



Leading Through Innovation



HSS & HSS-E

MORSE TAPER SHANK DRILLS

BOHRER MIT MK

- Morse Taper Shank Drills for Wide Applications
- Bohrer mit Morsekegel für breite Anwendungen

SELECTION GUIDE



| SERIES | DL205 | D1205 | D1206 |
|----------|---------|---------|---------|
| STANDARD | DIN 345 | DIN 345 | DIN 341 |
| LENGTH | JOBBER | JOBBER | LONG |
| SIZE MIN | D13.0 | D5.0 | D13.0 |
| SIZE MAX | D30.0 | D60.0 | D30.0 |
| PAGE | A270 | A271 | A274 |

| D1209 | D1210 |
|------------|------------|
| DIN 1870/1 | DIN 1870/2 |
| EXTRA LONG | EXTRA LONG |
| D13.0 | D13.0 |
| D50.0 | D50.0 |
| A275 | A276 |

SURFACE TREATMENT

| | | |
|--------|-----|--|
| Bright | Vap | |
|--------|-----|--|

| | |
|-----|--|
| Vap | |
|-----|--|

HSS & HSS-E MORSE TAPER SHANK DRILLS

Morse Taper Shank Drills for Wide Applications



Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : p.A277

| ISO | VDI 3323 | Material Description | Composition / Structure / Heat Treatment | HB | HRc | DL205 | D1205 | D1206 |
|-----|---------------------|-----------------------------|--|-----------------------|-----|-------|-------|-------|
| P | 1 | Non-alloy steel | About 0.15% C Annealed | 125 | | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C Annealed | 190 | 13 | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C Annealed | 270 | 28 | ○ | ○ | ○ |
| | 5 | | About 0.75% C Quenched & Tempered | 300 | 32 | ○ | ○ | ○ |
| | 6 | Low alloy steel | Annealed | 180 | 10 | ◎ | ◎ | ◎ |
| | 7 | | Quenched & Tempered | 275 | 29 | ○ | ○ | ○ |
| | 8 | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ |
| | 9 | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ |
| | 10 | | High alloyed steel, and tool steel | Annealed | 200 | 15 | ○ | ○ |
| | 11 | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic Annealed | 200 | 15 | ◎ | ◎ | ◎ |
| | 13 | | Martensitic Quenched & Tempered | 240 | 23 | ○ | ○ | ○ |
| | 14 | | Austenitic | 180 | 10 | ○ | ○ | ○ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | 180 | 10 | ○ | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | 260 | 26 | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | 160 | 3 | ○ | ○ | ○ |
| | 18 | | Pearlitic | 250 | 25 | ○ | ○ | ○ |
| | 19 | | Ferritic | 130 | | ○ | ○ | ○ |
| 20 | Malleable cast iron | Pearlitic | 230 | 21 | ○ | ○ | ○ | |
| N | 21 | Aluminum-wrought alloy | Not Curable | 60 | | ○ | ○ | ○ |
| | 22 | | Curable Hardened | 100 | | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | 75 | | ○ | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable Hardened | 90 | | ○ | ○ | ○ |
| | 25 | | > 12% Si, Not Curable | 130 | | ○ | ○ | ○ |
| | 26 | | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | 110 | | ○ | ○ |
| | 27 | Non Metallic Materials | CuZn, CuSnZn (Brass) | 90 | | ○ | ○ | ○ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | 100 | | ○ | ○ | ○ |
| | 29 | | Duroplastic, Fiber Reinforced Plastic | | | | ○ | ○ |
| | 30 | Rubber, Wood, etc. | | | | ○ | ○ | ○ |
| S | 31 | Heat Resistant Super Alloys | Fe Based Annealed | 200 | 15 | | | |
| | 32 | | Cured | 280 | 30 | | | |
| | 33 | | Annealed | 250 | 25 | | | |
| | 34 | | Ni or Co Based Cured | 350 | 38 | | | |
| | 35 | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | 400 Rm | | ○ | ○ | ○ |
| | 37 | | Alpha + Beta Alloys Hardened | 1050 Rm | | ○ | ○ | ○ |
| H | 38 | Hardened steel | Hardened | 550 | 55 | | | |
| | 39 | | Hardened | 630 | 60 | | | |
| | 40 | | Chilled Cast Iron | Cast | 400 | 42 | | |
| 41 | Hardened Cast Iron | Hardened | 550 | 55 | | | | |

