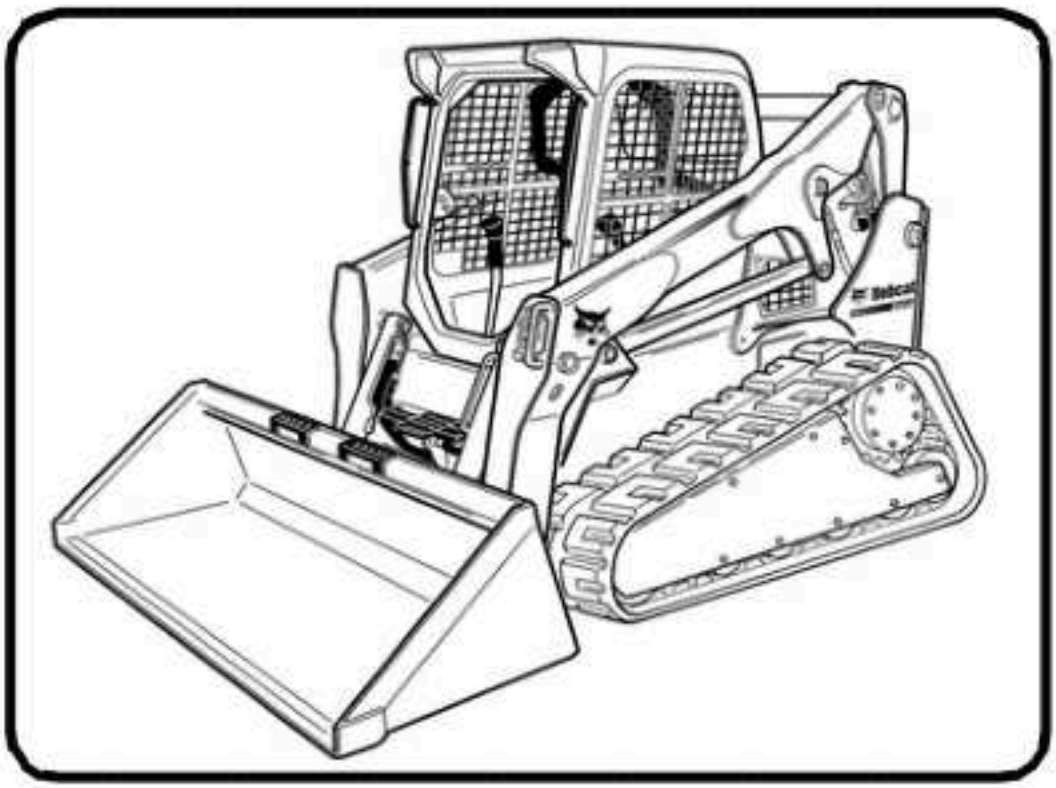
Bobcat®

Service Manual
T770 Compact Track Loader

S/N A3P811001 & Above
S/N A3P911001 & Above



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6989476 (4-11)

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HYDRAULIC/HYDROSTATIC SCHEMATIC
WITH ALL OPTIONS
T770 (S/N A3P811001 AND ABOVE)
(S/N A3P911001 AND ABOVE)

