

Applications
Applications
Anwendungen

F02

Toolholders
Porte-outils
Klemmhalter

F03

Boring bars
Barres d'alésage
Bohrstangen

F07

Tool blocks
Blocs porte-lames
Trägerwerkzeuge

F08

Blades
Lames
Stechschwerter

F08

Top Notch Tools
Outils Notch
Notch-Werkzeuge

F10


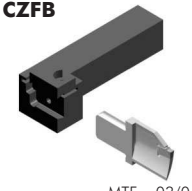
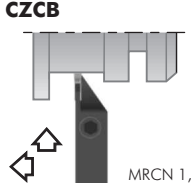
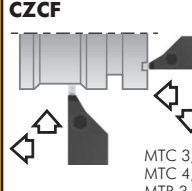
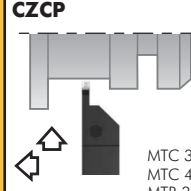
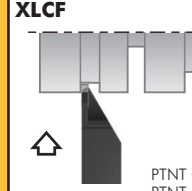
Cutting cata
Conditions de coupe
Schnittbedingungen

F12

Toolholders - Porte-outils - Klemmhalter

Inserts

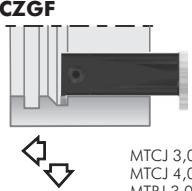
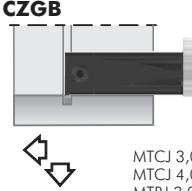
Turning

| | | | | | |
|--|--|---|--|---|---|
| <p>CZGB</p>  <p>Page F.03 MTE 03/04 MRCN 03/04</p> | <p>CZFB</p>  <p>Page F.03 MTE 03/04 MRCN 03/04</p> | <p>CZCB</p>  <p>Page F.05 MRCN 1,6 ... MRCN 6,0</p> | <p>CZCF</p>  <p>Page F.05 MTC 3,0 MTC 4,0 MTR 3,0 MTR 3,8</p> | <p>CZCP</p>  <p>Page F.05 MTC 3,0 MTC 4,0 MTR 3,0 MTR 3,8</p> | <p>XLCF</p>  <p>Page F.06 PTNT 02 PTNT 03 PTNT 04</p> |
|--|--|---|--|---|---|

Automatic lathes

Boring bars - Barres d'alésage - Bohrstangen

Ceramic tools



| | | | | | |
|---|---|--|--|--|--|
| <p>CZGF</p>  <p>Page F.07 MTCJ 3,0 MTCJ 4,0 MTRJ 3,0 MTRJ 3,8</p> | <p>CZGB</p>  <p>Page F.07 MTCJ 3,0 MTCJ 4,0 MTRJ 3,0 MTRJ 3,8</p> | | | | |
|---|---|--|--|--|--|

Parting & grooving

Tool blocks - Blocs porte-lames - Trägerwerkzeuge

Threading

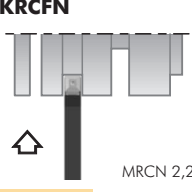
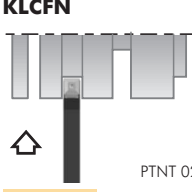
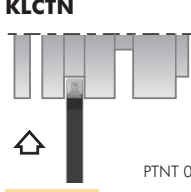
Drills

| | | | | | |
|--|--|--|--|--|--|
| <p>KPTS</p>  <p>Page F.08</p> | <p>DPTS</p>  <p>Page F.08</p> | | | | |
|--|--|--|--|--|--|

Blades- Lames - Stechschwerter

Cartridges

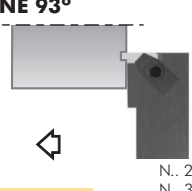
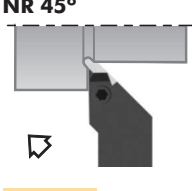
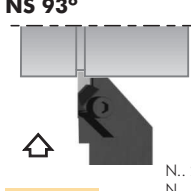

Brazed tools

| | | | | | |
|--|--|--|--|--|--|
| <p>KRCFN</p>  <p>Page F.08 MRCN 2,2 ... MRCN 6,0</p> | <p>KLCFN</p>  <p>Page F.08 PTNT 02 ... PTNT 09</p> | <p>KLCTN</p>  <p>Page F.09 PTNT 02 ... PTNT 06</p> | | | |
|--|--|--|--|--|--|

Top Notch Tools - Outils Notch - Notch-Werkzeuge

Milling cutters

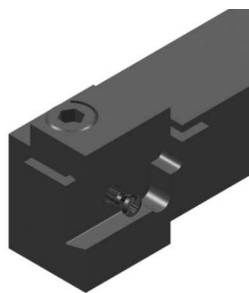
Solid carbide



| | | | | | |
|---|---|---|--|--|--|
| <p>NE 93°</p>  <p>Page F.10 N.. 2 N.. 3 N.. 4</p> | <p>NR 45°</p>  <p>Page F.10 N.. 3</p> | <p>NS 93°</p>  <p>Page F.10 N.. 2 N.. 3 N.. 4</p> | <p>NNTO 93°</p>  <p>Page F.11 N.. 2 N.. 3 N.. 4</p> | | |
|---|---|---|--|--|--|

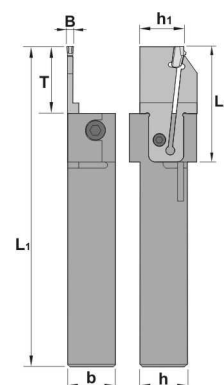
Boring heads

Arbors & adaptors

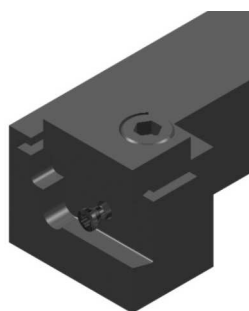
CZGB





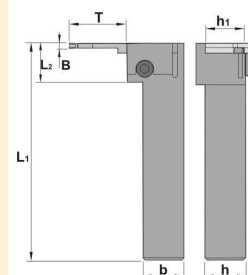
| REF. | h | b | L1 | L2 | h1 | B | T |  |  |
|--------------------------|----|----|-----|----|----|-----|-------|--|---|
| CZGB R/L 2020 M34 | 20 | 20 | 150 | 53 | 20 | 3-4 | 25-30 | 466 | 505 |
| CZGB R/L 2525 M34 | 25 | 25 | 150 | 53 | 25 | 3-4 | 25-30 | 466 | 505 |
| CZGB R/L 3232 P34 | 32 | 32 | 170 | 53 | 32 | 3-4 | 25-30 | 466 | 505 |



