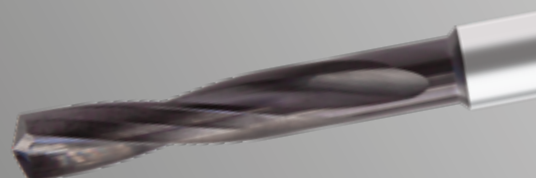
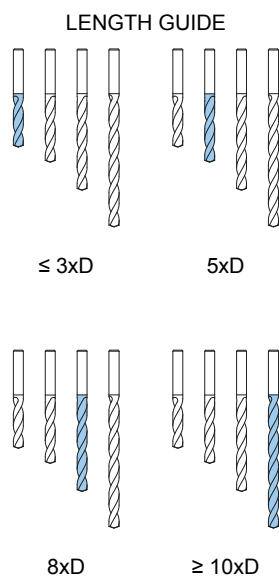


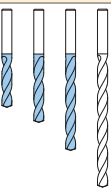
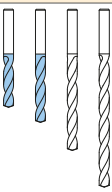
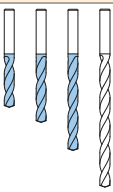
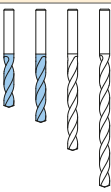
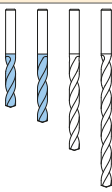
# CARBIDE DRILLS

 **EUROPA  
TOOL**

 **Clarkson**





| PRODUCT RANGE | INOX DRILL                                                                        | SX DRILL                                                                           | ALU-XP DRILL                                                                        | HF DRILL                                                                            | BF DRILL                                                                            |
|---------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| TOOL TYPE     |  |   |  |  |  |
| MATERIAL      | MG HM                                                                             | MG HM                                                                              | MG HM                                                                               | MG HM                                                                               | MG HM                                                                               |
| DRILL LENGTHS |  |  |  |  |  |
| SERIES NO.    | 823323<br>825323<br>828323                                                        | 869329<br>870329                                                                   | 843303<br>845303<br>848303                                                          | 803366<br>805366                                                                    | 809323<br>811323                                                                    |
| PAGE NO.      | 4-9                                                                               | 10-13                                                                              | 14-19                                                                               | 20-23                                                                               | 24-27                                                                               |

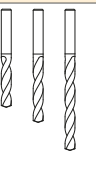
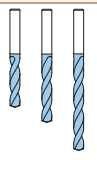
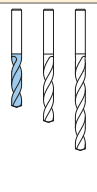
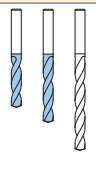
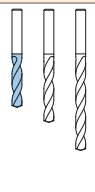
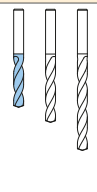
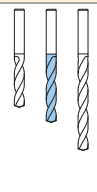
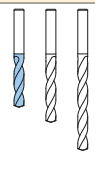
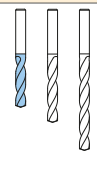


Cutting Data - P.50-58

Numeric index - P.59

| ISO      | MATERIAL                               | VDI    | HARDNESS (HRC) | ●: Primary application ○: Secondary application |   |   |   |   |
|----------|----------------------------------------|--------|----------------|-------------------------------------------------|---|---|---|---|
| <b>P</b> | Non-alloy steel                        | 1-5    | <25            | ●                                               |   |   | ● | ● |
|          | Low alloy steel                        | 6-9    | 25-35          | ●                                               |   |   | ● | ● |
|          | High alloy steel                       | 10-11  | 35-45          | ●                                               |   |   | ● |   |
| <b>M</b> | Ferritic / Martensitic Stainless steel | 12, 13 |                | ●                                               |   |   |   | ○ |
|          | Austenitic Stainless steel             | 14     |                | ●                                               |   |   |   |   |
| <b>K</b> | Grey Cast iron                         | 15-16  |                |                                                 |   |   | ● | ● |
|          | Nodular & Malleable Cast iron          | 17-20  |                |                                                 |   |   | ● |   |
| <b>N</b> | Aluminium (HSM)                        | 21-25  |                |                                                 |   | ● |   |   |
|          | Aluminium                              |        |                | ○                                               |   | ● |   | ○ |
|          | Copper<br>Copper alloys                | 26-28  |                |                                                 |   |   |   |   |
|          | Plastics/Acrylics                      | 29.1   |                |                                                 |   |   |   |   |
|          | CFRP/GFRP                              | 29.2   |                |                                                 |   |   |   |   |
|          | Synthetic Graphite                     | 30     |                |                                                 |   |   |   |   |
| <b>S</b> | Heat Resistant and Super Alloys        | 31-35  |                | ○                                               | ● |   |   |   |
|          | Titanium                               | 36-37  |                | ●                                               | ○ |   |   |   |
| <b>H</b> | Hardened steel                         | 38     | 45-55          |                                                 |   |   |   |   |
|          |                                        | 39.1   | 55-60          |                                                 |   |   |   |   |
|          |                                        | 39.2   | >60            |                                                 |   |   |   |   |
|          | Chilled cast iron                      | 40     |                |                                                 |   |   |   |   |
|          | Hardened cast iron                     | 41     |                |                                                 |   |   |   |   |

# CARBIDE DRILLING

| MQL DRILL                                                                         | GP T/C DRILL                                                                      | PULSAR DRILL                                                                      | GP SOLID DRILL                                                                    | STUB TiAIN DRILL                                                                  | STUB DRILL                                                                        | JOBBER DRILL                                                                        | SPOTTING 90°/120°                                                                   | CENTRE DRILL                                                                        |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |  |  |
| MG HM                                                                             | MG HM                                                                             | MG HM                                                                             | MG HM                                                                             | MG HM                                                                             | MG HM                                                                             | MG HM                                                                               | MG HM                                                                               | MG HM                                                                               |
|  |  |  |  |  |  |  |  |  |
| 810323 to 860323                                                                  | 803323 804323 805323                                                              | 821223                                                                            | 807323 808323                                                                     | 802323                                                                            | 800303                                                                            | 801303                                                                              | 806303 806403                                                                       | 810303                                                                              |
| 28-30                                                                             | 32-37                                                                             | 31                                                                                | 38-41                                                                             | 42-43                                                                             | 44-45                                                                             | 46-47                                                                               | 49                                                                                  | 48                                                                                  |
| ●: Primary application ○: Secondary application                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| ●                                                                                 | ●                                                                                 |                                                                                   | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                   | ●                                                                                   | ●                                                                                   |
| ●                                                                                 | ●                                                                                 |                                                                                   | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                   | ●                                                                                   | ●                                                                                   |
| ○                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                   | ●                                                                                   | ●                                                                                   |
|                                                                                   | ○                                                                                 |                                                                                   | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                   | ○                                                                                   | ○                                                                                   |
|                                                                                   | ○                                                                                 |                                                                                   | ○                                                                                 | ○                                                                                 |                                                                                   |                                                                                     | ○                                                                                   | ○                                                                                   |
| ●                                                                                 | ●                                                                                 |                                                                                   | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                   | ●                                                                                   | ●                                                                                   |
| ●                                                                                 | ●                                                                                 |                                                                                   | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                   | ●                                                                                   | ●                                                                                   |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | ○                                                                                   | ○                                                                                   |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | ○                                                                                   | ○                                                                                   |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | ○                                                                                   | ○                                                                                   |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | ○                                                                                   | ○                                                                                   |
|                                                                                   |                                                                                   | ●                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   | ●                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   | ●                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |



## INOX DRILL 3XD

MG  
HM

BSG  
DIN  
6537



### Series No. 823323

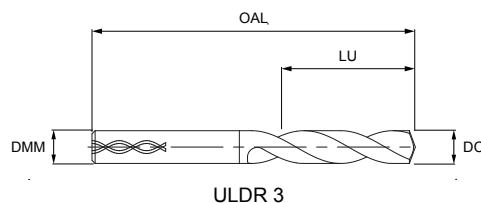
► cutting conditions : p.51

Special flute shape and geometry highly suited to machining stainless steels.

Excellent chip evacuation due to better surface treatment.

Point R-thinning gives superior centering and chip curling.

Applied INOX coating achieves better surface finish and longer tool life.



ULDR 3

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8233230300             | 3.0      | 6.0       | 20           | 62           | 8233230610             | 6.1      | 8.0       | 34           | 79           |
| 8233230310             | 3.1      | 6.0       | 20           | 62           | 8233230620             | 6.2      | 8.0       | 34           | 79           |
| 8233230320             | 3.2      | 6.0       | 20           | 62           | 8233230630             | 6.3      | 8.0       | 34           | 79           |
| 8233230330             | 3.3      | 6.0       | 20           | 62           | 8233230640             | 6.4      | 8.0       | 34           | 79           |
| 8233230340             | 3.4      | 6.0       | 20           | 62           | 8233230650             | 6.5      | 8.0       | 34           | 79           |
| 8233230350             | 3.5      | 6.0       | 20           | 62           | 8233230660             | 6.6      | 8.0       | 34           | 79           |
| 8233230360             | 3.6      | 6.0       | 20           | 62           | 8233230670             | 6.7      | 8.0       | 34           | 79           |
| 8233230370             | 3.7      | 6.0       | 20           | 62           | 8233230680             | 6.8      | 8.0       | 34           | 79           |
| 8233230380             | 3.8      | 6.0       | 24           | 66           | 8233230690             | 6.9      | 8.0       | 34           | 79           |
| 8233230390             | 3.9      | 6.0       | 24           | 66           | 8233230700             | 7.0      | 8.0       | 34           | 79           |
| 8233230400             | 4.0      | 6.0       | 24           | 66           | 8233230710             | 7.1      | 8.0       | 41           | 79           |
| 8233230410             | 4.1      | 6.0       | 24           | 66           | 8233230720             | 7.2      | 8.0       | 41           | 79           |
| 8233230420             | 4.2      | 6.0       | 24           | 66           | 8233230730             | 7.3      | 8.0       | 41           | 79           |
| 8233230430             | 4.3      | 6.0       | 24           | 66           | 8233230740             | 7.4      | 8.0       | 41           | 79           |
| 8233230440             | 4.4      | 6.0       | 24           | 66           | 8233230750             | 7.5      | 8.0       | 41           | 79           |
| 8233230450             | 4.5      | 6.0       | 24           | 66           | 8233230760             | 7.6      | 8.0       | 41           | 79           |
| 8233230460             | 4.6      | 6.0       | 24           | 66           | 8233230770             | 7.7      | 8.0       | 41           | 79           |
| 8233230470             | 4.7      | 6.0       | 24           | 66           | 8233230780             | 7.8      | 8.0       | 41           | 79           |
| 8233230480             | 4.8      | 6.0       | 28           | 66           | 8233230790             | 7.9      | 8.0       | 41           | 79           |
| 8233230490             | 4.9      | 6.0       | 28           | 66           | 8233230800             | 8.0      | 8.0       | 41           | 79           |
| 8233230500             | 5.0      | 6.0       | 28           | 66           | 8233230810             | 8.1      | 10.0      | 47           | 89           |
| 8233230510             | 5.1      | 6.0       | 28           | 66           | 8233230820             | 8.2      | 10.0      | 47           | 89           |
| 8233230520             | 5.2      | 6.0       | 28           | 66           | 8233230830             | 8.3      | 10.0      | 47           | 89           |
| 8233230530             | 5.3      | 6.0       | 28           | 66           | 8233230840             | 8.4      | 10.0      | 47           | 89           |
| 8233230540             | 5.4      | 6.0       | 28           | 66           | 8233230850             | 8.5      | 10.0      | 47           | 89           |
| 8233230550             | 5.5      | 6.0       | 28           | 66           | 8233230860             | 8.6      | 10.0      | 47           | 89           |
| 8233230560             | 5.6      | 6.0       | 28           | 66           | 8233230870             | 8.7      | 10.0      | 47           | 89           |
| 8233230570             | 5.7      | 6.0       | 28           | 66           | 8233230880             | 8.8      | 10.0      | 47           | 89           |
| 8233230580             | 5.8      | 6.0       | 28           | 66           | 8233230890             | 8.9      | 10.0      | 47           | 89           |
| 8233230590             | 5.9      | 6.0       | 28           | 66           | 8233230900             | 9.0      | 10.0      | 47           | 89           |
| 8233230600             | 6.0      | 6.0       | 28           | 66           | 8233230910             | 9.1      | 10.0      | 47           | 89           |

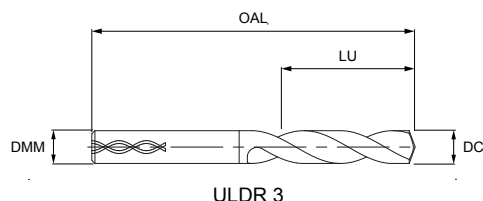
| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ●      | ●  |       |       | ○     |       |      |      |    | ○     | ●     |       |       |





## INOX DRILL 3XD



MG  
HM

BSG  
DIN  
6537



Series No. 823323

► cutting conditions : p.51

Special flute shape and geometry highly suited to machining stainless steels.

Excellent chip evacuation due to better surface treatment.

Point R-thinning gives superior centering and chip curling.

Applied INOX coating achieves better surface finish and longer tool life.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8233230920             | 9.2      | 10.0      | 47           | 89           | 8233231150             | 11.5     | 12.0      | 55           | 102          |
| 8233230930             | 9.3      | 10.0      | 47           | 89           | 8233231160             | 11.6     | 12.0      | 55           | 102          |
| 8233230940             | 9.4      | 10.0      | 47           | 89           | 8233231170             | 11.7     | 12.0      | 55           | 102          |
| 8233230950             | 9.5      | 10.0      | 47           | 89           | 8233231180             | 11.8     | 12.0      | 55           | 102          |
| 8233230960             | 9.6      | 10.0      | 47           | 89           | 8233231190             | 11.9     | 12.0      | 55           | 102          |
| 8233230970             | 9.7      | 10.0      | 47           | 89           | 8233231200             | 12.0     | 12.0      | 55           | 102          |
| 8233230980             | 9.8      | 10.0      | 47           | 89           | 8233231250             | 12.5     | 14.0      | 60           | 107          |
| 8233230990             | 9.9      | 10.0      | 47           | 89           | 8233231300             | 13.0     | 14.0      | 60           | 107          |
| 8233231000             | 10.0     | 10.0      | 47           | 89           | 8233231350             | 13.5     | 14.0      | 60           | 107          |
| 8233231010             | 10.1     | 12.0      | 55           | 102          | 8233231400             | 14.0     | 14.0      | 60           | 107          |
| 8233231020             | 10.2     | 12.0      | 55           | 102          | 8233231450             | 14.5     | 16.0      | 65           | 115          |
| 8233231030             | 10.3     | 12.0      | 55           | 102          | 8233231500             | 15.0     | 16.0      | 65           | 115          |
| 8233231040             | 10.4     | 12.0      | 55           | 102          | 8233231550             | 15.5     | 16.0      | 65           | 115          |
| 8233231050             | 10.5     | 12.0      | 55           | 102          | 8233231600             | 16.0     | 16.0      | 65           | 115          |
| 8233231060             | 10.6     | 12.0      | 55           | 102          | 8233231650             | 16.5     | 18.0      | 73           | 123          |
| 8233231070             | 10.7     | 12.0      | 55           | 102          | 8233231700             | 17.0     | 18.0      | 73           | 123          |
| 8233231080             | 10.8     | 12.0      | 55           | 102          | 8233231750             | 17.5     | 18.0      | 73           | 123          |
| 8233231090             | 10.9     | 12.0      | 55           | 102          | 8233231800             | 18.0     | 18.0      | 73           | 123          |
| 8233231100             | 11.0     | 12.0      | 55           | 102          | 8233231850             | 18.5     | 20.0      | 79           | 131          |
| 8233231110             | 11.1     | 12.0      | 55           | 102          | 8233231900             | 19.0     | 20.0      | 79           | 131          |
| 8233231120             | 11.2     | 12.0      | 55           | 102          | 8233231950             | 19.5     | 20.0      | 79           | 131          |
| 8233231130             | 11.3     | 12.0      | 55           | 102          | 8233232000             | 20.0     | 20.0      | 79           | 131          |
| 8233231140             | 11.4     | 12.0      | 55           | 102          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TDCD | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ●      | ●  |       |       | ○     |       |      |      |    | ○     | ●     |       |       |



## INOX DRILL 5XD

MG  
HM

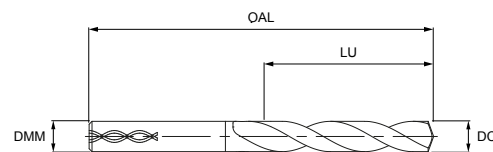
BSG  
DIN  
6537



### Series No. 825323

► cutting conditions : p.51

Special flute shape and geometry highly suited to machining stainless steels.  
Excellent chip evacuation due to better surface treatment.  
Point R-thinning gives superior centering and chip curling.  
Applied INOX coating achieves better surface finish and longer tool life.



ULDR 5

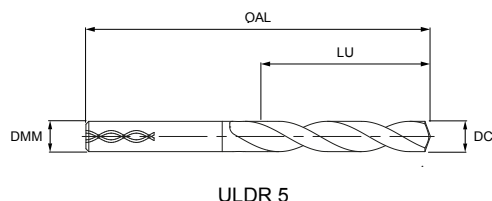
| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8253230150             | 1.5      | 3.0       | 16           | 55           | 8253230460             | 4.6      | 6.0       | 36           | 74           |
| 8253230160             | 1.6      | 3.0       | 16           | 55           | 8253230470             | 4.7      | 6.0       | 36           | 74           |
| 8253230170             | 1.7      | 3.0       | 16           | 55           | 8253230480             | 4.8      | 6.0       | 44           | 82           |
| 8253230180             | 1.8      | 3.0       | 16           | 55           | 8253230490             | 4.9      | 6.0       | 44           | 82           |
| 8253230190             | 1.9      | 3.0       | 16           | 55           | 8253230500             | 5.0      | 6.0       | 44           | 82           |
| 8253230200             | 2.0      | 4.0       | 21           | 57           | 8253230510             | 5.1      | 6.0       | 44           | 82           |
| 8253230210             | 2.1      | 4.0       | 21           | 57           | 8253230520             | 5.2      | 6.0       | 44           | 82           |
| 8253230220             | 2.2      | 4.0       | 21           | 57           | 8253230530             | 5.3      | 6.0       | 44           | 82           |
| 8253230230             | 2.3      | 4.0       | 21           | 57           | 8253230540             | 5.4      | 6.0       | 44           | 82           |
| 8253230240             | 2.4      | 4.0       | 21           | 57           | 8253230550             | 5.5      | 6.0       | 44           | 82           |
| 8253230250             | 2.5      | 4.0       | 21           | 57           | 8253230560             | 5.6      | 6.0       | 44           | 82           |
| 8253230260             | 2.6      | 4.0       | 21           | 57           | 8253230570             | 5.7      | 6.0       | 44           | 82           |
| 8253230270             | 2.7      | 4.0       | 21           | 57           | 8253230580             | 5.8      | 6.0       | 44           | 82           |
| 8253230280             | 2.8      | 4.0       | 21           | 57           | 8253230590             | 5.9      | 6.0       | 44           | 82           |
| 8253230290             | 2.9      | 4.0       | 21           | 57           | 8253230600             | 6.0      | 6.0       | 44           | 82           |
| 8253230300             | 3.0      | 6.0       | 28           | 66           | 8253230610             | 6.1      | 8.0       | 53           | 91           |
| 8253230310             | 3.1      | 6.0       | 28           | 66           | 8253230620             | 6.2      | 8.0       | 53           | 91           |
| 8253230320             | 3.2      | 6.0       | 28           | 66           | 8253230630             | 6.3      | 8.0       | 53           | 91           |
| 8253230330             | 3.3      | 6.0       | 28           | 66           | 8253230640             | 6.4      | 8.0       | 53           | 91           |
| 8253230340             | 3.4      | 6.0       | 28           | 66           | 8253230650             | 6.5      | 8.0       | 53           | 91           |
| 8253230350             | 3.5      | 6.0       | 28           | 66           | 8253230660             | 6.6      | 8.0       | 53           | 91           |
| 8253230360             | 3.6      | 6.0       | 28           | 66           | 8253230670             | 6.7      | 8.0       | 53           | 91           |
| 8253230370             | 3.7      | 6.0       | 28           | 66           | 8253230680             | 6.8      | 8.0       | 53           | 91           |
| 8253230380             | 3.8      | 6.0       | 36           | 74           | 8253230690             | 6.9      | 8.0       | 53           | 91           |
| 8253230390             | 3.9      | 6.0       | 36           | 74           | 8253230700             | 7.0      | 8.0       | 53           | 91           |
| 8253230400             | 4.0      | 6.0       | 36           | 74           | 8253230710             | 7.1      | 8.0       | 53           | 91           |
| 8253230410             | 4.1      | 6.0       | 36           | 74           | 8253230720             | 7.2      | 8.0       | 53           | 91           |
| 8253230420             | 4.2      | 6.0       | 36           | 74           | 8253230730             | 7.3      | 8.0       | 53           | 91           |
| 8253230430             | 4.3      | 6.0       | 36           | 74           | 8253230740             | 7.4      | 8.0       | 53           | 91           |
| 8253230440             | 4.4      | 6.0       | 36           | 74           | 8253230750             | 7.5      | 8.0       | 53           | 91           |
| 8253230450             | 4.5      | 6.0       | 36           | 74           | 8253230760             | 7.6      | 8.0       | 53           | 91           |

| Drill Dia.<br>Tolerance<br><b>TCDC</b> | Shank Dia.<br>Tolerance<br><b>TCDMM</b> |
|----------------------------------------|-----------------------------------------|
| m7                                     | h6                                      |

| ISO          |                | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------|----------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP    |                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ●<br>Primary | ○<br>Secondary | ●   | ●   | ●     | ●      | ●  |       |       | ○     |       |      |      |    | ○     | ●     |       |       |



## INOX DRILL 5XD



MG  
HM

BSG  
DIN  
6537



Series No. 825323

► cutting conditions : p.51

Special flute shape and geometry highly suited to machining stainless steels.

Excellent chip evacuation due to better surface treatment.

Point R-thinning gives superior centering and chip curling.

Applied INOX coating achieves better surface finish and longer tool life.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8253230770             | 7.7      | 8.0       | 53           | 91           | 8253231070             | 10.7     | 12.0      | 71           | 118          |
| 8253230780             | 7.8      | 8.0       | 53           | 91           | 8253231080             | 10.8     | 12.0      | 71           | 118          |
| 8253230790             | 7.9      | 8.0       | 53           | 91           | 8253231090             | 10.9     | 12.0      | 71           | 118          |
| 8253230800             | 8.0      | 8.0       | 53           | 91           | 8253231100             | 11.0     | 12.0      | 71           | 118          |
| 8253230810             | 8.1      | 10.0      | 61           | 103          | 8253231110             | 11.1     | 12.0      | 71           | 118          |
| 8253230820             | 8.2      | 10.0      | 61           | 103          | 8253231120             | 11.2     | 12.0      | 71           | 118          |
| 8253230830             | 8.3      | 10.0      | 61           | 103          | 8253231130             | 11.3     | 12.0      | 71           | 118          |
| 8253230840             | 8.4      | 10.0      | 61           | 103          | 8253231140             | 11.4     | 12.0      | 71           | 118          |
| 8253230850             | 8.5      | 10.0      | 61           | 103          | 8253231150             | 11.5     | 12.0      | 71           | 118          |
| 8253230860             | 8.6      | 10.0      | 61           | 103          | 8253231160             | 11.6     | 12.0      | 71           | 118          |
| 8253230870             | 8.7      | 10.0      | 61           | 103          | 8253231170             | 11.7     | 12.0      | 71           | 118          |
| 8253230880             | 8.8      | 10.0      | 61           | 103          | 8253231180             | 11.8     | 12.0      | 71           | 118          |
| 8253230890             | 8.9      | 10.0      | 61           | 103          | 8253231190             | 11.9     | 12.0      | 71           | 118          |
| 8253230900             | 9.0      | 10.0      | 61           | 103          | 8253231200             | 12.0     | 12.0      | 71           | 118          |
| 8253230910             | 9.1      | 10.0      | 61           | 103          | 8253231250             | 12.5     | 14.0      | 77           | 124          |
| 8253230920             | 9.2      | 10.0      | 61           | 103          | 8253231300             | 13.0     | 14.0      | 77           | 124          |
| 8253230930             | 9.3      | 10.0      | 61           | 103          | 8253231350             | 13.5     | 14.0      | 77           | 124          |
| 8253230940             | 9.4      | 10.0      | 61           | 103          | 8253231400             | 14.0     | 14.0      | 77           | 124          |
| 8253230950             | 9.5      | 10.0      | 61           | 103          | 8253231450             | 14.5     | 16.0      | 83           | 133          |
| 8253230960             | 9.6      | 10.0      | 61           | 103          | 8253231500             | 15.0     | 16.0      | 83           | 133          |
| 8253230970             | 9.7      | 10.0      | 61           | 103          | 8253231550             | 15.5     | 16.0      | 83           | 133          |
| 8253230980             | 9.8      | 10.0      | 61           | 103          | 8253231600             | 16.0     | 16.0      | 83           | 133          |
| 8253230990             | 9.9      | 10.0      | 61           | 103          | 8253231650             | 16.5     | 18.0      | 93           | 143          |
| 8253231000             | 10.0     | 10.0      | 61           | 103          | 8253231700             | 17.0     | 18.0      | 93           | 143          |
| 8253231010             | 10.1     | 12.0      | 71           | 118          | 8253231750             | 17.5     | 18.0      | 93           | 143          |
| 8253231020             | 10.2     | 12.0      | 71           | 118          | 8253231800             | 18.0     | 18.0      | 93           | 143          |
| 8253231030             | 10.3     | 12.0      | 71           | 118          | 8253231850             | 18.5     | 20.0      | 101          | 153          |
| 8253231040             | 10.4     | 12.0      | 71           | 118          | 8253231900             | 19.0     | 20.0      | 101          | 153          |
| 8253231050             | 10.5     | 12.0      | 71           | 118          | 8253231950             | 19.5     | 20.0      | 101          | 153          |
| 8253231060             | 10.6     | 12.0      | 71           | 118          | 8253232000             | 20.0     | 20.0      | 101          | 153          |

Drill Dia.  
Tolerance  
**TCDC**

m7

Shank Dia.  
Tolerance  
**TCDMM**

h6

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ●      | ●  |       |       | ○     |       |      |      |    | ○     | ●     |       |       |



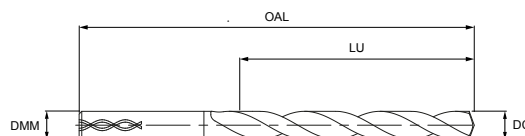
## INOX DRILL 8XD

MG  
HMBSG  
DIN  
6537

## Series No. 828323

► cutting conditions : p.51

Special flute shape and geometry highly suited to machining stainless steels.  
Excellent chip evacuation due to better surface treatment.  
Point R-thinning gives superior centering and chip curling.  
Applied INOX coating achieves better surface finish and longer tool life.



