Annotation:

The present operational bulletin contains information on changes in dashboard with included control instruments, switches, fuses.

Content of changes:

Page 3. «Adopted abbreviations and symbolic notations» shall be supplemented with the following records:

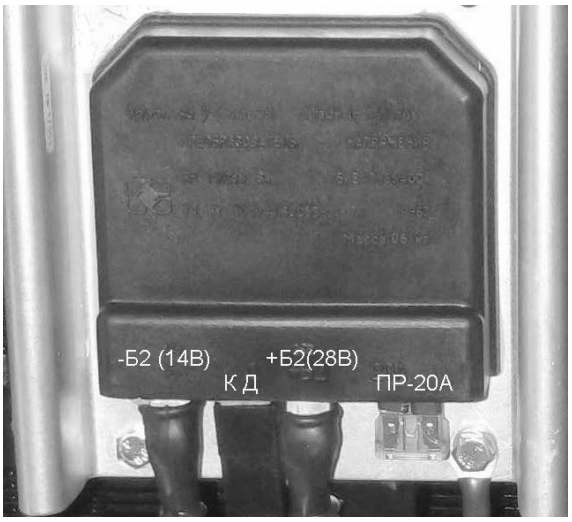
FVS.F – fuel volume sensor (frequency modification);
LCD – liquid-crystal display;
II – integrated indicator.

Section 2.3 Electrical equipment

Subsection 2.3.1 General information

Shall be supplemented with

Functions of the voltage converter 15 (fig. 2.5) are the following:
- charging supplementary accumulator battery on tractors with 24V starting;
- controlling charging system workability and monitoring emergency situations.



Voltage from alternator is supplied to power terminal of voltage converter “-Б2 (14V)”, and voltage from terminal “+Б2 (28V)” is supplied to terminal “+” of the supplementary accumulator battery. Voltage between terminals of the supplementary battery shall be approximately 14,3 V with the engine started.

Though two-pin plug the converter is connected to signal terminal “Д” of the alternator and signalling lamp “К” in the voltage indicator in dashboard.

A fuse installed on the converter body (line “-Б2 (14V)”) protects the converter from breakdown in the following cases:

- short circuit in the line “+Б2 (28V)” – “tractor body”;
- impact of back voltage in the line “+Б2 (28V)” – “-Б2 (14V)” (reverse polarity).

Algorithm of the converter operation:

1. When the key of starter and instruments switch is turned into position “I” (“Instruments are on”, fixed position) a control lamp of supplementary battery charging lights up on the dashboard.
2. After the engine is started, the control lamp of supplementary battery charging shall go out, this shows that the converter charges the supplementary battery. If the control lamp of the battery charging continues to glow, it means that the supplementary battery doesn't get charged, it is necessary to find and eliminate fault cause.

Specific faults that prevent the supplementary accumulator battery from charging:

- voltage at terminal “Д” of the alternator is below 5,5 V;
- voltage in on-board system is below 12,4 V;
- voltage in on-board system is above 15,6 V;
- bad contact or absence of negative lead of the converter;
- load current on the terminal “+Б2 (28 V)” is below 15 mA (accumulator battery is charged, bad contact in the line is possible);
- the voltage converter has got overheated – the temperature is above 110°C.
- heavy discharge of the supplementary accumulator battery (the accumulator battery shall be charged at charging station).

Attention: Lighting up of signaling lamp “K” after some time of engine operation may be the result of charge of the supplementary battery, in this case current in the charging circuit is below 15 mA, the converter is disengaged.

To ensure that the system of charging the supplementary battery is in good order it is necessary to do the following:

1) check charging current, to do this connect a multipurpose meter in the mode of measuring current up to 20A instead of the fuse FU (20A):

- availability of current indicates that the system of charging the supplementary battery is in good condition;

- failure of current indicates that the system charging the supplementary battery is faulty – it is necessary to find and eliminate the above stated specific faults.

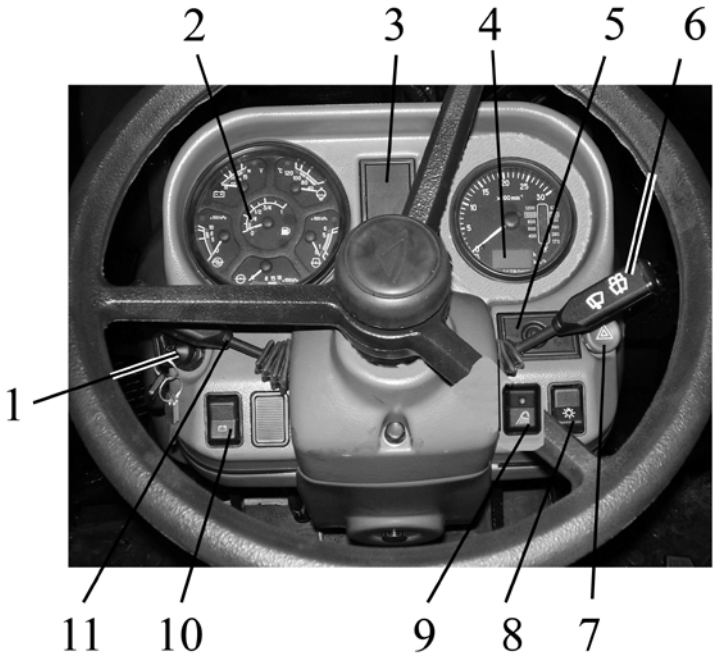
2) measure the voltage on the terminals of the supplementary accumulator battery::

- voltage within the range 13-15V testifies of the serviceability of the system of charging the supplementary accumulator battery;

- voltage below 13V testifies of a breakdown in the system of charging the supplementary battery, bad connection of the wires – it necessary to find and eliminate the above stated specific faults.

