PRESIDIO
2700

Service Manual

Version 1.00
US - 11.2016

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Welcome letter

Dear New HARDI® Owner,

Thank you for purchasing your new HARDI® product and welcome to the ever-increasing family of proud HARDI® owners.

HARDI® is the leading sprayer company in offering growers strong, reliable products made for the widest range of applications worldwide. Quality, reliability, and resale value make the HARDI® product line the preferred product line of customers both in North America as well as worldwide. Our guiding principle is to provide the highest level of customer satisfaction and long term value in the marketplace today. We have developed a very high level of customer loyalty in the marketplace which we are very proud of and strive every day to maintain and to continue to grow.

HARDI® is your specialist in spraying and we spend all of our time and keep all of our focus on spraying. We do not share our resources between other types of products or compromise on anything in providing the best quality sprayers to the market today. We can provide the latest in technology with our products if desired, or allow them to operate with the technology that you already use on other products in most cases. You get to decide that, and what best suits your needs. We feel that you, our customer, are the best suited to answer that question for your operation. Either way, you decide, and we will try and help make it happen for you.

Our broad spectrum of product offerings, from the ruggedly simple models we build to our highly sophisticated models, the built-in HARDI® strength and reliability ensures a low cost of ownership. HARDI® sprayers are all based on a functional design concept of being as simple to operate as possible and to meet our customers' requirements for all their application needs.

Please take the time to thoroughly read the Operator's Manual before using your equipment. You will find many helpful hints as well as important safety and operation information.

Some of the features on your HARDI® sprayer were suggested by growers. There is no substitute for "on farm" experience and we invite your comments and suggestions. If any portion of this instruction book remains unclear after reading it, contact your HARDI® dealer or service personnel for further explanation before using the equipment.

For Product, Service or Warranty Information please contact your local HARDI® dealer.

- Please use the HARDI® Customer Service number: 1-866-770-7063
- Or send your email to CUSTSERV@hardi-us.com

HARDI® NORTH AMERICA INC.

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Davenport, Iowa 52806
Phone: (563) 386-1730
Fax: (563) 386-1280

Sincerely,

Wayne Buchberger

President

Operator safety

Symbols

These symbols are used throughout the book to designate where the reader needs to pay extra attention.


This symbol means DANGER. Be very alert as your safety is involved!


This symbol means WARNING. Be alert as your safety can be involved!


This symbol means ATTENTION. This guides you to better, easier and safer operation of your sprayer!


This symbol means NOTE.

General info

Before using the sprayer, read the following recommendations and safety instructions.

- Read this instruction book carefully before using the equipment. It is equally important that other operators of this equipment also read this book.
- If any portion of this instruction book remains unclear after reading it, contact your HARDI® dealer for further explanation before using the equipment.
- Local law may demand that the operator is certified to use spray equipment. Adhere to the law.
- The driver's seat is the intended working place during operation.
- Wear protective clothing. Clothing may differ according to the plant protection chemicals used. Comply to any applicable local legislation.
- After spraying, the operator should wash and change his clothes.
- Rinse and wash equipment after use and before servicing. Wash tools if they have become contaminated.
- Do not eat, drink or smoke during the use and maintenance of your sprayer.
- In case of poisoning, immediately seek medical advice. Remember to identify chemicals used. Follow instructions indicated on the label(s) of the products used.
- Never service or repair the equipment while it is operating.
- Replace all safety devices or shields immediately after servicing.
- Do not go under the machine unless it is secured. The boom is secure when placed in the transport brackets with rear transport lock engaged.
- Do not attempt to enter the tank.
- Keep children away from the sprayer.

Important guidelines

- Comply with all recommendations for installation, carrying out adjustments, maintenance and repair contained in this instruction book.
- Use only original spare parts and accessories conforming to the manufacturer's recommendations.
- Do not modify or have your machine and it’s accessories modified by someone else (mechanical, electrical, hydraulic and pneumatic characteristics) and, more generally, the parts of the machine affecting user safety, without first requesting written agreement from the manufacturer.
- Failure to respect these rules may make your machine dangerous. In the event of damage or injury, HARDI® shall not be held liable in any way.

2 - Safety notes

Operator's skill

The machine should be used and maintained by people who are aware of its special use and safety characteristics. Before using your machine, familiarize yourself with all the commands. When working, it will be too late to do so. Ensure that you have the skills required for protecting crops and the environment, and for handling and spraying plant protection chemicals.

Driving on public roads

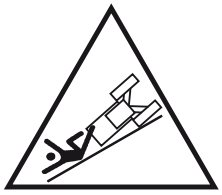
When driving on public roads, obey all traffic regulations. Pay particular attention to those regarding mandatory equipment such as lights, indicators, hazard lights, etc.

You should be aware of the vehicle's size and weight, particularly the overall width and height.

WARNING! You must in all circumstances adapt your driving on the road, particularly by reducing your speed during turns or when road conditions demand. Also reduce speed when meeting or being passed by another vehicle.

Driving in fields

Be very careful to avoid the risk of overturning when driving at speeds greater than 9 mph (15 km/h) or when driving on a slope.



ATTENTION! As a general rule:

- Adapt your speed and driving to suit the terrain you are driving on. Be aware and take care!
- Slow down when driving on uneven terrain as the sprayer may become unbalanced and overturn.
- No persons are allowed in the operational area of the sprayer. Take care not to harm people or surroundings when maneuvering the sprayer, especially while backing up.
- In all circumstances and particularly on uneven and sloping terrain, drive the machine at a low speed, especially on curves and avoid sudden changes of direction.
- Do not brake or accelerate suddenly when going up or down a slope, bearing in mind the variable volume of liquid in the sprayer tank.

DANGER! Boom maneuvers should be carried out with the sprayer stationary and on flat ground. Ensure that there are no obstacles nearby (electrical lines, people, poles etc.).

Lights, working at night

If there is insufficient light for working at night, the spraying boom should be equipped with boom lights. For more information on this equipment, contact your HARDI® dealer.

Recommendations to users of crop protection chemicals

This sprayer has been designed and manufactured by HARDI® for the application of crop protection chemicals. For your safety and the proper functioning of the sprayer, it is important to read and understand all instruction books delivered with this sprayer.

It is also the sole responsibility of the operator to strictly comply with all recommendations given by the manufacturers of all crop protection chemicals used with this sprayer.

In particular, it is strongly recommended that any operator of this sprayer:

- Carefully read the label(s) of the manufacturer(s) of the treatment products used with this sprayer and follow the instructions given (measuring, personal protective equipment, etc.);
- Mix only products whose compatibility was expressly recognized by the manufacturer(s) of the crop protection chemicals being mixed;
- Avoid introducing air while filling the tank to prevent the formation of foam and cause problems with overflow;
- Follow the manufacturer(s) instructions and warnings for all crop protection chemicals regarding proper storage, processing and keeping chemicals out of the reach of children and animals;
- Observe all precautions relating to the disposal/recycling of packaging, in accordance with the recommendations of the manufacturer(s) of the products used;
- Contact the manufacturer(s) of the plant protection product (or their representative) if any doubt remains after reading the label(s) of their product(s).

Personal safety equipment

Depending on which type of chemical is used, some or all of the following protective clothing and equipment will be required:

1. Ear muffs
2. Safety goggles or face shield
3. Respirator
4. Chemical resistant coveralls
5. Chemical resistant gloves
6. Chemical resistant boots

Contaminated clothing

Contaminated clothing should be removed and safely stored and laundered. Do not contaminate the inside of the cab with soiled clothing.

2 - Safety notes

Safety decals

It is important that the safety decals remain in place and in good condition. The decals will draw your attention to all the possible dangers and refer to this instruction manual.

Replace any safety decals that are missing, illegible or damaged.

Clean off any mud or dirt that makes the safety decals illegible.

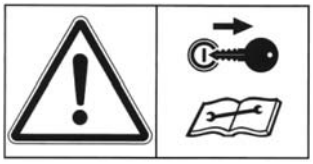
Mandatory

Read manual

- Read the operator's manual before operating machine.
- Regularly consult manual for maintenance schedule, instructions, etc.

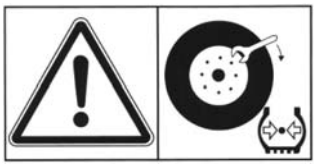
Remove key

- Remove the ignition key before leaving the cab to perform maintenance.
- Consult operator's manual before performing maintenance.



Tire maintenance

- The wheel nuts must be re-torqued after the first 2 hours of operation. Then periodically check that the tires are properly inflated.



Prohibited

Speed limit

- Maximum speed limit while operating the sprayer.
- Extra care must be taken on hills and when cornering.

Engine start

- Never attempt to start engine while outside the cab.

Do not climb

- Do not climb on or off machine.
- Always use ladder and working platform to access the machine.

Do not drink

- Water from the clean water tank is for hand washing, cleaning of clogged nozzles, etc. This water must never be used for drinking.

Danger

Overhead wires

- Take care when operating near wires to prevent entanglement or electrocution.

Fluids under pressure

- Shut down the engine and relieve pressure before performing maintenance.

Danger overhead

- Do not enter paralift area or stand under boom.

Danger from hot surface

- Risk of burns.

Danger from crushing

- Risk of crushing.

Danger from crushing

- Risk of crushing hand.

Danger from radiator

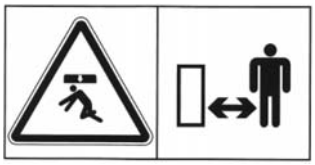
- Risk of injury from fan blades.
- Risk of burns.

Danger from wheel

- Risk of being crushed by wheel.

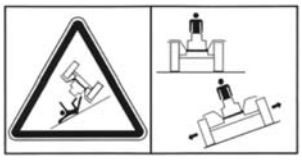
Danger from machine

- Stay a safe distance from the machine.



Danger of toppling over on hillside or slope

- Drive with extreme caution.
- Widen axle track width to minimize risk.



Local poison information center

If you live anywhere in the United States, the following toll free number will connect you to your Local Poison Information Center.

PHONE NO. 1 - 800 - 222 - 1222

If you live outside the United States, find the number for the poison control center in your phone book and write it in the space below:

PHONE NO._____ - _____ - _____

Keep a list, in the space provided below, of all the chemicals that you have in use.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

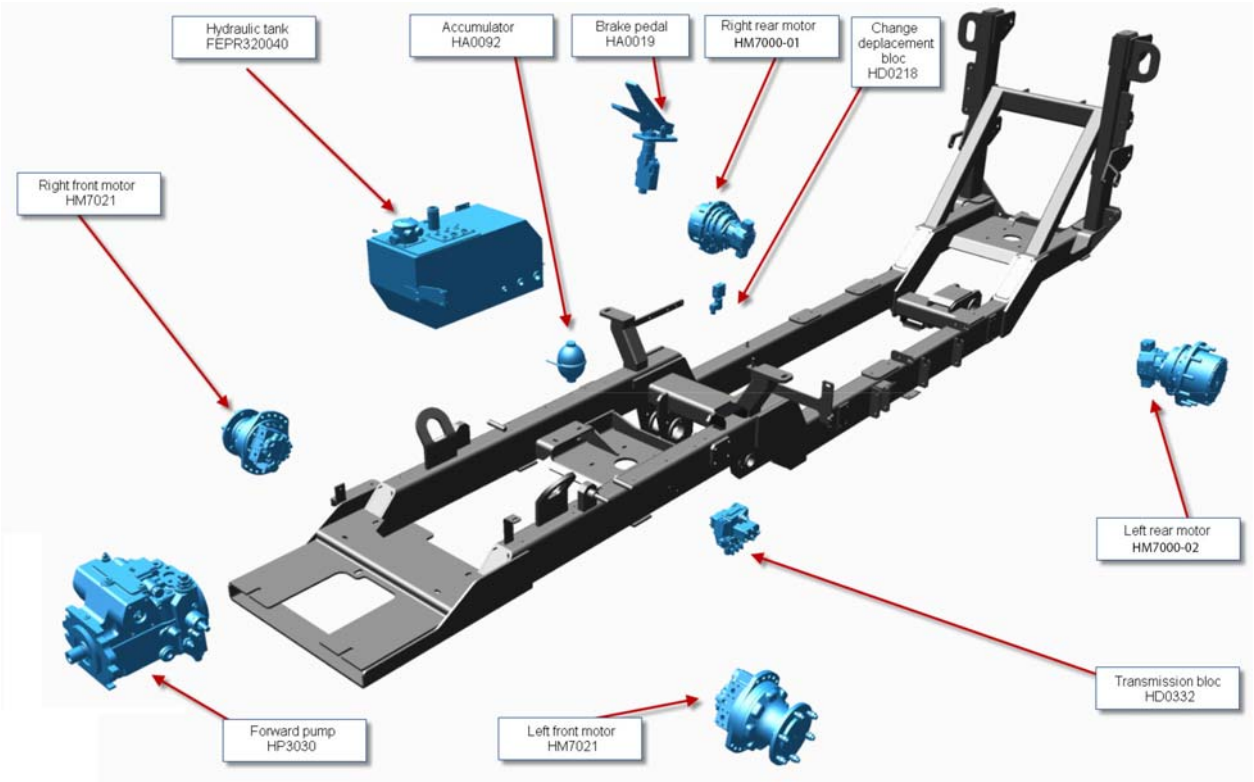
8. _____

9. _____

10. _____

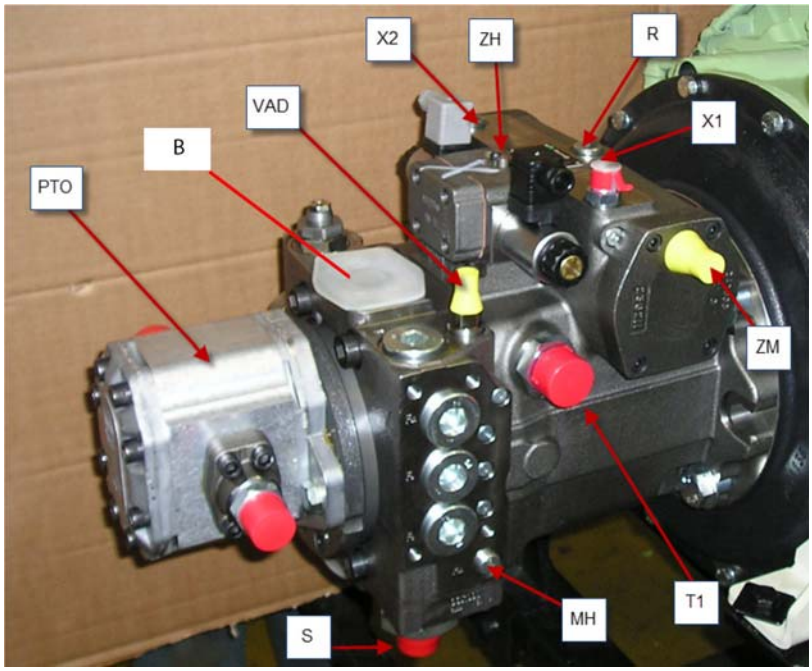
Forward Pump

Component Identification



Forward pump

PTO:	PTO Pump
VAD:	DA cartridge (lock)
X1/X2:	Command Pressure
ZH:	Adjustment of Hydraulic Zero
R:	Air Bleed
ZM:	Adjustment of Mechanical Zero
T1:	Case Drain or fill port (to valve block HD0337)
MH:	Port for High Pressure Control (forward /reverse) (M12x150)
S:	Charge Pump Supply
B:	Reverse Pressure & Flow



VHP: High Pressure Valve

MA: Measure Port for High Pressure Valve (M12x150)

DA: Flow Canceling

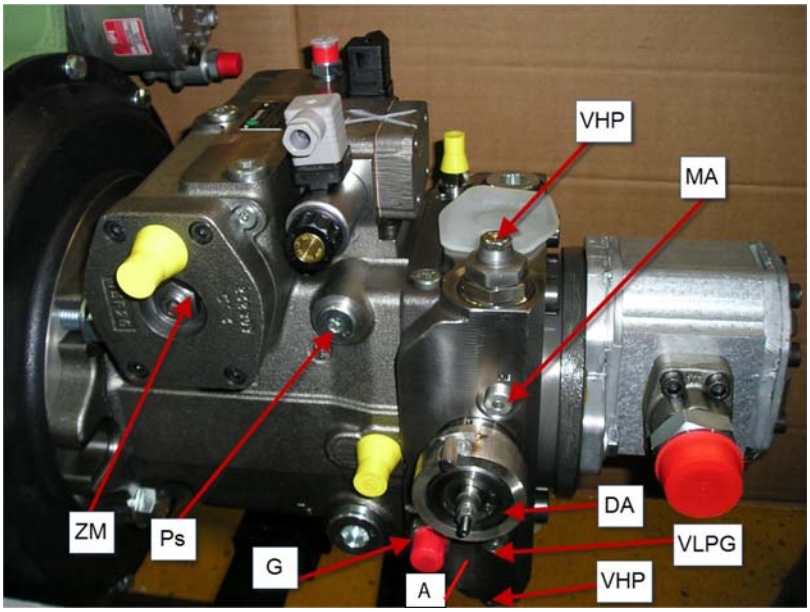
VLPG: Charge Pump Pressure Valve

VHP: High Pressure Valve/Limiter Valve (limiting when in reverse)

G: Charge Pump Pressure 435 psi (30 bar)

ZM: Adjustment of Mechanical Zero

A: Forward Pressure & Flow



Flow canceling at 6526psi (450 bar)

High Pressure Valve set at 5800psi (400 bar)

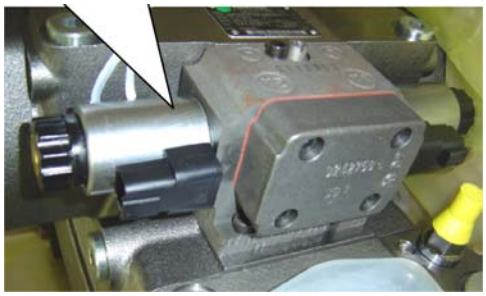
High Pressure Valve (HP9302)

1. Adjustment Screw
2. Jamb Nut

Charge Pressure Valve (HPR09434856)

1. Adjustment Screw
2. Jamb Nut

Electric Proportional Control Valve (HPR02053272)



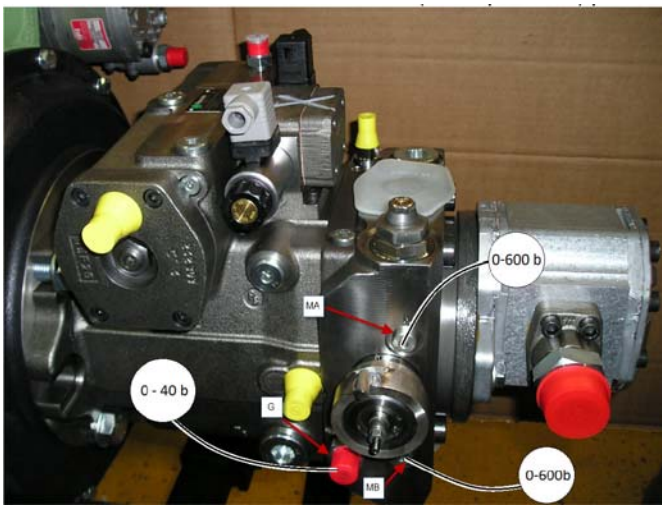
Resistance is above 6.5 ohms.

Testing and Adjusting the Transmission Pump

Charge Pressure Adjustment

1. Prepare the pump

- Connect a 580psi (40 bar) manometer on the G (charge pressure) port of the pump.
- Connect a 8702psi (600 bar) on MA and MB



Connection for G (use a JIC (SAE 37°) swivel nut run tee ¾" male x ¾" JIC female, with a manometer connection)

2. Charge Pressure Control

- Start the Engine
- Put the engine at 2400 rpm
- In Neutral, the pressures should be 435psi (30 bar) on every manometer.

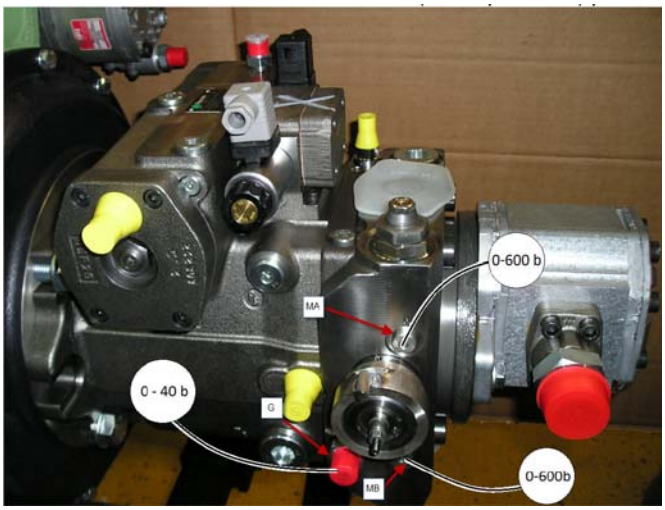
	Pump Pressure
G (Charge Pressure)	435psi (30 bar)
MA (Backward Pressure)	435psi (30 bar)
MB (Forward Pressure)	435psi (30 bar)

- If you need to adjust the Charge Pressure with the Charge Pressure Valve: Loosen Jamb Nut (2) and turn Adjustment Screw (1) clockwise to increase pressure, or turn Adjustment Screw (1) counterclockwise to decrease pressure, then tighten Jamb Nut (2).

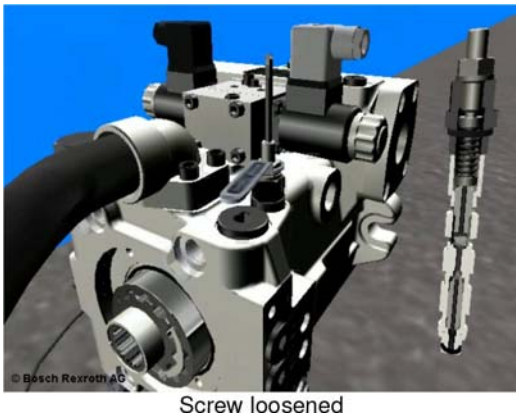
Control and Adjustment of the High Pressure Valve

1. Prepare the pump

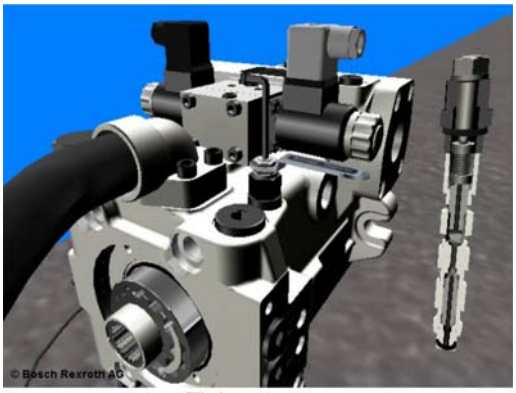
- Connect A 8702psi (600 bar) manometer on ports MA (backward pressure) and MB (forward pressure) of the pump.



- Tighten the flow canceling screw clockwise.



Screw loosened



Tighten screw

ATTENTION! If the flow canceling screw is not tightened, it is impossible to control the max pressure of the valves.

2. Check and Adjust the High Pressure Valve.

- Start the engine.
- Engage the parking brake.

- Put the lever half forward.

- Run the engine at 2400rpm
- Push the lever forward to control the forward HP valve (port MB)

Forward Pressure

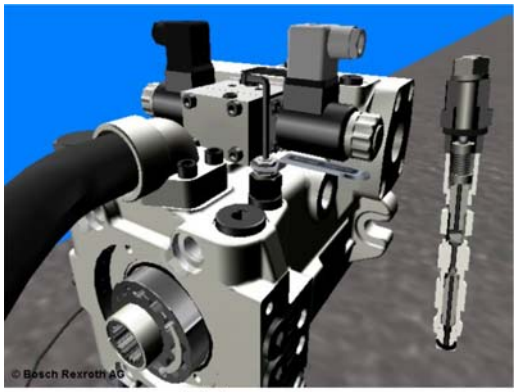
G (Charge Pressure)	Pump Pressure
MA (Pressure Backward)	435psi (30 bar)
MB (Pressure Forward)	406psi (28 bar)
	Increase from 435psi to 6526spi (30 bar to 450 bar)

Backward Pressure

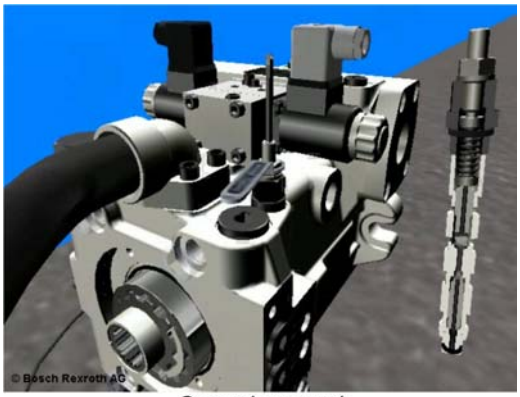
G (Charge Pressure)	Pump Pressure
MA (Pressure Backward)	435psi (30 bar)
MB (Pressure Forward)	Increase from 435psi to 6526spi (30 bar to 450 bar)
	435psi (30 bar)

- If the pressure is incorrect, adjust the valve.
- To adjust the valve, loosen the jamb nut (2), turn adjustment screw (1) clockwise to increase the pressure, or turn adjustment screw (1) counterclockwise to decrease pressure, then tighten the jamb nut (2).

3. After adjusting the forward and backward HP valves you will need to adjust the flow canceling screw.
   - The flow canceling valve will need to be adjusted to 6526psi (450 bar). To achieve this pressure the adjustment screw will need to be loosened.



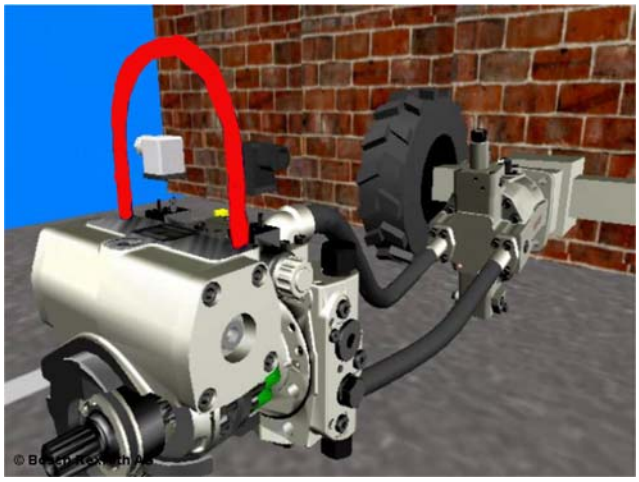
Tighten screw



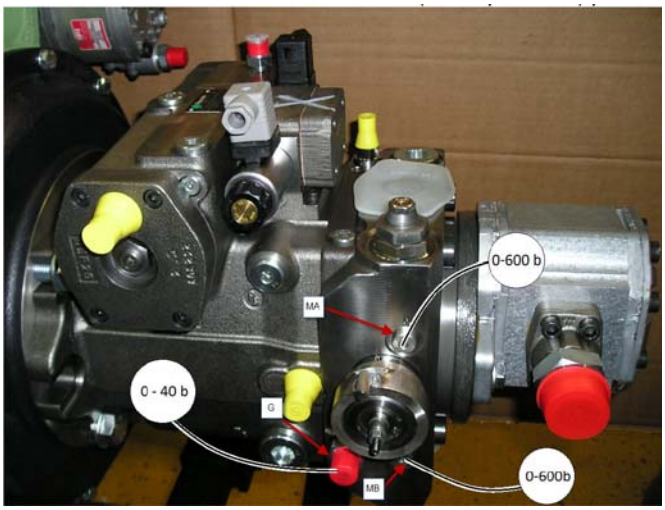
Screw loosened

Adjustment of Mechanical Zero

1. Prepare the pump
   - Install a hose (as short as possible) between the X1 and X2 ports of the pump.

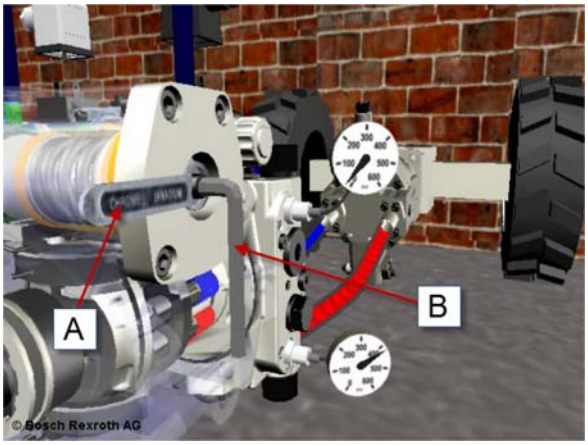


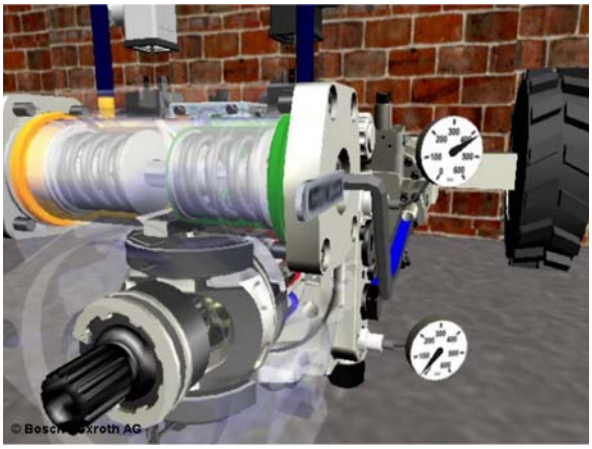
- Install a 8702 psi (600 bar) manometer on ports MA and MB.



2. Adjust Mechanical Zero.

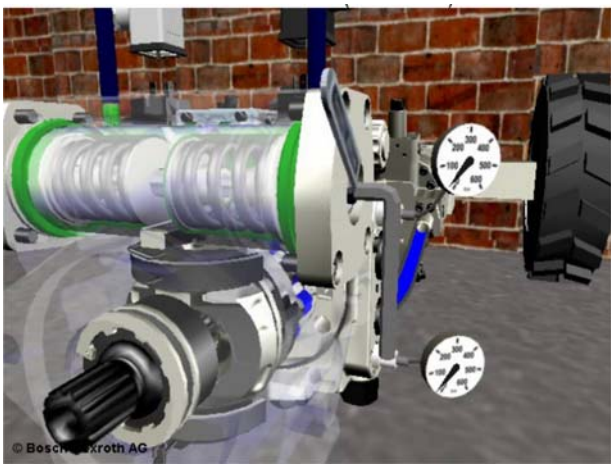
- Start the engine and check the pressure with the joystick in neutral.
- If the pressure is unbalanced, loosen the nuts (A) and turn (B) to balance the pressure.





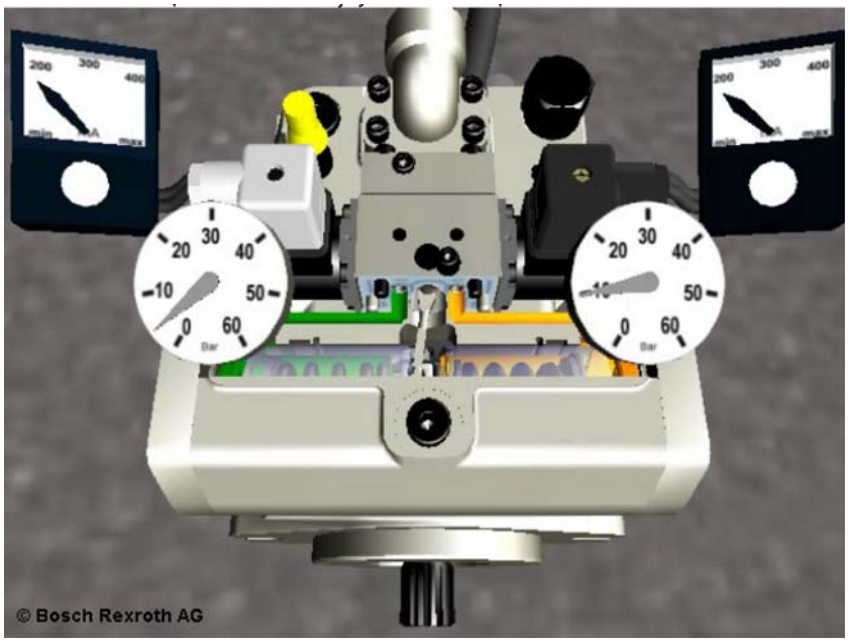
- After balancing pressure switch to 580psi (40 bar) manometers for finer adjustment.

- The adjustment is correct when the same pressure is achieved on both manometers.

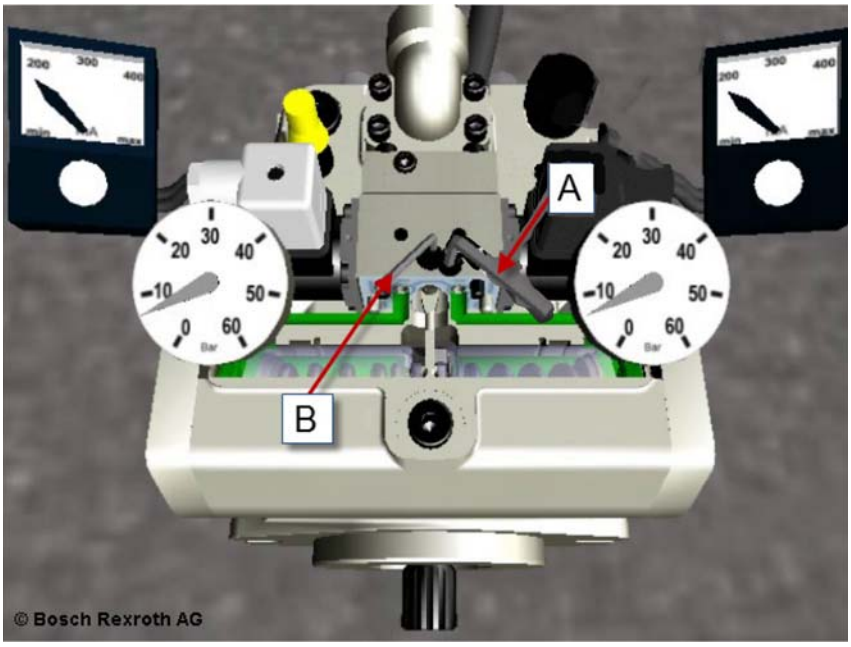


Hydraulic Zero Adjustment

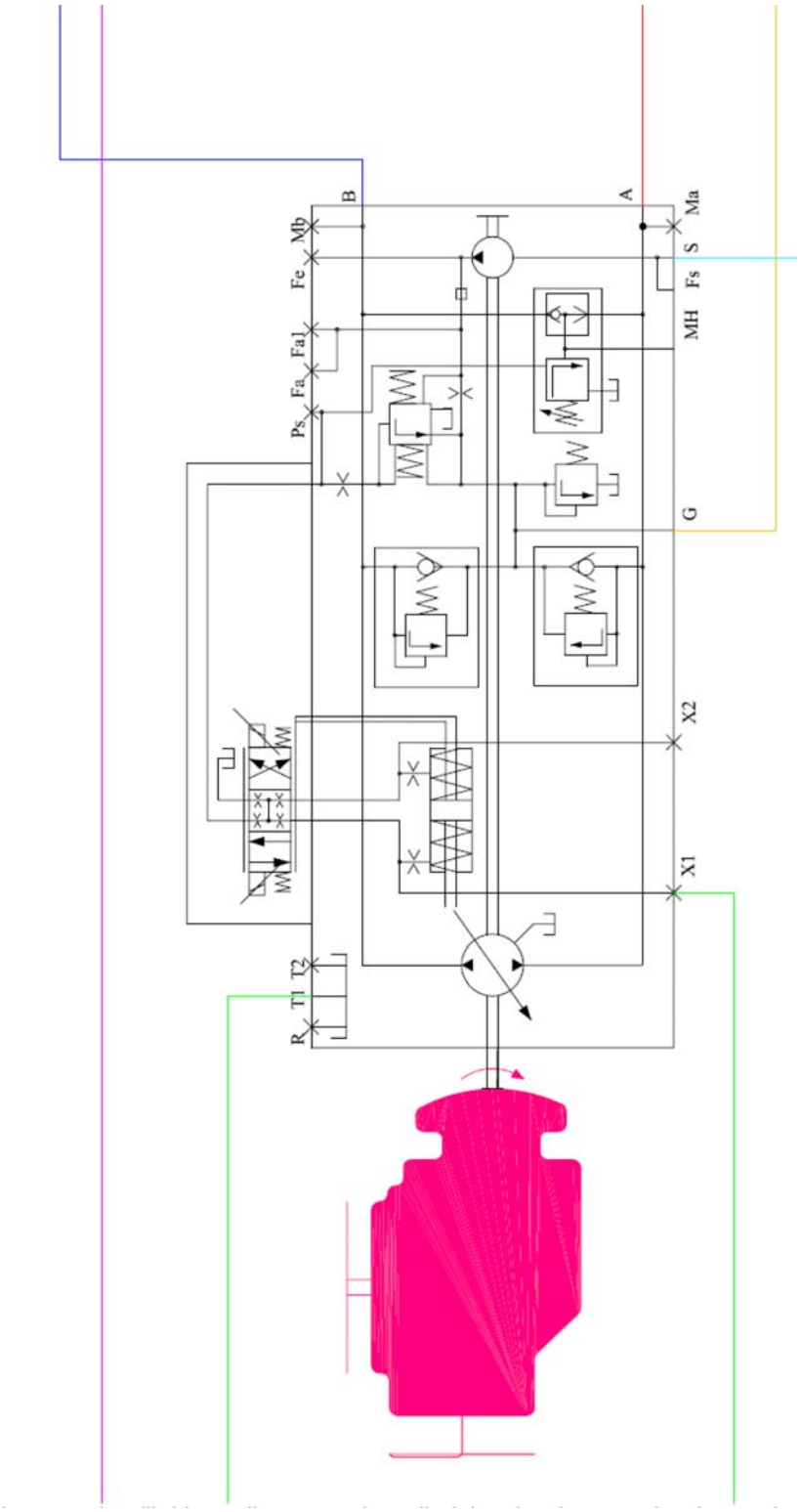
1. Prepare the pump.
   - Connect two 870psi (60 bar) manometers to ports X1 and X2.
2. Checking and Adjusting Hydraulic Zero.
   - Start the engine
   - Put the joystick in the neutral position.
   - Check the pressures.



- If the pressures are unbalanced, loosen locking screw (A), and turn the eccentric (B) to balance the pressure on the circuit.



Hydraulic Schematic



Front Motors

Component Identification

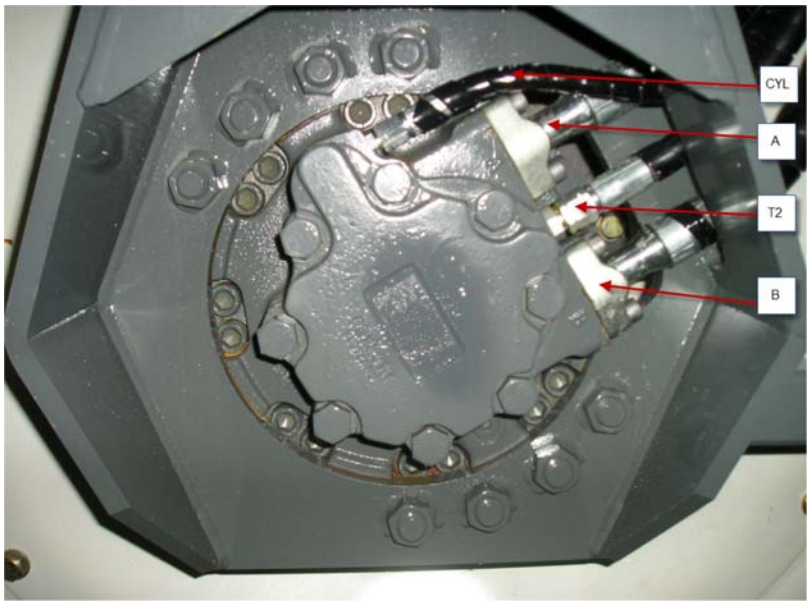
Front Left Motor

A: Service Line Port (Reverse)

B: Service Line Port (Forward)

CYL: Change of Displacement

T2: Case Drain Port



Forward and pressure lines/hoses are identified with black tape around the line/hose)

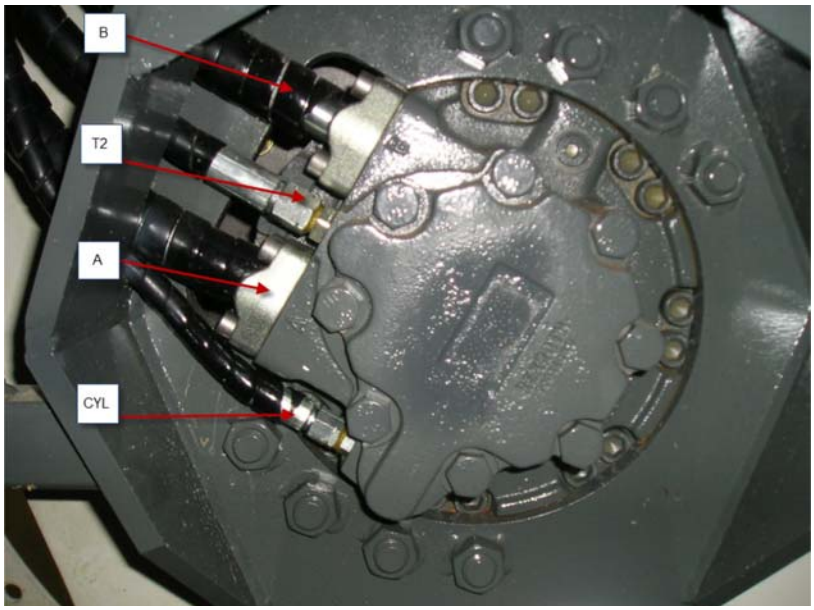
Front Right Motor

A: Service Line Port (Forward)

B: Service Line Port (Reverse)

CYL: Change of Displacement

T2: Case Drain Port



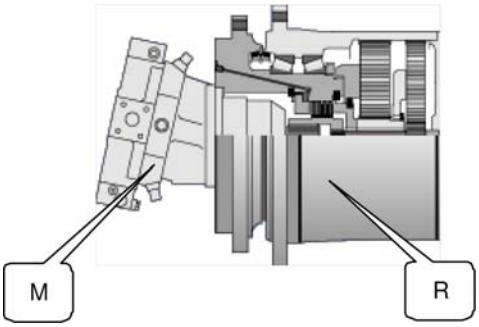
Forward and pressure lines/hoses are identified with black tape around the line/hose)

Hydrostatic Motor + Gear Unit (HM7000 & HM7001)

Component Identification

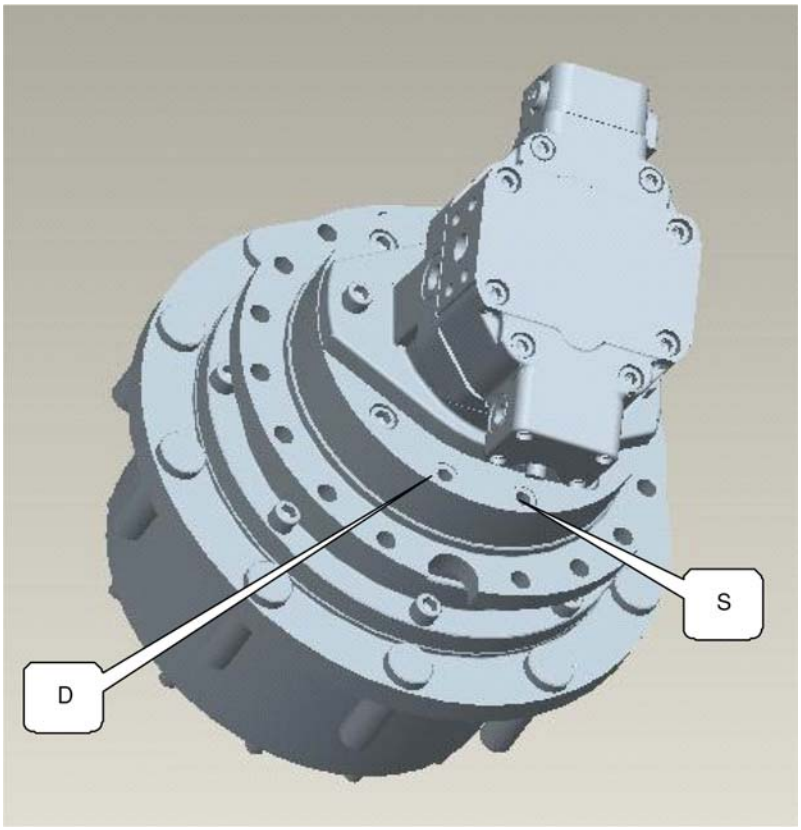
M: Hydrostatic Motor

R: Gear Unit



D: Dynamic Brake

S: Static Brake



Left Rear Motor

A: Service Line Port (Reverse) (435psi to 6526psi) (30 bar to 450 bar)

B: Service Line Port (Forward) (435psi to 6526psi) (30 bar to 450 bar)

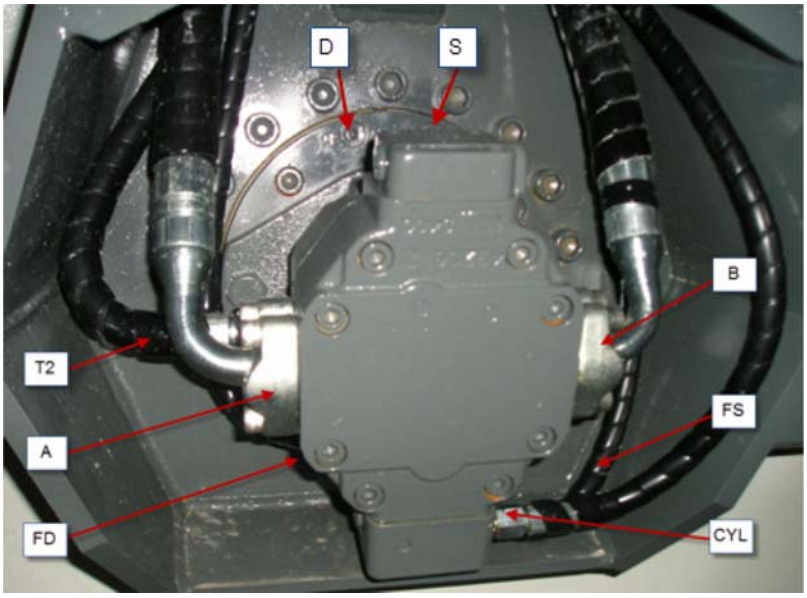
CYL: Change of Displacement (0psi or 435psi) (0 bar or 30 bar)

FS: Parking Brake (0psi or 435psi) (0 bar or 30 bar)

FD: Dynamic Brake Port (0psi to 870psi) (0 bar to 60 bar)

T2: Case Drain Port (<43psi) (<3 bar)

D and S: Plugs to check Pressure or Purge (M12x150)



Right Rear Motor

A: Service Line Port (Forward) (435psi to 6526psi) (30 bar to 450 bar)

B: Service Line Port (Reverse) (435psi to 6526psi) (30 bar to 450 bar)

CYL: Change of Displacement (0psi or 435psi) (0 bar or 30 bar)

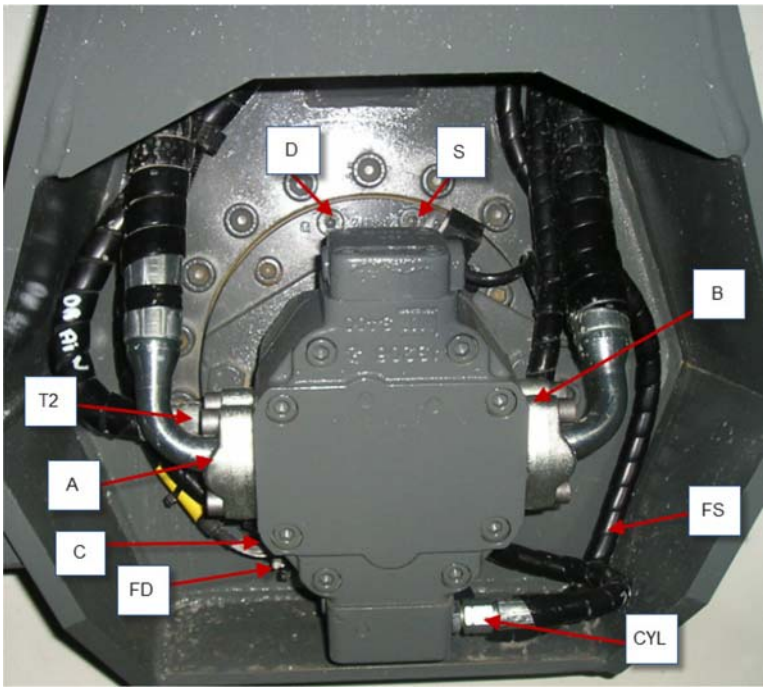
FS: Parking Brake (0psi or 435psi) (0 bar or 30 bar)

FD: Dynamic Brake Port (0psi to 870psi) (0 bar to 60 bar)

T2: Case Drain Port (<43psi) (<3 bar)

D and S: Plugs to check Pressure or Purge (M12x150)

C: Speed Sensor (XX0203)

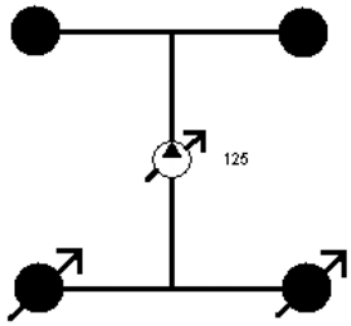


Gear Ratio: 32/1 (55 cm^3 to 20 cm^3) = 1.8 liter/revolution of the wheel.

Operating Speed Range (Old Prior to S/N 0316103794))

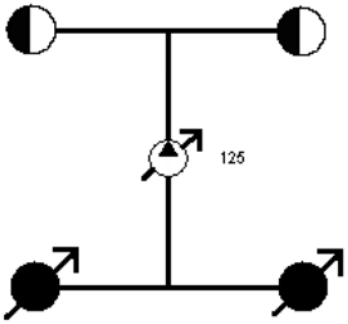
1st Gear

- Full displacement of all 4 motors.



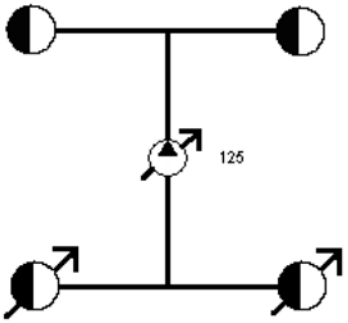
2nd Gear

- Half displacement of the front motors.
- Full displacement of the rear motors.



3rd Gear

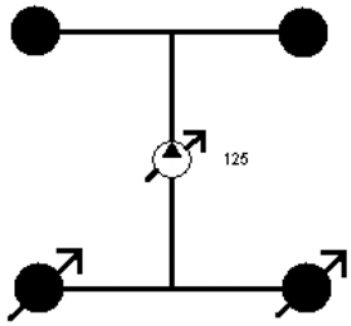
- Half displacement of all 4 motors.



Operating Speed Range (New S/N 0313103794)

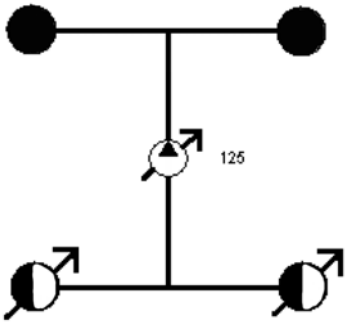
1st Gear

- Full displacement of all 4 motors.



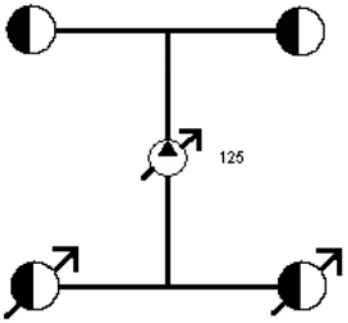
2nd Gear

- Full displacement of the front motors.
- Half displacement of the rear motors.



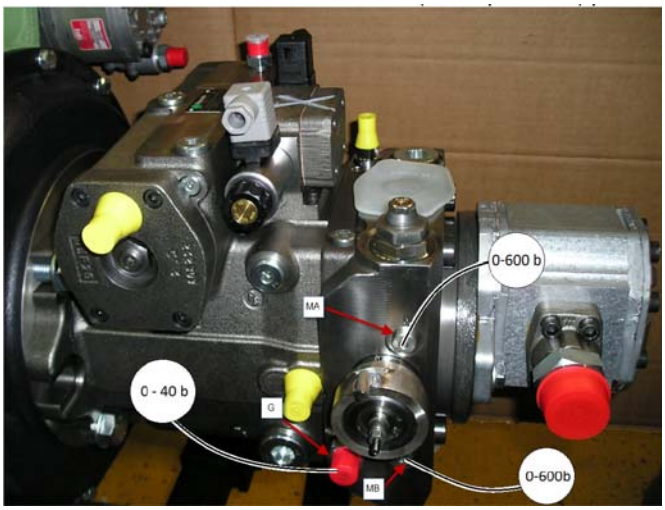
3rd Gear

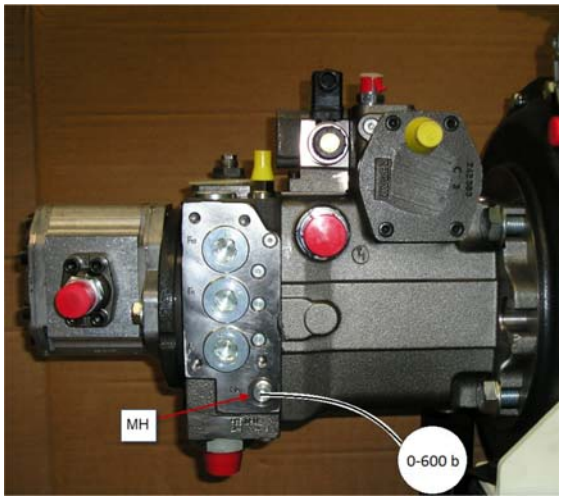
- Half displacement of all 4 motors.



Checking the Change of Displacement of the Motors

- Connect a 8702psi (600 bar) manometer on the MB (HP Forward) or the MH (HP Forward and Backward) port of the forward pump. Thread is M12x150.





- Activate the Parking Brake.

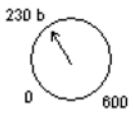
- Connect two manometers on the connection show on the two rear motors. Thread is M14x150.

Change of Displacement Test

- Start the engine and run the pump between 1300and 1400 rpm.

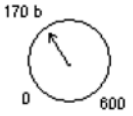
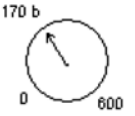
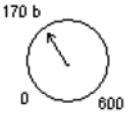
1st Gear

- The pressure of the rear motors should follow the pump pressure.

Pump		**Rear left motor**		**Rear right motor**	

2nd Gear

- Less than 2900psi (200 bar) of pressure

Pump		**Rear left motor** **Full diplacement**		**Rear right motor** **Full diplacement**	

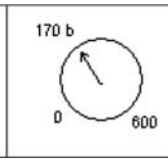
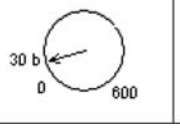
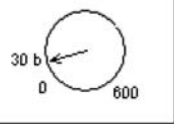
- Over 3335psi (230 bar) of pressure

Pump		**Rear left motor** **Full diplacement**		**Rear right motor** **Full diplacement**	

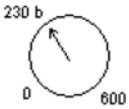
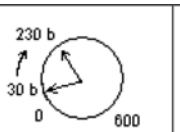
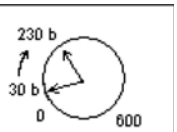
3rd Gear

- All motors are in half displacement
- The motor changes displacement when the pump pressure goes over 3335psi (230 bar).

- Less than 3335psi (230 bar)

Pump		**Rear left motor** **Half diplacement**		**Rear right motor** **Half diplacement**	

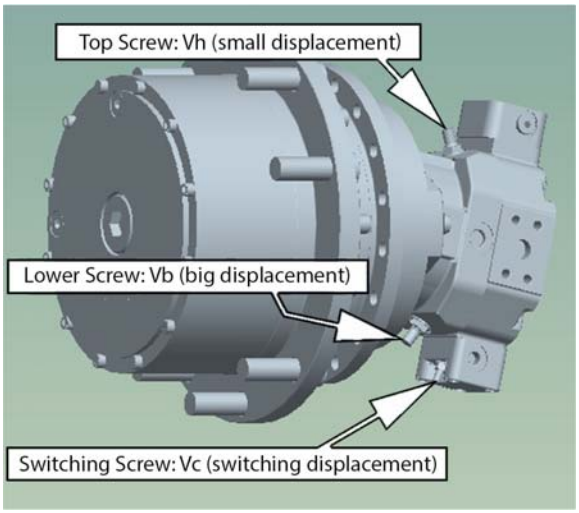
- Over 3335psi (230 bar)

Pump		**Rear left motor** **Full diplacement**		**Rear right motor** **Full diplacement**	

Top Screw: Vh (small displacement)

Lower Screw: Vb (big displacement)

Switching Screw: Vc (switching displacement)



- To adjust or change the setting of the switching displacement, adjust the screw Vc.

Changing a Right Hydraulic Motor to a Left Hydraulic Motor

- Motor in position on the device: Remove the flange facing down.

- Remove the 4 screws on the flange.

- Remove the plate.

ATTENTION! Be careful of the spring.

- Use am M3 screw and pliers.

- Tighten the screw in the plug and remove it with the pliers.

- Proceed in the same way to extract the valve.

- Using a magnet, remove the needle at the bottom of the valve orifice.