ULDR 8

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8283230300             | 3.0      | 6.0       | 34           | 72           | 8283230610             | 6.1      | 8.0       | 76           | 114          |
| 8283230310             | 3.1      | 6.0       | 34           | 72           | 8283230620             | 6.2      | 8.0       | 76           | 114          |
| 8283230320             | 3.2      | 6.0       | 34           | 72           | 8283230630             | 6.3      | 8.0       | 76           | 114          |
| 8283230330             | 3.3      | 6.0       | 34           | 72           | 8283230640             | 6.4      | 8.0       | 76           | 114          |
| 8283230340             | 3.4      | 6.0       | 34           | 72           | 8283230650             | 6.5      | 8.0       | 76           | 114          |
| 8283230350             | 3.5      | 6.0       | 34           | 72           | 8283230660             | 6.6      | 8.0       | 76           | 114          |
| 8283230360             | 3.6      | 6.0       | 34           | 72           | 8283230670             | 6.7      | 8.0       | 76           | 114          |
| 8283230370             | 3.7      | 6.0       | 34           | 72           | 8283230680             | 6.8      | 8.0       | 76           | 114          |
| 8283230380             | 3.8      | 6.0       | 43           | 81           | 8283230690             | 6.9      | 8.0       | 76           | 114          |
| 8283230390             | 3.9      | 6.0       | 43           | 81           | 8283230700             | 7.0      | 8.0       | 76           | 114          |
| 8283230400             | 4.0      | 6.0       | 43           | 81           | 8283230710             | 7.1      | 8.0       | 76           | 114          |
| 8283230410             | 4.1      | 6.0       | 43           | 81           | 8283230720             | 7.2      | 8.0       | 76           | 114          |
| 8283230420             | 4.2      | 6.0       | 43           | 81           | 8283230730             | 7.3      | 8.0       | 76           | 114          |
| 8283230430             | 4.3      | 6.0       | 43           | 81           | 8283230740             | 7.4      | 8.0       | 76           | 114          |
| 8283230440             | 4.4      | 6.0       | 43           | 81           | 8283230750             | 7.5      | 8.0       | 76           | 114          |
| 8283230450             | 4.5      | 6.0       | 43           | 81           | 8283230760             | 7.6      | 8.0       | 76           | 114          |
| 8283230460             | 4.6      | 6.0       | 43           | 81           | 8283230770             | 7.7      | 8.0       | 76           | 114          |
| 8283230470             | 4.7      | 6.0       | 43           | 81           | 8283230780             | 7.8      | 8.0       | 76           | 114          |
| 8283230480             | 4.8      | 6.0       | 57           | 95           | 8283230790             | 7.9      | 8.0       | 76           | 114          |
| 8283230490             | 4.9      | 6.0       | 57           | 95           | 8283230800             | 8.0      | 8.0       | 76           | 114          |
| 8283230500             | 5.0      | 6.0       | 57           | 95           | 8283230810             | 8.1      | 10.0      | 95           | 142          |
| 8283230510             | 5.1      | 6.0       | 57           | 95           | 8283230820             | 8.2      | 10.0      | 95           | 142          |
| 8283230520             | 5.2      | 6.0       | 57           | 95           | 8283230830             | 8.3      | 10.0      | 95           | 142          |
| 8283230530             | 5.3      | 6.0       | 57           | 95           | 8283230840             | 8.4      | 10.0      | 95           | 142          |
| 8283230540             | 5.4      | 6.0       | 57           | 95           | 8283230850             | 8.5      | 10.0      | 95           | 142          |
| 8283230550             | 5.5      | 6.0       | 57           | 95           | 8283230860             | 8.6      | 10.0      | 95           | 142          |
| 8283230560             | 5.6      | 6.0       | 57           | 95           | 8283230870             | 8.7      | 10.0      | 95           | 142          |
| 8283230570             | 5.7      | 6.0       | 57           | 95           | 8283230880             | 8.8      | 10.0      | 95           | 142          |
| 8283230580             | 5.8      | 6.0       | 57           | 95           | 8283230890             | 8.9      | 10.0      | 95           | 142          |
| 8283230590             | 5.9      | 6.0       | 57           | 95           | 8283230900             | 9.0      | 10.0      | 95           | 142          |
| 8283230600             | 6.0      | 6.0       | 57           | 95           | 8283230910             | 9.1      | 10.0      | 95           | 142          |

Drill Dia.  
Tolerance  
**TCDC**

m7

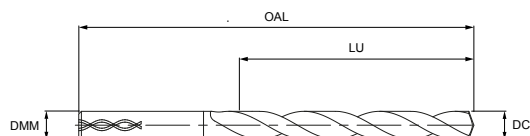
Shank Dia.  
Tolerance  
**TCDMM**

h6

| ISO          |                | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------|----------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP    |                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ●<br>Primary | ○<br>Secondary | ●   | ●   | ●     | ●      | ●  |       |       | ○     |       |      |      |    | ○     | ●     |       |       |



## INOX DRILL 8XD



ULDR 8

MG  
HMBSG  
DIN  
6537

### Series No. 828323

► cutting conditions : p.51

Special flute shape and geometry highly suited to machining stainless steels.

Excellent chip evacuation due to better surface treatment.

Point R-thinning gives superior centering and chip curling.

Applied INOX coating achieves better surface finish and longer tool life.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8283230920             | 9.2      | 10.0      | 95           | 142          | 8283231090             | 10.9     | 12.0      | 114          | 162          |
| 8283230930             | 9.3      | 10.0      | 95           | 142          | 8283231100             | 11.0     | 12.0      | 114          | 162          |
| 8283230940             | 9.4      | 10.0      | 95           | 142          | 8283231110             | 11.1     | 12.0      | 114          | 162          |
| 8283230950             | 9.5      | 10.0      | 95           | 142          | 8283231120             | 11.2     | 12.0      | 114          | 162          |
| 8283230960             | 9.6      | 10.0      | 95           | 142          | 8283231130             | 11.3     | 12.0      | 114          | 162          |
| 8283230970             | 9.7      | 10.0      | 95           | 142          | 8283231140             | 11.4     | 12.0      | 114          | 162          |
| 8283230980             | 9.8      | 10.0      | 95           | 142          | 8283231150             | 11.5     | 12.0      | 114          | 162          |
| 8283230990             | 9.9      | 10.0      | 95           | 142          | 8283231160             | 11.6     | 12.0      | 114          | 162          |
| 8283231000             | 10.0     | 10.0      | 95           | 142          | 8283231170             | 11.7     | 12.0      | 114          | 162          |
| 8283231010             | 10.1     | 12.0      | 114          | 162          | 8283231180             | 11.8     | 12.0      | 114          | 162          |
| 8283231020             | 10.2     | 12.0      | 114          | 162          | 8283231190             | 11.9     | 12.0      | 114          | 162          |
| 8283231030             | 10.3     | 12.0      | 114          | 162          | 8283231200             | 12.0     | 12.0      | 114          | 162          |
| 8283231040             | 10.4     | 12.0      | 114          | 162          | 8283231250             | 12.5     | 14.0      | 133          | 178          |
| 8283231050             | 10.5     | 12.0      | 114          | 162          | 8283231300             | 13.0     | 14.0      | 133          | 178          |
| 8283231060             | 10.6     | 12.0      | 114          | 162          | 8283231350             | 13.5     | 14.0      | 133          | 178          |
| 8283231070             | 10.7     | 12.0      | 114          | 162          | 8283231400             | 14.0     | 14.0      | 133          | 178          |
| 8283231080             | 10.8     | 12.0      | 114          | 162          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ●      | ●  |       |       | ○     |       |      |      |    | ○     | ●     |       |       |



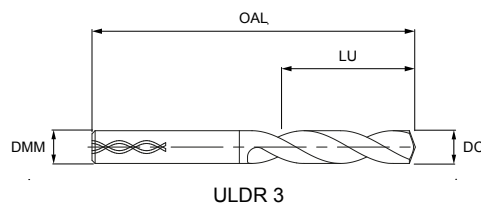
## SX DRILL 3XD

MG  
HMBSG  
DIN  
6537

## Series No. 869329

► cutting conditions : p.52

Special flute shape optimised for chip evacuation in Nickel alloys  
 Convex cutting edge geometry for reduced cutting load and increase strength  
 Tailored surface treatment after coating highly suited to machining HRSA materials.



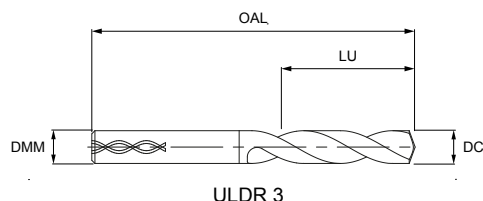
| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8693290300             | 3.0      | 6.0       | 20           | 62           | 8693290610             | 6.1      | 8.0       | 34           | 79           |
| 8693290310             | 3.1      | 6.0       | 20           | 62           | 8693290620             | 6.2      | 8.0       | 34           | 79           |
| 8693290320             | 3.2      | 6.0       | 20           | 62           | 8693290630             | 6.3      | 8.0       | 34           | 79           |
| 8693290330             | 3.3      | 6.0       | 20           | 62           | 8693290640             | 6.4      | 8.0       | 34           | 79           |
| 8693290340             | 3.4      | 6.0       | 20           | 62           | 8693290650             | 6.5      | 8.0       | 34           | 79           |
| 8693290350             | 3.5      | 6.0       | 20           | 62           | 8693290660             | 6.6      | 8.0       | 34           | 79           |
| 8693290360             | 3.6      | 6.0       | 20           | 62           | 8693290670             | 6.7      | 8.0       | 34           | 79           |
| 8693290370             | 3.7      | 6.0       | 20           | 62           | 8693290680             | 6.8      | 8.0       | 34           | 79           |
| 8693290380             | 3.8      | 6.0       | 24           | 66           | 8693290690             | 6.9      | 8.0       | 34           | 79           |
| 8693290390             | 3.9      | 6.0       | 24           | 66           | 8693290700             | 7.0      | 8.0       | 34           | 79           |
| 8693290400             | 4.0      | 6.0       | 24           | 66           | 8693290710             | 7.1      | 8.0       | 41           | 79           |
| 8693290410             | 4.1      | 6.0       | 24           | 66           | 8693290720             | 7.2      | 8.0       | 41           | 79           |
| 8693290420             | 4.2      | 6.0       | 24           | 66           | 8693290730             | 7.3      | 8.0       | 41           | 79           |
| 8693290430             | 4.3      | 6.0       | 24           | 66           | 8693290740             | 7.4      | 8.0       | 41           | 79           |
| 8693290440             | 4.4      | 6.0       | 24           | 66           | 8693290750             | 7.5      | 8.0       | 41           | 79           |
| 8693290450             | 4.5      | 6.0       | 24           | 66           | 8693290760             | 7.6      | 8.0       | 41           | 79           |
| 8693290460             | 4.6      | 6.0       | 24           | 66           | 8693290770             | 7.7      | 8.0       | 41           | 79           |
| 8693290470             | 4.7      | 6.0       | 24           | 66           | 8693290780             | 7.8      | 8.0       | 41           | 79           |
| 8693290480             | 4.8      | 6.0       | 28           | 66           | 8693290790             | 7.9      | 8.0       | 41           | 79           |
| 8693290490             | 4.9      | 6.0       | 28           | 66           | 8693290800             | 8.0      | 8.0       | 41           | 79           |
| 8693290500             | 5.0      | 6.0       | 28           | 66           | 8693290810             | 8.1      | 10.0      | 47           | 89           |
| 8693290510             | 5.1      | 6.0       | 28           | 66           | 8693290820             | 8.2      | 10.0      | 47           | 89           |
| 8693290520             | 5.2      | 6.0       | 28           | 66           | 8693290830             | 8.3      | 10.0      | 47           | 89           |
| 8693290530             | 5.3      | 6.0       | 28           | 66           | 8693290840             | 8.4      | 10.0      | 47           | 89           |
| 8693290540             | 5.4      | 6.0       | 28           | 66           | 8693290850             | 8.5      | 10.0      | 47           | 89           |
| 8693290550             | 5.5      | 6.0       | 28           | 66           | 8693290860             | 8.6      | 10.0      | 47           | 89           |
| 8693290560             | 5.6      | 6.0       | 28           | 66           | 8693290870             | 8.7      | 10.0      | 47           | 89           |
| 8693290570             | 5.7      | 6.0       | 28           | 66           | 8693290880             | 8.8      | 10.0      | 47           | 89           |
| 8693290580             | 5.8      | 6.0       | 28           | 66           | 8693290890             | 8.9      | 10.0      | 47           | 89           |
| 8693290590             | 5.9      | 6.0       | 28           | 66           | 8693290900             | 9.0      | 10.0      | 47           | 89           |
| 8693290600             | 6.0      | 6.0       | 28           | 66           | 8693290910             | 9.1      | 10.0      | 47           | 89           |

| Drill Dia.<br>Tolerance<br>TDCD | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary |     |     |       |        |    |       |       |       |       |      |      |    | ●     | ○     |       |       |



## SX DRILL 3XD



MG  
HM

BSG  
DIN  
6537



Series No. 869329

► cutting conditions : p.52

Special flute shape optimised for chip evacuation in Nickel alloys  
Convex cutting edge geometry for reduced cutting load and increase strength  
Tailored surface treatment after coating highly suited to machining HRSA materials.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8693290920             | 9.2      | 10.0      | 47           | 89           | 8693291200             | 12.0     | 12.0      | 55           | 102          |
| 8693290930             | 9.3      | 10.0      | 47           | 89           | 8693291210             | 12.1     | 14.0      | 60           | 107          |
| 8693290940             | 9.4      | 10.0      | 47           | 89           | 8693291220             | 12.2     | 14.0      | 60           | 107          |
| 8693290950             | 9.5      | 10.0      | 47           | 89           | 8693291230             | 12.3     | 14.0      | 60           | 107          |
| 8693290960             | 9.6      | 10.0      | 47           | 89           | 8693291250             | 12.5     | 14.0      | 60           | 107          |
| 8693290970             | 9.7      | 10.0      | 47           | 89           | 8693291260             | 12.6     | 14.0      | 60           | 107          |
| 8693290980             | 9.8      | 10.0      | 47           | 89           | 8693291270             | 12.7     | 14.0      | 60           | 107          |
| 8693290990             | 9.9      | 10.0      | 47           | 89           | 8693291280             | 12.8     | 14.0      | 60           | 107          |
| 8693291000             | 10.0     | 10.0      | 47           | 89           | 8693291290             | 12.9     | 14.0      | 60           | 107          |
| 8693291010             | 10.1     | 12.0      | 55           | 102          | 8693291300             | 13.0     | 14.0      | 60           | 107          |
| 8693291020             | 10.2     | 12.0      | 55           | 102          | 8693291310             | 13.1     | 14.0      | 60           | 107          |
| 8693291030             | 10.3     | 12.0      | 55           | 102          | 8693291320             | 13.2     | 14.0      | 60           | 107          |
| 8693291040             | 10.4     | 12.0      | 55           | 102          | 8693291350             | 13.5     | 14.0      | 60           | 107          |
| 8693291050             | 10.5     | 12.0      | 55           | 102          | 8693291360             | 13.6     | 14.0      | 60           | 107          |
| 8693291060             | 10.6     | 12.0      | 55           | 102          | 8693291380             | 13.8     | 14.0      | 60           | 107          |
| 8693291070             | 10.7     | 12.0      | 55           | 102          | 8693291390             | 13.9     | 14.0      | 60           | 107          |
| 8693291080             | 10.8     | 12.0      | 55           | 102          | 8693291400             | 14.0     | 14.0      | 60           | 107          |
| 8693291090             | 10.9     | 12.0      | 55           | 102          | 8693291410             | 14.1     | 16.0      | 65           | 115          |
| 8693291100             | 11.0     | 12.0      | 55           | 102          | 8693291420             | 14.2     | 16.0      | 65           | 115          |
| 8693291110             | 11.1     | 12.0      | 55           | 102          | 8693291430             | 14.3     | 16.0      | 65           | 115          |
| 8693291120             | 11.2     | 12.0      | 55           | 102          | 8693291450             | 14.5     | 16.0      | 65           | 115          |
| 8693291130             | 11.3     | 12.0      | 55           | 102          | 8693291460             | 14.6     | 16.0      | 65           | 115          |
| 8693291140             | 11.4     | 12.0      | 55           | 102          | 8693291500             | 15.0     | 16.0      | 65           | 115          |
| 8693291150             | 11.5     | 12.0      | 55           | 102          | 8693291520             | 15.2     | 16.0      | 65           | 115          |
| 8693291160             | 11.6     | 12.0      | 55           | 102          | 8693291550             | 15.5     | 16.0      | 65           | 115          |
| 8693291170             | 11.7     | 12.0      | 55           | 102          | 8693291580             | 15.8     | 16.0      | 65           | 115          |
| 8693291180             | 11.8     | 12.0      | 55           | 102          | 8693291600             | 16.0     | 16.0      | 65           | 115          |
| 8693291190             | 11.9     | 12.0      | 55           | 102          | 8693292000             | 20.0     | 20.0      | 79           | 131          |

Drill Dia.  
Tolerance  
**TCDC**

m7

Shank Dia.  
Tolerance  
**TCDDM**

h6

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary |     |     |       |        |    |       |       |       |       |      |      |    | ●     | ○     |       |       |





## SX DRILL 5XD

MG  
HMBSG  
DIN  
6537

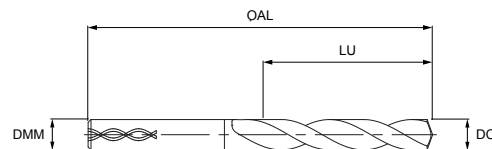
## Series No. 870329

► cutting conditions : p.52

Special flute shape optimised for chip evacuation in Nickel alloys

Convex cutting edge geometry for reduced cutting load and increase strength

Tailored surface treatment after coating highly suited to machining HRSA materials.



ULDR 5

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8703290300             | 3.0      | 6.0       | 28           | 66           | 8703290610             | 6.1      | 8.0       | 53           | 91           |
| 8703290310             | 3.1      | 6.0       | 28           | 66           | 8703290620             | 6.2      | 8.0       | 53           | 91           |
| 8703290320             | 3.2      | 6.0       | 28           | 66           | 8703290630             | 6.3      | 8.0       | 53           | 91           |
| 8703290330             | 3.3      | 6.0       | 28           | 66           | 8703290640             | 6.4      | 8.0       | 53           | 91           |
| 8703290340             | 3.4      | 6.0       | 28           | 66           | 8703290650             | 6.5      | 8.0       | 53           | 91           |
| 8703290350             | 3.5      | 6.0       | 28           | 66           | 8703290660             | 6.6      | 8.0       | 53           | 91           |
| 8703290360             | 3.6      | 6.0       | 28           | 66           | 8703290670             | 6.7      | 8.0       | 53           | 91           |
| 8703290370             | 3.7      | 6.0       | 28           | 66           | 8703290680             | 6.8      | 8.0       | 53           | 91           |
| 8703290380             | 3.8      | 6.0       | 36           | 74           | 8703290690             | 6.9      | 8.0       | 53           | 91           |
| 8703290390             | 3.9      | 6.0       | 36           | 74           | 8703290700             | 7.0      | 8.0       | 53           | 91           |
| 8703290400             | 4.0      | 6.0       | 36           | 74           | 8703290710             | 7.1      | 8.0       | 53           | 91           |
| 8703290410             | 4.1      | 6.0       | 36           | 74           | 8703290720             | 7.2      | 8.0       | 53           | 91           |
| 8703290420             | 4.2      | 6.0       | 36           | 74           | 8703290730             | 7.3      | 8.0       | 53           | 91           |
| 8703290430             | 4.3      | 6.0       | 36           | 74           | 8703290740             | 7.4      | 8.0       | 53           | 91           |
| 8703290440             | 4.4      | 6.0       | 36           | 74           | 8703290750             | 7.5      | 8.0       | 53           | 91           |
| 8703290450             | 4.5      | 6.0       | 36           | 74           | 8703290760             | 7.6      | 8.0       | 53           | 91           |
| 8703290460             | 4.6      | 6.0       | 36           | 74           | 8703290770             | 7.7      | 8.0       | 53           | 91           |
| 8703290470             | 4.7      | 6.0       | 36           | 74           | 8703290780             | 7.8      | 8.0       | 53           | 91           |
| 8703290480             | 4.8      | 6.0       | 44           | 82           | 8703290790             | 7.9      | 8.0       | 53           | 91           |
| 8703290490             | 4.9      | 6.0       | 44           | 82           | 8703290800             | 8.0      | 8.0       | 53           | 91           |
| 8703290500             | 5.0      | 6.0       | 44           | 82           | 8703290810             | 8.1      | 10.0      | 61           | 103          |
| 8703290510             | 5.1      | 6.0       | 44           | 82           | 8703290820             | 8.2      | 10.0      | 61           | 103          |
| 8703290520             | 5.2      | 6.0       | 44           | 82           | 8703290830             | 8.3      | 10.0      | 61           | 103          |
| 8703290530             | 5.3      | 6.0       | 44           | 82           | 8703290840             | 8.4      | 10.0      | 61           | 103          |
| 8703290540             | 5.4      | 6.0       | 44           | 82           | 8703290850             | 8.5      | 10.0      | 61           | 103          |
| 8703290550             | 5.5      | 6.0       | 44           | 82           | 8703290860             | 8.6      | 10.0      | 61           | 103          |
| 8703290560             | 5.6      | 6.0       | 44           | 82           | 8703290870             | 8.7      | 10.0      | 61           | 103          |
| 8703290570             | 5.7      | 6.0       | 44           | 82           | 8703290880             | 8.8      | 10.0      | 61           | 103          |
| 8703290580             | 5.8      | 6.0       | 44           | 82           | 8703290890             | 8.9      | 10.0      | 61           | 103          |
| 8703290590             | 5.9      | 6.0       | 44           | 82           | 8703290900             | 9.0      | 10.0      | 61           | 103          |
| 8703290600             | 6.0      | 6.0       | 44           | 82           | 8703290910             | 9.1      | 10.0      | 61           | 103          |

Drill Dia.  
Tolerance  
**TCDC**

m7

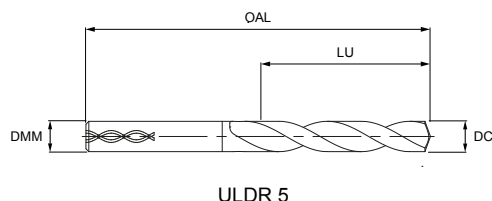
Shank Dia.  
Tolerance  
**TCDMM**

h6

| ISO       | P           |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|-----------|-------------|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP | 1-5         | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary | ○ Secondary |     |       |        |    |       |       |       |       |      |      |    | ●     | ○     |       |       |



## SX DRILL 5XD



MG  
HM

BSG  
DIN  
6537



Series No. 870329

► cutting conditions : p.52

Special flute shape optimised for chip evacuation in  
Nickel alloys  
Convex cutting edge geometry for reduced cutting load  
and increase strength  
Tailored surface treatment after coating highly suited to  
machining HRSA materials.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8703290920             | 9.2      | 10.0      | 61           | 103          | 8703291220             | 12.2     | 14.0      | 77           | 124          |
| 8703290930             | 9.3      | 10.0      | 61           | 103          | 8703291230             | 12.3     | 14.0      | 77           | 124          |
| 8703290940             | 9.4      | 10.0      | 61           | 103          | 8703291240             | 12.4     | 14.0      | 77           | 124          |
| 8703290950             | 9.5      | 10.0      | 61           | 103          | 8703291250             | 12.5     | 14.0      | 77           | 124          |
| 8703290960             | 9.6      | 10.0      | 61           | 103          | 8703291260             | 12.6     | 14.0      | 77           | 124          |
| 8703290970             | 9.7      | 10.0      | 61           | 103          | 8703291270             | 12.7     | 14.0      | 77           | 124          |
| 8703290980             | 9.8      | 10.0      | 61           | 103          | 8703291280             | 12.8     | 14.0      | 77           | 124          |
| 8703290990             | 9.9      | 10.0      | 61           | 103          | 8703291290             | 12.9     | 14.0      | 77           | 124          |
| 8703291000             | 10.0     | 10.0      | 61           | 103          | 8703291300             | 13.0     | 14.0      | 77           | 124          |
| 8703291010             | 10.1     | 12.0      | 71           | 118          | 8703291310             | 13.1     | 14.0      | 77           | 124          |
| 8703291020             | 10.2     | 12.0      | 71           | 118          | 8703291320             | 13.2     | 14.0      | 77           | 124          |
| 8703291030             | 10.3     | 12.0      | 71           | 118          | 8703291330             | 13.3     | 14.0      | 77           | 124          |
| 8703291040             | 10.4     | 12.0      | 71           | 118          | 8703291340             | 13.4     | 14.0      | 77           | 124          |
| 8703291050             | 10.5     | 12.0      | 71           | 118          | 8703291350             | 13.5     | 14.0      | 77           | 124          |
| 8703291060             | 10.6     | 12.0      | 71           | 118          | 8703291360             | 13.6     | 14.0      | 77           | 124          |
| 8703291070             | 10.7     | 12.0      | 71           | 118          | 8703291370             | 13.7     | 14.0      | 77           | 124          |
| 8703291080             | 10.8     | 12.0      | 71           | 118          | 8703291380             | 13.8     | 14.0      | 77           | 124          |
| 8703291090             | 10.9     | 12.0      | 71           | 118          | 8703291390             | 13.9     | 14.0      | 77           | 124          |
| 8703291100             | 11.0     | 12.0      | 71           | 118          | 8703291400             | 14.0     | 14.0      | 77           | 124          |
| 8703291110             | 11.1     | 12.0      | 71           | 118          | 8703291410             | 14.1     | 16.0      | 83           | 133          |
| 8703291120             | 11.2     | 12.0      | 71           | 118          | 8703291420             | 14.2     | 16.0      | 83           | 133          |
| 8703291130             | 11.3     | 12.0      | 71           | 118          | 8703291450             | 14.5     | 16.0      | 83           | 133          |
| 8703291140             | 11.4     | 12.0      | 71           | 118          | 8703291470             | 14.7     | 16.0      | 83           | 133          |
| 8703291150             | 11.5     | 12.0      | 71           | 118          | 8703291480             | 14.8     | 16.0      | 83           | 133          |
| 8703291160             | 11.6     | 12.0      | 71           | 118          | 8703291500             | 15.0     | 16.0      | 83           | 133          |
| 8703291170             | 11.7     | 12.0      | 71           | 118          | 8703291510             | 15.1     | 16.0      | 83           | 133          |
| 8703291180             | 11.8     | 12.0      | 71           | 118          | 8703291520             | 15.2     | 16.0      | 83           | 133          |
| 8703291190             | 11.9     | 12.0      | 71           | 118          | 8703291550             | 15.5     | 16.0      | 83           | 133          |
| 8703291200             | 12.0     | 12.0      | 71           | 118          | 8703291580             | 15.8     | 16.0      | 83           | 133          |
| 8703291210             | 12.1     | 14.0      | 77           | 124          | 8703291600             | 16.0     | 16.0      | 83           | 133          |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary |     |     |       |        |    |       |       |       |       |      |      |    | ●     | ○     |       |       |



## ALU-XP DRILL 3XD

MG  
HM

BSG  
DIN  
6537

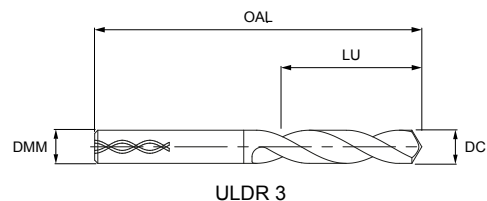


### Series No. 843303

► cutting conditions : p.52

Good chip evacuation due to special flute geometry and wide chip space.

Polished flute gives better surface finish and helps prevent built-up edge.



| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8433030300             | 3.0      | 6.0       | 20           | 62           | 8433030610             | 6.1      | 8.0       | 34           | 79           |
| 8433030310             | 3.1      | 6.0       | 20           | 62           | 8433030620             | 6.2      | 8.0       | 34           | 79           |
| 8433030320             | 3.2      | 6.0       | 20           | 62           | 8433030630             | 6.3      | 8.0       | 34           | 79           |
| 8433030330             | 3.3      | 6.0       | 20           | 62           | 8433030640             | 6.4      | 8.0       | 34           | 79           |
| 8433030340             | 3.4      | 6.0       | 20           | 62           | 8433030650             | 6.5      | 8.0       | 34           | 79           |
| 8433030350             | 3.5      | 6.0       | 20           | 62           | 8433030660             | 6.6      | 8.0       | 34           | 79           |
| 8433030360             | 3.6      | 6.0       | 20           | 62           | 8433030670             | 6.7      | 8.0       | 34           | 79           |
| 8433030370             | 3.7      | 6.0       | 20           | 62           | 8433030680             | 6.8      | 8.0       | 34           | 79           |
| 8433030380             | 3.8      | 6.0       | 24           | 66           | 8433030690             | 6.9      | 8.0       | 34           | 79           |
| 8433030390             | 3.9      | 6.0       | 24           | 66           | 8433030700             | 7.0      | 8.0       | 34           | 79           |
| 8433030400             | 4.0      | 6.0       | 24           | 66           | 8433030710             | 7.1      | 8.0       | 41           | 79           |
| 8433030410             | 4.1      | 6.0       | 24           | 66           | 8433030720             | 7.2      | 8.0       | 41           | 79           |
| 8433030420             | 4.2      | 6.0       | 24           | 66           | 8433030730             | 7.3      | 8.0       | 41           | 79           |
| 8433030430             | 4.3      | 6.0       | 24           | 66           | 8433030740             | 7.4      | 8.0       | 41           | 79           |
| 8433030440             | 4.4      | 6.0       | 24           | 66           | 8433030750             | 7.5      | 8.0       | 41           | 79           |
| 8433030450             | 4.5      | 6.0       | 24           | 66           | 8433030760             | 7.6      | 8.0       | 41           | 79           |
| 8433030460             | 4.6      | 6.0       | 24           | 66           | 8433030770             | 7.7      | 8.0       | 41           | 79           |
| 8433030470             | 4.7      | 6.0       | 24           | 66           | 8433030780             | 7.8      | 8.0       | 41           | 79           |
| 8433030480             | 4.8      | 6.0       | 28           | 66           | 8433030790             | 7.9      | 8.0       | 41           | 79           |
| 8433030490             | 4.9      | 6.0       | 28           | 66           | 8433030800             | 8.0      | 8.0       | 41           | 79           |
| 8433030500             | 5.0      | 6.0       | 28           | 66           | 8433030810             | 8.1      | 10.0      | 47           | 89           |
| 8433030510             | 5.1      | 6.0       | 28           | 66           | 8433030820             | 8.2      | 10.0      | 47           | 89           |
| 8433030520             | 5.2      | 6.0       | 28           | 66           | 8433030830             | 8.3      | 10.0      | 47           | 89           |
| 8433030530             | 5.3      | 6.0       | 28           | 66           | 8433030840             | 8.4      | 10.0      | 47           | 89           |
| 8433030540             | 5.4      | 6.0       | 28           | 66           | 8433030850             | 8.5      | 10.0      | 47           | 89           |
| 8433030550             | 5.5      | 6.0       | 28           | 66           | 8433030860             | 8.6      | 10.0      | 47           | 89           |
| 8433030560             | 5.6      | 6.0       | 28           | 66           | 8433030870             | 8.7      | 10.0      | 47           | 89           |
| 8433030570             | 5.7      | 6.0       | 28           | 66           | 8433030880             | 8.8      | 10.0      | 47           | 89           |
| 8433030580             | 5.8      | 6.0       | 28           | 66           | 8433030890             | 8.9      | 10.0      | 47           | 89           |
| 8433030590             | 5.9      | 6.0       | 28           | 66           | 8433030900             | 9.0      | 10.0      | 47           | 89           |
| 8433030600             | 6.0      | 6.0       | 28           | 66           | 8433030910             | 9.1      | 10.0      | 47           | 89           |

Drill Dia.  
Tolerance  
**TCDC**

m7

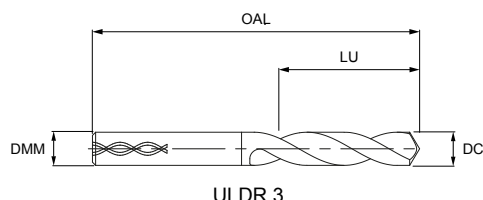
Shank Dia.  
Tolerance  
**TCDMM**

h6

| ISO       | P           |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|-----------|-------------|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP | 1-5         | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary | ○ Secondary |     |       |        |    |       |       | ●     |       |      |      |    |       |       |       |       |



## ALU-XP DRILL 3XD



MG  
HM

BSG  
DIN  
6537



### Series No. 843303

► cutting conditions : p.52

Good chip evacuation due to special flute geometry and wide chip space.

