



Leading Through Innovation



CARBIDE INSERT & HOLDER

i-Xmill END MILLS

i-Xmills, HM-Wendeplatten Fräser

- Various Applications Type of Inserts Available for General Purpose Steels, Pre-Hardened Steels, High Hardened Steels, Stainless Steels and Graphite
- Für die verschiedensten Anwendungen sind Wendeplatten verfügbar, für allgemeine Stähle, vorgehärtete Stähle, hochgehärtete Stähle, rostfreie Stähle und Graphit



XMB110A SERIES
XMB120C SERIES
XMB260T SERIES

i-Xmill BALL INSERTS

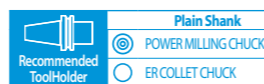
- i-Xmill WECHSELPLATTE mit RUNDER STIRN
- i-Xmill - Plaquette hémisphérique
- i-Xmill Placca emisferica

- ▶ Exchangeable Ball End Mill for economic use
- ▶ Three Types of Inserts are available
 - For General Purpose (~HRc50)
 - For Hardened Material (HRc40~HRc65)
 - For Graphite
- ▶ Special Geometry and Coating for Excellent Performance

- ▶ Kopierfräser mit Wechselplatte für wirtschaftlichen Einsatz.
- ▶ Drei Typen von Schneideinsätzen lieferbar
 - Für allgemeinen Einsatz (HRc50)
 - Für gehärtete Materialien (HRc40~HRc65)
 - Für Graphit
- ▶ Spezielle Geometrie und Beschichtung für höchste Leistu



cutting conditions : p.C60



Unit : mm

| EDP No. | | | Radius of Ball Nose | Mill Diameter | Height | Thickness |
|-----------------|---------------------|----------------------|---------------------|---------------|--------|-----------|
| AITIN | XC-Coating | Z-Coating | | | | |
| General Purpose | Pre-Hardened Steels | High Hardened Steels | R | D | H | T |
| XMB110A080 | XMB120C080 | XMB260T080 | R4.0 | 8.0 | 8.0 | 2.4 |
| XMB110A100 | XMB120C100 | XMB260T100 | R5.0 | 10.0 | 9.5 | 2.7 |
| XMB110A110 | XMB120C110 | XMB260T110 | R5.5 | 11.0 | 10.0 | 2.7 |
| XMB110A120 | XMB120C120 | XMB260T120 | R6.0 | 12.0 | 11.0 | 3.2 |
| XMB110A130 | XMB120C130 | XMB260T130 | R6.5 | 13.0 | 11.5 | 3.2 |
| XMB110A160 | XMB120C160 | XMB260T160 | R8.0 | 16.0 | 13.0 | 4.2 |
| XMB110A170 | XMB120C170 | XMB260T170 | R8.5 | 17.0 | 13.5 | 4.2 |
| XMB110A200 | XMB120C200 | XMB260T200 | R10.0 | 20.0 | 16.0 | 5.2 |
| XMB110A210 | XMB120C210 | XMB260T210 | R10.5 | 21.0 | 16.5 | 5.2 |
| XMB110A250 | XMB120C250 | XMB260T250 | R12.5 | 25.0 | 19.5 | 6.2 |
| XMB110A260 | XMB120C260 | XMB260T260 | R13.0 | 26.0 | 20.0 | 6.2 |
| XMB110A300 | XMB120C300 | XMB260T300 | R15.0 | 30.0 | 23.5 | 7.2 |
| XMB110A320 | XMB120C320 | XMB260T320 | R16.0 | 32.0 | 24.5 | 7.2 |
| XMB110A330 | XMB120C330 | XMB260T330 | R16.5 | 33.0 | 25.0 | 7.2 |

▶ The ball radius tolerance is ±0.01mm and the set-up accuracy is ±0.02mm.

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | M | | | | K | | | | | |
|----------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 38 | 10 | 29 | 32 | 38 | 45 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 3 | 25 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMB110A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| XMB120C | | | | | | | | | | | | | | | | | | | | |
| XMB260T | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | S | | | | | H | | | | | | | | | |
|----------|------------------------|-----|------------------------|----|---|-----|-----------------------------|-----|-----|-----------------|-----|----------------|-------------------|--------------------|---------|-----|-----|-----|-----|-----|-----|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Heat Resistant Super Alloys | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 15 | 30 | 25 | 38 | 34 | 15 | 30 | 25 | 38 | 34 | 15 | 30 | 25 | 38 | 34 | 55 | 60 | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | 400 | 550 |
| XMB110A | | | | | | | | | | | | | | | | | | | | | |
| XMB120C | | | | | | | | | | | | | | | | | | | | | |
| XMB260T | | | | | | | | | | | | | | | | | | | | | |



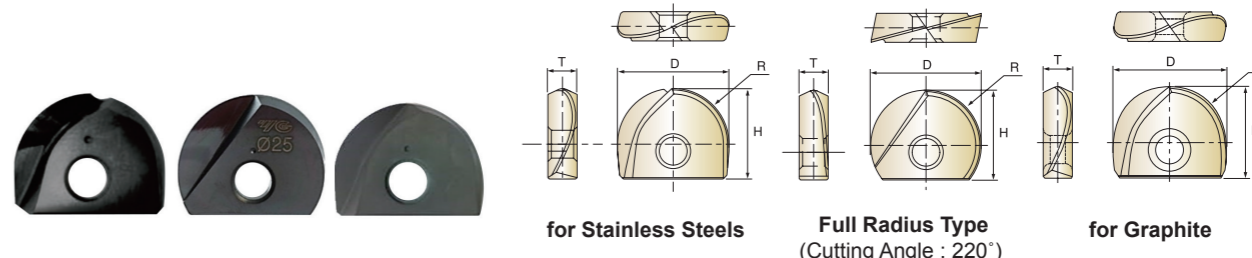
XMB130A SERIES
XMM110V SERIES
XMB110D SERIES

i-Xmill BALL INSERTS

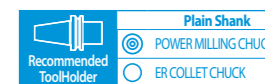
- i-Xmill WECHSELPLATTE mit RUNDER STIRN
- i-Xmill - Plaquette hémisphérique
- i-Xmill Placca emisferica

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 - Für Graphit
- ▶ Spezielle Geometrie und Beschichtung für höchste Leistu



cutting conditions : p.C60~C61



Unit : mm

| EDP No. | | | Radius of Ball Nose | Mill Diameter | Height | Thickness |
|------------------|----------------------------------|------------|---------------------|---------------|--------|-----------|
| AITIN | Y-Coating | Diamond | | | | |
| Stainless Steels | General Purpose Full Radius Type | Graphite | R | D | H | T |
| XMB130A080 | XMM110V080 | XMB110D080 | R4.0 | 8.0 | 8.0 | 2.4 |
| XMB130A100 | XMM110V100 | XMB110D100 | R5.0 | 10.0 | 9.5 | 2.7 |
| XMB130A110 | XMM110V110 | XMB110D110 | R5.5 | 11.0 | 10.0 | 2.7 |
| XMB130A120 | XMM110V120 | XMB110D120 | R6.0 | 12.0 | 11.0 | 3.2 |
| XMB130A130 | XMM110V130 | XMB110D130 | R6.5 | 13.0 | 11.5 | 3.2 |
| XMB130A160 | XMM110V160 | XMB110D160 | R8.0 | 16.0 | 13.0 | 4.2 |
| XMB130A170 | XMM110V170 | XMB110D170 | R8.5 | 17.0 | 13.5 | 4.2 |
| XMB130A200 | XMM110V200 | XMB110D200 | R10.0 | 20.0 | 16.0 | 5.2 |
| XMB130A210 | XMM110V210 | XMB110D210 | R10.5 | 21.0 | 16.5 | 5.2 |
| XMB130A250 | XMM110V250 | XMB110D250 | R12.5 | 25.0 | 19.5 | 6.2 |
| XMB130A260 | XMM110V260 | XMB110D260 | R13.0 | 26.0 | 20.0 | 6.2 |
| XMB130A300 | XMM110V300 | XMB110D300 | R15.0 | 30.0 | 23.5 | 7.2 |
| XMB130A320 | XMM110V320 | XMB110D320 | R16.0 | 32.0 | 24.5 | 7.2 |
| XMB130A330 | XMM110V330 | XMB110D330 | R16.5 | 33.0 | 25.0 | 7.2 |

▶ The ball radius tolerance is ±0.01mm and the set-up accuracy is ±0.02mm.

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | M | | | | K | | | | | | |
|----------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|--|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | 13 | 25 | 28 | 32 | 38 | 10 | 29 | 32 | 38 | 45 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 3 | 25 | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| XMB130A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | |
| XMM110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | |
| XMB110D | | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | S | | | | | H | | | | | | | | | |
|----------|------------------------|-----|------------------------|----|---|-----|-----------------------------|-----|-----|-----------------|-----|----------------|-------------------|--------------------|---------|-----|-----|-----|-----|-----|-----|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Heat Resistant Super Alloys | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 15 | 30 | 25 | 38 | 34 | 15 | 30 | 25 | 38 | 34 | 15 | 30 | 25 | 38 | 34 | 55 | 60 | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | 400 | 550 |
| XMB130A | | | | | | | | | | | | | | | | | | | | | |
| XMM110V | | | | | | | | | | | | | | | | | | | | | |
| XMB110D | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



XMR110A SERIES
XMR120C SERIES
XMR260T SERIES

i-Xmill CORNER RADIUS INSERT

- i-Xmill WECHSELPLATTE mit GERADER STIRN UND ECKRADIUS
- i-Xmill - Plaquette pour usage général et inox
- INSERTI IN MD, TORICI

- ▶ The optimized geometry of the tool achieves better reliability and less vibration and cutting load.
- ▶ Interchangeable with i-Xmill ball holder, but precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The varied and wide cutting range makes it possible to machine from roughing through to finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ Die optimale Werkzeuggeometrie für große Betriebssicherheit und geringe Vibration und Schneidendruck.
- ▶ Einsetzbar wie i-Xmill Rundplattenhalter, aber eine größere Schnittgenauigkeit ist mit dem Vierkantplattenhalter möglich, wegen der größeren Steifigkeit und Stärke des Werkzeugs.
- ▶ Die große Einsatzbreite des Werkzeugs macht den Einsatz sowohl zum Schruppen als auch zum Schlichten möglich.
- ▶ Eine spezielle Beschichtung verleiht der Schneide große Härte und Hitzebeständigkeit.



cutting conditions : p.C62



Unit : mm

| EDP No. | | | Corner Radius | Mill Diameter | Height | Thickness |
|------------------------------------|---------------------|----------------------|---------------|---------------|--------|-----------|
| AITIN | XC-Coating | Z-Coating | | | | |
| General Purpose & Stainless Steels | Pre-Hardened Steels | High Hardened Steels | R | D | H | T |
| XMR110A170 03 | XMR120C170 03 | XMR260T170 03 | R0.3 | 17.0 | 13.0 | 4.2 |
| XMR110A170 05 | XMR120C170 05 | XMR260T170 05 | R0.5 | 17.0 | 13.0 | 4.2 |
| XMR110A170 10 | XMR120C170 10 | XMR260T170 10 | R1.0 | 17.0 | 13.0 | 4.2 |
| XMR110A170 15 | XMR120C170 15 | XMR260T170 15 | R1.5 | 17.0 | 13.0 | 4.2 |
| XMR110A170 20 | XMR120C170 20 | XMR260T170 20 | R2.0 | 17.0 | 13.0 | 4.2 |
| XMR110A170 30 | XMR120C170 30 | XMR260T170 30 | R3.0 | 17.0 | 13.0 | 4.2 |
| XMR110A200 03 | XMR120C200 03 | XMR260T200 03 | R0.3 | 20.0 | 16.0 | 5.2 |
| XMR110A200 05 | XMR120C200 05 | XMR260T200 05 | R0.5 | 20.0 | 16.0 | 5.2 |
| XMR110A200 10 | XMR120C200 10 | XMR260T200 10 | R1.0 | 20.0 | 16.0 | 5.2 |
| XMR110A200 15 | XMR120C200 15 | XMR260T200 15 | R1.5 | 20.0 | 16.0 | 5.2 |
| XMR110A200 20 | XMR120C200 20 | XMR260T200 20 | R2.0 | 20.0 | 16.0 | 5.2 |
| XMR110A200 30 | XMR120C200 30 | XMR260T200 30 | R3.0 | 20.0 | 16.0 | 5.2 |
| XMR110A210 03 | XMR120C210 03 | XMR260T210 03 | R0.3 | 21.0 | 16.0 | 5.2 |
| XMR110A210 05 | XMR120C210 05 | XMR260T210 05 | R0.5 | 21.0 | 16.0 | 5.2 |
| XMR110A210 10 | XMR120C210 10 | XMR260T210 10 | R1.0 | 21.0 | 16.0 | 5.2 |
| XMR110A210 15 | XMR120C210 15 | XMR260T210 15 | R1.5 | 21.0 | 16.0 | 5.2 |
| XMR110A210 20 | XMR120C210 20 | XMR260T210 20 | R2.0 | 21.0 | 16.0 | 5.2 |
| XMR110A210 30 | XMR120C210 30 | XMR260T210 30 | R3.0 | 21.0 | 16.0 | 5.2 |

▶ The corner radius tolerance is ±0.015mm and the set-up accuracy is ±0.02mm.

