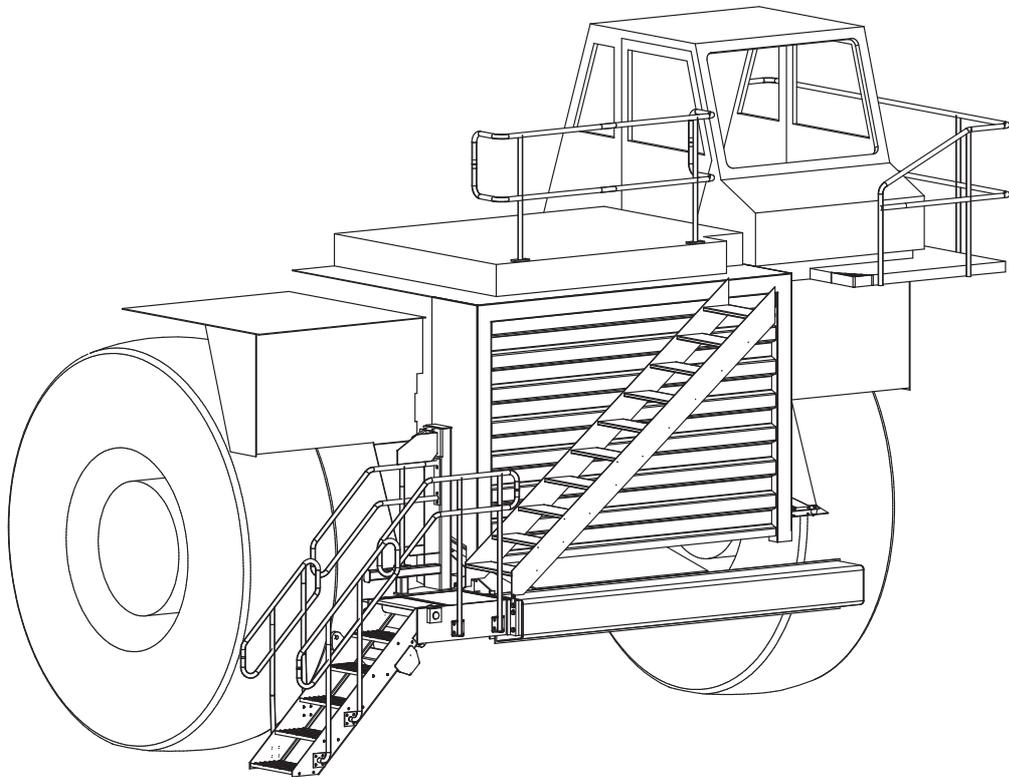




FOLDING RETRACTABLE STAIRWAY

Manual for Cat 785D Haul Truck



Model No.: PSA-785D-FS
Serial No.: 785D-001 to 785D-002
Date Manufactured: Sept 2009

FOLDING STAIRWAY

Caterpillar 785D Haul Truck



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FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 1. Mounting and Installation

See Page 4

NOTE

Follow all on-site/Mine lifting and safety procedures when installing PSFS to Truck.

PROCEDURE

1. Remove OEM landing, so bottom of fixed stair and end of bumper look generally as shown on **View 2**.
2. Assemble the Mounting Plate and various bolting pads as shown in **View 4**.
3. Locate the Mounting Plate and its attachments at the end of the bumper as shown in **Views 5 & 6**. Note that the Seat Bars on the back of the mounting plate should support the mounting plate on the truck's original landing mountings, at the correct height.
4. Tack weld all relevant components to the truck bumper and wall plate. Try the Power Step Landing and Stair in place against the mounting plate, without putting any load on the mounting plate. If it fits correctly, remove the landing and unbolt the mounting plate from the mountings. If it doesn't fit correctly make corrections to suit.
5. Weld the mounting components to the truck per **View 3**, including one additional piece, 23 814 03 Gusset Bar. Where the top/bottom of the gusset bar and the web plate of the Inner Mounting protrude above/below the wall plate to which they are welded, neatly trim off the excess. Note that the little gussets are to be positioned so as to approximately align with the diaphragm plates behind the wall plate - see **View 5**.
6. Fit the Power Step Landing & Stairs. **View 7** shows the location of all the relevant boltholes.

Welding: all Cat SP to AS1554, 6 cfw uno.

FOLDING STAIRWAY

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Section 2. Electrical Installation

Remove centre console panel in cabin -
- to do this remove six (6) screws and gear selection knob.

Position stairway indicator panel on centre console, above hour meter.
- drill two mounting screw holes (6mm or 7/32")
- one electrical cable hole (12mm or 15/32")
- do not re-fix console Panel

Remove four (4) screws holding Caterpillar fuse panel behind operator's seat. Drill one hole to insert Caterpillar fuse holder - fit fuse holder, into fuse indicator panel - tighten. Drill size (12mm or 15/32").

Remove rear access panel from back of cabin and run short conduit through the main cable gland to inside centre console, ensuring conduit goes underneath control box.

Connect blue wire start from conduit above to blue wire of cabin indicator panel harness.

In rear access, connect black wire, with 10mm eye terminal to machine ground, and blue wire to outer terminal of newly inserted fuse holder.

Install short blue wire to screw terminal of Caterpillar circuit breaker, and other end to fuse holder.

Run wiring harness from Power Step Folding Stairway magnetic proximity switch around under radiator, and follow cabling/hose routing up to air line/ electrical outlet on rear Right Hand Side of cabin.

Drill hole in RH Cabin access panel - route wiring harness in through access panel, and through to under centre console - connect wires appropriately as colour coded. Hole saw/drill size (24mm), cable tie harness as appropriate, approximately every 300mm.

WARNING

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

FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 3. Installation of Hydraulic Power Pack Enclosure

Main Hydraulic Enclosure is positioned on top of front bumper, as indicated position to allow easy access as walking up or down diagonal stairway across front of radiator.

Mark mounting position.

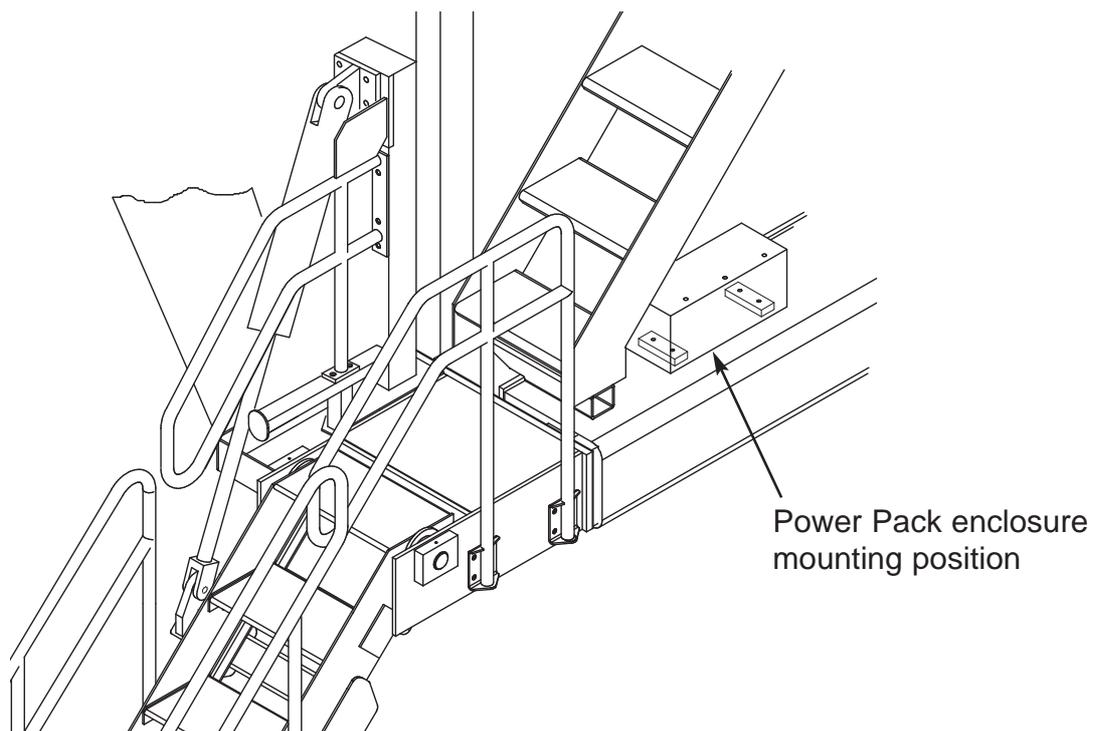
Remove M10 x 25 bolts from bottom of enclosure to release mounting plates.

