MANUALE ISTRUZIONI
OPERATOR'S HANDBOOK
MANUEL D'UTILISATION
GEBRAUCHSANWEISUNG
MANUAL DE ISTRUCCIONES

MAXI SMART

THE REVOLUTION IN ASPIRATION

CATTANI
AIR TECHNOLOGY

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MAXI SMART

THE REVOLUTION IN ASPIRATION

INDEX

• *General operation data 50/60 Hz Maxi-Smart dental aspirator*

Model	Maxi-Smart
Rated voltage	400 V ~
Rated frequency	50/60 Hz
Rated current	25 A
Operation mode	Continuous operation
Protection against humidity	Common
Maximum absorbed power	11,8 kW
Maximum flow rate	300 m^3/h
Maximum head for continuous service	2400 mm H_2O
Rotation speed	30 Hz 75 Hz
Sound pressure without cover	from 73 to 77 dB(A)
Sound pressure with cover	from 67 to 68 dB(A)

~	Alternated current	IEC 417-5032
⏚	Protective earthing conductor	IEC 417-5019
	Degree of protection against direct or indirect contacts	IEC 60204-1
○	Open (disconnection from power mains)	IEC 417-5008
I	Closed (connection to power mains)	IEC 417-5007

Sound pressure measured in accordance with ISO 3746-1979 (E).
Parameters: r = 1.5 m – background noise: 34 dB(A) – instrument: Bruel & Kjaer type 2232.

• New technology

• *New technology*

For over twenty years, Cattani has been carrying out research to bring you state-of-the-art technology. The primary purpose of research is always to improve our products: building machines that are increasingly flexible, safer, less expensive in terms of purchasing costs as well as running and maintenance costs. Cattani has also pursued a development pathway based on scientific and technological research, with focus on sustainable growth and technical solutions to enable savings of raw materials and energy.

Maxi-Smart is a dental suction control unit recommended for 15 dental units in operation simultaneously.

Description:
• The centrifugal separator replaces both the separator tank and the drainage pump; this reduces space requirements and major maintenance operations;
• the amalgam separator is integrated with the centrifugal separator at the top of the suction unit and next to the primary filter, two features that facilitate ordinary maintenance operations;
• for units with cover, the suction unit is encased and soundproofed, with residual sound pressure of 68 dB(A) at 75 Hz;
• the electrical control unit contains both the inverter (VSD) and a small computer;
• the programme enables optional control of head and flow rate;
• Maxi-Smart is the first wet system constructed as a single unit;
• Maxi-Smart is the first of its kind anywhere in the world: it is the first large suction unit that in addition to head can control flow rate;
• with Maxi-Smart simultaneous use of multiple surgeries no longer means reduced performance due to the fact that as demand increases, the flow rate is automatically and instantly increased.

Eco-sustainability
The Maxi-Smart electrical control unit is complete with inverter (VSD) and a small computer with software. VSD and Software reduce motor stress, maintain head constantly at the programmed value and adapt the flow rate in real time according to demand.

Maximum power savings are achieved when the system is under-utilised: this is the time when a fixed-speed motor is subjected to the greatest stress: demand decreases, power absorption increases and the motor overheats.
With variable speed suction on the other hand, when demand decreases, the VSD and software combination decreases motor speed and consequently decreases power absorption, so power saving is proportional to the actual suction demand.

• Introduction
• Signs and warnings

• Introduction

The following presentation provides information on the assembly and starting up of the Maxi-Smart unit as well as on hazards and preventative precautions.

This handbook should always be accessible for reference during use, assembly and commissioning of your Maxi-Smart unit.

Updated handbooks are available through our website **www.cattani.it**.

We strongly recommend you refer to the updated information on matters concerning **safety**.

• Signs and warnings

• *Danger of electrocution, even a voltage of 230 V~ can be deadly.* 

• *Biological hazard, infections from epidemic diseases.* 

• *General danger signal.* 

• *Personal protection for heavy duty work.* 

• *Personal protection for biological hazard.* 

• *High temperature.* 

• *No flammable, corrosive or explosive substances in this area.* 

• *Required flow or rotation direction.* 

It is not always possible to illustrate all hazards with a danger sign; users are therefore required to carefully read and observe the warnings provided.

Failing to observe a danger sign or warning may lead to operator or patient injury.

Do not remove safety protections, do not tamper with machines or their operation.

Despite our best efforts, danger signs may overlook some aspects; we apologize if this happens and kindly ask you to analyse all the possible hazard points and inform us if we have neglected something.

• Recommended precautions

• Recommended precautions

Before unpacking the unit, check the outside of the package; if you find that the impact indicator is red, or the carton damaged, accept the delivery on the condition of your inspection of the unit.

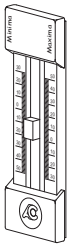
The packaging frame is wood treated with ISPM-15 fumigation. Treatment is certified by the code stamped on the wood frame. The packaging is recyclable, if not reused, dispose of it in accordance with current regulations. Remove the screws that secure the wood panels together, possibly using a pneumatic screwdriver; start with the top panel. The unit is anchored to a pallet. The drawing of the suction unit is under the address and includes machine dimensions and weight. Keep the stoppers that close all the external/internal communication points, so that you may use them when moving the suction unit.

Only experienced personnel with the right tools must be allowed to install the unit. The suction unit must be placed in a clean area, away from sources of heat, humidity and dust. When installing outside: balconies, porches and gardens, ensure that the machine is sheltered from rain, spraying, humidity, frost and direct exposure to sunlight.

The temperature in the plant room must not drop below +5°C nor exceed +35°C.

If ventilation or air conditioning is needed in the plant room, the ventilation or air conditioning system should be designed by a thermal engineer. Access to the plant room must not be allowed to patients or casual visitors. If a plant room is not available, the machines must be protected with a cover that is not easily removed. Provide protections and danger signs to prevent accidental contact because of electrocution hazard and for the (remote but possible) event of fire, explosion, leakage of contaminated liquids and air. Use only covers (for indoor or outdoor use) designed and made by the manufacturer. The manufacturer shall not be liable for machines protected with cases made by other companies. Cover design requires testing with temperature and functionality checks, measured over time, with heat sensors and instruments for control of flow rate and head.

No flammable material should be stored in the plant room; ensure that there is no possibility of gas leaks in the room. Do not connect damaged equipment to the power mains; do not use extension cords, multiple sockets or plugs. Before connecting the unit to power mains, ensure that the line conforms with C.E.I. . 64-8 standards and that the thermal switch has a class “A” or “B” differential in accordance with EN 61008-1.



• Installation

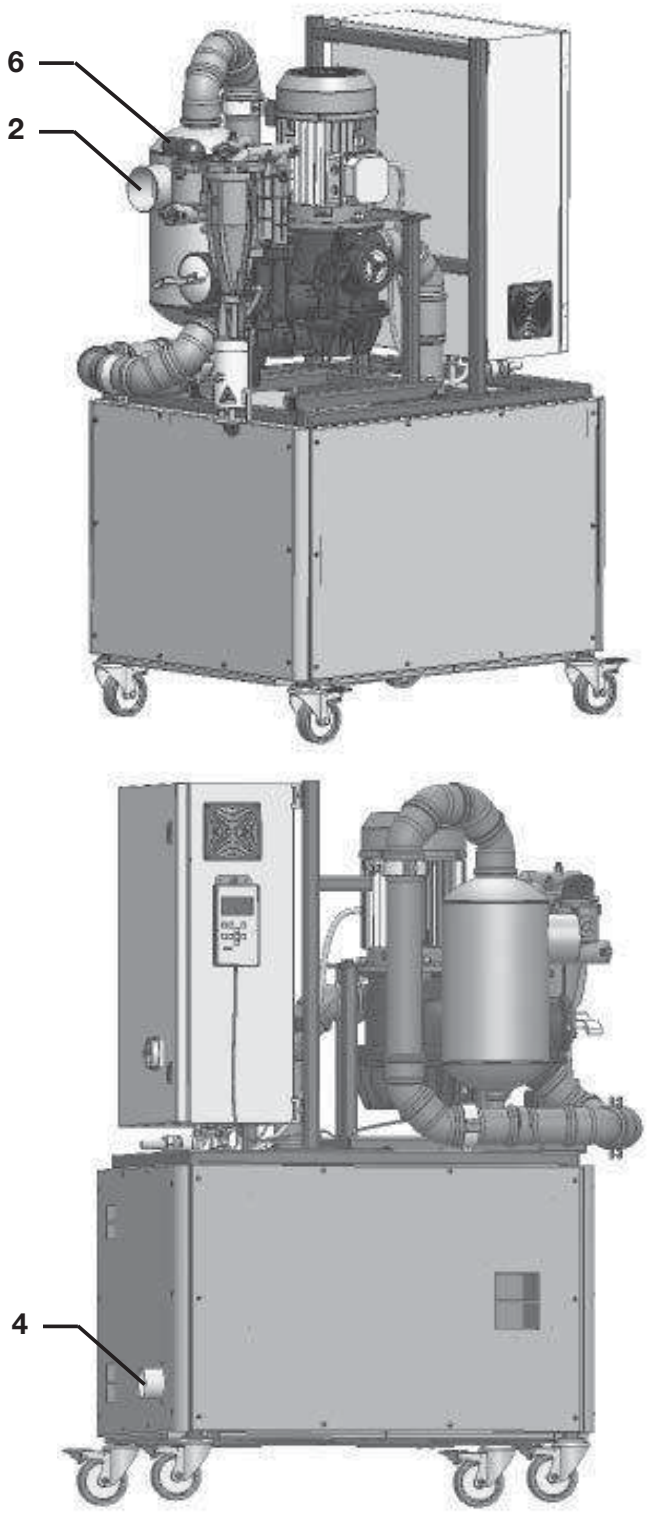
• Installation

Before connecting the suction to the suction line of the central system, ensure that the suction pipes are clean; heavy debris could damage the unit. The light grey PVC suction pipe supplied with the unit must be connected to the "aspirated fluid inlet" pipe connector **(2)** with 100 mm diameter. On the other end, the same pipe will be connected to the suction line arriving from the surgeries.

