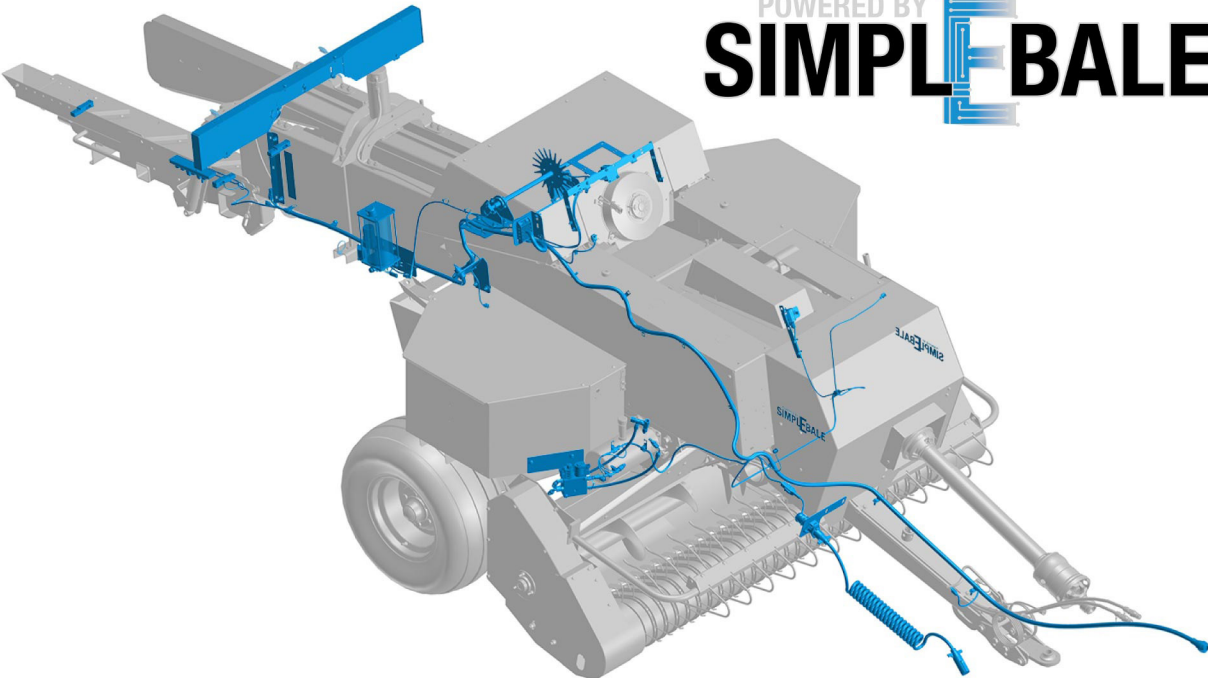


# SimpleBale





# SimpleBale

<b>1</b>	<b>General</b> .....	<b>5</b>
1.1	<b>Safety</b> .....	<b>7</b>
1.1.1	Safety Icons .....	7
1.1.2	Safety Instructions .....	7
1.1.3	General Safety .....	8
1.2	<b>How to use this manual</b> .....	<b>9</b>
1.3	<b>Introduction</b> .....	<b>13</b>
1.3.1	Monitor information page .....	13
1.3.2	Ag Co-Pilot monitor layout .....	13
1.3.3	Operation buttons .....	14
1.3.4	Navigate the screen and pages .....	15
1.3.5	Baler Keypad .....	15
1.4	<b>Specifications</b> .....	<b>16</b>
1.4.1	Fuse schematic .....	16
1.5	<b>Calibrations</b> .....	<b>19</b>
1.5.1	Calibrate the hydraulic density control .....	19
1.5.2	Calibrate the bale scale .....	20
1.6	<b>Troubleshooting</b> .....	<b>21</b>
1.6.1	Baler diagnostics page .....	21
1.6.2	Scale diagnostics page .....	22
1.6.3	Diagnostics .....	23
1.6.3.1	Star wheel diagnostics .....	23
1.6.3.2	PTO speed diagnostics .....	24
1.6.3.3	Scale diagnostics .....	26
1.6.3.4	Needle carriage diagnostics .....	30
1.6.3.5	Fan diagnostics .....	30
1.6.3.6	Lamp diagnostics .....	32
1.6.3.7	Automatic lubrication system diagnostics .....	33
1.6.3.8	Bale pressure system diagnostics .....	34
1.6.3.9	CAN bus diagnostics .....	37
1.6.4	Fault codes .....	38
1.6.4.1	Fault codes overview .....	38
1.6.4.2	Erase a fault code .....	38
1.6.4.3	Fault codes .....	38
<b>2</b>	<b>Electrical system</b> .....	<b>43</b>
2.1	<b>Adjust the star wheel sensor</b> .....	<b>45</b>
2.2	<b>Adjust the needle carriage sensor</b> .....	<b>48</b>
2.3	<b>Adjust the PTO speed sensor</b> .....	<b>51</b>
2.4	<b>Update the terminal software</b> .....	<b>55</b>
<b>3</b>	<b>Hydraulic system</b> .....	<b>61</b>

---

<b>3.1</b>	<b>Release the hydraulic pressure on the bale chamber .....</b>	<b>63</b>
<b>3.2</b>	<b>Bleed the air from the hydraulic density control valve .....</b>	<b>64</b>
<b>4</b>	<b>Diagrams .....</b>	<b>67</b>
<b>4.1</b>	<b>Electrical component list.....</b>	<b>68</b>
<b>4.2</b>	<b>Wiring diagram .....</b>	<b>71</b>
<b>4.3</b>	<b>Subsystem diagrams .....</b>	<b>73</b>
4.3.1	5 V sensors.....	75
4.3.2	9 V sensors.....	76
4.3.3	12 V after the ignition switch .....	77
4.3.4	12 V power supply .....	78
4.3.5	Pins not used on the controller .....	79
4.3.6	Diagnostics.....	80
4.3.7	Fan .....	81
4.3.8	Ground .....	82
4.3.9	Ground 2 .....	83
4.3.10	Hydraulic system.....	84
4.3.11	Knotter .....	85
4.3.12	Light system .....	86
4.3.13	Light system 2.....	87
4.3.14	Light system 3.....	88
4.3.15	CAN bus.....	89
<b>Index.....</b>	<b>.....</b>	<b>91</b>

# 1 General

<b>1.1</b>	<b>Safety .....</b>	<b>7</b>
1.1.1	Safety Icons .....	7
1.1.2	Safety Instructions .....	7
1.1.3	General Safety .....	8
<b>1.2</b>	<b>How to use this manual .....</b>	<b>9</b>
<b>1.3</b>	<b>Introduction .....</b>	<b>13</b>
1.3.1	Monitor information page .....	13
1.3.2	Ag Co-Pilot monitor layout .....	13
1.3.3	Operation buttons .....	14
1.3.4	Navigate the screen and pages .....	15
1.3.5	Baler Keypad .....	15
<b>1.4</b>	<b>Specifications .....</b>	<b>16</b>
1.4.1	Fuse schematic .....	16
<b>1.5</b>	<b>Calibrations .....</b>	<b>19</b>
1.5.1	Calibrate the hydraulic density control .....	19
1.5.2	Calibrate the bale scale .....	20
<b>1.6</b>	<b>Troubleshooting .....</b>	<b>21</b>
1.6.1	Baler diagnostics page .....	21
1.6.2	Scale diagnostics page .....	22
1.6.3	Diagnostics .....	23
1.6.3.1	Star wheel diagnostics .....	23
1.6.3.2	PTO speed diagnostics .....	24
1.6.3.3	Scale diagnostics .....	26
1.6.3.4	Needle carriage diagnostics .....	30
1.6.3.5	Fan diagnostics .....	30
1.6.3.6	Lamp diagnostics .....	32
1.6.3.7	Automatic lubrication system diagnostics .....	33
1.6.3.8	Bale pressure system diagnostics .....	34
1.6.3.9	CAN bus diagnostics .....	37
1.6.4	Fault codes .....	38
1.6.4.1	Fault codes overview .....	38
1.6.4.2	Erase a fault code .....	38
1.6.4.3	Fault codes .....	38



---

## 1.1 Safety

---

### 1.1.1 Safety Icons

---

**NOTE:** The use of the signal words *DANGER*, *WARNING* and *CAUTION* with the safety messages. The signal word for each message will use the structure that follows:



**DANGER: Danger**

Shows data on a possible hazard that if you do not prevent death or injury will occur.



**WARNING: Warning**

Shows data on a possible hazard that if you do not prevent death or injury will occur, these will include hazards that occur when guards are not in position.



**CAUTION: Caution**

Shows data on a possible hazard that if you do not prevent can cause small or moderate injury or component or property damage.

**NOTE:** This shows more data that can help.

---

### 1.1.2 Safety Instructions

---

YOU are responsible for the SAFE operation and maintenance of your machine.

YOU must make sure that each person who operates or does work on the machine understands all the SAFETY data in this manual.

YOU are the key to safety. Good safety procedures prevent accidents to you and each person near you.

Make these procedures a set part of your safety sequence.

Make sure that EVERYONE who operates, does maintenance or works near to the machine obeys the safety precautions.

Follow the safety instructions to prevent the risk of injury or death:

- Owners must complete training with all operators before they operate the machine. This training must be done a minimum of each year.
- The operator must read, understand and obey all safety and operation instructions in the manual.
- A person who did not read and understand all safety and operation instructions must not operate the machine.
- Do not change the equipment. Adjustments not approved by the manufacturer can change the function of the machine and cause damage or personal injury.
- Only use approved replacement parts and make sure that only approved technicians do the repair procedures.

Vehicle modifications with impact to dimensions, weight and road- and user safety are prohibited.

The manufacturer confirms that the described complete vehicle is intended to be used on the road and that it can be registered in EU member states. Subsequent changes without parts approvals or without

manufacturer approvals will invalidate the type approval. The issued Certificate of Conformity and corresponding data sheets are also invalidated. After modifications is the responsibility of the vehicle owner to ensure the vehicle operating permission.

---

### 1.1.3 General Safety

---

- Read and understand the manual and all safety decals, before you operate the machine.
  - Follow all safety regulations, in this manual and instructions or warnings shown on the machine
  - Only use the machine for its correct operation
  - Only approved persons that understand the operator manual, can operate, drive and do maintenance on the machine.
  - Keep persons and objects away from parts that move.
  - Make sure that the installation of all the safety guards and protection devices is correct and they operate correctly.
  - Always use a tractor with a cabin. Make sure that you close the cabin of the tractor during operation to decrease the quantity of sound. High quantity of sound can cause reduction in hearing.
  - Know the height of the machine. Always keep a minimum distance of 3 m (10 ft) between the machine and electrical power lines, specially when you open the tailgate.
  - Put on the correct protective clothing and equipment (gloves, safety glasses and ear protectors).
  - Look for hazards and signs of defects (leakage and noise).
  - Keep the safety decals clean to make sure that you can see them at all times. Replace safety decals that are missing or you cannot see.
  - Know the telephone number for emergency medical help in your area.
  - Speak to your local dealer, if you are not sure of one or more items.
  - Only connect the machine to the tractor using the procedures in this manual. Only connect the machine to a tractor trailer hitch with your local regulations approval.
  - Make sure that the front axle weight of the tractor is sufficient. Make sure that you do not have more weight than the maximum permitted on the rear axle.
  - Do not connect the machine to the tractor when the tractor engine is in operation.
  - Release the pressure from the hydraulic system before you connect or disconnect the hydraulic hoses. Refer to the manual of the tractor.
  - If the machine has a pneumatic or hydraulic brake, connect the brake hose(s) to the tractor.
  - Do not remove a blockage by hand or by foot. Always use an applicable tool.
  - Make sure that the pick up safety guard always has the correct height setting.
- The machine has a brake release button. It can be used to release the brakes, when the air hoses are not connected to the tractor.
- NOTE:** *When the air hoses are connected to the tractor the brake release button will automatically retract.*
- Only use the brake release button to do the maintenance and servicing of the machine.
  - Make sure that you connect the air hoses for the pneumatic brake system (optional equipment). The pneumatic brake system does not operate when the air hoses are disconnected.



## 1.2 How to use this manual

### Transport damage and missing parts

Examine the machine and parts carefully for possible damage that occurred during transport. Speak to the person that is responsible for transport immediately if you find damage.

Make an order for missing parts.

### General

The function of this manual is to help dealers and agents in the installation, servicing and repair of equipment.

It is important to follow the repair procedures. You must use the applicable tools and equipment in order to complete the procedures in the times specified in the repair time schedule.

You must read this manual before you operate or do work on the machine.

If more assistance is necessary you should speak to your AGCO dealer.

This manual is only applicable to the models specified on the front cover.

### Contents

For quick reference, there is an index at the back of the manual. The index lists the contents and the location in the manual. Each chapter starts with a table of contents which includes the different sections in that chapter.

### Fastener torques

Always replace fasteners with fasteners of the same specification. Tighten all fasteners to the correct torque values.

You can find the list of torque values in the service manual or the assembly instructions of the machine. If the torque value is different, it is specified in the procedure.



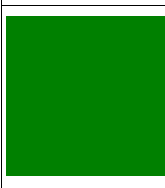
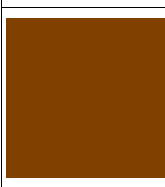
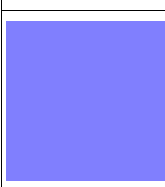
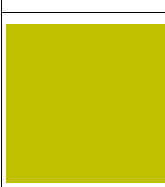
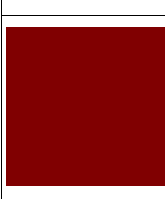
### Special tools


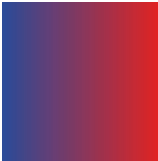

If it is necessary to use a special tool in a procedure, the tool identification is specified in the procedure.

### Illustrations

The illustrations do not always show the same machine specification or machine configuration. The procedure is the same unless the instruction tells you differently.

The illustrations in this manual use a color system to help you follow the instruction correctly.

Color	Description	Functions
	<p><b>Target/focus item</b> The primary component in the step is this color.</p>	Primary component, decal location, component location
	<p><b>Connectors, fasteners</b> All components that attach the primary component to a different component are this color.</p>	Fasteners, electrical connectors
	<p><b>Primary alternative</b> If there are 2 primary components in the illustration, 1 of the 2 components is this color.</p>	Secondary component
	<p><b>Secondary alternative</b> If there are 3 primary components in the illustration, 1 of the 3 components is this color.</p>	Tertiary component
	<p><b>Special tool</b> Where the special tools or equipment are in an illustration, they are this color.</p>	Pressure gauges, specified tools
	<p><b>Parts that you move</b> A component that you must move, and that is not necessary to remove from the machine.</p>	Electrical wires, hydraulic hoses
	<p><b>Sections</b> Where a cross-section of a component is necessary, this color shows the component that you see through.</p>	Engines, drivetrain

Color	Description	Functions
	<b>Channels</b> To show the flow of liquid in a channel.	Engines, drivetrain
	<b>Temperature</b> Where the temperature of liquid changes. • Blue - Cold • Red - Hot	Coolant flow, water flow
	<b>Pressure</b> Where the pressure or state of gas changes. • Yellow - Low • Orange - High	SCR system, hydraulic systems

### Part number references





All parts that are supplied in the kit are referenced in the bill of materials.




Each part is added to a table in the installation steps, below is an example.

Number	Part number	Description	Quantity
(1)	X446235234000	Long key	5
(2)	X446234100000	Short key	2
(3)	653620031930	Shaft	1

- Number - As shown in the illustration
- Part number - Component part number
- Description - Component name
- Quantity - Number of components required for the step

### ISO Hydraulic color definition

Color	Description	Color	Description
	Pump flow		Suction flow
	Tank flow		No flow

Color	Description	Color	Description
	Measured flow		Reduced flow
	Intensified fluid		

## 1.3 Introduction

### 1.3.1 Monitor information page

- (1) Software version and build date
- (2) QR code for wireless internet connection
- (3) Wireless internet connection ON/OFF and small square baler monitor wireless identification number

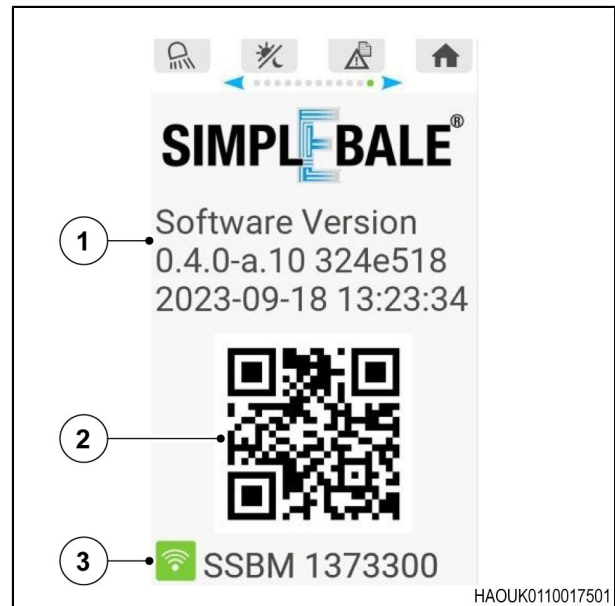


Fig. 1

### 1.3.2 Ag Co-Pilot monitor layout

- (1) Buttons that the operator can configure
- (2) Keypad
- (3) Machine status indicators
- (4) Home screen data
- (5) Speaker

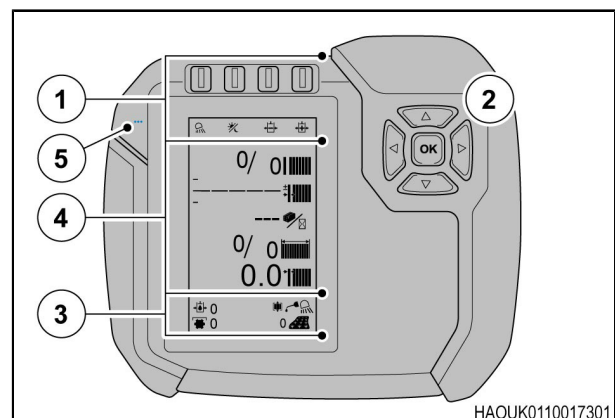


Fig. 2

- (1) Side area to hold with hand
- (2) Mounting bracket surface
- (3) 48 pin electrical connector
- (4) Identification decal

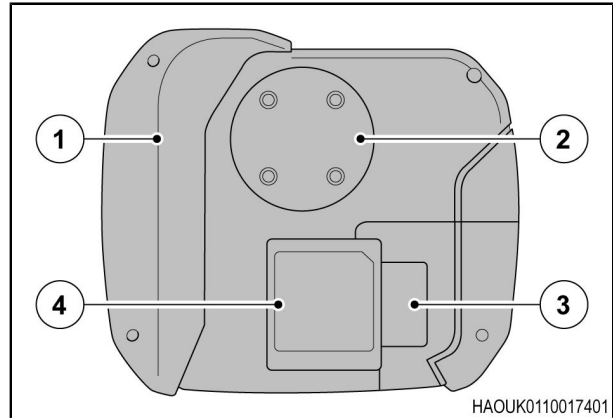


Fig. 3

### 1.3.3 Operation buttons

Icon	Description
	Work lamp ON/OFF
	Bale chamber pressure reduction
	Bale density decrease (You can set the increments of the change in the hydraulic density control setup.)
	Bale density increase (You can set the increments of the change in the hydraulic density control setup.)
	Knotter lubrication pump ON/OFF
	Day/Night mode
	Screen brightness decrease
	Screen brightness increase
	Alarm page
	Dye marker
	Return to the home screen

### 1.3.4 Navigate the screen and pages

The green dot on the screen page indicator



shows the operator which page is on the screen. The 2 outer arrows show where the screen cursor is. To move to a different screen the operator can press the left or right arrow on the keypad.

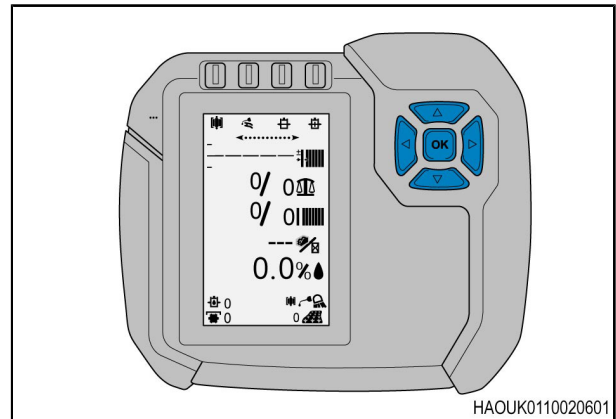


Fig. 4

### 1.3.5 Baler Keypad

The keypad attached to the side of the machine can operate some of the SimplE bale functions.

