

SUPER DIEMASTER

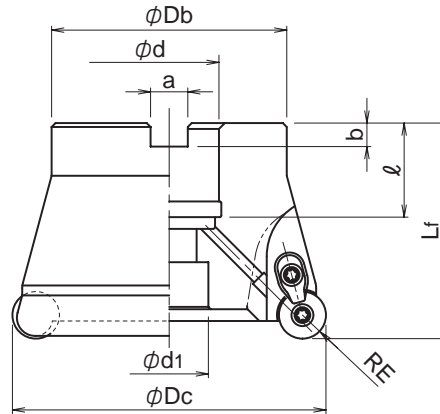
HDM/SDH Type



HDM
TYPE

Bore Type / Standard Pitch High Efficient Indexable Radius Tool

- High rigidity insert for stable machining.
- Positive axial rake reduces cutting force.



Cat.No.	Stock	No. of inserts	Dimensions(mm)									Arbor set bolt	Parts		Weight (kg)	Inserts
			φDc	RE	Lf	φDb	φd	φd1	a	b	ℓ		Screw	Wrench		
HDM-3050-12R-22	●	3	50	6	50	47	22	16.5	10.4	6.3	20	M10	DSW-410H	A-15T	0.5	RD**1204MO...
HDM-3050-16R-22	●			8	55								DSW-4512H	A-20		RD**1606MO...
HDM-4063-12R-22	●	4	63	6	50	60	22	16.5	10.4	6.3	20	M10	DSW-410H	A-15T	0.7	RD**1204MO...
HDM-4063-16R-22	●			8	55								DSW-4512H	A-20		RD**1606MO...

Screw	Torque (N.m)
DSW-410H	3.6
DSW-4512H	6.0

MD	Hexagonal wrench(mm) for Arbor set bolt
M10	8
M12	10
M16	14
M20	17
M24	19

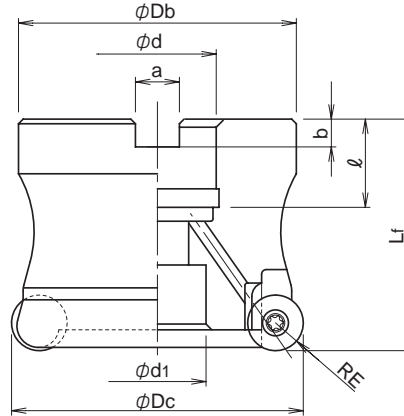
Inserts	Screw	Clamp	Wrench
RD**1204MO*	DSW-410H	DCM-18	A-15T
RD**1606MO*	DSW-4512H	DCM-17	A-20

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HDM/SDH Type

HDM
TYPE

Bore Type / Fine Pitch



Cat.No.	Stock	No. of inserts	Dimensions(mm)									Arbor set bolt	Weight (kg)	Parts		Inserts
			ϕDc	RE	L_f	ϕDb	ϕd	$\phi d1$	a	b	ℓ			Screw	Wrench	
HDM-4050-16R-22	●	4	50	8	55	47	22	16.5	10.4	6.3	20	M10	0.4	DSW-4512H	A-20	RD**1606MO...
HDM-5050-12R-22	●	6		6										RD**1204MO...		
HDM-5052-12R-22	●	5	52	6	50	40	27	20	12.4	7	22	M10	0.5	DSW-410H	A-15T	RD**1204MO...
HDM-5063-16R-27	●	8	63	6		60								RD**1606MO...		
HDM-6063-12R-27	●	6	6	80	55	76	27	20	12.4	7	22	M12	0.8	DSW-410H	A-15T	RD**1204MO...
HDM-6080-16R-27	●	8	6											RD**1606MO...		
HDM-7080-12R-27	●	7	80	6	76	27	20	12.4	7	22	M12	1.4	DSW-410H	A-15T	RD**1204MO...	

