PATON

DATA SHEET AND
OPERATING MANUAL

Feeder-15-2
Feeder-15-4

PATON INTERNATIONAL

CONTENTS

1. GENERAL INFORMATION

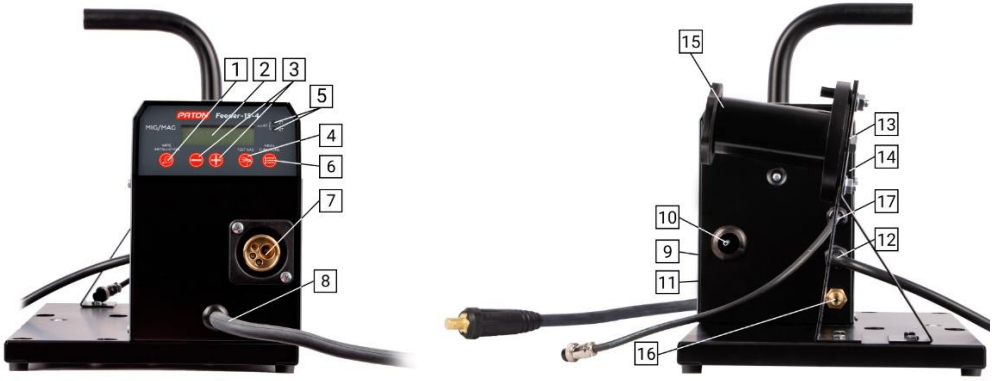
The PATON Feeder-15-2/15-4 digital wire feeder is designed to work in conjunction with an external welding source in semi-automatic welding mode. The power source supplies the welding current, and the wire feeder provides a stabilized feed of solid or cored wire into the weld pool.

The feeder has its inverter source to power the motor, safety gas valve and control circuitry. What sets the PATON feeders apart is the very powerful, high-quality and sealed metal wire feeder and the KZ-2 EURO type connector, which has become a world standard, allowing the user to later change the torches as desired. A safety gas valve is built into the unit.

When the feeder is in operation, its internal digital control board receives signals from the KZ-2 connector of the torch button and turns on the safety gas valve at the right moment, then, with a preset delay, signals to turn on the power supply, then turns on and stabilizes the speed of the wire feed motor. After the welding process is finished, every unit is turned off in reverse order with the necessary delays. Everything is set by default to optimum parameters.

The unit is highly optimized to work with PATON sources and will require minimal time for user adaptation, as the mating spots for connectors and installation are already provided in the design.

PARAMETERS	Feeder-15-2	Feeder-15-4
Rated supply mains voltage 50Hz, V	220	220
Rated input current from mains, A	0.25	0.38
Mains voltage variation limits, V	180 – 260	180 – 260
Number of pressure rollers	2	4
Control range of wire feed speed, m/min	2.0 – 16.0	2.0 – 16.0
Continuous welding wire diameter, mm	0.6 – 1.2	0.6 – 1.6
Maximum weight of wire coil, max.	15	15
Wire-filling function	yes	yes
Function of safety gas check	yes	yes
Rated input power, VA	55	85
Maximum input power, VA	80	115
Operating temperature range	–25 ... +45°C	–25 ... +45°C
Dimensions, mm (length, width, height)	430x260x270	430x275x290
Weight without coil and accessories, kg	7.5	8.2



1 – Wire-filling button (no gas supplied);
2 – Digital display of the wire feeder;
3 – Down and up buttons for adjusting parameters
(main default setting: wire feed speed);
4 – Safety gas check button (no wire feed);
5 – Button mode indicators on the torch (2t/4t mode);
6 – Button for selecting functions of the wire feeder;
7 – KZ-2 EURO type connector for semi-automatic torch connection;
8 – Power supply plug to the wire feeder;
9 – Lifting protective cover;
10 – Welding wire filler inlet;
11 – Locking the protective cover;
12 – Power cord for 220V power supply;
13 – Source on/off button (decorative color).
14 – Wire feeder fuses;
15 – Wire coil holder with spring braking mechanism;
16 – Safety gas supply connector;
17 – Control signal connector from wire feeder to external welding power source.

2. COMMISSIONING

Caution! Before commissioning, read the section "Safety instructions" cl.13.

