Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
HORN - SHORT TO BATTERY	3	3	33208	✓	✓	✓	✓	✓
HORN - SHORT TO GROUND	3	3	33209	✓	✓	✓	✓	✓
GLOWPLUG - OPEN CIRCUIT	3	3	33279	✓	✓	✓	✓	✓
GLOWPLUG - SHORT TO BATTERY	3	3	33280	✓	✓	✓	✓	✓
GLOWPLUG - SHORT TO GROUND	3	3	33281	✓	✓	✓	✓	✓
ALTERNATOR EXCITATION LINE - SHORT TO BATTERY	3	3	33285	✓	✓	✓	✓	✓
SWING LEFT VALVE - OPEN CIRCUIT	3	3	33295	✓	✓	✓	✓	✓
SWING LEFT VALVE - SHORT TO BATTERY	3	3	33306	✓	✓	✓	✓	✓
MAIN TELESCOPE FLOW CONTROL VALVE - SHORT TO GROUND	3	3	33307	✓	✓	✓	✓	✓
MAIN TELESCOPE FLOW CONTROL VALVE - OPEN CIRCUIT	3	3	33308	✓	✓	✓	✓	✓
MAIN TELESCOPE FLOW CONTROL VALVE - SHORT TO BATTERY	3	3	33309	✓	✓	✓	✓	✓
MAIN LIFT DOWN VALVE - SHORT TO BATTERY	3	3	33310	✓	✓	--	✓	✓
MAIN LIFT FLOW CONTROL VALVE - SHORT TO GROUND	3	3	33311	✓	✓	--	✓	✓
MAIN LIFT FLOW CONTROL VALVE - OPEN CIRCUIT	3	3	33312	✓	✓	--	✓	✓
MAIN LIFT FLOW CONTROL VALVE - SHORT TO BATTERY	3	3	33313	✓	✓	--	✓	✓
LIFT UP VALVE - SHORT TO BATTERY	3	3	33329	--	--	--	--	✓
SWING - CURRENT FEEDBACK READING TOO LOW	3	3	33414	--	--	--	--	✓
SWING - CURRENT FEEDBACK READING LOST	3	3	33418	--	--	--	--	✓
JIB LIFT UP OVERRIDE VALVE - SHORT TO GROUND	3	3	33429	--	--	--	✓	✓
JIB LIFT UP OVERRIDE VALVE - OPEN CIRCUIT	3	3	33430	--	--	--	✓	✓
JIB LIFT UP OVERRIDE VALVE - SHORT TO BATTERY	3	3	33431	--	--	--	✓	✓
JIB LIFT DOWN OVERRIDE VALVE - SHORT TO GROUND	3	3	33432	--	--	--	✓	✓
JIB LIFT DOWN OVERRIDE VALVE - OPEN CIRCUIT	3	3	33433	--	--	--	✓	✓
JIB LIFT DOWN OVERRIDE VALVE - SHORT TO BATTERY	3	3	33434	--	--	--	✓	✓
JIB CONTROL VALVE - SHORT TO GROUND	3	3	33435	--	--	--	✓	✓
JIB CONTROL VALVE - OPEN CIRCUIT	3	3	33436	--	--	--	✓	✓
JIB CONTROL VALVE - SHORT TO BATTERY	3	3	33437	--	--	--	✓	✓
MAIN LIFT FLOW CONTROL VALVE - CURRENT FEEDBACK READING LOST	3	3	33456	--	--	--	--	✓
MAIN LIFT FLOW CONTROL VALVE - CURRENT FEEDBACK READING TOO LOW	3	3	33457	--	--	--	--	✓
TELESCOPE FLOW CONTROL VALVE - CURRENT FEEDBACK READING LOST	3	3	33460	--	--	--	--	✓
TELESCOPE FLOW CONTROL VALVE - CURRENT FEEDBACK READING TOO LOW	3	3	33461	--	--	--	--	✓
WARM UP VALVE - SHORT TO BATTERY	3	3	33462	--	--	--	--	✓
WARM UP VALVE - OPEN CIRCUIT	3	3	33463	--	--	--	--	✓
WARM UP VALVE - SHORT TO GROUND	3	3	33464	--	--	--	--	✓

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
CHASSIS ENABLE VALVE - SHORT TO BATTERY	3	3	33465	--	--	--	--	✓
CHASSIS ENABLE VALVE - OPEN CIRCUIT	3	3	33466	--	--	--	--	✓
CHASSIS ENABLE VALVE - SHORT TO GROUND	3	3	33467	--	--	--	--	✓
TWO SPEED OR BRAKE VALVE - STUCK OPEN	3	3	33487	--	--	--	--	✓
SWING FLOW CONTROL VALVE - SHORT TO GROUND	3	3	33488	--	--	--	--	✓
SWING FLOW CONTROL VALVE - OPEN CIRCUIT	3	3	33489	--	--	--	--	✓
SWING FLOW CONTROL VALVE - SHORT TO BATTERY	3	3	33490	--	--	--	--	✓
LIFT ENABLE VALVE - STUCK OPEN	3	3	33563	--	--	--	--	✓
COUNTER BALANCE VALVE - STUCK OPEN	3	3	33564	--	--	--	--	✓
LIFT ENABLE - CURRENT FEEDBACK READING LOST	3	3	33565	--	--	--	--	✓
LIFT ENABLE - CURRENT FEEDBACK READING TOO LOW	3	3	33566	--	--	--	--	✓
JIB LOCK VALVE - OPEN CIRCUIT	3	4	3427	--	--	--	✓	✓
JIB LOCK VALVE - SHORT TO BATTERY	3	4	3428	--	--	--	✓	✓
JIB LOCK VALVE - SHORT TO GROUND	3	4	3429	--	--	--	✓	✓
JIB UNLOCK VALVE - OPEN CIRCUIT	3	4	3430	--	--	--	✓	✓
JIB UNLOCK VALVE - SHORT TO BATTERY	3	4	3431	--	--	--	✓	✓
JIB UNLOCK VALVE - SHORT TO GROUND	3	4	3432	--	--	--	✓	✓
PLATFORM LEVEL UP VALVE - SHORT TO GROUND	3	4	343	✓	✓	✓	✓	✓
PLATFORM LEVEL UP VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	4	344	✓	✓	✓	✓	✓
PLATFORM LEVEL DOWN VALVE - SHORT TO GROUND	3	4	347	✓	✓	✓	✓	✓
PLATFORM LEVEL DOWN VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	4	348	✓	✓	✓	✓	✓
JIB LEVEL UP VALVE - SHORT TO GROUND	3	5	351	--	--	--	✓	✓
JIB LEVEL UP VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	5	352	--	--	--	✓	✓
JIB LEVEL DOWN VALVE - SHORT TO GROUND	3	5	353	--	--	--	✓	✓
JIB LEVEL DOWN VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	5	354	--	--	--	✓	✓
JIB LIFT UP VALVE - SHORT TO GROUND	3	5	355	--	--	--	✓	✓
JIB LIFT UP VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	5	356	--	--	--	✓	✓
JIB LIFT DOWN VALVE - SHORT TO GROUND	3	5	357	--	--	--	✓	✓
JIB LIFT DOWN VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	5	358	--	--	--	✓	✓
JIB ROTATE LEFT VALVE - SHORT TO GROUND	3	5	359	--	--	--	✓	✓
JIB ROTATE LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	5	3510	--	--	--	✓	✓
JIB ROTATE RIGHT VALVE - SHORT TO GROUND	3	5	3511	--	--	--	✓	✓
JIB ROTATE RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	5	3512	--	--	--	✓	✓
JIB TELESCOPE IN VALVE - SHORT TO GROUND	3	5	3513	--	--	--	✓	✓
JIB TELESCOPE IN VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	5	3514	--	--	--	✓	✓

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
JIB TELESCOPE OUT VALVE - SHORT TO GROUND	3	5	3515	--	--	--	✓	✓
JIB TELESCOPE OUT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	3	5	3516	--	--	--	✓	✓
FRONT AXLE EXTEND VALVE - SHORT TO BATTERY	3	6	361	--	--	--	--	✓
FRONT AXLE EXTEND VALVE - SHORT TO GROUND	3	6	362	--	--	--	--	✓
FRONT AXLE RETRACT VALVE - SHORT TO BATTERY	3	6	363	--	--	--	--	✓
FRONT AXLE RETRACT VALVE - SHORT TO GROUND	3	6	364	--	--	--	--	✓
REAR AXLE EXTEND VALVE - SHORT TO BATTERY	3	6	365	--	--	--	--	✓
REAR AXLE EXTEND VALVE - SHORT TO GROUND	3	6	366	--	--	--	--	✓
REAR AXLE RETRACT VALVE - SHORT TO BATTERY	3	6	367	--	--	--	--	✓
REAR AXLE RETRACT VALVE - SHORT TO GROUND	3	6	368	--	--	--	--	✓
FRONT AXLE EXTEND VALVE - OPEN CIRCUIT	3	6	369	--	--	--	--	✓
FRONT AXLE VALVE - CURRENT FEEDBACK READING LOST	3	6	3610	--	--	--	--	✓
FRONT AXLE RETRACT VALVE - OPEN CIRCUIT	3	6	3611	--	--	--	--	✓
REAR AXLE VALVE - CURRENT FEEDBACK READING LOST	3	6	3612	--	--	--	--	✓
REAR AXLE EXTEND VALVE - OPEN CIRCUIT	3	6	3613	--	--	--	--	✓
FRONT AXLE VALVE - CURRENT FEEDBACK READING TOO LOW	3	6	3614	--	--	--	--	✓
REAR AXLE RETRACT VALVE - OPEN CIRCUIT	3	6	3615	--	--	--	--	✓
REAR AXLE VALVE - CURRENT FEEDBACK READING TOO LOW	3	6	3616	--	--	--	--	✓
CHASSIS BRAKE - OPEN CIRCUIT	3	6	3617	--	--	--	--	✓
CHASSIS BRAKE - SHORT TO BATTERY	3	6	3618	--	--	--	--	✓
CHASSIS BRAKE - SHORT TO GROUND	3	6	3619	--	--	--	--	✓
FRONT AXLE VALVE - SHORT TO BATTERY	3	6	3620	--	--	--	--	✓
REAR AXLE VAVE - SHORT TO BATTERY	3	6	3621	--	--	--	--	✓
FUEL SENSOR SHORT TO BATTERY	4	3	431	✓	✓	✓	✓	✓
FUEL SENSOR SHORT TO GROUND	4	3	432	✓	✓	✓	✓	✓
OIL PRESSURE SHORT TO BATTERY	4	3	433	✓	✓	✓	✓	✓
OIL PRESSURE SHORT TO GROUND	4	3	434	✓	✓	✓	✓	✓
COOLANT TEMPERATURE SHORT TO GROUND	4	3	435	✓	✓	✓	✓	✓
ENGINE TROUBLE CODE	4	3	437	✓	✓	✓	✓	✓
HIGH ENGINE TEMP	4	3	438	✓	✓	✓	✓	✓
AIR FILTER BYPASSED	4	3	439	✓	✓	✓	✓	✓
NO ALTERNATOR OUTPUT	4	3	4310	✓	✓	✓	✓	✓
LOW OIL PRESSURE	4	3	4311	✓	✓	✓	✓	✓
THROTTLE ACTUATOR FAILURE	4	3	4313	✓	✓	✓	✓	✓
WRONG ENGINE SELECTED - ECM DETECTED	4	3	4314	✓	✓	✓	✓	✓

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
LOSS OF ENGINE SPEED SENSOR	4	3	4322	✓	✓	✓	✓	✓
SPEED SENSOR READING INVALID SPEED	4	3	4323	✓	✓	✓	✓	✓
SOOT LOAD WARNING - LOW	4	3	4331	✓	✓	✓	✓	✓
SOOT LOAD WARNING - HIGH	4	3	4332	✓	✓	✓	✓	✓
SOOT LOAD WARNING - SEVERE	4	3	4333	✓	✓	✓	✓	✓
ENGINE COOLANT - LOW LEVEL	4	3	4334	✓	✓	✓	✓	✓
BATTERY VOLTAGE TOO LOW - SYSTEM SHUTDOWN	4	4	441	✓	✓	✓	✓	✓
BATTERY VOLTAGE TOO HIGH - SYSTEM SHUTDOWN	4	4	442	✓	✓	✓	✓	✓
LSS BATTERY VOLTAGE TOO HIGH	4	4	443	✓	✓	✓	✓	✓
LSS BATTERY VOLTAGE TOO LOW	4	4	444	✓	✓	✓	✓	✓
BATTERY VOLTAGE LOW	4	4	445	✓	✓	✓	✓	✓
MAIN LIFT PVG VALVE - INTERNAL FAULT	4	5	451	--	--	✓	--	--
TOWER LIFT PVG VALVE - INTERNAL FAULT	4	5	452	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - INTERNAL FAULT	4	5	453	--	--	✓	--	--
MAIN LIFT PVG VALVE - HIGH VOLTAGE	4	5	454	--	--	✓	--	--
TOWER LIFT PVG VALVE - HIGH VOLTAGE	4	5	455	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - HIGH VOLTAGE	4	5	456	--	--	✓	--	--
MAIN LIFT PVG VALVE - LOW VOLTAGE	4	5	457	--	--	✓	--	--
TOWER LIFT PVG VALVE - LOW VOLTAGE	4	5	458	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - LOW VOLTAGE	4	5	459	--	--	✓	--	--
MAIN LIFT PVG VALVE - STUCK NEUTRAL	4	5	4510	--	--	✓	--	--
TOWER LIFT PVG VALVE - STUCK NEUTRAL	4	5	4511	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - STUCK NEUTRAL	4	5	4512	--	--	✓	--	--
MAIN LIFT PVG VALVE - STUCK EXTENDED	4	5	4513	--	--	✓	--	--
TOWER LIFT PVG VALVE - STUCK EXTENDED	4	5	4514	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - STUCK EXTENDED	4	5	4515	--	--	✓	--	--
MAIN LIFT PVG VALVE - STUCK RETRACTED	4	5	4516	--	--	✓	--	--
TOWER LIFT PVG VALVE - STUCK RETRACTED	4	5	4517	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - STUCK RETRACTED	4	5	4518	--	--	✓	--	--
MAIN LIFT PVG VALVE - OBSTRUCTED	4	5	4519	--	--	✓	--	--
TOWER LIFT PVG VALVE - OBSTRUCTED	4	5	4520	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - OBSTRUCTED	4	5	4521	--	--	✓	--	--
MAIN LIFT PVG VALVE - COMMAND IMPROPER	4	5	4522	--	--	✓	--	--

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
TOWER LIFT PVG VALVE - COMMAND IMPROPER	4	5	4523	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - COMMAND IMPROPER	4	5	4524	--	--	✓	--	--
MAIN LIFT PVG VALVE - TIMEOUT	4	5	4525	--	--	✓	--	--
TOWER LIFT PVG VALVE - TIMEOUT	4	5	4526	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - TIMEOUT	4	5	4527	--	--	✓	--	--
MAIN LIFT PVG VALVE - SETUP FAULT	4	5	4528	--	--	✓	--	--
TOWER LIFT PVG VALVE - SETUP FAULT	4	5	4529	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - SETUP FAULT	4	5	4530	--	--	✓	--	--
MAIN LIFT PVG VALVE - SENT UNRECOGNIZED FAULT	4	5	4531	--	--	✓	--	--
TOWER LIFT PVG VALVE - SENT UNRECOGNIZED FAULT	4	5	4532	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - SENT UNRECOGNIZED FAULT	4	5	4533	--	--	✓	--	--
MAIN LIFT PVG VALVE - PARAMETERS INCORRECT	4	5	4534	--	--	✓	--	--
TOWER LIFT PVG VALVE - PARAMETERS INCORRECT	4	5	4535	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - PARAMETERS INCORRECT	4	5	4536	--	--	✓	--	--
MAIN LIFT PVG VALVE - LOCATION IMPROPER	4	5	4537	--	--	✓	--	--
TOWER LIFT PVG VALVE - LOCATION IMPROPER	4	5	4538	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - LOCATION IMPROPER	4	5	4539	--	--	✓	--	--
MAIN LIFT PVG VALVE - WIRING INCORRECT	4	5	4540	--	--	✓	--	--
TOWER LIFT PVG VALVE - WIRING INCORRECT	4	5	4541	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - WIRING INCORRECT	4	5	4542	--	--	✓	--	--
MAIN LIFT PVG VALVE - SPOOL CANNOT REACH NEUTRAL	4	5	4543	--	--	✓	--	--
TOWER LIFT PVG VALVE - SPOOL CANNOT REACH NEUTRAL	4	5	4544	--	--	✓	--	--
TOWER TELESCOPE PVG VALVE - SPOOL CANNOT REACH NEUTRAL	4	5	4545	--	--	✓	--	--
CANBUS FAILURE - PLATFORM MODULE	6	6	662	✓	✓	✓	✓	✓
CANBUS FAILURE - LOAD SENSING SYSTEM MODULE	6	6	663	✓	✓	✓	✓	✓
CANBUS FAILURE - ENGINE CONTROLLER	6	6	666	✓	✓	✓	✓	✓
CANBUS FAILURE - MAIN LIFT PVG	6	6	667	--	--	✓	--	--
CANBUS FAILURE - TOWER LIFT PVG	6	6	668	--	--	✓	--	--
CANBUS FAILURE - TOWER TELESCOPE PVG	6	6	669	--	--	✓	--	--

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
CANBUS FAILURE - BLAM	6	6	6610	✓	✓	✓	✓	✓
CANBUS FAILURE - CHASSIS MODULE	6	6	6611	✓	✓	✓	✓	✓
CANBUS FAILURE - CYLINDER LOAD PIN	6	6	6612	✓	✓	✓	✓	✓
CANBUS FAILURE - EXCESSIVE CANBUS ERRORS	6	6	6613	✓	✓	✓	✓	✓
CANBUS FAILURE - MAIN ANGLE SENSOR #1	6	6	6614	--	--	✓	--	--
CANBUS FAILURE - MAIN ANGLE SENSOR #2	6	6	6615	--	--	✓	--	--
CANBUS FAILURE - TCU MODULE	6	6	6622	✓	✓	✓	✓	✓
CANBUS FAILURE - TELEMATICS CANBUS LOADING TOO HIGH	6	6	6629	✓	✓	✓	✓	✓
CANBUS FAILURE - GATEWAY MODULE	6	6	6623	✓	✓	✓	✓	✓
CANBUS FAILURE - JIB CONTROL MODULE	6	6	6639	--	--	--	✓	✓
CANBUS FAILURE - JIB LIFT ANGLE SENSOR	6	6	6640	--	--	--	✓	✓
CANBUS FAILURE - PLATFORM LEVEL ANGLE SENSOR	6	6	6641	--	--	--	✓	✓
REMOTE CONTRACT MANAGEMENT OVERRIDE - ALL FUNCTIONS IN CREEP	6	8	681	✓	✓	✓	✓	✓
CHASSIS TILT SENSOR NOT CALIBRATED	8	1	813	✓	✓	✓	✓	✓
CHASSIS TILT SENSOR OUT OF RANGE	8	1	814	--	--	--	--	✓
CHASSIS TILT SENSOR DISAGREEMENT	8	1	815	✓	✓	✓	✓	✓
CHASSIS TILT READING DISAGREEMENT	8	1	8111	--	--	--	--	✓
LSS CELL #1 ERROR	8	2	821	✓	✓	✓	✓	✓
LSS CELL #2 ERROR	8	2	822	✓	✓	✓	✓	✓
LSS CELL #3 ERROR	8	2	823	✓	✓	✓	✓	✓
LSS CELL #4 ERROR	8	2	824	✓	✓	✓	✓	✓
LSS HAS NOT BEEN CALIBRATED	8	2	825	✓	✓	✓	✓	✓
RUNNING AT CREEP - PLATFORM OVERLOADED	8	2	826	✓	✓	✓	✓	✓
DRIVE & BOOM PREVENTED - PLATFORM OVERLOADED	8	2	827	✓	✓	✓	✓	✓
LIFT UP & TELE OUT PREVENTED - PLATFORM OVERLOADED	8	2	828	✓	✓	✓	✓	✓
PLATFORM LEVELING OVERRIDE ON	8	3	831	✓	✓	✓	✓	✓
PLATFORM LEVELING OVERRIDE OFF	8	3	832	✓	✓	✓	✓	✓
PLATFORM LEVEL UP CRACKPOINT - NOT CALIBRATED	8	3	833	✓	✓	✓	✓	✓
PLATFORM LEVEL DOWN CRACKPOINT - NOT CALIBRATED	8	3	834	✓	✓	✓	✓	✓
PLATFORM LEVEL SENSOR #2 - SHORT TO BATTERY	8	3	8311	✓	✓	✓	✓	✓
PLATFORM LEVEL SENSOR #2 - SHORT TO GROUND OR OPEN CIRCUIT	8	3	8312	✓	✓	✓	✓	✓
PLATFORM LEVEL SENSOR #1 - REFERENCE VOLTAGE OUT OF RANGE	8	3	8313	✓	✓	✓	✓	✓
PLATFORM LEVEL SENSOR #2 - REFERENCE VOLTAGE OUT OF RANGE	8	3	8314	✓	✓	✓	✓	✓
PLATFORM LEVELING SENSOR - DISAGREEMENT	8	3	8315	✓	✓	✓	✓	✓

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
PLATFORM LEVEL SENSOR #1 - COMMUNICATIONS LOST	8	3	8316	✓	✓	✓	✓	✓
PLATFORM LEVEL SENSOR #2 - COMMUNICATIONS LOST	8	3	8317	✓	✓	✓	✓	✓
PLATFORM LEVELING SYSTEM TIMEOUT	8	3	8318	✓	✓	✓	✓	✓
PLATFORM LEVEL SENSOR #1 - SHORT TO BATTERY	8	3	837	✓	✓	✓	✓	✓
PLATFORM LEVEL SENSOR #1 - SHORT TO GROUND OR OPEN CIRCUIT	8	3	838	✓	✓	✓	✓	✓
JIB LEVEL SENSOR #1 - OUT OF RANGE LOW	8	3	8319	--	--	--	✓	✓
JIB LEVEL SENSOR #1 - OUT OF RANGE HIGH	8	3	8320	--	--	--	✓	✓
JIB LEVEL SENSOR #2 - OUT OF RANGE LOW	8	3	8321	--	--	--	✓	✓
JIB LEVEL SENSOR #2 - OUT OF RANGE HIGH	8	3	8322	--	--	--	✓	✓
JIB LEVEL SENSORS - NOT CALIBRATED	8	3	8323	--	--	--	✓	✓
JIB LEVEL SENSORS - DISAGREEMENT	8	3	8324	--	--	--	✓	✓
JIB SWING SENSOR #1 - OUT OF RANGE LOW	8	3	8325	--	--	--	✓	✓
JIB SWING SENSOR #1 - OUT OF RANGE HIGH	8	3	8326	--	--	--	✓	✓
JIB SWING SENSOR #2 - OUT OF RANGE LOW	8	3	8327	--	--	--	✓	✓
JIB SWING SENSOR #2 - OUT OF RANGE HIGH	8	3	8328	--	--	--	✓	✓
JIB SWING SENSORS - NOT CALIBRATED	8	3	8329	--	--	--	✓	✓
JIB SWING SENSORS - DISAGREEMENT	8	3	8330	--	--	--	✓	✓
JIB LOCK PIN SENSOR - DISAGREEMENT	8	3	8331	--	--	--	✓	✓
JIB TRANSPORT SENSOR #1 - DISAGREEMENT	8	3	8332	--	--	--	✓	✓
JIB TRANSPORT SENSOR #2 - DISAGREEMENT	8	3	8333	--	--	--	✓	✓
JIB LIFT ANGLE SENSOR - NOT CALIBRATED	8	3	8334	--	--	--	✓	✓
JIB LEVEL UP CRACKPOINT - NOT CALIBRATED	8	3	8335	--	--	--	✓	✓
JIB LEVEL DOWN CRACKPOINT - NOT CALIBRATED	8	3	8336	--	--	--	✓	✓
JIB LEVELING SYSTEM TIMEOUT	8	3	8337	--	--	--	✓	✓
WRONG JIB LOCK PIN RESPONSE	8	3	8338	--	--	--	✓	✓
PLATFORM LEVEL ANGLE SENSOR - NOT CALIBRATED	8	3	8339	--	--	--	✓	✓
BOOM ANGLE SENSOR DISAGREEMENT	8	4	841	✓	✓	--	✓	✓
BOOM LENGTH SWITCH FAILED	8	4	842	✓	✓	--	✓	✓
BOOM LENGTH SWITCH/SENSOR DISAGREEMENT	8	4	843	✓	✓	--	✓	✓
BOOM LENGTH SENSOR NOT DETECTING LENGTH CHANGE	8	4	844	✓	✓	--	✓	✓
BOOM LENGTH SENSOR - OUT OF RANGE HIGH	8	4	845	✓	✓	--	✓	✓
BOOM LENGTH SENSOR - OUT OF RANGE LOW	8	4	846	✓	✓	--	✓	✓
BOOM LENGTH SENSOR - VALUE OUT OF RANGE HIGH	8	4	847	✓	✓	--	✓	✓
BOOM LENGTH SENSOR - VALUE OUT OF RANGE LOW	8	4	848	✓	✓	--	✓	✓
BOOM ANGLE SENSOR #1 - COMMUNICATIONS FAULT	8	4	849	✓	✓	✓	✓	✓

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
BOOM ANGLE SENSOR #2 - COMMUNICATIONS FAULT	8	4	8410	✓	✓	✓	✓	✓
BOOM ANGLE SENSOR #1 - INVALID ANGLE	8	4	8411	✓	✓	--	✓	✓
BOOM ANGLE SENSOR #2 - INVALID ANGLE	8	4	8412	✓	✓	--	✓	✓
WRONG TELESCOPE RESPONSE	8	4	8413	✓	✓	--	✓	✓
WRONG LIFT RESPONSE	8	4	8414	✓	✓	--	✓	✓
TOWER ANGLE SENSOR DISAGREEMENT	8	4	8415	--	--	✓	--	--
TOWER LENGTH SENSOR DISAGREEMENT	8	4	8416	--	--	✓	--	--
MAIN ANGLE SENSOR DISAGREEMENT	8	4	8417	--	--	✓	--	--
TOWER LENGTH SENSOR #1 - OUT OF RANGE HIGH	8	4	8418	--	--	✓	--	--
TOWER LENGTH SENSOR #1 - OUT OF RANGE LOW	8	4	8419	--	--	✓	--	--
TOWER LENGTH SENSOR #2 - OUT OF RANGE HIGH	8	4	8420	--	--	✓	--	--
TOWER LENGTH SENSOR #2 - OUT OF RANGE LOW	8	4	8421	--	--	✓	--	--
TOWER LENGTH SENSOR - NOT DETECTING LENGTH CHANGE	8	4	8422	--	--	✓	--	--
TOWER LENGTH MOVEMENT WITHOUT COMMAND	8	4	8423	--	--	✓	--	--
TOWER LENGTH SENSOR #1 - OUT OF RANGE HIGH	8	4	8424	--	--	✓	--	--
TOWER LENGTH SENSOR #1 - OUT OF RANGE LOW	8	4	8425	--	--	✓	--	--
TOWER LENGTH SENSOR #2 - OUT OF RANGE HIGH	8	4	8426	--	--	✓	--	--
TOWER LENGTH SENSOR #2 - OUT OF RANGE LOW	8	4	8427	--	--	✓	--	--
TOWER ANGLE SENSOR #1 - INVALID ANGLE	8	4	8428	--	--	✓	--	--
TOWER ANGLE SENSOR #2 - INVALID ANGLE	8	4	8429	--	--	✓	--	--
TOWER ANGLE SENSOR #1 - INVALID MODEL	8	4	8430	--	--	✓	--	--
TOWER ANGLE SENSOR #2 - INVALID MODEL	8	4	8431	--	--	✓	--	--
MAIN ANGLE SENSOR #1 - INVALID ANGLE	8	4	8432	--	--	✓	--	--
MAIN ANGLE SENSOR #2 - INVALID ANGLE	8	4	8433	--	--	✓	--	--
MAIN ANGLE SENSOR - NOT DETECTING ANGLE CHANGE	8	4	8434	--	--	✓	--	--
MAIN ANGLE MOVEMENT WITHOUT CMD	8	4	8435	--	--	✓	--	--
WRONG TOWER TELESCOPE RESPONSE	8	4	8436	--	--	✓	--	--
WRONG TOWER LIFT RESPONSE	8	4	8437	--	--	✓	--	--
TOWER CYLINDER ANGLE SENSOR - OUT OF RANGE HIGH	8	4	8438	--	--	✓	--	--
TOWER CYLINDER ANGLE SENSOR - OUT OF RANGE LOW	8	4	8439	--	--	✓	--	--
TOWER CYLINDER ANGLE SENSOR - NOT DETECTING CHANGE	8	4	8440	--	--	✓	--	--
TOWER CYLINDER ANGLE MOVEMENT WITHOUT COMMAND	8	4	8441	--	--	✓	--	--
MAIN TRANSPORT ANGLE SWITCH FAILED	8	4	8442	--	--	✓	--	--
TWR TRANSPORT SWITCH DISAGREEMENT	8	4	8443	--	--	✓	--	--
TRANSPORT DUAL CAPACITY SWITCHES BAD	8	4	8444	--	--	✓	--	--

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
TRANSPORT DUAL CAPACITY BAD TRANSITION	8	4	8445	--	--	✓	--	--
MAIN TRANSPORT LENGTH SWITCH DISAGREEMENT	8	4	8446	--	--	✓	--	--
MAIN DUAL CAPACITY LENGTH SWITCH DISAGREEMENT	8	4	8447	--	--	✓	--	--
MAIN TRANSPORT ANGLE SWITCH/SENSOR DISAGREEMENT	8	4	8448	--	--	✓	--	--
TOWER CYLINDER ANGLE SWITCH/SENSOR DISAGREEMENT	8	4	8449	--	--	✓	--	--
NEW MAIN ANGLE SENSOR #1 DETECTED	8	4	8450	--	--	✓	--	--
NEW MAIN ANGLE SENSOR #2 DETECTED	8	4	8451	--	--	✓	--	--
TOWER LENGTH SWITCH/SENSOR DISAGREEMENT	8	4	8452	--	--	✓	--	--
WRONG MAIN TELE RESPONSE	8	4	8453	--	--	✓	--	--
WRONG MAIN LIFT RESPONSE	8	4	8454	--	--	✓	--	--
MAIN CYLINDER ANGLE SENSOR #1 - OUT OF RANGE LOW	8	4	8479	--	--	--	✓	✓
MAIN CYLINDER ANGLE SENSOR #1 - OUT OF RANGE HIGH	8	4	8480	--	--	--	✓	✓
TOWER ENVELOPE MASSIVELY ENCROACHED	8	4	8482	--	--	✓	--	--
TOWER ENVELOPE MULTIPLE ENCROACHMENTS	8	4	8483	--	--	✓	--	--
BCS VIOLATION - BOOM LOCKED	8	4	8484	--	--	✓	--	--
BCS - HYDRAULIC RETRIEVAL ACTIVE	8	4	8485	--	--	✓	--	--
BCS - ELECTRICAL RETRIEVAL ACTIVE	8	4	8486	--	--	✓	--	--
BCS - MULTIPLE FAILURES ACTIVE	8	4	8487	--	--	✓	--	--
MAIN CYLINDER ANGLE SENSOR #2 - OUT OF RANGE LOW	8	4	8492	--	--	--	✓	✓
MAIN CYLINDER ANGLE SENSOR #2 - OUT OF RANGE HIGH	8	4	8493	--	--	--	✓	✓
MAIN CYLINDER ANGLE SENSORS - DISAGREEMENT	8	4	8494	--	--	--	✓	✓
TURNTABLE SENSOR #1 - FREQUENCY OUT OF RANGE LOW	8	4	8495	--	--	--	✓	✓
TURNTABLE SENSOR #1 - FREQUENCY OUT OF RANGE HIGH	8	4	8496	--	--	--	✓	✓
TURNTABLE SENSOR #2 - FREQUENCY OUT OF RANGE LOW	8	4	8497	--	--	--	✓	✓
TURNTABLE SENSOR #2 - FREQUENCY OUT OF RANGE HIGH	8	4	8498	--	--	--	✓	✓
CHASSIS TURNTABLE SENSORS - DISAGREEMENT	8	4	8499	--	--	--	✓	✓
CHASSIS TURNTABLE SENSORS AND DRIVE ORIENTATION SWITCH - DISAGREEMENT	8	4	84100	--	--	--	✓	✓
CHASSIS TURNTABLE SENSORS - NOT CALIBRATED	8	4	84101	--	--	--	✓	✓
MAIN CYLINDER ANGLE SENSOR - NOT DETECTING CHANGE	8	4	84102	--	--	--	✓	✓
JIB LEVEL ANGLE SENSOR - NOT DETECTING CHANGE	8	4	84103	--	--	--	✓	✓
JIB LIFT ANGLE SENSOR - NOT DETECTING CHANGE	8	4	84104	--	--	--	✓	✓
PLATFORM LEVEL ANGLE SENSOR - NOT DETECTING CHANGE	8	4	84105	--	--	--	✓	✓
JIB LEVEL MOVEMENT WITHOUT COMMAND	8	4	84106	--	--	--	✓	✓
JIB LIFT MOVEMENT WITHOUT COMMAND	8	4	84107	--	--	--	✓	✓
PLATFORM LEVEL MOVEMENT WITHOUT COMMAND	8	4	84108	--	--	--	✓	✓

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
WRONG SWING RESPONSE	8	4	84109	--	--	--	--	✓
MOMENT PIN - HORIZONTAL FORCE OUT OF RANGE	8	5	851	✓	✓	--	✓	✓
MOMENT PIN - VERTICAL FORCE OUT OF RANGE	8	5	852	✓	✓	--	✓	✓
LOAD PIN - HORIZONTAL FORCE OUT OF RANGE	8	5	853	--	--	✓	--	--
LOAD PIN - VERTICAL FORCE OUT OF RANGE	8	5	854	--	--	✓	--	--
MOMENT PIN - SENSOR FAULT	8	5	855	✓	✓	--	✓	✓
LOAD PIN - SENSOR FAULT	8	5	856	--	--	✓	--	--
NEW MOMENT PIN DETECTED	8	5	857	✓	✓	--	✓	✓
NEW LOAD PIN DETECTED	8	5	858	--	--	✓	--	--
LOAD PIN/TOWER LIFT CYLINDER ANGLE DISAGREEMENT	8	5	859	--	--	✓	--	--
LOAD PIN - FORCE VALUES NOT CHANGING	8	5	8510	--	--	✓	--	--
LOAD PIN - FORCE TOO LOW OVER TOWER ANGLE CHANGE	8	5	8511	--	--	✓	--	--
LOAD PIN - FORCE TOO LOW OVER MAIN ANGLE CHANGE	8	5	8512	--	--	✓	--	--
LOAD PIN - FORCE TOO LOW OVER MAIN LENGTH TRANSITION	8	5	8513	--	--	✓	--	--
RESTRICTED TO TRANSPORT - OSCILLATING AXLE PRESSURE SWITCH DISAGREEMENT	8	6	861	✓	✓	✓	✓	✓
AXLE EXTEND VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	862	✓	✓	✓	✓	--
AXLE EXTEND VALVE - SHORT TO GROUND	8	6	863	✓	✓	✓	✓	--
AXLE RETRACT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	864	✓	✓	✓	✓	--
AXLE RETRACT VALVE - SHORT TO GROUND	8	6	865	✓	✓	✓	✓	--
RIGHT FRONT STEER RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	866	✓	✓	✓	✓	--
RIGHT FRONT STEER RIGHT VALVE - SHORT TO GROUND	8	6	867	✓	✓	✓	✓	✓
RIGHT FRONT STEER LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	868	✓	✓	✓	✓	--
RIGHT FRONT STEER LEFT VALVE - SHORT TO GROUND	8	6	869	✓	✓	✓	✓	✓
LEFT FRONT STEER RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	8610	✓	✓	✓	✓	--
LEFT FRONT STEER RIGHT VALVE - SHORT TO GROUND	8	6	8611	✓	✓	✓	✓	✓
LEFT FRONT STEER LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	8612	✓	✓	✓	✓	--
LEFT FRONT STEER LEFT VALVE - SHORT TO GROUND	8	6	8613	✓	✓	✓	✓	✓
RIGHT REAR STEER RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	8614	✓	✓	✓	✓	--
RIGHT REAR STEER RIGHT VALVE - SHORT TO GROUND	8	6	8615	✓	✓	✓	✓	✓
RIGHT REAR STEER LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	8616	✓	✓	✓	✓	--
RIGHT REAR STEER LEFT VALVE - SHORT TO GROUND	8	6	8617	✓	✓	✓	✓	✓
LEFT REAR STEER RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	8618	✓	✓	✓	✓	--
LEFT REAR STEER RIGHT VALVE - SHORT TO GROUND	8	6	8619	✓	✓	✓	✓	✓
LEFT REAR STEER LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	8	6	8620	✓	✓	✓	✓	--
LEFT REAR STEER LEFT VALVE - SHORT TO GROUND	8	6	8621	✓	✓	✓	✓	✓

