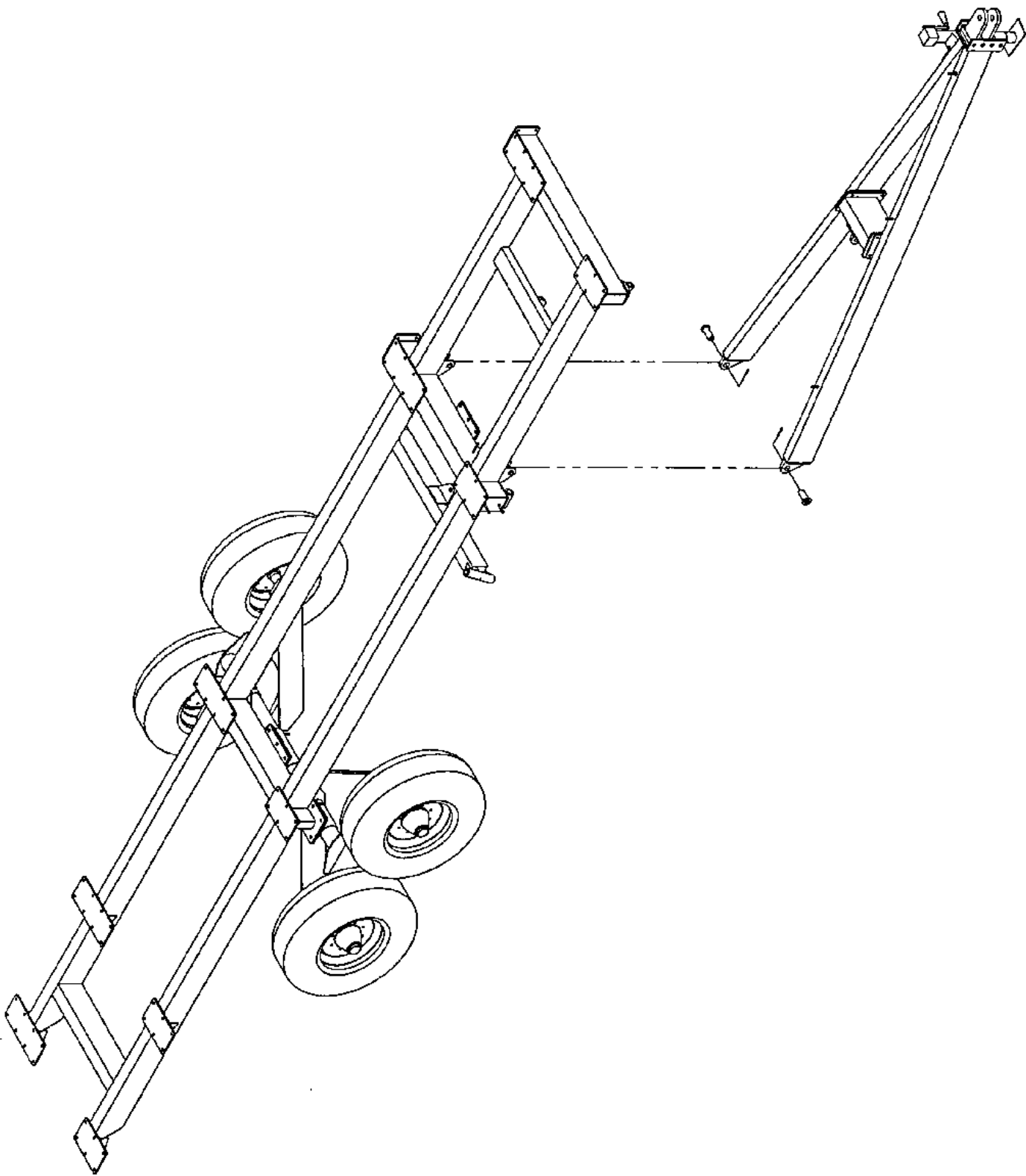
Figure 1. Pipe Clamps

Grease No	Description	Frequen
1	Fork, Pivot	Daily

4.0 Equipment Preparation

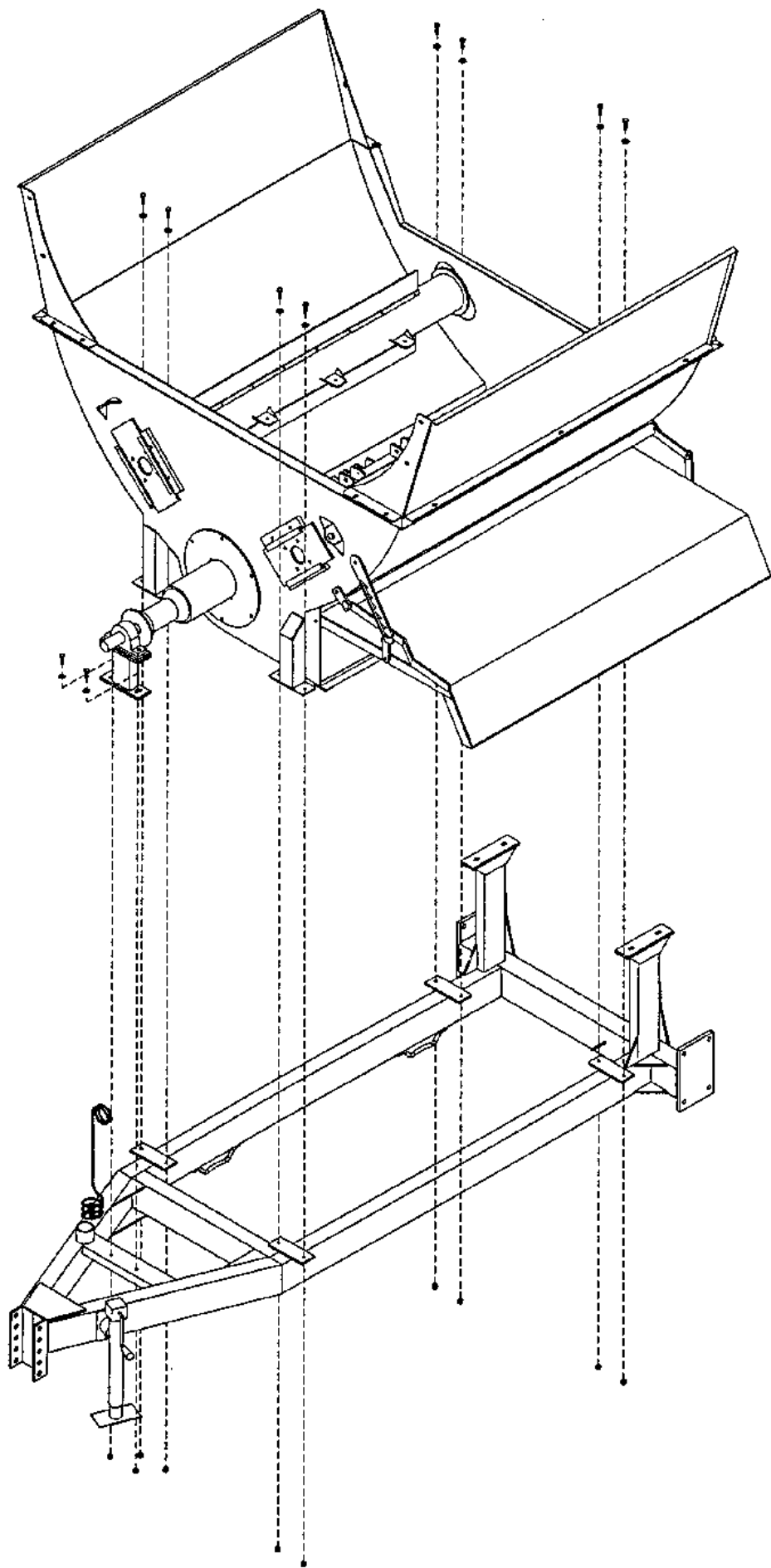
4.1 Bale Mover

To prepare the bale mover for conversion the following equipment must be removed. The deck cylinder can be unpinned from the bale mover subframe, leaving it attached to the hitch. The hydraulic hoses removed from the deck cylinder. The valve on the hitch needs to be un-bolted as well as the hydraulic hoses on the a-frame need to be unbolted. The extension harness unplugged from the valve. The hitch then can be removed as per drawing.



4.2 Bale Pro

The Bale Pro needs to be removed from the cart as per drawing.



