

INSTRUMENT PANEL IDENTIFICATION (CONT'D)

Left Panel (Earlier Models) (Cont'd)

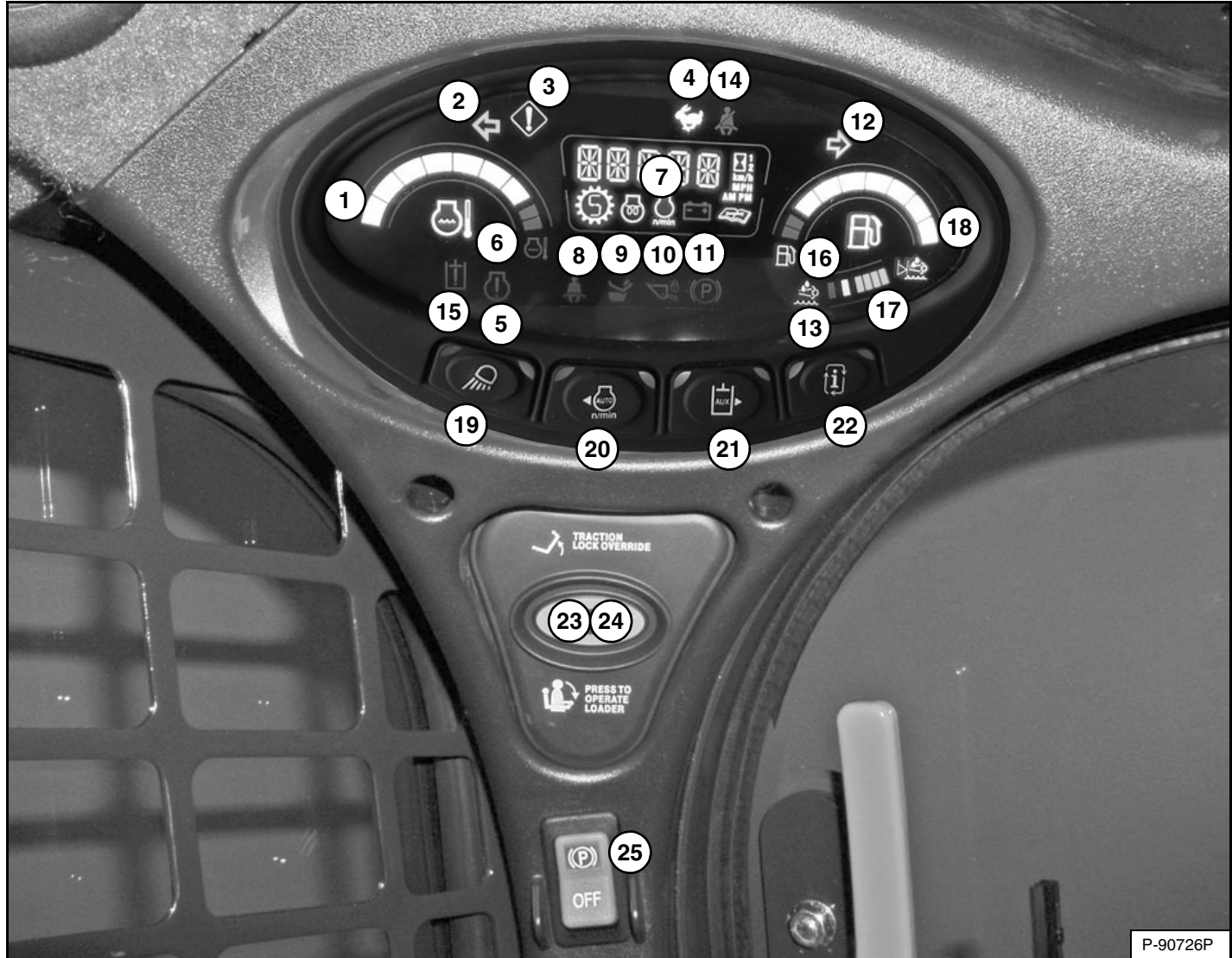
ITEM	DESCRIPTION	FUNCTION / OPERATION
12	RIGHT TURN SIGNAL (Option)	Indicates right turn signals are ON.
13	DIESEL EXHAUST FLUID (DEF) / AdBlue® MALFUNCTION	Not used.
14	SHOULDER BELT (Option)	Instructs operator to fasten shoulder belt when operating in high range. Remains lit while in high range.
15	HYDRAULIC SYSTEM MALFUNCTION	Hydraulic system malfunction or failure. (See Service Codes*)
16	FUEL	Fuel level low or sensor error.
17	DIESEL EXHAUST FLUID (DEF) / AdBlue® LEVEL	Not used.
18	FUEL GAUGE	Shows the amount of fuel in the tank.
19	LIGHTS	Press once for FRONT work lights and REAR taillights. (Left green LED lights.) Press a second time to add REAR work lights. (Left and right green LEDs light.) Press a third time to turn all lights off. (Left and right green LEDs off.)
		Press and hold 5 seconds to display software version in display screen.
20	AUTO IDLE	Not used.
		Move cursor to the left inside the DISPLAY SCREEN when using certain INFORMATION button menus.
21	AUXILIARY HYDRAULICS without high-flow option	Press once to activate the auxiliary hydraulic system. (Left green LED lights.) Press a second time to deactivate the system.
	AUXILIARY HYDRAULICS with high-flow option	Press once to activate the auxiliary hydraulic system. (Left green LED lights.) Press a second time to engage the HIGH-FLOW auxiliary hydraulics. (Left and right green LEDs light.) Press a third time to deactivate the system. (Left and right green LEDs off.)
		Move cursor to the right inside the DISPLAY SCREEN when using certain INFORMATION button menus.
22	INFORMATION	Cycles through (after each button press): <ul style="list-style-type: none"> • Hourmeter (On startup) • Engine rpm • Battery voltage • Drive response menu • Steering drift compensation menu • Maintenance clock (Press and hold 7 seconds when displayed to reset the maintenance clock.) • Service codes*
23	TRACTION LOCK OVERRIDE	Functions only when the seat bar is raised and the engine is running. Press once to unlock the brakes. Allows you to use the steering levers or joystick(s) to move the loader forward or backward when using the backhoe attachment. (See TRACTION LOCK OVERRIDE in this manual.) Press a second time to lock the brakes.
24	PRESS TO OPERATE LOADER	Press to activate the BICS™ when the seat bar is down and operator is seated in operating position. Button will light.
25	PARKING BRAKE (Standard on all loaders)	Press the top to engage the Parking Brake. Press the bottom to disengage. (See PARKING BRAKE in this manual.)

* This manual contains a table with Service Code descriptions. (See DIAGNOSTIC SERVICE CODES on Page 188.)

INSTRUMENT PANEL IDENTIFICATION (CONT'D)

Left Panel (Later Models)

Figure 12



The left panel [Figure 12] is the same for all machines regardless of options and accessories.

