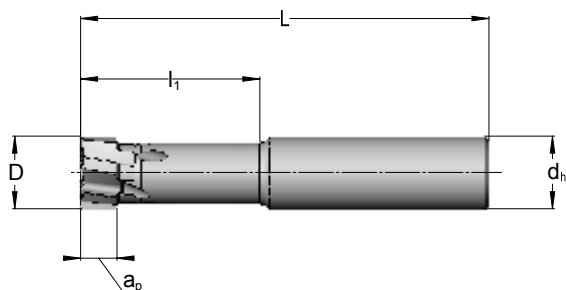


SHOULDER MILLING CUTTERS

XS90



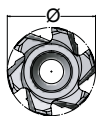
Alternative to carbide shank end milling cutters
 in combination with small depths of cut
 Utmost change accuracy
 Form and force locking cross and/or star drive keys
 Ensures maximum smooth cutting



| XS90 Smooth shank tool holders | | | | | | | INS |
|-----------------------------------|----|-----------------|-----|----------------|-----|------|-----------|
| Article | D | d _{h6} | L | l ₁ | lc | kg | |
| 20G.16.1327.10 | 16 | 16 | 90 | 40 | yes | 0.12 | ECE1612.R |
| 20G.20.1624.10 | 20 | 20 | 100 | 48 | yes | 0.24 | ECE2014.R |
| 20G.25.2013.01 | 25 | 25 | 120 | 30 | yes | 0.42 | ECE2512.R |
| 20G.25.2033.01 | 25 | 25 | 130 | 71 | yes | 0.39 | ECE2512.R |
| 20G.25.2126.10 | 25 | 25 | 110 | 53 | yes | 0.36 | ECE2516.R |
| 20G.32.2526.10 | 28 | 32 | 120 | 58 | yes | 0.62 | ECE2818.R |

| Data Interchangeable heads ECE | | | | |
|-----------------------------------|----|------------------|----------------|-------------|
| Article | D | z _{eff} | a _p | Weight in g |
| EC.E1612.67.10 SKY77 | 16 | 6 | 8.0 | 33.0 |
| EC.E2014.84.10 SKY77 | 20 | 8 | 10.0 | 33.0 |
| EC.E2512.53.02 SKY77 | 25 | 5 | 8.5 | 40.8 |
| EC.E2516.86.10 SKY77 | 25 | 8 | 12.5 | 63.6 |
| EC.E2818.86.10 SKY77 | 28 | 8 | 15.0 | 100.0 |

INTERCHANGEABLE HEADS **EC**



| ECE | | |
|-----|----|----|
| AS | Ø | s |
| 5 | 25 | 16 |
| | 25 | 16 |

| ECE | | |
|-----|----|----|
| AS | Ø | s |
| 6 | 16 | 12 |
| | 16 | 12 |

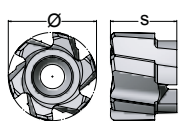
| ECE | | | | | | |
|-----|---|----|----|----|----|------|
| AS | Ø | | | s | | |
| | 8 | 20 | 25 | 28 | 14 | 16 |
| 20 | | 25 | 28 | 14 | 16 | 18.5 |

Matching of machining parameters
with the AV material groups

| | Article | Designation | Recomm. a_e $0.7 \times D$ | Steel | | | | | | |
|------------|----------------------|-----------------|------------------------------------|-------|---------|---------|---------|---------|---------|---------|
| | | | | A22 | A21 | A20 | A19 | A18 | A17 | A16 |
| ECE1612... | EC.E1612.67.10 SKY77 | ECE 161210TR-28 | h_{max} | 0.16 | 0.16 | 0.14 | 0.14 | 0.12 | 0.10 | – |
| | | | | v_c | 280-320 | 240-280 | 210-240 | 180-210 | 140-180 | 110-140 |
| ECE2014... | EC.E2014.84.10 SKY77 | ECE 201410TR-28 | h_{max} | 0.18 | 0.16 | 0.14 | 0.14 | 0.12 | 0.10 | – |
| | | | | v_c | 280-320 | 240-280 | 210-240 | 180-210 | 140-180 | 110-140 |
| ECE2512... | EC.E2512.53.02 SKY77 | ECE 251210TR-25 | h_{max} | 0.20 | 0.18 | 0.15 | 0.15 | 0.13 | 0.11 | – |
| | | | | v_c | 280-320 | 240-280 | 210-240 | 180-210 | 140-180 | 110-140 |
| ECE2516... | EC.E2516.86.10 SKY77 | ECE 251610TR-28 | h_{max} | 0.18 | 0.16 | 0.14 | 0.14 | 0.12 | 0.10 | – |
| | | | | v_c | 280-320 | 240-280 | 210-240 | 180-210 | 140-180 | 110-140 |
| ECE2818... | EC.E2818.86.10 SKY77 | ECE 281810TR-28 | h_{max} | 0.18 | 0.16 | 0.14 | 0.14 | 0.12 | 0.10 | – |
| | | | | v_c | 280-320 | 240-280 | 210-240 | 180-210 | 140-180 | 110-140 |