Screw	Torque (N.m)
DSW-4512H	6
DSW-410H	3.6

MD	Hexagonal wrench(mm) for Arbor set bolt
M10	8
M12	10
M16	14
M20	17
M24	19

Inserts	Screw	Wrench
RD**1204MO*	DSW-410H	A-15T
RD**1606MO*	DSW-4512H	A-20

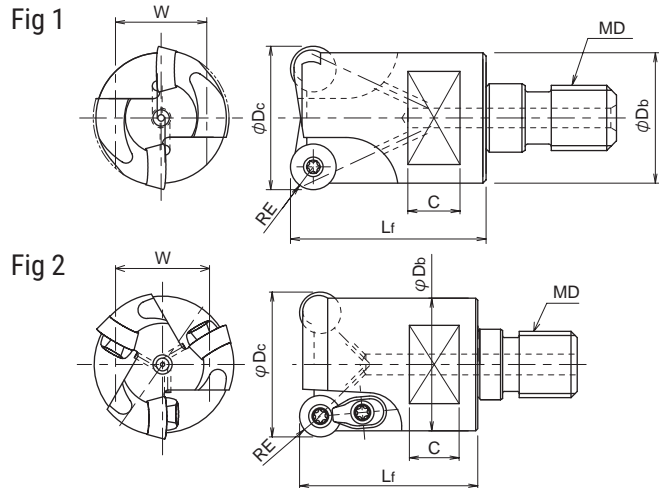
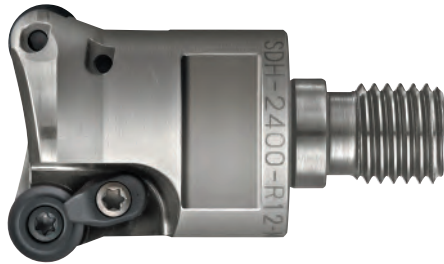
SUPER DIEMASTER

HDM/SDH Type



SDH
TYPE

Modular Type / Standard Pitch



Cat.No.	Stock	No. of inserts	Dimensions(mm)							Parts			Inserts	Fig.		
			φDc	RE	Lf	φDb	MD	C	W	Screw	Clamp	Wrench				
SDH-2150-R07-M8	●	2	15	3.5	23	13.8	M8	8	12	TSW-2556H	-	A-08SD	RD**07T2MO...	1		
SDH-2160-R07-M8	●		16			M8	14									
SDH-2200-R07-M10	●		20		20	M10	10		17						DCM-18	A-15
SDH-2220-R07-M10	●		22													
SDH-2250-R10-M12	●	25	23	M12	12	22		DSW-410H		RD**1204MO...						
SDH-2280-R10-M12	●	28									25	M12				
SDH-2300-R10-M16	●	30	28	M16			13		26		CSW-408H	RD**1004MO...				
SDH-2320-R12-M16	●	32											6	M16		
SDH-3320-R10-M16	●	3	5	M16	13	26		DSW-410H		RD**1204MO...						
SDH-2350-R12-M16	●	2	6										M16			
SDH-3350-R10-M16	●	3	5	M16												
SDH-2400-R12-M16	●	2	40				6		M16		13	26	DSW-410H	RD**1204MO...		

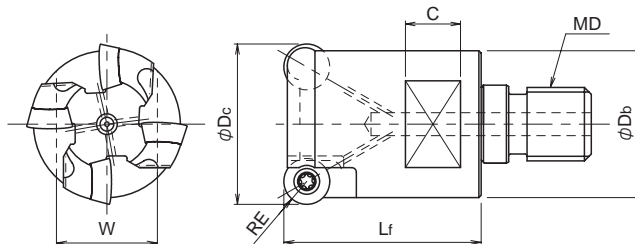
Screw	Torque (N.m)
TSW-2556H	1.1
CSW-408H	3.6
DSW-410H	3.6

SUPER DIEMASTER

HDM/SDH Type

SDH
TYPE

Modular Type / Fine Pitch



Cat.No.	Stock	No. of inserts	Dimensions(mm)						Parts		Inserts		
			φDc	RE	Lf	φDb	MD	C	W	Screw		Wrench	
SDH-3200-R07-M10	●	3	20	3.5	30	18	M10	8	14	TSW-2556H	A-08SD	RD**07T2MO...	
SDH-3220-R07-M10	●		22			20							
SDH-3250-R07-M12	●		25			23							
SDH-3250-R10-M12	●	4	28	35	25	M12	10	17	CSW-408H	A-15	RD**1004MO...		
SDH-3280-R10-M12	●											30	28
SDH-3300-R10-M16	●											32	28
SDH-4300-R10-M16	●											32	28
SDH-3350-R12-M16	●	3	6	43	M16	12	22	DSW-410H	A-15	RD**1204MO...			
SDH-4350-R10-M16	●										35	5	
SDH-4400-R12-M16	●	4	40	6	M16	13	26	DSW-410H	A-15	RD**1204MO...			
SDH-5420-R10-M16	●										42	5	
					M16			CSW-408H		RD**1004MO...			

