SERVICE MANUAL

P2350 / P3440 / P3550 / P4460 / P4580 / P4760 / P4950

Air Cart

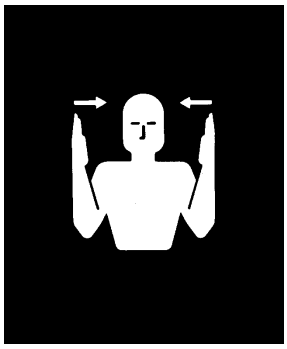
Part number 47827462
1st edition English
April 2017

NEW HOLLAND AGRICULTURE

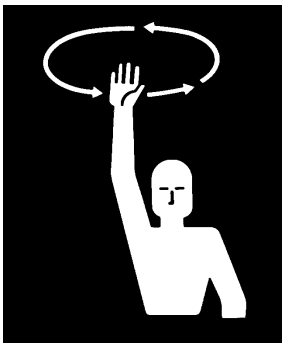
Hand signals

P Series Air Carts	

It is often necessary to communicate using hand signals in agricultural operations when noise or distance inhibit communication by voice. The **ASAE S351** standard illustrates these hand signals, which provide an easy means of communication, particularly in the interest of safety.

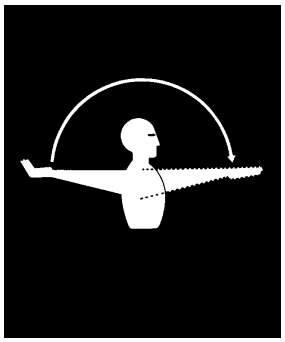


THIS FAR TO GO - Place palms at ear level facing head and move laterally inward to indicate remaining distance to go.



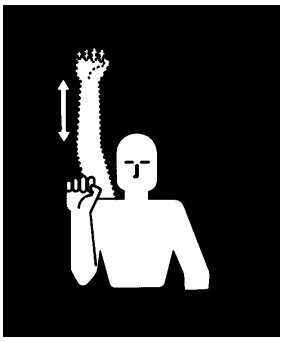
COME TO ME - Raise the arm vertically overhead, palm to the front, and rotate in large horizontal circles.

MOVE TOWARD ME, FOLLOW ME - Point toward person(s), vehicle(s), or unit(s), beckon by holding the arm horizontally to the front, palm up, and motioning toward the body.

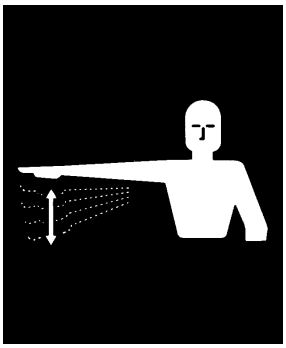


MOVE OUT, TAKE OFF - Face the desired direction of movement; hold the arm extended to the ear; then swing it overhead and forward in the direction of desired movement until it is horizontal, palm down.

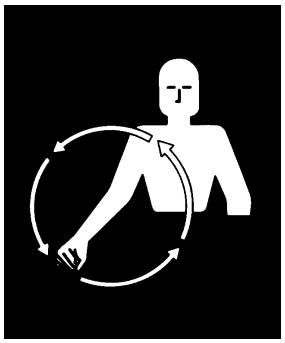
STOP - Raise hand upward to the full extent of the arm, palm to the front. Hold that position until the signal is understood.



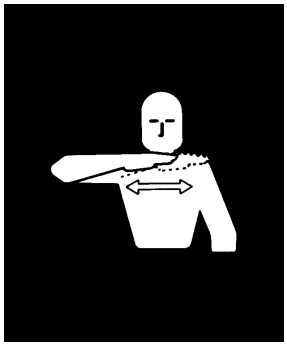
SPEED IT UP, INCREASE SPEED - Raise the hand to the shoulder, fist closed; thrust the fist upward to the full extent of the arm and back to the shoulder rapidly several times.



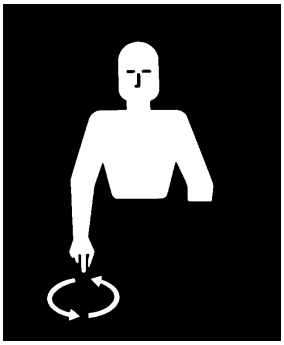
SLOW IT DOWN, DECREASE SPEED - Extend the arm horizontally sidewards, palm down, and wave arm downward



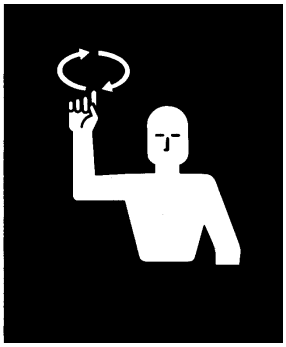
START THE ENGINE - Simulate cranking of vehicles by moving arm in circular motion at waist level.



STOP THE ENGINE - Draw right hand, palm down, across the neck in a "throat cutting" motion from left to right.



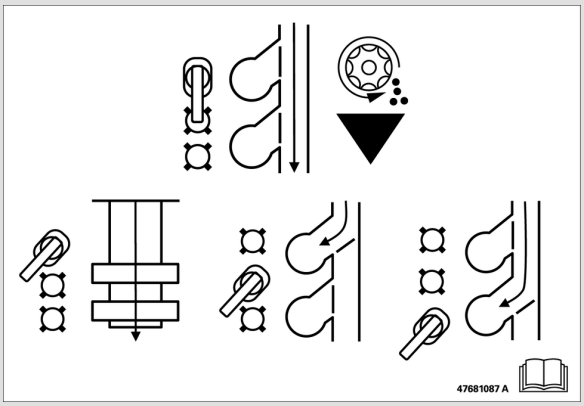
LOWER EQUIPMENT - Make circular motion with either hand pointing to the ground.



RAISE EQUIPMENT - Make circular motion with either hand at head level.

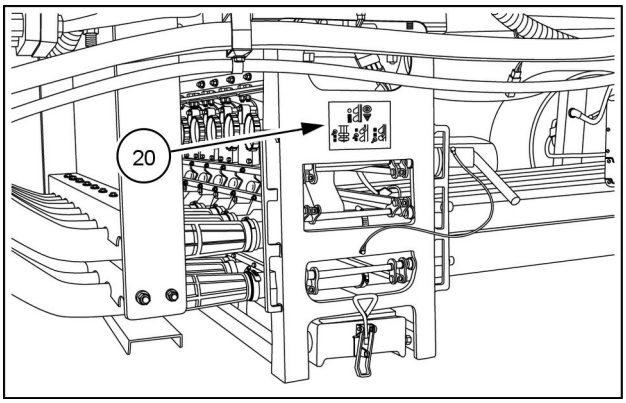
Operation of meter control handles. Note that meter handle should be placed in storage position when tank is not in use.
Quantity: 1 per meter bank
Part number: 47681087
47681088
47681089
47681090

NOTE: The decal in a particular location shows the correct handle orientation.



47681087 12

On the side of each meter bank **(20)**.



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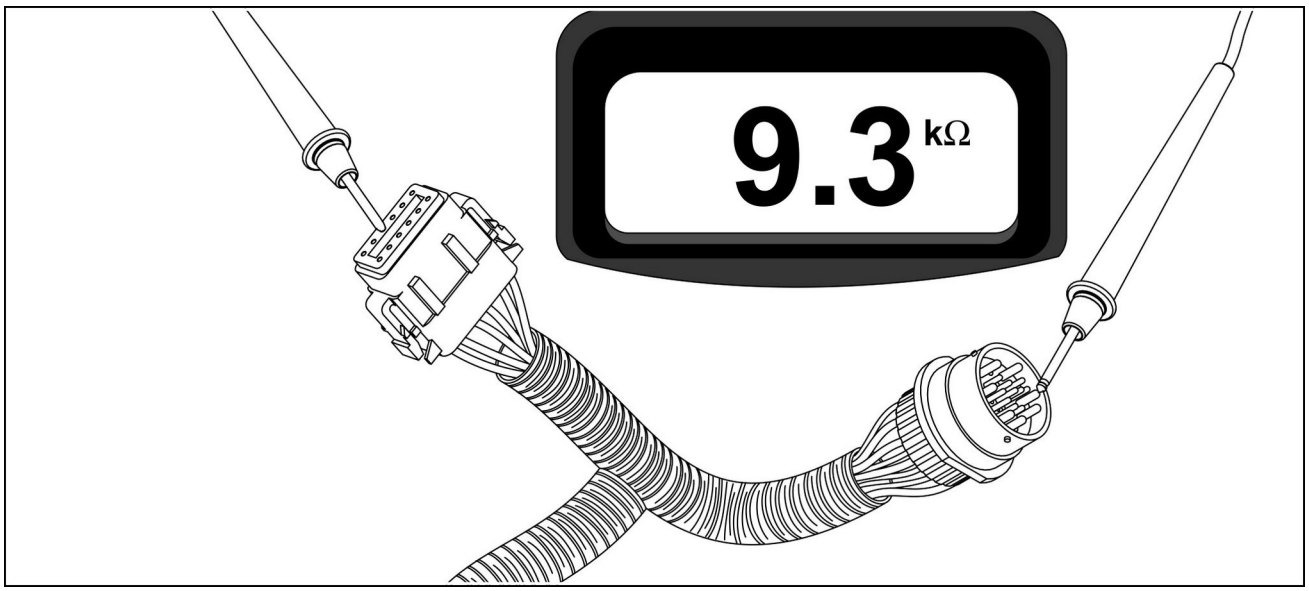
Basic instructions - Electrical testing - Short circuit to ground



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Short circuit to ground occurs when any part of a circuit is in contact with a ground source when it is not intended. Where the test leads are applied depends on the component or circuit tested:

- When testing a sensor, for example, disconnect the sensor from its connector.
- When testing a controller harness, disconnect the harness at the controller connector and the malfunctioning component at its connector on the harness.
- When testing a harness, disconnect the harness connectors at its source and its terminal.

1. Turn system power OFF.
2. Disconnect the connectors for the circuits to be tested.
3. Identify the pins or cavities that need to be tested.
4. Select the resistance setting on the multimeter.
5. Touch one of the test leads from the multimeter to the pin or cavity on one end of the circuit.
6. Touch the other test lead to the pin or cavity on the other end of the circuit.
7. Read the value on the multimeter.
8. The resistance reading should be greater than **100 Ω** to indicate an open circuit. If the circuit is not open, the wire is shorted to ground.

   NOTE: *The **100 Ω** value is a representative value used throughout the diagnostic procedures in this manual. The expected resistance reading for an open circuit is "infinite" resistance or "open line" on the multimeter. The actual reading on the multimeter depends on the wire gauge – 0.8, 1.2, 2.0, 3.0 – and the distance between the test points.*
9. Locate and repair the source of the short. Or replace the shorted wire or component.

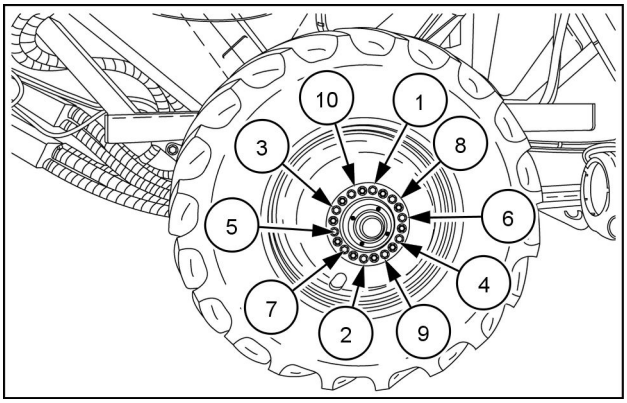
Contents

Front axle system - 25

Table 1

Location	Torque
Front caster wheels	**169 N·m** +/- **26 N·m** (**125 lb ft** +/- **19 lb ft**)
Front steered wheels	**441 N·m** +/- **66 N·m** (**325 lb ft** +/- **49 lb ft**)
Rear single wheels	**441 N·m** +/- **66 N·m** (**325 lb ft** +/- **49 lb ft**)
Rear dual wheels	**931 N·m** +/- **140 N·m** (**687 lb ft** +/- **103 lb ft**)

9. Check wheel bolt torque after the first 10 hours and re torque to the values shown in Table **1**.
10. Torque bolts to **85%** of the listed torque then torque to the full value.
11. Tighten the bolts in the order shown. This pattern will apply for all 10 bolt wheels.



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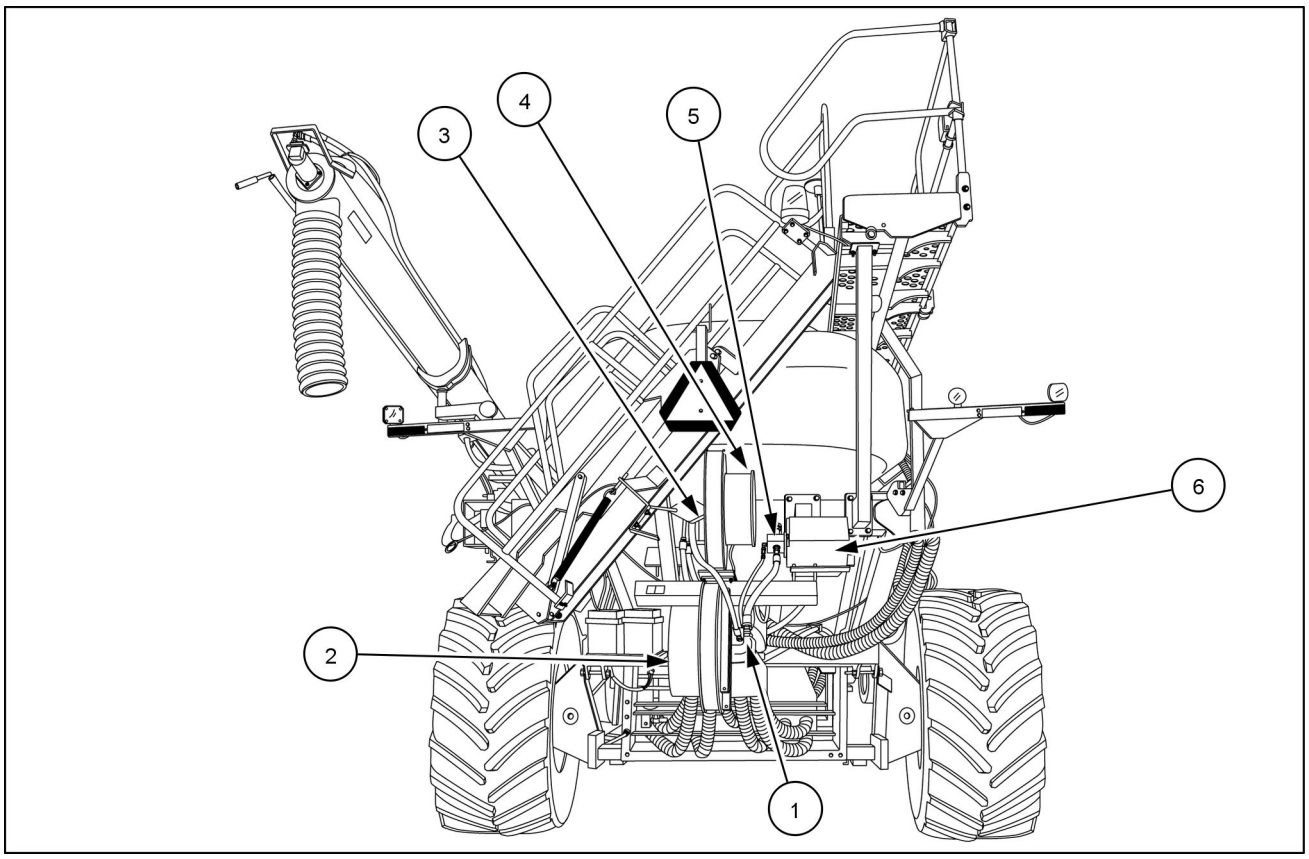
Brakes and controls - 33

Hydraulic service brakes - 202

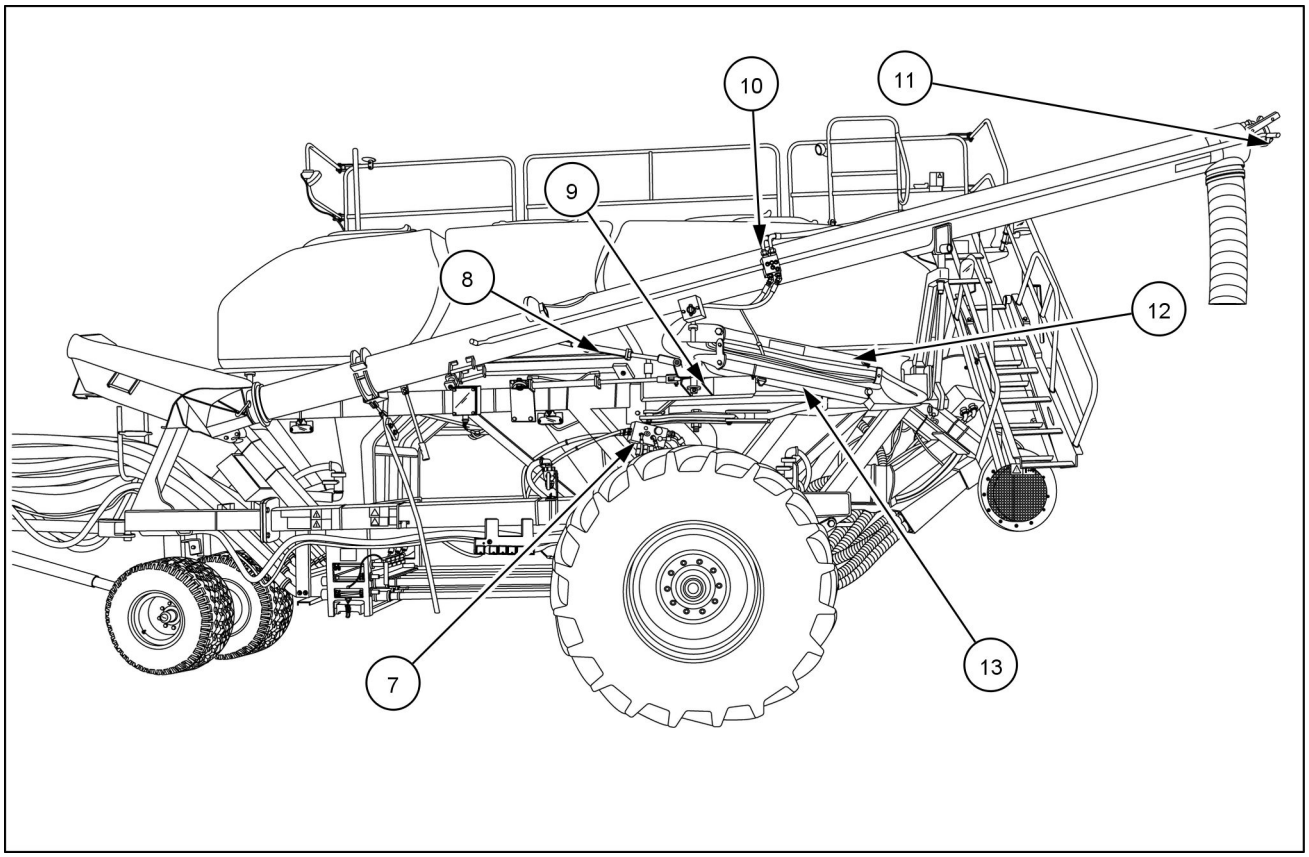
(*) See content for specific models

Hydraulic systems - Overview



SAIL15SE00439FA 1

Fans and alternator



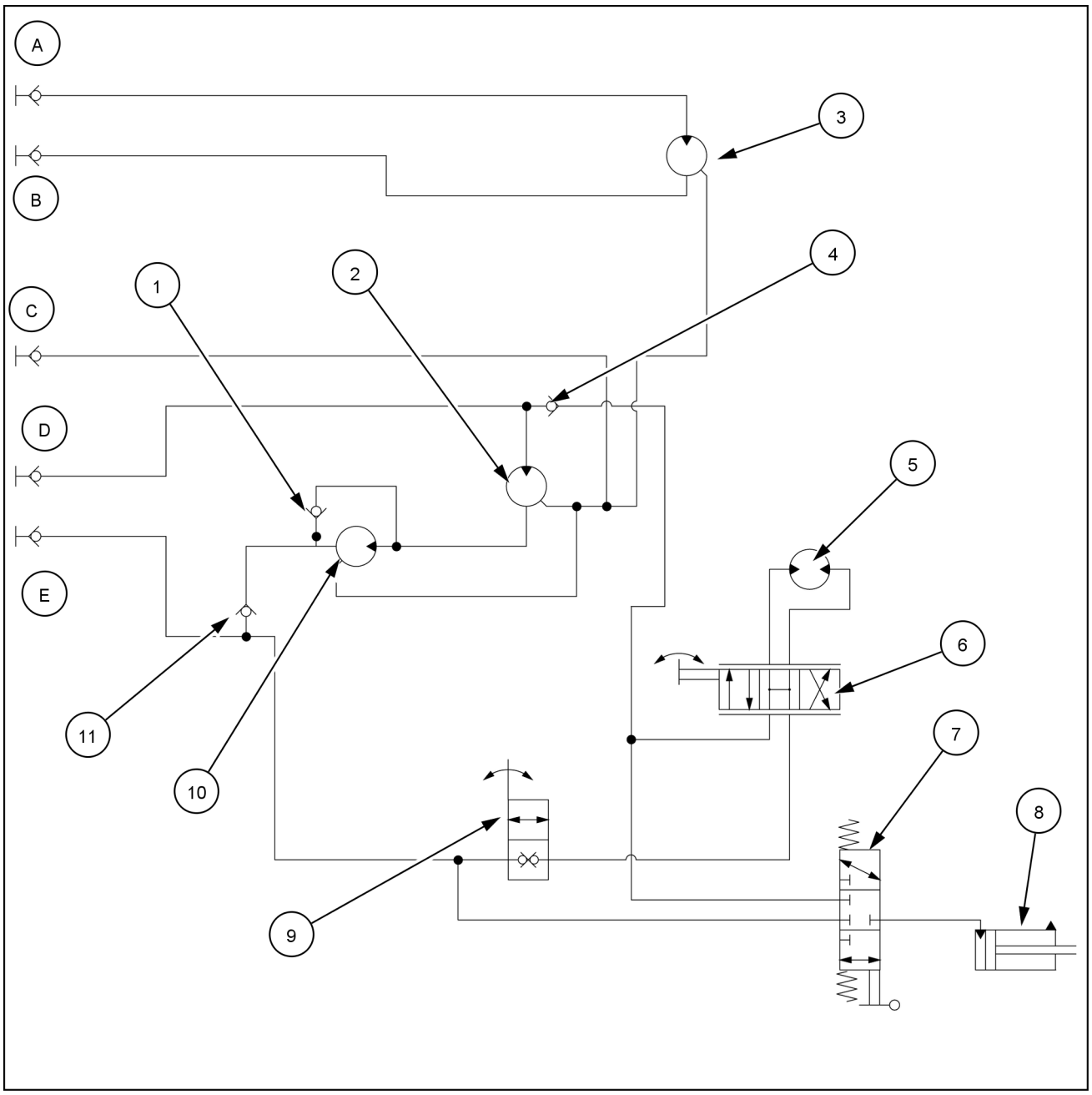
SAIL15SE00440FA 2

Deluxe auger

Hydraulic systems - Hydraulic schema 350 Bu tow between single shoot with no auger

P2350	

Ref	Description
(A)	Case drain
(B)	Fan pressure
(C)	Fan return
(1)	Check valve
(2)	Check valve
(3)	Fan motor
(4)	Alternator motor
(5)	Check valve



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Hydraulic systems - Hydraulic schema 460 Bu and 580 Bu and 760 Bu and 950 Bu tow behind double shoot with auxiliary tank and deluxe auger/conveyor

P4460	
P4580	
P4760	
P4950	

Ref	Description
(A)	Upper fan pressure
	Auxiliary tank fill return
(B)	Upper fan return
	Auxiliary tank fill pressure
(C)	Case drain
(D)	Lower fan pressure
	Auger / conveyor return
(E)	Lower fan return
	Auger / conveyor pressure
(1)	Check valve
(2)	Check valve
(3)	Filter
(4)	Ball valve
(5)	Check valve
(6)	Pressure compensated valve
(7)	Auxiliary tank fill rotary motor
(8)	Rotary valve, see **Auxiliary tank fill system valves - Hydraulic schema (35.870)** for valve block details
(9)	Upper fan motor
(10)	Auxiliary tank fill fan motor
(11)	Lower fan motor
(12)	Auger motor
(13)	Rotary valve
(14)	Auger/conveyor control valve, see **Seeding auger control valve - Hydraulic schema (35.744)** for valve block details
(15)	Tilt cylinder
(16)	Rotate outer arm cylinder
(17)	Lift cylinder
(18)	Rotate arm cylinder
(19)	Alternator motor
(20)	Check valve
(21)	Check valve

Hydraulic systems - 35

Seeding and planting hydraulic circuits - 744

P2350, P3440, P3550 , P4460, P4580, P4760, P4950

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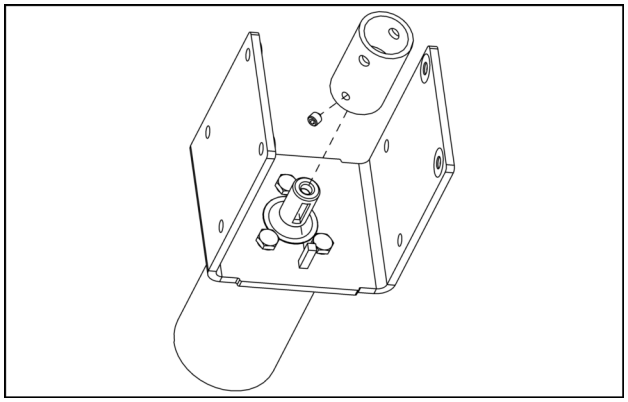
Seeding and planting hydraulic circuits - 744

Auxiliary tank fill system feeder motor - Install

P3550	
P4580	
P4760	
P4950	

Prior operation:
Auxiliary tank fill system feeder motor - Remove (35.870)

1. Fasten the motor to the mount bracket using the previously removed hardware.



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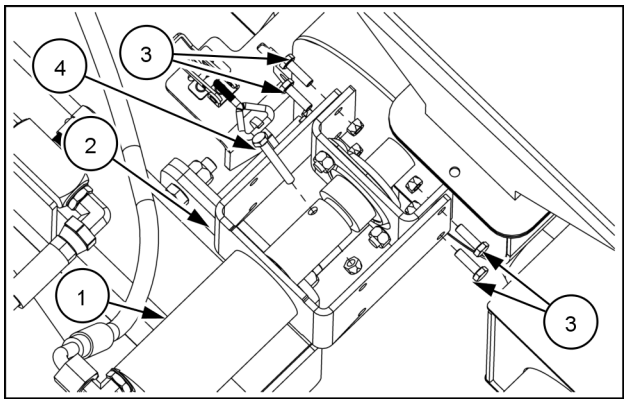
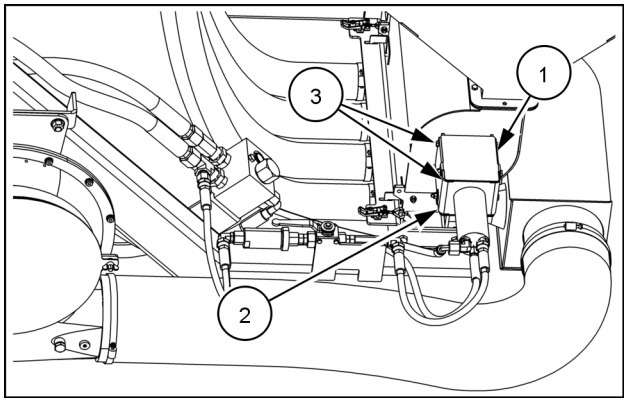
2. Align the drive sprocket with the drive and install the coupler **(4)** .
3. Fasten the motor mount **(3)** to the auxiliary tank hopper using the previously removed hardware.



