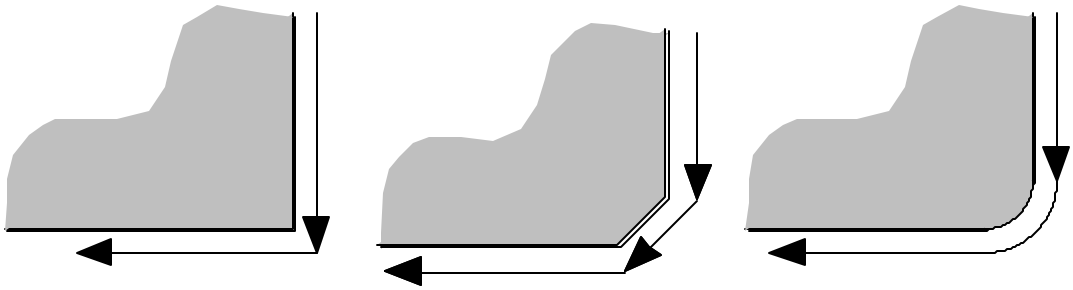
Automatic corner radiusing (**R**) and chamfering (**C**)

It is possible to automatically generate a chamfer or radius between two connecting linear moves. Just program the lines to the theoretical intersection point of the two move and put a C or R with the absolute amount of the radius or chamfer needed.



Programmed move **Move with C value** **Move with R value**

Format

X*n*Z*n***R*n*** - Z*n***R*n*** - X*n***R*n***

X*n*Z*n***C*n*** - Z*n***C*n*** - X*n***C*n***

XnZn	The linear move leading to the intersection point of two lines
Rn	The n is the absolute value of the radius used to blend the two lines
Cn	The n is the absolute value of the chamfer used to blend the two lines

RULES

The moves that are connected by the auto chamfer or radius ***must be linear moves***. The C or R command will not work with blending arcs or arcs and lines. If you want to blend these use G02 and G03.

The moves do not have to be at right angles

A chamfer created is set back equally from the intersection point of the two lines.

A radius created is made tangential to the two intersecting lines. The direction (CW or CCW) of the radius is determined automatically by the OmniTurn. It looks ahead to the next move.

The n value must be the absolute (+) value

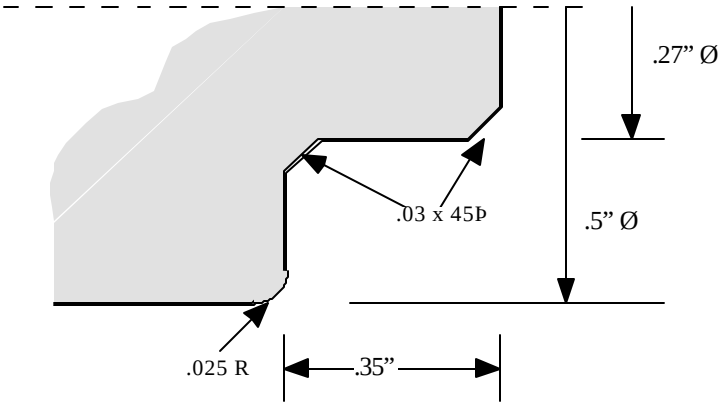
Running programs using C or R

When you use the automatic corner radius or chamfer commands the OmniTurn creates a number of moves to generate what you want. If you look at the command line while you run a program you will notice lines of code that you did write. In the single block mode you can see arc (G02 or G03)

commands. This is normal. When you leave the editor the OmniTurn automatically recreates the new moves. The program is also recreated whenever you change the secondary offset table.

Example

Note: The example program shown uses more codes than shown yet to this point in the book. M03, M08, G41, D*n* and G40 are covered in other sections.



G90G72G94F300	*G72 Program is in diameter mode*
M03S2500	Turn the spindle on at 2500 rpm
M08	Turn the coolant on
T1 (LH turn tool)	
X0Z1	
Z.05	
G95F.001	
G41	*Turn on LH cutter compensation*
Z0D1	*Use the radius value found in D1 for comp*
X.27**C.03**	*set chamfer amount*
Z-.35**C.03**	*set chamfer amount*
X.5**R.025**	*set radius amount*
Z-.45	
X.54	*move off the part more than the comp. value*
G00Z1	
G40	*turn cutter compensation off*
M30	