# FRESE E SVASATORI COMPONIBILI
## Interchangeable Counterbores and Countersinks



## SCELTE RACCOMANDATE / Reccomanded choice

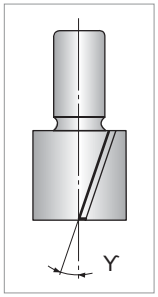
Y 40°

Y 25°

Y 5°

Y 7°

| Materiali / Materials | | N | W | H | HI | S |
|---|---|---|---|---|---|---|
| | | Toll k7 | Toll k7 | Toll k7 | | Toll k7 |
| P | Acciaio / Steel | ● | ● | | ● | ● |
| M | Acciaio Inossidabile / Stainless Steel | ● | ● | | ● | ● |
| K | Ghisa / Cast iron | | | ● | ● | |
| N | Alluminio / Alluminium | ● | ● | | ● | ● |
| N | Fusioni di Alluminio /Cast Alluminium | | | | ● | |
| N | Rame / Copper | ● | ● | | | ● |
| N | Bronzo / Bronze | | | ● | ● | |
| N | Ottone / Brass | | | ● | ● | |
| H | HARDOX | | | | ● | |
| X | Plastiche Morbide / Soft Plastics | ● | | | | ● |
| X | Plastiche Dure / Hard Plastics | | | ● | | |




