

FMD03 FME04 FMP03

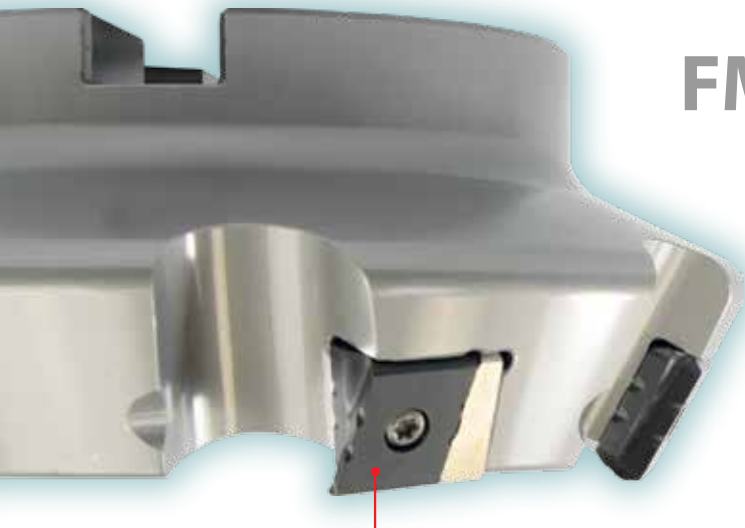
For heavy milling

Für schwere Fräsbearbeitung



ZCC Cutting Tools Europe GmbH

your Partner | your Value



FMD 03

- Reliable screw clamping
- Zuverlässige Verbindung mit Schraube

- Double positive rake angle in combination of inserts and milling body
- Doppelt positiver Spanwinkel in einer Kombination von WSP und Fräser



FMP 03

- Specially made steel shim
- Spezielle Stahl-Unterlage

FMD03

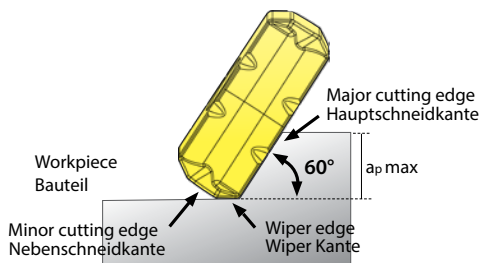
FME04

FMP03

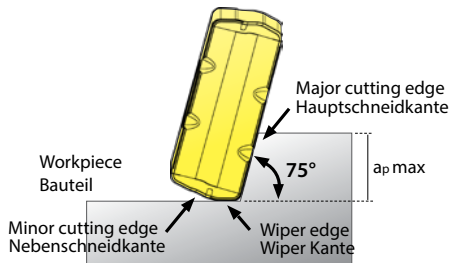
Diameter Durchmesser Ø125~Ø400 mm

Ø125~Ø315mm

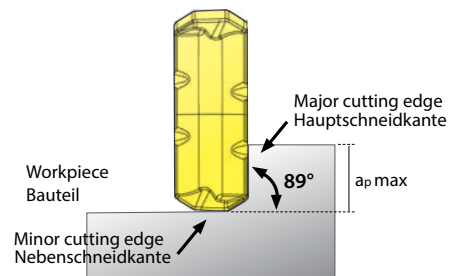
Ø50~Ø315mm



LNKT20** a_p max = 12 mm
LNKT25** a_p max = 16 mm



LNKT15** a_p max = 10 mm



LNKT12** a_p max = 7 mm
LNKT15** a_p max = 12 mm
LNKT20** a_p max = 16 mm
LNKT25** a_p max = 20 mm

- LNKT* has four cutting edges with one positive inclined angle and rake angle
- LNKT* hat vier Schneidkanten mit einem positiven Neigungswinkel und Spanwinkel

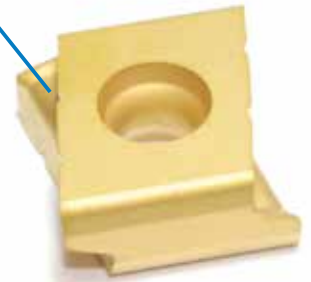


Wiper
Wiper

Better surface quality
Bessere Oberflächqualität



Spanbrecher
Chipbreaker



Economy & Wide Application

Wirtschaftlichkeit & Breites Anwendungsfeld

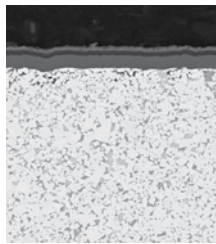
One insert for general machining from roughing to semi-finishing
Eine Platte für die allgemeine Bearbeitung von Schruppen bis Vorschlichten