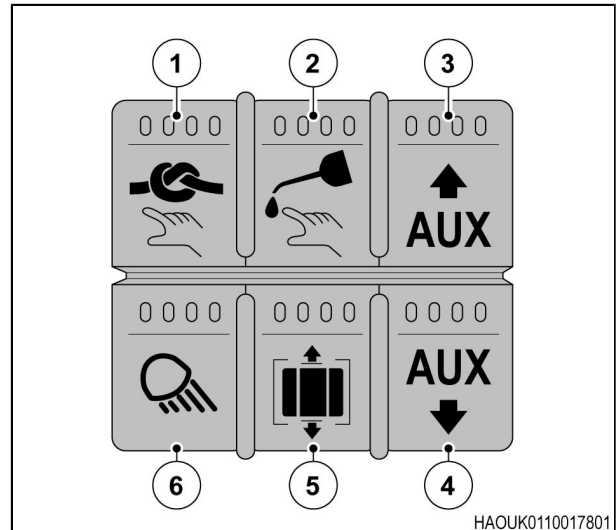


Fig. 5

(1)	N/A	N/A
(2)	Knotter lubrication	Activates the lubrication system for the knotter
(3)	N/A	N/A
(4)	N/A	N/A
(5)	Chamber pressure release	Releases the pressure in the bale chamber
(6)	Field/Work lamps	Field/Work lamps ON/OFF

## 1.4 Specifications

### 1.4.1 Fuse schematic

The location of the fuse box is on the right side of the machine.

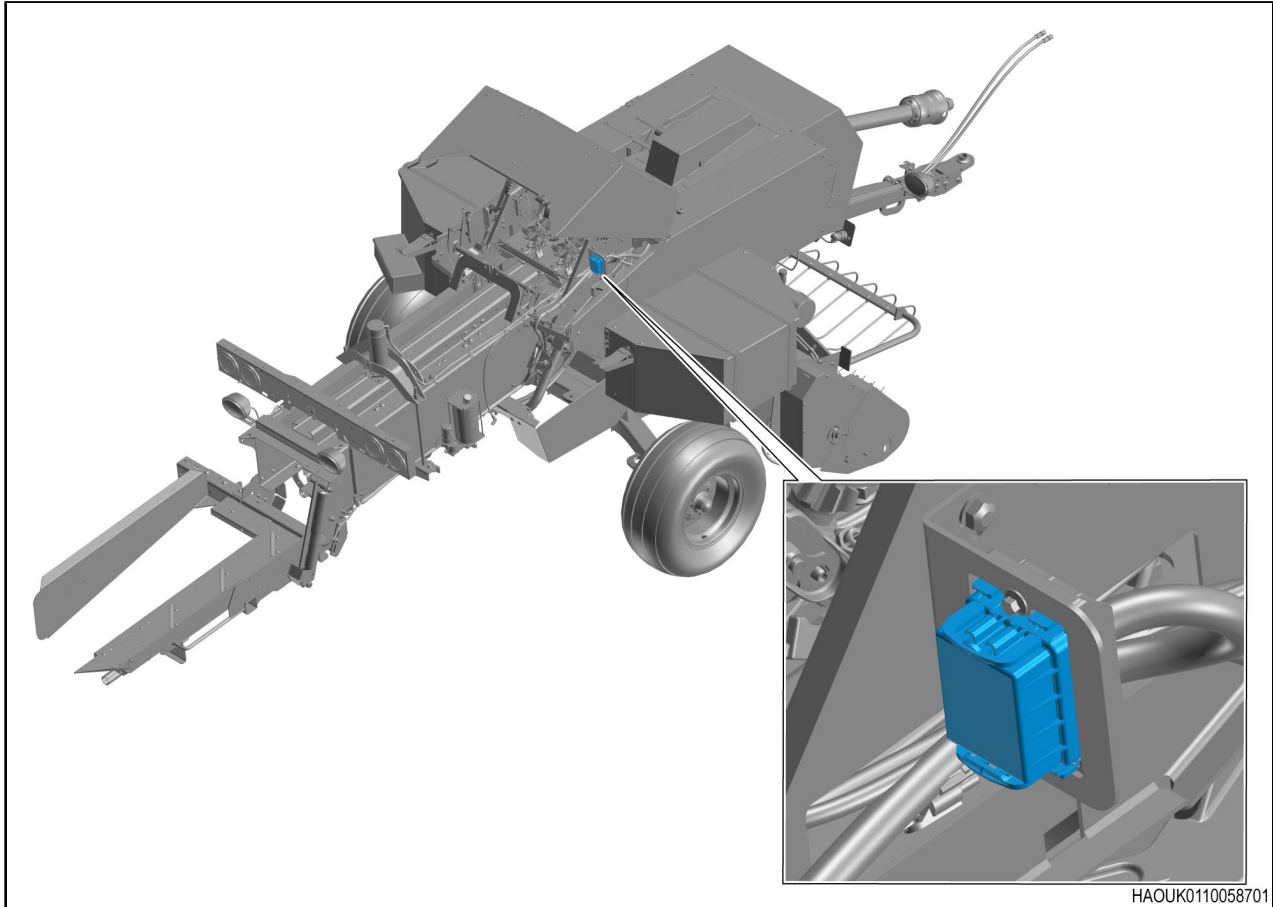
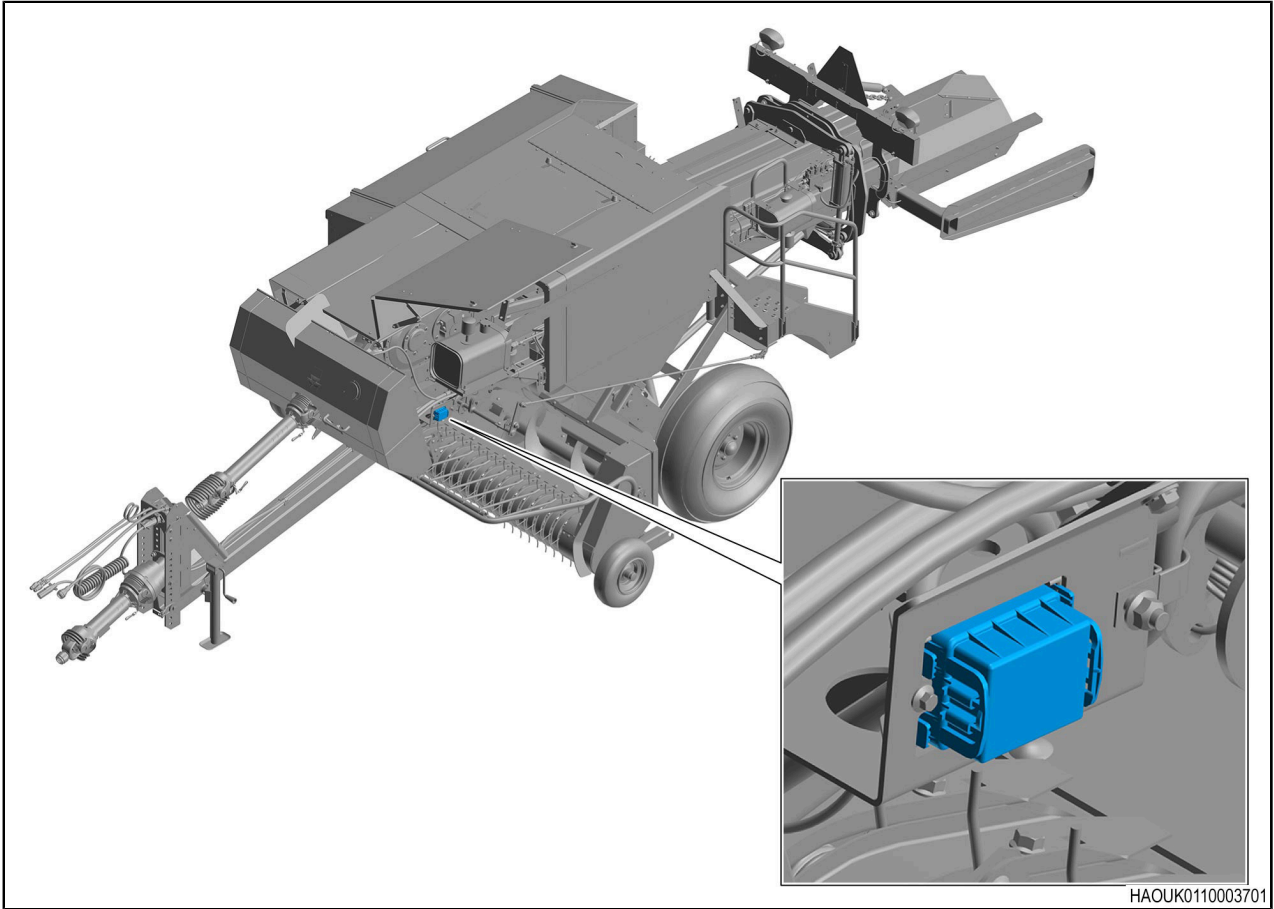


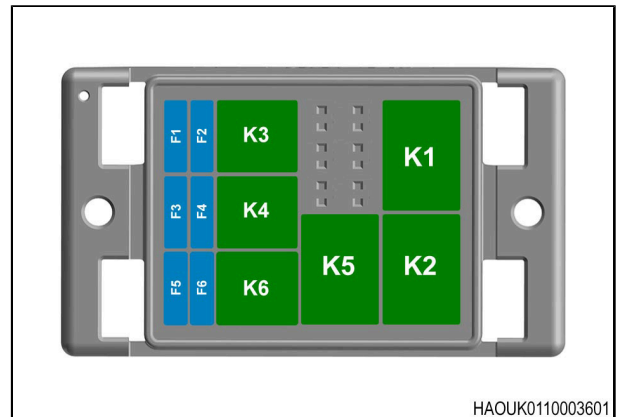
Fig. 6 1840 models





HAOUK0110003701

Fig. 7 1844 models



HAOUK0110003601

Fig. 8

**Fuses**

Fuse	Amp	Description
F1	25	Fan
F2	10	Accessory power
F3	15	Lamps
F4	7.5	Lubrication pump
F5	7.5	Knotter trip system
F6	3	ECU Accessory power

**Relays**

Relay	Description
K1	Fan direction 1
K2	Fan direction 2
K3	Field lamps
K4	Lubrication pump
K5	Knotter trip system
K6	Service lamp

## 1.5 Calibrations

### 1.5.1 Calibrate the hydraulic density control



**WARNING:** The machine or parts can move without notification.

The machine and its parts are heavy and can cause death or injury.

Park the machine on a clean, hard and level area.

Set the parking brake to ON and install the wheel chocks.

If an implement is on the machine, lower the implement to the ground.


Stop the engine and remove the ignition key.

Calibration of the hydraulic density control is necessary when you:

- Install the SimplE bale system.
- Replace the hydraulic valve.
- Do maintenance of the hydraulic density system.

To make sure that you calibrate the system to baling conditions, we recommend that you operate the PTO and the hydraulics for 10 minutes. This makes sure that the oil is at the correct operation temperature. If this is not done, the precision of the calibration can change and cause the pressure range for the valve to be incorrect.

#### Procedure

1. Start the PTO and set the baler to work speed.
2. Use the keypad to go to the hydraulic run page.
3. Use the keypad to select the  icon.
4. Press and hold the OK button to start the calibration.

**NOTE:** A blue status bar fills until it is fully blue. When fully blue, the calibration is done.

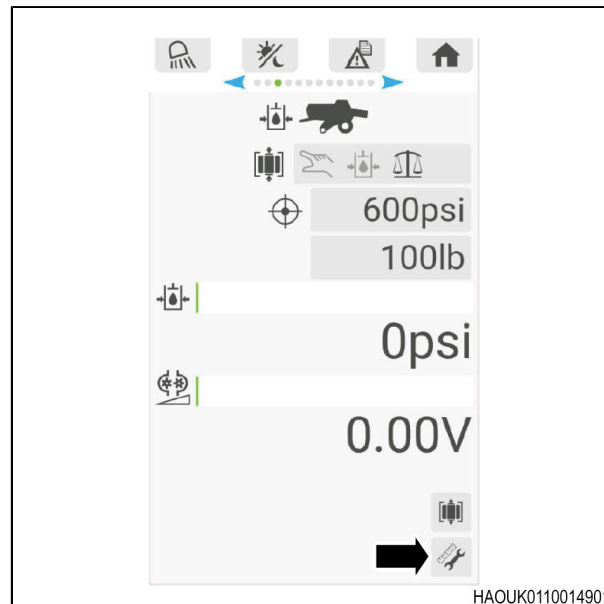


Fig. 9

### After finishing the procedure

- The operator can continue to bale with the machine.

## 1.5.2 Calibrate the bale scale

### Before starting the procedure

- Before you calibrate the scale, make sure that the scale is empty.

### Procedure

1. Use the keypad to go to the scale calibration button.
2. When you select the calibration button, press and hold the OK button on the keypad.

The calibration completes when the blue status bar fills the blue box.

### Result

The scales total shows 0 and the weights for each load sensor also show 0.

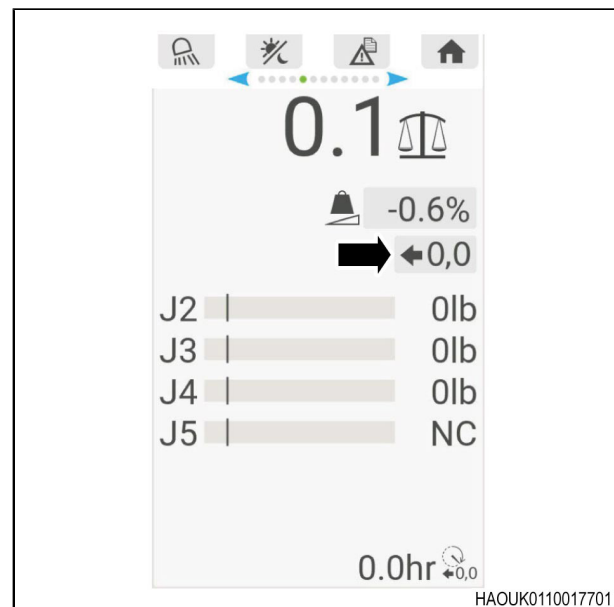


Fig. 10

## 1.6 Troubleshooting

### 1.6.1 Baler diagnostics page

- (1) PTO speed sensor
- (2) Hydraulic duty cycle
- (3) Knotter lubrication output
- (4) Fan reverse output
- (5) Service lamp output
- (6) 5 V sensor supply
- (7) Hydraulic pressure sensor
- (8) Star wheel sensor
- (9) 9 V sensor supply
- (10) Battery voltage
- (11) Field lamp output
- (12) Fan forward output
- (13) Needle carriage home status
- (14) Chamber pressure reduction cycle

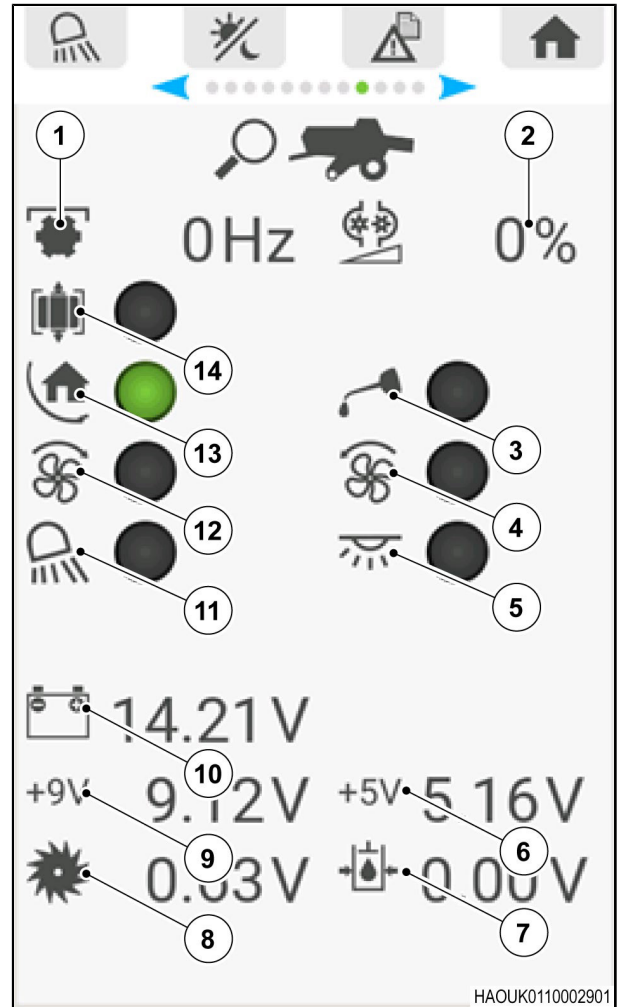


Fig. 11

### 1.6.2 Scale diagnostics page

- (1) Load sensor module voltage
- (2) Load sensor data
- (3) Load sensor data
- (4) Load sensor data
- (5) Load sensor data
- (6) Tilt sensor data for X axis
- (7) Tilt sensor data for Y axis
- (8) Tilt sensor data for Z axis
- (9) Load sensor module software version

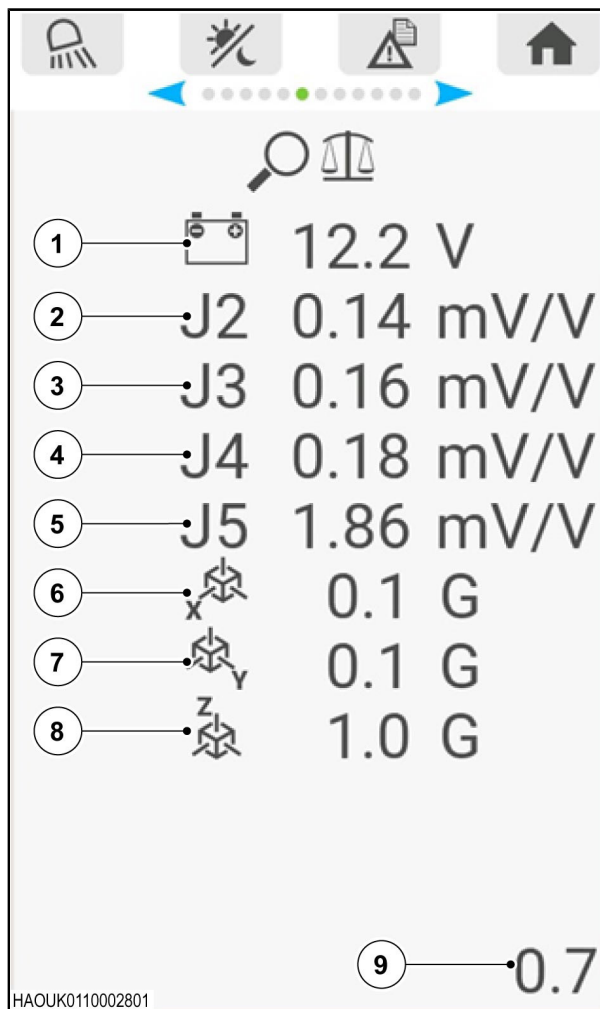


Fig. 12

## 1.6.3 Diagnostics

### 1.6.3.1 Star wheel diagnostics



**WARNING: The machine or parts can move without notification.**

The parts that move can cause death or injury.

Before you do work on the machine:

If an implement is on the machine, lower the implement to the ground.

Stop the engine.

Remove the ignition key.

Disconnect the PTO shaft.



**CAUTION: Personal Protective Equipment is mandatory.**

This procedure can cause injury.

Put on Personal Protective Equipment when you do this procedure.

