CLAAS

CLAAS COMPONENT NUMBER

Technical support **Arion 430-410**	**Diagnostics – Edition 11.2009**
	Reference n° 00 1139 729 0

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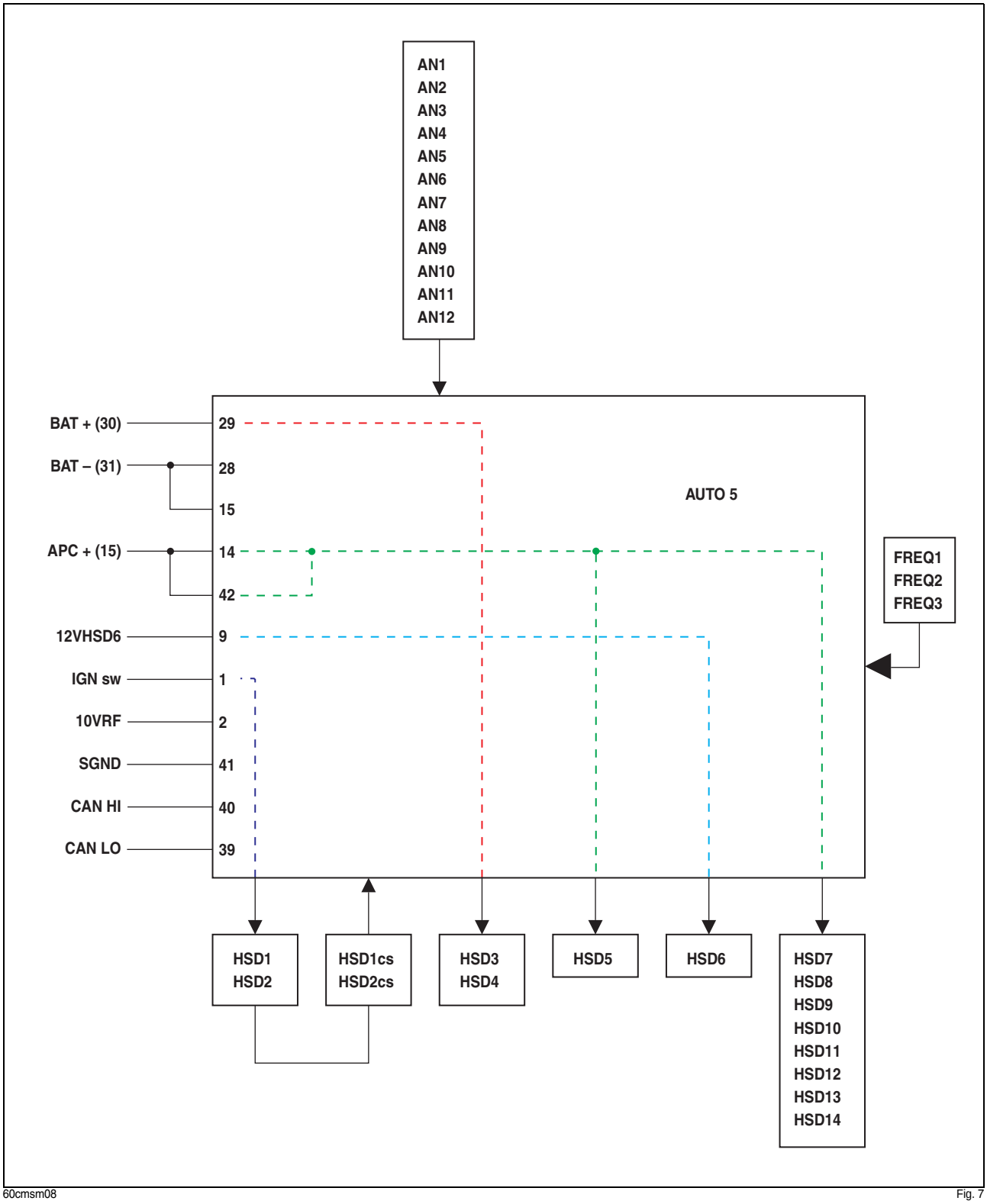
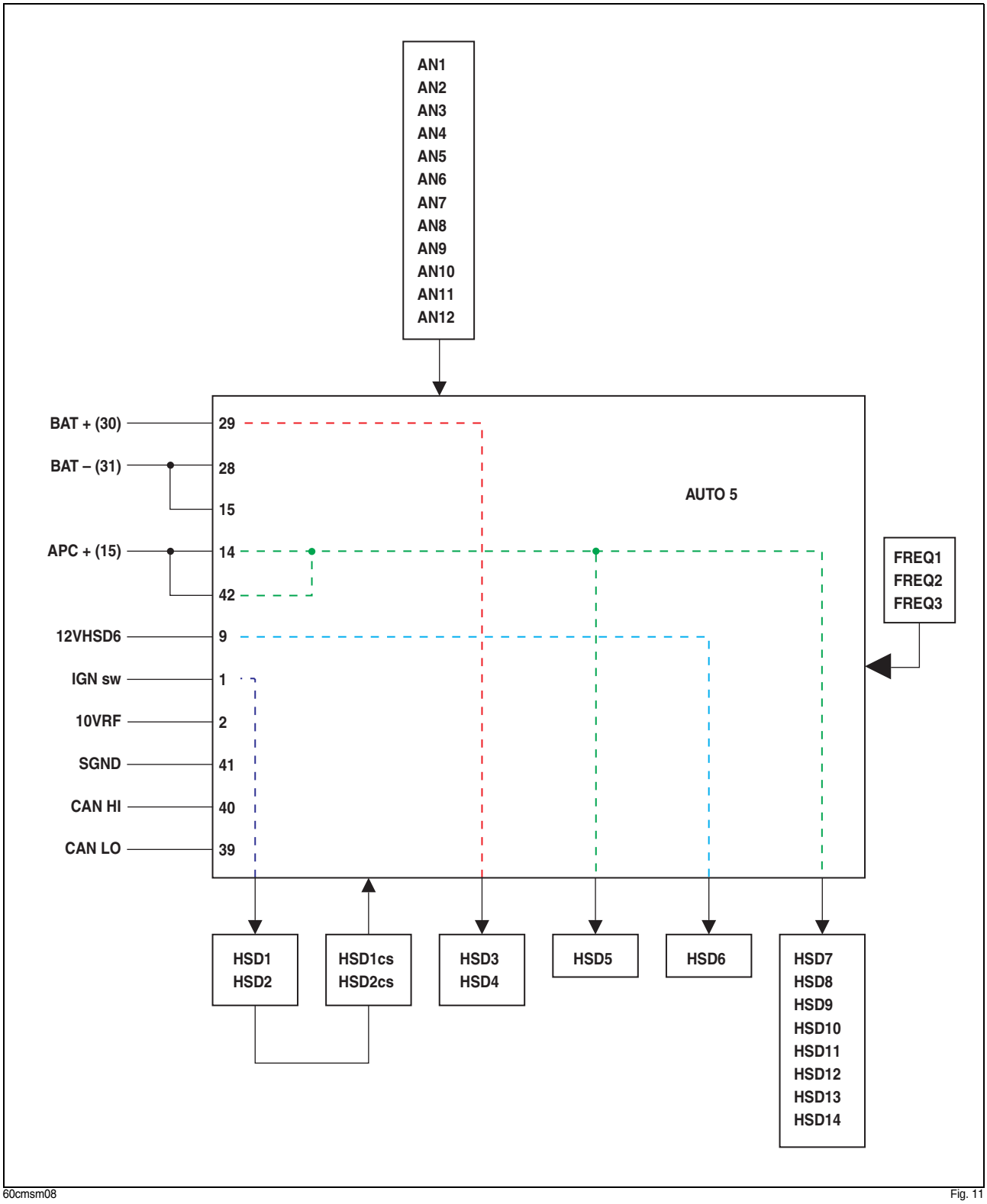
Schematic diagram



60cmsm08 Fig. 7

Schematic diagram



60cmsm08 Fig. 11

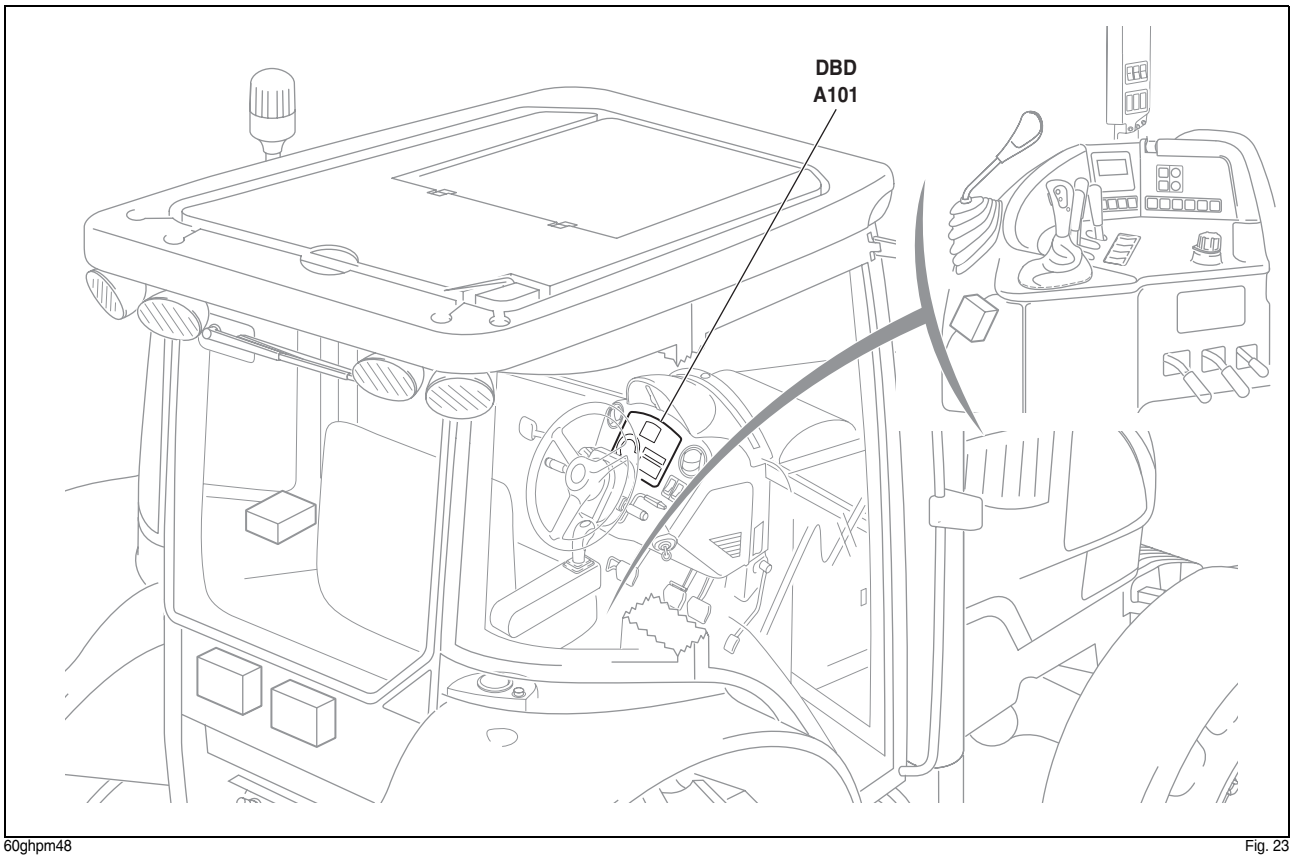
Inputs/outputs

Connector		Type	Nature	Function	Component		State	Test conditions	
Ref	Terminal				Nature	Ref		Condition 1	Condition 2
J173	1	—	—	—	—	—	—	—	—
	2	—	—	—	—	—	—	—	—
	3	—	—	—	—	—	—	—	—
	4	—	—	—	—	—	—	—	—
	5	—	—	—	—	—	—	—	—
	6	—	—	—	—	—	—	—	—
	7	—	—	—	—	—	—	—	—
	8	—	—	—	—	—	—	—	—
	9	Input	Supply	Power supply of the 23 pin	Control	S114	12 V	Master switch on	Rear power take-off engaging command actuated
					Relays	RL15		—	Relay in auto maintain status
							0 V	—	Engaging command non actuated and relay non maintained
	10	—	—	—	—	—	—	—	—
	11	—	—	—	—	—	—	—	—
	12	—	—	—	—	—	—	—	—
	13	—	—	—	—	—	—	—	—
	14	Supply	12 V (15)	Power supply of the 10, 11, 12, 13, 22, 24, 25, 26, 27 terminals	Key operated ignition	S64	12 V	Master switch on	—
	15		(31) earth	(31) earth supply	Battery	G1	0 V	Permanent	—
	16	Input	Information	Rear power take-off stopped	Relays	RL11	12 V	Master switch on	Relay in auto maintain status
					Switch	S114 U53-1 U53-2	0 V		One rear power take-off stop command actuated

Connector		Type	Nature	Function	Component		State	Test conditions	
Ref	Terminal				Nature	Ref		Condition 1	Condition 2
J191	14	Supply	12 V (15)	Power supply of the 10, 11, 12, 13, 22, 24, 25, 26, 27 terminals	Key operated ignition	S64	12 V	Master switch on	—
	15		(31) earth	—	Battery	G1	0 V	Permanent	—
	16	Input	Information	RH draft	Sensor	B144-2	5 V	Master switch on	Without mechanical load on lower lifting bars
	17			Mode selector	Lifting console	V22	0 V		"high" position selector
							4,9 V		Selector in "stop" position
							3,95 V		Selector in "work" position
							3,6 V		Selector in "forced earthing" position
	18	—	—	—	—	—	—	—	—
	19	Input	Information	Sensitivity instruction	Lifting console	V22	9 V	Master switch on	Command in "0" position
							0,75 V		Command in "10" position
	20			Position setting			0,5 V		Command in "0" position
							9 V		Command in "10" position
	21			Events counter	Event counter socket	X36	5 V		Event non active
							12 V		Event active

Dashboard and "DBD A101" CAN network communication module

Description



60ghpm48 Fig. 23

The "DBD A101" dashboard module is of the "TDB5" or "TDB6" type. The module is integrated to the combined dashboard. The module has 3 connectors:

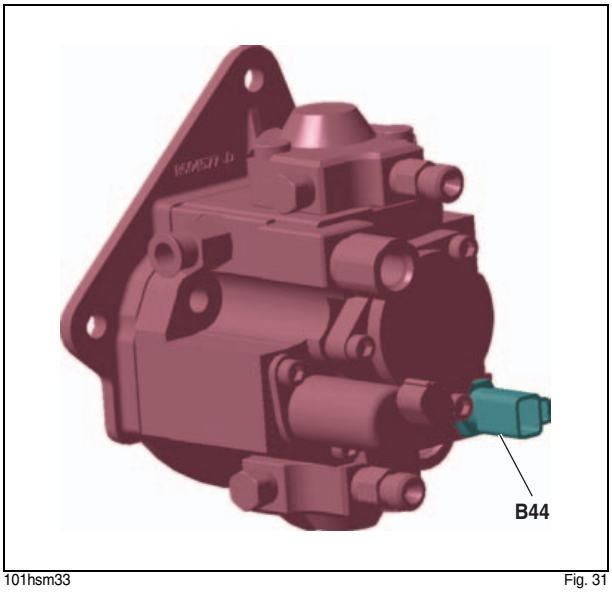
– 2 26-pin connectors.

– 1 red connector with 12 pins.

"B44" fuel temperature sensor

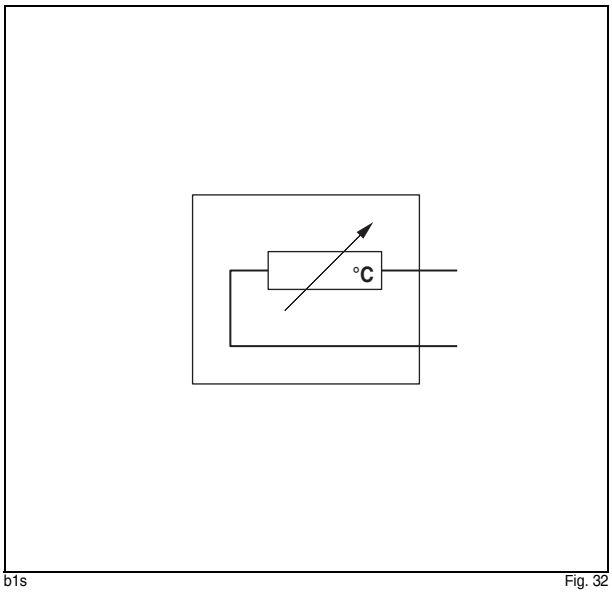
Description

The "B44" fuel temperature sensor is a negative temperature ratio thermistance. It is composed of 2 wires, a 5 V supply and a ground. Voltage varies with temperature.



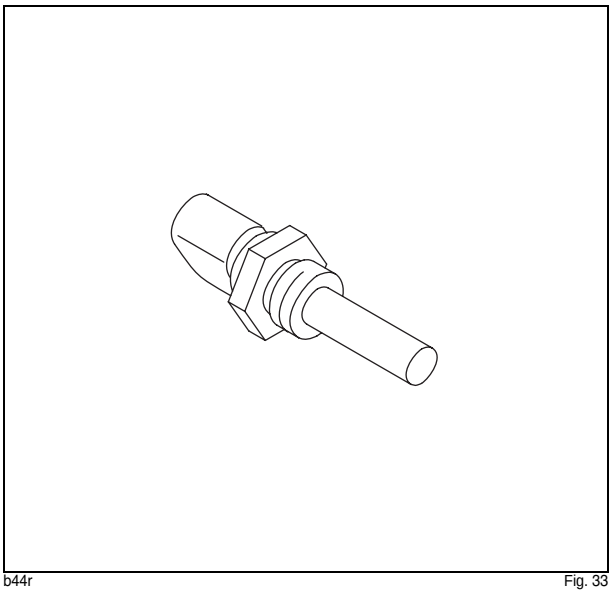
101hsm33 Fig. 31

Schematic diagram



b1s Fig. 32

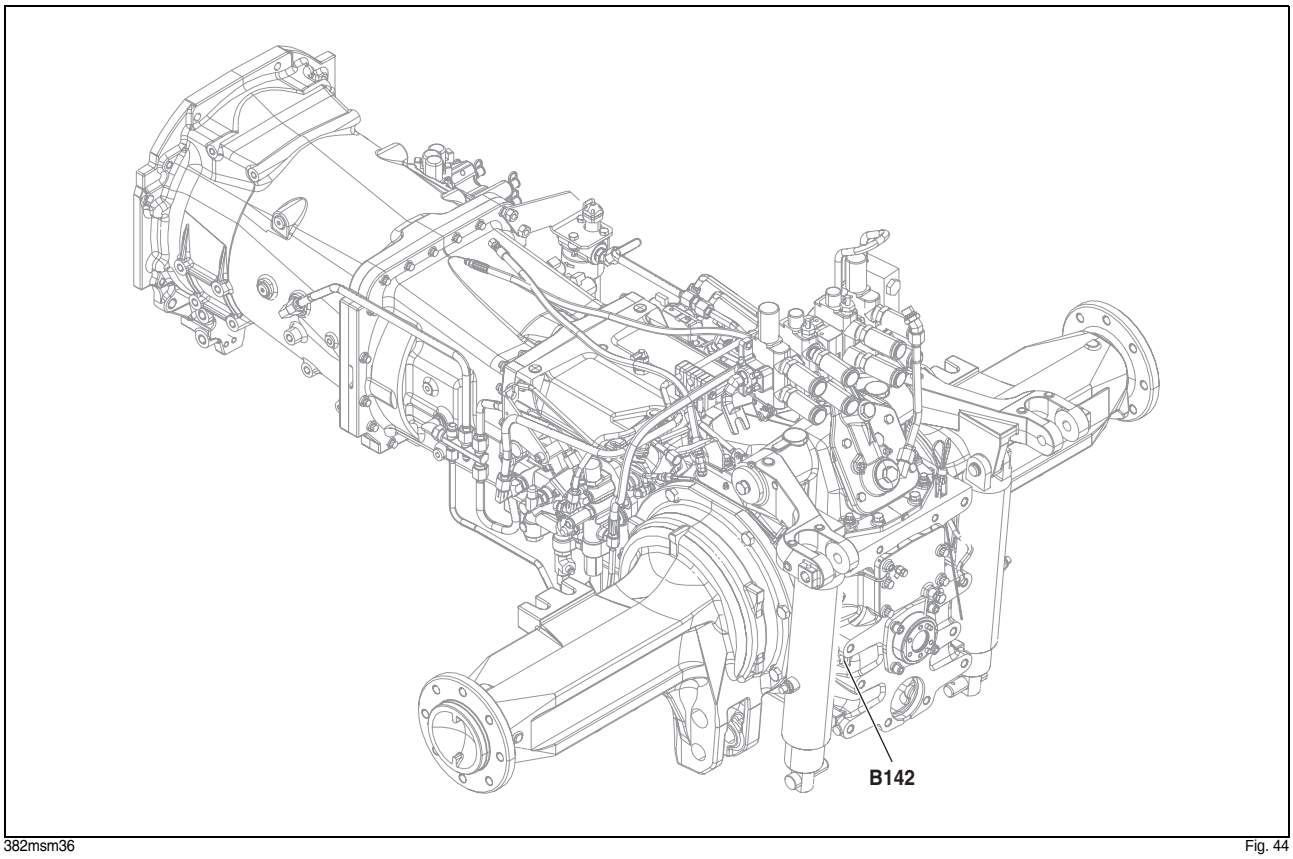
Representation



b44r Fig. 33

"B142" power take-off engine speed sensor

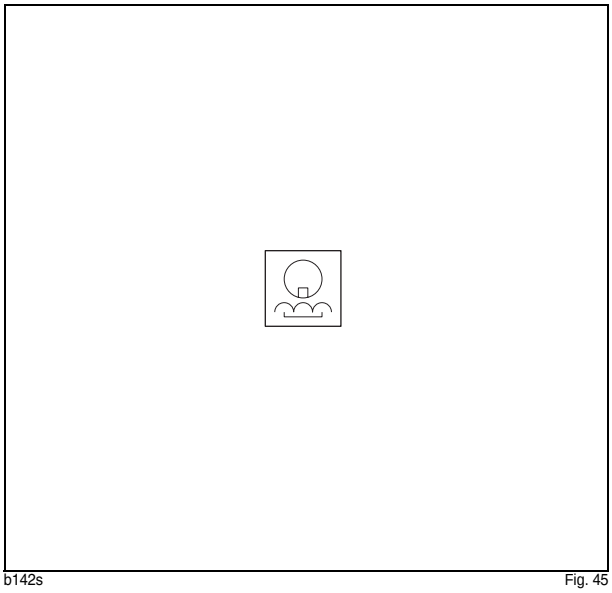
Description



382msm36 Fig. 44

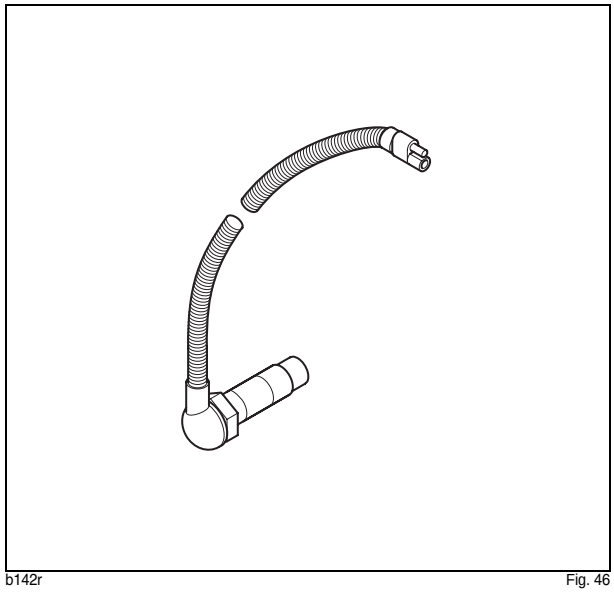
The "B142" power take-off engine speed sensor is of the inductive type. The power take-off sensor allows measuring speed at the exit of the power take-off shaft.

Schematic diagram



b142s Fig. 45

Representation



b142r Fig. 46

Measurements and checks

See 'Inductive pick-off' test method.

Frequency check

Test conditions:

– Air gap set to 1 ± 0,5 mm.

– Sensor disconnected.

– Engine started.

– (Example of measurement made on a Arion in gear "B1").

Engine speed (rpm)	Frequency measured (Hz)
850	21
1 000	25
1 200	29,3
1 400	35
1 600	40
1 800	45
2 000	49,5
2 200	54,5

Resistance check

Test condition: sensor disconnected and removed.

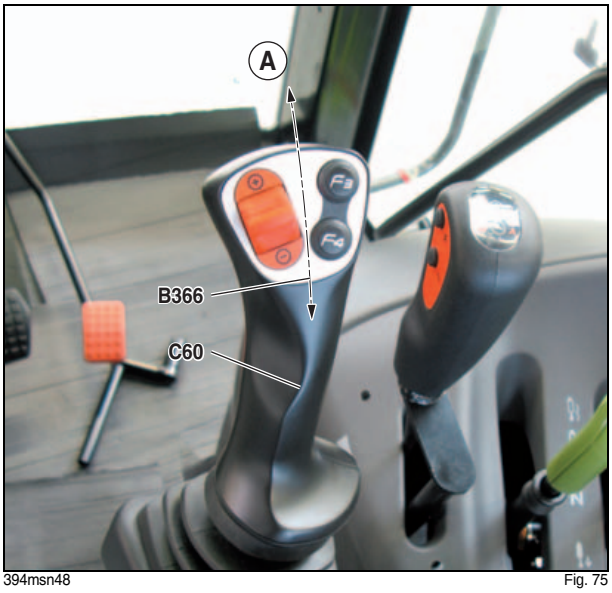
The sensor's resistor must be 450 ± 20 ohms.

Electrohydraulic valve (A) "B366" command

Description

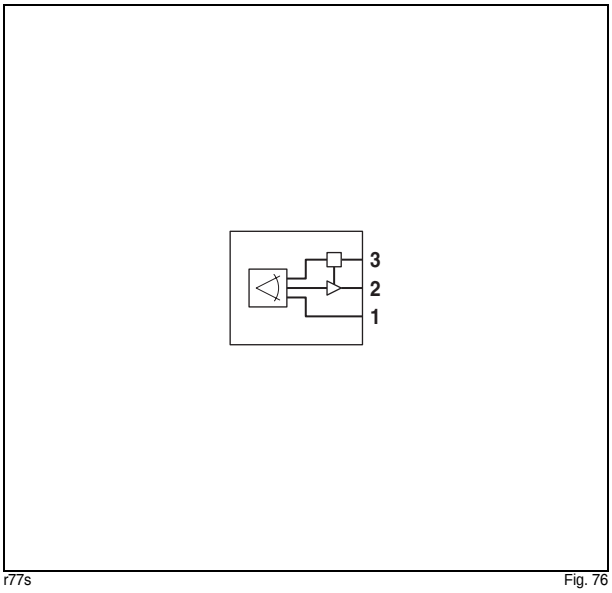
The command of the (A) "B366" electrohydraulic valve is integrated to the "C60" electrohydraulic cross command.

It has a 12V power supply, a ground, and a signal varying between 0V and 5V according to the command's position.