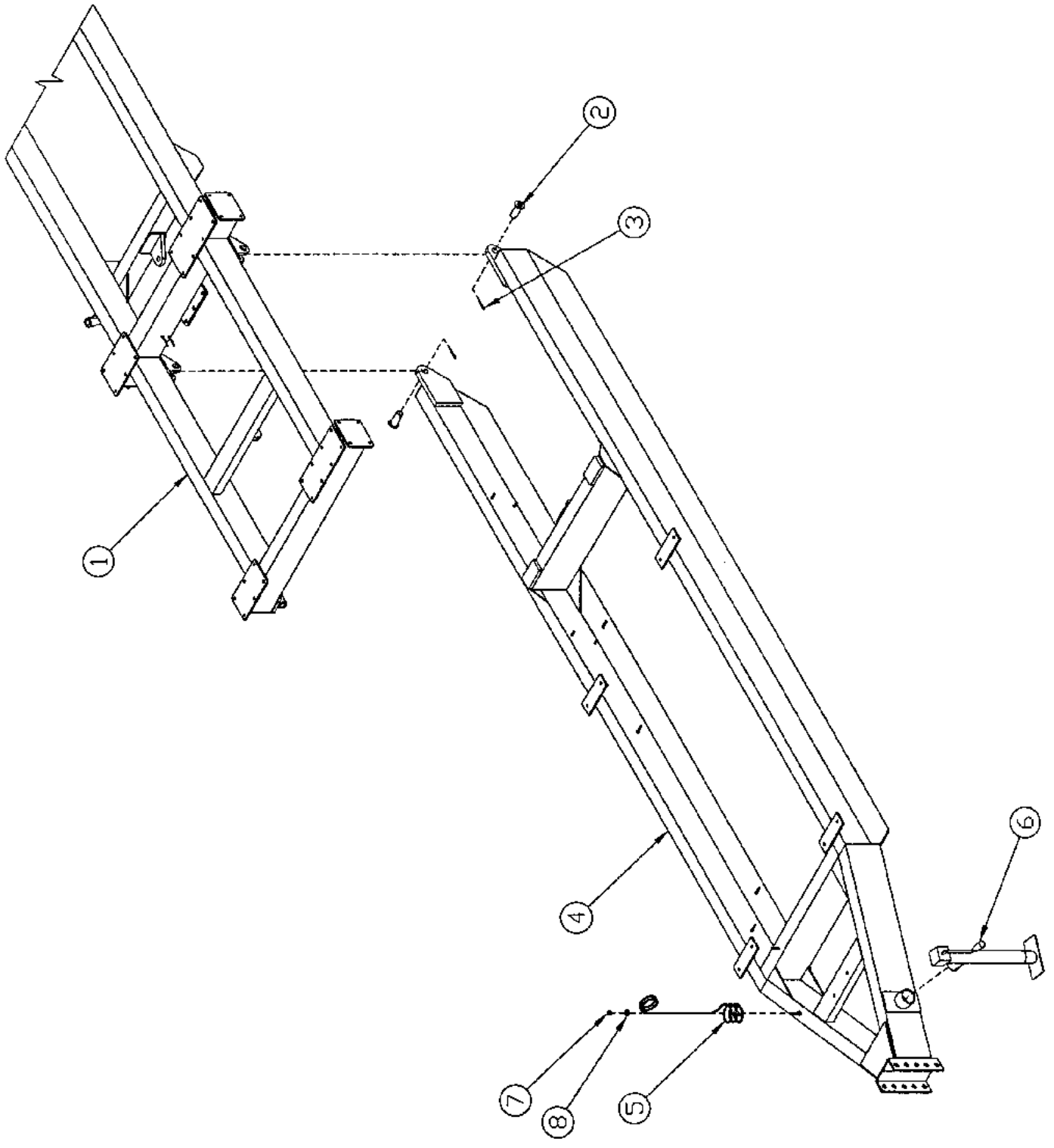
5.0 Parts Information

5.1 Hitch and Bale Mover

Item	Part No.	Description	Quantity
1		Bale mover	1
2		Pin,Hitch	2*
3		1/4" x 2 1/2" Cotterpin	2*
4	25000	Frame,BP Hitch	1
5	30206	Holder, Hose, Hydraulic, 1/2"	1
6	92088	7000lb Hitch Jack	1
7	LNC08	Nut, Nylock, 1/2"	1
8	FW08P	Washer, Flat, 1/2", PLTD.	1

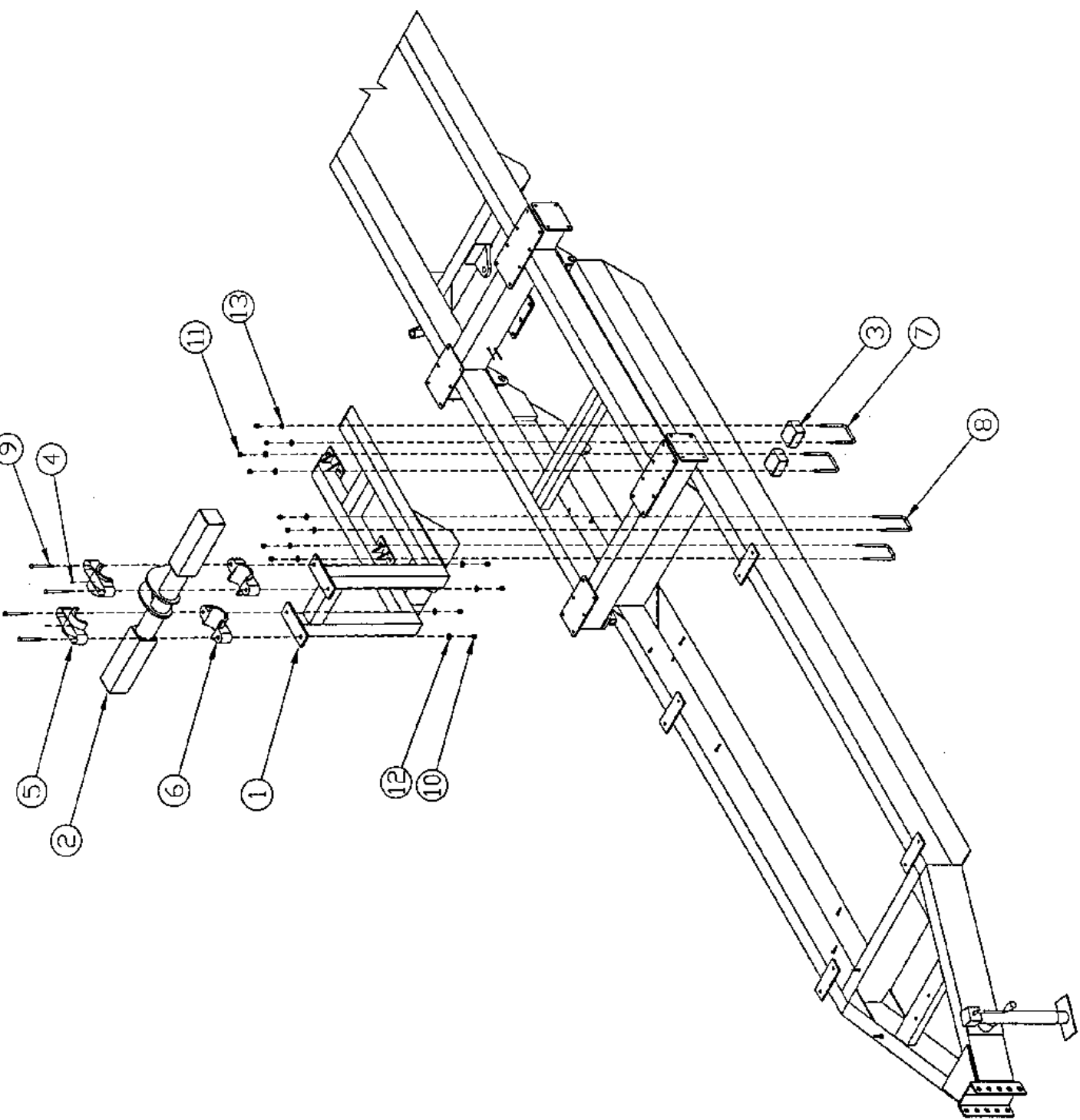
Note: Installing Bale Mover Cylinder hydraulics after this task is completed would make the process easier at this time.

* Parts come with existing equipment.



