

CAM CLEAN AIR MODULE




PREFACE


Using this manual

This manual is intended to be used as a work of reference for users to be able to safely use the clean air module CAM.

Pictograms and symbols

The following pictograms and symbols are used on the product and in this manual.

	WARNING Procedures, if not carried out with the necessary caution may damage the product or cause personal injury.
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	ATTENTION Procedures, if not carried out with the necessary caution, could damage the product or the environment.
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INTRODUCTION

Identification of the product

The identification plate contains the following data:

- serial number
- product name
- power consumption
- supply voltage and frequency

FEATURES

- Solid state power supply is self-regulating and maintains peak efficiency during a wide range of cell dirt loading conditions.
- Electronic cell(s) can be washed in most dishwashers.
- Galvanized/Epoxy coated cabinet (exterior + interior) protects against rust.
- Prefilter screens(s) protects cell(s) from large dirt particles.

GENERAL DESCRIPTION

The high efficiency clean air module CAM air cleaner is mounted in the return air duct of a forced air heating, cooling, or ventilation system. It captures a significant amount of airborne particles 0.5 microns and larger from the air circulated through it. All models have an internal air flow switch to operate the CAM when the system blower is on.

TECHNICAL SPECIFICATIONS

The specifications given in this publication do not include normal manufacturing tolerances. Therefore, this unit may not exactly match the listed specifications. This product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Technical specifications

Dimensions H x W x D	620 x 360 x 210 mm
Power consumption	25 W
Max. capacity	1500 m ³ /h
Collector surface	2,35 m ²
Weight	13 kg
Power supply	230 V, 50 Hz
Filter efficiency	> 80%
Main filter	electrostatic
Housing	epoxy-coated steel
Pressure drop	< 150 Pa

Ambient conditions

Min. operating temperature	5 °C
Max. operating temperature	45 °C
Max. relative humidity	75%

Note: The specifications given in this manual must not be altered.

SAFETY INSTRUCTIONS AND WARNINGS

General

The manufacturer does not accept any liability for damage to the product or personal injury caused by non-observance of the safety instructions in this manual.

Specific working conditions may require additional safety instructions. Immediately contact your supplier if you detect a potential danger when using the product.

The user of the product is always fully responsible for observing the local safety instructions and regulations. Observe all applicable safety instructions and regulations.

User manual

- Everyone working with the product, must be familiar with the contents of this manual and must strictly observe the instructions therein. The management should instruct the personnel in accordance with the manual and observe all instructions and directions given.
- Never change the order of steps to perform.
- Always keep the manual with the product.

Safety features

- All safety features must be correctly mounted and can only be removed for maintenance and repair jobs by skilled and authorised service engineers.
- The product must not be used if the safety features are not or only partly present, or defective.
- The safety features should be regularly checked for their proper functioning, and if required, be immediately repaired.

Modifications

- Modification of (parts of) the product is not allowed.

POSITIONING ELECTROSTATIC FILTER

Installation

- Inspect the product and check it for damage. Verify the functioning of the safety features.
- Check the working environment. Do not allow unauthorised persons to enter the working environment.
- The product is not explosion-proof rated. It can cause sparks and should therefore not be used in areas with an explosion risk.
- Never operate the product without filters.
- If the air cleaner is installed close to an elbow or angle fitting, install turning vanes inside the angle to distribute airflow more evenly across the face of the air cleaner.
- Transitions are needed when the duct is a different size than the air cleaner cabinet. Gradual transitions reduce air turbulence and increase efficiency.

Note: Change duct size gradually to minimize turbulence.

OZONE AND THE ELECTRONIC AIR CLEANER

The electronic air cleaner generates a small amount of ozone in normal operation. During the first week or two of operation the amount may be higher because of sharp edges on some of the new high voltage metal parts. Normal use dulls these edges in a short time.

OUTDOOR AIR INTAKE APPLICATIONS

Return air temperature must be at least 15°C. Lower temperatures can cause ionizer wire failure. If outdoor air is used, warm it upstream from the air cleaner by:

- Making sure the outdoor intake is far enough upstream from the air cleaner so the return and

outdoor air is thoroughly mixed. Stratified air can dump a stream of very cold air into one section of the air cleaner.

