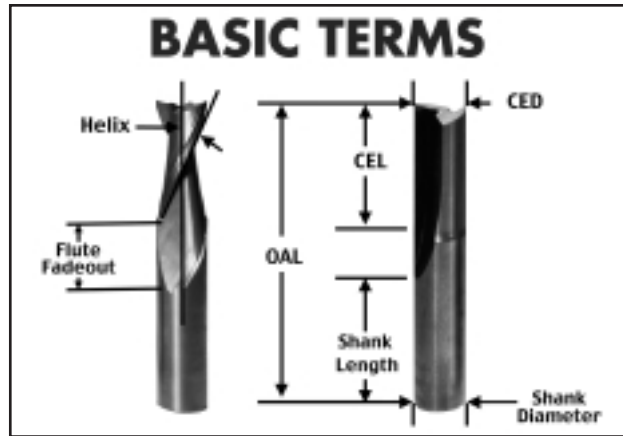


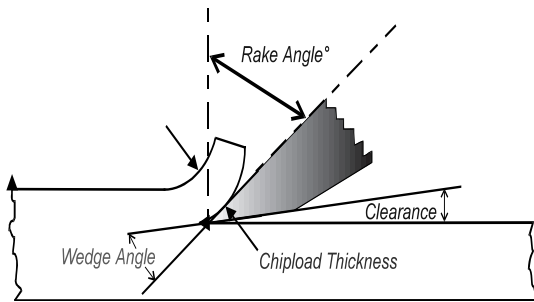
CUTTING TOOL GEOMETRY

Cutting tool geometry influences many factors including the type of chip produced, the flow of the chip, the finish, and the actual force placed on the part. Consequently, it is important to understand the basic terms associated with tool geometry and how these influences effect the machining process.

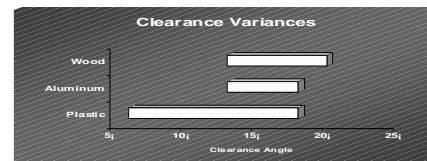
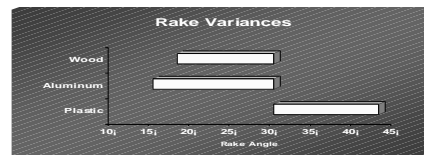


OAL= overall length CEL= cutting edge length
CED = cutting edge dia.

RAKE & CLEARANCE



RAKE & CLEARANCE



HELIX



UPCUT HELIX

PRO: BEST FINISHES
GOOD CHIP EXTRACTION
CON: SOMETIMES LIFTS PARTS

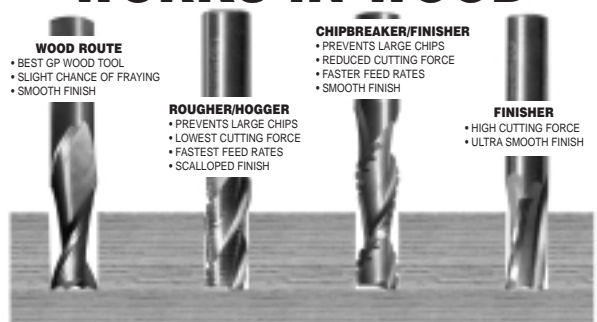
DOWNCUT HELIX

PRO: HELPS HOLD PARTS DOWN
CON: SOMETIMES REWELDS CHIPS
CHATTERS ON UNSUPPORTED PARTS

TOOL TYPES

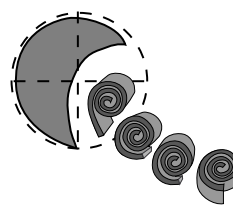
- STRAIGHT "O" FLUTE - SOFT WOOD/SOFT PLASTIC
- SPIRAL "O" FLUTES - PLASTICS/ALUMINUM
- "V" FLUTES - HARDWOOD/HARD PLASTIC/COMPOSITES
- FINISHERS - HARD PLASTICS/HARDWOODS
- ROUGHERS - ALL WOODS/COMPOSITES
- CHIPBREAKER/FINISHERS - ALL WOODS
- COMPRESSION SPIRALS - LAMINATED WOODS
- WOOD ROUTS - ALL WOODS
- STANDARD SPIRALS - ALUMINUM/COMPOSITES

HOW GEOMETRY WORKS IN WOOD

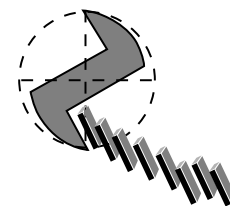


HOW GEOMETRY WORKS IN PLASTICS

WHY ARGUE WITH THE MATERIAL?



NATURAL CHIP FORMATION IN SOFT PLASTICS IS A CURL



NATURAL CHIP FORMATION IN HARD PLASTICS IS A BLOCK OR LOOSE CURL.