Saving processing and storage costs
Einsparung von Bearbeitungs sowie Lagerkosten

The insert can be also used on weak performing machines
Diese WSP kann auch bei schwacher Maschinenleistung eingesetzt werden

YBM351

P M K S

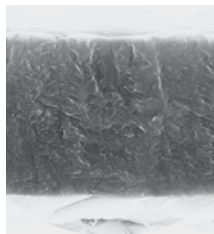


MT-TiCN+Al₂O₃ CVD coated carbide grade with very good strength and impact resistance. It is for milling of alloy steel and stainless steel.

CVD Beschichtete Hartmetallsorte MT-TiCN+Al₂O₃ mit ausgezeichneter Widerstandsfähigkeit und Schneidkantensicherheit. Zum Fräsen von legiertem und rostfreiem Stahl.

YBG302

P M S

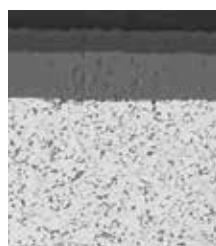


Substrate with reasonable hardness and strength + Nano-TiAlN PVD coating. For rough and semi-finish milling of steel and stainless steel.

Substrat mit einer guten Härte und Festigkeit + Nano-TiAlN PVD Beschichtung. Anwendung für mittlere und Schruppbearbeitung von Stahl und rostfreiem Stahl.

YBD252

K



Tough substrate in combination with TiN, TiCN, thick Al₂O₃ coating. For milling of cast iron and alloy steel.

Zähes Substrat mit TiN, TiCN, dicke Al₂O₃ Beschichtung. Zum Fräsen von Guss und legiertem Stahl.

Case study for FMD03

Bearbeitungsbeispiel für FMD03



Tool · Werkzeug: FMD03-315-D60-LN25-12

Inserts · WSP: LNKT2510-ZR/YBG302

Workpiece material

Werkstückstoff: ASTM A743 CA-6NM class (HB200)
(42CrMo4)

Cooling system

Kühlsystem: dry cutting, trocken

Machine

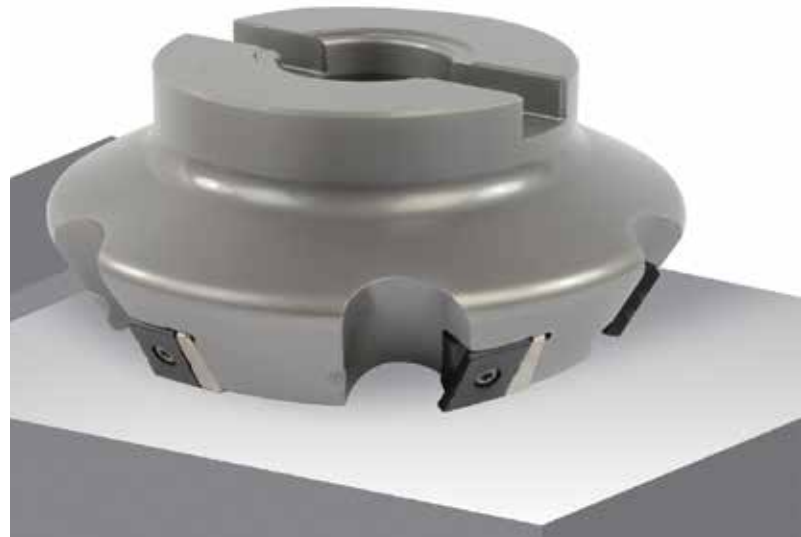
Maschine:

NC floor Type · Typ boring and milling machine,
spindle power ≥ 30 KW

Bohr-Fräszentrum, Spindelkraft ≥ 30 KW

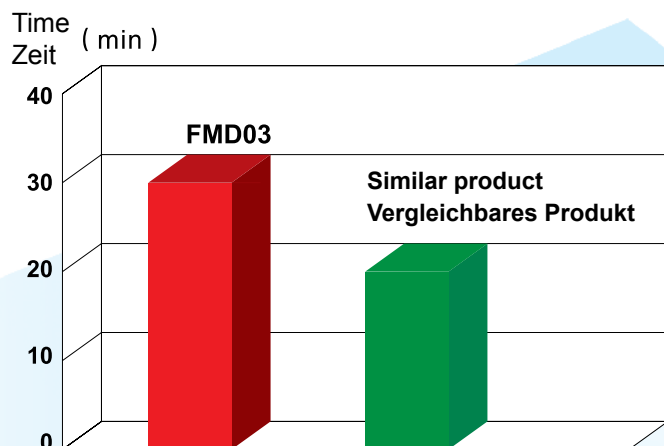
Cutting data

Schnittdaten: $V_c=120$ m/min
 $f_z=0.55$ mm/z
 $a_p=12$ mm
 $a_e=230$ mm



Wear comparison of insert

Verschleißvergleich der WSP

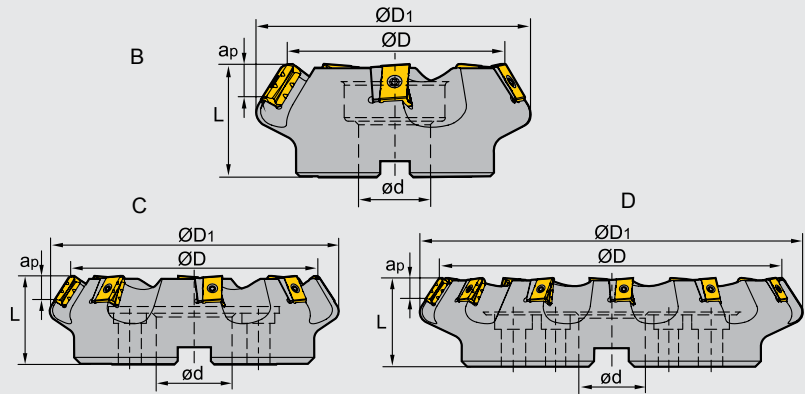


Face Milling Tools · Planfräser

Kr:60°



FMD03 P M



■ Specification of tools · Werkzeug-Beschreibung

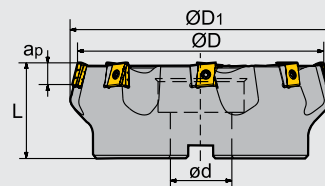
Type · Typ		Stock Lager		Dimension (mm) Abmessung					inserts WSP	No. of teeth Zähne	Coupling Aufnahme	Weight Gewicht (kg)
		R	L	Ø D	Ø D ₁	Ø d	L	a _{pmax}				
FMD03	-125-B40-LN20-06	●	○	125	153	40	63	12	LNKT2007DN-ZR	6	B	4.5
	-160-C40-LN20-08	●	○	160	187	40	63	12		8	C	6.9
	-200-C60-LN20-10	●	○	200	227	60	70	12		10	C	10.5
	-250-C60-LN20-12	●	○	250	276	60	70	12		12	C	13.4
	-315-D60-LN20-15	○	○	315	339	60	80	12		15	D	26.2
	-125-B40-LN25-05	○	○	125	154	40	63	17	LNKT2510-ZR	5	B	4.5
	-160-C40-LN25-06	●	○	160	189	40	63	17		6	C	6.9
	-200-C60-LN25-08	●	○	200	229	60	70	17		8	C	10.5
	-250-C60-LN25-10	●	○	250	278	60	70	17		10	C	16.7
	-315-D60-LN25-12	○	○	315	346	60	80	17		12	D	27.3
-400-D60-LN25-16	○	○	400	427	60	80	17	16	D	47.1		