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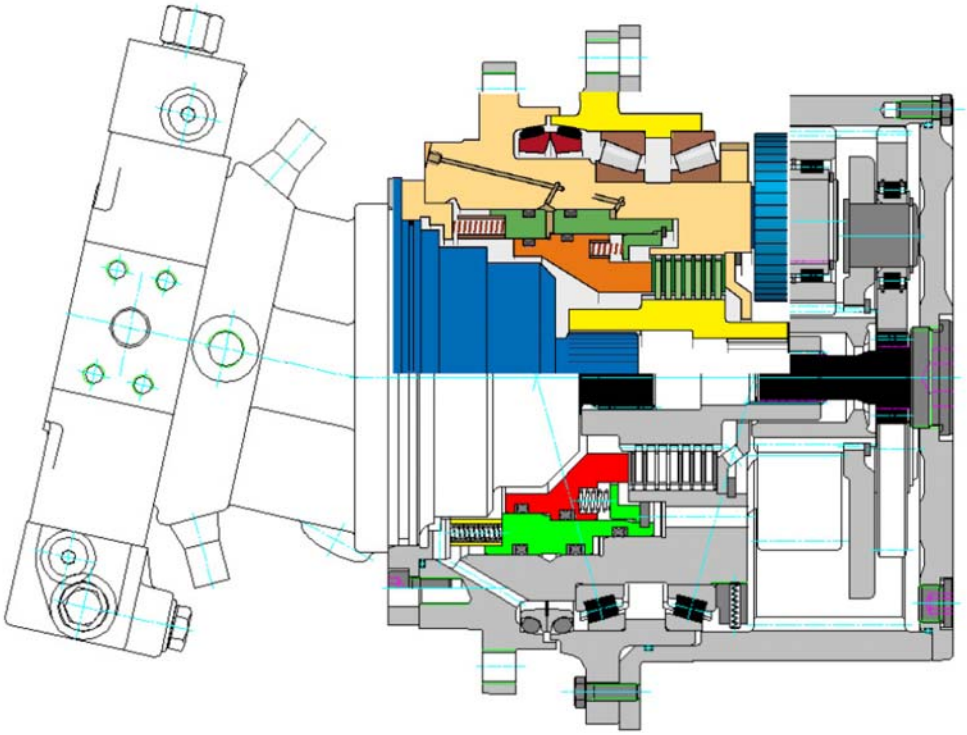
- To Reverse the mounting side of a motor, positions between the plug and valve must be reversed.
- Left Motor

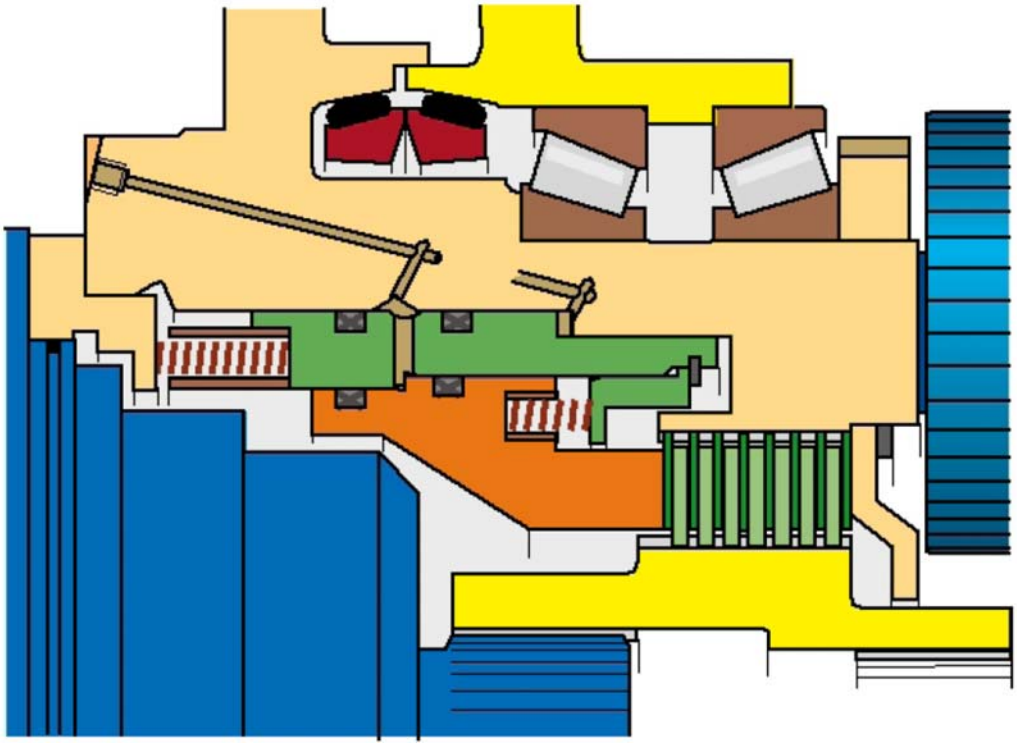
- Right Motor

Operational Diagrams

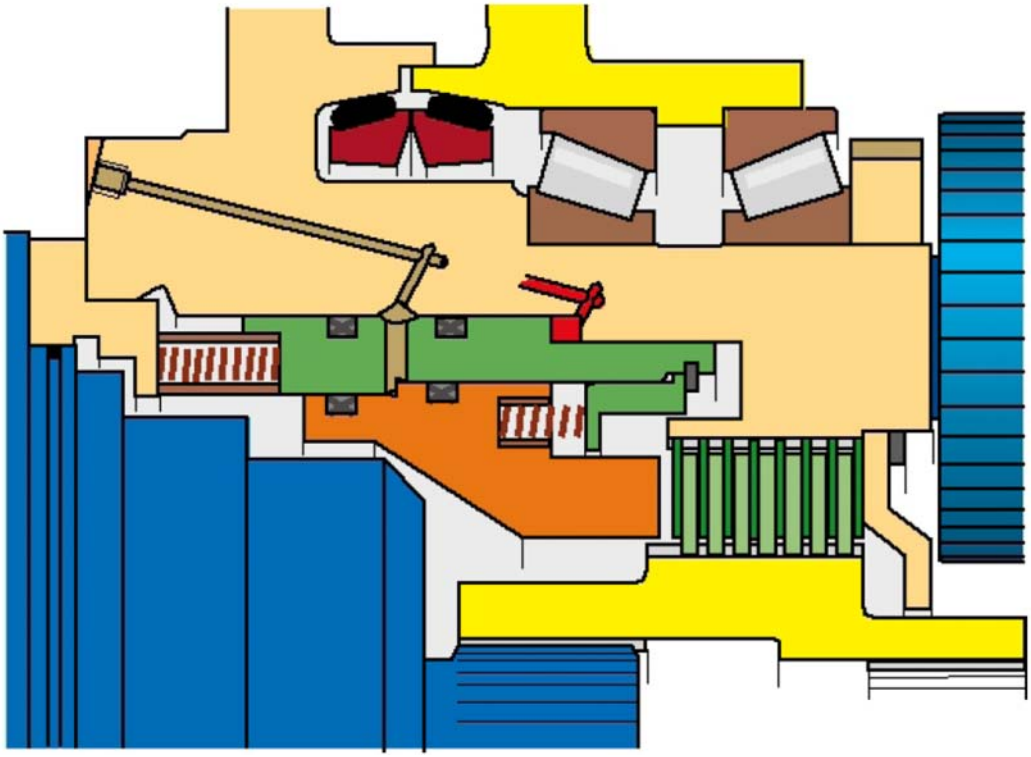
Tow Braking Piston



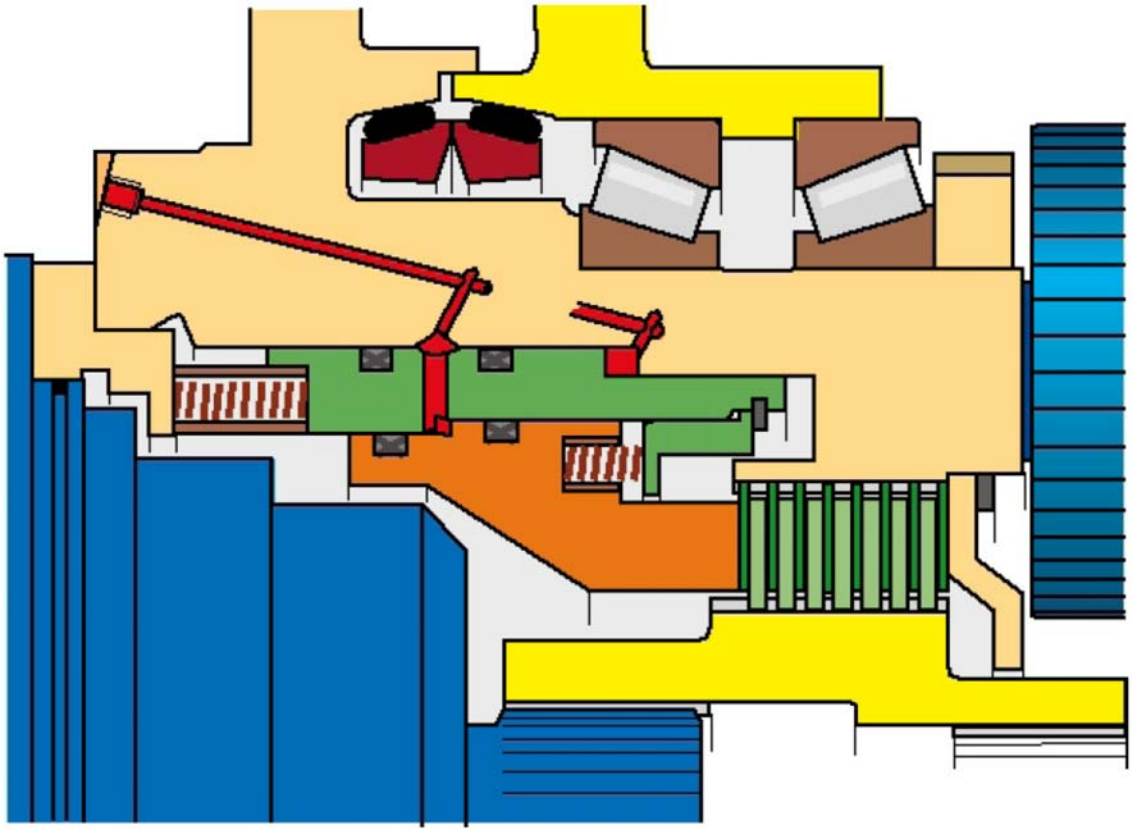
Parking



Driving



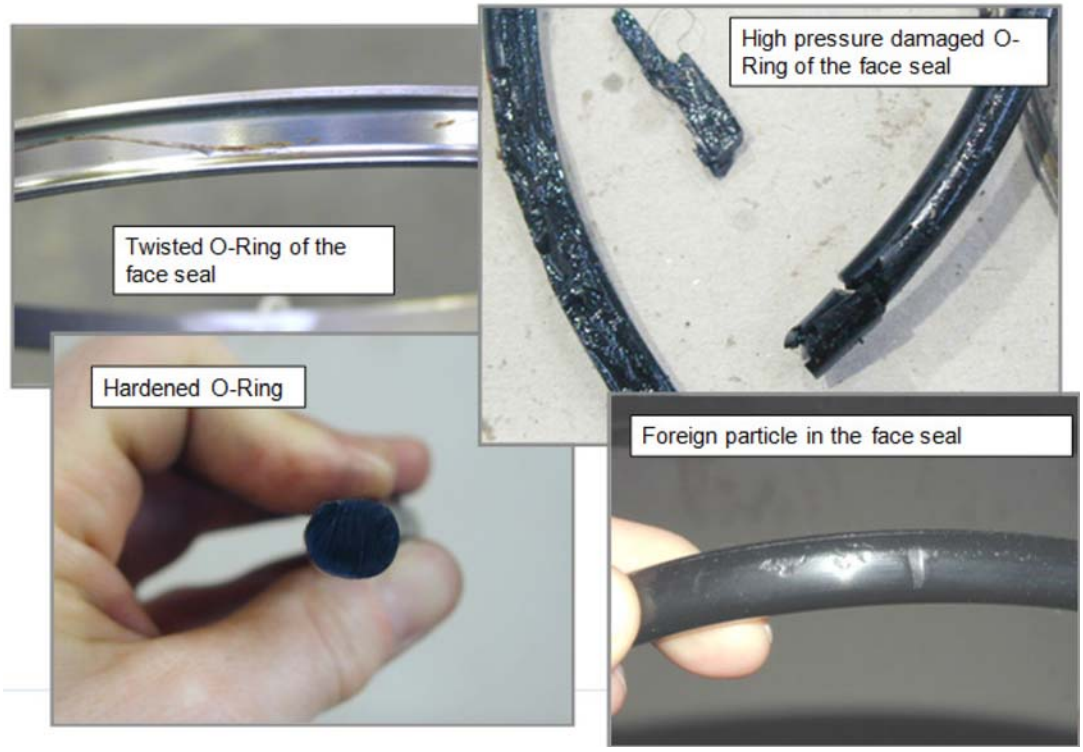
Dynamic Braking



Troubleshooting

Leakage

Fault	Probable Cause
Leakage from the main face seal	Foreign particles in the face seal from the outside Wear of the face seal High pressure in the gearbox (> 29psi)(>2 bar) (i.e. damaged hydraulic motor seal, damaged brake seals, or oil level too high) Assembly failure (i.e. slanted assembly of the face seal, or a twisted o-ring)
Leakage of the cover plate	Damaged o-ring
Leakage of the screw plugs	Missing copper seals Loose screw plugs



Hydraulic Transmission Block (HD0332)

Component Identification

A: Charged Pressure Port

B: Tank Return Like (3.96 gpm) (15 l/min)

C: Forward Port (from pump)

D: Backward Port (from pump)

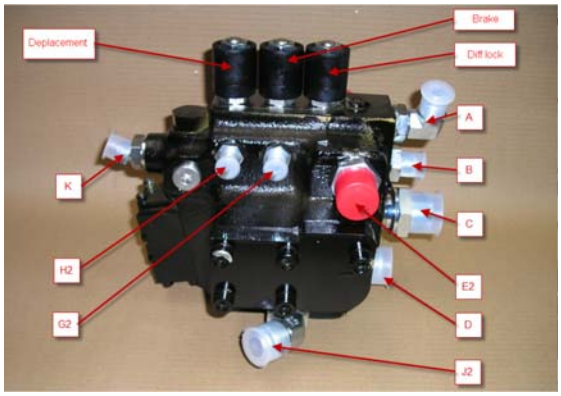
G2: Right Rear Motor Brake Port

E2: Front Right (A) & Rear Left (B) Motor Port

H2: Change of Displacement Port (front motors)

J2: Front Right (B) & Rear Left (A) Motor Port

K: Oil Cooling Return Line (3.96 gpm) (15 l/min)



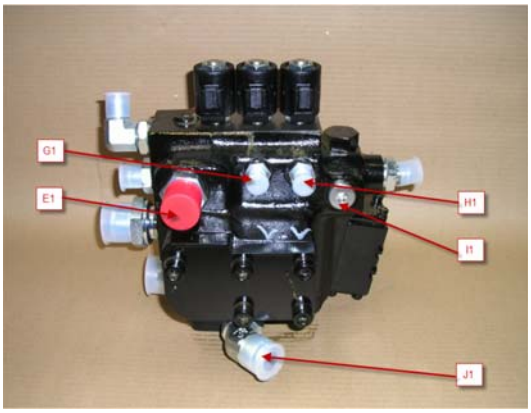
G1: Left Rear Motor Brake Port

E1: Front Left (B) & Rear Right (A) Motor Port

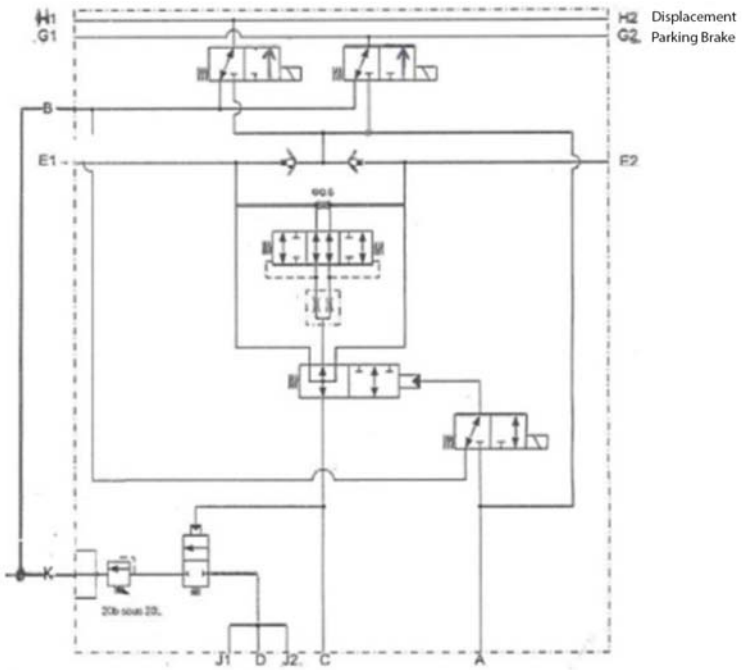
H1: Change of Displacement Port (front motors)

l1: Case Drain Port

J1: Front Left (A) & Rear Right (B) Motor Port



Hydraulic Schematic for (HD0332)

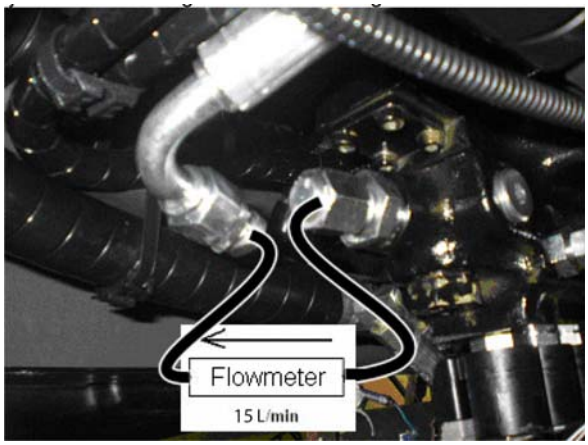


Oil Cooling Block (HD0332-03)

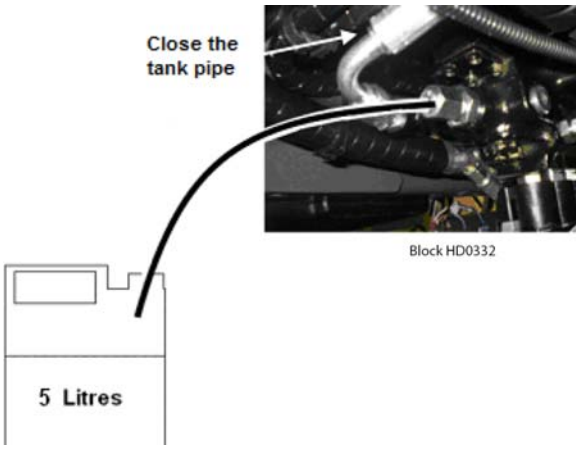
The oil Cooling Block is used to cool the oil in the transmission circuit. This is done by a valve.

Checking the oil cooling flow

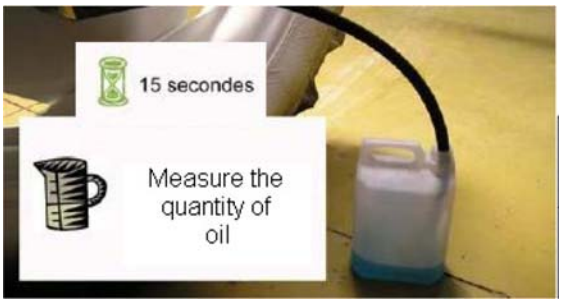
1. Checking with a flow-meter
   - Install a flow-meter between port K and the hose.
   - Test when rolling.
   - The oil cooling flow should be 3.96 gpm (15 l/min)



2. Checking with a bucket
   - Run a hose from port K and run it into a 1.5 gallon (5 liter bucket).
   - Plug the hose that was previously going to port K.
   - Engage the parking brake
   - Put the engine to 2000 rpm.
   - Push the Joystick forward. (The pressure will go up on the circuit and the oil will go to the T port of block HD0332).



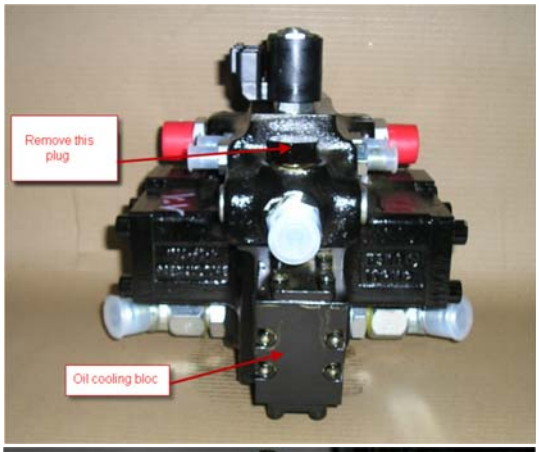
   - When the oil begins to go in the bucket, wait 15 seconds and put the joystick back to neutral.
   - There should be 0.99 gallons (3.75 liters) in the bucket.
   - If you have more oil in the bucket you will need to adjust the oil cooling flow.



Adjustment of oil cooling flow

To adjust the oil cooling flow it is necessary to change the size of the wedge

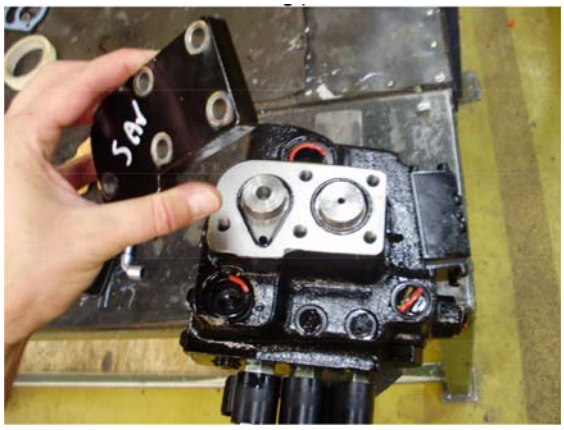
- Remove the valve plug



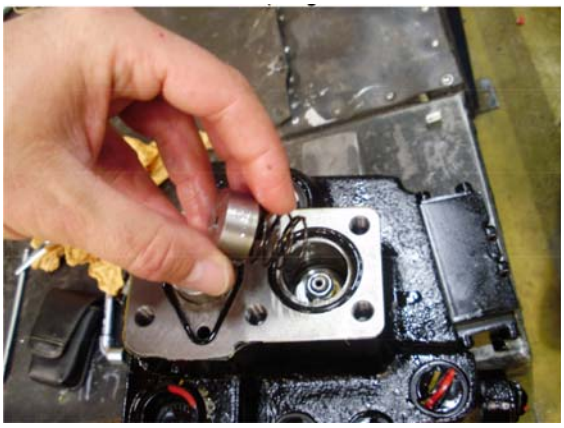
- Wedge will either be 6mm or 6.8mm.

Removing the Hydraulic Valve from the Divider Block

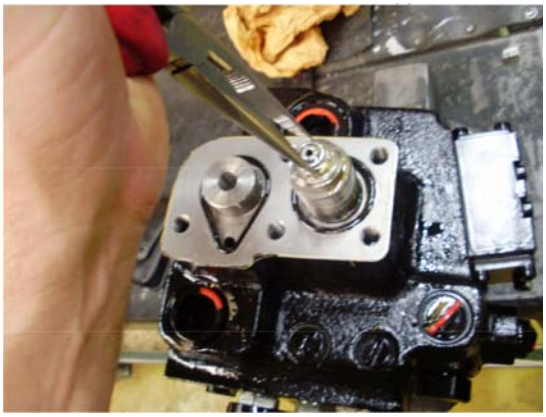
- Remove the enclosing plate of the block.



- Remove the spring and hat.



- Remove the valve with needle nose pliers.



- Remove the nut at the end of the valve.

ATTENTION! Be careful of the side of the washer behind the nut.

- With snap ring pliers, remove the snap ring.
- Remove the insert and replace with new.
- Reassemble in the reverse order of operation.

Dynamic Brake

Component Identification

Accumulator (HA0092)

- Pressure 870psi (60 bar)

Brake Pedal (HA0019)

T: Tank Return Line (M16x1.5)

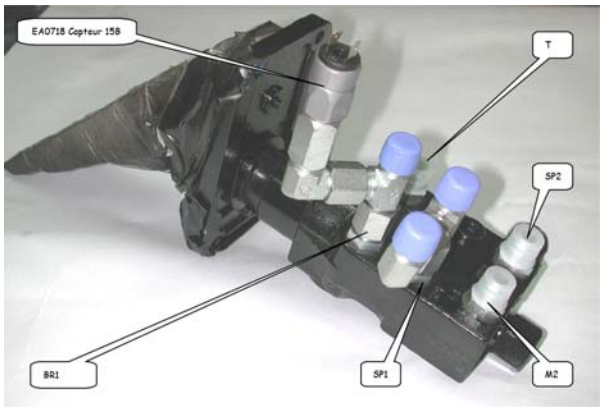
BR1: Dynamic Brake Port (to 4 hydrostatic motor) (M16x1.5)

SP1: Accumulator & S1 Block HA0020 (M16x1.5)

SP2: X1 Transmission Pump Port (M16x1.5)

M2: Tank Return Line (M16x1.5)

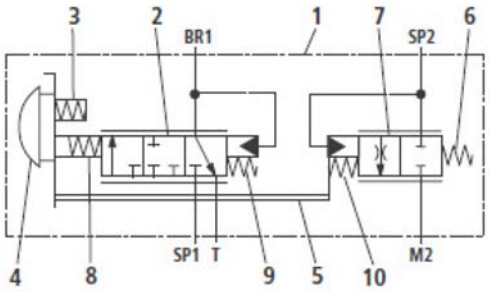
EA0718: Pressure Switch 217psi (15 bar)



Function Description

The inching-remotely powered brake valve is a combination of a single circuit brake valve (3-way pressure reducing valve) and an inching valve (2-way pressure reducing valve) with step-less operation.

The valve basically comprises of the housing (1), brake control spool (2) inching spool (7), force spring (3), compression spring (8), plunger (4), inching pressure limiting spring (6), and inching pressure control spring (10).



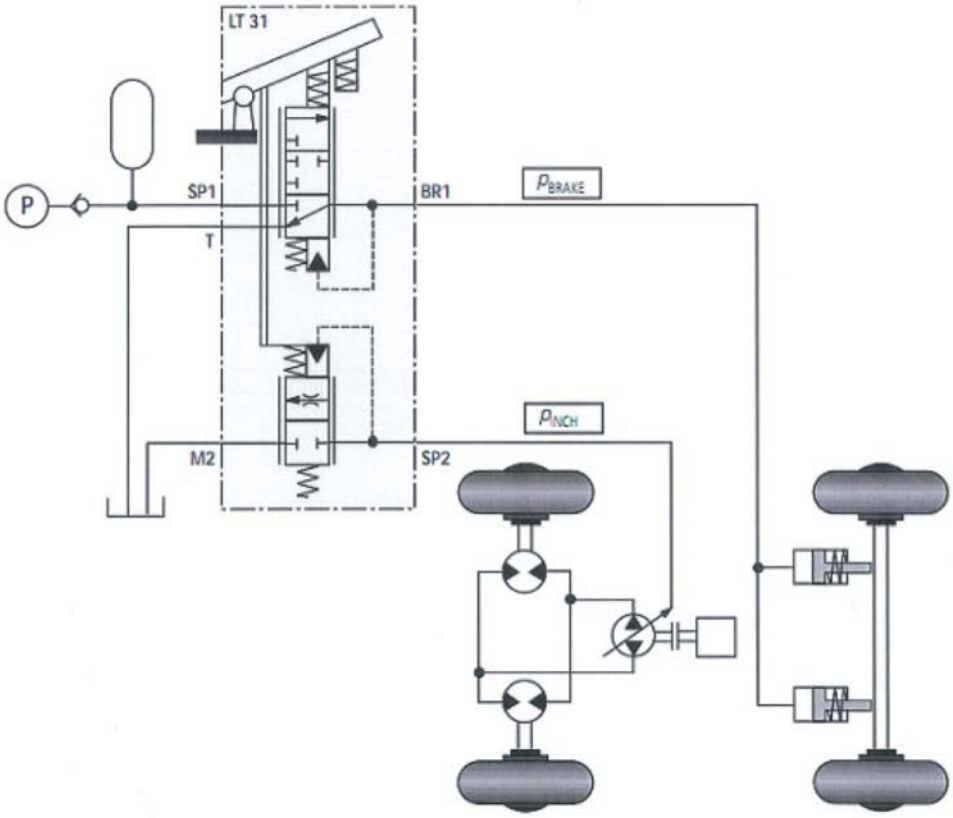
The valve is normally operated via a foot pedal which moves the plunger (4). This pushes against the force spring (3) and acts via the rod (5) on the inching pressure control spring (10) together with the inching pressure against the inching pressure control spring (6).

An increase in operation causes the control pressure to fall, the travel pump swivels back and hydro-statically brakes the vehicle.

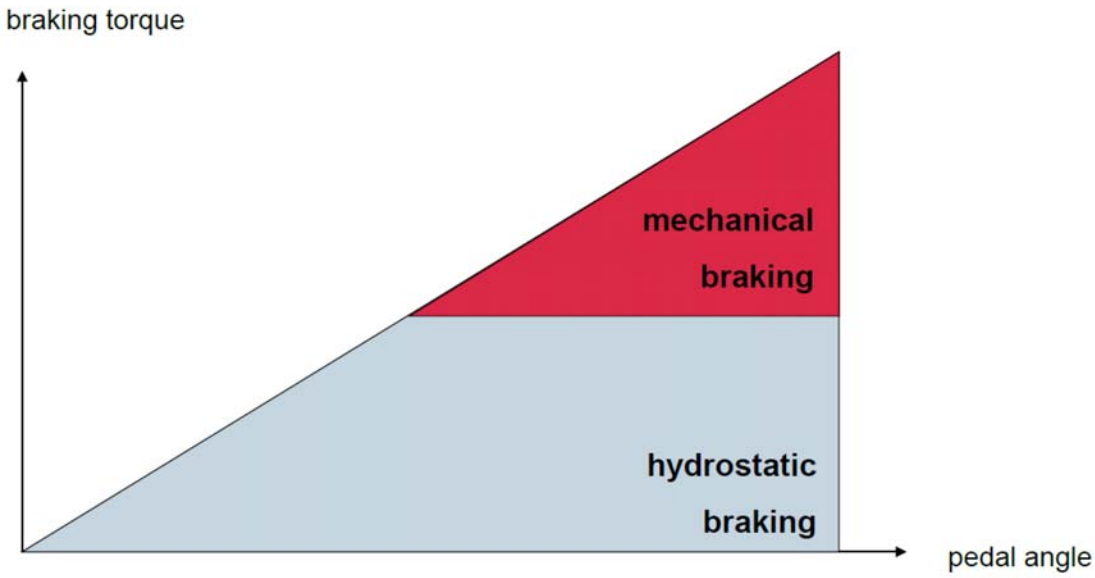
From a specific point the plunger acts on the compression spring (8). This moves the brake control spool (2) and the connection to tank is closed. The flow from the accumulator to the brake cylinder is enabled. The increasing brake pressure acts on the revers side of the brake spool (2). The control spool controls the brake pressure in relation tot he operation.

A pedal travel limitation acts as a maximum pressure limiter for the secondary circuit (brake pressure).

Hydraulic Diagram

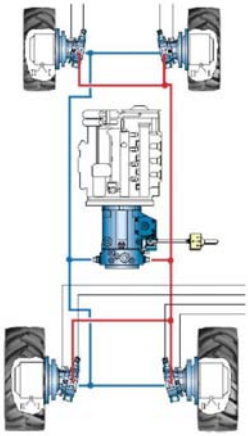


Braking Functions with Mechanical Support



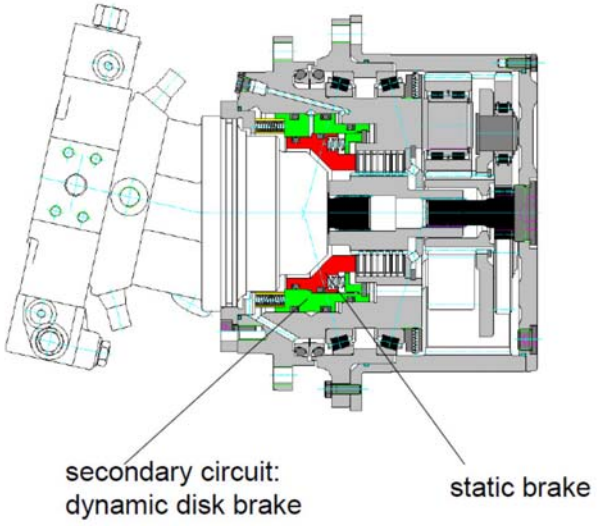
Primary Circuit

- Hydrostatic Braking



Secondary Circuit

- Mechanical Braking
- Covers peak braking torque if required.



Hydraulic Contact/Brake Block

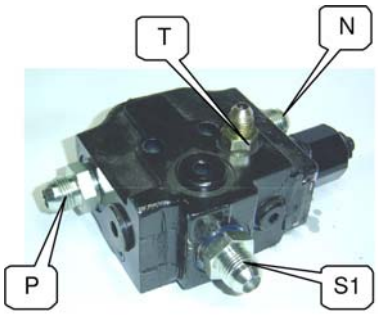
Component Identification

N: Hydraulic Steering Unit Port (M18x1.5)

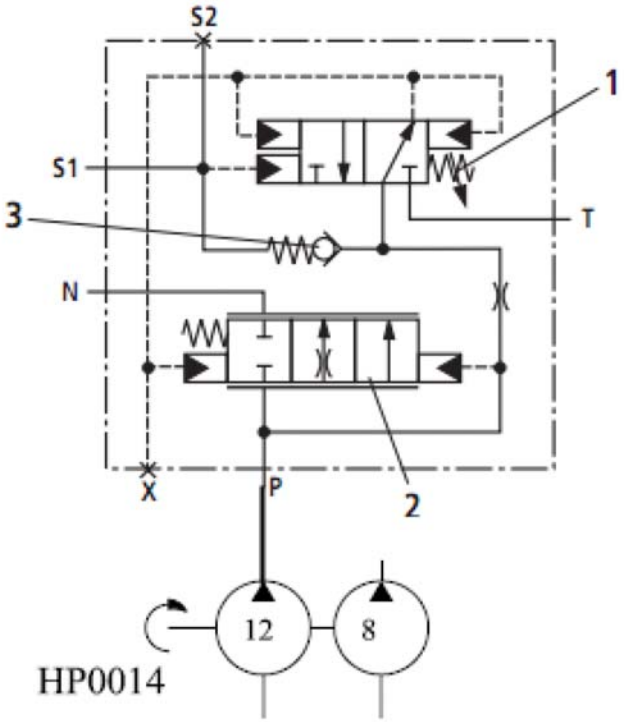
P: Pressure Port (M18x1.5)

S1: Accumulator & Brake Pedal Port (M18x1.5)

T: Tank Return Line (M12x1.5)



Hydraulic Schematic



Function

Accumulator charging valves or pressure shut-off valves assume the function of keeping a pressure level in an accumulator circuit within certain limit values (cut-in pressure, cut-out pressure). The switching pressure differential is approx. 18% of the cut-off pressure.

The valve basically consists of a pilot control with pressure adjustment element (1), pressure compensator (2), and check valve (3).

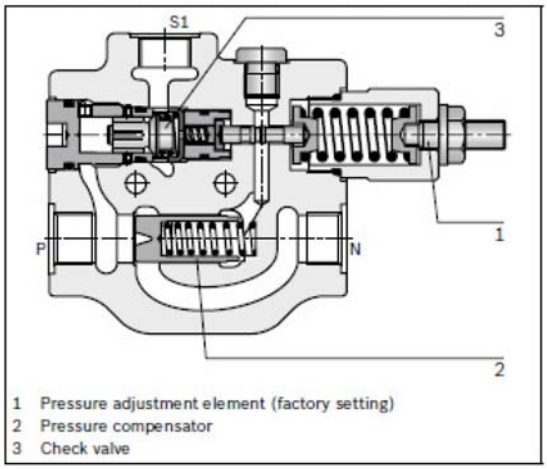
Changing the pump flow over from accumulator charging to neutral circulation

During the charging process, the pump feed oil via the check valve (3) into the accumulator circuit. To this end, the pressure is directed via the pilot line and pilot control to the load side of the pressure compensator (2). This pressure compensator throttles the pump flow until the pressure that builds up in the accumulator circuit overcomes the spring force of the pressure adjustment element (1).

The pilot control element reconnects the load signal line of the pressure compensator (2) from S1 to T. The pressure compensator (2) then re-directs the pump flow from P to N and the check valve (3) closes. The charging process is completed and the pump flow flows with a low Δp through the charging valve.

Changing the pump flow over from neutral circulation to accumulator charging

When the pressure in the accumulator circuit falls below the lower switching point (cut-in point), P is connected to the load signal chamber of the pressure compensator (2) and the pump flow is directed again into the accumulator circuit.



1 Pressure adjustment element (factory setting)
2 Pressure compensator
3 Check valve

Change Displacement Block (HD0218)

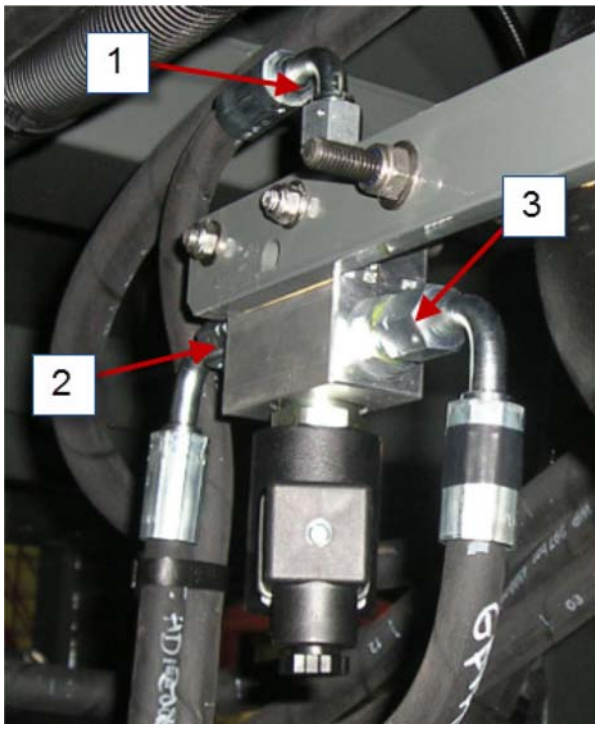
Component Identification

Displacement Front Motors

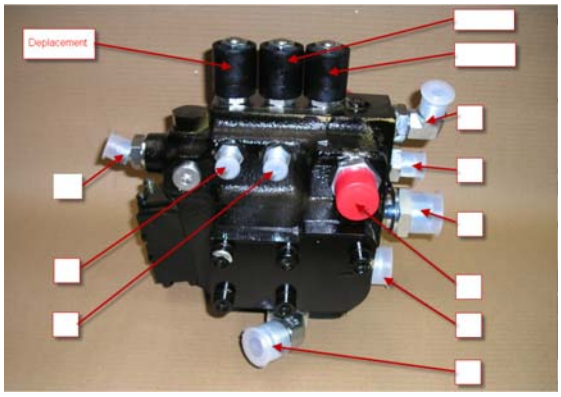
1: Front Motors left and right

2: Return

3: Charge Pressure



Displacement Rear Motors



Specifications

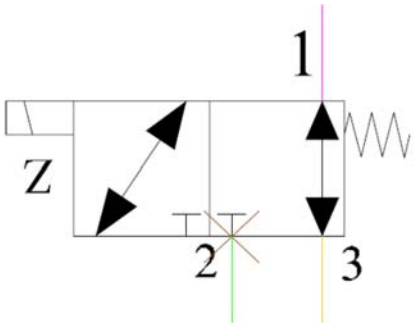
Old (Prior to S/N 0313103794)

	Rear Motors		Front Motors	
	Voltage	Pressure	Voltage	Pressure
Low	12V	435psi (30 bar)	12V	0psi (0 bar)
Medium	12V	435psi (30 bar)	0V	435psi (30 bar)
High	0V	0psi (0 bar)	0V	435psi (30 bar)
	Rear motors are variable displacement. They are naturally in half displacement. You must force the pilot to switch to full displacement. (Low Speed)		Front motors are a fixed displacement. They are naturally in full displacement. You must force the pilot to switch to half displacement. (High Speed)	

New (S/N 0313103794 to present)

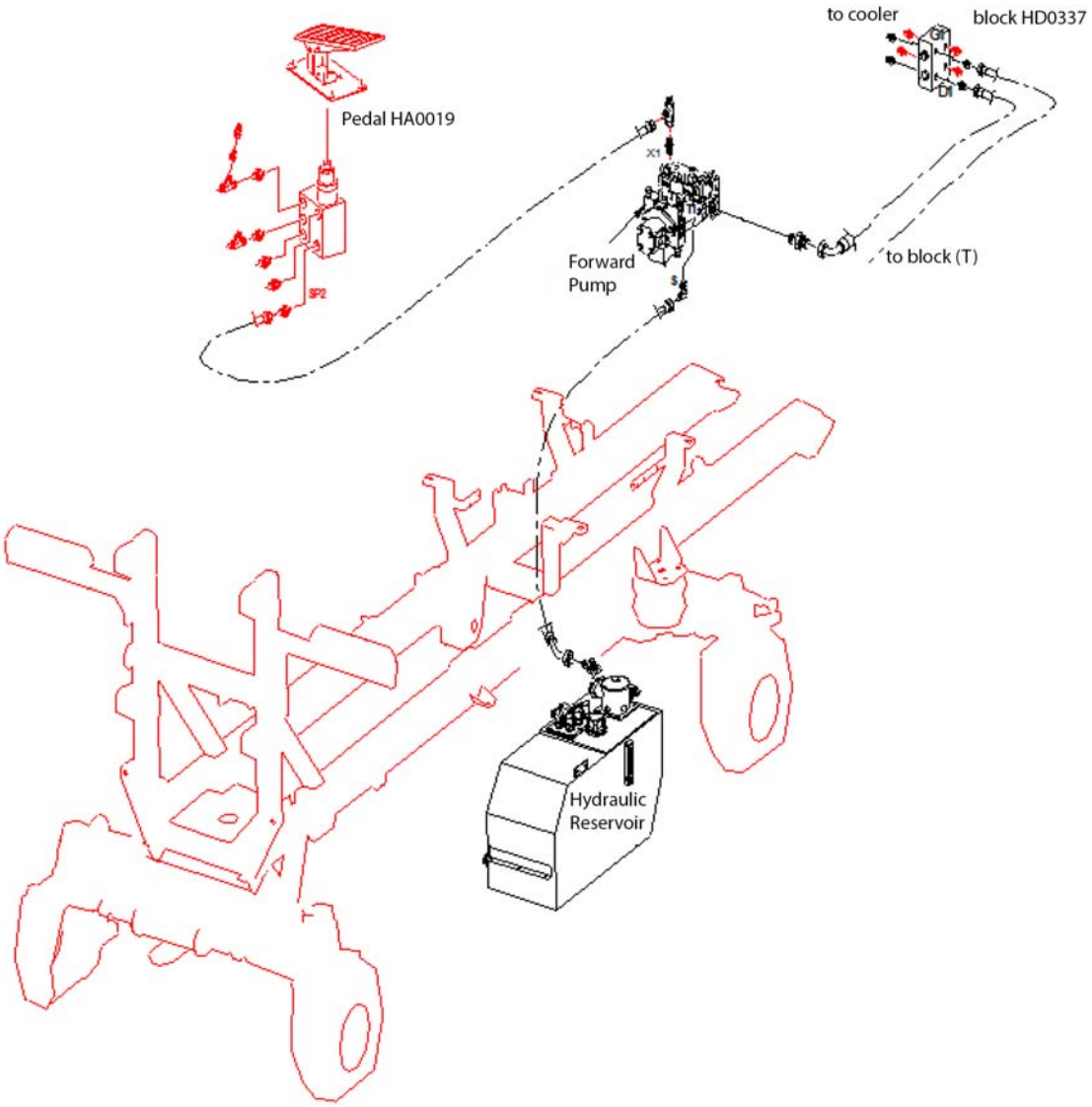
	Rear Motors		Front Motors	
	Voltage	Pressure	Voltage	Pressure
Low	12V	435psi (30 bar)	12V	0psi (0 bar)
Medium	0V	0psi (0 bar)	12V	0psi (0 bar)
High	0V	0psi (0 bar)	0V	435psi (30 bar)
	Rear motors are variable displacement. They are naturally in half displacement. You must force the pilot to switch to full displacement. (Low Speed)		Front motors are a fixed displacement. They are naturally in full displacement. You must force the pilot to switch to half displacement. (High Speed)	

Hydraulic Schematic

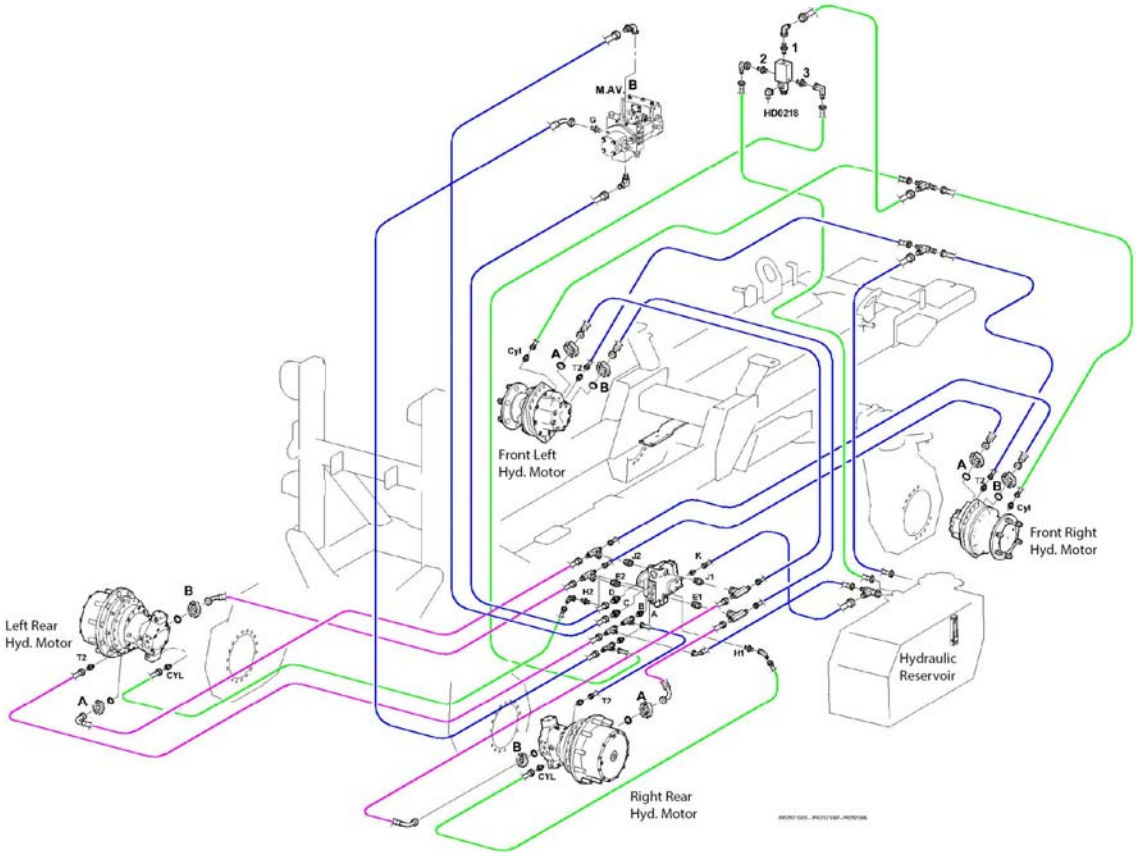


Hydraulic Diagrams

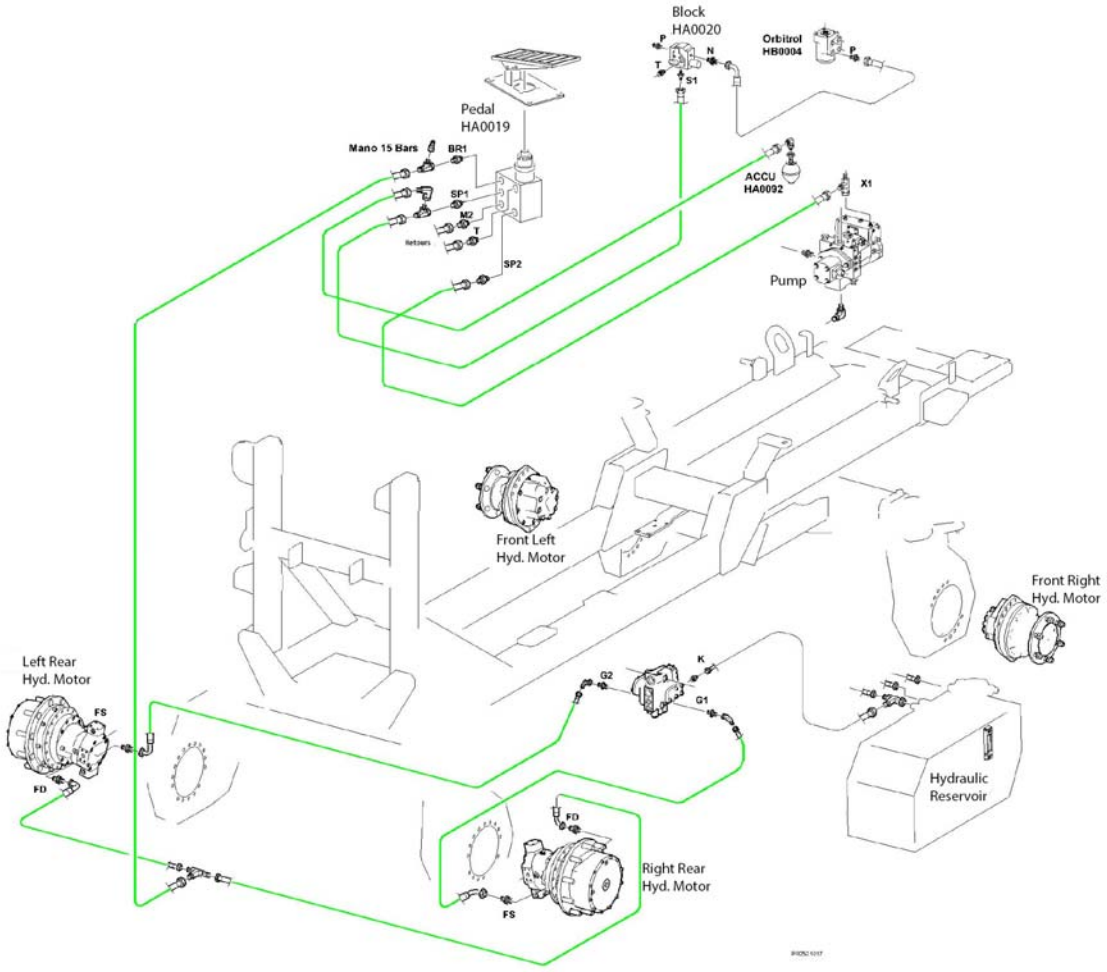
Supply Circuit of Transmission Pumps



Front and Rear Hydrostatic Circuit

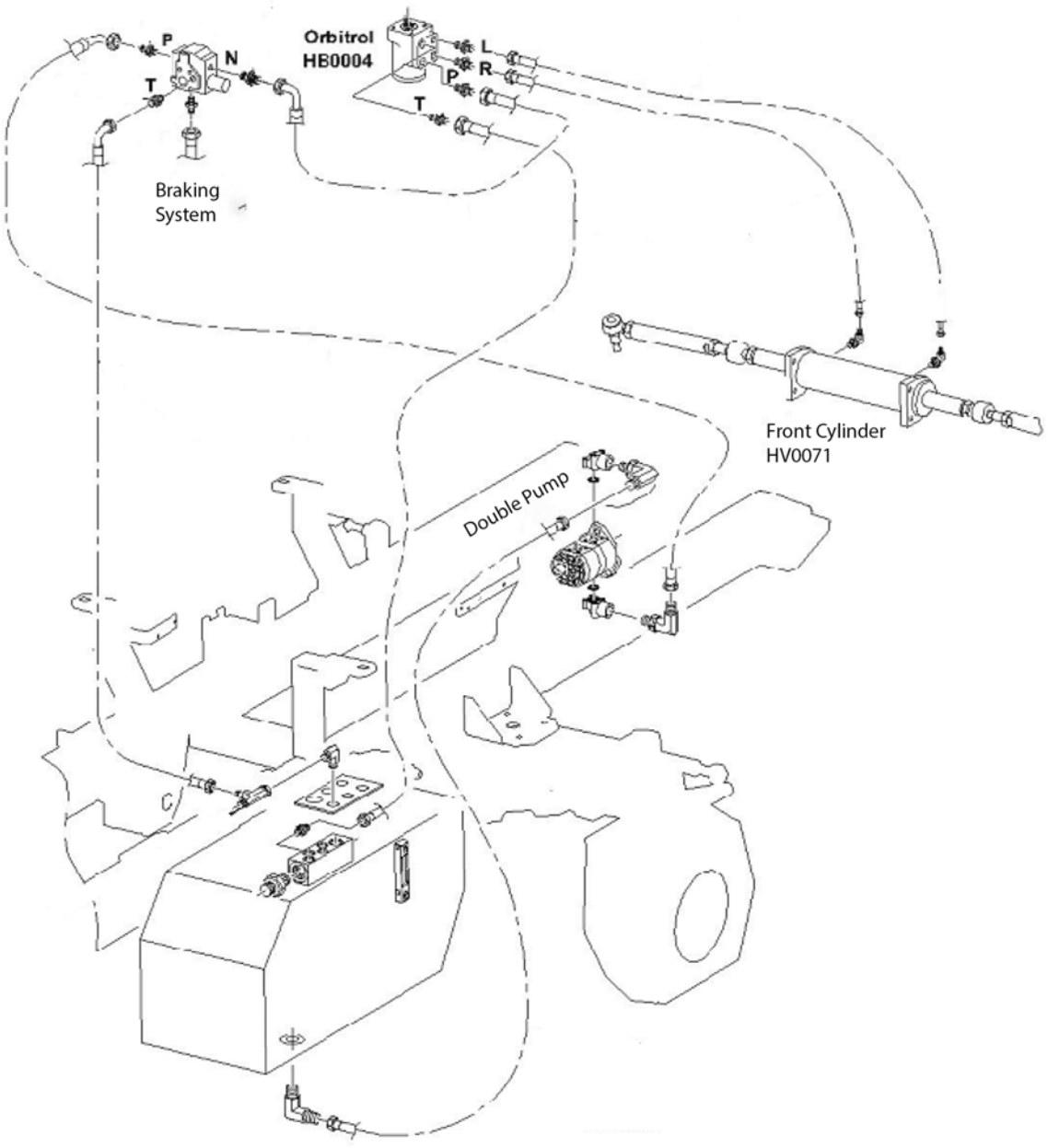


Static and Dynamic Brake Circuit



Steering System

General Representation



Component Identification

Hydraulic Steering Unit (HB004)

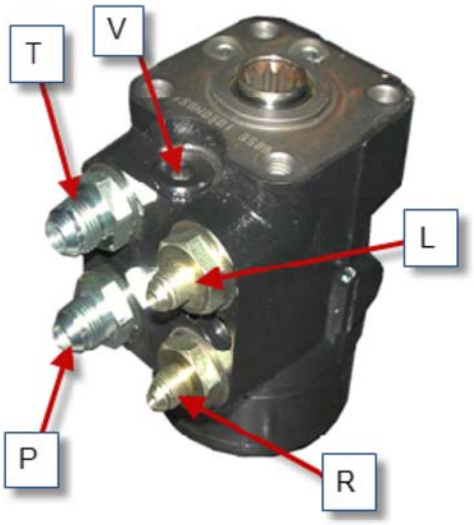
P: Pressure 2610psi (180 bar)

T: Tank

L: Left

R: Right

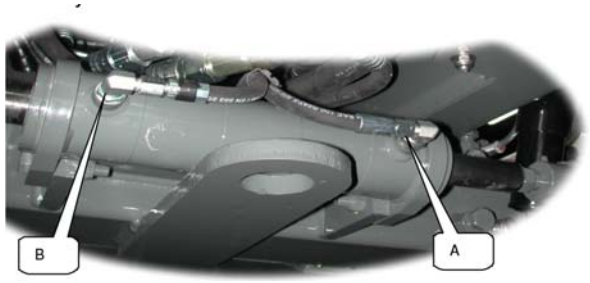
V: Maximal Pressure Adjustment Screw (under a cap)



Steering Cylinder (HV0071)

A: Right Hydraulic Steering Unit

B: Left Hydraulic Steering Unit



Double Pump (HP0014)(

1: Pump 15cc (Hydraulic contact, brake pedal, hydraulic steering unit)

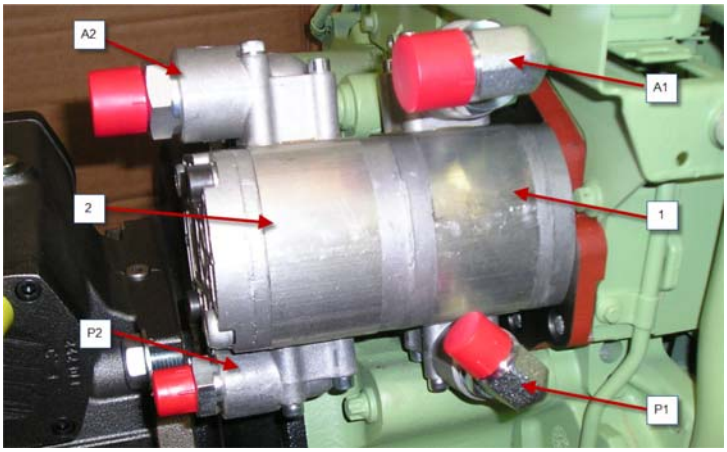
A1: Feeding

P1: Pressure (hydraulic contact block (HA0020))

2: Pump 12cc (Sprayer Hydraulics)

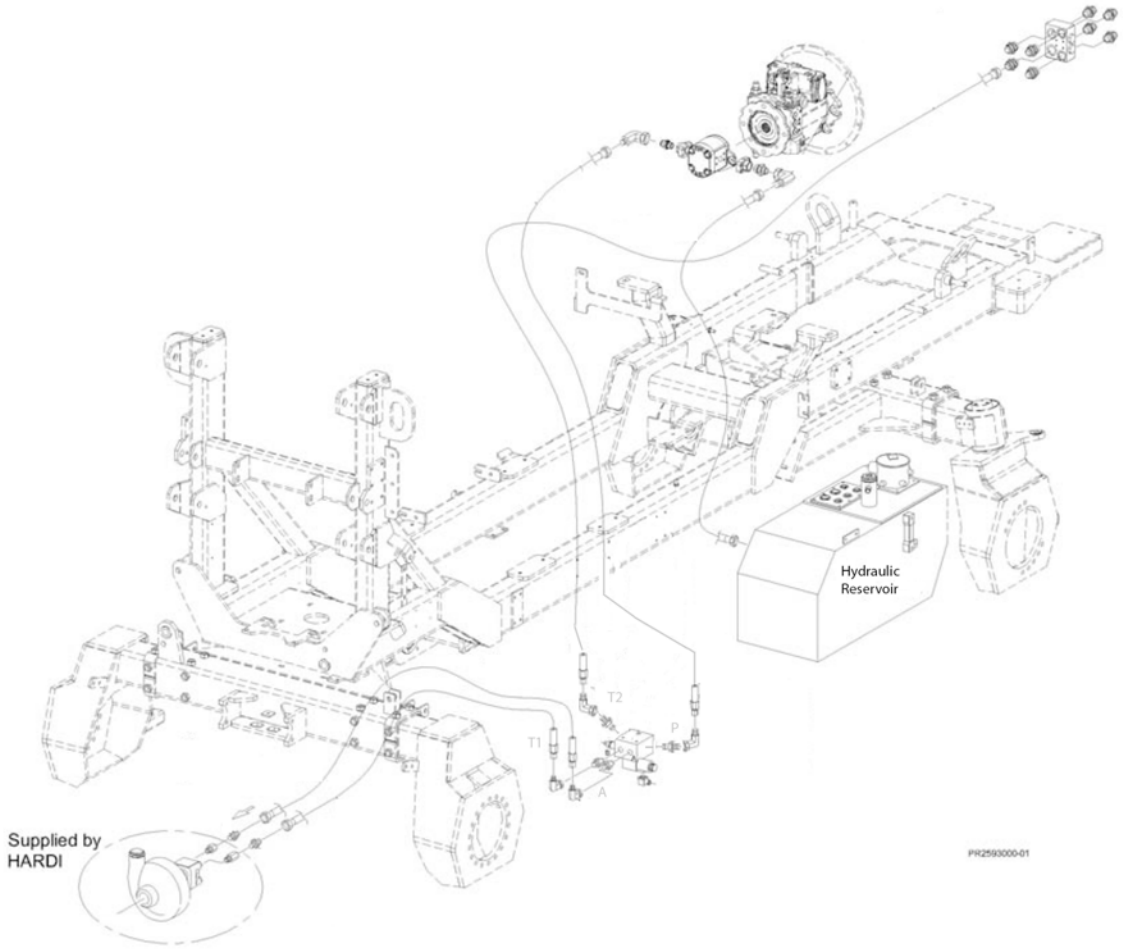
A2: Feeding

P2: Pressure (Sprayer Hydraulics)



Power Take-Off

General Representation



Component Identification

PTO (HP0192)
26 cm^3

Regulating Block (HD0091)

T2: Return

R: Mechanical Stop

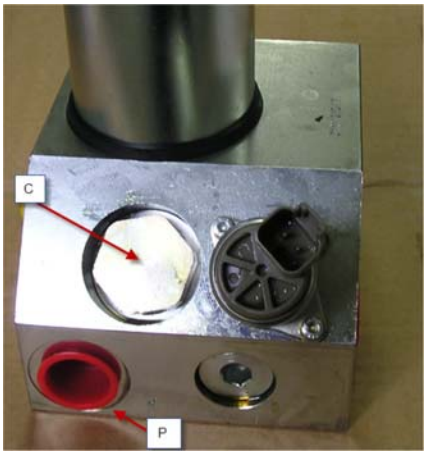
S: Valve

1: Pressure Valve (2683psi) (185 bar)

Z1: Pilot Pressure

C: Valve

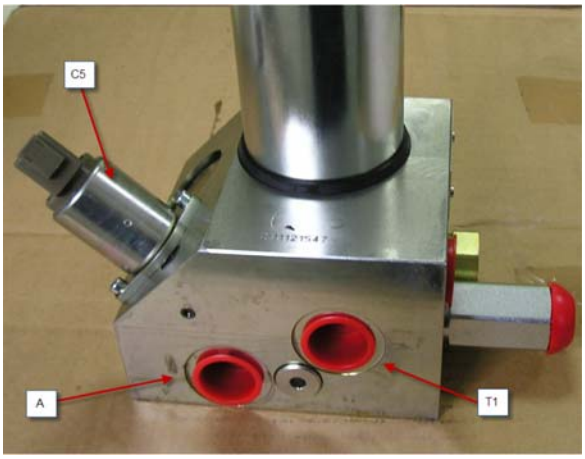
P: Pressure



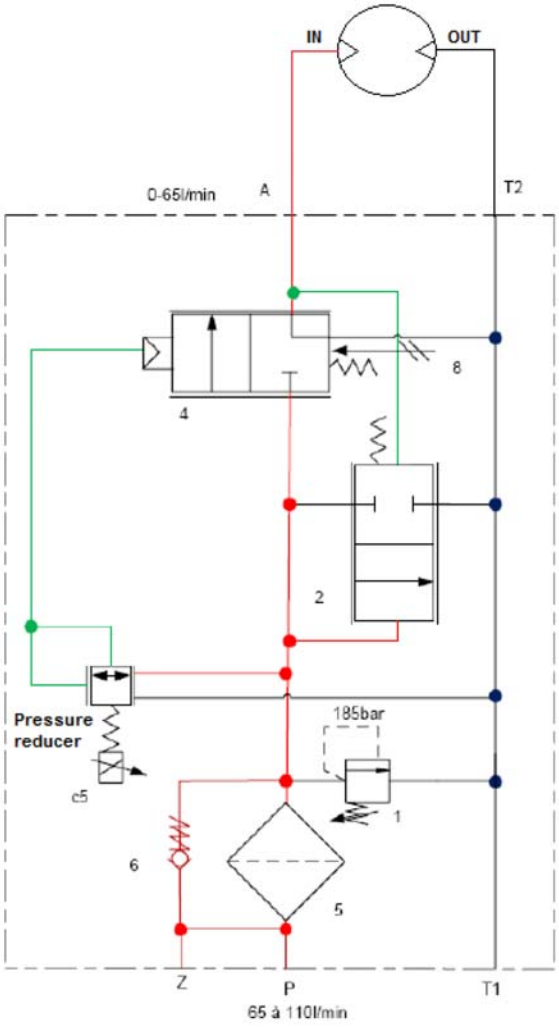
C5: Proportional Pressure Reducer

A: Feeding PTO Motor

T1: Return

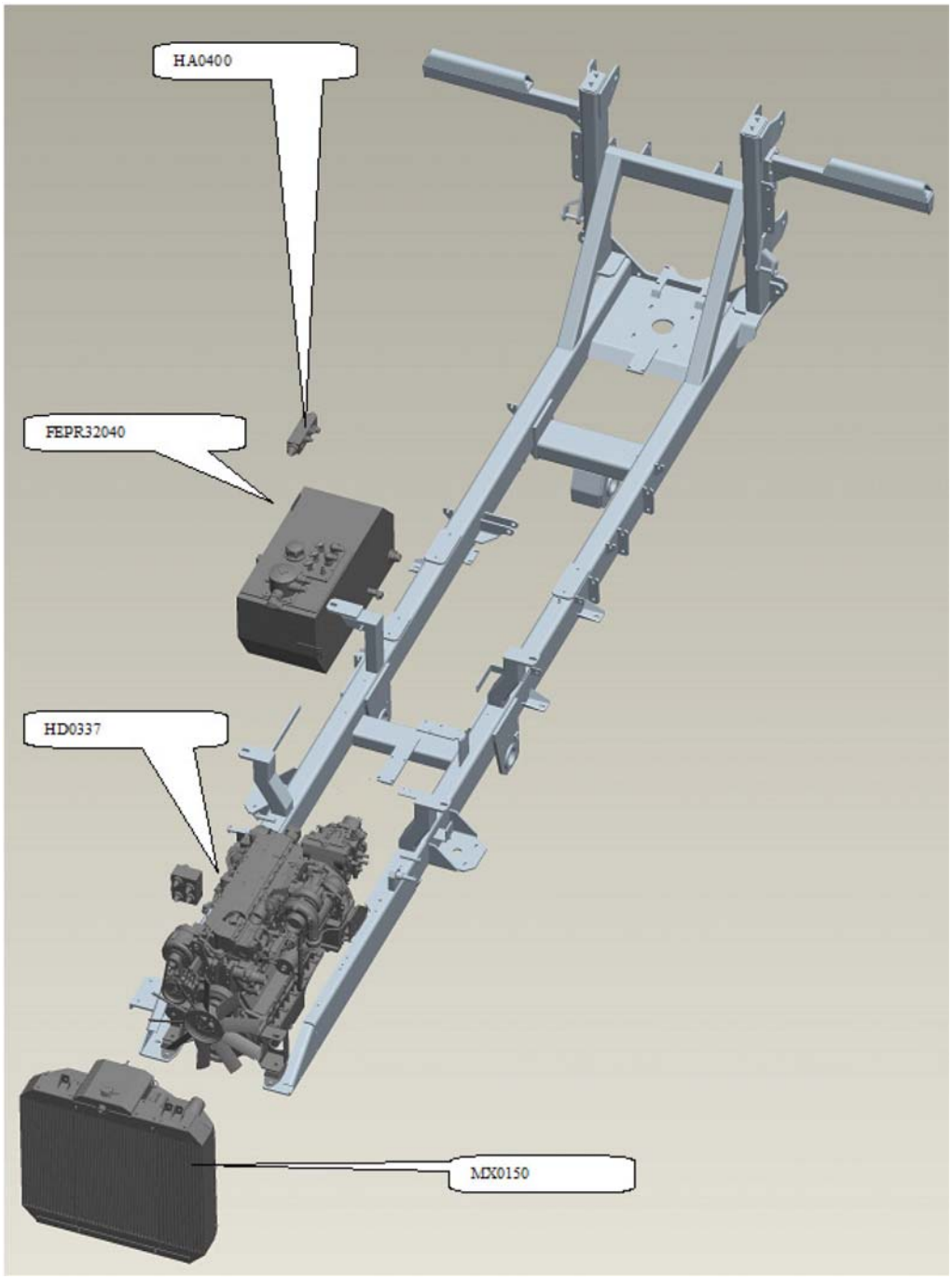


Hydraulic Diagram (Regulating Block HD0091)



Hydraulic Cooler and Filtered Returns

General Representation



Component Identification

Hydraulic Reservoir (FEPR32040)

1: Hydraulic System Filter (HE0004 old)(HE0024 new)

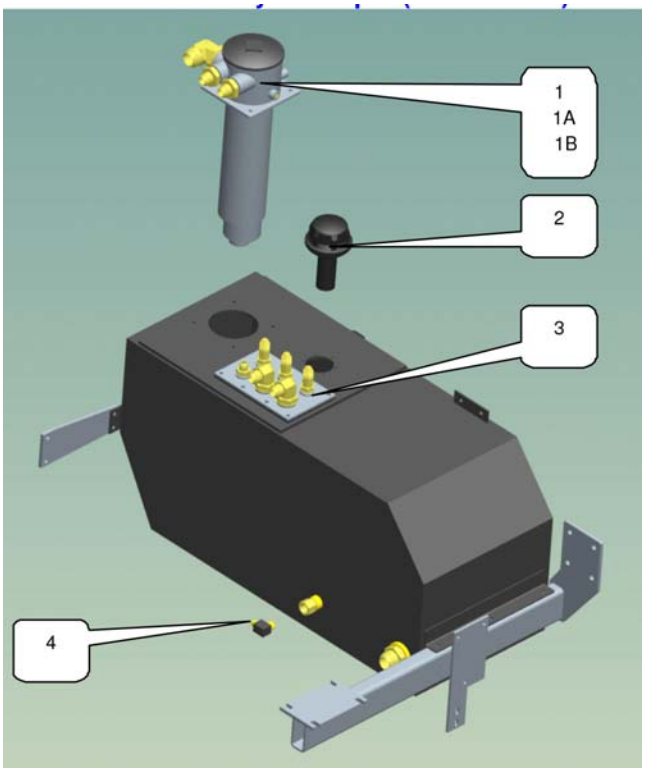
1A: Filter Element (HE0005 old)(HE0025 new)

1B: Clogged Indicator (HE0004-01)

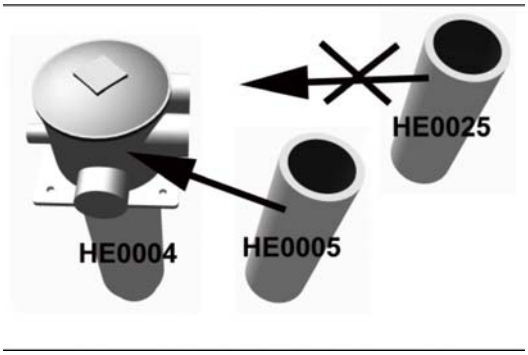
2: Breather (HA0022)

3: Unfiltered Return Circuit

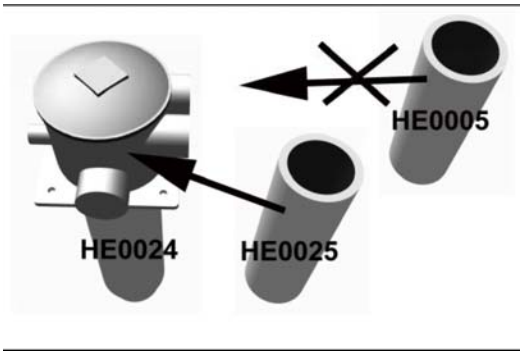
4: Thermostat Sensor 194°F (90°C) (EA-885)



Hydraulic System Filter Housing and Element (Old Version)



Hydraulic System Filter Housing and Element (New Version)



ATTENTION! The old version filter element (HE0005) can only be used in the old version filter housing (HE0004) and the new version filter element (HE0025) can only be used in the new version filter housing (HE0024).

