



# VG-Cut

Complete Range of Turning Solutions



METRIC  
INCH

**GROOVEX**

Innovative Grooving & Turning Solutions

# VG-Cut | Complete Range of Turning Solutions

## Deep Grooving, Threading, Parting Off, Boring, and Face Grooving

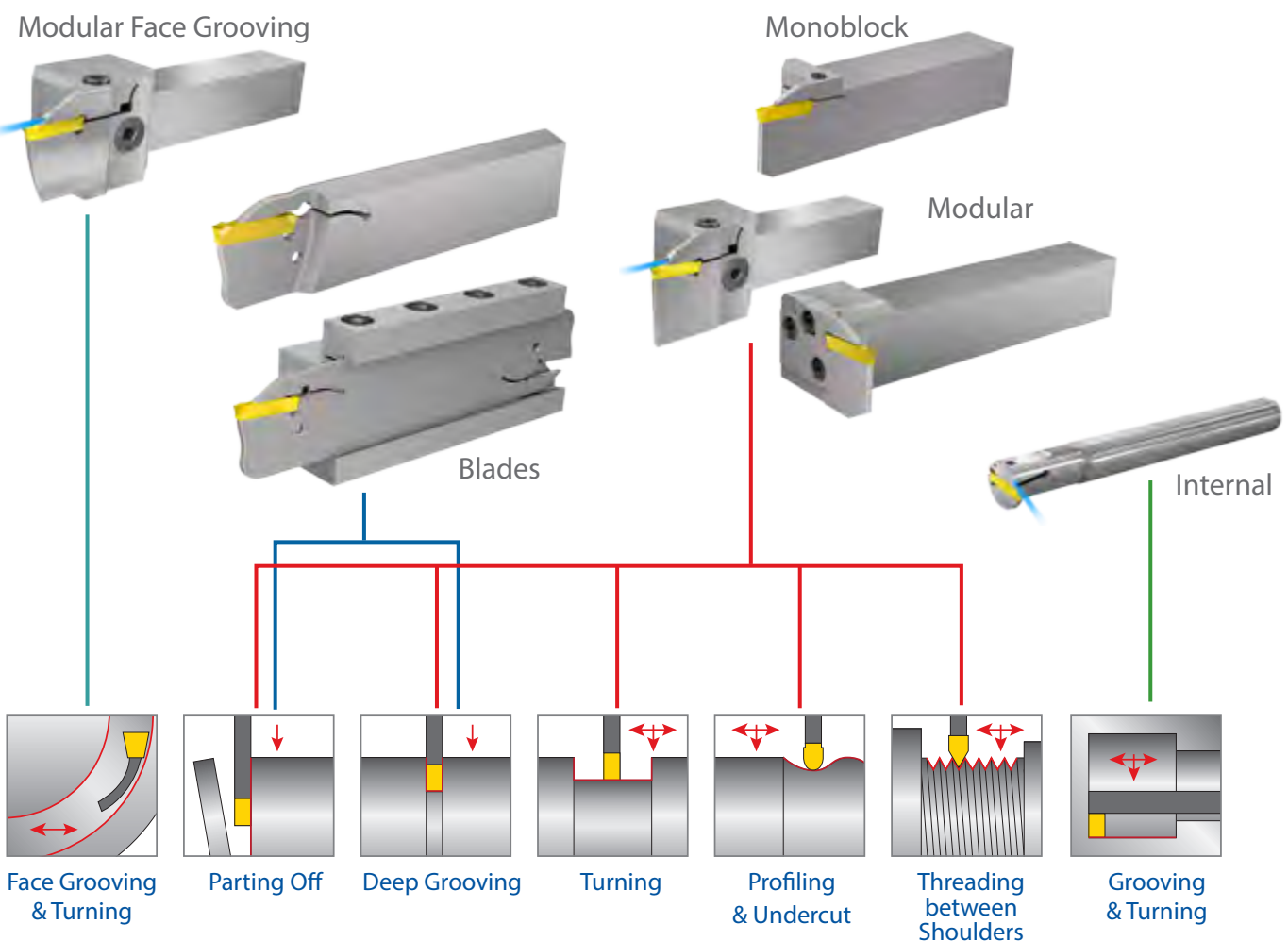
VARGUS Ltd., the leading supplier of premium thread turning and thread milling solutions, as well as hand deburring tools, launched its groundbreaking range of **GROOVEX** tool solutions for cost-effective, high-performance grooving applications in 2011.

With full commitment to the **GROOVEX** line of tooling and insert solutions across all industry sectors, **VARGUS Ltd.** is pleased to introduce its newest family of products - the **VG-Cut**.

The new family of **VG-Cut** tools opens doors to greater application exposure within the same insert pocket of Deep Grooving, Parting Off, Turning, Profiling, Boring, Face Grooving and Threading. The VG-Cut inserts offer excellent designated chip formers and carbide grades, making **VG-Cut** the most versatile product yet.

**VG-Cut** tools cover a wide range of Threading Standards for machining between shoulders and close to the spindle in up to shoulder depth of 10.0 mm.

The **VG-Cut**, with its unique multifunctional geometry, minimizes inventory for the end-user in an extensive selection of applications.



# VG-Cut

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## VG-Cut Inserts Ordering Code

| VG | D | 3.00 | 020 | 6R | GP | VPG |
|----|---|------|-----|----|----|-----|
| 1  | 2 | 3    | 4   | 5  | 6  | 7   |

|                                                                                         |                                                                  |                                                                                                               |                                                           |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| <b>1 – Line Name</b><br>Deep Grooving & Parting Off                                     | <b>2 – Number of Cutting Corners</b><br>D - Double<br>S - Single | <b>3 – Insert Width</b><br>2.0, 3.0, 4.0, 5.0, 6.0 mm                                                         | <b>4 – Corner Radius</b><br>0.20 mm<br>Threading Standard |
| <b>5 – RH or LH (for Grooving)</b><br>6R - 6 Deg. RH<br>6L - 6 Deg. LH<br>NON - Neutral | <b>5 – RH or LH (for Threading)</b><br>RH Helix<br>LH Helix      | <b>6 – Top Rake Geometry</b><br>GP, GM, GT, GR<br>RS - Close to right shoulder<br>LS - Close to left shoulder | <b>7 – Carbide Grade</b><br>VPG, VMG, VKG                 |

## VG-Cut Tools Ordering Code

### Monoblock Toolholders

| VG | E | R | 2525 | 3 | T12 | C  |
|----|---|---|------|---|-----|----|
| 1  | 2 | 9 | 3    | 4 | 5   | 10 |

### Blades

| VG | P | 32 | 4 | D | C  |
|----|---|----|---|---|----|
| 1  | 6 | 7  | 4 | 8 | 10 |

### Modules

| VG | A | R | 20 | T25 | 4 | S | C  |
|----|---|---|----|-----|---|---|----|
| 1  | 2 | 9 | 7  | 5   | 4 | 8 | 10 |

### Holders/Bodies

| VB | A | R | 2525 | 32 | C  |
|----|---|---|------|----|----|
| 1  | 2 | 9 | 3    | 7  | 10 |

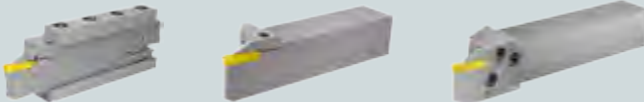
### Internal Toolholders

| VG | I | R | 20-25 | 3 | C  |
|----|---|---|-------|---|----|
| 1  | 2 | 9 | 3     | 4 | 10 |

|                                                                          |                                                                                     |                                                                        |                                                          |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------|
| <b>1 – Line Name</b><br>VG - Deep Grooving & Parting Off<br>VB - Holders | <b>2 – Application</b><br>E - External<br>I - Internal<br>A - Blades<br>M - Modules | <b>3 – For External Holders</b><br>Shank Size                          | <b>4 – Pocket Size</b><br>2, 3, 4                        |
| <b>5 – Depth of Cut</b><br>T12 - Limit Depth of Cut 12 mm                | <b>6 – Blade Type</b><br>P - Universal<br>A - Modules<br>W - Reinforced blade       | <b>3 – For Internal Toolholders</b><br>Shank Dia. - D min.             | <b>8 – Number of Pockets</b><br>D - Double<br>S - Single |
| <b>9 – RH or LH</b><br>R - RH<br>L - LH<br>NON - Neutral                 | <b>10 – Coolant</b><br>C - Coolant                                                  | <b>7 – Blade Height</b><br>20, 25, 26, 32<br>00, 45, 90 Approach angle |                                                          |

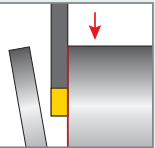
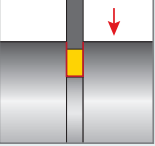


# Insert, Tool and Cutting Data Selection Guide

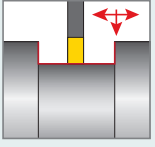
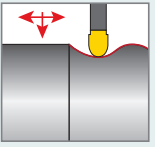
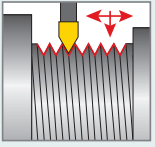
|                 |                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                  |                            |                              |                                  |                                    |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
|-----------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------|------------------------------|----------------------------------|------------------------------------|------------|-----------------|----|-----------------|--------------|-----|--------|--------|--|----|-------------------------------|----------|-----|--------|--------|--|----|---------------------------------|------------|-----|--------|--------|--|----|---------------------------------|----------|-----|--------|--------|--|---|----|---------------------|------------------------|-----|--|---------|---------|----|---------------------|------------------------|-----|--|---------|---------|----|----------------------|--|-----|--|---------|---------|-------------|
| A               | Identify the Application                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                  |                            |                              |                                  |                                    |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
| B               | Identify the Designated Work Piece Material               | <div>P<br/>Alloy Steel</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <div>M<br/>Stainless Steel</div> | <div>K<br/>Cast Iron</div> | <div>N<br/>Non-Ferrous</div> | <div>S<br/>Heat Resistance</div> | <div>H<br/>Hardened Material</div> |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
| C               | Designated Chip Former Geometry for Selected Applications |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                  |                            |                              |                                  |                                    | page 6     |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
| D               | Designated Carbide Grade for Desired Application          | <div>VKG</div> <div>VPG</div> <div>VMG</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                            |                              |                                  |                                    | page 7     |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
| E               | Selecting Insert and Tool as Required by Operation        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                  |                            |                              |                                  |                                    | pages 8-24 |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
| F               | Cutting Data According to Selected Items                  | <table><tr><td rowspan="4">Stainless Steel</td><td>15</td><td>Stainless Steel</td><td>Non Hardened</td><td>200</td><td>50-120</td><td>60-160</td><td></td></tr><tr><td>16</td><td>Stainless Steel Cast Ferritic</td><td>Hardened</td><td>330</td><td>40-100</td><td>50-140</td><td></td></tr><tr><td>17</td><td>Stainless Steel Cast Austenitic</td><td>Austenitic</td><td>200</td><td>50-120</td><td>60-160</td><td></td></tr><tr><td>18</td><td>Stainless Steel Cast Austenitic</td><td>Hardened</td><td>330</td><td>40-100</td><td>50-140</td><td></td></tr><tr><td rowspan="3">K</td><td>28</td><td>Malleable Cast Iron</td><td>Ferritic (short chips)</td><td>130</td><td></td><td>160-240</td><td>160-280</td></tr><tr><td>29</td><td>Pearlitic Cast Iron</td><td>Pearlitic (long chips)</td><td>230</td><td></td><td>140-220</td><td>140-260</td></tr><tr><td>30</td><td>Low Tensile Strength</td><td></td><td>180</td><td></td><td>160-240</td><td>160-280</td></tr></table> |                                  |                            |                              |                                  |                                    |            | Stainless Steel | 15 | Stainless Steel | Non Hardened | 200 | 50-120 | 60-160 |  | 16 | Stainless Steel Cast Ferritic | Hardened | 330 | 40-100 | 50-140 |  | 17 | Stainless Steel Cast Austenitic | Austenitic | 200 | 50-120 | 60-160 |  | 18 | Stainless Steel Cast Austenitic | Hardened | 330 | 40-100 | 50-140 |  | K | 28 | Malleable Cast Iron | Ferritic (short chips) | 130 |  | 160-240 | 160-280 | 29 | Pearlitic Cast Iron | Pearlitic (long chips) | 230 |  | 140-220 | 140-260 | 30 | Low Tensile Strength |  | 180 |  | 160-240 | 160-280 | pages 25-31 |
| Stainless Steel | 15                                                        | Stainless Steel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Non Hardened                     | 200                        | 50-120                       | 60-160                           |                                    |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
|                 | 16                                                        | Stainless Steel Cast Ferritic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Hardened                         | 330                        | 40-100                       | 50-140                           |                                    |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
|                 | 17                                                        | Stainless Steel Cast Austenitic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Austenitic                       | 200                        | 50-120                       | 60-160                           |                                    |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
|                 | 18                                                        | Stainless Steel Cast Austenitic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Hardened                         | 330                        | 40-100                       | 50-140                           |                                    |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
| K               | 28                                                        | Malleable Cast Iron                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ferritic (short chips)           | 130                        |                              | 160-240                          | 160-280                            |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
|                 | 29                                                        | Pearlitic Cast Iron                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Pearlitic (long chips)           | 230                        |                              | 140-220                          | 140-260                            |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |
|                 | 30                                                        | Low Tensile Strength                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                  | 180                        |                              | 160-240                          | 160-280                            |            |                 |    |                 |              |     |        |        |  |    |                               |          |     |        |        |  |    |                                 |            |     |        |        |  |    |                                 |          |     |        |        |  |   |    |                     |                        |     |  |         |         |    |                     |                        |     |  |         |         |    |                      |  |     |  |         |         |             |



## Designated Chip Former Geometry for Parting Off and Grooving

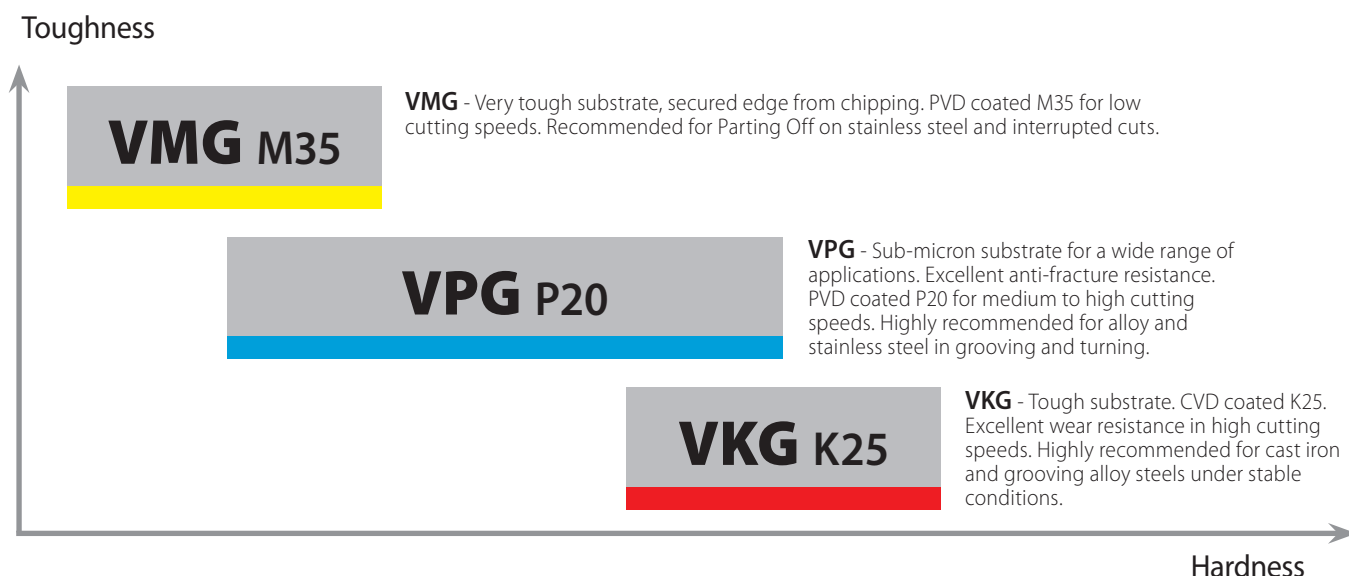
| Application                                                                                          | Material Group                                                                                             | Standard Conditions                                                                                                                                                                                                                                                                               | Extreme Conditions                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Parting Off</p> | <div>P Alloy Steel</div> <div>K Cast Iron</div> <div>H Hardened Material</div>                             |  <p><b>GT</b> Primary choice for machining alloy and stainless steel. Positive rake chip former leads to low cutting forces during cutting. A multifunctional chip former for parting, grooving and turning.</p> |  <p><b>GP</b> Primary choice for machining cast iron, for interrupted cuts and for unstable applications where accuracy and overall machining stability are not clear. Reinforced cutting edge for parting off and grooving.</p> |
|  <p>Grooving</p>    | <div>M Stainless Steel</div> <div>N Non-Ferrous</div> <div>S Heat Resistance</div> <div>P Mild Steel</div> |  <p><b>GM/GF</b> Primary choice for stainless steel. Positive sharp cutting edge decreases build-up on edge for parting off and grooving in low feeds.</p>                                                       |  <p><b>GT</b> Primary choice for machining alloy and stainless steel. Positive rake chip former leads to low cutting forces during cutting, with multifunctional chip former for parting, grooving and turning.</p>              |

