



FIELD REFERENCE MANUAL

OQ40 – OQ120

OilQuick Safety System
OQSS OQ



1. Table of Contents

- 1. Table of Contents 2
- 2. System Status Screens 3
- 3. Sensor Adjustment Procedure 4
 - 3.1. Field Sensor Adjustment Check Procedure 4
- 4. Hydraulic schematic (OQE06747) 5
- 5. Electrical schematic (OQE06358) 6
- 6. Wiring diagram - (OQE06748) 8
- 7. Troubleshooting - OQSS 10

2. System Status Screens

System Status pages show current state of electronically controlled / monitored system components. There are three status screens, all shown below with example status. The buttons between the left / right arrow icons are used to navigate between pages. The coupler can be operated via status pages 1 and 2 to view component status during operation. EVENT LOG screens can be accessed from status page 3.

Monitored components with descriptions are listed below:

- COUPLER STATUS – Indicated with green (locked), gray (closed no tool), and red (open) boxes around coupler lock/open icons
- CONTROL INTERLOCK – Status of machine control arm signal. ON, OFF, or DISABLED
- GEN INTERLOCK – Status of generator enable signal. ON, OFF, or DISABLED
- LOCK SENSOR 1 – Status of OQSS lock sensor. ON is locked, OFF is not locked
- LOCK SENSOR 2 – Status of OQSS lock sensor. ON is locked, OFF is not locked
- LOCK PRESSURE – Actual pressure in the lock port (not actual coupler pressure - indicates LOW PSI when pressure is not present in lock line)
- SYSTEM VOLTAGE - Actual system supply voltage
- LOCK VALVE – Status of lock valve solenoid. ON, OFF, or FAULT
- PRESSURE BOOST VALVE – Status of LS boost valve solenoid. ON, OFF, FAULT, or DISABLED
- RELIEF VALVE 1 / 2 – Status of Relief valve 1 and 2 solenoid. ON, OFF, FAULT, or DISABLED
- ALARM BUZZER – Status of Alarm Buzzer. ON, OFF, or FAULT
- NORMAL LOCK CYCLES – Count of the number of successful lock cycles (coupler locked into tool)
- EMPTY LOCK CYCLES – Count of the number of lock cycles with no tool connection
- EMERGENCY LOCK CYCLES – Count of emergency operation lock cycles
- SYSTEM STARTUPS – Count of system starts
- SYSTEM HOURS - Records total number of OQSS system operating hours.
- EVENT LOG - Press button below EVENT LOG text to enter EVENT LOG pages.



Opening and closing the coupler from status pages 1 and 2:

