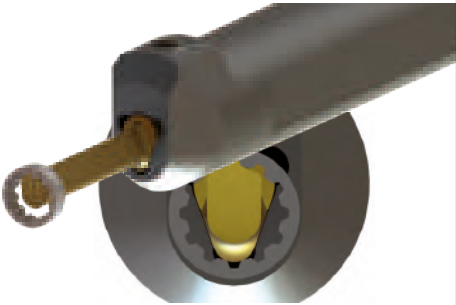


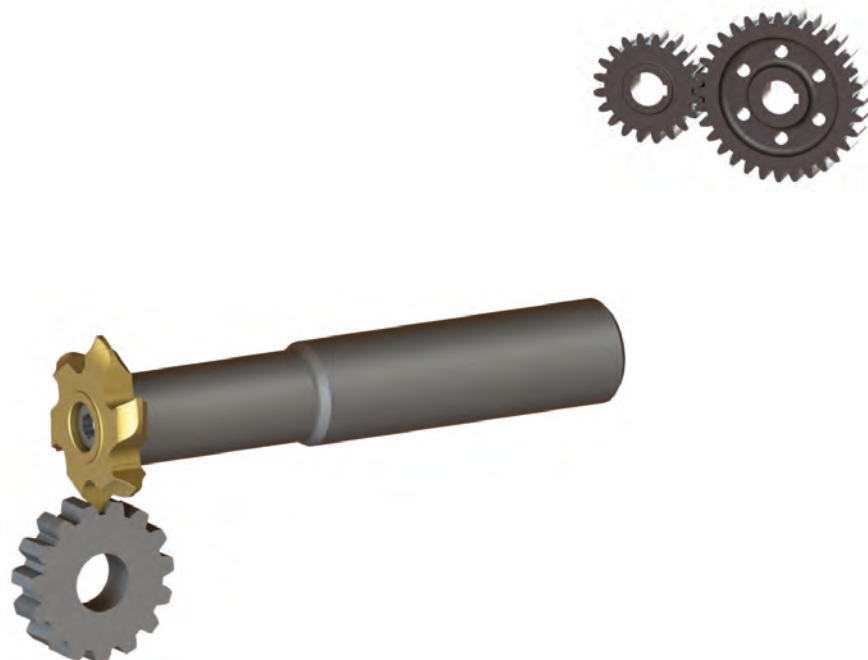


対応システム/System	ページ/Page
ギヤミーリング / Gear Milling	371
ギヤブローチング / Gear Broaching	383
ギヤスカイビング / Gear Skiving	387
ギヤ端面バリ取り工具 / Deburring	393
ギヤシェーピング / Gear Shaping	395
シングルポイントギヤミーリング / Single-Point Gear Milling	397
ベベルギヤミーリング / Bevel Gear Milling	399
5軸加工機用歯切工具 / 5-Axis Milling of Gear Teeth	403

加工法 Technology	少量生産 Small series	中規模生産 Medium batch sizes	大量生産 Large series
ギヤミーリング (外歯) Gear milling (external) 	+++	++	-
ギヤブローチング (外歯 / 内歯) Gear broaching (external and internal) 	+++	++	+
ギヤスカイピング (外歯 / 内歯) Gear skiving (external and internal) 	-	+	+++
ギヤシェーピング (ピニオンカッター) (外歯) Gear shaping (external) 	-	+	+++

加工法 Technology	少量生産 Small series	中規模生産 Medium batch sizes	大量生産 Large series
シングルポイントギヤミーリング (外歯) Single-point gear milling (external) 	-	+++	+
ベベルギヤミーリング (外歯) Bevel gear milling (external) 	+	+	+++
5軸加工機用歯切工具 (外歯) 5-Axis milling of gears (external) 	+++	-	-
ギヤ端面バリ取り工具 (外歯) Deburring of gears 	+++	+++	+++

