

USER'S MANUAL

Vacuum Installation VAC-C160, VAC-C300

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This User's Manual is a translation of the original User's Manual.

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1 PREFACE

1.1 User's Manual identification

The data on the machine plate can be found in the index of the documentation set. It contains a reference to the document number of this User's Manual. Check if the User's Manual belongs to the machine. The index can also contain references to corresponding documentation.

1.2 General information

The User's Manual provides information and instructions for proper and safe use of the machine and applies to the life of it.

All users of the machine must be acquainted with the presence and contents of the User's Manual, which for that reason has to be kept in an accessible place.

Carefully read through the User's Manual before starting to use the machine. Familiarize yourself with the information and follow the instructions. If you have questions, require explanation of subjects related to the machine or the User's Manual, please contact the manufacturer. You can find the address on the front page.

Replace damaged and missing User's Manuals.

Always mention the data of the machine plate below in correspondence about the machine:


- Machine
- Model / Machine code
- Serial no.

See fig. 1.

1.3 Reading indicator

The User's Manual uses the term machine. By "machine" is meant: the specific module, installation, unit or system with the corresponding equipment.

This User's Manual contains several boxes. They draw your attention to dangerous situations for the user, control panel and/or product and give you tips. They have been subdivided and displayed as follows:



MORTAL DANGER

The user's life is directly threatened.

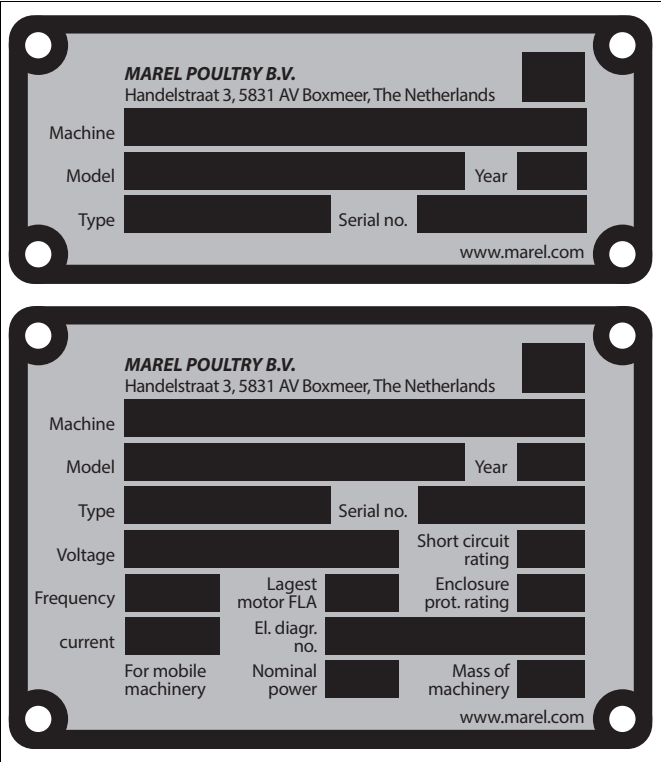


fig. 1 Machine plate example

**WARNING**

The user can be (seriously) injured or seriously damage the machine.

The picture in this box depends on the risk-bearing action that is discussed.

**TAKE CARE**

The user can damage the machine or products when the instructions are not carried out with care.

**NOTE**

Observation containing additional information for the user.

**TIP**

Provides suggestions and advice to the user to carry out certain instructions more skilfully and easier.

Page and document numbers

Each page has a unique identification and consists of:

- The page number with the total number of pages.

Example:

4 / 24

- The document number and the date of issue.

Example:

90952_00_01_ENG / 17-08-2013

Position numbers and letters in text

Bold printed position numbers and letters in the text refer to the specific section in the figure.

Example:

Product guides **40** and **41** stop the legs when

**NOTE**

The pictures in this User's Manual can deviate from your machine. Keep this in mind when reading this User's Manual and carrying out operations on the machine.

Some components can have documentation of their own. Consult the index on this.

1.4 Keeping machine data up to date

We advise you to keep a logbook.

You can enter data regarding production, maintenance, cleaning, inspections, defects, repairs, overhauls, modifications and other operations on the machine. See appendix: LOGBOOK.

We also advise you to keep a registration form for entering the setting data.

See appendix: SETTINGS.

1.5 General terms of delivery

The general terms of delivery of the manufacturer apply to the machine. These can be found in the documentation set.

1.6 Responsibilities of the purchaser

By “purchaser” this User's Manual means every enterprise that uses the machine, regardless if it concerns purchase, rent, lease or another user's right.

**MORTAL DANGER**

If the machine is not installed in accordance with our layout drawings, or if local regulations or the individual circumstances make this necessary, then additional safety measures are necessary.

The purchaser has a duty to familiarize all users with the information and instructions given in this User's Manual.

The purchaser is obliged to take care of the safety of the users and the machine.

In particular:

- he makes sure that all required information is available to all users.
- he allocates authorities to the users per chapter of the User's Manual.
- only authorized, skilled and instructed users are allowed to carry out the instructions.
- he supervises the users to make sure they meet all regulations and instructions.
- he makes sure that the machine is only used within the limits mentioned in the User's Manual and “Technical Data”.
- he makes sure that the original state of the machine must not be changed by modifications, repairs and/or other influences by or on behalf of the purchaser or a third party without prior written permission of the manufacturer.
- he makes sure that settings, maintenance and cleaning of the machine are properly carried out in time.

1.7 Modifications to the machine

The data contained in this User's Manual are based on the latest information.

The manufacturer reserves the right to change the design and/or configuration of its machines at any time, without any obligation on our part to change any previous supplies accordingly.

The original state of the machine must not be changed by modifications, repairs and/or other influences by or

on behalf of the purchaser or a third party without prior written permission of the manufacturer.

If the CE-2A-status is applicable to the machine (see EC-declaration), this can become defunct due to modifications to the machine.