SAVM16SE00212AA 2

4. Reinstall the top **(1)** and bottom **(2)** plates using the previously removed hardware **(3)** .



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5. Install the hoses on the motor ports, matching the ports with the hose tags installed earlier.
6. Test the operation of the motor and the rotor.

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Frames and ballasting - 39

Drawbar and hitch assembly - 110

(*) See content for specific models

Row crop and controlled traffic tire option

Row crop rear dual

		Tire size	Inflation Pressure 10 km/h (6 mph)	Inflation Pressure 16 km/h (10 mph)
P2350	Tow-between	480/80R42 151A8 AC85	**138 kPa** (**20 psi**)	**159 kPa** (**23 psi**)
	Tow-behind		**117 kPa** (**17 psi**)	**138 kPa** (**20 psi**)

Row crop and controlled traffic front

		Tire size	Inflation Pressure 10 km/h (6 mph)	Inflation Pressure 16 km/h (10 mph)
P2350	Tow-behind	380/90R46 159A8 AC85	**117 kPa** (**17 psi**)	**159 kPa** (**23 psi**)
P3440	Tow-behind	380/90R46 159A8 AC85	**117 kPa** (**17 psi**)	**159 kPa** (**23 psi**)
P4460	Tow-behind	380/90R46 159A8 AC85	**117 kPa** (**17 psi**)	**159 kPa** (**23 psi**)

Row crop and controlled traffic front tires– steered front axle

			Tire size	Load index	Single / Dual	Inflation Pressure 10 km/h (6 mph)	Inflation Pressure 16 km/h (10 mph)
P2350	Front	Base	18.4-38 R1 TD19	8PR	Single	**90 kPa** (**13 psi**)	**90 kPa** (**13 psi**)
		High flotation	650/75R38 SFT	172A8	Single	**41 kPa** (**6 psi**)	**41 kPa** (**6 psi**)
P3440	Front	Base	18.4-38 R1 TD19	8PR	Single	**90 kPa** (**13 psi**)	**90 kPa** (**13 psi**)
		High flotation	650/75R38 SFT	172A8	Single	**41 kPa** (**6 psi**)	**41 kPa** (**6 psi**)
P4460	Front	Base	18.4-38 R1 TD19	8PR	Single	**90 kPa** (**13 psi**)	**90 kPa** (**13 psi**)
		High flotation	650/75R38 SFT	172A8	Single	**41 kPa** (**6 psi**)	**41 kPa** (**6 psi**)

Controlled traffic rear single

		Tire size	Inflation Pressure 10 km/h (6 mph)	Inflation Pressure 16 km/h (10 mph)
P2350	Tow-between	800/70R38 176A8 SFT	**83 kPa** (**12 psi**)	**62 kPa** (**9 psi**)
	Tow-behind		**103 kPa** (**15 psi**)	**83 kPa** (**12 psi**)
P3440	Tow-between	800/70R38 176A8 SFT	**117 kPa** (**17 psi**)	**138 kPa** (**20 psi**)
	Tow-behind		**117 kPa** (**17 psi**)	**138 kPa** (**20 psi**)
P4460	Tow-between	800/70R38 176A8 SFT	**138 kPa** (**20 psi**)	**200 kPa** (**29 psi**)
	Tow-behind		**117 kPa** (**17 psi**)	**159 kPa** (**23 psi**)

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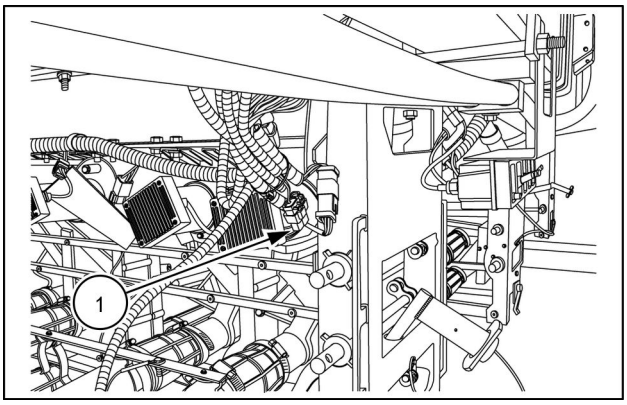
Electrical systems - 55

4. Fuse 5 **(1)** is located near the calibration switches. It fuses ECU_PWR that is used by the UCM, sensors, and **12 V** circuitry in the motors.



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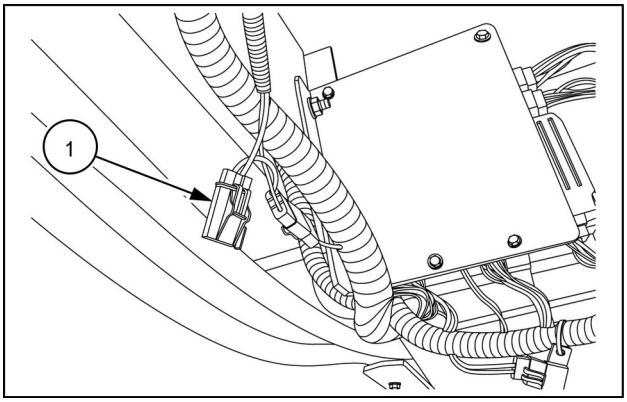
5. Fuse 6 **(1)** is located near the UCM. It fuses PWR to the UCM and to the coil of Relay 1. (The ground side of the coil is controlled by the UCM.)



SAIL15SE00911AA 5

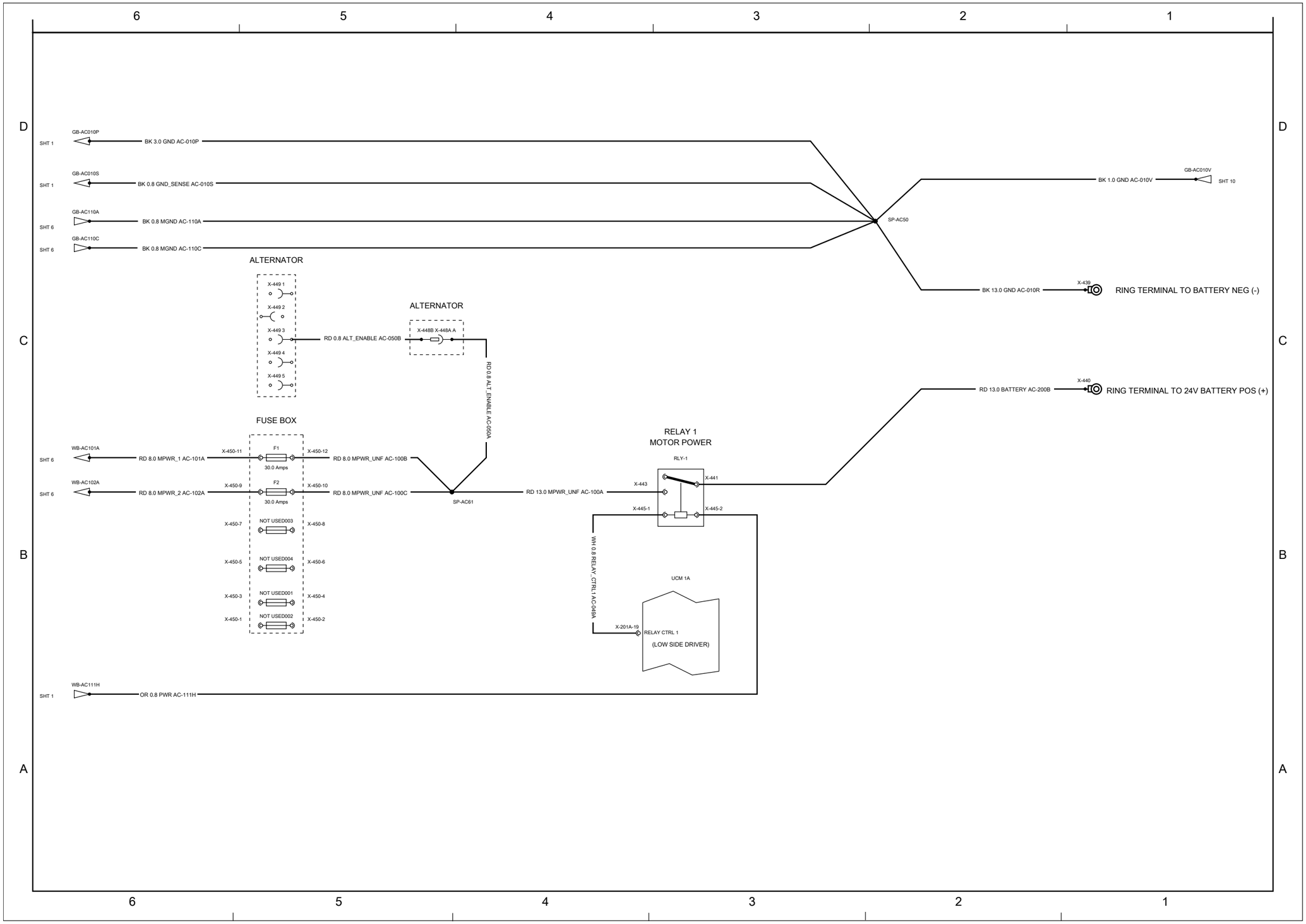
6. Replace blown fuses with the same value.

NOTICE: *Do not use higher value fuses. Damage to the wiring harness or connectors may occur.*

Wiring harnesses - Electrical schematic sheet 01 12V power - 350 Bu tow behind

P2350	

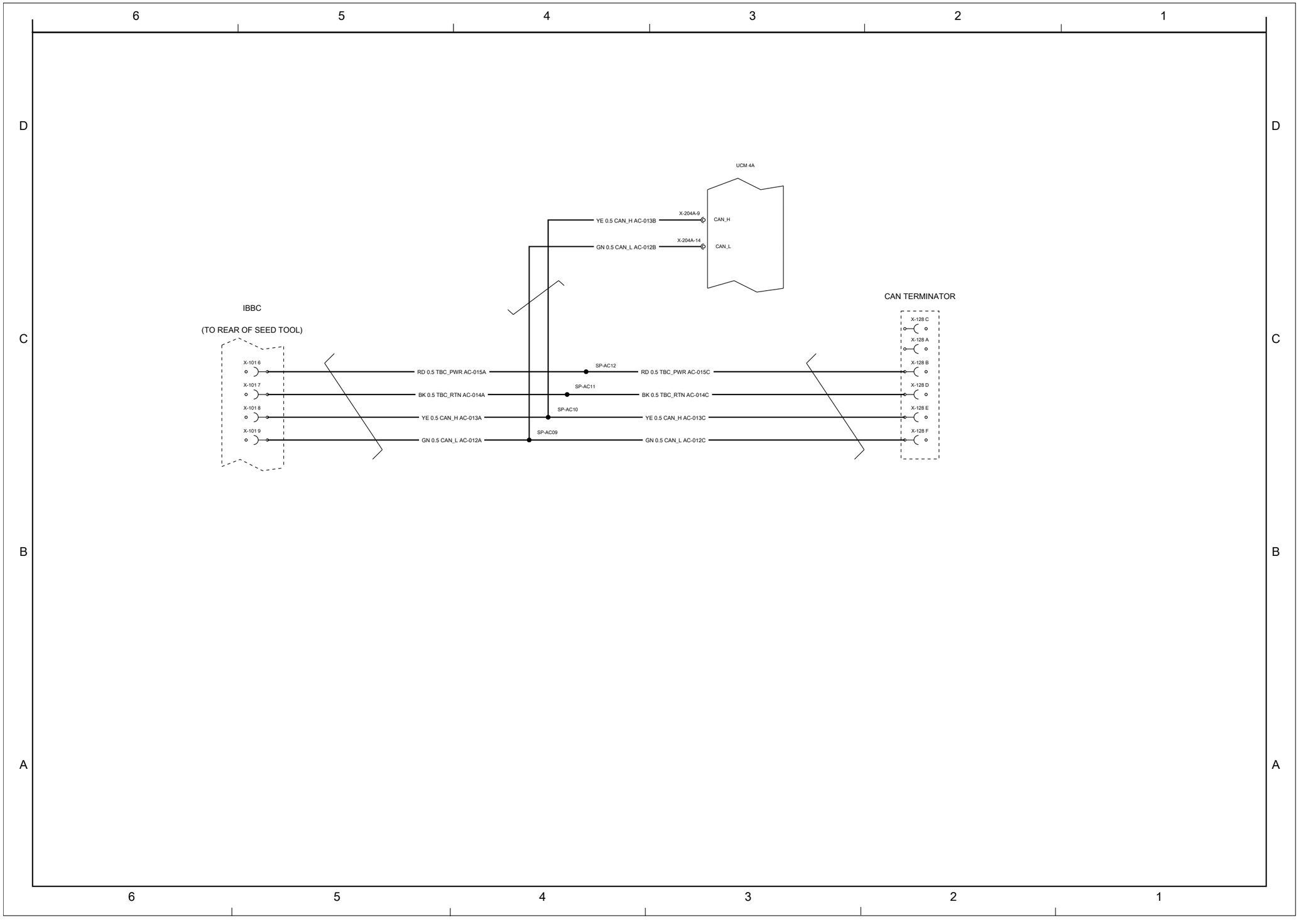
Type	Component	Connector / Link	Description
ECU	**A-008**	**X-203B**	UCM 3B
ECU	**A-012**	**X-204B**	UCM 4B
ECU	**A-014**	**X-202B**	UCM 2B
ECU	**A-015**	**X-201B**	UCM 1B
ECU	**A-016**	**X-201A**	UCM 1A
Fuse	**F-05**	**X-452**	ECU PWR
Fuse	**F-06**	**X-451**	HSD PWR
Connector	X-014	**X-014**	AUGER CONTROL
Connector	X-101 1	**X-101**	AIR CART ISOBUS CONNECTOR (IBBC)
Connector	X-101 2	**X-101**	AIR CART ISOBUS CONNECTOR (IBBC)
Connector	X-101 3	**X-101**	AIR CART ISOBUS CONNECTOR (IBBC)
Connector	X-101 4	**X-101**	AIR CART ISOBUS CONNECTOR (IBBC)
Connector	X-101 5	**X-101**	AIR CART ISOBUS CONNECTOR (IBBC)


6
5
4
3
2
1
D
C
B
A
GB-AC010P
SHT 1
BK 3.0 GND AC-010P
GB-AC010S
SHT 1
BK 0.8 GND_SENSE AC-010S
GB-AC110A
SHT 6
BK 0.8 MGND AC-110A
GB-AC110C
SHT 6
BK 0.8 MGND AC-110C
SP-AC50
BK 1.0 GND AC-010V
GB-AC010V
SHT 10
BK 13.0 GND AC-010R
X-439
RING TERMINAL TO BATTERY NEG (-)
ALTERNATOR
X-449 1
X-449 2
X-449 3
X-449 4
X-449 5
RD 0.8 ALT_ENABLE AC-050B
ALTERNATOR
X-448B X-448A A
RD 0.8 ALT_ENABLE AC-050A
RD 13.0 BATTERY AC-200B
X-440
RING TERMINAL TO 24V BATTERY POS (+)
FUSE BOX
WB-AC101A
SHT 6
RD 8.0 MPWR_1 AC-101A
X-450-11
F1
30.0 Amps
X-450-12
RD 8.0 MPWR_UNF AC-100B
WB-AC102A
SHT 6
RD 8.0 MPWR_2 AC-102A
X-450-9
F2
30.0 Amps
X-450-10
RD 8.0 MPWR_UNF AC-100C
SP-AC61
RD 13.0 MPWR_UNF AC-100A
X-450-7
NOT USED003
X-450-8
X-450-5
NOT USED004
X-450-6
X-450-3
NOT USED001
X-450-4
X-450-1
NOT USED002
X-450-2
RELAY 1
MOTOR POWER
RLY-1
X-443
X-441
X-445-1
X-445-2
WH 0.8 RELAY_CTRL1 AC-049A
UCM 1A
X-201A-19
RELAY CTRL 1
(LOW SIDE DRIVER)
WB-AC111H
SHT 1
OR 0.8 PWR AC-111H
SHT_9 1

Wiring harnesses - Electrical schematic sheet 06 Local Interconnect Network (LIN) bus and motor position assignment - 350 Bu tow between

P2350	

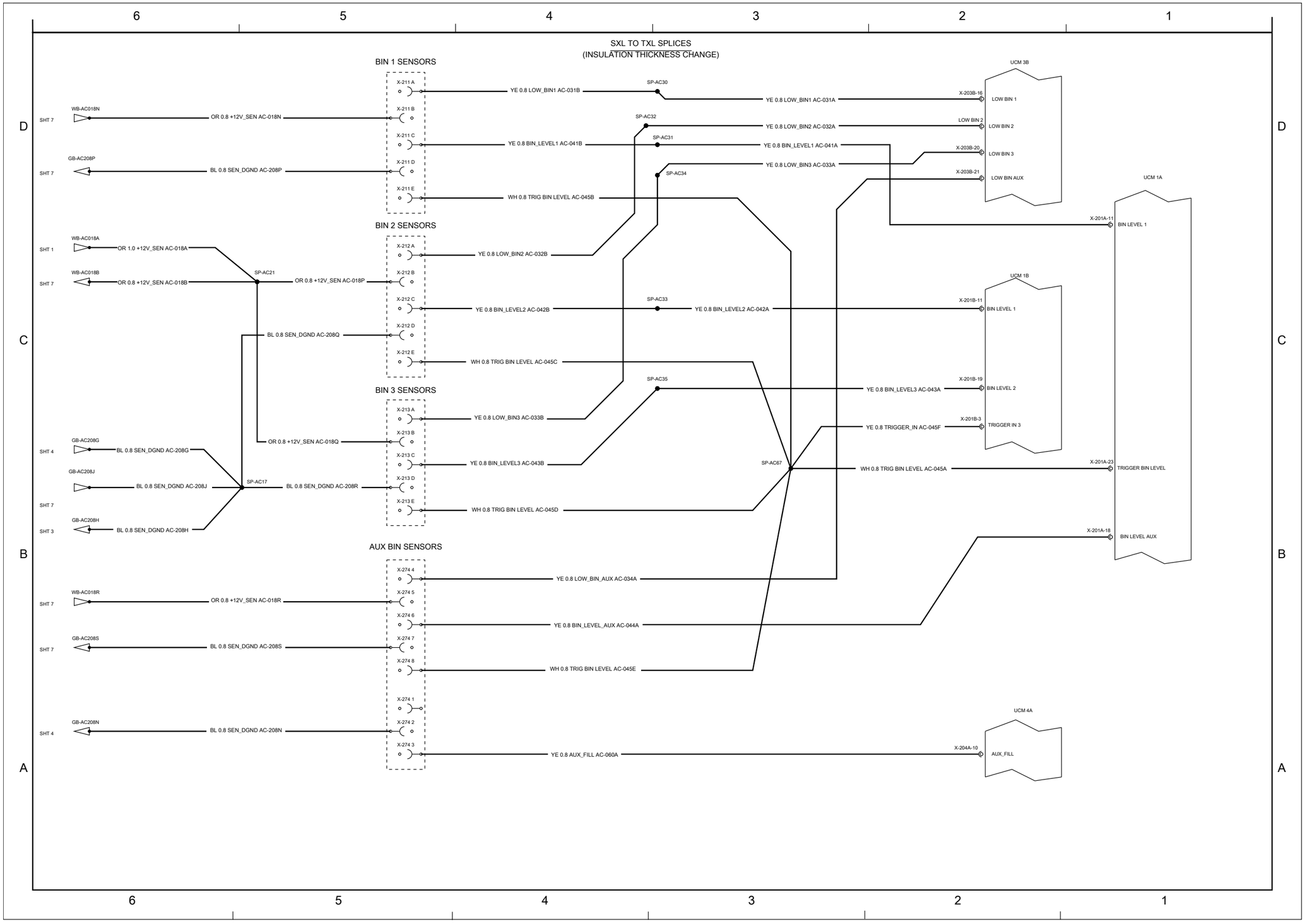
Type	Component	Connector / Link	Description
ECU	**A-005**	**X-203B**	UCM 3B
ECU	**A-009**	**X-204B**	UCM 4B
Connector	X-401 A	**X-401**	TANK 1 MOTORS
Connector	X-401 B	**X-401**	TANK 1 MOTORS
Connector	X-401 C	**X-401**	TANK 1 MOTORS
Connector	X-401 D	**X-401**	TANK 1 MOTORS
Connector	X-401 E	**X-401**	TANK 1 MOTORS
Connector	X-401 F	**X-401**	TANK 1 MOTORS
Connector	X-401 G	**X-401**	TANK 1 MOTORS
Connector	X-401 H	**X-401**	TANK 1 MOTORS
Connector	X-402 A	**X-402**	TANK 2 MOTORS
Connector	X-402 B	**X-402**	TANK 2 MOTORS
Connector	X-402 C	**X-402**	TANK 2 MOTORS
Connector	X-402 D	**X-402**	TANK 2 MOTORS
Connector	X-402 E	**X-402**	TANK 2 MOTORS
Connector	X-402 F	**X-402**	TANK 2 MOTORS
Connector	X-402 G	**X-402**	TANK 2 MOTORS
Connector	X-402 H	**X-402**	TANK 2 MOTORS


6
5
4
3
2
1
D
C
B
A
UCM 4A
YE 0.5 CAN_H AC-013B
X-204A-9
CAN_H
GN 0.5 CAN_L AC-012B
X-204A-14
CAN_L
IBBC
(TO REAR OF SEED TOOL)
X-101 6
X-101 7
X-101 8
X-101 9
RD 0.5 TBC_PWR AC-015A
BK 0.5 TBC_RTN AC-014A
YE 0.5 CAN_H AC-013A
GN 0.5 CAN_L AC-012A
SP-AC12
SP-AC11
SP-AC10
SP-AC09
RD 0.5 TBC_PWR AC-015C
BK 0.5 TBC_RTN AC-014C
YE 0.5 CAN_H AC-013C
GN 0.5 CAN_L AC-012C
CAN TERMINATOR
X-128 C
X-128 A
X-128 B
X-128 D
X-128 E
X-128 F
SHT_2 1

Wiring harnesses - Electrical schematic sheet 11 In-tank and auxiliary tank sensor harness - 435 Bu and 460 Bu tow behind

P3440	
P4460	

Type	Component	Connector / Link	Description
Ground	**GND-006**	**X-218**	LADDER GROUND
Ground	**GND-008**	**X-219**	TOP PLATE GROUND
Connector	X-210	**X-210**	AUX BIN SENSORS
Connector	X-215	**X-215**	BIN SENSORS
Connector	X-216	**X-216**	LOW BIN
Connector	X-217	**X-217**	BIN LEVEL
Connector	X-220A	**X-220A**	TOP DISCONNECT
Connector	X-270	**X-270**	AUX TANK SENSORS