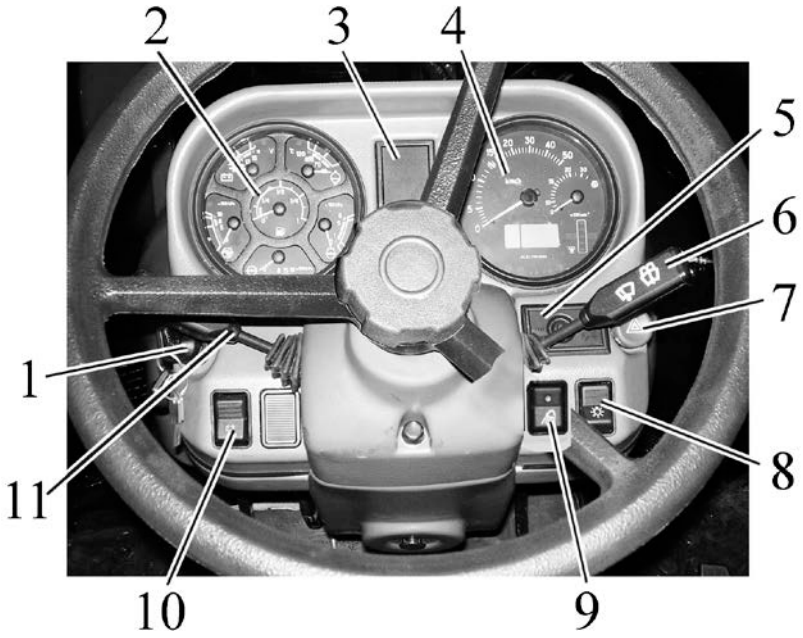
Subsection 2.3.2 Dashboard

Figure 2.6. The information available



… 4 – programmable tachospeedometer; 5 – control unit for programmable tachospeedometer; …

Shall be replaced with

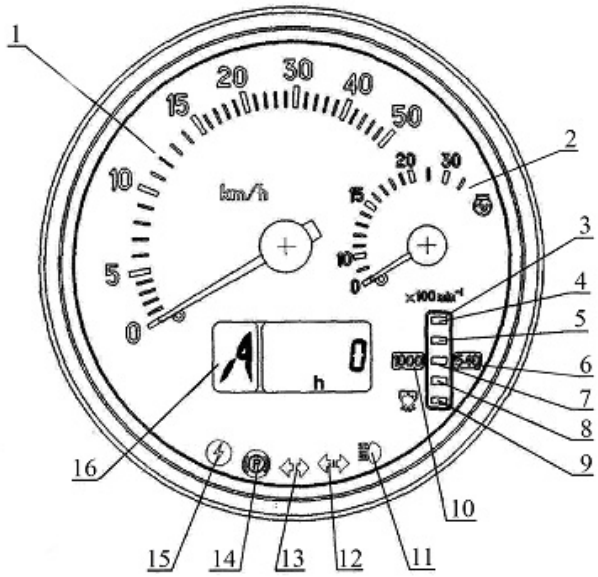


… 4 – integrated indicator; 5 – programming unit for integrated indicator; ...

Section 2.3 Electrical equipment
Subsections 2.3.2.а; 2.3.2б; 2.3.2в shall be introduced.

2.3.2a Integrated indicator (II) and programming unit

Integrated indicator shows information about operational parameters of tractor systems and units and provides operator with data on distortion of operation or failure of any system.
The integrated indicator consists of pointers and signaling lamps (figure 2.6a).



1 – speed pointer (needle indicator); 2 – engine speed pointer (needle indicator); 3 – PTO speed indicator (light indicator); 4, 9 – sections of PTO speed scale (yellow color); 5, 7, 8 – sections of PTO speed scale (green color); 6 – annunciator of "540 min^{-1}" of PTO scale range (yellow color); 10 – annunciator of "1000 min^{-1}" of PTO scale range (yellow color); 11 – pilot light of upper beam (blue color); 12 – pilot light of trailer turn blinkers (green light); 13 – pilot light of tractor turn blinkers (green light); 14 – pilot lamp of parking brake (red color); 15 – pilot lamp of increased voltage in on-board power system (red light); 16 – multifunctional LCD.

Figure 2.6a – Integrated indicator

The speed pointer shows on a needle indicator the design speed of tractor travel. The design speed exceeds the real speed, as skidding of a tractor is not taken into account.

The speed pointer is actuated by signals from pulse sensors of turning speed of toothed gears of final drives of tractor left and right rear wheels. The speed is taken form the signal of the sensor, mounted on the final drive gear of the wheel, turning with less speed.

In case one of the speed sensors is faulty the integrated indicator shows the speed basing on signal the signal from the functioning sensor. When one of the speed sensors is faulty the Integrated Indicator shows the speed readout basing on the signal from the functioning sensor. On LCD the breakdown of the speed sensors or their lines is depicted as "0" figure, positioned on the left or on the right of a digital area (figure 2.6b) depending on which side of tractor movement the faulty sensor is positioned.

The engine speed pointer shows on a needle indicator the speed of crankshaft turning.

Information on engine revolutions comes from phase winding of the generator. The revolutions range is 0 – 3500 (rev/min).

PTO speed indicator shows on indicating light the speed of the rear PTO shaft.

The PTO speed indicator is actuated by the signal coming from the speed sensor, mounted above the toothed gear in PTO body. To make the Integrated Indicator depict the speed correctly it is necessary to program it.

