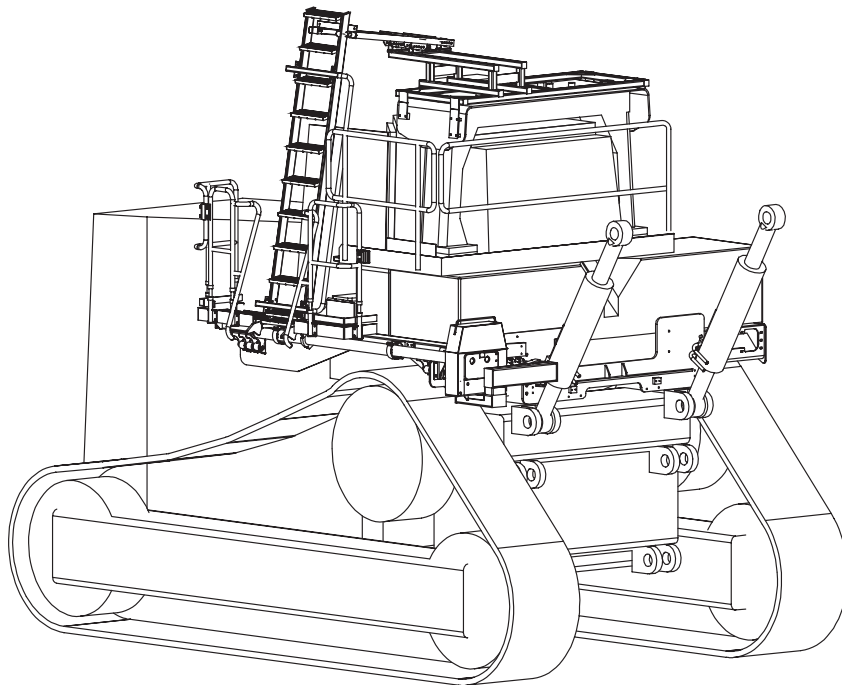


FOLDING LADDER



Manual for Cat D11T Dozer With Extended Square Tank



Model No.PSA-D11T-F/L-2
Serial No.:LD11T-EXT-FT-001
Date Manufactured: October 2008

FOLDING LADDER

Caterpillar D11T Dozer

(With Extended Square Tank)



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Caterpillar D11T Dozer



Installation and Mounting Instructions

See Drawings 23 190, 23 191 & 23 192 (Page 5,6,7 & 8)

NOTE

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

PROCEDURE

See Drawing 23 190 (Page 5)

1. Remove cover plate at the back of the mudguards then remove horn/s.
2. Fit Bolting Pads/Blocks as shown.
3. Re-locate horn/s to suit.

See Drawing 23 191 (Page 6 & 7)

4. Per View 1, fit 23 158 Rear Spreader Plate to the rear of the machine, bolted to the mounting blocks welded to the mudguards etc. Fit Washer Plates (provided) under bolt heads - Washer Plates not shown.
5. Fit Landing Brackets and Isolators to Spreader Plate per View 1.
6. Fit Isolators to mounting plates welded to sides of mudguards per View 1.
Fit Isolator Pin Brackets to Isolators. Note (per View 2) that the 'neck' of the Isolator Pin Bracket is offset - install with the neck near to the machine & therefore the rectangular bolting plate away from the machine.
7. Fit Landing Brackets and Isolators to Spreader Plate per View 1.
8. Per View 3, put the side landing (complete with ladder) on the Isolator Pin Brackets (Item iii.) and bolt on. See also View 4. Also fit Isolator Pin Brackets to the arm on the rear end of the side landing main beam and attach to Isolators (on Spreader Plate) using Isolator Bush Pin per View 5.
9. Per View 6, weld in the Spacer between the rear section of the landing handrail and the OEM/agent's tank-top rear walkway.
10. Per View 7, cut back the profiled side plate and the hinge of the single-tread step between the original mudguard deck and the tank-top walkway. Location of step indicated per View 6.
11. Grease the gears in the drive mechanism.

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Caterpillar D11T Dozer



Section 1 Installation Instruction Drawings - 23 192

PROCEDURE (cont.)

See Drawing 23 192 (Page 8)

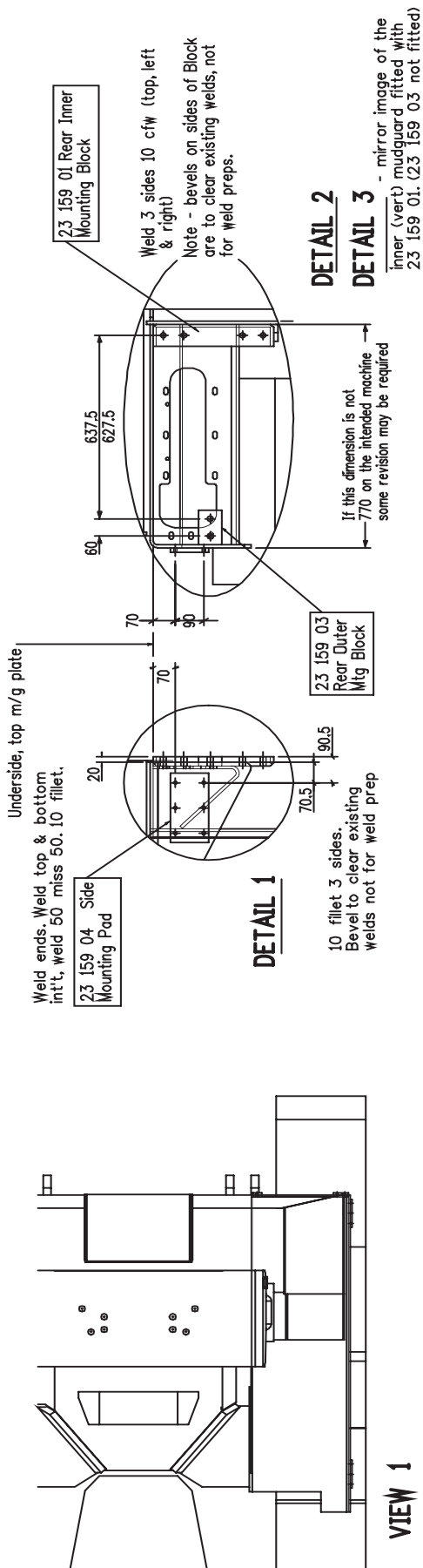
1. Lower ladder as far as it will go. Ensure its' lowered travel is limited by the stops at the top of the ladder (see View 2) and not by the drive mechanism. If the drive mechanism is limiting down travel, re-arrange spacers/packers behind the actuator attachment so the ladder stops limit the travel - see View 3.
2. Fit the Prop System Mounting Frame to the ROPS over the cabin per View 1. Use existing bolting blocks at the back + Bolting Pad 23 160 14 at the front. Also weld ROPS Roof Button 23 160 16 to the ROPS roof, 3 off. Spacers 23 160 13 might be required under the rear cleats.
3. Raise the ladder as far as it will go. Per View 1, bolt the PROP Arm 21 945 to the Spacer Frame 23 161 using the middle of five holes available for the isolator bush bolts. Locate the assembled PROP Arm and Spacer Frame so as to engage the ladder centrally and support it in the middle of its' range of free movement (slap). Weld the blocks in place, per View 4.

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Caterpillar D11T Dozer



Section 1 Installation Instruction Drawings - 23 190



Procedure.

1. Remove cover plate at the back of the mudguards then remove horn/s.
2. Fit Bolting Pads/Blocks as shown.
3. Re-locate horn/s to suit.

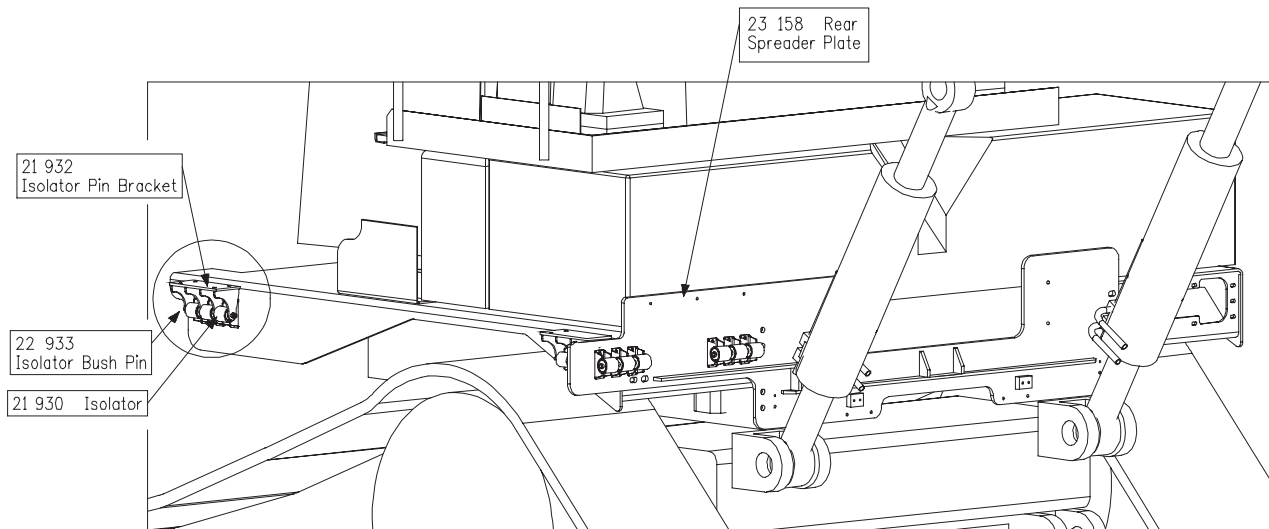
Welding:
 AS 1554 Cat SP, 6cfw uno.