394msn48 Fig. 75

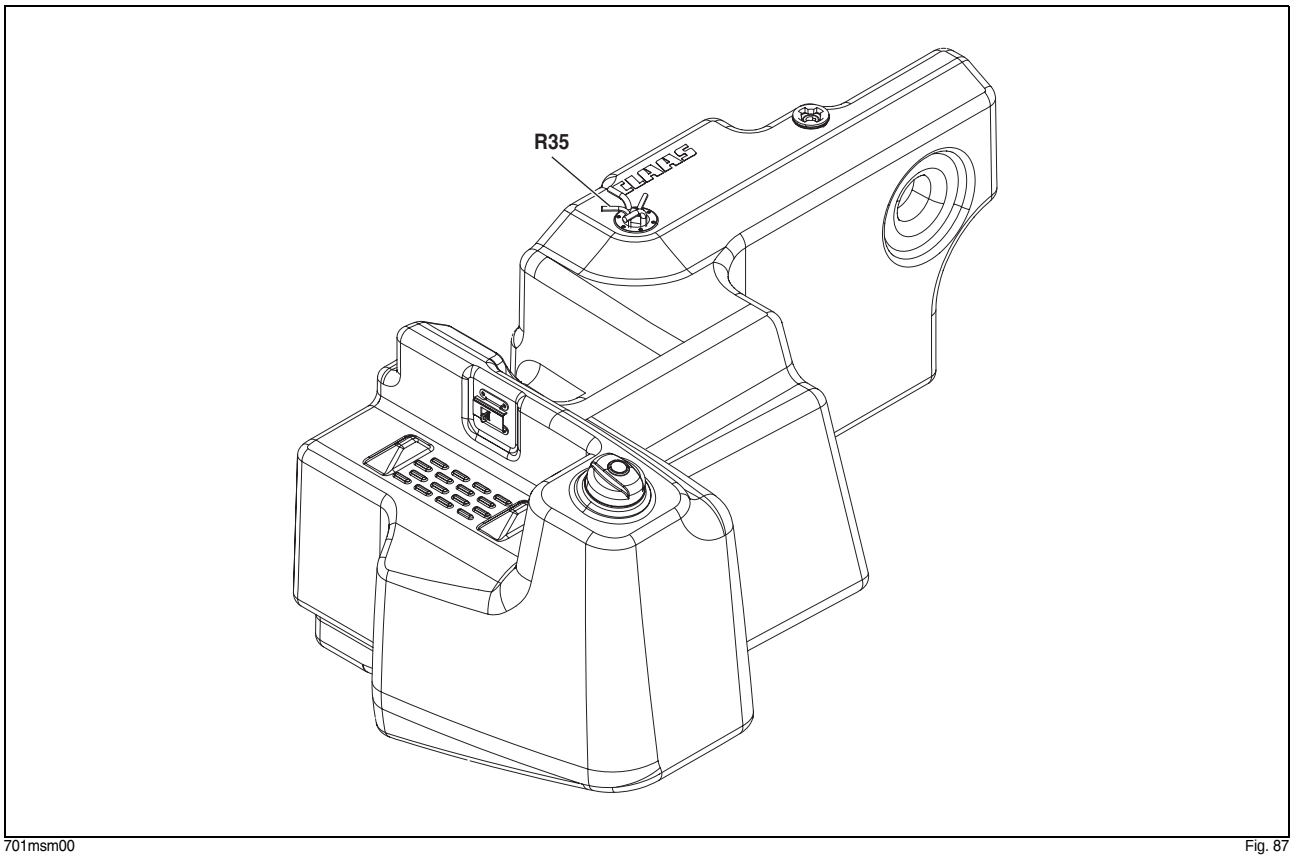
Schematic diagram



r77s Fig. 76

Fuel level "R35"

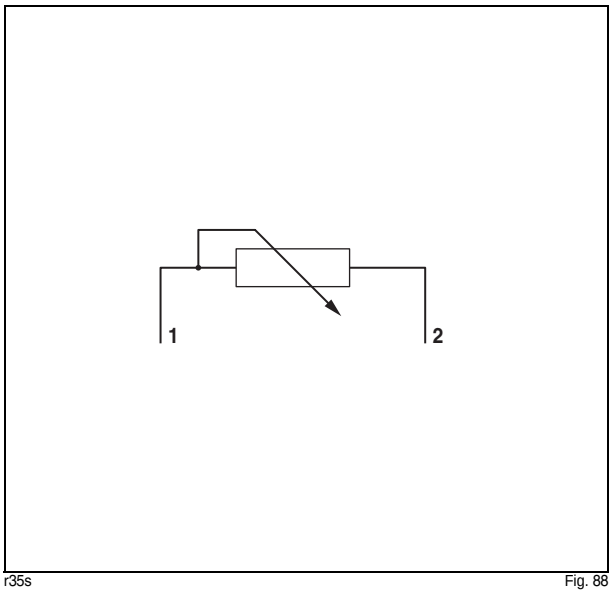
Description



701msm00 Fig. 87

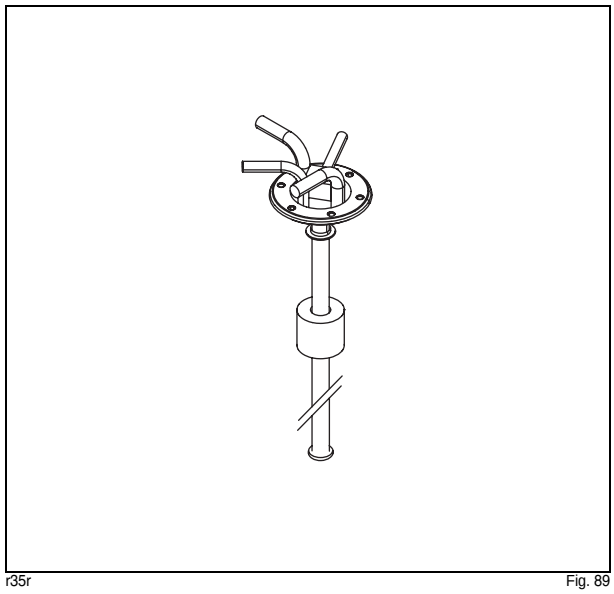
The fuel gauge “R35” is located in the main tank, on the left-hand side. The float's position inside the tank matches a resistance converted by the dashboard.

Schematic diagram



r35s Fig. 88

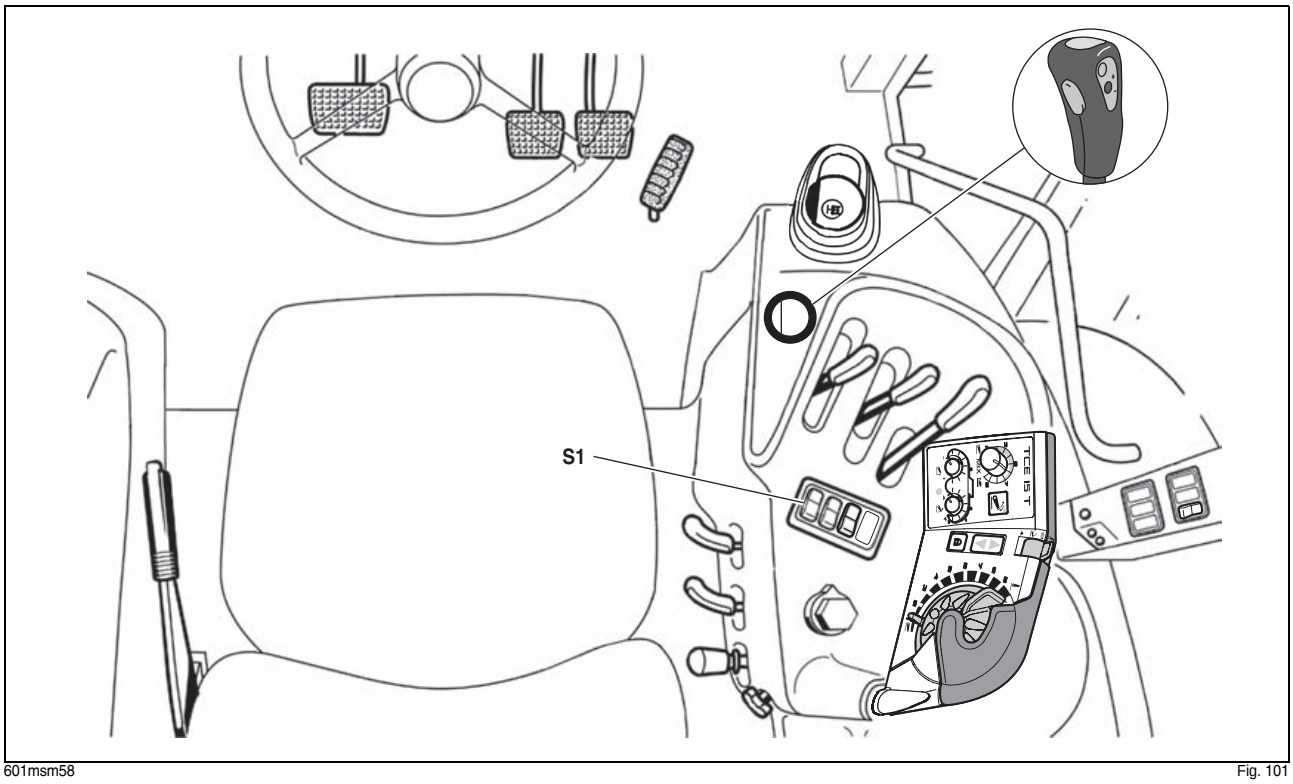
Representation



r35r Fig. 89

"S1" 4-wheel drive switch

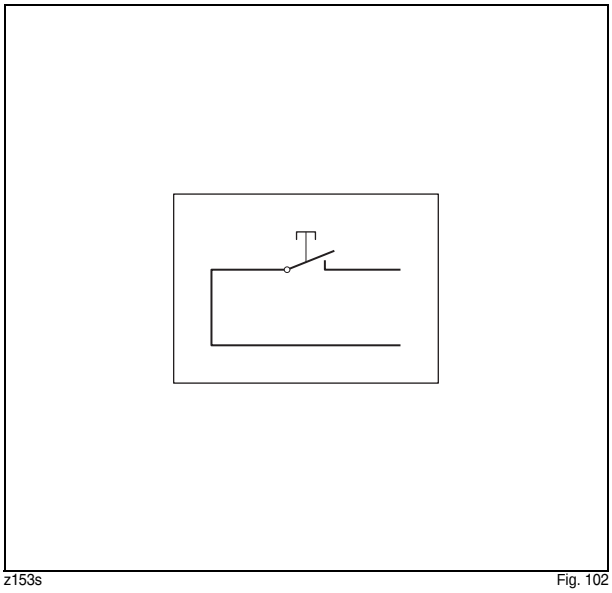
Description



601msm58 Fig. 101

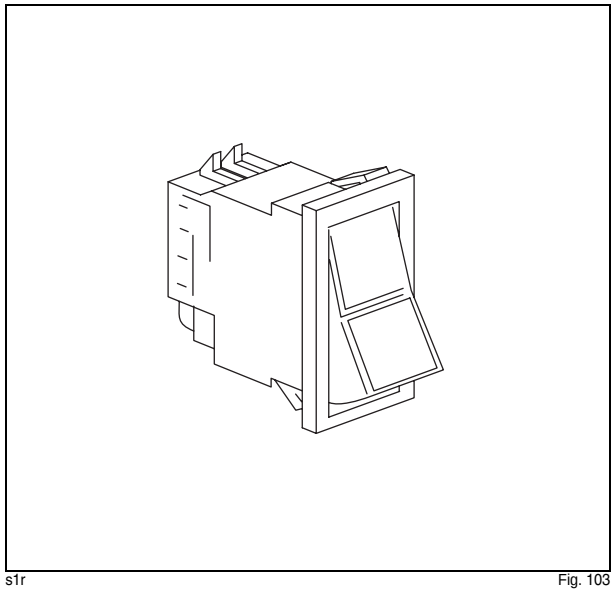
The “S1” 4-wheel drive switch is of the contact type on supply circuit.
The 4-wheel drive switch has 2 positions.

Schematic diagram



z153s Fig. 102

Representation

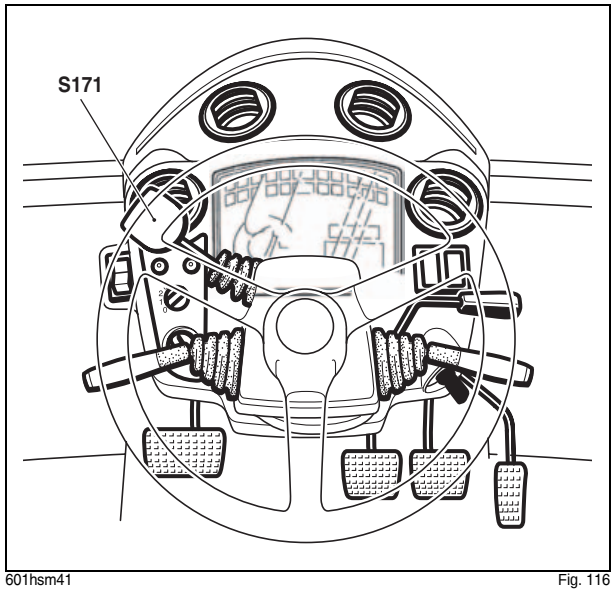


s1r Fig. 103

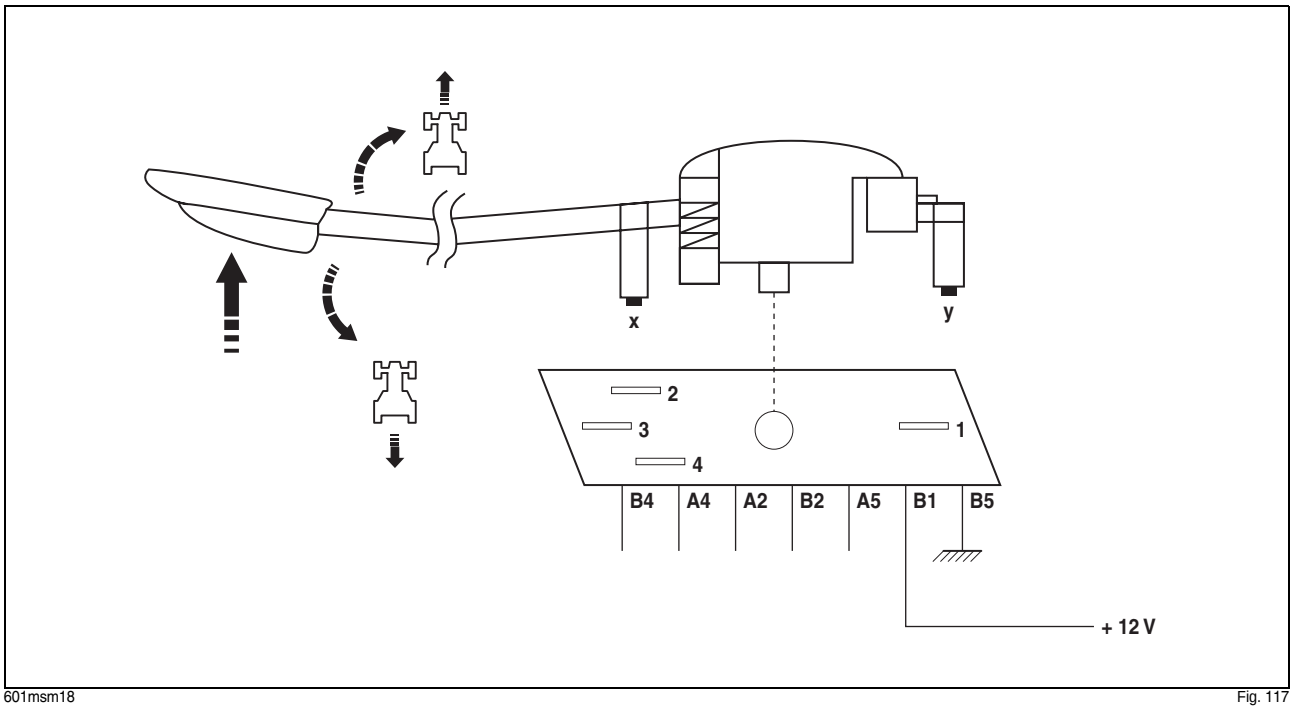
Forward/reverse lever “Revershift S171”

Description

The “Revershift S171” reverser lever is a control of the handle type. The lever assembly located under the steering wheel allows reversing the driving direction.



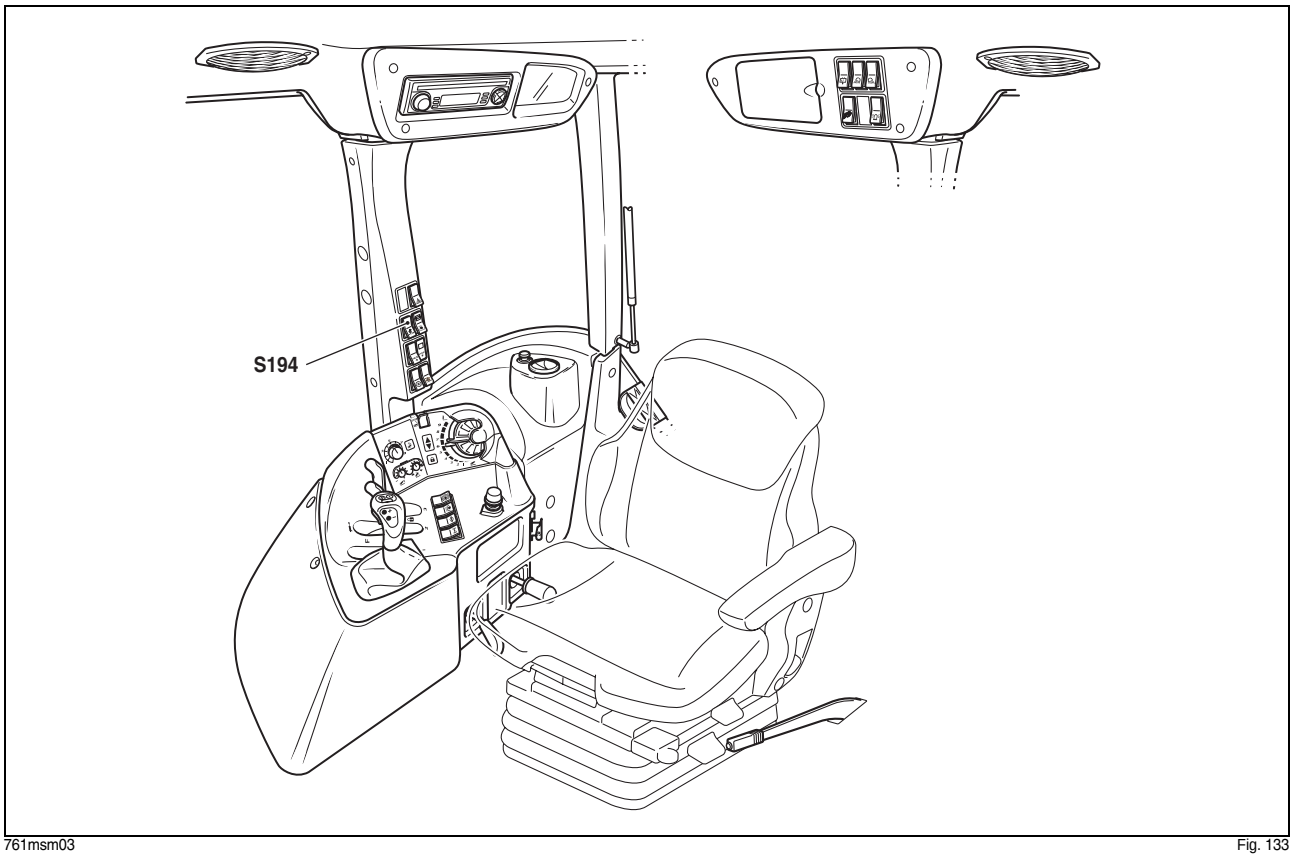
601hsm41 Fig. 116



601msm18 Fig. 117

Switch of the "S194" auxiliary hydraulics

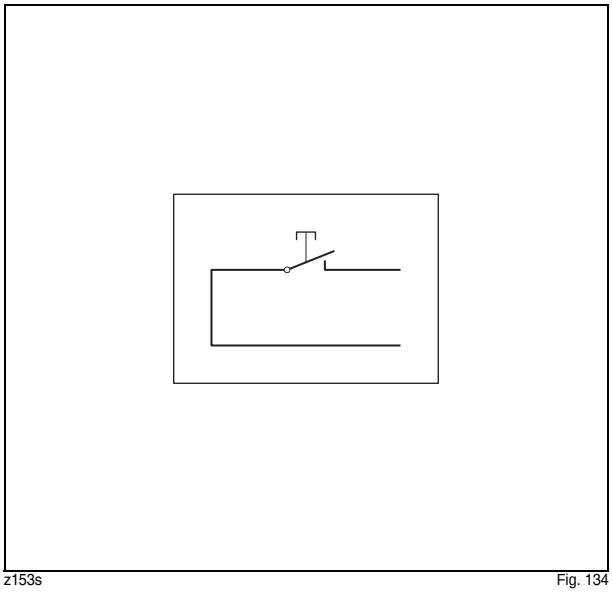
Description



761msm03 Fig. 133

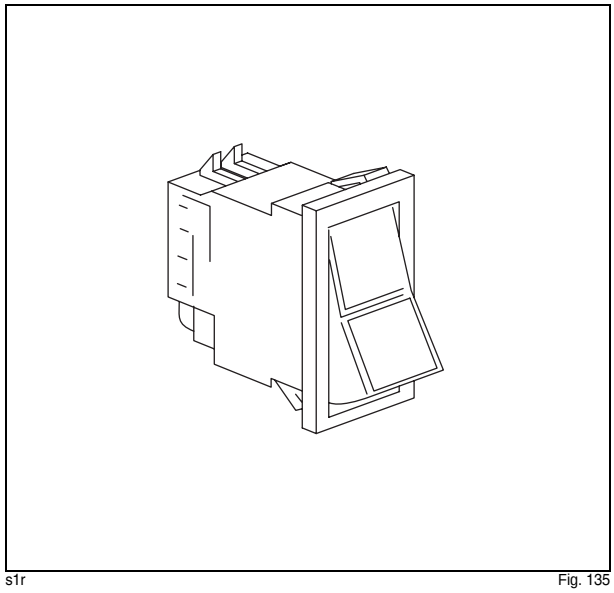
The “S194” auxiliary hydraulic switch is a pulse switch.

Schematic diagram



z153s Fig. 134

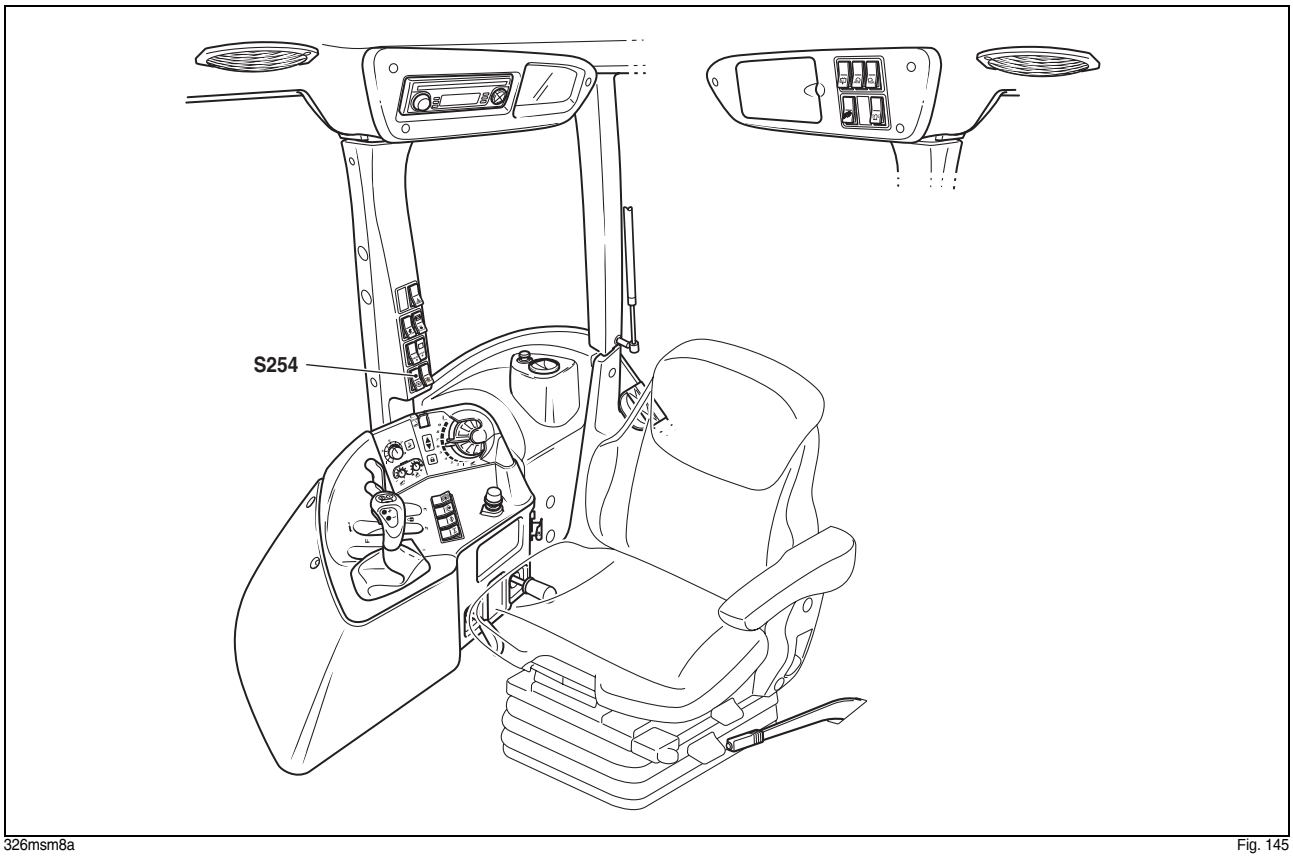
Representation



s1r Fig. 135

Switch of the “Quadractiv S254” function

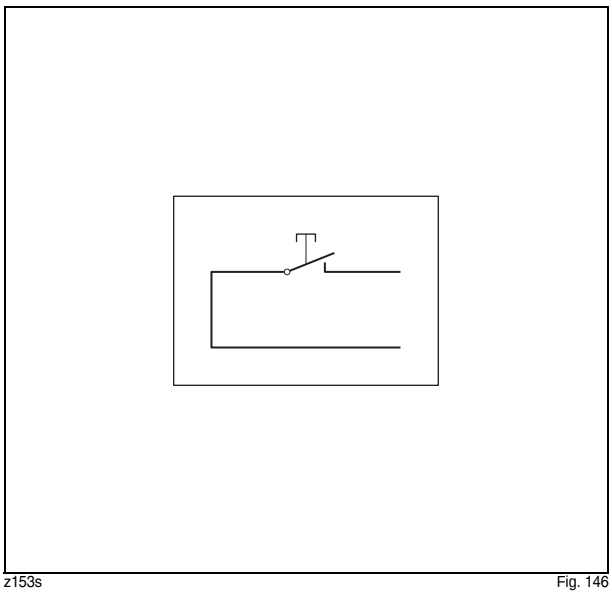
Description



326msm8a Fig. 145

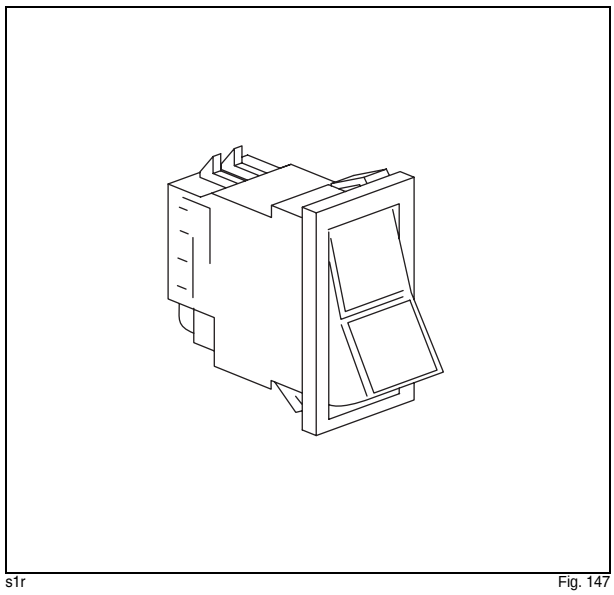
The switch of the “Quadractiv S254” function is a toggle switch. It is composed of 2 wires, a 12V power supply, and a signal from 0 to 12 V according to the mode engaged.