The operating order of the PTO speed indicator is the following:

1. after the PTO has been started the annunciator of "540 min $^{-1}$"of the PTO scale range 6 lights up;
2. as the PTO shank reaches the speed of 320 min^{-1} together with the annunciator 6 a lower segment of the PTO indicator 9 lights up.
3. as the speed increases further, together with the annunciator 6 PTO indicator segments light up one-by-one from top downward in the following order: 8-7-5-4;
4. as the PTO shank speed reaches 750 min^{-1} the annunciator 6 goes off, an annunciator of "1000 min^{-1}" of PTO scale range 10 lights up together with the lower segment of PTO indicator 9.
5. as the speed increases further, together with the annunciator 10 segments of PTO indicator light up one-by-one bottom-up in the following order: 8-7-5-4;
6. during the process of PTO operation the PTO speed is depicted on the indicator against the upper lighting segment in accordance with the table (for the engaged PTO operating mode).

Table – Correspondence of indicator parameters with the speed of PTO shank

PTO shank speed at modes		Upper operating segment of the scale
"540 min^{-1}"	"1000 min^{-1}"	
650	1150	4
580	1050	5
500	950	7
420	850	8
320	750	9

Depending on the PTO mode engaged it is necessary to count the speed on the respective table column.

Multifunctional Integrated Indicator shows information simultaneously in two fields 1 and 2 (figure 2.6b).

1 – digital designation of the gear engaged (figures from 0 to 6);
2 – current numeric value of one of tractor system parameters.

Figure 2.6b – Multifunctional LCD.

Letter “A” is depicted in the informational field as a complex electronic control system is not provided for on the tractor.

The following parameters are depicted in the informational field 2:

- total apparent time of engine operation;
- PTO speed;
- volume of fuel that remains in the tank, mounted on the brackets on the semi-axle to the right of tractor movement;
- testing serviceability of speed sensors;
- testing serviceability of a frequency sensor of fuel volume FVS.F.

Switching between the indicating mode “Total apparent time of engine operation”, “PTO speed”, “Volume of fuel that remains in the tank” and fault messages of “Speed sensors”, “Sensor of fuel volume” is performed by “Mode” button of the programming console of the Integrated Indictor (figure 2.6c).

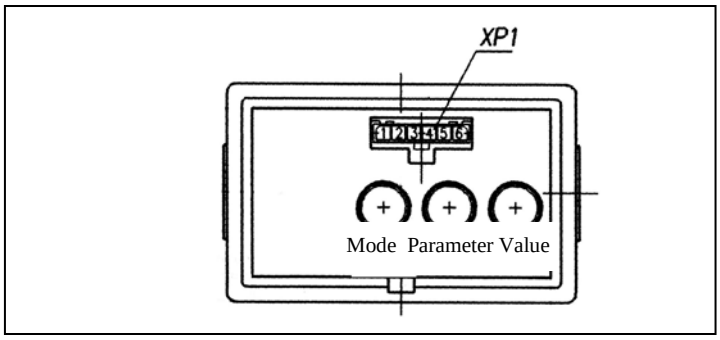


Figure 2.6c – Programming console of the Integrate Indicator

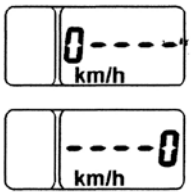
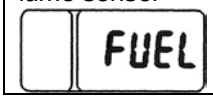
Displaying on LCD and brief description of information on engine operating time, PTO speed, remaining volume of fuel in the tank is given in the table.

Table – displaying of information on engine operating time, PTO speed, remaining volume of fuel in the tank on LCD

Parameter	Parameter description
Total apparent time of engine operation, h min 0 h max 99999 h	The counter amasses information on total apparent time of engine operation when the signal form generator phase winding comes and it saves it when the power supply is cut out.
PTO speed, min^{-1} 485 min^{-1}	In this mode PTO speed in a digital format is displayed depending on the signal from PTO speed sensor.
Remaining volume of fuel in the tank, l 117 l	In this mode the current volume of fuel in the tank is displayed. The mode is active only with the tractor stopped.

Displaying on LCD messages on fault of speed sensors, fuel volume sensor and a brief description are given in the table.

Table – displaying messages on fault of speed sensors, fuel volume sensor on LCD

Parameter tested	Fault description.
Testing of operation ability and connections of speed sensors  – Left wheel sensor – Right wheel sensor	In case there are no signals from the sensors for 10 - 12 sec. a message as “0” figure is shown on the display, characterizing the position of the faulty sensor (left or right) or breaking in a circuit of the given sensor.
Testing operation ability of fuel volume sensor  	When there is no frequency signal from FVS.F within 2 sec. a message of a fault is displayed on LCD.

The pilot indicating lamp of headlight upper beam 11 lights up when switching on the headlight upper beam.

Indicators of tractor and trailer blinkers 13 and 12 operate in the flashing mode when switching on right or left turn signal with underwheel multifunctional switch or when switching on emergency button.

The pilot signaling lamp of parking brake 14 works in a flashing mode with 1 Hz frequency after the sensor of parking brake has gone off.

The pilot lamp of the increased voltage in on-board system 15 is actuated when tractor on-board voltage increases above 19 V and goes out when the supply voltage falls below 17 V.

Attention: when tractor on-board voltage increases above 19 V the Integrated Indicator fully goes out and recovers when the level of voltage is below 17V.

Attention: The pilot signaling lamps are on and out simultaneously with changes of a state system sensors.

2.3.2b Description of Integrated Indicator functional check. Integrated Indicator programming.

With each power supply a check of functioning of needle pointers and scale elements of PTO indicator is carried out in the Integrated Indicator.

