

PROGRESS AND NEW TECHNOLOGY

Environmental sustainability

Aware as we are that our current resources of raw materials and energy are destined to end, whilst making an effort to find renewable sources, we are all called to contribute to the preservation of these precious resources: attention to these needs has guided our research and our production.

Fixed-speed dental suction

Dental aspirators with asynchronous motors have always featured fixed speed, causing head fluctuations during dental work.

A single operator may use at least three types of tips with different diameter: a saliva suction tip, a surgical tip or spray interceptor.

Considering that the largest the diameter of the tip, the smaller the degree of vacuum, maintaining constant head in a single surgery would require three different rotation speeds in the suction unit.

In a surgery with a number of dental units, where the aspects highlighted above are combined with the greater number of operators who may use suction, the difference in head will be accentuated.

The solution to this inconvenient is usually to oversize the suction system and install compensation valves to open additional air passage and thus contain high negative pressure peaks.

However the valves have not solved the problem entirely, as the professional will still experience annoying differences in pumping pressure.

When suction is insufficient there may be an increase in ambient contamination and reduced visibility of the operating area, whereas an excess of vacuum will be painful for the patient, due to the cold, dry sensation caused by an excessive flow of air on teeth and mucous membranes when working without anaesthetics.

As regards power consumption, with fixed speed aspirators consumption is highest when the aspirator (or system) is used with full load, but at the same time power consumption is extremely high resulting in overheating of the motor when the system is underused.

The advantage of VSD (Variable Speed Drive) technically defined inverter

Inverters are electric devices that, by enabling variation of the supply frequency (Hz) of asynchronous motors, make it possible to change their speed, by adjusting and reducing the number of revolutions until the minimum speed required for good system operation has been reached;

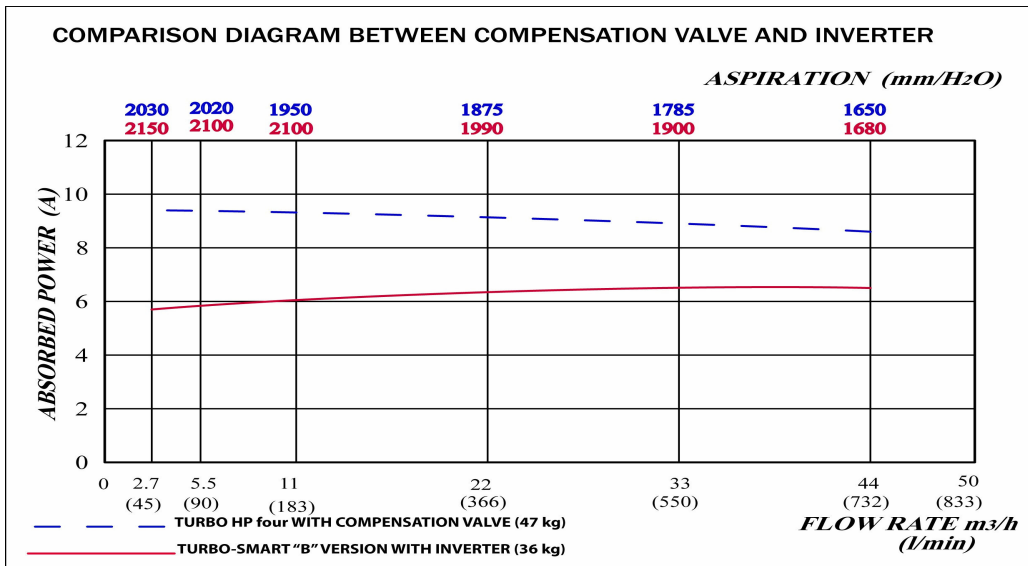
the reduction in speed results in a reduction of the power absorbed by the motor.

If we compare a traditional suction control system equipped with compensation valve (a system that increases the load on the suction unit) with the inverter controlled system (which adjusts the rotation speed of the suction unit), we clearly see the energy saving achievable with VSD technology.

The suction unit associated with the inverter can improve its performance and is never underused because it is the VSD which by varying the motor rotation speed adapts the suction unit to the demand, thus producing a saving that will vary according to the power of the motors, the number of dental units and operation time.

The inverter lets you save twice: firstly when you purchase it, because with increased performance a smaller unit will be sufficient and, secondly, with reduced power consumption during operation.

Operation diagram comparing two aspirators: the first is a fixed-speed unit with compensation valve, the second a variable-speed unit with inverter. The comparison shows that the inverter enables electricity savings, while the fixed-speed aspirators gives lower performance and higher consumption, which increases as the quantity of aspirated air decreases.



