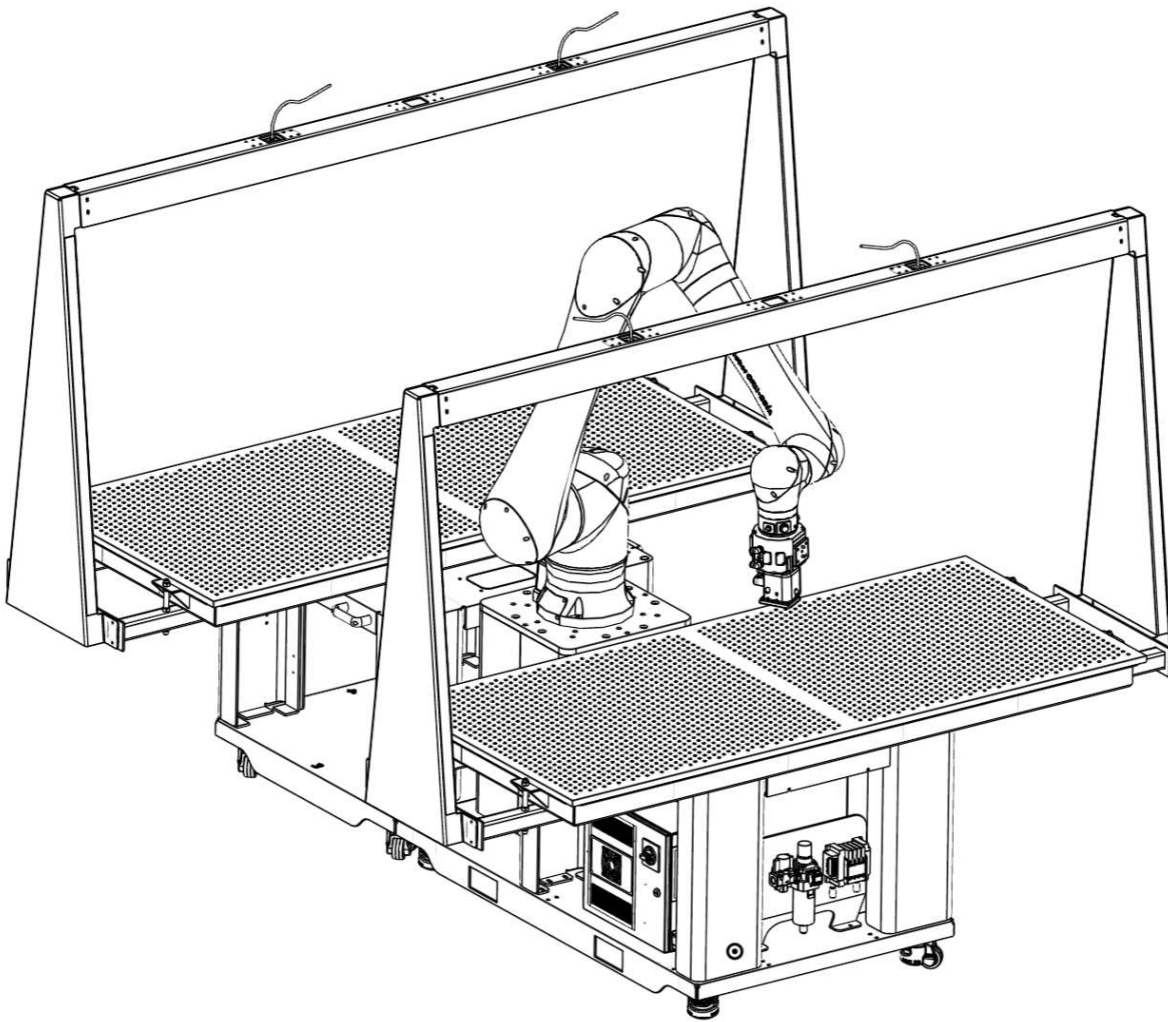


Features Guide



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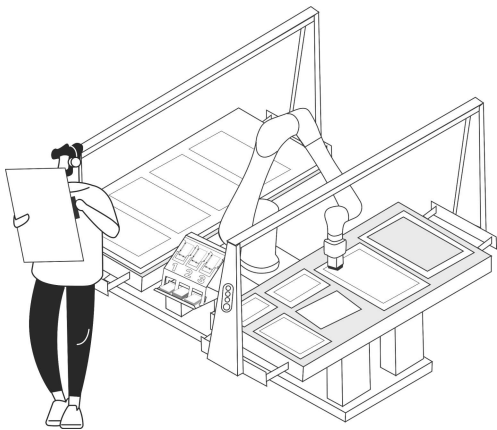
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OPTIMIZE YOUR PRODUCTIVITY

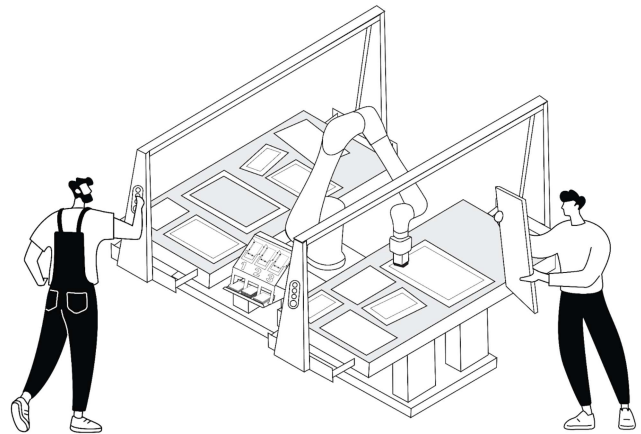
There is no one way to use the **PANEL SANDING ASSISTANT**. Regardless of your types of operations, the **ASSISTANT** is flexible and adapts to your business reality. In order to optimize your productivity, ensure you give your new **ASSISTANT** the most tasks to accomplish so that it is always in operation and avoid downtime.