2.1 INTENDED USE

The wire feeder is designed exclusively to feed solid or cored welding wires.
Any other use of the machine is considered improper. The manufacturer cannot be held liable for damages caused by improper use of the machine.
Intended use is subject to the instructions in this operating manual.

2.2 PLACEMENT REQUIREMENTS

The wire feeder can be placed and operated outdoors. The internal electrical parts of the unit are protected against direct exposure to humidity, but not against condensation droplets.
WARNING! After storage in a cold place, condensation will form inside closed areas when used in a warm room. For this reason, the unit must not be switched on earlier than 1...2 hours!!!
Place the unit in such a way that the lifting cover is easily accessible. Make sure that metal dust (e.g. from sanding) does not penetrate the machine.
WARNING! The wire feeder can be life-threatening after a hard fall. Install on a stable hard surface.

2.3 MAINS CONNECTION

The feeder is designed as standard for a supply voltage of 220V (-15% +20%).
Warning! If connected to mains voltages above 270V, all warranty obligations of the manufacturer become invalid! This situation can occur with very large phase voltage imbalances in the standard mains or when using a non-standard connection.
The manufacturer's warranty also becomes void if the mains phase is connected to the ground wire by mistake.
The mains connector, mains extension cable cross-sections and mains fuses must be selected according to the technical data of the unit.
Warning! The mains plug must correspond to the supply voltage. For safety reasons, use power outlets with a **guaranteed ground connection!!!**

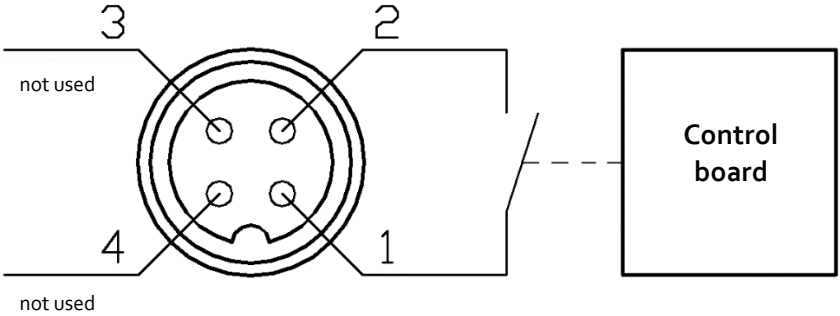
2.4 CONNECTING THE POWER CONTACT

This is carried out by the power bayonet connector 8 to the corresponding pole of the external welding source. As a rule, it is connected to the "positive" pole for solid

wire welding and the "negative" pole of the welding source when welding with flux-cored wire.

2.5 CONNECTING THE POWER SOURCE CONTROL PLUG

To control switching the external welding power source on and off during semi-automatic welding, use plug **17** with the following wiring diagram:



Only contacts 1 and 2 are used, which are closed at the right moments with a relay. The maximum switching current is not more than 1.5A; the maximum switching voltage is not more than 220V. At the moment when the source is supposed to be running, the relay contacts are closed, when the source is supposed to be off – they are open.

WARNING!!! The wiring diagram in the power supply is **specific** to each application, so it is not included in this manual for the wire feeder. Look for it in the power supply manual.

The new generation of PATON power supply sources already includes all the features, so the adaptation will be done with minimum effort. It is enough to check the presence of the control connector on the rear panel of the source. If it is installed, then it takes time only to fix the plug in this connector, if it is not present, then you need to contact the service department to install it.

2.6 TURNING ON THE WIRE FEEDER

It is done with the power switch 13 on the rear panel of the unit.

2.7 SAFETY GAS SUPPLY

The hose from the safety gas cylinder is connected to connector **16** on the rear panel of the unit.

WARNING!!! A pressure reducer must already be pre-installed on the cylinder. The optimum outlet pressure is individual for each case. If you are a beginner and have

no experience in setting the optimum pressure for welding a specific product, then at first the gas pressure can be set higher than the optimum value of ~0.2 MPa. This will have little effect on the process, only the consumption of safety gas will increase. To save money hereafter, follow the general recommendations for welding with semi-automatic welding machines.
Press button **4** on the front of the feeder to check the safety gas supply.