Remove paint from mounting area and mounting plate.

Stitch weld mounting plates in position.

Allow to cool, thoroughly and clean area, prime and paint.

Remount Enclosure, with ports to right hand side of truck.



FOLDING STAIRWAY

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Section 4. Operating Procedure

To Lower Stairway (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 Stair Access System is clear of people and obstacles, and lower Stair by operating the two position electrical switch adjacent to the stair, to the down position by pressing the switch down.

Hold the switch in the down position until Stair 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 Stair with caution.

To Raise Stairway

Ascend the Stair onto the landing of the truck.

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

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

The Stair is now raised and stored.

OPERATING NOTES

NOTE: FLOW CONTROL VALVE ADJUSTMENT:

The valve should be positioned to restrict the flow and speed of the Power Step when lowering. Adjust the knob on top of the valve by turning left or right (clockwise) when the step is being lowered, until it is lowering at a safe and reasonable speed.

When it is adjusted, lock the adjusting knob by tightening the grub screw located on the side of the knob.

NOTE: MAGNETIC 'GO' SWITCH ADJUSTMENT:

The switch target trigger area is located on the opposite side and end from the cable entry point on the switch. Once it is mounted to the switch bracket, adjust the switch in or out from the stair steel trigger point, to be within 3mm - 10mm from touching each other when the stair is in the desired rest position.

[DO NOT EXCEED 10mm DISTANCE BETWEEN THE SWITCH AND STRIKER PLATE].

Test by raising and lowering the Power Step a couple of times and adjust again if necessary.

FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 5. 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 2 grease nipples on Stair Pivot shaft
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

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

Grease 2 grease nipples on Stair Pivot shaft

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

Repeat daily check as above.

FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 6. Assembly Complete - Main Assemblies

See Pg 10

Item	Part No.	Part Name	Qty		
1	PSA-785D-FS	ASSEMBLY COMPLETE	1		
2	PS-23812-A	LANDING ASSEMBLY (INC.HANDRAILS) REFER TO 6.2FOR DETAILS	1		
3	PS-23811-A	FOLDING STAIRS ASSEMBLY (INC.HANDRAILS) REFER TO 6.5 FOR DETAILS	1		
4	PS-62998-AH	HYDRAULIC CYLINDER REFER TO 6.5 FOR DETAILS	1		
5	PS-80103A-SLD	POWER PACK REFER TO 6.6 FOR DETAILS	1		

