



**C.P.T.**  
*Präzisions Werkzeuge*



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# ***Diamond Tools***

Swiss Line inserts with  
PCD, CVD and CBN tip

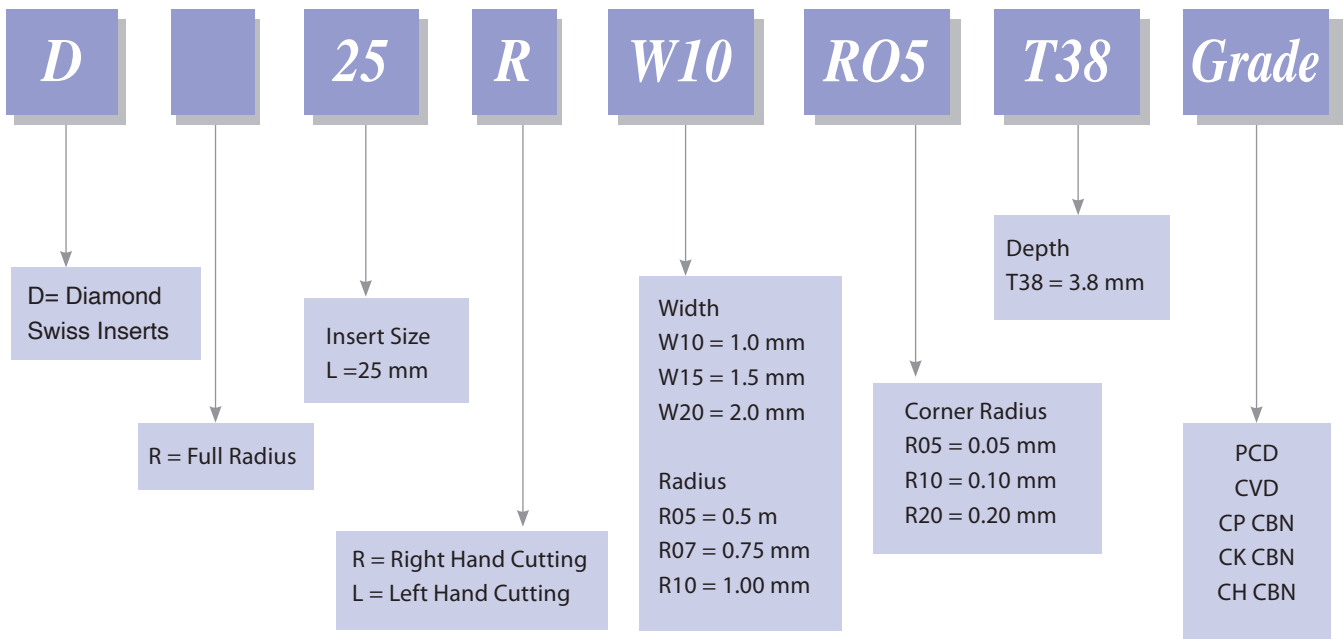
English

# Diamond Tip Swiss Line inserts

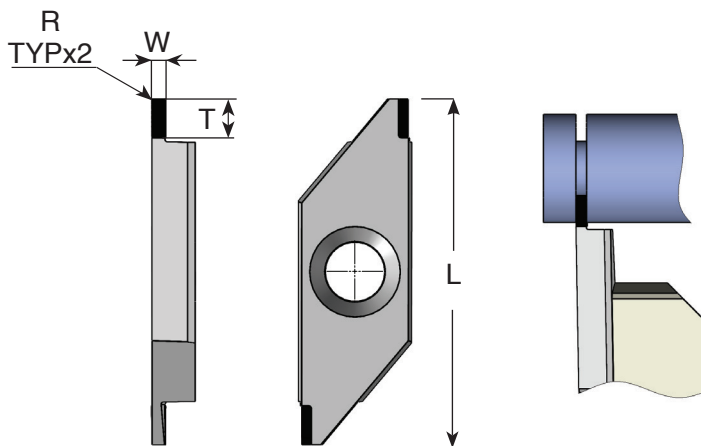
CPT extend the Diamond Tools range offering a Swiss Line Polygon inserts with PCD, CVD and CBN tip for External Grooving, Grooving and Profiling (full radius) including a side cutting.