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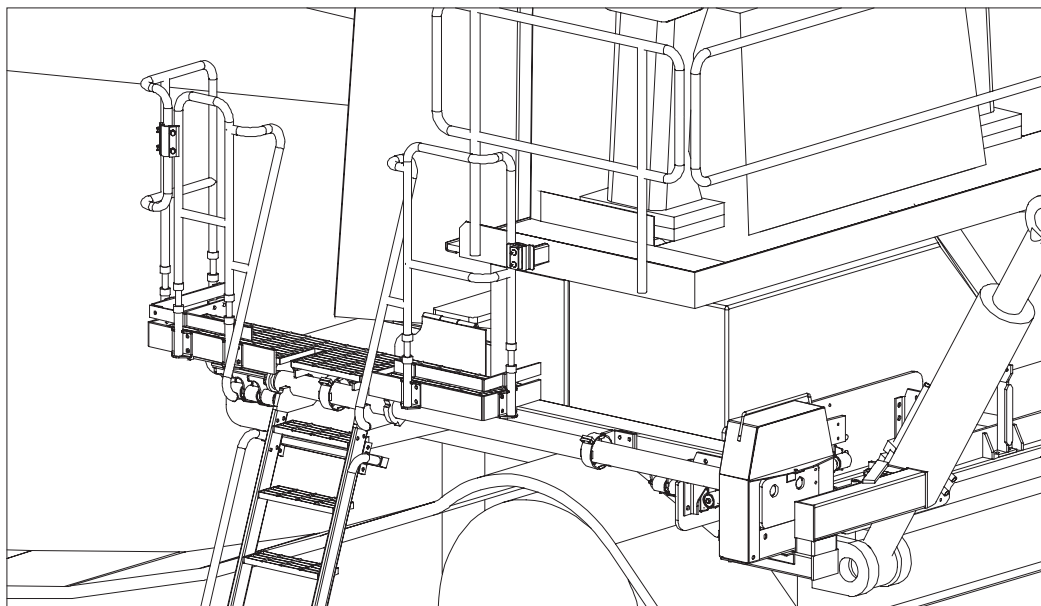
Caterpillar D11T Dozer



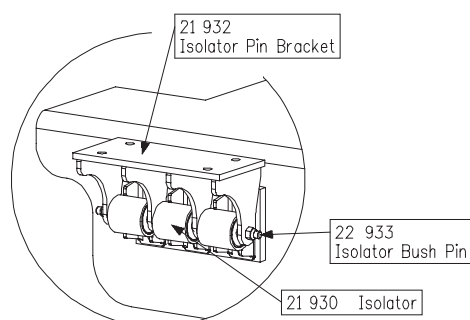
Section 1 Installation Instruction Drawings - 23 191 (Page 1)



VIEW 1



VIEW 3



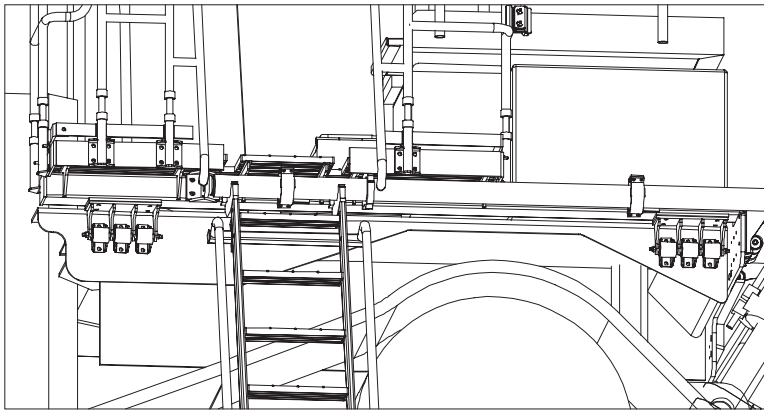
VIEW 2

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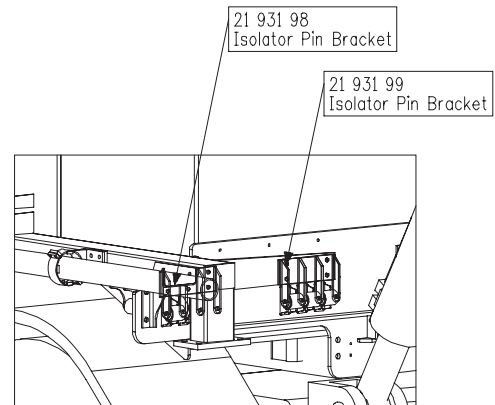
Caterpillar D11T Dozer



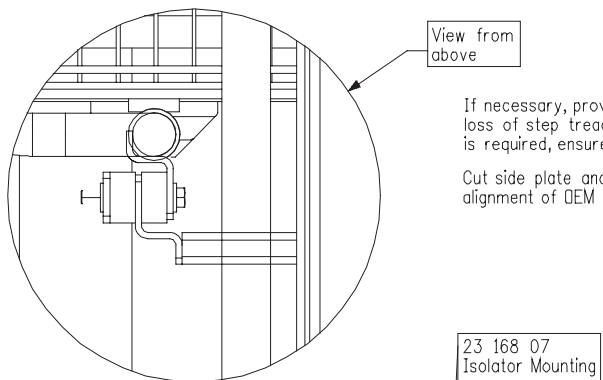
Section 1 Installation Instruction Drawings - 23 191 (Page 2)



VIEW 4

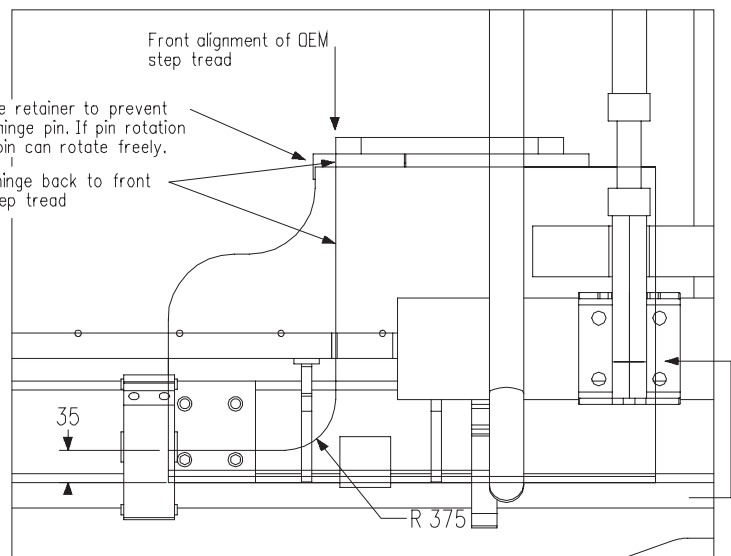


VIEW 5



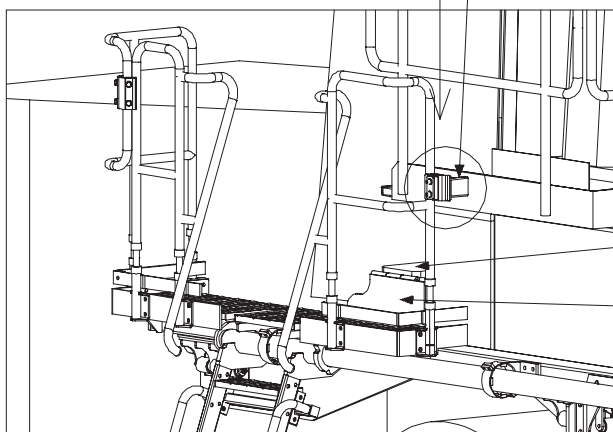
If necessary, provide retainer to prevent loss of step tread hinge pin. If pin rotation is required, ensure pin can rotate freely.