ITEM	DESCRIPTION	FUNCTION / OPERATION
1	ENGINE TEMPERATURE GAUGE	Shows the engine coolant temperature.
2	LEFT TURN SIGNAL (Option)	Indicates left turn signals are ON.
3	GENERAL WARNING	Malfunction with one or more machine functions. (See Service Codes*)
4	TWO-SPEED (Option)	High range selected.
5	ENGINE MALFUNCTION	Engine malfunction or failure. (See Service Codes*)
6	ENGINE COOLANT TEMPERATURE	Engine coolant temperature high or sensor error.
7	DISPLAY SCREEN	Displays information. (See Display Screen in this manual.)
8	SEAT BELT	Instructs operator to fasten seat belt. Remains lit for 45 seconds.
9	SEAT BAR	The light is on when the seat bar is UP.
10	LIFT AND TILT VALVE	The light is on when the lift and tilt functions cannot be operated.
11	PARKING BRAKE	The light is on when the loader cannot be driven.

INSTRUMENT PANEL IDENTIFICATION (CONT'D)

Left Panel (Later Models) (Cont'd)

ITEM	DESCRIPTION	FUNCTION / OPERATION
12	RIGHT TURN SIGNAL (Option)	Indicates right turn signals are ON.
13	DIESEL EXHAUST FLUID (DEF) / AdBlue® MALFUNCTION	Not used.
14	SHOULDER BELT (Option)	Instructs operator to fasten shoulder belt when operating in high range. Remains lit while in high range.
15	HYDRAULIC SYSTEM MALFUNCTION	Hydraulic system malfunction or failure. (See Service Codes*)
16	FUEL	Fuel level low or sensor error.
17	DIESEL EXHAUST FLUID (DEF) / AdBlue® LEVEL	Not used.
18	FUEL GAUGE	Shows the amount of fuel in the tank.
19	LIGHTS	Press once for FRONT work lights and REAR taillights. (Left green LED lights.) Press a second time to add REAR work lights. (Left and right green LEDs light.) Press a third time to turn all lights off. (Left and right green LEDs off.)
		Press and hold 5 seconds to display software version in display screen.
20	AUTO IDLE	Not used.
		Move cursor to the left inside the DISPLAY SCREEN when using certain INFORMATION button menus.
21	AUXILIARY HYDRAULICS without high-flow option	Press once to activate the auxiliary hydraulic system. (Left green LED lights.) Press a second time to deactivate the system.
	AUXILIARY HYDRAULICS with high-flow option	Press once to activate the auxiliary hydraulic system. (Left green LED lights.) Press a second time to engage the HIGH-FLOW auxiliary hydraulics. (Left and right green LEDs light.) Press a third time to deactivate the system. (Left and right green LEDs off.)
		Move cursor to the right inside the DISPLAY SCREEN when using certain INFORMATION button menus.
22	INFORMATION	Cycles through (after each button press): <ul style="list-style-type: none"> • Hourmeter (On startup) • Engine rpm • Battery voltage • Drive response menu • Steering drift compensation menu • Maintenance clock (Press and hold 7 seconds when displayed to reset the maintenance clock.) • Service codes*
23	TRACTION LOCK OVERRIDE	Functions only when the seat bar is raised and the engine is running. Press once to unlock the brakes. Allows you to use the steering levers or joystick(s) to move the loader forward or backward when using the backhoe attachment. (See TRACTION LOCK OVERRIDE in this manual.) Press a second time to lock the brakes.
24	PRESS TO OPERATE LOADER	Press to activate the BICS™ when the seat bar is down and operator is seated in operating position. Button will light.
25	PARKING BRAKE (Standard on all loaders)	Press the top to engage the Parking Brake. Press the bottom to disengage. (See PARKING BRAKE in this manual.)

* This manual contains a table with Service Code descriptions. (See DIAGNOSTIC SERVICE CODES on Page 188.)

CONTROL IDENTIFICATION

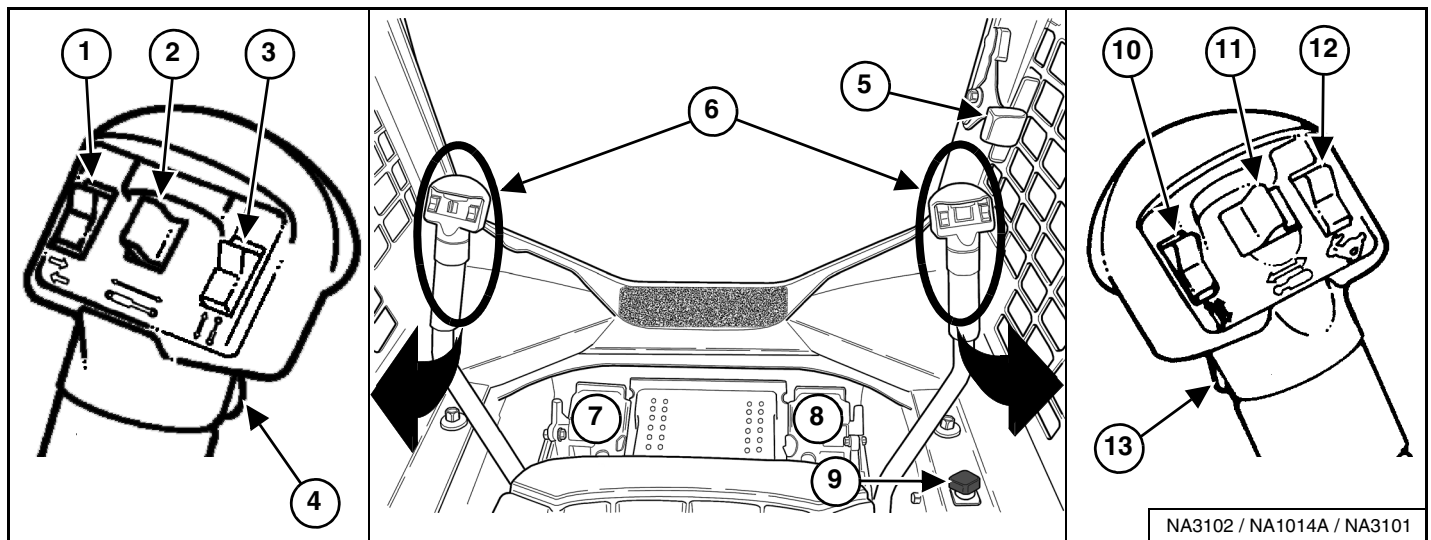
Description

This loader has three control configurations available to operate lift / tilt functions and driving / steering the loader:

- **Standard Controls** – Uses foot pedals for lift and tilt functions.
Uses steering levers for driving and steering the loader.
- **Advanced Control System (ACS) (Option)** – Uses a choice of foot pedals or handles for lift and tilt functions.
Uses steering levers for driving and steering the loader.
- **Joystick Controls (JC) and Selectable Joystick Controls (SJC) (Option)** – Uses joysticks for lift / tilt functions and driving / steering the loader.