In this case pointing needles deflect from their reference points behind the first digitized marks of the scale for not more than one sec. (behind the mark “5” for the speed pointer and behind the mark “10” for the engine speed pointer), also both annunciators of PTO scale range 6 and 10 and all PTO scale segments are actuated (figure 2.6a).

The Integrated Indicator is programmed by means of:

- a console allowing to program the indicator manually with the help of buttons “Mode”, “Parameter” and “Value” (figure 2.6c), to change the mode of displaying parameters on LCD.
- a diagnostic connector XP1, positioned on the front surface of the console which allows to program (reprogram) the Integrated Indicator automatically with a special device (if available).

2.3.2c Algorithm of Integrated Indicator programming

To choose a fixed value of a parameter of the Integrated Indicator programming the following shall be done:

- upon first pushing the button “Parameter” the Integrated Indicator transits into the mode of viewing a programmable parameter and its numeric value on LCD-display.
- upon repeated pushing the button “Parameter” a cyclic change of parameters takes place;
- upon sequential pushing the button “Value” a change of a numeric value of the set programmable parameter takes place;
- the programming mode is exited automatically when the buttons “Parameter” and “Value” are not pushed within 7 seconds.

When the programming mode is exited the last parameter values chosen with the button “Value” are stored.

To choose a nonfixed value of a parameter of the Integrated Indicator programming the following shall be done:

- with the button “Parameter” choose a parameter, the value of which is to be set;
- push the button “Mode” twice, after that the least significant digit of a numeric value will start flashing on LCD-display;
- the flashing digit of a parameter is changed by pushing the button “Value”;
- transit to the more significant digit is carried out by pushing the button “Parameter”;
- the mode of programming a nonfixed value of any parameter is exited by a double pressing the button “Mode”;
- after the given mode is exited digits of the set parameter value stop flashing;

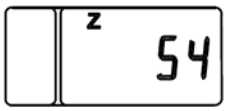
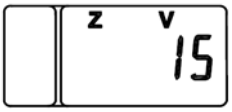
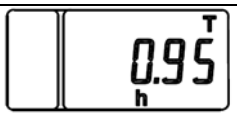
A newly entered value is set last in the list of parameter values permitted for programming.

Upon single pressing the button “Mode” in the programming mode entering an arbitrary value of a parameter is not possible.

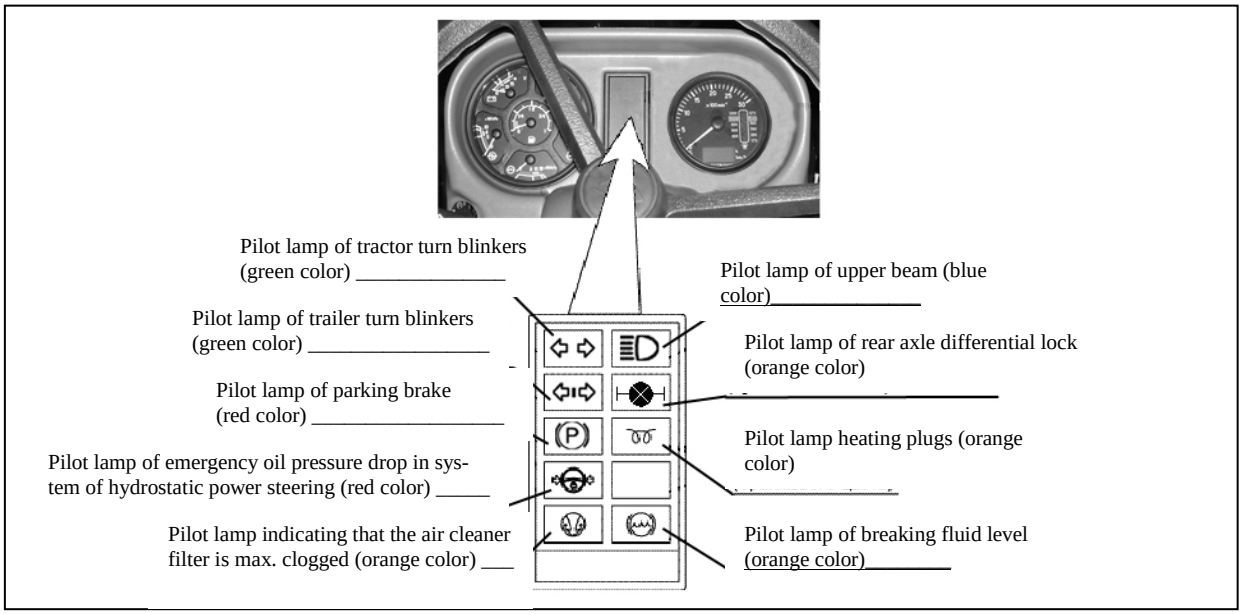
If the buttons “Mode”, “Parameter”, “Value” are not pressed within seven seconds in the mode of entering a nonfixed value, the Integrated Indicator exits the programming mode automatically storing the set parameter values.

