Sanding

Flexible Solutions for

# Wide Belt Sanding Machines


## S6 CCT 1350

CALIBRATING, SANDING Machines

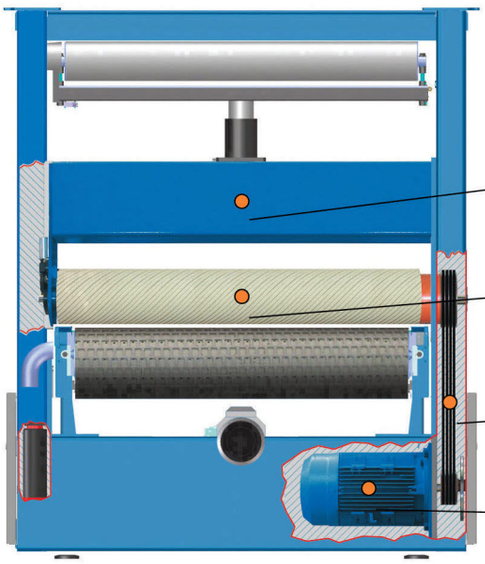
↳ CT / CCT / CTT

COSTA LEVIGATRICI

Wide belt Sanding Machines

# Frame

The rigidity of the structure is essential to guarantee a perfect process of the panels.



Large beam for supporting the working unit and the tensioning system

Working unit totally adjustable on right-left sides to reset parallelism.

4 V belts for transfering up to 37 kW, with mechanical tensioning system

Main motor (max 30 kW) with pneumatic disk brakes, inside machine frame for lowest noise emmissions

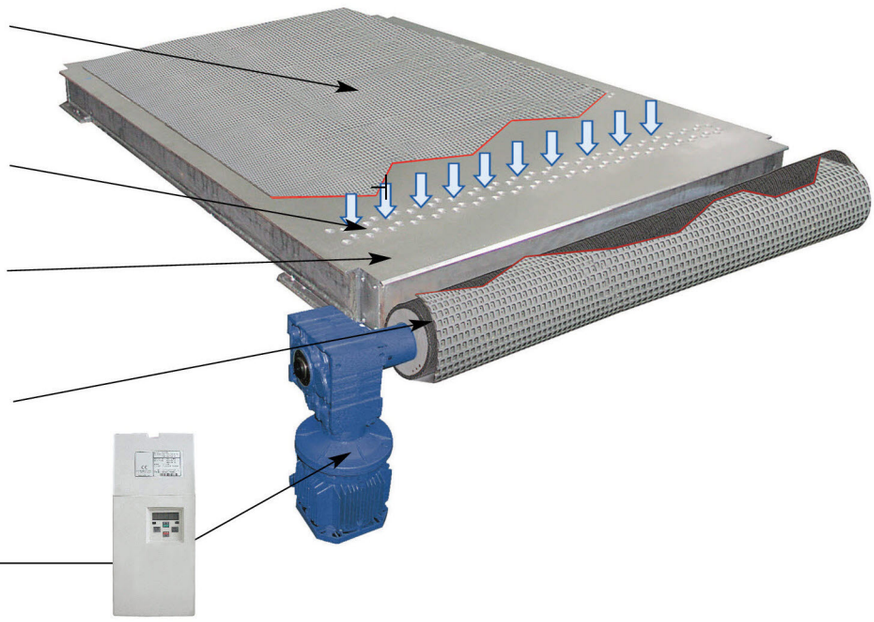
# Feed system designed for heavy duty purposes and long lasting

Rubber feed belts with 3 layers of cloth without joint, for best surface planarity and longer lasting; thick rubber layer on top to allow many re-grinding operations over the years of utilization.

Vacuum intakes positioned under the working units to diminish the requirement of vacuum-power and to concentrate the vacuum pull only where needed.

T1 Steel feed-table with surface hardness of 260 Brinnel for longest lasting grinded to fine finish to prevent internal wearing of the feed belt.

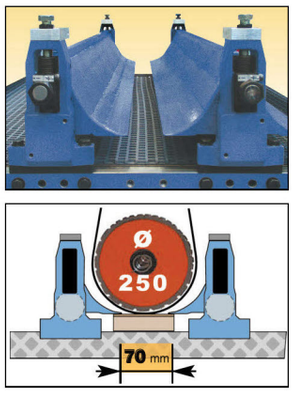
Large driven traction roller for wide contact area, not to stress the feed belt - traction roller rubber covered to increase the capacity of traction and to avoid sliding (that can deteriorate the feed belt).

