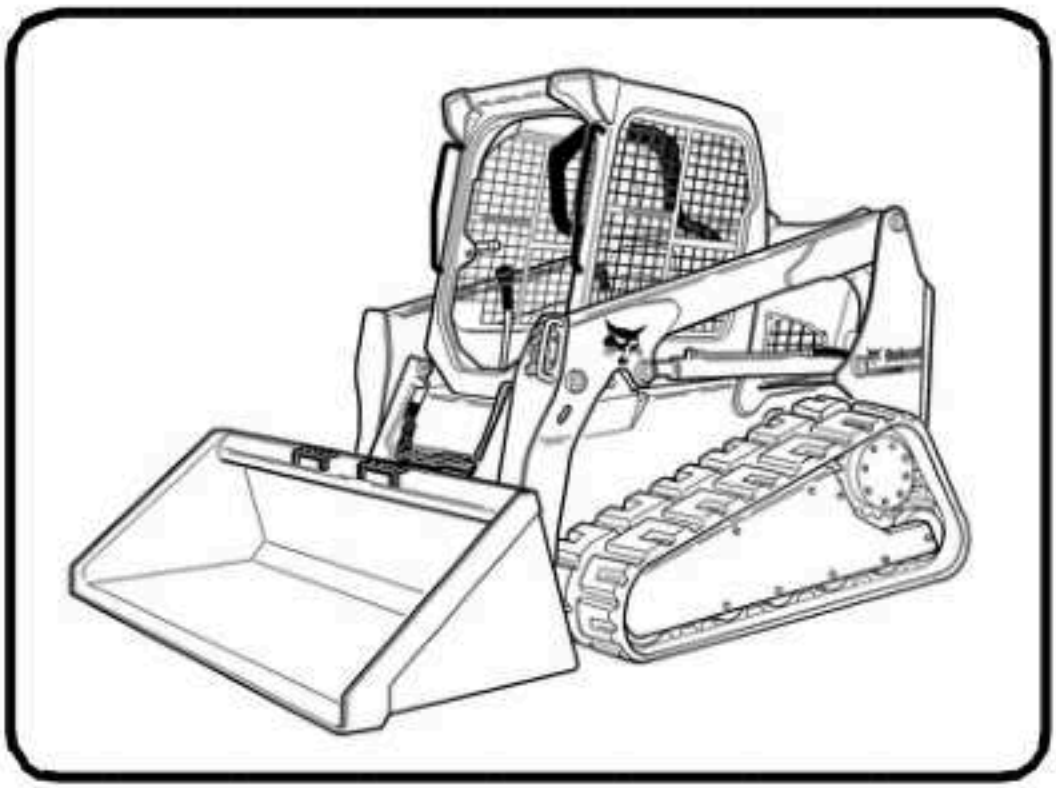
Bobcat®

Service Manual

T630 Compact Track Loader

S/N A7PU11001 & Above
S/N A7PV11001 & Above



EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™)

6987164 (10-10)

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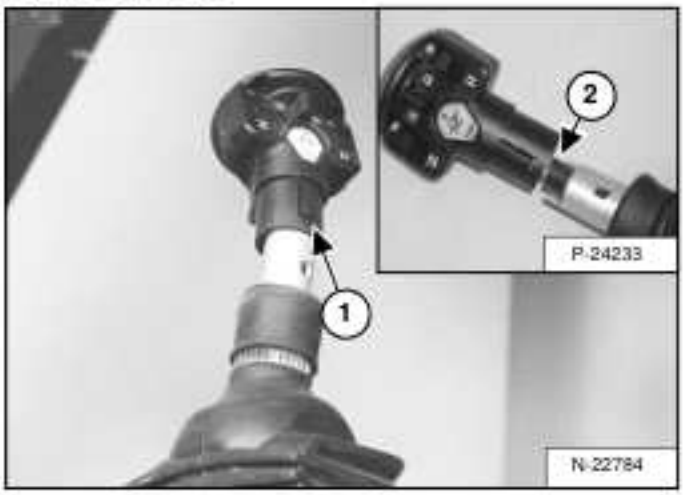
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Switch Handle Removal (Cont'd)

