PRODUCT NEWS

PN-E-008

SERIES EXPANSION

DIJET

QM MAX GII

High efficient roughing tool

GMX / MXG type

- Bore type : φ50~66
- Modular type : φ16~42
- Shank type : φ16~32

DIJET GmbH

www.dijet.de

QM MAX GII

Achieving high metal removal rates!
High efficiency machining for versatile applications

Bore Type	Modular Type	Shank Type
φ50～φ66	φ16～φ42	φ16～φ32

Feature 1

Optimized cutting edge for a wide range of applications

ENMU Type

For high feed
with chipbreaker
(low cutting force)

Double sided insert

ENMQ Type

For hardened materials
flat top insert
(with strengthened cutting edge)

Optimized cutting edge

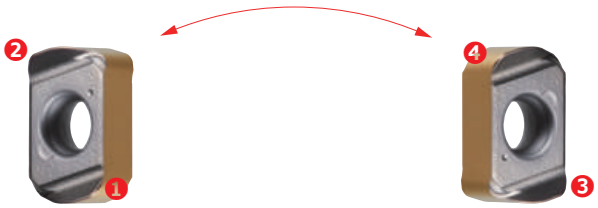
Feature 2

Possible to stable high feed machining in case of long overhung length over L/D=6

Feature 3

Economical double sided insert with 4 cutting edges for various types of materials;
Carbon steel, Hardened material <upto 62HRC>, Stainless steel, Titanium alloy

● double sided insert with 4 cutting edges



● Line up

Low cutting force → Edge strength

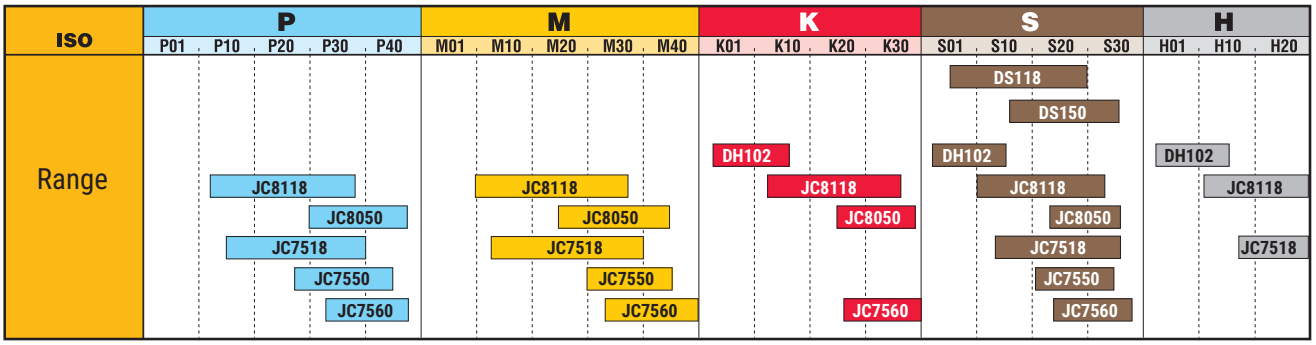
ENMU100412ZER-SL
- Low cutting force
- Sharp cutting edge
- Grade C7550, JC7518, DS118, DS150

ENMU100412ZER-PH
- For general applications
- Grade JC8118, JC8050, JC7560

ENMU100312ZER-HL
- For hardened materials up to 60HRC
- enhanced cutting edge strength but retains sharpness
- Grade DH102

ENMQ100312ZER
- Flat top insert
- Grade DH102
- For hardened materials over 60HRC

● Insert grades

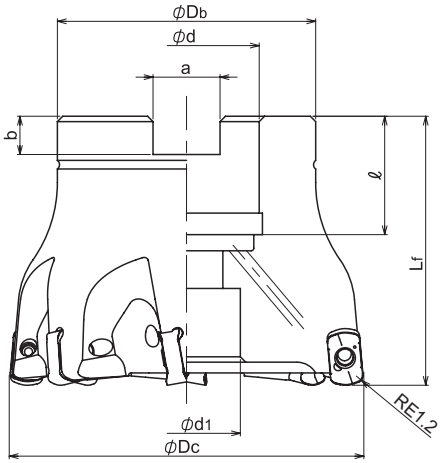


Feature 4

Excellent in ramping and helical interpolation, and possible to high efficient pocket milling

