

# CARBIDE



Being the best through innovation



# GENERAL CARBIDE DRILLS

## UNIVERSELLE VHM - BOHRER

- JOBBER & STUB LENGTH  
General Purpose, DIN338 & DIN6539
- Kurz & Extra Kurz  
Für allgemeinen Einsatz, DIN338 und DIN6539

# SELECTION GUIDE

## GENERAL SOLID CARBIDE DRILLS

For General materials, Cast steels, Cast iron, Non-ferrous materials

| ITEM                                                            | MODEL                                                                             | DESCRIPTION                                                                 | SIZE |       | PAGE       |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------|-------|------------|
|                                                                 |                                                                                   |                                                                             | MIN  | MAX   |            |
| <b>D5405</b>                                                    |  | CARBIDE DRILLS<br>VOLLHARTMETALL-SPIRALBOHRER<br><i>STUB<br/>EXTRA KURZ</i> | D1.0 | D13.0 | <b>116</b> |
| <b>D5407</b>                                                    |  | CARBIDE DRILLS<br>VOLLHARTMETALL-SPIRALBOHRER<br><i>JOBBER<br/>KURZ</i>     | D1.0 | D13.0 | <b>118</b> |
| RECOMMENDED CUTTING CONDITIONS<br>EMPFOHLENE SCHNEIDKONDITIONEN |                                                                                   |                                                                             |      |       | <b>120</b> |

# GENERAL SOLID CARBIDE DRILLS

◎ : Excellent  
○ : Good

| Carbon Steels | Alloy Steels | Prehardened Steels | Hardened Steels |        | Cast Iron | Aluminum | Stainless Steels | Titanium | Mild Steels | Copper | Bronze | CFRP |
|---------------|--------------|--------------------|-----------------|--------|-----------|----------|------------------|----------|-------------|--------|--------|------|
| ~HB225        | HB225~325    | HRC30~45           | HRC45~55        | HRC55~ |           |          |                  |          |             |        |        |      |
| ◎             | ◎            |                    |                 |        | ○         | ○        | ○                | ○        | ◎           |        |        |      |
| ◎             | ◎            |                    |                 |        | ○         | ○        | ○                | ○        | ◎           |        |        |      |



# GENERAL CARBIDE DRILLS

**D5405** SERIES

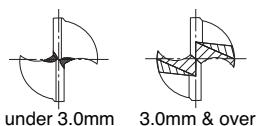
## CARBIDE DRILLS

## VOLLHARTMETALL-SPIRALBOHRER

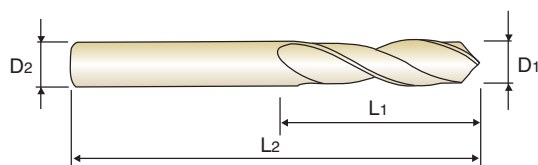
**STUB**
**EXTRA KURZ**

► **Application** : Drilling steels in general, cast steels, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy metals, non-ferrous light metals, abrasive plastics.

► **Verwendung** : Zum wirtschaftlichen Bohren von Stahl allgemein, Stahlguß, Hart-und Temperguß, Nichteisen Leichtmetallen, abrasiven Kunststoffen.