The exhaust air pipe (black, temperature resistant, with metal spiral) must be connected to the exhaust air outlet) pipe connector **(4)** with 60 mm diameter, the other end of the pipe will be connected to the antibacterial filter H14 preferably going through a silencer provided with the unit. From the antibacterial filter outlet, hot exhausted air must be conveyed outside. The 40 mm diam. pipe connector **(6)** must be connected to the liquid outlet connection; please note that with Hydrocyclone the suction unit drains by gravity and can never drain upwards.
The suction line generally runs horizontally on the plant room floor and should have a rise of around 100 cm to reach the Maxi-Smart connection inlet **(2)**.

When Maxi Smart is located in a room one floor lower than the surgeries, the suction line must have a fall taking it to the same level as the suction inlet, with a minimum 2 metre horizontal run, and then connect to the inlet with the flexible tube **(2)** (fig. B, page 27).

Once installation is complete, the power cable must be connected to the power mains in accordance with regulation EN 61008-1. Lastly, the low-voltage signal line must be connected: from the control unit terminals see wiring diagram, page. 30-31) to the signal line (**12** page 9) which reaches all the dental units of the same system with parallel connections. Ensure that the contact is clean (not live). An alternative to the signal line is to programme clock-operated starting, wiring diagram page. 29.



• Testing and staff training

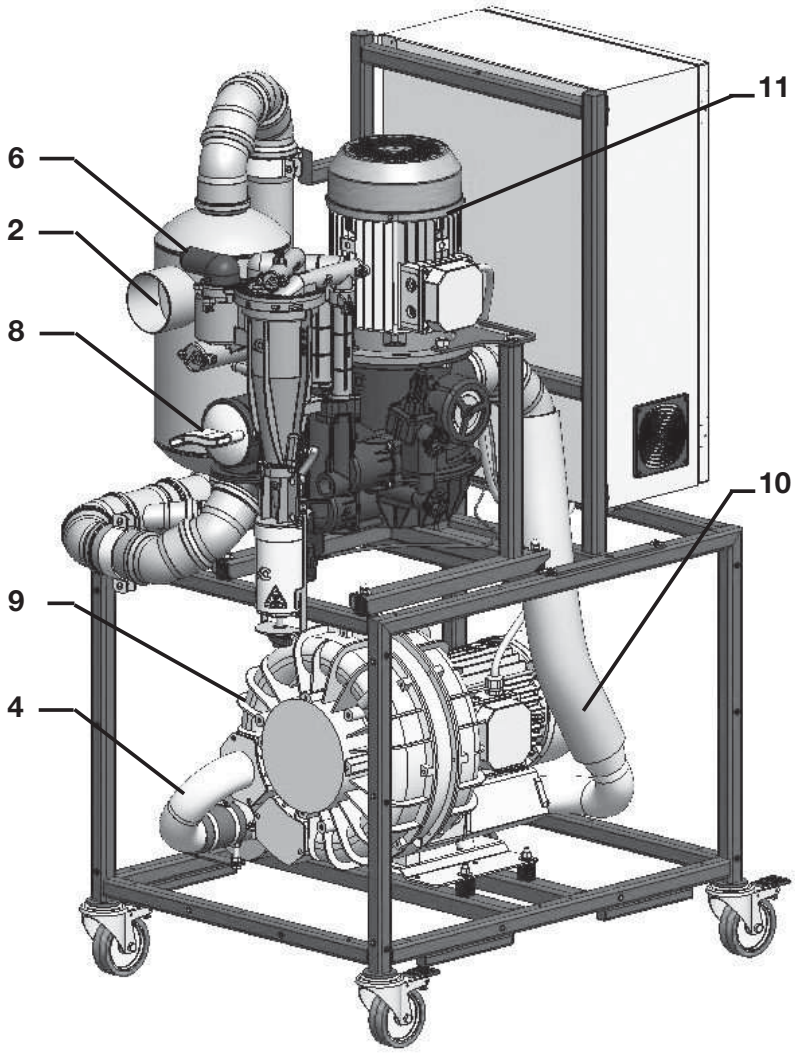
• Testing and staff training

To check the efficiency of the Maxi-Smart aspirator, we recommend you carry out dynamic tests, using a pressure gauge and vacuum gauge to verify whether the unit is serving all the surgeries satisfactorily.

Staff instruction on the use and ordinary maintenance of the suction unit should be performed with a new, non-contaminated unit. Surgery staff must be instructed on how to follow the display panel and the operational phases of the Maxi-Smart unit, to understand danger warnings and carry out maintenance operations using Puli-Jet plus new with anti-scale (A), Pulse Cleaner (B) and antifoaming tablets (C).

• Operation

The suction assembly **(9)** (through pipe **10**) creates vacuum in the centrifugal separator (**part 11 page 12)**.Fluid from the surgeries goes through the manifold **(2)** into the expansion tank and then through filter **(8)** into the centrifugal separator **(11)**.
The centrifugal separator separates air from liquid: the air is exhausted outside through a pipe **(4)** while the liquids go through the amalgam separator to be drained through the discharge pipe connected to pipe connector **(6)**. The centrifugal separator **(part 11 page 12)** is switched on before the turbine (part **9**), this makes it possible to discharge any liquids that may have accumulated in the centrifugal separator before suction starts. When the machine is switched off, a software setting keeps the aspirator running for a minimum of 13 minutes; this delay prevents repeated stopping and starting induced by liquid residues, which are harmful for the system.

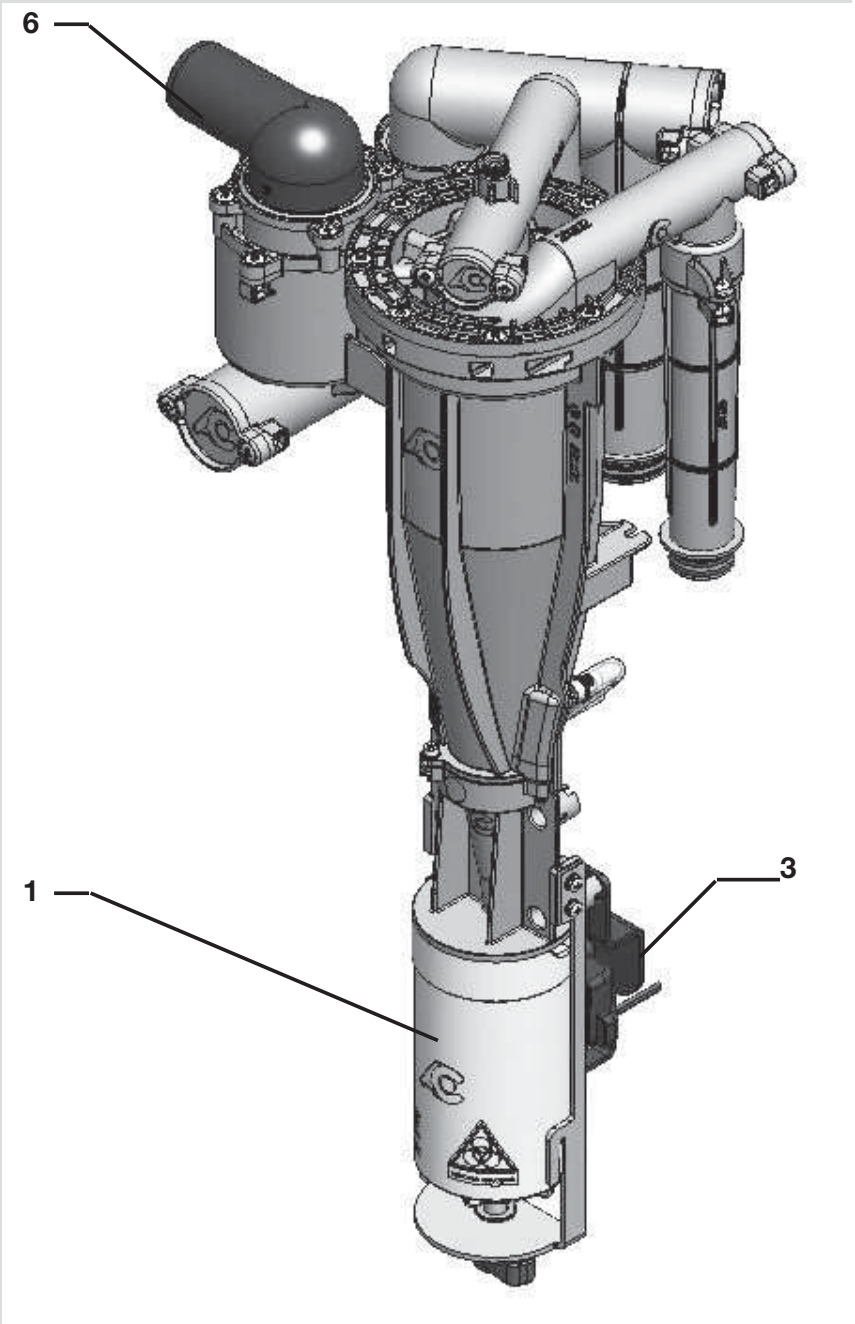


• Amalgam separator Hydrocyclone ISO 60

• *Amalgam separator Hydrocyclone ISO 60*

Hydrocyclone ISO 60, an amalgam separator specifically designed for Maxi- Smart, is ISO certified by TÜV in Essen to provide 98% separation and 54 l/min flow rate.