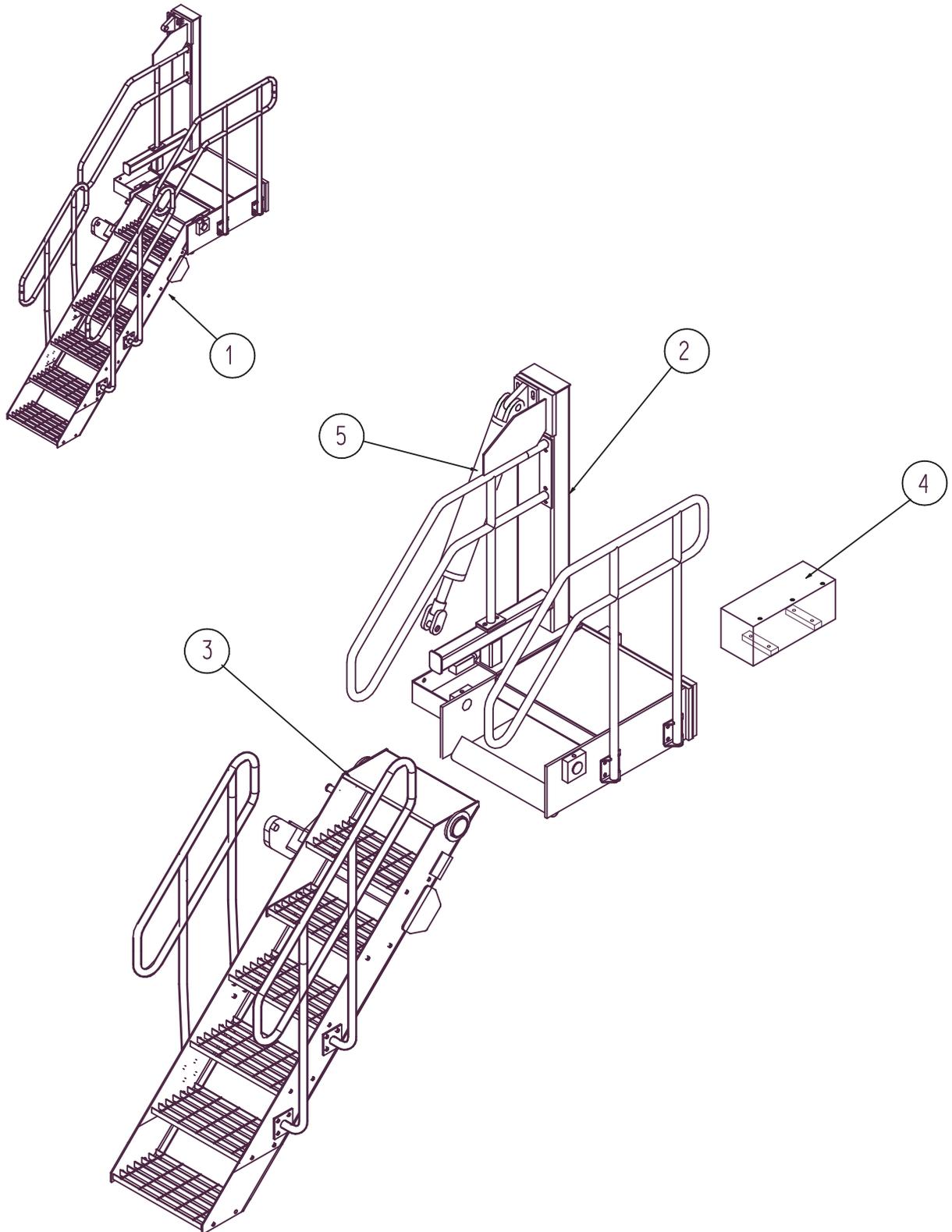
FOLDING STAIRWAY

Caterpillar 785D Haul Truck

Hydraulic Operation



Section 6-1. Assembly Complete

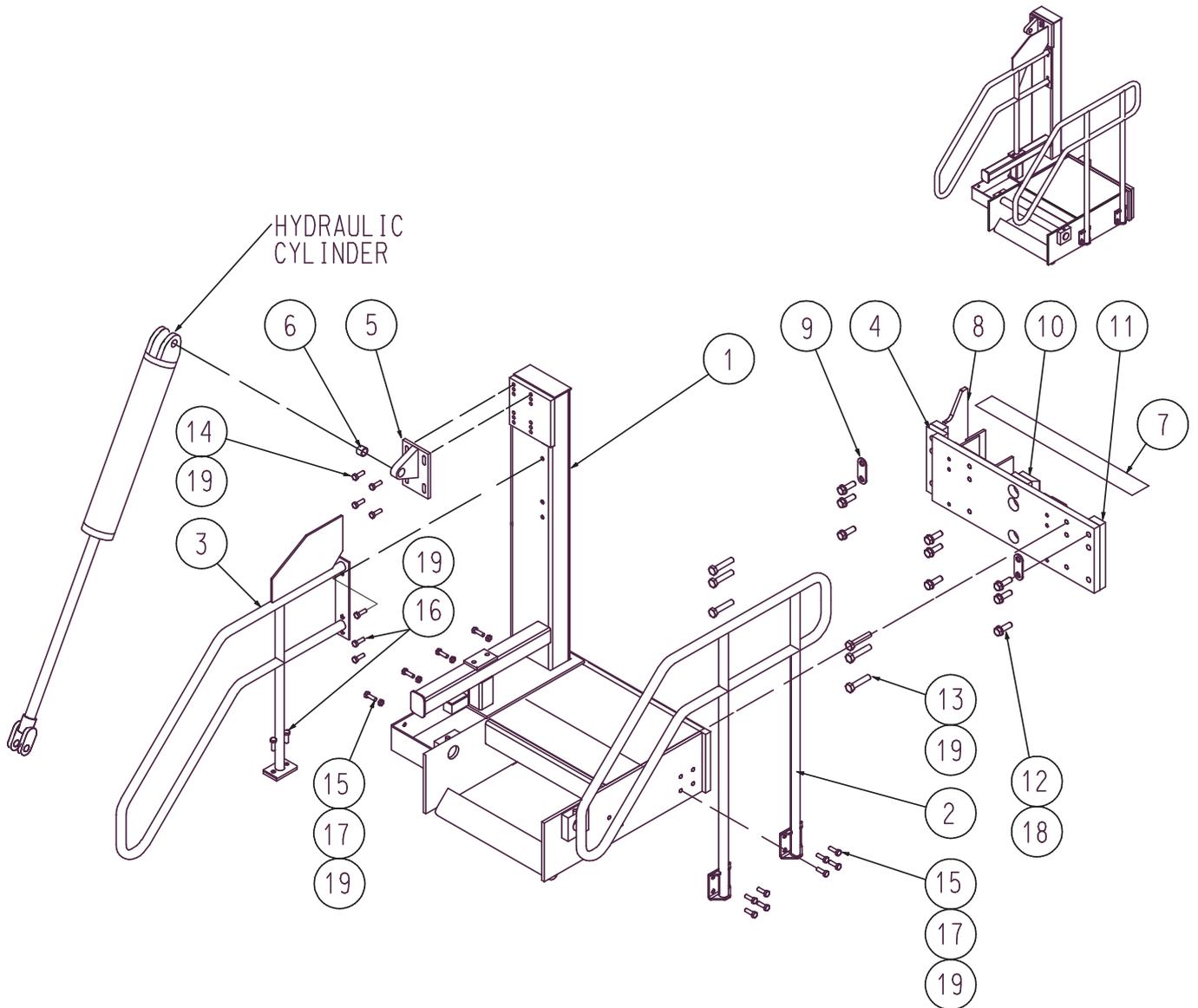


FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 6-2. Landing Assembly PS 23812-A



FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 6-2. Landing Assembly PS-23812-A

Parts List

See Drawing Pg 11 (Does not include items 4,7,8,9,10 and 11)

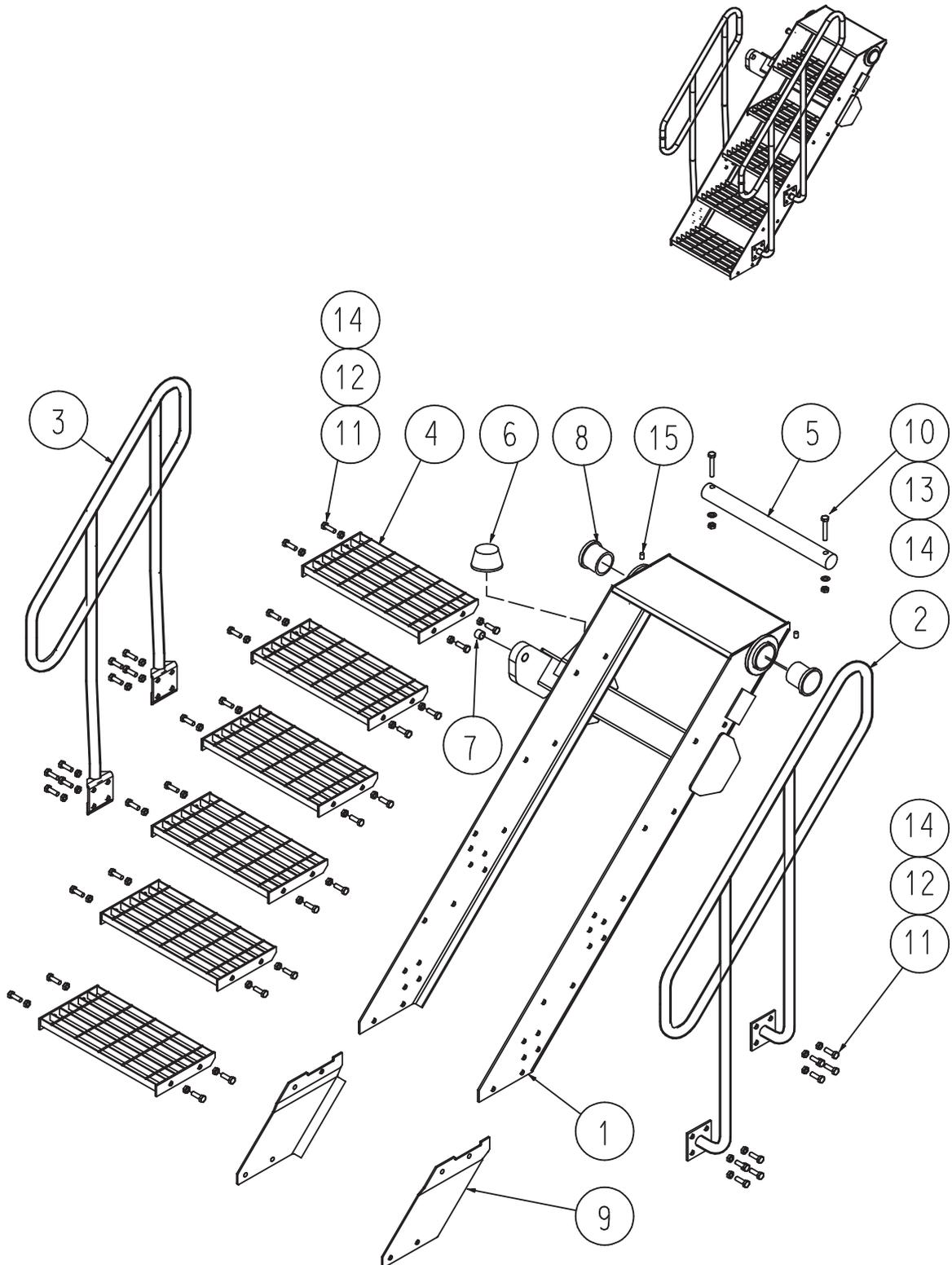
Item	Part No.	Part Name	Qty		
1	PS-22502	FRAME	1		
2	PS-22507-97	HANDRAIL - FRONT	1		
3	PS-22507-96	HANDRAIL - REAR	1		
4	PS-23813-00	MOUNTING PLATE	1		
5	PS-22502-01	CYLINDER MOUNTING	1		
6	PS-63009B	CYL-MOUNTING-BUSH - 1 1/4"OD x 1" x 28	1		
7	PS-23813-04	FLOOR INFILL	1		
8	PS-23814-99	INNER MOUNTING	1		
9	PS-23813-06	LIFTING TAG	1		
10	PS-23814-01	MIDDLE BOLT PAD	1		
11	PS-23814-02	OUTER BOLT PAD	1		
12	CPS-M16X50ZP	BOLT-M16 x 50	12		
13	CPS-M12X50ZP	BOLT-M12 x 50	6		
14	CPS-M12X40ZP	BOLT-M12 x 40	4		
15	CPS-M12X35ZP	BOLT- M12 x 35	12		
16	CPS-M12X30ZP	BOLT- M12 x 30	5		
17	CPS-M12NZP	NUT-M12	12		
18	CPS-M16WH	WASHER - HARDENED - M16	6		
19	CPS-M12WH	WASHER - HARDENED - M12	27		

