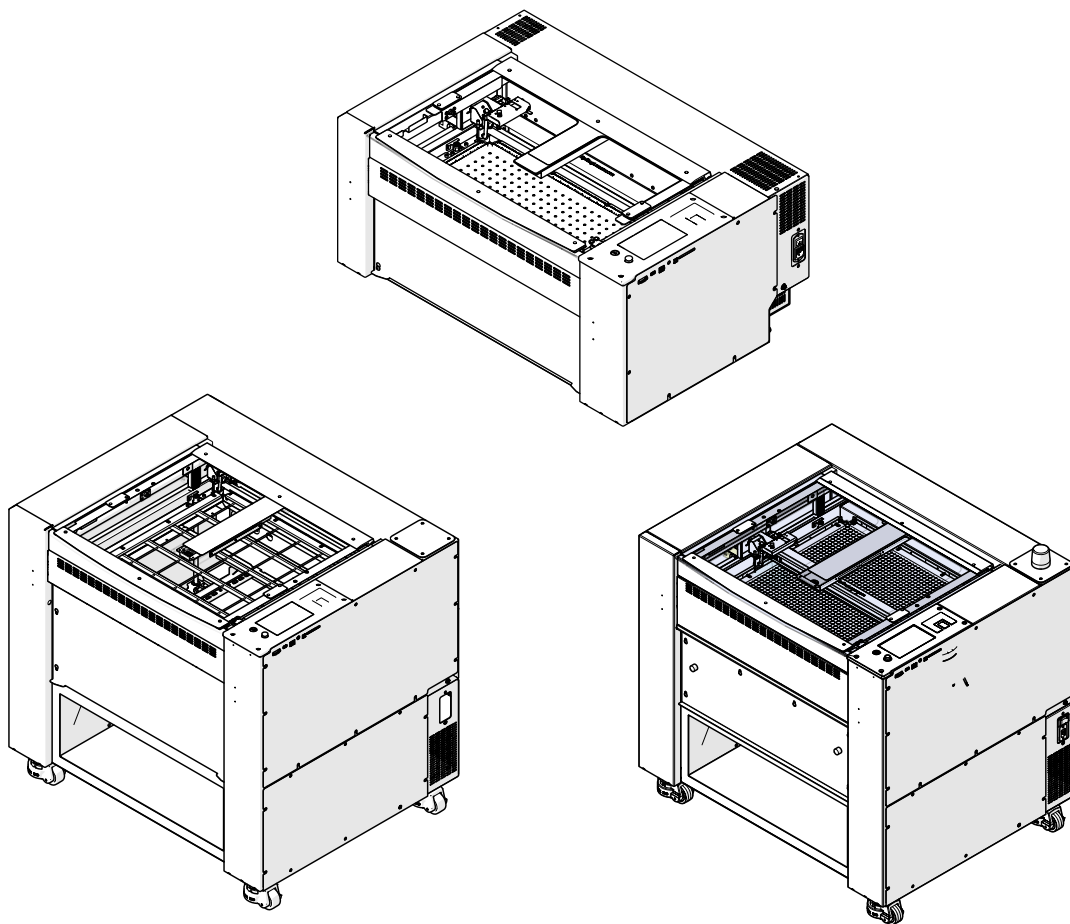




Cleaning and Maintenance Procedures

Fusion Maker - Fusion Edge - Fusion Pro 24 & 36



Cleaning the Fusion Edge

Regular cleaning of the Fusion Edge will result in a longer service life of the engraver and less down time.

Use a mild household cleaner to clean all surfaces of the engraver except for the optics.

Optics should only be cleaned using Epilog Laser branded Multi-Coated Filter and Lens cleaner, reagent grade acetone, or a similar high-quality optics cleaning solution.

If high-proof grain alcohol, such as Everclear, is available in your area, this can be a suitable alternative to the products listed above.



