

# **Nederman**

## Instruction manual

### **Extraction hoods and downdraft tables**

#### **Downdraught table**

#### **FilterBench**



#### **Original instruction manual**

EN INSTRUCTION MANUAL

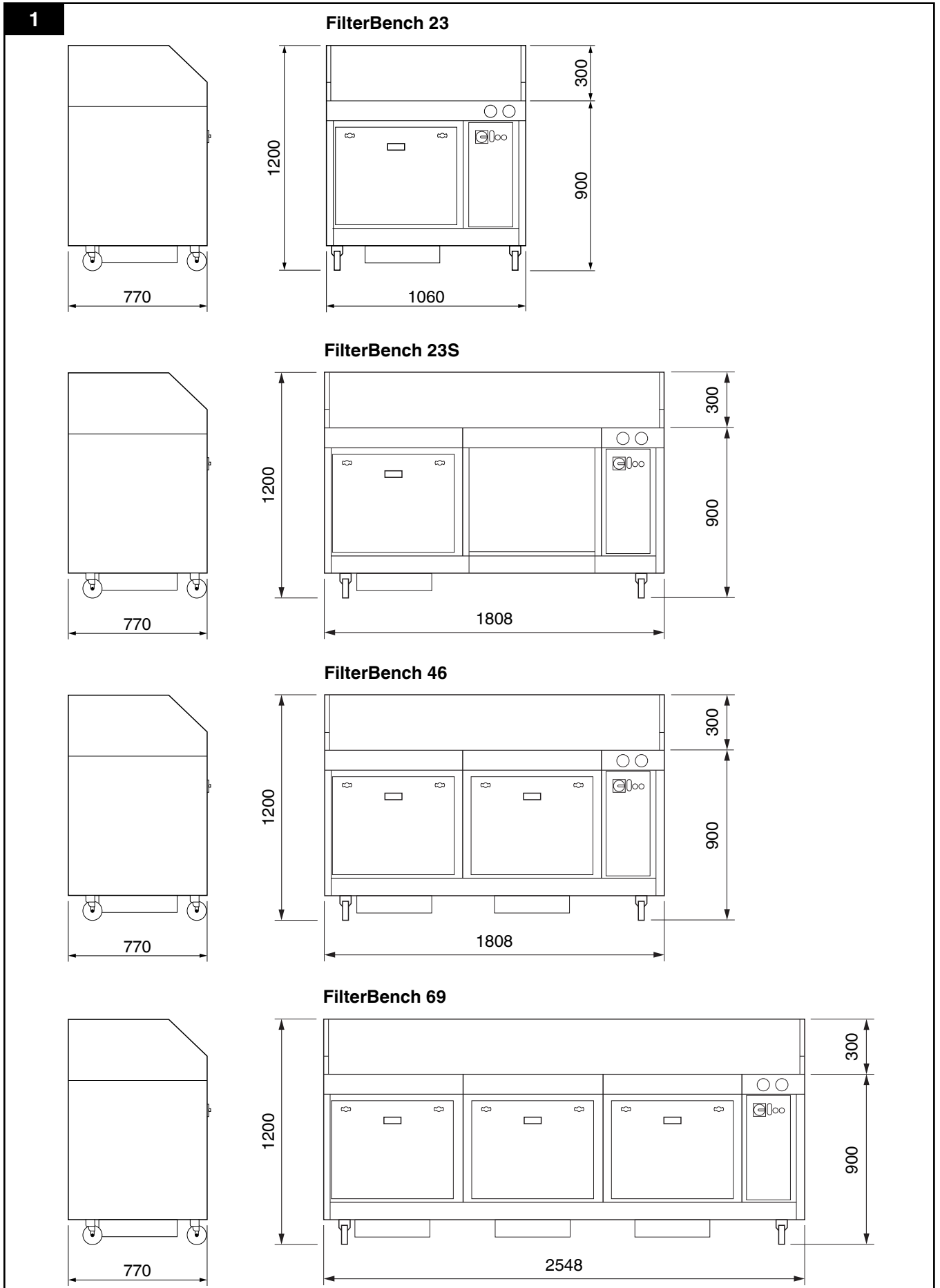
#### **Translation of original instruction manual**

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ES MANUAL DE INSTRUCCIONES  
PL INSTRUKCJA UŻYTKOWANIA  
SV ANVÄNDARMANUAL