Figure 60-130-12

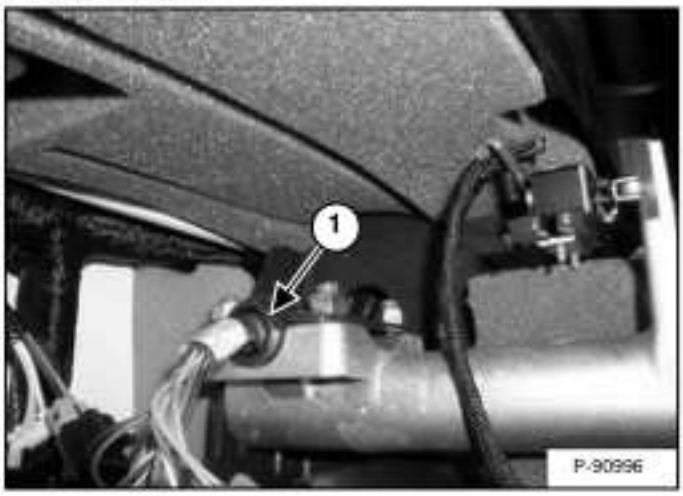


Pull the switch handle and wiring harness assembly (Item 1) **[Figure 60-130-12]** from the control lever.

Cut the wires (Item 2) **[Figure 60-130-12]** below the switch handle and remove switch handle.

NOTE: Only cut the wires if the switch handle is bad and needs replacement. If the switch handle is good and just needs to be removed for control handle or lever replacement, then remove the connectors on the end of the harness and pull switch handle up out of lever tube.

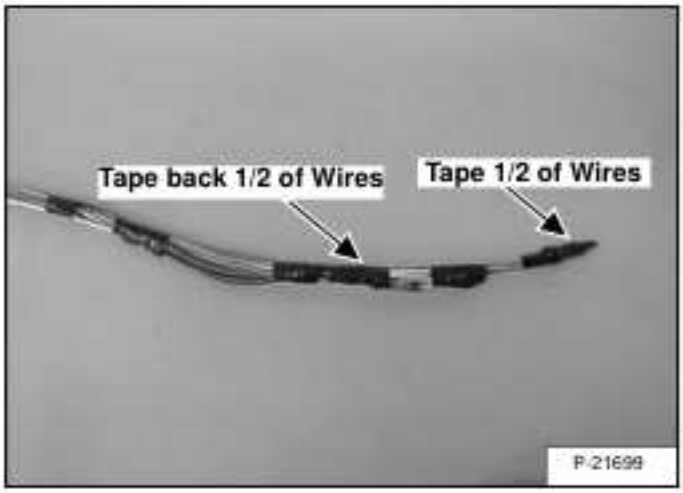
Figure 60-130-13



Pull harness (Item 1) **[Figure 60-130-13]** out the bottom of the control lever tube.

Switch Handle Installation

Figure 60-130-14



When installing the new switch handle, tape the wire terminals together.

The switch handle comes with a 6 inch piece of heat shrink tube side on the end of the wires. Remove the heat shrink tube from the end of the wires before routing through handle and control lever tube.

NOTE: Leave all the other heat shrink tube on the wires for protection.

Tape half of the wires back and half forward **[Figure 60-130-14]** to keep the harness small enough to route through the control lever tube.

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Gauge Pressure Related Troubleshooting (Cont'd)

Possible Cause	Inspection	Solution
High pressure side Too low.		
1. Low refrigerant charge.	The high side pressure will be low.	Repair any leaks and recharge the refrigerant to the correct level.
System pressures Equal		
1. Clutch not operating.	See magnetic clutch related topics above.	
2. Compressor not pumping.	Equal high and low pressures.	Replace compressor.

