

CATERPILLAR D6T

SMC / SEBP4972

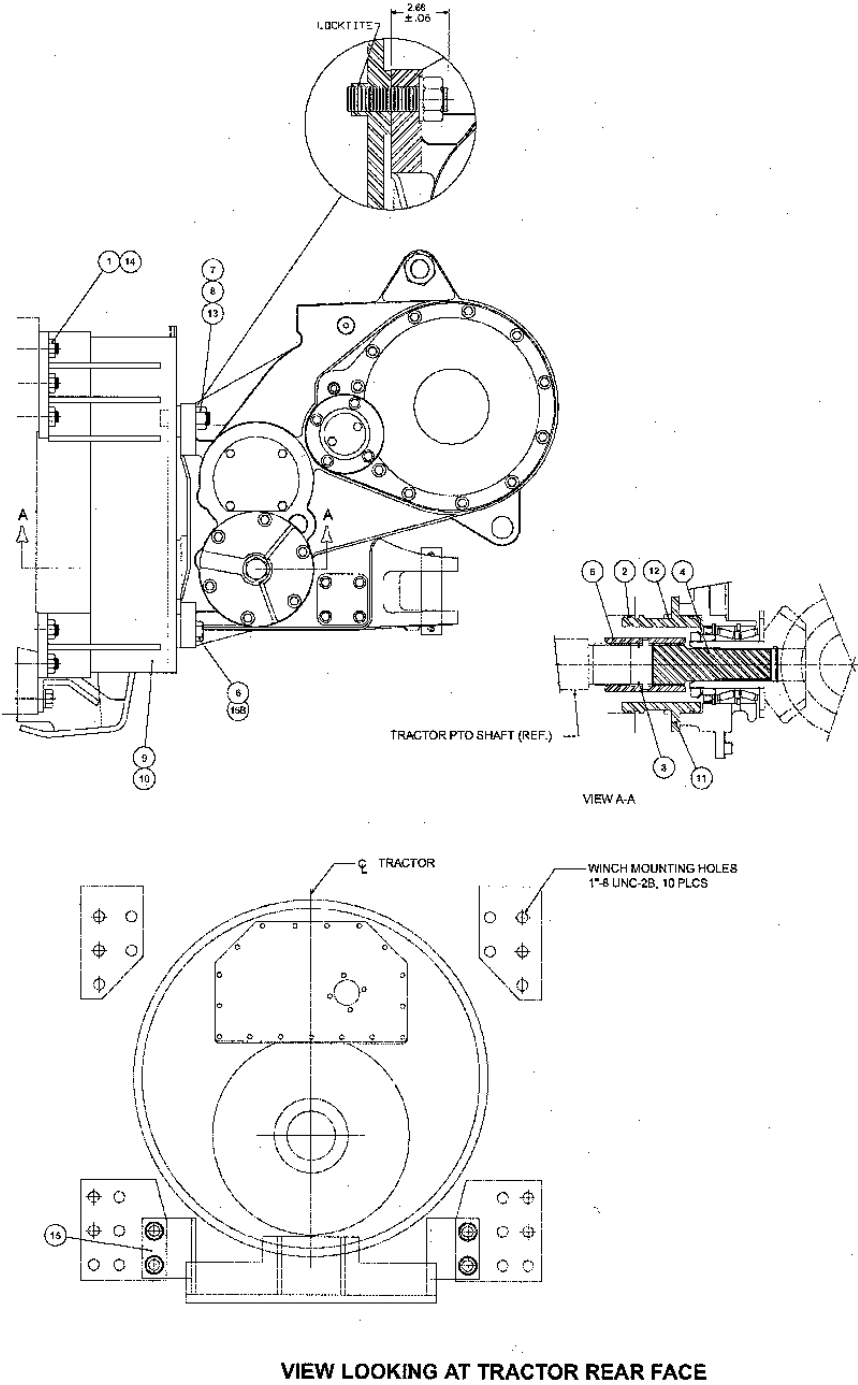
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MOUNTING GROUP

MOUNTING GROUP

Drawing 1 of 3



MOUNTING GROUP (continued)

