

Twist Chamfer Mill

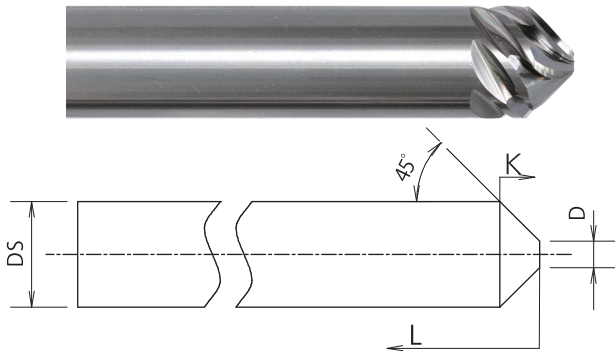
Carbide 90° End Mill for Front Chamfering



Uncoated



Coated



Twist Chamfer Mill Carbide 90° End Mill for Front Chamfering

	Model number		Tip diameter D	Effective blade length K	Number of flutes	Shank diameter DS	Overall length L
	Uncoated	Coated					
①	T C M 9 0 - 3	T C M 9 0 C - 3	0.5	1.25	3	3	40
②	T C M 9 0 - 4	T C M 9 0 C - 4	0.5	1.75	3	4	50
③	T C M 9 0 - 6	T C M 9 0 C - 6	0.75	2.625	5	6	60
④	T C M 9 0 - 8	T C M 9 0 C - 8	1.25	3.375	5	8	60
⑤	T C M 9 0 - 10	T C M 9 0 C - 10	2.5	3.75	7	10	70
⑥	T C M 9 0 - 12	T C M 9 0 C - 12	2.5	4.75	7	12	70
⑦	TCM90-10-11S	TCM90C-10-11S	4	3	11	10	70
⑧	TCM90-12-11S	TCM90C-12-11S	4	4	11	12	70

• K=Cutting Edge



Recommended cutting conditions

Work material	Aluminum alloy	General steel	Stainless steel	Titanium alloy	Heat-resistant alloy
Shank diameter	Feed rate (mm/blade)				
Cutting speed (m/min)	85 ~ 175	40 ~ 90	30 ~ 60	25 ~ 55	20 ~ 45
Φ3. / Φ4.	0.01 ~ 0.05	0.025 ~ 0.065	0.02 ~ 0.06	0.025 ~ 0.05	0.02 ~ 0.04
Φ6. / Φ8.	0.015 ~ 0.055	0.02 ~ 0.06	0.015 ~ 0.055	0.02 ~ 0.055	0.01 ~ 0.05
Φ10. / Φ12.	0.015 ~ 0.055	0.015 ~ 0.055	0.01 ~ 0.05	0.02 ~ 0.045	0.01 ~ 0.035
Chamfering depth	~ 0.3DS	~ 0.15DS	~ 0.2DS	~ 0.15DS	~ 0.15DS

Cutting speed (m/min)	150 ~ 305	100 ~ 225	90 ~ 180	75 ~ 165	65 ~ 150
Φ10. / Φ12. (11S)	~ 0.03	~ 0.035	~ 0.03	~ 0.025	~ 0.035
Chamfering depth	~ 0.2DS	~ 0.1DS	~ 0.125DS	~ 0.1DS	~ 0.1DS

※ « Resin » machining is possible under the recommended cutting conditions for aluminum alloy.

<Precautions>

- ※ The values listed in the recommended cutting conditions were calculated by TOYO Co., Ltd., so fine-tuning may be necessary depending on the material, processing machine, state of the work, or other factors.
- ※ Recommended cut direction: downward
- ※ We recommend you use an **oil-based or water-soluble coolant** while machining.
- ※ Depending on the material, processing machine, state of the work, or other factors, processing should be done by making several cuts.
- ※ To prevent **tool damage, chattering, or burrs**, make sure **the work is clamped securely and the tool is set in a manner where it does not shake.**
- ※ To improve the surface roughness, set a lower feed rate per blade or a lower chamfering depth.
- ※ When chamfering a hole by thrusting, set a lower cutting speed.
- ※ For a long thrust, set a lower value than that of the condition.

<Recommended type>

	Aluminum	General steel	Stainless steel	Titanium alloy	Heat-resistant alloy
Uncoated	◎	△	△	○	×
Coated	○	○	◎	◎	○

※ Resin ※