## Designated Chip Former Geometry for Turning, Profiling and Threading

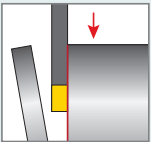
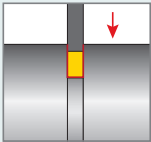
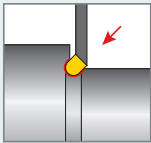
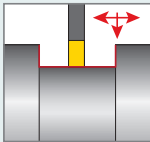
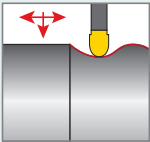
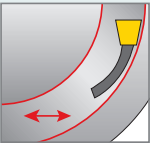
| Application                                                                                          | Standard Conditions                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Turning</p>   |  <p><b>GT</b> Primary choice for machining alloy and stainless steel. Positive rake chip former leads to low cutting forces during cutting, with multifunctional chip former for parting off, grooving and turning.</p> |
|  <p>Profiling</p> |  <p><b>GR</b> Primary choice for grooving, undercut and profiling. Round shape geometric for profiling, and positive rake chip former with multifunctional chip control.</p>                                            |
|  <p>Threading</p> |  <p><b>RS/LS</b> Varied range of threading standards for machining between shoulders and close to the spindle.</p>                                                                                                      |

# Designated Carbide Grade for Desired Application

## Toughness vs. Hardness

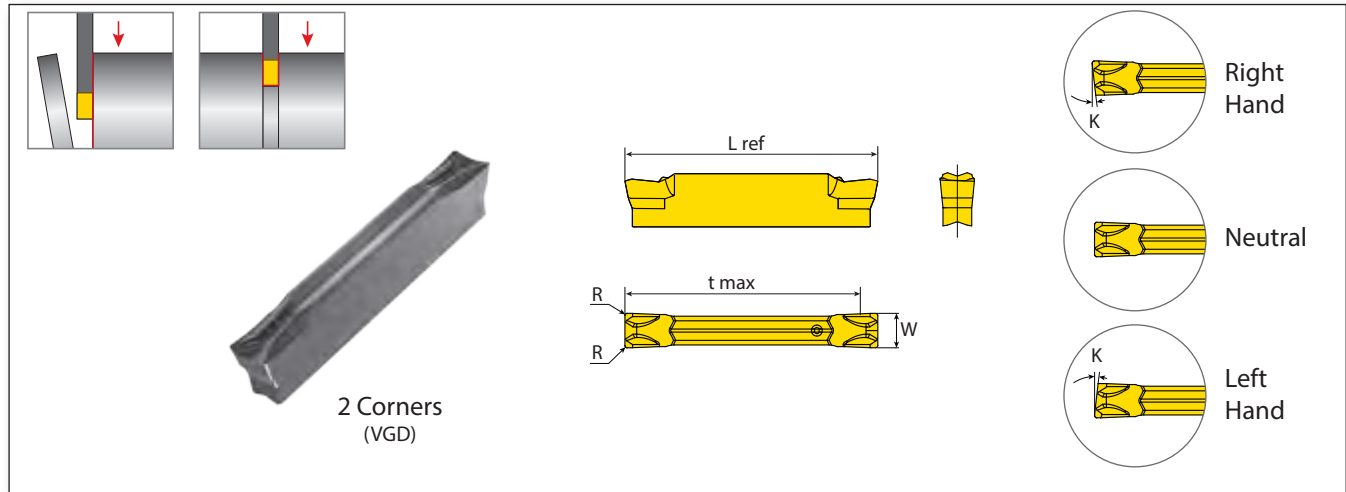


## Recommended Carbide Grade for Designated Application

| Application                                                                                          | Improved Chipping Resistance    | Improved Wear Resistance |
|------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------|
| <br>Parting Off   | <b>VMG M35</b> ↔ <b>VPG P20</b> |                          |
| <br>Grooving      | <b>VPG P20</b> ↔ <b>VKG K25</b> |                          |
| <br>Undercut      | <b>VMG M35</b> ↔ <b>VPG P20</b> |                          |
| Application                                                                                          | Improved Chipping Resistance    | Improved Wear Resistance |
| <br>Turning      | <b>VPG P20</b> ↔ <b>VKG K25</b> |                          |
| <br>Profiling    | <b>VPG P20</b> ↔ <b>VKG K25</b> |                          |
| <br>Face Turning | <b>VPG P20</b> ↔ <b>VKG K25</b> |                          |

# Parting Off & Deep Grooving - Double Sided Inserts

## 2.0 - 6.0 mm Width



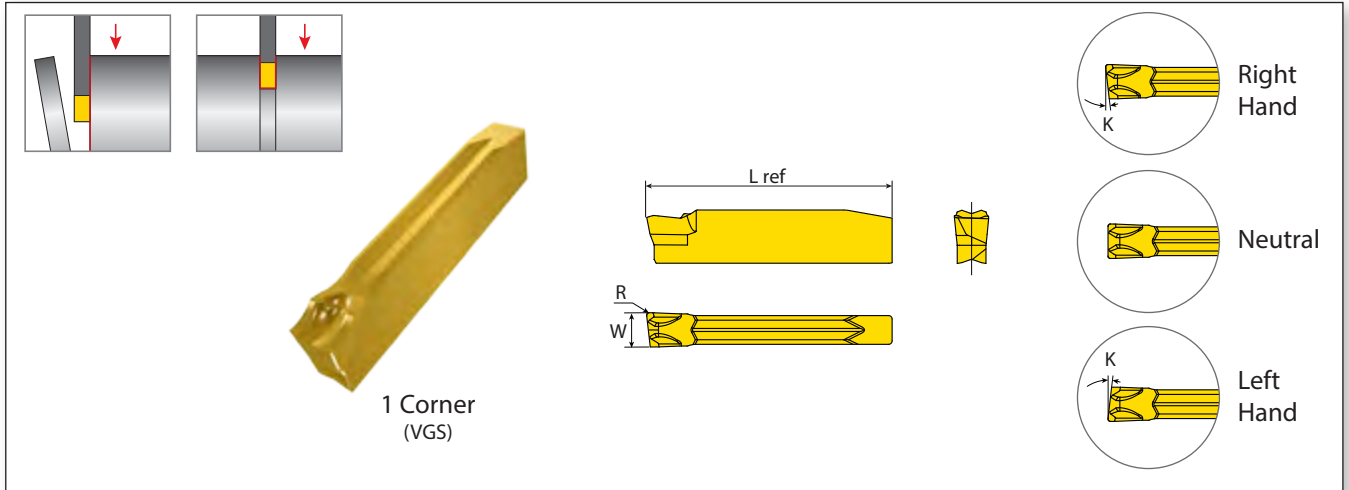
|                                                                          | Pocket Size | Ordering Code        | Dimensions mm |      |       |      |       | Feed Range<br>(mm/rev) | Grade |     |     |
|--------------------------------------------------------------------------|-------------|----------------------|---------------|------|-------|------|-------|------------------------|-------|-----|-----|
|                                                                          |             |                      | W ± 0.04      | R    | t max | K°   | L ref |                        | VPG   | VMG | VKG |
| Positive cutting edge, for small parts, thin wall pipes & soft clearings | GF          | 2 VGD2.00-020-GF     | 2.00          | 0.20 | 20.0  | 0.0  | 22.0  | 0.03 - 0.10            | •     | •   | ◦   |
|                                                                          |             | 2 VGD2.00-015-6R-GF  | 2.00          | 0.15 | 20.0  | 6.0  | 22.0  | 0.03 - 0.10            | •     | •   | ◦   |
|                                                                          |             | 2 VGD2.00-015-6L-GF  | 2.00          | 0.15 | 20.0  | 6.0  | 22.0  | 0.03 - 0.10            | •     | •   | ◦   |
|                                                                          |             | 2 VGD2.00-020-15R-GF | 2.00          | 0.20 | 20.0  | 15.0 | 22.0  | 0.03 - 0.08            | •     | ◦   | ◦   |
|                                                                          |             | 2 VGD2.00-020-15L-GF | 2.00          | 0.20 | 20.0  | 15.0 | 22.0  | 0.03 - 0.08            | •     | ◦   | ◦   |
| Positive sharp cutting edge, for low feed & speed                        | GM          | 3 VGD3.00-030-GM     | 3.00          | 0.30 | 20.0  | 0.0  | 22.0  | 0.08 - 0.22            | •     | •   | •   |
|                                                                          |             | 3 VGD3.00-020-6R-GM  | 3.00          | 0.20 | 20.0  | 6.0  | 22.0  | 0.05 - 0.16            | ◦     | •   | ◦   |
|                                                                          |             | 3 VGD3.00-020-6L-GM  | 3.00          | 0.20 | 20.0  | 6.0  | 22.0  | 0.05 - 0.16            | ◦     | •   | ◦   |
|                                                                          |             | 4 VGD4.00-030-GM     | 4.00          | 0.30 | 23.0  | 0.0  | 25.0  | 0.08 - 0.25            | •     | •   | ◦   |
| Multi-purpose geometric, for general use                                 | GT          | 2 VGD2.00-020-GT     | 2.00          | 0.20 | 20.0  | 0.0  | 22.0  | 0.03 - 0.12            | •     | ◦   | •   |
|                                                                          |             | 3 VGD3.00-030-GT     | 3.00          | 0.30 | 20.0  | 0.0  | 22.0  | 0.05 - 0.15            | •     | ◦   | •   |
|                                                                          |             | 4 VGD4.00-020-GT     | 4.00          | 0.20 | 23.0  | 0.0  | 23.0  | 0.05-0.15              | ◦     | ◦   | ◦   |
|                                                                          |             | 4 VGD4.00-040-GT     | 4.00          | 0.40 | 23.0  | 0.0  | 25.0  | 0.05 - 0.18            | •     | ◦   | •   |
|                                                                          |             | 5 VGD5.00-040-GT     | 5.00          | 0.40 | 23.0  | 0.0  | 25.0  | 0.08 - 0.25            | •     | ◦   | •   |
|                                                                          |             | 6 VGD6.00-040-GT     | 6.00          | 0.40 | 23.0  | 0.0  | 25.0  | 0.10 - 0.25            | •     | ◦   | •   |
| Round multipurpose geometry for profiling & undercut                     | GR          | 2 VGD2.00-100-GR     | 2.00          | 1.00 | 18.0  | 0.0  | 22.0  | 0.03 - 0.12            | •     | ◦   | ◦   |
|                                                                          |             | 3 VGD3.00-150-GR     | 3.00          | 1.50 | 18.0  | 0.0  | 22.0  | 0.05 - 0.15            | •     | ◦   | ◦   |
|                                                                          |             | 4 VGD4.00-200-GR     | 4.00          | 2.00 | 20.0  | 0.0  | 25.0  | 0.05 - 0.18            | •     | ◦   | ◦   |
| Blunt reinforced cutting edge for high feed & speed                      | GP          | 2 VGD2.00-020-GP     | 2.00          | 0.20 | 20.0  | 0.0  | 22.0  | 0.03 - 0.14            | •     | ◦   | •   |
|                                                                          |             | 3 VGD3.00-020-GP     | 3.00          | 0.20 | 20.0  | 0.0  | 22.0  | 0.06 - 0.20            | •     | •   | •   |
|                                                                          |             | 3 VGD3.00-015-6R-GP  | 3.00          | 0.15 | 20.0  | 6.0  | 22.0  | 0.06 - 0.16            | ◦     | •   | ◦   |
|                                                                          |             | 3 VGD3.00-015-6L-GP  | 3.00          | 0.15 | 20.0  | 6.0  | 22.0  | 0.06 - 0.16            | ◦     | •   | ◦   |
|                                                                          |             | 4 VGD4.00-040-GP     | 4.00          | 0.40 | 23.0  | 0.0  | 25.0  | 0.08 - 0.24            | •     | •   | •   |
|                                                                          |             | 4 VGD4.00-020-4R-GP  | 4.00          | 0.20 | 23.0  | 4.0  | 25.0  | 0.06 - 0.22            | ◦     | •   | ◦   |
|                                                                          |             | 4 VGD4.00-020-4L-GP  | 4.00          | 0.20 | 23.0  | 4.0  | 25.0  | 0.06 - 0.22            | ◦     | •   | ◦   |
|                                                                          |             | 5 VGD5.00-040-GP     | 5.00          | 0.40 | 23.0  | 0.0  | 25.0  | 0.08 - 0.28            | •     | ◦   | •   |
|                                                                          |             | 6 VGD6.00-040-GP     | 6.00          | 0.40 | 23.0  | 0.0  | 25.0  | 0.10 - 0.30            | •     | ◦   | •   |

- In stock
- Available upon request



# Parting Off & Deep Grooving - Single Sided Inserts

## 2.0 - 4.0 mm Width

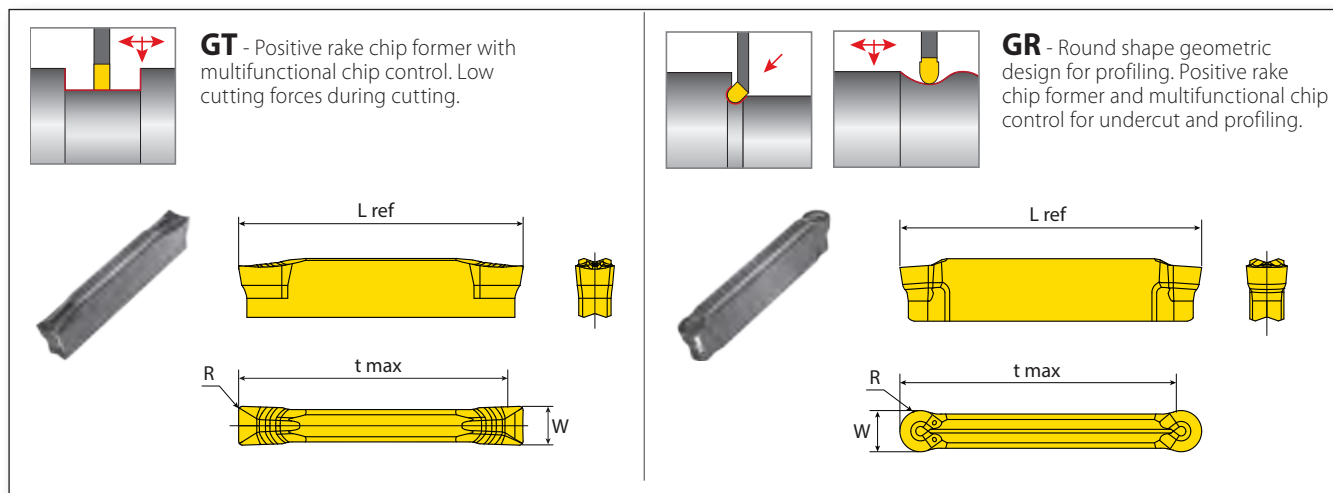


|                                                                          |    | Pocket Size | Ordering Code     | Dimensions mm |      |       |     |       | Feed Range<br>(mm/rev) | Grade |     |     |
|--------------------------------------------------------------------------|----|-------------|-------------------|---------------|------|-------|-----|-------|------------------------|-------|-----|-----|
|                                                                          |    |             |                   | W ± 0.04      | R    | t max | K°  | L ref |                        | VPG   | VMG | VKG |
| Positive cutting edge, for small parts, thin wall pipes & soft clearings | GF | 2           | VGS2.00-015-6R-GF | 2.00          | 0.15 | ∞     | 6.0 | 21.3  | 0.03 - 0.10            | ○     | ●   | ○   |
|                                                                          |    | 2           | VGS2.00-015-6L-GF | 2.00          | 0.15 | ∞     | 6.0 | 21.3  | 0.03 - 0.10            | ○     | ●   | ○   |
| Positive sharp cutting edge, for low feed & speed                        | GM | 3           | VGS3.00-020-GM    | 3.00          | 0.20 | ∞     | 0.0 | 22.0  | 0.08 - 0.22            | ●     | ●   | ○   |
|                                                                          |    | 3           | VGS3.00-020-6R-GM | 3.00          | 0.20 | ∞     | 6.0 | 21.3  | 0.05 - 0.16            | ○     | ●   | ○   |
|                                                                          |    | 3           | VGS3.00-020-6L-GM | 3.00          | 0.20 | ∞     | 6.0 | 21.3  | 0.05 - 0.16            | ○     | ●   | ○   |
|                                                                          |    | 4           | VGS4.00-030-GM    | 4.00          | 0.30 | ∞     | 0.0 | 25.0  | 0.08 - 0.25            | ●     | ●   | ○   |
|                                                                          |    | 4           | VGS4.00-030-4R-GM | 4.00          | 0.30 | ∞     | 4.0 | 24.3  | 0.06 - 0.18            | ○     | ●   | ○   |
|                                                                          |    | 4           | VGS4.00-030-4L-GM | 4.00          | 0.30 | ∞     | 4.0 | 24.3  | 0.06 - 0.18            | ○     | ●   | ○   |
| Blunt reinforced cutting edge for high feed & speed                      | GP | 3           | VGS3.00-020-GP    | 3.00          | 0.20 | ∞     | 0.0 | 22.0  | 0.06 - 0.20            | ●     | ●   | ○   |
|                                                                          |    | 3           | VGS3.00-020-6R-GP | 3.00          | 0.20 | ∞     | 6.5 | 21.3  | 0.06 - 0.16            | ○     | ●   | ○   |
|                                                                          |    | 3           | VGS3.00-020-6L-GP | 3.00          | 0.20 | ∞     | 6.5 | 21.3  | 0.06 - 0.16            | ○     | ●   | ○   |
|                                                                          |    | 4           | VGS4.00-030-GP    | 4.00          | 0.30 | ∞     | 0.0 | 25.0  | 0.08 - 0.24            | ●     | ●   | ○   |
|                                                                          |    | 4           | VGS4.00-030-4R-GP | 4.00          | 0.30 | ∞     | 4.0 | 24.3  | 0.06 - 0.22            | ○     | ●   | ○   |
|                                                                          |    | 4           | VGS4.00-030-4L-GP | 4.00          | 0.30 | ∞     | 4.0 | 24.3  | 0.06 - 0.22            | ○     | ●   | ○   |

