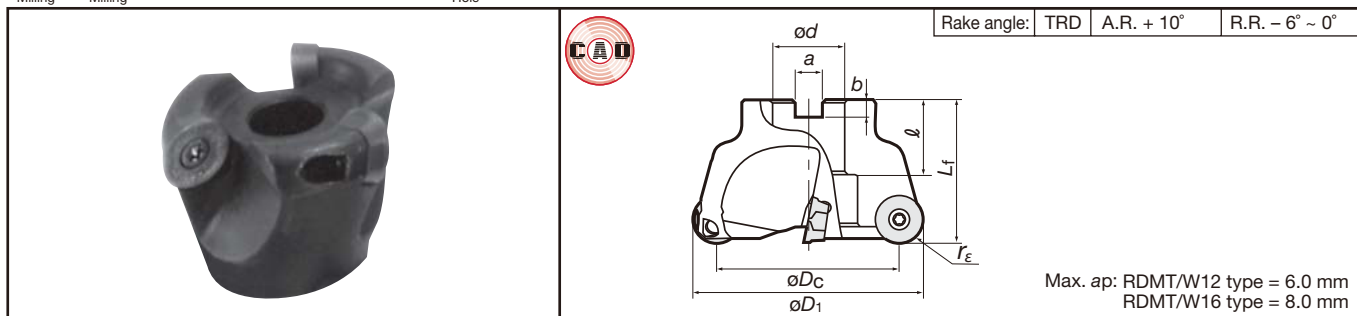




For multi-functional milling of steels, cast irons
and hard materials



TRD12·16 (Bore type)

Cat. No.	Stock	Applicable insert	No. of inserts	Dimensions (mm)								Weight (kg)	Mounting details
				r_E	ϕD_1	ϕD_C	L_f	ℓ	ϕd	b	a		
TRD12050R-E	●	RDMT1204ZDPN-MJ RDMW1204ZDSN	4	6	50	38	40	20	22	6.3	10.4	0.3	9-107(A)
TRD12052R-E	●		4		52	40						0.4	
TRD12063R-E	●		5		63	51						0.5	
TRD12066R-E	●		5		66	54	50	22	27	7	12.4	0.8	9-107(B)
TRD12080R-E	●		6		80	68						1.4	
TRD12100R-E	●		6		100	88						1.4	
TRD16063R-E	●	RDMT1606ZDPN-MJ RDMW1606ZDSN	4	8	63	47	50	22	27	7	12.4	0.4	9-107(A)
TRD16066R-E	●		4		66	50						0.5	
TRD16080R-E	●		5		80	64						0.7	
TRD16100R-E	●		6		100	84						1.1	

Inserts

Fig. 1

Fig. 2

Cat No.	Accuracy	Honing	Figure	Grades						Dimensions (mm)			
				Coated						A	S	bs	r _E
				T3130	AH120	AH130	AH140	AH330	UX30				
RDMT1204ZDPN-MJ	M	With	Fig. 1	●	●	●	●	●	●	12.8	4.76	0.8	6
RDMW1204ZDSN			Fig. 2	●	●	●	●	●	●				
RDMT1606ZDPN-MJ			Fig. 1	●	●	●	●	●	●	16.8	6.35	0.8	8
RDMW1606ZDSN			Fig. 2	●	●	●	●	●	●				

Replacement parts

Descriptions	Cat. No.	
	T/ERD12	T/ERD16
Clamping screw	CSTB-3.5	CSTB-5
Wrench	T-15D	T-20D

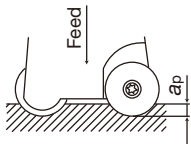
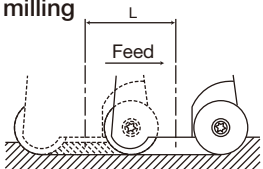
● : Stocked items

