

3 FLUTE, LONG LENGTH, THROW AWAY 3 SCHNEIDEN, LANG, EINWEGFRÄSER

SERIES E2554 FLAT SHANK

SEITLICHEN MITNAHMEFLÄCHEN

HSS
Co8

YG
STD

N

30°

FLUTE
3

DIN
1835B

P.303,311,312,315,316

SERIES GB554 FLAT SHANK

SEITLICHEN MITNAHMEFLÄCHEN



Up to φ10



Over φ10

Unit : mm

| EDP No. FLAT | ITEM No. FLAT | EDP No. TAIN | ITEM No. TAIN | MILL DIAMETER e8 | SHANK DIAMETER h6 | LENGTH OF CUT | OVERALL LENGTH |
|-----------------|------------------|-----------------|------------------|------------------------|-------------------------|------------------|-------------------|
| E2554015 | C3FLC-015AF | GB554015 | R3FLC-015AF | 1.5 | 6 | 4 | 35 |
| E2554020 | C3FLC-020AF | GB554020 | R3FLC-020AF | 2.0 | 6 | 7 | 38 |
| E2554025 | C3FLC-025AF | GB554025 | R3FLC-025AF | 2.5 | 6 | 8 | 39 |
| E2554030 | C3FLC-030AF | GB554030 | R3FLC-030AF | 3.0 | 6 | 8 | 39 |
| E2554035 | C3FLC-035AF | GB554035 | R3FLC-035AF | 3.5 | 6 | 10 | 41 |
| E2554040 | C3FLC-040AF | GB554040 | R3FLC-040AF | 4.0 | 6 | 11 | 42 |
| E2554045 | C3FLC-045AF | GB554045 | R3FLC-045AF | 4.5 | 6 | 11 | 42 |
| E2554050 | C3FLC-050AF | GB554050 | R3FLC-050AF | 5.0 | 6 | 13 | 44 |
| E2554055 | C3FLC-055AF | GB554055 | R3FLC-055AF | 5.5 | 6 | 13 | 44 |
| E2554060 | C3FLC-060AF | GB554060 | R3FLC-060AF | 6.0 | 6 | 13 | 44 |
| E2554065 | C3FLC-065BF | GB554065 | R3FLC-065BF | 6.5 | 8 | 16 | 48 |
| E2554070 | C3FLC-070BF | GB554070 | R3FLC-070BF | 7.0 | 8 | 16 | 48 |
| E2554075 | C3FLC-075BF | GB554075 | R3FLC-075BF | 7.5 | 8 | 16 | 48 |
| E2554080 | C3FLC-080BF | GB554080 | R3FLC-080BF | 8.0 | 8 | 19 | 51 |
| E2554085 | C3FLC-085TF | GB554085 | R3FLC-085TF | 8.5 | 10 | 19 | 56 |
| E2554090 | C3FLC-090TF | GB554090 | R3FLC-090TF | 9.0 | 10 | 19 | 56 |
| E2554095 | C3FLC-095TF | GB554095 | R3FLC-095TF | 9.5 | 10 | 19 | 56 |
| E2554100 | C3FLC-100TF | GB554100 | R3FLC-100TF | 10.0 | 10 | 22 | 59 |

► TIN-COATING & TiCN-COATING is available on your request.

HSS

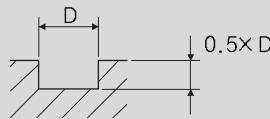
Tolerances according to DIN 7160 & 7161

Toleranzen nach DIN 7160 & 7161

| Toleranzwerte in μm / Tolerance range in μm | | | | | | |
|---|----------------------------|-----------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Nennmaßbereich in mm / Nominal-Diameter in mm | | | | | | |
| | von 1 bis 3 from 1 to 3 | über 3 bis 6 over 3 to 6 | über 6 bis 10 over 6 to 10 | über 10 bis 18 over 10 to 18 | über 18 bis 30 over 18 to 30 | über 30 bis 50 over 30 to 50 |
| e8 | -14 -28 | -20 -38 | -25 -47 | -32 -59 | -40 -73 | -50 -89 |
| h6 | 0 -6 | 0 -8 | 0 -9 | 0 -11 | 0 -13 | 0 -16 |

