



Aluminum Series

Professional in Aluminum machining

Pro-A Mill

Features

Mirroring on the chip breaker ensures excellent chip removal and reduces built-up edge

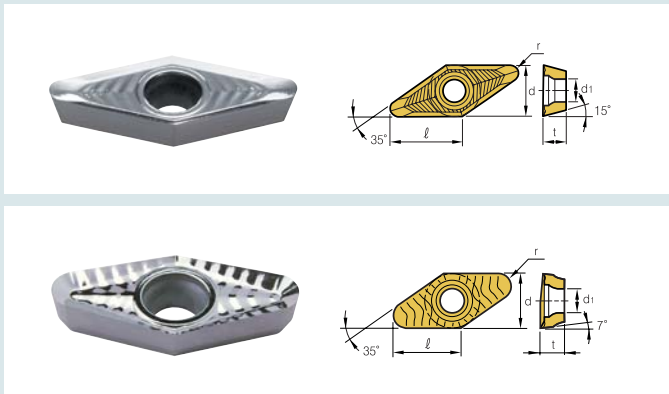
- High rake angle ensures excellent finishing and reduces cutting resistance.
- For shouldering, curved surface and slanted shouldering.
- Multi functional aluminum machining tool.



Pro-A Mill

Insert | PAM 2000 | Matching of modular head & shank adaptor

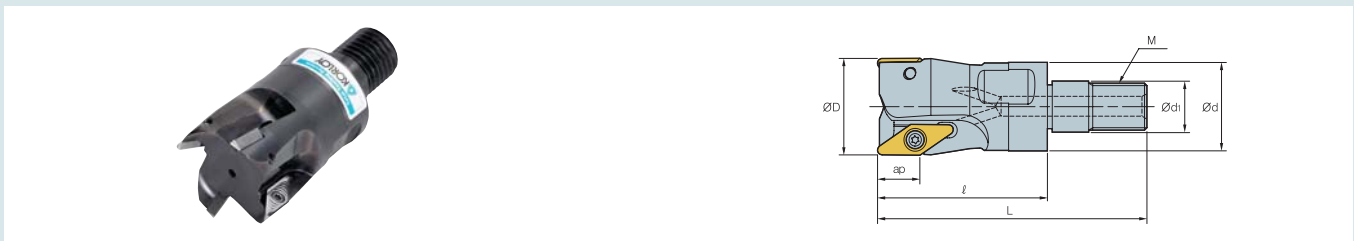
Insert



Grade	Dimensions(mm)				
	ℓ	d	t	r	ød ₁
H01	8.8	6.35	2.87	1.0	2.8
●	VDKT11T210N-MA				

Grade	Dimensions(mm)				
	ℓ	d	t	r	ød ₁
H01	15.6	12.7	5.56	3.0	5.6
●	VCKT220530N-MA				

PAM 2000



Designation	Stock	Dimensions(mm)								Insert		
		øD	ød	ød ₁	ℓ	L	M	⊙	ap			
PAM 2012HR-M06	●	12	11.0	6.5	33	47.5	M06	1	8.5	VDKT11T210N-MA	ETNA02505	TW07S
2016HR-M08	●	16	14.5	8.5	36	53.5	M08	2	8.5	VDKT11T210N-MA	ETNA02505	TW07S
2020HR-M10	●	20	18.0	10.5	36	56.0	M10	2	8.5	VDKT11T210N-MA	ETNA02506	TW07S
2025HR-M12	●	25	22.5	12.5	41	63.0	M12	3	8.5	VDKT11T210N-MA	ETNA02506	TW07S
2032HR-M16	○	32	28.5	17.0	45	69.0	M16	4	8.5	VDKT11T210N-MA	ETNA02506	TW07S
2042HR-M16	○	42	28.5	17.0	45	69.0	M16	5	8.5	VDKT11T210N-MA	ETNA02506	TW07S

● Stock item, ○ Under preparing for stock

Matching of modular head & shank adaptor

Designation : PAM 2012HR - M06

Modular head screw size (M06)

⇒

Shank designation : MAT- M06 - 020 - S12S

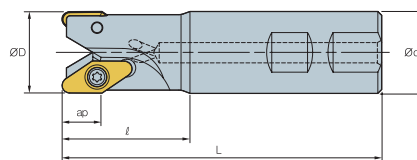
Shank adaptor screw size (M06)