#### Bale Length or Flake Count do not change

Step	Diagnostic	Result	Action
1	On the terminal, navigate to the <b>Diagnostics Screen</b> . Does the voltage of the star wheel sensor change as the star wheel rotates?	Yes	Go to step 3.
		No	Go to step 2.
2	Do a check of the wiring harness for damage. Do a continuity test of the wiring harness from the PTO speed sensor to the monitor sensor to the monitor connector. Clean the connections. Make sure that there is a 5 V supply at the wiring harness connector for the star wheel sensor.	Yes	Diagnostics complete.
		No	Repair or replace the harness.
3	Is there unwanted movement of the star wheel?	Yes	Tighten the bearing collars, replace the bearings if there is too much free play of the bearings.
		No	Go to step 4.

Step	Diagnostic	Result	Action
4	Is the magnet tight on the shaft?	Yes	Go to step 5..
		No	Tighten the fasteners.
5	Is the magnet aligned correctly with the sensor?	Yes	Go to step 6.
		No	Adjust the magnet.
6	Is there unwanted material in the space between the sensor and the magnet on the end of the shaft?	Yes	Clean the area between the sensor and the magnet on the end of the shaft.
		No	Go to step 7.
7	Adjust the distance between the sensor and the magnet on the end of the shaft to 1 mm (0 in) to 3 mm (0.1 in). Is the problem corrected?	Yes	Diagnostics complete.
		No	Refer to your approved dealer.

### 1.6.3.2 PTO speed diagnostics



**WARNING:** The machine or parts can move without notification.

The parts that move can cause death or injury.

Before you do work on the machine:

If an implement is on the machine, lower the implement to the ground.

Stop the engine.

Remove the ignition key.

Disconnect the PTO shaft.



**WARNING:** Entanglement with the PTO shaft.

Risk of death or injury.

Make sure that the guards are in position and always operate correctly.

If a guard breaks or is missing, repair or replace it before you use the machine.



**CAUTION:** Personal Protective Equipment is mandatory.

This procedure can cause injury.

Put on Personal Protective Equipment when you do this procedure.



**The PTO speed does not show**

Step	Diagnostic	Result	Action
1	Do a check of the LED indicator on the rear of the PTO speed sensor. Does the LED come ON when the tooth of the sprocket aligns with the sensor?	Yes	Go to step 2.
		No	Go to step 3.
2	Fully rotate the PTO shaft. Does the LED on the rear of the PTO speed sensor come ON when aligned with each tooth on the sprocket? Does the LED go OFF when it is not aligned with a tooth?	Yes	Go to step 4.
		No	Position the PTO speed sensor so the LED on the rear of the sensor comes ON after each tooth aligns with the sensor.
3	Do a check of the sensor position. Is the distance from the sensor to the sprocket tooth 1 mm (0 in) to 3 mm (0.1 in)?	Yes	Go to step 4.
		No	Move the sensor to the correct position.
4	Do a check of the wiring harness for damage. Do a continuity test of the wiring harness from the PTO speed sensor to the monitor connector. Clean the connections. Make sure that there is a 9 V supply at the wiring harness connector for the PTO speed sensor. Does the PTO speed show?	Yes	Diagnostics complete.
		No	Replace or repair the wiring harness, or replace the sensor.

**The PTO speed that shows on the display is not accurate**

Step	Diagnostic	Result	Action
1	Navigate to the <b>Baler Options</b> on the terminal, is the baler model correct?	Yes	Go to step 2.
		No	Select the correct baler model.
2	Do a check of the sensor position. Is the distance from the sensor to the sprocket tooth 1 mm (0 in) to 3 mm (0.1 in)?	Yes	Go to step 3.
		No	Move the sensor to the correct position.

Step	Diagnostic	Result	Action
3	Fully rotate the baler to make sure that the sensor is calibrated correctly. Is the PTO speed that shows on the display accurate and constant during the full turn?	Yes	Diagnostics complete.
		No	Do a check of the sprocket for damage and correct alignment with the sensor.
4	Do a check of the wiring harness for damage. Do a continuity test of the wiring harness from the PTO speed sensor to the monitor connector. Clean the connections. Make sure that there is a 9 V supply at the wiring harness connector for the PTO speed sensor. Is the PTO speed that shows on the display accurate?	Yes	Diagnostics complete.
		No	Replace or repair the wiring harness, or replace the sensor.

### 1.6.3.3 Scale diagnostics



**CAUTION: Personal Protective Equipment is mandatory.**

**This procedure can cause injury.**

**Put on Personal Protective Equipment when you do this procedure.**

#### No sensor found

Step	Diagnostic	Result	Action
1	Is the scale harness is connected to the J1 power port on the load cell module.	Yes	Go to step 2.
		No	Connect the wiring harness.
2	Are the load cell harnesses are connected to the J2-J5 load cell ports of the load cell module.	Yes	Go to step 3.
		No	Connect the wiring harness.
3	Find the LEDs on the module. Does the power LED illuminate?	Yes	Go to step 5.
		No	Go to step 4.

Step	Diagnostic	Result	Action
4	Do a check of the wiring harness for damage, and a check of the continuity from the wiring harness to the monitor connector. Clean the connections. Make sure that there is a 12 V supply on the connector the module connects to. Can you identify the module?	Yes	Diagnostics complete.
		No	Do a check to make sure that the fuse (F6) is not defective. Repair or replace the wiring harness, or replace the module.
5	Does the communications LED flash 1 time, or 2 or 3 times?	LED flashes 1 time	Refer to your approved dealer.
		LED flashes 2 times	See <b>Controller Area Network Diagnostics</b> .
		LED flashes 3 times	Go to step 6.
6	Does the fault LED flash 1 time, or 2 or 3 times?	LED flashes 1 time	Low voltage warning. Do a check of the battery and the charge system.
		LED flashes 2 times	High voltage warning. Do a check of the charge system.
		LED flashes 3 times	Load sensor port failure, go to step 7.
7	The standard setting of the load sensor is if the load sensor is not in use it flashes 3 times. If a port with a fault is in operation, the LED will also flash 3 times. Change the load sensor connector from the port with a fault with the connectors from a port that operates correctly. If the fault follows the connector, see <b>Load Sensor diagnostics</b> . If the load sensor operates correctly, the other port has a fault. Replace the port that has a fault.		

### Communications LED status

Flash type	Status
Flashes quickly	Startup mode
Always ON	Standard operation
LED flashes 1 time	Source MAC address fault
LED flashes 2 times	CAN bus hardware fault
LED flashes 3 times	Standard operation

**Fault LED status**

Flash type	Status
Flashes quickly	Startup mode
LED flashes 1 time	Low voltage warning
LED flashes 2 times	High voltage warning
LED flashes 3 times	Load sensor port failure, or standard operation when 3 or less load cells are connected.

**The scales are not accurate or the empty weight is incorrect**

If the load sensor shows a value of -2.27 kg (-5 lb) to 2.27 kg (5 lb) after the scale is set to zero.

Step	Diagnostic	Result	Action
1	Remove all objects from the scale and set the scale to 0. Clean the scales and remove unwanted objects. Does the scale balance correctly?	Yes	Diagnostics complete.
		No	Go to step 2.
2	Do a check of the scale. Make sure that there is no damage to the frame of the scale. Does the scale balance correctly?	Yes	Diagnostics complete.
		No	Go to step 3.
3	Is there loose or missing hardware that attaches to the load sensors?	Yes	Go to step 4.
		No	Go to step 5.
4	Repair or replace the hardware and set the scales to 0. Does the scale balance correctly?	Yes	Diagnostics complete.
		No	Go to step 5.
5	Do a check of the load sensor or the load sensor wiring harness and connectors. Are the components damaged?	Yes	Replace or repair the components.
		No	Refer to your approved dealer.

**The load sensor display weight does not change**

Step	Diagnostic	Result	Action
1	Navigate to the <b>Scale Diagnostics</b> screen on the terminal. Does <b>NC</b> show on the screen near the load sensor icon?  <b>NOTE: NC is usual when 3 or less load sensors are connected. If there are more than 3 load sensors connected: NC is a fault with the wiring harness, load sensor, or the load sensor and the module does not connect.</b>	Yes	Go to step 2.
		No	Go to step 3.
2	Connect the load sensor wiring harness connector to the load sensor module. Does the load sensor display weight change?	Yes	Diagnostics complete.
		No	Go to step 4.
3	Do a check of the other load sensors. Does the display weight of the other load sensors change?	Yes	Replace the load sensor.
		No	Load sensor communication fault. See <b>Scale Diagnostics</b> .
4	Do a check of the position of the load sensor. Are the fasteners tight on the hardware that attaches to the load sensor?	Yes	Go to step 5.
		No	Move the load sensor to the correct position. Tighten the fasteners of the hardware that attaches to the load sensor.
5	Remove the load sensor that has a fault. Use a multimeter to measure the resistance across the pins of the load sensor. Does the resistance measure $1000 \Omega \pm 200 \Omega$ ?  <b>NOTE: For the pin layout, see <i>Load Cell Schematics</i>.</b>	Yes	Refer to your approved dealer.
		No	Replace the load sensor.

### 1.6.3.4 Needle carriage diagnostics

#### False Bale Count

Step	Diagnostic	Result	Action
1	Move the needle carriage to the home position. Does the needle carriage status sense an object (green dot) on the <b>Diagnostics</b> screen of the terminal?	Yes	Go to step 2.
		No	Go to step 3.
2	Put a metal object against the sensor. Does the lamp on the rear of the sensor illuminate?	Yes	Position the sensor so the LED illuminates when the needle carriage is in the home position.
		No	Go to step 4.
3	Does the needle carriage status show when the needle carriage is not in the home position?	Yes	Do a check of the sensor for damage, replace the sensor if necessary.
		No	Go to step 5.
4	Do a check of the wiring harness for damage. Clean the connections. Is there a 9 V supply to the connector that the sensor connects to?	Yes	Refer to your approved dealer.
		No	Repair or replace the wiring harness, or replace the sensor.
5	Do a check of the alignment of the sensor. Does the needle carriage status on the terminal show a green dot when the LED on the sensor illuminates?	Yes	Diagnostics complete.
		No	Position the sensor so the needle carriage status on the terminal shows when the LED on the rear of the sensor illuminates.

### 1.6.3.5 Fan diagnostics

#### The fan does not turn in the forward direction

Step	Diagnostic	Result	Action
1	Can the PTO speed be identified?  <b>NOTE:</b> <i>The PTO speed must be &gt;70% of the usual baler PTO speed to set the fan to ON.</i>	Yes	Go to step 2.
		No	See <b>PTO Speed Diagnostics</b> .

Step	Diagnostic	Result	Action
2	Is the fuse for the fan (F1) defective?	Yes	Replace the fuse.
		No	Go to step 3.
3	Does the fan forward relay operate correctly?	Yes	Go to step 4.
		No	Replace the relay.
4	Does the fan turn by hand? Disconnect the electrical connector from the fan and do a check that it rotates freely by hand.	Yes	Go to step 5.
		No	Replace the fan.
5	Is there damage to the harness?	Yes	Repair or replace the harness.
		No	Go to step 6.
6	Clean the connections. Is there a 12 V supply to the fan connector when the fan is set to ON?	Yes	Complete.
		No	Repair or replace the harness or fan.

**The fan does not turn in the rearward direction**

Step	Diagnostic	Result	Action
1	Can the PTO speed be identified? <b>NOTE:</b> <i>The PTO speed must be identified to start the fan.</i>	Yes	Go to step 2.
		No	<b>See PTO Speed Diagnostics.</b>
2	Do a check of the reverse time setting on the baler settings on the terminal. Is the reverse function set to OFF, or set incorrectly?	Yes	Change the settings.
		No	Go to step 3.
3	Is the fuse for the fan (F1) defective?	Yes	Go to step 4.
		No	Replace the fuse.
4	Does the fan reverse relay operate correctly?	Yes	Go to step 5.
		No	Replace the relay.

Step	Diagnostic	Result	Action
5	Does the fan turn by hand? Disconnect the electrical connector from the fan and do a check that it rotates freely by hand.	Yes	Go to step 6.
		No	Replace the fan.
6	Is there damage to the harness?	Yes	Repair or replace the harness.
		No	Go to step 7.
7	Clean the connections. Is there a 12 V supply to the connector that the fan connects to?	Yes	Complete.
		No	Repair or replace the harness.

### The fan will not turn off

Step	Diagnostic	Result	Action
1	Can the PTO speed be detected? <b>NOTE:</b> <i>The PTO speed must be detected to activate the fan.</i>	Yes	Go to step 3.
		No	Go to step 2.
2	Is a fan relay in the ON position when the fan is set to OFF? Does the fan stop when you remove a relay?	Yes	Replace the relay.
		No	Go to step 3.
3	Is there damage to the harness?	Yes	Repair or replace the harness or fan.
		No	Refer to your approved dealer.

### 1.6.3.6 Lamp diagnostics

Step	Diagnostic	Result	Action
1	Do the status lamp indicators on the diagnostic screen illuminate when lamps are set to ON?	Yes	Go to step 2.
		No	Go to step 3.
2	Are the keypad status indicator lamps on?	Yes	Go to step 3.



Step	Diagnostic	Result	Action
		No	See <b>CAN diagnostics</b> .
3	Does the fuse for the lamp operate correctly?	Yes	Go to step 4.
		No	Replace the fuse.
4	Does the relay for the service lamp and the relay for the field lamp operate correctly?	Yes	Go to step 5.
		No	Replace the relay.
5	Is there damage to the harness?	Yes	Replace the harness.
		No	Go to step 6.
6	Do a check of the connectors. Is there a 12 V supply to the connectors?	Yes	Refer to your approved dealer.
		No	Repair or replace the lamps.

### 1.6.3.7 Automatic lubrication system diagnostics

Step	Diagnostic	Result	Action
1	Is the automatic lubrication enabled on the <b>Baler Options</b> on the terminal?	Yes	Go to step 2.
		No	Activate the automatic lubrication function on the <b>Baler Options</b> on the terminal.
2	Can the PTO speed be identified?	Yes	Go to step 3.
		No	See <b>PTO Speed Diagnostics</b> .
3	Does the <b>Bale Count</b> operate correctly? <b>NOTE:</b> <i>The automatic lubrication system function is operated by the <b>Bale Count</b>.</i>	Yes	Go to step 4.
		No	See <b>Needle Carriage Diagnostics</b> .
4	Do a manual lubrication cycle from the keypad. Does the lubrication pump operate for 15 seconds?	Yes	Go to the <b>Baler Settings</b> screen on the terminal and change the lubrication pump duration and interval.

Step	Diagnostic	Result	Action
		No	<p>Do a check of the lubrication pump and relay.</p> <p>Do a check of the wiring to the lubrication pump.</p> <p>Do a check of the lubrication pump. Use a multimeter to see if there is an internal short in the lubrication pump motor.</p>

**1.6.3.8 Bale pressure system diagnostics**



**WARNING:** The machine or parts can move without notification.

The machine and its parts are heavy and can cause death or injury.

Park the machine on a clean, hard and level area.

Set the parking brake to ON and install the wheel chocks.

If an implement is on the machine, lower the implement to the ground.

Stop the engine and remove the ignition key.



**CAUTION:** Personal Protective Equipment is mandatory.

This procedure can cause injury.

Put on Personal Protective Equipment when you do this procedure.

**Hydraulic pressure not stable**

Step	Diagnostic	Result	Action
1	Was the air removed from the hydraulic valve after repairs on the hydraulic system, or before the first start of the machine?	Yes	Calibrate the hydraulic valve. See <b>Calibrations</b> .
		No	Remove the air from the hydraulic system. Go to step 2.
2	Is the hydraulic pressure stable?	Yes	Diagnostics complete.
		No	Calibrate the hydraulic valve. To calibrate the hydraulic valve, see the <b>Calibrations</b> section.

**Hydraulic system not building pressure**

Step	Diagnostic	Result	Action
1	Set the PTO to ON, set the manual mode to ON and set the manual voltage to 5 V. Does pressure increase in the hydraulic system?	Yes	Go to step 2.
		No	Go to step 3.
2	Increase the engine rpm to set the PTO speed to the standard operation speed. Is the PTO speed on the display correct?	Yes	Go to step 4.
		No	See <b>PTO Diagnostics</b> .
3	Set the manual mode to ON and set the manual voltage to 5 V. Use a multimeter to do a check of the solenoid valve. Can the multimeter find a 5 V electrical voltage?  <b>NOTE:</b> <i>The voltage measured must be <math>\pm 1</math> V from the voltage that shows on the terminal.</i>	Yes	Go to step 5.
		No	Replace the solenoid.
4	Is the pressure sensor in fault mode or does the display show 0 psi?	Yes	Do a check of the pressure transducer. Replace the transducer if necessary.
		No	Go to step 6.
5	Set the manual mode to ON and set the manual voltage to 5 V. Does an object made from iron attach to the solenoid?	Yes	Go to step 6.
		No	Do a check of the wiring harness. If there is damage to the wiring harness, repair or replace the wiring harness.
6	Calibrate the hydraulic valve. Does pressure increase in the hydraulic system?	Yes	Diagnostics complete.
		No	Go to step 7.
7	Do a check of the hydraulic density cylinder. Does it operate correctly with no leaks?	Yes	Go to step 8.
		No	Replace the hydraulic density cylinder.

Step	Diagnostic	Result	Action
8	Do a check of the oil pump reservoir. Is the level of oil correct?	Yes	Go to step 9.
		No	Add oil.
9	Do a check of the hydraulic hoses. Are there leaks or failures on the hoses?	Yes	Repair the hydraulic hoses.
		No	Go to step 10.
10	Do a check of the drive mechanism for the oil pump. Does it operate correctly?	Yes	Go to step 11.
		No	Replace the oil pump drive chain.
11	Rotate the oil pump and do a check if it operates correctly. Is the internal key in good condition and operating correctly?	Yes	Go to step 12.
		No	Replace the oil pump.
12	Do a check of the hydraulic valve. Are there unwanted objects in the valve stems?	Yes	Clean the hydraulic valve and remove the unwanted objects.
		No	Refer to your approved dealer.

#### Bale chamber pressure reduction does not function correctly

Step	Diagnostic	Result	Action
1	Is the PTO speed less than 70% of the standard PTO speed?	Yes	Go to step 2.
		No	Decrease the PTO speed.
2	Does the compression cycle status indicator illuminate on the <b>Baler Diagnostics</b> page of the terminal?	Yes	For 1844 models: See <b>Hydraulics system not building pressure</b> diagnostics.
		No	Refer to your approved dealer.

### 1.6.3.9 CAN bus diagnostics

#### The CAN bus keypad does not operate correctly

Step	Diagnostic	Result	Action
1	Do some of the first LEDs on the keypad buttons come ON when you set the machine to ON?	Yes	See <b>General CAN bus diagnostics</b> .
		No	Go to step 2.
2	Do the keypad lamps come ON when you set the machine to ON?	Yes	See <b>General CAN bus diagnostics</b> .
		No	Do a check of fuse 6, replace if it is necessary.
3	Is there power to the CAN bus keypad?	Yes	Go to step 4.
		No	Go to step 4.
4	Use a multimeter to do a check of the CAN bus keypad connector. Can the multimeter find a 12 V electrical current?	Yes	Refer to your approved dealer.
		No	Do a check of fuse 6, replace if necessary.

#### General CAN bus diagnostics

Step	Diagnostic	Result	Action
1	Are the 2 resistors installed on the CAN bus? There is a resistor at the aft of the baler and a resistor on the cab harness connector.	Yes	Go to step 2.
		No	Install the 2 resistors on the CAN bus.
2	Use a multimeter to do a check of the CAN bus. Can the multimeter find an electrical current?  <b>NOTE:</b> <i>The typical voltage for the CAN is 2.3 V for CAN low and 2.7 V for CAN high.</i>	Yes	Do a check of the CAN bus hardware for damage or broken wires.
		No	Go to step 3.
3	Do a check of the moisture sensor, the CAN bus keypad, and the scale module. To see if a hardware device creates a CAN communication fault, disconnect each hardware device 1 at a time.		Replace broken hardware.

## 1.6.4 Fault codes

### 1.6.4.1 Fault codes overview

Go to the fault code menu to see stored fault codes. You can configure the home screen to show the fault code menu.