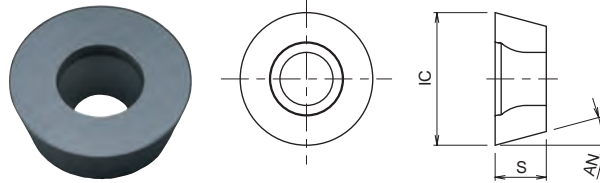
Screw	Torque (N.m)
TSW-2556H	1.1
CSW-408H	3.6
DSW-410H	3.6

Insert

Standard type

Flat top inert

for General steel



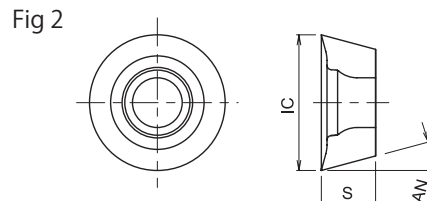
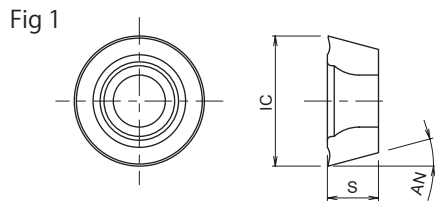
Cat.No.	Tolerance	PVD Coating			Dimensions(mm)		
		DH103	JC5040	JC8015	IC	S	AN
RDMW07T2MOT	M	●	●	●	7	2.7	15°
RDMW1004MOT		●	●	●	10	4.1	
RDMW1204MOT		●	●	●	12	4.8	
RDMW1606MOT		●	●	●	16	6	

Low cutting force

Chip breaker style

for Titanium + Inconel

for Stainless steel



Cat.No.	Tolerance	PVD Coating			Dimensions(mm)			Fig.
		JC8015	JC8050	JC8118	IC	S	AN	
RDGT07T2MOE	G	●	●		7	2.7	15°	1
RDGT1004MOE		●	●		10	4.1		
RDGT1004MOT		●	●		12	4.8		
RDGT1204MOE		●	●		16	6		
RDGT1204MOT		●	●					
RDGT1606MOE		●	●					
RDGT1606MOT		●	●					
RDMT07T2MOE	M		●	●	7	2.7	15°	2
RDMT1004MOE			●	●	10	4.1		
RDMT1004MOE-ML			●	●	12	4.8		2
RDMT1004MOT			●	●				
RDMT1204MOE			●	●	16	6		1
RDMT1204MOE-ML			●	●				
RDMT1204MOT			●	●				
RDMT1606MOE			●	●				
RDMT1606MOT			●	●				

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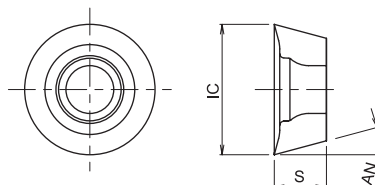
HDM/SDH Type

Insert

Low cutting force

Chip breaker style

for Aluminium

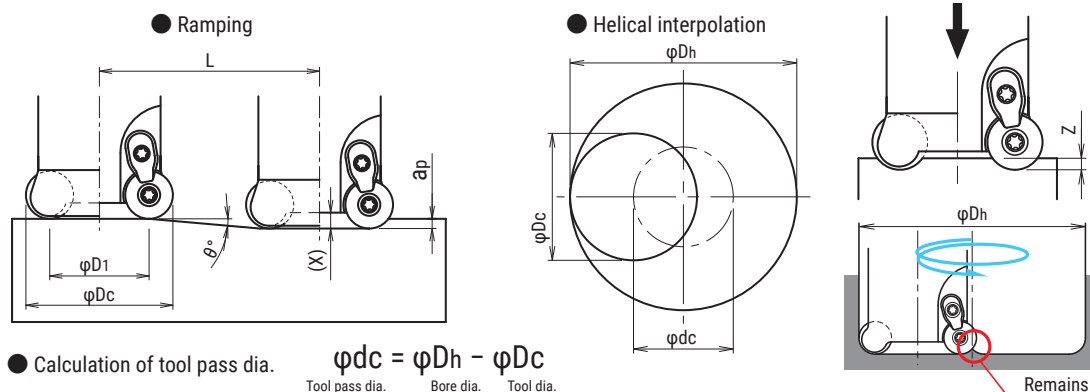


Cat.No.	Tolerance	Uncoated	Dimensions(mm)		
		FZ05	IC	S	AN
RDGT07T2MOF-AL	G	●	7	2.7	15°
RDGT1004MOF-AL		●	10	4.1	
RDGT1204MOF-AL		●	12	4.8	
RDGT1606MOF-AL		●	16	6	

SUPER DIEMASTER

HDM/SDH Type

Recommended Data for Profile Milling



● 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 A_p .
- Down cutting is recommended, tool pass rotation should be counterclockwise
- Do not combine drilling and ramping together

- In case of ramping and helical interpolation, apply 70% or less feed (V_f) from standard cutting condition table.
- In case of drilling, apply 50% or less feed (V_f) from standard cutting condition table.
- Long chips may come out in case of drilling, confirm safe operating conditions.