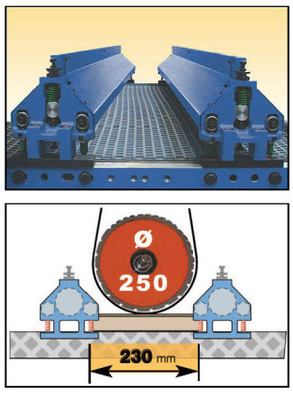


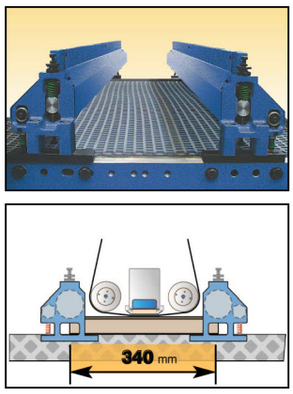
Feed speed variation controlled by inverter from **3** m/min to **20** m/min

# Pressure units

The safe traction of the work-pieces is determined by the rigidity of the pressure units; at same time these units must be able to adapt to thickness variations of work-pieces, this is the reason why we link them with springs/pneumatic pistons to the machine frame, to be rigid or flexible depending on mode of utilization (calibrating or fine veneer-lacquer sanding).



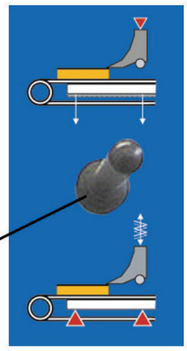



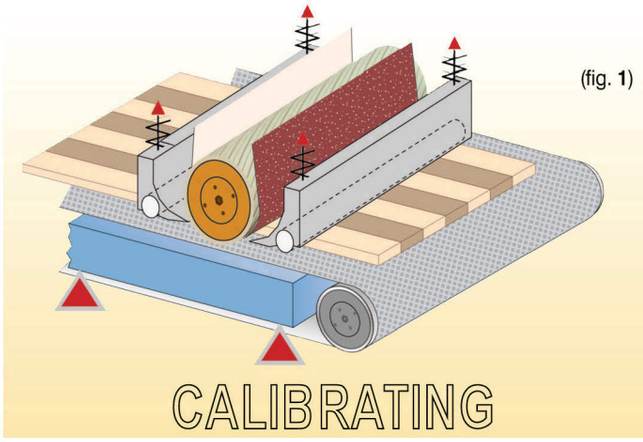



# Multifunction feed table: Rigid / Floating

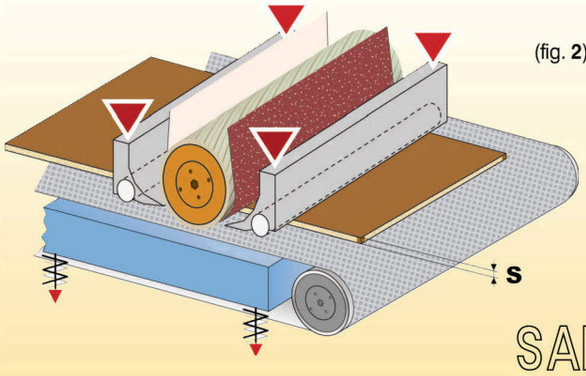
In calibrating mode (fig. 1) the feed table must be rigid to assure a high level of thickness tolerance of the processed workpieces, while the pressure units are free to float.

In veneer/lacquer sanding operation (fig. 2) the pressure units are set rigid and the feed table works in a floating mode. - This type of setting allows the levelling of different panel thickness (D) up to a maximum of 2 mm (fig. 3).
Setting operations of feed table and pressure units are automatically made by a quick set device.

