



Optical sorter system manual

MISTRAL COMPACT

MAINTENANCE MANUAL

Printed on 100% recycled paper

M030-DOC004-EN - Rev. B

EN

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Chapter 5. Servicing



Regular servicing of the machine and devices ensures continuous and correct operation. It is carried out every day, every week or every month, depending on the component to be serviced. The components to be serviced are located in the following three assemblies: the control cabinet, the detection enclosure and the pneumatic system. Refer to the specific manuals for conveyor, output box and Turbosorter servicing.

The frequency and duration of maintenance operations depends on the usage and context of the machine. Tables below summarize servicing to be carried out with frequency and durations estimated by Pellenc ST for a "clean site". The operator will establish the right frequency for the servicing operations according to the use and surrounding environment (dust, particles in suspension, type of flow, etc.).

Servicing operations are listed in the following tables according to their frequency. These operations must be carried out regularly or at each shift change, according to the environment.

- ML = Machine electrical lockout
- CL = Conveyor lockout

Note that an electrical lockout of the machine does not produce a conveyor lockout. The latter must be provided by the integrator (example: padlockable disconnect switch on the conveyor power supply)

- PL = Pneumatic lockout

N°	Period	Task	Duration	Lockout before operation		
				ML	CL	PL
1	Daily	Clean the jamming sensors	5 min	-	X	-
2	Daily	Clean the windows of the reflectors and the detection box	5 min	-	X	-
3	Daily	Optional TurboSorter - jamming sensors	5 min	-	X	-
4	Weekly	Clean the ejection bar (manual maintenance)	15 min	X	X	X
5	Weekly	Clean solenoid valves (available with remote display option)	2 min	-	-	-
6	Weekly	Test solenoid valves (available with remote display option)	2 min	-	-	-
7	Weekly	Do the brightness detection test (available with remote screen option)	15 min	-	X	-
8	Monthly	Check the filters on the Air Handling System	5 min	-	-	X
9	Annual (or 2000 hours)	Replacement of reflector halogen tube	10 min	X	X	-
10	Annually	Have the electricity and pressurised equipment checked by an approved inspection body	2 hours	X	X	-

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Caution

All operations carried out on Pellenc ST equipment must be performed by competent authorised personnel.

Before any maintenance operations, make sure that the machine and the high speed conveyor are lockout.

Operators must never work alone, particularly during operations inside the output box.

5.1. Clean the jamming sensors



Caution



The integrator must ensure that the means for conveyor lockout are present and can be implemented (risk of collision with object or entanglement)



Important

The jam sensors detect a build-up of objects at the outlet of the high speed conveyor, which may cause the optical sorter to malfunction. They thus allow risks caused by this type of potentially dangerous situation to be eliminated by stopping the optical sorter if the detected jamming continues for more than 30 seconds. It is therefore essential to clean the 2 windows to avoid unexpected stoppages (e.g. caused by a label stuck to the glass).

Tools and protection required for the operation

- PPE



Protective gloves

- Maintenance products



Glass-cleaning liquid

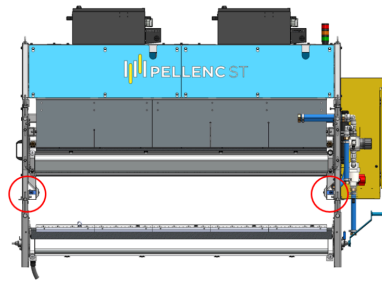


Soft cloth

Location

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Optical sorter stops while it is running

When the sensor beam is blocked for more than 30 seconds:

- The halogen lighting is switched off
- An information message is displayed on the screen: Jamming detected at nozzle bar
- A fault becomes active on the interconnection terminal block

Restarting the optical sorter

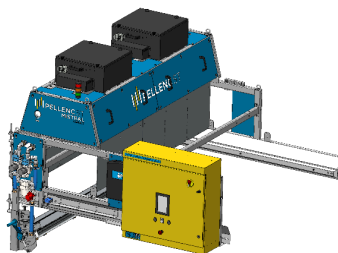
To resolve this fault:

1. Ensure the sensors are visible to each other
2. Acknowledge fault by pressing reset button on the front

Machine is ready for operation.