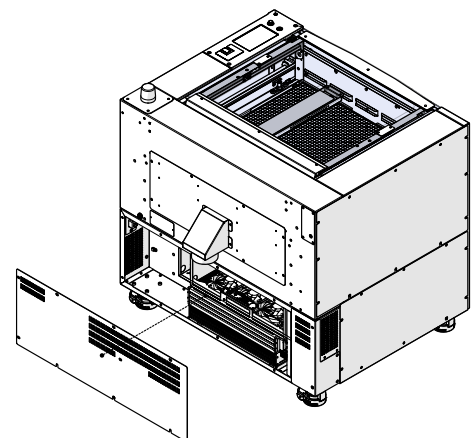
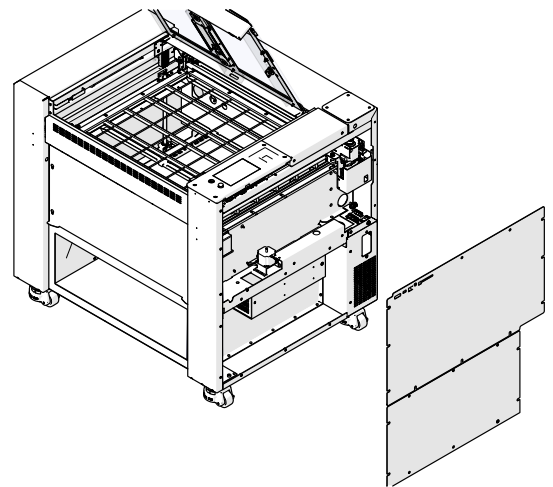
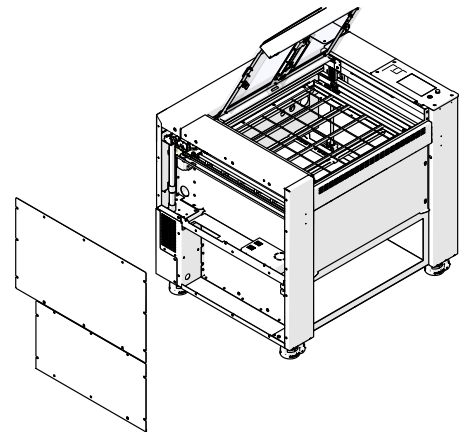
To test a lens cleaning solution, use a q-tip or an optic cleaning tissue to place a small amount of solution on the optic and let the solution evaporate. Then, inspect the optic for any sign of oils film left behind. If these exist, this is a sign that the solution is not pure enough to clean the optics of the engraver.

Lubrication Of the X-Axis

The x-axis linear guide is lubricated internally and sealed at both ends. Frequent lubrication is not required. If the x-axis linear is lubricated it can cause dust and debris to accumulate on the guide, causing premature wear.

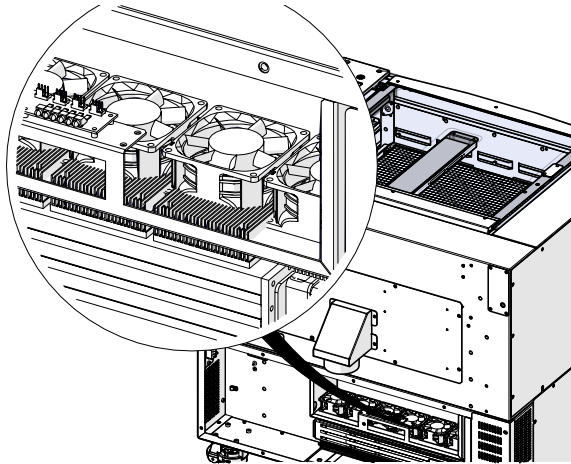
General Cleaning

1. To begin the cleaning process of the Fusion Edge engraver, remove the left and right panels, as well as the laser bay access panels:

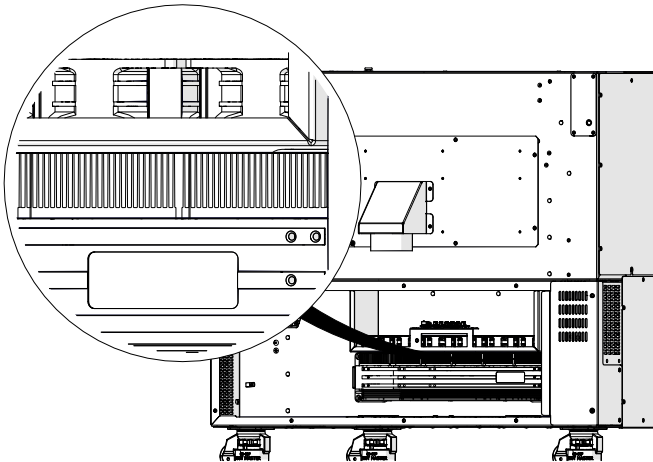


2. Clean behind each of these panels, removing any loose debris and or engraving materials you may encounter.

Pay close attention to the two following areas.