2.8 INSTALLATION OF THE WIRE COIL

A quality mechanism 15 with an internal brake to prevent spontaneous rotation of the coil is used to secure it. A screw with the plastic "nut" is used to increase or decrease the braking degree.
WARNING!!! Do not clamp the coil too tight. The clamping degree should be the least necessary to keep the coil from turning spontaneously. If it is clamped more than necessary, it will create an unnecessary force on the motor and eventually lead to uneven feeding of the wire.
Having opened the lifting cover **9** for wire filling, lift the clamping beams upwards. Plastic cams are used to unlock them.
The end of the wire is run through hole **10** in the rear wall of the unit. You must pass through the whole metal wire feeder starting from the rear flexible spiral, between the rollers, to the exit from the KZ-2 EURO type connector. Fix by clamping beams. The clamping force is adjusted with a cam.
WARNING!!! Do not clamp the beam too tight, as in the coil braking mechanism. Here the clamping degree should be the least necessary to push the wire when the wire is not tightly clamped by hand.

2.9 INSTALLATION OF THE WELDING TORCH

The torch is screwed into connector **7** on the front of the feeder. Screw in as far as possible!!!
The quality of the contact must be assured, as all the operating welding current flows through this connector.

2.10 WIRE FILLING

After locking the wire with the beam, press button 1 on the front panel and wait for the wire to come out of the nozzle of the torch. The wire feed speed will increase smoothly to the maximum for convenience. This can be seen by the display on the front panel.

3. OPERATION OF THE WIRE FEEDER

After successfully going through the preceding steps of preparing for the operation, the wire feeder shows that it is fully functional. The wire feeder is then ready for operation.

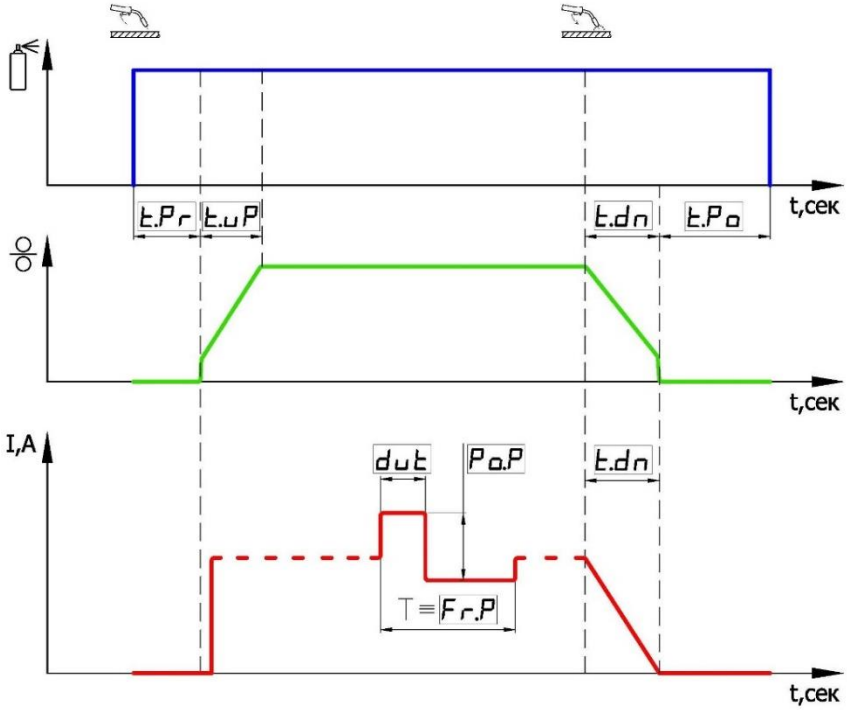
WARNING!!! Be sure to connect the opposite pole of the power source to the welded piece with the "ground" terminal.

Weld according to general recommendations for welding with semi-automatic machines.

If you are a beginner and have no experience in setting the optimum wire feed rate for a particular product, start with the average wire feed rate (~6.0... 8,0 m/min) and the average voltage on the source (~19V) at any diameter of the installed wire (Ø0,6...1,2mm). It may not be optimal, but if the source works properly and the wire is evenly fed (without jerks, checked ONLY AT NO LOAD "on weight"), as well as properly connected, this combination "source + feeder" should be welding.