The amalgam separator comes always with an operator and maintenance handbook.
The container **(1)** must be replaced when the optical sensor
detects that the container is full and sends a signal to **(I15)** code display.



• *Parallel installation*

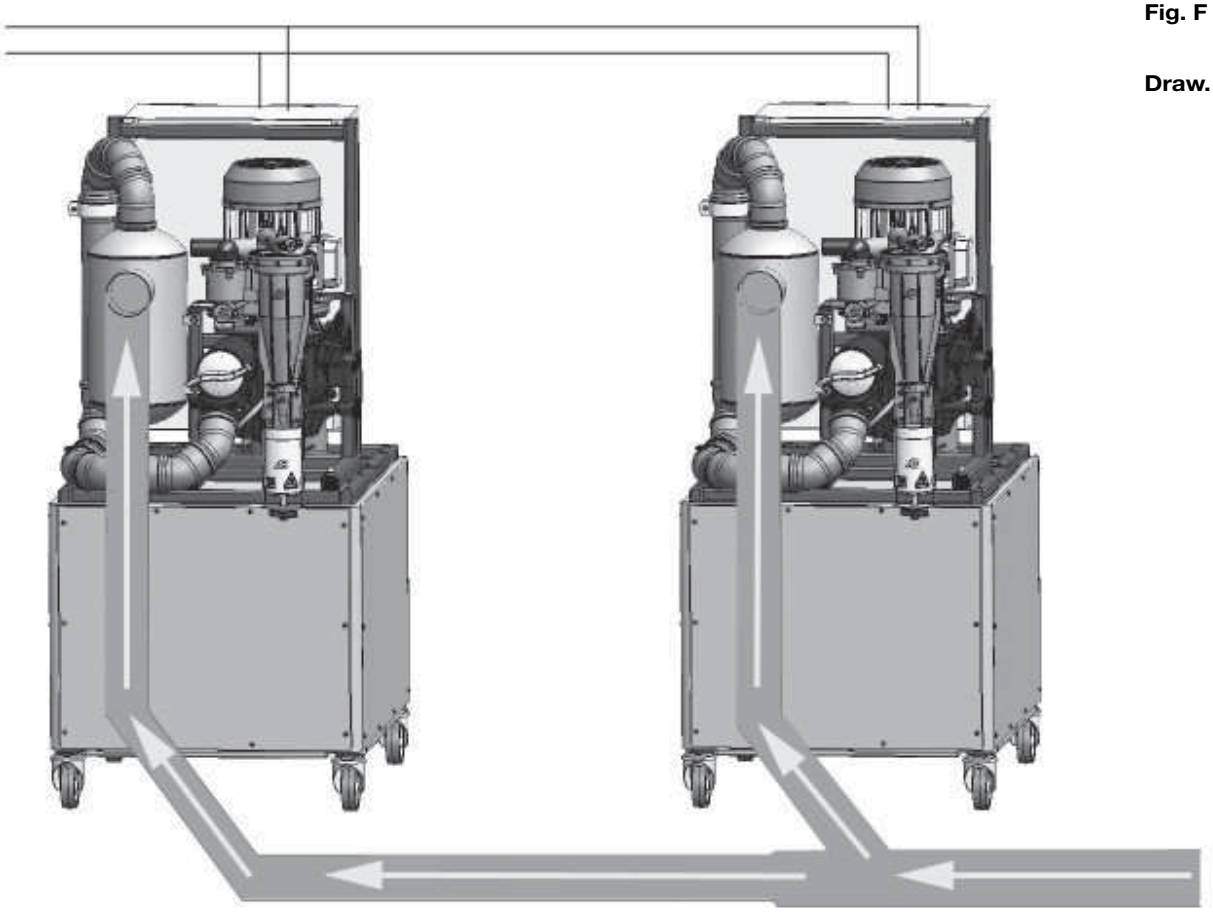
• *Parallel installation*

It is advisable to only install in parallel identical machines, with the same flow rate and the same head. Two or three suction units in parallel (fig. F) will double or triple the flow rate, provided that the diameter of the main suction line for each suction unit added is creased by ten millimetres. Similarly, the diameter of the exhaust air duct should be increased. Maxi Smart comes complete with all the accessories needed for installation in parallel, therefore no uni-directional valves are necessary nor additional control units or peripherals. When two or three suction units are connected to the main duct, it is necessary to connect in parallel the signals (12) arriving from the various dental chairs or from the control rooms of the clinic. When installing suction units in parallel, take care not to invert the cables of terminals no.09-05 in the machines in parallel: see wiring diagram (fig. C, page 30-31). With a number of suction units in parallel a stoppage of one of the units may go undetected. To prevent this, terminals 06 and 07 of the control unit (clean contact) (fig. C, page 30-31) should be connected to a remote alarm in a visible area of the clinic. Maxi Smart units in parallel will be more efficient and provide greater power savings when operating simultaneously, regardless of the demand. Removing power from one of the suction units will not save power while it reduces the performance of the suction units still in operation.

12

Fig. F

Draw. F



• Two or three Maxi-Smarts in parallel

• *A safer solution for the same price*

Installing two parallel machines means halving the probability of a total shutdown in the surgery: this is the reason why this solution is recommended. If we consider machines of equal performance, two machines that together serve 30 dental units with simultaneous suction, will normally cost the same as a machine with double flow serving the same number of units, always operating simultaneously.

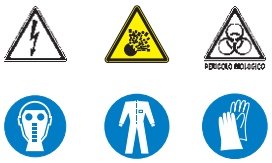
• *Operation*

When the first surgery starts using suction, the programme starts the machine with fewer operation hours. Each time another dental unit starts suction, the units automatically increases its rotation speed; before a total of 15 dental units is reached, the second Maxi-Smart is switched on. The two suction units will then share the work-load evenly based on the programmed head and flow rate, while keeping power consumption as low as possible. Before the two machines reach maximum rotation speed, the third machine will be started. The programme follows the same method in the opposite direction, when the number of dental units decreases. If the system is large compared to the total number of users, the programme will always start the second or third machine before the ones in operation reach their maximum operating speed. This precaution prevents stress on the motor and keeps power consumption down. With this new technology you will no longer need to buy a smaller system to save on purchase cost, because there will be no real saving; in addition there will be an economic advantage over time in terms of life of the suction units and power consumption.

• Ordinary maintenance

• Ordinary maintenance must be carried out only by a properly trained member of surgery staff.

• We recommend you pay special attention to all the danger signs and use protective glasses, gloves and disposable coverall.

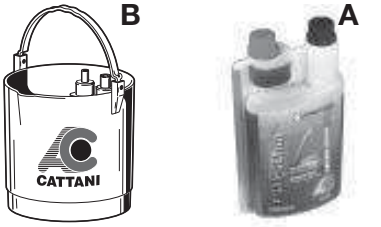


*Every day **

• Check the display for alarm warnings, if danger signs are shown contact the technician.

Every night

• At the end of the day suck up through the dental units a Puli-Jet plus new disinfectant with anti-scale **(A)** use Pulse Cleaner **(B)**;



• Remove power before getting close to the suction unit. Untrained staff must not get close to the machine.

Every day

• Place the antifoaming tablets in the filters of the dental units.

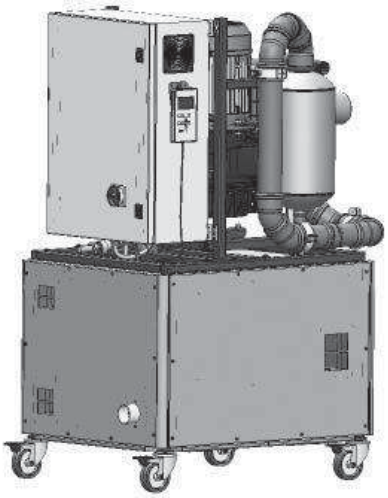
Periodically

• Keep the filter of the aspirator clean.

Occasionally

• Ensure that no build-up (or simply a thick layer of dust) is preventing proper ventilation in the suction unit;

• Keep the plant room clear of material that is not related to the machines, in particular flammable material and make sure that there is not a possibility that corrosive, flammable or explosive mixtures are formed.



* Every day only during the initial period, then occasionally.

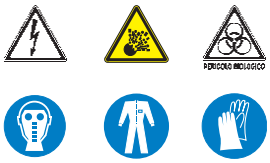
• Extraordinary maintenance

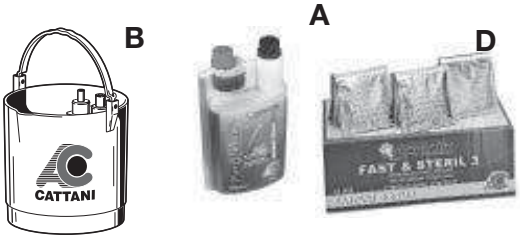
Special maintenance operations must be carried out by a trained technician using original spare parts:

• We recommend you pay special attention to all the danger signs and use protective glasses, gloves and disposable coverall.