Cut side plate and hinge back to front alignment of OEM step tread



VIEW 7

Mudguard deck level, underside of bolting flange of step tread side plate

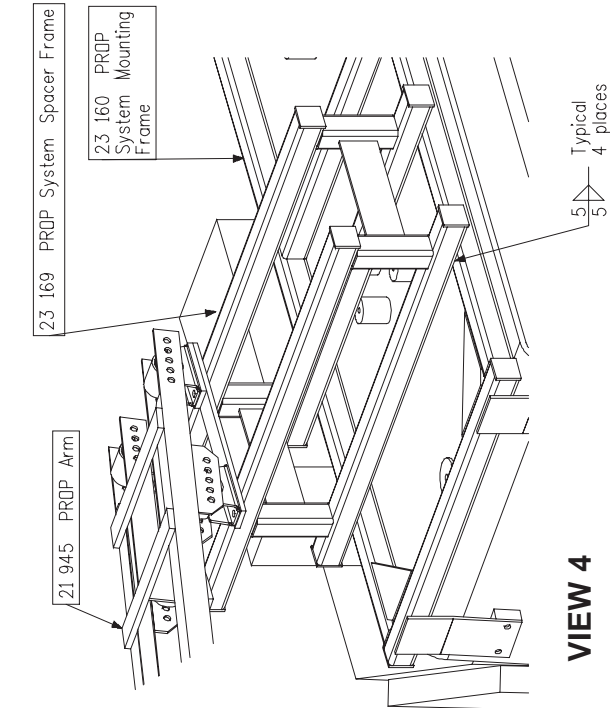


VIEW 8

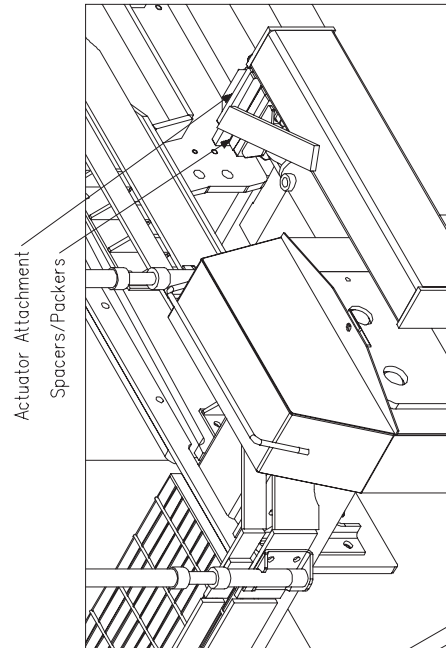
FOLDING LADDER

Caterpillar D11T Dozer

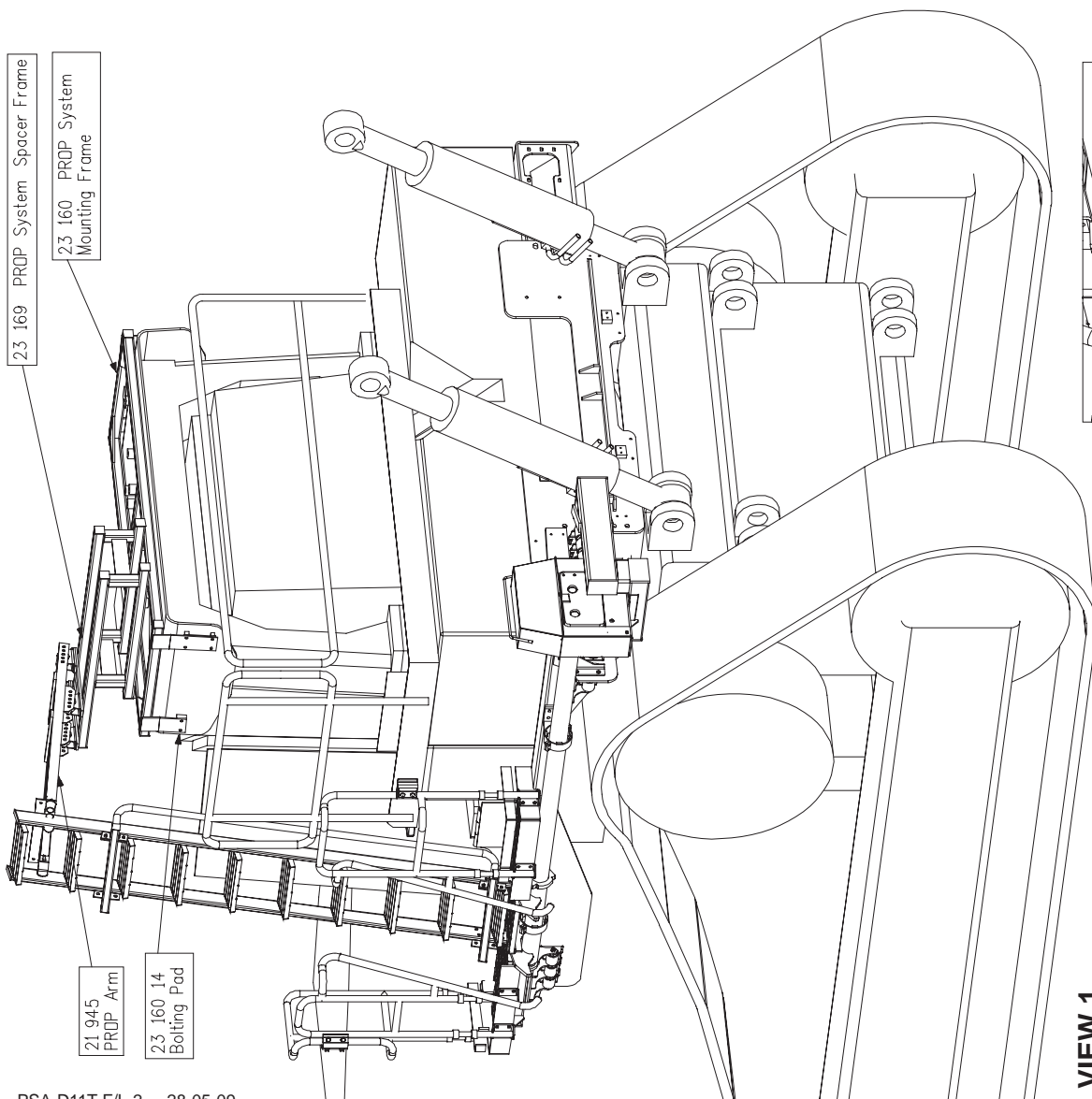
Section 1 Installation Instruction Drawgs 23 192



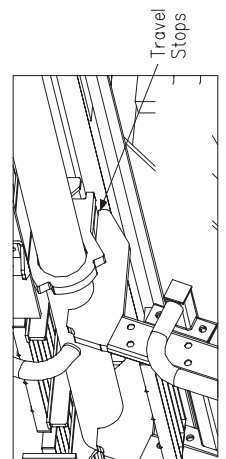
VIEW 4



VIEW 3



VIEW 1



VIEW 2

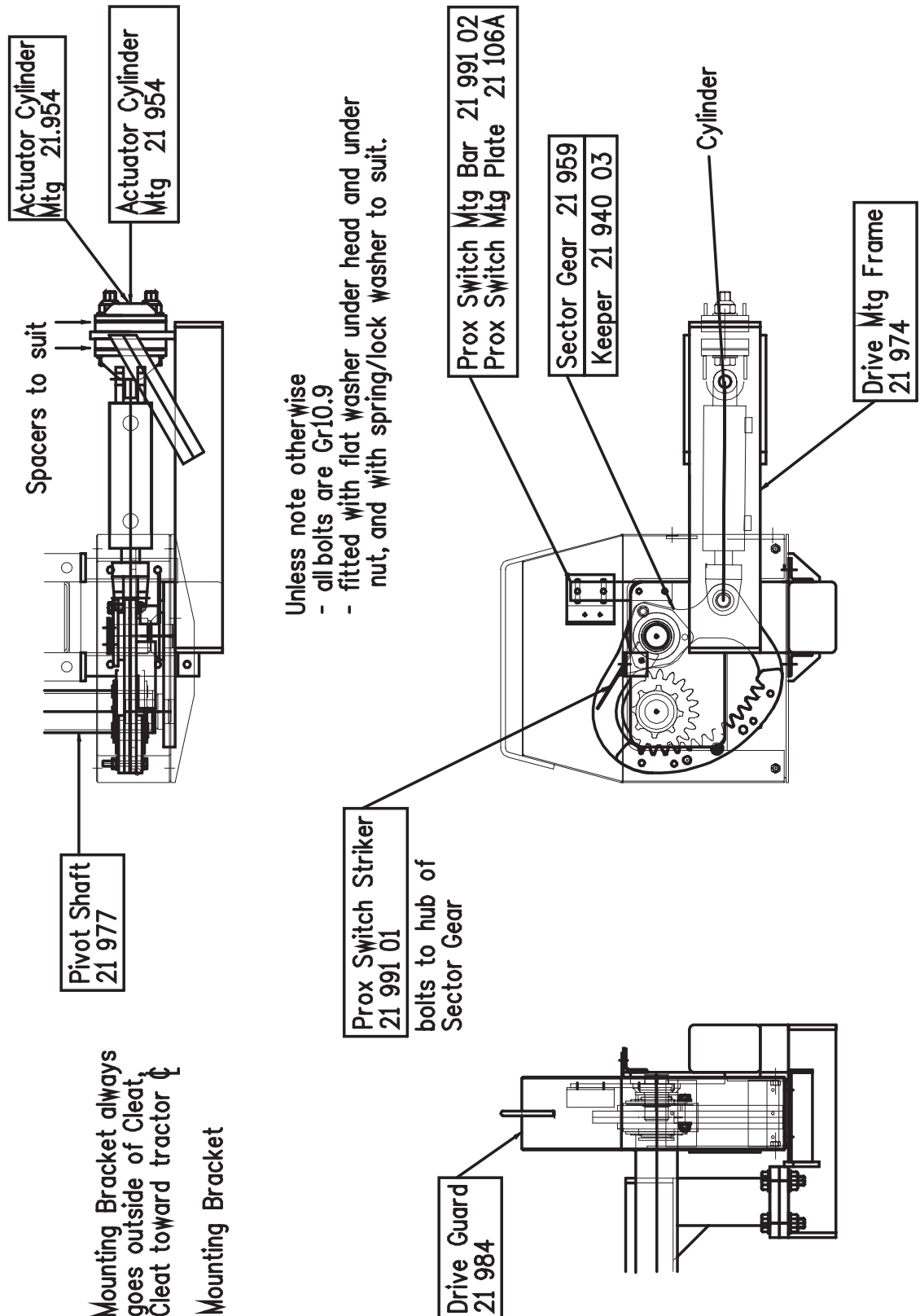
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Section 1 Installation Instruction Drawings - 22 520 Page 1

Drive Arrangement



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Section 1 Installation and Mounting Instructions (Cont.)

