

G74 - Box Roughing Cycle

G74 is a box roughing cycle where a rectangular area of material is removed in many passes.

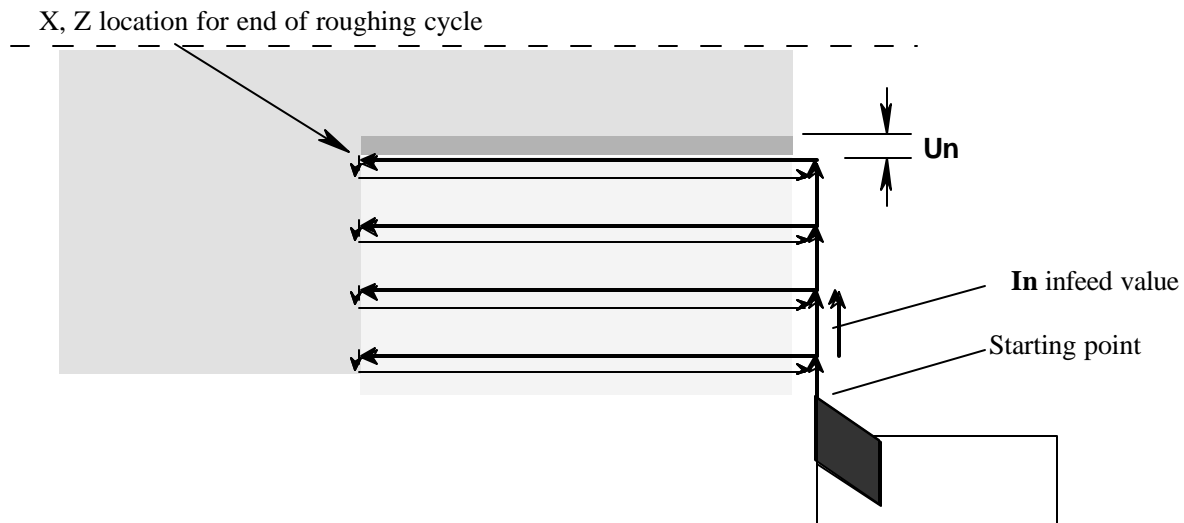
G74XnZnInUnFn

X and **Z** is the corner of the box area to be cleared out

In is the maximum amount to be roughed per pass, defined as the depth of cut per side

Un amount of material to be left by the cycle for a finish pass in X only.
(depth of cut, as a radius)

Fn is the feed rate



The box cycle starts at the current position, then makes cutting passes parallel to the Z axis at a cutting depth no greater than the I ending at X, Z. At the end of the cycle the tool is returned to the start point.

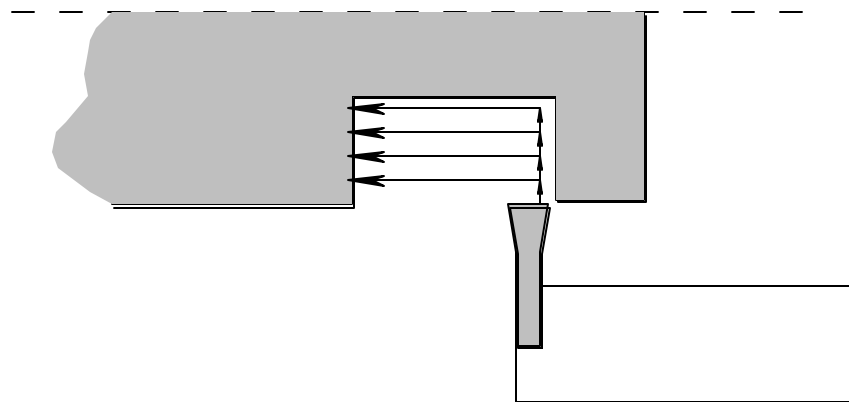
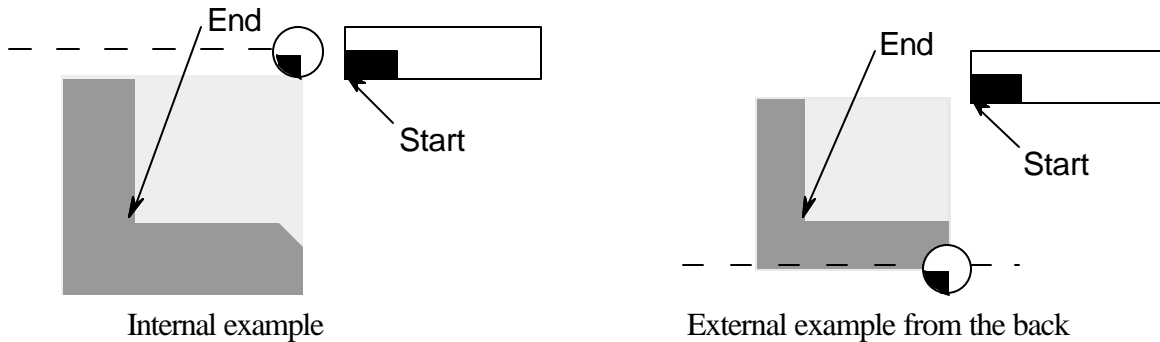
If you want to leave material for a finish pass the X and Z values must be offset for this.

The feed rate is IPM (G94) or IPR (G95), depending on the mode when the cycle is started.

The X, Z coordinate may be absolute or incremental, based on the current mode of the control.

The return passes are at a fixed clearance distance (.02") from the last cutting pass.

The G74 cycle can be used for either internal or external removal. It can also be used from the front (x+) or back (x-) of the part.



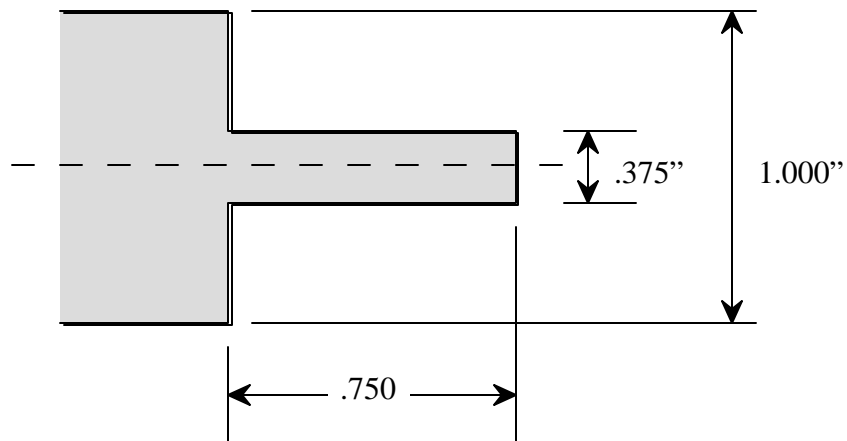
Example behind a sholder

The G74 cycle can be used in radius (G73) or diameter (G72) mode. In both cases the In value is the amount to be taken off on a side. An In value of .05 would take .1 off the diameter of the part with each pass.

Tool nose radius compensation **can not** be active when using this box roughing cycle.

Worked example for G74

In the following example we will rough the 3/8" stem out from the solid 1" diameter bar. The G74 statement is written to leave .005" on X surface and .003" on the Z surface for a finish pass. The material to be left on the Z axis must be done with the end location value in the G74 code. The finish pass is not shown on this example.



G90G94F300G72

M03S2000

T1(LH Turn tool for roughing)

X1.05Z.5

Z.1

G95

G74X.375Z-.747I.075U.005F.003 programmed to leave .005 on X and Z for finish cut

M05

G00Z1

X-1

M30