1.8 Use of the machine

- The machine can only be used for industrial ends.
- The machine can only be used within the limits mentioned in the User's Manual and "Technical Data".
- Prior written permission of the manufacturer is required for other use.
- It is not allowed to install parts that have not been supplied, installed and/or released beforehand by the manufacturer.

2 SAFETY

2.1 Safety at work

The manufacturer has made every possible effort to provide you with comprehensive, accurate information as regards any hazards relating to the operation of the machine. The purchaser himself shall be responsible for the implementation and proper observance of these rules of conduct.

You must not let minors of 14 years old or younger work on this machine, even if local legislation of the country where the machine is in operation permits it.

Observe the current state of labour, safety and environmental regulations when carrying out any operations.



MORTAL DANGER

Do not wear:

- loose-fitting and loose articles of clothing.
 - jewellery and suchlike.
- They can come into contact with moving parts.**

Wear footwear that prevents slipping.

2.2 Safety labels

The adjacent safety labels alert the user to possible dangers. You will find them on the machine and in the text of this User's Manual.

2.3 Noise pollution

The manufacturer designs and constructs machines where noise pollution has been reasonably reduced to a minimum.

However it is possible that users, due to local circumstances, will be exposed to noise pollution which may cause hearing impairment.



WARNING

To prevent hearing impairment due to noise pollution, you should always observe the legal standards and regulations relating to noise pollution and take proper measures if required.

The noise pollution of the machine is mentioned in the "Technical Data".

We draw your attention to the fact that wrong settings and overdue maintenance can cause an increase in

| | |
|--|--|
| | Risk of injury from sharp objects. |
| | Risk of injury from rotating parts. |
| | Risk of injury from entrapment. |
| | Risk of injury from electrical voltage. |
| | Risk of injury from high temperatures. |
| | Risk of hearing loss from high noise levels. |
| | Approaching a dangerous area. |
| | Risk of injury from breathing poisonous gases. |
| | Risk of injury from flammable substances that make a fire. |
| | Risk of injury from ionizing radiation. |
| | Risk of injury from laser beams. |
| | Risk of injury when you climb the machine. |

noise pollution.

2.4 Hygiene and environment

Uphold the rules of hygiene and environment during (maintenance) operations on the machine.

Make certain that the production process does not absorb any damaging influences from outside, such as detergents and maintenance tools.

Recycling

Offer materials for recycling sorted as much as possible.

Chemical waste

Materials that come under the category of chemical waste should be separated when discharged. This includes, for example, batteries, oil filters, oils and greases.

Waste discharge

Waste should only be offered to recognized waste-disposal companies that meet local legislation, standards and regulations.

Putting machine out of operation

If the machine is not used over a longer period of time or is dismantled, the purchaser must remove all components that can cause danger, such as knives, guides sticking out, batteries.

3 TRANSPORT

**MORTAL DANGER**

Activities described in this chapter must be carried out by competent, professional and trained personnel.

3.1 Transport and storage

- During transport of the machine/control panel follow instructions on the packing.
Consult the weight marking on the packing for transport weights.
- Check if the machines or spare parts are correct and available by means of the documents that have also been supplied.
- Check the machine for transport damage.
- In case of incorrect delivery or damage contact the manufacturer.
- Keep the machine dry, clean and safeguarded against humidity, dust and dirt.

4 MACHINE DESCRIPTION

4.1 Implementation

The Vacuum Installation supplies the required partial vacuum for the offal transport.

This User's Manual describes the following models:

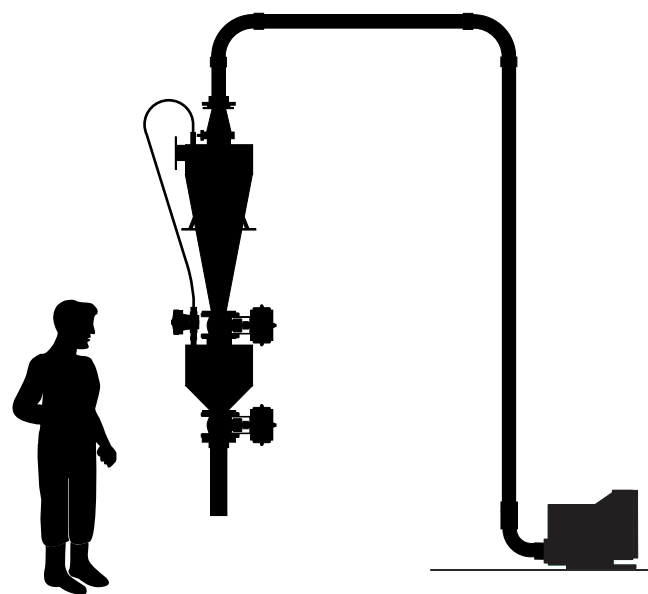
- VAC-C160
- VAC-C300



NOTE

The machine model is shown on the machine plate.

- "VAC" means Vacuum Installation.
- "C" stands for a continuous partial vacuum.
- The last 3 digits indicate the capacity of the Vacuum Installation (number of m³ of air displacement at atmospheric pressure).



4.2 Names used

The machine consists of the following main components:

1. Blower
2. Vacuum cyclone
3. Discharge tank
4. Vacuum pipe work
5. Ball valve (pneumatic operation)
6. Drain pipe
7. Filter
8. Pneumatics box
9. Vacuum Installation Control Panel

See fig. 2.