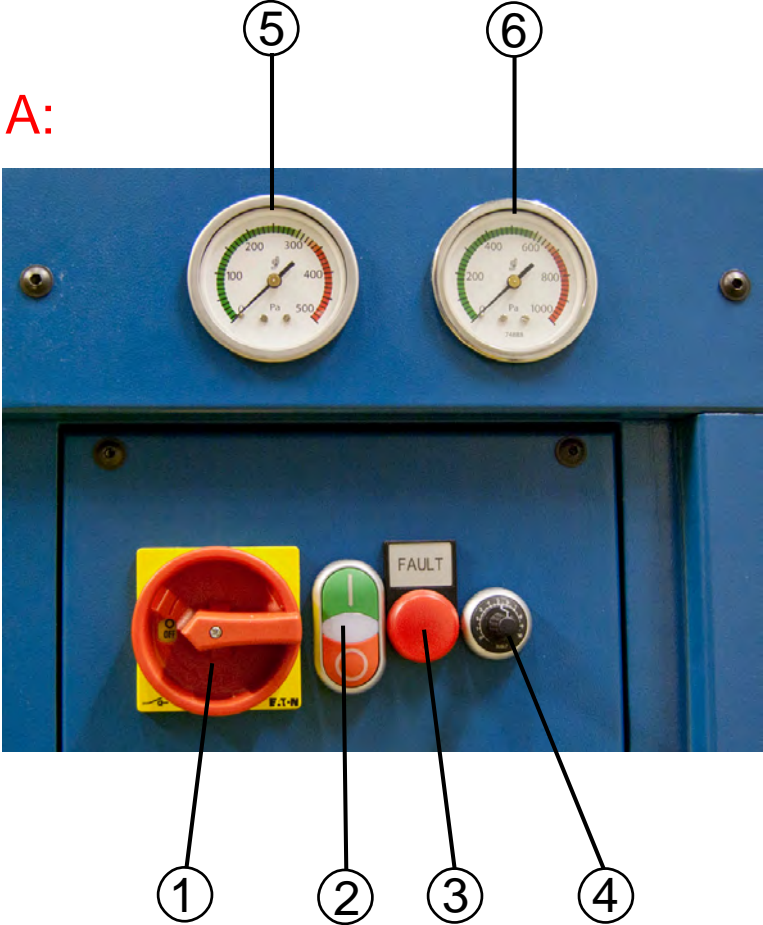


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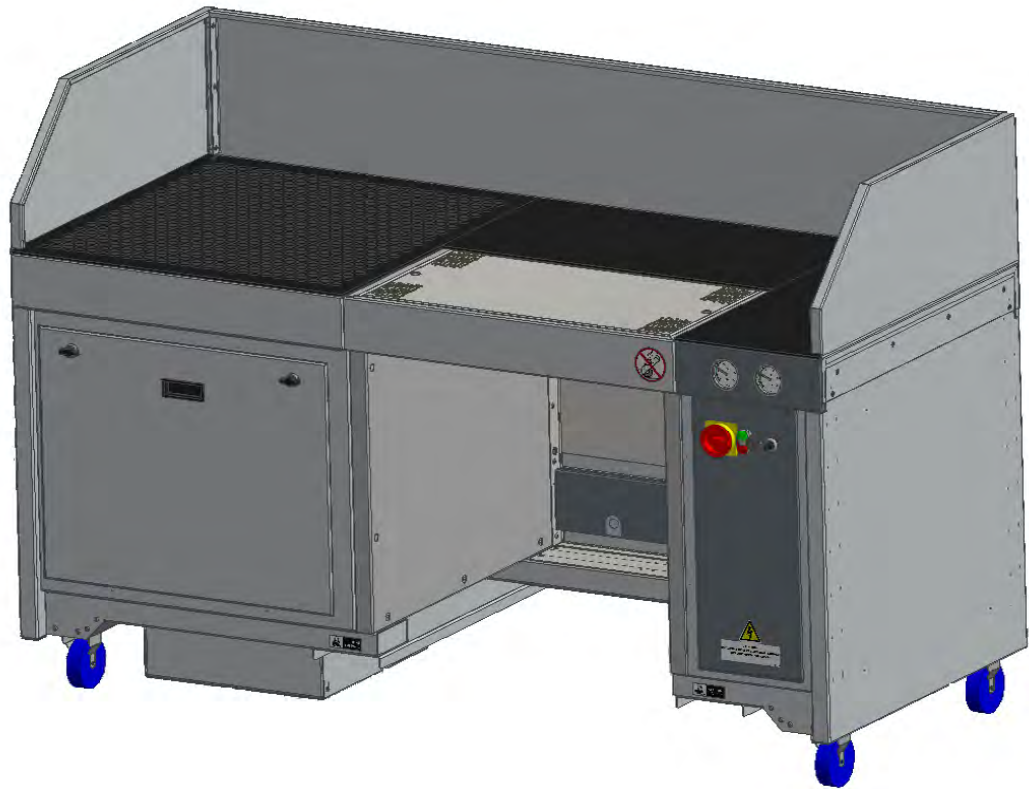
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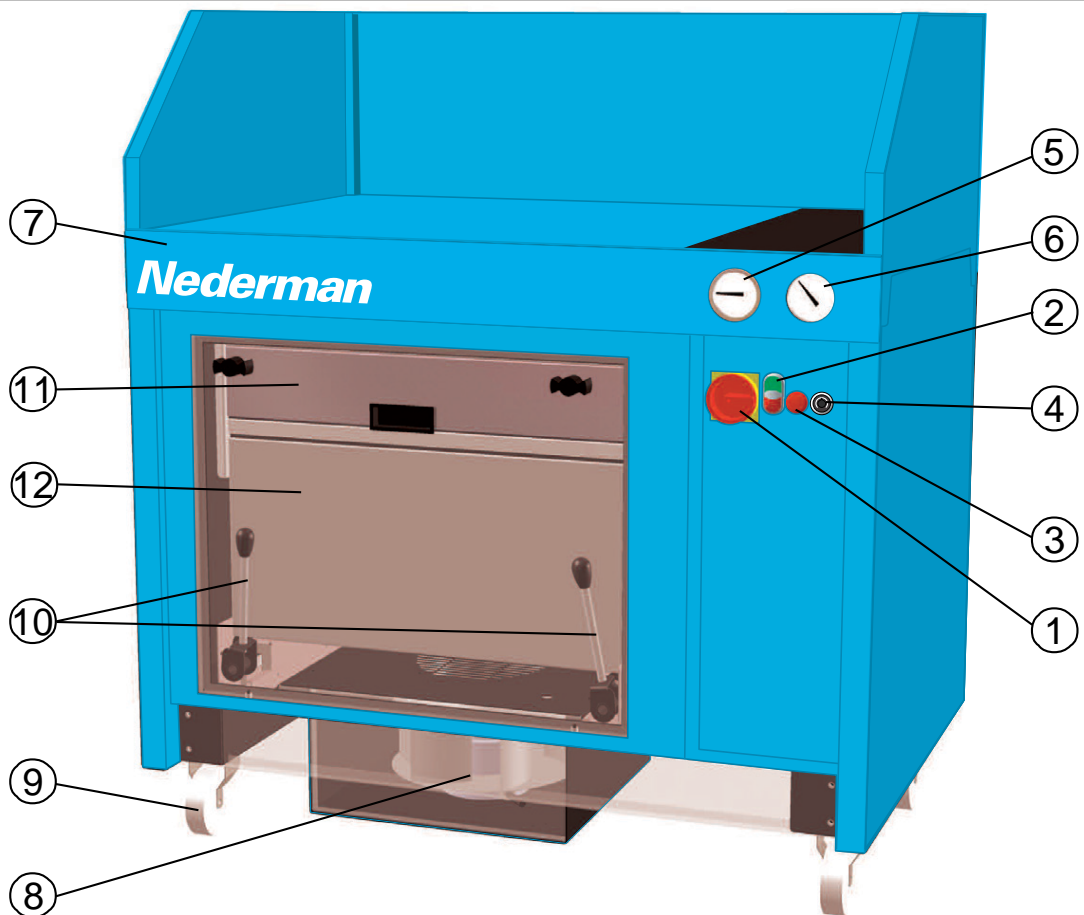
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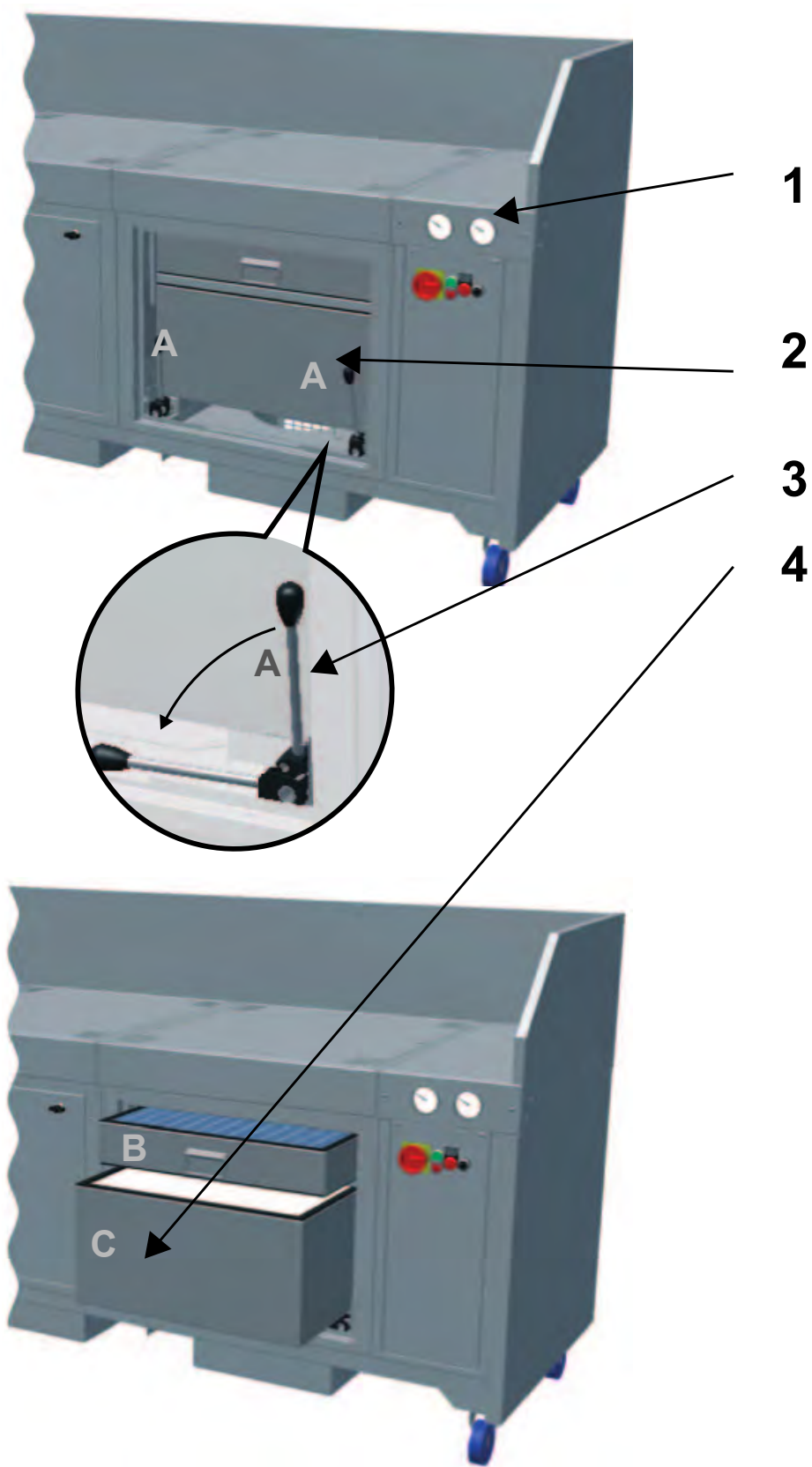