List of programmable parameter values for tractors “BELARUS – 2022.3” (graphic samples of displaying parameters and their values in the programming mode) is given in the table

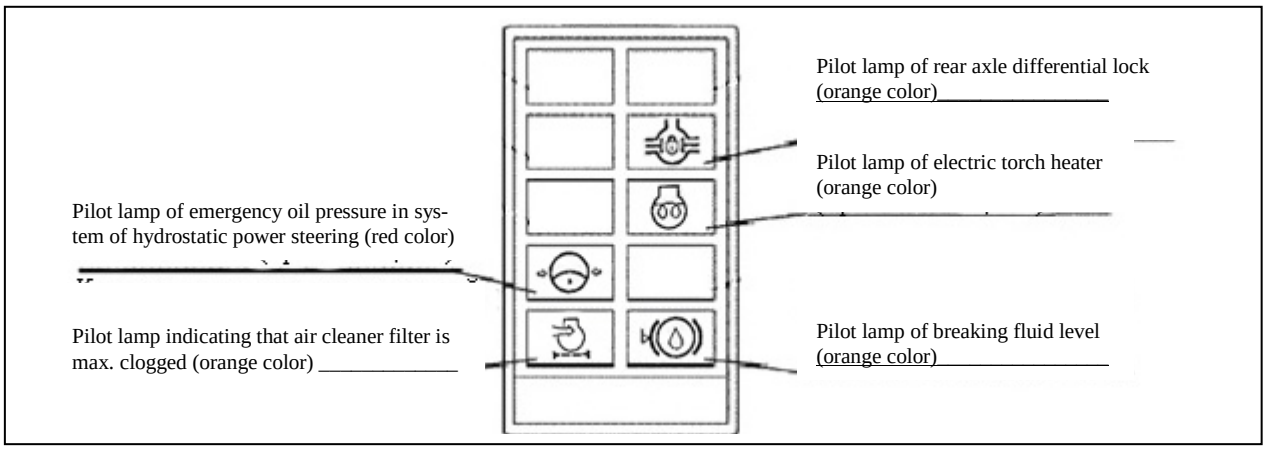
Table – List of programmable parameter values for tractors “BELARUS – 2022.3”

	Parameter Z – number of teeth of gears of final shafts of driving wheels (left and right), above which speed sensors are mounted.
	Parameter “I” I is a step-up index of wheel-hub drive ratio.
	Parameter “R” R is a rear wheel rolling radius, mm. In case of reprogramming this parameter may change with resolution of 5 mm. [1)]
	Parameter “K” K is a generator drive ratio.
	Parameter “KV2” KV2 is a PTO ratio. [2)]
	Parameter “ZV” ZV is a number of teeth of a washer of PTO speed sensor
	Parameter “V” V is a fuel tank volume, l.
	Also upon pressing the button “Parameter” in the programming mode, an independent parameter “T” of the revised content of the counter of total apparent time of engine operation is displayed in the list of programmable parameters. This parameter is not available for alteration, it represents a precise value (up to 1/10 of an hour) of engine operation time.
[1)] “910” is a value for tyres 580/70R42. If other types of tyres are mounted it is necessary to set a value of the parameter “R”, corresponding to the rolling radius of the tyres mounted. [2)] On tractors “BELARUS – 2022.3/2022.3B” rear PTO speed is calculated basing on the signal from PTO speed sensor. In this connection the parameter “KV2” is not used and may have an arbitrary value.	

Subsection 2.3.2 Instruments dashboard
Figure 2.7. The information available



Shall be replaced with



Page 15.
The following clauses shall be annulled:

a) pilot lamps of turn blinkers of a tractor and of a trailer operate in the flashing mode when the signal of left or right turn is switched with the underwheel multifunctional switch 11 (figure 2.6.) or when switching emergency button;

b) pilot lamp of a parking brake switch operates in the flashing mode with 1 Hz frequency when the parking brake switch sensor goes off;

e) pilot lamp of headlights upper beam switch lights up when switching on headlights upper beam;

Subsection 2.3.3 Fuses
Page 16.
The information available

Six fuses (figure 2.8) protect the following electrical lines from overloading:

1 - Beacon (15 A);
…
Shall be replaced with:
Six fuses (figure 2.8) protect the following electrical lines from overloading:

1 - Beacon (15 A) upon necessity of installation on a tractor;
…
The information available
…
12 – instruments supply (15 A).

Shall be replaced with:
…
12 – power supply of instruments, speed sensors, PTO sensor, fuel volume, side console (system of transmission control) (15A).

Page 17.
Figure 2.11 The information available

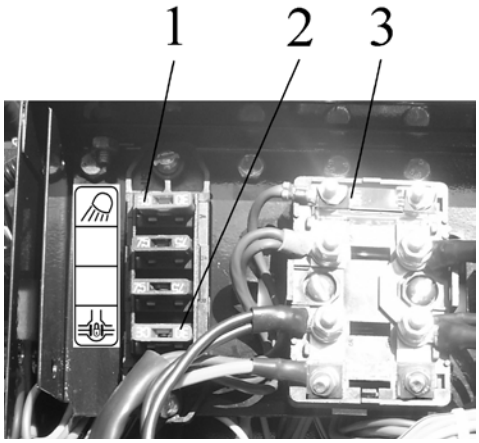


Figure 2.11 – Fuses, located in relay-and-fuses block

Three fuses (figure 2.11) protect the following electrical lines from overloading:

1 – working lights on hand grips (30A);
2 – side console power supply (30A);
3 – charge of the main accumulator battery (60A);

Shall be replaced with:

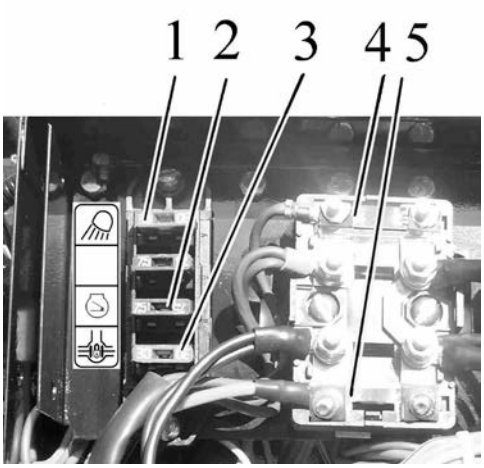


Figure 2.11 – Fuses located in relay-and-fuses block

Five fuses (figure 2.11) protect the following electrical lines from overloading

1 – working lights on hand grips and power supply of instrument dashboard consumers when the starter and instruments switch is set in position “I” (30A);
2 – fortifier power supply (7,5A);
3 – side console power supply (30A);
4 – roof consumers power supply (80A);
5 – power supply of instruments dashboard (starter and instruments switch in position “0”) (60A);

Section 2.3 Electrical equipment
The subsection 2.3.5 shall be introduced. Fortifier.