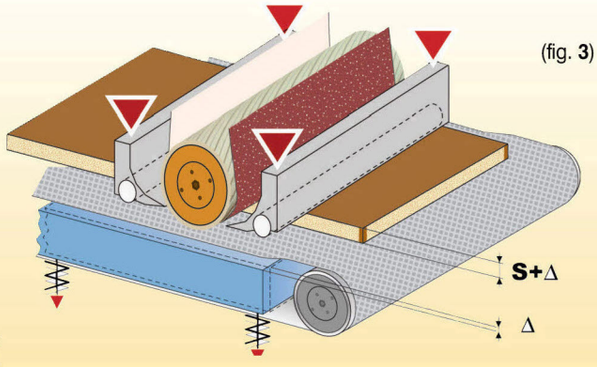





(fig. **1**)




(fig. **2**)

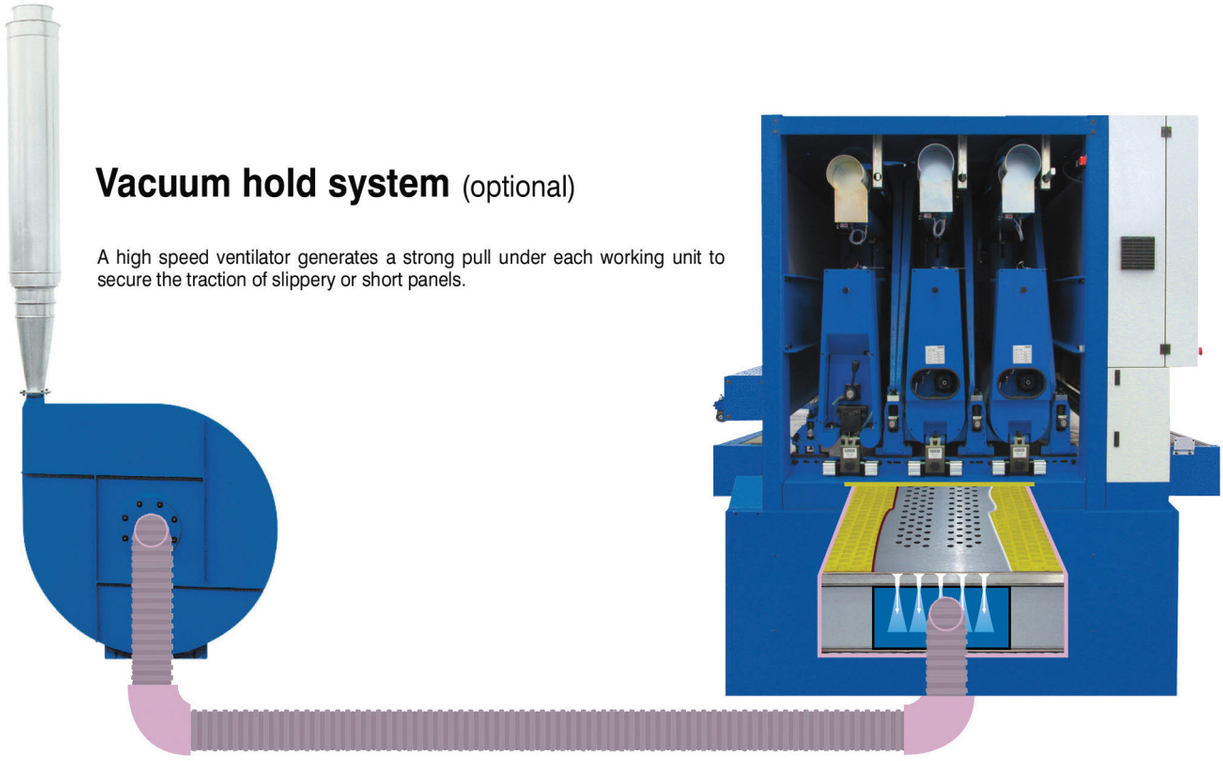


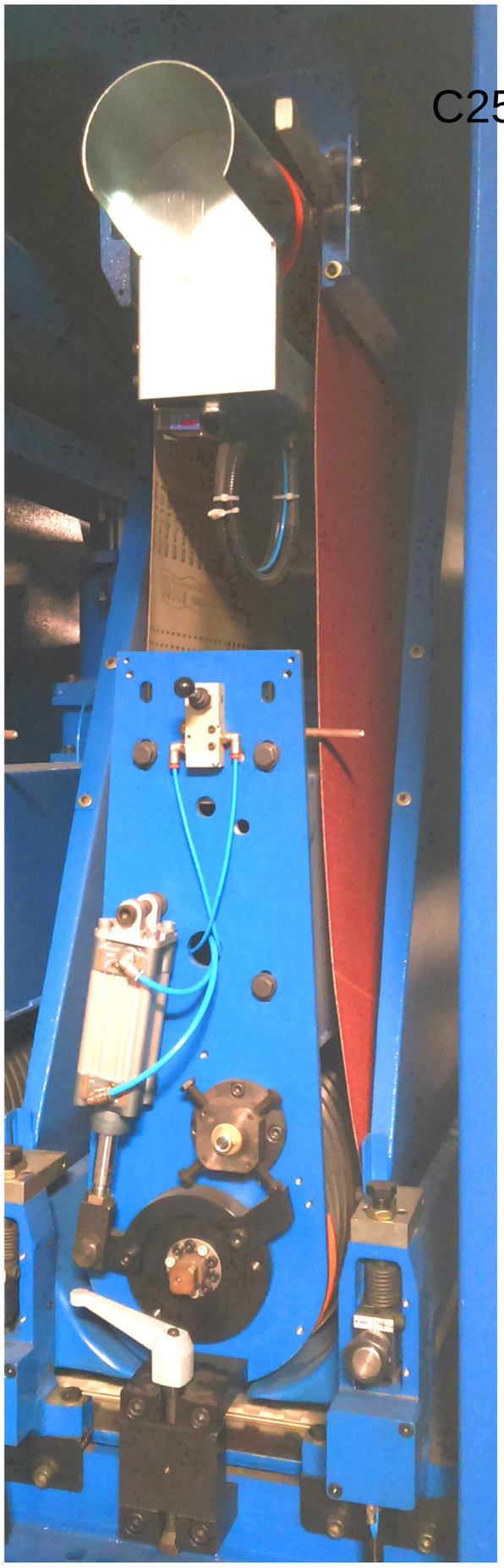

(fig. **3**)

SANDING

## Vacuum hold system (optional)

A high speed ventilator generates a strong pull under each working unit to secure the traction of slippery or short panels.





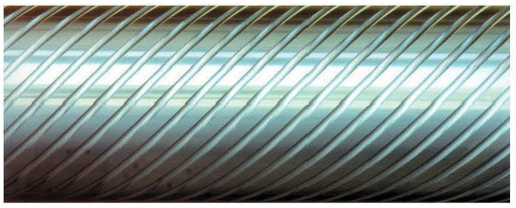
# C25

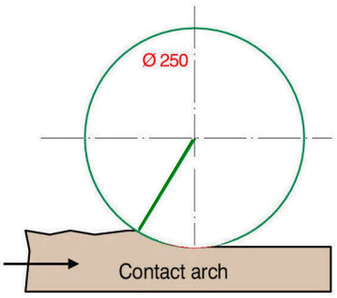
## C25 - Cylinder

You can have rubber covered or steel surface cylinders depending on utilization at same cost.

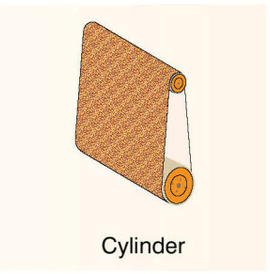
The rubber hardness determines the level of adaptation of the sanding action of the cylinder on the panel surface in white-wood/lacquer sanding operations.

A soft rubber covered cylinder has more adaptability to the unevenness of the surface therefore is preferred for veneer-lacquer sanding operations, while a hard rubber cylinder has less or no adaptability to the surface (thus better for calibrating operations).






For calibrating a smaller diameter cylinder is more aggressive, the angle of contact is more open, the surface of contact is narrower, this means less fritction and more take away.

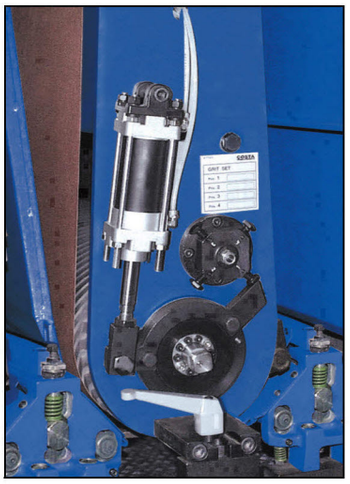



**GSE** Electronic Grit-Set (optional)

Centesimal positioning of the working level of the cylinder unit.
Exclusion of cylinder in emergency (stand-by)