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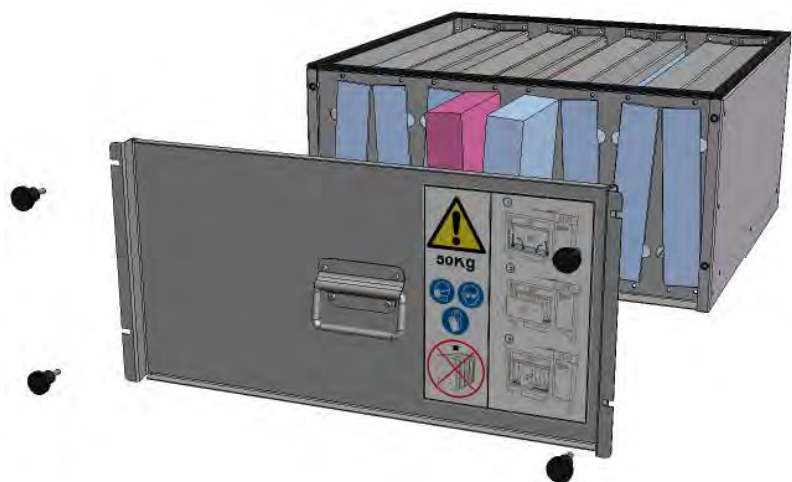
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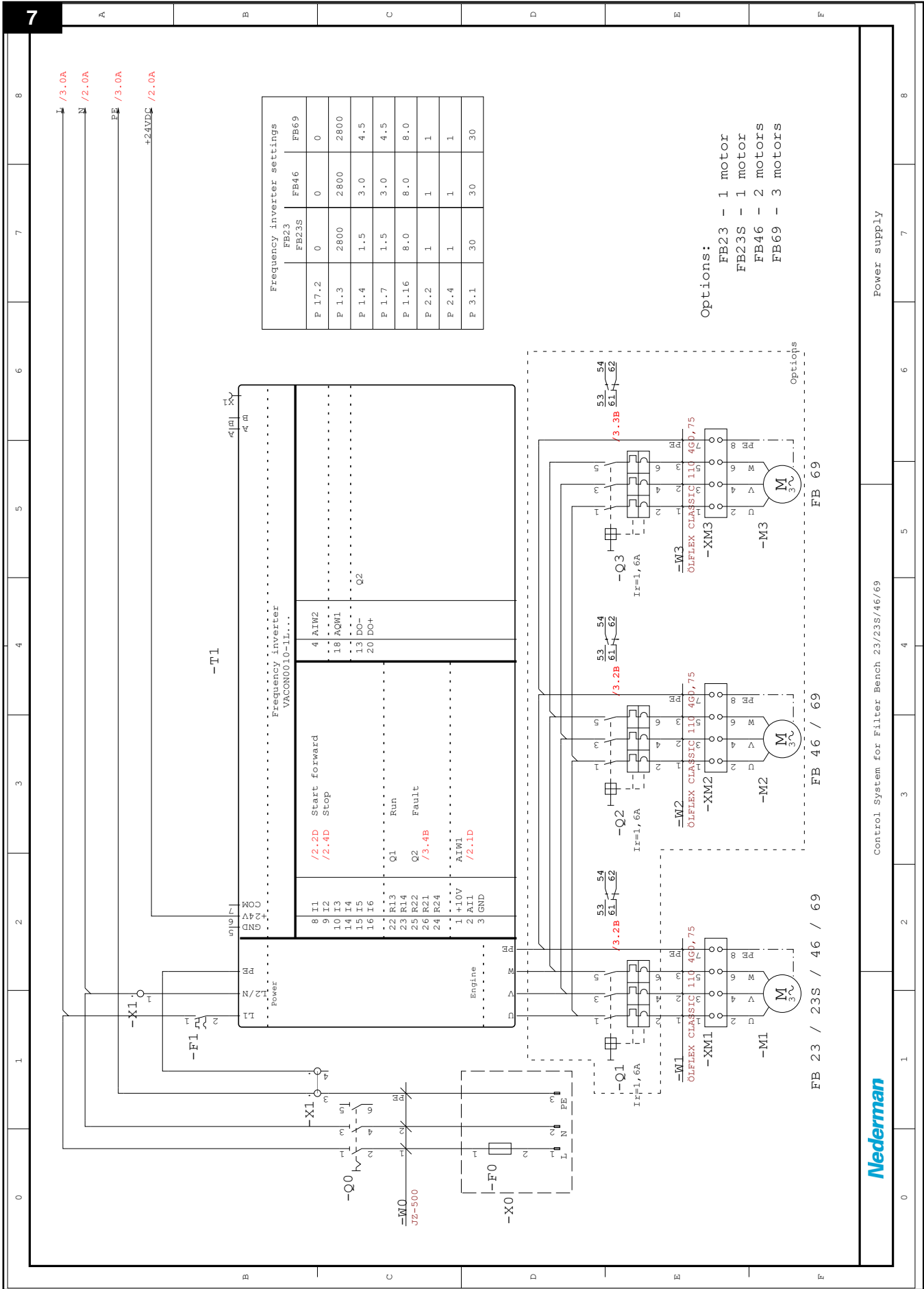
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-  A
-  B
-  C
-  D