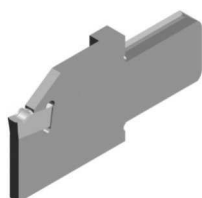
CZFB



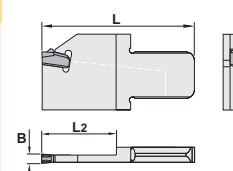
| REF. | h | b | L1 | L2 | h1 | B | T |  |  |
|--------------------------|----|----|-----|----|----|-----|-------|--|---|
| CZFB R/L 2525 M34 | 25 | 25 | 150 | 25 | 25 | 3-4 | 25-30 | 466 | 505 |
| CZFB R/L 3232 P34 | 32 | 32 | 170 | 25 | 32 | 3-4 | 25-30 | 466 | 505 |



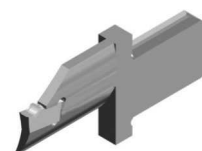
CZXB 00



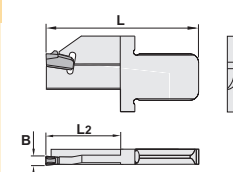
| REF. | L | L2 | B | Insert size |
|-----------------------|----|----|---|-------------|
| CZXB R/L 00X03 | 53 | 25 | 3 | MRCN 03 |
| CZXB R/L 00X04 | 53 | 25 | 4 | MRCN 04 |



CZXB 40-50



| REF. | L | L2 | B | Ø Range | Insert size |
|-------------------------|----|----|---|---------|-------------|
| CZXB R/L 4050X03 | 53 | 20 | 3 | 40-50 | MTE 03 |
| CZXB R/L 4050X04 | 53 | 20 | 4 | 40-50 | MTE 04 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

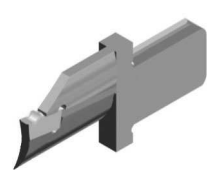
Solid carbide

Boring heads

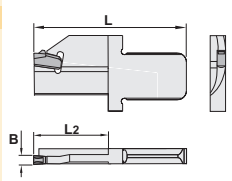
Arbors & adaptors

Inserts

CZXB 50-65



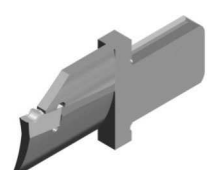
| REF. | L | L2 | B | Ø Range | Insert size |
|-------------------------|----|----|---|---------|-------------|
| CZXB R/L 5065X03 | 53 | 20 | 3 | 50-65 | MTE 03 |
| CZXB R/L 5065X04 | 53 | 20 | 4 | 50-65 | MTE 04 |



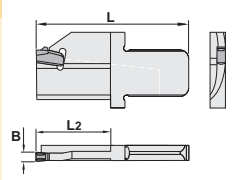
Turning

Automatic lathes

CZXB 65-92



| REF. | L | L2 | B | Ø Range | Insert size |
|-------------------------|----|----|---|---------|-------------|
| CZXB R/L 6592X03 | 53 | 20 | 3 | 65-92 | MTE 03 |
| CZXB R/L 6592X04 | 53 | 20 | 4 | 65-92 | MTE 04 |



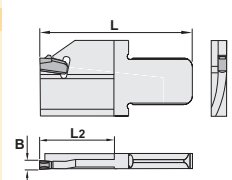
Ceramic tools

Parting & grooving

CZXB 90-122



| REF. | L | L2 | B | Ø Range | Insert size |
|--------------------------|----|----|---|---------|-------------|
| CZXB R/L 90122X03 | 53 | 25 | 3 | 90-122 | MTE 03 |
| CZXB R/L 90122X04 | 53 | 25 | 4 | 90-122 | MTE 04 |



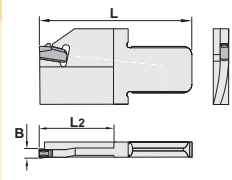
Threading

Drills

CZXB 120-160



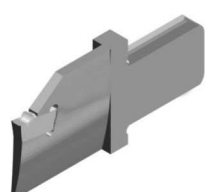
| REF. | L | L2 | B | Ø Range | Insert size |
|---------------------------|----|----|---|---------|-------------|
| CZXB R/L 120160X03 | 53 | 25 | 3 | 120-160 | MTE 03 |
| CZXB R/L 120160X04 | 53 | 25 | 4 | 120-160 | MTE 04 |



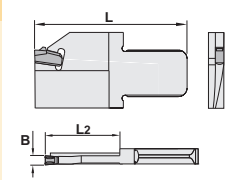
Cartridges

Brazed tools

CZXB 150-500



| REF. | L | L2 | B | Ø Range | Insert size |
|---------------------------|----|----|---|---------|-------------|
| CZXB R/L 150500X03 | 53 | 25 | 3 | 150-500 | MTE 03 |
| CZXB R/L 150500X04 | 53 | 25 | 4 | 150-500 | MTE 04 |