By default, the safety gas pre-purge is set to 0.5 sec, post-purge to 1.5 sec.

3.1 WELDING PROCESS CYCLE - MIG/MAG - 2T

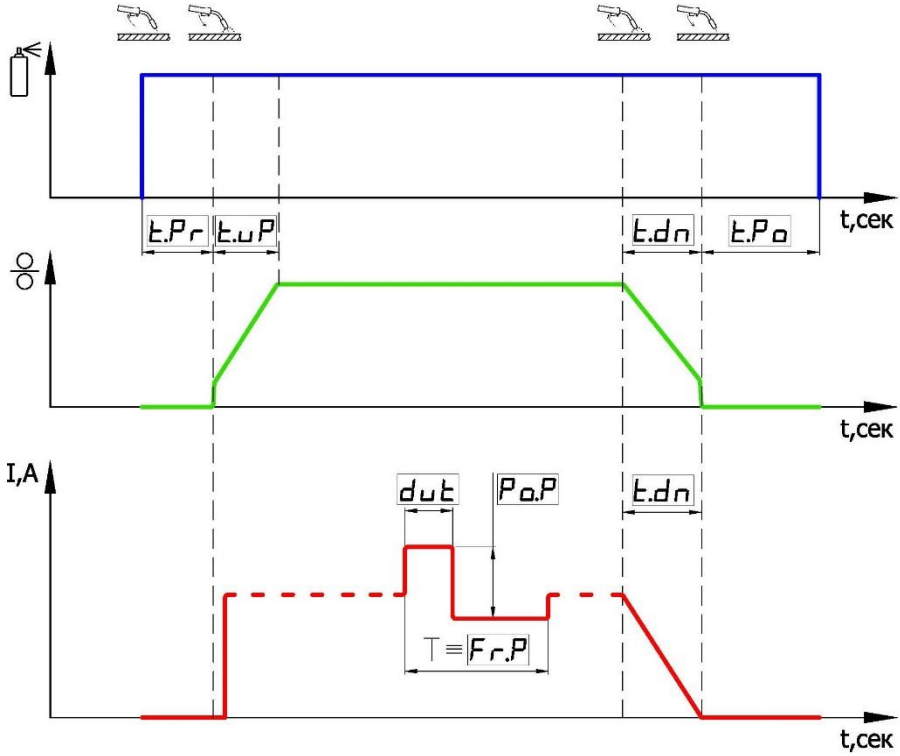


To change the value of any function, see step 4.

3.1.1 TORCH BUTTON FUNCTION - 2T

It is used when welding short and medium-length welds. The function is as follows: when you press the button on the torch, the control signal goes to the control unit, the function of pre-purging the welding zone with gas for time [t.Pr] is activated (gas valve opens), then the signal to turn on the source and the wire feeder. From this moment, the welding process begins. At the same time, the function of smooth output to the welding mode in time [t.uP] is activated, as well as additional functions (e.g. additional functions (for example, the last generation digital PATON sources have a pulse mode), all according to the welding process cycle shown in the cyclogram of 3.1. After releasing the button, the function of smooth decay of current and wire feed speed for time [t.dn] is activated, then the source is switched off. Then the function of post-purging the welding zone with gas for the time [t.Po] (the gas valve is closed with a delay) is executed.

3.2 WELDING PROCESS CYCLE - MIG/MAG - 4T



To change the value of any function, see step 4.

3.2.1 TORCH BUTTON FUNCTION - 4T and _4T

a) World standard button mode - 4T

б) Alternative button mode - _4T

It is used when welding long welds. The function is as follows: when you press the button on the torch, the control signal goes to the control unit, the function of pre-purging the welding zone with gas (gas valve opens) is executed; after the first release of the button, the signal to turn on the source and the wire feeder motor is released. From that moment, the welding process starts. At the same time, the function of gradual entering the welding mode in time [t.uP], as well as additional functions (for example, the last generation of PATON digital sources have a pulse mode) are executed. All this is according to the welding process cycle shown in the cyclogram of cl. 3.2.