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
FRONT RIGHT STEER SENSOR - DECOUPLED	8	6	8622	✓	✓	✓	✓	✓
FRONT LEFT STEER SENSOR - DECOUPLED	8	6	8623	✓	✓	✓	✓	✓
REAR RIGHT STEER SENSOR - DECOUPLED	8	6	8624	✓	✓	✓	✓	✓
REAR LEFT STEER SENSOR - DECOUPLED	8	6	8625	✓	✓	✓	✓	✓
FRONT LEFT STEER SENSOR - NOT RESPONDING	8	6	8626	✓	✓	✓	✓	✓
FRONT RIGHT STEER SENSOR - NOT RESPONDING	8	6	8627	✓	✓	✓	✓	✓
REAR LEFT STEER SENSOR - NOT RESPONDING	8	6	8628	✓	✓	✓	✓	✓
REAR RIGHT STEER SENSOR - NOT RESPONDING	8	6	8629	✓	✓	✓	✓	✓
FRONT RIGHT STEER SENSOR - SHORT TO GROUND OR OPEN CIRCUIT	8	6	8630	✓	✓	✓	✓	✓
FRONT RIGHT STEER SENSOR - SHORT TO BATTERY	8	6	8631	✓	✓	✓	✓	✓
FRONT LEFT STEER SENSOR - SHORT TO GROUND OR OPEN CIRCUIT	8	6	8632	✓	✓	✓	✓	✓
FRONT LEFT STEER SENSOR - SHORT TO BATTERY	8	6	8633	✓	✓	✓	✓	✓
REAR RIGHT STEER SENSOR - SHORT TO GROUND OR OPEN CIRCUIT	8	6	8634	✓	✓	✓	✓	✓
REAR RIGHT STEER SENSOR - SHORT TO BATTERY	8	6	8635	✓	✓	✓	✓	✓
REAR LEFT STEER SENSOR - SHORT TO GROUND OR OPEN CIRCUIT	8	6	8636	✓	✓	✓	✓	✓
REAR LEFT STEER SENSOR - SHORT TO BATTERY	8	6	8637	✓	✓	✓	✓	✓
ENGINE SHUTDOWN - AXLE LOCKOUT VALVE FAULT	8	6	8651	✓	✓	✓	✓	✓
RIGHT FRONT STEER RIGHT VALVE - OPEN CIRCUIT	8	6	8670	--	--	--	--	✓
RIGHT FRONT STEER RIGHT VALVE - SHORT TO BATTERY	8	6	8671	--	--	--	--	✓
RIGHT FRONT STEER LEFT VALVE - OPEN CIRCUIT	8	6	8672	--	--	--	--	✓
RIGHT FRONT STEER LEFT VALVE - SHORT TO BATTERY	8	6	8673	--	--	--	--	✓
LEFT FRONT STEER RIGHT VALVE - OPEN CIRCUIT	8	6	8674	--	--	--	--	✓
LEFT FRONT STEER RIGHT VALVE - SHORT TO BATTERY	8	6	8675	--	--	--	--	✓
LEFT FRONT STEER LEFT VALVE - OPEN CIRCUIT	8	6	8676	--	--	--	--	✓
LEFT FRONT STEER LEFT VALVE - SHORT TO BATTERY	8	6	8677	--	--	--	--	✓
RIGHT REAR STEER RIGHT VALVE - OPEN CIRCUIT	8	6	8678	--	--	--	--	✓
RIGHT REAR STEER RIGHT VALVE - SHORT TO BATTERY	8	6	8679	--	--	--	--	✓
RIGHT REAR STEER LEFT VALVE - OPEN CIRCUIT	8	6	8680	--	--	--	--	✓
RIGHT REAR STEER LEFT VALVE - SHORT TO BATTERY	8	6	8681	--	--	--	--	✓
LEFT REAR STEER RIGHT VALVE - OPEN CIRCUIT	8	6	8682	--	--	--	--	✓
LEFT REAR STEER RIGHT VALVE - SHORT TO BATTERY	8	6	8683	--	--	--	--	✓
LEFT REAR STEER LEFT VALVE - OPEN CIRCUIT	8	6	8684	--	--	--	--	✓
LEFT REAR STEER LEFT VALVE - SHORT TO BATTERY	8	6	8685	--	--	--	--	✓
FRONT LEFT AXLE - MOVEMENT WITHOUT COMMAND	8	6	8686	--	--	--	--	✓
FRONT RIGHT AXLE - MOVEMENT WITHOUT COMMAND	8	6	8687	--	--	--	--	✓

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
REAR RIGHT AXLE - MOVEMENT WITHOUT COMMAND	8	6	8688	--	--	--	--	✓
REAR LEFT AXLE - MOVEMENT WITHOUT COMMAND	8	6	8689	--	--	--	--	✓
MACHINE SAFTEY SYSTEM OVERRIDE OCCURRED	8	7	873	--	--	--	--	✓
LSS WATCHDOG RESET	9	9	991	✓	✓	✓	✓	✓
LSS EEPROM ERROR	9	9	992	✓	✓	✓	✓	✓
LSS INTERNAL ERROR - PIN EXCITATION	9	9	993	✓	✓	✓	✓	✓
LSS INTERNAL ERROR - DRDY MISSING FROM A/D	9	9	994	✓	✓	✓	✓	✓
EEPROM FAILURE - CHECK ALL SETTINGS	9	9	998	✓	✓	✓	✓	✓
FUNCTIONS LOCKED OUT - LSS MODULE SOFTWARE VERSION IMPROPER	9	9	9911	✓	✓	✓	✓	✓
FUNCTIONS LOCKED OUT - PLATFORM MODULE SOFTWARE VERSION IMPROPER	9	9	9910	✓	✓	✓	✓	✓
PLATFORM MODULE SOFTWARE UPDATE REQUIRED	9	9	9914	✓	✓	✓	✓	✓
CHASSIS TILT SENSOR NOT GAIN CALIBRATED	9	9	9915	✓	✓	✓	✓	✓
CHASSIS TILT SENSOR GAIN OUT OF RANGE	9	9	9916	✓	✓	✓	✓	✓
HIGH RESOLUTION A2D FAILURE - INTERRUPT LOST	9	9	9917	✓	✓	✓	✓	✓
HIGH RESOLUTION A2D FAILURE - REINIT LIMIT	9	9	9918	✓	✓	✓	✓	✓
GROUND SENSOR REF VOLTAGE OUT OF RANGE	9	9	9919	✓	✓	✓	✓	✓
PLATFORM SENSOR REF VOLTAGE OUT OF RANGE	9	9	9920	✓	✓	✓	✓	✓
GROUND MODULE FAILURE - HIGH SIDE DRIVER CUTOUT FAULTY	9	9	9921	✓	✓	✓	✓	✓
PLATFORM MODULE FAILURE - HWFS CODE 1	9	9	9922	✓	✓	✓	✓	✓
GROUND MODULE FAILURE - HWFS CODE 1	9	9	9923	✓	✓	✓	✓	✓
FUNCTIONS LOCKED OUT - MACHINE NOT CONFIGURED	9	9	9924	✓	✓	✓	✓	✓
FUNCTIONS LOCKED OUT - CHASSIS MODULE SOFTWARE VERSION IMPROPER	9	9	9925	✓	✓	✓	✓	✓
FUNCTIONS LOCKED OUT - BLAM MODULE SOFTWARE VERSION IMPROPER	9	9	9926	✓	✓	✓	✓	✓
GROUND MODULE CONSTANT DATA UPDATE REQUIRED	9	9	9927	✓	✓	✓	✓	✓
ENVELOPE CONTROL DISABLED	9	9	9928	✓	✓	✓	✓	✓
MOMENT CONTROL DISABLED	9	9	9929	✓	✓	✓	✓	✓
STEER SENSORS NOT CALIBRATED	9	9	9930	✓	✓	✓	✓	✓
BOOM SENSORS NOT CALIBRATED	9	9	9931	✓	✓	✓	✓	✓
LIFT CRACKPOINTS NOT CALIBRATED	9	9	9932	✓	✓	--	✓	✓
TELESCOPE CRACKPOINTS NOT CALIBRATED	9	9	9933	✓	✓	--	✓	✓
DRIVE CRACKPOINTS NOT CALIBRATED	9	9	9934	✓	✓	✓	✓	✓
BLAM SENSOR SUPPLY OUT OF RANGE HIGH	9	9	9935	✓	✓	✓	✓	✓
BLAM SENSOR SUPPLY OUT OF RANGE LOW	9	9	9936	✓	✓	✓	✓	✓
LENGTH SENSOR REF VOLTAGE HIGH	9	9	9937	✓	✓	✓	✓	✓

Table 6-12. Diagnostic Fault Code Chart

Fault Text	Flash 1	Flash 2	DTC	1350	1200	1250	1500	1850
LENGTH SENSOR REF VOLTAGE LOW	9	9	9938	✓	✓	✓	✓	✓
BLAM HIGH RES A/D FAILURE	9	9	9939	✓	✓	✓	✓	✓
CHASSIS SENSOR SUPPLY OUT OF RANGE HIGH	9	9	9940	✓	✓	✓	✓	✓
CHASSIS SENSOR SUPPLY OUT OF RANGE LOW	9	9	9941	✓	✓	✓	✓	✓
BLAM BACKUP COMMUNICATIONS LINK FAULTY	9	9	9942	--	--	✓	--	--
BLAM BACKUP COMMUNICATIONS LOST - HYDRAULICS SUSPENDED	9	9	9943	--	--	✓	--	--
CURRENT FEEDBACK GAINS OUT OF RANGE	9	9	9944	✓	✓	✓	✓	✓
CURRENT FEEDBACK CALIBRATION CHECKSUM INCORRECT	9	9	9945	✓	✓	✓	✓	✓
LOAD PIN NOT CALIBRATED	9	9	9975	--	--	✓	--	--
LSS CORRUPT EEPROM	9	9	9977	✓	✓	✓	✓	✓
FUNCTIONS LOCKED OUT - GROUND MODULE SOFTWARE VERSION IMPROPER	9	9	9979	✓	✓	✓	✓	✓
JIB CONTROL MODULE - HIGH RESOLUTION A2D FAILURE	9	9	99155	--	--	--	✓	✓
JIB CONTROL MODULE - HIGH RESOLUTION A2D REFERENCE LOW	9	9	99156	--	--	--	✓	✓
JIB CONTROL MODULE - HIGH RESOLUTION A2D REFERENCE HIGH	9	9	99157	--	--	--	✓	✓
PLATFORM LEVEL ANGLE SENSOR - INTERNAL ERROR	9	9	99158	--	--	--	✓	✓
JIB LIFT ANGLE SENSOR - INTERNAL ERROR	9	9	99159	--	--	--	✓	✓
FUNCTIONS LOCKED OUT - JIB CONTROL MODULE SOFTWARE VERSION IMPROPER	9	9	99160	--	--	--	✓	✓

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
1	0	1	EVERYTHING OK	The normal help message in Platform Mode.	
2	0	2	GROUND MODE OK	The normal help message in Ground Mode.	
10	0	10	RUNNING AT CUTBACK - OUT OF TRANSPORT POSITION	Drive speed is limited to "ELEVATED MAX" while the vehicle is out of transport position.	
49	0	0	SCR CLEANING REQUIRED	SCR Cleaning for regular maintenance (engine controlled)	
50	0	0	BOOM UNLOCK REQUIRED	Triggers if machine is 1850SJ and DTC 23127 and DTC 8413 become active	
0	**0**	**0**	**<<< HELP COMMENT >>>**		
11	0	11	FSW OPEN	A drive / boom function was selected with the Footswitch open.	
12	0	12	RUNNING AT CREEP - CREEP SWITCH OPEN	All functions at creep while the Creep Switch is open.	
13	0	13	RUNNING AT CREEP - TILTED AND ABOVE ELEVATION	All functions at creep while the Platform is elevated and the Chassis is tilted.	
14	0	14	CHASSIS TILT SENSOR OUT OF RANGE	The Chassis is tilted > 19 degrees for more then 4 seconds.	- Not reported during power-up.
0015	0	15	LOAD SENSOR READING UNDER WEIGHT	LSS has been calibrated and the UGM has determined that the load sensing system reading is less than -50lbs for 2 seconds. If the load sensing system determines that the reading is greater than -50lbs for 5 seconds this fault will no longer be annunciated. No control system interlocks present when DTC is active.	Ensure platform is not resting on the ground or is not leveled at an extreme negative angle. Re-calibrate the load sensing system if the above items are not a factor.
16	0	16	ENVELOPE ENCROACHED - HYDRAULICS SUSPENDED	There is an envelope violation.	- Envelope control system equipped vehicle only.
17	0	17	OVER MOMENT - HYDRAULICS SUSPENDED	There is an over moment violation.	- Envelope control system equipped vehicle only.
18	0	18	UNDER MOMENT - HYDRAULICS SUSPENDED	There is an under moment violation.	- Envelope control system equipped vehicle only.
21	0	21	ADS 1213 REINITIALIZED		
30	0	30	RUNNING AT CREEP - PLATFORM STOWED		
31	0	31	FUEL LEVEL LOW - ENGINE SHUTDOWN		
35	0	35	APU ACTIVE		
37	0	37	JIB UNLOCKED OUT OF TRANSPORT - HYDRAULICS SUSPENDED		
38	0	38	SWING ENVELOPE ENCROACHED - HYDRAULICS SUSPENDED		
0039	0	0	SKYGUARD ACTIVE - FUNCTIONS CUTOUT	The SkyGuard sensors have been activated. Fault cleared when controls returned to neutral and SkyGuard is no longer active.	
210	**2'**	**1**	**<<< POWER-UP >>>**		

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
211	2	1	POWER CYCLE	The normal help message is issued at each power cycle.	
212	2	1	KEYSWITCH FAULTY	Both Platform and Ground modes are selected simultaneously.	
213	2	1	FSW FAULTY	Both Footswitches are closed for more then one second.	
220	**22**	**0**	**<<< PLATFORM CONTROLS >>>**		
227	2	2	STEER SWITCHES FAULTY	Both Steer Left and Steer Right inputs are closed simultaneously.	
2211	2	2	FSW INTERLOCK TRIPPED	The Footswitch was closed for more then seven seconds.	- Can be reported during power- up.
2212	2	2	DRIVE LOCKED - JOYSTICK MOVED BEFORE FOOTSWITCH	A drive function was selected with Footswitch open.	- Can be reported during power- up.
2213	2	2	STEER LOCKED - SELECTED BEFORE FOOTSWITCH	A steer function was selected with Footswitch open.	
2215	2	2	D/S JOY. OUT OF RANGE LOW	The D/S Joystick reference volt- age is low.	- Resistive joysticks, these faults do not occur.
2216	2	2	D/S JOY. OUT OF RANGE HIGH	The D/S Joystick reference volt- age is > 8.1V.	- Resistive joysticks. - If the reference voltage is > 7.7V then the reference voltage is out of tolerance of a short to battery has occurred.
2217	2	2	D/S JOY. CENTER TAP BAD	The D/S Joystick center tap volt- age is < 3.08V or > 3.83V.	- Resistive joysticks. - There is a +/- .1V range. around these values due to resistor tolerances
2218	2	2	L/S JOY. OUT OF RANGE LOW	The L/S Joystick reference volt- age is low.	- Resistive joysticks, these faults do not occur.
2219	2	2	L/S JOY. OUT OF RANGE HIGH	The L/S Joystick reference volt- age is > 8.1V.	- Resistive joysticks. - If the reference voltage is > 7.7V then the reference voltage is out of tolerance of a short to battery has occurred.
2220	2	2	L/S JOY. CENTER TAP BAD	The L/S Joystick center tap volt- age is < 3.08V or > 3.83V.	- Resistive joysticks. - There is a +/- .1V range. around these values due to resistor tolerances
2221	2	2	LIFT/SWING LOCKED - JOYSTICK MOVED BEFORE FOOTSWITCH	A lift / swing function was selected with Footswitch open.	
2222	2	2	WAITING FOR FSW TO BE OPEN	The Footswitch was closed during Platform selection.	- Can be reported during power- up.
2223	2	2	FUNCTION SWITCHES LOCKED - SELECTED BEFORE ENABLE	A boom function was selected with Footswitch open.	
2224	2	2	FOOTSWITCH SELECTED BEFORE START	The Footswitch was closed during engine start.	
2286	2	2	FUNCTION PROBLEM - SOFT TOUCH/SKY- GUARD OVERRIDE PERMANENTLY SELECTED	The Soft Touch/SkyGuard Override swtich is engaged during system power up and Soft Touch or SkyGuard is turned on in Machine Setup. Fault cleared when switch is no lon- ger enageged	Check wiring and switch
230	**2**	**0**	**<<<Ground Inputs >>>**		
23124	2	3	LIFT PRESSURE SENSOR - OUT OF RANGE LOW	Pressure transducer sensor voltage output < 0.4V for 240ms	Check sensor hardware and wiring

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
23125	2	3	LIFT PRESSURE SENSOR - OUT OF RANGE HIGH	Pressure transducer sensor voltage output > 4.5V for 240ms	Check sensor hardware and wiring
23126	2	3	LIFT PRESSURE SENSOR - NOT DETECTING CHANGE	Lift down is commanded and pressure does not change by 20psi within 10seconds. This is only evaluated when rod-side pressure starts out below a threshold value	Check sensor hardware and wiring
23127	2	3	LIFT CYLINDER - OVER PRESSURE	At the end of a lift up event if pressure is greater than 2200 psi for 3seconds	Check lift cylinder seal across piston, fault detects a hardware failure
23128	2	3	REDUCTION CHECK PRESSURE SENSOR - OUT OF RANGE LOW	Pressure sensor voltage output < 0.4V for 240ms	Check sensor hardware and wiring
23129	2	3	REDUCTION CHECK PRESSURE SENSOR - OUT OF RANGE HIGH	Pressure sensor voltage output > 4.5V for 240ms	Check sensor hardware and wiring
23130	2	3	REDUCTION CHECK PRESSURE SENSOR - HIGH	Pressure transducer reads > 3250 psi for 2 seconds while main dump valve energized and engine is running	Check sensor hardware and wiring and check relief setttings
23131	2	3	REDUCTION CHECK PRESSURE SENSOR - LOW	Pressure transducer reads < 1500 psi for 2 seconds while main dump valve energized and engine is running	Check sensor hardware and wiring and check relief setttings
23253	2	3	MACHINE SETUP WIRING - ERROR	An issue with the machine setup wiring has been detected. Fault cleared once issue resolved.	Check wiring on UGM J3-11 and BLAM J2-7 against Electrical Schematic applicable to machine manufacturing date. Analyzer also provides status of the inputs under DIAGNOSTICS --> SYSTEM --> SETUP CONFIG 1 and DIAGNOSTICS --> SYSTEM --> SETUP CONFIG 2 (LOW = Open Circuit, HIGH = Closed Circuit)
240	**24**	**0**	**<<< OTHER CONTROLS >>>**		
250	**25**	**0**	**<<< FUNCTION PREVENTED >>>**		
259	2	5	MODEL CHANGED - HYDRAULICS SUSPENDED - CYCLE EMS	The model selection has been changed.	
2513	2	5	GENERATOR MOTION CUTOUT ACTIVE	Driving is not possible while the vehicle generator is running AND is configured to prevent drive.	
2514	2	5	BOOM PREVENTED - DRIVE SELECTED	Boom functions are not possible while the vehicle is being driven AND is configured to not allow simultaneous drive & boom operation.	
2515	2	5	DRIVE PREVENTED - BOOM SELECTED	Driving is not possible while the vehicle above elevation AND is configured to prevent drive while above elevation.	
2516	2	5	DRIVE PREVENTED - ABOVE ELEVATION	Driving is not possible while Boom functions are selected AND is configured to not allow simultaneous drive & boom operation.	
2517	2	5	DRIVE PREVENTED - TILTED & ABOVE ELEVATION	Driving is not possible while the vehicle is tilted and above elevation AND is configured to prevent drive while tilted and above elevation.	
2521	2	5	JIB SWING PREVENTED - IN 1000# MODE	JIB Swing is not possible while the vehicle is in 1000 LB Mode.	

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
2522	2	5	CAN DONGLE ATTACHED - HYDRAULICS NOT RESTRICTED	CAN Dongle attached. Very limited restrictions for all hydraulics systems.	
2546	2	5	MACHINE SETUP FAULT - JIB SWING		
2547	2	5	MACHINE SETUP FAULT - MODEL		
2563	2	5	SKYGUARD SWITCH - DISAGREEMENT	The UGM detects that Skyguard Input 1 and Skyguard Input 2 states do not match for more than 160ms. Fault is cleared when Skyguard input 1 and Skyguard Input 2 must match and controls are returned to neutral.	Check wiring, verify wiring to relays and relays are working correctly.
2549	2	5	DRIVE & BOOM PREVENTED - SOFT TOUCH ACTIVE	The Soft Touch sensor has been activated. Fault cleared once controls are returned to neutral and Soft Touch is not active.	
2587	2	5	RUNNING AT CREEP - PLATFORM LEVELED UNDER	The UGM has detected the platform is in the leveled under position. Fault cleared when platform is returned to level.	Level platform
260	**26**	**0**	**<<<Chassis Inputs>>>**		
261	2	6	FRONT LEFT AXLE SWING SENSOR - VOLTAGE OUT OF RANGE LOW	Sensor output < 0.1V	Check sensor hardware and wiring
262	2	6	FRONT LEFT AXLE SWING SENSOR - VOLTAGE OUT OF RANGE HIGH	Sensor output >4.9V	Check sensor hardware and wiring
263	2	6	FRONT RIGHT AXLE SWING SENSOR - VOLTAGE OUT OF RANGE LOW	Sensor output < 0.1V	Check sensor hardware and wiring
264	2	6	FRONT RIGHT AXLE SWING SENSOR - VOLTAGE OUT OF RANGE HIGH	Sensor output >4.9V	Check sensor hardware and wiring
265	2	6	REAR LEFT AXLE SWING SENSOR - VOLTAGE OUT OF RANGE LOW	Sensor output < 0.1V	Check sensor hardware and wiring
266	2	6	REAR LEFT AXLE SWING SENSOR - VOLTAGE OUT OF RANGE HIGH	Sensor output >4.9V	Check sensor hardware and wiring
267	2	6	REAR RIGHT AXLE SWING SENSOR - VOLTAGE OUT OF RANGE LOW	Sensor output < 0.1V	Check sensor hardware and wiring
268	2	6	REAR RIGHT AXLE SWING SENSOR - VOLTAGE OUT OF RANGE HIGH	Sensor output >4.9V	Check sensor hardware and wiring
269	2	6	REAR LEFT AXLE RETRACT SWITCH - DISAGREEMENT		Check sensor hardware and wiring
2610	2	6	REAR RIGHT AXLE RETRACT SWITCH - DISAGREEMENT		Check sensor hardware and wiring
2611	2	6	FRONT LEFT AXLE SENSOR - NOT RESPONDING	< 0.4deg travel detected for 5 seconds with a deploy or retract command	Check sensor hardware and wiring
2612	2	6	FRONT RIGHT AXLE SENSOR - NOT RESPONDING		Check sensor hardware and wiring
2613	2	6	REAR LEFT AXLE SENSOR - NOT RESPONDING		Check sensor hardware and wiring
2614	2	6	REAR RIGHT AXLE SENSOR - NOT RESPONDING		Check sensor hardware and wiring
2615	2	6	AXLE RETRACT POSITION - NOT CALIBRATED	Axles are not calibrated	Calibrate axles
2616	2	6	AXLE DEPLOY POSITION - NOT CALIBRATED	Axles are not calibrated	Calibrate axles
330	**3**	**3**	**<<< GROUND OUTPUT DRIVER >>>**		

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
331	3	3	BRAKE - SHORT TO BATTERY	There is a Short to Battery to the Brake Valve.	
332	3	3	BRAKE - OPEN CIRCUIT	There is an Open Circuit to the Brake Valve.	
3311	3	3	GROUND ALARM - SHORT TO BATTERY	There is a Short to Battery to the Ground Alarm.	- Ground Alarm equipped vehicles only.
3316	3	3	RIGHT FORWARD DRIVE PUMP - SHORT TO GROUND	There is a Short to Ground to the Right Forward Drive Valve.	- Chassis Module equipped vehicles only.
3317	3	3	RIGHT FORWARD DRIVE PUMP - OPEN CIRCUIT	There is an Open Circuit to the Right Forward Drive Valve.	- Chassis Module equipped vehicles only.
3318	3	3	RIGHT FORWARD DRIVE PUMP - SHORT TO BATTERY	There is a Short to Battery to the Right Forward Drive Valve.	- Chassis Module equipped vehicles only.
3320	3	3	RIGHT REVERSE DRIVE PUMP - SHORT TO GROUND	There is a Short to Ground to the Right Reverse Drive Valve.	- Chassis Module equipped vehicles only.
3321	3	3	RIGHT REVERSE DRIVE PUMP - OPEN CIRCUIT	There is an Open Circuit to the Right Reverse Drive Valve.	- Chassis Module equipped vehicles only.
3322	3	3	RIGHT REVERSE DRIVE PUMP - SHORT TO BATTERY	There is a Short to Battery to the Right Reverse Drive Valve.	- Chassis Module equipped vehicles only.
3324	3	3	LEFT FORWARD DRIVE PUMP - SHORT TO GROUND	There is a Short to Ground to the Left Forward Drive Valve.	- Chassis Module equipped vehicles only.
3325	3	3	LEFT FORWARD DRIVE PUMP - OPEN CIRCUIT	There is an Open Circuit to the Left Forward Drive Valve.	- Chassis Module equipped vehicles only.
3326	3	3	LEFT FORWARD DRIVE PUMP - SHORT TO BATTERY	There is a Short to Battery to the Left Forward Drive Valve.	- Chassis Module equipped vehicles only.
3328	3	3	LEFT REVERSE DRIVE PUMP - SHORT TO GROUND	There is a Short to Ground to the Left Reverse Drive Valve.	- Chassis Module equipped vehicles only.
3329	3	3	LEFT REVERSE DRIVE PUMP - OPEN CIRCUIT	There is an Open Circuit to the Left Reverse Drive Valve.	- Chassis Module equipped vehi- cles only.
3330	3	3	LEFT REVERSE DRIVE PUMP - SHORT TO BATTERY	There is a Short to Battery to the Left Reverse Drive Valve.	- Chassis Module equipped vehi- cles only.
3336	3	3	ALTERNATOR/ECM POWER - SHORT TO GROUND	There is a Short to Ground to the Alternator/ECM.	
3338	3	3	ALTERNATOR POWER - OPEN CIRCUIT	There is an Open Circuit to the Alternator.	
3339	3	3	ALTERNATOR POWER - SHORT TO BATTERY	There is a Short to Battery to the Alternator	
3340	3	3	AUX POWER - SHORT TO GROUND	There is a Short to Ground to the Auxiliary Power Pump Relay.	
3341	3	3	AUX POWER - OPEN CIRCUIT	There is an Open Circuit to the Auxiliary Power Pump Relay.	
3342	3	3	AUX POWER - SHORT TO BATTERY	There is a Short to Battery to the Auxiliary Power Pump Relay.	
3343	3	3	COLD START ADVANCE SOLENOID - SHORT TO GROUND	There is a Short to Ground to the Cold Start Advance Solenoid.	- CAT engines only.
3344	3	3	COLD START ADVANCE SOLENOID - OPEN CIRCUIT	There is an Open Circuit to the Cold Start Advance Solenoid.	- CAT engines only.
3345	3	3	COLD START ADVANCE SOLENOID - SHORT TO BATTERY	There is a Short to Battery to the Cold Start Advance Solenoid.	- CAT engines only.

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
3349	3	3	ELECTRIC PUMP - SHORT TO GROUND	There is a Short to Ground to the Pump Relay.	- CAT engines only.
3350	3	3	ELECTRIC PUMP - OPEN CIRCUIT	There is an Open Circuit to the Pump Relay.	- CAT engines only.
3351	3	3	ELECTRIC PUMP - SHORT TO BATTERY	There is a Short to Battery to the Pump Relay.	- CAT engines only.
3358	3	3	MAIN DUMP VALVE - SHORT TO GROUND	There is a Short to Ground to the Main Dump Valve.	
3359	3	3	MAIN DUMP VALVE - OPEN CIRCUIT	There is an Open Circuit to the Main Dump Valve.	
3360	3	3	MAIN DUMP VALVE - SHORT TO BATTERY	There is a Short to Battery to the Main Dump Valve.	
3361	3	3	BRAKE - SHORT TO GROUND	There is a Short to Ground to the Brake Valve.	
3362	3	3	START SOLENOID - SHORT TO GROUND	There is a Short to Ground to the Start Relay.	- Diesel engines only.
3363	3	3	START SOLENOID - OPEN CIRCUIT	There is an Open Circuit to the Start Relay.	- Diesel engines only.
3364	3	3	START SOLENOID - SHORT TO BATTERY	There is a Short to Battery to the Start Relay.	- Diesel engines only.
3368	3	3	TWO SPEED VALVE - SHORT TO GROUND	There is a Short to Ground to the Two Speed Valve.	
3369	3	3	TWO SPEED VALVE - OPEN CIRCUIT	There is an Open Circuit to the Two Speed Valve.	
3370	3	3	TWO SPEED VALVE - SHORT TO BATTERY	There is a Short to Battery to the Two Speed Valve.	
3371	3	3	GROUND ALARM - SHORT TO GROUND	There is a Short to Ground to the Ground Alarm.	- Ground Alarm equipped vehicles only.
3372	3	3	GROUND ALARM - OPEN CIRCUIT	There is an Open Circuit to the Ground Alarm.	- Ground Alarm equipped vehicles only.
3373	3	3	GEN SET/WELDER - SHORT TO GROUND	There is a Short to Ground to the Generator Relay.	- Generator / Welder equipped vehicles only.
3374	3	3	GEN SET/WELDER - OPEN CIRCUIT	There is an Open Circuit to the Generator Relay.	- Generator / Welder equipped vehicles only.
3375	3	3	GEN SET/WELDER - SHORT TO BATTERY	There is a Short to Battery to the Generator Relay.	- Generator / Welder equipped vehicles only.
3376	3	3	HEAD TAIL LIGHT - SHORT TO GROUND	There is a Short to Ground to the Head Light Relay.	- Head Light equipped vehicles only.
3377	3	3	HEAD TAIL LIGHT - OPEN CIRCUIT	There is an Open Circuit to the Head Light Relay.	- Head Light equipped vehicles only.
3378	3	3	HEAD TAIL LIGHT - SHORT TO BATTERY	There is a Short to Battery to the Head Light Relay.	- Head Light equipped vehicles only.
3379	3	3	HOUR METER - SHORT TO GROUND	There is a Short to Ground to the Hour Meter.	
3380	3	3	HOUR METER - OPEN CIRCUIT	There is an Open Circuit to the Hour Meter.	- Can be reported during power- up.
3381	3	3	HOUR METER - SHORT TO BATTERY	There is a Short to Battery to the Hour Meter.	

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
3385	3	3	PLATFORM LEVEL UP OVERRIDE VALVE - SHORT TO GROUND	There is a Short to Ground to the Platform Level Up Override Valve.	- Electronic leveling system equipped vehicles only.
3386	3	3	PLATFORM LEVEL UP OVERRIDE VALVE - OPEN CIRCUIT	There is an Open Circuit to the Platform Level Up Override Valve.	- Electronic leveling system equipped vehicles only.
3387	3	3	PLATFORM LEVEL UP OVERRIDE VALVE - SHORT TO BATTERY	There is a Short to Battery to the Platform Level Up Override Valve.	- Electronic leveling system equipped vehicles only.
3391	3	3	PLATFORM LEVEL DOWN OVERRIDE VALVE - SHORT TO GROUND	There is a Short to Ground to the Platform Level Down Override Valve.	- Electronic leveling system equipped vehicles only.
3392	3	3	PLATFORM LEVEL DOWN OVERRIDE VALVE - OPEN CIRCUIT	There is an Open Circuit to the Platform Level Down Override Valve.	- Electronic leveling system equipped vehicles only.
3393	3	3	PLATFORM LEVEL DOWN OVERRIDE VALVE - SHORT TO BATTERY	There is a Short to Battery to the Platform Level Down Override Valve.	- Electronic leveling system equipped vehicles only.
3394	3	3	PLATFORM ROTATE LEFT VALVE - SHORT TO GROUND	There is a Short to Ground to the Platform Rotate Left Valve.	
3395	3	3	PLATFORM ROTATE LEFT VALVE - OPEN CIRCUIT	There is an Open Circuit to the Platform Rotate Left Valve.	
3396	3	3	PLATFORM ROTATE LEFT VALVE - SHORT TO BATTERY	There is a Short to Battery to the Platform Rotate Left Valve.	
3397	3	3	PLATFORM ROTATE RIGHT VALVE - SHORT TO GROUND	There is a Short to Ground to the Platform Rotate Right Valve.	
3398	3	3	PLATFORM ROTATE RIGHT VALVE - OPEN CIRCUIT	There is an Open Circuit to the Platform Rotate Right Valve.	
3399	3	3	PLATFORM ROTATE RIGHT VALVE - SHORT TO BATTERY	There is a Short to Battery to the Platform Rotate Right Valve.	
33120	3	3	MAIN TELESCOPE IN VALVE - SHORT TO BATTERY	There is a Short to Battery to the Main Telescope In Valve.	
33123	3	3	MAIN TELESCOPE OUT VALVE - SHORT TO BATTERY	There is a Short to Battery to the Main Telescope Out Valve.	
33130	3	3	THROTTLE ACTUATOR - SHORT TO GROUND	There is a Short to Ground to the Throttle Actuator.	
33131	3	3	THROTTLE ACTUATOR - OPEN CIRCUIT	There is an Open Circuit to the Throttle Actuator.	
33132	3	3	THROTTLE ACTUATOR - SHORT TO BATTERY	There is a Short to Battery to the Throttle Actuator.	
33133	3	3	PLATFORM CONTROL VALVE - SHORT TO GROUND	There is a Short to Ground to the Platform Control Valve.	- Electronic leveling system equipped vehicles only.
33134	3	3	PLATFORM CONTROL VALVE - OPEN CIRCUIT	There is an Open Circuit to the Platform Control Valve.	- Electronic leveling system equipped vehicles only.
33135	3	3	PLATFORM CONTROL VALVE - SHORT TO BATTERY	There is a Short to Battery to the Platform Control Valve.	- Electronic leveling system equipped vehicles only.
33150	3	3	LIFT PILOT VALVE - SHORT TO GROUND	There is a Short to Ground to the Lift Pilot Valve.	- Gravity Lift Down equipped vehicles only.
33151	3	3	LIFT PILOT VALVE - OPEN CIRCUIT	There is an Open Circuit to the Lift Pilot Valve.	- Gravity Lift Down equipped vehicles only.
33152	3	3	LIFT PILOT VALVE - SHORT TO BATTERY	There is a Short to Battery to the Lift Pilot Valve.	- Gravity Lift Down equipped vehicles only.