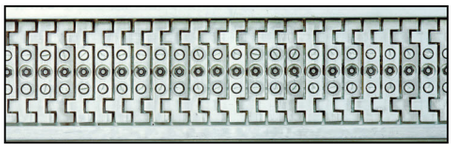
**GSP** Pneumatic Grit-Set (optional)

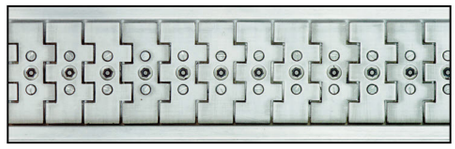
To position by pre-set steps the working level of the cylinder unit. - Exclusion of cylinder in emergency (stand-by)



# CA - Electronic controlled sectioned pads

This is the classic sanding unit for finishing the surface; they give an ideal protection of edges and corners of panels; the wide surface of contact is giving a flat look to the work-pieces surface. The sectioned pads with electronic control of the timing of intervention and of the pressures of utilization can compensate thickness and planarity differences up to 2 mm.



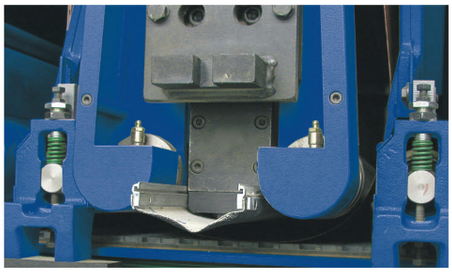


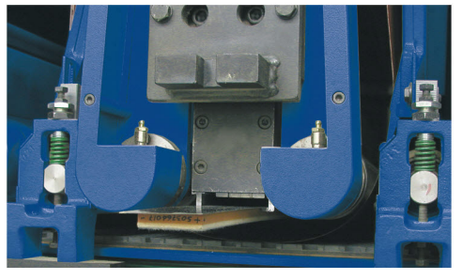
## CA 16

pitch of sections 16 mm
n° 84 sections with a working width of 1350 mm

## CA 32

pitch of sections 32 mm
n° 42 sections with a working width of 1350 mm

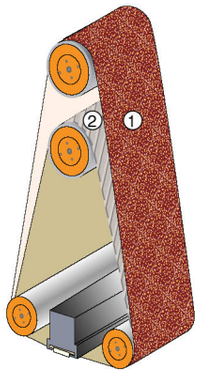




Quick - easy change of graphite cloth and inspection of the felt-rubber and of the steel blade inserts

# TSF - Superfinish unit

The working pressure of the pad sections is applied onto the abrasive belt through an intermediate lamellar belt (running at different speed than that of the belt).
This sequence of homogeneous pressure application assures an higher level of surface finish thank to the contact of the felt lamellas on the abrasive belt, preventing the transmission of scratches or defects (caused) by the graphite cloth. This "superfinishing" process assures a very homogeneous surface finish even with very fine grit belts, a result very important in the staining process, thank to the high uniformity of absorption of the stain in the surface.





The Superfinish unit requires the abrasive belt length of 2620 mm (1).
The lamellar felt belt (2) has a length of 2120 mm.

The lamellar belt gives further advantages:

- the air flow between the felt stripes of the lamellar belt cools the abrasive belt;
- it is possible to utilise pads wider than normal;
- utilizing lamellar belts with different ratio full/empty of the lamellas, it is possible to diversify the finishing of the surface;
- thank to the independency of the tensioning and tracking systems, in case of necessity we can take out the lamellar belt and work with the sanding belt only.

Both the lamellar and the abrasive belts have their own tension system independent one another (to be able to work also without lamellar belt, just with a standard sanding belt)

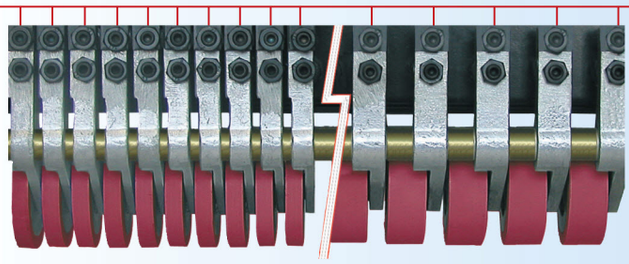
The pneumatic control are positioned in the sanding belt insertion side.

