
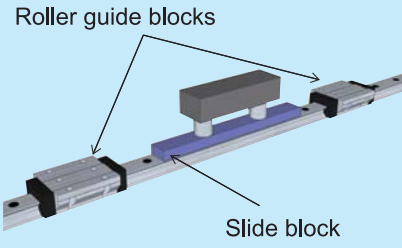
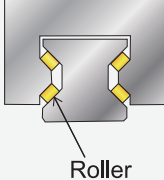
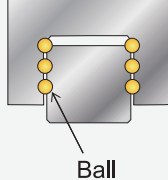
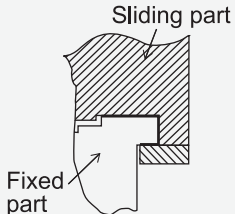


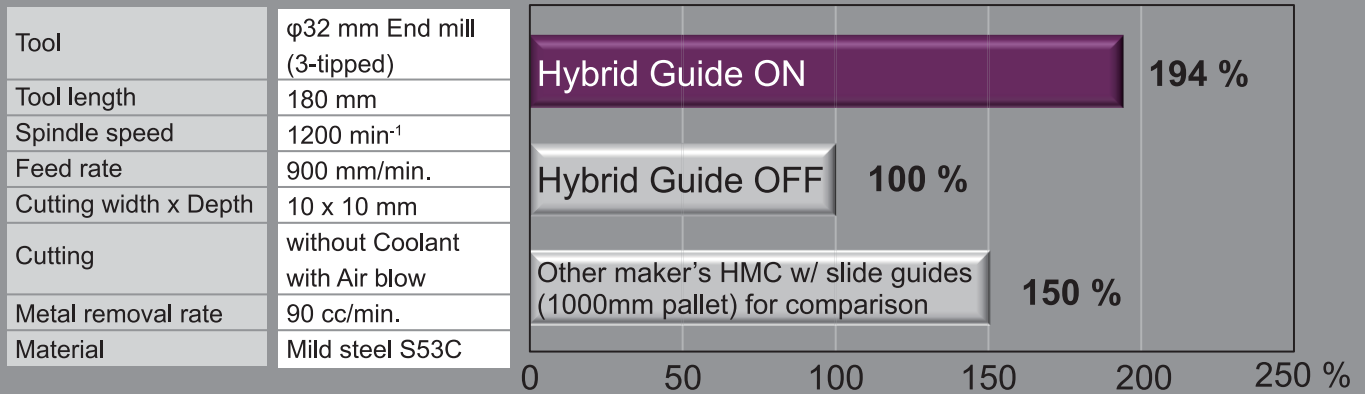
HYBRID GUIDES

Type of guides		Rolling type		Sliding type
		Roller guide	Ball guide	
Shape of guides		[cross section] 	[cross section] 	[cross section] 
Rigidity	◎	○	△	◎
Vibration damping during cutting	◎	○	△	○

Hybrid Guides prolong Tool Life.

Tool Life Test

Tool Life with "Hybrid Guide OFF" is taken as 100% (Judgment by Increase of Spindle Load.)



Vibration Test

Tool	φ126 mm Face mill (6-tipped)
Tool length	90 mm
Spindle speed	600 min ⁻¹
Feed rate	1000 mm/min.
Cutting width x Depth	100 x 5 mm
Cutting	without Coolant
Metal removal rate	500 cc/min.
Material	Mild steel S53C