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | | | | | | | | M | | | | | | K | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | Non-alloy steel | | | | | | Low alloy steel | | | | | | High alloyed steel, and tool steel | | | | | | Stainless steel | | | Grey cast iron | | | Nodular cast iron | | | Malleable cast iron | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Material Description | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270 | 271 | 272 | 273 | 274 | 275 | 276 | 277 | 278 | 279 | 280 | 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | 291 | 292 | 293 | 294 | 295 | 296 | 297 | 298 | 299 | 300 | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 312 | 313 | 314 | 315 | 316 | 317 | 318 | 319 | 320 | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332 | 333 | 334 | 335 | 336 | 337 | 338 | 339 | 340 | 341 | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | 351 | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 | 361 | 362 | 363 | 364 | 365 | 366 | 367 | 368 | 369 | 370 | 371 | 372 | 373 | 374 | 375 | 376 | 377 | 378 | 379 | 380 | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391 | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 400 | 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 | 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 | 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 | 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 | 521 | 522 | 523 | 524 | 525 | 526 | 527 | 528 | 529 | 530 | 531 | 532 | 533 | 534 | 535 | 536 | 537 | 538 | 539 | 540 | 541 | 542 | 543 | 544 | 545 | 546 | 547 | 548 | 549 | 550 | 551 | 552 | 553 | 554 | 555 | 556 | 557 | 558 | 559 | 560 | 561 | 562 | 563 | 564 | 565 | 566 | 567 | 568 | 569 | 570 | 571 | 572 | 573 | 574 | 575 | 576 | 577 | 578 | 579 | 580 | 581 | 582 | 583 | 584 | 585 | 586 | 587 | 588 | 589 | 590 | 591 | 592 | 593 | 594 | 595 | 596 | 597 | 598 | 599 | 600 | 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 | 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 | 635 | 636 | 637 | 638 | 639 | 640 | 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 | 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 | 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 | 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 | 721 | 722 | 723 | 724 | 725 | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 | 740 | 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 | 755 | 756 | 757 | 758 | 759 | 760 | 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 | 770 | 771 | 772 | 773 | 774 | 775 | 776 | 777 | 778 | 779 | 780 | 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 | 795 | 796 | 797 | 798 | 799 | 800 | 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811 | 812 | 813 | 814 | 815 | 816 | 817 | 818 | 819 | 820 | 821 | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831 | 832 | 833 | 834 | 835 | 836 | 837 | 838 | 839 | 840 | 841 | 842 | 843 | 844 | 845 | 846 | 847 | 848 | 849 | 850 | 851 | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 | 861 | 862 | 863 | 864 | 865 | 866 | 867 | 868 | 869 | 870 | 871 | 872 | 873 | 874 | 875 | 876 | 877 | 878 | 879 | 880 | 881 | 882 | 883 | 884 | 885 | 886 | 887 | 888 | 889 | 890 | 891 | 892 | 893 | 894 | 895 | 896 | 897 | 898 | 899 | 900 | 901 | 902 | 903 | 904 | 905 | 906 | 907 | 908 | 909 | 910 | 911 | 912 | 913 | 914 | 915 | 916 | 917 | 918 | 919 | 920 | 921 | 922 | 923 | 924 | 925 | 926 | 927 | 928 | 929 | 930 | 931 | 932 | 933 | 934 | 935 | 936 | 937 | 938 | 939 | 940 | 941 | 942 | 943 | 944 | 945 | 946 | 947 | 948 | 949 | 950 | 951 | 952 | 953 | 954 | 955 | 956 | 957 | 958 | 959 | 960 | 961 | 962 | 963 | 964 | 965 | 966 | 967 | 968 | 969 | 970 | 971 | 972 | 973 | 974 | 975 | 976 | 977 | 978 | 979 | 980 | 981 | 982 | 983 | 984 | 985 | 986 | 987 | 988 | 989 | 990 | 991 | 992 | 993 | 994 | 995 | 996 | 997 | 998 | 999 | 1000 | 1001 | 1002 | 1003 | 1004 | 1005 | 1006 | 1007 | 1008 | 1009 | 1010 | 1011 | 1012 | 1013 | 1014 | 1015 | 1016 | 1017 | 1018 | 1019 | 1020 | 1021 | 1022 | 1023 | 1024 | 1025 | 1026 | 1027 | 1028 | 1029 | 1030 | 1031 | 1032 | 1033 | 1034 | 1035 | 1036 | 1037 | 1038 | 1039 | 1040 | 1041 | 1042 | 1043 | 1044 | 1045 | 1046 | 1047 | 1048 | 1049 | 1050 | 1051 | 1052 | 1053 | 1054 | 1055 | 1056 | 1057 | 1058 | 1059 | 1060 | 1061 | 1062 | 1063 | 1064 | 1065 | 1066 | 1067 | 1068 | 1069 | 1070 | 1071 | 1072 | 1073 | 1074 | 1075 | 1076 | 1077 | 1078 | 1079 | 1080 | 1081 | 1082 | 1083 | 1084 | 1085 | 1086 | 1087 | 1088 | 1089 | 1090 | 1091 | 1092 | 1093 | 1094 | 1095 | 1096 | 1097 | 1098 | 1099 | 1100 | 1101 | 1102 | 1103 | 1104 | 1105 | 1106 | 1107 | 1108 | 1109 | 1110 | 1111 | 1112 | 1113 | 1114 | 1115 | 1116 | 1117 | 1118 | 1119 | 1120 | 1121 | 1122 | 1123 | 1124 | 1125 | 1126 | 1127 | 1128 | 1129 | 1130 | 1131 | 1132 | 1133 | 1134 | 1135 | 1136 | 1137 | 1138 | 1139 | 1140 | 1141 | 1142 | 1143 | 1144 | 1145 | 1146 | 1147 | 1148 | 1149 | |



XMR110A SERIES
XMR120C SERIES
XMR260T SERIES

i-Xmill CORNER RADIUS INSERT

- i-Xmill WECHSELPLATTE mit GERADER STIRN UND ECKRADIUS
- i-Xmill - Plaquette pour usage général et inox
- INSERTI IN MD, TORICI

- ▶ The optimized geometry of the tool achieves better reliability and less vibration and cutting load.
- ▶ Interchangeable with i-Xmill ball holder, but precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The varied and wide cutting range makes it possible to machine from roughing through to finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ Die optimale Werkzeuggeometrie für große Betriebssicherheit und geringe Vibration und Schneidendruck.
- ▶ Einsetzbar wie i-Xmill Rundplattenhalter, aber eine größere Schnittgenauigkeit ist mit dem Vierkantplattenhalter möglich, wegen der größeren Steifigkeit und Stärke des Werkzeugs.
- ▶ Die große Einsatzbreite des Werkzeugs macht den Einsatz sowohl zum Schruppen als auch zum Schlichten möglich.
- ▶ Eine spezielle Beschichtung verleiht der Schneide große Härte und Hitzebeständigkeit.



cutting conditions : p.C62



Unit : mm

| EDP No. | | | Corner Radius | Mill Diameter | Height | Thickness |
|------------------------------------|---------------------|----------------------|---------------|---------------|--------|-----------|
| AlTiN | XC-Coating | Z-Coating | | | | |
| General Purpose & Stainless Steels | Pre-Hardened Steels | High Hardened Steels | R | D | H | T |
| XMR110A320 03 | XMR120C320 03 | XMR260T320 03 | R0.3 | 32.0 | 23.5 | 7.2 |
| XMR110A320 05 | XMR120C320 05 | XMR260T320 05 | R0.5 | 32.0 | 23.5 | 7.2 |
| XMR110A320 10 | XMR120C320 10 | XMR260T320 10 | R1.0 | 32.0 | 23.5 | 7.2 |
| XMR110A320 15 | XMR120C320 15 | XMR260T320 15 | R1.5 | 32.0 | 23.5 | 7.2 |
| XMR110A320 20 | XMR120C320 20 | XMR260T320 20 | R2.0 | 32.0 | 23.5 | 7.2 |
| XMR110A320 30 | XMR120C320 30 | XMR260T320 30 | R3.0 | 32.0 | 23.5 | 7.2 |
| XMR110A330 03 | XMR120C330 03 | XMR260T330 03 | R0.3 | 33.0 | 23.5 | 7.2 |
| XMR110A330 05 | XMR120C330 05 | XMR260T330 05 | R0.5 | 33.0 | 23.5 | 7.2 |
| XMR110A330 10 | XMR120C330 10 | XMR260T330 10 | R1.0 | 33.0 | 23.5 | 7.2 |
| XMR110A330 15 | XMR120C330 15 | XMR260T330 15 | R1.5 | 33.0 | 23.5 | 7.2 |
| XMR110A330 20 | XMR120C330 20 | XMR260T330 20 | R2.0 | 33.0 | 23.5 | 7.2 |
| XMR110A330 30 | XMR120C330 30 | XMR260T330 30 | R3.0 | 33.0 | 23.5 | 7.2 |

▶ The corner radius tolerance is ±0.015mm and the set-up accuracy is ±0.02mm.