• Check ordinary maintenance efficiency, ensure that Magnolia products are used.

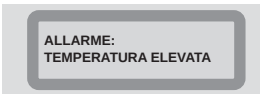
• Before intervening on used equipment run a few washing cycles with Fast & Steril 3 **(D)**, wait 15 minutes to allow the disinfectant to work.





Recommended checks every 12 months

• Check the maximum temperatures recorded and all the alarm signals, intervene as required.



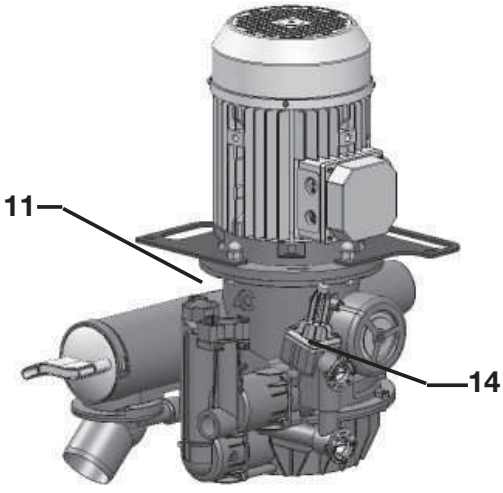
• Check noise level of suction unit, max 77 dB for units without cover and 68 dB with cover, measured in accordance with regulation 3047 (E).

• Use a jet of dry air, with maximum 2 bar pressure, to clean any electronic components of the AC300 circuit that need cleaning.

• Check the plastic pipes, in particular the ones under pressure (at the amalgam separator outlet) which should be replaced every 12-18 months;

• Hydrocyclone ISO 60

Check efficiency with aspirator switched on, suck up a quantity of Fast & Steril 3 sufficient to ensure complete disinfection. Remove the amalgam retention vessel and place a metal object between the diodes, the aspirator should read I14 or I15. Finally, check that the holes conveying the liquid are unobstructed in the Hydrocyclone cone. Before carrying out any procedure check



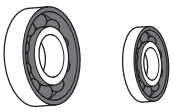
Recommended checks every 18-24 months

• Check efficiency of the centrifugal separator **(11)** and of the recirculation valve **(14)**.

Recommended checks every 10.000 months

• Rubber parts: O-rings, bellows, seals should be replaced every time one of these is removed when a part is disassembled.

• Replace motor bearings.



• If regular maintenance is not performed properly or inadequate products are used, staff should be instructed to report this to the person in charge in the surgery.

• *Instructions for accessing and changing parameters in the Maxi-Smart menus*

Main menus

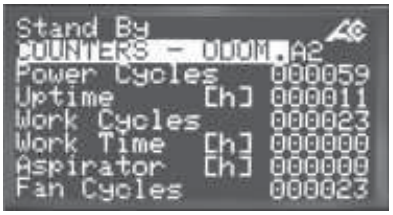
When switched on the graphic display will show the Cattani logo for 10 seconds, then the main menu will appear.

Main menu "A1"

This shows some parameters such as vacuum level, time for aspirator activation, temperature, amalgam container (if present) and system software revision.

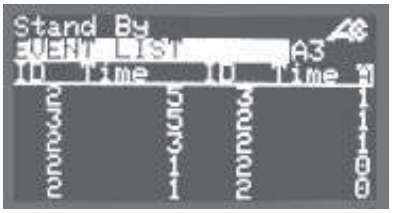
Control menu "A2"

This shows: number of times the Maxi-Smart was switched on, total hours switched on, number of activations of the aspirator, actual hours of use of the aspirator, the average hours the blower alone was on and the number of fan activations.



Event menu "A3"

This shows the last 10 events or alarms indicated by a number, to decode the event see table on page 25.



Control menu "A2"

COUNTERS – ODOM . A2		
POWER CYCLES	000000	Number of switch-on from master switch
UPTIME [h]	000000	Total hours system on
WORK CYCLES	000000	Number of activations by aspiration control
WORK TIME [h]	000000	Actual hours of operation (motors on)
ASPIRATOR [h]	000000	Average operation hours of aspiration motor (Medio-Jet 2V)
FAN CYCLES	000000	Number of control panel cooling fan activation.

Secondary

Press  to access secondary menus.

From this menu you access the next one by pressing the arrow. 

Drive Status

You can access this menu without a “Password”, you can view all the information on the operation of the Maxi-Smart.

System Parameter Setup

To access enter the password “0000456000”.

You can change time delay before switchoff and other technical parameters.

Motor Parameter

Menù non accessibile, di esclusivo utilizzo dell’azienda Cattani.

Pressure Regulator

Menù non accessibile, di esclusivo utilizzo dell’azienda Cattani.

Factory Settings Restricted Access

This menu cannot be accessed; its use is reserved to the manufacturer Cattani.

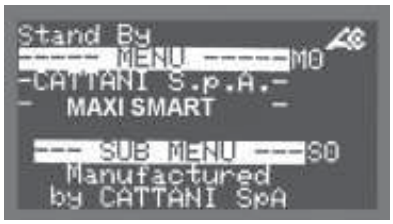
Accessing and entering the "Password"

Drive Status is the only menu that does not require the use of a Password".

To access the "User Parameters" menu the access "Password" is "0000123000".

To access the "Parameters Setup" menu the access "Password" is "0000456000".

From the "CATTANI S.p.A." menu, press the arrow then the arrow and the display will show the menu "Access Password "0000000000



Press Enter and the cursor will appear on the right

Press to move the cursor on the sixth 0.

Press and 1 will appear.

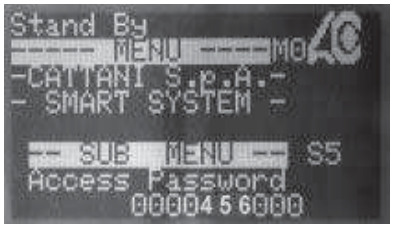
Press to move on the 0 next to it and then press until the number 2 appears.

Press to move on the 0 next to it and press until the number 3 appears.

Press Enter to confirm the "Password" and the cursor disappears.

Press to go back to the "Cattani S.p.A." menu.

To change the parameters in the "User Parameters" menu repeat the same procedure entering the password 0000123000.



Menù "Drive Status"

This menu is visible without entering any password; its function is to show parameters linked to the status of the Maxi-Smart. Some of the parameters are listed below.

Blower frequency
(max. 75 Hz)

Blower outlet voltage (max. 400 V)

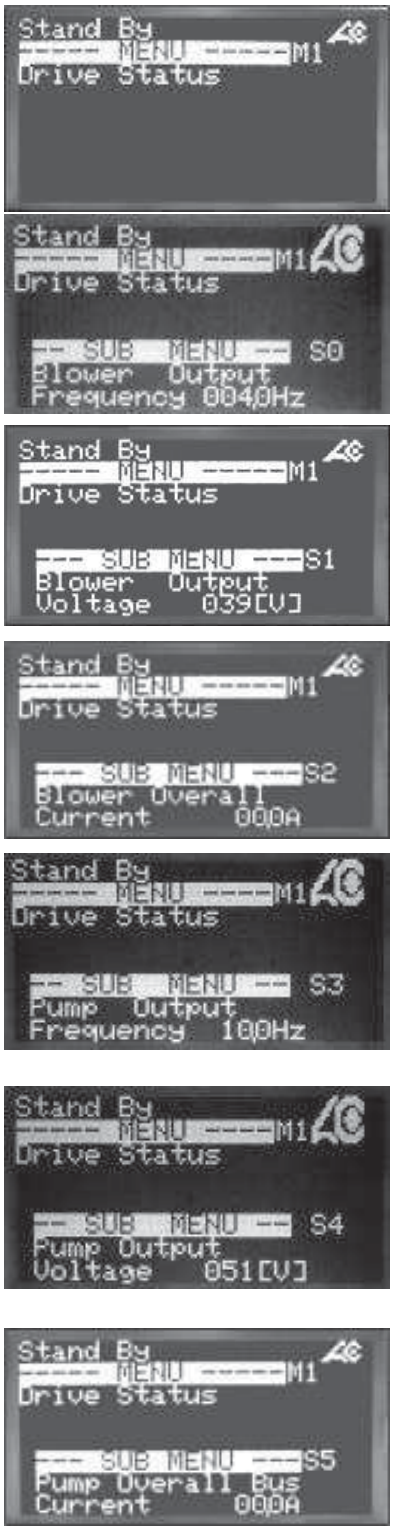
Blower current
(max. 15 A)

Centrifugal separator frequency (50/60 Hz fixed)

Centrifugal separator outlet voltage (max. 400V)

Centrifugal separator current

(max. 30 A)



System temperature

Maximum temperature recorded (+58 °C alarm and aspirator shutdown, it can be reset)

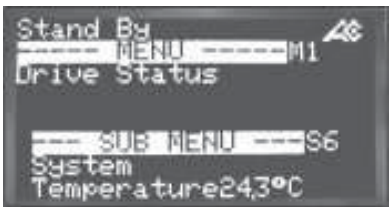
Maximum temperature recorded (+58 °C alarm and aspirator shutdown)

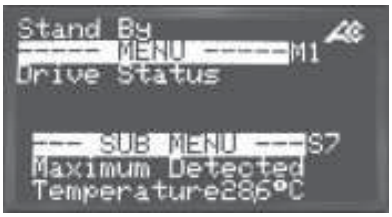
Bus voltage

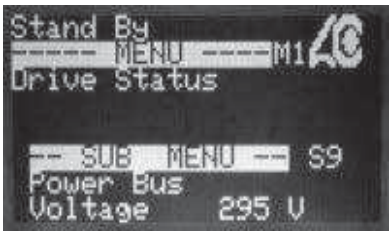
Maximum bus voltage (shutdown limit 700V)

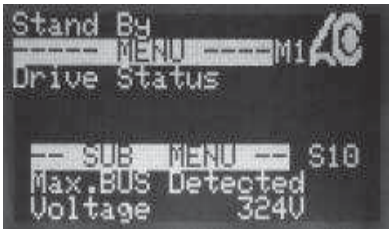
Capacitors condition indicative parameter

Scroll down button









Instantaneous vacuum level

Operation procedure (manufacturer setting)

"System Parameters Setup" menu

To access this menu, enter the access password 0000456000 (see instructions on page 43).