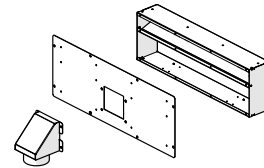
3. Ensure that the fans are free of dust and debris. Buildup of dust and debris will reduce the cooling efficiency of the fans.



4. Ensure that the heat sinks on the laser tube are free of dust and debris. Buildup of dust and debris on the laser tube heat sinks prevents the laser tube from dissipating heat. This can lead to overheating and premature failure of the laser tube.

Cleaning the Exhaust Plenum

1. In certain cases it may be necessary to disassemble the exhaust plenum for cleaning. The following image shows the plenum disassembled:

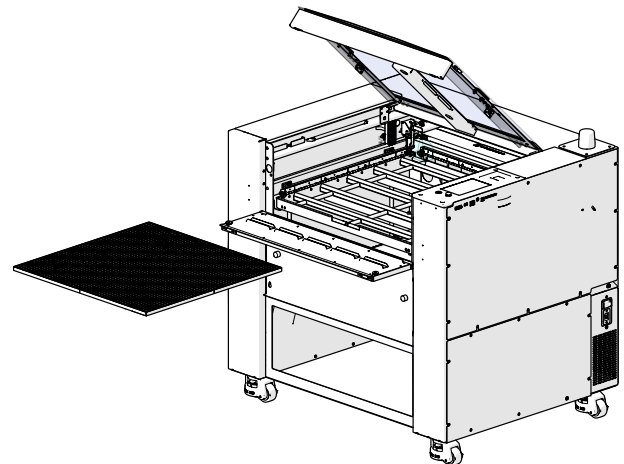


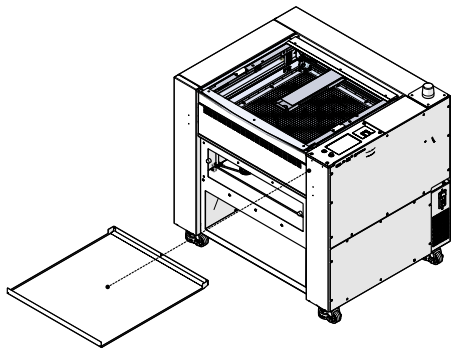
2. Dust and buildup on the exhaust plenum can be cleaned with a mild household degreaser. Larger debris can be cleaned with a brush or vacuum cleaner.

Cleaning the Table Assembly

1. Remove the vector grid assembly and crumb trays from the machine as shown below:

In some Fusion Edge engravers, the vector grid is held in place by four (4) brackets, one at each corner of the table. Loosen and remove the screws which secure the brackets to the vector grid to remove.





2. Dust and buildup on the task plate, vector grid and crumb tray can be cleaned with a mild household degreaser. Large debris can be cleaned with a brush or vacuum cleaner.

Cleaning the Optics

The Fusion Edge CO2 and Fusion Edge Fiber engravers contain four (4) mirrors, one (1) window optic, and one (1) lens. Each optic should be checked regularly and cleaned to ensure that they are free of debris and in good working order.

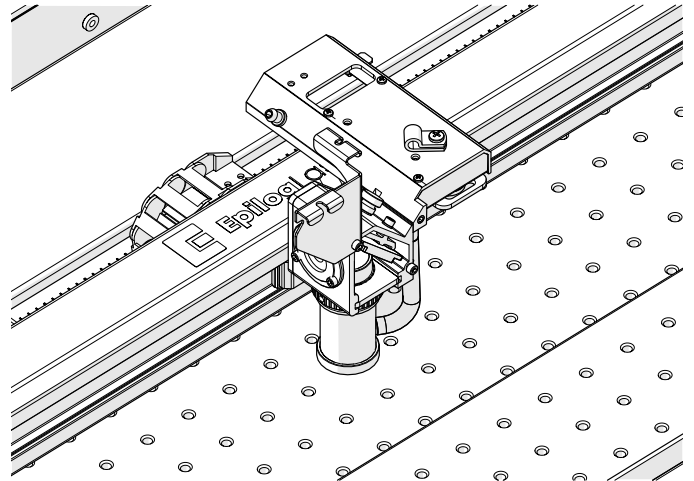


Do not use isopropyl alcohol, denatured alcohol, or other harsh solvents to clean the optics in the engraver. Impurities left behind by these products can damage the engraver optics.

