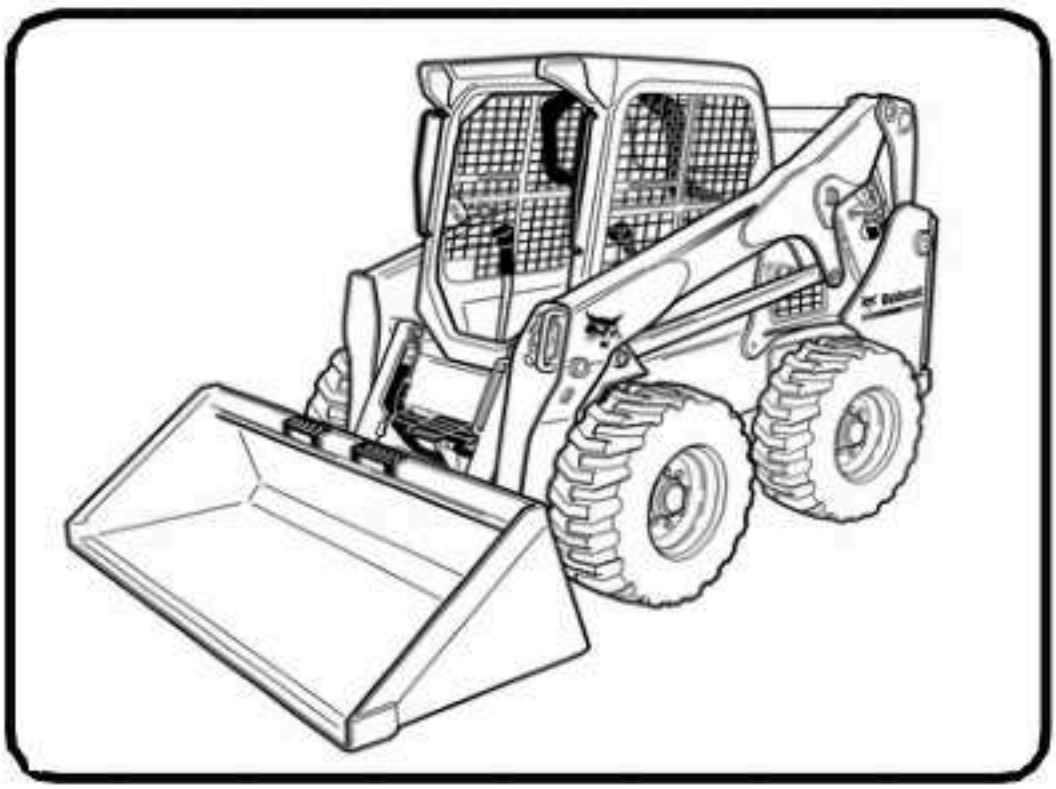
Bobcat®

Service Manual
S770 Skid-Steer Loader

S/N A3P411001 & Above
S/N A3P511001 & Above



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6989468 (12-10)

Printed in U.S.A.

© Bobcat Company 2010

MidWestTech | Bobcat S770 Skid Steer Loader Service Manual | Publication 6989468_12_10 Order the manual at mid-west-tech.com >

CONTENTS

SAFETY & MAINTENANCE 10-01

HYDRAULIC SYSTEM 20-01

HYDROSTATIC SYSTEM 30-01

DRIVE SYSTEM 40-01

MAINFRAME 50-01

ELECTRICAL SYSTEM & ANALYSIS 60-01

ENGINE SERVICE 70-01

HEATING, VENTILATION, AIR CONDITIONING 80-01

SPECIFICATIONS SPEC-01

ALPHABETICAL INDEX INDEX-01

MidWestTech | Bobcat S770 Skid Steer Loader Service Manual | Publication 6989468_12_10 Order the manual at mid-west-tech.com >

FOREWORD 1-7

SAFETY INSTRUCTIONS 1-10

FIRE PREVENTION 1-12
- Maintenance 1-12
- Operation 1-12
- Electrical 1-12
- Hydraulic System 1-12
- Fueling 1-12
- Starting 1-12
- Spark Arrestor Exhaust System 1-12
- Welding And Grinding 1-13
- Fire Extinguishers 1-13

SERIAL NUMBER LOCATIONS 1-14
- Loader Serial Number 1-14
- Engine Serial Number 1-14