FOLDING STAIRWAY

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Section 6-3. Stair Assembly PS-23811-A



FOLDING STAIRWAY

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Section 6-3. Stair Assembly PS-23811-A

Parts List

See Drawing Page 13

Item	Part No.	Part Name	Qty		
1	PS-23811	STRINGER ASSEMBLY ONLY	1		
2	PS-23811-F	HANDRAIL-FRONT	1		
3	PS-23811-R	HANDRAIL-REAR	1		
4	PS-22501	STAIR TREADS	6		
5	PS-22509	PIVOT SHAFT-STAIRS	1		
6	PS-40001	RUBBER STOP	1		
7	PS-63009-B	CYL-MOUNTING BUSH	1		
8	PS-22510	PIVOT BUSH	2		
9	PS-23465	STAIR EXTENSION	1Set		
10	CPS-M12X120ZP	BOLT-M12 x 120	2		
11	CPS-M12X30ZP	BOLT-M12 x 30	36		
12	CPS-M12NZIP	NUT-M12	36		
13	CPS-M12NN	NYLOC NUT-M12	2		
14	CPS-M12WH	WASHER-HARDENED-M12	40		
15	PS-61006-2	GREASE NIPPLE 1/4" BSP	2		

FOLDING STAIRWAY

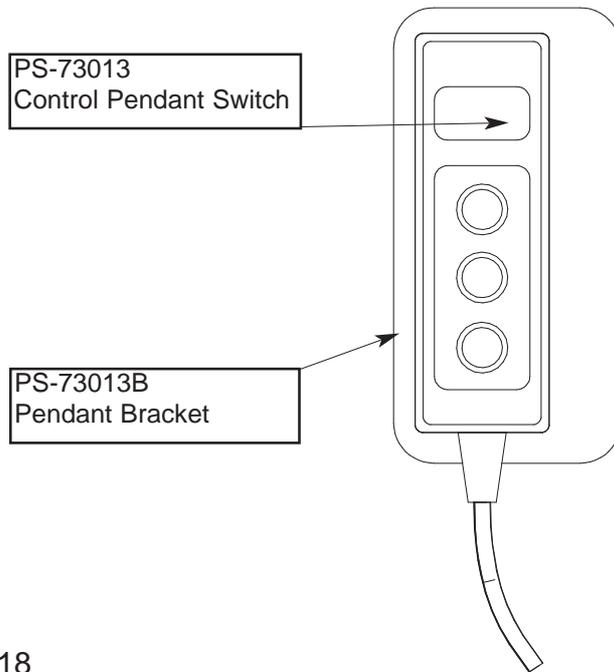
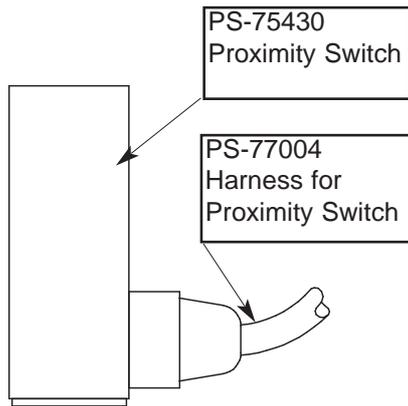
Caterpillar 785D Haul Truck



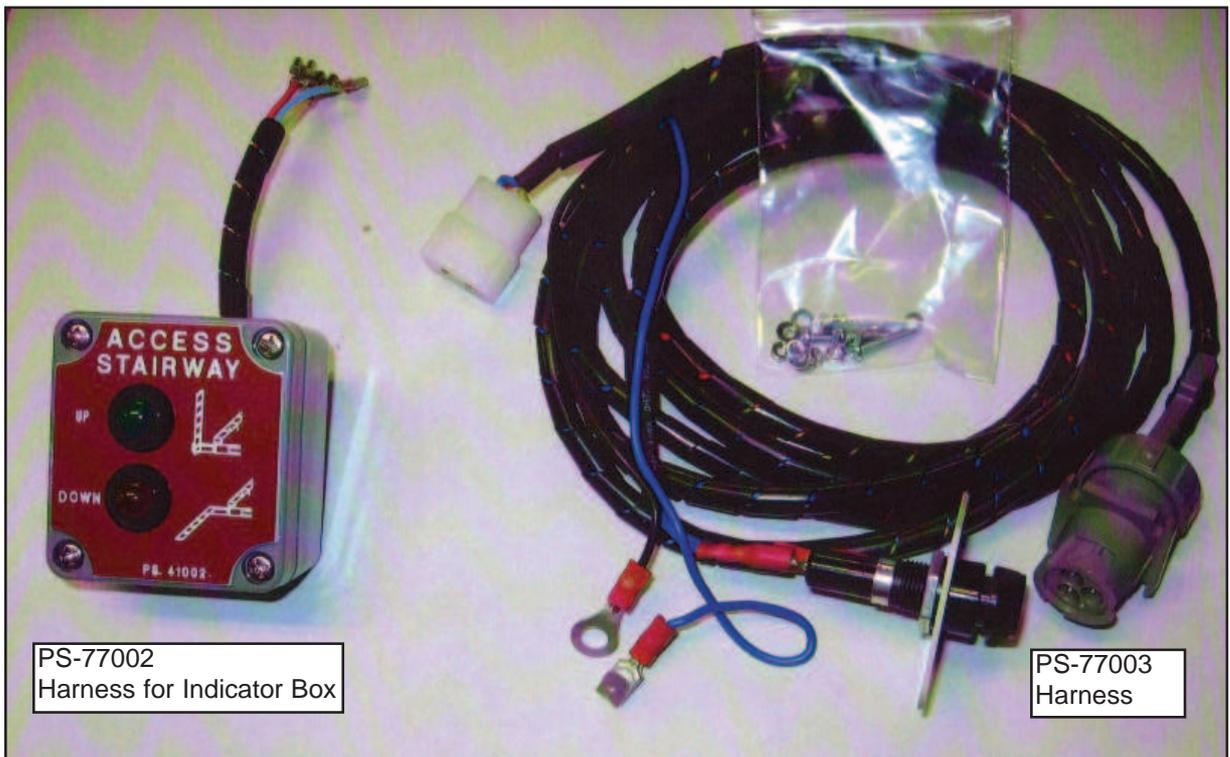
Section 6-4. Electrical System

Control Pendant Switch
Mounted on Handrail

Proximity Switch Assembly
Mounted on Fixed Landing



Cab Harness & Equipment
Refer Wiring Harness Drawing Page 18



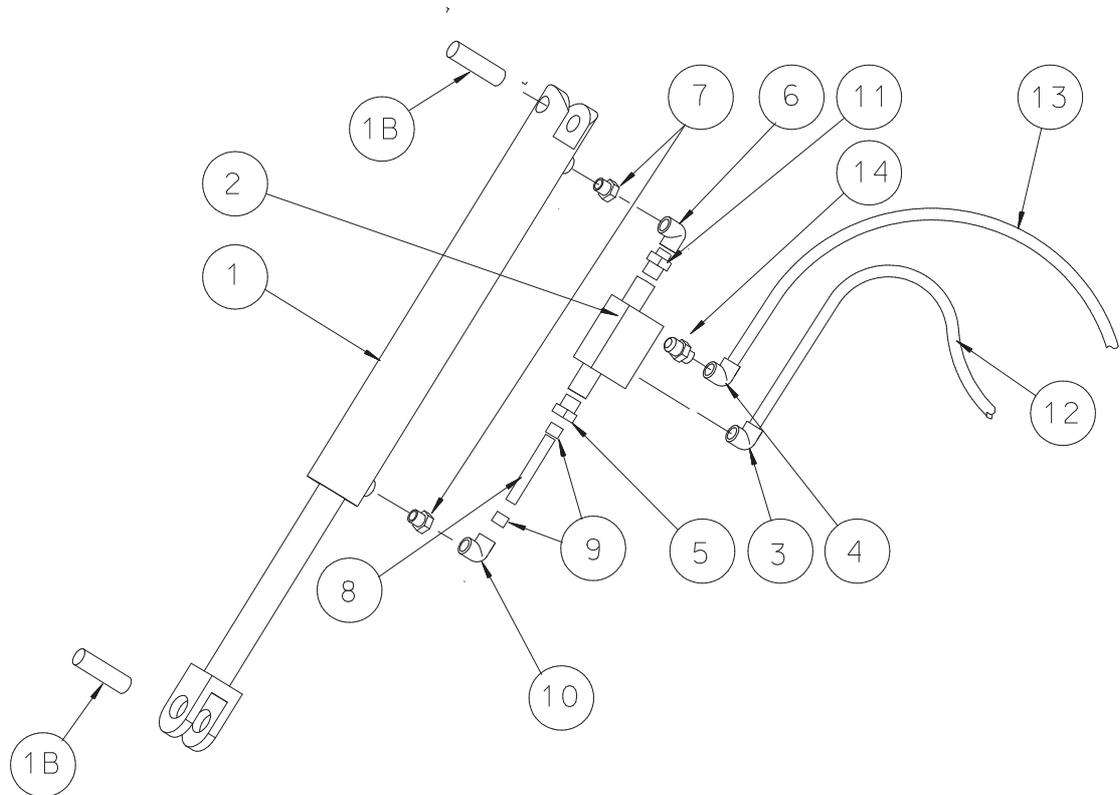
3M Harness Ext. (Not shown) - PS-77011

FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 6-5. Hydraulic Cylinder Assembly P/No. PS-62998-AH



NOTE: HYDRAULIC CYLINDER ASSEMBLY P/No PS- 62998-AH includes Part No.s 1 to 11

Item	Part No.	Part Name	Qty		
1	PS-62998-AH	HYDRAULIC CYL. (with hard plumbing)	1		
	PS-62998-HPK	HARD PLUMBING KIT	1		
1A	PS-62998-A	HYDRAULIC CYLINDER 2 1/2"	1		
1B	PS-62998-P	PIN - CYLINDER (Incl. clips)	2		
1S	PS-63103	SEAL KIT (Not shown)	1		
2	PS-63201	VALVE - PILOT OPERATED LOCKING	1		
3	PS-61154	FITTING - ELBOW-9/16" JIC	1		
4	PS-61151	FITTING - SWIVEL ELBOW 7/16" JIC	1		
5	PS-61157	FITTING - O RING 1/4BSPPx 9/16" JIC	1		
6	PS-61158-5MM	FITTING - 0.5mm RESTRICTION 90 DEG	1		CYL. END
7	PS61163	REDUCER JIC x BSPP	2		
8	PS-61160	TUBE (Cut to suit) 510mm	1		
9	PS-61147	FERRULES	2		
10	PS-61158-1MM	FITTING - 1MM RESTRICTION 90 DEG	1		ROD END
11	PS-61145	FITTING- 9/6" JIC SWIVEL	1		
12	PS-60051-3.5	HOSE- HYDR. (9/6" JIC SWIVEL FITTING)	2		
13	PS-60050-3.5	HOSE- HYDR. (7/6" JIC SWIVEL FITTING)	1		
14	PS-61153	FITTING - STRAIGHT 7/16"	1		

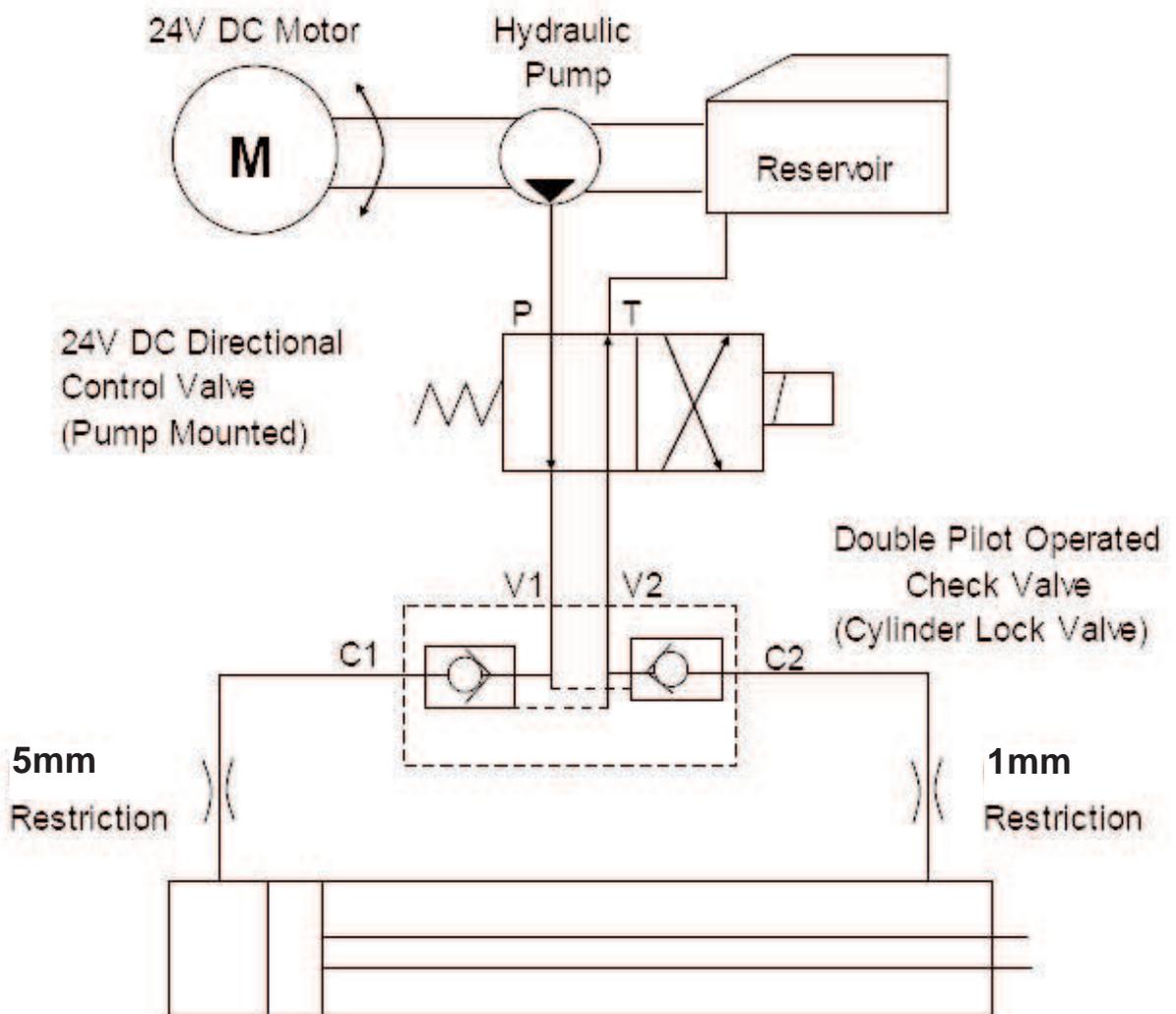
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Caterpillar 785D Haul Truck