Standard Controls

Figure 27

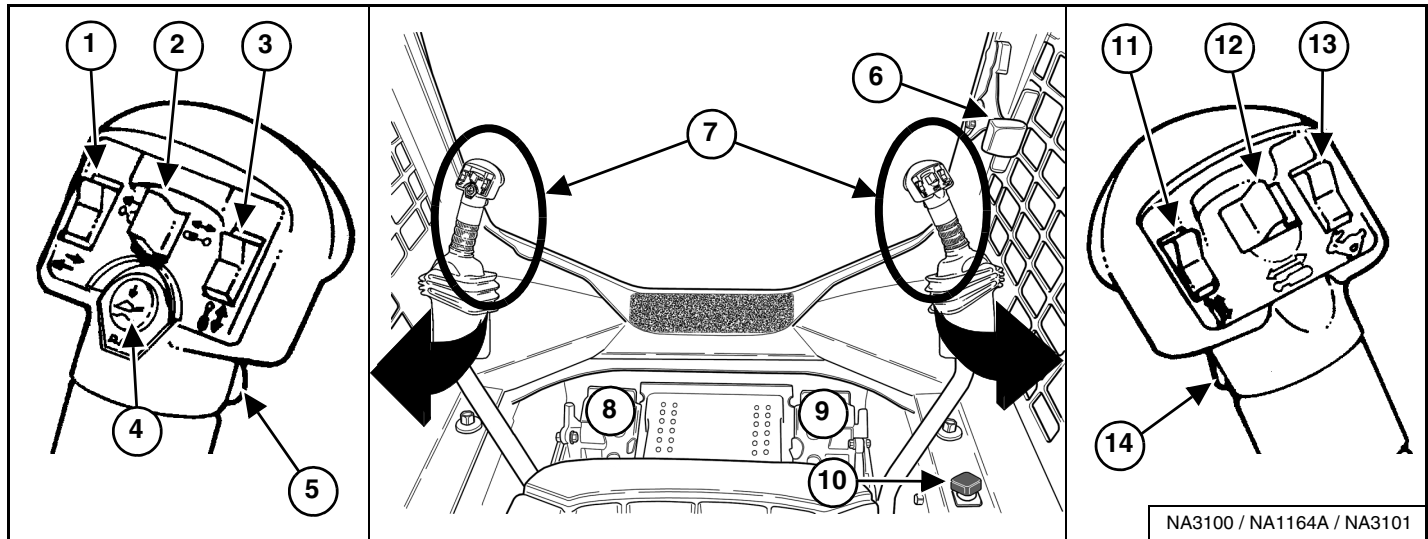


ITEM	DESCRIPTION	FUNCTION / OPERATION
1	TURN SIGNALS (Option)	Press the top to activate right signal; bottom to activate left signal; center position to turn off.
2	REAR AUXILIARY HYDRAULICS (Option)	See REAR Auxiliary Hydraulics Operation in this manual.
	Also: ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
3	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
4	FRONT HORN	Press the front switch to sound the front horn.
5	ENGINE SPEED CONTROL	See ENGINE SPEED CONTROL in this manual.
6	STEERING LEVERS	See DRIVING AND STEERING THE LOADER in this manual.
7	LIFT ARM PEDAL	See HYDRAULIC CONTROLS in this manual.
8	TILT PEDAL	See HYDRAULIC CONTROLS in this manual.
9	LIFT ARM BYPASS CONTROL	See LIFT ARM BYPASS CONTROL in this manual.
10	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
11	FRONT AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation in this manual.
12	TWO-SPEED CONTROL (Option)	See TWO-SPEED CONTROL in this manual.
13	CONTINUOUS FLOW CONTROL FOR AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation (CONTINUOUS FLOW) in this manual.

CONTROL IDENTIFICATION (CONT'D)

Advanced Control System (ACS)

Figure 28

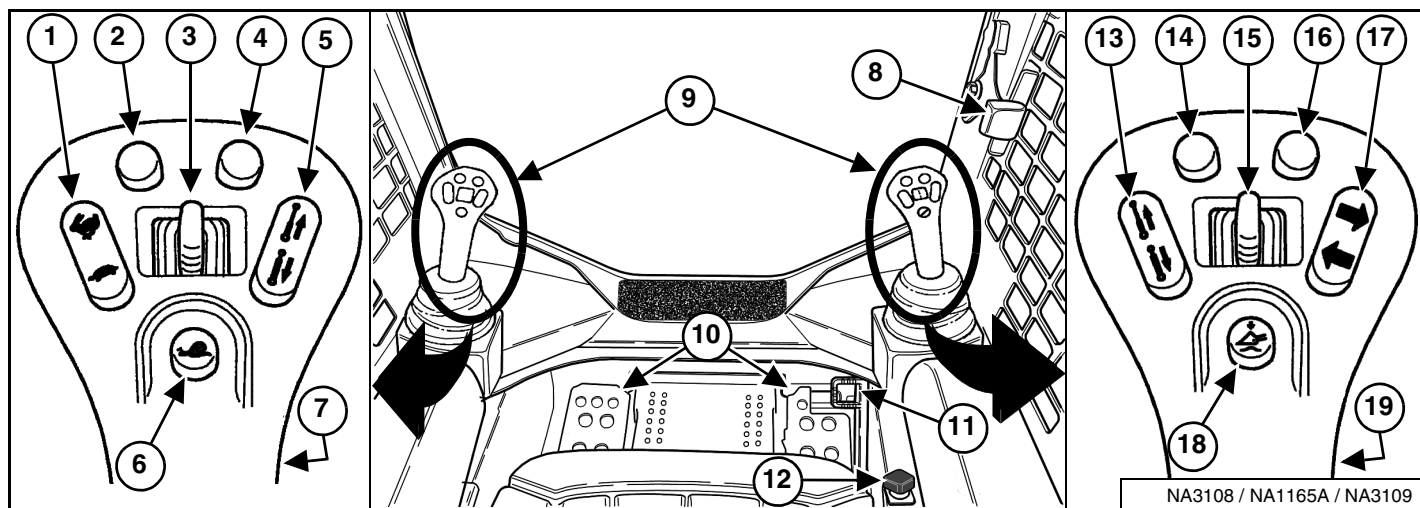


ITEM	DESCRIPTION	FUNCTION / OPERATION
1	TURN SIGNALS (Option)	Press the top to activate right signal; bottom to activate left signal; center position to turn off.
2	REAR AUXILIARY HYDRAULICS (Option) Also: ATTACHMENT FUNCTION CONTROL	See REAR Auxiliary Hydraulics Operation in this manual. See ATTACHMENT CONTROL DEVICE in this manual.
3	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
4	FLOAT CONTROL	See HYDRAULIC CONTROLS in this manual.
5	FRONT HORN	Press the front switch to sound the front horn.
6	ENGINE SPEED CONTROL	See ENGINE SPEED CONTROL in this manual.
7	STEERING LEVERS and LIFT / TILT HANDLES	See DRIVING AND STEERING THE LOADER and HYDRAULIC CONTROLS in this manual.
8	LIFT ARM PEDAL	See HYDRAULIC CONTROLS in this manual.
9	TILT PEDAL	See HYDRAULIC CONTROLS in this manual.
10	LIFT ARM BYPASS CONTROL	See LIFT ARM BYPASS CONTROL in this manual.
11	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
12	FRONT AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation in this manual.
13	TWO-SPEED CONTROL (Option)	See TWO-SPEED CONTROL in this manual.
14	CONTINUOUS FLOW CONTROL FOR AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation (CONTINUOUS FLOW) in this manual.