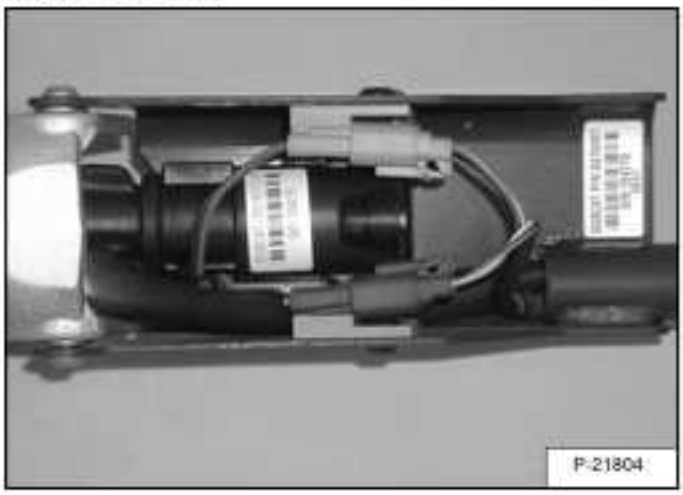
DELIVERY REPORT 1-15

LOADER IDENTIFICATION 1-16

MidWestTech | Bobcat S770 Skid Steer Loader Service Manual | Publication 6989468_12_10 Order the manual at mid-west-tech.com >

Switch Handle Installation (Cont'd)

Figure 60-130-21

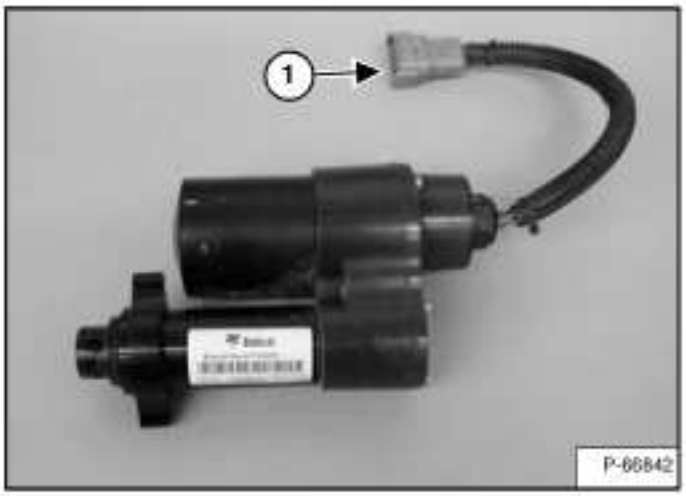


Connect the handle harness connectors to the sensor and lock solenoid connectors **[Figure 60-130-21]**.

Actuator Connector Disassembly And Assembly

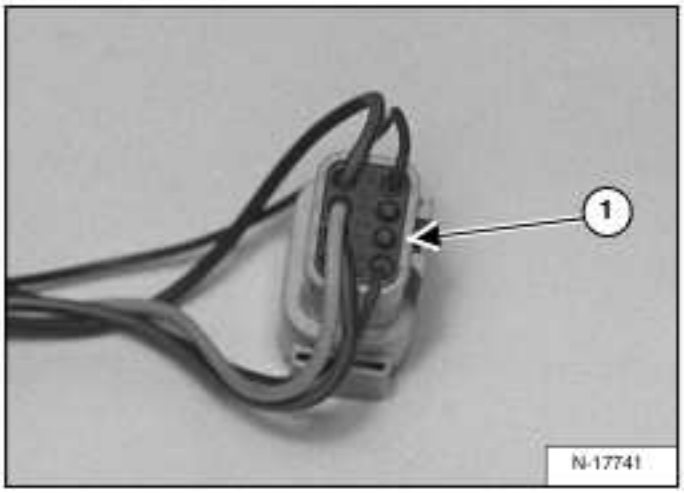
NOTE: Actuator shown removed for clarity. Not necessary for procedure.

Figure 60-130-22



Check the actuator wiring harness connector (Item 1) **[Figure 60-130-22]** and replace if broken.

Figure 60-130-23



Installation: Install the wires into the connector as listed below. The terminal numbers are written on the back of the connector (Item 1) **[Figure 60-130-23]**.

Lift And Tilt Actuator

1. Terminal-Black/Green-Larger diameter wire (16 gauge)
2. Terminal-Green-Larger diameter wire (16 gauge)
3. Terminal-Red/Green-Larger diameter wire (16 gauge)
4. Terminal-Open
5. Terminal-Red-Smaller diameter wire (18 gauge)
6. Terminal-Open
7. Terminal-Open
8. Terminal-Black-Smaller diameter wire (18 gauge)

MidWestTech | Bobcat S770 Skid Steer Loader Service Manual | Publication 6989468_12_10 Order the manual at mid-west-tech.com >

Valve Guide - Checking

The tool described below is not provided. The tool is used for inserting and removing the valve guides.Use the dimensions below **[Figure 70-80-28]** and **[Figure 70-80-29]** to make this tool.

