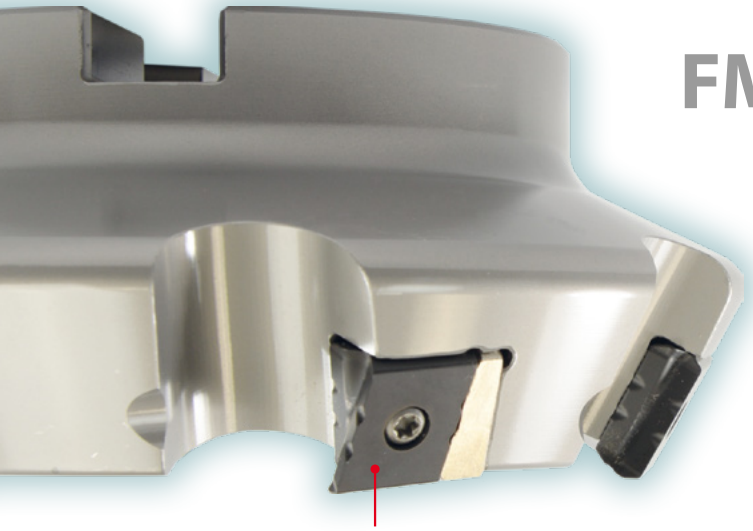
FMD03 FME04 FMP03

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*

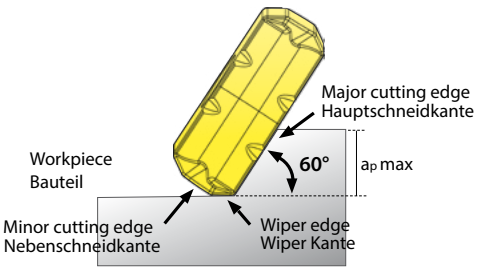
- Specially made steel shim
- *Spezielle Stahl-Unterlage*

	FMD03	FME04	FMP03
Diameter Durchmesser	Ø125~Ø400 mm	Ø125~Ø315mm	Ø50~Ø315mm

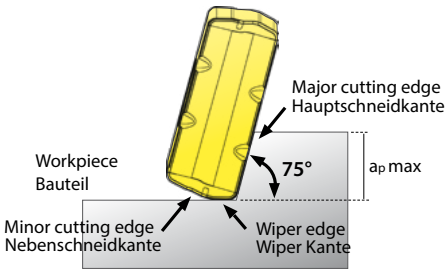
Kr: 60°

Kr: 75°

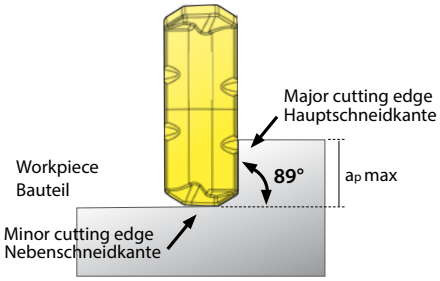
Kr: 89°



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

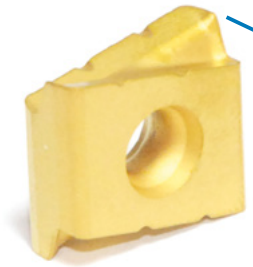


LNKT15** a_p max = 10 mm



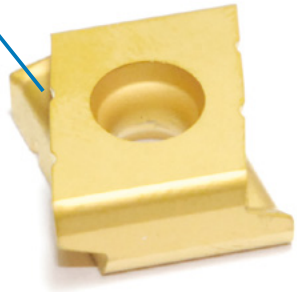
LNKT12** a_p max = 7 mm
LNKT15** a_p max = 12 mm
LNKT20** a_p max = 16 mm
LNKT25** a_p max = 20 mm

