

PML-4E★PM-4E★PML-4EL★PM-4EL★PM-4EBL/X(general cutting)

Workpiece material	Cast iron, Carbon steel, Alloy steel ~30HRC		Stainless steel		Pre-hardened steel, quenched and tempered steel ~40HRC		Pre-hardened steel, quenched and tempered steel ~50HRC		Hardened steel ~55HRC	
	Diameter (mm)	Rotating speed (min ⁻¹)	Feed speed (mm/min)	Rotating speed (min ⁻¹)	Feed speed (mm/min)	Rotating speed (min ⁻¹)	Feed speed (mm/min)	Rotating speed (min ⁻¹)	Feed speed (mm/min)	Rotating speed (min ⁻¹)
1	20000	300	20000	108	20000	240	20000	180	20000	135
2	15000	480	11150	120	15000	420	13000	270	11140	195
3	14000	815	7500	145	10600	630	8500	495	7430	360
4	10800	840	5500	150	8000	645	6500	505	5570	370
5	8200	875	4500	150	6400	675	5000	530	4460	390
6	7000	900	3700	165	5300	690	4200	540	3710	390
8	5200	890	2800	165	4000	680	3200	555	2785	405
10	4200	875	2200	165	3200	675	2500	525	2230	375
12	3500	875	1850	165	2650	675	2100	525	1855	375
14	3000	815	1600	150	2300	630	1800	495	1590	360
16	2600	815	1400	145	2000	630	1600	495	1390	360
18	2300	805	1250	125	1800	620	1400	485	1240	350
20	2050	805	1100	125	1600	620	1250	485	1115	350

Maximum cutting depth	Diagram 1: $a_e=0.1D$		Diagram 2: $a_e=0.05D$		Diagram 3: $a_e=0.03D$													
	a_p	$a_p=1.5D$	a_p	$a_p=1.5D$	a_p	$a_p=1.5D$												
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- The above table shows the standard value of side milling. When milling slot, 50%~70% of rotating speed and 40%~60% of feed speed stated above are recommended as standard.
- Please select high-precision machine and tool holder.
- Please use air blow or cutting liquid with high mist retardant property.
- Down milling is recommended in the case of side milling.
- When the machine rigidity and workpiece fixture stability is low, vibration and abnormal noise may be generated. Please reduce the rotating speed and feed speed stated above correspondingly.
- Make overhang of tool as short as possible in conditions of non-interference.

PML-4E★PM-4E★PML-4EL★PM-4EL★PM-4EBL/X(high speed side milling)

Workpiece material	Cast iron, Carbon steel, Alloy steel ~30HRC		Carbon steel, Alloy steel ~40HRC		Pre-hardened steel, quenched and tempered steel ~45HRC		Pre-hardened steel, quenched and tempered steel ~50HRC		Hardened steel ~55HRC		
Cutting speed	300m/min		250 m/min		200 m/min		150 m/min		100 m/min		
Diameter (mm)	Rotating speed (min ⁻¹)	Feed speed (mm/min)	Rotating speed (min ⁻¹)	Feed speed (mm/min)	Rotating speed (min ⁻¹)	Feed speed (mm/min)	Rotating speed (min ⁻¹)	Feed speed (mm/min)	Rotating speed (min ⁻¹)	Feed speed (mm/min)	
6	15915	1705	13260	1420	10600	1135	7960	850	5300	570	
8	11935	1700	9950	1400	7960	1130	5970	850	3980	570	
10	9550	1660	7960	1380	6370	1110	4775	830	3180	550	
12	7960	1660	6630	1380	5300	1110	3980	830	2650	550	
14	6820	1545	5685	1290	4550	1030	3410	900	2275	515	
16	5970	1545	4975	1290	3980	1030	2985	900	1990	515	
18	5305	1545	4420	1290	3540	1030	2650	900	1770	515	
20	4775	1545	3980	1290	3180	1030	2390	900	1590	515	
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PML-4E-G★PM-4E-G★PML-4EL-G★PM-4EL-G★PM-4EBL/X-G PML-4E-H★PM-4E-H★PML-4EL-H★PM-4EL-H(general cutting)

Workpiece material	Cast iron, Carbon steel, Alloy steel ~30HRC		Stainless steel		Pre-hardened steel, quenched and tempered steel ~40HRC		Pre-hardened steel, quenched and tempered steel ~50HRC		Hardened steel ~55HRC	
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1	20000	270	20000	95	20000	215	20000	135	20000	120
2	15000	435	11150	110	15000	380	13000	200	11140	175
3	14000	735	7500	135	10600	565	8500	370	7430	325
4	10800	755	5500	140	8000	575	6500	380	5570	335
5	8200	795	4500	140	6400	605	5000	400	4460	350
6	7000	810	3700	145	5300	620	4200	405	3710	350
8	5200	800	2800	145	4000	615	3200	415	2785	365
10	4200	795	2200	145	3200	605	2500	390	2230	340
12	3500	795	1850	145	2650	605	2100	390	1855	340
14	3000	735	1600	140	2300	565	1800	370	1590	325
16	2600	735	1400	135	2000	565	1600	370	1390	325
18	2300	720	1250	115	1800	555	1400	365	1240	315
20	2050	720	1100	115	1600	555	1250	365	1115	315

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Indexable milling tools

Solid carbide end mills

Cutting parameters for PML/PM series end mills

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Maximum cutting depth	<p>$a_e=0.05D$ $a_p=1.5D$ Maximum $a_e=1.0\text{mm}$</p>	<p>$a_e=0.03D$ $a_p=1D$ Maximum $a_e=0.5\text{mm}$</p>
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