◎ : Excellent ○ : Good

| ISO Material Description | P | | | | | | | | | | M | | | | K | | | | | |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 38 | 10 | 29 | 32 | 38 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 3 | 25 | 130 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMR110A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| XMR120C | | | | | | | | | | ◎ | ◎ | | | | | | | | | |
| XMR260T | | | | | | | | | | | | | | | | | | | | |

| ISO Material Description | N | | | | | | S | | | | | H | | | | | | | | | |
|--------------------------|------------------------|-----|------------------------|----|---|-----|------------------------|-----|-----------------------------|-----|-----|-----------------|-----|----------------|-------------------|--------------------|-----|-----|-----|-----|-----|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | Heat Resistant Super Alloys | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 15 | 30 | 25 | 38 | 34 | 15 | 30 | 25 | 38 | 34 | 15 | 30 | 25 | 38 | 34 | 40 | 41 | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 400 | 550 | 550 |
| XMR110A | | | | | | | | | | | | | | | | | | | | | |
| XMR120C | | | | | | | | | | | | | | | | | | | | | |
| XMR260T | | | | | | | | | | | | | | | | | | | | | |



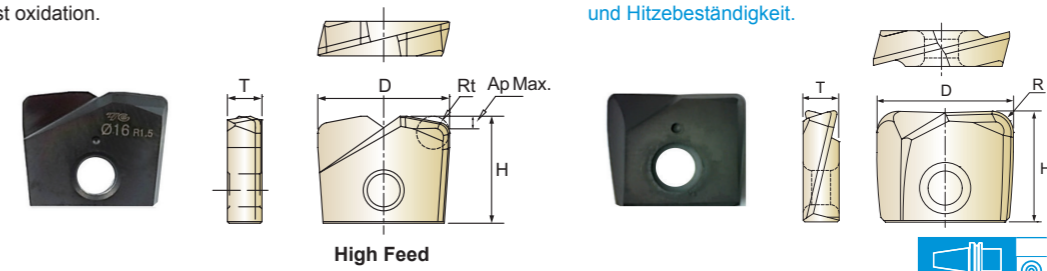
XMF110V SERIES
XMR110D SERIES

i-Xmill CORNER RADIUS INSERT

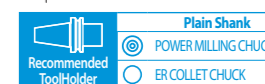
- i-Xmill WECHSELPLATTE mit GERADER STIRN UND ECKRADIUS
- i-Xmill Plaquette Torique AVEC RAYON de coupe frontale
- INSERTI IN MD, TORICI & TORICI HIGH FEED

- ▶ The optimized geometry of the tool achieves better reliability and less vibration and cutting load.
- ▶ Interchangeable with i-Xmill ball holder, but precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The varied and wide cutting range makes it possible to machine from roughing through to finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ Die optimale Werkzeuggeometrie für große Betriebssicherheit und geringe Vibration und Schneidendruck.
- ▶ Einsetzbar wie i-Xmill Rundplattenhalter, aber eine größere Schnittgenauigkeit ist mit dem Vierkantplattenhalter möglich, wegen der größeren Steifigkeit und Stärke des Werkzeugs.
- ▶ Die große Einsatzbreite des Werkzeugs macht den Einsatz sowohl zum Schruppen als auch zum Schlichten möglich.
- ▶ Eine spezielle Beschichtung verleiht der Schneide große Härte und Hitzebeständigkeit.



cutting conditions : p.C63



Unit : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---------------------------|---------------|---------------|---------------|--------|-----------|---------------|
| Y-Coating | Diamond | | | | | |
| General Purpose High Feed | Graphite | R(Rt) | D | H | T | Ap Max. |
| - | XMR110D080 03 | R0.3 | 8.0 | 8.0 | 2.4 | - |
| - | XMR110D080 05 | R0.5 | 8.0 | 8.0 | 2.4 | - |
| XMF110V080 08 | - | R0.8 | 8.0 | 8.0 | 2.4 | 0.4 |
| - | XMR110D080 10 | R1.0 | 8.0 | 8.0 | 2.4 | - |
| - | XMR110D080 20 | R2.0 | 8.0 | 8.0 | 2.4 | - |
| - | XMR110D100 03 | R0.3 | 10.0 | 9.5 | 2.7 | - |
| - | XMR110D100 05 | R0.5 | 10.0 | 9.5 | 2.7 | - |
| XMF110V100 10 | XMR110D100 10 | R1.0 | 10.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D100 15 | R1.5 | 10.0 | 9.5 | 2.7 | - |
| - | XMR110D100 20 | R2.0 | 10.0 | 9.5 | 2.7 | - |
| - | XMR110D100 30 | R3.0 | 10.0 | 9.5 | 2.7 | - |
| - | XMR110D110 03 | R0.3 | 11.0 | 9.5 | 2.7 | - |
| - | XMR110D110 05 | R0.5 | 11.0 | 9.5 | 2.7 | - |
| XMF110V110 10 | XMR110D110 10 | R1.0 | 11.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D110 15 | R1.5 | 11.0 | 9.5 | 2.7 | - |
| - | XMR110D110 20 | R2.0 | 11.0 | 9.5 | 2.7 | - |
| - | XMR110D110 30 | R3.0 | 11.0 | 9.5 | 2.7 | - |

▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm.

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO Material Description | P | | | | | | | | | | M | | | | K | | | | | |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 38 | 10 | 29 | 32 | 38 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 3 | 25 | 130 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

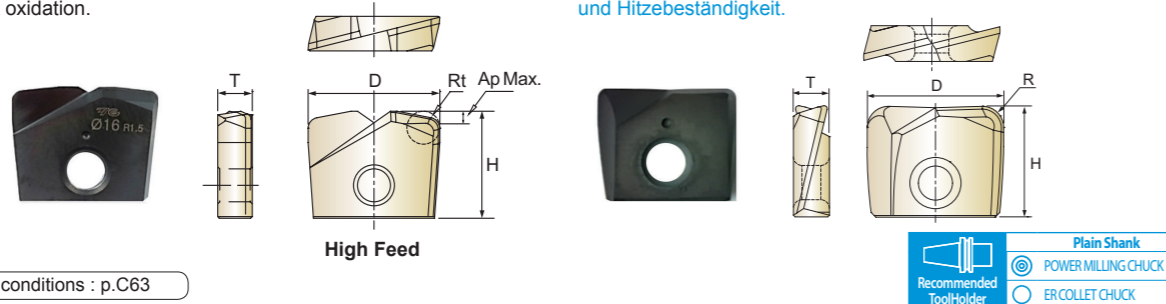
| ISO Material Description | N | | | | | | S | | | | | H | | | | | | | | | |
|--------------------------|------------------------|-----|------------------------|----|---|-----|------------------------|-----|-----------------------------|-----|-----|-----------------|-----|----------------|-------------------|--------------------|-----|-----|-----|-----|-----|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | Heat Resistant Super Alloys | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 15 | 30 | 25 | 38 | 34 | 15 | 30 | 25 | 38 | 34 | 15 | 30 | 25 | 38 | 34 | 40 | 41 | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 400 | 550 | 550 |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |

i-Xmill CORNER RADIUS INSERT

- i-Xmill WECHSELPLATTE mit GERADER STIRN UND ECKRADIUS
- i-Xmill Plaquette Torique AVEC RAYON de coupe frontale
- INSERTI IN MD, TORICI & TORICI HIGH FEED

- ▶ The optimized geometry of the tool achieves better reliability and less vibration and cutting load.
- ▶ Interchangeable with i-Xmill ball holder, but precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The varied and wide cutting range makes it possible to machine from roughing through to finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ Die optimale Werkzeuggeometrie für große Betriebssicherheit und geringe Vibration und Schneidendruck.
- ▶ Einsetzbar wie i-Xmill Rundplattenhalter, aber eine größere Schnittgenauigkeit ist mit dem Vierkantplattenhalter möglich, wegen der größeren Steifigkeit und Stärke des Werkzeugs.
- ▶ Die große Einsatzbreite des Werkzeugs macht den Einsatz sowohl zum Schruppen als auch zum Schlichten möglich.
- ▶ Eine spezielle Beschichtung verleiht der Schneide große Härte und Hitzebeständigkeit.



cutting conditions : p.C63

Unit : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---------------------------|---------------|---------------|---------------|--------|-----------|---------------|
| Y-Coating | Diamond | | | | | |
| General Purpose High Feed | Graphite | R(Rt) | D | H | T | Ap Max. |
| - | XMR110D120 03 | R0.3 | 12.0 | 11.0 | 2.7 | - |
| - | XMR110D120 05 | R0.5 | 12.0 | 11.0 | 2.7 | - |
| XMF110V120 10 | XMR110D120 10 | R1.0 | 12.0 | 11.0 | 2.7 | 0.6 |
| - | XMR110D120 15 | R1.5 | 12.0 | 11.0 | 2.7 | - |
| - | XMR110D120 20 | R2.0 | 12.0 | 11.0 | 2.7 | - |
| - | XMR110D120 30 | R3.0 | 12.0 | 11.0 | 2.7 | - |
| - | XMR110D130 03 | R0.3 | 13.0 | 11.2 | 2.7 | - |
| - | XMR110D130 05 | R0.5 | 13.0 | 11.2 | 2.7 | - |
| XMF110V130 10 | XMR110D130 10 | R1.0 | 13.0 | 11.2 | 2.7 | 0.6 |
| - | XMR110D130 15 | R1.5 | 13.0 | 11.2 | 2.7 | - |
| - | XMR110D130 20 | R2.0 | 13.0 | 11.2 | 2.7 | - |
| - | XMR110D130 30 | R3.0 | 13.0 | 11.2 | 2.7 | - |
| - | XMR110D160 03 | R0.3 | 16.0 | 13.0 | 4.2 | - |
| - | XMR110D160 05 | R0.5 | 16.0 | 13.0 | 4.2 | - |
| - | XMR110D160 10 | R1.0 | 16.0 | 13.0 | 4.2 | - |
| XMF110V160 15 | XMR110D160 15 | R1.5 | 16.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D160 20 | R2.0 | 16.0 | 13.0 | 4.2 | - |
| - | XMR110D160 30 | R3.0 | 16.0 | 13.0 | 4.2 | - |

▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm. ▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | M | | | | K | | | | | |
|----------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----|-----|-----------------|-----|----------------|-----|-------------------|---------------------|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | Stainless steel | | Grey cast iron | | Nodular cast iron | Malleable cast iron |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 30 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 21 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

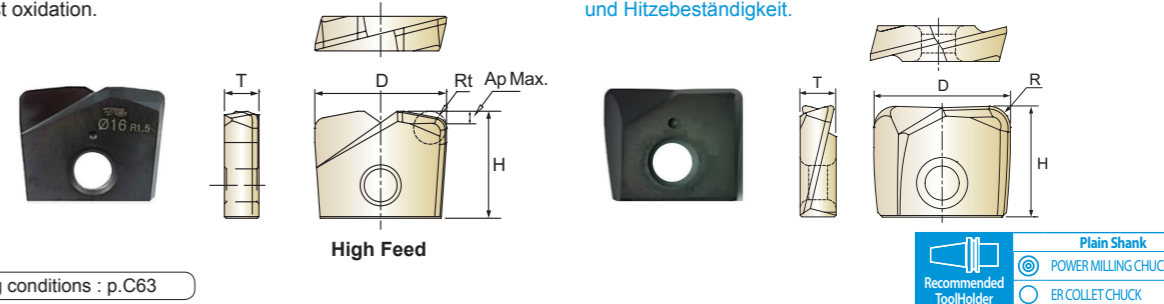
| ISO | N | | | | | S | | | | | H | | | | | | | | | | |
|----------|------------------------|-----|------------------------|----|-----|---|-----|-----|------------------------|-----|-----------------------------|---------|-----|-----------------|----------------|-------------------|--------------------|----|----|----|----|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | Titanium Alloys | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 15 | 30 | 25 | 38 | 34 | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 41 | 42 | 55 | 55 | 55 | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 400 Rm | 1050 Rm | 550 | 630 | 400 | 41 | 42 | 55 | 55 | 55 | |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ○ | ○ | ○ | ○ | | | | | ◎ | | | | | | | | | | | | |

i-Xmill CORNER RADIUS INSERT

- i-Xmill WENDEPLATTE mit GERADER STIRN UND ECKRADIUS
- i-Xmill Plaquette Torique AVEC RAYON de coupe frontale
- INSERTI IN MD, TORICI & TORICI HIGH FEED

- ▶ The optimized geometry of the tool achieves better reliability and less vibration and cutting load.
- ▶ Interchangeable with i-Xmill ball holder, but precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The varied and wide cutting range makes it possible to machine from roughing through to finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ Die optimale Werkzeuggeometrie für große Betriebssicherheit und geringe Vibration und Schneidendruck.
- ▶ Einsetzbar wie i-Xmill Rundplattenhalter, aber eine größere Schnittgenauigkeit ist mit dem Vierkantplattenhalter möglich, wegen der größeren Steifigkeit und Stärke des Werkzeugs.
- ▶ Die große Einsatzbreite des Werkzeugs macht den Einsatz sowohl zum Schruppen als auch zum Schlichten möglich.
- ▶ Eine spezielle Beschichtung verleiht der Schneide große Härte und Hitzebeständigkeit.