With a single resource, it can be possible to occupy 2 **ASSISTANTS** at full capacity. When your **ASSISTANT** is in operation, the operator performs secondary tasks and supervises the quality sanding. In addition to this new automated sanding cell which will increase your productivity, your employees will be valued and will give you better performance.

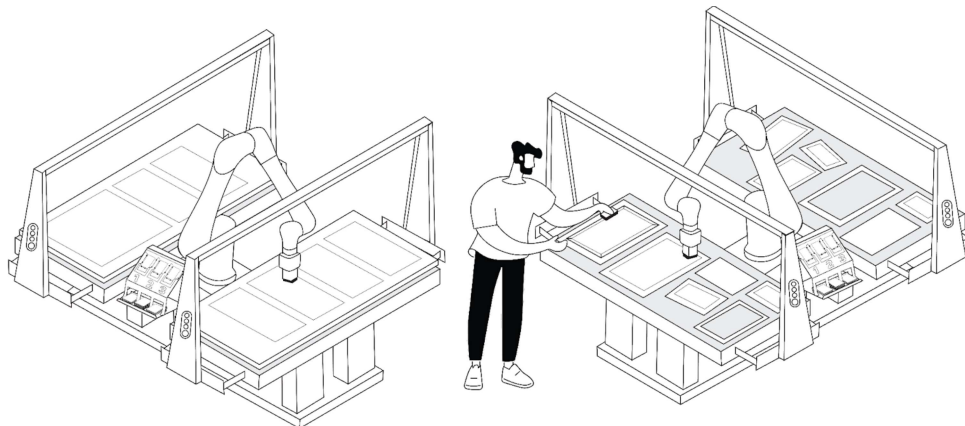
Here are some sample scenarios possible with the **PANEL SANDING ASSISTANT**. Sanding of MDF or hardwood with or without finishing coat, solid panel, grooved, with central panel or only the frame... The **ASSISTANT** allows you to perform sustained quality sanding for panels up to 80"x36 " (203.2 cm x 91.44 cm) in size.



An operator can occupy an **ASSISTANT** at full capacity on a daily basis in addition to performing related and varied tasks.



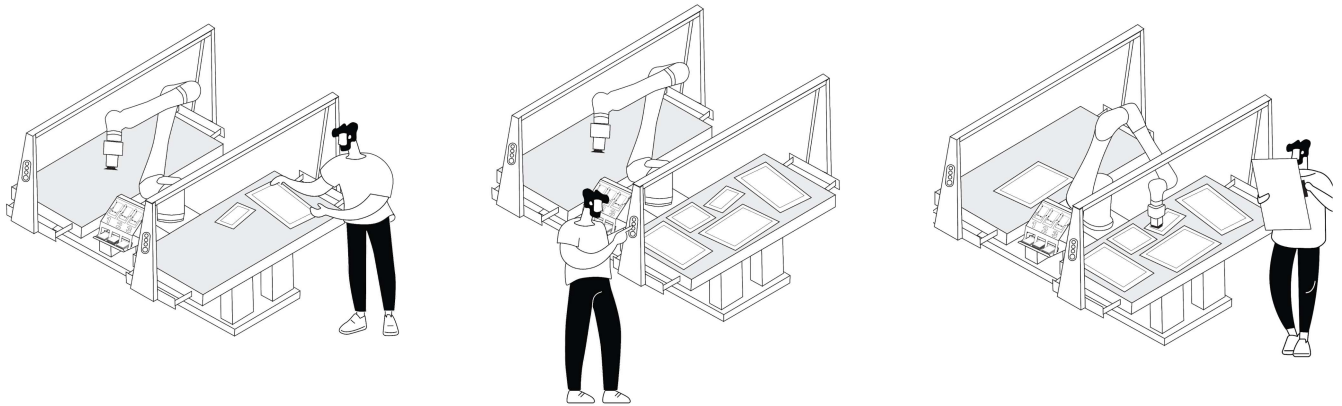
More than one operator can increase their output with the help of the **ASSISTANT**.



An operator can occupy two **ASSISTANTS** at full capacity on a daily basis in addition perform some related tasks.

GUIDE TO MAIN OPERATIONS

Normal operating mode.