Milling cutters

Solid carbide

Boring heads

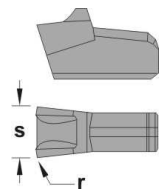


MTE



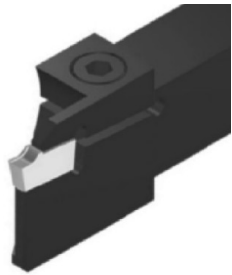
MRCN

| REF. | s | r |
|--------------------|-----|------|
| MTE/MRCN 03 | 3,0 | 0,20 |
| MTE/MRCN 04 | 4,0 | 0,20 |

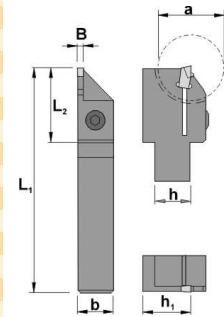


Arbors & adaptors

CZCB

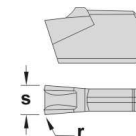


| REF. | h | b | L1 | L2 | h1 | B | α | MRCN | | |
|-------------------|----|----|-----|----|----|-----|----|------|-----|-----|
| CZCB R/L 1010 J01 | 10 | 10 | 110 | 25 | 21 | 1,6 | 22 | 1,6 | 107 | 504 |
| CZCB R/L 1010 J02 | 10 | 10 | 110 | 25 | 21 | 2,2 | 22 | 2,2 | 107 | 504 |
| CZCB R/L 1212 J01 | 12 | 12 | 110 | 25 | 21 | 1,6 | 22 | 1,6 | 107 | 504 |
| CZCB R/L 1212 J02 | 12 | 12 | 110 | 25 | 21 | 2,2 | 22 | 2,2 | 107 | 504 |
| CZCB R/L 1612 J02 | 16 | 12 | 110 | 29 | 21 | 2,2 | 32 | 2,2 | 199 | 505 |
| CZCB R/L 1612 J03 | 16 | 12 | 110 | 29 | 21 | 3,0 | 32 | 3,0 | 199 | 505 |
| CZCB R/L 2016 K03 | 20 | 16 | 125 | 35 | 30 | 3,0 | 42 | 3,0 | 109 | 505 |
| CZCB R/L 2016 K04 | 20 | 16 | 125 | 35 | 30 | 4,0 | 42 | 4,0 | 109 | 505 |
| CZCB R/L 2016 K05 | 20 | 16 | 125 | 35 | 30 | 5,0 | 42 | 5,0 | 109 | 505 |
| CZCB R/L 2016 K06 | 20 | 16 | 125 | 35 | 30 | 6,0 | 42 | 6,0 | 109 | 505 |
| CZCB R/L 2520 M03 | 25 | 20 | 150 | 50 | 30 | 3,0 | 80 | 3,0 | 109 | 505 |
| CZCB R/L 2520 M04 | 25 | 20 | 150 | 50 | 30 | 4,0 | 80 | 4,0 | 109 | 505 |
| CZCB R/L 2520 M05 | 25 | 20 | 150 | 50 | 30 | 5,0 | 80 | 5,0 | 109 | 505 |
| CZCB R/L 2520 M06 | 25 | 20 | 150 | 50 | 30 | 6,0 | 80 | 6,0 | 109 | 505 |

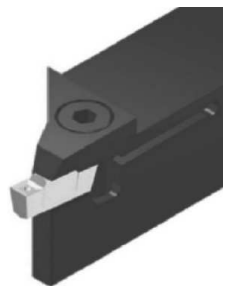


| REF. | s | r |
|----------|-----|------|
| MRCN 1,6 | 1,6 | 0,15 |
| MRCN 2,2 | 2,2 | 0,20 |
| MRCN 3,0 | 3,0 | 0,20 |
| MRCN 4,0 | 4,0 | 0,20 |
| MRCN 5,0 | 5,0 | 0,30 |
| MRCN 6,0 | 6,0 | 0,40 |

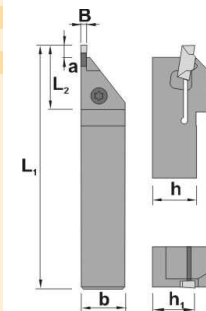
For more information see page: A.67



CZCF

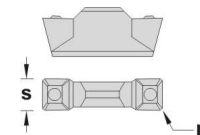


| REF. | h | b | L1 | L2 | B | α | MT. | | |
|-------------------|----|----|-----|----|-----|-----|---------|-----|-----|
| CZCF R/L 1616 H34 | 16 | 16 | 100 | 24 | 3-4 | 4,5 | 3,0-4,0 | 199 | 505 |
| CZCF R/L 2020 K34 | 20 | 20 | 125 | 24 | 3-4 | 4,5 | 3,0-4,0 | 109 | 505 |
| CZCF R/L 2525 M34 | 25 | 25 | 150 | 24 | 3-4 | 4,5 | 3,0-4,0 | 109 | 505 |

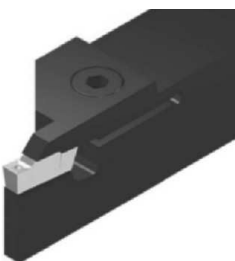


| REF. | s | r |
|---------|-----|------|
| MT. 3,0 | 3,0 | 0,15 |
| MT. 4,0 | 4,0 | 0,20 |
| MT. 3,0 | 3,0 | 1,50 |
| MT. 3,8 | 3,8 | 1,90 |

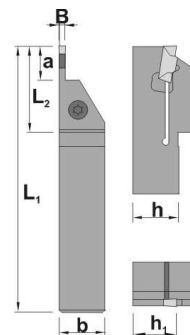
For more information see page: A.67



CZCP

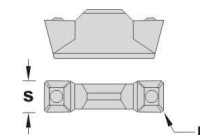


| REF. | h | b | L1 | L2 | B | α | MT. | | |
|-------------------|----|----|-----|----|-----|----|---------|-----|-----|
| CZCP R/L 1616 H34 | 16 | 16 | 100 | 30 | 3-4 | 12 | 3,0-4,0 | 199 | 505 |
| CZCP R/L 2020 K34 | 20 | 20 | 125 | 30 | 3-4 | 12 | 3,0-4,0 | 109 | 505 |
| CZCP R/L 2525 M34 | 25 | 25 | 150 | 30 | 3-4 | 12 | 3,0-4,0 | 109 | 505 |



| REF. | s | r |
|---------|-----|------|
| MT. 3,0 | 3,0 | 0,15 |
| MT. 4,0 | 4,0 | 0,20 |
| MT. 3,0 | 3,0 | 1,50 |
| MT. 3,8 | 3,8 | 1,90 |

For more information see page: A.67



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

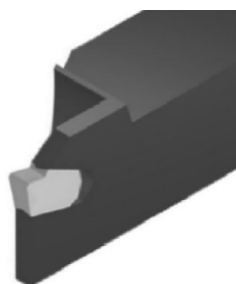
Milling
cutters

Solid
carbide

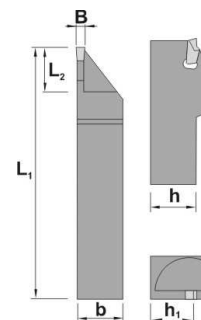
Boring
heads

Arbors &
adaptors

XLCF



| REF. | h=h1 | b | L1 | L2 | B | PTNT | |
|--------------------------|------|----|-----|----|---|------|-----|
| XLCF R/L 1010 J02 | 10 | 10 | 110 | 18 | 2 | 02 | 532 |
| XLCF R/L 1212 J02 | 12 | 12 | 110 | 18 | 2 | 02 | 532 |
| XLCF R/L 1612 J03 | 16 | 12 | 110 | 20 | 3 | 03 | 532 |
| XLCF R/L 1612 J04 | 16 | 12 | 110 | 20 | 4 | 04 | 532 |
| XLCF R/L 2012 K03 | 20 | 12 | 125 | 20 | 3 | 03 | 532 |
| XLCF R/L 2012 K04 | 20 | 12 | 125 | 20 | 4 | 04 | 532 |
| XLCF R/L 2020 K03 | 20 | 20 | 125 | 20 | 3 | 03 | 532 |
| XLCF R/L 2020 K04 | 20 | 20 | 125 | 20 | 4 | 04 | 532 |
| XLCF R/L 2525 M03 | 25 | 25 | 150 | 20 | 3 | 03 | 532 |
| XLCF R/L 2525 M04 | 25 | 25 | 150 | 20 | 4 | 04 | 532 |



| REF. | s |
|----------------|------|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |

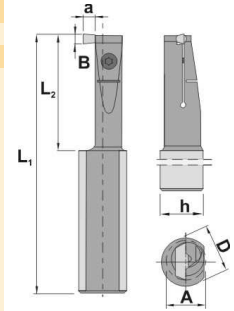


For more information see page: A.68

CZGF



| REF. | D | A | h | L1 | L2 | B | α | MT.. | | | | |
|-------------------------|----|------|----|-----|----|-----|----------|---------|-----|-----|-----|-----|
| S20R CZGF R/L 34 | 20 | 16,5 | 18 | 200 | 40 | 3-4 | 5 | 3,0-4,0 | 150 | 520 | - | - |
| S25R CZGF R/L 34 | 25 | 25,0 | 23 | 200 | 50 | 3-4 | 5 | 3,0-4,0 | - | - | 179 | 504 |
| S32S CZGF R/L 34 | 32 | 30,0 | 30 | 250 | 60 | 3-4 | 5 | 3,0-4,0 | - | - | 179 | 504 |



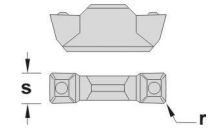
Inserts

Turning

Automatic lathes

Ceramic tools

| REF. | s | r |
|-----------------|-----|------|
| MT.. 3,0 | 3,0 | 0,15 |
| MT.. 4,0 | 4,0 | 0,20 |
| MT.. 3,0 | 3,0 | 1,50 |
| MT.. 3,8 | 3,8 | 1,90 |



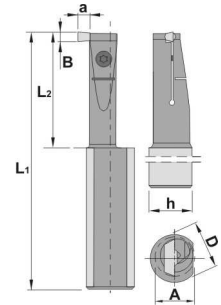
For more information see page: A.67,68

Parting & grooving

CZGB



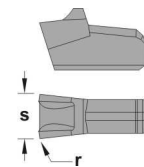
| REF. | D | A | h | L1 | B | α | MCRN | | | | |
|-------------------------|----|------|----|-----|---|----------|------|-----|-----|-----|-----|
| S16M CZGB R/L 03 | 16 | 15,0 | 15 | 150 | 3 | 4 | 3,0 | 150 | 520 | - | - |
| S20R CZGB R/L 03 | 20 | 16,5 | 18 | 200 | 3 | 6 | 3,0 | 150 | 520 | - | - |
| S25S CZGB R/L 03 | 25 | 25,0 | 23 | 250 | 3 | 8 | 3,0 | - | - | 179 | 504 |
| S20R CZGB R/L 04 | 20 | 16,5 | 18 | 200 | 4 | 6 | 4,0 | - | - | 179 | 504 |
| S25S CZGB R/L 04 | 25 | 25,0 | 23 | 250 | 4 | 8 | 4,0 | - | - | 179 | 504 |



Threading

Drills

| REF. | s | r |
|-----------------|-----|------|
| MRCN 3,0 | 3,0 | 0,20 |
| MRCN 4,0 | 4,0 | 0,20 |



For more information see page: A.67

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

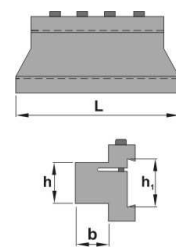
Arbors & adaptors

Inserts

KPTS



| REF. | h1 | L | h | b | 100 504 | |
|------------------|----|-----|----|----|---------|-----|
| KPTS 1916 | 19 | 76 | 16 | 16 | 100 | 504 |
| KPTS 2616 | 26 | 87 | 16 | 16 | 101 | 505 |
| KPTS 2620 | 26 | 87 | 20 | 20 | 101 | 505 |
| KPTS 2625 | 26 | 87 | 25 | 25 | 101 | 505 |
| KPTS 3220 | 32 | 100 | 20 | 20 | 101 | 505 |
| KPTS 3225 | 32 | 110 | 25 | 25 | 101 | 505 |
| KPTS 3232 | 32 | 120 | 32 | 32 | 101 | 505 |
| KPTS 5250 | 52 | 135 | 50 | 50 | 102 | 506 |



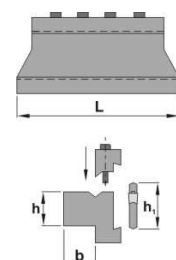
Turning

Automatic lathes

DPTS



| REF. | h1 | L | h | b | 100 504 | |
|------------------|----|-----|----|----|---------|-----|
| DPTS 1916 | 19 | 76 | 16 | 16 | 100 | 504 |
| DPTS 2620 | 26 | 87 | 20 | 20 | 101 | 505 |
| DPTS 2625 | 26 | 87 | 25 | 25 | 101 | 505 |
| DPTS 3220 | 32 | 100 | 20 | 20 | 101 | 505 |
| DPTS 3225 | 32 | 110 | 25 | 25 | 101 | 505 |
| DPTS 3232 | 32 | 120 | 32 | 32 | 101 | 505 |
| DPTS 5250 | 52 | 135 | 50 | 50 | 102 | 506 |