Icon	Description
	Fault code menu

### 1.6.4.2 Erase a fault code

#### Procedure

1. Move the cursor with the keypad buttons to the applicable fault code.

2. Press the **OK** button on the keypad.

**NOTE:** *The fault code details display.*

3. Press the button to delete the fault code.

**NOTE:** *It is not possible to delete active fault codes.*

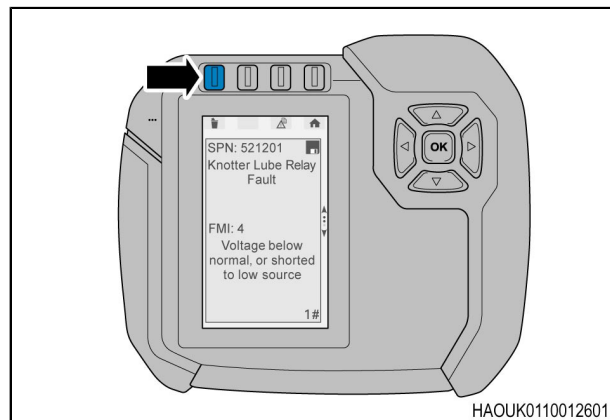


Fig. 13

### 1.6.4.3 Fault codes

Fault title on display	Fault code	System	Fault level	System condition description
Keyswitch battery potential	158	Standard	High	Battery voltage is higher than 16 V
Keyswitch battery potential	158	Standard	High	Battery voltage is lower than 10.5 V
Hydraulic pressure	1762	Standard	High	Valve pressure is higher than 200 psi
Sensor power 2 fault	3509	Standard	High	Sensor voltage is lower than 4.5 V

Fault title on display	Fault code	System	Fault level	System condition description
Sensor power 2 fault	3509	Standard	High	Sensor voltage is higher than 5.5 V
Sensor power 1 fault	3510	Standard	High	Sensor voltage is lower than 8.5 V
Sensor power 1 fault	3510	Standard	High	Sensor voltage is higher than 9.5 V
Hydraulic pressure sensor	520201	Hydraulic and load control	High	Standard input fault
Decompress solenoid fault	520205	Hydraulic and load control	Low	Standard output fault
Pressure control solenoid fault	520206	Hydraulic and load control	High	Standard output fault
Hydraulic response fault	520207	Hydraulic and load control	Low	The bailer is ON and the hydraulic pressure is 50 psi lower than the applicable pressure
Rear keypad fault	520401	Keypad	Low	The keypad does not connect to the machine for more than 3 seconds while the machine is in operation.  The machine can not connect to the keypad for more than 5 seconds after the machine is set to ON.

Fault title on display	Fault code	System	Fault level	System condition description
Moisture system fault	520501	Moisture system	Low	<p>The moisture system is set to ON and:</p> <ul style="list-style-type: none"> <li>• There is no communication from the moisture sensor for 3 seconds.</li> <li>• The system type data is unknown.</li> <li>• There is a 30 second configuration delay.</li> </ul>
Moisture system fault	520501	Moisture system	Low	The moisture function is OFF and the machine can not find the moisture system.
Scale module fault	520701	Chute scale	Low	The scale function is OFF and the machine can not find the Load Sensor Module (LSM) system.
Insufficient load cells	520702	Chute scale	Low	Load Sensor Module (LSM) is ON and the system senses that there are less than or more than 3 load cells.
Bale length sensor fault	520901	Knotter system	High	Standard analog input fault.
Knotter trip relay fault	520905	Knotter system	High	Standard output fault.
Continuous needles cycling	520909	Knotter system	High	Baler is in operation and on the twine tie cycle the start flake count of the bale is less than 1.



Fault title on display	Fault code	System	Fault level	System condition description
Needles not home	520910	Knotter system	High	Baler is in operation and the needles have been away from the start position for more than 1 flake.
				The needles are not at the start position on startup.
Tie cycle fault	520912	Knotter system	High	After the knotter was set to ON, the machine did not get a signal that the tie cycle started: -2 times in automatic mode. -1 time in manual mode.
Bale oversize	520914	Knotter system	Low	The current bale length is equal to or more than 100 mm (3.9 in) over the set bale length.
Knotter fan forward relay fault	520915	Knotter system	Low	Module configuration and standard output fault.
Knotter fan reverse relay fault	520917	Knotter system	Low	Module configuration and standard output fault.
Flywheel shearbolt failure	521008	Drives/Gears	High	The PTO speed decreased faster than the approved value for the machine.
No PTO speed detected	521009	Drives/gears	Low	The PTO speed signal is lower than 100 rpm, but the machine is in operation and it makes bales.

Fault title on display	Fault code	System	Fault level	System condition description
Service light relay fault	521101	Lamps	Low	Standard output fault.
Field light relay fault	521102	Lamps	Low	Standard output fault.
Knotter lube relay fault	521201	Oilers	High	Standard output fault.

## 2 Electrical system

<b>2.1</b>	<b>Adjust the star wheel sensor .....</b>	<b>45</b>
<b>2.2</b>	<b>Adjust the needle carriage sensor.....</b>	<b>48</b>
<b>2.3</b>	<b>Adjust the PTO speed sensor .....</b>	<b>51</b>
<b>2.4</b>	<b>Update the terminal software.....</b>	<b>55</b>



## 2.1 Adjust the star wheel sensor



**DANGER: Dangerous area.**

**Risk of death or injury.**

**Before you go into the area between the machine and the implement:**

**Park the machine on a clean, hard and level area.**

**Put the parking brake to ON.**

**If an implement is on the machine, lower the implement to the ground.**

**Set the ignition to OFF.**

**Install the wheel chocks.**



**WARNING: The machine or parts can move without notification.**

**The parts that move can cause death or injury.**

**Before you do work on the machine:**

**If an implement is on the machine, lower the implement to the ground.**

**Stop the engine.**

**Remove the ignition key.**

**Disconnect the PTO shaft.**



**WARNING: Entanglement with the PTO shaft.**

**Risk of death or injury.**

**Make sure that the guards are in position and always operate correctly.**

**If a guard breaks or is missing, repair or replace it before you use the machine.**



**CAUTION: Personal Protective Equipment is mandatory.**

**This procedure can cause injury.**

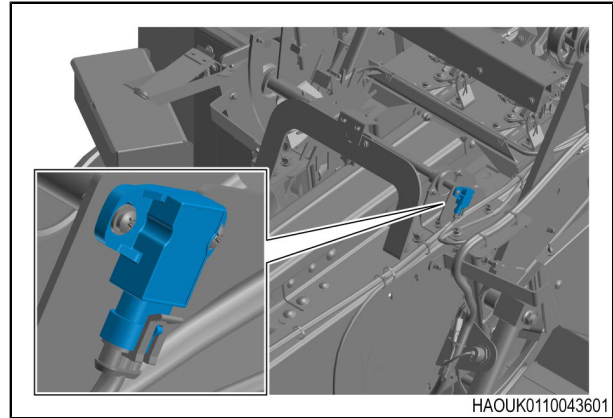
**Put on Personal Protective Equipment when you do this procedure.**

**Before starting the procedure**

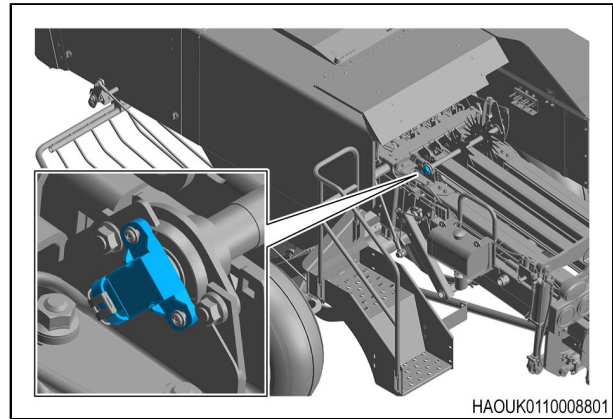
Number	Part number	Description	Quantity
(1)	ACX4656760	Guide tool	1

**Procedure**

1. Get access to the star wheel sensor.



**Fig. 1** 1840 models



**Fig. 2** 1844 models

2. Use the guide tool ACX4656760 (1) to examine the alignment of the star wheel sensor.

**Result**

The top of the star wheel sensor must align with the holes in the guide tool ACX465670 (1).

3. Adjust the position of the star wheel sensor if it is necessary.
4. Loosen, but do not fully remove the 2 fasteners.
5. Move the star wheel sensor to the correct position and then tighten the 2 fasteners to the approved torque.
6. Remove the guide tool ACX465670 (1).

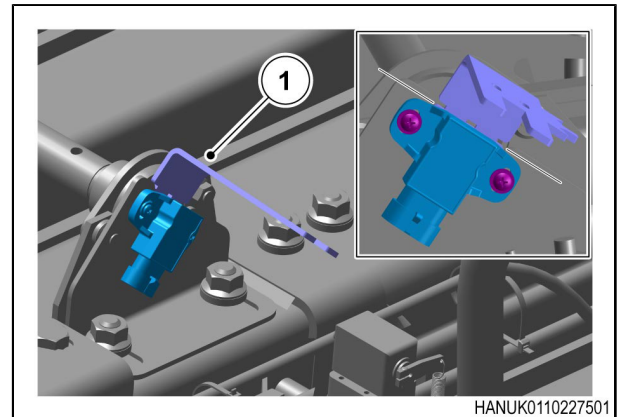


Fig. 3

7. Measure the distance (A) between the star wheel sensor and the magnet on the end of the shaft.

**Result**

The distance (A) must be 1 mm (0 in) to 3 mm (0.1 in).

8. Adjust the star wheel sensor assembly if it is necessary.
9. Loosen, but do not fully remove the 2 fasteners.
10. Move the star wheel sensor assembly to the set distance (A) to 1 mm (0 in) to 3 mm (0.1 in).
11. Tighten the 2 fasteners to the approved torque.
12. Do a check to make sure that the star wheel sensor operates correctly.

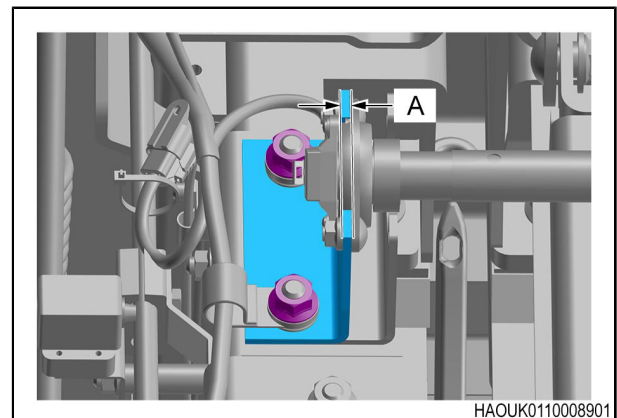


Fig. 4

**IMPORTANT:** Make sure that the wiring harness is connected to the star wheel sensor.

## 2.2 Adjust the needle carriage sensor



**DANGER: Dangerous area.**

**Risk of death or injury.**

**Before you go into the area between the machine and the implement:**

**Park the machine on a clean, hard and level area.**

**Put the parking brake to ON.**

**If an implement is on the machine, lower the implement to the ground.**

**Set the ignition to OFF.**

**Install the wheel chocks.**



**WARNING: The machine or parts can move without notification.**

**The parts that move can cause death or injury.**

**Before you do work on the machine:**

**If an implement is on the machine, lower the implement to the ground.**

**Stop the engine.**

**Remove the ignition key.**

**Disconnect the PTO shaft.**



**WARNING: Entanglement with the PTO shaft.**

**Risk of death or injury.**

**Make sure that the guards are in position and always operate correctly.**

**If a guard breaks or is missing, repair or replace it before you use the machine.**



**CAUTION: Personal Protective Equipment is mandatory.**

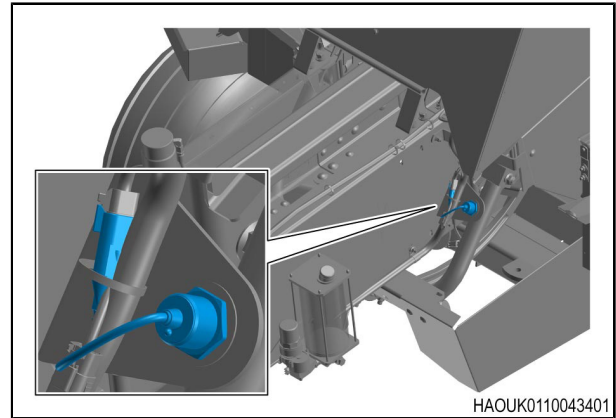
**This procedure can cause injury.**

**Put on Personal Protective Equipment when you do this procedure.**

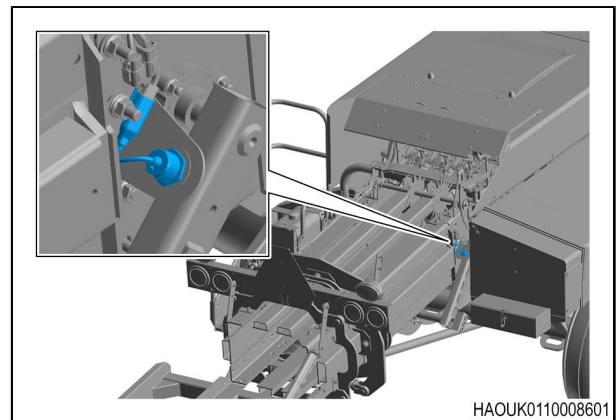


**Procedure**

1. Get access to the needle carriage sensor.



**Fig. 5** 1840 models



**Fig. 6** 1844 models

2. Loosen, but do not fully remove the 2 fasteners on the needle carriage sensor.
3. Use the 2 fasteners to adjust the position of the needle carriage sensor. The distance (A) must be 3 mm (0.1 in) to 7 mm (0.3 in) when the needle carriage is at the home position.
4. Tighten the 2 fasteners to the approved torque.
5. Do a check to make sure that the needle carriage cannot touch the sensor or move out of range when it is at the home position.

**IMPORTANT:** Make sure that the wiring harness is connected to the needle carriage sensor.

- a) Set the ignition switch to ON.
- b) Slowly move the needle carriage and examine the LED at the rear of the sensor.

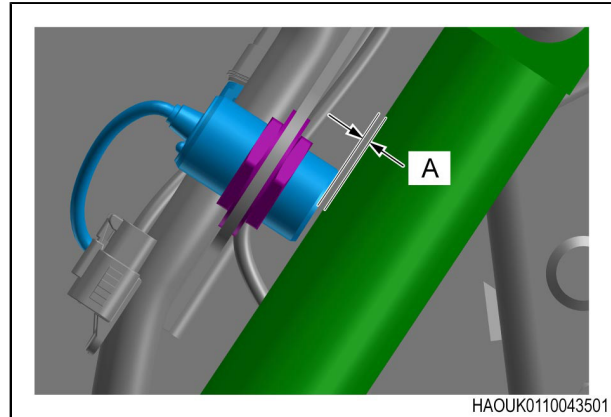


Fig. 7 1840 models

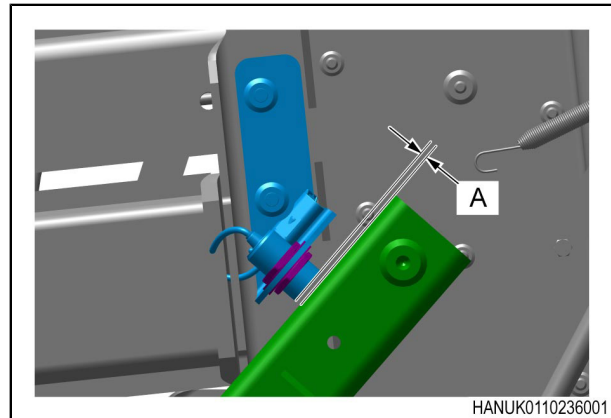


Fig. 8 1844 models

### Result of the procedure

The needle carriage sensor clearance is set correctly when:

- The LED is ON when the needle carriage is in the home position.
- The LED is OFF when the needle carriage is not in the home position.

## 2.3 Adjust the PTO speed sensor



**DANGER: Dangerous area.**

**Risk of death or injury.**

**Before you go into the area between the machine and the implement:**

**Park the machine on a clean, hard and level area.**

**Put the parking brake to ON.**

**If an implement is on the machine, lower the implement to the ground.**

**Set the ignition to OFF.**

**Install the wheel chocks.**



**WARNING: The machine or parts can move without notification.**

**The parts that move can cause death or injury.**

**Before you do work on the machine:**

**If an implement is on the machine, lower the implement to the ground.**

**Stop the engine.**

**Remove the ignition key.**

**Disconnect the PTO shaft.**



**WARNING: Entanglement with the PTO shaft.**

**Risk of death or injury.**

**Make sure that the guards are in position and always operate correctly.**

**If a guard breaks or is missing, repair or replace it before you use the machine.**



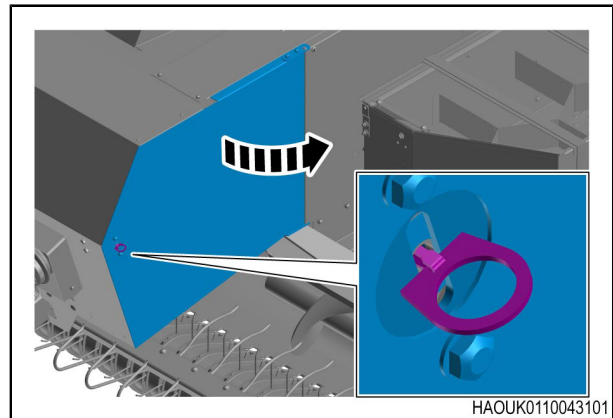
**CAUTION: Personal Protective Equipment is mandatory.**

**This procedure can cause injury.**

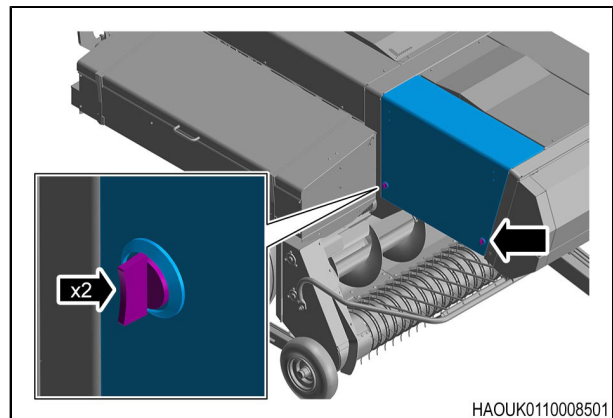
**Put on Personal Protective Equipment when you do this procedure.**

**Procedure**

1. Open the cover.
  - For 1840 models: lift and turn the fastener. Open the cover.
  - For 1844 models: Turn the 2 fasteners and open the cover.

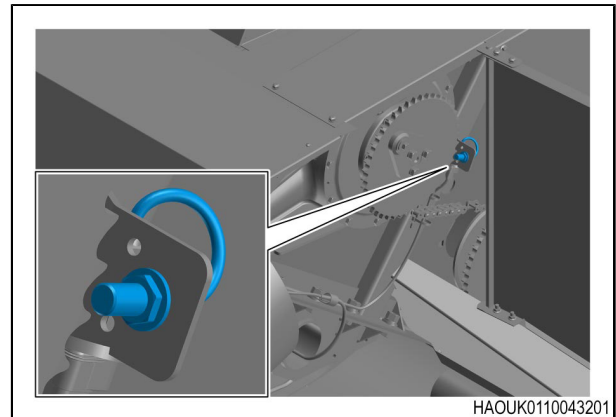


**Fig. 9** 1840 models

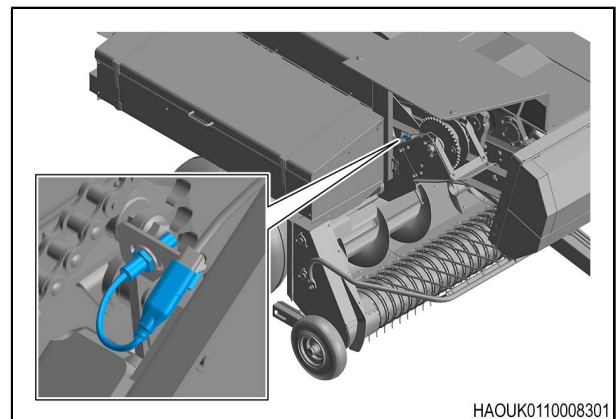


**Fig. 10** 1844 models

2. Get access to the PTO speed sensor.



**Fig. 11** 1840 models



**Fig. 12** 1844 models

3. Loosen, but do not fully remove the 2 fasteners on the PTO speed sensor.
4. Use the 2 fasteners to adjust the position of the PTO speed sensor. The distance (A) must be 1 mm (0 in) to 3 mm (0.1 in).
5. Tighten the fasteners to the approved torque.
6. Turn the machine slowly 1 full turn by hand. Make sure that the sprocket does not contact or move out of range of the sensor.
7. Do a check to make sure that the sensor operates correctly.