- Adding baffles upstream from the air cleaner to force thorough air mixing.
- Installing a preheater, which could be an electric strip heater or hot water coil, to be controlled by a thermostat. Hot water or steam coils should be protected by a freeze-up control.

Service, maintenance and repairs

- Always use tools, parts, materials, lubricants and service techniques that have been approved by the manufacturer. Never use worn tools and ensure that tools are not left behind in or on the product.
- Do not carry out any maintenance on the product before it has been protected against unintended starting.
- Safety features removed for maintenance shall be re-installed immediately and checked for proper functioning.
- Regularly clean the inside of the housing.
- Clean or replace the filters in time.

GENERAL DESCRIPTION

The CAM clean air module consists of the following main components (see fig. 1 on page 6):

- electrostatic filter (ElectroMax) (8)
- electromodule (5)

The extracted contaminated air passes the pre filter (fig. 7a) that takes out all larger particles. The pre filter also ensures a proper distribution of the airflow. After that, the air passes the ElectroMax filter (8). The contaminations in the air are electrically charged by the high voltage (+8kV). These will then be deposited on the collector plates of the ElectroMax filter. The final filter (7b) is the last filtration step which also spreads the airflow.

There are a main switch (6) and an indicator LED (3) on the front panel. Please contact your dealer if the indicator LED is not working.

OPERATION

Large particles (e.g. lint, hair, dust) are caught by the prefilter. As the dirty air passes through the intense high voltage electric field surrounding the ionizer wires, all particles are given an electrical charge. The air then moves through the collector part of the cell where alternate parallel plates are charged positively and negatively, creating a uniform electrostatic field. The charged particles are attracted to and collect on the plates having the opposite electrical charge. The air leaving the air cleaner has fewer particles. Each time the air circulates through the CAM, more particles are removed.

CLEANING THE ELECTROSTATIC CELL(S) AND PREFILTER(S)

To assure optimum performance from the air cleaner, the cell(s) and prefilter(s) must be cleaned regularly; every one to six months. Washing frequency will vary depending on the use.

Note: Vacuum the prefilter or brush, or soak it in a tub. Do not wash the prefilter in the dishwasher or car wash.

Use the EFC detergent for cleaning (available on request).

WASHING THE CELLS IN A CONTAINER


- Do not splash the detergent solution in eyes. Wear rubber gloves to avoid prolonged detergent contact with skin.
- Keep detergent and solution out of reach of children.

Note:

- Always wash the cell(s) first, then the prefilter, to keep heavy prefilter lint from getting caught in the cell(s).
- Use a large enough container, such as a trash container, to hold one or both cell(s).

CHANGE OF AIRFLOW DIRECTION

The standard airflow of the clean air module is from left to right. If desired, the airflow direction can be changed from right to left. Proceed as follows (see fig. 1 on page 6):

	ATTENTION Disconnect the CAM from the mains.
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Housing:

- Remove the front panel (4).
- Remove the prefilter (7a), the ElectroMax filter (6) and the final filter (7b).
- Unscrew the electromodule (5) and remove it.
- Unscrew the reinforced rail that is mounted at the right bottom side.
- Turn the reinforced rail 180° horizontally and mount it the same way at the left bottom side.

Electromodule:


- Remove the filter guide rails from the electromodule (5).
- Remove the red contact plate (1) by sliding.
- Turn the red contact plate (1) 180° horizontally and replace it.
- Mount the filter guide rails to the electromodule (5).
- Replace the electromodule (5) and mount it.


Housing:

- Insert the prefilter (7a), the ElectroMax filter (6) and the final filter (7b).
- Replace the front panel (4).

