TFX Thermal Imaging Head

Window Cleaning or Replacement Procedure

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Revision History

Revision	Date	Author	Comments
1	July 2000	B.Jelstad / A.Blignaut	Initial release.
2	May 2002	M.Gill	Added part number for replacement window. Updated template.
3	Jun 2003	A.Blignaut / G.Edge	Added window cleaning procedure. Removed sections relating to old hardware. Replaced old pictures with new ones.
4 (A-C)	30 Sep 2003	Maureen Munroe	Updated Tools section to reflect new lens cleaning kit, PN 04-0012B. ECO CA02313

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1. TOOLS AND PARTS REQUIRED

- Leans cleaning kit, part number 04-0012B
- Metric Allen key set
- Anti-static wrist strap
- Flathead screwdriver
- TFX Front Window for window replacement (Creo Part # 30-1170A)
- Lint free cloth for cleaning
- Flashlight

2. OVERVIEW

The TFX head window should be inspected:

- Monthly.
- When artifacts occur.
- When the debris removal nozzle is found to be clogged during nozzle inspection.
- When the debris removal filter has not been replaced and is clogged.
- After a plate fly-off where the media has been shredded inside the ThermoFlex device.

If the window is scratched or damaged in any way, replace it with a new one. If the window is relatively clean from debris, install it back into the device without cleaning it. If the window requires cleaning, clean it according to the instructions given in this document.

3. PREPARATION

1. Turn on the ThermoFlex device.
2. Open Print Console to initialize the device. This will move the carriage home and the stage home (furthest from the drum).

   If you prefer to have the head in the center, type `>>carriage moveto 40000`.
3. Turn the device off.
4. Lift the table and support it with the table brace.
5. Put on an anti-static strap to prevent damage to sensitive electronic components.

6. Remove the debris nozzle from the nozzle assembly. Inspect the nozzle and clean if necessary.

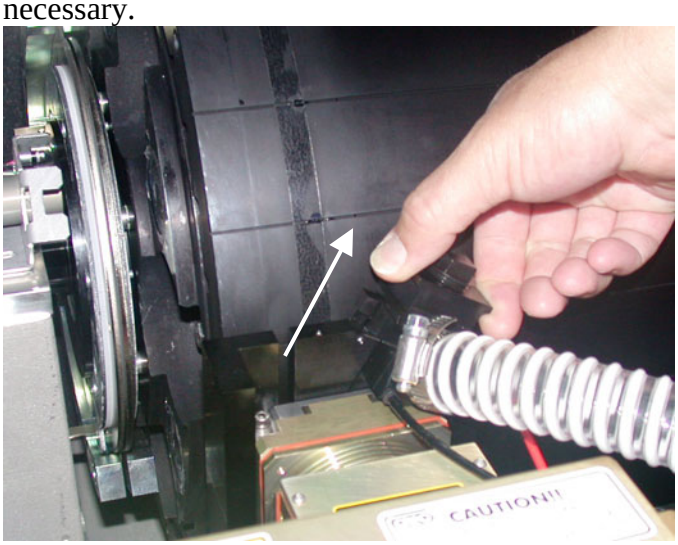


Figure 1: Remove the Debris Nozzle

7. Locate the red lever on the left side of the nozzle support assembly and pull the lever up until it is vertical.
   This moves the nozzle support assembly away from the head window to provide enough clearance for removal of the window.

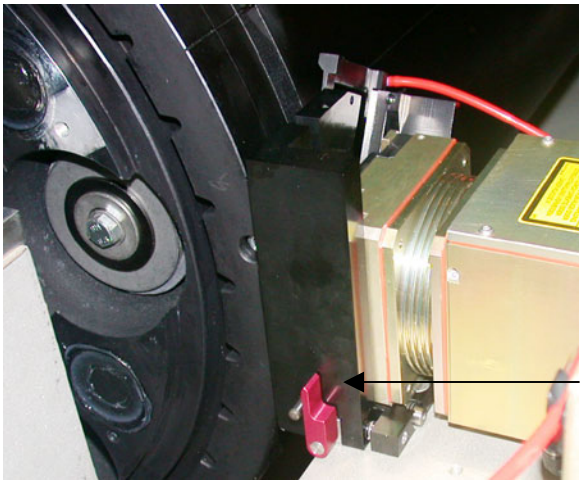


Figure 2: Pull red lever up

4. REMOVING THE WINDOW

Before removing the window from the head, clean the area surrounding the window with a lint free cloth and HPLC grade Acetone.