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).

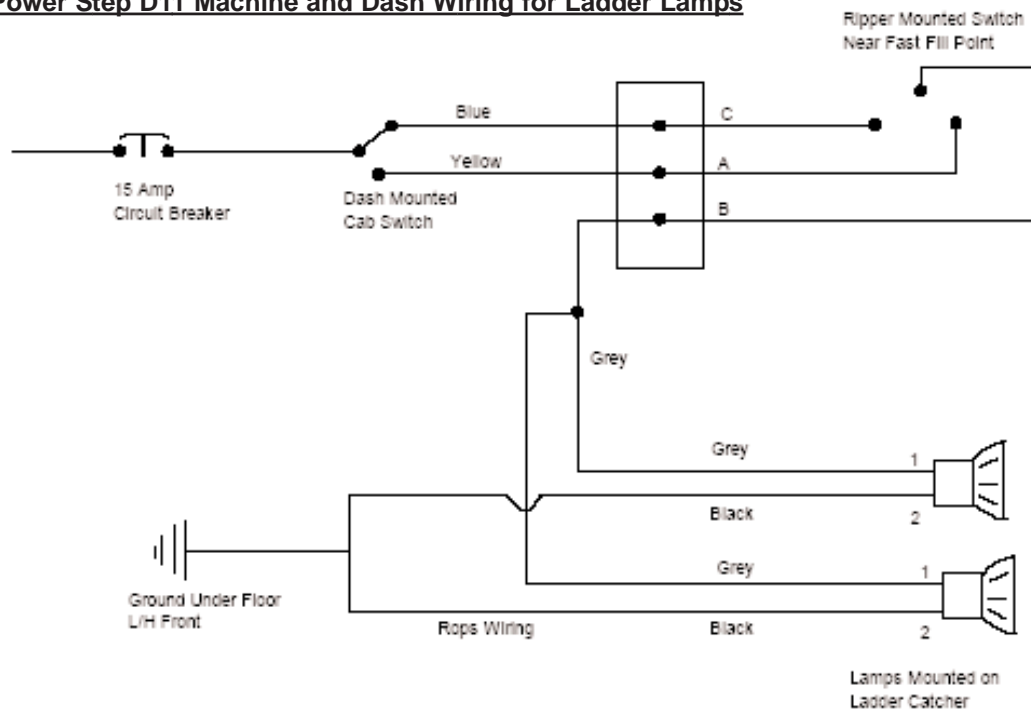
FOLDING LADDER

Caterpillar D11T Dozer

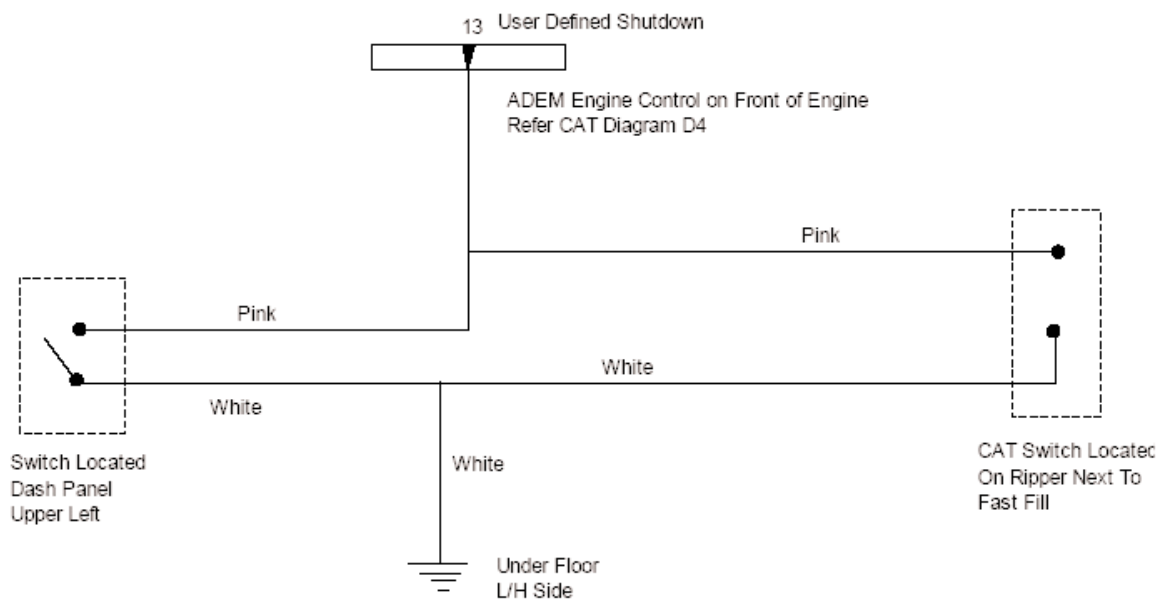


Section 2 Electrical System - Wiring Diagrams Page 1

Power Step D11 Machine and Dash Wiring for Ladder Lamps



Power Step D11 Shutdwn Circuit



POWER STEP
(AUSTRALIA) PTY. LTD.

Section 2 Electrical System - Wiring Diagram Page 2



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Caterpillar D11T Dozer



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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Caterpillar D11T Dozer



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 truck 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 truck.

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.

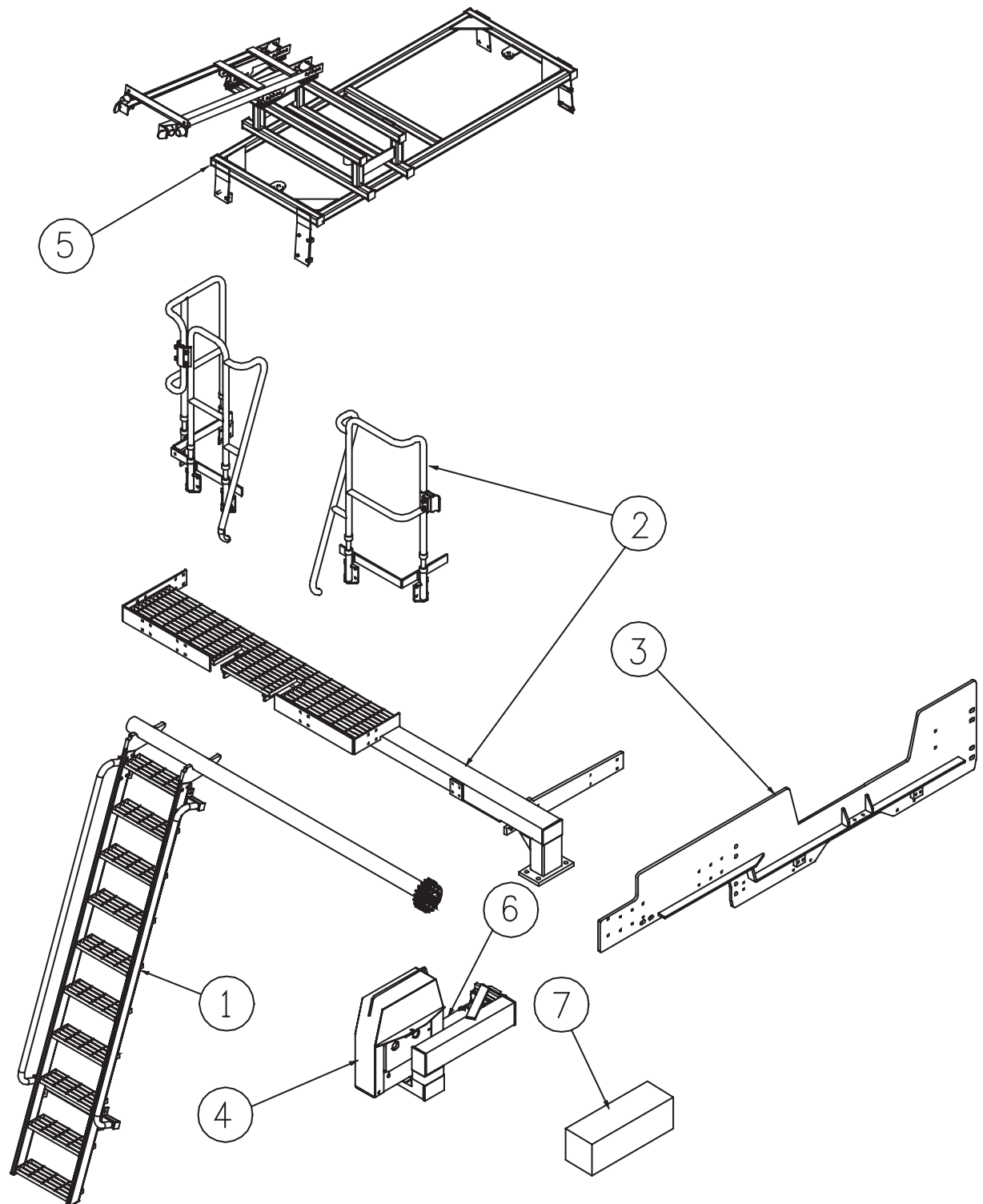
The ladder is now raised and stored.