| ISO | VDI 3323 | Material Description | Composition / Structure / Heat Treatment | HB | HRc | D1209 | D1210 |
|-----|---------------------|-----------------------------|--|-----------------------|-----|-------|-------|
| P | 1 | Non-alloy steel | About 0.15% C Annealed | 125 | | ◎ | ◎ |
| | 2 | | About 0.45% C Annealed | 190 | 13 | ◎ | ◎ |
| | 3 | | About 0.45% C Quenched & Tempered | 250 | 25 | ◎ | ◎ |
| | 4 | | About 0.75% C Annealed | 270 | 28 | ○ | ○ |
| | 5 | | About 0.75% C Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 6 | Low alloy steel | Annealed | 180 | 10 | ◎ | ◎ |
| | 7 | | Quenched & Tempered | 275 | 29 | ○ | ○ |
| | 8 | | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 9 | | Quenched & Tempered | 350 | 38 | ○ | ○ |
| | 10 | | High alloyed steel, and tool steel | Annealed | 200 | 15 | ○ |
| | 11 | | Quenched & Tempered | 325 | 35 | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic Annealed | 200 | 15 | ◎ | ◎ |
| | 13 | | Martensitic Quenched & Tempered | 240 | 23 | ○ | ○ |
| | 14 | | Austenitic | 180 | 10 | ○ | ○ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | 180 | 10 | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | 260 | 26 | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | 160 | 3 | ○ | ○ |
| | 18 | | Pearlitic | 250 | 25 | ○ | ○ |
| | 19 | | Ferritic | 130 | | ○ | ○ |
| 20 | Malleable cast iron | Pearlitic | 230 | 21 | ○ | ○ | |
| N | 21 | Aluminum-wrought alloy | Not Curable | 60 | | ○ | ○ |
| | 22 | | Curable Hardened | 100 | | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | 75 | | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable Hardened | 90 | | ○ | ○ |
| | 25 | | > 12% Si, Not Curable | 130 | | ○ | ○ |
| | 26 | | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | 110 | | ○ |
| | 27 | Non Metallic Materials | CuZn, CuSnZn (Brass) | 90 | | ○ | ○ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | 100 | | ○ | ○ |
| | 29 | | Duroplastic, Fiber Reinforced Plastic | | | | ○ |
| | 30 | Rubber, Wood, etc. | | | | ○ | ○ |
| S | 31 | Heat Resistant Super Alloys | Fe Based Annealed | 200 | 15 | | |
| | 32 | | Cured | 280 | 30 | | |
| | 33 | | Annealed | 250 | 25 | | |
| | 34 | | Ni or Co Based Cured | 350 | 38 | | |
| | 35 | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | 400 Rm | | ○ | ○ |
| | 37 | | Alpha + Beta Alloys Hardened | 1050 Rm | | ○ | ○ |
| H | 38 | Hardened steel | Hardened | 550 | 55 | | |
| | 39 | | Hardened | 630 | 60 | | |
| | 40 | | Chilled Cast Iron | Cast | 400 | 42 | |
| 41 | Hardened Cast Iron | Hardened | 550 | 55 | | | |

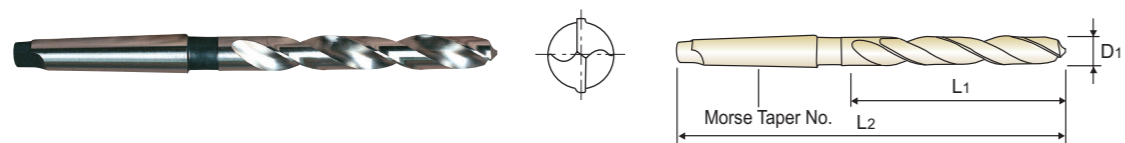
YG MORSE TAPER SHANK DRILLS

DL205 SERIES

HSS-E, MORSE TAPER SHANK TWIST DRILLS for HEAVY DUTY JOBBER

- HSS-E, SPIRALBOHRER für HOHELEISTUNGEN mit MORSEKEGELSCHAFT KURZ
- Forets HSS-E, queue cône morse pour matériaux durs, série courte COURTE
- HSS-E, PUNTE ELICOIDALI, ATTACCO CM PER LAVORAZIONI GRAVOSE CORTA

► **Surface treatment** : Bright Finish ► **Oberflächenbehandlung** : Helle Beschaffenheit
 ► **Application** : Drilling steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, graphite. ► **Verwendung** : Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sinterisen, Graphit.



DIN 345
HSS-E
N 30°
1~3
h8
118°
Bright
p.A277
Plain Shank
Recommended ToolHolder
MORSE TAPER ARBOR

Unit : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. |
|----------|----------------|--------------|----------------|-----------------|
| | D1 | L1 | L2 | |
| DL205130 | 13.0 | 101 | 182 | 1 |
| DL205135 | 13.5 | 108 | 189 | 1 |
| DL205140 | 14.0 | 108 | 189 | 1 |
| DL205145 | 14.5 | 114 | 212 | 2 |
| DL205150 | 15.0 | 114 | 212 | 2 |
| DL205155 | 15.5 | 120 | 218 | 2 |
| DL205160 | 16.0 | 120 | 218 | 2 |
| DL205165 | 16.5 | 125 | 223 | 2 |
| DL205170 | 17.0 | 125 | 223 | 2 |
| DL205175 | 17.5 | 130 | 228 | 2 |
| DL205180 | 18.0 | 130 | 228 | 2 |
| DL205185 | 18.5 | 135 | 233 | 2 |
| DL205190 | 19.0 | 135 | 233 | 2 |
| DL205195 | 19.5 | 140 | 238 | 2 |
| DL205200 | 20.0 | 140 | 238 | 2 |
| DL205205 | 20.5 | 145 | 243 | 2 |
| DL205210 | 21.0 | 145 | 243 | 2 |
| DL205215 | 21.5 | 150 | 248 | 2 |

◎ : Excellent ○ : Good

| ISO Material Description | P | | | | | | | | | | M | | | | K | | | | | |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 35 | 38 | 42 | 45 | 48 | 52 | 55 | 58 | 60 | 62 | 65 | 68 | 70 | 72 | 75 | 78 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 215 | 235 | 260 | 280 | 200 | 235 | 250 | 280 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