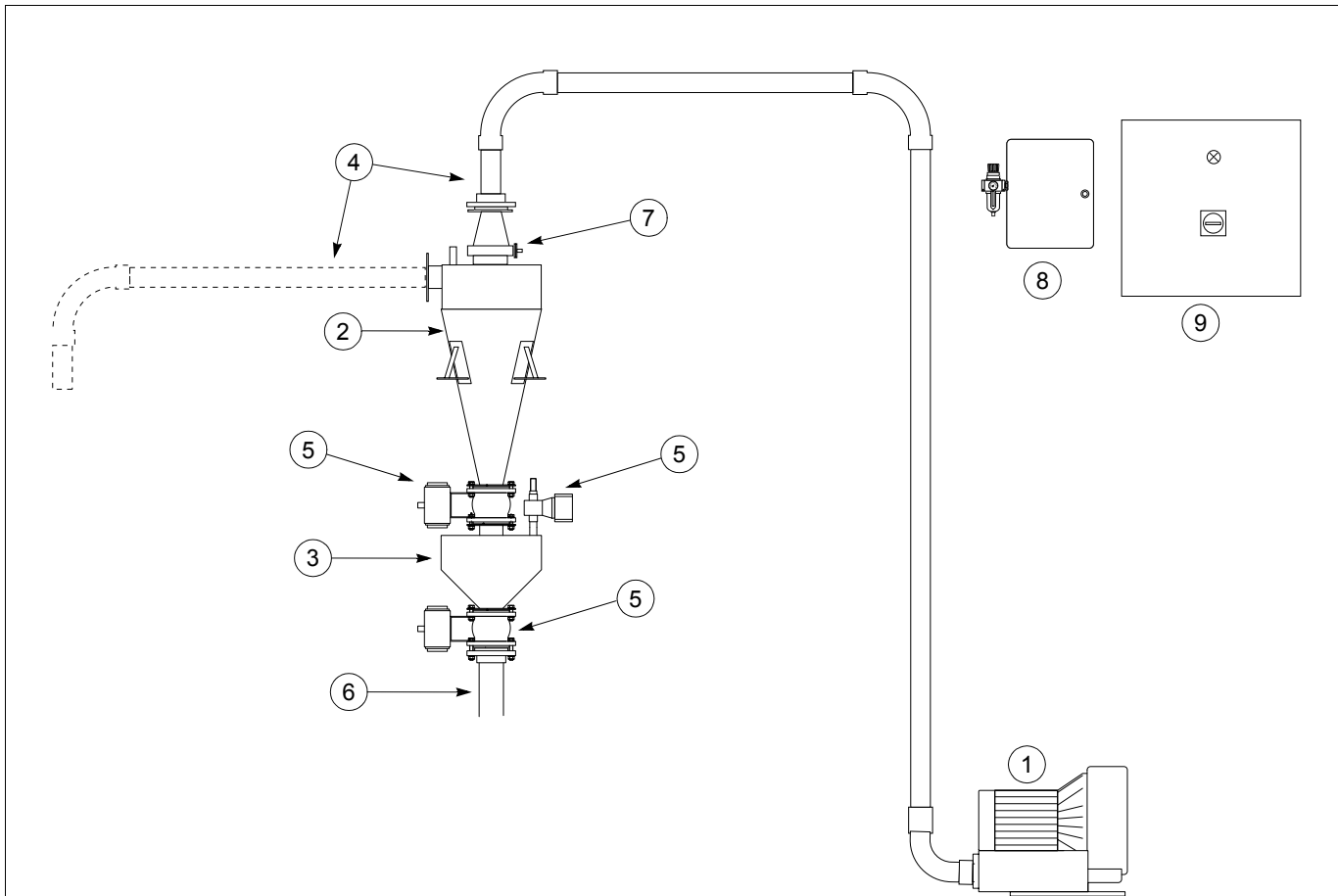


fig. 2 Names used

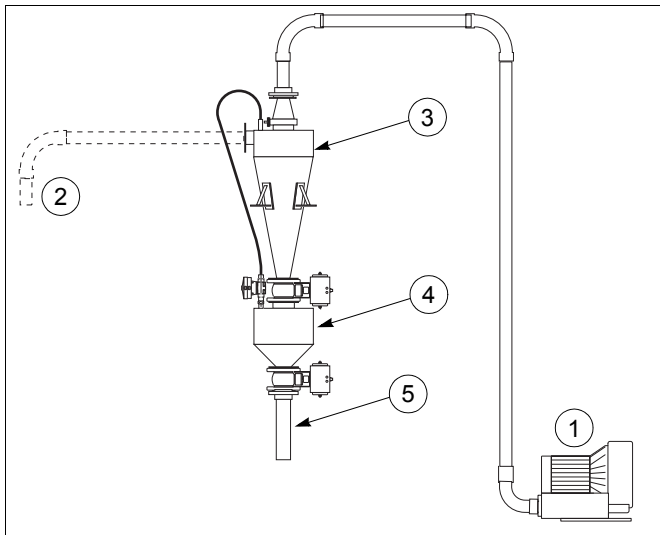


fig. 3 Process description I

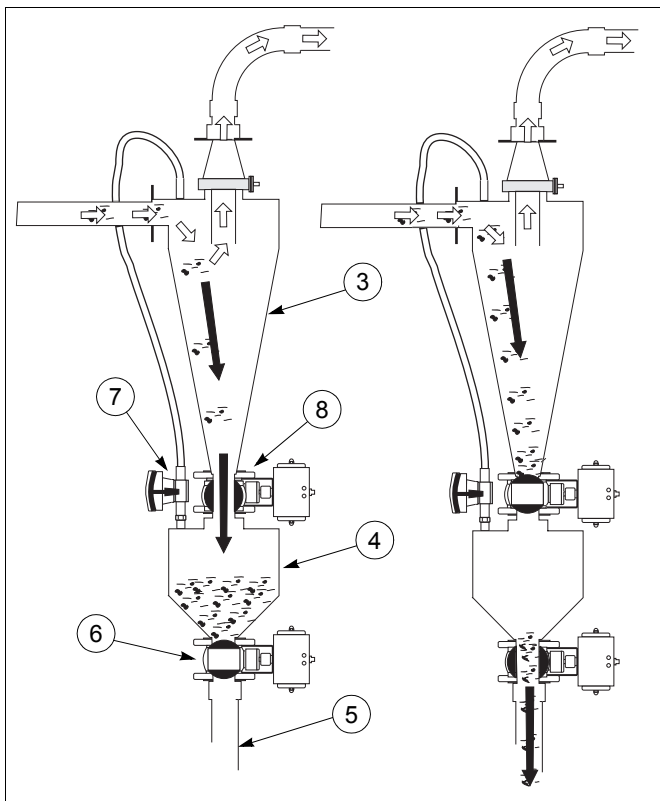


fig. 4 Process description II

4.3 Process description

Blower **1** supplies partial vacuum, which creates an air current. This air current sucks off away at exhaust point **2**.