Drawing 2 of 3

MOUNTING GROUP INSTRUCTIONS

1. PTO rotation is counterclockwise (CCW) as viewed from the rear of the tractor. Remove the tractor PTO cover.
2. Remove paint, dirt, rust, oil and grease from mounting surfaces of tractor, winch and winch adapters. If this material is left between the mounting surfaces, movement of the clamped members will result in loosening mounting fasteners and possible fastener or mounting component failure.
3. Coat splines of PTO shaft (4), with multi-purpose grease and install into bevel pinion gear of winch.
4. Install retaining rings (3), in coupling (5). Trial fit the coupling onto the tractor PTO shaft and the winch PTO shaft to make certain the splines fit well and there are no rough areas on either shaft that need to be smoothed. Install coupling onto winch PTO shaft with deepest bevel end away from winch.
5. Install O-rings (2), onto PTO pilot (11). NOTE: As the same PTO pilot may be used on several adaptations, typically only one O-ring groove will engage and seal in the tractor PTO opening.
6. Apply Loctite 271, 277 or equivalent to threads and install studs (8) into winch adapters (9, 10) to a height of 2-5/8 in. (67 mm).
7. Apply Loctite 242, 243 or equivalent to the threads of capscrews (6), and studs (8). Install the winch adapters (9, 10) onto the winch then install capscrews (6), washers (13) and nuts (7) onto studs (8). At this time, only lightly hand-tighten the capscrews (6), and nuts (21).
8. Fill winch to proper level with recommended oil.

⚠ WARNING ⚠

Winch weighs approximately 2500 lb (1134 kg) without oil, cable or tractor adapters. Make certain lifting equipment has adequate capacity to eliminate the possibility of damage or injury. Attempting to lift the winch with inadequate equipment may result in personal injury or property damage.

⚠ WARNING ⚠

DO NOT start the tractor engine until the winch has been filled to the proper level with the recommended oil. Bearing and gear damage may result if the tractor is run without oil in the winch.

MOUNTING GROUP (continued)

Drawing 3 of 3

There are two methods that may be used to install the winch with adapters onto the rear face of the tractor:

Method A: Involves removing winch guards and covers to gain access to the bevel gears.

A1. Apply Loctite 271, 277 or equivalent to clean, dry threads and install studs (1) into rear face of tractor until they bottom in the stud bores but no lower than a height of 1.80 in. (46 mm) measured from the machined surface of the tractor rear face mounting pads to the end of the stud.

A2. Apply general purpose grease to the PTO pilot o-rings. Lift winch into position and install onto rear of tractor taking care to guide the PTO shaft/coupling onto the tractor PTO shaft. It may be necessary to rotate the winch bevel pinion gears to align the winch shaft with the tractor shaft. It will be necessary to remove the guard group and top cover from the winch to gain access to the bevel gears.

A3. Apply Loctite 242 or 243 to clean dry threads of studs (1) and install nuts (14).

NOTE: Keep the winch in a level position to avoid binding of the PTO pilot and shafts.

With the weight of the winch supported by the hoist, use a cross pattern to evenly tighten all mounting fasteners to approximately 25% of the recommended torque. Start the tractor engine and listen for any unusual gear train noise that would indicate binding in the PTO shafts or gear train. If no unusual noises are detected, remove the hoist from the winch and continue to evenly tighten all mounting fasteners to recommended torque. Tighten nuts (7) & (14) to 600 lb.ft. (815 N•m) torque. Tighten capscrews (6) to 680 lb.ft. (920 N•m) torque. If torque wrench adapters are not available for tightening the nuts (7, 14) they may be tightened as follows: Tighten nuts with a hand wrench to approximately 100 lb.ft. (136 N•m) torque to remove all looseness from the assembly. Mark the position of a wrench flat on each nut, then tighten each nut one (1) additional wrench flat.

Method B: Does not require removal of guards and covers from the winch.

B1. Apply general purpose grease to the PTO pilot o-rings. Lift winch into position and install onto rear of tractor taking care to guide the PTO shaft/coupling onto the tractor PTO shaft. While the winch is supported on the hoist, slightly rotate the winch case to align the PTO coupling on the winch with the PTO shaft of the tractor.

NOTE: Keep the winch in a level position to avoid binding of the PTO pilot and shafts.

