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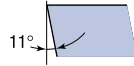
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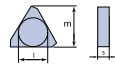
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Shape
Triangle 60°



Clearance Angle
11°



Tolerance
l ± 0.05 m ± 0.013
s ± 0.025



Insert Type
Clamping
no chip breaker

| Insert designation | Grade | l | s | P/r | D | Direction | Catalog Nr. | Page |
|--------------------|-------|----|------|-----|-----|-----------|-------------|------|
| TPKN 1603 PDTR | LT 30 | 16 | 3,18 | 90° | 15° | Right | M000051 | 213 |
| TPKN 2204 PDTR | LT 30 | 22 | 4,76 | 90° | 15° | Right | M000052 | 214 |

Application Guide

Slotting

Sholder Milling

Surfacing

Multi purpose 90° milling insert with 3 cutting edges. Use for slotting, shoulder milling and face milling. Roughing to finishing.

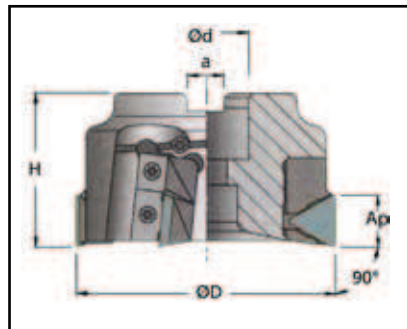
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Machining Recommendation Guide - Please see Pg. 8

| Catalog Nr. | Description | D | d | H | Ap | z |
|-------------|---------------|-----|----|----|----|---|
| M2000699 | LT 310 M-D63 | 63 | 22 | 50 | 14 | 6 |
| M2000700 | LT 310 M-D80 | 80 | 27 | 50 | 14 | 6 |
| M2000701 | LT 310 M-D100 | 100 | 32 | 50 | 14 | 7 |
| M2000702 | LT 310 M-D125 | 125 | 40 | 63 | 14 | 8 |

TPKN 2204 PDTR

| Catalog Nr. | Description | D | d | H | Ap | z |
|-------------|---------------|-----|----|----|----|---|
| M2000703 | LT 320 M-D80 | 80 | 27 | 50 | 20 | 5 |
| M2000704 | LT 320 M-D100 | 100 | 32 | 50 | 20 | 6 |
| M2000705 | LT 320 M-D125 | 125 | 40 | 63 | 20 | 7 |
| M2000706 | LT 320 M-D160 | 160 | 40 | 63 | 20 | 9 |



| Material Group | Group No | Material Examples* | Brinell hardness | d.o.c [mm] | | feed [mm/tooth] | | V _c [m/min] | |
|-----------------------------|----------|---|------------------|---|-----|-----------------|------|------------------------|-----|
| | | | | min | max | min | max | min | max |
| Low Carbon Steel | 1 | Ck15, Ck45 1020, 1045 | 150 | 0.5 | 12 | 0.15 | 0.25 | 180 | 300 |
| | | | 180 | | 12 | | 0.25 | | 260 |
| | | | 210 | | 12 | | 0.25 | | 220 |
| Alloy Steel | 2 | 42 CrMo 4 St 50-2 Ck60 1060 4140 | 180 | 0.5 | 7 | 0.12 | 0.23 | 130 | 200 |
| | | | 230 | | 7 | | 0.23 | | 180 |
| | | | 280 | 0.5 | 7 | 0.12 | 0.22 | 100 | 160 |
| | | | 320 | | 7 | | 0.22 | | 140 |
| High Alloy Steel | 3 | X40 CrMoV 5 1 H 13 40 NiCrMo 6 4340 S 2-10-1-8 HSS M42 | 220 | 0.5 | 7 | 0.12 | 0.18 | 90 | 130 |
| | | | 280 | | 7 | | 0.18 | | 120 |
| | | | 320 | 0.5 | 7 | 0.12 | 0.18 | 90 | 110 |
| | | | 350 | | 7 | | 0.18 | | 100 |
| | | | 400 | 0.5 | 5 | 0.1 | 0.18 | 40 | 80 |
| | | | 480 | | 3 | | 0.16 | | 70 |
| 550 | 1.5 | 0.14 | 60 | | | | | | |
| Austenitic Stainless Steel | 4 | X5 CrNi 18 9 304 | 210 to 250 | TPKN inserts are not recommended for Stainless Steel | | | | | |
| | 5 | X2 CrNiMo 17 2 2 316 | 230 to 270 | | | | | | |
| | 6 | X6 CrNiMoTi 17 12 2 316 Ti Duplex / Nitronic | ----- | | | | | | |
| Ferritic Stainless Steel | 7 | X8 Cr 7 430 | Annealed | | | | | | |
| Martensitic Stainless Steel | 8 | X15 Cr 13 410 | Annealed Treated | | | | | | |
| Grey Cast Iron | 9 | GG 20 | 140 to 230 | 0.5 | 12 | 0.15 | 0.25 | 150 | 240 |
| | | GG 25 | | | | | | | 220 |
| | | GG 30 | | | | | | | 190 |
| Nodular Cast Iron | 10 | GGG 40 | 210 | 0.5 | 12 | 0.12 | 0.21 | 100 | 200 |
| | | GGG 50 | 260 | | | | | | 160 |
| | | GGG 70 | 310 | | | | | | 130 |
| | | G-X260NiCr42 | 450 | 0.5 | 3 | 0.1 | 0.16 | 30 | 60 |
| Nickel Based Alloys | 11 | Inconel 625 | ----- | TPKN inserts are not recommended for Exotic materials | | | | | |
| | | Inconel 718 | | | | | | | |
| | | Hastelloy C | | | | | | | |
| Titanium Based Alloys | 12 | TiAl 6 V4 | ----- | | | | | | |
| | | T40 | | | | | | | |

