
RRD

ROUND INSERT TYPE CUTTERS

VERSATILE PERFORMANCE AND LONG TOOL LIFE



Mplus...

RRD

PRODUCT FEATURES



- Round insert type cutter for mould & die machining
- Versatile range of insert grades for machining up to 60 HRC
- Large range of cutters available, arbor, screw-in, shank and Weldon types
- Wide range of insert sizes, R2.5, 3.5, 5.0, 6.0 and 8.0

RRD

ROUND INSERT TYPE CUTTERS

RRD CUTTERS

Straight Shank



Weldon Shank



Screw-In

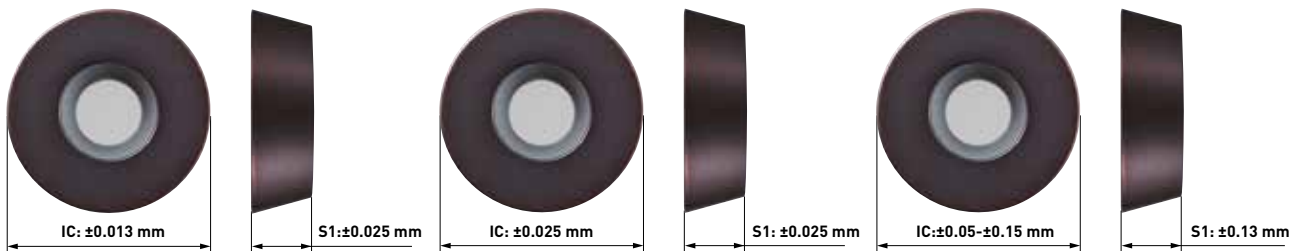


Arbor



FEATURES

Inserts are available in 3 different tolerances to suit all applications.



RDHX

- Ground (H Tolerance)
- For high precision
- For semi-finishing and finishing

RDZX

- Precision sintered (E Tolerance)
- For universal use
- Economical insert with long tool life

RDMX

- Sintered (M Tolerance)
- For universal use
- For roughing and semi-finishing

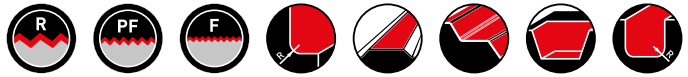
GRADE OVERVIEW

ISO	Coated Carbide					Uncoated Carbide	
P	P01	VP05HT	VP10H	VP15TF	VP20M	F7030	UT120T
K	K01			VP15TF			UT120T
H	H01	VP05HT	VP10H	VP15TF			
	H10						
	H20						
	H30						

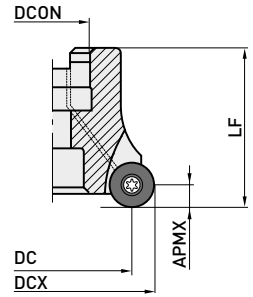
↑ Wear resistance

↓ Toughness

RRD N



P K H



Right hand tool holder only.

ARBOR TYPE (Neutral)

RE	Order Number	Stock	Teeth	DCX	DC	LF	DCON	APMX	WT *1	Insert
5	RRD050N-042A06R	●	6	42	32	44	16	5	0.26	RDH/M/Z
	RRD050N-052A07R	●	7	52	42	50	22	5	0.4	1003M0
6	RRD060N-042A05R	●	5	42	30	42	16	6	0.26	RDH/M/Z 12T3M0
	RRD060N-050A05R	●	5	50	38	50	22	6	0.38	
	RRD060N-052A05R	●	5	52	40	50	22	6	0.4	
	RRD060N-063A06R	●	6	63	51	50	22	6	0.33	
	RRD080N-050A04R	●	4	50	34	50	22	8	0.4	
8	RRD080N-052A04R	●	4	52	36	50	22	8	0.4	RDH/M/Z 1604M0
	RRD080N-052A05R	●	5	52	36	50	22	8	0.4	
	RRD080N-063A05R	●	5	63	47	50	22	8	0.58	
	RRD080N-066A05R	●	5	66	50	50	27	8	0.6	
	RRD080N-080A06R	●	6	80	64	52	27	8	1	
	RRD080N-100A07R*2	●	7	100	84	52	32	8	1.5	
	RRD080N-125B08R*2	□	8	125	109	52	40	8	2.5	
	RRD080N-160C09R*2	●	9	160	144	52	40	8	3.5	