Step 1
Place the panels
on the table

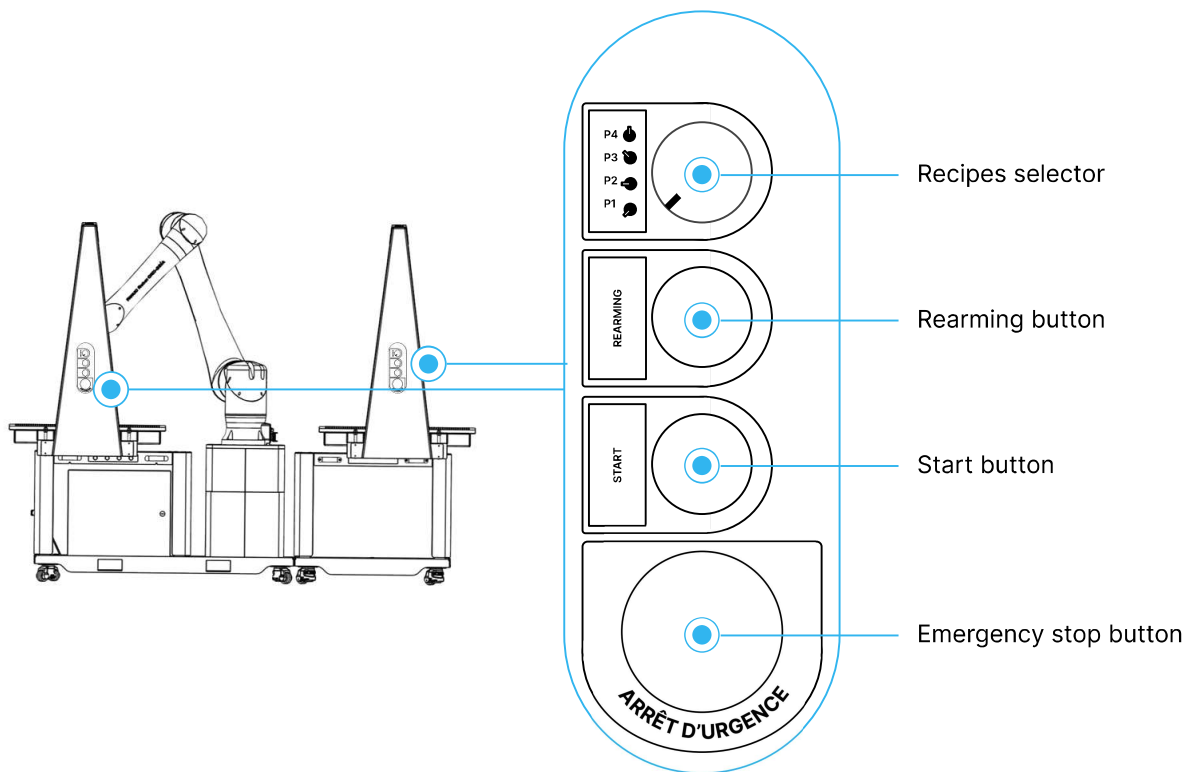
2nd step
Start the operation
sanding

Step 3
Perform secondary operations
and clear the table for the next
cycle.

Main control panels

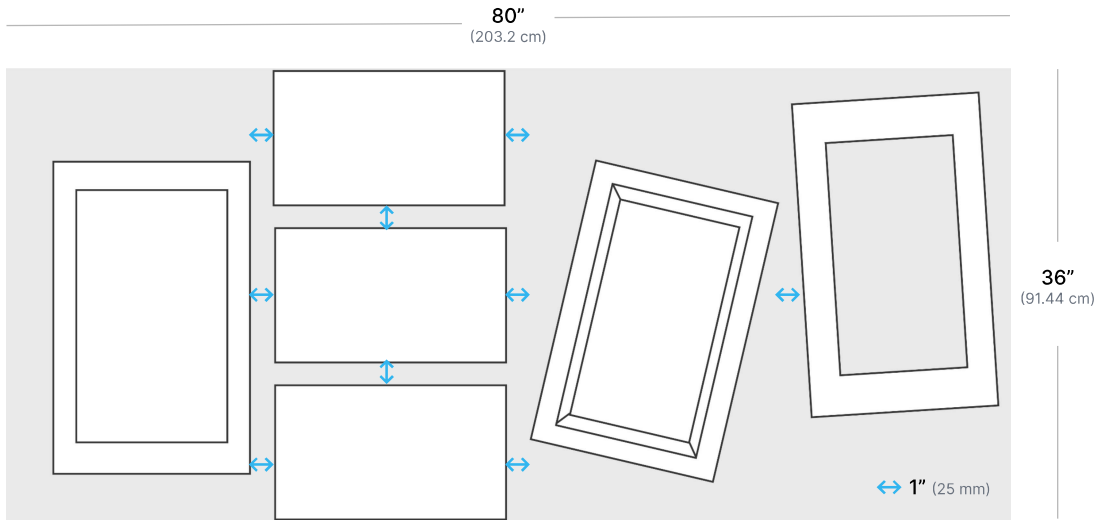
Each of the tables possesses its own control panel. The control panels are magnetic, it is therefore possible to move them according to the convenience of the user.

Each control panel allow launch separate operations on each of the tables.



Step 1: Place the panels on the table

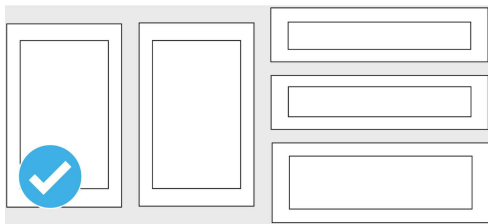
Each table is equipped with two 3D cameras. The **ASSISTANT** will capture all the panels present on the surface of the 80"x36" (203.2 cm x 91.44 cm) table.