CONTROL IDENTIFICATION (CONT'D)

Joystick Controls (JC) And Selectable Joystick Controls (SJC)

Figure 29



ITEM	DESCRIPTION	FUNCTION / OPERATION
1	TWO-SPEED CONTROL (Option) Also: SPEED MANAGEMENT	See TWO-SPEED CONTROL in this manual. See SPEED MANAGEMENT in this manual.
2 *	STEERING DRIFT COMPENSATION Also: DRIVE RESPONSE	See STEERING DRIFT COMPENSATION in this manual. See DRIVE RESPONSE in this manual.
3	REAR AUXILIARY HYDRAULICS (Option) Also: ATTACHMENT FUNCTION CONTROL	See REAR Auxiliary Hydraulics Operation in this manual. See ATTACHMENT CONTROL DEVICE in this manual.
4 *	STEERING DRIFT COMPENSATION Also: DRIVE RESPONSE	See STEERING DRIFT COMPENSATION in this manual. See DRIVE RESPONSE in this manual.
5	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
6	SPEED MANAGEMENT	See SPEED MANAGEMENT in this manual.
7	FRONT HORN	Press the front switch to sound the front horn.
8	ENGINE SPEED CONTROL (HAND)	See ENGINE SPEED CONTROL in this manual.
9	JOYSTICKS	See DRIVING AND STEERING THE LOADER and HYDRAULIC CONTROLS in this manual.
10	FOOTRESTS	Keep your feet on the footrests at all times.
11	ENGINE SPEED CONTROL (FOOT)	See ENGINE SPEED CONTROL in this manual.
12	LIFT ARM BYPASS CONTROL	See LIFT ARM BYPASS CONTROL in this manual.
13	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
14 *	NOT USED	- - -
15	FRONT AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation in this manual.
16 *	NOT USED	- - -
17	TURN SIGNALS (Option)	Press the top to activate right signal; press again to turn off. Press the bottom to activate left signal; press again to turn off.
18	FLOAT CONTROL	See HYDRAULIC CONTROLS in this manual.
19	CONTINUOUS FLOW CONTROL FOR AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation (CONTINUOUS FLOW) in this manual.

* Also used as Attachment Function Control: See your attachment Operation & Maintenance Manual.

DIAGNOSTIC SERVICE CODES (CONT'D)

Service Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
A0618	Wheel speed out of range	A8307	ACD output 'D' open circuit
A3623	ACD not programmed	A8332	ACD output 'D' overcurrent
A4621	5 volt sensor supply out of range high	A8402	ACD output 'E' error ON
A4622	5 volt sensor supply out of range low	A8403	ACD output 'E' error OFF
A4721	8 volt sensor supply out of range high	A8405	ACD output 'E' short to battery
A4722	8 volt sensor supply out of range low	A8406	ACD output 'E' short to ground
A7701	Machine key active	A8407	ACD output 'E' open circuit
A7901	E-Stop active	A8432	ACD output 'E' overcurrent
A8002	ACD output 'A' error ON	A8502	ACD output 'F' error ON
A8003	ACD output 'A' error OFF	A8503	ACD output 'F' error OFF
A8005	ACD output 'A' short to battery	A8505	ACD output 'F' short to battery
A8006	ACD output 'A' short to ground	A8506	ACD output 'F' short to ground
A8007	ACD output 'A' open circuit	A8507	ACD output 'F' open circuit
A8032	ACD output 'A' overcurrent	A8532	ACD output 'F' overcurrent
A8102	ACD output 'B' error ON	A8602	ACD output 'G' error ON
A8103	ACD output 'B' error OFF	A8603	ACD output 'G' error OFF
A8105	ACD output 'B' short to battery	A8605	ACD output 'G' short to battery
A8106	ACD output 'B' short to ground	A8606	ACD output 'G' short to ground
A8107	ACD output 'B' open circuit	A8607	ACD output 'G' open circuit
A8132	ACD output 'B' overcurrent	A8702	ACD output 'H' error ON
A8202	ACD output 'C' error ON	A8703	ACD output 'H' error OFF
A8203	ACD output 'C' error OFF	A8705	ACD output 'H' short to battery
A8205	ACD output 'C' short to battery	A8706	ACD output 'H' short to ground
A8206	ACD output 'C' short to ground	A8707	ACD output 'H' open circuit
A8207	ACD output 'C' open circuit	A8802	Reverse solenoid error ON
A8232	ACD output 'C' overcurrent	A8803	Reverse solenoid error OFF
A8302	ACD output 'D' error ON		
A8303	ACD output 'D' error OFF	D3905	Left joystick X-axis not in NEUTRAL
A8305	ACD output 'D' short to battery	D3907	Left joystick Y-axis not in NEUTRAL
A8306	ACD output 'D' short to ground	D4007	Right joystick Y-axis not in NEUTRAL

DIAGNOSTIC SERVICE CODES (CONT'D)