# Finishing Units of Series S sanding - K calibrating

**ELECTRONIC CONTROLLED SECTIONED PAD COMPLEX : THE MECHANICAL INFEED SENSING BAR**

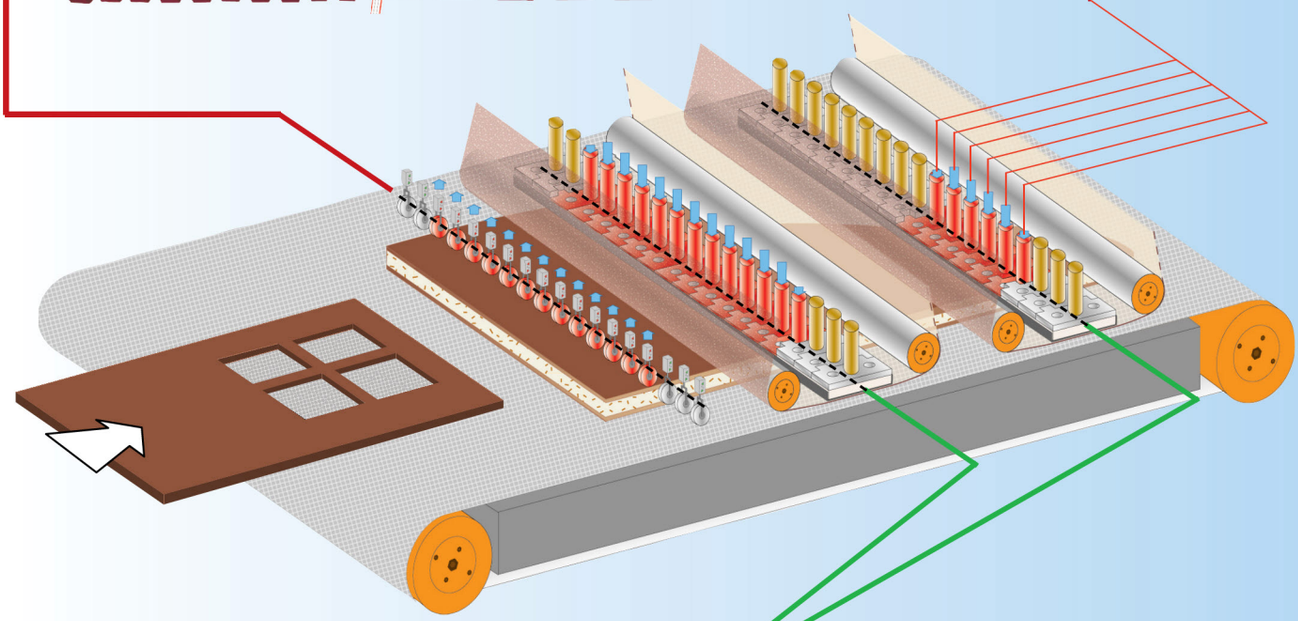
An in-feed sensing bar detects form and size of work-pieces; we utilize a MECHANICAL sensing bar ( to avoid problems of sensing the feed belt when processing thin work-pieces or rounded edges giving wrong positions) constituted by special long lasting "vulcolan" covered wheels, all set at 1 mm below the thickness set for the work-pieces in the machine ( the pre-load is of course adjustable). - The contact of each wheel with a pannel gives a signal ON to its related inductive proximity switch ( there is no phisical contact, therefore no wearing ) and the input signal is received and elaborate by the main electronic control of the pads that is giving the out-put signal to each pad-section when it is time to activate, considering also the hysteresis between the electro-valve and the delay of the time of movement of the single pad.
The pitch between the wheels on our sensing bars can be of 8 - 16 - 32 mm respectively for the bars TB 08 - TB 16 - TB 32
Of course the smaller the pitch the more accurate will be the definition of actual dimensions of the work-pieces, therefore allowing the system to determine with much higher accuracy the position and the pressure of contact of the actual pad sections.

