

# Basic Injection Molding Machine Operations

## Part 2

---

### I. Regrinding

#### A. The job of regrinding.

1. The job of regrinding consists of putting clean runners and reject parts into the granulator to be ground up into small pieces which can be reused.
2. The ground up plastic, called regrind, falls into a bin at the bottom of the granulator.

#### B. How to regrind:

1. Insert clean runners and scrap parts into the granulator throat.
2. Don't reach into the granulator throat.
3. Don't hold onto the plastic, push it in.
4. Wear eye protection in case plastic chips fly out.
5. Grind only one kind of plastic at a time.

***NOTE: Mixing different types of plastic can ruin all the regrind.***

6. When switching types of plastics to be reground, clean out the granulator throat and blades thoroughly. Use a vacuum to remove all the pieces of the previous plastic.
  - a. Even a few small pieces of a different kind of plastic can contaminate the whole batch.

#### C. DO NOT regrind:

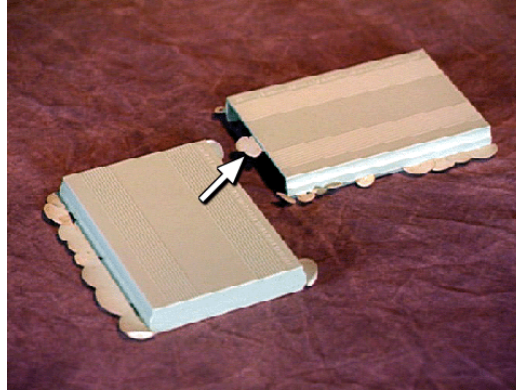
1. Plastic that is not clean.
2. Parts containing metal inserts.
3. Large purge lumps.
4. Hot plastic--wait for parts and runners to cool before regrinding them.

#### D. When storing regrind, be sure to cover and accurately label it.

## Notes

### II. Trimming Flash

Parts with Flash



*Flash is a thin piece of plastic that extends out from the edge of a part. On some molding jobs, the parts with flash are rejected, on others this flash is trimmed off.*

#### A. How to trim flash:

1. Firmly grasp utility knife in your hand.
2. Draw knife away from your body as you trim, do not draw it toward you.

### III. Degating Parts

#### A. Degating is separating the molded parts from the runner.

1. Degating can be done using a hand trimmer, a fixture, or if the gate is small, it can be broken off.
  - a. Be very careful when separating the parts from the runner; molded parts are easily damaged.

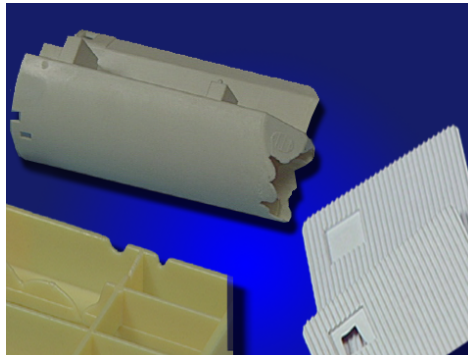
## Notes

### IV. Part Defects

The next several pages contain pictures and descriptions of parts with common molding defects. Operators should be able to spot most of these defects when they occur during a production run.

#### A. Short shots

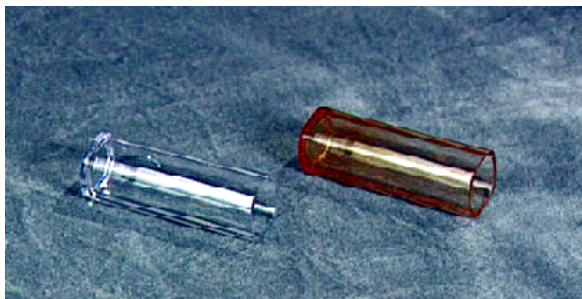
##### Short Shots



*Short shots are injection molded parts that are not completely filled out. Short shots are usually, but not always found at the edge of parts.*

#### B. Color changes

##### Color Changes

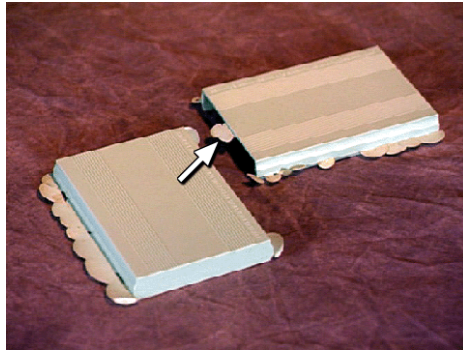


*The part on the left is clear. The part on the right is darker. It has turned red during processing. Parts can change color because of defective colorant, a change in the amount of colorant, overheated plastic, or a change in the virgin-to-regrind ratio.*

## Notes

### C. Flash

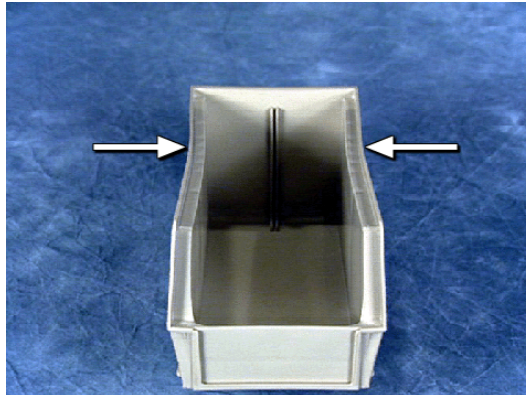
Flash



*Flash is a thin layer of plastic that extends out from the edge of a part. Flash can be a large area or a very small area. Flash is also damaging to the mold. If flash begins to occur during a molding run, notify a supervisor.*

### D. Warp

Warped Part



*Warp is often caused by how parts cool outside the mold. With some parts it is important to handle each part exactly the same way after it is removed from the mold. If the parts finish cooling on a table, they must all be placed the same way. Packing parts too soon after molding can also cause warp.*