1. Loosen the M4 clamp screw on the left of the upper surface of the window clamp bar. This is a captive screw and will not fall out.

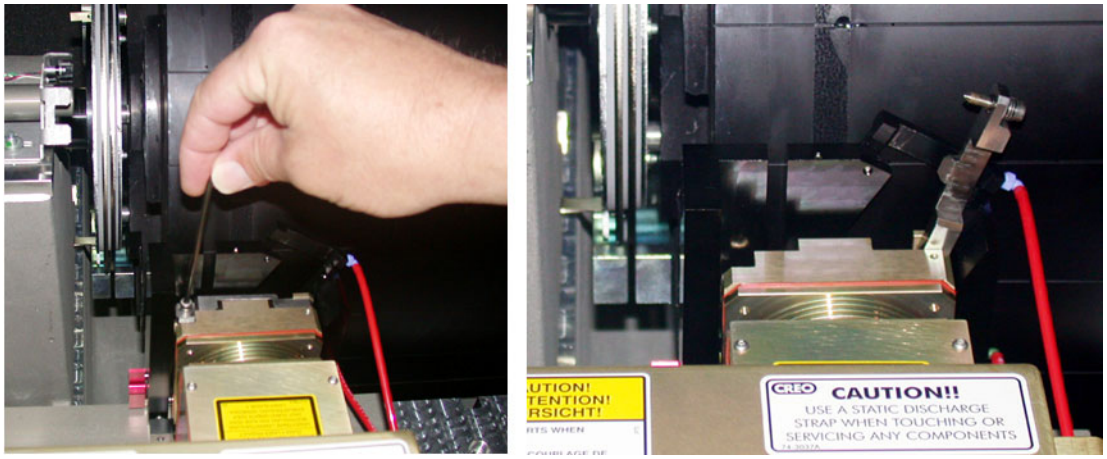


Figure 3: Open the clamp bar

2. Rotate the clamp bar to the open position.

3. To remove the window frame assembly, hook a bent tool (a 3mm Allen key works well) into the hole provided at the upper left corner of the frame and lift the window straight up and away - the hole can be reached from the slot in the nozzle support assembly.
If the window is accidentally dropped into the machine during removal, retrieve it by removing the front panel of the ThermoFlex device.

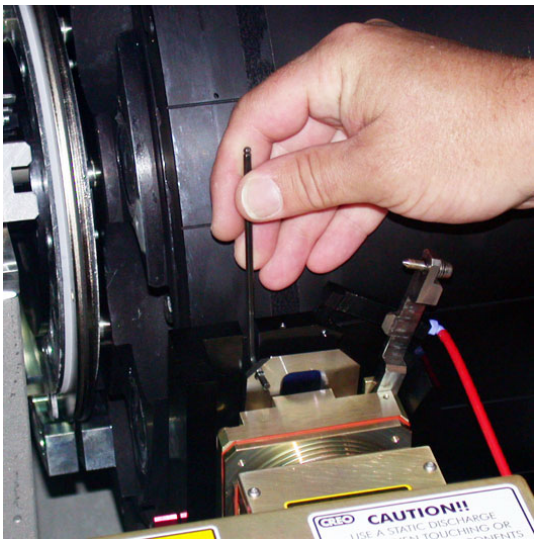


Figure 4: Remove the window

4. Inspect the window for excessive debris buildup or scratches by shining the light from a flashlight on the window at an angle that best shows the lens contamination or damage.
   If the window needs cleaning, continue on to the next section on cleaning the window.
   If the window needs to be replaced, see section 6 on Installing the window.