Schematic diagram



z153s Fig. 146

Representation



s1r Fig. 147

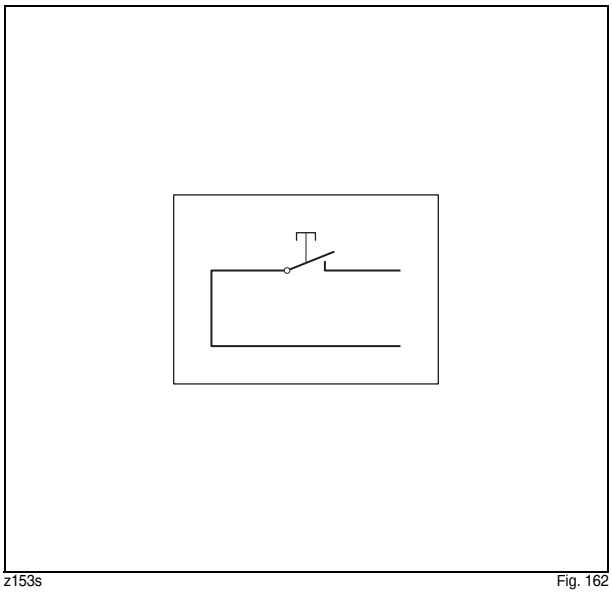
Rear contact of “U57”, “U58” rear lifting

Description

The up/down contacts on the rear left-hand fender “U57-1”, “U57-2” and the rear right-hand fender “U58-1”, “U58-2” allows commanding rear lifting from the outside. They are pulse contacts, normally open.

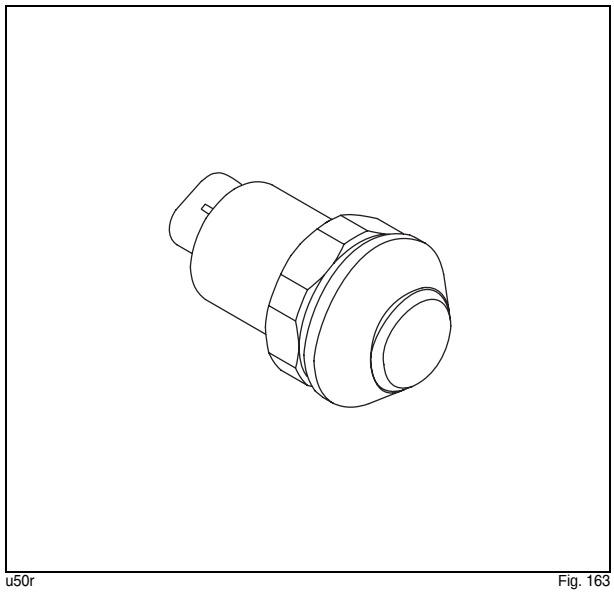
382msm72 Fig. 161

Schematic diagram



z153s Fig. 162

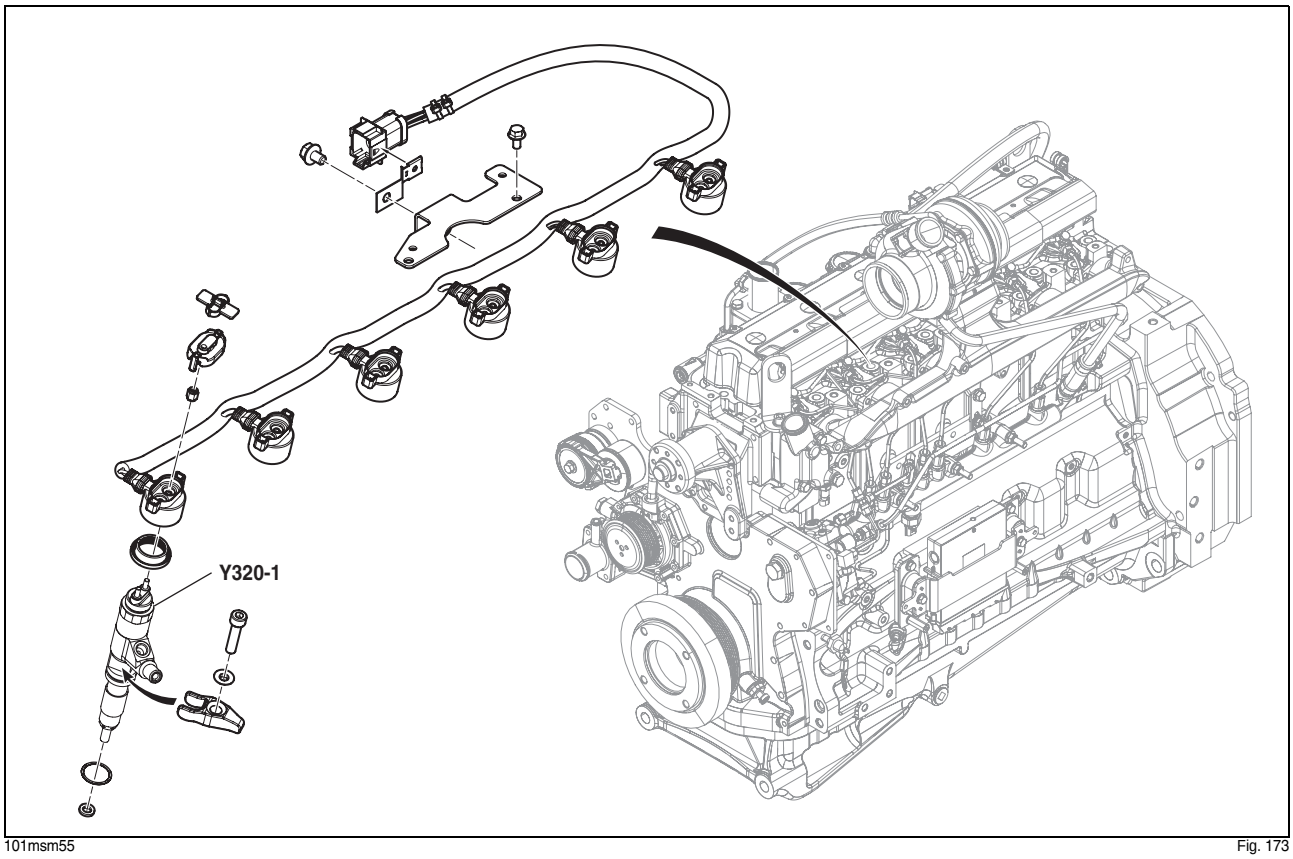
Representation



u50r Fig. 163

"Y320" electronic injector

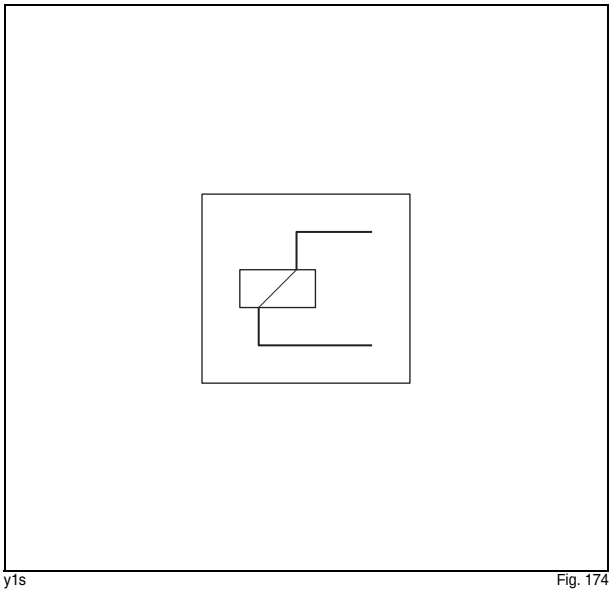
Description



101msm55 Fig. 173

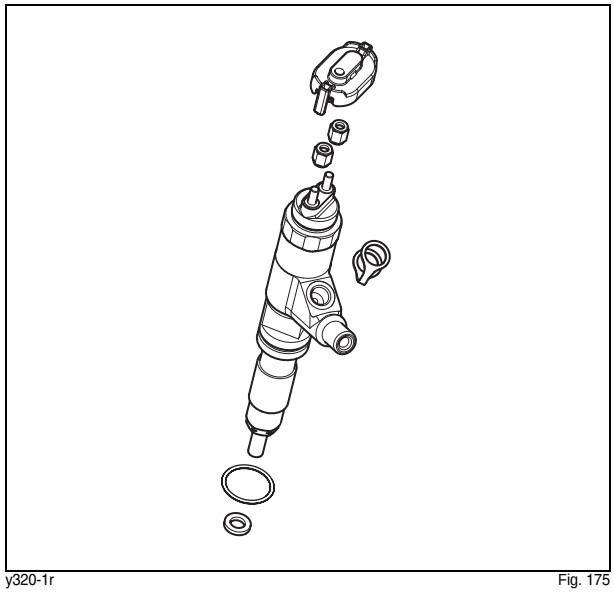
The "Y320" electronic injector is an all or nothing solenoid valve. It is composed of 2 wires, one 90V pulsed supply, and a ground. The opening time depends on demand.

Schematic diagram



y1s Fig. 174

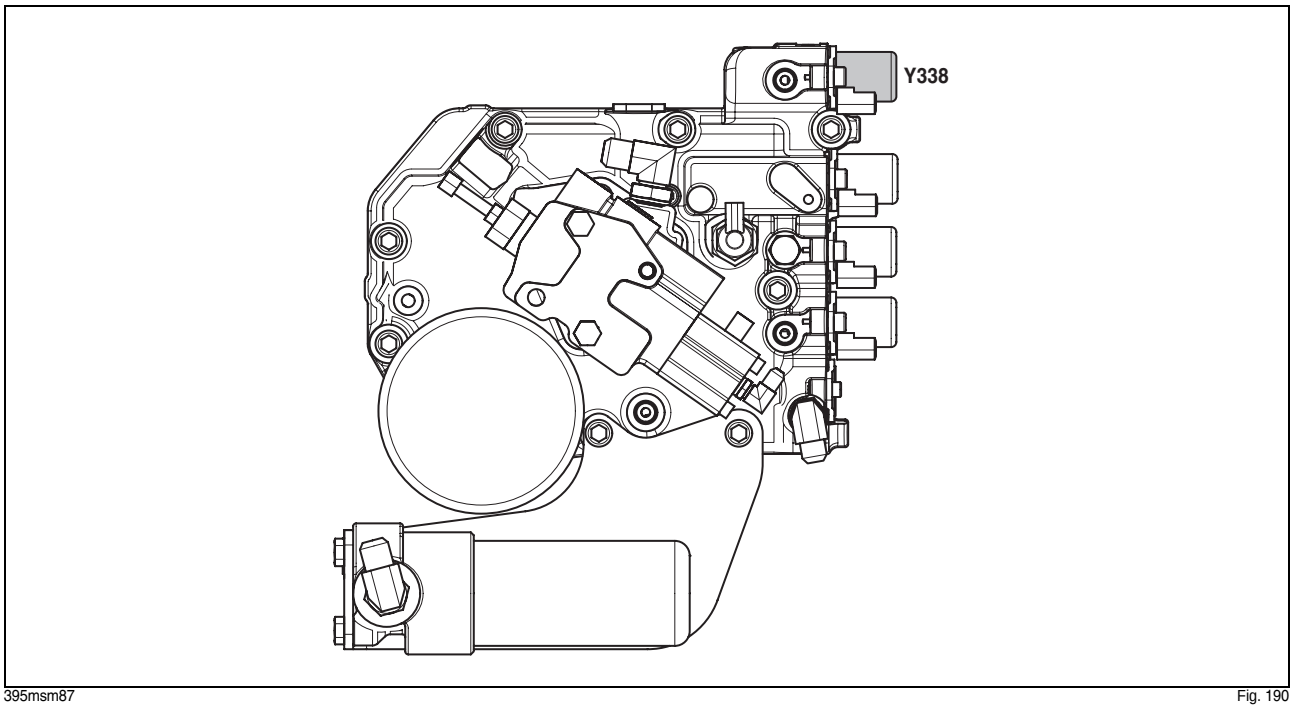
Representation



y320-1r Fig. 175

PTO brake solenoid valve “Y338”

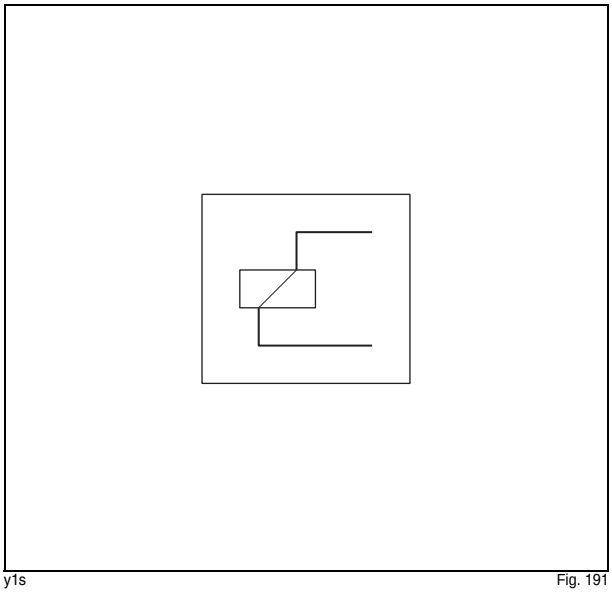
Description



395msm87 Fig. 190

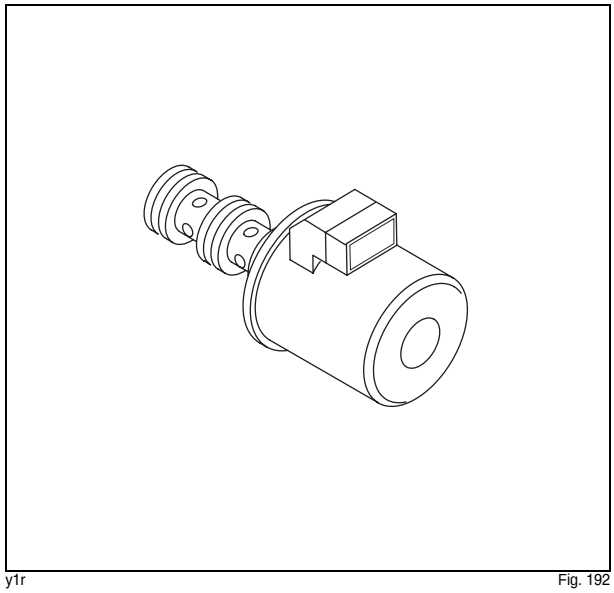
The “Y338” rear power take-off solenoid valve is of the all or nothing type. The rear power take-off brake solenoid valve is controlled by the “TR3 A57-3” module.

Schematic diagram



y1s Fig. 191

Representation

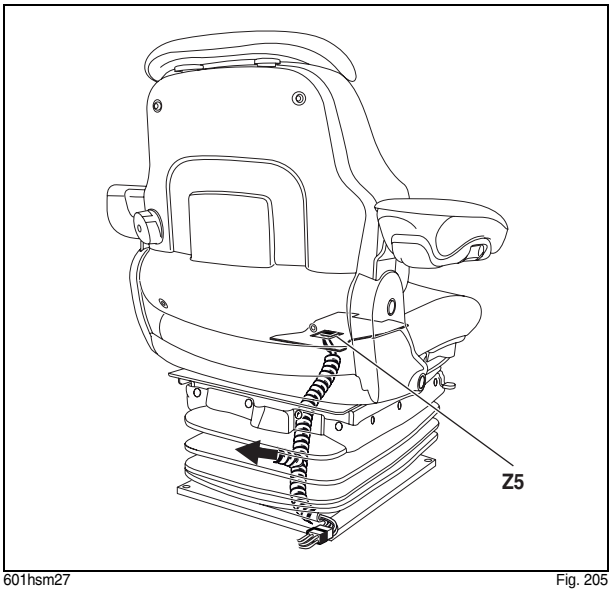


y1r Fig. 192

"Z5" presence contact

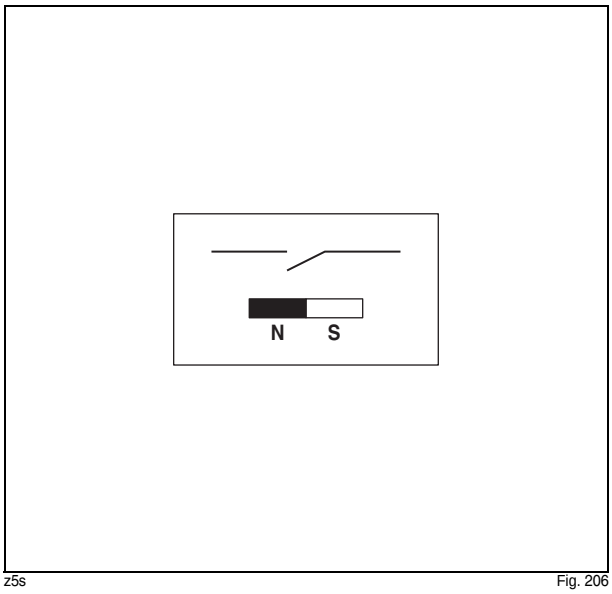
Description

The presence contact (seat) "Z5" is of the detection contact type and is located under the driver seat. The contact closes when a person weighing more than 35 kg is sitting on the driver's seat.



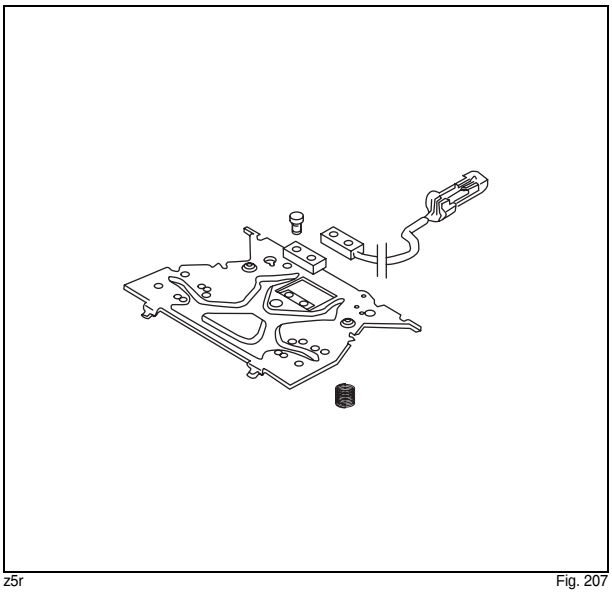
601hsm27 Fig. 205

Schematic diagram



z5s Fig. 206

Representation

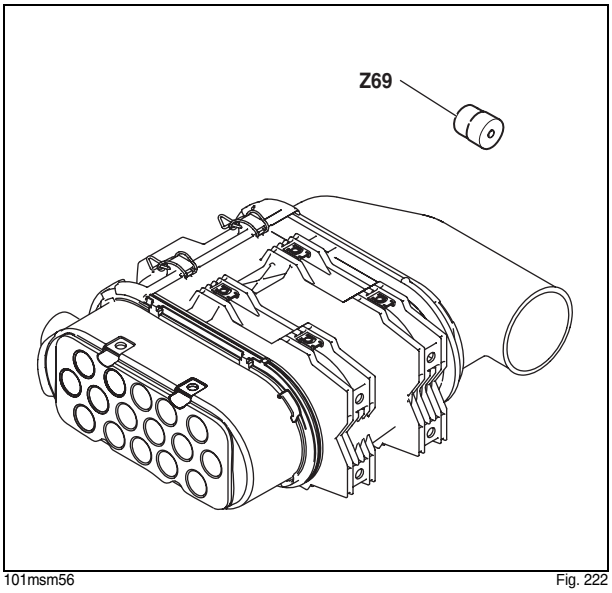


z5r Fig. 207

"Z69" air filter clogging contact

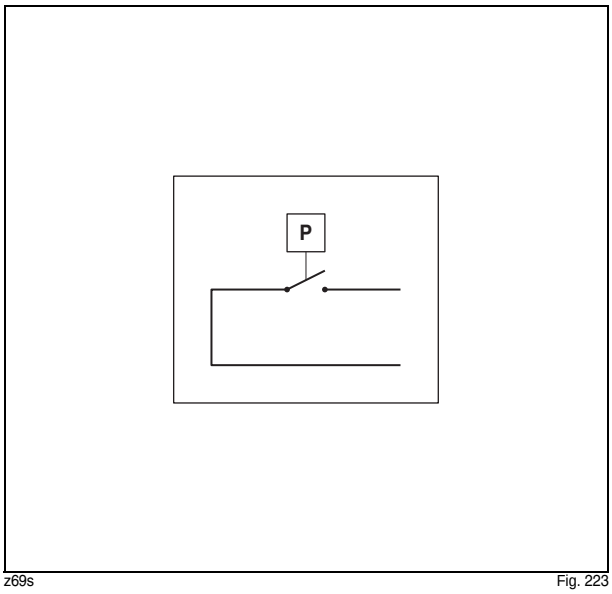
Description

The "Z69" air filter clogging contact is a contact on supply circuit. It is made of a 12V supply and a ground.



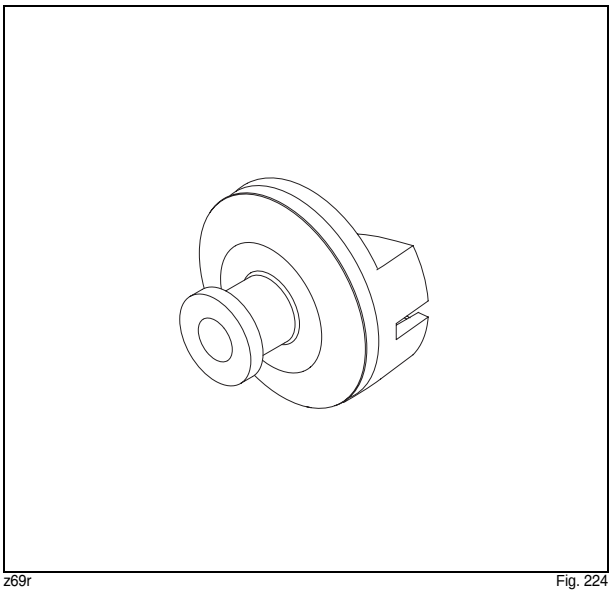
101msm56 Fig. 222

Schematic diagram



z69s Fig. 223

Representation



z69r Fig. 224

Measurements and checks

See 'Supply circuit contact' test method.

Power check

Test condition: Power on.

Connect the multimeter (voltmeter function) and bypass on the contact (see electric diagram for pin allocation). The supply voltage must be 12 V.

Continuity check

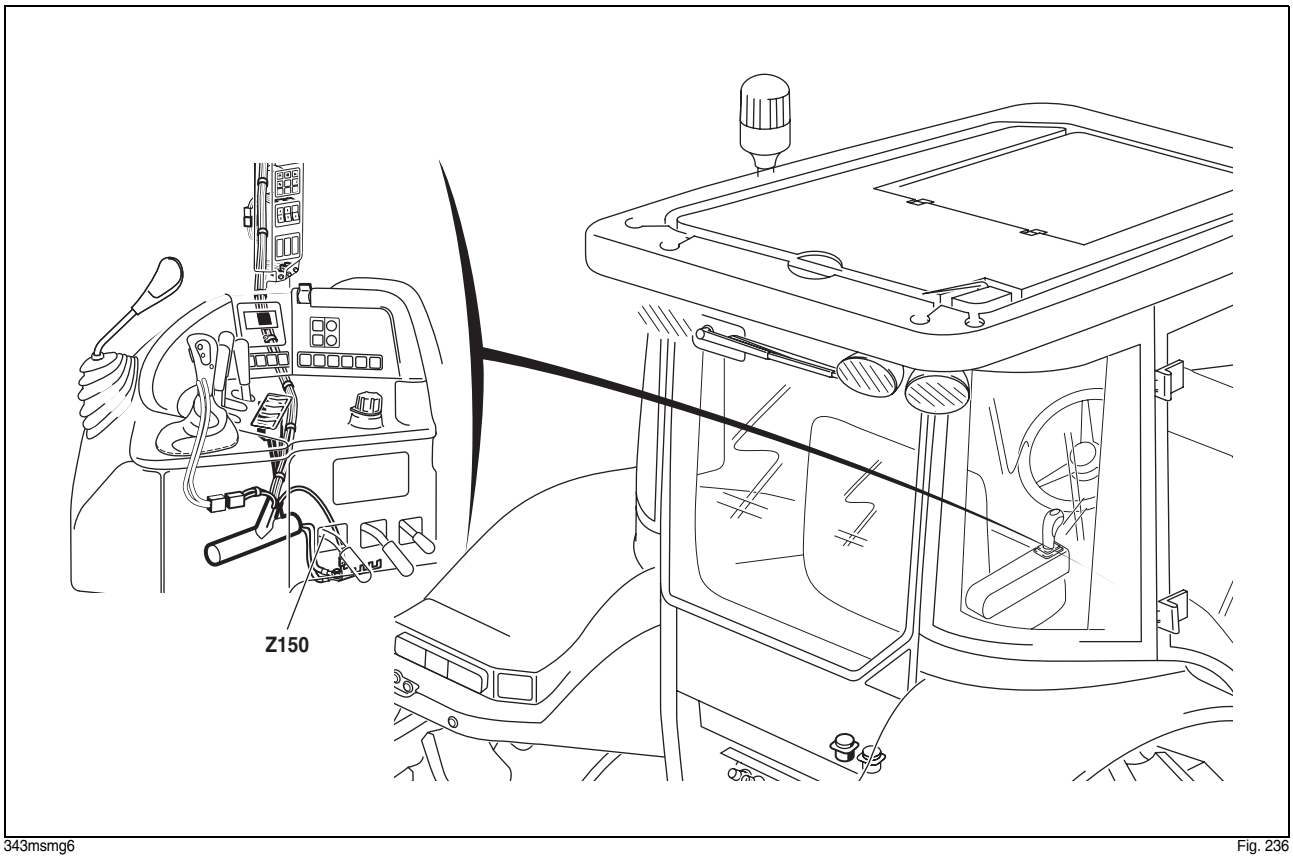
Test condition: Power off.

Connect the multimeter (ohmmeter) in bypass on the contact (see electric diagram for pin allocation).