Turbo-Smart

Turbo-Smart is an aspirator equipped with inverter and computerized programme, two technological solutions that give the unit special features, most importantly:

- 1) Turbo-Smart is always produced in version A i.e. to serve two dental units; upon request with a password it can be turned to a version B to serve four dental units;
- 2) the head remains close to the values entered, whatever the demand and number of operators using suction;
- 3) with particular environmental conditions, such as high temperature, Turbo-Smart will not stop or suffer damage as the head will automatically lower for the time required to restore the operating temperature;
- 4) when a sudden wave of liquid arrives from the surgeries, Turbo-Smart will not be flooded but it will enter a self-protection mode: the recirculation valve opens, suction slows down, the centrifugal separator absorbs the current made available by the suction unit and, once the wave has been processed, the aspirator will automatically resume regular operation;
- 5) with voltage and power surges, within preset limits, the aspirator will not stop, because the electronics intervenes to protect the machine without stopping its operation;
- 6) during operation the display signals any operating problems so that the operator may intervene before the situation gets worse; if there is no intervention, the aspirator will go into self-protection mode and it will stop before any damage may occur.

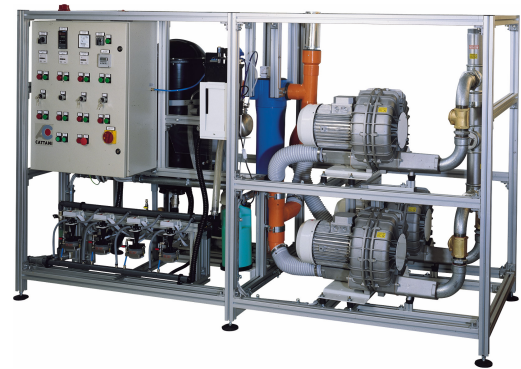


Turbo-Smart with box

Remote operation control.

The advantages of Turbo-Smart's inverter and computerized programme are amplified in "large systems" designed for hospitals and university clinics, improving both machine durability and energy consumption as well as professional performance.

With large systems it becomes particularly important to have remote operation control, an instrument through which the manufacturer can view the user's machine room from its offices, to contribute to the correct operation of the systems and, more importantly, prevent shutdowns. With large systems installed around the world and knowing that this kind of instruments cannot be handled by any technician, it has become more important to come up with a form of remote control.



Example : centralizes suction system

CATTANI S.p.A.

Via Natta, 6/A - 43122 Parma - Italy - Tel. +39 0521 607604
 SALE DEPT. FAX: +39 0521 607628 - PURCHASING DEPT. FAX: +39 0521 607855
 ACCOUNTING DEPT. FAX: +39 0521 399966
<http://www.cattani.it> Email: info@cattani.it PEC: cattani@peclife.it

Codice Fiscale e Partita I.V.A. 01720020344 - E.E.C. VAT IT 01720020344 - Capitale Sociale € 1.549.800,00 I.V. - R.E.A. 173616
 Registro Imprese Parma n. 01720020344



The remote control via the internet uses a Web Server: with a simple setup the control unit, in case of serious problems, will send the operation data to the technician in charge who will be able to remotely intervene to make the necessary changes. Clinic operators who need to monitor the system, such as the technical department and technical service of the clinic, the system manufacturer or whoever has been supplied with the password, can connect via modem and check the operating conditions of the suction system and compressed air distribution.

Study and research have led us to change the suction system and compressed air system for dentistry. We trust we have given a significant contribution to the dental profession, combining high technology with energy saving.

Cattani S.p.A.

CATTANI S.p.A.

Via Natta, 6/A – 43122 Parma – Italy – Tel. +39 0521 607604
SALE DEPT. FAX: +39 0521 607628 – PURCHASING DEPT. FAX: +39 0521 607855
ACCOUNTING DEPT. FAX : +39 0521 399966
<http://www.cattani.it> Email: info@cattani.it PEC: cattani@peclife.it

Codice Fiscale e Partita I.V.A. 01720020344 – E.E.C. VAT IT 01720020344 – Capitale Sociale € 1.549.800,00 I.V. - R.E.A. 173616
Registro Imprese Parma n. 01720020344

**AZIENDA CON SISTEMA DI GESTIONE
PER LA QUALITÀ CERTIFICATO DA DNV
= UNI EN ISO 9001:2008 =**