Power supply

Control System for Filter Bench 23/23S/46/69

**Nederman**

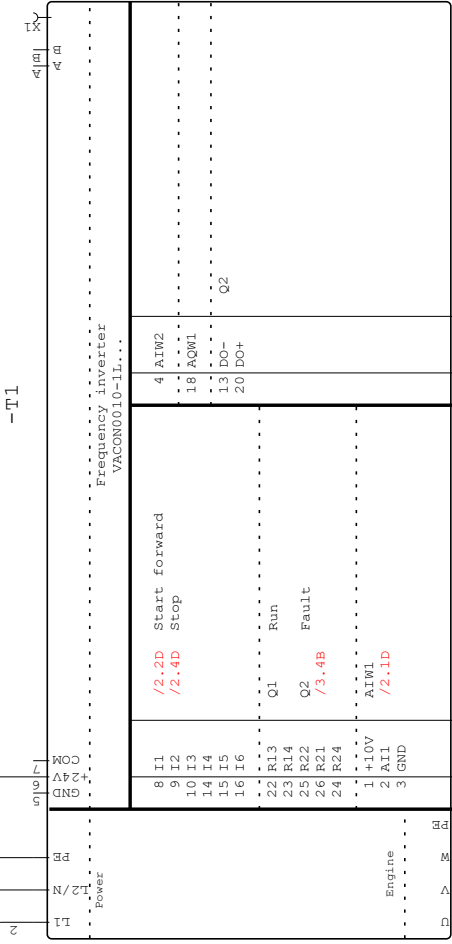
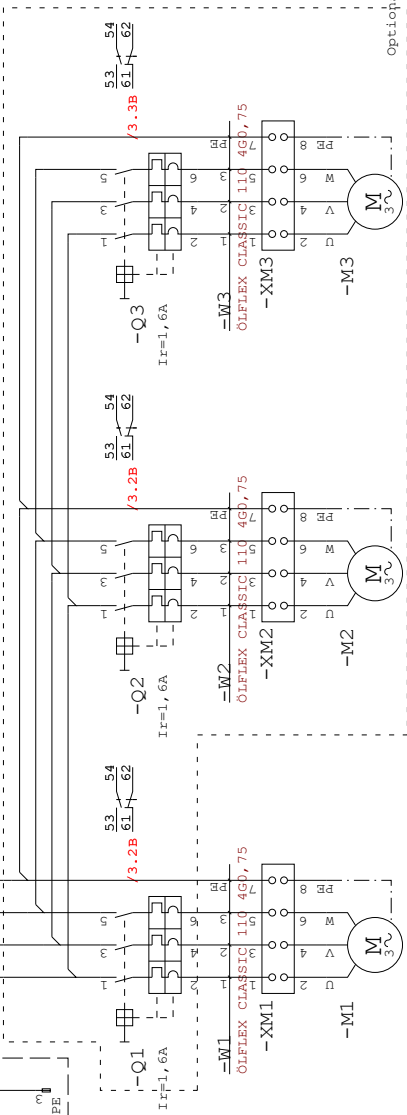
FB 23 / 23S / 46 / 69