The separation between air and offal takes place in cyclone **3**. The offal leaves the machine through discharge tank **4** and drain pipe **5**.

The machine functions as follows:

1. Ball valve **6** is closed. Ball valve **7** is open, due to which the pressures in cyclone **3** and in discharge tank **4** are equal. The offal enters discharge tank **4** via ball valve **8**.
2. After a (long) preset time, ball valve **8** closes. The offal gathers in cyclone **3**.
3. After a small delay ball valve **7** closes and ball valve **6** opens. The offal leaves the machine via drain pipe **5**.
4. After a (short) preset time, ball valve **6** closes and ball valve **7** opens. After a small delay ball valve **8** opens and the cycle repeats itself.

See fig. 3 and fig. 4.

4.4 Specifications

See the "Basic design specifications" in the order confirmation for the machine and the product specifications.

- The relevant machine specifications are the production speed and the process times.
- The relevant product specifications are the weights and the weight distributions.

Use the machine only within these specifications.

See the "Technical Data" and the User's Manual "Explanation of Symbols Technical Data" (90819) for:

- The connections
- The consumptions
- The dimensions
- The requirements for steam, water and compressed air, whatever is applicable

4.5 Workplace



MORTAL DANGER

Only competent, professional and trained personnel are allowed to enter the workplace.

Workplace **1** for operating the machine is shown in color in fig. 5. All the space around the machine is the working area for all other activities.
See fig. 5.

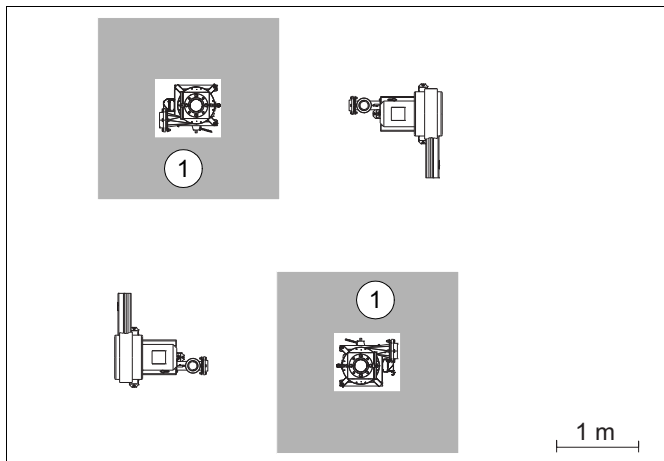


fig. 5 Top view of workspace

4.6 Danger zones



MORTAL DANGER

Only competent, professional and trained personnel are allowed to enter the danger zone.

The dangers inside space **2** are screened off or covered as far as possible.
See fig. 6.

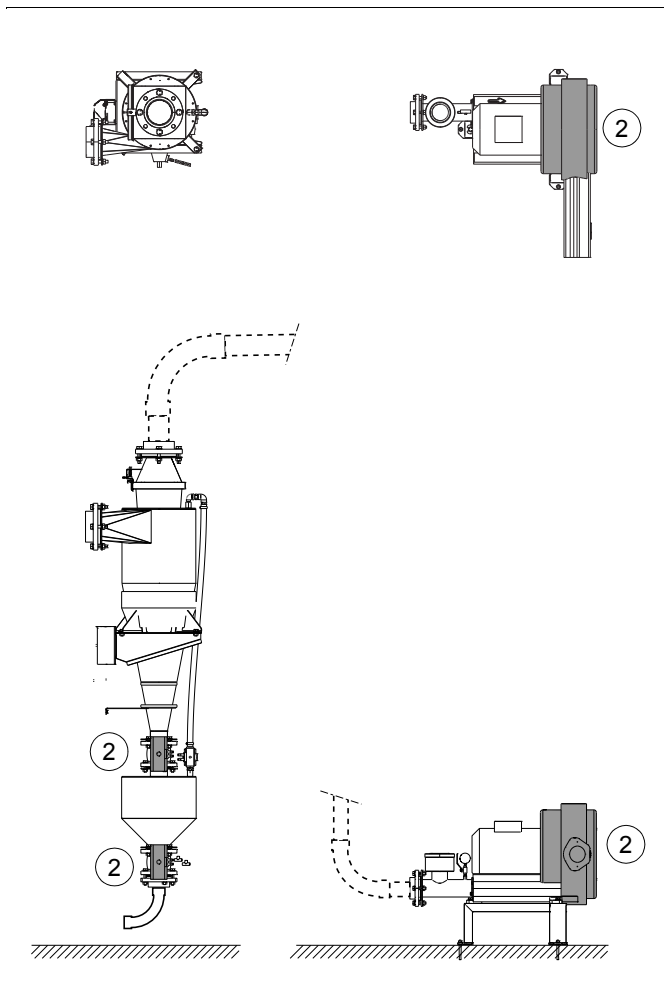


fig. 6 Danger zones

5 SET-UP

The machine will be installed by the manufacturer or by others commissioned by the manufacturer.
If the purchaser carries out the installation himself, the following instructions apply.



MORTAL DANGER

Activities described in this chapter must be carried out by competent, professional and trained personnel.

Set up the machine as shown on the manufacturer's layout drawings. See also the "Technical Data".