3FL. FINISH SLOTTING, HSS-Co8 END MILLS

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 5600 | 60 | 4500 | 45 | 4000 | 45 | 2200 | 20 | 12000 | 240 |
| 3 | 3500 | 80 | 3200 | 65 | 2500 | 60 | 1600 | 30 | 11000 | 380 |
| 4 | 2800 | 105 | 2200 | 80 | 1800 | 65 | 1100 | 45 | 8000 | 440 |
| 5 | 2200 | 135 | 1800 | 105 | 1600 | 90 | 900 | 50 | 6300 | 470 |
| 6 | 1800 | 135 | 1600 | 120 | 1200 | 90 | 800 | 60 | 5600 | 470 |
| 8 | 1400 | 150 | 1100 | 135 | 900 | 105 | 560 | 65 | 4000 | 580 |
| 10 | 1100 | 150 | 900 | 135 | 800 | 120 | 450 | 65 | 3100 | 600 |
| 12 | 900 | 165 | 800 | 150 | 630 | 120 | 400 | 75 | 2500 | 570 |
| 14 | 800 | 165 | 700 | 135 | 560 | 120 | 350 | 75 | 2200 | 530 |
| 16 | 700 | 165 | 560 | 135 | 450 | 105 | 280 | 65 | 2000 | 530 |
| 18 | 630 | 150 | 500 | 135 | 400 | 105 | 250 | 65 | 1800 | 530 |
| 20 | 560 | 150 | 450 | 135 | 400 | 105 | 220 | 65 | 1600 | 480 |
| 22 | 500 | 150 | 450 | 135 | 350 | 105 | 220 | 65 | 1400 | 450 |
| 25 | 450 | 135 | 400 | 120 | 310 | 90 | 180 | 50 | 1200 | 420 |
| 28 | 400 | 120 | 350 | 105 | 280 | 80 | 160 | 45 | 1100 | 400 |
| 30 | 350 | 105 | 310 | 90 | 250 | 75 | 160 | 45 | 1100 | 400 |



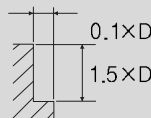
※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN.
FEED=mm/min.

HSS

3FL. FINISH SIDE CUTTING, HSS-Co8 END MILLS

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 5600 | 60 | 4500 | 40 | 4000 | 35 | 2200 | 15 | 12000 | 180 |
| 3 | 3500 | 80 | 3200 | 60 | 2500 | 45 | 1600 | 20 | 11000 | 280 |
| 4 | 2800 | 105 | 2200 | 75 | 1800 | 50 | 1100 | 30 | 8000 | 330 |
| 5 | 2200 | 135 | 1800 | 95 | 1600 | 65 | 900 | 35 | 6300 | 350 |
| 6 | 1800 | 135 | 1600 | 110 | 1200 | 65 | 800 | 45 | 5600 | 350 |
| 8 | 1400 | 150 | 1100 | 120 | 900 | 80 | 560 | 50 | 4000 | 440 |
| 10 | 1100 | 150 | 900 | 120 | 800 | 90 | 450 | 50 | 3100 | 450 |
| 12 | 900 | 165 | 800 | 135 | 630 | 90 | 400 | 55 | 2500 | 430 |
| 14 | 800 | 165 | 700 | 120 | 560 | 90 | 350 | 55 | 2200 | 400 |
| 16 | 700 | 165 | 560 | 120 | 450 | 80 | 280 | 50 | 2000 | 400 |
| 18 | 630 | 150 | 500 | 120 | 400 | 80 | 250 | 50 | 1800 | 400 |
| 20 | 560 | 150 | 450 | 120 | 400 | 80 | 220 | 50 | 1600 | 360 |
| 22 | 500 | 150 | 450 | 120 | 350 | 80 | 220 | 50 | 1400 | 340 |
| 25 | 450 | 135 | 400 | 110 | 310 | 65 | 180 | 35 | 1200 | 320 |
| 28 | 400 | 120 | 350 | 95 | 280 | 60 | 160 | 30 | 1100 | 300 |
| 30 | 350 | 105 | 310 | 80 | 250 | 55 | 160 | 30 | 1100 | 300 |

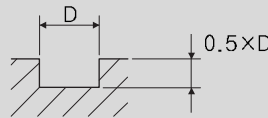


※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN.
FEED=mm/min.