- Laser cut Diamond
- High precision carbide body
- Two cutting edges
- All inserts can be used with same toolholders

## Product Identification



# Grooving and Turning



Right Version

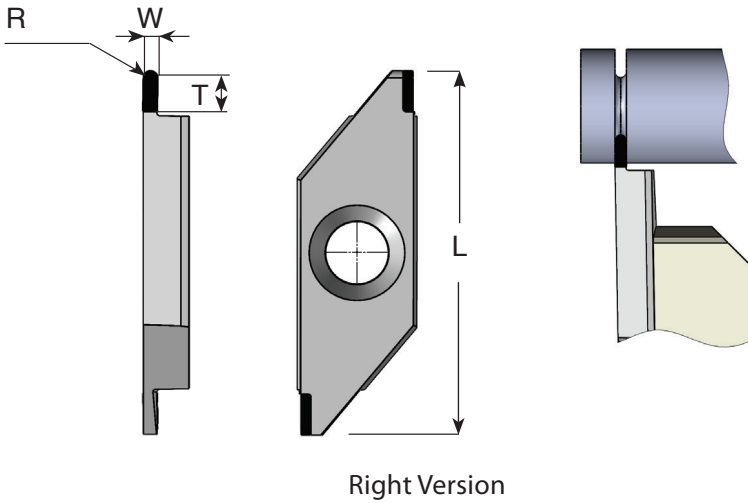
## Right hand cutting

| Insert Size L | Ordering Code            | W   | T max | R    | Grade/Type |     |        |        |        |
|---------------|--------------------------|-----|-------|------|------------|-----|--------|--------|--------|
|               |                          |     |       |      | PCD        | CVD | CP CBN | CK CBN | CH CBN |
| 25            | <b>D25 R W10 R05 T38</b> | 1.0 | 3.8   | 0.05 | •          | •   | •      | •      | •      |
|               | <b>D25 R W10 R10 T38</b> | 1.0 | 3.8   | 0.10 | •          | •   | •      | •      | •      |
|               | <b>D25 R W15 R05 T38</b> | 1.5 | 3.8   | 0.05 | •          | •   | •      | •      | •      |
|               | <b>D25 R W15 R10 T38</b> | 1.5 | 3.8   | 0.10 | •          | •   | •      | •      | •      |
|               | <b>D25 R W20 R05 T38</b> | 2.0 | 3.8   | 0.05 | •          | •   | •      | •      | •      |
|               | <b>D25 R W20 R10 T38</b> | 2.0 | 3.8   | 0.10 | •          | •   | •      | •      | •      |
|               | <b>D25 R W20 R20 T38</b> | 2.0 | 3.8   | 0.20 | •          | •   | •      | •      | •      |