- 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

Spanbrecher
Chipbreaker



Better surface quality
Bessere Oberflächerqualität

Economy & Wide Application
Wirtschaftlichkeit & Breites Anwendungsfeld

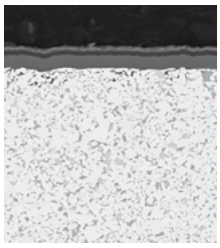
One insert for general machining from roughing to semi-finishing
Eine Platte für die allgemeine Bearbeitung von Schruppen bis Vorschlichten

Saving processing and storage costs
Einsparung von Bearbeitungs sowie Lagerkosten

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

YBM351

P M K S

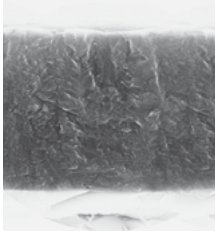


MT-TiCN+Al2 O3 CVD coated carbide grade with very good strength and impact resistance. It is for milling of alloy steel and stainless steel.

CVD Beschichtete Hartmetallsorte MT-TiCN+Al_2O_3 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 Al_2O_3 Beschichtung. Zum Fräsen von Guss und legiertem Stahl.

Case study for FMD03

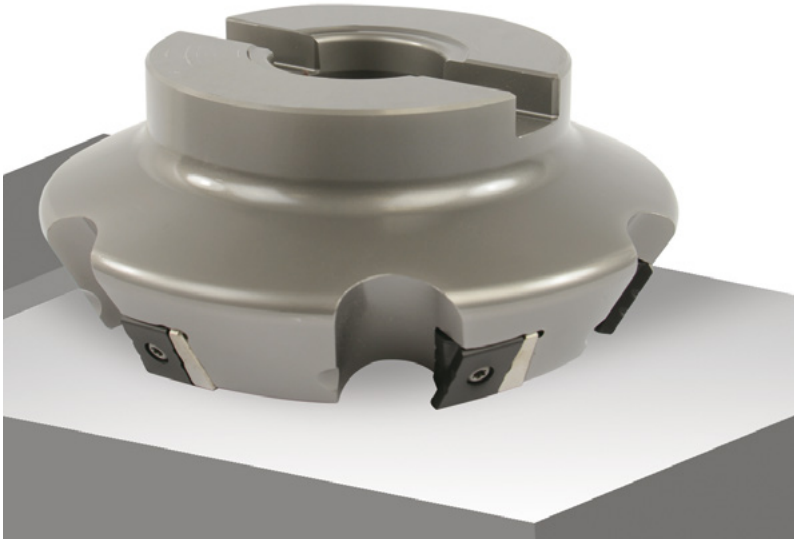
Bearbeitungsbeispiel für FMD03

Tool · Werkzeug: FMD03-315-D60-LN25-12
Inserts · WSP: LNKT2510-ZR/YBG302

Workpiece material
Werkstückstoff: ASTMA743 CA-6NM class (HB200)
(42CrMo4)
Cooling system
Kühlsystem: dry cutting, trocken

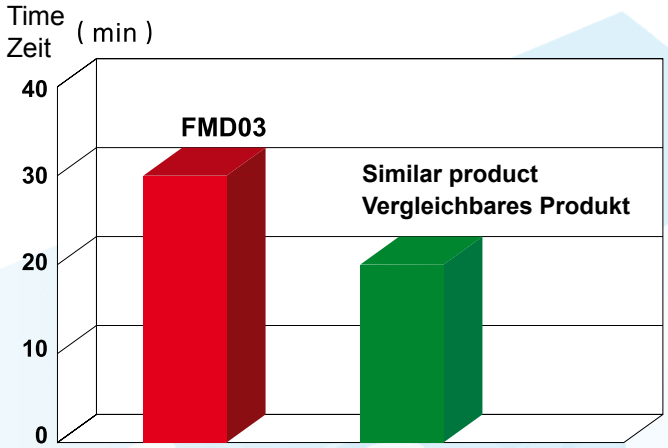
Machine
Maschine:
NC floor Type · Typ boring and milling machine,
spindle power ≥ 30KW
Bohr-Fräszentrum, Spindelkraft ≥30 KW

