

**PRODUCT
NEWS**

PN-E-006

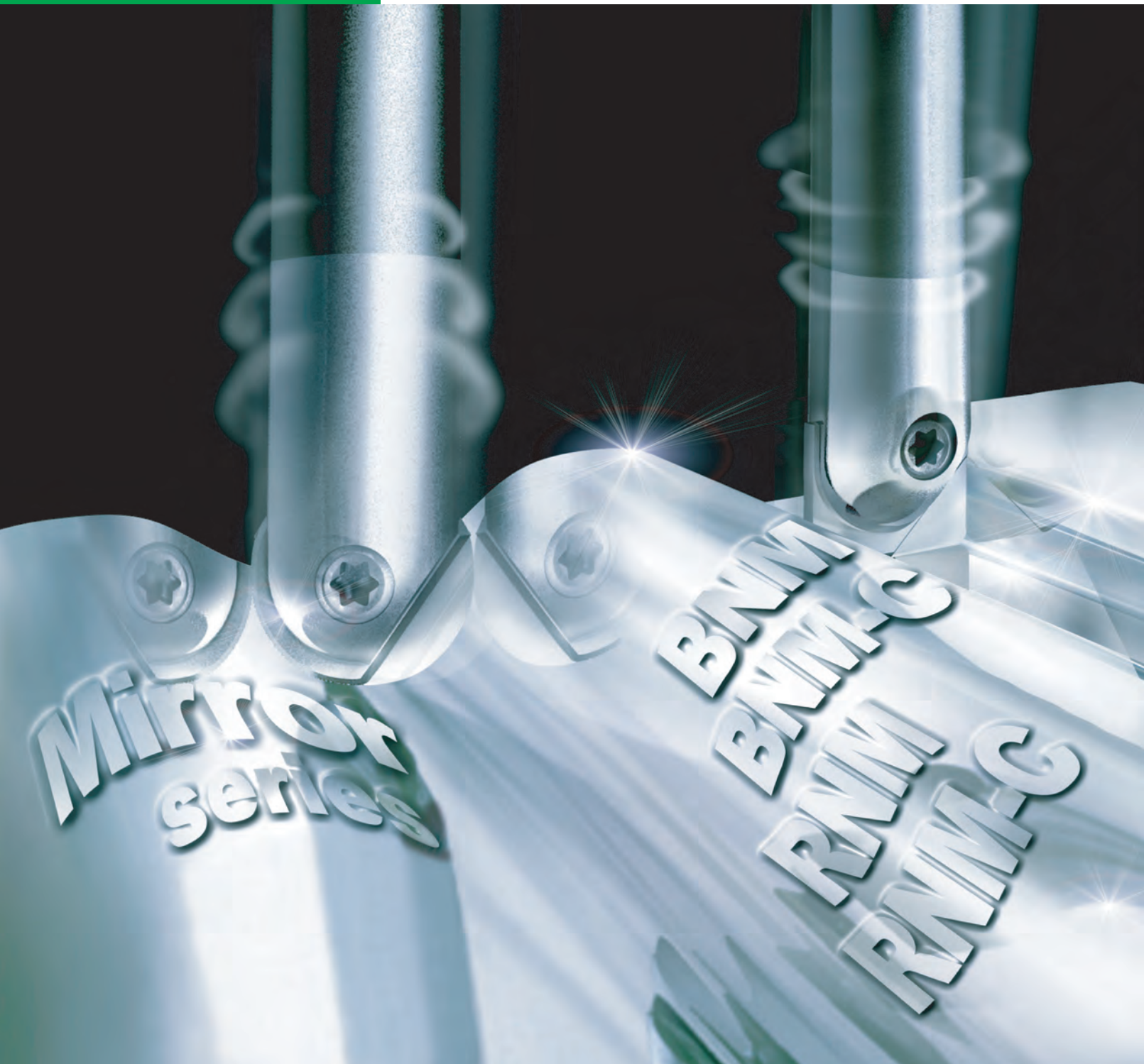
SERIES EXPANSION



MIRROR ^{BNM & RNM}
Series

“Mirror Ball & Mirror Radius”