Order Example: D25 R W10 T38 R10 T38 **CP CBN**

For LH, specify D25 **L** Instead of D25 **R**

# Grooving and Profiling (full radius)

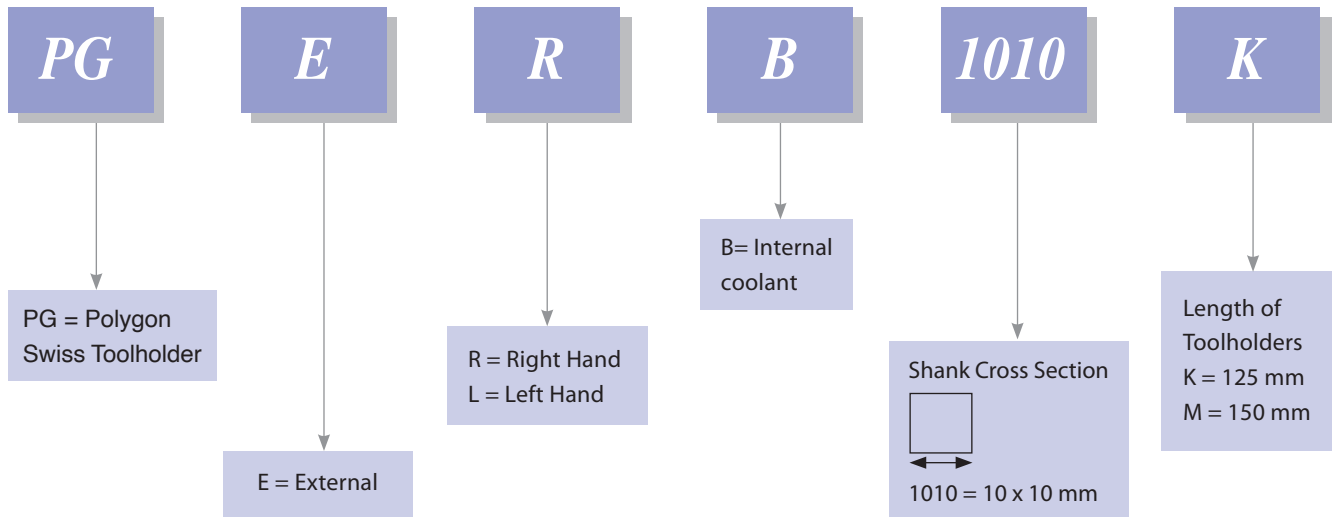


## Right hand cutting

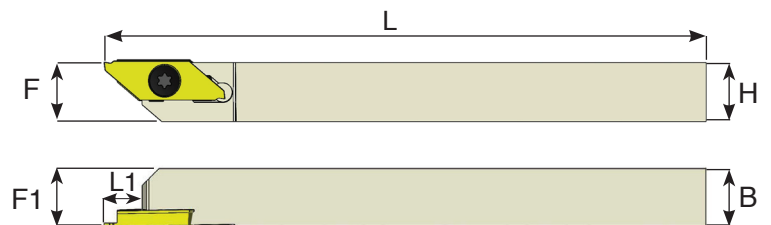
| Insert Size L | Ordering Code         | R    | T max | W   | Grade/Type |     |        |        |        |
|---------------|-----------------------|------|-------|-----|------------|-----|--------|--------|--------|
|               |                       |      |       |     | PCD        | CVD | CP CBN | CK CBN | CH CBN |
| 25            | <b>DR25 R R05 T38</b> | 0.50 | 3.8   | 1.0 | •          | •   | •      | •      | •      |
|               | <b>DR25 R R07 T38</b> | 0.75 | 3.8   | 1.5 | •          | •   | •      | •      | •      |
|               | <b>DR25 R R10 T38</b> | 1.00 | 3.8   | 2.0 | •          | •   | •      | •      | •      |

Order Example: DR25 R R05 T38 **PCD**  
 For LH, specify DR25 **L** Instead of DR25 **R**

# Product Identification



## External Toolholder



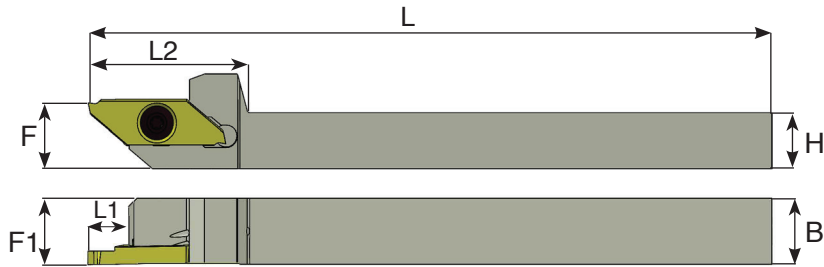
Right Version

## Right hand cutting

| Insert Size | Ordering Code      | B  | H  | L1 | L   | F  | F1 | Insert Screw Torx + | Key Torx + |
|-------------|--------------------|----|----|----|-----|----|----|---------------------|------------|
| 25          | <b>PGER 0808 K</b> | 8  | 8  | 8  | 125 | 10 | 10 | S26PD               | K11P       |
|             | <b>PGER 1010 K</b> | 10 | 10 | 8  | 125 | 10 | 10 | S26PD               | K11P       |
|             | <b>PGER 1212 K</b> | 12 | 12 | 8  | 125 | 12 | 12 | S26PD               | K11P       |
|             | <b>PGER 1616 K</b> | 16 | 16 | 8  | 125 | 16 | 16 | S26PD               | K11P       |
|             | <b>PGER 2020 K</b> | 20 | 20 | 8  | 125 | 20 | 20 | S26PD               | K11P       |
|             | <b>PGER 2525 M</b> | 25 | 25 | 8  | 150 | 25 | 25 | S26PD               | K11P       |

For LH, specify PGEL instead of PGER

## External Toolholders with internal coolant



Right Version



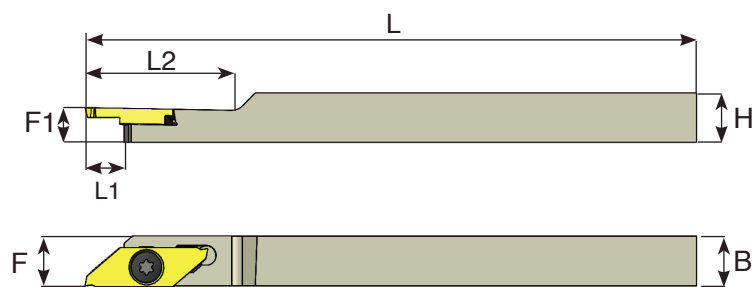
### Right hand cutting

| Insert Size | Ordering Code       | B  | H  | L1 | L2 | L   | F  | F1 | Insert Screw Torx + | Key Torx + | *Coolant connector |
|-------------|---------------------|----|----|----|----|-----|----|----|---------------------|------------|--------------------|
| 25          | <b>PGERB 1010 K</b> | 10 | 10 | 8  | 30 | 125 | 10 | 10 | S26PD               | K11P       | Ø4/Ø6              |
|             | <b>PGERB 1212 K</b> | 12 | 12 | 8  | 30 | 125 | 12 | 12 | S26PD               | K11P       | Ø4/Ø6              |
|             | <b>PGERB 1616 K</b> | 16 | 16 | 8  | 30 | 125 | 16 | 16 | S26PD               | K11P       | Ø4/Ø6              |