WARNING: Do not leave the front window off for any longer than necessary. Dust will enter the head and affect its performance.

5. CLEANING THE WINDOW

Hold it by the steel frame only - do not touch the glass surfaces. Use only HPLC grade Acetone or IPA solvents for cleaning. Do not use Windex, Methyl Ethyl Ketone (MEK), or Kodak lens cleaning solutions.

To clean the window:

1. Dip a plastic-handled cotton swab in Acetone or IPA.
   A quick shake after dipping often gets rid of any excess acetone. Keep the time between dipping and cleaning to a minimum, as solvents will dissolve the glue holding the swabs, and possibly the plastic rod as well, contaminating the surface.

Note: Do not dip the swab into the container of solvent, as it will contaminate the remainder of the solvent in the container. Also, do not use wooden-handled swabs, because the solvent breaks down the glue on the swab and leaves residue on the lens.

2. Begin cleaning near the center of the lens and roll towards and across the edge.

3. Rotate the swab slowly against the surface as you wipe it, so that each part of the glass surface sees a new, clean portion of the swab. Apply light pressure, similar to the pressure applied when spreading mustard or mayonnaise on a slice of bread.
   The direction of rotation should be against the direction of the stroke. As the swab rotates, it brings clean solvent in contact with the surface. Do not rotate the swab more than 360º and only use each swab once. Typical cleaning can use in excess of 20 swabs.

4. Repeat the procedure until the entire lens surface has been cleaned.

5. Re-inspect the window with the flashlight.

   - If debris or streaking is still visible, clean the window again. It is not unusual to have to clean the window multiple times to get it clean.
   - Reinstall the window and continue with normal operation. See the chapter on Installing the window.

5.1.1 Finger Prints on the Window Lens

Fingerprints left on the glass surface must be cleaned immediately. Do not wrap a window with a fingerprint or smudge on the lens in lens tissue and put it away for storage. Fingerprint oils are slightly acidic and will permanently etch the glass surface over time causing permanent damage.

6. INSTALLING THE WINDOW

Hold it by the steel frame only - do not touch the glass surfaces.

1. If you are installing a new window, unwrap the window and clean the window with clean, dry compressed air to remove any dust from the wrapping.
   The dot on one side of the steel frame must be at the top of the window and facing forward (away from the head, toward the drum).

2. Holding the window with the Allen key and the right top edge, slide the window down the front surface of the nose-piece into its locating surfaces. A slight resistance may be felt as the window frame slides over the rubber o-ring on the front of the nose. Be very careful not to drop the new window into the device.

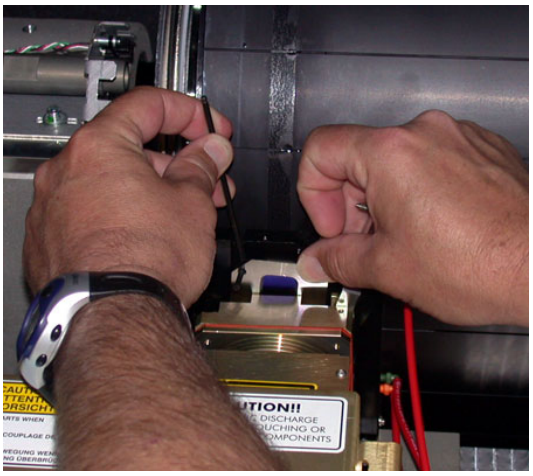


Figure 5: Slide the window into place

3. Rotate the window clamp bar into place and tighten the M4 clamp screw.

7. INSTALLING THE DEBRIS REMOVAL SYSTEM

Replacing the debris removal system is the reverse of the removal procedure.

1. Rotate the red lever on the nozzle support assembly to the horizontal position. This seals the assembly around the TFX window.
2. Replace the debris nozzle. Ensure there is no force on the nozzle from the debris hose. Loosen the hose clamp on the nozzle and reposition the hose to reduce this force.
3. Check that the air lines, cables, and the debris hose will not interfere with the stage motion or cause the nozzle to lift out of position.
4. Lower the table and resume normal operations.