## PARAMETRI RACCOMANDATI / Cutting data

z=4

z=2

z=3

z=2

z=3

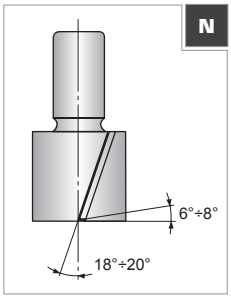
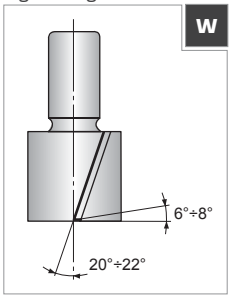
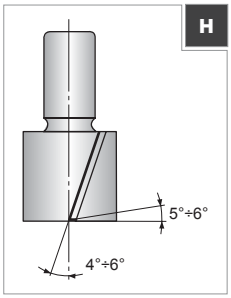
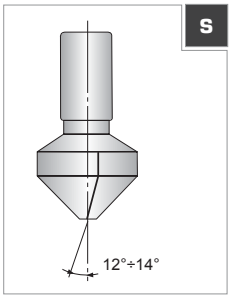
| Materiale / Material | | | N | W | H | | HI | | S | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | HSS | | MD/Carbide | | MD/Carbide | | HSS | |
| Resistenza / Tensile Strenght N/mm² Durezza / Hardness HB | | | Speed Vc m/min | Feed F mm/rev | Speed Vc m/min | Feed F mm/rev | Speed Vc m/min | Feed F mm/rev | Speed Vc m/min | Feed F mm/rev |
| P | Acciaio / Steel | < 450 N/mm² | 20 - 40 | 0.10 - 0.5 | 60 - 130 | 0.1 - 0.6 | 75 - 130 | 0.1 - 0.6 | 15 - 30 | 0.05 - 0.3 |
| P | Acciaio / Steel | < 600 N/mm² | 15 - 30 | 0.10 - 0.4 | 50 - 110 | 0.1 - 0.5 | 65 - 120 | 0.1 - 0.5 | 10 - 25 | 0.05 - 0.3 |
| P | Acciaio / Steel | < 1000 N/mm² | 10 - 25 | 0.05 - 0.3 | 40 - 110 | 0.1 - 0.3 | 55 - 100 | 0.1 - 0.4 | 10 - 20 | 0.05 - 0.3 |
| P | Acciaio / Steel | > 1000 N/mm² | 5 - 20 | 0.05 - 0.3 | 30 - 90 | 0.1 - 0.2 | 45 - 90 | 0.1 - 0.4 | 5 - 15 | 0.05 - 0.3 |
| P | Acciaio Fuso / Cast Steel | < 800 N/mm² | 10 - 25 | 0.05 - 0.3 | 30 - 90 | 0.1 - 0.3 | 45 - 90 | 0.1 - 0.4 | 5 - 15 | 0.05 - 0.3 |
| M | Acciaio Inossidabile / Stainless Steel | | 10 - 20 | 0.10 - 0.3 | 20 - 60 | 0.1 - 0.4 | 30 - 60 | 0.1 - 0.3 | 5 - 15 | 0.05 - 0.3 |
| K | Ghisa / Cast iron | < 180 HB | 20 - 40 | 0.20 - 0.5 | 60 - 120 | 0.2 - 0.5 | 80 - 120 | 0.2 - 0.5 | 10 - 25 | 0.05 - 0.3 |
| K | Ghisa / Cast iron | < 200 HB | 20 - 35 | 0.20 - 0.4 | 50 - 100 | 0.2 - 0.4 | 80 - 120 | 0.2 - 0.5 | 10 - 20 | 0.05 - 0.3 |
| K | Ghisa / Cast iron | < 220 HB | 10 - 30 | 0.10 - 0.4 | 40 - 100 | 0.2 - 0.4 | 70 - 110 | 0.1 - 0.4 | 5 - 15 | 0.05 - 0.3 |
| K | Ghisa Malleabile / Malleable Iron | < 180 HB | 20 - 40 | 0.10 - 0.4 | 60 - 120 | 0.2 - 0.5 | 80 - 120 | 0.1 - 0.5 | 15 - 25 | 0.05 - 0.3 |
| K | Ghisa Malleabile / Malleable Iron | < 200 HB | 15 - 35 | 0.10 - 0.4 | 50 - 110 | 0.2 - 0.5 | 75 - 110 | 0.1 - 0.5 | 10 - 20 | 0.05 - 0.3 |
| K | Ghisa Malleabile / Malleable Iron | < 220 HB | 10 - 30 | 0.10 - 0.4 | 40 - 100 | 0.2 - 0.5 | 60 - 110 | 0.1 - 0.4 | 5 - 15 | 0.05 - 0.3 |
| N | Alluminio Morbido / Soft Alluminium | | 70 - 150 | 0.05 - 0.5 | 100 - 350 | 0.1 - 0.8 | 80 - 150 | 0.2 - 1.0 | 20 - 50 | 0.05 - 0.3 |
| N | Alluminio Duro / Hard Alluminium | | 70 - 120 | 0.05 - 0.5 | 100 - 350 | 0.1 - 0.8 | 100 - 200 | 0.2 - 1.0 | 30 - 70 | 0.05 - 0.3 |
| N | Fusioni di Alluminio /Cast Alluminium | | 70 - 120 | 0.10 - 0.5 | 200 - 350 | 0.1 - 0.5 | 100 - 200 | 0.2 - 1.0 | 30 - 70 | 0.05 - 0.3 |
| N | Bronzo / Bronze | | 30 - 60 | 0.10 - 0.5 | 50 - 150 | 0.1 - 0.8 | 80 - 150 | 0.1 - 0.5 | 20 - 40 | 0.05 - 0.3 |
| N | Ottone / Brass | | 40 - 80 | 0.10 - 0.5 | 50 - 150 | 0.1 - 0.4 | 80 - 200 | 0.2 - 0.6 | 20 - 60 | 0.05 - 0.3 |
| N | Rame / Copper | | 30 - 60 | 0.10 - 0.4 | 50 - 150 | 0.1 - 0.4 | 50 - 120 | 0.2 - 0.4 | 20 - 50 | 0.05 - 0.3 |
| H | HARDOX | | | 0.10 - 0.4 | | | 30 - 60 | 0.1 - 0.2 | | |
| X | Plastiche Morbide / Soft Plastics | | 50-100 | | | | | | 40 - 80 | 0.05 - 0.3 |
| X | Plastiche Dure / Hard Plastics | | | 0.10 - 0.5 | 70 - 200 | 0.1 - 0.5 | 90 - 200 | 0.2 - 0.5 | | |

## FORMULE / Formulas

n = giri al minuto - Rev/min.

$$n = \frac{Vc \times 1000}{\pi \times \varnothing}$$

Vf = avanz. /feed (mm/min.)

Vf = n x F x z

## RIAFFILATURA / Regrinding