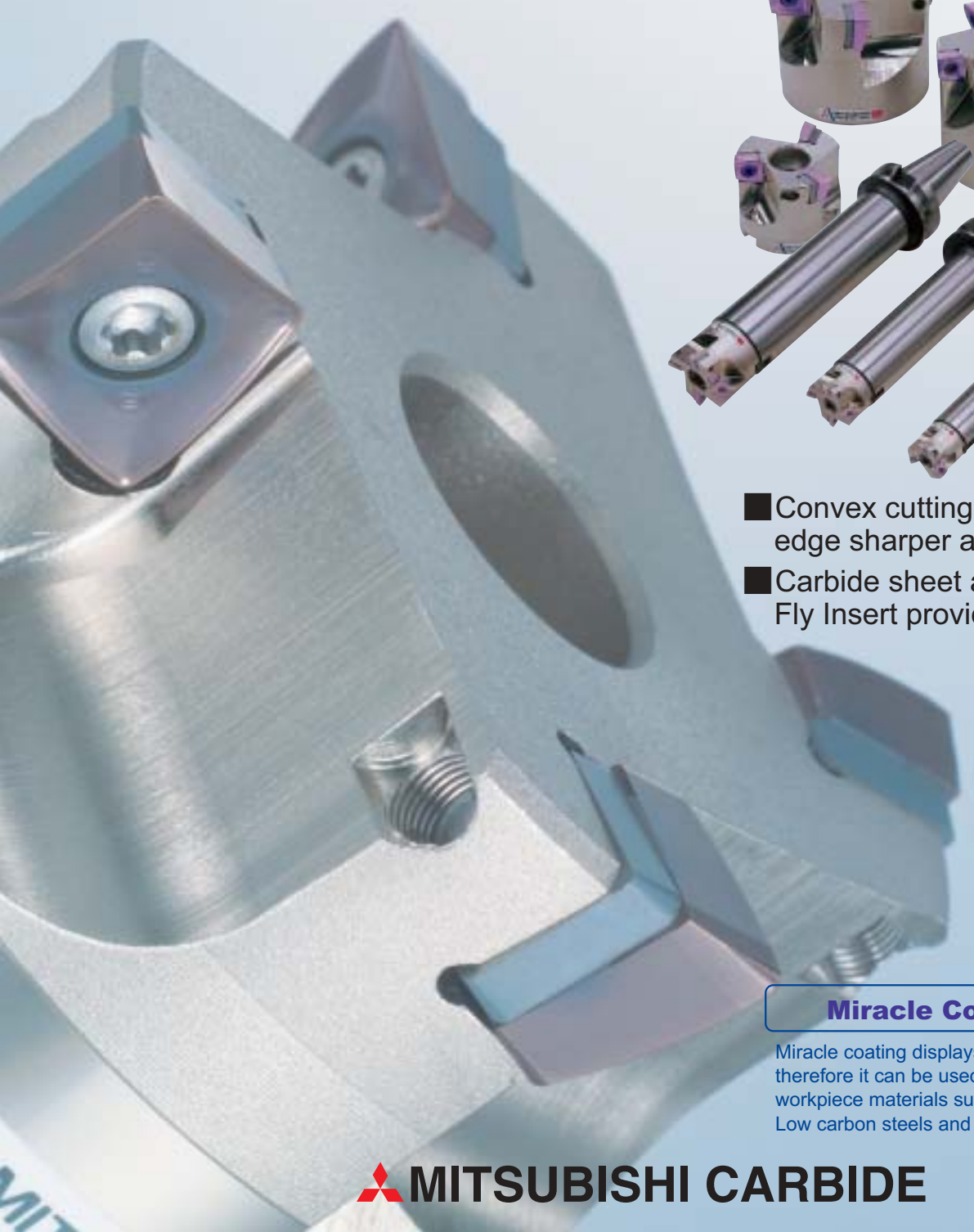


Indexable endmill for rough plunging

# PMIR

Sharper and stronger cutting edge by its low cutting pressure shape.  
The deeper, the better cutting performance.

## For plunge, horizontal feed, and ramping.



- Convex cutting edge makes cutting edge sharper and stronger.
- Carbide sheet and proprietary Anti-Fly Insert provide excellent rigidity.

### Miracle Coated *VP15TF*

Miracle coating displays high welding resistance therefore it can be used for machining a wide range of workpiece materials such as Plain steels, Mild steels, Low carbon steels and Stainless steels.