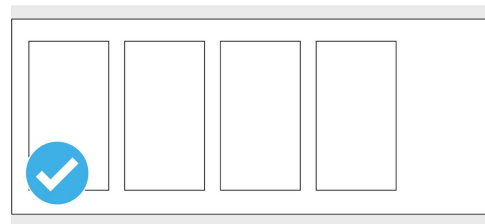
Exemple de disposition sur une table

A space of at least 1' (25mm) between the panels must be preserved in order to allow the sanding of the leaves. This space is also necessary for optimal 3D capture. Apart from the clearance between panels:

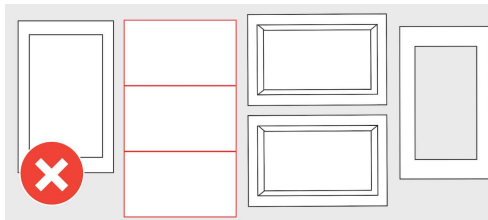
- No restrictions on orientation or the layout Signs.
- Panels should not extend beyond the work area.
- All different types of panels can be treated simultaneously. Shaker type panel, solid panels, frame only (see examples of supported panels).
- You can place one or as many panels as you want condition to respect the previous rules.



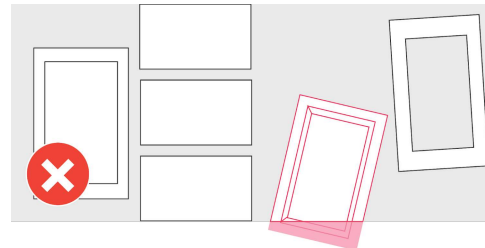
Example of optimized layouts



Example of optimized layout

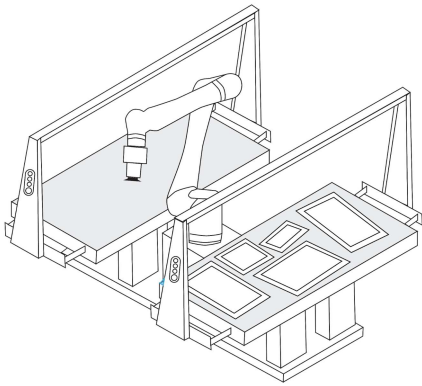


If the panels are glued together, the **ASSISTANT** consider as a single panel

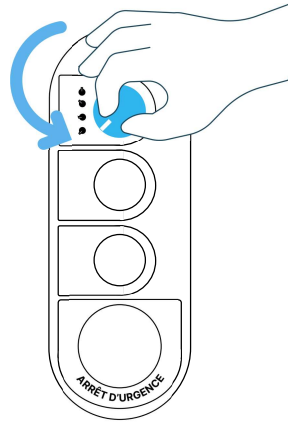


The panels must not protrude from the table

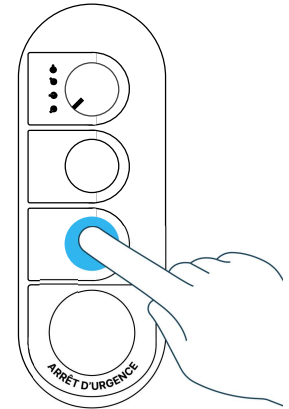
Step 2: Start the sanding operation



Make sure your panels are positioned correctly



Select desired sanding recipe



Start the sanding operation

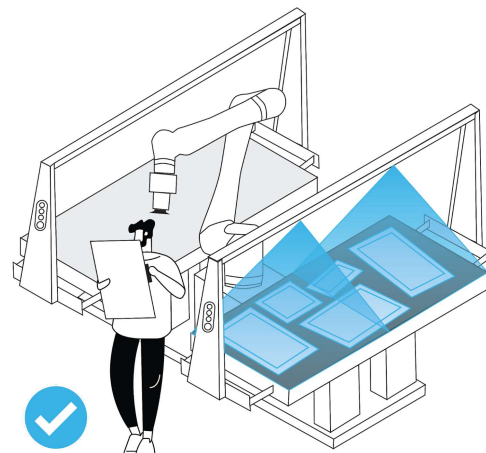
Starting the sanding operation

As soon as the start button is pressed, the system suction is activated to immobilize the panels. The **ASSISTANT** captures the panels to get their dimensions and location on the table. From the data collected the **ASSISTANT** will program itself and carry out the most optimal sanding sequence. It is important not to obstruct the view of the cameras and not to move or add panels during and after this step.

During 3D image captures



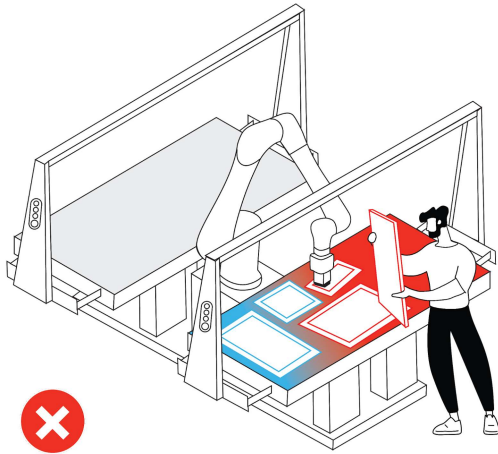
It is important not to obstruct the view of the cameras and not to move or add panels during the capture of the 3D cameras.



