









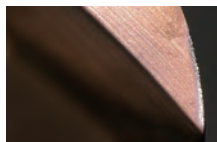
## Application examples

### Hardened steel (STD61, HRC50~55)

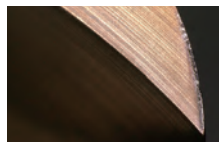


**Cutting conditions**  $vc(m/min) = 200$ ,  $fz(mm/t) = 0.15$ ,  $ap(mm) = 0.5$ ,  $ae(mm) = 0.5$ , dry

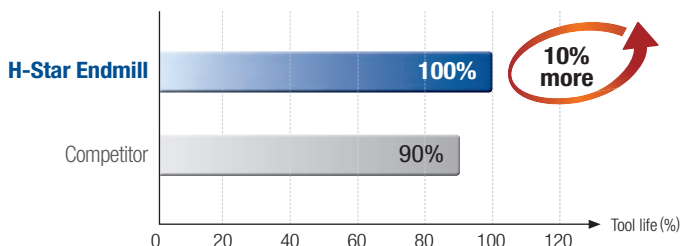
**Tool** ESB702101 (Diameter =  $\varnothing 10$  mm)



[ H-Star Endmill ]



[ Competitor ]

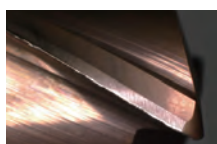


### Hardened steel (STD11, HRC55~60)

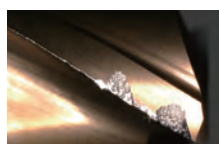


**Cutting conditions**  $vc(m/min) = 70$ ,  $fz(mm/t) = 0.1$ ,  $ap(mm) = 10$ ,  $ae(mm) = 0.3$ , dry

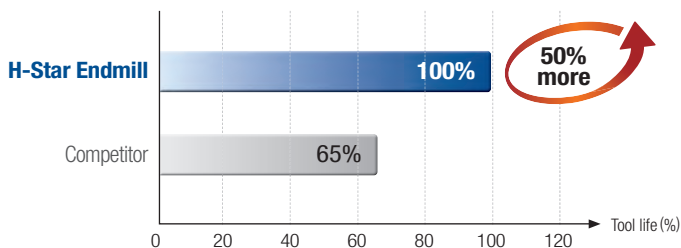
**Tool** ESXR7041001032 (Diameter =  $\varnothing 10$  mm)



[ H-Star Endmill ]



[ Competitor ]

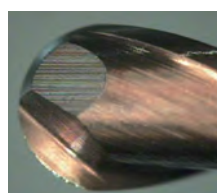


### Hardened steel (SKH51, HRC60~63)



**Cutting conditions**  $vc(m/min) = 73$ ,  $fz(mm/t) = 0.08$ ,  $ap(mm) = 0.083$ ,  $ae(mm) = 0.083$ , wet

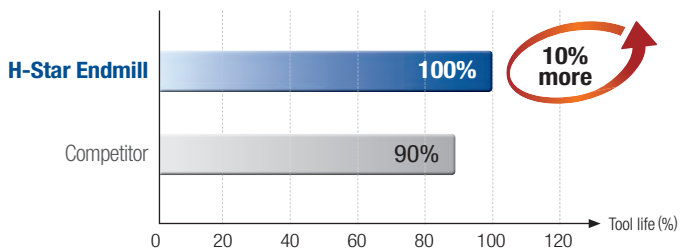
**Tool** ESB702015S4 (Diameter =  $\varnothing 1.5$  mm)



[ H-Star Endmill ]



[ Competitor ]

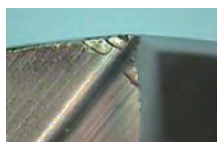


### Hardened steel (STD61, HRC48~50)

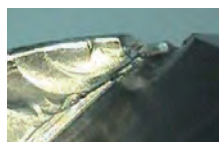


**Cutting conditions**  $vc(m/min) = 250$ ,  $fz(mm/t) = 0.15$ ,  $ap(mm) = 0.15$ ,  $ae(mm) = 0.15$ , wet

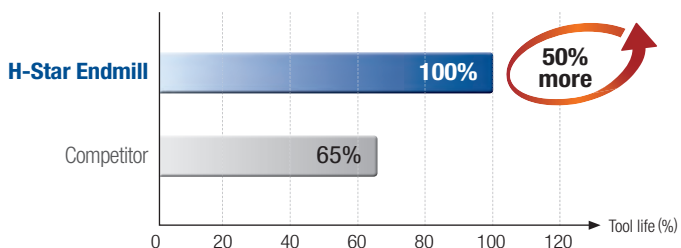
**Tool** ESB702100 (Diameter =  $\varnothing 10$  mm)

























[ H-Star Endmill ]





