USER MANUAL

V. BRØNDUM A/S
Produkt No: A0800038

RONDA® 2000

Efficient Industrial Vacuum Cleaner for fine dust and dust hazardous to health

IMPORTANT!
Read this manual before you operate the machine.

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RONDA® 2000

Industrial Vacuum Cleaner for fine dust and dust hazardous to health

Congratulations on your new RONDA® 2000 industrial vacuum cleaner from V. BRØNDUM A/S.

RONDA® 2000 is an efficient industrial vacuum cleaner, developed for the collection of large quantities of fine and health hazardous dust. RONDA® 2000 meets the requirements for vacuum cleaners within the industry and the construction industry today. The machine is ideal for large cleaning tasks, together with large grinding machines for e.g. wooden floors or concrete floors.

- Self-cleaning Teflon-coated multi-tube filter (BIA dust class ”M”)
- Filter cleaning during operation
- Vacuum indicator for check of the filter load
- HEPA-filter (BIA dust class ”H”)
- Trolley frame with large wheels
- Protection class IPX4 (IEC 60 529)
- Emptying from the bottom with collection in plastic sack, in disposable container with handle and sealing or direct in the collection container
- Static electricity dissipation
- Fulfils the requirements of EN 60 335-2-69 Annex AA for collection of dust hazardous to health in dust class ”H”

Technical Data

RONDA® 2000 is available in 2 variants, 2200 W and 3300 W. Depending on the version RONDA® 2000 is to be connected to 230 or 400 V mains voltage.

Make sure that the voltage and fuse of the power supply correspond with the data of the data plate on the machine and with the technical data of this manual.

The below survey shows the technical data of the RONDA® 2000

A169 motor blow through

Voltage	230	400	Volt
Suction motor	2*1100	3*1100	Watt
Suction capacity	2550	2550	mmWc
	25	25	kPa
Air volume, max. (per motor)	54	54	l/sec
	194	194	m^3/h
Suction power, max.	530	780	W
Noise level	<70	<70	dB(A)
Collection capacity (bag/container)	28/43	28/43	l
Filter area, pre-filter	1.87	1.87	m^2
Filter area, HEPA	2.2	2.2	m^2
Height	1300	1300	mm
Length	580	580	mm
Width	620	620	mm
Weight without accessories	48	50	kg
Container coupling	Ø 90	Ø 90	mm
Length of supply cable	8	8	m

RONDA® 2000 fulfils the requirements of EN 60 335-2-69 Annex AA for collection of health hazardous dust in dust class "H". Vacuum cleaners for collection of health hazardous dust must be marked with the following text:

H	WARNING: This machine contains dust hazardous to health. Only authorized operators wearing appropriate personal protection are allowed to carry out emptying, maintenance and change of filters. Do not operate the machine without the full filtration system fitted.	H

Standard Accessories

RONDA® 2000 is supplied with a complete set of accessories comprising tubes, hose and all the necessary nozzles.

You can reorder the accessories using the following product numbers:

1. Professional's set (antistatic) Ø 90.....80.33.5027
2. Plastic hose, 5 m, with Ø 90 mm coupling.....84.54.5022
3. Round brush.....80.34.5001
4. Adapter for round brush etc. 80.34.5002
5. Crevice nozzle.....80.34.5000
6. Floor nozzle B-500 with brush and wheels.....84.38.5010
7. Tube, curved 80.52.5000
8. Extension tube 0.25 m.....80.52.5020

User Manual

The user manual is to ensure a secure operation of the vacuum cleaner, and to ensure that the user is in no way uncertain as to the use. The manual must be stored near the vacuum cleaner.

Does any uncertainty arise as to the use of the vacuum cleaner or the material collected, the work should be stopped until all questions have been cleared.

Pictures and drawings are for illustrative purpose and will make the understanding of the manual easier. The pictures shown may therefore be different from the actual product.

