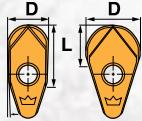
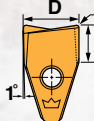
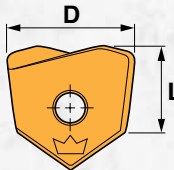


## Profile Milling Inserts

### Small Ball Nose & Back Draft Inserts

| VRBS                                                                              | Tool Ordering Number | Dimensions |      |         | Grade |     |     | Description                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|----------------------|------------|------|---------|-------|-----|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                   |                      | D          | L    | R       | XRN   | TLN | HSN |                                                                                                                                                                                                                 |
|  | VRBS-6               | 6          | 8,10 | 3       | •     | •   | •   | Used for semi and finish-milling small radius or detail work, and surface milling in soft and hard steel, cast iron, aerospace and non-ferrous alloys, graphite, etc. Suitable for high speed and hard milling. |
|                                                                                   | VRBS-8               | 8          | 4,50 | 4       | •     | •   | •   |                                                                                                                                                                                                                 |
| VBD                                                                               | Tool Ordering Number | Dimensions |      |         | Grade |     |     | Description                                                                                                                                                                                                     |
|                                                                                   |                      | D          | L    | R       | XRN   | TLN | HSN |                                                                                                                                                                                                                 |
|  | VBD-06               | 6          | 8,6  | 0,1/0,4 | •     | •   | •   | Used for semi and finish-milling small radius or detail work, and surface milling in soft and hard steel, cast iron, aerospace and non-ferrous alloys, graphite, etc. Suitable for high speed and hard milling  |
|                                                                                   | VBD-08               | 8          | 5    | 0,1/0,4 | •     | •   | •   |                                                                                                                                                                                                                 |

### Metric High Feed Inserts

| HF                                                                                 | Tool Ordering Number | Dimensions |   |      | Grade |     |     | Description                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------|----------------------|------------|---|------|-------|-----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                    |                      | D          | L | PR   | XRN   | TLN | HSN |                                                                                                                                                                                                                                      |
|  | HF-10                | 10         | 3 | 1,00 | •     | •   | •   | Millstar HF insert is designed for High feed and High speed machining. It runs at high cutting speed and feed rates with shallow depth of cut. It allows the chip to flow up and out of the cut quickly. It allows heavy chip loads. |
|                                                                                    | HF-12                | 12         | 4 | 1,43 | •     | •   | •   |                                                                                                                                                                                                                                      |
|                                                                                    | HF-16                | 16         | 5 | 1,94 | •     | •   | •   |                                                                                                                                                                                                                                      |
|                                                                                    | HF-20                | 20         | 6 | 2,26 | •     | •   | •   |                                                                                                                                                                                                                                      |
|                                                                                    | HF-25                | 25         | 7 | 2,82 | •     | •   | •   |                                                                                                                                                                                                                                      |