Test condition	Selector state
Contactor at rest	Open circuit
Contact activated	Circuit closed

"Z150" slow range contact

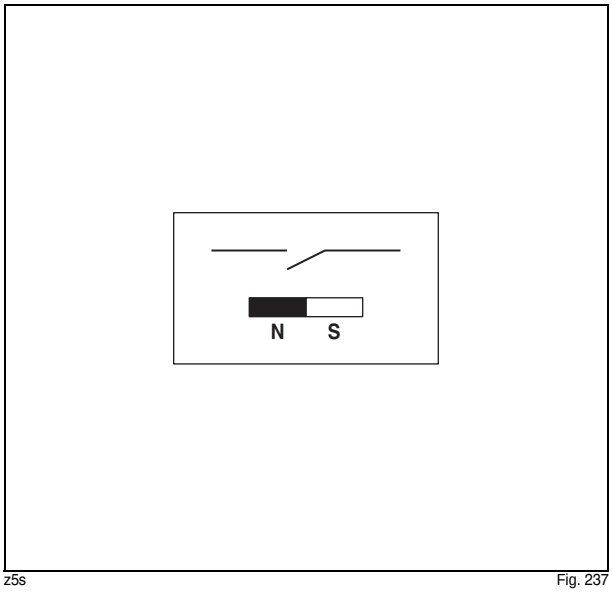
Description



343msmg6 Fig. 236

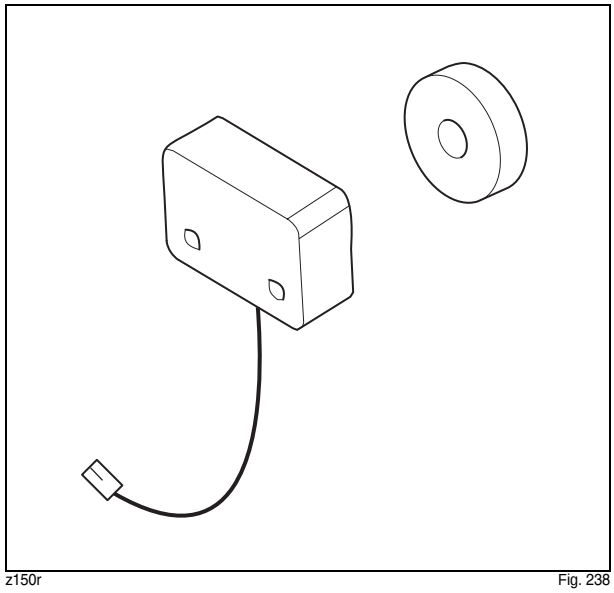
The "Z150" slow range contact is a flexible blade contact. It is composed of 2 wires, a 12V supply, and a 0 or 12V signal according to slow range engaging. These contacts are open when idle. It is actuated or not by the presence of a magnetic field.

Schematic diagram



z5s Fig. 237

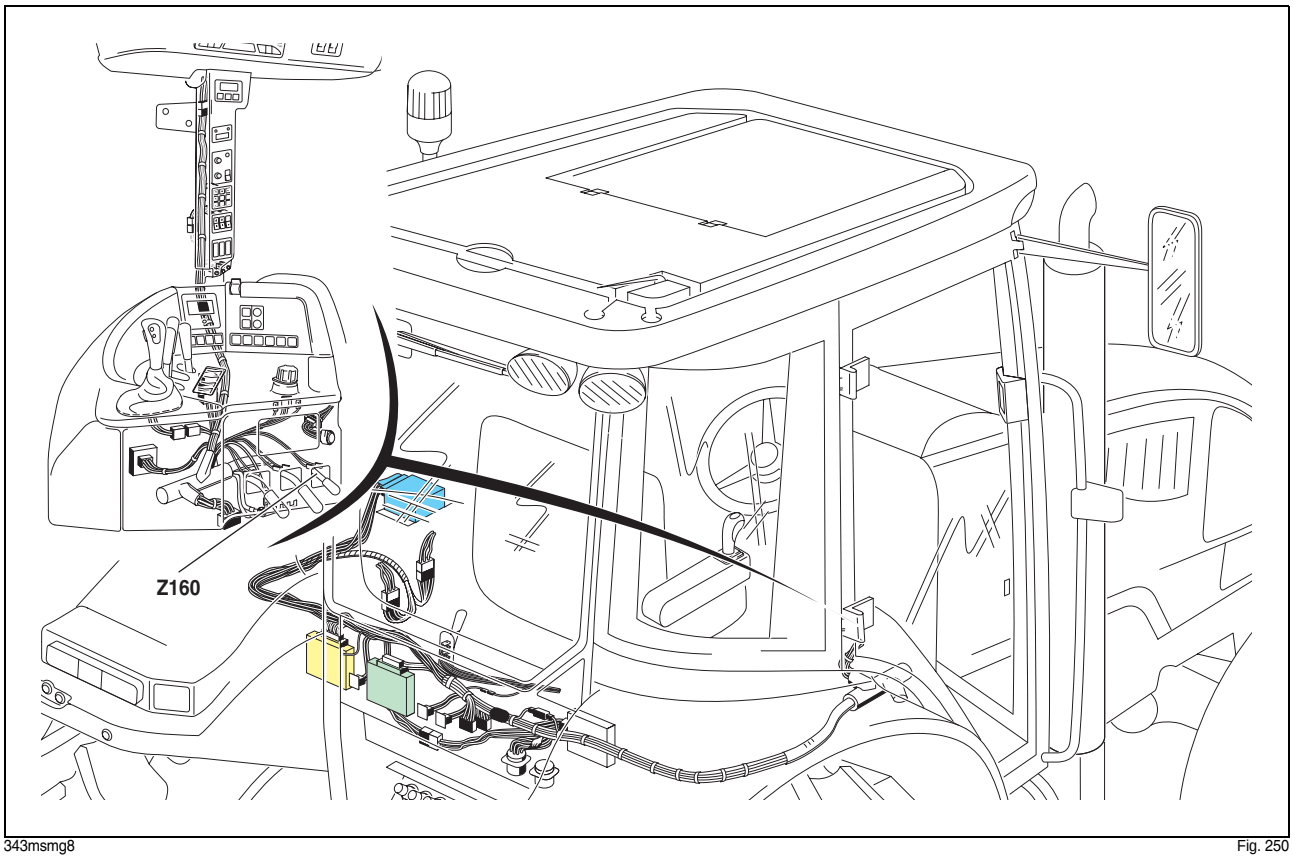
Representation



z150r Fig. 238

“Z160” 1 000 rev/min power take-off contact

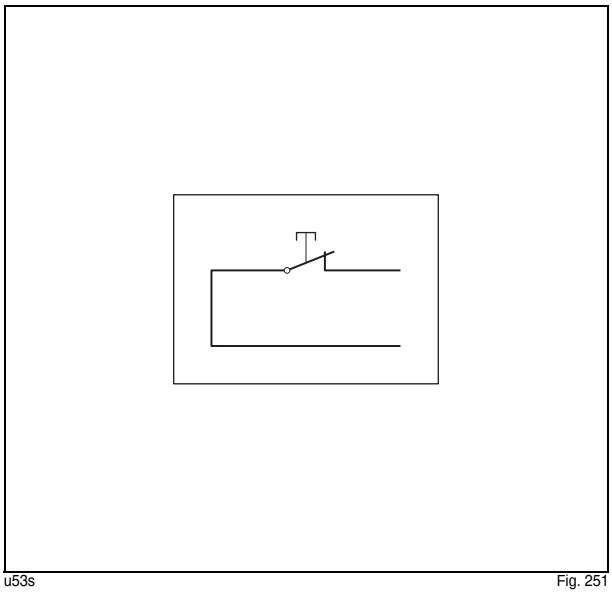
Description



343msmg8 Fig. 250

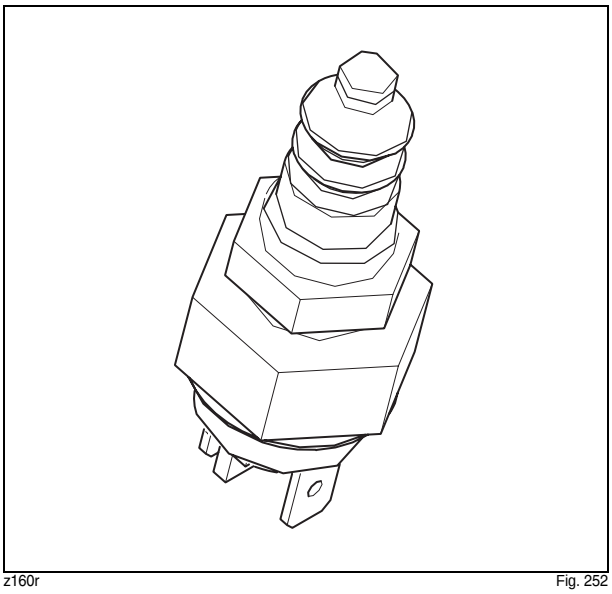
The “Z160” 1 000 rev/min PTO engaged contact is on the supply circuit.

Schematic diagram



u53s Fig. 251

Representation



z160r Fig. 252

CONTENTS

TEST METHODS

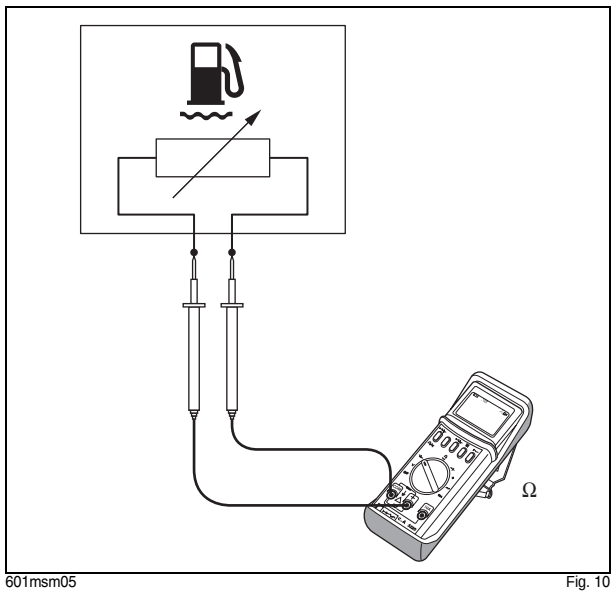
Water sensor

Resistance test

Test condition: Sensor immersed in water or not.

– Check the evolution of resistance according to the presence of water.

– With the sensor disconnected, connect a multimeter (ohmmeter function) in branch joint.



601msm05 Fig. 10

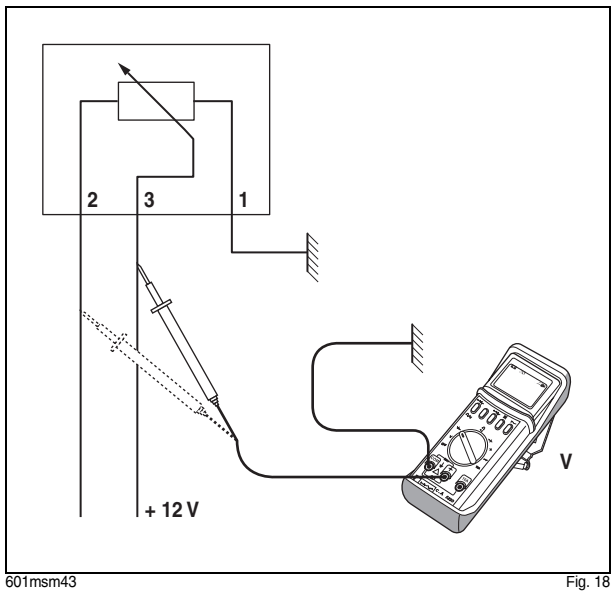
Pressure sensor (Rheostat)

Voltage test

Test condition: Power on.

– Check the sensor supply voltage. With the sensor connected, connect a multimeter (voltmeter function) in branch joint.

– Check the voltage variation of the signal according to pressure variation. With the sensor connected, connect a multimeter (voltmeter function) in branch joint.



601msm43 Fig. 18

Proportional solenoid valve

Current test

– Test conditions:

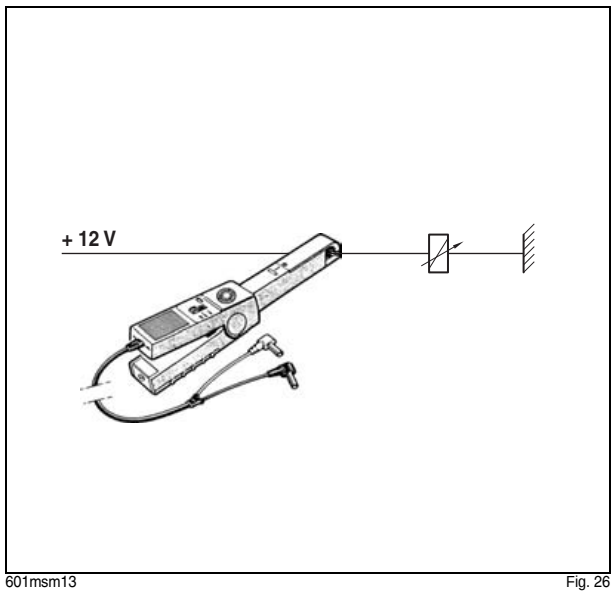
– Power on.

– Power supplied to solenoid valve.

• Check increase in current consumed by the solenoid valve.

• Connect a multimeter n° 60 0500 674 4 (ammeter function) in series.

• Use cable n° 60 0500 573 4 or an amperometric clamp on the solenoid valve supply wire.



601msm13 Fig. 26

Resistance test

Test conditions:

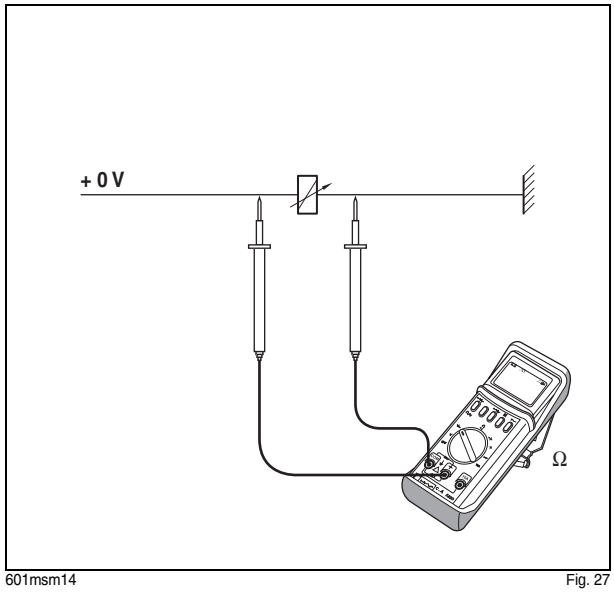
– Power off.

– Solenoid valve disconnected.

• Check coil resistance at the solenoid valve terminals.

• With the solenoid valve disconnected, connect a multimeter n° 60 0500 674 4 (ohmmeter function) in parallel.

• Use cable n° 60 0500 573 4.



601msm14 Fig. 27

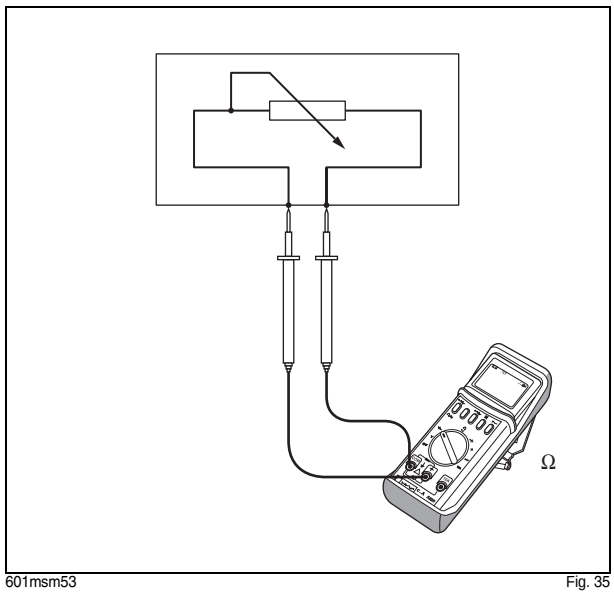
Potentiometer

Resistance test

Test condition: Controlled rotation of the potentiometer.

– Check the progress of resistance according to the rotation angle.

– With the potentiometer disconnected, connect a multimeter (ohmmeter function) onto the terminals.



601msm53 Fig. 35

CLAAS

ERROR CODES

Technical support **Arion 430-410**	**Diagnostics – 04.2010 publication**
	Reference n° 00 1139 729 0

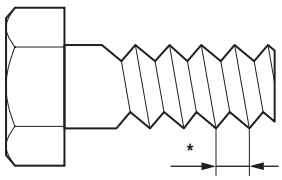
Error code	Native code	Sender module	Designation	Cause/System response	Comment/Solution
Id75C8h	309	TR1 (A57-1)	The actual current measured on the forward gear solenoid valve return is less than the setpoint value.	Audio warning:: Yes. "ISC" reset requested: Yes.	Check: – For a possible open circuit in the solenoid valve supply harness. – For a possible short circuit to earth on the solenoid valve. – The resistance of the solenoid valve winding. – The "Auto 5" module using tool n° 60 05 033 249, and change if required.
Id75C9h	310	TR1 (A57-1)	The actual current measured on the reverse gear solenoid valve return is less than the setpoint value.		
Id75CAh	311	TR1 (A57-1)	The current sent to the forward gear solenoid valve is insufficient (current regulation problem).	Audio warning:: No. "ISC" reset requested: No.	Check: – The battery voltage. – For a possible resistance on the solenoid valve supply. – The solenoid valve winding.
Id75CBh	312	TR1 (A57-1)	The current sent to the reverse gear solenoid valve is insufficient (current regulation problem).		
Id75CCh	313	TR1 (A57-1)	Loss of shuttle reverser output speed information (knowing that the theoretical speed is indicated).	Audio warning:: Yes. "ISC" reset requested: No.	Check: – The reverser exit speed sensor under torque (B229).
Id75CDh	314	TR1 (A57-1)	Loss of the ENG module engine speed information (knowing the units are supplied with 12V after ignition and a theoretical speed of > 1 km/h is specified).		Check: – The Powertrain CAN bus network. – The engine module (A15).
Id75CEh	315	TR1 (A57-1)	Loss of theoratical speed information (knowing that the shuttle reverser output speed is indicated). This fault not detected when changing range or a slow range is engaged.	Audio warning:: No. "ISC" reset requested: No.	Check: – The theoretical speed sensor (B227).
Id75CFh	316	TR1 (A57-1)	The voltage of the signal provided by the clutch pedal sensor is < 0,3 V or > 4,8 V.	Audio warning:: No. "ISC" reset requested: Yes.	Check: – The clutch pedal position potentiometer (R73).
Id75D0h	317	TR1 (A57-1)	The voltage of the signal provided by the accelerator pedal sensor is < 0,3 V or > 4,8 V.	Audio warning:: No. "ISC" reset requested: No. The "Quadractiv" function is inactive. The engine remains in idle speed.	Check: – The accelerator pedal position potentiometer (R71).
Id75D1h	318	TR1 (A57-1)	Loss of the theoretical forward speed information on the Powertrain CAN bus or inconsistency between the theoretical forward speed information on the Powertrain CAN bus and the information from the theoretical forward speed sensor.	Audio warning:: No. "ISC" reset requested: No. The REH (A58) lifting module and its associated functions may be lost.	Check: – The instrument panel module (A101). – The Powertrain CAN bus network. – The "Auto 5" module using tool n° 60 05 033 249, and change if required.

Error code	Native code	Sender module	Designation	Cause/System response	Comment/Solution
Id7710h	190 00	ENG (A15)	Extreme engine overspeed.	The fuel supply of the common rail by the high pressure pump is off.	Abnormal use of the engine. Check the engine application.
Id7711h	676 03	ENG (A15)	High voltage on the glow plug relay.	Difficult start. Irregular engine running.	Check: – The glow plugs (R78). – The preheating relay (K1).
Id7712h	676 04	ENG (A15)	No return voltage on the glow plug relay.	Difficult start in extreme cold.	Check: – The glow plugs (R78). – The preheating relay (K1).
Id7713h	898 09	ENG (A15)	The ENG (A15) engine module does not receive the accelerator information on the Powertrain CAN bus or this information is in error on the Powertrain CAN bus.	The engine remains in idle speed.	Check: – The Powertrain CAN bus network. – The TR2 (A57-2) module. – The engine module ENG (A15).
Id7714h	1568 02	ENG (A15)	The ENG (A15) engine module receives no information from torque curve selection on the Powertrain CAN bus or this information is in error on the Powertrain CAN bus.	The lowest power curve is selected by default.	Check: – The Powertrain CAN bus network. – The TR2 (A57-2) module. – The engine module ENG (A15).
Id7715h	2004 09	ENG (A15)	Communication error on the Powertrain CAN bus.	The engine remains in idle speed.	Check: – The Powertrain CAN bus network. – The TR2 (A57-2) module. – The engine module ENG (A15).
Id7716h	2000 13	ENG (A15)	Engine/transmission configuration error.	The engine stays in idle speed after 1 minute running.	Check: – The configuration of the TR1 (A57-1), TR2 (A57-2), TR3 (A57-3) transmission modules and ENG (A15) engine module.
Id7717h	2005 09	ENG (A15)	Communication error on the Powertrain CAN bus.	The engine remains in idle speed.	Check: – The Powertrain CAN bus network. – The TR2 (A57-2) module. – The engine module ENG (A15).
Id7718h	97 03	ENG (A15)	Voltage of the signal high presence of water in the fuel.	The engine runs normally without considering the information delivered by the sensor in error.	Check: – The water presence sensor (B225). – The engine module ENG (A15).
Id7719h	97 04	ENG (A15)	Voltage of the signal low presence of water in the fuel.	The engine runs normally without considering the information delivered by the sensor in error.	Check: – The water presence sensor (B225). – The engine module ENG (A15).
Id771Ah	97 16	ENG (A15)	Presence of water detected in the fuel.	Engine power is reduced to 50%.	Empty the decanter prefilter. Restart the tractor. The tractor returns to the normal mode when the error disappears.

Error code	Native code	Sender module	Designation	Cause/System response	Comment/Solution
Id7F12h	–	DBD (A101)	Dashboard transmission error over the Powertrain CAN bus network.	Short-circuit on the supply of the Powertrain CAN bus.	The tractor returns to the normal mode when the error disappears. Check: – The Powertrain CAN bus network.
Id7F13h	–	DBD (A101)	Dashboard data overflow over the Powertrain CAN bus network.	Powertrain CAN bus short-circuited to ground.	The tractor returns to the normal mode when the error disappears. Check: – The Powertrain CAN bus network.
Id7F14h	–	DBD (A101)	The dashboard is no longer online on the Powertrain CAN bus network.	No message can be transmitted until the module is back online.	The tractor returns to the normal mode once the module is online again. Check: – The DBD (A101) module.
Id7F2Dh	–	DBD (A101)	Theoretical speed sensor (B227) Disconnected.	The harness giving the information of the (B227) speed sensor between the TR1 module and the DBD is probably damaged.	Check the harness between the TR1 (A57-1) module and the DBD (A101).
Id7F34h	–	DBD (A101)	Air filter blocked.	Air filter blocked.	Clean air filter. Check the (Z69) air filter clogged contact.
Id7F35h	–	DBD (A101)	Transmission oil filter clogged.	Transmission oil filter clogged.	Clean the oil filter. Check the (Z102) oil filter clogging contact.
Id7F36h	–	DBD (A101)	Alarm - Trailer brake.	–	–
IdA0D7h	0	HYD (A60)	Error during the RAM test at start.	RAM faulty.. Valve 6 returns to neutral.	Clear the error. If the error reappears, change the valve 6.
IdA0D8h	1	HYD (A60)	Error upon initial commissioning of the valve.	Faulty EEPROM. Valve 6 returns to neutral.	This error should not occur during work, as it appears during the initial commissioning.
IdA0D9h	3	HYD (A60)	Division by 0 internal error.	Valve 6 returns to neutral.	The calculator cannot divide by 0. Clear the error. If the error reappears, change the valve 6.
IdA0DAh	4	HYD (A60)	Internal calculation error..	Value out of range. Valve 6 returns to neutral.	Clear the error. If the error reappears, change the valve 6.
IdA0DBh	5	HYD (A60)	Internal calculation error..	Value out of range. Valve 6 returns to neutral.	Clear the error. If the error reappears, change the valve 6.
IdA0DCh	6	HYD (A60)	Error when saving the parameters..	Valve 6 returns to neutral.	Clear the error. If the error reappears, change the valve 6.

Standardised torques
(except specific torque for technical support)

Hardware class																
Ø	Designations	4,8			6,8			8,8			10,9			12,9		
M3	Pitch (mm)*	0,5			0,5			0,5			0,5			—		
	Torque settings (daN.m)	0,05			0,07			0,09			0,14			—		
M4	Pitch (mm)*	0,7			0,7			0,7			0,7			—		
	Torque settings (daN.m)	0,11			0,16			0,22			0,32			—		
M5	Pitch (mm)*	0,8			0,8			0,7			0,7			—		
	Torque settings (daN.m)	0,23			0,33			0,44			0,65			—		
M6	Pitch (mm)*	1			1			1			1			—		
	Torque settings (daN.m)	0,41			0,57			0,77			1,13			—		
M7	Pitch (mm)*	1			1			1			1			—		
	Torque settings (daN.m)	0,67			0,94			1,26			1,85			—		
M8	Pitch (mm)*	1	—	1,25	1	—	1,25	1	—	1,25	1	—	1,25	1	—	1,25
	Torque settings (daN.m)	1,06	—	0,99	1,5	—	1,4	2	—	1,87	2,94	—	2,74	3,4	—	3,2
M10	Pitch (mm)*	1	1,25	1,5	1	1,25	1,5	1	1,25	1,5	1	1,25	1,5	1	1,25	1,5
	Torque settings (daN.m)	2,18	2,07	1,96	3,08	2,92	2,77	4,11	3,9	3,69	6,04	5,73	5,4	7,1	6,7	6,3
M12	Pitch (mm)*	1,25	1,5	1,75	1,25	1,5	1,75	1,25	1,5	1,75	1	1,25	1,5	1	1,25	1,5
	Torque settings (daN.m)	3,7	3,5	3,4	5,2	5	4,8	7	6,7	6,4	10,2	9,8	9,4	12	11,5	10,9
M14	Pitch (mm)*	1,5	—	2	1,5	—	2	1,5	—	2	1,5	—	2	1,5	—	2
	Torque settings (daN.m)	5,8	—	5,4	8,2	—	7,6	11	—	10,2	16,2	—	15	18,9	—	17,5
M16	Pitch (mm)*	1,5	—	2	1,5	—	2	1,5	—	2	1,5	—	2	1,5	—	2
	Torque settings (daN.m)	8,9	—	8,4	12,6	—	11,8	16,9	—	15,8	24,7	—	23,2	29	—	27,1
M18	Pitch (mm)*	1,5	—	2,5	1,5	—	2,5	1,5	—	2,5	1,5	—	2,5	1,5	—	2,5
	Torque settings (daN.m)	13	—	11,6	18,4	—	16,4	24,6	—	21,9	36,1	—	32,1	42,2	—	37,6
M20	Pitch (mm)*	1,5	—	2,5	1,5	—	2,5	1,5	—	2,5	1,5	—	2,5	1,5	—	2,5
	Torque settings (daN.m)	18,2	—	16,4	25,7	—	23,2	34,2	—	30,9	50,2	—	45,4	57,7	—	53,1
M22	Pitch (mm)*	1,5	—	2,5	1,5	—	2,5	1,5	—	2,5	1,5	—	2,5	—		
	Torque settings (daN.m)	24,6	—	22,5	34,7	—	31,7	46,3	—	42,3	68	—	62,2	—		
M24	Pitch (mm)*	2	—	3	2	—	3	2	—	3	2	—	3	—		
	Torque settings (daN.m)	30,7	—	28,2	43,4	—	39,8	57,8	—	53,1	85	—	78	—		
M30	Pitch (mm)*	3,5			3,5			3,5			3,5			—		
	Torque settings (daN.m)	56,5			79,8			106,4			156,3			—		
M33	Pitch (mm)*	3,5			3,5			3,5			3,5			—		
	Torque settings (daN.m)	76,6			108,2			144,3			211,9			—		
M36	Pitch (mm)*	4			4			4			4			—		
	Torque settings (daN.m)	98,5			139			185,4			273,3			—		



Checking power/torque

List of checks

The purpose of this procedure is to check a number of points before and after dynamometer testing. It is suited to engines with electronic control (TIER III).

Failure to carry out these tests may lead to an incorrect power reading.

Always check the following points before starting a PTO power test.