under 3.0mm    3.0mm & over


**DIN  
6539**
**MG**
**N  
30°**
**h6**
**h7**
**118°**
**P.120**
**D<sub>1</sub>=D<sub>2</sub>**

Unit : mm

| EDP No.  | Drill Diameter<br>D <sub>1</sub> | Flute Length<br>L <sub>1</sub> | Overall Length<br>L <sub>2</sub> | EDP No.  | Drill Diameter<br>D <sub>1</sub> | Flute Length<br>L <sub>1</sub> | Overall Length<br>L <sub>2</sub> |
|----------|----------------------------------|--------------------------------|----------------------------------|----------|----------------------------------|--------------------------------|----------------------------------|
| D5405010 | 1.0                              | 6                              | 26                               | D5405035 | 3.5                              | 20                             | 52                               |
| D5405011 | 1.1                              | 7                              | 28                               | D5405036 | 3.6                              | 20                             | 52                               |
| D5405012 | 1.2                              | 8                              | 30                               | D5405037 | 3.7                              | 20                             | 52                               |
| D5405013 | 1.3                              | 8                              | 30                               | D5405038 | 3.8                              | 20                             | 52                               |
| D5405014 | 1.4                              | 9                              | 32                               | D5405039 | 3.9                              | 22                             | 55                               |
| D5405015 | 1.5                              | 9                              | 32                               | D5405040 | 4.0                              | 22                             | 55                               |
| D5405016 | 1.6                              | 10                             | 34                               | D5405041 | 4.1                              | 22                             | 55                               |
| D5405017 | 1.7                              | 10                             | 34                               | D5405042 | 4.2                              | 22                             | 55                               |
| D5405018 | 1.8                              | 11                             | 36                               | D5405043 | 4.3                              | 24                             | 58                               |
| D5405019 | 1.9                              | 11                             | 36                               | D5405044 | 4.4                              | 24                             | 58                               |
| D5405020 | 2.0                              | 12                             | 38                               | D5405045 | 4.5                              | 24                             | 58                               |
| D5405021 | 2.1                              | 12                             | 38                               | D5405046 | 4.6                              | 24                             | 58                               |
| D5405022 | 2.2                              | 13                             | 40                               | D5405047 | 4.7                              | 24                             | 58                               |
| D5405023 | 2.3                              | 13                             | 40                               | D5405048 | 4.8                              | 26                             | 62                               |
| D5405024 | 2.4                              | 14                             | 43                               | D5405049 | 4.9                              | 26                             | 62                               |
| D5405025 | 2.5                              | 14                             | 43                               | D5405050 | 5.0                              | 26                             | 62                               |
| D5405026 | 2.6                              | 14                             | 43                               | D5405051 | 5.1                              | 26                             | 62                               |
| D5405027 | 2.7                              | 16                             | 46                               | D5405052 | 5.2                              | 26                             | 62                               |
| D5405028 | 2.8                              | 16                             | 46                               | D5405053 | 5.3                              | 26                             | 62                               |
| D5405029 | 2.9                              | 16                             | 46                               | D5405054 | 5.4                              | 28                             | 66                               |
| D5405030 | 3.0                              | 16                             | 46                               | D5405055 | 5.5                              | 28                             | 66                               |
| D5405031 | 3.1                              | 18                             | 49                               | D5405056 | 5.6                              | 28                             | 66                               |
| D5405032 | 3.2                              | 18                             | 49                               | D5405057 | 5.7                              | 28                             | 66                               |
| D5405033 | 3.3                              | 18                             | 49                               | D5405058 | 5.8                              | 28                             | 66                               |
| D5405034 | 3.4                              | 20                             | 52                               | D5405059 | 5.9                              | 28                             | 66                               |

► TiN(D6405), TiCN(DG405) and TiAlN(DH405) are available on your request.

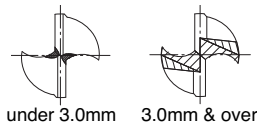
◎ : Excellent    ○ : Good

| Carbon Steels | Alloy Steels | Prehardened Steels | Hardened Steels |        | Cast Iron | Aluminum | Stainless Steels | Titanium | Mild Steels | Copper | Bronze | CFRP |
|---------------|--------------|--------------------|-----------------|--------|-----------|----------|------------------|----------|-------------|--------|--------|------|
| ~HB225        | HB225~325    | HRc30~45           | HRc45~55        | HRc55~ |           |          |                  |          |             |        |        |      |
| ◎             | ◎            |                    |                 |        | ○         | ○        | ○                | ○        | ◎           |        |        |      |

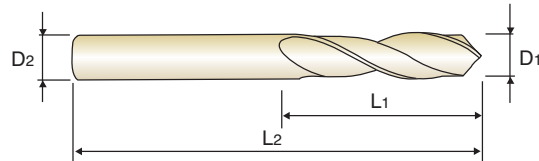
**CARBIDE DRILLS**  
**VOLLHARTMETALL-SPIRALBOHRER**
**STUB****EXTRA KURZ**

► **Application** : Drilling steels in general, cast steels, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy metals, non-ferrous light metals, abrasive plastics.