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
33153	3	3	LIFT DOWN AUX VALVE - SHORT TO GROUND	There is a Short to Ground to the Lift Down Auxiliary Valve.	- Gravity Lift Down equipped vehicles only.
33154	3	3	LIFT DOWN AUX VALVE - OPEN CIRCUIT	There is an Open Circuit to the Lift Down Auxiliary Valve.	- Gravity Lift Down equipped vehicles only.
33155	3	3	LIFT DOWN AUX VALVE - SHORT TO BATTERY	There is a Short to Battery to the Lift Down Auxiliary Valve.	- Gravity Lift Down equipped vehicles only.
33159	3	3	MAIN LIFT ENABLE VALVE - SHORT TO GROUND	Short to Ground detected	Check wiring
33160	3	3	MAIN LIFT ENABLE VALVE - OPEN CIRCUIT	Open Circuit detected	Check wiring
33173	3	3	RESTRICTED TO TRANSPORT - AXLE LOCK-OUT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Axle Lockout Valve.	
33174	3	3	RESTRICTED TO TRANSPORT - BRAKE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Brake.	
33182	3	3	LIFT VALVES - SHORT TO BATTERY		
33186	3	3	MAIN TELESCOPE OUT VALVE - OPEN CIRUIT	There is an Open Circuit to the Main Telescope Out Valve.	
33188	3	3	MAIN TELESCOPE OUT VALVE - SHORT TO GROUND	There is a Short to Ground to the Main Telescope Out Valve.	
33189	3	3	MAIN TELESCOPE IN VALVE - OPEN CIRCUIT	There is an Open Circuit to the Main Telescope In Valve.	
33190	3	3	MAIN TELESCOPE IN VALVE - SHORT TO GROUND	There is a Short to Ground to the Main Telescope In Valve.	
33207	3	3	HORN - OPEN CIRCUIT	There is an Open Circuit to the Horn.	
33208	3	3	HORN - SHORT TO BATTERY	There is a Short to Battery to the Horn.	
33209	3	3	HORN - SHORT TO GROUND	There is a Short to Ground to the Horn.	
33279	3	3	GLOWPLUG - OPEN CIRCUIT	There is an Open Circuit to the Glow Plugs.	- Glowplugs equipped vehicles only.
33280	3	3	GLOWPLUG - SHORT TO BATTERY	There is a Short to Battery to the Glow Plugs.	- Glowplugs equipped vehicles only.
33281	3	3	GLOWPLUG - SHORT TO GROUND	There is a Short to Ground to the Glow Plugs.	- Glowplugs equipped vehicles only.
33285	3	3	ALTERNATOR EXCITATION LINE - SHORT TO BATTERY		
33307	3	3	MAIN TELESCOPE FLOW CONTROL VALVE - SHORT TO GROUND	There is a Short to Ground to the Main Telescope Flow Control Valve.	
33308	3	3	MAIN TELESCOPE FLOW CONTROL VALVE - OPEN CIRCUIT	There is an Open Circuit to the Main Telescope Flow Control Valve.	
33309	3	3	MAIN TELESCOPE FLOW CONTROL VALVE - SHORT TO BATTERY	There is a Short to Battery to the Main Telescope Flow Control Valve.	
33311	3	3	MAIN LIFT FLOW CONTROL VALVE - SHORT TO GROUND	There is a Short to Ground to the Main Lift Flow Control Valve.	
33312	3	3	MAIN LIFT FLOW CONTROL VALVE - OPEN CIRCUIT	There is an Open Circuit to the Main Lift Flow Control Valve.	

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
33313	3	3	MAIN LIFT FLOW CONTROL VALVE - SHORT TO BATTERY	There is a Short to Battery to the Main Lift Flow Control Valve.	
33414	3	3	SWING - CURRENT FEEDBACK READING TOO LOW	Current feedback into controller is below threshold value	Check wiring and coil
33418	3	3	SWING - CURRENT FEEDBACK READING LOST	Current feedback into controller not detected	Check wiring and coil
33429	3	3	JIB LIFT UP OVERRIDE VALVE - SHORT TO GROUND		
33430	3	3	JIB LIFT UP OVERRIDE VALVE - OPEN CIRCUIT		
33431	3	3	JIB LIFT UP OVERRIDE VALVE - SHORT TO BATTERY		
33432	3	3	JIB LIFT DOWN OVERRIDE VALVE - SHORT TO GROUND		
33433	3	3	JIB LIFT DOWN OVERRRIDE VALVE - OPEN CIRCUIT		
33434	3	3	JIB LIFT DOWN OVERRIDE VALVE - SHORT TO BATTERY		
33435	3	3	JIB CONTROL VALVE - SHORT TO GROUND		
33436	3	3	JIB CONTROL VALVE - OPEN CIRCUIT		
33437	3	3	JIB CONTROL VALVE - SHORT TO BATTERY		
33456	3	3	MAIN LIFT FLOW CONTROL VALVE - CURRENT FEEDBACK READING LOST	Current feedback into controller not detected	Check wiring and coil
33457	3	3	MAIN LIFT FLOW CONTROL VALVE - CURRENT FEEDBACK READING TOO LOW	Current feedback into controller is below threshold value	
33460	3	3	TELESCOPE FLOW CONTROL VALVE - CURRENT FEEDBACK READING LOST	Current feedback into controller not detected	
33461	3	3	TELESCOPE FLOW CONTROL VALVE - CURRENT FEEDBACK READING TOO LOW	Current feedback into controller is below threshold value	
33462	3	3	WARM UP VALVE - SHORT TO BATTERY	Short to Battery detected	Check wiring
33463	3	3	WARM UP VALVE - OPEN CIRCUIT	Open Circuit detected	Check wiring
33464	3	3	WARM UP VALVE - SHORT TO GROUND	Short to Ground detected	Check wiring
33465	3	3	CHASSIS ENABLE VALVE - SHORT TO BATTERY	Short to Battery detected	Check wiring
33466	3	3	CHASSIS ENABLE VALVE - OPEN CIRCUIT	Open Circuit detected	Check wiring
33467	3	3	CHASSIS ENABLE VALVE - SHORT TO GROUND	Short to Ground detected	Check wiring
33487	3	3	TWO SPEED OR BRAKE VALVE - STUCK OPEN		
33488	3	3	SWING FLOW CONTROL VALVE - SHORT TO GROUND	Short to Ground detected	Check wiring
33489	3	3	SWING FLOW CONTROL VALVE - OPEN CIRCUIT	Open Circuit detected	Check wiring
33490	3	3	SWING FLOW CONTROL VALVE - SHORT TO BATTERY	Short to Battery detected	Check wiring

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
33563	3	3	LIFT ENABLE VALVE - STUCK OPEN	Lift pilot valve is energized (during auxiliary or gravity sequence) and 1deg of motion is detected prior to the enable valve being energized	Check enable valve hardware
33564	3	3	COUNTER BALANCE VALVE - STUCK OPEN	Counterbalance valve test completed at the end of a lift down command. If Lift Cylinder angle sensor detects 2-deg motion, fault is activated	Check counterbalance valve hardware
33565	3	3	LIFT ENABLE - CURRENT FEEDBACK READING LOST	Current feedback into controller not detected	Check wiring and coil
33566	3	3	LIFT ENABLE - CURRENT FEEDBACK READING TOO LOW	Current feedback into controller is below threshold value	Check wiring and coil
340	**3**	**4**	**<<< PLATFORM OUTPUT DRIVER >>>**		
343	3	4	PLATFORM LEVEL UP VALVE - SHORT TO GROUND	There is a Short to Ground to the Platform Level Up Valve.	
344	3	4	PLATFORM LEVEL UP VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Platform Level Up Valve.	- Electronic leveling system equipped vehicles only.
347	3	4	PLATFORM LEVEL DOWN VALVE - SHORT TO GROUND	There is a Short to Ground to the Platform Level Down Valve.	
348	3	4	PLATFORM LEVEL DOWN VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Platform Level Down Valve.	- Electronic leveling system equipped vehicles only.
3427	3	4	JIB LOCK VALVE - OPEN CIRCUIT		
3428	3	4	JIB LOCK VALVE - SHORT TO BATTERY		
3429	3	4	JIB LOCK VALVE - SHORT TO GROUND		
3430	3	4	JIB UNLOCK VALVE - OPEN CIRCUIT		
3431	3	4	JIB UNLOCK VALVE - SHORT TO BATTERY		
3432	3	4	JIB UNLOCK VALVE - SHORT TO GROUND		
350	**3**	**5**	**<<< OTHER OUTPUT DRIVERS >>>**		
351	3	5	JIB LEVEL UP VALVE - SHORT TO GROUND		
352	3	5	JIB LEVEL UP VALVE - SHORT TO BATTERY OR OPEN CIRCUIT		
353	3	5	JIB LEVEL DOWN VALVE - SHORT TO GROUND		
354	3	5	JIB LEVEL DOWN VALVE - SHORT TO BATTERY OR OPEN CIRCUIT		
355	3	5	JIB LIFT UP VALVE - SHORT TO GROUND		
356	3	5	JIB LIFT UP VALVE - SHORT TO BATTERY OR OPEN CIRCUIT		
357	3	5	JIB LIFT DOWN VALVE - SHORT TO GROUND		
358	3	5	JIB LIFT DOWN VALVE - SHORT TO BATTERY OR OPEN CIRCUIT		
359	3	5	JIB ROTATE LEFT VALVE - SHORT TO GROUND		
3510	3	5	JIB ROTATE LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT		
3511	3	5	JIB ROTATE RIGHT VALVE - SHORT TO GROUND		

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
3512	3	5	JIB ROTATE RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT		
3513	3	5	JIB TELESCOPE IN VALVE - SHORT TO GROUND		
3514	3	5	JIB TELESCOPE IN VALVE - SHORT TO BATTERY OR OPEN CIRCUIT		
3515	3	5	JIB TELESCOPE OUT VALVE - SHORT TO GROUND		
3516	3	5	JIB TELESCOPE OUT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT		
360	**3**	**6**	**<<<Chassis Output Driver>>>**		
361	3	6	FRONT AXLE EXTEND VALVE - SHORT TO BATTERY	Short to Battery detected	Check wiring
362	3	6	FRONT AXLE EXTEND VALVE - SHORT TO GROUND	Short to Ground detected	
363	3	6	FRONT AXLE RETRACT VALVE - SHORT TO BATTERY	Short to Battery detected	
364	3	6	FRONT AXLE RETRACT VALVE - SHORT TO GROUND	Short to Ground detected	
365	3	6	REAR AXLE EXTEND VALVE - SHORT TO BATTERY	Short to Battery detected	
366	3	6	REAR AXLE EXTEND VALVE - SHORT TO GROUND	Short to Ground detected	
367	3	6	REAR AXLE RETRACT VALVE - SHORT TO BATTERY	Short to Battery detected	
368	3	6	REAR AXLE RETRACT VALVE - SHORT TO GROUND	Short to Ground detected	
369	3	6	FRONT AXLE EXTEND VALVE - OPEN CIRCUIT	Open Circuit detected	
3610	3	6	FRONT AXLE VALVE - CURRENT FEEDBACK READING LOST	Current feedback into controller not detected	Check wiring and coil
3611	3	6	FRONT AXLE RETRACT VALVE - OPEN CIRCUIT	Open Circuit detected	Check wiring
3612	3	6	REAR AXLE VALVE - CURRENT FEEDBACK READING LOST	Current feedback into controller not detected	Check wiring and coil
3613	3	6	REAR AXLE EXTEND VALVE - OPEN CIRCUIT	Open Circuit detected	Check wiring
3514	3	6	FRONT AXLE VALVE - CURRENT FEEDBACK READING TOO LOW	Current feedback into controller is below threshold value	Check wiring and coil
3615	3	6	REAR AXLE RETRACT VALVE - OPEN CIRCUIT	Open Circuit detected	Check wiring
3616	3	6	REAR AXLE VALVE - CURRENT FEEDBACK READING TOO LOW	Current feedback into controller is below threshold value	Check wiring and coil
3617	3	6	CHASSIS BRAKE - OPEN CIRCUIT	Open Circuit detected	Check wiring
3618	3	6	CHASSIS BRAKE - SHORT TO BATTERY	Short to Battery detected	Check wiring
3619	3	6	CHASSIS BRAKE - SHORT TO GROUND	Short to Ground detected	Check wiring
3620	3	6	FRONT AXLE VALVE - SHORT TO BATTERY	Short to Battery detected	Check wiring
3621	3	6	REAR AXLE VAVE - SHORT TO BATTERY	Short to Battery detected	Check wiring
430	**4**	**3**	**<<< ENGINE >>>**		

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
431	4	3	FUEL SENSOR SHORT TO BATTERY	The Fuel Sensor reading is > 4.3V.	
432	4	3	FUEL SENSOR SHORT TO GROUND	The Fuel Sensor reading is < 0.2V.	
433	4	3	OIL PRESSURE SHORT TO BATTERY	The Oil Pressure Sensor reading is > 6.6V.	- Deutz engine only.
434	4	3	OIL PRESSURE SHORT TO GROUND	The Oil Pressure Sensor reading is < 0.1V for more then 5 seconds.	- Deutz engine only. - Not reported during engine start.
435	4	3	COOLANT TEMPERATURE SHORT TO GROUND	The Coolant Temperature Sensor reading is < 0.1V.	- Deutz engine only.
437	4	3	ENGINE TROUBLE CODE	Displays engine SPN FMI code.	
438	4	3	HIGH ENGINE TEMP	(Ford engine only) The engine temperature is > 117 C. (Deutz engine only) The engine temperature is > 130 C.	- Ford / Deutz engine only.
439	4	3	AIR FILTER BYPASSED	The Air Filter is clogged.	
4310	4	3	NO ALTERNATOR OUTPUT	Battery voltage is < 11.5 volts for more then 15 seconds after engine start.	
4311	4	3	LOW OIL PRESSURE	(Ford engine only) The ECM has reported a low oil pressure fault. (Deutz engine only) Oil pressure is < 8 PSI for more then 10 seconds after engine start.	- Ford / Deutz engine only.
4313	4	3	THROTTLE ACTUATOR FAILURE	The engine RPM is > XXX for more then XX seconds.	
4314	4	3	WRONG ENGINE SELECTED - ECM DETECTED	A ECM was detected with a non- ECM type engine selected.	
4322	4	3	LOSS OF ENGINE SPEED SENSOR	The engine RPM sensor indicates 0 RPM AND the Oil Pressure Sensor indicates > 8 PSI for three seconds.	- Diesel engine only.
4323	4	3	SPEED SENSOR READING INVALID SPEED	The engine RPM sensor indicates > 4000 RPM.	- Diesel engine only.
4364	4	3	SCR CLEANING NOT INITIATED	SCR Cleaning was requested bu not initiated.	
4365	4	3	RUNNING AT CREEP - ENGINE POWER REDUCTION	Triggered by 524190:14 (engine controlled)	
4366	4	3	SCR CLEANING REQUIRED - SOOT DETECTED	SCR Crystallization has been detected (engine controlled)	
4368	4	3	ALL FUNCTIONS PREVENTED - ENGINE POWER REDUCTION SEVERE	Triggered by 524191:14 (engine controlled)You	

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
4375	4	3	WATER IN FUEL	The engine has shut down because an unacceptable amount of water has been detected in the fuel or there is an issue with the water in fuel sensor. If operating in platform mode, platform alarm will sound continuously and low fuel indicator will flash. If operating in ground mode, the ground alarm will sound	Water in fuel filter for water or in fuel or water in fuel sensor.
4376	4	3	FUNCTIONS PREVENTED - ENGINE OIL WARM-UP ACTIVE	The engine oil is not warm enough to run the machine. Fault cleared once engine oil temperature has reached temperature.	Let machine run until fault is cleared
440	**4**	**4**	**<<< BATTERY SUPPLY >>>**		
441	4	4	BATTERY VOLTAGE TOO LOW - SYSTEM SHUTDOWN	Battery voltage is < 9V.	
442	4	4	BATTERY VOLTAGE TOO HIGH - SYSTEM SHUTDOWN	Battery voltage is > 16V.	
443	4	4	LSS BATTERY VOLTAGE TOO HIGH	The load sensor has determined that its supply voltage is too high (> 16V). The machine will assume the platform is overloaded.	Check for issue with sensor supply voltage.
444	4	4	LSS BATTERY VOLTAGE TOO LOW	The load sensor has determined that its supply voltage is too low (> 8V). The machine will assume the platform is overloaded.	Check for issue with sensor supply voltage.
445	4	4	BATTERY VOLTAGE LOW	Battery voltage is < 11V for more then 5 seconds.	
4479	4	4	LSS BATTERY VOLTAGE - INITIALIZATION ERROR	The shear beam is reporting a Sensor Supply Voltage Initialization Error The machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
4480	4	4	LSS BATTERY VOLTAGE - NOT CALIBRATED	The shear beam is reporting a Sensor Supply Voltage calibration error. The machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
660	**6**	**6**	**<<< COMMUNICATION >>>**		
662	6	6	CANBUS FAILURE - PLATFORM MODULE	Platform Module CAN communication lost.	

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
663	6	6	CANBUS FAILURE - LOAD SENSING SYSTEM MODULE	The control system has lost communication with the load sensing system load pin. The machine will assume the platform is overloaded.	Check wiring to load sensor.
666	6	6	CANBUS FAILURE - ENGINE CONTROLLER	Engine Control Module CAN communication lost.	- ECM equipped engine only.
6610	6	6	CANBUS FAILURE - BLAM	BLAM CAN communication lost.	- BLAM equipped vehicles only.
6611	6	6	CANBUS FAILURE - CHASSIS MODULE	Engine Control Module CAN communication lost.	- ECM equipped engine only.
6612	6	6	CANBUS FAILURE - CYLINDER LOAD PIN	Cylinder Load Pin CAN communication lost.	- Cylinder Load Pin equipped engine only.
6613	6	6	CANBUS FAILURE - EXCESSIVE CANBUS ERRORS	There has been > 500 Bus Off errors or >500 Bus Passive Errors.	
6622	6	6	CANBUS FAILURE - TCU MODULE	Machine Setup/Telematics=YES, No device heartbeat for 30 sec	
6623	6	6	CANBUS FAILURE - GATEWAY MODULE	Machine Setup/Telematics=YES, No device heartbeat for 30 sec	
6629	6	6	CANBUS FAILURE - TELEMATICS CANBUS LOADING TOO HIGH	X	-Telematics only
6639	6	6	CANBUS FAILURE - JIB CONTROL MODULE		
6640	6	6	CANBUS FAILURE - JIB LIFT ANGLE SENSOR		
6641	6	6	CANBUS FAILURE - PLATFORM LEVEL ANGLE SENSOR		
6654	6	6	CANBUS FAILURE - GROUND DISPLAY	CANbus communications has been lost between the UGM and the Ground Display (only applicable to 1850SJ with a T4f engine). Fault cleared once communications has been restored.	Verify CANbus wiring per electrical schematic, verify CANbus resistance.
6667	6	6	CANBUS FAILURE - PLATFORM DISPLAY	CANbus communications has been lost between the UGM and the Platform Display (only applicable to 1850SJ with a T4f engine). Fault cleared once communications has been restored.	Verify CANbus wiring per electrical schematic, verify CANbus resistance.
6682	6	6	CANBUS FAILURE - GROUND LIGHT PANEL	CANbus communications has been lost between the UGM and the Ground Light Panel. Fault cleared once communications has been restored.	Verify CANbus wiring per electrical schematic, verify CANbus resistance.
6683	6	6	CANBUS FAILURE - PLATFORM LIGHT PANEL	CANbus communications has been lost between the UGM and the Ground Light Panel Fault cleared once communications has been restored.	Verify CANbus wiring per electrical schematic, verify CANbus resistance.
680	**6**	**8**	**<<< TELEMATICS >>>**		
681	6	8	REMOTE CONTRACT MANAGEMENT OVER-RIDE - ALL FUNCTIONS IN CREEP	X	-Telematics only

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
810	**8**	**1**	**<<< TILT SENSOR >>>**		
813	8	1	CHASSIS TILT SENSOR NOT CALIBRATED	The Chassis Tilt Sensor has not been calibrated.	
814	8	1	CHASSIS TILT SENSOR OUT OF RANGE	Tilt sensor out of range	Check sensor hardware and wiring
815	8	1	CHASSIS TILT SENSOR DISAGREEMENT	X	
8111	8	1	CHASSIS TILT READING DISAGREEMENT	Disagreement between internal (UGM) and external chassis tilt sensors	Check external/internal sensor hardware and installation on machine
820	**8**	**2**	**<<< PLATFORM LOAD SENSE >>>**		
821	8	2	LSS CELL #1 ERROR		
8211	8	2	LSS READING UNDER WEIGHT	LSS has been calibrated and the UGM has determined that the load sensing system reading is underweight while a period of time while operating drive or boom lift up at speeds greater than creep OR the UGM has determined that the load sensing system reading is less than -1.5 x Gross Platform Weight. The machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Ensure platform is not resting on the ground or is not leveled at an extreme negative angle. Re-calibrate the load sensing system if the above items are not a factor.
8218	8	2	LSS SENSOR DISAGREEMENT	The control system has determined that the difference between the calculated load for sensor 1 and sensor 2 differ by more than 50lbs OR the internal strain gauge sensor 1 gross platform weight reading and the internal strain gauge sensor 2 gross platform weight reading differ by more than 200lbs. If the platform is not considered to be overloaded boom functions will be restricted to creep. This fault, once annunciated is latched within a given key cycle.	Attempt to re-calibrate the load sensing system. Possible sensor hardware issue.
822	8	2	LSS CELL #2 ERROR822822		

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
8222	8	2	LSS STRAIN GAUGE 1 - STAGNANT	The control system has determined that the strain gauge 1 reading in the load sensor is stagnant (not changing). If the platform is not considered to be over-loaded boom functions will be restricted to creep.. If DTC 8223 is active in combination with DTC 8222 the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8223	8	2	LSS STRAIN GAUGE 2 - STAGNANT	The control system has determined that the strain gauge 2 reading in the load sensor is stagnant (not changing). If the platform is not considered to be over-loaded boom functions will be restricted to creep. If DTC 8222 is active in combination with DTC 8223 the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8224	8	2	LSS STRAIN GAUGE 1 - OUT OF RANGE LOW	The shear beam is reporting an out of range low issue with the strain gauge 1 reading. If the platform is not overloaded the machine will be placed in to creep. If DTC 8225 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8225	8	2	LSS STRAIN GAUGE 2 - OUT OF RANGE LOW	The shear beam is reporting an out of range low issue with the strain gauge 2 reading. If the platform is not overloaded the machine will be placed in to creep. If DTC 8224 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
8226	8	2	LSS STRAIN GAUGE 1 - OUT OF RANGE HIGH	The shear beam is reporting an out of range high issue with the strain gauge 1 reading. If the platform is not overloaded the machine will be placed in to creep. If DTC 8227 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8227	8	2	LSS STRAIN GAUGE 2 - OUT OF RANGE HIGH	The shear beam is reporting an out of range high issue with the strain gauge 2 reading. If the platform is not overloaded the machine will be placed in to creep. If DTC 8226 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8228	8	2	LSS STRAIN GAUGE 1 - INITIALIZATION ERROR	The shear beam is reporting an initialization issue with the strain gauge 1 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8229 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8229	8	2	LSS STRAIN GAUGE 2 - INITIALIZATION ERROR	The shear beam is reporting an initialization issue with the strain gauge 2 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8228 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
8230	8	2	LSS STRAIN GAUGE 1 - NOT CALIBRATED	The shear beam is reporting a calibration issue with the strain gauge 1 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8231 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
823	8	2	LSS CELL #3 ERROR823823		
8231	8	2	LSS STRAIN GAUGE 2 - NOT CALIBRATED	The shear beam is reporting a calibration issue with the strain gauge 2 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8230 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8232	8	2	LSS STRAIN GAUGE 1 - SENSOR DEFECT	The shear beam is reporting a sensor defect issue with the strain gauge 1 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8233 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8233	8	2	LSS STRAIN GAUGE 2 - SENSOR DEFECT	The shear beam is reporting a sensor defect issue with the strain gauge 2 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8232 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
8234	8	2	LSS STRAIN GAUGE 1 - NOT INSTALLED	The shear beam is reporting a not installed issue with the strain gauge 1 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8235 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8235	8	2	LSS STRAIN GAUGE 2 - NOT INSTALLED	The shear beam is reporting a not installed issue with the strain gauge 2 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8234 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8236	8	2	LSS NOT DETECTING CHANGE	The control system has determined that the load sensor reading has not deviated by more than 1lb for 5s while operating drive or boom functions at greater than creep speed. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8237	8	2	LSS STRAIN GAUGE 1 - A/D DEFECT	The shear beam is reporting an internal issue with the strain gauge 1 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8238 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
8238	8	2	LSS STRAIN GAUGE 2 - A/D DEFECT	The shear beam is reporting an internal issue with the strain gauge 2 sensor. If the platform is not overloaded the machine will be placed in to creep. If DTC 8237 is also active the machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
824	8	2	LSS CELL #4 ERROR824824		
825	8	2	LSS HAS NOT BEEN CALIBRATED	The load sensing system is configured but has not been calibrated. The machine will assume the platform is overloaded.	Calibrate the load sensing system.
826	8	2	RUNNING AT CREEP - PLATFORM OVERLOADED	All functions at creep, the Load Sensing System indicates the Platform is overloaded AND is configured to warn only while the Platform is overloaded.	
827	8	2	DRIVE & BOOM PREVENTED - PLATFORM OVERLOADED	Driving and boom functions are not possible while the Load Sensing System indicates the Platform is overloaded AND is configured to prevent drive and boom functions while the Plat- form is overloaded.	
828	8	2	LIFT UP & TELE OUT PREVENTED - PLATFORM OVERLOADED	Lift up and telescope out are not possible while the Load Sensing System indicates the Platform is overloaded AND is configured to prevent Lift up and telescope out while the Platform is overloaded.	
830	**8**	**3**	**<<< PLATFORM LEVELING >>>**		
831	8	3	PLATFORM LEVELING OVERRIDE ON	Platform Leveling forced on with Access Level 0 selection.	
832	8	3	PLATFORM LEVELING OVERRIDE OFF	Platform Leveling forced off with Access Level 0 selection.	
833	8	3	PLATFORM LEVEL UP CRACKPOINT - NOT CALIBRATED	The Platform Level Up Valve Crackpoint has not been calibrated.	- Electronic leveling system equipped vehicles only.
834	8	3	PLATFORM LEVEL DOWN CRACKPOINT - NOT CALIBRATED	The Platform Level Down Valve Crackpoint has not been calibrated.	- Electronic leveling system equipped vehicles only.
837	8	3	PLATFORM LEVEL SENSOR #1 - SHORT TO BATTERY	There is a Short to Battery to the Platform Level Sensor #1.	- Electronic leveling system equipped vehicles only.
838	8	3	PLATFORM LEVEL SENSOR #1 - SHORT TO GROUND OR OPEN CIRCUIT	There is a Short to Ground or an Open Circuit to the Platform Level Sensor #1.	- Electronic leveling system equipped vehicles only.
8311	8	3	PLATFORM LEVEL SENSOR #2 - SHORT TO BATTERY	There is a Short to Battery to the Platform Level Sensor #2.	- Electronic leveling system equipped vehicles only.
8312	8	3	PLATFORM LEVEL SENSOR #2 - SHORT TO GROUND OR OPEN CIRCUIT	There is a Short to Ground or an Open Circuit to the Platform Level Sensor #2.	- Electronic leveling system equipped vehicles only.
8313	8	3	PLATFORM LEVEL SENSOR #1 - REFERENCE VOLTAGE OUT OF RANGE	Platform Level Sensor #1 reference voltage is outside acceptable range (4.9 to 5.1 volts).	- Electronic leveling system equipped vehicles only.
8314	8	3	PLATFORM LEVEL SENSOR #2 - REFERENCE VOLTAGE OUT OF RANGE	Platform Level Sensor #2 reference voltage is outside acceptable range (4.9 to 5.1 volts).	- Electronic leveling system equipped vehicles only.
8315	8	3	PLATFORM LEVELING SENSOR - DISAGREEMENT	The Control System reads the sensor values at power-up. The fault is triggered when there is a ± 5 degree difference from the initial reading.	- Electronic leveling system equipped vehicles only.
8316	8	3	PLATFORM LEVEL SENSOR #1 - COMMUNICATIONS LOST	Platform Level Sensor #1 serial communication lost.	

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
8317	8	3	PLATFORM LEVEL SENSOR #2 - COMMUNICATIONS LOST	Platform Level Sensor #2 serial communication lost.	
8318	8	3	PLATFORM LEVELING SYSTEM TIMEOUT	The Platform was unable to maintain desired level within range for the allotted time.	
8319	8	3	JIB LEVEL SENSOR #1 - OUT OF RANGE LOW		
8320	8	3	JIB LEVEL SENSOR #1 - OUT OF RANGE HIGH		
8321	8	3	JIB LEVEL SENSOR #2 - OUT OF RANGE LOW		
8322	8	3	JIB LEVEL SENSOR #2 - OUT OF RANGE HIGH		
8323	8	3	JIB LEVEL SENSORS - NOT CALIBRATED		
8324	8	3	JIB LEVEL SENSORS - DISAGREEMENT		
8325	8	3	JIB SWING SENSOR #1 - OUT OF RANGE LOW		
8326	8	3	JIB SWING SENSOR #1 - OUT OF RANGE HIGH		
8327	8	3	JIB SWING SENSOR #2 - OUT OF RANGE LOW		
8328	8	3	JIB SWING SENSOR #2 - OUT OF RANGE HIGH		
8329	8	3	JIB SWING SENSORS - NOT CALIBRATED		
8330	8	3	JIB SWING SENSORS - DISAGREEMENT		
8331	8	3	JIB LOCK PIN SENSOR - DISAGREEMENT		
8332	8	3	JIB TRANSPORT SENSOR #1 - DISAGREEMENT		
8333	8	3	JIB TRANSPORT SENSOR #2 - DISAGREEMENT		
8334	8	3	JIB LIFT ANGLE SENSOR - NOT CALIBRATED		
8335	8	3	JIB LEVEL UP CRACKPOINT - NOT CALIBRATED		
8336	8	3	JIB LEVEL DOWN CRACKPOINT - NOT CALIBRATED		
8337	8	3	JIB LEVELING SYSTEM TIMEOUT		
8338	8	3	WRONG JIB LOCK PIN RESPONSE		
8339	8	3	PLATFORM LEVEL ANGLE SENSOR - NOT CALIBRATED		
840	**8**	**4**	**<<< ENVELOPE >>>**		
841	8	4	BOOM ANGLE SENSOR DISAGREEMENT	There is a disagreement between the Boom Angle Sensors.	- Envelope Control equipped vehicles only.
842	8	4	BOOM LENGTH SWITCH FAILED	The Boom Length Switches are reporting the same state.	- Envelope Control equipped vehicles only.
843	8	4	BOOM LENGTH SWITCH/SENSOR DISAGREEMENT	There is a disagreement between the Boom Length Switch and the Boom Length Sensor.	- Envelope Control equipped vehicles only.
844	8	4	BOOM LENGTH SENSOR NOT DETECTING LENGTH CHANGE	The Boom Length Sensor is not changing during a boom telescope command.	- Envelope Control equipped vehicles only.
845	8	4	BOOM LENGTH SENSOR - OUT OF RANGE HIGH	Boom Length Sensor out of range high.	- Envelope Control equipped vehicles only.
846	8	4	BOOM LENGTH SENSOR - OUT OF RANGE LOW	Boom Length Sensor out of range low.	- Envelope Control equipped vehicles only.

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
847	8	4	BOOM LENGTH SENSOR - VALUE OUT OF RANGE HIGH	Boom Length out of range high.	- Envelope Control equipped vehicles only.
848	8	4	BOOM LENGTH SENSOR - VALUE OUT OF RANGE LOW	Boom Length out of range low.	- Envelope Control equipped vehicles only.
849	8	4	BOOM ANGLE SENSOR #1 - COMMUNICATIONS FAULT	Boom Angle Sensor #1 communications lost.	- Envelope Control equipped vehicles only.
8410	8	4	BOOM ANGLE SENSOR #2 - COMMUNICATIONS FAULT	Boom Angle Sensor #2 communications lost.	- Envelope Control equipped vehicles only.
8411	8	4	BOOM ANGLE SENSOR #1 - INVALID ANGLE	Boom Angle Sensor #1 out of range.	- Envelope Control equipped vehicles only.
8412	8	4	BOOM ANGLE SENSOR #2 - INVALID ANGLE	Boom Angle Sensor #2 out of range.	- Envelope Control equipped vehicles only.
8413	8	4	WRONG TELESCOPE RESPONSE	Boom telescope is moving in the opposite direction of the command.	- Envelope Control equipped vehicles only.
8414	8	4	WRONG LIFT RESPONSE	Boom lift is moving in the opposite direction of the command.	- Envelope Control equipped vehicles only.
8479	8	4	MAIN CYLINDER ANGLE SENSOR #1 - OUT OF RANGE LOW		
8480	8	4	MAIN CYLINDER ANGLE SENSOR #1 - OUT OF RANGE HIGH		
8492	8	4	MAIN CYLINDER ANGLE SENSOR #2 - OUT OF RANGE LOW		
8493	8	4	MAIN CYLINDER ANGLE SENSOR #2 - OUT OF RANGE HIGH		
8494	8	4	MAIN CYLINDER ANGLE SENSORS - DISAGREEMENT		
8495	8	4	TURNTABLE SENSOR #1 - FREQUENCY OUT OF RANGE LOW		
8496	8	4	TURNTABLE SENSOR #1 - FREQUENCY OUT OF RANGE HIGH		
8497	8	4	TURNTABLE SENSOR #2 - FREQUENCY OUT OF RANGE LOW		
8498	8	4	TURNTABLE SENSOR #2 - FREQUENCY OUT OF RANGE HIGH		
8499	8	4	CHASSIS TURNTABLE SENSORS - DISAGREEMENT		
84100	8	4	CHASSIS TURNTABLE SENSORS AND DRIVE ORIENTATION SWITCH - DIS- AGREEMENT		
84101	8	4	CHASSIS TURNTABLE SENSORS - NOT CALIBRATED		
84102	8	4	MAIN CYLINDER ANGLE SENSOR - NOT DETECTING CHANGE		
84103	8	4	JIB LEVEL ANGLE SENSOR - NOT DETECTING CHANGE		
84104	8	4	JIB LIFT ANGLE SENSOR - NOT DETECTING CHANGE		
84105	8	4	PLATFORM LEVEL ANGLE SENSOR - NOT DETECTING CHANGE		
84106	8	4	JIB LEVEL MOVEMENT WITHOUT COMMAND		

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
84107	8	4	JIB LIFT MOVEMENT WITHOUT COMMAND		
84108	8	4	PLATFORM LEVEL MOVEMENT WITHOUT COMMAND		
84151	8	4	TOWER LENGTH SENSOR 1 FAULTY	There are three ways (a, b, c) that these faults can be set: (a) If the length sensor voltage changes more than 0.0168 volts within 40 milliseconds a counter for the respective length sensor shall be incremented to aid service in diagnosing bad sensor performance. The counter below shall be incremented anytime the description above is met. It is cleared/reset by a power cycle TwrLenSnsr(1/2)FaultCounter_PowerCycle > 30 (b) The counter below shall be incremented every time TwrLenSnsr(1/2)FaultCounter_PowerCycle (described above) reached its threshold. This value is stored in EEPROM in order to track the history of the issue. (A successful Boom Sensor Calibration will reset this counter – this is reflected in the boom sensor calibration document) TwrLenSnsr(1/2)FaultCounter_EEPROM > 3 (c) The fault counter below shall be incremented every time the trigger condition described in section (a) is observed during certain steps during Boom Sensor Calibration (please see that document section for further details) TwrLenSnsr(1/2)FaultCounter_BmSnsrCal > 20 If (a) or (b) or (c) are met (fault triggered) the machine will be put into Electrical Retrieval Fault, once triggered, is maintained within a given key-cycle Machine will be trapped in transport	Check Hardware, Wiring

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
84152	8	4	TOWER LENGTH SENSOR 2 FAULTY	There are three ways (a, b, c) that these faults can be set: (a) If the length sensor voltage changes more than 0.0168 volts within 40 milliseconds a counter for the respective length sensor shall be incremented to aid service in diagnosing bad sensor performance. The counter below shall be incremented anytime the description above is met. It is cleared/reset by a power cycle TwrLenSnsr(1/2)FaultCounter_PowerCycle > 30 (b) The counter below shall be incremented every time TwrLenSnsr(1/2)FaultCounter_PowerCycle (described above) reached its threshold. This value is stored in EEPROM in order to track the history of the issue. (A successful Boom Sensor Calibration will reset this counter – this is reflected in the boom sensor calibration document) TwrLenSnsr(1/2)FaultCounter_EEPROM > 3 (c) The fault counter below shall be incremented every time the trigger condition described in section (a) is observed during certain steps during Boom Sensor Calibration (please see that document section for further details) TwrLenSnsr(1/2)FaultCounter_BmSnsrCal > 20 If (a) or (b) or (c) are met (fault triggered) the machine will be put into Electrical Retrieval Fault, once triggered, is maintained within a given key-cycle Machine will be trapped in transport	Check Hardware, Wiring

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
84153	8	4	BOOM LENGTH SENSOR 1 FAULTY	There are three ways (a, b, c) that these faults can be set: (a) If the length sensor voltage changes more than 0.0168 volts within 40 milliseconds a counter for the respective length sensor shall be incremented to aid service in diagnosing bad sensor performance. The counter below shall be incremented anytime the description above is met. It is cleared/reset by a power cycle BmLenSnsr(1/2)FaultCounter_PowerCycle > 30 (b) The counter below shall be incremented every time BmLenSnsr(1/2)FaultCounter_PowerCycle (described above) reached its threshold. This value is stored in EEPROM in order to track the history of the issue. (A successful Boom Sensor Calibration will reset this counter – this is reflected in the boom sensor calibration document) BmLenSnsr(1/2)FaultCounter_EEPROM > 3 (c) The fault counter below shall be incremented every time the trigger condition described in section (a) is observed during certain steps during Boom Sensor Calibration (please see that document section for further details) BmLenSnsr(1/2)FaultCounter_BmSnsrCal > 20 If (a) or (b) or (c) are met (fault triggered) the machine will be put into Electrical Retrieval Fault, once triggered, is maintained within a given key-cycle Machine will be trapped in transport	Check wiring and hardware

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
84154	8	4	BOOM LENGTH SENSOR 2 FAULTY	There are three ways (a, b, c) that these faults can be set: (a) If the length sensor voltage changes more than 0.0168 volts within 40 milliseconds a counter for the respective length sensor shall be incremented to aid service in diagnosing bad sensor performance. The counter below shall be incremented anytime the description above is met. It is cleared/reset by a power cycle BmLenSnsr(1/2)FaultCounter_PowerCycle > 30 (b) The counter below shall be incremented every time BmLenSnsr(1/2)FaultCounter_PowerCycle (described above) reached its threshold. This value is stored in EEPROM in order to track the history of the issue. (A successful Boom Sensor Calibration will reset this counter – this is reflected in the boom sensor calibration document) BmLenSnsr(1/2)FaultCounter_EEPROM > 3 (c) The fault counter below shall be incremented every time the trigger condition described in section (a) is observed during certain steps during Boom Sensor Calibration (please see that document section for further details) BmLenSnsr(1/2)FaultCounter_BmSnsrCal > 20 If (a) or (b) or (c) are met (fault triggered) the machine will be put into Electrical Retrieval Fault, once triggered, is maintained within a given key-cycle Machine will be trapped in transport	Check wiring and hardware
850	**8**	**5**	**<<< MOMENT / LOAD PINS >>>**		
851	8	5	MOMENT PIN - HORIZONTAL FORCE OUT OF RANGE	The Moment Pin horizontal force is out of range.	
852	8	5	MOMENT PIN - VERTICAL FORCE OUT OF RANGE	The Moment Pin vertical force is out of range.	
855	8	5	MOMENT PIN - SENSOR FAULT	The Moment Pin has reported a fault.	
857	8	5	NEW MOMENT PIN DETECTED	A new Moment Pin has been detected.	