MORTAL DANGER

If necessary, take extra safety measures when:

- **changes are made to the manufacturer's recommendations and instructions during installation of the machine.**
- **local regulations, legislation or circumstances require this.**

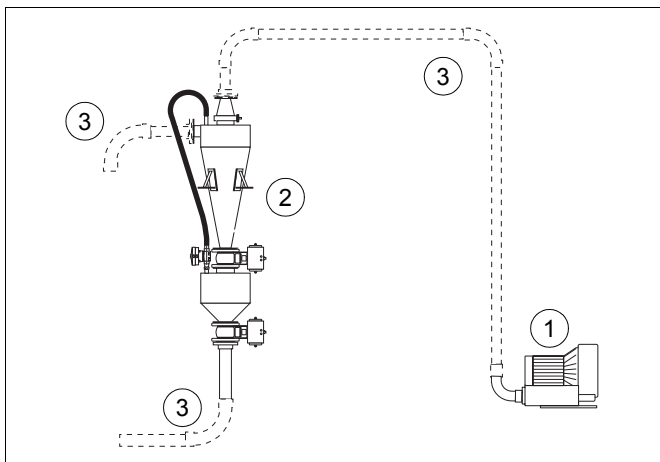


fig. 7 Set-up

Set-up the machine as follows:



NOTE

Install the vacuum pump and the vacuum cyclone in a frost-free and properly aired room.

1. Move the packed machine with suitable means of transport to the reserved spot.
2. Remove the packing from the machine.
3. Attach the vacuum cyclone **2** to a separate frame or to the appropriate machine.
4. Secure blower **1** and the frame to the floor.
5. Connect the vacuum pipes **3** to the machine.

Note the following points:

- Make sure that the surface is solid and level and that there is sufficient space to move around the machine for carrying out work.
- Take into account the set-up requirements for the other machines.
- Make sure there is sufficient lighting to work safely on the machine.

5.1 Connections

5.1.1 Connect the electricity

**MORTAL DANGER**

Do the work described in this chapter only if:

1. the power supply to the machines and/or control panels is switched off.
2. all the electrical plugs of the machine have been removed from the wall sockets.
3. all the main switches have been fitted with a padlock.
4. all measures have been taken to prevent that the electricity is unintendedly switched on.

Take care when performing the work.

Before connecting, check if the power supply and frequency match the data on the type plate of the main drive. Follow local regulations when connecting the machine.

For data about the connections, see the electric circuit diagrams supplied by the manufacturer.

For connection and consumption details consult the "Technical Data".

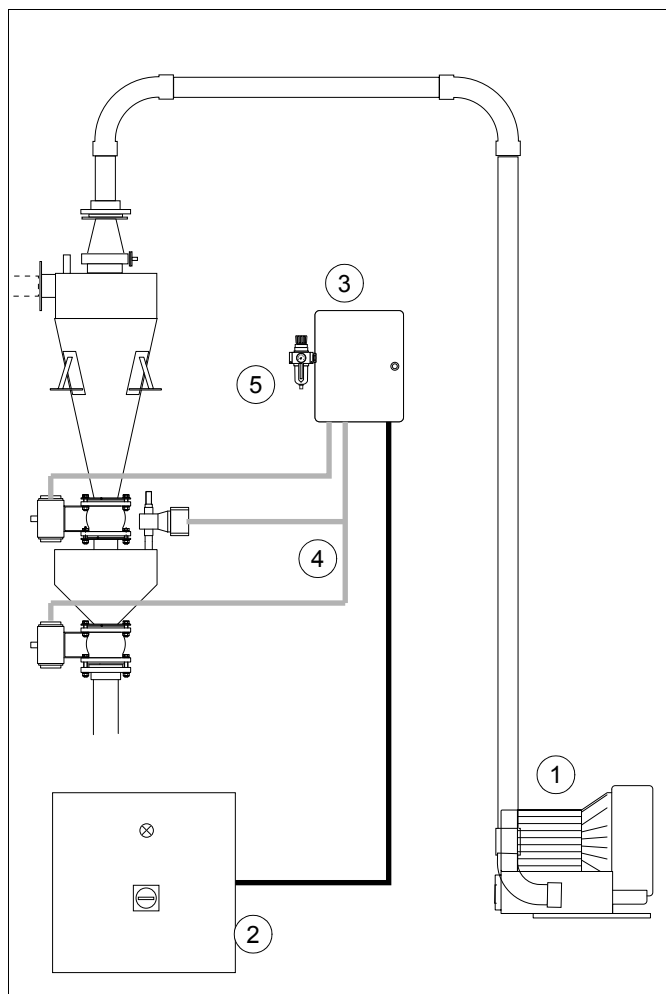


fig. 8 Connections

- Connect blower **1**.
- Connect pneumatics box **3** to Control Panel **2** of the Vacuum Installation.

See fig. 8 and User's Manual "Vacuum Installation Control Panel".



TAKE CARE

An incorrect direction of rotation can lead to damage to the machine.

5.1.2 Connect the compressed air

The machine has pneumatic components which are operated by compressed air.

- Connect the pneumatic components **4** to pneumatics box **3**. See paragraph 9.2 Pneumatic diagram.
- Connect point **5** to the compressed air supply system.



TAKE CARE

The compressed air should meet the following requirements:

- The size of the contaminated particles should not exceed 5 µm.
- The dew point should not exceed a maximum of 3 °C.
- It should not contain any chemically contaminated particles.
- The compressed air should be oilproof. Oil, water and contaminations in the compressed air cause defects and early wear.

The requirements above correspond with ISO8573-1, class:

- 3 for particles.
- 4 for water.
- 1 for oil.

5.2 Cleaning the machine after set-up

Clean the machine thoroughly before putting it into operation for the first time.

See paragraph 8.1 Cleaning.

6 SETTINGS

**MORTAL DANGER**

Activities described in this chapter must be carried out by competent, professional and trained personnel.