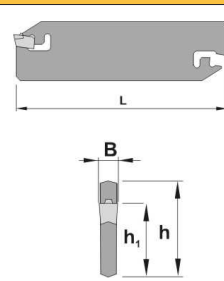
Ceramic tools

Parting & grooving

KRCFN

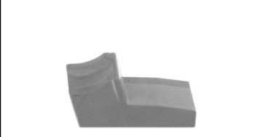


| REF. | h | L | h1 | B | MRCN | 533 |
|------------------------|----|-----|------|-----|------|-----|
| KRCF N 1901 X02 | 19 | 86 | 15,4 | 2,2 | 2,2 | 533 |
| KRCF N 2601 J02 | 26 | 110 | 21,4 | 2,2 | 2,2 | 533 |
| KRCF N 2602 J03 | 26 | 110 | 21,4 | 3,0 | 3,0 | 533 |
| KRCF N 2603 J04 | 26 | 110 | 21,4 | 4,0 | 4,0 | 533 |
| KRCF N 2604 J05 | 26 | 110 | 21,4 | 5,0 | 5,0 | 533 |
| KRCF N 2605 J06 | 26 | 110 | 21,4 | 6,0 | 6,0 | 533 |
| KRCF N 3202 M03 | 32 | 150 | 25,0 | 3,0 | 3,0 | 533 |
| KRCF N 3203 M04 | 32 | 150 | 25,0 | 4,0 | 4,0 | 533 |
| KRCF N 3204 M05 | 32 | 150 | 25,0 | 5,0 | 5,0 | 533 |
| KRCF N 3205 M06 | 32 | 150 | 25,0 | 6,0 | 6,0 | 533 |

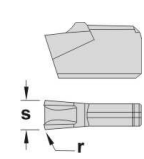


Threading

Drills



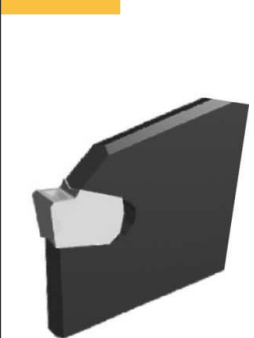
| REF. | s | r |
|-----------------|-----|-----|
| MRCN 2,2 | 2,2 | 0,2 |
| MRCN 3,0 | 3,0 | 0,2 |
| MRCN 4,0 | 4,0 | 0,2 |
| MRCN 5,0 | 5,0 | 0,3 |
| MRCN 6,0 | 6,0 | 0,4 |



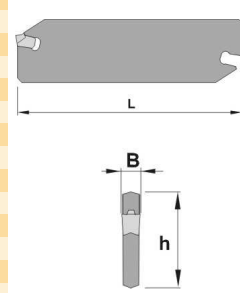
For more information see page: A.67

Cartridges

KLCFN



| REF. | h | L | B | PTNT | 532 |
|------------------------|----|-----|-----|------|-----|
| KLCF N 1901 X02 | 19 | 86 | 2,1 | 02 | 532 |
| KLCF N 2601 J02 | 26 | 110 | 2,1 | 02 | 532 |
| KLCF N 2602 J03 | 26 | 110 | 3,1 | 03 | 532 |
| KLCF N 2603 J04 | 26 | 110 | 4,1 | 04 | 532 |
| KLCF N 2604 J05 | 26 | 110 | 5,1 | 05 | 532 |
| KLCF N 2605 J06 | 26 | 110 | 6,1 | 06 | 532 |
| KLCF N 3201 M02 | 32 | 150 | 2,1 | 02 | 532 |
| KLCF N 3202 M03 | 32 | 150 | 3,1 | 03 | 532 |
| KLCF N 3203 M04 | 32 | 150 | 4,1 | 04 | 532 |
| KLCF N 3204 M05 | 32 | 150 | 5,1 | 05 | 532 |
| KLCF N 3205 M06 | 32 | 150 | 6,1 | 06 | 532 |
| KLCF N 3207 M08 | 32 | 150 | 8,1 | 08 | 532 |
| KLCF N 3208 M09 | 32 | 150 | 9,1 | 09 | 532 |
| KLCF N 5207 X08 | 53 | 190 | 8,1 | 08 | 532 |
| KLCF N 5208 X09 | 53 | 190 | 9,1 | 09 | 532 |
| KLCF N 5307 X08 | 53 | 260 | 8,1 | 08 | 532 |
| KLCF N 5308 X09 | 53 | 260 | 9,1 | 09 | 532 |



Brazed tools

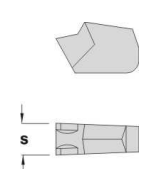
Milling cutters

Solid carbide

Boring heads



| REF. | s |
|----------------|------|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |
| PTNT 05 | 5,10 |
| PTNT 06 | 6,10 |
| PTNT 08 | 8,10 |
| PTNT 09 | 9,10 |



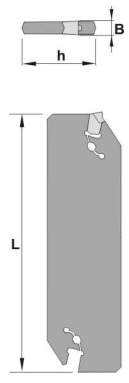
For more information see page: A.68

Arbors & adaptors

KLCTN



| REF. | h | L | B | PTNT | |
|-----------------|----|-----|-----|------|-----|
| KLCT N 1901 X02 | 19 | 86 | 2,1 | 02 | 532 |
| KLCT N 2601 J02 | 26 | 110 | 2,1 | 02 | 532 |
| KLCT N 2602 J03 | 26 | 110 | 3,1 | 03 | 532 |
| KLCT N 2603 J04 | 26 | 110 | 4,1 | 04 | 532 |
| KLCT N 2604 J05 | 26 | 110 | 5,1 | 05 | 532 |
| KLCT N 2605 J06 | 26 | 110 | 6,1 | 06 | 532 |
| KLCT N 3201 M02 | 32 | 150 | 2,1 | 02 | 532 |
| KLCT N 3202 M03 | 32 | 150 | 3,1 | 03 | 532 |
| KLCT N 3203 M04 | 32 | 150 | 4,1 | 04 | 532 |
| KLCT N 3204 M05 | 32 | 150 | 5,1 | 05 | 532 |
| KLCT N 3205 M06 | 32 | 150 | 6,1 | 06 | 532 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

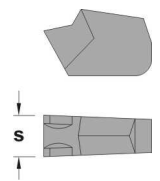
Solid carbide

Boring heads

Arbors & adaptors



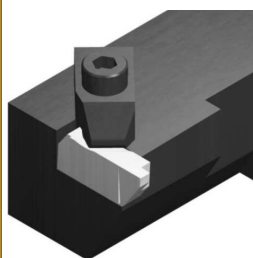
| REF. | s |
|---------|------|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |
| PTNT 05 | 5,10 |
| PTNT 06 | 6,10 |