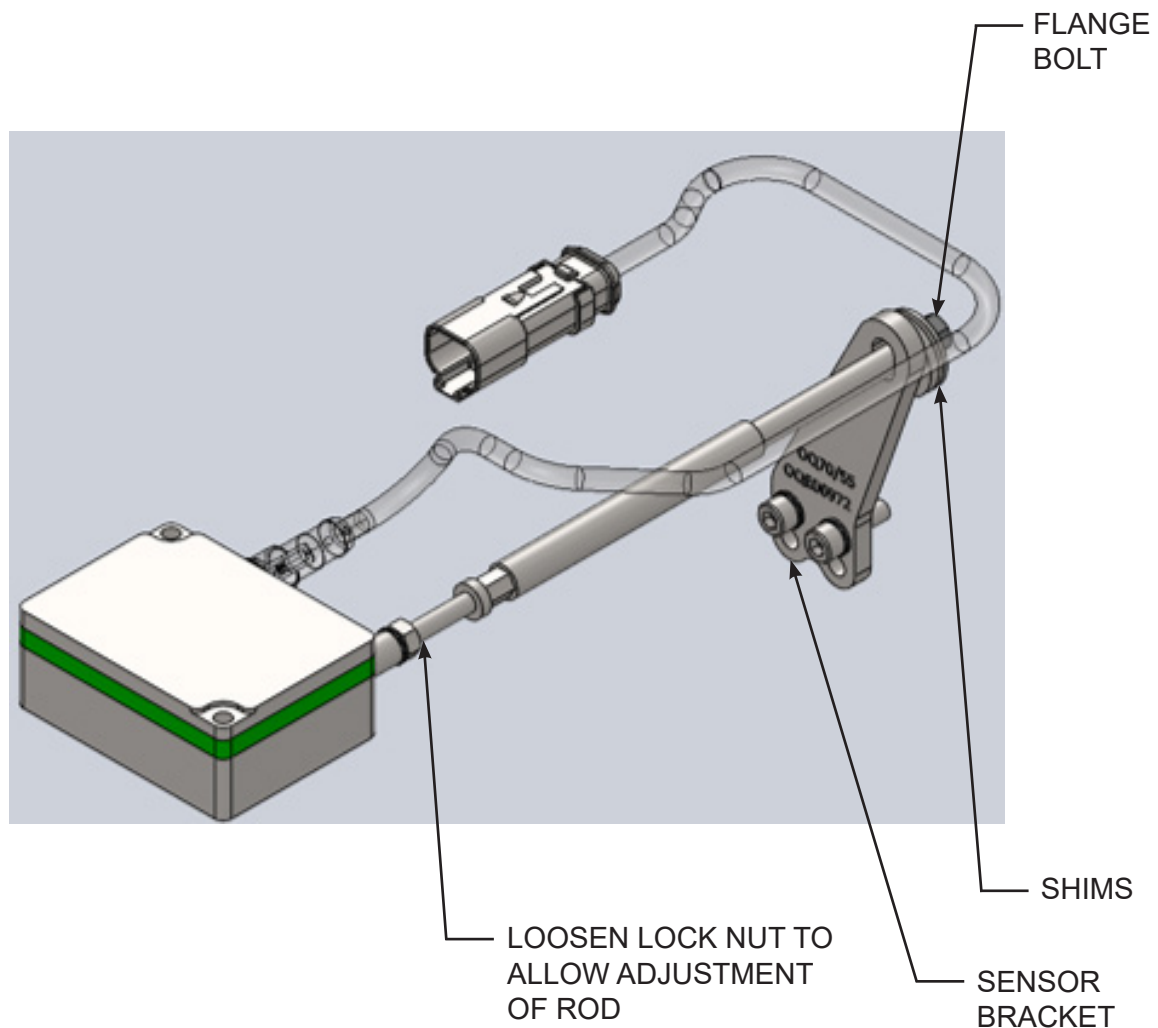


Opening coupler from “CLOSED NO TOOL” or “LOCKED” status. Press and hold buttons below unlock icons for 8 seconds. Box around open icons shows white until buttons have been held for the required time.

Closing coupler. Press and hold button below lock icon for 8 seconds. Box around lock icon shows white until button has been held for the required time.

3. Sensor Adjustment Procedure

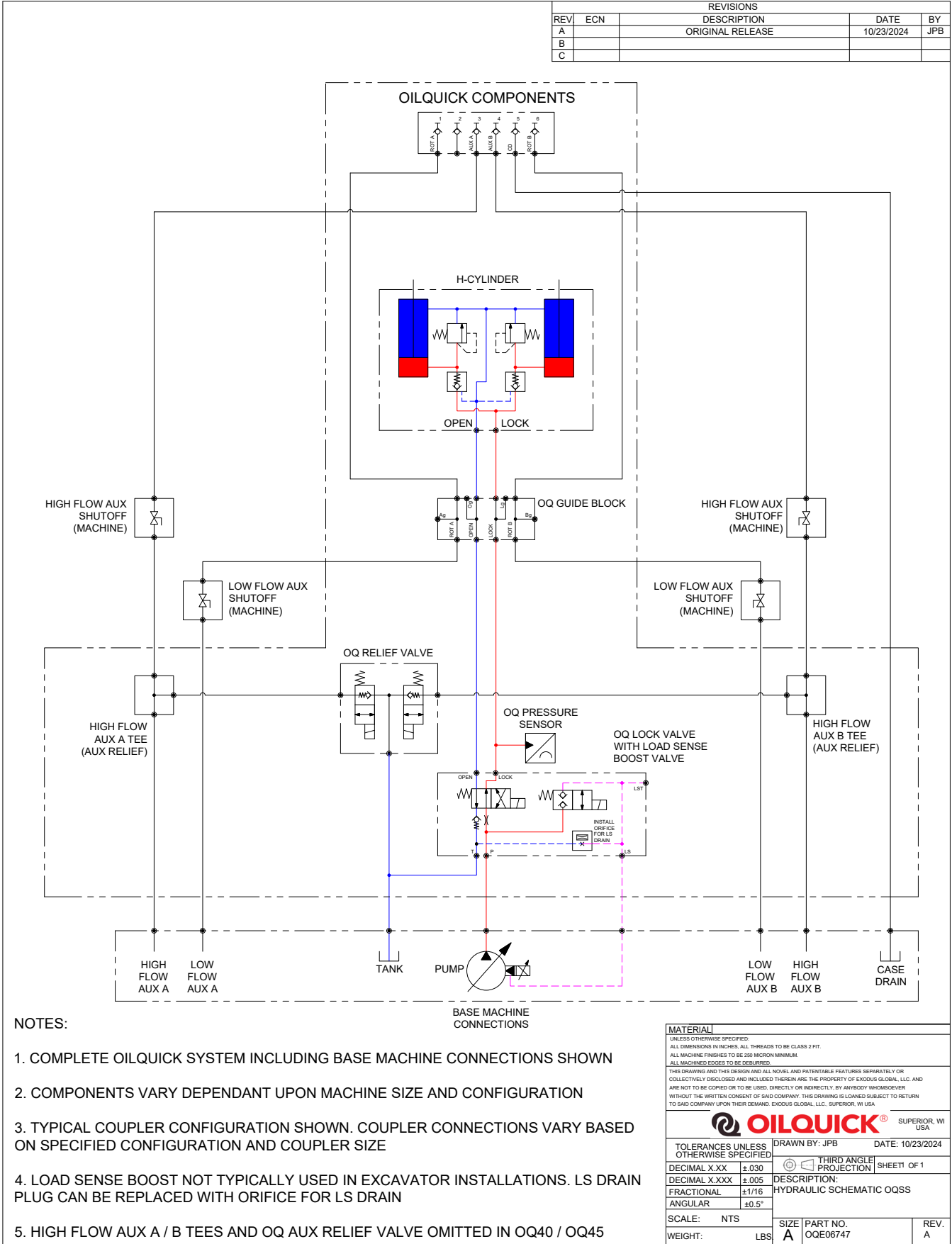
1. Couple into attachment, check if green light on sensor is lit.
2. If light is on pull rod out (this will cause fault in control system).
 - A. Light should turn off after 1/8" of rod movement.
 - B. Shims can be inserted between flange nut and sensor bracket to measure actuation.
 - 1/8" SHIM – LIGHT ON.
 - 3/16" SHIM – LIGHT OFF.