*1 WT : Tool Weight in kg
*2 without internal coolant

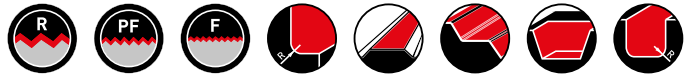
SPARE PARTS

RE	Order Number	Washer	Washer Screw	Clamp Screw	Clamp Screw	Wrench
5	RRD050N-042A06R					
	RRD050N-052A07R					
6	RRD060N-042A05R			B-TS35		TKY15F
	RRD060N-050A05R				TS1001	
	RRD060N-052A05R					
	RRD060N-063A06R					
	RRD080N-050A04R					
8	RRD080N-052A04R					
	RRD080N-052A05R					
	RRD080N-063A05R					
	RRD080N-066A05R	KS-12	B-TS45	214		TKY20F
	RRD080N-080A06R					
	RRD080N-100A07R					
	RRD080N-125B08R					
	RRD080N-160C09R					

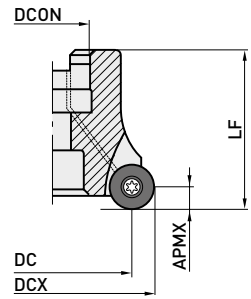
Roughing
 Semi-Finishing
 Finishing

● : Inventory maintained.
 ★ : Inventory maintained in Japan.
 □ : Produced to order only.

RRD P



P K H



Right hand tool holder only.

ARBOR TYPE (Positive)

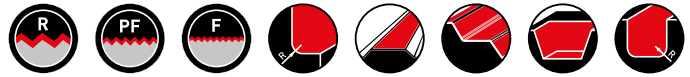
RE	Order Number	Stock	Teeth	DCX	DC	LF	DCON	APMX	WT *1	Insert
6	RRD060P-050A05R	●	5	50	38	50	22	6	0.33	RDH/M/Z 12T3M0E
	RRD060P-052A05R	●	5	52	40	50	22	6	0.35	
	RRD060P-063A06R	●	6	63	51	50	22	6	0.58	
	RRD060P-066A06R	●	6	66	54	52	27	6	0.6	
	RRD060P-080A07R	●	7	80	68	50	27	6	1	
8	RRD080P-050A04R	●	4	50	34	50	22	8	0.33	RDH/M/Z 1604M0E
	RRD080P-063A05R	●	5	63	47	50	22	8	0.53	
	RRD080P-066A05R	●	5	66	50	50	27	8	0.55	
	RRD080P-080A06R	●	6	80	64	52	27	8	1	
	RRD080P-100A07R *2	●	7	100	84	52	32	8	1.5	
	RRD080P-125B08R *2	●	8	125	109	52	40	8	2.6	
	RRD080P-160C09R *2	●	9	160	144	52	40	8	3.5	

*1 WT : Tool Weight in kg
*2 without internal coolant

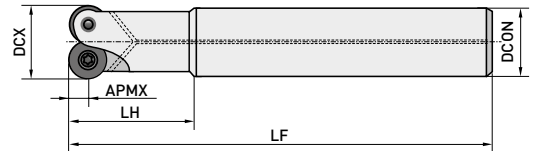
SPARE PARTS

RE	Order Number	Washer	Washer Screw	Clamp Screw	Clamp Screw	Wrench
6	RRD060P-050A05R	—	—	B-TS35	TS1001	TKY15F
	052A05R					
	063A06R					
	066A06R					
	080A07R					
8	RRD080P-050A04R	KS-12	B-TS45	214	—	TKY20F
	063A05R					
	066A05R					
	080A06R					
	100A07R					
	125B08R					
	160C09R					

RRD









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STRAIGHT SHANK TYPE

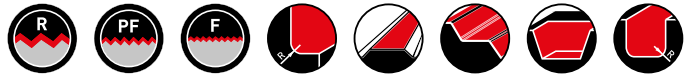
Right hand tool holder only.

RE	Order Number	Stock	Teeth	DCX	DCON	LF	LH	APMX		Insert
2.5	RRD025R102S10Z	●	2	10	10	75	23	2.5		RDH/Z 0501M0
	RRD025R123S12Z	●	3	12	12	75	23	2.5		
	RRD025R154S16Z	●	4	15	16	80	23	2.5		
3.5	RRD035R122S10Z	●	2	12	10	75	23	3.5		RDH/M/Z 07T1M0
	RRD035R122S12Z	●	2	12	12	75	23	3.5		
	RRD035R122S16Z	□	2	12	16	88	15	3.5		
	RRD035R122S16ZL	●	2	12	16	128	15	3.5		
	RRD035R122S16ZM	●	2	12	16	108	15	3.5		
	RRD035R152S16Z	□	2	15	16	88	18	3.5		
3.5	RRD035R152S16ZM	□	2	15	16	108	18	3.5		RDH/M/Z 0702M0
	RRD035R152S20Z	●	2	15	20	130	20	3.5		
	RRD035R152S20ZM	●	2	15	20	150	20	3.5		
	RRD035R152S25Z	□	2	15	25	176	20	3.5		
3.5	RRD035R153S12Z	□	3	15	12	75	17	3.5		RDH/M/Z 07T1M0
	RRD035R153S16Z	□	3	15	16	78	30	3.5		
5	RRD050R202S20Z	●	2	20	20	90	31	5.0		RDH/M/Z 1003M0
	RRD050R202S20ZM	●	2	20	20	110	51	5.0		
	RRD050R202S25Z	●	2	20	25	136	72	5.0		
	RRD050R202S25ZL	●	2	20	25	176	112	5.0		
	RRD050R202S25ZM	●	2	20	25	156	92	5.0		

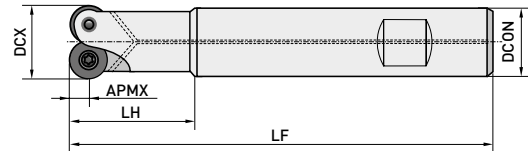
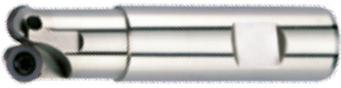
SPARE PARTS

RE	Order Number					
		Washer	Washer Screw	Clamp Screw	Clamp Screw	Wrench
2.5	RRD025R					
	102S10Z					
	123S12Z	—	—	B-TS20	—	TKY06F
3.5	RRD035R					
	122S10Z					
	122S12Z					
	122S16Z	—	—	B-TS253	—	TKY07F
	122S16ZL					
	122S16ZM					
5	RRD050R					
	152S16Z					
	152S16ZM					
	152S20Z	—	—	TS25	—	TKY08F
	152S20ZM					
5	RRD050R					
	202S25Z	—	—	B-TS35	—	TKY15F
	202S25ZL					
	202S25ZM					

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WELDON SHANK TYPE

Right hand tool holder only.