FB 46 / 69

Options

FB 69

F



I /3.0A  
N /2.0A  
PE /3.0A  
+24VDC /2.0A

A

B

C

D

E

F

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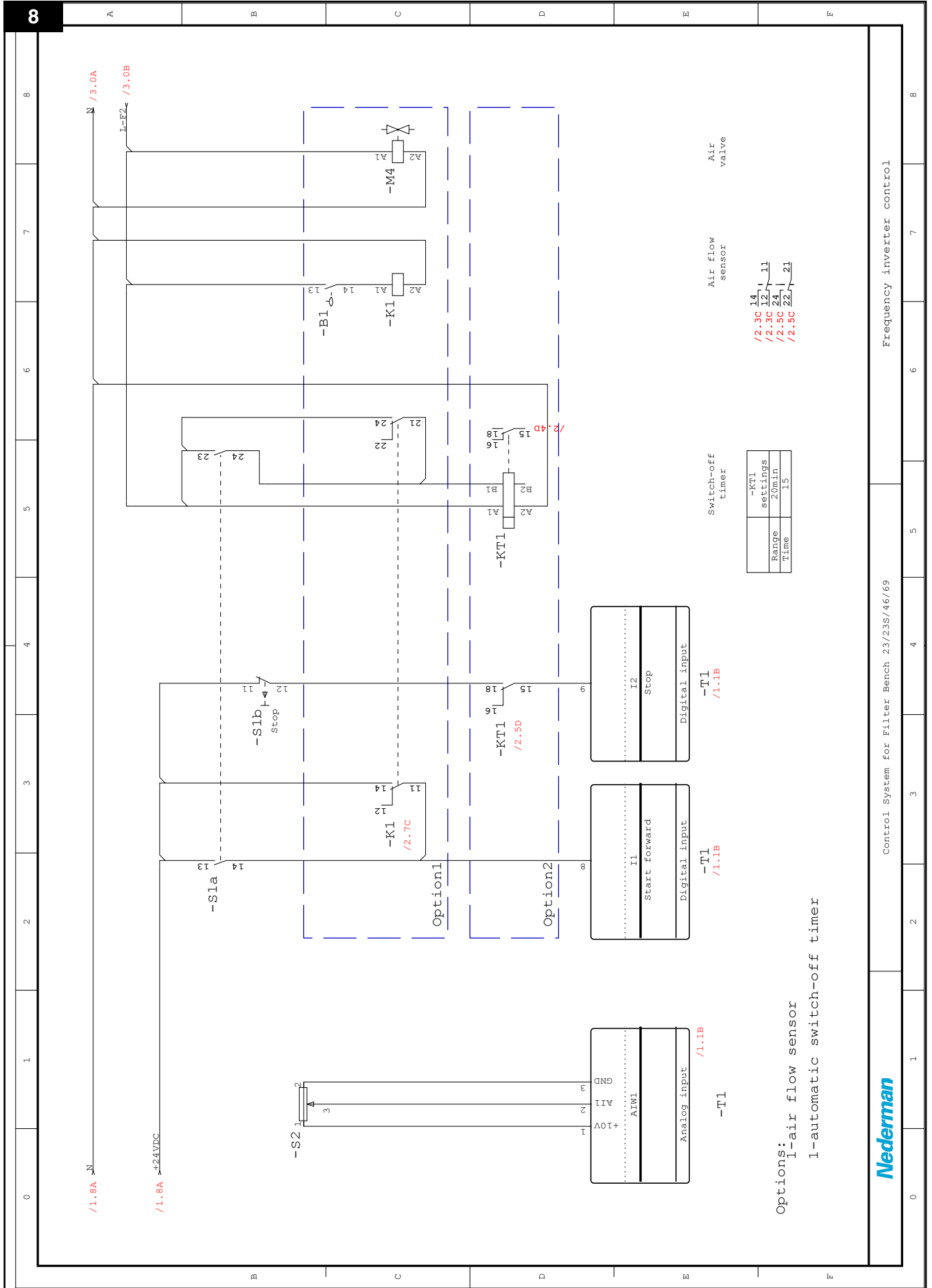
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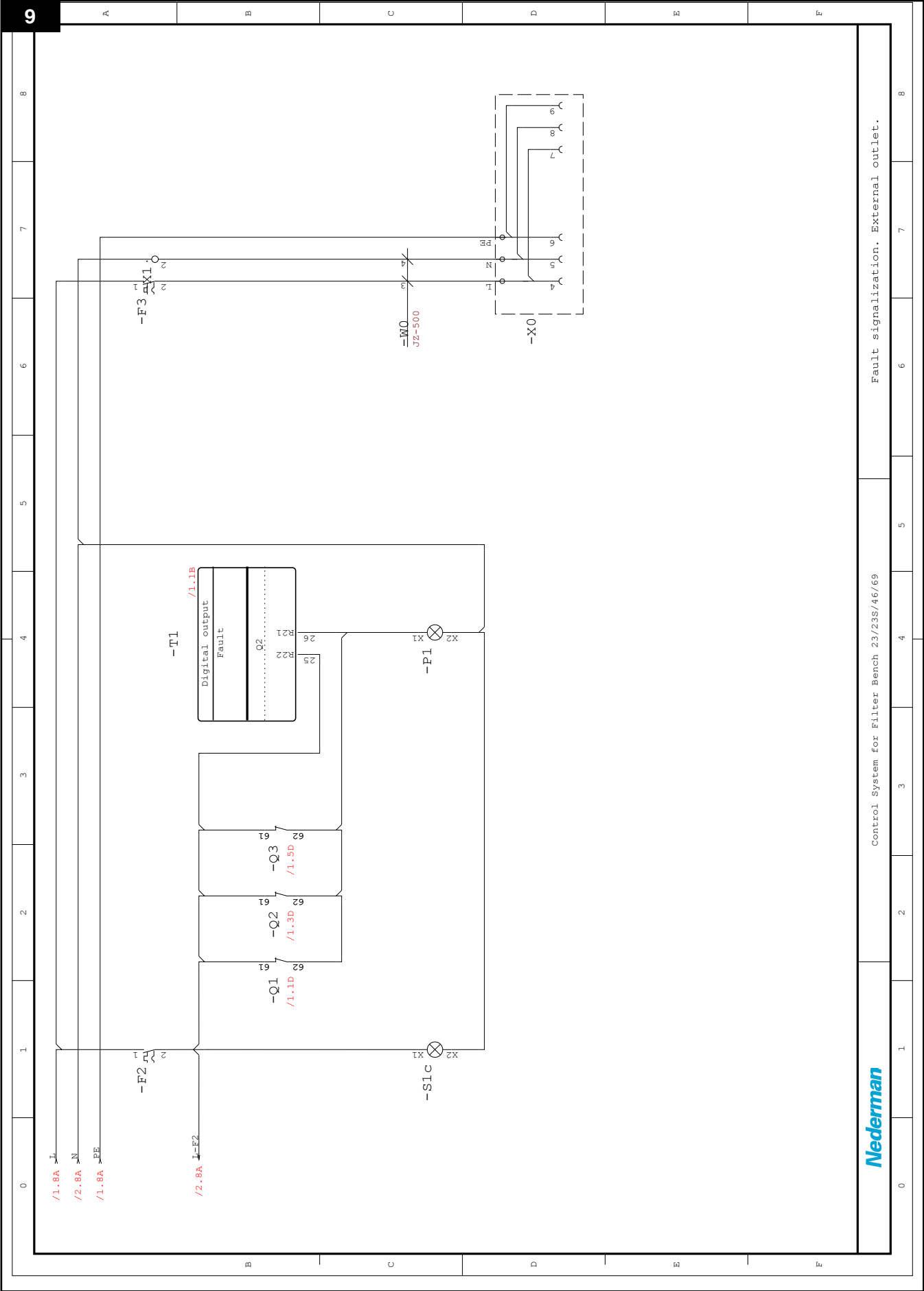
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Control System for Filter Bench 23/23S/46/69

Frequency inverter control

Nederman



**Nederman**

Control System for Filter Bench 23/23S/46/69

Fault signalization. External outlet.