- In stock
- Available upon request

# Turning & Profiling

## 2.0 - 6.0 mm Width



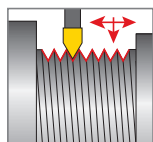
| Pocket Size | Ordering Code  | Dimensions mm |      |       |    |       | Feed Range (mm/rev) | Grade |     |     |
|-------------|----------------|---------------|------|-------|----|-------|---------------------|-------|-----|-----|
|             |                | W ± 0.05      | R    | t max | K° | L ref |                     | VPG   | VMG | VKG |
| 2           | VGD2.00-020-GT | 2.00          | 0.20 | 20.0  | -  | 22.0  | 0.05 - 0.10         | ●     | ○   | ●   |
| 3           | VGD3.00-030-GT | 3.00          | 0.30 | 20.0  | -  | 22.0  | 0.05 - 0.25         | ●     | ○   | ●   |
| 4           | VGD4.00-040-GT | 4.00          | 0.40 | 23.0  | -  | 25.0  | 0.08 - 0.28         | ●     | ○   | ●   |
| 4           | VGD4.00-020-GT | 4.00          | 0.20 | 23.0  | -  | 25.0  | 0.05 - 0.18         | ○     | ○   | ○   |
| 5           | VGD5.00-040-GT | 5.00          | 0.40 | 23.0  | -  | 25.0  | 0.08 - 0.25         | ●     | ○   | ●   |
| 6           | VGD6.00-040-GT | 6.00          | 0.40 | 23.0  | -  | 25.0  | 0.10 - 0.28         | ●     | ○   | ●   |
|             |                |               |      |       |    |       |                     |       |     |     |
| 2           | VGD2.00-100-GR | 2.00          | 1.50 | 18.0  | -  | 22.0  | 0.06 - 0.12         | ●     | ○   | ○   |
| 3           | VGD3.00-150-GR | 3.00          | 1.50 | 18.0  | -  | 22.0  | 0.06 - 0.18         | ●     | ○   | ○   |
| 4           | VGD4.00-200-GR | 4.00          | 2.00 | 20.0  | -  | 25.0  | 0.06 - 0.20         | ●     | ○   | ○   |

- In stock
- Available upon request

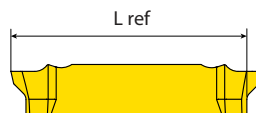
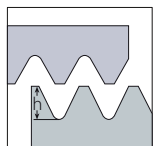


# Threading

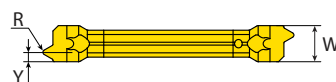
## 3.0 mm Width



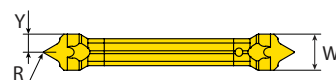
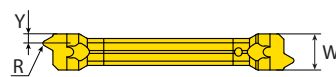
**RS/LS** Varied range of threading standards for machining between shoulders and close to spindle.



**RS Full Profile**



**LS Full Profile**



**Partial Profile**

To be used with monoblock tools (VGE...T12) only

| Pocket Size                       | Ordering Code         | Dimensions mm |              |       |      | No. of Passes | Helix  | Grade | Min. Thread Diameter |                 |
|-----------------------------------|-----------------------|---------------|--------------|-------|------|---------------|--------|-------|----------------------|-----------------|
|                                   |                       | W ref         | Pitch mm/tpi | h min | Y    | L ref         | Deg    | VPG   |                      |                 |
| ISO Metric External Full Profile  |                       |               |              |       |      |               |        |       |                      |                 |
| 3                                 | VGD3.0ISO0.50RH-RS/LS | 3.00          | 0.50         | 0.31  | 0.53 | 21.9          | 5 - 7  | 2.5°  | ◦                    | M 3x0.5         |
| 3                                 | VGD3.0ISO0.75RH-RS/LS |               | 0.75         | 0.46  | 0.64 |               | 5 - 8  |       | ◦                    | M 5x0.75        |
| 3                                 | VGD3.0ISO1.00RH-RS/LS |               | 1.00         | 0.61  | 0.74 |               | 5 - 9  |       | ●                    | M 6x1           |
| 3                                 | VGD3.0ISO1.25RH-RS/LS |               | 1.25         | 0.77  | 0.85 |               | 6 - 10 |       | ●                    | M 8x1.25        |
| 3                                 | VGD3.0ISO1.50RH-RS/LS |               | 1.50         | 0.92  | 1.10 |               | 7 - 12 |       | ●                    | M10x1.5 Coarse  |
| 3                                 | VGD3.0ISO1.75RH-RS/LS |               | 1.75         | 1.07  | 1.20 |               | 8 - 14 |       | ◦                    | M12x1.75 Coarse |
| 3                                 | VGD3.0ISO2.00RH-RS/LS |               | 2.00         | 1.23  | 1.30 |               | 9 - 14 |       | ◦                    | M16x2.0 Coarse  |
| 3                                 | VGD3.0ISO2.50RH-RS/LS |               | 2.50         | 1.53  | 1.55 |               | 8 - 14 |       | ●                    | M18x2.5 Coarse  |
| American UN External Full Profile |                       |               |              |       |      |               |        |       |                      |                 |
| 3                                 | VGD3.0UN32RH-RS/LS    | 3.00          | 32           | 0.49  | 0.66 | 21.9          | 5 - 8  | 2.5°  | ●                    | 5/32-32 UNC     |
| 3                                 | VGD3.0UN28RH-RS/LS    |               | 28           | 0.56  | 0.71 |               | 5 - 9  |       | ●                    | 3/16-28 UNC     |
| 3                                 | VGD3.0UN24RH-RS/LS    |               | 24           | 0.65  | 0.77 |               | 5 - 9  |       | ●                    | 7/32-24 UNC     |
| 3                                 | VGD3.0UN20RH-RS/LS    |               | 20           | 0.78  | 0.86 |               | 6 - 10 |       | ●                    | 1/4-20 UNC      |
| 3                                 | VGD3.0UN18RH-RS/LS    |               | 18           | 0.87  | 0.93 |               | 7 - 12 |       | ●                    | 5/16-18 UNC     |
| 3                                 | VGD3.0UN16RH-RS/LS    |               | 16           | 0.97  | 1.10 |               | 7 - 12 |       | ◦                    | 3/8-16 UNC      |
| 3                                 | VGD3.0UN14RH-RS/LS    |               | 14           | 1.11  | 1.09 |               | 8 - 14 |       | ◦                    | 7/16-14 UNC     |
| 3                                 | VGD3.0UN12RH-RS/LS    |               | 12           | 1.30  | 1.30 |               | 8 - 14 |       | ◦                    | 9/16-14 UNC     |
| NPT External Full Profile         |                       |               |              |       |      |               |        |       |                      |                 |
| 3                                 | VGD3.0NPT18RH-RS/LS   | 3.00          | 18           | 1.01  | 1.20 | 21.9          | 7 - 12 | 1.5°  | ●                    | 1/4-18NPT       |
| 3                                 | VGD3.0NPT14RH-RS/LS   |               | 14           | 1.33  | 1.40 |               | 8 - 14 |       | ●                    | 1/2-14NPT       |
| 3                                 | VGD3.0NPT11.5RH-RS/LS |               | 12           | 1.64  | 1.60 |               | 9 - 15 |       | ◦                    | 1-11.5NPT       |
| Whitworth External Full Profile   |                       |               |              |       |      |               |        |       |                      |                 |
| 3                                 | VGD3.0W19RH-RS/LS     | 3.00          | 19           | 0.86  | 0.95 | 21.9          | 7 - 12 | 2.5°  | ●                    | 1/2-19BSW       |
| 3                                 | VGD3.0W14RH-RS/LS     |               | 14           | 1.16  | 1.15 |               | 8 - 14 |       | ●                    | 1/2-14BSW       |

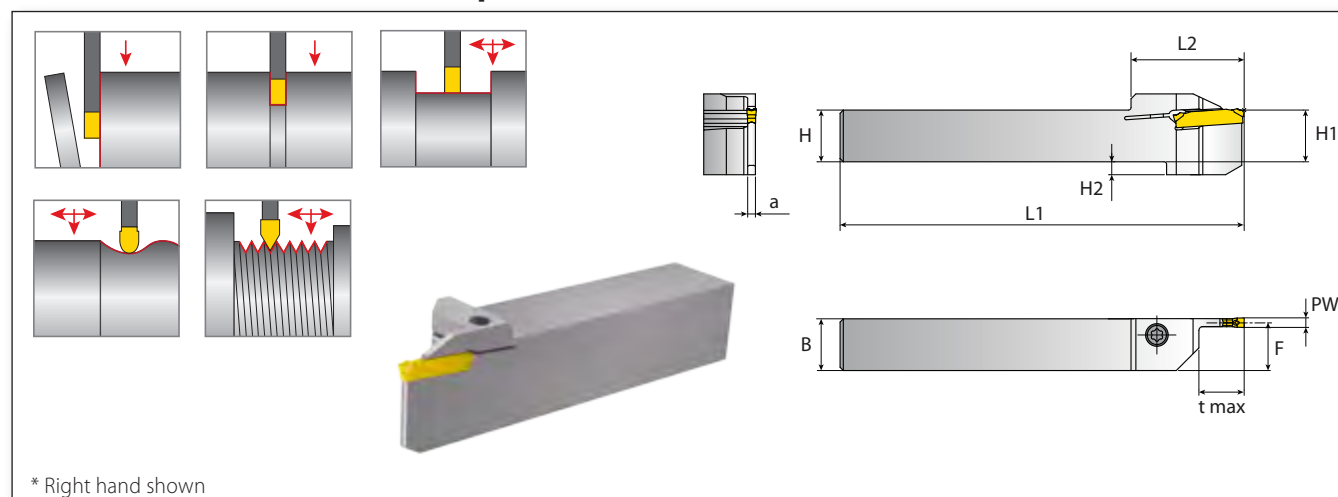
• In stock | ◦ Available upon request  
LH Helix threads available upon request

## External Partial Profile

| Pocket Size | Ordering Code | Dimensions mm |              |      |      |       | No. of Passes | Helix | Grade      | Min. Thread Diameter |
|-------------|---------------|---------------|--------------|------|------|-------|---------------|-------|------------|----------------------|
|             |               | W ref         | Pitch mm/tpi | R    | Y    | L ref |               | Deg   | <b>VPG</b> |                      |
| 3           | VGD3.0A60RH   | 3.00          | 0.5-1.5      | 0.05 | 1.68 | 21.9  | 5 - 8         | 1.5°  | •          | Partial Profile A60  |
| 3           | VGD3.0A55RH   | 3.00          | 48-16        | 0.05 | 1.68 |       | 5 - 8         |       | •          | Partial Profile A55  |

• In stock | ◦ Available upon request

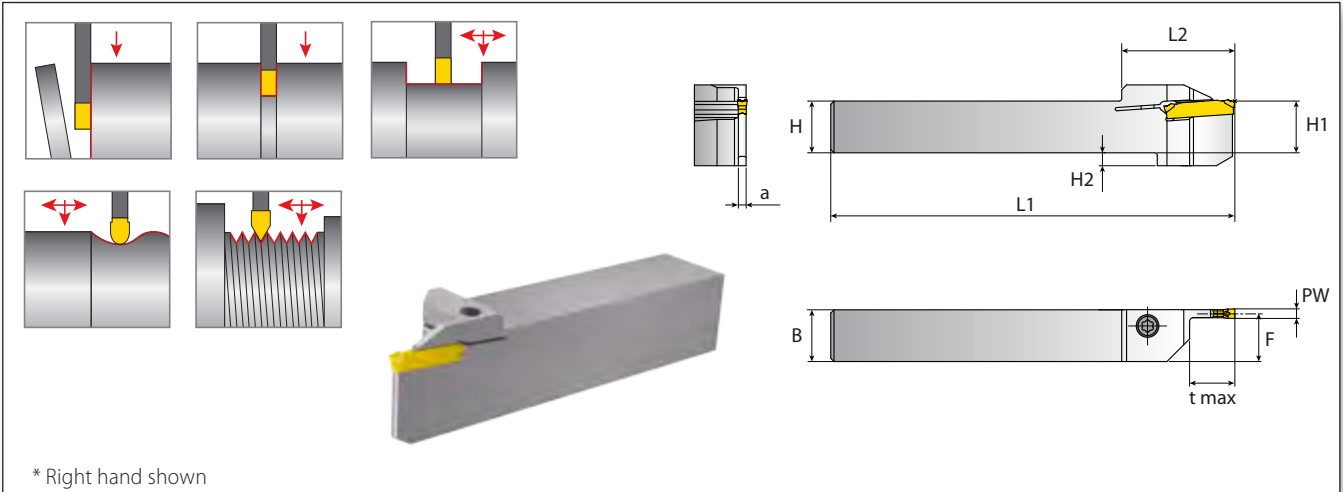
# External Monoblock Tools for Grooving, Parting Off, Turning & Threading | M E T R I C



## Metric Holders

| Metric Holders  |       |       |       |       |      |      |     |     |              | Spare Parts                                                                         |                                                                                     |     |
|-----------------|-------|-------|-------|-------|------|------|-----|-----|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----|
| Ordering Code   |       |       |       |       |      |      |     |     |              |  |  |     |
| RH/LH           | PW    | t max | HXB   | H1    | F    | L1   | L2  | a   | H2           | Cylindrical Screw                                                                   | Key                                                                                 |     |
| VGER/L1616-2T12 | 2     | 12    | 16X16 | 16    | 15.3 | 125  | 35  | 1.4 | 4.0          | SM4,0X16-T20                                                                        | K6T                                                                                 |     |
| VGER/L2020-2T12 |       |       | 20X20 | 20    | 19.3 | 125  | 35  | 1.4 | ---          | SM4,0X18-T20                                                                        |                                                                                     |     |
| VGER/L1616-3T12 | 3     | 12    | 16X16 | 16    | 14.8 | 125  | 35  | 2.4 | 4.0          | SM4,0X18-T20                                                                        | K6T                                                                                 |     |
| VGER/L2020-3T12 |       |       | 20X20 | 20    | 18.8 | 125  | 35  | 2.4 | ---          |                                                                                     |                                                                                     |     |
| VGER/L2525-3T12 |       | 21    | 25X25 | 25    | 23.8 | 125  | 35  | 2.4 | ---          |                                                                                     |                                                                                     |     |
| VGER/L1616-3T21 |       |       | 16X16 | 16    | 14.8 | 125  | 35  | 2.4 | 4.0          |                                                                                     |                                                                                     |     |
| VGER/L2020-3T21 |       |       | 20X20 | 20    | 18.8 | 125  | 35  | 2.4 | ---          |                                                                                     |                                                                                     |     |
| VGER/L2525-3T21 |       | 12    | 25X25 | 25    | 23.8 | 125  | 35  | 2.4 | ---          |                                                                                     |                                                                                     |     |
| VGER/L2525-4T12 | 4     |       | 25X25 | 25    | 23.5 | 125  | 35  | 3.0 | ---          |                                                                                     |                                                                                     |     |
| VGER/L1616-4T21 | 21    | 16X16 | 16    | 14.5  | 125  | 35   | 3.0 | 4.0 | SM4,0X18-T20 |                                                                                     |                                                                                     | K6T |
| VGER/L2020-4T21 |       | 20X20 | 20    | 18.5  | 125  | 35   | 3.0 | --- |              |                                                                                     |                                                                                     |     |
| VGER/L2525-4T21 | 24    | 25X25 | 25    | 23.5  | 125  | 35   | 3.0 | --- |              |                                                                                     |                                                                                     |     |
| VGER/L2525-5T22 |       | 5     |       | 25X25 | 25   | 23.0 | 150 | 43  |              | 4.0                                                                                 | ---                                                                                 |     |
| VGER/L3232-5T22 | 6     | 22    | 32X32 | 32    | 30.0 | 170  | 43  | 4.0 | ---          | SM6,0X20                                                                            | K30T                                                                                |     |
| VGER/L2525-6T24 |       |       | 24    | 25X25 | 25   | 22.5 | 150 | 45  | 5.0          |                                                                                     |                                                                                     | --- |
| VGER/L3232-6T24 | 32X32 | 32    |       | 29.5  | 170  | 45   | 5.0 | --- |              |                                                                                     |                                                                                     |     |