Reminder: Wait until the running-in period has elapsed (minimum 100 hours) before testing an engine on the dynamometer. This period is necessary to ensure that measurements are carried out under suitable conditions.

1. Visual checks

Make sure that the supply and return lines are correctly fitted (not trapped or kinked on installation, etc.). Check that the engine serial n° read with Métadiag is the same as the one indicated on the engine identification plate and if there are any error codes.

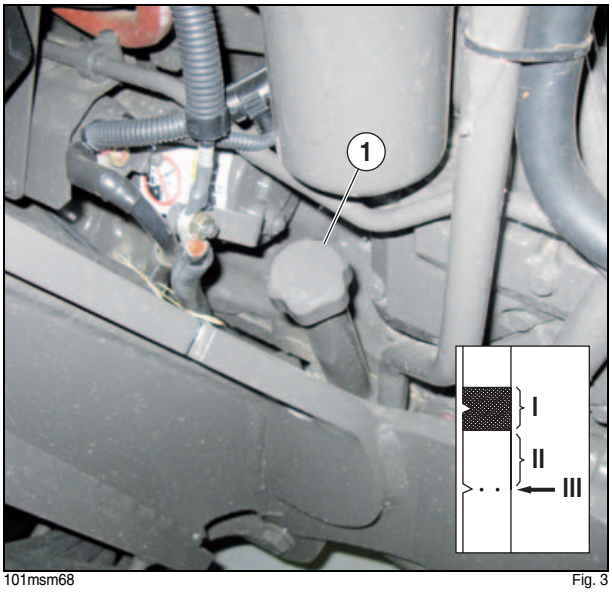
2. Engine oil level

Check the fluid level with dipstick (1):

I Normal operating level.

II Top up as soon as possible.

III Top up before restarting the engine.



101msm68 Fig. 3

3. Hydraulic /transmission oil level

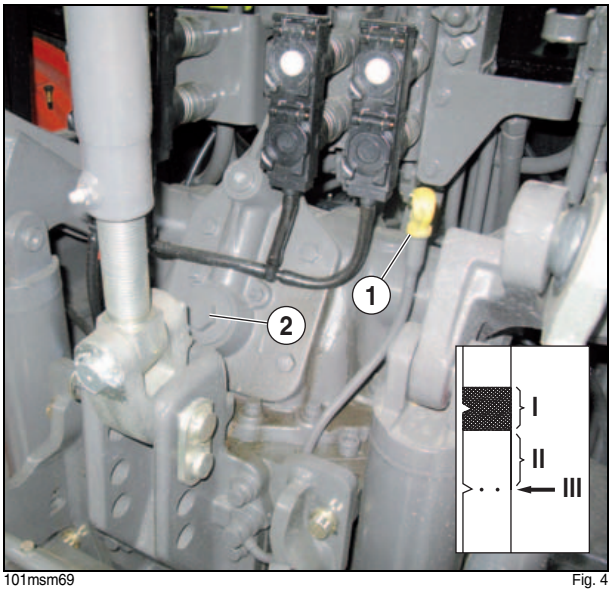
– Check the fluid level with dipstick (1).

– I : Normal operating level.

– II : Top up as soon as possible.

– III : Readjust the level before starting the engine.

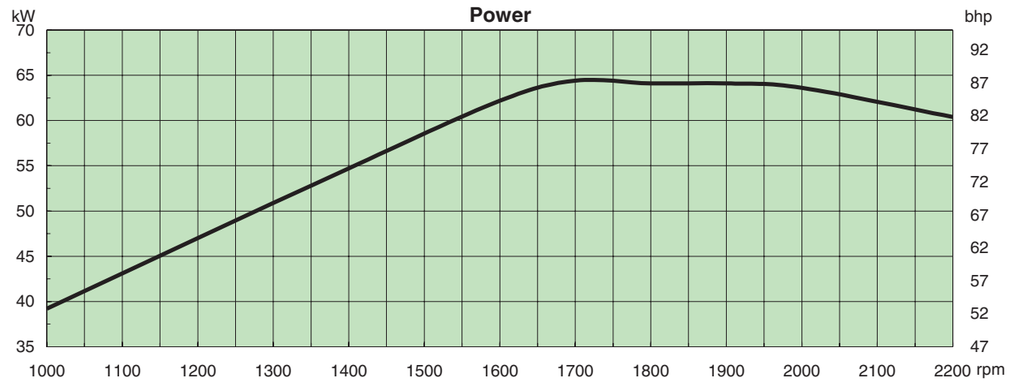
– The fluid is topped up via the cap (2).

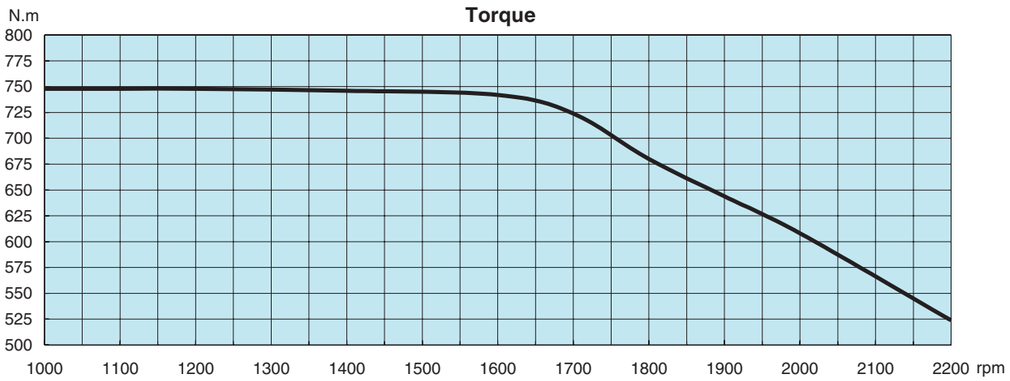


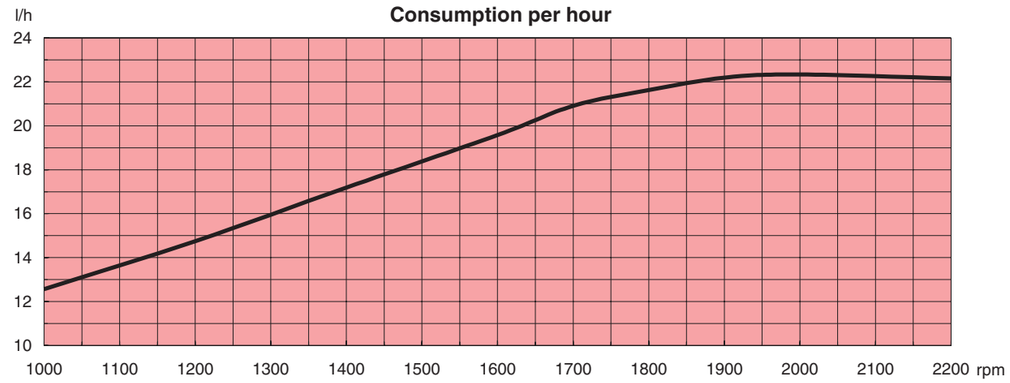
101msm69 Fig. 4

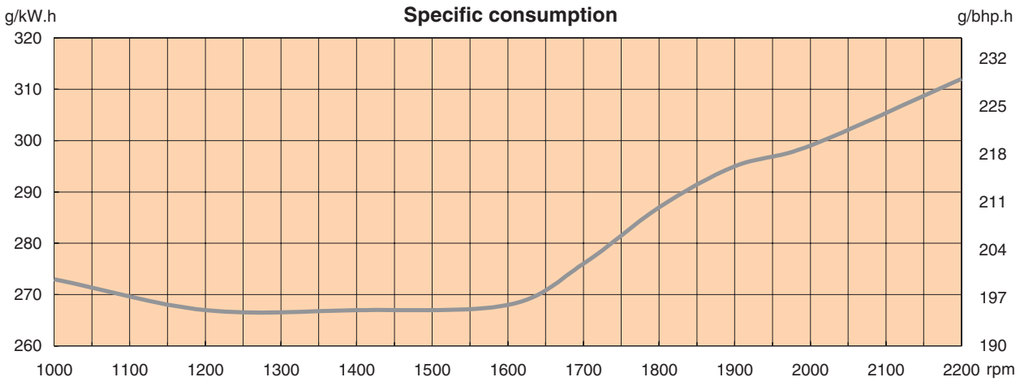
Arion 410 C.I.S.

Engine tests at the power take off – 1 000 rpm position









Note:
– rated engine speed 2 200 rpm;
– reference values on an Arion tractor with air conditioning, pneumatic braking, fuel temperature 40°C, and ambient temperature 35°C.

Reference values – Power Take-off position 1 000 rpm

Speed	Engine (rpm)	1000	1200	1400	1600	1700	1800	1900	2000	2200
	Power Take-off (rpm)	500	600	700	800	850	900	950	1000	1100
Power*	kW	39.2	47.0	54.7	62.2	64.4	64.1	64.1	63.6	60.4
	bhp	53.3	63.9	74.4	84.6	87.6	87.2	87.2	86.5	82.1
Torque** (power take-off output)	N.m	748	748	746	742	724	680	644	608	524
Consumption per hour	l/h	12.6	14.7	17.2	19.6	20.9	21.6	22.2	22.3	22.2
Specific consumption***	g/kW.h	273	267	267	268	276	287	295	299	312
	g/bhp.h	201	196	196	197	203	211	217	220	229

Power to be added to or subtracted from the reference values

OPTIONS	Engine (rpm)	1000	1200	1400	1600	1700	1800	1900	2000	2200
Without pneumatic braking	kW	+ 0,2	+ 0,5	+ 0,78	+ 1,03	+ 1,17	+ 1,3	+ 1,45	+ 1,59	+ 1,87
Without air conditioning		+ 0,19	+ 0,47	+ 1,03	+ 1,31	+ 1,45	+ 1,6	+ 1,64	+ 1,87	+ 2

Engine tests at power take-off

Engine	Gearbox	Rear axle	Power Take-off (total reduction)			
			Position 540	Position 540 eco	Position 1 000	Position 1 000 eco
4045HRT83C	**GBA25 4PS**	**GPA22**	**3.60**	**2.80**	**2.00**	**1.50**

Rotation rate (rpm)		Idle		Nominal		Max no load	
		Engine	Power take-off	Engine	Power take-off	Engine	Power take-off
Power take-off position	**540**	**840 → 850**	**233 → 236**	**2200**	**611**	**2265 → 2275**	**629 → 632**
	540 eco	**840 → 850**	**300 → 304**	**2200**	**786**	**2265 → 2275**	**809 → 813**
	1 000	**840 → 850**	**420 → 425**	**2200**	**1100**	**2265 → 2275**	**1133 → 1138**

* Power (W) = torque (N.m) x speed (rad/s)

** Equivalent engine torque (N.m) = $\frac{\text{Torque at Power take-off outlet (N.m)}}{\text{Power take-off reduction}}$

Injector flow (mm^3/shot) = $\frac{\text{Hourly consumption (l/h)x 1 000 000}}{\text{Number of engine cylinders x engine speed(rpm) x 30}}$

1 bhp = 0.7355 kW
1 rpm = 0.1047 rad/s
1 kW = 1.3596 bhp
1 rad/s = 9.5510 rpm

*** Specific consumption (g/kW.h or g/bhp.h) = $\frac{\text{Hourly consumption (l/h) x diesel fuel density (0.840)}}{\text{Power (kW or bhp)}}$

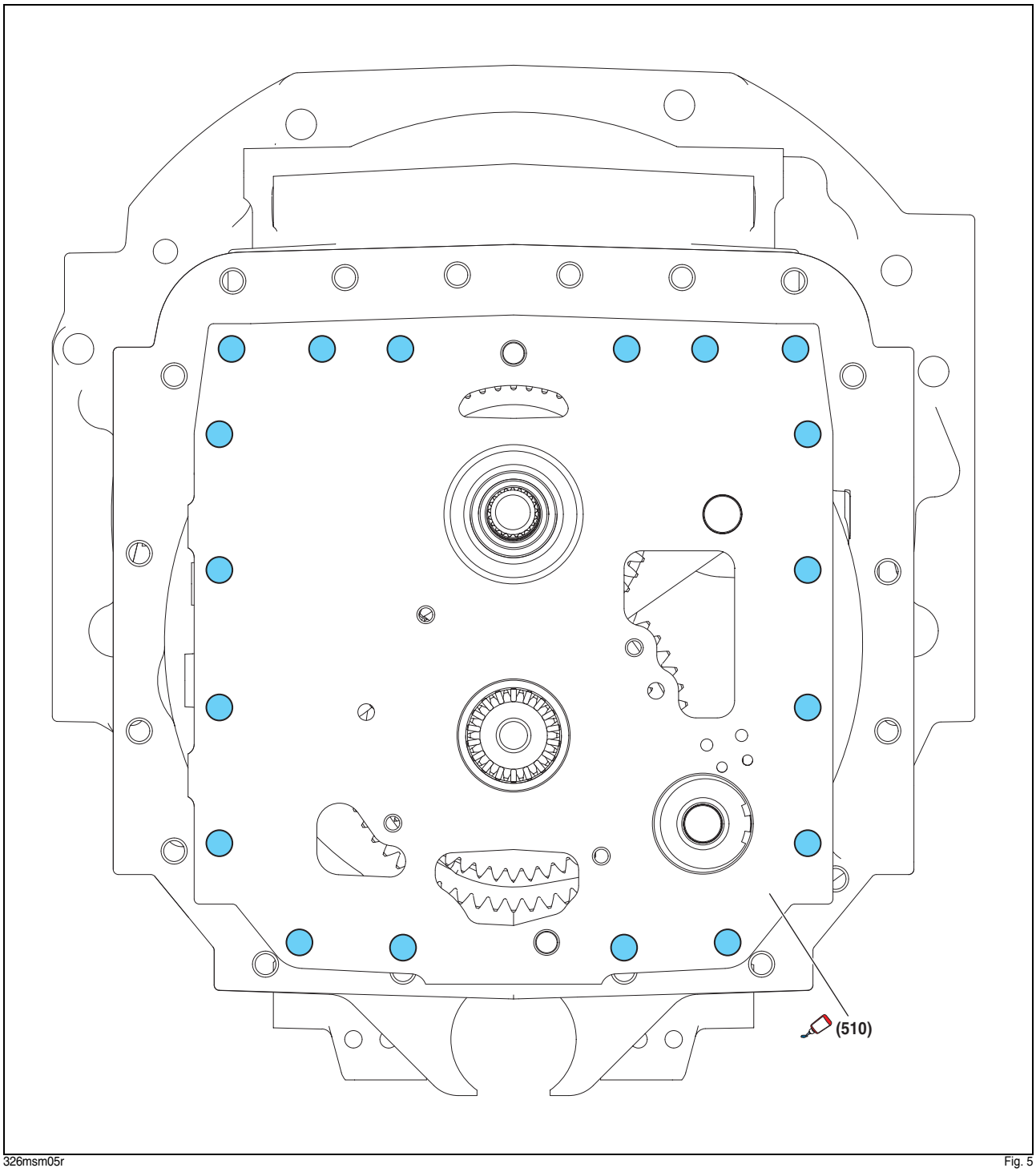
Torque feedback (%) = $\frac{\text{maximum torque – nominal speed torque}}{\text{nominal speed torque}}$ x 100

CLAAS

02
TRANSMISSION/CLUTCH

Technical support Arion 430-410	Diagnostics – 12.2009 publication
	Reference n° 00 1139 729 0

Range module/rear axle coupling



326msm05r Fig. 5

Description	
	17,5 daN.m - Loctite (243).

"Revershift" calibration

Calibration must be performed if the temperature of the transmission oil ranges between 15°C and 60°C.

– Start the tractor on a hard, flat and sufficiently open ground.

– Adjust the engine speed to 1 500 rev/min.

– Maintain the reverter handle in the raised position while contacting the 4-wheel drive command (for at least 2 seconds).

On the transmission display of the instrument panel:

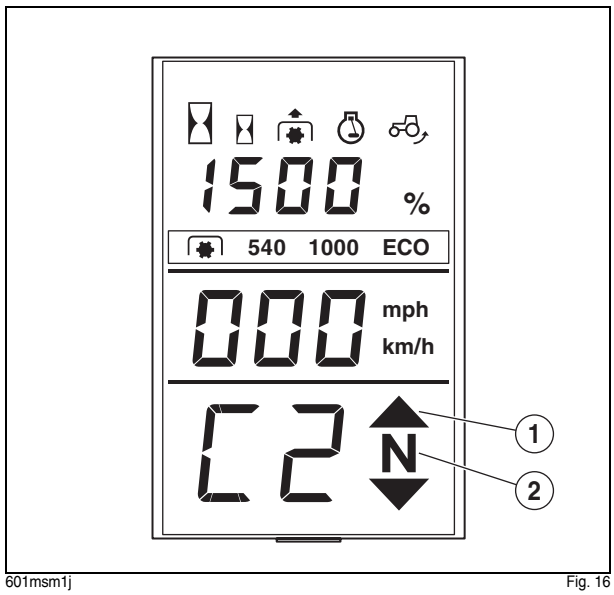
– If the arrow indicating forward driving does not blink, return the handle to the neutral position.

– If the arrow (1) indicating forward driving blinks, set the reverter handle to the forward or reverse position. Calibration of the 2 clutches starts (5 to 6 minutes).

Note: During the calibration, the forward drive arrow (1) blinks on the transmission display of the instrument panel.

When the blinking neutral indication (2) is added between the 2 forward and reverse arrows, calibration is complete.

– Return the reverter handle to neutral, reduce the engine speed to idle, then switch off the ignition for 30 seconds. The new parameters will then be considered.



601msm1j Fig. 16

Results record form

This sheet may be copied and should be completed for each operation on the tractor. If it has to be returned to the manufacturer's after sales department; the following must be included:

Tractor type:.....

The serial number:.....

Total operating hours:.....

Date of operation: .....

Control of general lubrication pressure

Test conditions Transmission oil temperature: 60°C	Pressure (bar)	Measured value (bar)
Engine running at 850 rpm	1,5 ± 0,2	
Engine running at 2 200 rpm	3	

LUBRICATION

REAR AXLE

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Results record form

This sheet may be copied and should be completed for each operation on the tractor. If it has to be returned to the manufacturer's after sales department; the following must be included:

Tractor type:.....

The serial number:.....

Total operating hours:.....

Date of operation: .....

Checking the front axle engagement pressure (4 wheel drive)

Test conditions Engine running at 2 200 rpm Transmission oil temperature: 60°C	Hydraulic status	
	Nominal pressure (bar)	Recorded pressure (bar)
4 wheel drive engaged	0	
4 wheel drive non engaged	21	

04
BRAKES

Technical support **Arion 430-410**	**Diagnostics – 11.2009 publication**
	Reference n° 00 1139 729 0

TRAILER AIR BRAKE

05
STEERING

Technical support **Arion 430-410**	**Diagnostics – 10.2009 publication**
	Reference n° 00 1139 729 0

Otherwise:

– Adjust the antishock valves (3).

Description

1 “16” mm key to activate the rotor.

2 Pressure restricter rating screw.

3 Rating screw of the antishock valves.

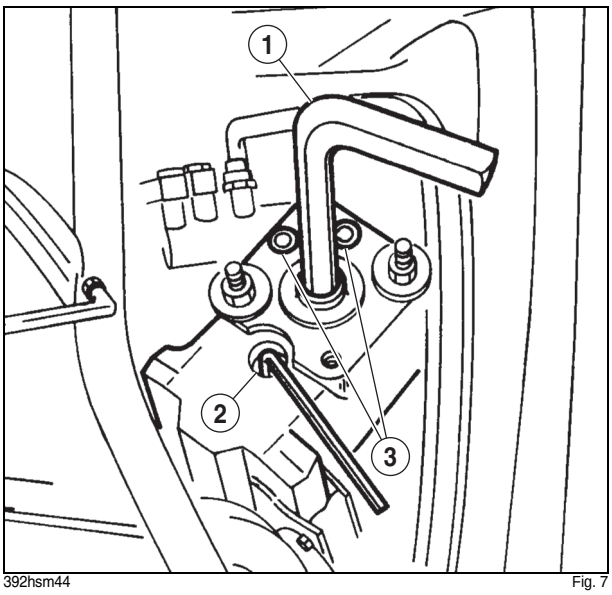
If the pressure cannot be obtained:

– Check the condition of the spring and ball on the valve.

If the problem persists:

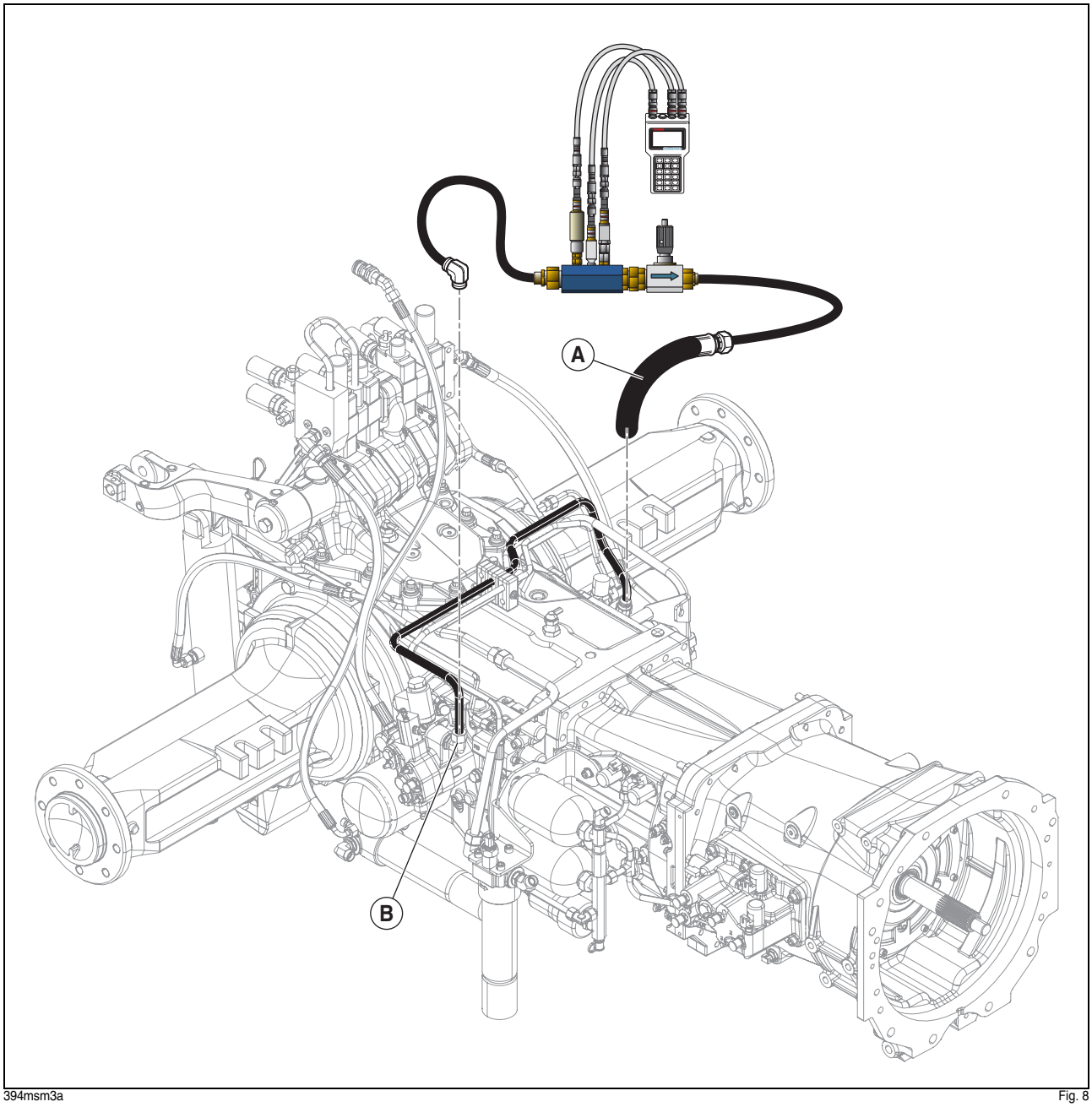
– Replace the full unit.

– Apply the same procedure to the second outlet of the steering jack unit.



392hsm44 Fig. 7

• Version 98 l/min



394msm3a Fig. 8

– Connect the tester of kit No.00 0178 310 0 and the flowmeter of kit No.00 0178 320 0 between (A) and (B) supplying the lifting valve.

Test conditions **Oil temperature 60°C**	**Flow rate** **(l/min)**
Engine running at 850 rpm	15 ± 0,5
Engine running at 2 200 rpm	36 ± 1

Check the accumulator

Test conditions:

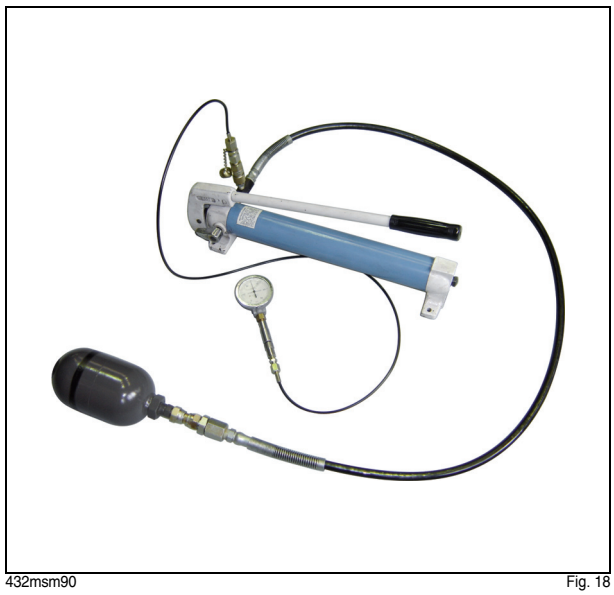
– Remove the accumulator.

– Connect the accumulator to a manual hydraulic pump fitted with a pressure gauge.

– Load in pressure up to 25 bars.

– Open the tap to create a 2 bar leak, and close it immediately.

The accumulator must compensate pressure, by returning pressure of the pressure gauge to is initial position.