This will enable you to change some settings.

Choice of the language.

Scroll down button

To change the parameters in this menu: Scroll the icons

in the menus with the ⇧⇩ arrows to select the parameters.

Press ⏻ Enter to activate the cursor and the ⇧⇩ to enter the new value.

Press ⏻ Enter to confirm the change and continue.

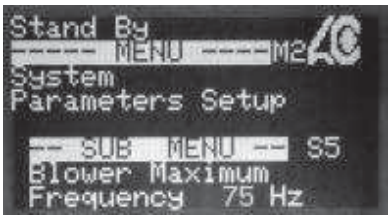
Network address (to be set from 100 to 110)

Mimum Zig-bee communication channel (11)

Maximum Zig-bee communication channel (26)

scroll down button

Blower max. frequency (75 Hz)



Blower rated current (15 A)

Vacuum level setting (max. 240)

Calibration control (reserved to trained technicians)

Operation options (reserved to trained technicians)

Motor Parameter

This menu cannot be accessed; its use is reserved to the manufacturer Cattani.

Pressure Regulator

This menu cannot be accessed; its use is reserved to the manufacturer Cattani.

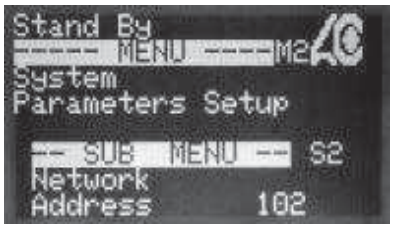
scroll down button

Factory Settings Restricted Access

This menu cannot be accessed; its use is reserved to the manufacturer Cattani.

• *Instructions for setting Zig-bee communication (wireless)*

Set the machine network address
(min 100)
(max 110).



Enter the Zig-bee communication key (ETRX2 USB) in the usb port of the computer and launch the display programme.

Install the SMART SYSTEM MONITOR programme (supplied by Cattani) in the computer

After launching the programme the company logo will appear for 10 seconds and then the main menu opens

Click on the SERVICE menu to access the device search page

click on device search, the programme will start searching; this could take a few seconds. At the end you will be able to view the various machines available and their generated code, it may be necessary to repeat this operation a number of times.

EUROPEAN REGULATION (EC) No.1907/2006 concerning the Registration , Evaluation , Authorisation and Restriction of Chemicals (REACH)

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Telephone	+39 0521 607604
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On the 1st of June 2007 has come into force the Regulation 1907/2006 REACH regarding the registration, evaluation, authorization and restriction of chemical substances.
This Regulation mainly concerns manufacturers or importers of chemical substances but it also

After the programme has found the devices available, go back to the home page to view the parameters.

Use the drop down menu to select the Maxi-Smart you want to display

It will now be possible to view the functional parameters of the Maxi-Smart

Click on the SERVICE icon to access the three different menus, one is open and 2 are protected by password

To enter the SYSTEM DATA SETTING enter the password 456000 and press ok

in this technical menu, all the Maxi-Smart parameters can be viewed and changed

the INVERTER STATUS does not need a password and lets you view the functional parameters of the machine while in operation.

from the main menu, click on the email icon to enter the address of the doctor and ot the technician to whom the alarm notifications must be sent.

In case of problems, an alarm is shown in the display and a email message is sent to the appointed technician.

Any alarms that take place during the day are displayed with an error code and its description inside the ALERTS box.

In the EVENT LOG folder you can view all the history of the alarms occurred in the machine during its entire operation period.

In the ODO COUNTERS menu the activation cycle of the Maxi-Smart are saved.

• *Description of the alarms*

Alarm code AC300		DESCRIPTION	SOLUTION
00	0	Microcontroller memory alarm	Contact technician
I14	2	95% amalgam level exceeded	Replace amalgam container as soon as possible
I15	3	100% amalgam level exceeded	Replace amalgam container
I00	32	Microcontroller memory alarm	Contact technician
I01	33	Short-circuit due to one of the two motors	Check origin of short-circuit and eliminate it
I02	34	Short-circuit before motor control	Contact technician (card probably damaged)
I03	35	Failed capacitor charging	Contact technician (replace card)
I04	36	Temperature threshold exceeded	Ventilate plant room
I05	37	Blower current limit exceeded	Check efficiency of blower (shutdown or excessive resistance)
I07	39	Maximum voltage on capacitors exceeded	Check mains voltage max. 500V
S08	40	Centrifuge short-circuit	Remove the short-circuit
S09	41	Short-circuit of card in centrifuge outlet	Replace the card
S10	42	Instantaneous current centrifuge exceeded	Eliminate siphons in pipes or check efficiency of centrifuge (shutdown or excessive resistance)
S11	43	Delayed current limit of centrifuge exceeded	Eliminate siphons in pipes or check efficiency of centrifuge (shutdown or excessive resistance)
I16	48	Vacuum sensor pipe disconnected	Connect vacuum pipe to centrifuge

• Important warnings
• Transport and storage
• Transport of used equipment

• *Important warnings*

• The units are covered by a warranty for one year from the date of sale, provided the warranty tag is completed with the following information and returned to the manufacturer: date of sale, name of seller and user.

• Purchase of a special kit of cleaning and disinfection products will entitle the buyer to a 12 month warranty extension.

• The warranty and manufacturer's liability shall cease to apply if the equipment is serviced with unsuitable products or products other than those indicated by the manufacturer, used incorrectly or if the equipment is tampered with in any way by persons not authorized by the manufactured.

• The manufacturer, dealers, agents and authorized technicians are available for advice, suggestions and to provide documentation, spare parts and anything else you may need.

• The manufacturers may decide to introduce changes in the products without notice due to technical needs, product improvement programmes, regulatory or functional problems, difficulty in sourcing parts or semi-finished products.

Updated handbooks are available through our website **www.cattani.it**. We strongly recommend you refer to the updated information on **safety** issues

• *Transport and storage*

• During transport and storage, the packed units can withstand temperatures from -10 °C to + 60 °C.

• The packed units should not be exposed to water and splashing and cannot withstand humidity above 70%.

• Packs may be stacked only to three layers with packs of the same weight.

• *Transport of used equipment*

• Before packing, you should clean and disinfect the aspirator with Fast & Steril 3 (see chapters on "Signs and warnings" and "Regular maintenance").

• Drain all pipes and outside/inside communications as liquid residues (even disinfectant) could damage the control unit. Remove the amalgam retention vessel, add the disinfectant, close the vessel with the tight cover. Dry the aspirator inside and outside, close all outside/inside communications with the stoppers provided, install a new amalgam retention vessel, wrap the aspirator and the control unit separately, to ensure maximum water tightness.

• Wrap the unit with polyethylene and pack using the original wood frame (if unavailable, obtain an original frame from the manufacturer)

• Secure the machine to the frame using brackets.