**English**

Instruction manual

**Extraction hoods and downdraft tables****Downdraught table**

FilterBench

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# 1 Declaration of conformity

*Below is presented the document setting out the contents of the EC Declaration of Conformity, not including neither the serial number nor the signature of the person empowered. The formal Declaration is attached to your product.*

manufacturer logo

## EC DECLARATION OF CONFORMITY

Supplier:

**NEDERMAN Manufacturing Poland Sp. z o. o.**

Okólna 45 A

05-270 Marki, Poland

herewith declares that the Machine:

Type: **FilterBench..**

Order number:

Serial number:

Year of manufact.:

Is in conformity with the provisions of the following other EC directives:

- Directive Machinery (MD) **2006/42/EC**
- Low Voltage Directive (LVD) **2014/35/EU**
- Electromagnetic Compatibility Directive (EMC) **2014/30/EU**

Complies with harmonized standards relating to European Directives:

- EN 60204-1
- EN 61000-6-4
- EN ISO 12100

*Identity and signature of the person empowered to draw up the declaration*

Marki, *date*

## 1.1 Product marking

**NEDERMAN** FilterBench is named and marked according to the following pattern:

**FilterBench AA**

where:

**FilterBench** - constant part of the marking,

**AA** - two digit number that corresponds to the max. air flow [(AA) x 100 m<sup>3</sup>/h].

## 2 Preface

Your FilterBench has been produced by:

**NEDERMAN Manufacturing Poland Sp. z o. o.**

ul. Okólna 45 A

05-270 Marki, Poland

tel: +48 22 7616000

fax: +48 22 7616099

[www.nederman.com](http://www.nederman.com)

This manual is for the correct installation, use and maintenance of your FilterBench. Read it carefully before using this product or carrying out maintenance. Replace the manual immediately if lost.

This product has been designed to meet the requirements of relevant EC directives. To maintain this status, all installation, repair and maintenance work for this product is to be carried out by qualified personnel using only original spare parts. Contact the nearest authorized distributor or NEDERMAN for advice on technical service and obtaining spare parts.

**NOTE!** Read Chapter '4 Safety' thoroughly.

NEDERMAN continuously improves its products' design and efficiency through modifications, and reserves the right to do so without introducing these improvements to previously supplied products. NEDERMAN also reserve the right to, without previous notice, modify data and equipment as well as operating and maintenance instructions.

## 3 Notices on hazards

This document contains important information that is presented either as a warning, caution or note. See the following examples:



**WARNING! Type of injury.**

Warnings indicate a potential hazard to the health and safety of personnel, and how that hazard may be avoided.

**Caution! Type of risk.**

Cautions indicate a potential hazard to the product but not to personnel, and how that hazard may be avoided.

**NOTE!** Notes contain other information that is important for personnel.



## 4 Safety

**NOTE!** Disregarding NEDERMAN safety regulations entails a heavy safety risk.

These safety regulations cover safety issues in connection with the installation, operation, inspection and maintenance of FilterBench. Therefore not every topics mentioned in this chapter directly refer to that product.

Different precautions are included for the family of product FilterBench. By using these according to their purpose and by following the safe practice during daily operation, the risk by using the filter system is minimized to the residual risk.

**NOTE!** Carefully read Chapter '4 Safety' directions before any activity is commenced. If the safety directions are not observed, this can result in severe personal injury.

Before the plant is in any way started, all screens, doors etc. must be closed and locked in place.

### 4.1 Explosion protection

**NOTE!** In order to prevent the explosion/fire the following must be taken into account:

1. It is prohibited to get close with open fire and to perform any activities leading to creation of sparks, fire, hot particles of any material through welding, polishing, cutting, drilling steel or smoking. This activities should be done 3 meters from the machinery.
2. Elements of the machinery and area around should be regularly cleaning in order to removed residual dust because of possibility of explosion/fire.
3. It is prohibited to maintain and store combustible materials within the established and marked zone within the distance of 3 m from the machinery.
4. It is prohibited to provide temporary power installations, and the power system cannot be repaired by persons, who do not have the required certificates.
5. It is prohibited to block the way or otherwise hinder access to:
  - Fire protection equipment,
  - Switches and power distribution boards.

### 4.2 Operation requirements



**WARNING! Risk of personal injury, fire or explosion.**

Always isolate the main power before changing filters or removing any components from the FilterBench.

6. FilterBench should be installed in accordance with the requirements specified in the chapter „8 Installation” of the present instruction manual.
7. FilterBench is design for indoor installation only and must be protected from excessive moisture.
8. Always make sure that good access is provided for the maintenance of the FilterBench.

### 4.3 Personal protective equipment

**WARNING! Risk of injury.**

Use appropriate means protective: protective goggles, hearing protection and protective mask.

Persons working inside the chambers, containers etc., who remove dust and filtration products, clean the ducts must use the individual protection means in accordance with the occupational health and safety rules:

- Respiratory protective equipment, preferably with fresh air supply.
- Anti-dust mask.
- Protective goggles.
- Safety clothes.
- Safety gloves.
- Safety shoes.
- Safety helmet.

### 4.4 Maintenance and repair

Maintenance of the installation must be carried out regularly.

Any intervention must be carried out when the installation is electrically and pneumatically locked.

Any energy that has accumulated, such as compressed air, must be switched off or, if necessary, completely discharged before commencing any work.

**NOTE!** Locking the electrical equipment does not lock the pneumatic equipment. Likewise, locking the pneumatic equipment does not lock the electrical equipment.

### 4.5 Electrical equipment

**NOTE!** The electrical equipment must be mounted by qualified specialist personnel. Proper functioning of the installation will also depend on correct installation of the equipment.

### 4.6 Emergency situations

Access to the mechanical devices is forbidden to all persons other than those authorized by the safety manager.

It is essential to stop the machinery and to lock the devices electrically and pneumatically before servicing a mechanism or intervening inside a device or a duct.

### 4.7 Prohibited actions

**WARNING! Risk of personal injury, fire or explosion.**

The FilterBench must not be used in an environment where there is a risk of explosion from the dust or gases in explosion concentrations.