Manifold (HA0400) Filtered Return Collector

A: Engine Return

B: Plug

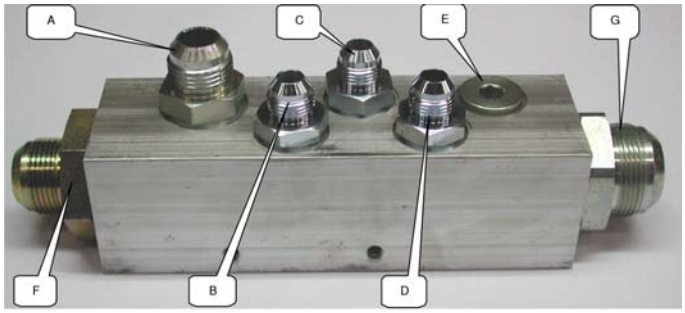
C: Sprayer Hydraulic Return

D: Plug

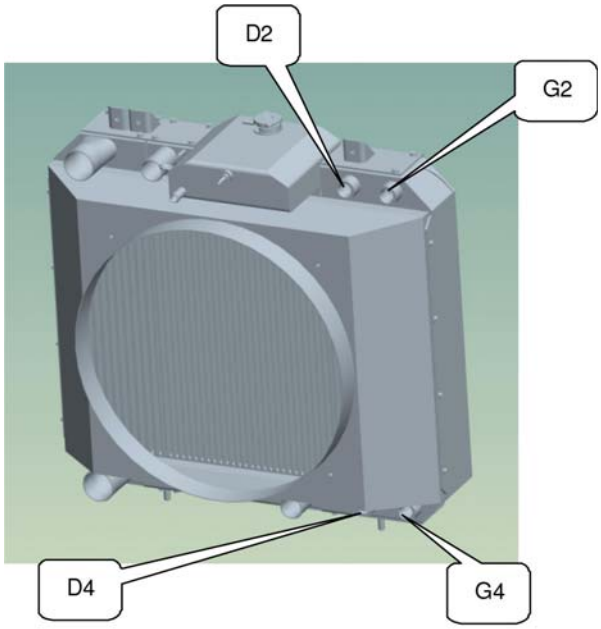
E: Orbitrol Return

F: Distributer Return

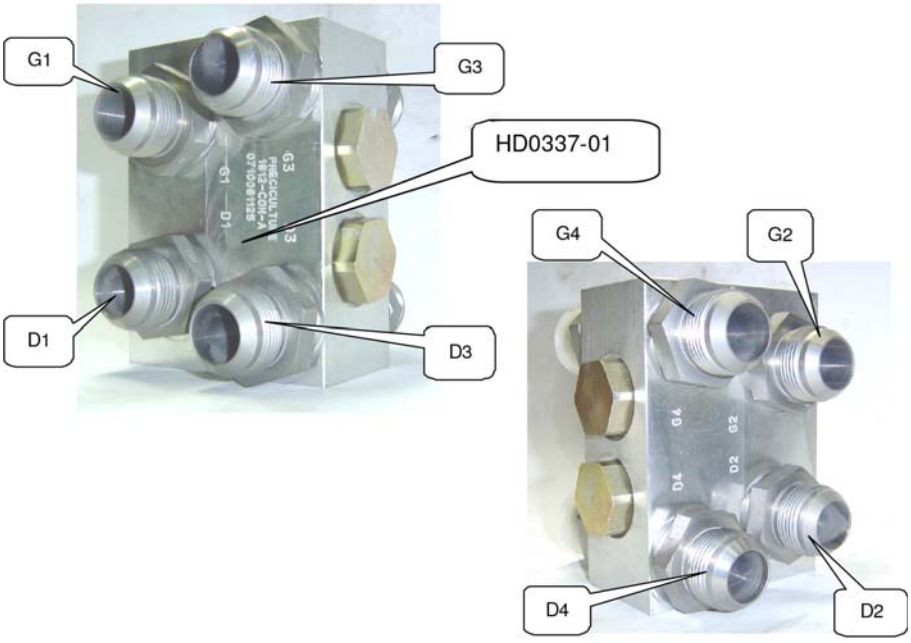
G: To Filter (HE0004)



Hydraulic Cooler (MX0150)



Valve Block (HD0337)



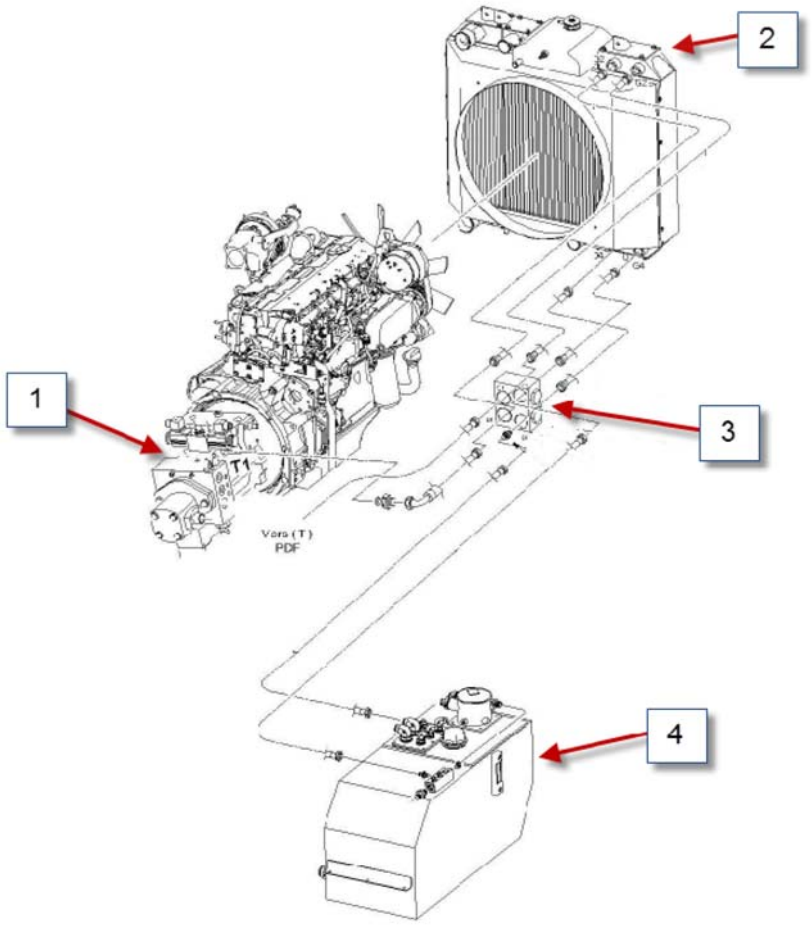
Hydraulic Schematic

1: Transmission Pump

2: Cooler

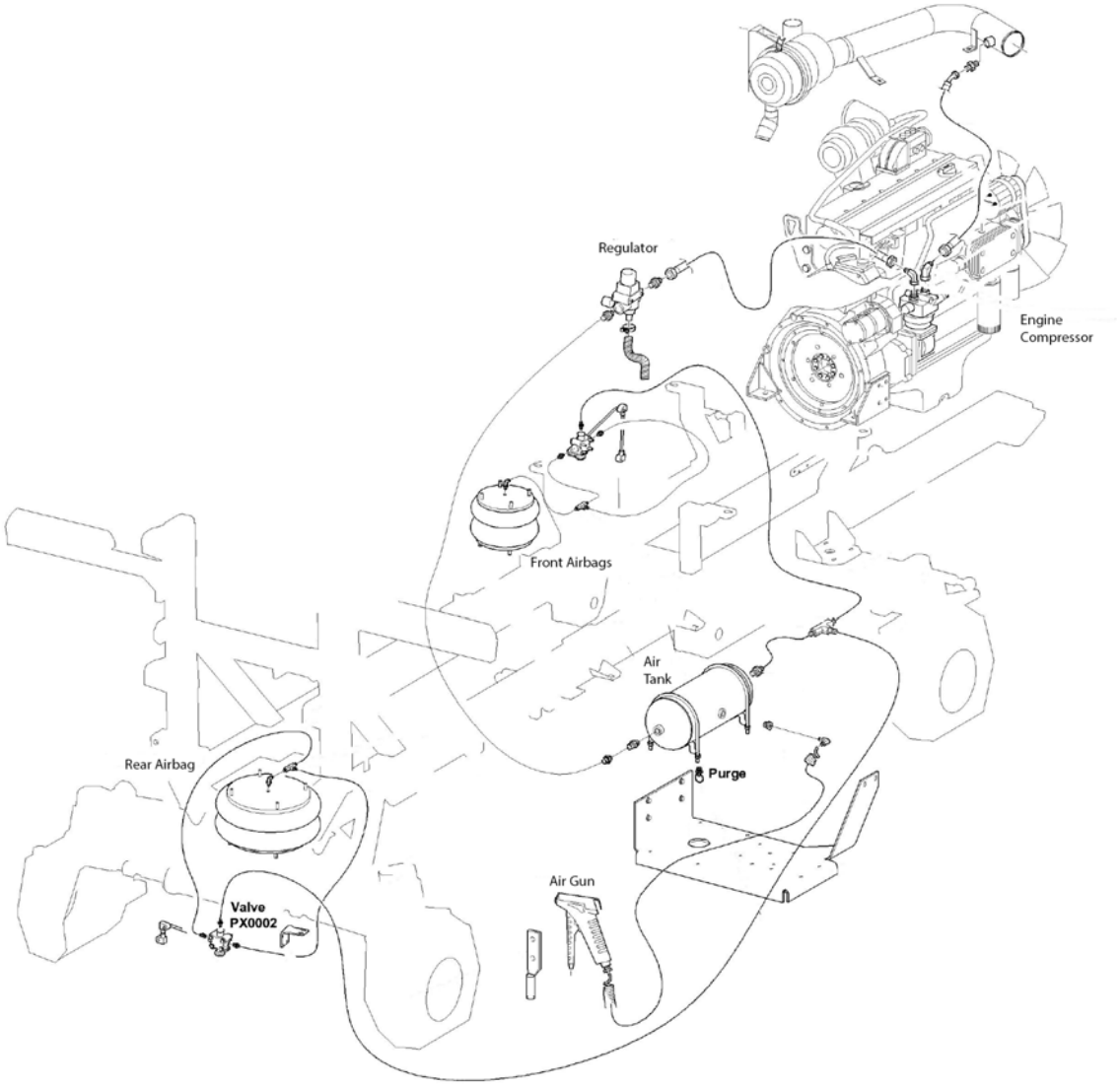
3: Valve Block

4: Hydraulic Tank

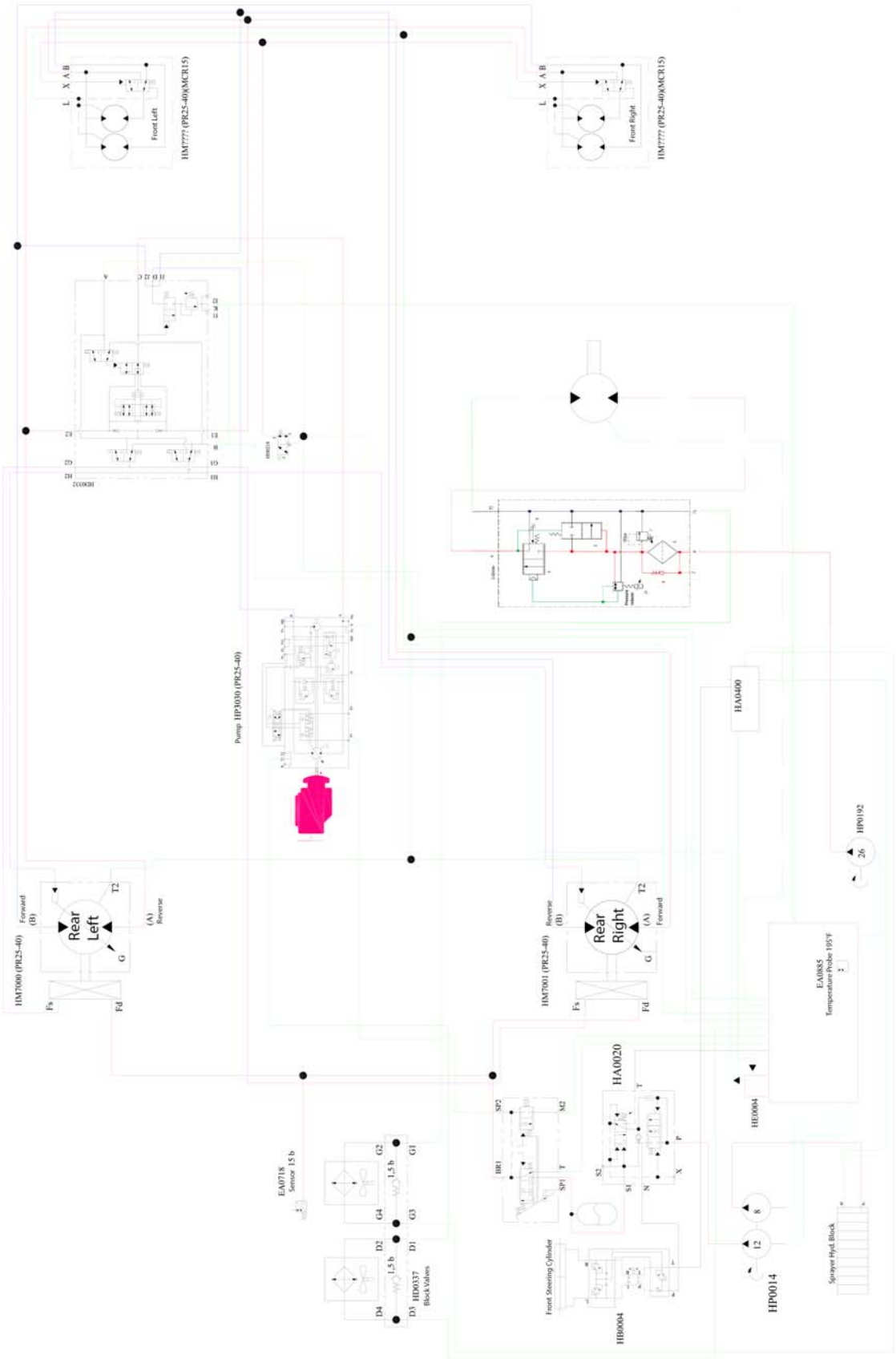


Compressed Air Circuit

Pneumatic Diagram

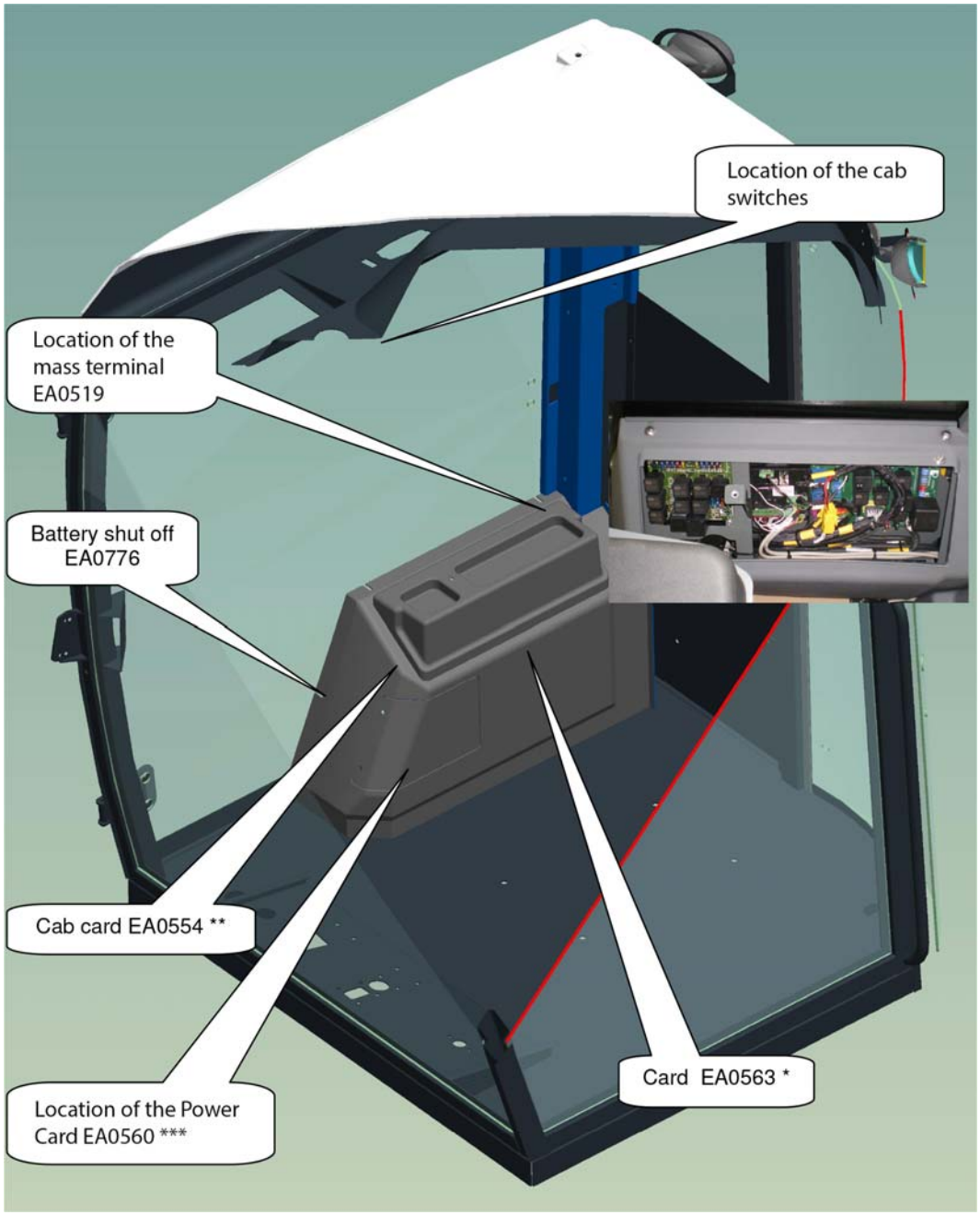


Hydraulic Schematic



Electronic Components

Localization



* EA0563-01 (without electrical equipment) EA0563 (with electrical equipment)

** EA0554 (without electrical equipment EA0555 (with electrical equipment)

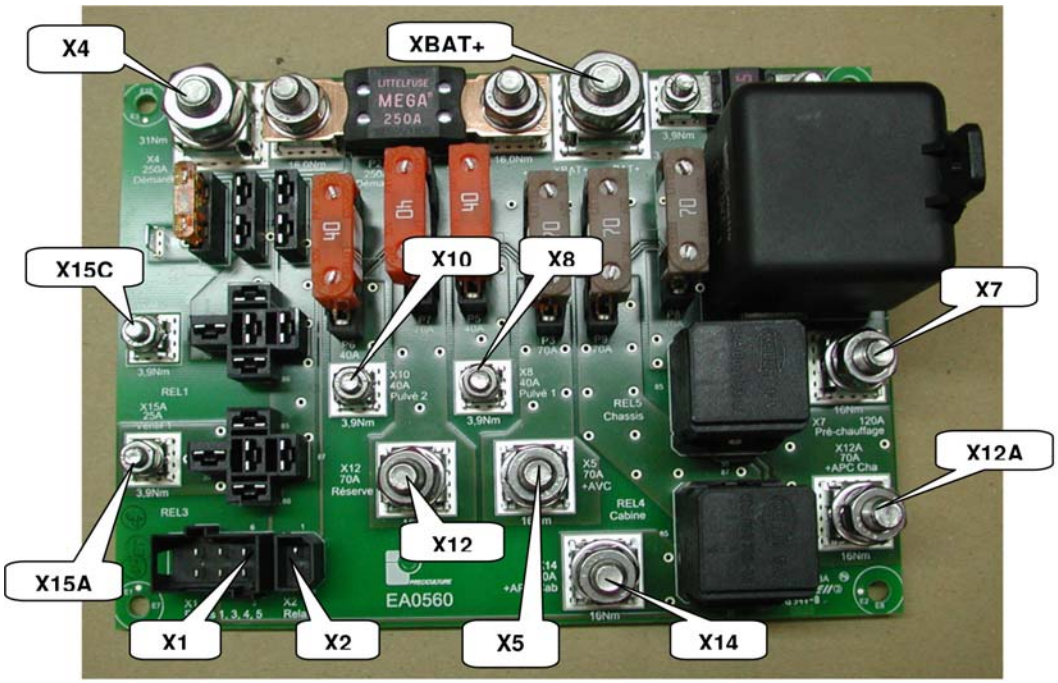
*** EA0560 (with electrical equipment) EA0561 (without electrical equipment)

4 - Electronics

Electronic Cards

Power Card (EA0560)

Connections (Power card EA0560)



XBAT+: Power supply/+ battery line (wiring EA0604-08 (+) battery shut-off)

X1: Relay control (frame card line) (wiring EA0604-22 (PUI X1) power relay control)

X2: Preheating relay control (engine wiring harness) (wiring EA0604-21 (2) preheating control)

X4: Starter power

X5: + before ignition (wiring EA0604-15 (power X5) before cab ignition)

X7: Glow plug supply (wiring EA0604-12 (glow card) preheating)

X8: Supply + sprayer 1

X10: Supply + sprayer 2

X12: Reserved

X12A: Supply + after ignition (frame card) (wiring EA0604-13 (power X12A) after frame ignition)

X14: Supply + after ignition (cab card) (wiring EA0604-14 (power X14) after cab ignition)

X15A: Supply electric/hydraulic cooling fan 1

X15C: Supply electric/hydraulic cooling fan 2

Fuses (Power card EA0560)

P2: Starter (250A)

P3: + before ignition (70A)

P4: Preheating (125A)

P5: Spray 1 (40A)

P6: Spray 2 (40A)

P7 Free (40A)

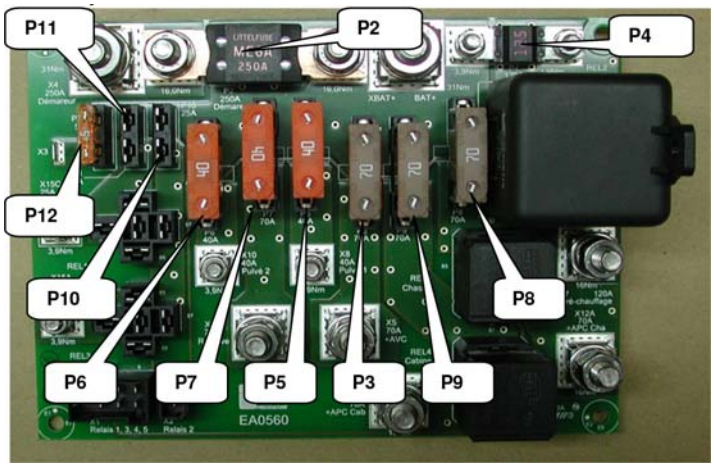
P8: + after ignition (frame card) (70A)

P9: + after ignition (cab card) (70A)

P10: Free

P11: Free

P12: Spray 3 (5A)



Relays (Power card EA0560)

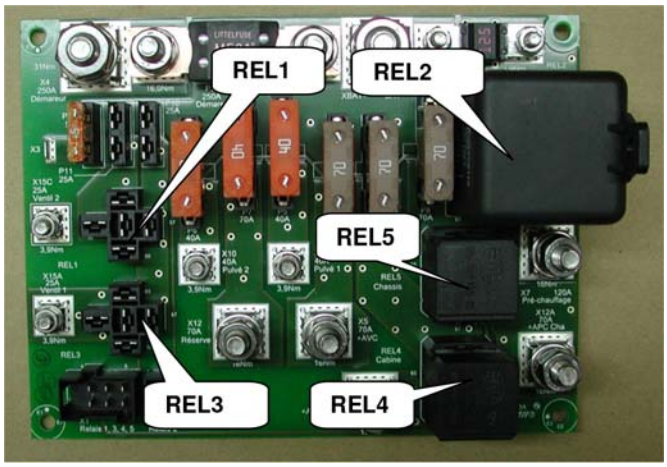
REL1: Free

REL2: Preheating

REL3: Free

REL4: Cab card

REL5: EA0563 Card



Cab Card (EA0554)

Connections (Cab Card EA0554)

X1: Wiring EA0604-19 (X1 GND Cab)

X2: Wiring EA0604-14 (+ after ignition cab)

X3: EA0604-15 (+ before ignition cab)

J1: Line A (cab)

J2: Line A (cab)

J3: Line A (cab)

J4: Line A (cab)

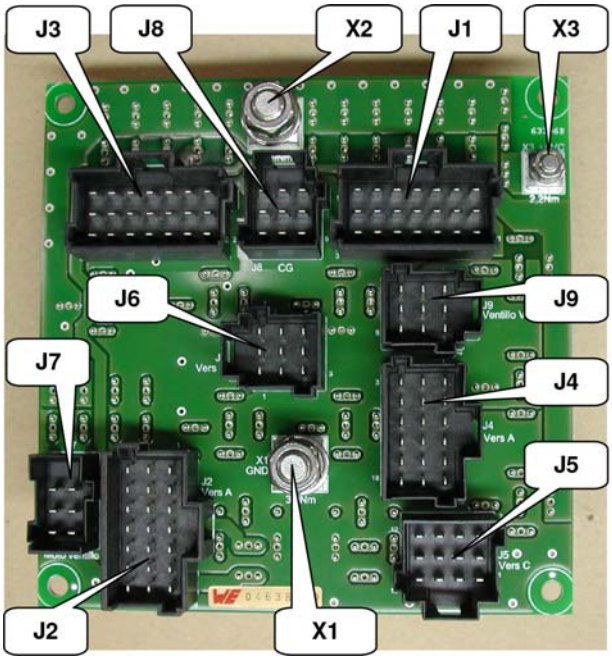
J5: Wiring EA0604-28 (outside mirror wiring harness)

J6: Wring EA0604-01 (main wiring harness)

J7: Heater fan

J8:

J9: Speed heater fan



Fuses (Cab Card EA0554)

FC2: Cab ventilation (30A)

FC3: Relay Control (heating solenoid valve, ventilation, air conditioning compressor, air conditioning regulator power supply) (2A)

FC4: Conditioning compressor (5A)

FC5: Front work light (hood) (10A)

FC6: Front work light (cab roof x4) (20A)

FC7: Rear work light (15A)

FC8: Boom work light (20A)

FC9: Wipers, washers (15A)

FC10: Flash light (7.5A)

FC11: Ceiling light, ambient light, rear view mirrors (7.5A)

FC12: Radio (before or after ignition) (7.5A)

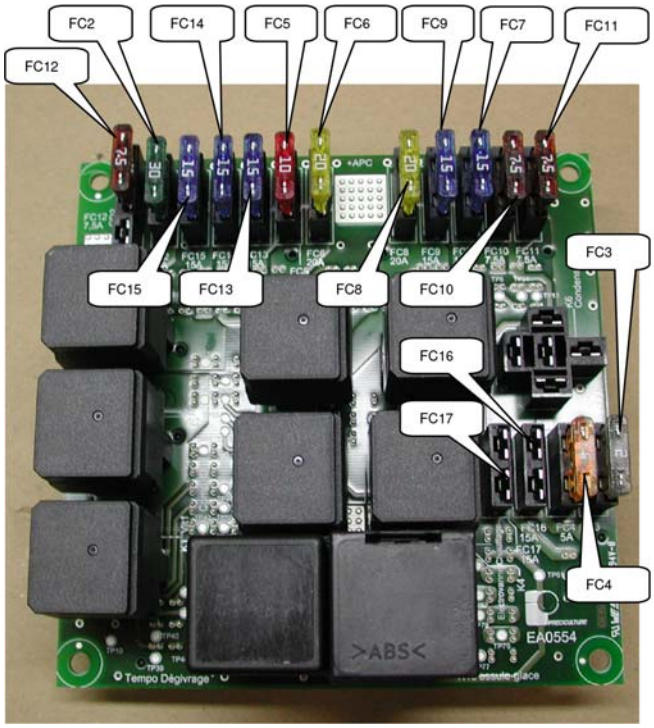
FC13: Free (15A)

FC 14: Free (15A)

FC15: Free (15A)

FC16: Condenser ventilation 1(vine machine) (15A)

FC 17: Condenser ventilation 2 (vine machine) (15A)



Relays (Cab card EA0554)

K1: Air conditioning fan speed 1

K2: Air conditioning fan speed 2

K3 Air conditioning fan speed 3

K4: Heater electro-valve

K5: Air conditioning compressor

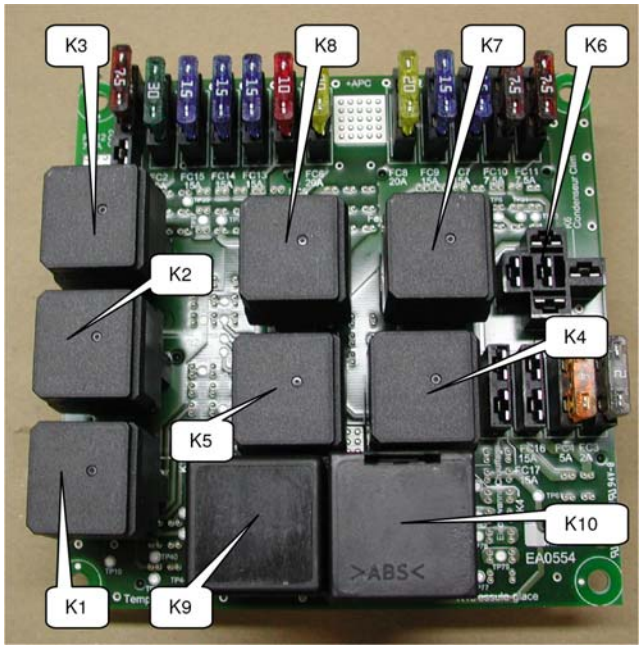
K6: Air conditioning condenser (vine machine)

K7: Rear work lights

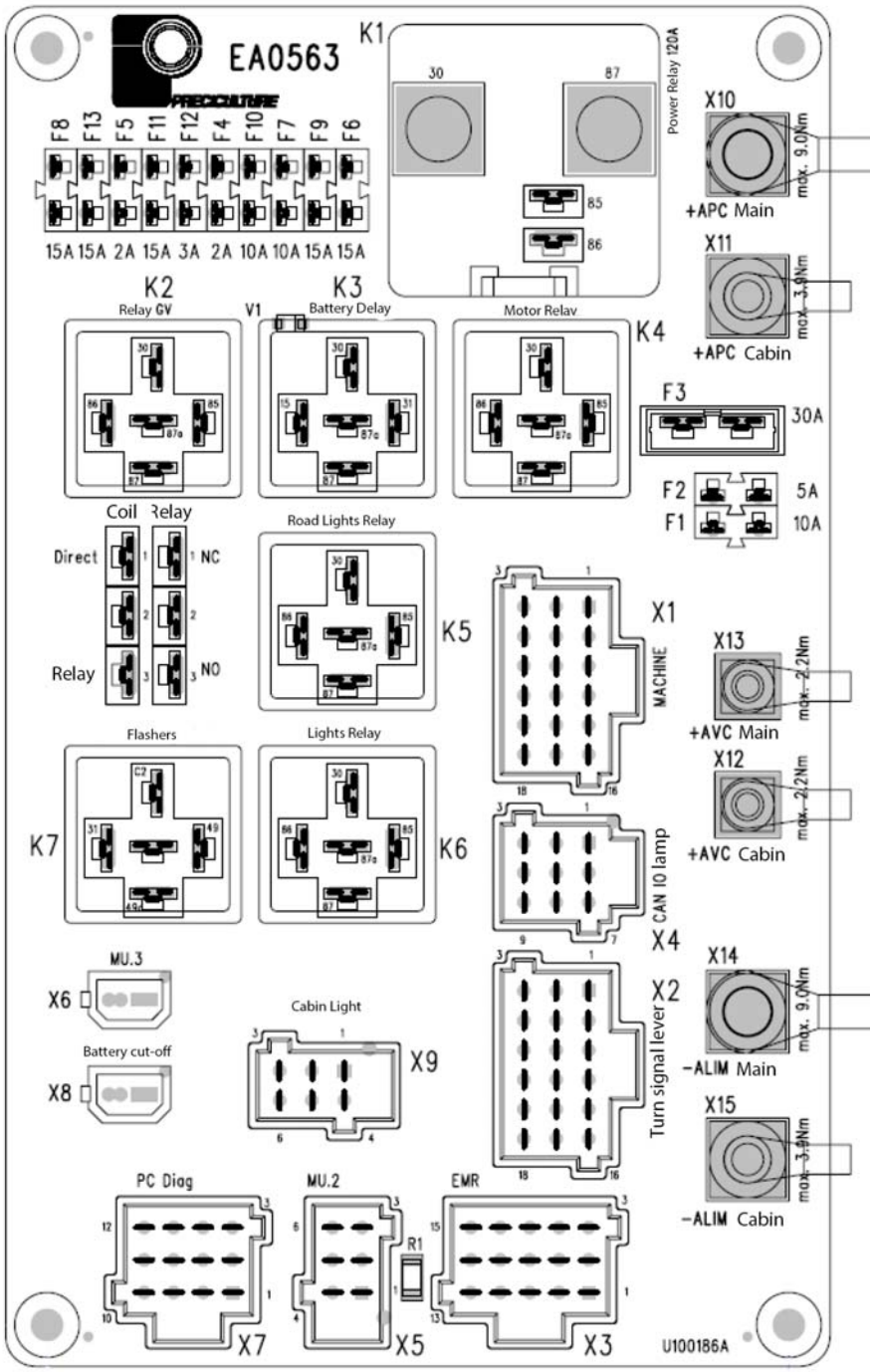
K8: Boom work lights

K9: Defrost timer

K10: Wiper



EA0563



Fuses

F1: Hazard, flashing (10A) (before battery shut-off)

F2: Key Switch (5A) (before battery shut-off)

F3: Engine (power) Relay EMR-ECU Deutz (30A)

F4: Engine (control) (2A)

F5: Differential Lock (2A)

F6: Trailer Socket (15A)

F7: Pneumatic Seat (10A)

F8: Hydraulic Oil Filter Warning Light, Oil Low Lever (alarm + light), Fuel Sender (15A)

F9: 12V Power (ACC) (15A)

F10: Head Light Switch (10A)

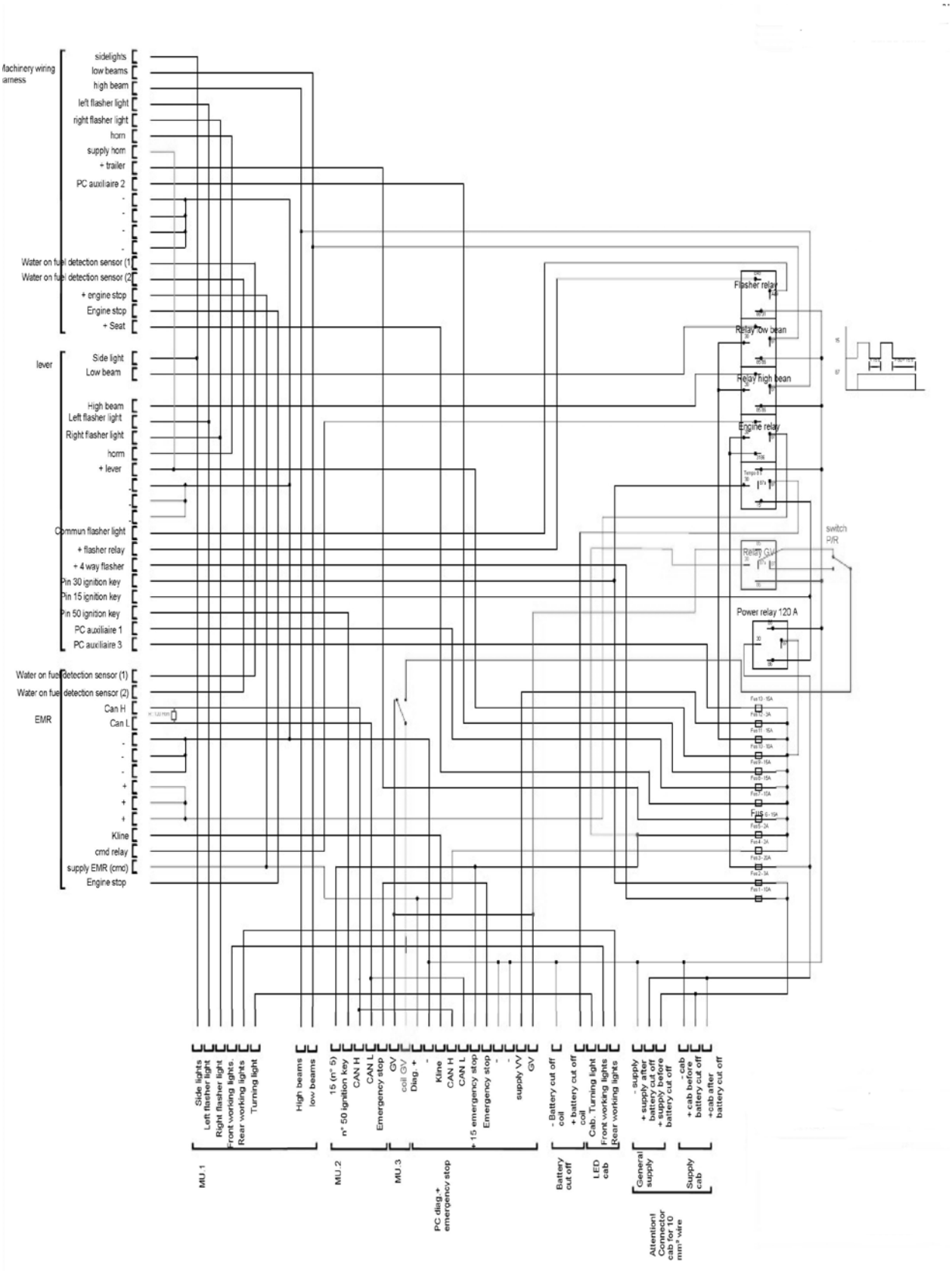
F11: Relay (headlight power)(15A)

F12: Joystick Board, PCB for Frequency Board Signal (3A)

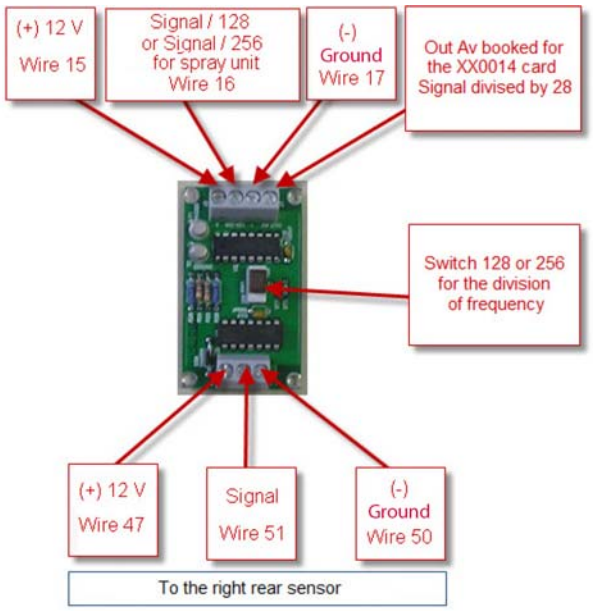
F13: Speed Range Selector and coils, Hydraulic High Temperature, Static Brake (15A)

There are also 2 more fuses. one under the header "Coil" in position 2 and 3 (20A), and one under the header "Relay" in position 1and 2 (20A).

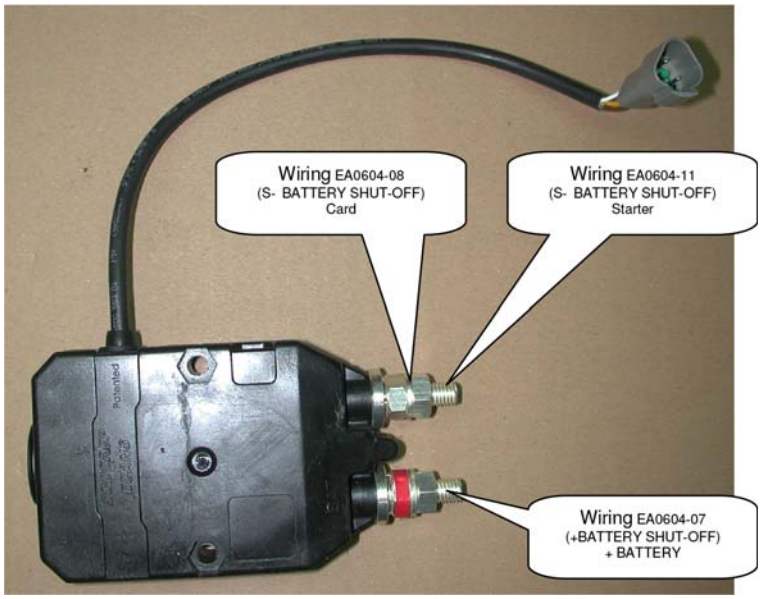
Pin-out (EA0563)



Division Frequency Card (XX0012)



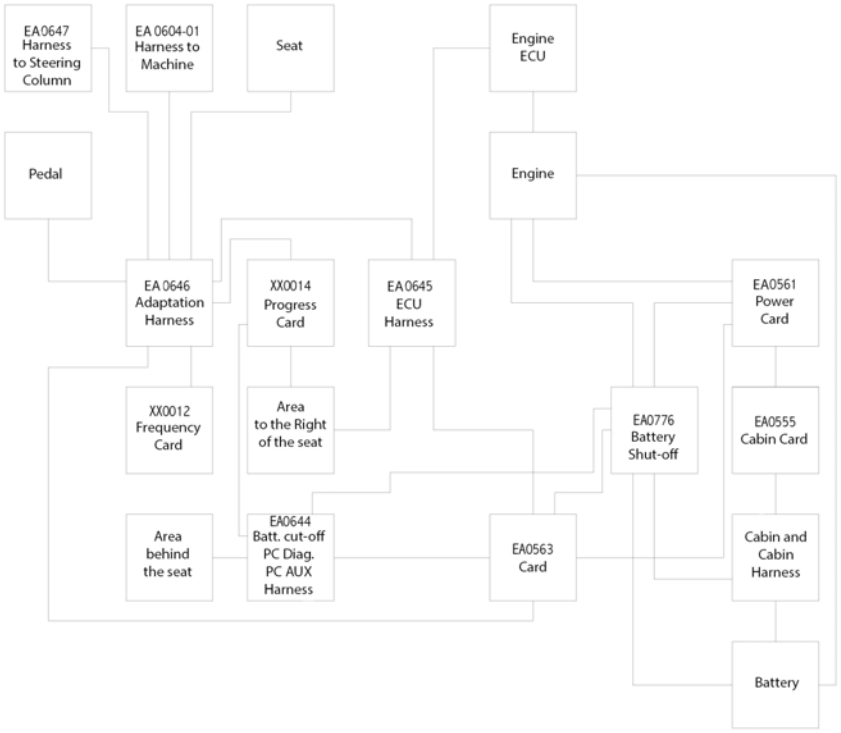
Electronic Battery Shut-off (EA0776)



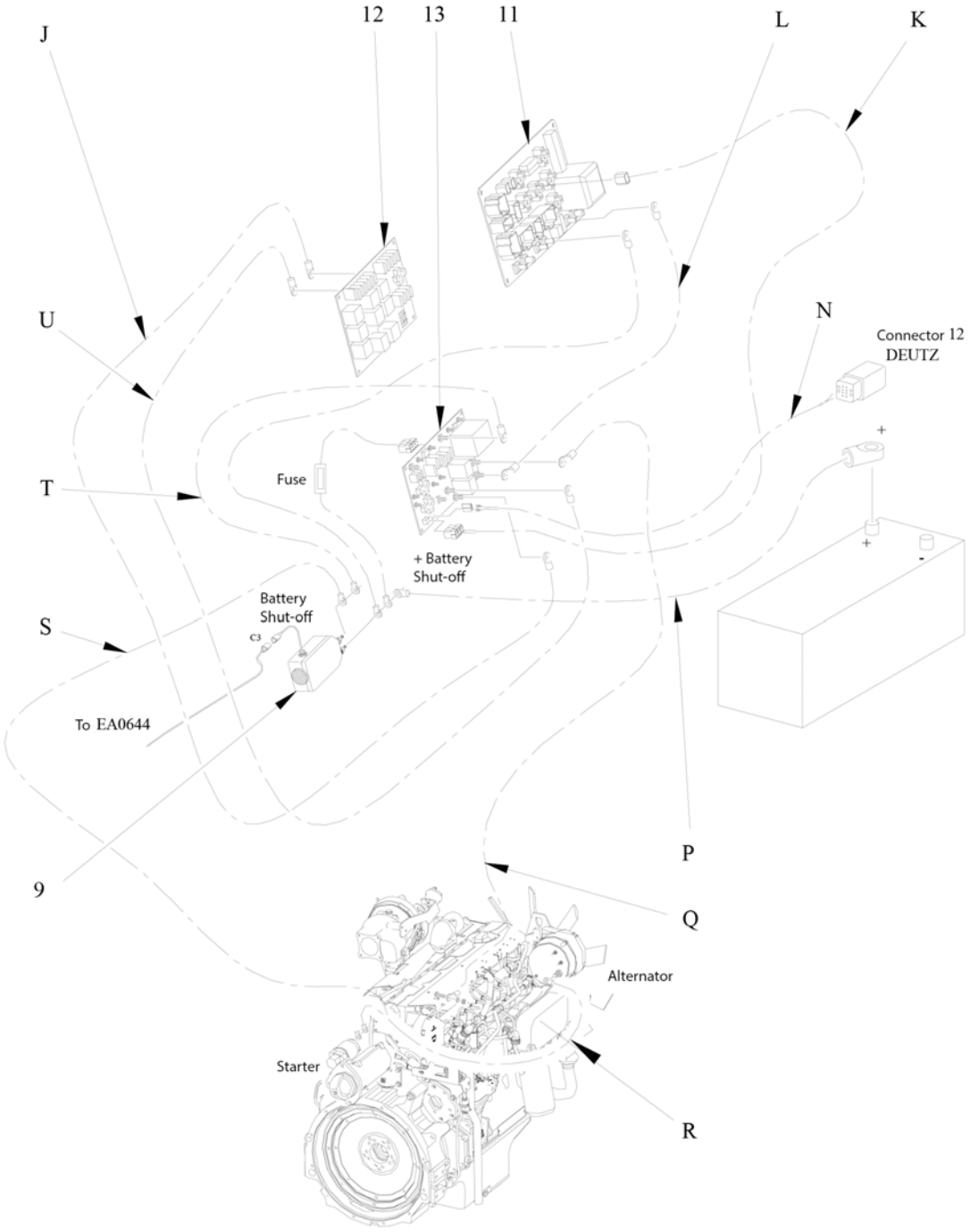
There is a delay of 15 seconds before the power switches off.

Wiring Diagrams

General Representation

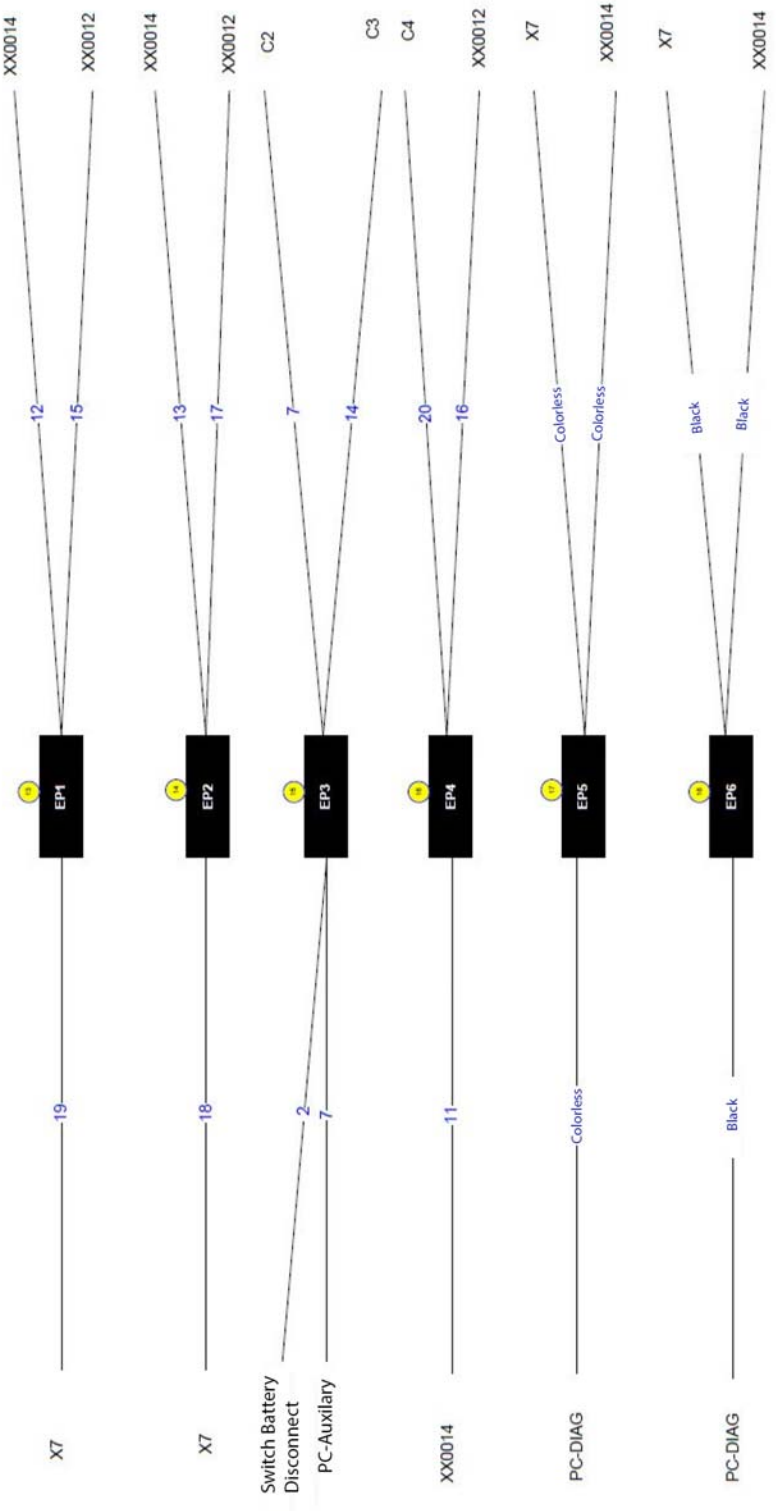


Power Wiring to the Battery Shut-off



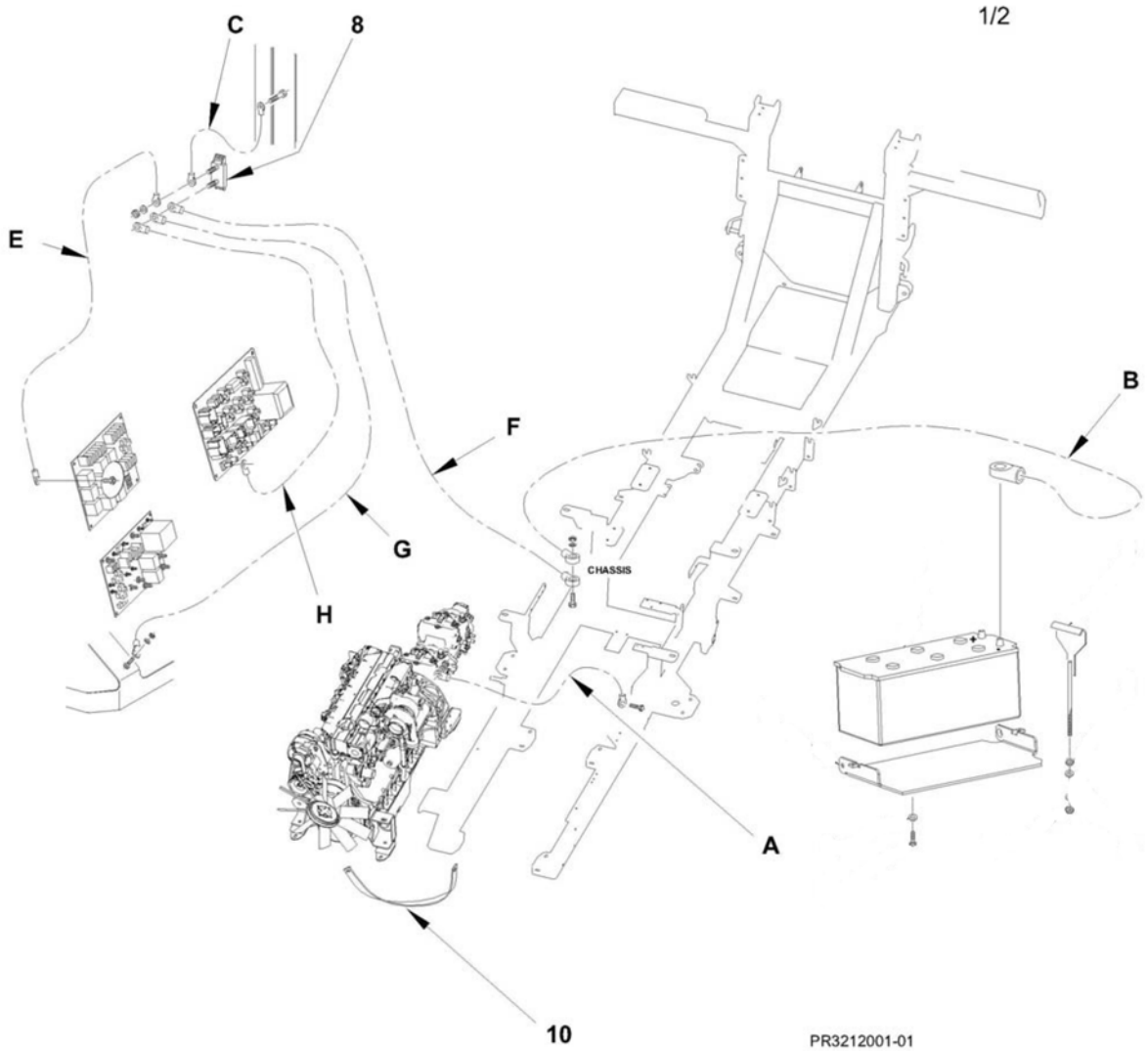
J: EA0604-14
K: EA0648
L: EA0604-13
N: EA0604-21
P: EA0604-07
Q: EA0604-12
R: EA0604-17
S: EA0604-11
T: EA0604-08
U: EA0604-16
11: EA0563
12: EA0555
13: EA0561

Battery Shut-off Wiring Harness



Ground Wiring

Diagram



A:EA0604-30	E: EA0604-19	H: EA0604-18
B"EA0604-09	F: EA0604-10	8: EA0519
C:EA0604-23	G: EA0604-29	10: EA0141

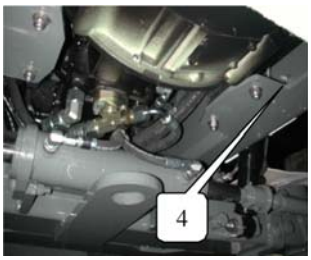
Locations

1. In cab, behind lateral door, wire EA0604-23.

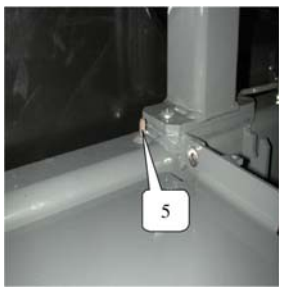
2. In cab, on lateral panel, wire EA0604-29.