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Caterpillar D11T Dozer



Section 5 Assembly Complete

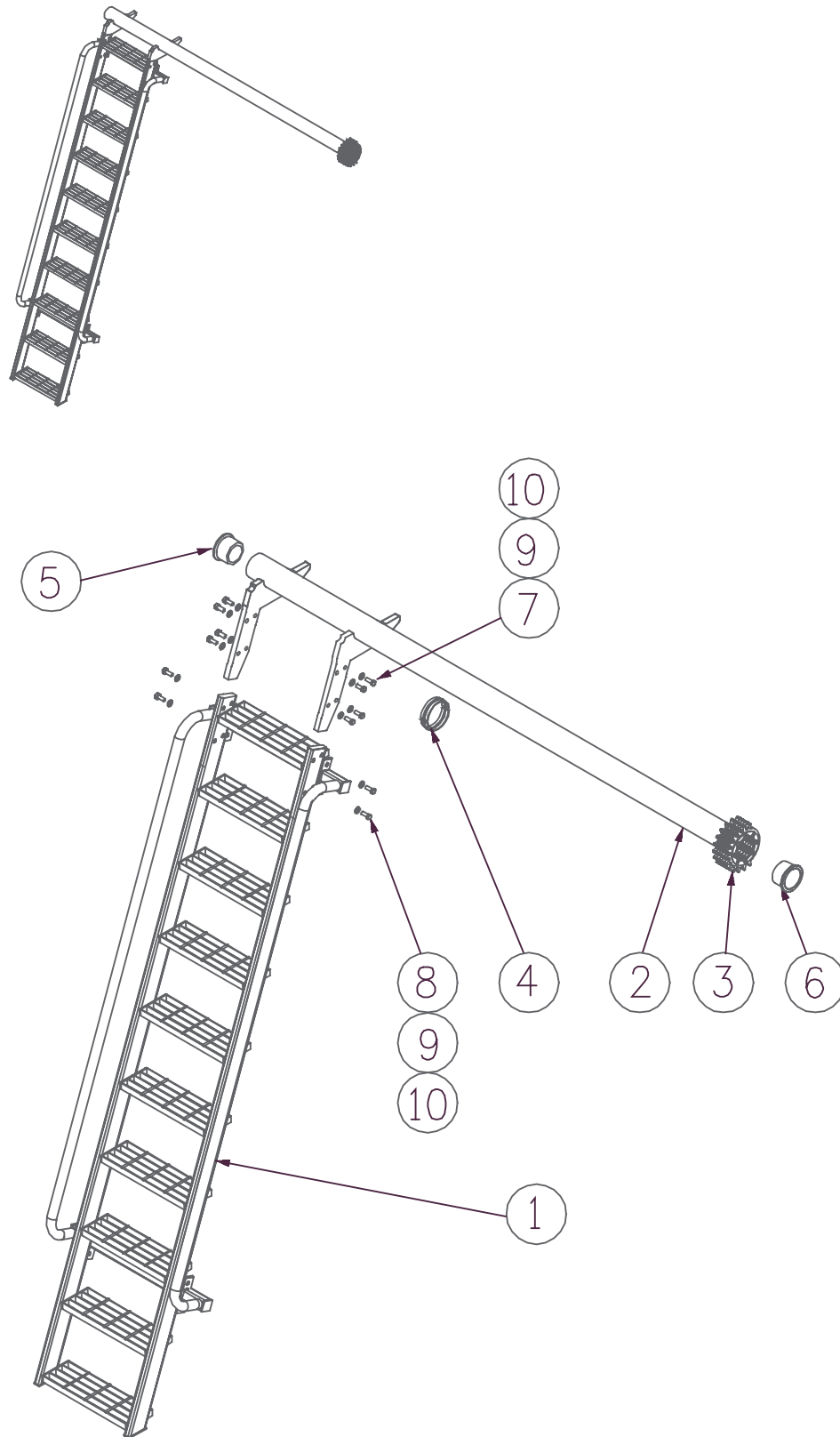


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Caterpillar D11T Dozer



Section 5-1 Ladder Assembly



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Caterpillar D11T Dozer



Section 5-1 Ladder Assembly

See Drawing Page 16

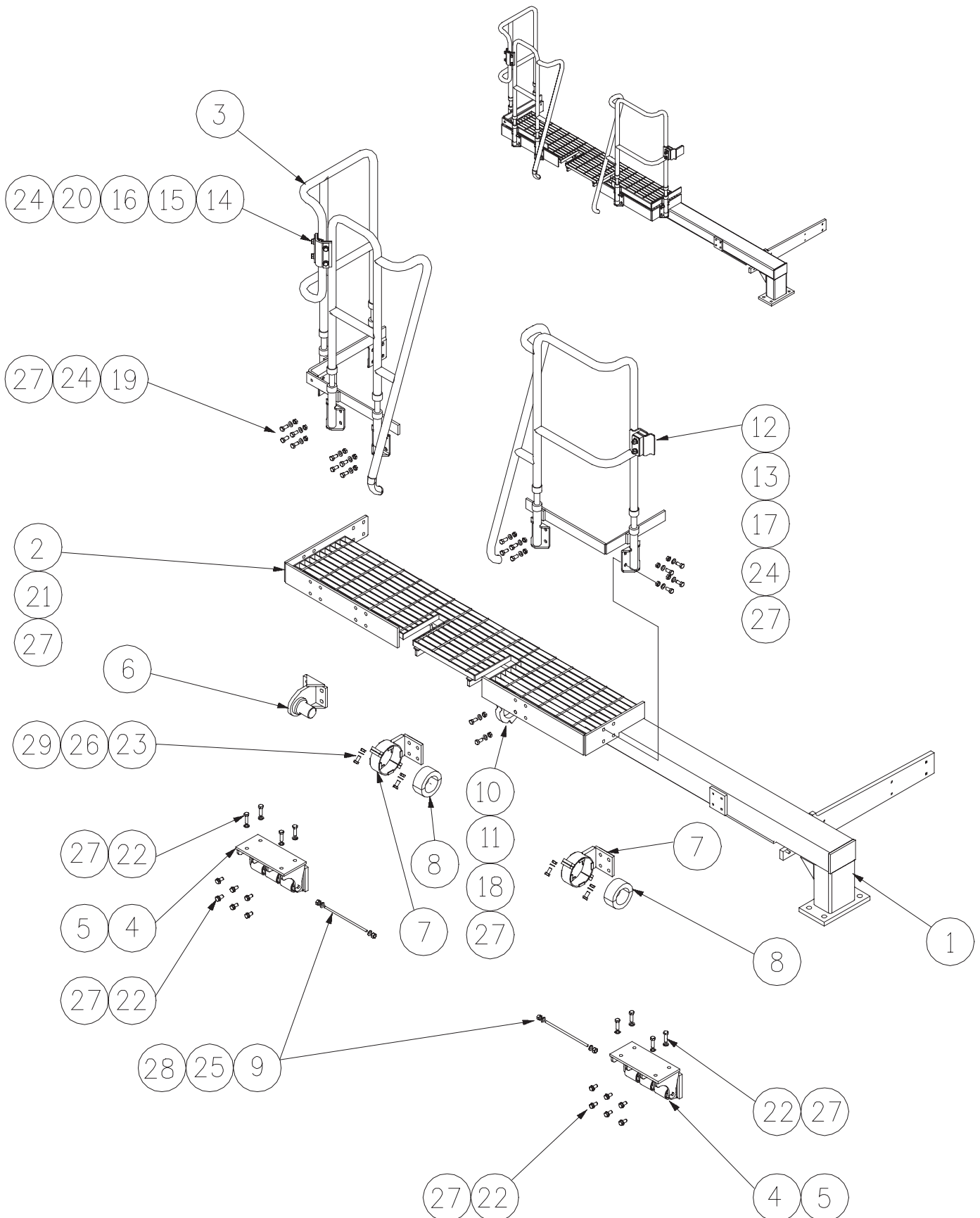
Item	Part No.	Part Name	Qty		
1	PS-21924	LADDER & HANDRAIL FABRICATION	1		
2	PS-23167	ROTATION SHAFT	1		
3	PS-21958	PINION ASSEMBLY	1		
4	PS-21926-01	LADDER SHAFT PIVOT BUSH-MIDDLE	1		
5	PS-21926-02	LADDER SHAFT PIVOT BUSH-NON DRIVE END	1		
6	PS-21926-03	LADDER SHAFT PIVOT BUSH- DRIVE END	1		
7	CPS-M12X50ZP	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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Caterpillar D11T Dozer



Section 5-2 Walkway Assembly L.H.S.



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Caterpillar D11T Dozer



Section 5-2 Walkway Assembly L.H.S.