SXL TO TXL SPLICES
(INSULATION THICKNESS CHANGE)
BIN 1 SENSORS
BIN 2 SENSORS
BIN 3 SENSORS
AUX BIN SENSORS
WB-AC018N
SHT 7
OR 0.8 +12V_SEN AC-018N
GB-AC208P
BL 0.8 SEN_DGND AC-208P
WB-AC018A
OR 1.0 +12V_SEN AC-018A
WB-AC018B
OR 0.8 +12V_SEN AC-018B
GB-AC208G
BL 0.8 SEN_DGND AC-208G
GB-AC208J
BL 0.8 SEN_DGND AC-208J
GB-AC208H
BL 0.8 SEN_DGND AC-208H
WB-AC018R
OR 0.8 +12V_SEN AC-018R
GB-AC208S
BL 0.8 SEN_DGND AC-208S
GB-AC208N
BL 0.8 SEN_DGND AC-208N
X-211 A
X-211 B
X-211 C
X-211 D
X-211 E
X-212 A
X-212 B
X-212 C
X-212 D
X-212 E
X-213 A
X-213 B
X-213 C
X-213 D
X-213 E
X-274 4
X-274 5
X-274 6
X-274 7
X-274 8
X-274 1
X-274 2
X-274 3
YE 0.8 LOW_BIN1 AC-031B
YE 0.8 BIN_LEVEL1 AC-041B
WH 0.8 TRIG BIN LEVEL AC-045B
YE 0.8 LOW_BIN2 AC-032B
YE 0.8 BIN_LEVEL2 AC-042B
WH 0.8 TRIG BIN LEVEL AC-045C
YE 0.8 LOW_BIN3 AC-033B
YE 0.8 BIN_LEVEL3 AC-043B
WH 0.8 TRIG BIN LEVEL AC-045D
YE 0.8 LOW_BIN_AUX AC-034A
YE 0.8 BIN_LEVEL_AUX AC-044A
WH 0.8 TRIG BIN LEVEL AC-045E
YE 0.8 AUX_FILL AC-060A
SP-AC21
SP-AC17
SP-AC30
SP-AC31
SP-AC32
SP-AC33
SP-AC34
SP-AC35
SP-AC67
OR 0.8 +12V_SEN AC-018P
BL 0.8 SEN_DGND AC-208Q
OR 0.8 +12V_SEN AC-018Q
BL 0.8 SEN_DGND AC-208R
YE 0.8 LOW_BIN1 AC-031A
YE 0.8 LOW_BIN2 AC-032A
YE 0.8 BIN_LEVEL1 AC-041A
YE 0.8 LOW_BIN3 AC-033A
YE 0.8 BIN_LEVEL2 AC-042A
YE 0.8 BIN_LEVEL3 AC-043A
YE 0.8 TRIGGER_IN AC-045F
WH 0.8 TRIG BIN LEVEL AC-045A
UCM 3B
X-203B-16
LOW BIN 1
LOW BIN 2
X-203B-20
LOW BIN 3
X-203B-21
LOW BIN AUX
UCM 1A
X-201A-11
BIN LEVEL 1
UCM 1B
X-201B-11
BIN LEVEL 1
X-201B-19
BIN LEVEL 2
X-201B-3
TRIGGER IN 3
X-201A-23
TRIGGER BIN LEVEL
X-201A-18
BIN LEVEL AUX
UCM 4A
X-204A-10
AUX_FILL
6
5
4
3
2
1
D
C
B
A
SHT_8 1

Wiring harnesses - Electrical schematic sheet 05 10 motor harness (1 per tank) - 555 Bu and 580 Bu tow behind

P3550	
P4580	

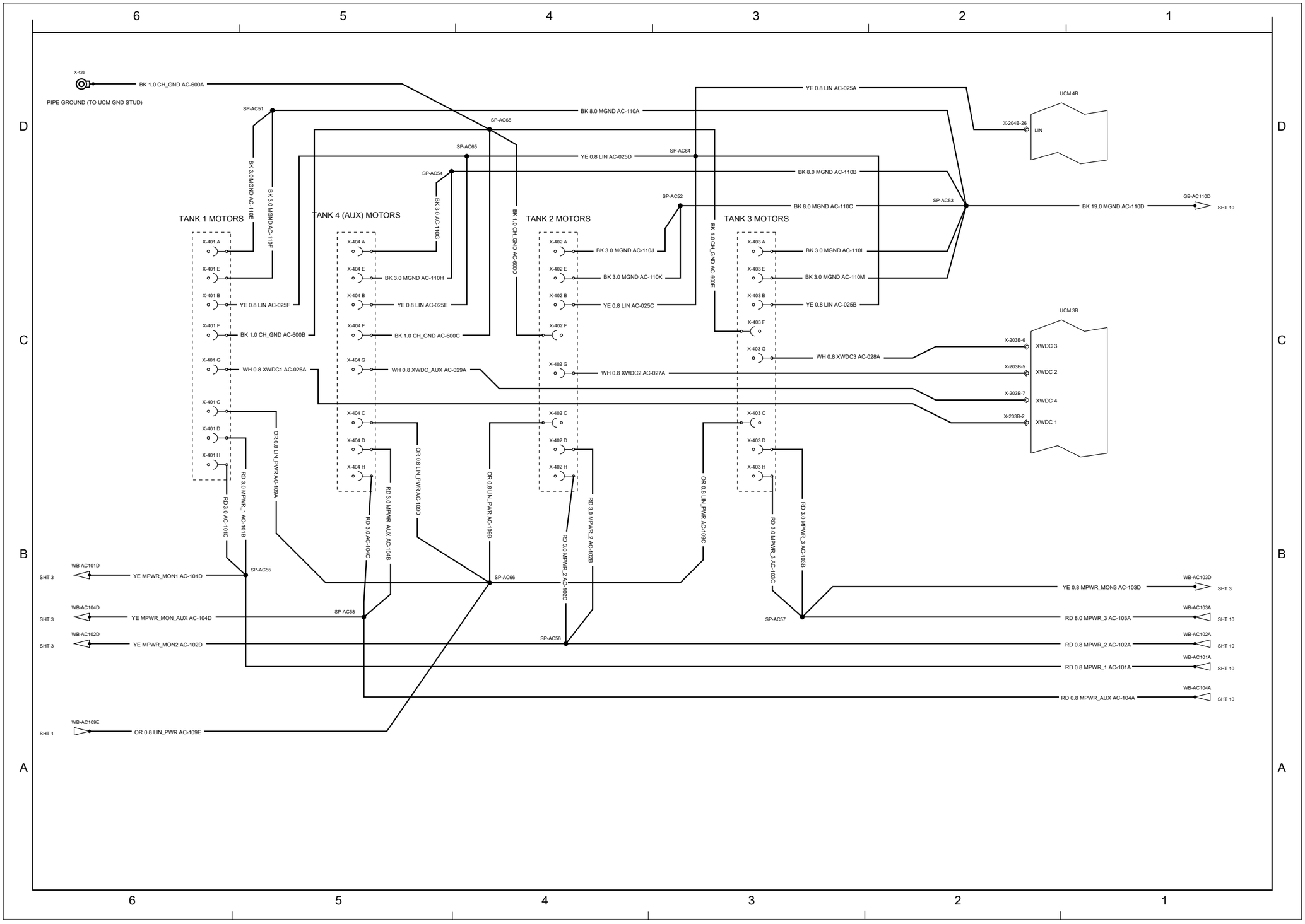
Type	Component	Connector / Link	Description
Dust cap	**DC-411**	DC-411	DUST CAP / LOOP PLUG FOR X-411
Dust cap	**DC-416**	DC-416	DUST CAP / LOOP PLUG FOR X-416
Dust cap	**DC-420**	DC-420	DUST CAP / LOOP PLUG FOR X-420
Ground	**GND-001**	**X-423**	PIPE GROUND
Ground	**GND-002**	**X-424**	PIPE GROUND
Ground	**GND-003**	**X-425**	SUB-HOPPER FRAME GROUND
Connector	X-410	**X-410**	TANK MOTORS
Connector	X-411	**X-411**	MOTOR 1
Connector	X-412	**X-412**	MOTOR 2
Connector	X-413	**X-413**	MOTOR 3
Connector	X-414	**X-414**	MOTOR 4
Connector	X-415	**X-415**	MOTOR 5
Connector	X-416	**X-416**	MOTOR 6
Connector	X-417	**X-417**	MOTOR 7
Connector	X-418	**X-418**	MOTOR 8
Connector	X-419	**X-419**	MOTOR 9
Connector	X-420	**X-420**	MOTOR 10

6
5
4
3
2
1
D
C
B
A
UCM 4A
X-204A-9
CAN_H
X-204A-14
CAN_L
YE 0.5 CAN_H AC-013B
GN 0.5 CAN_L AC-012B
ISOBUS CONNECTOR (IBBC)
(CONNECTS TO REAR OF TRACTOR)
X-101 6
X-101 7
X-101 8
X-101 9
RD 0.5 TBC_PWR AC-015A
BK 0.5 TBC_RTN AC-014A
YE 0.5 CAN_H AC-013A
GN 0.5 CAN_L AC-012A
SP-AC12
SP-AC11
SP-AC10
SP-AC09
RD 0.5 TBC_PWR AC-015C
BK 0.5 TBC_RTN AC-014C
YE 0.5 CAN_H AC-013C
GN 0.5 CAN_L AC-012C
SP-AC29
SP-AC28
SP-AC27
SP-AC26
RD 0.5 TBC_PWR AC-015D
BK 0.5 TBC_RTN AC-014D
YE 0.5 CAN_H AC-013D
GN 0.5 CAN_L AC-012D
CAN TERMINATOR
X-128 C
X-128 A
X-128 B
X-128 D
X-128 E
X-128 F
ISOBUS CONNECTOR (IBBC)
(CONNECTS TO FRONT OF SEED TOOL)
RD 0.5 TBC_PWR AC-015E
BK 0.5 TBC_RTN AC-014E
YE 0.5 CAN_H AC-013E
GN 0.5 CAN_L AC-012E
X-133 6
X-133 7
X-133 8
X-133 9
SHT_2 1

Wiring harnesses - Electrical schematic sheet 10 Light module function - 555 Bu and 580 Bu tow between

P3550	
P4580	

Type	Component	Connector / Link	Description
ECU	**A-019**	**X-201B**	UCM 1B
ECU	**A-020**	**X-202B**	UCM 2B
Connector	X-209	**X-209**	LIGHT MODULE

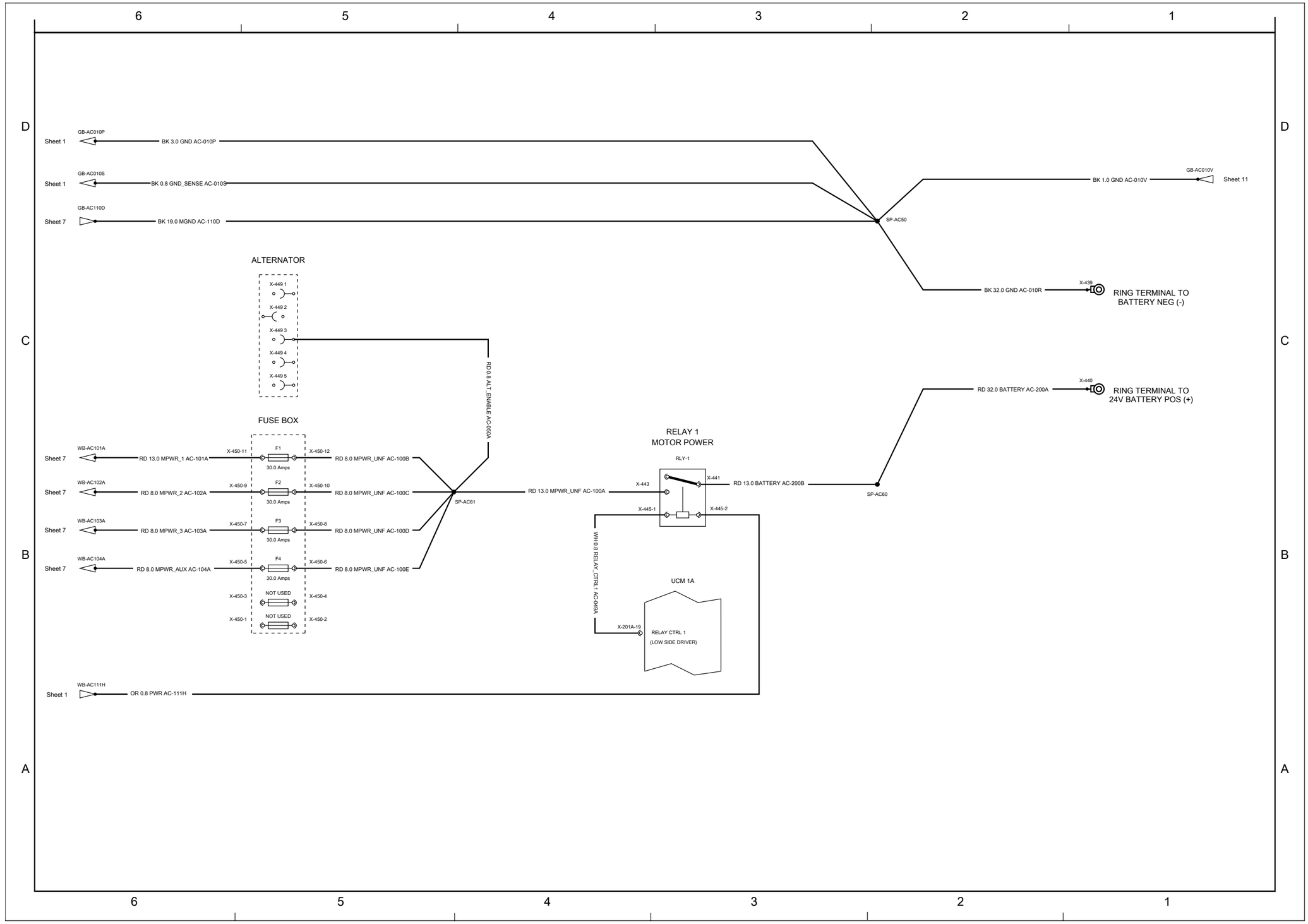

X-426
BK 1.0 CH_GND AC-600A
PIPE GROUND (TO UCM GND STUD)
SP-AC51
BK 8.0 MGND AC-110A
SP-AC68
YE 0.8 LIN AC-025A
UCM 4B
X-204B-26
LIN
SP-AC65
YE 0.8 LIN AC-025D
SP-AC64
SP-AC54
BK 8.0 MGND AC-110B
SP-AC52
BK 8.0 MGND AC-110C
SP-AC53
BK 19.0 MGND AC-110D
GB-AC110D
SHT 10
BK 3.0 MGND AC-110E
BK 3.0 MGND AC-110F
BK 3.0 AC-110G
BK 1.0 CH_GND AC-600D
BK 1.0 CH_GND AC-600E
TANK 1 MOTORS
TANK 4 (AUX) MOTORS
TANK 2 MOTORS
TANK 3 MOTORS
X-401 A
X-401 E
X-401 B
YE 0.8 LIN AC-025F
X-401 F
BK 1.0 CH_GND AC-600B
X-401 G
WH 0.8 XWDC1 AC-026A
X-401 C
X-401 D
X-401 H
X-404 A
X-404 E
BK 3.0 MGND AC-110H
X-404 B
YE 0.8 LIN AC-025E
X-404 F
BK 1.0 CH_GND AC-600C
X-404 G
WH 0.8 XWDC_AUX AC-029A
X-404 C
X-404 D
X-404 H
X-402 A
BK 3.0 MGND AC-110J
X-402 E
BK 3.0 MGND AC-110K
X-402 B
YE 0.8 LIN AC-025C
X-402 F
X-402 G
WH 0.8 XWDC2 AC-027A
X-402 C
X-402 D
X-402 H
X-403 A
BK 3.0 MGND AC-110L
X-403 E
BK 3.0 MGND AC-110M
X-403 B
YE 0.8 LIN AC-025B
X-403 F
X-403 G
WH 0.8 XWDC3 AC-028A
X-403 C
X-403 D
X-403 H
UCM 3B
X-203B-6
XWDC 3
X-203B-5
XWDC 2
X-203B-7
XWDC 4
X-203B-2
XWDC 1
OR 0.8 LIN_PWR AC-109A
RD 3.0 AC-101C
RD 3.0 MPWR_1 AC-101B
RD 3.0 AC-104C
RD 3.0 MPWR_AUX AC-104B
OR 0.8 LIN_PWR AC-109D
OR 0.8 LIN_PWR AC-109B
RD 3.0 MPWR_2 AC-102B
RD 3.0 MPWR_2 AC-102C
OR 0.8 LIN_PWR AC-109C
RD 3.0 MPWR_3 AC-103C
RD 3.0 MPWR_3 AC-103B
WB-AC101D
SHT 3
YE MPWR_MON1 AC-101D
SP-AC55
SP-AC66
YE 0.8 MPWR_MON3 AC-103D
WB-AC103D
SHT 3
WB-AC104D
SHT 3
YE MPWR_MON_AUX AC-104D
SP-AC58
SP-AC57
RD 8.0 MPWR_3 AC-103A
WB-AC103A
SHT 10
WB-AC102D
SHT 3
YE MPWR_MON2 AC-102D
SP-AC56
RD 0.8 MPWR_2 AC-102A
WB-AC102A
SHT 10
RD 0.8 MPWR_1 AC-101A
WB-AC101A
SHT 10
RD 0.8 MPWR_AUX AC-104A
WB-AC104A
SHT 10
WB-AC109E
SHT 1
OR 0.8 LIN_PWR AC-109E

SHT_7 1

Wiring harnesses - Electrical schematic sheet 03 Sensors: tank pressure, motor power monitor - 950 Bu tow behind

P4950	

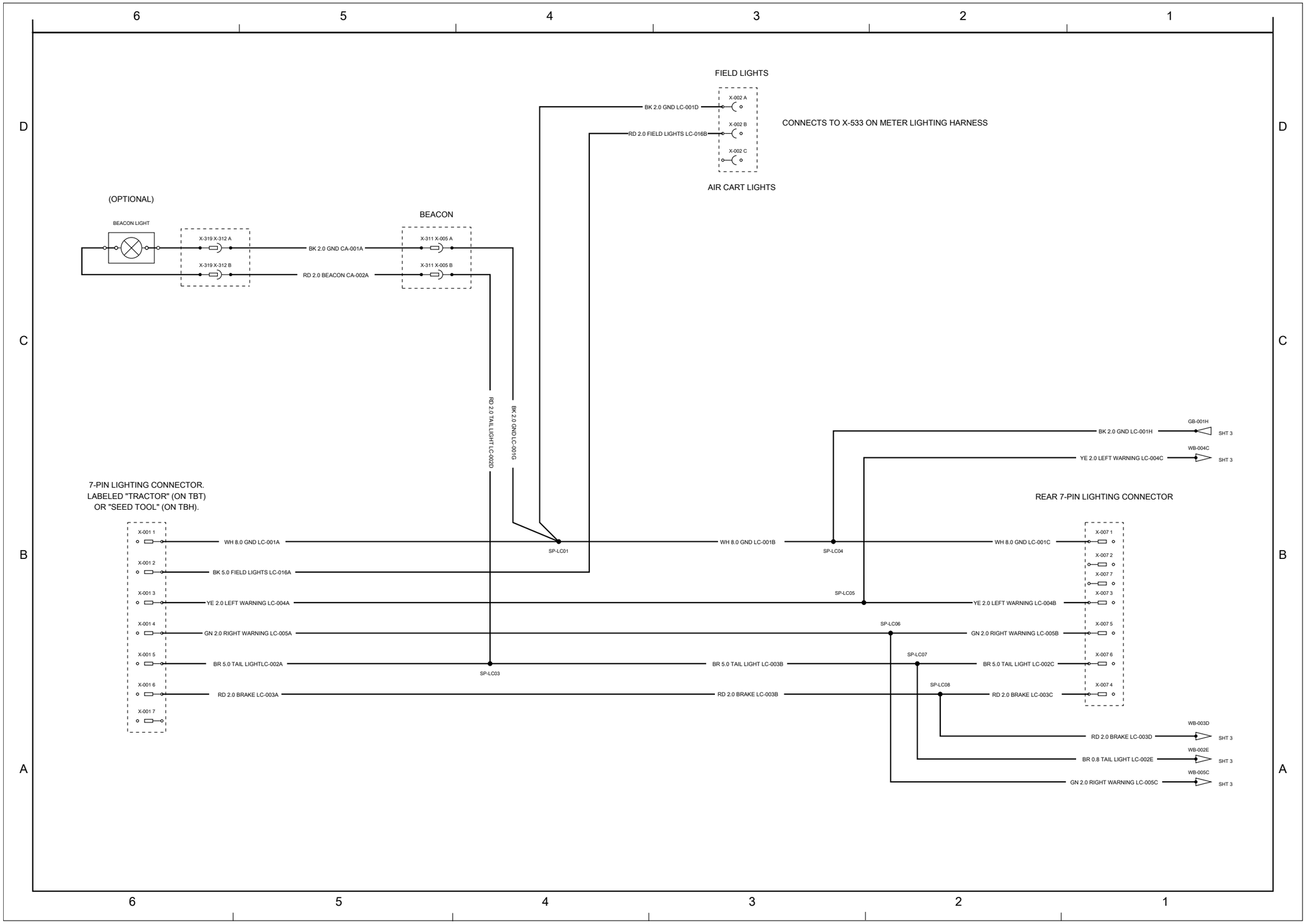
Type	Component	Connector / Link	Description
ECU	**A-001**	**X-202B**	UCM 2B
ECU	**A-002**	**X-201A**	UCM 1A
ECU	**A-017**	**X-204A**	UCM 4A
ECU	**A-022**	**X-202A**	UCM 2A
ECU	**A-024**	**X-204B**	UCM 4B
Connector	X-231	**X-231**	PRESSURE 1
Connector	X-232	**X-232**	PRESSURE 2
Connector	X-233	**X-233**	PRESSURE 3
Connector	X-234	**X-234**	PRESSURE AUX



SAVE17SE00089JA 1

Wiring harnesses - Electrical schematic sheet 01 Cart lighting power and meter lighting - 2 tank air carts

Type	Component	Connector / Link	Description
Fuse	**F-01**	**X-531**	CART LIGHTING (15A)
Connector	X-530	**X-530**	AIR CART LIGHTING
Connector	X-532	**X-532**	LIGHT SWITCH
Connector	X-533	**X-541**	PLATFORM LIGHTS
Connector	X-535	**X-535**	METER LIGHT 1
Connector	X-536	**X-536**	METER LIGHT 2
Connector	X-538	**X-538**	METER LIGHT 3
Connector	X-539	**X-539**	AUGER LIGHTS
Connector	X-541	**X-541**	PLATFORM LIGHTS
Connector	X-554	**X-554**	TO MOTOR HARNESS
Connector	X-555	**X-555**	AIR CART LIGHTING

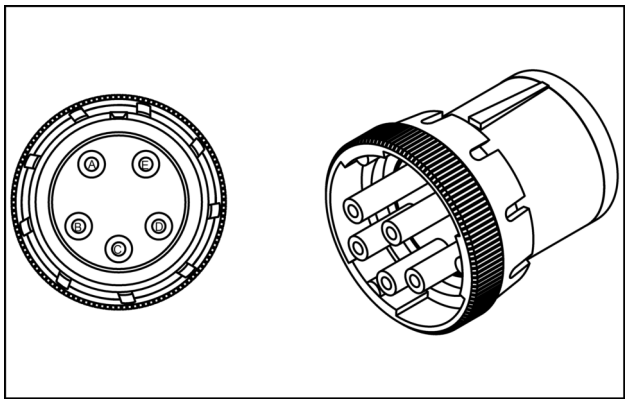


SAVM17SE00090JA 1

Wire connectors - Component diagram 21 350 Bu tow behind

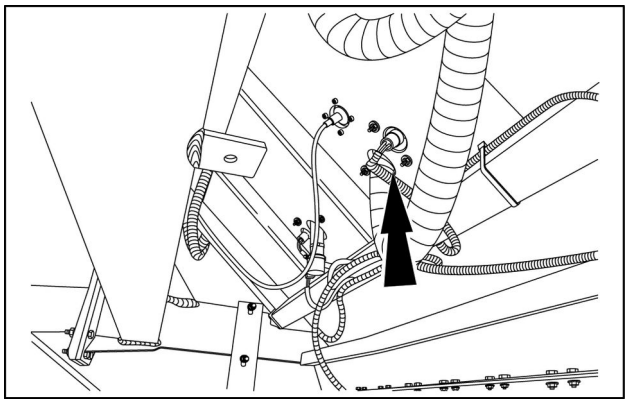
P2350	

X-211 - BIN 1 SENSORS (87706919) (Female)