2.3.5 Fortifier

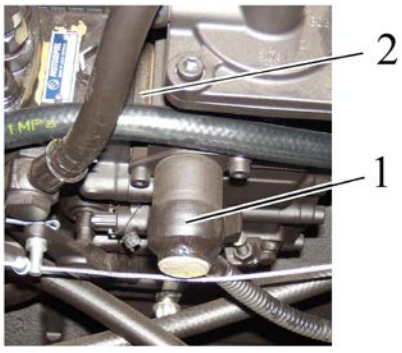


Figure 2.13a - Fortifier

The fortifier 1 is mounted on a control valve of the pump “Motorpal” 2 (figure 2.13a). It serves to deactivate the mode of fuel delivery limitation when there is no pressure or pressure value of the charged air in intake manifold is low at the moment of engine start.

The fortifier is a electromagnetic relay, its linkage is connected to a pneumatic adjustor mechanically.

At the moment of engine start when the key of starter and instruments switch is turned into position “II” (engine start), 12V is supplied to the fortifier, the relay goes off and deactivates the pneumatic adjustor.

When the key of starter and instruments switch is turned into position “I”, the fortifier goes out.

Section 2.3 Electrical equipment

The subsection 2.3.6 shall be introduced – Fuel volume sensor FVS.F

2.3.6 Fuel volume sensor FVS.F

The principle of FVS.F is the following:

Depending on the quantity of fuel in the tank the sensor forms a frequency signal in the range from 500 Hz (the tank is empty) to 1500 Hz (full tank). The signal comes to the indicator of fuel volume in the dashboard and to the Integrated Indicator. At frequency of 625 Hz the signal lamp of “reserve volume” of fuel lights up in the tank. Basing on the set parameter “V” on LCD-display the remaining volume of fuel in the tank is displayed. Basing on the set value of the parameter “V”, fuel volume remaining in the tank is displayed on LCD-display.

In case there are no indications of fuel volume in the dashboard and on LCD-display of the Integrated Indicator (fault message “FUEL”) it is necessary to do the following:

a) check integrity of lines in a bunch along transmission from twelve-pin cylindrical plug to three-pin receptacle connecting wires to FVS.F (BN1), if necessary, repair the lines.

Electrical lines of FVS.F are considered in good order if at position “I” of starter and instruments switch SA9 the following conditions are fulfilled:

- on the pin No3 wire of the receptacle connecting the bunch to FVS.F the voltage shall be 12V;
- the pin No2 wire of the receptacle shall have ground;
- frequency signal on the wire (pin No1 of the receptacle) with FVS.F and instrument dashboard connected must change within the range form 500 to 1500 Hz depending on the tank occupancy.

b) If electrical lines are OK, remove FVS.F from the tank. Check the tank for sediments, if any – drain it as FVS.F pipes may short circuit if there is a large amount of sediment on the tank bottom. It is also required to inspect the fuel tank visually for dirtiness between measuring pipes. If any – clean the FVS.F.

c) If all the abovementioned actions are carried out and the indications of fuel volume pointer in the instrument dashboard are still missing, it is necessary to replace the FVS.F.

Diagram of FVS.F connection to the 3-pin receptacle of the bundle is presented in the figure 2.13b.

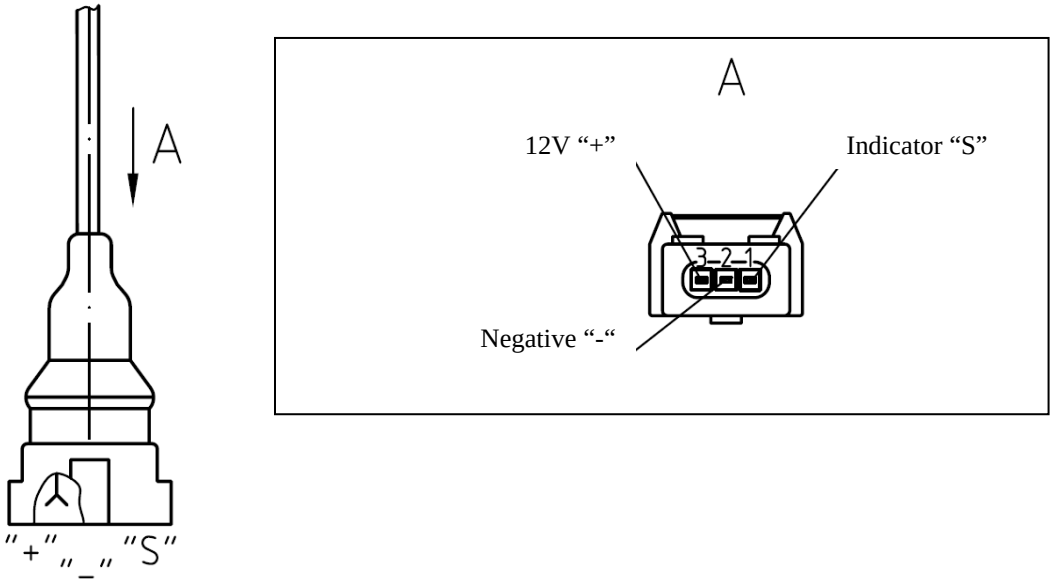


Figure 2.13б – Diagram of FVS.F connection

The assignment of the plate pins is given in the table.