• SCHEMA DI MONTAGGIO MAXI-SMART
• INSTALLATION LAYOUT

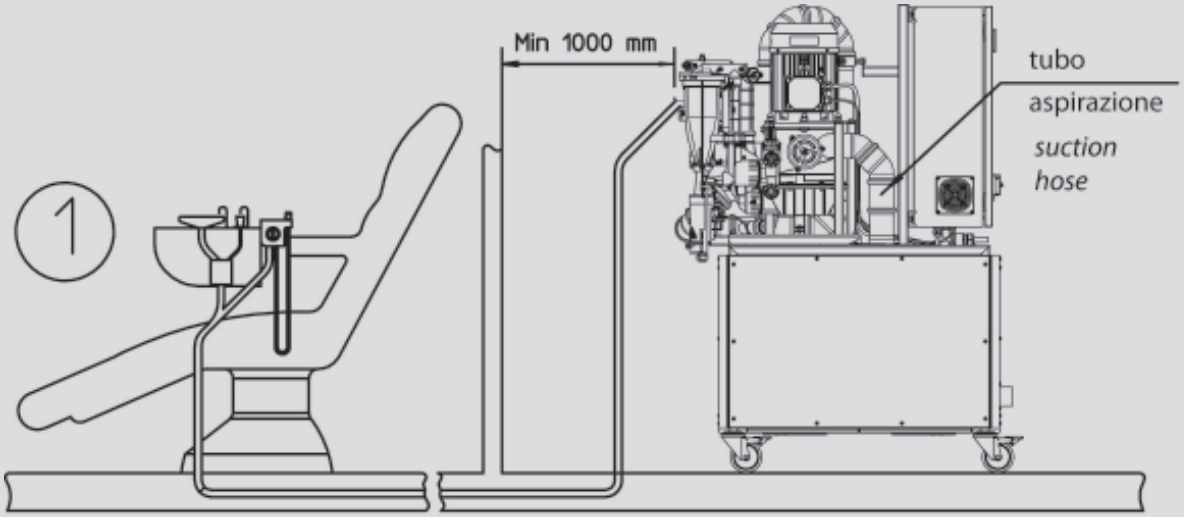


Fig. A

Draw. A

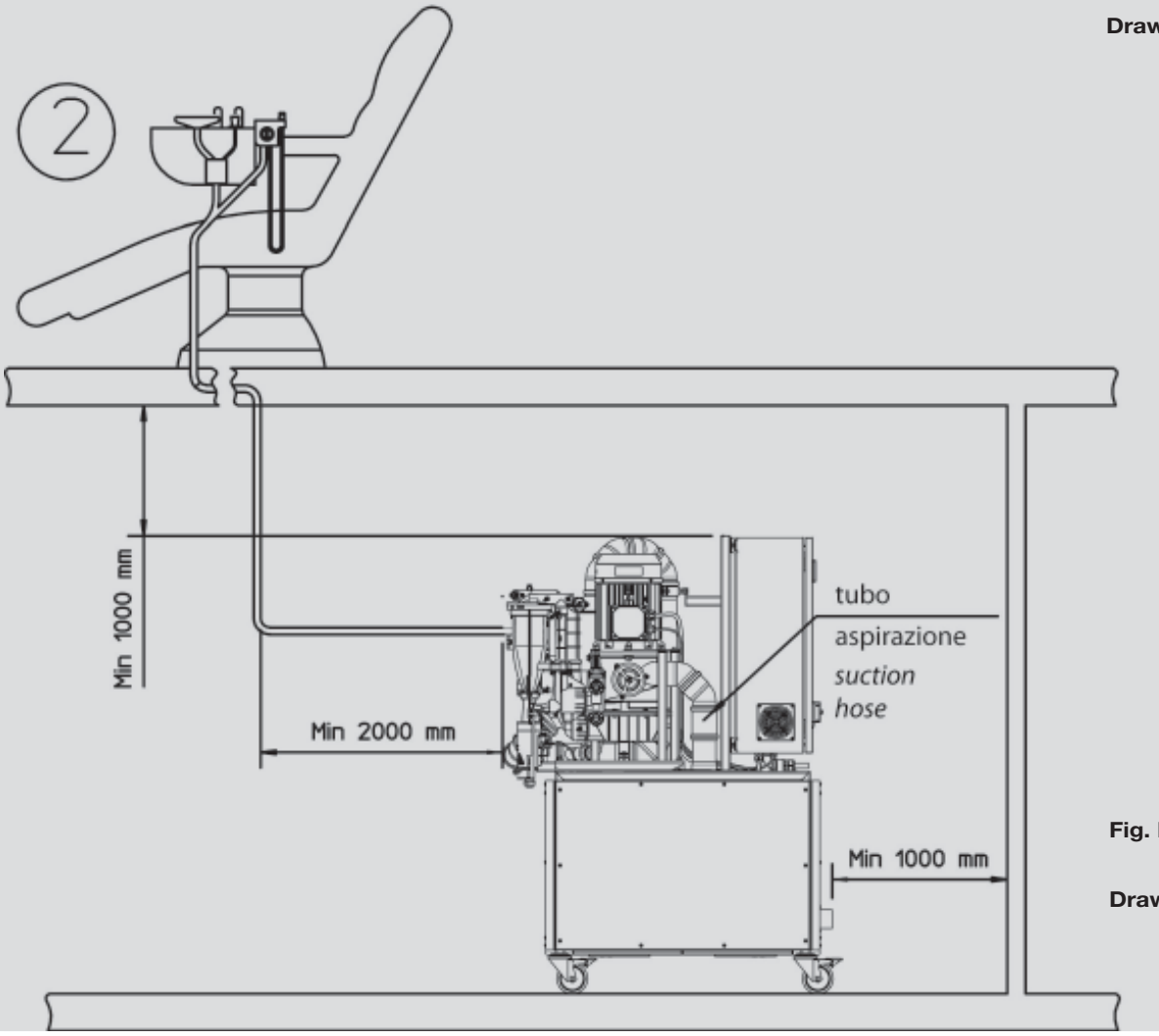
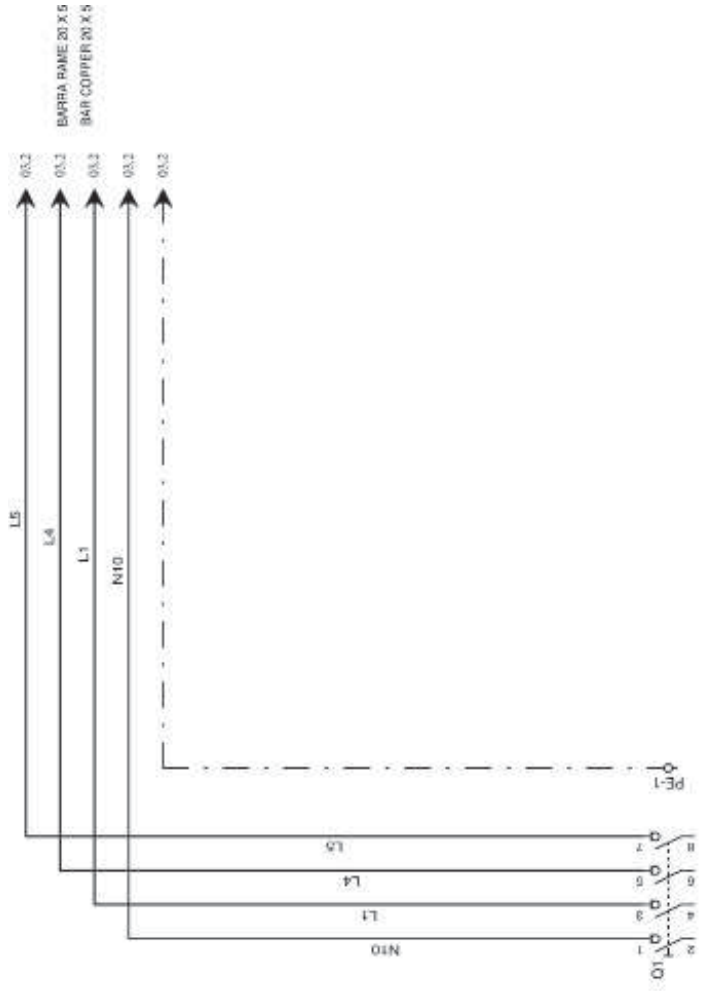