# External Monoblock Tools for Grooving, Parting Off, Turning & Threading | INCH

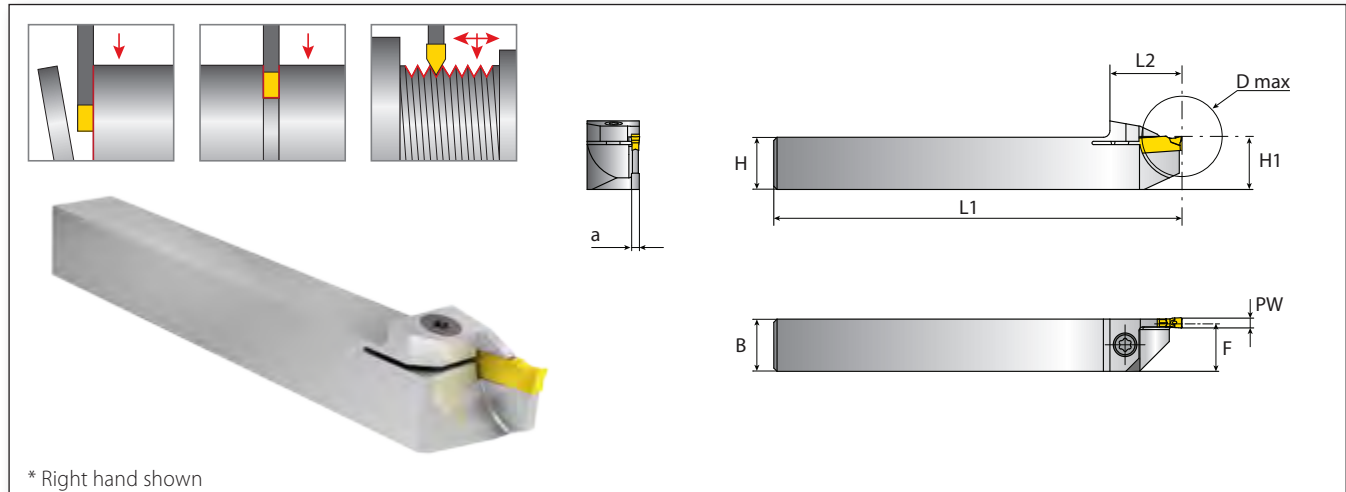


## Inch Holders

| Ordering Code   |      |       |           |       |      |    |      |      |      | Spare Parts                                                                         |                                                                                     |
|-----------------|------|-------|-----------|-------|------|----|------|------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Dimensions inch |      |       |           |       |      |    |      |      |      |  |  |
| RH/LH           | PW   | t max | HXB       | H1    | F    | L1 | L2   | a    | H2   | Cylindrical Screw                                                                   | Key                                                                                 |
| VGER/L0625-2T12 | .079 | .472  | .625X.625 | .625  | .597 | 5  | 1.38 | .06  | .162 | SM4,0X16-T20                                                                        | K6T                                                                                 |
| VGER/L075-2T12  |      |       | .750X.750 | .750  | .722 | 5  | 1.38 | .06  | ---  | SM4,0X18-T20                                                                        | K6T                                                                                 |
| VGER/L0625-3T12 | .118 | .472  | .625X.625 | .625  | .578 | 5  | 1.38 | .09  | .162 | SM4,0X18-T20                                                                        | K6T                                                                                 |
| VGER/L075-3T12  |      |       | .750X.750 | .750  | .703 | 5  | 1.38 | .09  | ---  |                                                                                     |                                                                                     |
| VGER/L100-3T12  |      |       | 1.00X1.00 | 1.000 | .953 | 5  | 1.38 | .09  | ---  |                                                                                     |                                                                                     |
| VGER/L0625-3T21 |      | .827  | .625X.625 | .625  | .578 | 5  | 1.38 | .09  | .162 |                                                                                     |                                                                                     |
| VGER/L075-3T21  |      |       | .750X.750 | .750  | .703 | 5  | 1.38 | .09  | ---  |                                                                                     |                                                                                     |
| VGER/L100-3T21  |      |       | 1.00X1.00 | 1.000 | .953 | 5  | 1.38 | .09  | ---  |                                                                                     |                                                                                     |
| VGER/L0625-4T21 | .157 | .827  | .625X.625 | .625  | .567 | 5  | 1.38 | .116 | .162 | SM4,0X18-T20                                                                        | K6T                                                                                 |
| VGER/L075-4T21  |      |       | .750X.750 | .750  | .692 | 5  | 1.38 | .116 | ---  |                                                                                     |                                                                                     |
| VGER/L100-4T21  |      |       | 1.00X1.00 | 1.000 | .942 | 5  | 1.38 | .116 | ---  |                                                                                     |                                                                                     |



# Reinforced Monoblock Tools for Parting, Grooving & Threading



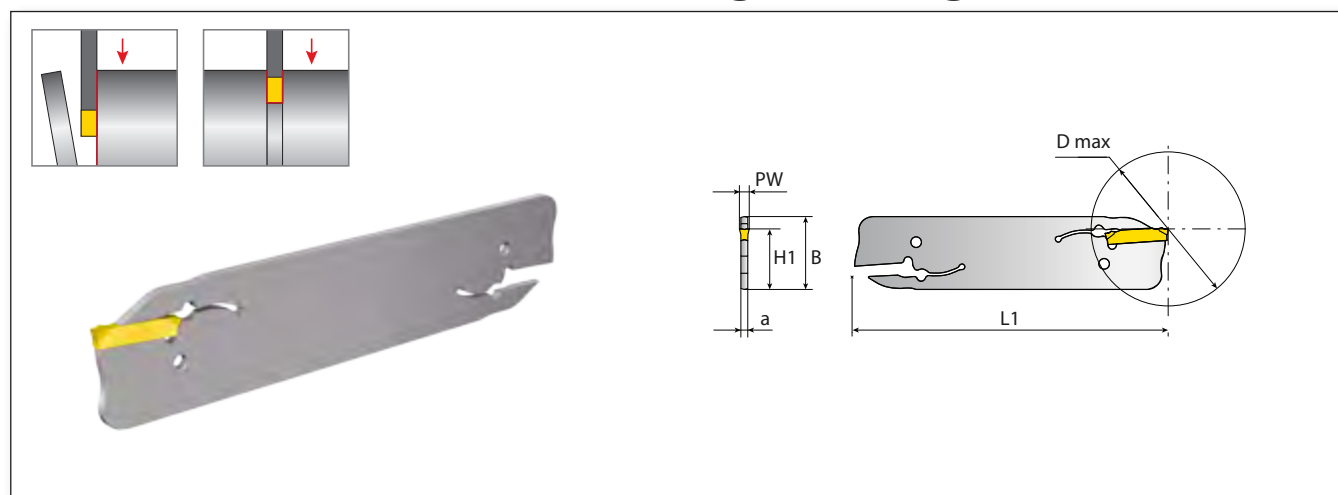
## Metric Holders

| Ordering Code     |    |       |       |    |      |     |    |     | Spare Parts       |       |
|-------------------|----|-------|-------|----|------|-----|----|-----|-------------------|-------|
| Dimensions mm     |    |       |       |    |      |     |    |     |                   |       |
| RH/LH             | PW | D max | HXB   | H1 | F    | L1  | L2 | a   | Cylindrical Screw | Key   |
| VGER/L1212-2T12PH | 2  | 26    | 12X12 | 12 | 11.3 | 125 | 20 | 1.4 | SCM4X14           | KT-15 |
| VGER/L1616-2T21PH |    | 26    | 16X16 | 16 | 15.3 | 125 | 20 | 1.4 |                   |       |
| VGER/L2020-2T21PH |    | 42    | 20X20 | 20 | 19.3 | 125 | 20 | 1.4 |                   |       |
| VGER/L2525-2T21PH |    | 42    | 25X25 | 20 | 19.3 | 125 | 20 | 1.4 |                   |       |
| VGER/L1616-3T12PH | 3  | 26    | 16X16 | 16 | 14.8 | 125 | 20 | 2.4 |                   |       |
| VGER/L2020-3T21PH |    | 42    | 20X20 | 20 | 18.8 | 125 | 30 | 2.4 |                   |       |
| VGER/L2525-3T21PH |    | 42    | 25X25 | 25 | 23.8 | 125 | 30 | 2.4 |                   |       |

## Inch Holders

| Ordering Code     |       |       |           |       |      |     |      |     | Spare Parts       |       |
|-------------------|-------|-------|-----------|-------|------|-----|------|-----|-------------------|-------|
| Dimensions inch   |       |       |           |       |      |     |      |     |                   |       |
| RH/LH             | PW    | D max | HXB       | H1    | F    | L1  | L2   | a   | Cylindrical Screw | Key   |
| VGER/L050-2T12PH  | 0.079 | 1.02  | .500X.500 | .500  | .500 | 5.0 | .78  | .06 | SCM4X14           | KT-15 |
| VGER/L0625-2T12PH |       | 1.02  | .625X.625 | .625  | .597 | 5.0 | .78  | .06 |                   |       |
| VGER/L075-2T12PH  |       | 1.02  | .750X.750 | .750  | .722 | 5.0 | .78  | .06 |                   |       |
| VGER/L100-2T21PH  |       | 1.65  | 1.00X1.00 | 1.000 | .722 | 5.0 | 1.18 | .06 |                   |       |
| VGER/L0625-3T12PH | 0.118 | 1.02  | .625X.625 | .625  | .578 | 5.0 | .78  | .09 |                   |       |
| VGER/L075-3T21    |       | 1.65  | .750X.750 | .750  | .703 | 5.0 | 1.18 | .09 |                   |       |
| VGER/L100-3T21    |       | 1.65  | 1.00X1.00 | 1.000 | .953 | 5.0 | 1.18 | .09 |                   |       |

## Double Ended Blades for Grooving & Parting Off

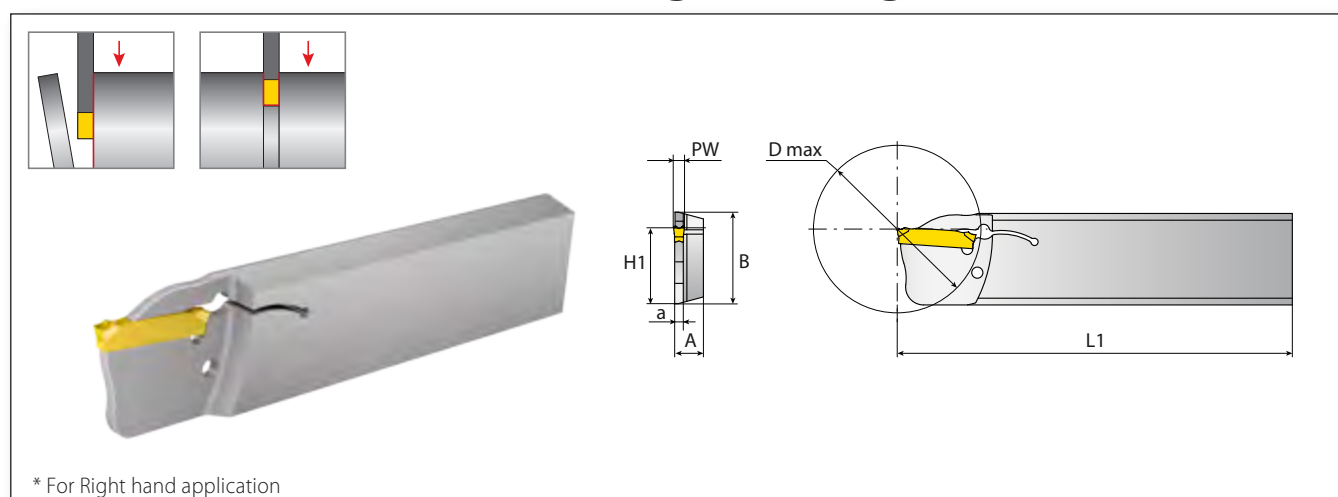


Spare Parts

| Ordering Code |            | Dimensions mm / inch |             |             |             |            | Key  |
|---------------|------------|----------------------|-------------|-------------|-------------|------------|------|
|               | B          | PW                   | D max*      | H1          | L1          | a          |      |
| VGP26-2D      | 26 / 1.024 | 2 / .079             | 50 / 1.969  | 21.1 / .831 | 150 / 5.906 | 1.4 / .055 | VP-3 |
| VGP26-3D      | 26 / 1.024 | 3 / .118             | 70 / 2.756  | 21.1 / .831 | 150 / 5.906 | 2.4 / .094 | VP-3 |
| VGP32-3D      | 32 / 1.260 |                      | 100 / 3.937 | 24.7 / .972 | 150 / 5.906 | 2.4 / .094 |      |
| VGP35-3D      | 35 / 1.378 |                      | 120 / 4.724 | 24.7 / .972 | 150 / 5.906 | 2.4 / .094 |      |
| VGP32-4D      | 32 / 1.260 | 4 / .157             | 100 / 3.937 | 24.6 / .969 | 150 / 5.906 | 3.0 / .118 | VP-4 |
| VGP32-5D      | 32 / 1.260 | 5 / .197             | See insert  | 24.6 / .969 | 150 / 5.906 | 4.0 / .157 | VP-G |
| VGP32-6D      | 32 / 1.260 | 6 / .236             |             | 24.6 / .969 | 150 / 5.906 | 5.0 / .197 |      |

\* D max figures presented are for single sided insert (VGS)

## Reinforced Blades for Grooving & Parting Off



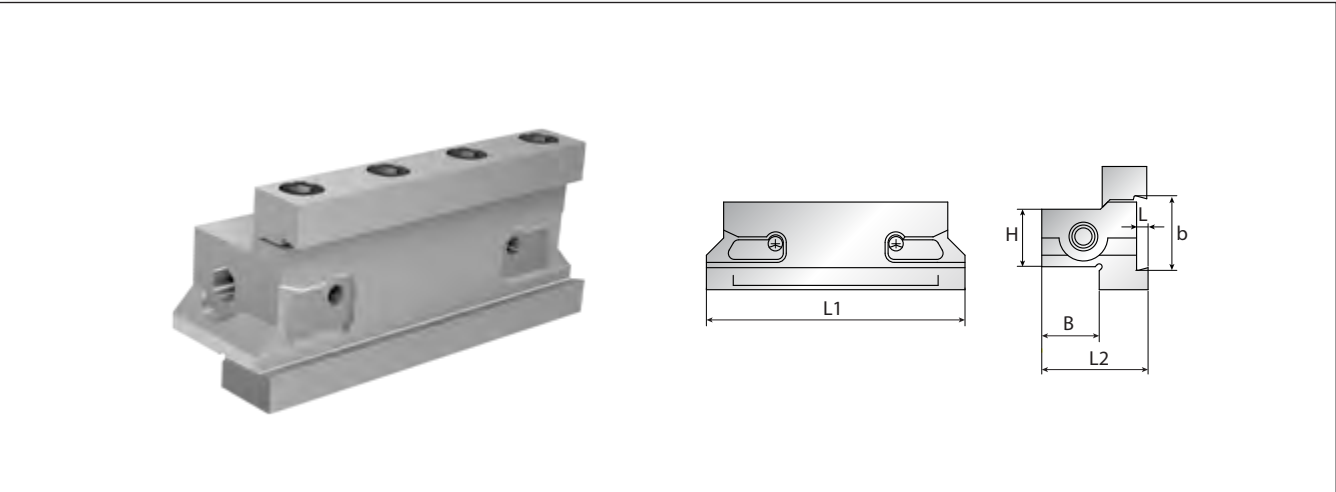
\* For Right hand application

Spare Parts

| Ordering Code |            | Dimensions mm |            |             |             |            |            | Key  |
|---------------|------------|---------------|------------|-------------|-------------|------------|------------|------|
| RH/LH         | B          | PW            | D max*     | H1          | L1          | A          | a          |      |
| VGWR/L26-2S   | 26 / 1.024 | 2 / .079      | 50 / 1.969 | 21.1 / .831 | 110 / 4.331 | 8.0 / .315 | 1.4 / .055 | VP-3 |
| VGWR/L26-3S   | 26 / 1.024 | 3 / .118      | 50 / 1.969 | 21.1 / .831 | 110 / 4.331 | 8.0 / .315 | 2.4 / .094 | VP-3 |