**IMPORTANT:** Make sure that the wiring harness is connected to the PTO speed sensor.

- a) Set the ignition switch to ON.
- b) Slowly move the PTO speed sensor sprocket and examine the LED at the rear of the sensor.

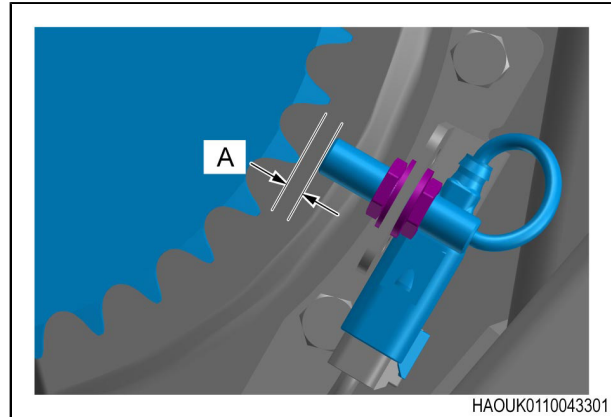


Fig. 13 1840 models

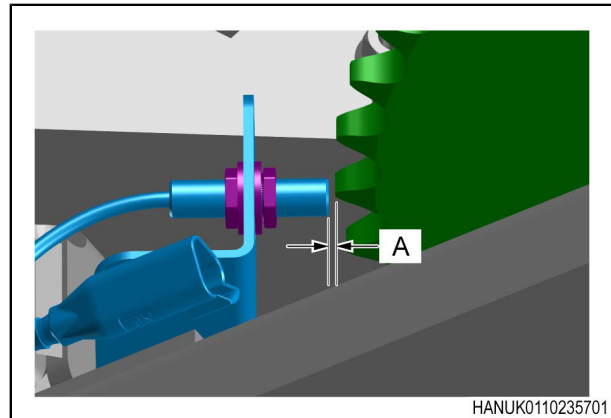


Fig. 14 1844 models

### Result of the procedure

The PTO speed sensor clearance is set correctly when:

- The LED is ON when the sensor is adjacent to a sprocket tooth.
- The LED is OFF when the sensor is not adjacent to a sprocket tooth.

## 2.4 Update the terminal software

### Terminal information page

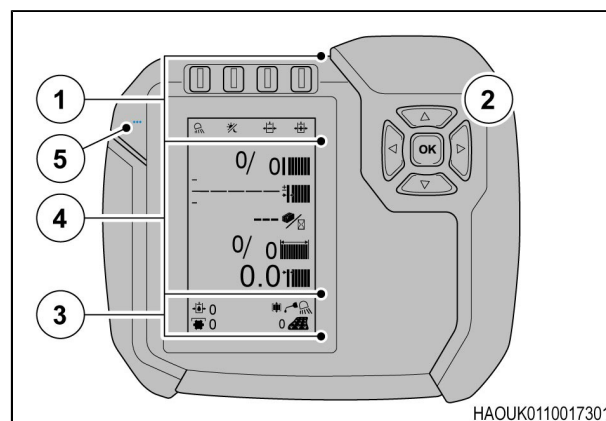


Fig. 15

(1)	Buttons that the operator can configure
(2)	Keypad
(3)	Machine status indicators
(4)	Home screen data
(5)	Speaker

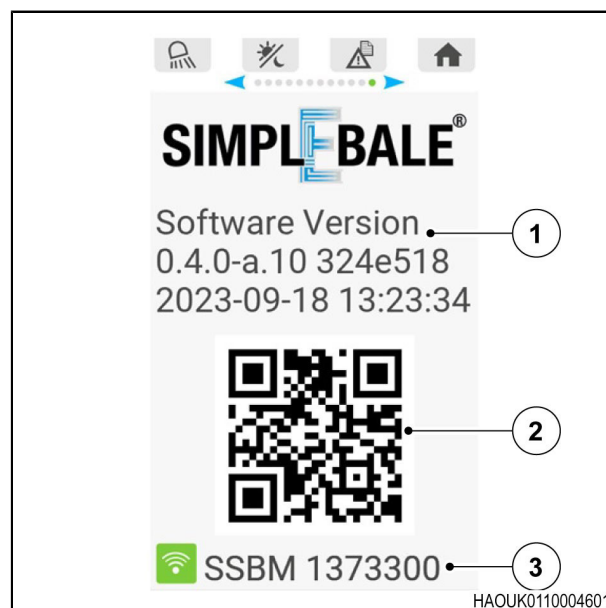


Fig. 16

(1)	Software version and build date.
(2)	QR code for the wireless network connection. <b>NOTE:</b> When the approved wireless device connects to the Ag Co-Pilot terminal wireless the QR code changes to the software download page.
(3)	Wireless on/off and SSBM (Small Square Baler terminal) device identification number of the terminal.

### Procedure

- Download the applicable software update from the AGCO service portal.  
**NOTE:** AGCO will update the Ag Co-Pilot software. Software updates are available to download from the AGCO service portal at no cost. You can install the software updates on the Ag Co-Pilot with an applicable wireless phone or tablet computer.
- Save the file to the wireless device that you use to update the software to the Ag Co-Pilot terminal.

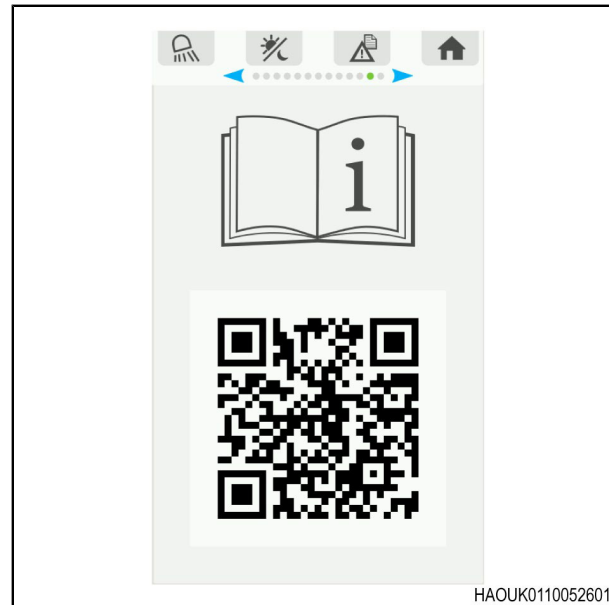


Fig. 17

HAOUK0110052601



3. Scan the QR code shown on the information screen of the Ag Co-Pilot terminal.

**IMPORTANT:** Use the same wireless device that you used to download the software update.

4. When the QR code is scanned, a message will appear to **Connect to a network** that is transmitted from the Ag Co-Pilot terminal.

**IMPORTANT:** The SSBM information shown on the Ag Co-Pilot terminal and the one shown on the wireless device must be the same.



Fig. 18

5. When the wireless device is connected to the Ag Co-Pilot terminal wireless network the QR code will change to a different code.

- a) Scan the new QR code on the Ag Co-Pilot terminal with the wireless device and you will be asked to **Show options**.
- b) When you press **Show options** on the wireless device, it will automatically copy the link provided by the QR code on the Ag Co-Pilot terminal.

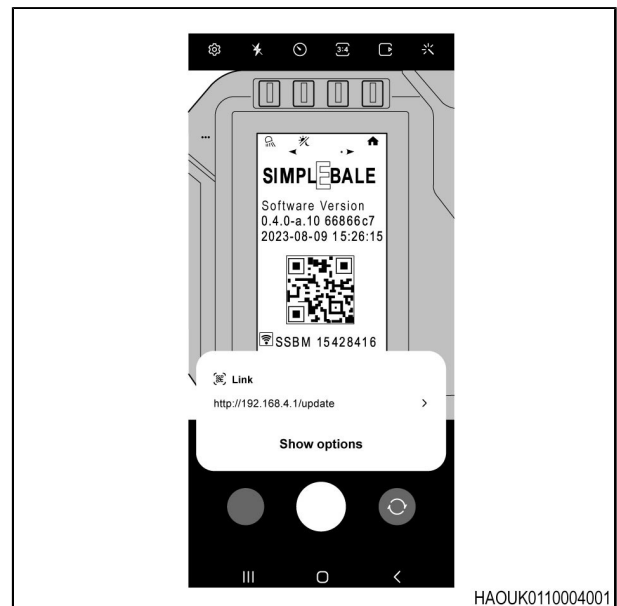


Fig. 19

6. Select **Update** on the SimplEbale portal.

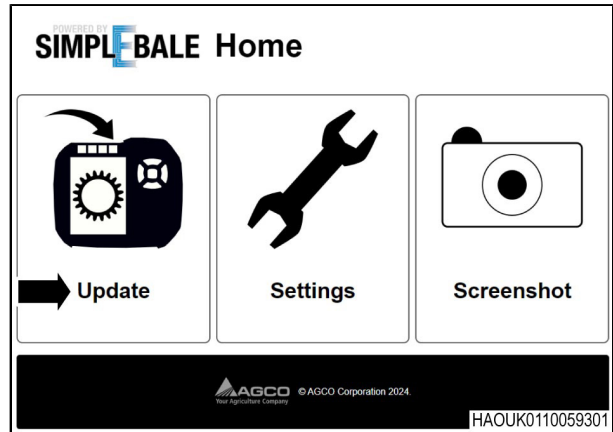


Fig. 20 Update the software with a PC

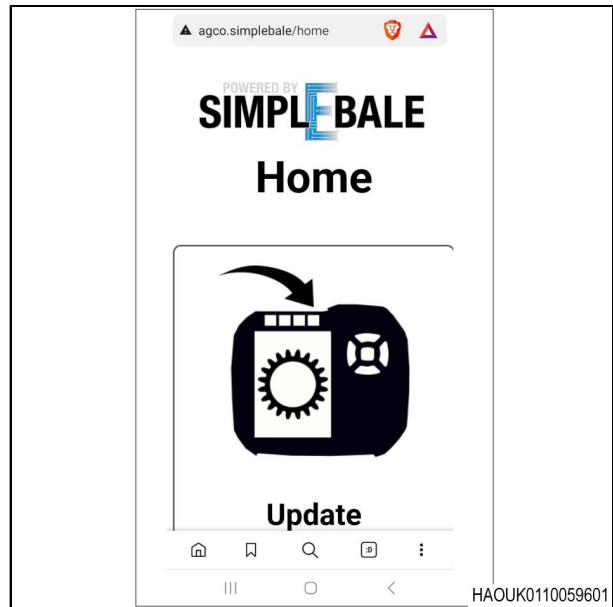


Fig. 21 Update the software with an Android phone

7. When the wireless device connects to the **Firmware Update** page, the downloaded software update file will be necessary to update the Ag Co-Pilot terminal.
8. Search for the file that was downloaded in step 2.



Fig. 22 Update the software with a PC



Fig. 23 Update the software with an Android phone

- When the applicable file is selected the **Update Firmware** button can be selected.

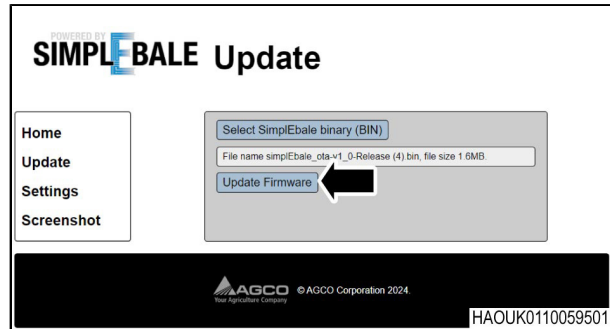


Fig. 24 Update the software with a PC

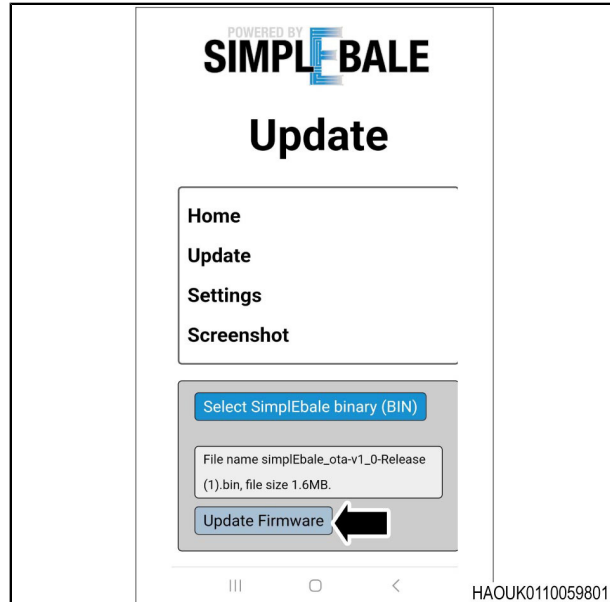


Fig. 25 Update the software with an Android phone

- The status of the software update is shown as the update is in progress. When the update is complete the Ag Co-Pilot terminal will automatically restart.

**NOTE:** Check the new software version number on the Ag Co-Pilot terminal information screen.

- After the software update is complete, disconnect the wireless device from the Ag Co-Pilot terminal.


## 3 Hydraulic system

<b>3.1</b>	<b>Release the hydraulic pressure on the bale chamber .....</b>	<b>63</b>
<b>3.2</b>	<b>Bleed the air from the hydraulic density control valve .....</b>	<b>64</b>



### 3.1 Release the hydraulic pressure on the bale chamber

#### Procedure

1. Use the keypad to go to the hydraulic control menu.
2. Select the  icon to release the hydraulic pressure in the bale chamber. You can also operate this function with the baler keypad.

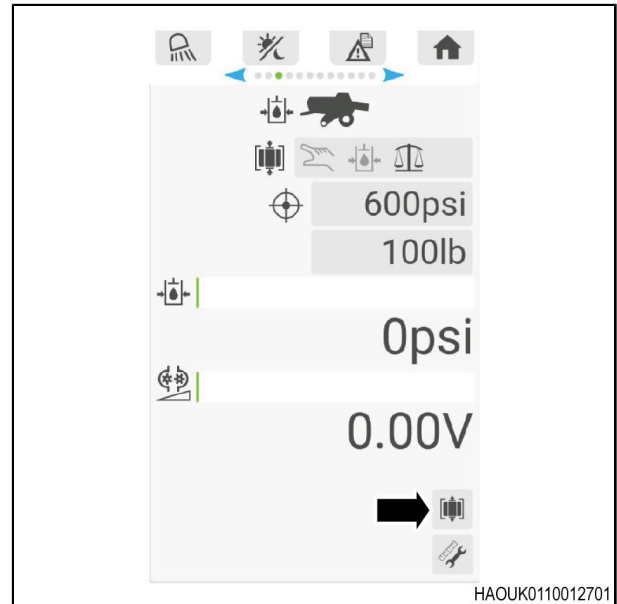


Fig. 1

## 3.2 Bleed the air from the hydraulic density control valve



**WARNING:** The machine or parts can move without notification.

The parts that move can cause death or injury.

Before you do work on the machine:

If an implement is on the machine, lower the implement to the ground.

Stop the engine.

Remove the ignition key.

Disconnect the PTO shaft.



**WARNING:** Entanglement with the PTO shaft.

Risk of death or injury.

Make sure that the guards are in position and always operate correctly.

If a guard breaks or is missing, repair or replace it before you use the machine.



**CAUTION:** Personal Protective Equipment is mandatory.

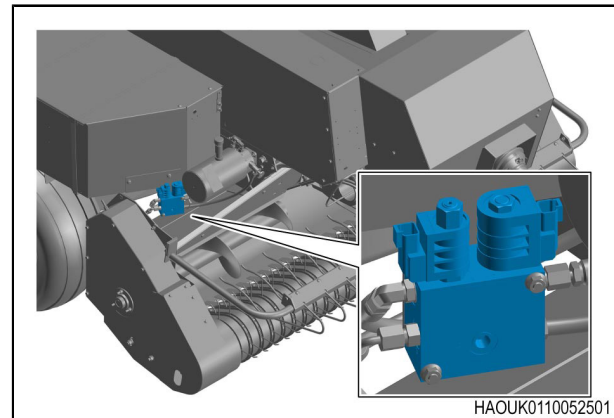
This procedure can cause injury.

Put on Personal Protective Equipment when you do this procedure.

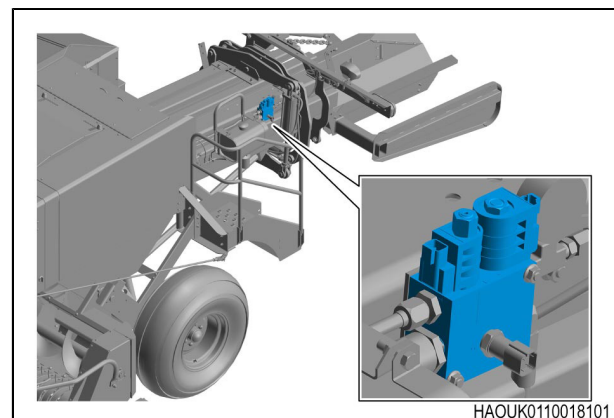


**Procedure**

1. Get access to the hydraulic density control valve.
2. Put an applicable container below the hydraulic density control valve.

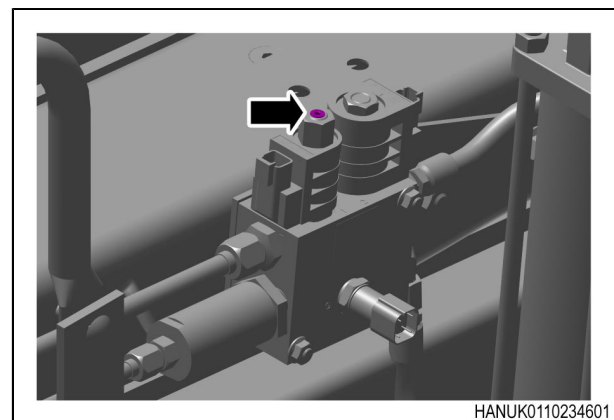


**Fig. 2** 1840 models



**Fig. 3** 1844 models

3. Remove the bleed screw on top of the hydraulic density control valve.
4. Start the engine on the tractor.
5. Engage the PTO and increase the PTO speed to the operation speed.
6. Examine the top of the hydraulic density control valve. Hydraulic oil and air bubbles will slowly release from the port.
7. When there are no air bubbles in the hydraulic oil coming out, install the bleed screw and tighten to the approved torque.
8. Decrease the PTO speed.
9. Disengage the PTO.



**Fig. 4**

10. Stop the engine on the tractor.
11. Remove the applicable container from below the hydraulic density control valve.
12. Clean the hydraulic oil that spilled during the bleed process.

**After finishing the procedure**

- Examine the level of the hydraulic oil. Add more hydraulic oil if it is necessary.

