



# FIELD REFERENCE MANUAL

## OQC65 — OQC90

OilQuick Safety System  
OQC OQSS



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# 1. Table of Contents

|                                          |    |
|------------------------------------------|----|
| 1. Table of Contents .....               | 2  |
| 2. System Status Screens .....           | 3  |
| 3. Hydraulic schematic (OQE06747) .....  | 4  |
| 4. Electrical schematic (OQE06358) ..... | 6  |
| 5. Wiring diagram - (OQE06748) .....     | 8  |
| 6. 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
- H-CYLINDER SENSOR – Status of OQSS H-cylinder sensor. ON indicates coupler closed, OFF indicates not locked
- PIN SENSOR – Status of OQSS pin sensor. ON indicates rear pin is engaged, OFF indicates rear pin is not engaged
- 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:

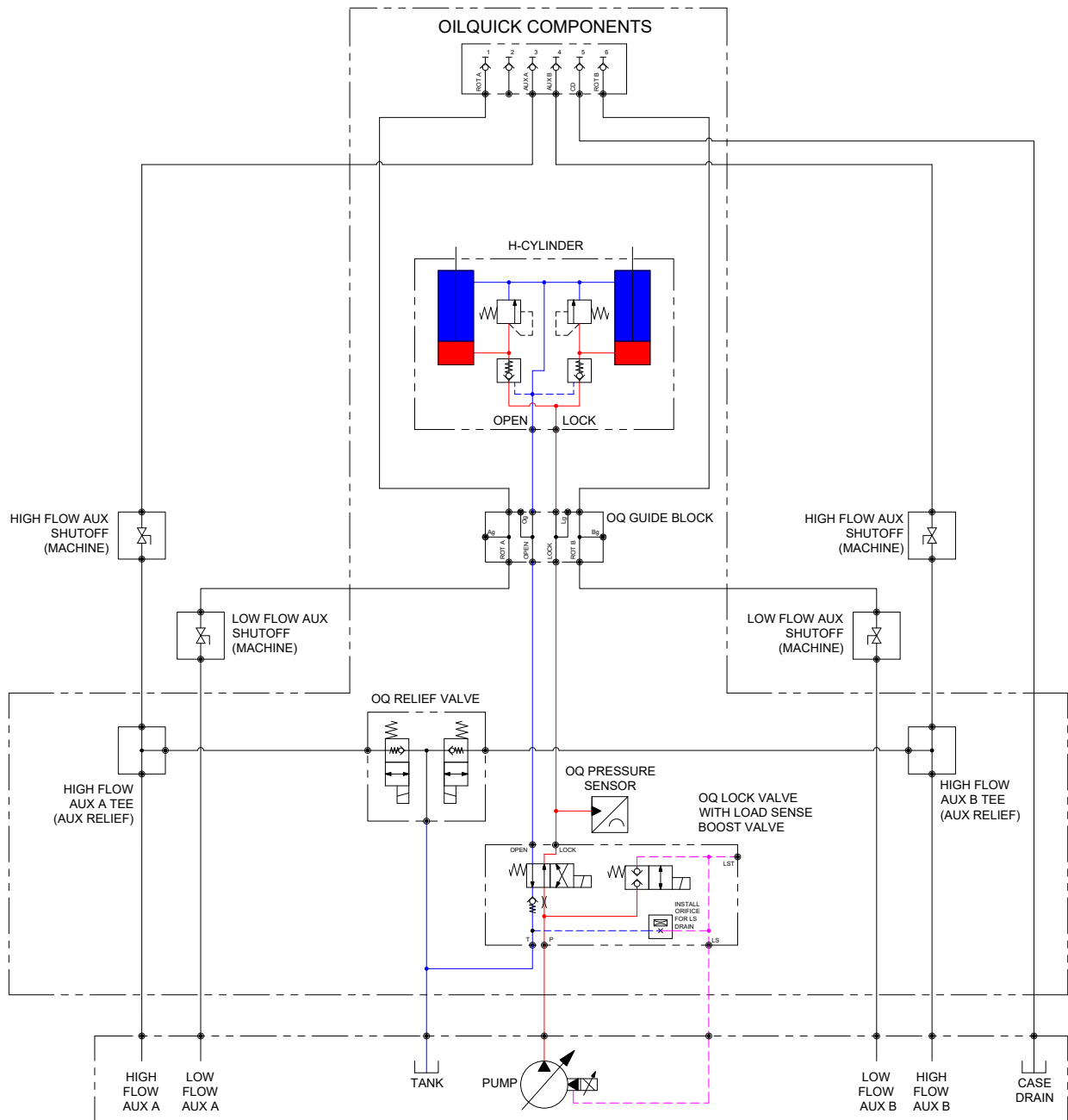