Face Milling Tools · Planfräser

Kr:75°



FME04 P M K

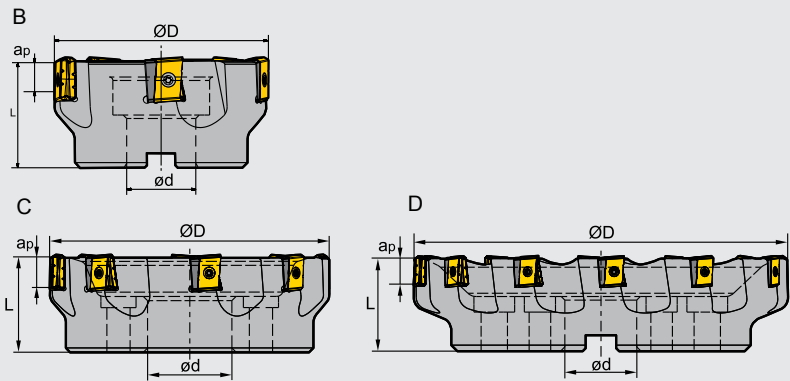


■ Specification of tools · Werkzeug-Beschreibung

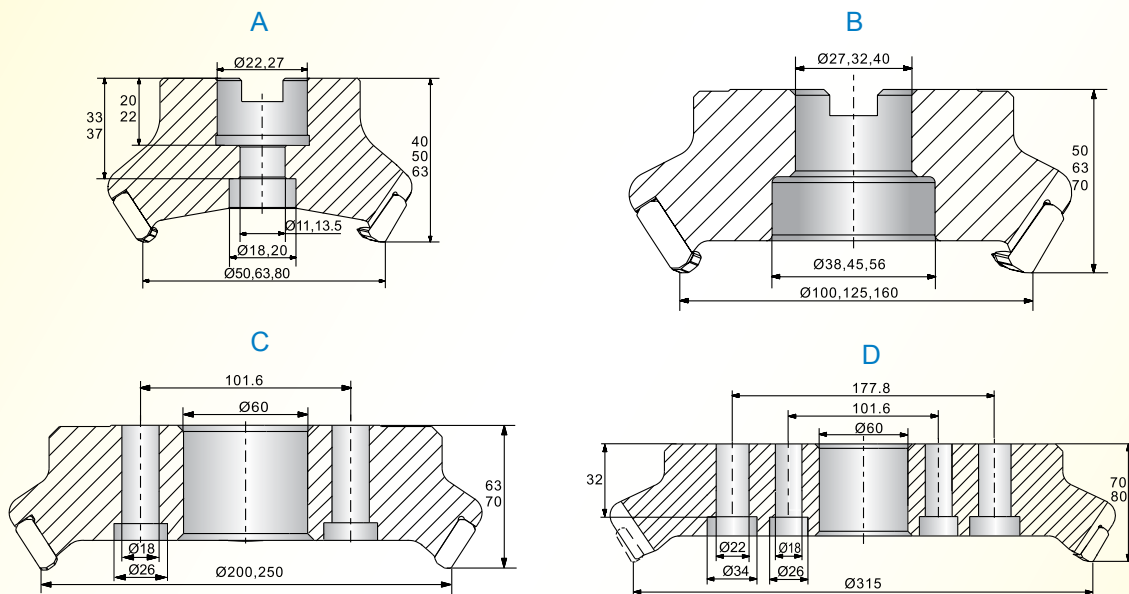
Type · Typ		Stock Lager		Dimension (mm) Abmessung					No. of teeth Zähne	Coupling Aufnahme	Weight Gewicht (kg)
		R	L	Ø D	Ø D ₁	Ø d	L	a _{pmax}			
FME04	-125-B40-LN15-06	●	○	125	137	40	63	8	6	B	3.8
	-160-B40-LN15-08	●	○	160	170	40	63	8	8	C	6.6
	-200-C60-LN15-10	●	○	200	208	60	70	8	10	C	9.6
	-250-C60-LN15-12	○	○	250	257	60	70	8	12	C	13.4
	-315-D60-LN15-16	○	○	315	328	60	80	8	16	D	25.2