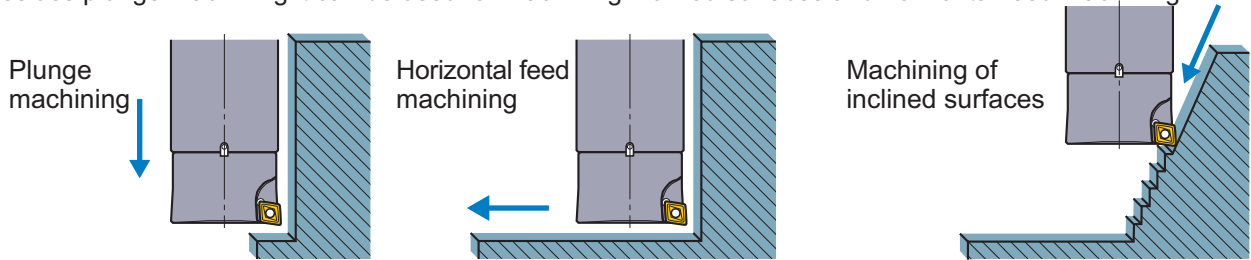
# Indexable endmill for rough plunging

# PMIR

## Features

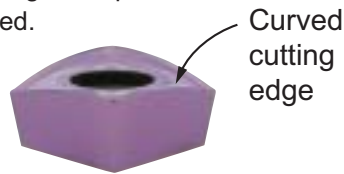
### Multi-functional

Besides plunge machining it can be used for machining inclined surfaces and horizontal feed machining.



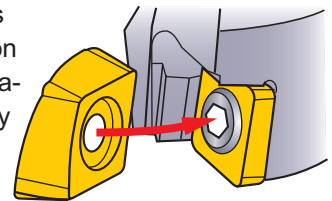
### Low cutting resistance geometry

By employing a low resistance cutting edge geometry, cutting edge sharpness and strength are increased.



### High machining reliability

By employing a cemented carbide shim and a mechanism to prevent the inserts from moving, insert location rigidity is increased and stable machining under heavy load conditions can be achieved.




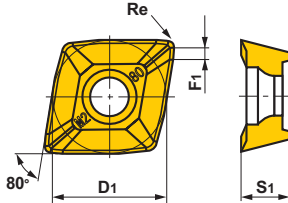

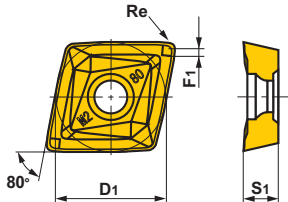
### High strength body

The body is made from a special alloy steel that has high heat temperature properties.

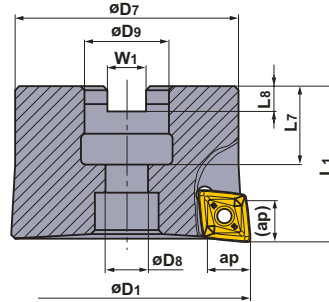


A special surface coating of the body is employed to improve the corrosion resistance properties.

### Insert

Shape	Order number	Class	Coated			Geometry	Dimensions (mm)			
			VP15TF		F7030		D1	S1	F1	Re
	CPMT1205ZPEN-M2	M	●		●		12.7	5.56	1.4	0.8
	1205ZPEN-M3	M	●				12.7	5.56	1.4	1.2
	CPMT1906ZPEN-M2	M	●		●		19.05	6.35	1.4	0.8
	1906ZPEN-M3	M	●				19.05	6.35	1.4	1.2

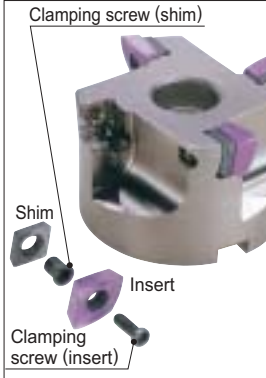
# PMR



Right hand tool holder only.

Type	Order number	Stock R	Number of teeth	Dimensions (mm)									Insert
				D1	D7	L1	D8	D9	L7	W1	L8	ap	
Metric	PMR405003A22R	●	3	50	45	40	11	22	20	10.4	6.3	11	CPMT1205ZPEN-M2/3
	406304A22R	●	4	63	57	40	11	22	20	10.4	6.3	11	CPMT1205ZPEN-M2/3
	408005A27R	●	5	80	73	50	13.5	27	23	12.4	7	11	CPMT1205ZPEN-M2/3
	608004A27R	●	4	80	72	50	13.5	27	23	12.4	7	17	CPMT1906ZPEN-M2/3
Inch	PMR405003BR	●	3	50	45	40	11	22.225	19	8.4	5	11	CPMT1205ZPEN-M2/3
	406304BR	●	4	63	57	40	11	22.225	19	8.4	5	11	CPMT1205ZPEN-M2/3
	408005DR	●	5	80	73	63	17	31.75	32	12.7	8	11	CPMT1205ZPEN-M2/3
	608004DR	●	4	80	72	63	17	31.75	32	12.7	8	17	CPMT1906ZPEN-M2/3