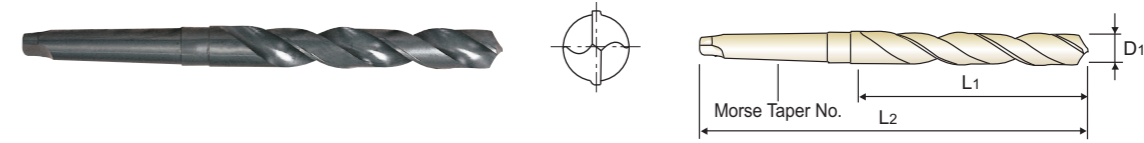
YG MORSE TAPER SHANK DRILLS

D1205 SERIES

HSS, MORSE TAPER SHANK TWIST DRILLS JOBBER

- HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT KURZ
- Forets HSS, queue cône morse, série courte COURTE
- PUNTE ELICOIDALI IN HSS, ATTACCO CM CORTA

► **Surface treatment** : Steam Tempered(Black Oxide Finish) ► **Oberflächenbehandlung** : Steam Homo(Schwarzoxidation)
 ► **Application** : Drilling steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, graphite. ► **Verwendung** : Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sinterisen, Graphit.



DIN 345
HSS
N 30°
1~5
h8
118°
Vap
p.A277
Plain Shank
Recommended ToolHolder
MORSE TAPER ARBOR

Unit : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. |
|----------|----------------|--------------|----------------|-----------------|
| | D1 | L1 | L2 | |
| D1205050 | 5.0 | 52 | 133 | 1 |
| D1205055 | 5.5 | 57 | 138 | 1 |
| D1205060 | 6.0 | 57 | 138 | 1 |
| D1205065 | 6.5 | 63 | 144 | 1 |
| D1205070 | 7.0 | 69 | 150 | 1 |
| D1205075 | 7.5 | 69 | 150 | 1 |
| D1205080 | 8.0 | 75 | 156 | 1 |
| D1205085 | 8.5 | 75 | 156 | 1 |
| D1205090 | 9.0 | 81 | 162 | 1 |
| D1205095 | 9.5 | 81 | 162 | 1 |
| D1205100 | 10.0 | 87 | 168 | 1 |
| D1205105 | 10.5 | 87 | 168 | 1 |
| D1205110 | 11.0 | 94 | 175 | 1 |
| D1205115 | 11.5 | 94 | 175 | 1 |
| D1205120 | 12.0 | 101 | 182 | 1 |
| D1205125 | 12.5 | 101 | 182 | 1 |
| D1205130 | 13.0 | 101 | 182 | 1 |
| D1205132 | 13.2 | 101 | 182 | 1 |
| D120513A | 13.25 | 108 | 189 | 1 |
| D1205135 | 13.5 | 108 | 189 | 1 |
| D120513B | 13.75 | 108 | 189 | 1 |
| D1205138 | 13.8 | 108 | 189 | 1 |
| D1205140 | 14.0 | 108 | 189 | 1 |
| D120514A | 14.25 | 114 | 212 | 2 |
| D1205145 | 14.5 | 114 | 212 | 2 |
| D120514B | 14.75 | 114 | 212 | 2 |

◎ : Excellent ○ : Good

| ISO Material Description | P | | | | | | | | | | M | | | | K | | | | | |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 35 | 38 | 42 | 45 | 48 | 52 | 55 | 58 | 60 | 62 | 65 | 68 | 70 | 72 | 75 | 78 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 215 | 235 | 260 | 280 | 200 | 235 | 250 | 280 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

YG MORSE TAPER SHANK DRILLS

D1205 SERIES

HSS, MORSE TAPER SHANK TWIST DRILLS

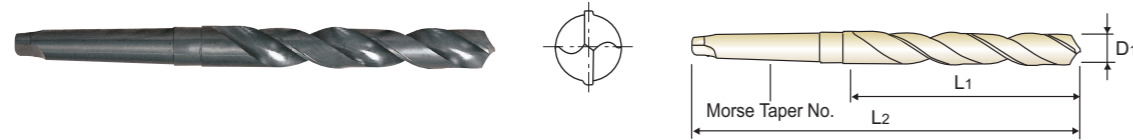
JOBBER

- HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT
- Forets HSS, queue cône morse, série courte
- PUNTE ELICOIDALI IN HSS, ATTACCO CM

- KURZ
- COURTE
- CORTA

► **Surface treatment** : Steam Tempered(Black Oxide Finish)
 ► **Application** : Drilling steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, graphite.

► **Oberflächenbehandlung** : Steam Homo(Schwarzoxidation)
 ► **Verwendung** : Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sinterisen, Graphit.