Polished flute gives better surface finish and helps prevent built-up edge.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8433030920             | 9.2      | 10.0      | 47           | 89           | 8433031150             | 11.5     | 12.0      | 55           | 102          |
| 8433030930             | 9.3      | 10.0      | 47           | 89           | 8433031160             | 11.6     | 12.0      | 55           | 102          |
| 8433030940             | 9.4      | 10.0      | 47           | 89           | 8433031170             | 11.7     | 12.0      | 55           | 102          |
| 8433030950             | 9.5      | 10.0      | 47           | 89           | 8433031180             | 11.8     | 12.0      | 55           | 102          |
| 8433030960             | 9.6      | 10.0      | 47           | 89           | 8433031190             | 11.9     | 12.0      | 55           | 102          |
| 8433030970             | 9.7      | 10.0      | 47           | 89           | 8433031200             | 12.0     | 12.0      | 55           | 102          |
| 8433030980             | 9.8      | 10.0      | 47           | 89           | 8433031250             | 12.5     | 14.0      | 60           | 107          |
| 8433030990             | 9.9      | 10.0      | 47           | 89           | 8433031300             | 13.0     | 14.0      | 60           | 107          |
| 8433031000             | 10.0     | 10.0      | 47           | 89           | 8433031350             | 13.5     | 14.0      | 60           | 107          |
| 8433031010             | 10.1     | 12.0      | 55           | 102          | 8433031400             | 14.0     | 14.0      | 60           | 107          |
| 8433031020             | 10.2     | 12.0      | 55           | 102          | 8433031450             | 14.5     | 16.0      | 65           | 115          |
| 8433031030             | 10.3     | 12.0      | 55           | 102          | 8433031500             | 15.0     | 16.0      | 65           | 115          |
| 8433031040             | 10.4     | 12.0      | 55           | 102          | 8433031550             | 15.5     | 16.0      | 65           | 115          |
| 8433031050             | 10.5     | 12.0      | 55           | 102          | 8433031600             | 16.0     | 16.0      | 65           | 115          |
| 8433031060             | 10.6     | 12.0      | 55           | 102          | 8433031650             | 16.5     | 18.0      | 73           | 123          |
| 8433031070             | 10.7     | 12.0      | 55           | 102          | 8433031700             | 17.0     | 18.0      | 73           | 123          |
| 8433031080             | 10.8     | 12.0      | 55           | 102          | 8433031750             | 17.5     | 18.0      | 73           | 123          |
| 8433031090             | 10.9     | 12.0      | 55           | 102          | 8433031800             | 18.0     | 18.0      | 73           | 123          |
| 8433031100             | 11.0     | 12.0      | 55           | 102          | 8433031850             | 18.5     | 20.0      | 79           | 131          |
| 8433031110             | 11.1     | 12.0      | 55           | 102          | 8433031900             | 19.0     | 20.0      | 79           | 131          |
| 8433031120             | 11.2     | 12.0      | 55           | 102          | 8433031950             | 19.5     | 20.0      | 79           | 131          |
| 8433031130             | 11.3     | 12.0      | 55           | 102          | 8433032000             | 20.0     | 20.0      | 79           | 131          |
| 8433031140             | 11.4     | 12.0      | 55           | 102          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary |     |     |       |        |    |       |       | ●     |       |      |      |    |       |       |       |       |



## ALU-XP DRILL 5XD

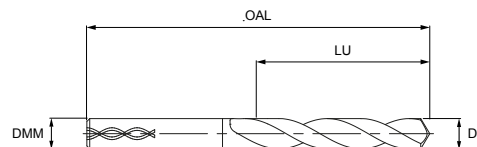
MG  
HMBSG  
DIN  
6537

## Series No. 845303

► cutting conditions : p.52

Good chip evacuation due to special flute geometry and wide chip space.

Polished flute gives better surface finish and helps prevent built-up edge.



ULDR 5

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8453030300             | 3.0      | 6.0       | 28           | 66           | 8453030610             | 6.1      | 8.0       | 53           | 91           |
| 8453030310             | 3.1      | 6.0       | 28           | 66           | 8453030620             | 6.2      | 8.0       | 53           | 91           |
| 8453030320             | 3.2      | 6.0       | 28           | 66           | 8453030630             | 6.3      | 8.0       | 53           | 91           |
| 8453030330             | 3.3      | 6.0       | 28           | 66           | 8453030640             | 6.4      | 8.0       | 53           | 91           |
| 8453030340             | 3.4      | 6.0       | 28           | 66           | 8453030650             | 6.5      | 8.0       | 53           | 91           |
| 8453030350             | 3.5      | 6.0       | 28           | 66           | 8453030660             | 6.6      | 8.0       | 53           | 91           |
| 8453030360             | 3.6      | 6.0       | 28           | 66           | 8453030670             | 6.7      | 8.0       | 53           | 91           |
| 8453030370             | 3.7      | 6.0       | 28           | 66           | 8453030680             | 6.8      | 8.0       | 53           | 91           |
| 8453030380             | 3.8      | 6.0       | 36           | 74           | 8453030690             | 6.9      | 8.0       | 53           | 91           |
| 8453030390             | 3.9      | 6.0       | 36           | 74           | 8453030700             | 7.0      | 8.0       | 53           | 91           |
| 8453030400             | 4.0      | 6.0       | 36           | 74           | 8453030710             | 7.1      | 8.0       | 53           | 91           |
| 8453030410             | 4.1      | 6.0       | 36           | 74           | 8453030720             | 7.2      | 8.0       | 53           | 91           |
| 8453030420             | 4.2      | 6.0       | 36           | 74           | 8453030730             | 7.3      | 8.0       | 53           | 91           |
| 8453030430             | 4.3      | 6.0       | 36           | 74           | 8453030740             | 7.4      | 8.0       | 53           | 91           |
| 8453030440             | 4.4      | 6.0       | 36           | 74           | 8453030750             | 7.5      | 8.0       | 53           | 91           |
| 8453030450             | 4.5      | 6.0       | 36           | 74           | 8453030760             | 7.6      | 8.0       | 53           | 91           |
| 8453030460             | 4.6      | 6.0       | 36           | 74           | 8453030770             | 7.7      | 8.0       | 53           | 91           |
| 8453030470             | 4.7      | 6.0       | 36           | 74           | 8453030780             | 7.8      | 8.0       | 53           | 91           |
| 8453030480             | 4.8      | 6.0       | 44           | 82           | 8453030790             | 7.9      | 8.0       | 53           | 91           |
| 8453030490             | 4.9      | 6.0       | 44           | 82           | 8453030800             | 8.0      | 8.0       | 53           | 91           |
| 8453030500             | 5.0      | 6.0       | 44           | 82           | 8453030810             | 8.1      | 10.0      | 61           | 103          |
| 8453030510             | 5.1      | 6.0       | 44           | 82           | 8453030820             | 8.2      | 10.0      | 61           | 103          |
| 8453030520             | 5.2      | 6.0       | 44           | 82           | 8453030830             | 8.3      | 10.0      | 61           | 103          |
| 8453030530             | 5.3      | 6.0       | 44           | 82           | 8453030840             | 8.4      | 10.0      | 61           | 103          |
| 8453030540             | 5.4      | 6.0       | 44           | 82           | 8453030850             | 8.5      | 10.0      | 61           | 103          |
| 8453030550             | 5.5      | 6.0       | 44           | 82           | 8453030860             | 8.6      | 10.0      | 61           | 103          |
| 8453030560             | 5.6      | 6.0       | 44           | 82           | 8453030870             | 8.7      | 10.0      | 61           | 103          |
| 8453030570             | 5.7      | 6.0       | 44           | 82           | 8453030880             | 8.8      | 10.0      | 61           | 103          |
| 8453030580             | 5.8      | 6.0       | 44           | 82           | 8453030890             | 8.9      | 10.0      | 61           | 103          |
| 8453030590             | 5.9      | 6.0       | 44           | 82           | 8453030900             | 9.0      | 10.0      | 61           | 103          |
| 8453030600             | 6.0      | 6.0       | 44           | 82           | 8453030910             | 9.1      | 10.0      | 61           | 103          |

Drill Dia.  
Tolerance  
**TCDC**

m7

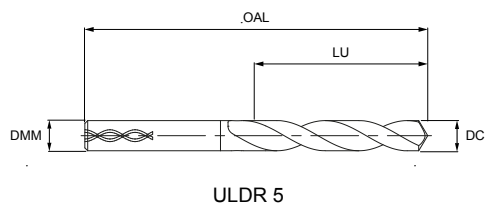
Shank Dia.  
Tolerance  
**TCDMM**

h6

| ISO          |                | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------|----------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP    |                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ●<br>Primary | ○<br>Secondary |     |     |       |        |    |       |       | ●     |       |      |      |    |       |       |       |       |



## ALU-XP DRILL 5XD



MG  
HM

BSG  
DIN  
6537



### Series No. 845303

► cutting conditions : p.52

Good chip evacuation due to special flute geometry and wide chip space.

Polished flute gives better surface finish and helps prevent built-up edge.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8453030920             | 9.2      | 10.0      | 61           | 103          | 8453031150             | 11.5     | 12.0      | 71           | 118          |
| 8453030930             | 9.3      | 10.0      | 61           | 103          | 8453031160             | 11.6     | 12.0      | 71           | 118          |
| 8453030940             | 9.4      | 10.0      | 61           | 103          | 8453031170             | 11.7     | 12.0      | 71           | 118          |
| 8453030950             | 9.5      | 10.0      | 61           | 103          | 8453031180             | 11.8     | 12.0      | 71           | 118          |
| 8453030960             | 9.6      | 10.0      | 61           | 103          | 8453031190             | 11.9     | 12.0      | 71           | 118          |
| 8453030970             | 9.7      | 10.0      | 61           | 103          | 8453031200             | 12.0     | 12.0      | 71           | 118          |
| 8453030980             | 9.8      | 10.0      | 61           | 103          | 8453031250             | 12.5     | 14.0      | 77           | 124          |
| 8453030990             | 9.9      | 10.0      | 61           | 103          | 8453031300             | 13.0     | 14.0      | 77           | 124          |
| 8453031000             | 10.0     | 10.0      | 61           | 103          | 8453031350             | 13.5     | 14.0      | 77           | 124          |
| 8453031010             | 10.1     | 12.0      | 71           | 118          | 8453031400             | 14.0     | 14.0      | 77           | 124          |
| 8453031020             | 10.2     | 12.0      | 71           | 118          | 8453031450             | 14.5     | 16.0      | 83           | 133          |
| 8453031030             | 10.3     | 12.0      | 71           | 118          | 8453031500             | 15.0     | 16.0      | 83           | 133          |
| 8453031040             | 10.4     | 12.0      | 71           | 118          | 8453031550             | 15.5     | 16.0      | 83           | 133          |
| 8453031050             | 10.5     | 12.0      | 71           | 118          | 8453031600             | 16.0     | 16.0      | 83           | 133          |
| 8453031060             | 10.6     | 12.0      | 71           | 118          | 8453031650             | 16.5     | 18.0      | 93           | 143          |
| 8453031070             | 10.7     | 12.0      | 71           | 118          | 8453031700             | 17.0     | 18.0      | 93           | 143          |
| 8453031080             | 10.8     | 12.0      | 71           | 118          | 8453031750             | 17.5     | 18.0      | 93           | 143          |
| 8453031090             | 10.9     | 12.0      | 71           | 118          | 8453031800             | 18.0     | 18.0      | 93           | 143          |
| 8453031100             | 11.0     | 12.0      | 71           | 118          | 8453031850             | 18.5     | 20.0      | 101          | 153          |
| 8453031110             | 11.1     | 12.0      | 71           | 118          | 8453031900             | 19.0     | 20.0      | 101          | 153          |
| 8453031120             | 11.2     | 12.0      | 71           | 118          | 8453031950             | 19.5     | 20.0      | 101          | 153          |
| 8453031130             | 11.3     | 12.0      | 71           | 118          | 8453032000             | 20.0     | 20.0      | 101          | 153          |
| 8453031140             | 11.4     | 12.0      | 71           | 118          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary |     |     |       |        |    |       |       | ●     |       |      |      |    |       |       |       |       |



## ALU-XP DRILL 8XD

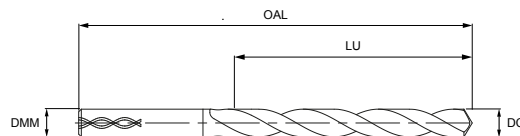
MG  
HMBSG  
DIN  
6537

## Series No. 848303

► cutting conditions : p.52

Good chip evacuation due to special flute geometry and wide chip space.

Polished flute gives better surface finish and helps prevent built-up edge.



ULDR 8

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8483030300             | 3.0      | 6.0       | 34           | 72           | 8483030610             | 6.1      | 8.0       | 76           | 114          |
| 8483030310             | 3.1      | 6.0       | 34           | 72           | 8483030620             | 6.2      | 8.0       | 76           | 114          |
| 8483030320             | 3.2      | 6.0       | 34           | 72           | 8483030630             | 6.3      | 8.0       | 76           | 114          |
| 8483030330             | 3.3      | 6.0       | 34           | 72           | 8483030640             | 6.4      | 8.0       | 76           | 114          |
| 8483030340             | 3.4      | 6.0       | 34           | 72           | 8483030650             | 6.5      | 8.0       | 76           | 114          |
| 8483030350             | 3.5      | 6.0       | 34           | 72           | 8483030660             | 6.6      | 8.0       | 76           | 114          |
| 8483030360             | 3.6      | 6.0       | 34           | 72           | 8483030670             | 6.7      | 8.0       | 76           | 114          |
| 8483030370             | 3.7      | 6.0       | 34           | 72           | 8483030680             | 6.8      | 8.0       | 76           | 114          |
| 8483030380             | 3.8      | 6.0       | 43           | 81           | 8483030690             | 6.9      | 8.0       | 76           | 114          |
| 8483030390             | 3.9      | 6.0       | 43           | 81           | 8483030700             | 7.0      | 8.0       | 76           | 114          |
| 8483030400             | 4.0      | 6.0       | 43           | 81           | 8483030710             | 7.1      | 8.0       | 76           | 114          |
| 8483030410             | 4.1      | 6.0       | 43           | 81           | 8483030720             | 7.2      | 8.0       | 76           | 114          |
| 8483030420             | 4.2      | 6.0       | 43           | 81           | 8483030730             | 7.3      | 8.0       | 76           | 114          |
| 8483030430             | 4.3      | 6.0       | 43           | 81           | 8483030740             | 7.4      | 8.0       | 76           | 114          |
| 8483030440             | 4.4      | 6.0       | 43           | 81           | 8483030750             | 7.5      | 8.0       | 76           | 114          |
| 8483030450             | 4.5      | 6.0       | 43           | 81           | 8483030760             | 7.6      | 8.0       | 76           | 114          |
| 8483030460             | 4.6      | 6.0       | 43           | 81           | 8483030770             | 7.7      | 8.0       | 76           | 114          |
| 8483030470             | 4.7      | 6.0       | 43           | 81           | 8483030780             | 7.8      | 8.0       | 76           | 114          |
| 8483030480             | 4.8      | 6.0       | 57           | 95           | 8483030790             | 7.9      | 8.0       | 76           | 114          |
| 8483030490             | 4.9      | 6.0       | 57           | 95           | 8483030800             | 8.0      | 8.0       | 76           | 114          |
| 8483030500             | 5.0      | 6.0       | 57           | 95           | 8483030810             | 8.1      | 10.0      | 95           | 142          |
| 8483030510             | 5.1      | 6.0       | 57           | 95           | 8483030820             | 8.2      | 10.0      | 95           | 142          |
| 8483030520             | 5.2      | 6.0       | 57           | 95           | 8483030830             | 8.3      | 10.0      | 95           | 142          |
| 8483030530             | 5.3      | 6.0       | 57           | 95           | 8483030840             | 8.4      | 10.0      | 95           | 142          |
| 8483030540             | 5.4      | 6.0       | 57           | 95           | 8483030850             | 8.5      | 10.0      | 95           | 142          |
| 8483030550             | 5.5      | 6.0       | 57           | 95           | 8483030860             | 8.6      | 10.0      | 95           | 142          |
| 8483030560             | 5.6      | 6.0       | 57           | 95           | 8483030870             | 8.7      | 10.0      | 95           | 142          |
| 8483030570             | 5.7      | 6.0       | 57           | 95           | 8483030880             | 8.8      | 10.0      | 95           | 142          |
| 8483030580             | 5.8      | 6.0       | 57           | 95           | 8483030890             | 8.9      | 10.0      | 95           | 142          |
| 8483030590             | 5.9      | 6.0       | 57           | 95           | 8483030900             | 9.0      | 10.0      | 95           | 142          |
| 8483030600             | 6.0      | 6.0       | 57           | 95           | 8483030910             | 9.1      | 10.0      | 95           | 142          |

Drill Dia.  
Tolerance  
**TCDC**

m7

Shank Dia.  
Tolerance  
**TCDMM**

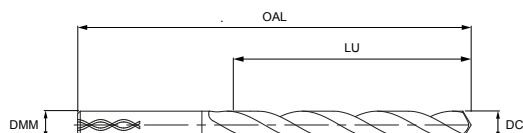
h6

| ISO       | P           |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|-----------|-------------|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP | 1-5         | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary | ○ Secondary |     |       |        |    |       |       | ●     |       |      |      |    |       |       |       |       |





## ALU-XP DRILL 8XD



ULDR 8

MG  
HMBSG  
DIN  
6537

### Series No. 848303

► cutting conditions : p.52

Good chip evacuation due to special flute geometry and wide chip space.

Polished flute gives better surface finish and helps prevent built-up edge.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8483030920             | 9.2      | 10.0      | 95           | 142          | 8483031090             | 10.9     | 12.0      | 114          | 162          |
| 8483030930             | 9.3      | 10.0      | 95           | 142          | 8483031100             | 11.0     | 12.0      | 114          | 162          |
| 8483030940             | 9.4      | 10.0      | 95           | 142          | 8483031110             | 11.1     | 12.0      | 114          | 162          |
| 8483030950             | 9.5      | 10.0      | 95           | 142          | 8483031120             | 11.2     | 12.0      | 114          | 162          |
| 8483030960             | 9.6      | 10.0      | 95           | 142          | 8483031130             | 11.3     | 12.0      | 114          | 162          |
| 8483030970             | 9.7      | 10.0      | 95           | 142          | 8483031140             | 11.4     | 12.0      | 114          | 162          |
| 8483030980             | 9.8      | 10.0      | 95           | 142          | 8483031150             | 11.5     | 12.0      | 114          | 162          |
| 8483030990             | 9.9      | 10.0      | 95           | 142          | 8483031160             | 11.6     | 12.0      | 114          | 162          |
| 8483031000             | 10.0     | 10.0      | 95           | 142          | 8483031170             | 11.7     | 12.0      | 114          | 162          |
| 8483031010             | 10.1     | 12.0      | 114          | 162          | 8483031180             | 11.8     | 12.0      | 114          | 162          |
| 8483031020             | 10.2     | 12.0      | 114          | 162          | 8483031190             | 11.9     | 12.0      | 114          | 162          |
| 8483031030             | 10.3     | 12.0      | 114          | 162          | 8483031200             | 12.0     | 12.0      | 114          | 162          |
| 8483031040             | 10.4     | 12.0      | 114          | 162          | 8483031250             | 12.5     | 14.0      | 133          | 178          |
| 8483031050             | 10.5     | 12.0      | 114          | 162          | 8483031300             | 13.0     | 14.0      | 133          | 178          |
| 8483031060             | 10.6     | 12.0      | 114          | 162          | 8483031350             | 13.5     | 14.0      | 133          | 178          |
| 8483031070             | 10.7     | 12.0      | 114          | 162          | 8483031400             | 14.0     | 14.0      | 133          | 178          |
| 8483031080             | 10.8     | 12.0      | 114          | 162          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br><b>TDCD</b> | Shank Dia.<br>Tolerance<br><b>TCDMM</b> |
|----------------------------------------|-----------------------------------------|
| m7                                     | h6                                      |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary |     |     |       |        |    |       |       | ●     |       |      |      |    |       |       |       |       |



## HF DRILL 3XD HIGH FEED

MG  
HMBSG  
DIN  
6537

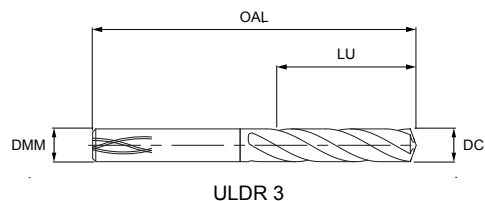
## Series No. 803366

► cutting conditions : p.56

1.5 - 2.0 times higher feed rate than 2-Fl drill for increased productivity.

Multi layer coating for improved tool life

High process reliability



ULDR 3

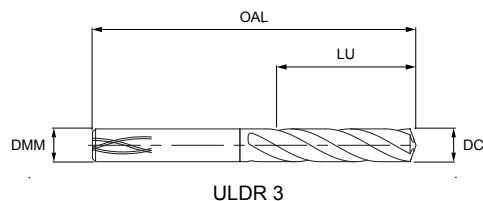
| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8033660500             | 5.0      | 6.0       | 28           | 66           | 8033660750             | 7.5      | 8.0       | 41           | 79           |
| 8033660510             | 5.1      | 6.0       | 28           | 66           | 8033660760             | 7.6      | 8.0       | 41           | 79           |
| 8033660520             | 5.2      | 6.0       | 28           | 66           | 8033660770             | 7.7      | 8.0       | 41           | 79           |
| 8033660530             | 5.3      | 6.0       | 28           | 66           | 8033660780             | 7.8      | 8.0       | 41           | 79           |
| 8033660540             | 5.4      | 6.0       | 28           | 66           | 8033660790             | 7.9      | 8.0       | 41           | 79           |
| 8033660550             | 5.5      | 6.0       | 28           | 66           | 8033660800             | 8.0      | 8.0       | 41           | 79           |
| 8033660560             | 5.6      | 6.0       | 28           | 66           | 8033660810             | 8.1      | 10.0      | 47           | 89           |
| 8033660570             | 5.7      | 6.0       | 28           | 66           | 8033660820             | 8.2      | 10.0      | 47           | 89           |
| 8033660580             | 5.8      | 6.0       | 28           | 66           | 8033660830             | 8.3      | 10.0      | 47           | 89           |
| 8033660590             | 5.9      | 6.0       | 28           | 66           | 8033660840             | 8.4      | 10.0      | 47           | 89           |
| 8033660600             | 6.0      | 6.0       | 28           | 66           | 8033660850             | 8.5      | 10.0      | 47           | 89           |
| 8033660610             | 6.1      | 8.0       | 34           | 79           | 8033660860             | 8.6      | 10.0      | 47           | 89           |
| 8033660620             | 6.2      | 8.0       | 34           | 79           | 8033660870             | 8.7      | 10.0      | 47           | 89           |
| 8033660630             | 6.3      | 8.0       | 34           | 79           | 8033660880             | 8.8      | 10.0      | 47           | 89           |
| 8033660640             | 6.4      | 8.0       | 34           | 79           | 8033660890             | 8.9      | 10.0      | 47           | 89           |
| 8033660650             | 6.5      | 8.0       | 34           | 79           | 8033660900             | 9.0      | 10.0      | 47           | 89           |
| 8033660660             | 6.6      | 8.0       | 34           | 79           | 8033660910             | 9.1      | 10.0      | 47           | 89           |
| 8033660670             | 6.7      | 8.0       | 34           | 79           | 8033660920             | 9.2      | 10.0      | 47           | 89           |
| 8033660680             | 6.8      | 8.0       | 34           | 79           | 8033660930             | 9.3      | 10.0      | 47           | 89           |
| 8033660690             | 6.9      | 8.0       | 34           | 79           | 8033660940             | 9.4      | 10.0      | 47           | 89           |
| 8033660700             | 7.0      | 8.0       | 34           | 79           | 8033660950             | 9.5      | 10.0      | 47           | 89           |
| 8033660710             | 7.1      | 8.0       | 41           | 79           | 8033660960             | 9.6      | 10.0      | 47           | 89           |
| 8033660720             | 7.2      | 8.0       | 41           | 79           | 8033660970             | 9.7      | 10.0      | 47           | 89           |
| 8033660730             | 7.3      | 8.0       | 41           | 79           | 8033660980             | 9.8      | 10.0      | 47           | 89           |
| 8033660740             | 7.4      | 8.0       | 41           | 79           | 8033660990             | 9.9      | 10.0      | 47           | 89           |

| Drill Dia.<br>Tolerance<br>TDCD | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   |       |        |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



## HF DRILL 3XD HIGH FEED



MG  
HM

BSG  
DIN  
6537



Series No. 803366

► cutting conditions : p.56

1.5 - 2.0 times higher feed rate than 2-Fl drill for increased productivity.  
Multi layer coating for improved tool life  
High process reliability

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8033661000             | 10.0     | 10.0      | 47           | 89           | 8033661190             | 11.9     | 12.0      | 55           | 102          |
| 8033661010             | 10.1     | 12.0      | 55           | 102          | 8033661200             | 12.0     | 12.0      | 55           | 102          |
| 8033661020             | 10.2     | 12.0      | 55           | 102          | 8033661250             | 12.5     | 14.0      | 60           | 107          |
| 8033661030             | 10.3     | 12.0      | 55           | 102          | 8033661300             | 13.0     | 14.0      | 60           | 107          |
| 8033661040             | 10.4     | 12.0      | 55           | 102          | 8033661350             | 13.5     | 14.0      | 60           | 107          |
| 8033661050             | 10.5     | 12.0      | 55           | 102          | 8033661400             | 14.0     | 14.0      | 60           | 107          |
| 8033661060             | 10.6     | 12.0      | 55           | 102          | 8033661450             | 14.5     | 16.0      | 65           | 115          |
| 8033661070             | 10.7     | 12.0      | 55           | 102          | 8033661500             | 15.0     | 16.0      | 65           | 115          |
| 8033661080             | 10.8     | 12.0      | 55           | 102          | 8033661550             | 15.5     | 16.0      | 65           | 115          |
| 8033661090             | 10.9     | 12.0      | 55           | 102          | 8033661600             | 16.0     | 16.0      | 65           | 115          |
| 8033661100             | 11.0     | 12.0      | 55           | 102          | 8033661650             | 16.5     | 18.0      | 73           | 123          |
| 8033661110             | 11.1     | 12.0      | 55           | 102          | 8033661700             | 17.0     | 18.0      | 73           | 123          |
| 8033661120             | 11.2     | 12.0      | 55           | 102          | 8033661750             | 17.5     | 18.0      | 73           | 123          |
| 8033661130             | 11.3     | 12.0      | 55           | 102          | 8033661800             | 18.0     | 18.0      | 73           | 123          |
| 8033661140             | 11.4     | 12.0      | 55           | 102          | 8033661850             | 18.5     | 20.0      | 79           | 131          |
| 8033661150             | 11.5     | 12.0      | 55           | 102          | 8033661900             | 19.0     | 20.0      | 79           | 131          |
| 8033661160             | 11.6     | 12.0      | 55           | 102          | 8033661950             | 19.5     | 20.0      | 79           | 131          |
| 8033661170             | 11.7     | 12.0      | 55           | 102          | 8033662000             | 20.0     | 20.0      | 79           | 131          |
| 8033661180             | 11.8     | 12.0      | 55           | 102          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDDMM |
|---------------------------------|-----------------------------------|
| m7                              | h6                                |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   |       |        |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



## HF DRILL 5XD HIGH FEED

MG  
HMBSG  
DIN  
6537

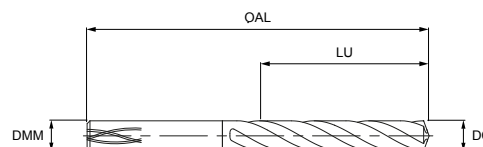
## Series No. 805366

► cutting conditions : p.56

1.5 - 2.0 times higher feed rate than 2-Fl drill for increased productivity.