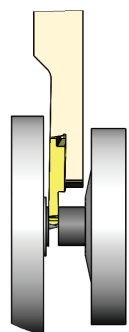
For LH, specify PGEL instead of PGER

\*Diameter of coolant pipe

## External Toolholders Slim



Left Version



### Left hand cutting

| Insert Size | Ordering Code       | B  | H  | L1 | L   | F  | F1 | Insert Screw + Torx | Key + Torx |
|-------------|---------------------|----|----|----|-----|----|----|---------------------|------------|
| 25          | <b>PGELS 1010 K</b> | 10 | 10 | 8  | 125 | 10 | 7  | 24                  | S26PS      |
|             | <b>PGELS 1212 K</b> | 12 | 12 | 8  | 125 | 12 | 7  | 30                  | S26PS      |

## Technical Section - Cutting Data

| ISO standard                          | PCD                    |               | CVD                    |              |
|---------------------------------------|------------------------|---------------|------------------------|--------------|
|                                       | V <sub>c</sub> (m/min) | F (mm/rev)    | V <sub>c</sub> (m/min) | F (mm/rev)   |
| Aluminum Alloys > 12% Si              | 100 - 4,000            | 0.005-0.300   | 100-1,800              | 0.005-0.25   |
| Aluminum Alloys > 20% Si              |                        |               | 100 - 700              | 0.005 - 0.20 |
| Brass                                 | 100 - 2,000            | 0.008 - 0.150 | 100 - 3,000            | 0.005 - 0.12 |
| Glass fiber/ Carbon fiber, composites |                        |               | 70 - 1,000             | 0.008 - 0.18 |
| Copper                                |                        |               | 150 - 1,800            | 0.008 - 0.25 |
| Graphite, coarse grain                | 100 - 4,000            | 0.01 - 0.150  |                        |              |
| Graphite, fine grain                  |                        |               | 100 - 5,000            | 0.01 - 0.25  |
| Acrylic (PMMA)                        | 100 - 3,000            | 0.005 - 0.250 | 100 - 3,000            | 0.005 - 0.18 |
| Magnesium                             | 100 - 2,000            | 0.005 - 0.150 | 100 - 3,000            | 0.005 - 0.12 |
| Plastics                              |                        |               | 120 - 2,000            | 0.01 - 0.30  |
| Peek                                  | 100 - 300              | 0.01 - 0.500  |                        |              |
| Gold, silver, Platinum                |                        |               | 50 - 1,500             | 0.005 - 0.25 |
| Zirconium                             |                        |               | 50 - 180               | 0.005 - 0.08 |

| ISO standard                             | CP CBN                 |            | CK CBN                 |            | CH CBN                 |            |
|--|------------------------|------------|------------------------|------------|------------------------|------------|
|  | V <sub>c</sub> (m/min) | F (mm/rev) | V <sub>c</sub> (m/min) | F (mm/rev) | V <sub>c</sub> (m/min) | F (mm/rev) |
| Tool Steel up to 72 HRc                  | 45-190                 | 0.005-0.03 |                        |            |                        |            |
| Powder metallurgical steels up to 72 HRc | 45-170                 | 0.005-0.04 |                        |            |                        |            |
| Co-Chrom Alloys                          | 50-180                 | 0.006-0.06 |                        |            |                        |            |
| Ni Alloys                                | 50-350                 | 0.005-0.04 |                        |            |                        |            |
| Titanium Alloys                          | 50-200                 | 0.005-0.04 |                        |            |                        |            |
| Hardened Stainless Steel                 | 60-260                 | 0.006-0.04 |                        |            |                        |            |
| Sintered Metal                           |                        |            | 200-300                | 0.007-0.10 |                        |            |
| Grey Cast Iron (GG)                      |                        |            | 200-2,000              | 0.007-0.16 |                        |            |
| Ductile Cast Iron (GGG)                  |                        |            | 100-800                | 0.007-0.07 |                        |            |
| Ni, Co-, Fe-, Cr Alloys                  | 80-360                 | 0.007-0.04 |                        |            |                        |            |
| Hardened Steel up to 55 HRc              | 70-230                 | 0.006-0.06 |                        |            | 70-230                 | 0.006-0.06 |
| Hardened Steel up to 62 HRc              |                        |            |                        |            | 60-210                 | 0.006-0.06 |
| Hardened Steel up to 72 HRc              |                        |            |                        |            | 50-190                 | 0.006-0.04 |
| Hardened Sintered Metal                  |                        |            |                        |            | 70-250                 | 0.006-0.04 |
| Hard/Soft Material                       |                        |            |                        |            | 80-290                 | 0.007-0.06 |



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