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Controls

Vehicle Steering	Direction and speed controlled by two hand operated steering levers *or* optional joystick(s)
Loader Hydraulics - Lift and Tilt - Front Auxiliary - Rear Auxiliary (Option)	 Controlled by separate foot pedals or optional Advanced Control System (ACS) or optional Selectable Joystick Controls (SJC) Controlled by electrical switch on Right Hand steering lever or joystick Controlled by electrical switch on Left Hand steering lever or joystick
Auxiliary Pressure Release	Pressure relieved through quick couplers; Push couplers in, hold for 5 seconds
Engine	Hand lever speed control, additional foot operated speed control pedal with SJC option; key-type start switch or optional keyless start panel or optional Deluxe Instrumentation Panel and function error shutdown.
Starting Aid	Glow plugs automatically activated as needed by Instrument Panel
Service Brake	Two independent hydrostatic systems controlled by two hand operated steering levers *or* optional joystick(s)
Secondary Brake	One of the hydrostatic transmissions
Parking Brake (Standard)	Spring applied pressure release multi-disk brake activated by manually operated switch on left instrument panel

Hydraulic System

Pump Type	Engine driven, gear type
Pump Capacity - Standard	87,1 L/min.(23.0 U.S. gpm)
Pump Capacity - High-Flow Option	115,5 L/min.(30.5 U.S. gpm)
System Relief at Quick Couplers	23,8 - 24,5 MPa (237,8 - 244,7 bar) (3450 - 3550 psi)
Filter (Hydraulic / Hydrostatic)	Replaceable beta 10 micron = 200, drop in element
Filter (Charge)	Replaceable beta 10 micron = 200, drop in element
Hydraulic Cylinders Bore Diameter: Lift Cylinder (2) Tilt Cylinder (2) Rod Diameter: Lift Cylinder (2) Tilt Cylinder (2) Stroke: Lift Cylinder (2) Tilt Cylinder (2)	Double-acting; tilt cylinders have cushioning feature on dump and rollback 63,5 mm (2.50 in) 76,2 mm (3.00 in) 44,4 mm (1.75 in) 41,4 mm (1.63 in) 860,3 mm (33.87 in) 354,8 mm (13.97 in)
Control Valve - Standard	3-Spool, open center, manually operated with spring detent for lift float and electrically controlled auxiliary spool
Control Valve - ACS and SJC	3-Spool, open center with electric actuator controlled lift with float and tilt. Electrically controlled auxiliary spool
Fluid Lines	SAE Standard tubelines, hoses and fittings
Fluid Type	BOBCAT FLUID, Hydraulic / Hydrostatic 6903117 - (Two - 2.5 U.S. gal) 6903118 - (5 U.S. gal) 6903119 - (55 U.S. gal)
Hydraulic Function Time: Raise Lift Arms Lower Lift Arms Bucket Dump Bucket Rollback	 3.4 Seconds 3.0 Seconds 2.3 Seconds 1.7 Seconds

