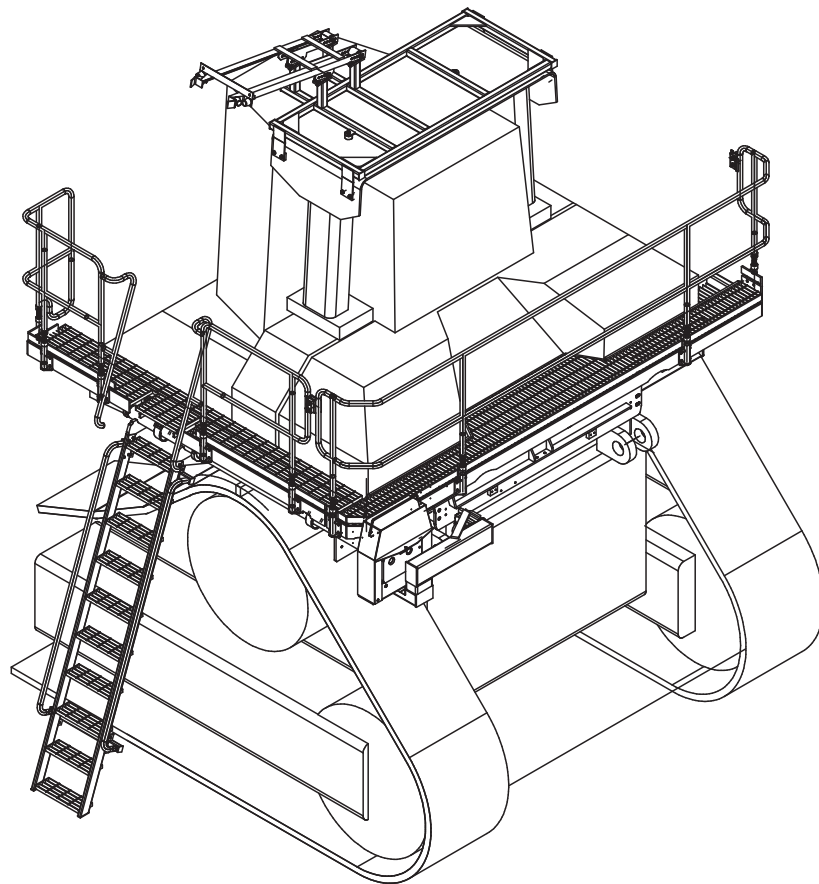


FOLDING LADDER



Manual for Cat D11N Dozer



Model No.PSA-CATD11N-FL
Serial No.:D11N-001 to D11N-005
Date Manufactured: 2006

FOLDING LADDER

Caterpillar D11N Dozer



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Installation and Mounting Instructions

See Drawings 22 150

NOTE

Follow all on-site/Mine lifting and safety procedures when installing Power Step Landings to Dozer.

Installation and Mounting Instructions

PROCEDURE

See Dwg 22 150

1. Remove cover plate at the back of the mudguards.
Remove Light and/or Horn from the rear of the left side mudguard.
Draw out wiring for future re-use.
2. Weld on Bolting Pads/Blocks as shown See details - Dwg 22150.
All these mounting pads have bevelled edges to clear existing welds in the corners.
3. Re-locate horn/s to suit.
4. Fit Spreader Plate **22 155** to rear mounting blocks. Use Washer Plates and washers under bolt heads - ensure maximum engagement of bolt threads in blind threaded holes. Washer Plates not shown in most views in this drawing.
5. Fit Isolator Brackets: **21 930**
Fit Side Landing Beam **22 970** with Ladder Shaft and Drive already assembled, supported by Isolators.
6. Fit Ladder. Using Spacers (within Actuator Cylinder Mounting **21 954**), adjust drive so gears are not loaded when ladder is lowered.
Clamp PROP Mtg Beams in position shown in View 1 and mount PROP **21 945**
Adjust position so that, with PROP attached to Isolators ladder gear drive is not loaded when ladder is fully raised. Attach PROP System Mounting Frame **22 153** atop cabin, on ROPS unless similar is already fitted by customer.
Weld Beams to Frame, 6cfw where visible from above.
7. Per Drawings Complete Assembly and PROP System.
8. Fit Rear Walkway. Fit also Rear Landing Handrail to Rear Landing. Weld Isolated Handrail Link to handrail/s to suit, left and right sides.
9. Grease the gears in the drive mechanism.

NOTES.

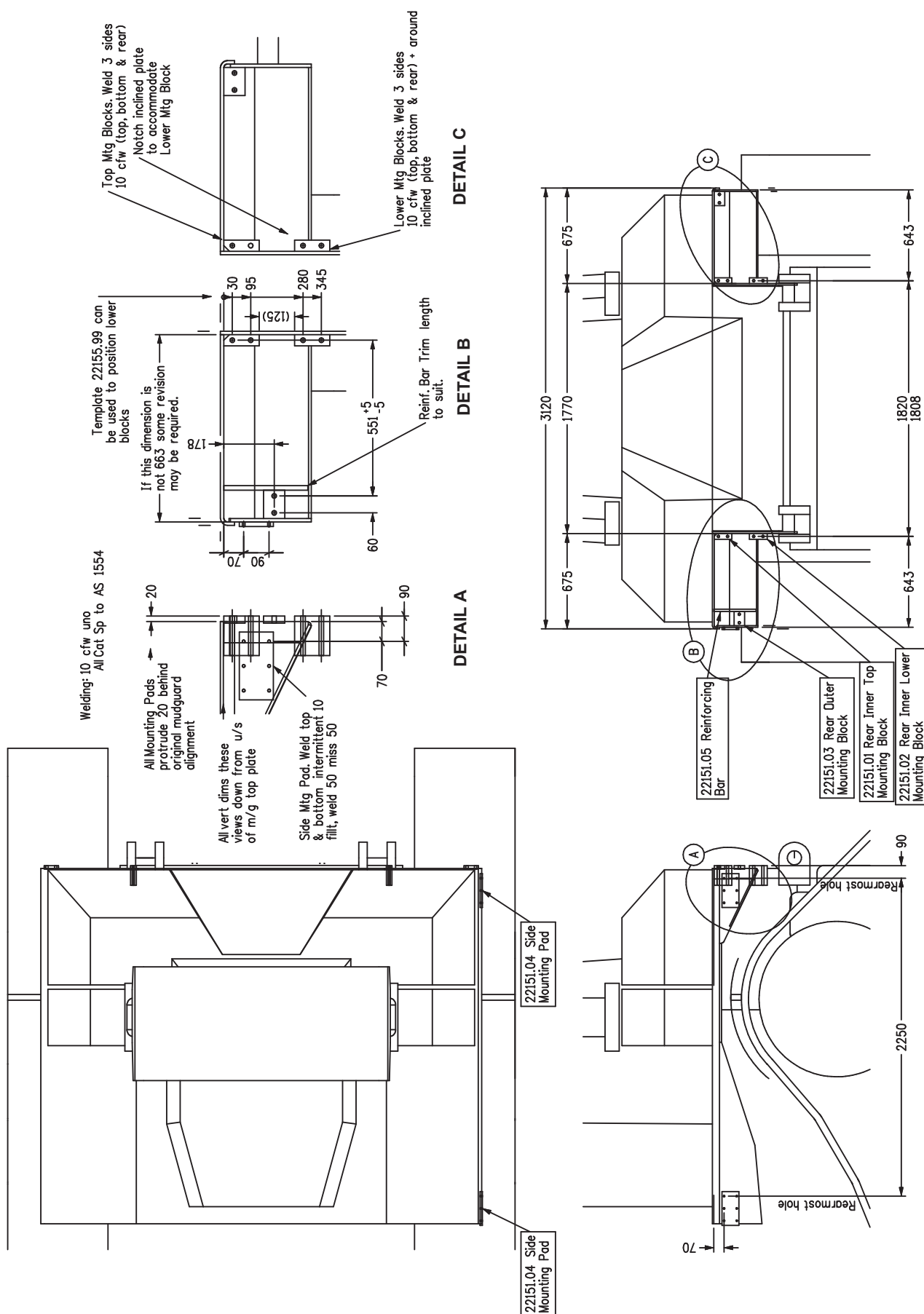
The drive, ladder stops and/or PROP system are to be adjusted so that in both the Ladder Up (Travel) position and Ladder Down (Climb) position, the actuator gears and cylinder are not loaded.

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Section 1 Installation Instruction Drawings - 22 150