cutting conditions : p.C63

Unit : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---------------------------|---------------|---------------|---------------|--------|-----------|---------------|
| Y-Coating | Diamond | | | | | |
| General Purpose High Feed | Graphite | R(Rt) | D | H | T | Ap Max. |
| - | XMR110D170 03 | R0.3 | 17.0 | 13.0 | 4.2 | - |
| - | XMR110D170 05 | R0.5 | 17.0 | 13.0 | 4.2 | - |
| - | XMR110D170 10 | R1.0 | 17.0 | 13.0 | 4.2 | - |
| XMF110V170 15 | XMR110D170 15 | R1.5 | 17.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D170 20 | R2.0 | 17.0 | 13.0 | 4.2 | - |
| - | XMR110D170 30 | R3.0 | 17.0 | 13.0 | 4.2 | - |
| - | XMR110D200 03 | R0.3 | 20.0 | 16.0 | 5.2 | - |
| - | XMR110D200 05 | R0.5 | 20.0 | 16.0 | 5.2 | - |
| - | XMR110D200 10 | R1.0 | 20.0 | 16.0 | 5.2 | - |
| - | XMR110D200 15 | R1.5 | 20.0 | 16.0 | 5.2 | - |
| XMF110V200 20 | XMR110D200 20 | R2.0 | 20.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D200 30 | R3.0 | 20.0 | 16.0 | 5.2 | - |
| - | XMR110D210 03 | R0.3 | 21.0 | 16.0 | 5.2 | - |
| - | XMR110D210 05 | R0.5 | 21.0 | 16.0 | 5.2 | - |
| - | XMR110D210 10 | R1.0 | 21.0 | 16.0 | 5.2 | - |
| - | XMR110D210 15 | R1.5 | 21.0 | 16.0 | 5.2 | - |
| XMF110V210 20 | XMR110D210 20 | R2.0 | 21.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D210 30 | R3.0 | 21.0 | 16.0 | 5.2 | - |

▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm. ▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | M | | | | K | | | | | |
|----------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----|-----|-----------------|-----|----------------|-----|-------------------|---------------------|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | Stainless steel | | Grey cast iron | | Nodular cast iron | Malleable cast iron |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 30 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 21 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | S | | | | | H | | | | | | | | | | |
|----------|------------------------|-----|------------------------|----|-----|---|-----|-----|------------------------|-----|-----------------------------|---------|-----|-----------------|----------------|-------------------|--------------------|----|----|----|----|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | Titanium Alloys | Hardened steel | Chilled Cast Iron | Hardened Cast Iron | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 15 | 30 | 25 | 38 | 34 | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 41 | 42 | 55 | 55 | 55 | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 400 Rm | 1050 Rm | 550 | 630 | 400 | 41 | 42 | 55 | 55 | 55 | |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ○ | ○ | ○ | ○ | | | | | ◎ | | | | | | | | | | | | |



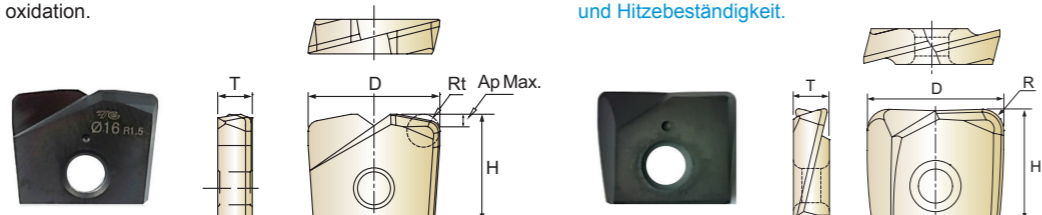
XMF110V SERIES
XMR110D SERIES

i-Xmill CORNER RADIUS INSERT

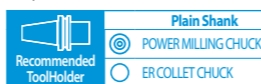
- i-Xmill WENDEPLATTE mit GERADER STIRN UND ECKRADIUS
- i-Xmill Plaquette Torique AVEC RAYON de coupe frontale
- INSERTI IN MD, TORICI & TORICI HIGH FEED

- ▶ The optimized geometry of the tool achieves better reliability and less vibration and cutting load.
- ▶ Interchangeable with i-Xmill ball holder, but precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The varied and wide cutting range makes it possible to machine from roughing through to finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ Die optimale Werkzeuggeometrie für große Betriebssicherheit und geringe Vibration und Schneidendruck.
- ▶ Einsetzbar wie i-Xmill Rundplattenhalter, aber eine größere Schnittgenauigkeit ist mit dem Vierkantplattenhalter möglich, wegen der größeren Steifigkeit und Stärke des Werkzeugs.
- ▶ Die große Einsatzbreite des Werkzeugs macht den Einsatz sowohl zum Schruppen als auch zum Schlichten möglich.
- ▶ Eine spezielle Beschichtung verleiht der Schneide große Härte und Hitzebeständigkeit.



High Feed



cutting conditions : p.C63

Unit : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---------------------------|---------------|---------------|---------------|--------|-----------|---------------|
| Y-Coating | Diamond | | | | | |
| General Purpose High Feed | Graphite | R(Rt) | D | H | T | Ap Max. |
| - | XMR110D250 03 | R0.3 | 25.0 | 19.5 | 6.2 | - |
| - | XMR110D250 05 | R0.5 | 25.0 | 19.5 | 6.2 | - |
| - | XMR110D250 10 | R1.0 | 25.0 | 19.5 | 6.2 | - |
| - | XMR110D250 15 | R1.5 | 25.0 | 19.5 | 6.2 | - |
| - | XMR110D250 20 | R2.0 | 25.0 | 19.5 | 6.2 | - |
| XMF110V250 25 | - | R2.5 | 25.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D250 30 | R3.0 | 25.0 | 19.5 | 6.2 | - |
| - | XMR110D260 03 | R0.3 | 26.0 | 19.5 | 6.2 | - |
| - | XMR110D260 05 | R0.5 | 26.0 | 19.5 | 6.2 | - |
| - | XMR110D260 10 | R1.0 | 26.0 | 19.5 | 6.2 | - |
| - | XMR110D260 15 | R1.5 | 26.0 | 19.5 | 6.2 | - |
| - | XMR110D260 20 | R2.0 | 26.0 | 19.5 | 6.2 | - |
| XMF110V260 25 | - | R2.5 | 26.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D260 30 | R3.0 | 26.0 | 19.5 | 6.2 | - |
| - | XMR110D300 03 | R0.3 | 30.0 | 23.5 | 7.2 | - |
| - | XMR110D300 05 | R0.5 | 30.0 | 23.5 | 7.2 | - |
| - | XMR110D300 10 | R1.0 | 30.0 | 23.5 | 7.2 | - |
| - | XMR110D300 15 | R1.5 | 30.0 | 23.5 | 7.2 | - |
| - | XMR110D300 20 | R2.0 | 30.0 | 23.5 | 7.2 | - |
| XMF110V300 30 | XMR110D300 30 | R3.0 | 30.0 | 23.5 | 7.2 | 1.6 |

▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm.

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO Material Description | P | | | | | | | | | | M | | | | K | | | | | |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|---------------------|-----|-----|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 30 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 21 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

| ISO Material Description | N | | | | | | | | | | S | | | | | | H | | | | |
|--------------------------|------------------------|-----|------------------------|----|-----|---|----|-----|----|----|------------------------|-----|-----------------------------|-----|-----|--------|-----------------|-----|----------------|-------------------|--------------------|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 15 | 30 | 25 | 38 | 34 | 400 Rm | 1050 Rm | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ○ | ○ | ○ | ○ | | | | | | ◎ | | | | | | | | | | | |



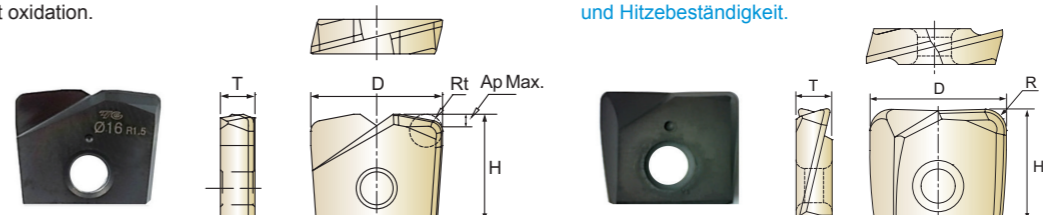
XMF110V SERIES
XMR110D SERIES

i-Xmill CORNER RADIUS INSERT

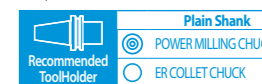
- i-Xmill WENDEPLATTE mit GERADER STIRN UND ECKRADIUS
- i-Xmill Plaquette Torique AVEC RAYON de coupe frontale
- INSERTI IN MD, TORICI & TORICI HIGH FEED

- ▶ The optimized geometry of the tool achieves better reliability and less vibration and cutting load.
- ▶ Interchangeable with i-Xmill ball holder, but precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The varied and wide cutting range makes it possible to machine from roughing through to finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ Die optimale Werkzeuggeometrie für große Betriebssicherheit und geringe Vibration und Schneidendruck.
- ▶ Einsetzbar wie i-Xmill Rundplattenhalter, aber eine größere Schnittgenauigkeit ist mit dem Vierkantplattenhalter möglich, wegen der größeren Steifigkeit und Stärke des Werkzeugs.
- ▶ Die große Einsatzbreite des Werkzeugs macht den Einsatz sowohl zum Schruppen als auch zum Schlichten möglich.
- ▶ Eine spezielle Beschichtung verleiht der Schneide große Härte und Hitzebeständigkeit.



High Feed



cutting conditions : p.C63

Unit : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---------------------------|---------------|---------------|---------------|--------|-----------|---------------|
| Y-Coating | Diamond | | | | | |
| General Purpose High Feed | Graphite | R(Rt) | D | H | T | Ap Max. |
| - | XMR110D320 03 | R0.3 | 32.0 | 23.5 | 7.2 | - |
| - | XMR110D320 05 | R0.5 | 32.0 | 23.5 | 7.2 | - |
| - | XMR110D320 10 | R1.0 | 32.0 | 23.5 | 7.2 | - |
| - | XMR110D320 15 | R1.5 | 32.0 | 23.5 | 7.2 | - |
| - | XMR110D320 20 | R2.0 | 32.0 | 23.5 | 7.2 | - |
| - | XMR110D320 30 | R3.0 | 32.0 | 23.5 | 7.2 | - |
| XMF110V320 32 | XMR110D320 32 | R3.2 | 32.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D330 03 | R0.3 | 33.0 | 23.5 | 7.2 | - |
| - | XMR110D330 05 | R0.5 | 33.0 | 23.5 | 7.2 | - |
| - | XMR110D330 10 | R1.0 | 33.0 | 23.5 | 7.2 | - |
| - | XMR110D330 15 | R1.5 | 33.0 | 23.5 | 7.2 | - |
| - | XMR110D330 20 | R2.0 | 33.0 | 23.5 | 7.2 | - |
| - | XMR110D330 30 | R3.0 | 33.0 | 23.5 | 7.2 | - |
| XMF110V330 32 | XMR110D330 32 | R3.2 | 33.0 | 23.5 | 7.2 | 1.6 |

▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm.