Maintenance steps

1. Lockout conveyor (see conveyor manual)
2. Open the protective cover with the special tool (double-bar key 3 mm)



3. Clean jamming sensor.



4. Test the jamming cell by simulating a jamming for more than 30 seconds (manually blocking the beam).

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5. Replace the protective cover, lock it and repeat these steps for the sensor on the opposite side.
6. When cleaning is finished, undo the conveyor lockout and reset the machine using the blue button on the screen.

5.2. Cleaning the reflectors and detection box



Caution



The integrator must provide the appropriate securing system for the personnel carrying out the operation (working at height with potential risk of falling). The integrator must also ensure that the conveyor lockout means are present and can be implemented.

Tools and protection required for the operation

- PPE



Use heat-proof gloves.

- Maintenance products



Scraper

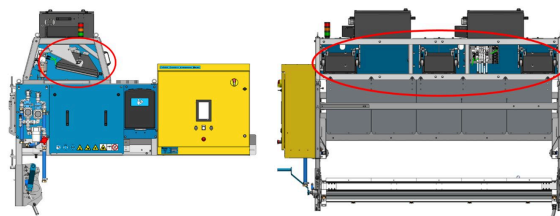


Glass-cleaning liqui



Soft cloth

Location



Maintenance steps

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1. Lockout the high speed conveyor, remove the rear covers.
2. Let glass to partially cool down at least 2 minutes* before starting the operation.

(*A reflector fitted with a 550W lamps cools down to 50°C in 12 minutes. A reflector fitted with a 750 W lamps cools down to 50°C in 18 minutes.)

3. Clean the reflector windows using a soft cloth. If necessary, use a suitable scraper to remove melted items stuck to the glass.
4. Clean the detection box windows using a soft cloth.
5. Return the covers and undo the high speed conveyor lockout.

5.3. Optional TurboSorter - Cleaning the jamming sensors



Caution



The integrator must ensure that the means for conveyor lockout are present and can be implemented (risk of collision with object or entanglement)



Important

The jam sensors detect a build-up of objects at the outlet of the high speed conveyor, which may cause the optical sorter to malfunction. They thus allow risks caused by this type of potentially dangerous situation to be eliminated by stopping the optical sorter if the detected jamming continues for more than 30 seconds. It is therefore essential to clean the 2 windows to avoid unexpected stoppages (e.g. caused by a label stuck to the glass).

Tools and protection required for the operation

- PPE



Protective gloves

- Maintenance products



Glass-cleaning liquid

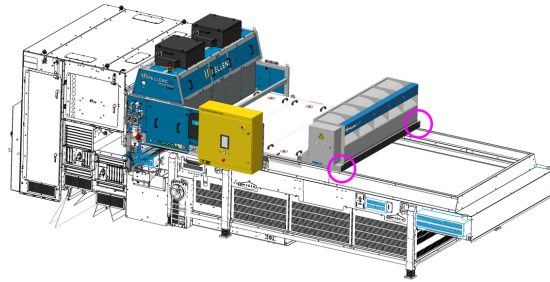


Soft cloth

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Location



Optical sorter stops while it is running

When the sensor beam is blocked for more than 30 seconds:

- The halogen lighting is switched off
- An information message is displayed on the screen: Jamming detected under the skimming bar
- A fault becomes active on the interconnection terminal block

Restarting the optical sorter

To resolve this fault:

1. Ensure the sensors are visible to each other
2. Acknowledge fault by pressing reset button on the front

The optical sorter is ready to operate.

1. Lockout conveyor (see conveyor manual)
2. Identify the sensors.
3. Clean jamming sensor.



4. Repeat these steps for the sensor on the opposite side.
5. Test the jamming cell by simulating a jamming for more than 30 seconds (manually blocking the beam).
6. When cleaning is finished, undo the conveyor lockout and reset the machine using the blue button on the screen.

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5.4. Clean the ejection bar



Caution



The integrator must provide the appropriate securing system for the personnel carrying out the operation (working at height with potential risk of falling). The integrator must also ensure that the conveyor lockout means are present and can be implemented.

The cleaning of the ejector bar must be done in the presence of a third person ensuring a visual control of the security.