Through coolant hole | G - Body | Face Milling | Copy Milling | Pocket Milling | Helical Interpolation | Plunge Milling

GMX TYPE Bore Type



Cat.No	Stock	No. of inserts	Dimensions (mm)								Weight (kg)	Inserts
			φDc	Lf	φDb	φd	φd1	a	b	ℓ		
GMX-7050R-22	●	7	50	50	40	22	17	10.4	6.3	20	0.35	ENMU100412ZER-** ENM*100312ZER-**
GMX-7052R-22	●		52								0.40	
GMX-7063R-22	●		63		48						0.64	
GMX-7066R-27	●		66			27	20	12.4	7	22	0.66	

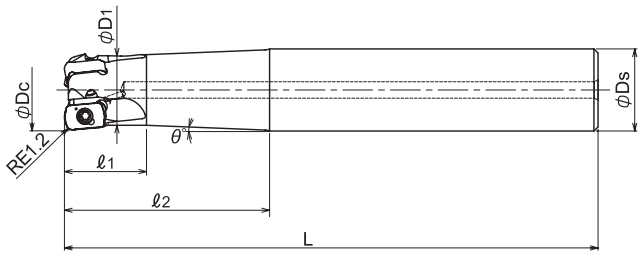
Note) All cutters are supplied without inserts or wrenches.

Screw	Torque(N.m)	Wrench
TSW-2567H	1.1	A-08

● : Standard stock items ◯ : Stock in Japan

Through coolant hole | Face Milling | Copy Milling | Pocket Milling | Helical Interpolation | Plunge Milling

GMX TYPE Shank Type



Cat.No.	Stock	No. of inserts	Dimensions (mm)						θ° taper angle	Insert
			φDc	ℓ1	ℓ2	L	φD1	φDs		
GMX-2016-30-S16	●	2	16	16	30	100	14	16	3.5°	ENMU100412ZER-** ENM*100312ZER-**
GMX-2016-50-S16	●				50	150			1.2°	
GMX-3020-50-S20	●	3	20	20		130	17.2	20	2.3°	
GMX-3020-80-S20	●				80	160			1°	
GMX-4025-60-S25	●	4	25	25	60	140	22	25	2°	
GMX-4025-100-S25	●				100	180			0.9°	
GMX-5032-70-S32	●	5	32	30	70	150	29	32	1.5°	
GMX-5032-120-S32	●				120	200			0.6	

Note) All cutters are supplied without inserts or wrenches.

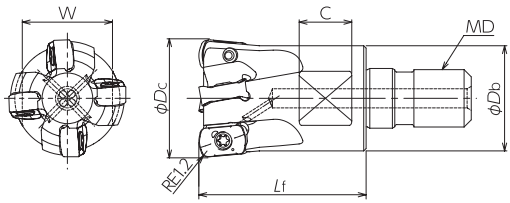
Screw	Torque(N.m)	Wrench
TSW-2567H	1.1	A-08

● : Standard stock items ◯ : Stock in Japan

MXG TYPE

Modular Type

Through coolant hole | G - Body | Face Milling | Copy Milling | Pocket Milling | Helical Interpolation | Plunge Milling



Cat.No.	Stock	No. of inserts	Dimensions (mm)						Insert
			φDc	Lf	φDb	MD	C	W	
MXG-2016-M8	●	2	16	23	14	M8	8	12	ENMU100412ZER-** ENM*100312ZER-**
MXG-2017-M8	●		17						
MXG-3020-M10	●	3	20	30	18	M10	9	14	
MXG-3021-M10	●		21						
MXG-3022-M10	○		22						
MXG-3025-M12	●	4	25	35	22	M12	11	19	
MXG-4025-M12	●								
MXG-4026-M12	●		26		22.5				
MXG-4028-M12	○		28		23.6				
MXG-5030-M16	●	5	30	43	27	M16	12	22	
MXG-5032-M16	●		32		29				
MXG-5035-M16	●		35						
MXG-6040-M16	●	6	40		32		14	26	
MXG-6042-M16	●		42						

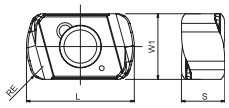
Note) All cutters are supplied without inserts or wrenches.

