

MACHINE TAPS R.P.M. AND RAKE ANGLE

MATERIAL	Cutting angle α	Cutting speed V_c (m/min.)	COOLANT
500 N/mm ² Non alloy steel	12° - 14°	10 - 15	Cutting oil
Carbon steel	10° - 12°	12 - 16	Cutting oil or emulsion
700 N/mm ² steel	10° - 12°	10 - 15	Cutting oil or emulsion
900 N/mm ² alloy steel	6° - 8°	6 - 8	Cutting oil or emulsion
<1100 N/mm ² alloy steel	4° - 6°	3 - 5	Cutting oil
Ni-Mn-Cr alloy steel	3° - 5°	3 - 5	Cutting oil
Stainless steel	8° - 10°	3 - 5	Cutting oil
Cast iron	4° - 6°	8 - 10	Cutting oil
Grey graphite die cast	0° - 3°	4 - 6	Cutting oil
Malleable die cast	3° - 5°	8 - 10	Cutting oil
Sferoidal die cast	6° - 8°	8 - 10	Cutting oil
Aluminium cast	10° - 12°	15 - 20	Cutting oil
Aluminium long chip	16° - 18°	20 - 25	Cutting oil
Aluminium alloy < 10% Si	14° - 16°	18 - 20	Cutting oil
Aluminium alloy > 10% Si	8° - 10°	14 - 16	Cutting oil
Zamak	14° - 16°	10 - 12	Cutting oil
Soft bronze	8° - 10°	8 - 12	Cutting oil
Hard bronze	3° - 5°	6 - 10	Cutting oil
Copper	12° - 14°	15 - 18	Cutting oil
Electrolytic copper	8° - 10°	8 - 12	Cutting oil
Fragile brass	2° - 4°	25 - 35	Dry or cutting oil
Though brass	6° - 8°	15 - 20	Dry or cutting oil
Mn alloy	2° - 4°	25 - 35	Air or dry
Ni alloy	2° - 4°	3 - 5	Special cutting oil
Titanium alloy	<1° - 3°	2 - 4	Special cutting oil
Bakelite	0° - 2°	3 - 5	Air or dry
Hard plastic	0° - 2°	8 - 10	Air or dry
Soft plastic	16° - 18°	10 - 15	Air or dry

CONVERSION FORMULA

$$\text{R.P.M.} = \frac{V_c \times 1.000}{\varnothing \times \Pi}$$

$$V_c = \frac{\text{R.P.M.} \times \varnothing \times \Pi}{1.000}$$

R.P.M.	=	REVOLUTIONS PER MINUTE
V_c	=	CUTTING DEPTH IN MILLIMETER PER MINUTE
\varnothing	=	DRILL DIAMETER
Π	=	3,1416

CUTTING ANGLE