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
860	**8**	**6**	**<<< STEERING / AXLE >>>**		
861	8	6	RESTRICTED TO TRANSPORT - OSCILLATING AXLE PRESSURE SWITCH DIS- AGREEMENT	The Oscillating Axle Pressure Switch indicates pressure while not driving or does not indicate pressure while driving and restricted to transport.	- Electrically released Oscillated Axles equipped vehicles only.
862	8	6	AXLE EXTEND VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Axle Extend Valve.	
863	8	6	AXLE EXTEND VALVE - SHORT TO GROUND	There is a Short to Ground to the Axle Extend Valve.	
864	8	6	AXLE RETRACT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Axle Retract Valve.	
865	8	6	AXLE RETRACT VALVE - SHORT TO GROUND	There is a Short to Ground to the Axle Retract Valve.	
866	8	6	RIGHT FRONT STEER RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Right Front Steer Right Valve.	
867	8	6	RIGHT FRONT STEER RIGHT VALVE - SHORT TO GROUND	There is a Short to Ground to the Right Front Steer Right Valve.	
868	8	6	RIGHT FRONT STEER LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Right Front Steer Left Valve.	
869	8	6	RIGHT FRONT STEER LEFT VALVE - SHORT TO GROUND	There is a Short to Ground to the Right Front Steer Left Valve.	
8610	8	6	LEFT FRONT STEER RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Left Front Steer Right Valve.	
8611	8	6	LEFT FRONT STEER RIGHT VALVE - SHORT TO GROUND	There is a Short to Ground to the Left Front Steer Right Valve.	
8612	8	6	LEFT FRONT STEER LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Left Front Steer Left Valve.	
8613	8	6	LEFT FRONT STEER LEFT VALVE - SHORT TO GROUND	There is a Short to Ground to the Left Front Steer Left Valve.	
8614	8	6	RIGHT REAR STEER RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Right Rear Steer Right Valve.	
8615	8	6	RIGHT REAR STEER RIGHT VALVE - SHORT TO GROUND	There is a Short to Ground to the Right Rear Steer Right Valve.	
8616	8	6	RIGHT REAR STEER LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Right Rear Steer Left Valve.	
8617	8	6	RIGHT REAR STEER LEFT VALVE - SHORT TO GROUND	There is a Short to Ground to the Right Rear Steer Left Valve.	
8618	8	6	LEFT REAR STEER RIGHT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Left Rear Steer Right Valve.	
8619	8	6	LEFT REAR STEER RIGHT VALVE - SHORT TO GROUND	There is a Short to Ground to the Left Rear Steer Right Valve.	
8620	8	6	LEFT REAR STEER LEFT VALVE - SHORT TO BATTERY OR OPEN CIRCUIT	There is a Short to Battery or an Open Circuit to the Left Rear Steer Left Valve.	
8621	8	6	LEFT REAR STEER LEFT VALVE - SHORT TO GROUND	There is a Short to Ground to the Left Rear Steer Left Valve.	
8622	8	6	FRONT RIGHT STEER SENSOR - DECOUPLED	The Front Right Steer Sensor has become decoupled.	

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
8623	8	6	FRONT LEFT STEER SENSOR - DECOUPLED	The Front Left Steer Sensor has become decoupled.	
8624	8	6	REAR RIGHT STEER SENSOR - DECOUPLED	The Rear Right Steer Sensor has become decoupled.	
8625	8	6	REAR LEFT STEER SENSOR - DECOUPLED	The Rear Left Steer Sensor has become decoupled.	
8626	8	6	FRONT LEFT STEER SENSOR - NOT RESPONDING	The Front Right Steer Sensor is not responding to steer commands.	
8627	8	6	FRONT RIGHT STEER SENSOR - NOT RESPONDING	The Front Left Steer Sensor is not responding to steer commands.	
8628	8	6	REAR LEFT STEER SENSOR - NOT RESPONDING	The Rear Right Steer Sensor is not responding to steer commands.	
8629	8	6	REAR RIGHT STEER SENSOR - NOT RESPONDING	The Rear Left Steer Sensor is not responding to steer commands.	
8630	8	6	FRONT RIGHT STEER SENSOR - SHORT TO GROUND OR OPEN CIRCUIT	There is a Short to Ground or an Open Circuit to the Front Right Steer Sensor.	
8631	8	6	FRONT RIGHT STEER SENSOR - SHORT TO BATTERY	There is a Short to Battery to the Front Right Steer Sensor.	
8632	8	6	FRONT LEFT STEER SENSOR - SHORT TO GROUND OR OPEN CIRCUIT	There is a Short to Ground or an Open Circuit to the Front Left Steer Sensor.	
8633	8	6	FRONT LEFT STEER SENSOR - SHORT TO BATTERY	There is a Short to Battery to the Front Left Steer Sensor.	
8634	8	6	REAR RIGHT STEER SENSOR - SHORT TO GROUND OR OPEN CIRCUIT	There is a Short to Ground or an Open Circuit to the Rear Right Steer Sensor.	
8635	8	6	REAR RIGHT STEER SENSOR - SHORT TO BATTERY	There is a Short to Battery to the Rear Right Steer Sensor.	
8636	8	6	REAR LEFT STEER SENSOR - SHORT TO GROUND OR OPEN CIRCUIT	There is a Short to Ground or an Open Circuit to the Rear Left Steer Sensor.	
8637	8	6	REAR LEFT STEER SENSOR - SHORT TO BATTERY	There is a Short to Battery to the Rear Left Steer Sensor.	
8651	8	6	ENGINE SHUTDOWN - AXLE LOCKOUT VALVE FAULT	Engine Start is prevented while there is an Oscillating Axle fault and vehicle is out of transport position	

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
8670	8	6	RIGHT FRONT STEER RIGHT VALVE - OPEN CIRCUIT	Open Circuit detected	Check wiring
8671	8	6	RIGHT FRONT STEER RIGHT VALVE - SHORT TO BATTERY	Short to Battery detected	
8672	8	6	RIGHT FRONT STEER LEFT VALVE - OPEN CIRCUIT	Open Circuit detected	
8673	8	6	RIGHT FRONT STEER LEFT VALVE - SHORT TO BATTERY	Short to Battery detected	
8674	8	6	LEFT FRONT STEER RIGHT VALVE - OPEN CIRCUIT	Open Circuit detected	
8675	8	6	LEFT FRONT STEER RIGHT VALVE - SHORT TO BATTERY	Short to Battery detected	
8676	8	6	LEFT FRONT STEER LEFT VALVE - OPEN CIRCUIT	Open Circuit detected	
8677	8	6	LEFT FRONT STEER LEFT VALVE - SHORT TO BATTERY	Short to Battery detected	
8678	8	6	RIGHT REAR STEER RIGHT VALVE - OPEN CIRCUIT	Open Circuit detected	
8679	8	6	RIGHT REAR STEER RIGHT VALVE - SHORT TO BATTERY	Short to Battery detected	
8680	8	6	RIGHT REAR STEER LEFT VALVE - OPEN CIRCUIT	Open Circuit detected	
8681	8	6	RIGHT REAR STEER LEFT VALVE - SHORT TO BATTERY	Short to Battery detected	
8682	8	6	LEFT REAR STEER RIGHT VALVE - OPEN CIRCUIT	Open Circuit detected	
8683	8	6	LEFT REAR STEER RIGHT VALVE - SHORT TO BATTERY	Short to Battery detected	
8684	8	6	LEFT REAR STEER LEFT VALVE - OPEN CIRCUIT	Open Circuit detected	
8685	8	6	LEFT REAR STEER LEFT VALVE - SHORT TO BATTERY	Short to Battery detected	
8686	8	6	FRONT LEFT AXLE - MOVEMENT WITHOUT COMMAND	Axle is set to extend position, no axle retract or extend is demanded by the operator and one or more of the axle sensors detects motion	Check sensor hardware and hydraulics
8687	8	6	FRONT RIGHT AXLE - MOVEMENT WITHOUT COMMAND		
8688	8	6	REAR RIGHT AXLE - MOVEMENT WITHOUT COMMAND		
8689	8	6	REAR LEFT AXLE - MOVEMENT WITHOUT COMMAND		
876	87	6	WIRE ROPE SERVICE REQUIRED	The Wire Rope Service Proximity sensor detects slack in wire ropes. Fault cleared when proximity switch detects no more slack in wire ropes.	Check wire ropes per torque spec. Check sensor wiring.
990	**9**	**9**	**<<< HARDWARE >>>**		
991	9	9	LSS WATCHDOG RESET		
992	9	9	LSS EEPROM ERROR		

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
993	9	9	LSS INTERNAL ERROR - PIN EXCITATION		
994	9	9	LSS INTERNAL ERROR - DRDY MISSING FROM A/D		
998	9	9	EEPROM FAILURE - CHECK ALL SETTINGS	The Ground Module has reported an EEPROM failure.	
9910	9	9	FUNCTIONS LOCKED OUT - PLATFORM MODULE SOFTWARE VERSION IMPROPER	The Platform Module software version is not compatible with the rest of the system.	
9911	9	9	FUNCTIONS LOCKED OUT - LSS MODULE SOFTWARE VERSION IMPROPER		
9914	9	9	PLATFORM MODULE SOFTWARE UPDATE REQUIRED	The Platform Module software requires an updated.	
9915	9	9	CHASSIS TILT SENSOR NOT GAIN CALIBRATED	The Chassis Tilt Sensor gain calibration has been lost.	
9916	9	9	CHASSIS TILT SENSOR GAIN OUT OF RANGE	The Chassis Tilt Sensor gain calibration has become corrupted.	
9917	9	9	HIGH RESOLUTION A2D FAILURE - INTERRUPT LOST	The Platform Module has reported that its ADS1213 chip has stopped asserting its interrupt.	
9918	9	9	HIGH RESOLUTION A2D FAILURE - REINIT LIMIT	The Platform Module has reported that its ADS1213 chip had to be reset 3 or more times.	
9919	9	9	GROUND SENSOR REF VOLTAGE OUT OF RANGE	The Ground Module has reported that its sensor reference voltage is outside acceptable range.	- Not reported during power-up.
9920	9	9	PLATFORM SENSOR REF VOLTAGE OUT OF RANGE	The Platform Module has reported that its sensor reference voltage is outside acceptable range.	- Not reported during power-up.
9921	9	9	GROUND MODULE FAILURE - HIGH SIDE DRIVER CUTOUT FAULTY	The Ground Module has reported that its high side driver cutout failed.	
9922	9	9	PLATFORM MODULE FAILURE - HWFS CODE 1	The Platform Module has reported that the V(Low) FET has failed.	
9923	9	9	GROUND MODULE FAILURE - HWFS CODE 1	The Ground Module has reported that the V(Low) FET has failed.	
9924	9	9	FUNCTIONS LOCKED OUT - MACHINE NOT CONFIGURED		
9925	9	9	FUNCTIONS LOCKED OUT - CHASSIS MODULE SOFTWARE VERSION IMPROPER	The Chassis Module software version is not compatible with the rest of the system.	
9926	9	9	FUNCTIONS LOCKED OUT - BLAM MODULE SOFTWARE VERSION IMPROPER	The BLAM software version is not compatible with the rest of the system.	
9927	9	9	GROUND MODULE CONSTANT DATA UPDATE REQUIRED	The Ground Module constant data requires an updated.	
9928	9	9	ENVELOPE CONTROL DISABLED	Envelope Control has been disabled by the user from Access Level 0.	- Envelope Control equipped vehicles only.
99282	9	9	GROUND DISPLAY SOFTWARE VERSION IS IMPROPER	The UGM has detected improper software version on the ground display. Fault cleared once software has been updated on the ground display	Verify Machine Setup is correct and ground display software version is at least P1.1 or greater

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
99285	9	9	LSS - FACTORY CALIBRATION ERROR	The load sensor is reporting a factor calibration issue (internal error) The machine will assume the platform is overloaded. This fault, once annunciated is latched within a given key cycle.	Possible sensor hardware issue.
9929	9	9	MOMENT CONTROL DISABLED	Moment Control has been disabled by the user from Access Level 0.	- Envelope Control equipped vehicles only.
9930	9	9	STEER SENSORS NOT CALIBRATED	The Steer Sensors have not been calibrated.	
9931	9	9	BOOM SENSORS NOT CALIBRATED	The Boom Sensors have not been calibrated.	- BLAM equipped vehicles only.
9932	9	9	LIFT CRACKPOINTS NOT CALIBRATED	The Lift Crackpoints have not been calibrated.	
9933	9	9	TELESCOPE CRACKPOINTS NOT CALIBRATED	The Telescope Crackpoints have not been calibrated.	
9934	9	9	DRIVE CRACKPOINTS NOT CALIBRATED	The Drive Crackpoints have not been calibrated.	
9935	9	9	BLAM SENSOR SUPPLY OUT OF RANGE HIGH	The Boom Angle Sensors supply voltage is high.	- BLAM equipped vehicles only.
9936	9	9	BLAM SENSOR SUPPLY OUT OF RANGE LOW	The Boom Angle Sensors supply voltage is low.	- BLAM equipped vehicles only.
9937	9	9	LENGTH SENSOR REF VOLTAGE HIGH	The Boom Length Sensors supply voltage is high.	
9938	9	9	LENGTH SENSOR REF VOLTAGE LOW	The Boom Length Sensors supply voltage is low.	
9939	9	9	BLAM HIGH RES A/D FAILURE	The BLAM high resolution analog to digital converter has failed.	- BLAM equipped vehicles only.
9940	9	9	CHASSIS SENSOR SUPPLY OUT OF RANGE HIGH	The Chassis Sensors supply voltage is high.	
9941	9	9	CHASSIS SENSOR SUPPLY OUT OF RANGE LOW	The Chassis Sensors supply voltage is low.	
9944	9	9	CURRENT FEEDBACK GAINS OUT OF RANGE	The factory set current feedback gains are out of range.	
9945	9	9	CURRENT FEEDBACK CALIBRATION CHECKSUM INCORRECT	The factory set current feedback checksum is not correct.	
99155	9	9	JIB CONTROL MODULE - HIGH RESOLUTION A2D FAILURE		
99156	9	9	JIB CONTROL MODULE - HIGH RESOLUTION A2D REFERENCE LOW		
99157	9	9	JIB CONTROL MODULE - HIGH RESOLUTION A2D REFERENCE HIGH		
99158	9	9	PLATFORM LEVEL ANGLE SENSOR - INTERNAL ERROR		
99159	9	9	JIB LIFT ANGLE SENSOR - INTERNAL ERROR		

Table 6-13. Diagnostic Trouble Code Chart

DTC	Flash Code	Sequence	Fault Message	Fault Description	Check
99160	9	9	FUNCTIONS LOCKED OUT - JIB CONTROL MODULE SOFTWARE VERSION IMPROPER		
99296	9	9	PLATFORM DISPLAY SOFTWARE VERSION IMPROPER	The UGM has detected improper software version on the platform display. Fault cleared once software has been updated on the platform display	Verify Machine Setup is correct and platform display software version is at least 1.6 or greater

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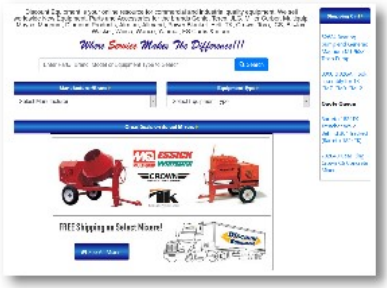

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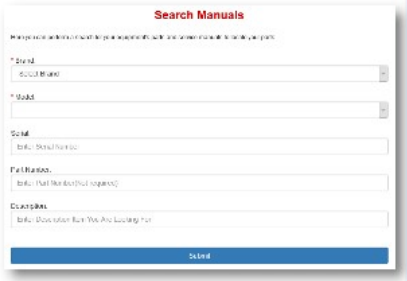

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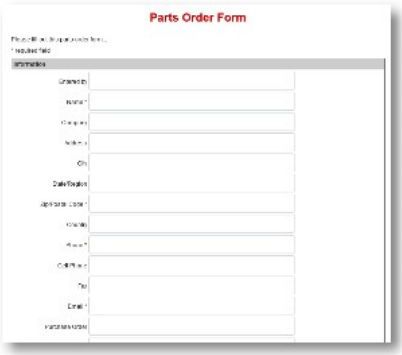

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SECTION 7. BASIC ELECTRICAL INFORMATION & ELECTRICAL SCHEMATICS

7.1 GENERAL

This section contains basic electrical information and schematics to be used for locating and correcting most of the operating problems which may develop. If a problem should develop which is not presented in this section or which is not corrected by listed corrective actions, technically qualified guidance should be obtained before proceeding with any maintenance.

NOTE: *Some of the procedures/connectors shown in this section may not be applicable to all models.*

7.2 MULTIMETER BASICS

A wide variety of multimeters or Volt Ohm Meters (VOM) can be used for troubleshooting your equipment. This section shows diagrams of a common, digital VOM configured for several different circuit measurements. Instructions for your VOM may vary. Please consult the meter operator's manual for more information.

Grounding

"Grounding the meter" means to take the black lead (which is connected to the COM (common) or negative port) and touch it to a good path to the negative side of the Voltage source.

Backprobing

To "backprobe" means to take the measurement by accessing a connector's contact on the same side as the wires, the back of the connector. Readings can be done while maintaining circuit continuity this way. If the connector is the sealed type, great care must be taken to avoid damaging the seal around the wire. It is best to use probes or probe tips specifically designed for this technique, especially on sealed connectors. Whenever possible insert probes into the side of the connector such that the test also checks both terminals of the connection. It is possible to inspect a connection within a closed connector by backprobing both sides of a connector terminal and measuring resistance. Do this after giving each wire a gentle pull to ensure the wires are still attached to the contact and contacts are seated in the connector.

Min/Max

Use of the "Min/Max" recording feature of some meters can help when taking measurements of intermittent conditions while alone. For example, you can read the Voltage applied to a solenoid when it is only operational while a switch, far from the solenoid and meter, is held down.

Polarity

Getting a negative Voltage or current reading when expecting a positive reading frequently means the leads are reversed. Check what reading is expected, the location of the signal and that the leads are connected to the device under test correctly. Also check that the lead on the "COM" port goes to the Ground or negative side of the signal and the lead on the other port goes to the positive side of the signal.

Scale

M = Mega = 1,000,000 * (Displayed Number)

k = kilo = 1,000 * (Displayed Number)

m = milli = (Displayed Number) / 1,000

µ = micro = (Displayed Number) / 1,000,000

Example: 1.2 kW = 1200 W
Example: 50 mA = 0.05 A

Voltage Measurement

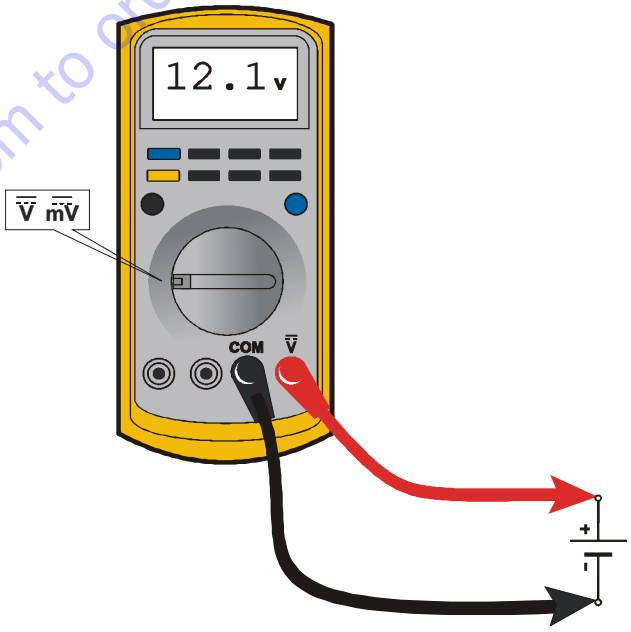


Figure 7-1. Voltage Measurement (DC)

- If meter is not auto ranging, set it to the correct range (See multimeter's operation manual)
- Use firm contact with meter leads

Resistance Measurement

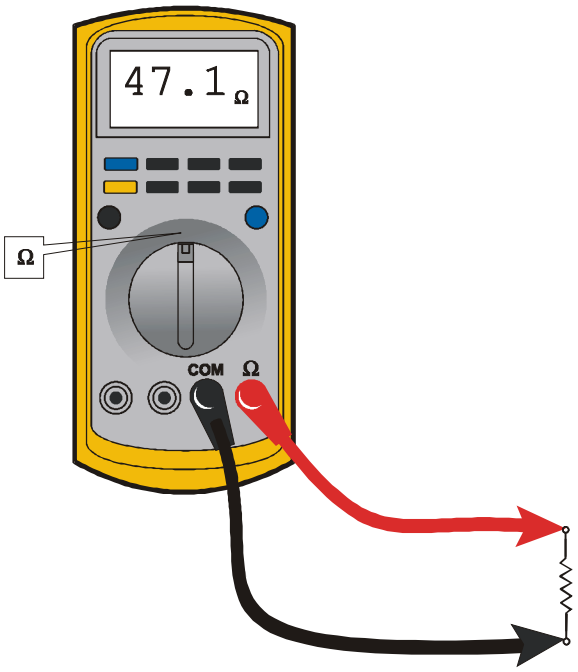


Figure 7-2. Resistance Measurement

- First test meter and leads by touching leads together. Resistance should read a short circuit (very low resistance)
- Circuit power must be turned OFF before testing resistance
- Disconnect component from circuit before testing
- If meter is not auto ranging, set it to the correct range (See multimeter's operation manual)
- Use firm contact with meter leads

Continuity Measurement

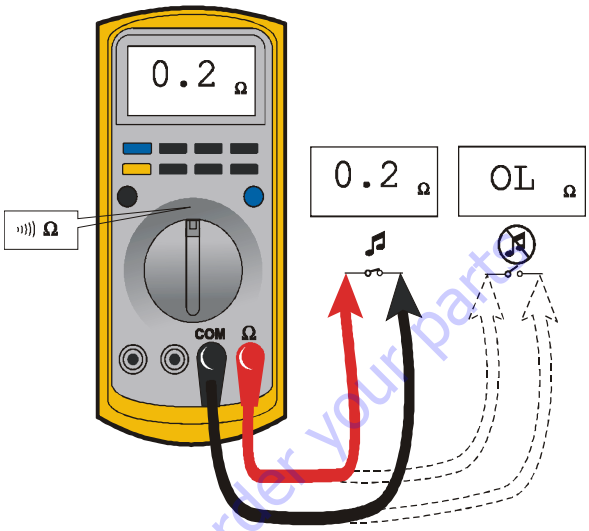


Figure 7-3. Continuity Measurement

- Some meters require a separate button press to enable audible continuity testing
- Circuit power must be turned OFF before testing continuity
- Disconnect component from circuit before testing
- Use firm contact with meter leads
- First test meter and leads by touching leads together. Meter should produce an audible alarm, indicating continuity

Current Measurement

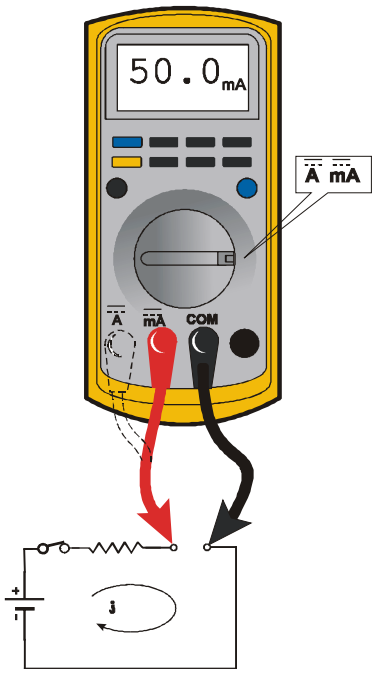


Figure 7-4. Current Measurement (DC)

- Set up the meter for the expected current range
- Be sure to connect the meter leads to the correct jacks for the current range you have selected
- If meter is not auto ranging, set it to the correct range (See multi meter's operation manual)
- Use firm contact with meter leads

7.3 APPLYING SILICONE DIELECTRIC COMPOUND TO ELECTRICAL CONNECTIONS

NOTE: *This section is not applicable for battery terminals.*

NOTICE

JLG PN 0100048 DIELECTRIC GREASE (NOVAGARD G661) IS THE ONLY MATERIAL APPROVED FOR USE AS A DIELECTRIC GREASE.

NOTE: *Do NOT apply dielectric grease to the following connections:*

- Main Boom Rotary sensor connections (on Celesco Sensor),
- LSS Modules connections,
- Deutz EMR 2 ECM connection.

Silicone Dielectric Compound must be used on all electrical connections except for those mentioned above for the following reasons:

- To prevent oxidation at the mechanical joint between male and female pins.
- To prevent electrical malfunction caused by low level conductivity between pins when wet.

Use the following procedure to apply Silicone Dielectric Compound to the electrical connectors. This procedure applies to all plug connections not enclosed in a box. Silicone grease should not be applied to connectors with external seals.

1. To prevent oxidation, silicone grease must be packed completely around male and female pins on the inside of the connector prior to assembly. This is most easily achieved by using a syringe.

NOTE: *Over a period of time, oxidation increases electrical resistance at the connection, eventually causing circuit failure.*

2. To prevent shorting, silicone grease must be packed around each wire where they enter the outside of the connector housing. Also, silicone grease must be applied at the joint where the male and female connectors come together. Any other joints (around strain reliefs, etc.) where water could enter the connector should also be sealed.

NOTE: *This condition is especially common when machines are pressure washed since the washing solution is much more conductive than water.*

3. Anderson connectors for the battery boxes and battery chargers should have silicone grease applied to the contacts only.

NOTE: *Curing-type sealants might also be used to prevent shorting and would be less messy, but would make future pin removal more difficult.*

When applied to electrical connections, dielectric grease helps to prevent corrosion of electrical contacts and improper conductivity between contacts from moisture intrusion. Open and sealed connectors benefit from the application of dielectric grease.

Dielectric grease could be applied to all electrical connectors at the time of connection (except those noted under Exclusions).

Installation of Dielectric Grease

Before following these instructions, refer to excluded connector types (See Exclusions below).

1. Use dielectric grease in a tube for larger connection points or apply with a syringe for small connectors.
2. Apply dielectric grease to plug/male connector housing which typically contains sockets contact/female terminals (fill it approximately ½ full; see example below).
3. Leave a thin layer of dielectric grease on the face of the connector
4. Assemble the connector system immediately to prevent moisture ingress or dust contamination

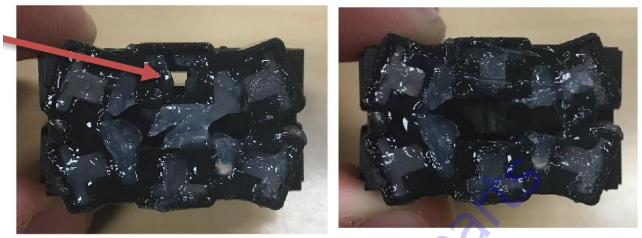
The following connector systems are specifically addressed because of their widespread use at JLG. However, this guidance may be applied to similar devices.

AMP Mate-N-Lok

Improper Proper

AMP Faston

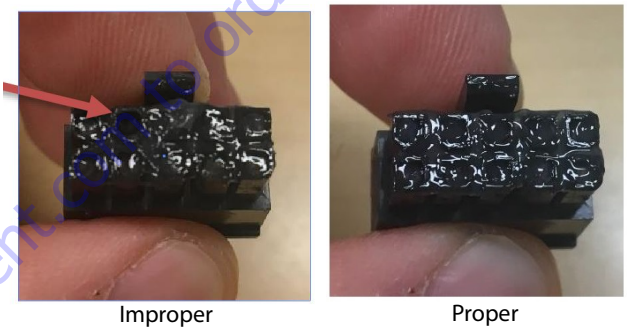
This connector system is typically used on operator switches at JLG. Follow the general guidance for installation.



Improper Proper

AMP Micro-Fit

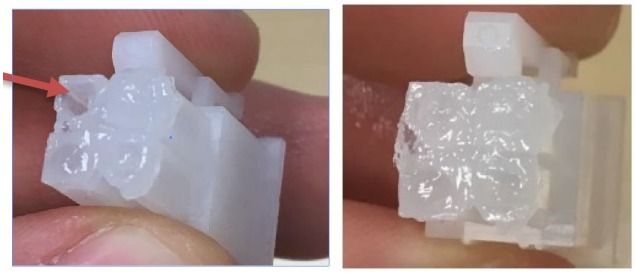
This connector system is typically used on control modules at JLG. Follow the general guidance for installation.



Improper Proper

AMP Mini Fit Jr

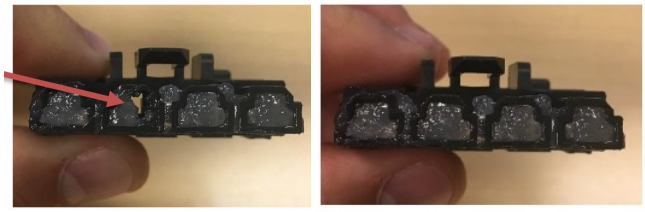
This connector system is typically used on control modules at JLG. Follow the general guidance for installation.



Improper Proper

Mini Fit Sr

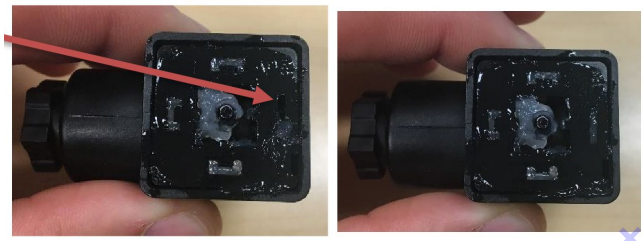
This connector system is typically used on control modules at JLG. Follow the general guidance for installation.



Improper Proper

DIN Connectors

This connector is typically used on hydraulic valves. Follow the installation instructions.



Improper Proper

Exceptions

Some waterproof connector applications do benefit from dielectric grease, and some non waterproof connectors do not benefit from dielectric grease.

In the exceptions below, we have found dielectric grease is not needed for some applications, and in some cases can interfere with the intended connection. Dielectric grease shall be used as an exception in other applications.

Enclosures

Application of dielectric grease is not required in properly sealed enclosures. To meet criteria, the enclosure must be rated to at least IP56 (dust protected; protected from powerful jets of water).

Carling Switch Connectors

Carling switches may experience high impedance, or discontinuity, due to silicone dielectric grease ingress when switching inductive loads. Therefore, dielectric grease shall not be applied to Carling switch mating connectors unless specifically noted.

7.4 AMP CONNECTOR

Assembly

Check to be sure the wedge lock is in the open, or as-shipped, position (See Figure 7-5.). Proceed as follows:

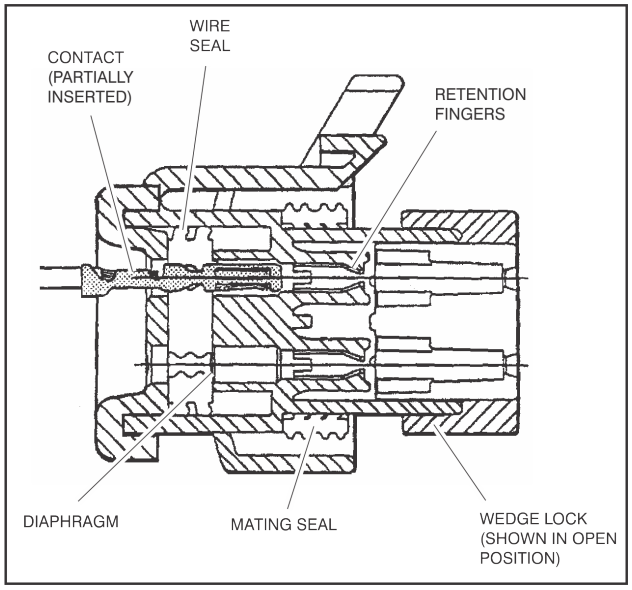


Figure 7-5. Connector Assembly Figure 1

1. To insert a contact, push it straight into the appropriate circuit cavity as far as it will go (See Figure 7-7.).
2. Pull back on the contact wire with a force of 1 or 2 lb to be sure the retention fingers are holding the contact (See Figure 7-7.).