3.1 - Field Sensor Adjustment Check Procedure

1. Remove guard assembly to access lock sensor linkage (if required).
2. Loosen lock nut and thread rod out of sensor until light turns off.
3. Thread rod 2 full turns into sensor and tighten lock nut.
4. Perform adjustment check per above.

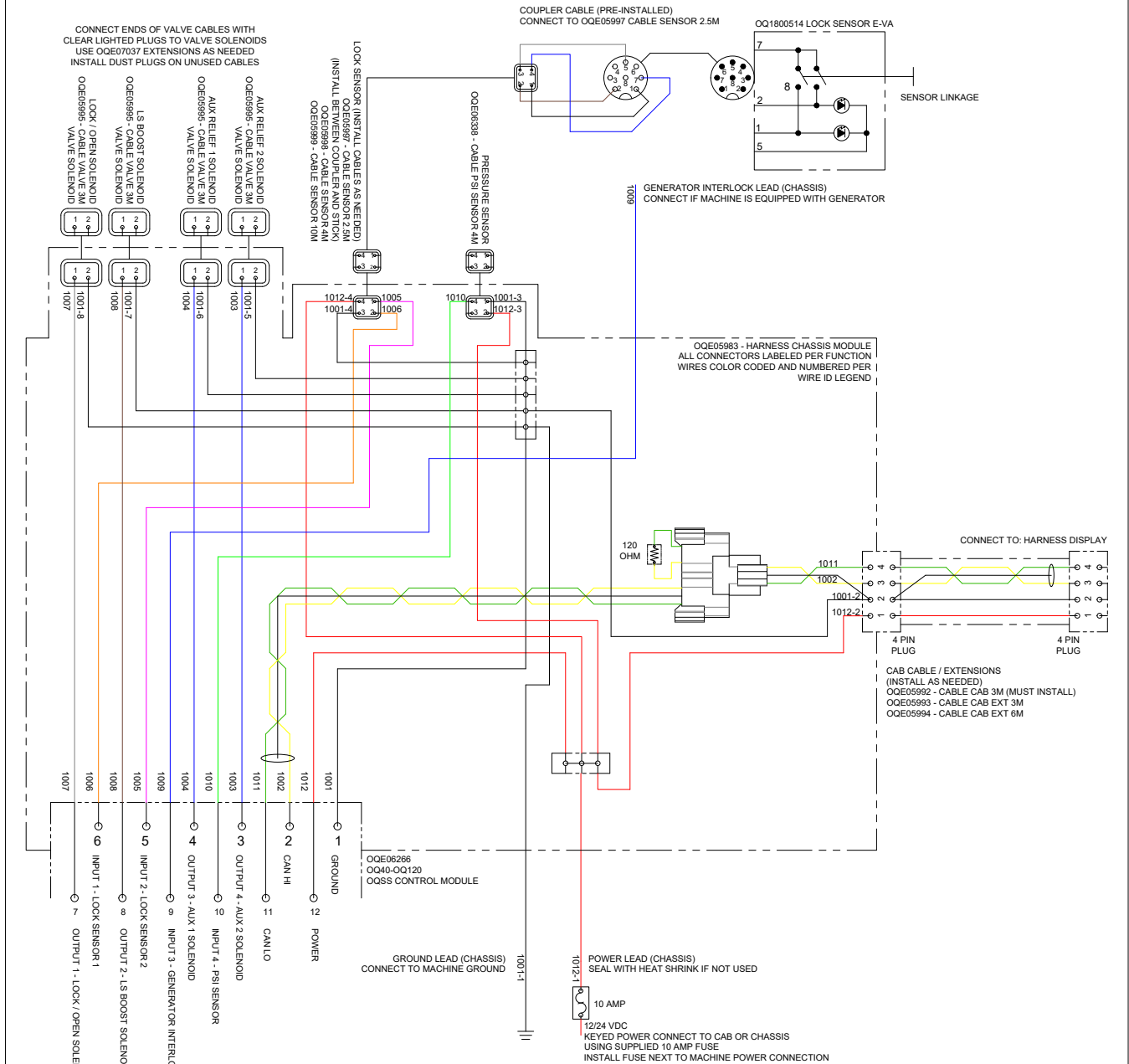
4. Hydraulic schematic (OQE06747)