**MORTAL DANGER**

Activities described in this chapter must only be carried out if the power supply to the machine and/or control panel is switched off.

1. Switch off main switch(es) of the control panel(s)
or
remove all machine plugs from the wall sockets.
2. Lock the main switch(es) with a padlock.
3. Take all measures to prevent unintentional recovery of the power supply.
4. Proceed carefully during carrying out the work.

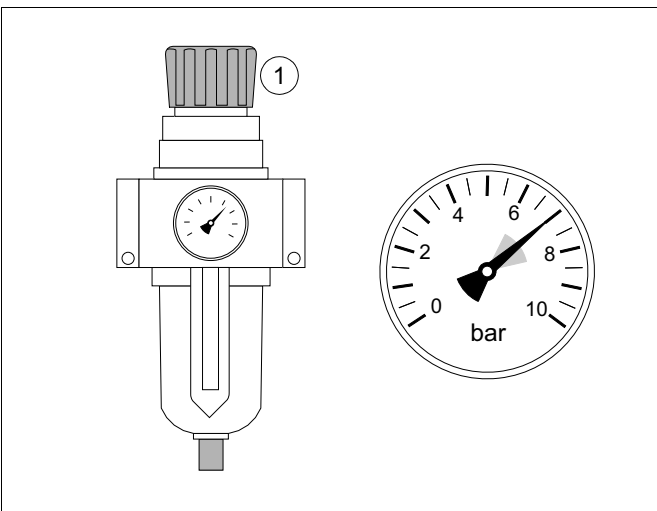


fig. 9 Setting the compressed air pressure

6.1 Setting the compressed air pressure

The correct compressed air pressure is important for a proper functioning of the machine and it limits the wear of the pneumatic components.

**TAKE CARE**

The maximum permitted working pressure is 800 kPa (8 bar).

Set the working pressure as follows:

1. Pull out knob 1.
2. Set the working pressure to 6-8 bar (600-800 kPa).
Rotate the knob:
 - clockwise for a higher pressure.
 - anti-clockwise for a lower pressure.
3. Push the knob back in.

7 OPERATION

The following instructions apply if the control panel is provided by the manufacturer and it is connected in accordance with the manufacturers electrical diagrams.

**MORTAL DANGER**

Activities described in this chapter must be carried out by competent, professional and trained personnel.

**MORTAL DANGER**

Warn everyone in the vicinity before the machine is started again.

WARNING

First read chapter 7 Operation prior to starting the machine.

7.1 Emergency stop



NOTE

Only use the emergency stop in an emergency situation.

In case of an emergency:

- pull the emergency stop cord.
- press the emergency stop button.

See fig. 10 and fig. 11.

When the emergency stop has been operated, all electrical drives to the machine are switched off. An alarm report appears on the Control Panel. See User's Manual "Vacuum Installation Control Panel".

Solve the emergency as follows:

1. Have an authorized person solve the emergency.



MORTAL DANGER

Make sure that nothing is done on the machine until the emergency stop is released.

Warn everybody near the machine before you start the machine again.

2. Unblock the emergency. See User's Manual "Vacuum Installation Control Panel" and User's Manual "Emergency Stop Provisions".
3. Start the vacuum transport system. See User's Manual "Vacuum Installation Control Panel".

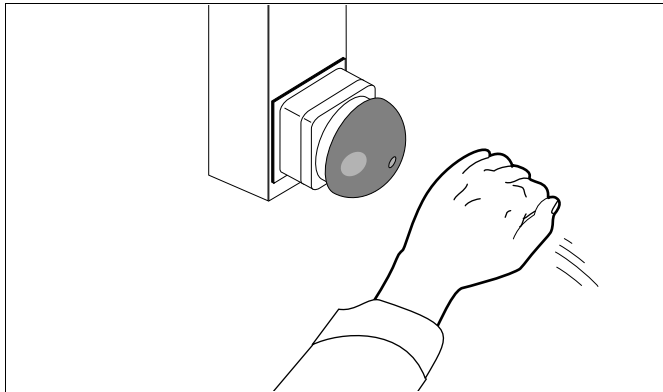


fig. 10 Emergency stop

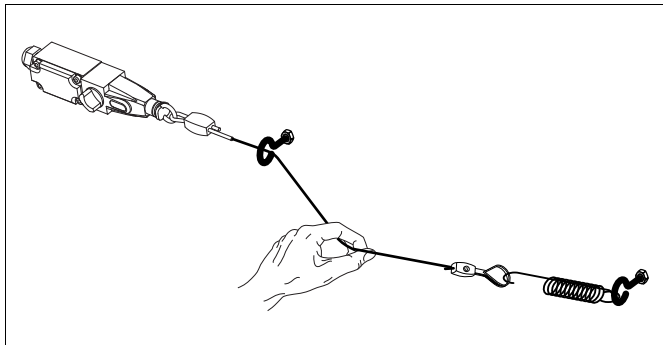


fig. 11 Emergency stop cord

7.2 Starting and stopping the Vacuum Installation

7.2.1 Starting the installation

Start the Vacuum Installation as follows:

1. Switch on the Control Panel of the vacuum transport system. See User's Manual of the "Vacuum transport system Control Panel".
2. Switch on the Control Panel of the Vacuum Installation. See User's Manual of the "Vacuum Installation Control Panel".
3. Start the vacuum pump. See User's Manual of the "Vacuum transport system Control Panel".
4. Check if sufficient partial vacuum is available and the installation functions properly.

7.2.2 Stopping the installation

Stop the Vacuum Installation as follows:

1. Stop the vacuum pump. See User's Manual of the "Vacuum transport system Control Panel".

2. Switch off the Control Panel of the Vacuum Installation. See User's Manual of the "Vacuum Installation Control Panel".

8 CLEANING

**MORTAL DANGER**

Activities described in this chapter must be carried out by competent, professional and trained personnel.