スパーギヤ/ギヤシャフト加工用インサート Milling inserts for spur gears and gear shafts



スパーギヤ/ギヤシャフト DIN 3972準拠 標準1型 Cylindrical gears, Tooth bars Basic profile 1 according to DIN 3972	ギヤシャフト/シャフトハブ/ セレーション Gear shafts, Shaft-hub, Serration DIN 5480/ANSI B92.1	インサート Insert タイプ type	Ds [mm]
$mn \leq 0.8$	$mn \leq 1 / dB \geq 40$	606	11.7
$mn \leq 1$	$mn \leq 1.5 / dB \geq 40$	608	15.7
$mn \leq 1.25$	$mn \leq 2 / dB \geq 40$	611	17.7
$mn \leq 1.5$	$mn \leq 3 / dB \geq 22$	613	21.7
$mn \leq 2$	$mn \leq 2.5 / dB \geq 40$	628	27.7
$mn \leq 2.5 / \text{Nr. 5 - 8}$	$mn \leq 2.5 / dB \geq 30$	632	31.7
$mn \leq 2.25 / \text{Nr. 2 - 8}$	$mn \leq 2.5 / dB \geq 30$	632	31.7
$mn \leq 2 \text{ Nr. 1 - 8}$	$mn \leq 2.5 / dB \geq 30$	632	31.7
$mn \leq 3$	$mn \leq 3 / dB \geq 50$	635	34.7
$mn \leq 1.5$	$mn \leq 2 / dB \geq 60$	636	35.7



ギヤミーリング

モジュールサイズ m 0.5 ~ m 4.0

GEAR MILLING

Module sizes from 0.5 up to 4 mm

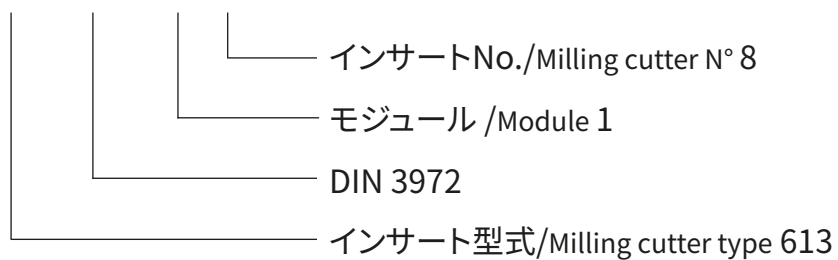
表記例 Ordering Example

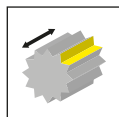


インサートNo. Milling cutter N°	*z (スパーギヤ歯数) *z (N° of teeth cylindrical gear)
1	12 - 13
2	14 - 16
3	17 - 20
4	21 - 25
5	26 - 34
6	35 - 54
7	55 - 134
8	≥ 135...ラックバー/Tooth bar

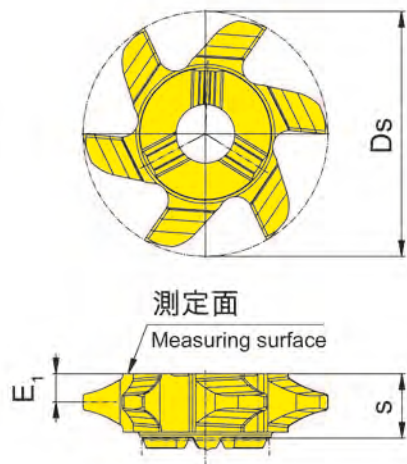


613.3972.100.8





z6



超硬材種
Carbide grades

▲ 在庫品
on stock

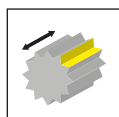
△ 4週間
4 weeks

型式 Part number	モジュール Module	z_{min}	z_{max}	E_1	s	t_{max}	Ds	HIS	AS45
613.3972.050.1	0.5	12	13	1.1	5.7	1.1	21.7	313113R	▲
613.3972.050.2	0.5	14	16	1.1	5.7	1.1	21.7	313113R	▲
613.3972.050.3	0.5	17	20	1.1	5.7	1.1	21.7	313113R	▲
613.3972.050.4	0.5	21	25	1.1	5.7	1.1	21.7	313113R	▲
613.3972.050.5	0.5	26	34	1.1	5.7	1.1	21.7	313113R	▲
613.3972.050.6	0.5	35	55	1.1	5.7	1.1	21.7	313113R	▲
613.3972.050.7	0.5	55	134	1.1	5.7	1.1	21.7	313113R	▲
613.3972.050.8	0.5	135	999	1.1	5.7	1.1	21.7	313113R	▲
613.3972.070.1	0.7	12	13	1.6	5.3	1.5	21.7	313113R	▲
613.3972.070.2	0.7	14	16	1.6	5.3	1.5	21.7	313113R	△
613.3972.070.3	0.7	17	20	1.6	5.3	1.5	21.7	313113R	▲
613.3972.070.4	0.7	21	25	1.6	5.3	1.5	21.7	313113R	△
613.3972.070.5	0.7	26	34	1.6	5.3	1.6	21.7	313113R	▲
613.3972.070.6	0.7	35	55	1.6	5.3	1.6	21.7	313113R	▲
613.3972.070.7	0.7	55	134	1.6	5.3	1.6	21.7	313113R	△
613.3972.070.8	0.7	135	999	1.6	5.3	1.6	21.7	313113R	△