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J1 CONNECTOR ASSIGNMENTS(GATEWAY CONTROLLER)			
PIN	FUNCTION	PIN	FUNCTION
A-1	HYDRAULIC LOCK RETURN	B-1	HYD CHARGE PRESS
A-2	LIFT SPOOL LOCK RETURN	B-2	UNSW BATT
A-3	FUEL PULL RELAY	B-3	UNSW BATT
A-4	SWITCHED POWER OUT RELAY	B-4	FUEL HOLD
A-5	LIGHT 1 RELAY	B-5	LIFT SPOOL LOCK
A-6	GLOW PLUG RELAY	B-6	TRACTION LOCK HOLD
A-7	STARTER RELAY	B-7	TILT SPOOL LOCK
A-8	TRACTION PULL RELAY	B-8	CAN LO 1
A-9	FAN 1 RELAY	B-9	CAN HI 1
A-10	TILT SPOOL LOCK RETURN	B-10	SPOOL LOCK SENSOR 2
A-11	SPARE DIGITAL, ECU SINKS	B-11	SEAT BAR
A-12	SPARE DIGITAL, ECU SOURCES	B-12	FUEL LEVEL
A-13	TRACTION PULL RELAY FDBK	B-13	BICS HYD LOCK HOLD
A-14	GLOW PLUG RELAY FDBK	B-14	CAN HI 2
A-15	ENGINE SPEED	B-15	GROUND P1
A-16	AIR FILTER SWITCH	B-16	GROUND P2
A-17	LIGHT 2 RELAY	B-17	GROUND P3, SENSOR
A-18	FAN 2 RELAY	B-18	ENGINE COOLANT TEMP
A-19	PTOL LED	B-19	FAN 2 OUTPUT
A-20	PTOL SWITCH	B-20	CAN LO 2
A-21	SWITCHED POWER OUT RELAY FDBK	B-21	REMOTE KEY
A-22	STATER RELAY FDBK	B-22	RUN/ENTER
A-23	HYD OIL FILTER SW2	B-23	SENSOR SUPPLY 8V
A-24	START ENGINE	B-24	SENSOR SUPPLY 5V
A-25	ENGINE OIL PRESS	B-25	TWO SPEED MAKEUP
A-26	SPARE	B-26	TWO SPEED COIL
A-27	SPARE		
A-28	LIGHT 2 RELAY FDBK		
A-29	FAN 1 RELAY FDBK		
A-30	FUEL PULL RELAY FDBK		
A-31	LIGHT 1 RELAY FDBK		
A-32	HYD OIL TEMP		
A-33	SPARE ANALOG		
A-34	HYD OIL FILTER SW1		

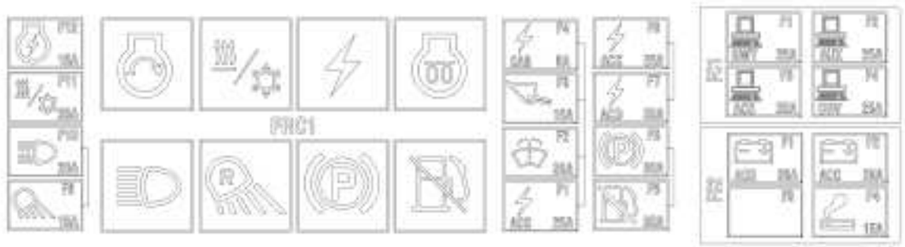
J2 CONNECTOR ASSIGNMENTS(AUXILLIARY CONTROLLER)			
PIN	FUNCTION	PIN	FUNCTION
A-1	FRONT AUX (F) RETURN	B-1	
A-2	REAR AUX (F) RETURN	B-2	UNSW BATT
A-3	LEFT BLINKER RELAY	B-3	UNSW BATT
A-4	RIGHT BLINKER RELAY	B-4	DIVERTED SOLENOID
A-5	HORN RELAY	B-5	REAR AUX (F)
A-6		B-6	RELIEF SOLENOID
A-7	OUTPUT SPARE	B-7	REAR AUX (M)
A-8		B-8	CAN LO 1
A-9		B-9	CAN HI 1
A-10	REAR AUX (M) RETURN	B-10	
A-11	LH PADDLE RIGHT	B-11	
A-12	LH PADDLE LEFT	B-12	
A-13	RH RIGHT BUTTON UP	B-13	FRONT AUX (F)
A-14	DIGITAL INPUT SPARE	B-14	CAN HI 2
A-15		B-15	GROUND
A-16		B-16	GROUND
A-17		B-17	HANDLE POT GND
A-18	FRONT AUX (M) RETURN	B-18	RH PVM POT SIGNAL
A-19		B-19	FRONT AUX (M)
A-20	LH FLOAT BUTTON	B-20	CAN LO 2
A-21	HYDRAULIC DETENT	B-21	RH TRIGGER
A-22	LH RIGHT BUTTON DOWN	B-22	SWITCHED POWER
A-23	RH CENTER BUTTON	B-23	HANDLE POT POWER
A-24	DIGITAL INPUT SPARE	B-24	
A-25		B-25	BUCKET POSITION (SPARE)
A-26	HIGH FLOW RETURN	B-26	HIGH FLOW
A-27	BUCKET POSITION(SPARE) RETURN		
A-28	LH RIGHT BUTTON		
A-29	RH RIGHT BUTTON DOWN		
A-30	RH LEFT UP		
A-31	RH LEFT DOWN		
A-32			
A-33			
A-34	DIGITAL INPUT SPARE		