**MORTAL DANGER**

Activities described in this chapter must only be carried out if the power supply to the machine and/or control panel is switched off.

1. Switch off main switch(es) of the control panel(s)
or
remove all machine plugs from the wall sockets.
2. Lock the main switch(es) with a padlock.
3. Take all measures to prevent unintentional recovery of the power supply.
4. Proceed carefully during carrying out the work.

**NOTE**

Consult the User's Manual "Cleaning and Disinfection" (90811).

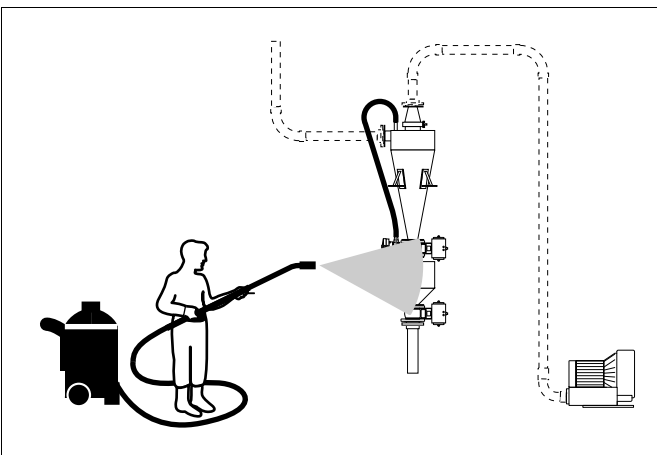


fig. 12 Cleaning

8.1 Cleaning

Clean the machine on a daily basis, both inside and out. Also see the User's Manual "Cleaning and Disinfection" (90811).

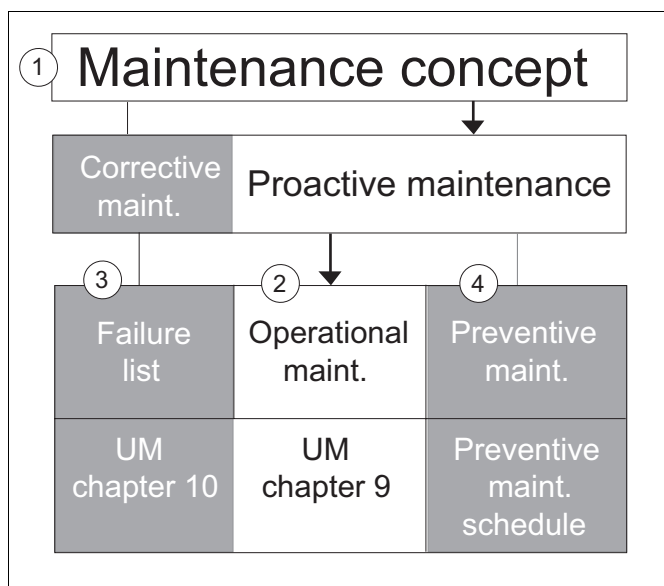


fig. 13 Maintenance concept

9 MAINTENANCE

Maintenance activities must be carried out promptly and accurately to maintain the machine state at the highest technical and technological level possible.

Any anomalies during the production process and/or technical functioning of the machine will become visible in an early stage.

Maintenance concept 1 is shown in fig. 13. This chapter describes the operational maintenance 2 as a part of the maintenance concept.

In chapter 10 the possible proceedings during corrective maintenance 3 are described.

For more information about preventive maintenance 4, ask the manufacturer.



MORTAL DANGER

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MORTAL DANGER

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or
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3. Take all measures to prevent unintentional recovery of the power supply.
4. Proceed carefully during carrying out the work.

Operational maintenance

The basic maintenance activities to be performed at the machine are defined in the maintenance schedule off paragraph 9.1 Maintenance schedule. See fig. 13.

9.1 Maintenance schedule













The maintenance schedule contains all points of attention and intervals related to the operational maintenance of the machine.



NOTE

The manufacturer strongly advises the availability of the right spare parts.

tab. 1 Maintenance schedule

| Part | Daily* | Weekly* | 2-weekly* | Monthly* | 3-monthly* | 6-monthly* | Annual* | <div> Clean</div> <div> Check</div> <div> Adjust / set up / replace</div> <div> Lubricate</div> | Description | Checked | Paragraph |
|-----------------|---|---|-----------|---|------------|------------|---------|---|---|---------|-----------|
| | | | | | | | | | | | |
| Safety features |  | | | | | | | | Check the functioning of the safety provisions. | | |
| |  | | | | | | | | Check the presence of the safety labels. | | |
| Filter |  | | | | | | | | Check the filter of the cyclone. | | |
| |  | | | | | | | | Clean the filter if necessary. | | |
| Ball valves | |  | | | | | | | Check the functioning of the ball valves. | | |
| | |  | | | | | | | Replace or repair if necessary.. | | |
| Blower | | | | | | | | | See User's Manual "Vacuum pump". | | |
| Whole machine | | | |  | | | | | Check for wear, broken parts, smooth running of moving parts. | | |
| | | | |  | | | | | Replace or repair if necessary. | | |

* Maintenance frequency based on 40 hrs./week.