High Precision Indexable Ball Nose End Mill & Radius End Mill



**Mirror
series**

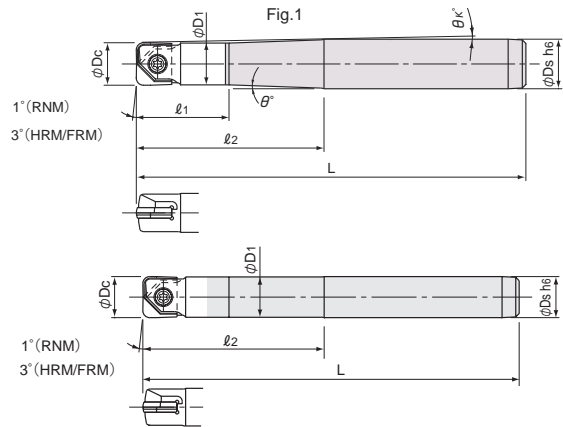
**BNM-C
BNM-C
RNM-C
RNM-C**

DIJET GmbH

www.dijet.de



High Precision Indexable Radius End Mill with 2 effective cutting edges



Carbide shank holders

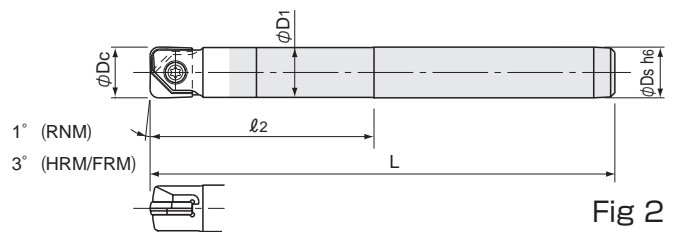
Cat. No.	stock	Dimensions(mm)							Parts		Insert	Fig.	
		ϕD_c	ℓ_1	ℓ_2	L	ϕD_1	θ°	θ_k	ϕD_s	Screw			Wrench
RNMS-060015U-S06C	●	6	—	15	60	5.7	—	—	6	FSW-2005H	A-06	RNM-060... HRM-060... FRM-060...	2
RNMM-060030U-S06C	●			30	80								
RNMS-080020U-S08C	●	8	—	20	70	7.6	—	—	8	FSW-2506H	A-07	RNM-080... HRM-080/090... FRM-080...	2
RNMM-080040U-S08C	●			40	90								
RNMM-080053T-S12C	●	8	20	53	110	7.8	2°	2°12'	12	FSW-3007H	A-08	RNM-100... HRM-100/110... FRM-100...	1
RNML-080075S-S08C	●			75	140								8
RNMS-100025U-S10C	●	10	—	25	75	9.5	—	—	10	FSW-3007H	A-08	RNM-100... HRM-100/110... FRM-100...	2
RNMM-100050U-S10C	●			50	100								
RNMM-100050S-S10C	●	10	22.5	53	110	9.8	1°	1°7'	12	FSW-3007H	A-08	RNM-100... HRM-100/110... FRM-100...	1
RNMM-100053T-S12C	●			75	140								10
RNML-100075S-S10C	●	10	—	75	140	9.5	—	—	10	FSW-3007H	A-08	RNM-100... HRM-100/110... FRM-100...	2
RNMS-120030U-S12C	●			30	80								
RNMM-120060U-S12C	●	12	—	60	110	11.5	—	—	12	FSW-3509H	A-10	RNM-120/130... HRM-120/130... FRM-120...	2
RNMM-120053S-S12C	●			53	110								
RNML-120095S-S12C	●	12	—	95	160	11.8	—	—	12	FSW-3509H	A-10	RNM-120/130... HRM-120/130... FRM-120...	2
RNMS-160035U-S16C	●			35	90								
RNMM-160070S-S16C	●	16	—	70	140	15.5	—	—	16	FSW-4013H	A-15	RNM-160/170... HRM-160/170... FRM-160/170...	2
RNMM-160090S-S16C	●			90	160								
RNML-160120S-S16C	●	16	—	120	210	15.8	—	—	16	FSW-4013H	A-15	RNM-160/170... HRM-160/170... FRM-160/170...	2
RNML-160150S-S16C	○			150	220								