87706919 1

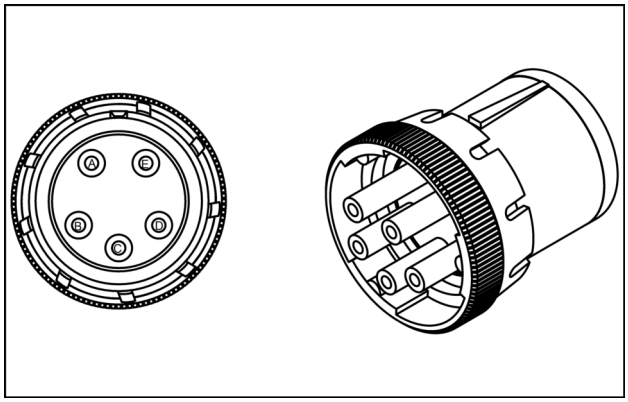
87706919



SAIL15SE01312AA 2

Pin	From	Wire	Description	Color-Size	Frame
A	SP-AC30-P-X	160	LOW_BIN1	YE - 0.8	**SHEET 08**
B	SP-AC19-P-X	164	+12V_SEN	OR - 0.8	
C	SP-AC31-P-X	172	BIN_LEVEL1	YE - 0.8	
D	SP-AC18-P-X	168	SEN_DGND	BL - 0.8	
E	SP-AC67-P-X	209	TRIG BIN LEVEL	WH - 0.8	

X-212 - BIN 2 SENSORS (87706919) (Female)



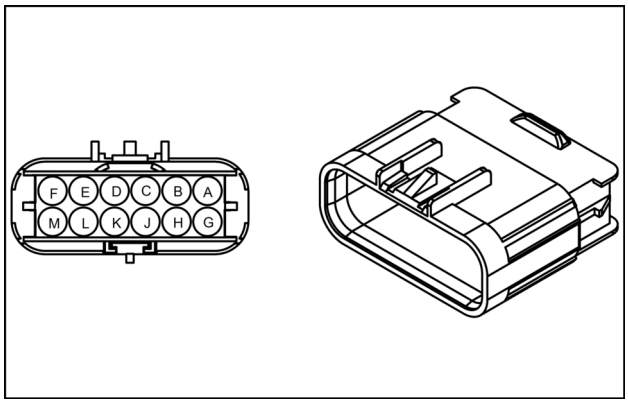
87706919 3

87706919

Wire connectors - Component diagram 41 350 Bu tow behind

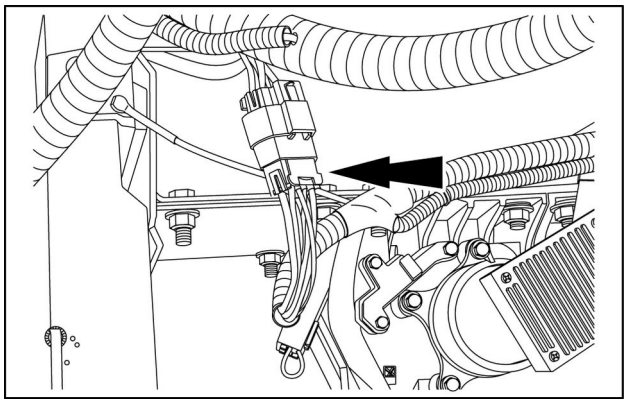
P2350	

X-410 - TANK MOTORS (84137497) (Male)



84137497 1

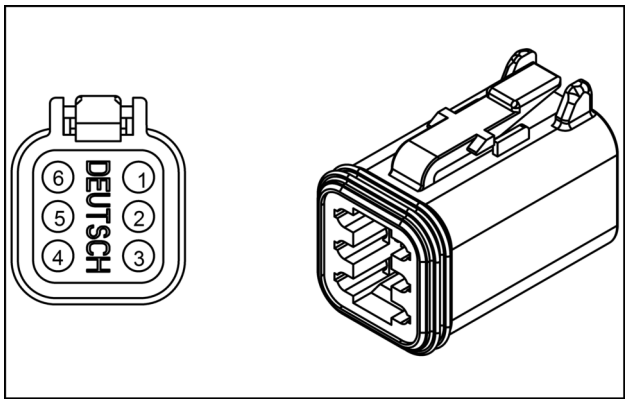
84137497



SAIL16SE00166AA 2

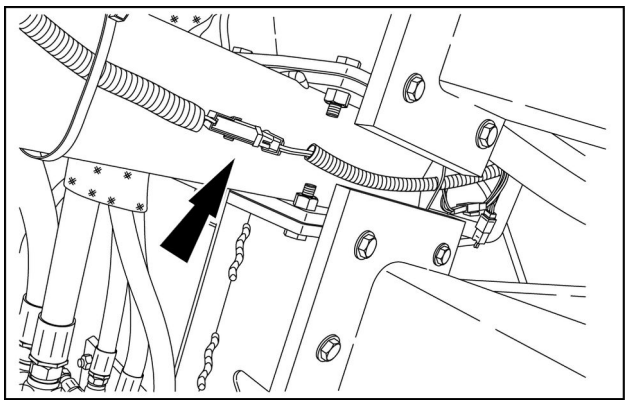
Pin	From	Wire	Description	Color-Size	Frame
A	SP-MR01-P-X	89	MGND	BK - 3	**SHEET 05**
B	SP-MR07-P-X	74	LIN	YE - 0.8	
C	SP-MR12-P-X	13	LIN_PWR	OR - 0.8	
D	SP-MR03-P-X	218	MPWR	RD - 3	
E	SP-MR01-P-X	35	MGND	BK - 3	
F	SP-MR14-P-X	264	CH_GND	BK - 1	
G	**X-411 (Female) pin 4** MOTOR 1	63	XWDC	WH - 0.8	
H	SP-MR03-P-X	147	MPWR	RD - 3	

X-411 - MOTOR 1 (87708148) (Female)



87708148 3

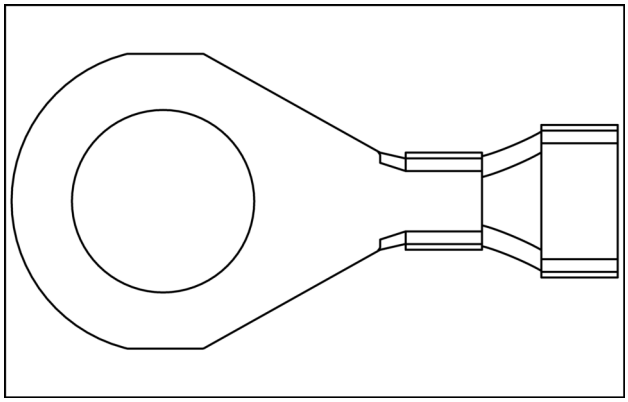
87708148



SAIL16SE00130AA 16

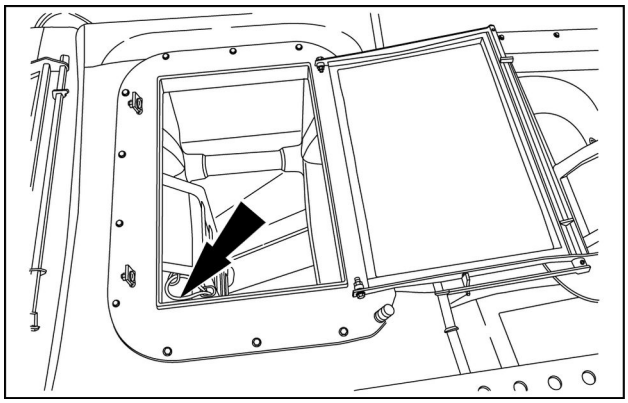
Pin	From	Wire	Description	Color-Size	Frame
3	**X-448A (Male) pin A** ALTERNATOR	280	ALT_ENABLE	RD - 0.8	**SHEET 09**

X-219 - TOP PLATE GROUND (47607318)



47607318 13

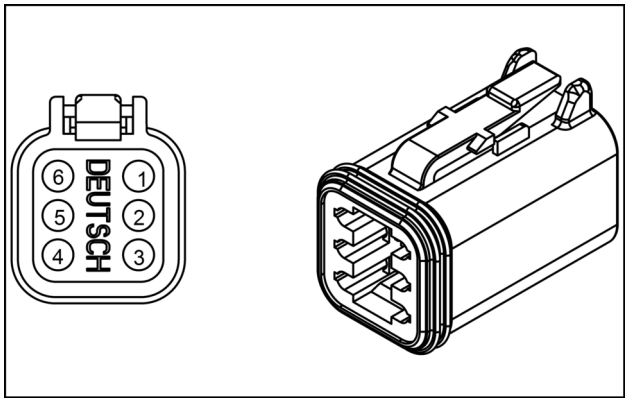
47607318



SAIL15SE00466AA 14

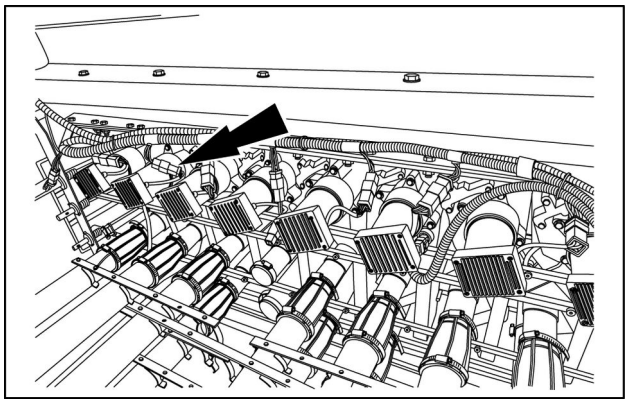
Pin	From	Wire	Description	Color-Size	Frame
1	**X-220A (Female) pin A** TOP DISCONNECT	295	GND	BK - 2	**SHEET 11**

X-416 - MOTOR 6 (87708148) (Female)



87708148 13

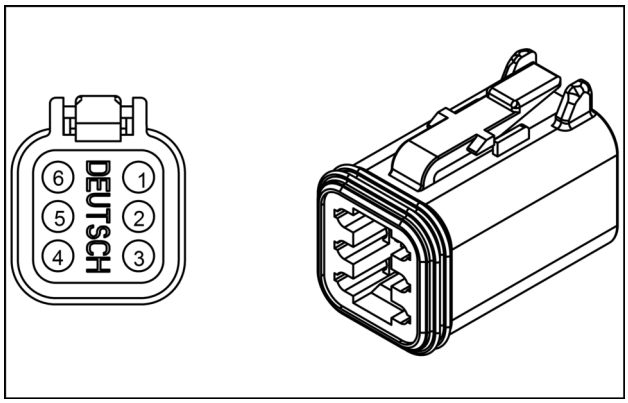
87708148



SAIL15SE00941AA 14

Pin	From	Wire	Description	Color-Size	Frame
1	SP-MR09-P-X	84	LIN	YE - 0.8	**SHEET 05**
2	SP-MR02-P-X	42	MGND	BK - 1	
3	SP-MR13-P-X	27	LIN_PWR	OR - 0.8	
4	**X-415 (Female) pin 5** MOTOR 5	68	XWDC	WH - 0.8	
5	**X-417 (Female) pin 4** MOTOR 7	69	XWDC	WH - 0.8	
6	SP-MR04-P-X	54	MPWR	RD - 1	

X-417 - MOTOR 7 (87708148) (Female)



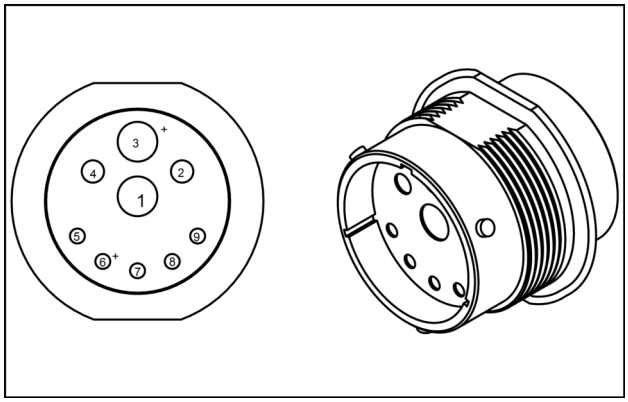
87708148 15

87708148

Wire connectors - Component diagram 10 435 Bu and 460 Bu tow behind

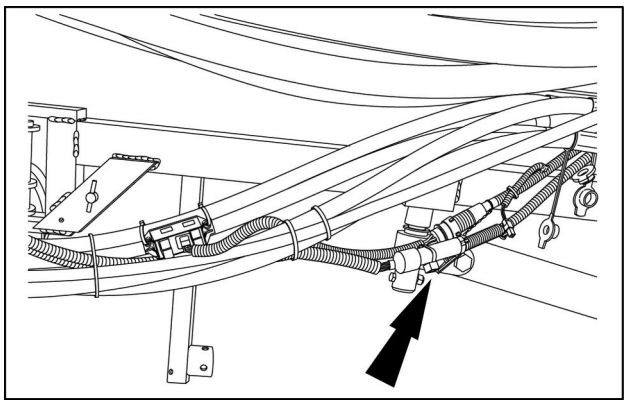
P3440	
P4460	

X-101 - AIR CART ISOBUS CONNECTOR (IBBC) (84074256) (Female)



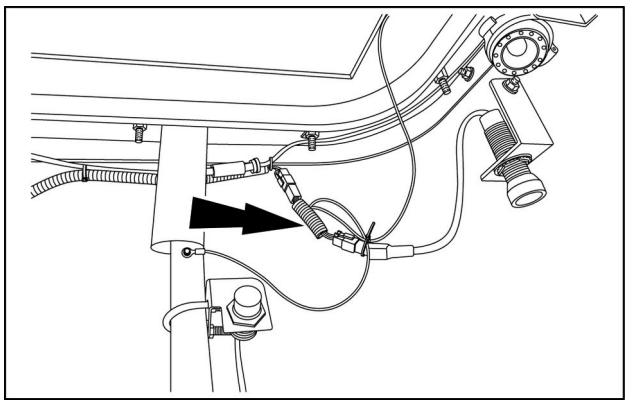
84074256 1

84074256



SAIL16SE00301AA 2

Pin	From	Wire	Description	Color-Size	Frame
1	SP-AC01-P-X	276	GND	BK - 5	**SHEET 01**
2	SP-AC02-P-X	144	ECU_GND	BK/WH - 2	
3	SP-AC04-P-X	215	PWR	OR - 5	
4	**X-452 pin A** ECU PWR	177	ECU_PWR	OR - 3	
6	SP-AC12-P-X	304	TBC_PWR	RD - 0.5	**SHEET 02**
7	SP-AC11-P-X	305	TBC_RTN	BK - 0.5	
8	SP-AC10-P-X	306	CAN_H	YE - 0.5	
9	SP-AC09-P-X	307	CAN_L	GN - 0.5	

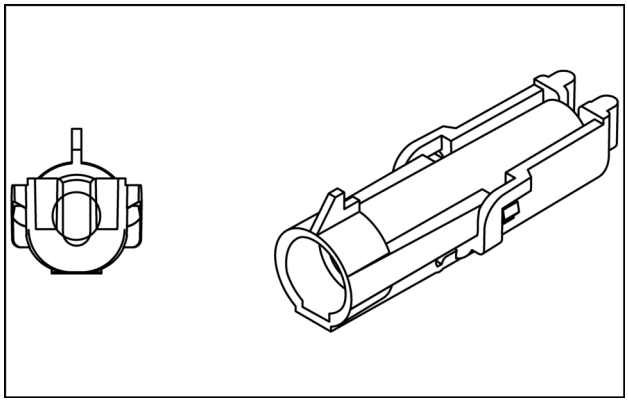


SAIL15SE00937AA 4

Pin	From	Wire	Description	Color-Size	Frame
A	SP-IT02-P-X	126	GND	BK - 2	**SHEET 11**

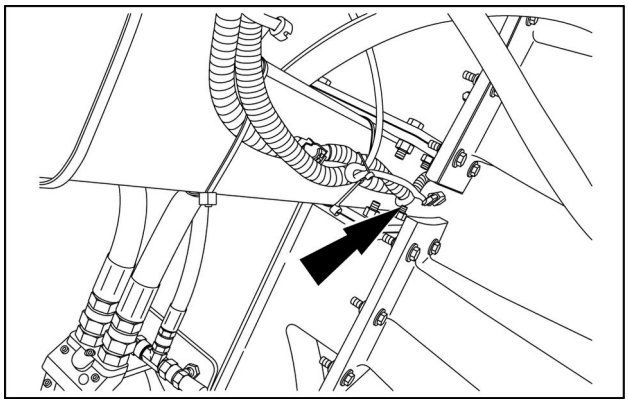
Pin	From	Wire	Description	Color-Size	Frame
A	SP-AC54-P-X	21	MGND	BK - 3	**SHEET 06**
B	SP-AC65-P-X	2	LIN	YE - 0.8	
C	SP-AC66-P-X	139	LIN_PWR	OR - 0.8	
D	SP-AC58-P-X	30	MPWR_AUX	RD - 3	
E	SP-AC54-P-X	20	MGND	BK - 3	
F	SP-AC68-P-X	269	CH_GND	BK - 1	
G	**X-203B pin 7** UCM 3B	11	XWDC_AUX	WH - 0.8	
H	SP-AC58-P-X	70	MPWR_AUX	RD - 3	

X-448A - ALTERNATOR (87693745) (Male)



87693745 13

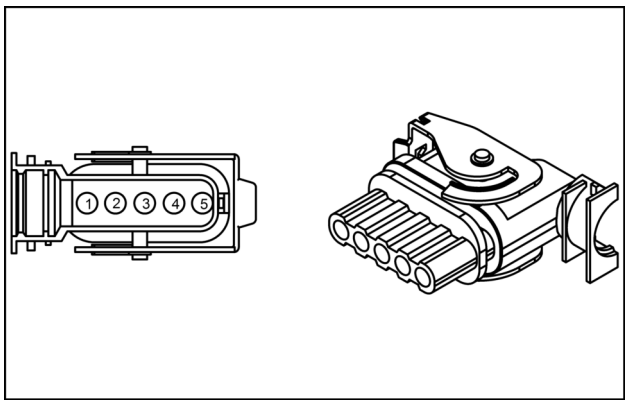
87693745



SAIL16SE00042AA 14

Pin	From	Wire	Description	Color-Size	Frame
A	**X-449 (Female) pin 3** ALTERNATOR	96	ALT_ENABLE	RD - 0.8	**SHEET 09**

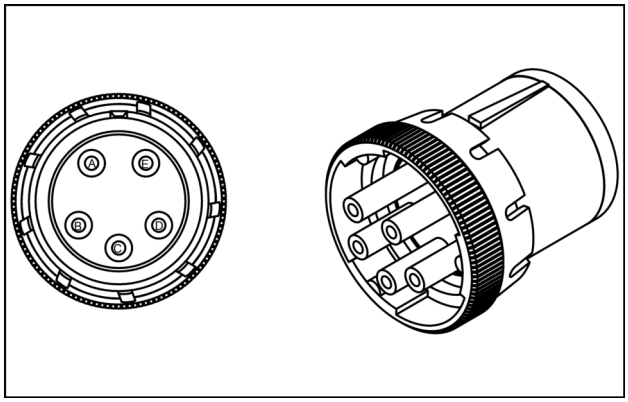
X-449 - ALTERNATOR (84163450) (Female)



84163450 15

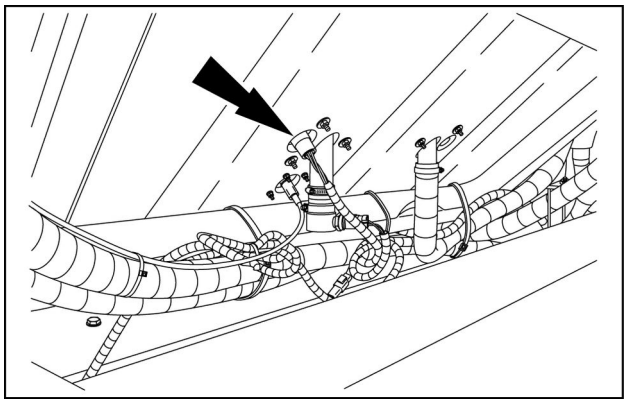
84163450

X-211 - BIN 1 SENSORS [GB-AC208P] (87706919) (Female)



87706919 3

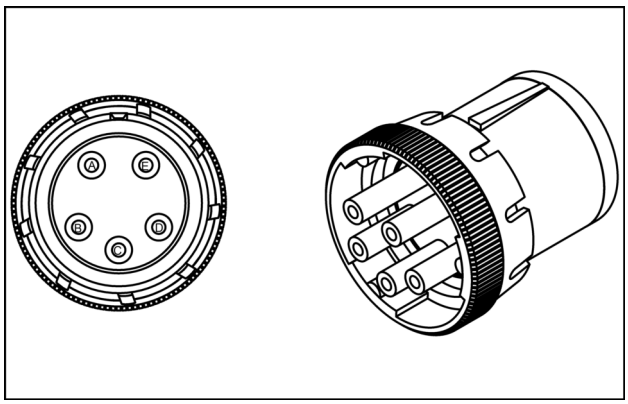
87706919



SAIL16SE00017AA 4

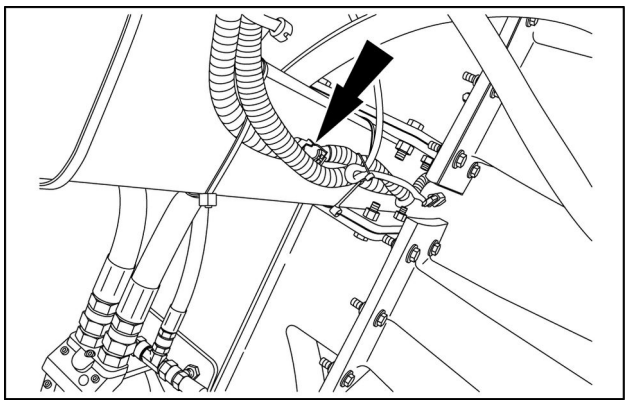
Pin	From	Wire	Description	Color-Size	Frame
A	SP-AC30-P-X	160	LOW_BIN1	YE - 0.8	**SHEET 08**
B	SP-AC19-P-X	116	+12V_SEN	OR - 0.8	
C	SP-AC31-P-X	172	BIN_LEVEL1	YE - 0.8	
D	SP-AC18-P-X	123	SEN_DGND	BL - 0.8	
E	SP-AC67-P-X	209	TRIG BIN LEVEL	WH - 0.8	

X-212 - BIN 2 SENSORS [GB-AC208Q] (87706919) (Female)



87706919 5

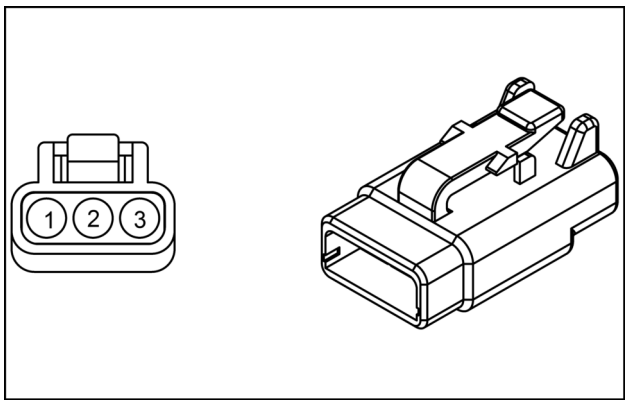
87706919



SAIL16SE00042AA 4

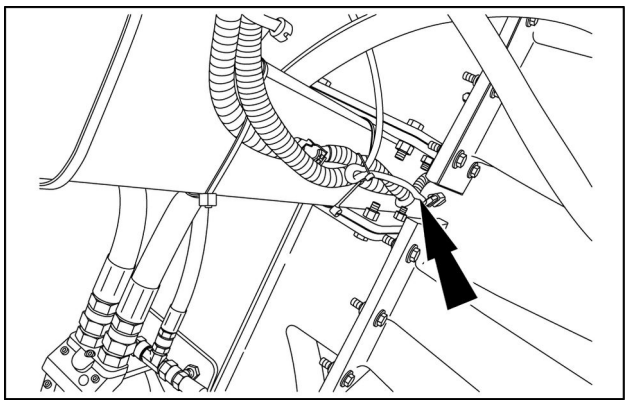
Pin	From	Wire	Description	Color-Size	Frame
1	SP-AC19-P-X	153	+12V_SEN	OR - 0.8	**SHEET 07**
2	**X-201A pin 15** UCM 1A	134	FAN_RPM1	YE - 0.8	
3	SP-AC18-P-X	133	SEN_DGND	BL - 0.8	

X-262 - LOWER FAN RPM (2) (87696551)



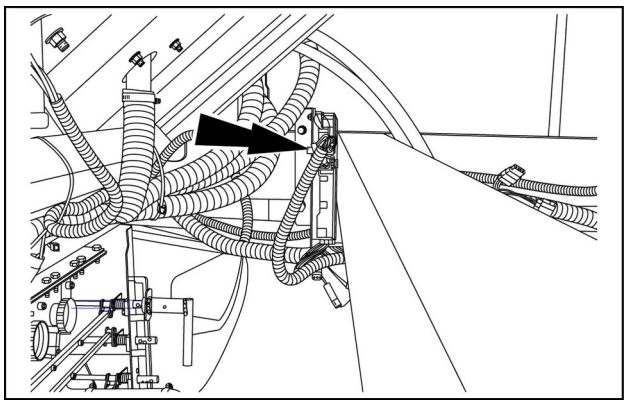
87696551 5

87696551



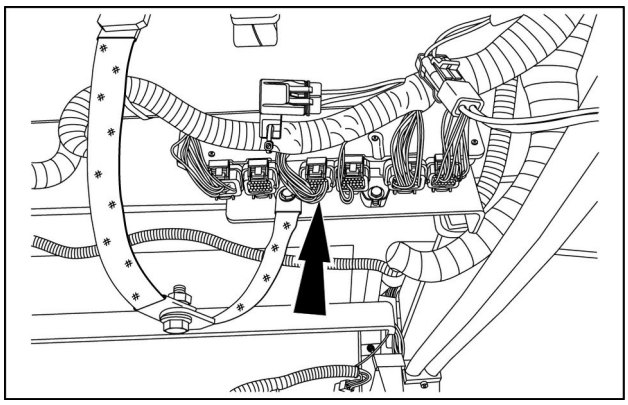
SAIL16SE00042AA 6

Pin	From	Wire	Description	Color-Size	Frame
1	SP-AC19-P-X	135	+12V_SEN	OR - 0.8	**SHEET 07**
2	**X-201A pin 16** UCM 1A	137	FAN_RPM2	YE - 0.8	
3	SP-AC18-P-X	136	SEN_DGND	BL - 0.8	