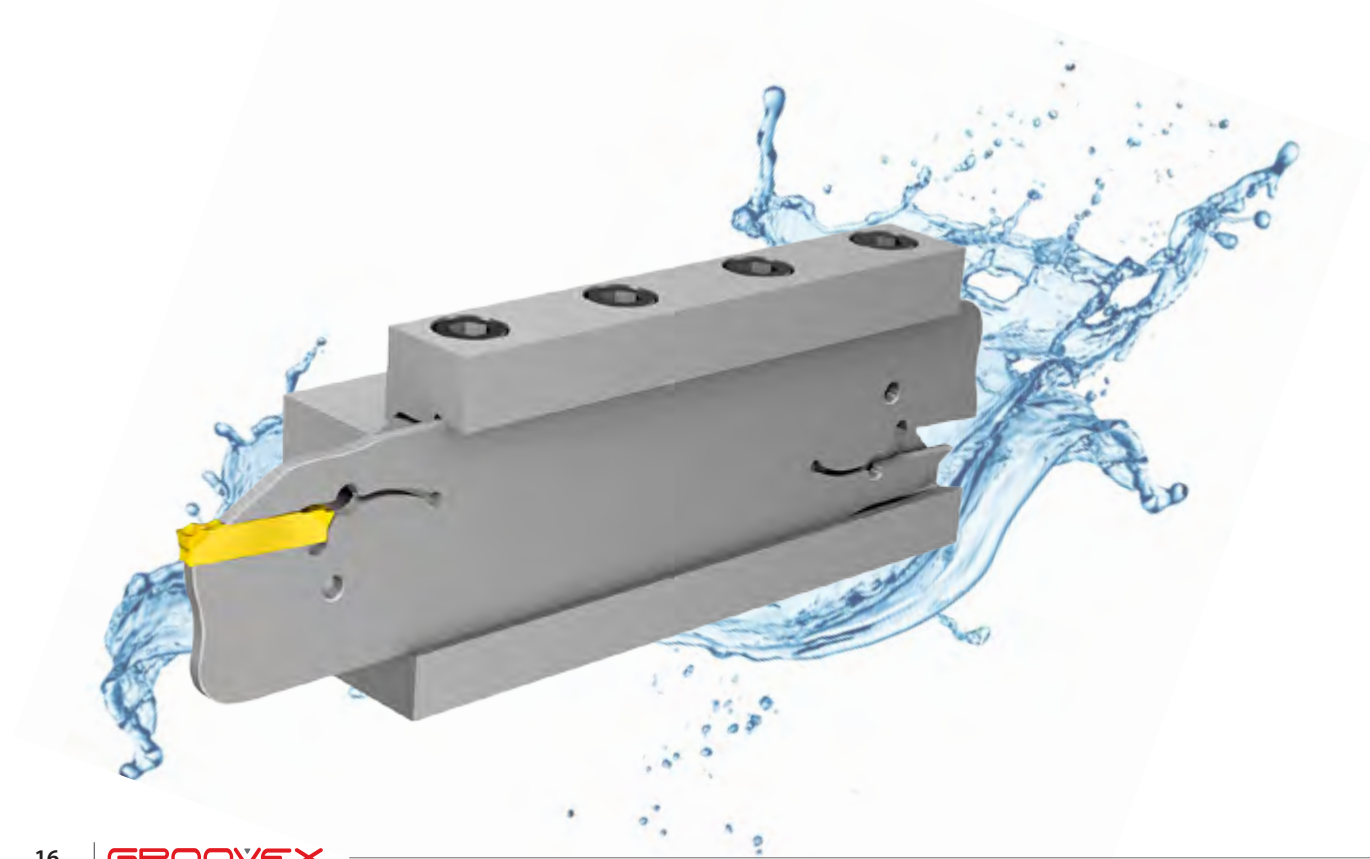
\* D max figures presented are for single sided insert (VGS)

# Blade Holders

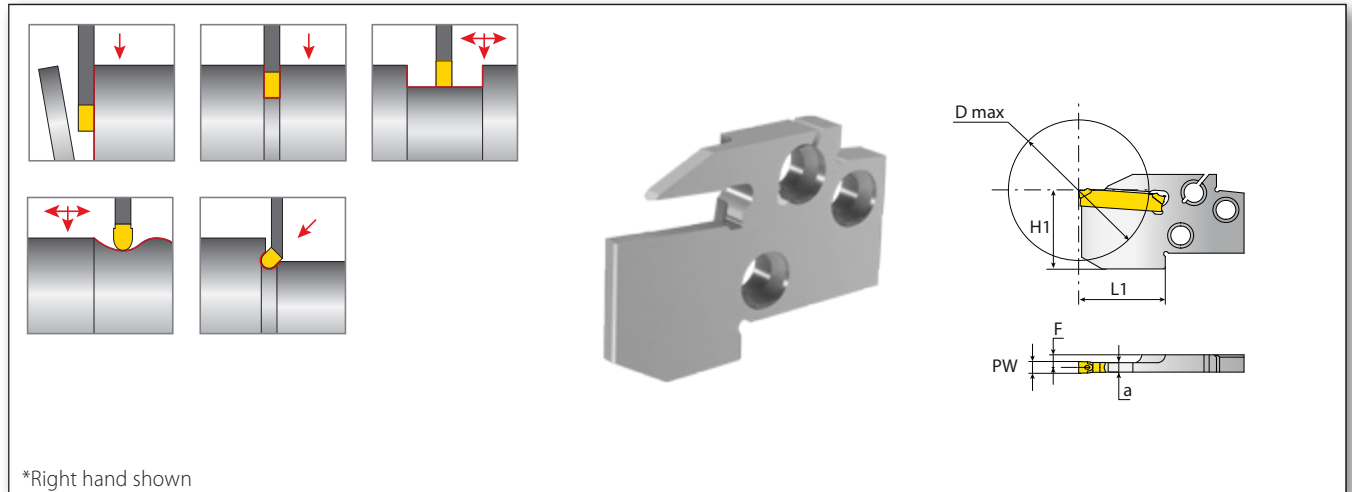


| Metric Holders |    |               |    |     |     |      | Spare Parts                                                                         |                                                                                     |
|----------------|----|---------------|----|-----|-----|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Ordering Code  |    | Dimensions mm |    |     |     |      |  |  |
|                | b  | H             | B  | L   | L1  | L2   | Cylindrical Screw                                                                   | Key                                                                                 |
| VBA 2020-26    | 26 | 20            | 20 | 4   | 90  | 37   | M6x1.0x25                                                                           | K5                                                                                  |
| VBA 2520-32    | 32 | 25            | 20 | 5.2 | 110 | 37.7 |                                                                                     |                                                                                     |

| Inch Holders  |       |                 |       |      |       |       | Spare Parts                                                                           |                                                                                       |
|---------------|-------|-----------------|-------|------|-------|-------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Ordering Code |       | Dimensions inch |       |      |       |       |  |  |
|               | b     | H               | B     | L    | L1    | L2    | Cylindrical Screw                                                                     | Key                                                                                   |
| VBA 075-26    | 1.024 | .75             | .787  | .157 | 3.543 | 1.457 | M6x1.0x25                                                                             | K5                                                                                    |
| VBA 100-32    | 1.260 | 1.00            | 1.020 | .205 | 4.331 | 1.727 |                                                                                       |                                                                                       |



## Modules for Grooving, Parting Off & Turning



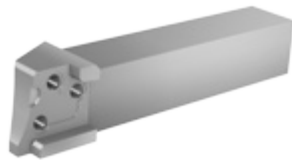
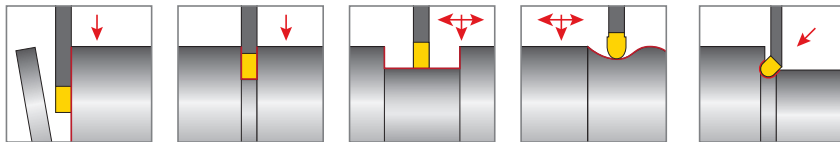
| Ordering Code  |          | Dimensions mm / inch |           |            |           |     |
|----------------|----------|----------------------|-----------|------------|-----------|-----|
| RH/LH          | PW       | D max                | H1        | F          | L1        | a   |
| VGAR/L20T25-2S | 2 / .079 | 40 / 1.575           | 20 / .787 | 3.7 / .146 | 22 / .866 | 1.4 |
| VGAR/L20T25-3S | 3 / .118 | 40 / 1.575           | 20 / .787 | 3.2 / .126 | 24 / .945 | 2.4 |
| VGAR/L20T25-4S | 4 / .157 | 44 / 1.732           | 20 / .787 | 2.9 / .114 | 24 / .945 | 3.0 |
| VGAR/L25T25-2S | 2 / .079 | 40 / 1.575           | 25 / .984 | 5.2 / .205 | 22 / .866 | 1.4 |
| VGAR/L25T25-3S | 3 / .118 | 40 / 1.575           | 25 / .984 | 4.7 / .185 | 24 / .945 | 2.4 |
| VGAR/L25T25-4S | 4 / .157 | 44 / 1.732           | 25 / .984 | 4.4 / .173 | 24 / .945 | 3.0 |

## Depth of Groove in Relation to Workpiece Diameter (00° - 90°)

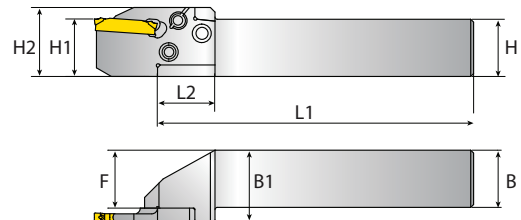
| Dimensions mm / inch |             |
|----------------------|-------------|
| D max                | t max       |
| 50 / 1.969           | 20.0 / .787 |
| 100 / 3.937          | 17.0 / .669 |
| 150 / 5.906          | 16.0 / .630 |
| 200 / 7.874          | 15.2 / .598 |



# Modular Bodies for Grooving, Parting Off & Turning | M E T R I C

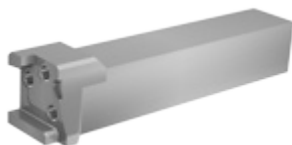


\* Right hand shown

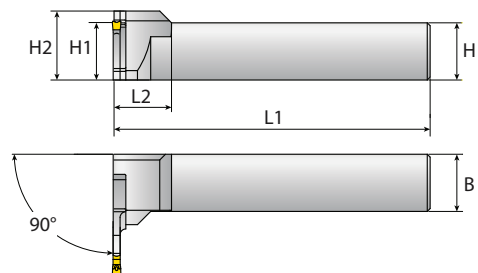


Spare Parts

| Ordering Code |      | Dimensions mm |      |    |       |     |    |               |        |
|---------------|------|---------------|------|----|-------|-----|----|---------------|--------|
| RH/LH         | H/H1 | B             | B1   | H2 | F     | L1  | L2 | Conical Screw | Key    |
| VBMR/L2020-00 | 20   | 20.0          | 24.3 | 24 | 20.15 | 110 | 20 | SM4x14 T15    | TK-T15 |
| VBMR/L2525-00 | 25   | 25.0          | 31.0 | 30 | 25.50 | 140 | 25 | SM5x18 T20    | TK-T20 |



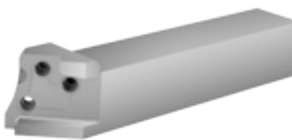
\* Right hand shown



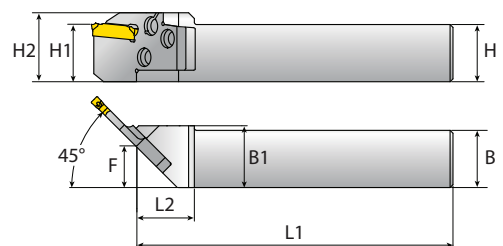
Spare Parts

| Ordering Code |      | Dimensions mm |    |     |    |  |  |               |        |
|---------------|------|---------------|----|-----|----|--|--|---------------|--------|
| RH/LH         | H/H1 | B             | H2 | L1  | L2 |  |  | Conical Screw | Key    |
| VBMR/L2020-90 | 20   | 20.0          | 24 | 110 | 20 |  |  | SM4x14 T15    | TK-T15 |
| VBMR/L2525-90 | 25   | 25.0          | 30 | 140 | 28 |  |  | SM5x18 T20    | TK-T20 |

! For 90° Right-hand Tool: Use right-hand body with left-hand module



\* Left hand shown

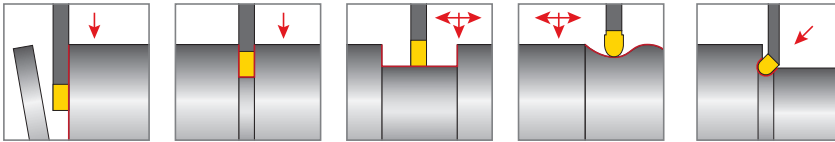


Spare Parts

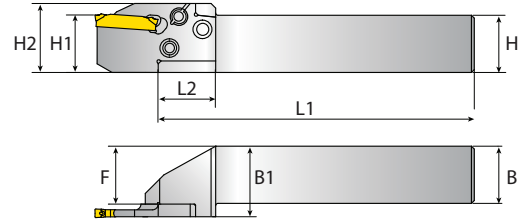
| Ordering Code |      | Dimensions mm |      |    |     |    |      |                            |        |
|---------------|------|---------------|------|----|-----|----|------|----------------------------|--------|
| RH/LH         | H/H1 | B             | B1   | H2 | L1  | L2 | F    | Conical Screw              | Key    |
| VBMR/L2020-45 | 20   | 20.0          | 21.5 | 24 | 110 | 20 | 14.5 | SM4x10.5 T15<br>SM4x14 T15 | TK-T15 |
| VBMR/L2525-45 | 25   | 25.0          | 26.0 | 30 | 140 | 25 | 18   | SM5x13.5 T20<br>SM5x18 T20 | TK-T20 |

! For 45° Right-hand Tool: Use right-hand body with left-hand module

# Modular Bodies for Grooving, Parting Off & Turning | INCH

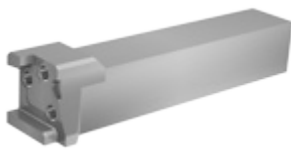


\* Right hand shown

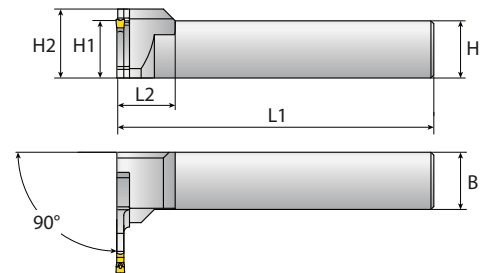


Spare Parts

| Ordering Code |      | Dimension <b>inch</b> |       |       |       |     |      |               |        |
|---------------|------|-----------------------|-------|-------|-------|-----|------|---------------|--------|
| RH/LH         | H/H1 | B                     | B1    | H2    | F     | L1  | L2   | Conical Screw | Key    |
| VBMR/L075-00  | .75  | .75                   | .957  | .984  | .793  | 4.5 | .787 | SM4x14 T15    | TK-T15 |
| VBMR/L100-00  | 1.00 | 1.00                  | 1.236 | 1.197 | 1.020 | 5.5 | .984 | SM5x18 T20    | TK-T20 |



\* Right hand shown



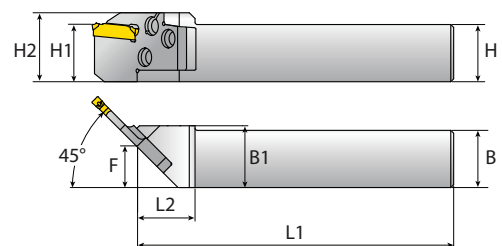
Spare Parts

| Ordering Code |      | Dimensions <b>inch</b> |       |     |       |  |  |               |        |
|---------------|------|------------------------|-------|-----|-------|--|--|---------------|--------|
| RH/LH         | H/H1 | B                      | H2    | L1  | L2    |  |  | Conical Screw | Key    |
| VBMR/L075-90  | .75  | .75                    | .907  | 4.5 | .787  |  |  | SM4x14T15     | TK-T15 |
| VBMR/L100-90  | 1.00 | 1.00                   | 1.197 | 5.5 | 1.000 |  |  | SM5x18T20     | TK-T20 |

! For 90° Right-hand Tool: Use right-hand body with left-hand module



\* Left hand shown



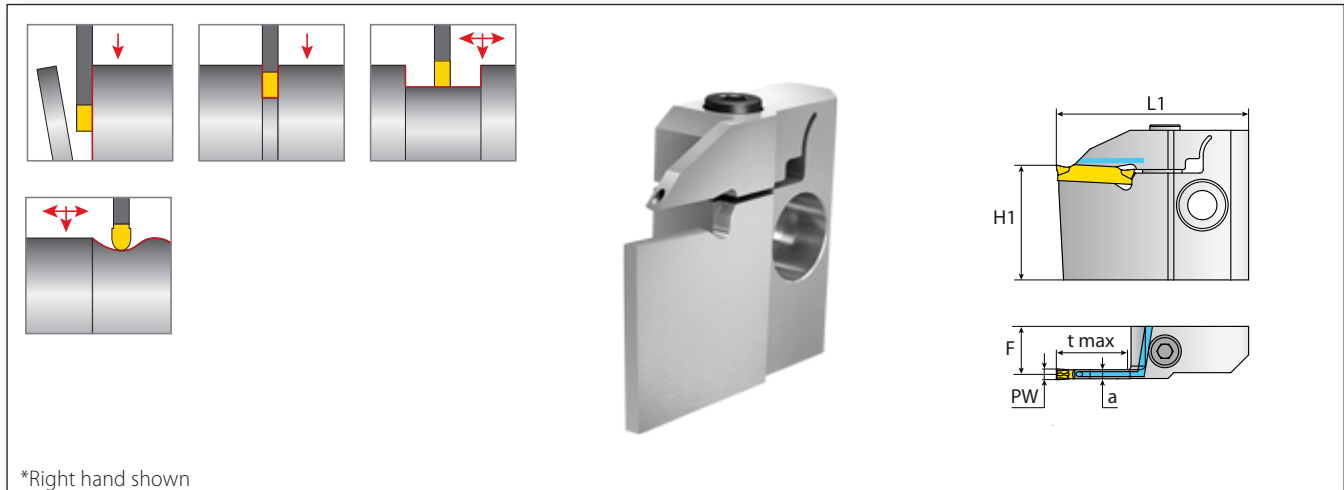
Spare Parts

| Ordering Code |      | Dimensions <b>inch</b> |       |       |     |      |      |                            |        |
|---------------|------|------------------------|-------|-------|-----|------|------|----------------------------|--------|
| RH/LH         | H/H1 | B                      | B1    | H2    | L1  | L2   | F    | Conical Screw              | Key    |
| VBMR/L075-45  | .75  | .75                    | .846  | .984  | 4.5 | .787 | .571 | SM4x10.5 T15<br>SM4x14 T15 | TK-T15 |
| VBMR/L100-45  | 1.00 | 1.00                   | 1.024 | 1.197 | 5.5 | .984 | .709 | SM5x13.5 T20<br>SM5x18 T20 | TK-T20 |