**WARNING! Type of injury, fire or explosion.**

The FilterBench must not be used for welding fumes or metal grinding dust.

**WARNING! Type of injury, fire or explosion.**

The FilterBench must not be used for extracting toxic substances.

**WARNING! Type of injury, fire or explosion.**

The FilterBench must not be used without the filters.

**WARNING! Type of injury.**

Cleaning of the filters is not recommended as this could potentially create a dust cloud and, if explosive, this could create an ATEX risk.

- It is forbidden to smoke or use open flame near the machinery.
- Never draw in incandescent particles (cigarettes, sparks from sanding, welding or grinding, etc.).
- Never draw in materials which might generate sparks.
- It is forbidden to use standard network tools inside the chambers of electric devices and channels instead of special low-voltage devices.
- Sparks, a fire out in the open or any other source of heat such as: welding, grinding, reaming or even smoking, etc is allowed at the distance of not less than 3 m from the machinery.
- It is forbidden to work on the clogged filters.
- Never draw in liquid substances.

## 4.8 Prevention of explosion and fire

Operators must ensure that everything is quite clean on and around installation components in order to avoid flammable or explosive contamination from catching fire and causing major damage.

## 4.9 Fire fighting measures

If any fire or explosion should occur, stop the system, immediately. Perform an emergency shut-down of the machinery.

Proceed strictly in accordance with the plant procedures.

Proper troubleshooting and repair must be performed before restarting the system.

# 5 Description

## 5.1 General description

The Nederman FilterBench is used for extraction and filtering of dust from materials like composite, plastic, fibreglass and wood arising from lighter processes such as sanding, de-burning, finishing, fettling, ingredient weighing etc. Easy to use always with extraction at hand. Available models of FilterBench tables are shown on Fig. 1.

## 5.2 Function

Particulate/odour is drawn by the downward airflow through the filter(s) located under the perforated worktop. At the base of the bench, an inverter controlled fan assembly discharges the cleaned air at the bottom, rear of the bench.

### Operation



**WARNING! Risk of electric shock.**

Isolate from electrical supply before opening cover.

All electrical equipment and controls are located in the electrical enclosure (Fig. 2):

- |                          |  |
|--------------------------|--|
| 1. <b>MAINS ISOLATOR</b> | Power on/off                             |
| 2. <b>ON/OFF SWITCH</b>  | Illuminated to show power on             |
| 3. <b>RED LIGHT</b>      | Advices motor overload                   |
| 4. <b>POTENTIOMETER</b>  | Regulates the operating speed of the fan |

Hand-wheel for the regulation engine's speed [4] should be set in order to type of work for the fan.

### Options

1. Automatic switch-off timer.

Automatically switch-off the FilterBench after 15 minutes from the start.

2. Automatic start by pneumatic tool

If pneumatic tool is connected to the FilterBench, it can automatically start when tool is activated.

## 5.3 Technical data

Table 5-1: Technical data

	FilterBench 23	FilterBench 23S (Fig. 3)	FilterBench 46	FiletrBench 69
Filtration efficiency	99,9%	99,9%	99,9%	99,9%
Motor rating	500 W	500 W	2x500 W	3x500 W
Max airflow (free blowing)	2300 m <sup>3</sup> /h	2300 m <sup>3</sup> /h	4600 m <sup>3</sup> /h	6900 m <sup>3</sup> /h
Power supply	230 V	230 V	230 V	230 V
Weight	230 kg	280 kg	340 kg	470 kg
Noise level*	73,6 dB(A)	73,6 dB(A)	76,6 dB(A)	78,6 dB(A)
Finish (colour)	5009	5009	5009	5009
Part no. with HEPA filters	73003030	73003029	73003031	73003032
Part no. with carbon filters	73000119	73000538	73000120	73000121

\*Measurement based on EN ISO 11201.

## 6 Main components

NEDERMAN continuously improves its products' design and efficiency through modifications, and reserves the right to do so without introducing

these improvements to previously supplied products. NEDERMAN also reserve the right to, without previous notice, modify data and equipment as well as operating and maintenance instructions.

The FilterBench is supplied with (Fig.4):

1. Mains isolator
2. On/off push button
3. Warning light
4. Inverter
5. Pre-filter G4 gauge
6. HEPA filter gauge
7. Housing
8. Fan
9. Castors indicator (4 pcs.)
10. Filter Clamp Mechanism
11. Pre-filter G4
12. HEPA filter

## 6.1 Electric documentation

Table 6-1: Electric documentation.

Pos.	Element of the documentation/ wiring diagram	Number of figures
1	Power supply	7
2	Frequency inverter control	8
3	Fault signalization. External outlet	9
4	Mounting plate of electrical devices	10

## 6.2 Accessories

Table 6-2: Accessories.

Parts	Part number
Gantry assembly	73000074
Shelf	73000075
Perforated rubber (740x770x5mm)	73000082
Perforated rubber (740x385x5mm)	73000083
Bin support (excluding bins)	73000077
Adjustable shelf	73000076
Plain rubber (740x385x5mm)	73000070
Plain rubber (740x300x5mm)	73000072
Plain rubber (740x770x5mm)	73000084
Plain rubber (740x385x5mm) complete with 118mm diameter hole to suit flexible arm	73000085
Overhead light	73000081
Rail uprights	73000073

Parts	Part number
HEPA filter	12376529
Pre-filter	12376528
Carbon filter	73000086
COLOURCELL filter	73000087
Solid state timer (1sec-24h)	7981223
Carbon filter module comprising 8xindividual cells in a vee configuration with 1xColourcell Retrofit for models FilterBench 23/23S/46/69	73000078
Fan exhaust air diffuser each	73000079
side extantion shelf (770x300)	73000080
Energy saving air control kit comprising:-Solenoid valve, Airflow sensor, Timer (multi function setting 1 sec - 24 hrs)-3 series 25 connectors.	73000088

## 7 Before installation

### 7.1 Delivery checks

Check the unit for any transport damage. In case of damage or parts missing, notify the carrier and your local NEDERMAN representative immediately.

### 7.2 Packaging and transport



**WARNING! Risk of personal injuries.**

Always use proper lifting and protective equipment.



**WARNING! Risk of crushing.**

Take special care when lifting, lowering and moving the device or its parts. Always use proper lifting and protective equipment.



**WARNING! Risk of tipping.**

Consider the centre of gravity of the device and attachments during transport.