B2. Apply Loctite 271, 277 or equivalent to clean dry threads and install studs (1) through winch adapter holes into the tractor rear face. Install the studs till they bottom in the stud bores but no lower than 1.80 in. (46 mm) measured from the machined surface of the tractor rear face mounting pads to the end of the stud. Apply Loctite 242 or 243 to clean dry threads of studs (1) and install nuts (14). With the weight of the winch supported by the hoist, use a cross pattern to evenly tighten all mounting fasteners to approximately 25% of the recommended torque. Start the tractor engine and listen for any unusual gear train noise that would indicate binding in the PTO shafts or gear train. If no unusual noises are detected, remove the hoist from the winch and continue to evenly tightening all mounting fasteners to recommended torque. Tighten nuts (7) & (14) to 600 lb.ft. (815 N•m) torque. Tighten capscrews (6) to 680 lb.ft. (920 N•m) torque. If torque wrench adapters are not available for tightening the nuts (7, 14) they may be tightened as follows: Tighten nuts with a hand wrench to approximately 100 lb.ft. (136 N•m) torque to remove all looseness from the assembly. Mark the position of a wrench flat on each nut, then tighten each nut one (1) additional wrench flat.

After winch is installed on tractor and all fasteners tightened to recommended torque, the bevel pinion must be pried toward the tractor. During installation, the pinion may get driven hard into the bevel gears, taking all end-play out of the pinion bearings and back-lash out of the gear set. Insert a pry bar between the clutch shaft and pinion then pry the pinion toward the tractor. A small amount of gear back-lash should be detected when the pinion moves forward.

Ref.	Part number	Description	Qty	Code	Group page
1	119-0171	STUD (1-8 X 3-1/4 G8)	10		
2	8S-5654	O-RING	3		
3	002-3455	RETAINING RING	2		
4	118-6595	PTO SHAFT	1		
5	118-5863	COUPLING	1		
6	7X-0406	CAPSCREW (HEX HEAD) (1-8X3 G8 Z)	4		

MOUNTING GROUP (continued)

Ref.	Part number	Description	Qty	Code	Group page
7	4J-5977	NUT (HEX) (1 1/8-7)	4		
8	133-9224	STUD (1 1/8-7X4 3/4)	4		
9	118-6929	ADAPTER (RH)	1		
10	118-6930	ADAPTER (LH)	1		
11	118-6537	PILOT (PTO)	1		
12	5P-2228	CAPSCREW (HEX HEAD) (1/2-13X1 G8 Z)	4		
13	7X-0531	WASHER (HARDENED) (1 1/8)	4		
14	6V-8190	NUT (HEX) (1-8)	10		
15	3W-1356	ECOLOGY DRAIN GROUP (INCLUDES ITEMS 15A, B & C)	1		
15A	3W-1357	GUARD	1		
15B	8T-5361	WASHER (HARDENED) (1)	8		
15C	7X-0400	CAPSCREW (HEX HEAD) (1-8X1 1/2 G8 Z)	4		