Opening coupler from “CLOSED NO TOOL” or “LOCKED” status. Press and hold buttons below unlock icons for 8 seconds. Box around open icons shows white until buttons have been held for the required time. If the DOUBLE PRESS option is enabled a confirmation screen will show before the open cycle initiates.

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. Hydraulic schematic (OQE06747)

| REVISIONS |     |                  |            |     |
|-----------|-----|------------------|------------|-----|
| REV       | ECN | DESCRIPTION      | DATE       | BY  |
| A         |     | ORIGINAL RELEASE | 10/23/2024 | JPB |
| B         |     |                  |            |     |
| C         |     |                  |            |     |



NOTES:

1. COMPLETE OILQUICK SYSTEM INCLUDING BASE MACHINE CONNECTIONS SHOWN
2. COMPONENTS VARY DEPENDANT UPON MACHINE SIZE AND CONFIGURATION
3. TYPICAL COUPLER CONFIGURATION SHOWN. COUPLER CONNECTIONS VARY BASED ON SPECIFIED CONFIGURATION AND COUPLER SIZE
4. LOAD SENSE BOOST NOT TYPICALLY USED IN EXCAVATOR INSTALLATIONS. LS DRAIN PLUG CAN BE REPLACED WITH ORIFICE FOR LS DRAIN
5. HIGH FLOW AUX A / B TEES AND OQ AUX RELIEF VALVE OMITTED IN OQ40 / OQ45

