

Turning

Grades

GRADE	COATING	MATERIAL
HF7	UNCOATED	ALUMINUM
T5305	MT-CVD	CAST IRON (Cont-Cut)
T5315	MT-CVD	CAST IRON (Inter-Cut)
T7325	MT-CVD	S.S.
T7335	MT-CVD	S.S.
T8315	PVD	STEEL >50 ROCKWELL
T8330	PVD	S.S.
T8345	PVD	S.S.
T9310	MT-CVD	STEEL >50 ROCKWELL (Cont-Cut)
T9315	MT-CVD	STEEL >50 ROCKWELL
T9325	MT-CVD	STEEL <30 ROCKWELL
T9325	MT-CVD	S.S.
T9325	MT-CVD	CAST IRON (Inter-Cut)
T9335	MT-CVD	STEEL <30 ROCKWELL (Inter-Cut)
TT310	CERMET	30 ROCKWELL STEEL
TB310	CBN	50 ROCKWELL STEEL
H07	UNCOATED	TITANIUM
H07	UNCOATED	ALUMINUM
T6310	PVD	SUPER ALLOY
T6310	PVD	S.S.

Chip Breakers

Neg. Chip Breakers		P	M	K	N	S	H
SI	STEEL, S.S. AND S-ALLOY						
FF	FINE FINISH						
FM	MEDIUM						
RM	ROUGH MEDIUM						
KR	ROUGH						
M	MEDIUM						
R	ROUGH						
NM	MEDIUM						
HR2	HEAVY ROUGH						
NMR	ROUGH						
NF	FINISH						
SM	ROUGH						
SF	FINISH						
A	FLAT TOP						
WF	WIPER FINISH						
WM	WIPER MEDIUM						
W-NM	WIPER MEDIUM						
W-FM	WIPER MEDIUM						

Pos. Chip Breakers		P	M	K	N	S	H
AL	ALUMINUM						
FF2	FINE FINISH						
FM2	FINE FINISH/MEDIUM TURNING						
RM3	MEDIUM TURNING						
NF1	FINE FINISH						
NF2	FINISH						
SF2	FINE FINISH						
SF3	FINE FINISH/MEDIUM TURNING						
UR	FINISH						

Milling

Grades

GRADE	COATING	MATERIAL
M0315	PVD	ALUMINUM SFM X3
M5315	MT-CVD	CAST IRON
M6330	PVD	S.S. #1 CHOICE
M6330	PVD	Ti/SUPER ALLOY 1st Choice
M6330	PVD	STEEL <30 ROCKWELL
M8310	PVD	STEEL >50 ROCKWELL
M8325	PVD	S.S.
M8340	PVD	S.S. 2ND CHOICE
M8340	PVD	Ti/SUPER ALLOY 2nd Choice
M8345	PVD	S.S. 2nd Choice
M9315	MT-CVD	STEEL >50 ROCKWELL
M9325	MT-CVD	STEEL <50 ROCKWELL
M9340	MT-CVD	S.S. AND SUPER ALLOY
HF7	UNCOATED	ALUMINUM / PLASTIC
S26	UNCOATED	CAST IRON

Chip Breakers

		P	M	K	N	S	H
FA	ALUMINUM						
HF	HIGH FEED						
M	MEDIUM						
F	FINISH						
FM	FINISH						
R	ROUGH						
GM	MEDIUM						
HM	MEDIUM						
FF	FINE FINISH						
MI	ROUGH MEDIUM						
HF2	HIGH FEED						
MM	MEDIUM						
MF	FINISH						
W	FINISH						
Q	FLAT TOP MEDIUM ROUGH						

Additional Info

P	STEELS
M	STAINLESS
K	CAST
N	ALUMINUM
S	TITANIUM / SUPER ALLOY
H	HARDENED STEEL

$$RPM = \frac{\text{Surface Feet Per Minute} \times 3.82}{\text{Cutting Diameter}}$$

$$\text{Surface Feet per Minute} = RPM \times .262 \times \text{cutting diameter}$$

$$\text{Feed Rate (in/min)} = RPM \times \text{chip load per tooth} \times \text{no. of flutes}$$

$$\text{Chip Load per Tooth} = \frac{\text{inches per minute}}{rpm / \# \text{ of flutes}}$$

$$\text{Cubic inches per minute (MRR)} = \text{width} \times \text{depth} \times \text{inches per minute}$$

$$\text{Required Horsepower @ Spindle} = \text{cubic inches per minute} \times \text{power factor}$$