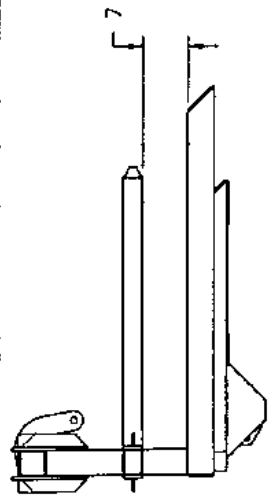
5.2 Mounting Bracket Fork And Bale Mover

Item	Part No.	Description	Quantity
1	25001	Bracket, Mounting, Fork	1
2	25002	Pivot, Fork	1
3	25005	Spacer, Bracket, Mount	2
4	30207	Zerk, Grease, 1/4-28	2
5	30230	Clamp, Pipe, Top	2
6	30231	Clamp, Pipe, Bottom	2
7	30272	Ubolt, 1/2 X 4 X 5 1/2 Leg	2
8	30276	Ubolt, 1/2 X 3 X 7 Leg	2
9	B5C1072P	Bolt, 5/8 x 4 1/2 UNC Gr5 Pltd.	4
10	LNC10	Nut, Nylock, 5/8"	4
11	LNC08	Nut, Nylock, 1/2"	8
12	FW10P	Washer, Flat, 5/8", Pltd.	4
13	FW08P	Washer, Flat, 1/2", Pltd.	8

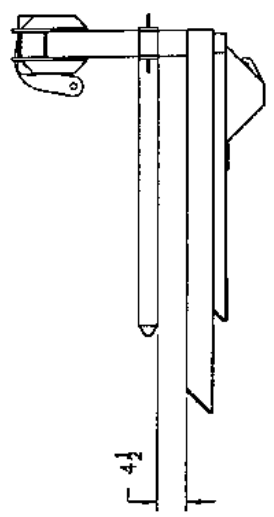


5.3 Bale Forks

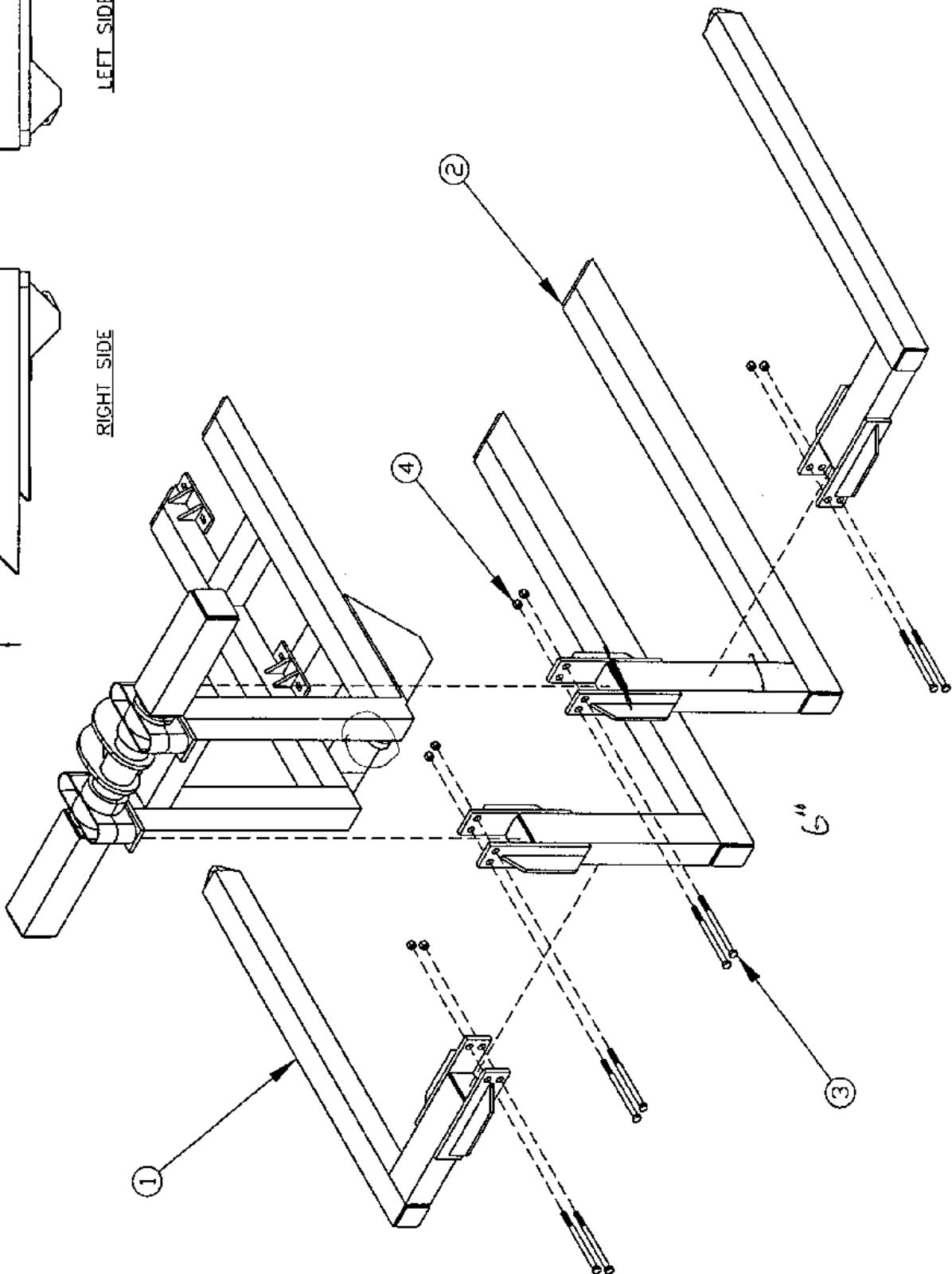
Item	Part No.	Description	Quantity
1	25006	Fork, Side	2
2	45173	Fork, BP Hitch	2
3	B5C1296P	Bolt, 3/4 X 6 UNC Gr5 Pltd.	8
4	LNC12	Nut, Nylock, 3/4"	8