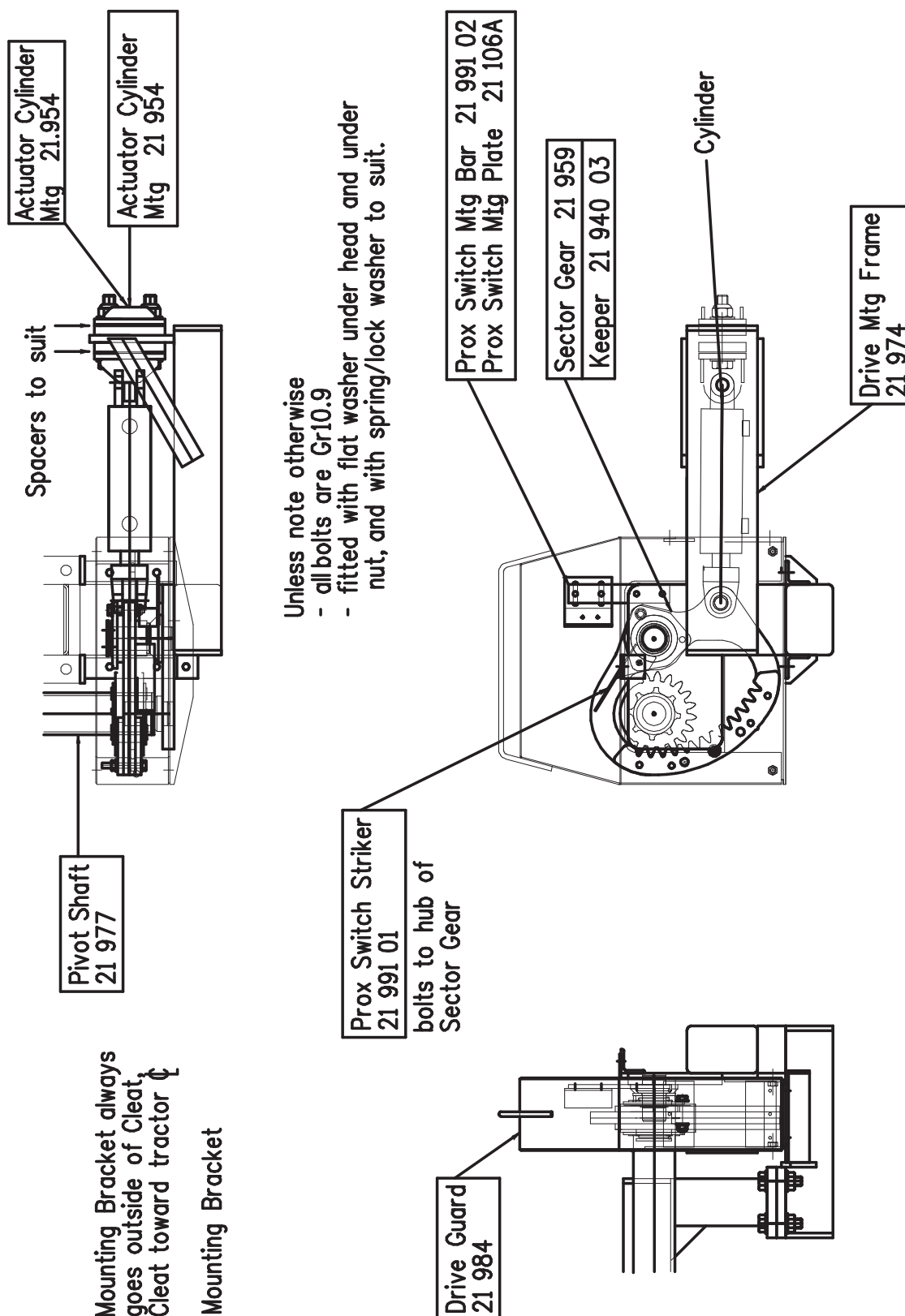
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Section 1 Installation Instruction Drawings - 22 158

Drive Arrangement



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Section 1 Installation and Mounting Instructions

Maintenance Notes

NOTE

Follow all on-site/Mine lifting and safety procedures when installing Power Step Landings to Dozer.

WARNING

Raising the POWER STEP Ladder by external means can create a vacuum in the hydraulic cylinder and create the opportunity to allow air into the hydraulic system, defeating the inherent safety features of the POWER STEP.

This must be avoided, to maintain safe operation of the POWER STEP.

In instances where the use of external means to raise the Ladder must be used, please follow the following instructions:

Loosen hard plumbed hydraulic lines on cylinder side of lock valve on cylinder.

Raise Ladder by available means.

Note: Make necessary arrangements to collect displaced oil, and be aware that air enters the piston side of the cylinder as platform is raised.

Lock in raised position.

Re-tighten hydraulic fittings.

SECURE THE LADDER IN THE RAISED POSITION, MECHANICALLY, CHAIN & TAGOUT THE POWER STEP

To recommission the POWER STEP:

Loosen hydraulic fittings on cylinder side of lock valve.

Note: Collect displaced oil.

Lower Ladder to lowest position, using alternate safety approved means, fully retracting cylinder. Ensure all personnel are clear of step radius.

Operate electrical control switch to purge air from the hydraulic line systems, lock valve and cylinder.

Tighten the hydraulic fittings either side of lock valve to restriction fitting.

Cycle step unloaded several times to purge all air from hydraulic system.

The Power Step will not operate correctly if there is any air in the hydraulic circuit (due to the incorrect operation of the lock valve).