Tool dia. (mm)	Insert dia. (R) (mm)	Effective cutting dia. φ_{D1} (mm)	Min. Bore dia. $D_{h \text{ min}}$ (mm)	Max. Bore dia. $D_{h \text{ max}}$ (mm)	Max. ramping angle: θ	Max. depth of cut: a_p (mm)	Max. depth of cut (a_p) Total cutting length: L (mm)	Max. drilling length: Z (mm)	Depth of holder face: X (mm)
15	7 (R3.5)	8	20	28	3°00'	3.5	66.8	0.4	1.0
16	7 (R3.5)	9	22	30	9°00'	3.5	22.1	1.5	2.5
20	7 (R3.5)	13	30	38	5°30'	3.5	36.3	1.5	2.5
22	7 (R3.5)	15	34	42	4°35'	3.5	43.6	1.5	2.5
25	7 (R3.5)	18	40	48	3°40'	3.5	54.6	1.5	2.5
25	10 (R5)	15	34	48	10°45'	5.0	26.3	2.5	3.5
28	10 (R5)	18	40	54	8°20'	5.0	34.1	2.5	3.5
30	10 (R5)	20	44	58	7°15'	5.0	39.3	2.5	3.5
32	10 (R5)	22	48	62	6°25'	5.0	44.4	2.5	3.5
32	12 (R6)	20	44	62	7°35'	6.0	45.1	2.5	3.5
35	10 (R5)	25	54	68	5°30'	5.0	51.9	2.5	3.5
35	12 (R6)	23	50	68	6°15'	6.0	54.7	2.5	3.5
40	12 (R6)	28	60	78	4°55'	6.0	69.7	2.5	3.5
42	10 (R5)	32	68	82	4°05'	5.0	70.0	2.5	3.5
50	12 (R6)	38	80	98	5°15'	6.0	65.2	3.5	4.5
50	16 (R8)	34	75	98	7°25'	8.0	61.4	4.0	5.0
52	12 (R6)	40	84	102	4°55'	6.0	69.7	3.5	4.5
52	16 (R8)	36	79	102	6°55'	8.0	65.9	4.0	5.0
63	12 (R6)	51	106	124	3°45'	6.0	91.5	3.5	4.5
63	16 (R8)	47	101	124	5°00'	8.0	91.4	4.0	5.0
66	12 (R6)	54	112	130	3°30'	6.0	98.1	3.5	4.5
66	16 (R8)	50	107	130	4°40'	8.0	98.0	4.0	5.0
80	12 (R6)	68	140	158	2°45'	6.0	124.9	3.5	4.5
80	16 (R8)	64	135	158	3°30'	8.0	130.7	4.0	5.0
100	16 (R8)	84	175	198	2°35'	8.0	177.3	4.0	5.0
125	16 (R8)	109	225	248	1°55'	8.0	239.1	4.0	5.0
160	16 (R8)	144	295	318	1°25'	8.0	223.5	4.0	5.0