Multi layer coating for improved tool life

High process reliability



ULDR 5

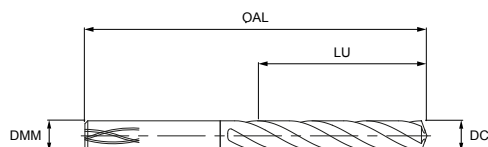
| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8053660500             | 5.0      | 6.0       | 44           | 82           | 8053660750             | 7.5      | 8.0       | 53           | 91           |
| 8053660510             | 5.1      | 6.0       | 44           | 82           | 8053660760             | 7.6      | 8.0       | 53           | 91           |
| 8053660520             | 5.2      | 6.0       | 44           | 82           | 8053660770             | 7.7      | 8.0       | 53           | 91           |
| 8053660530             | 5.3      | 6.0       | 44           | 82           | 8053660780             | 7.8      | 8.0       | 53           | 91           |
| 8053660540             | 5.4      | 6.0       | 44           | 82           | 8053660790             | 7.9      | 8.0       | 53           | 91           |
| 8053660550             | 5.5      | 6.0       | 44           | 82           | 8053660800             | 8.0      | 8.0       | 53           | 91           |
| 8053660560             | 5.6      | 6.0       | 44           | 82           | 8053660810             | 8.1      | 10.0      | 61           | 103          |
| 8053660570             | 5.7      | 6.0       | 44           | 82           | 8053660820             | 8.2      | 10.0      | 61           | 103          |
| 8053660580             | 5.8      | 6.0       | 44           | 82           | 8053660830             | 8.3      | 10.0      | 61           | 103          |
| 8053660590             | 5.9      | 6.0       | 44           | 82           | 8053660840             | 8.4      | 10.0      | 61           | 103          |
| 8053660600             | 6.0      | 6.0       | 44           | 82           | 8053660850             | 8.5      | 10.0      | 61           | 103          |
| 8053660610             | 6.1      | 8.0       | 53           | 91           | 8053660860             | 8.6      | 10.0      | 61           | 103          |
| 8053660620             | 6.2      | 8.0       | 53           | 91           | 8053660870             | 8.7      | 10.0      | 61           | 103          |
| 8053660630             | 6.3      | 8.0       | 53           | 91           | 8053660880             | 8.8      | 10.0      | 61           | 103          |
| 8053660640             | 6.4      | 8.0       | 53           | 91           | 8053660890             | 8.9      | 10.0      | 61           | 103          |
| 8053660650             | 6.5      | 8.0       | 53           | 91           | 8053660900             | 9.0      | 10.0      | 61           | 103          |
| 8053660660             | 6.6      | 8.0       | 53           | 91           | 8053660910             | 9.1      | 10.0      | 61           | 103          |
| 8053660670             | 6.7      | 8.0       | 53           | 91           | 8053660920             | 9.2      | 10.0      | 61           | 103          |
| 8053660680             | 6.8      | 8.0       | 53           | 91           | 8053660930             | 9.3      | 10.0      | 61           | 103          |
| 8053660690             | 6.9      | 8.0       | 53           | 91           | 8053660940             | 9.4      | 10.0      | 61           | 103          |
| 8053660700             | 7.0      | 8.0       | 53           | 91           | 8053660950             | 9.5      | 10.0      | 61           | 103          |
| 8053660710             | 7.1      | 8.0       | 53           | 91           | 8053660960             | 9.6      | 10.0      | 61           | 103          |
| 8053660720             | 7.2      | 8.0       | 53           | 91           | 8053660970             | 9.7      | 10.0      | 61           | 103          |
| 8053660730             | 7.3      | 8.0       | 53           | 91           | 8053660980             | 9.8      | 10.0      | 61           | 103          |
| 8053660740             | 7.4      | 8.0       | 53           | 91           | 8053660990             | 9.9      | 10.0      | 61           | 103          |

| Drill Dia.<br>Tolerance<br>TDCD | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   |       |        |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



## HF DRILL 5XD HIGH FEED



ULDR 5

MG  
HMBSG  
DIN  
6537

### Series No. 805366

► cutting conditions : p.56

1.5 - 2.0 times higher feed rate than 2-Fl drill for increased productivity.

Multi layer coating for improved tool life

High process reliability

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8053661000             | 10.0     | 10.0      | 61           | 103          | 8053661190             | 11.9     | 12.0      | 71           | 118          |
| 8053661010             | 10.1     | 12.0      | 71           | 118          | 8053661200             | 12.0     | 12.0      | 71           | 118          |
| 8053661020             | 10.2     | 12.0      | 71           | 118          | 8053661250             | 12.5     | 14.0      | 77           | 124          |
| 8053661030             | 10.3     | 12.0      | 71           | 118          | 8053661300             | 13.0     | 14.0      | 77           | 124          |
| 8053661040             | 10.4     | 12.0      | 71           | 118          | 8053661350             | 13.5     | 14.0      | 77           | 124          |
| 8053661050             | 10.5     | 12.0      | 71           | 118          | 8053661400             | 14.0     | 14.0      | 77           | 124          |
| 8053661060             | 10.6     | 12.0      | 71           | 118          | 8053661450             | 14.5     | 16.0      | 83           | 133          |
| 8053661070             | 10.7     | 12.0      | 71           | 118          | 8053661500             | 15.0     | 16.0      | 83           | 133          |
| 8053661080             | 10.8     | 12.0      | 71           | 118          | 8053661550             | 15.5     | 16.0      | 83           | 133          |
| 8053661090             | 10.9     | 12.0      | 71           | 118          | 8053661600             | 16.0     | 16.0      | 83           | 133          |
| 8053661100             | 11.0     | 12.0      | 71           | 118          | 8053661650             | 16.5     | 18.0      | 93           | 143          |
| 8053661110             | 11.1     | 12.0      | 71           | 118          | 8053661700             | 17.0     | 18.0      | 93           | 143          |
| 8053661120             | 11.2     | 12.0      | 71           | 118          | 8053661750             | 17.5     | 18.0      | 93           | 143          |
| 8053661130             | 11.3     | 12.0      | 71           | 118          | 8053661800             | 18.0     | 18.0      | 93           | 143          |
| 8053661140             | 11.4     | 12.0      | 71           | 118          | 8053661850             | 18.5     | 20.0      | 101          | 153          |
| 8053661150             | 11.5     | 12.0      | 71           | 118          | 8053661900             | 19.0     | 20.0      | 101          | 153          |
| 8053661160             | 11.6     | 12.0      | 71           | 118          | 8053661950             | 19.5     | 20.0      | 101          | 153          |
| 8053661170             | 11.7     | 12.0      | 71           | 118          | 8053662000             | 20.0     | 20.0      | 101          | 153          |
| 8053661180             | 11.8     | 12.0      | 71           | 118          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDDMM |
|---------------------------------|-----------------------------------|
| m7                              | h6                                |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   |       |        |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



## BF DRILL 2XD FLAT BOTTOM

MG  
HM

ZEFP 2



FHA 20°



SIG 180°



CNSC 0

## Series No. 809323

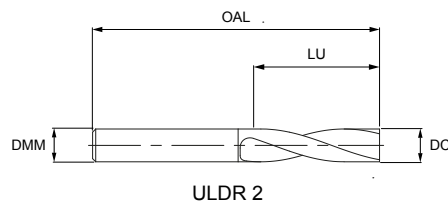
► cutting conditions : p.55

180° point angle enables drilling of flat, inclined and curved surfaces.

Optimised flute design for excellent chip evacuation.

High strength cutting edge for improved tool life.

Minimised burrs at entrance and exit of thin plate.



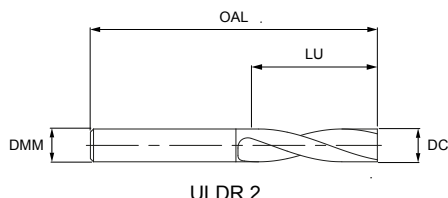
| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8093230300             | 3.0      | 6.0       | 16           | 50           | 8093230540             | 5.4      | 6.0       | 24           | 60           |
| 8093230310             | 3.1      | 6.0       | 16           | 50           | 8093230550             | 5.5      | 6.0       | 24           | 60           |
| 8093230320             | 3.2      | 6.0       | 16           | 50           | 8093230560             | 5.6      | 6.0       | 24           | 60           |
| 8093230330             | 3.3      | 6.0       | 16           | 50           | 8093230570             | 5.7      | 6.0       | 26           | 60           |
| 8093230340             | 3.4      | 6.0       | 18           | 50           | 8093230580             | 5.8      | 6.0       | 26           | 60           |
| 8093230350             | 3.5      | 6.0       | 18           | 50           | 8093230590             | 5.9      | 6.0       | 26           | 60           |
| 8093230360             | 3.6      | 6.0       | 18           | 50           | 8093230600             | 6.0      | 6.0       | 26           | 60           |
| 8093230370             | 3.7      | 6.0       | 18           | 50           | 8093230610             | 6.1      | 8.0       | 28           | 70           |
| 8093230380             | 3.8      | 6.0       | 18           | 50           | 8093230620             | 6.2      | 8.0       | 28           | 70           |
| 8093230390             | 3.9      | 6.0       | 18           | 50           | 8093230630             | 6.3      | 8.0       | 28           | 70           |
| 8093230400             | 4.0      | 6.0       | 18           | 50           | 8093230640             | 6.4      | 8.0       | 30           | 70           |
| 8093230410             | 4.1      | 6.0       | 20           | 60           | 8093230650             | 6.5      | 8.0       | 30           | 70           |
| 8093230420             | 4.2      | 6.0       | 20           | 60           | 8093230660             | 6.6      | 8.0       | 30           | 70           |
| 8093230430             | 4.3      | 6.0       | 20           | 60           | 8093230670             | 6.7      | 8.0       | 30           | 70           |
| 8093230440             | 4.4      | 6.0       | 20           | 60           | 8093230680             | 6.8      | 8.0       | 30           | 70           |
| 8093230450             | 4.5      | 6.0       | 22           | 60           | 8093230690             | 6.9      | 8.0       | 30           | 70           |
| 8093230460             | 4.6      | 6.0       | 22           | 60           | 8093230700             | 7.0      | 8.0       | 30           | 70           |
| 8093230470             | 4.7      | 6.0       | 22           | 60           | 8093230710             | 7.1      | 8.0       | 34           | 70           |
| 8093230480             | 4.8      | 6.0       | 22           | 60           | 8093230720             | 7.2      | 8.0       | 34           | 70           |
| 8093230490             | 4.9      | 6.0       | 22           | 60           | 8093230730             | 7.3      | 8.0       | 34           | 70           |
| 8093230500             | 5.0      | 6.0       | 22           | 60           | 8093230740             | 7.4      | 8.0       | 34           | 70           |
| 8093230510             | 5.1      | 6.0       | 24           | 60           | 8093230750             | 7.5      | 8.0       | 34           | 70           |
| 8093230520             | 5.2      | 6.0       | 24           | 60           | 8093230760             | 7.6      | 8.0       | 34           | 70           |
| 8093230530             | 5.3      | 6.0       | 24           | 60           | 8093230770             | 7.7      | 8.0       | 34           | 70           |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| h7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   |       | ○      |    | ●     |       | ○     |       |      |      |    |       |       |       |       |



## BF DRILL 2XD FLAT BOTTOM

MG  
HM

### Series No. 809323

► cutting conditions : p.55

180° point angle enables drilling of flat, inclined and curved surfaces.

Optimised flute design for excellent chip evacuation.

High strength cutting edge for improved tool life.

Minimised burrs at entrance and exit of thin plate.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8093230780             | 7.8      | 8.0       | 34           | 70           | 8093231050             | 10.5     | 12.0      | 48           | 90           |
| 8093230790             | 7.9      | 8.0       | 34           | 70           | 8093231080             | 10.8     | 12.0      | 48           | 90           |
| 8093230800             | 8.0      | 8.0       | 34           | 70           | 8093231100             | 11.0     | 12.0      | 48           | 90           |
| 8093230810             | 8.1      | 10.0      | 38           | 80           | 8093231150             | 11.5     | 12.0      | 50           | 90           |
| 8093230820             | 8.2      | 10.0      | 38           | 80           | 8093231180             | 11.8     | 12.0      | 52           | 90           |
| 8093230830             | 8.3      | 10.0      | 38           | 80           | 8093231190             | 11.9     | 12.0      | 52           | 90           |
| 8093230840             | 8.4      | 10.0      | 38           | 80           | 8093231200             | 12.0     | 12.0      | 52           | 90           |
| 8093230850             | 8.5      | 10.0      | 38           | 80           | 8093231250             | 12.5     | 14.0      | 54           | 100          |
| 8093230860             | 8.6      | 10.0      | 38           | 80           | 8093231300             | 13.0     | 14.0      | 56           | 100          |
| 8093230870             | 8.7      | 10.0      | 40           | 80           | 8093231350             | 13.5     | 14.0      | 58           | 100          |
| 8093230880             | 8.8      | 10.0      | 40           | 80           | 8093231400             | 14.0     | 14.0      | 58           | 100          |
| 8093230890             | 8.9      | 10.0      | 40           | 80           | 8093231450             | 14.5     | 16.0      | 62           | 105          |
| 8093230900             | 9.0      | 10.0      | 40           | 80           | 8093231500             | 15.0     | 16.0      | 62           | 105          |
| 8093230910             | 9.1      | 10.0      | 42           | 80           | 8093231550             | 15.5     | 16.0      | 64           | 115          |
| 8093230920             | 9.2      | 10.0      | 42           | 80           | 8093231600             | 16.0     | 16.0      | 64           | 115          |
| 8093230930             | 9.3      | 10.0      | 42           | 80           | 8093231650             | 16.5     | 18.0      | 70           | 125          |
| 8093230940             | 9.4      | 10.0      | 42           | 80           | 8093231700             | 17.0     | 18.0      | 70           | 125          |
| 8093230950             | 9.5      | 10.0      | 42           | 80           | 8093231750             | 17.5     | 18.0      | 70           | 125          |
| 8093230960             | 9.6      | 10.0      | 42           | 80           | 8093231800             | 18.0     | 18.0      | 70           | 125          |
| 8093230970             | 9.7      | 10.0      | 45           | 80           | 8093231850             | 18.5     | 20.0      | 75           | 135          |
| 8093230980             | 9.8      | 10.0      | 45           | 80           | 8093231900             | 19.0     | 20.0      | 75           | 135          |
| 8093230990             | 9.9      | 10.0      | 45           | 80           | 8093231950             | 19.5     | 20.0      | 75           | 135          |
| 8093231000             | 10.0     | 10.0      | 45           | 80           | 8093232000             | 20.0     | 20.0      | 75           | 135          |
| 8093231020             | 10.2     | 12.0      | 46           | 90           |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TDCD | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| h7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   |       | ○      |    | ●     |       | ○     |       |      |      |    |       |       |       |       |





## BF DRILL 5XD FLAT BOTTOM

MG  
HM



### Series No. 811323

► cutting conditions : p.55

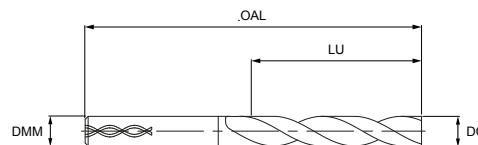
180° point angle enables drilling of flat, inclined and curved surfaces.

Optimised flute design for excellent chip evacuation.

High strength cutting edge for improved tool life.

Minimised burrs at entrance and exit of thin plate.

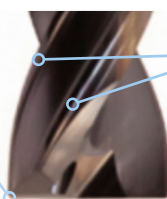
Double margin for improved hole straightness and roundness.



ULDR 5

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8113230300             | 3.0      | 6.0       | 28           | 66           | 8113230540             | 5.4      | 6.0       | 44           | 82           |
| 8113230310             | 3.1      | 6.0       | 28           | 66           | 8113230550             | 5.5      | 6.0       | 44           | 82           |
| 8113230320             | 3.2      | 6.0       | 28           | 66           | 8113230560             | 5.6      | 6.0       | 44           | 82           |
| 8113230330             | 3.3      | 6.0       | 28           | 66           | 8113230570             | 5.7      | 6.0       | 44           | 82           |
| 8113230340             | 3.4      | 6.0       | 28           | 66           | 8113230580             | 5.8      | 6.0       | 44           | 82           |
| 8113230350             | 3.5      | 6.0       | 28           | 66           | 8113230590             | 5.9      | 6.0       | 44           | 82           |
| 8113230360             | 3.6      | 6.0       | 28           | 66           | 8113230600             | 6.0      | 6.0       | 44           | 82           |
| 8113230370             | 3.7      | 6.0       | 28           | 66           | 8113230610             | 6.1      | 8.0       | 53           | 91           |
| 8113230380             | 3.8      | 6.0       | 36           | 74           | 8113230620             | 6.2      | 8.0       | 53           | 91           |
| 8113230390             | 3.9      | 6.0       | 36           | 74           | 8113230630             | 6.3      | 8.0       | 53           | 91           |
| 8113230400             | 4.0      | 6.0       | 36           | 74           | 8113230640             | 6.4      | 8.0       | 53           | 91           |
| 8113230410             | 4.1      | 6.0       | 36           | 74           | 8113230650             | 6.5      | 8.0       | 53           | 91           |
| 8113230420             | 4.2      | 6.0       | 36           | 74           | 8113230660             | 6.6      | 8.0       | 53           | 91           |
| 8113230430             | 4.3      | 6.0       | 36           | 74           | 8113230670             | 6.7      | 8.0       | 53           | 91           |
| 8113230440             | 4.4      | 6.0       | 36           | 74           | 8113230680             | 6.8      | 8.0       | 53           | 91           |
| 8113230450             | 4.5      | 6.0       | 36           | 74           | 8113230690             | 6.9      | 8.0       | 53           | 91           |
| 8113230460             | 4.6      | 6.0       | 36           | 74           | 8113230700             | 7.0      | 8.0       | 53           | 91           |
| 8113230470             | 4.7      | 6.0       | 36           | 74           | 8113230710             | 7.1      | 8.0       | 53           | 91           |
| 8113230480             | 4.8      | 6.0       | 44           | 82           | 8113230720             | 7.2      | 8.0       | 53           | 91           |
| 8113230490             | 4.9      | 6.0       | 44           | 82           | 8113230730             | 7.3      | 8.0       | 53           | 91           |
| 8113230500             | 5.0      | 6.0       | 44           | 82           | 8113230740             | 7.4      | 8.0       | 53           | 91           |
| 8113230510             | 5.1      | 6.0       | 44           | 82           | 8113230750             | 7.5      | 8.0       | 53           | 91           |
| 8113230520             | 5.2      | 6.0       | 44           | 82           | 8113230760             | 7.6      | 8.0       | 53           | 91           |
| 8113230530             | 5.3      | 6.0       | 44           | 82           | 8113230770             | 7.7      | 8.0       | 53           | 91           |

| Drill Dia.<br>(mm) | Corner Chamfer<br>(mm) |
|--------------------|------------------------|
| 3.0 - 6.0          | 0.06                   |
| 6.1 - 10.0         | 0.12                   |
| 10.2 - 14.0        | 0.18                   |
| 14.5 - 20.0        | 0.26                   |



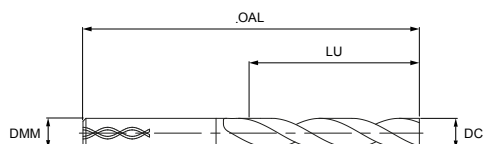
Double Margin for improved hole straightness and roundness

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| h7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   |       | ○      |    | ●     |       | ○     |       |      |      |    |       |       |       |       |



## BF DRILL 5XD FLAT BOTTOM



ULDR 5

MG  
HM

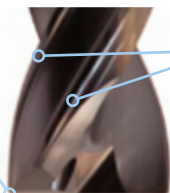
### Series No. 811323

► cutting conditions : p.55

180° point angle enables drilling of flat, inclined and curved surfaces.  
Optimised flute design for excellent chip evacuation.  
High strength cutting edge for improved tool life.  
Minimised burrs at entrance and exit of thin plate.  
Double margin for improved hole straightness and roundness.

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8113230780             | 7.8      | 8.0       | 53           | 91           | 8113231050             | 10.5     | 12.0      | 71           | 118          |
| 8113230790             | 7.9      | 8.0       | 53           | 91           | 8113231080             | 10.8     | 12.0      | 71           | 118          |
| 8113230800             | 8.0      | 8.0       | 53           | 91           | 8113231100             | 11.0     | 12.0      | 71           | 118          |
| 8113230810             | 8.1      | 10.0      | 61           | 103          | 8113231150             | 11.5     | 12.0      | 71           | 118          |
| 8113230820             | 8.2      | 10.0      | 61           | 103          | 8113231180             | 11.8     | 12.0      | 71           | 118          |
| 8113230830             | 8.3      | 10.0      | 61           | 103          | 8113231190             | 11.9     | 12.0      | 71           | 118          |
| 8113230840             | 8.4      | 10.0      | 61           | 103          | 8113231200             | 12.0     | 12.0      | 71           | 118          |
| 8113230850             | 8.5      | 10.0      | 61           | 103          | 8113231250             | 12.5     | 14.0      | 77           | 124          |
| 8113230860             | 8.6      | 10.0      | 61           | 103          | 8113231300             | 13.0     | 14.0      | 77           | 124          |
| 8113230870             | 8.7      | 10.0      | 61           | 103          | 8113231350             | 13.5     | 14.0      | 77           | 124          |
| 8113230880             | 8.8      | 10.0      | 61           | 103          | 8113231400             | 14.0     | 14.0      | 77           | 124          |
| 8113230890             | 8.9      | 10.0      | 61           | 103          | 8113231450             | 14.5     | 16.0      | 83           | 133          |
| 8113230900             | 9.0      | 10.0      | 61           | 103          | 8113231500             | 15.0     | 16.0      | 83           | 133          |
| 8113230910             | 9.1      | 10.0      | 61           | 103          | 8113231550             | 15.5     | 16.0      | 83           | 133          |
| 8113230920             | 9.2      | 10.0      | 61           | 103          | 8113231600             | 16.0     | 16.0      | 83           | 133          |
| 8113230930             | 9.3      | 10.0      | 61           | 103          | 8113231650             | 16.5     | 18.0      | 93           | 143          |
| 8113230940             | 9.4      | 10.0      | 61           | 103          | 8113231700             | 17.0     | 18.0      | 93           | 143          |
| 8113230950             | 9.5      | 10.0      | 61           | 103          | 8113231750             | 17.5     | 18.0      | 93           | 143          |
| 8113230960             | 9.6      | 10.0      | 61           | 103          | 8113231800             | 18.0     | 18.0      | 93           | 143          |
| 8113230970             | 9.7      | 10.0      | 61           | 103          | 8113231850             | 18.5     | 20.0      | 101          | 153          |
| 8113230980             | 9.8      | 10.0      | 61           | 103          | 8113231900             | 19.0     | 20.0      | 101          | 153          |
| 8113230990             | 9.9      | 10.0      | 61           | 103          | 8113231950             | 19.5     | 20.0      | 101          | 153          |
| 8113231000             | 10.0     | 10.0      | 61           | 103          | 8113232000             | 20.0     | 20.0      | 101          | 153          |
| 8113231020             | 10.2     | 12.0      | 71           | 118          |                        |          |           |              |              |

| Drill Dia.<br>(mm) | Corner Chamfer<br>(mm) |
|--------------------|------------------------|
| 3.0 - 6.0          | 0.06                   |
| 6.1 - 10.0         | 0.12                   |
| 10.2 - 14.0        | 0.18                   |
| 14.5 - 20.0        | 0.26                   |



Double Margin for improved  
hole straightness and roundness

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| h7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   |       | ○      |    | ●     |       | ○     |       |      |      |    |       |       |       |       |



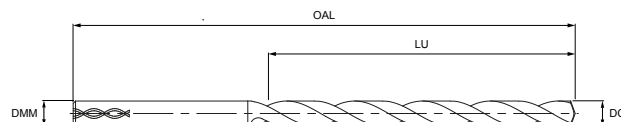
## MQL DRILL 10XD

MG  
HMBSG  
DIN  
6537

Series No. 810323, 810623

► cutting conditions : p.54

4 facet point geometry for accurate centering  
 Special flute design optimised for high volume chip  
 evacuation  
 Polished flute to enhance chip removal  
 MQL system compatible (Minimum Quantity Lubrication)



ULDR 10

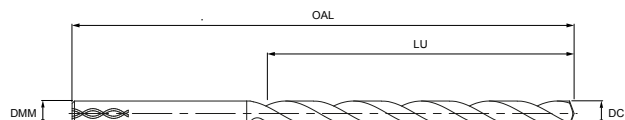
| 10xD<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | 10xD<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|-----------------|----------|-----------|--------------|--------------|-----------------|----------|-----------|--------------|--------------|
| 8103230300      | 3.0      | 3         | 39           | 90           | 8103230750      | 7.5      | 8         | 98           | 155          |
| 8106230300      |          | 6         | 40           | 80           | 8103230800      | 8.0      | 8         | 104          | 161          |
| 8103230330      | 3.3      | 4         | 46           | 97           | 8103230850      | 8.5      | 9         | 111          | 169          |
| 8106230330      |          | 6         | 47           | 87           | 8106230850      |          | 10        | 112          | 156          |
| 8103230350      | 3.5      | 4         | 46           | 97           | 8103230900      | 9.0      | 9         | 117          | 175          |
| 8106230350      |          | 6         | 47           | 87           | 8106230900      |          | 10        | 118          | 162          |
| 8103230400      | 4.0      | 4         | 52           | 103          | 8103230950      | 9.5      | 10        | 124          | 182          |
| 8106230400      |          | 6         | 53           | 93           | 8103231000      | 10.0     | 10        | 130          | 188          |
| 8103230420      | 4.2      | 5         | 59           | 112          | 8103231050      | 10.5     | 11        | 137          | 201          |
| 8106230420      |          | 6         | 60           | 100          | 8106231050      |          | 12        | 139          | 188          |
| 8103230450      | 4.5      | 5         | 59           | 112          | 8103231100      | 11.0     | 11        | 143          | 207          |
| 8106230450      |          | 6         | 60           | 100          | 8106231100      |          | 12        | 145          | 194          |
| 8103230500      | 5.0      | 5         | 65           | 118          | 8103231150      | 11.5     | 12        | 150          | 215          |
| 8106230500      |          | 6         | 66           | 106          | 8103231200      | 12.0     | 12        | 156          | 221          |
| 8103230550      | 5.5      | 6         | 72           | 127          | 8103231250      | 12.5     | 13        | 163          | 229          |
| 8103230600      | 6.0      | 6         | 78           | 133          | 8106231250      |          | 14        | 165          | 214          |
| 8103230650      | 6.5      | 7         | 85           | 141          | 8103231300      | 13.0     | 13        | 169          | 235          |
| 8106230650      |          | 8         | 86           | 126          | 8106231300      |          | 14        | 171          | 220          |
| 8103230680      | 6.8      | 7         | 91           | 147          | 8103231350      | 13.5     | 14        | 176          | 243          |
| 8106230680      |          | 8         | 92           | 132          | 8103231400      | 14.0     | 14        | 182          | 249          |
| 8103230700      | 7.0      | 7         | 91           | 147          |                 |          |           |              |              |
| 8106230700      |          | 8         | 92           | 132          |                 |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDDM |
|---------------------------------|----------------------------------|
| h7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     |        |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