DIN 345 HSS N 30° 1~5 h8 118° Vap p.A277

Plain Shank Recommended ToolHolder MORSE TAPER ARBOR

Unit : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. | EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. |
|----------|----------------|--------------|----------------|-----------------|----------|----------------|--------------|----------------|-----------------|
| | D1 | L1 | L2 | | | D1 | L1 | L2 | |
| D1205215 | 21.5 | 150 | 248 | 2 | D1205280 | 28.0 | 170 | 291 | 3 |
| D120521B | 21.75 | 150 | 248 | 2 | D120528A | 28.25 | 175 | 296 | 3 |
| D1205220 | 22.0 | 150 | 248 | 2 | D1205285 | 28.5 | 175 | 296 | 3 |
| D120522A | 22.25 | 150 | 248 | 2 | D120528B | 28.75 | 175 | 296 | 3 |
| D1205225 | 22.5 | 155 | 253 | 2 | D1205290 | 29.0 | 175 | 296 | 3 |
| D120522B | 22.75 | 155 | 253 | 2 | D120529A | 29.25 | 175 | 296 | 3 |
| D1205230 | 23.0 | 155 | 253 | 2 | D1205295 | 29.5 | 175 | 296 | 3 |
| D120523A | 23.25 | 155 | 276 | 3 | D120529B | 29.75 | 175 | 296 | 3 |
| D1205235 | 23.5 | 155 | 276 | 3 | D1205300 | 30.0 | 175 | 296 | 3 |
| D120523B | 23.75 | 160 | 281 | 3 | D120530A | 30.25 | 180 | 301 | 3 |
| D1205240 | 24.0 | 160 | 281 | 3 | D1205305 | 30.5 | 180 | 301 | 3 |
| D120524A | 24.25 | 160 | 281 | 3 | D120530B | 30.75 | 180 | 301 | 3 |
| D1205245 | 24.5 | 160 | 281 | 3 | D1205310 | 31.0 | 180 | 301 | 3 |
| D120524B | 24.75 | 160 | 281 | 3 | D120531A | 31.25 | 180 | 301 | 3 |
| D1205250 | 25.0 | 160 | 281 | 3 | D1205315 | 31.5 | 180 | 301 | 3 |
| D120525A | 25.25 | 165 | 286 | 3 | D120531B | 31.75 | 185 | 306 | 3 |
| D1205255 | 25.5 | 165 | 286 | 3 | D1205320 | 32.0 | 185 | 334 | 4 |
| D120525B | 25.75 | 165 | 286 | 3 | D1205325 | 32.5 | 185 | 334 | 4 |
| D1205260 | 26.0 | 165 | 286 | 3 | D1205330 | 33.0 | 185 | 334 | 4 |
| D120526A | 26.25 | 165 | 286 | 3 | D1205335 | 33.5 | 185 | 334 | 4 |
| D1205265 | 26.5 | 165 | 286 | 3 | D1205340 | 34.0 | 190 | 339 | 4 |
| D120526B | 26.75 | 170 | 291 | 3 | D1205345 | 34.5 | 190 | 339 | 4 |
| D1205270 | 27.0 | 170 | 291 | 3 | D1205350 | 35.0 | 190 | 339 | 4 |
| D120527A | 27.25 | 170 | 291 | 3 | D1205355 | 35.5 | 190 | 339 | 4 |
| D1205275 | 27.5 | 170 | 291 | 3 | D1205360 | 36.0 | 195 | 344 | 4 |
| D120527B | 27.75 | 170 | 291 | 3 | D1205365 | 36.5 | 195 | 344 | 4 |

► NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | M | | | | K | | | | | |
|----------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| Material Description | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 30 | 29 | 32 | 38 | 35 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 21 | 21 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | S | | | | | H | | | | | | | | | | |
|----------------------|------------------------|-----|------------------------|----|-----|---|----|-----|------------------------|----|-----------------------------|-----|-----|-----------------|-----|----------------|-------------------|--------------------|-----|-----|-----|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | |
| Material Description | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | | | ○ | | | | | ○ | | | | | |

YG MORSE TAPER SHANK DRILLS

D1205 SERIES

HSS, MORSE TAPER SHANK TWIST DRILLS

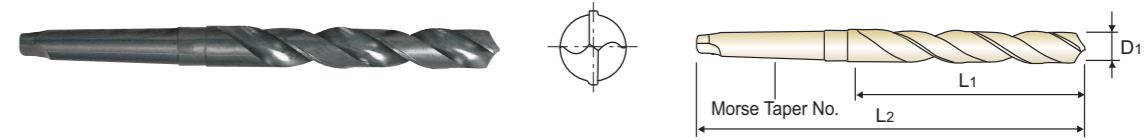
JOBBER

- HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT
- Forets HSS, queue cône morse, série courte
- PUNTE ELICOIDALI IN HSS, ATTACCO CM

- KURZ
- COURTE
- CORTA

► **Surface treatment** : Steam Tempered(Black Oxide Finish)
 ► **Application** : Drilling steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, graphite.

► **Oberflächenbehandlung** : Steam Homo(Schwarzoxidation)
 ► **Verwendung** : Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sinterisen, Graphit.