Screw	Torque(N.m)	Wrench
TSW-2567H	1.1	A-08

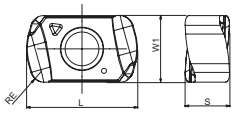
● : Standard stock items ○ : Stock in Japan

GMX/MXG TYPE — Insert

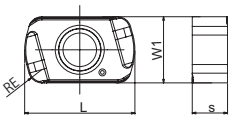
ENMU100412ZER-PH



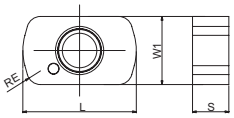
ENMU100412ZER-SL



ENMU100312ZER-HL



ENMQ100312ZER

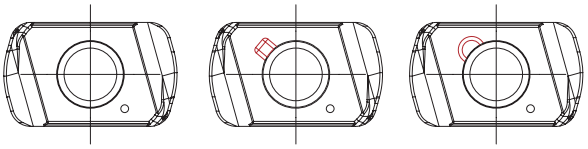


Cat.No.	Tolerance	PVD Coating								Dimensions (mm)			
		DH102	JC7518	JC7550	JC7560	JC8050	JC8118	DS118	DS150	RE	L	W1	S
ENMU100412ZER-PH	M				●	●	●			1.2	10	6	4
ENMU100412ZER-SL			●	●				●	●				
ENMU100312ZER-HL		●											3.2
ENMQ100312ZER		●											

Note) 10 inserts per case.

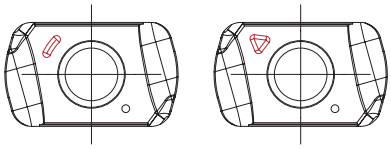
GRADE MARKING

ENMU100412ZER-PH



JC8118 JC8050 JC7560

ENMU100412ZER-SL



JC7518/DS118 JC7550/DS150

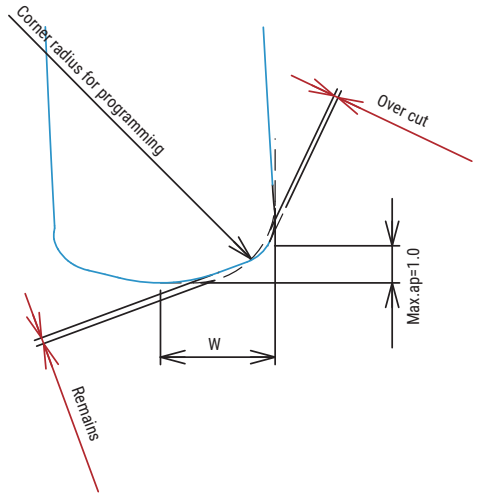
● : Standard stock items ◯ : Stock in Japan

■ Insert selection guide

Materials	Grade	Cat.No.			
		ENMU100412ZER-PH	ENMU100412ZER-SL	ENMU100312ZER-HL	ENMQ100312ZER
Chip breaker		For general milling	Low cutting force	For Hardened materials	Flat top insert
Carbon steel (S50C, S55C) below 250HB	JC8118	○			
	JC8050	◎			
	JC7560	●			
	JC7550				
	JC7518		☆		
	DH102				
	DS118				
	DS150				
Tool & die steel (SKD61, SKD11) below 255HB	JC8118	○			
	JC8050	◎			
	JC7560	●			
	JC7550				
	JC7518		☆		
	DH102				
	DS118				
	DS150				
Mold steel (HPM7, PX5, P20) 30 - 36HRC	JC8118	○			
	JC8050	◎			
	JC7560	●			
	JC7550				
	JC7518		☆		
	DH102				
	DS118				
	DS150				
Mold steel (NAK80, HPM1, P21) 38 - 43HRC	JC8118	◎			
	JC8050	●			
	JC7560				
	JC7550				
	JC7518		☆		
	DH102				
	DS118				
	DS150				
Hardened die steel (SKD61, DAC, DHA) 42 - 52HRC	JC8118	◎			
	JC8050				
	JC7560				
	JC7550				
	JC7518		☆		
	DH102			●	
	DS118				
	DS150				
Hardened die steel (SKD11, SLD, DC11) 55 - 62HRC	JC8118	×			
	JC8050	×			
	JC7560	×			
	JC7550		×		
	JC7518		×		
	DH102			○	◎
	DS118				
	DS150				
Grey cast iron (FC、FCD) below 300HB	JC8118	◎			
	JC8050	○			
	JC7560	●			
	JC7550				
	JC7518				
	DH102				
	DS118				
	DS150				
Stainless steel (SUS304) below 250HB	JC8118				
	JC8050	●			
	JC7560				
	JC7550		○		
	JC7518				
	DH102				
	DS118				
	DS150		◎		
Titanium alloy (Ti-6Al-4V)	JC8118				
	JC8050	●			
	JC7560				
	JC7550		○		
	JC7518				
	DH102				
	DS118				
	DS150		◎		
Heat resistant alloy (INCO718)	JC8118				
	JC8050	●			
	JC7560				
	JC7550				
	JC7518		○		
	DH102				
	DS118		◎		
	DS150				