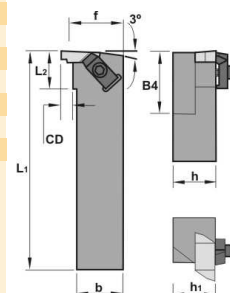
For more information see page: A.68

Inserts

NE 93°



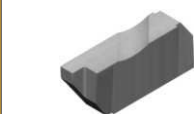
| REF. | h-h1 | b | L1 | L2 | f | N.. | | | |
|-----------------|------|----|-----|-------|----|-----|-------|-------|-----|
| NE R/L 1616 H02 | 16 | 16 | 100 | 25,40 | 20 | 2 | TF-75 | TF-74 | 474 |
| NE R/L 2020 K02 | 20 | 20 | 125 | 25,40 | 25 | 2 | TF-75 | TF-74 | 474 |
| NE R/L 2525 M02 | 25 | 25 | 150 | 25,40 | 32 | 2 | TF-75 | TF-74 | 474 |
| NE R/L 2525 M03 | 25 | 25 | 150 | 50,80 | 32 | 3 | TF-73 | TF-72 | 475 |
| NE R/L 3225 P03 | 32 | 25 | 170 | 50,80 | 32 | 3 | TF-73 | TF-72 | 475 |
| NE R/L 2525 M04 | 25 | 25 | 150 | 50,80 | 35 | 4 | TF-73 | TF-72 | 475 |
| NE R/L 3225 P04 | 32 | 25 | 170 | 50,80 | 35 | 4 | TF-73 | TF-72 | 475 |
| NE R/L 3232 P04 | 32 | 32 | 170 | 50,80 | 40 | 4 | TF-73 | TF-72 | 475 |



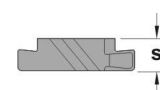
Turning

Automatic lathes

Ceramic tools



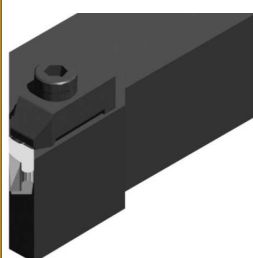
| REF. | D | A | T |
|-------|------|-------|------|
| N.. 2 | 4,76 | 5,56 | 3,81 |
| N.. 3 | 9,53 | 8,74 | 4,95 |
| N.. 4 | 9,53 | 11,51 | 6,48 |



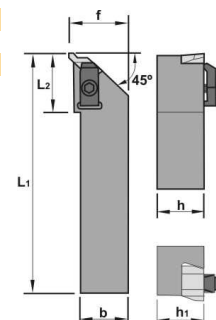
For more information see page: A.68,69

Parting & grooving

NR 45°



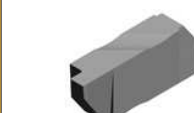
| REF. | h-h1 | b | L1 | L2 | f | N.. | | | |
|-----------------|------|----|-----|----|----|-----|-------|-------|-----|
| NR R/L 2020 K03 | 20 | 20 | 125 | 32 | 25 | 3 | TF-73 | TF-72 | 475 |
| NR R/L 2525 M03 | 25 | 25 | 150 | 32 | 32 | 3 | TF-73 | TF-72 | 475 |
| NR R/L 3225 P03 | 32 | 25 | 170 | 32 | 32 | 3 | TF-73 | TF-72 | 475 |



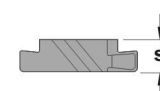
Threading

Drills

Cartridges



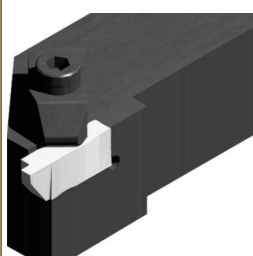
| REF. | D | A | T |
|-------|------|------|------|
| N.. 3 | 9,53 | 8,74 | 4,95 |



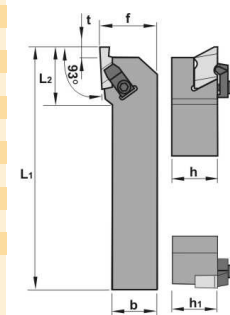
For more information see page: A.68,69

Brazed tools

NS 93°



| REF. | h-h1 | b | L1 | L2 | f | N.. | | | | | |
|-----------------|------|----|-----|------|----|-----|-------|-------|-----|-----|-----|
| NS R/L 1010 E02 | 10 | 10 | 70 | 6,35 | 14 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 1212 F02 | 12 | 12 | 80 | 6,35 | 16 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 1616 H02 | 16 | 16 | 100 | 6,35 | 20 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 2020 K02 | 20 | 20 | 125 | 6,35 | 25 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 2525 M02 | 25 | 25 | 150 | 6,35 | 32 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 2020 K03 | 20 | 20 | 125 | 9,65 | 25 | 3 | TF-72 | TF-73 | - | - | 474 |
| NS R/L 2525 M03 | 25 | 25 | 150 | 9,65 | 32 | 3 | TF-72 | TF-73 | - | - | 474 |
| NS R/L 3225 P03 | 32 | 25 | 170 | 9,65 | 32 | 3 | TF-72 | TF-73 | - | - | 474 |
| NS R/L 3232 P03 | 32 | 32 | 170 | 9,65 | 40 | 3 | TF-72 | TF-73 | - | - | 474 |
| NS R/L 2525 M04 | 25 | 25 | 150 | 9,65 | 32 | 4 | TF-72 | TF-73 | 321 | 185 | 475 |
| NS R/L 3225 P04 | 32 | 25 | 170 | 9,65 | 32 | 4 | TF-72 | TF-73 | 321 | 185 | 475 |
| NS R/L 3232 P04 | 32 | 32 | 170 | 9,65 | 40 | 4 | TF-72 | TF-73 | 321 | 185 | 475 |

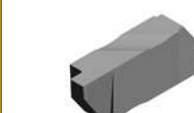


Milling cutters

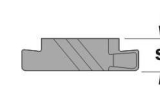
Solid carbide

Boring heads

Arbors & adaptors

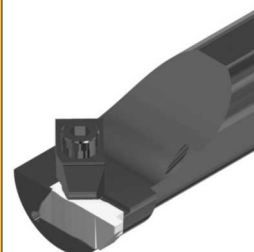


| REF. | D | A | T |
|-------|------|-------|------|
| N.. 2 | 4,76 | 5,56 | 3,81 |
| N.. 3 | 9,53 | 8,74 | 4,95 |
| N.. 4 | 9,53 | 11,51 | 6,48 |