Service Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
D7501	Drive CAN joystick information error	D7546	Drive right reverse drive solenoid error ON
D7502	Drive controller needs programming	D7547	Drive right front steer extend short to battery
D7504	Drive no communication from drive controller	D7548	Drive left front steer extend short to battery
D7505	Drive left joystick X-axis not in NEUTRAL	D7549	Drive right rear steer extend short to battery
D7507	Drive left joystick Y-axis not in NEUTRAL	D7550	Drive left rear steer extend short to battery
D7508	Drive right joystick Y-axis not in NEUTRAL	D7551	Drive steer pressure short to battery
D7509	Drive operating mode switch short to ground or battery	D7552	Drive back-up alarm error ON
D7510	Drive improper joysticks installed	D7553	Drive left forward drive solenoid error OFF
D7511	Drive left speed sensor not connected	D7554	Drive left reverse drive solenoid error OFF
D7512	Drive right speed sensor not connected	D7555	Drive right forward drive solenoid error OFF
D7513	Drive right front wheel angle sensor stuck	D7556	Drive right reverse drive solenoid error OFF
D7514	Drive left front wheel angle sensor stuck	D7557	Drive right front steer extend short to ground
D7515	Drive right rear wheel angle sensor stuck	D7558	Drive right front steer retract short to ground
D7516	Drive left rear wheel angle sensor stuck	D7559	Drive left front steer extend short to ground
D7517	Drive left swash plate not in NEUTRAL	D7560	Drive left front steer retract short to ground
D7518	Drive right swash plate not in NEUTRAL	D7561	Drive right rear steer extend short to ground
D7519	Drive left joystick X-axis out of range high	D7562	Drive right rear steer retract short to ground
D7521	Drive left joystick Y-axis out of range high	D7563	Drive left rear steer extend short to ground
D7522	Drive right joystick Y-axis out of range high	D7564	Drive left rear steer retract short to ground
D7523	Drive right front wheel angle sensor out of range high	D7565	Drive steer pressure short to ground
D7524	Drive left front wheel angle sensor out of range high	D7566	Drive back-up alarm error OFF
D7525	Drive right rear wheel angle sensor out of range high	D7567	Drive no communication from Bobcat controller
D7526	Drive left rear wheel angle sensor out of range high	D7568	Drive angle sensors not calibrated
D7527	Drive left swash plate out of position	D7569	Drive battery voltage out of range high
D7528	Drive right swash plate out of position	D7570	Drive interrupted power (also occurs after software updates)
D7529	Drive left joystick X-axis out of range low	D7571	Drive battery voltage out of range low
D7531	Drive left joystick Y-axis out of range low	D7572	Drive pump not calibrated
D7532	Drive right joystick Y-axis out of range low	D7573	Drive operating mode switch flipped while operating
D7533	Drive right front wheel angle sensor out of range low	D7574	Drive right wheel speed uncommanded motion
D7534	Drive left front wheel angle sensor out of range low	D7575	Drive left wheel speed uncommanded motion
D7535	Drive right rear wheel angle sensor out of range low	D7576	Drive no communication from ACS controller
D7536	Drive left rear wheel angle sensor out of range low	D7577	Drive left speed sensor out of range high
D7537	Drive 5 volt sensor supply 1 out of range low	D7578	Drive right speed sensor out of range high
D7538	Drive 5 volt sensor supply 2 out of range low	D7579	Drive left speed sensor out of range low
D7539	Drive left swash plate sensor out of range high	D7580	Drive right speed sensor out of range low
D7540	Drive left swash plate sensor out of range low	D7581	Drive right front steer retract short to battery
D7541	Drive right swash plate sensor out of range high	D7582	Drive left front steer retract short to battery
D7542	Drive right swash plate sensor out of range low	D7583	Drive right rear steer retract short to battery
D7543	Drive left forward drive solenoid error ON	D7584	Drive left rear steer retract short to battery
D7544	Drive left reverse drive solenoid error ON	D7585	Drive 5 volt sensor supply 1 out of range high
D7545	Drive right forward drive solenoid error ON		

DIAGNOSTIC SERVICE CODES (CONT'D)**Service Codes List (Cont'd)**

CODE	DESCRIPTION	CODE	DESCRIPTION
D7586	Drive 5 volt sensor supply 2 out of range high	H2407	Rear rod output open circuit
D7587	Drive software update required	H2432	Rear rod output overcurrent
D7588	Drive switched power stuck ON	H2505	Diverter #2 short to battery
D7589	Drive switched power error OFF	H2506	Diverter #2 short to ground
D7590	Drive calibration performed	H2507	Diverter #2 open circuit
D7591	Drive left swash plate sensor reversed	H2605	Front base output short to battery
D7592	Drive right swash plate sensor reversed	H2606	Front base output short to ground
D7593	Drive unresponsive right speed sensor	H2607	Front base output open circuit
D7594	Drive unresponsive left speed sensor	H2632	Front base output overcurrent
D7595	Drive left speed sensor reverse direction	H2705	Front rod output short to battery
D7596	Drive right speed sensor reverse direction	H2706	Front rod output short to ground
D7597	Drive controller programmed	H2707	Front rod output open circuit
D7598	Drive controller in calibration mode	H2732	Front rod output overcurrent
D7599	Drive AWS controller in wheel position calibration mode	H2805	Diverter short to battery
		H2806	Diverter short to ground
H1221	Right thumb switch out of range high	H2807	Diverter open circuit
H1222	Right thumb switch out of range low	H2905	High-flow short to battery
H1224	Right thumb switch not in NEUTRAL	H2906	High-flow short to ground
H1321	Left thumb switch out of range high	H2907	High-flow open circuit
H1322	Left thumb switch out of range low	H2932	High-flow overcurrent
H1324	Left thumb switch not in NEUTRAL	H3028	Controller memory failure
H1421	Lift base pressure out of range high	H3128	Interrupted power failure
H1422	Lift base pressure out of range low	H3648	Multiple ACD conflict error
H1502	Ride control output error ON	H3904	Left joystick in error
H1503	Ride control output error OFF	H3912	Left joystick thumb switch not in NEUTRAL
H1507	Ride control output open circuit	H3913	Left joystick grip no communication
H1528	Ride control output failure	H3916	Left joystick no communication
H1602	Ride control relay error ON	H3928	Left joystick internal failure
H1603	Ride control relay error OFF	H3948	Left joystick multiple
H2005	Boost solenoid short to battery	H4004	Right joystick in error
H2006	Boost solenoid short to ground	H4012	Right joystick thumb switch not in NEUTRAL
H2007	Boost solenoid open circuit	H4013	Right joystick grip no communication
H2032	Boost solenoid overcurrent	H4016	Right joystick no communication
H2105	Reverse fan solenoid short to battery	H4028	Right joystick internal failure
H2106	Reverse fan solenoid short to ground	H4048	Right joystick multiple
H2107	Reverse fan solenoid open circuit	H4302	Horn error ON
H2132	Reverse fan solenoid overcurrent	H4303	Horn error OFF
H2305	Rear base output short to battery	H4423	Auxiliary not programmed
H2306	Rear base output short to ground	H4497	Auxiliary controller programmed
H2307	Rear base output open circuit	H4502	Right blinker error ON
H2332	Rear base output overcurrent	H4503	Right blinker error OFF
H2405	Rear rod output short to battery	H4602	Left blinker error ON
H2406	Rear rod output short to ground	H4603	Left blinker error OFF

DIAGNOSTIC SERVICE CODES (CONT'D)