LEFT SIDE

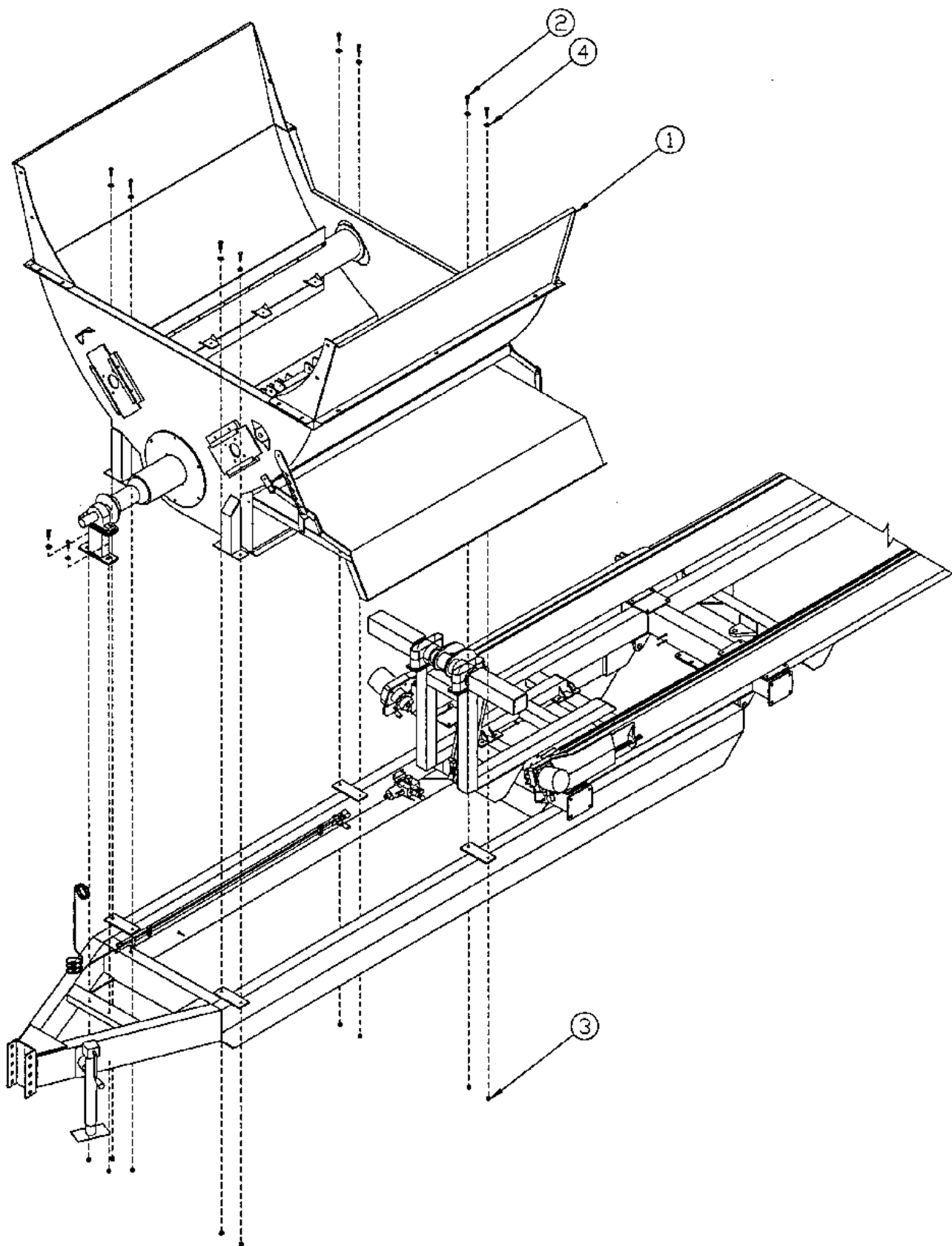


RIGHT SIDE



5.4 Bale Pro Tub

Item	Part No.	Description	Quantity
1		Tub, Bale Pro	1
2	B5C0824P	Bolt, 1/2 X 1 1/2 UNC Gr5 Pltd.	10
3	LNC08	Nut, Nylock, 1/2"	10
4	FW08P	Washer, Flat, 1/2", Pltd.	10



