Single-room reversible energy recovery ventilator
This user's manual is a main operating document intended for technical, maintenance, and operating staff. The manual contains information about purpose, technical details, operating principle, design, and installation of the Solo RA1-35(A)-9R unit and all its modifications. Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country. The information in this user's manual is correct at the time of the document's preparation. The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order to incorporate the latest technological developments. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means in any information search system or translated into any language in any form without the prior written permission of the Company.
SAFETY REQUIREMENTS

All user’s manual requirements as well as the provisions of all the applicable local and national construction, electrical, and technical norms and standards must be observed when installing and operating the unit. Disconnect the unit from power supply prior to any connection, servicing, maintenance, and repair operations.

**Only qualified electricians with a work permit for electrical units up to 1000 V are allowed for installation and maintenance. The present user’s manual should be carefully read before beginning works.**

- Single-phase power mains must comply with the acting local electrical norms and standards.
- Fixed electrical wiring must be equipped with an automatic circuit breaker.
- The unit must be connected to power mains through a double pole circuit breaker of suitable rating integrated into the fixed wiring system with opening of contacts at all poles. The gap between the circuit breaker contacts at all poles must be not less than 3 mm.
- Check the unit for any visible damage of the impeller, the casing, and the grille before starting installation. The casing internals must be free of any foreign objects that can damage the impeller blades.
- While mounting the unit, avoid compression of the casing! Deformation of the casing may result in motor jam and excessive noise.
- Misuse of the unit and any unauthorized modifications are not allowed.
- Do not expose the device to adverse atmospheric agents (rain, sun, etc.).
- Take steps to prevent ingress of smoke, carbon monoxide, and other combustion products into the room through open chimney flues or other fire-protection devices. Sufficient air supply must be provided for proper combustion and exhaust of gases through the chimney of fuel burning equipment to prevent back drafting.
- Transported air must not contain any dust or other solid impurities, sticky substances, or fibrous materials.
- Do not use the unit in a hazardous or explosive environment containing spirits, gasoline, insecticides, etc.
- For effective functioning of the unit, it is necessary to ensure an appropriate fresh air supply into the room. Do not close or block the intake or extract vents in order to ensure the efficient air flow.
- Do not sit on the unit and do not put objects on it.
- The unit is allowed to be used by children aged from 8 years old and above and persons with reduced physical, sensory, or mental capabilities or no experience and knowledge provided that they have been given supervision or instruction regarding safe use of the unit and understand the risks involved.
- Do not allow children to play with the unit.
• Cleaning and user maintenance shall not be made by children without supervision.
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**WARNING! Similar to the use of any other household electrical appliances when operating this fan, the following basic rules must be followed:**
• Never touch the fan with wet or damp hands.
• Never touch the fan when barefoot.

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THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE. DO NOT DISPOSE THE UNIT AS UNSORTED DOMESTIC WASTE.
PURPOSE

The ventilator is designed to ensure continuous mechanical air exchange in flats, cottages, hotels, cafes and other domestic and public premises. The ventilator is equipped with a regenerator that enables supply of fresh filtered air heated by means of extract air heat energy recovery.

The ventilator is designed for wall flush mounting.

The unit is rated for continuous operation.

Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

DELIVERY SET

<table>
<thead>
<tr>
<th>NAME</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilator</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Mounting kit</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Foam wedges</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Spare polyurethane foam</td>
<td>1 pc.</td>
</tr>
<tr>
<td>User’s manual</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Packing box</td>
<td>1 pc.</td>
</tr>
</tbody>
</table>

DESIGNATION KEY

Solo  R  A  1  35  A  L07 -9  R

Additional options:
- R – power cord with a switch

Ventilation hood type:
- 7 – MVMO 100 bV1sAn round metal grille
- 9 – MV102 V plastic ventilation hood

Duct length [mm]:
- 380
- L07 – 700

Regenerator type:
- _ – ceramic
- A – aluminium

Rated air flow [m³/h]

Front panel type:
- 1 – with a decorative plastic cover plate

Automation:
- A – equipped with automation

Air duct cross-section form:
- R – round

Solo Series
TECHNICAL DATA

The temperature in the room where the indoor unit of the ventilator is installed must be in the range from +1 °C to +40 °C with relative humidity up to 60 %. The transported air temperature must be in the range from -15 °C to +40 °C. The ventilator is rated as a class II electric appliance. Ingress protection rating against access to hazardous parts and water ingress is IP24. The unit design is constantly being improved, thus some models may be different from those described in this manual.