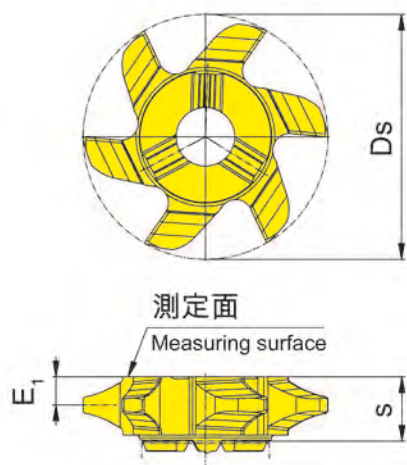
PCD上圧力角 20°
Pressure angle 20°

DIN 867準拠 インボリュートスパーク加工用カッター DIN 3972 基準 1型 歯形 仕上げ加工用 転位 0
Gear milling cutter for cylindrical gears with involuted flanks according to DIN 867 Basic profile 1 according to DIN 3972 for finishing, addendum shift 0

P	●
M	●
K	●
N	○
S	●
H	-



z6


超硬材種
Carbide grades

▲ 在庫品
on stock

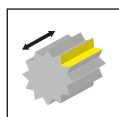
△ 4週間
4 weeks

型式 Part number	モジュール Module	z_{min}	z_{max}	E_1	s	t_{max}	Ds	HIS	AS45
613.3972.080.1	0.8	12	13	1.6	5.3	1.8	21.7	313113R	▲
613.3972.080.2	0.8	14	16	1.6	5.3	1.8	21.7	313113R	▲
613.3972.080.3	0.8	17	20	1.6	5.3	1.8	21.7	313113R	▲
613.3972.080.4	0.8	21	25	1.6	5.3	1.8	21.7	313113R	▲
613.3972.080.5	0.8	26	34	1.6	5.3	1.8	21.7	313113R	▲
613.3972.080.6	0.8	35	55	1.6	5.3	1.8	21.7	313113R	▲
613.3972.080.7	0.8	55	134	1.6	5.3	1.8	21.7	313113R	▲
613.3972.080.8	0.8	135	999	1.6	5.3	1.8	21.7	313113R	▲
613.3972.090.1	0.9	12	13	2.5	5.7	2.1	21.7	313113R	△
613.3972.090.2	0.9	14	16	2.5	5.7	2.1	21.7	313113R	△
613.3972.090.3	0.9	17	20	2.5	5.7	2.1	21.7	313113R	△
613.3972.090.4	0.9	21	25	2.5	5.7	2.1	21.7	313113R	△
613.3972.090.5	0.9	26	34	2.5	5.7	2.1	21.7	313113R	△
613.3972.090.6	0.9	35	55	2.5	5.7	2.1	21.7	313113R	△
613.3972.090.7	0.9	55	134	2.5	5.7	2.1	21.7	313113R	△
613.3972.090.8	0.9	135	999	2.5	5.7	2.1	21.7	313113R	△

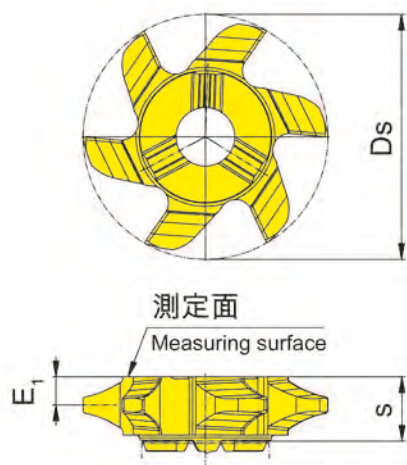
PCD上圧力角 20°
Pressure angle 20°

DIN 867準拠 インボリュートスパーク加工用カッター DIN 3972 基準 1型 歯形 仕上げ加工用 転位 0
Gear milling cutter for cylindrical gears with involuted flanks according to DIN 867 Basic profile 1 according to DIN 3972 for finishing, addendum shift 0