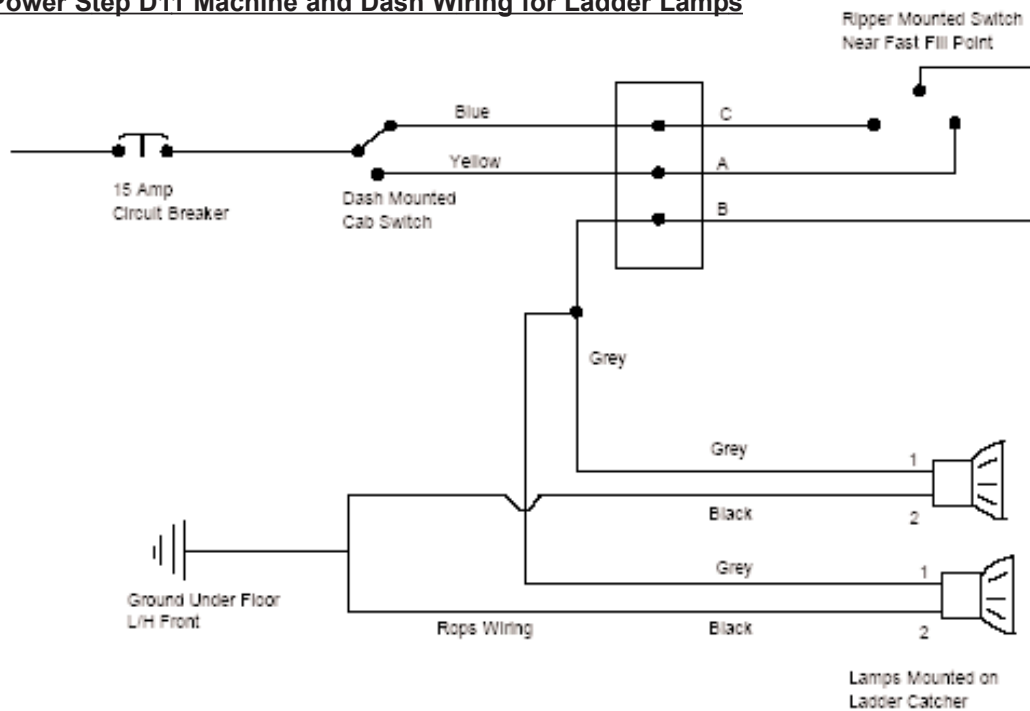
FOLDING LADDER

Caterpillar D11N Dozer

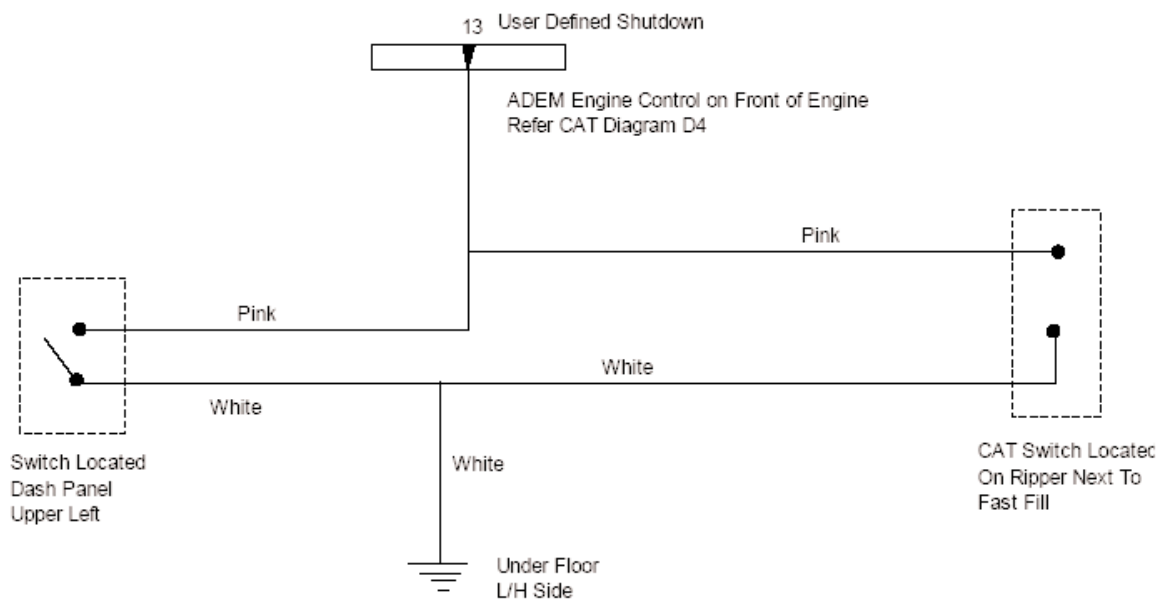


Section 2 Electrical System - Wiring Diagrams Page 1

Power Step D11 Machine and Dash Wiring for Ladder Lamps



Power Step D11 Shutdown Circuit

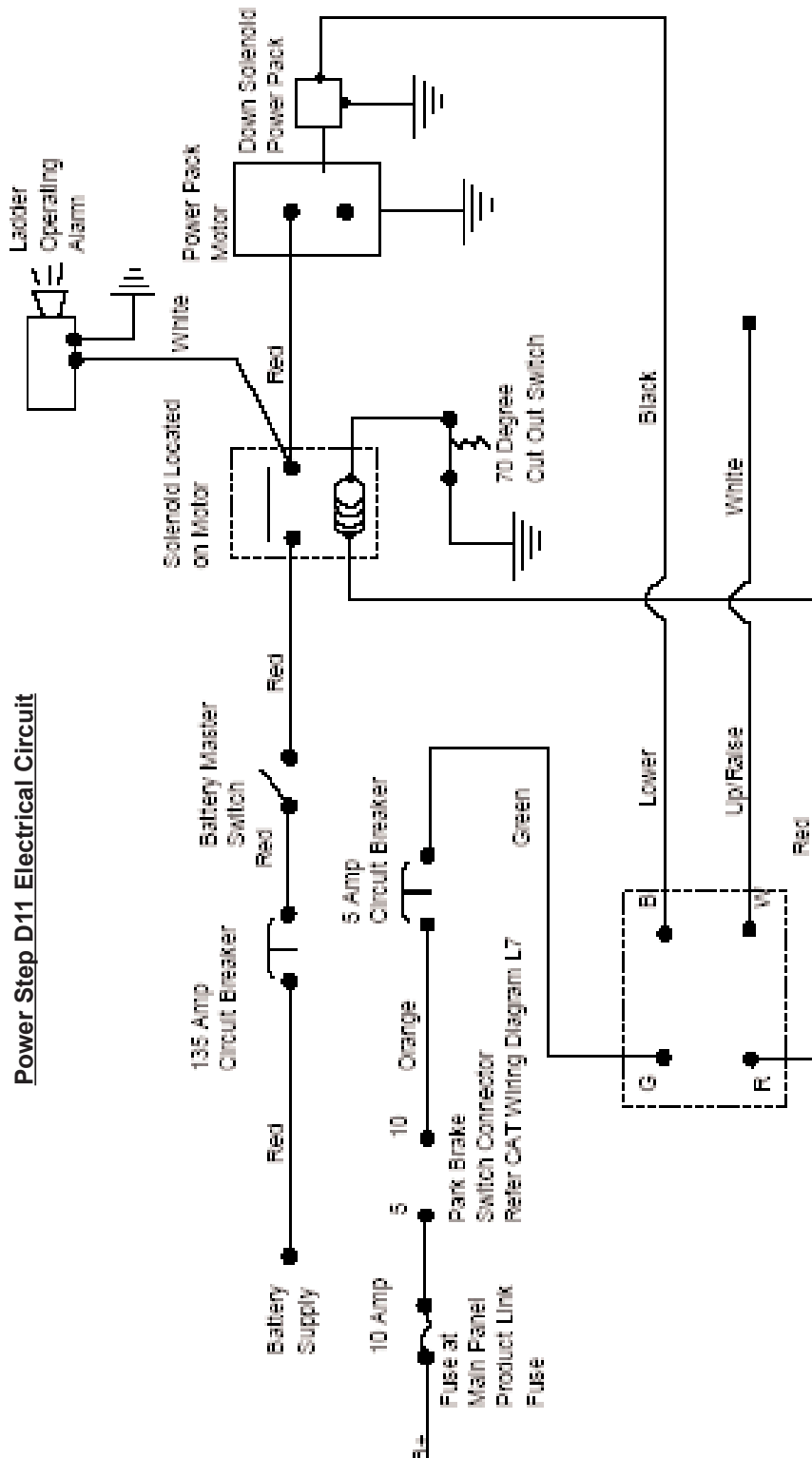


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Section 2 Electrical System - Wiring Diagram Page 2



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Section 3 Recommended Maintenance Procedure

Daily

Visually check stairway and structure for damage, loose components, handrails, etc.

Check for hydraulic oil leaks from hydraulic cylinders, plumbing and hoses.

Notify the appropriate supervisor for any observed damage or malfunction.

500 Hours

Grease the nipples on the rotation shaft and sector gears.

Check main mounting bolts for torque.

Check hydraulic oil level in power pack and top up as necessary. (Stairway in raised position).

Top up using same hydraulic oil as used in hydraulics of machine.
Thoroughly check all electrical wiring for damage, replace as necessary.

Repeat daily check as above

5000 Hours

Change hydraulic oil in tank of hydraulic power pack (5.0 litres)

It is recommended that the same hydraulic oil be used in the power pack as the hydraulics of the machine.

Grease 4 grease nipples on rotation shaft and sector gears, all of these are accessible with the stairway lowered, and accessed from under the stairway.

Check and inspect all main bolts on stairway system.
Retorque if required.

Repeat daily check as above

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Section 4 Operating Procedure

To Lower Ladder (from the machine)

Position machine in a level, safe area, away from the work face, whenever possible.

Apply park brake and lower engine speed to idle.

Check that the area below the Ladder Access System is clear of people and obstacles, and lower ladder by operating the two position electrical switch adjacent to the ladder, to the down position by pressing the switch down.

Hold the switch in the down position until ladder is fully lowered.

If the Dozer is parked on uneven ground, the bottom of the stairway may touch the ground before the ladder is in the fully lowered position.

Should this occur, descend the ladder with caution.

To Raise Ladder

Ascend the ladder onto the landing of the Dozer.

Ensure the area around the ladder is clear of people and standing to the side, clear of the area the handrails and ladder raises into, operate the electrical switch to the raise position (up).

Hold the switch in the up position until the ladder is in the fully raised position.

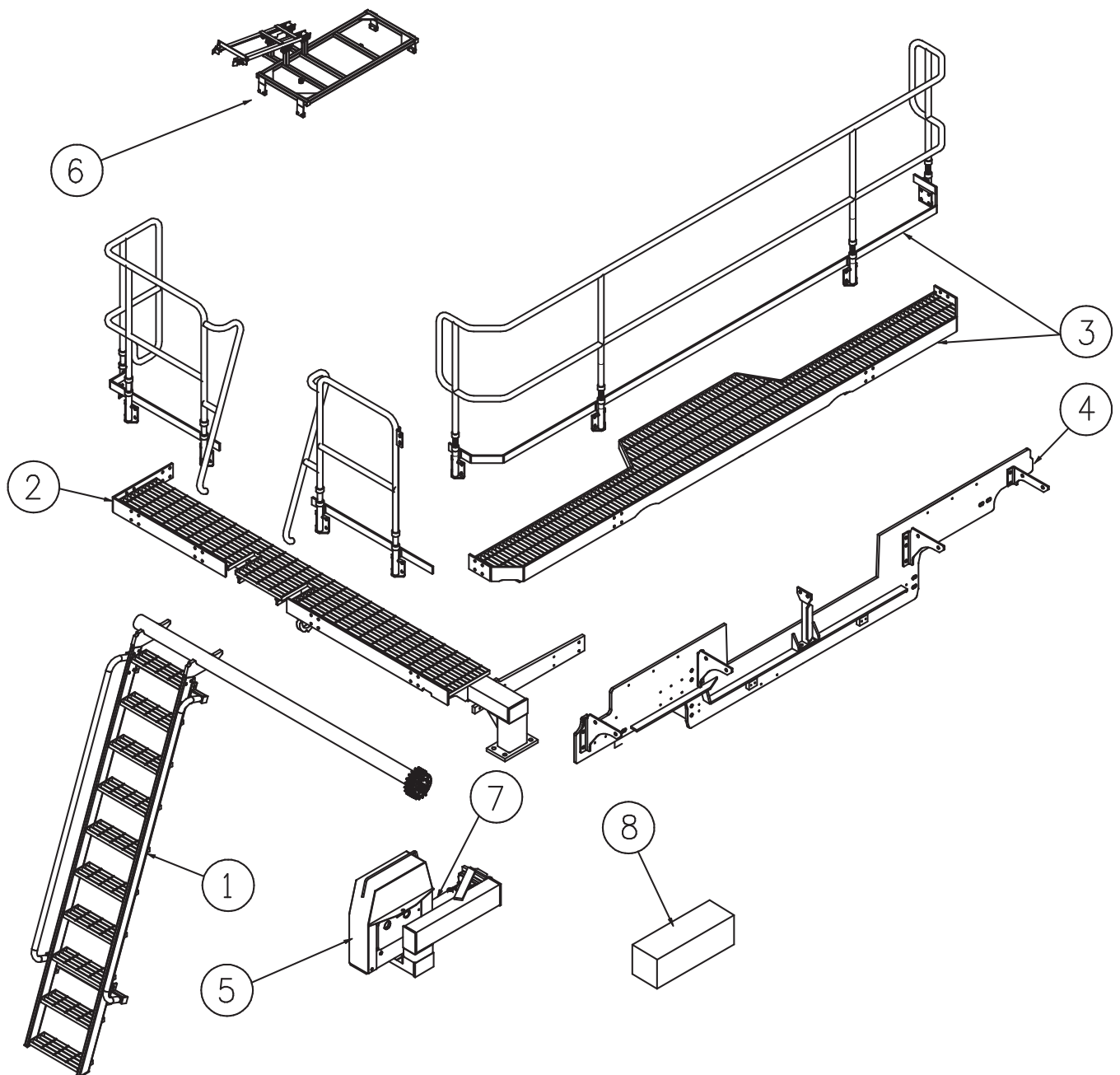
The ladder is now raised and stored.