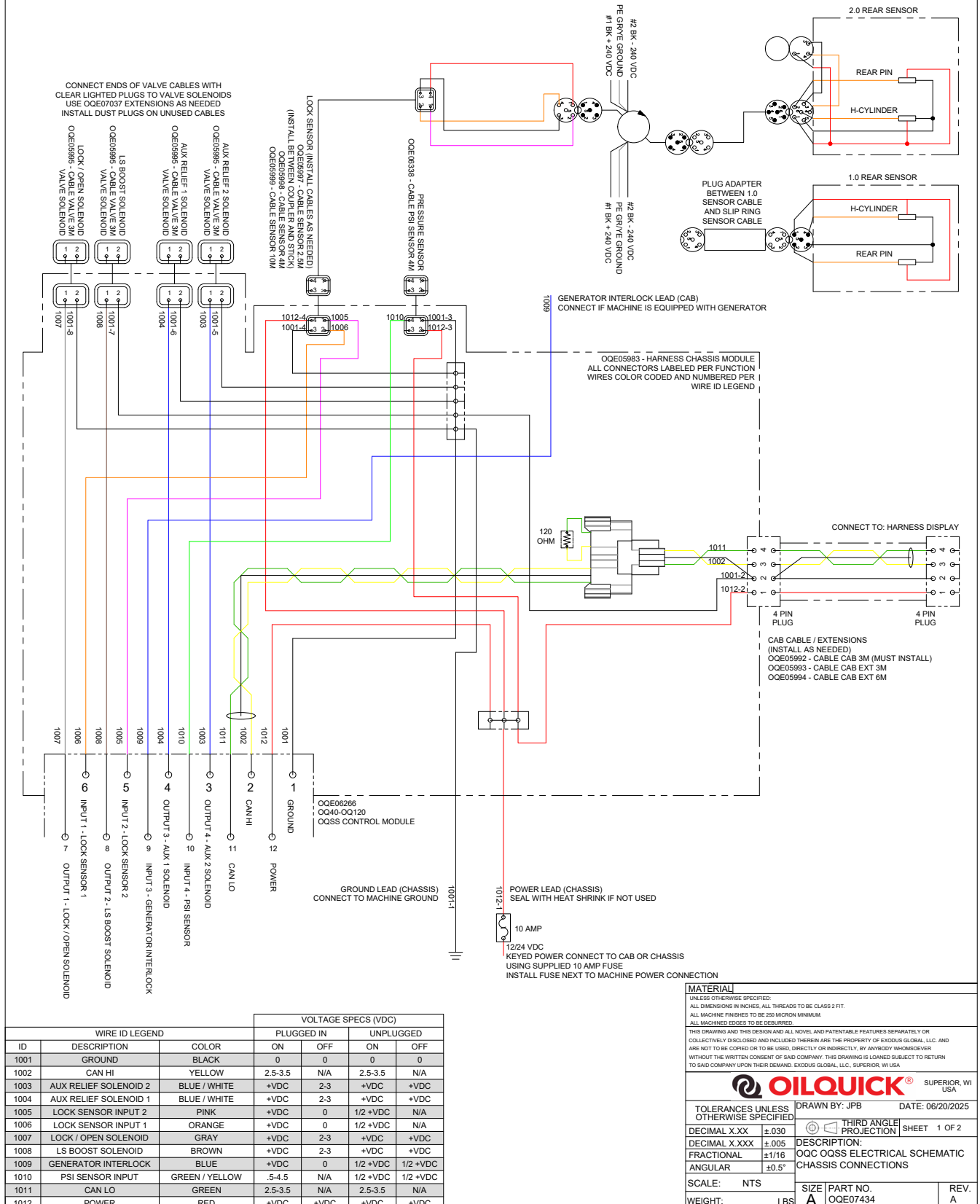
| MATERIAL                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                                                                              |            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------|------------|
| UNLESS OTHERWISE SPECIFIED:<br>ALL DIMENSIONS IN INCHES. ALL THREADS TO BE CLASS 2 FTT.<br>ALL MACHINE FINISHES TO BE 320 MICRON MINIMUM.<br>ALL MACHINED EDGES TO BE DEBURRED.                                                                                                                                                                                                                                          |        |                                                                                                              |            |
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|                                                                                                                                                                                                                                                                                                                                     |        | SUPERIOR, WI USA                                                                                             |            |
| TOLERANCES UNLESS OTHERWISE SPECIFIED                                                                                                                                                                                                                                                                                                                                                                                    |        | DRAWN BY: JPB      DATE: 10/23/2024                                                                          |            |
| DECIMAL X.XX                                                                                                                                                                                                                                                                                                                                                                                                             | ±.030  |  THIRD ANGLE PROJECTION | SHEET OF 1 |
| DECIMAL X.XXX                                                                                                                                                                                                                                                                                                                                                                                                            | ±.005  |                                                                                                              |            |
| FRACTIONAL                                                                                                                                                                                                                                                                                                                                                                                                               | ±1/16  | DESCRIPTION: HYDRAULIC SCHEMATIC OQSS                                                                        |            |
| ANGULAR                                                                                                                                                                                                                                                                                                                                                                                                                  | ±0.5°  |                                                                                                              |            |
| SCALE: NTS                                                                                                                                                                                                                                                                                                                                                                                                               |        |                                                                                                              |            |
| WEIGHT: LBS                                                                                                                                                                                                                                                                                                                                                                                                              | SIZE A | PART NO. OQE06747                                                                                            | REV. A     |