**WARNING! Risk of being crushed or hit by a falling object**

During transportation always use the adequate lifting equipment. Transport can be carried out using normal pallet handling equipment.

**NOTE!** For best results and further effective operation of machinery, it is strongly recommended to hire the servicing personnel from NEDERMAN for performing the installation work.

## 8 Installation



**WARNING! Risk of crushing.**

Take special care when lifting, lowering and moving the device or its parts. Always use proper lifting and protective equipment.



**WARNING! Risk of personal injuries.**

Always use proper lifting and protective equipment.

## 8.1 Installation requirements

The FilterBench is easy to install and will provide satisfactory operation subject to “good housekeeping”.

The FilterBench is heavy. The unit must be installed on a level floor that is able to take its weight. Before installation check that adequate space is available for access, and the withdrawal of the filters.

# 9 Using the FilterBench

## 9.1 Before start-up



### **WARNING! Risk of injury.**

Use proper protective equipment when risking exposure to the dust. Wear a protective mask, goggles and hand protection.

**NOTE!** Before using the FilterBench this instruction should be read very carefully.

Check the unit for any transport damage. After start-up of the fan, clogged of filters should be checked. In case of clogged the filters-see chapter “Maintenance”.

## 9.2 Service

During operation the clogged of filters should be checked. In case of clogged the filters - see chapter “Maintenance”.

Speed of engine should be adjusted to type of work the fan.

# 10 Maintenance



### **WARNING! Risk of injury.**

Use proper protective equipment when risking exposure to the dust. Wear a protective mask, goggles and hand protection



### **WARNING! Risk of injury, fire or explosion**

Always isolate the mains power before changing filters or removing any components from the FilterBench.

**NOTE!** Before any kind of activity, the Chapter 4 - SAFETY must be read carefully, and the safety regulations must be strictly adhered to.

Installation, repair and maintenance work is to be carried out by qualified personnel using only original NEDERMAN spare parts. Contact your nearest authorized distributor or NEDERMAN for advice on technical service.

**NOTE!** The service intervals in this chapter are based on the unit being professionally maintained.

If any deviations are made from the safety regulations, this may cause serious personal injury. Before restarting, guards, hatches/doors etc. must be closed/reestablished. The following elements are to be maintained regularly at the

intervals stated. The briefest interval shall apply. If any wear or similar is found, the faulty parts must be replaced.

## 10.1 Filters replacement



### **WARNING! Risk of injury, fire or explosion**

Always isolate the mains power before changing filters or removing any components from the FilterBench.



### **WARNING! Risk of injury.**

Do not remove the filter module when changing the carbon filters.

When filter G4 (Fig. 2, Pos. 5) gauge reads 350Pa the extraction rate will be 1.0m/s (the minimum required air speed). At the point the G4 filter (Fig. 5, Pos. B) will require replacement

When filter HEPA (Fig. 2, Pos. 6) gauges reads 600Pa the HEPA filter (Fig. 5, Pos. C) will require imminent replacement.

The filter cannot be cleaned and must be replaced when dirty.

The filter are disposable and should be discarded after use.

### **Filter replacement**

Description of filter replacement is shown on Fig. 5:

1. The pressure gauge will indicate the indicate the initial (clean) pressure of the system. Note this initial reading when the filter is commissioned.
2. To gain access to the filter, release the door latches and lift off the door.
3. Lower levers [A] into the horizontal position.
4. The filters [B] and [C] can now be withdraw.

To refit the filter(s), place in the runners with seal uppermost and push fully home.

Then raise both levers [A] into the vertical position, and the filter(s) will be locked into place.

Replace the door.

### **Carbon filter replacement**

Carbon filter replacement is shown on Fig. 6.

As the carbon media is used, the COLOURCELL responds to changes in the condition of the activated carbon by providing a visual indication as follows:

- Colour **A** Media is new/good condition
- Colour **B** Media in use with some useful life
- Colour **C** Media becoming used - breakthrough may occur. Remove a sample and crush - if the interior is purple this confirms that there is still useful media life.
- Colour **D** Media fully spent-no life remaining and the filters needs to be replaced.



## Maintenance intervals

In addition to maintenance intervals of clogged the filters, machinery doesn't required other maintenance intervals.

## 10.2 Spare parts

Any repair and maintenance works must be carried out by qualified personnel using only original NEDERMAN spare parts. Contact your nearest authorized distributor or NEDERMAN for advice on technical service or if you require help with spare parts. See also:

[www.nederman.com](http://www.nederman.com)

### Ordering spare parts

When ordering spare parts always state the following:

- Serial number (see the product identification plate).
- Number and name of the spare part (see Table 10-1).
- Quantity of the parts required.

Only original parts supplied by NEDERMAN must be used to repair the devices.

In the table below are listed the typical spare parts available.

Table 10-1: Spare parts for FilterBench

N°	Spare part name	Number Parts
1	Pre-Filter G4	12376528
2	HEPA Filter	12376529
3	Fan	12376530

**NOTE.** Contact your nearest authorized distributor or NEDERMAN for advice on technical service or if you require help with accessories. See also: [www.nederman.com](http://www.nederman.com)

## 10.3 Disassembly



### **WARNING! Risk of injury.**

Use necessary personal protective equipment.

During transport always use the right equipment.

## 11 Troubleshooting

All fault finding and fault correction activities may only be performed by technically skilled and competent personnel with knowledge of the functions and of the construction of the plant. Before restarting the plant, all screens, doors, etc. must be restored.

Table 11-1 shows the possible causes of faults, as well as eliminate them.

Table 11-1: Trouble shooting guide

Fault	Possible causes	Recommended solutions
Lack of suction	Dirty filter(s)	See chapter "Maintenance"
Red light is on	Faulty Inverter	Reset motor protection or call service
Motor still doesn't operate	Faulty motor	Motor needs to be replaced
The fan discharge air is contaminated	The filtration system is being by-passed or overload motor	Check for damaged or incorrectly fitted filter(s), and replace as appropriate
White light doesn't work	no power supply	1. Check the regularity of power supply 2. Check the fuse (placed on housing near the socket)

## 12 Acronyms and abbreviations

# Appendix A: Installation protocol

Unit No.	Date:	
	Performed by:	

Control items	Reference	Result	Notes

# Appendix B: Service protocol

<b>Unit No.</b>	<b>Date:</b>	
	<b>Operating hours:</b>	
	<b>Performed by:</b>	

<b>Control items</b>	<b>Reference</b>	<b>Result</b>	<b>Notes</b>



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