DIN 345 HSS N 30° 1~5 h8 118° Vap p.A277

Plain Shank Recommended ToolHolder MORSE TAPER ARBOR

Unit : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. | EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. |
|----------|----------------|--------------|----------------|-----------------|----------|----------------|--------------|----------------|-----------------|
| | D1 | L1 | L2 | | | D1 | L1 | L2 | |
| D1205370 | 37.0 | 195 | 344 | 4 | D1205500 | 50.0 | 220 | 369 | 4 |
| D1205375 | 37.5 | 195 | 344 | 4 | D1205505 | 50.5 | 225 | 374 | 4 |
| D1205380 | 38.0 | 200 | 349 | 4 | D1205510 | 51.0 | 225 | 412 | 5 |
| D1205385 | 38.5 | 200 | 349 | 4 | D1205520 | 52.0 | 225 | 412 | 5 |
| D1205390 | 39.0 | 200 | 349 | 4 | D1205530 | 53.0 | 225 | 412 | 5 |
| D1205395 | 39.5 | 200 | 349 | 4 | D1205540 | 54.0 | 230 | 417 | 5 |
| D1205400 | 40.0 | 200 | 349 | 4 | D1205550 | 55.0 | 230 | 417 | 5 |
| D1205405 | 40.5 | 205 | 354 | 4 | D1205560 | 56.0 | 230 | 417 | 5 |
| D1205410 | 41.0 | 205 | 354 | 4 | D1205570 | 57.0 | 235 | 422 | 5 |
| D1205415 | 41.5 | 205 | 354 | 4 | D1205580 | 58.0 | 235 | 422 | 5 |
| D1205420 | 42.0 | 205 | 354 | 4 | D1205590 | 59.0 | 235 | 422 | 5 |
| D1205425 | 42.5 | 205 | 354 | 4 | D1205600 | 60.0 | 235 | 422 | 5 |
| D1205430 | 43.0 | 210 | 359 | 4 | | | | | |
| D1205435 | 43.5 | 210 | 359 | 4 | | | | | |
| D1205440 | 44.0 | 210 | 359 | 4 | | | | | |
| D1205445 | 44.5 | 210 | 359 | 4 | | | | | |
| D1205450 | 45.0 | 210 | 359 | 4 | | | | | |
| D1205455 | 45.5 | 215 | 364 | 4 | | | | | |
| D1205460 | 46.0 | 215 | 364 | 4 | | | | | |
| D1205465 | 46.5 | 215 | 364 | 4 | | | | | |
| D1205470 | 47.0 | 215 | 364 | 4 | | | | | |
| D1205475 | 47.5 | 215 | 364 | 4 | | | | | |
| D1205480 | 48.0 | 220 | 369 | 4 | | | | | |
| D1205485 | 48.5 | 220 | 369 | 4 | | | | | |
| D1205490 | 49.0 | 220 | 369 | 4 | | | | | |
| D1205495 | 49.5 | 220 | 369 | 4 | | | | | |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | M | | | | K | | | | | |
|----------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| Material Description | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 30 | 29 | 32 | 38 | 35 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 21 | 21 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | S | | | | | H | | | | | | | | | | |
|----------------------|------------------------|-----|------------------------|----|-----|---|----|-----|------------------------|----|-----------------------------|-----|-----|-----------------|-----|----------------|-------------------|--------------------|-----|-----|-----|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | |
| Material Description | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | | | ○ | | | | | ○ | | | | | |

YG MORSE TAPER SHANK DRILLS

D1206 SERIES

HSS, MORSE TAPER SHANK TWIST DRILLS

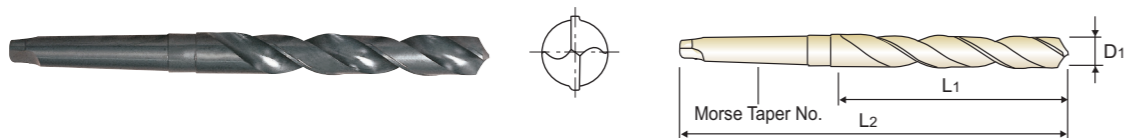
LONG

- HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT
- Forets HSS, queue cône morse, série longue
- PUNTE ELICOIDALI IN HSS, ATTACCO CM

LANG
LONGUE
LUNGA

►Surface treatment : Steam Tempered(Black Oxide Finish)
►Application : Drilling deep holes in steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, graphite.

►Oberflächenbehandlung : Steam Homo(Schwarzoxidation)
►Verwendung : Für Bohrungen mit Bohrbuchsen oder an tief liegenden Stellen.
Zum Bohren von Stahl und Stahlguß, Grauß, Temperguß, Sphäroguß, Sintereisen, Neusilber und Graphit.



DIN 341 HSS N 30° 1~3 h8 118° Vap p.A277

Plain Shank Recommended ToolHolder MORSE TAPER ARBOR

Unit : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. |
|----------|----------------|--------------|----------------|-----------------|
| | D1 | L1 | L2 | |
| D1206130 | 13.0 | 134 | 215 | 1 |
| D1206135 | 13.5 | 142 | 223 | 1 |
| D1206140 | 14.0 | 142 | 223 | 1 |
| D1206145 | 14.5 | 147 | 245 | 2 |
| D1206150 | 15.0 | 147 | 245 | 2 |
| D1206155 | 15.5 | 153 | 251 | 2 |
| D1206160 | 16.0 | 153 | 251 | 2 |
| D1206165 | 16.5 | 159 | 257 | 2 |
| D1206170 | 17.0 | 159 | 257 | 2 |
| D1206175 | 17.5 | 165 | 263 | 2 |
| D1206180 | 18.0 | 165 | 263 | 2 |
| D1206185 | 18.5 | 171 | 269 | 2 |
| D1206190 | 19.0 | 171 | 269 | 2 |

| EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. |
|----------|----------------|--------------|----------------|-----------------|
| | D1 | L1 | L2 | |
| D1206195 | 19.5 | 177 | 275 | 2 |
| D1206200 | 20.0 | 177 | 275 | 2 |
| D1206210 | 21.0 | 184 | 282 | 2 |
| D1206220 | 22.0 | 191 | 289 | 2 |
| D1206230 | 23.0 | 198 | 296 | 2 |
| D1206240 | 24.0 | 206 | 327 | 3 |
| D1206250 | 25.0 | 206 | 327 | 3 |
| D1206260 | 26.0 | 214 | 335 | 3 |
| D1206270 | 27.0 | 222 | 343 | 3 |
| D1206280 | 28.0 | 222 | 343 | 3 |
| D1206290 | 29.0 | 230 | 351 | 3 |
| D1206300 | 30.0 | 230 | 351 | 3 |