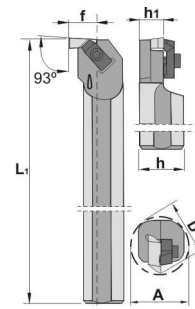


For more information see page: A.68,69

NNTO 93°



| REF. | D | h | h1 | L1 | f | A | N.. | | | |
|-------------------------|----|----|------|-----|----|------|-----|--------|--------|-----|
| A12M-NNTO R/L 02 | 12 | 11 | 5,5 | 150 | 11 | 18,5 | 2 | TF-147 | TF-146 | 474 |
| A16M-NNTO R/L 02 | 16 | 15 | 7,5 | 150 | 11 | 22,0 | 2 | TF-75 | TF-74 | 474 |
| A20Q-NNTO R/L 02 | 20 | 18 | 9,0 | 180 | 13 | 26,0 | 2 | TF-75 | TF-74 | 474 |
| A25R-NNTO R/L 02 | 25 | 23 | 11,5 | 200 | 17 | 34,0 | 2 | TF-75 | TF-74 | 474 |
| A25R-NNTO R/L 03 | 25 | 23 | 11,5 | 200 | 17 | 34,0 | 3 | TF-73 | TF-72 | 475 |
| A32S-NNTO R/L 03 | 32 | 30 | 15,0 | 250 | 22 | 44,0 | 3 | TF-73 | TF-72 | 475 |
| A40T-NNTO R/L 03 | 40 | 37 | 18,5 | 300 | 27 | 54,0 | 3 | TF-73 | TF-72 | 475 |
| A40T-NNTO R/L 04 | 40 | 37 | 18,5 | 300 | 27 | 54,0 | 4 | TF-73 | TF-72 | 475 |
| A50U-NNTO R/L 04 | 50 | 47 | 23,5 | 350 | 35 | 70,0 | 4 | TF-73 | TF-72 | 475 |



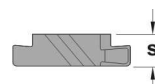
Inserts

Turning

Automatic lathes



| REF. | D | A | T |
|--------------|------|-------|------|
| N.. 2 | 4,76 | 5,56 | 3,81 |
| N.. 3 | 9,53 | 8,74 | 4,95 |
| N.. 4 | 9,53 | 11,51 | 6,48 |



For more information see page: A.68,69

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts

Nominal cutting speed for parting

| Material | HB | Condition | Basic qualities | | | Specific cutting force N/mm ² |
|---------------------------------|------------------------|--|----------------------|---------|---|---|
| | | | TIC30 | P25K | K15K | |
| | | | Cutting speed m/min. | | | |
| Unalloyed steel | P 125 150 200 | C=0.15% | 200-150 | 160-120 | | 1900 |
| | | C=0.35% | 190-140 | 150-110 | | 2100 |
| | | C=0.60% | 170-120 | 130-90 | | 2250 |
| Low alloyed steel | 180 | Annealed | 180-130 | 140-100 | | 2100 |
| | 275 | Hardened | 160-110 | 120-80 | | 2600 |
| | 300 | Hardened | 150-100 | 110-70 | | 2700 |
| | 350 | Hardened | 140-90 | 90-60 | | 2850 |
| High alloyed steel | 200 | Annealed | 110-90 | 70-60 | | 2600 |
| | 325 | Hardened | 70-50 | 45-30 | | 3900 |
| Stainless steel | 200 | Martensitic/Ferritic | 170-120 | 130-90 | | 2300 |
| Steel | 180 | Unalloyed | 130-90 | 100-60 | | 2000 |
| | 200 | Low alloyed | 115-75 | 90-50 | | 2500 |
| | 225 | High alloyed | 100-60 | 80-40 | | 2700 |
| Stainless steel annealed | M 180 | | 170-120 | 130-90 | 100-60 | 2450 |
| Heat resistant alloys | 200 | Annealed | Iron base | | 50-30 40-20 30-20 20-10 20-10 | 3000 |
| | 280 | Aged | | | | 3050 |
| | 250 | Annealed | Ni or Co base | | | 3500 |
| | 350 | Aged | 4150 | | | |
| | 320 | Cast | 4150 | | | |
| Titanium alloys | 400 | Ti | | | | 1520 |
| | 950 | Cast α , almost α and $\alpha + \beta$ | | | | 1675 |
| | 1050 | Aged cast $\alpha + \beta$ | | | | 1690 |
| Hardened steel | K 220 250 | Hardened steel | | | | 4500 |
| | | Manganese steel 12% | | | | |
| Malleable cast iron | 130 | Ferritic | 140-110 | | 100-80 | 1100 |
| | 230 | Pearlitic | 100-70 | | 70-50 | 1100 |
| Cast iron | 180 | Low tensile strength | 110-85 | | 80-60 | 1100 |
| | 260 | High tensile strength | 100-70 | | 70-50 | 1500 |
| Nodular SG iron | 160 | Ferritic | 100-70 | | 70-50 | 1100 |
| | 250 | Pearlitic | 85-60 | | 60-40 | 1800 |
| Aluminium alloys | 60 | Non heat treatable | 1500 | 1500 | 1000 | 500 |
| | 100 | Heat treatable | 500 | 500 | 420 | 800 |
| Aluminium alloys (cast) | 75 | Non heat treatable | 1500 | 1500 | 1000 | 750 |
| | 90 | Heat treatable | 750 | 750 | 650 | 900 |
| Bronze-Brass alloys | 110 | Lead alloys, Pb > 1% | 300 | 300 | 300 | 700 |
| | 90 | Brass, red brass | 200 | 200 | 200 | 750 |
| | 100 | Bronze and lead-free copper | 150 | 150 | 150 | 1750 |