## MQL DRILL 15XD, 20XD



ULDR 15, ULDR 20

MG  
HM

BSG  
DIN  
6537



Series No. 815323, 815623  
Series No. 820323, 820623

► cutting conditions : p.54

4 facet point geometry for accurate centering  
Special flute design optimised for high volume chip evacuation  
Polished flute to enhance chip removal  
MQL system compatible (Minimum Quantity Lubrication)

| 15xD<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|-----------------|----------|-----------|--------------|--------------|
| 8153230300      | 3.0      | 3         | 54           | 105          |
| 8156230300      |          | 6         | 55           | 95           |
| 8153230350      | 3.5      | 4         | 63           | 114          |
| 8156230350      |          | 6         | 64           | 104          |
| 8153230400      | 4.0      | 4         | 72           | 123          |
| 8156230400      |          | 6         | 73           | 113          |
| 8153230450      | 4.5      | 5         | 81           | 134          |
| 8156230450      |          | 6         | 82           | 122          |
| 8153230500      | 5.0      | 5         | 90           | 143          |
| 8156230500      |          | 6         | 91           | 131          |
| 8153230550      | 5.5      | 6         | 99           | 154          |
| 8153230600      | 6.0      | 6         | 108          | 163          |
| 8153230700      | 7.0      | 7         | 126          | 182          |
| 8156230700      |          | 8         | 127          | 167          |
| 8153230800      | 8.0      | 8         | 144          | 201          |
| 8153230900      | 9.0      | 9         | 162          | 220          |
| 8156230900      |          | 10        | 163          | 207          |
| 8153231000      | 10.0     | 10        | 180          | 238          |
| 8153231100      | 11.0     | 11        | 198          | 262          |
| 8156231100      |          | 12        | 200          | 249          |
| 8153231200      | 12.0     | 12        | 216          | 281          |

| 20xD<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|-----------------|----------|-----------|--------------|--------------|
| 8203230300      | 3.0      | 3         | 69           | 120          |
| 8206230300      |          | 6         | 70           | 110          |
| 8203230350      | 3.5      | 4         | 81           | 132          |
| 8206230350      |          | 6         | 82           | 122          |
| 8203230400      | 4.0      | 4         | 92           | 143          |
| 8206230400      |          | 6         | 93           | 133          |
| 8203230450      | 4.5      | 5         | 104          | 157          |
| 8206230450      |          | 6         | 116          | 156          |
| 8203230500      | 5.0      | 5         | 115          | 168          |
| 8206230500      |          | 6         | 128          | 168          |
| 8203230550      | 5.5      | 6         | 127          | 182          |
| 8203230600      | 6.0      | 6         | 138          | 193          |
| 8203230700      | 7.0      | 7         | 161          | 217          |
| 8206230700      |          | 8         | 162          | 202          |
| 8203230800      | 8.0      | 8         | 184          | 241          |
| 8203230900      | 9.0      | 9         | 207          | 265          |
| 8206230900      |          | 10        | 208          | 252          |
| 8203231000      | 10.0     | 10        | 230          | 288          |
| 8206231100      | 11.0     | 12        | 255          | 304          |
| 8203231200      | 12.0     | 12        | 276          | 341          |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDDMM |
|---------------------------------|-----------------------------------|
| h7                              | h6                                |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDDMM |
|---------------------------------|-----------------------------------|
| h7                              | h6                                |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     |        |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



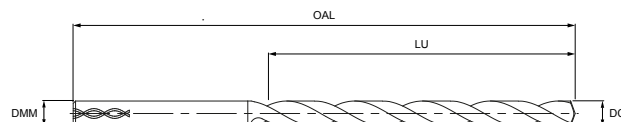
## MQL DRILL 25XD, 30XD

MG  
HMBSG  
DIN  
6537

Series No. 826323, 860323

► cutting conditions : p.54

4 facet point geometry for accurate centering  
 Special flute design optimised for high volume chip  
 evacuation  
 Polished flute to enhance chip removal  
 MQL system compatible (Minimum Quantity Lubrication)



ULDR 25, ULDR 30

| 25xD<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|-----------------|----------|-----------|--------------|--------------|
| 8263230300      | 3.0      | 6.0       | 85           | 125          |
| 8263230350      | 3.5      | 6.0       | 99           | 139          |
| 8263230400      | 4.0      | 6.0       | 113          | 153          |
| 8263230450      | 4.5      | 6.0       | 127          | 167          |
| 8263230500      | 5.0      | 6.0       | 141          | 181          |
| 8263230550      | 5.5      | 6.0       | 155          | 195          |
| 8263230600      | 6.0      | 6.0       | 169          | 209          |
| 8263230700      | 7.0      | 8.0       | 197          | 237          |
| 8263230800      | 8.0      | 8.0       | 225          | 265          |
| 8263230900      | 9.0      | 10.0      | 253          | 297          |
| 8263231000      | 10.0     | 10.0      | 282          | 326          |

| 30xD<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|-----------------|----------|-----------|--------------|--------------|
| 8603230300      | 3.0      | 6.0       | 100          | 140          |
| 8603230350      | 3.5      | 6.0       | 117          | 157          |
| 8603230400      | 4.0      | 6.0       | 133          | 173          |
| 8603230450      | 4.5      | 6.0       | 150          | 190          |
| 8603230500      | 5.0      | 6.0       | 166          | 206          |
| 8603230550      | 5.5      | 6.0       | 183          | 223          |
| 8603230600      | 6.0      | 6.0       | 199          | 239          |
| 8603230700      | 7.0      | 8.0       | 232          | 272          |
| 8603230800      | 8.0      | 8.0       | 265          | 305          |

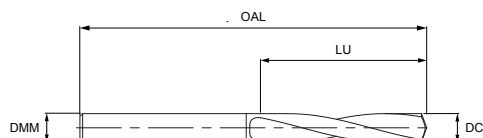
| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| h7                              | h6                               |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| h7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     |        |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



## PULSAR DRILL 3XD FOR HARDENED STEEL ≤HRc70



ULDR 3

MG  
HMBSG  
DIN  
6537

### Series No. 821223

► cutting conditions : p.56

Special Design  
Minimized cutting load through special  
point thinning  
Good chip removal  
Powerful Drilling

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8212230300             | 3.0      | 3         | 16           | 46           | 8212230700             | 7.0      | 8         | 45           | 85           |
| 8212230330             | 3.3      | 4         | 18           | 48           | 8212230750             | 7.5      | 8         | 45           | 85           |
| 8212230340             | 3.4      | 4         | 20           | 50           | 8212230800             | 8.0      | 8         | 50           | 98           |
| 8212230350             | 3.5      | 4         | 20           | 50           | 8212230850             | 8.5      | 10        | 50           | 98           |
| 8212230400             | 4.0      | 4         | 22           | 52           | 8212230860             | 8.6      | 10        | 57           | 105          |
| 8212230420             | 4.2      | 6         | 25           | 65           | 8212230880             | 8.8      | 10        | 57           | 105          |
| 8212230430             | 4.3      | 6         | 28           | 68           | 8212230900             | 9.0      | 10        | 57           | 105          |
| 8212230440             | 4.4      | 6         | 28           | 68           | 8212230950             | 9.5      | 10        | 57           | 105          |
| 8212230450             | 4.5      | 6         | 28           | 68           | 8212231000             | 10.0     | 10        | 63           | 111          |
| 8212230500             | 5.0      | 6         | 32           | 72           | 8212231020             | 10.2     | 12        | 63           | 111          |
| 8212230510             | 5.1      | 6         | 32           | 72           | 8212231030             | 10.3     | 12        | 63           | 111          |
| 8212230520             | 5.2      | 6         | 32           | 72           | 8212231050             | 10.5     | 12        | 63           | 111          |
| 8212230550             | 5.5      | 6         | 35           | 75           | 8212231080             | 10.8     | 12        | 71           | 119          |
| 8212230600             | 6.0      | 6         | 35           | 75           | 8212231100             | 11.0     | 12        | 71           | 119          |
| 8212230650             | 6.5      | 8         | 40           | 80           | 8212231150             | 11.5     | 12        | 71           | 119          |
| 8212230680             | 6.8      | 8         | 45           | 85           | 8212231200             | 12.0     | 12        | 71           | 119          |
| 8212230690             | 6.9      | 8         | 45           | 85           | 8212231400             | 14.0     | 14        | 77           | 125          |

| Drill Dia.<br>Tolerance<br>TDCD | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| h7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary |     |     | ●     |        |    |       |       |       |       |      |      |    |       |       | ●     |       |



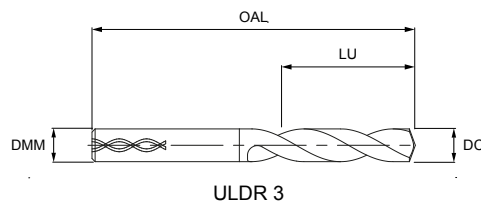
## GP DRILL T/C 3XD

MG  
HMBSG  
DIN  
6537

## Series No. 803323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling



ULDR 3

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8033230300             | 3.0      | 6.0       | 20           | 62           | 8033230570             | 5.7      | 6.0       | 28           | 66           |
| 8033230310             | 3.1      | 6.0       | 20           | 62           | 8033230580             | 5.8      | 6.0       | 28           | 66           |
| 8033230320             | 3.2      | 6.0       | 20           | 62           | 8033230590             | 5.9      | 6.0       | 28           | 66           |
| 8033230330             | 3.3      | 6.0       | 20           | 62           | 8033230600             | 6.0      | 6.0       | 28           | 66           |
| 8033230340             | 3.4      | 6.0       | 20           | 62           | 8033230610             | 6.1      | 8.0       | 34           | 79           |
| 8033230350             | 3.5      | 6.0       | 20           | 62           | 8033230620             | 6.2      | 8.0       | 34           | 79           |
| 8033230360             | 3.6      | 6.0       | 20           | 62           | 8033230630             | 6.3      | 8.0       | 34           | 79           |
| 8033230370             | 3.7      | 6.0       | 20           | 62           | 8033230640             | 6.4      | 8.0       | 34           | 79           |
| 8033230380             | 3.8      | 6.0       | 24           | 66           | 8033230650             | 6.5      | 8.0       | 34           | 79           |
| 8033230390             | 3.9      | 6.0       | 24           | 66           | 8033230660             | 6.6      | 8.0       | 34           | 79           |
| 8033230400             | 4.0      | 6.0       | 24           | 66           | 8033230670             | 6.7      | 8.0       | 34           | 79           |
| 8033230410             | 4.1      | 6.0       | 24           | 66           | 8033230680             | 6.8      | 8.0       | 34           | 79           |
| 8033230420             | 4.2      | 6.0       | 24           | 66           | 8033230690             | 6.9      | 8.0       | 34           | 79           |
| 8033230430             | 4.3      | 6.0       | 24           | 66           | 8033230700             | 7.0      | 8.0       | 34           | 79           |
| 8033230440             | 4.4      | 6.0       | 24           | 66           | 8033230710             | 7.1      | 8.0       | 41           | 79           |
| 8033230450             | 4.5      | 6.0       | 24           | 66           | 8033230720             | 7.2      | 8.0       | 41           | 79           |
| 8033230460             | 4.6      | 6.0       | 24           | 66           | 8033230730             | 7.3      | 8.0       | 41           | 79           |
| 8033230470             | 4.7      | 6.0       | 24           | 66           | 8033230740             | 7.4      | 8.0       | 41           | 79           |
| 8033230480             | 4.8      | 6.0       | 28           | 66           | 8033230750             | 7.5      | 8.0       | 41           | 79           |
| 8033230490             | 4.9      | 6.0       | 28           | 66           | 8033230760             | 7.6      | 8.0       | 41           | 79           |
| 8033230500             | 5.0      | 6.0       | 28           | 66           | 8033230770             | 7.7      | 8.0       | 41           | 79           |
| 8033230510             | 5.1      | 6.0       | 28           | 66           | 8033230780             | 7.8      | 8.0       | 41           | 79           |
| 8033230520             | 5.2      | 6.0       | 28           | 66           | 8033230790             | 7.9      | 8.0       | 41           | 79           |
| 8033230530             | 5.3      | 6.0       | 28           | 66           | 8033230800             | 8.0      | 8.0       | 41           | 79           |
| 8033230540             | 5.4      | 6.0       | 28           | 66           | 8033230810             | 8.1      | 10.0      | 47           | 89           |
| 8033230550             | 5.5      | 6.0       | 28           | 66           | 8033230820             | 8.2      | 10.0      | 47           | 89           |
| 8033230560             | 5.6      | 6.0       | 28           | 66           | 8033230830             | 8.3      | 10.0      | 47           | 89           |

Drill Dia.  
Tolerance  
TCDC

m7

Shank Dia.  
Tolerance  
TCDMM

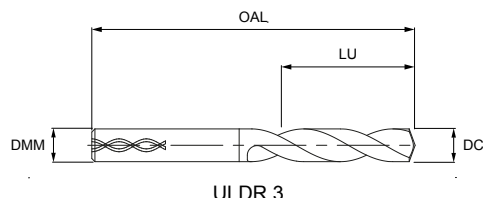
h6

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |





## GP DRILL T/C 3XD



MG  
HM

BSG  
DIN  
6537



### Series No. 803323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8033230840             | 8.4      | 10.0      | 47           | 89           | 8033231110             | 11.1     | 12.0      | 55           | 102          |
| 8033230850             | 8.5      | 10.0      | 47           | 89           | 8033231120             | 11.2     | 12.0      | 55           | 102          |
| 8033230860             | 8.6      | 10.0      | 47           | 89           | 8033231130             | 11.3     | 12.0      | 55           | 102          |
| 8033230870             | 8.7      | 10.0      | 47           | 89           | 8033231140             | 11.4     | 12.0      | 55           | 102          |
| 8033230880             | 8.8      | 10.0      | 47           | 89           | 8033231150             | 11.5     | 12.0      | 55           | 102          |
| 8033230890             | 8.9      | 10.0      | 47           | 89           | 8033231160             | 11.6     | 12.0      | 55           | 102          |
| 8033230900             | 9.0      | 10.0      | 47           | 89           | 8033231170             | 11.7     | 12.0      | 55           | 102          |
| 8033230910             | 9.1      | 10.0      | 47           | 89           | 8033231180             | 11.8     | 12.0      | 55           | 102          |
| 8033230920             | 9.2      | 10.0      | 47           | 89           | 8033231190             | 11.9     | 12.0      | 55           | 102          |
| 8033230930             | 9.3      | 10.0      | 47           | 89           | 8033231200             | 12.0     | 12.0      | 55           | 102          |
| 8033230940             | 9.4      | 10.0      | 47           | 89           | 8033231250             | 12.5     | 14.0      | 60           | 107          |
| 8033230950             | 9.5      | 10.0      | 47           | 89           | 8033231300             | 13.0     | 14.0      | 60           | 107          |
| 8033230960             | 9.6      | 10.0      | 47           | 89           | 8033231350             | 13.5     | 14.0      | 60           | 107          |
| 8033230970             | 9.7      | 10.0      | 47           | 89           | 8033231400             | 14.0     | 14.0      | 60           | 107          |
| 8033230980             | 9.8      | 10.0      | 47           | 89           | 8033231450             | 14.5     | 16.0      | 65           | 115          |
| 8033230990             | 9.9      | 10.0      | 47           | 89           | 8033231500             | 15.0     | 16.0      | 65           | 115          |
| 8033231000             | 10.0     | 10.0      | 47           | 89           | 8033231550             | 15.5     | 16.0      | 65           | 115          |
| 8033231010             | 10.1     | 12.0      | 55           | 102          | 8033231600             | 16.0     | 16.0      | 65           | 115          |
| 8033231020             | 10.2     | 12.0      | 55           | 102          | 8033231650             | 16.5     | 18.0      | 73           | 123          |
| 8033231030             | 10.3     | 12.0      | 55           | 102          | 8033231700             | 17.0     | 18.0      | 73           | 123          |
| 8033231040             | 10.4     | 12.0      | 55           | 102          | 8033231750             | 17.5     | 18.0      | 73           | 123          |
| 8033231050             | 10.5     | 12.0      | 55           | 102          | 8033231800             | 18.0     | 18.0      | 73           | 123          |
| 8033231060             | 10.6     | 12.0      | 55           | 102          | 8033231850             | 18.5     | 20.0      | 79           | 131          |
| 8033231070             | 10.7     | 12.0      | 55           | 102          | 8033231900             | 19.0     | 20.0      | 79           | 131          |
| 8033231080             | 10.8     | 12.0      | 55           | 102          | 8033231950             | 19.5     | 20.0      | 79           | 131          |
| 8033231090             | 10.9     | 12.0      | 55           | 102          | 8033232000             | 20.0     | 20.0      | 79           | 131          |
| 8033231100             | 11.0     | 12.0      | 55           | 102          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDDMM |
|---------------------------------|-----------------------------------|
| m7                              | h6                                |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |



## GP DRILL T/C 5XD

MG  
HM

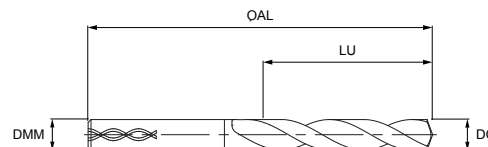
BSG  
DIN  
6537



### Series No. 804323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling



ULDR 5

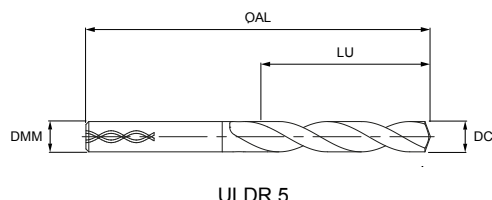
| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8043230100             | 1.0      | 3.0       | 8            | 55           | 8043230420             | 4.2      | 6.0       | 36           | 74           |
| 8043230110             | 1.1      | 3.0       | 12           | 55           | 8043230430             | 4.3      | 6.0       | 36           | 74           |
| 8043230120             | 1.2      | 3.0       | 12           | 55           | 8043230440             | 4.4      | 6.0       | 36           | 74           |
| 8043230130             | 1.3      | 3.0       | 12           | 55           | 8043230450             | 4.5      | 6.0       | 36           | 74           |
| 8043230140             | 1.4      | 3.0       | 12           | 55           | 8043230460             | 4.6      | 6.0       | 36           | 74           |
| 8043230150             | 1.5      | 3.0       | 16           | 55           | 8043230470             | 4.7      | 6.0       | 36           | 74           |
| 8043230160             | 1.6      | 3.0       | 16           | 55           | 8043230480             | 4.8      | 6.0       | 44           | 82           |
| 8043230170             | 1.7      | 3.0       | 16           | 55           | 8043230490             | 4.9      | 6.0       | 44           | 82           |
| 8043230180             | 1.8      | 3.0       | 16           | 55           | 8043230500             | 5.0      | 6.0       | 44           | 82           |
| 8043230190             | 1.9      | 3.0       | 16           | 55           | 8043230510             | 5.1      | 6.0       | 44           | 82           |
| 8043230200             | 2.0      | 4.0       | 21           | 57           | 8043230520             | 5.2      | 6.0       | 44           | 82           |
| 8043230210             | 2.1      | 4.0       | 21           | 57           | 8043230530             | 5.3      | 6.0       | 44           | 82           |
| 8043230220             | 2.2      | 4.0       | 21           | 57           | 8043230540             | 5.4      | 6.0       | 44           | 82           |
| 8043230230             | 2.3      | 4.0       | 21           | 57           | 8043230550             | 5.5      | 6.0       | 44           | 82           |
| 8043230240             | 2.4      | 4.0       | 21           | 57           | 8043230560             | 5.6      | 6.0       | 44           | 82           |
| 8043230250             | 2.5      | 4.0       | 21           | 57           | 8043230570             | 5.7      | 6.0       | 44           | 82           |
| 8043230260             | 2.6      | 4.0       | 21           | 57           | 8043230580             | 5.8      | 6.0       | 44           | 82           |
| 8043230270             | 2.7      | 4.0       | 21           | 57           | 8043230590             | 5.9      | 6.0       | 44           | 82           |
| 8043230280             | 2.8      | 4.0       | 21           | 57           | 8043230600             | 6.0      | 6.0       | 44           | 82           |
| 8043230290             | 2.9      | 4.0       | 21           | 57           | 8043230610             | 6.1      | 8.0       | 53           | 91           |
| 8043230300             | 3.0      | 6.0       | 28           | 66           | 8043230620             | 6.2      | 8.0       | 53           | 91           |
| 8043230310             | 3.1      | 6.0       | 28           | 66           | 8043230630             | 6.3      | 8.0       | 53           | 91           |
| 8043230320             | 3.2      | 6.0       | 28           | 66           | 8043230640             | 6.4      | 8.0       | 53           | 91           |
| 8043230330             | 3.3      | 6.0       | 28           | 66           | 8043230650             | 6.5      | 8.0       | 53           | 91           |
| 8043230340             | 3.4      | 6.0       | 28           | 66           | 8043230660             | 6.6      | 8.0       | 53           | 91           |
| 8043230350             | 3.5      | 6.0       | 28           | 66           | 8043230670             | 6.7      | 8.0       | 53           | 91           |
| 8043230360             | 3.6      | 6.0       | 28           | 66           | 8043230680             | 6.8      | 8.0       | 53           | 91           |
| 8043230370             | 3.7      | 6.0       | 28           | 66           | 8043230690             | 6.9      | 8.0       | 53           | 91           |
| 8043230380             | 3.8      | 6.0       | 36           | 74           | 8043230700             | 7.0      | 8.0       | 53           | 91           |
| 8043230390             | 3.9      | 6.0       | 36           | 74           | 8043230710             | 7.1      | 8.0       | 53           | 91           |
| 8043230400             | 4.0      | 6.0       | 36           | 74           | 8043230720             | 7.2      | 8.0       | 53           | 91           |
| 8043230410             | 4.1      | 6.0       | 36           | 74           | 8043230730             | 7.3      | 8.0       | 53           | 91           |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |



## GP DRILL T/C 5XD



MG  
HM

BSG  
DIN  
6537



### Series No. 804323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8043230740             | 7.4      | 8.0       | 53           | 91           | 8043231060             | 10.6     | 12.0      | 71           | 118          |
| 8043230750             | 7.5      | 8.0       | 53           | 91           | 8043231070             | 10.7     | 12.0      | 71           | 118          |
| 8043230760             | 7.6      | 8.0       | 53           | 91           | 8043231080             | 10.8     | 12.0      | 71           | 118          |
| 8043230770             | 7.7      | 8.0       | 53           | 91           | 8043231090             | 10.9     | 12.0      | 71           | 118          |
| 8043230780             | 7.8      | 8.0       | 53           | 91           | 8043231100             | 11.0     | 12.0      | 71           | 118          |
| 8043230790             | 7.9      | 8.0       | 53           | 91           | 8043231110             | 11.1     | 12.0      | 71           | 118          |
| 8043230800             | 8.0      | 8.0       | 53           | 91           | 8043231120             | 11.2     | 12.0      | 71           | 118          |
| 8043230810             | 8.1      | 10.0      | 61           | 103          | 8043231130             | 11.3     | 12.0      | 71           | 118          |
| 8043230820             | 8.2      | 10.0      | 61           | 103          | 8043231140             | 11.4     | 12.0      | 71           | 118          |
| 8043230830             | 8.3      | 10.0      | 61           | 103          | 8043231150             | 11.5     | 12.0      | 71           | 118          |
| 8043230840             | 8.4      | 10.0      | 61           | 103          | 8043231160             | 11.6     | 12.0      | 71           | 118          |
| 8043230850             | 8.5      | 10.0      | 61           | 103          | 8043231170             | 11.7     | 12.0      | 71           | 118          |
| 8043230860             | 8.6      | 10.0      | 61           | 103          | 8043231180             | 11.8     | 12.0      | 71           | 118          |
| 8043230870             | 8.7      | 10.0      | 61           | 103          | 8043231190             | 11.9     | 12.0      | 71           | 118          |
| 8043230880             | 8.8      | 10.0      | 61           | 103          | 8043231200             | 12.0     | 12.0      | 71           | 118          |
| 8043230890             | 8.9      | 10.0      | 61           | 103          | 8043231250             | 12.5     | 14.0      | 77           | 124          |
| 8043230900             | 9.0      | 10.0      | 61           | 103          | 8043231300             | 13.0     | 14.0      | 77           | 124          |
| 8043230910             | 9.1      | 10.0      | 61           | 103          | 8043231350             | 13.5     | 14.0      | 77           | 124          |
| 8043230920             | 9.2      | 10.0      | 61           | 103          | 8043231400             | 14.0     | 14.0      | 77           | 124          |
| 8043230930             | 9.3      | 10.0      | 61           | 103          | 8043231450             | 14.5     | 16.0      | 83           | 133          |
| 8043230940             | 9.4      | 10.0      | 61           | 103          | 8043231500             | 15.0     | 16.0      | 83           | 133          |
| 8043230950             | 9.5      | 10.0      | 61           | 103          | 8043231550             | 15.5     | 16.0      | 83           | 133          |
| 8043230960             | 9.6      | 10.0      | 61           | 103          | 8043231600             | 16.0     | 16.0      | 83           | 133          |
| 8043230970             | 9.7      | 10.0      | 61           | 103          | 8043231650             | 16.5     | 18.0      | 93           | 143          |
| 8043230980             | 9.8      | 10.0      | 61           | 103          | 8043231700             | 17.0     | 18.0      | 93           | 143          |
| 8043230990             | 9.9      | 10.0      | 61           | 103          | 8043231750             | 17.5     | 18.0      | 93           | 143          |
| 8043231000             | 10.0     | 10.0      | 61           | 103          | 8043231800             | 18.0     | 18.0      | 93           | 143          |
| 8043231010             | 10.1     | 12.0      | 71           | 118          | 8043231850             | 18.5     | 20.0      | 101          | 153          |
| 8043231020             | 10.2     | 12.0      | 71           | 118          | 8043231900             | 19.0     | 20.0      | 101          | 153          |
| 8043231030             | 10.3     | 12.0      | 71           | 118          | 8043231950             | 19.5     | 20.0      | 101          | 153          |
| 8043231040             | 10.4     | 12.0      | 71           | 118          | 8043232000             | 20.0     | 20.0      | 101          | 153          |
| 8043231050             | 10.5     | 12.0      | 71           | 118          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |



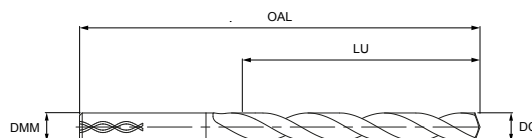
## GP DRILL T/C 8XD

MG  
HMBSG  
DIN  
6537

## Series No. 805323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling



ULDR 8

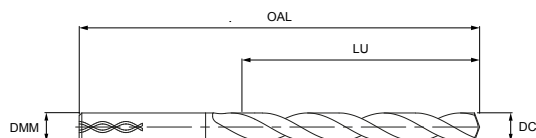
| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8053230300             | 3.0      | 6.0       | 34           | 72           | 8053230530             | 5.3      | 6.0       | 57           | 95           |
| 8053230310             | 3.1      | 6.0       | 34           | 72           | 8053230540             | 5.4      | 6.0       | 57           | 95           |
| 8053230320             | 3.2      | 6.0       | 34           | 72           | 8053230550             | 5.5      | 6.0       | 57           | 95           |
| 8053230330             | 3.3      | 6.0       | 34           | 72           | 8053230560             | 5.6      | 6.0       | 57           | 95           |
| 8053230340             | 3.4      | 6.0       | 34           | 72           | 8053230570             | 5.7      | 6.0       | 57           | 95           |
| 8053230350             | 3.5      | 6.0       | 34           | 72           | 8053230580             | 5.8      | 6.0       | 57           | 95           |
| 8053230360             | 3.6      | 6.0       | 34           | 72           | 8053230590             | 5.9      | 6.0       | 57           | 95           |
| 8053230370             | 3.7      | 6.0       | 34           | 72           | 8053230600             | 6.0      | 6.0       | 57           | 95           |
| 8053230380             | 3.8      | 6.0       | 43           | 81           | 8053230610             | 6.1      | 8.0       | 76           | 114          |
| 8053230390             | 3.9      | 6.0       | 43           | 81           | 8053230620             | 6.2      | 8.0       | 76           | 114          |
| 8053230400             | 4.0      | 6.0       | 43           | 81           | 8053230630             | 6.3      | 8.0       | 76           | 114          |
| 8053230410             | 4.1      | 6.0       | 43           | 81           | 8053230640             | 6.4      | 8.0       | 76           | 114          |
| 8053230420             | 4.2      | 6.0       | 43           | 81           | 8053230650             | 6.5      | 8.0       | 76           | 114          |
| 8053230430             | 4.3      | 6.0       | 43           | 81           | 8053230660             | 6.6      | 8.0       | 76           | 114          |
| 8053230440             | 4.4      | 6.0       | 43           | 81           | 8053230670             | 6.7      | 8.0       | 76           | 114          |
| 8053230450             | 4.5      | 6.0       | 43           | 81           | 8053230680             | 6.8      | 8.0       | 76           | 114          |
| 8053230460             | 4.6      | 6.0       | 43           | 81           | 8053230690             | 6.9      | 8.0       | 76           | 114          |
| 8053230470             | 4.7      | 6.0       | 43           | 81           | 8053230700             | 7.0      | 8.0       | 76           | 114          |
| 8053230480             | 4.8      | 6.0       | 57           | 95           | 8053230710             | 7.1      | 8.0       | 76           | 114          |
| 8053230490             | 4.9      | 6.0       | 57           | 95           | 8053230720             | 7.2      | 8.0       | 76           | 114          |
| 8053230500             | 5.0      | 6.0       | 57           | 95           | 8053230730             | 7.3      | 8.0       | 76           | 114          |
| 8053230510             | 5.1      | 6.0       | 57           | 95           | 8053230740             | 7.4      | 8.0       | 76           | 114          |
| 8053230520             | 5.2      | 6.0       | 57           | 95           | 8053230750             | 7.5      | 8.0       | 76           | 114          |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |



## GP DRILL T/C 8XD



ULDR 8

MG  
HMBSG  
DIN  
6537

### Series No. 805323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8053230760             | 7.6      | 8.0       | 76           | 114          | 8053230990             | 9.9      | 10.0      | 95           | 142          |
| 8053230770             | 7.7      | 8.0       | 76           | 114          | 8053231000             | 10.0     | 10.0      | 95           | 142          |
| 8053230780             | 7.8      | 8.0       | 76           | 114          | 8053231010             | 10.1     | 12.0      | 114          | 162          |
| 8053230790             | 7.9      | 8.0       | 76           | 114          | 8053231020             | 10.2     | 12.0      | 114          | 162          |
| 8053230800             | 8.0      | 8.0       | 76           | 114          | 8053231030             | 10.3     | 12.0      | 114          | 162          |
| 8053230810             | 8.1      | 10.0      | 95           | 142          | 8053231040             | 10.4     | 12.0      | 114          | 162          |
| 8053230820             | 8.2      | 10.0      | 95           | 142          | 8053231050             | 10.5     | 12.0      | 114          | 162          |
| 8053230830             | 8.3      | 10.0      | 95           | 142          | 8053231060             | 10.6     | 12.0      | 114          | 162          |
| 8053230840             | 8.4      | 10.0      | 95           | 142          | 8053231070             | 10.7     | 12.0      | 114          | 162          |
| 8053230850             | 8.5      | 10.0      | 95           | 142          | 8053231080             | 10.8     | 12.0      | 114          | 162          |
| 8053230860             | 8.6      | 10.0      | 95           | 142          | 8053231090             | 10.9     | 12.0      | 114          | 162          |
| 8053230870             | 8.7      | 10.0      | 95           | 142          | 8053231100             | 11.0     | 12.0      | 114          | 162          |
| 8053230880             | 8.8      | 10.0      | 95           | 142          | 8053231110             | 11.1     | 12.0      | 114          | 162          |
| 8053230890             | 8.9      | 10.0      | 95           | 142          | 8053231120             | 11.2     | 12.0      | 114          | 162          |
| 8053230900             | 9.0      | 10.0      | 95           | 142          | 8053231130             | 11.3     | 12.0      | 114          | 162          |
| 8053230910             | 9.1      | 10.0      | 95           | 142          | 8053231140             | 11.4     | 12.0      | 114          | 162          |
| 8053230920             | 9.2      | 10.0      | 95           | 142          | 8053231150             | 11.5     | 12.0      | 114          | 162          |
| 8053230930             | 9.3      | 10.0      | 95           | 142          | 8053231160             | 11.6     | 12.0      | 114          | 162          |
| 8053230940             | 9.4      | 10.0      | 95           | 142          | 8053231170             | 11.7     | 12.0      | 114          | 162          |
| 8053230950             | 9.5      | 10.0      | 95           | 142          | 8053231180             | 11.8     | 12.0      | 114          | 162          |
| 8053230960             | 9.6      | 10.0      | 95           | 142          | 8053231190             | 11.9     | 12.0      | 114          | 162          |
| 8053230970             | 9.7      | 10.0      | 95           | 142          | 8053231200             | 12.0     | 12.0      | 114          | 162          |
| 8053230980             | 9.8      | 10.0      | 95           | 142          |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDDMM |
|---------------------------------|-----------------------------------|
| m7                              | h6                                |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |



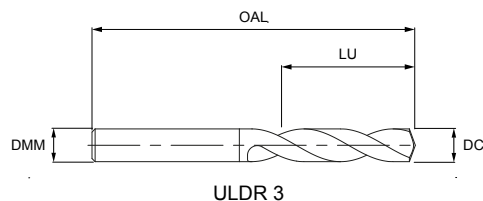
## GP DRILL 3XD

MG  
HMBSG  
DIN  
6537

## Series No. 807323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling



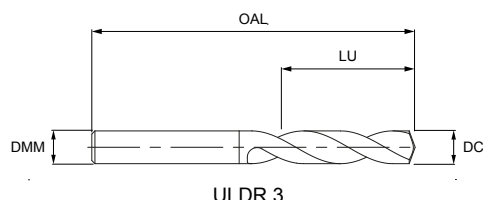
| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8073230300             | 3.0      | 6.0       | 20           | 62           | 8073230590             | 5.9      | 6.0       | 28           | 66           |
| 8073230310             | 3.1      | 6.0       | 20           | 62           | 8073230600             | 6.0      | 6.0       | 28           | 66           |
| 8073230320             | 3.2      | 6.0       | 20           | 62           | 8073230610             | 6.1      | 8.0       | 34           | 79           |
| 8073230330             | 3.3      | 6.0       | 20           | 62           | 8073230620             | 6.2      | 8.0       | 34           | 79           |
| 8073230340             | 3.4      | 6.0       | 20           | 62           | 8073230630             | 6.3      | 8.0       | 34           | 79           |
| 8073230350             | 3.5      | 6.0       | 20           | 62           | 8073230640             | 6.4      | 8.0       | 34           | 79           |
| 8073230360             | 3.6      | 6.0       | 20           | 62           | 8073230650             | 6.5      | 8.0       | 34           | 79           |
| 8073230370             | 3.7      | 6.0       | 20           | 62           | 8073230660             | 6.6      | 8.0       | 34           | 79           |
| 8073230380             | 3.8      | 6.0       | 24           | 66           | 8073230670             | 6.7      | 8.0       | 34           | 79           |
| 8073230390             | 3.9      | 6.0       | 24           | 66           | 8073230680             | 6.8      | 8.0       | 34           | 79           |
| 8073230400             | 4.0      | 6.0       | 24           | 66           | 8073230690             | 6.9      | 8.0       | 34           | 79           |
| 8073230410             | 4.1      | 6.0       | 24           | 66           | 8073230700             | 7.0      | 8.0       | 34           | 79           |
| 8073230420             | 4.2      | 6.0       | 24           | 66           | 8073230710             | 7.1      | 8.0       | 41           | 79           |
| 8073230430             | 4.3      | 6.0       | 24           | 66           | 8073230720             | 7.2      | 8.0       | 41           | 79           |
| 8073230440             | 4.4      | 6.0       | 24           | 66           | 8073230730             | 7.3      | 8.0       | 41           | 79           |
| 8073230450             | 4.5      | 6.0       | 24           | 66           | 8073230740             | 7.4      | 8.0       | 41           | 79           |
| 8073230460             | 4.6      | 6.0       | 24           | 66           | 8073230750             | 7.5      | 8.0       | 41           | 79           |
| 8073230470             | 4.7      | 6.0       | 24           | 66           | 8073230760             | 7.6      | 8.0       | 41           | 79           |
| 8073230480             | 4.8      | 6.0       | 28           | 66           | 8073230770             | 7.7      | 8.0       | 41           | 79           |
| 8073230490             | 4.9      | 6.0       | 28           | 66           | 8073230780             | 7.8      | 8.0       | 41           | 79           |
| 8073230500             | 5.0      | 6.0       | 28           | 66           | 8073230790             | 7.9      | 8.0       | 41           | 79           |
| 8073230510             | 5.1      | 6.0       | 28           | 66           | 8073230800             | 8.0      | 8.0       | 41           | 79           |
| 8073230520             | 5.2      | 6.0       | 28           | 66           | 8073230810             | 8.1      | 10.0      | 47           | 89           |
| 8073230530             | 5.3      | 6.0       | 28           | 66           | 8073230820             | 8.2      | 10.0      | 47           | 89           |
| 8073230540             | 5.4      | 6.0       | 28           | 66           | 8073230830             | 8.3      | 10.0      | 47           | 89           |
| 8073230550             | 5.5      | 6.0       | 28           | 66           | 8073230840             | 8.4      | 10.0      | 47           | 89           |
| 8073230560             | 5.6      | 6.0       | 28           | 66           | 8073230850             | 8.5      | 10.0      | 47           | 89           |
| 8073230570             | 5.7      | 6.0       | 28           | 66           | 8073230860             | 8.6      | 10.0      | 47           | 89           |
| 8073230580             | 5.8      | 6.0       | 28           | 66           | 8073230870             | 8.7      | 10.0      | 47           | 89           |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDDM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |



## GP DRILL 3XD



MG  
HM

BSG  
DIN  
6537



### Series No. 807323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8073230880             | 8.8      | 10.0      | 47           | 89           | 8073231170             | 11.7     | 12.0      | 55           | 102          |
| 8073230890             | 8.9      | 10.0      | 47           | 89           | 8073231180             | 11.8     | 12.0      | 55           | 102          |
| 8073230900             | 9.0      | 10.0      | 47           | 89           | 8073231190             | 11.9     | 12.0      | 55           | 102          |
| 8073230910             | 9.1      | 10.0      | 47           | 89           | 8073231200             | 12.0     | 12.0      | 55           | 102          |
| 8073230920             | 9.2      | 10.0      | 47           | 89           | 8073231230             | 12.3     | 14.0      | 60           | 107          |
| 8073230930             | 9.3      | 10.0      | 47           | 89           | 8073231250             | 12.5     | 14.0      | 60           | 107          |
| 8073230940             | 9.4      | 10.0      | 47           | 89           | 8073231280             | 12.8     | 14.0      | 60           | 107          |
| 8073230950             | 9.5      | 10.0      | 47           | 89           | 8073231300             | 13.0     | 14.0      | 60           | 107          |
| 8073230960             | 9.6      | 10.0      | 47           | 89           | 8073231350             | 13.5     | 14.0      | 60           | 107          |
| 8073230970             | 9.7      | 10.0      | 47           | 89           | 8073231380             | 13.8     | 14.0      | 60           | 107          |
| 8073230980             | 9.8      | 10.0      | 47           | 89           | 8073231400             | 14.0     | 14.0      | 60           | 107          |
| 8073230990             | 9.9      | 10.0      | 47           | 89           | 8073231450             | 14.5     | 16.0      | 65           | 115          |
| 8073231000             | 10.0     | 10.0      | 47           | 89           | 8073231480             | 14.8     | 16.0      | 65           | 115          |
| 8073231010             | 10.1     | 12.0      | 55           | 102          | 8073231500             | 15.0     | 16.0      | 65           | 115          |
| 8073231020             | 10.2     | 12.0      | 55           | 102          | 8073231550             | 15.5     | 16.0      | 65           | 115          |
| 8073231030             | 10.3     | 12.0      | 55           | 102          | 8073231580             | 15.8     | 16.0      | 65           | 115          |
| 8073231040             | 10.4     | 12.0      | 55           | 102          | 8073231600             | 16.0     | 16.0      | 65           | 115          |
| 8073231050             | 10.5     | 12.0      | 55           | 102          | 8073231650             | 16.5     | 18.0      | 73           | 123          |
| 8073231060             | 10.6     | 12.0      | 55           | 102          | 8073231680             | 16.8     | 18.0      | 73           | 123          |
| 8073231070             | 10.7     | 12.0      | 55           | 102          | 8073231700             | 17.0     | 18.0      | 73           | 123          |
| 8073231080             | 10.8     | 12.0      | 55           | 102          | 8073231750             | 17.5     | 18.0      | 73           | 123          |
| 8073231090             | 10.9     | 12.0      | 55           | 102          | 8073231780             | 17.8     | 18.0      | 73           | 123          |
| 8073231100             | 11.0     | 12.0      | 55           | 102          | 8073231800             | 18.0     | 18.0      | 73           | 123          |
| 8073231110             | 11.1     | 12.0      | 55           | 102          | 8073231850             | 18.5     | 20.0      | 79           | 131          |
| 8073231120             | 11.2     | 12.0      | 55           | 102          | 8073231900             | 19.0     | 20.0      | 79           | 131          |
| 8073231130             | 11.3     | 12.0      | 55           | 102          | 8073231950             | 19.5     | 20.0      | 79           | 131          |
| 8073231140             | 11.4     | 12.0      | 55           | 102          | 8073231980             | 19.8     | 20.0      | 79           | 131          |
| 8073231150             | 11.5     | 12.0      | 55           | 102          | 8073232000             | 20.0     | 20.0      | 79           | 131          |
| 8073231160             | 11.6     | 12.0      | 55           | 102          |                        |          |           |              |              |

Drill Dia.  
Tolerance  
**TCDC**

m7

Shank Dia.  
Tolerance  
**TCDDM**

h6

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |





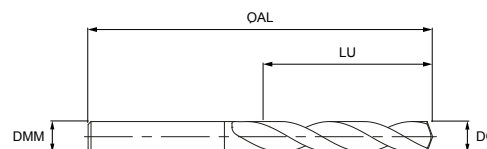
## GP DRILL 5XD

MG  
HMBSG  
DIN  
6537

## Series No. 808323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling



ULDR 5

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8083230100             | 1.0      | 3.0       | 8            | 55           | 8083230440             | 4.4      | 6.0       | 36           | 74           |
| 8083230110             | 1.1      | 3.0       | 12           | 55           | 8083230450             | 4.5      | 6.0       | 36           | 74           |
| 8083230120             | 1.2      | 3.0       | 12           | 55           | 8083230460             | 4.6      | 6.0       | 36           | 74           |
| 8083230130             | 1.3      | 3.0       | 12           | 55           | 8083230470             | 4.7      | 6.0       | 36           | 74           |
| 8083230140             | 1.4      | 3.0       | 12           | 55           | 8083230480             | 4.8      | 6.0       | 44           | 82           |
| 8083230150             | 1.5      | 3.0       | 16           | 55           | 8083230490             | 4.9      | 6.0       | 44           | 82           |
| 8083230160             | 1.6      | 3.0       | 16           | 55           | 8083230500             | 5.0      | 6.0       | 44           | 82           |
| 8083230170             | 1.7      | 3.0       | 16           | 55           | 8083230510             | 5.1      | 6.0       | 44           | 82           |
| 8083230180             | 1.8      | 3.0       | 16           | 55           | 8083230520             | 5.2      | 6.0       | 44           | 82           |
| 8083230190             | 1.9      | 3.0       | 16           | 55           | 8083230530             | 5.3      | 6.0       | 44           | 82           |
| 8083230200             | 2.0      | 4.0       | 21           | 57           | 8083230540             | 5.4      | 6.0       | 44           | 82           |
| 8083230210             | 2.1      | 4.0       | 21           | 57           | 8083230550             | 5.5      | 6.0       | 44           | 82           |
| 8083230220             | 2.2      | 4.0       | 21           | 57           | 8083230560             | 5.6      | 6.0       | 44           | 82           |
| 8083230230             | 2.3      | 4.0       | 21           | 57           | 8083230570             | 5.7      | 6.0       | 44           | 82           |
| 8083230240             | 2.4      | 4.0       | 21           | 57           | 8083230580             | 5.8      | 6.0       | 44           | 82           |
| 8083230250             | 2.5      | 4.0       | 21           | 57           | 8083230590             | 5.9      | 6.0       | 44           | 82           |
| 8083230260             | 2.6      | 4.0       | 21           | 57           | 8083230600             | 6.0      | 6.0       | 44           | 82           |
| 8083230270             | 2.7      | 4.0       | 21           | 57           | 8083230610             | 6.1      | 8.0       | 53           | 91           |
| 8083230280             | 2.8      | 4.0       | 21           | 57           | 8083230620             | 6.2      | 8.0       | 53           | 91           |
| 8083230290             | 2.9      | 4.0       | 21           | 57           | 8083230630             | 6.3      | 8.0       | 53           | 91           |
| 8083230300             | 3.0      | 6.0       | 28           | 66           | 8083230640             | 6.4      | 8.0       | 53           | 91           |
| 8083230310             | 3.1      | 6.0       | 28           | 66           | 8083230650             | 6.5      | 8.0       | 53           | 91           |
| 8083230320             | 3.2      | 6.0       | 28           | 66           | 8083230660             | 6.6      | 8.0       | 53           | 91           |
| 8083230330             | 3.3      | 6.0       | 28           | 66           | 8083230670             | 6.7      | 8.0       | 53           | 91           |
| 8083230340             | 3.4      | 6.0       | 28           | 66           | 8083230680             | 6.8      | 8.0       | 53           | 91           |
| 8083230350             | 3.5      | 6.0       | 28           | 66           | 8083230690             | 6.9      | 8.0       | 53           | 91           |
| 8083230360             | 3.6      | 6.0       | 28           | 66           | 8083230700             | 7.0      | 8.0       | 53           | 91           |
| 8083230370             | 3.7      | 6.0       | 28           | 66           | 8083230710             | 7.1      | 8.0       | 53           | 91           |
| 8083230380             | 3.8      | 6.0       | 36           | 74           | 8083230720             | 7.2      | 8.0       | 53           | 91           |
| 8083230390             | 3.9      | 6.0       | 36           | 74           | 8083230730             | 7.3      | 8.0       | 53           | 91           |
| 8083230400             | 4.0      | 6.0       | 36           | 74           | 8083230740             | 7.4      | 8.0       | 53           | 91           |
| 8083230410             | 4.1      | 6.0       | 36           | 74           | 8083230750             | 7.5      | 8.0       | 53           | 91           |
| 8083230420             | 4.2      | 6.0       | 36           | 74           | 8083230760             | 7.6      | 8.0       | 53           | 91           |
| 8083230430             | 4.3      | 6.0       | 36           | 74           | 8083230770             | 7.7      | 8.0       | 53           | 91           |

Drill Dia.  
Tolerance  
**TCDC**

m7

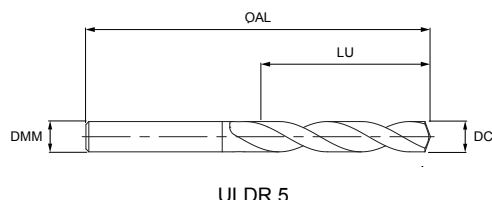
Shank Dia.  
Tolerance  
**TCDMM**

h6

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |



## GP DRILL 5XD



MG  
HM

BSG  
DIN  
6537



### Series No. 808323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8083230780             | 7.8      | 8.0       | 53           | 91           | 8083231120             | 11.2     | 12.0      | 71           | 118          |
| 8083230790             | 7.9      | 8.0       | 53           | 91           | 8083231130             | 11.3     | 12.0      | 71           | 118          |
| 8083230800             | 8.0      | 8.0       | 53           | 91           | 8083231140             | 11.4     | 12.0      | 71           | 118          |
| 8083230810             | 8.1      | 10.0      | 61           | 103          | 8083231150             | 11.5     | 12.0      | 71           | 118          |
| 8083230820             | 8.2      | 10.0      | 61           | 103          | 8083231160             | 11.6     | 12.0      | 71           | 118          |
| 8083230830             | 8.3      | 10.0      | 61           | 103          | 8083231170             | 11.7     | 12.0      | 71           | 118          |
| 8083230840             | 8.4      | 10.0      | 61           | 103          | 8083231180             | 11.8     | 12.0      | 71           | 118          |
| 8083230850             | 8.5      | 10.0      | 61           | 103          | 8083231190             | 11.9     | 12.0      | 71           | 118          |
| 8083230860             | 8.6      | 10.0      | 61           | 103          | 8083231200             | 12.0     | 12.0      | 71           | 118          |
| 8083230870             | 8.7      | 10.0      | 61           | 103          | 8083231230             | 12.3     | 14.0      | 77           | 124          |
| 8083230880             | 8.8      | 10.0      | 61           | 103          | 8083231250             | 12.5     | 14.0      | 77           | 124          |
| 8083230890             | 8.9      | 10.0      | 61           | 103          | 8083231280             | 12.8     | 14.0      | 77           | 124          |
| 8083230900             | 9.0      | 10.0      | 61           | 103          | 8083231300             | 13.0     | 14.0      | 77           | 124          |
| 8083230910             | 9.1      | 10.0      | 61           | 103          | 8083231350             | 13.5     | 14.0      | 77           | 124          |
| 8083230920             | 9.2      | 10.0      | 61           | 103          | 8083231380             | 13.8     | 14.0      | 77           | 124          |
| 8083230930             | 9.3      | 10.0      | 61           | 103          | 8083231400             | 14.0     | 14.0      | 77           | 124          |
| 8083230940             | 9.4      | 10.0      | 61           | 103          | 8083231450             | 14.5     | 16.0      | 83           | 133          |
| 8083230950             | 9.5      | 10.0      | 61           | 103          | 8083231480             | 14.8     | 16.0      | 83           | 133          |
| 8083230960             | 9.6      | 10.0      | 61           | 103          | 8083231500             | 15.0     | 16.0      | 83           | 133          |
| 8083230970             | 9.7      | 10.0      | 61           | 103          | 8083231550             | 15.5     | 16.0      | 83           | 133          |
| 8083230980             | 9.8      | 10.0      | 61           | 103          | 8083231580             | 15.8     | 16.0      | 83           | 133          |
| 8083230990             | 9.9      | 10.0      | 61           | 103          | 8083231600             | 16.0     | 16.0      | 83           | 133          |
| 8083231000             | 10.0     | 10.0      | 61           | 103          | 8083231650             | 16.5     | 18.0      | 93           | 143          |
| 8083231010             | 10.1     | 12.0      | 71           | 118          | 8083231680             | 16.8     | 18.0      | 93           | 143          |
| 8083231020             | 10.2     | 12.0      | 71           | 118          | 8083231700             | 17.0     | 18.0      | 93           | 143          |
| 8083231030             | 10.3     | 12.0      | 71           | 118          | 8083231750             | 17.5     | 18.0      | 93           | 143          |
| 8083231040             | 10.4     | 12.0      | 71           | 118          | 8083231780             | 17.8     | 18.0      | 93           | 143          |
| 8083231050             | 10.5     | 12.0      | 71           | 118          | 8083231800             | 18.0     | 18.0      | 93           | 143          |
| 8083231060             | 10.6     | 12.0      | 71           | 118          | 8083231850             | 18.5     | 20.0      | 101          | 153          |
| 8083231070             | 10.7     | 12.0      | 71           | 118          | 8083231900             | 19.0     | 20.0      | 101          | 153          |
| 8083231080             | 10.8     | 12.0      | 71           | 118          | 8083231950             | 19.5     | 20.0      | 101          | 153          |
| 8083231090             | 10.9     | 12.0      | 71           | 118          | 8083231980             | 19.8     | 20.0      | 101          | 153          |
| 8083231100             | 11.0     | 12.0      | 71           | 118          | 8083232000             | 20.0     | 20.0      | 101          | 153          |
| 8083231110             | 11.1     | 12.0      | 71           | 118          |                        |          |           |              |              |

Drill Dia.  
Tolerance  
**TCDC**

Shank Dia.  
Tolerance  
**TCDMM**

m7

h6

| ISO         | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|-------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP   | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary   | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |
| ○ Secondary |     |     |       |        |    |       |       |       |       |      |      |    |       |       |       |       |



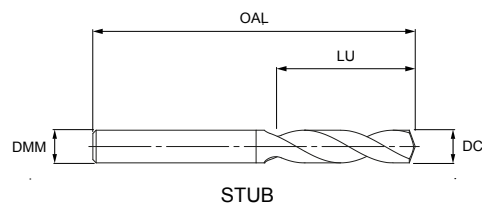
## STUB DRILL TiAIN

MG  
HMBSG  
DIN  
6539

## Series No. 802323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling



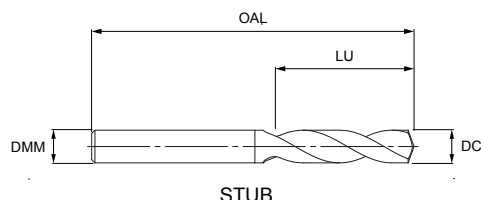
| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8023230300             | 3.0      | 3.0       | 16           | 46           | 8023230530             | 5.3      | 5.3       | 26           | 62           |
| 8023230310             | 3.1      | 3.1       | 18           | 49           | 8023230540             | 5.4      | 5.4       | 28           | 66           |
| 8023230320             | 3.2      | 3.2       | 18           | 49           | 8023230550             | 5.5      | 5.5       | 28           | 66           |
| 8023230330             | 3.3      | 3.3       | 18           | 49           | 8023230560             | 5.6      | 5.6       | 28           | 66           |
| 8023230340             | 3.4      | 3.4       | 20           | 52           | 8023230570             | 5.7      | 5.7       | 28           | 66           |
| 8023230350             | 3.5      | 3.5       | 20           | 52           | 8023230580             | 5.8      | 5.8       | 28           | 66           |
| 8023230360             | 3.6      | 3.6       | 20           | 52           | 8023230590             | 5.9      | 5.9       | 28           | 66           |
| 8023230370             | 3.7      | 3.7       | 20           | 52           | 8023230600             | 6.0      | 6.0       | 28           | 66           |
| 8023230380             | 3.8      | 3.8       | 22           | 55           | 8023230610             | 6.1      | 6.1       | 31           | 70           |
| 8023230390             | 3.9      | 3.9       | 22           | 55           | 8023230620             | 6.2      | 6.2       | 31           | 70           |
| 8023230400             | 4.0      | 4.0       | 22           | 55           | 8023230630             | 6.3      | 6.3       | 31           | 70           |
| 8023230410             | 4.1      | 4.1       | 22           | 55           | 8023230640             | 6.4      | 6.4       | 31           | 70           |
| 8023230420             | 4.2      | 4.2       | 22           | 55           | 8023230650             | 6.5      | 6.5       | 31           | 70           |
| 8023230430             | 4.3      | 4.3       | 24           | 58           | 8023230660             | 6.6      | 6.6       | 31           | 70           |
| 8023230440             | 4.4      | 4.4       | 24           | 58           | 8023230670             | 6.7      | 6.7       | 31           | 70           |
| 8023230450             | 4.5      | 4.5       | 24           | 58           | 8023230680             | 6.8      | 6.8       | 34           | 74           |
| 8023230460             | 4.6      | 4.6       | 24           | 58           | 8023230690             | 6.9      | 6.9       | 34           | 74           |
| 8023230470             | 4.7      | 4.7       | 24           | 58           | 8023230700             | 7.0      | 7.0       | 34           | 74           |
| 8023230480             | 4.8      | 4.8       | 26           | 62           | 8023230710             | 7.1      | 7.1       | 34           | 74           |
| 8023230490             | 4.9      | 4.9       | 26           | 62           | 8023230720             | 7.2      | 7.2       | 34           | 74           |
| 8023230500             | 5.0      | 5.0       | 26           | 62           | 8023230730             | 7.3      | 7.3       | 34           | 74           |
| 8023230510             | 5.1      | 5.1       | 26           | 62           | 8023230740             | 7.4      | 7.4       | 34           | 74           |
| 8023230520             | 5.2      | 5.2       | 26           | 62           | 8023230750             | 7.5      | 7.5       | 34           | 74           |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |



## STUB DRILL TiAIN



MG  
HM

BSG  
DIN  
6539



### Series No. 802323

► cutting conditions : p.53

Self centering, centre drilling is not required  
Excellent positioning, bush is not necessary  
Special Design, reaming is not required  
Good chip removal, powerful drilling

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8023230760             | 7.6      | 7.6       | 37           | 79           | 8023230990             | 9.9      | 9.9       | 43           | 89           |
| 8023230770             | 7.7      | 7.7       | 37           | 79           | 8023231000             | 10.0     | 10.0      | 43           | 89           |
| 8023230780             | 7.8      | 7.8       | 37           | 79           | 8023231020             | 10.2     | 10.2      | 43           | 89           |
| 8023230790             | 7.9      | 7.9       | 37           | 79           | 8023231050             | 10.5     | 10.5      | 43           | 89           |
| 8023230800             | 8.0      | 8.0       | 37           | 79           | 8023231100             | 11.0     | 11.0      | 47           | 95           |
| 8023230810             | 8.1      | 8.1       | 37           | 79           | 8023231150             | 11.5     | 11.5      | 47           | 95           |
| 8023230820             | 8.2      | 8.2       | 37           | 79           | 8023231200             | 12.0     | 12.0      | 51           | 102          |
| 8023230830             | 8.3      | 8.3       | 37           | 79           | 8023231300             | 13.0     | 13.0      | 51           | 102          |
| 8023230840             | 8.4      | 8.4       | 37           | 79           | 8023231350             | 13.5     | 13.5      | 54           | 107          |
| 8023230850             | 8.5      | 8.5       | 37           | 79           | 8023231400             | 14.0     | 14.0      | 54           | 107          |
| 8023230860             | 8.6      | 8.6       | 40           | 84           | 8023231450             | 14.5     | 14.5      | 56           | 111          |
| 8023230870             | 8.7      | 8.7       | 40           | 84           | 8023231500             | 15.0     | 15.0      | 56           | 111          |
| 8023230880             | 8.8      | 8.8       | 40           | 84           | 8023231550             | 15.5     | 15.5      | 58           | 115          |
| 8023230890             | 8.9      | 8.9       | 40           | 84           | 8023231600             | 16.0     | 16.0      | 58           | 115          |
| 8023230900             | 9.0      | 9.0       | 40           | 84           | 8023231650             | 16.5     | 16.5      | 60           | 119          |
| 8023230910             | 9.1      | 9.1       | 40           | 84           | 8023231700             | 17.0     | 17.0      | 60           | 119          |
| 8023230920             | 9.2      | 9.2       | 40           | 84           | 8023231750             | 17.5     | 17.5      | 62           | 123          |
| 8023230930             | 9.3      | 9.3       | 40           | 84           | 8023231800             | 18.0     | 18.0      | 62           | 123          |
| 8023230940             | 9.4      | 9.4       | 40           | 84           | 8023231850             | 18.5     | 18.5      | 64           | 127          |
| 8023230950             | 9.5      | 9.5       | 40           | 84           | 8023231900             | 19.0     | 19.0      | 64           | 127          |
| 8023230960             | 9.6      | 9.6       | 43           | 89           | 8023231950             | 19.5     | 19.5      | 66           | 131          |
| 8023230970             | 9.7      | 9.7       | 43           | 89           | 8023232000             | 20.0     | 20.0      | 66           | 131          |
| 8023230980             | 9.8      | 9.8       | 43           | 89           |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     |       |       |      |      |    |       |       |       |       |



