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COLLECTIVE PROTECTION

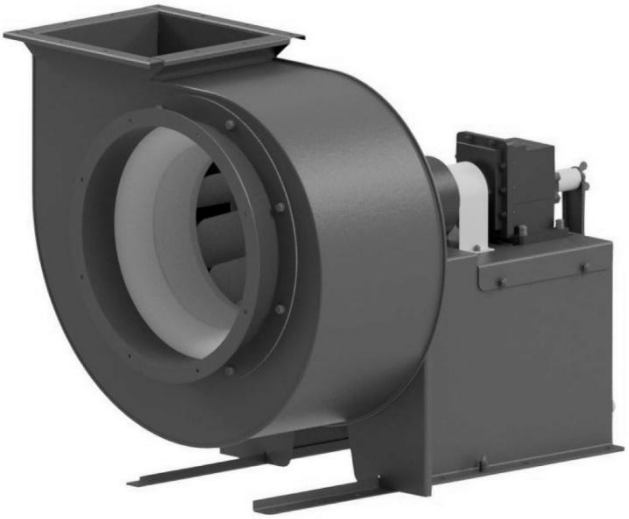
ELECTRIC BLOWER ERV-72

WITH MANUAL BACKUP

PASSPORT

and

OPERATING INSTRUCTIONS



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This passport and operating instructions are technical documentation that contains a description of the structure and principle of operation, technical data and characteristics, information about the conditions and operating procedure of the ERV-72 blower, which means "ERV" – electric blower with manual backup, "72" – year of development, number 2 or 3 – the number of manual drive operators (hereinafter referred to as the blower).

Qualification of service personnel - technician, III group for electrical safety.

<u>WARNING!</u> The blower is connected to the electrical network, contains rotating components. If the relevant safety rules are not followed, this poses a danger to human life and health.

1. DESCRIPTION AND OPERATION

1.1. **Purpose**

1.1.1. The blower is designed to supply air to various buildings in the mode of clean ventilation, and can operate both from the electrical network (U=380V) and from a manual drive. They are used mainly in civil defense protective structures, they can be used for ventilation of wells and other structures in the absence of power supply.

1.1.2. For macroclimatic regions with a moderate and cold climate; for operation in rooms where temperature and humidity fluctuations do not significantly differ from outdoor fluctuations and there is relatively free access to outside air..

1.1.3. Operating conditions: - ambient temperature from -40° to + 40°C; - relative humidity of the ambient air 95% at 25°C; - the content of dust and solid impurities in the atmosphere is not more than 100 mg/m3, in the absence of sticky substances and fibrous materials.

1.1.4. Manufacturing options:

a. Electric blower with manual backup ERV-72-2, which is manually operated by two people; It is equipped with a radial blower VC 4-75 №3,15, right-hand design.

b. Electric blower with manual backup ERV-72-3 №4, which is operated manually by three people; It is equipped with a radial blower VC 4-75, right-hand design.

1.2. **Specifications**

The rated specifications of the blowers are shown in Table 1.

Table 1

Type	ERV-72-2	ERV-72-3
Number of operators	2	3
Mass	65 kg	96 kg
Voltage	380 V	
Engine power consumption	0.37 kW	
Amperage	1.30 A	
Speed	1500 rpm	1000 rpm
Rated Performance ($Per_{Efficiency\ Max}$)	1500 cmh @220 Pa	2100 cmh @220 Pa
Force on the handle at the moment of starting	≤ 30 kgf	≤ 30 kgf