◎ : Excellent ○ : Good

| ISO Material Description | P | | | | | | | | | | M | | | | K | | | | | |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|---------------------|-----|-----|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | 13 | 25 | 28 | 32 | 30 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 21 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

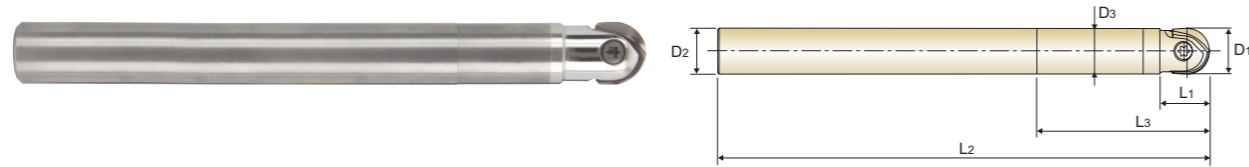
| ISO Material Description | N | | | | | | | | | | S | | | | | | H | | | | |
|--------------------------|------------------------|-----|------------------------|----|-----|---|----|-----|----|----|------------------------|-----|-----------------------------|-----|-----|--------|-----------------|-----|----------------|-------------------|--------------------|
| | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 15 | 30 | 25 | 38 | 34 | 400 Rm | 1050 Rm | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ○ | ○ | ○ | ○ | | | | | | ◎ | | | | | | | | | | | |



ZBC SERIES

i-Xmill CARBIDE BALL HOLDER - STRAIGHT NECK

● i-Xmill HARTMETAL HALTER für WECHSEL PLATTE mit RUNDER STIRN - mit GERADER SCHAFT
 (●) Porte-plaquette i-Xmill en Carbone, entrée droite, pour plaquette à bout hémisphérique
 (●) CORPO FRESA IN MD PER INSERTI SEMISFERICI i-Xmill - CILINDRICO



Unit : mm

| EDP No. | Mill Diameter | Shank Diameter | Neck Diameter | Length of Cut | Length Below Shank | Overall Length | Length Type | Wrench No. | Screw No. |
|--------------|---------------|----------------|---------------|---------------|--------------------|----------------|-------------|------------|-----------|
| | D1 | D2 | D3 | L1 | L3 | L2 | | | |
| ★ ZBC0801080 | 8 | 8 | 7.6 | 12 | 25 | 130 | Regular | TWFT07 | TX2508T07 |
| ★ ZBC0802080 | 8 | 8 | 7.6 | 12 | 40 | 130 | Regular | | |
| ★ ZBC0803080 | 8 | 8 | 7.6 | 12 | 65 | 130 | Regular | | |
| ZBC0804080 | 8 | 8 | 7.6 | 12 | 60 | 150 | Regular | TWFT08 | TX3010T08 |
| ZBC0805080 | 8 | 8 | 7.6 | 12 | 60 | 200 | Long | | |
| ZBC0806080 | 8 | 8 | 7.6 | 12 | 25 | 80 | Short | | |
| ★ ZBC1001100 | 10, 11 | 10 | 9.5 | 15 | 30 | 140 | Regular | TWFT08 | TX3010T08 |
| ★ ZBC1002100 | 10, 11 | 10 | 9.5 | 15 | 50 | 140 | Regular | | |
| ★ ZBC1003100 | 10, 11 | 10 | 9.5 | 15 | 75 | 140 | Regular | | |
| ZBC1004100 | 10, 11 | 10 | 9.5 | 15 | 60 | 180 | Regular | TWFT10 | TX3512T10 |
| ZBC1005100 | 10, 11 | 10 | 9.5 | 15 | 60 | 200 | Long | | |
| ZBC1006100 | 10, 11 | 10 | 9.5 | 15 | 30 | 80 | Short | | |
| ZBC120001P | 12, 13 | 12 | 11.4 | 17 | 40 | 200 | Long | TWFT10 | TX3512T10 |
| ★ ZBC1201120 | 12, 13 | 12 | 11.4 | 17 | 35 | 150 | Regular | | |
| ★ ZBC1202120 | 12, 13 | 12 | 11.4 | 17 | 60 | 150 | Regular | | |
| ★ ZBC1203120 | 12, 13 | 12 | 11.4 | 17 | 85 | 150 | Regular | TWFT15 | TX4016T15 |
| ZBC1204120 | 12, 13 | 12 | 11.4 | 17 | 60 | 250 | Long | | |
| ZBC1205120 | 12, 13 | 12 | 11.4 | 17 | 35 | 100 | Short | | |
| ZBC160001P | 16, 17 | 16 | 15.0 | 20 | 50 | 150 | Regular | TWFT15 | TX4016T15 |
| ★ ZBC1601160 | 16, 17 | 16 | 15.0 | 20 | 50 | 200 | Long | | |
| ★ ZBC1602160 | 16, 17 | 16 | 15.0 | 20 | 80 | 200 | Long | | |
| ★ ZBC1603160 | 16, 17 | 16 | 15.0 | 20 | 120 | 200 | Long | TWBT20 | TX5020T20 |
| ★ ZBC1604160 | 16, 17 | 16 | 15.0 | 20 | 80 | 250 | Long | | |
| ZBC1605160 | 16, 17 | 16 | 15.0 | 20 | 50 | 120 | Short | | |
| ZBC200002P | 20, 21 | 20 | 19.0 | 25 | 60 | 150 | Regular | TWBT20 | TX5020T20 |
| ★ ZBC2001200 | 20, 21 | 20 | 19.0 | 25 | 60 | 200 | Regular | | |
| ★ ZBC2002200 | 20, 21 | 20 | 19.0 | 25 | 80 | 200 | Regular | | |
| ★ ZBC2003200 | 20, 21 | 20 | 19.0 | 25 | 100 | 250 | Long | TWBT25 | TX6025T25 |
| ★ ZBC2004200 | 20, 21 | 20 | 19.0 | 25 | 150 | 250 | Long | | |
| ZBC2005200 | 20, 21 | 20 | 19.0 | 25 | 100 | 300 | Long | | |
| ZBC250001P | 25, 26 | 25 | 24.0 | 30 | 75 | 150 | Regular | TWBT25 | TX6025T25 |
| ★ ZBC2501250 | 25, 26 | 25 | 24.0 | 30 | 75 | 200 | Regular | | |
| ★ ZBC2502250 | 25, 26 | 25 | 24.0 | 30 | 120 | 250 | Regular | | |
| ★ ZBC2503250 | 25, 26 | 25 | 24.0 | 30 | 190 | 300 | Long | TWBT30 | TX8030T30 |
| ZBC2504250 | 25, 26 | 25 | 24.0 | 30 | 120 | 350 | Long | | |
| ZBC2505250 | 25, 26 | 25 | 24.0 | 30 | 60 | 300 | Long | | |
| ★ ZBC3001320 | 30, 32, 33 | 32 | 29.0 | 40 | 90 | 250 | Regular | TWBT30 | TX8030T30 |
| ★ ZBC3002320 | 30, 32, 33 | 32 | 29.0 | 40 | 150 | 300 | Long | | |
| ★ ZBC3003320 | 30, 32, 33 | 32 | 29.0 | 40 | 190 | 300 | Long | | |
| ZBC3004320 | 30, 32, 33 | 32 | 29.0 | 40 | 120 | 350 | Long | TWBT30 | TX8030T30 |
| ZBC3005320 | 30, 32, 33 | 32 | 29.0 | 40 | 150 | 400 | Long | | |

● : Required to use T-HANDLE (TWH600)
 ★ : Stock Item

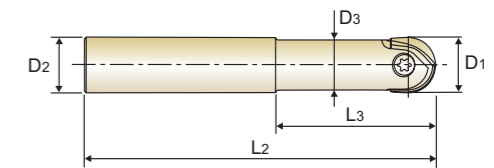
▶ Upon request, the broken holder is able to be regenerated.
 ▶ Your carbide holder can be regenerated as YG-1 type upon request.



ZBS SERIES

i-Xmill STEEL BALL HOLDER - STRAIGHT NECK

● i-Xmill STAHL HALTER für WECHSEL PLATTE mit RUNDER STIRN - mit GERADER SCHAFT
 (●) Porte-plaquette i-Xmill en acier, entrée droite, pour plaquette à bout hémisphérique
 (●) CORPO FRESA IN ACCIAIO PER INSERTI SEMISFERICI i-Xmill - CILINDRICO



Unit : mm

| EDP No. | Mill Diameter | Shank Diameter | Neck Diameter | Length Below Shank | Overall Length | Length Type | Wrench No. | Screw No. |
|--------------|---------------|----------------|---------------|--------------------|----------------|-------------|------------|-----------|
| | D1 | D2 | D3 | L3 | L2 | | | |
| ★ ZBS1201120 | 12, 13 | 12 | 10.5 | 35 | 90 | Short | TWFT10 | TX3512T10 |
| ★ ZBS1202120 | 12, 13 | 12 | 10.5 | 55 | 110 | Regular | | |
| ZBS120001P | 12, 13 | 12 | 10.5 | 40 | 150 | Long | TWFT15 | TX4016T15 |
| ★ ZBS1601160 | 16, 17 | 16 | 14.5 | 35 | 95 | Short | | |
| ★ ZBS1602160 | 16, 17 | 16 | 14.5 | 65 | 125 | Regular | | |
| ZBS160001P | 16, 17 | 16 | 14.5 | 60 | 200 | Long | TWBT20 | TX5020T20 |
| ★ ZBS2001200 | 20, 21 | 20 | 18.0 | 40 | 110 | Short | | |
| ★ ZBS2002200 | 20, 21 | 20 | 18.0 | 75 | 145 | Regular | | |
| ZBS200001P | 20, 21 | 20 | 18.0 | 80 | 200 | Long | TWBT25 | TX6025T25 |
| ZBS200002P | 20, 21 | 20 | 18.0 | 60 | 200 | Long | | |
| ★ ZBS2501250 | 25, 26 | 25 | 22.5 | 45 | 125 | Short | | |
| ★ ZBS2502250 | 25, 26 | 25 | 22.5 | 90 | 170 | Regular | TWBT25 | TX6025T25 |
| ZBS2503250 | 25, 26 | 25 | 22.5 | 100 | 250 | Long | | |
| ZBS250001P | 25, 26 | 25 | 22.5 | 90 | 200 | Long | | |
| ZBS250002P | 25, 26 | 25 | 22.5 | 60 | 200 | Long | TWBT30 | TX8030T30 |
| ★ ZBS3001320 | 30, 32, 33 | 32 | 27.0 | 55 | 140 | Short | | |
| ★ ZBS3002320 | 30, 32, 33 | 32 | 27.0 | 110 | 195 | Regular | | |
| ZBS3004320 | 30, 32, 33 | 32 | 27.0 | 150 | 350 | Long | TWBT30 | TX8030T30 |
| ZBS300001P | 30, 32, 33 | 32 | 27.0 | 100 | 250 | Long | | |

● : Required to use T-HANDLE (TWH600)
 ★ : Stock Item

i-Xmill STEEL BALL HOLDER - TAPER NECK

● i-Xmill STAHL HALTER für WECHSEL PLATTE mit RUNDER STIRN - mit KONISCH ABGESETZTEM SCHAFTTEIL
 (●) Porte-plaquette i-Xmill en acier, entrée conique, pour plaquette à bout hémisphérique
 (●) CORPO FRESA IN ACCIAIO PER INSERTI SEMISFERICI i-Xmill - CONICO