Figure 70-80-28

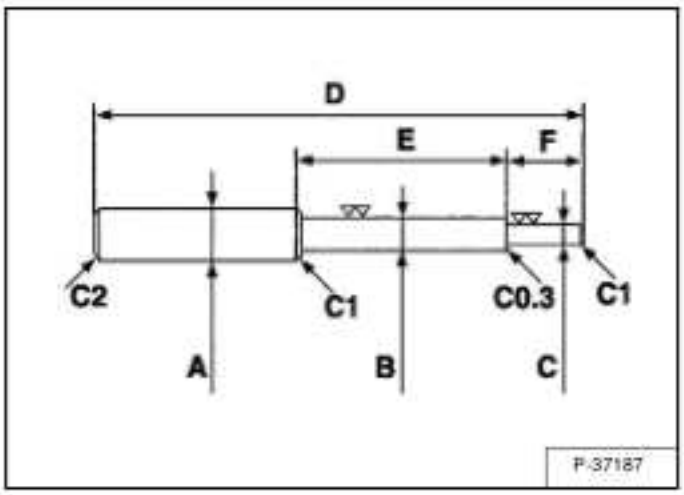
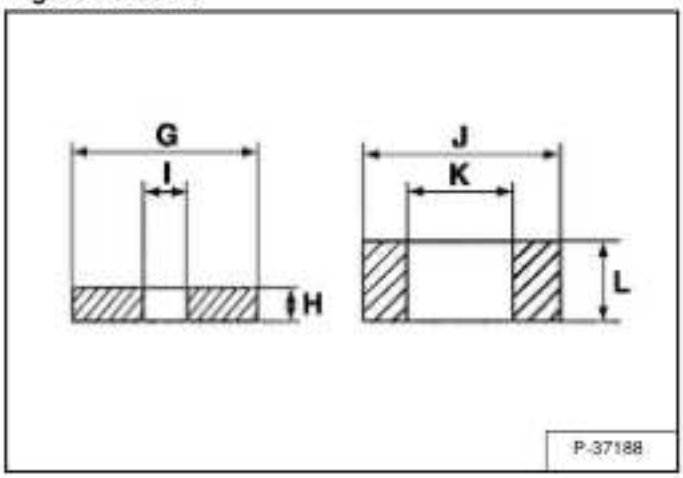
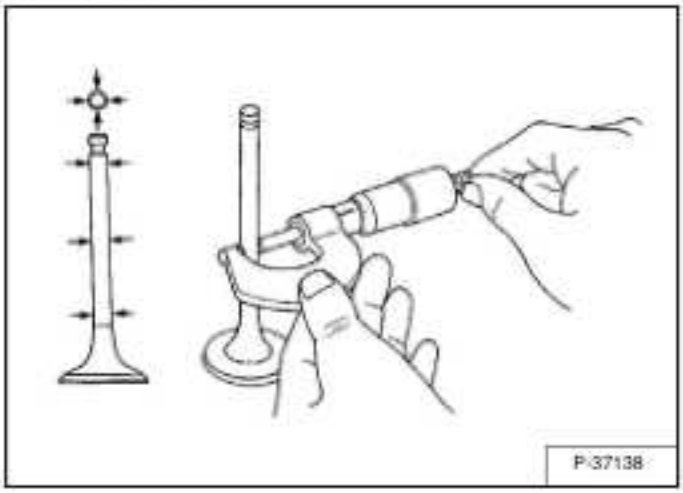


Figure 70-80-29



A	20 mm dia. (0.79 in dia.)
B	11,7 - 11,9 mm dia. (0.461 - 0.468 in dia.)
C	6,50 - 6,60 mm dia. (0.256 - 0.259 in dia.)
D	225 mm (8.86 in)
E	70 mm (2.8 in)
F	45 mm (1.8 in)
G	25 mm (0.98 in)
H	5 mm (0.2 in)
I	6,70 - 7,00 mm dia. (0.264 - 0.275 in dia.)
J	20 mm dia. (0.79 in dia.)
K	12,5 - 12,8 mm dia. (0.493 - 0.503 in dia.)
L	8,90 - 9,10 mm dia. (0.351 - 0.358 in dia.)
C1	Chamfer 1,0 mm (0.039 in)
C2	Chamfer 2,0 mm (0.079 in)
C0.3	Chamfer 0,3 mm (0.01 in)

