
SECTION G3: TOOL MAINTENANCE



CAUTION!

Regular inspection of all guards, protective devices, point of operation safeguarding systems and mechanically loaded components is recommended. Component devices or guarding which show signs of wear, fatigue (cracks, distortion), or damage of any type should be replaced immediately.

Most damage to tooling can be easily avoided through proper set up of the Cable Processor Module.

1. The tool installation procedure, (found in Section E: System Setup), should be followed closely.
2. All settings outlined in Section G2: Cable Processor Module Maintenance, should be checked weekly.
3. Particular attention should be given to the Cable Processor Module Closed proximity switch and the flow control valves.

Avoiding damage

To the tool

A Cable Processor Module tool can be damaged near the cavity by strands of wire, or improperly placed components getting pinched between the tool faces. This can be avoided by closing the main slide slowly and not compressing a stray strand between the tool faces.

If the tooling has been removed from the Cable Processor Module, clean all tool mounting surfaces and make sure they are free from damage before replacing the tool.

To ejector pins

The ejector pins will eventually wear in the tool, and new pins will have to be fit. However, the life of a set of ejector pins can be maximized if the cavity lubrication system and the tool cooling system are kept in optimum condition.

If the cavity lubrication system is not functioning properly, the ejector pins will not be adequately lubricated and may be damaged. Check the operation of the cavity lubricator and ensure that the lubrication is being directed at the cavity.

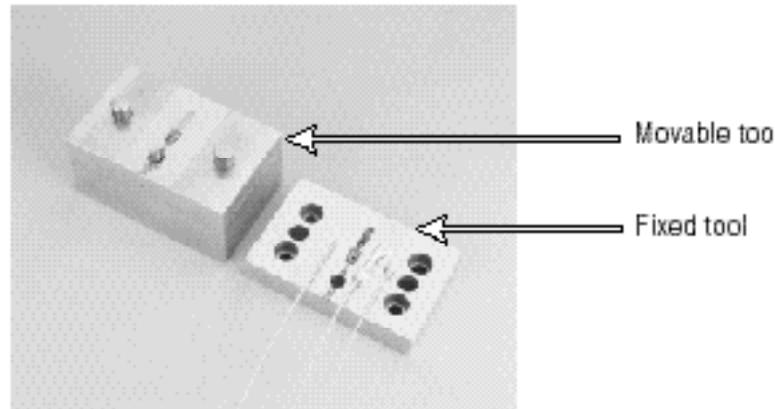
If the cooling system is not functioning correctly, (ie if the system is blocked), then the tool will run too hot. This can result in scored ejector pins.

To the nozzle seat

The nozzle seat can be damaged by a poor nozzle alignment or poor operating conditions.

See “Zinc is building up on top of the nozzle” in Section G5: Troubleshooting.

Removing the tool



Movable tool removal

1. Turn the Setup/Run key selector switch to the setup position.
2. Remove the Cable-In-Place switch air supply line.
3. Hold the movable tool and undo the 10 mm draw bolt using an 8 mm hex (Allen) wrench.
4. Remove the parting line flash guard.
5. Remove the tool through the front of the Cable Processor Module. Some amount of manoeuvring must be done because of the coolant lines.
6. Turn off the water supply and drain valves.
7. Once clear of the melt pot, remove the cooling lines from the movable tool.



CAUTION!

Do not allow any coolant to fall into the melt pot. Only remove the coolant lines when the tool is clear of the molten alloy. An explosion could occur if coolant is spilled into the melt pot.

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8. The movable tool will now be free from the Cable Processor Module. To replace the movable tool, follow the instructions in Section E: System Setup.



CAUTION!

Do not operate the equipment without the parting line flash guard in place.

Fixed tool removal

1. Turn the Setup/Run key selector switch to the setup position.
2. It is easier to remove the fixed tool if the movable tool has already been removed.
3. Undo the bolts which hold the fixed tool to the fixed tool holder.
4. Loosen the single screw holding the slotted guard in place in front of the fixed tool holder.
5. Slide the guard to the left. Lift the fixed tool, being careful to lift it straight up.

Note: Care must be taken to lift the fixed tool straight off the fixed tool holder. If the fixed tool is removed otherwise, damage to the ejector pins could result.

6. The fixed tool will now be free from the Cable Processor Module. To replace the fixed tool, follow the instructions in Section E: System Setup.