OVERALL DIMENSIONS [MM]

*air duct length for Solo A35(A) L S4 Pro R models
The ventilator consists of an air duct, a ventilation unit and an outer ventilation hood. Two filters, a regenerator, a distance ring and two air flow rectifiers are installed in the air duct. The air filters are designed to purify supply air and prevent foreign object ingress into the heat exchanger and the fan. The regenerator utilises extract air heat energy to warm up supply air flow. The regenerator is heat insulated with a specially designed insulating material. The ventilation unit must be installed on inner side of the wall. The ventilation hood must be installed on outer side of the wall. It is used for directed air discharge and prevention of ingress of water and other objects to the ventilator.

The ventilator operates in two cycles, 70 seconds each.

**CYCLE I.** Warm stale extract air flows through the regenerator, which is gradually warmed up and moisturized. In 70 seconds as the regenerator gets warmed up the ventilator is switched to supply mode.

**CYCLE II.** Fresh intake air from outside flows through the regenerator, absorbs accumulated moisture and is heated to a room temperature due to the heat accumulated in the regenerator. In 70 seconds as the regenerator gets cooled down, the ventilator is switched to air extract mode and the cycle is renewed.
1. Prepare a round core hole in the outer wall. The hole size is shown in the figure below.

2. Insert the air duct in the wall. For ease of installation use the foam wedges included in the delivery set. The air duct end must protrude for the distance A that enables installation of the outer ventilation hood. The distance A is stated in the mounting instruction for the outer ventilation hood.

   While mounting the air duct be sure to provide the minimum slope 3 mm downwards from outside.

   The air duct can be cut by calculating preliminary the required length or after fixing the air duct on the wall (in this case, it is necessary to have access to the outside part of the wall).

3. Install the assembled regenerator into the air duct.
4. Use a screwdriver to take off the front side of the ventilation unit.

5. Attach the mounting plate and mark the places for the dowels with a pencil or marker. Drill the holes and insert the dowels. Then mount the mounting plate on the wall and install the rear part of the ventilation unit in the duct. Fasten the rear part of the ventilation unit with the screws on the mounting plate.

6. Install the front side of the ventilation unit to its original position and fix it with a screw using a screwdriver.
The ventilator is rated for connection to single-phase AC 220…240 V/50 Hz power mains using a power cable with a plug installed at the factory.

**WARNING!** The unit must not be connected through any type of speed regulators – thyristor, autotransformer, frequency, etc.

The ventilator must be connected to the stationary power supply via an integrated switch with a gap between the contacts at all poles of at least 3 mm.

The unit is equipped with an electric motor, which has two fixed speeds. Switching from the first speed to the second is carried out only by a standard pull cord switch.

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**CONNECTION TO POWER MAINS**

**POWER OFF THE POWER SUPPLY PRIOR TO ANY OPERATIONS WITH THE UNIT.**
**THE UNIT MUST BE CONNECTED TO POWER SUPPLY BY A QUALIFIED ELECTRICIAN.**
**THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE GIVEN ON THE MANUFACTURER’S LABEL.**

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**ALL THE COMPONENTS OF THE UNIT ARE ITS INTEGRAL PARTS.**
**MAINTAINING THE FACTORY CONFIGURATION AND FORM FACTOR IS ABSOLUTELY ESSENTIAL FOR THE PROPER AND CONSISTENT FUNCTIONING OF THE UNIT.**
**ANY UNAUTHORISED ALTERATIONS TO THE UNIT FORM FACTOR OR FAILURE TO ADHERE TO THE ELECTRICAL CONNECTIONS DIAGRAM SHALL RELIEVE THE MANUFACTURER FROM LIABILITY FOR ANY RESULTING MALFUNCTIONS AND VOID THE UNIT WARRANTY.**
TECHNICAL MAINTENANCE

DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY MAINTENANCE OPERATIONS!

Maintenance of the ventilator means regular cleaning of the ventilator surfaces of dust and cleaning and replacement of the filters. Accessing the main units for servicing and maintenance is as follows.

Remove the front side of the ventilation unit by unscrewing the self-tapping screw.

Remove the four screws retaining the ventilation unit, then pull it out of the air duct.

