

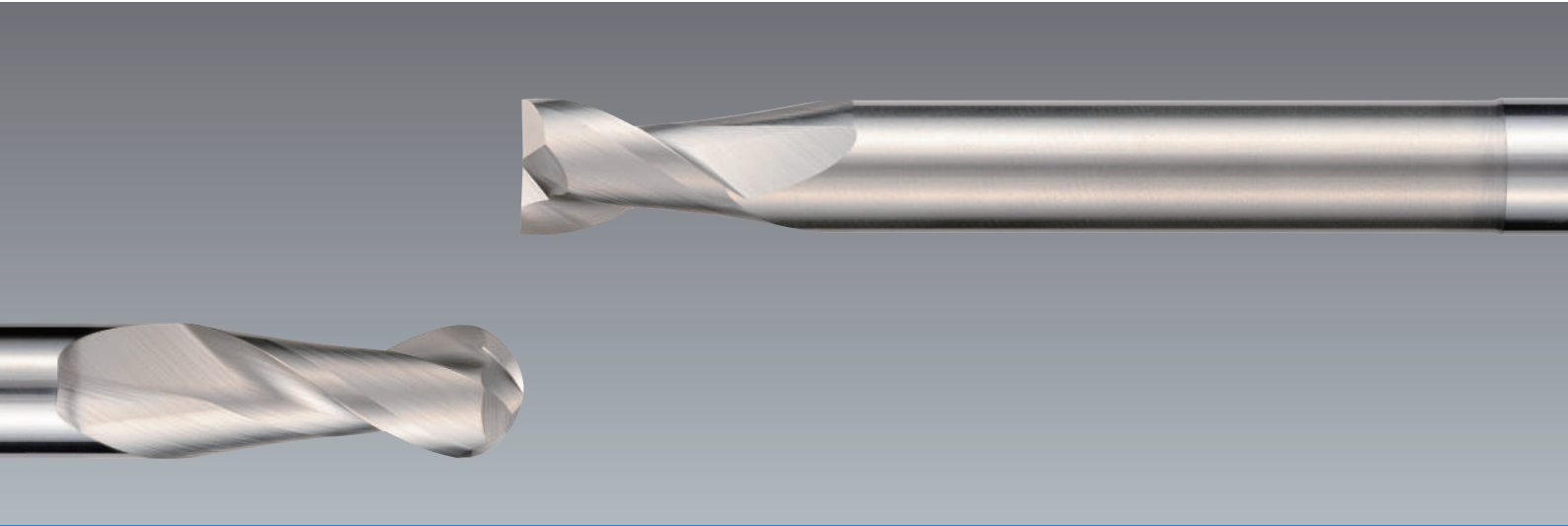
THE NEW VALUE FRONTIER



Solid End Mill | **47M Series**

For Aluminum Alloy Machining

# 47M Series



Achieve Long Tool Life and a Smooth Surface with High Hardness TiB<sub>2</sub> Coating

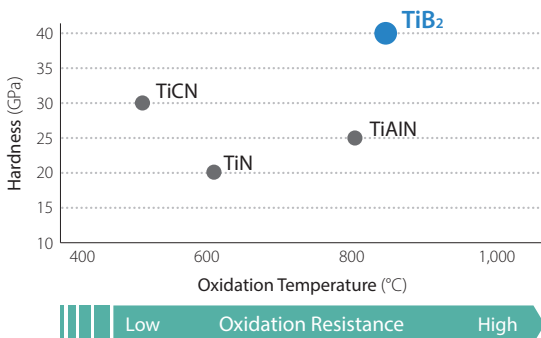
Lineup of Square, Long Type, and Ball-nose Type