All cutters are supplied without inserts or wrenches

Screw	Torque (N·m)
FSW-2005H	0.5
FSW-2506H	0.9
FSW-3007H	1.2
FSW-3509H	2.0
FSW-4013H	3.0



Precision Indexable Radius End Mill with 2 effective cutting edges



Carbide shank holders

Cat. No	Stock	Dimensions(mm)					Parts		Insert	Fig.
		ϕD_c	ℓ_2	L	ϕD_1	ϕD_s	Screw	Wrench		
RNMS-200040U-S20C	○	20	40	105	19.5	20	FSW-5016H	A-20W	RNM-200/210... HRM-200/220... FRM-200/210...	2
RNMM-200075S-S20C	●		75	141	19.8					
RNMM-200105S-S20C	●		105	180						
RNML-200150S-S20C	●		150	220						
RNML-200170S-S20C	●		170	250						
RNMM-250090S-S25C	●	25	90	166	24.8	25	FSW-6020	A-30	RNM-250/260... FRM-250...	
RNMM-250140S-S25C	○		140	220						
RNML-250190S-S25C	○		190	260						
RNMM-300106S-S32C	○	30	106	186	29.8	32	FSW-8025S	A-30	RNM-300... FRM-300...	
RNMM-320106S-S32C	○				31.8					

All cutters are supplied without inserts or wrenches

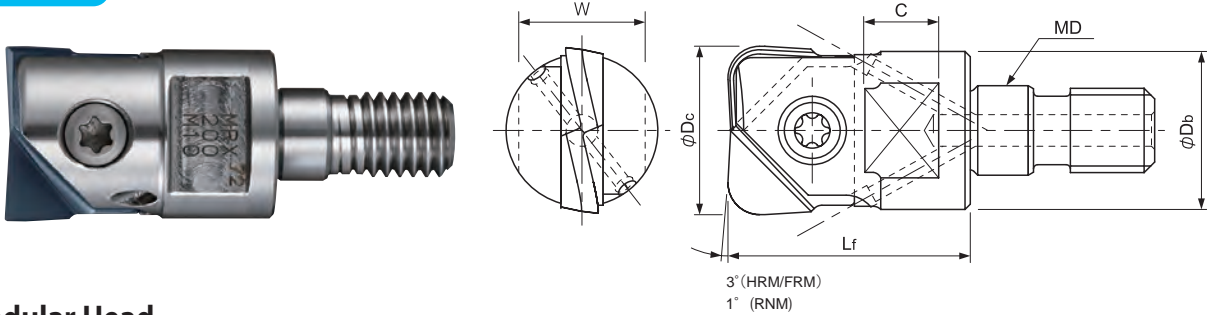
Screw	Torque (N · m)
FSW-5016H	4.0
FSW-6020	5.0
FSW-8025S	6.0