1.3. The main dimensions are indicated in Figure 2

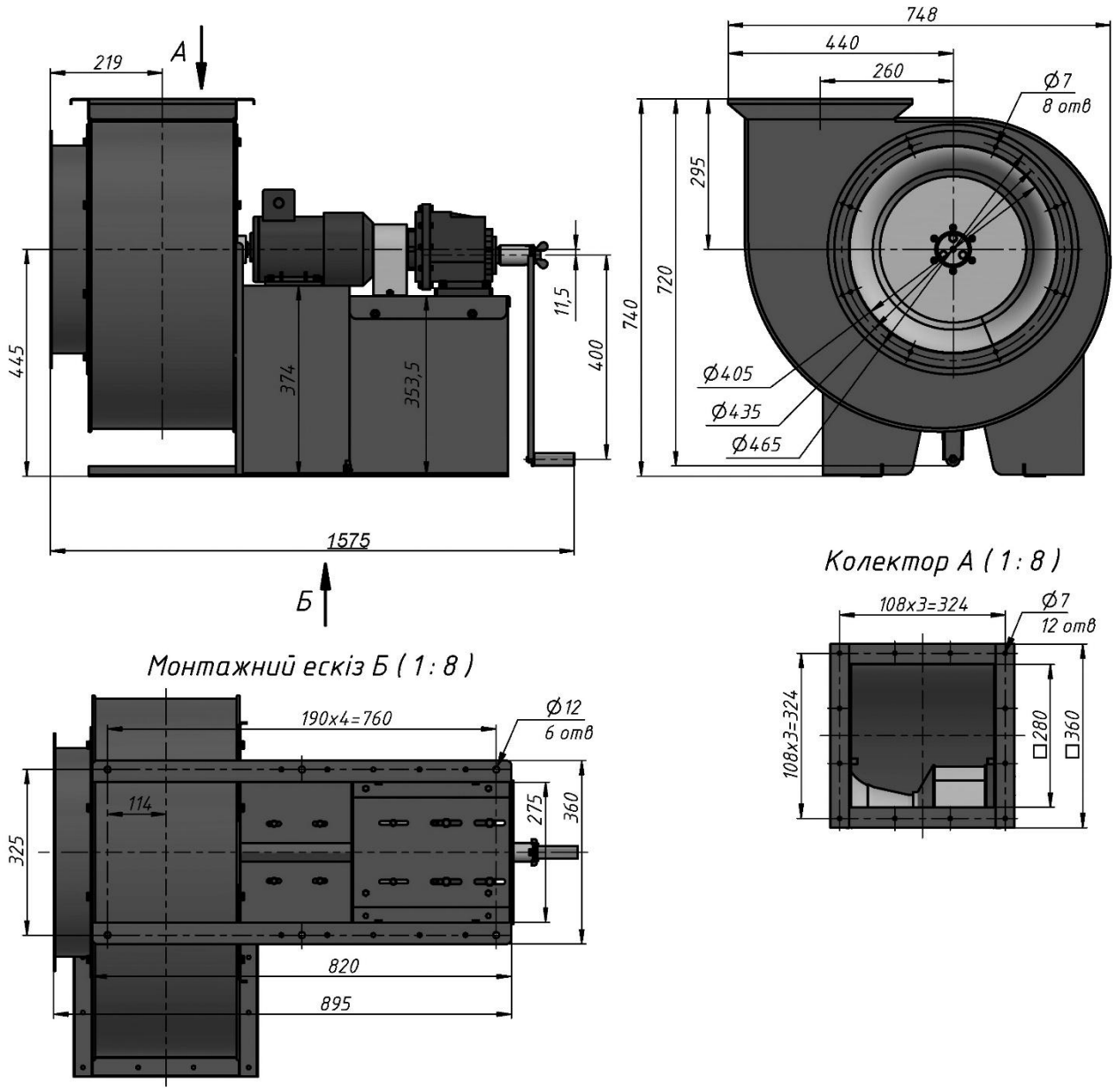

Fig. 2 Overall dimensions of ERV-72-3

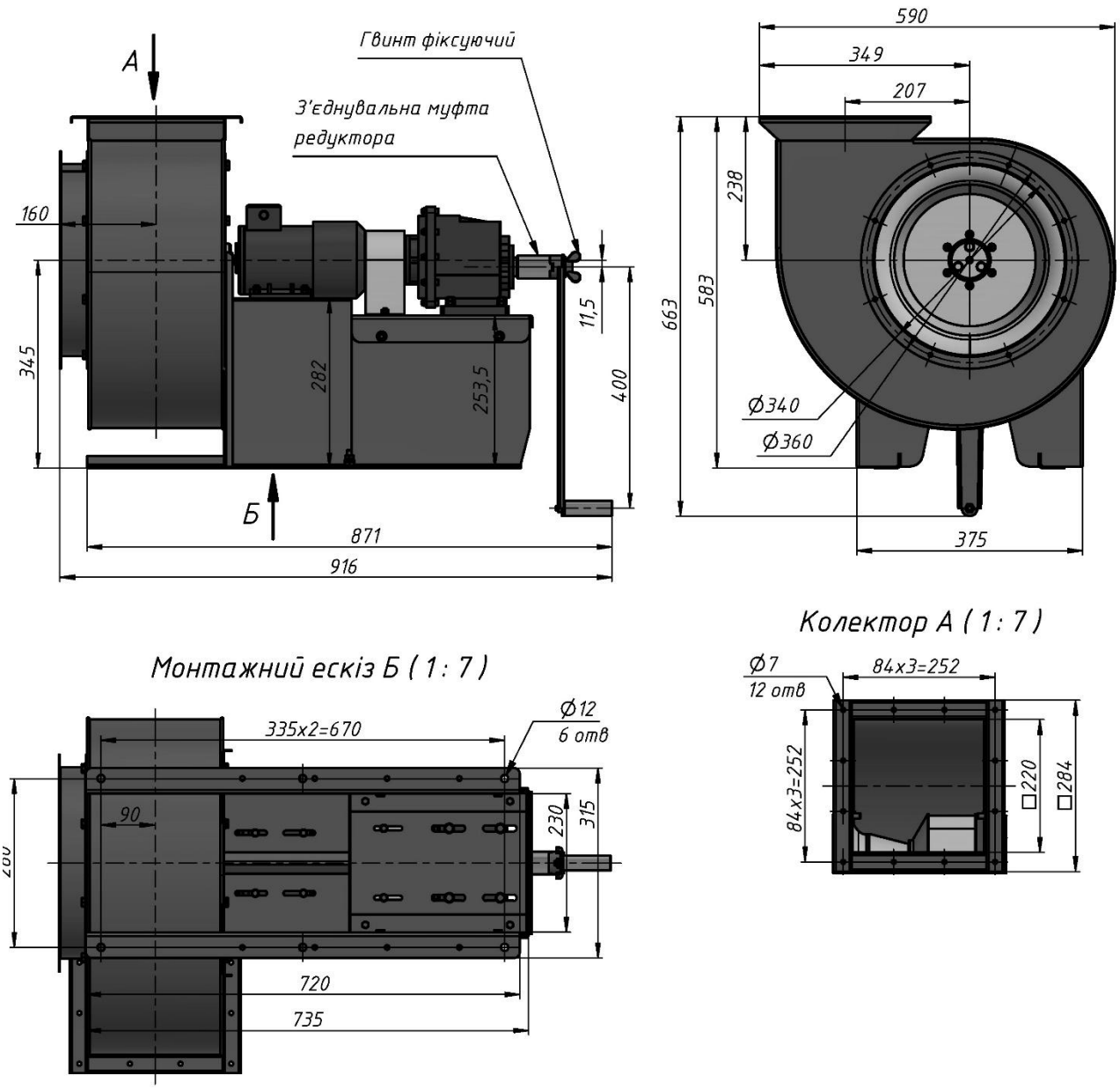

Fig. 3 Overall dimensions of ERV-72-2

1.4. **Structure and principle of operation**

1.4.1. An electric hand blower is an electromechanical product.

1.4.2. When the blower is powered by an electric motor, the handle is disconnected and not used. When the blower is operated from a manual drive, the handle is attached to the gearbox.

The blower is usually installed at a height of 1125 mm from the floor to the motor axis.

1.5. **Package Contents**

1.5.1. The package includes:

- electric hand blower;
- handle;
- passport and operating instructions.

1.5.2. Upon agreement with the Customer, additional equipment may be supplied with the blower.

1.6. **Labeling**

The marking of the electric hand blower contains some characteristics of the product (manufacturer, product name, model/variant of manufacture, year of manufacture, serial number), and is supplemented by the marking that is applied on the plates attached to the components of the electric hand blower (electric motor and gearbox).

Fig. 4 Sample Marking Plate

1.7. **Packaging**

1.7.1. The blower is packed in polyethylene film, delivered assembled with a detachable handle, which is attached to the blower frame (or nested inside the blower housing during transportation). In agreement with the customer, the blower can be supplied on a wooden pallet or in a wooden box.

1.7.2. It is allowed, in agreement with the Customer, to supply the blower in a partially disassembled form. On-site assembly is carried out by the manufacturer.

2. OPERATING INSTRUCTIONS

2.1. **Operational limitations**

2.1.1. The blower should be installed out of the reach of unauthorized persons.

2.1.3. The blower must be installed on a rigid horizontal base with a slope of no more than ±3 mm.

2.2. The established service life of the product before overhaul is at least 5 years.

2.3. The full service life of the product is set at 10 years after placement (installation) in the premises of civil defense structures.

2.2. **Preparing for use and getting started**

2.2.1. Read the instructions and guidelines in all documents supplied with the blower.

2.2.2. Depending on the type of packaging, remove the transport fasteners of the blower to the pallet (screws, bolts or studs), or remove the polyethylene film.