TROUBLESHOOTING

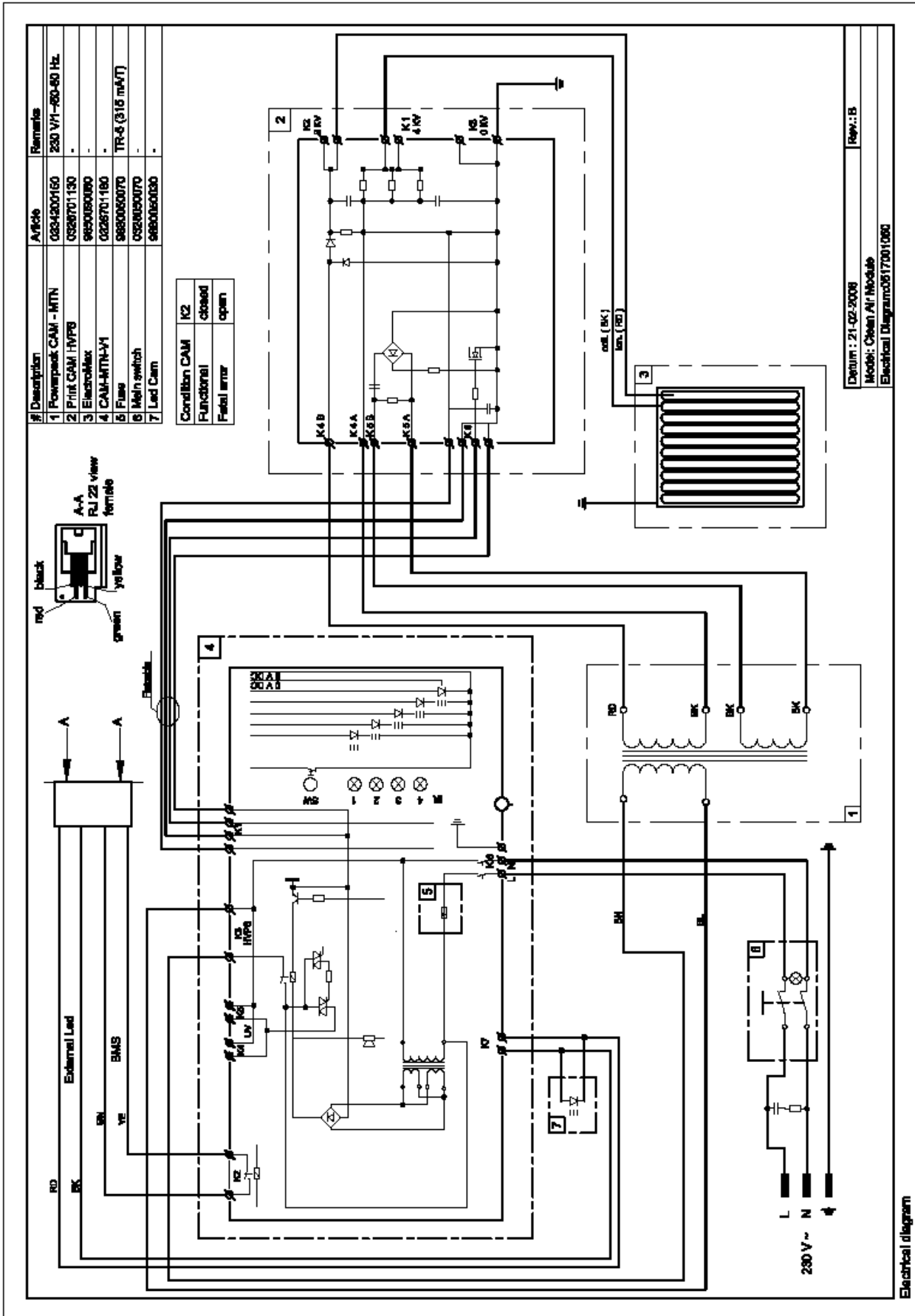
If the machine does not function (correctly), consult the checklist below to see if you may remedy the error yourself. Should this not be possible consult a qualified service engineer.

	WARNING First check whether the error is of a mechanical or electrical nature. The electric system can only be serviced or repaired by qualified and authorised service engineers.
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	ATTENTION Always switch OFF the clean air module and disconnect the mains before carrying out any repairs. First read the repair instructions at the beginning of this manual.
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Signal	Problem	Possible cause	Solution
Dust or other particles from the final filter and/or blinking indicator LED.	No power on the ElectroMax filter.	Short-circuit in the ElectroMax filter (caused by particles).	Clean or replace ElectroMax filter.
		Short-circuit in the ElectroMax filter (caused by bent lamellas).	Check and repair or replace.
		High voltage transformer defective.	Replace the high voltage transformer.
		High voltage PC board defective.	Replace the PC board high voltage.