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Section 5 Assembly Complete

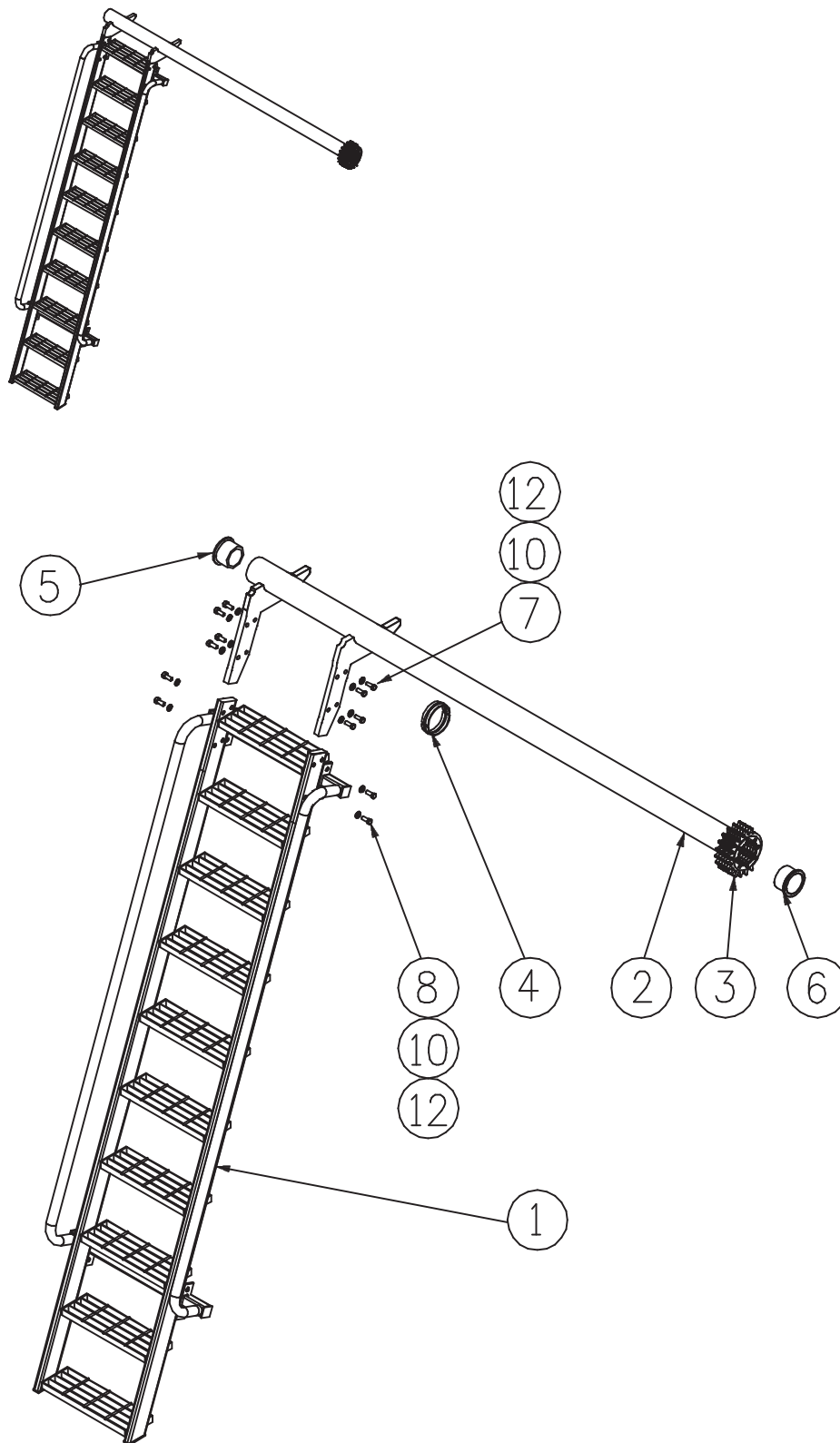


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Section 5-1 Ladder Assembly



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Section 5-1 Ladder Assembly

See Drawing Page 12

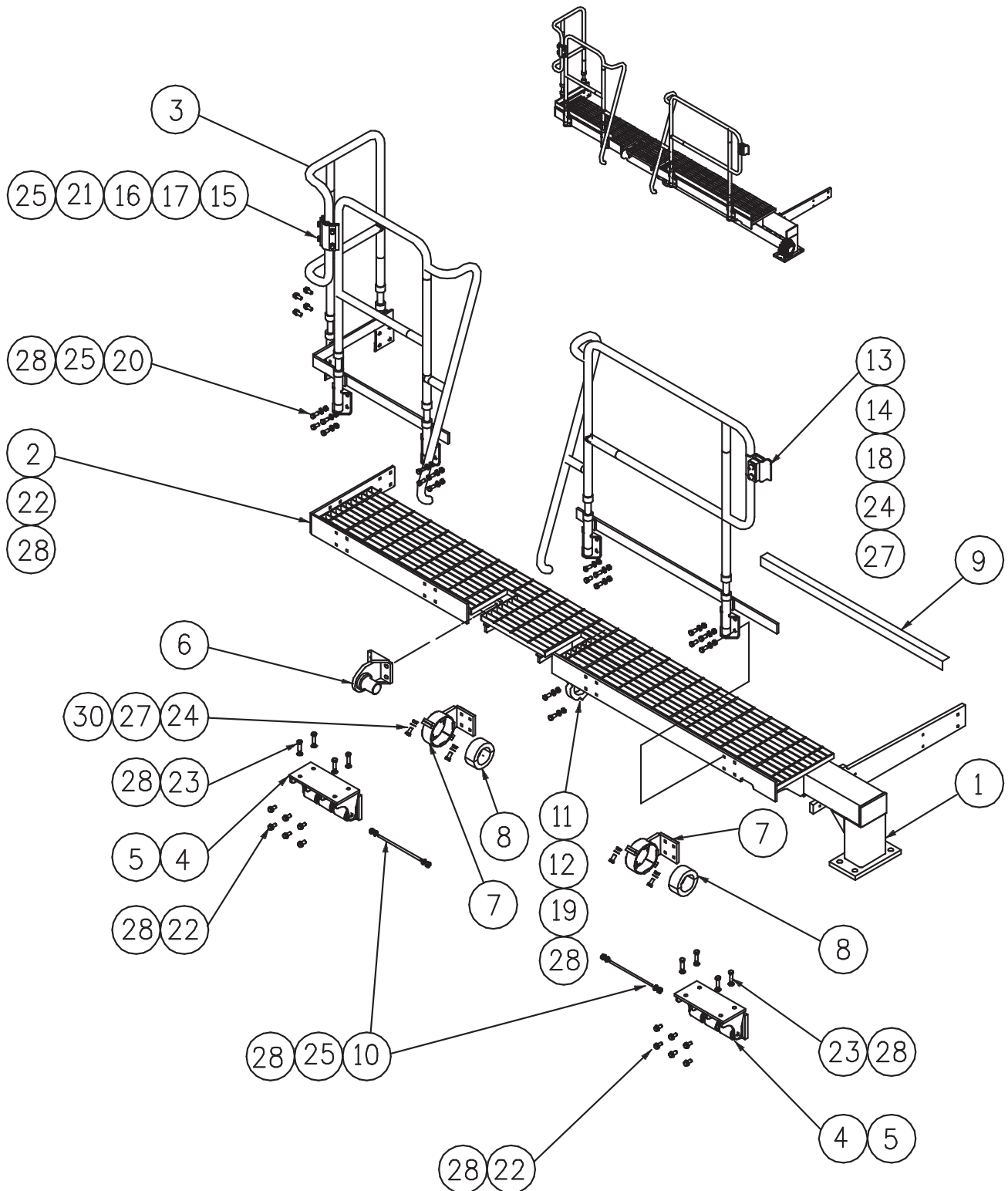
Item	Part No.	Part Name	Qty		
1	PS-21924	LADDER & HANDRAIL FABRICATION	1		
2	PS-21977	ROTATION SHAFT	1		
3	PS-21958	PINION ASSEMBLY	1		
4	PS-21926-01	LADDER SHAFT PIVOT BUSH-MIDDLE	1		
5	PS-21926-02	LADDER SHAFT PIVOT BUSH-NON DRIVE END	1		
6	PS-21926-03	LADDER SHAFT PIVOT BUSH- DRIVE END	1		
7	CPS-M12X50ZP	BOLT-M12 x 50	8		
8	CPS-M12X20ZP	BOLT-M12 x 20	8		
9	CPS-M12NZP	NUT-M12	8		
10	CPS-M12NZP	WASHER-M12	8		

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Section 5-2 Landing Assembly LHS. 22 784A



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Section 5-2 Landing Assembly LHS.

See Drawing Page 14

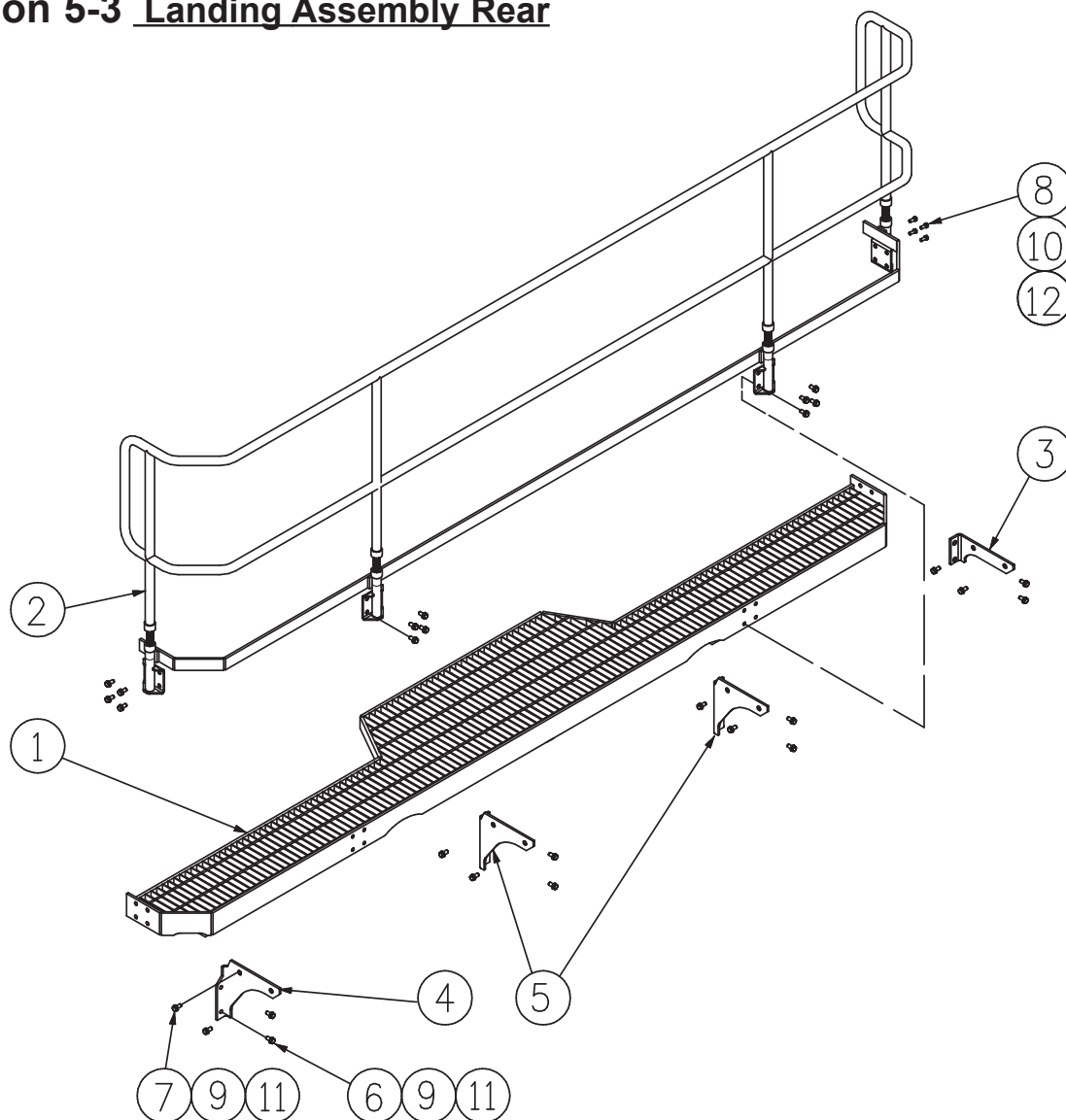
Item	Part No.	Part Name	Qty		
1	PS-21970	LANDING BEAM	1		
2	PS-22786	LANDING FLOOR	1		
3	PS-22787A	HANDRAIL (2 piece Handrail LH-FT & LH-RR)	1		
4	PS-21932	ISOLATOR PIN BRACKETS	2		
5	PS-21930	ISOLATOR MOUNTINGS	6		
6	PS-21976	FRONT PIVOT PIN BRACKET	1		
7	PS-21941-02	ANTI VIBRATION BEARING	2		
8	PS-21941-06	RUBBER BUSH	2		
9	PS-23176	FLOORING EXTENSION	1		
10	PS-21933	ISOLATOR BUSH PIN	2		
11	PS-21925	MIDDLE BEARING MOUNTING	1		
12	PS-21926	PIVOT BUSHES	1		
13	PS-22005-01	ISOLATED HANDRAIL LINK	2		
14	PS-22005-03/02	ISOLATOR RUBBER/CLAMP	2		
15	PS-22789-01	MOUNTING BAR	2		
16	PS-22789-02	CLAMP BAR	2		
17	PS-22789-03	ISOLATOR ELEMENT	1		
18	CPS-M12X75ZP	BOLT-M12 x 75	2		
19	CPS-M12X65ZP	BOLT-SOCKET HEAD-M12 x 65	2		
20	CPS-M12X40ZP	BOLT-M12 x 40	20		
21	CPS-12X40ZP	BOLT-M12 x 35	4		
22	CPS-M12X30ZP	BOLT-M12 x 30	16		
23	CPS-M12X25ZP	BOLT-M12 x 25	12		
24	CPS-M8X35ZP	BOLT-M8 x 35	8		
25	CPS-M12NZP	NUT-M12	30		
26	CPS-1/2"NN	NUT-NYLOC-1/2"UNC	4		
27	CPS-M8NN	NUT-NYLOC-M8	8		
28	CPS-M12WH	WASHER-HARDENED-M12	52		
29	CPS-1/2"WH	WASHER-HARDENED-1/2"	4		
30	CPS-M8WH	WASHER-HARDENED-M8	8		