(PRINTED NOVEMBER 2010)
V-1434legend

LEGEND

1. RESERVOIR:
   Capacity at sight gauge . . 9,8 L (2.6 U.S. gal)
   System Capacity . . . . . 36,0 L (9.5 U.S. gal)
2. SIGHT GUAGE
3. DIFFERENTIAL PRESSURE SWITCH:
   103 kPa (1,03 bar) (15 psi)
   Normally Closed
4. FILTER - HYDRAULIC (CANISTER)
5. SPRING LOADED FILTER BY-PASS VALVE: 172 kPa (1,7 bar) (25 psi)
6. DIAGNOSTIC COUPLER
7. RELIEF VALVE - MAIN:
   24132 kPa (241 bar) (3500 psi)
   at Front Quick Couplers
8. RELIEF/ANTICAVITATION VALVE - PORT: 27579 kPa (276 bar) (4000 psi)
9. RELIEF/ANTICAVITATION VALVE - PORT (OPTIONAL): 27579 kPa (276 bar) (4000 psi)
10. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - AUXILIARY
11. LOAD CHECK VALVE
12. ANTICAVITATION VALVE
13. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - TILT CONTROL
14. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT CONTROL
15. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BICS CONTROL
16. FILTER - BICS CONTROL VALVE (SCREEN)
17. CHECK VALVE - With 100 kPa (1,0 bar) (14.5 psi) Spring
18. RESTRICTION . . . . . 2,0 mm (0.079 in)
19. PULL BUTTON ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT ARM BY-PASS
20. LIFT CYLINDER SPOOL - MADE TO RESTRICT FLOW DURING BOOM DOWN BUT NOT DURING BOOM UP
21. ANTICAVITATION VALVE
22. PROPORTIONAL RELIEF VALVE – (Fan Speed Regulator): 10797 – 12300 kPa (108 - 123 bar) (1566 - 1784 psi)
23. SPRING LOADED FILTER BY-PASS VALVE: 517 – 572 kPa (5,2 - 5,7 bar) (75 - 83 psi)
24. FIXED CAPACITY DISPLACEMENT HYDRAULIC MOTOR
25. FILTER - HYDRAULIC (CANISTER)
26. SENSOR – CHARGE PRESSURE – Fan Filter
27. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BUCKET POSITION VALVE (ON/OFF)
28. FLOW DIVIDER ADJUSTMENT VALVE
29. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - FLOW CONTROL SPOOL
30. CHECK VALVE - BUCKET POSITION VALVE
31. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - UNLOADING SPOOL
32. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE – HYDRAULIC POWERED BOB-TACH With Build-up Valve 207 kPa (2,07 bar) (30 psi)
33. FILTER - BOB-TACH VALVE
34. RESTRICTION - 2,08 mm (0.08 in)
35. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE (TWO COIL)
36. RELIEF VALVE - 8274 kPa (83 bar) (1200 psi)
37. CHECK VALVE - With 552 kPa) (5,5 bar) (80 psi) Spring
38. RELIEF VALVE - 13790 kPa (137 bar) (2000 psi)
39. CHECK VALVE - With 2068 kPa (20,7 bar) (300 psi) Spring And With 0,40 mm (0.016 in) Orifice
40. RESTRICTION - 0,51 mm (0.020 in)
41. SHUTTLE VALVE
42. RESTRICTION - 0,51 mm (0.020 in)
43. HYDRAULIC PUMP . . . . . Gear Type
    87,1 L/min (23.0 U.S. gpm) at High Engine Idle
44. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - REAR AUXILIARY
45. RELIEF VALVE: 22753 kPa (228 bar) (3300 psi)
46. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - TWO COIL
47. RESTRICTOR - 0,8 mm (0.031 in)
48. LOAD SHUTTLE VALVE - BLEED OFF
49. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BASE
50. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - ROD
51. VARIABLE CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC PUMP
52. RELIEF/REPLENISHING VALVE - HIGH PRESSURE: 36500 kPa (365 bar) (5294 psi)
53. RELIEF VALVE - CHARGE INLET:
    3206 kPa (32, bar) (465 psi)
    at High Engine Idle
    With 60 ° C (140 ° F) Fluid
54. CHECK VALVE – COLD WEATHER BY-PASS With 345 kPa (3,45 bar) (50 psi) Spring
55. RESTRICTION - 1,5 mm (0.06 in)
56. CHECK VALVE - With 1379 kPa 13,8 bar (200 psi) Spring
57. DRIVE MOTOR SHUTTLE VALVE
58. FIXED CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC MOTOR
59. HYDRAULIC BRAKE – SPRING APPLIED – PRESSURE RELEASE (SAPR)
60. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE – 2 Speed
61. FIXED CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC MOTOR
62. CHARGE PUMP -
    51,1 L/min (13.5 U.S. gpm) at High Engine Idle
63. HIGH FLOW HYDRAULIC PUMP Gear Type
    51,1 L/min (13.5 U.S. gal) at High Engine Idle
64. RELIEF VALVE - 24132 kPa (241 bar) (3500 psi)
65. DUMP VALVE – ON / OFF
66. CHECK VALVE - With 34,5 kPa (0,34 bar) (5.0 psi) Spring
67. FRONT AUXILIARY MANUAL PRESSURE BLEED-OFF VALVE
68. SENSOR – HYD. TEMPERATURE
69. RIDE CONTROL VALVE
70. HIGH PRESSURE CHAMBER
71. LOW PRESSURE CHAMBER
72. SOLENOID ACTIVATED DIRECECTIONAL CONTROL VALVE – BRAKE
73. FILTER – BRAKE VALVE
74. CHECK VALVE
75. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE – 2 Speed Shift
76. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE – 2 Speed Make-up

NOTE: Unless otherwise specified springs have NO significant pressure value.