See Drawing Page 18

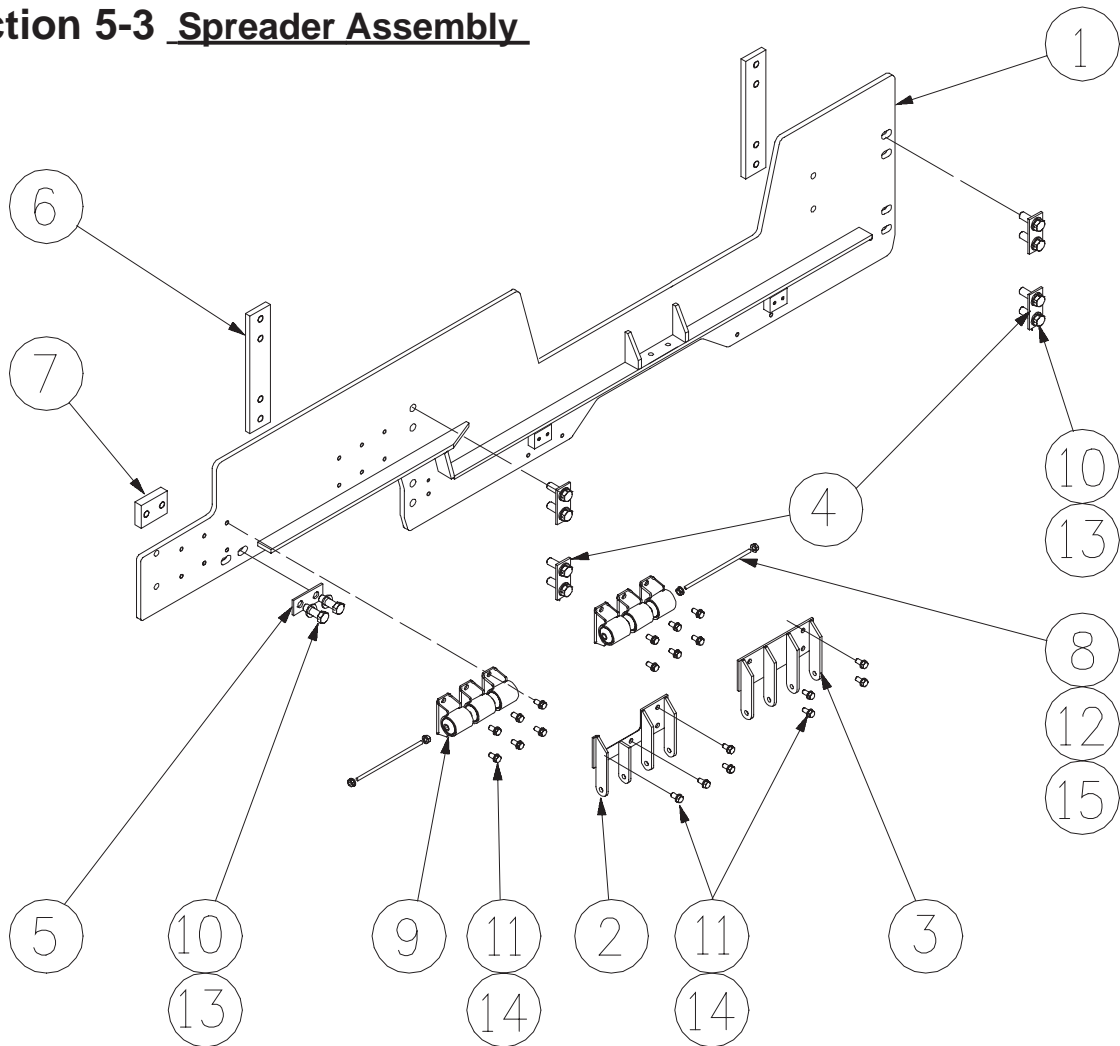
Item	Part No.	Part Name	Qty		
1	PS-23165	WALKWAY-LEFT SIDE	1		
2	PS-23166	FLOORING PANEL	1		
3	PS-23168	HANDRAIL	1		
4	PS-21932	ISOLATOR PIN BRACKETS	2		
5	PS-21930	ISOLATOR MOUNTINGS	6		
6	PS-21976	FRONT PIVOT PIN BRACKET	1		
7	PS-21941-02	ANTI VIBRATION BEARING	2		
8	PS-21941-06	RUBBER BUSH	2		
9	PS-21933	ISOLATOR BUSH PIN	2		
10	PS-21925	MIDDLE BEARING MOUNTING	1		
11	PS-21926	PIVOT BUSHES	1		
12	PS-22005-01	ISOLATED HANDRAIL LINK	2		
13	PS-22005-03/02	ISOLATOR RUBBER/CLAMP	2		
14	PS-22789-01	MOUNTING BAR	2		
15	PS-22789-02	CLAMP BAR	2		
16	PS-22789-03	ISOLATOR ELEMENT	1		
17	CPS-M12X75ZP	BOLT-M12 x 75	2		
18	CPS-M12X65ZP	BOLT-SOCKET HEAD-M12 x 65	2		
19	CPS-M12X40ZP	BOLT-M12 x 40	28		
20	CPS-12X35ZP	BOLT-M12 x 35	4		
21	CPS-M12X30ZP	BOLT-M12 x 30	16		
22	CPS-M12X25ZP	BOLT-M12 x 25	32		
23	CPS-M8X35ZP	BOLT-M8 x 35	8		
24	CPS-M12NZP	NUT-M12	30		
25	CPS-1/2"NN	NUT-NYLOC-1/2"UNC	4		
26	CPS-M8NN	NUT-NYLOC-M8	8		
27	CPS-M12WH	WASHER-HARDENED-M12	80		
28	CPS-1/2"WH	WASHER-HARDENED-1/2"	4		
29	CPS-M8WH	WASHER-HARDENED-M8	8		

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Caterpillar D11T Dozer



Section 5-3 Spreader Assembly



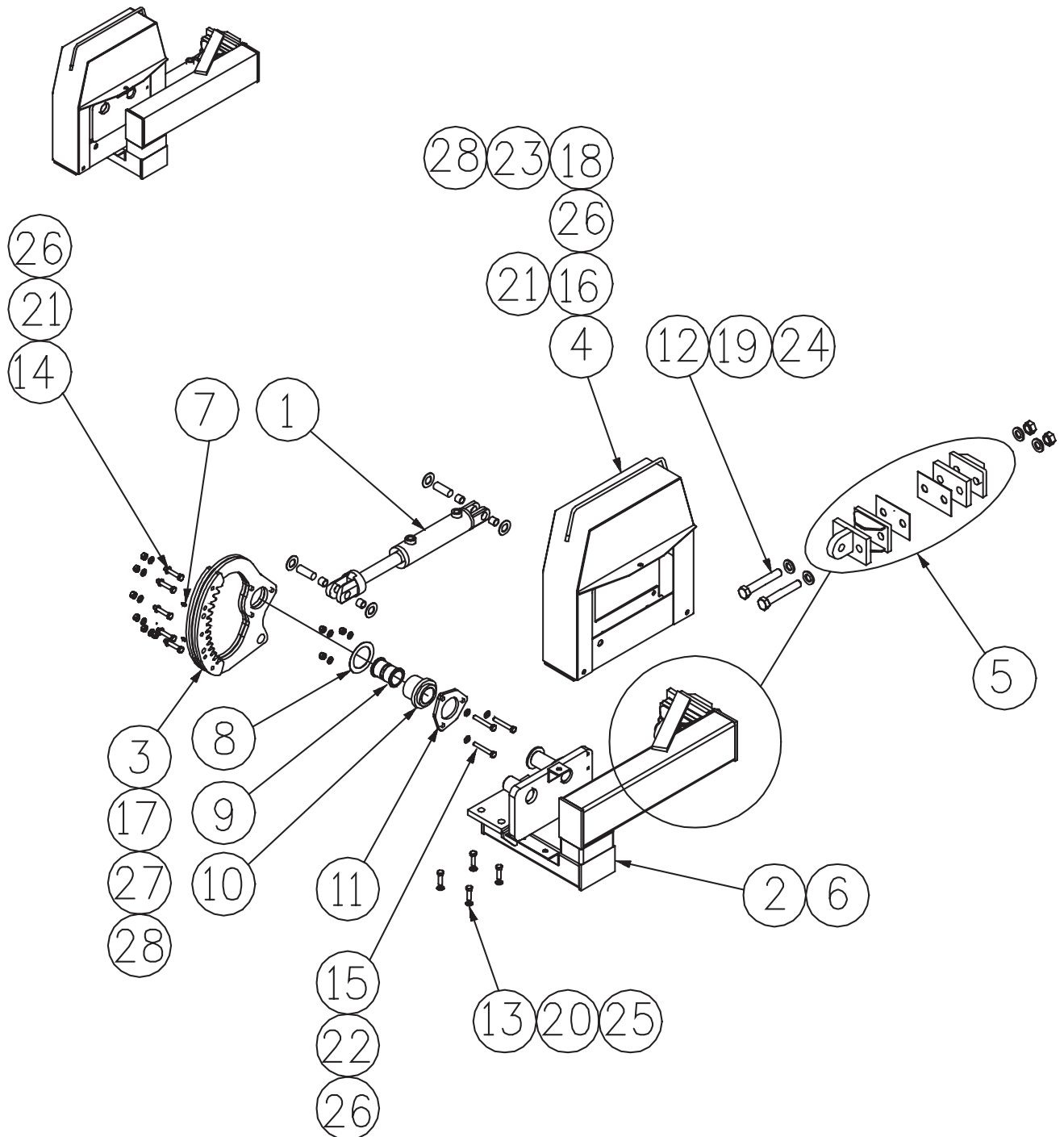
Item	Part No.	Part Name	Qty		
1	PS-23158	SPREADER	1		
2	PS-21931 98	ISOLATOR PIN BRACKET-OUTER	1		
3	PS-21931 99	ISOLATOR PIN BRACKET-INNER	1		
4	PS-23159 05	WASHER PLATES	4		
5	PS-23159 06	WASHER PLATE	1		
6	PS-23159 01	INNER MOUNTING BLOCK	2		
7	PS-23159 03	OUTER MOUNTING BLOCK	1		
8	PS-22933	ISOLATOR BUSH PIN	2		
9	PS-21930	ISOLATOR MOUNTING	6		
10	CPS-M20X60ZP	BOLT-M20 x 60	10		
11	CPS-M12X25ZP	BOLT-M12 x 25	20		
12	CPS-1/2"NN	NUT-NYLOC-1/2" UNC	4		
13	CPS-M20WH	WASHER-HARDENED-M20	10		
14	CPS-M12WH	WASHER-HARDENED-M12	20		
15	CPS-1/2"WH	WASHER-HARDENED-1/2"	4		