432msm90 Fig. 18

Rear power take-off

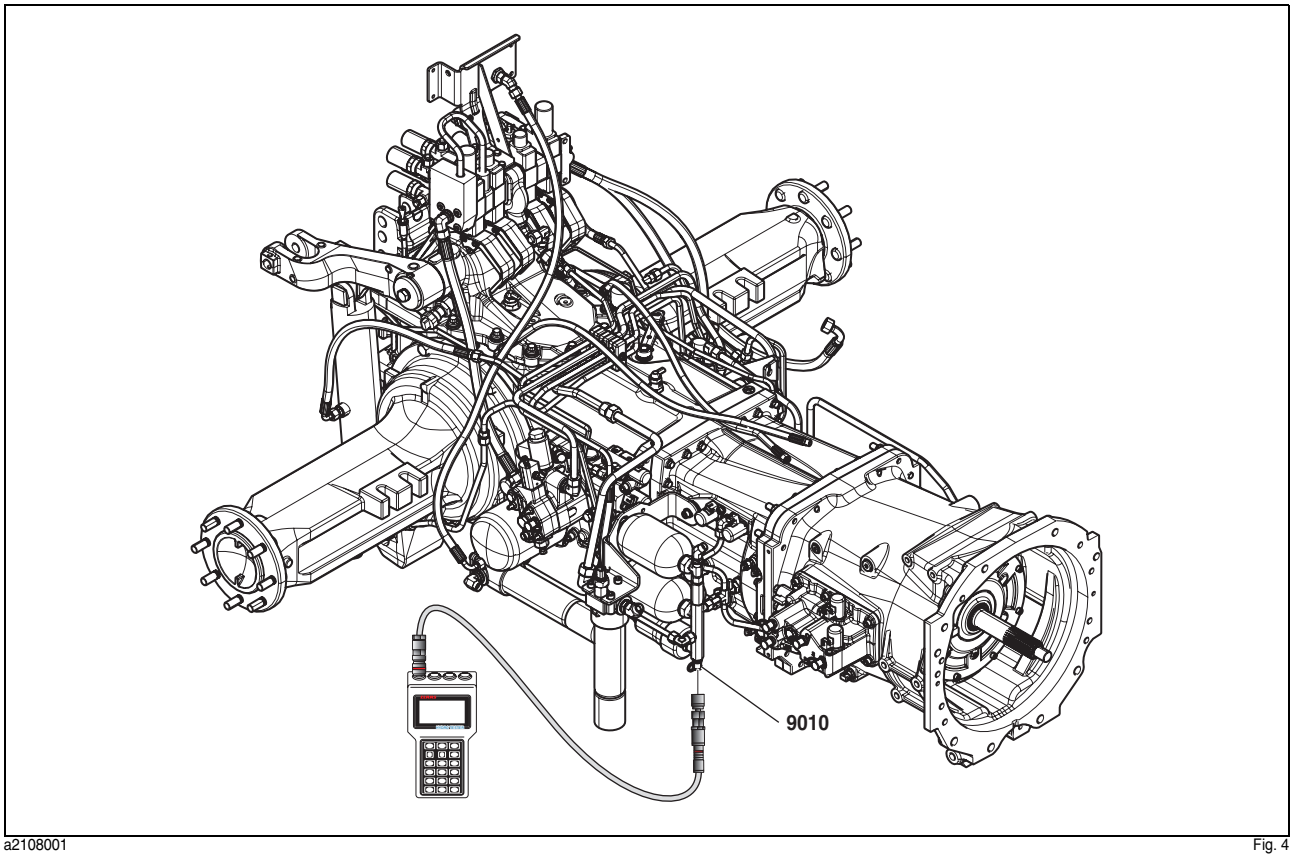
Measurements and checks

Checking supply pressure of the rear PTO clutch

Test conditions:

– Engine running at 2 200 rpm.

– Transmission oil temperature: 60°C.



a2108001 Fig. 4

– Fit the pressure sensor of the 00 0178 310 0 kit onto the low pressure connector "9010".

– Connect tester Nr.00 0178 310 0 to the pressure sensor.

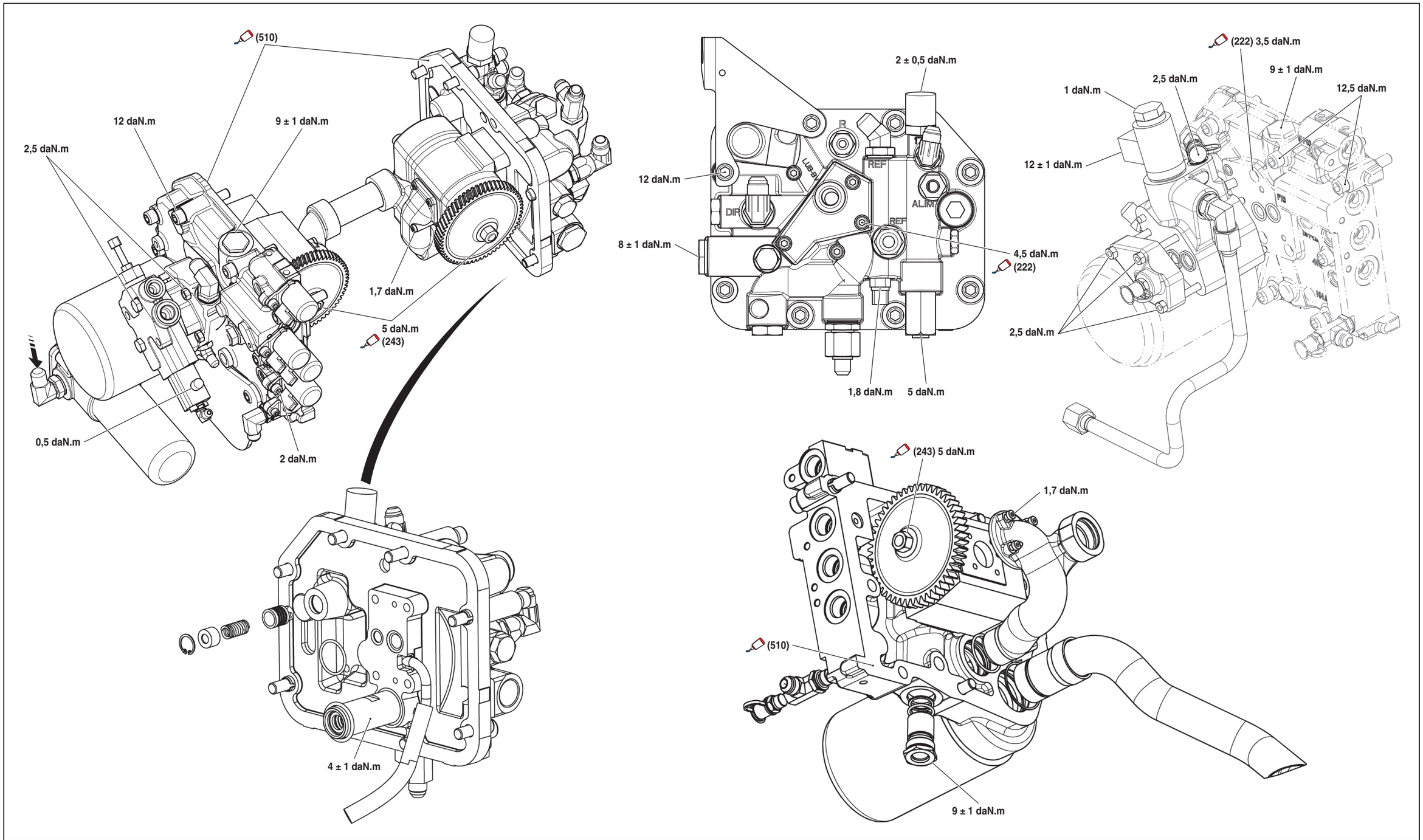
– Start the tractor, engine speed at 2 200 rev/min.

– Actuate the on/off contact of the "S114" rear power take-off.

– Pressure must stabilize at 21 bars.

Pumps

Torque settings and sealants



394msm2m

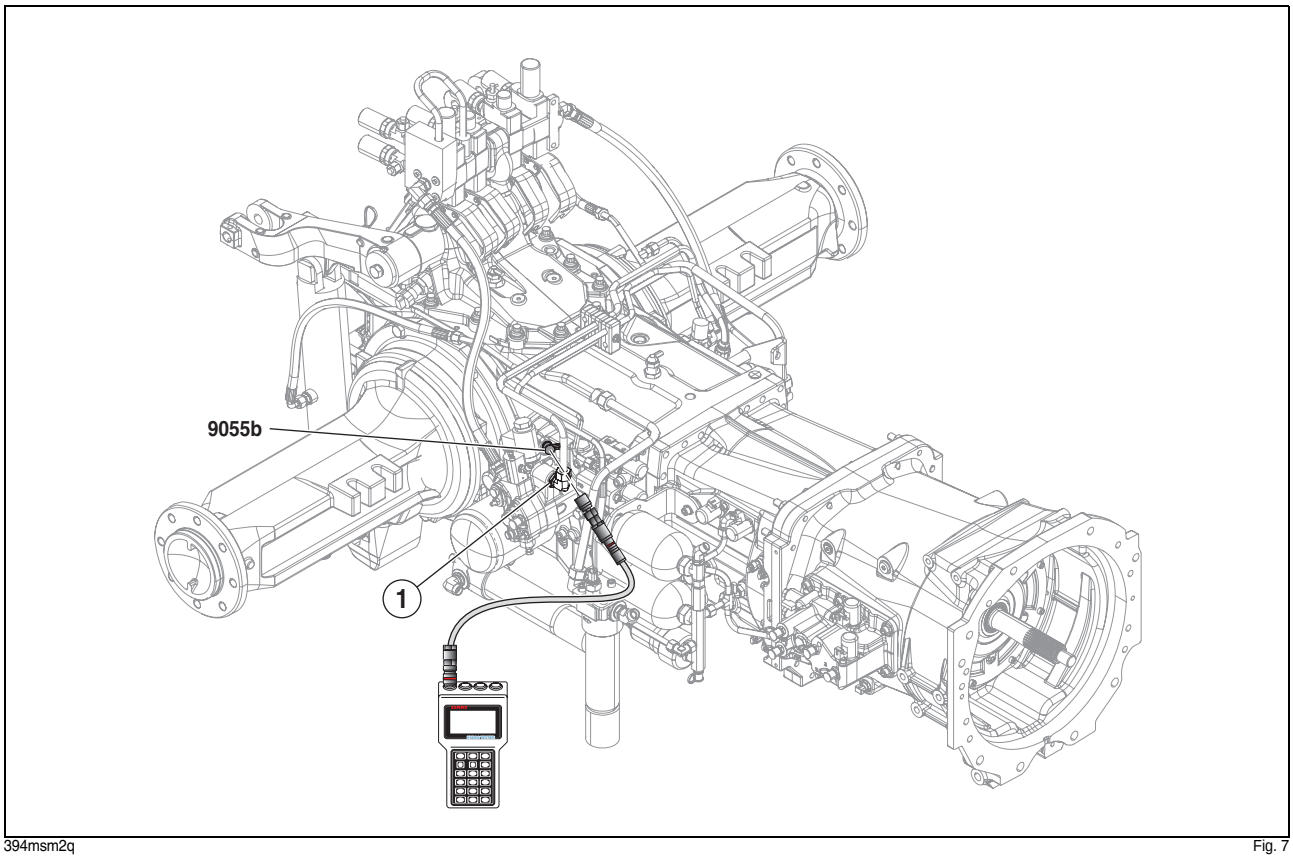
Fig. 1

Checking pressure of the 14 cm3 pump

Test conditions:

– Nominal engine speed: 2 200.

– Transmission oil temperature: 60°C.



394msm2q Fig. 7

– Connect test set n° 00 0178 310 0 to the pressure outlet "9055b".

– At neutral (without any actuation), permanent pressure is about 9 bar.

– Fit a cap on the outlet of the elbow (1).

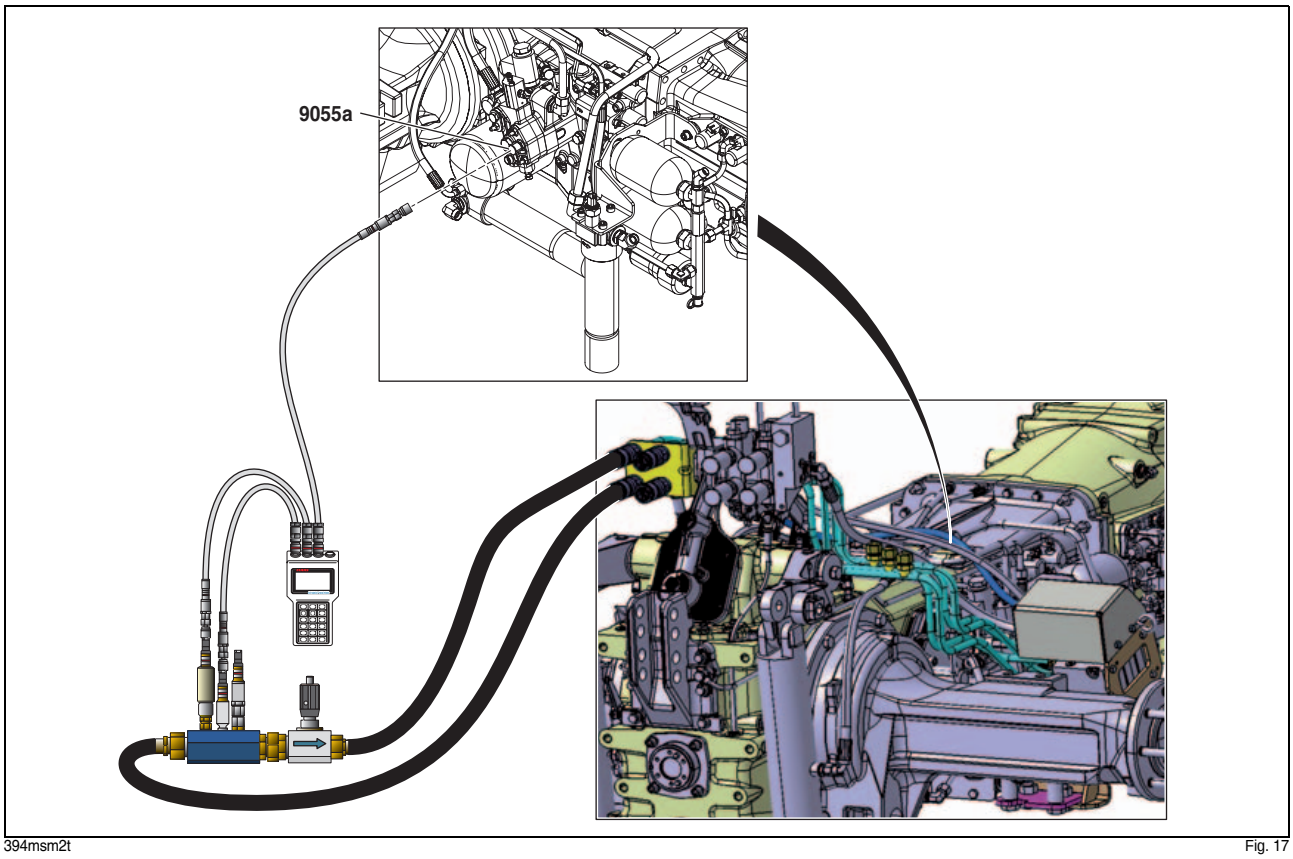
– When actuating the upper lifting command, rpessure is about 190 ± 3 bar.

Checking pressure and flow on the auxiliary solenoid valve (A) or (B)

Test conditions:

– Engine running at 2 200 rpm.

– Oil temperature at 60°C.



394msm2t Fig. 17

– Connect tester No.00 0178 310 0 and No.00 0178 320 0 to the auxiliary valve (A) or (B).

– Actuate the appropriate valve control in the cab.

All-flows switch	Flowmeter valve	Flow rate measured (l/min)	Pressure on the "9055a" plug
Non activated	Open	51 ± 1	31 ± 1
	Closed	—	187 ± 1
Activated	Open	88 ± 1	74 ± 1
	Closed	—	187 ± 1

Checking the bus CAN network

The bus CAN networks are looped by 2 120-ohm termination resistors fitted in parallel. The equivalent resistance of each bus CAN network is 60 ohms.

To recognise the bus CAN networks on the harnesses, the wires are twisted.

Note: Checking the networks and resistors must be performed with the battery disconnected.

Checking the equivalent resistance of the “Powertrain CAN bus” network

The “Powertrain CAN bus network is checked between the 14 and 6 terminals of the “J224” diagnostic plug.

The resistance should be 60 ohms.

Checking the equivalent resistance of the “CLAAS vehicle CAN bus” network

The “CLAAS vehicle CAN bus” network is checked between the 12 and 13 terminals of the “J224” diagnostic plug.

The resistance should be 60 ohms.

601msm0v Fig. 2

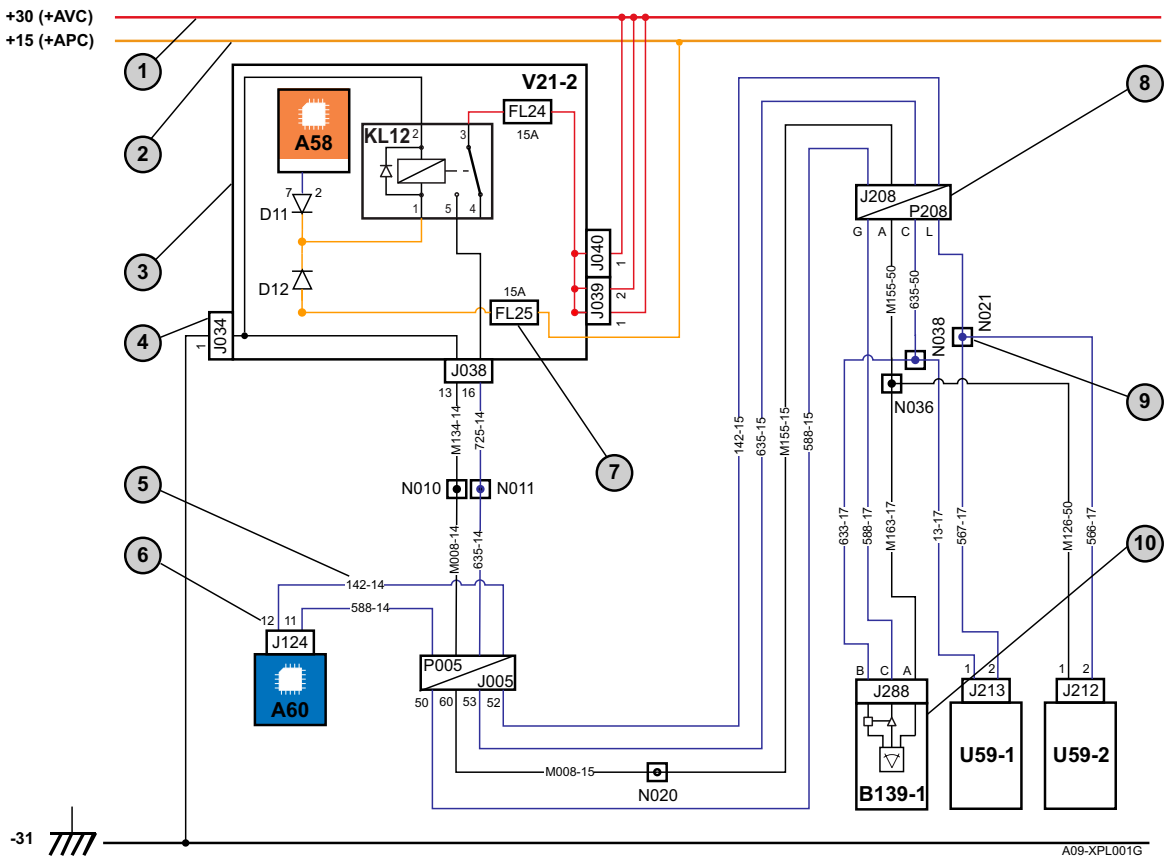
Technical support user guide

F0 General

This section concerns all the coded elements contained in chapter F. Each plate is first represented in 2D view with the list of relays and fuses. The plates are then represented schematically in one or several views.

F1 Function diagrams

Each diagram represents all devices, plates and their connections for a given use function, such as front lifting command or the fuel gauge (see below).



1. Supply before contact
2. Supply after contact
3. Panel
4. (Jxxx) Connector
5. Wire number – Harness number
6. Connector path numbering
7. Fuse
8. Interconnection
9. Splice (Nxxx)
10. Item

Y339-1	(SVA) robot-driven solenoid valve
Y339-2	(SVB) robot-driven solenoid valve
Y339-3	(SVC) robot-driven solenoid valve
Y339-4	(SVD) robot-driven solenoid valve
Y340	Air brake solenoid valve
Y344	dosage solenoid valve (high pressure pump)
Y492	Total flow solenoid valve

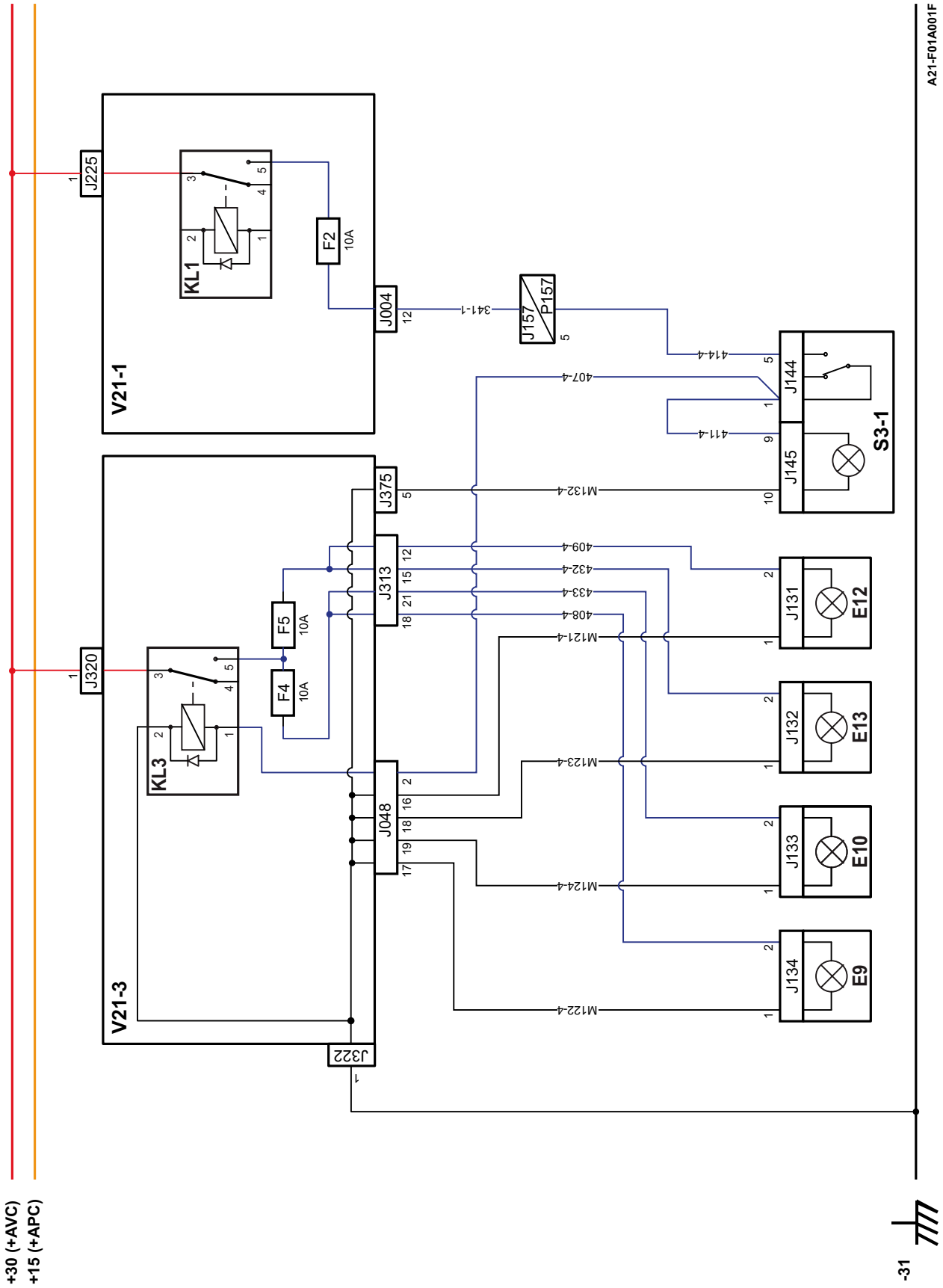
Z	
Z5	Seat presence contact
Z12	Hand brake contact
Z21	A/C gas pressure switch
Z24	A/C thermostat
Z42	Engine oil pressure switch
Z69	Air filter clogging contact
Z76	brake fluid level contact
Z102	Hydraulic filter blockage pressure switch
Z126	LH brake pedal switch
Z127	RH brake pedal switch
Z150	Slow range contact
Z152	Clutch pedal low contact
Z153-1	A range contact engaged
Z153-2	B range contact engaged
Z153-3	C range contact engaged
Z153-4	D range contact engaged
Z155	RH door contact
Z156	LH door contact
Z159	Economic PTO engaged contact
Z160	Pto engaged 1 000 rev/min contact
Z172	CUNA braking contact
Z183	Suction circuit pressure switch
Z184	Transmission control circuit pressure switch

Connector n°	*Designation*
P045-J045	Interconnection
P079-J079	Interconnection
P119-J119	Interconnection
P120-J120	Interconnection
P121-J121	Interconnection
P122-J122	Interconnection
P123-J123	Interconnection
P126-J126	Interconnection
P135-J135	Interconnection
P137-J137	Interconnection
P156-J156	Interconnection
P157-J157	Interconnection
P179-J179	Interconnection
P180-J180	Interconnection
P189-J189	Interconnection
P193-J193	Interconnection
P195-J195	Interconnection
P198-J198	Interconnection
P207-J207	Interconnection
P208-J208	Interconnection
P236-J236	Interconnection
P242-J242	Interconnection
P271-J271	Interconnection
P289-J289	Interconnection
P298-J298	Interconnection
P306-J306	Interconnection
P437-J437	Interconnection

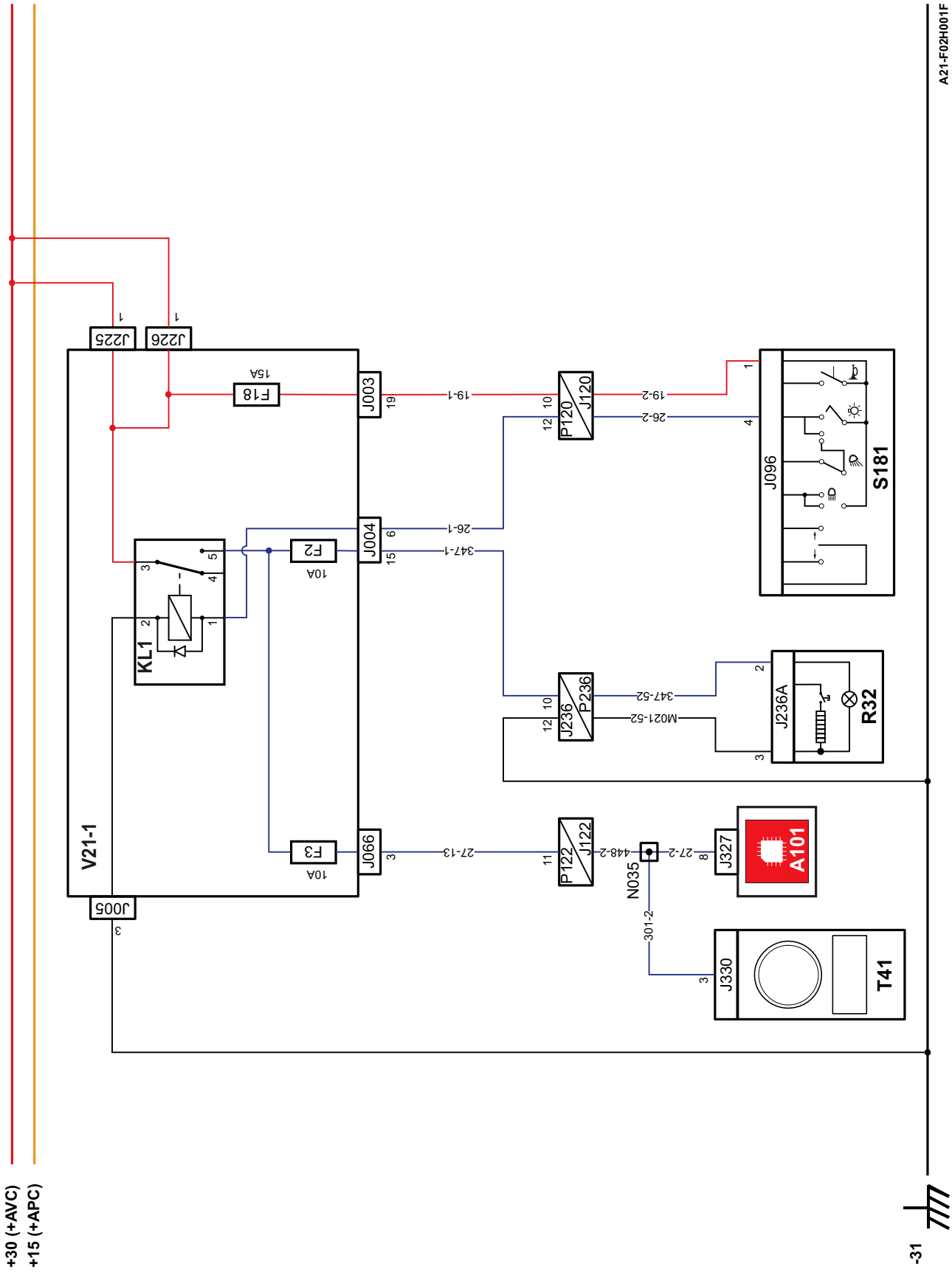
Relays	Designation
KL1	Rotating beacons
KL2	+ Side work lights (on railing)
KL3	Front working lights on cab roof
KL4	Rear working lights on cab roof
KL5	GPS (Global Positionning System)
KL6	De-icing the rear window and electric rearview mirrors
KL7	Tilting of lights at cab top/bottom