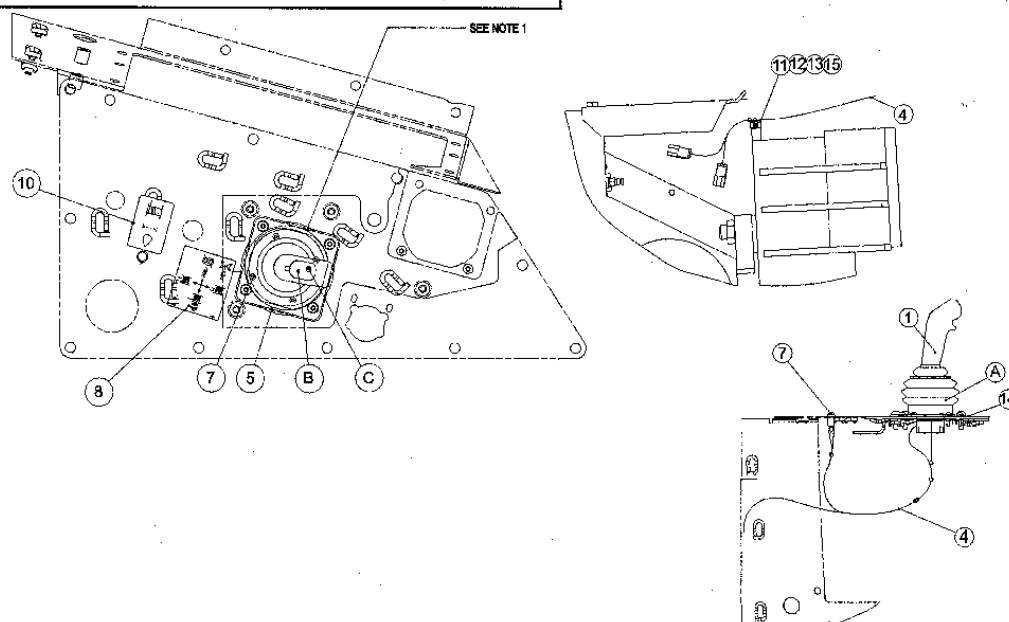
CONTROL GROUP

CONTROL GROUP

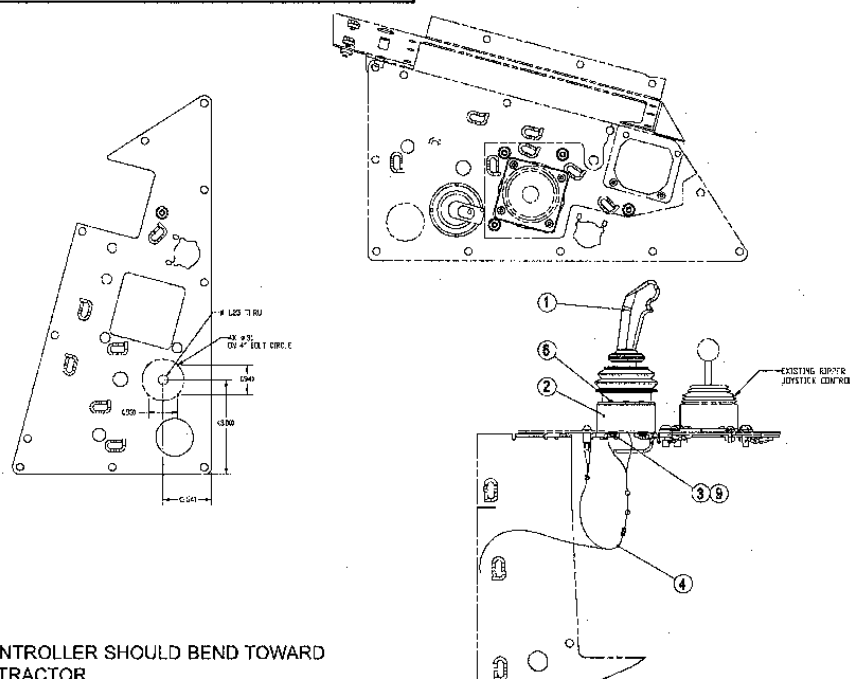
Drawing 1 of 2

D6T

CONTROL GROUP WITHOUT RIPPER CONTROL



CONTROL GROUP WITH RIPPER CONTROL



NOTES:

1. TOP OF CONTROLLER SHOULD BEND TOWARD FRONT OF TRACTOR

CONTROL GROUP (continued)

Drawing 2 of 2

CONTROL INSTALLATION INSTRUCTIONS

These control installation instructions are provided as a general guide. Tractor options, application requirements or local regulations may require deviation from these recommendations. Stop engine, turn key switch and master power switch off.



Avoid routing the wiring harness near moving shafts or linkages, which may cause damage to the wiring harness or restrict free movement of tractor components.

1. Attach dual axis controller (1), to controller mounting plate (5), with button head capscrews (6).
2. Remove RH tractor console.
3. Install harness (4), in tractor as shown. Connect winch and control module ends of harness. Secure winch end of harness with strap, capscrew, washer and wire tie strap (11, 12, 13, 15), as shown. Secure harness at console wall with wire tie straps, as shown.
4. Install decal, and indicator light (7, 10), onto console.
5. If tractor is equipped with a ripper control assembly, modify console as shown and install spacer (2) with capscrews and washers (3, 9) as shown. Install console cover.
6. Attach dual axis controller and mounting plate to console cover with existing Caterpillar fasteners.
7. Connect controller to control module and secure harness with wire tie straps (13).
8. Connect harness spade connectors to indicator light. Red wire must be connected to positive terminal of indicator light.
9. Insure tractor power is off. Connect harness to tractor power supply circuit 3-pin plug, which is located on right rear side of the fuel tank.
10. Install control decal (8) onto console cover.
11. Fill the winch to the proper level with recommended oil. Refer to the specifications found in the Operation and Preventive Maintenance Manual, publication SEBU7048 or Service Manual, publication SENR8463.
12. Start the tractor and operate the engine at low RPM for several minutes to allow the winch control system pressure to stabilize. Operate the winch in brake-off for approximately one minute then all functions as instructed in the Operation and Preventive Maintenance Manual, publication SEBU7048.

