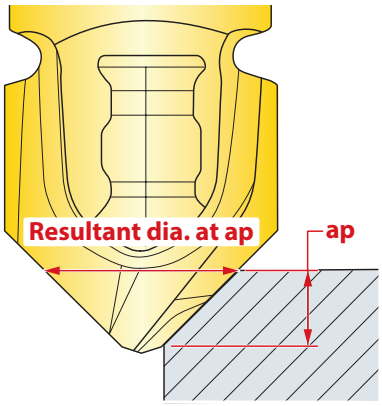
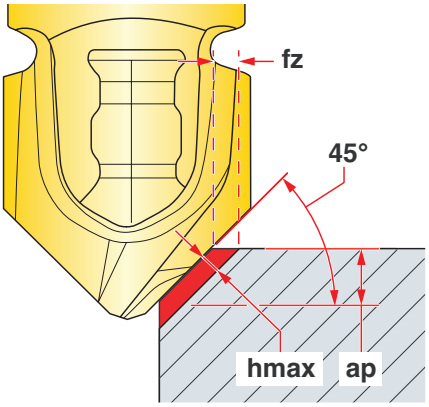
## OPERATING GUIDELINES - MILLING 45M, 45N, 45P, 46N, 47N, 48N

### RPM Calculation




Calculation is to be made using the resultant diameter at ap.

### Chip Thinning




Chip Thinning Calculator is recommended to ensure hmax falls within fz range.

| Material | | Brinnell Hardness | SFM | fz Feed per Tooth | Coolant |
|---|---|---|---|---|---|
| Steel | Low Carbon 1018, 8620 | 150-250 | 350-600 | .002-.004 | No |
| | High Carbon F-6180 | 250-400 | | | |
| | Alloyed Steel 4140, 4340 | 150-300 | | | |
| | Tool Steel A-6, D-1, D-2 | Up to 300 | 300-500 | | |
| Stainless Steel | 300 Series, 304, 316 | - | 250-500 | .002-.004 | May not be needed at high speeds |
| | 400 Series 15-5 PH | Up to 320 | | | |
| | 13-8 PH | - | | | Yes |
| Cast Iron | Gray | 150-250 | 450-700 | .002-.005 | No |
| | Nodular | 150-250 | 400-600 | .002-.004 | |
| Aluminum | 6061 T-6, 7075 T-6, 2024 | - | 1300-4000 | .003-.006 | Yes |
| Nickel Alloys | Inconel, Hastelloy, Waspalloy | - | 75-125 | .002-.004 | Yes |
| Titanium | 6AL-4V | - | 125-200 | .002-.004 | Yes |

## OPERATING GUIDELINES - SPOT/C'SINK 45M, 45N, 45P, 46N, 47N, 48N

| Material | | Brinnell Hardness | SFM | f Feed per Revolution | Coolant |
|---|---|---|---|---|---|
| Steel | Low Carbon 1018, 8620 | 150-250 | 200-500 | .003-.008 | No |
| | High Carbon F-6180 | 250-400 | | | |
| | Alloyed Steel 4140, 4340 | 150-300 | | | |
| Stainless Steel | 300 Series, 304, 316 | - | 200-400 | .003-.006 | May not be needed at high speeds |
| | 400 Series 15-5 PH | Up to 320 | | | |
| | 13-8 PH | - | | | Yes |
| Cast Iron | Gray | 150-250 | 250-550 | .003-.010 | No |
| | Nodular | 150-250 | | | |
| Titanium | 6AL-4V | - | 70-150 | .002-.005 | Yes |

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.