3. Under the cab, cab pillar, wire EA0604-10.

4. On the frame, side of motor Deutz mounting.

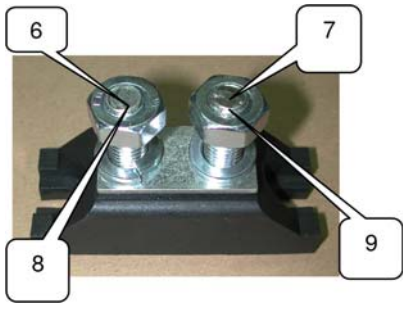


5. On the frame, behind the ladder.



Ground Terminal

6. Wire EA0604-23
7. Wire EA0604-19
8. Wire EA0604-10
9. Wire EA0604-18



Principle Wiring Harness (EA0604-01)

Diagram Front Part

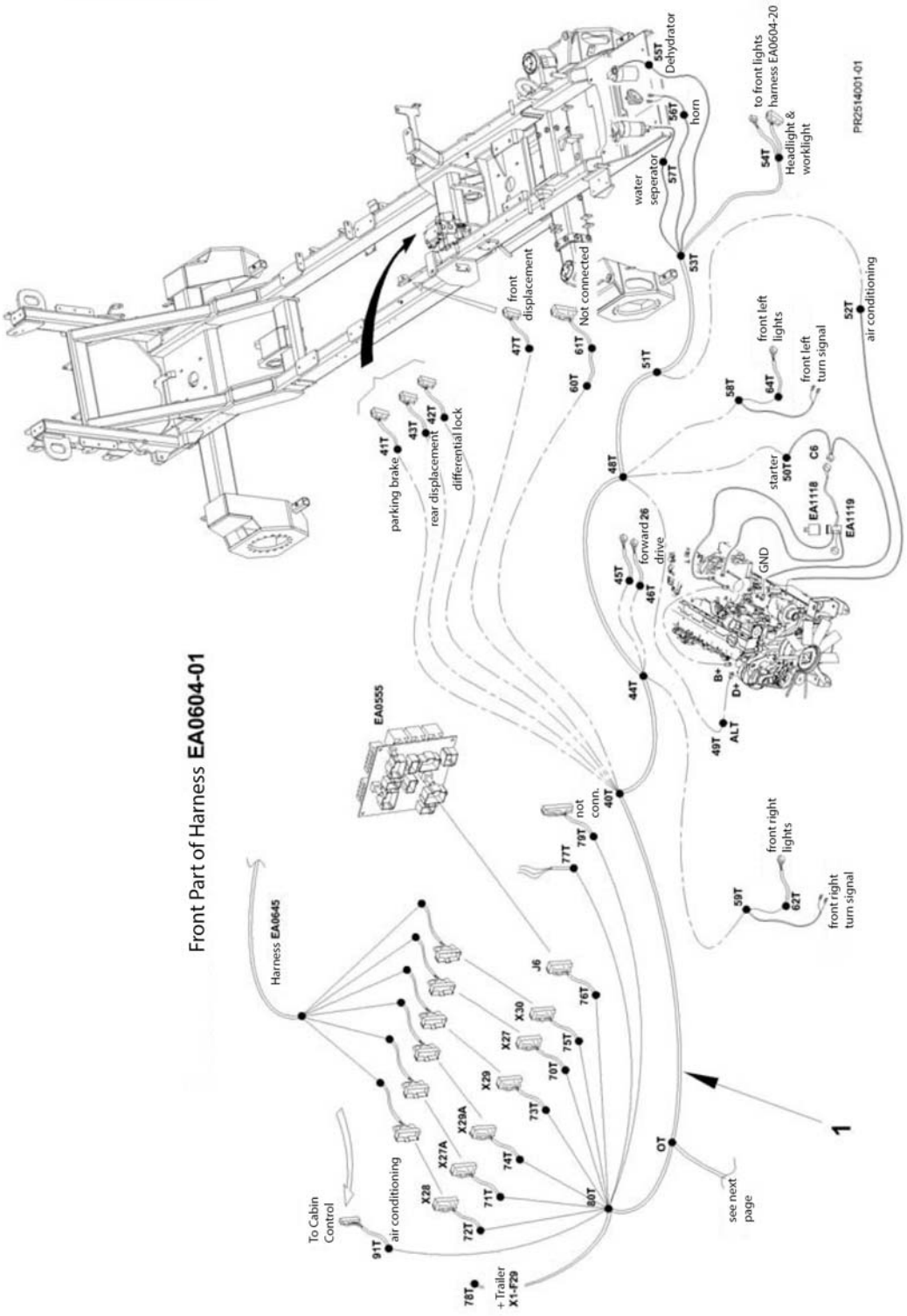
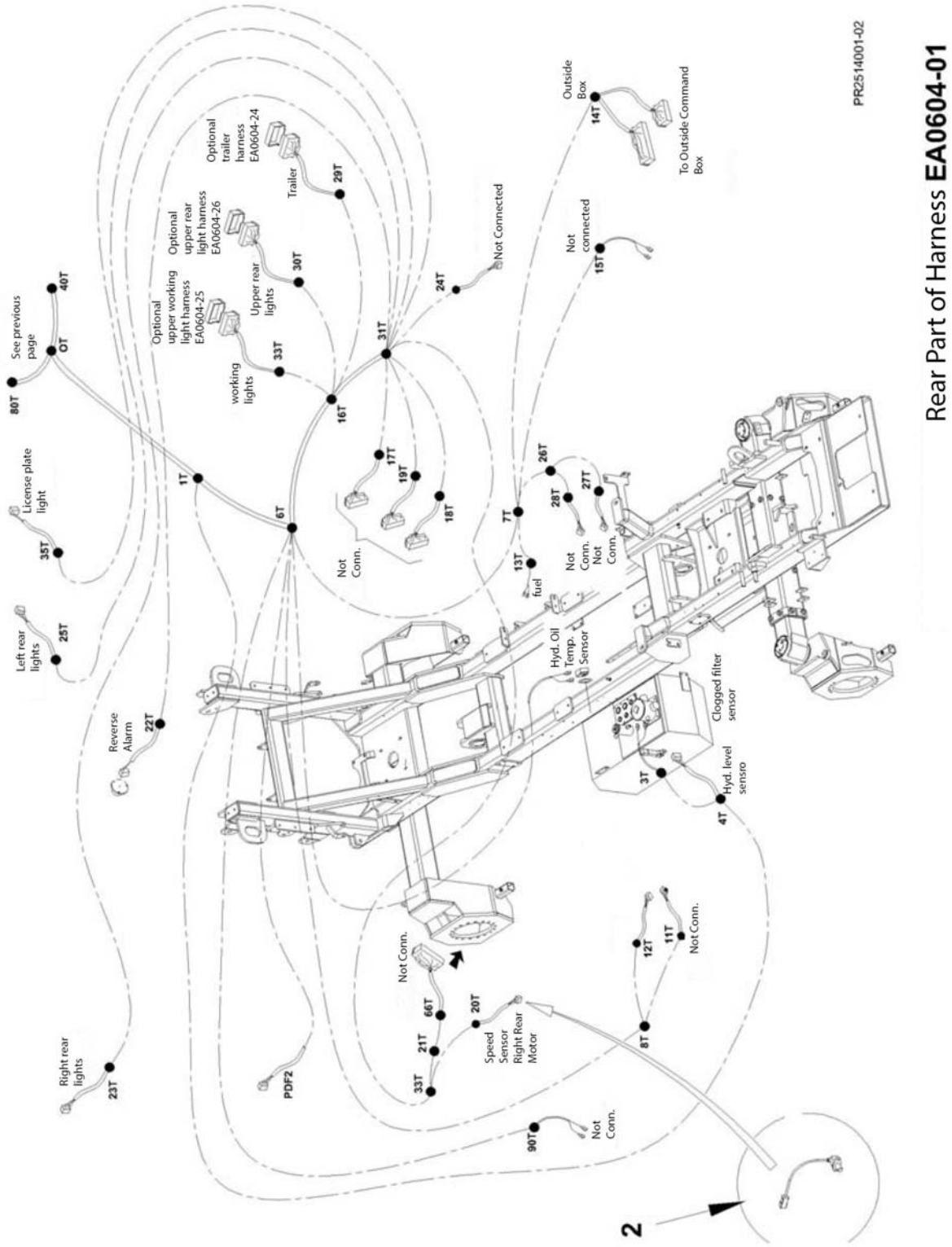
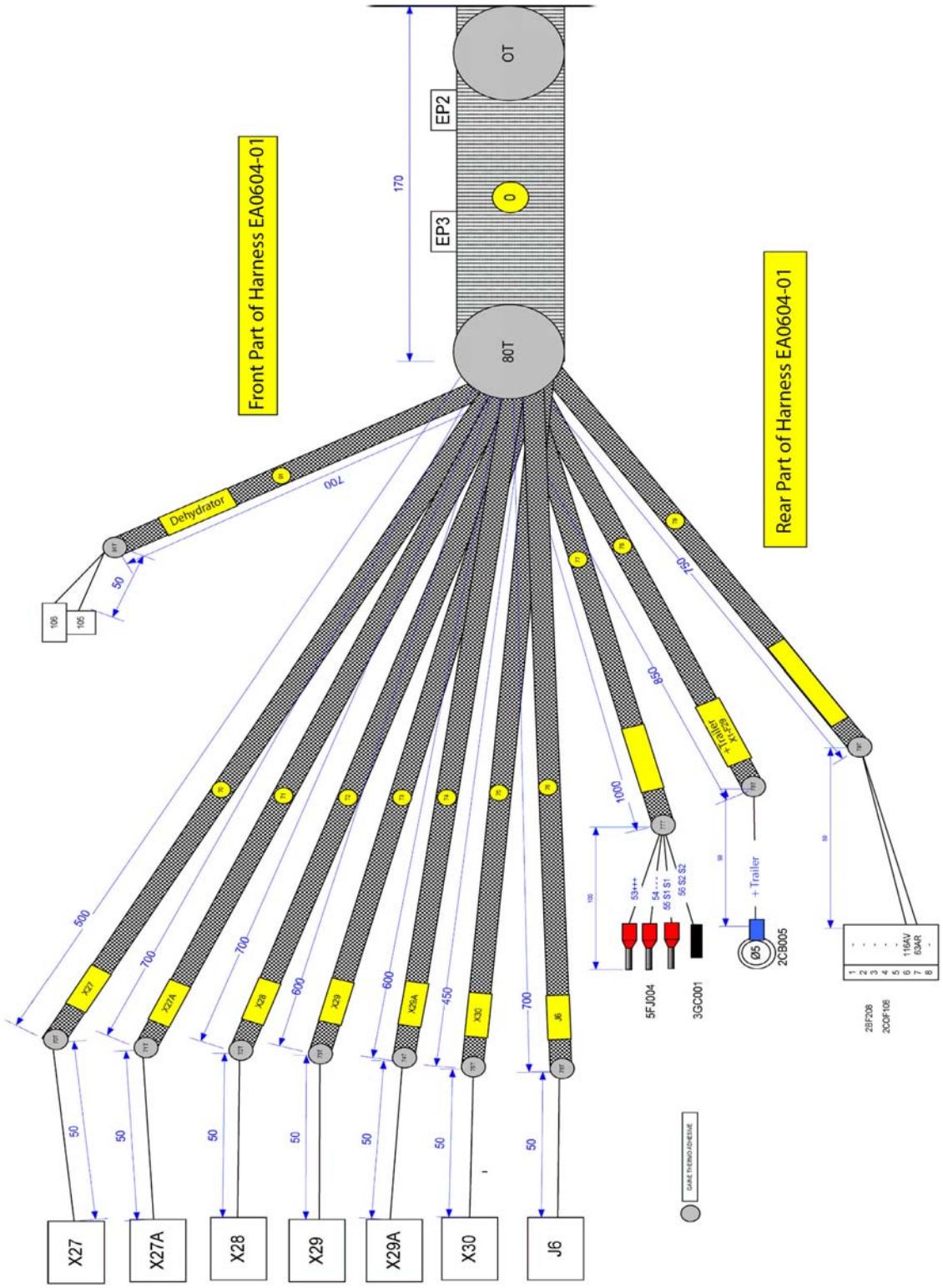
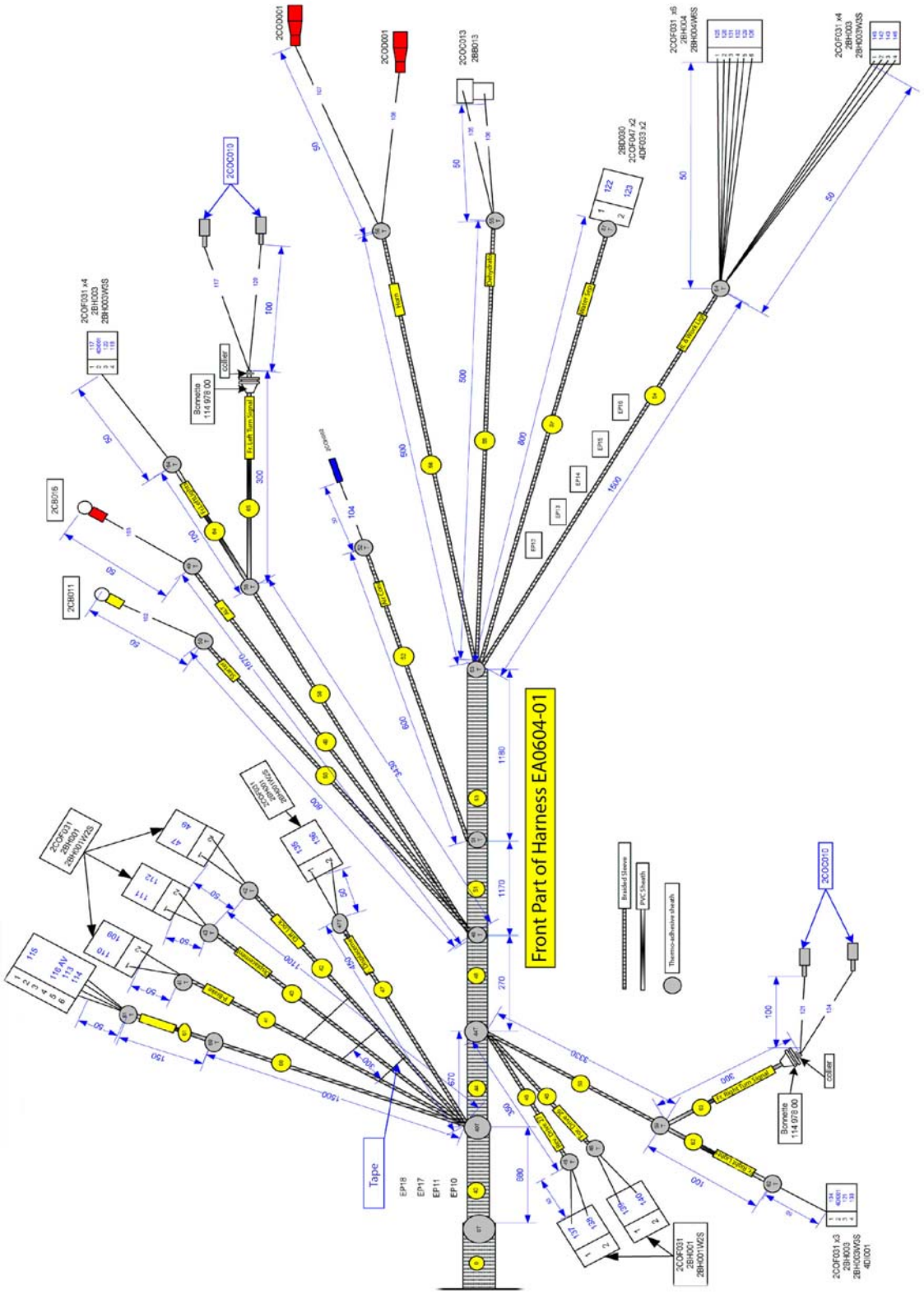


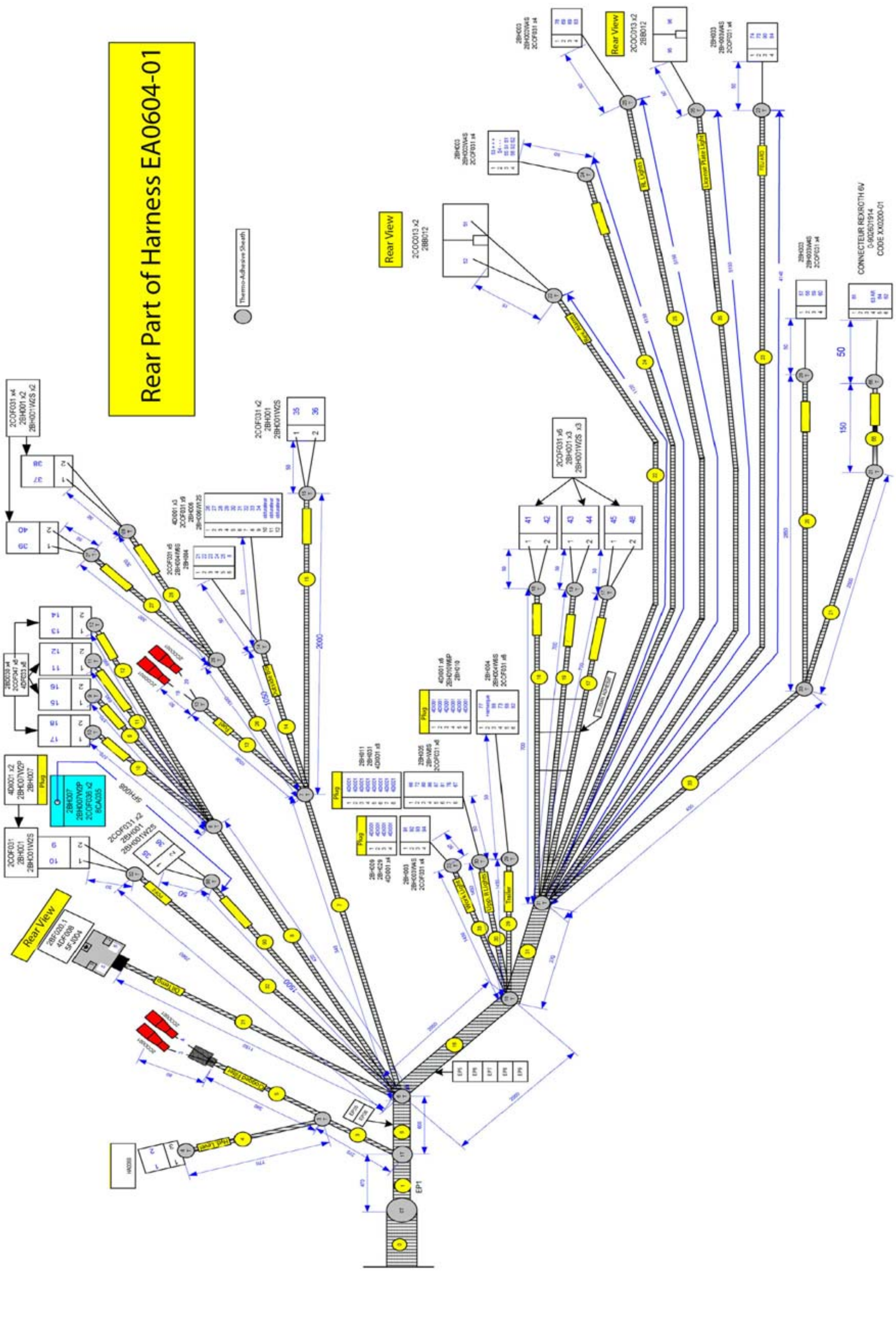
Diagram Rear Part

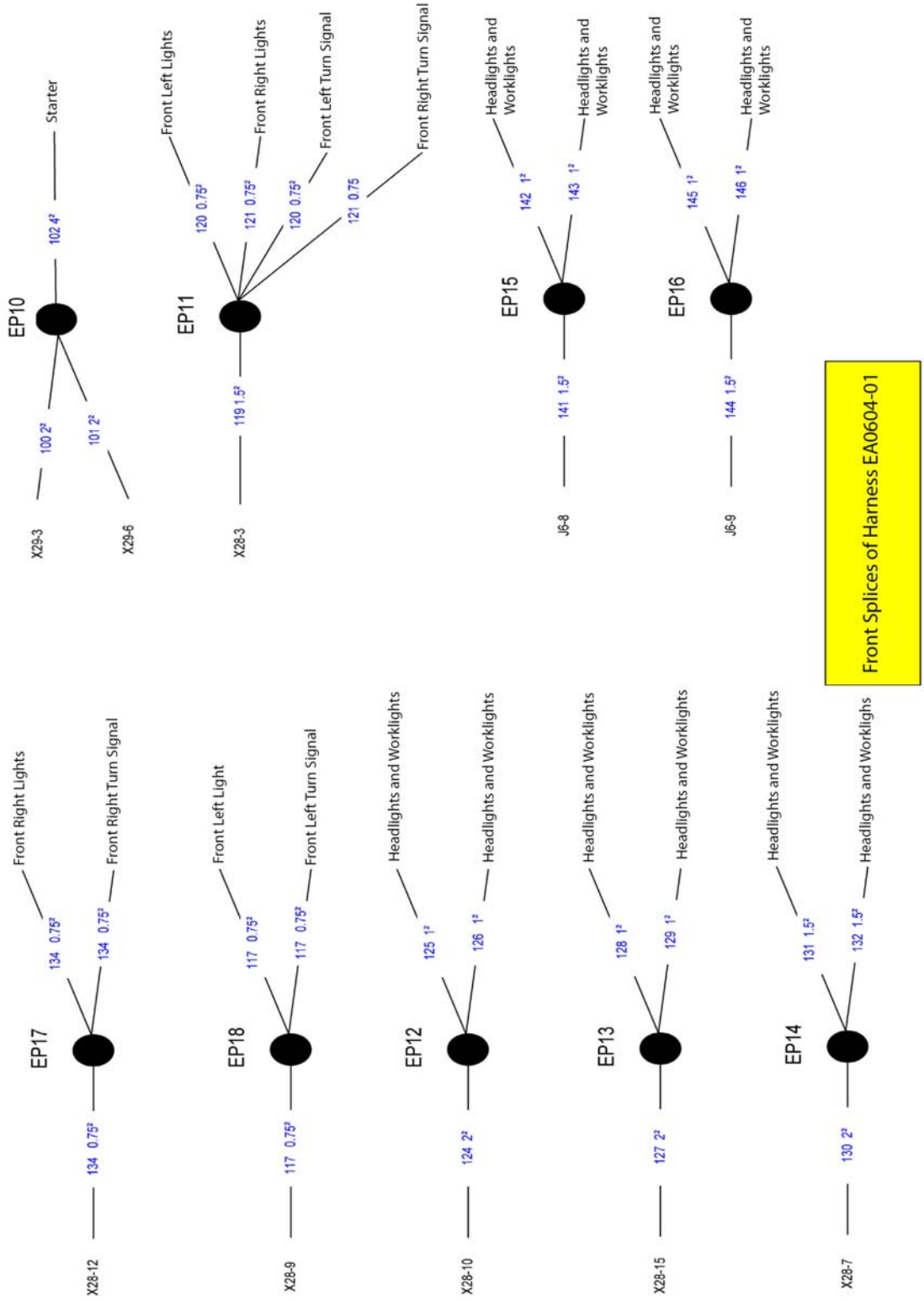


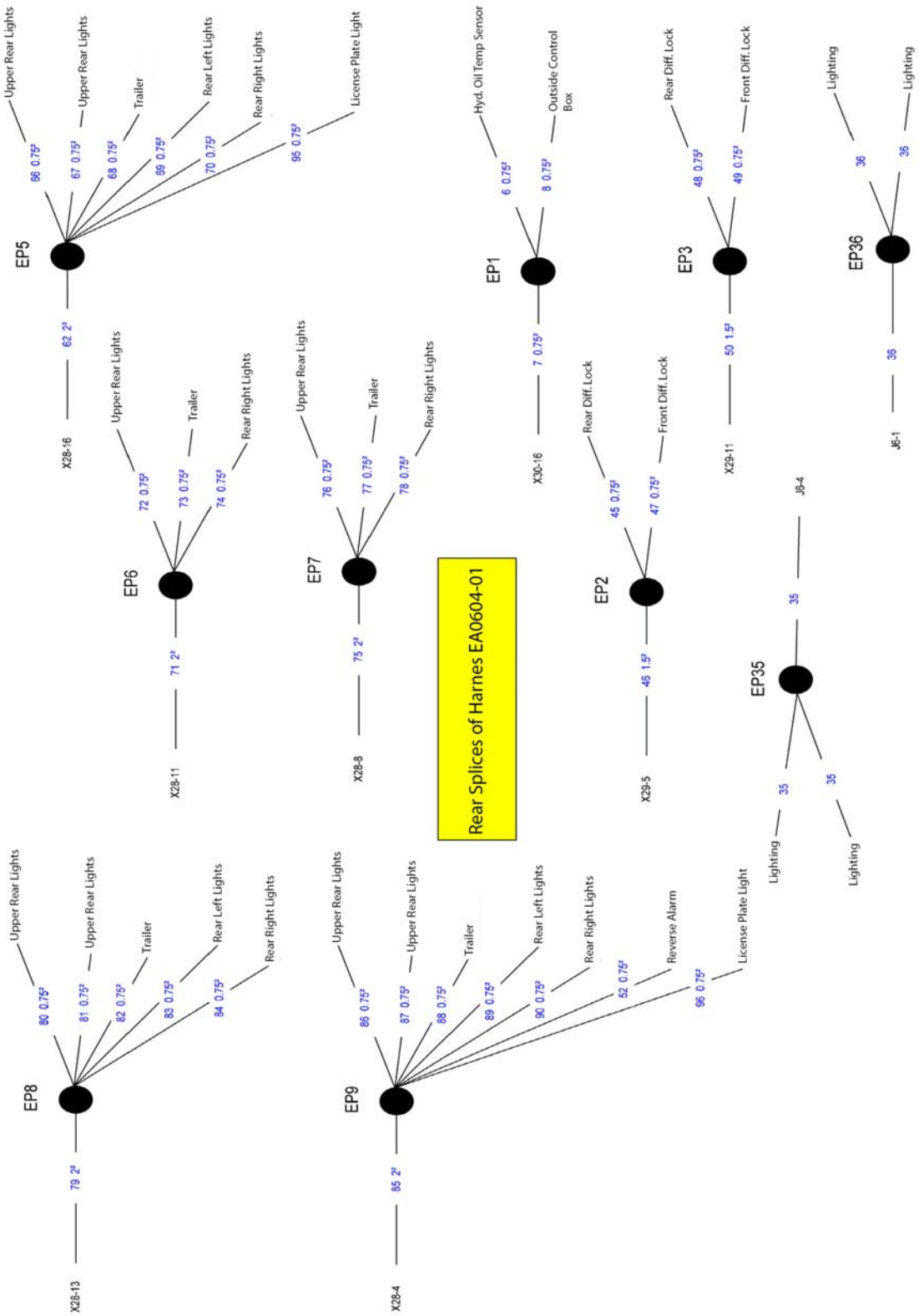
Wiring Harness and Connectors

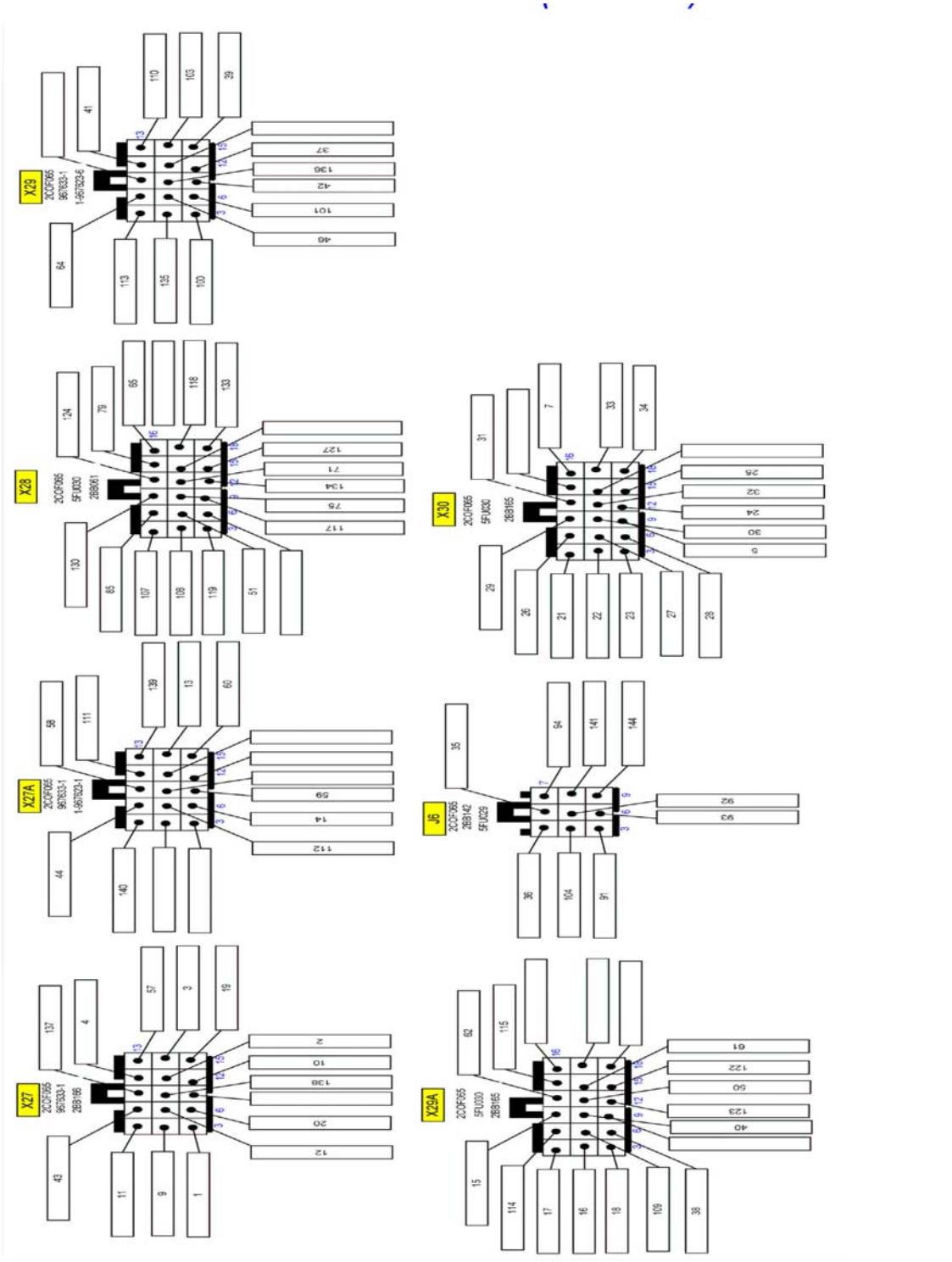



Front Part of Harness EA0604-01
Tape
Bonnette 114 978 00
collier
Braided Sleeve
PVC Sheath
Thermo-adhesive sheath


Rear Part of Harness EA0604-01
Thermo-Adhesive Sheath
Rear View
Rear View
Rear View

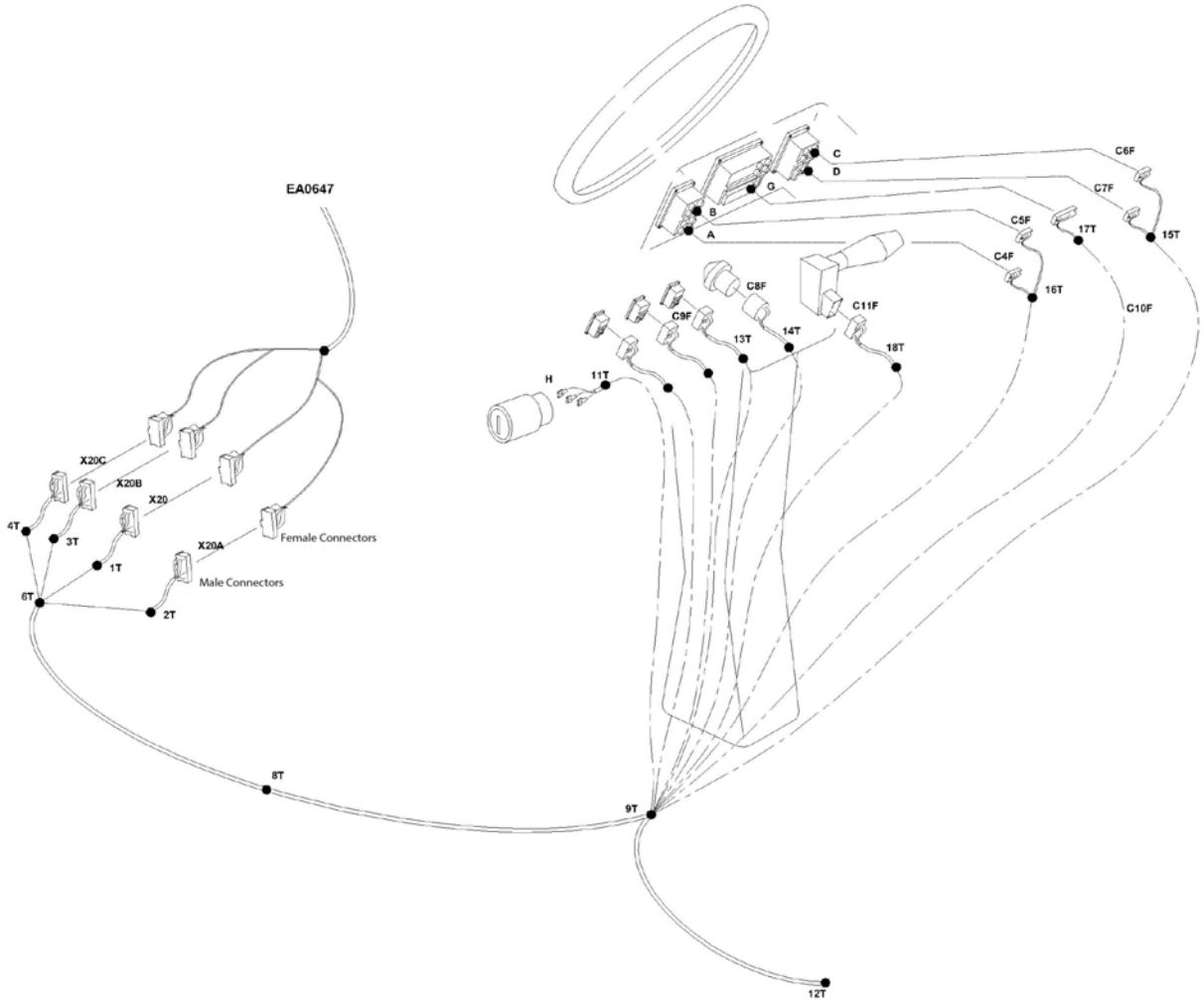

EP10
Starter
102 4²
100 2²
101 2²
X29-3
X29-6
EP11
Front Left Lights
Front Right Lights
Front Left Turn Signal
Front Right Turn Signal
120 0.75²
121 0.75²
120 0.75²
121 0.75
119 1.5²
X28-3
EP15
Headlights and Worklights
142 1²
143 1²
141 1.5²
J6-8
EP16
Headlights and Worklights
145 1²
146 1²
144 1.5²
J6-9
EP17
Front Right Lights
Front Right Turn Signal
134 0.75²
134 0.75²
134 0.75²
X28-12
EP18
Front Left Light
Front Left Turn Signal
117 0.75²
117 0.75²
117 0.75²
X28-9
EP12
Headlights and Worklights
125 1²
126 1²
124 2²
X28-10
EP13
Headlights and Worklights
128 1²
129 1²
127 2²
X28-15
EP14
Headlights and Worklights
131 1.5²
132 1.5²
130 2²
X28-7
Front Splices of Harness EA0604-01


Rear Splices of Harnes EA0604-01
EP5
X28-16
62 2²
66 0.75²
67 0.75²
68 0.75²
69 0.75²
70 0.75²
95 0.75²
Upper Rear Lights
Upper Rear Lights
Trailer
Rear Left Lights
Rear Right Lights
License Plate Light
EP6
X28-11
71 2²
72 0.75²
73 0.75²
74 0.75²
Upper Rear Lights
Trailer
Rear Right Lights
EP7
X28-8
75 2²
76 0.75²
77 0.75²
78 0.75²
Upper Rear Lights
Trailer
Rear Right Lights
EP1
X30-16
7 0.75²
6 0.75²
8 0.75²
Hyd. Oil Temp Sensor
Outside Control Box
EP2
X29-5
46 1.5²
45 0.75²
47 0.75²
Rear Diff. Lock
Front Diff. Lock
EP3
X29-11
50 1.5²
48 0.75²
49 0.75²
Rear Diff. Lock
Front Diff. Lock
EP35
35
J6-4
Lighting
Lighting
EP36
J6-1
38
36
36
Lighting
Lighting
EP8
X28-13
79 2²
80 0.75²
81 0.75²
82 0.75²
83 0.75²
84 0.75²
Upper Rear Lights
Upper Rear Lights
Trailer
Rear Left Lights
Rear Right Lights
EP9
X28-4
85 2²
86 0.75²
87 0.75²
88 0.75²
89 0.75²
90 0.75²
52 0.75²
96 0.75²
Upper Rear Lights
Upper Rear Lights
Trailer
Rear Left Lights
Rear Right Lights
Reverse Alarm
License Plate Light

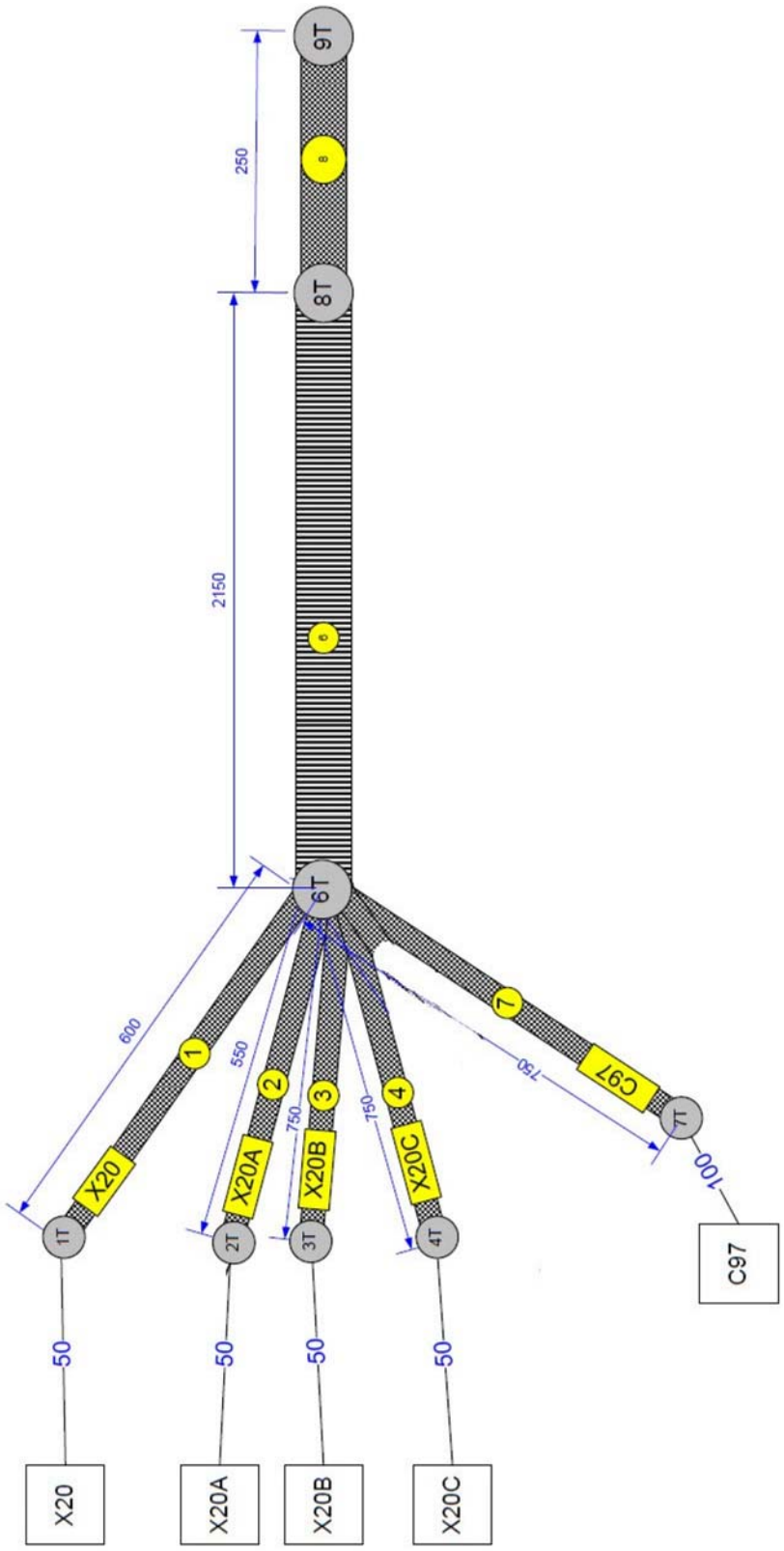

X29
X28
X30
X27A
J6
X27
X29A

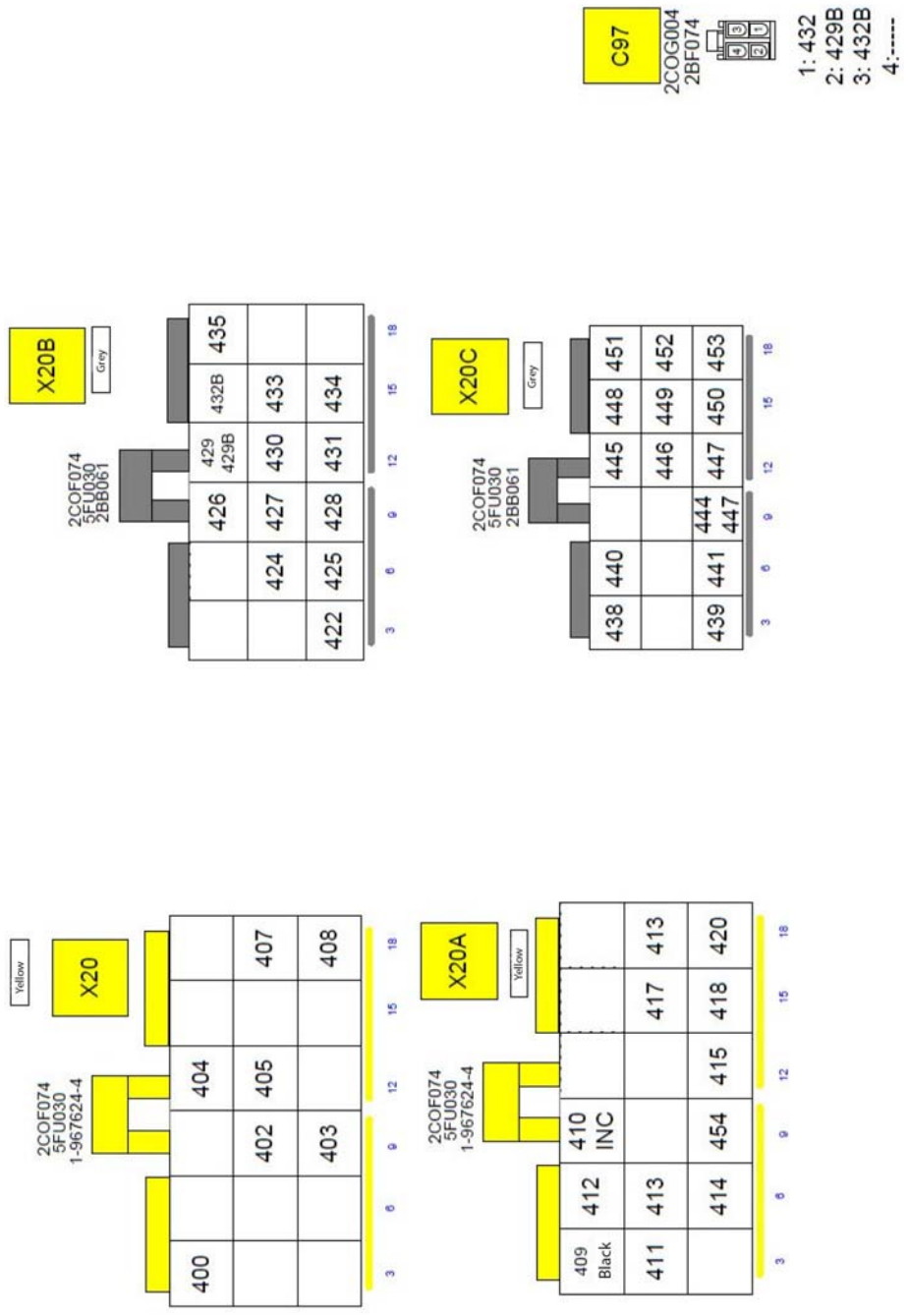
Steering Column Wiring Harness (EA0604-04)

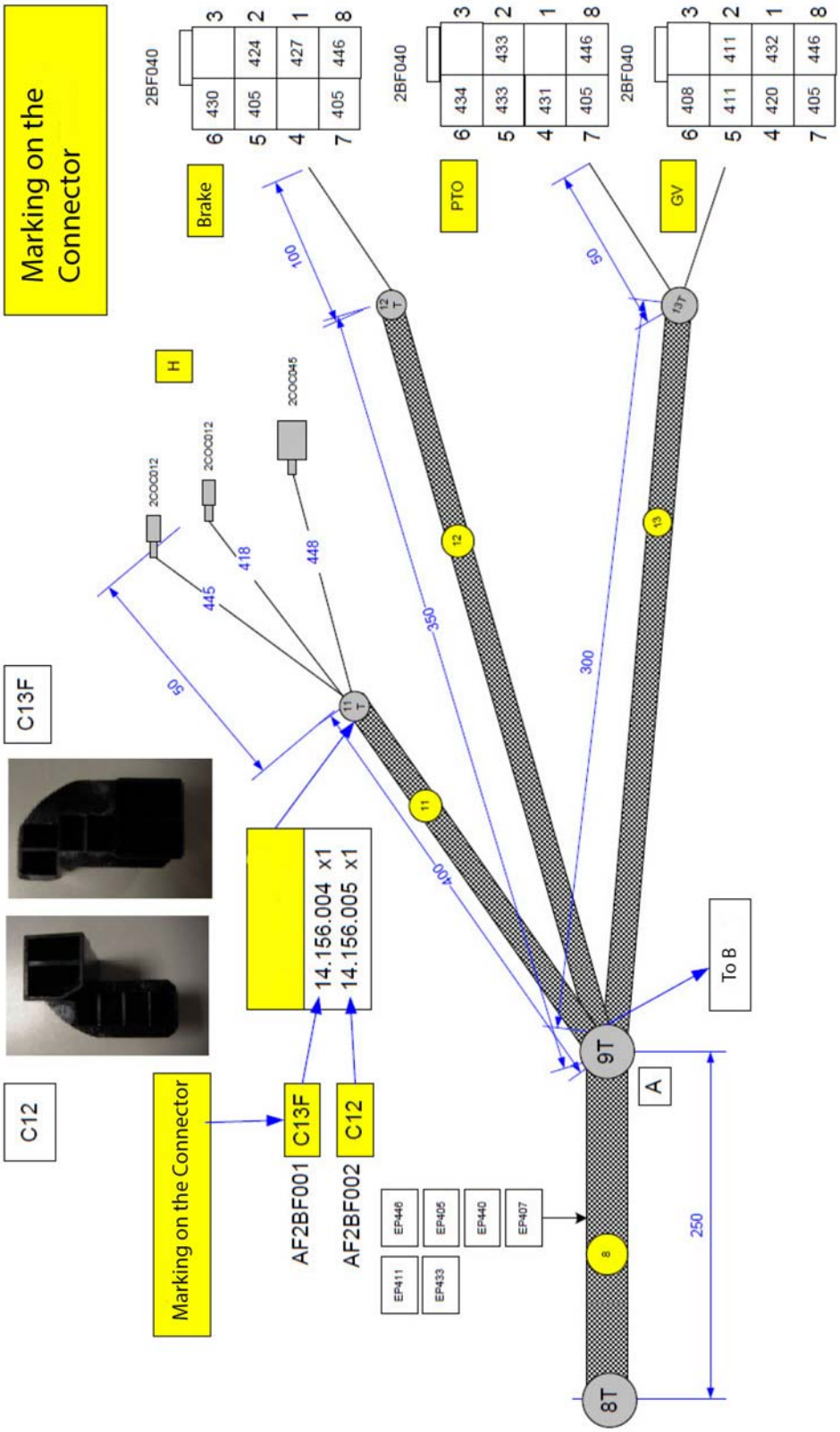
Diagram

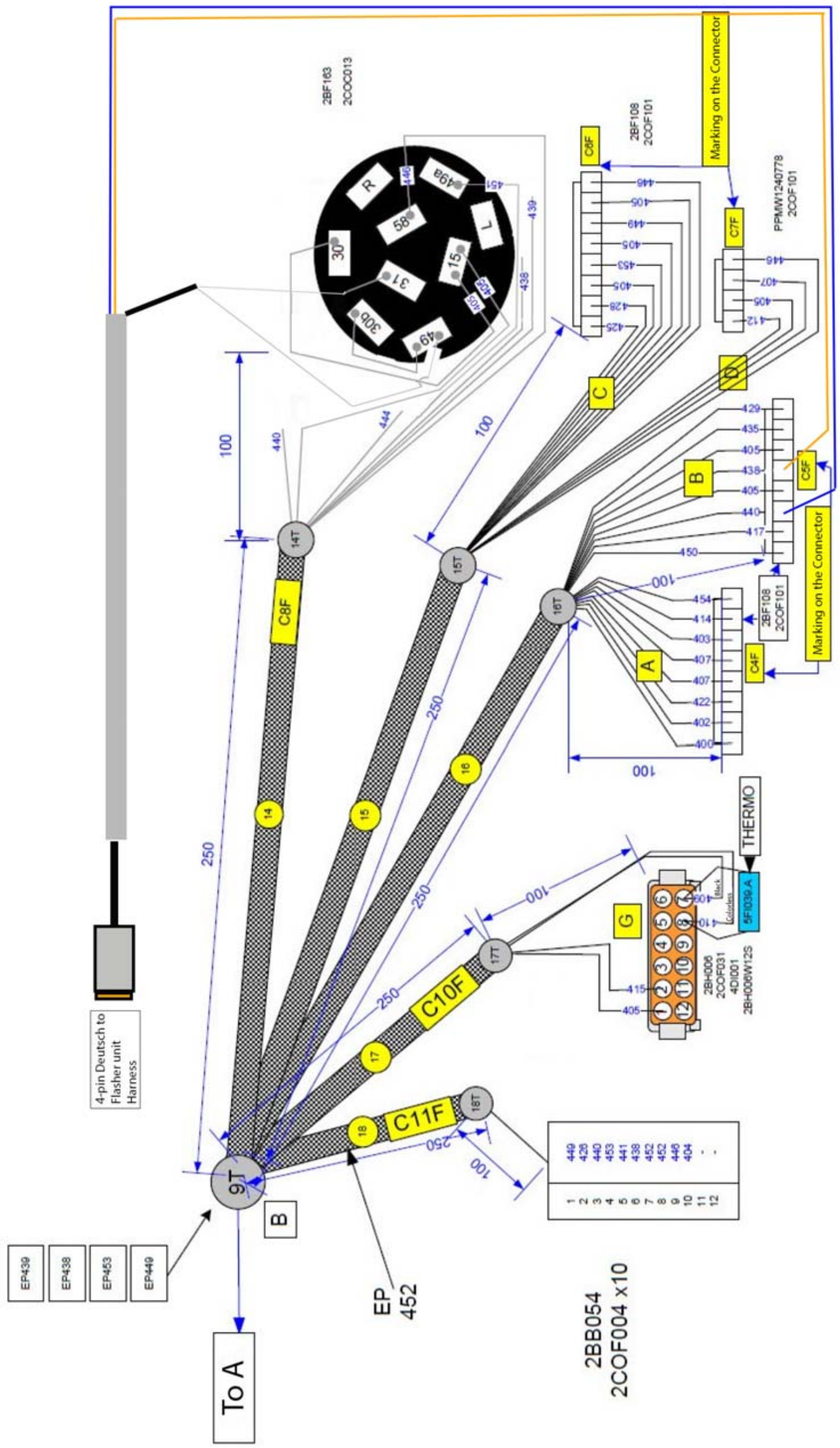


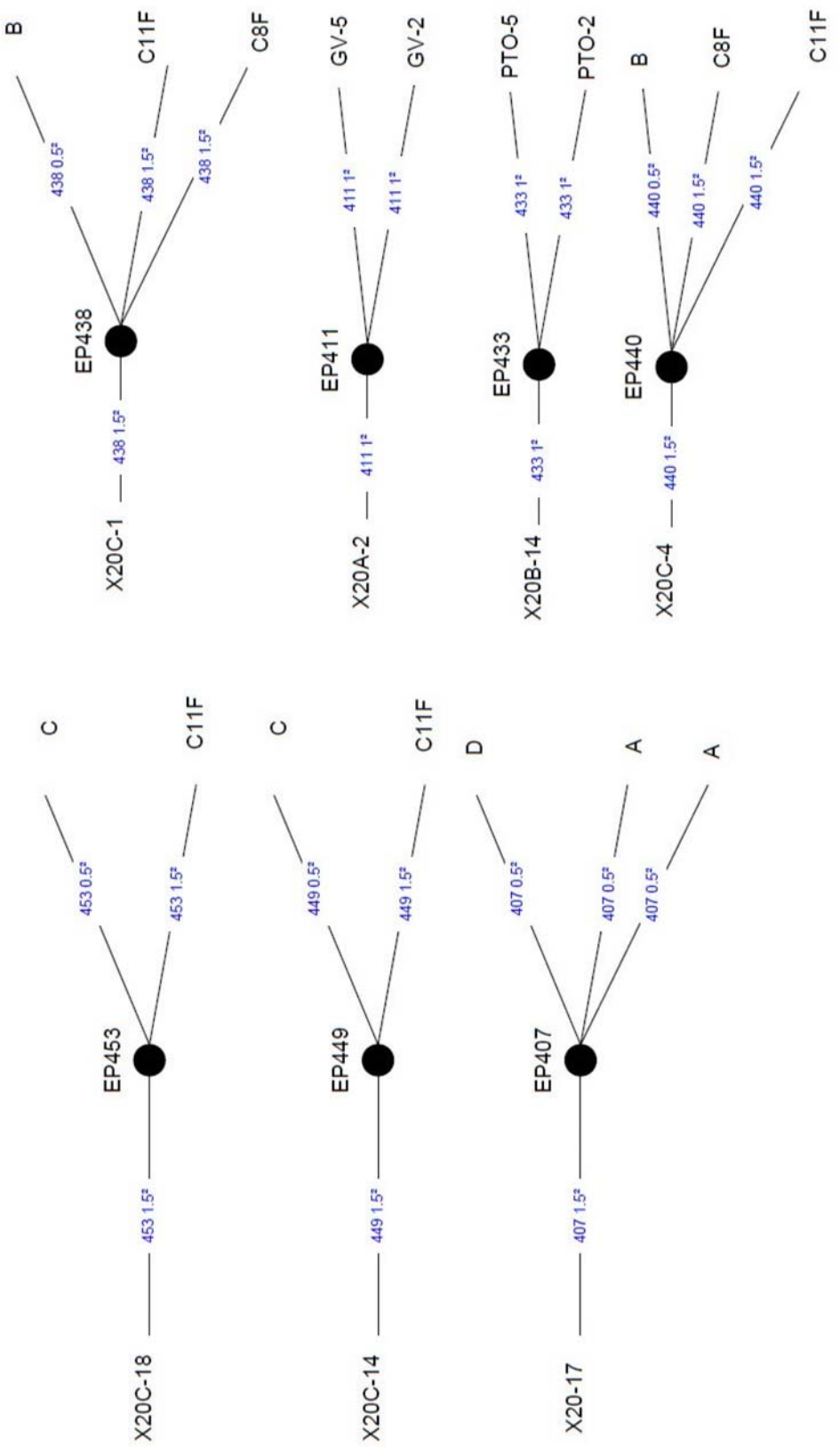
Column Harness (EA0647)

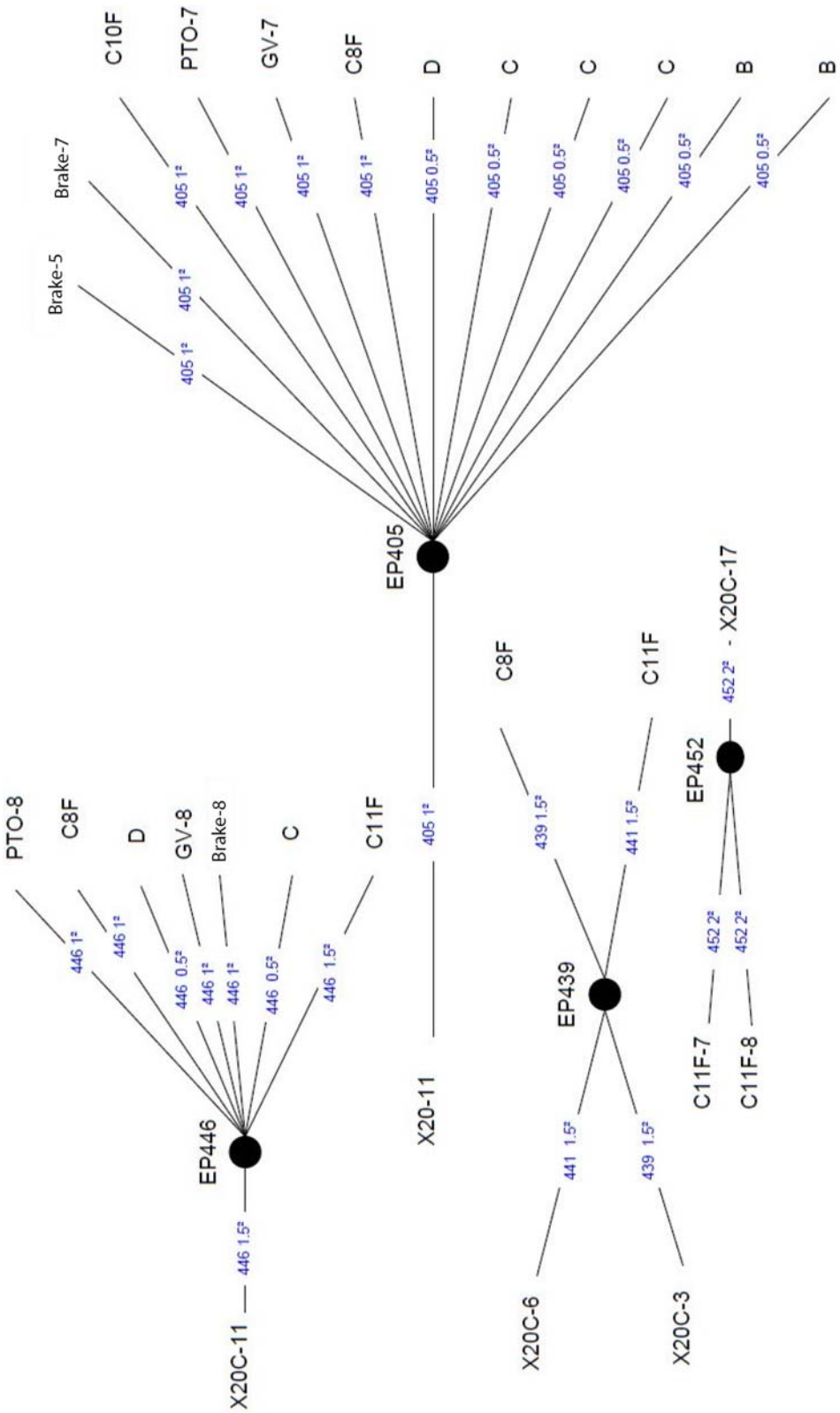



X20
Yellow
2COF074
5FU030
1-967624-4
400
404
402
405
407
403
408
X20A
Yellow
2COF074
5FU030
1-967624-4
409
Black
412
410
INC
411
413
414
454
415
417
413
418
420
X20B
Grey
2COF074
5FU030
2BB061
426
429
429B
424
427
430
432B
435
422
425
428
431
433
434
X20C
Grey
2COF074
5FU030
2BB061
438
440
445
448
451
446
449
452
439
441
444
447
447
450
453
C97
2COG004
2BF074
1: 432
2: 429B
3: 432B
4:-----

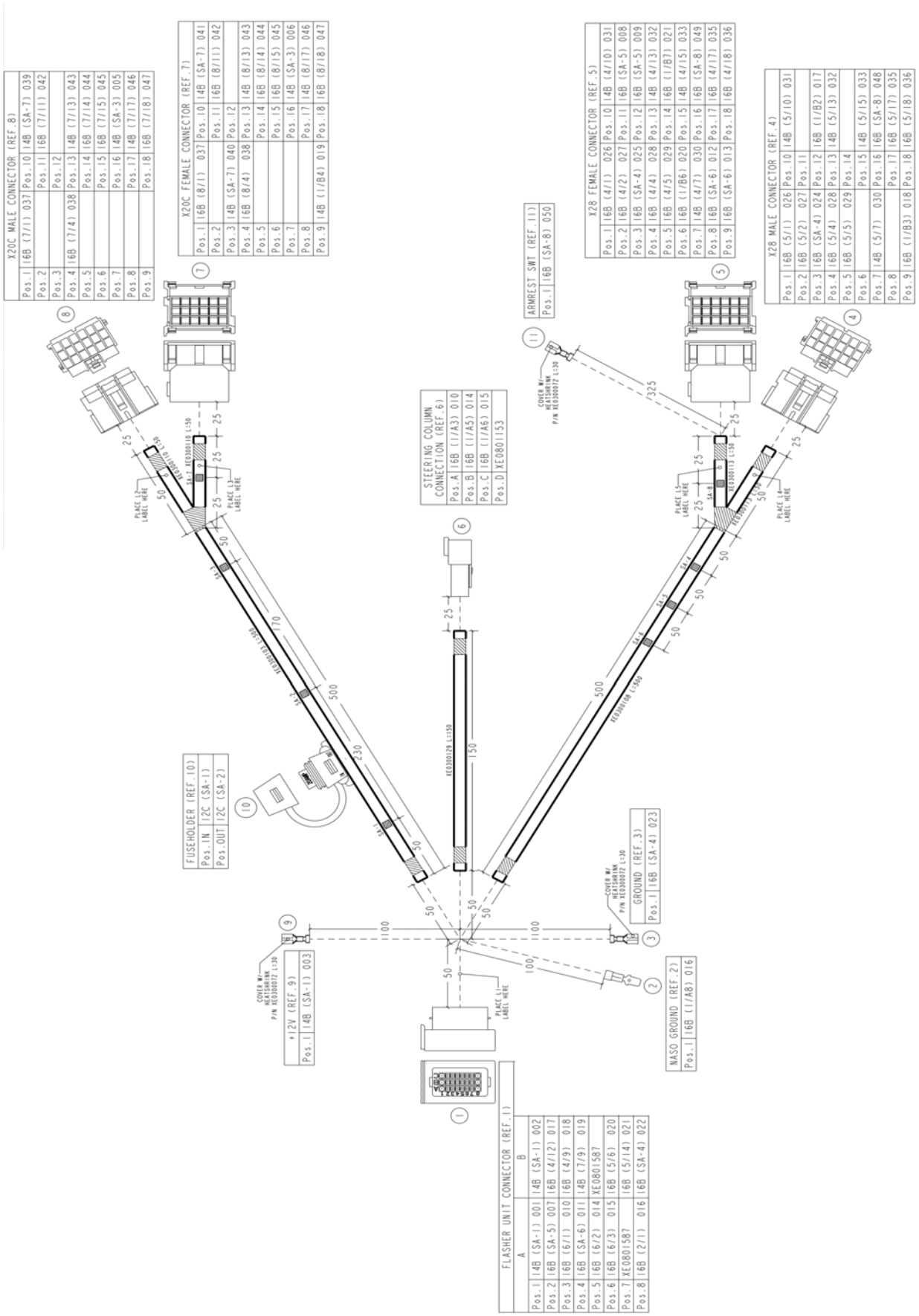

Marking on the Connector
2BF040
Brake
PTO
GV
H
2CC012
2CC012
2CC045
C13F
C12
Marking on the Connector
AF2BF001
AF2BF002
14.156.004 x1
14.156.005 x1
EP446
EP405
EP440
EP407
EP411
EP433
9T
8T
A
To B
250
300
350
400
445
418
448
100
50


To A
EP439
EP438
EP453
EP449
EP
452
2BB054
2COF004 x10
4-pin Deutsch to Flasher unit Harness
C8F
C10F
C11F
C4F
C5F
C6F
C7F
THERMO
5FI039 A
2BF163
2COC013
2BF108
2COF101
PPMW1240778
2COF101
2BH006
2COF031
4DI001
2BH006W12S
Marking on the Connector
Marking on the Connector

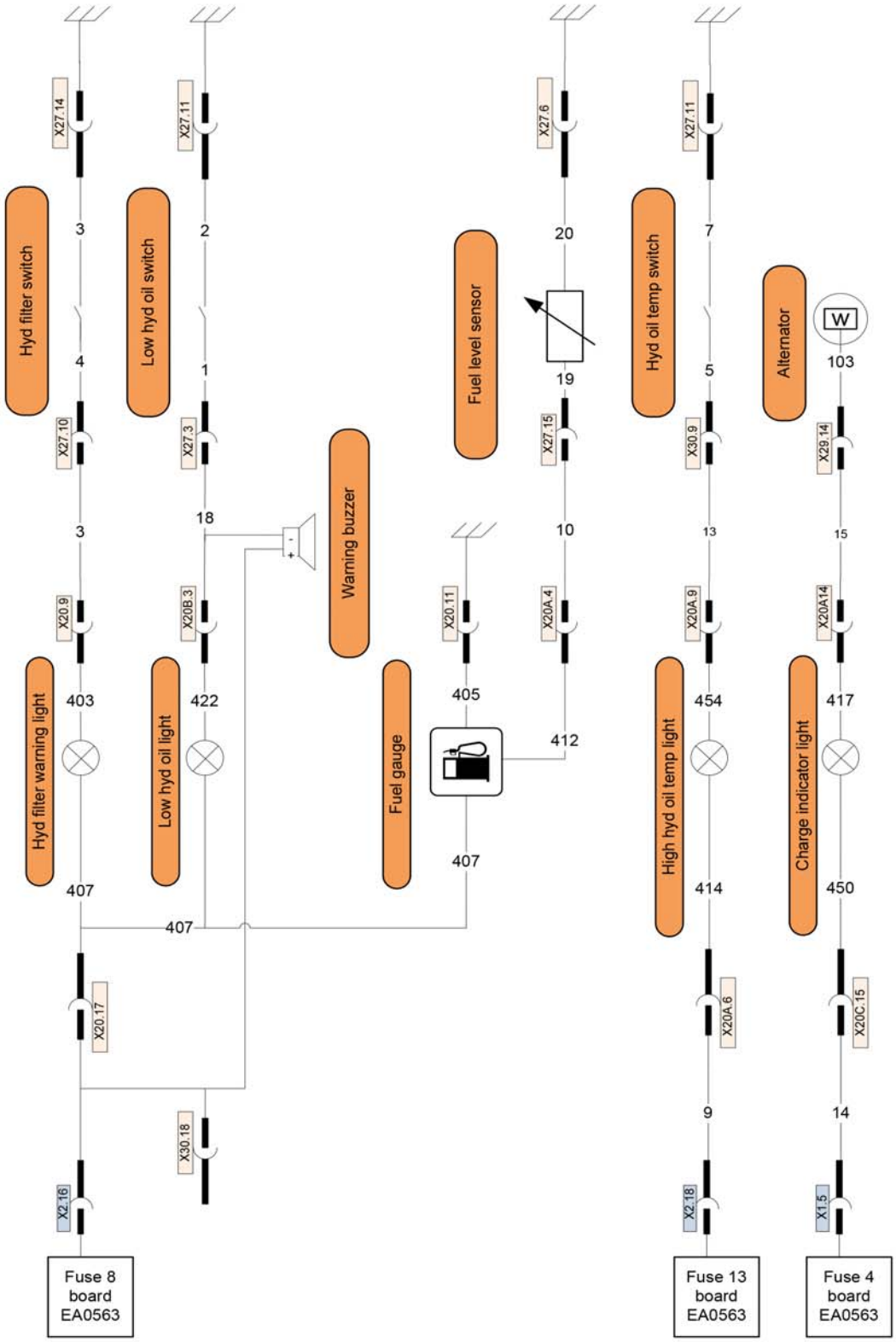

X20C-1
438 1.5²
EP438
438 0.5²
B
438 1.5²
C11F
438 1.5²
C8F
X20A-2
411 1²
EP411
411 1²
GV-5
411 1²
GV-2
X20B-14
433 1²
EP433
433 1²
PTO-5
433 1²
PTO-2
X20C-4
440 1.5²
EP440
440 0.5²
B
440 1.5²
C8F
440 1.5²
C11F
X20C-18
453 1.5²
EP453
453 0.5²
C
453 1.5²
C11F
X20C-14
449 1.5²
EP449
449 0.5²
C
449 1.5²
C11F
X20-17
407 1.5²
EP407
407 0.5²
D
407 0.5²
A
407 0.5²
A


X20C-11
446 1.5²
EP446
PTO-8
446 1²
C8F
446 1²
D
446 0.5²
GV-8
446 1²
Brake-8
446 1²
C
446 0.5²
C11F
446 1.5²
X20-11
405 1²
EP405
Brake-5
405 1²
Brake-7
405 1²
C10F
405 1²
PTO-7
405 1²
GV-7
405 1²
C8F
405 1²
D
405 0.5²
C
405 0.5²
C
405 0.5²
C
405 0.5²
B
405 0.5²
B
405 0.5²
X20C-6
441 1.5²
EP439
C8F
439 1.5²
C11F
441 1.5²
X20C-3
439 1.5²
C11F-7
452 2²
EP452
C11F-8
452 2²
452 2² - X20C-17