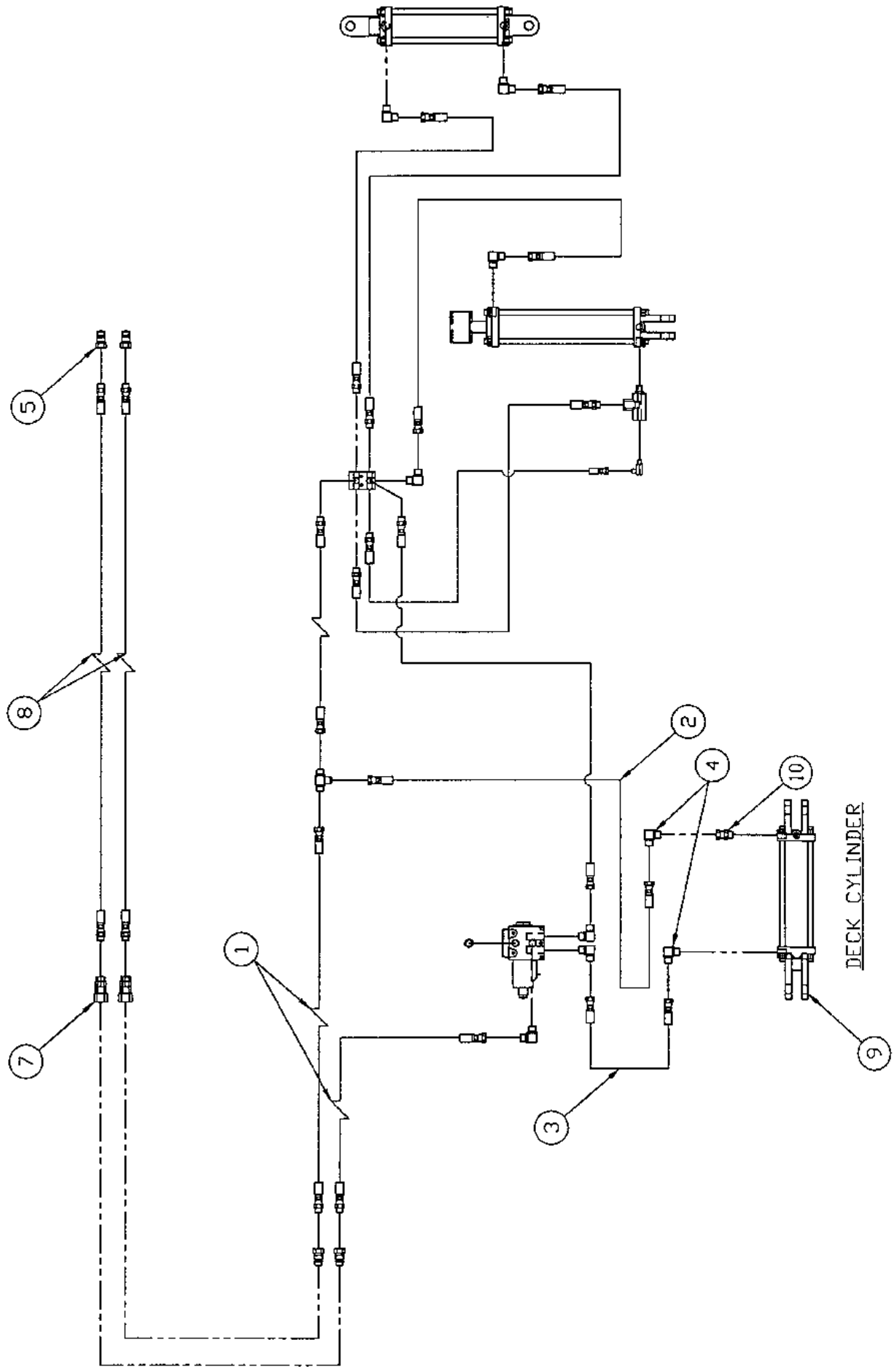
6.0 Hydraulics

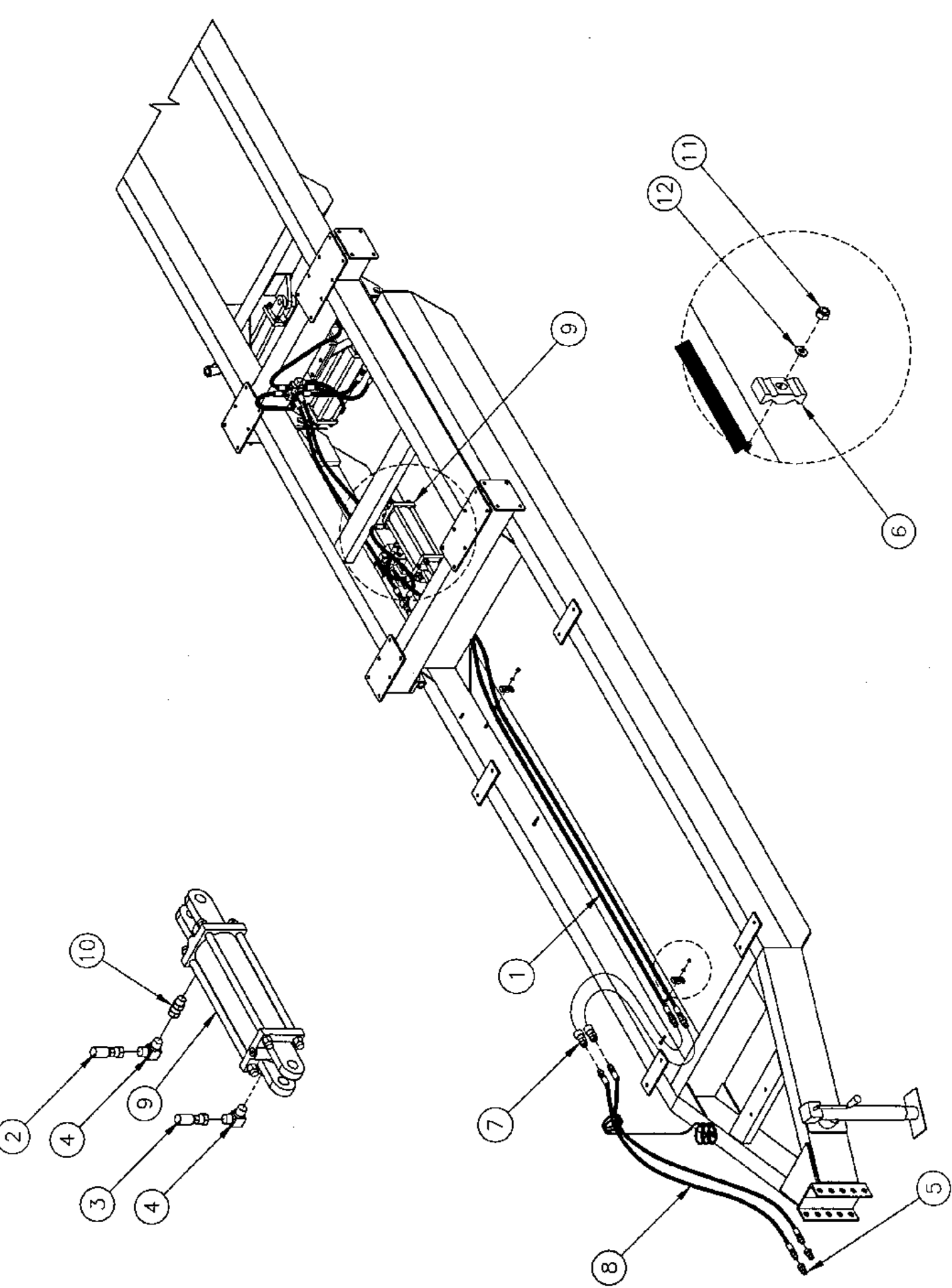
6.1 Bale mover Hydraulics

Item	Part No.	Description	Quantity
1		Hydraulic Hoses, Tractor, BM	2
2		Hydraulic Hose, From Tee	1
3		Hydraulic Hose, From Valve	1
4	30212	Fitting, 8MP-8MJ90	2
5	30209	Tip, Male, Pioneer, 1/2"	2
6	30210	Clamp, Oil, 1/2"	2
7	30227	Tip, Female, Pioneer, 1/2"	2
8	30268	Hose, 3/8" X 120", 8MP-8MP	2
9	30270	Cylinder, 4" X 10", 1 1/4" Rod	1
10	30283	Fitting, Flow Restrictor, 1/16"	1
11	LNC05	Nut, Nylock, 5/16"	2
12	FW05P	Washer, Flat, 5/16"	2