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Section 5-3 Landing Assembly Rear



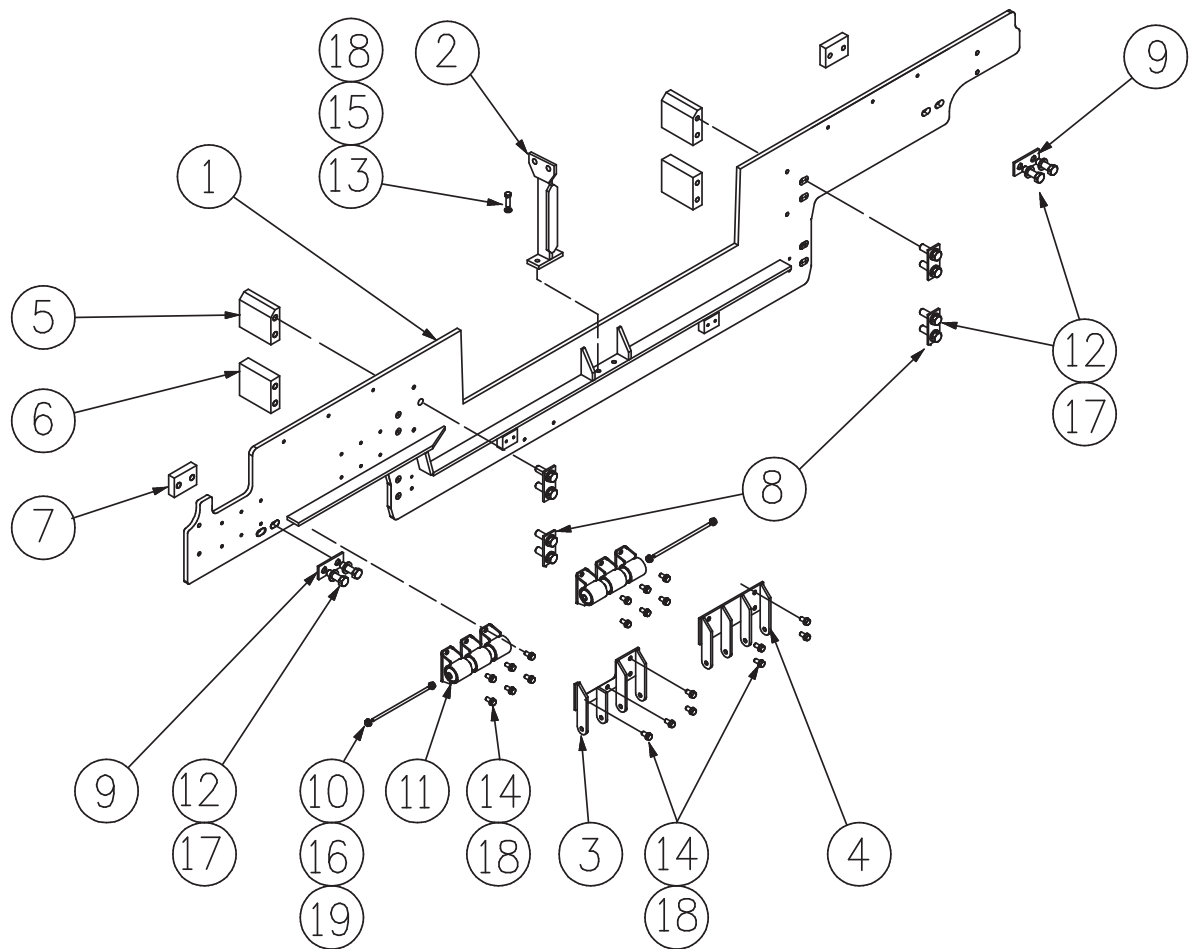
Item	Part No.	Part Name	Qty		
1	PS-22156	LANDING PLATFORM	1		
2	PS-22157	HANDRAILS- REAR	1		
3	PS-22154-96	REAR LANDING BRACKET-OUTER-RHS	1		
4	PS-22154-97	REAR LANDING BRACKET-OUTER-LHS	1		
5	PS-22154-98/99	REAR LANDING BRACKETS - INNER	2		
6	CPS-M16X50ZP	BOLT-M16 x 50	8		
7	CPS-M16X30ZP	BOLT-M16 x 30	8		
8	CPS-M12X40ZP	BOLT-M12 x 40	16		
9	CPS-M16NZP	NUT-M16	8		
10	CPS-M12NZP	NUT-M12	16		
11	CPS-M16WH	WASHER-HARDENED-M16	16		
12	CPS-M12WH	WASHER-HARDENED-M12	16		

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Section 5-4 Spreader Assembly



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Section 5-4 Spreader Assembly

See Drawing Page 17

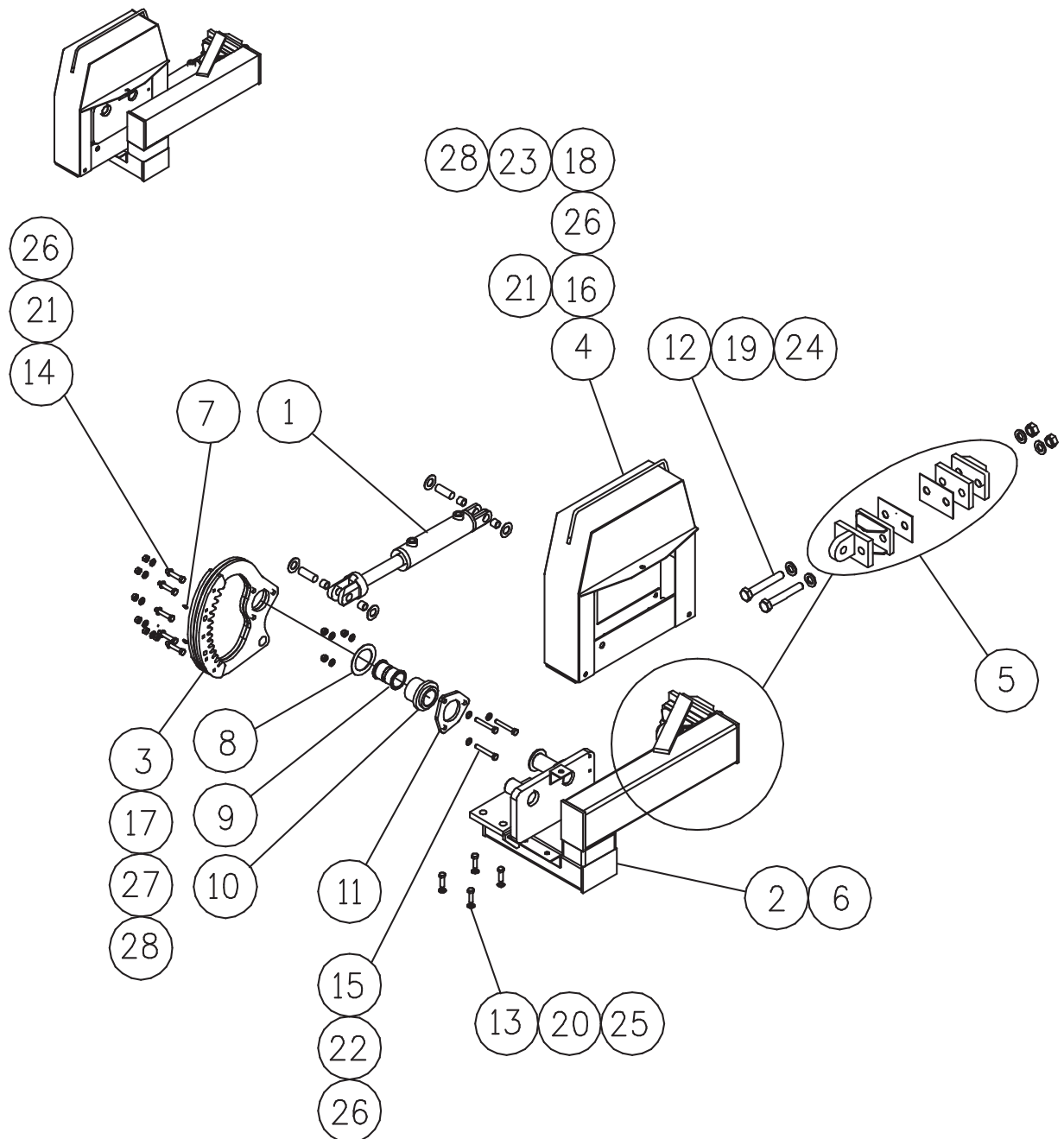
Item	Part No.	Part Name	Qty		
1	PS-22155	SPREADER	1		
2	PS-21929	REAR LANDING POST	1		
3	PS-21931-98	ISOLATOR PIN BRACKET-OUTER-LHS	1		
4	PS-21931-99	ISOLATOR PIN BRACKET-INNER	1		
5	PS-22785 01	REAR INNER MOUNTING BLOCK-UPPER	2		
6	PS-22785 02	REAR INNER MOUNTING BLOCK-LOWER	2		
7	PS-22785 03	REAR OUTER MOUNTING BLOCK	2		
8	PS-22785 05	WASHER PLATES	4		
9	PS-22785 06	WASHER PLATES	2		
10	PS-21933	ISOLATOR BUSH PIN	2		
11	PS-21930	ISOLATOR MOUNTING	6		
12	CPS-M20X60ZP	BOLT-M20 x 60	12		
13	CPS-M12X40ZP	BOLT-M12 x 40	4		
14	CPS-M12X25ZP	BOLT-M12 x 25	20		
15	CPS-M12NZP	NUT-M12	4		
16	CPS-1/2"NN	NUT-NYLOC-1/2" UNC	4		
17	CPS-M20WH	WASHER-HARDENED-M20	12		
18	CPS-M12WH	WASHER-HARDENED-M12	24		
19	CPS-1/2"WH	WASHER-HARDENED-1/2"	4		