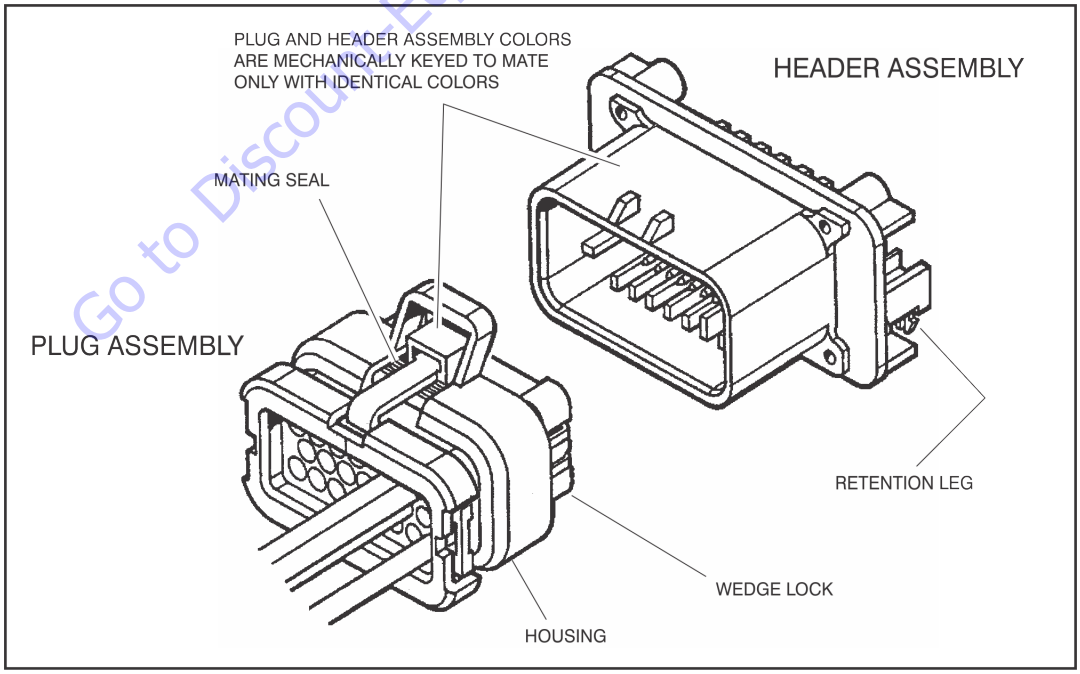


Figure 7-6. AMP Connector

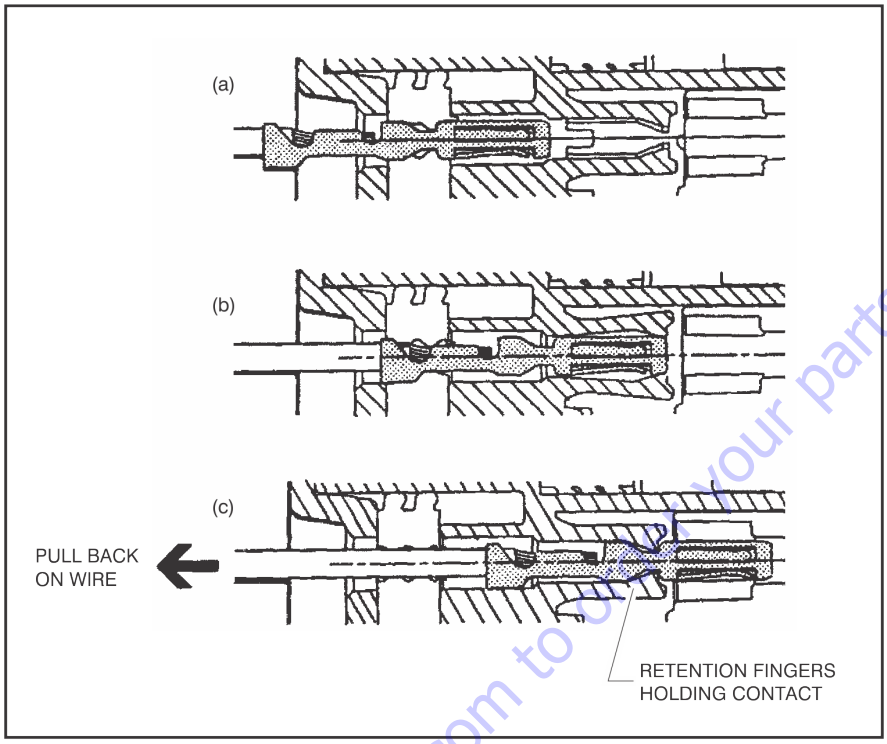


Figure 7-7. Connector Assembly Figure 2

3. After all required contacts have been inserted, the wedge lock must be closed to its locked position. Release the locking latches by squeezing them inward (See Figure 7-8.).

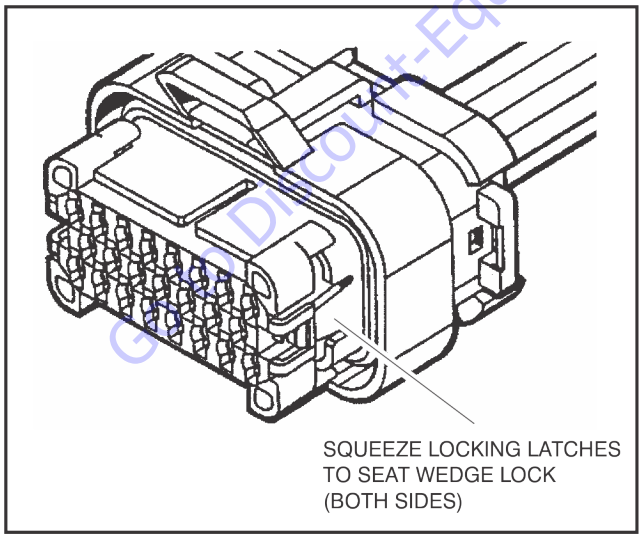


Figure 7-8. Connector Assembly Figure 3

4. Slide the wedge lock into the housing until it is flush with the housing (See Figure 7-9.).

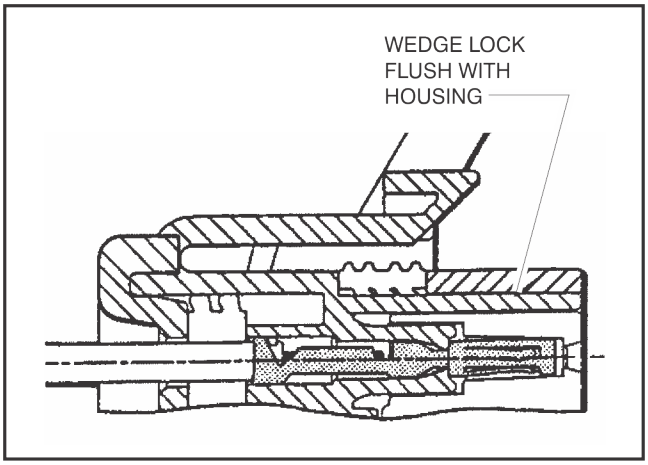


Figure 7-9. Connector Assembly Figure 4

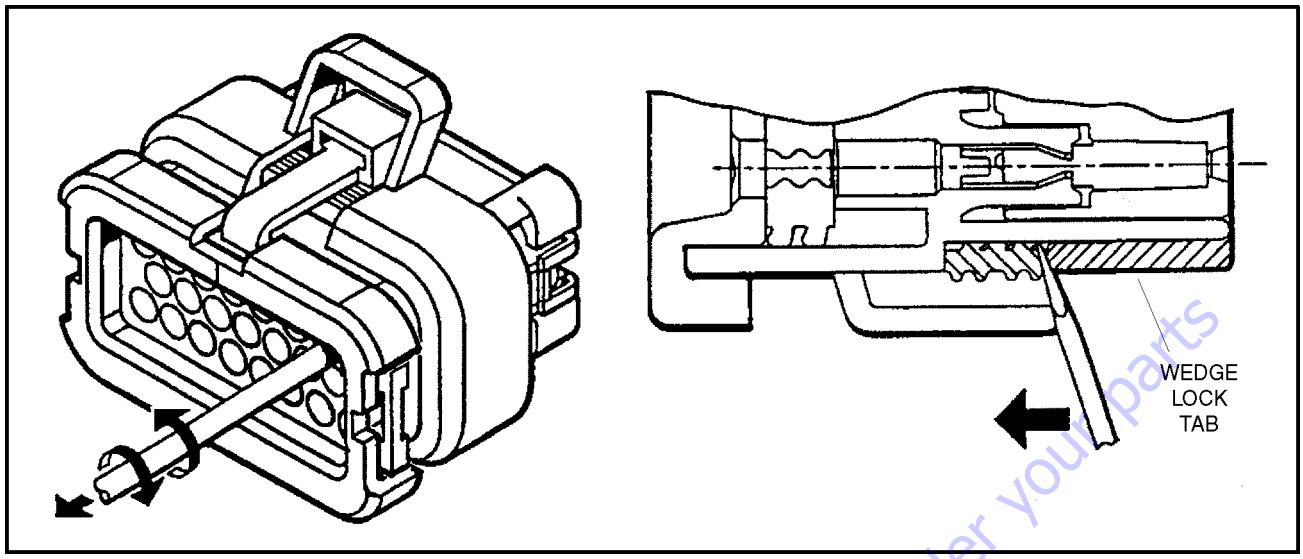


Figure 7-10. Connector Disassembly

Disassembly

1. Insert a 4.8 mm (3/16") wide screwdriver blade between the mating seal and one of the red wedge lock tabs.
2. Pry open the wedge lock to the open position.
3. While rotating the wire back and forth over a half turn (1/4 turn in each direction), gently pull the wire until the contact is removed.

NOTE: *The wedge lock should never be removed from the housing for insertion or removal of the contacts.*

Wedge Lock

The wedge lock has slotted openings in the forward, or mating end. These slots accommodate circuit testing in the field, by using a flat probe such as a pocket knife. DO NOT use a sharp point such as an ice pick.

Service - Voltage Reading

NOTICE

DO NOT PIERCE WIRE INSULATION TO TAKE VOLTAGE READINGS.

It has been common practice in electrical troubleshooting to probe wires by piercing the insulation with a sharp point. This practice should be discouraged when dealing with the AMP-SEAL plug assembly, or any other sealed connector system. The resulting pinholes in the insulation will allow moisture to invade the system by traveling along the wire strands. This nullifies the effectiveness of the connector seals and could result in system failure.

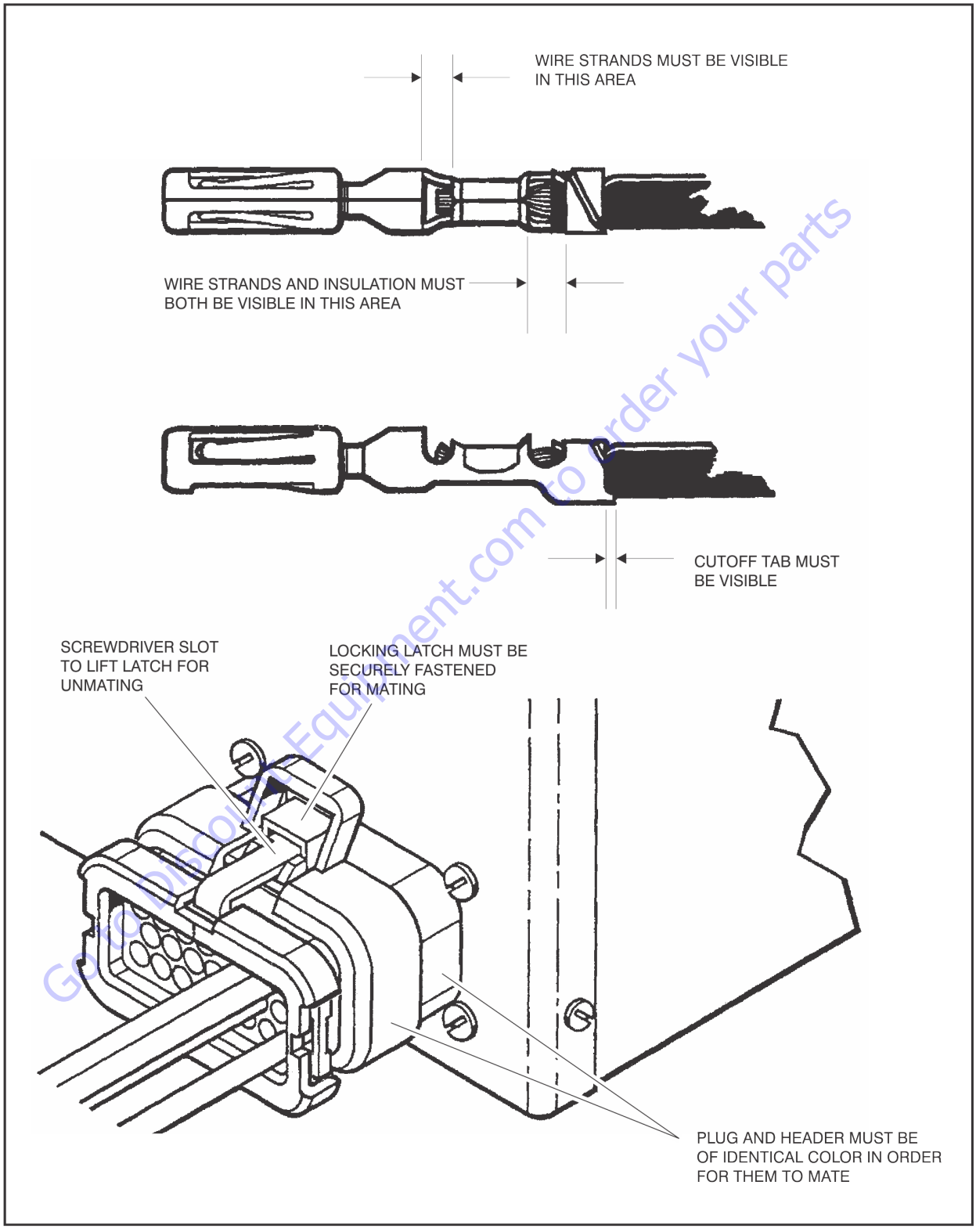


Figure 7-11. Connector Installation

7.5 DEUTSCH CONNECTORS

DT/DTP Series Assembly

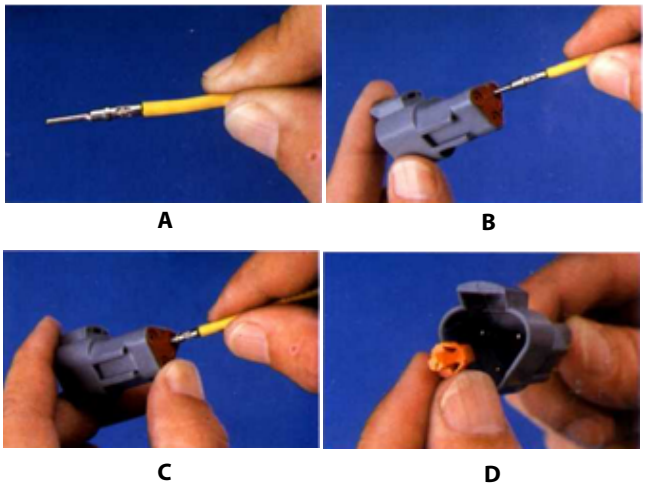


Figure 7-12. DT/DTP Contact Installation

1. Grasp crimped contact about 25mm behind the contact barrel.
2. Hold connector with rear grommet facing you.
3. Push contact straight into connector grommet until a click is felt. A slight tug will confirm that it is properly locked in place.
4. Once all contacts are in place, insert wedgelock with arrow pointing toward exterior locking mechanism. The wedgelock will snap into place. Rectangular wedges are not oriented. Thy may go in either way.

NOTE: *The receptacle is shown - use the same procedure for plug.*

DT/DTP Series Disassembly

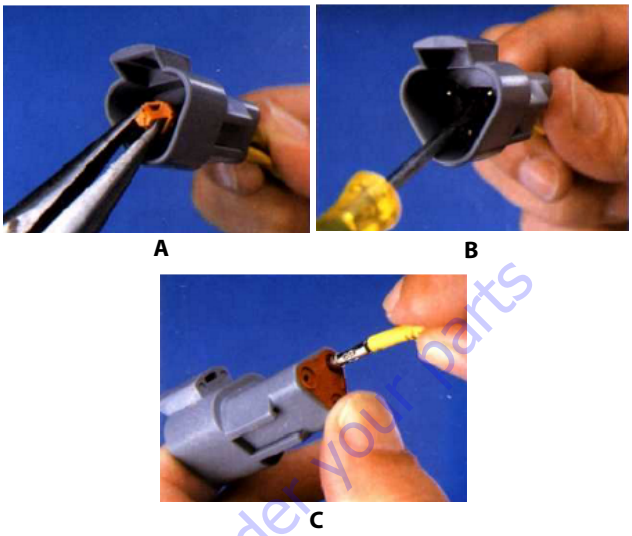


Figure 7-13. DT/DTP Contact Removal

1. Remove wedgelock using needlenose pliers or a hook shaped wire to pull wedge straight out.
2. To remove the contacts, gently pull wire backwards, while at the same time releasing the locking finger by moving it away from the contact with a screwdriver.
3. Hold the rear seal in place, as removing the contact may displace the seal.

HD30/HDP20 Series Assembly

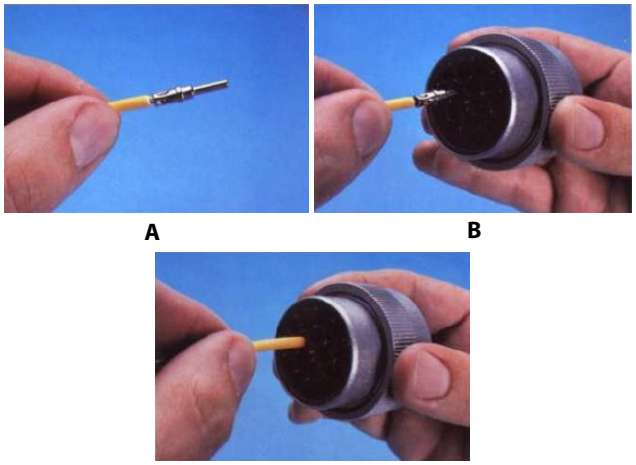


Figure 7-14. HD/HDP Contact Installation

1. Grasp contact about 25mm behind the contact crimp barrel.
2. Hold connector with rear grommet facing you.
3. Push contact straight into connector grommet until a positive stop is felt. A slight tug will confirm that it is properly locked in place.

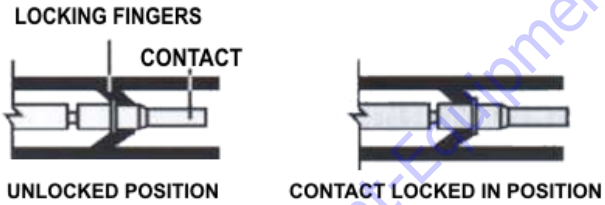


Figure 7-15. HD/HDP Locking Contacts Into Position

NOTE: *For unused wire cavities, insert sealing plugs for full environmental sealing*

HD30/HDP20 Series Disassembly

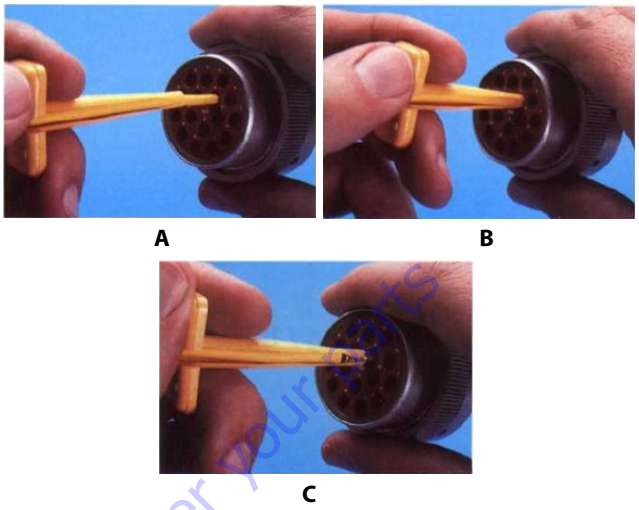


Figure 7-16. HD/HDP Contact Removal

1. With rear insert toward you, snap appropriate size extractor tool over the wire of contact to be removed.
2. Slide tool along into the insert cavity until it engages contact and resistance is felt.
3. Pull contact-wire assembly out of connector.

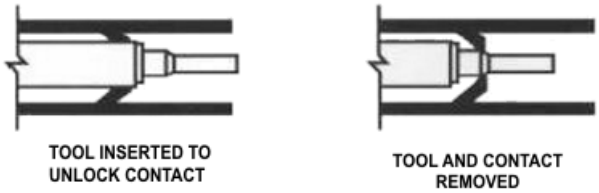


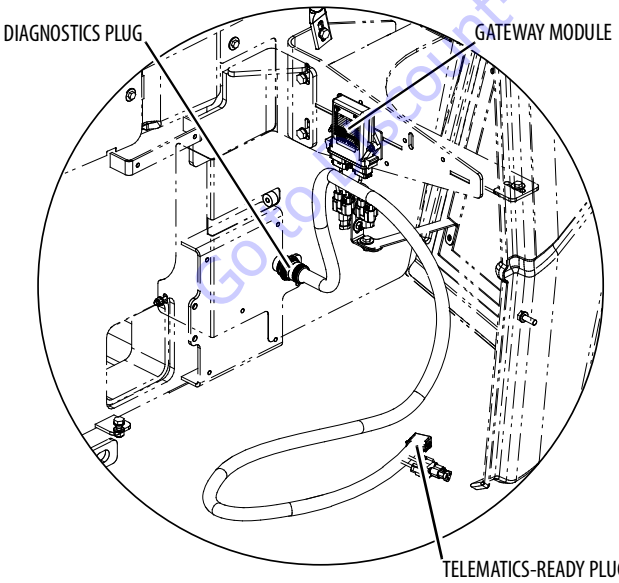
Figure 7-17. HD/HDP Unlocking Contacts

NOTE: *Do Not twist or insert tool at an angle.*

7.6 TELEMATICS GATEWAY

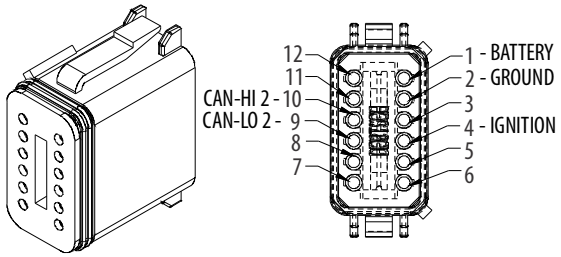
Personnel using machines equipped with an optional telematics gateway will be able to view the following data through their telematics device:

JLG LABEL	DESCRIPTION	UNIT
Engine Speed	Actual engine speed.	RPM
DEF Tank Level (If Equipped)	Indicates the level of DEF (diesel exhaust fluid) within the DEF tank if the machine is equipped with DEF tank. • 0% = Empty • 100% = Full	Percentage (%)
JLG Machine Faults: Active / Not-Active	• 00 - No Machine Faults • 01 - Active Machine Fault • 10 - Error • 11 - Not available	Bit
Total Idle Fuel Used	Total amount of fuel used during vehicle operation during idle conditions.	Liters
Total Idle Hours	Total time of engine operation during idle conditions.	Seconds
Total Engine Hours	Total time of engine operation.	Seconds
Total Fuel Used	Total amount of fuel used during vehicle operation.	Liters
Fuel Rate	Amount of fuel consumed by engine per unit of time.	Liters/Hour
Fuel Level	Ratio of fuel volume to the total volume of the fuel storage container. When a low fuel limit switch is present, the fuel level will indicate "full" until the switch opens, which will then indicate 10% fuel remaining. When Fuel Level 2 (SPN 38) is not used, Fuel Level 1 represents the total fuel in all fuel storage containers. When Fuel Level 2 is used, Fuel Level 1 represents the fuel level in the primary or left side fuel storage container.	Percentage (%)
DM1 Engine Faults	Shows actual engine fault codes.	N/A



Telematics-Ready (TCU) Plug

The telematics-ready (TCU) plug is a standard 12-pin Deutsch connector. Pin-out locations are shown below:



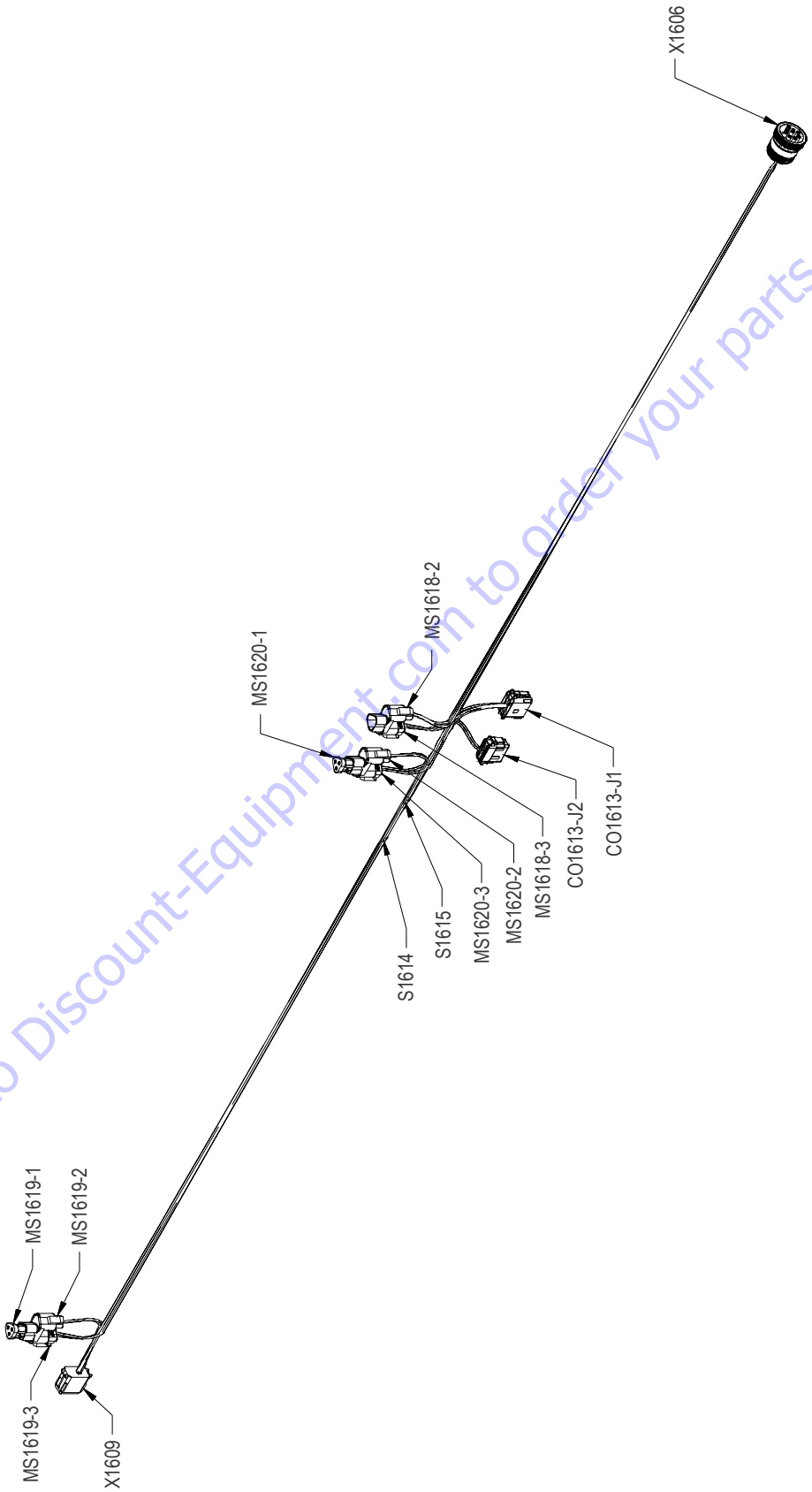


Figure 7-18. Telematics Gateway Harness - Sheet 1 of 3

X1609 (TCU)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-0 BAT	16 AWG	GXL	X1606 (B)
2	BLK	0-0 GND	16 AWG	GXL	S1615 (1)
4	ORN	2-0 IGN	16 AWG	GXL	S1614 (1)
9	GRN	CANL2	18 AWG	GXL	MS1619-2 (B)
10	YEL	CANH2	18 AWG	GXL	MS1619-2 (A)

MS1619-2 (CAN-T 2)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CANH2	18 AWG	GXL	X1609 (10)
B	GRN	CANL2	18 AWG	GXL	X1609 (9)

MS1619-3 (CAN-T 2)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CANH2	18 AWG	GXL	MS1620-2 (A)
B	GRN	CANL2	18 AWG	GXL	MS1620-2 (B)

CO1613-J1 (GATEWAY 1)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
9	GRN	CAN1	18 AWG	GXL	MS1618-2 (B)
10	YEL	CANH1	18 AWG	GXL	MS1618-2 (A)
11	BLK	0-2 GND	16 AWG	GXL	S1615 (2)
12	ORN	2-2 IGN	16 AWG	GXL	S1614 (2)

CO1613-J2 (GATEWAY 2)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
9	GRN	CANL2	18 AWG	GXL	MS1620-3 (B)
10	YEL	CANH2	18 AWG	GXL	MS1620-3 (A)

MS1620-2 (CAN-T 2)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CANH2	18 AWG	GXL	MS1619-3 (A)
B	GRN	CANL2	18 AWG	GXL	MS1619-3 (B)

MS1620-3 (CAN-T 2)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CANH2	18 AWG	GXL	CO1613-J2 (10)
B	GRN	CANL2	18 AWG	GXL	CO1613-J2 (9)

S1614					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	ORN	2-0 IGN	16 AWG	GXL	X1609 (4)
2	ORN	2-1 IGN	16 AWG	GXL	X1606 (H)
2	ORN	2-2 IGN	16 AWG	GXL	CO1613-J1 (12)

S1615					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-0 GND	16 AWG	GXL	X1609 (2)
2	BLK	0-1 GND	16 AWG	GXL	X1606 (A)
2	BLK	0-2 GND	16 AWG	GXL	CO1613-J1 (11)

MS1618-2 (CAN-T 1)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CANH1	18 AWG	GXL	CO1613-J1 (10)
B	GRN	CANL1	18 AWG	GXL	CO1613-J1 (9)

MS1618-3 (CAN-T 1)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CANH1	18 AWG	GXL	X1606 (C)
B	GRN	CANL1	18 AWG	GXL	X1606 (D)

X1606 (DIAG)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	BLK	0-1 GND	16 AWG	GXL	S1615 (2)
B	RED	1-0 BAT	16 AWG	GXL	X1609 (1)
C	YEL	CANH1	18 AWG	GXL	MS1618-3 (A)
D	GRN	CANL1	18 AWG	GXL	MS1618-3 (B)
H	ORN	2-1 IGN	16 AWG	GXL	S1614 (2)

Figure 7-19. Telematics Gateway Harness - Sheet 2 of 3

					FROM		TO	
WIRE NO.	COLOR	WIRE GAUGE	LENGTH (mm)	JACKET	REFERENCE	PIN	REFERENCE	PIN
CAN L2	GRN	18 AWG	1151	GXL	MS1619-3	B	MS1620-2	B
CAN L2	GRN	18 AWG	151	GXL	X1609	9	MS1619-2	B
CAN L1	GRN	18 AWG	157	GXL	MS1618-2	B	CO1613-J1	9
CAN L2	GRN	18 AWG	225	GXL	MS1620-3	B	CO1613-J2	9
CAN L1	GRN	18 AWG	1076	GXL	MS1618-3	B	X1606	D
CAN H2	YEL	18 AWG	155	GXL	X1609	10	MS1619-2	A
CAN H2	YEL	18 AWG	233	GXL	MS1620-3	A	CO1613-J2	10
CAN H1	YEL	18 AWG	157	GXL	MS1618-2	A	CO1613-J1	10
CAN H2	YEL	18 AWG	1150	GXL	MS1619-3	A	MS1620-2	A
CAN H1	YEL	18 AWG	1079	GXL	MS1618-3	A	X1606	C
0-0 GND	BLK	16 AWG	1006	GXL	X1609	2	S1615	1
0-1 GND	BLK	16 AWG	1145	GXL	X1606	A	S1615	2
0-2 GND	BLK	16 AWG	223	GXL	CO1613-J1	11	S1615	2
1-0 BAT	RED	16 AWG	2150	GXL	X1609	1	X1606	B
2-0 IGN	ORN	16 AWG	939	GXL	X1609	4	S1614	1
2-1 IGN	ORN	16 AWG	1212	GXL	S1614	2	X1606	H
2-2 IGN	ORN	16 AWG	287	GXL	CO1613-J1	12	S1614	2

Figure 7-20. Telematics Gateway Harness - Sheet 3 of 3

7.7 WIRING HARNESS CONNECTOR LABELS

Connector Labels

Connectors between harnesses are identified by the prefix "X" and a sequentially assigned number. An optional suffix (letters & numbers) may be added when multiple terminations occur at one device or when there are optional connections.

Examples:

X25 connects to X25 in another harness.

X65A, X65B connect to different portions of one device

X163 connects to X163A in ANSI and X163B in CE machines

Component Labels

Every component on the vehicle has a unique identification. A standard prefix letter is assigned according to the table below, followed by a unique sequential number. An optional suffix (letters & numbers) may be added when multiple terminations occur at one device.

Terminals that are not loaded into connectors are considered independent components and labeled in the same fashion.