SCHEMATIC DRAWING

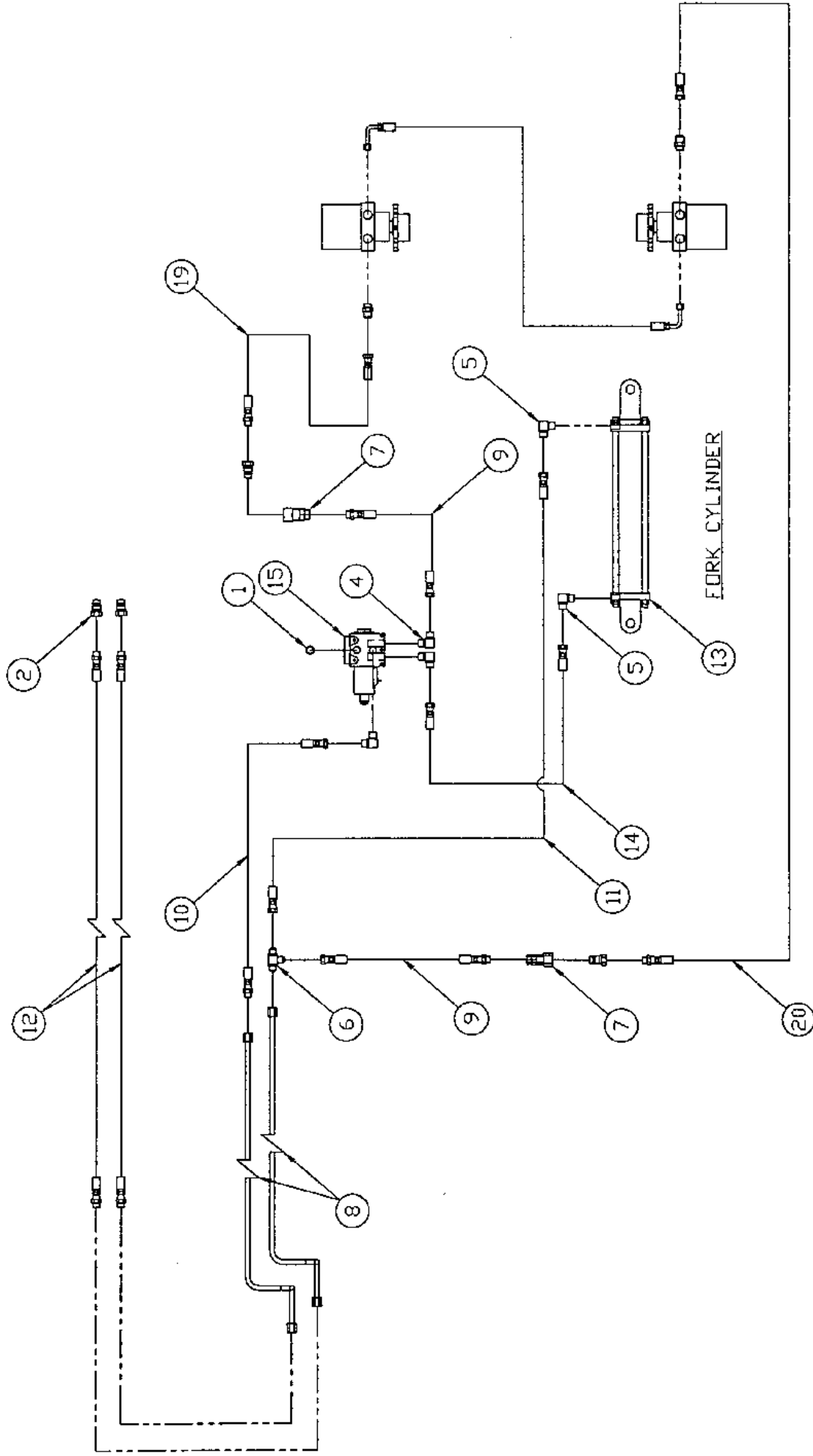
NOTE: REFER TO BALE MOVER MANUAL FOR HYDRAULIC PLUMBING

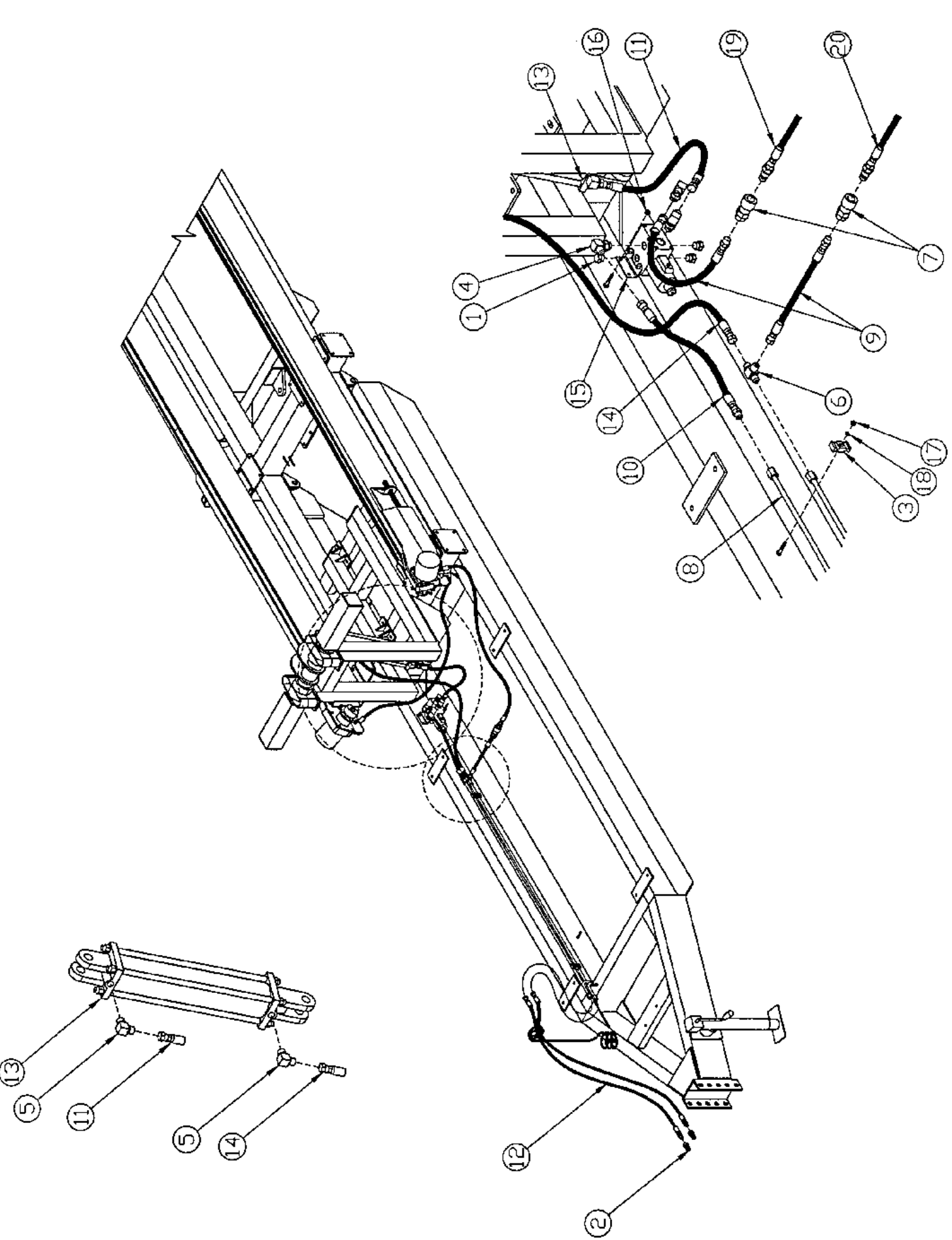




6.2 Bale Pro Hitch Hydraulics

Item	Part No.	Description	Quantity
1	30200	Fitting, Plug, 8MB	3
2	30209	Tip, Male, Pioneer, 1/2"	2
3	30210	Clamp, Oil, 1/2"	2
4	30211	Fitting, 8MB-8MJ90	3
5	30212	Fitting, 8MP-8MJ90	2
6	30313	Fitting, Tee, 8MJT	1
7	30227	Tip, Female, Pioneer, 1/2"	2
8	30234	Line, Steel, Forks, Bale	2
9	30264	Hose, 3/8" X 10", 8FJX-8MP	2
10	30265	Hose, 3/8" X 22", 8MJX-8FJX	1
11	30266	Hose, 3/8" X 65", 8FJX-8FJX	1
12	30267	Hose, 3/8" X 100", 8MJX-8MP	2
13	90103	Cylinder, 3 1/2" X 16", 1 1/2" Rod	1
14	90252	Hose, 3/8" X 50", 8FJX-8FJX	1
15	92089	Valve	1
16	LNC06	Nut, Nylock, 3/8"	2
17	LNC05	Nut, Nylock, 5/16"	2
18	FW05P	Washer, Flat, 5/16"	2
19		Hydraulic Hose, From Right Bale mover Motor	1
20		Hydraulic Hose, From Left Bale mover Motor	1