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

# 4. Electrical schematic (OQE07434) - sheet 1

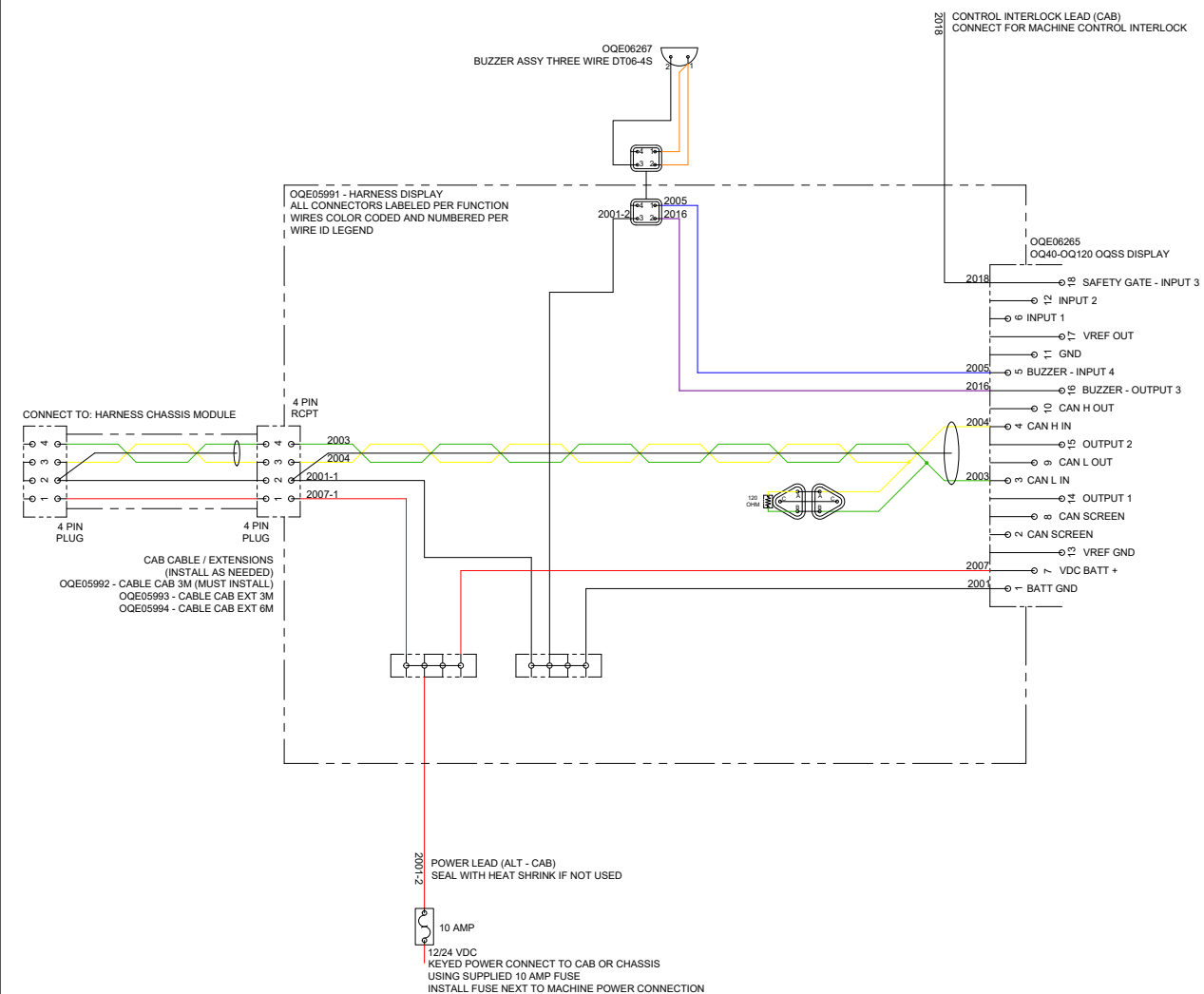
## CHASSIS WIRING

| REVISIONS |     |                  |            |     |
|-----------|-----|------------------|------------|-----|
| REV.      | ECN | DESCRIPTION      | DATE       | BY  |
| A         |     | ORIGINAL RELEASE | 06/20/2025 | JPB |
| B         |     |                  |            |     |
| C         |     |                  |            |     |