Service Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
H4721	8 volt sensor supply out of range high	M0715	Hydraulic fluid temperature in shutdown
H4722	8 volt sensor supply out of range low	M0721	Hydraulic fluid temperature out of range high
H4821	5 volt sensor supply out of range high	M0722	Hydraulic fluid temperature out of range low
H4822	5 volt sensor supply out of range low	M0810	Engine coolant temperature too high
H7404	Main controller no communication	M0811	Engine coolant temperature extremely high
H9004	Press to operate loader keypad no communication	M0815	Engine coolant temperature in shutdown
H9109	Fuel pressure at filter inlet too low	M0821	Engine coolant temperature out of range high
H9110	Fuel pressure at filter inlet too high	M0822	Engine coolant temperature out of range low
H9121	Fuel pressure sensor at filter inlet out of range high	M0909	Fuel level too low
H9122	Fuel pressure sensor at filter inlet out of range low	M0921	Fuel level out of range high
		M0922	Fuel level out of range low
L0102	Lights button error ON	M1016	Hydraulic charge filter not connected
L0202	High-flow enable / auto idle enable button error ON	M1017	Hydraulic charge filter plugged
L0302	Auxiliary enable button error ON	M1121	Seat bar sensor out of range high
L0402	Information button error ON	M1122	Seat bar sensor out of range low
L7404	Main controller no communication	M1128	Seat bar sensor failure
L7672	Left display panel needs programming	M1305	Fuel hold solenoid short to battery
		M1306	Fuel hold solenoid short to ground
M0116	Air filter not connected	M1307	Fuel hold solenoid open circuit
M0117	Air filter plugged	M1402	Fuel pull solenoid error ON
M0216	Hydraulic / Hydrostatic filter not connected	M1403	Fuel pull solenoid error OFF
M0217	Hydraulic / Hydrostatic filter plugged	M1407	Fuel pull solenoid open circuit
M0309	System voltage too low	M1428	Fuel pull solenoid failure
M0310	System voltage too high	M1502	Traction lock pull output error ON
M0311	System voltage extremely high	M1503	Traction lock pull output error OFF
M0314	System voltage extremely low	M1507	Traction lock pull output open circuit
M0322	System voltage out of range low	M1528	Traction lock pull output failure
M0409	Engine oil pressure too low	M1605	Traction lock hold solenoid short to battery
M0414	Engine oil pressure extremely low	M1606	Traction lock hold solenoid short to ground
M0415	Engine oil pressure in shutdown	M1607	Traction lock hold solenoid open circuit
M0421	Engine oil pressure out of range high	M1705	Hydraulic lock valve short to battery
M0422	Engine oil pressure out of range low	M1706	Hydraulic lock valve short to ground
M0509	Hydraulic charge pressure too low	M1707	Hydraulic lock valve open circuit
M0510	Hydraulic charge pressure too high	M1732	Hydraulic lock valve overcurrent
M0511	Hydraulic charge pressure extremely high	M1805	Lift spool lock output short to battery
M0514	Hydraulic charge pressure extremely low	M1806	Lift spool lock output short to ground
M0515	Hydraulic charge pressure in shutdown	M1807	Lift spool lock output open circuit
M0521	Hydraulic charge pressure out of range high	M1832	Lift spool lock output overcurrent
M0522	Hydraulic charge pressure out of range low	M2005	Two-speed primary solenoid short to battery
M0610	Engine speed too high	M2006	Two-speed primary solenoid short to ground
M0611	Engine speed extremely high	M2007	Two-speed primary solenoid open circuit
M0613	Engine speed no signal	M2032	Two-speed primary solenoid overcurrent
M0615	Engine speed in shutdown	M2102	Glow plug output error ON
M0618	Engine speed out of range	M2103	Glow plug output error OFF
M0634	Engine speed invalid information from ECU	M2107	Glow plug output open circuit
M0710	Hydraulic fluid temperature too high	M2128	Glow plug output failure
M0711	Hydraulic fluid temperature extremely high	M2202	Starter output error ON

DIAGNOSTIC SERVICE CODES (CONT'D)

Service Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
M2203	Starter output error OFF	M4802	Front light relay error ON
M2207	Starter output open circuit	M4803	Front light relay error OFF
M2228	Starter output failure	M4902	Rear light relay error ON
M2302	Starter relay error ON	M4903	Rear light relay error OFF
M2303	Starter relay error OFF	M5002	Front light output error ON
M2402	Fuel pull relay error ON	M5003	Front light output error OFF
M2403	Fuel pull relay error OFF	M5007	Front light output open circuit
M2502	Traction pull relay error ON	M5028	Front light output failure
M2503	Traction pull relay error OFF	M5102	Rear light output error ON
M2602	Glow plug relay error ON	M5103	Rear light output error OFF
M2603	Glow plug relay error OFF	M5107	Rear light output open circuit
M2721	Throttle primary sensor out of range high	M5128	Rear light output failure
M2722	Throttle primary sensor out of range low	M5202	Press to operate button error ON
M2821	Throttle secondary sensor out of range high	M5221	Press to operate button out of range high
M2822	Throttle secondary sensor out of range low	M5222	Press to operate button out of range low
M2899	Throttle secondary sensor not calibrated	M5305	Press to operate light short to battery
M3028	Controller memory failure	M5306	Press to operate light short to ground
M3128	Interrupted power failure	M5405	Tilt spool lock short to battery
M3204	ACS (AHC) no communication to Bobcat controller	M5406	Tilt spool lock short to ground
M3304	Deluxe panel no communication	M5407	Tilt spool lock open circuit
M3404	Deluxe panel in error	M5432	Tilt spool lock overcurrent
M3505	Hydraulic fan short to battery	M5902	DPF regeneration switch error ON
M3506	Hydraulic fan short to ground	M6002	DPF inhibit regeneration switch error ON
M3507	Hydraulic fan open circuit	M6102	Remote parked regeneration switch error ON
M3532	Hydraulic fan overcurrent	M6402	Switched power relay error ON
M3705	Two-speed second output short to battery	M6403	Switched power relay error OFF
M3706	Two-speed second output short to ground	M6505	ECU power short to battery
M3707	Two-speed second output open circuit	M6506	ECU power short to ground
M3732	Two-speed second output overcurrent	M6507	ECU power open circuit
M3805	Auxiliary hydraulic lock short to battery	M6604	ECU no communication
M3806	Auxiliary hydraulic lock short to ground	M6702	HVAC output error ON
M3807	Auxiliary hydraulic lock open circuit	M6703	HVAC output error OFF
M3832	Auxiliary hydraulic lock overcurrent	M6707	HVAC output open circuit
M4109	Alternator too low	M6728	HVAC output failure
M4110	Alternator high	M6802	HVAC relay error ON
M4111	Alternator extremely high	M6803	HVAC relay error OFF
M4304	Keyless panel no communication	M7002	Switched power output error ON
M4404	Auxiliary no communication	M7003	Switched power output error OFF
M4510	Water in fuel sensor too high	M7007	Switched power output open circuit
M4511	Water in fuel sensor extremely high	M7028	Switched power output failure
M4521	Water in fuel sensor out of range high	M7304	Remote control no communication
M4522	Water in fuel sensor out of range low	M7316	Remote control no communication to transmitter
M4621	5 volt sensor supply out of range high	M7423	Main controller not programmed
M4622	5 volt sensor supply out of range low	M7472	Main controller needs programming
M4721	8 volt sensor supply out of range high	M7497	Main controller programmed
M4722	8 volt sensor supply out of range low	M7504	Drive no communication

DIAGNOSTIC SERVICE CODES (CONT'D)