P	●
M	●
K	●
N	○
S	●
H	-



z6



超硬材種
Carbide grades

▲ 在庫品
on stock

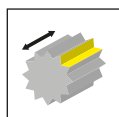
△ 4週間
4 weeks

型式 Part number	モジュール Module	z_{min}	z_{max}	E_1	s	t_{max}	Ds	HIS	AS45
613.3972.100.1	1	12	13	2.5	5.7	2.2	21.7	313113R	▲
613.3972.100.2	1	14	16	2.5	5.7	2.2	21.7	313113R	▲
613.3972.100.3	1	17	20	2.5	5.7	2.2	21.7	313113R	▲
613.3972.100.4	1	21	25	2.5	5.7	2.2	21.7	313113R	▲
613.3972.100.5	1	26	34	2.5	5.7	2.2	21.7	313113R	▲
613.3972.100.6	1	35	54	2.5	5.7	2.3	21.7	313113R	▲
613.3972.100.7	1	55	134	2.5	5.7	2.3	21.7	313113R	▲
613.3972.100.8	1	135	999	2.5	5.7	2.4	21.7	313113R	▲
613.3972.125.1	1.25	12	13	2.5	5.7	2.6	21.7	313113R	▲
613.3972.125.2	1.25	14	16	2.5	5.7	2.7	21.7	313113R	▲
613.3972.125.3	1.25	17	20	2.5	5.7	2.7	21.7	313113R	△
613.3972.125.4	1.25	21	25	2.5	5.7	2.7	21.7	313113R	△
613.3972.125.5	1.25	26	34	2.5	5.7	2.7	21.7	313113R	▲
613.3972.125.6	1.25	35	54	2.5	5.7	2.7	21.7	313113R	▲
613.3972.125.7	1.25	55	134	2.5	5.7	2.8	21.7	313113R	△
613.3972.125.8	1.25	135	999	2.5	5.7	2.8	21.7	313113R	▲

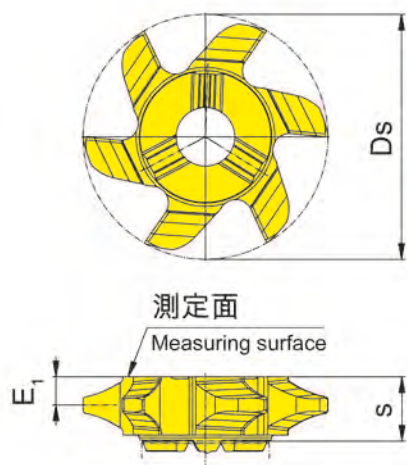
PCD上圧力角 20°
Pressure angle 20°

DIN 867準拠 インボリュートスパーク加工用カッター DIN 3972 基準 1型 歯形 仕上げ加工用 転位 0
Gear milling cutter for cylindrical gears with involuted flanks according to DIN 867 Basic profile 1 according to DIN 3972 for finishing, addendum shift 0

P	●
M	●
K	●
N	○
S	●
H	-



z6



超硬材種
Carbide grades

▲ 在庫品
on stock

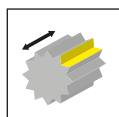
△ 4週間
4 weeks

型式 Part number	モジュール Module	z_{min}	z_{max}	E_1	s	t_{max}	Ds	HIS	AS45
613.3972.150.1	1.5	12	13	2.5	5.7	3.1	21.7	313113R	▲
613.3972.150.2	1.5	14	16	2.5	5.7	3.2	21.7	313113R	▲
613.3972.150.3	1.5	17	20	2.5	5.7	3.2	21.7	313113R	▲
613.3972.150.4	1.5	21	25	2.5	5.7	3.3	21.7	313113R	▲
613.3972.150.5	1.5	26	34	2.5	5.7	3.3	21.7	313113R	▲
613.3972.150.6	1.5	35	54	2.5	5.7	3.3	21.7	313113R	▲
613.3972.150.7	1.5	55	134	2.5	5.7	3.3	21.7	313113R	▲
613.3972.150.8	1.5	135	999	2.5	5.7	3.3	21.7	313113R	▲

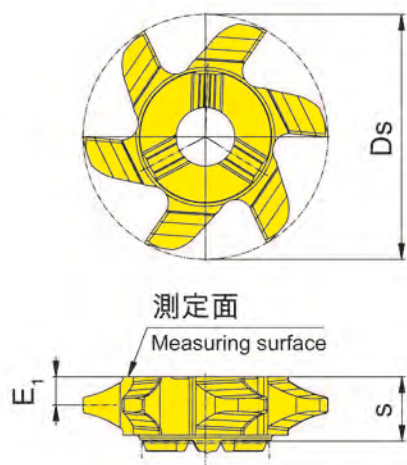
PCD上圧力角 20°
Pressure angle 20°

DIN 867準拠 インボリュートスパーク加工用カッター DIN 3972 基準 1型 歯形 仕上げ加工用 転位 0
Gear milling cutter for cylindrical gears with involuted flanks according to DIN 867 Basic profile 1 according to DIN 3972 for finishing, addendum shift 0