Fig. B

Draw. B

• *COLLEGAMENTI CIRCUITO INVERTER AC300*
• *INVERTER AC300 CONNECTIONS*



ATTENZIONE-----WARNING

PRIMA DI OGNI MANUTENZIONE SPEGNERE E LUCCHETTARE IL QUADRO

BEFORE EVERY MAINTENANCE OPERATIONS, SWITCH OFF AND LOCK THE MAIN SWITCH

Fig. C

Draw. C

• COLLEGAMENTI CIRCUITO INVERTER AC300
• INVERTER AC300 CONNECTIONS

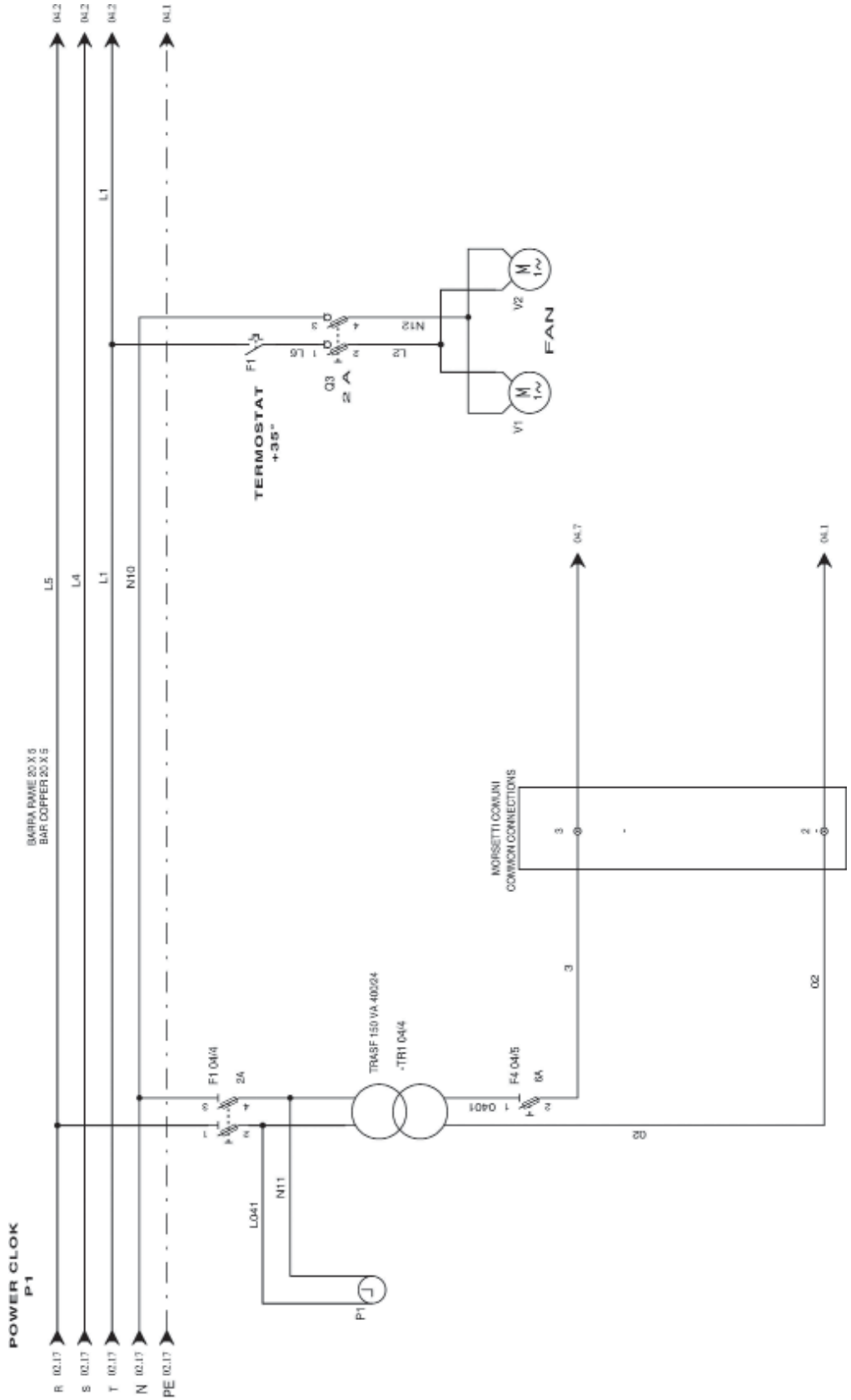


Fig. C

Draw. C

- *COLLEGAMENTI CIRCUITO INVERTER AC300*
- *INVERTER AC300 CONNECTIONS*

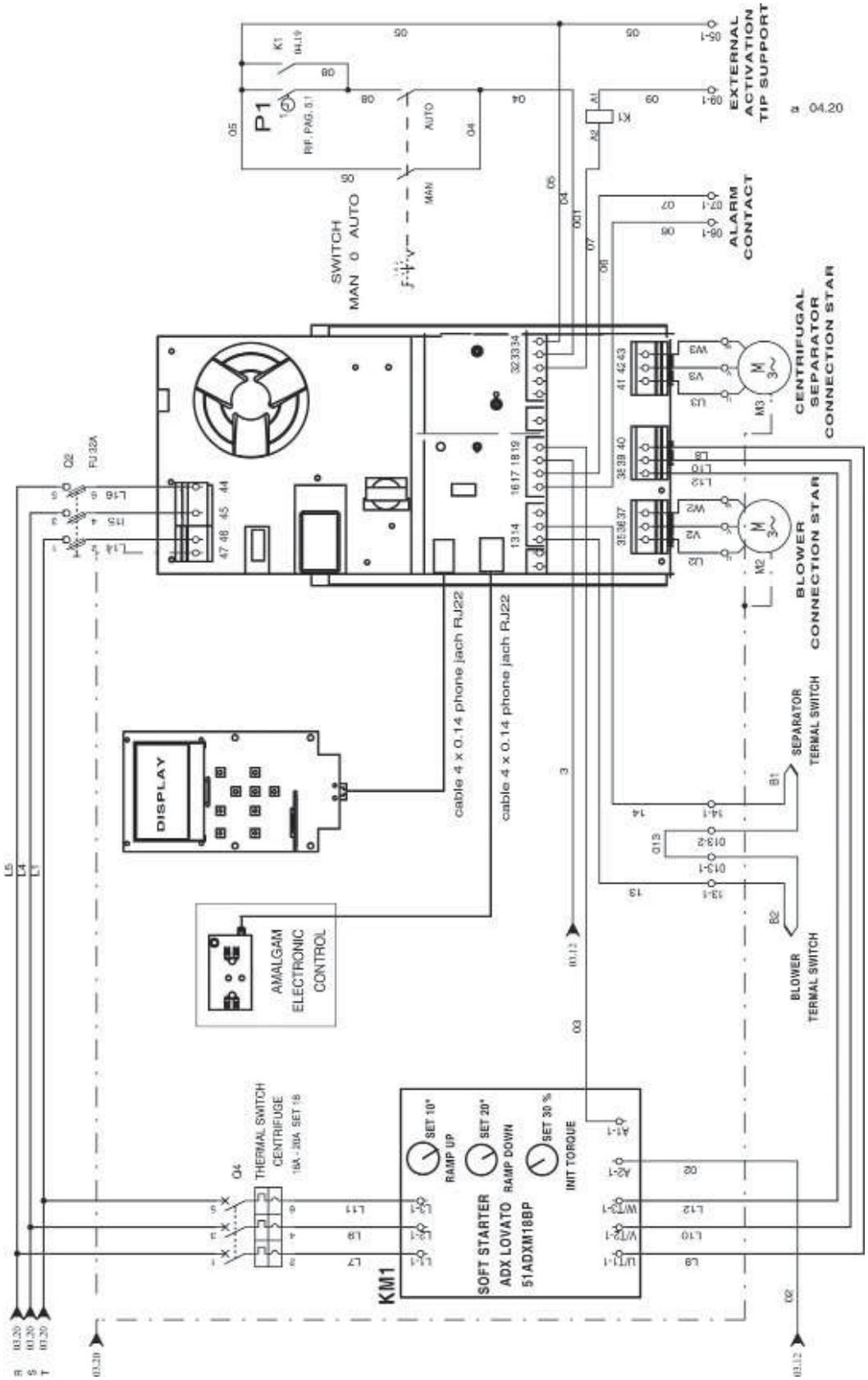


Fig. C

Draw. C

• *COLLEGAMENTI CIRCUITO INVERTER AC300*
• *INVERTER AC300 CONNECTIONS*

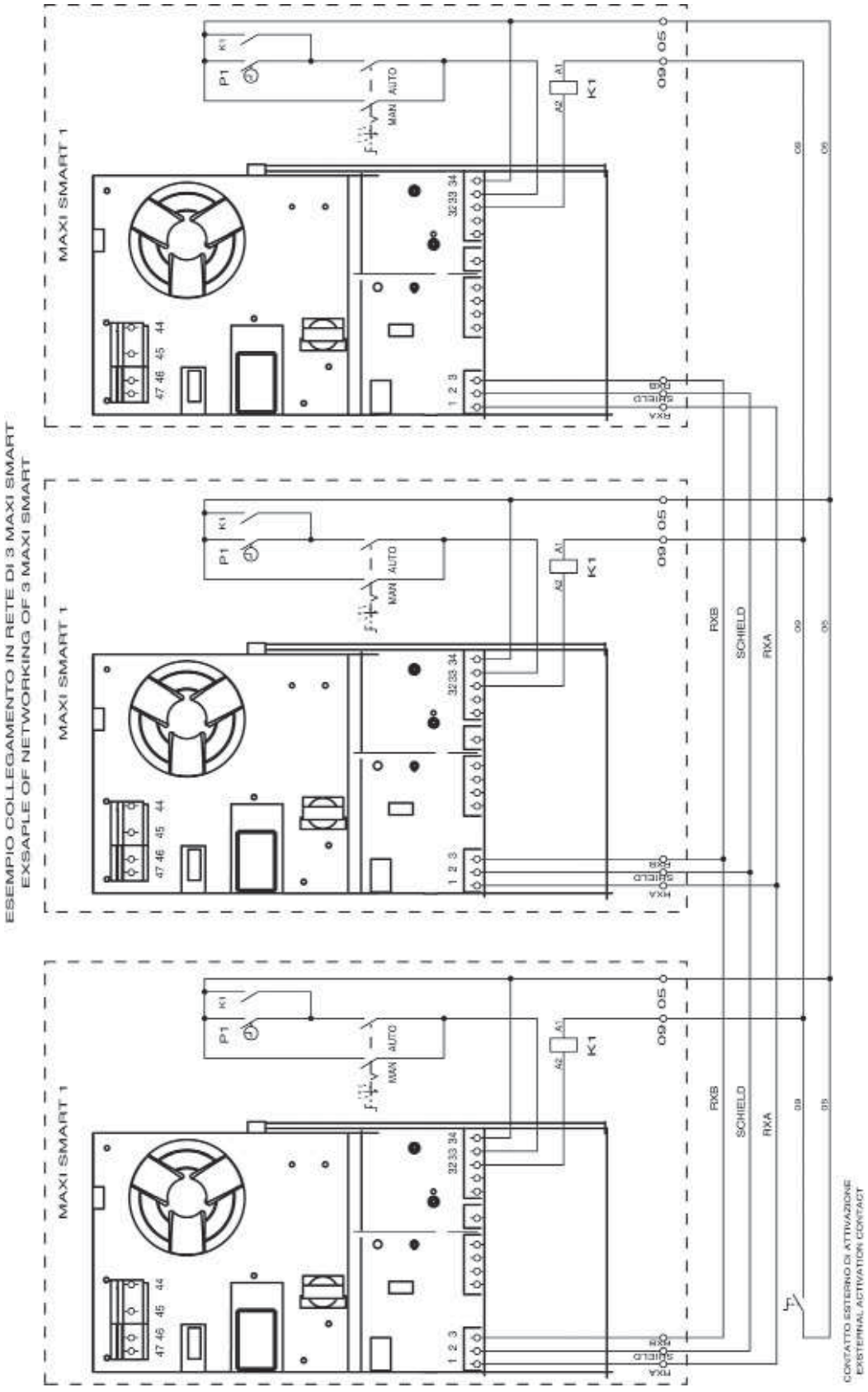


Fig. C

Draw. C

• *ESPLOSO MAXI-SMART*
• *SPLIT-UP DRAWING*

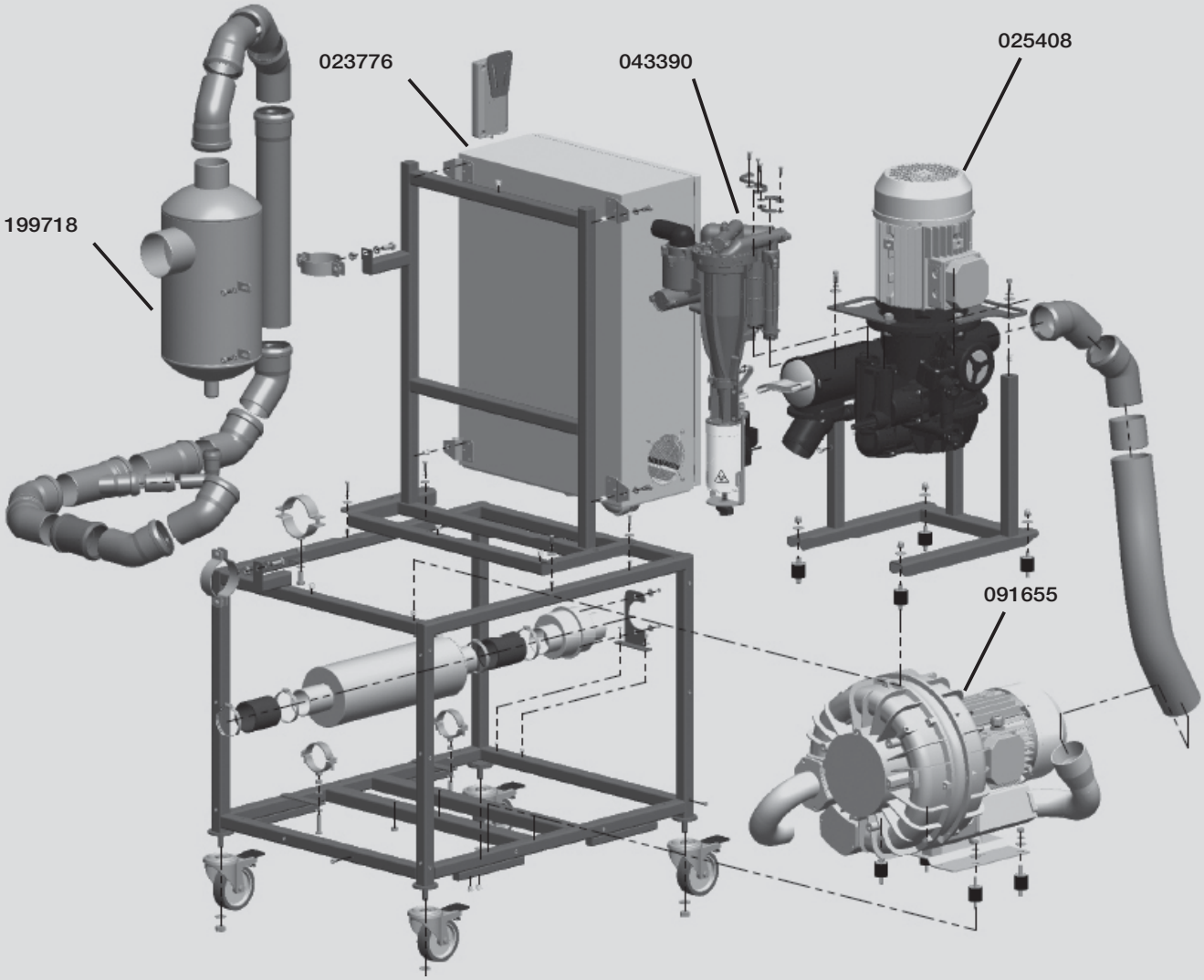


Fig. D

Draw. D

Cod. 199718	VASO D'ESPANSIONE EXPANSION TANK
Cod. 023776	CENTRALINO ELETTRICO ELECTRIC CONTROL PANEL
Cod. 025408	SEPARATORE CENTRIFUGO CENTRIFUGAL SEPARATOR
Cod. 091655	GRUPPO ASPIRANTE BLOWER