Standard cutting conditions

Work materials	Grades	Cutting speed V _c (m/min)	Feed per tooth f _z (mm/t)	
			T/ERD12	T/ERD16
Carbon steels (C50 etc.) < 300 HB	AH120	170 (120 ~ 220)	0.3 ~ 0.5	0.3 ~ 0.6
	AH330	190 (140 ~ 240)	0.2 ~ 0.4	0.2 ~ 0.5
	UX30	100 (80 ~ 120)		
Alloy steels (42CrMo4, 17Cr3 etc.) < 300 HB	AH120	150 (100 ~ 200)	0.2 ~ 0.45	0.2 ~ 0.5
	AH330	170 (120 ~ 220)	0.15 ~ 0.35	0.15 ~ 0.4
	UX30	90 (60 ~ 120)		
Die steels (X96CrMoV12 etc.) < 300 HB	AH120	130 (80 ~ 180)	0.2 ~ 0.35	0.25 ~ 0.45
	AH330	150 (100 ~ 200)	0.1 ~ 0.3	0.1 ~ 0.4
Stainless steels (X5CrNi18 9 etc.)	AH130•AH140	150 (100 ~ 200)	0.2 ~ 0.3	0.2 ~ 0.4
Grey cast irons (GG25 etc.)	AH120	180 (120 ~ 240)	0.3 ~ 0.5	0.3 ~ 0.6
	AH330	200 (150 ~ 250)	0.2 ~ 0.4	0.2 ~ 0.5
Hard materials < 45 HRC	AH120	100 (60 ~ 140)	0.08 ~ 0.25	0.1 ~ 0.3

Note: When the depth of cut is smaller than 2 mm, use the higher limit of feed values shown above. When larger than 3 mm, use the lower limit of the feed values.

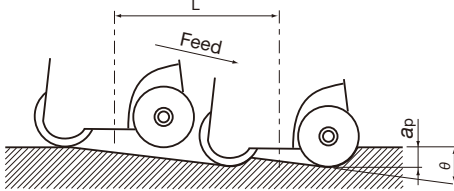
Plunging + traverse feed milling

Plunging		Traverse feed milling	
			
Cat. No.	Max. plunging depth a _p (mm)	Min. traverse length to flatten the bottom surface: L (mm)	
TRD12050R-E	4	Tool diameter øD ₁ - 11	
TRD12052R-E			
TRD12063R-E			
TRD12066R-E			
TRD12080R-E			
TRD12100R-E			
TRD16063R-E	5.5	Tool diameter øD ₁ - 15	
TRD16066R-E			
TRD16080R-E			
TRD16100R-E			
TRD16100R-E			

Notes:

- In plunging, the maximum plunging depth is limited as shown in the above table.
- In plunging, set the Z-axis feed in a range of 0.05 to 0.1 mm/t.
- When plunging, use peck-feed every 1 mm (or smaller than 1 mm) to break chips.

Ramping

Ramping	
	
Cat. No.	Max. ramping angle θ
TRD12050R-E	6°
TRD12052R-E	5.5°
TRD12063R-E	4°
TRD12066R-E	4°
TRD12080R-E	2.5°
TRD12100R-E	1.5°
TRD16063R-E	6°
TRD16066R-E	6°
TRD16080R-E	4°
TRD16100R-E	3°

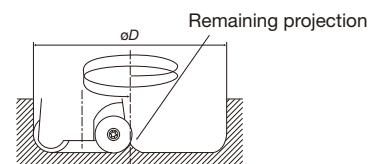
Notes:

- $\tan \theta = \text{depth of cut: } a_p / \text{length of tool pass: } L$
- In ramping, the ramping angle should be set within the maximum ramping angle.

Helical feed drilling

Unit: mm

Cat. No.	Min. machining diameter		Mix. machining diameter		P
	øD	øD ₂	øD	øD ₂	
TRD12050R-E	88	38	98	48	< 6
TRD12052R-E	92	40	102	50	
TRD12063R-E	114	51	124	61	
TRD12066R-E	120	54	130	64	
TRD16080R-E	148	68	158	78	
TRD16100R-E	188	88	198	98	
TRD16063R-E	110	47	124	61	< 8
TRD16066R-E	120	50	130	64	
TRD16080R-E	144	64	158	78	
TRD16100R-E	184	84	198	98	



øD₁ : Tool diameter
 øD : Drilling diameter
 øD₂ : Tool pass diameter
 P : Z-axis feed per one round of tool pass (Pitch of helical cycle)

• In helical feed hole machining, the machinable hole diameters are limited by the tool diameter as shown in the above tables.
 • When machining between the minimum and maximum machining diameters, a projection remains in the center of the bottom surface of the hole as shown in the Figure at right. Remove it by traverse feed milling.