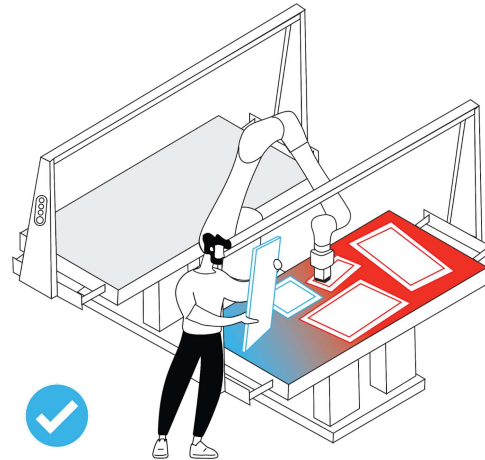
Take care of secondary tasks when the sanding operation is in progress so as not to compromise the 3D captures.

During the sanding operation

As soon as the **ASSISTANT** has finished sanding a panel, the operator can carry out its inspection and fine-tune its sanding if necessary.



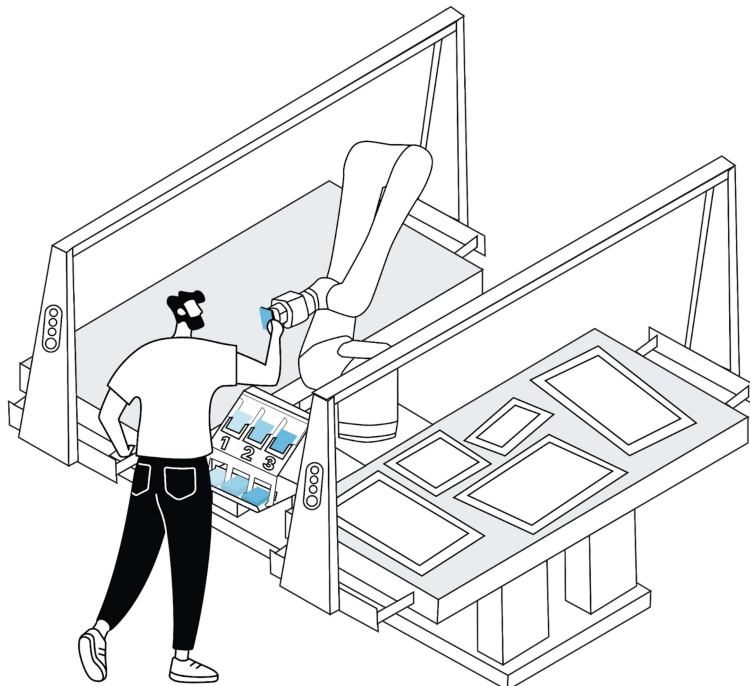
When the sanding operation is on course, it is important not to move the panels whose sanding has not been completed.

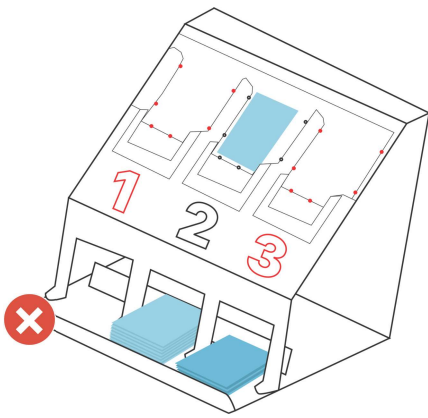


You can move or work on the panels as soon as their sanding has been successfully completed.

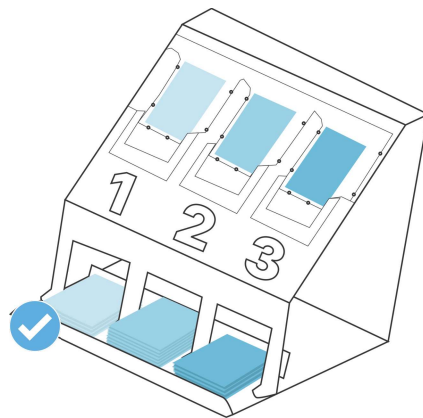
Change of media

At any time during the sanding operation, the **ASSISTANT** may notify the operator that it is time to change media, either because the media has arrived to the end of the cycle of its lifespan or when it must change that time to remove the media attached to the tool. The operator can then proceed to remove and dispose of the media. The **ASSISTANT** will take care of selecting and fixing the corresponding media. To do this, the operator must always ensure that the media are available in sufficient quantity in the receptacles provided for this purpose.





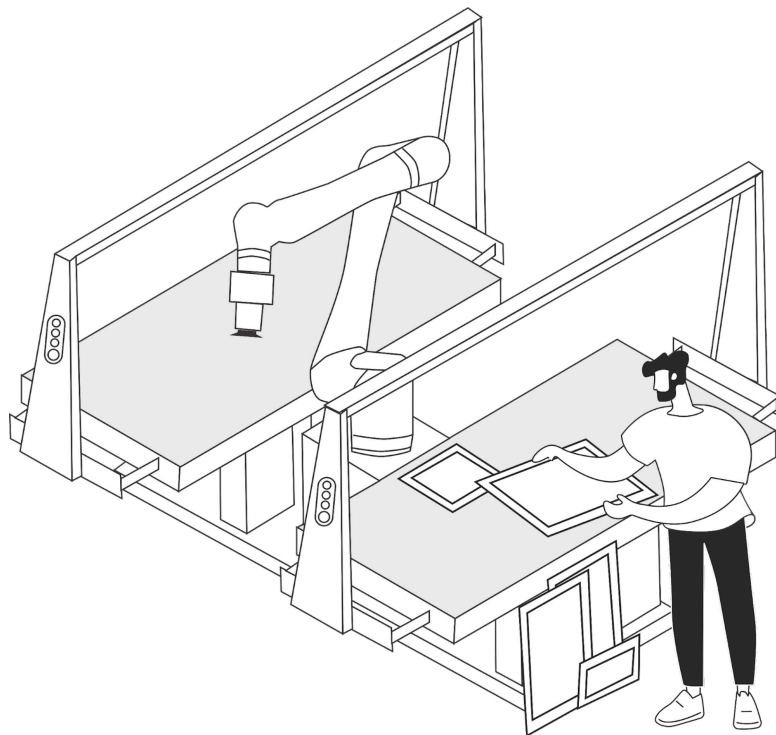
Receptacles should never be leave in quantity insufficient.