Tools and protection required for the operation

- PPE



Protective gloves

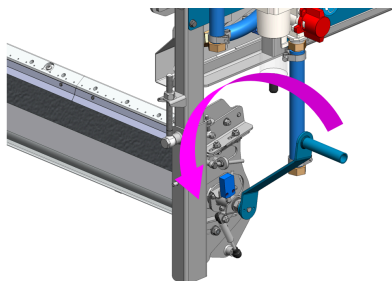
- Maintenance products



Scraper

Maintenance steps

1. If the option to retract the nozzle bar is present, put the nozzle bar into the maintenance position.



2. Place the conveyor in lockout (see: Conveyor manual)

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3. Lockout the pneumatics system
3. Go into the output box while respecting the safety recommendations (see: Output box instructions)
4. Clean the nozzle bar



5. Check that no objects are jammed between the conveyor and the nozzle bar
6. Leave the outlet unit
7. Lockout the conveyor (return the nozzle bar to the sort position and reset the machine, if applicable).

5.5. Cleaning the solenoid valves

Maintenance steps

1. Launch a cleaning of the nozzles via the application interface

5.6. Test solenoid valves (available with remote display option)

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Maintenance steps

1. Lock operation of conveyor
2. Launch a nozzle test. The test can be stopped. Each nozzle can be tested
3. Check that each faulty nozzle is not blocked
4. If the problem persists, change each faulty solenoid valve

5.7. Do the brightness detection test (available with remote screen option)



Caution



The integrator must ensure that the means for conveyor lockout are present and can be implemented (risk of collision with object or entanglement)

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Caution



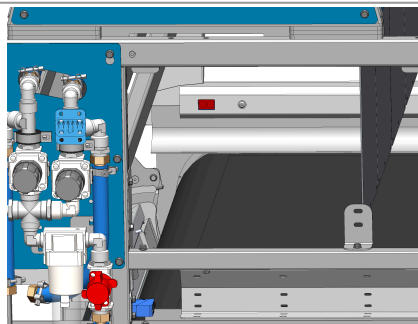
Class 2 laser, do not look directly into the beam

Protection required for servicing



Protective gloves

Location



Maintenance steps

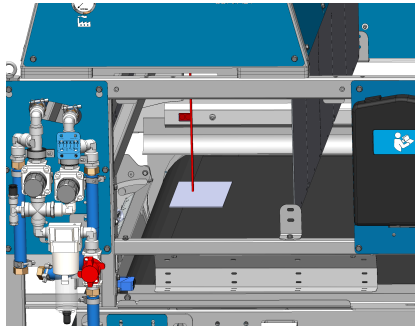
1. Lockout conveyor (see: conveyor manual)

Brightness test is performed with the help of the software. It is used to ensure that the optical sensors of the machine is correctly serviced.

2. Click on the following menus: Machine / Maintenance / Weekly.
3. Place a ceramic reference plate under each red dot on conveyor belt.

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The number of red dots depends on the width of the optical sorter

4. Close the hatch and reset machine by pressing the blue button on the front

5. Click the test launch button.

6. If all windows are shown in green, the test is OK.



7. If any windows are shown in orange, clean the corresponding window(s) and repeat the test.

8. If the image stays orange, replace lamp and repeat the test.

9. If the problem persists, call the Pellenc ST Customer Service

10. Remove the ceramic reference tile, close the hatch, unlock conveyor and reset the machine.

5.8. Check the filter on the Air Handling System

Protection required for servicing

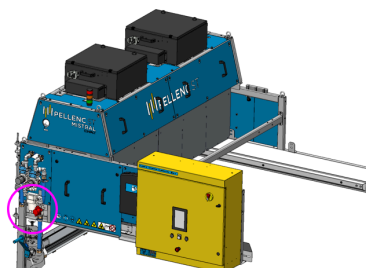


Protective gloves



Protective glasses

Location

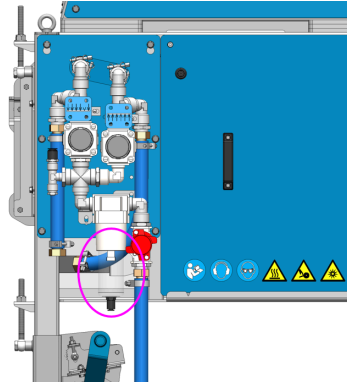


1. Lockout the pneumatics system

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2. Locate the air handling system and check that the condensation level does not exceed the maximum level



3. Dismantle the system to clean it. Push the latch down and turn the tank to remove it from its mount



4. Empty any contents and ensure there are no impurities inside
5. Repeat step 3 in reverse order to refit it
6. If the gauge fills up too quickly, check the condition of the coalescent filter.