Cutting data
Schnittdaten: Vc=120m/min
fz=0.55mm/z
ap=12mm
ae=230mm



Wear comparison of insert

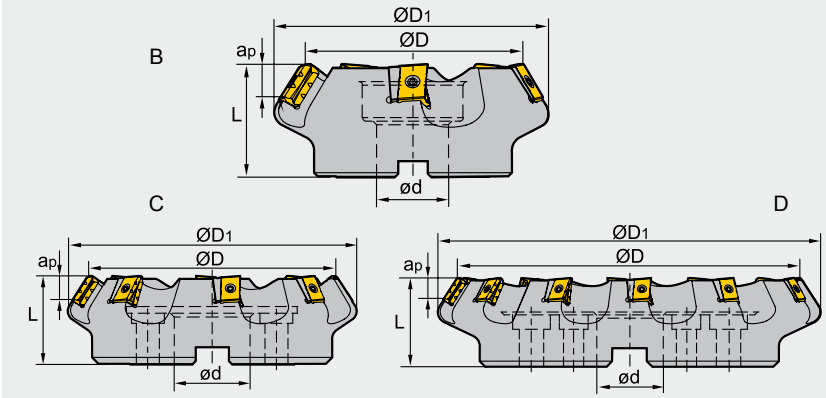
Verschleißvergleich der WSP



Face Milling Tools · Planfräser

Kr:60°

FMD03 P M K



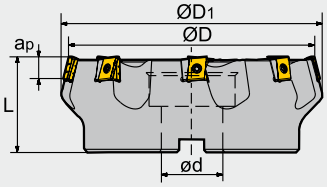
Specification of tools · Werkzeug-Beschreibung

Type Typ		Stock Lager R	Stock Lager L	Dimension(mm) Abmessung ØD	ØD1	Ød	L	apmax	No.of Teeth Zähne	Insert WSP	Coupling Aufnahme	Weight Gewicht (kg)
FMD03	**-100-B32-LN20-05**	●		100	129	32	63	12	5	LNKT2007DN-ZR	B	3.02
	-125-B40-LN20-06	●	○	125	153	40	63	12	6		B	4.5
	-160-C40-LN20-08	●	○	160	187	40	63	12	8		C	6.9
	-160-C40-LN20-09	●		160	187	40	63	12	9		C	6.7
	-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	16	5	LNKT2510-ZR	B	4.5
	-160-C40-LN25-06	●	○	160	189	40	63	16	6		C	6.9
	-200-C60-LN25-08	●	○	200	229	60	70	16	8		C	10.5
	-250-C60-LN25-10	●	○	250	278	60	70	16	10		C	16.7
	-315-D60-LN25-12	●	○	315	346	60	80	16	12		D	27.3
	-400-D60-LN25-16	●	○	400	427	60	80	16	16		D	47.1