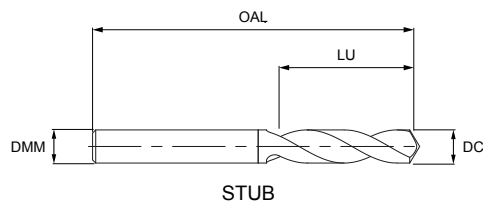
## STUB DRILL

MG  
HMBSG  
DIN  
6539

## Series No. 800303

► cutting conditions : p.57

Drilling into steel in general, cast steel,  
cast iron, chilled cast iron, malleable  
cast iron, stainless steel



| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8003030100             | 1.0      | 1.0       | 6            | 26           | 8003030390             | 3.9      | 3.9       | 22           | 55           |
| 8003030110             | 1.1      | 1.1       | 7            | 28           | 8003030400             | 4.0      | 4.0       | 22           | 55           |
| 8003030120             | 1.2      | 1.2       | 8            | 30           | 8003030410             | 4.1      | 4.1       | 22           | 55           |
| 8003030130             | 1.3      | 1.3       | 8            | 30           | 8003030420             | 4.2      | 4.2       | 22           | 55           |
| 8003030140             | 1.4      | 1.4       | 9            | 32           | 8003030430             | 4.3      | 4.3       | 24           | 58           |
| 8003030150             | 1.5      | 1.5       | 9            | 32           | 8003030440             | 4.4      | 4.4       | 24           | 58           |
| 8003030160             | 1.6      | 1.6       | 10           | 34           | 8003030450             | 4.5      | 4.5       | 24           | 58           |
| 8003030170             | 1.7      | 1.7       | 10           | 34           | 8003030460             | 4.6      | 4.6       | 24           | 58           |
| 8003030180             | 1.8      | 1.8       | 11           | 36           | 8003030470             | 4.7      | 4.7       | 24           | 58           |
| 8003030190             | 1.9      | 1.9       | 11           | 36           | 8003030480             | 4.8      | 4.8       | 26           | 62           |
| 8003030200             | 2.0      | 2.0       | 12           | 38           | 8003030490             | 4.9      | 4.9       | 26           | 62           |
| 8003030210             | 2.1      | 2.1       | 12           | 38           | 8003030500             | 5.0      | 5.0       | 26           | 62           |
| 8003030220             | 2.2      | 2.2       | 13           | 40           | 8003030510             | 5.1      | 5.1       | 26           | 62           |
| 8003030230             | 2.3      | 2.3       | 13           | 40           | 8003030520             | 5.2      | 5.2       | 26           | 62           |
| 8003030240             | 2.4      | 2.4       | 14           | 43           | 8003030530             | 5.3      | 5.3       | 26           | 62           |
| 8003030250             | 2.5      | 2.5       | 14           | 43           | 8003030540             | 5.4      | 5.4       | 28           | 66           |
| 8003030260             | 2.6      | 2.6       | 14           | 43           | 8003030550             | 5.5      | 5.5       | 28           | 66           |
| 8003030270             | 2.7      | 2.7       | 16           | 46           | 8003030560             | 5.6      | 5.6       | 28           | 66           |
| 8003030280             | 2.8      | 2.8       | 16           | 46           | 8003030570             | 5.7      | 5.7       | 28           | 66           |
| 8003030290             | 2.9      | 2.9       | 16           | 46           | 8003030580             | 5.8      | 5.8       | 28           | 66           |
| 8003030300             | 3.0      | 3.0       | 16           | 46           | 8003030590             | 5.9      | 5.9       | 28           | 66           |
| 8003030310             | 3.1      | 3.1       | 18           | 49           | 8003030600             | 6.0      | 6.0       | 28           | 66           |
| 8003030320             | 3.2      | 3.2       | 18           | 49           | 8003030610             | 6.1      | 6.1       | 31           | 70           |
| 8003030330             | 3.3      | 3.3       | 18           | 49           | 8003030620             | 6.2      | 6.2       | 31           | 70           |
| 8003030340             | 3.4      | 3.4       | 20           | 52           | 8003030630             | 6.3      | 6.3       | 31           | 70           |
| 8003030350             | 3.5      | 3.5       | 20           | 52           | 8003030640             | 6.4      | 6.4       | 31           | 70           |
| 8003030360             | 3.6      | 3.6       | 20           | 52           | 8003030650             | 6.5      | 6.5       | 31           | 70           |
| 8003030370             | 3.7      | 3.7       | 20           | 52           | 8003030660             | 6.6      | 6.6       | 31           | 70           |
| 8003030380             | 3.8      | 3.8       | 20           | 52           | 8003030670             | 6.7      | 6.7       | 31           | 70           |

Drill Dia.  
Tolerance  
**TCDC**

m7

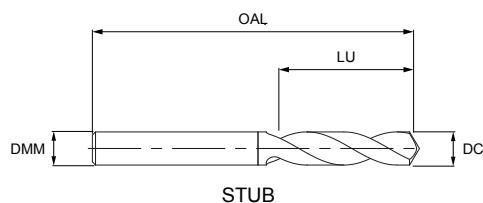
Shank Dia.  
Tolerance  
**TCDDM**

h6

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



## STUB DRILL



MG  
HM

BSG  
DIN  
6539



Series No. 800303

► cutting conditions : p.57

Drilling into steel in general, cast steel,  
cast iron, chilled cast iron, malleable  
cast iron, stainless steel

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8003030680             | 6.8      | 6.8       | 34           | 74           | 8003030880             | 8.8      | 8.8       | 40           | 84           |
| 8003030690             | 6.9      | 6.9       | 34           | 74           | 8003030890             | 8.9      | 8.9       | 40           | 84           |
| 8003030700             | 7.0      | 7.0       | 34           | 74           | 8003030900             | 9.0      | 9.0       | 40           | 84           |
| 8003030710             | 7.1      | 7.1       | 34           | 74           | 8003030910             | 9.1      | 9.1       | 40           | 84           |
| 8003030720             | 7.2      | 7.2       | 34           | 74           | 8003030920             | 9.2      | 9.2       | 40           | 84           |
| 8003030730             | 7.3      | 7.3       | 34           | 74           | 8003030930             | 9.3      | 9.3       | 40           | 84           |
| 8003030740             | 7.4      | 7.4       | 34           | 74           | 8003030940             | 9.4      | 9.4       | 40           | 84           |
| 8003030750             | 7.5      | 7.5       | 34           | 74           | 8003030950             | 9.5      | 9.5       | 40           | 84           |
| 8003030760             | 7.6      | 7.6       | 37           | 79           | 8003030960             | 9.6      | 9.6       | 43           | 89           |
| 8003030770             | 7.7      | 7.7       | 37           | 79           | 8003030970             | 9.7      | 9.7       | 43           | 89           |
| 8003030780             | 7.8      | 7.8       | 37           | 79           | 8003030980             | 9.8      | 9.8       | 43           | 89           |
| 8003030790             | 7.9      | 7.9       | 37           | 79           | 8003030990             | 9.9      | 9.9       | 43           | 89           |
| 8003030800             | 8.0      | 8.0       | 37           | 79           | 8003031000             | 10.0     | 10.0      | 43           | 89           |
| 8003030810             | 8.1      | 8.1       | 37           | 79           | 8003031020             | 10.2     | 10.2      | 43           | 89           |
| 8003030820             | 8.2      | 8.2       | 37           | 79           | 8003031050             | 10.5     | 10.5      | 43           | 89           |
| 8003030830             | 8.3      | 8.3       | 37           | 79           | 8003031100             | 11.0     | 11.0      | 47           | 95           |
| 8003030840             | 8.4      | 8.4       | 37           | 79           | 8003031150             | 11.5     | 11.5      | 47           | 95           |
| 8003030850             | 8.5      | 8.5       | 37           | 79           | 8003031200             | 12.0     | 12.0      | 51           | 102          |
| 8003030860             | 8.6      | 8.6       | 40           | 84           | 8003031300             | 13.0     | 13.0      | 51           | 102          |
| 8003030870             | 8.7      | 8.7       | 40           | 84           |                        |          |           |              |              |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDMM |
|---------------------------------|----------------------------------|
| m7                              | h6                               |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



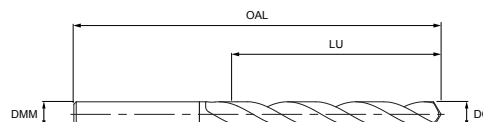
## JOBBER DRILL

MG  
HMBSG  
DIN  
338

## Series No. 801303

► cutting conditions : p.57

Drilling into steel in general, cast steel,  
cast iron, chilled cast iron, malleable  
cast iron, stainless steel



JOBBER

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8013030100             | 1.0      | 1.0       | 12           | 34           | 8013030390             | 3.9      | 3.9       | 43           | 75           |
| 8013030110             | 1.1      | 1.1       | 14           | 36           | 8013030400             | 4.0      | 4.0       | 43           | 75           |
| 8013030120             | 1.2      | 1.2       | 16           | 38           | 8013030410             | 4.1      | 4.1       | 43           | 75           |
| 8013030130             | 1.3      | 1.3       | 16           | 38           | 8013030420             | 4.2      | 4.2       | 43           | 75           |
| 8013030140             | 1.4      | 1.4       | 18           | 40           | 8013030430             | 4.3      | 4.3       | 43           | 75           |
| 8013030150             | 1.5      | 1.5       | 18           | 40           | 8013030440             | 4.4      | 4.4       | 47           | 80           |
| 8013030160             | 1.6      | 1.6       | 20           | 43           | 8013030450             | 4.5      | 4.5       | 47           | 80           |
| 8013030170             | 1.7      | 1.7       | 20           | 43           | 8013030460             | 4.6      | 4.6       | 47           | 80           |
| 8013030180             | 1.8      | 1.8       | 22           | 46           | 8013030470             | 4.7      | 4.7       | 47           | 80           |
| 8013030190             | 1.9      | 1.9       | 22           | 46           | 8013030480             | 4.8      | 4.8       | 52           | 86           |
| 8013030200             | 2.0      | 2.0       | 24           | 49           | 8013030490             | 4.9      | 4.9       | 52           | 86           |
| 8013030210             | 2.1      | 2.1       | 24           | 49           | 8013030500             | 5.0      | 5.0       | 52           | 86           |
| 8013030220             | 2.2      | 2.2       | 27           | 53           | 8013030510             | 5.1      | 5.1       | 52           | 86           |
| 8013030230             | 2.3      | 2.3       | 27           | 53           | 8013030520             | 5.2      | 5.2       | 52           | 86           |
| 8013030240             | 2.4      | 2.4       | 30           | 57           | 8013030530             | 5.3      | 5.3       | 52           | 86           |
| 8013030250             | 2.5      | 2.5       | 30           | 57           | 8013030540             | 5.4      | 5.4       | 57           | 93           |
| 8013030260             | 2.6      | 2.6       | 30           | 57           | 8013030550             | 5.5      | 5.5       | 57           | 93           |
| 8013030270             | 2.7      | 2.7       | 33           | 61           | 8013030560             | 5.6      | 5.6       | 57           | 93           |
| 8013030280             | 2.8      | 2.8       | 33           | 61           | 8013030570             | 5.7      | 5.7       | 57           | 93           |
| 8013030290             | 2.9      | 2.9       | 33           | 61           | 8013030580             | 5.8      | 5.8       | 57           | 93           |
| 8013030300             | 3.0      | 3.0       | 33           | 61           | 8013030590             | 5.9      | 5.9       | 57           | 93           |
| 8013030310             | 3.1      | 3.1       | 36           | 65           | 8013030600             | 6.0      | 6.0       | 57           | 93           |
| 8013030320             | 3.2      | 3.2       | 36           | 65           | 8013030610             | 6.1      | 6.1       | 63           | 101          |
| 8013030330             | 3.3      | 3.3       | 36           | 65           | 8013030620             | 6.2      | 6.2       | 63           | 101          |
| 8013030340             | 3.4      | 3.4       | 39           | 70           | 8013030630             | 6.3      | 6.3       | 63           | 101          |
| 8013030350             | 3.5      | 3.5       | 39           | 70           | 8013030640             | 6.4      | 6.4       | 63           | 101          |
| 8013030360             | 3.6      | 3.6       | 39           | 70           | 8013030650             | 6.5      | 6.5       | 63           | 101          |
| 8013030370             | 3.7      | 3.7       | 39           | 70           | 8013030660             | 6.6      | 6.6       | 63           | 101          |
| 8013030380             | 3.8      | 3.8       | 43           | 75           | 8013030670             | 6.7      | 6.7       | 63           | 101          |

Drill Dia.  
Tolerance  
**TCDC**

m7

Shank Dia.  
Tolerance  
**TCDDM**

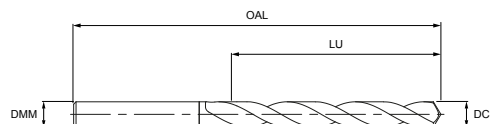
h6

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      |    | ●     | ●     |       |       |      |      |    |       |       |       |       |





## JOBBER DRILL



JOBBER

MG  
HM

BSG  
DIN  
338



### Series No. 801303

► cutting conditions : p.57

Drilling into steel in general, cast steel,  
cast iron, chilled cast iron, malleable  
cast iron, stainless steel

| EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL | EUROPA CODE<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|------------------------|----------|-----------|--------------|--------------|------------------------|----------|-----------|--------------|--------------|
| 8013030680             | 6.8      | 6.8       | 69           | 109          | 8013030880             | 8.8      | 8.8       | 81           | 125          |
| 8013030690             | 6.9      | 6.9       | 69           | 109          | 8013030890             | 8.9      | 8.9       | 81           | 125          |
| 8013030700             | 7.0      | 7.0       | 69           | 109          | 8013030900             | 9.0      | 9.0       | 81           | 125          |
| 8013030710             | 7.1      | 7.1       | 69           | 109          | 8013030910             | 9.1      | 9.1       | 81           | 125          |
| 8013030720             | 7.2      | 7.2       | 69           | 109          | 8013030920             | 9.2      | 9.2       | 81           | 125          |
| 8013030730             | 7.3      | 7.3       | 69           | 109          | 8013030930             | 9.3      | 9.3       | 81           | 125          |
| 8013030740             | 7.4      | 7.4       | 69           | 109          | 8013030940             | 9.4      | 9.4       | 81           | 125          |
| 8013030750             | 7.5      | 7.5       | 69           | 109          | 8013030950             | 9.5      | 9.5       | 81           | 125          |
| 8013030760             | 7.6      | 7.6       | 75           | 117          | 8013030960             | 9.6      | 9.6       | 87           | 133          |
| 8013030780             | 7.8      | 7.8       | 75           | 117          | 8013030970             | 9.7      | 9.7       | 87           | 133          |
| 8013030790             | 7.9      | 7.9       | 75           | 117          | 8013030980             | 9.8      | 9.8       | 87           | 133          |
| 8013030800             | 8.0      | 8.0       | 75           | 117          | 8013030990             | 9.9      | 9.9       | 87           | 133          |
| 8013030810             | 8.1      | 8.1       | 75           | 117          | 8013031000             | 10.0     | 10.0      | 87           | 133          |
| 8013030820             | 8.2      | 8.2       | 75           | 117          | 8013031020             | 10.2     | 10.2      | 87           | 133          |
| 8013030830             | 8.3      | 8.3       | 75           | 117          | 8013031050             | 10.5     | 10.5      | 87           | 133          |
| 8013030840             | 8.4      | 8.4       | 75           | 117          | 8013031100             | 11.0     | 11.0      | 94           | 142          |
| 8013030850             | 8.5      | 8.5       | 75           | 117          | 8013031150             | 11.5     | 11.5      | 94           | 142          |
| 8013030860             | 8.6      | 8.6       | 81           | 125          | 8013031200             | 12.0     | 12.0      | 101          | 151          |
| 8013030870             | 8.7      | 8.7       | 81           | 125          | 8013031300             | 13.0     | 13.0      | 101          | 151          |

| Drill Dia.<br>Tolerance<br>TCDC | Shank Dia.<br>Tolerance<br>TCDDMM |
|---------------------------------|-----------------------------------|
| m7                              | h6                                |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      |    | ●     | ●     |       |       |      |      |    |       |       |       |       |



## CENTRE DRILL

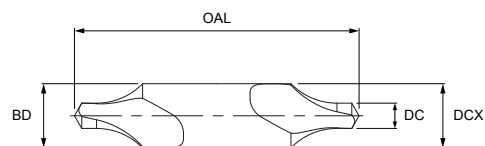
HM

BSG  
DIN  
333

## Series No. 810303

► cutting conditions : p.57

Form A (60°)



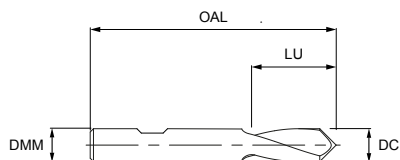
| EUROPA CODE<br>ORDCODE | PILOT DIA<br>DC | BODY DIA<br>BD = DCX | O/ALL LENGTH<br>OAL | PILOT<br>LENGTH |
|------------------------|-----------------|----------------------|---------------------|-----------------|
| <b>8103030100</b>      | <b>1.0</b>      | <b>3.15</b>          | 31.5                | 1.3             |
| <b>8103030125</b>      | <b>1.25</b>     | <b>3.15</b>          | 31.5                | 1.6             |
| <b>8103030160</b>      | <b>1.6</b>      | <b>4.0</b>           | 35.5                | 2.0             |
| <b>8103030200</b>      | <b>2.0</b>      | <b>5.0</b>           | 40.0                | 2.5             |
| <b>8103030250</b>      | <b>2.5</b>      | <b>6.3</b>           | 45.0                | 3.1             |
| <b>8103030315</b>      | <b>3.15</b>     | <b>8.0</b>           | 50.0                | 3.9             |
| <b>8103030400</b>      | <b>4.0</b>      | <b>10.0</b>          | 56.0                | 5.0             |
| <b>8103030500</b>      | <b>5.0</b>      | <b>12.5</b>          | 63.0                | 6.3             |
| <b>8103030630</b>      | <b>6.3</b>      | <b>16.0</b>          | 71.0                | 8.0             |

| Drill Dia.<br>Tolerance<br><b>TDCD</b> | Shank Dia.<br>Tolerance<br><b>TCDMM</b> |
|----------------------------------------|-----------------------------------------|
| k12                                    | h8                                      |

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     | ○     | ○     |      |      |    | ○     | ○     |       |       |



## SPOTTING DRILL 90°, 120°


MG  
HM


### Series No. 806303, 806403

► cutting conditions : p.58

For more precise centering work on NC/CNC machine.  
A larger diameter than the subsequent drilling tool allows  
for centering and chamfering simultaneously.

**142° also available on request**

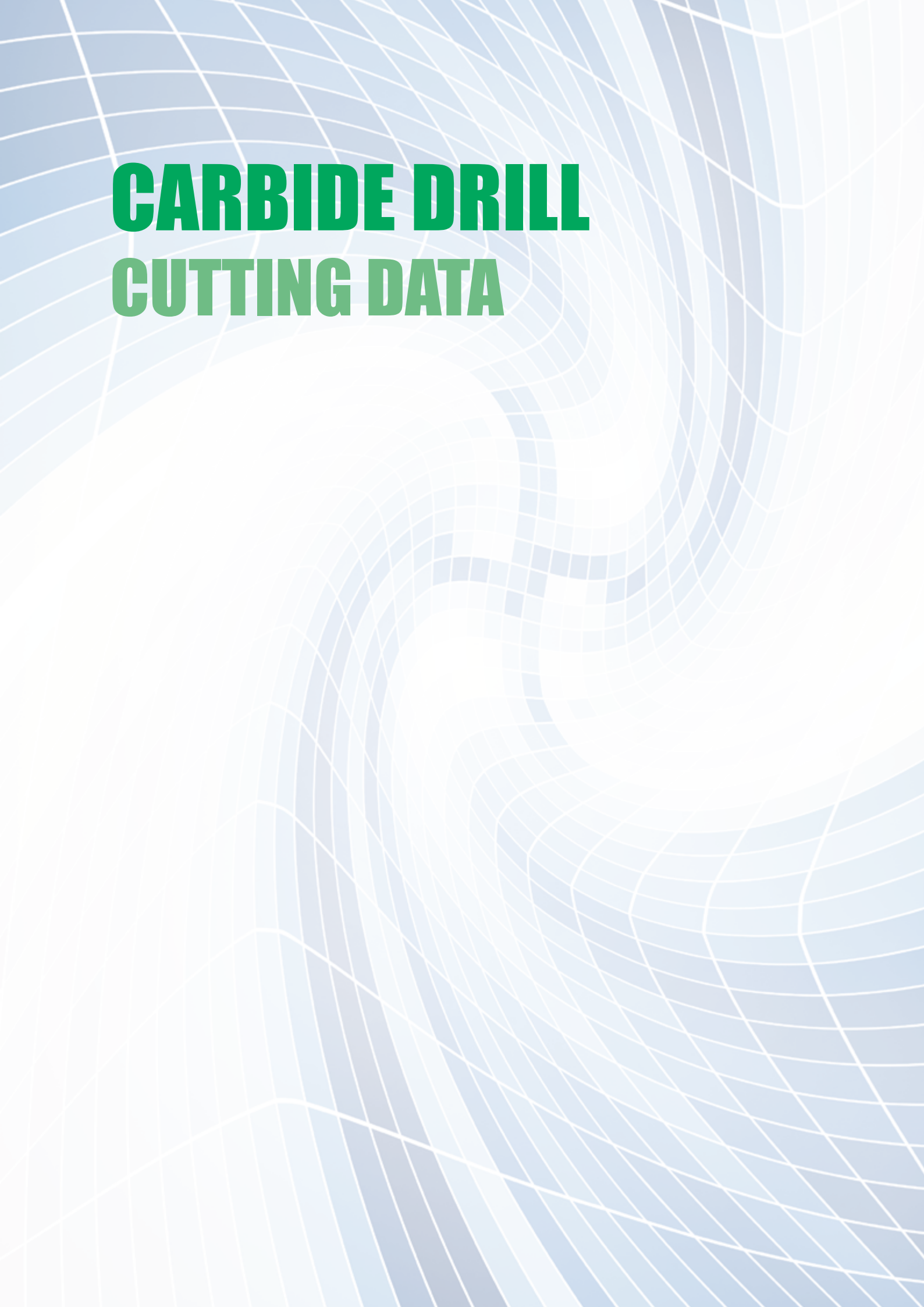
| 90°<br>ORDCODE | 120°<br>ORDCODE | OD<br>DC | SD<br>DMM | FL.LTH<br>LU | O/ALL<br>OAL |
|----------------|-----------------|----------|-----------|--------------|--------------|
| 8063030200*    | 8064030200*     | 2.0      | 2.0       | 6            | 32           |
| 8063030300*    | 8064030300*     | 3.0      | 3.0       | 8            | 32           |
| 8063030400*    | 8064030400*     | 4.0      | 4.0       | 10           | 40           |
| 8063030600     | 8064030600      | 6.0      | 6.0       | 13           | 50           |
| 8063030800     | 8064030800      | 8.0      | 8.0       | 23           | 60           |
| 8063031000     | 8064031000      | 10.0     | 10.0      | 24           | 70           |
| 8063031200     | 8064031200      | 12.0     | 12.0      | 24           | 70           |
| 8063031600     | 8064031600      | 16.0     | 16.0      | 29           | 75           |
| 8063032000     | 8064032000      | 20.0     | 20.0      | 35           | 100          |

\* Plain shank to DIN6535HA

Shank Dia.  
Tolerance  
**TC DMM**

h6

| ISO                      | P   |     |       | M      |    | K     |       | N     |       |      |      |    | S     |       | H     |       |
|--------------------------|-----|-----|-------|--------|----|-------|-------|-------|-------|------|------|----|-------|-------|-------|-------|
| VDI GROUP                | 1-5 | 6-9 | 10-11 | 12, 13 | 14 | 15-16 | 17-20 | 21-25 | 26-28 | 29.1 | 29.2 | 30 | 31-35 | 36-37 | 38-39 | 40-41 |
| ● Primary<br>○ Secondary | ●   | ●   | ●     | ○      | ○  | ●     | ●     | ○     | ○     |      |      |    | ○     | ○     |       |       |



# **CARBIDE DRILL CUTTING DATA**



## CUTTING DATA

| 823323, 825323, 828323 INOX DRILL |       |                                       |       |                           |                         |              |              |              |              |              |              |              |                |                |                |                |                |       |
|-----------------------------------|-------|---------------------------------------|-------|---------------------------|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|-------|
| VDI MATERIAL GROUP                |       |                                       | HRc   | v <sub>c</sub><br>(m/min) | f <sub>n</sub> (mm/rev) |              |              |              |              |              |              |              |                |                |                |                |                |       |
|                                   |       |                                       |       |                           | ø1.0<br>-1.9            | ø2.0<br>-2.9 | ø3.0<br>-3.9 | ø4.0<br>-4.9 | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø7.0<br>-7.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.5 | ø14.0<br>-15.5 | ø16.0<br>-17.5 | ø18.0<br>-19.5 | ø20.0 |
| P                                 | 1-5   | Non-alloy Steel                       | <25   | <b>115<br/>(105-125)</b>  | 0.02                    | 0.03         | 0.04         | 0.05         | 0.05         | 0.06         | 0.07         | 0.08         | 0.10           | 0.12           | 0.15           | 0.20           | 0.22           | 0.24  |
|                                   | 6-9   | Low alloy Steel                       | 25-35 | <b>105<br/>(95-115)</b>   | 0.02                    | 0.03         | 0.04         | 0.05         | 0.05         | 0.06         | 0.07         | 0.08         | 0.10           | 0.12           | 0.15           | 0.20           | 0.22           | 0.24  |
|                                   | 10-11 | High alloy Steel, Tool Steel          | 35-45 | <b>95<br/>(85-105)</b>    | 0.02                    | 0.03         | 0.04         | 0.05         | 0.05         | 0.06         | 0.07         | 0.08         | 0.10           | 0.12           | 0.15           | 0.20           | 0.22           | 0.24  |
| M                                 | 12-13 | Ferritic/ Martensitic Stainless Steel |       | <b>65<br/>(60-70)</b>     | 0.02                    | 0.03         | 0.04         | 0.05         | 0.05         | 0.06         | 0.07         | 0.08         | 0.10           | 0.12           | 0.16           | 0.20           | 0.22           | 0.24  |
|                                   | 14    | Austenitic Stainless Steel            |       | <b>40<br/>(35-45)</b>     | 0.02                    | 0.03         | 0.03         | 0.03         | 0.03         | 0.04         | 0.05         | 0.06         | 0.08           | 0.10           | 0.12           | 0.15           | 0.17           | 0.19  |
| N                                 | 21-24 | Aluminium Si<12%                      |       | <b>210<br/>(200-220)</b>  | 0.04                    | 0.08         | 0.12         | 0.18         | 0.20         | 0.25         | 0.28         | 0.30         | 0.40           | 0.50           | 0.60           | 0.80           | 1.00           | 1.20  |
|                                   | 25    | Aluminium Si>12%                      |       | <b>165<br/>(155-175)</b>  | 0.03                    | 0.06         | 0.10         | 0.15         | 0.18         | 0.25         | 0.28         | 0.30         | 0.35           | 0.40           | 0.50           | 0.60           | 0.70           | 0.80  |
| S                                 | 31-32 | HRSA Fe Based                         |       | <b>30<br/>(25-35)</b>     | 0.05                    | 0.05         | 0.06         | 0.08         | 0.08         | 0.10         | 0.10         | 0.11         | 0.12           | 0.14           | 0.14           | 0.15           | 0.15           | 0.15  |
|                                   | 33-35 | HRSA Ni/Co Based                      |       | <b>25<br/>(20-30)</b>     | 0.03                    | 0.03         | 0.04         | 0.06         | 0.06         | 0.08         | 0.08         | 0.09         | 0.10           | 0.12           | 0.12           | 0.13           | 0.13           | 0.13  |
|                                   | 36    | Titanium unalloyed                    |       | <b>45<br/>(40-50)</b>     | 0.01                    | 0.02         | 0.03         | 0.04         | 0.05         | 0.06         | 0.06         | 0.07         | 0.08           | 0.10           | 0.12           | 0.14           | 0.16           | 0.18  |
|                                   | 37    | Titanium Alloys                       |       | <b>40<br/>(35-45)</b>     | 0.01                    | 0.02         | 0.03         | 0.04         | 0.05         | 0.06         | 0.06         | 0.07         | 0.08           | 0.10           | 0.12           | 0.14           | 0.16           | 0.18  |

- ▶ For 8xD drills reduce feed rate by 15%
- ▶ For recommended coolant pressure refer to P.59

v<sub>c</sub> - cutting speed (m/min)  
 n - RPM (rev/min)  
 f<sub>n</sub> - feed rate (mm/rev)  
 ø - drill diameter (mm)

$$\text{To calculate RPM from cutting speed: } n = \frac{v_c \cdot 1000}{\pi \cdot \phi}$$

$$\text{To calculate cutting speed from RPM: } v_c = \frac{n \cdot \pi \cdot \phi}{1000}$$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in these charts are nominal recommendations and should be considered only as good starting points.