► **Verwendung** : Zum wirtschaftlichen Bohren von Stahl allgemein, Stahlguß, Hart-und Temperguß, Nichteisen Leichtmetallen, abrasiven Kunststoffen.



under 3.0mm    3.0mm &amp; over

**D<sub>1</sub>=D<sub>2</sub>**

Unit : mm

| EDP No.  | Drill Diameter<br>D <sub>1</sub> | Flute Length<br>L <sub>1</sub> | Overall Length<br>L <sub>2</sub> | EDP No.  | Drill Diameter<br>D <sub>1</sub> | Flute Length<br>L <sub>1</sub> | Overall Length<br>L <sub>2</sub> |
|----------|----------------------------------|--------------------------------|----------------------------------|----------|----------------------------------|--------------------------------|----------------------------------|
| D5405060 | 6.0                              | 28                             | 66                               | D5405084 | 8.4                              | 37                             | 79                               |
| D5405061 | 6.1                              | 31                             | 70                               | D5405085 | 8.5                              | 37                             | 79                               |
| D5405062 | 6.2                              | 31                             | 70                               | D5405086 | 8.6                              | 40                             | 84                               |
| D5405063 | 6.3                              | 31                             | 70                               | D5405087 | 8.7                              | 40                             | 84                               |
| D5405064 | 6.4                              | 31                             | 70                               | D5405088 | 8.8                              | 40                             | 84                               |
| D5405065 | 6.5                              | 31                             | 70                               | D5405089 | 8.9                              | 40                             | 84                               |
| D5405066 | 6.6                              | 31                             | 70                               | D5405090 | 9.0                              | 40                             | 84                               |
| D5405067 | 6.7                              | 31                             | 70                               | D5405091 | 9.1                              | 40                             | 84                               |
| D5405068 | 6.8                              | 34                             | 74                               | D5405092 | 9.2                              | 40                             | 84                               |
| D5405069 | 6.9                              | 34                             | 74                               | D5405093 | 9.3                              | 40                             | 84                               |
| D5405070 | 7.0                              | 34                             | 74                               | D5405094 | 9.4                              | 40                             | 84                               |
| D5405071 | 7.1                              | 34                             | 74                               | D5405095 | 9.5                              | 40                             | 84                               |
| D5405072 | 7.2                              | 34                             | 74                               | D5405096 | 9.6                              | 43                             | 89                               |
| D5405073 | 7.3                              | 34                             | 74                               | D5405097 | 9.7                              | 43                             | 89                               |
| D5405074 | 7.4                              | 34                             | 74                               | D5405098 | 9.8                              | 43                             | 89                               |
| D5405075 | 7.5                              | 34                             | 74                               | D5405099 | 9.9                              | 43                             | 89                               |
| D5405076 | 7.6                              | 37                             | 79                               | D5405100 | 10.0                             | 43                             | 89                               |
| D5405077 | 7.7                              | 37                             | 79                               | D5405102 | 10.2                             | 43                             | 89                               |
| D5405078 | 7.8                              | 37                             | 79                               | D5405105 | 10.5                             | 43                             | 89                               |
| D5405079 | 7.9                              | 37                             | 79                               | D5405110 | 11.0                             | 47                             | 95                               |
| D5405080 | 8.0                              | 37                             | 79                               | D5405115 | 11.5                             | 47                             | 95                               |
| D5405081 | 8.1                              | 37                             | 79                               | D5405120 | 12.0                             | 51                             | 102                              |
| D5405082 | 8.2                              | 37                             | 79                               | D5405130 | 13.0                             | 51                             | 102                              |
| D5405083 | 8.3                              | 37                             | 79                               |          |                                  |                                |                                  |

► TiN(D6405), TiCN(DG405) and TiAlN(DH405) are available on your request.

◎ : Excellent    ○ : Good

| Carbon Steels | Alloy Steels | Prehardened Steels | Hardened Steels |        | Cast Iron | Aluminum | Stainless Steels | Titanium | Mild Steels | Copper | Bronze | CFRP |
|---------------|--------------|--------------------|-----------------|--------|-----------|----------|------------------|----------|-------------|--------|--------|------|
| ~HB225        | HB225~325    | HRc30~45           | HRc45~55        | HRc55~ |           |          |                  |          |             |        |        |      |
| ◎             | ◎            |                    |                 |        | ○         | ○        | ○                | ○        | ◎           |        |        |      |



# GENERAL CARBIDE DRILLS

**D5407** SERIES

## CARBIDE DRILLS

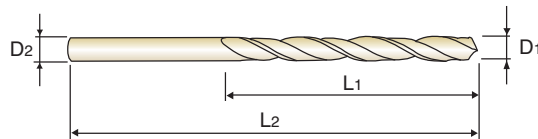
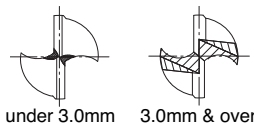
**JOBBER**

## VOLLHARTMETALL-SPIRALBOHRER

**KURZ**

► **Application** : Drilling steels in general, cast steels, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy metals, non-ferrous light metals, abrasive plastics.