Precision Indexable Radius End Mill with 2 effective cutting edges



- RNM/Corner radius accuracy : below $\pm 0.010\text{mm}$, Bottom edge run out from radius to radius : below $5 \mu\text{m}$
- HRM/Corner radius accuracy : $\pm 0.015\text{mm}$
- FRM/Corner radius accuracy : $\pm 0.010\text{mm}$
- O.D. run out / Modular head+MSN shank : below $15 \mu\text{m}$

coolant thru



Modular Head

Cat. No.	Stock	Dimensions(mm)						Parts		Insert
		ϕD_c	Lf	ϕD_b	MD	C	W	Screw	Wrench	
MRX-100-M6	●	10	18	9.7	M6	6.5	8	FSW-3007H	A-08	RNM-100...; HRM-100/110... FRM-100...
MRX-120-M6	●	12	20	11.5	M6			FSW-3509H	A-10	RNM-120/130... HRM-120/130... FRM-120...
MRX-160-M8	●	16	23	15	M8	8	12	FSW-4013H	A-15	RNM-160/170... HRM-160/170... FRM-160/170...
MRX-200-M10	●	20	30	18.5	M10			14	FSW-5016H	A-20W
MRX-250-M12	●	25	35	24	M12	10	17	FSW-6020	A-30	RNM-250/260... FRM-250...
MRX-300-M16	○	30	43	29	M16	12.5	22	FSW-8025S	A-40	RNM-300... FRM-300...
MRX-320-M16	●	32		30	M16					RNM-320... FRM-320...

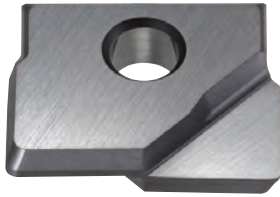
All cutters are supplied without inserts or wrenches

Screw	Torque (N · m)
FSW-3007H	1.2
FSW-3509H	2.0
FSW-4013H	3.0
FSW-5016H	4.0
FSW-6020	5.0
FSW-8025S	6.0

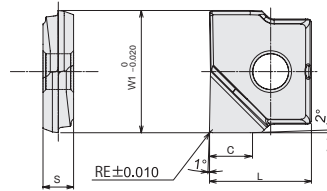
Spanner (for M6,M8)

	Cat. No.	MD	Torque	Width across flat W	Thickness	Length
	DS-08	M6	8.0N·m	8	4	85
	DS-12	M8	16N·m	12	4	93

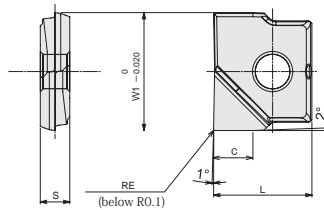
※prevent over tightening by short grip



Corner radius accuracy
±0.010mm



●RNM-□□□-R0



RNM

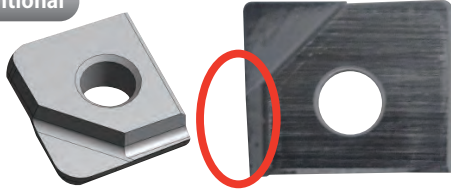
Cat. No.	PVD coating		Diamond coating	Uncoated	Dimensions (mm)				
	DH103 (Z05)	JC8015 (Z10~20)	JC10000	KT9 (K10)	RE	L	W1	S	C
RNM-060-R03	●	●			0.3				
RNM-060-R05	●	●			0.5	5	6	2	2
RNM-060-R10	●	●			1				
RNM-080-R03	●	●		○	0.3				
RNM-080-R05	●	●	●	●	0.5	7	8	2.4	2.7
RNM-080-R10	●	●	●	●	1				
RNM-100-R0		●			※				
RNM-100-R03	●	●		○	0.3				
RNM-100-R05	●	●	●	●	0.5	8.5	10	2.6	3.3
RNM-100-R10	●	●	○	●	1				
RNM-100-R15		○		●	1.5				
RNM-100-R20	●	●		○	2				
RNM-120-R0		●			※				
RNM-120-R03	●	●		○	0.3				
RNM-120-R05	●	●		●	0.5	10	12	3	4
RNM-120-R10	●	●	○	●	1				
RNM-120-R15	●	●	○	○	1.5				
RNM-120-R20	●	●		●	2				
RNM-130-R03		○			0.3				
RNM-130-R05		○			0.5	10	13	3	4
RNM-130-R10		○			1				
RNM-130-R20		○			2				
RNM-160-R0		●			※				
RNM-160-R03	●	●		●	0.3				
RNM-160-R05	●	●		●	0.5	12	16	4	5.3
RNM-160-R10	●	●		●	1				
RNM-160-R15	●	●		●	1.5				
RNM-160-R20	●	●		○	2				
RNM-170-R03		○			0.3				
RNM-170-R05		○			0.5	12	17	4	5.3
RNM-170-R10		●			1				
RNM-170-R20		○			2				
RNM-200-R0		●			※				
RNM-200-R03	●	●		○	0.3	15	20	5	6.7
RNM-200-R05	●	●		○	0.5				
RNM-200-R10	●	●		●	1				