## CUTTING DATA

| 869329, 870329 SX DRILL |       |                                  |                        |                         |              |              |              |              |              |                |                |                |       |       |
|-------------------------|-------|----------------------------------|------------------------|-------------------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|-------|-------|
| VDI MATERIAL GROUP      |       | HRc                              | V <sub>c</sub> (m/min) | f <sub>n</sub> (mm/rev) |              |              |              |              |              |                |                |                |       |       |
|                         |       |                                  |                        | ø3.0<br>-3.9            | ø4.0<br>-4.9 | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø7.0<br>-7.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.9 | ø14.0<br>-15.9 | ø16.0 | ø20.0 |
| <b>S</b>                | 31-35 | HRSA<br>Fe & Ni/Co<br>Based      | <b>25</b><br>(22-28)   | 0.05                    | 0.07         | 0.09         | 0.11         | 0.13         | 0.15         | 0.18           | 0.22           | 0.25           | 0.29  | 0.36  |
|                         | 36-37 | Titanium &<br>Titanium<br>Alloys | <b>40</b><br>(35-45)   | 0.03                    | 0.04         | 0.05         | 0.06         | 0.06         | 0.08         | 0.08           | 0.10           | 0.12           | 0.14  | 0.18  |

► For recommended coolant pressure refer to P.59

| 843303, 845303, 848303 ALU-XP DRILL |       |                     |     |                 |                         |              |              |              |              |              |                |                |                |                |                |       |
|-------------------------------------|-------|---------------------|-----|-----------------|-------------------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|-------|
| VDI MATERIAL GROUP                  |       |                     | HRc | vc (m/min)      | f <sub>η</sub> (mm/rev) |              |              |              |              |              |                |                |                |                |                |       |
|                                     |       |                     |     |                 | ø3.0<br>-3.9            | ø4.0<br>-4.9 | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø7.0<br>-7.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.5 | ø14.0<br>-15.5 | ø16.0<br>-17.5 | ø18.0<br>-19.5 | ø20.0 |
| N                                   | 21-24 | Aluminium<br>Si<12% |     | 140<br>(80-200) | 0.20                    | 0.30         | 0.40         | 0.50         | 0.50         | 0.60         | 0.60           | 0.70           | 0.70           | 0.80           | 0.90           | 1.00  |
|                                     | 25    | Aluminium<br>Si>12% |     | 140<br>(80-200) | 0.15                    | 0.20         | 0.25         | 0.30         | 0.30         | 0.35         | 0.35           | 0.40           | 0.40           | 0.40           | 0.40           | 0.40  |

► For 8xD drills reduce feed rate by 15%

► For recommended coolant pressure refer to P.59

V<sub>c</sub> - cutting speed (m/min)  
n - RPM (rev/min)  
f<sub>n</sub> - feed rate (mm/rev)  
ø - drill diameter (mm)

$$\text{To calculate RPM from cutting speed: } n = \frac{V_c \cdot 1000}{\pi \cdot \phi}$$

$$\text{To calculate cutting speed from RPM: } V_c = \frac{n \cdot \pi \cdot \phi}{1000}$$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in these charts are nominal recommendations and should be considered only as good starting points.



## CUTTING DATA

| 803323, 804323, 805323 GP DRILL (T/Coolant) |       |                                       |       |                           |                         |              |              |              |              |              |              |              |                |                |                |                |                |       |
|---------------------------------------------|-------|---------------------------------------|-------|---------------------------|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|-------|
| VDI MATERIAL GROUP                          |       |                                       | HRc   | v <sub>c</sub><br>(m/min) | f <sub>n</sub> (mm/rev) |              |              |              |              |              |              |              |                |                |                |                |                |       |
|                                             |       |                                       |       |                           | ø1.0<br>-1.9            | ø2.0<br>-2.9 | ø3.0<br>-3.9 | ø4.0<br>-4.9 | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø7.0<br>-7.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.5 | ø14.0<br>-15.5 | ø16.0<br>-17.5 | ø18.0<br>-19.5 | ø20.0 |
| P                                           | 1-5   | Non-alloy Steel                       | <25   | 100<br>(90-110)           | 0.04                    | 0.06         | 0.09         | 0.11         | 0.15         | 0.17         | 0.18         | 0.19         | 0.23           | 0.25           | 0.26           | 0.29           | 0.33           | 0.35  |
|                                             | 6-9   | Low alloy Steel                       | 25-35 | 80<br>(50-110)            | 0.04                    | 0.06         | 0.09         | 0.11         | 0.15         | 0.17         | 0.18         | 0.19         | 0.23           | 0.25           | 0.26           | 0.29           | 0.33           | 0.35  |
|                                             | 10-11 | High alloy Steel, Tool Steel          | 35-45 | 65<br>(45-80)             | 0.03                    | 0.05         | 0.08         | 0.10         | 0.12         | 0.13         | 0.14         | 0.16         | 0.19           | 0.21           | 0.22           | 0.24           | 0.25           | 0.26  |
| M                                           | 12-13 | Ferritic/ Martensitic Stainless Steel |       | 65<br>(45-80)             | 0.03                    | 0.05         | 0.08         | 0.10         | 0.14         | 0.16         | 0.17         | 0.18         | 0.21           | 0.23           | 0.24           | 0.26           | 0.29           | 0.31  |
| K                                           | 15-16 | Grey Cast Iron                        |       | 100<br>(95-110)           | 0.05                    | 0.05         | 0.09         | 0.13         | 0.16         | 0.19         | 0.20         | 0.21         | 0.25           | 0.28           | 0.30           | 0.32           | 0.35           | 0.37  |
|                                             | 17-20 | Nodular/ Malleable Cast Iron          |       | 90<br>(80-110)            | 0.05                    | 0.05         | 0.09         | 0.13         | 0.16         | 0.19         | 0.20         | 0.21         | 0.25           | 0.28           | 0.30           | 0.32           | 0.35           | 0.37  |

- For 8xD drills reduce feed rate by 15%. For drills <3.0mm reduce v<sub>c</sub> by 30%
- For recommended coolant pressure refer to P.59

| 802323, 807323, 808323 GP DRILL |       |                                       |       |                  |                         |              |              |              |              |              |              |              |                |                |                |                |                |       |
|---------------------------------|-------|---------------------------------------|-------|------------------|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|-------|
| VDI MATERIAL GROUP              |       |                                       | HRc   | vc (m/min)       | f <sub>n</sub> (mm/rev) |              |              |              |              |              |              |              |                |                |                |                |                |       |
|                                 |       |                                       |       |                  | ø1.0<br>-1.9            | ø2.0<br>-2.9 | ø3.0<br>-3.9 | ø4.0<br>-4.9 | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø7.0<br>-7.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.5 | ø14.0<br>-15.5 | ø16.0<br>-17.5 | ø18.0<br>-19.5 | ø20.0 |
| P                               | 1-5   | Non-alloy Steel                       | <25   | 100<br>(100-120) | 0.04                    | 0.06         | 0.09         | 0.11         | 0.15         | 0.17         | 0.18         | 0.19         | 0.23           | 0.25           | 0.26           | 0.29           | 0.33           | 0.35  |
|                                 | 6-9   | Low alloy Steel                       | 25-35 | 95<br>(85-105)   | 0.04                    | 0.06         | 0.09         | 0.11         | 0.15         | 0.17         | 0.18         | 0.19         | 0.23           | 0.25           | 0.26           | 0.29           | 0.33           | 0.35  |
|                                 | 10-11 | High alloy Steel, Tool Steel          | 35-45 | 80<br>(70-90)    | 0.03                    | 0.05         | 0.08         | 0.10         | 0.12         | 0.13         | 0.14         | 0.16         | 0.19           | 0.21           | 0.22           | 0.24           | 0.25           | 0.26  |
| M                               | 12-13 | Ferritic/ Martensitic Stainless Steel |       | 60<br>(45-70)    | 0.03                    | 0.05         | 0.08         | 0.10         | 0.14         | 0.16         | 0.17         | 0.18         | 0.21           | 0.23           | 0.24           | 0.26           | 0.29           | 0.31  |
| K                               | 15-16 | Grey Cast Iron                        |       | 90<br>(80-100)   | 0.05                    | 0.05         | 0.09         | 0.13         | 0.16         | 0.19         | 0.20         | 0.21         | 0.25           | 0.28           | 0.30           | 0.32           | 0.35           | 0.37  |
|                                 | 17-20 | Nodular/ Malleable Cast Iron          |       | 85<br>(70-100)   | 0.05                    | 0.05         | 0.09         | 0.13         | 0.16         | 0.19         | 0.20         | 0.21         | 0.25           | 0.28           | 0.30           | 0.32           | 0.35           | 0.37  |

- For 8xD drills reduce feed rate by 15%. For drills <3.0mm reduce v<sub>c</sub> by 30%





## CUTTING DATA

| 810323, 815323, 820323, 826323, 860323 MQL DRILL |       |                              |            |                       |              |              |              |              |                |                |       |      |
|--------------------------------------------------|-------|------------------------------|------------|-----------------------|--------------|--------------|--------------|--------------|----------------|----------------|-------|------|
| VDI MATERIAL GROUP                               |       | HRC                          | Vc (m/min) | fn (mm/rev)           |              |              |              |              |                |                |       |      |
|                                                  |       |                              |            | ø3.0<br>-3.9          | ø4.0<br>-4.9 | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.5 | ø14.0 |      |
| <b>P</b>                                         | 1-5   | Non-alloy Steel              | <25        | <b>95</b><br>(65-125) | 0.09         | 0.12         | 0.15         | 0.18         | 0.22           | 0.28           | 0.33  | 0.37 |
|                                                  | 6-9   | Low alloy Steel              | 25-35      | <b>85</b><br>(60-115) | 0.09         | 0.12         | 0.15         | 0.18         | 0.22           | 0.28           | 0.33  | 0.37 |
|                                                  | 10-11 | High alloy Steel, Tool Steel | 35-45      | <b>75</b><br>(50-100) | 0.09         | 0.12         | 0.15         | 0.18         | 0.22           | 0.28           | 0.33  | 0.37 |
| <b>K</b>                                         | 15-16 | Grey Cast Iron               |            | <b>95</b><br>(65-125) | 0.09         | 0.12         | 0.15         | 0.18         | 0.22           | 0.28           | 0.33  | 0.37 |
|                                                  | 17-20 | Nodular/ Malleable Cast Iron |            | <b>70</b><br>(60-80)  | 0.09         | 0.12         | 0.15         | 0.18         | 0.22           | 0.28           | 0.33  | 0.37 |

1. Guide drilling should be carried out with 5xD drill 0.1mm larger than finished hole diameter and drilled between 3xD and 5xD depth.

2. For main drilling, reduce to 300RPM and feed in at 400mm/min while entering pilot hole.

3. Just before the end of the pilot hole, reduce feed rate to zero and increase the RPM according to the recommended cutting condition shown in the chart above.

4. Increase feed rate and drill to depth without step drilling.

5. When extracting drill after drilling, reduce to 300RPM and feed rate of 1000mm/min when drill reaches pilot hole depth.

6. When exiting hole reduce feed by 50%.

- For 25xD and 30xD drills reduce cutting speed by up to 25%
- For recommended coolant pressure refer to P.59

$v_c$  - cutting speed (m/min)  
 $n$  - RPM (rev/min)  
 $f_n$  - feed rate (mm/rev)  
 $\phi$  - drill diameter (mm)

$$\text{To calculate RPM from cutting speed: } n = \frac{v_c \cdot 1000}{\pi \cdot \phi}$$

$$\text{To calculate cutting speed from RPM: } v_c = \frac{n \cdot \pi \cdot \phi}{1000}$$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in these charts are nominal recommendations and should be considered only as good starting points.



## CUTTING DATA

| 809323 BF DRILL (Flat Bottom)                        |       |                                                |       |                  |                  |                    |              |              |              |              |                |                |                |                |                |       |
|------------------------------------------------------|-------|------------------------------------------------|-------|------------------|------------------|--------------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|-------|
| VDI MATERIAL GROUP                                   |       |                                                | HRc   | vc<br>(m/min)    | fn (mm/rev)      |                    |              |              |              |              |                |                |                |                |                |       |
|                                                      |       |                                                |       |                  | ø3.0<br>-3.9     | ø4.0<br>-4.9       | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø7.0<br>-7.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.5 | ø14.0<br>-15.5 | ø16.0<br>-17.5 | ø18.0<br>-19.5 | ø20.0 |
| P                                                    | 1-5   | Non-alloy Steel                                | <25   | 70<br>(35-75)    | 0.05             | 0.07               | 0.08         | 0.09         | 0.10         | 0.12         | 0.17           | 0.21           | 0.24           | 0.28           | 0.31           | 0.34  |
|                                                      | 6-9   | Low alloy Steel                                | 25-35 | 38<br>(35-40)    | 0.05             | 0.06               | 0.08         | 0.09         | 0.10         | 0.12         | 0.15           | 0.18           | 0.20           | 0.24           | 0.27           | 0.31  |
| M                                                    | 12-13 | Ferritic/<br>Martensitic<br>Stainless<br>Steel |       | 30<br>(25-35)    | 0.02             | 0.03               | 0.04         | 0.05         | 0.05         | 0.06         | 0.08           | 0.10           | 0.11           | 0.12           | 0.13           | 0.15  |
| K                                                    | 15-16 | Grey<br>Cast Iron                              |       | 68<br>(65-70)    | 0.04             | 0.06               | 0.07         | 0.09         | 0.10         | 0.12         | 0.15           | 0.18           | 0.20           | 0.24           | 0.27           | 0.30  |
| N                                                    | 21-24 | Aluminium<br>Si<12%                            |       | 165<br>(150-180) | 0.06             | 0.08               | 0.10         | 0.12         | 0.14         | 0.16         | 0.20           | 0.24           | 0.28           | 0.32           | 0.36           | 0.40  |
| Recommended cutting conditions for inclined surfaces |       |                                                |       |                  |                  |                    |              |              |              |              |                |                |                |                |                |       |
|                                                      |       |                                                |       |                  | Surface<br>angle | Cutting conditions |              |              |              |              |                |                |                |                |                |       |
|                                                      |       |                                                |       |                  |                  | RPM                | FEED         |              |              |              |                |                |                |                |                |       |
|                                                      |       |                                                |       |                  | 0° - 15°         | 100%               | 100%         |              |              |              |                |                |                |                |                |       |
|                                                      |       |                                                |       |                  | 15° - 30°        | 100%               | 50%          |              |              |              |                |                |                |                |                |       |
|                                                      |       |                                                |       |                  | > 30°            | 70%                | 30%          |              |              |              |                |                |                |                |                |       |

| 811323 BF DRILL (Flat Bottom, Through Coolant) |       |                                                |       |                  |                         |              |              |              |              |              |                |                |                |                |                |       |
|------------------------------------------------|-------|------------------------------------------------|-------|------------------|-------------------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|-------|
| VDI MATERIAL GROUP                             |       |                                                | HRc   | vc (m/min)       | f <sub>η</sub> (mm/rev) |              |              |              |              |              |                |                |                |                |                |       |
|                                                |       |                                                |       |                  | ø3.0<br>-3.9            | ø4.0<br>-4.9 | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø7.0<br>-7.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.5 | ø14.0<br>-15.5 | ø16.0<br>-17.5 | ø18.0<br>-19.5 | ø20.0 |
| P                                              | 1-5   | Non-alloy Steel                                | <25   | 87<br>(75-100)   | 0.05                    | 0.07         | 0.10         | 0.12         | 0.13         | 0.15         | 0.19           | 0.22           | 0.26           | 0.31           | 0.35           | 0.40  |
|                                                | 6-9   | Low alloy Steel                                | 25-35 | 67<br>(50-85)    | 0.03                    | 0.06         | 0.08         | 0.09         | 0.10         | 0.11         | 0.14           | 0.16           | 0.19           | 0.23           | 0.26           | 0.30  |
| M                                              | 12-13 | Ferritic/<br>Martensitic<br>Stainless<br>Steel |       | 60<br>(50-70)    | 0.03                    | 0.06         | 0.07         | 0.09         | 0.11         | 0.13         | 0.17           | 0.19           | 0.23           | 0.27           | 0.31           | 0.35  |
| K                                              | 15-16 | Grey<br>Cast Iron                              |       | 82<br>(75-90)    | 0.03                    | 0.04         | 0.05         | 0.06         | 0.07         | 0.08         | 0.11           | 0.12           | 0.15           | 0.17           | 0.19           | 0.22  |
| N                                              | 21-24 | Aluminium<br>Si<12%                            |       | 160<br>(150-170) | 0.07                    | 0.10         | 0.12         | 0.15         | 0.18         | 0.21         | 0.27           | 0.31           | 0.37           | 0.43           | 0.49           | 0.55  |

- For drilling on inclined surfaces, drill pilot hole to 1xD with same diameter 809323 2xD BF Drill
- For drilling on flat surfaces, drill pilot hole to 1xD with same diameter 823323 3xD Inox Drill
- For recommended coolant pressure refer to P.59



## CUTTING DATA

| 803366, 805366 HF DRILL (High Feed) |       |                              |       |                           |                         |              |              |              |                |                |                |                |                |       |
|-------------------------------------|-------|------------------------------|-------|---------------------------|-------------------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|-------|
| VDI MATERIAL GROUP                  |       |                              | HRc   | v <sub>c</sub><br>(m/min) | f <sub>n</sub> (mm/rev) |              |              |              |                |                |                |                |                |       |
|                                     |       |                              |       |                           | ø5.0<br>-5.9            | ø6.0<br>-6.9 | ø7.0<br>-7.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.5 | ø14.0<br>-15.5 | ø16.0<br>-17.5 | ø18.0<br>-19.5 | ø20.0 |
| P                                   | 1-5   | Non-alloy Steel              | <25   | 90<br>(80-150)            | 0.22                    | 0.20         | 0.22         | 0.25         | 0.30           | 0.33           | 0.36           | 0.39           | 0.42           | 0.45  |
|                                     | 6-9   | Low alloy Steel              | 25-35 | 80<br>(40-100)            | 0.22                    | 0.20         | 0.22         | 0.25         | 0.30           | 0.33           | 0.36           | 0.39           | 0.42           | 0.45  |
|                                     | 10-11 | High alloy Steel, Tool Steel | 35-45 | 55<br>(40-70)             | 0.16                    | 0.19         | 0.22         | 0.25         | 0.28           | 0.31           | 0.39           | 0.40           | 0.42           | 0.47  |
| K                                   | 15-16 | Grey Cast Iron               |       | 90<br>(80-100)            | 0.26                    | 0.20         | 0.22         | 0.25         | 0.30           | 0.33           | 0.36           | 0.39           | 0.42           | 0.45  |
|                                     | 17-20 | Nodular/ Malleable Cast Iron |       | 85<br>(70-100)            | 0.22                    | 0.20         | 0.22         | 0.25         | 0.30           | 0.33           | 0.36           | 0.39           | 0.42           | 0.45  |

► For recommended coolant pressure refer to P.59

| 821223 PULSAR DRILL |       |                              |       |                           |                         |              |              |              |              |                |                |       |
|---------------------|-------|------------------------------|-------|---------------------------|-------------------------|--------------|--------------|--------------|--------------|----------------|----------------|-------|
| VDI MATERIAL GROUP  |       |                              | HRc   | v <sub>c</sub><br>(m/min) | f <sub>η</sub> (mm/rev) |              |              |              |              |                |                |       |
|                     |       |                              |       |                           | ø3.0<br>-3.9            | ø4.0<br>-4.9 | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0<br>-13.5 | ø14.0 |
| P                   | 10-11 | High alloy Steel, Tool Steel | 35-45 | 20<br>(16-24)             | 0.05                    | 0.05         | 0.05         | 0.05         | 0.05         | 0.05           | 0.05           | 0.05  |
| K                   | 38    | Hardened Steel               | 40-55 | 18<br>(14-22)             | 0.04                    | 0.04         | 0.04         | 0.04         | 0.04         | 0.04           | 0.04           | 0.04  |
|                     | 39    | Hardened Steel               | 55-65 | 13<br>(10-16)             | 0.04                    | 0.04         | 0.04         | 0.04         | 0.04         | 0.04           | 0.04           | 0.04  |
|                     |       | Hardened Steel               | 65-70 | 10<br>(8-13)              | 0.04                    | 0.04         | 0.04         | 0.04         | 0.04         | 0.04           | 0.04           | 0.04  |

v<sub>c</sub> - cutting speed (m/min)  
 n - RPM (rev/min)  
 f<sub>n</sub> - feed rate (mm/rev)  
 ø - drill diameter (mm)

$$\text{To calculate RPM from cutting speed: } n = \frac{v_c \cdot 1000}{\pi \cdot \phi}$$

$$\text{To calculate cutting speed from RPM: } v_c = \frac{n \cdot \pi \cdot \phi}{1000}$$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in these charts are nominal recommendations and should be considered only as good starting points.



## CUTTING DATA

| 800303, 801303 CARBIDE STUB & JOBBER DRILL |       |                                                |       |                |              |              |              |              |              |              |              |              |                |       |
|--------------------------------------------|-------|------------------------------------------------|-------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|-------|
| VDI<br>MATERIAL<br>GROUP                   |       |                                                | HRc   | Vc<br>(m/min)  | fn (mm/rev)  |              |              |              |              |              |              |              |                |       |
|                                            |       |                                                |       |                | ø1.0<br>-1.9 | ø2.0<br>-2.9 | ø3.0<br>-3.9 | ø4.0<br>-4.9 | ø5.0<br>-5.9 | ø6.0<br>-6.9 | ø7.0<br>-7.9 | ø8.0<br>-9.9 | ø10.0<br>-11.9 | ø12.0 |
| P                                          | 1-5   | Non-alloy<br>Steel                             | <25   | 70<br>(65-75)  | 0.03         | 0.04         | 0.05         | 0.06         | 0.07         | 0.08         | 0.09         | 0.11         | 0.13           | 0.15  |
|                                            | 6-9   | Low alloy<br>Steel                             | 25-35 | 50<br>(45-55)  | 0.03         | 0.04         | 0.05         | 0.06         | 0.07         | 0.08         | 0.09         | 0.11         | 0.13           | 0.15  |
|                                            | 10-11 | High alloy<br>Steel,<br>Tool Steel             | 35-45 | 40<br>(35-45)  | 0.03         | 0.04         | 0.05         | 0.06         | 0.07         | 0.08         | 0.09         | 0.11         | 0.13           | 0.15  |
| M                                          | 12-13 | Ferritic/<br>Martensitic<br>Stainless<br>Steel |       | 35<br>(30-40)  | 0.03         | 0.04         | 0.04         | 0.05         | 0.06         | 0.07         | 0.08         | 0.10         | 0.12           | 0.13  |
| K                                          | 15-16 | Grey<br>Cast Iron                              |       | 90<br>(80-100) | 0.04         | 0.05         | 0.06         | 0.07         | 0.08         | 0.09         | 0.10         | 0.13         | 0.17           | 0.20  |
|                                            | 17-20 | Nodular/<br>Malleable<br>Cast Iron             |       | 60<br>(50-70)  | 0.04         | 0.05         | 0.06         | 0.07         | 0.08         | 0.09         | 0.10         | 0.13         | 0.17           | 0.20  |

| 810303 CARBIDE CENTRE DRILLS |       |                              |       |            |                         |       |       |      |       |       |       |       |
|------------------------------|-------|------------------------------|-------|------------|-------------------------|-------|-------|------|-------|-------|-------|-------|
| VDI MATERIAL GROUP           |       |                              | HRc   | vc (m/min) | f <sub>n</sub> (mm/rev) |       |       |      |       |       |       |       |
|                              |       |                              |       |            | ø1.0                    | ø1.25 | ø2.0  | ø2.5 | ø3.15 | ø4.0  | ø5.0  | ø6.3  |
| P                            | 1-5   | Non-alloy Steel              | <25   | 40 (30-50) | 0.025                   | 0.03  | 0.035 | 0.04 | 0.05  | 0.055 | 0.063 | 0.08  |
|                              | 6-9   | Low alloy Steel              | 25-35 | 35 (30-40) | 0.025                   | 0.03  | 0.035 | 0.04 | 0.05  | 0.055 | 0.063 | 0.08  |
| M                            | 12-13 | Stainless Steel              |       | 20 (15-25) | 0.02                    | 0.02  | 0.025 | 0.03 | 0.035 | 0.04  | 0.05  | 0.06  |
| K                            | 15-16 | Grey Cast Iron               |       | 55 (50-60) | 0.025                   | 0.03  | 0.035 | 0.04 | 0.05  | 0.055 | 0.063 | 0.08  |
|                              | 17-20 | Nodular/ Malleable Cast Iron |       | 50 (40-60) | 0.03                    | 0.035 | 0.045 | 0.05 | 0.06  | 0.07  | 0.08  | 0.095 |



## CUTTING DATA

| 806303, 806403 CARBIDE SPOTTING DRILLS |       |                              |                        |                         |       |       |       |       |       |      |
|----------------------------------------|-------|------------------------------|------------------------|-------------------------|-------|-------|-------|-------|-------|------|
| VDI MATERIAL GROUP                     |       | HRC                          | V <sub>c</sub> (m/min) | f <sub>n</sub> (mm/rev) |       |       |       |       |       |      |
|                                        |       |                              |                        | ø6.0                    | ø8.0  | ø10.0 | ø12.0 | ø16.0 | ø20.0 |      |
| <b>P</b>                               | 1-5   | Non-alloy Steel              | <25                    | <b>70</b><br>(65-75)    | 0.075 | 0.095 | 0.11  | 0.13  | 0.15  | 0.17 |
|                                        | 6-9   | Low alloy Steel              | 25-35                  | <b>65</b><br>(55-70)    | 0.075 | 0.095 | 0.11  | 0.13  | 0.15  | 0.17 |
|                                        | 10-11 | High alloy Steel, Tool Steel | 35-45                  | <b>55</b><br>(50-60)    | 0.065 | 0.085 | 0.095 | 0.11  | 0.13  | 0.15 |
| <b>M</b>                               | 12-13 | Stainless Steel              |                        | <b>30</b><br>(25-35)    | 0.085 | 0.10  | 0.115 | 0.14  | 0.16  | 0.18 |
| <b>K</b>                               | 15-20 | Cast Iron                    |                        | <b>75</b><br>(60-90)    | 0.08  | 0.10  | 0.12  | 0.15  | 0.18  | 0.22 |
| <b>N</b>                               | 21-24 | Aluminium Si<12%             |                        | <b>140</b><br>(110-165) | 0.115 | 0.135 | 0.17  | 0.205 | 0.24  | 0.28 |
|                                        | 26-27 | Copper & Copper Alloys       |                        | <b>110</b><br>(100-120) | 0.115 | 0.135 | 0.17  | 0.205 | 0.24  | 0.28 |
| <b>S</b>                               | 31-35 | HRSA Fe & Ni/Co Based        |                        | <b>25</b><br>(20-30)    | 0.065 | 0.085 | 0.10  | 0.115 | 0.14  | 0.16 |
|                                        | 36-37 | Titanium & Titanium Alloys   |                        | <b>30</b><br>(25-35)    | 0.065 | 0.085 | 0.10  | 0.115 | 0.14  | 0.16 |

v<sub>c</sub> - cutting speed (m/min)  
 n - RPM (rev/min)  
 f<sub>n</sub> - feed rate (mm/rev)  
 ø - drill diameter (mm)

$$\text{To calculate RPM from cutting speed: } n = \frac{v_c \cdot 1000}{\pi \cdot \phi}$$

$$\text{To calculate cutting speed from RPM: } v_c = \frac{n \cdot \pi \cdot \phi}{1000}$$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in these charts are nominal recommendations and should be considered only as good starting points.



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## COOLANT PRESSURE

Recommended guidelines for through coolant carbide drills.

| Type                                 | Size   |              |              |               |                |                |
|--------------------------------------|--------|--------------|--------------|---------------|----------------|----------------|
| Inox, SX, HF, BF<br>Alu-XP, GP Drill | <ø3.0  | ø3.0<br>-5.0 | ø5.0<br>-8.0 | ø8.0<br>-12.0 | ø12.0<br>-16.0 | ø16.0<br>-20.0 |
| <b>3xD to 5xD</b>                    | 60 bar | 50 bar       | 30 bar       | 25 bar        | 20 bar         | 15 bar         |
| <b>8xD</b>                           | 80 bar | 60 bar       | 40 bar       | 30 bar        | 25 bar         | 20 bar         |

Recommended guidelines for minimum quantity lubricant carbide drills.

| Type     | ULDR   |        |        |        |        |
|----------|--------|--------|--------|--------|--------|
| MQL      | 10 x D | 15 X D | 20 X D | 25 X D | 30 X D |
| PRESSURE | 20 bar | 20 bar | 45 bar | 45 bar | 45 bar |

All recommendations are for guidance only. Adjustments may need to be made according to your set-up.