Section 6-5 Hydraulic Cylinder Assembly (Valve Diagram)

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



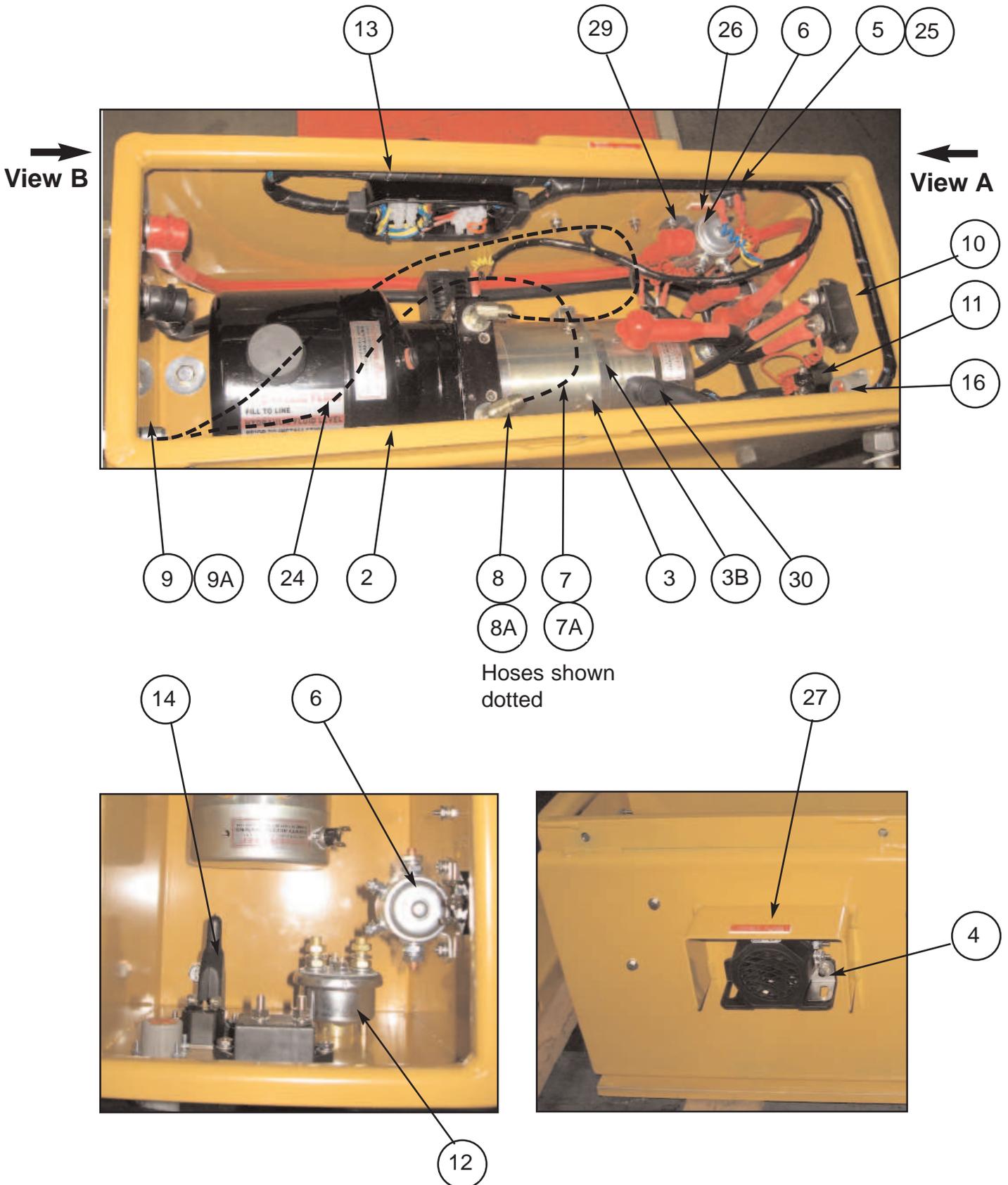
FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 6-6. Power Pack PS-80103A-SLD