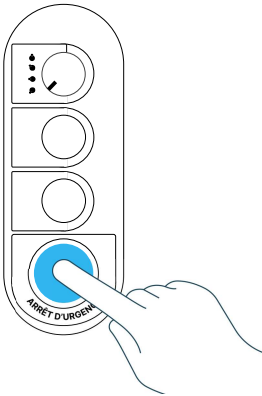
At all times, receptacles must be available in sufficient quantity to ensure seamless media switching.

Step 3: Clear the table for the next cycle

When the sanding operation is completed, the vacuum system will turn off to facilitate unloading. The **ASSISTANT** will return to its initial position or begins sanding sequences on the other table. At this moment, the operator can unload the table and add new panels to sand.

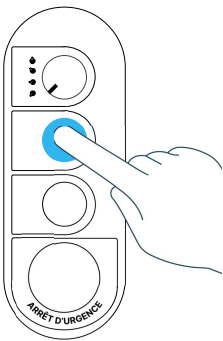


Reset and emergency stop



Emergency stop

By pressing the stop button emergency, the **ASSISTANT** stops right away and abandons the sanding sequence in progress on the two tables. The vacuum system also turns off.



Rearm

After an emergency stop or an unexpected stop of the **ASSISTANT** (collision detection for example), this button is used to rearm the **ASSISTANT** and signal to interrupt the actions in progress. The **ASSISTANT** resumes then its initial position and will wait for new instructions from one of the two tables.

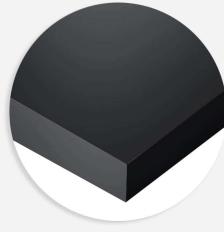
Types of materials supported



MDF brut



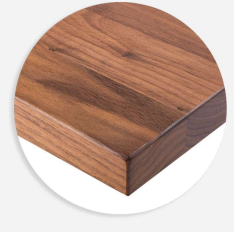
Primed MDF



Fine MDF



Raw wood



Varnished wood

Examples of supported styles

The size of the panel must be less than or equal to 80"x36" (203.2 cm x 91.44 cm)



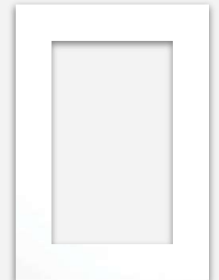
Flat panels



Flat center panels with raised flat frame. Corner or fine moldings must be sanded by hand.



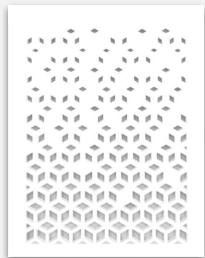
Flat center panels with raised flat frame



Frame only (no center panel)



dimension cavity (less than 92mm wide)



Perforated or grooved flat panels



Flat center panels with minimally raised thin flat frame



Multi-cavity panels with asymmetrical framing

Examples of unsupported styles

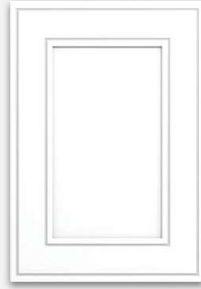
Panel sizes larger than 80"x36" (203.2 cm x 91.44 cm) are not supported



Cathedral or
fretwork panels



Shaped central
corner panels

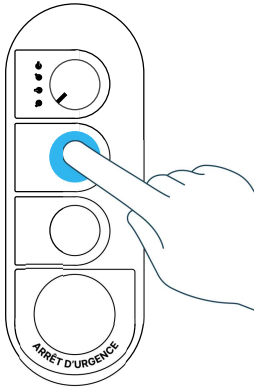


Raised flat frame
with molding

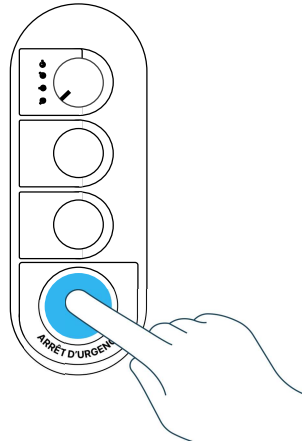
ASSISTANT REGISTRATION AND CALIBRATION

Procedure for registration and calibration for the **PANEL SANDING ASSISTANT**.