◎ : First choice ○ : For general milling ● : For unstable milling ☆ : For light cutting resistance × : Not recommended

Definition of Corner Shape for Programming



Cat.No.	W	Corner radius for programming	Remains	Over cut
ENMU100412ZER-PH ENMU100412ZER-SL	3.1	1.0	0.51	0
		1.5 (Standard)	0.36	0
		2.0	0.22	0.05

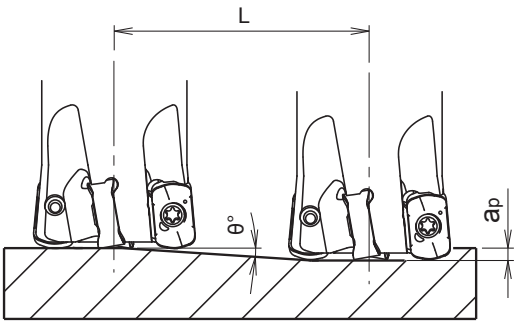
(mm)

Cat.No.	W	Corner radius for programming	Remains	Over cut
ENMU100312ZER-HL ENMQ100312ZER	3.3	1.0	0.55	0
		1.5 (Standard)	0.41	0
		2.0	0.26	0.04

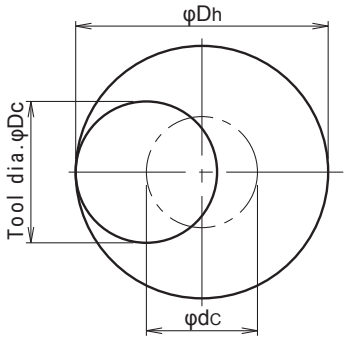
(mm)

■ Recommended Data for Profile Milling

Ramping



Helical interpolation



- Calculation of tool pass dia.

$$\varphi dc = \varphi Dh - \varphi Dc$$

Tool pass dia. | Bore dia. | Tool dia.

- Depth of cut per one circuit should not exceed max. depth of cut Ap
- Down cutting is recommended, tool pass rotation should be counterclockwise

- In case of ramping and helical interpolation, apply 70% or less feed (Vf) from standard cutting condition table
- In case of drilling, apply 50% or less Z axis feed (F) from standard cutting condition table
- Long consecutive chips may result in case of drilling, confirm safe operating conditions

Cat.No.	Tool dia.	Effective Cutting dia.		Max. depth of cut: ap	Ramping	
		Insert			Ramping Max. ramping Angle θ	Max. depth of cut (ap) Total cutting length:L (mm)
		ENMU100412ZER-※※	ENM※100312ZER-※※			
MXG-2016-M8	16	10.1	9.6	0.7	1°36'	25.1
MXG-2017-M8	17	11	10.5	0.7	1°36'	25.1
MXG-3020-M10	20	13.9	13.5	1	1°30'	38.2
MXG-3021-M10	21	14.9	14.5	1	1°30'	38.2
MXG-＊025-M12	25	18.9	18.4	1	1°12'	47.7
MXG-4026-M12	26	19.9	19.4	1	1°12'	47.7
MXG-5030-M16	30	23.9	23.4	1	0°54'	63.6
MXG-5032-M16	32	25.8	25.4	1	0°54'	63.6
MXG-5035-M16	35	28.8	28.4	1	0°42'	81.8
MXG-6040-M16	40	33.8	33.4	1	0°30'	114.5
MXG-6042-M16	42	35.8	35.4	1	0°30'	114.5
GMX-2016-＊＊-S16	16	10.1	9.6	0.7	1°36'	25.1
GMX-3020-＊＊-S20	20	13.9	13.5	1	1°30'	38.2
GMX-4025-＊＊-S25	25	18.9	18.4	1	1°12'	47.7
GMX-5032-＊＊-S32	32	25.8	25.4	1	0°54'	63.6
GMX-7050R-＊＊	50	43.8	43.4	1	0°24'	143.2
GMX-7052R-22	52	45.8	45.4	1	0°24'	143.2
GMX-7063R-＊＊	63	56.8	56.4	1	0°18'	190.9
GMX-7066R-＊＊	66	59.8	59.4	1	0°18'	190.9