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Caterpillar D11N Dozer



Section 5-5 Drive Unit Assembly



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Section 5-5 Drive Unit Assembly

See Drawing Page 19

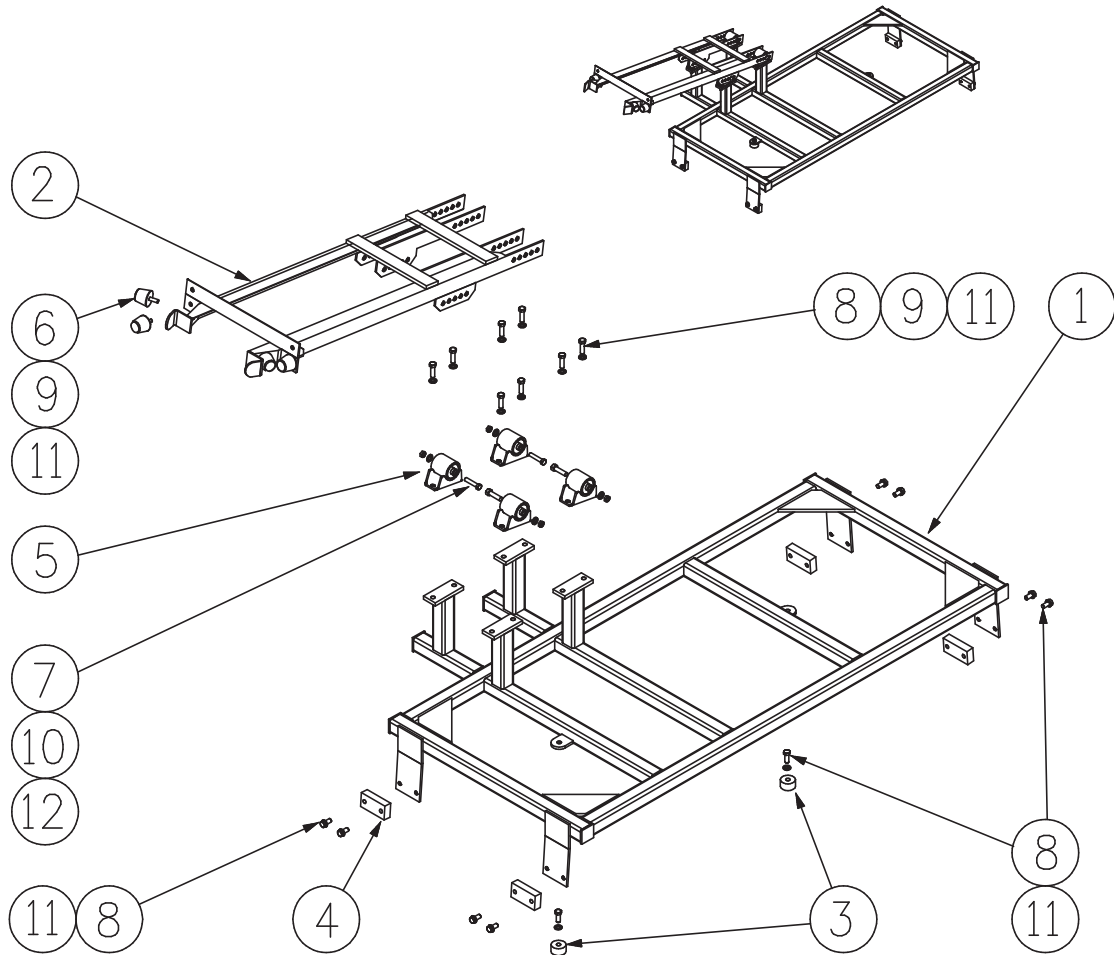
Item	Part No.	Part Name	Qty		
1	PS-63014	HYDRAULIC CYLINDER	1		
2	PS-21974	DRIVE MOUNTING FRAME	1		
3	PS-21959	SECTOR GEAR	1		
4	PS-21984	DRIVE GUARD	1		
5	PS-21954	ACTUATOR CYL. MOUNTING ASSEMBLY	1		
6	PS-21991	PROXIMITY SWITCH PLATES	1		
7	PS-61006-2	GREASE NIPPLE M6 STR.	2		
8	PS-21940-03	PIVOT PIN KEEPER PLATE	1		
9	PS-21959-09	SECTOR GEAR BUSH	2		
10	PS-21959-08	SECTOR GEAR HUB	1		
11	PS-21959-05	CLAMP RING	1		
12	PS-M24X150ZP	BOLT-M24 x 150	2		
13	CPS-20X65ZP	BOLT-M20 x 65	4		
14	CPS-M12X80ZP	BOLT-M12 x 80	5		
15	CPS-M12X65ZP	BOLT-M12 x 65	3		
16	CPS-M12X25ZP	BOLT-M12 x 25	9		
17	CPS-M10X15ZP	BOLT-M10 x 15	4		
18	CPS-M5X15ZP	BOLT-M5 x 15	6		
19	PS-M24XNN	NUT-NYLOC-M24	2		
20	PS-M20NZP	NUT-M20	4		
21	CPS-M12NZP	NUT-M12	14		
22	CPS-M12NN	NUT-NYLOC-M12	3		
23	CPS-M5NN	NUT-NYLOC-M5	6		
24	CPS-M24WH	WASHER-HARDENED-M24	2		
25	CPS-M20WH	WASHER-HARDENED-M20	4		
26	CPS-M12WH	WASHER-HARDENED-M12	17		
27	CPS-M10WH	WASHER-HARDENED-M10	4		
28	CPS-M5WH	WASHER-HARDENED-M5	6		

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Section 5-6 PROP Assembly



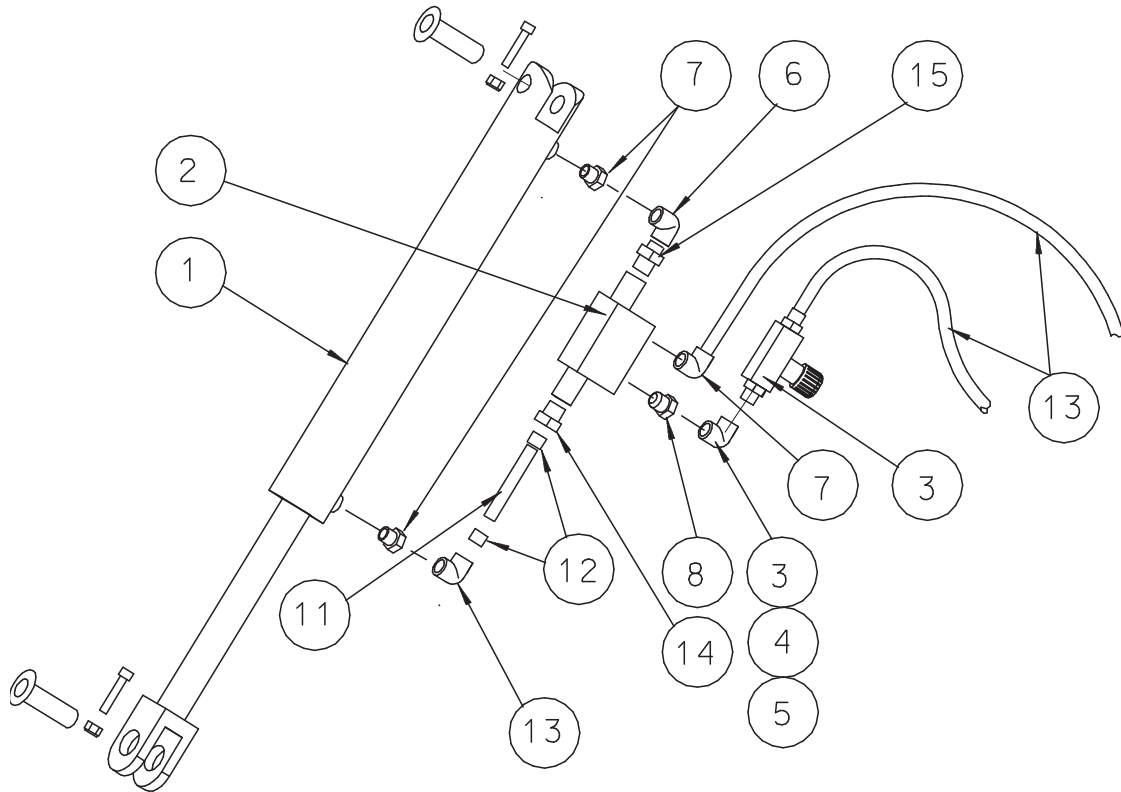
Item	Part No.	Part Name	Qty		
1	PS-23153	PROP MOUNTING FRAME	1		
2	PS-21945	PROP	1		
3	PS-22153-16	ROOF BUTTON	2		
4	PS-22153-14	BOLTING PAD	4		
5	PS-21930	ISOLATOR MOUNTING	4		
6	PS-40003	BUFFER	4		
7	CPS-1/2"UNC	ISOLATOR PIN 1/2" x 4.5"	4		
8	CPS-M12X25ZP	BOLT-M12 x 25	18		
9	CPS-M12NZP	NUT-M12	12		
10	CPS-1/2"NN	NUT-NYLOC-1/2" UNC	8		
11	CPSM12WH	WASHER-HARDENED-M12	22		
12	CPS-1/2"WH	WASHER-HARDENED-1/2"	8		