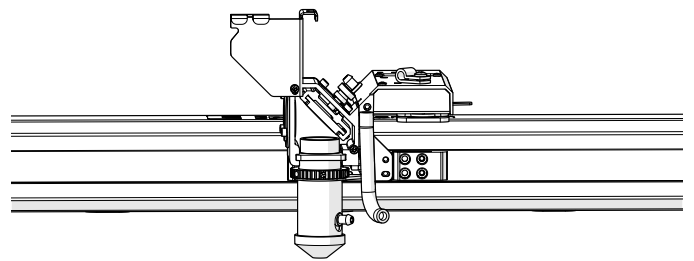
Cleaning the Lens

To effectively clean the lens, the lens tube assembly must be removed from the x-axis carriage assembly.

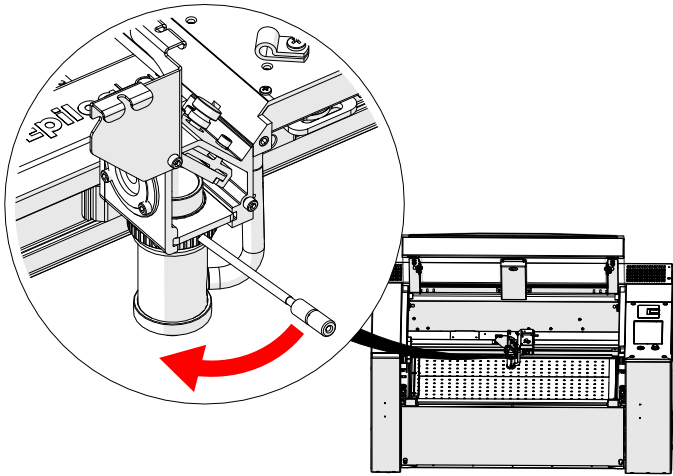
1. Loosen the thumbscrews on the lens assembly cover and move the cover to the up position:



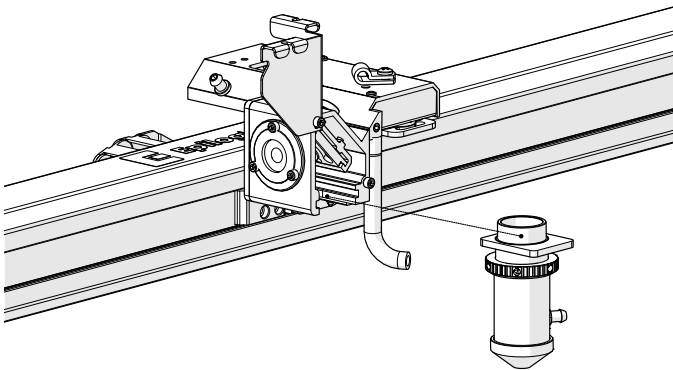
2. Disconnect the air assist tube from the lens assembly:



3. Insert the manual focus gauge into the circular indentations on the lens assembly collar and move it to the left to loosen the collar:



4. Once the collar is loosened, remove the lens tube:



5. Place several drops of optic cleaning solution on a cotton swab or optic cleaning tissue and clean the lens in a slow, circular motion using light pressure.
6. After thoroughly wiping the lens, use a second, dry cotton swab or optic cleaning tissue to dry the lens, ensuring that no debris or buildup is left behind.

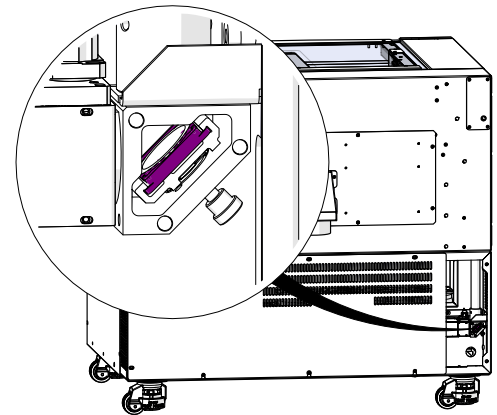
Cleaning the Mirrors

To clean the mirrors they must be removed from their respective locations.