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| Material Group | Group No | Material Examples* | Brinell hardness | d.o.c [mm] | | feed [mm/tooth] | | V _c [m/min] | |
|-----------------------------|----------|---|---------------------|---|-----|-----------------|------|------------------------|-----|
| | | | | min | max | min | max | min | max |
| Low Carbon Steel | 1 | Ck15, Ck45 1020, 1045 | 150 | 0.5 | 18 | 0.18 | 0.28 | 180 | 300 |
| | | | 180 | | 18 | | 0.28 | | 260 |
| | | | 210 | | 18 | | 0.28 | | 220 |
| Alloy Steel | 2 | 42 CrMo 4 St 50-2 Ck60 1060 4140 | 180 | 0.5 | 18 | 0.15 | 0.23 | 130 | 200 |
| | | | 230 | | 18 | | 0.23 | | 180 |
| | | | 280 | 0.5 | 14 | 0.15 | 0.23 | 100 | 160 |
| | | | 320 | | 14 | | 0.23 | | 140 |
| High Alloy Steel | 3 | X40 CrMoV 5 1 H 13 40 NiCrMo 6 4340 S 2-10-1-8 HSS M42 | 220 | 0.5 | 12 | 0.12 | 0.18 | 90 | 130 |
| | | | 280 | | 12 | | 0.18 | | 110 |
| | | | 320 | 0.5 | 12 | 0.12 | 0.18 | 60 | 95 |
| | | | 350 | | 12 | | 0.18 | | 80 |
| | | | 400 | 0.5 | 5 | 0.1 | 0.18 | 40 | 80 |
| | | | 480 | | 3 | | 0.16 | | 70 |
| | | | 550 | | 1.5 | | 0.14 | | 60 |
| Austenitic Stainless Steel | 4 | X5 CrNi 18 9 304 | 210 to 250 | TPKN inserts are not recommended for Stainless Steel | | | | | |
| | 5 | X2 CrNiMo 17 2 2 316 | 230 to 270 | | | | | | |
| | 6 | X6 CrNiMoTi 17 12 2 316 Ti Duplex / Nitronic | ----- | | | | | | |
| Ferritic Stainless Steel | 7 | X8 Cr 7 430 | Annealed | | | | | | |
| Martensitic Stainless Steel | 8 | X15 Cr 13 410 | Annealed Treated | | | | | | |
| Grey Cast Iron | 9 | GG 20 | 140 to 230 | 0.5 | 18 | 0.18 | 0.28 | 150 | 240 |
| | | GG 25 | | | | | | | 220 |
| | | GG 30 | | | | | | | 190 |
| Nodular Cast Iron | 10 | GGG 40 | 210 | 0.5 | 14 | 0.15 | 0.23 | 100 | 200 |
| | | GGG 50 | 260 | | | | | | 160 |
| | | GGG 70 | 310 | | | | | | 130 |
| | | G-X260NiCr42 | 450 | | | | | | 0.5 |
| Nickel Based Alloys | 11 | Inconel 625 | ----- | TPKN inserts are not recommended for Exotic materials | | | | | |
| | | Inconel 718 | | | | | | | |
| | | Hastelloy C | | | | | | | |
| Titanium Based Alloys | 12 | TiAl 6 V4 | ----- | | | | | | |
| | | T40 | | | | | | | |