P	●
M	●
K	●
N	○
S	●
H	-



z6



超硬材種
Carbide grades

▲ 在庫品
on stock

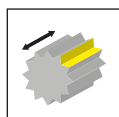
△ 4週間
4 weeks

型式 Part number	モジュール Module	$z_{\min}$	$z_{\max}$	E_1	s	$t_{\max}$	Ds	HIS	AS45
628.3972.175.1	1.75	12	13	3.4	7.45	3.8	27.7	328143R	△
628.3972.175.2	1.75	14	16	3.4	7.45	3.8	27.7	328143R	△
628.3972.175.3	1.75	17	20	3.4	7.45	3.8	27.7	328143R	△
628.3972.175.4	1.75	21	25	3.4	7.45	3.9	27.7	328143R	△
628.3972.175.5	1.75	26	34	3.4	7.45	3.9	27.7	328143R	△
628.3972.175.6	1.75	35	54	3.4	7.45	3.9	27.7	328143R	△
628.3972.175.7	1.75	55	134	3.4	7.45	3.9	27.7	328143R	▲
628.3972.175.8	1.75	135	999	3.4	7.45	3.9	27.7	328143R	△
628.3972.200.1	2	12	13	3.4	7.45	4.2	27.7	328143R	△
628.3972.200.2	2	14	16	3.4	7.45	4.2	27.7	328143R	▲
628.3972.200.3	2	17	20	3.4	7.45	4.2	27.7	328143R	▲
628.3972.200.4	2	21	25	3.4	7.45	4.3	27.7	328143R	▲
628.3972.200.5	2	26	34	3.4	7.45	4.4	27.7	328143R	▲
628.3972.200.6	2	35	54	3.4	7.45	4.4	27.7	328143R	▲
628.3972.200.7	2	55	134	3.4	7.45	4.4	27.7	328143R	▲
628.3972.200.8	2	135	999	3.4	7.45	4.5	27.7	328143R	▲

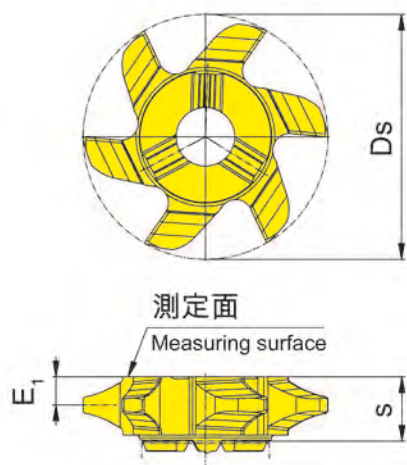
PCD上圧力角 20°
Pressure angle 20°

DIN 867準拠 インボリュートスパーク加工用カッター DIN 3972 基準 1型 歯形 仕上げ加工用 転位 0
Gear milling cutter for cylindrical gears with involuted flanks according to DIN 867 Basic profile 1 according to DIN 3972 for finishing, addendum shift 0

P	●
M	●
K	●
N	○
S	●
H	-



z6



超硬材種
Carbide grades

▲ 在庫品
on stock

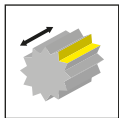
△ 4週間
4 weeks

型式 Part number	モジュール Module	$z_{\min}$	$z_{\max}$	E_1	s	$t_{\max}$	Ds	HIS	AS45
632.3972.225.2	2.25	14	16	3.45	7.5	4.7	31.7	332143R	Δ
632.3972.225.3	2.25	17	20	3.45	7.5	4.8	31.7	332143R	Δ
632.3972.225.4	2.25	21	25	3.45	7.5	4.9	31.7	332143R	Δ
632.3972.225.5	2.25	26	34	3.45	7.5	4.9	31.7	332143R	Δ
632.3972.225.6	2.25	35	54	3.45	7.5	5	31.7	332143R	Δ
632.3972.225.7	2.25	55	134	3.45	7.5	5	31.7	332143R	Δ
632.3972.225.8	2.25	135	999	3.45	7.5	5	31.7	332143R	Δ