Fuse	Designation	Current
F1	LH rotating beacon	5 A
F2	RH rotating beacon	5 A
F3	Not in use	20 A
F4	Front working lights on cab roof (internal)	10 A
F5	Front working lights on cab roof (external)	10 A
F6	Rear working lights on cab roof (internal)	10 A
F7	Rear working lights on cab roof (external)	10 A
F8	Not in use	10 A
F9	Tilting of lights at cab top/bottom	10 A
F10	Not in use	40 A
F11	Not in use	5 A
F12	Not in use	15 A
F13	Radio	15 A
F14	Rear screen wiper	10 A
F15	Not in use	10 A
F16	Radio	10 A
F17	Left and right overhead light	5 A
F18	Not in use	5 A
F19	Not in use	5 A
F20	Not in use	5 A
F21	Not in use	10 A
F22	Not in use	5 A
F23	Not in use	5 A
F24	Rotating beacon switch	5 A
F25	Not in use	7,5 A

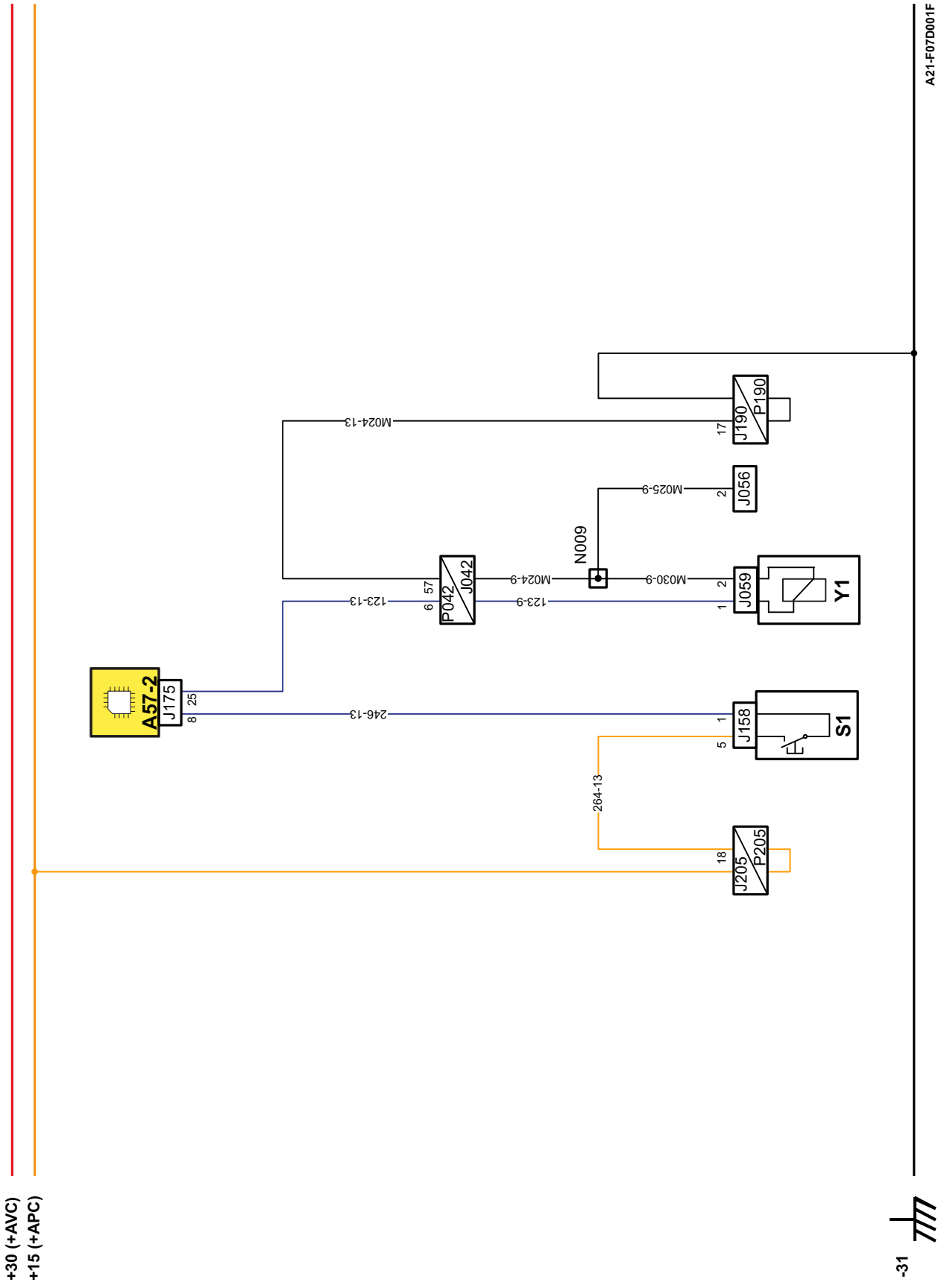
Front working lights on cab roof



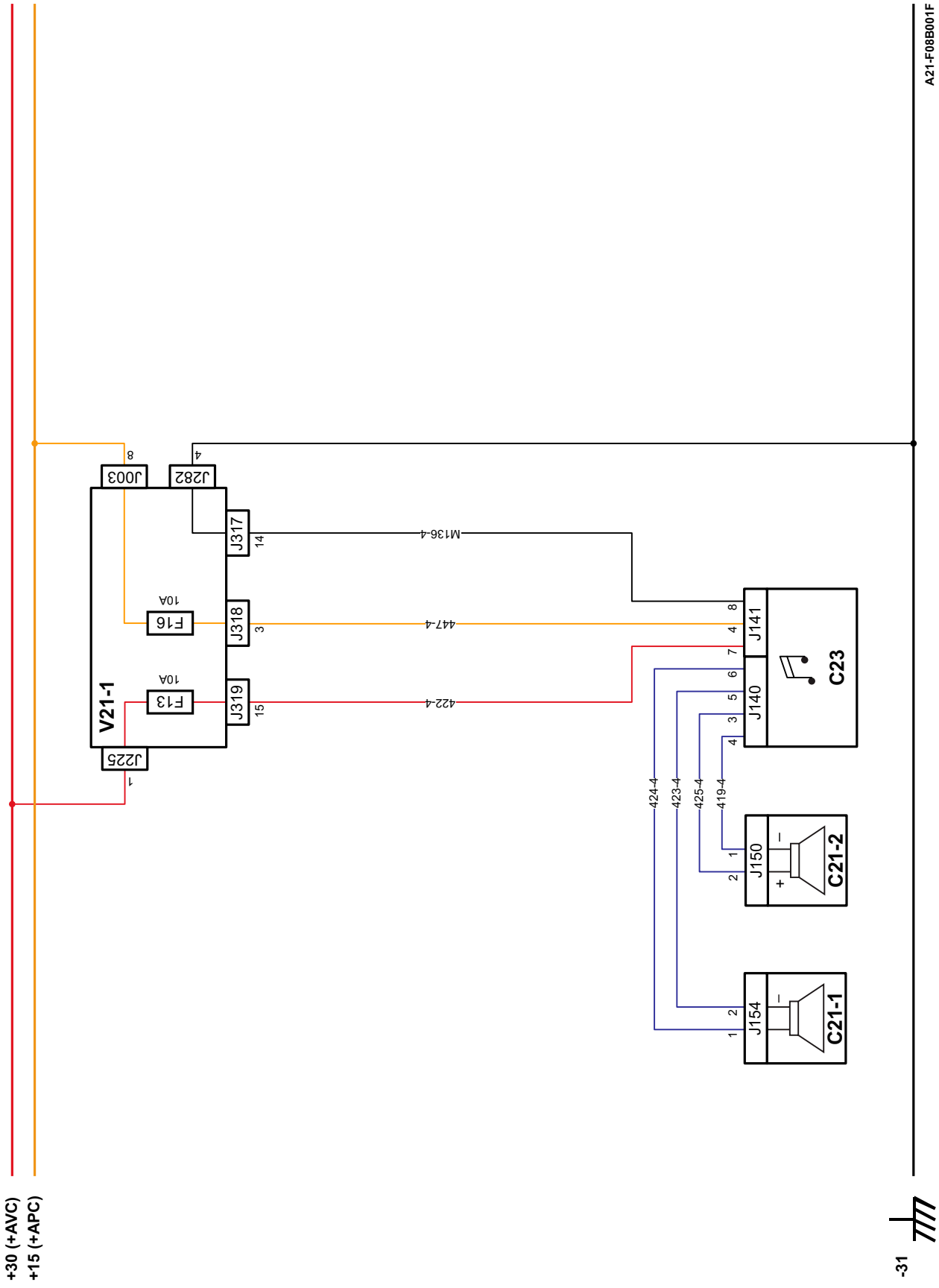
Instrument panel lighting



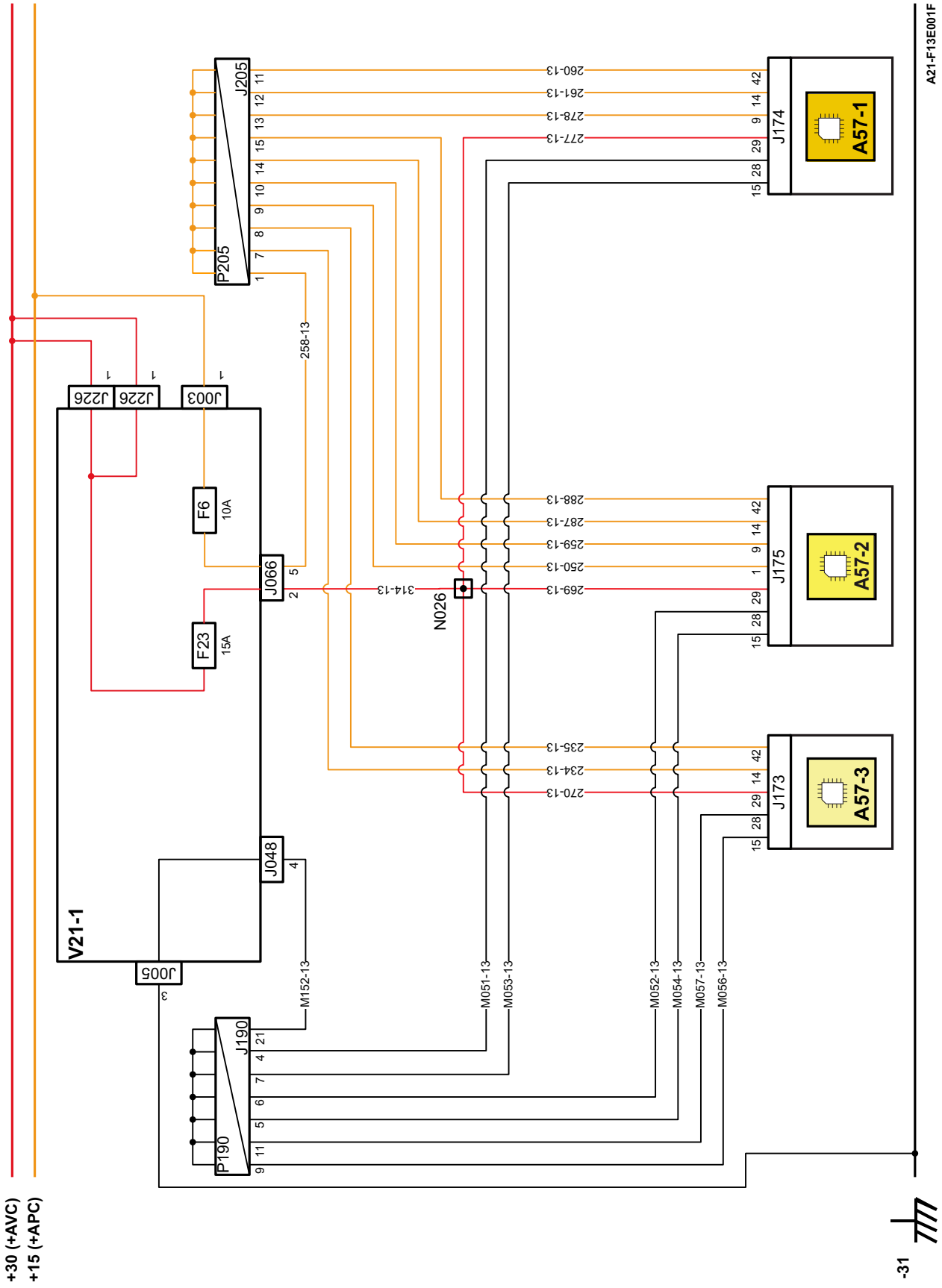
4-wheel drive control



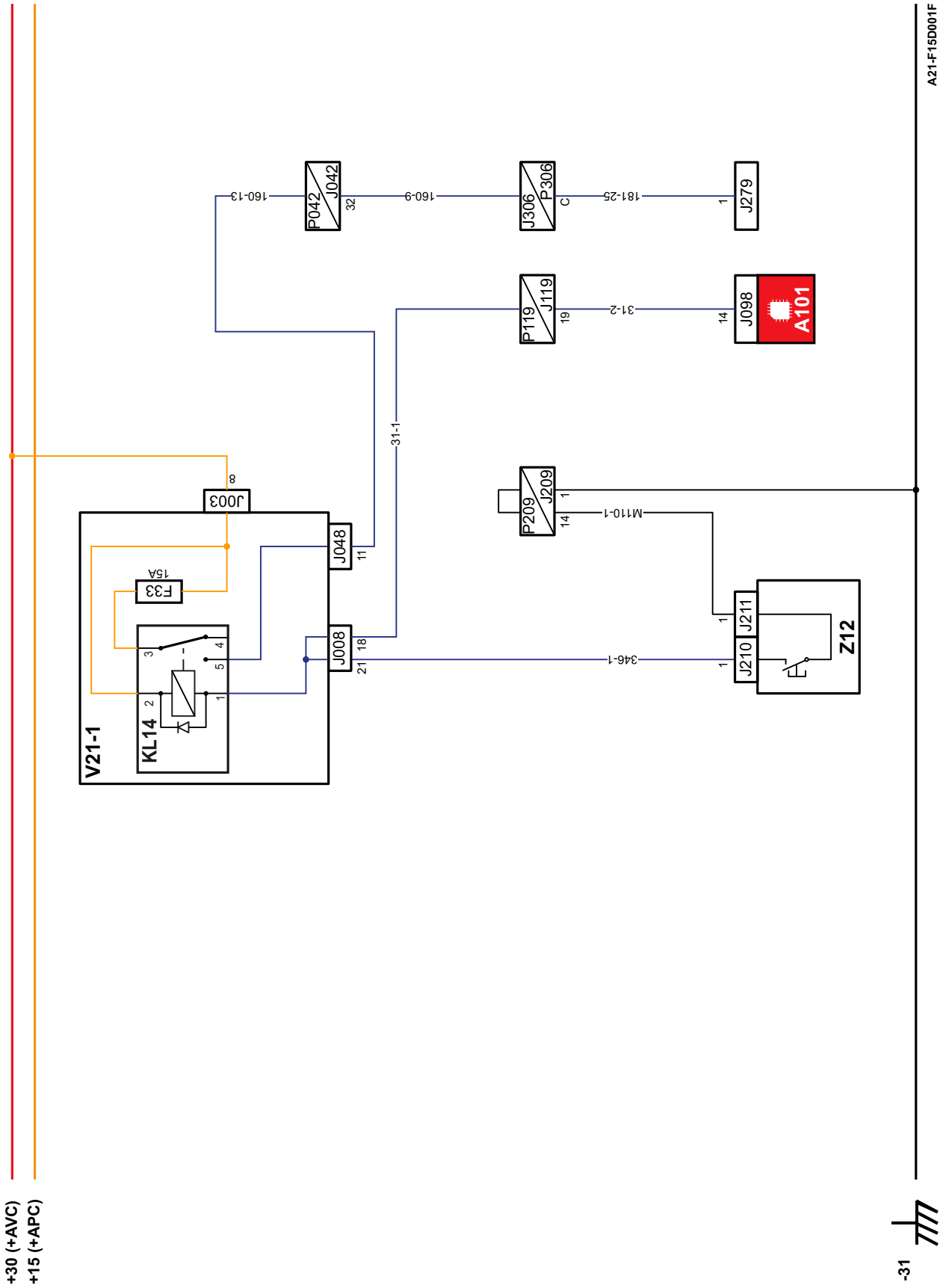
Radio


A21-F08B001F
+30 (+AVC)
+15 (+APC)
-31
V21-1
J003
J282
J225
F16
F13
10A
10A
J317
J318
J319
14
3
15
M136-4
447-4
422-4
J141
J140
C23
8
4
7
6
5
3
4
424-4
423-4
425-4
419-4
J150
C21-2
J154
C21-1
1
2
1
2

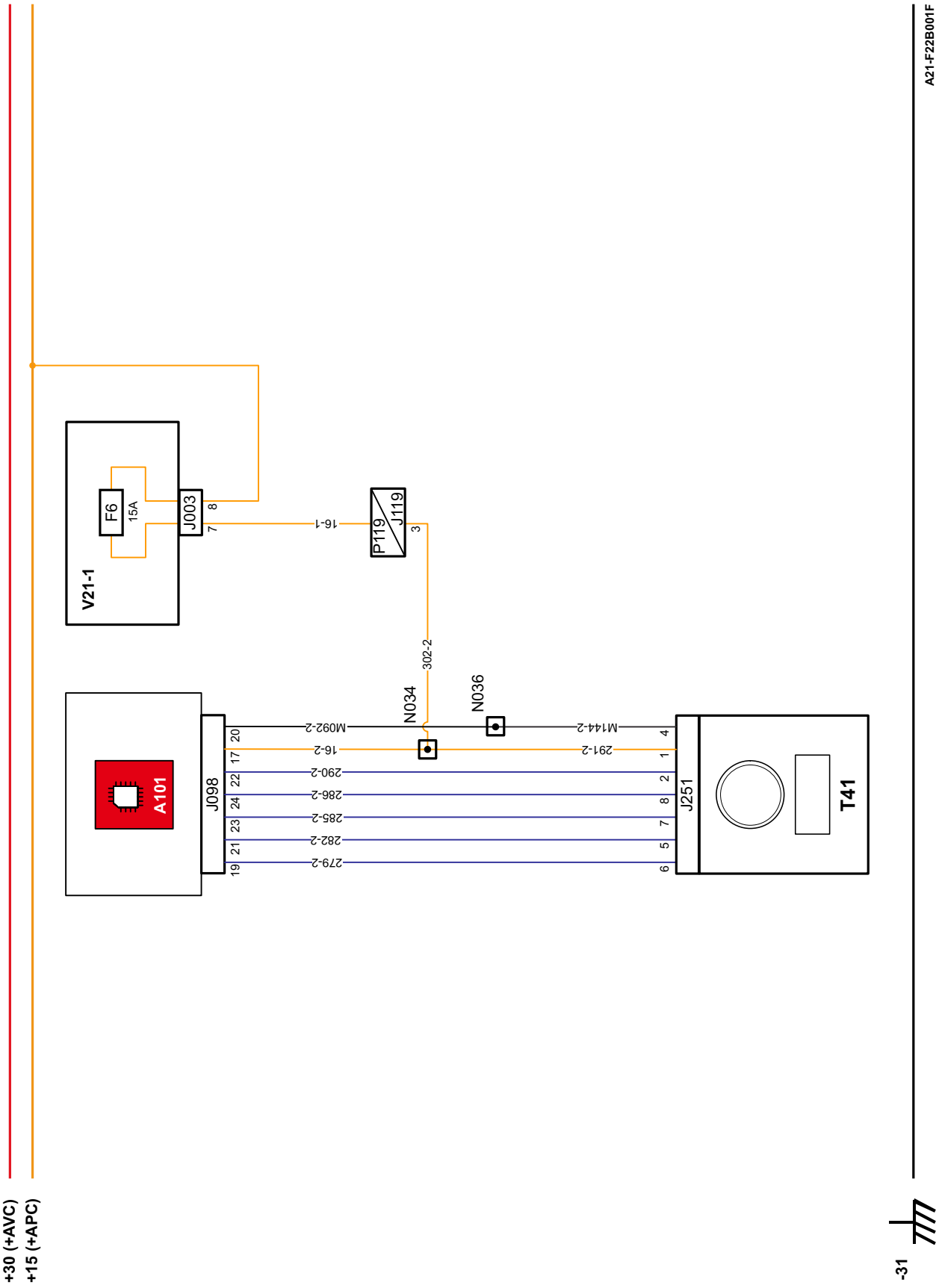
Supply of transmission modules ("TR1", "TR2", "TR3")



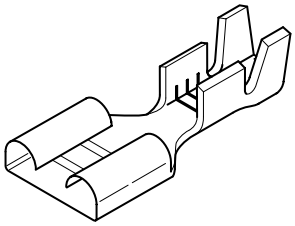
Handbrake


A21-F15D001F
+30 (+AVC)
+15 (+APC)
-31
P042
J042
32
160-13
160-9
J306
P306
C
181-25
J279
1
P119
J119
19
31-2
J098
14
A101
31-1
J003
8
15A
F33
J048
11
J008
18
21
V21-1
KL14
3
4
5
2
1
P209
J209
1
14
M110-1
J211
J210
346-1
Z12

Dashboard selector "C.I.S."



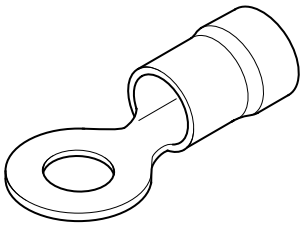
J019 Connector - W alternator



7700055899

Pin	Wire	mm²	Designation	Tip		State
1	014-41	1.0	W alternator	P045	B	

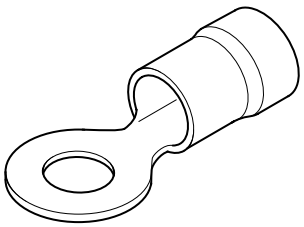
J020 Connector - Cab ground



0855809100

Pin	Wire	mm²	Designation	Tip		State
1	M006-10	2	Alternator ground	J045	C	
1	M012-10	1	Pressure switch ground	J011	1	
1	M014-10	1	Ground of air filter clogging	J012	2	
1	M016-10	1	Front PTO earth	J003	B	
1	M017-10	1.5	Washer ground - Front and back - Pre-heating	J180	3	

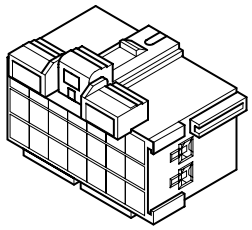
J021 Connector - Cab ground

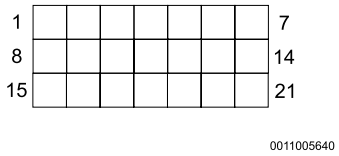


0855809100

Pin	Wire	mm²	Designation	Tip		State
1	M007-10	1	Horn earth	J002	E	
1	M008-10	5.0	Front optics earth	N004		

J047 Connector - V21-3 base plate - Cab top





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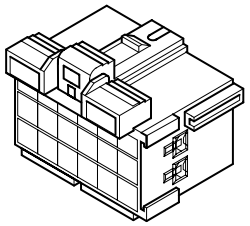
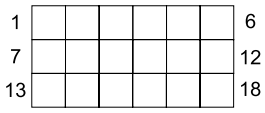
Pin	Wire	mm²	Designation	Tip		State
2	450-04	1.0	+ Upper left low beam	J256	1	
5	451-04	1.0	+ Upper right low beam	J257	1	
13	M125-04	1.0	Ground of rear left inside working light	J253	1	
14	M126-04	1.0	Ground of rear right inside working light	J252	1	
15	M127-04	1.0	Ground of rear left outside working light	J155	1	
16	M128-04	1.0	Ground of rear right outside working light	J151	1	
21	M140-04	1.0	Antenna earth	J139	1	

J048 Connector - V21-1 base plate





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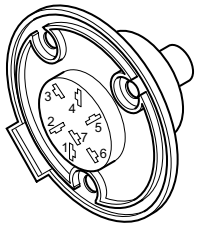
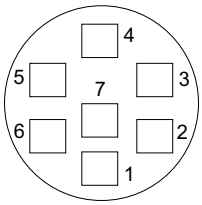
Pin	Wire	mm²	Designation	Tip		State
2	205-13	2.0	2 starter + AVC	P122	19	
3	397-13	1.0	Earth - Starter relay	J048	14	
4	M152-13	3.0	Earth - Shunt base	J190	21	
5	008-13	2.0	1 starter + AVC	P123	1	
6	163-13	0.75	Air brake solenoid valve	P042	34	
11	160-13	0.75	CUNA braking solenoid valve	P042	32	
12	449-13	2.0	+ APC loader	J255	A	
14	397-13	1.0	Starting relay ground	J048	3	
15	151-13	2.0	Main beam lights	P123	19	
16	009-13	0.5	Reverser engaged	P122	10	
17	011-13	1.0	D+ alternator	P123	3	

J080 Connector - Trailer socket





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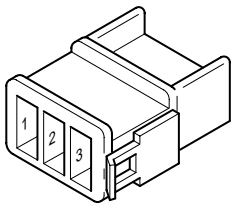
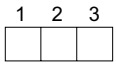
Pin	Wire	mm²	Designation	Tip		State
1	177-15	1.0	Trailer LH flashing light	J079	16	
3	M004-15	2.0	Trailer ground	J079	20	
4	180-15	1.0	Trailer RH flashing light	J079	19	
5	178-15	1.0	Trailer outlet RH light	J079	17	
6	176-15	1.0	Trailer stop	J079	15	
7	179-15	1.0	Trailer outlet LH light	J079	18	

J081 Connector - Position sensor

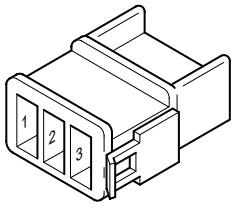


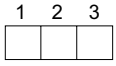


7700040308

Pin	Wire	mm²	Designation	Tip		State
1	172-15	0,5	V- rear position	J079	3	
2	170-15	0,5	RR position signal	J079	2	
3	169-15	0,5	V+ rear position	J079	1	

J082 Connector - LH bar

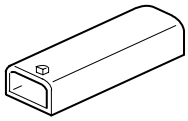




7700040309

Pin	Wire	mm²	Designation	Tip		State
1	174-15	0,5	V - left bar	J079	7	
2	167-15	0,5	LH bar signal	J079	6	
3	168-15	0,5	V+ LH bar	J079	5	

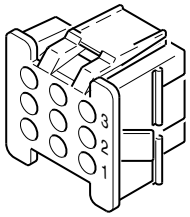
J105 Connector - Right stop contact

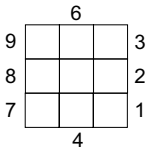


7700055900

Pin	Wire	mm²	Designation	Tip		State
1	029-02	1	Left/right stop	J102	1	

J106 Connector - Front wiper motor

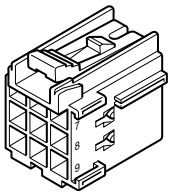


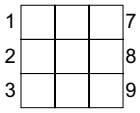


7700068242

Pin	Wire	mm²	Designation	Tip		State
1	047-02	1.0	1st speed screen wiper control	J107	4	
2	M094-02	1	Windscreen wiper earth	J121	1	
3	110-02	1	+ APC fixed stop wiper motor	J119	8	
4	109-02	1	Windscr. wiper eng. park. pos.	J121	6	