► **Verwendung** : Zum wirtschaftlichen Bohren von Stahl allgemein, Stahlguß, Hart-und Temperguß, Nichteisen Leichtmetallen, abrasiven Kunststoffen.


**DIN  
338**
**MG**
**N  
30°**
**h6**
**h7**
**118°**


P.120

D<sub>1</sub>=D<sub>2</sub>

Unit : mm

| EDP No.  | Drill Diameter<br>D <sub>1</sub> | Flute Length<br>L <sub>1</sub> | Overall Length<br>L <sub>2</sub> | EDP No.  | Drill Diameter<br>D <sub>1</sub> | Flute Length<br>L <sub>1</sub> | Overall Length<br>L <sub>2</sub> |
|----------|----------------------------------|--------------------------------|----------------------------------|----------|----------------------------------|--------------------------------|----------------------------------|
| D5407010 | 1.0                              | 12                             | 34                               | D5407032 | 3.2                              | 36                             | 65                               |
| D5407011 | 1.1                              | 14                             | 36                               | D5407033 | 3.3                              | 36                             | 65                               |
| D5407012 | 1.2                              | 16                             | 38                               | D5407034 | 3.4                              | 39                             | 70                               |
| D5407013 | 1.3                              | 16                             | 38                               | D5407035 | 3.5                              | 39                             | 70                               |
| D5407014 | 1.4                              | 18                             | 40                               | D5407036 | 3.6                              | 39                             | 70                               |
| D5407015 | 1.5                              | 18                             | 40                               | D5407037 | 3.7                              | 39                             | 70                               |
| D5407016 | 1.6                              | 20                             | 43                               | D5407038 | 3.8                              | 43                             | 75                               |
| D5407017 | 1.7                              | 20                             | 43                               | D5407039 | 3.9                              | 43                             | 75                               |
| D5407018 | 1.8                              | 22                             | 46                               | D5407040 | 4.0                              | 43                             | 75                               |
| D5407019 | 1.9                              | 22                             | 46                               | D5407041 | 4.1                              | 43                             | 75                               |
| D5407020 | 2.0                              | 24                             | 49                               | D5407042 | 4.2                              | 43                             | 75                               |
| D5407021 | 2.1                              | 24                             | 49                               | D5407043 | 4.3                              | 47                             | 80                               |
| D5407022 | 2.2                              | 27                             | 53                               | D5407044 | 4.4                              | 47                             | 80                               |
| D5407023 | 2.3                              | 27                             | 53                               | D5407045 | 4.5                              | 47                             | 80                               |
| D5407024 | 2.4                              | 30                             | 57                               | D5407046 | 4.6                              | 47                             | 80                               |
| D5407025 | 2.5                              | 30                             | 57                               | D5407047 | 4.7                              | 47                             | 80                               |
| D5407026 | 2.6                              | 30                             | 57                               | D5407048 | 4.8                              | 52                             | 86                               |
| D5407027 | 2.7                              | 33                             | 61                               | D5407049 | 4.9                              | 52                             | 86                               |
| D5407028 | 2.8                              | 33                             | 61                               | D5407050 | 5.0                              | 52                             | 86                               |
| D5407029 | 2.9                              | 33                             | 61                               | D5407051 | 5.1                              | 52                             | 86                               |
| D5407030 | 3.0                              | 33                             | 61                               | D5407052 | 5.2                              | 52                             | 86                               |
| D5407031 | 3.1                              | 36                             | 65                               | D5407053 | 5.3                              | 52                             | 86                               |

► TiN(D6407), TiCN(DG407) and TiAlN(DH407) are available on your request.

