# GARR TOOL Reaming Guide

## *Fractional*

| Type | Rc Hardness | Recommended SFM | Chipload Per Flute (Fz) | | | |
|---|---|---|---|---|---|---|
| | | Series 4100 | .0590" - .1250" (1.499 - 3.175mm) | .1251" - .2500" (3.178 - 6.350mm) | .2501" - .3750" (6.353 - 9.525mm) | .3751" - .5020" (9.528 - 12.750mm) |
| **COBALT BASE ALLOYS** | | | | | | |
| Powdered Metal, Stellite, Hs-21, Haynes 25/188, X-40, L-605 | < 35<br>> 35 | 80-120<br>60-80 | .0003"-.0008" | .0005"-.0010" | .0008"-.0012" | .0010"-.0015" |
| **NICKEL BASE ALLOYS** | | | | | | |
| Invar, Kovar, Inconel-625/718, Waspaloy, Rene, Hastelloy, A286 | < 35<br>> 35 | 100-125<br>80-110 | .0003"-.0008" | .0005"-.0010" | .0008"-.0012" | .0010"-.0015" |
| **IRON BASE ALLOYS** | | | | | | |
| Incoloy 800-802, Multimet N-155, Timkin 16-25-6, Carpenter 22-b3 | < 35<br>> 35 | 150-175<br>120-150 | .0004"-.0009" | .0006"-.0012" | .0009"-.0013" | .0010"-.0017" |
| **MONEL** | | | | | | |
| Monel - 65% Nickel | | 75-110 | .0003"-.0008" | .0005"-.0010" | .0008"-.0012" | .0010"-.0015" |
| **TITANIUM ALLOYS** | | | | | | |
| Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si | | 120-150 | .0004"-.0009" | .0006"-.0012" | .0009"-.0013" | .0010"-.0017" |
| **STAINLESS STEELS** | | | | | | |
| (Precipitation) 13/8, 15/5, 17-4, pH Types | < 35<br>> 35 | 100-125<br>80-110 | .0004"-.0009" | .0006"-.0012" | .0009"-.0013" | .0010"-.0017" |
| (Austentic) Inox, 200 Series, 300 Series | < 35<br>> 35 | 100-125<br>80-110 | .0004"-.0009" | .0006"-.0012" | .0009"-.0013" | .0010"-.0017" |
| (Austentic) 304L, 316L, Nitronic 50, Inox | < 35<br>> 35 | 80-100<br>60-80 | .0003"-.0008" | .0005"-.0010" | .0008"-.0012" | .0010"-.0015" |
| (Martensitic) 400 Series | < 35<br>> 35 | 100-125<br>80-110 | .0004"-.0009" | .0006"-.0012" | .0009"-.0013" | .0010"-.0017" |
| **HIGH STRENGTH TOOL STEELS** | | | | | | |
| 4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, O1 | < 35<br>> 35 | 100-125<br>80-110 | .0003"-.0008" | .0005"-.0010" | .0008"-.0012" | .0010"-.0015" |
| **MEDIUM ALLOY TOOL STEELS** | | | | | | |
| 200, 250, 300, 8620 | < 35<br>> 35 | 100-125<br>80-110 | .0004"-.0009" | .0006"-.0012" | .0009"-.0013" | .0010"-.0017" |
| **CARBON STEELS** | | | | | | |
| Platinum, A36, 12L14, 1000's, 1100's, 1300's | < 35<br>> 35 | 100-125<br>80-110 | .0004"-.0009" | .0006"-.0012" | .0009"-.0013" | .0010"-.0017" |
| **CAST MATERIAL** | | | | | | |
| Steel | | 125-150 | .0003"-.0008" | .0005"-.0010" | .0008"-.0012" | .0010"-.0015" |
| Ductile Iron | | 150-225 | .0005"-.0010" | .0007"-.0012" | .0010"-.0015" | .0010"-.0018" |
| Gray Iron | | 125-200 | .0005"-.0010" | .0007"-.0012" | .0010"-.0015" | .0010"-.0018" |
| Aluminum | | 150-225 | .0005"-.0010" | .0007"-.0012" | .0010"-.0015" | .0010"-.0018" |
| **ALUMINUM** | | | | | | |
| Aircraft Grade (6061, 7075) | | 225 | .0005"-.0010" | .0007"-.0012" | .0010"-.0015" | .0010"-.0018" |
| **MAGNESIUM** | | | | | | |
| | | 225 | .0005"-.0010" | .0007"-.0012" | .0010"-.0015" | .0010"-.0018" |
| **COPPER** | | | | | | |
| Copper Alloys | | 225 | .0005"-.0010" | .0007"-.0012" | .0010"-.0015" | .0010"-.0018" |
| **BRASS, BRONZE** | | | | | | |
| Brass, Aluminum/Bronze, Low Silicon Bronze | | 125-200 | .0005"-.0010" | .0007"-.0012" | .0010"-.0015" | .0010"-.0018" |
| **COMPOSITE MATERIAL** | | | | | | |
| Glass Epoxy, Fiberglass, Plastics, Graphite, G10 | | 150 | .0003"-.0008" | .0005"-.0010" | .0008"-.0012" | .0010"-.0015" |

**NOTE - ABOVE ARE STARTING PARAMETERS ONLY. HIGHER RESULTS MAY BE ACHIEVED WITH OPTIMUM CONDITIONS.**