Table – Assignment of pins of the bunch plate in respect of FVS.F connection

Pin No	Assignment
1	Signal of "fuel volume in the tank" to indicator "S"
2	"Ground" of sensor power supply
3	12V of sensor power supply

Page 30a. Diagram of tractor electrical connections shall be replaced.

Page 53. Annex A (obligatory) shall be amended as follows.

Diagram of electrical connections of the tractor "Belarus-2022.3"

List of elements of the electric connections diagram, presented in the figure A.1, is given in the Table A.1.

Table A.1

Item designation	Denomination	Q-ty	Note
A1	Stereo tape recorder	1	
BA1, BA2	Loud speaker	2	Included into the set of stereo tape recorder
A2…A7	Heating plug	6	Included into engine set
A8	Programming console of the integrated indicator	1	
A9	Conditioner	1	

Continuation of the table A1.

A9.1	Air handling unit	1	Included into conditioner set
A9.1.1	Adjustor of output air temperature	1	
M6	Fan electric motor	1	
S1	Switch between fan modes	1	
A9.2	Condensing unit	1	Included into conditioner set
YC	Electromagnetic clutch unit of a compressor	1	
A9.3	Pressure sensors unit	1	Included into conditioner set
SP9.1	Min. pressure sensor	1	(0,4 MPa)
SP9.2	Max. pressure sensor	1	(1,2 MPa)
SP9.3	Max. pressure sensor	1	(1,6 MPa)
A10	Valve of fuel fortifier	1	Included into engine set
BK1	Sensor of temperature indicator	1	
BN1	Sensor of fuel volume (frequency)	1	FVS.F 730Ч-02
BP1	Sensor of oil pressure in the engine	1	
BP2	Sensor of oil pressure in the gearbox	1	
BP3	Sensor of air pressure	1	
BV1…BV3	Speed sensor	3	
E1, E2	Headlight	2	
E3, E4, E6, E7, E9…E12	Working light	8	
E5	Cab light	1	
E8	License-plate light	1	
EL1, EL2	Lamp АКG12-60+55-1	2	Included into set E1, E2
EL5..EL7, EL10, EL16, EL21	Lamp A12-5	6	Included into set HL1...HL5, E8
EL8, EL19, EL23	Lamp A12-10	3	Included into set HL6, HL7, E5
EL9, EL17, EL18, EL20, EL22, EL24	Lamp A12-21-3	6	Included into set HL4...HL7
EL3, EL4, EL11, EL15, EL25...EL28	Lamp АКГ12-55-1	8	Included into set E3, E4, E6, E7, E9 ...E12
FU1	Fuse-link 2 A	1	Included into the set of stereo tape recorder
FU2, FU3	Fuse-link 25 A	2	
G1	Generator 14B, 150A	1	Included into engine set
GB1, GB2	Accumulator battery 12/120	2	
HA1	Low-pitch horn beep	1	
HA2	High-pitch horn beep	1	
HA3	Sound alarm relay	1	
HG1	Pilot lamp unit	1	
HL1...HL3	Road-train light	3	
HL4, HL5	Front light	2	
HL6,HL7	Rear light	2	

Table A1 continued.

K1, K2, K4, K7...K10	Cut-in relay 30A	7	
K3	Heating plugs relay	1	
K5	Cut-out relay 20A	1	
K6	Starter relay	1	
KH1	Flasher unit	1	
KT1	Heating plugs unit	1	
M1	Starter 24V, 5,5kW	1	
M2	Heater fan	1	
M3	Electric washer	1	
M4	Parallel-motion windscreen wiper	1	
M5	Windscreen wiper	1	
P1	Integrated indicator	1	
P2	Frequency instrument board KP-6	1	
QS1	Remote battery switch 24V	1	
R1	Ballast resistor SD-3 (50 Ohm, 5 W)	1	
SA1	Road-train light switch	1	
SA2	Switch of wiper and washer	1	
SA3	Working lights switch (rear external on the roof)	1	
SA4	Working lights switch (rear internal on the roof)	1	
SA5	Working lights switch (front on the roof)	1	
SA6	Fan switch	1	
SA7	Windscreen wiper switch	1	
SA8	Underwheel switch	1	
SA9	Central light switch	1	
SA10	Starter cutoff with start locking	1	
SA11	Ground cutoff	1	
SA12	Working lamps switch (on the handgrip)	1	
SB1, SB2	Breaking signal switch	2	
SB3	Start locking cutoff (speed range engagement)	1	
SB4	Hazard light switch	1	
SB5	Switch of parking brake lamp	1	
SK1	Emergency temperature sensor	1	
SL1	Sensor of breaking fluid emergency level	1	
SP1	Sensor of air cleaner filter impurity	1	
SP2	Sensor of emergency oil pressure	1	
SP3	Sensor of emergency oil pressure (in hydrostatic power steering system)	1	
SP4	Sensor of emergency air pressure	1	
UZ1	Voltage converter	1	
XA9.1	Socket for connecting agricultural implements	1	
	Male connectors		
XP1.1...XP1.7	Male receptacle 502601	7	
XP2.1...XP2.11	Male receptacle 502602	11	
XP4.1	Male receptacle 502604	1	

Table A1 finished.