## Spare parts



Order number	Shim	Clamp screw (shim)	Clamp screw (insert)	Set bolt	Wrench (insert)	Wrench (shim)
PMR405003A22R	STPMR4N	WCS503507H	①TPS35	HSC10035	①TIP15T	HKY35R
406304A22R	STPMR4N	WCS503507H	①TPS35	HSC10035	①TIP15T	HKY35R
408005A27R	STPMR4N	WCS503507H	①TPS35	HSC12040	①TIP15T	HKY35R
405003BR	STPMR4N	WCS503507H	①TPS35	HSC10035	①TIP15T	HKY35R
406304BR	STPMR4N	WCS503507H	①TPS35	HSC10035	①TIP15T	HKY35R
408005DR	STPMR4N	WCS503507H	①TPS35	HSC16040	①TIP15T	HKY35R
PMR608004A27R	STPMR6N	WCS604010H	②CSF401260T	HSC12040	②TKY20D	HKY40R
608004DR	STPMR6N	WCS604010H	②CSF401260T	HSC16040	②TKY20D	HKY40R

## Recommended cutting conditions

Workpiece		Hardness	Grade	Cutting speed (m/min)	Feed per tooth (mm/tooth)	pf (mm)
P	Carbon steel Alloy steel	JIS S50C JIS SCM440 etc.	F7030	180 (150-200)	0.2 (0.1 - 0.3)	≤0.5D
		180 - 280HB 280 - 380HB				
K	Cast iron	JIS FC250 etc.	VP15TF	180 (150-200)	0.2 (0.1 - 0.3)	≤0.5D
	Ductile cast iron	JIS FCD450 etc.	VP15TF	150 (120-170)	0.2 (0.1 - 0.3)	≤0.5D
		JIS FCD600 etc.	VP15TF	120 (100-150)	0.2 (0.1 - 0.3)	≤0.5D

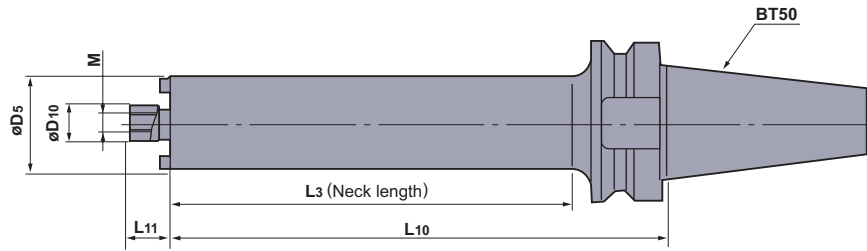
Note 1) The above conditions are suitable for general machining purposes, it is possible to use conditions that are different from the above.

Note 2) For horizontal feed machining, please reduced the feed rate by 20~40%.

Note 3) If vibration occurs when machining, please reduce the depth of cut, cutting speed by 20~50%.

# PMR

## Arbor standards



Arbor type	Order number	Stock	Dimensions (mm)						Weight (kg)	Cutter
			D5	D10	L10	L11	L3	M		
Metric	<b>BT50-22-250-050</b>	●	47	22	250	18	202	10	6.5	PMR405003A22R
	<b>22-250-063</b>	●	60	22	250	18	202	10	8.5	PMR406304A22R
	<b>27-300-080</b>	●	75	27	300	22	252	12	12.5	PMR408005A27R PMR608004A27R
Inch	<b>BT50-22.225-250-050</b>	●	47	22.225	250	17	202	10	6.5	PMR405003BR
	<b>22.225-250-063</b>	●	60	22.225	250	17	202	10	8.5	PMR406304BR
	<b>31.75-300-080</b>	●	75	31.75	300	30	252	16	12.5	PMR408005DR PMR608004DR

### Application examples

Tool		PMR405003BR (VP15TF)	PMR405003A22R (F7030)
Workpiece		Cast iron (JIS FC300) Press mold	Carbon steel (JIS S55C) Plastic mold
Cutting conditions	Revolutions (min <sup>-1</sup> )	1200	900
	Cutting speed (m/min)	188	141
	Table feed (mm/min)	400	800
	Feed per tooth (mm/tooth)	0.11	0.3
	Depth of cut (mm)	5 - 10	3
	Pick feed (mm)	10	4
Results		Higher cutting edge sharpness, lower resistance and the tool life was twice as long the competitor.	Used for semi-finishing, and the tool life and cutting edge sharpness was better than the competitor.

**For Your Safety**

●Don't touch breakers and chips without gloves. ●Please machine within recommended application range, and exchange expired tools with new parts in advance. ●Please use safety cover and wear safety glasses. ●When using compounded cutting oils, please take fire prevention. ●When attaching chips or spare parts, please use the attached wrench or spanner. ●When using tools in revolution machining, please make a trial run to check run-out, vibration, abnormal sounds etc.

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(Tools specifications subject to change without notice.)