



Plastic Extrusion Tooling Specialists

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Extrusion Tooling Cleaning Procedure Manual



Extrusion Tooling Cleaning Procedure

Regular cleaning of your plastic extrusion tooling during the disassembly process lengthens tooling life, helps reduce scrap and helps maintain tighter tolerances on your final product. Today, there are various options available to clean your tooling. *They include:*

- **Ovens**
- **Fluidized Beds**
- **Propane Torches**
- **Cryogenic Cleaning**

Each method can be effective at removing the plastic; unfortunately, each can also remove steel, damage the tooling, or otherwise compromise the integrity of the metal. For example, ovens are very effective at vaporizing the melt, however, with repeated use they can change the molecular structure of the piece and pit thinner areas. This may result in leakage between critical components and higher scrap rates. The other methods mentioned have similar concerns. In each case, we recommend a close look at the cleaning method and tools used to ensure that damage is minimized.

In an effort to support your chosen cleaning methods, B&H Tool Co. recommends cleaning your tooling during the disassembly process. Cleaning your tooling at the extrusion line, while it is hot, lessens the risk of damage to the tooling and reduces the amount of time required for the traditional methods mentioned above.

With proper training and the right cleaning tools, your operators can increase the life of your tooling while reducing scrap and maintaining the quality of your output. As efficiency increases, productivity goes up and downtime is minimized. For your convenience, we have prepared a list of proper cleaning tools and this comprehensive cleaning procedure.

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Supplies

- Single spiral brass wire brush
- Small brass wire brush
- Large brass wire brush
- Copper gauze (*optional*)
- Leather gloves
- Allen wrench



Step 1

Disassemble the Crosshead

- After extruder stops
- Turn heat off and disconnect power cord for die holder heater (*Photo 2*)



- Remove die adjusting bolts and set aside (*Photo 3*)

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- Loosen clamp-on heater and remove
(Photos 4, 5)



- Grasp die and remove from tip
(Photo 6)

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- Remove excess material from inside of die with needle-nose pliers or small brush (*Photo 7*)



- Clean excess material from tip (*Photo 8*)
- Remove wedge ring



- Loosen body heater (*Photo 9*)

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- Remove core tube
Note: On back side, remove 6 cap head screws (Photos 10, 11)



- Remove excess material from core tube and tip with wide brush (*Photo 12*)
- Remove tip from core tube

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- Remove deflector from body and clean off excess material with large brass brush. Run round brush through inside of deflector to remove excess material that has collected.

(Photos 13,14,15)

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- Remove body from adaptor, then from heater
NOTE: Before removing body from adaptor, use large round brush to clean inside of body
(Photo 16)



- Take small round brass brush and clean inlet port (Photo 17)



- Brush outside surface of barrel body thoroughly with brass brush (Photo 18)

Disassembly is now complete!

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Step 2 Remove and Clean Adapter and Breaker Plate from Extruder

Step 3 Inspect and Clean Components

Inspect each component for debris and damage, such as nicks and dings

- **Die Holder:** Look for scratches and other surface damage from die holder to barrel body. Make sure die adjusting bolt threads are not stripped or damaged.
- **Die:** Inspect die face for nicks
- **Wedge Ring:** Inspect wedge ring for damage on tapered edge and die seating surface
- **Core Tube:** Check tip section of core tube for damaged threads. Check adjusting nut and jam nut threads for damage and debris
- **Tip:** Check for thread damage, nicked or bent land area. With brass wire brush, clean away excess material that may be inside of tip.

Note: Common practice is to use a propane torch to burn out excess material from the tip.

CAUTION: Do not heat excessively or cause material to be red hot.

- **Deflector:** Check reflector tapered edge for nicks. Check flow channel edges for nicks. Clean off excess material with brass brush (*spiral inside.*)
- **Barrel Body:** Inspect all mating surfaces for nicks or excessive damage. Check bolt hole and adaptor threads for damage.

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Step 4 **Use Traditional Processing**

- At this point, using an oven, fluidized bed, cryogenic process, or propane torch (*not recommended*) is appropriate.

Step 5 **Inspect After Secondary Cleaning**

- Remove ash or other residue from parts that have gone through secondary cleaning processes
- Wipe down each component with isopropyl alcohol to remove fine particles

Step 6 **Reassemble the Crosshead**

- See B&H Procedure: The Adjustable Crosshead Operational Manual for assembly instructions