## 4 Diagrams

<b>4.1</b>	<b>Electrical component list .....</b>	<b>68</b>
<b>4.2</b>	<b>Wiring diagram .....</b>	<b>71</b>
<b>4.3</b>	<b>Subsystem diagrams .....</b>	<b>73</b>
4.3.1	5 V sensors .....	75
4.3.2	9 V sensors .....	76
4.3.3	12 V after the ignition switch .....	77
4.3.4	12 V power supply .....	78
4.3.5	Pins not used on the controller .....	79
4.3.6	Diagnostics .....	80
4.3.7	Fan .....	81
4.3.8	Ground .....	82
4.3.9	Ground 2 .....	83
4.3.10	Hydraulic system .....	84
4.3.11	Knotter .....	85
4.3.12	Light system .....	86
4.3.13	Light system 2 .....	87
4.3.14	Light system 3 .....	88
4.3.15	CAN bus .....	89

## 4.1 Electrical component list

Symbol Name	DIN Number	Function	Location
[CAB...A1]	A1	CONTROL MONITOR	CAB
[HNA...A26]	A26	Flasher Module	HNA
[SSC...B04]	B04	GEARBOX RPM	SSC
[PSC...B04]	B04	GEARBOX RPM	PSC
[SSC...B07]	B07	DENSITY PRESSURE	SSC
[PSC...B07]	B07	DENSITY PRESSURE	PSC
[SSC...B18]	B18	BALE LENGTH	SSC
[PSC...B18]	B18	BALE LENGTH	PSC
[UCH...E03]	E03	PU LIGHT	UCH
[UCH...E05]	E05	SERVICE LIGHT	UCH
[UCH...E17]	E17	KNOTTER LIGHT	UCH
[UCH...E19]	E19	NEEDLE LIGHT	UCH
[UCH...E204]	E204	Ladder Light	UCH
[UCH...E23]	E23	FIELD LIGHT LH	UCH
[UCH...E24]	E24	FIELD LIGHT RH	UCH
[CAB...F1]	F1	+12 V Power	CAB
[SSC...F1]	F1	Fan Power	SSC
[PSC...F1]	F1	Fan Power	PSC
[CAB...F2]	F2	Switched Power	CAB
[SSC...F3]	F3	+12V Power	SSC
[PSC...F3]	F3	+12V Power	PSC
[SSC...F4]	F4	Lube Power	SSC

Symbol Name	DIN Number	Function	Location
[PSC...F4]	F4	Lube Power	PSC
[PSC...F5]	F5	Knotter Power	PSC
[SSC...F5]	F5	Knotter Power	SSC
[HPS...F6]	F6	+12 V	HPS
[PSC...K1]	K1	Fan Fwd	PSC
[SSC...K1]	K1	Fan Fwd	SSC
[PSC...K2]	K2	Fan Rev	PSC
[SSC...K2]	K2	Fan Rev	SSC
[PSC...K3]	K3	Field Lighting	PSC
[SSC...K3]	K3	Field Lighting	SSC
[PSC...K4]	K4	Lube	PSC
[SSC...K4]	K4	Lube	SSC
[PSC...K5]	K5	Knotter Trip	PSC
[SSC...K5]	K5	Knotter Trip	SSC
[PSC...K6]	K6	Service Lighting	PSC
[SSC...K6]	K6	Service Lighting	SSC
[PSC...M01]	M01	TERM RES	PSC
[SSC...M01]	M01	TERM RES	SSC
[PSC...M02]	M02	KNOTTER TRIP	PSC
[SSC...M02]	M02	KNOTTER TRIP	SSC
[CAB...M03]	M03	TERM RES	CAB