J5 DRIVE CONTROLLER	
PIN	FUNCTION
1	SAFETY IN
2	TWO SPEED SWITCH
3	SPARE DIGITAL INPUT 2
4	H PAT SWITCH
5	ISO PAT SWITCH
6	ISO LITE
7	L SWASH PLATE ANGLE
8	R SWASH PLATE ANGLE
9	SPARE ANALOG 4
10	SPARE ANALOG 5
11	L FWD RETURN
12	CAN HIGH
13	LF ANGLE
14	RF ANGLE
15	LR ANGLE
16	H PAT LITE
17	RR ANGLE
18	L JOYSTICK X
19	L JOYSTICK Y
20	R JOYSTICK X
21	L FWD DRIVE
22	CAN LOW
23	R QUAD A DRIVE
24	R QUAD B DRIVE
25	TWO SPEED 1
26	BRAKE LIGHT OUTPUT
27	GROUND
28	GROUND
29	SENSOR GROUND
30	SENSOR SUPPLY 2 +5V
31	L REV DRIVE
32	CAN SHIELD
33	L QUAD A DRIVE
34	L QUAD B DRIVE
35	SAFETY OUT
36	BACKUP ALARM
37	R JOYSTICK Y
38	SPARE ANALOG 1
39	SPARE PWM COIL 7
40	SENSOR SUPPLY 1 +5V
41	L REV RETURN
42	R FWD RETURN
43	R FWD DRIVE
44	R REV DRIVE
45	R REV RETURN
46	TWO SPEED 2
47	UNSWITCHED BATTERY
48	UNSWITCHED BATTERY
49	SPARE PWN COIL 6
50	SWITCHED BATTERY

ACS CONTROLLER					
CONNECTOR J1-ACS		CONNECTOR J2-ACS		CONNECTOR J3-ACS	
PIN	FUNCTION	PIN	FUNCTION	PIN	FUNCTION
A	+5V TO SENSORS	A	LIFT CYLINDER SENSOR-SPARE	A	TILT MOTOR 1
B	SWITCHED POWER	B	FLOAT-SPARE	B	UNSWITCHED POWER
C	HAND/FOOT INPUT	C	RESPONSE SELECTOR-SPARE	C	UNSWITCHED POWER
D	CAN HIGH	D	TILT CYLINDER SENSOR-SPARE	D	LIFT MOTOR 2
E	CAN LOW	E	TILT ACTUATOR FEEDBACK	E	HANDLE ENABLE
F		F	LIFT HANDLE	F	LIFT MOTOR 1
G	GROUND	G	TILT HANDLE	G	PEDAL ENABLE
H	GROUND	H	LIFT ACTUATOR FEEDBACK	H	GROUND
		J	LIFT PEDAL	J	GROUND
		K	TILT PEDAL	K	TILT MOTOR 2

HARNESS PART NUMBER	
MAINFRAME	7175625
STD CAB	7165991
DLX CAB	7176098
DLX FUEL	7175293
STD FUEL	7149219
DOOR	7155024
S/R	6733370
TAILGATE DOM	7175271
TAILGATE EUR	7175287
2 SPD ADP	7159366
ACS	7164144
SJC WHEEL	7159325

HARNESS PART NUMBER	
SJC TRACK	7159458
A22 PUMP	7169309
SUSP JSTK	7163706
BACKUP ALARM	7175017
BRAKE ADAPTER	7165061



WIRING SCHEMATIC
(ACS & SJC MACHINE)
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