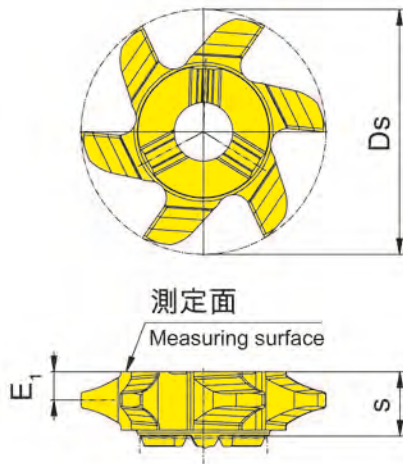
PCD上圧力角 20°
Pressure angle 20°

DIN 867準拠 インボリュートスパーク加工用カッター DIN 3972 基準 1型 歯形 仕上げ加工用 転位 0
Gear milling cutter for cylindrical gears with involuted flanks according to DIN 867 Basic profile 1 according to DIN 3972 for finishing, addendum shift 0

P	●
M	●
K	●
N	○
S	●
H	-



z6



超硬材種
Carbide grades

▲ 在庫品
on stock

△ 4週間
4 weeks

型式 Part number	モジュール Module	z_{min}	z_{max}	E_1	s	t_{max}	Ds	HIS	AS45
635.3972.225.1	2.25	12	13	5.5	11.9	4.7	34.7	335175R	△
635.3972.250.1	2.5	12	13	5.5	11.9	5.4	34.7	335175R	△
635.3972.250.2	2.5	14	16	5.5	11.9	5.4	34.7	335175R	△
635.3972.250.3	2.5	17	20	5.5	11.9	5.4	34.7	335175R	△
635.3972.250.4	2.5	21	25	5.5	11.9	5.5	34.7	335175R	▲
635.3972.250.5	2.5	26	34	5.5	11.9	5.5	34.7	335175R	▲
635.3972.250.6	2.5	35	54	5.5	11.9	5.5	34.7	335175R	▲
635.3972.250.7	2.5	55	134	5.5	11.9	5.7	34.7	335175R	▲
635.3972.250.8	2.5	135	999	5.5	11.9	5.7	34.7	335175R	▲
635.3972.275.1	2.75	12	13	5.5	11.9	5.7	34.7	335175R	△
635.3972.275.2	2.75	14	16	5.5	11.9	5.8	34.7	335175R	△
635.3972.275.3	2.75	17	20	5.5	11.9	5.8	34.7	335175R	△
635.3972.275.4	2.75	21	25	5.5	11.9	5.9	34.7	335175R	△
635.3972.275.5	2.75	26	34	5.5	11.9	5.9	34.7	335175R	△
635.3972.275.6	2.75	35	54	5.5	11.9	6	34.7	335175R	△
635.3972.275.7	2.75	55	134	5.5	11.9	6.1	34.7	335175R	△
635.3972.275.8	2.75	135	999	5.5	11.9	6.1	34.7	335175R	▲
635.3972.300.1	3	12	13	5.5	11.9	6.2	34.7	335175R	▲
635.3972.300.2	3	14	16	5.5	11.9	6.4	34.7	335175R	▲
635.3972.300.3	3	17	20	5.5	11.9	6.4	34.7	335175R	▲
635.3972.300.4	3	21	25	5.5	11.9	6.4	34.7	335175R	▲
635.3972.300.5	3	26	34	5.5	11.9	6.5	34.7	335175R	▲
635.3972.300.6	3	35	54	5.5	11.9	6.5	34.7	335175R	▲
635.3972.300.7	3	55	134	5.5	11.9	6.6	34.7	335175R	▲
635.3972.300.8	3	135	999	5.5	11.9	6.6	34.7	335175R	▲

PCD上圧力角 20°
Pressure angle 20°

DIN 867準拠 インボリュートスパーク加工用カッター DIN 3972 基準 1型 歯形 仕上げ加工用 転位 0
Gear milling cutter for cylindrical gears with involuted flanks according to DIN 867 Basic profile 1 according to DIN 3972 for finishing, addendum shift 0