5. Electrical schematic (OQE06358) - sheet 1

CHASSIS WIRING

REVISIONS				
REV.	ECN	DESCRIPTION	DATE	BY
A		ORIGINAL RELEASE	05/14/2024	JPB
B	5182	OQE05983 / OQE05991 HARNESS UPDATES	03/18/2025	JPB
C	5182	UPDATE VOLTAGE SPECS FOR V1.3 S/W	07/18/2025	JPB

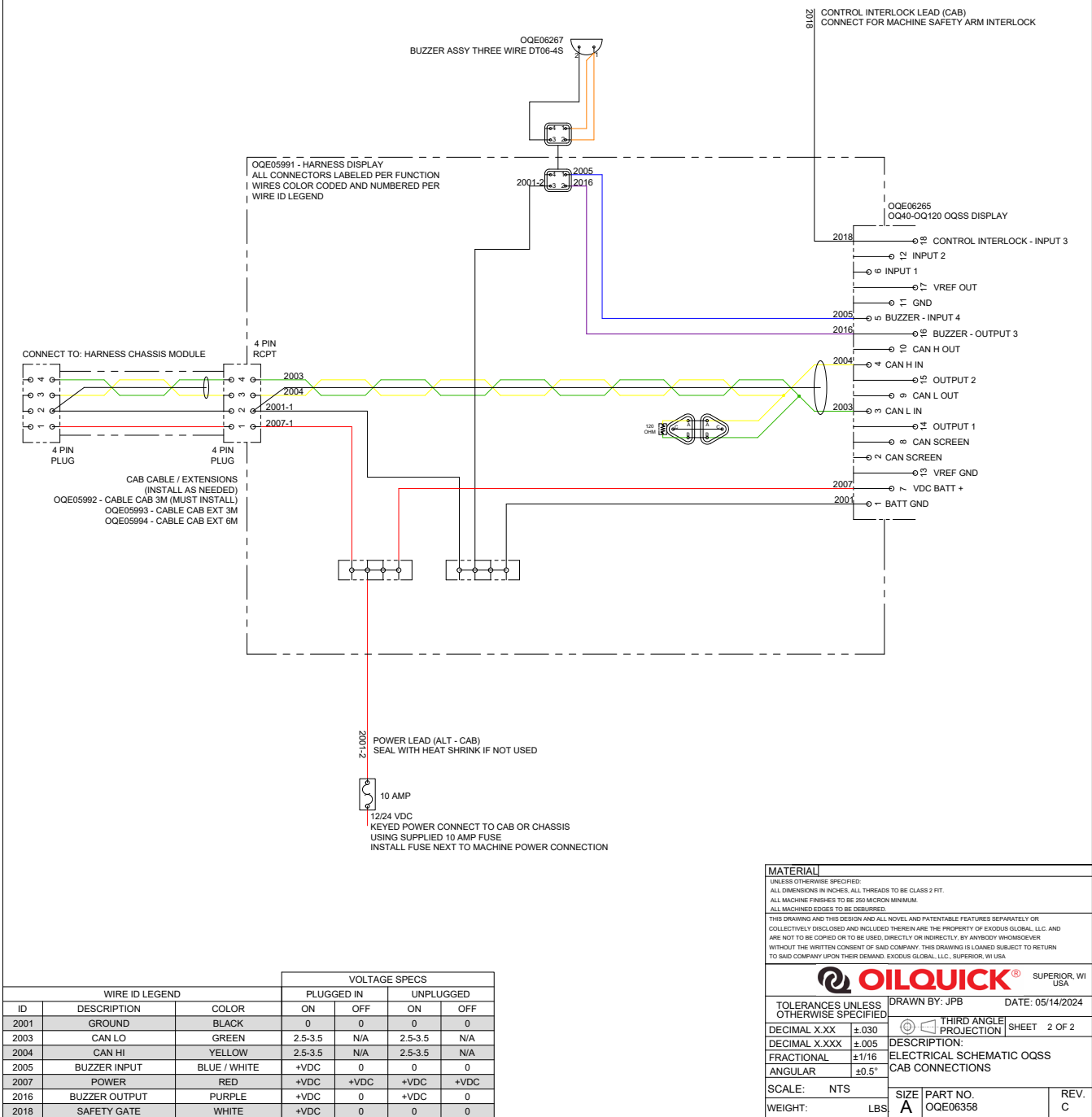


VOLTAGE SPECS									
VALVE FAULT MONITORING ON OQE06520 VERSIONS 1.0 - 1.2					VALVE FAULT MONITORING OFF OQE06520 1.0 - 1.3				
WIRE ID LEGEND					WIRE ID LEGEND				
ID	DESCRIPTION	COLOR	ON	OFF	ID	DESCRIPTION	COLOR	ON	OFF
1001	GROUND	BLACK	0	0	1001	GROUND	BLACK	0	0
1002	CAN HI	YELLOW	2.5-3.5	N/A	1002	CAN HI	YELLOW	2.5-3.5	N/A
1003	AUX RELIEF SOLENOID 2	BLUE / WHITE	+VDC	2-3	1003	AUX RELIEF SOLENOID 2	BLUE / WHITE	+VDC	2-3
1004	AUX RELIEF SOLENOID 1	BLUE / WHITE	+VDC	2-3	1004	AUX RELIEF SOLENOID 1	BLUE / WHITE	+VDC	2-3
1005	LOCK SENSOR INPUT 2	PINK	+VDC	0	1005	LOCK SENSOR INPUT 2	PINK	+VDC	0
1006	LOCK SENSOR INPUT 1	ORANGE	+VDC	0	1006	LOCK SENSOR INPUT 1	ORANGE	+VDC	0
1007	LOCK / OPEN SOLENOID	GRAY	+VDC	2-3	1007	LOCK / OPEN SOLENOID	GRAY	+VDC	2-3
1008	LS BOOST SOLENOID	BROWN	+VDC	2-3	1008	LS BOOST SOLENOID	BROWN	+VDC	2-3
1009	GENERATOR INTERLOCK	BLUE	+VDC	0	1009	GENERATOR INTERLOCK	BLUE	+VDC	0
1010	PSI SENSOR INPUT	GREEN / YELLOW	5-4.5	N/A	1010	PSI SENSOR INPUT	GREEN / YELLOW	5-4.5	N/A
1011	CAN LO	GREEN	2.5-3.5	N/A	1011	CAN LO	GREEN	2.5-3.5	N/A