Flasher Unit Harness

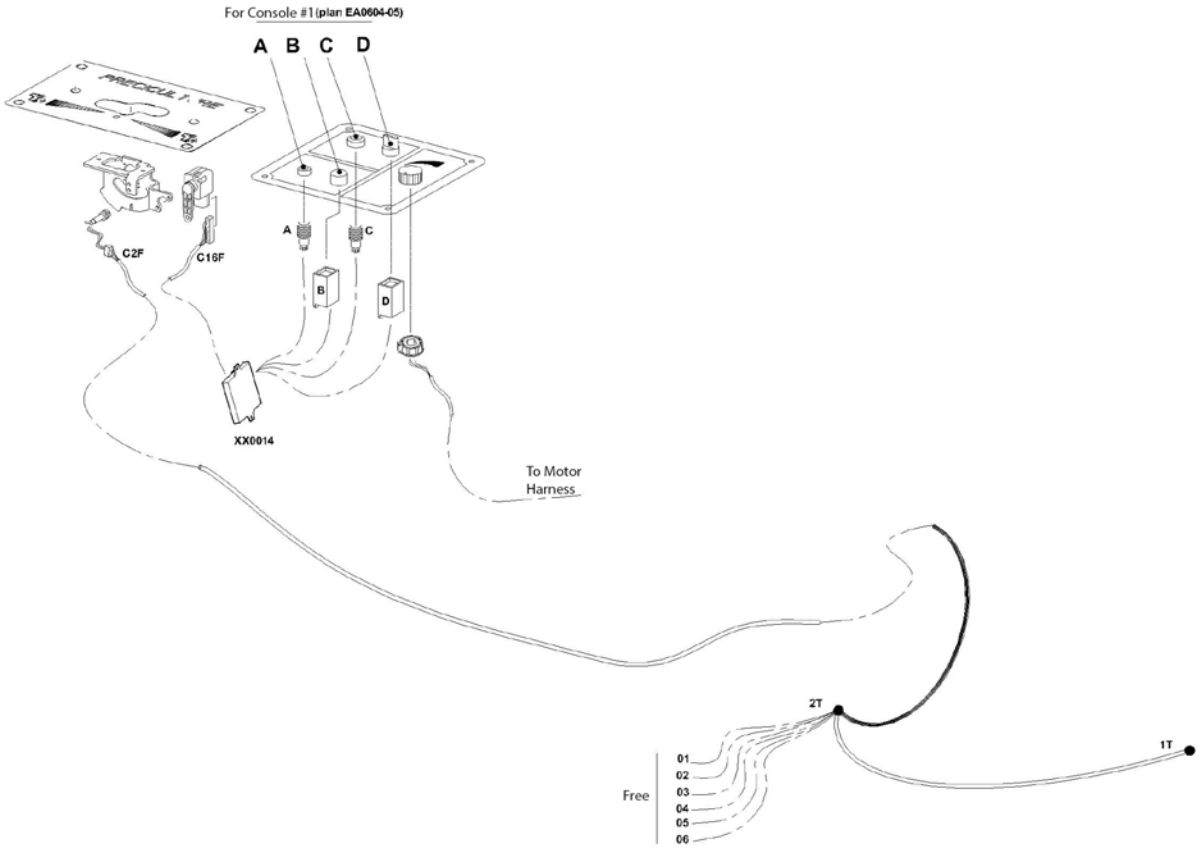


Hydraulic, Fuel, and Charge Indicator

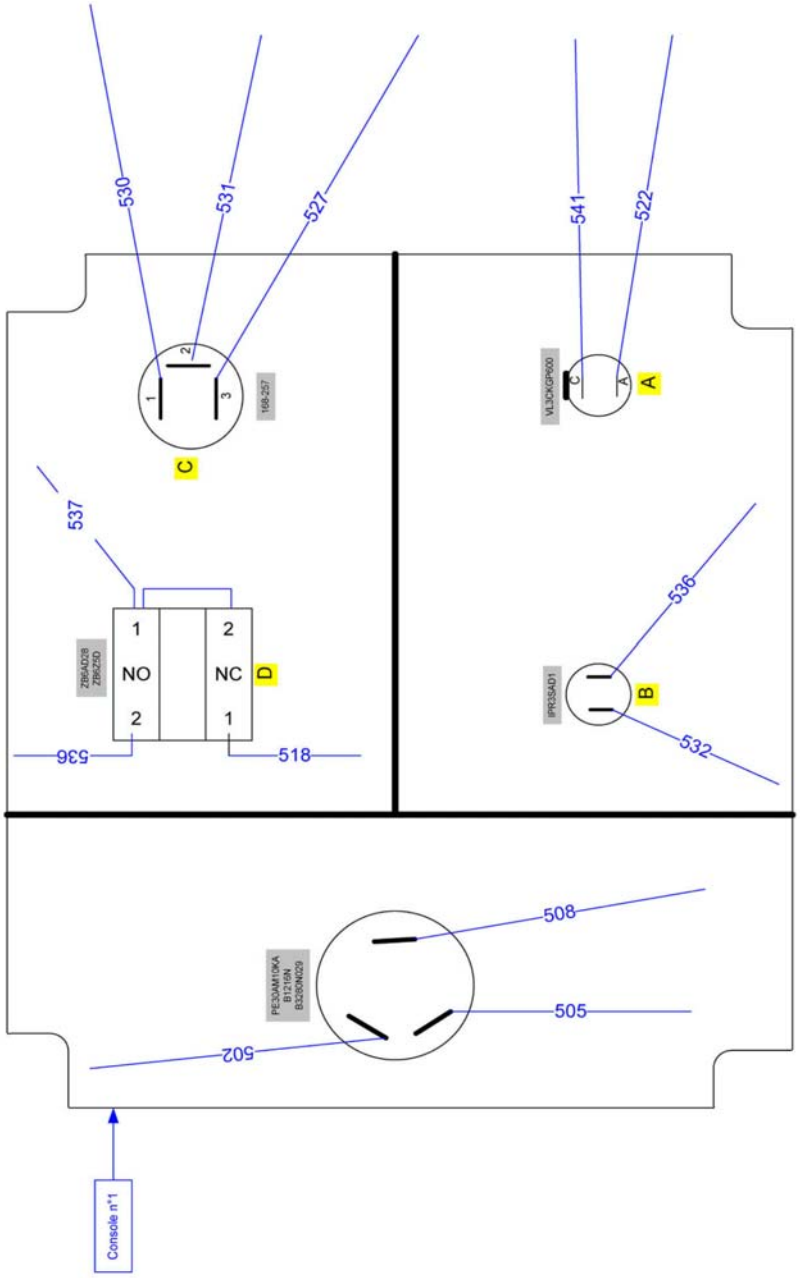


Operator's Seat Armrest Wiring Harness (EA0604-05)

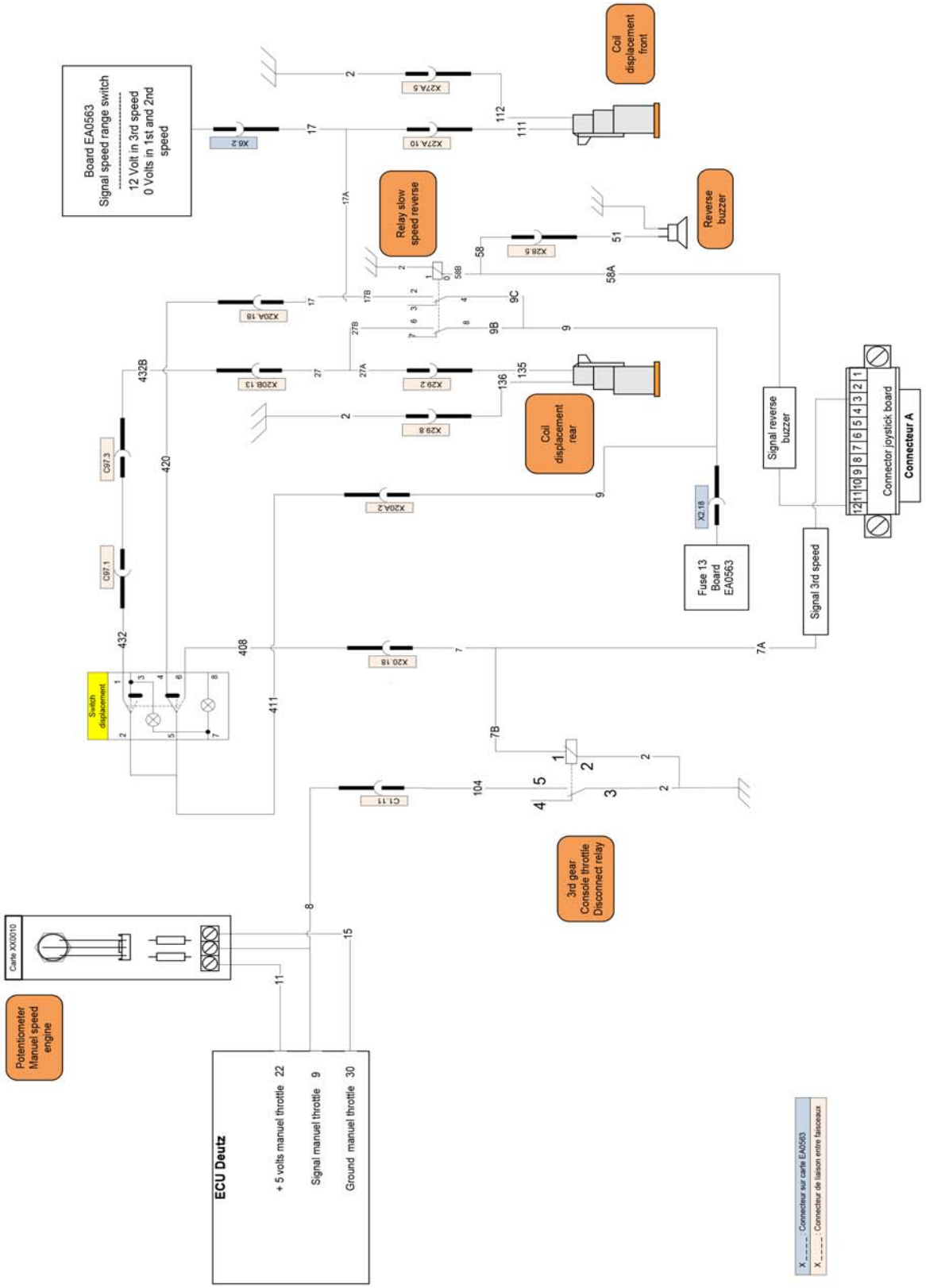
Diagram



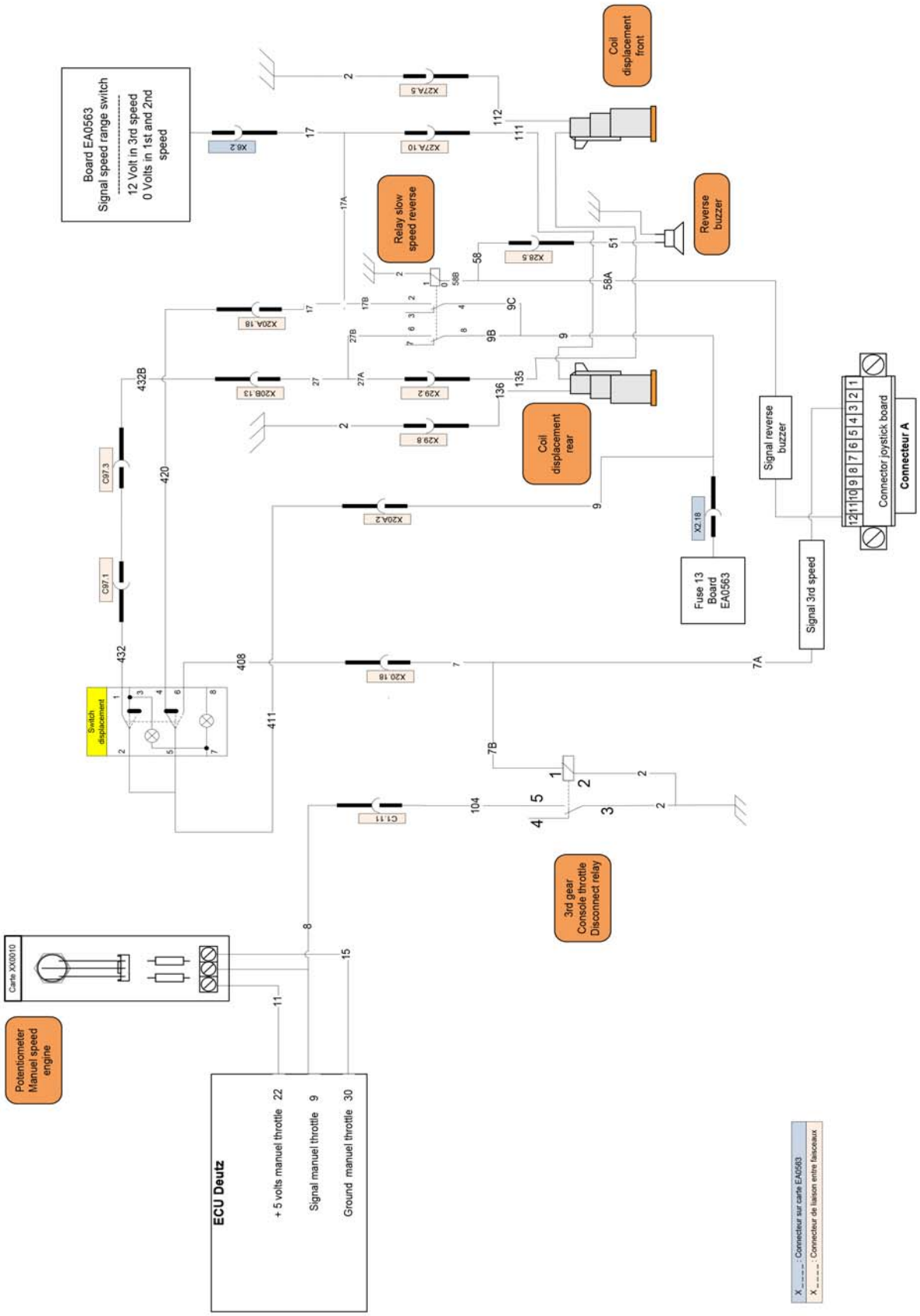
Armrest Harness (XX0014)

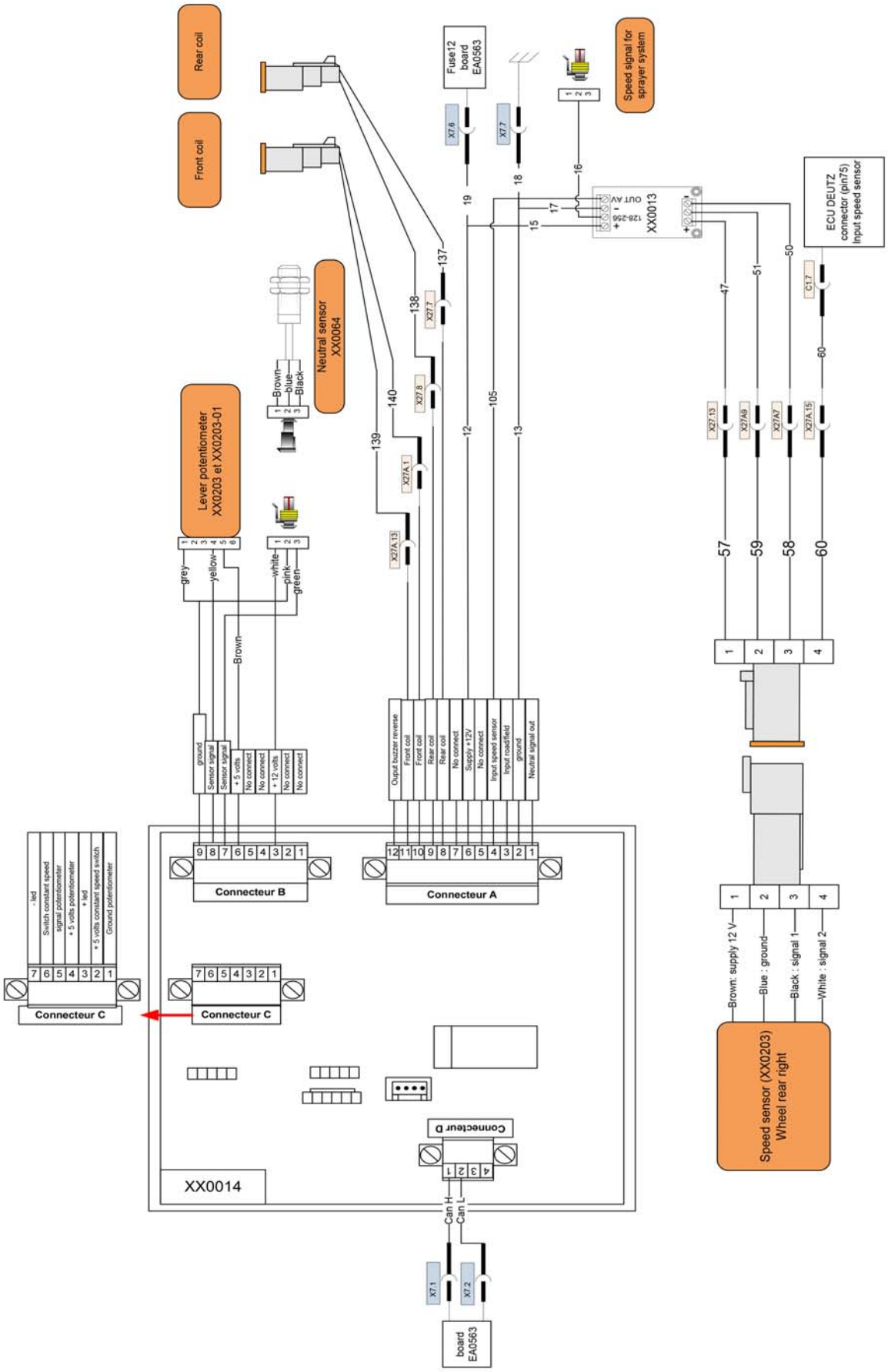


Prior to 0313103794

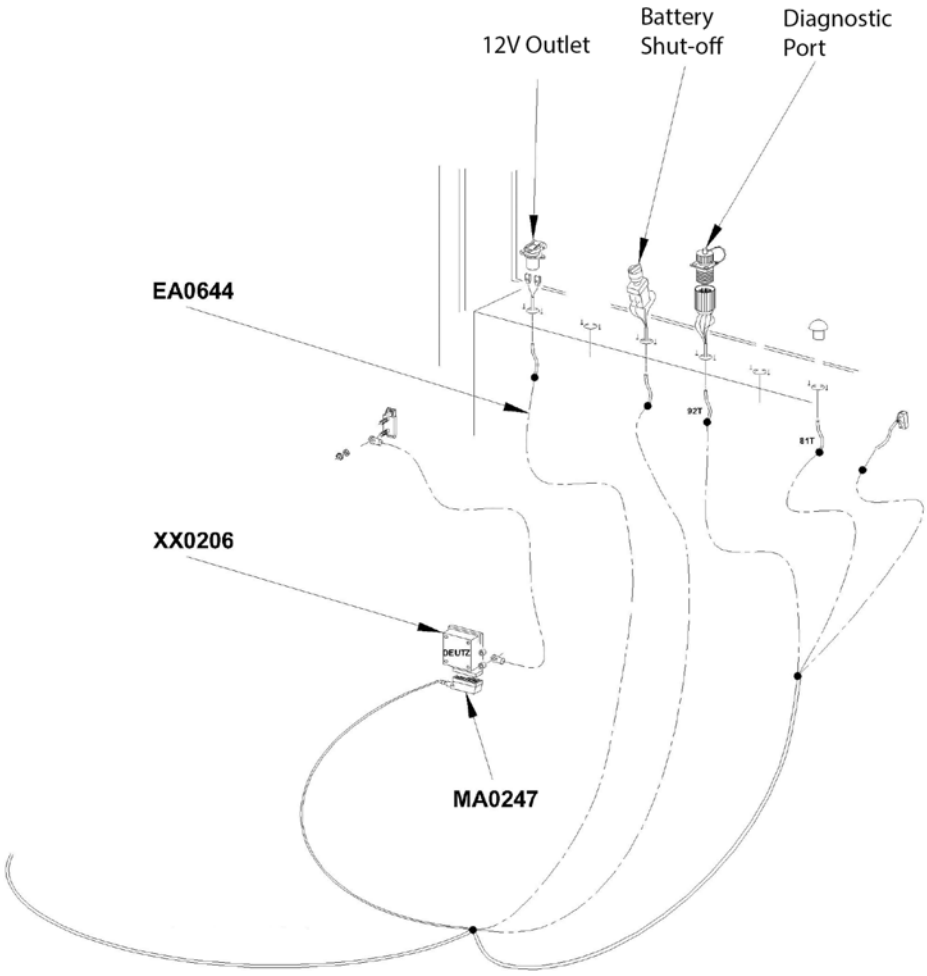


S/N 0313103794 to present

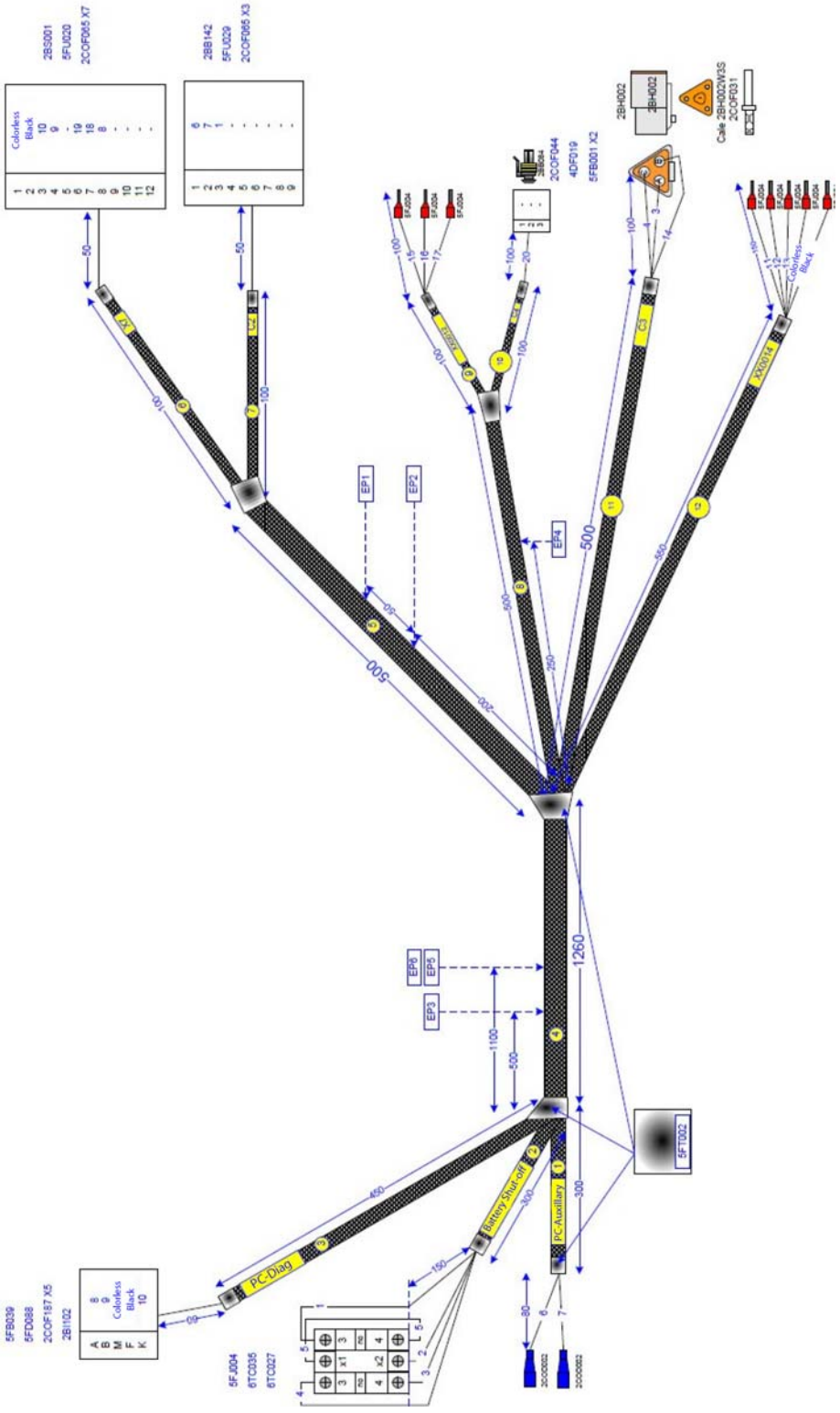


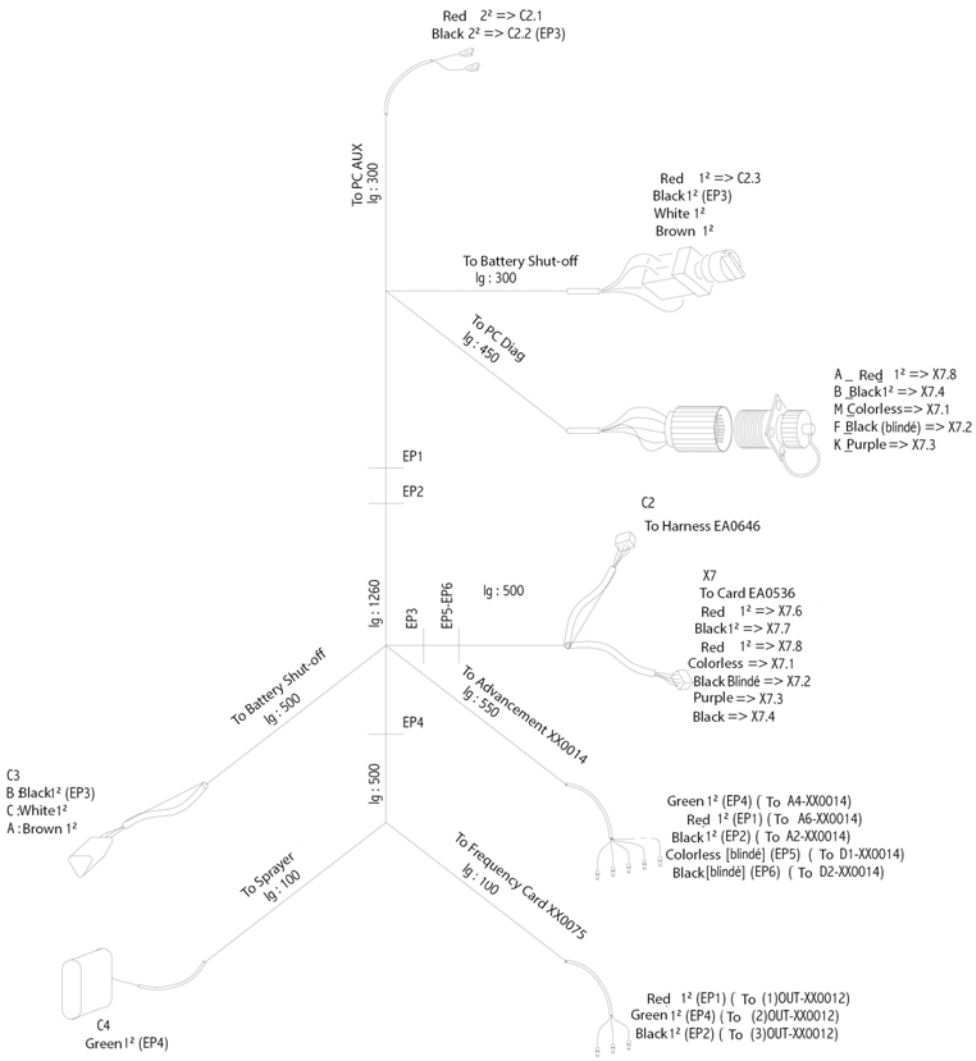

Rear coil
Front coil
Fuse12 board EA0563
Speed signal for sprayer system
X7.6
X7.7
OUT AV
128-256
XX0013
ECU DEUTZ connector (pin75) Input speed sensor
C1.7
Neutral sensor XX0064
Brown
blue
Black
Lever potentiometer XX0203 et XX0203-01
grey
yellow
white
pink
green
Brown
X27.7
X27.8
X27A.1
X27A.13
X27.13
X27A9
X27A7
X27A.15
ground
Sensor signal
Sensor signal
+ 5 volts
No connect
No connect
+ 12 volts
No connect
No connect
Ouput buzzer reverse
Front coil
Front coil
Rear coil
Rear coil
No connect
Supply +12V
No connect
Input speed sensor
Input road/field
ground
Neutral signal out
Connecteur B
Connecteur A
- led
Switch constant speed
signal potentiometer
+ 5 volts potentiometer
+ led
+ 5 volts constant speed switch
Ground potentiometer
Connecteur C
Connecteur C
Connecteur D
XX0014
Can H
Can L
X7.1
X7.2
board EA0563
Brown: supply 12 V
Blue : ground
Black : signal 1
White : signal 2
Speed sensor (XX0203) Wheel rear right

Computer Wiring Harness (EA0604-02)

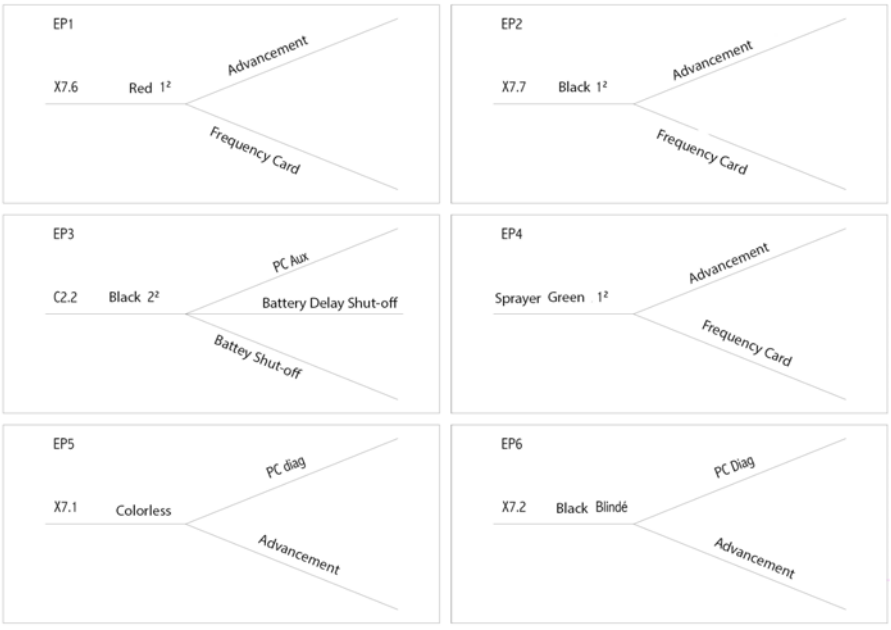


EA0644


2BS001
5FU020
2COF065 X7
2BB142
5FU029
2COF065 X3
2BH002
2BH002
Cable 2BH002W3S
2COF031
2BB004
2COF044
4DF019
5FB001 X2
5FJ004
EP1
EP2
EP4
EP6
EP5
EP3
1260
1100
500
PC-Diag
Battery Shut-off
PC-Auxiliary
5FT002
5FB039
5FD088
2COF187 X5
2BI102
5FJ004
6TC035
6TC027

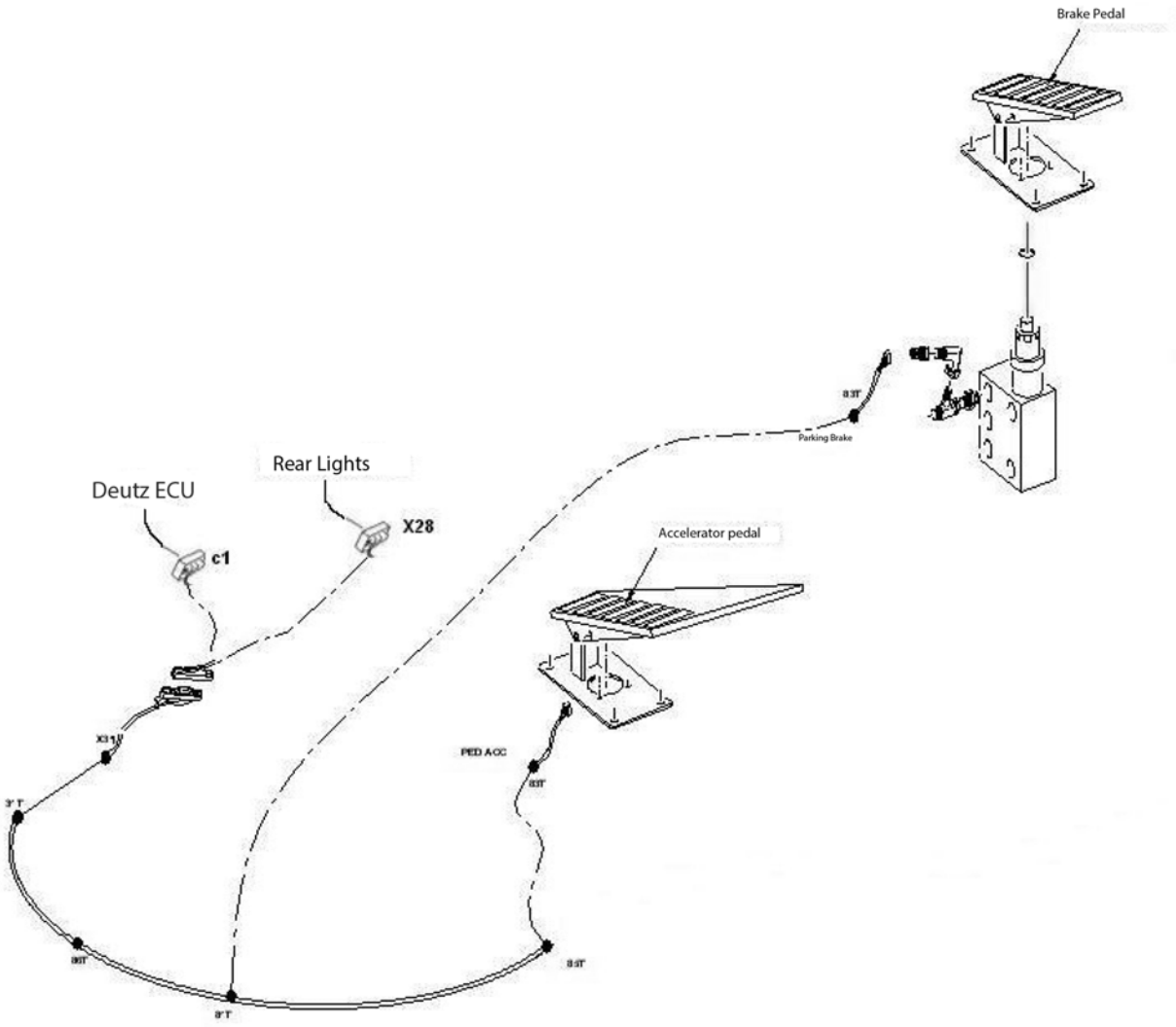

Red 2² => C2.1
Black 2² => C2.2 (EP3)
To PC AUX
lg : 300
Red 1² => C2.3
Black 1² (EP3)
White 1²
Brown 1²
To Battery Shut-off
lg : 300
To PC Diag
lg : 450
A _ Red 1² => X7.8
B _Black 1² => X7.4
M Colorless => X7.1
F Black (blindé) => X7.2
K Purple => X7.3
EP1
EP2
C2
To Harness EA0646
X7
To Card EA0536
Red 1² => X7.6
Black 1² => X7.7
Red 1² => X7.8
Colorless => X7.1
Black Blindé => X7.2
Purple => X7.3
Black => X7.4
lg : 1260
EP3
EP5-EP6
lg : 500
To Advancement XX0014
lg : 550
To Battery Shut-off
lg : 500
EP4
lg : 500
C3
B :Black 1² (EP3)
C :White 1²
A : Brown 1²
Green 1² (EP4) (To A4-XX0014)
Red 1² (EP1) (To A6-XX0014)
Black 1² (EP2) (To A2-XX0014)
Colorless [blindé] (EP5) (To D1-XX0014)
Black [blindé] (EP6) (To D2-XX0014)
To Sprayer
lg : 100
To Frequency Card XX0075
lg : 100
C4
Green 1² (EP4)
Red 1² (EP1) (To (1)OUT-XX0012)
Green 1² (EP4) (To (2)OUT-XX0012)
Black 1² (EP2) (To (3)OUT-XX0012)

Splices

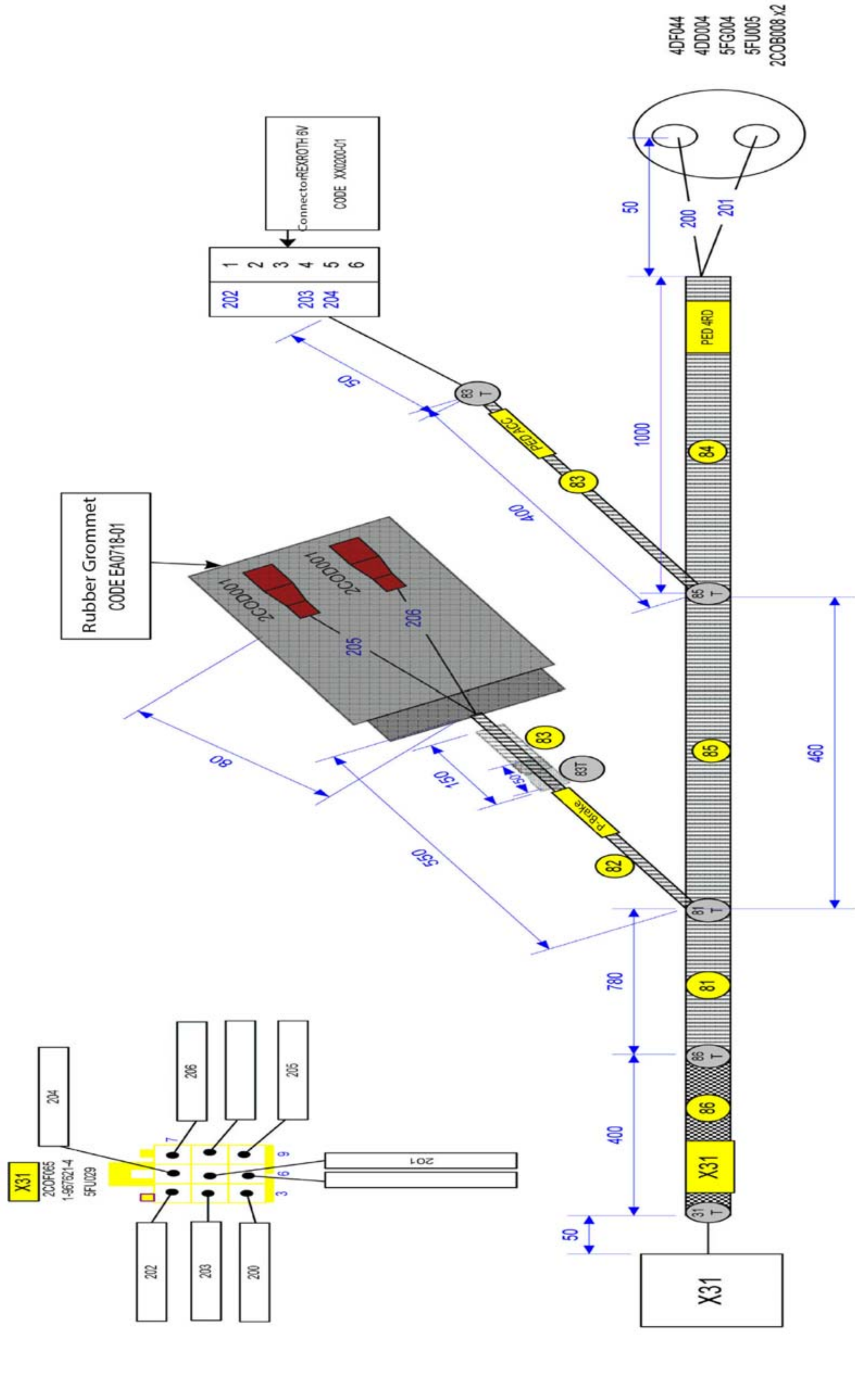

EP1
X7.6
Red 1²
Advancement
Frequency Card
EP2
X7.7
Black 1²
Advancement
Frequency Card
EP3
C2.2
Black 2²
PC Aux
Battery Delay Shut-off
Battey Shut-off
EP4
Sprayer Green 1²
Advancement
Frequency Card
EP5
X7.1
Colorless
PC Diag
Advancement
EP6
X7.2
Black Blindé
PC Diag
Advancement

Brake Pedal Harness (EA0604-03)

Diagram

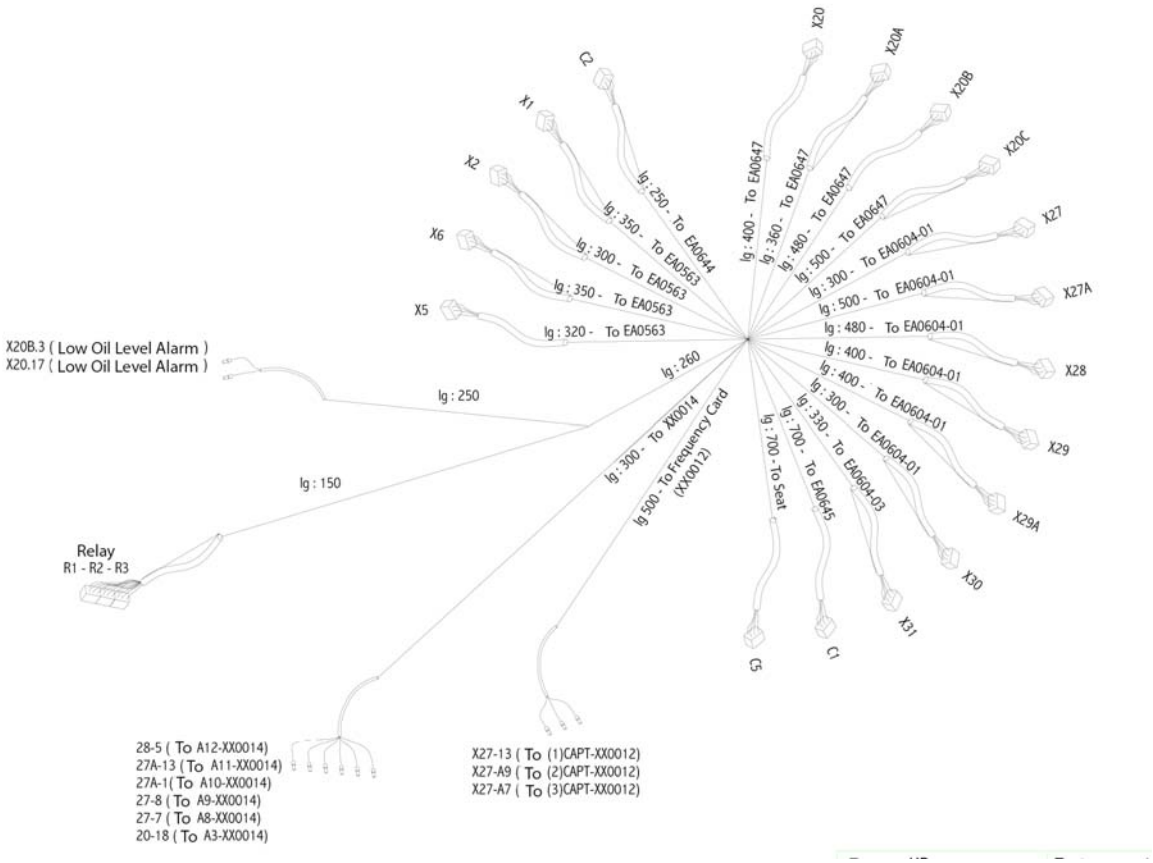


Harness

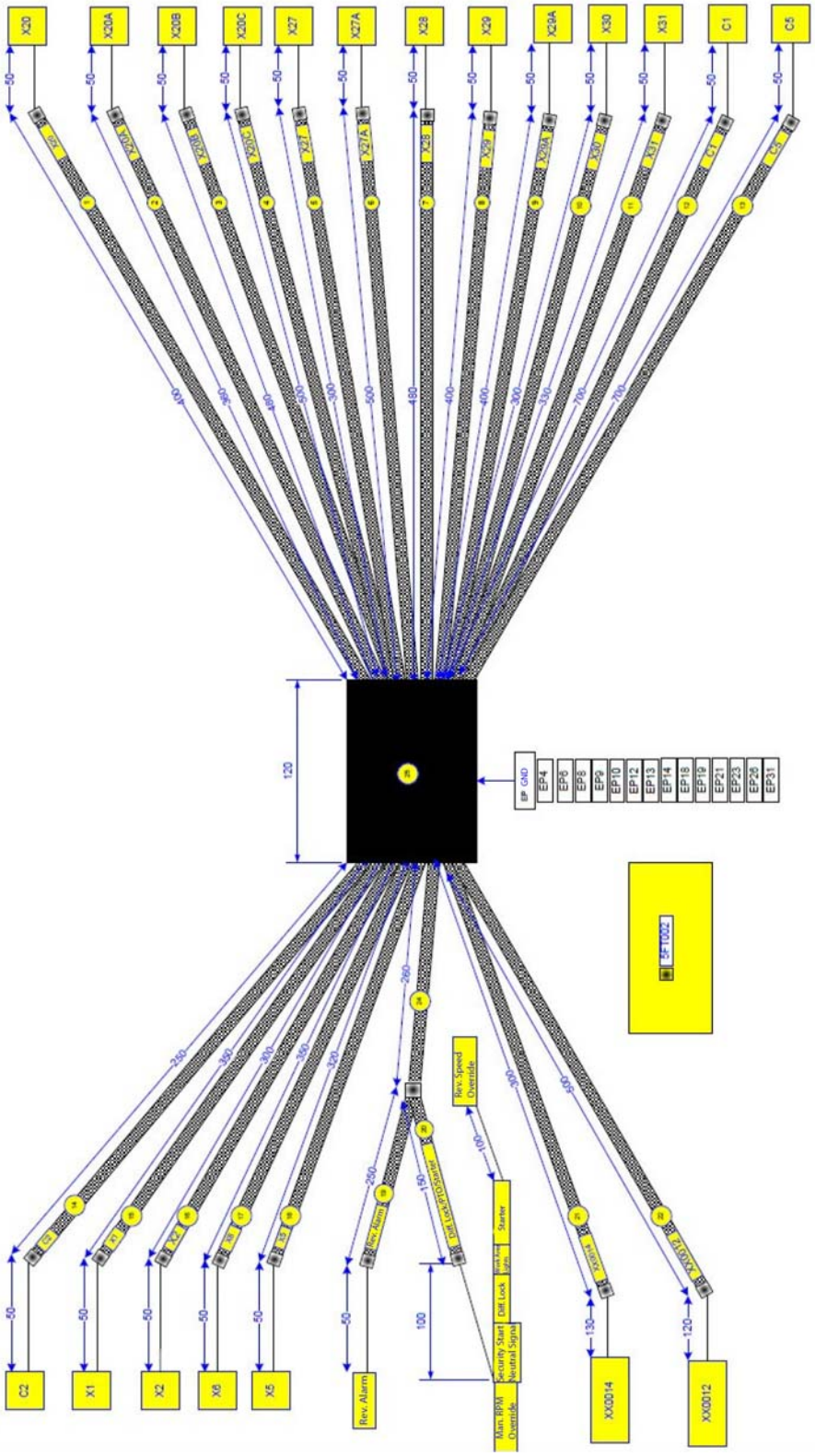

4DF044
4DD004
5FG004
5FU005
2COB008 x2
Connector REXROTH 6V
CODE XX0200-01
Rubber Grommet
CODE EA0718-01
2COD001
2COD001
PED 4RD
PED ACC
P-Brake
X31
X31
2COF065
1-967621-4
5FU029

Adaptation Harness (EA0646)