FMP03 P M K

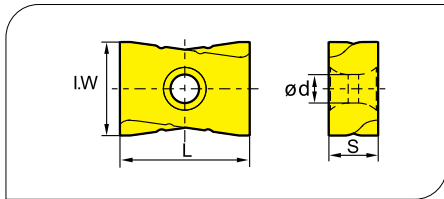


Type	Stock		Ø D	Ø d	L	ap _{max}	No. of teeth	Insert	Coupling	Weight (kg)
	R	L								
FMP03	-050-A22-LN12-04C	● ○	50	22	40	7	4	LNKT120608-ZR	A	0.3
	-050-A22-LN12-05C	○ ○	50	22	40	7	5		A	0.3
	-063-A22-LN12-05C	● ○	63	22	40	7	5		A	0.5
	-063-A22-LN12-06C	○ ○	63	22	40	7	6		A	0.5
	-080-A27-LN12-06C	● ○	80	27	50	7	6		A	1.0
	-080-A27-LN12-07C	○ ○	80	27	50	7	7		A	1.0
	-125-B40-LN15-06	● ○	125	40	63	12	6	LNKT1506EN-ZR	B	3.2
	-160-C40-LN15-08	● ○	160	40	63	12	8		C	5.1
	-200-C60-LN15-10	● ○	200	60	70	12	10		C	7.5
	-250-C60-LN15-12	○ ○	250	60	70	12	12		C	12.2
	-315-D60-LN15-16	○ ○	315	60	80	12	16	D	23.7	
	-125-B40-LN20-06	● ○	125	40	63	16	6	LNKT2007DN-ZR	B	3.3
	-160-C40-LN20-08	● ○	160	40	63	16	8		C	5.3
	-200-C60-LN20-10	● ○	200	60	70	16	10		C	8.8
	-250-C60-LN20-12	● ○	250	60	70	16	12		C	14.0
	-315-D60-LN20-15	○ ○	315	60	80	16	15	D	23.9	
	-125-B40-LN25-05	● ○	125	40	63	20	5	LNKT2510-ZR	B	3.3
	-160-C40-LN25-06	● ○	160	40	63	20	6		C	5.1
	-200-C60-LN25-08	○ ○	200	60	70	20	8		C	8.9
	-250-C60-LN25-10	● ○	250	60	70	20	10		C	12.0
-315-D60-LN25-12	○ ○	315	60	80	20	12	D		21.9	



● Ex Stock / ab Lager ○ On demand / auf Anfrage

■ Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

Workpiece Material / Werkstoff	P	M	K	N	S	YBC301	YBC302	YBC401	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD101	YD201
P Steel / Stahl	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
M Stainless Steel / Rostfreier Stahl	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
K Cast iron / Gusseisen			●									●	●					●	●					●
N Non-ferrite material / Ne Metalle				●																			●	●
S Heat-resistant steel / Warmfester Stahl					●							●	●											

Insert shape / Plattenform	Type / Typ	Dimension (mm) / Abmessung				CVD Coating / CVD Beschicht.						PVD Coating / PVD Beschicht.				Cermet / Cermet	Carbide uncoat. / unbe. Hartmetall								
		L	I.W	S	d	YBC301	YBC302	YBC401	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD101	YD201	
	LNKT120608-ZR	12.7	12	6.35	4.3	●				●															
	LNKT1506EN-ZR	15.875	14	6.35	4.6	●			●		●	●	●					●							
	LNKT2007DN-ZR	20	17	7.94	4.6						●	●		●				●							
	LNKT2510-ZR	25	18	9.525	5.5							●		●				●							

■ Parts · Ersatzteile

Diameter / Ø D	Insert	shim	Screw	Shim Screw	Wrench	Wrench
Ø50 ~ Ø80	LN12	-	I60M4×12	-	WT15IS	-
Ø125 ~ Ø315	LN15	LLN15-ZR	I60M4×12	I60M3×7	WT15IS	WT10IS
Ø125 ~ Ø315	LN20	LLN20R-ZR	I60M4×15	I60M3×7	WT15IS	WT10IS
Ø125 ~ Ø315	LN25	LLN25R-ZR	I60M5×17	I60M3.5×10.4	WT20IT	WT15IS

■ Recommended cutting data · Empfohlene Schnittdaten

Workpiece material / Werkstückstoff	Hardness HB / Härte	Grade / Sorte	Cutting data · Schnittdaten	
			V (m/min)	f (mm/z)
P Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl	≤180	YBG302	180 (150-300)	0.5 (0.2-0.8)
		YBM351	180 (150-300)	0.5 (0.2-0.8)
	180-280	YBG302	150 (120-280)	0.5 (0.2-0.8)
		YBM351	140 (120-280)	0.5 (0.2-0.8)
Alloy tool steel / Leg. Werkzeugstahl	280-350	YBG302	120 (80-250)	0.45 (0.2-0.6)
		YBM351	100 (80-250)	0.45 (0.2-0.6)
M Stainless steel / Rostfreier Stahl	≤270	YBG302	120 (80-200)	0.45 (0.2-0.6)
		YBM351	100 (80-200)	0.45 (0.2-0.6)
K Cast iron / Gusseisen	180-250	YBD152	150 (120-200)	0.3 (0.2-0.5)
		YBD252	130 (110-200)	0.3 (0.2-0.5)





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