P	●
M	●
K	●
N	○
S	●
H	-

アーバー取付型カッター M279

Arbour Mounted Cutter

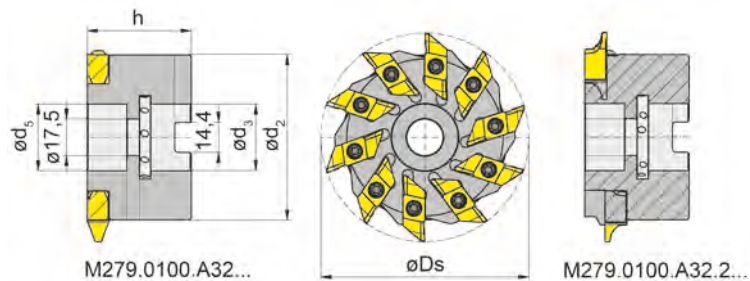
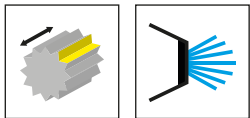
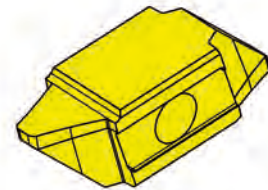
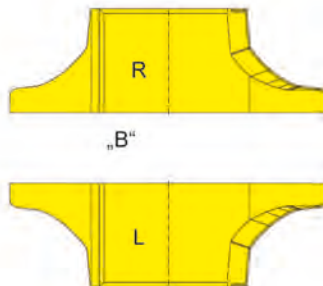
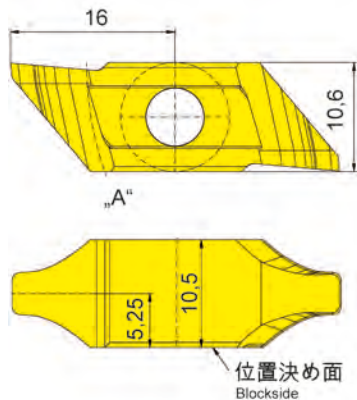
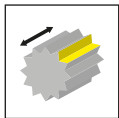


図 = 右勝手バージョン
Picture = right hand cutting version

型式 Part number	Z	Ds	h	d ₅	d ₂	d ₃	HWS
M279.0100.A32.10.10.IK	10	100	50	17.5	79	32	279105R
M279.0100.A32.2.10.05.IK	10	100	50	17.5	79	32	279105R • 279105L

予備部品 Spare Parts

アーバー取付型カッター Arbour Mounted Cutter	ねじ Clamping Screw	トルクスレンチ TORX PLUS® Wrench
M279...	030.0516.T20P	T20PQ



超硬材種
Carbide grades

▲ 在庫品
on stock

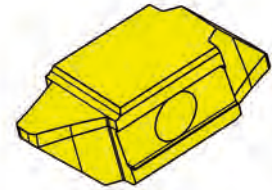
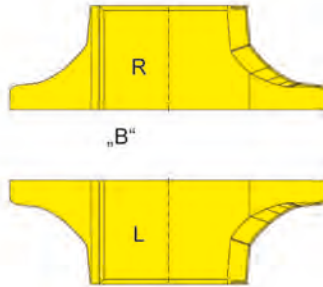
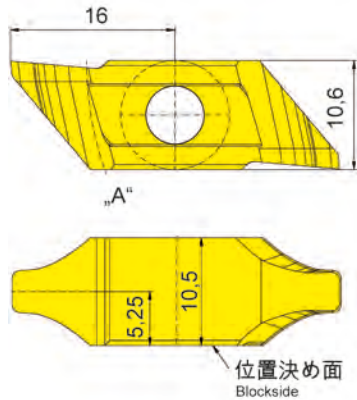
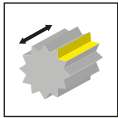
△ 4週間
4 weeks

型式 Part number	モジュール Module	z_{min}	z_{max}	E_1	s	t_{max}	Z	形状 Form	HIS	AS45
RS279.3972.325.1	3.25	12	13	5.25	10.5	6.7	2	A	279105R	△
RS279.3972.325.2	3.25	14	16	5.25	10.5	6.8	2	A	279105R	△
RS279.3972.325.3	3.25	17	20	5.25	10.5	7	2	A	279105R	△
RS279.3972.325.4	3.25	21	25	5.25	10.5	7	2	A	279105R	△
RS279.3972.325.5	3.25	26	24	5.25	10.5	7.1	2	A	279105R	△
RS279.3972.325.6	3.25	35	54	5.25	10.5	7.2	2	A	279105R	△
RS279.3972.325.7	3.25	55	134	5.25	10.5	7.2	2	A	279105R	△
RS279.3972.325.8	3.25	135	999	5.25	10.5	7.2	2	A	279105R	△
RS279.3972.350.1L	3.5	12	13	5.25	10.5	7.35	2	B	279105L	△
RS279.3972.350.1R	3.5	12	13	5.25	10.5	7.35	2	B	279105R	△
RS279.3972.350.2L	3.5	14	16	5.25	10.5	7.45	2	B	279105L	△
RS279.3972.350.2R	3.5	14	16	5.25	10.5	7.45	2	B	279105R	△
RS279.3972.350.3	3.5	17	20	5.25	10.5	7.4	2	A	279105R	△
RS279.3972.350.4	3.5	21	25	5.25	10.5	7.5	2	A	279105R	△
RS279.3972.350.5	3.5	26	34	5.25	10.5	7.65	2	A	279105R	△
RS279.3972.350.6	3.5	35	54	5.25	10.5	7.7	2	A	279105R	△
RS279.3972.350.7	3.5	55	134	5.25	10.5	7.8	2	A	279105R	△
RS279.3972.350.8	3.5	135	999	5.25	10.5	7.8	2	A	279105R	△