Solid carbide

Boring heads

Arbors & adaptors

Nominal cutting speed for grooving

| Material | HB | Condition | External | | | Internal / Axial | | | Specific cutting force N/mm ² |
|--|------|--|----------------------|---------|--------|------------------|--------|--------|---|
| | | | TIC30 | P25K | K15K | TIC30 | P25K | K15K | |
| | | | Cutting speed m/min. | | | | | | |
| Unalloyed steel P | 125 | C=0.15% | 200-150 | 160-120 | | 140-105 | 110-85 | | 1900 |
| | 150 | C=0.35% | 190-140 | 150-110 | | 135-100 | 105-80 | | 2100 |
| | 200 | C=0.60% | 170-120 | 130-90 | | 120-85 | 90-60 | | 2250 |
| Low alloyed steel | 180 | Annealed | 180-130 | 140-100 | | 125-90 | 100-70 | | 2100 |
| | 275 | Hardened | 160-110 | 120-80 | | 110-80 | 85-55 | | 2600 |
| | 300 | Hardened | 150-100 | 110-70 | | 105-70 | 80-50 | | 2700 |
| | 350 | Hardened | 140-90 | 90-60 | | 100-60 | 60-45 | | 2850 |
| High alloyed steel | 200 | Annealed | 110-90 | 70-60 | | 80-60 | 50-45 | | 2600 |
| | 325 | Hardened | 70-50 | 45-30 | | 80-35 | 32-20 | | 3900 |
| Stainless steel | 200 | Martensitic/Ferritic | 170-120 | 130-90 | | 120-85 | 90-60 | | 2300 |
| Steel | 180 | Unalloyed | 130-90 | 100-60 | | 90-60 | 70-45 | | 2000 |
| | 200 | Low alloyed | 115-75 | 90-50 | | 80-50 | 60-35 | | 2500 |
| | 225 | High alloyed | 100-60 | 80-40 | | 70-45 | 55-30 | | 2700 |
| Stainless steel annealed M | 180 | | 170-120 | 130-90 | 100-60 | 120-85 | 90-60 | 70-45 | 2450 |
| Heat resistant alloys | 200 | Annealed | | | 50-30 | | | 50-30 | 3000 |
| | 280 | Aged | | | 40-20 | | | 40-20 | 3050 |
| | 250 | Annealed | | | 30-20 | | | 30-20 | 3500 |
| | 350 | Aged | | | 20-10 | | | 20-10 | 4150 |
| | 320 | Cast | | | 20-10 | | | 20-10 | 4150 |
| Titanium alloys | 400 | Ti | | | 175 | | | | 1520 |
| | 950 | Cast α , almost α and $\alpha + \beta$ | | | 72 | | | | 1675 |
| | 1050 | Aged cast $\alpha + \beta$ | | | 65 | | | | 1690 |
| Hardened steel K | 220 | Hardened steel | | | | | | | 4500 |
| | 250 | Manganese steel 12% | | | | | | | |
| Malleable cast iron | 130 | Ferritic | 140-110 | | 100-80 | 100-80 | | 100-80 | 1100 |
| | 230 | Pearlitic | 100-70 | | 70-50 | 70-50 | | 70-50 | 1100 |
| Cast iron | 180 | Low tensile strength | 110-85 | | 80-60 | 80-60 | | 80-60 | 1100 |
| | 260 | High tensile strength | 100-70 | | 70-50 | 70-50 | | 70-50 | 1500 |
| Nodular SG iron | 160 | Ferritic | 100-70 | | 70-50 | 70-50 | | 70-50 | 1100 |
| | 250 | Pearlitic | 85-60 | | 60-40 | 60-45 | | 60-40 | 1800 |
| Aluminium alloys | 60 | Non heat treatable | 1500 | 1500 | 1000 | 1050 | 1050 | 700 | 500 |
| | 100 | Heat treatable | 500 | 500 | 420 | 350 | 350 | 300 | 800 |
| Aluminium alloys (cast) | 75 | Non heat treatable | 1500 | 1500 | 1000 | 1050 | 1050 | 700 | 750 |
| | 90 | Heat treatable | 750 | 750 | 650 | 525 | 525 | 460 | 900 |
| Bronze-Brass alloys | 110 | Lead alloys, Pb > 1% | 300 | 300 | 300 | 210 | 210 | 210 | 700 |
| | 90 | Brass, red brass | 200 | 200 | 200 | 140 | 140 | 140 | 750 |
| | 100 | Bronze and lead-free copper | 150 | 150 | 150 | 105 | 105 | 105 | 1750 |

Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

Cartridges

Brazed
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

Inserts

Nominal cutting speed for profiling

| Material | HB | Condition | Basic qualities | | | Specific cutting force N/mm ² |
|--|------|--|----------------------|------|------|---|
| | | | TIC30 | P25K | K15K | |
| | | | Cutting speed m/min. | | | |
| Unalloyed steel P | 125 | C=0.15% | 200 | 160 | | 1900 |
| | 150 | C=0.35% | 190 | 150 | | 2100 |
| | 200 | C=0.60% | 170 | 130 | | 2250 |
| Low alloyed steel | 180 | Annealed | 180 | 140 | | 2100 |
| | 275 | Hardened | 160 | 120 | | 2600 |
| | 300 | Hardened | 150 | 110 | | 2700 |
| | 350 | Hardened | 140 | 90 | | 2850 |
| High alloyed steel | 200 | Annealed | 130 | 100 | | 2600 |
| | 325 | Hardened | 100 | 60 | | 3900 |
| Stainless steel | 200 | Martensitic/Ferritic | 170 | 130 | | 2300 |
| Steel | 180 | Unalloyed | 130 | 100 | | 2000 |
| | 200 | Low alloyed | 115 | 90 | | 2500 |
| | 225 | High alloyed | 100 | 70 | | 2700 |
| Stainless steel annealed M | 180 | | 170 | 120 | 100 | 2450 |
| Heat resistant alloys | 200 | Annealed | | 60 | 3000 | |
| | 280 | Aged | | | | 50 |
| | 250 | Annealed | Ni or Co base | 30 | 3500 | |
| | 350 | Aged | | 20 | 4150 | |
| | 320 | Cast | | 20 | 4150 | |
| Titanium alloys | 400 | Ti | | 175 | 1520 | |
| | 950 | Cast α , almost α and $\alpha + \beta$ | | 72 | 1675 | |
| | 1050 | Aged cast $\alpha + \beta$ | | 65 | 1690 | |
| Hardened steel K | 220 | Hardened steel | | | | 4500 |
| | 250 | Manganese steel 12% | | | | |
| Malleable cast iron | 130 | Ferritic | 140 | | 100 | 1100 |
| | 230 | Pearlitic | 110 | | 70 | 1100 |
| Cast iron | 180 | Low tensile strength | 110 | | 100 | 1100 |
| | 260 | High tensile strength | 100 | | 70 | 1500 |
| Nodular SG iron | 160 | Ferritic | 100 | | 100 | 1100 |
| | 250 | Pearlitic | 85 | | 70 | 1800 |
| Aluminium alloys | 60 | Non heat treatable | 1500 | 1500 | 1000 | 500 |
| | 100 | Heat treatable | 500 | 500 | 420 | 800 |
| Aluminium alloys (cast) | 75 | Non heat treatable | 1500 | 1500 | 450 | 750 |
| | 90 | Heat treatable | 750 | 750 | 300 | 900 |
| Bronze-Brass alloys | 110 | Lead alloys, Pb > 1% | 300 | 300 | 300 | 700 |
| | 90 | Brass, red brass | 200 | 200 | 200 | 750 |
| | 100 | Bronze and lead-free copper | 150 | 150 | 150 | 1750 |

Solid carbide

Boring heads

Arbors & adaptors