Pro-A Mill

PAS 2000 / 4000 | PACM 4000

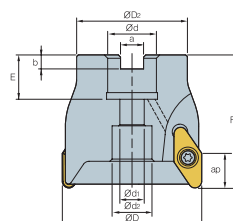
PAS 2000 / 4000





Designation	Stock	Dimensions(mm)						Insert		
		$\varnothing D$	$\varnothing d$	L	ℓ	\odot	ap			
PAS 2012HR	●	12	16	85	25	1	8	VDKT11T210N-MA	ETNA02505	TW07S
2016HR	●	16	16	90	25	2	8	VDKT11T210N-MA	ETNA02505	TW07S
2020HR	●	20	20	100	30	2	8	VDKT11T210N-MA	ETNA02506	TW07S
2025HR	●	25	25	115	35	3	8	VDKT11T210N-MA	ETNA02506	TW07S
2032HR	○	32	32	125	40	4	8	VDKT11T210N-MA	ETNA02506	TW07S
2042HR	○	42	32	130	42	5	8	VDKT11T210N-MA	ETNA02506	TW07S
PAS 4032HR	●	32	32	125	50	2	15	VCKT220530N-MA	FTNC04511	TW20S
4040HR	●	40	32	140	50	3	15	VCKT220530N-MA	FTNC04511	TW20S
4040HR-S40	○	40	40	150	60	3	15	VCKT220530N-MA	FTNC04509	TW20S
4040HR-S42	○	40	42	150	60	3	15	VCKT220530N-MA	FTNC04509	TW20S

● Stock item, ○ Under preparing for stock

PACM 4000



Designation	Stock	Dimensions(mm)											Insert		
		$\varnothing D$	$\varnothing D_2$	$\varnothing d$	$\varnothing d_1$	$\varnothing d_2$	F	a	b	E	\odot	ap			
PACM 4040HR	●	40	32	16	9	11.5	55	8.4	5.6	20	3	15	VCKT220530N-MA	PTNC04511	TW20S
4050HR	●	50	40	22	11	18	55	10.4	6.3	20	3	15	VCKT220530N-MA	PTNC04511	TW20S
4063HR	●	63	50	22	11	18	60	10.4	6.3	20	4	15	VCKT220530N-MA	PTNC04511	TW20S
4080HR	●	80	60	27	14	20	60	12.4	7.0	25	4	15	VCKT220530N-MA	PTNC04511	TW20S
4100HR	●	100	80	32	18	26	60	14.4	8.0	26	5	15	VCKT220530N-MA	PTNC04511	TW20S

● Stock item, ○ Under preparing for stock



Pro-A Mill

Modular adaptor (Steel)

Modular adaptor (Steel)

Standard type

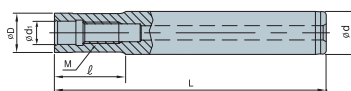


Fig 1. Straight Neck adaptor

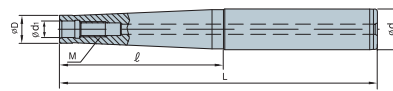


Fig 2. Taper Neck adaptor

Designation	Stock	Fig.	Dimensions(mm)					
			M	øD	ød	ød ₁	ℓ	L
MAT-M06-020-S10S	●	1	M06	9.5	10	6.5	20	70
MAT-M06-040-S12T	●	2	M06	9.5	12	6.5	40	96
MAT-M06-065-S16T	●	2	M06	9.5	16	6.5	65	125
MAT-M6B-020-S12S	●	1	M06	11	12	6.5	20	76
MAT-M6B-040-S12S	●	1	M06	11	12	6.5	40	96
MAT-M6B-065-S16T	●	2	M06	11	16	6.5	65	125
MAT-M6B-080-S16T	●	2	M06	11	16	6.5	80	140
MAT-M08-020-S16S	●	1	M08	14.5	16	8.5	20	80
MAT-M08-040-S16T	●	2	M08	14.5	16	8.5	40	100
MAT-M08-065-S16T	●	2	M08	14.5	16	8.5	65	125
MAT-M08-080-S20T	●	2	M08	14.5	20	8.5	80	150
MAT-M08-110-S25T	●	2	M08	14.5	25	8.5	110	190
MAT-M10-030-S20S	●	1	M10	18	20	10.5	30	100
MAT-M10-050-S20T	●	2	M10	18	20	10.5	50	120
MAT-M10-070-S20T	●	2	M10	18	20	10.5	70	140
MAT-M10-090-S25T	●	2	M10	18	25	10.5	90	170
MAT-M10-110-S25T	●	2	M10	18	25	10.5	110	190
MAT-M10-130-S32T	●	2	M10	18	32	10.5	130	220
MAT-M12-030-S25S	●	1	M12	22.5	25	12.5	30	110
MAT-M12-050-S25T	●	2	M12	22.5	25	12.5	50	130
MAT-M12-070-S25T	●	2	M12	22.5	25	12.5	70	150
MAT-M12-090-S25T	●	2	M12	22.5	25	12.5	90	170
MAT-M12-110-S32T	●	2	M12	22.5	32	12.5	110	200
MAT-M12-175-S40T	●	2	M12	22.5	40	12.5	175	300
MAT-M16-035-S32S	●	1	M16	28.5	32	17	35	125
MAT-M16-055-S32T	●	2	M16	28.5	32	17	55	145
MAT-M16-080-S32T	●	2	M16	28.5	32	17	80	170
MAT-M16-120-S32T	●	2	M16	28.5	32	17	120	210
MAT-M16-175-S40T	●	2	M16	28.5	40	17	175	300