! For 45° Right-hand Tool: Use right-hand body with left-hand module



## Radial Grooving Modules with High Pressure Coolant Thru

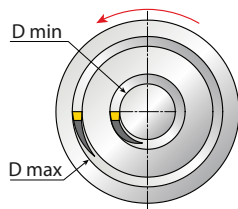
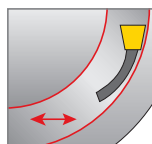


| Ordering Code |    |       |    |      |    |      | Spare Parts                                                                         |                                                                                     |
|---------------|----|-------|----|------|----|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Dimensions mm |    |       |    |      |    |      |  |  |
| RH/LH         | PW | t max | H1 | F    | L1 | a    | Screw                                                                               | Key                                                                                 |
| VGAR/L-T09-2C | 2  | 9     | 32 | 13.9 | 43 | 1.58 | SM5X16                                                                              | K4H                                                                                 |
| VGAR/L-T18-2C | 2  | 18    | 32 | 13.9 | 52 | 1.58 |                                                                                     |                                                                                     |
| VGAR/L-T10-3C | 3  | 10    | 32 | 13.3 | 44 | 2.48 |                                                                                     |                                                                                     |
| VGAR/L-T20-3C | 3  | 20    | 32 | 13.3 | 54 | 2.48 |                                                                                     |                                                                                     |
| VGAR/L-T12-4C | 4  | 12    | 32 | 13.0 | 46 | 3.10 |                                                                                     |                                                                                     |
| VGAR/L-T24-4C | 4  | 24    | 32 | 13.0 | 58 | 3.10 |                                                                                     |                                                                                     |
| VGAR/L-T15-5C | 5  | 15    | 32 | 13.5 | 49 | 4.00 | SM6X20T                                                                             | K30T                                                                                |
| VGAR/L-T30-5C | 5  | 30*   | 32 | 12.5 | 64 | 4.00 |                                                                                     |                                                                                     |
| VGAR/L-T20-6C | 6  | 20    | 32 | 13.0 | 54 | 5.00 |                                                                                     |                                                                                     |
| VGAR/L-T40-6C | 6  | 40*   | 32 | 13.0 | 74 | 5.00 |                                                                                     |                                                                                     |

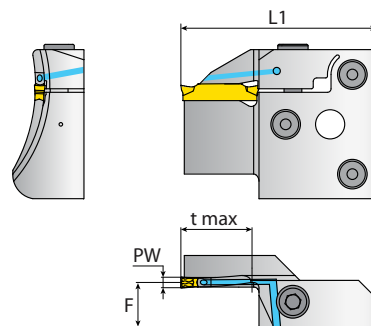
\* T max figures presented for single sided inserts (VGS).



# Face Grooving Modules with High Pressure Coolant Thru



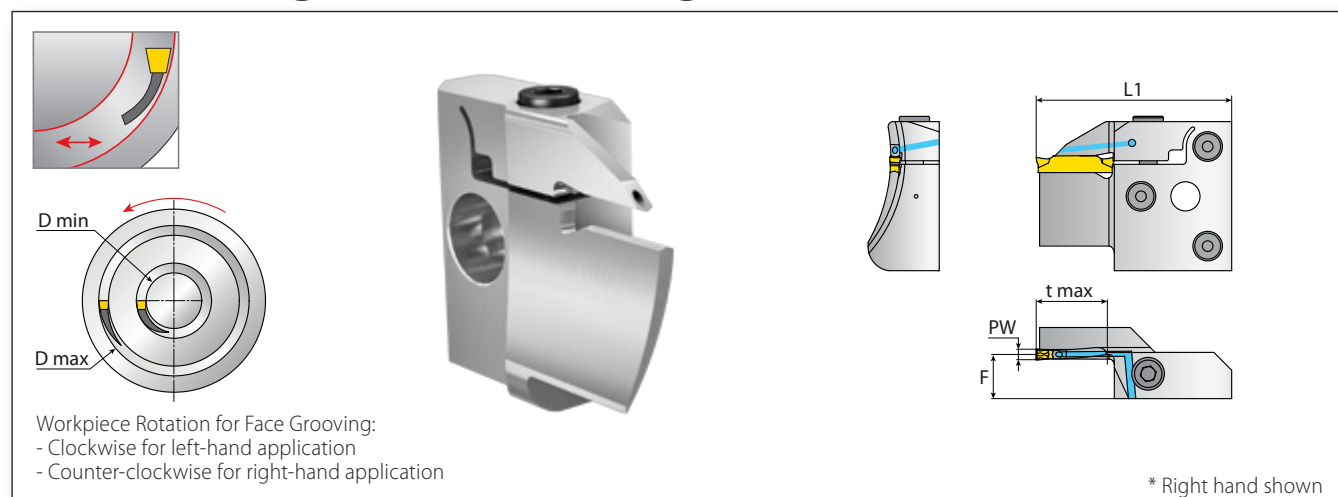
Workpiece Rotation for Face Grooving:  
 - Clockwise for left-hand application  
 - Counter-clockwise for right-hand application



\* Right hand shown

|                      |    |               |       |       |      |    | Spare Parts                                                                         |                                                                                     |
|----------------------|----|---------------|-------|-------|------|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Ordering Code        |    | Dimensions mm |       |       |      |    |  |  |
| RH/LH                | PW | t max         | D min | D max | F    | L1 | Screw                                                                               | Key                                                                                 |
| VGFR/L-2530-T10-3C   | 3  | 10            | 25    | 30    | 12.5 | 45 | SM5X16                                                                              | K4H                                                                                 |
| VGFR/L-3038-T10-3C   |    |               | 30    | 38    |      |    |                                                                                     |                                                                                     |
| VGFR/L-3848-T10-3C   |    |               | 38    | 48    |      |    |                                                                                     |                                                                                     |
| VGFR/L-4860-T10-3C   |    |               | 48    | 60    |      |    |                                                                                     |                                                                                     |
| VGFR/L-6075-T10-3C   |    |               | 60    | 75    |      |    |                                                                                     |                                                                                     |
| VGFR/L-75100-T10-3C  |    |               | 75    | 100   |      |    |                                                                                     |                                                                                     |
| VGFR/L-100200-T10-3C |    |               | 100   | 200   |      |    |                                                                                     |                                                                                     |
| VGFR/L-6075-T20-3C   |    | 20            | 60    | 75    |      | 55 |                                                                                     |                                                                                     |
| VGFR/L-75100-T20-3C  |    |               | 75    | 100   |      |    |                                                                                     |                                                                                     |
| VGFR/L-100200-T20-3C |    |               | 100   | 200   |      |    |                                                                                     |                                                                                     |
| VGFR/L-3048-T12-4C   | 4  | 12            | 30    | 48    | 12   | 47 |                                                                                     |                                                                                     |
| VGFR/L-4860-T12-4C   |    |               | 48    | 60    |      |    |                                                                                     |                                                                                     |
| VGFR/L-6075-T12-4C   |    |               | 60    | 75    |      |    |                                                                                     |                                                                                     |
| VGFR/L-75100-T12-4C  |    |               | 75    | 100   |      |    |                                                                                     |                                                                                     |
| VGFR/L-100150-T12-4C |    |               | 100   | 150   |      |    |                                                                                     |                                                                                     |
| VGFR/L-150->-T12-4C  |    |               | 150   | >150  |      |    |                                                                                     |                                                                                     |
| VGFR/L-3048-T24-4C   |    | 24            | 30    | 48    |      | 59 |                                                                                     |                                                                                     |
| VGR/LF-4860-T24-4C   |    |               | 48    | 60    |      |    |                                                                                     |                                                                                     |
| VGFR/L-6075-T24-4C   |    |               | 60    | 75    |      |    |                                                                                     |                                                                                     |
| VGFR/L-75100-T24-4C  |    |               | 75    | 100   |      |    |                                                                                     |                                                                                     |
| VGFR/L-100150-T24-4C |    | 100           | 150   |       |      |    |                                                                                     |                                                                                     |
| VGFR/L-150->-T24-4C  |    | 150           | >150  |       |      |    |                                                                                     |                                                                                     |
| VGFR/L-4255-T22-5C   | 5  | 22            | 42    | 55    | 13.5 | 60 | SM6X20T                                                                             | K30T                                                                                |
| VGFR/L-5575-T22-5C   |    |               | 55    | 75    |      |    |                                                                                     |                                                                                     |
| VGFR/L-75130-T22-5C  |    |               | 75    | 130   |      |    |                                                                                     |                                                                                     |
| VGFR/L-130200-T22-5C |    |               | 130   | 200   |      |    |                                                                                     |                                                                                     |
| VGFR/L-200 ->-T22-5C |    |               | 200   | >200  |      |    |                                                                                     |                                                                                     |
| VGFR/L-130200-T45-5C |    | 45            | 130   | 200   |      | 92 |                                                                                     |                                                                                     |
| VGFR/L-200400-T45-5C |    |               | 200   | 400   |      |    |                                                                                     |                                                                                     |
| VGFR/L-450->-T45-5C  |    |               | 450   | >450  |      |    |                                                                                     |                                                                                     |

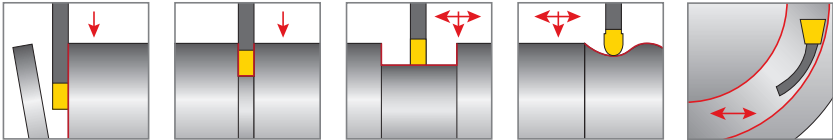
## Face Grooving Modules with High Pressure Coolant Thru (con't)



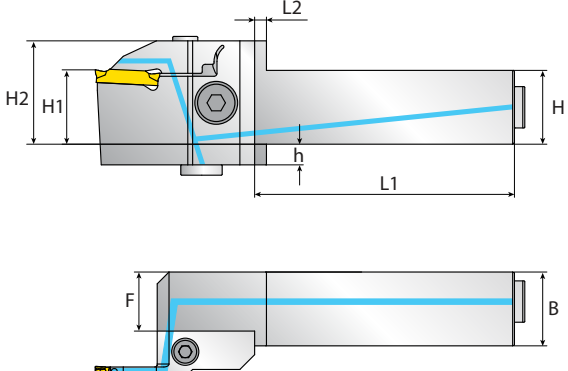
| Ordering Code        |    |       |       |       |    |    | Spare Parts                                                                         |                                                                                     |
|----------------------|----|-------|-------|-------|----|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Dimensions mm        |    |       |       |       |    |    |  |  |
| RH/LH                | PW | t max | D min | D max | F  | L1 | Screw                                                                               | Key                                                                                 |
| VGFR/L-4255-T22-6C   | 6  | 22    | 42    | 55    | 13 | 60 | SM6X20T                                                                             | K30T                                                                                |
| VGFR/L-5575-T22-6C   |    |       | 55    | 75    |    |    |                                                                                     |                                                                                     |
| VGFR/L-75130-T22-6C  |    |       | 75    | 130   |    |    |                                                                                     |                                                                                     |
| VGFR/L-130200-T22-6C |    |       | 130   | 200   |    |    |                                                                                     |                                                                                     |
| VGFR/L-200->-T22-6C  |    |       | 200   | >200  |    |    |                                                                                     |                                                                                     |
| VGFR/L-130200-T45-6C | 45 | 45    | 130   | 200   | 13 | 92 | SM6X20T                                                                             | K30T                                                                                |
| VGFR/L-200400-T45-6C |    |       | 200   | 400   |    |    |                                                                                     |                                                                                     |
| VGFR-450->-T45-6C    |    |       | 450   | >450  |    |    |                                                                                     |                                                                                     |



Modular Bodies with High Pressure Coolant Thru for Grooving, Face Grooving, Parting Off and Turning





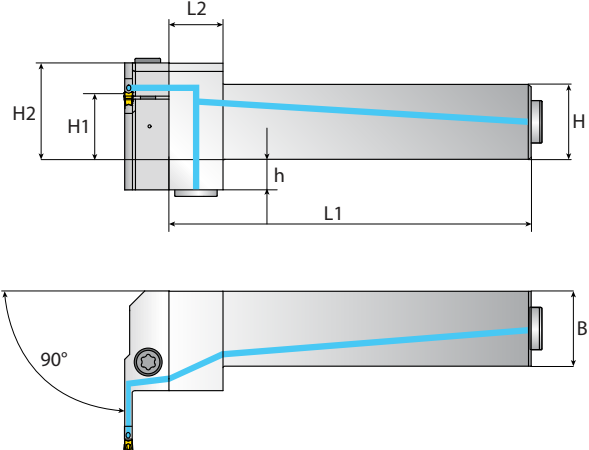


\* Right hand shown

\* Right hand assembly

| Ordering Code   |      |    |    |    |    |     |    | Spare Parts                                                                         |                                                                                     |
|-----------------|------|----|----|----|----|-----|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Dimensions mm   |      |    |    |    |    |     |    |  |  |
|                 | H/H1 | B  | H2 | h  | F  | L1  | L2 | Screw                                                                               | Key                                                                                 |
| VBMR/L2020-00-C | 20   | 20 | 30 | 12 | 15 | 106 | 4  | SM8x25                                                                              | K6H                                                                                 |
| VBMR/L2525-00-C | 25   | 25 | 35 | 7  | 20 | 121 | 4  |                                                                                     |                                                                                     |
| VBMR/L3225-00-C | 32   | 25 | 42 | 0  | 20 | 136 | 4  |                                                                                     |                                                                                     |



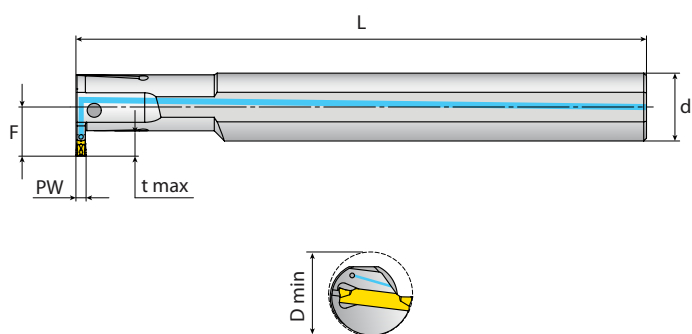
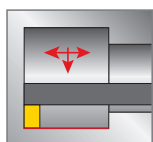


\* Right hand shown

\* Right hand assembly

| Ordering Code   |      |    |    |    |     |    |        | Spare Parts                                                                           |                                                                                       |
|-----------------|------|----|----|----|-----|----|--------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Dimensions mm   |      |    |    |    |     |    |        |  |  |
| RH/LH           | H/H1 | B  | H2 | h  | L1  | L2 |        | Screw                                                                                 | Key                                                                                   |
| VBMR/L2020-90-C | 20   | 20 | 30 | 12 | 111 | 18 | SM8x25 | K6H                                                                                   |                                                                                       |
| VBMR/L2525-90-C | 25   | 25 | 35 | 7  | 120 | 18 |        |                                                                                       |                                                                                       |
| VBMR/L3225-90-C | 32   | 25 | 42 | 0  | 130 | 18 |        |                                                                                       |                                                                                       |

## Internal Grooving & Turning



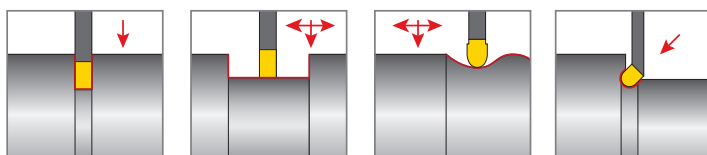
\*Right hand shown

| Ordering Code   |    |       |       |    |    |     |     | Spare Parts                                                                         |                                                                                     |
|-----------------|----|-------|-------|----|----|-----|-----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Dimensions mm   |    |       |       |    |    |     |     |  |  |
| RH/LH           | PW | t max | D min | d  | F  | a   | L   | Screw                                                                               | Key                                                                                 |
| VGIR/L-20-25-2C | 2  | 7     | 25    | 20 | 14 | 1.5 | 180 | SM5x12                                                                              | K4H                                                                                 |
| VGIR/L-25-32-2C |    | 9     | 32    | 25 | 19 | 1.5 | 200 | SM5x16                                                                              |                                                                                     |
| VGIR/L-20-25-3C | 3  | 7     | 25    | 20 | 14 | 2.5 | 180 | SM5x12                                                                              |                                                                                     |
| VGIR/L-25-32-3C |    | 9     | 32    | 25 | 19 | 2.5 | 200 | SM5x16                                                                              |                                                                                     |
| VGIR/L-20-28-4C | 4  | 9     | 28    | 20 | 17 | 3.0 | 180 | SM5x12                                                                              |                                                                                     |
| VGIR/L-25-32-4C |    | 9     | 32    | 25 | 19 | 3.0 | 200 | SM5x16                                                                              |                                                                                     |