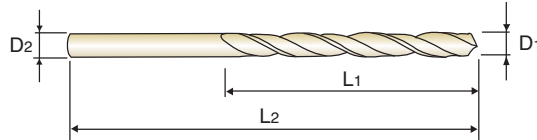
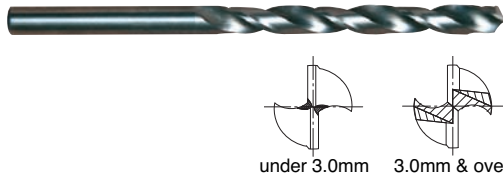
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|---------------|--------------|--------------------|-----------------|--------|-----------|----------|------------------|----------|-------------|--------|--------|------|
| ~HB225        | HB225~325    | HRc30~45           | HRc45~55        | HRc55~ |           |          |                  |          |             |        |        |      |
| ◎             | ◎            |                    |                 |        | ○         | ○        | ○                | ○        | ◎           |        |        |      |

**CARBIDE DRILLS**  
**VOLLHARTMETALL-SPIRALBOHRER**
**JOBBER****KURZ**

► **Application** : Drilling steels in general, cast steels, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy metals, non-ferrous light metals, abrasive plastics.

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**D<sub>1</sub>=D<sub>2</sub>**

Unit : mm

| EDP No.  | Drill Diameter<br>D <sub>1</sub> | Flute Length<br>L <sub>1</sub> | Overall Length<br>L <sub>2</sub> |
|----------|----------------------------------|--------------------------------|----------------------------------|
| D5407054 | 5.4                              | 57                             | 93                               |
| D5407055 | 5.5                              | 57                             | 93                               |
| D5407056 | 5.6                              | 57                             | 93                               |
| D5407057 | 5.7                              | 57                             | 93                               |
| D5407058 | 5.8                              | 57                             | 93                               |
| D5407059 | 5.9                              | 57                             | 93                               |
| D5407060 | 6.0                              | 57                             | 93                               |
| D5407061 | 6.1                              | 63                             | 101                              |
| D5407062 | 6.2                              | 63                             | 101                              |
| D5407063 | 6.3                              | 63                             | 101                              |
| D5407064 | 6.4                              | 63                             | 101                              |
| D5407065 | 6.5                              | 63                             | 101                              |
| D5407068 | 6.8                              | 69                             | 109                              |

| EDP No.  | Drill Diameter<br>D <sub>1</sub> | Flute Length<br>L <sub>1</sub> | Overall Length<br>L <sub>2</sub> |
|----------|----------------------------------|--------------------------------|----------------------------------|
| D5407070 | 7.0                              | 69                             | 109                              |
| D5407075 | 7.5                              | 69                             | 109                              |
| D5407080 | 8.0                              | 75                             | 117                              |
| D5407085 | 8.5                              | 75                             | 117                              |
| D5407090 | 9.0                              | 81                             | 125                              |
| D5407095 | 9.5                              | 81                             | 125                              |
| D5407100 | 10.0                             | 87                             | 133                              |
| D5407102 | 10.2                             | 87                             | 133                              |
| D5407105 | 10.5                             | 87                             | 133                              |
| D5407110 | 11.0                             | 94                             | 142                              |
| D5407115 | 11.5                             | 94                             | 142                              |
| D5407120 | 12.0                             | 101                            | 151                              |
| D5407130 | 13.0                             | 101                            | 151                              |

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|---------------|--------------|--------------------|-----------------|--------|-----------|----------|------------------|----------|-------------|--------|--------|------|
| ~HB225        | HB225~325    | HRc30~45           | HRc45~55        | HRc55~ |           |          |                  |          |             |        |        |      |
| ◎             | ◎            |                    |                 |        | ○         | ○        | ○                | ○        | ◎           |        |        |      |