1012	POWER	RED	+VDC	+VDC	1012	POWER	RED	+VDC	+VDC

MATERIAL		TOLERANCES UNLESS OTHERWISE SPECIFIED	
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES. ALL THREADS TO BE CLASS 2 FIT. ALL MACHINE FINISHES TO BE 250 MICRON MINIMUM. ALL MACHINED EDGES TO BE DEBURRED.		THIS DRAWING AND THIS DESIGN AND ALL NOVEL AND PATENTABLE FEATURES SEPARATELY OR COLLECTIVELY DISCLOSED AND INCLUDED THEREIN ARE THE PROPERTY OF EXODUS GLOBAL, LLC. AND ARE NOT TO BE COPIED OR TO BE USED, DIRECTLY OR INDIRECTLY, BY ANYBODY WHOEVER WITHOUT THE WRITTEN CONSENT OF SAID COMPANY. THIS DRAWING IS LOANED SUBJECT TO RETURN TO SAID COMPANY UPON THEIR DEMAND. EXODUS GLOBAL, LLC. SUPERIOR, WI USA	
DRAWN BY: JPB		DATE: 05/14/2024	
THIRD ANGLE PROJECTION		SHEET 1 OF 2	
DESCRIPTION: ELECTRICAL SCHEMATIC OQSS CHASSIS CONNECTIONS		SCALE: NTS	
SIZE PART NO. OQE06358		REV. C	
WEIGHT: LBS			

5. Electrical schematic (OQE06358) - sheet 2

IN CAB WIRING



6. Wiring diagram - (OQE06748) - sheet 1

FULL SYSTEM INSTALLATION SHOWN
COMPONENTS SUPPLIED AND INSTALLED DEPENDANT UPON COUPLER SIZE AND MACHINE CONFIGURATION

1. HARNESS LABELS DESIGNATE CONNECTION TO BE MADE AT EACH END.

2. OQE05997 MUST BE CONNECTED TO COUPLER AT STICK TIP.

3. HARNESS KITS VARY PER COUPLER SIZE AND CONFIGURATION.

4. "CABLE OQSS SENSOR" (ITEM 14) PRE-INSTALLED ON COUPLER.