Unit : mm

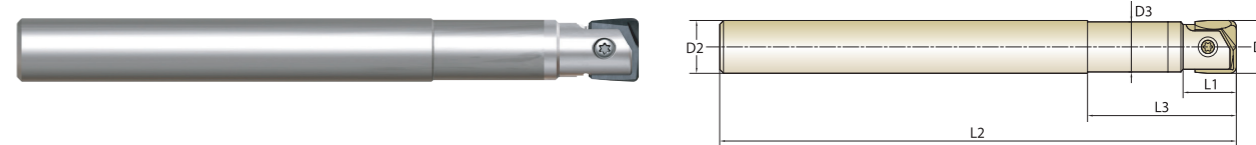
| EDP No. | Mill Diameter | Shank Diameter | Neck Diameter | Length of Cut | Length Below Shank | Overall Length | Interference Angle | Length Type | Wrench No. | Screw No. |
|--------------|---------------|----------------|---------------|---------------|--------------------|----------------|--------------------|-------------|------------|-----------|
| | D1 | D2 | D3 | L1 | L3 | L2 | θ° | | | |
| ★ ZBT0801120 | 8 | 12 | 7.2 | 12 | 35 | 90 | 4° 43' | Short | TWFT07 | TX2508T07 |
| ★ ZBT0802120 | 8 | 12 | 7.2 | 25 | 55 | 110 | 3° 37' | Regular | | |
| ★ ZBT1001120 | 10, 11 | 12 | 9.0 | 15 | 35 | 90 | 2° 51' | Short | TWFT08 | TX3010T08 |
| ★ ZBT1002120 | 10, 11 | 12 | 9.0 | 30 | 55 | 110 | 2° 17' | Regular | | |
| ★ ZBT1201160 | 12, 13 | 16 | 10.5 | 17 | 55 | 110 | 3° 23' | Short | TWFT10 | TX3512T10 |
| ★ ZBT1601200 | 16, 17 | 20 | 14.5 | 20 | 65 | 125 | 2° 51' | Short | | |
| ZBT1604200 | 16, 17 | 20 | 14.5 | 20 | 115 | 200 | 1° 22' | Regular | TWFT15 | TX4016T15 |
| ★ ZBT2001250 | 20, 21 | 25 | 18.0 | 25 | 75 | 145 | 3° 26' | Short | | |
| ZBT2004250 | 20, 21 | 25 | 18.0 | 25 | 115 | 200 | 1° 55' | Regular | ●TWBT20 | TX5020T20 |
| ZBT2005250 | 20, 21 | 25 | 18.0 | 25 | 160 | 250 | 1° 17' | Long | | |
| ★ ZBT2501320 | 25, 26 | 32 | 22.5 | 30 | 90 | 170 | 4° 03' | Short | ●TWBT25 | TX6025T25 |
| ZBT2504320 | 25, 26 | 32 | 22.5 | 30 | 160 | 250 | 1° 53' | Regular | | |
| ZBT2505320 | 25, 26 | 32 | 22.5 | 30 | 190 | 300 | 1° 32' | Long | ●TWBT30 | TX8030T30 |
| ★ ZBT3001320 | 30,32,33 | 32 | 27.0 | 40 | 110 | 195 | 1° 38' | Short | | |
| ZBT3004320 | 30,32,33 | 32 | 27.0 | 40 | 160 | 250 | 0° 58' | Regular | ●TWBT30 | TX8030T30 |
| ZBT3005320 | 30,32,33 | 32 | 27.0 | 40 | 190 | 300 | 0° 46' | Long | | |

● : Required to use T-HANDLE (TWH600)

★ : Stock Item

i-Xmill CARBIDE CORNER RADIUS HOLDER - STRAIGHT NECK

● i-Xmill HARTMETAL HALTER für WECHSEL PLATTE mit ECKRADIUS - mit GERADER SCHAFT
 (●) Porte-plaquette i-Xmill en Carbure, entrée droite, pour plaquette à bout torique
 (●) CORPO FRESA IN MD PER INSERTI TORICI i-Xmill - CILINDRICO



Unit : mm

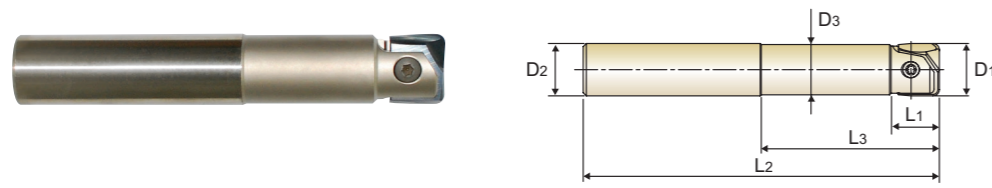
| EDP No. | Mill Diameter | Shank Diameter | Neck Diameter | Length of Cut | Length Below Shank | Overall Length | Length Type | Wrench No. | Screw No. |
|--------------|---------------|----------------|---------------|---------------|--------------------|----------------|-------------|------------|-----------|
| | D1 | D2 | D3 | L1 | L3 | L2 | | | |
| ★ ZRC0801080 | 8 | 8 | 7.6 | 12 | 25 | 130 | Regular | TWFT07 | TX2508T07 |
| ★ ZRC0802080 | 8 | 8 | 7.6 | 12 | 40 | 130 | Regular | | |
| ★ ZRC0803080 | 8 | 8 | 7.6 | 12 | 65 | 130 | Regular | TWFT08 | TX3010T08 |
| ★ ZRC1001100 | 10 | 10 | 9.5 | 15 | 30 | 140 | Regular | | |
| ★ ZRC1002100 | 10 | 10 | 9.5 | 15 | 50 | 140 | Regular | TWFT10 | TX3512T10 |
| ★ ZRC1201120 | 10 | 10 | 9.5 | 15 | 75 | 140 | Regular | | |
| ★ ZRC1201120 | 12, 13 | 12 | 11.4 | 17 | 35 | 150 | Regular | TWFT10 | TX3512T10 |
| ★ ZRC1202120 | 12, 13 | 12 | 11.4 | 17 | 60 | 150 | Regular | | |
| ★ ZRC1203120 | 12, 13 | 12 | 11.4 | 17 | 85 | 150 | Regular | TWFT15 | TX4016T15 |
| ★ ZRC1601160 | 16, 17 | 16 | 15.0 | 20 | 50 | 200 | Long | | |
| ★ ZRC1602160 | 16, 17 | 16 | 15.0 | 20 | 80 | 200 | Long | TWFT15 | TX4016T15 |
| ★ ZRC1603160 | 16, 17 | 16 | 15.0 | 20 | 120 | 200 | Long | | |
| ★ ZRC1604160 | 16, 17 | 16 | 15.0 | 20 | 80 | 250 | Long | ●TWBT20 | TX5020T20 |
| ★ ZRC2001200 | 20, 21 | 20 | 19.0 | 25 | 60 | 200 | Regular | | |
| ★ ZRC2002200 | 20, 21 | 20 | 19.0 | 25 | 80 | 200 | Regular | ●TWBT20 | TX5020T20 |
| ★ ZRC2003200 | 20, 21 | 20 | 19.0 | 25 | 100 | 250 | Long | | |
| ★ ZRC2004200 | 20, 21 | 20 | 19.0 | 25 | 150 | 250 | Long | ●TWBT25 | TX6025T25 |
| ★ ZRC2501250 | 25, 26 | 25 | 24.0 | 30 | 75 | 200 | Regular | | |
| ★ ZRC2502250 | 25, 26 | 25 | 24.0 | 30 | 120 | 250 | Regular | ●TWBT25 | TX6025T25 |
| ★ ZRC2503250 | 25, 26 | 25 | 24.0 | 30 | 190 | 300 | Long | | |
| ★ ZRC3001320 | 30,32,33 | 32 | 29.0 | 40 | 90 | 250 | Regular | ●TWBT30 | TX8030T30 |
| ★ ZRC3002320 | 30,32,33 | 32 | 29.0 | 40 | 150 | 300 | Long | | |
| ★ ZRC3003320 | 30,32,33 | 32 | 29.0 | 40 | 190 | 300 | Long | ●TWBT30 | TX8030T30 |
| ★ ZRC3003320 | 30,32,33 | 32 | 29.0 | 40 | 190 | 300 | Long | | |

● : Required to use T-HANDLE (TWH600)

★ : Stock Item

i-Xmill STEEL CORNER RADIUS HOLDER - STRAIGHT NECK

- i-Xmill STAHL HALTER für WECHSEL PLATTE mit ECKRADIUS - mit GERADER SCHAFT
- Ⓛ Porte-plaquette i-Xmill en acier, entrée droite, pour plaquette torique
- Ⓛ CORPO FRESA IN ACCIAIO PER INSERTI TORICI i-Xmill - CILINDRICO



Unit : mm

| EDP No. | Mill Diameter | Shank Diameter | Neck Diameter | Length of Cut | Length Below Shank | Overall Length | Length Type | Wrench No. | Screw No. |
|--------------|----------------|----------------|----------------|----------------|--------------------|----------------|--------------|------------|-----------|
| | D ₁ | D ₂ | D ₃ | L ₁ | L ₃ | L ₂ | | | |
| ★ ZRS1201120 | 12, 13 | 12 | 11.0 | 13 | 30 | 110 | Regular | TWFT10 | TX3512T10 |
| ★ ZRS1601160 | 16, 17 | 16 | 15.0 | 15 | 50 | 130 | Regular | TWFT15 | TX4016T15 |
| ★ ZRS1602160 | 16, 17 | 16 | 15.0 | 15 | 65 | 165 | Intermediate | | |
| ZRS1603160 | 16, 17 | 16 | 15.0 | 15 | 65 | 200 | Long | TWBT20 | TX5020T20 |
| ★ ZRS2001200 | 20, 21 | 20 | 19.0 | 18 | 60 | 140 | Regular | | |
| ★ ZRS2002200 | 20, 21 | 20 | 19.0 | 18 | 80 | 180 | Intermediate | TWBT25 | TX6025T25 |
| ZRS2003200 | 20, 21 | 20 | 19.0 | 18 | 80 | 250 | Long | | |
| ★ ZRS2501250 | 25, 26 | 25 | 24.0 | 23 | 70 | 150 | Regular | TWBT30 | TX8030T30 |
| ★ ZRS2502250 | 25, 26 | 25 | 24.0 | 23 | 90 | 200 | Intermediate | | |
| ZRS2503250 | 25, 26 | 25 | 24.0 | 23 | 90 | 300 | Long | TWBT30 | TX8030T30 |
| ★ ZRS3001320 | 30, 32, 33 | 32 | 29.0 | 27 | 80 | 160 | Regular | | |
| ★ ZRS3002320 | 30, 32, 33 | 32 | 29.0 | 27 | 100 | 220 | Intermediate | TWBT30 | TX8030T30 |
| ZRS3003320 | 30, 32, 33 | 32 | 29.0 | 27 | 100 | 350 | Long | | |

- : Required to use T-HANDLE (TWH600)
- ★ : Stock Item

i-Xmill STEEL CORNER RADIUS HOLDER - TAPER NECK

- i-Xmill STAHL HALTER für WECHSEL PLATTE mit ECKRADIUS - mit KONISCH ABGESETZTEM SCHAFTTEIL
- Ⓛ Porte-plaquette i-Xmill en acier, entrée conique, pour plaquette torique
- Ⓛ CORPO FRESA IN ACCIAIO PER INSERTI TORICI i-Xmill - CONICO

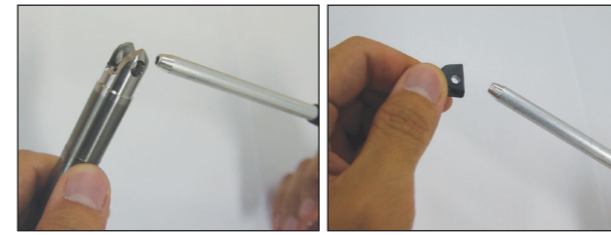


Unit : mm

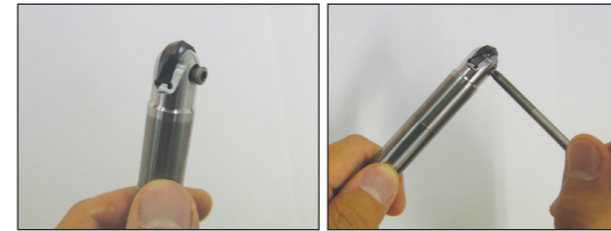
| EDP No. | Mill Diameter | Shank Diameter | Neck Diameter | Length of Cut | Length Below Shank | Overall Length | Interference Angle | Length Type | Wrench No. | Screw No. |
|--------------|----------------|----------------|----------------|----------------|--------------------|----------------|--------------------|-------------|------------|-----------|
| | D ₁ | D ₂ | D ₃ | L ₁ | L ₃ | L ₂ | θ° | | | |
| ★ ZRT0801120 | 8 | 12 | 6.7 | 10 | 22 | 100 | 9° | Regular | TWFT07 | TX2508T07 |
| ★ ZRT0802120 | 8 | 12 | 6.7 | 10 | 50 | 130 | 2° 43' | Long | TWFT08 | TX3010T08 |
| ★ ZRT1001120 | 10, 11 | 12 | 8.6 | 13 | 25 | 100 | 4° 45' | Regular | | |
| ★ ZRT1002120 | 10, 11 | 12 | 8.6 | 13 | 50 | 150 | 1° 32' | Long | TWFT10 | TX3512T10 |
| ★ ZRT1202160 | 12, 13 | 16 | 10.2 | 15 | 60 | 160 | 2° 32' | Long | | |

- ★ : Stock Item

**ASSEMBLY of i-Xmill
MONTAGE DES i-Xmill**



- ▲ Make sure to clean the insert and insert seat.
Wechselplatte und Plattensitz sorgfältig reinigen.