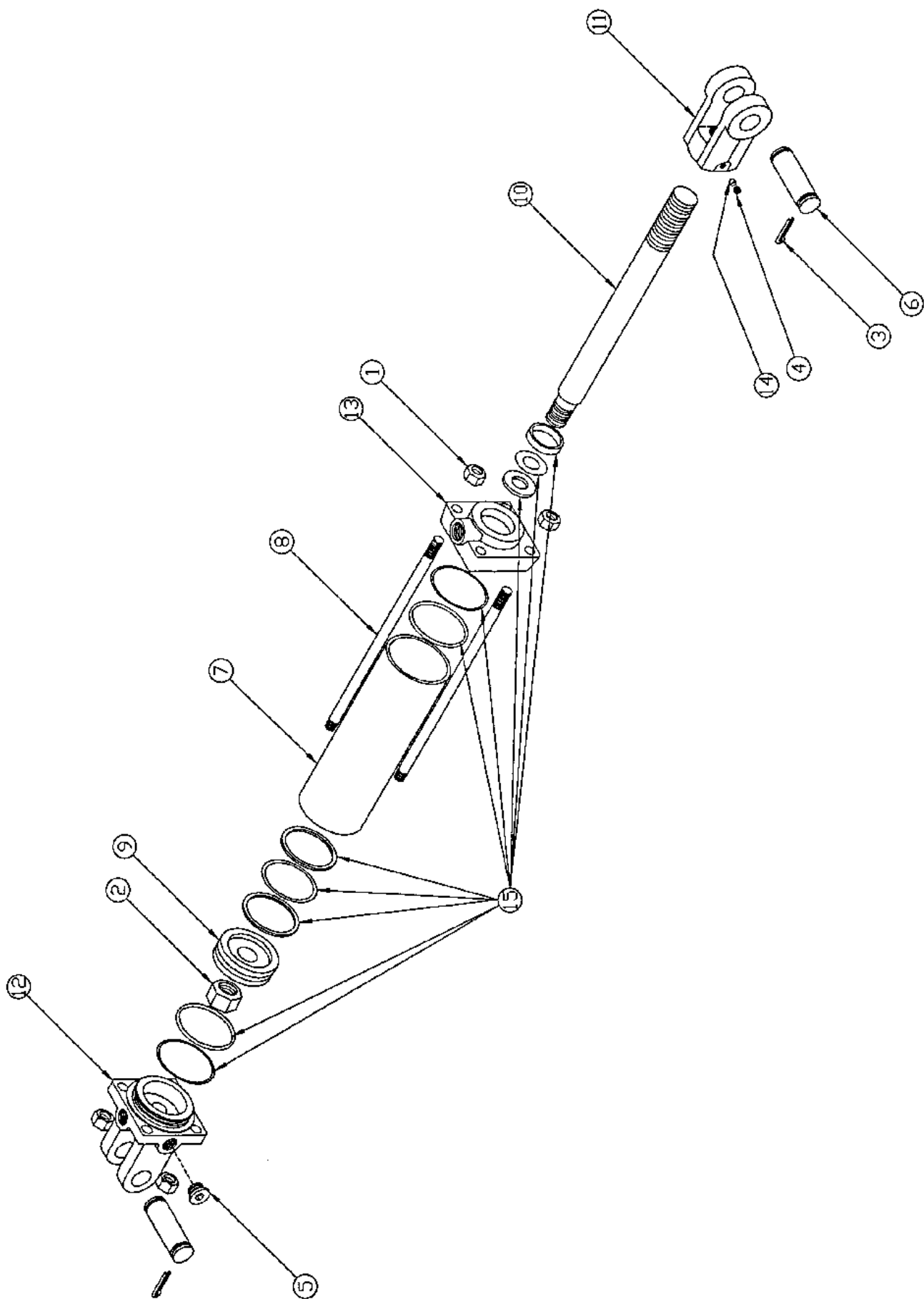




6.0 Cylinders

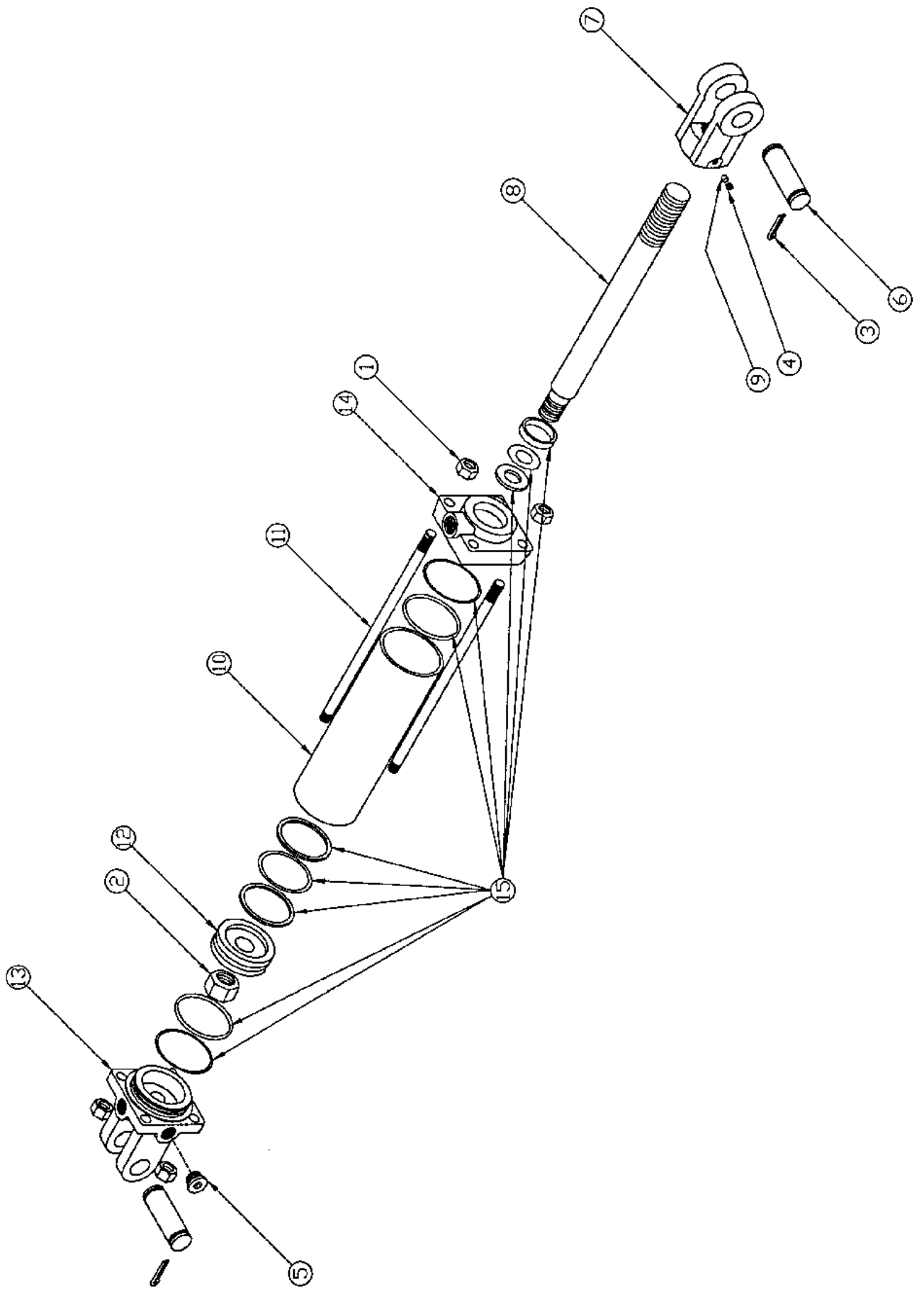
7.1 3 1/2 x 13, 1 1/2 Rod

Item	Part No.	Description	Quantity
1	30236	Nut, Hex, 5/8" UNC Grade 5	8
2	30237	Nut, Hex, 1"-14 UNS Grd 5 Phosphate	1
3	30238	Cotterpin, Hamerlock, 3/16" x 1 1/2"	2
4	30240	Fitting, Plug, 1/2"-14 NPTF Dry Seal	1
5	30241	Pin, 1" Dia, H5552	1
6	30242	Rod, 1 1/2" x 13", Weldment	1
7	30245	Tube, Cyl., 3 1/2" x 13", H6203	1
8	30251	Piston, 3 1/2" Dia, H6888	1
9	30255	Rod, Tie, 5/8" x 13", Special	4
10	30258	Cap, Clevis, 3 1/2" NPTF	1
11	30259	Cap, Rod, 3 1/2" x 1 1/2" NPTF	1
12	30263	Kit, Repair, 3 1/2" Cyl.	1



7.2 4 X 10, 1 1/4 Rod

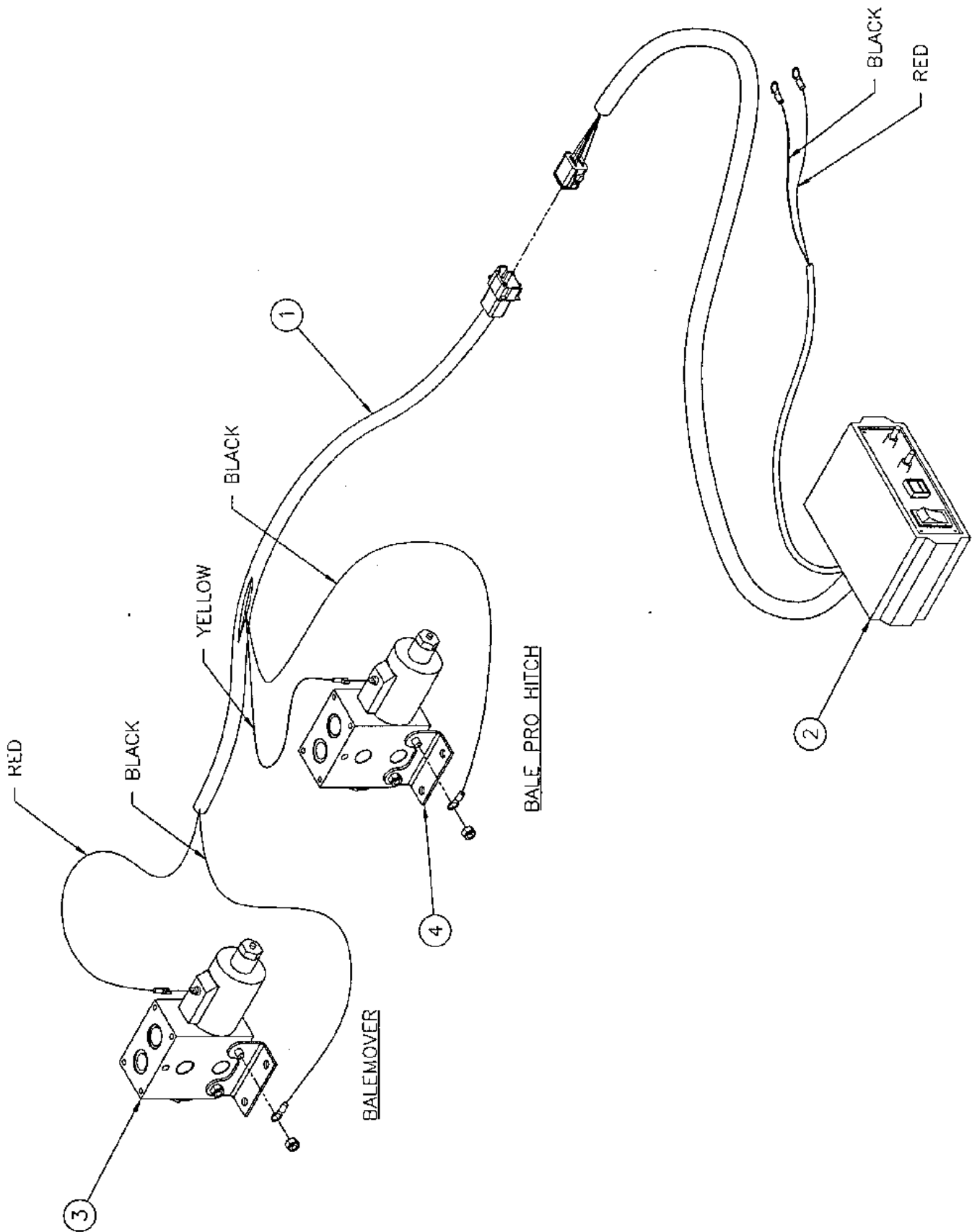
Item	Part No.	Description	Quantity
1	30236	Nut, Hex, 5/8" UNC Grade 5	8
2	30237	Nut, Hex, 1"-14 UNS Grd 5 Phosphate	1
3	30238	Cotterpin, Hamerlock, 3/16" x 1 1/2"	4
4	30239	Screw, Set, Sekt, 3/8"UNC x 1/2" Knur	1
5	30240	Fitting, Plug, 1/2"-14 NPTF Dry Seal	1
6	30241	Pin, 1" Dia, H5552	2
7	30253	Clevis,Rod,1 1/4", 1" Pin	1
8	30260	Rod, 1 1/4" x 10"	1
9	30261	Lock, Thread, Nylon	1
10	30322	Tube, Cyl, 4" x 10", H8410	1
11	30323	Rod, Tie, 5/8" x 10", H6740	4
12	30324	Piston, 4" Dia, TL/TC	1
13	30325	Cap, Clevis, 4" NPTF	1
14	30326	Cap, Rod, 4" x 1 1/4" NPTF	1
15	30327	Kit, Repair, 4" Cyl.	1



