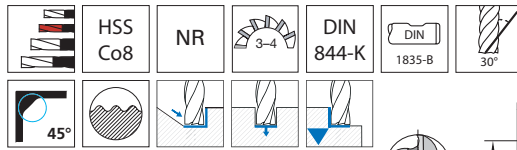


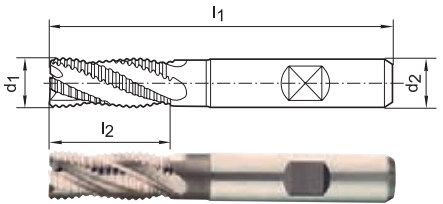
## Schrupfräser

**Ausführung:** Mit hinterschliffenem Kordelprofil. Mit Zentrumschnitt, zum Bohren geeignet.

**Anwendung:** Einsetzbar zum Umfangs- und Stirnfräsen.



**format**  
professional quality



**2190**  
blank

**2196**  
TiAIN



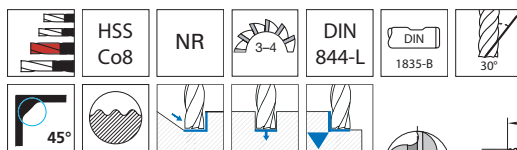
| Einsatz                | STAHL                      |                             |                             | INOX                 |              |        | GUSS       |     | SOND.-LEG.                       | NE-METALLE     |                |                        |                                 | GEHÄRTETER STAHL |             |             | Bestell-Nr. |
|------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|--------------|--------|------------|-----|----------------------------------|----------------|----------------|------------------------|---------------------------------|------------------|-------------|-------------|-------------|
|                        | < 700<br>N/mm <sup>2</sup> | < 1000<br>N/mm <sup>2</sup> | < 1400<br>N/mm <sup>2</sup> | ferrit./<br>martens. | austenitisch | Duplex | GG/<br>GTS | GGG | Titan ><br>850 N/mm <sup>2</sup> | Alu <<br>8% Si | Alu ><br>8% Si | Kupfer/<br>Kupfer-Leg. | Graphit/<br>GFK/CFK/<br>Duropl. | < 55<br>HRC      | < 60<br>HRC | > 60<br>HRC |             |
| V <sub>c</sub> [m/min] | 40                         | 30                          | 20                          | -                    | -            | -      | -          | -   | -                                | 105            | -              | -                      | -                               | -                | -           | -           | 2190        |
|                        | -                          | 36                          | -                           | -                    | -            | -      | -          | -   | -                                | -              | -              | -                      | -                               | -                | -           | -           | 2196        |

|                         |                                    |                            |                              |           |           | format<br>roundtable |        | format<br>roundtable |         | Bestell-<br>Nr. |
|-------------------------|------------------------------------|----------------------------|------------------------------|-----------|-----------|----------------------|--------|----------------------|---------|-----------------|
|                         |                                    |                            |                              |           |           | STAHL                | 2190   | 2196                 |         |                 |
|                         |                                    |                            |                              |           |           | < 1000 N/mm²         | blank  | TiAIN                |         |                 |
| Ø d <sub>1</sub> = js12 | Schneiden-<br>länge l <sub>2</sub> | Gesamtlänge l <sub>1</sub> | Schaft-Ø d <sub>2</sub> = h6 | Eckenfase | f         |                      |        |                      |         |                 |
| mm                      | mm                                 | mm                         | mm                           | mm        | Zähnezahl | mm                   | €      | €                    |         |                 |
| 6                       | 13                                 | 57                         | 6                            | 0,25      | 3         | 0,013                | 20,30  | 23,90                | ...0600 |                 |
| 7                       | 16                                 | 66                         | 10                           | 0,25      | 3         | 0,013                | –      | 28,60                | ...0700 |                 |
| 8                       | 19                                 | 69                         | 10                           | 0,25      | 3         | 0,021                | 21,60  | 28,00                | ...0800 |                 |
| 9                       | 19                                 | 69                         | 10                           | 0,34      | 3         | 0,021                | –      | 29,40                | ...0900 |                 |
| 10                      | 22                                 | 72                         | 10                           | 0,34      | 4         | 0,044                | 21,60  | 29,40                | ...1000 |                 |
| 11                      | 22                                 | 79                         | 12                           | 0,5       | 4         | 0,044                | –      | 32,00                | ...1100 |                 |
| 12                      | 26                                 | 83                         | 12                           | 0,5       | 4         | 0,058                | 24,10  | 32,60                | ...1200 |                 |
| 14                      | 26                                 | 83                         | 12                           | 0,55      | 4         | 0,067                | 30,50  | 40,10                | ...1400 |                 |
| 16                      | 32                                 | 92                         | 16                           | 0,55      | 4         | 0,083                | 34,30  | 43,50                | ...1600 |                 |
| 18                      | 32                                 | 92                         | 16                           | 0,55      | 4         | 0,093                | 36,00  | 48,60                | ...1800 |                 |
| 19                      | 32                                 | 92                         | 16                           | 0,55      | 4         | 0,096                | 41,50  | –                    | ...1900 |                 |
| 20                      | 38                                 | 104                        | 20                           | 0,55      | 4         | 0,106                | 41,50  | 61,80                | ...2000 |                 |
|                         |                                    |                            |                              |           |           |                      | (W206) | (W214)               |         |                 |