4. SWITCHING TO THE DESIRED FUNCTION

If the tamper protection system for the function menu is installed, no change occurs on the display when button **6** is pressed, i.e. this button is locked. To unlock it, it is necessary to hold it pressed for more than 3.5 seconds. When unlocked, horizontal bars will appear on the display indicating that the function menu is unlocked. After successful unlocking, pressing button **6** will display the graphic name of the current function on the numeric display and, as long as it is held down, it can be viewed. After releasing the button, the current value of this function is displayed, which can be changed up or down using the buttons **3**. By quickly pressing and releasing button **5**, you can switch to the next function in a circle.

4.1 GENERAL LIST AND SEQUENCE OF FUNCTIONS

0) [-1-] The main displayed parameter FEED RATE = 7.0 m/min (default)

a) 2.0 ... 16.0 m/min (step change 0.1 m/min)

1) [But] torch button mode = [2T] (default)

a) [2t] – 2T torch button mode

б) [4t] – standard button mode on 4T torch

в) [_4t] – alternative button mode on 4T burner

2) [t.Pr] time of pre-purging time with safety gas = 0.1 sec (by default)

a) 0.1 ... 25.0 sec (step change 0.1 sec)

3) [t.Po] time of post-purging time with safety gas = 1.5 sec (by default)

a) 0.1 ... 25.0 sec (step change 0.1 sec)

4) [t.uP] wire feeder ramp up time = 0.1 sec (by default)

a) 0.1 ... 5.0 sec (step change 0.1 sec)

5) [t.dn] wire feed speed decay time = 0.1 sec (by default)
a) 0.1 ... 5.0 sec (step change 0.1 sec)

5. SERVICE AND MAINTENANCE

Warning! Before opening the unit, turn it off and remove the mains plug. Allow the internal circuits of the unit to discharge (approximately 1 minute) and only then perform the rest of the operation. When leaving, put a sign prohibiting switching on. In order to keep the wire feeder operable for many years, a few rules must be observed:

- Perform safety inspections at specified intervals (see Section "Safety Instructions");
- If intensively used, we recommend blowing out the unit with dry compressed air once every 6 months. **Warning!** Blowing from a too-short distance can damage the electronic components.

6. GENERATOR OPERATION MODE

Wire feeder consumes extremely low power, usually not exceeding 100W, so the main condition is that the output voltage of the generator must not exceed the permissible limits of 180-260V.

7. STORAGE REGULATIONS

Preserved and packed wire feeder should be kept in storage conditions 4 of State Standard 15150-69 for 5 years.
Unpacked wire feeder should be stored in a dry closed room at air temperature not lower than +5 °C. There should be no vapors of acids and other active substances on the premises.

8. TRANSPORTATION

Packed wire feeder can be transported by all means ensuring its safety in compliance with the rules of transportation established for the relevant type of transport.

9. SCOPE OF DELIVERY

1.	Wire feeder unit	– 1 pc;
2.	Pneumatic quick connector	– 1 pc;
3.	Operation manual	– 1 pc.
4.	PATON branded corrugated box	– 1 pc;

For Feeder-15-2 model:

- ABICOR BINZEL semi-automatic torch – 1 pc;
- Rollers for solid wire 0,6-0,8; 1,0-1,2 – 1 set;

For Feeder-15-4 model:

- Rollers for solid wire 0,6-0,8; 1,0-1,2 – 1 set;
- Rollers for aluminum wire 0,8-1,0 – 1 set.

10. SAFETY INSTRUCTIONS

GENERAL PROVISIONS

The wire feeder is manufactured following technical standards and established safety regulations. Nevertheless, if handled improperly, there is a risk of:

- Injury to operating personnel or a third party;
- Damage to the machine or material assets in the workplace;
- Disruption of an efficient work process.

All persons involved in the commissioning, operating, maintenance and servicing of the machine must:

- Take appropriate certification;
- Possess knowledge of welding;
- Adhere strictly to these instructions.

Faults that could impair safety must be eliminated immediately.

USER OBLIGATIONS

The user is obliged to allow only those persons to work on the machine who:

- Are familiar with the basic safety instructions and have been trained in the use of the welding equipment;
- Have read the "Safety instructions" section and the safety precautions in this manual and confirm this with their signature.

