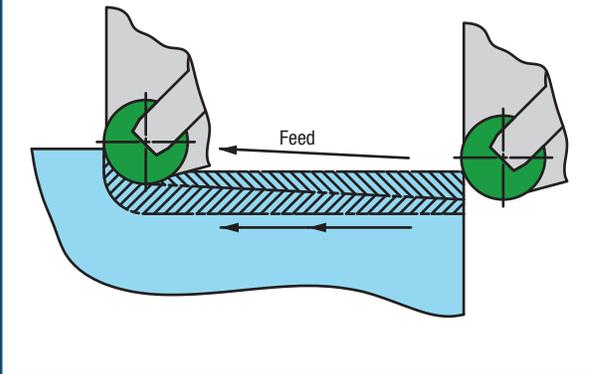## Ramping with negative round inserts

The ramp **must** start out with a deep cut, then the depth of cut must diminish. This constantly lifts the insert higher and more out of the cut, creating a ramp. The second cut is programmed straight and in the same direction, effectively removing the ramped surface left by the first cut. *(Figure 39)*

Tool life on the first cut is longer than on the second since the damaged cutting edge from the work-hardened surface is lifted out of the cut. Tool life on the second cut is shorter since the damaged cutting edge at the depth-of-cut line is buried more and more as it continues cutting straight and the ramp gets higher. However, tool life in both described ramped cuts is longer than in straight cuts.

Ramping with positive round inserts

When using RPGN or RCGN inserts, ramping can be done in both directions without indexing *(Figure 40)*. Area "B," which is the bottom of the inserts, is constantly lifted out of the cut on the first pass, and the insert finishes with area "A". The second pass in the opposite direction will then use area "B" for finishing.

The above is not possible if the ramping is started from the lesser depth of cut to the deeper depth of cut. Ramping is always better from deep to a shallow depth.

Figure 39 – Ramping/Negative Inserts/RNGN

Feed

Figure 40 – Ramping/Positive Inserts/RPGN-RCGN

RAMPING
With Neutral V-Bottom Inserts

Feed

"A" Finishing Area 90° To Ramp (in front of centerline)

45°

1/3 Of Insert Diameter

1/3 Of Insert Diameter

Feed

"B" Finishing Area 90° To Ramp (on centerline)

45°

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