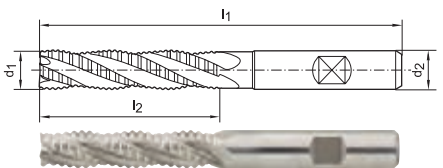
## Schrupfräser

**Ausführung:** Mit hinterschliffenem Kordelprofil. Mit Zentrumschnitt, zum Bohren geeignet.

**Anwendung:** Einsetzbar zum Umfangs- und Stirnfräsen.



**format**  
professional quality



| Einsatz                | STAHL                      |                             |                             | INOX                 |              |        | GUSS       |     | SOND.-LEG.                       | NE-METALLE     |                |                        |                                 | GEHÄRTETER STAHL |             |             | Bestell-Nr. |
|------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|--------------|--------|------------|-----|----------------------------------|----------------|----------------|------------------------|---------------------------------|------------------|-------------|-------------|-------------|
|                        | < 700<br>N/mm <sup>2</sup> | < 1000<br>N/mm <sup>2</sup> | < 1400<br>N/mm <sup>2</sup> | ferrit./<br>martens. | austenitisch | Duplex | GG/<br>GTS | GGG | Titan ><br>850 N/mm <sup>2</sup> | Alu <<br>8% Si | Alu ><br>8% Si | Kupfer/<br>Kupfer-Leg. | Graphit/<br>GFK/CFK/<br>Duropl. | < 55<br>HRC      | < 60<br>HRC | > 60<br>HRC |             |
| V <sub>c</sub> [m/min] | 40                         | 30                          | 20                          | blank                | -            | -      | -          | -   | -                                | 110            | -              | -                      | -                               | -                | -           | -           | 2199        |

|                         |                               |                            |                              |           |           |                |       |        |     | format                   |       | Bestell-Nr. |
|-------------------------|-------------------------------|----------------------------|------------------------------|-----------|-----------|----------------|-------|--------|-----|--------------------------|-------|-------------|
|                         |                               |                            |                              |           |           |                |       |        |     | STAHL                    | 2199  |             |
|                         |                               |                            |                              |           |           |                |       |        |     | < 1400 N/mm <sup>2</sup> | blank |             |
| Ø d <sub>1</sub> = js12 | Schneidenlänge l <sub>2</sub> | Gesamtlänge l <sub>1</sub> | Schaft-Ø d <sub>2</sub> = h6 | Eckenfase | Zähnezahl | f <sub>t</sub> | mm    | €      | €   |                          |       |             |
| mm                      | mm                            | mm                         | mm                           | mm        |           |                |       |        |     |                          |       |             |
| 6                       | 24                            | 68                         | 6                            | 0,25      | 3         | 0,013          | 26,20 | 27,80  | ... | 0600                     |       |             |
| 8                       | 38                            | 88                         | 10                           | 0,25      | 3         | 0,021          | 27,80 | 28,40  | ... | 0800                     |       |             |
| 10                      | 45                            | 95                         | 10                           | 0,34      | 4         | 0,033          | 28,40 | 32,80  | ... | 1000                     |       |             |
| 12                      | 53                            | 110                        | 12                           | 0,5       | 4         | 0,044          | 32,80 | 48,10  | ... | 1200                     |       |             |
| 16                      | 63                            | 123                        | 16                           | 0,55      | 4         | 0,063          | 48,10 | 54,50  | ... | 1600                     |       |             |
| 18                      | 63                            | 123                        | 16                           | 0,55      | 4         | 0,07           | 54,50 | 60,10  | ... | 1800                     |       |             |
| 20                      | 75                            | 141                        | 20                           | 0,55      | 4         | 0,08           | 60,10 | -      | ... | 2000                     |       |             |
|                         |                               |                            |                              |           |           |                |       | (W206) |     |                          |       |             |