Consequently remove all elements of the ventilator.

1. Clean the filters as they get clogged, but not less than once in three months.
   • Wash the filters and let them get dry. Install dry filters in the air duct.
   • Vacuum cleaning is allowed.
   • The filter rated service life is 3 years.
   • For new filters contact the Seller.

2. Some dust may accumulate on the regenerator block even in case of regular maintenance of the filters.
   • Clean the regenerator regularly to ensure its high heat recovery efficiency.
   • Vacuum clean the regenerator not less than once a year.
POSSIBLE REASONS AND TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible reasons</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>When switching on the ventilator the fan does not start.</td>
<td>No power supply.</td>
<td>Make sure the power supply line is connected correctly, otherwise troubleshoot the connection error.</td>
</tr>
<tr>
<td></td>
<td>The motor is jammed, the impeller blades are soiled.</td>
<td>Turn the ventilator off. Troubleshoot the motor jam and the impeller clogging. Clean the blades. Turn the ventilator on.</td>
</tr>
<tr>
<td>Circuit breaker tripping during the ventilator start-up.</td>
<td>Overcurrent as a result of short circuit in the electric circuit.</td>
<td>Turn the ventilator off. Contact the Seller for further information.</td>
</tr>
<tr>
<td>Low air flow.</td>
<td>Low set fan speed.</td>
<td>Set higher speed.</td>
</tr>
<tr>
<td></td>
<td>The filters, the fan or the regenerator are clogged.</td>
<td>Clean or replace the filter. Clean the fan and the regenerator.</td>
</tr>
<tr>
<td>Noise, vibration.</td>
<td>The impeller is clogged.</td>
<td>Clean the impeller.</td>
</tr>
<tr>
<td></td>
<td>Loose screw connection of the ventilator casing or the outer ventilation hood.</td>
<td>Tighten the screws of the ventilator or the outer ventilation hood.</td>
</tr>
</tbody>
</table>

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer’s original packaging box in a dry closed ventilated premise with temperature range from +5 °C to + 40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures, allow the unit to warm up at operating temperature for at least 3-4 hours.
MANUFACTURER’S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Compatibility (EMC) Directive 2014/30/EU of the European Parliament and of the Council, Low Voltage Directive (LVD) 2014/35/EU of the European Parliament and of the Council and CE-marking Council Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above. The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user’s observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer’s fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user’s manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user’s manual. Contact the Seller for warranty service.

The manufacturer’s warranty does not apply to the following cases:

- User’s failure to submit the unit with the entire delivery package as stated in the user’s manual including submission with missing component parts previously dismounted by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user’s manual.
- User’s failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user’s manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer’s authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user’s manual.
- Failure to submit the user’s manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.

FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.

USER’S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER’S MANUAL WITH THE PURCHASE DATE STAMP.
CERTIFICATE OF ACCEPTANCE

<table>
<thead>
<tr>
<th>Unit Type</th>
<th>Single-room reversible energy recovery ventilator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Solo RA1- _________________</td>
</tr>
<tr>
<td>Serial Number</td>
<td></td>
</tr>
<tr>
<td>Manufacture Date</td>
<td></td>
</tr>
<tr>
<td>Quality Inspector’s Stamp</td>
<td></td>
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</tbody>
</table>

SELLER INFORMATION

<table>
<thead>
<tr>
<th>Seller</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Phone Number</td>
<td></td>
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<tr>
<td>E-mail</td>
<td></td>
</tr>
<tr>
<td>Purchase Date</td>
<td></td>
</tr>
</tbody>
</table>

This is to certify acceptance of the complete unit delivery with the user’s manual. The warranty terms are acknowledged and accepted.

Customer’s Signature

INSTALLATION CERTIFICATE

<table>
<thead>
<tr>
<th>Company name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Phone Number</td>
<td></td>
</tr>
<tr>
<td>Installation Technician's Full Name</td>
<td></td>
</tr>
<tr>
<td>Installation Date:</td>
<td>Signature:</td>
</tr>
</tbody>
</table>

The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.

Signature:

WARRANTY CARD

<table>
<thead>
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<tr>
<td>Purchase Date</td>
<td></td>
</tr>
<tr>
<td>Warranty Period</td>
<td></td>
</tr>
<tr>
<td>Seller</td>
<td></td>
</tr>
</tbody>
</table>