2 inserts per case (JC10000 / 1 insert per case)

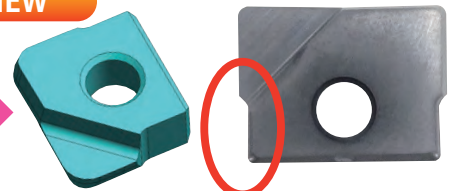
※ Corner Radius below R0.1

Change on the appearance of RNM type

Conventional

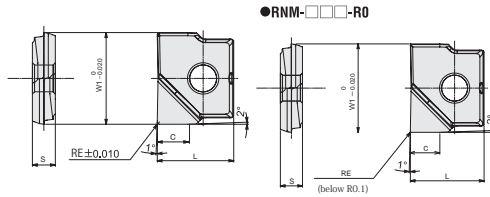


NEW



switched to new geometry after the stock run out

Corner radius accuracy
±0.010mm



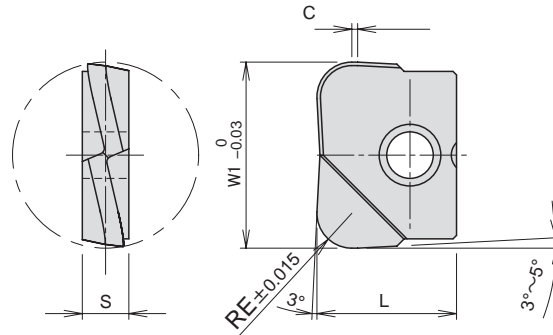
RNM

Cat. No.	PVD coating		Diamond coating	Uncoated	Dimensions(mm)				
	DH103 (Z05)	JC8015 (Z10~20)	JC10000	KT9 (K10)	RE	L	W1	S	C
RNM-200-R15	●	●		○	1.5	6.7	20	15	5
RNM-200-R20	●	●		○	2				
RNM-200-R30		●			3				
RNM-210-R03	○				0.3	6.7	21	15	5
RNM-210-R05	○				0.5				
RNM-210-R10	○				1				
RNM-210-R20	○				2				
RNM-250-R0		●			※	8.3	25	18.5	6
RNM-250-R03	●	●			0.3				
RNM-250-R05	●	●			0.5				
RNM-250-R10	●	●			1				
RNM-250-R15	○	○			1.5				
RNM-250-R20	●	●			2				
RNM-250-R30		●			3				
RNM-260-R03		○			0.3	8.3	26	18.5	6
RNM-260-R05		○			0.5				
RNM-260-R10		●			1				
RNM-260-R20		●			2				
RNM-300-R03	○	○			0.3	10	30	22.5	7
RNM-300-R05	○	○			0.5				
RNM-300-R10	○	○			1				
RNM-300-R15		○			1.5				
RNM-300-R20	○	○			2				
RNM-300-R30		○			3				
RNM-320-R03	●	●			0.3	10.7	32	23.5	7
RNM-320-R05	●	●			0.5				
RNM-320-R10	●	●			1				
RNM-320-R15		○			1.5				
RNM-320-R20	●	●			2				
RNM-320-R30		○			3				