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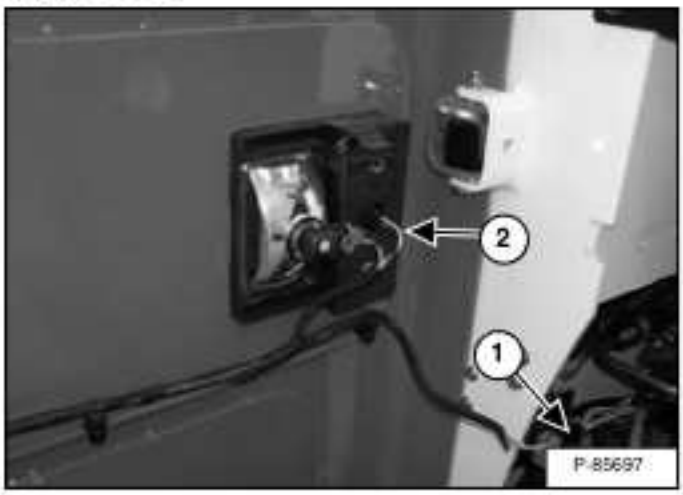
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REAR DOOR (TAILGATE)

Removal And Installation

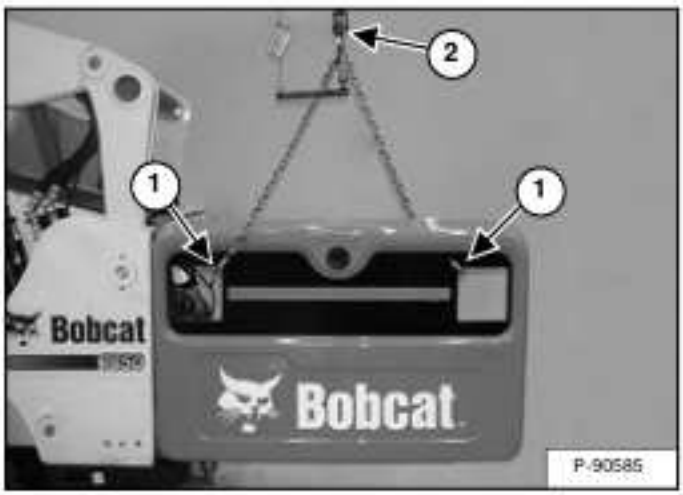
Figure 50-70-1



Disconnect the light harness connector (Item 1) **[Figure 50-70-1]** from the main frame harness.

Remove both rear lights (Item 2) **[Figure 50-70-1]** from the door. (See Rear Removal And Installation on Page 60-60-2.)

Figure 50-70-2



Secure the chain hooks (Item 1) **[Figure 50-70-2]** to the door as shown.

Connect a chain hoist (Item 2) **[Figure 50-70-2]** to the lifting chain.

Figure 50-70-3



Remove the top and bottom door hinge mounting bolts and nuts (Item 1) **[Figure 50-70-3]**.

NOTE: Install the door stop (Item 2) and the door stop retainer (Item 3) in the top hinge as shown [Figure 50-70-3].

Installation: Tighten the mounting bolts and nuts to 34 - 38 N•m (25 - 28 ft-lb) torque.

Lift the door away from the loader frame and put the door flat on the floor.

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Temperature / Pressure Chart

NORMAL EVAPORATOR RANGE				
TEMP °C	TEMP °F	kPa	BAR	PSIG
-8,8	16	108,2	1,08	15.69
-7,8	18	117,5	1,17	17.04
-6,7	20	127,1	1,27	18.43
-5,6	22	137	1,37	19.87
-4,4	24	147,2	1,47	21.35
-3,3	26	157,8	1,58	22.88
-2,2	28	168,7	1,69	24.47
-1,1	30	180	1,80	26.10
0	32	191,6	1,92	27.79
1,1	34	203,5	2,04	29.52
2,2	36	216	2,16	31.32
3,3	38	228,7	2,29	33.17
4,4	40	241,8	2,42	35.07
5,6	42	255,3	2,55	37.03
6,7	44	269,3	2,69	39.05
7,2	45	276,4	2,76	40.09
10	50	313,6	3,14	45.48
12,8	55	353,5	3,54	51.27
15,6	60	396,3	3,96	57.47
18,3	65	442	4,42	64.10
21,1	70	490,8	4,91	71.19
23,9	75	543	5,43	78.75
26,7	80	598,5	5,99	86.80
29,4	85	657,8	6,58	95.40
32,2	90	719,8	7,20	104.40
32,8	91	733	7,33	106.30
33,3	92	746,1	7,46	108.20