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Caterpillar D11N Dozer



Section 5-7 Hydraulic Cylinder



Item	Part No.	Part Name	Qty		
1	PS-63014	HYDRAULIC CYLINDER	1		
-	PS-63011K	SEAL KIT (NOT SHOWN)	1		
2	PS-63201	VALVE - PILOT OPERATED LOCKING	1		
3	PS-63202	FLOW CONTROL VALVE	1		
4	PS-63202B	FITTING - JIC NIPPLE	1		
5	PS-63202C	FITTING- JIC SWIVEL	1		
6	PS-61159	FITTING - ELBOW-9/16" JIC	1		
7	PS-61154	FITTING - ELBOW- O RING 1/4BSPPx9/16" JIC	1		
8	PS-61157	FITTING - O RING 1/4BSPPx 9/16" JIC	2		
9	PS-61158-0.30	FITTING - 0.030" RESTRICTION 90 DEG	2		
10	PS61163	REDUCER JIC x BSPP	2		
11	PS-61163	TUBE	2		
12	PS-60031-FT	FERRULES	2		
13	PS-60051-2.8	HOSE- HYDR. (9/6" JIC SWIVEL FITTING 2.8M)	2		
14	PS-61156-1MM	FITTING - 1MM RESTRICTION 90 DEG	2		
15	PS-61145	FITTING 9/16 JIC SWIVEL	1		

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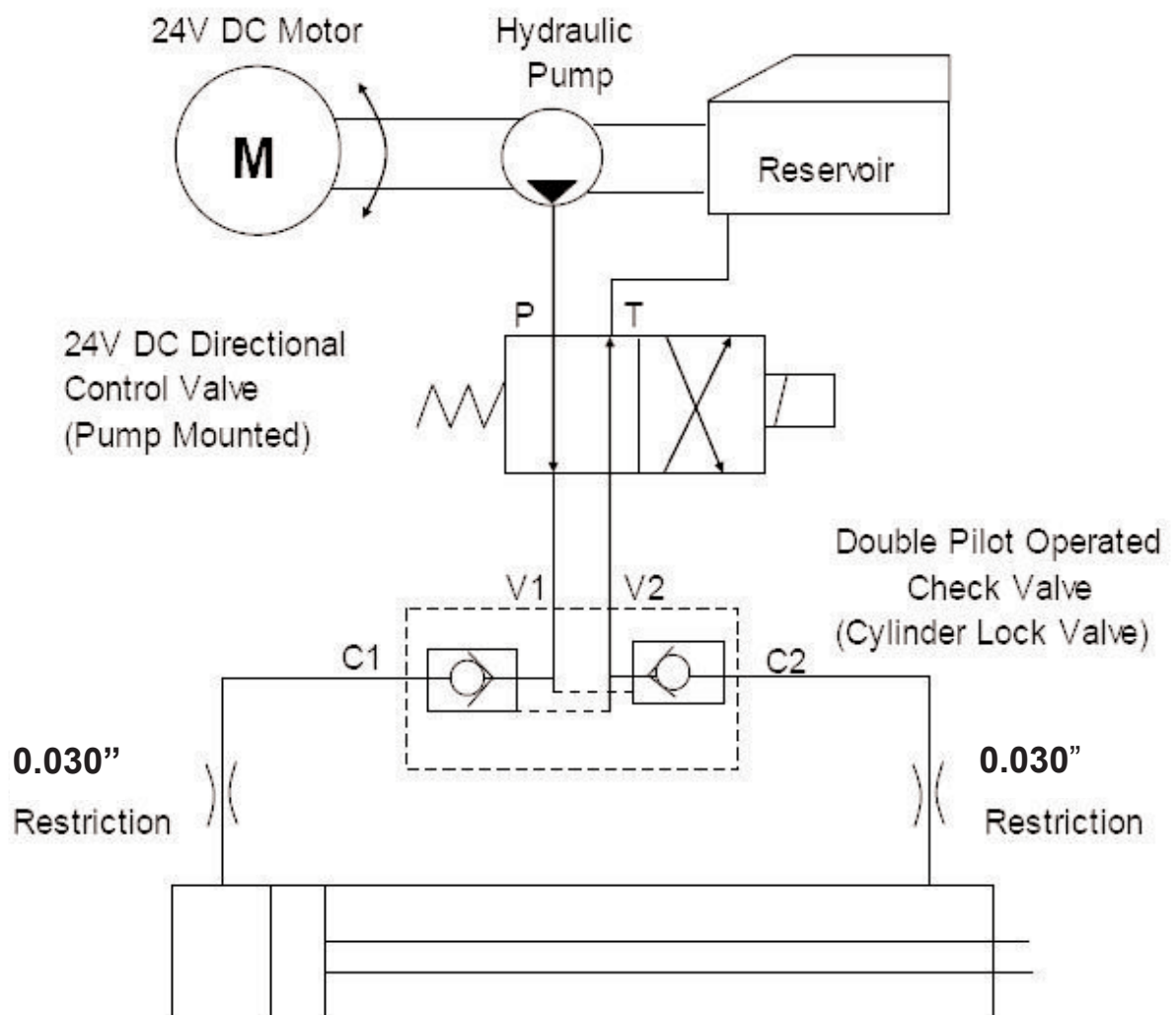
Caterpillar D11N Dozer



Section 5-7 Hydraulic Cylinder

See also Drawing page 22

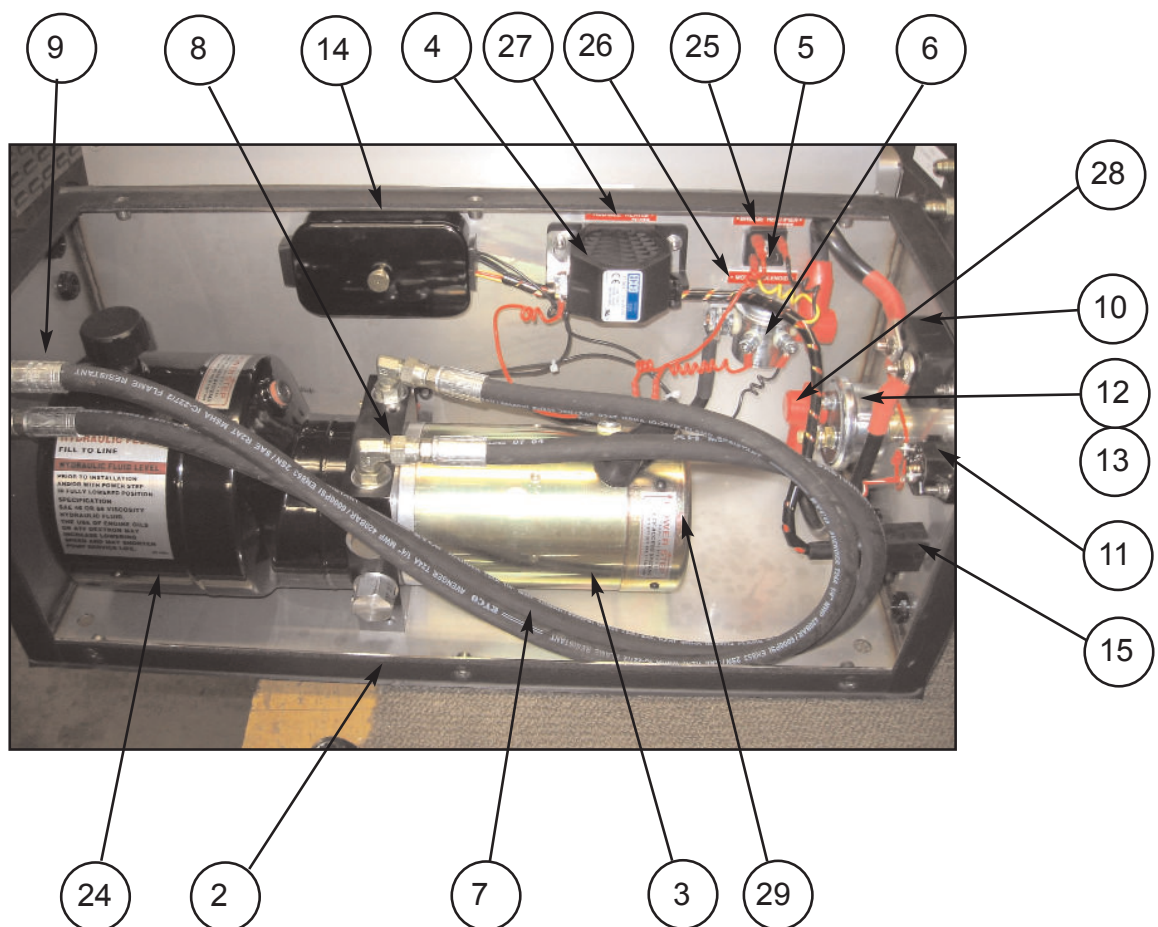
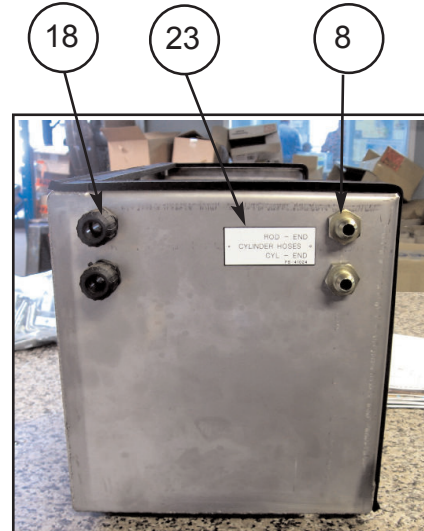
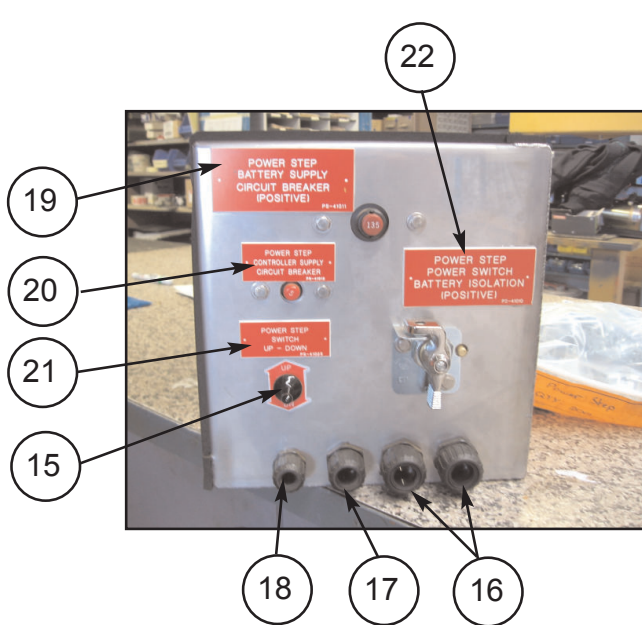
Double Acting Hydraulic System with
directional Control Valve and Cylinder
Lock Valve