RE	Order Number	Stock	Teeth	DCX	DCON	LF	LH	APMX	Insert
3.5	RRD035R122S16W	●	2	12	16	88	15	3.5	RDH/M/Z 07T1M0
	RRD035R122S16WL	□	2	12	16	128	15	3.5	
	RRD035R122S16WM	□	2	12	16	108	15	3.5	
3.5	RRD035R152S16W	□	2	15	16	88	18	3.5	RDH/M/Z 0702M0
	RRD035R152S16WM	□	2	15	16	108	18	3.5	
	RRD035R152S20W	□	2	15	20	130	20	3.5	
	RRD035R152S20WM	□	2	15	20	150	20	3.5	
3.5	RRD035R152S25W	□	2	15	25	176	20	3.5	RDH/M/Z 07T1M0
	RRD035R153S16W	●	3	15	16	78	30	3.5	
5	RRD050R202S20W	●	2	20	20	90	31	5.0	RDH/M/Z 1003M0
	RRD050R202S20WM	●	2	20	20	110	51	5.0	
	RRD050R202S25W	●	2	20	25	135	72	5.0	
	RRD050R202S25WL	●	2	20	25	176	112	5.0	
	RRD050R202S25WM	●	2	20	25	156	92	5.0	

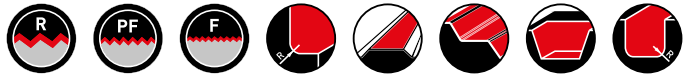
SPARE PARTS

RE	Order Number	Washer	Washer Screw	Clamp Screw	Clamp Screw	Wrench
3.5	RRD035R					
	122S16W					
	122S16WL	—	—	B-TS253	—	TKY07F
	122S16WM					
	152S16W					
	152S16WM					
	152S20W			TS25		TKY08F
152S20WM	—	—		—		
152S25W						
153S16W				TS253		
5	RRD050R					
	202S20W					
	202S20WM					
	202S25W	—	—	B-TS35	—	TKY15F
202S25WL						
202S25WM						

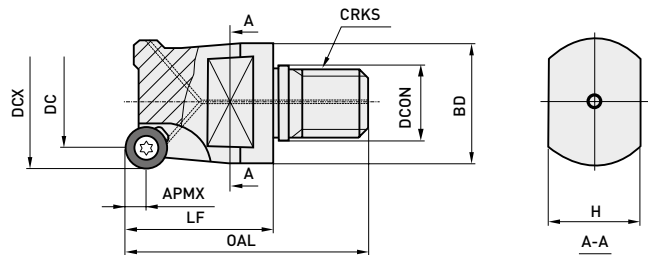
Roughing
 Semi-Finishing
 Finishing

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SCREW-IN TYPE






Right hand tool holder only.

RE	Order Number	Stock	Teeth	DCX	DC	OAL	LF	DCON	BD	CRKS	APMX	H	Insert
	RRD025R102M5	●	2	10	5	35	20	5.5	9.9	M5	2.5	6	
2.5	RRD025R123M8	●	3	12	7	38	20	8.5	13.5	M8	2.5	9	RDH/Z 0501M0
	RRD025R154M8	●	4	15	10	38	20	8.5	13.5	M8	2.5	10	
	RRD025R205M10	●	5	20	15	44	25	10.5	18	M10	2.5	15	
3.5	RRD035R122M8	●	2	12	5	46	28	8.5	13.5	M8	3.5	9	RDH/M/Z 07T1M0
	RRD035R153M8	●	3	15	8	46	28	8.5	13.5	M8	3.5	10	
	RRD035R204M10	●	4	20	13	47	28	10.5	18	M10	3.5	15	
	RRD035R255M12	●	5	25	18	50	28	12.5	21	M12	3.5	17	
	RRD035R306M16	●	6	30	23	51	28	17	29	M16	3.5	22	
3.5	RRD035R357M16	●	7	35	28	51	28	17	29	M16	3.5	22	RDH/M/Z 0702M0
	RRD035R152M8	●	2	15	8	46	28	8.5	13.5	M8	3.5	10	
	RRD035R153M8X	●	3	15	8	43	28	8.5	13.5	M8	3.5	10	
5	RRD050R202M10	●	2	20	10	47	28	10.5	18	M10	5.0	15	RDH/M/Z 1003M0
	RRD050R252M12	●	2	25	15	54	32	12.5	21	M12	5.0	17	
	RRD050R253M12	●	3	25	15	54	32	12.5	21	M12	5.0	17	
	RRD050R304M12	●	4	30	20	54	32	12.5	21	M12	5.0	17	
	RRD050R304M16	●	4	30	20	55	32	17	29	M16	5.0	22	
	RRD050R355M16	●	5	35	25	65	42	17	29	M16	5.0	22	
	RRD050R426M16	●	6	42	32	65	42	17	29	M16	5.0	22	
6	RRD060R242M12	●	2	24	12	54	32	12.5	21	M12	6.0	17	RDH/M/Z 12T3M0
	RRD060R353M16	●	3	35	23	65	42	17	29	M16	6.0	22	
	RRD060R354M16	●	4	35	23	65	42	17	29	M16	6.0	22	
	RRD060R424M16	●	4	42	30	55	32	17	29	M16	6.0	24	
	RRD060R425M16	●	5	42	30	65	42	17	29	M16	6.0	22	
8	RRD080R322M16	●	2	32	16	65	42	17	29	M16	8.0	22	RDH/M/Z 1604M0