2 inserts per case (JC10000 / 1 insert per case)

※ Corner Radius below R0.1

Corner radius accuracy
±0.015mm



■ HRM (High Feed Geometry)

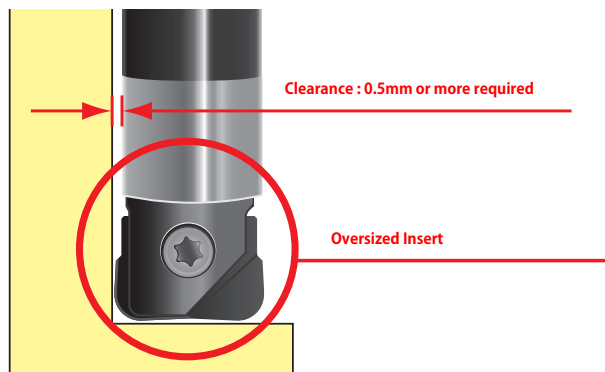
Cat. No.	PVD coating	Dimensions(mm)					
	JC8015	RE	L	W1	S	C	
HRM-060-R05	●	0.5	5	6	2	—	
HRM-060-R10	●	1					
HRM-060-R15	●	1.5					
HRM-080-R20	●	2	7	8	2.4	0.3	
HRM-090-R20	●			9			
HRM-100-R20	●		8.5	10	2.6		
HRM-110-R20	●			11			
HRM-120-R20	●		10	12	3		0.5
HRM-130-R20	●			13			
HRM-160-R20	●	3	12	16	4		
HRM-160-R30	●			17			
HRM-170-R30	●	2	15	20	5		
HRM-200-R20	●						
HRM-200-R30	●						
HRM-220-R30	●	3	22				

2 inserts per case

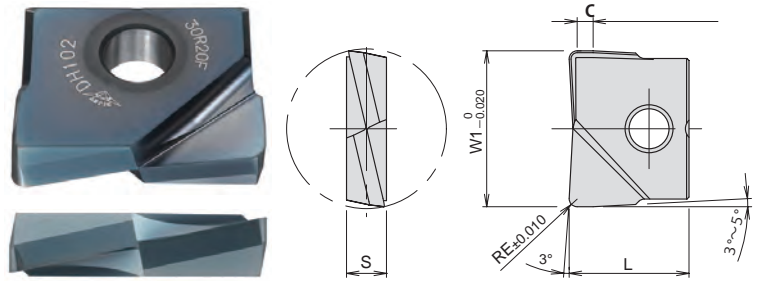
Mirror Radius Oversized insert

recommended to use oversized insert (※) for increasing side clearance to prevent the damage of shank by sticking chips

(※) HRM-090-R20, HRM-110-R20, HRM-130-R20,
HRM-170-R30, HRM-220-R30



- High feed insert with helical geometry
- Smaller side wiper for less deflection
- From semi-finish to finish



Corner radius accuracy
±0.010mm

■ FRM (High Feed Geometry)

Cat. No.	PVDcoating		Dimensions(mm)				
	DH102	JC8015	RE	L	W1	S	C
FRM-060-R03	○		0.3				
FRM-060-R05	●	●	0.5	5	6	2	0.8
FRM-060-R10	●	●	1				
FRM-080-R03	○		0.3				
FRM-080-R05	●	●	0.5	7	8	2.4	1.2
FRM-080-R10	●	●	1				
FRM-100-R03	○		0.3				
FRM-100-R05	●	●	0.5	8.5	10	2.6	
FRM-100-R10	●	●	1				
FRM-100-R20	●		2				
FRM-120-R03	○		0.3				1.5
FRM-120-R05	●	●	0.5				
FRM-120-R10	●	●	1	10	12	3	
FRM-120-R20	●	●	2				
FRM-120-R30	●		3				
FRM-160-R03	○		0.3				
FRM-160-R05	●	●	0.5				
FRM-160-R10	●	●	1				
FRM-160-R15	●		1.5	12	16	4	
FRM-160-R20	●	●	2				
FRM-160-R30	●		3				
FRM-170-R10	○	○	1		17		2
FRM-200-R03	○		0.3				
FRM-200-R05	●	●	0.5				
FRM-200-R10	●	●	1				
FRM-200-R15	●		1.5	15	20	5	
FRM-200-R20	●	●	2				
FRM-200-R30	●		3				
FRM-210-R10	○	●	1		21		