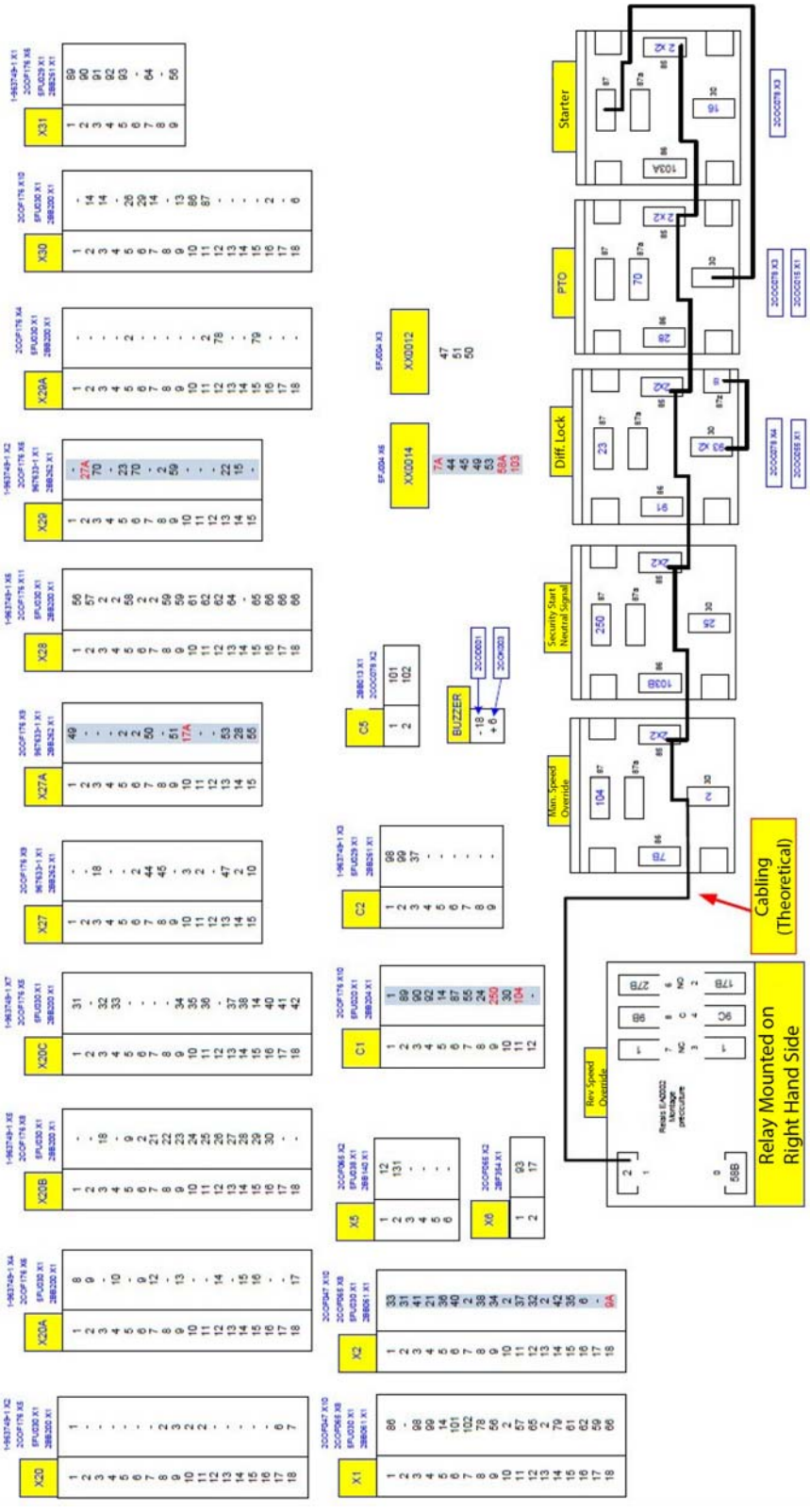
Diagram



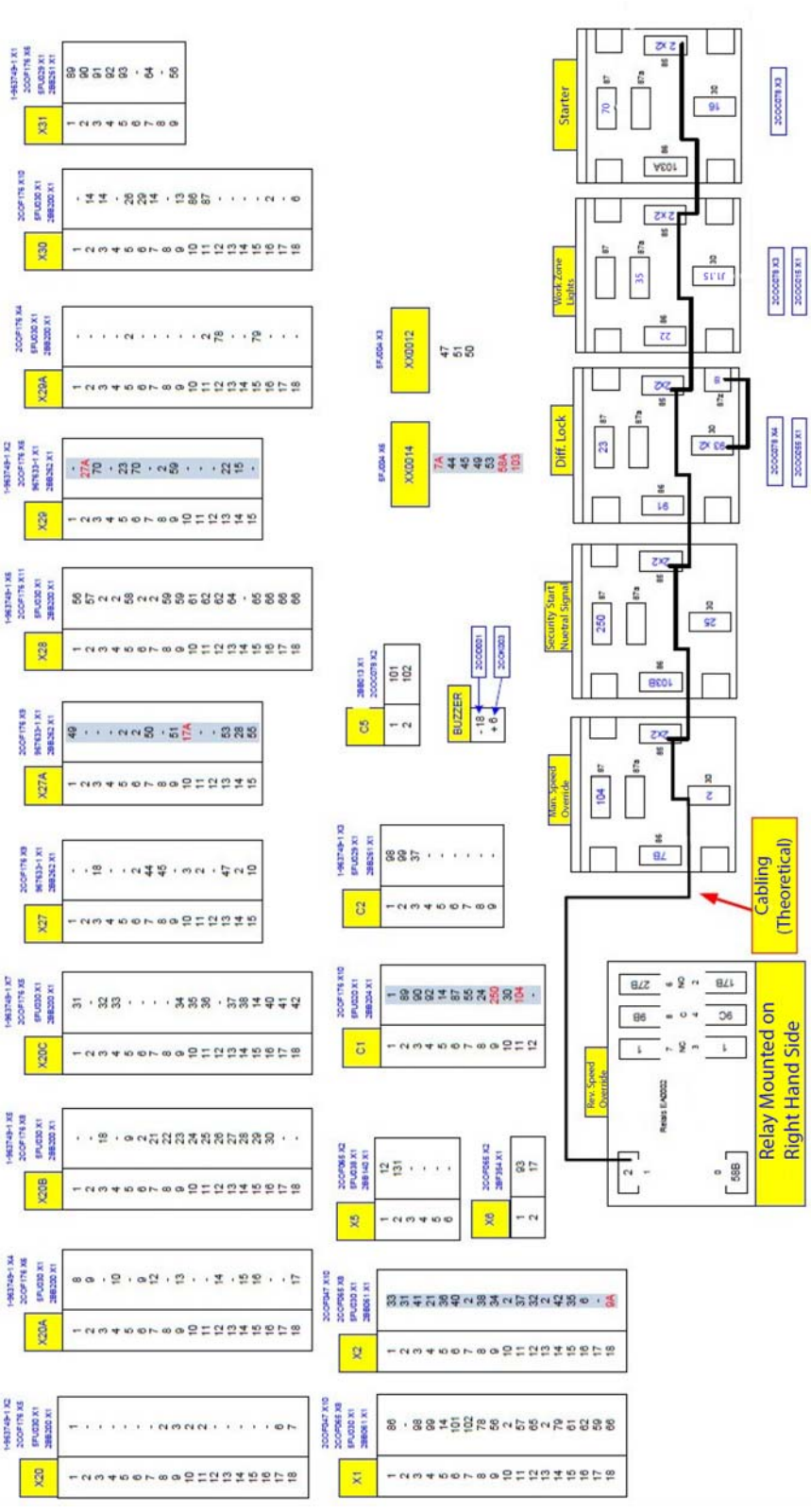
Connectors and Harnesses



Prior to 0313103794

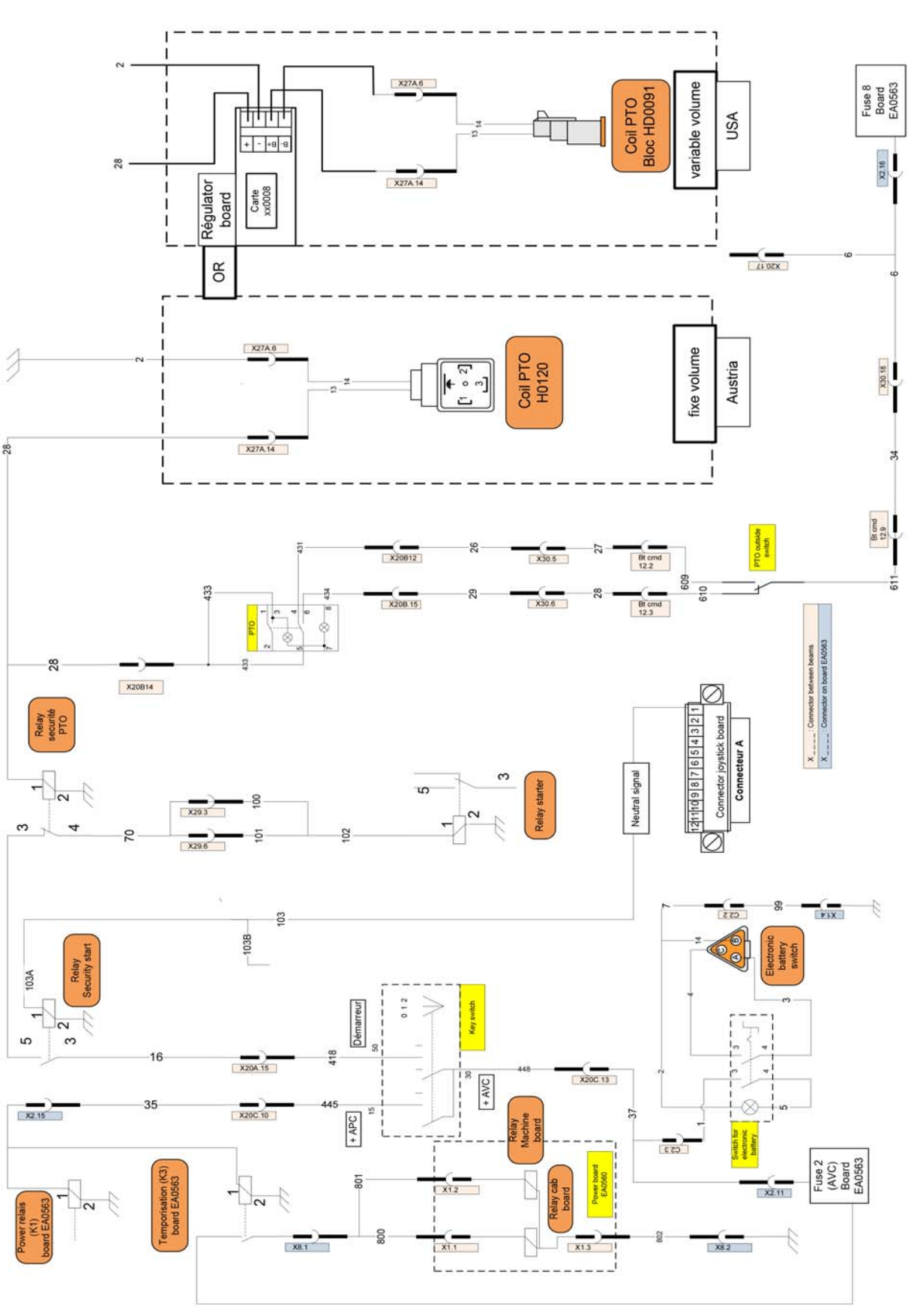


S/N 0313103794 to Present

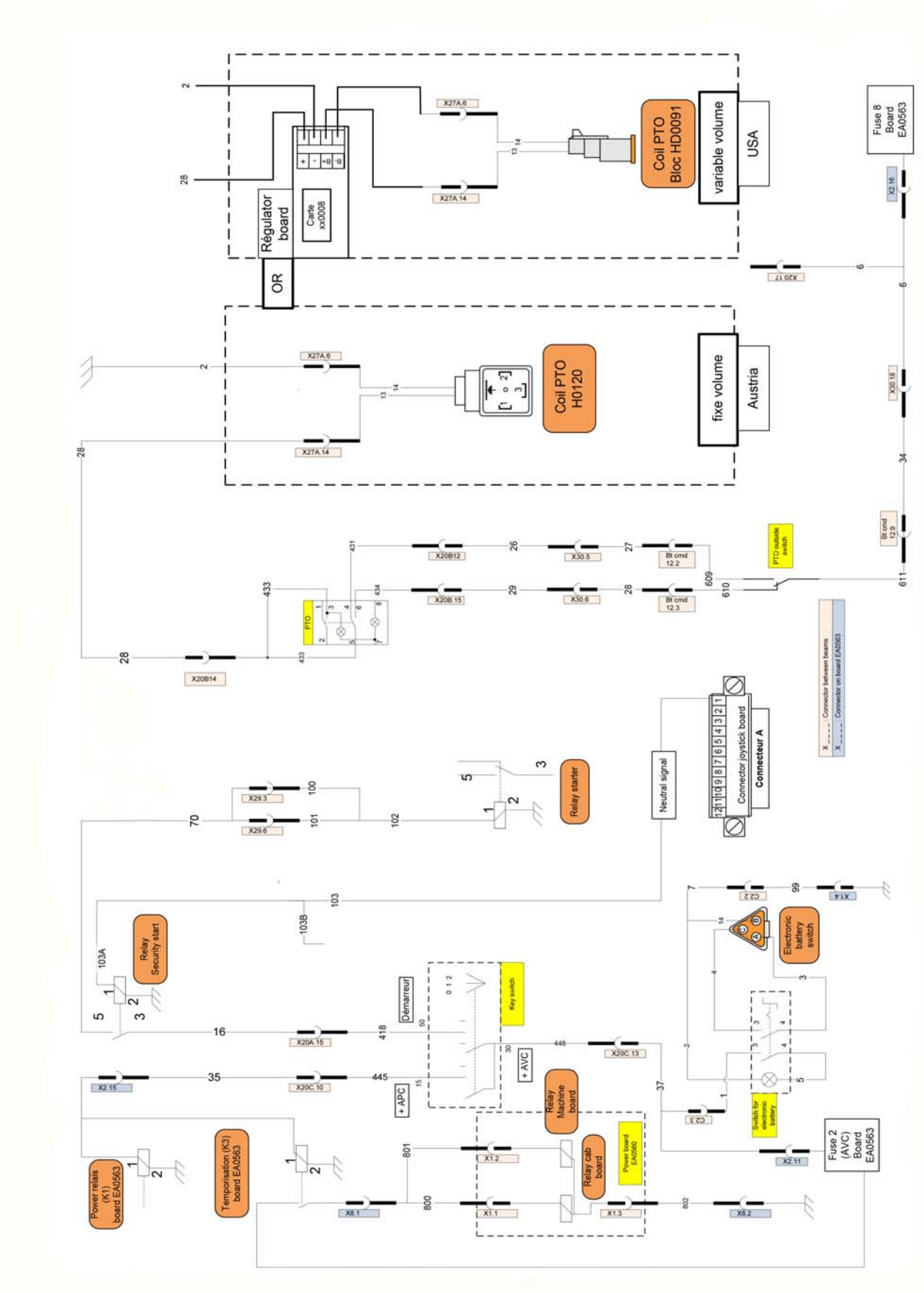


4 - Electronics

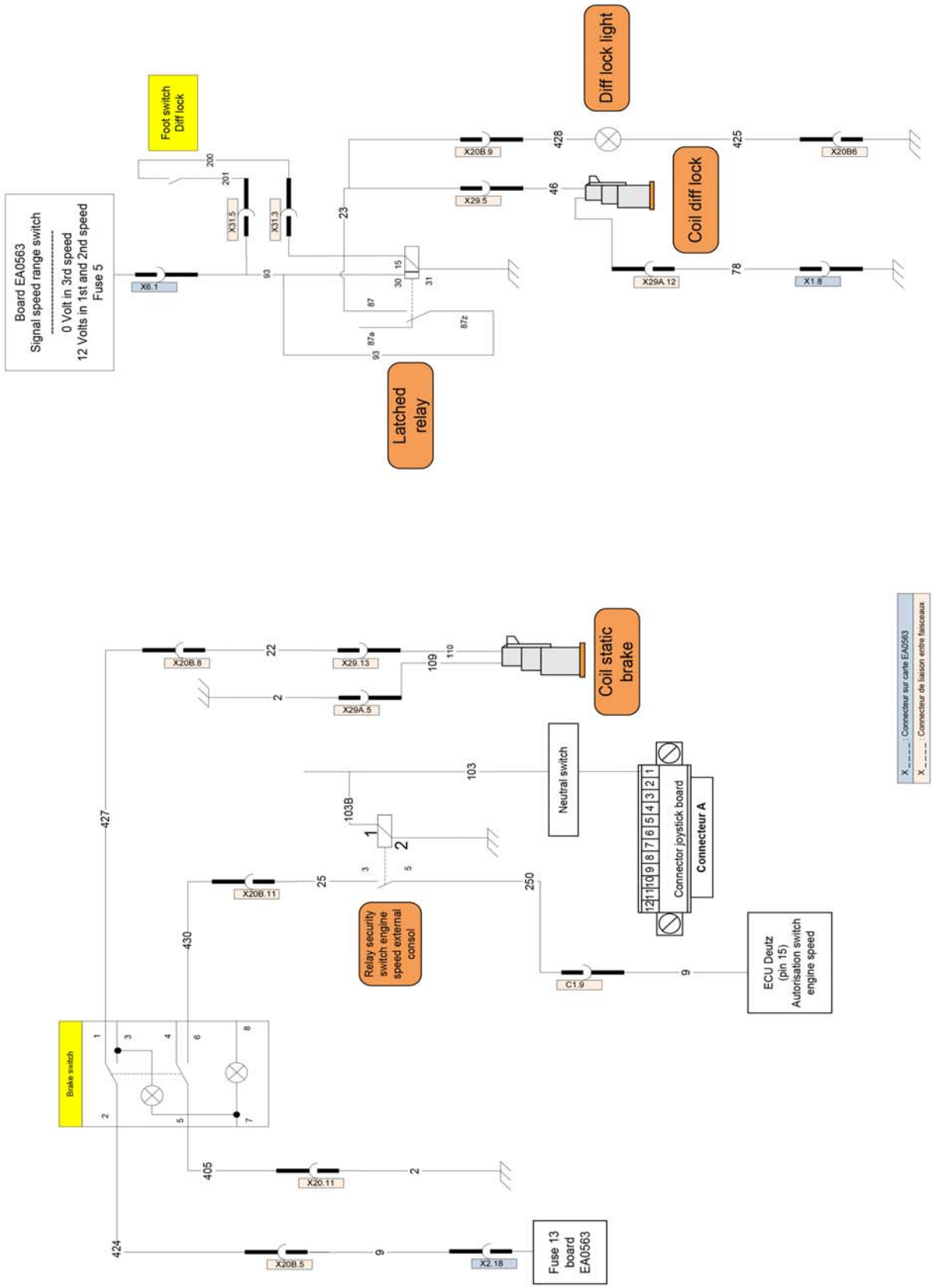
Prior to S/N 0313103794



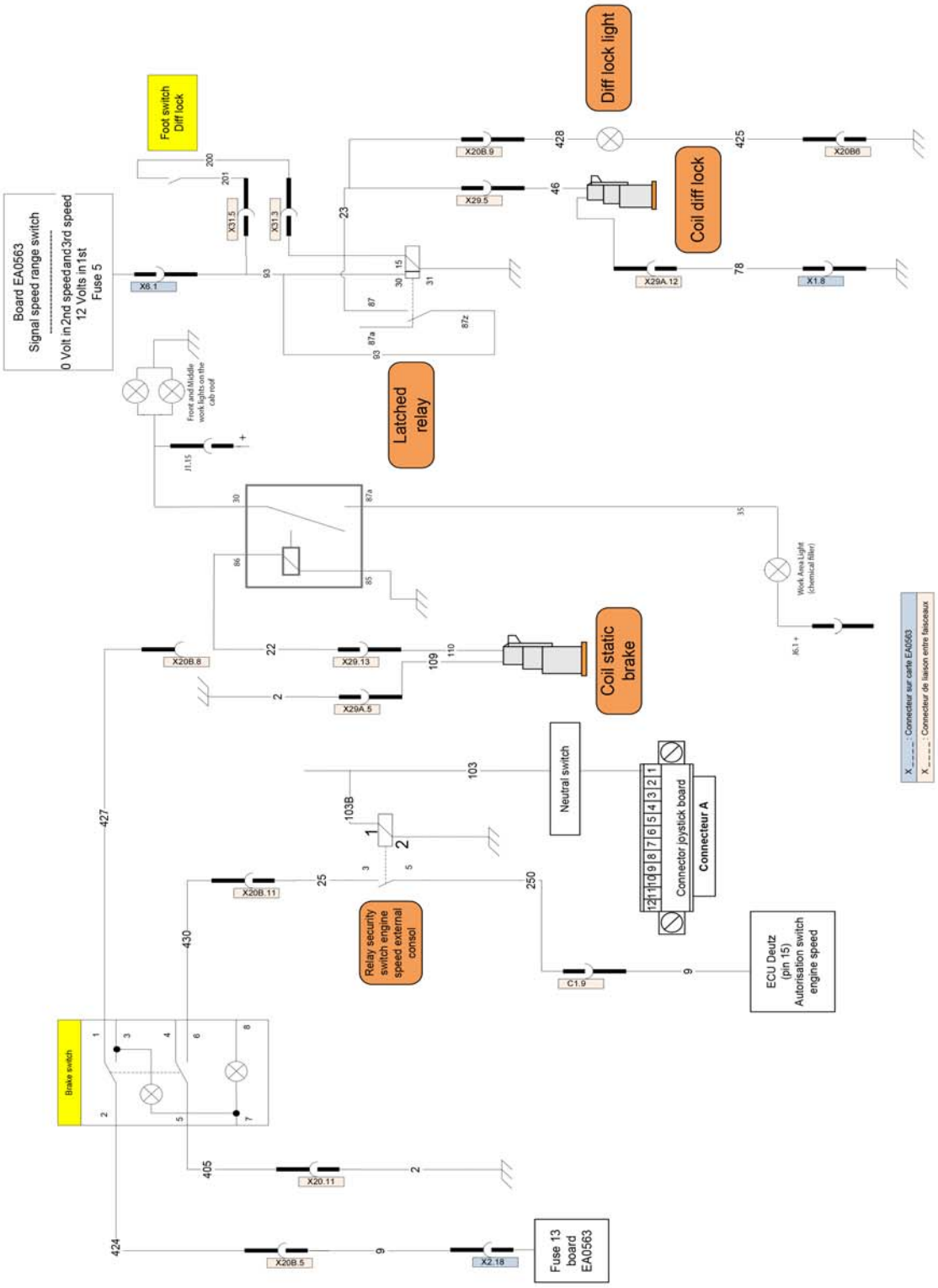
S/N 0313103794 to Present

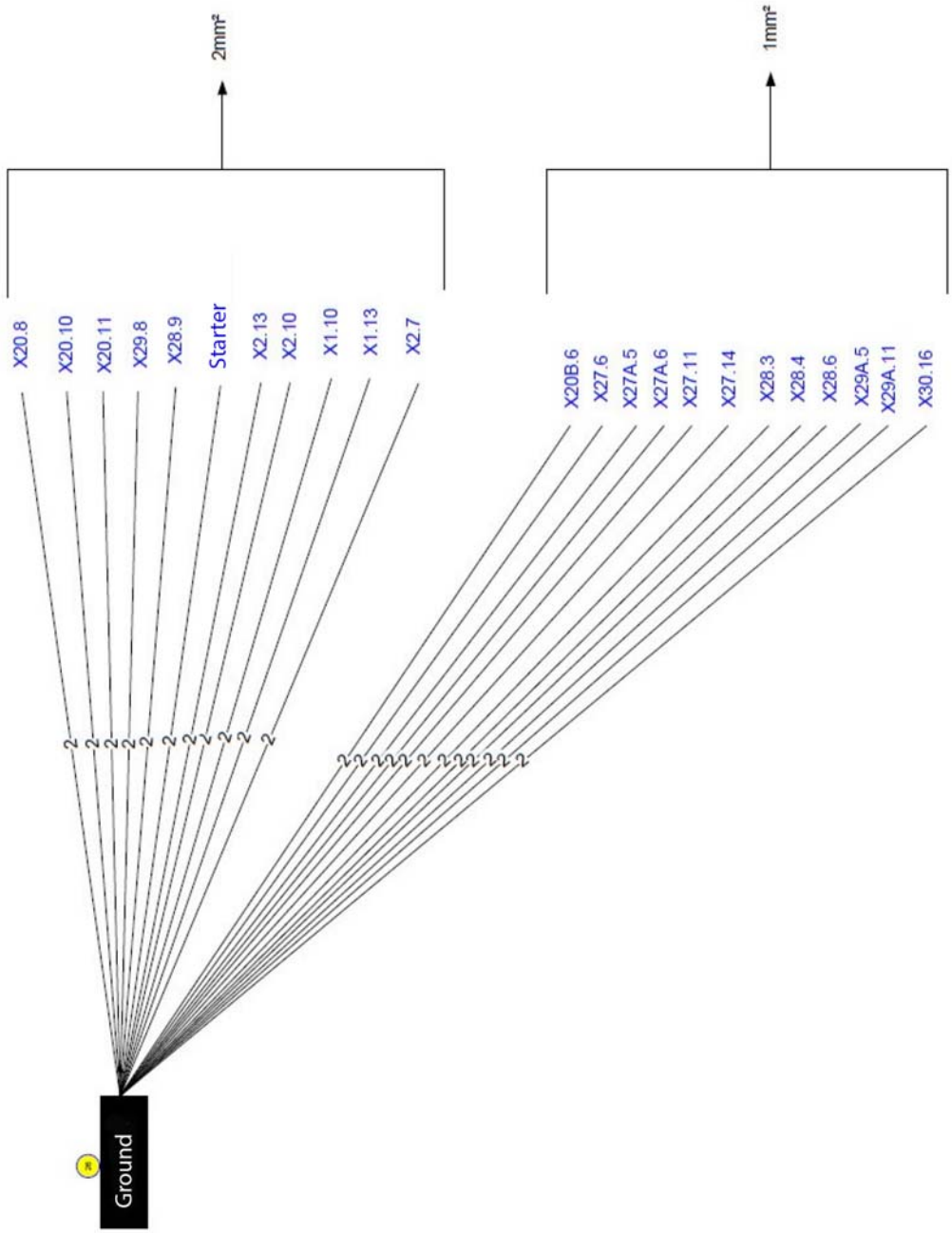


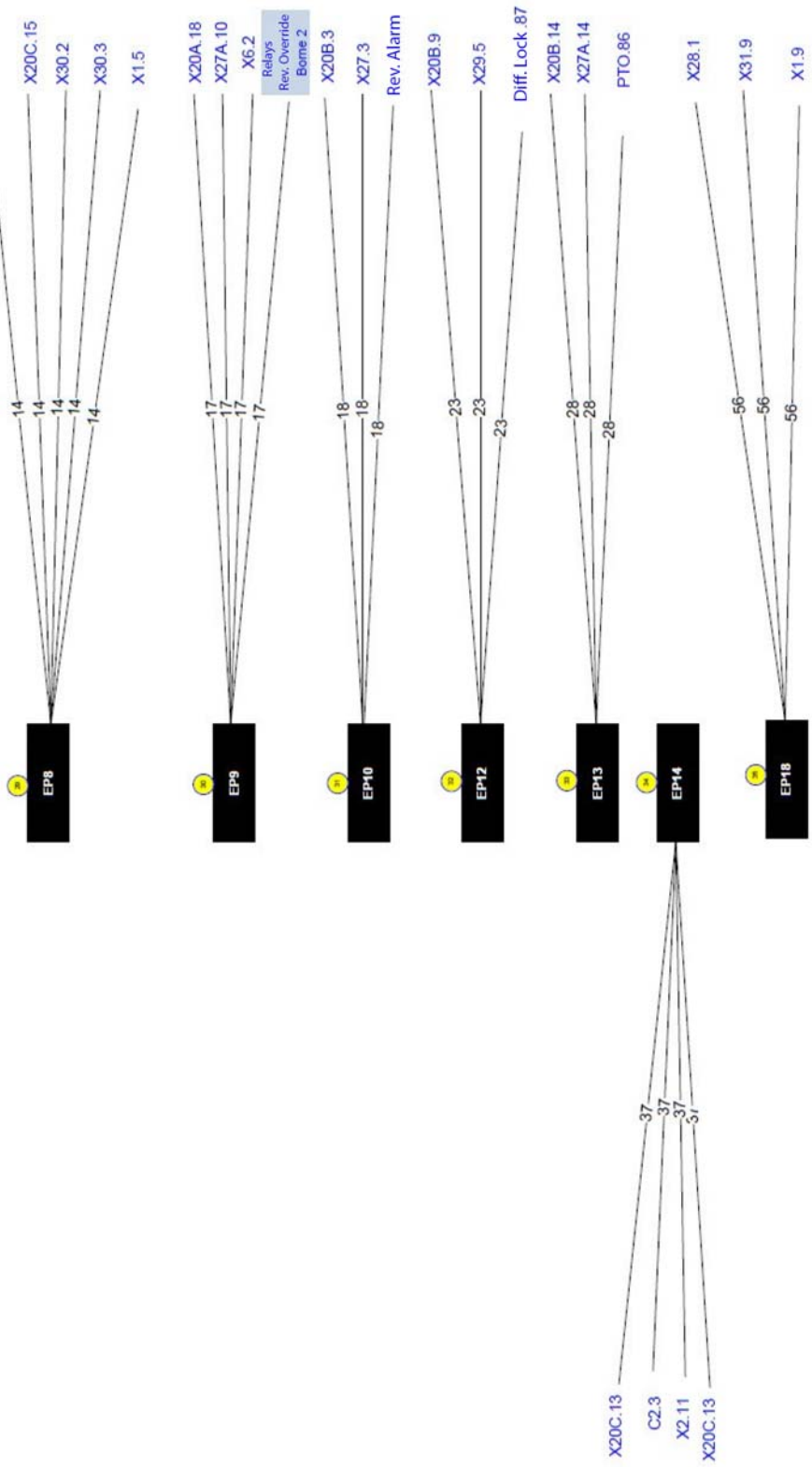
Prior to S/N 0313103794

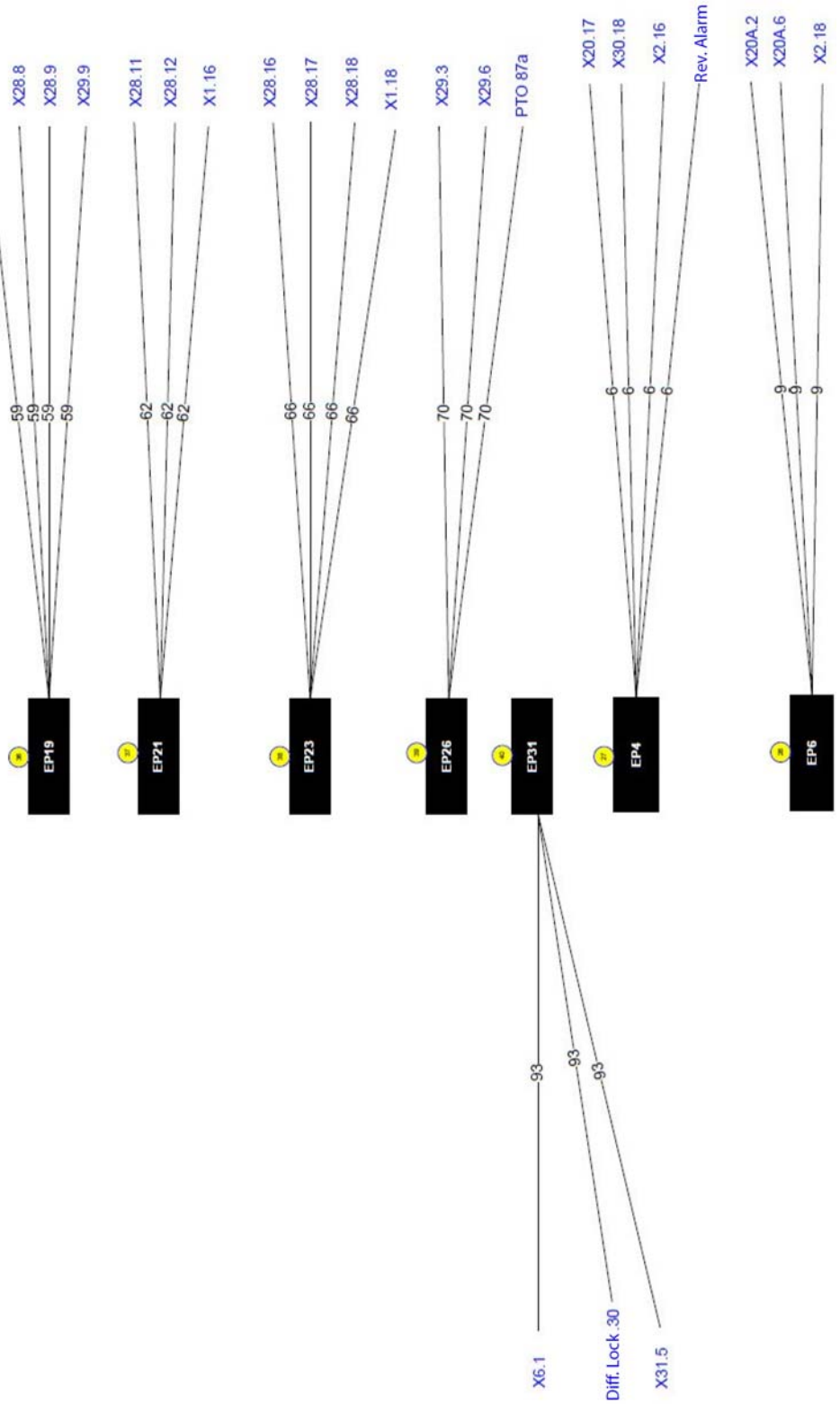


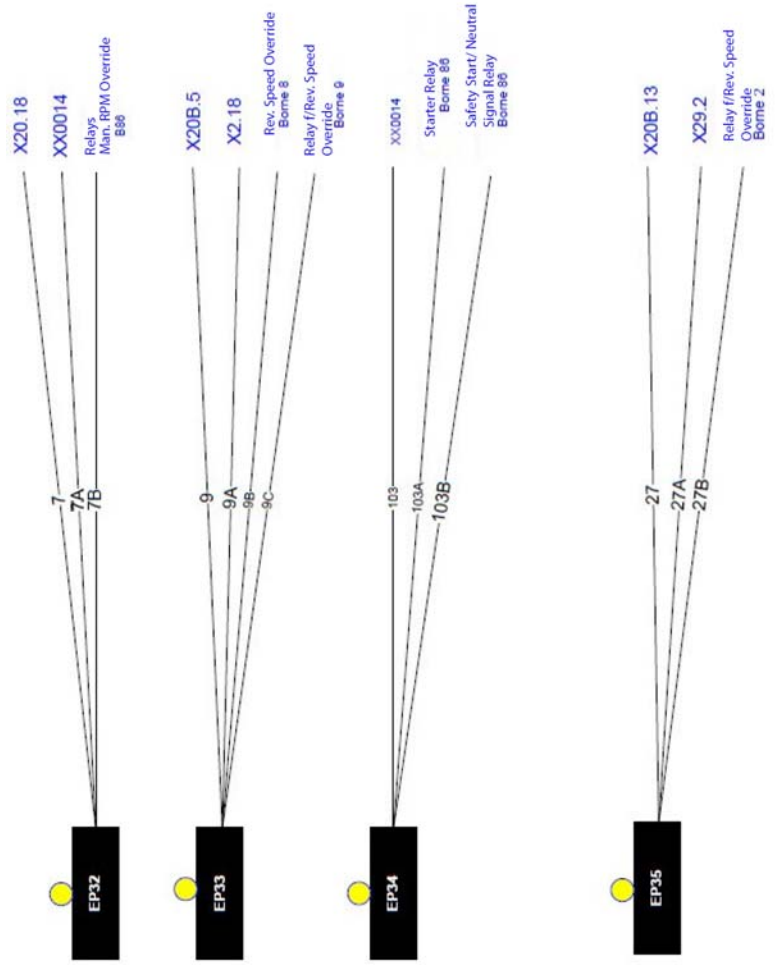
S/N 0313103794 to Present




2mm²
1mm²
X20.8
X20.10
X20.11
X29.8
X28.9
Starter
X2.13
X2.10
X1.10
X1.13
X2.7
X20B.6
X27.6
X27A.5
X27A.6
X27.11
X27.14
X28.3
X28.4
X28.6
X29A.5
X29A.11
X30.16
Ground

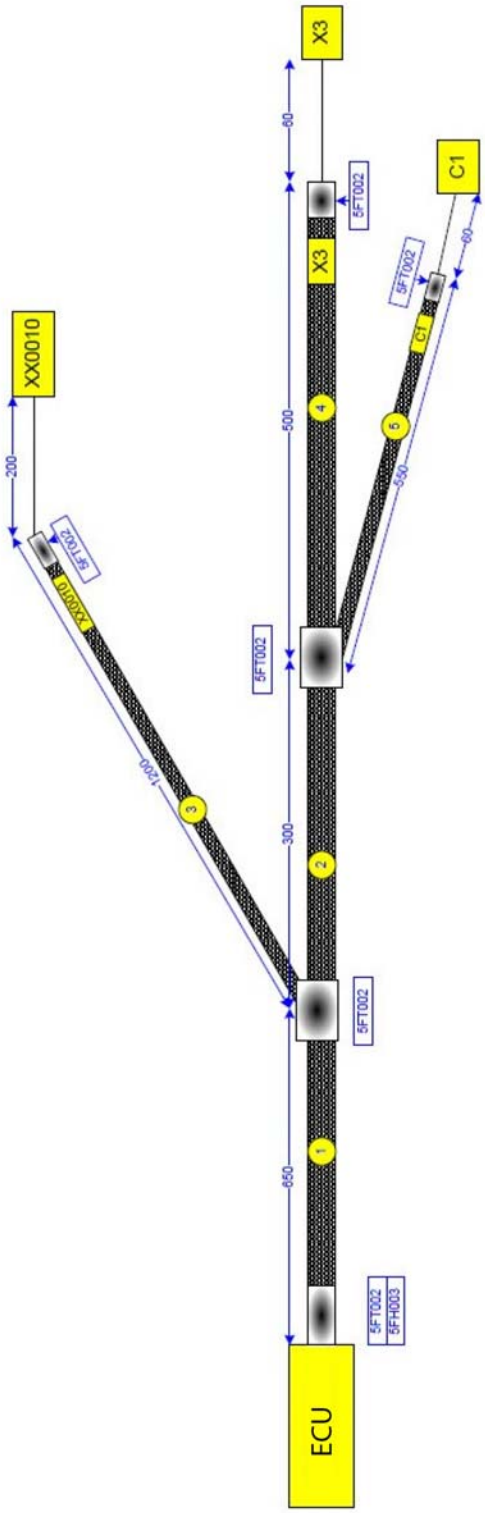

X20A.12
X20C.15
X30.2
X30.3
X1.5
X20A.18
X27A.10
X6.2
Relays
Rev. Override
Borne 2
X20B.3
X27.3
Rev. Alarm
X20B.9
X29.5
Diff. Lock .87
X20B.14
X27A.14
PTO.86
X28.1
X31.9
X1.9
14
14
14
14
14
17
17
17
17
18
18
18
23
23
23
28
28
28
56
56
56
37
37
37
37
EP8
EP9
EP10
EP12
EP13
EP14
EP18
X20C.13
C2.3
X2.11
X20C.13


X1.17
X28.8
X28.9
X29.9
X28.11
X28.12
X1.16
X28.16
X28.17
X28.18
X1.18
X29.3
X29.6
PTO 87a
X20.17
X30.18
X2.16
Rev. Alarm
X20A.2
X20A.6
X2.18
59
59
59
59
62
62
62
66
66
66
66
70
70
70
6
6
6
6
9
9
9
93
93
93
EP19
EP21
EP23
EP26
EP31
EP4
EP6
X6.1
Diff. Lock .30
X31.5


X20.18
XX0014
Relays
Man. RPM Override
B86
7
7A
7B
EP32
X20B.5
X2.18
Rev. Speed Override
Borne 8
Relay f/Rev. Speed
Override
Borne 9
9
9A
9B
9C
EP33
XX0014
Starter Relay
Borne 86
Safety Start/ Neutral
Signal Relay
Borne 86
103
103A
103B
EP34
X20B.13
X29.2
Relay f/Rev. Speed
Override
Borne 2
27
27A
27B
EP35

ECU Wiring Harness (EA0645)

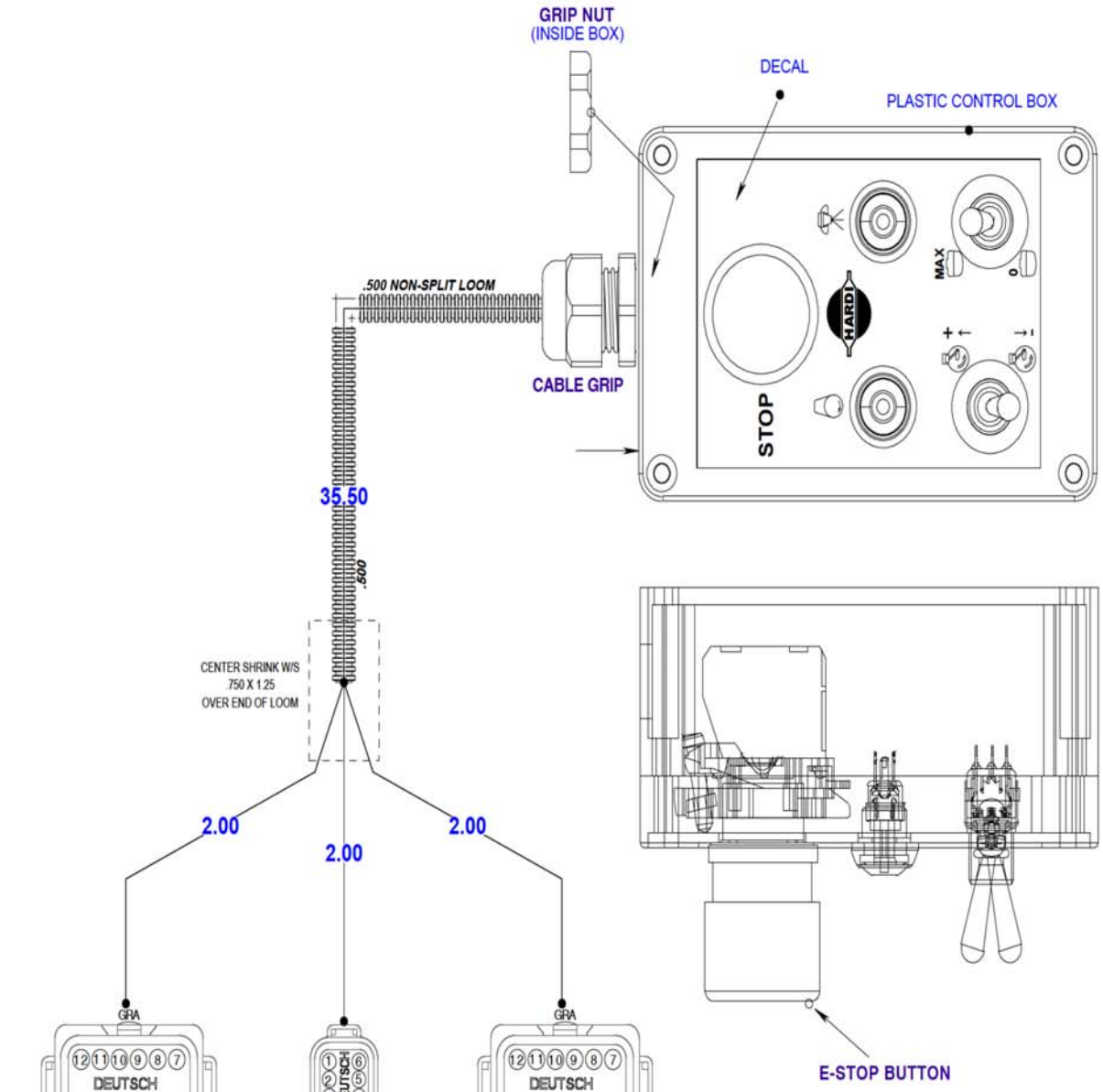
Diagram



Connectors

4DI024 X3
2COF314 X1
4DF033-E X6
4DI017 X66
2COF246 X18
2COF219 X6
2BB188 X1
ECU
2COF047 X6
2COF065 X8
967633-1 X1
1-967623-1 X1
X3
2COF047 X10
2COF065 X8
5FU030 X1
2BB061 X1
C1
XX0010

Outside Box (26031703)



12P-1
3146114
TERM 2334761
RET 3146115

12P-1							
Pos	CKT	GA	COL	Type	LBL	CavPlug	Term
1	1	20	WHT	TXL	1000	-	SEE PROCESS
2	2	20	WHT	TXL	1001	-	SEE PROCESS
3	5	20	WHT	TXL	1002	-	SEE PROCESS
4	6	20	WHT	TXL	1003	-	SEE PROCESS
5	7	20	WHT	TXL	1004	-	SEE PROCESS
6	8	20	WHT	TXL	1005	-	SEE PROCESS
7	9	20	WHT	TXL	1006	-	SEE PROCESS
8	10	20	WHT	TXL	1007	-	SEE PROCESS
9	11	20	WHT	TXL	1008	-	SEE PROCESS
10	12	20	WHT	TXL	1009	-	SEE PROCESS
11	13	20	WHT	TXL	1010	-	SEE PROCESS
12	-	-	-	-	-	3146141	-

6P
3146118
TERM 2334761
RET 3146119

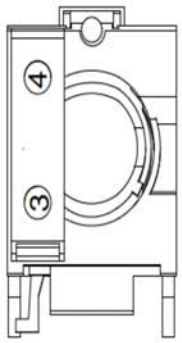
6P							
Pos	CKT	GA	COL	Type	LBL	CavPlug	Term
1	-	-	-	-	-	3146141	-
2	14	16	WHT	TXL	601	-	SEE PROCESS
3	15	16	WHT	TXL	613	-	SEE PROCESS
4	-	-	-	-	-	3146141	-
5	-	-	-	-	-	3146141	-
6	-	-	-	-	-	3146141	-

12P-2
3146114
TERM 2334761
RET 3146115

12P-2							
Pos	CKT	GA	COL	Type	LBL	CavPlug	Term
1	-	-	-	-	-	3146141	-
2	-	-	-	-	-	3146141	-
3	-	-	-	-	-	3146141	-
4	18	16	WHT	TXL	612	-	SEE PROCESS
5	-	-	-	-	-	3146141	-
6	21	16	WHT	TXL	600	-	SEE PROCESS
7	22	16	WHT	TXL	614	-	SEE PROCESS
8	-	-	-	-	-	3146141	-
9	-	-	-	-	-	3146141	-
10	-	-	-	-	-	3146141	-
11	-	-	-	-	-	3146141	-
12	-	-	-	-	-	3146141	-

E-STOP BASE
4170042

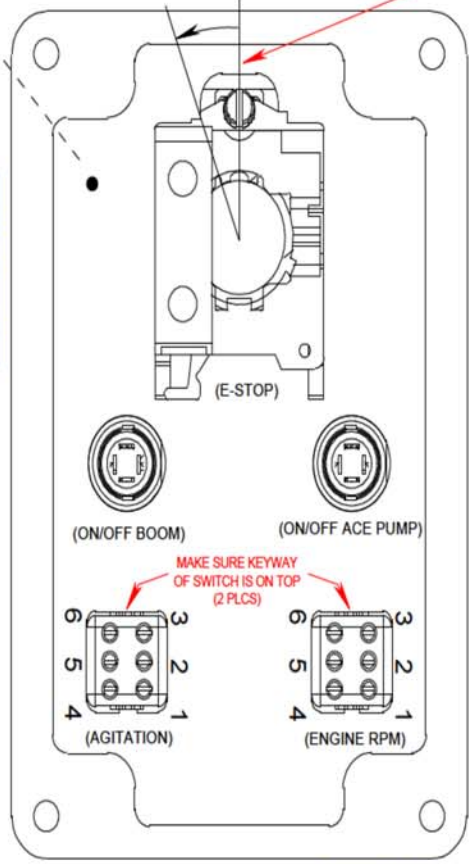
E-STOP BASE						
Pos	CKT	GA	COL	Type	LBL	Term
3	14	16	WHT	TXL	601	2158008
4	21	16	WHT	TXL	600	2158008



LABEL - 7210909
ID
LABEL

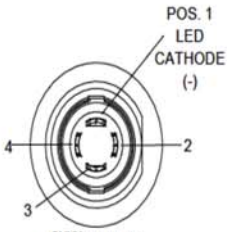
INSIDE OF FRONT COVER

SWITCH BASE WILL HAVE TO BE ROTATED SLIGHTLY SO CABLE GR P DOES NOT NTERFERE WITH CONTACT BLOCK WHEN L D IS INSTALLED ON BOX.



ON/OFF BOOM BUTTON						
Pos	CKT	GA	COL	Type	LBL	Term
1	9001	20	-	DevW		STR P .25 & SEE DETAIL
2	8	20	WHT	TXL	1005	STR P .25 & SEE DETAIL
3	7	20	WHT	TXL	1004	STR P .25 & SEE DETAIL
4	9	20	WHT	TXL	1006	STR P .25 & SEE DETAIL

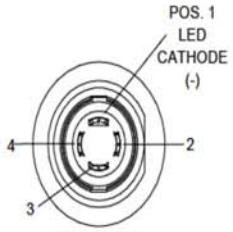
ON/OFF BOOM BUTTON
4170007



SHNK 3210187
SHNK 3210187
SHNK 3210187

ON/OFF ACE PUMP BUTTON						
Pos	CKT	GA	COL	Type	LBL	Term
1	9002	20	-	DevW		STRIP .25 & SEE DETA L
2	5	20	WHT	TXL	1002	STRIP .25 & SEE DETA L
3	1	20	WHT	TXL	1000	STRIP .25 & SEE DETA L
4	6	20	WHT	TXL	1003	STRIP .25 & SEE DETA L

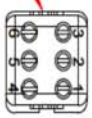
ON/OFF ACE PUMP BUTTON
4170007



SHNK 3210187
SHNK 3210187
SHNK 3210187

AGITATION SWITCH
4100034

KEYWAY ON TOP



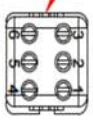
SHNK 3210187 X 5
SHNK 3210187 X 5
SHNK 3210187 X 5
SHNK 3210187 X 5
BOOT 4140043
GSKT 4140044

AGITATION SWITCH						
Pos	CKT	GA	COL	Type	LBL	Term
1	10	20	WHT	TXL	1007	STRIP .25 & SEE DETAIL
2	11	20	WHT	TXL	1008	STRIP .25 & SEE DETAIL
5	12	20	WHT	TXL	1009	STRIP .25 & SEE DETAIL
6	13	20	WHT	TXL	1010	STRIP .25 & SEE DETAIL

ENGINE RPM
4100034

KEYWAY ON TOP

BOOT 4140043
GSKT 4140044



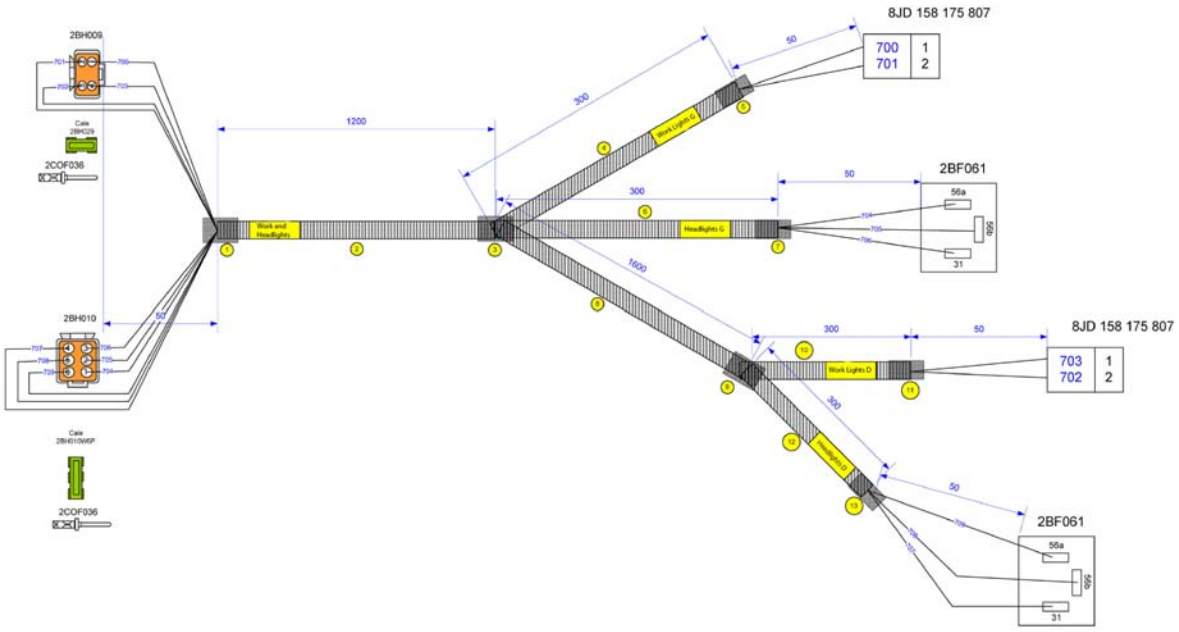
ENG NE RPM						
Pos	CKT	GA	COL	Type	LBL	Term
1	22	16	WHT	TXL	614	STRIP .38 & TIN
2	15	16	WHT	TXL	613	STRIP .38 & TIN
3	18	16	WHT	TXL	612	STRIP .38 & TIN

ON THIS SWITCH,
EACH WIRE BRIDGES TWO TERMINALS
CKT 22 BRIDGES 1 & 4
CKT 15 BRIDGES 2 & 5
CKT 18 BRIDGES 3 & 6
(SEE DETA L AND PHOTO)

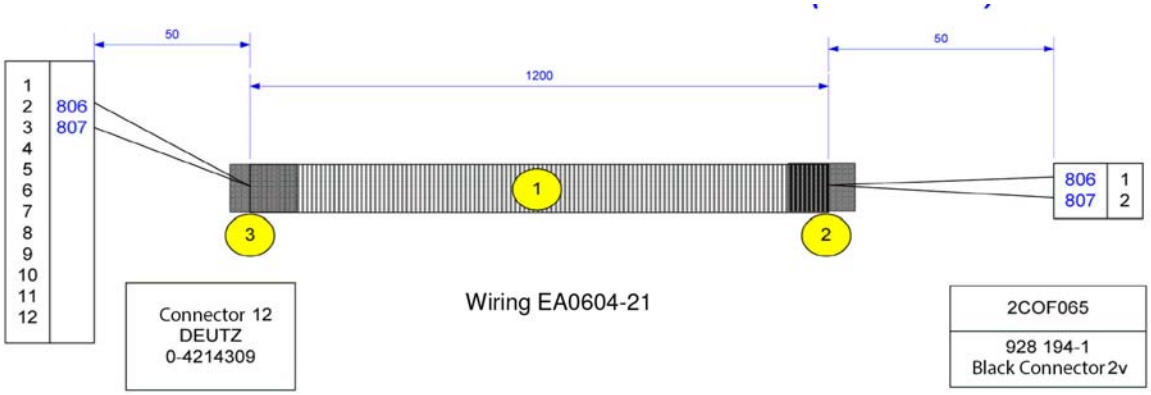
Connectors

Wire Number	Position in 6-pin Deutsch Connector	Position in 12-pin Deutsch Connector	Description
600		2CMD6	Emergency Stop
601	1CMD2		Emergency Stop Power
612		2CMD4	Engine Speed Decrease
613	1CMD3		Engine Speed Power
614		2CMD7	Engine Speed Increase

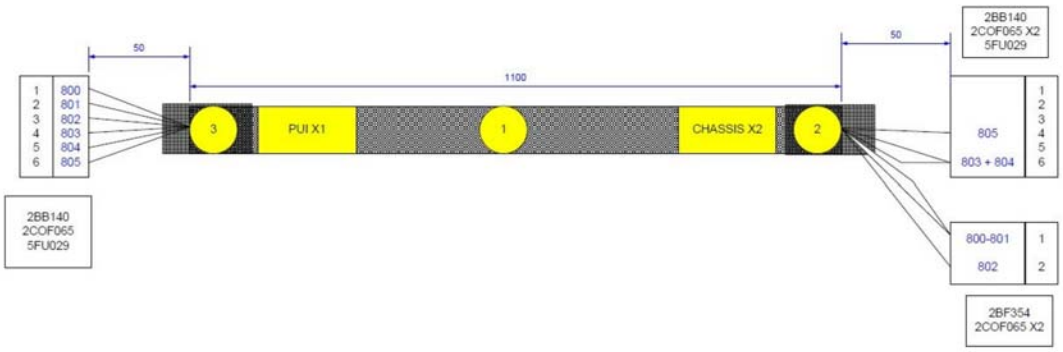
Headlight Wiring Harness (EA0604-20)



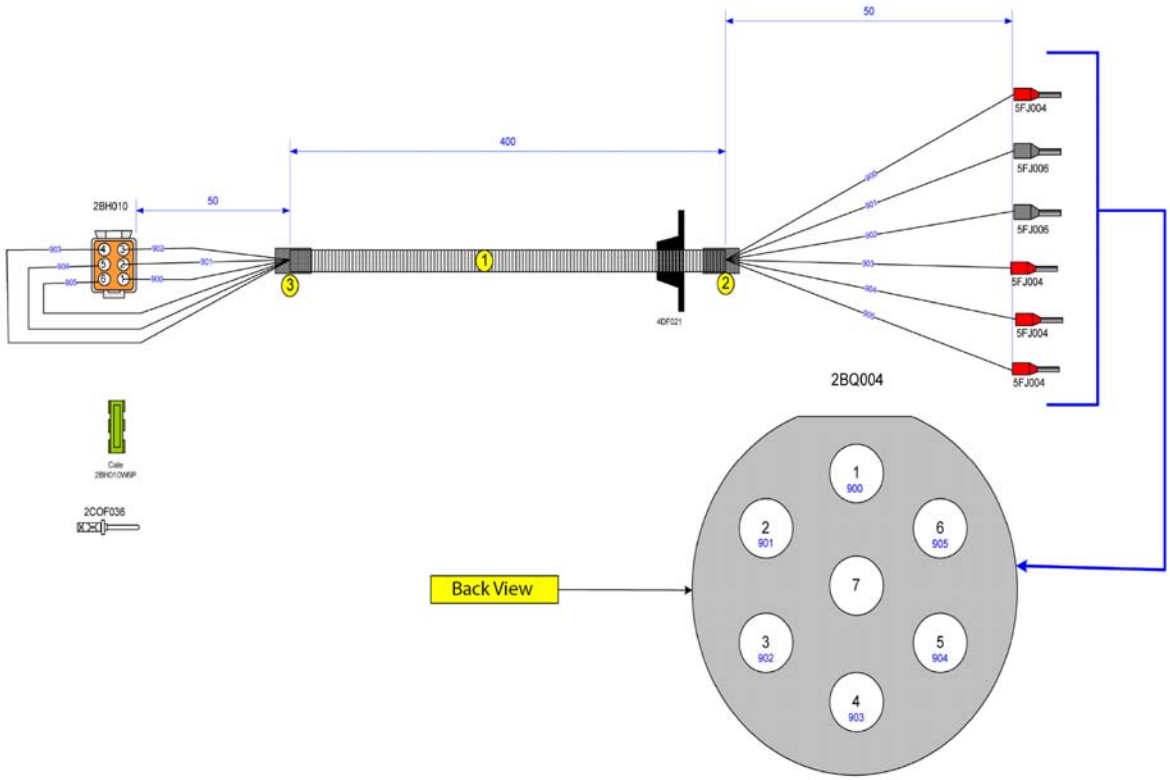
Preheating Command Wiring Harness (EA0604-21)



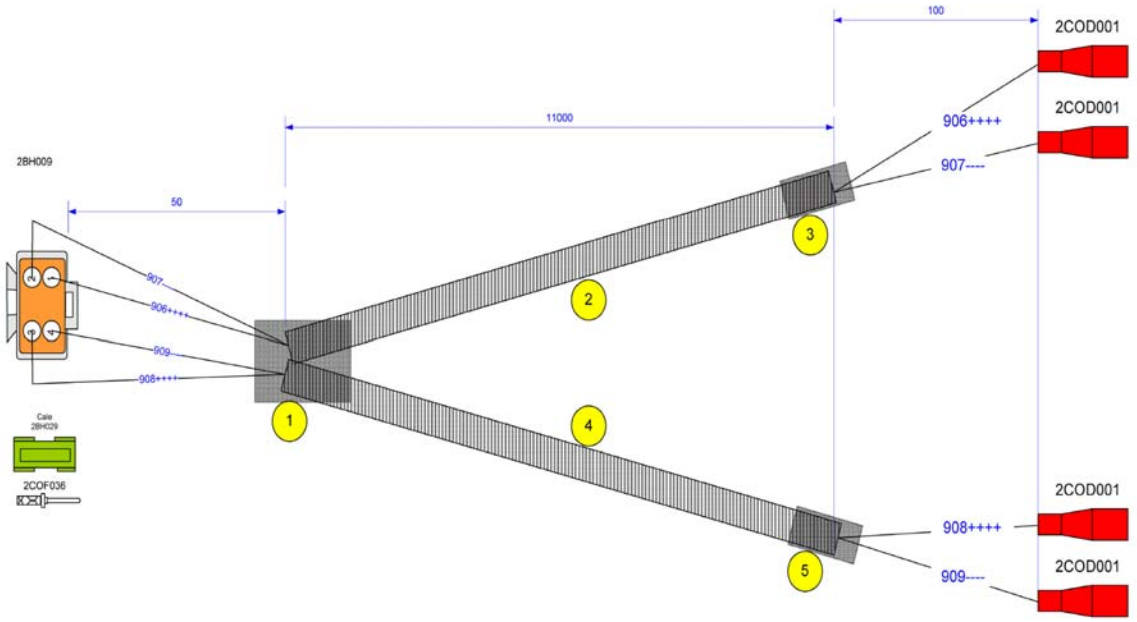
Power Relay Command Wiring Harness (EA0648)



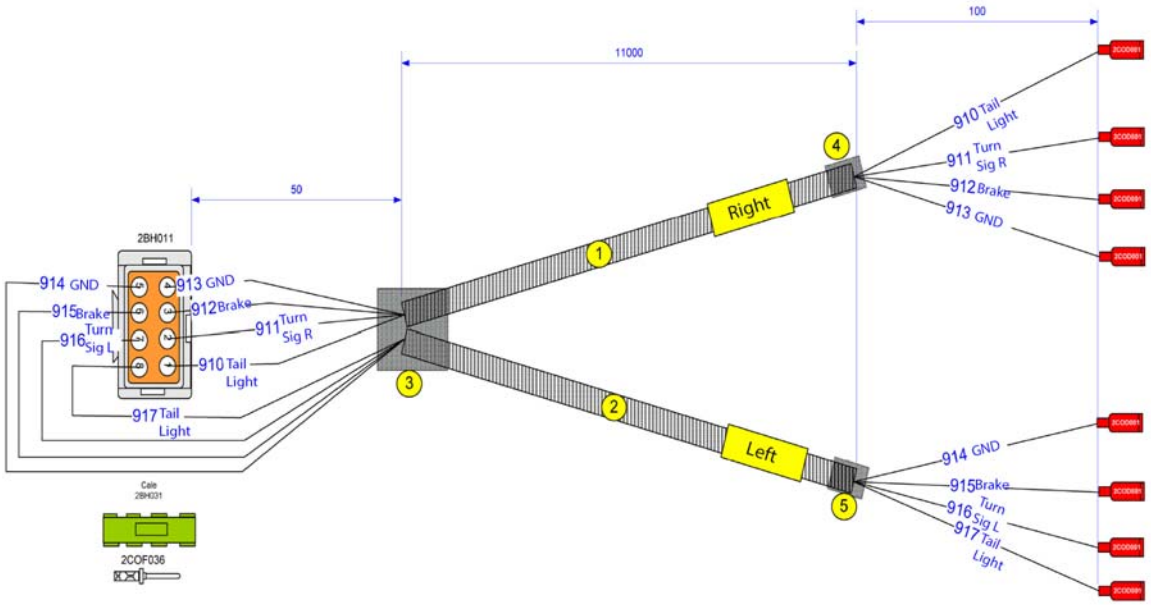
Trailer Socket Wring Harness (EA0604-24)



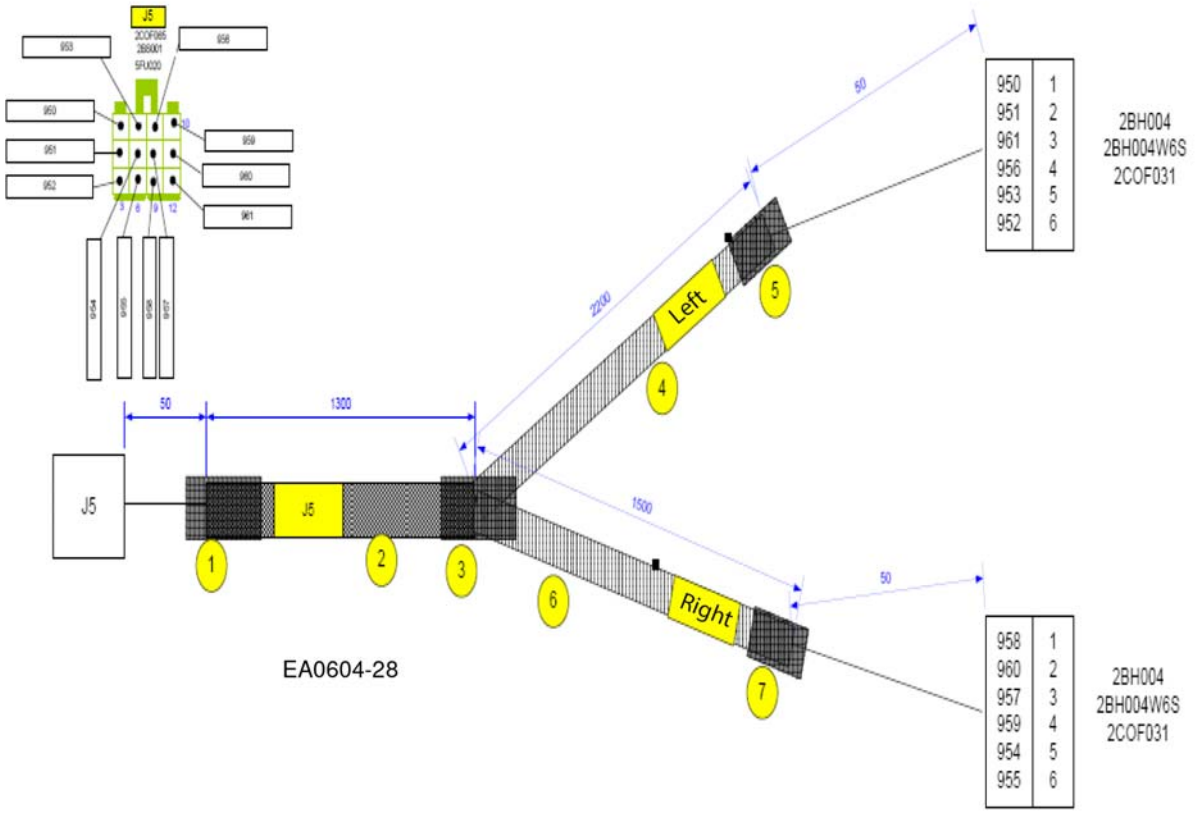
Front Working Lights Wiring Harness (EA0604-25)



Rear Working Lights Wiring Harness (EA0604-26)

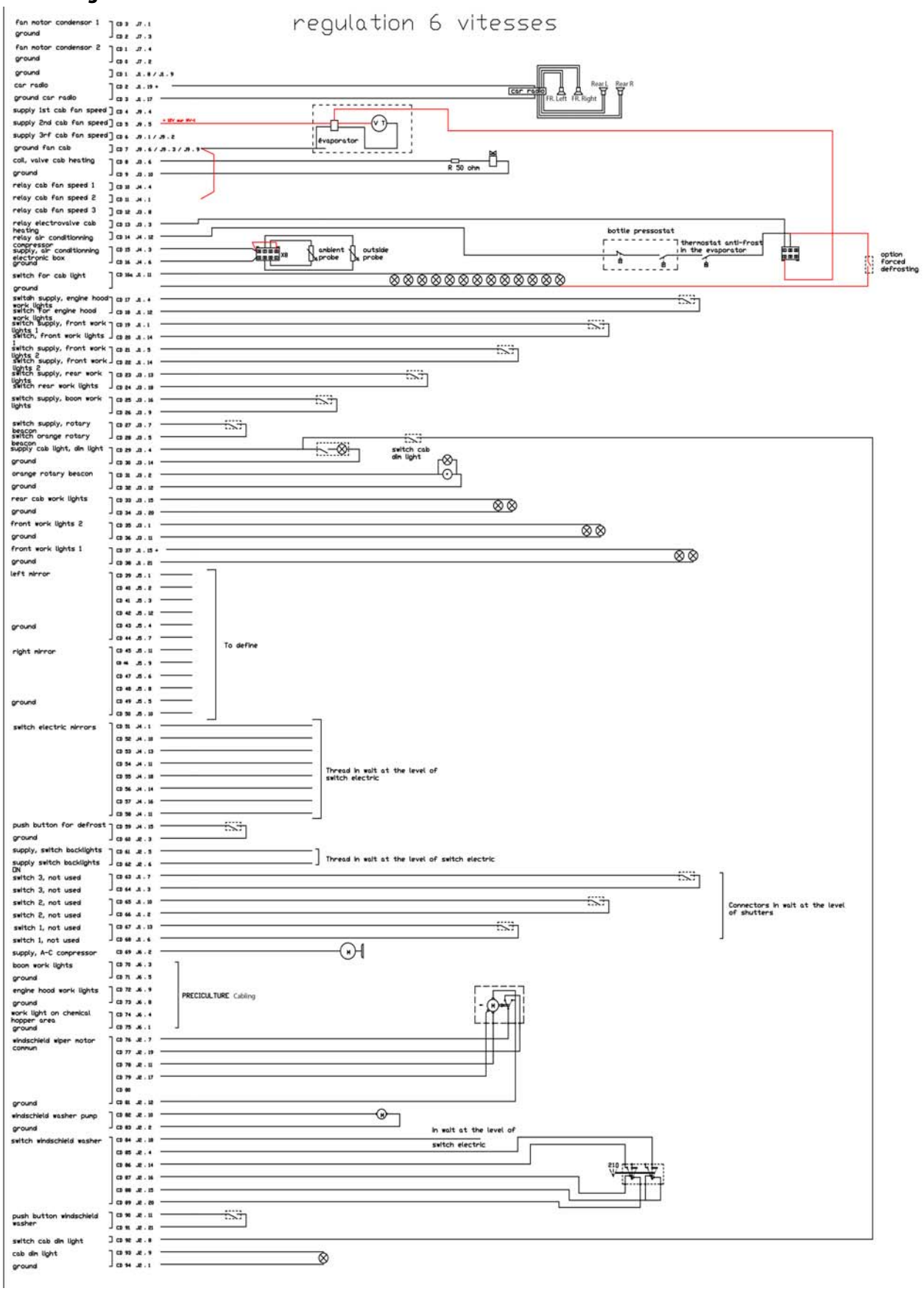


Outside Mirrors Wiring Harness (EA0604-28)



EA0604-28

Cab Wiring


regulation 6 vitesses
fan motor condensor 1
ground
fan motor condensor 2
ground
ground
car radio
ground car radio
supply 1st cab fan speed
supply 2nd cab fan speed
supply 3rf cab fan speed
ground fan cab
coil, valve cab heating
ground
relay cab fan speed 1
relay cab fan speed 2
relay cab fan speed 3
relay electrovalve cab heating
relay air conditionning compressor
supply, air conditionning electronic box
ground
switch for cab light
ground
switch supply, engine hood work lights
switch for engine hood work lights
switch supply, front work lights 1
switch, front work lights
switch supply, front work lights 2
switch supply, front work lights 2
switch supply, rear work lights
switch rear work lights
switch supply, boom work lights
switch supply, rotary beacon
switch orange rotary beacon
supply cab light, dim light
ground
orange rotary beacon
ground
rear cab work lights
ground
front work lights 2
ground
front work lights 1
ground
left mirror
ground
right mirror
ground
switch electric mirrors
push button for defrost
ground
supply, switch backlights
supply switch backlights ON
switch 3, not used
switch 3, not used
switch 2, not used
switch 2, not used
switch 1, not used
switch 1, not used
supply, A-C compressor
boom work lights
ground
engine hood work lights
ground
work light on chemical hopper area
ground
windschield wiper motor commun
ground
windschield washer pump
ground
switch windschield washer
push button windschield washer
switch cab dim light
cab dim light
ground
csr radio
Rear L
Rear R
FR Left
FR Right
evaporator
R 50 ohm
bottle pressostat
thermostat anti-frost in the evaporator
option forced defrosting
ambient probe
outside probe
switch cab dim light
To define
Thread in walt at the level of switch electric
Thread in walt at the level of switch electric
Connectors in walt at the level of shutters
PRECICULTURE Cabling
In walt at the level of switch electric

Travel Management

Advancement Card XX0014

Connector A

1. Output Immobilizer
2. Ground
3. Info Road/Field
4. Sensor Signal NPN1
5. Sensor Signal NPN2
6. Supply + 12V
7. Supply +12V
8. Rear Coil
9. Common Coil Front/Rear
10. Common Coil Front/Rear
11. Front Coil
12. Output Rev. Alarm

Connector B

1. Not Connected
2. Not Connected
3. + 12V Sensor M8
4. Not Connected
5. Not Connected
6. + 5V Sensor Rexroth
7. Sensor Signal M8
8. Sensor Signal Rexroth
9. Sensor GND M8 and Rexroth

Connector C

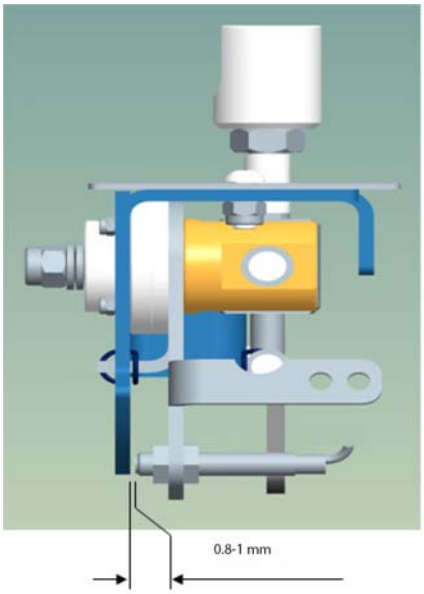
1. Ground Potentiometer
2. + 5V BP Constant Speed
3. LED +
4. + 5V Potentiometer
5. BP Constant Speed
6. LED GND

Connector D

1. CAN H
2. CAN L
3. Not Connected
4. Not Connected

Travel Lever

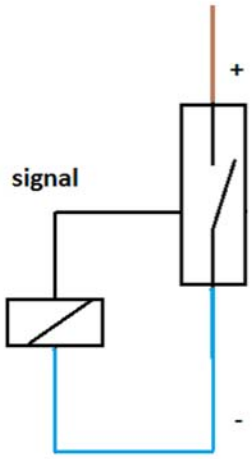
PNP Sensor/Lever Neutral Sensor



The sensor should be adjusted between 0.8-1 mm.

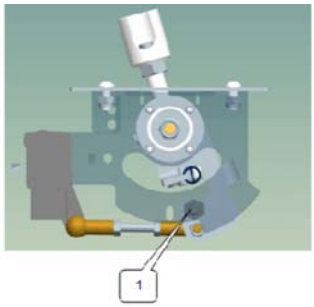
3 wires are connected to the sensor:

- Brown- "+"
- Blue- "GND"
- Black- "signal"



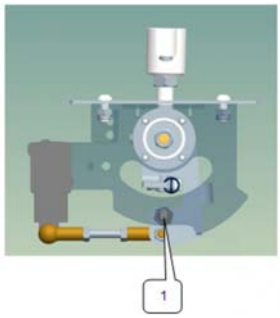
Backward:

- Sensor 1: Light on
- Brown-Blue: 12V
- Black-Blue: 12V



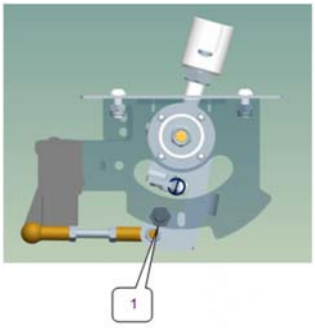
Neutral:

- Sensor 1: Light Off
- Brown-Blue: 12v
- Black-Blue: 0V



Forward:

- Sensor 1: Light On
- Brown-Blue: 12V
- Black-Blue: 12V



Lever Potentiometer XX0200

0-5V Sensor

The voltage can be checked on the Travel Card XX0014, connector B, between pin 9 GND, and pin 8 potentiometer signal.

Lever in Neutral:

- Potentiometer voltage: 2.5V

Lever Forward:

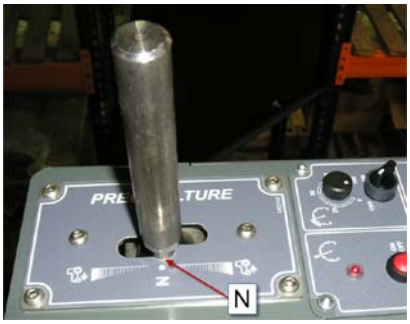
- Potentiometer Voltage: 4V

Lever Reverse:

- Potentiometer Voltage: 1V

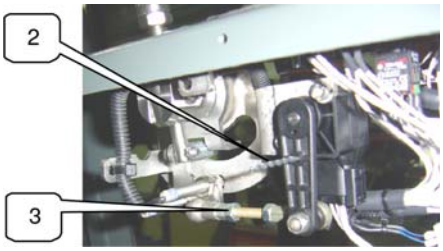
Adjusting the Potentiometer

1. Put the joystick in the neutral position.



2. Maintain the potentiometer lever in position using a 3mm drill bit as shown.

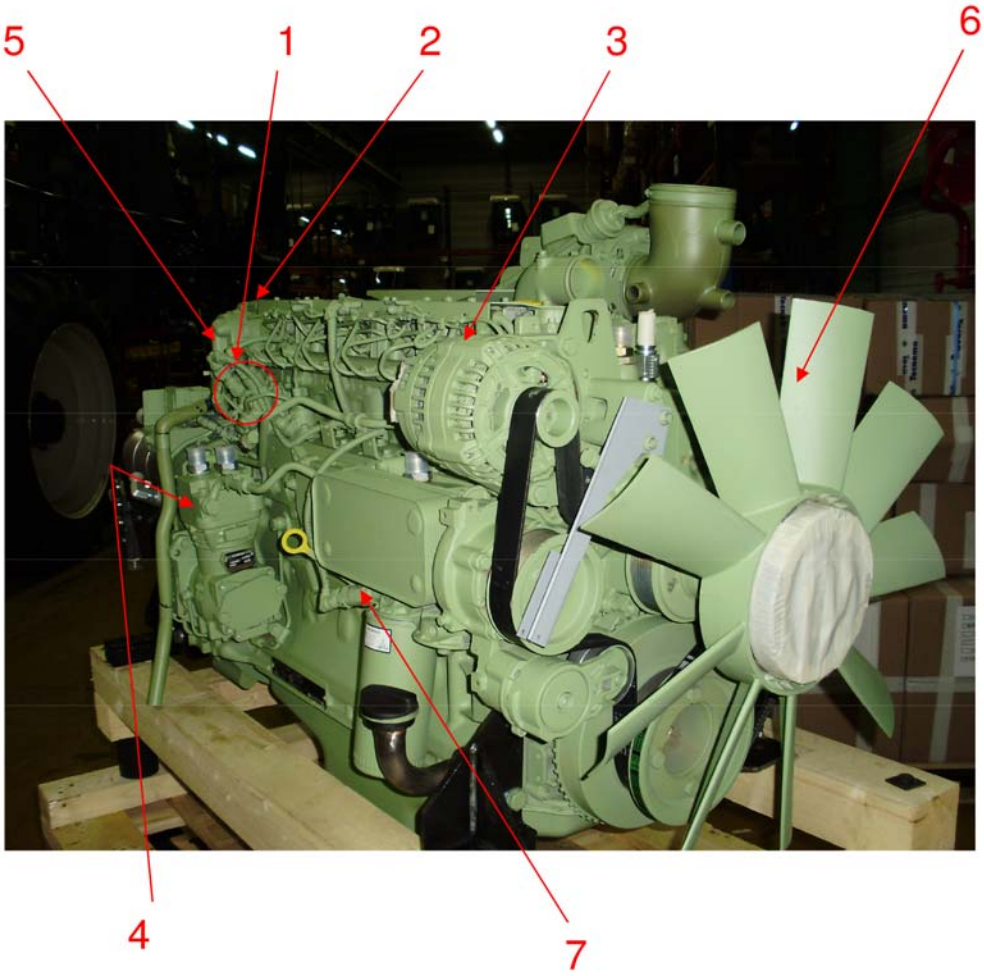
3. Adjust the threaded rod between the joystick and the potentiometer and tighten the two jamb nuts on the ball joints.



ATTENTION! Remember to remove the drill-bit when the adjustment is completed.

Sensors

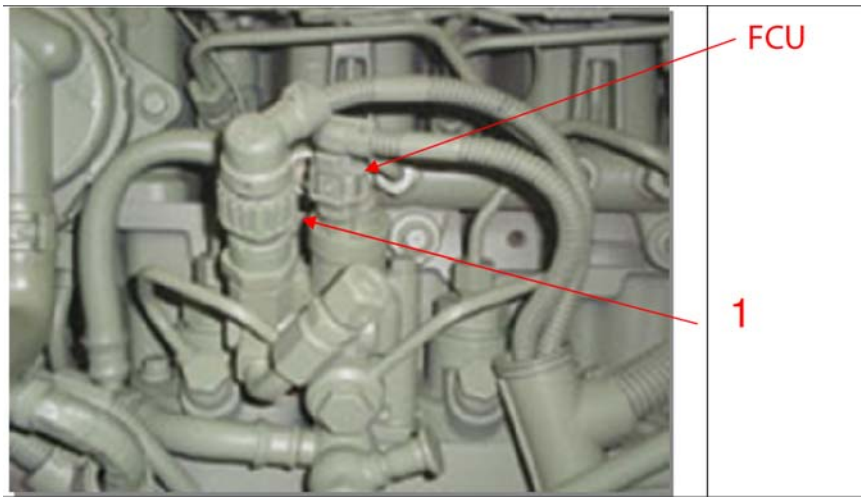
Engine



1. Low Fuel Pressure Sensor. (87psi) (6 bar) (MA0209-02)

Error if pressure is less than 66.7psi (4.6 bar)

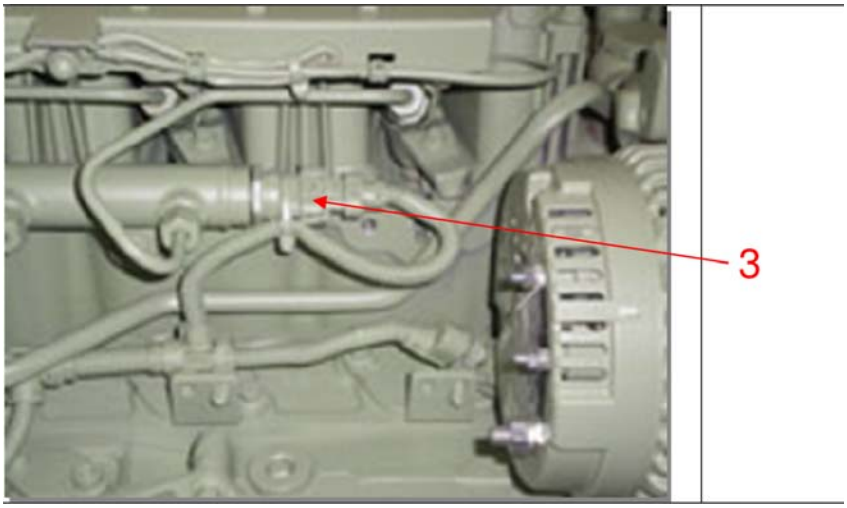
- FCU: Gives out the necessary flow to the pump according to the engine loading (proportional coil).