Roughing
 Semi-Finishing
 Finishing

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SPARE PARTS

RE	Order Number						
		Washer	Washer Screw	Clamp Screw	Clamp Screw	Wrench	
2.5	RRD025R	102M5					
		123M8	—	—	B-TS20	—	TKY06F
		154M8					
		205M10					
3.5	RRD035R	122M8			B-TS253	—	TKY07F
		153M8					
		204M10					
		255M12	—	—	TS253	—	TKY08F
		306M16					
		357M16					
		152M8			TS25	—	TKY08F
153M8X							
5	RRD050R	202M10					
		252M12					
		253M12					
		304M12	—	—	B-TS35	—	TKY15F
		304M16					
6	RRD060R	355M16					
		426M16					
		242M12				—	
		353M16					
8	RRD080R	354M16	—	—	B-TS35	TS1001	TKY15F
		424M16					
		425M16					
8	RRD080R	322M16			214	—	TKY20F

INSERTS

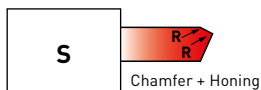
P	Steel	●	●	●	●	●	●
K	Cast Iron	✱	✱	✱	✱	✱	✱
H	Hardened Materials	●	●	●	●	●	●

Cutting Conditions (Guide):

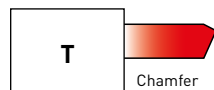
●: Stable Cutting ●: General Cutting ✱: Unstable Cutting

Order Number	Class	Honing	F7030	VP15TF	VP20M	VP10H	VP05HT	UT120T	IC	S	Geometry
RDHX0501M0E	H	E	●	●		●	●		5	1.5	
RDHX0501M0S	H	S	●	●		●			5	1.5	
RDHX07T1M0E	H	E	●	●		●	●		7	1.98	
RDHX07T1M0S	H	S	●	●		●	●		7	1.98	
RDHX0702M0E	H	E	●	●		●	●		7	2.38	
RDHX0702M0S	H	S	●	●		●			7	2.38	
RDHX1003M0E	H	E	●	●		●	●		10	3.18	
RDHX1003M0S	H	S	●	●		●	●		10	3.18	
RDHX12T3M0E	H	E	●	●		●	●		12	3.97	
RDHX12T3M0S	H	S	●	●		●			12	3.97	
RDHX1604M0E	H	E	●	●		●	●		16	4.76	
RDHX1604M0S	H	S	●	●		●			16	4.76	
RDMX07T1M0E	M	E					●		7	1.98	
RDMX07T1M0T	M	T	●		●	●			7	1.98	
RDMX0702M0E	M	E					●		7	2.38	
RDMX0702M0T	M	T	●		●	●		□	7	2.38	
RDMX1003M0E	M	E					●		10	3.18	
RDMX1003M0S	M	S		●		●			10	3.18	
RDMX1003M0T	M	T	●		●	●		●	10	3.18	
RDMX12T3M0E	M	E					●		12	3.97	
RDMX12T3M0S	M	S		●		●			12	3.97	
RDMX12T3M0T	M	T	●		●	●		●	12	3.97	
RDMX1604M0E	M	E					●		16	4.76	
RDMX1604M0S	M	S		●		●			16	4.76	
RDMX1604M0T	M	T	●		●	●		●	16	4.76	
RDZX0501M0E	Z	E		●					5	1.50	
RDZX07T1M0E	Z	E		●					7	1.98	
RDZX0702M0E	Z	E		●					7	2.38	
RDZX1003M0E	Z	E		●					10	3.18	
RDZX1003M0S	Z	S	●	●					10	3.18	
RDZX12T3M0E	Z	E		●					12	3.97	
RDZX12T3M0S	Z	S	●	●					12	3.97	
RDZX1604M0E	Z	E		●					16	4.76	
RDZX1604M0S	Z	S	●	●					16	4.76	