Safety Precautions

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

- DO NOT USE THE MACHINE WITHOUT A PROPER GROUND CONNECTION. This machine is designed to be used with a ground connection, in an installation with HFI or HPFI relay. The user is responsible for ensuring that the wall outlet is grounded. The ground connection of the plug must NOT be removed.
- The machine is not approved for collection of flammable, explosive, poisonous or extremely health hazardous dust, fluids or gasses.
- RONDA® 2000 is approved for collection of dust hazardous to health according to CEI/IEC 60335-2-69 Annex AA.
- The user must ensure that the machine is adjusted to the task and that regulatory requirements are met.
- When collecting dust hazardous to health you must use a filter bag, and disposal must comply with the legal requirements for material (closed container, plastic bag etc.)
- Avoid damaging the supply cord. When replacing the supply cord, only use an original supply cord as shown above (see the spare parts list). V. BRØNDUM A/S, an authorized V. BRØNDUM A/S dealer or an equally qualified person must carry out the replacement in order to avoid danger. Regularly check the mains connection for damage, such as fissures or ageing, and if damage is found, the supply cord must be replaced before further use.
- Before any repair or maintenance operations on the machine – also cleaning – the plug must be removed from the power supply.
- Depending upon the version, RONDA® 2000 must be connected to either 230 or 400 V power supply. Make sure that the voltage and the safety fuse of the power supply correspond with the data of the date plate on the machine and the information given in this manual.
- The mains socket of the machine must be used as described in this manual only.
- Before use, operators should be provided with information, instruction and training for the use of the appliance and the substances for which it is to be used, including the safe method of removal and disposal of the material collected.

- For user servicing, the appliance must be dismantled, cleaned and serviced, as far as is reasonably practicable, without causing risk to the maintenance staff and others. Suitable precautions include decontamination before dismantling, provision for local filtered exhaust ventilation where the appliance is dismantled, cleaning of the maintenance area and suitable personal protection.
- In the case of class H appliances the outside of the appliance should be decontaminated by vacuum cleaning methods and wiped clean or treated with sealant before being taken out of a hazardous area. All the appliance parts shall be regarded as contaminated when removed from the hazardous area and appropriate action taken to prevent dust dispersal.
- The manufacturer, or an instructed person, shall perform a technical inspection at least annually, consisting of, for example, inspection of filters for damage, air tightness of the appliance and proper function of the control mechanism. On class H appliances the appliance filtration efficiency should be tested at least annually, or more often, according to national requirements. The test method that may be used for the verification of the appliance filtration efficiency is given in AA.22.201.2. If the test will not be passed, it must be repeated with a new main filter.
- When carrying out service or repair operations, all contaminated items, which cannot be satisfactorily cleaned, are to be disposed of. Such items shall be disposed of in impervious bags in accordance with any current regulation of the disposal of such waste.
- The upper part of the motor top is a non-dust proof compartment, and when cleaning, the covers of this compartment are removed by loosening the screws fixing the covers.
- Guidelines in Connection with Disposal of the Machine

The product you have purchased is subject to Directive 2002/96/EC of the European Parliament and the Council of the European Union on waste electrical and electronic equipment (WEEE) and should not be disposed of as unsorted municipal waste. Please utilize your local WEEE collection facilities in the disposition of this product and otherwise observe all applicable national requirements.

Does the safe use or maintenance of the appliance raise any questions; do not hesitate to contact either your dealer or V. BRØNDUM A/S.

Description of the Main Parts

RONDA® 2000 is designed as an effective industrial vacuum cleaner for the collection of fine dust and dust hazardous to health. Below follows a description of the main parts and how they work and operate.

Motor Top with Suction Motor and HEPA-Filter

The motor top is equipped with an integrated handle and switches for the powerful suction motors.

The powerful suctions motors of the RONDA® 2000 are placed in the motor top. Depending upon the version, 2 or 3 suction motors are mounted in the motor top.

Operation of the machine may generate or produce static electricity, which can be inconvenient for the work. Therefore the supply cord has a separate wire (conductor) for connection to earth. Static electricity, if any, will be diverted through this wire.