Cat.No.	Tool dia.	Helical interpolation			Max.drilling depth ：Z	
		Min.Bore dia.		Max. Bore dia.	Insert	
		Insert				
		ENMU100412ZER-※※	ENM※100312ZER-※※		ENMU100412ZER-※※	ENM※100312ZER-※※
MXG-2016-M8	16	22	21	30	0.3	0.2
MXG-2017-M8	17	24	23	32	0.3	0.2
MXG-3020-M10	20	30	29	38	0.4	0.2
MXG-3021-M10	21	32	31	40	0.4	0.2
MXG-＊025-M12	25	40	39	48	0.5	0.3
MXG-4026-M12	26	42	41	50	0.5	0.3
MXG-5030-M16	30	50	49	58	0.6	0.4
MXG-5032-M16	32	54	53	62	0.6	0.4
MXG-5035-M16	35	60	59	68	0.6	0.4
MXG-6040-M16	40	70	69	78	0.7	0.5
MXG-6042-M16	42	74	73	82	0.7	0.5
GMX-2016-＊＊-S16	16	22	21	30	0.3	0.2
GMX-3020-＊＊-S20	20	30	29	38	0.4	0.2
GMX-4025-＊＊-S25	25	40	39	48	0.5	0.3
GMX-5032-＊＊-S32	32	54	53	62	0.6	0.4
GMX-7050R-＊＊	50	90	89	98	0.8	0.6
GMX-7052R-22	52	94	93	102	0.8	0.6
GMX-7063R-＊＊	63	116	115	124	0.8	0.6
GMX-7066R-＊＊	66	122	121	130	0.8	0.6

Recommended Cutting Conditions

Material	Insert	Grade	Vc	fz	ap	ae
Carbon Steel below 250HB	- PH	JC8050 (JC7560)	130- 180	1.2	0.4 - 1.0	0.7 Dc
Tool & Die Steel below 255HB	- PH	JC8050 (JC7560)	130 - 180	1.2	0.4 - 1.0	0.7 Dc
Mold Steel 30-36HRC	- PH	JC8050 (JC7560)	130 - 160	1.2	0.4 - 1.0	0.7 Dc
Mold Steel 38-43HRC	- PH	JC8118 (JC8050)	70- 100	0.8 - 1.1	0.3 - 0.8	0.7 Dc
Hardened Die Steel 42-52HRC	- PH (- SL)	JC8118 (JC7518)	70 - 90	0.8 - 1.1	0.1 - 0.6	0.6 Dc
Hardened Die Steel 55-62HRC	ENMQ (- HL)	DH102	60 - 80	0.25 - 0.3	0.1 - 0.2	0.4 Dc
Grey Cast Iron	- PH	JC8118 (JC8050)	150 - 200	1.2 - 1.5	0.4 - 1.0	0.7 Dc
Nodular Cast Iron	- PH	JC8118 (JC8050)	150 - 200	1.2 - 1.5	0.4 - 1.0	0.7 Dc
Austenitic Stainless Steel	- SL	JC7550 (JC7518)	100 - 120	0.8 - 1.0	0.3 - 0.8	0.6 Dc
Precipitation hardening Stainless Steel	- SL (- PH)	JC7550 (JC8050)	90 - 100	0.6 -0.7	0.2 - 0.6	0.6 Dc
Duplex Stainless Steel	-SL (-PH)	JC7550 (JC8050)	90 - 100	0.2 - 0.3	0.3 - 0.8	0.6 Dc
Titanium Alloy	- SL	DS150 (DS118)	50 - 60	0.6 - 0.7	0.3 - 0.7	0.6 Dc
Heat Resistant Alloy	- SL	JC7518 (JC7550)	20 - 30	0.3	0.2~0.7	0.6 Dc

Note
1. Please adjust cutting conditions according to machine rigidity or work rigidity. (the above table is guide for cutting on a BT50 machine.)
2. In case of chatter ocurring, recommended to reduce ap or rpm and keep feed per tooth.
3. ap should be reduced when using on low rigidity machine.
4. Use air blow.

HEADQUARTER

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