## 4.2 Wiring diagram

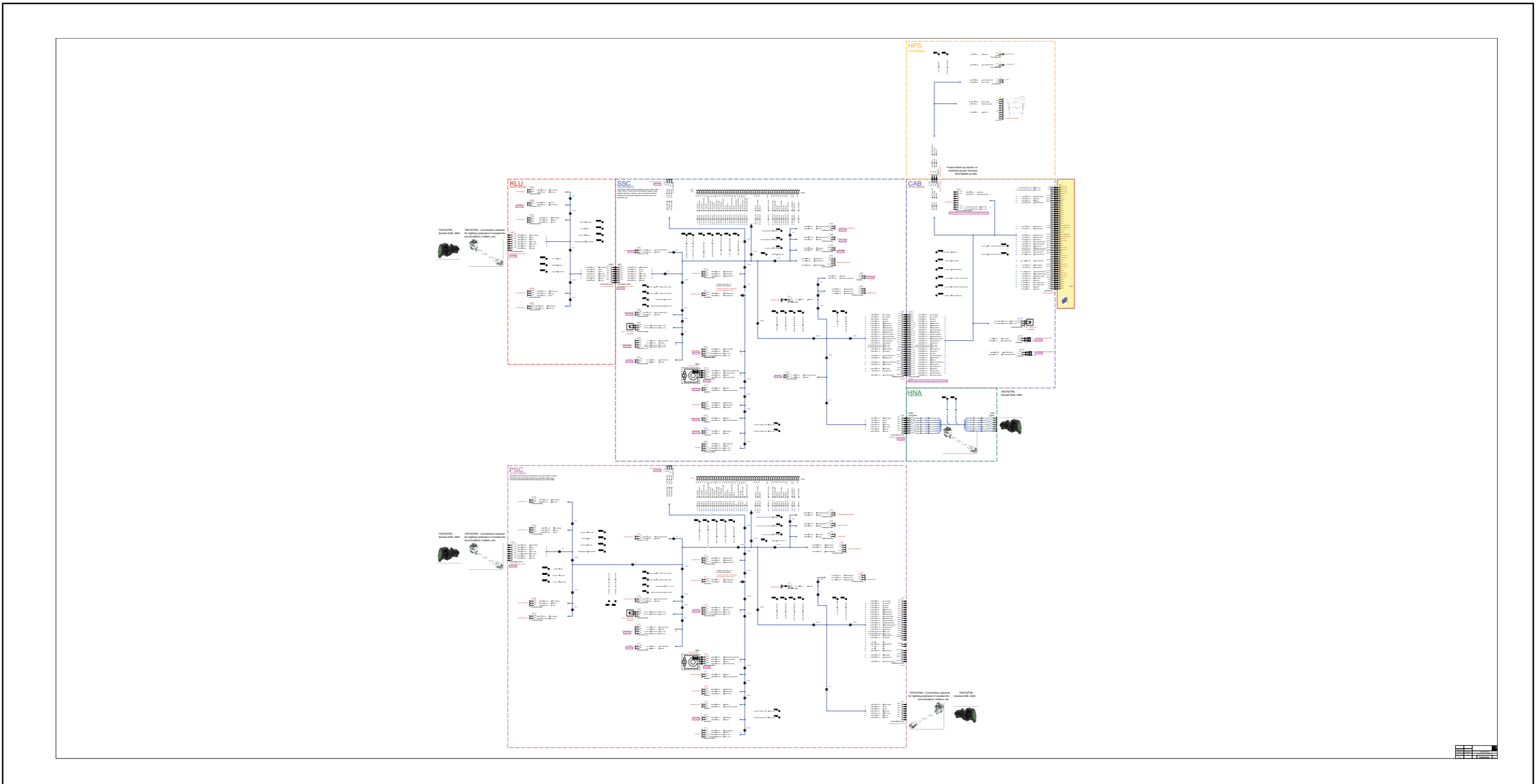


Fig. 1





## 4.3 Subsystem diagrams



4.3.1 5 V sensors

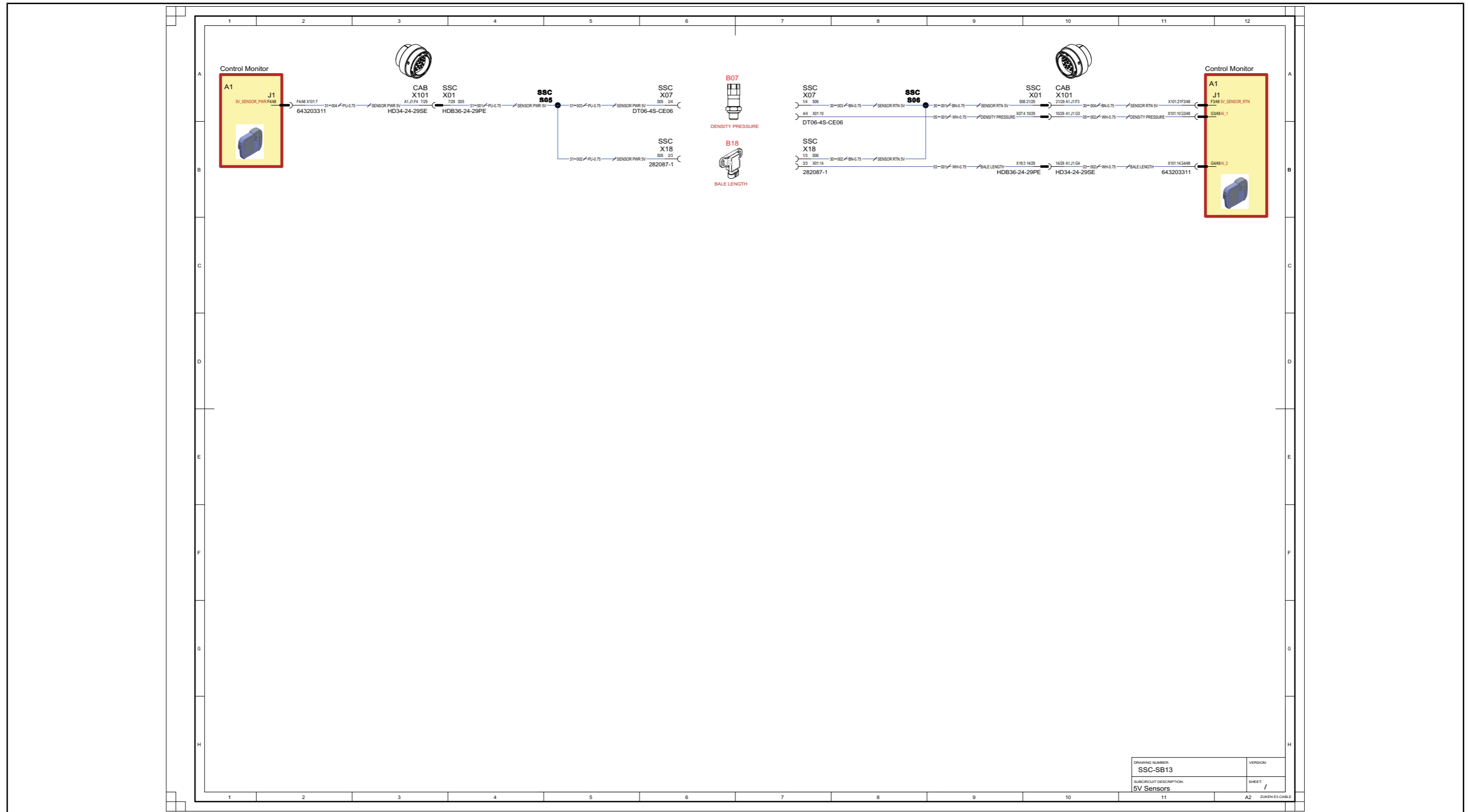


Fig. 2

4.3.2 9 V sensors

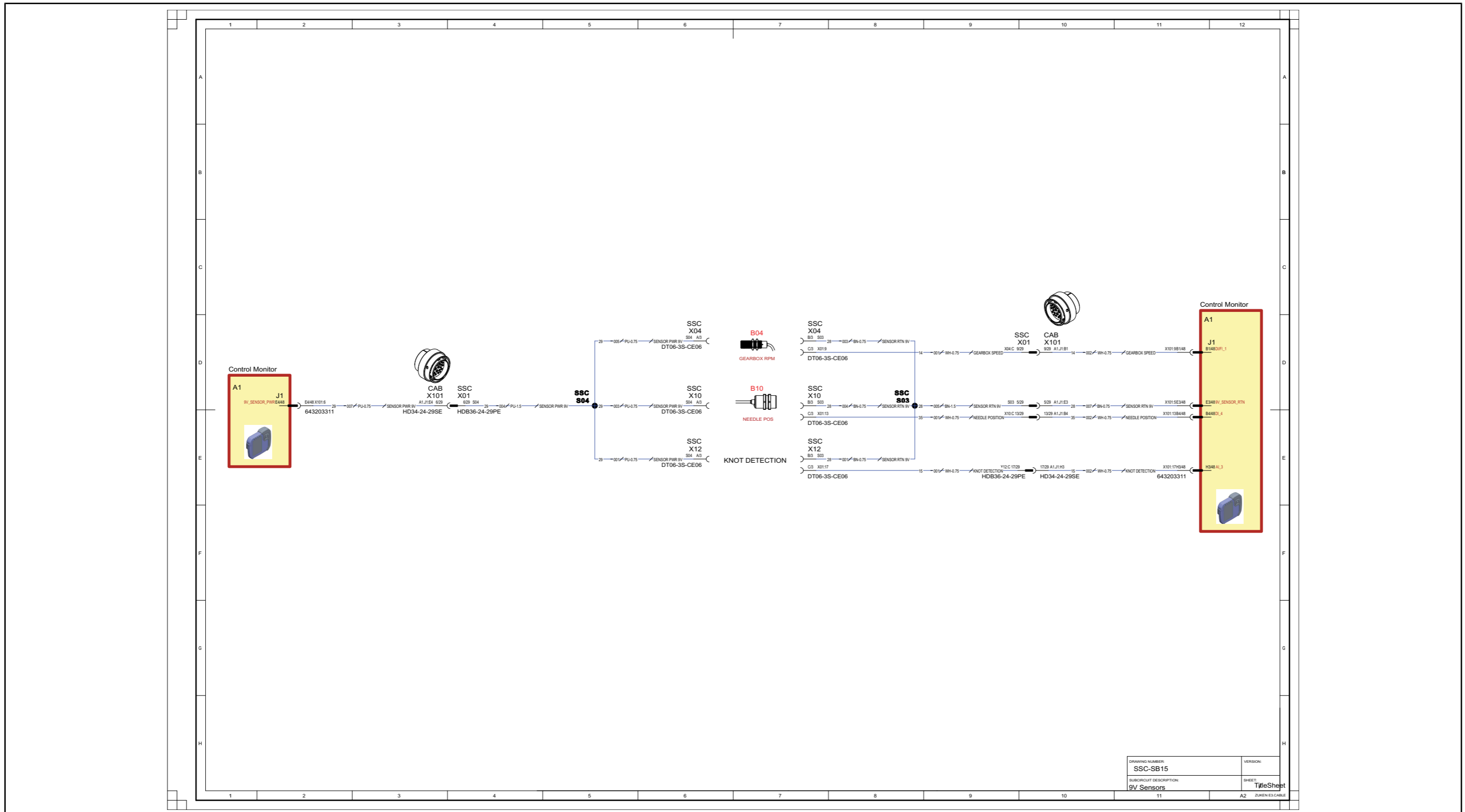


Fig. 3

4.3.3 12 V after the ignition switch

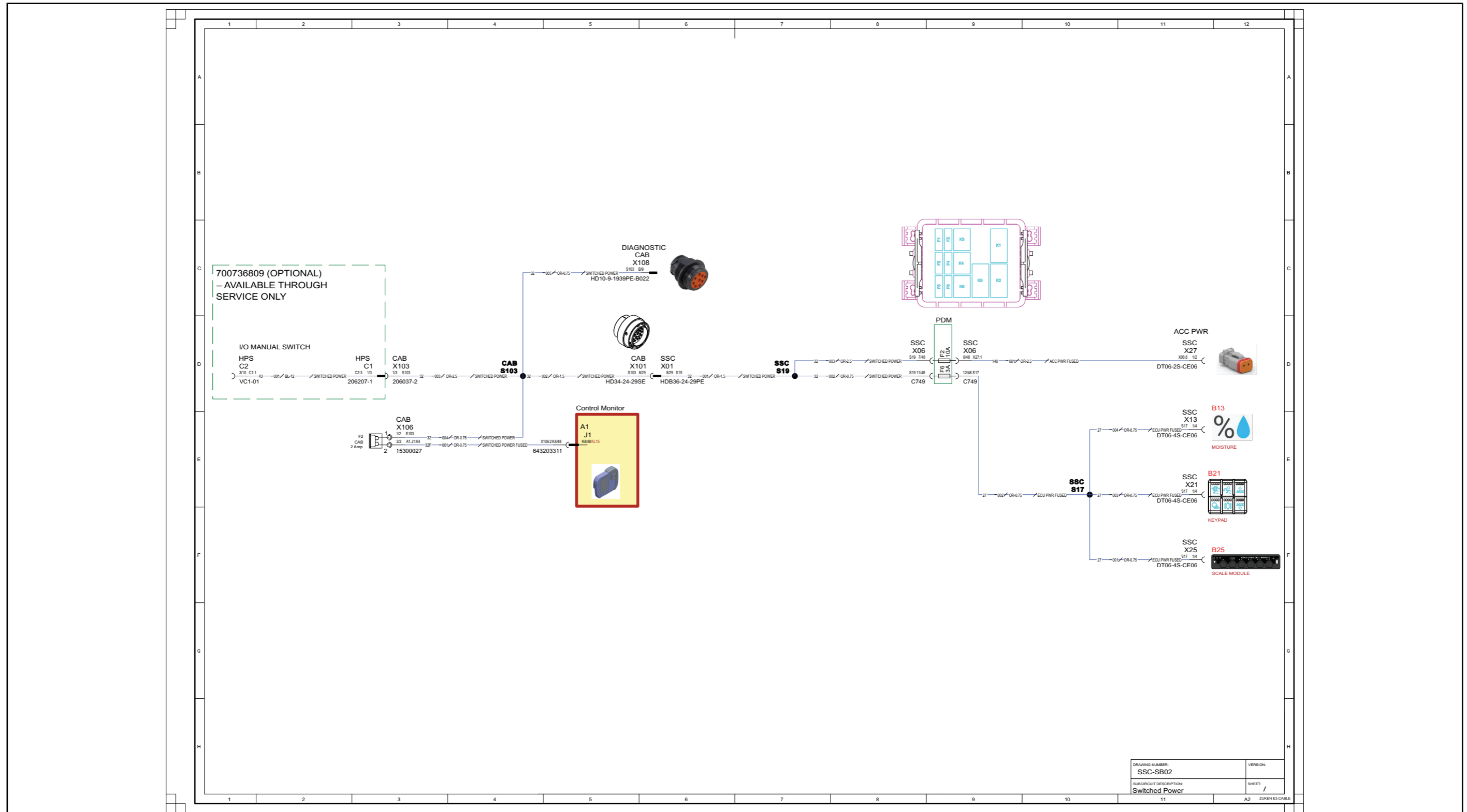


Fig. 4

### 4.3.4 12 V power supply

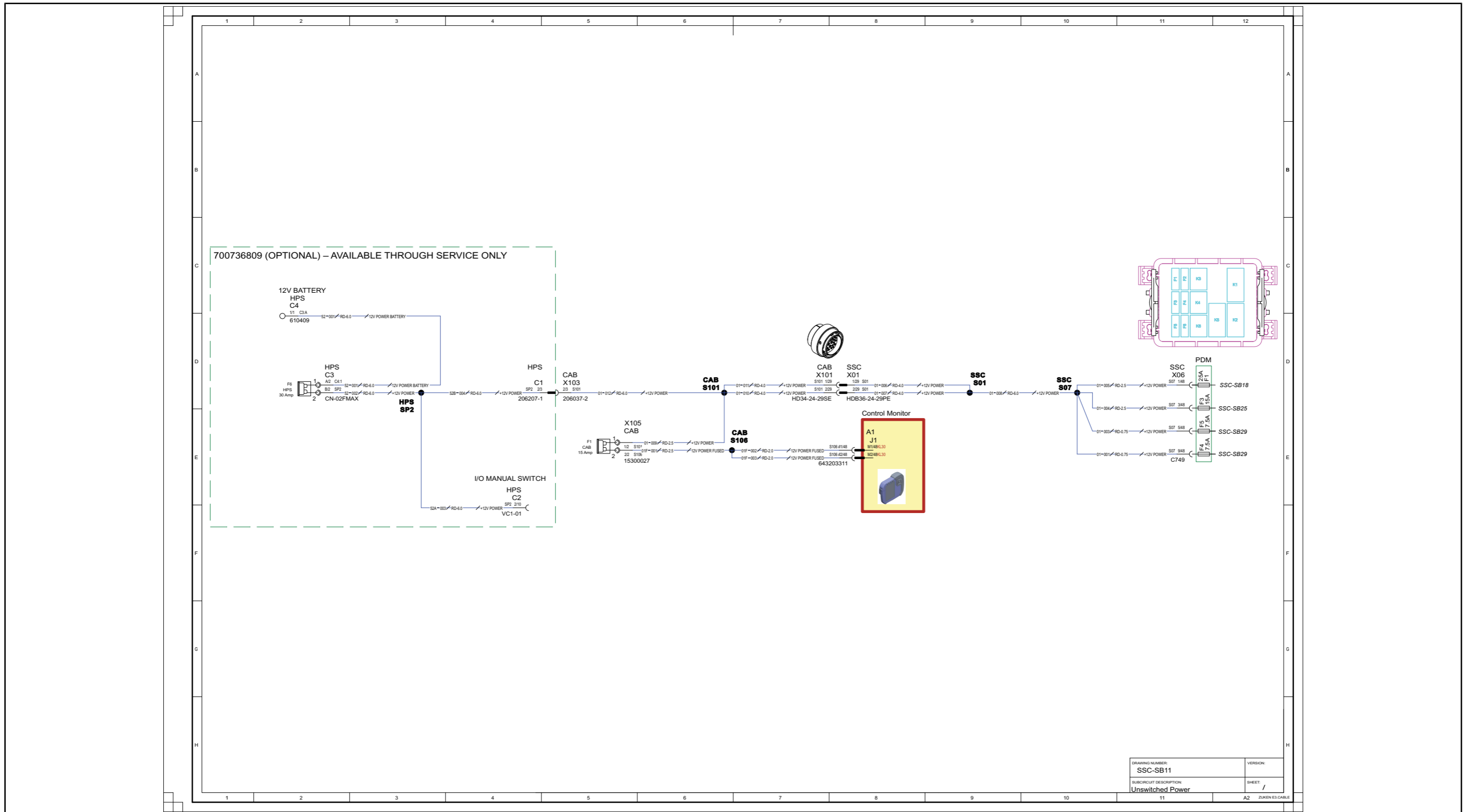


Fig. 5

4.3.5 Pins not used on the controller

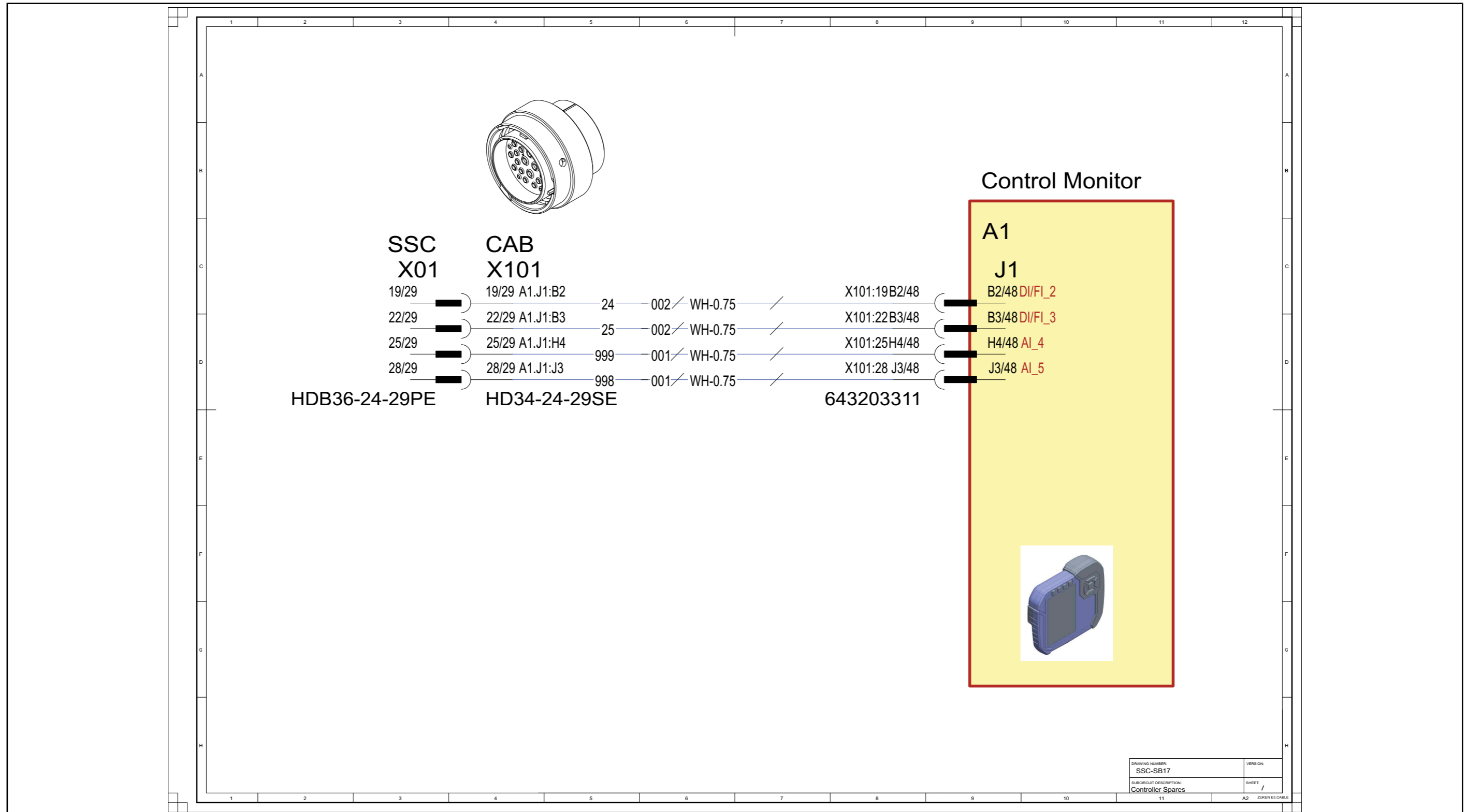
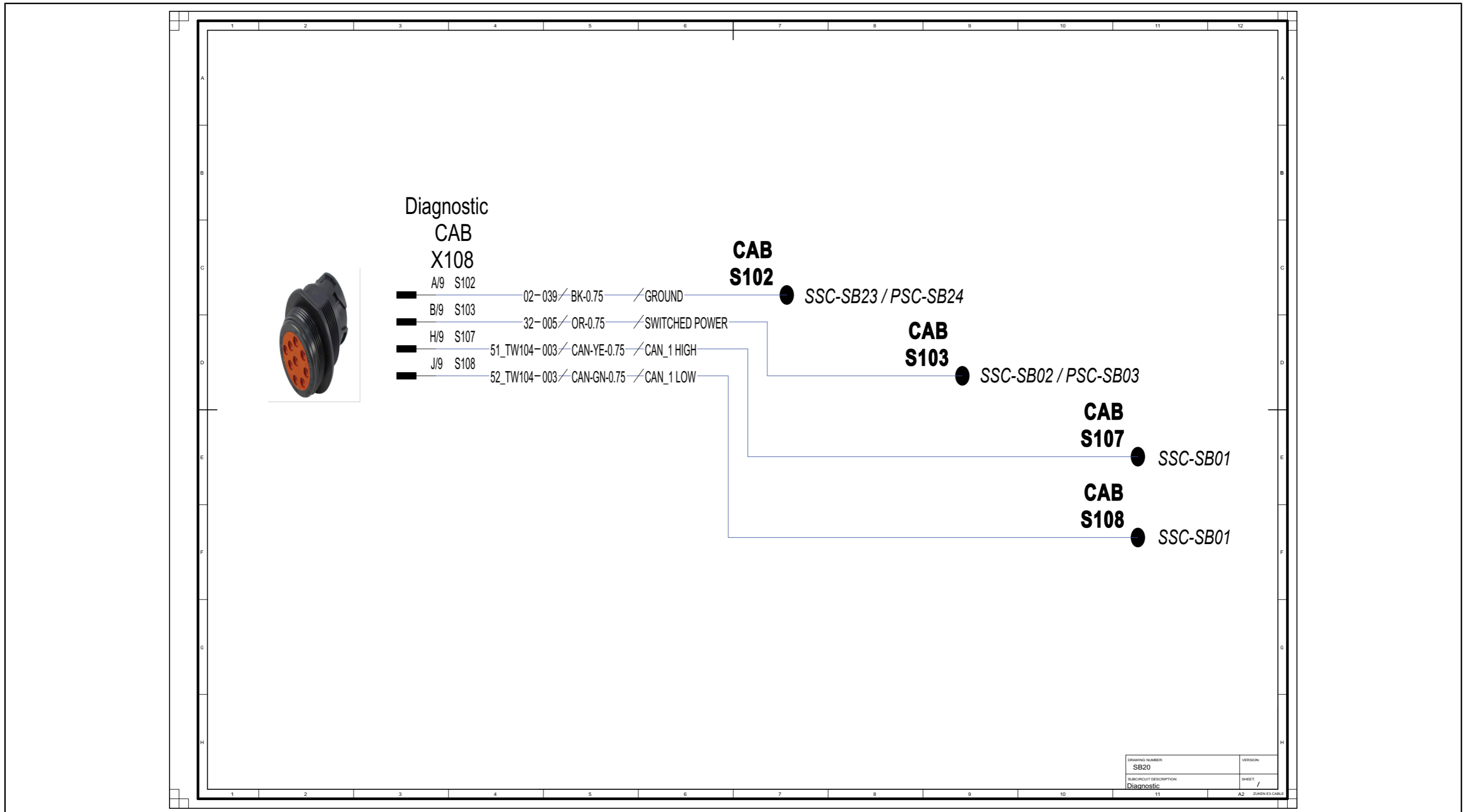