Table 7-1. Wiring Harness Connector Labels

Component	Category	Label
Audible	Alarms	AH
	Horns	
Battery	Batteries	BT
	Battery Terminals	
Control Module	Ground	CO
	LSS	
	Platform	
Engine	Alternator	EC
	Cold Start	
	Controller	
	Coolant Temp	
	Fuel Pump	
	Fuel Solenoid	
	Glow Plugs	
	Oil Pressure	
	Starter	
Fuse & CB Fuse FC	Fuse	FC
	Fusible Link	FC
	Circuit Breaker	CB
Gauge & Display	Board	GD
	Cluster	
	Hour meter	
	LMI	
	Speedometer	
Inline	Resistor	R
	Diode	D
Joystick & Steering	Electronic	JS
	Hydraulic	
Lights	Dome	LB
	Headlights	
	Simple	
	Taillights	
Membrane Panel		MP
Miscellaneous	Radio	MS
	Speakers	
	Splice Blocks	
	T-Connectors	

Table 7-1. Wiring Harness Connector Labels

Component	Category	Label
Other Switches	Disconnect	SW
	EMS	
	Foot	
	HVAC	WH
	Key	SW
	Park brake	
	Pump pot	
	Push	
	Shifter	
	Turn signal	
Relay	5 Pin	RL
	4 Pin	
	Contactor	
	Power module	
Rocker Switch		SW
Sensor	Angle	SN
	Fuel	
	Length	
	Limit	
	Load	
	Pressure	
	Proximity	
	Speed	
	Temperature	
Terminals	Pins	T
	Sockets	
	Male Blades	
	Female Blades	
	Rings	
	Forks	
Toggle Switch	DPDT	SW
	DPST	
	SPDT	
	SPST	
	Special	
Valves	Simple	HV
	Suppression	

Examples:
T67 is a ring terminal connected during installation.
C01-J3 is the J3 connector for a UGM control module.
EC9 is a glow plug supplied with the engine

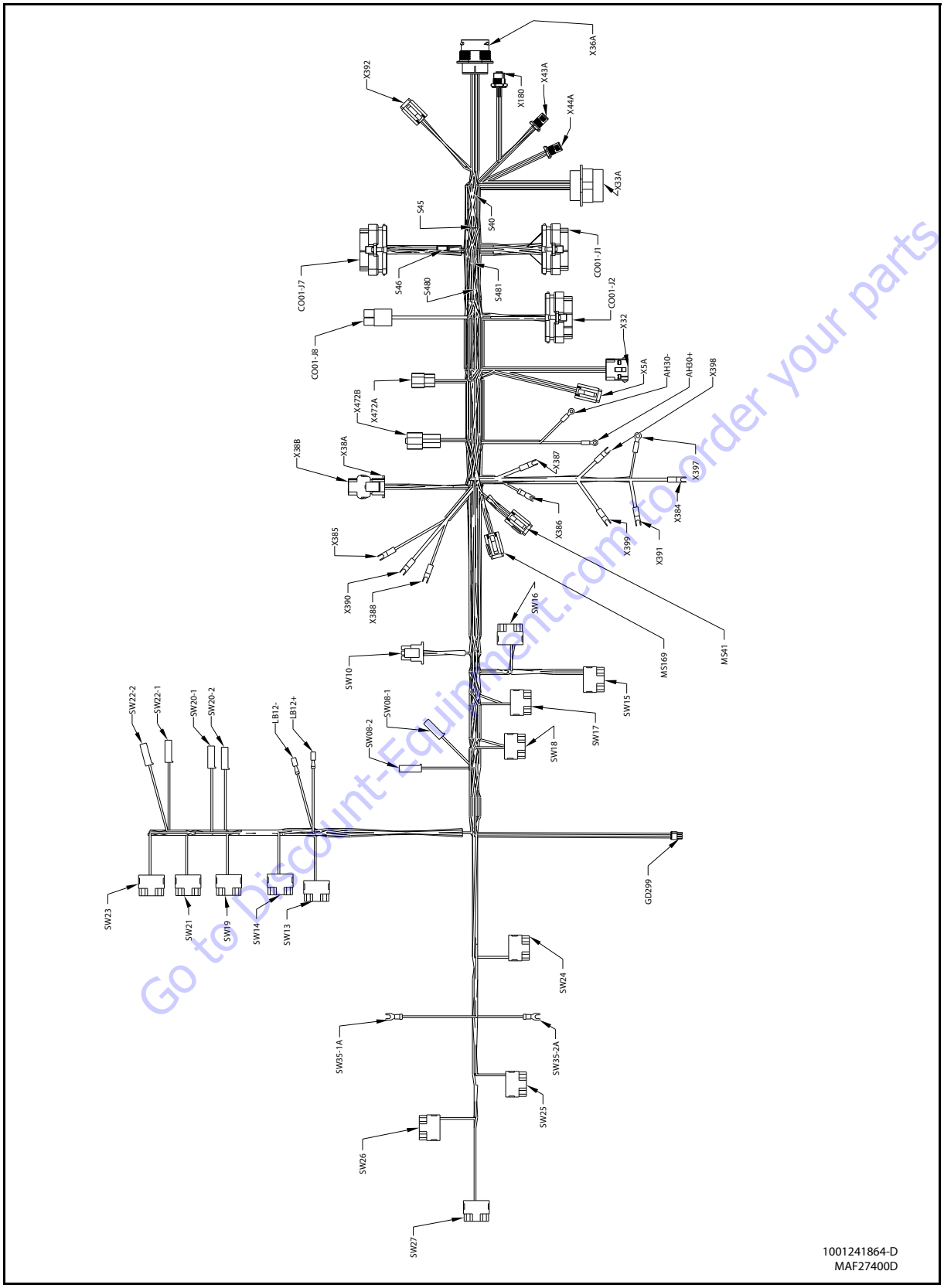


Figure 7-21. Platform Box Wiring Harness - Sheet 1 of 5

X33A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	SHLD	CAN SHIELD	20 AWG	J1939 CABLE	X472A (3)
2	GRN	CAN LOW	20 AWG	J1939 CABLE	X472A (2)
3	YEL	CAN HI	20 AWG	J1939 CABLE	X472A (1)
4	YEL	2-4	18 AWG	GXL	CO01-J7 (3)
5	RED	1-4-3	18 AWG	GXL	SW35-2A (2A)
6					
7	WHT	25-5 PLVL DN O/R	18 AWG	GXL	S46 (2)
8					
9	WHT	25-6 PLVL UP O/R	18 AWG	GXL	S45 (2)
10	-	2-25 FUSIBLE LINK	12 AWG	FUSIBLE LINK	S480 (2)
11	YEL	2-5	18 AWG	GXL	CO01-J7 (1)
12	-	2-26 FUSIBLE LINK	12 AWG	FUSIBLE LINK	S481 (2)
13	WHT	49-19 PROX NO	18 AWG	GXL	CO01-J1 (33)
14					
15	WHT	49-20 PROX NC	18 AWG	GXL	CO01-J1 (1)
16	BLK	0-40	12 AWG	GXL	X384 (1)
17					
18	BLK	0-41	12 AWG	GXL	X391 (1)
19					

S40					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-6	18 AWG	GXL	CO01-J2 (32)
2	YEL	2-6-1	18 AWG	GXL	X36A (1)
2	YEL	2-6-2	18 AWG	GXL	X36A (15)

S45					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	25-3 PLVL UP	18 AWG	GXL	CO01-J7 (15)
2	WHT	25-3-1 PLVL UP	18 AWG	GXL	X36A (7)
2	WHT	25-6 PLVL UP O/R	18 AWG	GXL	X33A (9)

X36A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-6-1	18 AWG	GXL	S40 (2)
2	WHT	49-18 PLVL 1	18 AWG	GXL	CO01-J1 (25)
3	WHT	49-22 GND	18 AWG	GXL	CO01-J7 (21)
4	WHT	49-50 PROX NC	18 AWG	GXL	CO01-J1 (20)
5	BLK	0-8	18 AWG	GXL	X388 (1)
6	WHT	25-4-1 PLVL DN	18 AWG	GXL	S46 (2)
7	WHT	25-3-1 PLVL UP	18 AWG	GXL	S45 (2)
8	WHT	23-3 PROT LT	18 AWG	GXL	CO01-J7 (5)
9	WHT	23-4 PROT RT	18 AWG	GXL	CO01-J7 (6)
10	WHT	55-26 JLOCK IN	18 AWG	GXL	CO01-J7 (25)
11	WHT	55-25 JLOCK OUT	18 AWG	GXL	CO01-J7 (26)
12	BLK	0-4	18 AWG	GXL	CO01-J7 (29)
13	ORG	1-7-1 WK LT PWR	16 AWG	TXL	X392 (2)
14	WHT	50-2 P DUMP	16 AWG	TXL	X36A (18)
15	YEL	2-6-2	18 AWG	GXL	S40 (2)
16	WHT	49-17 PLVL 2	18 AWG	GXL	CO01-J1 (26)
17	WHT	49-23 GND	18 AWG	GXL	CO01-J7 (33)
18	WHT	50-2 P DUMP	16 AWG	TXL	X36A (14)
19	BLK	0-7	16 AWG	TXL	X388 (1)
20	ORG	1-7-2 WK LT PWR	16 AWG	TXL	X392 (4)
21					

X392 LIGHTS (OPTION)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-40-3	16 AWG	GXL	X385 (1)
2	ORG	1-7-1 WK LT PWR	16 AWG	TXL	X36A (13)
3	BLK	0-41-3	16 AWG	GXL	X385 (1)
4	ORG	1-7-2 WK LT PWR	16 AWG	TXL	X36A (20)

X43A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BRN	49-11 X43 PWR	20 AWG	CABLE	CO01-J7 (4)
2	WHT	49-10 X43 GND	20 AWG	CABLE	CO01-J7 (34)
3	BLU	CAN HI	20 AWG	CABLE	MS41 (12)
4	BLK	CAN LOW	20 AWG	CABLE	MS41 (10)
5	GRY	CAN SHIELD	20 AWG	CABLE	MS41 (8)

X44A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BRN	49-13 X44 PWR	20 AWG	CABLE	CO01-J7 (7)
2	WHT	49-12 X44 GND	20 AWG	CABLE	CO01-J7 (14)
3	BLU	CAN HI	20 AWG	CABLE	MS169 (2)
4	BLK	CAN LOW	20 AWG	CABLE	MS169 (4)
5	GRY	CAN SHIELD	20 AWG	CABLE	MS169 (6)

X5A PLATFORM SENSOR					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	P2 SKYG PWR	18 AWG	GXL	X38A (3)
2	BLK	P6 SKYG GND	18 AWG	GXL	AH30- (1)
3					
4	WHT	P1 SKYG INPUT #1	18 AWG	GXL	CO01-J7 (18)
5	WHT	P3 SKYG INPUT #2	18 AWG	GXL	CO01-J1 (2)
6					

CO01-J7					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-5	18 AWG	GXL	X33A (11)
2	RED	1-4-3 PLTF MODE	18 AWG	GXL	SW35-1A (1A)
3	YEL	2-4	18 AWG	GXL	X33A (4)
4	BRN	49-11 X43 PWR	20 AWG	CABLE	X43A (1)
5	WHT	23-3 PROT LT	18 AWG	GXL	X36A (8)
6	WHT	23-4 PROT RT	18 AWG	GXL	X36A (9)
7	BRN	49-13 X44 PWR	20 AWG	CABLE	X44A (1)
8	WHT	49-25 FTSW OPEN	18 AWG	GXL	X38A (7)
9	WHT	52-4 GEN	18 AWG	GXL	X38A (1)
10					
11					
12					
13					
14	WHT	49-12 X44 GND	20 AWG	CABLE	X44A (2)
15	WHT	25-3 PLVL UP	18 AWG	GXL	S45 (1)
16	WHT	25-4 PLVL DN	18 AWG	GXL	S46 (1)
17					
18	WHT	P1 SKYG INPUT #1	18 AWG	GXL	X5A (4)
19	WHT	49-26 ALARM	18 AWG	GXL	AH30+ (1)
20	BLK	0-5	18 AWG	GXL	AH30- (1)
21	WHT	49-22 GND	18 AWG	GXL	X36A (3)
22					
23					
24					
25	WHT	55-26 JLOCK IN	18 AWG	GXL	X36A (10)
26	WHT	55-25 JLOCK OUT	18 AWG	GXL	X36A (11)
27					
28					
29	BLK	0-4	18 AWG	GXL	X36A (12)
30	GRN	CAN LOW	20 AWG	J1939 CABLE	MS41 (4)
31	YEL	CAN HI	20 AWG	J1939 CABLE	MS41 (2)
32	SHLD	CAN SHIELD	20 AWG	J1939 CABLE	MS41 (6)
33	WHT	49-23 GND	18 AWG	GXL	X36A (17)
34	WHT	49-10 X43 GND	20 AWG	CABLE	X43A (2)
35					

MS169 (SEE NOTE 5)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	CAN HI	20 AWG	CABLE	X180 (4)
2	BLU	CAN HI	20 AWG	CABLE	X44A (3)
3	GRY	CAN LOW	20 AWG	CABLE	X180 (5)
4	BLK	CAN LOW	20 AWG	CABLE	X44A (4)
5	SHLD	CAN SHIELD	20 AWG	J1939 CABLE	MS41 (7)
6	GRY	CAN SHIELD	20 AWG	CABLE	X44A (5)
7					
8					
9	GRN	CAN LOW	20 AWG	J1939 CABLE	MS41 (9)
10	GRN	CAN LOW	20 AWG	TXL	GD299 (4)
11	YEL	CAN HI	20 AWG	TXL	GD299 (1)
12	YEL	CAN HI	20 AWG	J1939 CABLE	MS41 (11)

S480					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-25	12 AWG	GXL	X398 (1)
2	-	2-25 FUSIBLE LINK	12 AWG	FUSIBLE LINK	X33A (10)

S481					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-26	12 AWG	GXL	X399 (1)
2	-	2-26 FUSIBLE LINK	12 AWG	FUSIBLE LINK	X33A (12)

CO01-J8					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-41-2	12 AWG	GXL	X390 (1)
2	YEL	2-25-1	12 AWG	GXL	X387 (1)

Figure 7-22. Platform Box Wiring Harness - Sheet 2 of 5

AH30+					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	49-26 ALARM	18 AWG	GXL	CO01-J7 (19)

AH30-					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-5	18 AWG	GXL	CO01-J7 (20)
1	BLK	P6 SKYG GND	18 AWG	GXL	X5A (2)

MS41					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	CAN HI	20 AWG	J1939 CABLE	X472B (1)
2	YEL	CAN HI	20 AWG	J1939 CABLE	CO01-J7 (31)
3	GRN	CAN LOW	20 AWG	J1939 CABLE	X472B (2)
4	GRN	CAN LOW	20 AWG	J1939 CABLE	CO01-J7 (30)
5	SHLD	CAN SHIELD	20 AWG	J1939 CABLE	X472B (3)
6	SHLD	CAN SHIELD	20 AWG	J1939 CABLE	CO01-J7 (32)
7	SHLD	CAN SHIELD	20 AWG	J1939 CABLE	MS169 (5)
8	GRY	CAN SHIELD	20 AWG	CABLE	X43A (5)
9	GRN	CAN LOW	20 AWG	J1939 CABLE	MS169 (9)
10	BLK	CAN LOW	20 AWG	CABLE	X43A (4)
11	YEL	CAN HI	20 AWG	J1939 CABLE	MS169 (12)
12	BLU	CAN HI	20 AWG	CABLE	X43A (3)

X384					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-40	12 AWG	GXL	X33A (16)

X391					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-41	12 AWG	GXL	X33A (18)
1	BLK	0-42 DISPLAY	20 AWG	TXL	GD299 (6)

X398					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-25	12 AWG	GXL	S480 (1)

X399					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-26	12 AWG	GXL	S481 (1)
1	YEL	2-27 DISPLAY	20 AWG	TXL	GD299 (3)

X387					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-25-1	12 AWG	GXL	CO01-J8 (2)

X38A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	52-4 GEN	18 AWG	GXL	CO01-J7 (9)
2	YEL	2-7	18 AWG	GXL	CO01-J2 (33)
3	WHT	P2 SKYG PWR	18 AWG	GXL	X5A (1)
4	WHT	49-27	18 AWG	GXL	X38A (5)
5	WHT	49-27	18 AWG	GXL	X38A (4)
6	YEL	2-8-1	18 AWG	GXL	X38A (8)
7	WHT	49-25 FTSW OPEN	18 AWG	GXL	CO01-J7 (8)
8	YEL	2-8	18 AWG	GXL	CO01-J2 (3)
8	YEL	2-8-1	18 AWG	GXL	X38A (6)
9					
10					
11					
12					
13					
14					
15					

X397					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLU	GND	20 AWG	CABLE	X180 (3)

X388					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-7	16 AWG	TXL	X36A (19)
1	BLK	0-8	18 AWG	GXL	X36A (5)

SW10					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1					
2	WHT	49-14 CREEP	18 AWG	GXL	CO01-J1 (32)
3	YEL	2-1-5	18 AWG	GXL	SW08-1 (1)
3	YEL	2-1-7	18 AWG	GXL	SW13 (2)
4	WHT	55-4 POT REF	18 AWG	GXL	CO01-J1 (34)
5	BLK	0-3	18 AWG	GXL	CO01-J1 (13)
6	WHT	55-5 PUMP POT	18 AWG	GXL	CO01-J1 (35)

SW15 HIGH DRIVE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	48-1 ENG SPD	18 AWG	GXL	CO01-J1 (28)
2	YEL	2-1	18 AWG	GXL	CO01-J1 (18)
2	YEL	2-1-1	18 AWG	GXL	SW16 (2)
3	WHT	48-2 2 SPD	18 AWG	GXL	CO01-J1 (27)

SW16 STEER MODE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	55-2 CRB STR	18 AWG	GXL	CO01-J1 (16)
2	YEL	2-1-1	18 AWG	GXL	SW15 (2)
2	YEL	2-1-2	18 AWG	GXL	SW17 (2)
3	WHT	55-3 CRD STR	18 AWG	GXL	CO01-J1 (17)

SW17 PLTFM LEVEL					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	25-1 PLVL UP	18 AWG	GXL	CO01-J1 (9)
2	YEL	2-1-2	18 AWG	GXL	SW16 (2)
2	YEL	2-1-3	18 AWG	GXL	SW18 (2)
3	WHT	25-2 PLVL DN	18 AWG	GXL	CO01-J1 (10)

SW18 AXLE EXT/RET					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	39-2 AXL EXT	18 AWG	GXL	CO01-J1 (23)
2	YEL	2-1-3	18 AWG	GXL	SW17 (2)
2	YEL	2-1-4	18 AWG	GXL	SW08-1 (1)
3	WHT	39-3 AXL RET	18 AWG	GXL	CO01-J1 (24)

SW08-1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-1-4	18 AWG	GXL	SW18 (2)
1	YEL	2-1-5	18 AWG	GXL	SW10 (3)

SW08-2					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	52-2 HORN	18 AWG	GXL	CO01-J1 (31)

X38B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1					
2					
3	YEL	SOFTT OPT	18 AWG	GXL	X38B (6)
4					
5					
6	YEL	SOFTT OPT	18 AWG	GXL	X38B (3)
7					
8					
9					
10					
11					
12					
13					
14					
15					

Figure 7-23. Platform Box Wiring Harness - Sheet 3 of 5

LB12+					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	49-21 SFTCH LT	18 AWG	GXL	CO01-J2 (16)

LB12-					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-1-2-2	18 AWG	GXL	C001- J2 (25)

SW20-2					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	49-15 SFT TOUCH	18 AWG	GXL	CO01-J1 (29)

SW20-1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-1-10	18 AWG	GXL	SW19 (2)
1	YEL	2-1-11	18 AWG	GXL	SW21 (2)

SW22-1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-1-12	18 AWG	GXL	SW21 (2)
1	YEL	2-1-13	18 AWG	GXL	SW23 (2)

SW22-2					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	52-3 HEAD/TAIL LT	18 AWG	GXL	CO01-J1 (30)

SW23 MAIN BOOM TELE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	13-1 MTELE IN	18 AWG	GXL	CO01-J1 (5)
2	YEL	2-1-13	18 AWG	GXL	SW22-1 (1)
2	YEL	2-1-14	18 AWG	GXL	SW24 (2)
3	WHT	13-2 MTELE OUT	18 AWG	GXL	CO01-J1 (6)

SW21 JIB LIFT					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	27-1 JIB UP	18 AWG	GXL	CO01-J1 (11)
2	YEL	2-1-11	18 AWG	GXL	SW20-1 (1)
2	YEL	2-1-12	18 AWG	GXL	SW22-1 (1)
3	WHT	27-2 JIB DN	18 AWG	GXL	CO01-J1 (12)

SW19 JIB SWING					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	59-1 JSWG RT	18 AWG	GXL	CO01-J2 (1)
2	YEL	2-1-10	18 AWG	GXL	SW20-1 (1)
2	YEL	2-1-9	18 AWG	GXL	SW14 (2)
3	WHT	59-2 JSWG LT	18 AWG	GXL	CO01-J2 (2)

SW27 DRIVE ORIENT					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	55-6 DOS	18 AWG	GXL	CO01-J2 (4)
2	YEL	2-1-17	18 AWG	GXL	SW26 (2)
3					

SW14 JIB TELE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	29-1 JTELE IN	18 AWG	GXL	CO01-J1 (3)
2	YEL	2-1-8	18 AWG	GXL	SW13 (2)
2	YEL	2-1-9	18 AWG	GXL	SW19 (2)
3	WHT	29-2 JTELE OUT	18 AWG	GXL	CO01-J1 (4)

SW13 PLTFM ROTATE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	23-1 P ROT RT	18 AWG	GXL	CO01-J1 (7)
2	YEL	2-1-7	18 AWG	GXL	SW10 (3)
2	YEL	2-1-8	18 AWG	GXL	SW14 (2)
3	WHT	23-2 P ROT LT	18 AWG	GXL	CO01-J1 (8)

SW24 BOOM CONTROL					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1					
2	YEL	2-1-14	18 AWG	GXL	SW23 (2)
2	YEL	2-1-15	18 AWG	GXL	SW25 (2)
3	WHT	49-16 ENVLP	18 AWG	GXL	CO01-J1 (22)

GD299					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	CAN HI	20 AWG	TXL	MS169 (11)
2					
3	YEL	2-27 DISPLAY	20 AWG	TXL	X399 (1)
4	GRN	CAN LOW	20 AWG	TXL	MS169 (10)
5					
6	BLK	0-42 DISPLAY	20 AWG	TXL	X391 (1)

SW35-2A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
2A	RED	1-4-3	18 AWG	GXL	X33A (5)

SW35-1A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1A	RED	1-4-3 PLTF MODE	18 AWG	GXL	CO01-J7 (2)

SW25 STRT/AUX PWR					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	48-3 STRT	18 AWG	GXL	CO01-J1 (14)
2	YEL	2-1-15	18 AWG	GXL	SW24 (2)
2	YEL	2-1-16	18 AWG	GXL	SW26 (2)
3	WHT	53-1 AUX	18 AWG	GXL	CO01-J1 (15)

SW26 CAPACITY SEL					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1					
2	YEL	2-1-16	18 AWG	GXL	SW25 (2)
2	YEL	2-1-17	18 AWG	GXL	SW27 (2)
3	WHT	54-3 CPCITY SW	18 AWG	GXL	CO01-J1 (21)

Figure 7-24. Platform Box Wiring Harness - Sheet 4 of 5

C001-J2					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	59-1 JSWG RT	18 AWG	GXL	SW19 (1)
2	WHT	59-2 JSWG LT	18 AWG	GXL	SW19 (3)
3	YEL	2-8	18 AWG	GXL	X38A (8)
4	WHT	55-6 DOS	18 AWG	GXL	SW27 (1)
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16	WHT	49-21 SFTCH LT	18 AWG	GXL	LB12+ (1)
17					
18					
19					
20					
21					
22					
23					
24					
25	BLK	0-1-2-2	18 AWG	GXL	LB12 - (1)
26	WHT	49-9 ANALPWR	18 AWG	GXL	X32 (1)
27	WHT	49-6 ANALGND	18 AWG	GXL	X32 (4)
28	WHT	49-8 RX	18 AWG	GXL	X32 (2)
29	WHT	49-7 TX	18 AWG	GXL	X32 (3)
30					
31					
32	YEL	2-6	18 AWG	GXL	S40 (1)
33	YEL	2-7	18 AWG	GXL	X38A (2)
34					
35					

X32					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	49-9 ANALPWR	18 AWG	GXL	C001-J2 (26)
2	WHT	49-8 RX	18 AWG	GXL	C001-J2 (28)
3	WHT	49-7 TX	18 AWG	GXL	C001-J2 (29)
4	WHT	49-6 ANALGND	18 AWG	GXL	C001-J2 (27)

X390					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-41-2	12 AWG	GXL	C001-J8 (1)

X385					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-40-3	16 AWG	GXL	X392 (1)
1	BLK	0-41-3	16 AWG	GXL	X392 (3)

S46					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	25-4 PLVL DN	18 AWG	GXL	C001-J7 (16)
2	WHT	25-4-1 PLVL DN	18 AWG	GXL	X36A (6)
2	WHT	25-5 PLVL DN O/R	18 AWG	GXL	X33A (7)

C001-J1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	49-20 PROX NC	18 AWG	GXL	X33A (15)
2	WHT	P3 SKYG INPUT #2	18 AWG	GXL	X5A (5)
3	WHT	29-1 JTELE IN	18 AWG	GXL	SW14 (1)
4	WHT	29-2 JTELE OUT	18 AWG	GXL	SW14 (3)
5	WHT	13-1 MTELE IN	18 AWG	GXL	SW23 (1)
6	WHT	13-2 MTELE OUT	18 AWG	GXL	SW23 (3)
7	WHT	23-1 P ROT RT	18 AWG	GXL	SW13 (1)
8	WHT	23-2 P ROT LT	18 AWG	GXL	SW13 (3)
9	WHT	25-1 PLVL UP	18 AWG	GXL	SW17 (1)
10	WHT	25-2 PLVL DN	18 AWG	GXL	SW17 (3)
11	WHT	27-1 JIB UP	18 AWG	GXL	SW21 (1)
12	WHT	27-2 JIB DN	18 AWG	GXL	SW21 (3)
13	BLK	0-3	18 AWG	GXL	SW10 (5)
14	WHT	48-3 STRT	18 AWG	GXL	SW25 (1)
15	WHT	53-1 AUX	18 AWG	GXL	SW25 (3)
16	WHT	55-2 CRB STR	18 AWG	GXL	SW16 (1)
17	WHT	55-3 CRD STR	18 AWG	GXL	SW16 (3)
18	YEL	2-1	18 AWG	GXL	SW15 (2)
19					
20	WHT	49-50 PROX NC	18 AWG	GXL	X36A (4)
21	WHT	54-3 CPCITY SW	18 AWG	GXL	SW26 (3)
22	WHT	49-16 ENVLP	18 AWG	GXL	SW24 (3)
23	WHT	39-2 AXL EXT	18 AWG	GXL	SW18 (1)
24	WHT	39-3 AXL RET	18 AWG	GXL	SW18 (3)
25	WHT	49-18 PLVL 1	18 AWG	GXL	X36A (2)
26	WHT	49-17 PLVL 2	18 AWG	GXL	X36A (16)
27	WHT	48-2 2 SPD	18 AWG	GXL	SW15 (3)
28	WHT	48-1 ENG SPD	18 AWG	GXL	SW15 (1)
29	WHT	49-15 SFT TOUCH	18 AWG	GXL	SW20-2 (1)
30	WHT	52-3 HEAD/TAIL LT	18 AWG	GXL	SW22-2 (1)
31	WHT	52-2 HORN	18 AWG	GXL	SW08-2 (1)
32	WHT	49-14 CREEP	18 AWG	GXL	SW10 (2)
33	WHT	49-19 PROX NO	18 AWG	GXL	X33A (13)
34	WHT	55-4 POT REF	18 AWG	GXL	SW10 (4)
35	WHT	55-5 PUMP POT	18 AWG	GXL	SW10 (6)

X180					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1					
2	WHT	PWR	20 AWG	CABLE	X386 (1)
3	BLU	GND	20 AWG	CABLE	X397 (1)
4	BLK	CAN HI	20 AWG	CABLE	MS169 (1)
5	GRY	CAN LOW	20 AWG	CABLE	MS169 (3)

X472A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	CAN HI	20 AWG	J1939 CABLE	X33A (3)
2	GRN	CAN LOW	20 AWG	J1939 CABLE	X33A (2)
3	SHLD	CAN SHIELD	20 AWG	J1939 CABLE	X33A (1)

X386					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	PWR	20 AWG	CABLE	X180 (2)

X472B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	CAN HI	20 AWG	J1939 CABLE	MS41 (1)
2	GRN	CAN LOW	20 AWG	J1939 CABLE	MS41 (3)
3	SHLD	CAN SHIELD	20 AWG	J1939 CABLE	MS41 (5)

Figure 7-25. Platform Box Wiring Harness - Sheet 5 of 5

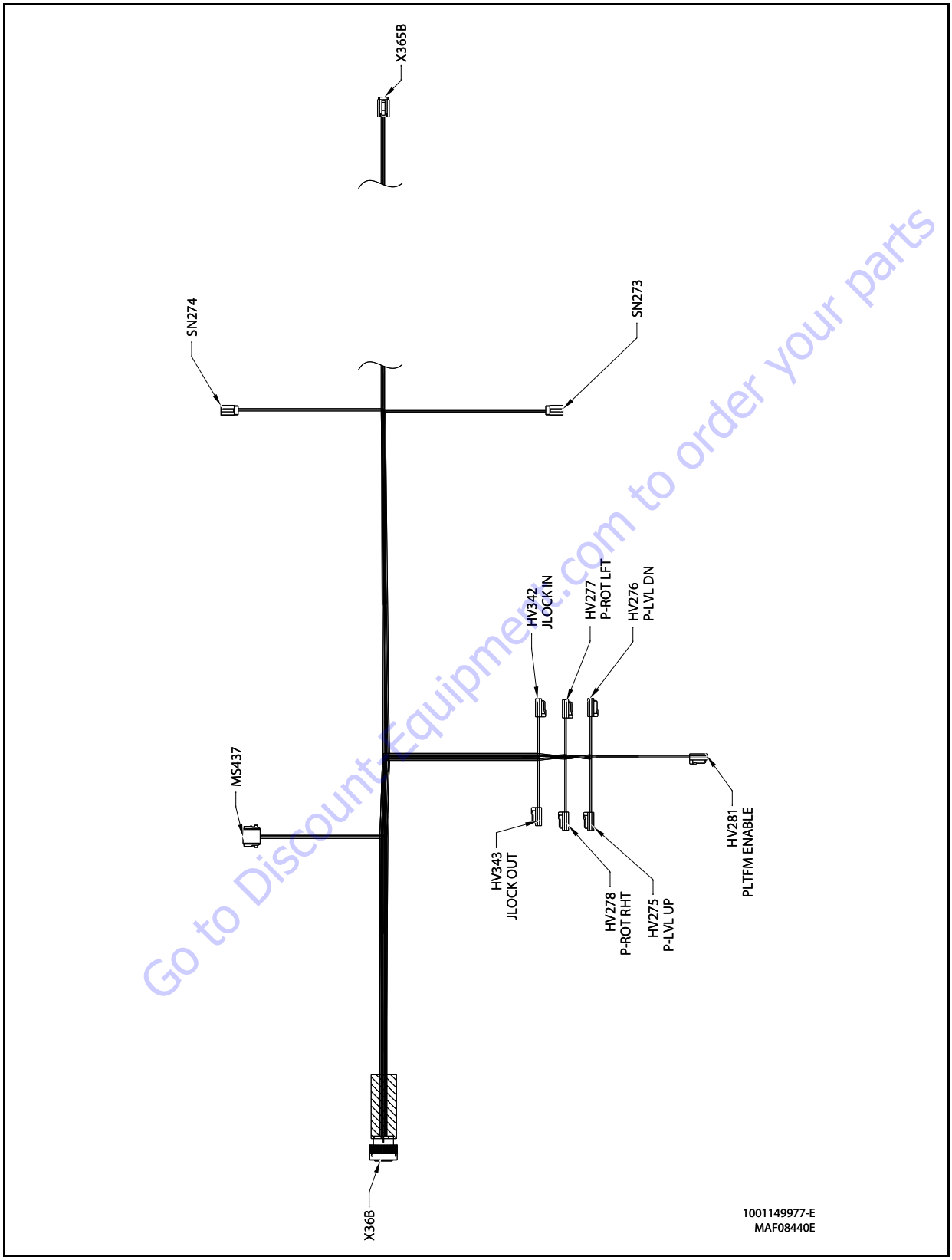


Figure 7-26. Platform Valve Wiring Harness

X36B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	CABLE	18 AWG	CABLE	SN274 (1)
2	BLU	CABLE	18 AWG	CABLE	SN274 (2)
3	BLK	CABLE	18 AWG	CABLE	SN274 (3)
4	BLU	CABLE	16 AWG	CABLE	X365B (3)
5	SHIELD	SHIELD	18 AWG	SHLD	NC ()
6	WHT	25-4-2 PLVL DN	18 AWG	GXL	HV276 (1)
7	WHT	25-3-2 PLVL UP	18 AWG	GXL	HV275 (1)
8	WHT	23-3 PROT LT	18 AWG	GXL	HV277 (1)
9	WHT	23-4 PROT RT	18 AWG	GXL	HV278 (1)
10	WHT	55-26 JLOCK IN	18 AWG	GXL	HV342 (1)
11	WHT	55-25 JLOCK OUT	18 AWG	GXL	HV343 (1)
12	BLK	0-4	18 AWG	GXL	MS437 (8)
13	ORG	CABLE	16 AWG	CABLE	X365B (2)
14	BLK	CABLE	16 AWG	CABLE	X365B (4)
15	ORG	CABLE	18 AWG	CABLE	SN273 (1)
16	YEL	CABLE	18 AWG	CABLE	SN273 (2)
17	BLK	CABLE	18 AWG	CABLE	SN273 (3)
18	WHT	25-5 PLTFRM DUMP	16 AWG	GXL	HV281 (1)
19	BLK	0-7	16 AWG	GXL	HV281 (2)
20	RED	CABLE	16 AWG	CABLE	X365B (1)
21					

MS437					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-4-4	18 AWG	GXL	HV278 (2)
2	BLK	0-4-3	18 AWG	GXL	HV277 (2)
3	BLK	0-4-1	18 AWG	GXL	HV275 (2)
4	BLK	0-4-2	18 AWG	GXL	HV276 (2)
5					
6	BLK	0-4-6	18 AWG	GXL	HV343 (2)
7	BLK	0-4-5	18 AWG	GXL	HV342 (2)
8	BLK	0-4	18 AWG	GXL	X36B (12)

HV342 JLOCK IN					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	55-26 JLOCK IN	18 AWG	GXL	X36B (10)
2	BLK	0-4-5	18 AWG	GXL	MS437 (7)

HV278 P-ROT RHT					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	23-4 PROT RT	18 AWG	GXL	X36B (9)
2	BLK	0-4-4	18 AWG	GXL	MS437 (1)

HV275 P-LVL UP					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	25-3-2 PLVL UP	18 AWG	GXL	X36B (7)
2	BLK	0-4-1	18 AWG	GXL	MS437 (3)

HV343 JLOCK OUT					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	55-25 JLOCK OUT	18 AWG	GXL	X36B (11)
2	BLK	0-4-6	18 AWG	GXL	MS437 (6)

HV277 P-ROT LFT					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	23-3 PROT LT	18 AWG	GXL	X36B (8)
2	BLK	0-4-3	18 AWG	GXL	MS437 (2)

SN274					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	CABLE	18 AWG	CABLE	X36B (1)
2	BLU	CABLE	18 AWG	CABLE	X36B (2)
3	BLK	CABLE	18 AWG	CABLE	X36B (3)

X365B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	CABLE	16 AWG	CABLE	X36B (20)
2	ORG	CABLE	16 AWG	CABLE	X36B (13)
3	BLU	CABLE	16 AWG	CABLE	X36B (4)
4	BLK	CABLE	16 AWG	CABLE	X36B (14)

SN273					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	ORG	CABLE	18 AWG	CABLE	X36B (15)
2	YEL	CABLE	18 AWG	CABLE	X36B (16)
3	BLK	CABLE	18 AWG	CABLE	X36B (17)

HV281 PLTFM ENABLE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	25-5 PLTFRM DUMP	16 AWG	GXL	X36B (18)
2	BLK	0-7	16 AWG	GXL	X36B (19)

HV276 P-LVL DN					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	25-4-2 PLVL DN	18 AWG	GXL	X36B (6)
2	BLK	0-4-2	18 AWG	GXL	MS437 (4)

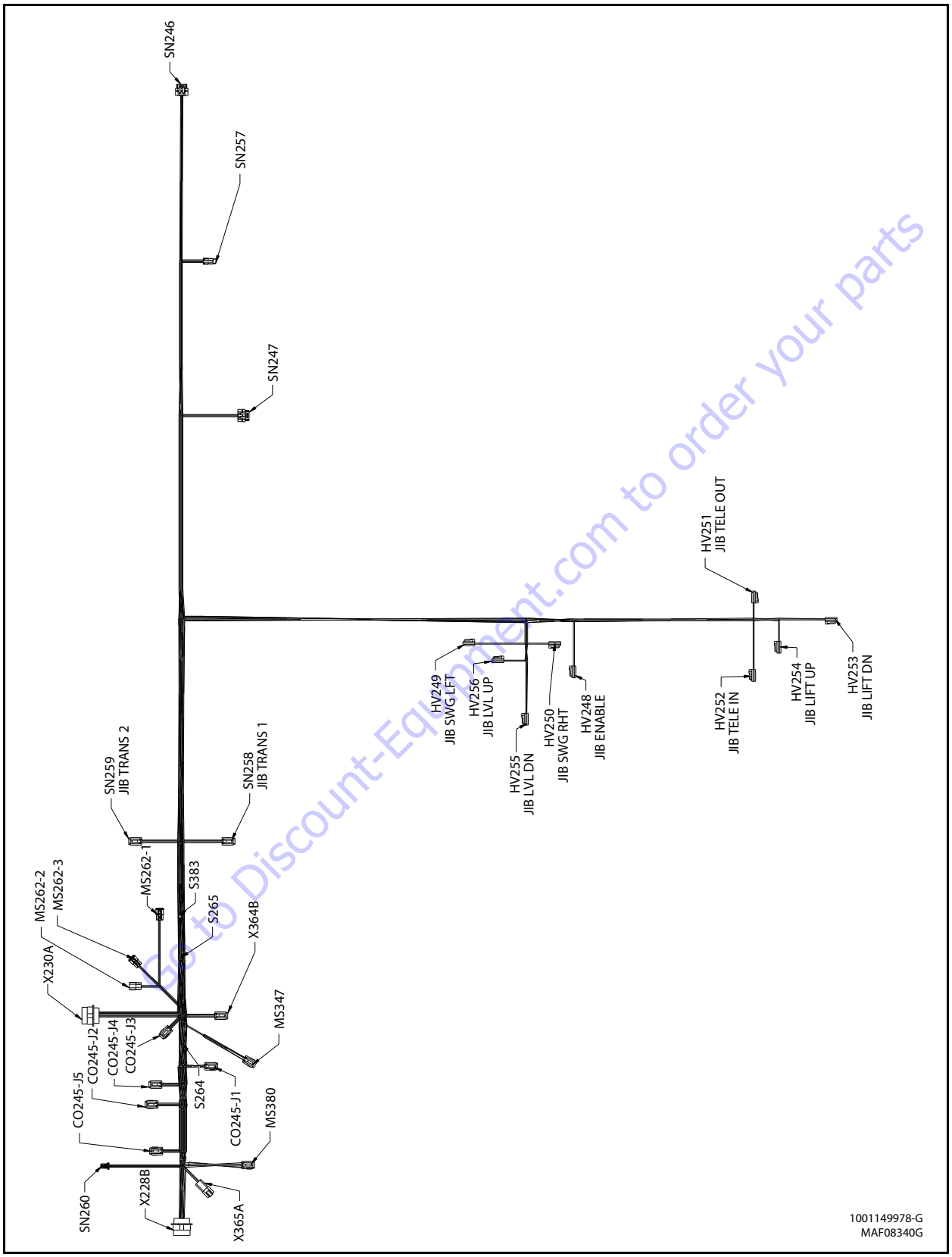


Figure 7-27. Jib Valve Wiring Harness

S264					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	27-5-1 JIB UP	18AWG	GXL	CO245-J5(1)
1	WHT	27-6-1 J-UP O/R	18AWG	GXL	CO245-J2(2)
2	WHT	27-5-2 JIB UP	18AWG	GXL	HV254(1)

S265					
CONN POS	WIREC OLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	27-3-1 JIB DN O/R	18AWG	GXL	CO245-J2(1)
1	WHT	27-4-1 JIB DN	18AWG	GXL	CO245-J5(2)
2	WHT	27-4-2 JIB DN	18AWG	GXL	HV253(1)

S383					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-27	18AWG	GXL	MS380(12)
2	BLK	0-27-1	18AWG	GXL	SN259(3)
2	BLK	0-47	16AWG	GXL	HV248(2)

SN246					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	BLK	GROUND	18AWG	CABLE	CO245-J3(12)
B	RED	5V PWR	18AWG	CABLE	CO245-J3(10)
C	BLU	SIGNAL	18AWG	CABLE	CO245-J3(8)
D	WHT	SIGNAL	18AWG	CABLE	CO245-J3(11)
E	GRN	GROUND	18AWG	CABLE	CO245-J3(9)
F	ORG	5V PWR	18AWG	CABLE	CO245-J3(7)