SAIL16SE00016AA 10

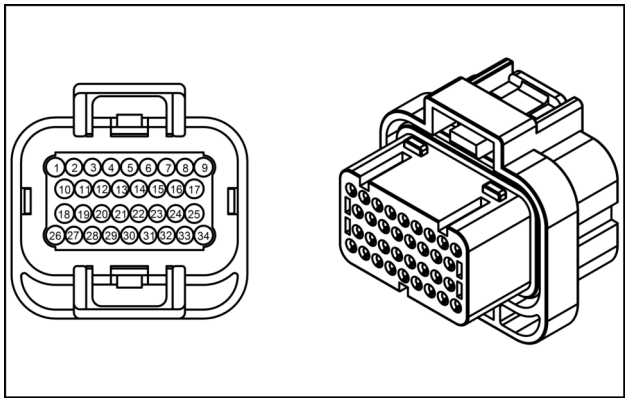
Pin	From	Wire	Description	Color-Size	Frame
1	SP-AC68-P-X	284	CH_GND	BK - 1	**SHEET 06**



SAIL16SE00044AA 8

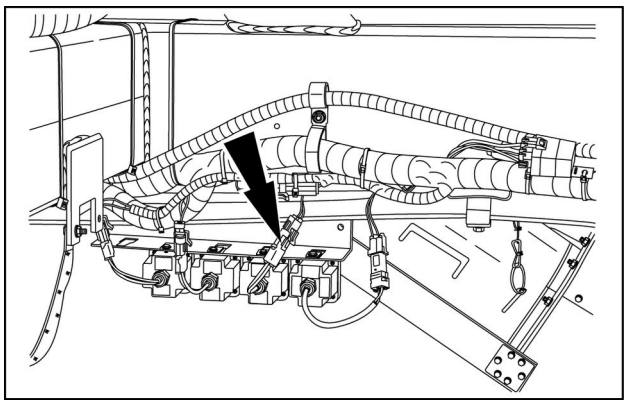
Pin	From	Wire	Description	Color-Size	Frame
3	SP-AC05-P-X	198	HSD_PWR	OR - 0.8	**SHEET 01**
4	SP-AC05-P-X	197	HSD_PWR	OR - 0.8	
9	SP-AC05-P-X	199	HSD_PWR	OR - 0.8	
17	SP-AC05-P-X	200	HSD_PWR	OR - 0.8	
23	**X-209 (Male) pin 1** LIGHT MODULE	256	LH WARN	VT - 0.8	
24	**X-209 (Male) pin 2** LIGHT MODULE	257	RH WARN	VT - 0.8	
26	SP-AC08-P-X	186	GND	BK - 0.8	
27	**X-209 (Male) pin 3** LIGHT MODULE	258	BRAKES	VT - 0.8	
28	**X-231 (Female) pin 3** PRESSURE 1	102	TANK_PRES1	YE - 0.8	
29	**X-232 (Female) pin 3** PRESSURE 2	103	TANK_PRES2	YE - 0.8	
30	**X-233 (Female) pin 3** PRESSURE 3	216	TANK_PRES3	YE - 0.8	
31	**X-234 (Female) pin 3** PRESSURE AUX	113	TANK_PRES_AUX	YE - 0.8	
34	SP-AC08-P-X	187	GND	BK - 0.8	

X-203B - UCM 3B (84130760)



84130760 9

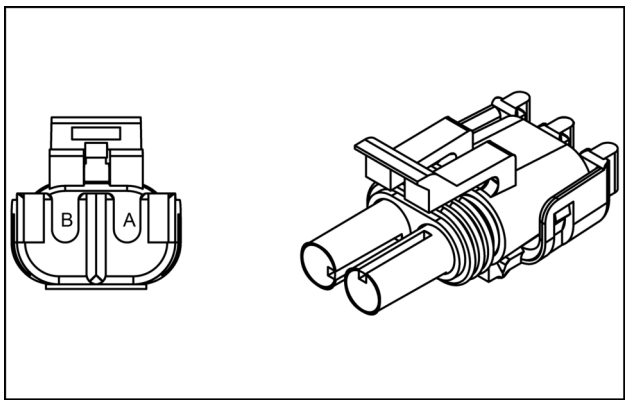
84130760



SAIL16SE00046AA 4

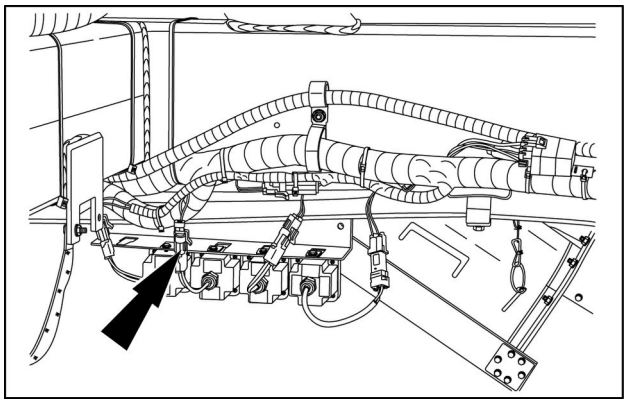
Pin	From	Wire	Description	Color-Size	Frame
A	**X-204A pin 18** UCM 4A	121	CAL_TANK1	YE - 0.8	**SHEET 04**
B	SP-AC16-P-X	110	SEN_DGND	BL - 0.8	

X-242 - CAL TANK 2 (87692855)



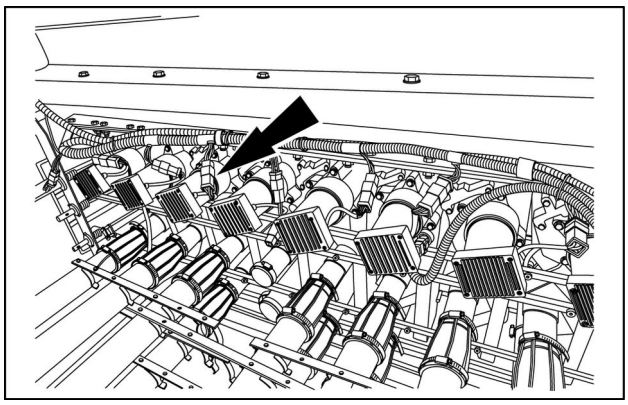
87692855 5

87692855



SAIL16SE00046AA 6

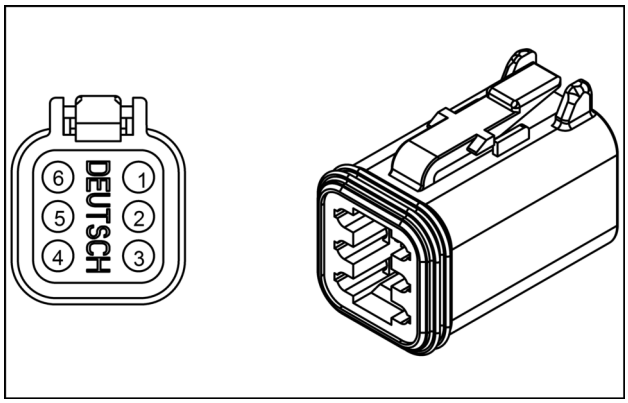
Pin	From	Wire	Description	Color-Size	Frame
A	**X-204A pin 23** UCM 4A	122	CAL_TANK2	YE - 0.8	**SHEET 04**
B	SP-AC16-P-X	111	SEN_DGND	BL - 0.8	



SAIL15SE00941AA 12

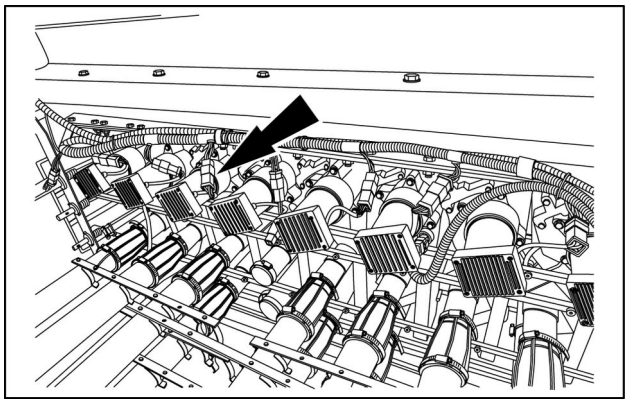
Pin	From	Wire	Description	Color-Size	Frame
1	SP-MR09-P-X	83	LIN	YE - 0.8	**SHEET 05**
2	SP-MR02-P-X	41	MGND	BK - 1	
3	SP-MR12-P-X	22	LIN_PWR	OR - 0.8	
4	**X-414 (Female) pin 5** MOTOR 4	67	XWDC	WH - 0.8	
5	**X-415 (Male) pin 4** MOTOR 5	47	47	WH - 0.8	
5	**X-416 (Female) pin 4** MOTOR 6	68	XWDC	WH - 0.8	
6	SP-MR04-P-X	53	MPWR	RD - 1	

X-416 - MOTOR 6 (87708148) (Female)

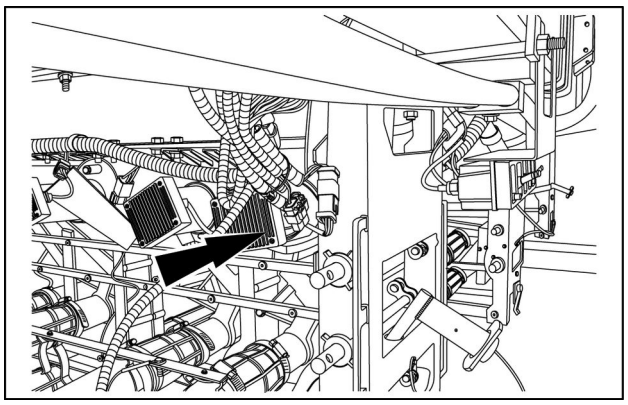


87708148 13

87708148



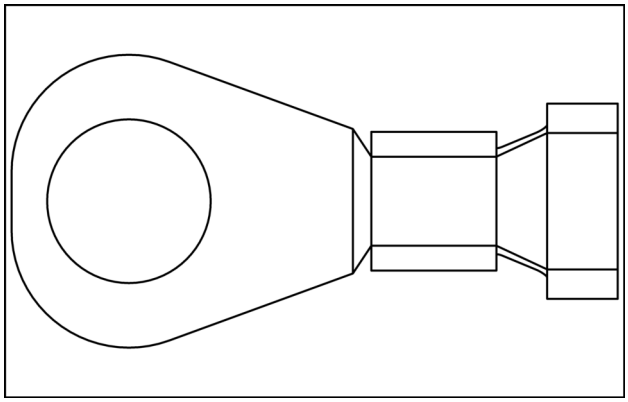
SAIL15SE00941AA 14



SAIL15SE00915AA 6

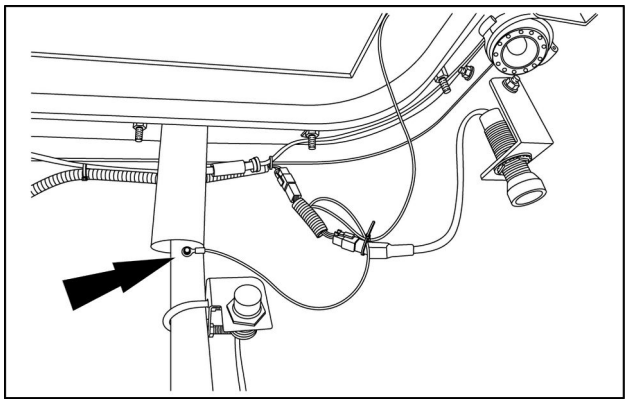
Pin	From	Wire	Description	Color-Size	Frame
A	**X-101 (Female) pin 4** AIR CART ISOBUS CONNECTOR (IBBC)	177	ECU_PWR	OR - 3	**SHEET 01**
B	SP-AC03-P-X	112	ECU_PWR	OR - 3	

X-218 - LADDER GROUND (84127304)



84127304 15

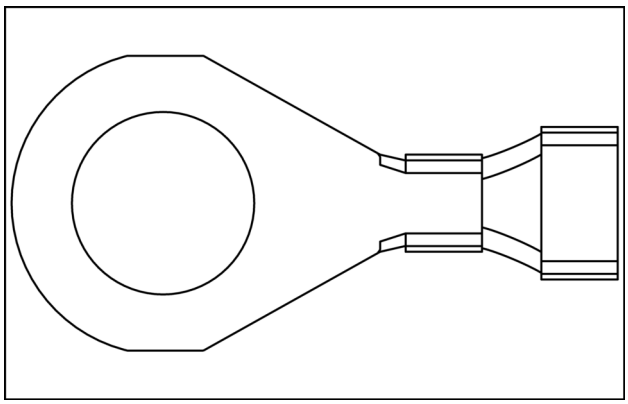
84127304



SAIL15SE00937AA 16

Pin	From	Wire	Description	Color-Size	Frame
1	SP-IT02-P-X	296	GND	BK - 1	**SHEET 11**

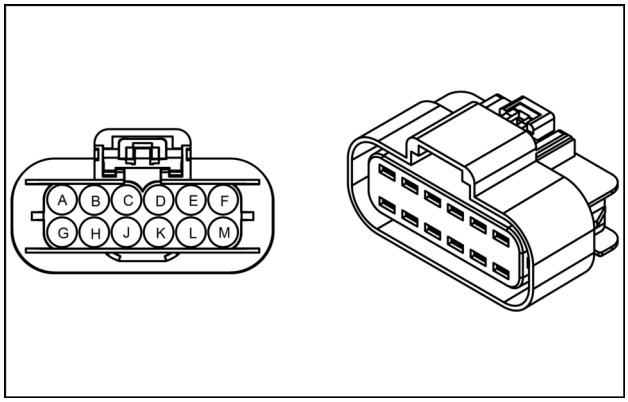
X-219 - TOP PLATE GROUND (47607318)



47607318 17

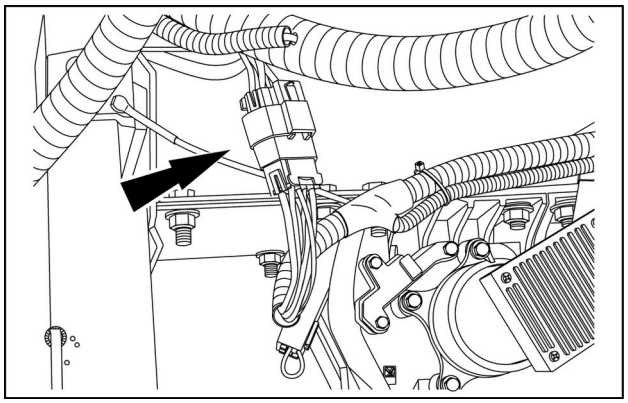
47607318

X-402 - TANK 2 MOTORS (84137524) (Female)



84137524 3

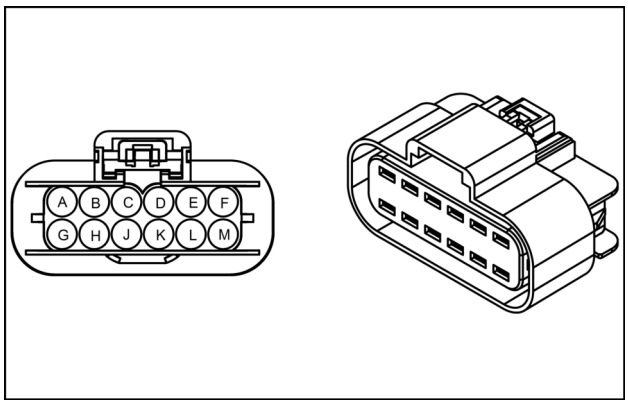
84137524



SAIL16SE00166AA 4

Pin	From	Wire	Description	Color-Size	Frame
A	SP-AC52-P-X	206	MGND	BK - 3	**SHEET 06**
B	SP-AC64-P-X	3	LIN	YE - 0.8	
C	SP-AC66-P-X	140	LIN_PWR	OR - 0.8	
D	SP-AC56-P-X	32	MPWR_2	RD - 3	
E	SP-AC52-P-X	18	MGND	BK - 3	
F	SP-AC68-P-X	282	CH_GND	BK - 1	
G	**X-203B pin 5** UCM 3B	9	XWDC2	WH - 0.8	
H	SP-AC56-P-X	91	MPWR_2	RD - 3	

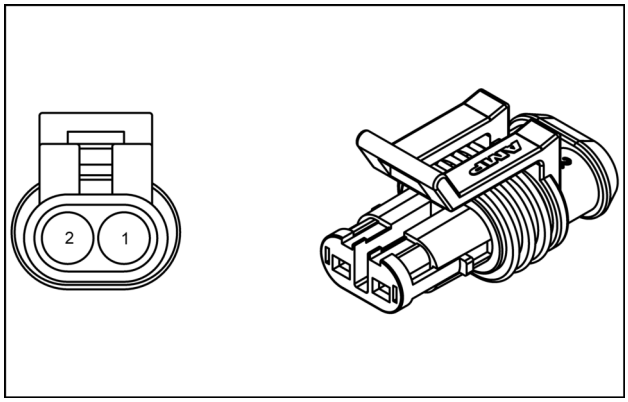
X-403 - TANK 3 MOTORS (84137524) (Female)



84137524 5

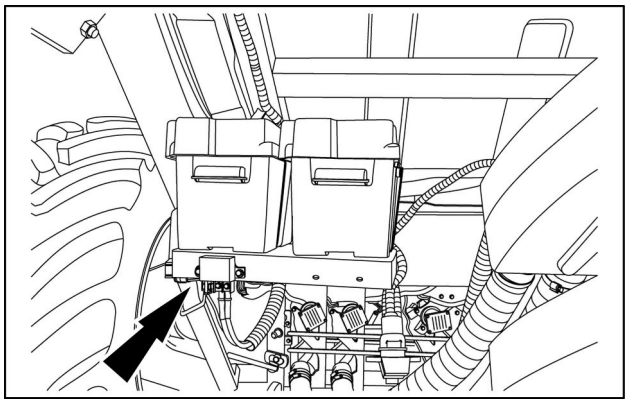
84137524

X-445 - RELAY 1 CTRL (82012083)



82012083 7

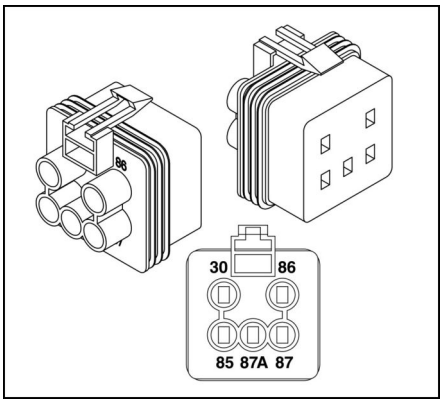
82012083



SAIL15SE00910AA 8

Pin	From	Wire	Description	Color-Size	Frame
1	**X-201A pin 19** UCM 1A	214	RELAY_CTRL1	WH - 0.8	**SHEET 09**
2	SP-AC05-P-X	229	PWR	OR - 0.8	

X-447 - RELAY 2 UCM POWER (297910A1)



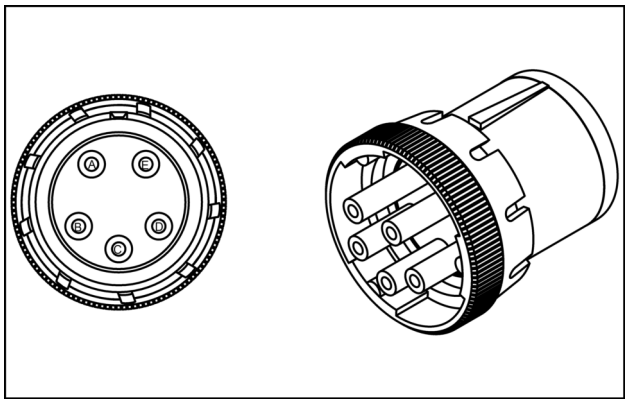
RCIL06_297910A1 9

297910A1

Wire connectors - Component diagram 21 760 Bu tow behind

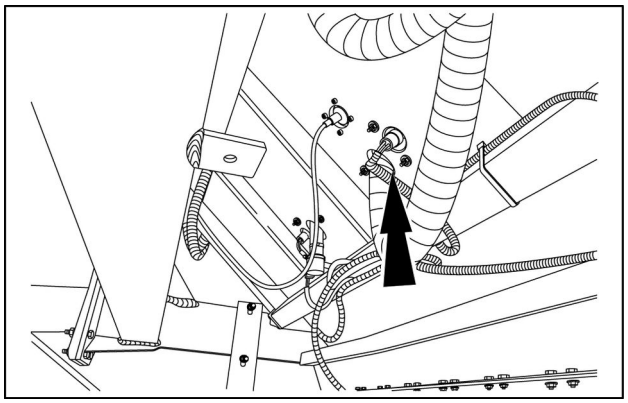
P4760	

X-210 - AUX BIN SENSORS (87706919) (Female)



87706919 1

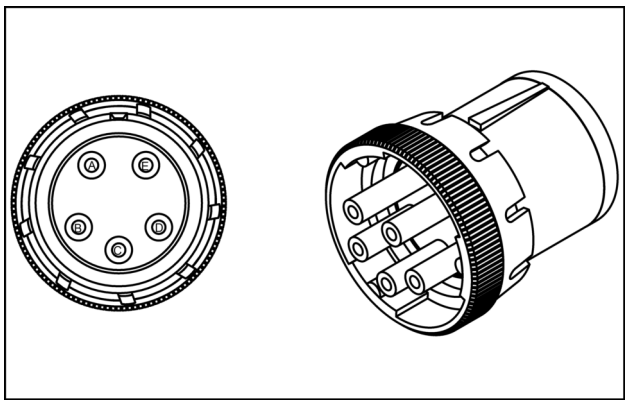
87706919



SAIL15SE01312AA 2

Pin	From	Wire	Description	Color-Size	Frame
A	**X-270 (Male) pin 4** AUX TANK SENSORS	162	LOW_BIN	YE - 0.8	**SHEET 12**
B	**X-270 (Male) pin 5** AUX TANK SENSORS	166	+12V_SEN	OR - 0.8	
C	**X-270 (Male) pin 6** AUX TANK SENSORS	174	BIN_LEVEL	YE - 0.8	
D	**X-270 (Male) pin 7** AUX TANK SENSORS	170	SEN_DGND	BL - 0.8	
E	**X-270 (Male) pin 8** AUX TANK SENSORS	254	TRIG BIN LEVEL	WH - 0.8	

X-211 - BIN 1 SENSORS(87706919) (Female)



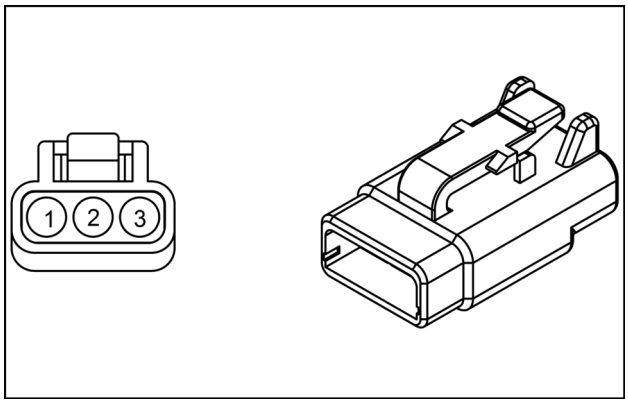
87706919 3

87706919

Wire connectors - Component diagram 26 760 Bu tow behind

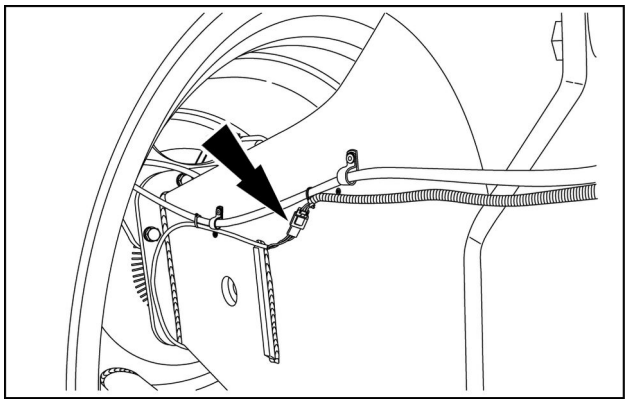
P4760	

X-260 - GROUND SPD (REAR) (87696551)