J107 Connector - Wiper control

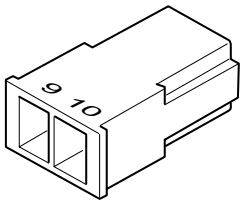




7700067411

Pin	Wire	mm²	Designation	Tip		State
1	046-02	1.5	+ APC windscreen wiper/washer control	J119	9	
2	060-02	0.5	Dashboard display selector	J098	7	
3	M097-02	0.5	Instrument panel display selector earth	J119	4	
4	047-02	1.0	1st speed screen wiper control	J106	1	
5	048-02	1.0	Front screen wiper park pos. control	J121	7	
6	049-02	1.0	Intermittent control	J121	5	
7	050-02	1.0	Front screen washer control	J121	4	

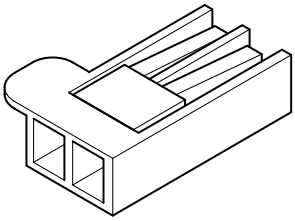
J149 Connector - Rotating beacon control



7700038262

Pin	Wire	mm²	Designation	Tip		State
9	441-04	0.5	Rotating beacon indicator	J148	5	
10	M129-04	0.5	Rotating beacon warning light earth	J375	4	

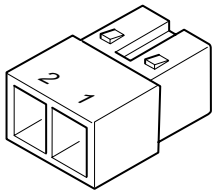
J150 Connector - Right-hand loudspeaker



8200123872V

Pin	Wire	mm²	Designation	Tip		State
1	419-04	0.5	- Right loudspeaker	J140	4	
2	425-04	0.5	+ RH loudspeaker	J140	3	

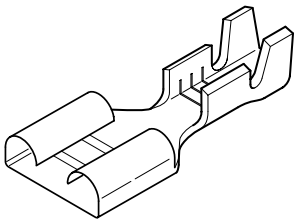
J151 Connector - External rear right working light



7700067772

Pin	Wire	mm²	Designation	Tip		State
1	M128-04	1.0	Ground of rear right outside working light	J047	16	
2	431-04	1.0	+ Rear right outside working light	J049	8	

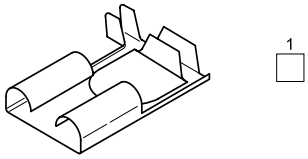
J178 Connector - Diode



7700071733

Pin	Wire	mm²	Designation	Tip		State
1	152-13	0.75	Solenoid valve feedback EV2-A	P042	28	
1	280-13	0.75	Solenoid valve feedback EV2-A	J175	23	

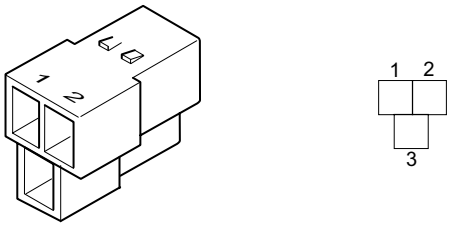
J181 Connector - Engine oil pressure



7700040944

Pin	Wire	mm²	Designation	Tip		State
1	057-10	1	Oil pressure	J001	38	

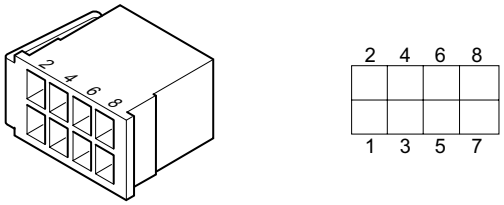
J182 Connector - Resistance box



7700015870

Pin	Wire	mm²	Designation	Tip		State
1	266-13	0.5	Tractor speed	J174	23	
1	804-13	0.5	Tractor speed	P123	15	
3	M058-13	0.5	Resisitance earth	J190	13	

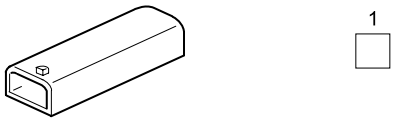
J213 Connector - Warning command



7700038263

Pin	Wire	mm²	Designation	Tip		State
1	349-01	1.5	LH indicators controls	J026	12	
2	350-01	1.5	+ AVC warning controls	J003	12	
3	351-01	1.5	Indicator/warning power supply	J008	19	
5	352-01	1.5	Right flashing lights control	J026	8	
6	353-01	1.5	Central supply	J008	10	
8	354-01	1.5	+ APC warning controls	J026	19	

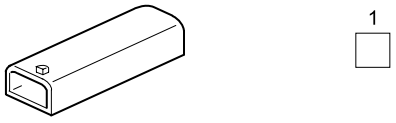
J214 Connector - Door leaf - Left



7700055900

Pin	Wire	mm²	Designation	Tip		State
1	328-01	0.5	Door leaf - Left	J157	1	

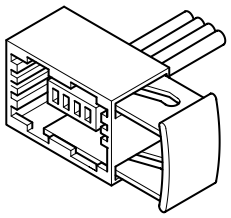
J215 Connector - Door leaf - Left



7700055900

Pin	Wire	mm²	Designation	Tip		State
1	M105-01	0.5	Left door rebate ground	J209	10	

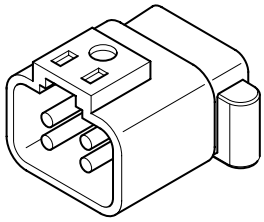
J244 Connector - Electrohydraulic spool valve ("DEH")



0011088460

Pin	Wire	mm²	Designation	Tip		State
1	387-44	0.5	CAN L - Hydraulic systems	J242	5	
2	446-44	1.5	+AVC (constant source) - Electrohydraulic spool valve ("DEH")	J242	7	
3	M143-44	1.0	Electrohydraulic distributor ground	N033		
4	386-44	0.5	CAN H - Hydraulic systems	J242	4	

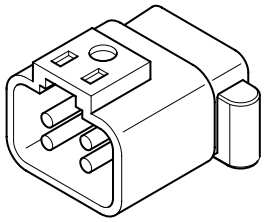
J245D Connector - Right-hand rear signaling light



7700078450

Pin	Wire	mm²	Designation	Tip		State
1	245-03	0,75	RH rear flashing light	P207	D	
2	241-03	0,75	Rear right tractor position light	P207	E	
3	M144-03	0.75	RH rear flashing light ground	P207	K	
4	229-03	0,75	Right tractor stop light	P207	N	

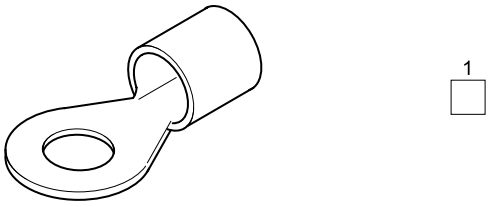
J245G Connector - Left-hand rear signaling light



7700078450

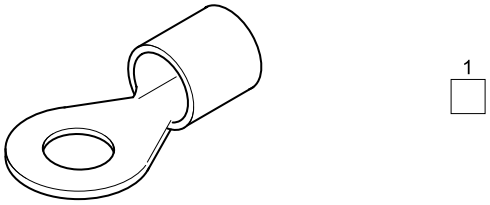
Pin	Wire	mm²	Designation	Tip		State
1	245-03	0,75	LH rear flashing light	P208	D	
2	241-03	0,75	Rear left tractor position light	P208	E	
3	M144-03	0.75	LH rear flashlight ground	P208	K	
4	229-03	0,75	Left tractor stop light	P208	N	

J280 Connector - Connection on battery + terminal



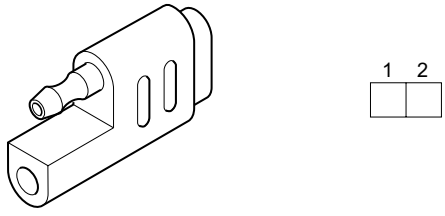
Pin	Wire	mm²	Designation	Tip		State
1	043-07	16.0	+ AVC cab	J437	1	

J281 Connector - Connection on battery + terminal



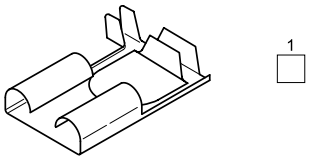
Pin	Wire	mm²	Designation	Tip		State
1	044-07	16.0	+ AVC cab	J437	2	

J283 Connector - Tractor speed sensor



Pin	Wire	mm²	Designation	Tip		State
1	132-09	0.75	+ Tractor speed	J042	12	
2	M034-09	0.75	Tractor speed earth	N008		

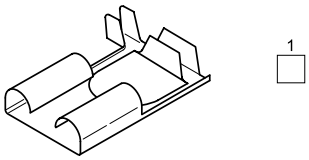
J408 Connector - RH dipped light



7700040944

Pin	Wire	mm²	Designation	Tip		State
1	220-11	1.0	RH dipped light	N037		

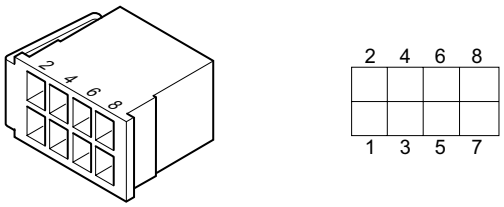
J409 Connector - RH dipped light



7700040944

Pin	Wire	mm²	Designation	Tip		State
1	M067-11	1.0	RH dipped beam earth	N039		

J410 Connector - Low beam up / down switch



7700038263

Pin	Wire	mm²	Designation	Tip		State
1	313-22	2.0	Top dipped headlight	J044	4	
2	455-22	2.5	High beam supply and low beam command - High	J044	1	
5	310-22	2.5	Dipped headlights	J044	2	
6	454-22	2.5	High beam supply and low beam command	J044	5	
7	311-22	2.0	Low dipped headlights	J044	6	
8	127-22	2.5	High beam supply and dipped lights command	J044	3	

Splice N018

Wire	mm²	Designation	Tip		State
M044-14	3.0	harness ground	P193	1	
M045-14	1	Auto 5 earth - Electro-hydraulic lift	J191	15	
M046-14	1	TCE15T earth	J192	16	
M047-14	0,5	Unit earth Auto5 - Electro-hydraulic lift	J191	28	
M118-14	2.0	DEH control harness earth	J195	10	
M119-14	1.5	DEH earth	P079	34	

Splice N019

Wire	mm²	Designation	Tip		State
189-14	1	Valve/indicator	J191	6	
190-14	0,5	Valve indicator	J192	8	
171-14	0.75	V REF + - Lowering valve	P079	8	

Splice N020

Wire	mm²	Designation	Tip		State
191-14	1	V + Valve/indicator	J191	5	
192-14	0,5	Valve indicator	J192	19	
164-14	0.75	V REF + - Lift valve	P079	14	

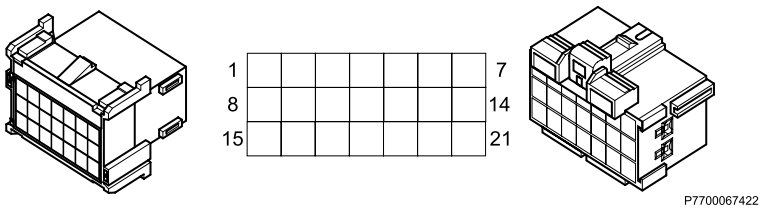
Splice N022

Wire	mm²	Designation	Tip		State
148-13	0.75	Range solenoid valve EV4	P042	26	
294-13	0.5	Copy EV4 range solenoid valve	J174	21	
298-13	0.75	Range solenoid valve EV4	J174	10	

Splice N023

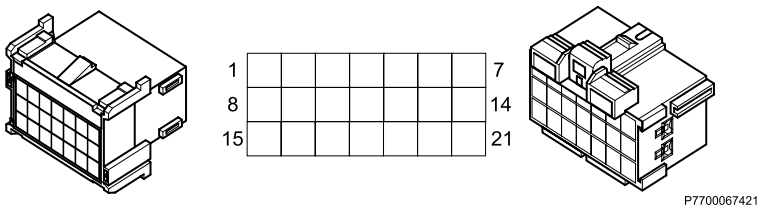
Wire	mm²	Designation	Tip		State
267-13	1.0	+APC - Power take-off clutch control	J298	4	
299-13	0.5	+APC - Power take-off brake command	J202	1	
304-13	0.5	+APC auto PTO	J163	1	
310-13	0.5	+APC fender power take-off command (ON/OFF) - Reverse	J198	15	
316-13	1.0	+APC	J198	19	

P119 - J119 Connector - Interconnection



Tip		P119			J119			Tip		State
		Wire	mm²	Pin	Designation	Wire	mm²			
J003	5	065-01	0.5	1	+ AVC control panel	065-02	0.5	J098	18	
J003	7	016-01	0.75	3	+ APC control panel	302-02	0.75	N034		
J209	3	M117-01	1.0	4	Instrument panel earth / Dashboard display selection	M097-02	0.5	J107	3	
				4	Dashboard and selector ground	M145-02	0.5	N036		
J026	2	137-01	0.5	6	Not neutral controls	137-02	0.5	J097	8	
J005	6	012-01	0.5	7	D+ alternator (dashboard)	012-02	0.5	J098	16	
J004	13	110-01	1	8	+ APC fixed stop wiper motor	110-02	1	J106	3	
J005	17	046-01	1.5	9	+ APC windscreen wiper/washer control	046-02	1.5	J107	1	
J008	9	063-01	0.5	12	REM 1 steering	063-02	0.5	J098	11	
J008	16	062-01	0.5	13	Tractor steering	062-02	0.5	J098	10	
J008	13	064-01	0.5	14	REM 2 steering	064-02	0.5	J098	12	
J008	18	031-01	0.5	19	Hand brake warning light	031-02	0.5	J098	14	
J026	9	002-01	2.0	20	+ AVC engine calculator	002-02	2.0	P001	33	
J004	16	003-01	2.0	21	+ APC engine calculator 1	003-02	2.0	P001	25	

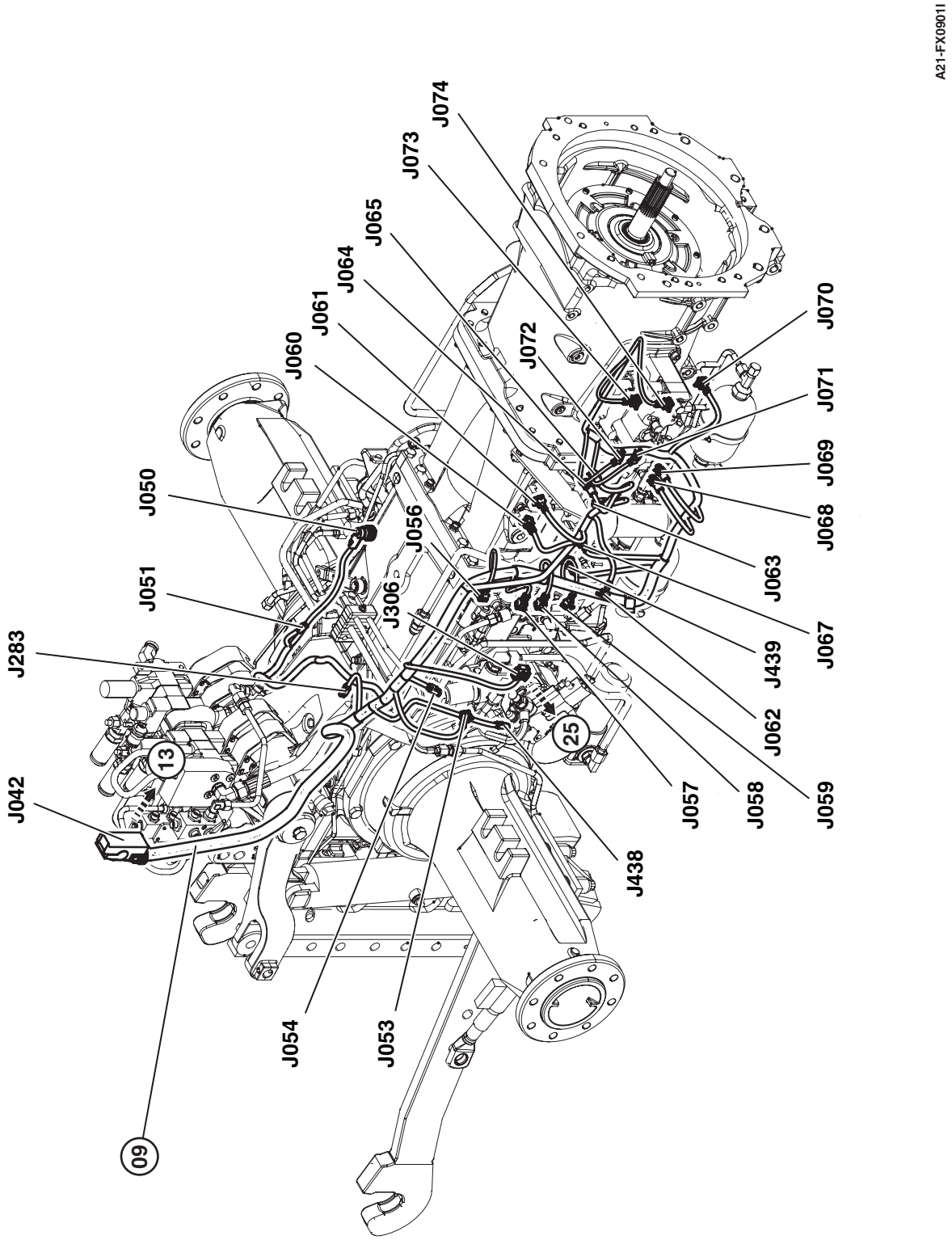
P189 - J189 Connector - Interconnection



Tip		P189				J189		Tip		State
		Wire	mm²	Pin	Designation	Wire	mm²			
J194	1	L444-14	0,5	1	CAN L - J237 derivator to electrohydraulic lifting calculator derivator	L356-13	0.5	J223	1	
J191	36	187-14	1	2	D+ alternator					
N015		206-14	0,5	3	V REF 1,6 V - Left down command	206-13	0,5	J198	10	
J194	4	H445-14	0,5	4	CAN H - J237 derivator to electrohydraulic lifting calculator derivator	H357-13	0.5	J223	4	
N014		208-14	0,5	5	V REF 9,5 V - Left up command	208-13	0,5	J198	12	
P079	15	176-14	1.0	6	Trailer stop	176-13	1.5	J198	1	
N014		207-14	0,5	7	V REF 9,5 V - Right up command	207-13	0,5	J198	11	
N015		210-14	0,5	8	V REF 1,6 V - Right down command	210-13	0,5	J198	13	
P079	16	177-14	1.0	9	Trailer LH flashing light	177-13	1.0	J198	2	
P079	17	178-14	1.0	10	Trailer outlet RH light	178-13	1.0	J198	3	
P079	18	179-14	1.0	11	Trailer outlet LH light	179-13	1.0	J198	4	
P079	19	180-14	1.0	12	Trailer RH flashing light	180-13	1.0	J198	5	
J191	38	223-14	0.5	13	Solenoid valve control - 98 l/min	223-13	0.5	J160	1	
J191	22	224-14	0.5	14	Solenoid valve relay command 98 l/min	224-13	0.5	J254	11	
N013		183-14	0,5	15	Left down command	183-13	0,5	J198	6	
N013		184-14	0,5	16	Left up command	184-13	0,5	J198	7	
N013		185-14	0,5	17	Right down command	185-13	0,5	J198	8	
N013		186-14	0,5	18	Right up command	186-13	0,5	J198	9	
P079	20	M004-14	2.0	19	Trailer ground	M004-13	2.0	J190	14	
J195	2	369-14	0.5	20	CAN-High CLAAS	369-13	0.5	J291	6	
J195	1	370-14	0.5	21	CAN-Low CLAAS	370-13	0.5	J291	3	

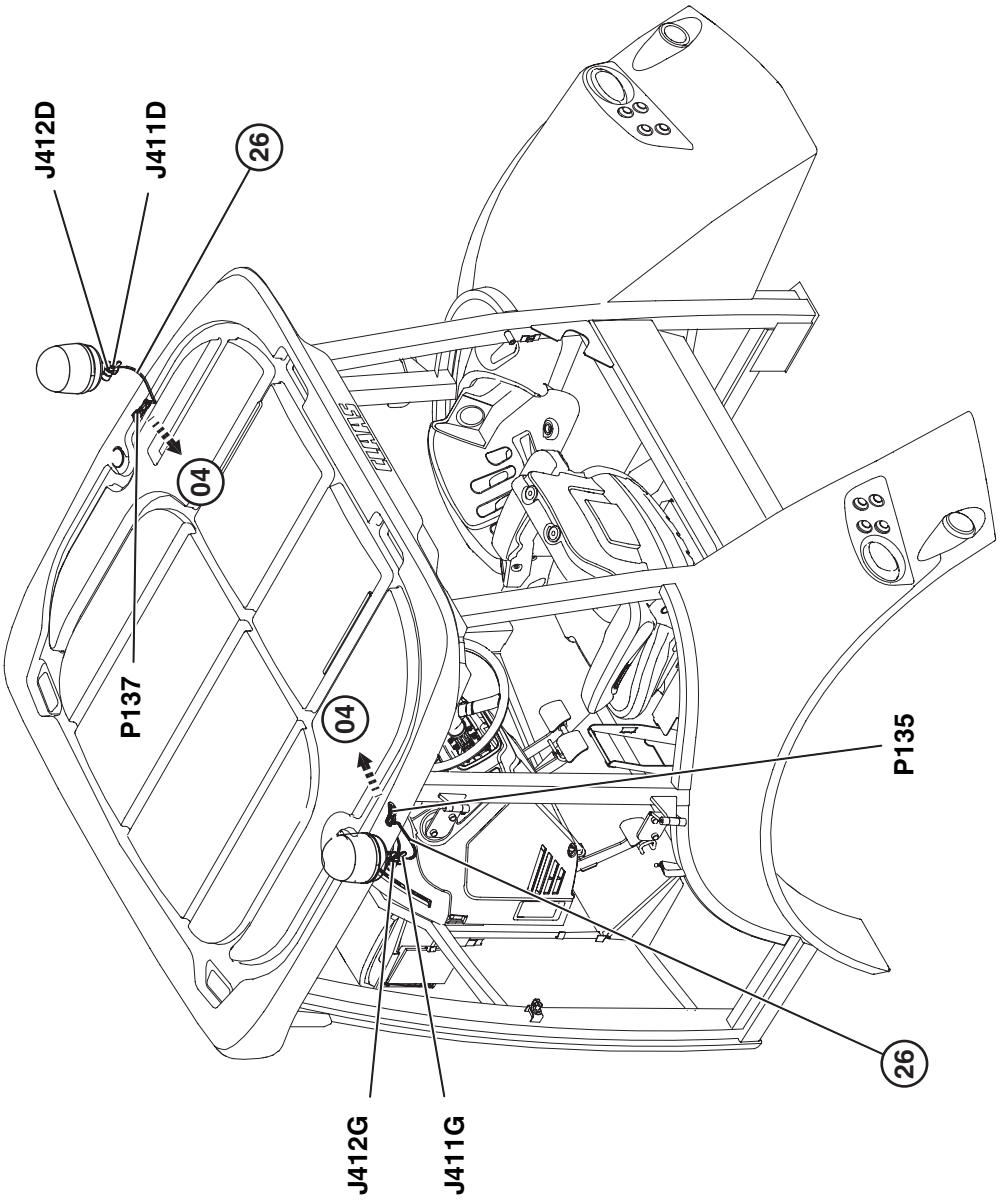
F3
IMPLANTATION DIAGRAMS

09 - Quadrishift Transmission harness

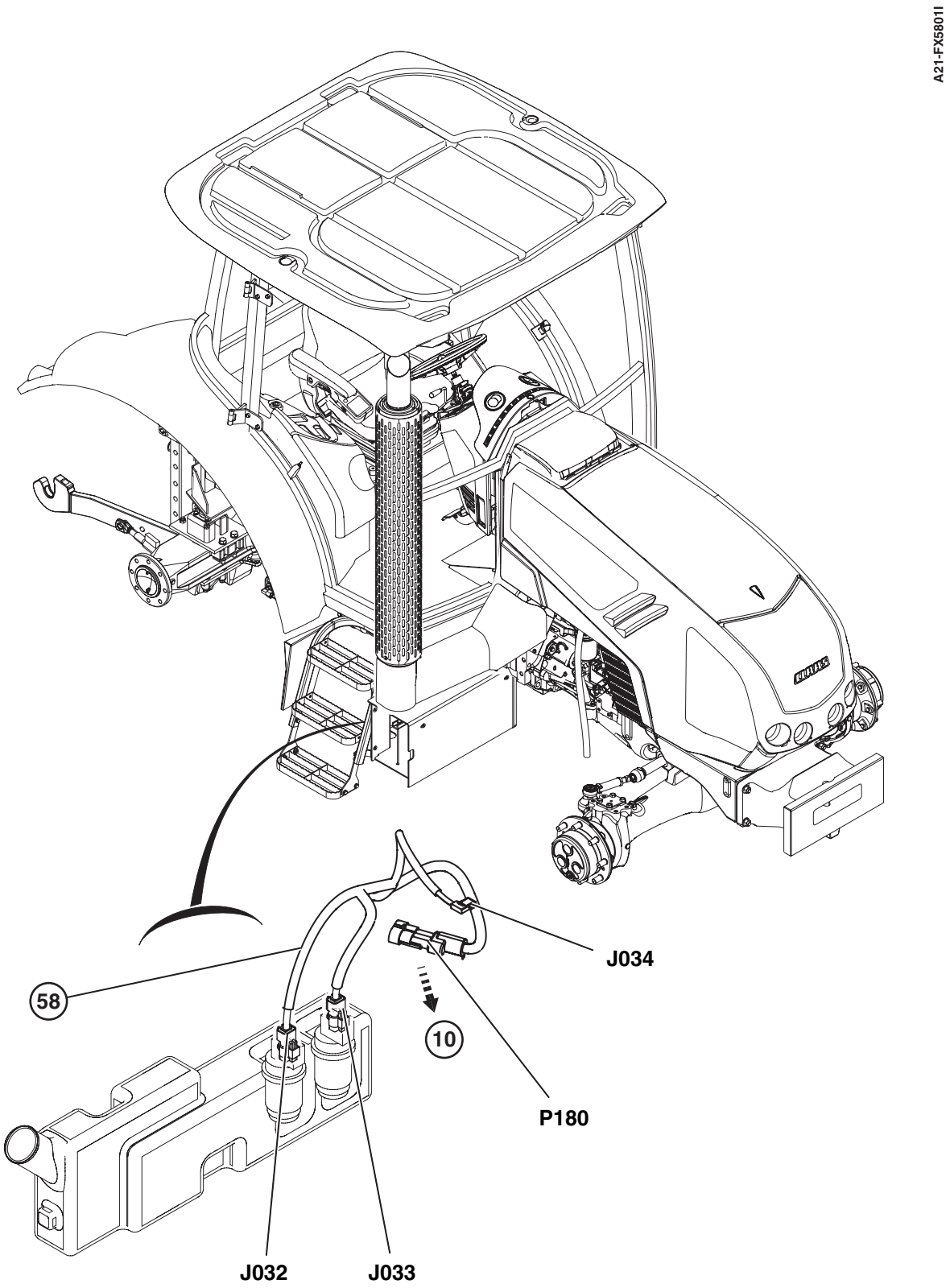


26 - Rotating beacon harness

A21-FX2601I



58 - Washer tank adaptation harness



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