Cutting Edge Preparation



● For roughing



● For roughing and finishing



● For finishing

RECOMMENDED CUTTING CONDITIONS

CUTTING CONDITIONS FOR ROUGHING (ae = 50% of Ø)

Work Material	Hardness	Grade	Vc (m/min)	Ø 10-15 mm		Ø 20 mm		Ø 24-25 mm		Ø 30-42 mm		Ø 50-80 mm		Ø 100-160 mm		
				ap (mm)	fz (mm)	ap (mm)	fz (mm)	ap (mm)	fz (mm)	ap (mm)	fz (mm)	ap (mm)	fz (mm)	ap (mm)	fz (mm)	
P Mild Steel	<180HB	F7030 VP15TF	(250-320)	-0.2	0.25	-0.5	0.45	-1.0	0.35	-1.0	0.40	-1.0	0.50	-1.5	0.60	
			(240-300)	0.2-0.3	0.20	0.5-1.0	0.25	1.0-2.0	0.30	1.5-2.0	0.32	1.0-1.5	0.40	1.5-2.5	0.45	
			(200-280)	0.3-0.5	0.12	1.0-1.5	0.15	2.0-2.5	0.20	2.0-3.0	0.25	1.5-3.0	0.35	2.5-5.0	0.35	
	Carbon Steel Alloy Steel	180- 350HB	F7030 VP15TF	(220-300)	-0.2	0.20	-0.5	0.40	-1.0	0.30	-1.0	0.40	-1.0	0.50	-1.5	0.55
				(200-290)	0.2-0.3	0.15	0.5-1.0	0.20	1.0-1.5	0.25	1.5-2.0	0.30	1.0-1.5	0.38	1.5-2.5	0.40
				(160-250)	0.3-0.5	0.10	1.0-1.5	0.10	1.5-2.0	0.22	2.0-3.0	0.22	1.5-3.0	0.30	2.5-4.5	0.32
K Cast Iron	Tensile Strength <450MPa	VP15TF VP20M VP10H	(200-250)	-0.1	0.15	-0.5	0.18	-1.0	0.20	-1.0	0.25	-1.0	0.30	-1.5	0.35	
			(180-230)	0.1-0.2	0.10	0.5-1.0	0.10	1.0-1.5	0.15	1.5-2.0	0.18	1.0-1.5	0.25	1.5-2.5	0.22	
			(160-200)	0.2-0.25	0.10	1.0-1.5	0.10	1.5-2.0	0.12	2.0-3.0	0.15	1.5-3.0	0.18	2.5-4.5	0.20	
H Hardened Steel	-52HRC -58HRC -60HRC	VP15TF VP10H VP05HT	(140-200)	-0.1	0.12	-0.1	0.14	-0.1	0.15	-0.1	0.18	-0.1	0.18	-0.1	0.20	
			(110-180)	0.1-0.15	0.10	0.1-0.20	0.12	0.1-0.30	0.12	0.1-0.30	0.14	0.1-0.30	0.14	0.1-0.30	0.15	
			(100-170)	0.1-0.15	0.10	0.1-0.20	0.10	0.1-0.30	0.10	0.1-0.30	0.12	0.1-0.30	0.12	0.1-0.30	0.12	