Face Milling Tools · Planfräser

Kr:75°

FME04 P M K

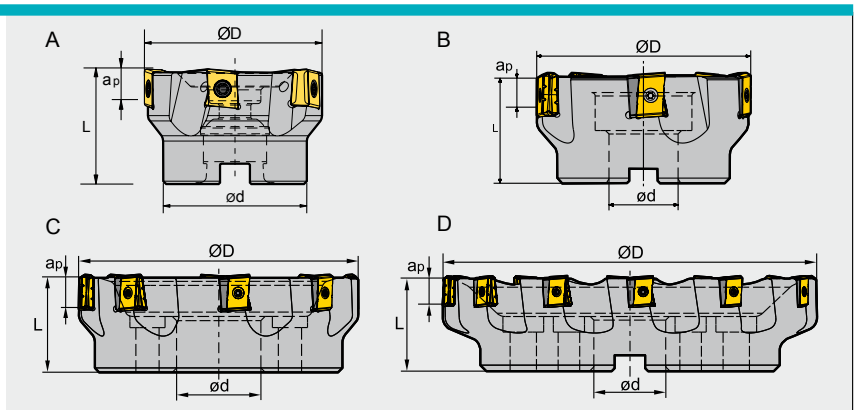


Specification of tools · Werkzeug-Beschreibung

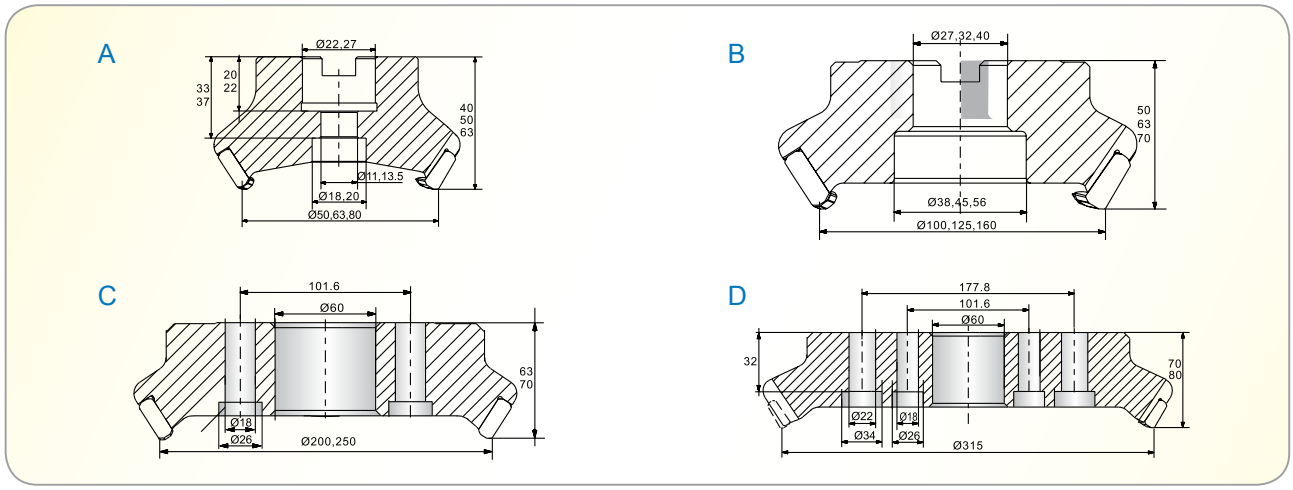
Type · Typ		Stock Lager R	Stock Lager L	Dimension (mm) Abmessung Ø D	Ø D1	Ø d	L	apmax	No. of teeth Zähne	Coupling Aufnahme	Weight Gewicht (kg)
FME04	-125-B40-LN15-06	●	○	125	137	40	63	10	6	B	3.8
	-160-B40-LN15-08	●	○	160	170	40	63	10	8	C	6.6
	-200-C60-LN15-10	●	○	200	208	60	70	10	10	C	9.6
	-250-C60-LN15-12	●	○	250	257	60	70	10	12	C	13.4
	-315-D60-LN15-16	●	○	315	328	60	80	10	16	D	25.2