# Technical Data

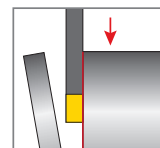
## Recommended Cutting Speeds



## Vc [m/min] for Grooving and Turning

| Material Group                         | Vargus No. | Material                                     | Hardness Brinell HB                 | Carbide Grade  |                |                |
|----------------------------------------|------------|----------------------------------------------|-------------------------------------|----------------|----------------|----------------|
|                                        |            |                                              |                                     | VMG<br>PVD M35 | VPG<br>PVD P20 | VKG<br>CVD K25 |
| <b>P</b><br>Steel                      | 1          | Unalloyed Steel                              | Low Carbon (C=0.1-0.25%)            | 125            | 100-160        | 120-260        |
|                                        | 2          |                                              | Medium Carbon (C=0.25-0.55%)        | 150            | 80-140         | 90-220         |
|                                        | 3          |                                              | High Carbon (C=0.55-0.85%)          | 170            | 80-140         | 90-220         |
|                                        | 4          | Low Alloy Steel<br>(alloying elements ≤ 5%)  | Non Hardened                        | 180            | 80-140         | 90-220         |
|                                        | 5          |                                              | Hardened                            | 275            | 50-120         | 60-160         |
|                                        | 6          |                                              | Hardened                            | 350            | 40-70          | 50-100         |
|                                        | 7          | High Alloy Steel<br>(alloying elements > 5%) | Annealed                            | 200            | 80-140         | 90-220         |
|                                        | 8          |                                              | Hardened                            | 325            | 40-70          | 50-100         |
|                                        | 9          | Cast Steel                                   | Low Alloy (alloying elements < 5%)  | 200            | 80-140         | 90-220         |
|                                        | 10         |                                              | High Alloy (alloying elements > 5%) | 225            | 50-120         | 60-190         |
| <b>M</b><br>Stainless Steel            | 11         | Stainless Steel Ferritic                     | Non Hardened                        | 200            | 50-120         | 60-160         |
|                                        | 12         |                                              | Hardened                            | 330            | 40-100         | 50-140         |
|                                        | 13         | Stainless Steel Austenitic                   | Austenitic                          | 180            | 50-120         | 60-160         |
|                                        | 14         |                                              | Super Austenitic                    | 200            | 50-120         | 60-160         |
|                                        | 15         | Stainless Steel Cast Ferritic                | Non Hardened                        | 200            | 50-120         | 60-160         |
|                                        | 16         |                                              | Hardened                            | 330            | 40-100         | 50-140         |
|                                        | 17         | Stainless Steel Cast Austenitic              | Austenitic                          | 200            | 50-120         | 60-160         |
|                                        | 18         |                                              | Hardened                            | 330            | 40-100         | 50-140         |
| <b>K</b><br>Cast Iron                  | 28         | Malleable Cast Iron                          | Ferritic (short chips)              | 130            |                | 160-240        |
|                                        | 29         |                                              | Pearlitic (long chips)              | 230            |                | 140-220        |
|                                        | 30         | Grey Cast Iron                               | Low Tensile Strength                | 180            |                | 160-240        |
|                                        | 31         |                                              | High Tensile Strength               | 260            |                | 100-200        |
|                                        | 32         | Nodular Sg Iron                              | Ferritic                            | 160            |                | 100-200        |
|                                        | 33         |                                              | Pearlitic                           | 260            |                | 100-200        |
| <b>N(K)</b><br>Non-Ferrous Metals      | 34         | Aluminium Alloys Wrought                     | Non Aging                           | 60             | 150-300        |                |
|                                        | 35         |                                              | Aged                                | 100            | 150-250        |                |
|                                        | 36         | Aluminium Alloys                             | Cast                                | 75             | 150-300        |                |
|                                        | 37         |                                              | Cast & Aged                         | 90             | 150-300        |                |
|                                        | 38         | Aluminium Alloys                             | Cast Si 13-22%                      | 130            | 150-250        |                |
|                                        | 39         | Copper and Copper Alloys                     | Brass                               | 90             | 150-300        |                |
|                                        | 40         |                                              | Bronze And Non Leaded Copper        | 100            | 150-300        |                |
| <b>S(M)</b><br>Heat Resistant Material | 19         | High Temperature Alloys                      | Annealed (iron based)               | 200            | 25-40          | 30-50          |
|                                        | 20         |                                              | Aged (iron based)                   | 280            | 25-35          | 20-50          |
|                                        | 21         |                                              | Annealed (nickel or cobalt based)   | 250            | 25-35          | 20-50          |
|                                        | 22         |                                              | Aged (nickel or cobalt based)       | 350            | 25-35          | 20-50          |
|                                        | 23         | Titanium Alloys                              | Pure 99.5 Ti                        | 400Rm          | 25-40          | 30-50          |
|                                        | 24         |                                              | α+β Alloys                          | 1050Rm         | 25-60          | 30-70          |
| <b>H(K)</b><br>Hardened Material       | 25         | Extra Hard Steel                             | Hardened & Tempered                 | 45-50HRC       |                | 20-40          |
|                                        | 26         |                                              |                                     | 51-55HRC       |                | 15-30          |

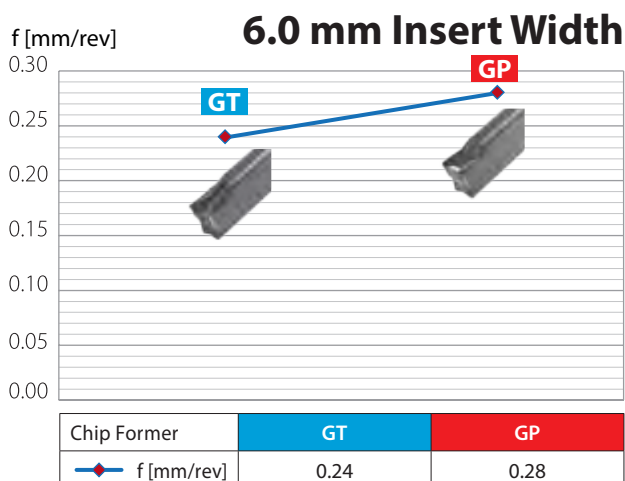
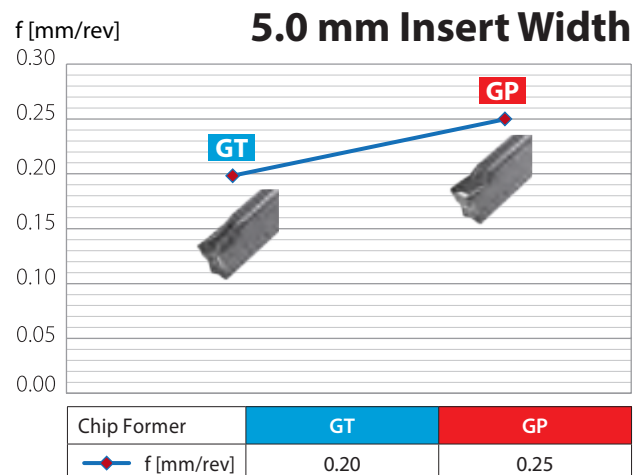
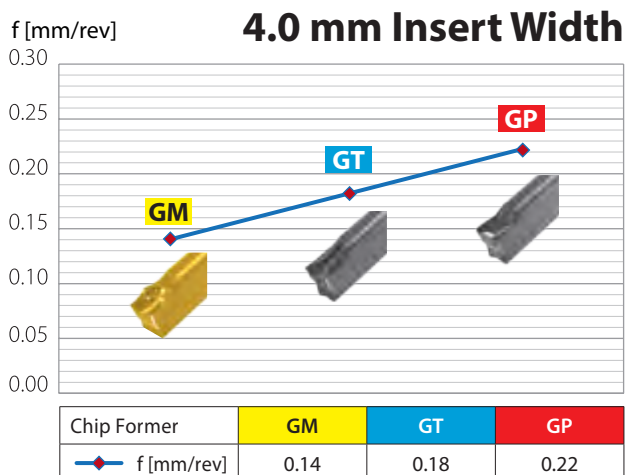
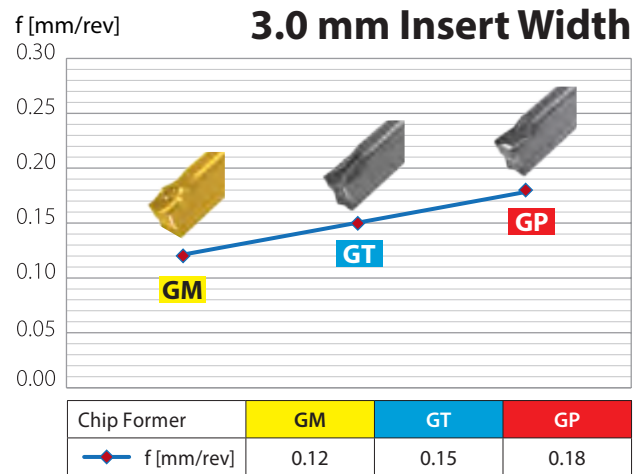
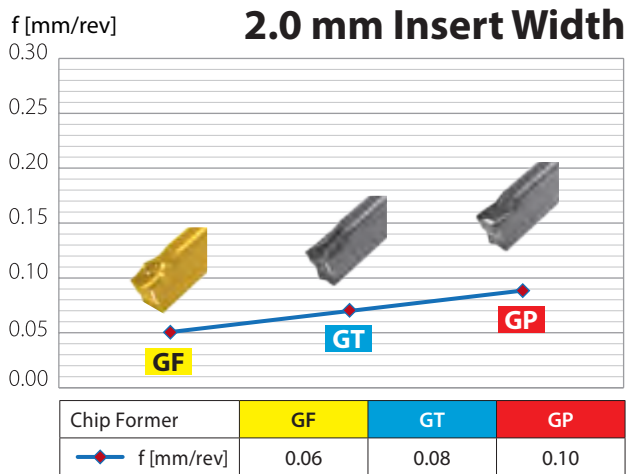
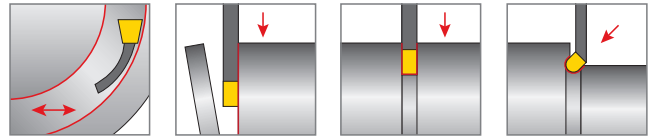
## Vc [m/min] for Parting Off



For Parting Off and to also improve chip forming and chip evacuation; **reduce speed by ≈ 30%.**

For Gummy materials, such as stainless steel and heat resistant metals - or in case of build up on edge (cold welding) - **speed should be increased by ≈ 20%.**

## Feed Rate (f) Starting Point for Deep Grooving, Face Grooving & Parting Off



Correct chip forming is essential for chip evacuation.

Low feed rates with sufficient chip evacuation improves process stability and tool life. Feed rate should be increased only when improved evacuation is needed to prevent wall scratching or chip entanglement.

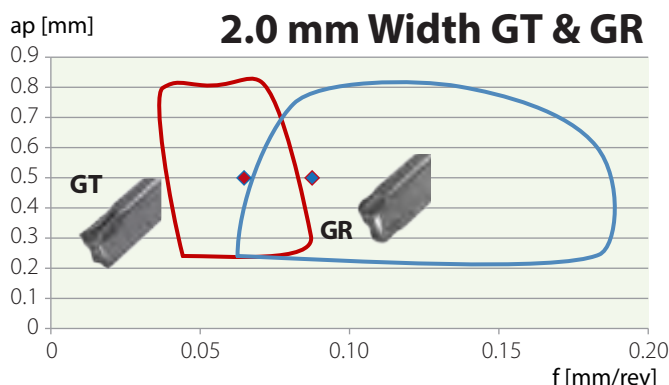
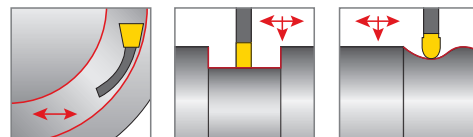
For Parting Off, it is recommended to reduce feed rate by 30% while using R / L inserts.

For Parting Off, it is strongly recommended to reduce feed rate by 50% as the insert approaches rotation center. Reduce feed when the insert approaches approx. 6.0 mm diameter.

For Face Grooving, it is recommended to reduce feed rate by 25%.

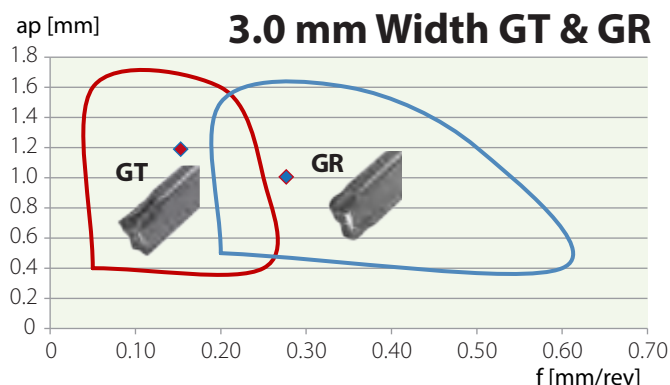


# Feed Rate (f) and Depth of Cuts for Axial Turning , Profiling and Face Grooving



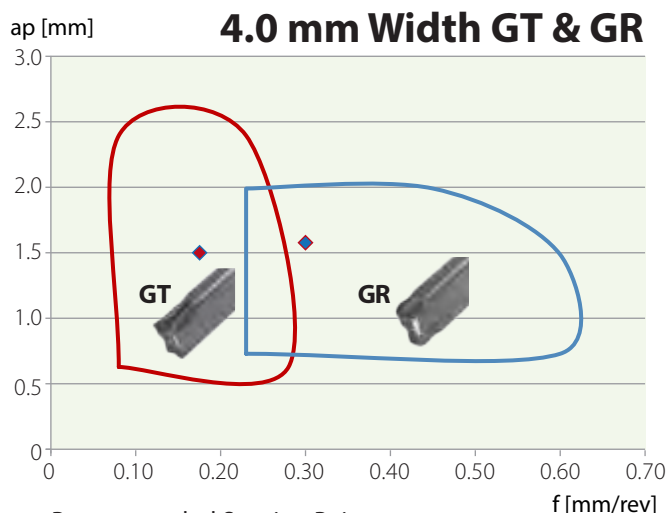
Recommended Starting Point:

|            | GT 2.0 mm | GR 2.0 mm |
|------------|-----------|-----------|
| ap [mm]    | 0.5       | 0.5       |
| f [mm/rev] | 0.06      | 0.08      |



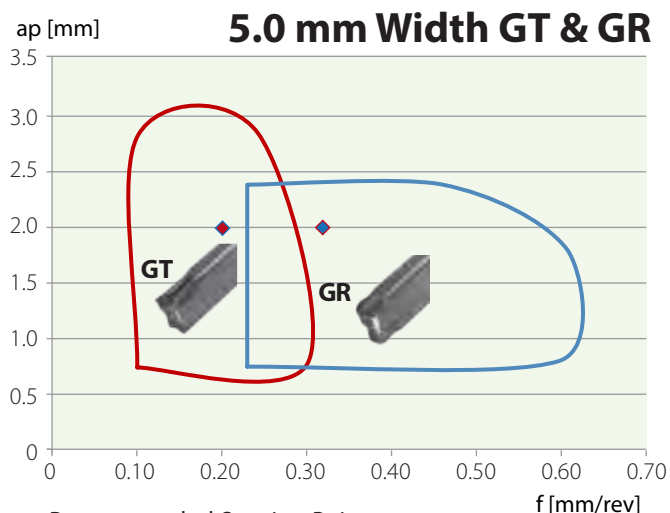
Recommended Starting Point:

|            | GT 3.0 mm | GR 3.0 mm |
|------------|-----------|-----------|
| ap [mm]    | 1.20      | 1.00      |
| f [mm/rev] | 0.14      | 0.25      |



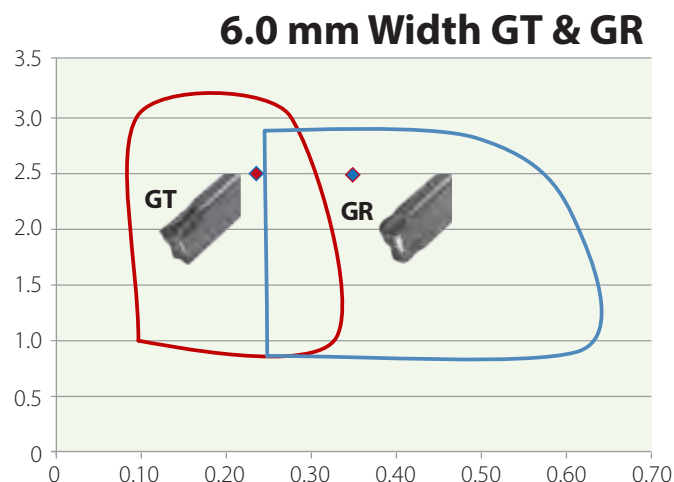
Recommended Starting Point:

|            | GT 4.0 mm | GR 4.0 mm |
|------------|-----------|-----------|
| ap [mm]    | 1.50      | 1.60      |
| f [mm/rev] | 0.18      | 0.30      |



Recommended Starting Point:

|            | GT 5.0 mm | GR 5.0 mm |
|------------|-----------|-----------|
| ap [mm]    | 2.0       | 2.0       |
| f [mm/rev] | 0.20      | 0.32      |



Recommended Starting Point:

|            | GT 6.0 mm | GR 6.0 mm |
|------------|-----------|-----------|
| ap [mm]    | 2.50      | 2.50      |
| f [mm/rev] | 0.24      | 0.35      |