8.0 Electrical**8.1 Electrical Schematic**

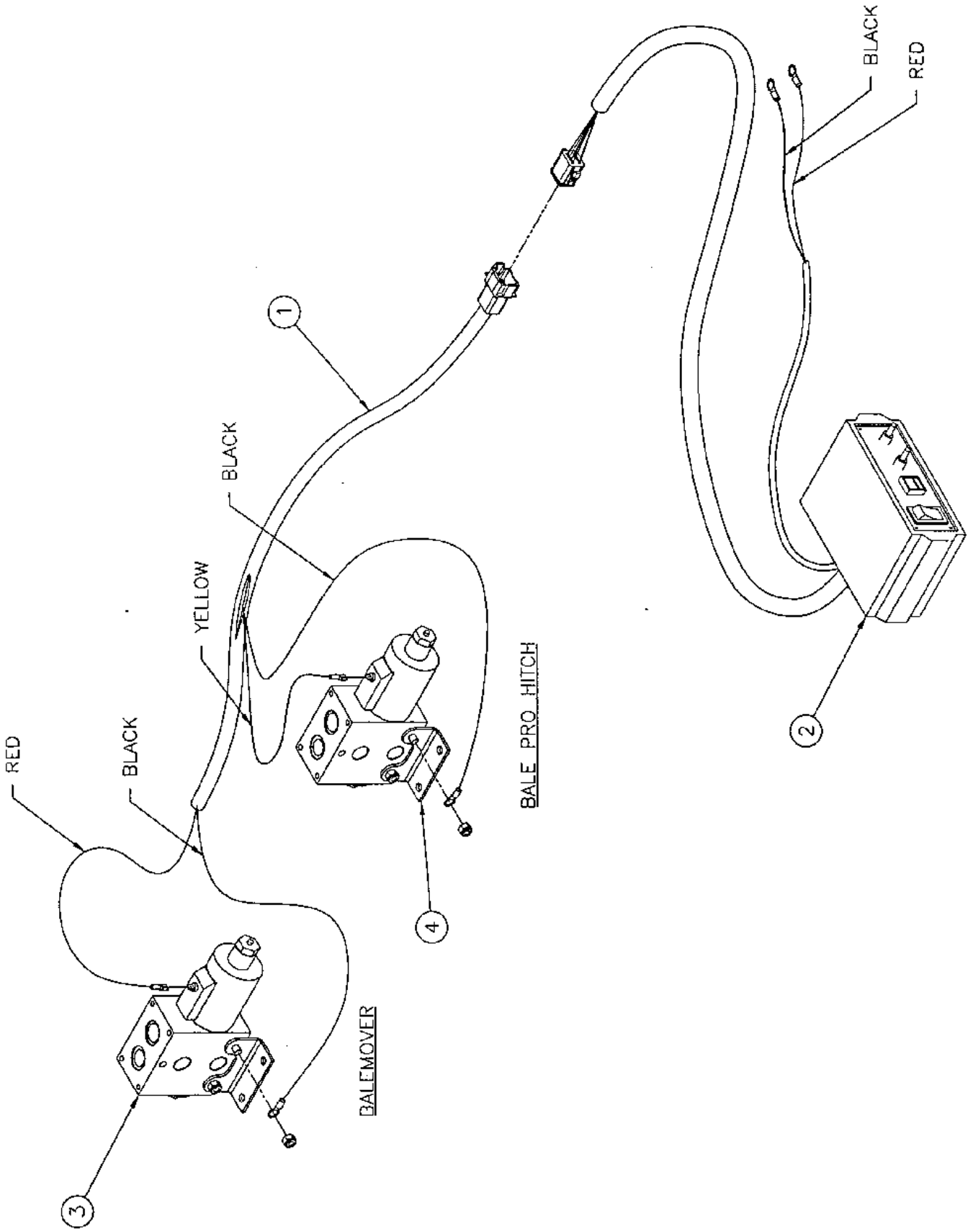
Item	Part No.	Description	Quantity
1	25007	Harness, Extension, BP Hitch	1
2	92073	Box, Control, BP Hitch (97)	1
3	92089	Valve, Bale mover	0
4	92089	Valve, BP Hitch	1

Note: Black wire from control box to tractor ground
Red wire from control box to tractor ignition accessory.



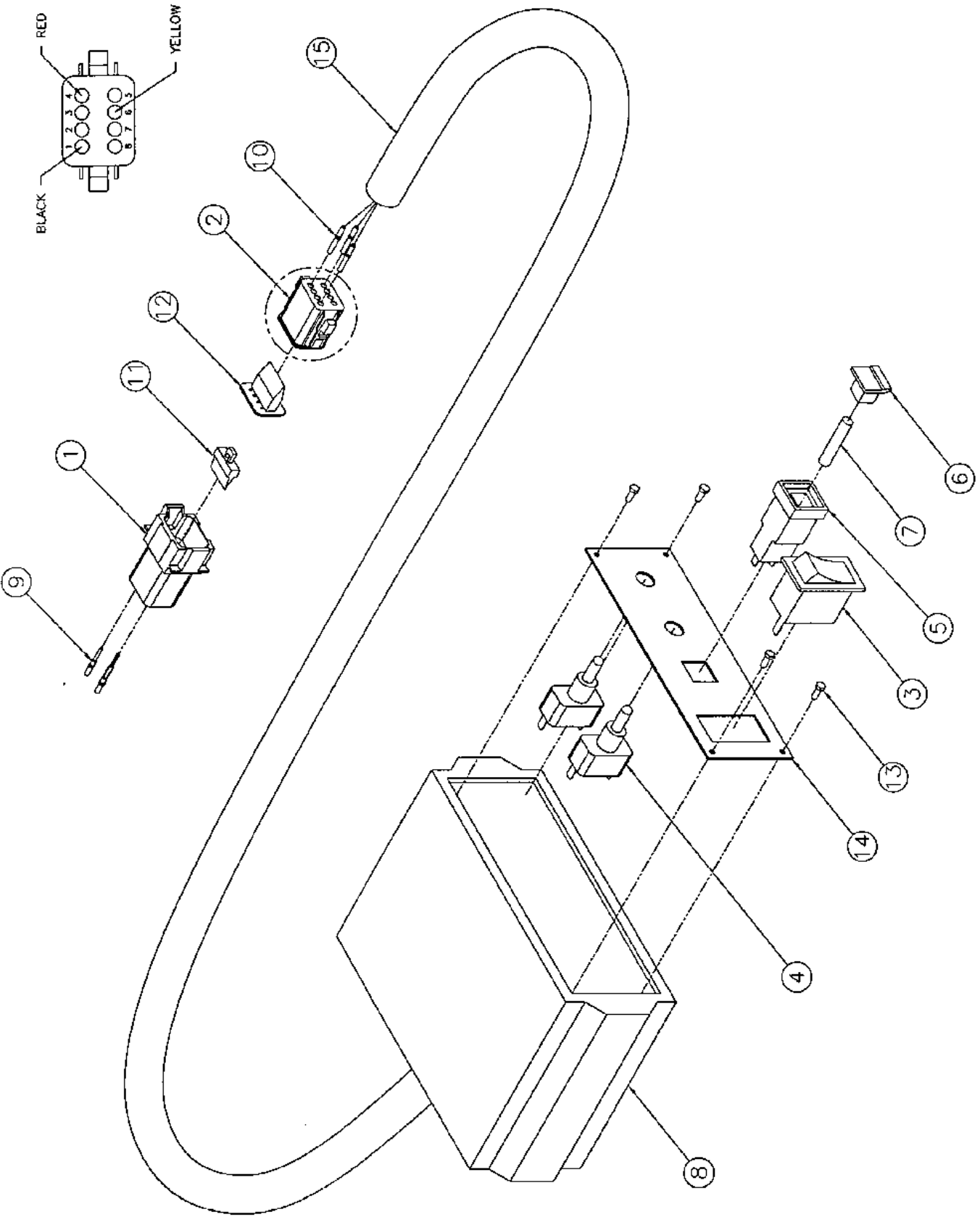
8.2 Control Box and Wiring Harness

Item	Part No.	Description	Quantity
1	92104	Electrical, Plug Male	1
2	92106	Electrical, Plug Female	1
3	92107	Switch, On/Off	1
4	92136	Switch, Toggle	2
5	92138	Fuse, Body	1
6	92139	Fuse, Cap	1
7	92140	Fuse, 20 Amp	1
8	92146	Enclosure, Plastic	1
9	92157	Pin, Male Plug	3
10	92158	Socket, Female Plug	3
11	92161	Wedge, Locking, Male Plug	1
12	92162	Wedge, Locking, Female Plug	1
13	92164	Screw, Tapping, #4 x 1/4	4
14	92220	Plate, Face, Box, Control	1
15		Wiring, Box, Control, 6 ft	1



8.2 Control Box and Wiring Harness

Item	Part No.	Description	Quantity
1	92104	Electrical, Plug Male	1
2	92106	Electrical, Plug Female	1
3	92107	Switch, On/Off	1
4	92136	Switch, Toggle	2
5	92138	Fuse, Body	1
6	92139	Fuse, Cap	1
7	92140	Fuse, 20 Amp	1
8	92146	Enclosure, Plastic	1
9	92157	Pin, Male Plug	3
10	92158	Socket, Female Plug	3
11	92161	Wedge, Locking, Male Plug	1
12	92162	Wedge, Locking, Female Plug	1
13	92164	Screw, Tapping, #4 x 1/4	4
14	92220	Plate, Face, Box, Control	1
15		Wiring, Box, Control, 6 ft	1



9.0 Specifications

Weight	Approximately 1,450 lbs (660 kg)
Total Length	16'9"
Total Width	3'4"
Total Height	5'4"
Ground Clearance	8"
Horsepower Required	90 Horsepower
Hydraulic Outlets	3
Hydraulic Pressure	2500 psi.(17240 KPa)