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Caterpillar D11T Dozer



Section 5-4 Drive Unit Assembly



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Caterpillar D11T Dozer



Section 5-4 Drive Unit Assembly

See Drawing Page 21

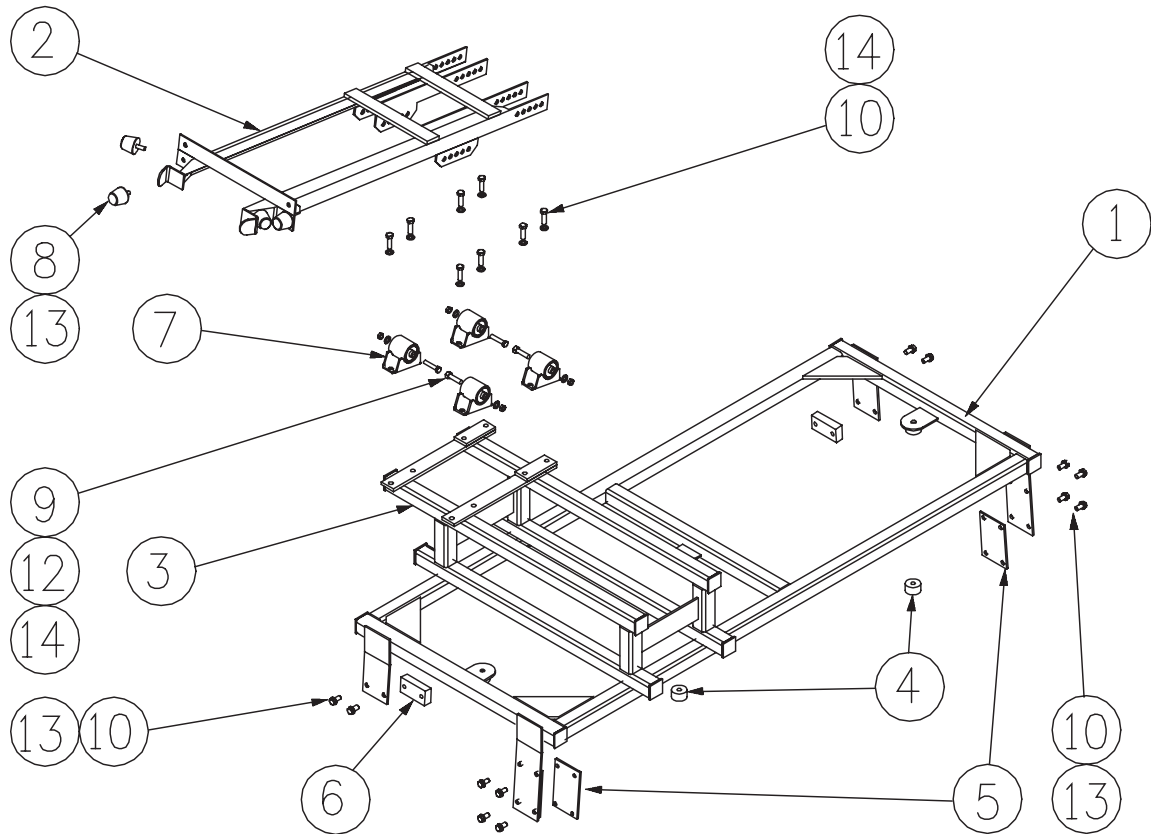
Item	Part No.	Part Name	Qty		
1	PS-63014	HYDRAULIC CYLINDER	1		
2	PS-21974	DRIVE MOUNTING FRAME	1		
3	PS-21959	SECTOR GEAR	1		
4	PS-21984	DRIVE GUARD	1		
5	PS-21954	ACTUATOR CYL. MOUNTING ASSEMBLY	1		
6	PS-21991	PROXIMITY SWITCH PLATES	1		
7	PS-61006-2	GREASE NIPPLE M6 STR.	2		
8	PS-21940-03	PIVOT PIN 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 5-5 PROP Assembly



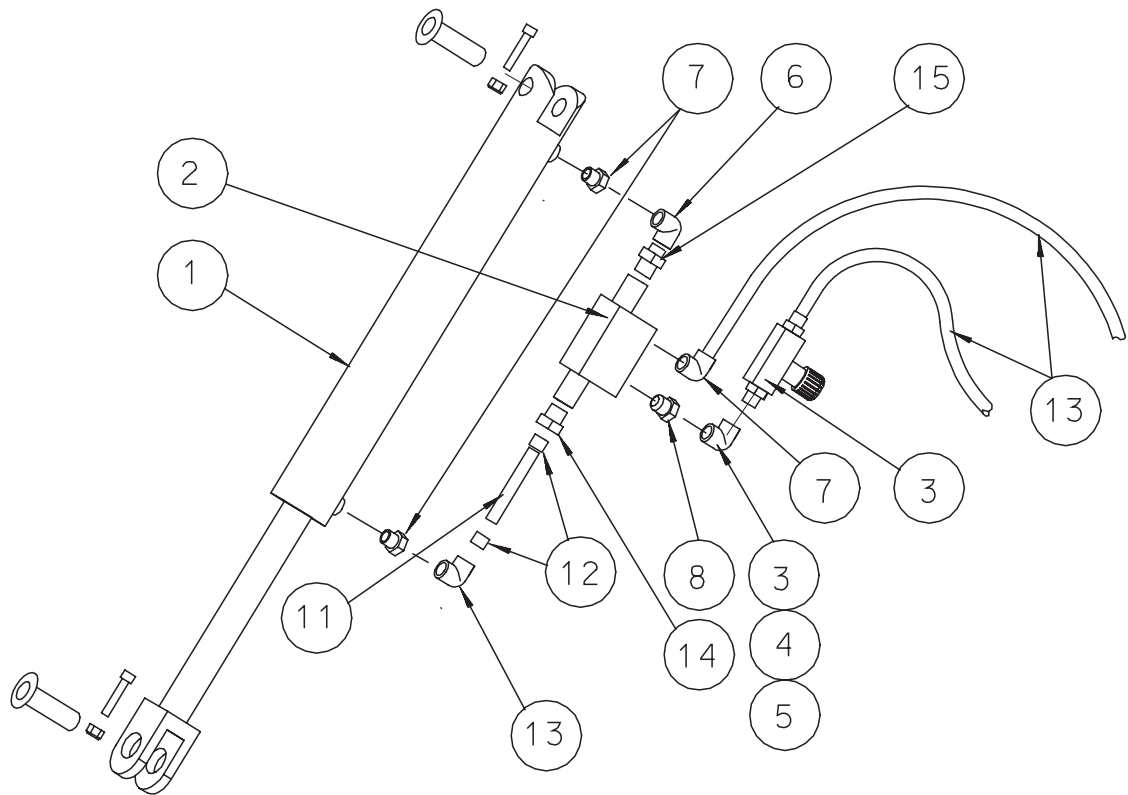
Item	Part No.	Part Name	Qty		
1	PS-23160	PROP MOUNTING FRAME	1		
2	PS-21945	PROP	1		
3	PS-23169	PROP SPACER FRAME	1		
4	PS-23160-16	ROOF BUTTON	3		
5	PS-23160-14	BOLTING PAD	2		
6	PS-23160-13	SPACER	2		
7	PS-21930	ISOLATOR MOUNTING	4		
8	PS-40003	BUFFER	4		
9	CPS-1/2"UNC	ISOLATOR PIN 1/2" x 4.5"	4		
10	CPS-M12X25ZP	BOLT-M12 x 25	23		
11	CPS-M12NZP	NUT-M12	14		
12	CPS-1/2"NN	NUT-NYLOC-1/2" UNC	4		
13	CPSM12WH	WASHER-HARDENED-M12	27		
14	CPS-1/2"WH	WASHER-HARDENED-1/2"	8		