## Selecting the Correct Face Grooving Module

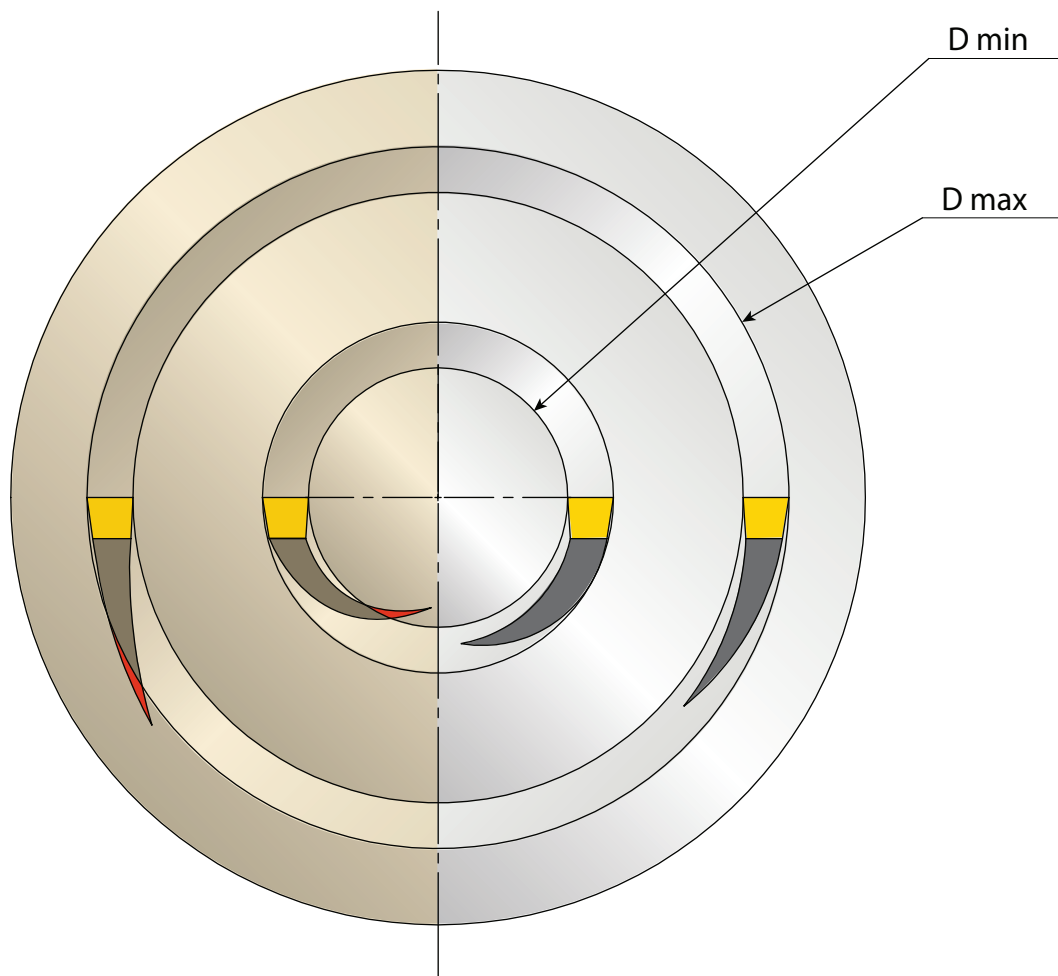
VG Cut Ordering Code Example: **VGFR-4860-T24-4C**

$D_{\max}$

$D_{\min}$

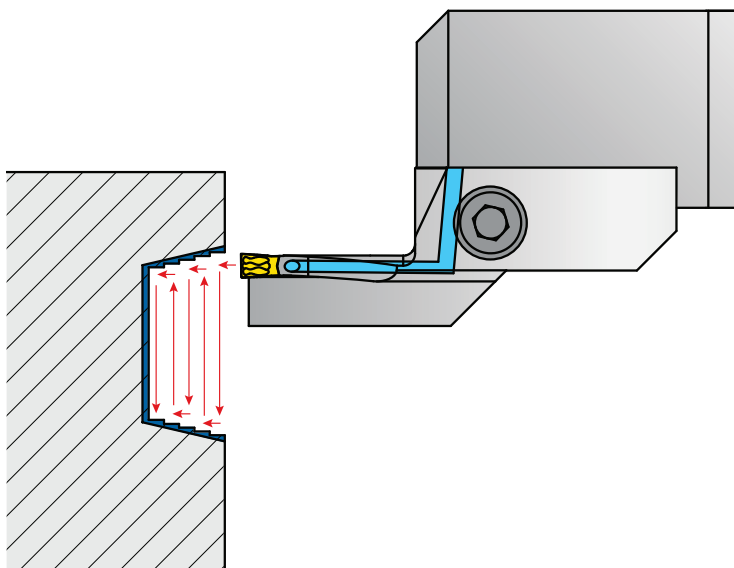
**Wrong Support**

**Correct Support**



## Face Groove and Turn Machining Recommendations:

### Roughing:

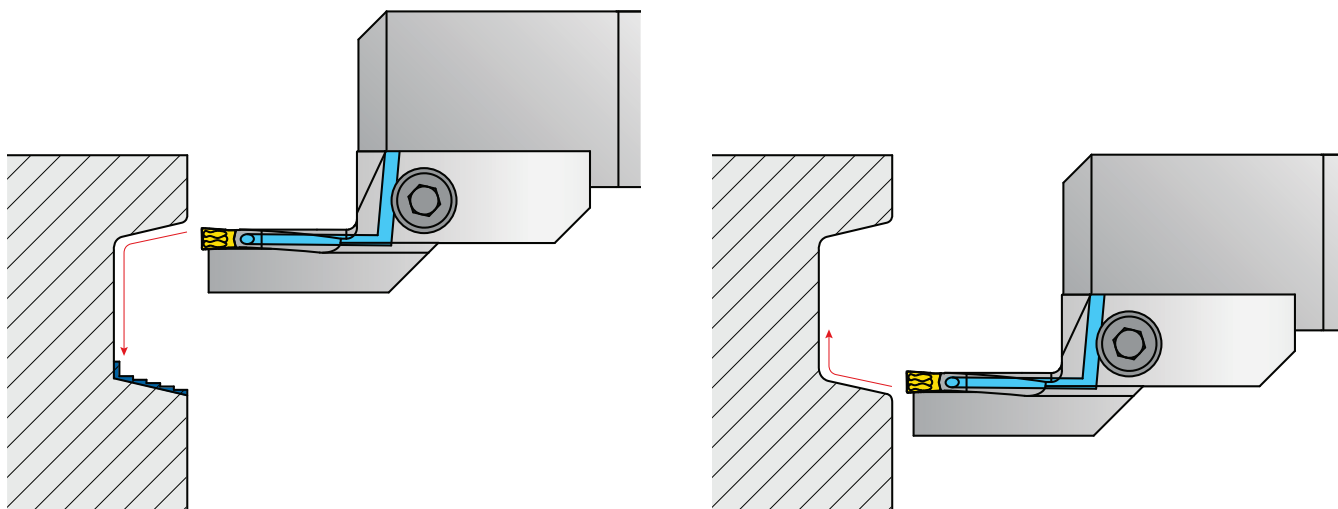


1. Start by grooving close to outer diameter, followed by face turning toward the center.
2. Continue grooving close to inner diameter, followed by face turning away from center. Continue as needed until the workpiece is ready for the finishing operation.
3. The recommended remaining excess material, for the finishing application, should not exceed twice the insert corner radius.

### Face Grooving Tips:

- Reduce speeds by 30% for grooving step. See page 25 for Face Turning cutting speeds.
- See pages 26-27 for Face Grooving cutting data.

### Finishing:

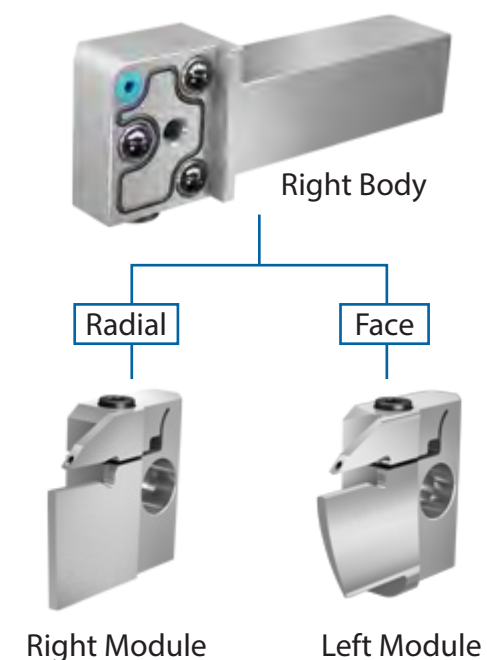


1. Start the Profiling operation from the outer diameter of the workpiece and work in. Generate the desired radius followed by the face turning operation close to the tangential point of the inner radius.
2. Start the Profiling operation from the inner diameter towards the bottom of the workpiece, generate the desired radius as needed.

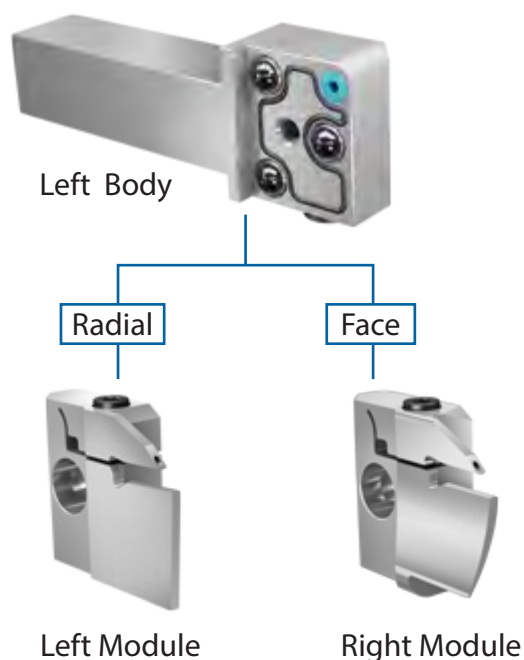
## User Guide for Modular system\* with high pressure coolant: Choosing the right Holder for the application (Body + Module):

\* For non-coolant Modular system, please see pages 17-19.

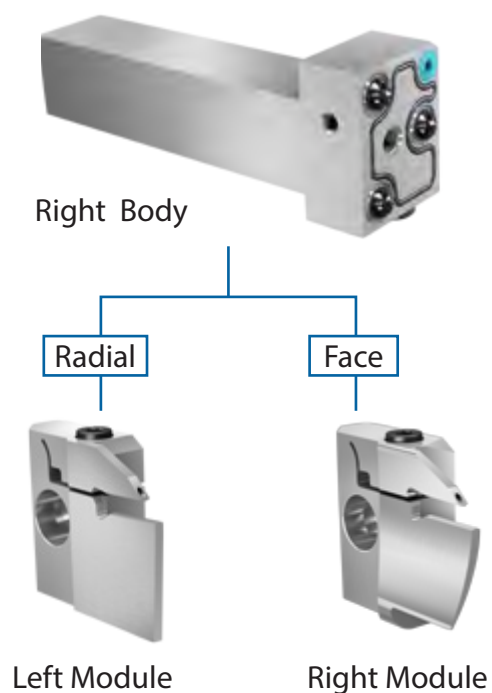
### Parallel Right Tools



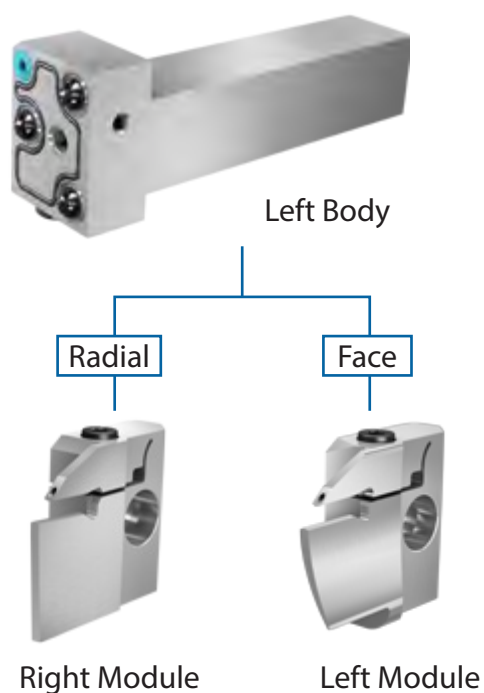
### Parallel Left Tools



### 90° Right Tools

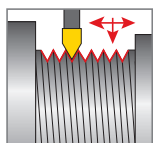


### 90° Left Tools



# Technical Data

## Recommended Cutting Speeds Vc [m/min] for Threading



| Material Group                         | Vargus No. | Material                                     |                                     | Hardness Brinell HB | Carbide Grade  |
|----------------------------------------|------------|----------------------------------------------|-------------------------------------|---------------------|----------------|
|                                        |            |                                              |                                     |                     | VPG<br>PVD P20 |
| <b>P</b><br>Steel                      | 1          | Unalloyed Steel                              | Low Carbon (C=0.1-0.25%)            | 125                 | 120-260        |
|                                        | 2          |                                              | Medium Carbon (C=0.25-0.55%)        | 150                 | 90-220         |
|                                        | 3          |                                              | High Carbon (C=0.55-0.85%)          | 170                 | 90-220         |
|                                        | 4          | Low Alloy Steel<br>(alloying elements ≤ 5%)  | Non Hardened                        | 180                 | 90-220         |
|                                        | 5          |                                              | Hardened                            | 275                 | 60-160         |
|                                        | 6          |                                              | Hardened                            | 350                 | 50-100         |
|                                        | 7          | High Alloy Steel<br>(alloying elements > 5%) | Annealed                            | 200                 | 90-220         |
|                                        | 8          |                                              | Hardened                            | 325                 | 50-100         |
|                                        | 9          | Cast Steel                                   | Low Alloy (alloying elements < 5%)  | 200                 | 90-220         |
|                                        | 10         |                                              | High Alloy (alloying elements > 5%) | 225                 | 60-160         |
| <b>M</b><br>Stainless Steel            | 11         | Stainless Steel<br>Ferritic                  | Non Hardened                        | 200                 | 60-160         |
|                                        | 12         |                                              | Hardened                            | 330                 | 50-140         |
|                                        | 13         | Stainless Steel<br>Austenitic                | Austenitic                          | 180                 | 60-160         |
|                                        | 14         |                                              | Super Austenitic                    | 200                 | 60-160         |
|                                        | 15         | Stainless Steel<br>Cast Ferritic             | Non Hardened                        | 200                 | 60-160         |
|                                        | 16         |                                              | Hardened                            | 330                 | 50-140         |
|                                        | 17         | Stainless Steel<br>Cast Austenitic           | Austenitic                          | 200                 | 60-160         |
|                                        | 18         |                                              | Hardened                            | 330                 | 50-140         |
| <b>K</b><br>Cast Iron                  | 28         | Malleable<br>Cast Iron                       | Ferritic (short chips)              | 130                 | 160-240        |
|                                        | 29         |                                              | Pearlitic (long chips)              | 230                 | 140-220        |
|                                        | 30         | Grey Cast Iron                               | Low Tensile Strength                | 180                 | 160-240        |
|                                        | 31         |                                              | High Tensile Strength               | 260                 | 100-200        |
|                                        | 32         | Nodular Sg Iron                              | Ferritic                            | 160                 | 100-200        |
|                                        | 33         |                                              | Pearlitic                           | 260                 | 100-200        |
| <b>N(k)</b><br>Non-Ferrous Metals      | 34         | Aluminium Alloys<br>Wrought                  | Non Aging                           | 60                  | 200-450        |
|                                        | 35         |                                              | Aged                                | 100                 | 200-350        |
|                                        | 36         | Aluminium Alloys                             | Cast                                | 75                  | 200-450        |
|                                        | 37         |                                              | Cast & Aged                         | 90                  | 200-450        |
|                                        | 38         | Aluminium Alloys                             | Cast Si 13-22%                      | 130                 | 200-350        |
|                                        | 39         | Copper and<br>Copper Alloys                  | Brass                               | 90                  | 200-450        |
|                                        | 40         |                                              | Bronze And Non Leaded Copper        | 100                 | 200-450        |
| <b>S(m)</b><br>Heat Resistant Material | 19         | High Temperature<br>Alloys                   | Annealed (iron based)               | 200                 | 30-50          |
|                                        | 20         |                                              | Aged (iron based)                   | 280                 | 20-50          |
|                                        | 21         |                                              | Annealed (nickel or cobalt based)   | 250                 | 20-50          |
|                                        | 22         |                                              | Aged (nickel or cobalt based)       | 350                 | 20-50          |
|                                        | 23         | Titanium Alloys                              | Pure 99.5 Ti                        | 400Rm               | 30-50          |
|                                        | 24         |                                              | α+β Alloys                          | 1050Rm              | 30-70          |
| <b>H(k)</b><br>Hardened Material       | 25         | Extra Hard Steel                             | Hardened & Tempered                 | 45-50HRC            | 20-40          |
|                                        | 26         |                                              |                                     | 51-55HRC            | 15-30          |

A dynamic splash of water against a solid blue background, with numerous bubbles and droplets visible.

**VG-Cut**

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Innovative Grooving & Turning Solutions