2FL. FINISH SLOTTING, HSS-Co8 END MILLS, TiN-COATED

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 6700 | 50 | 5400 | 35 | 5000 | 35 | 2600 | 20 | 14000 | 190 |
| 3 | 4200 | 65 | 3800 | 55 | 3000 | 50 | 1900 | 25 | 13000 | 300 |
| 4 | 3400 | 85 | 2600 | 65 | 2200 | 55 | 1300 | 35 | 9500 | 350 |
| 5 | 2600 | 110 | 2200 | 85 | 1900 | 70 | 1100 | 40 | 7500 | 370 |
| 6 | 2200 | 110 | 1900 | 95 | 1400 | 70 | 950 | 50 | 6700 | 370 |
| 8 | 1700 | 120 | 1300 | 110 | 1100 | 85 | 670 | 55 | 5000 | 470 |
| 10 | 1300 | 120 | 1100 | 110 | 950 | 95 | 550 | 55 | 3700 | 480 |
| 12 | 1100 | 130 | 950 | 120 | 750 | 95 | 500 | 60 | 3000 | 460 |
| 14 | 950 | 130 | 850 | 110 | 670 | 95 | 400 | 60 | 2600 | 420 |
| 16 | 850 | 130 | 670 | 110 | 550 | 85 | 340 | 55 | 2400 | 420 |
| 18 | 750 | 120 | 600 | 110 | 500 | 85 | 300 | 55 | 2200 | 420 |
| 20 | 670 | 120 | 550 | 110 | 500 | 85 | 260 | 55 | 1900 | 380 |
| 22 | 600 | 120 | 550 | 110 | 400 | 85 | 260 | 55 | 1700 | 360 |
| 25 | 550 | 110 | 500 | 95 | 370 | 70 | 220 | 40 | 1400 | 340 |
| 28 | 500 | 95 | 400 | 85 | 340 | 65 | 190 | 35 | 1300 | 320 |
| 30 | 400 | 85 | 370 | 70 | 300 | 60 | 190 | 35 | 1300 | 320 |
| 32 | 400 | 85 | 340 | 65 | 260 | 55 | 170 | 35 | 1200 | 290 |
| 36 | 370 | 70 | 300 | 60 | 240 | 50 | 140 | 30 | 1100 | 260 |
| 40 | 340 | 70 | 260 | 60 | 220 | 50 | 130 | 30 | 950 | 240 |

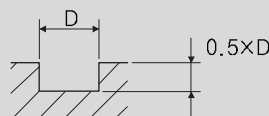


※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN. FEED=mm/min.