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Caterpillar D11T Dozer



Section 5-6 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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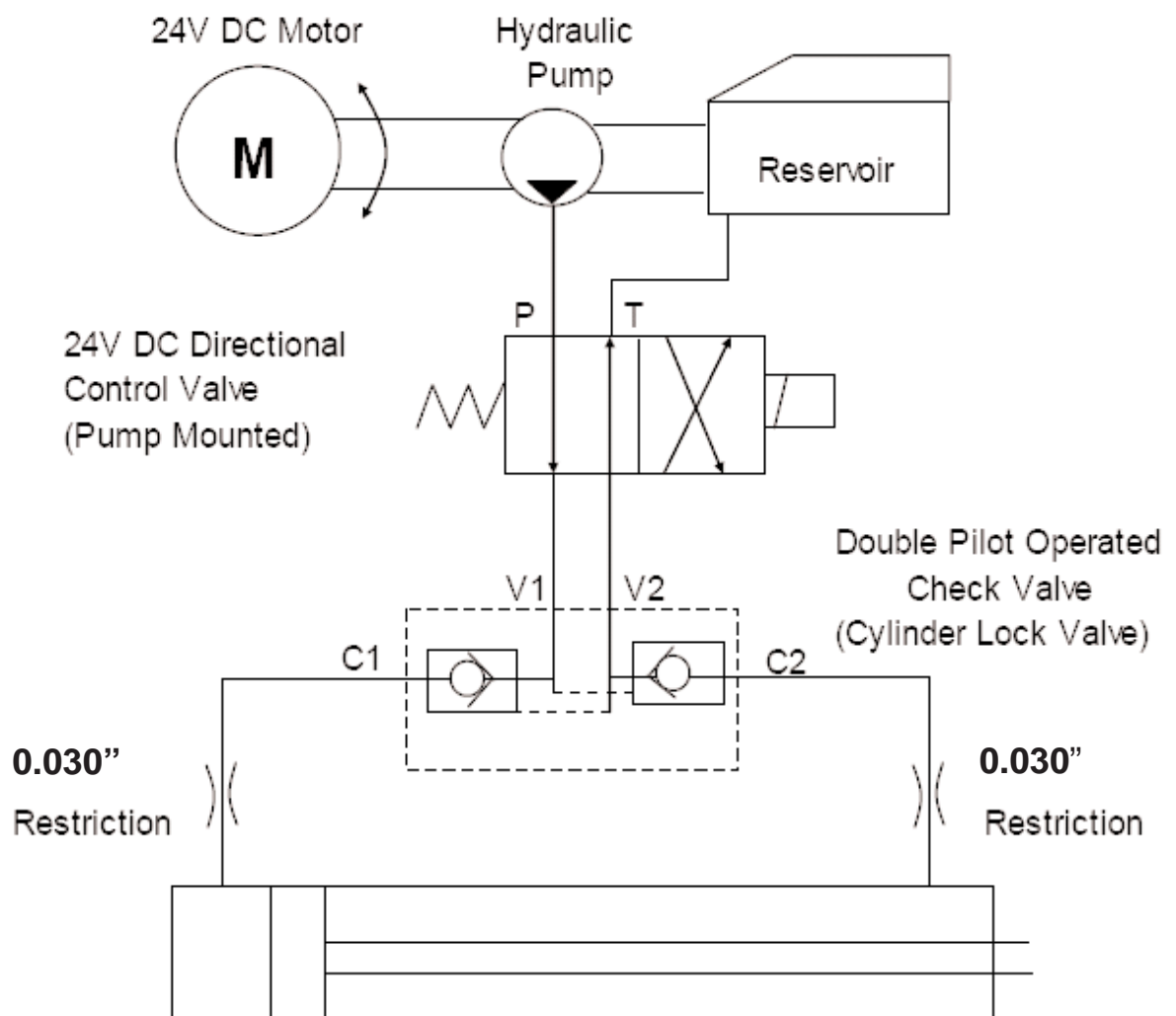
Caterpillar D11T Dozer



Section 5-6 Hydraulic Cylinder (Valve Diagram)

See also Drawing page 24

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

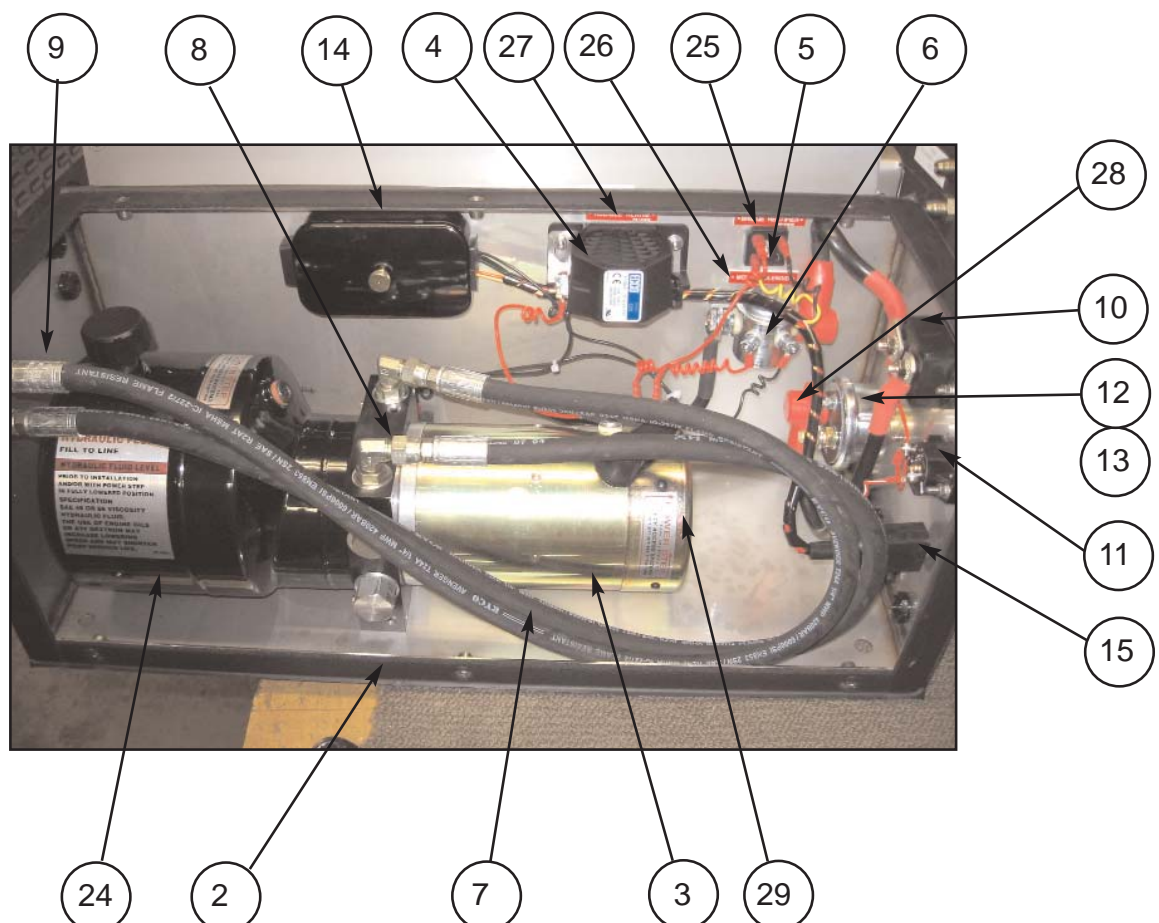
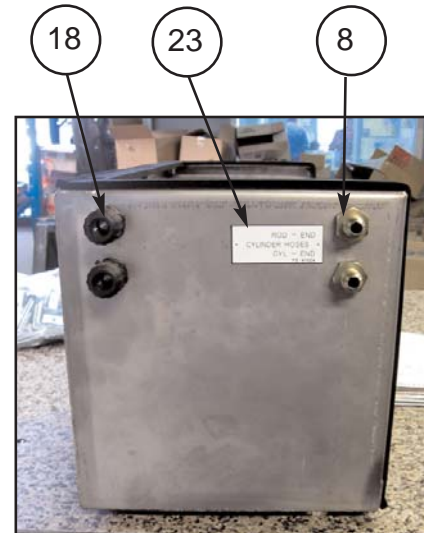
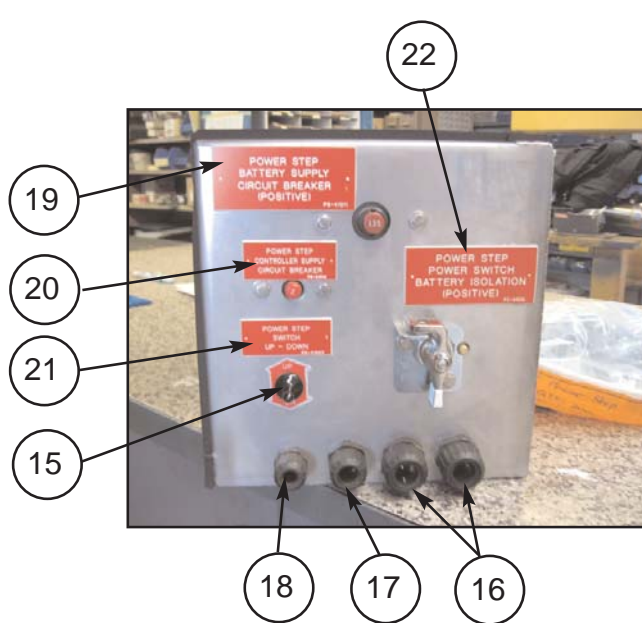


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Caterpillar D11T Dozer



Section 5-7 Power Pack



FOLDING LADDER

Caterpillar D11T Dozer



Section 5-7 Power Pack

See Photo Page 26

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	1		
20	PS-41012	DECAL ELECTRICAL	1		
21	PS-41023	DECAL ELECTRICAL	1		
22	PS-41010	DECAL ELECTRICAL	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 D11T Dozer



Section 5-8 Electrical Controls

Refer also Wiring Drawings Page 11 & 12.



FOLDING LADDER

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Section 5-8 Electrical Controls

Refer also Wiring Drawings Page 11 &12.
See Photo Page 28.

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		