4. Electrical schematic (OQE07434) - sheet 2

IN CAB WIRING



| WIRE ID LEGEND |               |              | VOLTAGE SPECS (VDC) |      |           |      |
|----------------|---------------|--------------|---------------------|------|-----------|------|
| ID             | DESCRIPTION   | COLOR        | PLUGGED IN          |      | UNPLUGGED |      |
|                |               |              | ON                  | OFF  | ON        | OFF  |
| 2001           | GROUND        | BLACK        | 0                   | 0    | 0         | 0    |
| 2003           | CAN LO        | GREEN        | 2.5-3.5             | N/A  | 2.5-3.5   | N/A  |
| 2004           | CAN HI        | YELLOW       | 2.5-3.5             | N/A  | 2.5-3.5   | N/A  |
| 2005           | BUZZER INPUT  | BLUE / WHITE | +VDC                | 0    | 0         | 0    |
| 2007           | POWER         | RED          | +VDC                | +VDC | +VDC      | +VDC |
| 2016           | BUZZER OUTPUT | PURPLE       | +VDC                | 0    | +VDC      | 0    |
| 2018           | SAFETY GATE   | WHITE        | +VDC                | 0    | 0         | 0    |

**MATERIAL**

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.

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TOLERANCES UNLESS OTHERWISE SPECIFIED: DECIMAL X.XX ±.030; DECIMAL X.XXX ±.005; FRACTIONAL ±1/16; ANGULAR ±0.5°

THIRD ANGLE PROJECTION

DESCRIPTION: OQC OQSS ELECTRICAL SCHEMATIC CAB CONNECTIONS

SCALE: NTS; WEIGHT: LBS

DRAWN BY: JPB; DATE: 6/20/2025

SHEET 2 OF 2

SIZE: A; PART NO.: OQE07434; REV.: A

## 5. Wiring diagram - (QQE07435) - 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. QQE05997 MUST BE CONNECTED TO COUPLER AT STICK TIP.

3. HARNESS KITS VARY PER COUPLER SIZE AND CONFIGURATION.

5. HYDRAULIC VALVES SHOWN FOR REFERENCE.

TYPICAL MATERIAL HANDLER INSTALLATION SHOWN.

INSTALL ITEM 20 IN OPEN VALVE SOLENOID PLUGS OF CHASSIS MODULE HARNESS.

QQE07037 CABLE DT PL/RCPT VALVE EXT 3M SUPPLIED UPON REQUEST.

| REV.   ECN |  | DESCRIPTION      | DATE       | BY  |
|------------|--|------------------|------------|-----|
| A          |  | ORIGINAL RELEASE | 06/20/2025 | JPB |
| B          |  |                  |            |     |
| C          |  |                  |            |     |