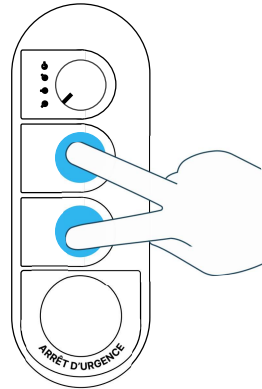
Enter setup mode



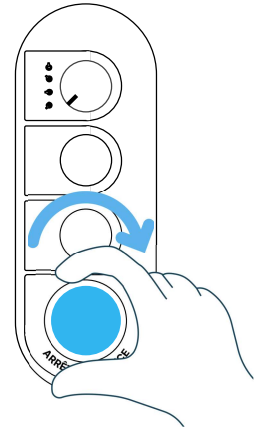
Push the button
reset



button tracking
emergency stop

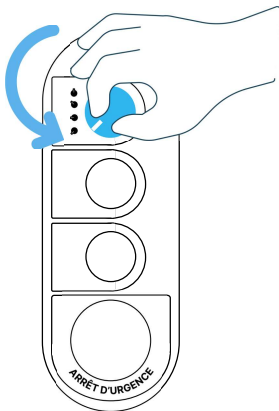


hold button
start-up and
reset during
5 seconds. Until the
lights flash

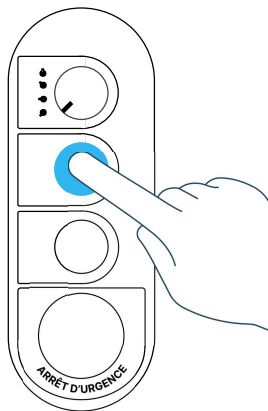


Activate the mode of
configuration by turning
the emergency button
to the right

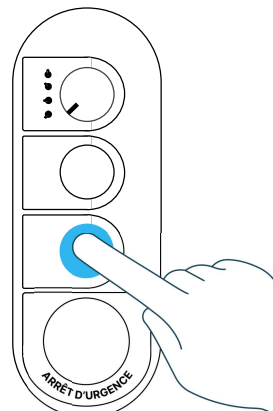
Registering the tool



Position the selector
revenue on position
number 1



Push the button
reset and wait 2
seconds



Push the button
to start for
start the tool registration



The **ASSISTANT** will
perform the tool
registration. Allow
approximately 4 minutes
for self-registration to
complete.

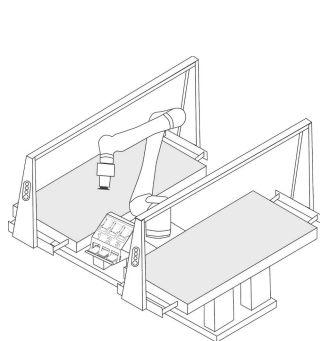
The tool registration is complete.

You can now exit setup mode or continue with the Registration and calibration for cameras on each table.

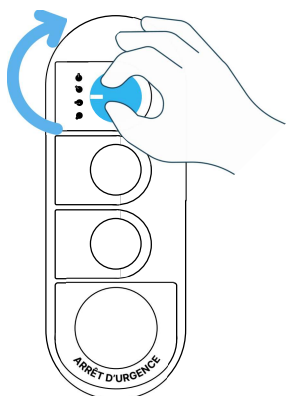
Register and calibrate the cameras

IMPORTANT: To Register and calibrate your cameras you'll need to proceed step 1 to 3 on each table.

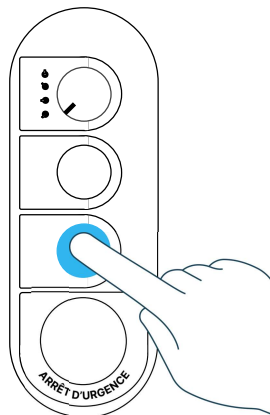
Step 1: Camera registration for table 1 positioning



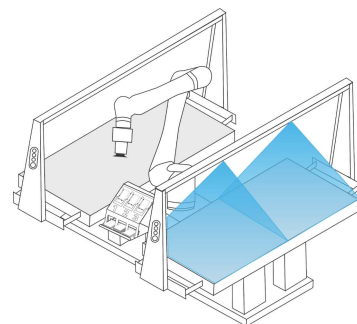
Before starting camera registration, make sure that there is nothing on the table 1.



Position the selector on position number 2

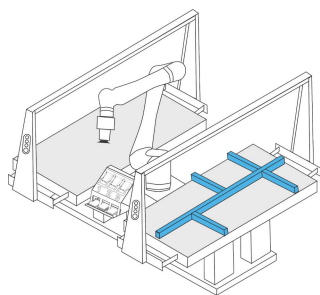


Push the button to start cameras registration on the table 1.

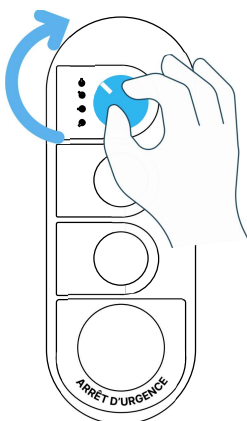


While the vacuum system running the cameras on table 1 will record images for reference. Wait until you heard the vacuum go off.