1. When using a full width of cut please reduce the cutting conditions by 20%.
2. When using a long overhang please reduce the feed rate by 20%.

CUTTING CONDITIONS FOR FINISHING (ae = 20% of Ø)

Work Material	Hardness	Grade	Vc (m/min)	Ø 10-15 mm		Ø 20 mm		Ø 24-25 mm		Ø 30-42 mm		Ø 50-80 mm		Ø 100-160 mm		
				ap (mm)	fz (mm)	ap (mm)	fz (mm)	ap (mm)	fz (mm)	ap (mm)	fz (mm)	ap (mm)	fz (mm)	ap (mm)	fz (mm)	
P Mild Steel	<180HB	F7030 VP15TF	(260-360)	-0.1	0.15	-0.15	0.20	-0.15	0.25	-0.15	0.30	-0.15	0.32	-0.3	0.35	
			(240-320)	0.1-0.2	0.15	0.1-0.2	0.15	0.1-0.2	0.18	0.1-0.3	0.20	0.1-0.3	0.22	0.2-0.3	0.25	
			(220-280)	0.2-0.24	0.10	0.1-0.30	0.15	0.1-0.30	0.18	0.1-0.30	0.20	0.2-0.30	0.20	0.3-0.40	0.20	
	Carbon Steel Alloy Steel	180- 350HB	F7030 VP15TF	(250-350)	-0.1	0.12	-0.1	0.15	-0.1	0.18	-0.1	0.25	-0.1	0.28	-0.15	0.30
				(230-310)	0.1-0.15	0.12	0.1-0.30	0.15	0.1-0.30	0.15	0.1-0.30	0.20	0.1-0.3	0.22	0.15-0.3	0.25
				(210-270)	0.15-0.2	0.10	0.15-0.30	0.12	0.15-0.30	0.15	0.15-0.30	0.15	0.2-0.3	0.18	0.2-0.3	0.18
K Cast Iron	Tensile Strength <450MPa	VP15TF VP20M VP10H	(200-300)	-0.1	0.15	-0.1	0.18	-0.1	0.20	-0.1	0.22	-0.1	0.25	-0.15	0.30	
			(200-280)	0.1-0.2	0.10	0.1-0.30	0.10	0.1-0.3	0.15	0.1-0.3	0.15	0.1-0.3	0.20	0.15-0.3	0.22	
			(180-240)	0.2-0.25	0.10	0.2-0.40	0.10	0.2-0.4	0.12	0.2-0.4	0.12	0.2-0.4	0.15	0.2-0.4	0.18	
H Hardened Steel	-52HRC -58HRC -60HRC	VP15TF VP10H VP05HT	(150-200)	-0.1	0.15	-0.1	0.14	-0.1	0.15	-0.1	0.18	-0.1	0.18	-0.1	0.20	
			(120-180)	0.1-0.15	0.10	0.1-0.20	0.12	0.1-0.30	0.12	0.1-0.30	0.14	0.1-0.30	0.14	0.1-0.30	0.15	
			(100-180)	0.1-0.15	0.10	0.1-0.20	0.10	0.1-0.30	0.10	0.1-0.30	0.12	0.1-0.30	0.12	0.1-0.30	0.12	

1. When using a full width of cut please reduce the cutting conditions by 20%.
2. When using a long overhang please reduce the feed rate by 20%.



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Order Code: B087E 

Published: 2018.02 [0], Printed in Germany