5. HYDRAULIC VALVES SHOWN FOR REFERENCE.

TYPICAL EXCAVATOR INSTALLATION DOES NOT UTILIZE LS BOOST VALVE.

DEPRESSURIZATION VALVE (ITEM 23A/B) NOT USED IN OQ 40 / OQ45 COUPLERS.

INSTALL ITEM 19 IN OPEN VALVE SOLENOID PLUGS OF CHASSIS MODULE HARNESS.

OQE07037 CABLE DT PL/RCPT VALVE EXT 3M SUPPLIED UPON REQUEST.

ITEM	PART#	NAME	QTY	UOM
1	OQE06265	OQ40-OQ120 OQSS DISPLAY	1	EA
2	OQE06266	OQ40-OQ120 OQSS CHASSIS MODULE	1	EA
3	OQ1800514	LOCK SENSOR E-VA	1	EA
4	OQE06267	BUZZER ASSY THREE WIRE DT06-4S	1	EA
5	OQE05983	HARNESS CONTROL MODULE	1	EA
6	OQE05991	HARNESS DISPLAY	1	EA
7	OQE06338	CABLE DT PL/PL PSI SENSOR 4M	1	EA
8	OQE05995	CABLE DT PL/PL VALVE 3M	1-3	EA
9	OQE05992	CABLE DT PL/PL CAB 3M	0-1	EA
10	OQE05993	CABLE DT PL/RCPT CAB EXT 3M (OPTION)	0-2	EA
11	OQE05994	CABLE DT PL/RCPT CAB EXT 6M (OPTION)	1	EA
12	OQE05998	CABLE DT PL/RCPT SENSOR 4M	1-3	EA
13	OQE05999	CABLE DT PL/RCPT SENSOR 10M	1-3	EA
14	OQE07560	CABLE 8-POS FEMALE M12/PL 3M	1	EA
15	30-00864	HEAT SHRINK 22-18 RING TERMINAL, 10-24	2	EA
	30-00865	HEAT SHRINK 22-18 RING TERMINAL, 1/4"	2	EA
	30-00866	HEAT SHRINK 22-18 RING TERMINAL, 3/8"	2	EA
	30-00879	HEAT SHRINK 16-14 RING TERMINAL, 10-24	1	EA
	30-00880	HEAT SHRINK 16-14 RING TERMINAL, 1/4"	1	EA
	30-00881	HEAT SHRINK 16-14 RING TERMINAL, 3/8"	1	EA
16	30-00465	16-14 AWG Blue Crimp Butt Splice	3	EA
	30-00801	22-18 AWG Red Crimp Butt Splice	3	EA
17	30-00862	INLINE FUSE HOLDER MINI	1	EA
18	30-00863	FUSE 10 AMP MINI	1	EA
19	30-00877	CONNECTOR DUST PLUG AT06-2S-SS01	1-3	EA
20	OQE06340	SENSOR PRESSURE 7500 PSI 04MB DT	1	EA
21a	OQ4120613	VALVE - LOCK/OPEN POWERBOOST	1	EA
21b	OQ4129351	LOCK VALVE/POWER BOOST 12V (OQ40 / 45-5)	1	EA
22a	OQ4123124	VALVE - DEPRESSURIZATION 24V DT (OQ60-5 - OQ120)	1	EA
22b	OQ4123125	DEPRESSURIZATION VALVE DOUBLE, 12V (OQ60-5 - OQ120)	1	EA
23	30-00894	CORRUGATED SPLIT LOOM .125" ID	30	FT
24	30-00892	ZIP TIE .098" X 3.9" BLACK	15	EA
25	30-00893	ZIP TIE .098" X 3.9" RED	15	EA
26	OQE07037	CABLE DT PL/RCPT VALVE EXT 3M	0-3	EA