Achieve Long Tool Life with High Hardness TiB<sub>2</sub> Coating

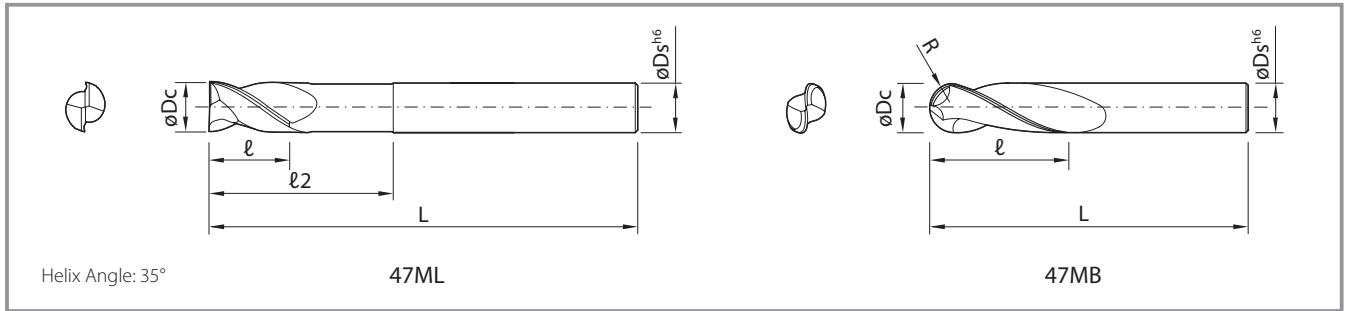
Ensure a Low Affinity to Cold Welding and a Smooth Surface



Coating Properties (In-house Evaluation)



## Lineup (Square / Ball-nose)



### 47ML (Square, Short length of cut, Long shank type)

No. of Inserts Z=2 (Unit: mm)

Description	*Code	Stock	Outside Dia.	Mill Dia.	Length of Cut	Under Neck Length	Shank Dia.	Overall Length
			øDc	Tolerance				
47ML120-160	44612	●	12	$\begin{matrix} 0 \\ -0.011 \end{matrix}$	16	80	12	150
47ML160-200	44613	●	16	$\begin{matrix} 0 \\ -0.011 \end{matrix}$	20	80	16	150
47ML200-250	44614	●	20	$\begin{matrix} 0 \\ -0.013 \end{matrix}$	25	80	20	150

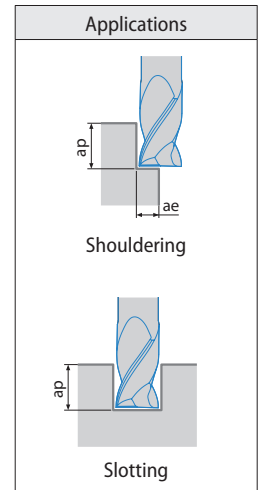
\*The code is a reference number that is listed on the product. When ordering, please refer to "Description" in the table. ●: Standard Stock

### 47MB (Ball-nose)

No. of Inserts Z=2 (Unit: mm)

Description	*Code	Stock	Radius of Ball Nose	Radius of Ball Nose	Outside Dia.	Length of Cut	Shank Dia.	Overall Length
			R	Tolerance				
47MB120-260	44604	●	6	$\pm 0.013$	12	26	12	83
47MB160-320	44606	●	8	$\pm 0.013$	16	32	16	92
47MB200-373	44607	●	10	$\pm 0.013$	20	37.3	20	104
47MB250-380	44608	●	12.5	$\pm 0.013$	25	38	25	104

\*The code is a reference number that is listed on the product. When ordering, please refer to "Description" in the table. ●: Standard Stock



## Cutting Conditions

### 47ML (Square)

Workpiece	Application	Depth of Cut (ap×ae) (mm)	Outside Dia.	ø12	ø20
			Dc (mm)		
Aluminum Alloy A5052 A7075	Shouldering	1.0Dc×0.5Dc	Spindle Revolution (min <sup>-1</sup> )	16,200	9,700
			Feed Rate (mm/min)	4,660	3,630
	1.0Dc×0.05Dc (Finishing)	Spindle Revolution (min <sup>-1</sup> )	26,700	16,000	
		Feed Rate (mm/min)	17,920	14,080	
Slotting	1.0Dc	Spindle Revolution (min <sup>-1</sup> )	13,000	7,800	
		Feed Rate (mm/min)	3,750	2,910	

### 47MB (Ball-nose)

Workpiece	Application	Depth of Cut (ap×ae) (mm)	Outside Dia.	ø12	ø20	ø25
			Dc (mm)			
Aluminum Alloy A5052 A7075	Shouldering	0.5Dc×0.5Dc	Spindle Revolution (min <sup>-1</sup> )	8,100	4,850	3,900
			Feed Rate (mm/min)	2,330	1,815	1,650
	0.5Dc×0.05Dc (Finishing)	Spindle Revolution (min <sup>-1</sup> )	13,350	8,000	6,400	
		Feed Rate (mm/min)	8,960	7,040	6,240	
Slotting	0.5Dc	Spindle Revolution (min <sup>-1</sup> )	6,500	3,900	3,100	
		Feed Rate (mm/min)	1,875	1,455	1,325	

\* When machining with long overhang length, please make depth of cut ap and feed rate about 50% in the above table