ELECTRICAL DIAGRAM FOR 230V CAM



Denum : 21-02-2008
 Model: Clean Air Module
 Electrical Diagram0617001090
 Rep.: B

Electrical diagram

1 SPARE PARTS

The following spare parts are available for the CAM clean air module (see fig. 1 on page 6):

No.	Article no.	Description
1	9880050010	Contact board
2	9880050120	Housing
3	9880050030	Indicator LED
4	9880050040	Front panel
5	9880050050	Electromodule
6	0328050070	Main switch

No.	Article no.	Description
7	9880050060	Pre and final filter (set)
8	9850090080	ElectroMax filter
9	9880050080	PC board control
10	9880050090	PC board high voltage
11	9880050070	Fuse (10 pieces)
12	0306210030	Flatcable
13	9880050100	High voltage transformer
14	0306000030	Ionisation wires ElectroMax filter (10 pieces)

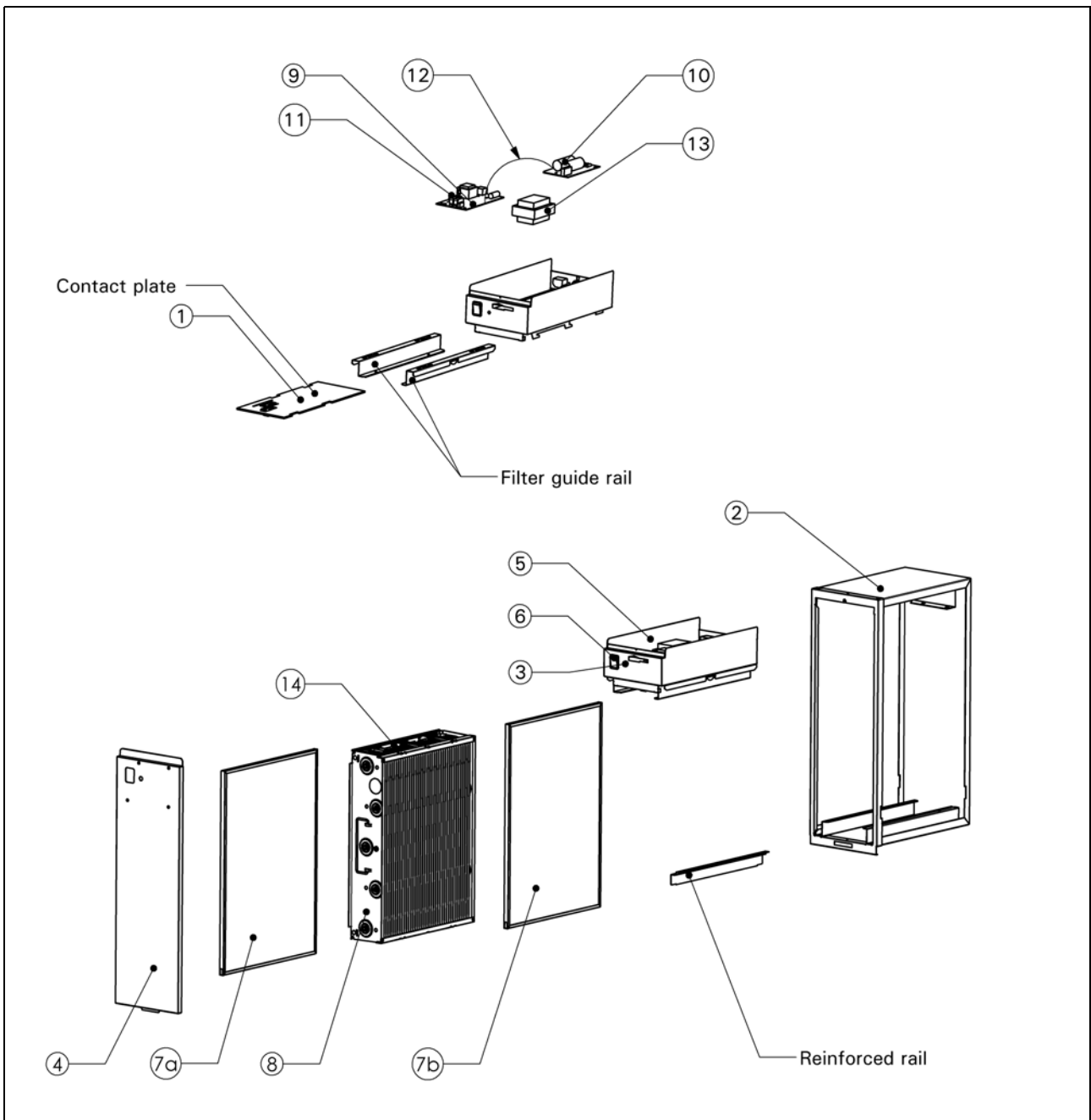
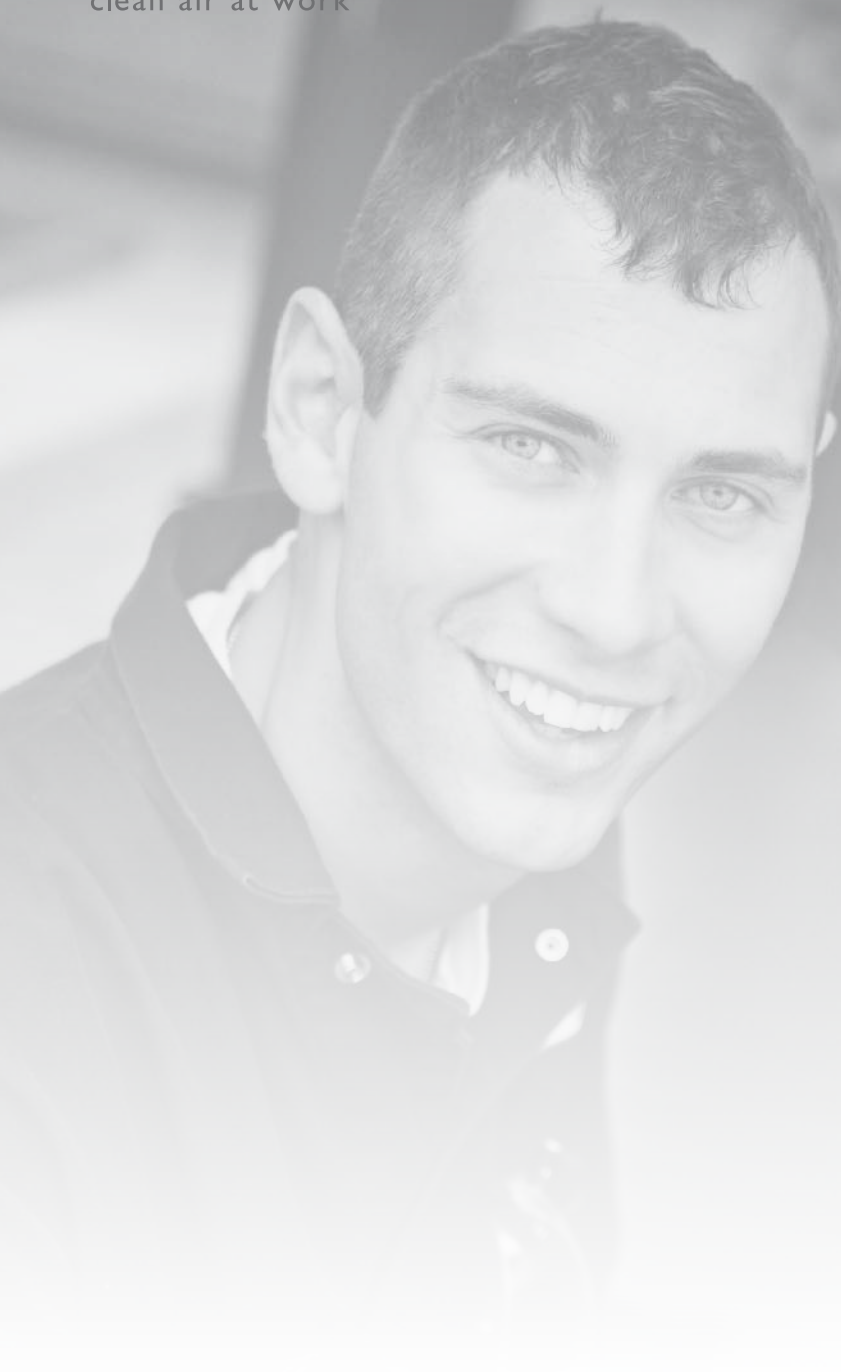


fig. 1



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