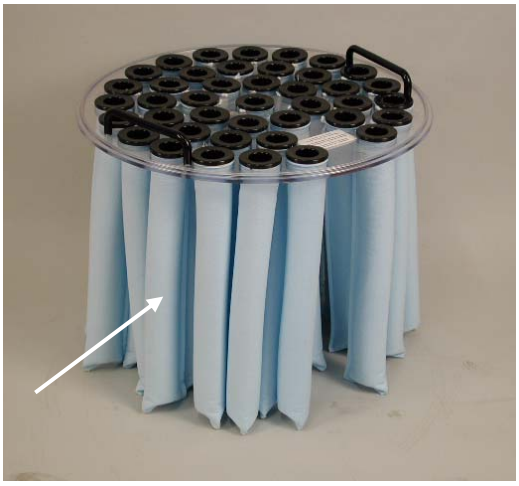
The motor top is provided with a HEPA-filter dust class ”H”.
The filter holds back the finest and smallest dust particles that are not held back by the multi-tube filter. The filter holds back particles >0.3 μm (0.0003 mm). The actual filter surface is 2.2 m^2 and is protected by a metal grating.

The HEPA filter must be changed annually or more often.

Adapter Ring with Vacuum Indicator and Shock Valve

The motor top is mounted on the adapter ring and fastened with three container clips. A vacuum indicator (1) and a shock valve (2) are mounted on the adapter ring.
The vacuum indicator measures the vacuum between the multi-tube filter and the HEPA-filter. The scale of the vacuum indicator has a green and red area. If the pointer reaches the red area during operation, it indicates that the filter is being blocked and that the air velocity in the suction hose consequently will fall and become too small. You can clean the filter during operation by using the shock valve.

Filter Container with Multi-Tube Filter



The large multi-tube filter of the RONDA® 2000 is mounted in the filter container. The multi-tube filter has been tested with quartz-dust particles, of which more than half is less than 5 µm. (5 µm is the same as 0.005 mm.)

The surface of the filter is 1.87 m^2 and has a fine Teflon-coating. The Teflon-coating repels the dust, which will in this way not stick so easily to the filter material.

The filter consists of a large number of tubes (channels) mounted on springs. During operation the tubes vibrate, and part of the dust sucked on to the surface of the filter will fall down in the collection container.

Collection Container

The collection container is fastened to the filter container with two large container clips. The wheels under the collection container make the emptying easier.

The collection container is provided with a ring, which will ensure that the plastic sack for collection of dust will not be sucked up against the multi-tube filter during operation.

The dust collection can be done in several ways, i.e. either direct in the large collection container,

in the disposable container with cover and handle

or in a plastic sack.

Mode of Operation

When the suction motors are on, the air is drawn through the machine and will collect the dust particles near the floor nozzle.

Due to the high air velocity the dust particles will be carried into the collection container, where the dust particles are held back by the multi-tube filter. The heavy particles will quickly fall to the bottom of the collection container.

The air flow and the very fine particles not falling to the bottom of the collection container will continue to the multi-tube filter.

The multi-tube filter will hold back the particles larger than 0.005 mm.

The very fine particles will be held back by the HEPA-filter under the motor top. The HEPA-filter will hold back the particles larger than 0.0003 mm.

The purified air flow will continue through the suction motors and will be led through the exhaust and noise reduction filters of the motor top.

Finally the air flow will leave the machine under the yellow motor top.

IMPORTANT!
Never cover the motor top when the machine is in use. If the air flow from the suction motors cannot leave the machine, there is a risk of the motor top being overheated and damaged.

Assembling

- Unpack RONDA® 2000 and check that all the parts ordered are there.
- Assemble the two parts of the tube, and mount the nozzle or another accessory on the tube.
- Fasten the rubber coupling of the suction hose to the tube and put the other coupling of the suction hose into the container coupling.
- Make sure that the collection container is empty, and that the multi-tube filter is correctly mounted in the collection container. Make sure that the filters of the machine are intact and undamaged (see the chapter concerning change of filters).
- Before the plug is connected to the electrical main supply you must make sure that the plug and cord are undamaged. If the cord or the plus is damaged, a professional must replace the parts.
- Connect the machine to 230 V or 400 V power supply with a reliable connection to earth (active protection against indirect touch).