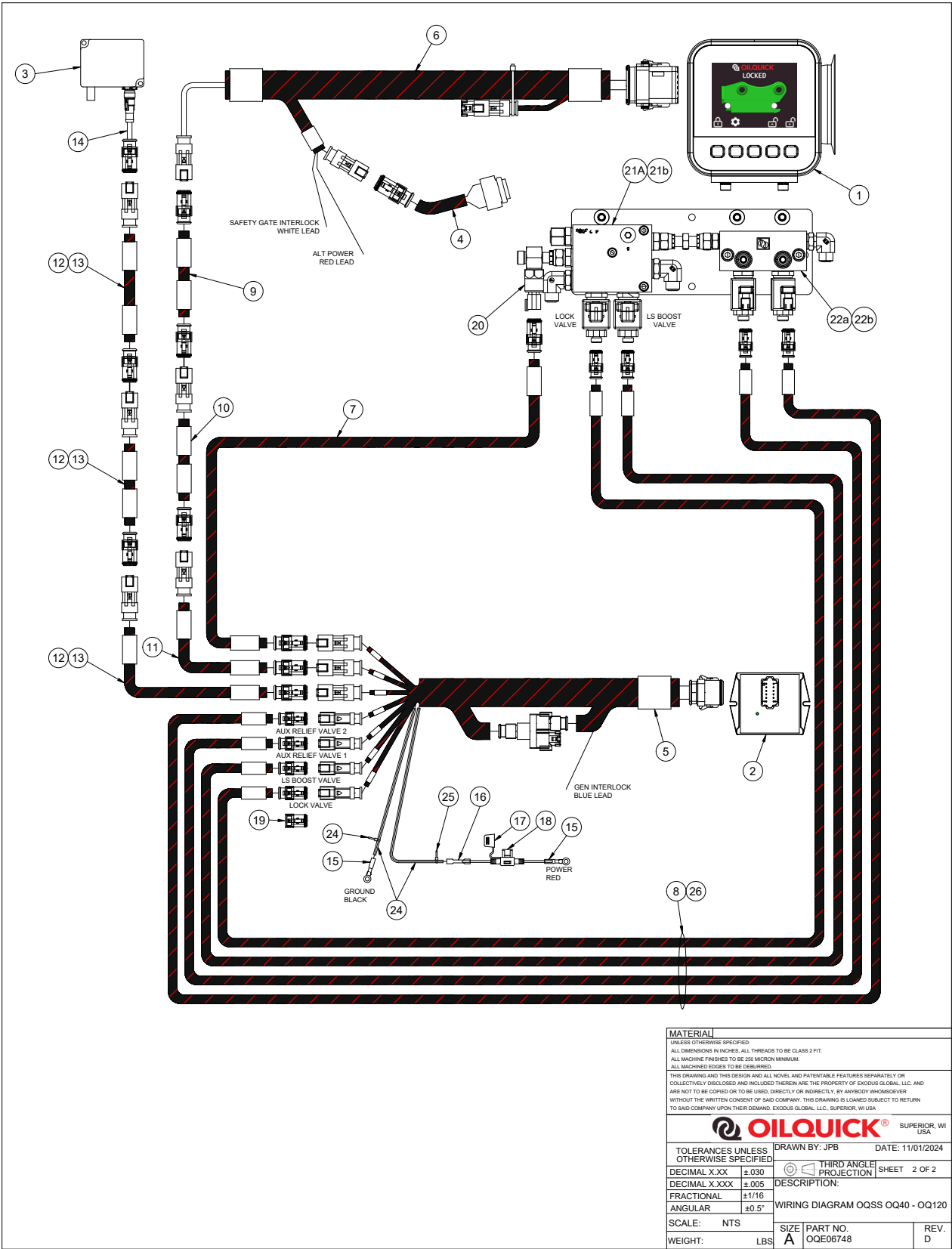
REV.	ECN	DESCRIPTION	DATE	BY
A		ORIGINAL RELEASE	11/01/2024	JPB
B	5182	ADD ITEMS 24-26 FOR PWR / GRD LEAD OQE05983 / OQE5991 HARNESS UPDATES	03/18/2025	JPB
C	5195	CH OQ 70/55 COUPLER CABLE TO OQE06598	05/08/2025	JPB
D	5218	CHANGE ITEM 14 TO COMMON MOLDED CABLE OBSOLETE OQE05997	01/23/2026	JPB

MATERIAL

UNLESS OTHERWISE SPECIFIED:
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ALL MACHINE FINISHES TO BE 250 MICRON MINIMUM.
ALL MACHINED EDGES TO BE DEBURRED.
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MATERIAL			
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		SUPERIOR, WI USA	
TOLERANCES UNLESS OTHERWISE SPECIFIED: DECIMAL X.XXX ±.030 DECIMAL X.XXX ±.005 FRACTIONAL ±1/16 ANGULAR ±0.5°		DRAWN BY: JPB DATE: 11/01/2024  THIRD ANGLE PROJECTION SHEET 1 OF 2 DESCRIPTION: WIRING DIAGRAM OQSS OQ40 - OQ120	
SCALE: NTS WEIGHT: LBS		SIZE: A PART NO. OQE06748 REV. D	

