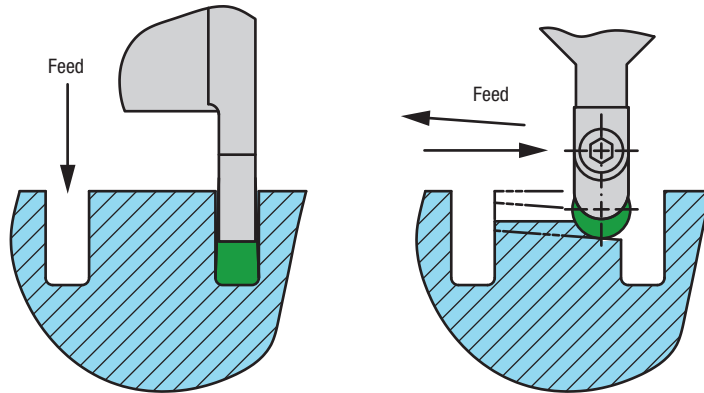


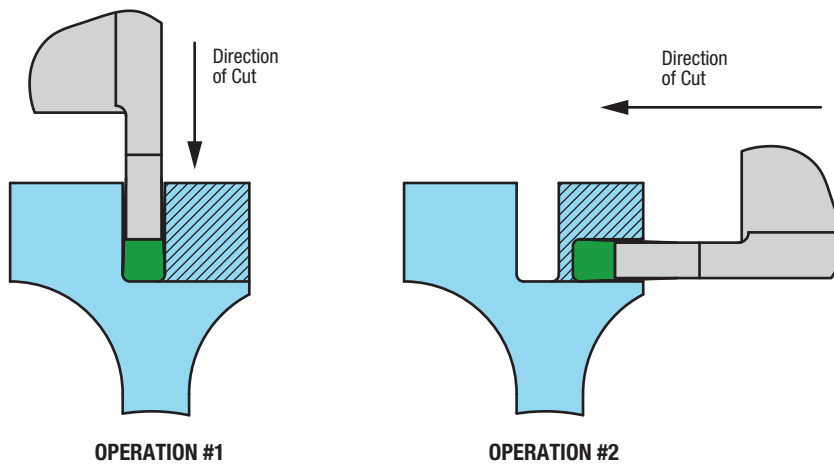
Figure 58– Ramping in Cavities



Method D (Figure 58)

The example shown in *Figure 58* is similar to *Figure 56*, except the cavity is wider and the material between the two grooves may be removed by a ramping operation with round inserts. This is an effective method of approaching a wide cavity application.

Figure 59 – Producing a Test Sample



Grooving Tools for Shoulder Cuts

It is possible to make shoulder cuts with grooving tools involving the removal of large amounts of material by producing a complete ring.

This technique is being applied in the production of large jet engine discs very effectively but requires special set-up. The method is illustrated in *Figure 59*.

In effect, two 90° opposing grooves are plunged into the part using a V-bottom grooving tool. This generates two clean walls and the required corner radius.

When the second groove breaks into the first one, a complete ring is produced which may be used for some other component. A fixture must be used to hold the ring as it parts from the main forging. It is worth constructing a special clamping fixture for such cases since the method itself is so economical.

Rethink the process

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