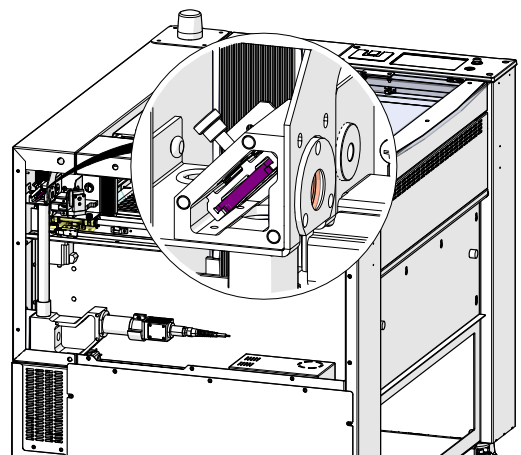
1. To remove the mirrors for cleaning, loosen the black, plastic thumbscrew on the back of the mirror assembly and remove the mirror.
2. Clean the mirrors following the same procedure outlined in the procedure "Cleaning the Lens".

The mirror locations are as follows:

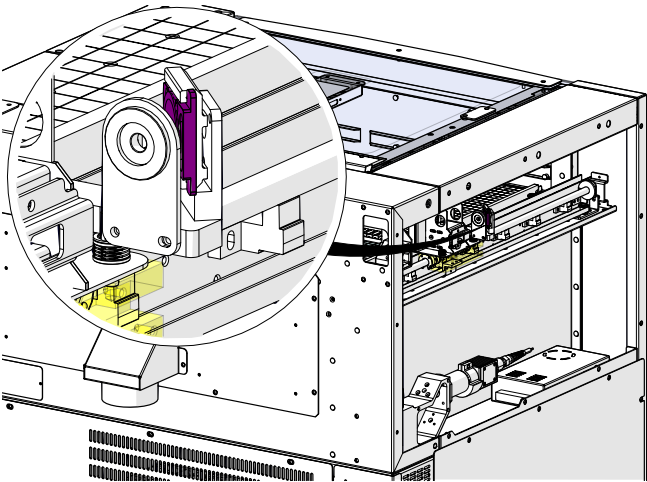
Mirror 1



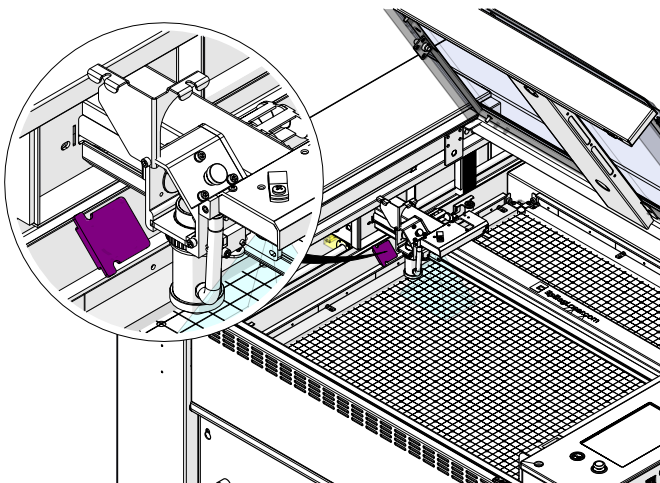
Mirror 2



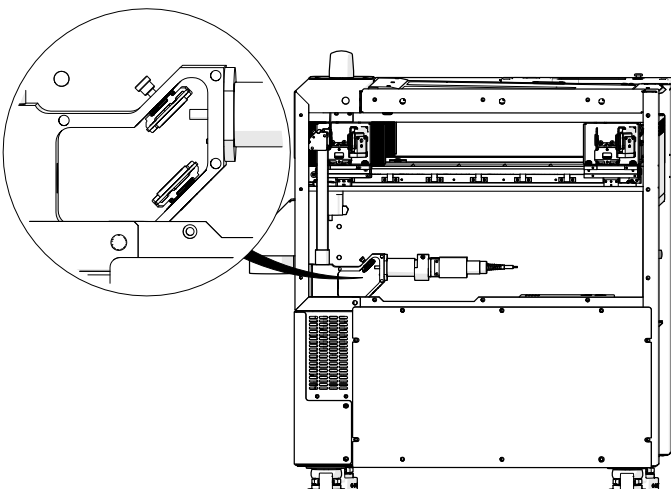
Mirror 3



Mirror 4



Additional mirrors on Fiber and Dual Source Engravers

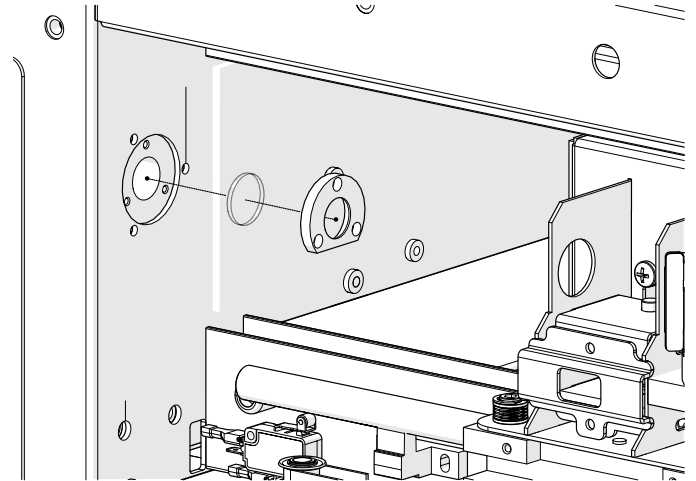


Cleaning the Window Optics

There is one (1) window optic in the Fusion Edge and Fusion Pro engraver located at the rear of the machine.

Unless the window optic or another optic in close proximity to the window optic is suspected to be damaged, only the front of the window optic should be cleaned regularly.

1. To completely remove the window optic for inspection or thorough cleaning, remove the three (3) screws securing the window optic holder:



2. Clean the window optic following the same procedure outlined in the procedure "Cleaning the Lens".

Fusion Edge & Pro Preventative Maintenance (PM) Schedule

Weekly	Purpose	Materials Needed	Instructions
Clean the Optics	Ensures that smoke, resin, or other contaminants do not accumulate on the optics, which can result in reduced laser power and damaged optics.	Cotton swabs or lens wipes, optics cleaning fluid.	<p>Use a cotton swab that is soaked with optics cleaning fluid.</p> <p>Gently swab the optics to remove dust and debris.</p> <p>Prepare a fresh swab and clean the surface with gentle pressure.</p>