SN257					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-22	18AWG	GXL	CO245-J4(1)
2	WHT	49-42 LOCK NC	18AWG	GXL	CO245-J2(5)
3	BLK	0-23	18AWG	GXL	CO245-J4(2)
4	WHT	49-41 LOCK NO	18AWG	GXL	CO245-J2(4)

HV252 (JIB TELE IN)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	29-3-1 JIB IN	18AWG	GXL	CO245-J5(5)
2	BLK	0-26-3	18AWG	GXL	MS347(4)

SN247					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	BLK	GROUND	18AWG	CABLE	CO245-J3(6)
B	RED	5V PWR	18AWG	CABLE	CO245-J3(4)
C	BLU	SIGNAL	18AWG	CABLE	CO245-J3(2)
D	WHT	SIGNAL	18AWG	CABLE	CO245-J3(5)
E	GRN	GROUND	18AWG	CABLE	CO245-J3(3)
F	ORG	5V PWR	18AWG	CABLE	CO245-J3(1)

HV253 JIB LIFT DN					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	27-4-2 JIB DN	18AWG	GXL	S265(2)
2	BLK	0-26-2	18AWG	GXL	MS347(9)

HV254 JIB LIFT UP					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	27-5-2 JIB UP	18AWG	GXL	S264(2)
2	BLK	0-26-1	18AWG	GXL	MS347(10)

HV251 JIB TELE OUT					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	29-4-1 JIB OUT	18AWG	GXL	CO245-J5(6)
2	BLK	0-26-4	18AWG	GXL	MS347(3)

HV248 JIB ENABLE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	50-3 JIB DUMP	16AWG	GXL	X364B(3)
2	BLK	0-47	16AWG	GXL	S383(2)

HV249 JIB SWG LFT					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	59-2-1 JSWG LT	18AWG	GXL	CO245-J5(4)
2	BLK	0-26-6	18AWG	GXL	MS347(1)

HV255 (JIB LVL DN)					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	55-19 JLVL DN	18AWG	GXL	CO245-J2(12)
2	BLK	0-25-2	18AWG	GXL	MS347(7)

HV256 JIB LVL UP					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	55-20 JLVL UP	18AWG	GXL	CO245-J2(11)
2	BLK	0-25-1	18AWG	GXL	MS347(8)

HV250 JIB SWG RHT					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	59-1-1 JSWG RT	18AWG	GXL	CO245-J5(3)
2	BLK	0-26-5	18AWG	GXL	MS347(2)

SN258 JIB TRANS 1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-21	18AWG	GXL	CO245-J4(7)
2	WHT	49-44 PROX 1NC	18AWG	GXL	CO245-J2(7)
3	BLK	0-24	18AWG	GXL	CO245-J4(8)
4	WHT	49-43 PROX 1NO	18AWG	GXL	CO245-J2(6)

SN259 JIB TRANS 2					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-19	18AWG	GXL	MS380(9)
2	WHT	49-20 PROX NC	18AWG	GXL	X228B(15)
3	BLK	0-27-1	18AWG	GXL	S383(2)
4	WHT	49-19 PROX NO	18AWG	GXL	X228B(13)

MS262-1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CAN HI	20AWG	J1939CABLE	X228B(3)
B	GRN	CAN LOW	20AWG	J1939CABLE	X228B(2)
C	SHLD	SHIELD	20AWG	J1939CABLE	X228B(1)

MS262-2					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	BLU	CAN HI	20AWG	CABLE	SN260(3)
B	BLK	CAN LOW	20AWG	CABLE	SN260(4)
C	GRY	SHIELD	20AWG	CABLE	SN260(5)

MS262-3					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CAN HI	20AWG	J1939CABLE	CO245-J4(3)
B	GRN	CAN LOW	20AWG	J1939CABLE	CO245-J4(4)
C	SHLD	SHIELD	20AWG	J1939CABLE	CO245-J4(5)

X364B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-7-2 WK LT PWR	16AWG	GXL	X365A(1)
2	RED	1-7-1 WK LT PWR	16AWG	GXL	X365A(2)
3	WHT	50-3 JIB DUMP	16AWG	GXL	HV248(1)
4	WHT	50-2 PLTFM DUMP	16AWG	GXL	X365A(4)

X230A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	SHLD	SHIELD	20AWG	J1939CABLE	CO245-J1(8)
2	GRN	CAN LOW	20AWG	J1939CABLE	CO245-J1(7)
3	YEL	CAN HI	20AWG	J1939CABLE	CO245-J1(6)
4	YEL	2-4	18AWG	GXL	X228B(4)
5	RED	1-4-3	18AWG	GXL	X228B(5)
6	YEL	2-15	18AWG	GXL	X228B(6)
7	WHT	25-5PLVL DN O/R	18AWG	GXL	X228B(7)
8					
9	WHT	25-6PLVL UP O/R	18AWG	GXL	X228B(9)
10	YEL	2-25	12AWG	GXL	MS380(7)
11	YEL	2-5	18AWG	GXL	X228B(11)
12	YEL	2-26	12AWG	GXL	MS380(6)
13	WHT	27-6 J-UP O/R	18AWG	GXL	CO245-J1(2)
14					
15	WHT	27-3 JIB DN O/R	18AWG	GXL	CO245-J1(1)
16	BLK	0-40	12AWG	GXL	MS380(10)
17					
18	BLK	0-41	12AWG	GXL	MS380(3)
19					

C0245-J3					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	ORG	5V PWR	18AWG	CABLE	SN247(F)
2	BLU	SIGNAL	18AWG	CABLE	SN247(C)
3	GRN	GROUND	18AWG	CABLE	SN247(E)
4	RED	5V PWR	18AWG	CABLE	SN247(B)
5	WHT	SIGNAL	18AWG	CABLE	SN247(D)
6	BLK	GROUND	18AWG	CABLE	SN247(A)
7	ORG	5V PWR	18AWG	CABLE	SN246(F)
8	BLU	SIGNAL	18AWG	CABLE	SN246(C)
9	GRN	GROUND	18AWG	CABLE	SN246(E)
10	RED	5V PWR	18AWG	CABLE	SN246(B)
11	WHT	SIGNAL	18AWG	CABLE	SN246(D)
12	BLK	GROUND	18AWG	CABLE	SN246(A)

C0245-J2					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	27-3-1 JIB DN O/R	18AWG	GXL	S265(1)
2	WHT	27-6-1 J-UP O/R	18AWG	GXL	S264(1)
3	BLK	0-25	18AWG	GXL	MS347(11)
4	WHT	49-41 LOCK NO	18AWG	GXL	SN257(4)
5	WHT	49-42 LOCK NC	18AWG	GXL	SN257(2)
6	WHT	49-43 PROX 1NO	18AWG	GXL	SN258(4)
7	WHT	49-44PROX1NC	18AWG	GXL	SN258(2)
8					
9					
10					
11	WHT	55-20 JLVL UP	18AWG	GXL	HV256(1)
12	WHT	55-19 JLVL DN	18AWG	GXL	HV255(1)

MS347					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-26-6	18AWG	GXL	HV249(2)
2	BLK	0-26-5	18AWG	GXL	HV250(2)
3	BLK	0-26-4	18AWG	GXL	HV251(2)
4	BLK	0-26-3	18AWG	GXL	HV252(2)
5					
6					
7	BLK	0-25-2	18AWG	GXL	HV255(2)
8	BLK	0-25-1	18AWG	GXL	HV256(2)
9	BLK	0-26-2	18AWG	GXL	HV253(2)
10	BLK	0-26-1	18AWG	GXL	HV254(2)
11	BLK	0-25	18AWG	GXL	C0245-J2(3)
12	BLK	0-26	18AWG	GXL	C0245-J5(12)

C0245-J1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	27-3 JIB DN O/R	18AWG	GXL	X230A(15)
2	WHT	27-6 J-UP O/R	18AWG	GXL	X230A(13)
3					
4	BLK	0-28	14AWG	GXL	MS380(11)
5	YEL	2-18	14AWG	GXL	MS380(8)
6	YEL	CAN HI	20AWG	J1939CABLE	X230A(3)
7	GRN	CAN LOW	20AWG	J1939CABLE	X230A(2)
8	SHLD	SHIELD	20AWG	J1939CABLE	X230A(1)
9					
10					
11	BRN	2-20	20AWG	CABLE	SN260(1)
12	WHT	0-29	20AWG	CABLE	SN260(2)

C0245-J4					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-22	18AWG	GXL	SN257(1)
2	BLK	0-23	18AWG	GXL	SN257(3)
3	YEL	CAN HI	20AWG	J1939CABLE	MS262-3(A)
4	GRN	CAN LOW	20AWG	J1939CABLE	MS262-3(B)
5	SHLD	SHIELD	20AWG	J1939CABLE	MS262-3(C)
6					
7	YEL	2-21	18AWG	GXL	SN258(1)
8	BLK	0-24	18AWG	GXL	SN258(3)

SN260					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BRN	2-20	20AWG	CABLE	C0245-J1(11)
2	WHT	0-29	20AWG	CABLE	C0245-J1(12)
3	BLU	CAN HI	20AWG	CABLE	MS262-2(A)
4	BLK	CAN LOW	20AWG	CABLE	MS262-2(B)
5	GRY	SHIELD	20AWG	CABLE	MS262-2(C)

C0245-J5					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	27-5-1 JIB UP	18AWG	GXL	S264(1)
2	WHT	27-4-1 JIB DN	18AWG	GXL	S265(1)
3	WHT	59-1-1 JSWG RT	18AWG	GXL	HV250(1)
4	WHT	59-2-1 JSWG LT	18AWG	GXL	HV249(1)
5	WHT	29-3-1 JIB IN	18AWG	GXL	HV252(1)
6	WHT	29-4-1 JIB OUT	18AWG	GXL	HV251(1)
7					
8					
9					
10					
11					
12	BLK	0-26	18AWG	GXL	MS347(12)

MS380					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-41	12AWG	GXL	X228B(18)
2	BLK	0-40	12AWG	GXL	X228B(16)
3	BLK	0-41	12AWG	GXL	X230A(18)
4	YEL	2-25	12AWG	GXL	X228B(10)
5	YEL	2-26	12AWG	GXL	X228B(12)
6	YEL	2-26	12AWG	GXL	X230A(12)
7	YEL	2-25	12AWG	GXL	X230A(10)
8	YEL	2-18	14AWG	GXL	C0245-J1(5)
9	YEL	2-19	18AWG	GXL	SN259(1)
10	BLK	0-40	12AWG	GXL	X230A(16)
11	BLK	0-28	14AWG	GXL	C0245-J1(4)
12	BLK	0-27	18AWG	GXL	S383(1)

X365A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-7-2 WK LT PWR	16AWG	GXL	X364B(1)
2	RED	1-7-1 WK LT PWR	16AWG	GXL	X364B(2)
3					
4	WHT	50-2 PLTFM DUMP	16AWG	GXL	X364B(4)

X228B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	SHLD	SHIELD	20AWG	J1939CABLE	MS262-1(C)
2	GRN	CAN LOW	20AWG	J1939CABLE	MS262-1(B)
3	YEL	CAN HI	20AWG	J1939CABLE	MS262-1(A)
4	YEL	2-4	18AWG	GXL	X230A(4)
5	RED	1-4-3	18AWG	GXL	X230A(5)
6	YEL	2-15	18AWG	GXL	X230A(6)
7	WHT	25-5 PLVL DN O/R	18AWG	GXL	X230A(7)
8					
9	WHT	25-6 PLVL UP O/R	18AWG	GXL	X230A(9)
10	YEL	2-25	12AWG	GXL	MS380(4)
11	YEL	2-5	18AWG	GXL	X230A(11)
12	YEL	2-26	12AWG	GXL	MS380(5)
13	WHT	49-19 PROX NO	18AWG	GXL	SN259(4)
14					
15	WHT	49-20 PROX NC	18AWG	GXL	SN259(2)
16	BLK	0-40	12AWG	GXL	MS380(2)
17					
18	BLK	0-41	12AWG	GXL	MS380(1)
19					

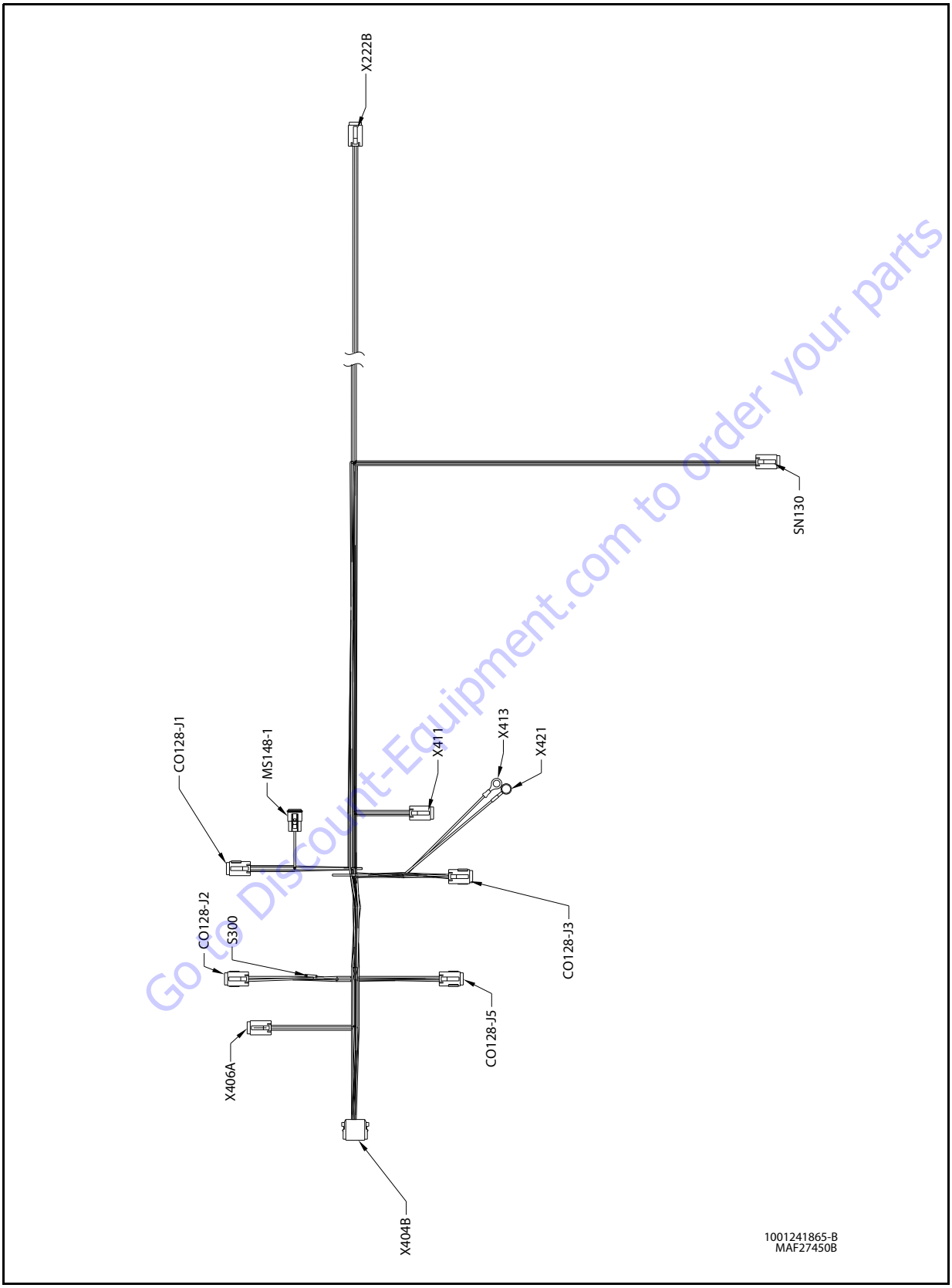


Figure 7-28. BLAM Module Wiring Harness - Sheet 1 of 2

X404B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	B LNGTH	18 AWG	CABLE	CO128-J3 (7)
2	BLU	B LNGTH	18 AWG	CABLE	CO128-J3 (8)
3	BLK	B LNGTH	18 AWG	CABLE	CO128-J3 (9)
4					
5	RED	BRKN CBL PROX	18 AWG	CABLE	X411 (5)
6	BLU	BRKN CBL PROX	18 AWG	CABLE	X411 (3)
7	BLK	BRKN CBL PROX	18 AWG	CABLE	X411 (4)
8	SHIELD	BRKN CBL PROX	18 AWG	SHLD	X411 (6)

X406A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	1-10	18 AWG	GXL	S300 (2)
2	WHT	49-60 GRVTY SEN1	18 AWG	GXL	CO128-J2 (8)
3	BLK	0-55	18 AWG	GXL	CO128-J2 (3)
4					
5	YEL	1-11	18 AWG	GXL	CO128-J2 (1)
6	WHT	49-61 GRVTY SEN2	18 AWG	GXL	CO128-J2 (9)
7	BLK	0-56	18 AWG	GXL	CO128-J2 (2)
8					

CO128-J2					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	1-11	18 AWG	GXL	X406A (5)
2	BLK	0-56	18 AWG	GXL	X406A (7)
3	BLK	0-55	18 AWG	GXL	X406A (3)
4					
5					
6					
7	YEL	1-10-1 CONFIG	18 AWG	GXL	S300 (2)
8	WHT	49-60 GRVTY SEN1	18 AWG	GXL	X406A (2)
9	WHT	49-61 GRVTY SEN2	18 AWG	GXL	X406A (6)
10					
11	WHT	7-1 RDRV PFWD	18 AWG	GXL	X222B (1)
12	WHT	7-2 RDRV PREV	18 AWG	GXL	X222B (2)

CO128-J5					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	7-4 LDRV PFWD	18 AWG	GXL	X222B (6)
2	WHT	7-3 LDRV PREV	18 AWG	GXL	X222B (5)
3					
4					
5					
6					
7					
8					
9	YEL	1-10	18 AWG	GXL	S300 (1)
10					
11					
12	BLK	0-15	18 AWG	GXL	X222B (3)

X222B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	7-1 RDRV PFWD	18 AWG	GXL	CO128-J2 (11)
2	WHT	7-2 RDRV PREV	18 AWG	GXL	CO128-J2 (12)
3	BLK	0-15	18 AWG	GXL	CO128-J5 (12)
4					
5	WHT	7-3 LDRV PREV	18 AWG	GXL	CO128-J5 (2)
6	WHT	7-4 LDRV PFWD	18 AWG	GXL	CO128-J5 (1)

SN130					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	BANG 2	18 AWG	CABLE	CO128-J3 (12)
2	RED	BANG 2	18 AWG	CABLE	CO128-J3 (10)
3	BLU	BANG 2	18 AWG	CABLE	CO128-J3 (5)
4	BLK	BANG 1	18 AWG	CABLE	CO128-J3 (6)
5	RED	BANG 1	18 AWG	CABLE	CO128-J3 (4)
6	BLU	BANG 1	18 AWG	CABLE	CO128-J3 (11)

MS148-1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CAN HIGH	18 AWG	GXL	CO128-J1 (6)
B	GRN	CAN LOW	18 AWG	GXL	CO128-J1 (7)
C					

X411					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-22	14 AWG	GXL	CO128-J1 (4)
2	YEL	2-10	14 AWG	GXL	CO128-J1 (5)
3	BLU	BRKN CBL PROX	18 AWG	CABLE	X404B (6)
4	BLK	BRKN CBL PROX	18 AWG	CABLE	X404B (7)
5	RED	BRKN CBL PROX	18 AWG	CABLE	X404B (5)
6	SHIELD	BRKN CBL PROX	18 AWG	SHLD	X404B (8)

CO128-J1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	IGN JUMP	18 AWG	GXL	CO128-J1 (11)
2	BLK	GND JUMP	18 AWG	GXL	CO128-J1 (12)
3					
4	BLK	0-22	14 AWG	GXL	X411 (1)
5	YEL	2-10	14 AWG	GXL	X411 (2)
6	YEL	CAN HIGH	18 AWG	GXL	MS148-1 (A)
7	GRN	CAN LOW	18 AWG	GXL	MS148-1 (B)
8					
9					
10					
11	YEL	IGN JUMP	18 AWG	GXL	CO128-J1 (1)
12	BLK	GND JUMP	18 AWG	GXL	CO128-J1 (2)

CO128-J3					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	5V	18 AWG	GXL	CO128-J3 (2)
2	WHT	5V	18 AWG	GXL	CO128-J3 (1)
3					
4	RED	BANG 1	18 AWG	CABLE	SN130 (5)
5	BLU	BANG 2	18 AWG	CABLE	SN130 (3)
6	BLK	BANG 1	18 AWG	CABLE	SN130 (4)
7	RED	B LNGTH	18 AWG	CABLE	X404B (1)
8	BLU	B LNGTH	18 AWG	CABLE	X404B (2)
9	BLK	B LNGTH	18 AWG	CABLE	X404B (3)
10	RED	BANG 2	18 AWG	CABLE	SN130 (2)
11	BLU	BANG 1	18 AWG	CABLE	SN130 (6)
12	BLK	BANG 2	18 AWG	CABLE	SN130 (1)

X421					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	SHIELD	B LNGTH	18 AWG	SHLD	X404B (NC)

X413					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	SHIELD	CABLE SHIELD	18 AWG	SHLD	SN130 (NC)
1	SHIELD	CABLE SHIELD	18 AWG	SHLD	SN130 (NC2)

S300					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	1-10	18 AWG	GXL	CO128-J5 (9)
2	YEL	1-10	18 AWG	GXL	X406A (1)
2	YEL	1-10-1 CONFIG	18 AWG	GXL	CO128-J2 (7)

Figure 7-29. BLAM Module Wiring Harness - Sheet 2 of 2

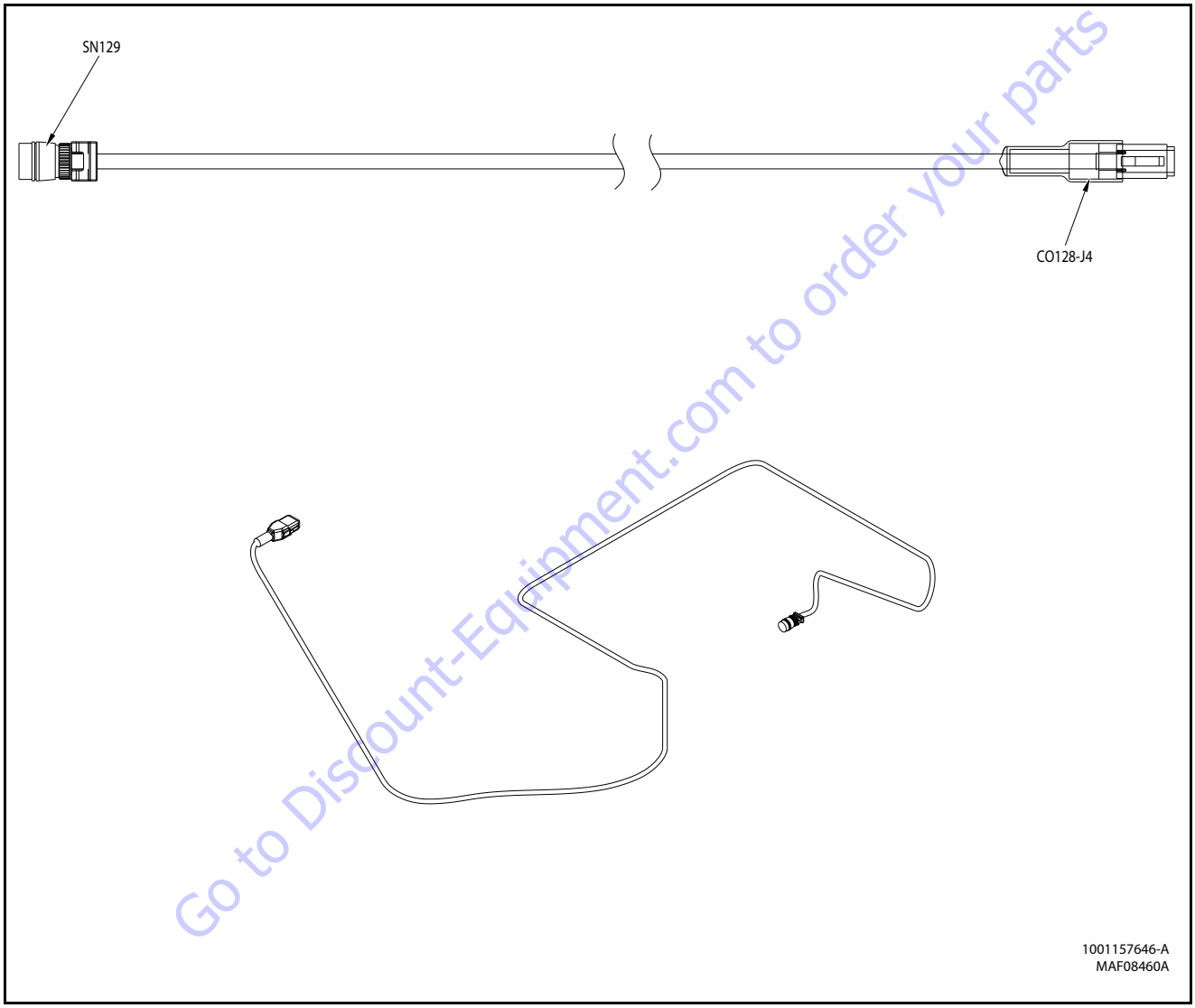


Figure 7-30. Load Sensing Pin Cable

SN129				
CONN POS	**WIRE COLOR**	**WIRE LABEL**	**GAUGE**	**JACKET**
A	RED	+B PWR SUP	22	PVC
B	BLK	-B GND SUP	22	PVC
C				
D	GRN	CAN HI	22	PVC
E	WHT	CAN LO	22	PVC
F				

C0128-J4				
CONN POS	**WIRE COLOR**	**WIRE LABEL**	**GAUGE**	**JACKET**
1	RED	+B PWR SUP	22	PVC
2	BLK	-B GND SUP	22	PVC
3	GRN	CAN HI	22	PVC
4	WHT	CAN LO	22	PVC
5	SHLD	SHIELD	22	PVC
6				
7				
8				

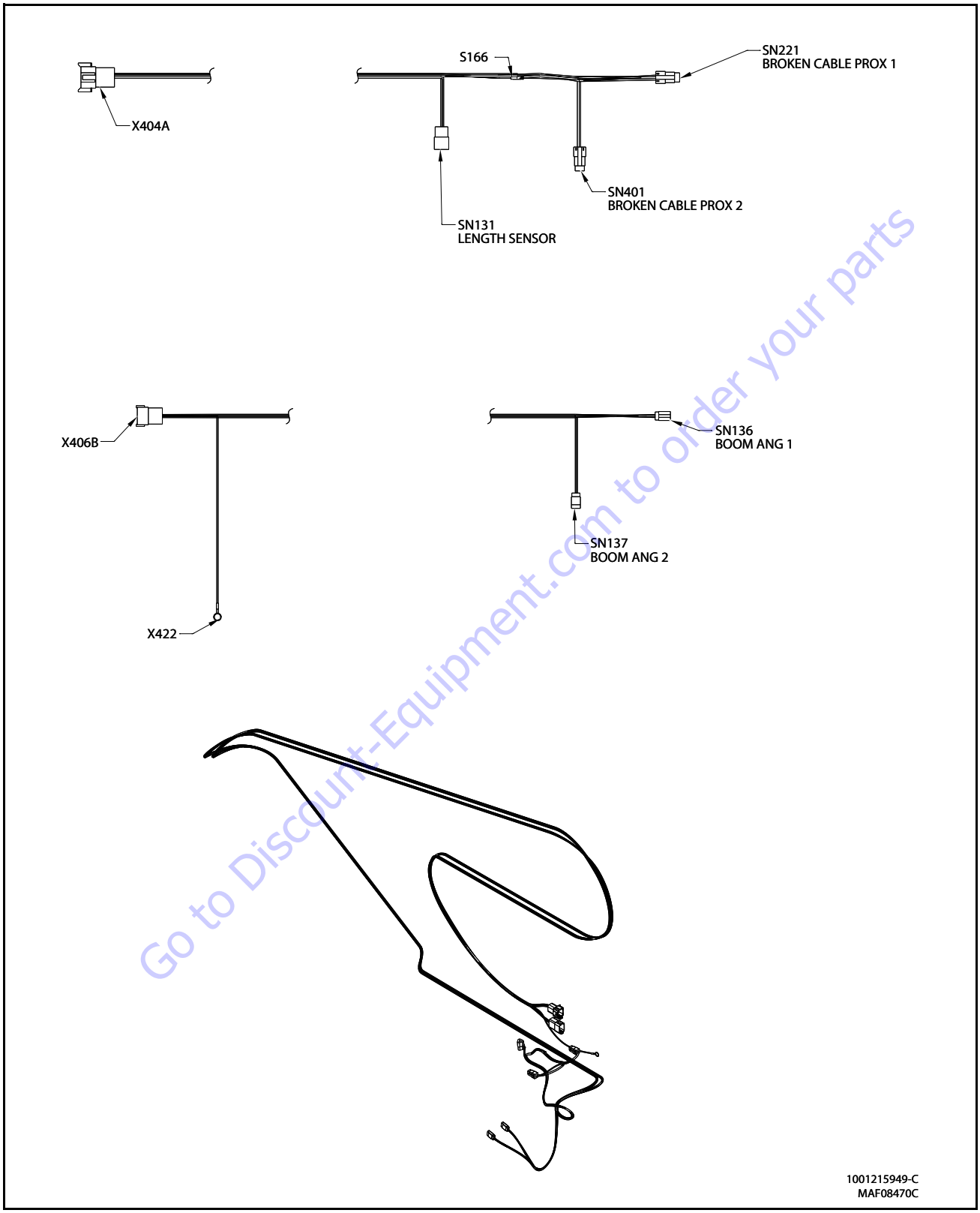


Figure 7-31. Base Boom Sensor Harness

X404A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	CABLE PN 1060616	18 AWG	CABLE	SN131 (A)
2	BLU	CABLE PN 1060616	18 AWG	CABLE	SN131 (C)
3	BLK	CABLE PN 1060616	18 AWG	CABLE	SN131 (B)
4	RED/BLK	CABLE PN 1060616	18 AWG	TFFN	SN221 (NC)
5	YEL	CABLE PN 1060616	18 AWG	CABLE	SN221 (1)
6	ORG	CABLE PN 1060616	18 AWG	CABLE	SN401 (2)
7	BRN	CABLE PN 1060616	22 AWG	CABLE	S166 (1)
8	SHIELD	CABLE PN 1060616	18 AWG	CABLE	SN221 (N.C)

SN131 - LENGTH SENSOR					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	CABLE PN 1060616	18 AWG	CABLE	X404A (1)
2	BLK	CABLE PN 1060616	18 AWG	CABLE	X404A (3)
3	BLU	CABLE PN 1060616	18 AWG	CABLE	X404A (2)

SN137 - BOOM ANG 2 LEFT SIDE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	CABLE PN 1060616	18 AWG	CABLE	X406B (5)
2	ORG	CABLE PN 1060616	18 AWG	CABLE	X406B (6)
3	BRN	CABLE PN 1060616	22 AWG	CABLE	X406B (7)

X422					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	SHIELD	CABLE PN 1060616	18 AWG	SHLD	SN136 (NC)

X406B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	CABLE PN 1060616	18 AWG	CABLE	SN136 (1)
2	BLU	CABLE PN 1060616	18 AWG	CABLE	SN136 (2)
3	BLK	CABLE PN 1060616	18 AWG	CABLE	SN136 (3)
4					
5	YEL	CABLE PN 1060616	18 AWG	CABLE	SN137 (1)
6	ORG	CABLE PN 1060616	18 AWG	CABLE	SN137 (2)
7	BRN	CABLE PN 1060616	22 AWG	CABLE	SN137 (3)
8					

SN136 - BOOM ANG 1 RIGHT SIDE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	CABLE PN 1060616	18 AWG	CABLE	X406B (1)
2	BLU	CABLE PN 1060616	18 AWG	CABLE	X406B (2)
3	BLK	CABLE PN 1060616	18 AWG	CABLE	X406B (3)
NC	SHIELD	CABLE PN 1060616	18 AWG	SHLD	X422 (1)

SN401 - BROKEN CABLE PROX 2 LEFT SIDE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT		18 AWG	GXL	SN221 (2)
2	ORG	CABLE PN 1060616	18 AWG	CABLE	X404A (6)
3	BLK		18 AWG	GXL	S166 (2)
4					

SN221 - BROKEN CABLE PROX 2 RIGHT SIDE					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	CABLE PN 1060616	18 AWG	CABLE	X404A (5)
2	WHT		18 AWG	GXL	SN401 (1)
3	BLK		18 AWG	GXL	S166 (2)
N.C	SHIELD	CABLE PN 1060616	18 AWG	SHLD	X404A (8)
NC	RED/BLK	CABLE PN 1060616	18 AWG	TFFN	X404A (4)

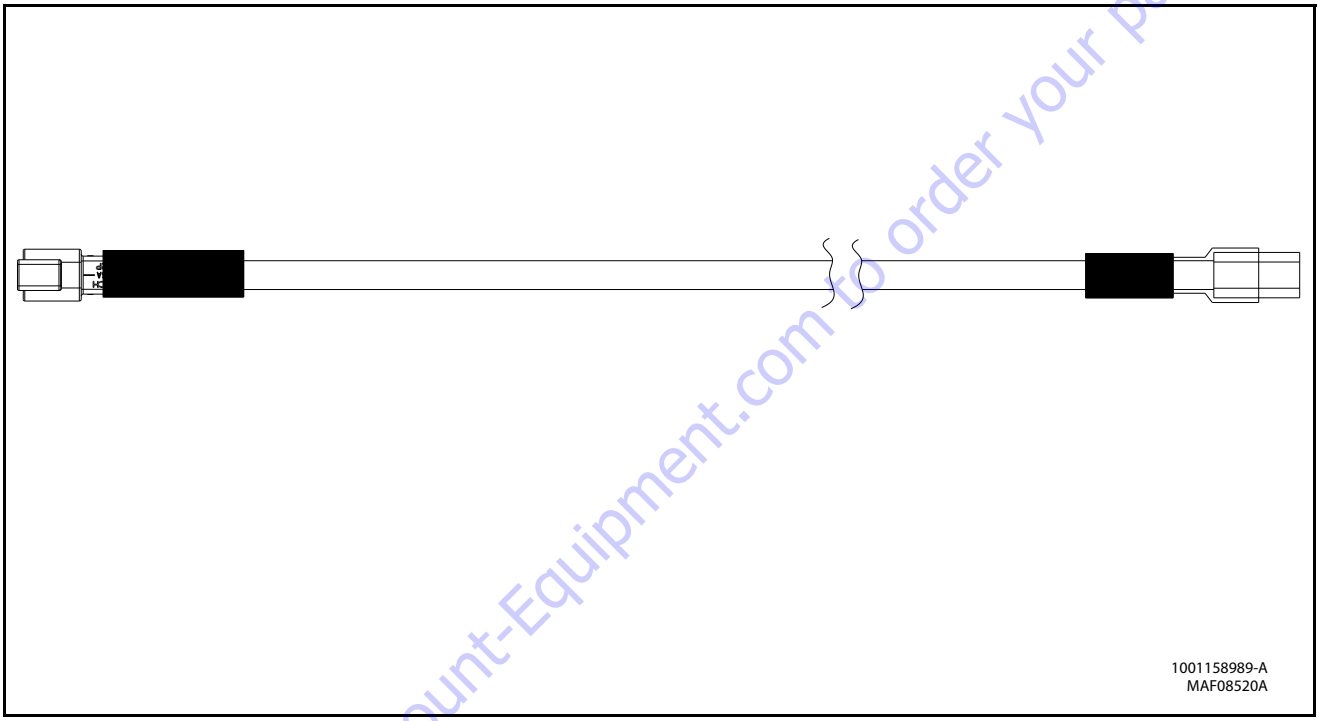


Figure 7-32. Beacon/Strobe Harness

BECON SIDE CONNECTION					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	BECON PWR	16 AWG	CABLE	HARNESS SIDE CONNECTION
2	BLK	BECON GND	16 AWG	CABLE	HARNESS SIDE CONNECTION

HARNESS SIDE CONNECTION					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	BECON PWR	16 AWG	CABLE	BECON SIDE CONNECTION
2	BLK	BECON GND	16 AWG	CABLE	BECON SIDE CONNECTION