- ▲ Slide the insert into the slot of the holder.
Tighten the screw using anti-seize compound.
Wechselplatte in den Sitz des Halters einführen.
Die Schraube fest anziehen und dabei Spezialfett verwenden

| SIZE (ØD) | CLAMPING TORQUE [N·m] |
|--------------|-----------------------|
| Ø8.0 | 1.0 |
| Ø10.0 | 1.5 |
| Ø12.0, Ø13.0 | 2.5 |
| Ø16.0, Ø17.0 | 3.5 |
| Ø20.0, Ø21.0 | 5.0 |
| Ø25.0, Ø26.0 | 6.0 |
| Ø30.0, Ø32.0 | 6.5 |

- * When the screw is worn out, please change the a new screw.
* Wenn das Schraubengewinde verschlissen ist, bitte neue Schraube verwenden.
- * Please tighten up the screw with recommended torque. (Please refer to the table)
* Die Feststellschraube mit dem empfohlenen Anzugsmoment anziehen (siehe Tabelle).
- * Don't press down the insert, when the screw is tightened.
* Die Wechselplatte nicht nach unten drücken, wenn die Schraube angezogen ist.

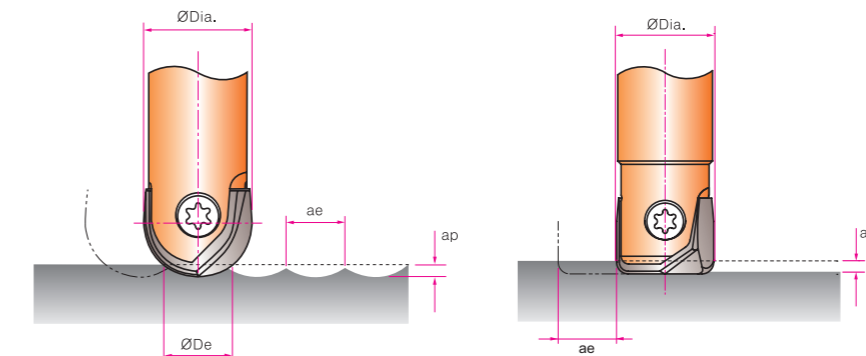


Wrench No.

| FLAG TYPE | WRENCH TYPE | PRODUCT NO. | T-HANDLE No. |
|---------------|-------------|-------------|--------------|
| | | TWFT07 | - |
| | | TWFT08 | - |
| | | TWFT10 | - |
| | | TWFT15 | - |
| TORX BIT TYPE | | ● TWBT20 | TWH600 |
| | | ● TWBT25 | |
| | | ● TWBT30 | |

- : Required to use T-HANDLE (TWH600)

**CUTTING CONDITION
SCHNEIDKONDITIONEN**



- RPM = revolution per minute (rev/min)
- Vc = surface meter per minute (M/min)
- Dia. = diameter of insert (mm)
- Vf = feed speed (mm/min)
- f = feed per revolution (mm/rev)
- De = effective tool diameter (mm)
- ap = axial depth of cut (mm)
- ae = radial depth of cut (mm)

$$Vc [M/min.] = \frac{(RPM) \cdot (\pi) \cdot (Dia.)}{1000}$$

$$RPM [rev/min.] = \frac{(Vc) \cdot (1000)}{(\pi) \cdot (Dia.)}$$

$$Vf [mm/min.] = (RPM) \cdot (f)$$

$$De [mm] = 2 \cdot \sqrt{(ap) \cdot (Dia. - ap)}$$

XMB110A SERIES BALL INSERTS for GENERAL PURPOSE

Vc = m/min.
fz = mm/tooth
RPM = rev/min.
FEED = mm/min.

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|-----------------|----------------------|------------|--------------|------------|------------|-----------|-----------|-----------|------------|--|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| P | 1-4 | Non-alloy steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 | |
| | | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 | |
| | | | Vc | 120~280 | 120~300 | 120~350 | 120~380 | 120~420 | 120~480 | 120~550 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | |
| | 5 | Non-alloy steel | Vc | 120~280 | 120~300 | 120~350 | 120~380 | 120~420 | 120~480 | 120~550 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | |
| | | | RPM | 4770~11140 | 3820~9550 | 3180~9280 | 2390~7560 | 1910~6680 | 1530~6110 | 1270~5840 | |
| | | | FEED | 1910~4460 | 1530~3820 | 1270~3710 | 1190~4540 | 950~5350 | 760~6110 | 640~7000 | |
| | | | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | |
| 6-7 | Low alloy steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 | | |
| | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | | |
| | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 | | |
| | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 | | |
| | | Vc | 120~280 | 120~300 | 120~350 | 120~380 | 120~420 | 120~480 | 120~550 | | |
| | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | | |
| 8 | Low alloy steel | Vc | 120~280 | 120~300 | 120~350 | 120~380 | 120~420 | 120~480 | 120~550 | | |
| | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | | |
| | | RPM | 4770~11140 | 3820~9550 | 3180~9280 | 2390~7560 | 1910~6680 | 1530~6110 | 1270~5840 | | |
| | | FEED | 1910~4460 | 1530~3820 | 1270~3710 | 1190~4540 | 950~5350 | 760~6110 | 640~7000 | | |
| | | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 | | |
| | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | | |

XMB120C SERIES BALL INSERTS for PRE-HARDENED STEELS

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|----------|--|-----------|--------------|------------|------------|-----------|-----------|-----------|------------|--|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| P | 9-11 | Low alloy steel, High alloyed steel, and tool steel | Vc | 100~220 | 100~260 | 100~280 | 100~350 | 100~400 | 100~450 | 100~500 | |
| | | | fz | 0.15~0.20 | 0.15~0.20 | 0.15~0.20 | 0.20~0.30 | 0.20~0.40 | 0.20~0.50 | 0.20~0.60 | |
| | | | RPM | 3980~8750 | 3180~8280 | 2650~7430 | 1990~6960 | 1590~6370 | 1270~5730 | 1060~5310 | |
| | | | FEED | 1190~3500 | 950~3310 | 800~2970 | 800~4180 | 640~5090 | 510~5730 | 420~6370 | |
| K | 15-20 | Grey cast iron, Nodular cast iron, Malleable cast iron | Vc | 160~320 | 160~360 | 160~400 | 160~500 | 160~550 | 160~620 | 160~720 | |
| | | | fz | 0.30~0.30 | 0.30~0.30 | 0.30~0.30 | 0.35~0.40 | 0.35~0.40 | 0.35~0.50 | 0.35~0.60 | |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10610 | 3180~9950 | 2550~8750 | 2040~7890 | 1700~7640 | |
| | | | FEED | 3820~7640 | 3060~6880 | 2550~6370 | 2230~7960 | 1780~7000 | 1430~7890 | 1190~9170 | |
| H | 38 | Hardened steel | Vc | 80~180 | 80~200 | 80~220 | 80~260 | 80~320 | 80~360 | 80~400 | |
| | | | fz | 0.10~0.20 | 0.10~0.20 | 0.10~0.20 | 0.15~0.30 | 0.15~0.40 | 0.15~0.50 | 0.15~0.60 | |
| | | | RPM | 3180~7160 | 2550~6370 | 2120~5840 | 1590~5170 | 1270~5090 | 1020~4580 | 850~4240 | |
| | | | FEED | 640~2860 | 510~2550 | 420~2330 | 480~3100 | 380~4070 | 310~4580 | 250~5090 | |

XMB260T SERIES BALL INSERTS for HIGH HARDENED STEELS

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|----------|----------------------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|------------|--|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| H | 38-41 | Hardened steel | Vc | 80~180 | 80~200 | 80~220 | 80~260 | 80~320 | 80~360 | 80~400 | |
| | | | fz | 0.10~0.15 | 0.10~0.15 | 0.10~0.15 | 0.15~0.25 | 0.15~0.25 | 0.15~0.25 | 0.15~0.30 | |
| | | | RPM | 3180~7160 | 2550~6370 | 2120~5840 | 1590~5170 | 1270~5090 | 1020~4580 | 850~4240 | |
| | | | FEED | 640~2150 | 510~1910 | 420~1750 | 480~2590 | 380~2550 | 310~2290 | 250~2550 | |

XMB130A SERIES BALL INSERTS for STAINLESS STEELS

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|----------|----------------------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|------------|--|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| M | 12-14 | Stainless steel | Vc | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | |
| | | | fz | 0.10~0.12 | 0.13~0.15 | 0.15~0.20 | 0.15~0.20 | 0.15~0.20 | 0.20~0.25 | 0.20~0.25 | |
| | | | RPM | 3580~5170 | 2860~4140 | 2390~3450 | 1790~2590 | 1430~2070 | 1150~1660 | 950~1380 | |
| | | | FEED | 720~1290 | 720~1240 | 720~1380 | 540~1030 | 430~830 | 460~830 | 380~690 | |

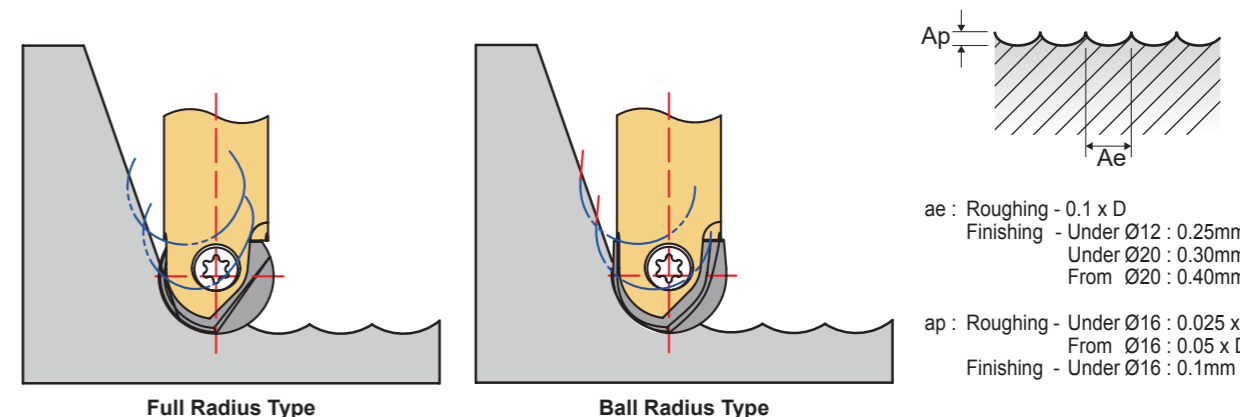
XMM110V SERIES BALL INSERTS for GENERAL PURPOSE - FULL RADIUS

Vc = m/min.
fz = mm/tooth
RPM = rev/min.
FEED = mm/min.