RONDA® 2000 can now be used for collection of dust hazardous to health. The collection is described in details in the following chapter.

Applications

RONDA® 2000 is a vacuum cleaner according to DS/EN 60335-2-2 and CEI/IEC 60335-2-69 Annex AA and must only be used as such. RONDA® 2000 may be used for collection of dust hazardous to health according to CEI/IEC 60335-2-69 Annex AA.

RONDA® 2000 must not be used for collection of liquids or moist dust.

RONDA® 2000 is not approved and must not be used to collect flammable, explosive, poisonous or other dust, fluids or gasses extremely hazardous to health.

RONDA® 2000 must be used under dry conditions only and must not be used or stored under moist or wet conditions outside or inside.

NOTE: Condensation may be formed in cold machines when these are brought into warm surroundings.

Should only be used at temperatures from -5°C to 35°C at an air humidity of Rh 15-95% (99% if the machine is acclimatized to the present circumstances).

Collection of Dry Dust

- Pull out the rear wheel frame and lean back the machine so that it is supported by the swivel wheels of the rear wheel frame.

During operation RONDA® 2000 is wheeled on the big wheels and the swivel wheels of the rear wheel frame.

When the machine has been correctly assembled and connected, it can be started on the switches of the motor top.

Is RONDA® 2000 equipped with two motors (2200 W), each switch turns on one suction motor.

Is RONDA® 2000 equipped with three motors (3300 W), one switch turns on two suction motors, and the other switch turns on the third motor.

If the task requires a particularly gentle dust collection, the number of active suction motors can be adjusted accordingly.

Vacuum Indicator and Filter Cleaning during Operation

The vacuum indicator placed on the adapter ring measures the vacuum between the filters of the machine during operation.

If the multi-tube filter is blocked by fine particles, the air pressure in the machine will fall. This will be indicated by the vacuum indicator. The pointer of the vacuum indicator reaching the read area indicates that the air velocity in the hose and in the tube is too low, and that the multi-tube filter therefore needs to be cleaned.

The multi-tube filter can be cleaned during operation, i.e. while the machine is working.

- Remove the hose from the tube.
- Block the suction of the hose so that full vacuum is made.

Vacuum will now be formed inside the machine and in the hose. At the same time the springs of the multi-tube filter will contract a little.

- Pull the flap of the shock valve (a regular pull, not a tug)

The equalization air will now go through the multi-tube filter in the opposite direction in order to equalize the pressure in the collection container and in the hose.

In this way the multi-tube filter is cleaned in an effective way. You can see the effect of the cleaning when you read the vacuum indicator.

Repeat the process a few times, if necessary, and read the

effect on the vacuum indicator.

It is recommended to leave the machine for a few minutes before emptying it. The dust will fall to the bottom of the container, and the risk of swirling dust into the surroundings during the emptying is reduced.

NOTE:
The vacuum indicator of the RONDA® 2000 is calibrated for correct reading, when the machine is used with the standard equipment (50 mm). If you use a hose or other accessories with a smaller diameter, the reading of the vacuum indicator will no longer be correct. In order to be sure that the air velocity in tube and hoses is sufficient, you should clean the filter and, if necessary, empty the machine, if the pointer of the vacuum indicator reaches the red area.