Clean Under the Cutting Table	This will reduce any fire hazards by removing debris that has fallen through the table.	Soft cloth and mild household cleaner, small brush or vacuum cleaner.	Remove the cutting table and clean built up dust and small debris with a soft cloth and cleaner. Large debris can be cleaned with a brush or vacuum cleaner.
Clean the Y-Axis Guide Rails	Ensures smooth movement of the x-axis assembly over the y-axis lead screws and guide rails.	Soft cloth, mild household cleaner or isopropyl alcohol.	Remove the left and right side panels and clean any dust and debris.
Clean Interior Work Space	This keeps corrosive dust and debris from accumulating on interior surfaces.	Soft cloth and mild household cleaner or isopropyl alcohol.	Use a soft cotton cloth and mild household cleaner or isopropyl alcohol to wipe all exposed surfaces.

6 Months	Purpose	Materials Needed	Instructions
Clean Exhaust Plenum	Ensures that the exhaust system is able to extract particulates, smoke, and fumes effectively.	Soft cloth and mild household cleaner, small brush or vacuum cleaner.	Remove the exhaust plenum and clean built up dust and small debris with a soft cloth and cleaner. Large debris can be cleaned with a brush or vacuum cleaner.
Exhaust Unit Maintenance	Ensures that the exhaust unit is able to extract particulates, smoke, and fumes effectively.	N/A	Refer to exhaust unit manufacturer specifications for suggested maintenance.
In addition to the task above, complete the tasks outlined in the weekly and 3- month PM schedule.			
12 Months	Purpose	Materials Needed	Instructions
Entire Machine	Preventative maintenance.	N/A	Schedule technician for preventative maintenance and service.
In addition to the task above, complete the tasks outlined in the weekly, 3- month, and 6- month PM schedules.			