2.2.3. Inspect the blower, make sure that there is no deformation or damage that may have occurred during transportation. Be sure to turn the impeller several times. **Difficult rotation of the impeller or extraneous sounds indicate damage during transportation.** In case of detection of difficult movement or blocking of the impeller, you should suspend the acceptance of products from

the transport company/carrier, draw up a report on the detected damage, do not use the product until the malfunctions that arose during transportation are corrected.

2.2.4. Install the blower at the place of operation. To move the blower and secure the slings, use loops or eyelets (if available) near the "chain" sign.

2.2.5. Follow the instructions in the blower installation manual and the motor wiring diagram (located on the inside of the terminal box cover).

2.2.6. The gearbox is supplied filled with oil.

2.2.7 Use the blower in accordance with the documentation of the protective structure.

2.2.8 In the event of a power outage, use a manual backup drive to operate the blower. To do this, disconnect the circuit breaker to prevent electric current from flowing to the blower during manual operation.

Attach the handle to the gearbox axis, fix it with a screw.

Rotate the handle attached to the gearbox at approximately 25 (72-3) or 38 (72-2) revolutions per minute. The actual air flow rate depends on many factors (the size of the ducts before and after the blower; the condition of the filter and blower; the parameters of the operators' work, etc.), and is specified during the commissioning process. When starting the blower in manual mode, start rotating the handle smoothly **without applying excessive force**.

2.2.9 When operating the blower in manual mode, control the air flow using the valve of the flowmeter-shut-off KRO-3 (additional equipment).

2.3. **List of possible problems and methods of their elimination**

2.3.1. The manual drive does not rotate the blower shaft. Check that the handle is correctly and securely attached to the gearbox shaft.

2.3.2. The handle of the manual drive rotates when the blower is operating in electric mode. Stop the blower and disconnect the handle from the gearbox. Start the blower.

2.3.3 For other faults, contact the manufacturer.

2.4. **Security measures**

2.4.1. During the operation, maintenance and repair of the blower, it is necessary to comply with the requirements of the "Rules for the Technical Operation of Consumer Electrical Installations", "Safety Rules for the Operation of Consumer Electrical Installations".

2.4.2. It is forbidden to operate the blower with the covers removed or damaged.

2.4.3. During testing and operation, the blower must be securely fastened.

2.4.4. **It is forbidden to start and operate the blower without limiting the air flow rate in accordance with the engine power and aerodynamic characteristics of the blower, as well as without taking measures to automatically shut down the motor in case of its overload.**

2.4.5 It is strictly forbidden to start the blower with the handle mounted on the gearbox. This can cause injury to people who are within the rotation area of the handle.

2.4.6. After turning off the blower power, always check that the handle is disconnected from the gearbox and attached to the blower frame.

3. MAINTENANCE

3.1. Maintenance of the blower is carried out in order to ensure safe and reliable operation of the blower throughout the entire period of operation.

3.2. Maintenance includes the following operations:

- external inspection of the blower, electric motor, gearbox and wiring;
- checking the reliability of the power supply connection and the grounding conductor;
- short-term switching on of the blower in electric and manual mode;
- necessary preventive work (painting, cleaning from dirt, etc.).

3.3. **Gearbox maintenance**:

- fill and drain the oil when the gearbox comes to a complete stop;
- when disassembling the gearbox, remove the action of cantilever loads at the ends of the shafts;
- At the end of the work, close the ends of the shaft with a safety cover.

Maintenance of the gearbox consists in constant monitoring of the condition of the lubricant. Fill the lubricant through the hole in the gearbox cover with the test hole open until the oil protrudes from the control hole. Fill in 0.7 liters of TAD-17i grease or similar. Monitor the level and top up the oil every 90 days of blower operation.

When repairing work, follow the safety requirements for rigging, locksmith and welding.

3.4. The frequency of maintenance is set depending on local operating conditions, but at least once a year.

4. MAINTENANCE ACCOUNTING

Date	Type of maintenance	Operating time		Basis (name, number and date of the document)	Position, surname and signature		Note
		From the last renovation	Since the beginning of operation		Got the job done	checked the work	

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5. STORAGE

5.1. Storage of an unmounted blower is carried out in closed rooms in a packed form.

5.2. Group of storage conditions C according to GOST 15150-69.

5.3. When storing blowers in transport boxes, it is allowed to stack in no more than 1 tier.

Date		Storage conditions	Types of storage	Note
Acceptance for storage	Removal from storage			

6. TRANSPORTATION

6.1. Blowers are transported in closed road transport (railway cars, containers, trucks).

6.2. Transportation conditions in terms of the influence of climatic factors - according to the group of storage conditions Ж2 GOST 15150−69.