● Available to use (FMRM, LBE, PAM, AMM, RM4PM, HRMM, PAXM)

● S : Straight type

● Stock item, ○ Under preparing for stock

● T : Taper type

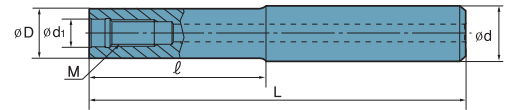


Pro-A Mill

Modular adaptor (Carbide)

Modular adaptor (Carbide)

Standard type



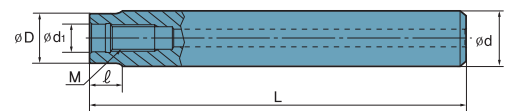
Designation	Stock	Dimensions(mm)					
		M	øD	ød	ød ₁	ℓ	L
MAT-M08-080-S16S-C	●	M08	14.5	16	8.5	80	150
MAT-M08-110-S16S-C	●	M08	14.5	16	8.5	110	180
MAT-M08-150-S16S-C	●	M08	14.5	16	8.5	150	250
MAT-M10-090-S20S-C	●	M10	18	20	10.5	90	170
MAT-M10-110-S20S-C	●	M10	18	20	10.5	110	200
MAT-M10-175-S20S-C	●	M10	18	20	10.5	175	300
MAT-M12-090-S25S-C	●	M12	22.5	25	12.5	90	170
MAT-M12-110-S25S-C	●	M12	22.5	25	12.5	110	200
MAT-M12-175-S25S-C	●	M12	22.5	25	12.5	175	300
MAT-M16-090-S32S-C	●	M16	28.5	32	17	90	180
MAT-M16-120-S32S-C	●	M16	28.5	32	17	120	210
MAT-M16-175-S32S-C	●	M16	28.5	32	17	175	300

• Available to use (FMRM, LBE, PAM, AMM, RM4PM, HRMM, PAXM)

● Stock item, ○ Under preparing for stock

Modular adaptor (Carbide)

Standard type



Designation	Stock	Dimensions(mm)					
		M	øD	ød	ød ₁	ℓ	L
MAT-M08-010-S16S-C-150	●	M08	14.5	16	8.5	10	150
MAT-M08-010-S16S-C-180	●	M08	14.5	16	8.5	10	180
MAT-M08-010-S16S-C-250	●	M08	14.5	16	8.5	10	250
MAT-M10-010-S20S-C-170	●	M10	18	20	10.5	10	170
MAT-M10-010-S20S-C-200	●	M10	18	20	10.5	10	200
MAT-M10-010-S20S-C-300	●	M10	18	20	10.5	10	300
MAT-M12-015-S25S-C-170	●	M12	22.5	25	12.5	15	170
MAT-M12-015-S25S-C-200	●	M12	22.5	25	12.5	15	200
MAT-M12-015-S25S-C-300	●	M12	22.5	25	12.5	15	300
MAT-M16-020-S32S-C-180	●	M16	28.5	32	17	20	180
MAT-M16-020-S32S-C-210	●	M16	28.5	32	17	20	210
MAT-M16-020-S32S-C-300	●	M16	28.5	32	17	20	300

• Available to use (FMRM, LBE, PAM, AMM, RM4PM, HRMM, PAXM)

● Stock item, ○ Under preparing for stock



Pro-A Mill

Pro-A Mill code system | Recommended cutting condition

Pro-A Mill code system

P	A	C	M	4	0	3	2	H	R
Pro-A Mill	Tool type	Arbor type	Insert I/C	Tool diameter	Coolant type	Hand of tool			
	- C : Cutter - S : Shank - M : Modular	- M : Metric - A : Inch	- 20 : 11 size insert - 40 : 22 size insert	- ISO : mm - AISI : inch	- H : Thru-hole - Unmarked : No thru-hole	- R : Right - L : Left			

Recommended cutting condition

Workpiece		vc (m/min)
Aluminum alloys	Rm < 280 N/mm ²	1000
	Rm > 280 N/mm ²	800
Copper alloys	Long chip	250
Thermo plastics	-	300
Aluminum alloys	Si < 12%	800
	Si ≥ 12%	-
Copper alloys	Short chip	400
Magnesium alloys	-	400
Duroplastics	-	150

Designation	fz (mm/t)	ap (mm)
VDKT11T210N-MA	0.05 - 0.2	8
VCKT220530N-MA	0.05 - 0.3	15



※ Safety instruction

- Use glasses safely and face cover with protective equipment. If cutting condition and use method are inaccurate, you may be injured by broken tools or scattered chips.
- Excessive cutting load may influence badly on both tool and machine.
Make suitable tool replacement for preventing failure of machining.
- After machine stopped, clean remained chips from machine with special cleaning equipment.
- Keep safety distance from acute and hot chip during machining.
- Make precaution for prevention of fire in advance when you use insoluble cutting oil.
- Assembled parts may be scattered at high speed cutting. Please use protective equipment.