Cat. No.	PVDcoating		Dimensions(mm)				
	DH102	JC8015	RE	L	W1	S	C
FRM-250-R03	○		0.3				
FRM-250-R05	●		0.5				
FRM-250-R10	●	●	1	18.5	25	6	2.5
FRM-250-R20	●	●	2				
FRM-250-R30	●		3				
FRM-300-R03	○		0.3				
FRM-300-R05	○		0.5				
FRM-300-R10	○	○	1	22.5	30		
FRM-300-R20	○	○	2				
FRM-300-R30	○		3				
FRM-320-R03	○		0.3			7	3
FRM-320-R05	○		0.5				
FRM-320-R10	●	●	1	23.5	32		
FRM-320-R20	●	●	2				
FRM-320-R30	●		3				

2 inserts per case

■ Grade selection guide

Material	Insert	Grade	RNM				HRM	FRM	
			DH103	JC8015	JC10000	KT9	JC8015	DH102	JC8015
Carbon steel below 250HB	RNM HRM FRM	JC8015		◎			◎		◎
Cast steel below 285HB	RNM HRM FRM	JC8015		◎			◎		◎
Tool and Die steel below 255HB	RNM HRM FRM	JC8015		◎			◎		◎
Mold steel 30~36HRC	RNM HRM FRM	DH103 JC8015	○	◎			◎		◎
Mold steel 38~43HRC	RNM HRM FRM	DH103 JC8015	○	◎			◎		◎
Hardened die steel 42~52HRC	HRM FRM	DH102 JC8015		○			○	◎	○
Hardened die steel 55~62HRC	FRM	DH102						◎	
HSS 63~70HRC	FRM	DH102	○					◎	
Gray cast iron 160~260HB	RNM HRM FRM	DH102 DH103 JC8015	◎	○			○	◎	○
Nodular cast iron 170~300HB	RNM HRM FRM	DH102 DH103 JC8015	◎	○			○	◎	○
Stainless steel (304, 316, 317) 13Cr	RNM HRM FRM	JC8015	○	◎			◎	○	◎
Stainless steel (403, 420J2, 430) 13Cr	RNM HRM FRM	JC8015	○	◎			◎	○	◎
Aluminium (A5052)	RNM	KT9				◎			
Aluminium (A7075)	RNM	KT9				◎			
Aluminium alloys below Si 13%	RNM	KT9				◎			
Copper alloys	RNM	KT9				◎			
Graphite	RNM	JC10000			◎				
Titanium alloy (Ti-6Al-4V) 35~43HRC	HRM FRM	JC8015					◎		◎
Inconel (INCO718) 35~43HRC	HRM FRM	JC8015					◎		◎

◎: First choice, ○: Second choice, ☆: Wet cutting, ★: High speed machining

Please scan the QR code for
recommended cutting conditions

Mirror Ball



Mirror Radius



HEADQUARTER

DIJET Industrial Co.Ltd.

2-1-18, Kami-Higashi,

Hirano-ku, Osaka 547-0002, Japan

Phone: +81-6-6791-6781

Fax: +81-6-6793-1221

www.dijet.co.jp



MAIN OFFICE EUROPE

DIJET GmbH

Immemannstraße 9

40210 Düsseldorf, Germany

Phone: +49-211-50088820

Fax: +49-211-50088823

www.dijet.de



DIJET EUROPE



Web : www.dijet.de