7. MANUFACTURER'S WARRANTIES

7.1. The manufacturer guarantees the normal operation of the electric hand blower, its compliance with TU U 28.1-2925223214-001:2022, provided that the consumer complies with the rules provided for in this instruction and the instructions for the blower components.

7.2. The warranty period of operation of the blower is 12 months from the date of commissioning, but not more than 18 months from the date of receipt of the blower by the buyer.

7.3. Post-warranty service is provided by the manufacturer under additional contracts.

7.4. The manufacturer is not responsible for the malfunction of the blower and does not guarantee its operation in case of non-compliance with safety and operating rules, as well as in case of careless storage.

8. DISPOSAL

8.1. The need to dispose of the blower may arise in the following cases: - the service life of the blower exceeds the service life of the installed service; - the technical parameters of the blower do not meet the changed requirements for this class of products; - destruction of the blower wheel or rotor of the electric motor.

8.2. Disposal of the blower is carried out after the approval of the act of decommissioning of the blower and the plan for disposal.

8.3. **Security measures**:

- before disposal, it is necessary to de-energize the blower;

- When dismantling and disassembling the blower, the requirements of the relevant safety instructions must be observed.

8.4. Disassembly procedure:

- disconnect the power cable;

- remove covers;

- remove the blower wheel;

- disconnect the stator from the motor;

- Remove and disassemble the engine.

8.5. The engine, if it is suitable for further use, is handed over to the warehouse with the appropriate accompanying information.

8.6. Parts are sorted according to groups: ferrous metal, aluminum alloy, copper, and in accordance with the established procedure, they are scrapped.

9. MOVEMENT OF THE PRODUCT IN OPERATION

Installation Date	Where it is installed	Withdrawal Date	Operating time		Reason for withdrawal	Signature of the person who carried out the installation (removal)
			Since the beginning of operation	After the last renovation		

10. DISCLAIMER

The manufacturer reserves the right to change the composition, configuration, color of the product, warranty period, technical characteristics, etc. without prior notice.

11. CERTIFICATE OF ACCEPTANCE

Electric hand blower ERV-72-___ was manufactured _____ 202_ and was assigned serial No____

The electric hand blower has passed acceptance tests, checked for compliance with TU U 28.1-2925223214-001:2022 and is recognized as suitable for operation.

Signature of the person responsible for quality control

_____

12. WARRANTY CARD

Supplier/Manufacturer:	
Product Name:	**ELECTRIC BLOWER ERV-72-__ WITH MANUAL BACKUP**
Serial Number:	
Warranty period:	**12** months from the date of receipt of the goods

12.1. Warranty Conditions

12.1.1. Warranty repair of equipment is carried out subject to the presentation by the client of a fully completed warranty card.

12.1.2. Delivery to the service department of equipment that is subject to warranty repair is carried out by the client independently and at his own expense, unless otherwise stipulated in additional written agreements.

12.1.3. Warranty obligations do not apply to materials and parts that are considered materials consumed during operation: bearings, oil seals.

12.2. Conditions for Interruption of Warranty Obligations

Warranty obligations may be interrupted in the following cases:

12.2.1. Discrepancy between the serial number of the equipment put forward for warranty service and the serial number specified in the warranty card.

12.2.2. The presence of obvious or hidden mechanical damage to the equipment caused by violation of the rules of transportation, storage or operation.

12.2.3. Inconsistency of operating conditions required for equipment of this type detected during the repair process.

12.2.4. The presence of foreign objects inside the equipment case, regardless of their nature, unless the possibility of such is stipulated in the technical documentation and the Operating Instructions.

12.2.5. Equipment failure caused by force majeure factors and/or actions of third parties.

12.2.6. Installation and start-up of equipment by non-certified personnel, in cases where the participation of qualified personnel in the installation and start-up is expressly stipulated in the technical documentation or other written agreements.

I agree with the terms of the warranty, I have studied the instructions

Date of sale

_____ _____

(name and signature of the buyer's representative)

For deliveries, warranty repairs, maintenance of ventilation equipment for the needs of civil protection, please contact in a convenient way:

Phone: +38(067) 935 38 24; e-mail: info@prozahyst.com; www.prozahyst.com