Fig. 6

4.3.6 Diagnostics





4.3.7 Fan

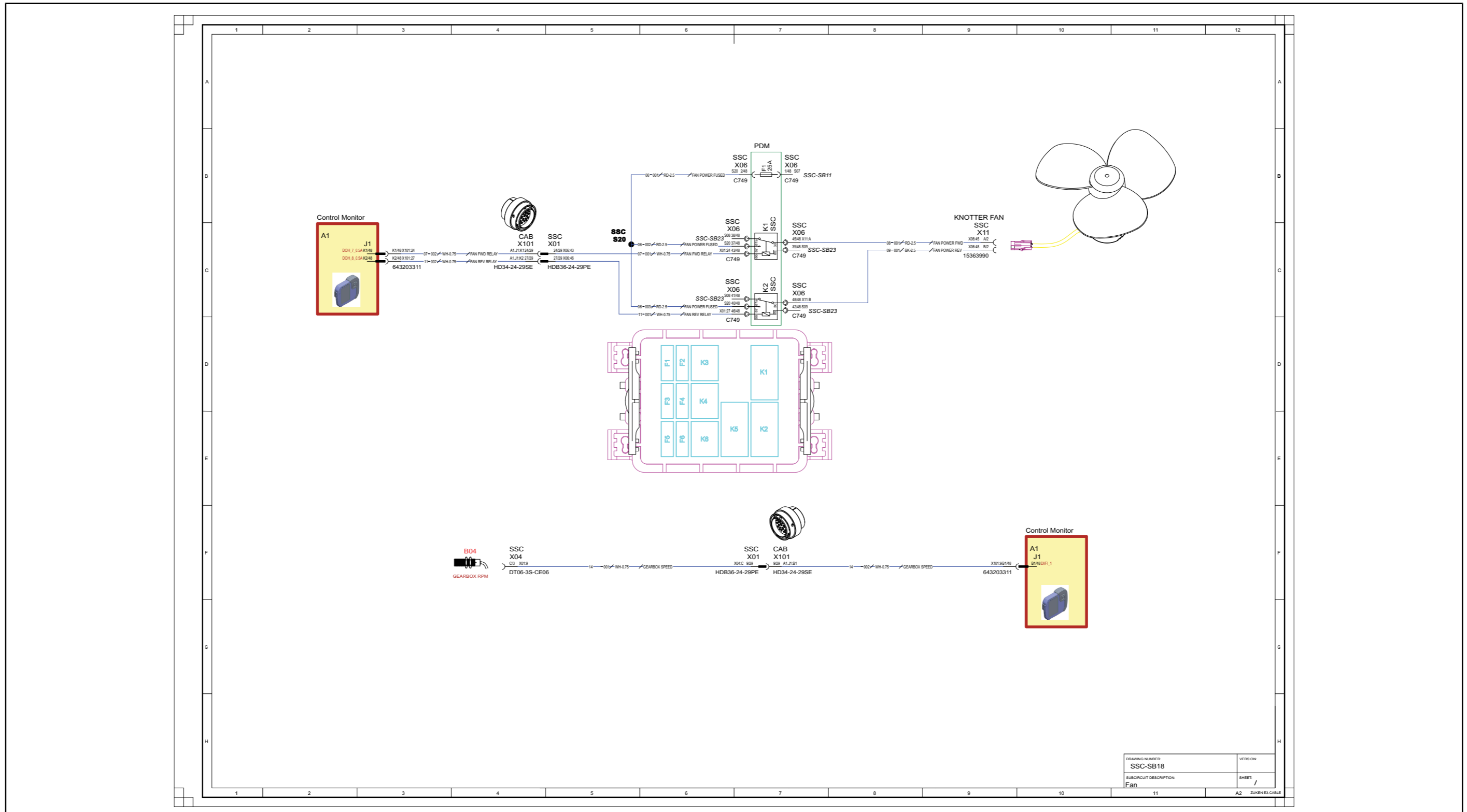


Fig. 8

### 4.3.8 Ground

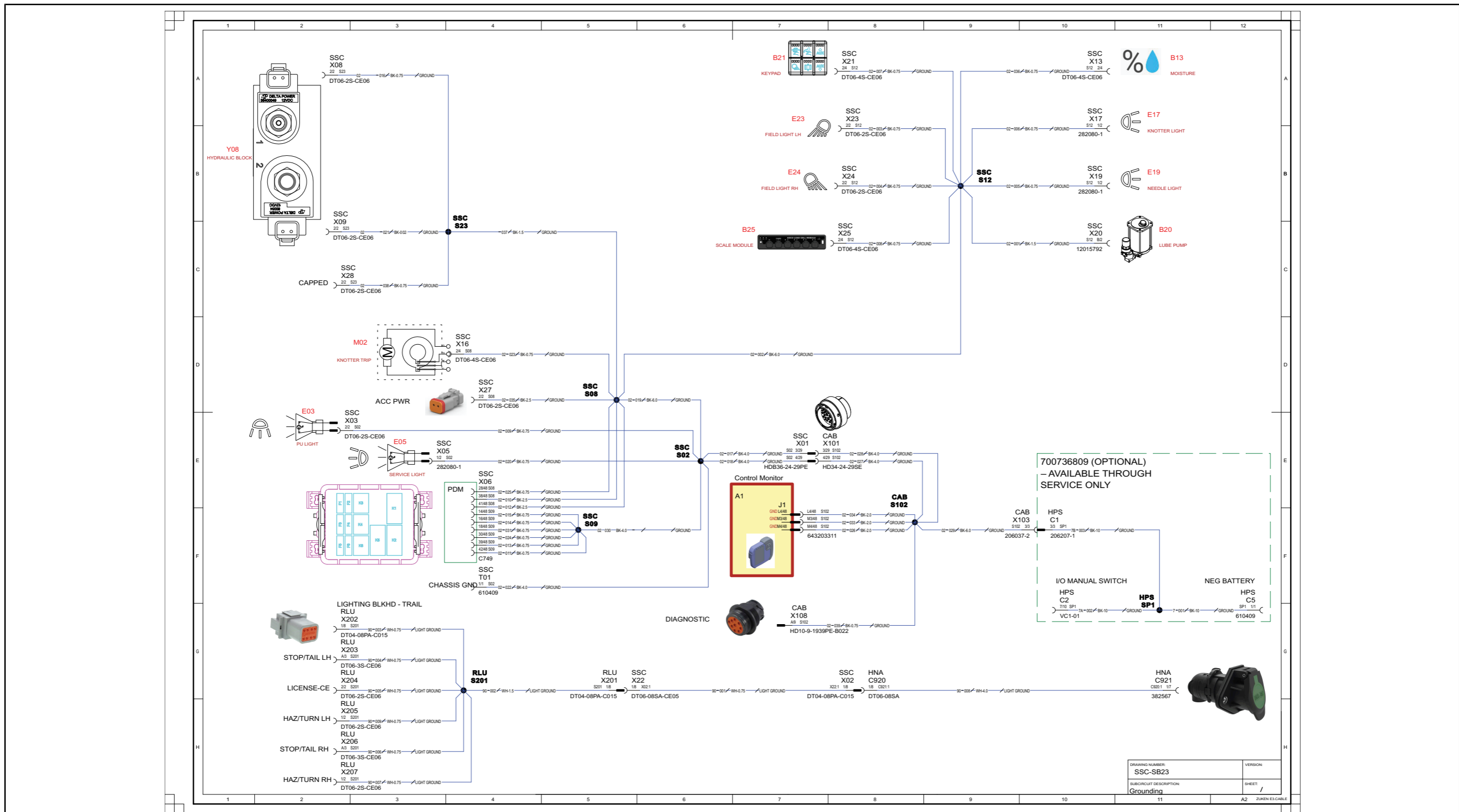


Fig. 9



4.3.10 Hydraulic system

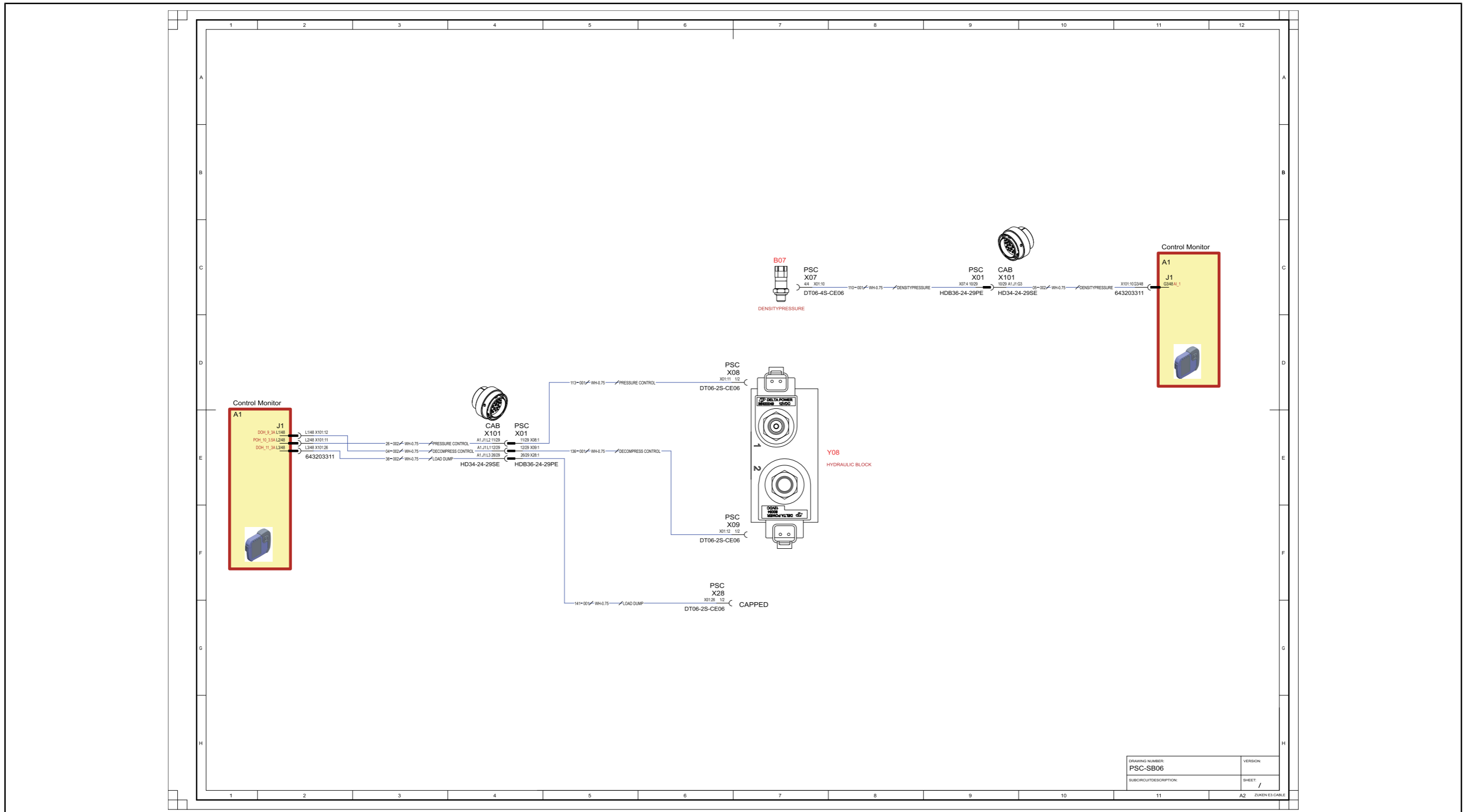


Fig. 11

4.3.11 Knotter

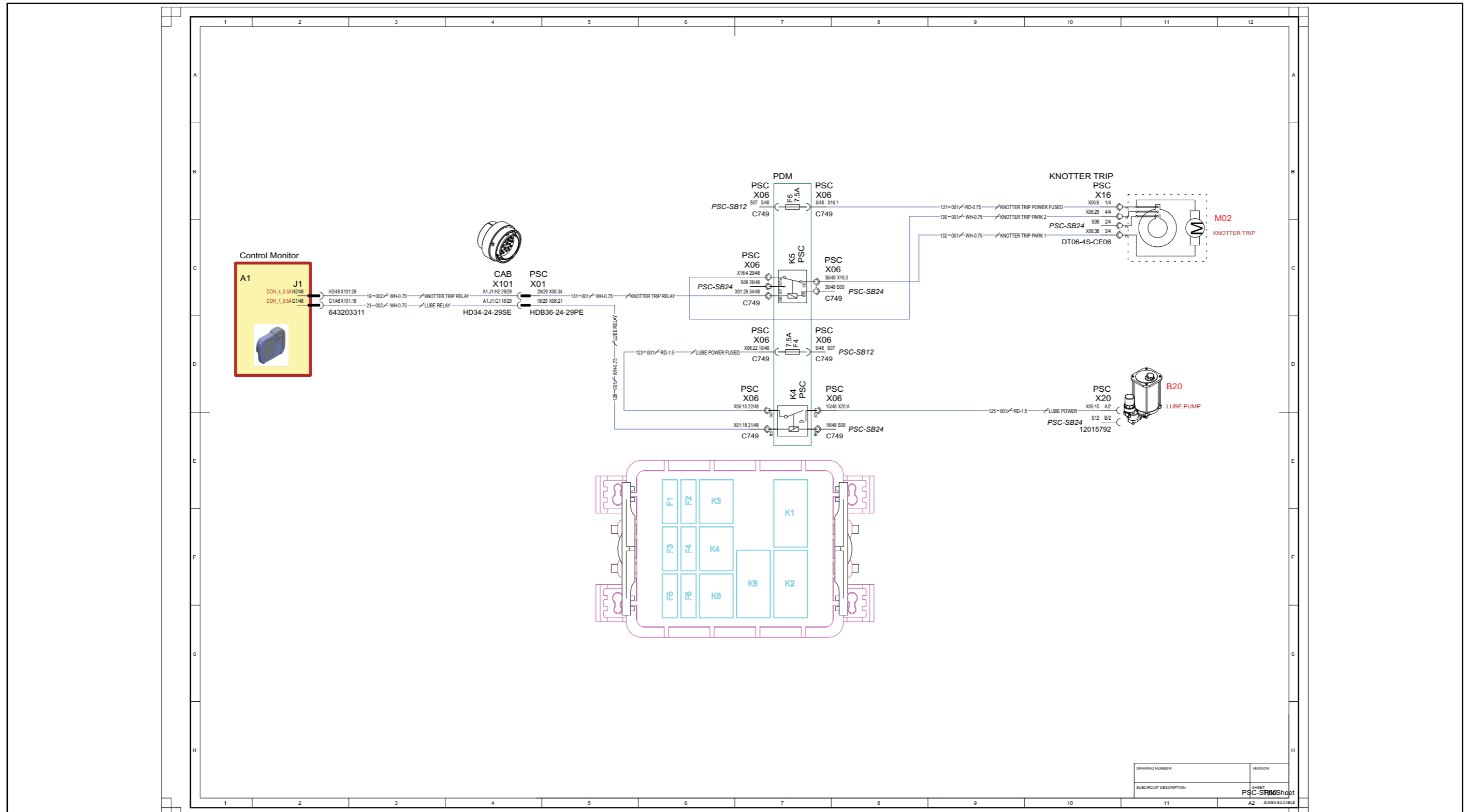


Fig. 12

4.3.12 Light system

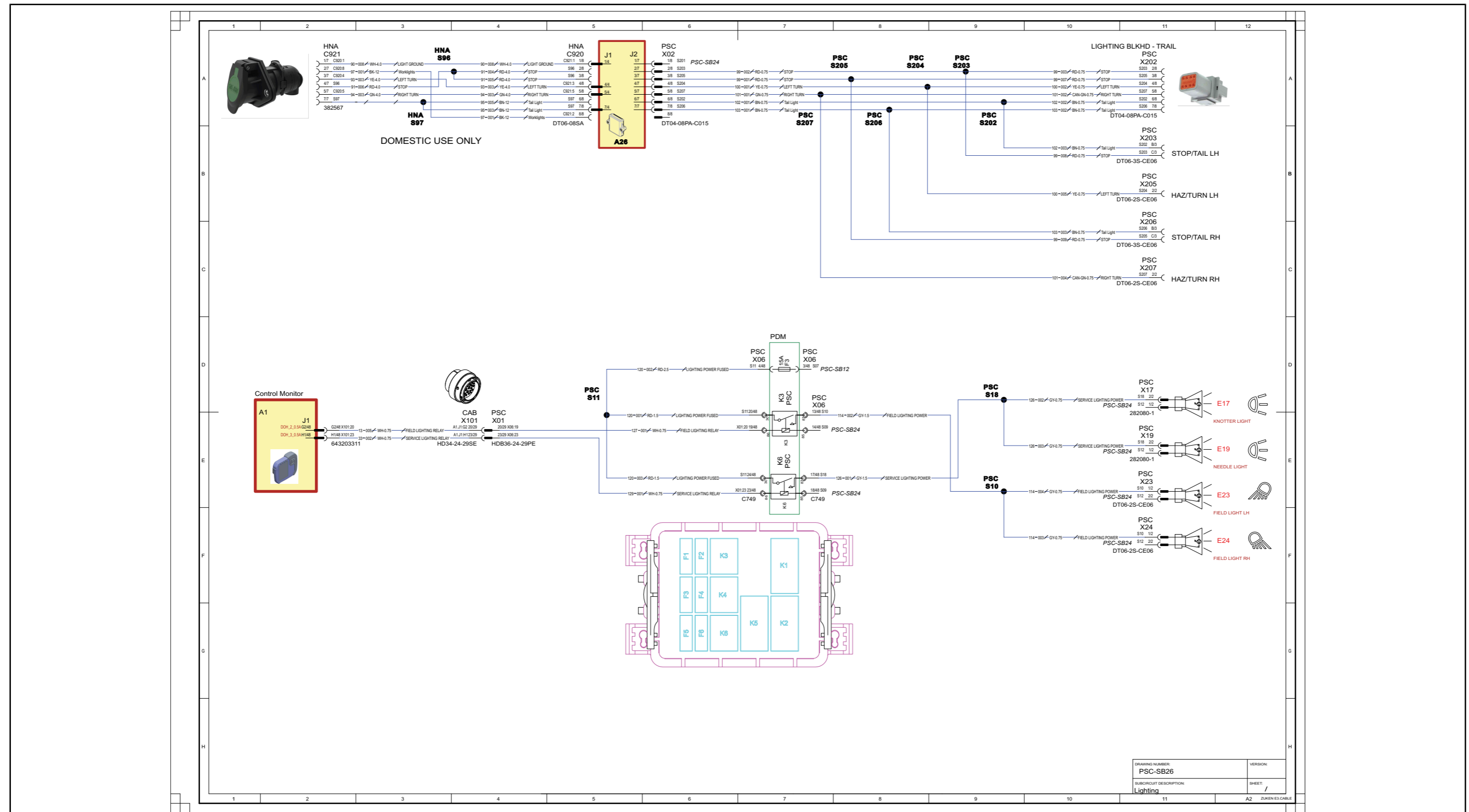


Fig. 13

4.3.13 Light system 2

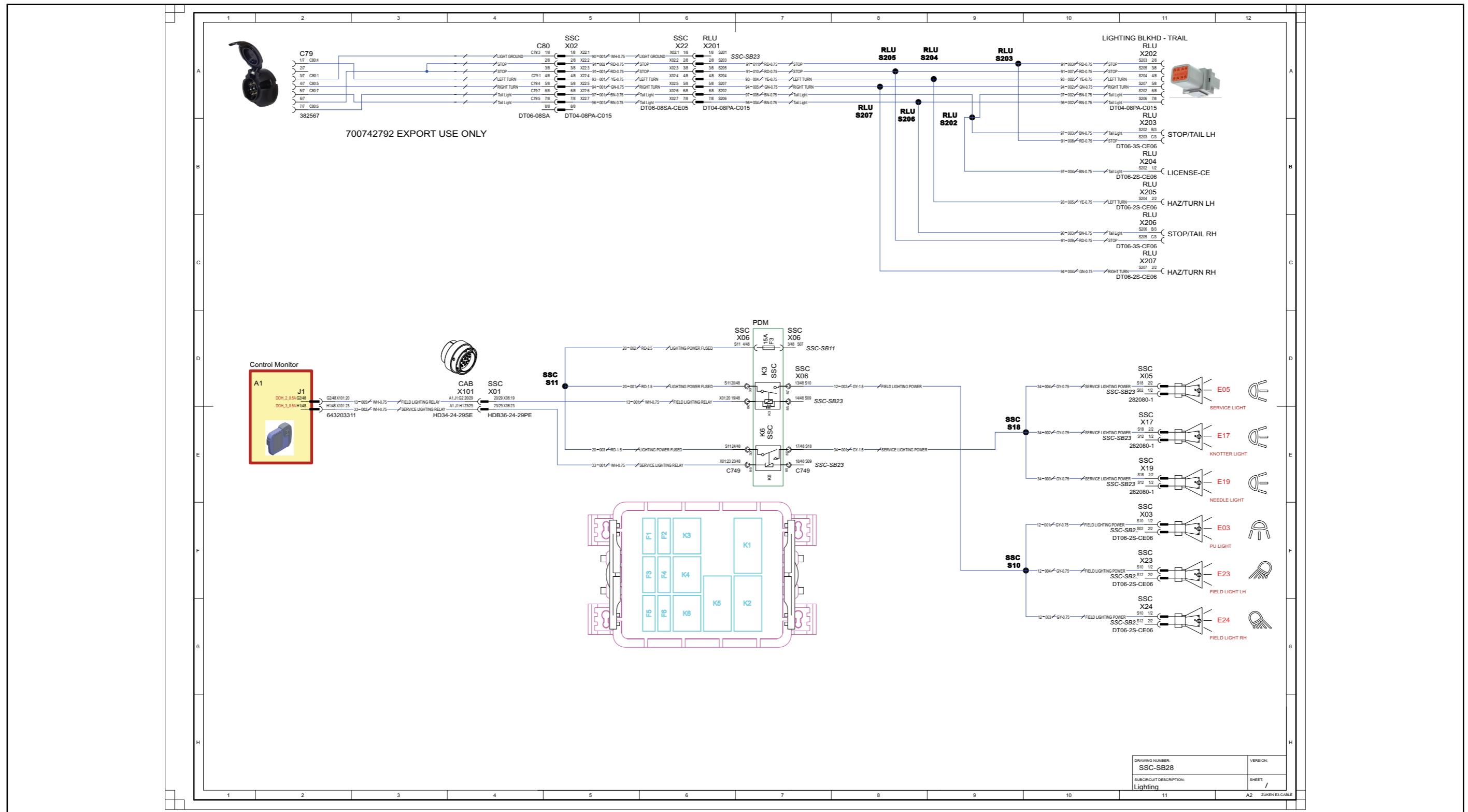


Fig. 14

### 4.3.14 Light system 3

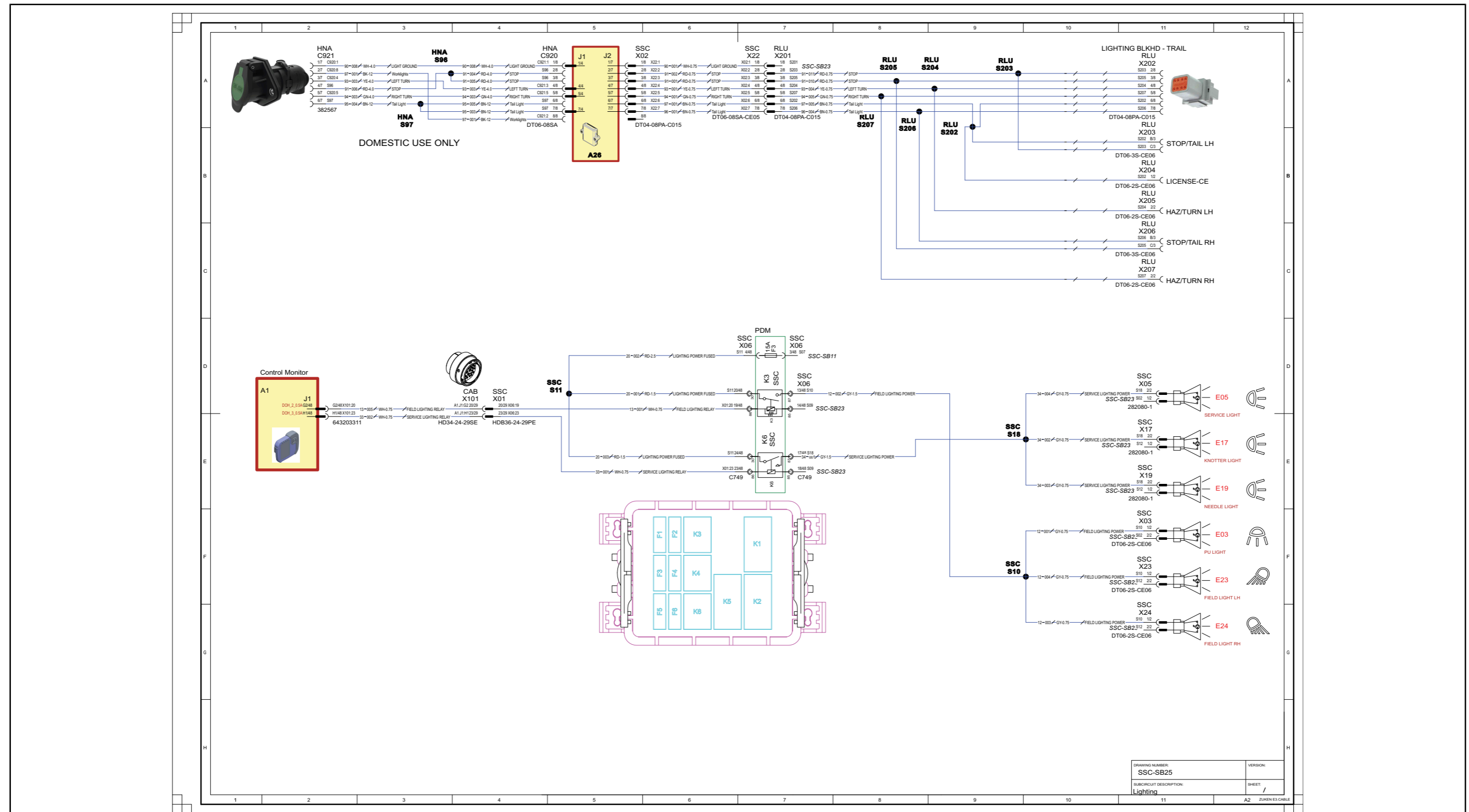


Fig. 15



4.3.15 CAN bus

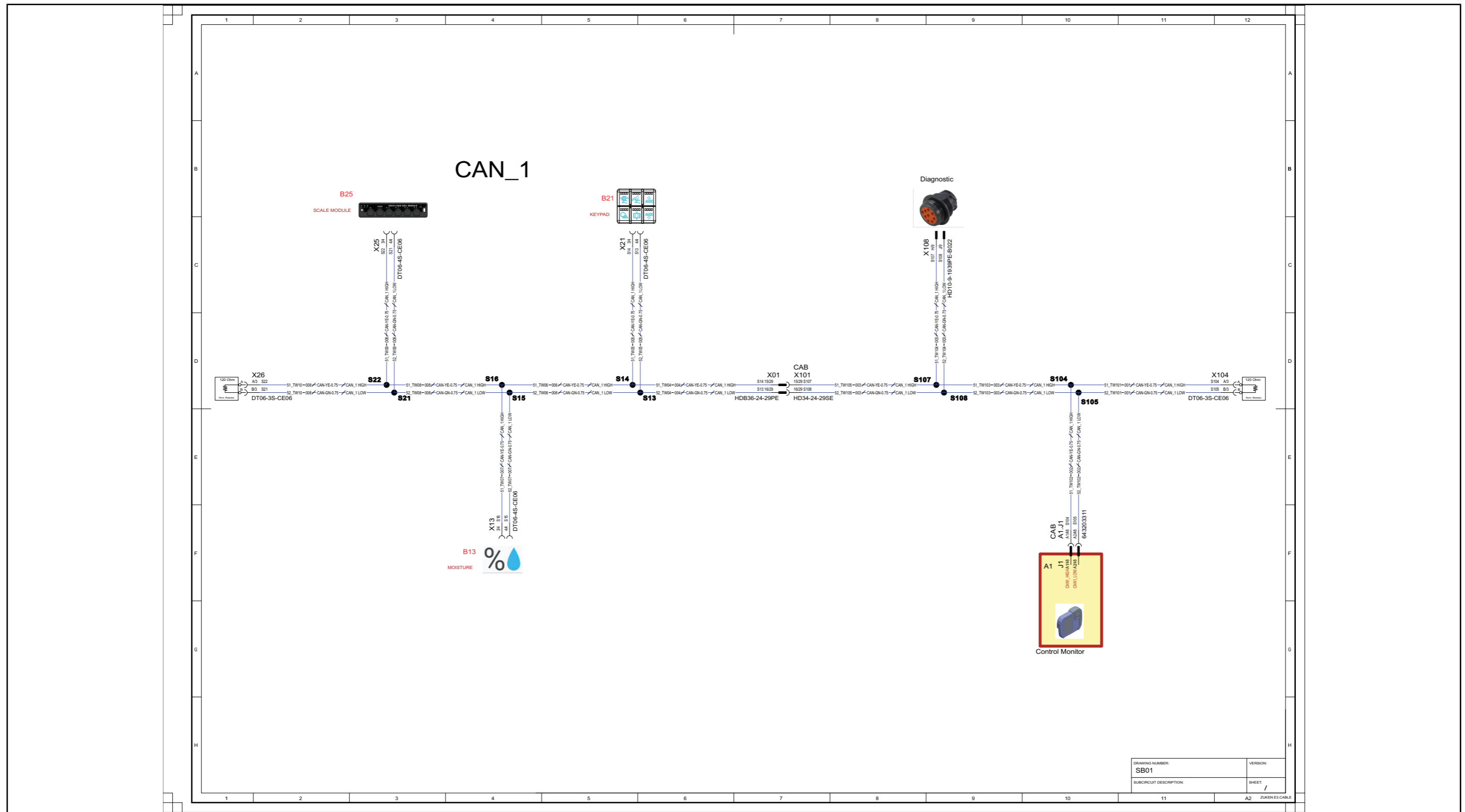


Fig. 16



# Index

12 V after the ignition switch.....	77	<b>H</b>	how to use this manual .....	9
12 V supply .....	78	hydraulic.....	64	
5 V sensors .....	75	hydraulic density control.....	19	
9 V sensors .....	76	hydraulic system .....	84	
<b>A</b>		<b>I</b>	information page	
adjust.....	45, 48, 51	monitor.....	13	
Ag Co-Pilot.....	55	<b>K</b>		
air.....	64	knotter.....	85	
<b>B</b>		<b>L</b>		
bale chamber pressure .....	63	light system .....	86	
bale scale calibration .....	20	light system 2 .....	87	
baler diagnostics page .....	21	light system 3 .....	88	
baler Keypad .....	15	<b>M</b>		
bleed.....	64	monitor layout		
<b>C</b>		Ag Co-Pilot .....	13	
CAN bus .....	89	<b>N</b>		
<b>D</b>		navigate the screen and pages.....	15	
diagnostics.....	80	needle carriage.....	48	
automatic lubrication system.....	33	<b>O</b>		
bale pressure system .....	34	operation buttons .....	14	
CAN bus.....	37	overview		
fan.....	30	fault codes .....	38	
lamp .....	32	<b>P</b>		
needle carriage.....	30	pins not used on the controller.....	79	
PTO speed .....	24	PTO .....	51	
scale.....	26	<b>S</b>		
star wheel.....	23	safety icons .....	7	
<b>E</b>		safety instructions .....	7	
electrical component list.....	68	scale diagnostics page.....	22	
erase a fault code.....	38	sensor.....	45, 48	
<b>F</b>		software.....	55	
fan .....	81	speed sensor.....	51	
fault codes .....	38	star wheel .....	45	
fuse schematic .....	16			
<b>G</b>				
general safety.....	8			
ground.....	82			
ground 2 .....	83			

---

**T**

terminal ..... 55

**U**

update ..... 55

**W**

wiring diagram ..... 71