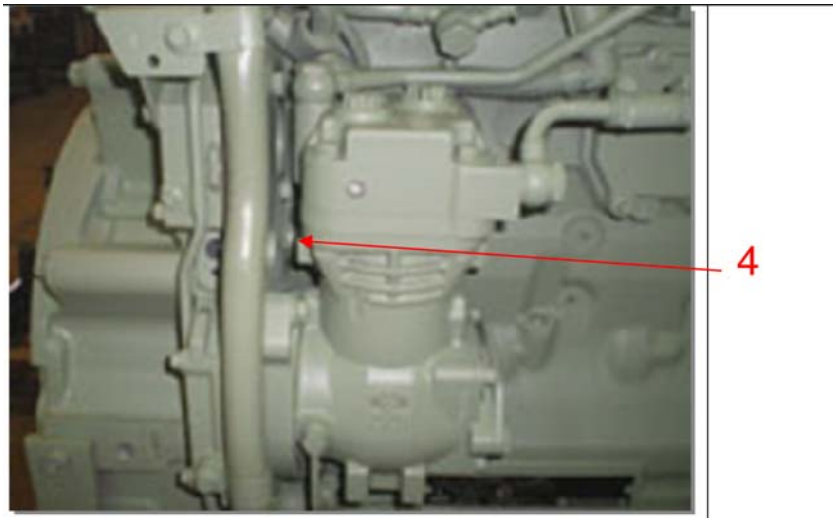
2. Turbo-charging Pressure and Temperature Sensor. (39psi in absolute value) (2.7 bar) (MA0209-01)

3. Common Rail Pressure Sensor (23206psi in full loading and 5801.5psi under starter) (1600 bar in full loading and 400 bar under starter) (MA0376) (supplied with valve).

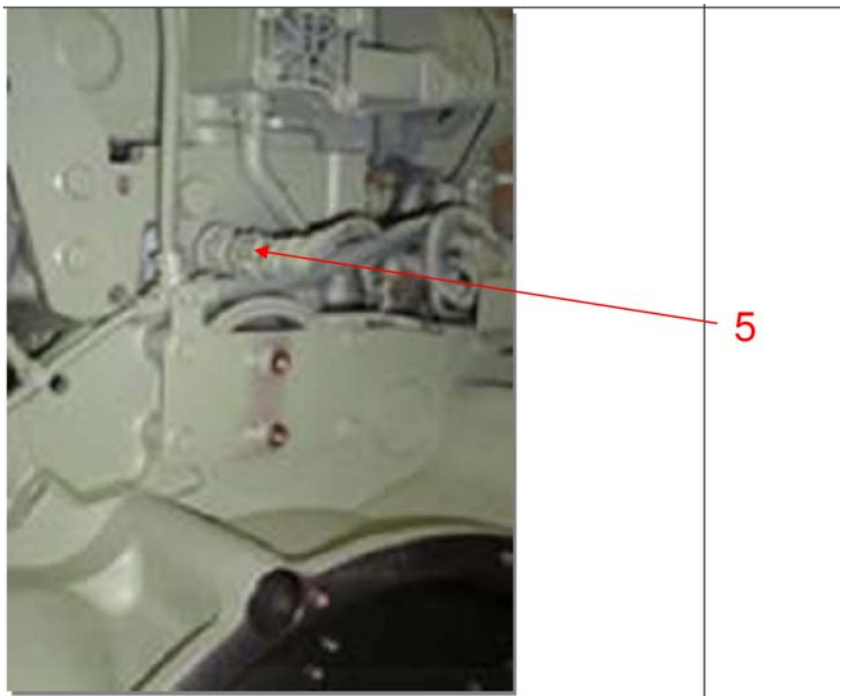
When the valve is opened 50 times you should change the valve and the sensor.



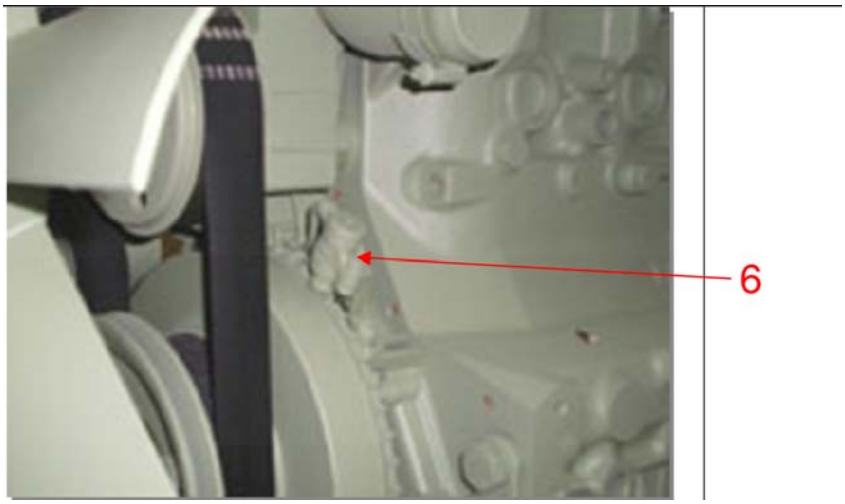
4. Camshaft Speed Sensor (MA0209-05).



5. Liquid Cooling Temperature Sensor (Ma0209-04).

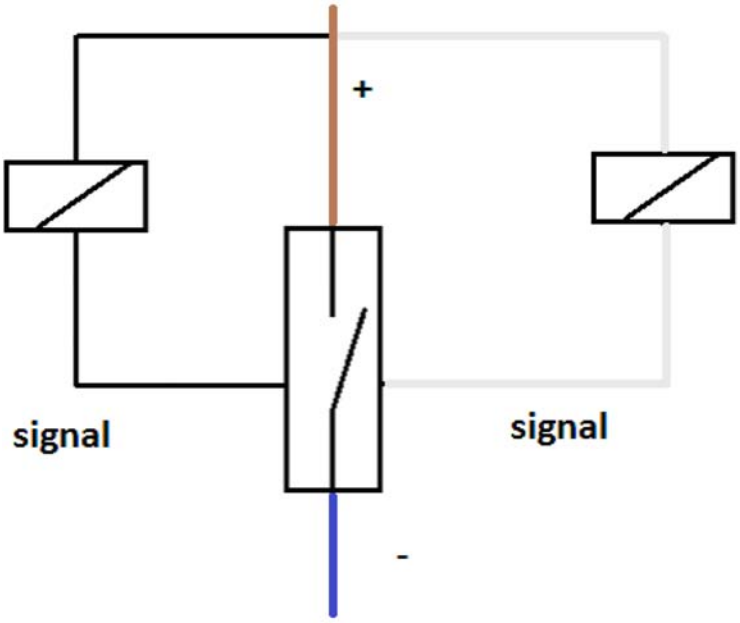


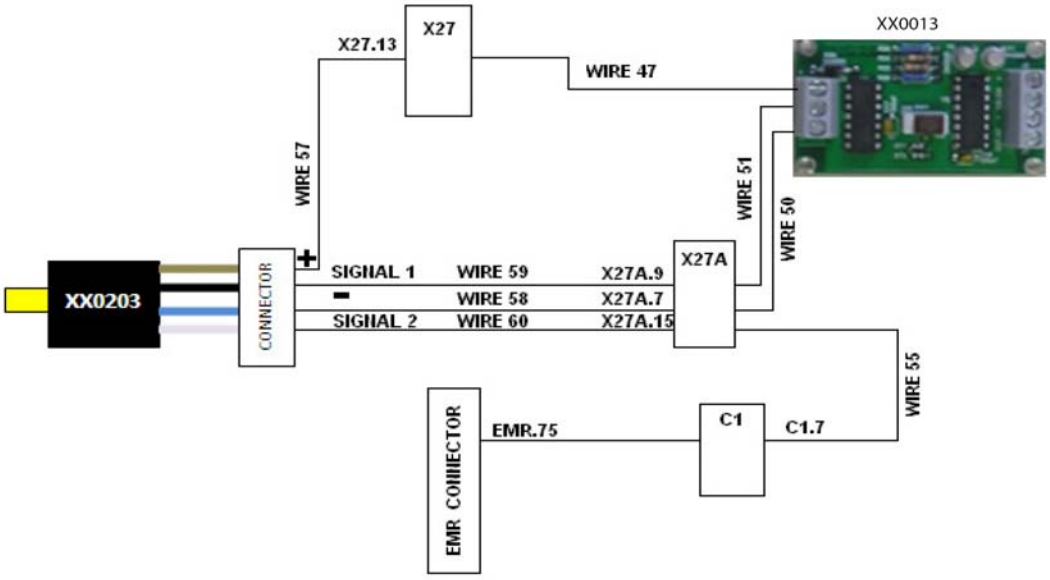
6. Crankshaft Speed Sensor (MA0209-06).



7. Oil Pressure Sensor (43.5psi at 900 rpm and 79.7psi at 2400 rpm) (3 bar at 900 rpm and 5.5 bar at 2400 rpm) (MA0209-03).

Speed Sensor XX0203





Connections

X20 (EA0646/EA0647)

Male	Destination	Function	Current (A) (NS=not significant)	Wire Number
X20.1	X20.1, C1.1	+ Error LED Engine ECU	0.2	400
X20.2				
X20.3				
X20.4				
X20.5				
X20.6				
X20.7				
X20.8	X2 GND, X20.8, X20.10, X20.11	GND Error LED ECU	0.2	402
X20.9	X20.9, X27.10	LED Clogged	0.2	403
X20.10	X2 GND, S20.8, X20.10, X20.11	GND	7	404
X20.11	X2 GND, X20.8, X20.10, X20.11	GND Supply Deutz Display	1	405
X20.12				
X20.13			0.2	
X20.14			NS	
X20.15			0.2	
X20.16			NS	
X20.17	X20.17, X2.16, X30.18, BUZZER +	+ Buzzer and LED Clogged, Oil and Fuel Level	3	407
X20.18	X20.18, Advancement card XX0014, A3, Clipping potentiometer relay B2	Signal GV	0.2	408

X20A (EA0646/EA0647)

Male	Destination	Function	Current (A) (NS=not significant	Wire Number
X20A.1	X5.2, X20.A1	CAN L	NS	409
X20A.2	X2.18, X20A2,X20A6, X20B5,low speed backward relay B4, B8	Supply displacement switch	7.5	411
X20A.3			1.75	
X20A.4	X20A.4, X20A.15	Fuel gauge	0.5	412
S20A.5	X20A.5, X20A.17	Electrical bridging	1.75	413
X20A.6	X2.18, X20A2, X20A6, X20B5,low speed backward relay	Supply LED high temperature hydraulic oil	NS	414
X20A.7	X5.1, X20A.7	CAN H	NS	410
X20A.8				
X20A.9	S20A.9, X30.9	LED high temperature oil	NS	454
X20A.10				
X20A.11				
X20A.12	X20A12, X20C.15, X30.2, X30.3, X1.5	+ supply LCD display	1	415
X20A.13			NS	
X20A.14	X20A.14, X29.14	LED battery charge	0.2	417
X20A.15	X20A.15, start up security relay B3	Starter excitation	1	418
X20A.16			0.2	
X20A.17	X20A.5, X20A.17	electrical bridging	1.75	413
X20A.18	X20A.18, S27A.10, X6.2, low speed backward relay B6	Front displacement	1.75	420

X20B (EA646/EA647)

Male	Destination	Function	Current (A) (NS=not significant	Wire Number
X20B.1			1.75	
X20B.2			NS	
X20B.3	X20B.3, X27.3, low oil level alarm GND	LED low lever hydraulic oil GND	0.2	422
X20B.4			2.5	
X20B.5	X2.18, X20A2, X20A6, X20B5, low speed backward relay B4, B8	Supply parking brake switch	7	424
X20B.6	GND	GND	0.2	425
X20B.7	X20B.7, X2.4	Horn switch	2	426
X20B.8	X20B.8, X29.13	Parking brake displacement switch	7	427
X20B.9	X20B9, diff. lock switch B87, X29.5	Diff lock light	0.2	428
X20B.10	X20B.10, C1.8	+Engine preheating light 29 ECU	0.2	429
X20B.11	X20B.11, outside accelerator security relay B3	Confirm outside switch engine idle speed by activation of parking brake and neutral point by engine 15 ECU	7	430
X20B.12	X20B.12, X30.5	Shuttle PTO A	7	431
X20B.13	X20B.13, X29.2, diff. lock low speed backward relay B2	Front displacement coil	NS	432
X20B.14	X20B14, X27A.14	Supply PTO switch	7	433
X20B.15	X20B.15, X30.6	Shuttle PTO B	7	434
X20B.16	X20B.16, C1.10	Engine preheating light GND 92 ECU	0.2	435
X20B.17			15	
X20B.18			15	

X20C (EA0646/EA0647)

Male	Destination	Function	Current (A) (NS=not significant)	Wire Number
X20C.1	X20C.1, X2.2	Left flasher light	8.5	438
X20C.2			0.2	
S20C.3	X20C.3, X2.12	Central common	17	439
X20C.4	X20C.4	Right flasher light	8.5	440
X20C.5	X2.1		0.2	
X20C.6		Central common	17	441
X20C.7			0.2	
X20C.8			0.2	
X20C.9	X20C.9, X2.9	+ Flasher relay	17	444, 447
X20C.10	X20C.10, X2.15	+ After ignition on	3	445
X20C.11	X20C.11, X2.5	Sidelight	5	446
X20C.12			17	447
X20C.13	X20C.13, X2.11, C2.3	Supply pin 30 ignition lock, battery light switch	5	448
X20C.14	X20C.14, X2.8	Low beams	8.5	449
X20C.15	X20A12, X20C.15, X30.2, X30.3,X1.5	+ Battery charge light	0.2	450
X20C.16	X20C.16, X2.6	Supply 4 way flashers	15	451
X20C.17	X20C.17, X2.3	Supply lever	15	452
X20C.18	X20C.18, X2.14	High beams	9	453

X27 (EA0646/EA0604-01)

Male	Destination	Function	Current (A) (NS=not significant)	Wire Number
X27.1			1.5	
X27.2			3.2	
X27.3	X20B.3, X27.3, low oil level buzzer GND	Low hydraulic oil level sensor	0.5	1
X27.4			1.75	
X27.5			1.5	
X27.6		Fuel level sensor GND	0.5	20
X27.7	X27.7, advancement card XX0014 A8	Backward coil	2.3	137
X27.8	X27.8, advancement card XX0014 A9	GND backward	2.3	138
X27.9			3.2	
X27.10	X20.9, X27.10	Sensor clogged	0.2	4
X27.11		Low hydraulic oil level GND	0.5	2
X27.12			3.2	
X27.13	X27.13, + Out divisor frequency card	+ Sensor advancement	NS	57
X27.14		GND clogged	0.2	3
X27.15	X20A.4, X27.15	Fuel level sensor	0.5	19

X27A (EA0646/EA0604-01)

Male	Destination	Function	Current (A) (NS=not significant)	Wire Number
X27A.1	X27A.1, advancement card XX0014 A10	GND forward	2.3	140
X27A.2			3.2	
X27A.3			2.3	
X27A.4			1.75	
X27A.5		GND front displacement	1.75	112
X27A.6		GND PTO left	2.3	14
X27A.7	X27A.7, GND out divisor, frequency card	GND advancement sensor	NS	58
X27A.8				
X27A.9	X27A.9, divisor, frequency out card	Signal advancement speed	NS	59
X27A.10	X20A1.8, X27A.10, X6.2, diff. lock low speed backward relay B6	Back displacement coil	1.75	111
X27A.11			2.3	
X27A.12				
X27A.13	X27A.13, advancement card XX0014 A11	Forward displacement coil	2.3	139
X27A.14	X20B.14, X27A.14, PTO security relay B2	PTO coil, outside switch	2.3	13
X27A.15	X27A.15, C1.7	Signal 2 advancement sensor engine ECU 75	NS	60

X28 (EA0646/EA0604-01)

Male	Destination	Function	Current (A) (NS=not significant	Wire Number
X28.1	X28.1, X1.9, X31.9	Klaxon	2	107
X28.2	X28.2,X1.11	Klaxon	2	108
X28.3		Side light GND	2	119
X28.4		Back light GND	20	85
X28.5	X28.5, advancement card XX014 A12, diff. lock low speed backward relay B1	Forward buzzer	1	51
X28.6		Front side light GND	15	
X28.7		High/low beams GND	10	130
X28.8	X28.8, X29.9, X1.17	Left rear flasher light	5.25	75
X28.9	X28.8, X29.9, X1.17	Left flasher light	1.75	117
X28.10	X28.10, X1.15	High beams	10	124
X28.11	X28.11, X28.12, X1.16	Right rear flasher light	5.25	71
X28.12	X28.11, X28.12, X1.16	Right flasher light	1.75	137
X28.13	X28.13, X31.7	Brake light	2.5	79
X28.14				
X28.15	X28.15, X1.12	Low beams	8.5	127
X28.16	X28.16, X28.17, X28.18, X1.18	Rear side light	2.52	65
X28.17	X28.16, X28.17, X28.18, X1.18	Left side light	0.9	118
X28.18	X28.16, X28.17, X28.18, X1.18	Right side light	5	133

X29 (EA0646/EA0604-01)

Male	Destination	Function	Current (A) (NS=not significant)	Wire Number
X29.1			NS	
X29.2	X20B.13, X29.2, diff. lock low speed backward relay	Back displacement coil	1.75	135
X29.3	X29.3, PTO security relay B4, X29.6	Starter excitement	20	100 ET, 101
X29.4			NS	
X29.5	X20B.9, diff. lock switch B87, X29.5	Diff. lock coil	3.5	46
X29.6	X29.3, PTO security relay B4, X29.6	Starter excitement	20	100 ET, 101
X29.7			NS	
X29.8		Displacement GND	1.75	136
X29.9			1.75	
X29.10			1.75	
X29.11			NS	
X29.12			1.75	
X29.13	X20B.8, X29.13	Front brake coil (agri), left brake coil (vineyard)	1.75	110
X29.14	X20A.14, X29.14	Alternator excitement	0.2	103
X29.15			1.75	

X29A (EA0646/EA0604-01)

Male	Destination	Function	Current (A) (NS=not significant	Wire Number
X29A.1			2.3	
X29A.2			2.3	
X29A.3			2.3	
X29A.4			NS	
X29A.5		Front brake GND (agri), left brake GND (vineyard)	1.75	109
X29A.6			1.75	
X29A.7			2.3	
X29A.8			1.75	
X29A.9				
X29A.10			NS	
X29A.11		Diff. lock GND	3.5	50
X29A.12	X29A.12, X1.8	Water in fuel sensor	NS	123
X29A.13			NS	
X29A.14			NS	
X29A.15	X29A.15, X1.14	Water in fuel sensor	NS	122
X29A.16				
X29A.17				
X29A.18				

X30 (EA0646/EA0604-01)

Male	Destination	Function	Current (A) (NS=not significant	Wire Number
X30.1			NS	
X30.2	X20A.12, X20C.15, X30.2, X30.3, X1.5	+ Engine stop	NS	22
X30.3	X20A.12, X20C.15, X30.2, X30.3, X1.5	+Outside engine idle speed	NS	23
X30.4			NS	
X30.5	X20B.12, X30.5	Shuttle PTO A	NS	27
X30.6	X20B15, X30.6	Shuttle PTO B	NS	28
X30.7	X30.7, C1.5	Decrease outside engine idle speed engine ECU 78	NS	29
X30.8			NS	30
X30.9	X20A.9, X30.9	Hydraulic oil high temperature sensor	0	5
X30.10	X30.10, X1.1	Outside engine stop	NS	31
X30.11	X30.11, C1.6	Increase outside engine idle speed engine ECU 56	NS	32
X30.12			NS	
X30.13				
X30.14				
X30.15			NS	
X30.16	GND	Hydraulic oil high temperature GND	NS	7
X30.17				
X30.18	X20.17, X2.16, X30.18, + Buzzer BNHH	PTO coil, outside switch	NS	34

X31 (EA0646/EA0604-03)

Male	Destination	Function	Current (A) (NS=not significant	Wire Number
X31.1	X31.1, C1.2	Accelerator pedal GND engine ECU 8	NS	202
X31.2	X31.2, C1.3	Accelerator pedal signal engine ECU 31	NS	203
X31.3	Diff lock switch B15	Diff. lock pedal	NS	200
X31.4	X31.4, C1.4	Accelerator pedal + engine ECU 46	NS	204
X31.5	X31.5, diff. lock witch B30 and B87Z, X6.1	Diff. lock pedal	NS	201
X31.6				
X31.7	X28.13, X31.7	Brake pedal	0.4	206
X31.8				
X31.9	X28.1, X1.9, X31.9	Brake pedal supply +	0.4	205

X1 (EA0646/EA0563)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
X1.1	X30.10, X1.1	Engine stop		86
X1.2		+ Trailer		
X1.3	X1.3, C2.1	+ Aux plug		98
X1.4	X1.4, C2.2	Aux plug, battery switch GND		99
X1.5	X20A.12, X20C.15, X30.2, X30.3, X1.5	Engine stop, ECU supply, +diag., display		14
X1.6	X1.6, seat connector C5.1	+ Seat		101
X1.7	X1.7, seat connector C5.2	Seat GND		102
X1.8	X29A.12, X1.8	Water in fuel 2		98
X1.9	X28.1, X1.9, X31.9	+ lever, supply		56
X1.10		Supply GND		2
X1.11	X28.2, X1.11	Klaxon		57
X1.12	X28.15, X1.12	Low beams		65
X1.13		GND supply		2
X1.14	X29A.15, X1.14	Water in fuel 1		79
X1.15	X28.10, X1.15	High beams		61
X1.16	X28.11, X28.12, X1.16	Right flasher light		62
X1.17	X28.8, X29.9, X1.17	Left flasher light		59
X1.18	X28.16, X28.17, X28.18, X1.18	Side light		66

X2 (EA0646/EA0563)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
X2.1	X20C.4, X2.1	Right flasher light		33
X2.2	X20C.1, X2.2	Left flasher light		31
X2.3	X20C.17, X2.3	+lever, supply		41
X2.4	X20B.7, X2.4	Klaxon		21
X2.5	X20C.11, X2.5	Side light		36
X2.6	X20C.16, X2.6	4-way flasher		40
X2.7	X2 GND, X20.8, X20.10, X20.11	GND supply		2
X2.8	X20C.14, X2.8	Low beams		38
X2.9	X20C.9, X2.9	+ relay		34
X2.10	X2 GND, X20.8, X20.10, X20.11	GND supply		2
X2.11	X20C.13, X2.11, C2.3	Pin 30		37
X2.12	X20C.3, X2.12	Flasher lever		32
X2.13	X2 GND, X20.8, X20.10, X20.11	GND supply		2
X2.14	X20C.18, X2.14	High beams		42
X2.15	X20C.10, X2.15	Pin 15		35
X2.16	X20.17, X2.16, X30.18, buzzer+	Supply buzzer and clogged light, oil and fuel level	3	6
X2.17	Free	Pin 50		
X2.18	X2.18, X20A.2, X20A.6, X20B.5, diff. lock low speed backward relay B4, B8	15A/		9A

X30 (EA0645/EA0563)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
X3.1	ECU 2, X3.1	GND supply		
X3.2	ECU 1, X3.2	+ Supply		
X3.3	ECU3, X3.3	+ Supply		
X3.4	ECU 4, X3.4	GND supply		
X3.5	ECU 5, X3.5	+ Supply		
X3.6		N/A		
X3.7	ECU 6, X3.7	GND supply		
X3.8	ECU 17, X3.8	Engine stop		
X3.9	ECU 72, X3.9	Main control relay		
X3.10	ECU 28, X3.10	+ After ignition on		
X3.11	ECU 63, X3.11	Water in fuel		7
X3.12	ECU 64, X3.12	Water in fuel		7
X3.13	ECU 62, X3.13	CAN H		
X3.14	ECU 61, X3.14	CANL		
X3.15	ECU 25, X3.15	KLINE		5

X5 (EA0646/EA0563)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
X5.1	X5.1, X20A.7	1A/CAN H		12
X5.2	X5.2, X20A.1	1A/ CAN L		131
X5.3	Free	2A/PIN50		
X5.4	Free	N/A		
X5.5	Free	1A/Emergency stop		
X5.6	Free	2A/Emergency Stop		

X6 (EA0646/EA0563)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
X6.1	X31.5, diff. lock switch B30 and B87Z, X6.1	2A/Coil high speed		93
X6.2	X20A.18, X27A.10, X6.2, diff. lock backward low speed relay B6	2a/GV		17

X7 (EA0644/EA0563)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
X7.1	X7.1, diagnostic plug M, advancement D, 1	CAN H (EP5)		
X7.2	X7.2, Diagnostic plug F, advancement D, 2	CAN L (EP6)		
X7.3	Diagnostic plug K	KLINE		
X7.4	Diagnostic plug B	GND supply		
X7.5				
X7.6	X7.6, + out divisor card, advancement card A6	+ divisor card and advancement card (EP1)		
X7.7	X7.7, GND out divisor, frequency, advancement card A2	frequency divisor and advancement card (EP2)		
X7.8	Diagnostic plug A	+ Diagnostic plug		
X7.9				
X7.10				
X7.11				
X7.12				

X8 (EA0648/EA0561)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
X8.1	Power card X1	+Relay coil		800+801
X8.2	Power card X1	GND relay coil		802

X11 (EA0563/EA0561)

	Destination	Function	Current (A) (NS=not significant	Wire Number
X11.1	Power card	Supply after battery switch		

X13 (EA0563/EA0776)

	Destination	Function	Current (A) (NS=not significant	Wire Number
X13.1	battery switch, on & off	Supply before battery switch		

X15 (EA0563/EA0519)

	Destination	Function	Current (A) (NS=not significant	Wire Number
X15.5	GND terminal on cab	GND battery		

EA0645/XX0010

	Destination	Function	Current (A) (NS=not significant	Wire Number
Manual Acceleration Potentiometer (Sig)	Engine ECU 9			
Manual Acceleration Potentiometer (+)	Engine ECU 22			
Manual Acceleration Potentiometer (GND)	Engine ECU 30			

C1 (EA0646/EA0645)

Male	Destination	Function	Current (A) (NS=not significant	Wire Number
C1.1	X20.1, C1.1	+ Error light engine ECU 55		1
C1.2	X31.1, C1.2	GND accelerator pedal engine ECU 8	NS	89
C1.3	X31.2, C1.3	Signal accelerator pedal engine ECU 31	NS	90
C1.4	X31.4, C1.4	+ Accelerator pedal engine ECU 46	NS	92
C1.5	X30.7, C1.5	Decrease outside engine idle speed engine ECU 78	NS	14
C1.6	X30.11, C1.6	Increase engine idle speed engine ECU 56	NS	87
C1.7	X27A.15, C1.7	Signal 2 advancement sensor engine ECU 75	NS	55
C1.8	X20B.10, C1.8	+ Preheating light engine ECU 29	0.2	24
C1.9	C1.9, security outside accelerator security relay	Confirm outside order engine idle speed by parking brake and neutral point engine ECU 15	7	250
C1.10	X20B.16, C1.10	GND preheating light engine ECU92	0.2	30
C1.11	C1.11, clipping potentiometer relay B5	Manual accelerator potentiometer reset		104
C1.12	Free			

EA0645/ECU

	Destination	Function	Current (A) (NS=not significant	Wire Number
1	ECU 1, X3.2	+ Supply	2	
2	ECU2, X3.1	GND supply	2	
3	ECU3, X3.3	+ Supply	2	
4	ECU4, X3.4	GND supply	2	
5	ECU5, X3.5	+ Supply	2	
6	ECU6, X3.7	GND supply	2	
7				
8	ECU8, C1.2	GND accelerator pedal engine ECU 8	0.5	
9	ECU9, C1.11, manual accelerator potentiometer signal	Signal manual potentiometer accelerator engine ECU 9	0.5	
10				
11				
12				
13				
14				
15	ECU15, C1.9	Confirm outside order engine idle speed by parking brake engine ECU 15	0.5	
16				
17	ECU17, X3.8	Engine stop	0.5	
18				
19				
20				
21				
22	+Manual accelerator potentiometer	+ Potentiometer manual accelerator engine ECU 22	0.5	
23				
24				
25	ECU25, X3.15	Kline	0.5	
26				
27				
28	ECU28, X3.10	+ After ignition on		
29	ECU29, C1.8	+ Preheating light engine ECU29	0.2	
30	Manual accelerator potentiometer (GND)	GND manual accelerator potentiometer engine ECU 30		
31	ECU31, C1.3	Signal accelerator pedal engine ECU 31	NS	
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				

	Destination	Function	Current (A) (NS=not significant	Wire Number
46	ECU46, C1.4	+ Accelerator pedal Engine ECU 46	NS	
47				
48				
49				
50				
51				
52				
53				
54				
55	ECU55 C1.1	+Error light engine ECU 55		
56	ECU56, C1.6	Increase engine idle speed engine ECU 56	NS	
57				
58				
59				
60				
61	ECU61, X3.14	CAN L		
62	ECU62, X3.13	CAN H		
63	ECU63, X3.11	Water in fuel		
64	ECU64, X3.12	Water in fuel		
65				
66				
67				
68				
69				
70				
71				
72	ECU72, X3.9	GND general order relay		
73				
74				
75	ECU75, C1.7	Signal 2 advancement sensor engine ECU 75	NS	
76				
77				
78	ECU78, C1.5	Decrease outside order engine idle speed engine ECU 78	NS	
79				
80				
81				
82				
83				
84				
85				
86				
87				
88				
89				
90				
91				
92	ECU92, C1.10	GND preheating light engine ECU 92	0.2	
93				
94				
95				

C2 (EA0646/EA0644)

Male	Destination	Function	Current (A) (NS=not significant	Wire Number
C2.1	X1.3, C2.1	+ Auxiliary plug		98
C2.2	X1.4, C2.2	GND auxiliary plug, battery switch		99
C2.3	X20C.13, X2.11, C2.3	Supply Pin 30 ignition lock, battery switch light	5	3
C2.4	Free			
C2.5	Free			
C2.6	Free			
C2.7	Free			
C2.8	Free			
C2.9	Free			
C2.10	Free			
C2.11	Free			
C2.12	Free			

C3 (EA0644/EA0776)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
C3.A	Switch battery switch	Supply battery switch		
C3.B	C2.2, GND auxiliary plug, switch battery switch C3, B	GND battery switch		
C3.C	Switch battery switch	Order battery switch		

EA0644/XX0013

	Destination	Function	Current (A) (NS=not significant	Wire Number
+	X7.6, + divisor card out +, advancement A6	+ divisor card and advancement card (EP1)		15
Capt (signal)	C4.2, divisor, frequency, sprayer speed	Signal advancement, divisor frequency, sprayer speed (EP4)		16
GND	X7.7, GND divisor out, frequency, advancement card A2	frequency divisor and advancement card (EP2)		17
AV	Advancement card A4, divisor front frequency card	Signal advancement, divisor frequency		105

XX0013/EA0646

	Destination	Function	Current (A) (NS=not significant	Wire Number
+	X27.13, divisor frequency card + sensor	+ advancement sensor	NS	47
Capt (signal)	X27A.9, divisor frequency card sensor	Signal advancement speed	NS	51
GND	X27A.7, divisor frequency card GND sensor	GND advancement speed	NS	50

C4 (XX0012/EA0646)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
C4.1	Free		NS	
C4.2	C4.2, divisor, frequency, sprayer speed out	Signal advancement frequency divisor, advancement card sprayer speed		
C4.3	Free		NS	

XX0014/EA0644

	Destination	Function	Current (A) (NS=not significant	Wire Number
Pin D.1	X7.1, diagnostic plug M, advancement D.1	CAN H (EP5)		
Pin D.2	X7.2, diagnostic plug F, advancement D.2	CAN L (EP6)		
Pin A.2	X7.7, GND divisor, frequency advancement card A.2	Divisor frequency and advancement card (EP2)		13
Pin A.4	Advancement card A.4, front frequency divisor card	Signal advancement divisor, frequency		105
Pin A.6	X7.6, plus divisor card, advancement card A.6	+ divisor and advancement cars (EP1)		12

XX0014/EA0646

	Destination	Function	Current (A) (NS=not significant	Wire Number
Pin A.1	Pin A.1 (XX0014), start-up security relay B2, outside accelerator security relay B2	Neutral point output XX0014		103
Pin A.3	X20.18 advancement card XX0014 A3, clipping potentiometer relay B2	High speed signal	0.2	7A
Pin A.8	X27.8, advancement card XX0014 A8	Backward coil	2.3	44
Pin A.9	X27.8, advancement card XX0014 A9	Backward GND	2.3	45
Pin A.10	X27A.1, advancement card XX0014 A10	Forward GND	2.3	49
Pin A.11	X27A.13 advancement card XX0014 A11	Forward coil	2.3	53
Pin A.12	X28.5, advancement card XX0014 A12	Reverse alarm	1	58A

C5 (C5/EA0646)

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
C5.1	X1.6, seat connector C5.1	+ Seat		101
C5.2	X1.7, seat connector C5.2	GND Seat		102

Buzzer/EA0646

	Destination	Function	Current (A) (NS=not significant	Wire Number
Buzzer GND	X20B.3, X27.3, low hydraulic level alarm GND	Low hydraulic oil level GND	0.2	6
Buzzer +	X20.17, X2.16, X30.18 buzzer +	Supply buzzer and clogged light, oil and fuel level	3	18

Starter Relay

	Destination	Function	Current (A) (NS=not significant	Wire Number
1(85)	GND			2
2(86)	Pin A.1 (XX0014), start-up security relay B2, outside accelerator security relay B2	Neutral point output XX0014		103A
3(30)	X20A.15, start up security relay B3	Starter excitation (pin 50 ignition lock)	1	16
4(87a)	Free			
5(87)	X29.3, PTO security relay B4, X29.6	Starter excitation		70

Work Zone Lights Relay

	Destination	Function	Current (A) (NS=not significant	Wire Number
1(85)	GND			2
2(86)				22
3(30)				J1.15
4(87a)				35
5(87)				

Manual Speed Override Relay

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
1(85)	GND			2
2(86)	X20.18, advancement card XX0014 A3, clipping potentiometer relay B2			7B
3(30)	GND			2
4(87a)	Free			
5(87)	C1.11, clipping potentiometer relay B5			104

Differential Locking Switch

	Destination	Function	Current (A) (NS=not significant	Wire Number
31	GND			2
30	X31.5, diff lock switch B30 and B87z, X6.1			93
87z	X31.5, diff. lock switch B30 and B87z, X6.1			93
87	X20B.9, diff. lock switch B87, X29.5	Diff. Lock coil		23
15	Diff. lock switch B15	Diff. lock pedal	NS	91

Reverse Speed Override Relay

	Destination	Function	Current (A) (NS=not significant	Wire Number
0	X28.5, advancement card, diff. lock relay backward low speed	backward Alarm		58B
1	GND			2
2	X20B.13, X29.2, diff. lock relay backward low speed			17B
3	Free			
4	X2.18, X20A.2, X20A.6, X20B.5, diff lock relay backward low peed			9C
6	X20A.18, X27A.10, X6.2, diff. lock relay backward low speed			27B
7	Free			
8	X2.18, X20A.2, X20A.6, X20B.5, diff. lock relay backward low speed			9B

Security Start Neutral Signal Relay

Female	Destination	Function	Current (A) (NS=not significant	Wire Number
1(85)	GND			2
2(86)	Pin a.1, security start-up relay B2, security relay output accelerator B2	Neutral point output XX0014		103B
3(30)	X20B.11, Security relay output accelerator B3	Confirm outside switch engine idle speed by activation of the parking brake and neutral pint by engine ECU15		25
4(87a)				
5(87)	C1.9, security relay output accelerator	Confirm outside switch engine idle speed by activation of the parking brake and neutral pint by engine ECU15		250

J1

	Destination	Function	Current (A) (NS=not significant	Wire Number
J1.1	20A, CD19, CD21, FC2	Switch supply, front work lights 1	10	CD19
J1.2	15A, CD66, CG6	Switch, not used	15	CD66
J1.3	15A, CD64, CG4	Switch, not used	15	CD64
J1.4	10A, CD17, FC5	Switch supply, engine hood work lights	10	CD17
J1.5	20A, CD19, CD21, FC2	Switch supply, front work lights 2	10	CD21
J1.6	15A, CD68, CG8	Switch, not used	15	CD68
J1.7	15A, CD63, FC13	Switch, not used	15	CD63
J1.8	GND	GND	20	CD01
J1.9	GND	GND	20	CD01
J1.10	15A, CD65, FC14	Switch, not used	15	CD65
J1.11	2A, CD16A, CG3A	Switch for cab light	2	CD16A
J1.12	10A, CD18, CD72, TP72	Switch for engine hood work lights	10	CD18
J1.13	15A, CD67, FC15	Switch, not used	15	CD67
J1.14	10A, CD20, CD37, TP37	Switch, front work lights 1	10	CD20
J1.15	10A, CD20, CD37, TP37	Front work light 1	10	CD37
J1.16	10A, CD22, CD35, TP35	Switch, front work lights 2	10	CD22
J1.17	GND	GND Radio	5	CD03
J1.18	GND			
J1.19	7.5A, CD2, FC12.2	+ Radio (and cab light +)	5	CD02
J1.20	GND			
J1.21	GND	GND, front work light 1	10	CD38

J2

	Destination	Function	Current (A) (NS=not significant	Wire Number
J2.1	GND	GND, cab dim light	1	CD94
J2.2	GND	GND, windshield washer pump	1	CD83
J2.3	GND	GND, switch back lights	2	CD60
J2.4	15A, CD85, D10-53M	Switch, windshield wiper	ND	CD85
J2.5	7.5A, CD29, CD61, CD62, FC11, K9-30/87Z, TP61-62	Supply, switch back lights	2	CD61
J2.6	7.5A, CD29, CD61, CD62, FC11, K9-30/87Z, TP61-61	Supply, switch back lights ON	2	CD62
J2.7	15A, CD76, K10-53S, TP76	Windshield wiper motor common	ND	CD76
J2.8	15A, CD92, CD93	Switch cap dim light	1	CD92
J2.9	15A, CD92, CD93	Cab dim light	1	CD93
J2.10	15A, CD82, CD90, K10-T	Windshield washer pump	1	CD82
J2.11	15A, CD82, CD90, K10-T	Push button windshield washer	1	CD90
J2.12	GND	GND, motor windshield washer	ND	CD81
J2.13	15A, CD78, CD86, CD88, TP78	1 speed motor windshield washer	ND	CD78
J2.14	15A, CD78, CD86, CD88, TP78	Switch windshield washer	ND	CD86
J2.15	15A, CD78, CD86, CD88, TP78	Switch windshield washer	ND	CD88
J2.16	15A, CD87, K10-I	Switch windshield washer	ND	CD87
J2.17	15A, CD79, CD84, TP79	2nd speed motor windshield washer	ND	CD79
J2.18	15A, CD79, CD84, TP79	Switch windshield washer	ND	CD84
J2.19	15A, CD77, CD89, CD91, FC9, K10-15	+ Motor windshield washer	ND	92
J2.20	15A, CD77, CD89, CD91, FC9, K10-15	Supply switch windshield washer	ND	CD89
J2.21	15A, CD77, CD89, CD91, FC9, K10-15	Supply push button windshield washer	1	CD91

J3

	Destination	Function	Current (A) (NS=not significant	Wire Number
J3.1	10A, CD22, CD35, TP35	Front work lights 2	10	CD35
J3.2	5.5A, CD28, CD31, TP31	Orange rotary beacon	5.5	CD31
J3.3	2A, CD13, K4-85, TP13	Relay electro valve cab heating	0	CD13
J3.4	7.5A, CD29, CD61, CD62, FC11, K9-3/87Z, TP61-62	Supply cab light, dim light	2	CD29
J3.5	5.5A, CD28, CD31, TP31	Switch orange rotary beacon	5.5	CD28
J3.6	2A, CD8, K4-30, TP8	Coil, valve cab heating	2	CD08
J3.7	7.5A, CD27, FC10	Switch supply, rotary beacon	5.5	CD27
J3.8	2A, CD12, K3-85, TP12	Relay cab fan speed 3	0	CD12
J3.9	2A, CD26, K8-86	Switch, boom working lights	0	CD26
J3.10	GND	GND coil, valve cab heating	0	CD09
J3.11	GND	GND, front work lights 2	10	CD36
J3.12	GND	GND rotary beacon	5.5	CD32
J3.13	15A, CD23, FC7, K7-87	Switch supply, rear work lights	15	CD23
J3.14	GND	GND, cab light, dim light	2	CD30
J3.15	15A, CD33, CD74, K7-30, TP33, TP74	Rear cab work lights	10	CD33
J3.16	20A, CD25, FC8, K8-830	Switch supply, boom work lights	0	CD25
J3.17	GND		15	CD24
J3.18	2A, CD24, K7-86	Switch, rear work lights	0	CD25
J3.19	20A, CD25, FC8, K8-830	Switch supply, boom work lights	10	CD34
J3.20	GND		0	CD11
J3.21	GND	GND, rear cab work lights	2	CD15

J4

	Destination	Function	Current (A) (NS=not significant	Wire Number
J4.1	2Z, CD11, K2-85, TP11	Relay cab fan speed 2	0	CD11
J4.2	GND			
J4.3	2A, CD15, FC3, K1.2.3.4.5.6-86, K4-87, TP15	Supply, auto air conditioning electronic box	2	CD15
J4.4	2a, CD10, K1-85, TP10	Relay cab fan speed 1	0	CD10
J4.5	GND			
J4.6	GND	GND, auto a/c electronic box	0	CD16
J4.7	2A, CD39, CD51, TP39	Switch electric mirrors	2	CD51
J4.8	GND			
J4.9	GND			
J4.10	2A, CD40, CD52, TP40	Switch electric mirrors	2	CD52
J4.11	2A, CD48, CD58, TP48	Switch electric mirrors	2	CD58
J4.12	2A, CD14, K5/K6-30, TP14	Relay a/c compressor (pressure switch B)	0	CD14
J4.13	2A, CD41, CD53, TP41	Switch electric mirrors	2	CD53
J4.14	2A, CD46, CD56, TP46	Switch electric mirrors	2	CD56
J4.15	0.5A, CD59, K9-15, TP59	Push button for defrost	0.5	CD59
J4.16	2A, CD47, CD57, TP47	Switch electric mirrors	2	CD57
J4.17	2A, CD42, CD54, TP42	Switch electric mirrors	2	CD54
J4.18	2A, CD45, CD55, TP45	Switch electric mirrors	2	CD55

J5

	Destination	Function	Current (A) (NS=not significant	Wire Number
J5.1	2A, CD39, CD51, TP39	Left Mirror	NS	950
J5.2	2A, CD40, CD52, TP40	Left Mirror	NS	951
J5.3	2A, CD41, CD53, TP41	Left Mirror	NS	952
J5.4	GND	GND left mirror	NS	953
J5.5	GND	GND right mirror	NS	954
J5.6	2A, CD47, CD57, TP47	Right mirror	NS	955
J5.7	7.5A, CD44, CD50, K9-87, TP44	Left Mirror	NS	956
J5.8	2A, CD48, CD58, TP48	Right Mirror	NS	957
J5.9	2A, CD46, CD56, TP46	Right Mirror	NS	958
J5.10	7.5A, CD44, CD50, TP44	Right Mirror	NS	959
J5.11	2A, CD45, CD55, TP45	Right mirror	NS	960
J5.12	2A, CD42, CD54, TP42	Left mirror	NS	961

J6

	Destination	Function	Current (A) (NS=not significant	Wire Number
J6.1	GND	GND, work light on chemical hopper area	5	36
J6.2	5A, CD69, K5-30, TP69	Supply, a/c compressor	5	104
J6.3	20A, CD70, K8-87, TP70	Boom work lights	20	91
J6.4	15A, CD33, CD74, K7-30, TP33, TP74	Work light n chemical hopper area	5	35
J6.5	GND	GND, boom work lights	20	92
J6.6	20A, CD70, K8-87, TP70	Boom work lights	20	91
J6.7	GND	GND, boom work lights	20	92
J6.8	GND	GND, engine hood work lights	10	141
J6.9	10A, CD18, CD72, TP72	Engine hood work lights	10	144

J7

	Destination	Function	Current (A) (NS=not significant	Wire Number
J7.1	15A, CD3	Fan motor condenser 1	15	
J7.2	GND	GND	15	
J7.3	GND	GND fan motor condenser 1	15	
J7.4	15A, CD1	Fan motor condenser 2	15	
J7.5	GND			
J7.6	GND			

J8

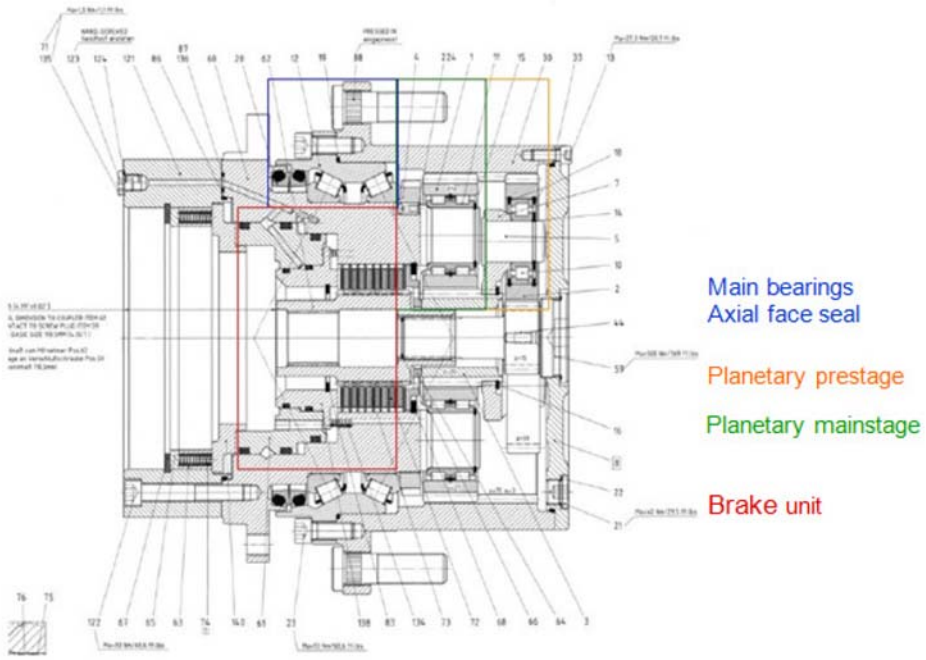
	Destination	Function	Current (A) (NS=not significant	Wire Number
J8.1	2A, CD16A, CG3A	Side light switch	2	
J8.2	GND			
J8.3	GND			
J8.4	GND	GND output switch 3, not used	15	
J8.5	GND	GND output switch 2, not used	15	
J8.6	GND	GND output switch 1, not used	15	
J8.7	15A, CD66, CG6	Output switch 2, not used	15	
J8.8	15A, CD68, CG8	Output switch 1, not used	15	
J8.9	15A, CD64, CG4	Output switch 3, not used	15	

J9

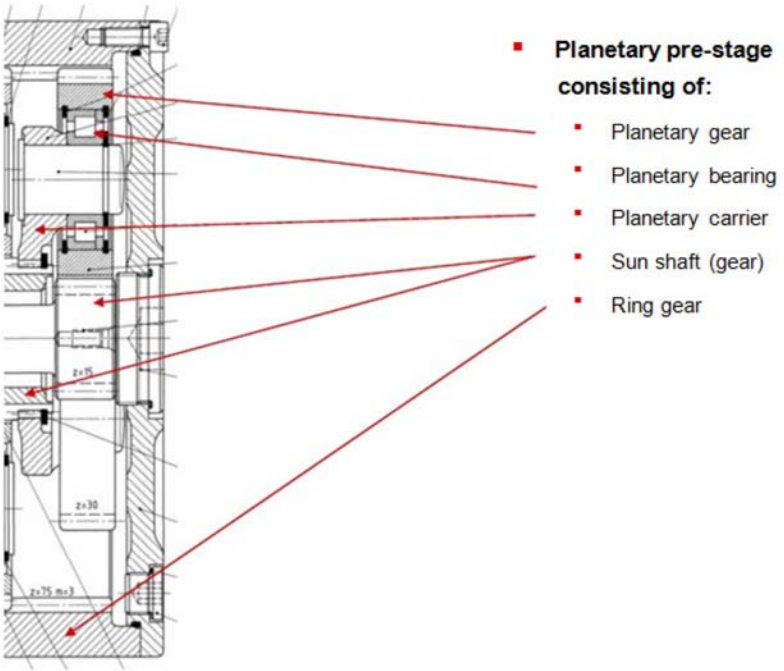
	Destination	Function	Current (A) (NS=not significant	Wire Number
J9.1	30A, CD6, K3-3, TP6	Supply, 3rd fan speed cab	0	CD06
J9.2	30A, CD6, K3-30, TP6	Supply, 3rd fan speed cab	0	CD06
J9.3	GND	GND cab fan	0	CD07
J9.4	30A, CD4, K1-30, TP4	Supply, 1st fan speed cab	0	CD04
J9.5	30A, CD5, K2-30, TP5	Supply, 2nd fan speed cab	0	CD05
J9.6	GND	GND cab fan	0	CD07
J9.7	30A, CD4, K1-30, TP4	Supply, 1st fan speed cab	0	CD04
J9.8	30A, CD5, K2-30, TP5	Supply, 2nd fan speed cab	0	CD05
J9.9	GND	GND, cab fan	0	CD07

Gearbox

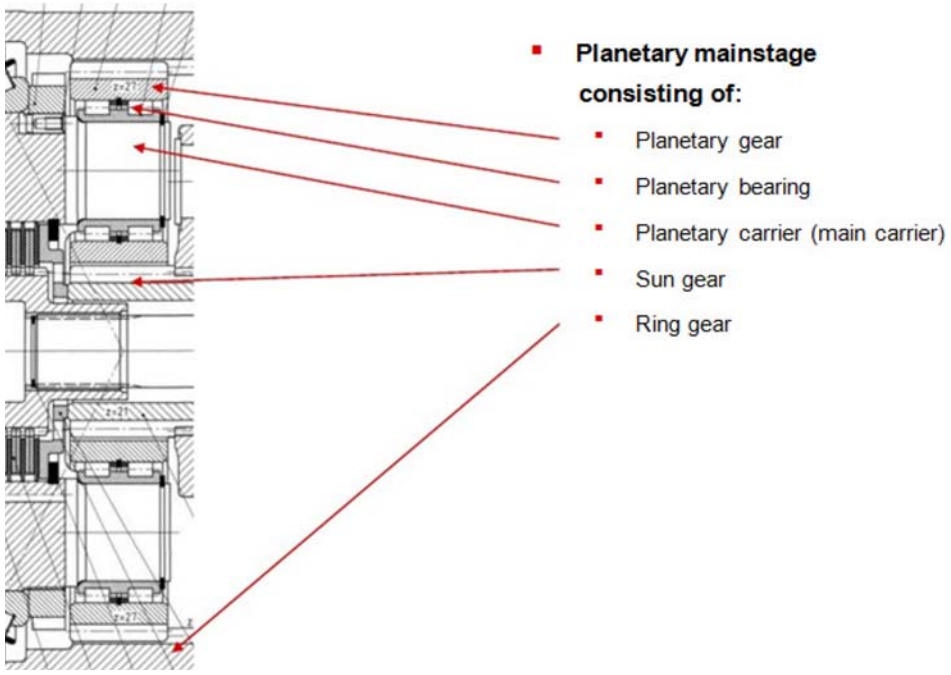
Gearbox Overview



Planetary Pre-stage

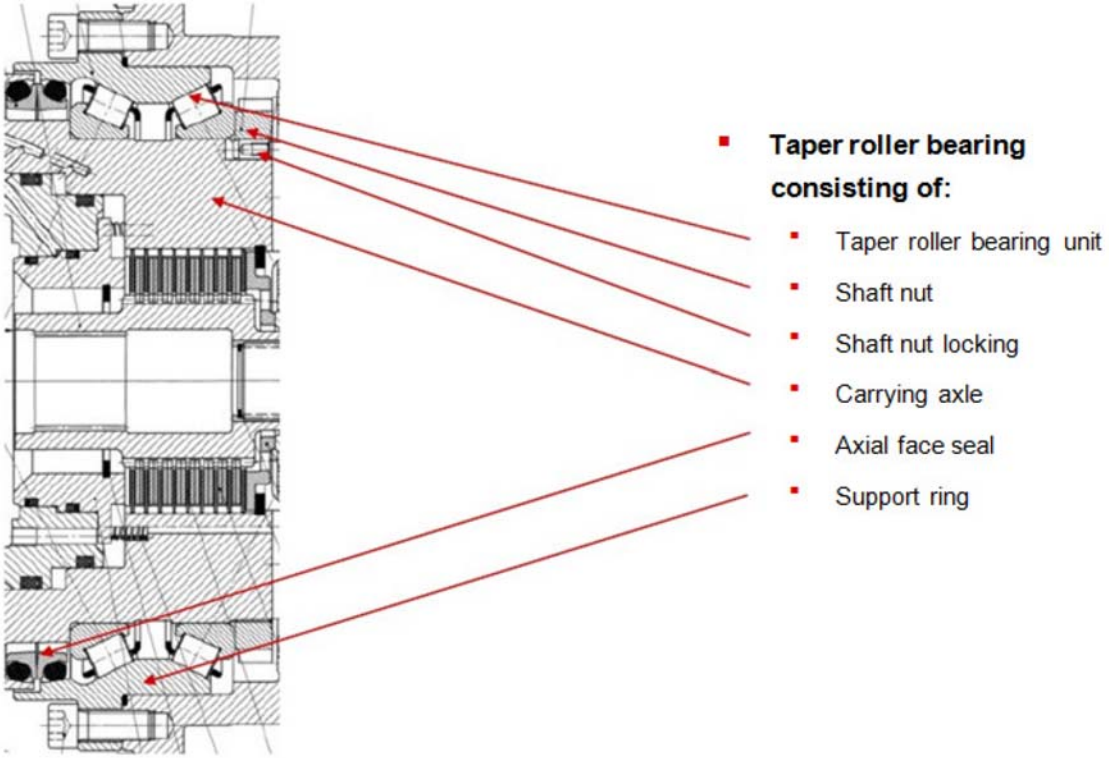


Planetary Mainstage



- **Planetary mainstage consisting of:**
  - Planetary gear
  - Planetary bearing
  - Planetary carrier (main carrier)
  - Sun gear
  - Ring gear

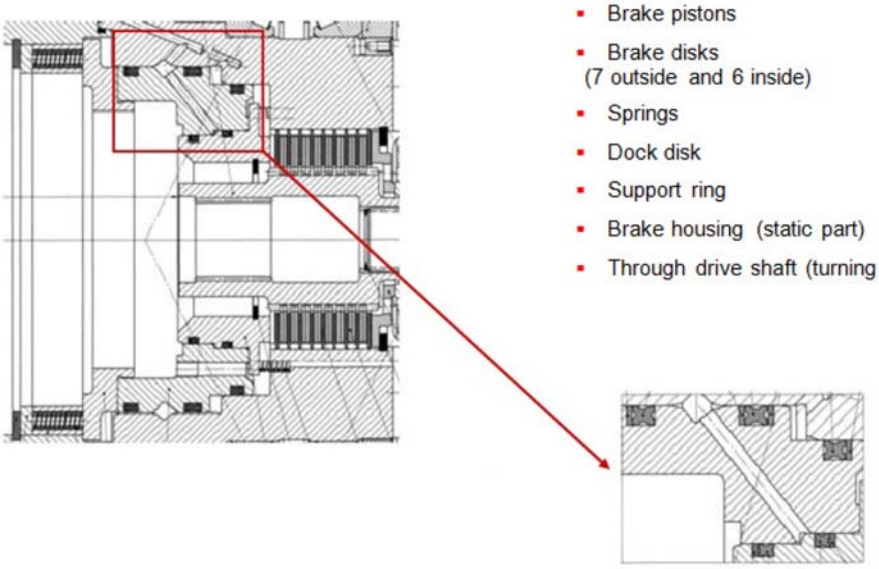
Bearing Unit



- **Taper roller bearing consisting of:**
  - Taper roller bearing unit
  - Shaft nut
  - Shaft nut locking
  - Carrying axle
  - Axial face seal
  - Support ring

Brake Unit

- Wet Operating Brakes.
- Static Brake is closed without oil pressure.
- Dynamic brake is open without oil pressure.



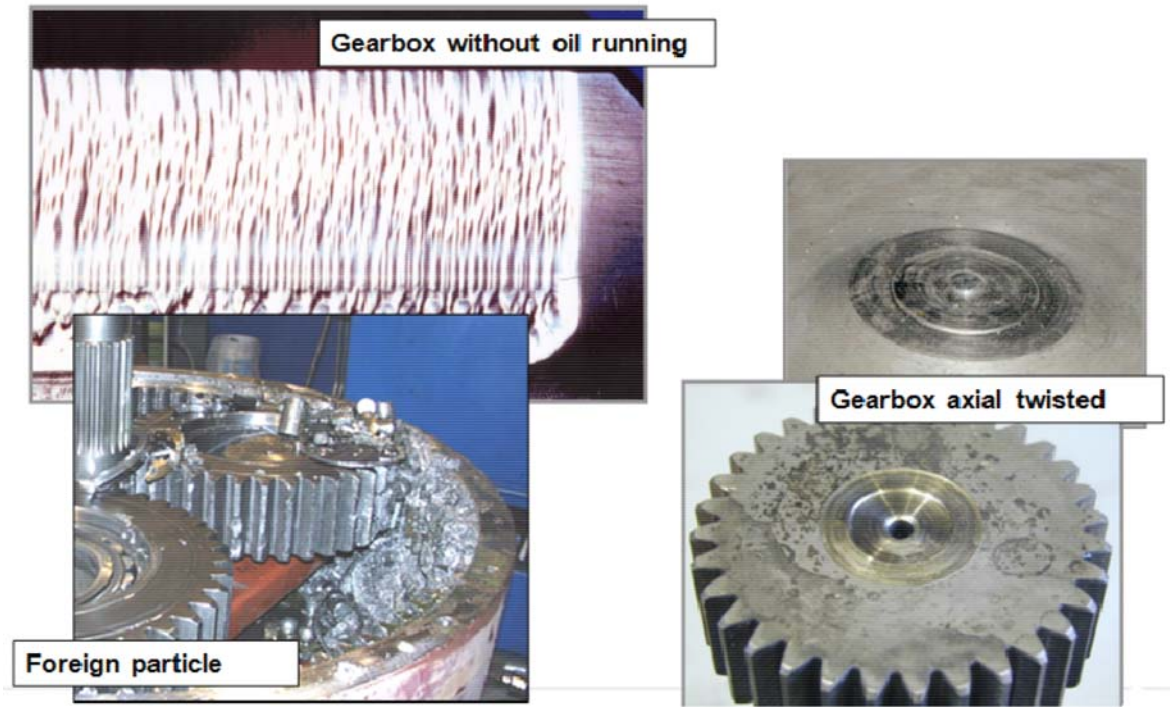
- **Dynamic and static brake consisting of:**
  - Brake pistons
  - Brake disks (7 outside and 6 inside)
  - Springs
  - Dock disk
  - Support ring
  - Brake housing (static part)
  - Through drive shaft (turning part)

5 - Gear Motor

Troubleshooting

Noise Problems

Fault	Probable Cause
Metallic Noise	No oil or wrong oil quantity in the gearbox Metallic content in the gearbox
Grinding Noise	Moving parts are scratching on other parts Axial twisting inside the gearbox
Clicking Noise	Moving parts are repeatedly scratching on other parts Foreign particles inside the gearbox which are repeatedly overrun Geometry failure in the gears (in the case of new gearboxes)



Brakes

Fault	Probable Cause
Brake doesn't reach the specified torque values	Wrong number of brake springs Wrong lay-up of brake discs Wrong number of brake discs Brake piston locking Back-pressure too high Brake discs are seized
Brake doesn't open	Brake release pressure is too low Leakage on brake piston seals Brake piston locking
Brake leakage	Brake seals damaged during assembly Missing support rings or wrong location of support rings

5 - Gear Motor

Uncoupling

To Tow the equipment it is necessary to uncouple the gear unit.

DANGER! The integrated parking brake in the gearbox is not operational when it is disconnected. Before disconnecting, make sure the machine is locked and level.

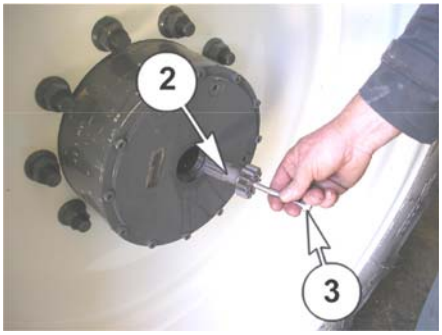
WARNING! Oil in the gear unit may be hot.

- Clean the central plug area of the gear unit (1).
- Remove plug (1)

WARNING! Plug may be under pressure.

- Recover any oil that may come out.

- Completely remove the shaft of the planetary gear (2) from the reduction gear. Use an M8 screw (3).



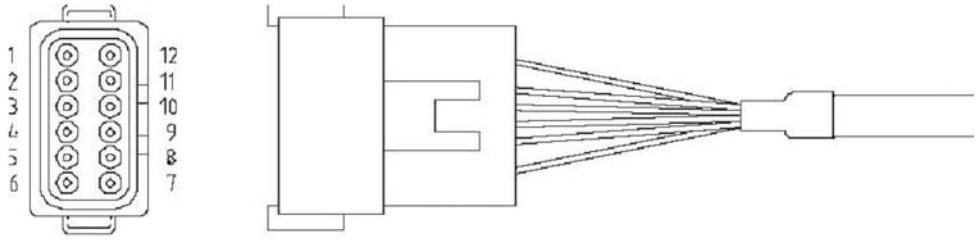
ATTENTION! Before towing fill the reduction gear with oil. Refer to the Maintenance section in the Presidio Operator's Manual.

ATTENTION! Uncoupling the gear unit is used only to tow the machine over a short distance.

DANGER! Before loosening the tow bar, couple the reduction gear, or take suitable measures to ensure that the machine does not start rolling.

Electrical

Connector



1: Power (- U bat)
2: Power (+ U bat)
3: Not Connected
4: Not Connected
5: Not Connected
6: Not Connected
7: CAN LO
8: CAN HI
9: Not Connected
10:Not Connected
11:Not Connected
12:Not Connected

Technical Data

Display:	Graphical
Resolution:	160 x 128 Pixel
Voltage Supply:	10-32 VDC
Current Consumption	140 mA without, 160 mA with connected background illumination
Protection Against:	Poling, over voltage
Acoustic Alarm:	80 dB at 4 kHz
Connection:	Integrated Deutsch plug, 12-pole, DT04-12PA for connection socket DT06-12SA, Wedge-lock W12S, PIN sockets 0462-201-1631 Crimping Tool: Deutsch designation HDT-48-00 Extraction Tool: Deutsch designation DT/RT1 for DT contacts
Specifications:	CE Designation Application Range: From -25°C to +75°C Storage Temperature: From -40°C to +80°C Protective System: IP 87 Environmental Checks as per: SAE J 1810, IEC 60068, IEC 60529 ECM as per: IEC 610000, ISO 7637, EN 55022 Reverse battery protected, resistant to over-voltage
Housing:	ABS plastic material, color gray anthracite
Size:	110mm x 110mm x 38.5mm (W x H x D) can be mounted at front
Weight:	250g

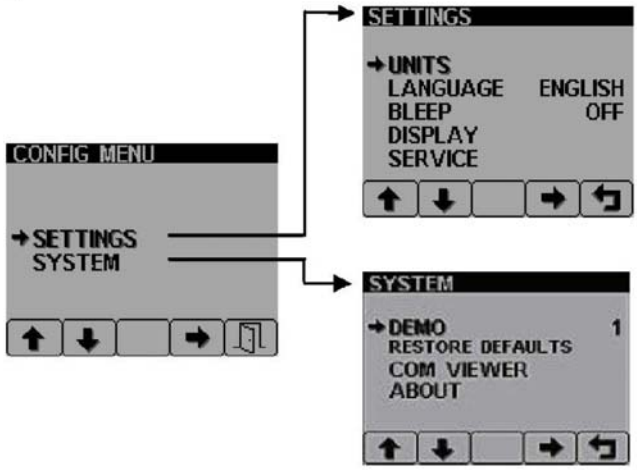
6 - Deutz Display

System Menu

Getting to the System Menu

The "System Menu" is reached by pressing and holding key #5 for at least 3 seconds, when the Deutz Display is in its normal operating mode.