3FL. FINISH SLOTTING, HSS-Co8 END MILLS, TiN-COATED

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 6700 | 70 | 5400 | 55 | 5000 | 55 | 2600 | 25 | 14000 | 290 |
| 3 | 4200 | 95 | 3800 | 80 | 3000 | 70 | 1900 | 35 | 13000 | 460 |
| 4 | 3400 | 125 | 2600 | 95 | 2200 | 80 | 1300 | 55 | 9500 | 530 |
| 5 | 2600 | 160 | 2200 | 125 | 1900 | 110 | 1100 | 60 | 7500 | 560 |
| 6 | 2200 | 160 | 1900 | 145 | 1400 | 110 | 950 | 70 | 6700 | 560 |
| 8 | 1700 | 180 | 1300 | 160 | 1100 | 125 | 670 | 80 | 5000 | 700 |
| 10 | 1300 | 180 | 1100 | 160 | 950 | 145 | 550 | 80 | 3700 | 720 |
| 12 | 1100 | 200 | 950 | 180 | 750 | 145 | 500 | 90 | 3000 | 680 |
| 14 | 950 | 200 | 850 | 160 | 670 | 145 | 400 | 90 | 2600 | 640 |
| 16 | 850 | 200 | 670 | 160 | 550 | 125 | 340 | 80 | 2400 | 640 |
| 18 | 750 | 180 | 600 | 160 | 500 | 125 | 300 | 80 | 2200 | 640 |
| 20 | 670 | 180 | 550 | 160 | 500 | 125 | 260 | 80 | 1900 | 580 |
| 22 | 600 | 180 | 550 | 160 | 400 | 125 | 260 | 80 | 1700 | 540 |
| 25 | 550 | 160 | 500 | 145 | 370 | 110 | 220 | 60 | 1400 | 500 |
| 28 | 500 | 145 | 400 | 125 | 340 | 95 | 190 | 55 | 1300 | 480 |
| 30 | 400 | 125 | 370 | 110 | 300 | 90 | 190 | 55 | 1300 | 480 |



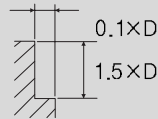
※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN. FEED=mm/min.

3FL. FINISH SIDE CUTTING, HSS-Co8 END MILLS, TiN-COATED

HSS

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 6700 | 70 | 5400 | 50 | 5000 | 40 | 2600 | 20 | 14000 | 220 |
| 3 | 4200 | 95 | 3800 | 70 | 3000 | 55 | 1900 | 25 | 13000 | 340 |
| 4 | 3400 | 125 | 2600 | 90 | 2200 | 60 | 1300 | 35 | 9500 | 400 |
| 5 | 2600 | 160 | 2200 | 115 | 1900 | 80 | 1100 | 40 | 7500 | 420 |
| 6 | 2200 | 160 | 1900 | 130 | 1400 | 80 | 950 | 55 | 6700 | 420 |
| 8 | 1700 | 180 | 1300 | 145 | 1100 | 95 | 670 | 60 | 5000 | 530 |
| 10 | 1300 | 180 | 1100 | 145 | 950 | 110 | 550 | 60 | 3700 | 540 |
| 12 | 1100 | 200 | 950 | 160 | 750 | 110 | 500 | 65 | 3000 | 520 |
| 14 | 950 | 200 | 850 | 145 | 670 | 110 | 400 | 65 | 2600 | 480 |
| 16 | 850 | 200 | 670 | 145 | 550 | 95 | 340 | 60 | 2400 | 480 |
| 18 | 750 | 180 | 600 | 145 | 500 | 95 | 300 | 60 | 2200 | 480 |
| 20 | 670 | 180 | 550 | 145 | 500 | 95 | 260 | 60 | 1900 | 430 |
| 22 | 600 | 180 | 550 | 145 | 400 | 95 | 260 | 60 | 1700 | 410 |
| 25 | 550 | 160 | 500 | 130 | 370 | 80 | 220 | 40 | 1400 | 380 |
| 28 | 500 | 145 | 400 | 115 | 340 | 70 | 190 | 35 | 1300 | 360 |
| 30 | 400 | 125 | 370 | 95 | 300 | 65 | 190 | 35 | 1300 | 360 |

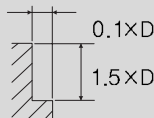


※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN. FEED=mm/min.

MULTI FLUTE, FINISH SIDE CUTTING, HSS-Co8 END MILLS, TiN-COATED

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 6700 | 95 | 5400 | 65 | 5000 | 55 | 2600 | 25 | 14000 | 290 |
| 3 | 4200 | 130 | 3800 | 95 | 3000 | 70 | 1900 | 35 | 13000 | 460 |
| 4 | 3400 | 170 | 2600 | 120 | 2200 | 80 | 1300 | 55 | 9500 | 530 |
| 5 | 2600 | 220 | 2200 | 150 | 1900 | 110 | 1100 | 60 | 7500 | 560 |
| 6 | 2200 | 220 | 1900 | 170 | 1400 | 110 | 950 | 70 | 6700 | 560 |
| 8 | 1700 | 240 | 1300 | 190 | 1100 | 125 | 670 | 80 | 5000 | 700 |
| 10 | 1300 | 240 | 1100 | 190 | 950 | 145 | 550 | 80 | 3700 | 720 |
| 12 | 1100 | 260 | 950 | 220 | 750 | 145 | 500 | 90 | 3000 | 680 |
| 14 | 950 | 260 | 850 | 190 | 670 | 145 | 400 | 90 | 2600 | 640 |
| 16 | 850 | 260 | 670 | 190 | 550 | 125 | 340 | 80 | 2400 | 640 |
| 18 | 750 | 240 | 600 | 190 | 500 | 125 | 300 | 80 | 2200 | 640 |
| 20 | 670 | 240 | 550 | 190 | 500 | 125 | 260 | 80 | 1900 | 580 |
| 22 | 600 | 240 | 550 | 190 | 400 | 125 | 260 | 80 | 1700 | 540 |
| 25 | 550 | 220 | 500 | 175 | 370 | 110 | 220 | 60 | 1400 | 500 |
| 28 | 500 | 190 | 400 | 150 | 340 | 95 | 190 | 55 | 1300 | 480 |
| 30 | 400 | 170 | 370 | 130 | 300 | 90 | 190 | 55 | 1300 | 480 |
| 32 | 400 | 170 | 340 | 120 | 260 | 80 | 170 | 55 | 1200 | 430 |
| 36 | 370 | 145 | 300 | 110 | 240 | 70 | 140 | 40 | 1100 | 400 |
| 40 | 340 | 145 | 260 | 110 | 220 | 70 | 130 | 40 | 950 | 360 |

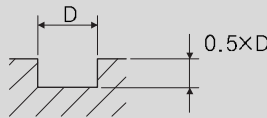


※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN. FEED=mm/min.

2FL. FINISH SLOTTING, HSS-Co8 END MILLS, TiCN-COATED

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 7300 | 50 | 6000 | 40 | 5000 | 40 | 2900 | 20 | 16000 | 210 |
| 3 | 4500 | 70 | 4200 | 60 | 3300 | 50 | 2100 | 25 | 14000 | 330 |
| 4 | 3600 | 90 | 2900 | 70 | 2300 | 60 | 1400 | 40 | 10000 | 380 |
| 5 | 2900 | 115 | 2300 | 90 | 2100 | 80 | 1200 | 45 | 8200 | 400 |
| 6 | 2300 | 115 | 2000 | 105 | 1600 | 80 | 1000 | 50 | 7300 | 400 |
| 8 | 1800 | 130 | 1400 | 115 | 1200 | 90 | 730 | 60 | 5000 | 510 |
| 10 | 1400 | 130 | 1200 | 115 | 1000 | 105 | 600 | 60 | 4000 | 520 |
| 12 | 1200 | 145 | 1000 | 130 | 800 | 105 | 500 | 65 | 3300 | 500 |
| 14 | 1000 | 145 | 900 | 115 | 700 | 105 | 450 | 65 | 2800 | 450 |
| 16 | 900 | 145 | 700 | 115 | 600 | 90 | 360 | 60 | 2600 | 450 |
| 18 | 800 | 130 | 650 | 115 | 500 | 90 | 320 | 60 | 2300 | 450 |
| 20 | 730 | 130 | 600 | 115 | 500 | 90 | 300 | 60 | 2100 | 420 |
| 22 | 650 | 130 | 600 | 115 | 450 | 90 | 280 | 60 | 1800 | 390 |
| 25 | 600 | 120 | 500 | 105 | 400 | 80 | 230 | 48 | 1600 | 360 |
| 28 | 500 | 105 | 450 | 90 | 350 | 70 | 210 | 40 | 1400 | 350 |
| 30 | 450 | 90 | 400 | 80 | 320 | 65 | 210 | 40 | 1400 | 350 |
| 32 | 450 | 90 | 360 | 70 | 280 | 60 | 180 | 40 | 1300 | 310 |
| 36 | 400 | 80 | 320 | 65 | 260 | 50 | 160 | 30 | 1200 | 280 |
| 40 | 360 | 80 | 280 | 65 | 230 | 50 | 140 | 30 | 1000 | 260 |

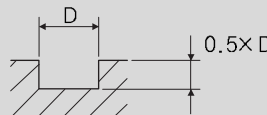


※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN. FEED=mm/min.

3FL. FINISH SLOTTING, HSS-Co8 END MILLS, TiCN-COATED

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 7300 | 80 | 6000 | 60 | 5000 | 60 | 2900 | 25 | 16000 | 310 |
| 3 | 4500 | 105 | 4200 | 85 | 3300 | 80 | 2100 | 40 | 14000 | 500 |
| 4 | 3600 | 135 | 2900 | 105 | 2300 | 85 | 1400 | 60 | 10000 | 570 |
| 5 | 2900 | 175 | 2300 | 135 | 2100 | 115 | 1200 | 65 | 8200 | 610 |
| 6 | 2300 | 175 | 2000 | 155 | 1600 | 115 | 1000 | 80 | 7300 | 610 |
| 8 | 1800 | 195 | 1400 | 175 | 1200 | 135 | 730 | 85 | 5000 | 750 |
| 10 | 1400 | 195 | 1200 | 175 | 1000 | 155 | 600 | 85 | 4000 | 780 |
| 12 | 1200 | 215 | 1000 | 195 | 800 | 155 | 500 | 95 | 3300 | 740 |
| 14 | 1000 | 215 | 900 | 175 | 700 | 155 | 450 | 95 | 2800 | 690 |
| 16 | 900 | 215 | 700 | 175 | 600 | 135 | 360 | 85 | 2600 | 690 |
| 18 | 800 | 195 | 650 | 175 | 500 | 135 | 320 | 85 | 2300 | 690 |
| 20 | 730 | 195 | 600 | 175 | 500 | 135 | 300 | 85 | 2100 | 620 |
| 22 | 650 | 195 | 600 | 175 | 450 | 135 | 280 | 85 | 1800 | 580 |
| 25 | 600 | 175 | 500 | 155 | 400 | 115 | 230 | 65 | 1600 | 550 |
| 28 | 500 | 155 | 450 | 135 | 350 | 105 | 210 | 60 | 1400 | 520 |
| 30 | 450 | 135 | 400 | 115 | 320 | 95 | 210 | 60 | 1400 | 520 |



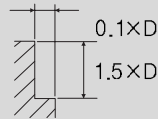
※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN. FEED=mm/min.

3FL. FINISH SIDE CUTTING, HSS-Co8 END MILLS, TiCN-COATED

HSS

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 7300 | 80 | 6000 | 50 | 5000 | 45 | 2900 | 20 | 16000 | 230 |
| 3 | 4500 | 105 | 4200 | 80 | 3300 | 60 | 2100 | 25 | 14000 | 360 |
| 4 | 3600 | 135 | 2900 | 95 | 2300 | 65 | 1400 | 40 | 10000 | 430 |
| 5 | 2900 | 175 | 2300 | 125 | 2100 | 85 | 1200 | 45 | 8200 | 450 |
| 6 | 2300 | 175 | 2000 | 145 | 1600 | 85 | 1000 | 60 | 7300 | 450 |
| 8 | 1800 | 195 | 1400 | 155 | 1200 | 105 | 730 | 65 | 5000 | 570 |
| 10 | 1400 | 195 | 1200 | 155 | 1000 | 115 | 600 | 65 | 4000 | 590 |
| 12 | 1200 | 215 | 1000 | 175 | 800 | 115 | 500 | 70 | 3300 | 560 |
| 14 | 1000 | 215 | 900 | 155 | 700 | 115 | 450 | 70 | 2800 | 520 |
| 16 | 900 | 215 | 700 | 155 | 600 | 105 | 360 | 65 | 2600 | 520 |
| 18 | 800 | 195 | 650 | 155 | 500 | 105 | 320 | 65 | 2300 | 520 |
| 20 | 730 | 195 | 600 | 155 | 500 | 105 | 300 | 65 | 2100 | 470 |
| 22 | 650 | 195 | 600 | 155 | 450 | 105 | 280 | 65 | 1800 | 440 |
| 25 | 600 | 175 | 500 | 145 | 400 | 85 | 230 | 45 | 1600 | 420 |
| 28 | 500 | 155 | 450 | 125 | 350 | 80 | 210 | 40 | 1400 | 390 |
| 30 | 450 | 135 | 400 | 105 | 320 | 70 | 210 | 40 | 1400 | 390 |