See Parts List Pg 20



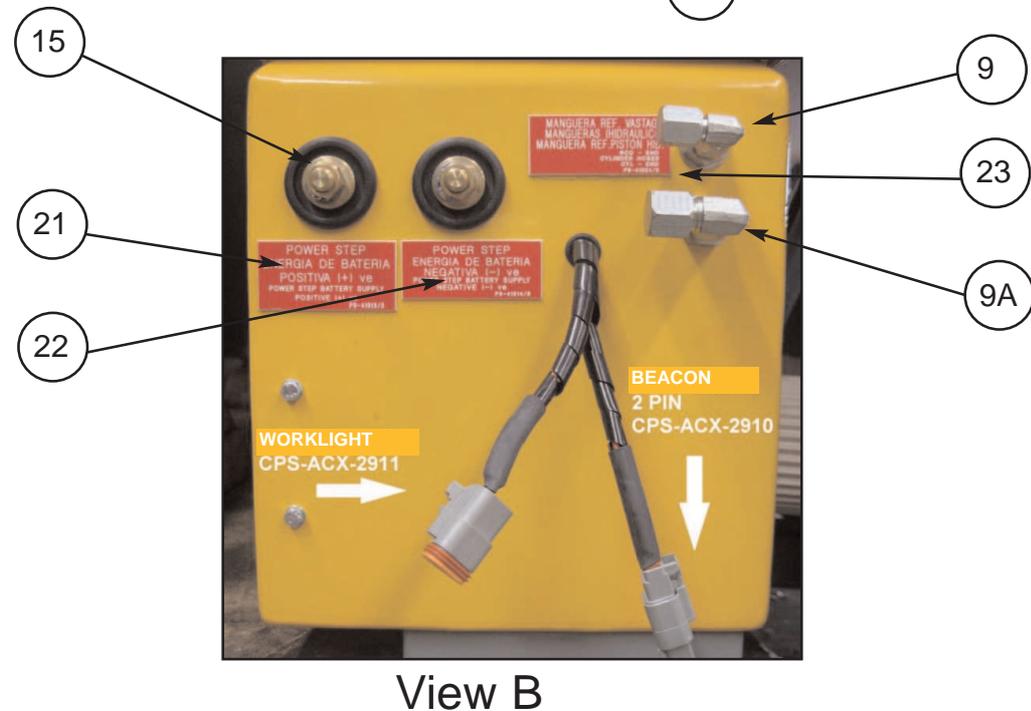
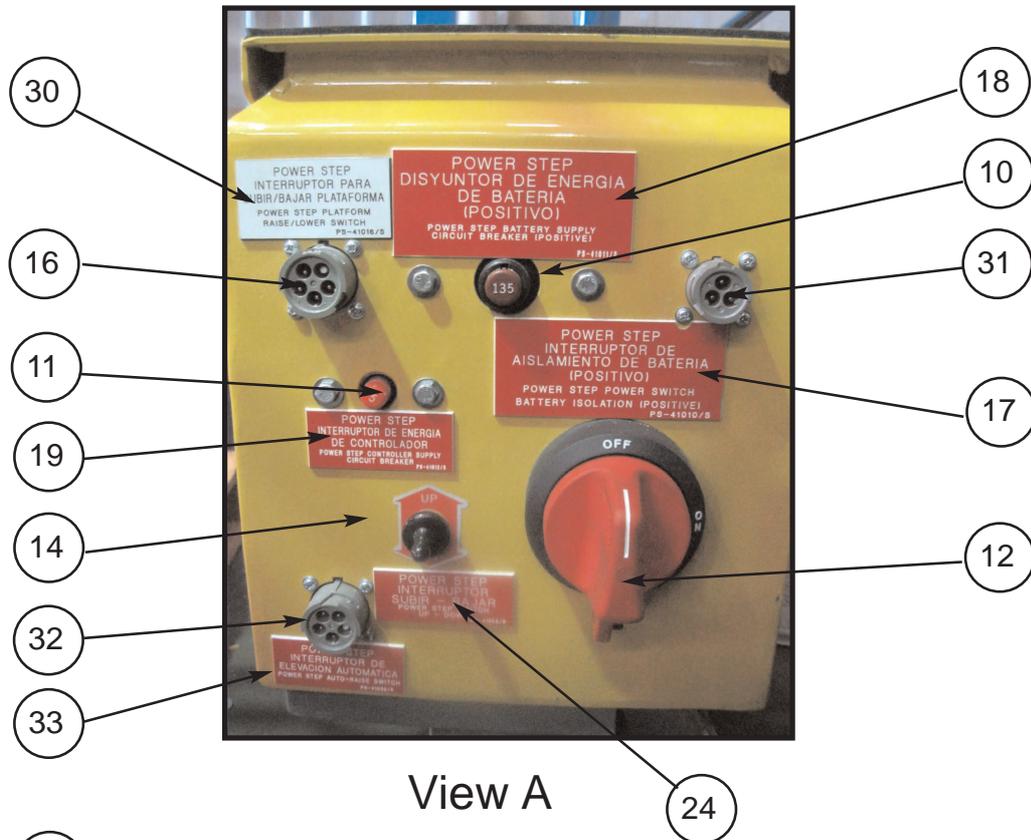
FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 6-6 Power Pack PS-80103A-SLD

See Parts List Pg 20



NOTE.
THE RELIEF PRESSURE OF THE POWERPACK IS TO BE SET TO 2800PSI.
IF THE POWERPACK IS REPLACED, THIS RELIEF PRESSURE WILL NEED TO BE
RESET USING INLINE GAUGES.
FAILURE TO DO SO MAY RESULT IN ACCIDENT OR INJURY

FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 6-6 Power Pack PS-80103A-SLD

See Photos 18 & 19

Item	Part No.	Part Name	Qty		
1	PS-80103A-SLD	POWER PACK ASSEMBLY	1		
2	PS-21107-METAL	MOTOR ENCLOSURE- SEALED ST/ST	1		
3	PS-80103A	POWER PACK	1		
3A	PS-80103-CLAMP	CLAMP ELECTRIC MOTOR	1		
4	PS-82415	AUDIBLE ALARM	1		
5	PS-84214	BRIDGE RECTIFIER	1		
6	PS-82492	SOLENOID 24V START MOTOR	1		
7	PS-60051-900MM 9/16"	HYDR. HOSES 9/16"JIC STRAIGHT SWIVEL	1		
7A	PS-60050-900MM 7/16"	HYDR. HOSES 7/16"JIC STRAIGHT SWIVEL	1		
8	PS-61152	HYDRAULIC FITTING 9/16"	1		
8A	PS-61150	HYDRAULIC FITTING 7/16"	1		
9	PS-61177	HYDRAULIC FITTING 9/16"	1		
9A	PS-61176	HYDRAULIC FITTING 7/16"	1		
10	PS-84213	135A CIRCUIT BREAKER	1		
11	PS-84212	5A CIRCUIT BREAKER	1		
12	PS-84303	ISOLATION SWITCH	1		
13	PS-1712080	SEALED WIRING BOX	1		
14	PS-73012	TOGGLE SWITCH KIT	1		
15	PS-82493	BATTERY FEED STUDS	2		
16	PS-HD10-5-16P	5 PIN SOCKET	1		
17	PS-41010	DECAL-Battery Isolation	1		
18	PS-41011	DECAL-Battery Supply C/B-135A	1		
19	PS-41012	DECAL-Controller Supply C/B-10A	1		
20	PS-41013	DECAL-Battery Supply-Positive	1		
21	PS-41014	DECAL-Battery Supply-Negative	1		
22	PS-41023	DECAL-Up/Down	1		
23	PS-41024	DECAL HYDRAULIC-HOSES	1		
24	PS-41041	DECAL OIL TANK	1		
25	PS-41019	DECAL BRIDGE RECTIFIER	1		
26	PS-41017	DECAL SOLENOID	1		
27	PS-41018	DECAL ALARM	1		
28	PS-41016	DECAL RAISE/LOWER SWITCH	1		
29	PS-73010	RUBBER BOOT RED	6		
30	PS-73009	RUBBER BOOT BLACK	3		
31	PS-HD10-3-16P	3 PIN SOCKET (PARK BREAK)	1		
32	PS-HD10-5-16P	5 PIN SOCKET (AUTO-RAISE)	1		
33	PS-41032	DECAL AUTO-RAISE SOCKET	1		