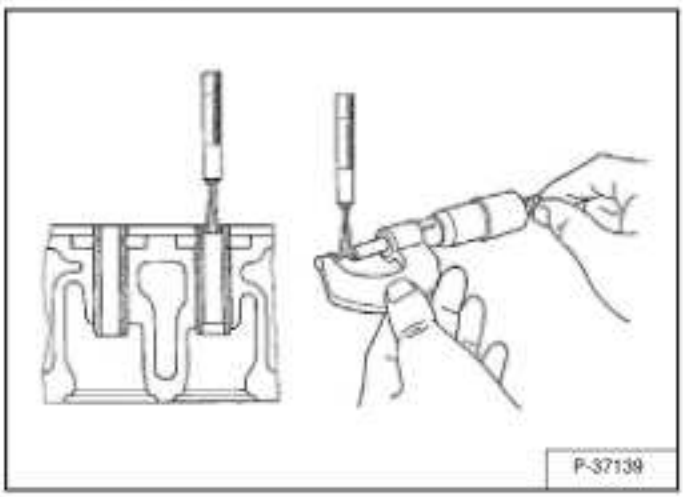
Figure 70-80-30



Remove carbon from the valve guide section.

Measure the valve stem O.D. with an outside micrometer **[Figure 70-80-30]**.

Figure 70-80-31



Measure the valve guide I.D. of the cylinder head at the most wear part as shown in **[Figure 70-80-31]** with a small hole gauge and calculate the clearance.

MidWestTech | Bobcat S770 Skid Steer Loader Service Manual | Publication 6989468_12_10 Order the manual at mid-west-tech.com >

TROUBLESHOOTING

Blower Motor Does Not Operate

Possible Cause	Inspection	Solution
1. Blown fuse.	Inspect the fuse / wiring.	Replace fuse / repair wiring.
2. Broken wiring or bad connection.	Check the fan motor ground and connectors.	Repair the wiring or connector.
3. Fan motor malfunction.	Check the lead wires form the motor with a circuit tester.	Replace Motor.
4. Resistor malfunction.	Check resistor using a circuit tester.	Replace Resistor.
5. Fan motor switch malfunction.	Check power into and out of the fan switch.	Replace Fan Switch.

Blower Motor Operates Normally, But Air Flow Is Insufficient

Possible Cause	Inspection	Solution
1. Evaporator inlet obstruction.	Check evaporator for plugging.	Remove obstruction and clean evaporator fins with air or water.
2. Air leak.	Check to make sure air ducts are properly connected and seals are not damaged.	Repair or adjust.
3. Defective thermo. switch (frozen evaporator).	Check thermostat using a circuit tester.	Replace thermostat.
4. Plugged cab filters	Check cab recirculation and fresh air filters.	Clean or replace filters.

Insufficient Cooling Although Air Flow And Compressor Operation Are Normal

Possible Cause	Inspection	Solution
1. System low on refrigerant.	The high side pressure will be low and bubbles may be present in sight glass on receive drier.	Repair any leaks and recharge the refrigerant to the correct level.
2. Excessive refrigerant.	The high pressure side pressure will be high.	Use refrigerant recovery equipment to capture excess refrigerant. Charge to the correct refrigerant level.

The Compressor Does Not Operate At All, Or Operates Improperly

Possible Cause	Inspection	Solution
1. Loose belt.	The belt is vibrating or oscillating.	Replace belt.
2. Internal compressor malfunction.	The compressor is locked up and the belt slips.	Replace compressor.
	Magnetic clutch related	
3. Low battery voltage.	Clutch slips.	Recharge the battery.
4. Faulty coil.	Clutch slips.	Replace the magnetic clutch.
5. Oil on the clutch surface.	Clutch slips.	Replace or clean the clutch surface.
6. Open coil.	Clutch does not engage and there is no reading when a circuit tester is connected between the coil and terminals.	Replace clutch.
7. Broken wiring or poor ground.	Clutch will not engage. Inspect the ground and connections.	Repair.
8. Wiring harness components.	Test the conductance of the pressure switch, thermostat, Relay, etc.	Check operation / thermostat LED status.

MidWestTech | Bobcat S770 Skid Steer Loader Service Manual | Publication 6989468_12_10 Order the manual at mid-west-tech.com >

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

SCHEMATIC INDEX

OVERVIEW	PAGE 1,2
POWER	PAGE 3
GROUND	PAGE 4
CAN BUS	PAGE 5
ENGINE	PAGE 6
HYDRAULICS	PAGE 7
CAB DISPLAY	PAGE 8
CAB	PAGE 9
MANUAL CONTROLS	PAGE 10
LIGHTS	PAGE 11
HVAC	PAGE 12
OPTIONS	PAGE 13
ACS	PAGE 14
SJC	PAGE 15

WIRING SCHEMATIC
(ACS / SJC MACHINE)
S770 (S/N A3P411001 AND ABOVE)
(S/N A3P511001 AND ABOVE)
Sheet 1 of 15

(PRINTED NOVEMBER 2010)

7197682

Printed In U.S.A.

Order the manual at mid-west-tech.com >