PCD上圧力角 20°
Pressure angle 20°

DIN 867準拠 インボリュートスパーク加工用カッター DIN 3972 基準 1型 歯形 仕上げ加工用 転位 0
Gear milling cutter for cylindrical gears with involuted flanks according to DIN 867 Basic profile 1 according to DIN 3972 for finishing, addendum shift 0

P	●
M	●
K	●
N	○
S	●
H	-



超硬材種
Carbide grades

▲ 在庫品
on stock

△ 4週間
4 weeks

型式 Part number	モジュール Module	z_{min}	z_{max}	E_1	s	t_{max}	Z	形状 Form	HIS	AS45
RS279.3972.375.1L	3.75	12	13	5.25	10.5	7.8	2	B	279105L	△
RS279.3972.375.1R	3.75	12	13	5.25	10.5	7.8	2	B	279105R	△
RS279.3972.375.2L	3.75	14	16	5.25	10.5	7.85	2	B	279105L	△
RS279.3972.375.2R	3.75	14	16	5.25	10.5	7.85	2	B	279105R	▲
RS279.3972.375.3L	3.75	17	20	5.25	10.5	8	2	B	279105L	△
RS279.3972.375.3R	3.75	17	20	5.25	10.5	8	2	B	279105R	△
RS279.3972.375.4L	3.75	21	25	5.25	10.5	8.1	2	B	279105L	▲
RS279.3972.375.4R	3.75	21	25	5.25	10.5	8.1	2	B	279105R	△
RS279.3972.375.5	3.75	26	34	5.25	10.5	8.1	2	A	279105R	△
RS279.3972.375.6	3.75	35	54	5.25	10.5	8.2	2	A	279105R	△
RS279.3972.375.7	3.75	55	134	5.25	10.5	8.3	2	A	279105R	△
RS279.3972.375.8	3.75	135	999	5.25	10.5	8.35	2	A	279105R	△
RS279.3972.400.1L	4	12	13	5.25	10.5	8.3	2	B	279105L	△
RS279.3972.400.1R	4	2	13	5.25	10.5	8.3	2	B	279105R	△
RS279.3972.400.2L	4	14	16	5.25	10.5	8.4	2	B	279105R	△
RS279.3972.400.2R	4	14	16	5.25	10.5	8.4	2	B	279105R	△
RS279.3972.400.3L	4	17	20	5.25	10.5	8.55	2	B	279105L	△
RS279.3972.400.3R	4	17	20	5.25	10.5	8.55	2	B	279105R	△
RS279.3972.400.4L	4	21	25	5.25	10.5	8.65	2	B	279105L	△
RS279.3972.400.4R	4	21	25	5.25	10.5	8.65	2	B	279105R	△
RS279.3972.400.5L	4	26	34	5.25	10.5	8.75	2	B	279105R	△
RS279.3972.400.5R	4	26	34	5.25	10.5	8.75	2	B	279105R	△
RS279.3972.400.6L	4	35	54	5.25	10.5	8.8	2	B	279105L	△
RS279.3972.400.6R	4	35	54	5.25	10.5	8.8	2	B	279105R	△
RS279.3972.400.7	4	55	134	5.25	10.5	8.8	2	A	279105R	△
RS279.3972.400.8	4	135	999	5.25	10.5	8.9	2	A	279105R	△

PCD上圧力角 20°
Pressure angle 20°

DIN 867準拠 インボリュートスパーク加工用カッター DIN 3972 基準 1型 歯形 仕上げ加工用 転位 0
Gear milling cutter for cylindrical gears with involuted flanks according to DIN 867 Basic profile 1 according to DIN 3972 for finishing, addendum shift 0

P	●
M	●
K	●
N	○
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