### Cutting Recommendations for High Feed Inserts

| Work Material     | Material Hardness | Cutting Depth at Diameter ap max |      |      |      |      | Cutting Width Ae max | Insert | Coating Type Recom. | Cut speed at D m/min | Max feed per tooth fz at cutting insert diameter D |           |            |            |           |
|-------------------|-------------------|----------------------------------|------|------|------|------|----------------------|--------|---------------------|----------------------|----------------------------------------------------|-----------|------------|------------|-----------|
|                   |                   | 10                               | 12   | 16   | 20   | 25   |                      |        |                     |                      | 10                                                 | 12        | 16         | 20         | 25        |
| H13/1,2344/SKD61  | <41               | 0,38                             | 0,46 | 0,61 | 0,76 | 0,95 | 60 - 75%             | HF     | XRN/HSN             | 157 - 218            | 0,28~0,48                                          | 0,36~0,56 | 0,051~0,71 | 0,66~0,86  | 0,85~1,05 |
| H13/1,2344/SKD61  | 41-50             | 0,32                             | 0,38 | 0,51 | 0,64 | 0,80 | 60 - 75%             | HF     | XRN/HSN             | 126 - 187            | 0,22~0,42                                          | 0,28~0,48 | 0,41~0,61  | 0,54~0,74  | 0,70~0,90 |
| H13/1,2344/SKD61  | 51+               | 0,26                             | 0,31 | 0,42 | 0,52 | 0,65 | 60 - 75%             | HF     | HSN                 | 96 - 157             | 0,16~0,36                                          | 0,21~0,41 | 0,32~0,52  | 0,42~0,62  | 0,55~0,75 |
| A2/1,2363/SKD12   | <41               | 0,38                             | 0,46 | 0,61 | 0,76 | 0,95 | 60 - 75%             | HF     | XRN/HSN             | 157 - 218            | 0,28~0,48                                          | 0,36~0,56 | 0,51~0,71  | 0,66~0,86  | 0,85~1,05 |
| A2/1,2363/SKD12   | 14-50             | 0,32                             | 0,38 | 0,51 | 0,64 | 0,80 | 60 - 75%             | HF     | XRN/HSN             | 126 - 187            | 0,220~0,42                                         | 0,28~0,48 | 0,32~0,52  | 0,54~0,74  | 0,70~0,90 |
| A2/1,2363/SKD12   | 51+               | 0,26                             | 0,31 | 0,42 | 0,52 | 0,65 | 60 - 75%             | HF     | HSN                 | 96 - 157             | 0,16~0,36                                          | 0,21~0,41 | 0,51~0,71  | 0,42~0,62  | 0,55~0,75 |
| P20/1,2330        | <41               | 0,38                             | 0,46 | 0,61 | 0,76 | 0,95 | 60 - 75%             | HF     | XRN/HSN             | 157 - 218            | 0,28~0,48                                          | 0,36~0,56 | 0,41~0,61  | 0,66~0,86  | 0,85~1,05 |
| P20/1,2330        | 14-50             | 0,32                             | 0,38 | 0,51 | 0,64 | 0,80 | 60 - 75%             | HF     | XRN/HSN             | 126 - 187            | 0,22~0,42                                          | 0,28~0,48 | 0,51~0,71  | 0,54~0,74  | 0,70~0,90 |
| D2/1,2379/SKD11   | <41               | 0,38                             | 0,46 | 0,61 | 0,76 | 0,95 | 60 - 75%             | HF     | XRN/HSN             | 157 - 218            | 0,28~0,48                                          | 0,36~0,56 | 0,41~0,71  | 0,66~0,86  | 0,85~1,05 |
| D2/1,2379/SKD11   | 14-50             | 0,32                             | 0,38 | 0,51 | 0,64 | 0,80 | 60 - 75%             | HF     | XRN/HSN             | 126 - 187            | 0,22~0,42                                          | 0,28~0,48 | 0,41~0,61  | 0,54~0,744 | 0,70~0,90 |
| D2/1,2379/SKD11   | 51+               | 0,26                             | 0,31 | 0,42 | 0,52 | 0,65 | 60 - 75%             | HF     | HSN                 | 96 - 157             | 0,16~0,36                                          | 0,21~0,41 | 0,32~0,52  | 0,42~0,62  | 0,55~0,75 |
| Grey Cast Iron/GG | <41               | 0,38                             | 0,46 | 0,61 | 0,76 | 0,95 | 60 - 75%             | HF     | XRN/HSN             | 157 - 218            | 0,282~0,48                                         | 0,36~0,56 | 0,51~0,71  | 0,66~0,86  | 0,85~1,05 |
| Cast Iron/GGG     | 41+               | 0,38                             | 0,46 | 0,61 | 0,76 | 0,95 | 60 - 75%             | HF     | XRN/HSN             | 157 - 218            | 0,28~0,48                                          | 0,36~0,56 | 0,51~0,71  | 0,66~0,86  | 0,85~1,05 |