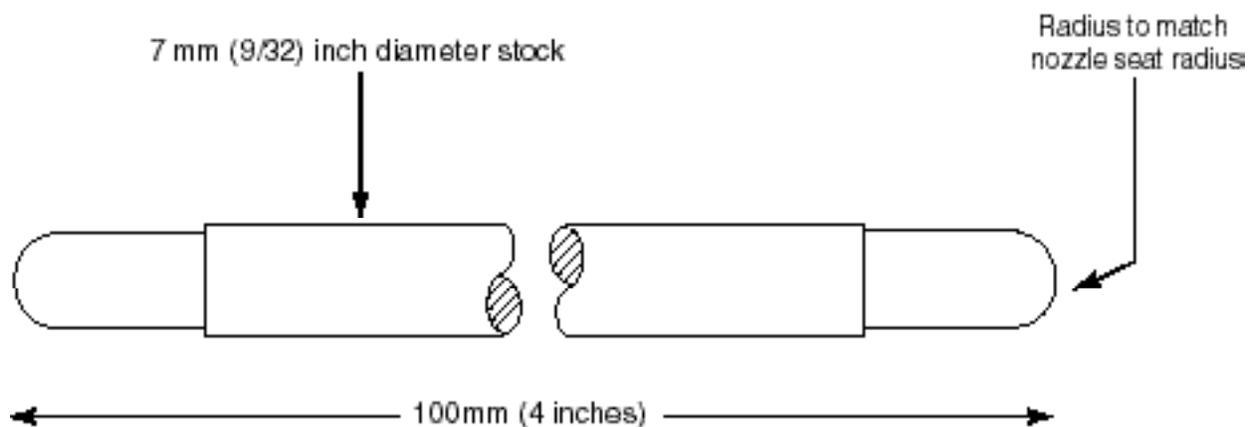
Lapping the nozzle seat

For proper machine operation, the nozzle seat should be clean and have a polished finish with the correct radius. If alloy is escaping between the nozzle and the seat, there could be a problem with the nozzle seat.

The Cable Processor Module should be tilted back, and the nozzle and nozzle seat condition checked. If the nozzle is in good condition (not badly damaged), lightly lap the nozzle.

Remove any alloy from the seat using a brass pick. If the seat appears to be in good condition, a light lap with fine diamond paste will clean up any imperfections in the seat.

A nozzle seat lap is included with the machine.



Nozzle seat lap

If the seat is badly damaged, it should be lapped first with a medium diamond paste and then a fine paste.

Only one end of a new lap should be used for lapping. The other end should be used to “blue” the seat to ensure the seat has the correct radius.

Clean the nozzle seat of any lapping compound residue and proceed with the nozzle alignment, if necessary.

Tool repair - cavity and tool faces

Drag or scratches on the termination

If the termination is showing drag (scratches) from the tool opening (movable tool side), or from being ejected from the fixed die, the edges of the cavity are probably peened (peened meaning dented into the cavity).

Peening along the edge of the cavity can be removed by polishing the edges of the cavity with diamond compound. Care should be taken not to undercut the cavity and make the situation worse.

Parting line flash

The surfaces of both the fixed tool and the movable tool can be peened. Bad peening will lead to parting line flash. Closing the tooling together when there is zinc flash, or broken or stray cable strands between the tool faces willpeen the cavity edges.

If flame cut or electrically cut cable is being used, small hardened pieces loosened during the upsetting process can land on the tool andpeen the tool faces when the main slide is closed and locked.

If the tool faces do become peened, the faces can best be reconditioned by lapping them on a lapping plate. If no lapping plate is available, the faces can be carefully dressed with a fine India stone. Care should be taken to stone the faces evenly.

Ejector pins

Flashing

If the termination is showing signs of flashing around the ejector pins, the pins and ejector pin holes are worn. The ejector pin holes should be lapped to ensure they are round and that the sides of the hole are parallel.

Lapping should always be done from the bottom of the fixed tool (opposite side from the cavity).

Ejector pins should be fit to 0.005 mm (.0002 inch) clearance. The next largest ejector pins should be used, and the holes lapped to suit the pins. The length and end profile of the replacement ejector pins must be adjusted to fit the tooling.

Cable upsetter tooling

The cable upsetter tooling consists of an anvil, an upper jaw and a lower jaw. There is very little maintenance required on the cable upsetter tooling. However, it will have to be removed occasionally for cleaning (the frequency of cleaning will depend on the type of cable being used, ie. galvanized, stainless clean, oily etc.). The tooling is easily removed.

1. Remove all of the screws holding the front cover on the cable upsetter. The cover and stainless steel guard can be removed at this time.
2. Take out the movable jaw.
3. Remove the 6 mm socket head screw from the fixed jaw and remove the jaw.
4. A single screw holds the anvil retainer in place. Remove this screw and slide the anvil and retainer out as one unit. Be careful not to lose the spring from the back of the anvil.
5. When the tooling has been cleaned, install it by reversing the above procedure. Do not grease the anvil prior to installation. Grease will cause the anvil to stick.

Degating (Trim) tooling

The degating tooling breaks the runner from the termination. It consists of a nest, an upper block and a mounting bracket for the upper block. The upper block houses a spring and a pin. When the tool closes during a cycle, the pin in the upper block makes contact with the cable termination resting in the nest. In this way, the termination is held in place before the upper block comes into contact with the runner. As the main slide continues to close, the pin is compressed and the upper block breaks the runner from the termination.

There is no maintenance on the degating tool. Check that the pin moves freely and that the spring behind the pin is not damaged.