| ITEM | PART#     | NAME                                                | QTY | UOM |
|------|-----------|-----------------------------------------------------|-----|-----|
| 1    | QQE07425  | OQC OQSS DISPLAY                                    | 1   | EA  |
| 2    | QQE06266  | OQ40-OQ120 OQSS CHASSIS MODULE                      | 1   | EA  |
| 3    | QQE06267  | BUZZER ASSY THREE WIRE DT06-4S                      | 1   | EA  |
| 4    | QQE05983  | HARNESS CONTROL MODULE                              | 1   | EA  |
| 5    | QQE05991  | HARNESS DISPLAY                                     | 1   | EA  |
| 6    | QQE06338  | CABLE DT PL/PL PSI SENSOR 4M                        | 1   | EA  |
| 7    | QQE05995  | CABLE DT PL/PL VALVE 3M                             | 1-3 | EA  |
| 8    | QQE05992  | CABLE DT PL/PL CAB 3M                               | 0-1 | EA  |
| 9    | QQE05993  | CABLE DT PL/RCPT CAB EXT 3M (OPTION)                | 0-2 | EA  |
| 10   | QQE05994  | CABLE DT PL/RCPT CAB EXT 6M (OPTION)                | 1   | EA  |
| 11   | QQE05998  | CABLE DT PL/RCPT SENSOR 4M                          | 1-3 | EA  |
| 12   | QQE05999  | CABLE DT PL/RCPT SENSOR 10M                         | 1-3 | EA  |
| 13   | QQE07381  | CABLE PLUG/M12 FEMALE STICK 3M                      | 1   | EA  |
| 14   | 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  |
| 15   | 30-00465  | 16-14 AWG Blue Crimp Butt Splice                    | 3   | EA  |
|      | 30-00801  | 22-18 AWG Red Crimp Butt Splice                     | 3   | EA  |
| 16   | 30-00862  | INLINE FUSE HOLDER MINI                             | 1   | EA  |
| 17   | 30-00863  | FUSE 10 AMP MINI                                    | 1   | EA  |
| 18   | 30-00877  | CONNECTOR DUST PLUG AT06-2S-SS01                    | 1-3 | EA  |
| 19   | QQE06340  | SENSOR PRESSURE 7500 PSI 04MB DT                    | 1   | EA  |
| 20a  | OQ4120613 | VALVE - LOCK/OPEN POWERBOOST                        | 1   | EA  |
| 20b  | OQ4129351 | LOCK VALVE/POWER BOOST 12V (OQ40 / 45-5)            | 1   | EA  |
| 21a  | OQ4123124 | VALVE - DEPRESSURIZATION 24V DT (OQ60-5 - OQ120)    | 1   | EA  |
| 21b  | OQ4123125 | DEPRESSURIZATION VALVE DOUBLE, 12V (OQ60-5 - OQ120) | 1   | EA  |
| 22   | 30-00894  | CORRUGATED SPLIT LOOM .125" ID                      | 30  | FT  |
| 23   | 30-00892  | ZIP TIE .098" X 3.9" BLACK                          | 15  | EA  |
| 24   | 30-00893  | ZIP TIE .098" X 3.9" RED                            | 15  | EA  |
| 25   | QQE07037  | CABLE DT PL/RCPT VALVE EXT 3M                       | 0-3 | EA  |
| 26   | QQE05906  | GEN ENABLE INTERLOCK KIT                            | 1   | EA  |

MATERIAL

UNLESS OTHERWISE SPECIFIED:  
ALL DIMENSIONS IN INCHES. ALL THREADS TO BE CLASS 2 FIT.  
ALL MACHINE FINISHES TO BE 320 MICRON MINIMUM.  
ALL MACHINED EDGES TO BE DEBURRED.

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DECIMAL X.XXX ±.030  
DECIMAL X.XXX ±.005  
FRACTIONAL ±1/16  
ANGULAR ±0.5°