◎ : Excellent ○ : Good

| ISO Material Description | P | | | | | | | | | | M | | | | | | K | | | | | |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----|-----------------|-----|-----|----------------|-----|-------------------|-----|---------------------|--|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | |
| HRc | 13 | 25 | 28 | 32 | 38 | 42 | 48 | 52 | 58 | 62 | 68 | 72 | 78 | 82 | 88 | 92 | 98 | 102 | 108 | 112 | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | |
| Recommended | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | |

| ISO Material Description | N | | | | | | | | | | S | | | | | | H | | | | | |
|--------------------------|------------------------|-----|------------------------|----|---|-----|------------------------|-----|-----------------------------|----|-----|-----|-----------------|-----|----------------|-------------------|--------------------|-----|-----|-----|-----|--|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | |
| HRc | 15 | 30 | 25 | 38 | 34 | | | | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | | | | | | | | | | | | |
| Recommended | ○ | ○ | ○ | | | | | | | | | | | | | ○ | | | | | | |

YG MORSE TAPER SHANK DRILLS

D1209 SERIES

HSS, MORSE TAPER SHANK TWIST DRILLS

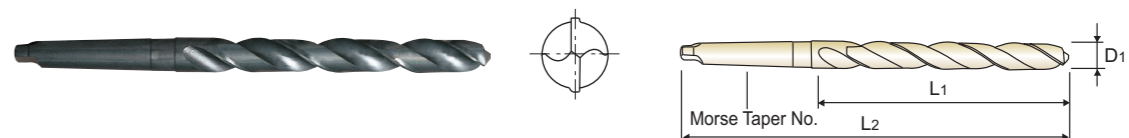
EXTRA LONG

- HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT
- Forets HSS, queue cône morse, série extra-longue
- PUNTE ELICOIDALI IN HSS, ATTACCO CM

ÜBERLANG
EXTRA-LONGUE
EXTRA LUNGA

►Surface treatment : Steam Tempered(Black Oxide Finish)
►Application : Drilling deep holes in steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, graphite.

►Oberflächenbehandlung : Steam Homo(Schwarzoxidation)
►Verwendung : Für Bohrungen mit Bohrbuchsen oder an tief liegenden Stellen.
Zum Bohren von Stahl und Stahlguß, Grauß, Temperguß, Sphäroguß, Sintereisen, Neusilber und Graphit.



DIN 1870/1 HSS N 30° 1~4 h8 118° Vap p.A277

Plain Shank Recommended ToolHolder MORSE TAPER ARBOR

Unit : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. |
|----------|----------------|--------------|----------------|-----------------|
| | D1 | L1 | L2 | |
| D1209130 | 13.0 | 205 | 310 | 1 |
| D1209135 | 13.5 | 220 | 325 | 1 |
| D1209140 | 14.0 | 220 | 325 | 1 |
| D1209145 | 14.5 | 220 | 340 | 2 |
| D1209150 | 15.0 | 220 | 340 | 2 |
| D1209155 | 15.5 | 230 | 355 | 2 |
| D1209160 | 16.0 | 230 | 355 | 2 |
| D1209165 | 16.5 | 230 | 355 | 2 |
| D1209170 | 17.0 | 230 | 355 | 2 |
| D1209175 | 17.5 | 245 | 370 | 2 |
| D1209180 | 18.0 | 245 | 370 | 2 |
| D1209185 | 18.5 | 245 | 370 | 2 |
| D1209190 | 19.0 | 245 | 370 | 2 |
| D1209195 | 19.5 | 260 | 385 | 2 |
| D1209200 | 20.0 | 260 | 385 | 2 |
| D1209205 | 20.5 | 260 | 385 | 2 |
| D1209210 | 21.0 | 260 | 385 | 2 |
| D1209215 | 21.5 | 270 | 405 | 2 |
| D1209220 | 22.0 | 270 | 405 | 2 |
| D1209225 | 22.5 | 270 | 405 | 2 |
| D1209230 | 23.0 | 270 | 405 | 2 |
| D1209235 | 23.5 | 270 | 425 | 3 |
| D1209240 | 24.0 | 290 | 440 | 3 |
| D1209245 | 24.5 | 290 | 440 | 3 |
| D1209250 | 25.0 | 290 | 440 | 3 |
| D1209255 | 25.5 | 290 | 440 | 3 |
| D1209260 | 26.0 | 290 | 440 | 3 |
| D1209265 | 26.5 | 290 | 440 | 3 |

| EDP No. | Drill Diameter | Flute Length | Overall Length | Morse Taper No. |
|----------|----------------|--------------|----------------|-----------------|
| | D1 | L1 | L2 | |
| D1209270 | 27.0 | 305 | 460 | 3 |
| D1209275 | 27.5 | 305 | 460 | 3 |
| D1209280 | 28.0 | 305 | 460 | 3 |
| D1209285 | 28.5 | 305 | 460 | 3 |
| D1209290 | 29.0 | 305 | 460 | 3 |
| D1209295 | 29.5 | 305 | 460 | 3 |
| D1209300 | 30.0 | 305 | 460 | 3 |
| D1209305 | 30.5 | 320 | 480 | 3 |
| D1209310 | 31.0 | 320 | 480 | 3 |
| D1209320 | 32.0 | 320 | 505 | 4 |
| D1209330 | 33.0 | 320 | 505 | 4 |
| D1209340 | 34.0 | 340 | 530 | 4 |
| D1209350 | 35.0 | 340 | 530 | 4 |
| D1209360 | 36.0 | 340 | 530 | 4 |
| D1209370 | 37.0 | 340 | 530 | 4 |
| D1209380 | 38.0 | 360 | 555 | 4 |
| D1209390 | 39.0 | 360 | 555 | 4 |
| D1209400 | 40.0 | 360 | 555 | 4 |
| D1209410 | 41.0 | 360 | 555 | 4 |
| D1209420 | 42.0 | 360 | 555 | 4 |
| D1209430 | 43.0 | 385 | 585 | 4 |
| D1209440 | 44.0 | 385 | 585 | 4 |
| D1209450 | 45.0 | 385 | 585 | 4 |
| D1209460 | 46.0 | 385 | 585 | 4 |
| D1209470 | 47.0 | 385 | 585 | 4 |
| D1209480 | 48.0 | 405 | 605 | 4 |
| D1209490 | 49.0 | 405 | 605 | 4 |
| D1209500 | 50.0 | 405 | 605 | 4 |