6. Wiring diagram - (OQE06748) - sheet 2



7. Troubleshooting - OQSS

Fault	Possible cause	Action
Control panel does not start on machine start	Faulty power connection / wiring	Check voltage at keyed power connection with a multimeter. If machine voltage is present, inspect fuse. Check chassis module power light. If this is lit, the chassis module is receiving power. Inspect wire harness between chassis module and display module.
	Faulty fuse at power connection	Inspect fuse at power connection.
	Faulty OQSS display module	Test power and ground connections to the OQSS display module (test for machine voltage at display connector (pin 7, wire ID 2007), and check continuity between wire harness display plug ground (pin 1, wire ID 2001) and chassis ground connection.
Buzzer fault	Faulty buzzer, Faulty wiring	Enter "Troubleshooting Mode" in OQSS control panel and force buzzer on. If the buzzer is sounding, back probe pin 5 on OQSS display plug (wire ID 2005). Machine voltage should be present. If not, inspect wire 2005 from display module to buzzer. If buzzer does not sound, unplug and test for voltage at buzzer plug pin 2. If machine voltage is present replace buzzer ASSY.
Lock valve fault	Faulty valve cable, Faulty coil	Enter "Troubleshooting Mode" in OQSS control panel and force faulted valve on. Look at lighted plug on affected valve solenoid. If it is lit green, replace coil. If it is not lit unplug and test for voltage at pin 1. If voltage is present replace coil and cable (LED in plug has failed as well as the coil). If there is no voltage, test continuity of valve cable / Harness Control Module and replace as needed.
Boost valve fault		
Relief valve 1 fault		
Relief valve 2 fault		
Lock pressure fault	Machine inactivity, Low supply pressure, Incorrect connection	Open "SYSTEM STATUS" and read lock pressure while operating excavator. If it does not rise above 2,200 PSI check connection between pump and OQ lock valve. Verify that the excavator has correct max pressure when a function is stalled. If supply pressure is correct, check to see if the fault is cleared. This fault will appear after ninety minutes of machine operation below 2,200 PSI as a reminder to boost the lock pressure periodically.
Pressure sensor fault	Faulty pressure sensor, Faulty wiring	Check power and ground at pressure sensor plug (pin 2 power, pin 1 ground). If power and ground are verified to be good, test continuity between pressure sensor cable plug pin 4 (wire ID 1010) and chassis module plug pin 10. If continuity is confirmed, replace pressure sensor. If there is no continuity, determine if faulty wire is in sensor cable or HARNESS CONTROL MODULE. Replace or repair harnesses as needed.

7. Troubleshooting - OQSS - continued

Fault	Possible cause	Action
Lock sensor fault	Improper adjustment of or damage to sensor linkage, Faulty sensor, Faulty wiring	Inspect lock sensor at coupler with machine running while locked into an attachment. If both lights are on, test continuity in wires 1005 and 1006 between sensor and chassis module and replace / repair cables as needed. If only one light is on, manually pull sensor linkage to determine if the second light comes on. If it does, adjust linkage. If it does not light, replace lock sensor.
Critical sensor fault	Faulty sensor wire, Improper adjustment of sensor linkage, H-cylinder retracted while attachment locked	Inspect lock sensor at coupler with machine running while locked into an attachment. If both lights are on, test continuity in wires 1005 and 1006 between sensor and chassis module and replace / repair cables as needed. If both lights are off, unplug sensor cable at coupler and test for machine power between pins 4 (pwr) and 3 (grd). If power is present, manually move sensor linkage to see if the lights can be turned on. If they turn on when the linkage is extended, adjust linkage. If they do not turn on, replace sensor. If power is not present test wires 1012-4 and 1001-4 in sensor cable between coupler and chassis module for continuity. Replace or repair as needed.
Can bus fault	Faulty chassis module, Faulty canbus harness, Faulty terminating resistor	Check active faults, if communication with chassis module has failed all valves and sensors will be in fault state. Remove chassis terminating resistor and test resistance on harness between pins A and B. this tests continuity of the CAN wires, along with the cab terminating resistor. If resistance is within spec, test between pins A and B on the removed resistor. Both tests should read 120 ohms. If resistance is within spec, unplug harness from display module and chassis module. Test plug to plug continuity between display plug pin 3 and chassis plug pin 11 (green wire); and display plug pin 4 and chassis plug pin 2 (yellow wire). If harness all wiring tests are within spec, replace the chassis module.



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