NORMAL CONDENSER RANGE				
TEMP °C	TEMP °F	kPa	BAR	PSIG
33,9	93	759,8	7,60	110.20
34,4	94	773	7,73	112.10
35	95	786,7	7,87	114.10
37,8	100	857,1	8,57	124.30
38,9	102	886	8,86	128.50
40	104	916,3	9,16	132.90
41,1	106	946,7	9,47	137.30
42,2	108	978,4	9,78	141.90
43,3	110	1010,1	10,10	146.50
44,4	112	1043,2	10,43	151.30
45,6	114	1076,3	10,76	156.10
46,7	116	1110,7	11,11	161.10
47,8	118	1145,2	11,45	166.10
48,9	120	1181,1	11,81	171.30
50	122	1217,6	12,18	176.60
51,1	124	1254,8	12,55	182.00
52,2	126	1292,8	12,93	187.50
53,3	128	1331,4	13,31	193.10
54,4	130	1371,4	13,71	198.90
57,2	135	1473,4	14,73	213.70
60	140	1581,7	15,82	229.40
62,8	145	1694,7	16,95	245.80
65,6	150	1813,3	18,13	263.00
68,3	155	1938,1	19,38	281.10
71,1	160	2069,1	20,69	300.10
73,9	165	2207,1	22,07	320.10
76,7	170	2349,7	23,50	340.80

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CONNECTOR ASSIGNMENTS

CONN	DESCRIPTION	NUM OF PINS	SHEET	CONN	DESCRIPTION	NUM OF PINS	SHEET	CONN	DESCRIPTION	NUM OF PINS	SHEET
C101	FUEL SHUTOFF SOLENOID	3	6	C446	HYDRAULIC FAN	2	7	FC1	FUSE CENTER 1	8	3
C103	TAILGATE	8	4,10,11,13	C449	LEFT JOYSTICK (CAB HARN)	4	5	FC2	FUSE CENTER 2	8	3
C104	ENGINE COOLANT SENSOR	2	6	C450	RIGHT JOYSTICK (CAB HARN)	4	5	FRC1	FUSE RELAY CENTER	64	3,6,7,11,12
C105	HYD CHARGE PRESSURE	3	7	C453	RIGHT QUAD A DRIVE	4	15				
C106	ENGINE SPEED SENSOR	2	6	C454	LEFT QUAD DRIVE	4	15	J1A	GATEWAY CONTROLLER	34	3,6-8,10-13
C107	ENGINE OIL PRESSURE	3	6	C467	LIFT PEDAL LOCK	3	14	J1B	GATEWAY CONTOLLER	26	3-10,13
C108	HYD TEMPERATURE SENDER	2	7	C468	TILT PEDAL LOCK	3	14	J2A	AUX CONTROLLER	34	7,10,13
C109	S/R ADAPTER HARNESS	2	6	C469	TILT HANDLE	3	14	J2B	AUX CONTROLLER	26	3-5,7,10,13
C110	ALTERNATOR	2	6	C470	TILT PEDAL	3	14				
C112	HYD OIL FILTER SWITCH	2	7	C471	LIFT PEDAL	3	14	J1-ACS	ACS CONTROLLER	8	14, 15
C126	HORN	2	13	C472	LIFT HANDLE	3	14	J2-ACS	ACS CONTROLLER	10	14, 15
C129	CAB ACCESSORY	3	9	C474	BRAKE LIGHT	1	15	J3-ACS	ACS CONTROLLER	10	14, 15
C209	DOME LIGHT	3	9	C479	LEFT PANEL(BLACK)	12	5,8	J5	DRIVE CONTROLLER	50	15
C212	POWER SOCKET	2	9	C480	LEFT PANEL(GRAY)	12	8				
C252	WASHER	2	9	C482	SEATBAR SENSOR	3	9	SW1	BRAKE SWITCH	6	8
C277	AIR RIDE SEAT	6	13	C483	TEMP CONTROL SWITCH	3	12	SW2	BEACON SWITCH	6	13
C278	RIGHT SPEAKER	2	13	C486	AC COMPRESSOR	2	12	SW3	HAZARD SWITCH	6	13
C279	LEFT SPEAKER	2	13	C489	MFR ACCESSORY	2	3,4	SW4	HAND/FOOT, H/ISO SWITCH	6	9
C308	BRAKE SOLENOID	2	7	C492	ACS/SJC/AWS-MFR HARN	8	3,5,9	SW5	POWER BOBTACH SWITCH	6	13
C350	AC EVAPORATOR SWITCH	2	12	C493	ACS/SJC/AWS-MFR HARN	4, 15	3,4	SW6	BUCKET POSITION SWITCH	6	13
C355	DLX or STD FUEL HARNESS	6	6,12,13	C497	SJC HORN/BLINKER	3	13	SW9	TRAVEL CONTROL SWITCH	6	8
C404	BU ALARM-MFR HARN	2	3,10	C499	PTOL	4	8	SW10	BLOWER SWITCH	5	12
C405	AIR FILTER SWITCH	2	6	C500	RH KEY SWITCH	6	8	SW11	AC SWITCH	3	12
C406	FUEL SENDER	2	6	C501	A22 PUMP HARNESS	8	15				
C408	CAB - MFR HARN CONNECTOR	48	3-5,8-9,11-13	C503	RH DLX PANEL	6	5,8	T1	BATT GROUND	1	4
C409	RIGHT HANDLE	10	10	C542	LEFT SWASHPLATE	3	15	T2	BUZZER GROUND	1	8
C410	LEFT HANDLE	10	10	C543	RIGHT SWASHPLATE	3	15	T3	FLASHER	2	13
C411	LEFT HANDLE 5 WAY (FLSHR)	5	13	C544	LEFT FORWARD DRIVE	2	15	T6	BATT GROUND	1	4
C412	LEFT HANDLE 2 WAY (HORN)	2	13	C545	LEFT REVERSE DRIVE	2	15	T8	BATT GROUND	1	4
C415	HIGH FLOW SOLENOID	2	13	C546	RIGHT FORWARD DRIVE	2	15	T13	BUZZER POWER	1	8
C418	FRONT ROD (MALE)	2	7	C547	RIGHT REVERSE DRIVE	2	15	T14	PRE HEATER	1	6
C419	FRONT BASE (FEMALE)	2	7					T15	RIGHT REAR WORK LIGHT(+)	1	11
C420	HYD LOCK	2	7					T16	RIGHT REAR WORK LIGHT(-)	1	11
C440	RF BASE	2	14	C602	LEFT REAR TAIL LIGHT	2	11	T17	LEFT REAR WORK LIGHT (+)	1	11
C422	TILT SPOOL LCOK	3	10	C603	RIGHT REAR TAIL LIGHT	2	11	T18	LEFT REAR WORK LIGHT (-)	1	11
C423	BUCKET POSITION	2	13	C606	POWER BOBTACH OPEN	2	13	T19	BACKUP ALARM	1	10
C425	BRAKE SOLENOID	3	7	C607	POWER BOBTACH CLOSE	2	13	T20	BACKUP ALARM (GND)	1	10
C426	CAN (Remote Start Tool, ACD)	7	5	C610	HVAC DUCT FAN	2	12				
C428	TILT ACTUATOR	8	14, 15	C611	BLOWER MOTOR	4	12				
C429	LIFT ACTUATOR	8	14,15	C630	THERMOSTAT	3	12				
C434-1	LEFT WORKLIGHT 1	2	11	C635	HEATER VALVE	6	12				
C434-2	LEFT WORKLIGHT 2	2	11	C667	DOOR	6	9				
C435-1	RIGHT WORKLIGHT 1	2	11	C670	EXTERIOR BEACON	6	13				
C435-2	RIGHT WORKLIGHT 2	2	11	C676	RADIO	6	13				
C437	TWO SPEED MAKEUP	2	13								
C441	TWO SPEED	2	13	C707	OBW STOP BRAKE LIGHT	3	15				