Service Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
M7604	Left display panel no communication	W3235	ACS (AHC) tilt handle / pedal not in NEUTRAL
M7748	Key switch multiple	W3236	ACS (AHC) lift actuator
M7839	Hourmeter changed	W3237	ACS (AHC) lift actuator wiring
M7974	Door open	W3238	ACS (AHC) lift handle wiring
M8541	DPF automatic regeneration active	W3239	ACS (AHC) lift actuator not in NEUTRAL
M8542	DPF automatic regeneration active (Operate machine under load)	W3240	ACS (AHC) lift handle / pedal not in NEUTRAL
M8551	DPF regeneration needed – inhibit active	W3241	ACS (AHC) no communication
M8552	DPF regeneration needed – inhibit active (Operate machine under load)	W3249	ACS (AHC) lift actuator short to ground
M8553	DPF remote parked regeneration required (Remote regeneration kit required)	W3250	ACS (AHC) tilt actuator short to ground
M8554	DPF service regeneration required (Contact Bobcat dealer)	W3251	ACS (AHC) lift actuator short to battery
M8555	DPF service required	W3252	ACS (AHC) tilt actuator short to battery
M8560	DPF service regeneration active	W3253	ACS (AHC) lift handle / pedal short to ground
M8561	DPF service regeneration active	W3254	ACS (AHC) tilt handle / pedal short to ground
M8562	DPF service regeneration active	W3255	ACS (AHC) lift handle / pedal short to battery
M8563	DPF service regeneration active	W3256	ACS (AHC) tilt handle / pedal short to battery
M8564	DPF service regeneration active	W3257	ACS (AHC) lift actuator reduced performance
M8615	Engine speed derate in shutdown	W3258	ACS (AHC) tilt actuator reduced performance
M8625	Engine speed derate unresponsive	W3259	ACS (AHC) lift actuator wrong direction
M9004	Press to operate loader keypad no communication	W3260	ACS (AHC) tilt actuator wrong direction
R7404	Main controller no communication	W3261	ACS (AHC) handle lock short to ground
		W3262	ACS (AHC) handle lock short to battery
T9002	Service tool output 'C' error ON	W3263	ACS (AHC) pedal lock short to ground
T9003	Service tool output 'C' error OFF	W3264	ACS (AHC) pedal lock short to battery
T9102	Service tool output 'D' error ON	W3265	ACS (AHC) sensor supply voltage out of range
T9103	Service tool output 'D' error OFF	W3266	ACS (AHC) battery voltage out of range
T9202	Service tool output 'E' error ON	W3267	ACS (AHC) switch flipped while operating
T9203	Service tool output 'E' error OFF	W3268	ACS (AHC) lift handle information error
T9302	Service tool output 'F' error ON	W3270	ACS (AHC) right drive handle short to ground
T9303	Service tool output 'F' error OFF	W3271	ACS (AHC) right drive handle short to battery
		W3274	ACS (AHC) left joystick X-axis out of range
W3204	ACS (AHC) no communication to Bobcat controller	W3275	ACS (AHC) interrupted unswitched power
W3223	ACS (AHC) calibration required	W3276	ACS (AHC) CAN joystick information error
W3224	ACS (AHC) calibration performed	W3277	ACS (AHC) remote control information error
W3225	ACS (AHC) actuator calibration failed	W3297	ACS (AHC) controller programmed
W3231	ACS (AHC) tilt actuator	W3905	Left joystick X-axis not in NEUTRAL
W3232	ACS (AHC) tilt actuator wiring	W4005	Right joystick X-axis not in NEUTRAL
W3233	ACS (AHC) tilt handle wiring	W4007	Right joystick Y-axis not in NEUTRAL
W3234	ACS (AHC) tilt actuator not in NEUTRAL		

CONTROL PANEL SETUP

Right Panel Setup (Deluxe Instrumentation Panel)

Icon Identification

Figure 289



ICON	DESCRIPTION
Mon, 17 Mar 3:45 PM	DATE / TIME
BRADY 232.5 hrs	USER / HOURMETER
Current Job 456.7 hrs	CURRENT JOB HOURS
	ACTIVE WARNINGS screen icon
	VITALS screen icon
	SERVICE screen icon
	MAIN screen icon
	ATTACHMENTS screen icon
	SECURITY screen icon
	DISPLAY screen icon
	HOME icon (Return to MAIN screen)
	LEFT SCROLL button
	RIGHT SCROLL button
ENTER	ENTER button

Vitals

	Press a scroll button (Item 1) repeatedly until the Vitals screen icon (Inset) is highlighted.
	Displays select system operating levels.

You can monitor real-time displays of:








- Engine Speed
- Engine Oil Pressure
- Engine Coolant Temperature
- System Voltage
- Hydraulic Charge Pressure
- Hydraulic Fluid Temperature

The Deluxe Instrumentation Panel is easy to use. Continue to set your own preferences for operating / monitoring your Bobcat loader.

CONTROL PANEL SETUP (CONT'D)








Right Panel Setup (Deluxe Instrumentation Panel) (Cont'd)

Job Clock Reset

	Press a scroll button (Item 1) repeatedly until the Security screen icon (Inset) is highlighted.
	Select [1. PASSWORDS / LOCKOUTS].
	Enter owner password and press [ENTER].
	Select [1. USER SETTINGS].
	Select user.
	Select [3. RESET JOB STATISTICS].
	Press [9] to reset job statistics. Press left scroll button or [0] to exit without saving.





PASSWORD SETUP (DELUXE INSTRUMENTATION PANEL) (CONT'D)

Changing The User Passwords

	Press a scroll button (Item 1) repeatedly until the Security screen icon (Inset) is highlighted.
	Select [1. PASSWORDS / LOCKOUTS].
	Enter owner password and press [ENTER].
	Select [1. USER SETTINGS].
	Select user.
	Select [2. CHANGE PASSWORD].
	Enter new user password and press [ENTER].

Password Lockout Feature

This feature allows the owner to unlock the password feature so that a password does not need to be used every time the engine is started.

	Press a scroll button (Item 1) repeatedly until the Security screen icon (Inset) is highlighted.
	Select [1. PASSWORDS / LOCKOUTS].
	Enter owner password and press [ENTER].
	Select [2. MACHINE LOCK].

NOTE: The procedure above can be followed to reset the machine lock so that the machine requires a password to start the engine.