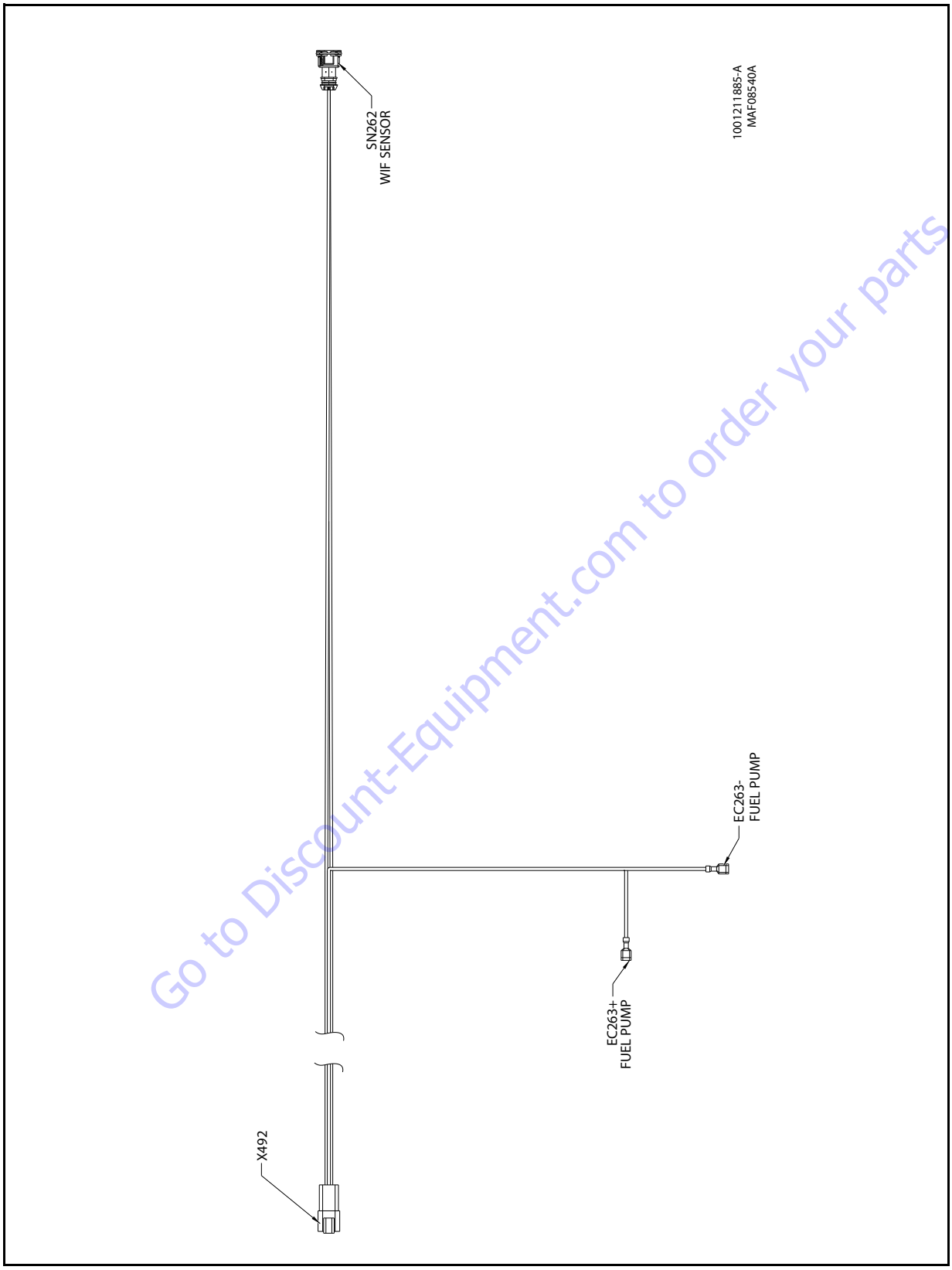


Figure 7-33. Fuel Pump & Water-In-Fuel Harness

SN262					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	148-64 WTR/FUL SW	16 AWG	GXL	X492 (1)
2	WHT	148-57 WTR/FUL RTN	16 AWG	GXL	X492 (2)

X492					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	148-64 WTR/FUL SW	16 AWG	GXL	SN262 (1)
2	WHT	148-57 WTR/FUL RTN	16 AWG	GXL	SN262 (2)
3	WHT	48-96 FUEL PUMP	14 AWG	GXL	EC263+ (1)
4	BLK	000-48-1 ENG GND	14 AWG	GXL	EC263- (1)

EC263+					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	48-96 FUEL PUMP	14 AWG	GXL	X492 (3)

EC263-					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	000-48-1 ENG GND	14 AWG	GXL	X492 (4)

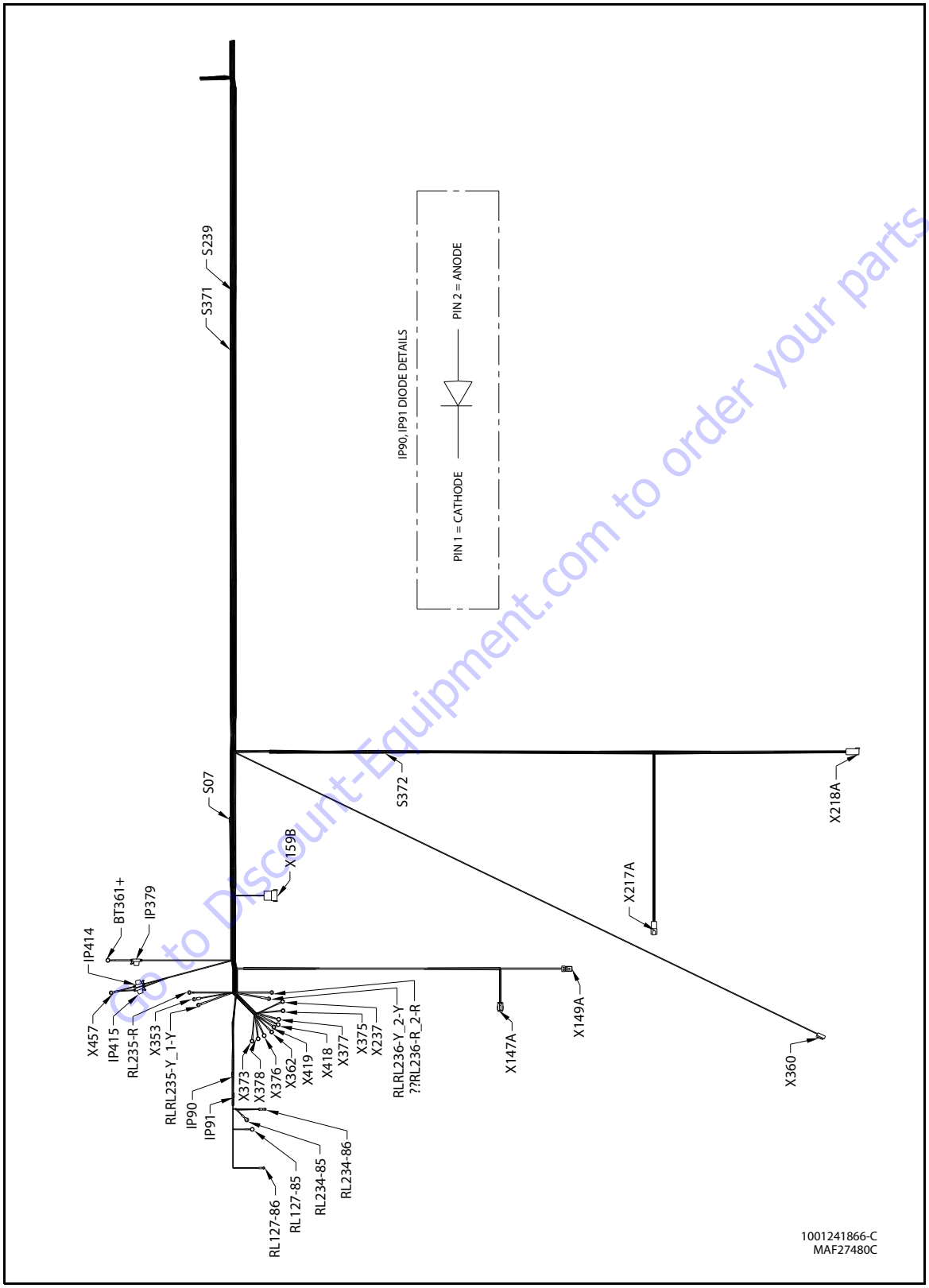


Figure 7-34. Turntable Wiring Harness - Sheet 1 of 7

X360					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	55-35 AUX B+ DISC	18 AWG	GXL	CO02-J1 (2)
2	BLK	0-45	18 AWG	GXL	X373 (1)

RL127-86					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	53-3 AUX PMP	18 AWG	GXL	CO02-J1 (13)

RL127-85					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-70	18 AWG	GXL	RL234-85 (1)

RL234-85					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-21	18 AWG	GXL	X373 (1)
1	BLK	0-70	18 AWG	GXL	RL127-85 (1)

RL234-86					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-4-2-1	18 AWG	GXL	IP91 (1)
1	YEL	2-4-2-1	18 AWG	GXL	IP90 (1)

IP91					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-4-2-1	18 AWG	GXL	RL234-86 (1)
2	RED	1-4-2	18 AWG	GXL	X327B (4)

IP90					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-4-2-1	18 AWG	GXL	RL234-86 (1)
2	YEL	2-4-2	18 AWG	GXL	S89 (1)

X457					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-15	18 AWG	GXL	IP414 (2)
1	RED	1-5	16 AWG	GXL	IP415 (2)

IP415					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-5	16 AWG	GXL	X327B (1)
2	RED	1-5	16 AWG	GXL	X457 (1)

IP414					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-15	18 AWG	GXL	S07 (2)
2	RED	1-15	18 AWG	GXL	X457 (1)

X378					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-40	12 AWG	GXL	X81 (16)

X373					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-21	18 AWG	GXL	RL234-85 (1)
1	BLK	0-45	18 AWG	GXL	X360 (2)

X419					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-50	16 AWG	GXL	S456 (1)

X376					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-20	12 AWG	GXL	CO02-J8 (1)

X362					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-19	16 AWG	GXL	S239 (1)

X418					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	00-11	10 AWG	GXL	X149A (2)

X377					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-41	12 AWG	GXL	X81 (18)

X375					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-22	14 AWG	GXL	X412 (1)

X237					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-14	18 AWG	GXL	X159B (11)
1	BLK	0-16	18 AWG	GXL	LB417 (2)

RLRL236-Y_2-Y					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-10	14 AWG	GXL	X412 (2)
1	YEL	2-11	12 AWG	GXL	CO02-J8 (2)

??RL236-R_2-R					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	02-6	10 AWG	GXL	X149A (1)

RLRL235-Y_1-Y					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-25	12 AWG	GXL	X81 (10)
1	YEL	2-26	12 AWG	GXL	X81 (12)

X353					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-12	18 AWG	GXL	X327B (5)
1	YEL	2-17	18 AWG	GXL	LB417 (1)

X147A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	CAN HI	18 AWG	J1939 CABLE	MS148-2 (A)
2	GRN	CAN LO	18 AWG	J1939 CABLE	MS148-2 (B)
3	SHLD	CAN SHLD	18 AWG	J1939 CABLE	MS148-2 (C)
4					
5					
6					
7	WHT	55-14 BRAKE	18 AWG	GXL	CO02-J1 (23)
8					
9					
10					
11					
12					

RL235-R					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-1-99 IGNITION	12 AWG	GXL	S372 (1)
1	YEL	2-13	16 AWG	GXL	X217A (5)

X149A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	02-6	10 AWG	GXL	??RL236-R_2-R (1)
2	BLK	00-11	10 AWG	GXL	X418 (1)

Figure 7-35. Turntable Wiring Harness - Sheet 2 of 7

S07					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-15-1	18 AWG	GXL	X84 (2)
1	RED	1-15-2	18 AWG	GXL	X06 (1)
2	RED	1-15	18 AWG	GXL	IP414 (1)

IP379					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-7 WK LT PWR	12 AWG	GXL	BT361+ (1)
2	RED	1-7-1 WK LT PWR	16 AWG	GXL	X341A (2)
2	RED	1-7-2 WK LT PWR	16 AWG	GXL	X341A (1)

BT361+					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-7 WK LT PWR	12 AWG	GXL	IP379 (1)

X159B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	27-3 JIB DN O/R	18 AWG	GXL	X81 (15)
2	WHT	25-6 PLVL UP O/R	18 AWG	GXL	X81 (9)
3	WHT	25-5 PLVL DN O/R	18 AWG	GXL	X81 (7)
4	WHT	50-2 PLTFM DUMP	16 AWG	GXL	X341A (4)
5	WHT	50-3 JIB DUMP	16 AWG	GXL	X341A (3)
6	WHT	49-45 HYD OIL TEMP	18 AWG	GXL	CO02-J1 (35)
7	BLK	0-31	18 AWG	GXL	CO02-J1 (27)
8					
9					
10					
11	BLK	0-14	18 AWG	GXL	X237 (1)
12	WHT	47-6 ALT EXC	18 AWG	GXL	S371 (2)

S372					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-1-99 IGNITION	12 AWG	GXL	RL235-R (1)
2	YEL	2-1-99 IGNITION	14 AWG	GXL	X218A (1)
2	YEL	2-1-99 IGNITION	14 AWG	GXL	X217A (1)

X217A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-1-99 IGNITION	14 AWG	GXL	S372 (2)
2	BLK	0-17	16 AWG	GXL	CO02-J1 (8)
3	WHT	52-9 GEN	18 AWG	GXL	CO02-J1 (22)
4	WHT	48-7 GLOW	18 AWG	GXL	CO02-J1 (12)
5	YEL	2-13	16 AWG	GXL	RL235-R (1)
6	BLK	0-18	18 AWG	GXL	CO02-J1 (9)
7	WHT	48-8 SP	18 AWG	GXL	CO02-J1 (7)
8					

X218A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-1-99 IGNITION	14 AWG	GXL	S372 (2)
2	WHT	48-6 STRT	18 AWG	GXL	CO02-J1 (11)
3	YEL	CAN HI	20 AWG	J1939 CABLE	MS83 (1)
4	GRN	CAN LO	20 AWG	J1939 CABLE	MS83 (3)
5	WHT	47-6-1 ALT EXC	18 AWG	GXL	S371 (2)
6	SHLD	CAN SHLD	20 AWG	J1939 CABLE	MS83 (5)

S371					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	47-6-2 ALT EXC	18 AWG	GXL	CO02-J1 (32)
2	WHT	47-6 ALT EXC	18 AWG	GXL	X159B (12)
2	WHT	47-6-1 ALT EXC	18 AWG	GXL	X218A (5)

S239					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-19	16 AWG	GXL	X362 (1)
2	BLK	0-19-1	18 AWG	GXL	X327B (6)
2	BLK	0-19-2	18 AWG	GXL	X84 (1)
2	BLK	0-19-3	18 AWG	GXL	X06 (2)

Figure 7-36. Turntable Wiring Harness - Sheet 3 of 7

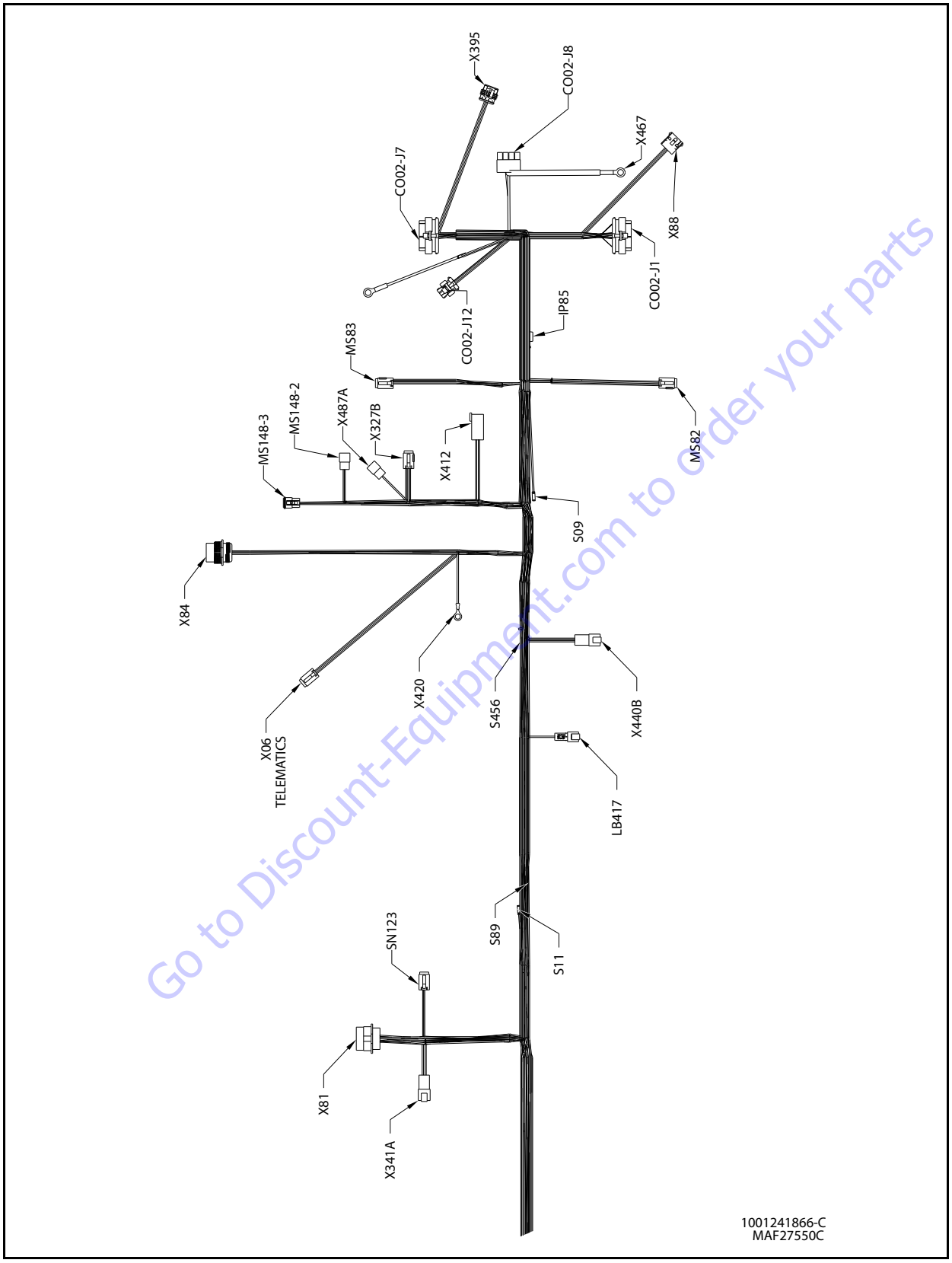


Figure 7-37. Turntable Wiring Harness - Sheet 4 of 7

X06 TELEMATICS					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-15-2	18 AWG	GXL	S07 (1)
2	BLK	0-19-3	18 AWG	GXL	S239 (2)
3	YEL	2-11-1A	18 AWG	GXL	S09 (1)
4	RED	1-4-3A	18 AWG	GXL	S11 (1)

S11					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-4-3A	18 AWG	GXL	X06 (4)
1	RED	1-4-3B	18 AWG	GXL	X327B (3)
2	RED	1-4-3	18 AWG	GXL	X81 (5)

S09					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-11-1A	18 AWG	GXL	X06 (3)
1	YEL	2-11-1B	18 AWG	GXL	X84 (8)
2	YEL	2-11-1	18 AWG	GXL	IP85 (1)

X341A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-7-2 WK LT PWR	16 AWG	GXL	IP379 (2)
2	RED	1-7-1 WK LT PWR	16 AWG	GXL	IP379 (2)
3	WHT	50-3 JIB DUMP	16 AWG	GXL	X159B (5)
4	WHT	50-2 PLTFM DUMP	16 AWG	GXL	X159B (4)

SN123					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	B LNTH CBL	18 AWG	CABLE	CO02-J7 (35)
2	BLK	B LNTH CBL	18 AWG	CABLE	CO02-J7 (11)
3					
4	WHT	B LNTH CBL	18 AWG	CABLE	CO02-J7 (29)

S456					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-50	16 AWG	GXL	X419 (1)
1	BLK	0-50-2	16 AWG	GXL	X440B (8)
2	BLK	0-50-1	16 AWG	GXL	X420 (1)

X440B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	55-30 LFT ENABLE	18 AWG	GXL	CO02-J1 (1)
2	WHT	49-77 P C PWR	20 AWG	GXL	CO02-J7 (26)
3	WHT	49-76 P C GND	20 AWG	GXL	CO02-J7 (10)
4	WHT	49-75 PRS CHK	20 AWG	GXL	CO02-J7 (7)
5	WHT	49-73 L P PWR	20 AWG	GXL	CO02-J7 (16)
6	WHT	49-74 L P GND	20 AWG	GXL	CO02-J7 (9)
7	WHT	49-72 LIFT PRS	20 AWG	GXL	CO02-J7 (4)
8	BLK	0-50-2	16 AWG	GXL	S456 (1)

X327B					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	RED	1-5	16 AWG	GXL	IP415 (1)
2	RED	1-4-1	18 AWG	GXL	CO02-J7 (3)
3	RED	1-4-3B	18 AWG	GXL	S11 (1)
4	RED	1-4-2	18 AWG	GXL	IP91 (2)
5	YEL	2-12	18 AWG	GXL	X353 (1)
6	BLK	0-19-1	18 AWG	GXL	S239 (2)
7	GRN	CAN LO	20 AWG	J1939 CABLE	MS82 (3)
8	YEL	CAN HI	20 AWG	J1939 CABLE	MS82 (1)
9	WHT	49-46 M CNTRL	18 AWG	GXL	CO02-J7 (21)
10					
11	WHT	44-1 MSSO	18 AWG	GXL	CO02-J12 (8)
12	BLK	0-44	18 AWG	GXL	CO02-J12 (5)

X412					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-22	14 AWG	GXL	X375 (1)
2	YEL	2-10	14 AWG	GXL	RLRL236-Y_2-Y (1)
3	BLU	CABLE	18 AWG	CABLE	CO02-J7 (12)
4	BLK	CABLE	18 AWG	CABLE	CO02-J7 (19)
5	RED	CABLE	18 AWG	CABLE	CO02-J7 (32)
6	SHIELD	BRKN CBL PROX	18 AWG	SHLD	S469 (2)

MS83					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	CAN HI	20 AWG	J1939 CABLE	X218A (3)
2	YEL	CAN HI	18 AWG	GXL	X487A (A)
3	GRN	CAN LO	20 AWG	J1939 CABLE	X218A (4)
4	GRN	CAN LO	18 AWG	GXL	X487A (B)
5	SHLD	CAN SHLD	20 AWG	J1939 CABLE	X218A (6)
6	SHLD	CAN SHLD	20 AWG	J1939 CABLE	S469 (2)
7	SHLD	CAN SHLD	20 AWG	J1939 CABLE	X84 (5)
8					
9	GRN	CAN LO	20 AWG	J1939 CABLE	X84 (4)
10	GRN	CAN LO	20 AWG	J1939 CABLE	CO02-J12 (4)
11	YEL	CAN HI	20 AWG	J1939 CABLE	X84 (3)
12	YEL	CAN HI	20 AWG	J1939 CABLE	CO02-J12 (3)

MS82					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	CAN HI	20 AWG	J1939 CABLE	X327B (8)
2	YEL	CAN HI	20 AWG	J1939 CABLE	CO02-J7 (13)
3	GRN	CAN LO	20 AWG	J1939 CABLE	X327B (7)
4	GRN	CAN LO	20 AWG	J1939 CABLE	CO02-J7 (24)
5	SHLD	CAN SHLD	20 AWG	J1939 CABLE	X81 (1)
6	SHLD	CAN SHLD	20 AWG	J1939 CABLE	S469 (2)
7	SHLD	CAN SHLD	20 AWG	J1939 CABLE	MS148-3 (C)
8					
9	GRN	CAN LO	20 AWG	J1939 CABLE	X81 (2)
10	GRN	CAN LO	20 AWG	J1939 CABLE	MS148-3 (B)
11	YEL	CAN HI	20 AWG	J1939 CABLE	X81 (3)
12	YEL	CAN HI	20 AWG	J1939 CABLE	MS148-3 (A)

IP85					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-11-1	18 AWG	GXL	S09 (2)
2	YEL	2-11	18 AWG	GXL	CO02-J7 (34)

X81					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	SHLD	CAN SHLD	20 AWG	J1939 CABLE	MS82 (5)
2	GRN	CAN LO	20 AWG	J1939 CABLE	MS82 (9)
3	YEL	CAN HI	20 AWG	J1939 CABLE	MS82 (11)
4	YEL	2-4	18 AWG	GXL	S89 (1)
5	RED	1-4-3	18 AWG	GXL	S11 (2)
6	YEL	2-15	18 AWG	GXL	CO02-J7 (15)
7	WHT	25-5 PLVL DN O/R	18 AWG	GXL	X159B (3)
8					
9	WHT	25-6 PLVL UP O/R	18 AWG	GXL	X159B (2)
10	YEL	2-25	12 AWG	GXL	RLRL235-Y_1-Y (1)
11	YEL	2-5	18 AWG	GXL	CO02-J7 (14)
12	YEL	2-26	12 AWG	GXL	RLRL235-Y_1-Y (1)
13	WHT	27-6J-UP O/R	18 AWG	GXL	CO02-J1 (3)
14					
15	WHT	27-3 JIB DN O/R	18 AWG	GXL	X159B (1)
16	BLK	0-40	12 AWG	GXL	X378 (1)
17					
18	BLK	0-41	12 AWG	GXL	X377 (1)
19					

S89					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-4	18 AWG	GXL	X81 (4)
1	YEL	2-4-2	18 AWG	GXL	IP90 (2)
2	YEL	2-4-3	18 AWG	GXL	CO02-J7 (2)
2	YEL	2-4-4	18 AWG	GXL	CO02-J7 (1)

LB417					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-17	18 AWG	GXL	X353 (1)
2	BLK	0-16	18 AWG	GXL	X237 (1)

MS148-2					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CAN HI	18 AWG	J1939 CABLE	X147A (1)
B	GRN	CAN LO	18 AWG	J1939 CABLE	X147A (2)
C	SHLD	CAN SHLD	18 AWG	J1939 CABLE	X147A (3)

X420					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-50-1	16 AWG	GXL	S456 (2)

Figure 7-38. Turntable Wiring Harness - Sheet 5 of 7

X84					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	BLK	0-19-2	18 AWG	GXL	S239 (2)
B	RED	1-15-1	18 AWG	GXL	S07 (1)
C	YEL	CAN HI	20 AWG	J1939 CABLE	MS83 (11)
D	GRN	CAN LO	20 AWG	J1939 CABLE	MS83 (9)
E	SHLD	CAN SHLD	20 AWG	J1939 CABLE	MS83 (7)
F					
G					
H	YEL	2-11-1B	18 AWG	GXL	S09 (1)
J					

MS148-3					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CAN HI	20 AWG	J1939 CABLE	MS82 (12)
B	GRN	CAN LO	20 AWG	J1939 CABLE	MS82 (10)
C	SHLD	CAN SHLD	20 AWG	J1939 CABLE	MS82 (7)

CO02-J7					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	YEL	2-4-4	18 AWG	GXL	S89 (2)
2	YEL	2-4-3	18 AWG	GXL	S89 (2)
3	RED	1-4-1	18 AWG	GXL	X327B (2)
4	WHT	49-72 LIFT PRS	20 AWG	GXL	X440B (7)
5					
6					
7	WHT	49-75 PRS CHK	20 AWG	GXL	X440B (4)
8	WHT	49-66 Y AXIS	18 AWG	GXL	X395 (4)
9	WHT	49-74 L P GND	20 AWG	GXL	X440B (6)
10	WHT	49-76 P C GND	20 AWG	GXL	X440B (3)
11	BLK	B LNTH CBL	18 AWG	CABLE	SN123 (2)
12	BLU	CABLE	18 AWG	CABLE	X412 (3)
13	YEL	CAN HI	20 AWG	J1939 CABLE	MS82 (2)
14	YEL	2-5	18 AWG	GXL	X81 (11)
15	YEL	2-15	18 AWG	GXL	X81 (6)
16	WHT	49-73 L P PWR	20 AWG	GXL	X440B (5)
17					
18					
19	BLK	CABLE	18 AWG	CABLE	X412 (4)
20	WHT	49-65 X AXIS	18 AWG	GXL	X395 (3)
21	WHT	49-46 M CNTRL	18 AWG	GXL	X327B (9)
22					
23					
24	GRN	CAN LO	20 AWG	J1939 CABLE	MS82 (4)
25	BLK	0-60	18 AWG	GXL	X395 (2)
26	WHT	49-77 P C PWR	20 AWG	GXL	X440B (2)
27	WHT	49-64 TILT PWR	18 AWG	GXL	X395 (1)
28					
29	WHT	B LNTH CBL	18 AWG	CABLE	SN123 (4)
30					
31					
32	RED	CABLE	18 AWG	CABLE	X412 (5)
33					
34	YEL	2-11	18 AWG	GXL	IP85 (2)
35	RED	B LNTH CBL	18 AWG	CABLE	SN123 (1)

CO02-J8					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	BLK	0-20	12 AWG	GXL	X376 (1)
2	YEL	2-11	12 AWG	GXL	RLRL236-Y_2-Y (1)
3	N/A	UGM TO CHASSIS GND	10 AWG	BRAID	X467 (1)
4					

X395					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	49-64 TILT PWR	18 AWG	GXL	CO02-J7 (27)
2	BLK	0-60	18 AWG	GXL	CO02-J7 (25)
3	WHT	49-65 X AXIS	18 AWG	GXL	CO02-J7 (20)
4	WHT	49-66 Y AXIS	18 AWG	GXL	CO02-J7 (8)

X468					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	N/A	CAN SHIELD TO CHASSIS GND	10 AWG	BRAID	S469 (1)

X487A					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
A	YEL	CAN HI	18 AWG	GXL	MS83 (2)
B	GRN	CAN LO	18 AWG	GXL	MS83 (4)
C					

X467					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	N/A	UGM TO CHASSIS GND	10 AWG	BRAID	CO02-J8 (3)

S469					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	N/A	CAN SHIELD TO CHASSIS GND	10 AWG	BRAID	X468 (1)
2	SHIELD	BRKN CBL PROX	18 AWG	SHLD	X412 (6)
2	SHLD	CAN SHLD	20 AWG	J1939 CABLE	MS83 (6)
2	SHLD	CAN SHLD	20 AWG	J1939 CABLE	MS82 (6)

CO02-J1					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	55-30 LFT ENABLE	18 AWG	GXL	X440B (1)
2	WHT	55-35 AUX B+ DISC	18 AWG	GXL	X360 (1)
3	WHT	27-6 J-UP O/R	18 AWG	GXL	X81 (13)
4					
5					
6					
7	WHT	48-8 SP	18 AWG	GXL	X217A (7)
8	BLK	0-17	16 AWG	GXL	X217A (2)
9	BLK	0-18	18 AWG	GXL	X217A (6)
10					
11	WHT	48-6 STRT	18 AWG	GXL	X218A (2)
12	WHT	48-7 GLOW	18 AWG	GXL	X217A (4)
13	WHT	53-3 AUX PMP	18 AWG	GXL	RL127-86 (1)
14					
15					
16					
17					
18					
19					
20					
21					
22	WHT	52-9 GEN	18 AWG	GXL	X217A (3)
23	WHT	55-14 BRAKE	18 AWG	GXL	X147A (7)
24					
25					
26					
27	BLK	0-31	18 AWG	GXL	X159B (7)
28	WHT	49-34 A-PWR	18 AWG	GXL	X88 (1)
29	WHT	49-35 A-RX	18 AWG	GXL	X88 (2)
30	WHT	49-36 A-TX	18 AWG	GXL	X88 (3)
31	WHT	49-37 A-GND	18 AWG	GXL	X88 (4)
32	WHT	47-6-2 ALT EXC	18 AWG	GXL	S371 (1)
33					
34					
35	WHT	49-45 HYD OIL TEMP	18 AWG	GXL	X159B (6)

X88					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1	WHT	49-34 A-PWR	18 AWG	GXL	CO02-J1 (28)
2	WHT	49-35 A-RX	18 AWG	GXL	CO02-J1 (29)
3	WHT	49-36 A-TX	18 AWG	GXL	CO02-J1 (30)
4	WHT	49-37 A-GND	18 AWG	GXL	CO02-J1 (31)

CO02-J12					
CONN POS	WIRE COLOR	WIRE LABEL	GAUGE	JACKET	TO
1					
2					
3	YEL	CAN HI	20 AWG	J1939 CABLE	MS83 (12)
4	GRN	CAN LO	20 AWG	J1939 CABLE	MS83 (10)
5	BLK	0-44	18 AWG	GXL	X327B (12)
6	WHT	JUMPER	18 AWG	GXL	CO02-J12 (7)
7	WHT	JUMPER	18 AWG	GXL	CO02-J12 (6)
8	WHT	44-1 MSSO	18 AWG	GXL	X327B (11)

Figure 7-39. Turntable Wiring Harness - Sheet 6 of 7

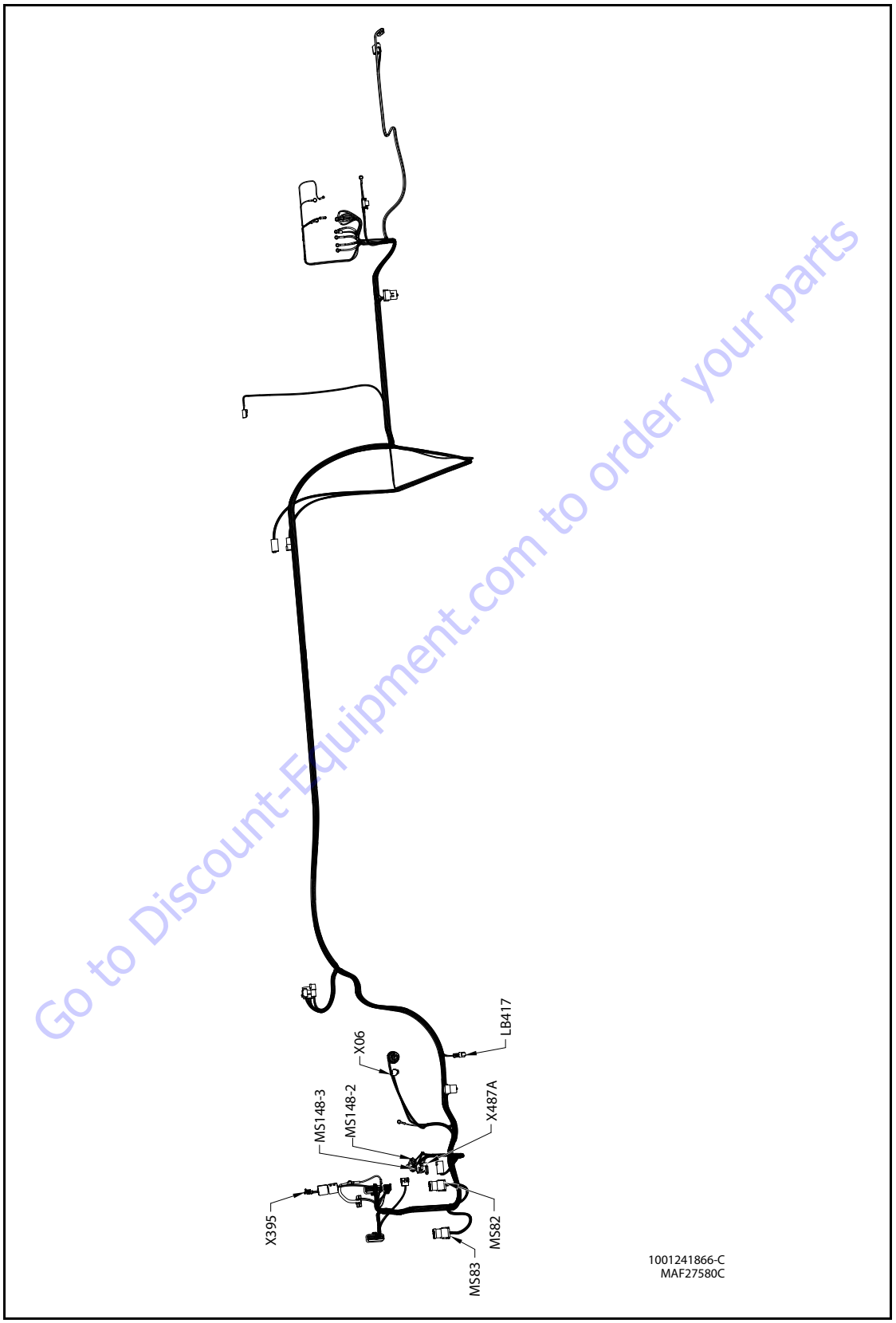


Figure 7-40. Turntable Wiring Harness - Sheet 7 of 7