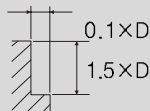


※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN. FEED=mm/min.

MULTI FLUTE, FINISH SIDE CUTTING, HSS-Co8 END MILLS, TiCN-COATED

| MATERIAL | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | CARBON STEELS ALLOY STEELS TOOL STEELS | | ALUMINUM ALUMINUM ALLOYS | |
|----------|--|------|--|------|--|------|--|------|-----------------------------|------|
| HARDNESS | | | ~ HRc20 | | HRc20 ~ HRc30 | | HRc30 ~ HRc40 | | | |
| STRENGTH | ~ 500N/mm ² | | 500 ~ 800N/mm ² | | 800 ~ 1000N/mm ² | | 1000 ~ 1300N/mm ² | | | |
| DIAMETER | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED | RPM | FEED |
| 2 | 7300 | 105 | 6000 | 70 | 5000 | 60 | 2900 | 25 | 16000 | 310 |
| 3 | 4500 | 145 | 4200 | 105 | 3300 | 80 | 2100 | 40 | 14000 | 500 |
| 4 | 3600 | 180 | 2900 | 130 | 2300 | 85 | 1400 | 60 | 10000 | 570 |
| 5 | 2900 | 235 | 2300 | 160 | 2100 | 115 | 1200 | 65 | 8200 | 610 |
| 6 | 2300 | 235 | 2000 | 190 | 1600 | 115 | 1000 | 80 | 7300 | 610 |
| 8 | 1800 | 260 | 1400 | 210 | 1200 | 135 | 730 | 85 | 5000 | 750 |
| 10 | 1400 | 260 | 1200 | 210 | 1000 | 155 | 600 | 85 | 4000 | 780 |
| 12 | 1200 | 285 | 1000 | 235 | 800 | 155 | 500 | 95 | 3300 | 740 |
| 14 | 1000 | 285 | 900 | 210 | 700 | 155 | 450 | 95 | 2800 | 690 |
| 16 | 900 | 285 | 700 | 210 | 600 | 135 | 360 | 85 | 2600 | 690 |
| 18 | 800 | 260 | 650 | 210 | 500 | 135 | 320 | 85 | 2300 | 690 |
| 20 | 730 | 260 | 600 | 210 | 500 | 135 | 300 | 85 | 2100 | 620 |
| 22 | 650 | 260 | 600 | 210 | 450 | 135 | 280 | 85 | 1800 | 580 |
| 25 | 600 | 235 | 500 | 190 | 400 | 115 | 230 | 65 | 1600 | 550 |
| 28 | 500 | 210 | 450 | 160 | 350 | 105 | 210 | 60 | 1400 | 520 |
| 30 | 450 | 180 | 400 | 145 | 320 | 95 | 210 | 60 | 1400 | 520 |
| 32 | 450 | 180 | 360 | 130 | 280 | 85 | 180 | 60 | 1300 | 470 |
| 36 | 400 | 155 | 320 | 120 | 260 | 80 | 160 | 45 | 1200 | 430 |
| 40 | 360 | 155 | 280 | 120 | 230 | 80 | 140 | 45 | 1000 | 390 |



※The FEED, in long & extra long types, should be reduced by around 50%

RPM=REVOLUTION PER MIN. FEED=mm/min.