## INFEED SENSING BARS TB 08 - TB 16 - TB 32

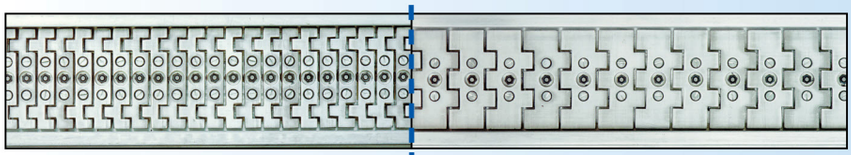


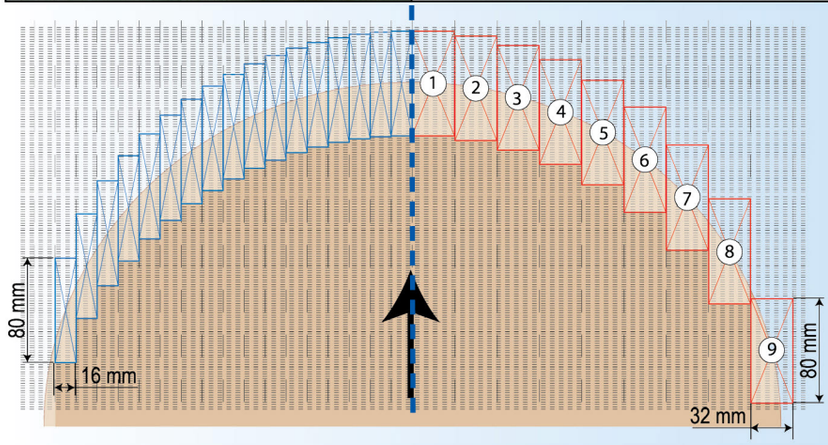
**ELECTRONIC CONTROL CARD**

Is superintending the processing of the incoming signals from the in-feed sensing barrier and is elaborating the timing and even the pressures (by activating different lines of electrovalves) of the various sections of the pads.



## SECTIONED PADS CA 16 - CA 32






**ACCURACY OF SANDING OF THE SECTIONS**

The scheme shows what is "visualized" by the electronic card, that is looking like a net with 1 mm of height (in the sense of the feed direction) , and a width that of the pads, 16 or 32 mm.

This is the level of accuracy of the pads in relation to the dimension and to the form of the work-pieces.

We can see how, by having narrow pads, the resolution of entry in angled panels gets better and better, very much improving the sanding results in the edges.

Our experience is favoring narrower pad sections working at constant pressure to sophisticated pressure controls (that may leave streaks of different finish on the panels surface)

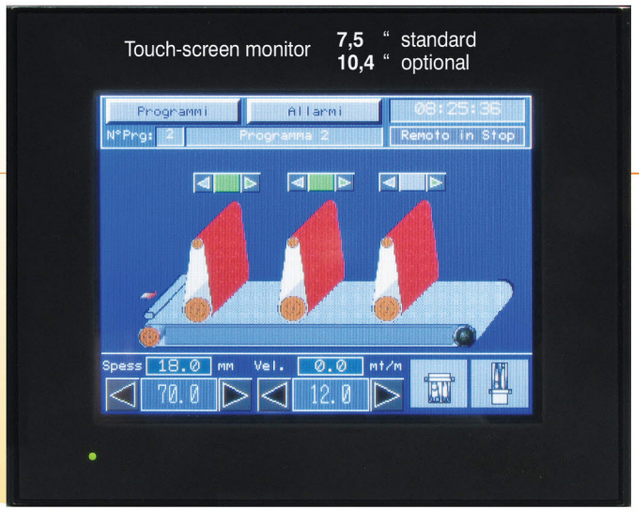
# Series S sanding - K calibrating: Accessories & Options

## Oscillating blowers (standard)

Oscillating air jet blowers for sanding belt cleaning, with high efficiency jets.

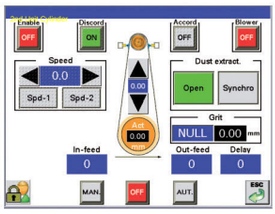
## Electromechanical Panel

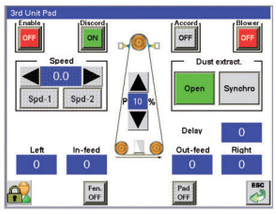
Control panel positioned in front of the machine, with push-buttons for all motors and amp-meter readers of power utilization of the working units. Digital positioner with read-out of the thickness adjustment with decimal accuracy.
Range change switch for the variation of the feed speed. Diagnostic leds of electric-pneumatic-safety problems.
Emergency stop and reset.