◎ : Excellent ○ : Good

| ISO Material Description | P | | | | | | | | | | M | | | | | | K | | | | | |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----|-----------------|-----|-----|----------------|-----|-------------------|-----|---------------------|--|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | |
| HRc | 13 | 25 | 28 | 32 | 38 | 42 | 48 | 52 | 58 | 62 | 68 | 72 | 78 | 82 | 88 | 92 | 98 | 102 | 108 | 112 | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | |
| Recommended | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | |

| ISO Material Description | N | | | | | | | | | | S | | | | | | H | | | | | |
|--------------------------|------------------------|-----|------------------------|----|---|-----|------------------------|-----|-----------------------------|----|-----|-----|-----------------|-----|----------------|-------------------|--------------------|-----|-----|-----|-----|--|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | |
| HRc | 15 | 30 | 25 | 38 | 34 | | | | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | | | | | | | | | | | | |
| Recommended | ○ | ○ | ○ | | | | | | | | | | | | | ○ | | | | | | |

i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
HPD DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

YG MORSE TAPER SHANK DRILLS

D1210 SERIES

HSS, MORSE TAPER SHANK TWIST DRILLS

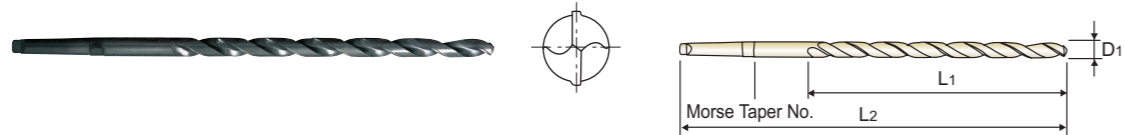
EXTRA LONG

- HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT
- Forets HSS, queue cône morse, série extra-longue
- PUNTE ELICOIDALI IN HSS, ATTACCO CM

ÜBERLANG
EXTRA-LONGUE
EXTRA LUNGA

▶ **Surface treatment** : Steam Tempered(Black Oxide Finish)
 ▶ **Application** : Designed for drilling deep holes or deeply located holes. Drilling into steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, Spheroidal graphite cast iron, sintered iron, aluminum and aluminum alloys.

▶ **Oberflächenbehandlung** : Steam Homo(Schwarzoxidation)
 ▶ **Verwendung** : Standardbohrer zum Bohren extrem tiefer Löcher.
 Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sintereisen und Graphit