87696551 1

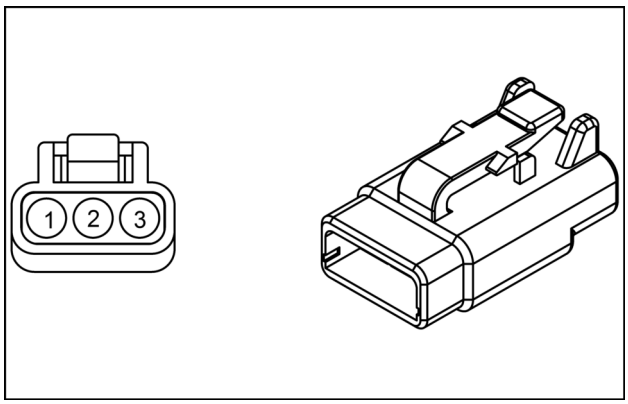
87696551



SAIL16SE00129AA 2

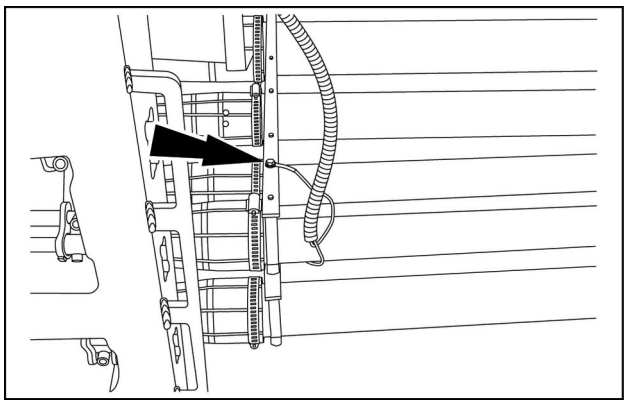
Pin	From	Wire	Description	Color-Size	Frame
1	SP-AC21-P-X	154	+12V_SEN	OR - 0.8	**SHEET 08**
2	**X-201B pin 2** UCM 1B	132	GROUND_SPD_REAR	YE - 0.8	
3	SP-AC17-P-X	131	SEN_DGND	BL - 0.8	

X-261 - UPPER FAN RPM (1) (87696551)



87696551 3

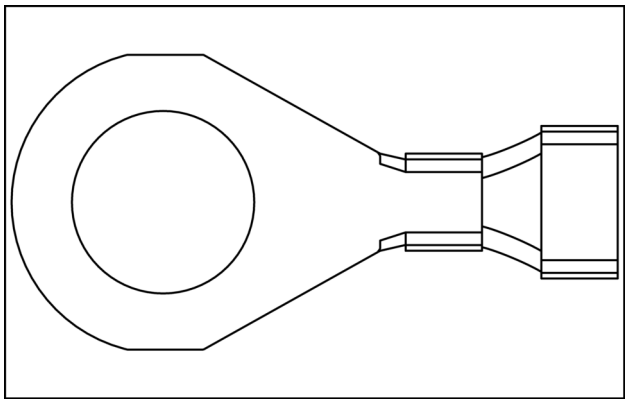
87696551



SAIL16SE00121AA 10

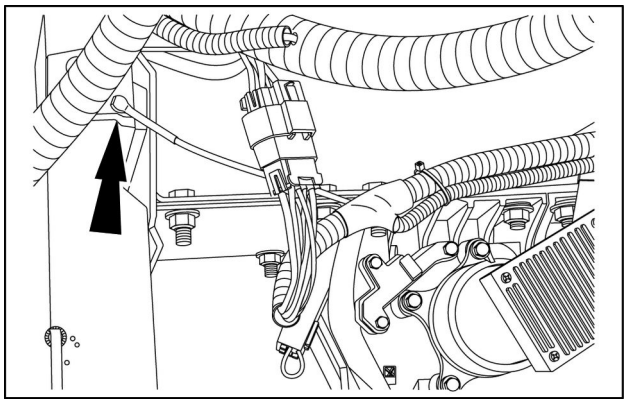
Pin	From	Wire	Description	Color-Size	Frame
1	SP-MR14-P-X	86	CH_GND	BK - 1	**SHEET 05**

X-425 - SUB-HOPPER FRAME GND (47607318)



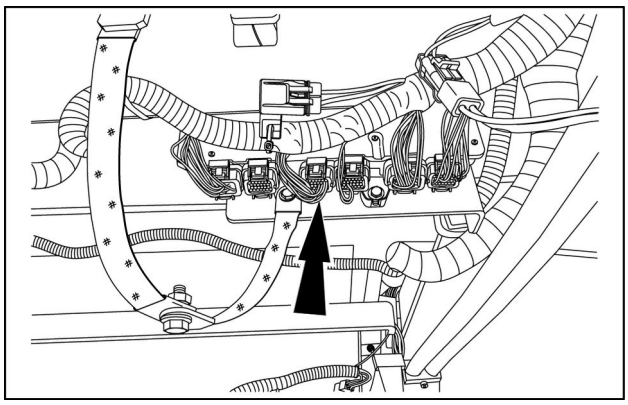
47607318 11

47607318



SAIL16SE00166AA 12

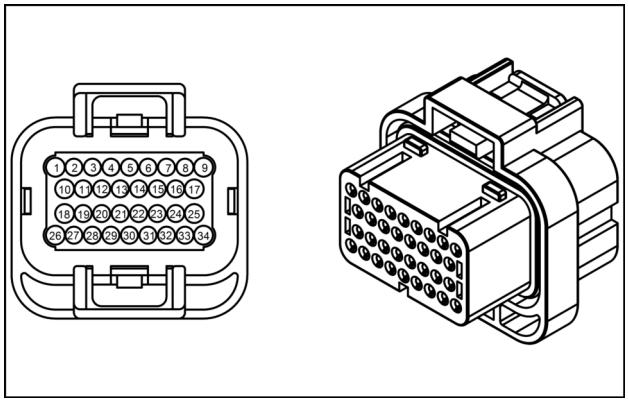
Pin	From	Wire	Description	Color-Size	Frame
1	SP-MR14-P-X	87	CH_GND	BK - 1	**SHEET 05**



SAIL16SE00044AA 8

Pin	From	Wire	Description	Color-Size	Frame
3	SP-AC05-P-X	198	HSD_PWR	OR - 0.8	**SHEET 01**
4	SP-AC05-P-X	197	HSD_PWR	OR - 0.8	
9	SP-AC05-P-X	199	HSD_PWR	OR - 0.8	
17	SP-AC05-P-X	200	HSD_PWR	OR - 0.8	
23	**X-209 (Male) pin 1** LIGHT MODULE	256	LH WARN	VT - 0.8	
24	**X-209 (Male) pin 2** LIGHT MODULE	257	RH WARN	VT - 0.8	
26	SP-AC08-P-X	186	GND	BK - 0.8	
27	**X-209 (Male) pin 3** LIGHT MODULE	258	BRAKES	VT - 0.8	
28	**X-231 (Female) pin 3** PRESSURE 1	102	TANK_PRES1	YE - 0.8	
29	**X-232 (Female) pin 3** PRESSURE 2	103	TANK_PRES2	YE - 0.8	
30	**X-233 (Female) pin 3** PRESSURE 3	216	TANK_PRES3	YE - 0.8	
31	**X-234 (Female) pin 3** PRESSURE AUX	113	TANK_PRES_AUX	YE - 0.8	
34	SP-AC08-P-X	187	GND	BK - 0.8	

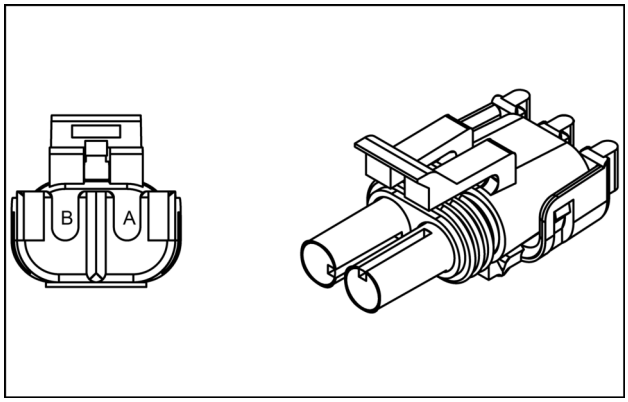
X-203B - UCM 3B (84130760)



84130760 9

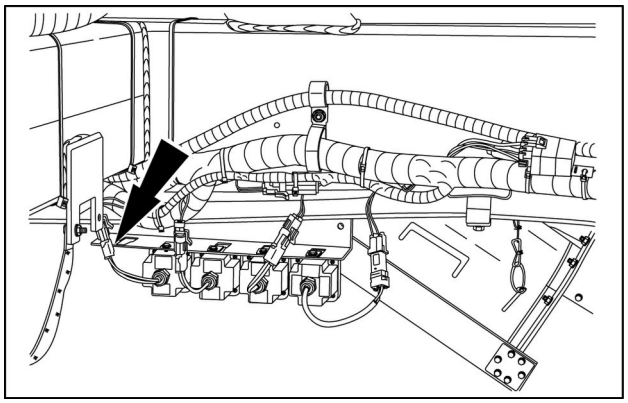
84130760

X-243 - CAL TANK 3 (87692855)



87692855 7

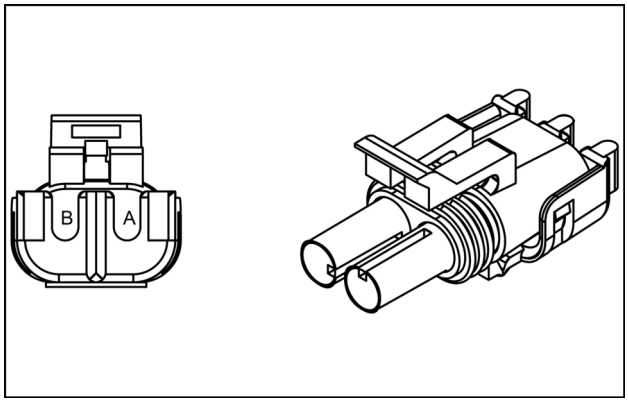
87692855



SAIL16SE00046AA 8

Pin	From	Wire	Description	Color-Size	Frame
A	**X-204A pin 24** UCM 4A	101	CAL_TANK3	YE - 0.8	**SHEET 04**
B	SP-AC16-P-X	118	SEN_DGND	BL - 0.8	

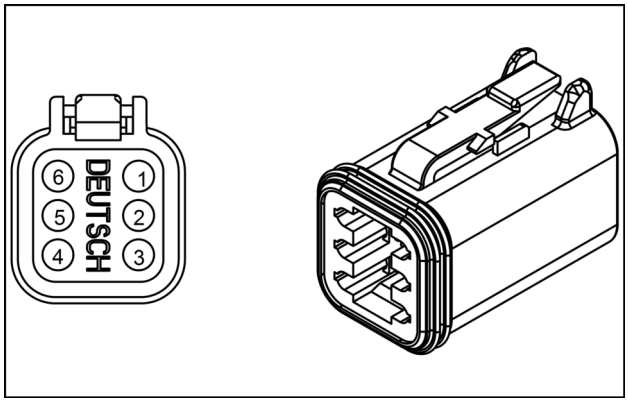
X-244 - CAL AUX TANK (87692855)



87692855 9

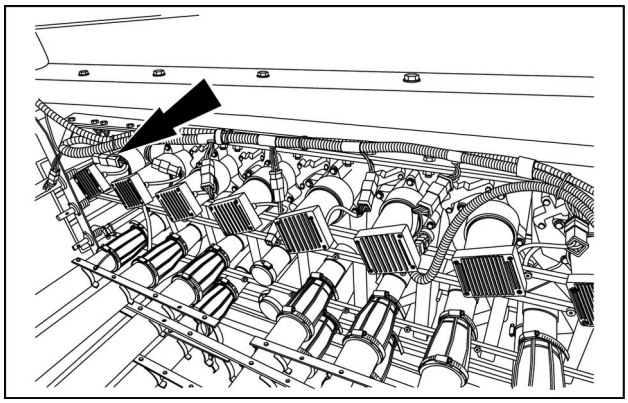
87692855

X-419 - MOTOR 9 (87708148) (Female)



87708148 19

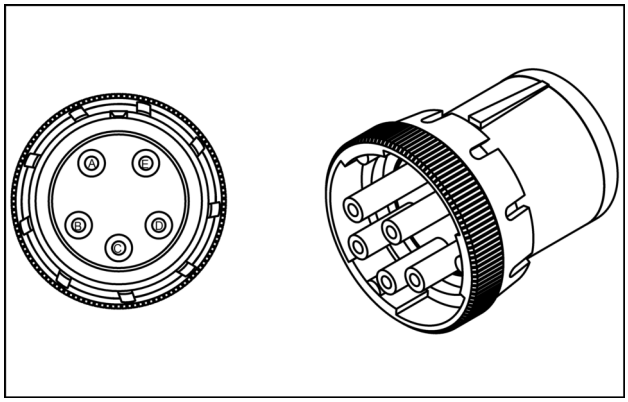
87708148



SAIL15SE00941AA 20

Pin	From	Wire	Description	Color-Size	Frame
1	SP-MR11-P-X	67	LIN	YE - 0.8	**SHEET 05**
2	SP-MR02-P-X	43	MGND	BK - 1	
3	SP-MR13-P-X	82	LIN_PWR	OR - 0.8	
4	**X-418 (Female) pin 5** MOTOR 8	53	XWDC	WH - 0.8	
5	**X-420 pin 4** MOTOR 10	89	XWDC	WH - 0.8	
6	SP-MR04-P-X	44	MPWR	RD - 1	

X-574 - FULL SENSOR 1 (87706919) (Female)



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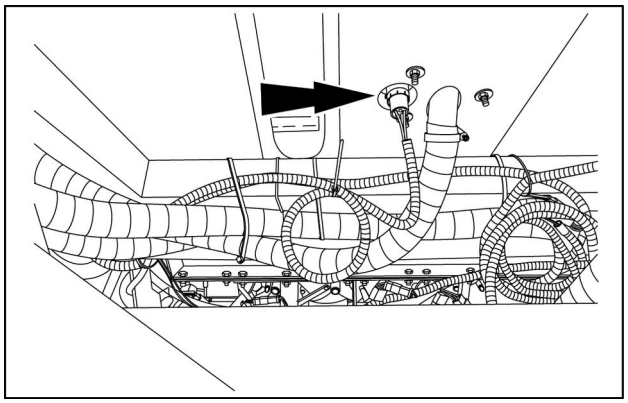
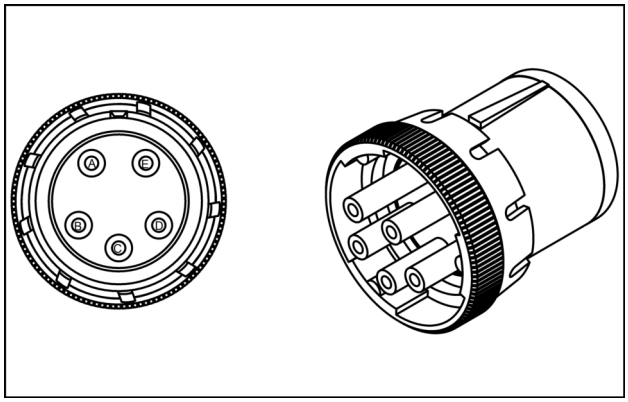
87706919



SAIL15SE00935AA 8

Pin	From	Wire	Description	Color-Size	Frame
A	**X-578 (Female) pin C** FULL INDICATOR 1	14	TANK_FULL1	YE - 1	**SHEET 01**
B	SP-TF01-P-X	20	PWR	OR - 1	
D	SP-TF02-P-X	19	GND	BL - 1	

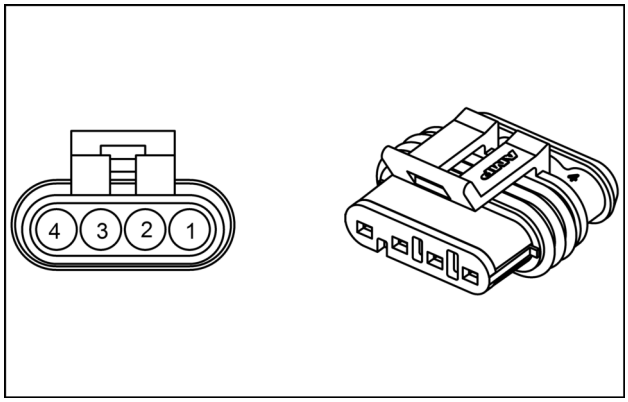
X-575 - FULL SENSOR 2 (87706919) (Female)



87706919 9

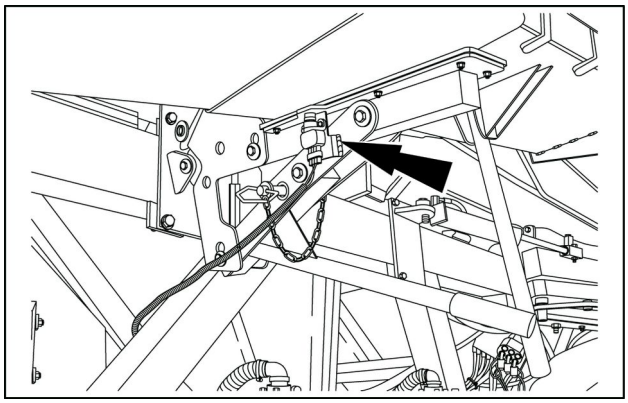
87706919

X-02 - TRANSPORT LOCK (87687242) (Female)



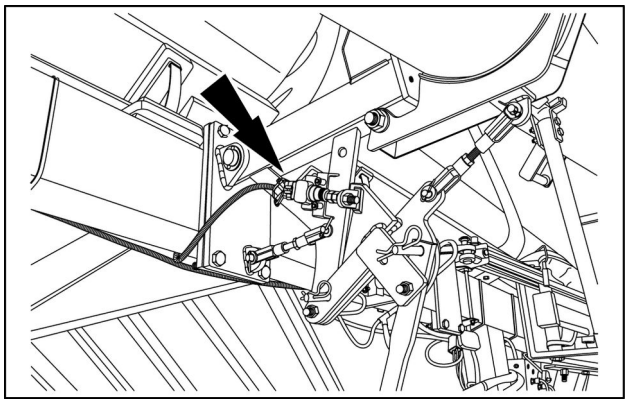
87687242 3

87687242



SAIL15SE00427AA 4

Conveyor

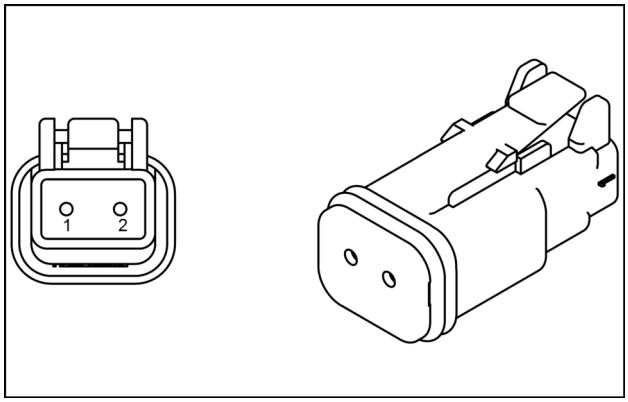


SAIL15SE00443AA 5

Auger

Pin	From	Wire	Description	Color-Size	Frame
2	F-01-P-B 10A FUSE	2	FUSED PWR	RD - 2	**SHEET 01**
3	**X-01 (Female) pin A** RF RECEIVER	3	PWR	OR - 2	

X-544 - FIELD LIGHT 2 (Female)



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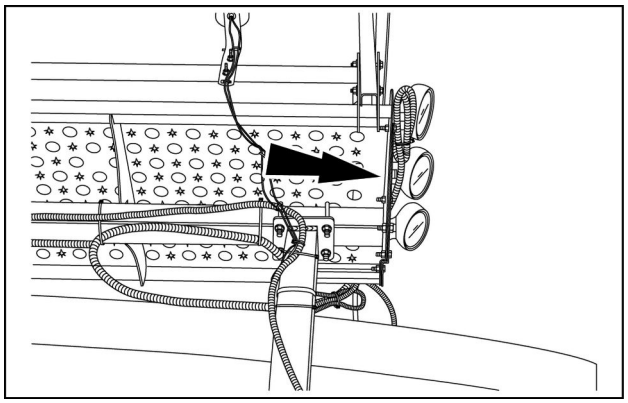
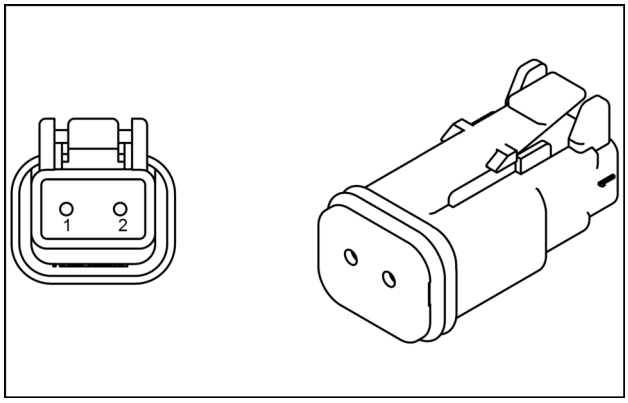


SAIL15SE00879AA 8

Pin	From	Wire	Description	Color-Size	Frame
1	SP-LP03-P-X	31	FIELD_LIGHT	VT - 2	**SHEET 02**
2	SP-LP04-P-X	35	FIELD_GND	BK - 2	

X-545 - FIELD LIGHT 3 (Female)



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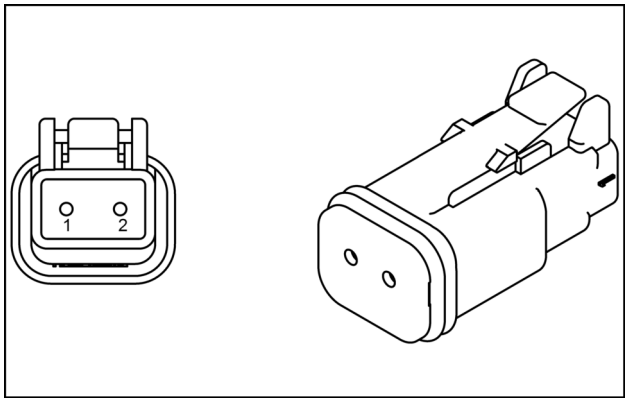
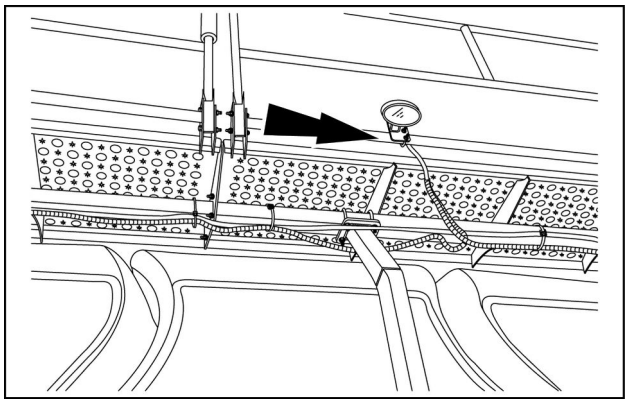
87695582

X-547 - AUX FILL LIGHT (Female)



87695582 13

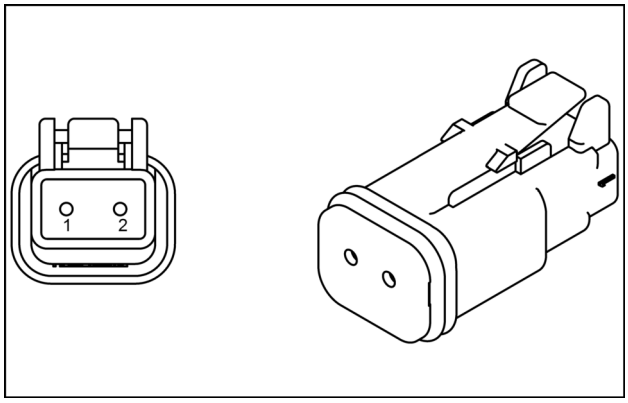
87695582



SAIL15SE00878AA 14

Pin	From	Wire	Description	Color-Size	Frame
1	SP-LP01-P-X	21	LIGHT_PWR	VT - 1	**SHEET 02**
2	SP-LP02-P-X	26	LIGHT_GND	BK - 1	

X-548 - PLATFORM LIGHT 2 (Female)

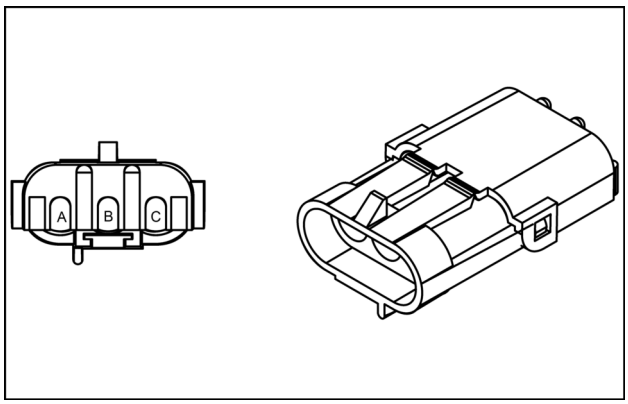


87695582 15

87695582

Wire connectors - Component diagram 32 Transport lighting

X-321 - RIGHT TAIL (Female)

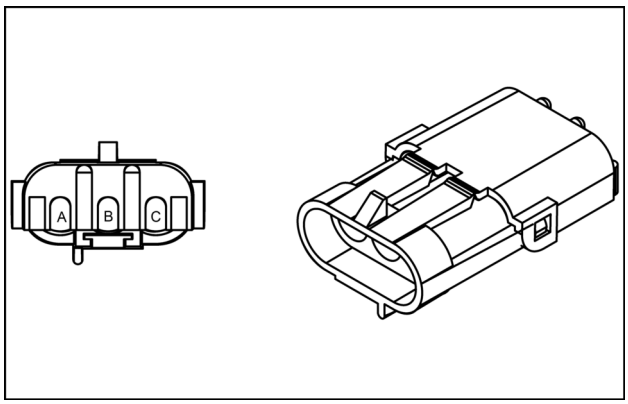


87692858 1

87692858

Pin	From	Wire	Description	Color-Size	Frame
A	SP-TB02-P-X	38	GND	WH - 1	**SHEET 02**
B	SP-TB04-P-X	39	TAIL	BR - 1	
C	**X-009 (Female) pin 6** MODULE	53	RT_ENHANCED	GN - 2	

X-322 - RIGHT BRAKE/TAIL LAMP



87692858 2

87692858

Pin	From	Wire	Description	Color-Size	Frame
A	**X-321 (Male) pin A** RIGHT TAIL	525	525	BK - 0.8	**SHEET 02**
B	**X-321 (Male) pin B** RIGHT TAIL	526	TAIL LIGHT	WH - 0.8	
C	**X-321 (Male) pin C** RIGHT TAIL	528	RT_ENHANCED	RD - 0.8	

Electrical components - Fuse description 350 Bu tow behind

P2350	

F-05 - ECU PWR (Fuse)

Component Type	Fuse
Wiring frames	**SHEET 01**
Connectors	**X-452 (Female)**

F-06 - HSD PWR (Fuse)

Component Type	Fuse
Wiring frames	**SHEET 01**
Connectors	**X-451 (Female)**

Electrical components - Sensor description 435 Bu and 460 Bu tow behind

P3440	
P4460	

B-001 - GROUND SPD (FRONT) (Sensor)

Component Type	Sensor
Wiring frames	**SHEET 07**
Connectors	**X-259 (Female)**

B-002 - LOWER FAN RPM (2) (Sensor)

Component Type	Sensor
Wiring frames	**SHEET 07**
Connectors	**X-262 (Female)**

B-005 - UPPER FAN RPM (1) (Sensor)

Component Type	Sensor
Wiring frames	**SHEET 07**
Connectors	**X-261 (Female)**

B-006 - GROUND SPD (REAR) (Sensor)

Component Type	Sensor
Wiring frames	**SHEET 07**
Connectors	**X-260 (Female)**

A-024 - UCM 4B (ECU)

Component Type	ECU
Wiring frames	**SHEET 03**
Connectors	**X-204B (Female)**

A-025 - UCM 4A (ECU)

Component Type	ECU
Wiring frames	**SHEET 08**
Connectors	**X-204A (Female)**

A-026 - UCM 1B (ECU)

Component Type	ECU
Wiring frames	**SHEET 10**
Connectors	**X-201B (Female)**

A-027 - UCM 1A (ECU)

Component Type	ECU
Wiring frames	**SHEET 09**
Connectors	**X-201A (Female)**

A-012 - UCM 4B (ECU)

Component Type	ECU
Wiring frames	**SHEET 01**
Connectors	**X-204B (Female)**

A-013 - UCM 1A (ECU)

Component Type	ECU
Wiring frames	**SHEET 10**
Connectors	**X-201A (Female)**

A-014 - UCM 2B (ECU)

Component Type	ECU
Wiring frames	**SHEET 01**
Connectors	**X-202B (Female)**

A-015 - UCM 1B (ECU)

Component Type	ECU
Wiring frames	**SHEET 01**
Connectors	**X-201B (Female)**

A-016 - UCM 1A (ECU)

Component Type	ECU
Wiring frames	**SHEET 01**
Connectors	**X-201A (Female)**

A-017 - UCM 4A (ECU)

Component Type	ECU
Wiring frames	**SHEET 03**
Connectors	**X-204A (Female)**

A-020 - UCM 2B (ECU)

Component Type	ECU
Wiring frames	**SHEET 11**
Connectors	**X-202B (Female)**

A-021 - UCM 1A (ECU)

Component Type	ECU
Wiring frames	**SHEET 08**
Connectors	**X-201A (Female)**

A-022 - UCM 2A (ECU)

Component Type	ECU
Wiring frames	**SHEET 03**
Connectors	**X-202A (Female)**

A-024 - UCM 4B (ECU)

Component Type	ECU
Wiring frames	**SHEET 03**
Connectors	**X-204B (Female)**

Electrical components - Fuse description 2 tank air carts tank full indicator

F-01 - FULL INDICATOR FUSE (Fuse)

Component Type	Fuse
Wiring frames	**SHEET 01**
Connectors	**X-572 (Female)**

(*) See content for specific models

(*) See content for specific models

Flow monitoring - Dynamic description

P Series Air Carts	

The flow monitoring system is intended to inform the operator that product is not flowing through the secondary distribution hoses.
The flow system is available in 2 configurations. It can be a Basic Flow System which consists of a Flow Gateway and 1 to 24 sensors. It can monitor up to 24 secondary distribution hoses.
An Expanded Flow System consists of one Flow Gateway plus 1 to 15 additional Flow Remotes. Each remote can have for 1 to 24 sensors attached to it. This system can monitor up to 384 secondary distribution hoses.

NOTICE: *The Flow Monitoring Assembly Manual gives step-by-step instructions for setting up the flow system. Many problems may be avoided if the instructions are followed carefully.*

The operation of the flow system is mainly automatic. However, the following points are helpful in understanding the operation of the system.

- Flow sensors are assigned to shoots. Meters are then assigned to shoots.
- The sensors work by determining if the flow sensor has detected material passing by. Each time a flow sensor detects the passage of material it sends a signal to the ECU.
- A certain amount of product passing the sensor and creating a signal is necessary to detect a flow. The sensitivity can be adjusted to suit different products and application situations.
- All leads that do not have a sensor attached, must have a dust cap installed.

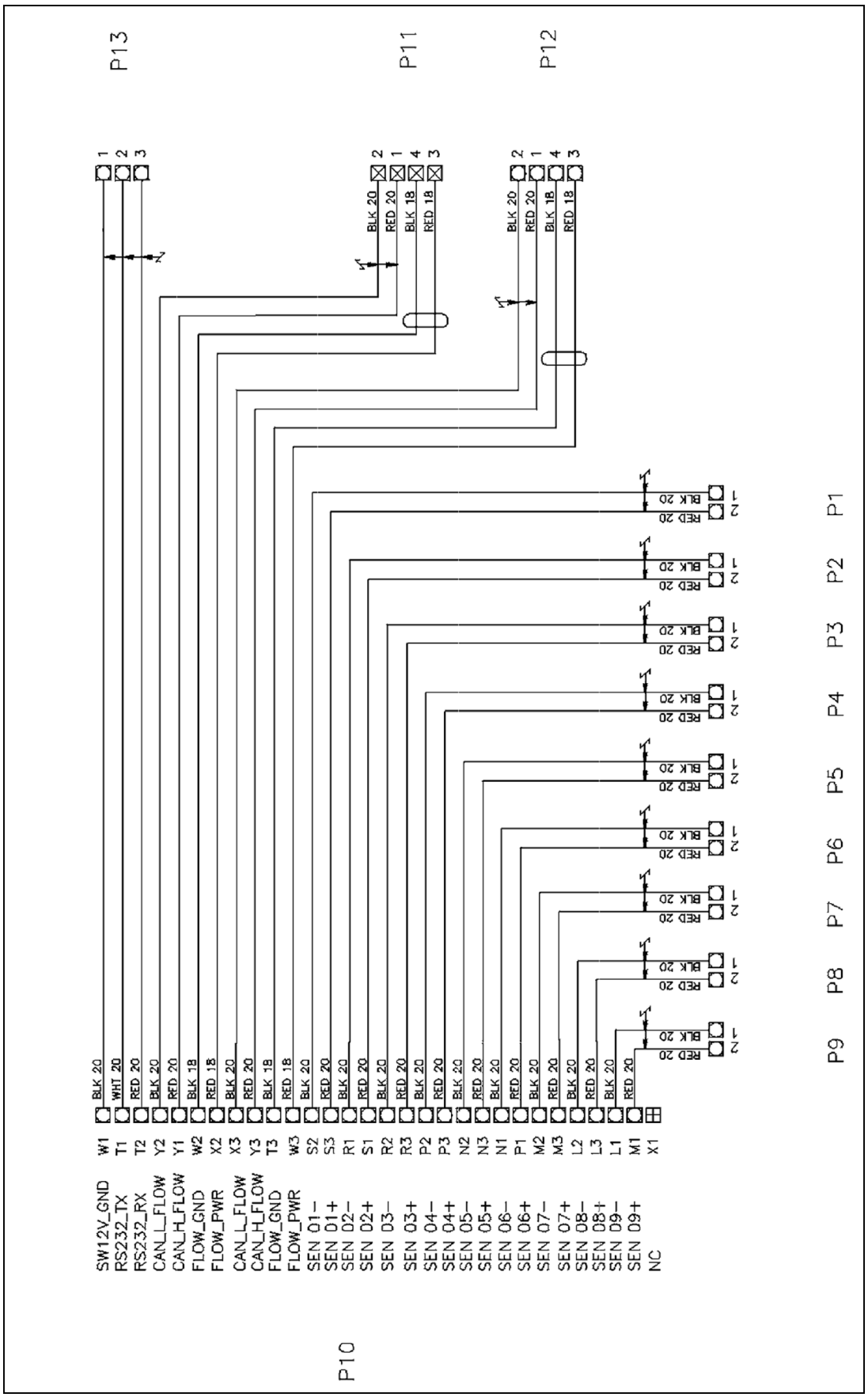
NOTE: *The flow system may not work satisfactorily if the product flow rate is less than the equivalent of canola at* ***3 kg/ha*** *at* ***5 km/h*** *(* ***3 lbs/ac*** *at* ***3 mph****).*

ALARMS

NOTE: *Alarms may not occur if flow Electronic Control Units (ECUs) are not assigned correctly. Always check setup upon initial operation. If a change to the distribution system is made, be sure to change the flow configuration accordingly.*

When the meter is turned on, allow an amount of time to pass to let product travel from the meter to the sensors. If inadequate flow is detected after the time delay, an alarm will sound.

- If there is an inadequate flow alarm and you check the flow status, any ECU with no flow will be in red. Select the ECU to see which flow sensor is reporting inadequate flow. From this information it is possible to identify the specific secondary distribution hoses to check for blockage in the hose or other obstructions. Refer to the Flow Monitoring Operator's manual for more information.
- A no flow alarm could have several other causes. Check for an empty or near empty air cart tank. The ground opener may have obstructions. There may be an air leak in either the primary or secondary distribution system (e.g., hose came off). There could also be an obstruction or other problem with the primary (air cart) manifold or in the headers.
- If the air cart metering system is turned off, all sensors will report no flow.

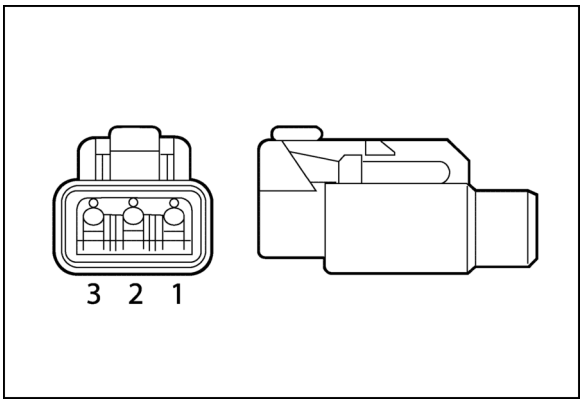


105179S 3

Flow Remote Harness, 9 Input with RS232

Position	Circuit Description
L1	SENSOR 9 GROUND
L2	SENSOR 8 GROUND
L3	SENSOR 8 POWER
M1	SENSOR 9 POWER
M2	SENSOR 7 GROUND
M3	SENSOR 7 POWER
N1	SENSOR 6 GROUND
N2	SENSOR 5 GROUND
N3	SENSOR 5 POWER
P1	SENSOR 6 POWER
P2	SENSOR 4 GROUND
P3	SENSOR 4 POWER
R1	SENSOR 2 GROUND
R2	SENSOR 3 GROUND
R3	SENSOR 3 POWER
S1	SENSOR 2 POWER
S2	SENSOR 1 GROUND
S3	SENSOR 2 POWER
T1	RS232_TX
T2	RS232_RX
T3	ECU_GND
W1	SW12V_GND
W2	FLOW_GND
W3	ECU_PWR
X1	
X2	FLOW_PWR
X3	CAN_L_IMPL
Y1	CAN_H_FLOW
Y2	CAN_L_FLOW
Y3	CAN_H_IMPL

P11 - Connector to RS232



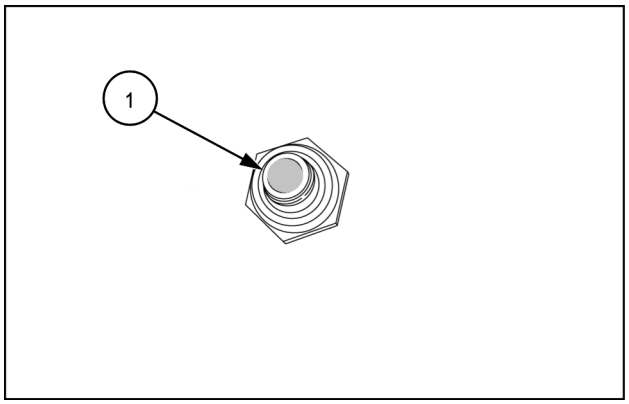
DEU_DTM06-3S 5

Position	Circuit Description
1	SWITCH 12 VOLT GROUND
2	RS_232TX
3	RS_232RX

6. Check the inside of the sensor mount tube for debris build-up and clean if required.
7. If the sensor port cannot be cleaned, replace the sensor. The replacement sensors are supplied with a filter.

Clean sensor (filter)

8. The new sensor has microscopic pores that block dust and water but allow air to pass through. The filter is a gray/black disk on the face of the sensor.
9. Carefully remove any debris from the filter **(1)**. Be sure not to damage or remove the filter.



SAIL17SE00146AA 5

NOTICE: *Do not remove the filter from the sensor.*

10. The filter is a slippery material so it will resist debris sticking to it. If cleaning is necessary:
    A. Do not use metal tools to scrape debris off of the filter or face of the sensor.
    B. Do not use high pressure air or water since this could damage the filter or damage the sensing element from overpressure
    C. Use tap water and a clean cloth or tissue to clean the face of the filter.
    D. Do not touch the center of the filter with greasy/ oily hands as this may plug the pores in the filter.

Seeding calibration switch - Dynamic description

The calibration toggle switches on the left side of the air cart are used to control which tanks will meter out product when the calibration push button is pressed.

- The positions of these toggle switches are ignored during seeding so they can be left on or off when calibration is complete.
- Priming of the meters can be done via the prime button on the display in the tractor or via the calibration push button.
- For priming from the display the toggle switch positions are ignores and the tank selection on the display is used to determine which tanks to prime.
- For priming via the calibration push button the toggle switches determine which tanks to prime.

Electrical systems - 55

Auger - 545

P2350, P3440, P3550 , P4460, P4580, P4760, P4950

One or more auger/conveyor control functions not working

NOTICE: *To avoid unexpected movement of the auger/conveyor during this test turn off power to the RF receiver by moving the transport lock arm to the lock position.*

1. Press the green "ON" button on the remote. Then press each function button (buttons 1 to 10) one at a time. If the red LED on the remote lights continuously while each button is being held then proceed to the next step.

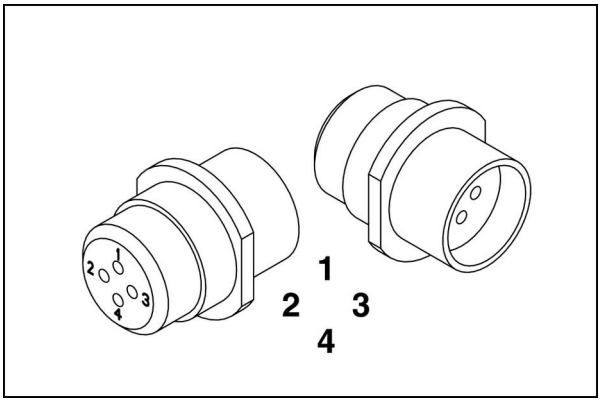
A. If the LED on the remote lights for some buttons but fails to light for one or more buttons the remote may be faulty and should be replaced.

   NOTE: *You will have to register the new remote with the RF receiver before it will be able to control the auger/conveyor. See* ***Auger - Basic instructions (77.100)****.*

B. If the LED light on the remote is dim and/or fades out when a button is held the batteries may be weak. Replace batteries with four fresh alkaline AAA batteries making sure the batteries are installed with the correct orientation. Inspect battery holder for corrosion. Clean if necessary. Make sure holder in inserted into the remote with the correct orientation.

2. For the following steps the hydraulics, RF receiver and remote need to be on so engage the hydraulics, move the transport lock arm to the unlock position, and press the green "ON" button on the remote before proceeding.

Connector X-004 - Radar

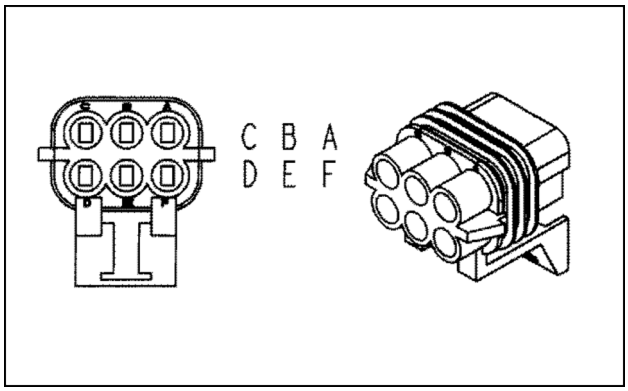


RCIL06_247724A1 4

247724A1

PIN NUMBER	CIRCUIT ID	CIRCUIT REFERENCE	ELECTRICAL SCHEMATIC FRAME
1	PLUG	OPEN	N/A
2	59B LG-0.8	SIG	**SHEET 05**
3	PLUG	OPEN	N/A
4	PLUG	OPEN	N/A

Connector X-005 - CAN BUS Terminator



256348A1 5

256348A1

PIN NUMBER	CIRCUIT ID	CIRCUIT REFERENCE	ELECTRICAL SCHEMATIC FRAME
A	23B R-0.8	ECU_PWR	**SHEET 05**
B	46B R-0.8	TBC_PWR	**SHEET 06**
C	20B B-0.8	ECU_GND	**SHEET 05**
D	48B B-0.8	TBC_RTN	**SHEET 06**
E	47B Y-0.8	CAN_H	**SHEET 06**
F	49B DG-0.8	CAN_L	**SHEET 06**

Contents

Electrical systems - 55

FAULT CODES - DTC

DIAGNOSTIC

40600T-12 - Tank T Meter Motors - Lost communication with all motors on tank. Check motor harness connections.

Control Module: Air Cart UCM

Context:
The UCM lost communications with all motors on the tank indicated by the fault. This procedure covers codes: 406001–12, 406002–12, 406003–12, 406004–12.

Cause:
Bad connection or open circuit.

Possible failure modes:

1. Bad connection or open circuit in LIN bus wiring.
2. Bad connection or open circuit on LIN_PWR, MPWR, or MGND wiring.

Solution:

1. Perform the electrical connector check procedure on the TANK x MOTORS connector, where ‘x’ is the tank indicated by the fault code.

   Inspect wires and contacts at both mating ends of all connectors referenced by the diagnostic procedures. Repair all contacts that are bent, broken, or improperly seated in their connector housing. Clean dirty or corroded contacts.
   Ensure that connector mating ends are securely mated back together.
   Cycle power and check for active fault

   A. Fault still present, go to step **2**.

   B. Fault not present, return unit to field operation.
2. Disconnect the TANK x MOTORS connector, where ‘x’ is the tank indicated by the fault code, and measure the following voltages:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	**Negative lead**		
MPWR_x (TANK x MOTORS, cavity D)	UCM chassis	**> 22 V**	Normal
		≤ 22 V	Check for bad/intermittent connection or open circuit on MPWR_x wire in main harness.
LIN_PWR (TANK x MOTORS, cavity C)	UCM chassis	Battery voltage	Normal
		< Battery voltage	Check for bad/intermittent connection or open circuit on LIN_PWR wire in main harness.
LIN (TANK x MOTORS, cavity B)	UCM chassis	~ Battery voltage	Normal
		< Battery voltage	Check for bad/intermittent connection or open circuit on LIN wire in main harness.

   A. Measurements normal or fault still present after repair made. Go to step **3**.

   B. Fault not present, return unit to field operation.
3. Disconnect the TANK x MOTORS connector, where ‘x’ is the tank indicated by the fault code, and measure the following voltage:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	**Negative lead**		
+12V_SEN (GROUND SPD REAR, cavity 1)	SEN_DGND (GROUND SPD REAR, cavity 3)	Battery voltage	Normal
		< Battery voltage	Check for open circuit or high resistance (**> 10 Ω**) on +12V_SEN wire.

A. Measurement normal or fault still present after repair made. Go to step **4**.

B. Fault not present, return unit to field operation.

4. Replace the sensor indicated by the fault with a known good sensor. Cycle power.

   A. Fault still present, reinstall original sensor, go to step **5**.

   B. Fault not present, return unit to field operation.

5. Perform the UCM troubleshooting procedure. See **Controller Area Network (CAN) data bus - Problem solving UCM (55.640)**.

   A. Fault still present, reinstall original UCM, submit a concern through ASIST.

   B. Fault not present, return unit to field operation.

520211-00 - Mechanical Work Switch, Data valid but above normal operation range - most severe level

Control Module: Air Cart UCM

Context:
The UCM detected an abnormally high voltage on its work switch signal input.

Cause:
Short to high source, or defective component.

Possible failure modes:

1. High short on signal wiring between device and UCM.
2. Faulty UCM hardware or software.

Solution:

1. Determine if the fault code is still active:

   Cycle system power or reset the UCM.
   Select Main Menu > Diagnostics tab > Faults and check both ACTIVE and INACTIVE faults. See **Cab seeding controls - Check faults (55.517)**.
   Review: Fault Count, First Time, Latest Time

   Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

   A. Fault still present, go to step **2**.

   B. Fault not present, return unit to field operation and monitor for recurring fault.

2. Disconnect the connector at the sensor indicated by the fault code. Measure the following voltages on the implement harness connector:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	**Negative lead**		
WORK_SW (WORK SWITCH, cavity 2)	SEN_DGND (WORK SWITCH, cavity 1)	**~8 V**	Normal
		> 8.5 V	Check for high short on WORK_SW wire.

   A. Measurement normal or fault still present after repair made. Go to step **3**.

   B. Fault not present, return unit to field operation.

3. Perform the UCM troubleshooting procedure. See **Controller Area Network (CAN) data bus - Problem solving UCM (55.640)**.

   A. Fault still present, reinstall original UCM, submit a concern through ASIST

   B. Fault not present, return unit to field operation

520220-05 - Tank 3 Low Product Sensor, Current below normal, or open circuit

Control Module: Air Cart UCM

Context:
The UCM detected an open circuit condition on its tank low sensor input.

Cause:
Bad connection or open circuit, or defective component.

Possible failure modes:

1. Bad connection or open circuit in signal wiring between device and UCM.
2. Bad connection or open circuit in power wiring to device.
3. Faulty device.
4. Faulty UCM hardware or software.

Solution:

1. Determine if the fault code is still active:

   Cycle system power or reset the UCM.
   Select Main Menu > Diagnostics tab > Faults and check both ACTIVE and INACTIVE faults. See **Cab seeding controls - Check faults (55.517)**.
   Review: Fault Count, First Time, Latest Time

   Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

   A. Fault still present, go to step **2**.

   B. Fault not present, return unit to field operation and monitor for recurring fault.
2. Perform the electrical connector check procedure on the connector at the sensor, on the BIN 3 SENSORS bulkhead connector mounted in the wall of the tank, and on the UCM 3B connector.

   Inspect wires and contacts at both mating ends of all connectors referenced by the diagnostic procedures. Repair all contacts that are bent, broken, or improperly seated in their connector housing. Clean dirty or corroded contacts.
   Ensure that connector mating ends are securely mated back together.
   Cycle power and check for active fault

   A. Fault still present, go to step **3**.

   B. Fault not present, return unit to field operation.
3. Disconnect the BIN 3 SENSORS bulkhead connector mounted in the wall of the tank. Measure the following voltages on the implement harness connector:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	**Negative lead**		
LOW_BIN3 (BIN 3 SENSORS, cavity A)	SEN_DGND (BIN 3 SENSORS, cavity D)	**3 – 5 V**	Normal
		V **< 3 V**	Check for open circuit or high resistance (**> 10 Ω**) on LOW_BIN3 wire.

520223-04 - Tank 3 Depth Sensor, Voltage below normal, or shorted to low source

Control Module: Air Cart UCM

Context:
The UCM detected an abnormally low voltage on its tank depth sensor signal input.

Cause:
Short to low source, or defective component.

Possible failure modes:

1. Low short on signal wiring between device and UCM.
2. Faulty device.
3. Faulty UCM hardware or software.

Solution:

1. Determine if the fault code is still active:

   Cycle system power or reset the UCM.
   Select Main Menu > Diagnostics tab > Faults and check both ACTIVE and INACTIVE faults. See **Cab seeding controls - Check faults (55.517)**.
   Review: Fault Count, First Time, Latest Time

   Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

   A. Fault still present, go to step **2**.

   B. Fault not present, return unit to field operation and monitor for recurring fault.

2. Disconnect the BIN 3 SENSORS bulkhead connector mounted in the wall of the tank. Measure the following voltages on the implement harness connector:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	**Negative lead**		
BIN_LEVEL3 (BIN 3 SENSORS, cavity C)	SEN_DGND (BIN 3 SENSORS, cavity D)	**2 – 5 V**	Normal
		< 2 V	Check for low short on BIN_LEVEL3.

   A. Measurement normal or fault still present after repair made. Go to step **3**.

   B. Fault not present, return unit to field operation.

3. Replace the sensor indicated by the fault with a known good sensor. Cycle power.

   A. Fault still present, reinstall original sensor, go to step **4**.

   B. Fault not present, return unit to field operation.

4. Perform the UCM troubleshooting procedure. See **Controller Area Network (CAN) data bus - Problem solving UCM (55.640)**.

   A. Fault still present, reinstall original UCM, submit a concern through ASIST.

   B. Fault not present, return unit to field operation.

A. Replacement fuse blows within three minutes. The problem is in the MPWR wiring in the motor harness. Repair or replace the motor harness. Go to step **1**.

B. Replacement fuse does not blow within three minutes. Go to step **5**.

5. Reconnect motors one at a time. Wait for three minutes and check the fuse after each motor is reconnected.

   A. Fuse blows within three minutes of reconnecting a motor. Replace motor with a known good motor. Replace fuse. Repeat step **5** for remaining motors.

   B. Fuse does not blow after all motors have been reconnected. Return unit to field operation and monitor for recurring fault

6. Turn on the calibration toggle switch for the tank indicated by the fault code, and turn off all other calibration toggle switches. Use the calibration pushbutton on the side of the air cart to turn the meters for at least three minutes.

   A. Fuse blows during meter motor operation. Go to step **7**.

   B. Fuse does not blow during meter motor operation. Go to step **10**.

7. Remove all meter cartridges, check for obstructions.

   A. Obstructions found and cleared. Go to step **8**.

   B. No obstructions found. Go to step **9**.

8. Use the calibration pushbutton on the side of the air cart to turn the meters for at least three minutes.

   A. Fuse blows during meter motor operation. Go to step **9**

   B. Fuse does not blow during meter motor operation. Return unit to field operation and monitor for recurring fault.

9. Disconnect all motors. Reconnect motors one at a time. Use the calibration pushbutton on the side of the air cart to turn the connected meter motors for at least three minutes.

   A. Fuse blows within three minutes of operating a reconnected motor. Replace motor with a known good motor. Replace fuse. Repeat step **9** for remaining motors.

   B. Fuse does not blow after all motors have been reconnected and operated. Return unit to field operation and monitor for recurring fault.

10. Check for intermittent shorts in the motor pigtail wires, motor harness, and main harness between the motor harness connector and the fuse box by flexing along the length of these pigtails/harnesses.

    A. Fuse blows or wiring damage found during flex test. Repair or replace affected harness. Return unit to field operation and monitor for recurring fault

    B. Fuse does not blow and no wiring damage found. Go to step **11**.

11. The problem can likely only be exposed under field operating conditions. It may only be seen when the meters are under load (i.e. metering product) and/or operating at a high RPM, or when vibration is being induced while the air cart is moving. Suggested actions include:

    A. While stationary, meter product at the application rate that was being used when the problem first occurred. Attempt to isolate a faulty motor if the problem is reproduced.

    B. Run meters without product at a high RPM. Attempt to isolate a faulty motor if the problem is reproduced.

    C. Drive over terrain similar to filed conditions with the meters running with or without product. Check for intermittent shorts or attempt to isolate a faulty motor if the problem is reproduced.

    D. Swap motors from the affected tank with a tank that is not having issues. Note that system power must be cycled after motors are moved in order for their positions to be reassigned. If the problem moves with the motors, move individual motors until a faulty motor is isolated. If the problem does not move with the motors, check for a harness issue.

    E. Submit a concern through ASIST.

B. Fault not present, return unit to field operation.

4. Perform the UCM troubleshooting procedure. See **Controller Area Network (CAN) data bus - Problem solving UCM (55.640)**.

   A. Fault still present, reinstall original UCM, submit a concern through ASIST.

   B. Fault not present, return unit to field operation.

520245-03 - ECU_PWR (12VB), Voltage above normal, or shorted to high source

Control Module: Air Cart UCM

Context:
The UCM detected an abnormally high voltage on its ECU_PWR (12VB) signal.

Cause:
Short to high source, or defective component.

Possible failure modes:

1. High short on power wire.
2. Faulty UCM hardware or software.

Solution:

1. Determine if the fault code is still active:

   Cycle system power or reset the UCM.
   Select Main Menu > Diagnostics tab > Faults and check both ACTIVE and INACTIVE faults. See **Cab seeding controls - Check faults (55.517)**.
   Review: Fault Count, First Time, Latest Time

   Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

   A. Fault still present. Go to step **2**.

   B. Fault not present, return unit to field operation and monitor for recurring fault.
2. Disconnect connector 1A from the UCM and measure the following voltage with the tractor power on:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	Negative lead		
ECU_PWR (12VB) (UCM 1A, cavity 26)	UCM chassis	<= Battery	Normal
		> Battery	Look for high short on ECU_PWR (12VB) wire.

   A. Measurement normal or fault still present after repair made. Go to step **3**.

   B. Fault not present, return unit to field operation.
3. Perform the UCM troubleshooting procedure. See **Controller Area Network (CAN) data bus - Problem solving UCM (55.640)**.

   A. Fault still present, reinstall original UCM, submit a concern through ASIST.

   B. Fault not present, return unit to field operation.

520250-04 - 12V PWR from Tractor Voltage below normal. Check connections, UCM POWER relay, UCM HSD_PWR fuse, and tractor fuse

Control Module: Air Cart UCM

Context:
The UCM detected an abnormally low voltage on its 12V PWR ("noisy power") supply from the tractor.

Cause:
Low battery voltage, blown fuse, bad connection or open circuit, short to low source, excessive current draw, or defective component.

Possible failure modes:

1. Low tractor battery voltage, tractor alternator not running or not charging.
2. Blown PWR fuse on tractor or air cart.
3. Bad connection or open circuit in PWR wiring.
4. Bad connection or open circuit in GND wiring.
5. Low short on PWR.
6. Bad connection to UCM power relay, or relay defective.
7. Excessive current draw from other device connected to PWR on air cart and/or seed tool.
8. Faulty UCM hardware or software.

Solution:

1. Determine if the fault code is still active:

   Cycle system power or reset the UCM.
   Select Main Menu > Diagnostics tab > Faults and check both ACTIVE and INACTIVE faults. See **Cab seeding controls - Check faults (55.517)**.
   Review: Fault Count, First Time, Latest Time

   Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

   A. Fault still present, go to step **2**.

   B. Fault not present, return unit to field operation and monitor for recurring fault.

2. Disconnect the IBBC (Implement Bus Breakaway Connector) at the front of the air cart. Measure the following voltages on the tractor/seed tool connector:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	Negative lead		
PWR (cavity 3)	GND (cavity 1)	**11 – 16 V**	Normal
		~0 V	Check tractor fuse, relay, PWR wiring, and GND wiring. Check seed tool wiring if tow-behind cart with seed tool connected.
		< 11 V	Check for discharged/failed tractor batteries, failed tractor alternator, or low short on PWR.

   A. Measurement normal or fault still present after repair made. Go to step **3**.

   B. Fault not present, return unit to field operation.

520271-03 - Tank 1 Cal Toggle Switch, Voltage above normal, or shorted to high source

Control Module: Air Cart UCM

Context:
The UCM detected an abnormally high voltage on its tank calibration toggle switch signal input.

Cause:
Bad connection while switch on, short to high source, or defective component.

Possible failure modes:

1. Bad connection in signal wiring between device and UCM.
2. Bad connection in ground wiring to device.
3. High short on signal wiring between device and UCM.
4. Faulty device.
5. Faulty UCM hardware or software.

Solution:

1. Determine if the fault code is still active:

   Cycle system power or reset the UCM.
   Select Main Menu > Diagnostics tab > Faults and check both ACTIVE and INACTIVE faults. See **Cab seeding controls - Check faults (55.517)**.
   Review: Fault Count, First Time, Latest Time

   Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

   A. Fault still present, go to step**2**.

   B. Fault not present, return unit to field operation and monitor for recurring fault.
2. Perform the electrical connector check procedure on the connector for the indicated motor.

   Inspect wires and contacts at both mating ends of all connectors referenced by the diagnostic procedures. Repair all contacts that are bent, broken, or improperly seated in their connector housing. Clean dirty or corroded contacts.
   Ensure that connector mating ends are securely mated back together.
   Cycle power and check for active fault

   A. Fault still present, go to step **3**.

   B. Fault not present, return unit to field operation.
3. Disconnect the connector at the switch indicated by the fault code. Measure the following voltages on the harness connector:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	**Negative lead**		
CAL_TANK1 (CAL TANK 1, cavity A)	SEN_DGND (CAL TANK 1, cavity B)	**~8 V**	Normal
		< 7.5 V	Check for high resistance (**> 10 Ω**) on CAL_TANK1 wire to UCM, or on SEN_DGND to frame ground.
		> 8.5 V	Check for high short on CAL_TANK1 wire.

520302-04 - Tank 2 Pressure Sensor, Voltage below normal, or shorted to low source

Control Module: Air Cart UCM

Context:
The UCM detected an abnormally low voltage on the indicated tank pressure sensor signal input.

Cause:
Short to low source, open circuit, or defective component.

Possible failure modes:

1. Low short or open circuit on signal wiring between device and UCM.
2. Low short or open circuit on power wiring to device.
3. Faulty device.
4. Faulty UCM hardware or software.

Solution:

1. Determine if the fault code is still active:

   Cycle system power or reset the UCM.
   Select Main Menu > Diagnostics tab > Faults and check both ACTIVE and INACTIVE faults. See **Cab seeding controls - Check faults (55.517)**.
   Review: Fault Count, First Time, Latest Time

   Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

   A. Fault still present, go to step **2**.

   B. Fault not present, return unit to field operation and monitor for recurring fault.
2. Disconnect the connector at the sensor indicated by the fault code. Check the resistance between TANK_PRES and SEN_AGND on the implement harness connector.

   A. Resistance is greater than **20000 Ω**, go to the step **3**.

   B. Resistance is less than **20000 Ω**. Check for low short on TANK_PRES between device and UCM. If fault is still present, go to step **3**.
3. Disconnect the connector at the sensor indicated by the fault code. Measure the following voltages on the harness connector:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	**Negative lead**		
+5V_EXT (TANK PRESSURE, cavity 1)	Frame ground point	**5 V**	Normal
		<5 V	Check for low short or open circuit on +5V_EXT wire.

   A. Measurement normal or fault still present after repair made. Go to step **4**.

   B. Fault not present, return unit to field operation.
4. Replace the sensor with a known good sensor. Cycle power.

   A. Fault still present, reinstall original sensor, go to step **5**.

B. Fault not present, return unit to field operation.

5. Perform the UCM troubleshooting procedure. See **Controller Area Network (CAN) data bus - Problem solving UCM (55.640)**.

   A. Fault still present, reinstall original UCM, submit a concern through ASIST.

   B. Fault not present, return unit to field operation.

A. Fault still present, reinstall original UCM, submit a concern through ASIST.

B. Fault not present, return unit to field operation.

521221-03 - Aux Tank Low Product Sensor, Voltage above normal, or shorted to high source

Control Module: Air Cart UCM

Context:
The UCM detected an abnormally high voltage on its tank low sensor signal input.

Cause:
Bad connection or open circuit, short to high source, or defective component.

Possible failure modes:

1. Bad connection or open circuit in ground wiring to device.
2. High short on signal wiring between device and UCM.
3. Faulty device.
4. Faulty UCM hardware or software.

Solution:

1. Determine if the fault code is still active:

   Cycle system power or reset the UCM.
   Select Main Menu > Diagnostics tab > Faults and check both ACTIVE and INACTIVE faults. See **Cab seeding controls - Check faults (55.517)**.
   Review: Fault Count, First Time, Latest Time

   Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

   A. Fault still present, go to step **2**.

   B. Fault not present, return unit to field operation and monitor for recurring fault.
2. Perform the electrical connector check on the connector at the sensor, at the AUX BIN SENSORS bulkhead connector mounted in the wall of the tank, and at the AUX TANK SENSORS connector on the main harness

   Inspect wires and contacts at both mating ends of all connectors referenced by the diagnostic procedures. Repair all contacts that are bent, broken, or improperly seated in their connector housing. Clean dirty or corroded contacts.
   Ensure that connector mating ends are securely mated back together.
   Cycle power and check for active fault

   A. Fault still present, go to step **3**.

   B. Fault not present, return unit to field operation.
3. Disconnect the AUX BIN SENSORS bulkhead connector mounted in the wall of the tank. Measure the following voltages on the implement harness connector:

Measure with Voltmeter		Measured Voltage	Interpretation and Action
Positive lead	**Negative lead**		
LOW_BIN (AUX BIN SENSORS, cavity A)	SEN_DGND (AUX SENSORS, cavity D)	**3 – 5 V**	Normal
		< 3 V	Check for open circuit or high resistance (**> 10 Ω**) on SEN_DGND wire to frame ground.
		> 5 V	Check for high short on LOW_BIN wire.

Review: Fault Count, First Time, Latest Time

Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

A. Fault still present, go to step **4**.

B. Fault not present. Check for low shorts on the tank 1 in-tank harness. Check for faulty tank 1 sensor.

4. Disconnect the bulkhead connectors for the remaining tanks one at a time, performing the active fault check after each disconnection.

   Cycle system power or reset the UCM.
   Select Main Menu > Diagnostics tab > Faults and check both ACTIVE and INACTIVE faults. See **Cab seeding controls - Check faults (55.517)**.
   Review: Fault Count, First Time, Latest Time

   Also view the voltage/current/frequency bar graphs for the faulted signal as measured by the UCM. Select Main Menu > Diagnostics tab > Signal Monitor and choose the faulted signal. See **Cab seeding controls - Check signal monitor (55.517)**.

   A. Fault still present after all bulkhead connectors disconnected, go to step **5**.

   B. Fault still present after all bulkhead connectors disconnected, go to next step.

5. Perform the UCM troubleshooting procedure. See **Controller Area Network (CAN) data bus - Problem solving UCM (55.640)**.

   A. Fault still present, reinstall original UCM, submit a concern through ASIST.

   B. Fault not present, return unit to field operation.

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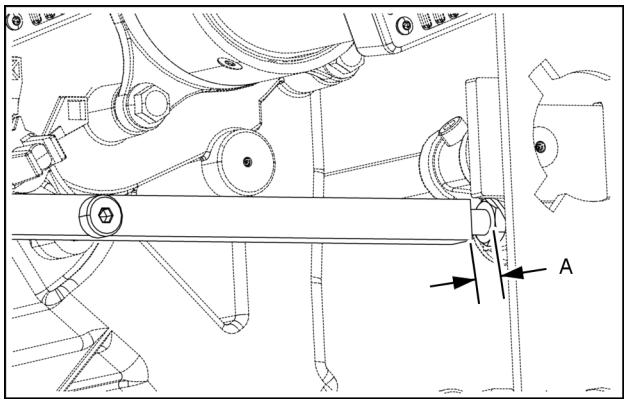
3. Once the drive side control shaft has been adjusted such that the connecting link indicator arrow is inside the closed indicator target on the motor side, adjust the cartridge side to the same exposed length **(A)** of threaded rod for equal positioning.



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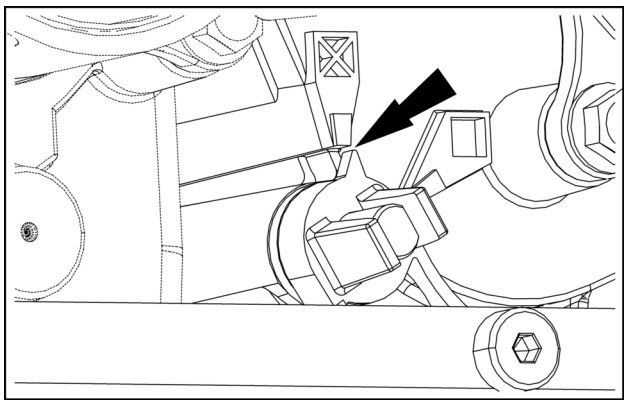
4. Check all meter modules to ensure the connecting link indicator arrow is inside the closed indicator target on the motor side of the meter housing.



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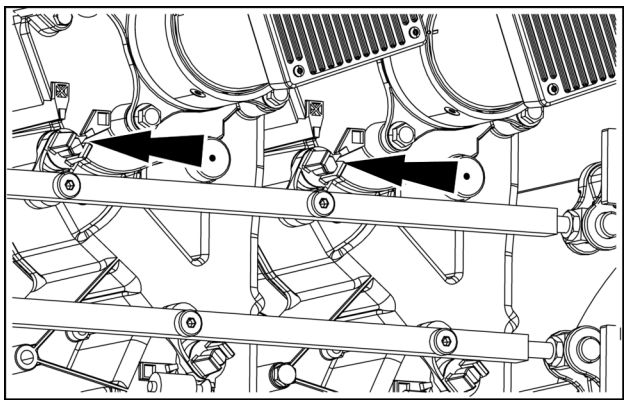
5. Tighten the threaded rod until the meter modules meet the above criteria.
6. Set the top position of the clean out door on the meter banks to the open position.



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NOTE: *Inspect all of the meter modules to see if the connecting link indicator arrow is inside the open indicator target on the meter housing motor side.*

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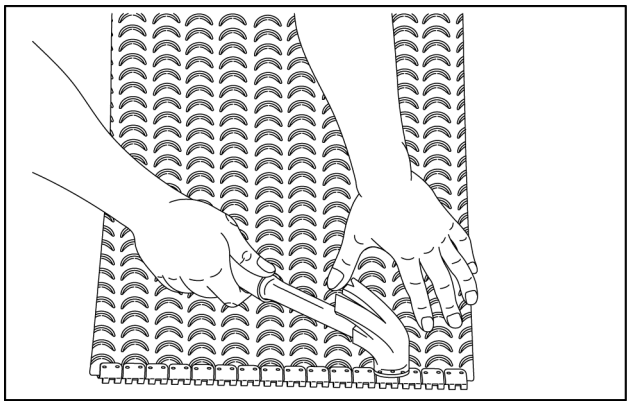
7. Set fastener strip on a solid flat surface. Strike top-side of fasteners and staples with firm hammer blows. Move back and forth across fastener strip until all staples are clinched.



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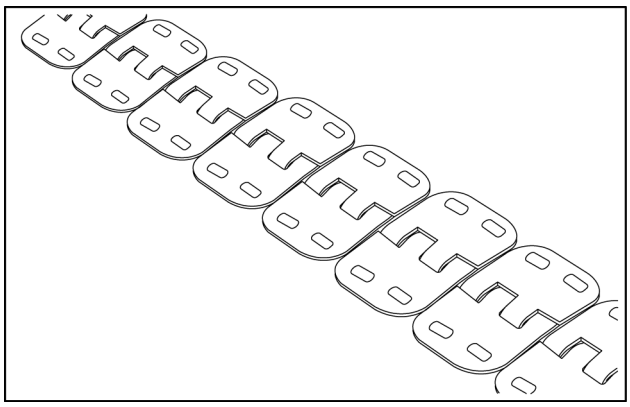

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8. Repeat steps **3** to **7** for the other end of the belt.

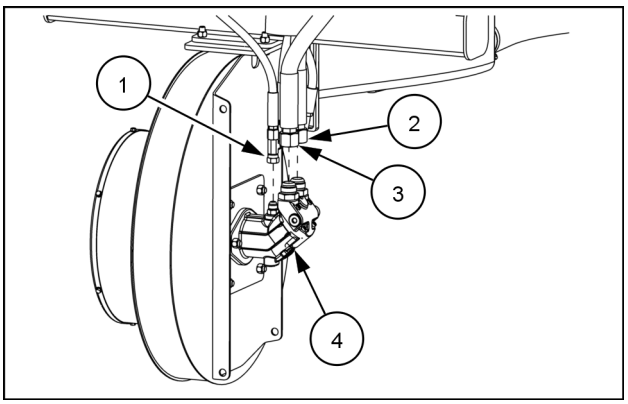
Single fan - Remove

⚠ CAUTION

Heavy parts!
Support designated component(s) with adequate lifting equipment.
Failure to comply could result in minor or moderate injury.

C0166A

1. Support the fan with a suitable lifting device.
2. Remove the three hydraulic hoses **(1)**, **(2)**, and **(3)** from the hydraulic fan motor **(4)**.
3. Cap all hydraulic hoses and motor ports to prevent entry of foreign material.



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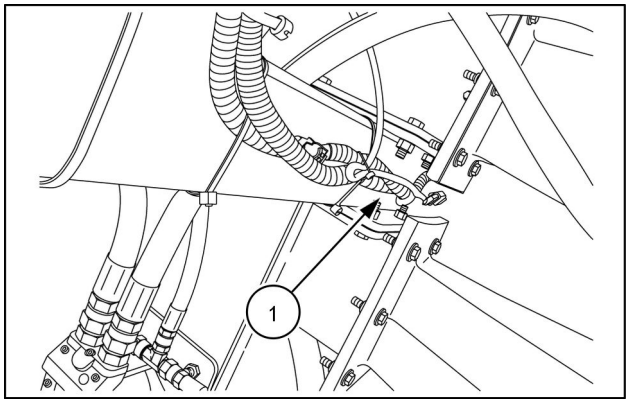
4. Disconnect the fan sensor wiring harness connector **(1)**.



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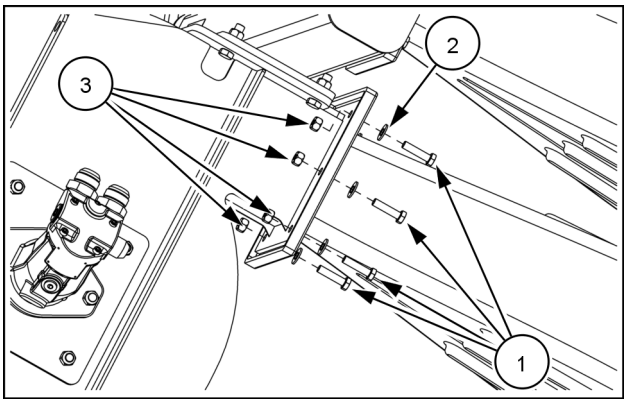
5. Remove the six M10 x 40 flange bolts **(2)** , washers **(2)** and the six M10 nuts **(3)** from the fan plenum.

NOTE: *Two of the flange bolts and two of the nuts are not visible in this illustration.*



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Air distribution system - Overview plenum and meter run configuration

The illustration shows a double shoot configuration with eight primary runs. **(Tn)** indicates the top run where **(T)** is top and **(n)** is the number of the run. **(Bn)** indicates the top run where **(B)** is top and **(n)** is the number of the run.

Table **1** shows which air cart runs match to the plenum ports. Runs are numbered from the rear of the cart in the direction of travel.

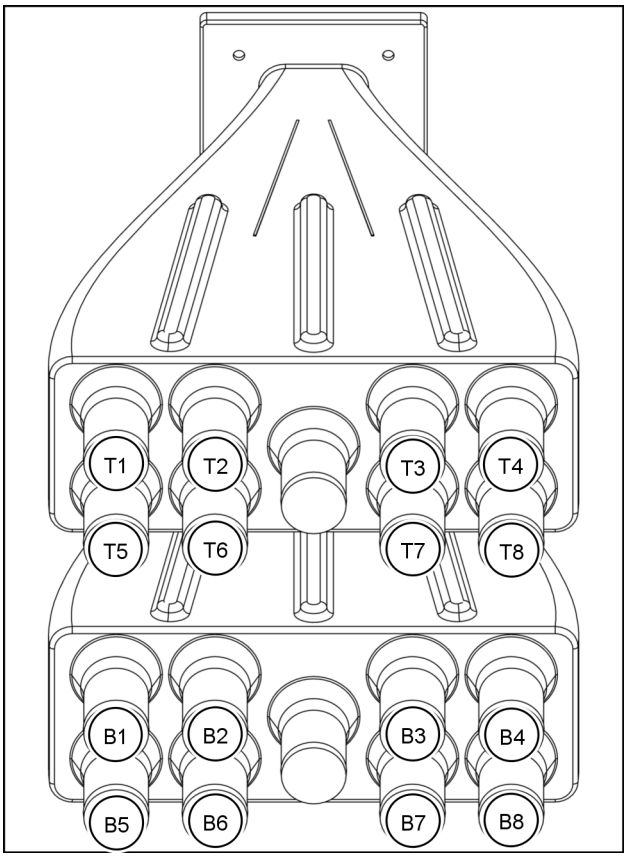

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Table 1

Blanked and active runs

4 run	
Plenum outlet	Meter run
B1	L3
B2	X
B3	X
B4	L2
B5	L4
B6	X
B7	X
B8	L1
T1	U3
T2	X
T3	X
T4	U2
T5	U4
T6	X
T7	X
T8	U1
5 run	
Plenum outlet	Meter run
B1	L4