Cod. 043390	IDROCICLONE ISO 60 HYDROCYCLONE ISO 60

• *DIMENSIONI MAXI-SMART*
• *MAXI-SMART DIMENSIONS*

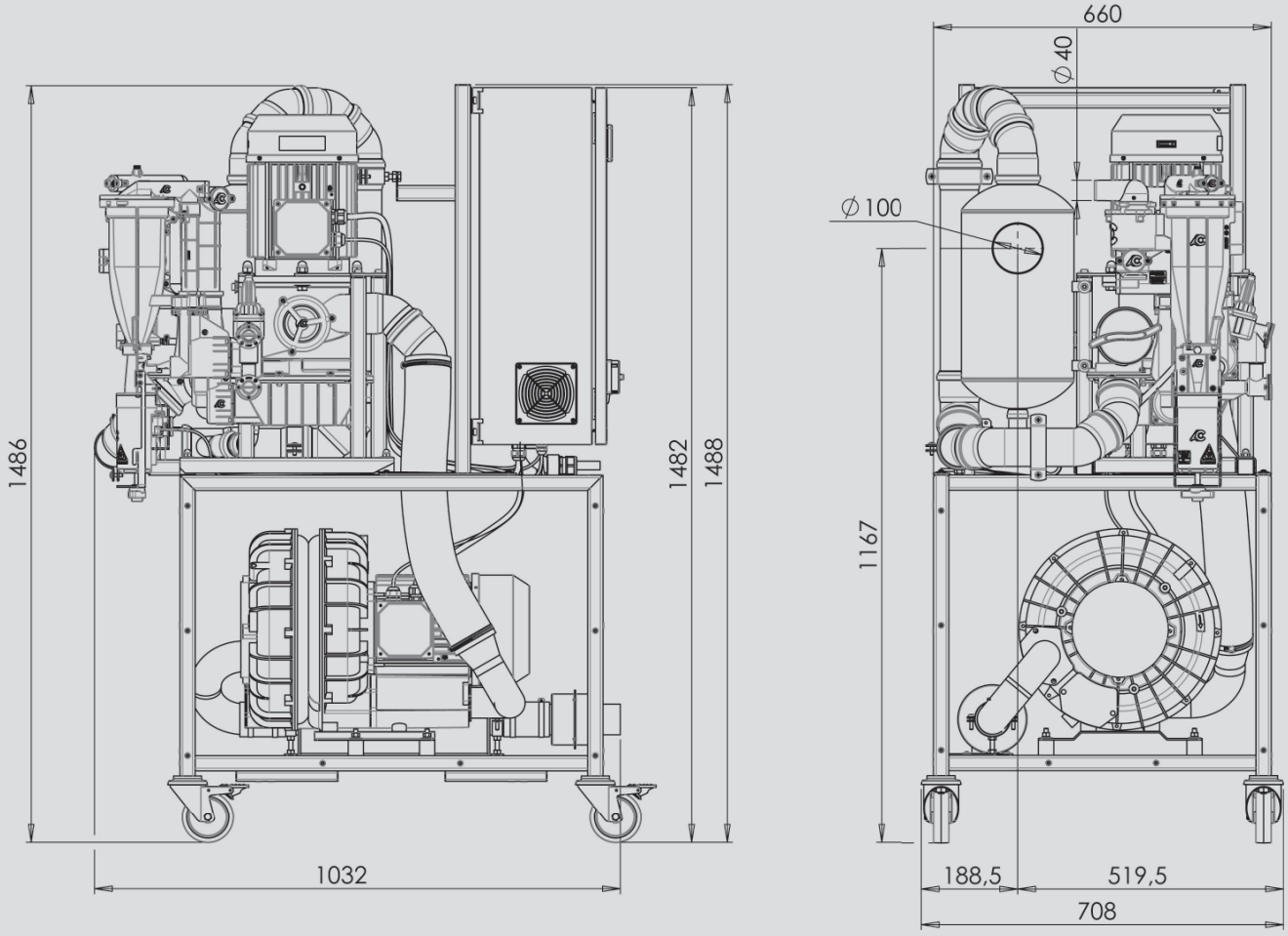


Fig. E

Draw.E

HOW CAN WE DO WE LEAD IN OUR FIELD, YET WE COST LESS THAN THE ALTERNATIVES?

THIS IS HOW:

- **WE RESEARCH:** this lets us apply the latest technology in all of our products and solutions.
- **WE INCREASE PERFORMANCE:** electronic and information technology allow us to increase the performance and reliability of our products.
- **WE REDUCE COSTS:** less maintenance and energy costs mean on a cost benefit analysis we are always the most economical.
- **WE REDUCE ENVIRONMENTAL IMPACT:** we save 50% of primary materials, and allow you to save between 30% and 50% of electrical consumption.

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Company with Quality System Certified according to
UNI EN ISO 9001:2008 - UNI EN ISO 13485:2012

ИМ05

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