DIN 1870/2 HSS N 30° 1~4 h8 118° Vap p.A277

Plain Shank Recommended Toolholder MORSE TAPER ARBOR

Unit : mm

| EDP No. | Drill Diameter D1 | Flute Length L1 | Overall Length L2 | Morse Taper No. | EDP No. | Drill Diameter D1 | Flute Length L1 | Overall Length L2 | Morse Taper No. |
|----------|-------------------|-----------------|-------------------|-----------------|----------|-------------------|-----------------|-------------------|-----------------|
| D1210130 | 13.0 | 260 | 395 | 1 | D1210270 | 27.0 | 385 | 580 | 3 |
| D1210135 | 13.5 | 275 | 410 | 1 | D1210275 | 27.5 | 385 | 580 | 3 |
| D1210140 | 14.0 | 275 | 410 | 1 | D1210280 | 28.0 | 385 | 580 | 3 |
| D1210145 | 14.5 | 275 | 425 | 2 | D1210285 | 28.5 | 385 | 580 | 3 |
| D1210150 | 15.0 | 275 | 425 | 2 | D1210290 | 29.0 | 385 | 580 | 3 |
| D1210155 | 15.5 | 295 | 445 | 2 | D1210295 | 29.5 | 385 | 580 | 3 |
| D1210160 | 16.0 | 295 | 445 | 2 | D1210300 | 30.0 | 385 | 580 | 3 |
| D1210165 | 16.5 | 295 | 445 | 2 | D1210310 | 31.0 | 410 | 610 | 3 |
| D1210170 | 17.0 | 295 | 445 | 2 | D1210320 | 32.0 | 410 | 635 | 4 |
| D1210175 | 17.5 | 310 | 465 | 2 | D1210330 | 33.0 | 410 | 635 | 4 |
| D1210180 | 18.0 | 310 | 465 | 2 | D1210340 | 34.0 | 430 | 665 | 4 |
| D1210185 | 18.5 | 310 | 465 | 2 | D1210350 | 35.0 | 430 | 665 | 4 |
| D1210190 | 19.0 | 310 | 465 | 2 | D1210360 | 36.0 | 430 | 665 | 4 |
| D1210195 | 19.5 | 325 | 490 | 2 | D1210370 | 37.0 | 430 | 665 | 4 |
| D1210200 | 20.0 | 325 | 490 | 2 | D1210380 | 38.0 | 460 | 695 | 4 |
| D1210205 | 20.5 | 325 | 490 | 2 | D1210390 | 39.0 | 460 | 695 | 4 |
| D1210210 | 21.0 | 325 | 490 | 2 | D1210400 | 40.0 | 460 | 695 | 4 |
| D1210215 | 21.5 | 345 | 515 | 2 | D1210410 | 41.0 | 460 | 695 | 4 |
| D1210220 | 22.0 | 345 | 515 | 2 | D1210420 | 42.0 | 460 | 695 | 4 |
| D1210225 | 22.5 | 345 | 515 | 2 | D1210430 | 43.0 | 490 | 735 | 4 |
| D1210230 | 23.0 | 345 | 515 | 2 | D1210440 | 44.0 | 490 | 735 | 4 |
| D1210235 | 23.5 | 345 | 535 | 3 | D1210450 | 45.0 | 490 | 735 | 4 |
| D1210240 | 24.0 | 365 | 555 | 3 | D1210460 | 46.0 | 490 | 735 | 4 |
| D1210245 | 24.5 | 365 | 555 | 3 | D1210470 | 47.0 | 490 | 735 | 4 |
| D1210250 | 25.0 | 365 | 555 | 3 | D1210480 | 48.0 | 510 | 765 | 4 |
| D1210255 | 25.5 | 365 | 555 | 3 | D1210490 | 49.0 | 510 | 765 | 4 |
| D1210260 | 26.0 | 365 | 555 | 3 | D1210500 | 50.0 | 510 | 765 | 4 |
| D1210265 | 26.5 | 365 | 555 | 3 | | | | | |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | M | | | | K | | | | | |
|----------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 30 | 29 | 32 | 38 | 35 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 25 | 21 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | H | | | | | | | |
|----------------------|------------------------|-----|------------------------|----|-----|---|----|-----|----|----|------------------------|-----|-----------------------------|-----|-----|-------|-----------------|-----|----------------|-----|-------------------|--|--------------------|--|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | | Hardened Cast Iron | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | |
| HRc | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 | | | |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |

YG MORSE TAPER SHANK DRILLS

RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

DL205, D1205, D1206, D1209, D1210 SERIES

HSS&HSS-E, MORSE TAPER SHANK DRILLS

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

| ISO | VDI 3323 | Material Description | Vc | Parameter | Drill Diameter (mm) | | | | | | | |
|------------------------------------|------------------------|------------------------|-----------|-----------|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|------|
| | | | | | 13.0 | 16.0 | 18.0 | 20.0 | 30.0 | 40.0 | 50.0 | 60.0 |
| P | 1 | Non-alloy steel | 30 | RPM | 730 | 600 | 530 | 480 | 320 | 240 | 190 | 160 |
| | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | |
| | | | 25 | RPM | 610 | 500 | 440 | 400 | 270 | 200 | 160 | 130 |
| | FEED | | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | | |
| | 20 | | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 | |
| | FEED | | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | | |
| | Low alloy steel | 15 | RPM | 370 | 300 | 270 | 240 | 160 | 120 | 100 | 80 | |
| | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | | |
| | | 25 | RPM | 610 | 500 | 440 | 400 | 270 | 200 | 160 | 130 | |
| | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | | |
| High alloyed steel, and tool steel | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 | | |
| | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | | | |
| M | 12 | Stainless steel | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 |
| | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | |
| K | 15 | Grey cast iron | 30 | RPM | 730 | 600 | 530 | 480 | 320 | 240 | 190 | 160 |
| | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | |
| | 25 | | RPM | 610 | 500 | 440 | 400 | 270 | 200 | 160 | 130 | |
| | FEED | | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | | |
| | Nodular cast iron | 30 | RPM | 730 | 600 | 530 | 480 | 320 | 240 | 190 | 160 | |
| | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | | |
| | | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 | |
| | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | | |
| | Malleable cast iron | 25 | RPM | 610 | 500 | 440 | 400 | 270 | 200 | 160 | 130 | |
| | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | | |
| 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 | | | |
| FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | | | | |
| N | 21 | Aluminum-wrought alloy | 55 | RPM | 1350 | 1090 | 970 | 880 | 580 | 440 | 350 | 290 |
| | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.28 | 0.20-0.30 | 0.28-0.38 | 0.32-0.42 | 0.36-0.46 | 0.40-0.50 | |
| | 55 | | RPM | 1350 | 1090 | 970 | 880 | 580 | 440 | 350 | 290 | |
| | FEED | | 0.16-0.22 | 0.18-0.24 | 0.20-0.28 | 0.20-0.30 | 0.28-0.38 | 0.32-0.42 | 0.36-0.46 | 0.40-0.50 | | |
| 23 | Aluminum-cast, alloyed | 40 | RPM | 980 | 800 | 710 | 640 | 420 | 320 | 250 | 210 | |
| | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.28 | 0.20-0.30 | 0.28-0.38 | 0.32-0.42 | 0.36-0.46 | 0.40-0.50 | | |
| 29 | Non Metallic Materials | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 | |
| | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 | | |
| S | 36 | Titanium Alloys | 10 | RPM | 240 | 200 | 180 | 160 | 110 | 80 | 60 | 50 |
| | | | FEED | 0.06-0.10 | 0.05-0.11 | 0.06-0.12 | 0.09-0.13 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | |