

## Turning Offsets

The two offset screens show the changes made for all offsets (*items 1 to 5*). Study the entries carefully.

OFFSET - GEOMETRY				
No.	X-OFFSET	Z-OFFSET	RADIUS	TIP
01	-308.490	-249.610	1.200	3
02	-293.885	-191.730	0.800	2
03	-306.820	-251.580	0.800	8
04	-310.500	-188.300	0.000	0

OFFSET - WEAR				
No.	X-OFFSET	Z-OFFSET	RADIUS	TIP
01	-0.067	0.000	1.200	3
02	0.057	0.000	0.800	2
03	0.000	0.000	0.800	8
04	0.000	0.000	0.000	0

1. The geometry offset has to be changed by adding 1.5 mm to its current amount:  $-186.8 + 1.5 = -188.300$
2. The tool nose radius is 0.8 - a standard boring bar uses tool tip orientation number 2, both have to be entered.
3. The wear offset for tool T01 must be **decreased** by 0.08.  $\text{Wear } 01 = 0.013 + -0.080 = -0.067$
4. The original geometry for tool T03 was -306.920, the new offset must be 0.1 mm smaller, to increase the diameter (added to the negative number):  $\text{Geometry } 03 = -306.920 + 0.100 = -306.820$
5. To increase the part diameter, change the X-offset on the WEAR screen.  $\text{Wear } 02 = 0.057$
6. The control system automatically transfers setting from one offset to the other.  
This means that there is no possibility to have a different tip number in the **Geometry** and the **Wear** offset registers.
7. The short answer is that the tool tip orientation number is zero when the tool nose radius offset is NOT in effect. Even if the tip number is greater than zero, only G41 and G42 will activate it. The same applies to the radius entry.
8. The minimum clearance must always be twice the tool radius. Practically, a clearance of 0.1 inches or 2.5 mm is sufficient for the most common tools. Note, that on diameter, the minimum clearance is four times the tool radius!
9. The only difference between the two inserts is the tool nose radius - R0.8 versus R1.2. However, it is **not** sufficient just to change the radius on the offset screen, the **X** and **Z** offsets are also affected. The correct answer is: all geometry offset data for T02 must be changed, only the tool tip number will remain the same.
10. The exact tool shape is not possible to establish from the given data. However, the tip orientation number is 8, which means it is a neutral orientation tool, neither left hand nor right hand. Typical inserts used in such a toolholder are 55° and 35°, but 80° or 90° can also be used, plus a few others (Kennametal ex.: DDJNR-164D)