# GENERAL CARBIDE DRILLS

## RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

### CARBIDE DRILLS, DIN6539, DIN338

### VOLLHARTMETALL SPIRALBOHRER, DIN 6539, DIN 338

#### D5405, D5407 SERIES

| WORK MATERIAL  | NON-ALLOY STEELS        |      | ALLOY STEELS             |      | SOFT GREY CAST IRON |      | HARD GREY CAST IRON |      | STAINLESS STEELS |      | Al-Si ALLOYS, Si<10% |      | Al-Si ALLOYS, Si>10% |      | Ti, Ni ALLOY STEELS |      |
|----------------|-------------------------|------|--------------------------|------|---------------------|------|---------------------|------|------------------|------|----------------------|------|----------------------|------|---------------------|------|
| STRENGTH       | < 700 N/mm <sup>2</sup> |      | < 1000 N/mm <sup>2</sup> |      | < HB240, GG25       |      | < HB300, GG40       |      |                  |      |                      |      |                      |      |                     |      |
| DRILLING SPEED | 65 ~ 75 m/min           |      | 45 ~ 55 m/min            |      | 80 ~ 100 m/min      |      | 50 ~ 70 m/min       |      | 30 ~ 40 m/min    |      | 150 ~ 170 m/min      |      | 110 ~ 130 m/min      |      | 33 ~ 38 m/min       |      |
| DIAMETER       | N                       | S    | N                        | S    | N                   | S    | N                   | S    | N                | S    | N                    | S    | N                    | S    | N                   | S    |
| 1.0            | 23000                   | 0.03 | 17200                    | 0.03 | 32000               | 0.04 | 23000               | 0.04 | 12000            | 0.04 | 54000                | 0.05 | 42000                | 0.05 | 11800               | 0.02 |
| 2.0            | 11500                   | 0.04 | 8600                     | 0.04 | 16000               | 0.05 | 11500               | 0.05 | 6000             | 0.03 | 27000                | 0.06 | 21000                | 0.06 | 5900                | 0.03 |
| 3.0            | 7800                    | 0.05 | 5750                     | 0.05 | 10500               | 0.06 | 7600                | 0.06 | 4000             | 0.04 | 18000                | 0.07 | 14000                | 0.07 | 3900                | 0.04 |
| 4.0            | 5800                    | 0.06 | 4300                     | 0.06 | 7800                | 0.07 | 5700                | 0.07 | 3000             | 0.05 | 13000                | 0.08 | 10500                | 0.08 | 2950                | 0.05 |
| 5.0            | 4700                    | 0.07 | 3450                     | 0.07 | 6200                | 0.08 | 4550                | 0.08 | 2400             | 0.06 | 10500                | 0.09 | 8500                 | 0.09 | 2350                | 0.06 |
| 6.0            | 3900                    | 0.08 | 2850                     | 0.08 | 5200                | 0.09 | 3800                | 0.09 | 2000             | 0.07 | 8800                 | 0.11 | 7100                 | 0.11 | 1950                | 0.07 |
| 7.0            | 3350                    | 0.09 | 2450                     | 0.09 | 4500                | 0.10 | 3250                | 0.10 | 1700             | 0.08 | 7600                 | 0.13 | 6100                 | 0.13 | 1700                | 0.08 |
| 8.0            | 2900                    | 0.10 | 2150                     | 0.10 | 3900                | 0.12 | 2850                | 0.12 | 1500             | 0.09 | 6600                 | 0.15 | 5350                 | 0.15 | 1450                | 0.09 |
| 9.0            | 2600                    | 0.11 | 1900                     | 0.11 | 3450                | 0.14 | 2550                | 0.14 | 1350             | 0.10 | 5900                 | 0.17 | 4750                 | 0.17 | 1300                | 0.10 |
| 10.0           | 2350                    | 0.12 | 1700                     | 0.12 | 3100                | 0.16 | 2300                | 0.16 | 1200             | 0.11 | 5300                 | 0.19 | 4250                 | 0.19 | 1200                | 0.11 |
| 11.0           | 2150                    | 0.13 | 1600                     | 0.13 | 2850                | 0.18 | 2100                | 0.18 | 1100             | 0.12 | 4850                 | 0.21 | 3900                 | 0.21 | 1050                | 0.12 |
| 12.0           | 1950                    | 0.14 | 1450                     | 0.14 | 2600                | 0.20 | 1900                | 0.20 | 1000             | 0.13 | 4450                 | 0.23 | 3550                 | 0.23 | 980                 | 0.13 |
| 13.0           | 1800                    | 0.16 | 1350                     | 0.16 | 2400                | 0.20 | 1750                | 0.20 | 950              | 0.13 | 4100                 | 0.25 | 3300                 | 0.25 | 905                 | 0.13 |

N = R.P.M

S = Feed per Revolution (mm/rev.)