LOADER SPECIFICATIONS (CONT'D)

Performance

Rated Operating Capacity	748 kg (1650 lb)
with 200 Pound Frame Mounted Counterweight Kit	816 kg (1800 lb)
Tipping Load	1497 kg (3300 lb)
Operating Weight	2686 kg (5922 lb)
Breakout Force – Lift	1470 kg (3242 lb)
Breakout Force – Tilt	1485 kg (3276 lb)
Travel Speed:	
— Single Speed Loader	0 – 11,8 km/h (0 – 7.35 mph)
— Two-Speed Loader (Option):	
— Low Range	0 – 11,8 km/h (0 – 7.35 mph)
— High Range	0 – 17,3 km/h (0 – 11.02 mph)

Engine

Make / Model	Kubota® / V2403-MDI-E3B Interim Tier 4
Fuel / Cooling	Diesel / Liquid
Horsepower:	
— ISO 9249 EEC / SAE J1349 Net	34,4 kW (46.1 hp) @ 2700 rpm
— ISO 14396 Gross	34,4 kW (46.1 hp) @ 2700 rpm
— SAE J1995 Gross	36,5 kW (48.9 hp) @ 2700 rpm
Torque:	
— ISO 9249 EEC / SAE J1349 Net	148,6 N•m (109.6 ft-lb) @ 1600 rpm
— SAE J1995 Gross	158,6 N•m (117.0 ft-lb) @ 1600 rpm
Low Idle rpm	1075 – 1225
High Idle rpm	2760 – 2900
Number of Cylinders	4
Displacement	2433 cm ³ (148.5 in ³)
Bore / Stroke	87 mm / 102,4 mm (3.425 in / 4.03 in)
Lubrication	Gear Pump Pressure System with Filter
Crankcase Ventilation	Closed Breathing
Air Cleaner	Dry replaceable paper cartridge with separate safety element
Ignition	Diesel – Compression
Air Induction	Naturally Aspirated
Engine Coolant	Propylene Glycol / Water Mixture
Starting Aid	Glow plugs automatically activated as needed in RUN position

LOADER SPECIFICATIONS (CONT'D)

Drive System

Main Drive	Fully hydrostatic, 4-wheel drive
Transmission	Infinitely variable tandem hydrostatic piston pumps, driving two fully reversing hydrostatic motors
Final Drive	Prestressed #80 HSOC endless roller chain (no master link) and sprockets in sealed chaincase with oil lubrication (Chains do not require periodic adjustments) Two chains per side with no idler sprocket
Axle Size	50,29 mm (1.98 in), heat treated
Wheel Bolts	Eight – 9/16 in. wheel bolts fixed to axle hubs

Controls

Machine Steering	Direction and speed controlled by two hand operated steering levers or optional joystick(s)
Loader Hydraulics: <ul style="list-style-type: none">— Lift and Tilt— Front Auxiliary— Rear Auxiliary (Option)	Controlled by separate foot pedals or optional Advanced Control System (ACS) or optional Joystick Controls (JC) 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 operated speed control, additional foot operated speed control pedal with joystick option; key-type start switch or optional Keyless Start Panel or optional Deluxe Instrumentation Panel and function error shutdown
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	Mechanical disc activated by manually operated switch on left instrument panel

LOADER SPECIFICATIONS (CONT'D)

Hydraulic System

Pump Type	Engine driven, gear type
Pump Capacity – Standard Flow	64,7 L/min (17.1 U.S. gpm)
Pump Capacity – High Flow (Option)	101,1 L/min (26.7 U.S. gpm)
System Relief at Quick Couplers	23,8 – 24,5 MPa (238 – 245 bar) (3450 – 3550 psi)
Filter (Hydraulic / Hydrostatic)	Replaceable beta 10 micron = 200, drop in element
Filter (Charge)	Replaceable beta 10 micron = 200, spin-on element
Hydraulic Cylinders: <ul style="list-style-type: none">— Lift Cylinder (2):<ul style="list-style-type: none">— Bore Diameter— Rod Diameter— Stroke— Tilt Cylinder (2):<ul style="list-style-type: none">— Bore Diameter— Rod Diameter— Stroke	Double-acting; lift cylinders have cushioning feature on lower, tilt cylinders have cushioning feature on dump and rollback 57,2 mm (2.25 in) 38,1 mm (1.50 in) 698,5 mm (27.50 in) 69,9 mm (2.75 in) 38,1 mm (1.50 in) 330,7 mm (13.02 in)
Control Valve — Standard	3-Spool, open center, manually operated with spring detent for lift float; Electrically controlled auxiliary spool
Control Valve — ACS, JC, 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: <ul style="list-style-type: none">— Raise Lift Arms— Lower Lift Arms— Bucket Dump— Bucket Rollback	3.3 seconds 2.8 seconds 2.3 seconds 1.7 seconds

LOADER SPECIFICATIONS (CONT'D)

Electrical System

Alternator	Belt driven, 90 amperes, open frame
Battery	12 volt, 700 cold cranking amperes @ -18°C (0°F), 110 minute reserve capacity @ 25 amperes
Starter	12 volt, gear type, 3,2 kW (4.29 hp)
Instrumentation	<p>Gauges: Engine Coolant Temperature and Fuel Level</p> <p>Warning lights: Fuel Level, Seat Belt, Engine Coolant Temperature, Engine Malfunction, Hydraulic System Malfunction, Diesel Particulate Filter (DPF) / Diesel Exhaust Fluid (DEF), and General Warning</p> <p>Indicators: BICS™ Functions, Two-Speed, 3-Point Restraint, and Turn Signals</p> <p>Data Display: Operating Hours, Engine rpm, Speed Management Setting, Maintenance Clock Countdown, Battery Voltage, Service Codes, Engine Preheat Countdown, Lift and Tilt Compensation Setting, Steering Drift Compensation Setting, and Drive Response Setting</p> <p>Other: Audible Alarm, Lights, and Option / Accessory Switches</p> <p>Optional Deluxe Instrumentation Panel: *Additional displays for: Engine rpm, Engine Coolant Temperature, Engine Oil Pressure, System Voltage, Hydraulic Fluid Temperature, and Hydrostatic Charge Pressure *Additional Features Included: Keyless Start, Digital Clock, Job Clock, Password Lockout, Multiple-Language Display, Help Screens, Diagnostic Capability, and Engine / Hydraulic Systems Shutdown Function</p>

Capacities

Fuel	93,7 L (24.75 U.S. gal)
Engine Oil with Filter Change	8,7 L (9.2 qt)
Engine Cooling System with Heater	11,7 L (3.1 U.S. gal)
Engine Cooling System without Heater	11,4 L (3.0 U.S. gal)
Hydraulic / Hydrostatic Reservoir	7,57 L (2.0 U.S. gal)
Hydraulic / Hydrostatic System	31,8 L (8.4 U.S. gal)
Chaincase Reservoir	32,2 L (8.5 U.S. gal)

LOADER SPECIFICATIONS (CONT'D)

Tires

Standard Duty (Standard)	10.00 – 16.5, 8 Ply Rating
Hard Solidflex (Option)	31 x 10 – 20
Heavy Duty (Option)	10.00 – 16.5, 10 Ply Rating
Heavy Duty Offset (Option)	10.00 – 16.5, 10 Ply Rating
Heavy Duty Offset Poly Fill (Option)	10.00 – 16.5, 10 Ply Rating
Heavy Duty Poly Fill (Option)	10.00 – 16.5, 10 Ply Rating
Severe Duty (Option)	10.00 – 16.5, 10 Ply Rating
Severe Duty Poly Fill (Option)	10.00 – 16.5, 10 Ply Rating
Solidflex (Option)	31 x 6 x 10
Super Float (Option)	31 x 12 – 16.5, 10 Ply Rating
Versatile Duty (Option)	10.00 – 16.5, 10 Ply Rating
Recommended Pressure	Inflate tires to MAXIMUM pressure shown on the sidewall of the tire; DO NOT mix brands of tires used on the same loader

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