Kr:89°

FMP03 P M K

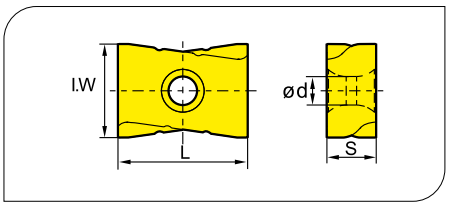


Type Typ		✻	Stock Lager R	Stock Lager L	Ø D	Ø d	L	a_{pmax}	No. of teeth Zähne	Insert WSP	Coupling Aufnahme	Weight Gewicht (kg)
FMP03	**-050-A22-LN12-04C**	✻	●	○	50	22	40	7	4	LNKT120608-ZR	A	0.3
	-050-A22-LN12-05C	✻	○	○	50	22	40	7	5		A	0.3
	-063-A22-LN12-05C	✻	●	○	63	22	40	7	5		A	0.5
	-063-A22-LN12-06C	✻	○	○	63	22	40	7	6		A	0.5
	-063-A27-LN12-05C	✻	●		63	27	50	7	5		A	0.64
	-063-A27-LN12-06C	✻	●		63	27	50	7	6		A	0.65
	-063-A27-LN12-07C	✻	●		63	27	50	7	7		A	0.64
	-080-A27-LN12-06C	✻	●	○	80	27	50	7	6		A	1.0
	-080-A27-LN12-07C	✻	○	○	80	27	50	7	7		A	1.0
	-100-B32-LN12-06		○		100	32	50	7	6		B	1.47
	-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
	-160-C40-LN15-09		●		160	40	63	12	9		C	
	-200-C60-LN15-10		●	○	200	60	70	12	10		C	7.5
	-250-C60-LN15-12		○	○	250	60	70	12	12		C	12.2
	-250-C60-LN15-13		○		250	60	70	12	13		C	
	-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
	-160-C40-LN20-09		●		160	40	63	16	9		C	
	-200-C60-LN20-10		●	○	200	60	70	16	10		C	8.8
	-200-C60-LN20-11		●		200	60	70	16	11		C	
	-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

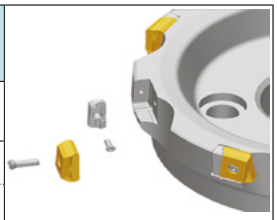
Unfavorable Machining Condition
Ungünstige Bearbeitungsbedingungen

Workpiece Material Werkstoffe		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG102	YB9320	YBG205	YBG202	YBG212	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	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG102	YB9320	YBG205	YBG202	YBG212	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						●		●						●							

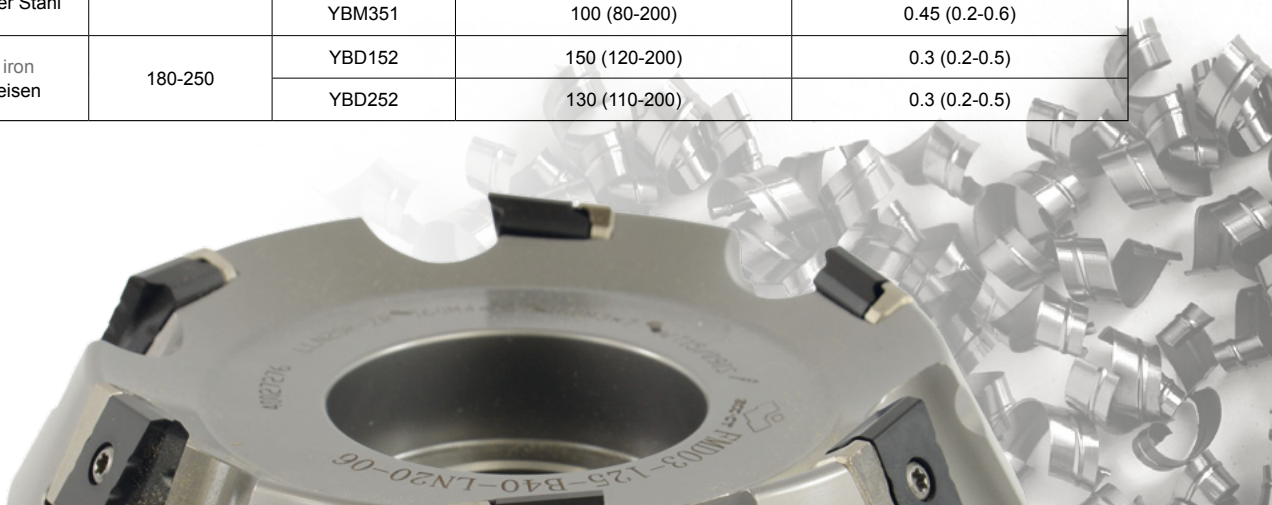
Parts · Ersatzteile

Diameter Durchmesser Ø D	Insert Platte	shim Unterlage	Screw Schraube	Shim Screw Unterlags-schraube	Wrench Schlüssel	Wrench Schlüssel
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)
	High-carbon steel Alloy steel Hochlegierter Kohlenstoffstahl Leg. Stahl	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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