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|----------|------------------------------------|-----------|--------------|------------|------------|-----------|-----------|-----------|------------|--|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| P | 1-4 | Non-alloy steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 | |
| | | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 | |
| | 6-7 | Low alloy steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 | |
| | | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 | |
| | 10 | High alloyed steel, and tool steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 | |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 | |
| | | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 | |

XMB110D SERIES BALL INSERTS for GRAPHITE

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|----------|------------------------|-----------|--------------|------------|------------|-----------|-----------|-----------|------------|--|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| N | 21~22 | Aluminum-wrought alloy | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~480 | 300~560 | 300~650 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.30~0.35 | 0.35~0.40 | 0.40~0.50 | |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~7640 | 3820~7130 | 3180~6900 | |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2980~4770 | 2860~5350 | 2670~5700 | 2550~6900 | |
| N | 23~24 | Aluminum-cast, alloyed | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~480 | 300~560 | 300~650 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.30~0.35 | 0.35~0.40 | 0.40~0.50 | |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~7640 | 3820~7130 | 3180~6900 | |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2980~4770 | 2860~5350 | 2670~5700 | 2550~6900 | |
| N | 29.2 | Graphite | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~480 | 300~560 | 300~650 | |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.30~0.35 | 0.35~0.40 | 0.40~0.50 | |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~7640 | 3820~7130 | 3180~6900 | |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2980~4770 | 2860~5350 | 2670~5700 | 2550~6900 | |



- ▶ When the length of overhang exceeds 4xD, we recommend using the carbide shank holder with 20% lower feed
- ▶ When using long (long & intermediate type holder) tools, we recommend reducing the feed rate to 70 ~ 85%.

XMR110A SERIES CORNER RADIUS INSERTS for GENERAL PURPOSE & STAINLESS STEELS

Vc = m/min.
fz = mm/tooth
RPM = rev/min.
FEED = mm/min.

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|------|-----------------|----------------------|------------|--------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| P | 1-4 | Non-alloy steel | Vc | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 |
| | | | fz | 0.20~0.15 | 0.20~0.15 | 0.20~0.15 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 |
| | | | RPM | 6370~11940 | 5090~9550 | 4240~7960 | 3180~5970 | 2550~4770 | 2040~3820 | 1700~3180 | |
| | | | FEED | 2550~3580 | 2040~2860 | 1700~2390 | 1590~2390 | 1270~1910 | 1020~1530 | 850~1270 | |
| | | | Vc | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | |
| | | | fz | 0.20~0.15 | 0.20~0.15 | 0.20~0.15 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | |
| | 5 | Non-alloy steel | RPM | 4770~11140 | 3820~8910 | 3180~7430 | 2390~5570 | 1910~4460 | 1530~3570 | 1270~2970 | |
| | | | FEED | 1910~3340 | 1530~2670 | 1270~2230 | 1190~2230 | 950~1780 | 760~1430 | 640~1190 | |
| | | | Vc | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | |
| | | | fz | 0.20~0.15 | 0.20~0.15 | 0.20~0.15 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | |
| | | | RPM | 6370~11940 | 5090~9550 | 4240~7960 | 3180~5970 | 2550~4770 | 2040~3820 | 1700~3180 | |
| | | | FEED | 2550~3580 | 2040~2860 | 1700~2390 | 1590~2390 | 1270~1910 | 1020~1530 | 850~1270 | |
| 6-7 | Low alloy steel | Vc | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | | |
| | | fz | 0.20~0.15 | 0.20~0.15 | 0.20~0.15 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | | |
| | | RPM | 4770~11140 | 3820~8910 | 3180~7430 | 2390~5570 | 1910~4460 | 1530~3570 | 1270~2970 | | |
| | | FEED | 1910~3340 | 1530~2670 | 1270~2230 | 1190~2230 | 950~1780 | 760~1430 | 640~1190 | | |
| | | Vc | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | | |
| | | fz | 0.20~0.15 | 0.20~0.15 | 0.20~0.15 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | | |
| 8 | Low alloy steel | RPM | 4770~11140 | 3820~8910 | 3180~7430 | 2390~5570 | 1910~4460 | 1530~3570 | 1270~2970 | | |
| | | FEED | 1910~3340 | 1530~2670 | 1270~2230 | 1190~2230 | 950~1780 | 760~1430 | 640~1190 | | |
| | | Vc | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | | |
| | | fz | 0.10~0.10 | 0.11~0.11 | 0.12~0.11 | 0.13~0.13 | 0.13~0.13 | 0.13~0.12 | 0.13~0.12 | | |
| | | RPM | 3580~5170 | 2860~4140 | 2390~3450 | 1790~2590 | 1430~2070 | 1150~1660 | 950~1380 | | |
| | | FEED | 720~1030 | 630~910 | 550~790 | 450~650 | 360~520 | 290~410 | 240~340 | | |
| M | 12-14 | Stainless steel | Vc | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | |
| fz | 0.10~0.10 | 0.11~0.11 | 0.12~0.11 | 0.13~0.13 | 0.13~0.13 | 0.13~0.12 | 0.13~0.12 | | | | |
| RPM | 3580~5170 | 2860~4140 | 2390~3450 | 1790~2590 | 1430~2070 | 1150~1660 | 950~1380 | | | | |
| FEED | 720~1030 | 630~910 | 550~790 | 450~650 | 360~520 | 290~410 | 240~340 | | | | |

XMR120C SERIES CORNER RADIUS INSERTS for PRE-HARDENED STEELS

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|----------|--|-----------|--------------|------------|------------|-----------|-----------|-----------|------------|---------|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| P | 9-11 | Low alloy steel High alloyed steel, and tool steel | Vc | 100~280 | 100~280 | 100~280 | 100~280 | 100~280 | 100~280 | 100~280 | 100~280 |
| | | | fz | 0.12~0.06 | 0.13~0.06 | 0.13~0.06 | 0.15~0.08 | 0.15~0.08 | 0.15~0.08 | 0.15~0.08 | |
| | | | RPM | 3980~11140 | 3180~8910 | 2650~7430 | 1990~5570 | 1590~4460 | 1270~3570 | 1060~2970 | |
| | | | FEED | 990~1340 | 800~1070 | 690~890 | 600~840 | 480~670 | 380~570 | 320~450 | |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | Vc | 160~380 | 160~380 | 160~380 | 160~380 | 160~380 | 160~380 | 160~380 | 160~380 |
| | | | fz | 0.30~0.20 | 0.30~0.20 | 0.30~0.20 | 0.35~0.30 | 0.35~0.30 | 0.35~0.30 | 0.35~0.30 | |
| | | | RPM | 6370~15120 | 5090~12100 | 4240~10080 | 3180~7560 | 2550~6050 | 2040~4840 | 1700~4030 | |
| | | | FEED | 3820~6050 | 3060~4840 | 2550~4030 | 2230~4540 | 1780~3630 | 1430~2900 | 1190~2420 | |
| H | 38 | Hardened steel | Vc | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 |
| | | | fz | 0.10~0.05 | 0.10~0.05 | 0.10~0.05 | 0.15~0.06 | 0.15~0.06 | 0.15~0.06 | 0.15~0.06 | |
| | | | RPM | 3180~8750 | 2550~7000 | 2120~5840 | 1590~4380 | 1270~3500 | 1020~2800 | 850~2330 | |
| | | | FEED | 640~880 | 510~700 | 420~580 | 420~530 | 380~420 | 310~340 | 250~280 | |

XMR260T SERIES CORNER RADIUS INSERTS for HIGH HARDENED STEELS

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|----------|----------------------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|------------|--------|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| H | 38-41 | Hardened steel | Vc | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 |
| | | | fz | 0.10~0.05 | 0.10~0.05 | 0.10~0.05 | 0.15~0.06 | 0.15~0.06 | 0.15~0.06 | 0.15~0.06 | |
| | | | RPM | 3180~8750 | 2550~7000 | 2120~5840 | 1590~4380 | 1270~3500 | 1020~2800 | 850~2330 | |
| | | | FEED | 640~880 | 510~700 | 420~580 | 480~530 | 380~420 | 310~340 | 250~280 | |

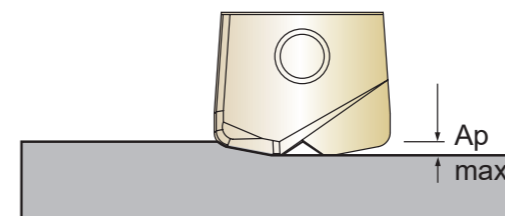
XMF110V SERIES CORNER RADIUS INSERTS for GENERAL PURPOSE - HIGH FEED

Vc = m/min.
fz = mm/tooth
RPM = rev/min.
FEED = mm/min.

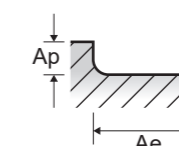
| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|---------------------------------------|---------------------------------------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|------------|---------|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| P | 1-7 | Non-alloy steel Low alloy steel | Vc | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 |
| | | | fz | 0.60~0.40 | 0.75~0.50 | 0.90~0.60 | 1.20~0.80 | 1.50~1.00 | 1.80~1.40 | 2.30~1.80 | |
| | | | RPM | 5970~7960 | 4770~6370 | 3980~5310 | 2980~3980 | 2390~3180 | 1910~2550 | 1590~2120 | |
| | | | FEED | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 6880~7140 | 7320~7640 | |
| | | | Ap(Max) | 0.4 | 0.5 | 0.6 | 0.8 | 1.0 | 1.3 | 1.6 | |
| | | | Vc | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | |
| | 10 | High alloyed steel, and tool steel | fz | 0.60~0.40 | 0.75~0.50 | 0.90~0.60 | 1.20~0.80 | 1.50~1.00 | 1.80~1.40 | 2.30~1.80 | |
| | | | RPM | 5970~7960 | 4770~6370 | 3980~5310 | 2980~3980 | 2390~3180 | 1910~2550 | 1590~2120 | |
| | | | FEED | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 6880~7140 | 7320~7640 | |
| | | | Ap(Max) | 0.4 | 0.5 | 0.6 | 0.8 | 1.0 | 1.3 | 1.6 | |
| | | | Vc | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | |
| | | | fz | 0.60~0.40 | 0.75~0.50 | 0.90~0.60 | 1.20~0.80 | 1.50~1.00 | 1.80~1.40 | 2.30~1.80 | |
| 10 | High alloyed steel, and tool steel | RPM | 5970~7960 | 4770~6370 | 3980~5310 | 2980~3980 | 2390~3180 | 1910~2550 | 1590~2120 | | |
| | | FEED | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 6880~7140 | 7320~7640 | | |
| | | Vc | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | | |
| | | fz | 0.60~0.40 | 0.75~0.50 | 0.90~0.60 | 1.20~0.80 | 1.50~1.00 | 1.80~1.40 | 2.30~1.80 | | |
| | | RPM | 5970~7960 | 4770~6370 | 3980~5310 | 2980~3980 | 2390~3180 | 1910~2550 | 1590~2120 | | |
| | | FEED | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 6880~7140 | 7320~7640 | | |

XMR110D SERIES CORNER RADIUS INSERTS for GRAPHITE

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) | | | | | | | |
|-----|----------|------------------------|-----------|--------------|------------|------------|-----------|-----------|-----------|------------|---------|
| | | | | 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 | |
| N | 21~22 | Aluminum-wrought alloy | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.25 | 0.25~0.25 | 0.25~0.25 | |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~6370 | 3820~5090 | 3180~4240 | |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2390~3180 | 2390~3180 | 1910~2550 | 1590~2120 | |
| N | 23~24 | Aluminum-cast, alloyed | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.25 | 0.25~0.25 | 0.25~0.25 | |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~6370 | 3820~5090 | 3180~4240 | |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2390~3180 | 2390~3180 | 1910~2550 | 1590~2120 | |
| N | 29.2 | Graphite | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.25 | 0.25~0.25 | 0.25~0.25 | |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~6370 | 3820~5090 | 3180~4240 | |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2390~3180 | 2390~3180 | 1910~2550 | 1590~2120 | |



High Feed



ae : Roughing - 0.1 x D
Finishing - 0.2mm
ap : Roughing - Under Ø16 : 0.025 x D
From Ø16 : 0.05 x D
Finishing - Under Ø16 : 0.1mm
From Ø16 : 0.2mm

- ▶ When the length of overhang exceeds 4xD, we recommend using the carbide shank holder with 20% lower feed
- ▶ When using long (long & intermediate type holder) tools, we recommend reducing the feed rate to 70 ~ 85%.



Global Cutting Tool Leader **YG-1**



MILLING