XP6.1	Male receptacle 502606	1	
XP9.1 ... XP9.3	Male receptacle 1-480673-0	3	
XP12.1, XP12.3	Plug ШС32П12Ш-МТ-7	2	
XP12.2	Plug ШС32П12Ш-МТ-7	1	
XP15.1, XP15.2	Plug ШС36ПК15Ш-МТ-6	2	
	Female connectors		
XS1.1...XS1.8	Female receptacle 602601	8	
XS2.1...XS2.4, XS2.6, XS2.7, XS2.9...XS2.11, XS2.17, XS2.22	Female receptacle 602602	11	
XS2.5,XS2.8,XS 2.12...XS2.16, XS2.18...XS2.21	Female receptacle 601202	11	"AMP" (Germany)
XS3.1 ... XS3.3	Female receptacle 601203	3	
XS4.1,XS4.2	Female receptacle 602604	2	
XS5.1...XS5.11	Female receptacle 607605	11	
XS6.1,XS6.2	Female receptacle 602606	2	
XS6.3	Female receptacle 602606-XX-10	1	
XS6.4	Female receptacle 1-965640-1	1	"AMP" (Germany)
XS7.1,XS7.2	Female receptacle 602207	2	
XS8.1...XS8.6, XS8.8,XS8.9	Female receptacle 605608	8	"AMP" (Germany)
XS8.7	Female receptacle 610608	1	
XS9.1, XS9.2, XS9.7	Female receptacle 1-480673-0 (AMP)	3	"AMP" (Germany)
XS9.3...XS9.6	Female receptacle 602209	4	
XS10.1	Female receptacle 1-0967240-1	1	"AMP" (Germany)
XS12.1, XS12.3	Female socket ШС32УК12Г-МТ-7	2	
XS12.2	Female socket ШС32П12Г-МТ-7	1	
XS13.1	Female receptacle 602213	1	
XS15.1	Female socket ШС36П15Г-М-6	1	
XS15.2	Female socket ШС36У15Г-М-6	1	
XT1	2-pin junction block	1	
XT2	Branching unit	1	
VD1	Rectifier diode	1	
WA1	Aerial	1	

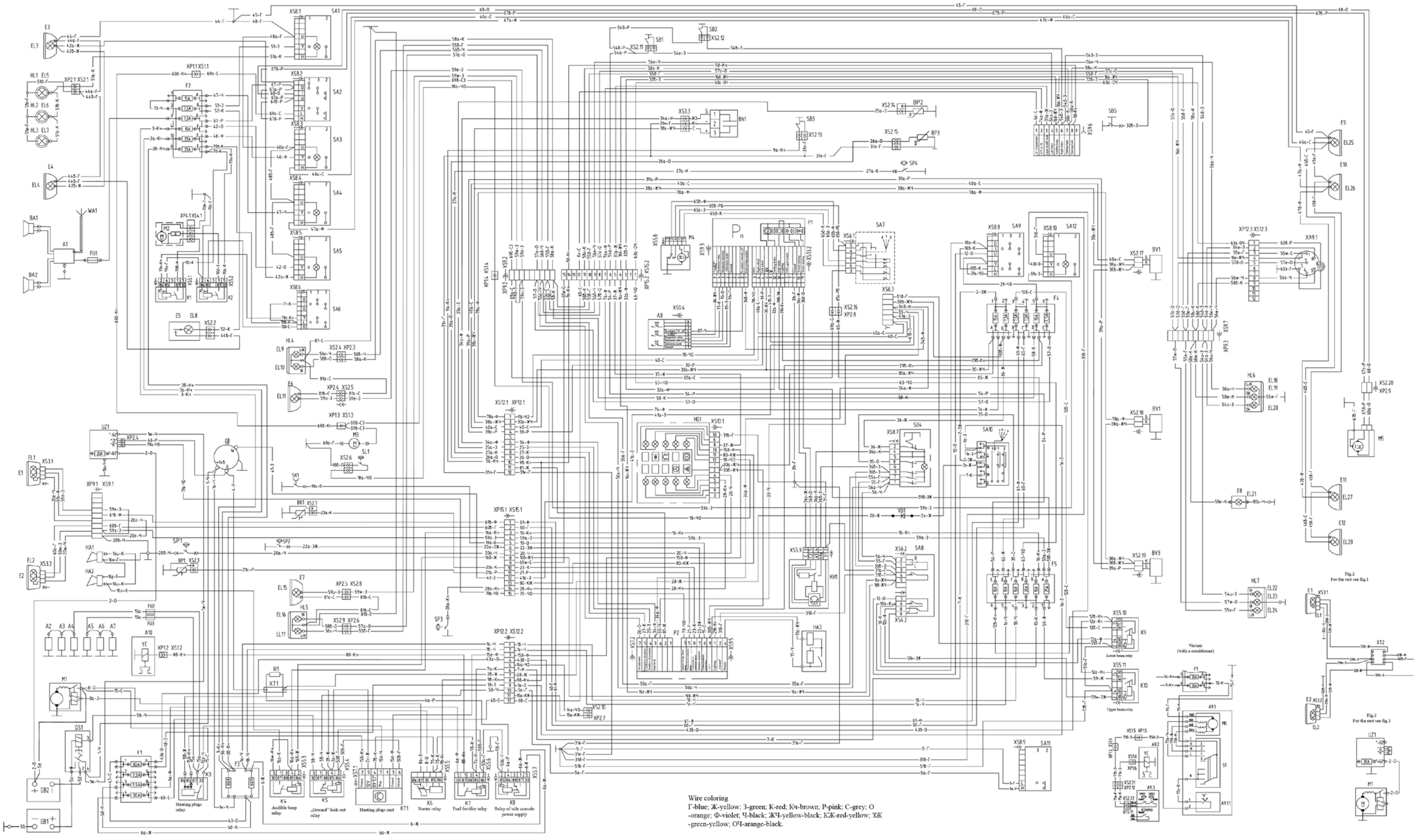


Fig A.1 - Wiring diagram