FOLDING STAIRWAY

Caterpillar 785D Haul Truck

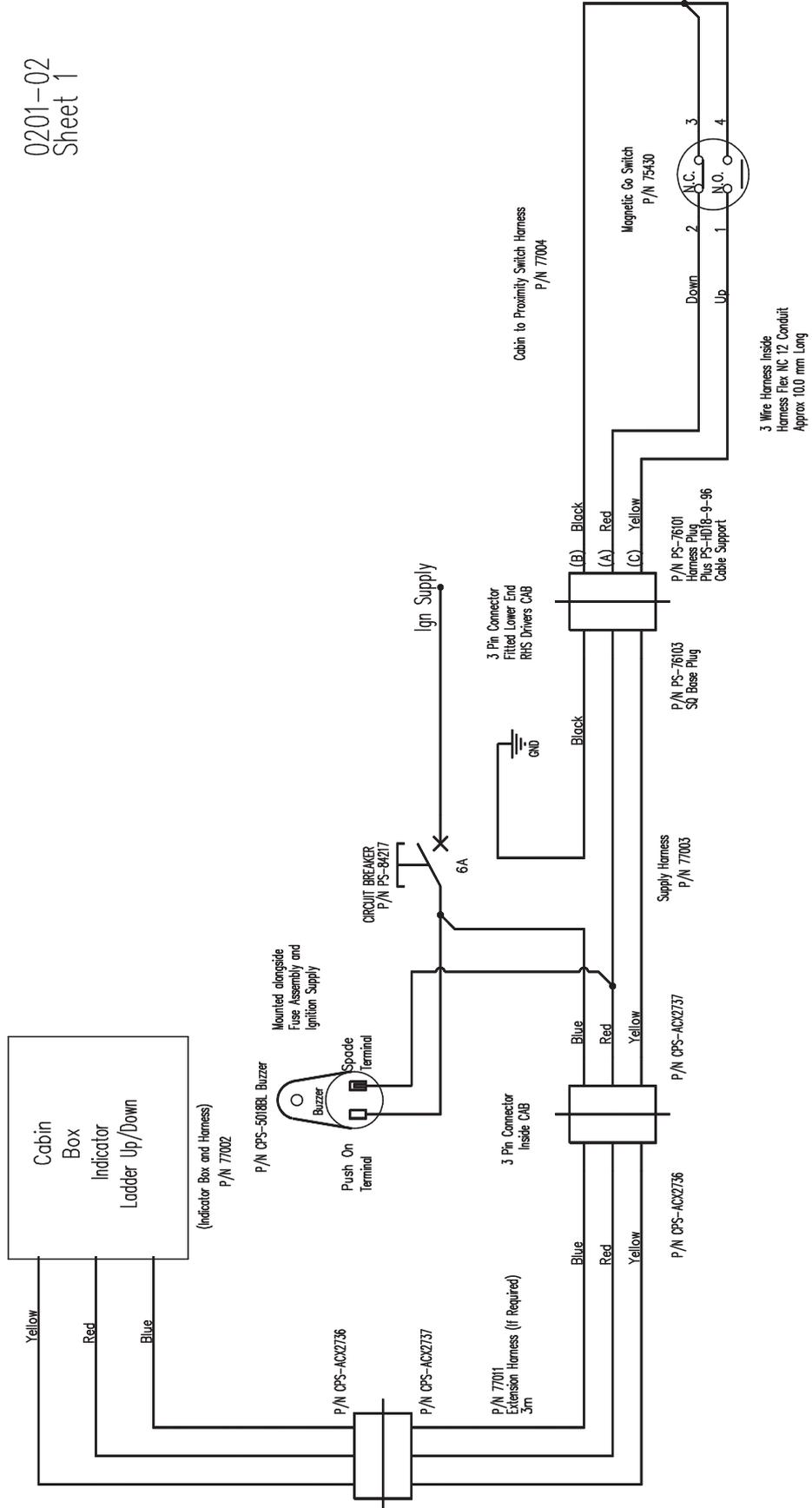


Section 6-4. Electrical System - Wiring Harness 1

WIRING HARNESS 785D

LADDER UP/DOWN

0201-02
Sheet 1



FOLDING STAIRWAY

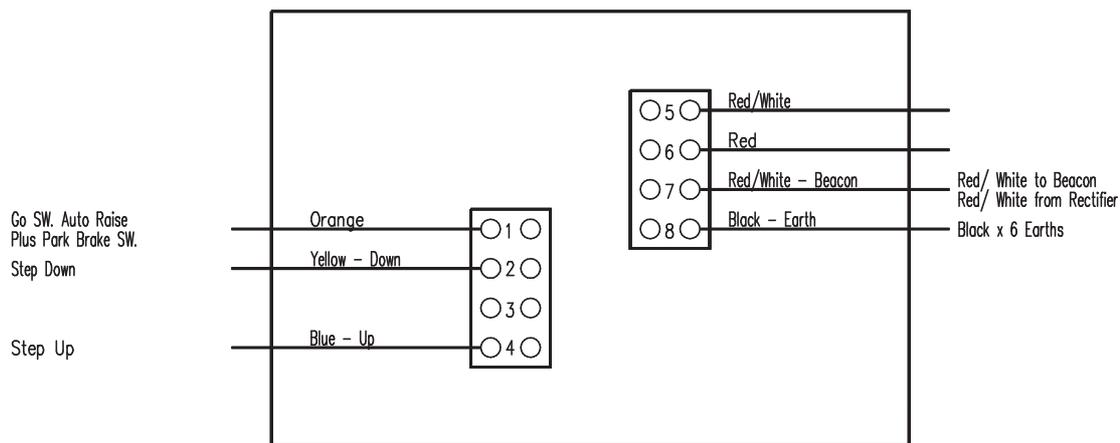
Caterpillar 785D Haul Truck



Section 6-4. Electrical System - Wiring 3

WIRING HARNESS

0201-02
Sheet 5



PARK BRAKE HARNESS- P/No 77006-PB

Plug Term	Colour		Terminal ID.	
(C)	Red	-	COM] Length 10m (Harness Flex No 12)
(A)	Red/White	-	N.C.	
(B)	Orange	-	N.O.	

GO SWITCH HARNESS (Auto Raise) P/No 77009-AR

Plug Term	Colour		Terminal ID.	
(B)	Blue	-	No. 1 Terminal N.C. Contact] Length 10m (Harness Flex No 12)
(E)	White (Spare)	-	No. 2 Terminal N.O. Contact	
(A)	Orange	-	No. 3 Terminal N.C. Contact	
(C)	Brown (Spare)	-	No. 4 Terminal N.O. Contact	

GO SWITCH HARNESS (Cabin to Go Switch) P/No 77004 (Cabin Indicator Ladder Up/Down)

Plug Term	Colour		Terminal ID.	
(B)	Black	-	No. 1 Terminal N.C. Contact] Length 10m (Harness Flex No 12)
(B)	Black	-	No. 2 Terminal N.O. Contact	
(A)	Red	-	No. 3 Terminal N.C. Contact	
(C)	Yellow	-	No. 4 Terminal N.O. Contact	

HAND RAIL SWITCH HARNESS (P/No 77010) (Handrail SW to Power Pack Box)

Plug Term	Colour		SW Contacts		Switch Terminal No.	
(C)	Red/White	-	No 1	-	No 5] Length 10m (Harness Flex No 12)
(D)	Blue	-	No 2	-	No 4	
(B)	Yellow	-	No 3	-	No 2	
(A)	Green	-	No 4	-		

FOLDING STAIRWAY

Caterpillar 785D Haul Truck



Section 6-4. Electrical System - Wiring 4

0201-02
Sheet 6

Wiring Harness

Go Switch

Auto - Raise Connection

N.C.	-	Orange	-	Blue
N.O.	-	Brown	-	White (Spare)

Go Switch - Cabin Indicator

Up/Down Lights Connection

N.C.	-	Red	-	Black] Linked
N.O.	-	Yellow	-	Black	

Hand Control Switch - Mounted on Hand Rails (P/No 73013)

Power Step Wiring Harness (10m) and Connections Supplied

Contacts

1	-	Red/White	-	Power Supply
2	-	Blue	-	Up Switch
3	-	Yellow	-	Down Switch
4	-	Green	-	Start Sol Motor [FRS Power Pack only (Spare)]

Pendant Switch

Standard Switch Wiring and Connections