DRAWN BY: JPB  
DATE: 06/20/2025

THIRD ANGLE PROJECTION  
SHEET 1 OF 2

DESCRIPTION: OQC OQSS WIRING DIAGRAM

SCALE: NTS

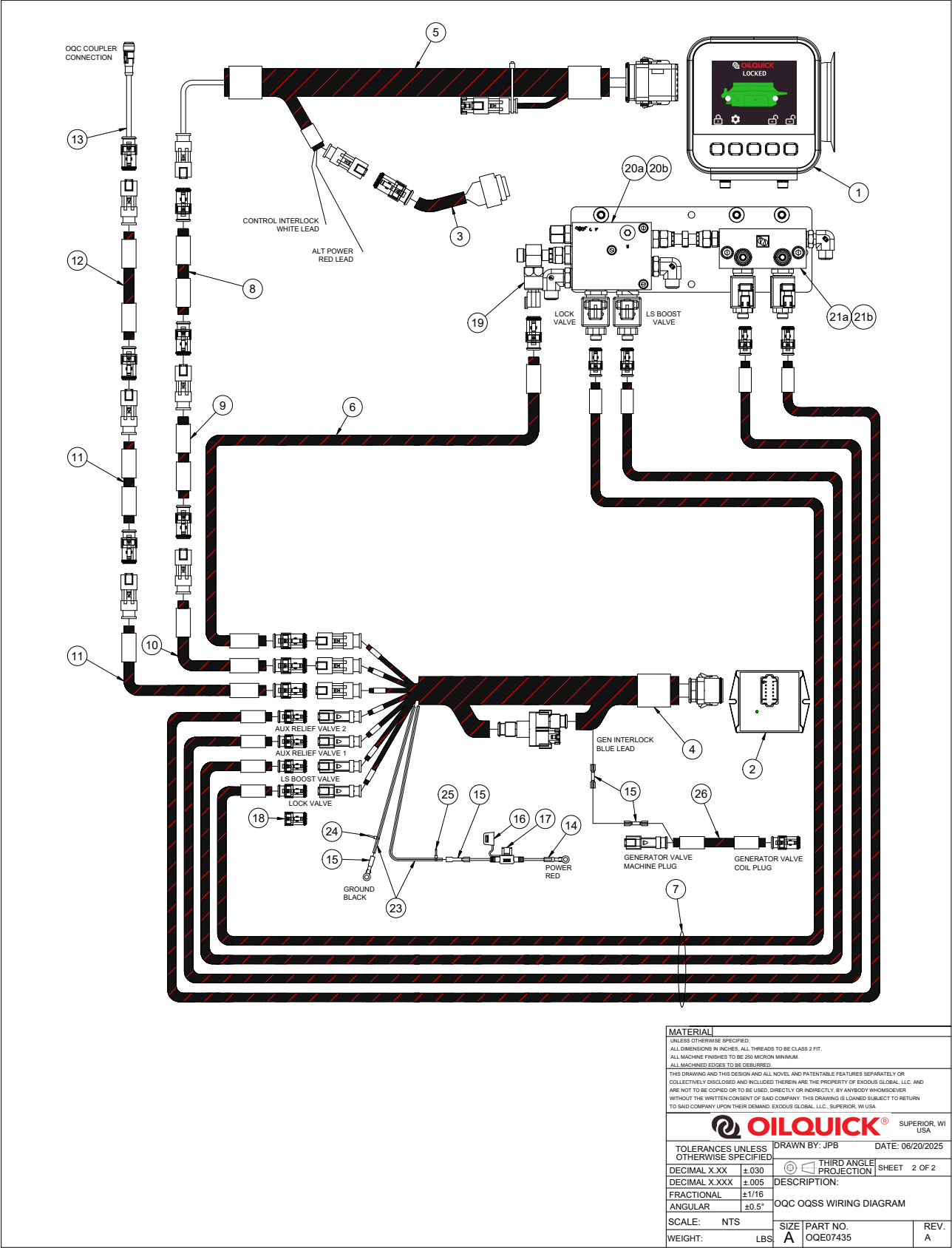
WEIGHT: LBS

SIZE A

PART NO. QQE07435

REV. A

5. Wiring diagram - (OQE07435) - sheet 2



## 6. 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 thirty minutes of machine operation below 2,200 PSI as a reminder to boost the lock pressure periodically. |
| Pressure sensor fault                         | Faulty lock 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, determine if faulty wire is in sensor cable or HARNESS CONTROL MODULE. Replace or repair harnesses as needed.                                                                              |

## 6. Troubleshooting - OQSS - *continued*

| Fault                   | Possible cause                                                            | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| H-Cylinder Sensor Fault | Faulty lock sensor, Faulty wiring                                         | With the machine keyed on and someone in the cab observing the monitor, manually actuate H-cylinder sensor and rear pin sensor by putting a piece of metal against the individual sensors. If both sensors indicate in the cab inspect the interface between sensors and rear pin / H-cylinder. If only one sensor lights, inspect the connection between coupler and chassis module (H-cylinder - wire 1006 - M12 coupler connector pin 4 / rear pin - wire 1005 - M12 coupler connector pin 1). If no indication is shown on the display, check power and ground connections between base of machine and coupler (PWR - wire 1012-4 - M12 coupler connector pin 1 / GRD - wire 1001-4 - M12 coupler connector pin 3).                  |
| Rear Pin Sensor Fault   |                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 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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