Collection and Emptying with Collection Container, Disposable Container or Plastic Sack

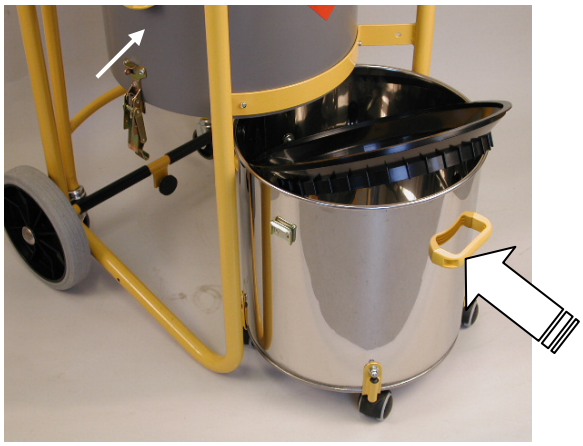
Depending on the type of dust/material to be collected you can choose between three different ways to collect the dust/material. With RONDA® 2000 the material can be collected direct in the collection container, in the disposable container or in the plastic sac. No matter which method is chosen the machine must be in its upright position when the collection container is removed. If the machine has been used immediately before, it is recommended to wait a few minutes before emptying it in order to allow the fine dust to fall to the bottom of the collection container.

Below you will find a more detailed description of the three methods.

Collection and Emptying with Collection Container:

If the material to collect will not raise dust in connection with the emptying it can be collected direct in the large collection container.

- Place the mounting ring on top of the collection container.
- Roll the container under the machine.
- Fasten the container with the two container clips.



Emptying the collection container:

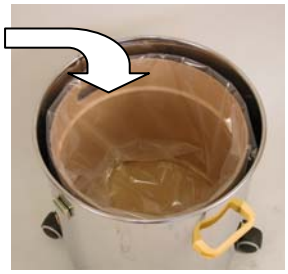
- Loosen the two container clips fastening the collection container and remove the collection container from the filter container.
- Remove the mounting ring.
- Roll or carry the container to the place for emptying.

Collection and Emptying with Disposable Container:

If the material to collect will raise dust and is mixed with sharp objects, which may penetrate the plastic sack, it is recommended to collect the material in the disposable container. The disposable container is an extra guarantee for dust free emptying if sharp objects have perforated the plastic sack.

- Place the plastic sack in the disposable container.
- Fold the upper part of the sack over the disposable container.

- Place the disposable container with plastic sack in the collection container.



- Place the mounting ring on the collection container.
- Fasten the collection container with the two container clips.

Emptying the disposable container:

- Loosen the two container clips fastening the collection container and remove the collection container from the filter container.
- Remove the mounting ring.
- Press the cover of the disposable container down into the drum.

- Wrap the plastic sack around the cover and close the sack with the binder.
- If necessary secure the disposable container with the fibrous paper ring.
- Lift the sealed disposable container out of the collection container.

Collection and Emptying with Plastic Sack:

If no sharp objects are contained in the material raising dust, the plastic sack can be used for the disposal of the dust/material collected.

The plastic sack is placed in the disposable container as described in the chapter concerning collection and emptying with disposable container.

Emptying with plastic sack only:

- Loosen the two container clips fastening the collection container and remove the collection container from the filter container.

- Remove the mounting ring.
- Seal the plastic sack with the binder.
- The plastic sack and the disposable container are lifted out of the collection container.
- The plastic sack is lifted out of the disposable container and disposed of.

Reordering Plastic Sack, Disposable Container etc.

Collection container RONDA® 2000	83.79.0001
Mounting ring D-440 mm	83.89.4810
Disposable container with cover and sealing ring	84.64.9989
Plastic sack with binder	84.64.9990
Binders (25 units)	84.64.9992

The disposable container and the plastic sack do not cause pollution when incinerated.

REMEMBER:
Disposal of dust hazardous to health must always take place according to the current rules.

When the machine has been used without collection bag, the necessary steps must be taken as to protection against dust nuisance.

If the machine has been used for dust hazardous to health, you MUST use personal protection equipment (PPE) when emptying, handling and cleaning the machine.

The machine must ALWAYS be emptied after use.

Cleaning and Maintenance

The machine must be emptied after every use. If the machine is left with dust, there is a risk of self-ignition.

IMPORTANT!
The machine must not be connected to the power supply during cleaning and maintenance.

Read the chapter concerning safety precautions before cleaning and maintenance.