SUPER DIEMASTER

HDM/SDH Type

■ Recommended Cutting Conditions

Material	Grade	Vc	Parameters	Insert Type			
				RD**07	RD**10	RD**12	RD**16
Carbon Steel below 250HB	JC8050	170 - 220	fz	~0.25	~0.30	~0.35	~0.37
	JC5040		ap	~1.5	~2.0	~2.5	~4.0
	JC8118		ae	0.7 Dc	0.7 Dc	0.7 Dc	0.7 Dc
Mold Steel 30-43HRC	JC8050	160 - 190	fz	~0.25	~0.29	~0.33	~0.34
	JC8118		ap	~1.5	~2.0	~2.5	~3.5
	JC8015		ae	0.6 Dc	0.6 Dc	0.6 Dc	0.6 Dc
Tool & Die Steel below 255HB	JC5040	160 - 190	fz	~0.25	~0.30	~0.35	~0.37
	JC8118		ap	~1.5	~2.0	~2.5	~4.0
			ae	0.7 Dc	0.7 Dc	0.7 Dc	0.7 Dc
Stainless Steel	JC8050	135 - 160	fz	~0.25	~0.26	~0.28	~0.32
	JC8015		ap	~1.5	~2.0	~2.5	~4.0
	JC8118		ae	0.6 Dc	0.6 Dc	0.6 Dc	0.6 Dc
Hardened Die Steel 40-50HRC	JC8015	120 - 140	fz	~0.20	~0.25	~0.25	~0.25
	DH103		ap	~0.8	~1.5	~1.5	~2.0
			ae	0.4 Dc	0.4 Dc	0.4 Dc	0.4 Dc
Grey & Nodular Cast Iron	JC8015	170 - 220	fz	~0.25	~0.30	~0.35	~0.40
	JC8118		ap	~1.5	~2.0	~2.5	~4.0
			ae	0.7 Dc	0.7 Dc	0.7 Dc	0.7 Dc
Titanium Alloy	JC8050	65	fz	~0.25	~0.25	~0.25	~0.25
	JC8015		ap	~0.5	~0.5	~1.0	~1.5
	JC8118		ae	0.6 Dc	0.6 Dc	0.6 Dc	0.6 Dc
Heat Resistant Alloy	JC8015	30	fz	~0.2	~0.2	~0.2	~0.25
	JC8118		ap	~0.5	~0.5	~1.0	~1.5
	JC8050		ae	0.6 Dc	0.6 Dc	0.6 Dc	0.6 Dc
Aluminium	FZ05	400 - 800	fz	~0.29	~0.30	~0.30	~0.39
			ap	~2.0	~3.5	~4.0	~5.5
			ae	0.6 Dc	0.6 Dc	0.6 Dc	0.6 Dc

Note

1. Please adjust cutting conditions according to machine rigidity or work rigidity.
2. In case of chatter occurring, recommended to reduce ap or Vf.
3. ap should be reduced when using on low rigidity machine.
4. Use airblow. (For cutting Aluminium, Titanium & Heat resistant alloy Wet cutting is recommended.)
5. When cutting Hard materials (50-55HRC), reduce ap, n & Vf by 30% from standard conditions.

SUPER DIEMASTER **HDM/SDH Type**

■ **Insert grades**

ISO	P					M					K				N				S				H		
	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20
Range	JC5040					JC8118					JC8015				FZ05				JC8118				DH103		
	JC8118					JC8015					JC8015				FZ05				JC8118				DH103		
	JC8015					JC8050					JC8015				FZ05				JC8118				DH103		
	JC8015					JC8050					JC8015				FZ05				JC8118				DH103		

■ **Grade selection guide**

Material	Cast iron	Carbon steel · Tool steel				Mold steel		Hardened steel	Titanium alloy Inconel		Stainless steel		Aluminium
		Grade	JC8015 JC5118	JC5040	JC8118	JC8050	JC8015 JC8118		JC8050	DH103 (over 50HRC) JC8015 JC8118	JC8015 JC8118	JC8050	
RDMW07T2MOT	◎	◎	○			◎		◎	○		○		
RD * T07T2MOE	☆		☆	●		☆	●		◎	●	◎	●	
RDMW1004MOT	◎	◎	○			◎		◎					
RD * T1004MOT	☆					○					○	●	
RD * T1004MOE			☆	●		☆	●		○	●	☆		
RDMT1004MOE-ML										◎		◎	
RDMW1204MOT	◎	◎	○			◎		◎					
RD * T1204MOT	☆					○					○	●	
RD * T1204MOE			☆	●		☆	●		○	●	☆		
RDMT1204MOE-ML										◎		◎	
RDMW1606MOT	◎	◎	○			◎		◎					
RD * T1606MOT	☆					○					○	●	
RD * T1606MOE			☆	●		☆	●		○	◎	☆	◎	
RDGT****MOF-AL													◎

■ **Grade selection guide**

Material	Cast iron	Carbon steel Tool steel	Mold steel	Hardened steel	Stainless steel	Aluminium
Cat.No./Grade	DH103	JC8015	JC8015	DH103	JC8015	FZ05
RDMW****MOT	◎	◎	◎	◎	◎	
RDGT****MOF-AL						◎

• RDMW type : without chip breaker • RD*T type : with chip breaker
 ◎ : First choice ○ : General cutting ● : Unstable cutting ☆ : Light cutting