PERSONAL PROTECTIVE EQUIPMENT

Observe the following rules for personal protection:

- Wear sturdy shoes that retain their insulating properties, including in wet conditions;
- Protect your hands with insulating gloves;
- Protect your eyes with a protective mask with a UV filter that meets safety standards;
- Use appropriate inflammable clothing.

HAZARD OF HARMFUL GASES AND VAPORS

- Remove any smoke and harmful gases from the workspace using special means;
- Ensure an adequate supply of fresh air;
- Solvent vapors must not enter the radiation zone of the welding arc.

HAZARD OF MAINS AND WELDING CURRENTS

- Electrical shock can be fatal;
- Welding cable must be strong, undamaged and insulated. Loose connections and damaged cables must be replaced immediately. All mains and welding machine cables should be checked regularly for correct insulation by an electrician;
- The outer cover of the machine must not be removed during operation.

INFORMAL SAFETY PRECAUTIONS

- In addition to the instructions, comply with the general and local safety and environmental regulations in force;
- If possible, do not place the machine directly on the conductive surface of the floor or the work table and use insulating pads.

COMMON PRECAUTIONS

Check the unit for external damage at least once a week.

11. WARRANTY OBLIGATIONS

PATON INTERNATIONAL warrants that the wire feeder will operate properly if the user follows the operating, storage and transportation conditions.

WARNING! There is no free warranty service if the welding machine is mechanically damaged!

Machine model	Warranty period
Feeder-15-2	**3 years**
Feeder-15-4	

The main warranty period is calculated from the date of sale of the inverter equipment to the end customer.

During the main warranty period, the seller undertakes, at no charge to the owner of the PATON inverter equipment:

- To make a diagnostic and identify the cause of the breakdown,
- To provide the units and elements necessary for repair,
- To replace defective components and units,
- To test the repaired equipment.

The main warranty does not cover the equipment:

- With mechanical damage that affects the performance of the equipment (deformation of the housing and parts as a result of falling from a height or falling of heavy objects on the equipment, falling out of the buttons and connectors),

- With traces of corrosion, which caused the defective condition,
- Failed due to exposure of its power and electronic components to excessive moisture,
- Failed due to accumulation of conductive dust inside (coal dust, metal chips, etc.),
- In the case of an unauthorized attempt to repair its components and/or replace the electronic elements,
- Depending on the operating conditions, it is recommended to remove the protective cover and clean the internal elements and units with compressed air once every six months to avoid the failure of the device. Cleaning should be carried out carefully, keeping the compressor hose at a sufficient distance to avoid damaging the soldered electronic components and mechanical parts.

The main warranty also does not cover damaged external parts of the equipment that are subject to physical contact and accessories/consumables, which must be claimed within two weeks of the date of sale:

- On and off button,
- Welding parameter control knobs,
- Cable and hose connectors,
- Control connectors,
- Power cord and power cord plug,
- Carrying handle, shoulder strap, case, box,
- Electrode holder, ground clamp, torch, welding cables and hoses.

The seller reserves the right to refuse to provide warranty repairs, or set the month and year of manufacture of the device (determined by the serial number) as the date of the warranty obligations beginning:

- In case of loss of the certificate by the owner,
- In the absence of correct or any filling of the certificate by the seller when selling the machine,
- The warranty period is extended for the period of warranty service in the service center.

12. ACCEPTANCE CERTIFICATE

PATON Feeder-15-2/15-4 inverter feeding unit

Serial number _____**BP,** recognized as serviceable.

Sale date "_____"_____20____.

Seal here. _____

(seller's signature)

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Date of acceptance for repair "_____"_____20____г.

_____

(signature)

Signs of inoperability:

_____

Cause: _____

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_____

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Date of acceptance for repair "_____"_____20____г.

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(signature)

Signs of inoperability:

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Date of acceptance for repair "_____"_____20____г.

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(signature)

Signs of inoperability:

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Cause: _____

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Date of acceptance for repair "_____"_____20____г.

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(signature)

Signs of inoperability:

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Cause: _____

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Date of acceptance for repair "_____"_____20____г.

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(signature)

Signs of inoperability:

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Cause: _____

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