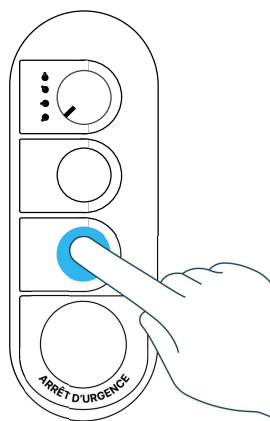
Step 2: Calibrate cameras on table 1



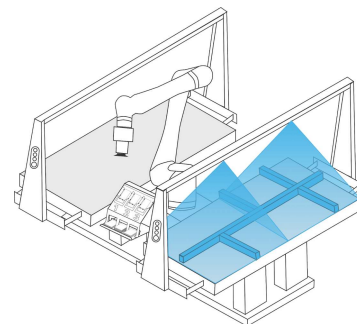
Insert the supplied calibration tools in the spaces provided on table 1.



Position the selector on position number 3

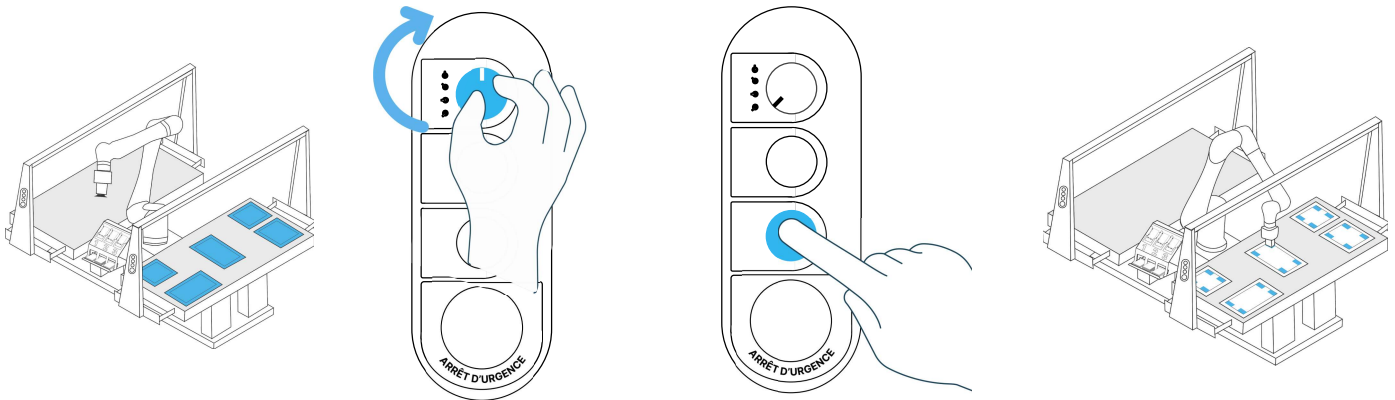


Push the button to start cameras calibration



While the vacuum system running the cameras on the table 1 will calibrate using themselves using the calibration tools in place. Wait until you heard the vacuum go off.

Step 3: Cameras registration with tactile probing



Place 5 panels with central panel in a way you cover each corner plus the center of the table

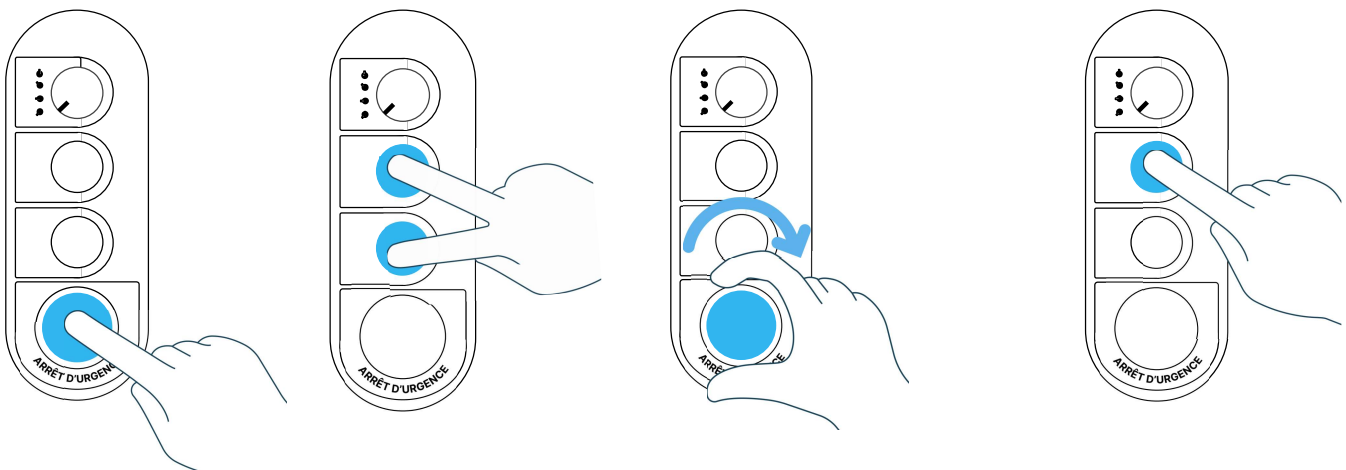
Position the selector revenue on position number 4

Push the button to complete the last step for the cameras registration

The **ASSISTANT** will proceed the tactile probing of each panel. Wait until the **ASSISTANT** finalize and reach his default position

The cameras registration and calibration for table 1 is complete. Make sure you repeat the Step 1, 2 and 3 for the second table.

Exit setup mode



Press the emergency stop button

hold button start-up and reset during 5 seconds, until the lights stop blinking

Exit configuration mode by turning the emergency button to the right

Finish by pressing on the reset button