WIRE CATEGORIES FOR COLORS AND NUMBER RANGE

GROUP DESCRIPTION	GROUP NUMBER RANGE	WIRE COLOR	COLOR CODE
BATT FEED, GENERAL	1000 THROUGH 1499	RED	RED
BATT FEED, FUSED	1000 THROUGH 1499	RED/WHITE	RED/WHT
BATT FEED, SWITCHED	1500 THROUGH 1999	ORANGE/WHITE	RNG/WHT
BATTERY GROUND	2000 THROUGH 2999	BLACK	BLK
move	2000 THROUGH 2999	BROWN	BRN
MONITORING	3000 THROUGH 3999	LIGHT BLUE	LBL
HYDRAULIC	4000 THROUGH 4999	LIGHT GREEN	LGN
CONTROLLER SUPPLY	5000 THROUGH 5999	YELLOW	YEL
LIGHTS	6000 THROUGH 6999	PINK	PNK
OTHER FUNCTIONS	7000 THROUGH 7999	WHITE	WHT
ENGINE	8000 THROUGH 8999	TAN	TAN
COMMUNICATION	9000 THROUGH 9999	PURPLE	PUR
COMMUNICATION	9000 THROUGH 9999	PURPLE/WHITE	PUR/WHT

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WIRING SCHEMATIC
(ACS / SJC MACHINE)
T770 (S/N A3P811001 AND ABOVE)
(S/N A3P911001 AND ABOVE)

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