TURNING CHIPBREAKERS OVERVIEW IN STEEL
OPERATION

STEEL

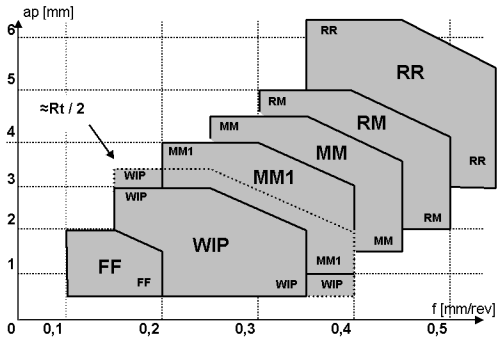
NEGATIVE INSERTS

	OPERATION					
	FINE FINISHING	FINISHING / SEMIFINISHING	SEMIFINISHING	MEDIUM	ROUGHING	HEAVY ROUGHING
CHIPBREAKERS	FF	WIP	MM1	MM	RM	RR

	FF	WIP	MM1	MM	RM	RR	
$ap_{min}=r\varepsilon \times \dots$	0,75	0,75	1,20	1,25	2,00	3,10	[mm]
$ap_{max}=l \times \dots$	0,20	0,27	0,30	0,33	0,40	0,50	[mm]
$f_{min}=r\varepsilon \times \dots$	0,15	0,18	0,28	0,28	0,40	0,38	[mm]
$f_{max}=r\varepsilon \times \dots$	0,30	0,45	0,50	0,52	0,65	0,75	[mm]
$A_{max}=ap_{max} \times f_{max}$	0,70	0,70	0,70	0,70	0,75	0,80	[mm²]

Ex: CNMG 120408-MM for CK60 / K_r = 95°

ap_{min} = 0.80 × 1.25	=	1,00	[mm]	»	1.00/25.4	=	0,04 [inch]
ap_{max} = 12 × 0.33	=	3,96	[mm]	»	3.96/25.4	=	0,16 [inch]
f_{min} = 0.80 × 0.28	=	0,22	[mm]	»	0.22/25.4	=	0,01 [inch]
f_{max} = 0.80 × 0.52	=	0,44	[mm]	»	0.44/25.4	=	0,02 [inch]
A_{max}=3.96×0.44×0.75	=	1,32	[mm²]	»	1.32/25.4²	=	0,002 [inch²]



STEEL

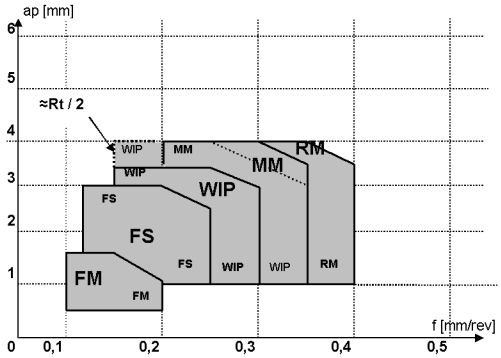
POSITIVE INSERTS

	OPERATION				
	FINE FINISHING	FINISHING / SEMIFINISHING	SEMIFINISHING	MEDIUM	ROUGHING
CHIPBREAKERS	FM	FS	WIP	MM	RM

	FM	FS	WIP	MM	RM	
$ap_{min}=r\varepsilon \times \dots$	0,70	1,25	1,25	1,25	1,25	[mm]
$ap_{max}=l \times \dots$	0,12	0,25	0,30	0,33	0,33	[mm]
$f_{min}=r\varepsilon \times \dots$	0,08	0,16	0,20	0,25	0,28	[mm]
$f_{max}=r\varepsilon \times \dots$	0,28	0,35	0,38	0,45	0,52	[mm]
$A_{max}=ap_{max} \times f_{max}$	0,65	1,00	0,75	0,75	0,75	[mm²]

Ex: CNMG 120408-RM for CK60 / K_r = 95°

ap_{min} = 0.80 × 1.25	=	1,00	[mm]	»	1.00/25.4	=	0,04 [inch]
ap_{max} = 12 × 0.33	=	3,96	[mm]	»	3.96/25.4	=	0,16 [inch]
f_{min} = 0.80 × 0.28	=	0,22	[mm]	»	0.22/25.4	=	0,01 [inch]
f_{max} = 0.80 × 0.52	=	0,44	[mm]	»	0.44/25.4	=	0,02 [inch]
A_{max}=4.00×0.42×0.75	=	1,26	[mm²]	»	1.26/25.4²	=	0,020 [inch²]



General Formulas

Vc:	Cutting speed	[mm/min]	or	[inch/min]
d1:	Diameter	[mm]	or	[inch]
f:	Feed	[mm]	or	[inch]
n:	Revolutions/min	[rev./min.]		
Vf:	Feed rate	[mm/min]	or	[inch/min]
ap:	depth of cut	[mm]	or	[inch]

1inch = 25.4mm 1m/min = 3.28sfm
1 mm = 0.04inch 1 sfm = 0.305m/min

$$Vc = \frac{\Pi \times d1 \times n}{1000}$$ [mm/min] if Dc in [mm]

$$n = \frac{Vc \times 1000}{\Pi \times d1}$$ [rev./min.]

Vf = f.N [mm/min] if f in [mm]

IMPORTANT:

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