Caution: if the maximum level is exceeded, the purge system is no longer working. In this case contact the Pellenc ST After-Sales department

5.9. Replacing lamp (annual or every 2000 hours)



Caution



The integrator must provide the appropriate securing system for the personnel carrying out the operation (working at height with potential risk of falling). The integrator must also ensure that the conveyor lockout means are present and can be implemented.



Important

Never touch the reflective panels with your fingers or even a cloth.

Protection required

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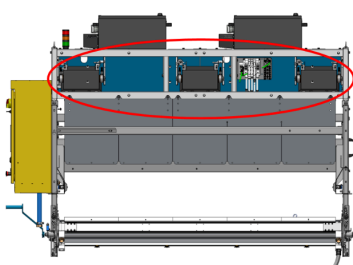
- Recommended PPE



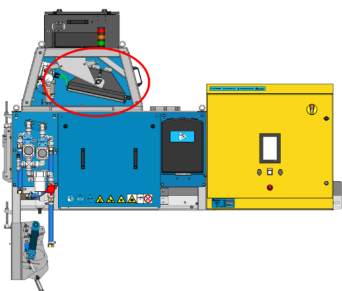
Heat-proof gloves

Location

Locate the reflector where the lamp needs to be replaced by doing a lighting test.

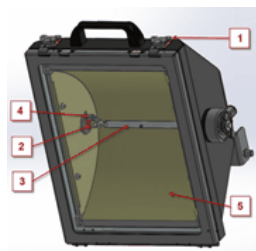


Front view



Left side view

Description of the reflector



1. Toggle clasp
2. Socket
3. Halogen tube
4. Tube indexing strip
5. Reflective panel

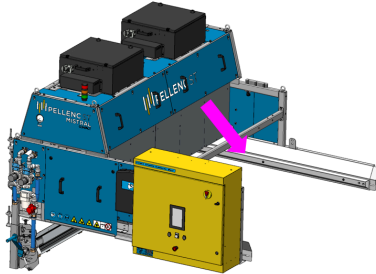
Width	Power	Quantity
800	750w	1
1000	750w	1
1,200	550w	2
1400	550w	2
1,600	750w	2
2,000	550w	3
2,400	550w	3

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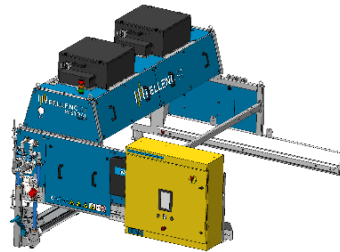
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2,800	750w	3
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1. Machine electrical lockout and high speed conveyor
2. Remove the flaps

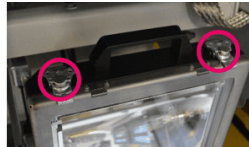


With flaps



Without flaps

3. Wait for the reflector lamps to cool down
4. Unlock the toggle clasp and open the window frame



Important

Hold the window and frame during rotation

5. Remove the halogen tube by pushing it against the mobile socket, as was done for the old halogen domestic lamps



6. Fit the new halogen tube by fitting the mobile end first, then pushing it against the fixed socket and check that it is correctly positioned



Use clean gloves for this stage to avoid touching the halogen tube with your fingers



7. Clean the inside of the window with window cleaner and a soft cloth
8. Check that the high-temperature seal is in good condition and correctly positioned
9. Close the window again, return the flaps and undo the high speed conveyor lockout.

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**Note**

If new lamp does not light up, replace the socket as well.

5.10. Electricity and pressurised equipment check**Important**

Have the electricity and pressurised equipment checked by an approved inspection body

These checks are performed annually to ensure that the machine is safe to operate.