Ref.	Part number	Description	Qty	Code	Group page
1	231-2222	DUAL AXIS JOYSTICK CONTROLLER	1		
A	285-8466	BOOT	1		
B	010-6428	CONTROLLER HANDLE DECAL	1	*	
C	285-8465	SWITCH	1		
2	010-6506	SPACER (USE W/RIPPER CONTROL)	1		
3	4M-5281	CAPSCREW (HEX HD 1/4-20X3/4) (USE W/SPACER 2)	4		
4	249-2804	WIRING HARNESS	4		
5	166-4822	CONTROLLER MOUNTING PLATE	1		
6	8T-9394	CAPSCREW (BUTTON HD) (10X1/2) (STAINLESS)	4		
7	138-2434	INDICATOR LIGHT (RED)	1		
8	138-2435	CONTROL CONSOLE DECAL	1		
9	5P-0537	WASHER (1/4) (USE W/SPACER 2)	4		
10	173-8938	FILTER BYPASS DECAL	1		
11	5M-3062	CAPSCREW (HEX HD) (3/8-16X3/4 GD 8 Z)	1		
12	8T-4896	WASHER (3/8)	1		
13	7K-1181	WIRE TIE STRAP (BLACK)	8		

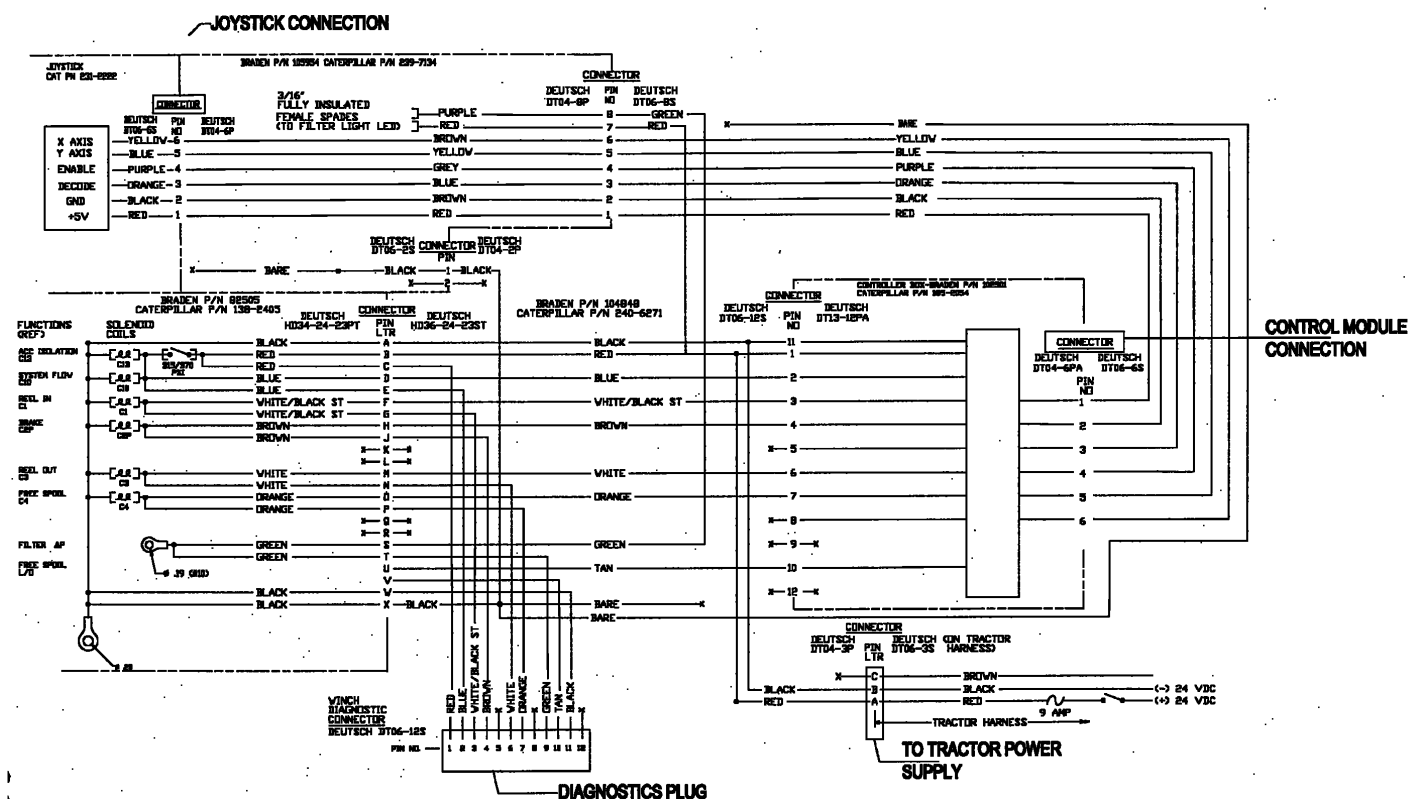
CONTROL GROUP (continued)