The top-level configuration menu will be displayed on the LCD, as shown below.



DEMO

Allows the Deutz Display to run in a demonstration mode, showing its capabilities even if not connected to a valid engine data stream.

There are three different demo modes:

Demo 1 has speed data simulated by the Deutz Display.

Demo 2 does not generate simulated speed data.

Demo 3 simulates various alarm conditions.

ATTENTION! For normal use, the demo mode must be switched to OFF.

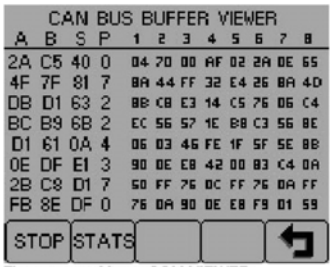
Restore Defaults

Allows the user to reset all configuration data to the factory defaults. The user may select either metric or imperial units. The default values for each is shown below.

Setting	metric	imperial
Language	German	
Max RPM	3000	
Max speed	110 Km/h	70 MPH
Graph range	2 mins	
Speed	Km/h	MPH
Distance	Km	Miles
Pressure	bar	PSI
Volume	L	Gal
Temperature	ºC	ºF

COM Viewer

Allows the user to examine the most recent messages in the CAN bus receive buffer. This is intended for use only as a diagnostic tool.



About

The "About" screen shows the following information about the Deutz Display:

ID No:	Unique identifying number of the display
BAD EE:	Number of writes on the EEPROM
PART No:	Software part number
CHKSM:	Flash memory checksum
SOURCE:	Display the source of received data
LABEL:	Allocated Label on the bus. Each unit on the same bus should have a different label.

Clearing Error Memory

1. In case of a breakdown or error on the screen, you have to press the central key in order to open the error code page.

2. On the error code screen, you can press the central key in order to jump from black bottom to white background.

3. Press the second key from the right hand side (3 or 5 seconds) until you can see under the central key "GARDER RESET" instead of the bell.

4. Press the central key (3 or 5 seconds) until you obtain the message "CLEAR REQUEST SENT". It might be necessary to perform this step twice in order to clear the full memory (only the 4th step).

Now the memory is completely clear.

WARNING! This process if for use at the Dealer level. If the memory is cleared it is not possible to see the error unless you access the #2 memory with a computer and SERDIA system. Only Deutz can see #2 memory.

Error Codes

Error code SERDIA	Component / Location	Description (Error location)	Defined for DCR	Defined for DMV	ID	Blink code	SPN	FMI	Self-curing[1]
11	Air filter condition	Pressure loss above target range with system reaction	●	●	AirFltSysReac	1-3-6	107	0, 11	●
12	Accelerator pedal	Cable break or short circuit, signal implausible compared to signal of idle sensor (analog pedal)	●	●	APP1	2-2-6	91	2, 3, 4, 11	
14	Accelerator pedal	Cable break or short circuit, bad PWM signal range or frequency (digital pedal)	●	●	APPPwm	2-2-2	91	2, 8	●
15	Accelerator pedal	Bad PWM pulse-width repetition rate (digital pedal)	●	●	APPPwmPer	2-2-2	91	8, 11	●
16	ECU internal error	Ambient pressure sensor defective	●	●	APSCD	2-9-2	108	2, 3, 4, 11	●
17	Air heater relay	Cable break or short circuit	●	●	ArHt1	2-6-3	729	3, 4, 5, 11	●
18	Air heater magnetic valve	Cable break or short circuit	●	●	ArHt2	2-6-3	730	3, 4, 5, 11	●
19	Air heater relay	Cable break or wrong connection	●	●	ArHtCD_NoLd	2-6-3	676	4, 11	
20	Air heater relay	Inoperable during shut-off	●	●	ArHtCD_RlyErr	2-6-3	676	2, 5, 11	
22	Battery	Voltage below target range	●	●	BattCD	3-1-8	168	0, 1, 11	●
23	Battery voltage	Above target range with system reaction	●	●	BattCDSysReac	3-1-8	168	2, 11	●
24	Begin of injection period	Outside target range or missing (cylinder 1)		●	BIPCyl1	5-3-1	523561	2	●
25	Begin of injection period	Outside target range or missing (cylinder 2)		●	BIPCyl2	5-3-2	523562	2	●
26	Begin of injection period	Outside target range or missing (cylinder 3)		●	BIPCyl3	5-3-3	523563	2	●
27	Begin of injection period	Outside target range or missing (cylinder 4)		●	BIPCyl4	5-3-4	523564	2	●
28	Begin of injection period	Outside target range or missing (cylinder 5)		●	BIPCyl5	5-3-5	523565	2	●
29	Begin of injection period	Outside target range or missing (cylinder 6)		●	BIPCyl6	5-3-6	523566	2	●
30	Begin of injection period	Outside target range or missing (cylinder 7)		●	BIPCyl7	5-3-7	523567	2	●
31	Begin of injection period	Outside target range or missing (cylinder 8)		●	BIPCyl8	5-3-8	523568	2	●
32	Charge air pressure sensor	Cable break or short circuit	●	●	BPSCD	2-2-3	102	2, 3, 4	●
33	Charge air pressure	Outside target range with system reaction	●	●	BPSCDSysReac	2-2-3	102	2, 11	●
37	Coolant level	Outside target range with system reaction	●	●	CLSCDSysReac	2-3-5	111	1, 11	
38	Single cylinder	Misfire detected (cylinder 1)	●	●	CmbChbMisfire1	2-4-1	1323	11, 12	
39	Single cylinder	Misfire detected (cylinder 2)	●	●	CmbChbMisfire2	2-4-1	1324	11, 12	
40	Single cylinder	Misfire detected (cylinder 3)	●	●	CmbChbMisfire3	2-4-1	1325	11, 12	
41	Single cylinder	Misfire detected (cylinder 4)	●	●	CmbChbMisfire4	2-4-1	1326	11, 12	
42	Single cylinder	Misfire detected (cylinder 5)	●	●	CmbChbMisfire5	2-4-1	1327	11, 12	
43	Single cylinder	Misfire detected (cylinder 6)	●	●	CmbChbMisfire6	2-4-1	1328	11, 12	
44	Single cylinder	Misfire detected (cylinder 7)		●	CmbChbMisfire7	2-4-1	1450	11, 12	
45	Single cylinder	Misfire detected (cylinder 8)		●	CmbChbMisfire8	2-4-1	1451	11, 12	
46	Multiple cylinders	Misfire detected	●	●	CmbChbMisfireMul	2-4-1	1322	11, 12	
47	Misfire	Misfire detected with system reaction	●		CmbChbSysReac	2-4-1	1346	0, 11	

Error code SERDIA	Component / Location	Description (Error location)	Defined for DCR	Defined for DMV	ID	Blink code	SPN	FMI	Self-curing[1]
48	Shut-off request	Shut-off request ignored by operator	●	●	CoEngShOffDemIgr	3-4-1	1109	2, 11	
52	Engine brake (internal)	Internal engine brake: cable break or short circuit	●	●	CRERCD	5-2-8	1072	3, 4, 5, 11	
53	Preheating signal lamp	Cable break or short circuit	●	●	CSLpCD	3-2-8	1081	2, 3, 4, 5	
54	Coolant temperature warning lamp	Cable break or short circuit	●	●	CTLpCD	1-2-3	704	11	
55	Coolant temperature sensor	Cable break or short circuit	●	●	CTSCD	2-2-5	110	2, 3, 4	●
56	Coolant temperature	Outside target range with system reaction	●	●	CTSCDSysReac	2-3-2	110	0, 11	●
57	Reserve output	Short circuit to Ubatt (output 1)	●	●	Dummy1CD_Max	-	701	11	
58	Reserve output	Short circuit to ground (output 1)	●	●	Dummy1CD_Min	-	701	11	
59	Reserve output	Cable break or ECU internal error (output 1)	●	●	Dummy1CD_SigNpl	-	701	11	
60	Reserve output	Short circuit to Ubatt (output 2)	●	●	Dummy2CD_Max	-	702	11	
61	Reserve output	Short circuit to ground (output 2)	●	●	Dummy2CD_Min	-	702	11	
62	Reserve output	Cable break or ECU internal error (output 2)	●	●	Dummy2CD_SigNpl	-	702	11	
69	EGR actuator (external)	Short circuit to Ubatt	●	●	EGRCD_Max	4-1-4	2791	3, 11	
70	EGR actuator (external)	Short circuit to ground	●	●	EGRCD_Min	4-1-4	2791	4, 11	
71	EGR actuator (external)	Cable break or ECU internal error	●	●	EGRCD_SigNpl	4-1-5	2791	2, 5, 11	
72	EGR actuator (external)	Cable break or short circuit	●	●	EGRCDIntEGR	4-1-6	2791	2, 3, 4, 5	
74	Engine power output	Engine Power output: cable break or short circuit	●	●	EngCDTrqCalcOut	5-5-5	923	2, 3, 4, 5	
75	Engine speed sensor	Engine running with cam-shaft speed signal only	●	●	EngMBackUp	2-1-2	190	11, 12	●
76	Engine speed sensor	Speed signal from cam-shaft bad or missing	●	●	EngMCaS1	2-1-2	190	8, 11, 12	●
77	Engine speed sensor	Speed signal from crank-shaft bad or missing	●	●	EngMCrS1	2-1-2	190	8, 11, 12	●
78	Engine speed sensor	Speed signals of crank-shaft and cam-shaft are phase-shifted	●	●	EngMOfsCaSCrS	2-1-3	190	2, 11	
79	Overspeed	Engine overspeed with system reaction	●	●	EngPrtSysReacFOC	2-1-4	190	0, 11	
80	Overrun conditions	Overrun conditions with system reaction	●	●	EngPrtSysReacORC	2-1-4	190	11, 14	●
81	Engine operating signal lamp	Cable break or ECU internal error	●	●	ESLpCD	1-4-2	703	2, 3, 4, 5	
82	Engine brake flap actuator	Engine brake flap actuator: cable break or short circuit	●	●	ExFlCD	2-1-9	1074	3, 4, 5, 11	
83	Fan actuator	Fan actuator: cable break or short circuit	●	●	FanCD	2-3-8	975	2, 3, 4, 5	
86	Fan speed	Above target range with system reaction	●	●	FanCDSysReac	2-3-8	523602	2, 11	●
87	Fuel filter water level sensor	Cable break or short circuit	●	●	FlFCD	2-2-8	97	3, 4, 11	●
89	Water level in fuel filter	Above target range	●	●	FlFCD_WtLvl	2-2-8	97	11, 12	
90	Fuel low pressure sensor	Cable break or short circuit	●	●	FlPSCD	2-1-6	94	3, 4, 11	●
91	Fuel low pressure	Below target range with system reaction	●	●	FlPSCDSysReac	2-1-6	94	2, 11	●
94	CAN message	Missing or value above target range (message "DecV1" = pseudo pedal)	●	●	FrmMngDecV1	5-2-6	523239	2, 12	●
95	CAN message	Missing (message "FunModCtl" = function mode control)	●	●	FrmMngFunModCtl	5-2-7	523240	11, 12	●
106	CAN message	Missing (message "EngPrt" = engine protection)	●	●	FrmMngTOEngPrt	3-3-3	523212	11, 12	●

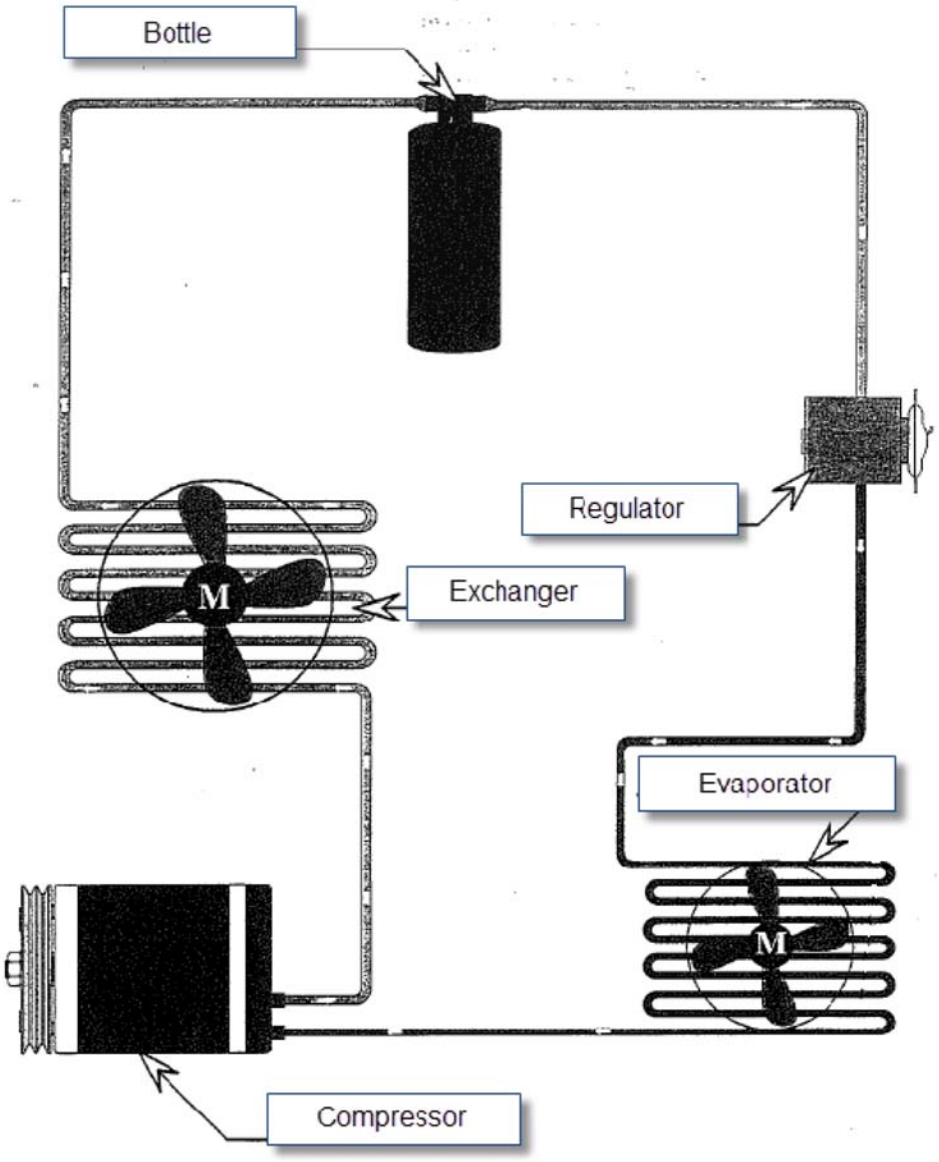
Error code SERDIA	Component / Location	Description (Error location)	Defined for DCR	Defined for DMV	ID	Blink code	SPN	FMI	Self-curing[1]
110	CAN message	Missing (message "PrHtEnCmd" = preheat and engine command)	●	●	FrmMngTOPrHtEnCmd	3-3-7	523216	11, 12	●
112	CAN message	Missing (message "RxCCVS" = cruise control)	●	●	FrmMngTORxCCVS	1-1-1	523218	11, 12	●
113	CAN message	Missing (message "RxEngTemp" = engine temperature)	●	●	FrmMngTORxEngTemp	1-1-2	523604	11, 12	●
117	CAN message	Missing (message "SwtOut" = switch outputs)	●	●	FrmMngTOSwtOut	1-1-5	523238	11, 12	●
118	CAN message	Missing (message "TCO1" = speedo signal)	●	●	FrmMngTOTCO1	1-1-6	523222	11, 12	●
120	CAN message	Missing (message "TSC1-AE")	●	●	FrmMngTOTSC1AE	1-1-8	523605	11, 12	
121	CAN message	Missing (message "TSC1-AR")	●	●	FrmMngTOTSC1AR	1-1-9	523606	11, 12	
122	CAN message	Missing (message "TSC1-DE")	●	●	FrmMngTOTSC1DE	1-1-8	523607	11, 12	
123	CAN message	Missing (message "TSC1-DR")	●	●	FrmMngTOTSC1DR	1-1-9	523608	11, 12	
124	CAN message	Missing (message "TSC1-PE")	●	●	FrmMngTOTSC1PE	1-1-8	523609	11, 12	
125	CAN message	Missing (message "TSC1-TE")	●	●	FrmMngTOTSC1TE	1-1-8	898	11, 12	
126	CAN message	Missing (message "TSC1-TR")	●	●	FrmMngTOTSC1TR	1-1-9	520	11, 12	
127	CAN message	Missing (message "TSC1-VE")	●	●	FrmMngTOTSC1VE	1-1-8	523610	11, 12	
128	CAN message	Missing (message "TSC1-VR")	●	●	FrmMngTOTSC1VR	1-1-9	523611	11, 12	
131	CAN message	Time-out of at least one sended message	●	●	FrmMngTxTO	2-7-1	523500	11, 12	●
133	Fuel temperature sensor	Fuel temp. sensor: cable break or short circuit	●	●	FTSCD	2-2-7	174	3, 4, 11	●
134	Fuel temperature	Above target range with system reaction	●	●	FTSCDSysReac	2-3-7	174	0, 11	●
136	Customer-specific sensor	Cable break or short circuit (sensor 1)	●	●	GOTSCD	1-3-3	-	2, 3, 4, 11	●
137	Customer-specific temperature	Outside target range with system reaction (temperature 1)	●	●	GOTSCDSysReac	1-3-3	-	2, 11	●
138	Hand throttle	Cable break or short circuit, signal implausible compared to signal of idle sensor	●	●	HdThrt	1-2-6	29	2, 3, 4, 11	
139	Customer-specific sensor	Cable break or short circuit (sensor 2)	●	●	HOTSCD	3-1-4	1638	3, 4, 11, 12	●
140	Customer-specific temperature	Outside target range with system reaction (temperature 2)	●	●	HOTSCDSysReac	3-1-4	1638	2, 11	●
141	ECU internal error	Communication with chip CJ 940 disturbed	●	●	HWEMonCom	5-5-5	523617	11, 12	
142	ECU internal error	EEPROM memory access	●	●	HWEMonEEPROM	2-8-1	630	11, 12	
143	ECU internal hardware monitoring	A recovery occurred which is stored as protected	●	●	HWEMonRcyLocked	5-5-5	523612	11, 14	
144	ECU internal hardware monitoring	A recovery occurred which is not stored	●	●	HWEMonRcySuppres-sed	5-5-5	523612	11, 14	
145	ECU internal hardware monitoring	A recovery occurred which is visible in the error memory	●	●	HWEMonRcyVisible	5-5-5	523612	11, 14	
146	ECU internal hardware monitoring	Overvoltage	●	●	HWEMonUMaxSupply	5-5-5	523612	3, 11	
147	ECU internal hardware monitoring	Undervoltage	●	●	HWEMonUMinSupply	5-5-5	523612	4, 11	
149	Charge air temperature sensor	Cable break or short circuit	●	●	IATSCD	1-2-8	105	2, 3, 4, 11	●
150	Charge air temperature	Above target range with system reaction	●	●	IATSCDSysReac	2-3-3	105	0, 11	●
153	Multiple injectors	Short circuit (cylinder bank 1)	●	●	InjVlvBnk1A	1-5-1	523350	3, 4, 11, 13	●
154	Multiple injectors	Cable break (cylinder bank 1)	●	●	InjVlvBnk1B	1-5-1	523351	5, 13	●

Error code SERDIA	Component / Location	Description (Error location)	Defined for DCR	Defined for DMV	ID	Blink code	SPN	FMI	Self-curing[1]
155	Multiple injectors	Short circuit (cylinder bank 2)	●	●	InjVlvBnk2A	1-5-2	523352	3, 4, 11, 13	●
156	Multiple injectors	Cable break (cylinder bank 2)	●	●	InjVlvBnk2B	1-5-2	523353	5, 13	●
157	ECU internal error	Injector power stage A	●	●	InjVlvChipA	1-5-3	523354	2, 3, 12, 14	
158	ECU internal error	Injector power stage B	●	●	InjVlvChipB	1-5-3	523355	12	
159	Single injector	Short circuit (injector 1)	●	●	InjVlvCyl1A	1-5-4	651	3, 4, 11, 13	●
160	Single injector	Cable break (injector 1)	●	●	InjVlvCyl1B	1-5-4	651	5, 13	●
161	Single injector	Short circuit (injector 2)	●	●	InjVlvCyl2A	1-5-5	652	3, 4, 11, 13	●
162	Single injector	Cable break (injector 2)	●	●	InjVlvCyl2B	1-5-5	652	5, 13	●
163	Single injector	Short circuit (injector 3)	●	●	InjVlvCyl3A	1-5-6	653	3, 4, 11, 13	●
164	Single injector	Cable break (injector 3)	●	●	InjVlvCyl3B	1-5-6	653	5, 13	●
165	Single injector	Short circuit (injector 4)	●	●	InjVlvCyl4A	1-6-1	654	3, 4, 11, 13	●
166	Single injector	Cable break (injector 4)	●	●	InjVlvCyl4B	1-6-1	654	5, 13	●
167	Single injector	Short circuit (injector 5)	●	●	InjVlvCyl5A	1-6-2	655	3, 4, 11, 13	●
168	Single injector	Cable break (injector 5)	●	●	InjVlvCyl5B	1-6-2	655	5, 13	●
169	Single injector	Short circuit (injector 6)	●	●	InjVlvCyl6A	1-6-3	656	3, 4, 11, 13	●
170	Single injector	Cable break (injector 6)	●	●	InjVlvCyl6B	1-6-3	656	5, 13	●
171	Single injector	Short circuit (injector 7)		●	InjVlvCyl7A	1-6-4	657	3, 4, 11, 13	●
172	Single injector	Cable break (injector 7)		●	InjVlvCyl7B	1-6-4	657	5, 13	●
173	Single injector	Short circuit (injector 8)		●	InjVlvCyl8A	1-6-5	658	3, 4, 11, 13	●
174	Single injector	Cable break (injector 8)		●	InjVlvCyl8B	1-6-5	658	5, 13	●
175	Rail pressure	Compression test active: rail-pressure monitoring is going to be disabled	●	●	InjVlvErrDet	5-5-5	523370	11, 14	
176	Metering unit valve	Flow rate outside target range	●		MeUnCD_ADC	1-3-5	523615	3, 4, 11	
177	Metering unit valve	Not connected or output disabled	●		MeUnCDNoLoad	1-3-5	523615	5, 11, 12	
178	Metering unit valve	Short circuit to Ubatt	●		MeUnCDSCBat	1-3-5	523615	11, 12	
179	Metering unit valve	Short circuit to ground	●		MeUnCDSCGnd	1-3-5	523615	11, 12	
182	Main relay	Short circuit to Ubatt (relay 1)	●	●	MnRly1_SCB	1-3-7	2634	3, 11	
183	Main relay	Short circuit to ground (relay 1)	●	●	MnRly1_SCG	1-3-8	2634	4, 11	
184	ECU internal error	Watchdog counter exceeds maximum	●	●	Montr	1-3-9	523420	11, 14	
186	Main relay	Short circuit to ground or emergency shut-off (relay 2)	●	●	MRlyCD	2-6-1	2634	7, 11, 12	
187	Main relay	Short circuit to ground or emergency shut-off (relay 3)	●	●	MRlyCDMnRly2	2-6-1	563	7, 11, 12	
188	Main relay	Short circuit to ground or emergency shut-off (relay 3)	●	●	MRlyCDMnRly3	2-6-1	2634	7, 11, 12	
189	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 1)	●	●	MSSCD1	1-4-3	523450	2, 3, 4, 11	●
190	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 2)	●	●	MSSCD2	1-4-3	523451	2, 3, 4, 11	●
191	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 3)	●	●	MSSCD3	1-4-3	523452	2, 3, 4, 11	●

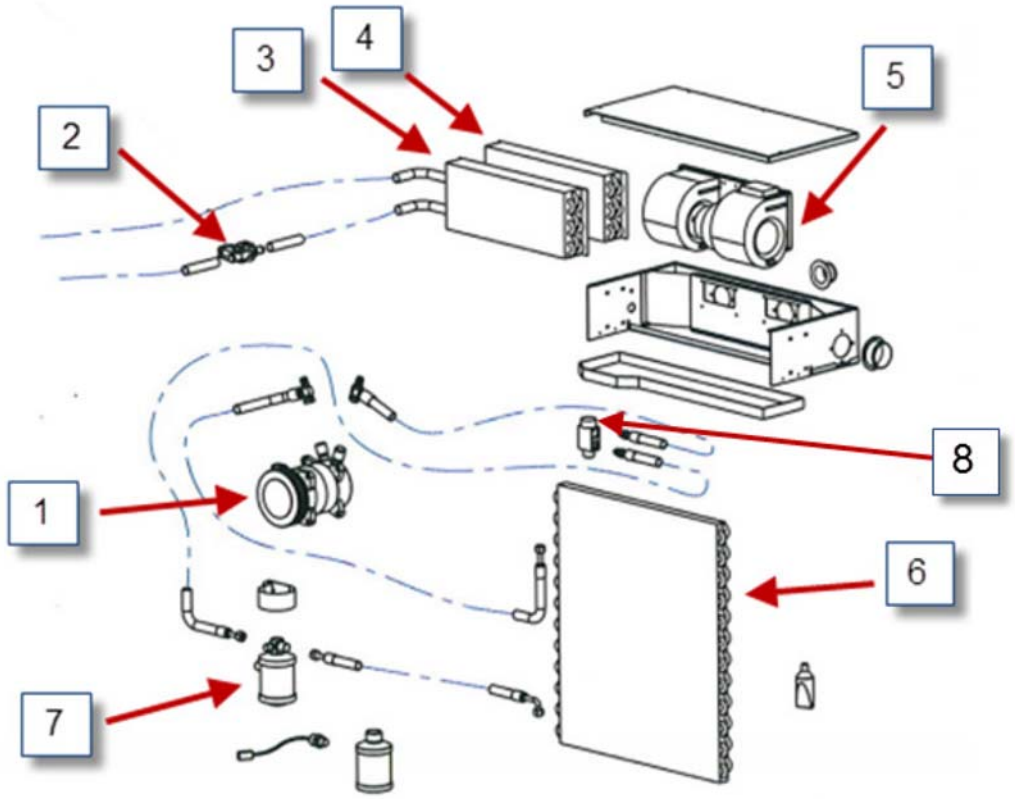
Error code SERDIA	Component / Location	Description (Error location)	Defined for DCR	Defined for DMV	ID	Blink code	SPN	FMI	Self-curing[1]
192	CAN bus off-state	Cable break or short circuit, off-state (CAN bus A)	●	●	NetMngCANAOff	2-7-1	639	11, 14	●
193	CAN bus off-state	Cable break or short circuit, off-state (CAN bus B)	●	●	NetMngCANBOff	2-7-1	1231	11, 14	●
194	CAN bus off-state	Cable break or short circuit, off-state (CAN bus C)	●	●	NetMngCANCOff	2-7-1	1235	11, 14	●
195	Oil pressure warning lamp	Cable break or short circuit	●	●	OPLpCD	1-3-5	705	2, 3, 4, 5	
196	Oil pressure sensor	Cable break or short circuit	●	●	OPSCD	2-2-4	100	0, 2, 3, 4	●
197	Oil pressure sensor	Pressure value implausible low	●	●	OPSCD1	2-3-1	100	1, 11	●
198	Oil pressure	Above target range	●	●	OPSCDSysReacHi	2-3-1	100	0, 11	●
199	Oil pressure	Below target range	●	●	OPSCDSysReacLo	2-3-1	100	1, 11	●
200	Override switch	Switch hangs	●	●	OSwCD	1-4-5	1237	2, 11	●
201	Oil temperature sensor	Cable break or short circuit	●	●	OTSCD	1-4-4	175	2, 3, 4	●
203	Oil temperature	Below target range with system reaction	●	●	OTSCDSysReac	1-4-4	175	0, 11	●
208	Rail pressure limiting valve	Opening failure	●		PRVMon	1-4-6	523470	2, 11, 12, 14	
209	Rail pressure sensor	Cable break or short circuit	●		RailCD	1-4-7	157	3, 4, 11	
210	Rail pressure sensor	Deviation of signal during start or after-run above target range	●		RailCDOfsTst	1-4-7	157	0, 1, 11	●
211	Rail pressure	Positive deviation (speed dependent) outside target range	●		RailMeUn0	1-3-4	523613	0, 11	●
212	Rail pressure	Positive deviation (flow dependent) outside target range (⇨ leakage!)	●		RailMeUn1	1-3-4	523613	0, 11	●
213	Rail pressure	Negative deviation (flow dependent) outside target range	●		RailMeUn2	1-3-4	523613	0, 11	●
214	Rail pressure	Negative deviation (speed dependent) outside target range	●		RailMeUn3	1-3-4	523613	1, 11	●
215	Rail pressure	Pressure above target range	●		RailMeUn4	1-3-4	523613	0, 11	●
216	Rail pressure	Implausible (leakage, injector needle blocked in open position)	●		RailMeUn7	1-3-4	523613	2, 11	●
218	ECU internal error	Redundant shut-off conditions detected	●	●	SOPTst	1-4-9	523490	3, 4, 11, 12	
219	ECU internal error	Wrong voltage of internal 5V reference source 1	●	●	SSpMon1	2-8-2	1079	3, 4, 11	●
221	ECU internal error	Wrong voltage of internal 5V reference source 2	●	●	SSpMon2	2-8-2	1080	3, 4, 11	●
222	ECU internal error	Wrong voltage of internal 5V reference source 3	●	●	SSpMon3	2-8-2	523601	3, 4, 11	●
223	Start relay	Start relay (high side): short circuit	●	●	StrtCDHS	5-1-2	677	3, 4, 11	
224	Start relay	Start relay (low side): cable break or short circuit, disabled by ECU	●	●	StrtCDLS	5-1-2	677	3, 4, 5, 11	
225	Diagnostic lamp	Cable break or short circuit, disabled by ECU	●	●	SysLamp	5-1-3	624	2, 3, 4, 5	
226	Terminal 15	Ignition ON not detected	●	●	T15CD	5-1-4	158	11, 12	
227	Terminal 50	Engine start switch hangs	●	●	T50CD	5-1-5	523550	11, 12	
228	ECU internal error	Time processing unit (TPU) defective	●	●	TPUMon	5-5-5	523550	2, 11	
232	Vehicle speed signal	Speed above target range, signal missing or implausible	●	●	VSSCD1	5-2-1	84	0, 8, 12, 14	●
235	ECU internal error	Serial communication interface defective	●	●	WdCom	5-5-5	523600	11, 12	
236	Rail pressure limiting valve	Opening failure with system reaction	●		PRVMonSysReac	1-4-6	523470	11, 12	

Air Conditioning

General Circuit



Components

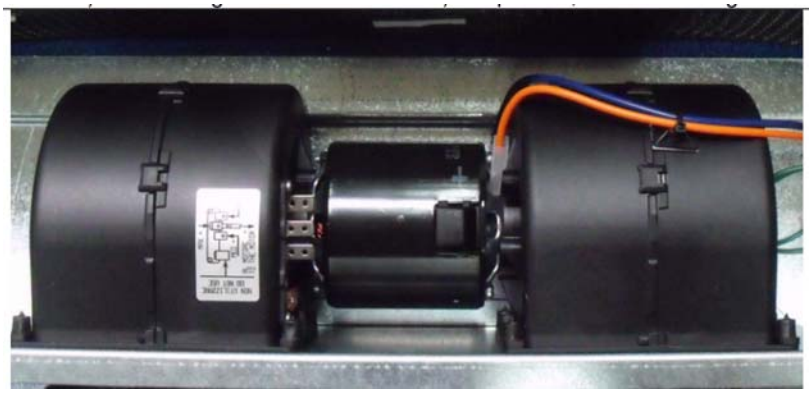


1. Compressor

2. Heating Valve

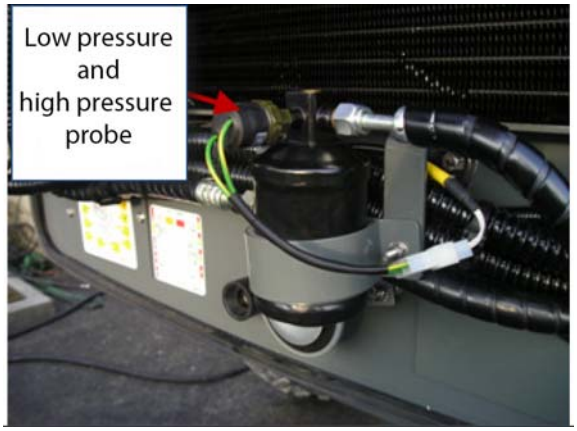
3. Heating Radiator
4. Evaporator, A/C

5. Blower

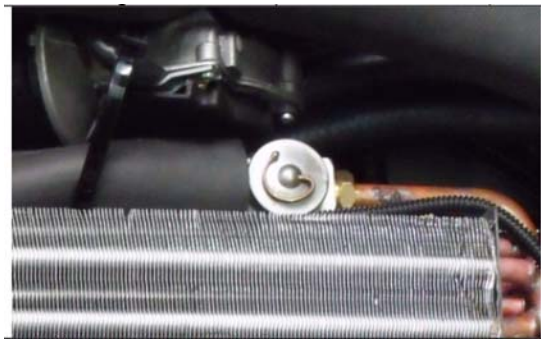


6. Exchanger

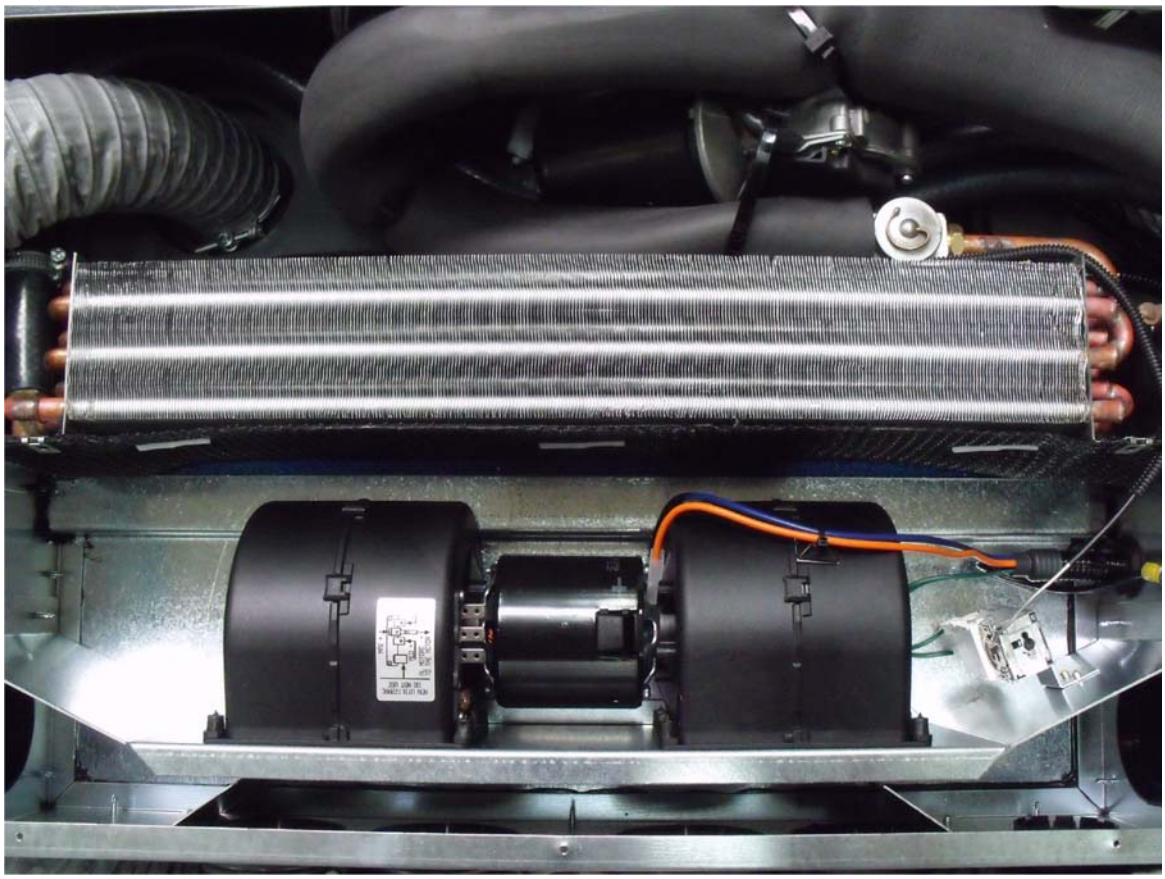
7. Bottle Dehydrator



8. Regulator

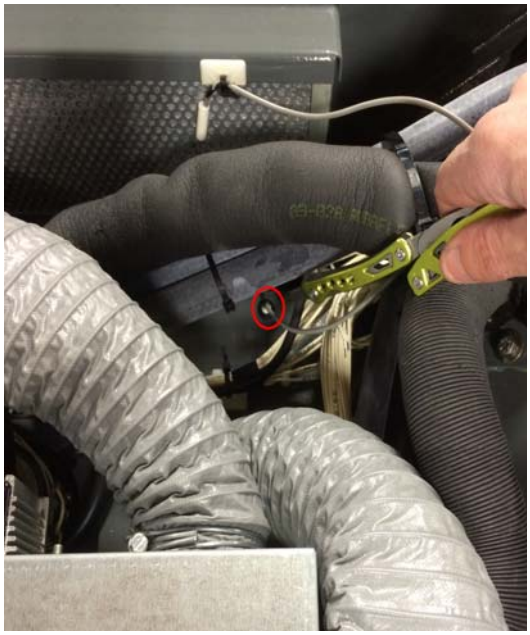


- Top View inside cab roof



- Cab temperature sensor (old version)

- Cab temperature sensor (new version)

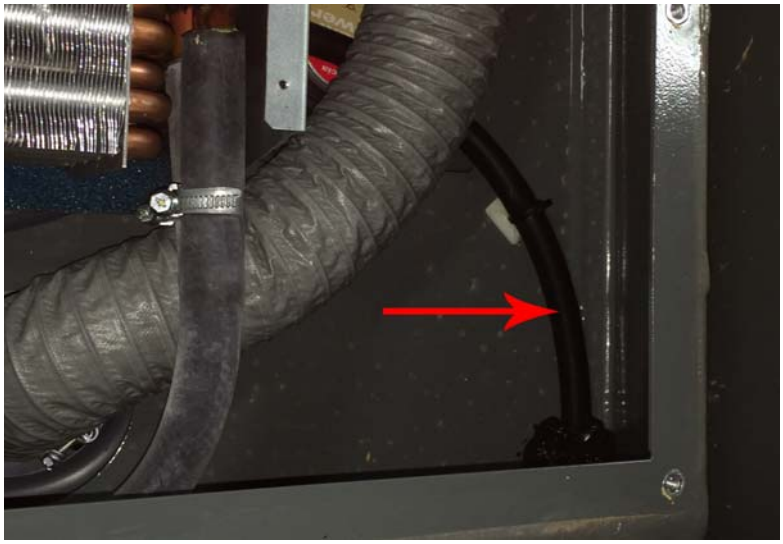


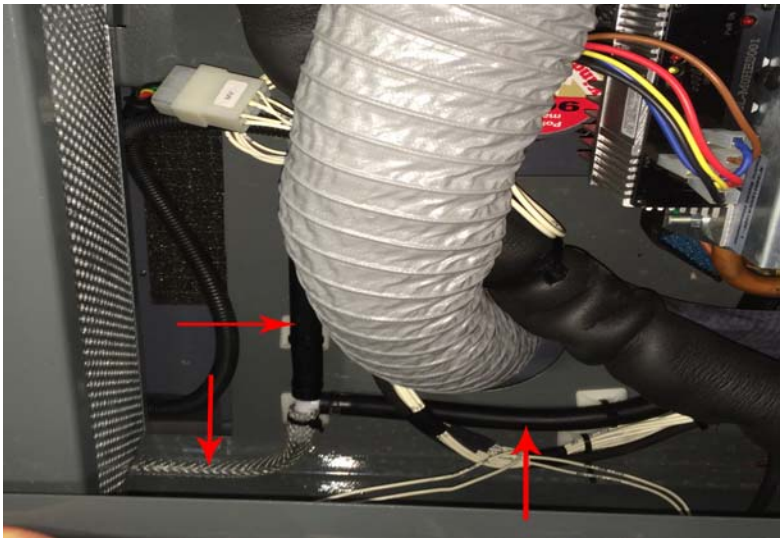
- External temperature sensor

- Anti Frost Thermostat and sensor

- Electronic management of the six fan speeds

Drain Hoses





Panel Parameter Programming

To power on the panel, press for 3 seconds, and the numeric display will show the vehicle internal temperature or the temperature set-point, depending on the SL parameter.

To power off the panel, press . The panel will save the functionality status. If you remove the power supply of the panel while in temperature mode, when you restore the power supply it will come back in temperature mode. It is the same if it was in standby mode.

System Parameters

- To access the system parameters, press the and , simultaneously for 3 seconds.

- To insert the password, press to change the left digit and to change the right digit.
- Enter password 53, then press to enter the parameters menu or press to exit the parameters.
- The first parameter is P0. To access other parameters press or .
- To view the parameter value, press , and to change the value press or .
- To return to the parameters view, press or to exit.

System Parameter Settings

Parameter	Function	Def	Min	Max
P0	Return temperature sensor off-set	4°C	-5°C	+5°C
P1	External temperature sensor off-set	0°C	-5°C	+5°C
P3	Blower speed overlapping mode 3 speeds (It´s valid when **tu** = 00) 0 = overlapping 1 = without overlapping 2 = delay 1s	0	0	2
P4	Maximum setpoint temperature	30°C	0°C	35°C
P5	Minimum setpoint temperature	16°C	-19°C	24°C
P7	Delay for activating the output 6 after output 2 is ON (It´s not valid when **tu** = 0)	0s	0s	60s
P8	Enable decimal point to flash in blackout mode (Not flashing = **0**; Flashing = **1**)	1	0	1
P9	Delay for activating the output 3 after output 2 is ON (It´s not valid when **tu** = 0) (It´s not valid when defrost ON)	0s	0s	6s
PA	Automatic ventilation control parameter	4°C	1°C	6°C
dC	Temperature differential for refrigeration	1°C	1°C	4°C
dt	Temperature differential for heating	1°C	1°C	6°C
dH	Difference from setpoint and heating setpoint	4°C	1°C	4°C
SL	Default visualization (Temperature = **0**; Setpoint = **1**)	1	0	1
tu	Ventilation mode 0 = 3 speeds (mode relay) 5 = PWM (6 speeds)	5	0	5
Pu	Ventilation differential to 6 speeds (PWM)	0.5	0.5	1.0
Pb	Delay for activating the output 3 after output 6 is ON (It´s not valid when **tu** = 0)	0s	0s	10s
Py	Minimum external temperature to allow the compressor to turn ON	5°C	5°C	10°C
td	Defrost ON period	2min	0	20min
tC	Minimum time that clutch stays ON before goes OFF and vice versa	60s	0s	60s
PH	Hysteresis between to turn off and to turn on (It´s not valid when defrost ON)	0min	0min	6min

Obs.: If **P4 = P5** the display will show the **bL** message upon *setpoint* temperature changing, indicating that the *setpoint* value is blocked.
Obs.: If **td = 0** Defrost for unlimited time.

Adjustment and Speed Control when tu=05

- When parameter tu=05, it is possible to adjust PWM speeds manually.

- To access the system parameters, press the and , simultaneously for 3 seconds.

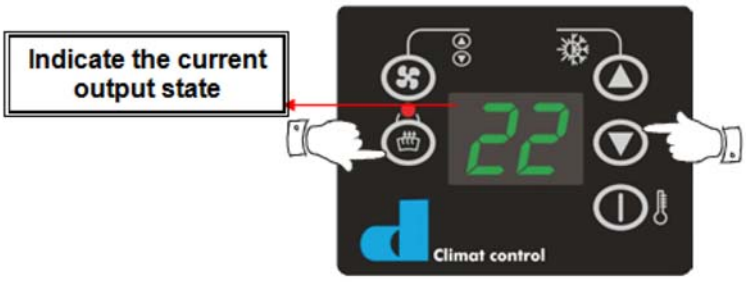
- To insert the password, press to change the left digit and to change the right digit.
- Enter password 27, then press to enter the parameters menu or press to exit the parameters.
- The first parameter is C0. To access other parameters press or .
- To view the parameter value, press , and to change the value press or .
- To return to the parameters view, press or to exit.

Parameter	Function	Def	Min	Max
C0	Duty signal	00	00	01
H1	PWM speed 1	27	00	99
H2	PWM speed 2	37	00	99
H3	PWM speed 3	50	00	99
H4	PWM speed 4	66	00	99
H5	PWM speed 5	81	00	99
H6	PWM speed 6	90	00	99

Output Visualization Mode

The panel allows the visualization of the output states in order to make it possible to check whether the outputs are activated or deactivated, during operation.

- To access the output visualization mode, press the and , simultaneously for 3 seconds.



- To insert the password, press to change the left digit and to change the right digit.
- Enter password 11, then press to enter the parameters menu or press to exit the parameters.
- To change the output visualization press or .
- To exit this mode press .
- The displays decimal point will represent the current state of the outputs in this mode of visualization.
- If it is lit, it indicates that it is activated

- if it is not lit, it indicates that it is not activated.

When tu = 0		When tu ≠ 0	
Indication	Description	Indication	Description
u1	Low speed evaporator output	u1	PWM speed 1
u2	Medium speed evaporator output	u2	PWM speed 2
u3	High speed evaporator output	u3	PWM speed 3
CL	Compressor output	u4	PWM speed 4
Ht	Heating output	u5	PWM speed 5
		u6	PWM speed 6
		CL	Compressor 1
		C2	Compressor 2
		C3	Compressor 3
		Ht	Heating output

Test Mode

Use this mode to test the outputs where it is possible to change their states.

- To access the test mode, press the and , simultaneously for 3 seconds.

- To insert the password, press to change the left digit and to change the right digit.
- Enter password 86, then press to enter the parameters menu or press to exit the parameters.
- The first parameter is u1. To access other tests press or .
- To enable an output, press , and to disable it press again.
- To exit this mode press .

Indication	Description
u1	Low speed evaporator output
u2	Medium speed evaporator output
u3	High speed evaporator output
u4	PWM 33%
u5	PWM 66%
u6	PWM 100%
Ht	Heating
CG	Gas charge (compressor and low speed evaporator)

Failures

Failure	Description	Action
F1	Internal Temperature Sensor	The controller assumes 22°C
F2	External Temperature Sensor	The controller assumes 22°C

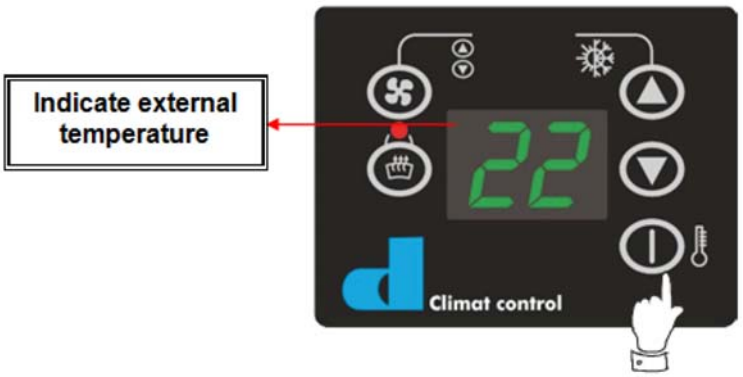
System Operation

Numeric Display

The display usually shows the vehicle's internal temperature or set-point, depending on the SL parameter. It also warns the operator when the system presents any failure.

Temperature Sensor

The vehicle's internal temperature will be automatically shown upon turning the device on if the SL parameter is equal to 0. The external temperature will be shown for 3 seconds by pressing for 3 second, and the displays decimal point will be ON.



Set-point

The set-point is the desired temperature inside the vehicle. Press or to adjust it. The set-point temperature will blink on the display. Press one of these buttons again until you obtain the temperature you want for inside the vehicle.

The set-point temperature will determine, along with the dC parameter, when the compressor and condenser will be activated. The set-point will also determine, along with the dH and dt parameters when the heating will be activated.

Ventilation

The ventilation will work even if the air conditioner function is not activated.

When tu=0, the panel works in three different speeds: u1 (low speed), u2 (medium speed), and u3 (hight speed). Initially the system will tart in Au mode, meaning automatic ventilation control, which will be controlled by the temperature set-point and the PA parameter.

When tu≠0,the panel works in 6 different speeds: u1-u6. Initially the system will start in Au mode, meaning automatic ventilation control, which will be controlled by the temperature set-point and the PA and Pu parameters.

To change the ventilation speed, press and then press or , selecting the desired speed or the automatic ventilation.

Automatic Ventilation (PWM) control descriptions on refrigeration

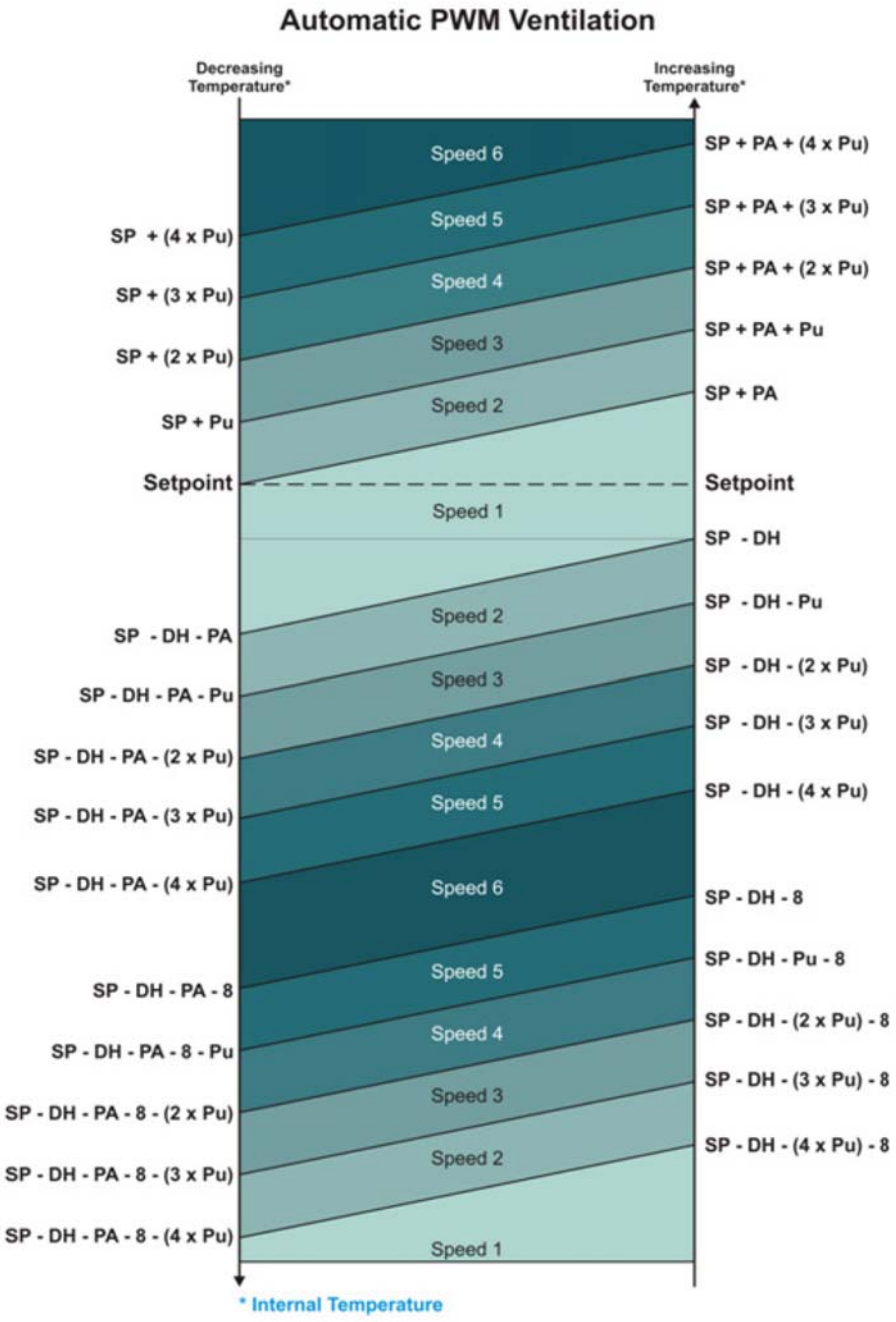
- Speed 1
  Tuns on when the current temperature is higher than the set-point
  Turns off when the current temperature is higher than set-point + PA
- Speed 2
  Turns on when the current temperature is higher than set-point + PA
  Turns off when the current temperature is lower than set-point

- Speed 3
  Turns on when the current temperature is higher than set-point +PA +Pu
  Turns off when the current temperature is lower than set-point + Pu
- Speed 4
  Turns on when the current temperature is higher than set-point + PA + (2xPu)
  Turns off when the current temperature is lower than set-point + (3xPu)
- Speed 5
  Turns on when the current temperature is higher than set-point + PA + (3xPu)
  Turns off when the current temperature is lower than set-point + (3xPu)
- Speed 6
  Turns on when the current temperature is higher than set-point + PA + (4xPu)
  Turns off when the current temperature is lower than set-point + (4xPu)

Automatic Ventilation (PWM) control description on Heating

- Speed 1
  Turns on when the current temperature is lower than set-point or lower than set-point-dH-8-(4xPu)
  Turns off when the current temperature is lower than set-point-dH-PA or higher than set-point-dH-8-(4xPu)
- Speed 2
  Turns on when the current temperature is lower than set-point-dH-PA or lower than set-point-dH-PA-e-(3xPu)
  Turns off when the current temperature is lower than set-point-dH or higher than set-point-dH-8-(3xPu)
- Speed 3
  Turns on when the current temperature is lower than set-point-dH-PA-Pu or lower than set-point-dH-PA-8-(2xPu)
  Turns off when the current temperature is lower than set-point-dH-Pu or higher than set-point-dH-8-(2xPu)
- Speed 4
  Turns on when the current temperature is lower than set-point-dH-PA-(2xPu) or lower than set-point-dH-PA-8-Pu
  Turns off when the current temperature is lower than set-point-dH-(2xPu) or higher than set-point-dH-8-Pu
- Speed 5
  Turns on when the current temperature is lower than set-point-dH-PA-(3xPu) or lower than set-point-dH-PA-8
  Turns off when the current temperature is lower than set-point-dH-(3xPu) or higher than set-point-dH-8
- Speed 6
  Turns on when the current temperature is lower than set-point-dH-PA-(4xPu) or higher than set-point-dH-8
  Turns off when the current temperature is higher than set-point-dH-(4xPu) or lower than set-point-dH-PA-8

Automatic PWM Ventilation Chart



Refrigeration

When the external temperature is lower than 41°f (5°C), the refrigeration will not be active

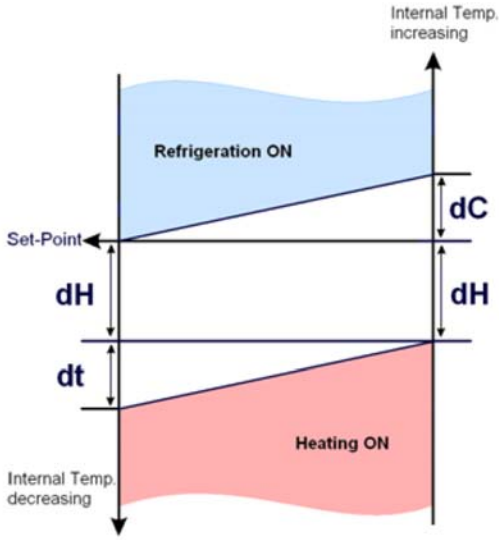
When the external temperature is equal or higher that 41°F (5°C), the refrigeration will be automatically turned on whenever the temperature is higher than the set-point + dC parameter. The refrigeration will be automatically turned off whenever the temperature is lower than the set-point or the external temperature is lower than 41°F (5°C).

The compressor has a minimum hysteresis time. This period is adjusted in the tC parameter.

7 - Climate Control

Heating

The eating will turn on whenever the temperature is lower than the set-point-dH-dt parameter. The heating will turn off whenever the temperature is greater than set-point-dH.



Graphic demonstrating the refrigeration and heating control as function of internal temperature.

****The refrigeration will be automatically turned off when the external temperature is lower than 5ºC.***

Defrost

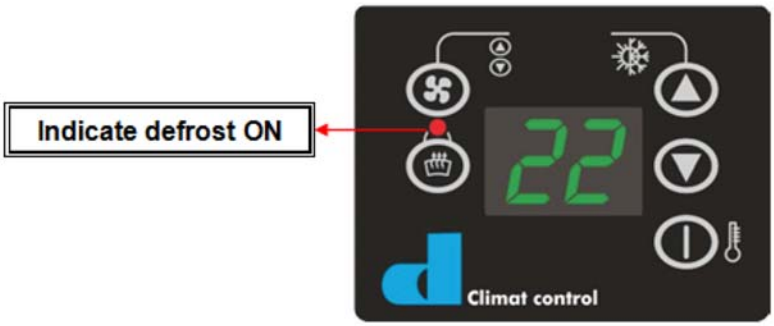
The defrost control is done manually by pressing .

Refrigeration and heating will turn on together, on high ventilation. The refrigeration will turn off when the external temperature is lower than 41°F (5°C)

To change the ventilation speed, press and then press or , selecting the desired speed for defrost.

The ON period of defrost is adjusted i the tD parameter.

Once the ON period of defrost is over, the system returns to the previous status.



The defrost LED will be ON during this cycle. At the end, it will flash twice.

Gas Charge

Allows turning the compressor on independently of the current temperature or set-point. It turns the compressor and the condenser on, as well as the evaporator in low speed. It has gas charge purposes and can only be activated in Test Mode.

Luminosity Control (Light Switch)

	Light Switch	
Indication	**ON**	**OFF**
A/C ON	Display on with normal luminosity	Display off and the standby point always on
A/C OFF	Standby decimal point intermittent with normal luminosity	Display off and standby point blinking intermittently.

The parameter **P8** enables the flashing for decimal point.

Warranty policy and conditions

HARDI® NORTH AMERICA INC. , 1500 West 76th Street, Davenport, Iowa, USA hereinafter called "HARDI®", offers the following limited warranty in accordance with the provisions below to each original retail purchaser of its own manufacturer, from an authorized HARDI® dealer that such equipment is at the time of delivery to such purchaser, free from defects in material and workmanship and that such equipment will be warranted for a period of one year from the time of delivery to the end user, providing the machine is used and serviced in accordance with the recommendations in the Operator's Manual and is operated under normal farm conditions.

HARDI®'s extended standard 3 year warranty and optional 5 year warranty is underwritten by Ag Guard, 21295 Hollingsworth Road, Tonganoxie, KS 66086, AgGuard.com. All warranty decisions after the first year are at the sole discretion of Ag Guard.

Standard 3 year and optional 5 year self-propelled warranty.

POWER TRAIN covers components that produce, transmit or control engine horsepower for propelling the machine (e.g. engine, engine electronic controls/sensors, turbo, water pump, fuel injection, drive-line couplers/shafts, U-joints, transfer gears, differential, transmission, final drives, axles, hydro, creeper, PTO, etc.).

POWER TRAIN + HYDRAULIC SYSTEMS includes Power train coverage plus hydraulic systems, parts and components associated with steering and implement control (e.g. tanks, pumps, coolers, motors, controls, sensors, valves, cylinders, accumulators, hoses/lines, couplers, swivels, filter bases, etc.).

POWER TRAIN + HYDRAULIC SYSTEMS + PLATFORM includes Power train + Hydraulic Systems coverage plus additional mechanical, electrical and structural components..

Model	Coverage	Terms	Hours	Deductible
Alpha	PT & Hydraulics	3 Years	1,000	$500.00
Alpha	PT & Hydraulics	5 years	2,000	$500.00
SARITOR	PT & Hydraulics	3 years	1,000	$500.00
SARITOR	PT & Hydraulics	5 Years	2,000	$500.00
PRESIDIO	PT & Hydraulics	3 Years	1,000	$500.00
PRESIDIO	PT & Hydraulics	5 Years	2,000	$500.00

1. This limited warranty is subject to the following exceptions:

   a) Parts of the machine not manufactured by HARDI®, (i.e. engines, tires, tubes, electronic controls and other components or trade accessories, etc.) are not covered by this warranty but are subject to the warranty of the original manufacturer. Any claim falling into this category will be taken up with the manufacturer concerned.

   b) This warranty will be withdrawn if any equipment has been used for purposes other than for which it was intended or if it has been misused, neglected, or damaged by accident, let out on hire or furnished by a rental agency. Nor can claims be accepted if parts other than those manufactured by HARDI® have been incorporated in any of our equipment. Further, HARDI® shall not be responsible for damage in transit or handling by any common carrier and under no circumstances within or without the warranty period will HARDI® be liable for damages of loss of use, or damages resulting from delay or any consequential damage.

2. We cannot be held responsible for loss of livestock, loss of crops, loss because of delays in harvesting or any other expense or loss incurred for labor, supplies, substitute machinery, rental for any other reason, or for injuries either to the owner or to a third party, nor can we be called upon to be responsible for labor charges, other than originally agreed, incurred in the removal or replacement of components.

3. The customer will be responsible for and bear the costs of:

   a) Normal maintenance such as greasing, maintenance of oil levels, minor adjustments including the boom.

   b) Transportation of any HARDI® product to and from where the warranty work is to be performed.

   c) Dealer travel time to and from the machine or to deliver and return the machine from the service workshop for repair unless otherwise dictated by state law.

   d) Dealer traveling costs.

4. Parts defined as normal wearing items, (i.e. Tires, Valves and O-rings) are not in any way covered under this warranty.

5. This warranty will not apply to any product which is altered or modified without the express written permission of the HARDI® Service and Engineering Departments and/or repaired by anyone other than an Authorized HARDI® Dealer.

6. Warranty is dependent upon the strict observance by the purchaser of the following provisions:

   a) That this warranty may not be assigned or transferred to anyone.

   b) That the Warranty Registration Certificate has been correctly completed by dealer and purchaser with their names and addresses, dated, signed and returned to the appropriate address as given on the Warranty Registration Certificate within 30 days of delivery to the purchaser.

   c) That all safety instructions in the operator's manual shall be followed and all safety guards regularly inspected and replaced where necessary.

7. This warranty is non-transferable.

8. Subject to the following terms, conditions and contributions, HARDI® extends the warranty on polyethylene tanks (excluding fittings, lids and gaskets) to FIVE YEARS. To qualify for this extended warranty, the tank must be drained and flushed with fresh water after each day's use. HARDI®'s liability is limited to replacement of defective parts FOB our plant in Davenport, IA at no cost to the purchaser for the first twelve months after date of purchase; at 20% of the then current retail price during the second year; at 40% during the third year; at 60% during the fourth year; and at 80% during the fifth year. This extended warranty is subject, in each instance, to the tank being inspected and approved for replacement or repair by HARDI® personnel before HARDI® will accept any liability hereunder.

9. HARDI® reserves the right to incorporate any change in design in its products without obligation to make such changes on units previously manufactured.

10. The judgement of the HARDI® Service Department in all cases of claims under this warranty shall be final and conclusive and the purchaser agrees to accept its decisions on all questions as to defect and the repair or exchange of any part or parts.

11. No employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by the CEO of HARDI® NORTH AMERICA INC. Approval of warranty is the responsibility of the HARDI® Service Department.

12. Any warranty work performed which will exceed $1000.00 MUST be approved IN ADVANCE by the Service Department. Warranty claims filed without prior approval will be returned.

13. ANY pump replacement MUST be approved by the HARDI® Service Department.

14. Claims under this policy MUST be filed with the HARDI® Service Department within thirty (30) days of when the work is performed or warranty shall be void unless prior arrangements are made.

15. Parts which are requested for return by the HARDI® Service Department must be returned prepaid within thirty (30) days for warranty settlement.

16. Warranty claims must be COMPLETELY filled out including part numbers and quantities or claims will be returned to the submitting dealer.

DISCLAIMER OF FURTHER WARRANTY

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, EXCEPT AS SET FORTH ABOVE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE PRODUCT CONTAINED HEREIN. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES (SUCH AS LOSS OF ANTICIPATED PROFITS) IN CONNECTION WITH THE RETAIL PURCHASER'S USE OF THE PRODUCT.