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Section 5-8 Power Pack



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Section 5-8 Power Pack

See Photo Page 24

Item	Part No.	Part Name	Qty		
1	PS-80103A-SS	POWER PACK ASSEMBLY (Incl. Items.2-11)	1		
2	PS-21107SS	MOTOR ENCLOSURE- SEALED ST/ST	1		
3	PS-80103A	POWER PACK	1		
4	PS-75024	AUDIBLE ALARM	1		
5	PS-84214	BRIDGE RECTIFIER	1		
6	PS-82402	SOLENOID	1		
7	PS-60050-900MM	HYDR. HOSES 9/16"JIC STRAIGHT SWIVEL	2		
8	PS-61152	HYDRAULIC FITTING	2		
9	PS-61177	HYDRAULIC FITTING	2		
10	PS-84213	135A CIRCUIT BREAKER	1		
11	PS-84212	5A CIRCUIT BREAKER	1		
12	PS-84303	ISOLATION SWITCH	1		
13	PS-84303-B	ISOLATION SWITCH BRACKET	1		
14	PS-1712080	SEALED WIRING BOX	1		
15	PS-73012	TOGGLE SWITCH KIT	1		
16	CPS-CAB20M20	WIRE HARNESS GLAND	2		
17	CPS-CAB16M20	WIRE HARNESS GLAND	1		
18	CPS-CAB12M16	WIRE HARNESS GLAND	3		
19	PS-41011	DECAL ELECTRICAL- 135Amp CB	1		
20	PS-41012	DECAL ELECTRICAL-5 Amp CB	1		
21	PS-41023	DECAL ELECTRICAL-Up/Down Switch	1		
22	PS-41010	DECAL ELECTRICAL- Isolation S/W	1		
23	PS-41024	DECAL HYDRA-HOSES	1		
24	PS-41041	DECAL OIL TANK	1		
25	PS-41019	DECAL SOLENOID	1		
26	PS-41017	DECAL BRIDGE RECTIFIER	1		
27	PS-41018	DECAL ALARM	1		
28	PS-73010	RUBBER BOOT RED	3		
29	PS-73009	RUBBER BOOT BLACK	1		

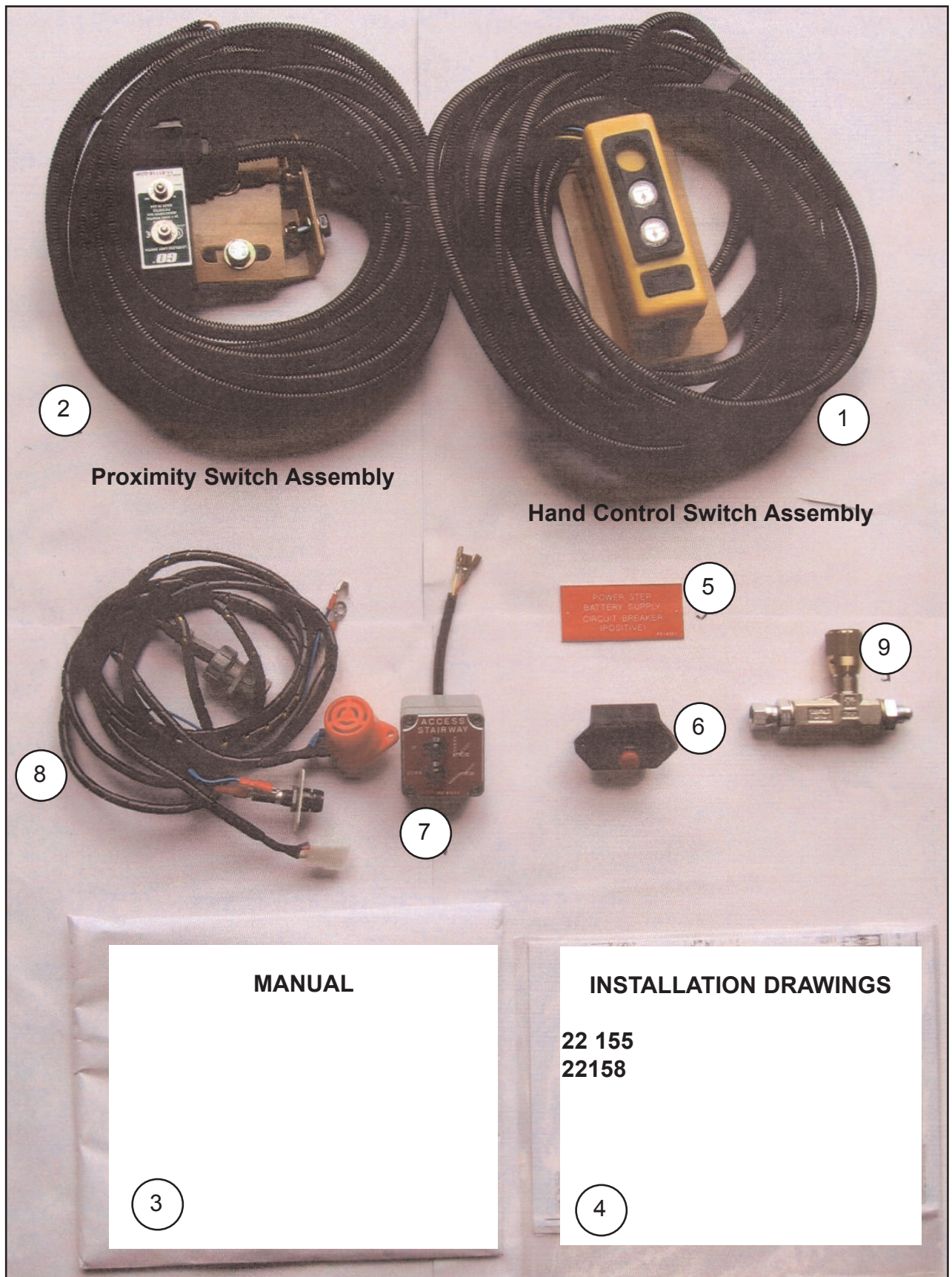
FOLDING LADDER

Caterpillar D11N Dozer



Section 5-9 Electrical Controls

Refer also Wiring Drawings Page 7 & 8.



FOLDING LADDER

Caterpillar D11N Dozer



Section 5-9 Electrical Controls

Refer also Wiring Drawings Page 7 & 8.

See Photo Page 26

Item	Part No.	Part Name	Qty		
1	PS-73013	HAND CONTROL SWITCH ASSEMBLY	1		
-	PS-73013B	BRACKET	1		
-	PS-73005	HARNESS	1		
			1		
2	PS-75430	PROXIMITY SWITCH ASSEMBLY	1		
-	PS-75430A	BRACKET	1		
-	PS-75430B	BRACKET	1		
-	PS-75402	HARNESS	1		
3	-	MANUALS	1		
4	-	INSTALLATION DRAWINGS	-		
5	PS-41011	DECAL FOR 135A CIRCUIT BREAKER	1		
6	PS-84213	135A CIRCUIT BREAKER	1		
7	PS-76001	CONTROL BOX	1		
8	PS-77003	CONTROL BOX HARNESS	1		
9	PS-63202	FLOW CONTROL VALVE	1		
10	PS-60051-2.8M	HYDRAULIC HOSES	1		
11	PS-21107-SS	ENCLOSURE-ST. STEEL(for Power Pack)	1		

WARNING

**LOW OR FAULTY BATTERIES WILL VOID
WARRANTY ON THE POWER PACK AND ALL
ELECTRICAL SWITCHES AND COMPONENTS**