Ref.	Part number	Description	Qty	Code	Group page
14	166-4841	CONTROLLER MOUNTING GASKET	1		
15	4P-7581	CLIP	1		
CAT source note: * CAT source note; shown as provided					

ELECTRIC SCHEMATIC

ELECTRIC SCHEMATIC

Drawing 1 of 1



Ref. Part number Description

Qty Code Group page

Parts list rows are not synced on this VPS for SEBP4972/SEBP49720003 yet.

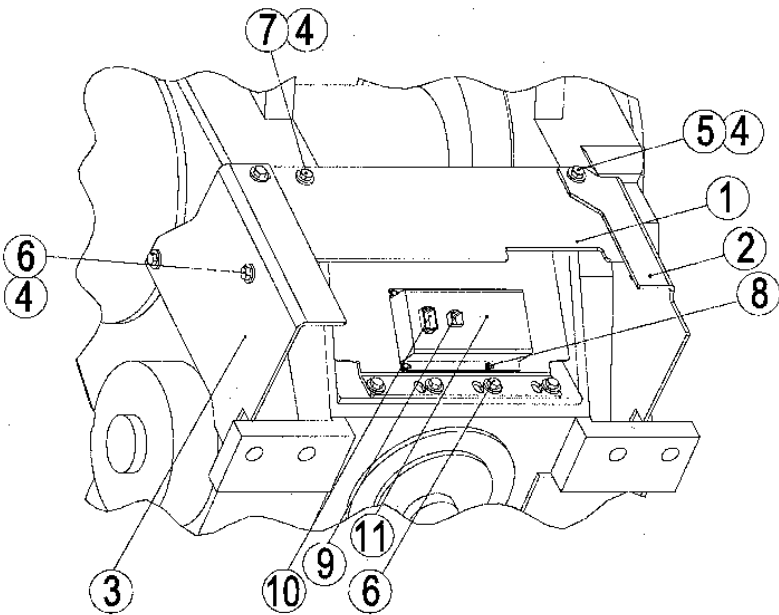
CONTROL MODULE

CONTROL MODULE

Drawing 1 of 1

Module and Harness Installation

- 1. Mount module by installing self-tapping screw (item 8) using Loctite 222, 242, or equivalent low or medium strength thread locker.
- 2. Insert wiring harness (pn# 239-7134) to winch and control module connectors (9 & 10), as well as in-cab mounted control group
- 3. Bundle loose wiring harness leads and secure with tie strap



Ref.	Part number	Description	Qty	Code	Group page
1	240-6267	UPPER GUARD	1		
2	240-6268	LH GUARD	1		
3	240-6269	RH GUARD	1		
4	5P-1076	HARDENED WASHER	10		
5	5P-2228	CAPSCREW (1/2-13 X 1 HEX HEAD GD8 Z)	1		
6	8T-8917	CAPSCREW (1/2-13 X 1 1/4 HEX HEAD GD8 Z)	8		
7	5P-2566	CAPSCREW (1/2-13 X 1 1/2 HEX HEAD GD8 Z)	1		
8	7H-4543	SELF TAPPING SCREW	4		
9	NONE	HARNESS CONNECTION (CONTROL TO MODULE)			
10	240-6271	HARNESS (MODULE TO WINCH)	1		
11	185-2054	CONTROL MODULE	1		

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SMC-SEBP4972

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