| | Article | Designation | Recomm. a_e $0.7 \times D$ | Cast iron | | | | | |
|------------|----------------------|-----------------|------------------------------------|-----------|---------|---------|---------|---------|---------|
| | | | | D21 | D20 | D19 | D18 | D17 | D16 |
| ECE1612... | EC.E1612.67.10 SKY77 | ECE 161210TR-28 | h_{max} | 0.16 | 0.15 | 0.14 | 0.14 | 0.10 | 0.10 |
| | | | | v_c | 290-340 | 270-300 | 240-280 | 210-240 | 180-210 |
| ECE2014... | EC.E2014.84.10 SKY77 | ECE 201410TR-28 | h_{max} | 0.16 | 0.15 | 0.14 | 0.14 | 0.10 | 0.10 |
| | | | | v_c | 290-340 | 270-300 | 240-280 | 210-240 | 180-210 |
| ECE2512... | EC.E2512.53.02 SKY77 | ECE 251210TR-25 | h_{max} | 0.18 | 0.16 | 0.15 | 0.15 | 0.11 | 0.10 |
| | | | | v_c | 290-340 | 270-300 | 240-280 | 210-240 | 180-210 |
| ECE2516... | EC.E2516.86.10 SKY77 | ECE 251610TR-28 | h_{max} | 0.16 | 0.15 | 0.14 | 0.14 | 0.10 | 0.10 |
| | | | | v_c | 290-340 | 270-300 | 240-280 | 210-240 | 180-210 |
| ECE2818... | EC.E2818.86.10 SKY77 | ECE 281810TR-28 | h_{max} | 0.16 | 0.15 | 0.14 | 0.14 | 0.10 | 0.10 |
| | | | | v_c | 290-340 | 270-300 | 240-280 | 210-240 | 180-210 |

INTERCHANGEABLE HEADS **EC**



ECE

| AS | Ø | s |
|----|----|----|
| 5 | 25 | 16 |
| | 25 | 16 |

ECE

| AS | Ø | s |
|----|----|----|
| 6 | 16 | 12 |
| | 16 | 12 |

ECE

| AS | Ø | | | s | | |
|----|---|----|----|----|----|------|
| | 8 | 20 | 25 | 28 | 14 | 16 |
| 20 | | 25 | 28 | 14 | 16 | 18.5 |

Matching of machining parameters
with the AV material groups

| | Article | Designation | Recomm. a_e 0.7 x D | NF metals | | |
|------------|----------------------|------------------|-----------------------------|-----------|---------|-----|
| | | | | E82 | E81 | E80 |
| ECE1612... | EC.E1612.67.10 SKY77 | ECE 161210 TR-28 | h_{max} | 0.15 | 0.15 | - |
| | | | v_c | 650-1000 | 450-650 | - |
| ECE2014... | EC.E2014.84.10 SKY77 | ECE 201410 TR-28 | h_{max} | 0.15 | 0.15 | - |
| | | | v_c | 650-1000 | 450-650 | - |
| ECE2512... | EC.E2512.53.02 SKY77 | ECE 251210 TR-25 | h_{max} | 0.15 | 0.15 | - |
| | | | v_c | 650-1000 | 450-650 | - |
| ECE2516... | EC.E2516.86.10 SKY77 | ECE 251610 TR-28 | h_{max} | 0.15 | 0.15 | - |
| | | | v_c | 650-1000 | 450-650 | - |
| ECE2818... | EC.E2818.86.10 SKY77 | ECE 281810 TR-28 | h_{max} | 0.15 | 0.15 | - |
| | | | v_c | 650-1000 | 450-650 | - |

INS



| | | |
|-------------|---------------|-------|
| ECE1612... | 08B.0416.7991 | TX215 |
| ECE2014.... | 08B.0520.7991 | TX220 |
| ECE2512.... | 08B.0520.7991 | TX220 |
| ECE2516.... | 08B.0627.7991 | TX225 |
| ECE2818.... | 08B.0627.7991 | TX225 |