## PLC VISION (optional)

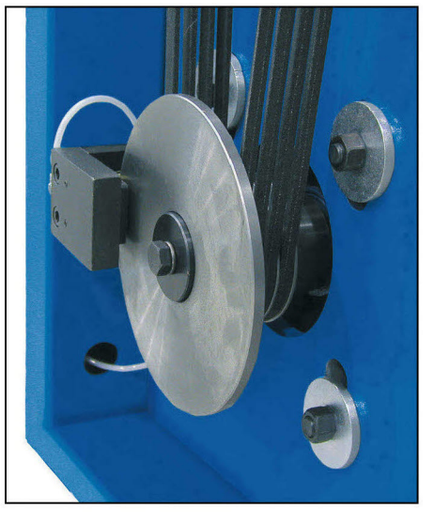
The PLC panel VISION enable the visualization in a touch-screen monitor of the actual setup data and operation settings of the machine, to be filed in a number of complete working programmes.






The PLC contains a number of pages each for a machine function, that can be included in working programmes, to store and recall with own codes.



## Disk brakes

Pneumatic operated disk brakes to stop the working units within few seconds from emergency.

## Sanding belt oscillation system

Sanding belt oscillation system with electronic dual-photocell.
Complete with safety micro-switch to stop the machine in case of misalignment or breakage of the abrasive belt .

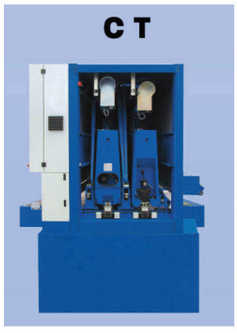
### *Main technical data*

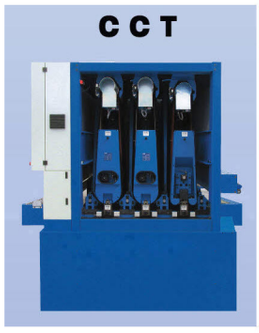
| | | |
|---|---|---|
| Longitudinal sanding belt dimensions | 1380 x 2620 | [mm] |
| Useful working widths | **1350** | [mm] |
| Standard machine opening | 3 ÷ 160 | [m/min] |
| Feed speed of calibrating machines | 3 ÷15 | [m/min] |
| Feed speed of sanding machines | 4 ÷ 20 | [m/min] |

### *Air volume required for each unit*

| | ø outlet | 20 | 24 | 28 | [m/s] |
|---|---|---|---|---|---|
| Each longitudinal working unit | 160 [mm] | 1447 | 1737 | 2026 | [m³/h] |
| Each F250/350 - S18/25 - SB18/25 | 160 [mm] | 1447 | 1737 | 2026 | [m³/h] |

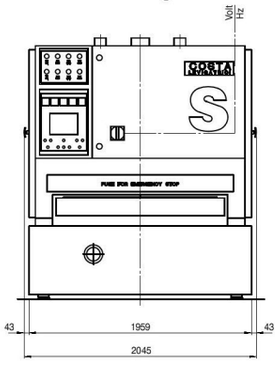
## Base frame for 2 / 3 internal units



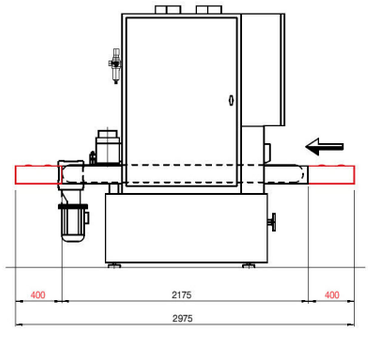





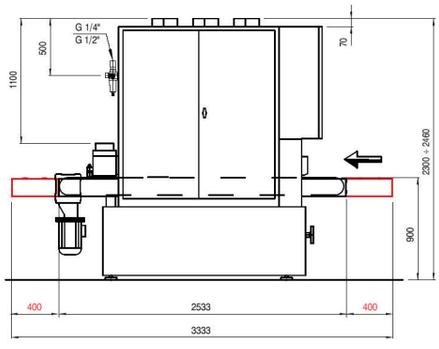
***Machine with Longitudinal units***




*version with 2 working units*




*version with 3 working units*




We reserve the right to change features without any notice.

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