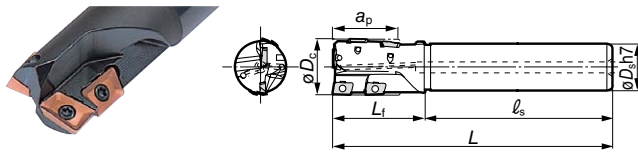
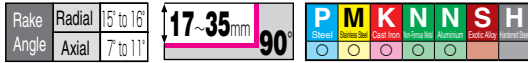


WMM 2000^{E/EL}_{ELH/EXLH} Type



Body (Standard Type/WMM 2000E Type)

Cat. No.	Stock	Dimensions (mm)						Total Teeth	Effective Teeth
		ϕD_c	ϕD_s	a_p	L_f	l_s	L		
WMM 2020E	●	20	20	17	35	95	130	3	1
2021E	●	21	20	17	35	95	130	3	1
2025E	●	25	25	26	40	100	140	4	1
2026E	●	26	25	26	40	100	140	4	1
2030E	●	30	25	35	50	100	150	5	1

(Long Type)

WMM 2020EL	●	20	20	17	60	125	185	3	1
2021EL	●	21	20	17	35	150	185	3	1
2025EL	●	25	25	26	75	145	220	4	1
2026EL	●	26	25	26	40	180	220	4	1
2030EL	●	30	25	35	50	180	230	5	1

(Long Type with Coolant Hole)

WMM 2020ELH	●	20	20	17	60	125	185	3	1
2021ELH	●	21	20	17	35	150	185	3	1
2025ELH	●	25	25	26	75	145	220	4	1
2026ELH	●	26	25	26	40	180	220	4	1
2030ELH	●	30	25	35	50	180	230	5	1

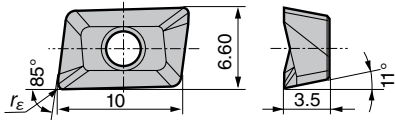
(Extra Long Type with Coolant Hole)

WMM 2022EXLH	●	22	20	17	35	215	250	3	1
2027EXLH	●	27	25	26	40	280	320	4	1
2030EXLH	●	30	25	35	50	300	350	5	1

Inserts are not included.

Inserts

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel



Grade	Coated Carbide	Carbide	DLC
	High Speed/Light		
General Purpose	M	P	K
Roughing			N

Cat. No.	ACZ350	ACZ330	ACZ310	H1	DL1000	Dimensions r_ϵ
	APMT 103504PDER	●	●	●	—	
103508PDER	●	●	●	—	—	0.8
103512PDER	●	●	●	—	—	1.2
APMT 103504PDER-H	●	●	●	—	—	0.4
103508PDER-H	●	●	●	—	—	0.8
103512PDER-H	●	●	●	—	—	1.2
APET 103504PDER-F	●	●	●	—	—	0.4
APET 103504PDER-S	—	—	—	●	●	0.4

-H: Strong Edge Type, F: Ground Insert, S: For Aluminum Alloy

Spare Parts (Common)

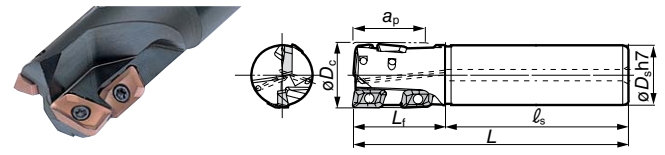
Screw	Spanner	Anti-seizure Cream	Applicable Endmill
BFTX02506N $\phi 1.5$	TRD08	SUMI-P	WMM2000 Type
BFTX03584 $\phi 3.0$	TRD15		WMM3000 Type

Recommended Tightening Torque (N·m)

Recommended Cutting Conditions (Common) Diameter $\phi 20$ to $\phi 26$ mm (Not for extra long type)

ISO	Work Material	Hardness	Cutting Speed v_c (m/min)		Feed Rate f_z (mm/t)		Grade
			Min. - Optimum - Max.	Min. - Optimum - Max.			
P	Carbon Steel	180 to 280HB	80-120-160	Shoulder Milling	0.05-0.13-0.20	ACZ330	
				Grooving	0.05-0.09-0.12		
				Drilling	0.05-0.12-0.18		
M	Stainless Steel	—	80-100-120	Shoulder Milling	0.05-0.10-0.15	ACZ350	
				Grooving	0.05-0.08-0.10		
				Drilling	0.05-0.09-0.12		
K	Cast Iron	250HB	70-150-180	Shoulder Milling	0.05-0.13-0.20	ACZ310	
				Grooving	0.05-0.09-0.12		
				Drilling	0.05-0.12-0.18		
N	Aluminium Alloy	—	200-300-500	Shoulder Milling	0.10-0.15-0.20	DL1000	
				Grooving	0.05-0.08-0.10		
				Drilling	0.05-0.08-0.10		