The easiest way to clean the machine is as follows:

- Clean the multi-tube filter as required. See the description of filter cleaning during operation.
- Wipe the machine on the outside with a dry or slightly wet cloth.

Maintenance of the Motor Top

The motor top is made of maintenance-free parts and needs therefore no daily maintenance, apart from external cleaning and check that the supply cords and plugs are undamaged.

The easiest way to clean the motor top is with a wet cloth. Do not aim jets of water directly at the motor top.

In order to avoid stop in operation it is recommended to let an authorised technician make an annual inspection of the electrical parts.

It is recommended to let an authorised service centre inspect the brushes of the suction motor after approx. 800 working hours, and if necessary replace them. In this way the life of the suction motor is prolonged.

Change of Filters

In General

When replacing the filters, the necessary precautions to protect the environment and the respiratory passages of the operator must be taken. This protection must be based on the tasks and the type of dust or sludge being on the surface of the filters. Before checking or replacing the filters you must clean the multi-tube filter as previously described, and you must empty the machine.

Check and Replacement of the multi-Tube Filter (Product No. 84.67.1098)

The multi-tube filter is made of a robust filter material and has a very long life. However, the filter will gradually be worn by the many large and small particles that are held back. Therefore it is necessary to check regularly if the filter is undamaged and intact. If the filter material is not intact, the multi-tube filter cannot hold back the dust particles, which will penetrate the filter and be caught by the HEPA-filter. The HEPA-filter is intended for very fine dust and will rapidly be blocked, if the multi-tube filter is damaged.

- Loosen the container clips of the motor top and remove the motor top.
- Place the motor top on a dry, clean and even surface.
- If necessary, loosen the adapter ring and lift it away from the yellow frame in order to be able to inspect the filter container.
- Check the top surface of the multi-tube filter for dust particles. If you can see dust particles there, it is a sign of a damaged multi-tube filter and worn filter material.

Is the multi-tube filter damaged, or have holes been worn in the filter surface, the multi-tube filter must be replaced.

A replacement of the multi-tube filter should also include a replacement of the HEPA-filter. See the next chapter.

Replacement of the HEPA-Filter (Product No. 84.67.5007)

- Loosen the three container clips of the motor top and remove the motor top. Place the motor top so that the filter is easily accessible.
- Loosen the bolt holding the filter. Now the filter can be removed and disposed of.
- Mount the new filter on the motor top and make sure that the contact surface of the filter is undamaged and clean.
- Tighten the bolt so that the filter shuts tight and is firmly connected to the contact face of the motor top. Don't tighten the bolt too much.

Disposal of Used Filters

When you dispose of the used filters you must make sure that this is done according to the environmental legislation.

Troubleshooting

If the machine does not collect the material in a satisfactory way:

- The suction hose, tube or nozzle may be blocked.
  Stop the machine, and remove the blocking.

- The collection container may be filled to overflowing.
  Stop the machine, and empty the container.

- A leak might have arisen in connection with the mounting of the motor top or the collection container.
  Start the machine, and block the suction hose. Normally you will be able to hear a possible leak. Loosen the container clips of the motor top or collection container, place the motor or the collection container correctly, and lock the clips again.

- The multi-tube filter may be blocked.
  Clean the multi-tube filter as described in the chapter concerning cleaning of filter during operation.

- The HEPA-filter may be blocked.
  Replace the filter as described in the chapter concerning change of filters.

Service and Repair

Service and repair are free of charge within the guarantee period (invoice must be presented) provided that:

- The defect has been caused by a design fault or defective materials. (Normal wear and tear, misuse or insufficient maintenance is not covered by the guarantee.)

- No repair attempts have been made by others than V. BRØNDUM A/S or service centres approved by V. BRØNDUM A/S to carry out guarantee repairs.

Service free of charge includes replacement of defect parts and the cost for related working hours.

The machine is delivered via the V. BRØNDUM A/S dealer or direct, carriage paid, to:

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Subject to changes.