9.2 Pneumatic diagram

You can find the following components in fig. 14:

- 1. Connection of the compressed air to the pressure regulator (pneumatics box)
- 2. Valves (pneumatics box)
- 3. Vacuum cyclone tank ball valve
- 4. Vacuum cyclone-discharge air pressure valve
- 5. Vacuum discharge tank ball valve

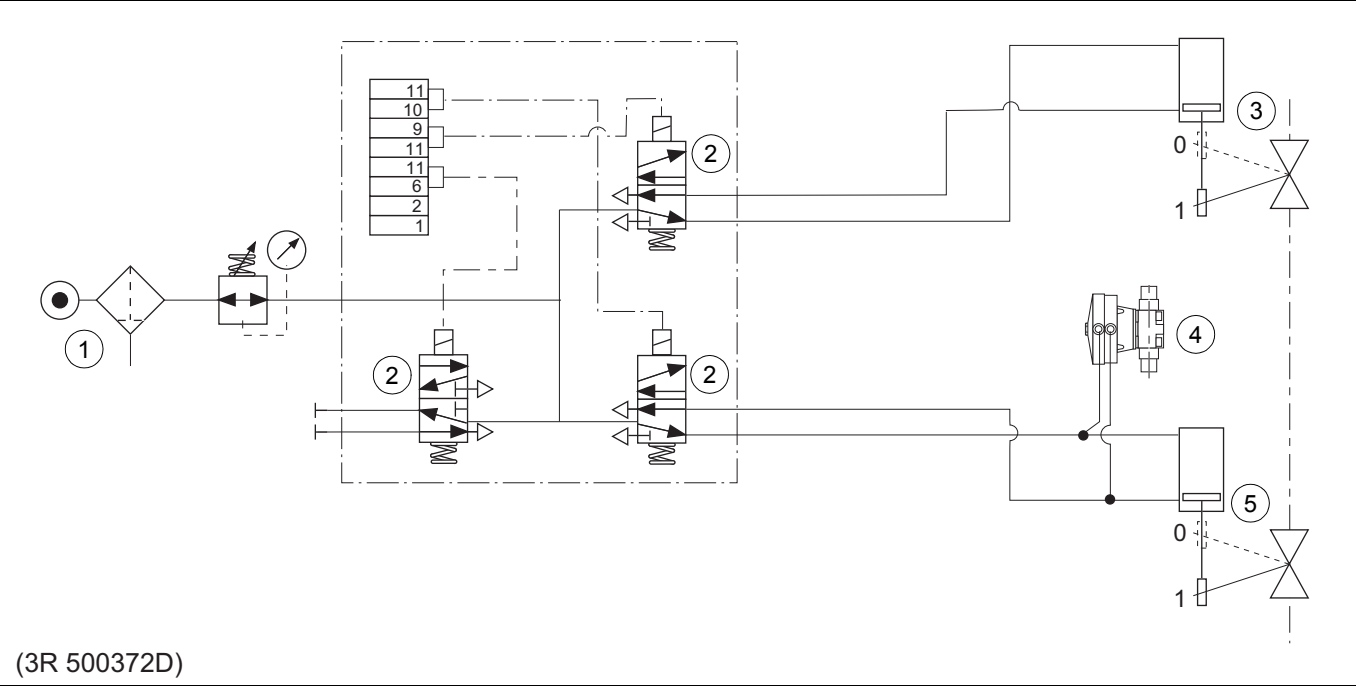


fig. 14 Pneumatic diagram

9.3 Clean the filter

Clean the filter as follows:

1. Shut down the Vacuum Installation. See paragraph 7.2 Starting and stopping the Vacuum Installation.
2. Remove the filter from the holder.
3. Clean the filter with hot water.
4. Put the filter back into the holder.
5. Put the Vacuum Installation into operation. See paragraph 7.2 Starting and stopping the Vacuum Installation.

See fig. 15.

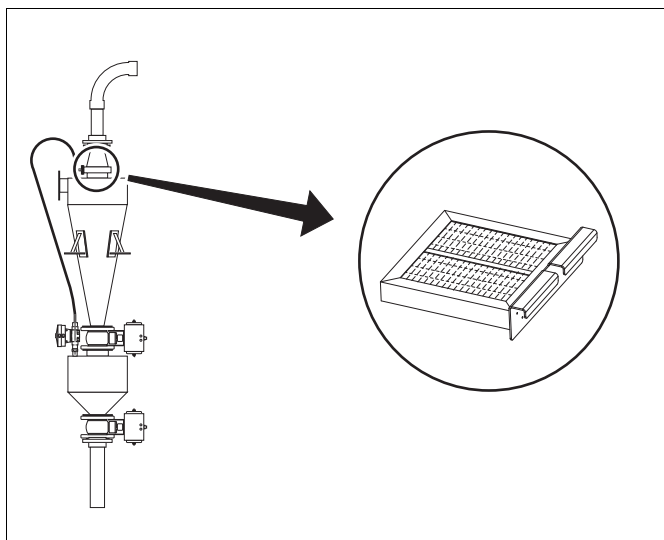


fig. 15 Clean the filter

10 FAILURES



MORTAL DANGER

Activities described in this chapter must be carried out by competent, professional and trained personnel.



MORTAL DANGER

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1. Switch off main switch(es) of the control panel(s)
or
remove all machine plugs from the wall sockets.
2. Lock the main switch(es) with a padlock.
3. Take all measures to prevent unintentional recovery of the power supply.
4. Proceed carefully during carrying out the work.

10.1 Failure list

The following failure list includes the most usual failures, their possible cause and solution. Always fix failures as quickly as possible.

tab. 2 List of failures

| Failure | Possible cause | Possible remedy | Paragraph |
|---|---|--|-----------|
| There is not enough partial vacuum. | The vacuum pipe work is blocked. | Clean the vacuum pipe work. | - |
| | There is a leak in the vacuum pipe work. | Check the vacuum pipe work for leakage and seal the leak. | - |
| | The filter on top of the vacuum cyclone is dirty. | Clean the filter. | 9.3 |
| | The vacuum pump does not function properly. | Check the functioning of the vacuum pump. See User's Manual "Vacuum pump". | - |
| The filter on top of the vacuum cyclone is blocked. | The hose connection between the vacuum cyclone and the discharge tank is blocked. | Deblock/clean the hose connection. | - |
| | The ball valve of the hose connection between the vacuum cyclone and the discharge tank is blocked. | Replace the ball valve and clean the filter. | - |

You can use the logbook to maintain a record of production, maintenance, cleaning, checks, faults, repairs, overhauls, modifications and other measures.

[illegible]

Appendix 2: SETTINGS

Note here the settings for the components for various products.

[illegible]