WMM 3000^{E/EL}_{ELH/EXLH} Type



Body (Standard Type/WMM 3000E Type)

Cat. No.	Stock	Dimensions (mm)						Total Teeth	Effective Teeth
		ϕD_c	ϕD_s	a_p	L_f	l_s	L		
WMM 3032E	●	32	32	39	50	100	150	4	1
3033E	●	33	32	39	50	100	150	4	1
3035E	●	35	32	39	50	100	150	4	1
3040E	●	40	32	39	55	105	160	4	1

(Long Type)

WMM 3032EL	●	32	32	39	90	140	230	4	1
3033EL	●	33	32	39	50	180	230	4	1
3035EL	●	35	32	39	50	180	230	4	1
3040EL	●	40	32	39	55	185	240	4	1

(Long Type with Coolant Hole)

WMM 3032ELH	●	32	32	39	90	140	230	4	1
3033ELH	●	33	32	39	50	180	230	4	1
3035ELH	●	35	32	39	50	180	230	4	1
3040ELH	●	40	32	39	55	185	240	4	1

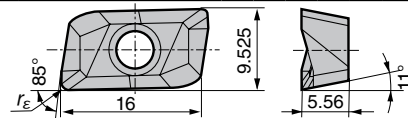
(Extra Long Type with Coolant Hole)

WMM 3035EXLH	●	35	32	39	50	320	370	4	1
3040EXLH	●	40	32	39	55	365	420	4	1

Inserts are not included.

Inserts

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel



Grade	Coated Carbide	Carbide	DLC
	High Speed/Light		
General Purpose	M	P	K
Roughing			N

Cat. No.	ACZ350	ACZ330	ACZ310	H1	DL1000	Dimensions r_ϵ
	APMT 160508PDER	●	●	●	—	
160512PDER	●	●	●	—	—	1.2
160516PDER	●	●	●	—	—	1.6
APMT 160508PDER-H	●	●	●	—	—	0.8
160512PDER-H	●	●	●	—	—	1.2
160516PDER-H	●	●	●	—	—	1.6
160520PDER-H *	●	●	●	—	—	2.0
160530PDER-H *	●	●	●	—	—	3.0
160540PDER-H *	●	●	●	—	—	4.0
160550PDER-H *	●	●	●	—	—	5.0
160560PDER-H *	●	●	●	—	—	6.0
APET 160508PDER-F	●	●	●	—	—	0.8
APET 160504PDER-S	—	—	—	●	●	0.4
160508PDER-S	—	—	—	●	●	0.8

-H: Strong Edge Type, F: Ground Insert, S: For Aluminum Alloy

* Cutter body modification is required.

* Correct the tool diameter by +0.5mm before use.

Recommended Cutting Conditions (Common) Diameter $\phi 30$ to $\phi 40$ mm (Not for extra long type)

ISO	Work Material	Hardness	Cutting Speed v_c (m/min)		Feed Rate f_z (mm/t)		Grade
			Min. - Optimum - Max.	Min. - Optimum - Max.			
P	Carbon Steel	180 to 280HB	80-120-160	Shoulder Milling	0.05-0.15-0.25	ACZ330	
				Grooving	0.05-0.10-0.15		
				Drilling	0.05-0.13-0.20		
M	Stainless Steel	—	80-100-120	Shoulder Milling	0.05-0.13-0.20	ACZ350	
				Grooving	0.05-0.09-0.12		
				Drilling	0.05-0.12-0.18		
K	Cast Iron	250HB	70-150-180	Shoulder Milling	0.05-0.15-0.25	ACZ310	
				Grooving	0.05-0.10-0.15		
				Drilling	0.05-0.13-0.20		
N	Aluminium Alloy	—	200-300-500	Shoulder Milling	0.10-0.15-0.20	DL1000	
				Grooving	0.05-0.08-0.10		
				Drilling	0.05-0.08-0.10		

Note The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, cutting depth, and other factors.