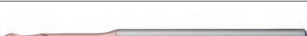



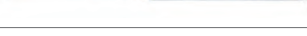

[ Competitor ]



## Line-up

Type	Designations	Grade	Picture	Product name	No. of flute	Size (Ø)	
						Min	Max
Ball	ESB702	PC305H		2 flutes neck type ball Endmill	2	1.0	12.0
	ESB712	PC305H		2 flutes ball Endmill	2	1.0	12.0
	ESB703	PC305H		3 flutes neck type ball Endmill	3	2.0	12.0
	ESB734	PC305H		4 flutes 15° helix ball Endmill	4	2.0	10.0
Flat	ESE702	PC305H		2 flutes neck type flat Endmill	2	0.1	20.0
	ESE712	PC305H		2 flutes flat Endmill	2	1.0	6.0
	ESE704	PC305H		4 flutes neck type flat Endmill	4	1.0	20.0
	ESE714	PC305H		4 flutes high helix flat Endmill	4	1.0	12.0
	ESE724(6)	PC305H		4 & 6 flutes high helix flat Endmill	4/6	1.0	12.0
	ESE744	PC305H		4 flutes 35° helix flat Endmill	4	1.0	12.0
	ESE716	PC305H		6 flutes high helix flat Endmill	6	6.0	20.0
Radius	ESR702	PC305H		2 flutes neck type radius Endmill	2	1.0	12.0
	ESR732	PC305H		2 flutes long shank radius Endmill	2	1.0	12.0
	ESR704	PC305H		4 flutes neck type radius Endmill	4	1.0	12.0
	ESR714	PC305H		4 flutes radius Endmill	4	3.0	12.0
	ESR724	PC305H		4 flutes neck type radius Endmill	4	6.0	12.0
	ESR734	PC305H		4 flutes long shank radius Endmill	4	1.0	12.0
	ESR706	PC305H		6 flutes neck type radius Endmill	6	6.0	12.0
	ESR736	PC305H		6 flutes radius Endmill	6	6.0	12.0
Rib ball	ESRB712	PC305H		2 flutes rib ball Endmill	2	0.1	12.0
Rib flat	ESRE712	PC305H		2 flutes rib flat Endmill	2	0.1	12.0
	ESRE714	PC305H		4 flutes rib flat Endmill	4	0.5	12.0

 Line-up

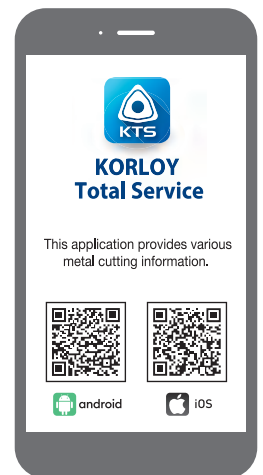
Type	Designations	Grade	Picture	Product name	No. of flute	Size (Ø)	
						Min	Max
Rib radius	ESRR712	PC305H		2 flutes rib radius Endmill	2	0.2	16.0
	ESRR714	PC305H		4 flutes rib radius Endmill	4	0.5	2.0
Flat	ESXE704	PC305H		4 flutes neck type flat Endmill	4	1.0	12.0
	ESXE714	PC305H		4 flutes flat Endmill	4	2.0	12.0
Radius	ESXR704	PC305H		4 flutes neck type radius Endmill	4	1.0	12.0
Rib ball	ESLNB20	PC305H		2 flutes long neck ball Endmill	2	1.0	5.0
	ESTNB20	PC305H		2 flutes taper neck ball Endmill	2	0.2	10.0
	ESTNB30	PC305H		3 flutes taper neck ball Endmill	3	2.0	5.0
Rib flat	ESLNS20	PC305H		2 flutes long neck flat Endmill	2	0.1	5.0
	ESLNS40	PC305H		4 flutes long neck flat Endmill	4	1.0	5.0
Rib radius	ESLNR	PC305H		2 flutes long neck radius Endmill	2	0.2	3.0
	ESTNR	PC305H		2 flutes taper neck radius Endmill	2	0.2	3.0
High feed	ESPM4	PC305H		4 flutes neck type radius Endmill	4	3.0	12.0

### ⚠ For the safe metalcutting

- Use safety supplies such as protective gloves to prevent possible injury while touching the edge of tools.
- Use safety glasses or safety cover to hedge possible dangers. Inappropriate usage or excessive cutting condition may lead tool's breakage or even the fragment's scattering.
- Clamp the workpiece tightly enough to prevent its movement while its machining.
- Properly manage the tool change phase because the inordinately used tool can be easily broken under the excessive cutting load or severe wear, and it may threat the operator's safety.
- Use safety cover because chips evacuated during cutting are hot and sharp and may cause burns and cuts. To remove chips safely, stop machining, put on protective gloves, and use a hook or other tools.
- Prepare for fire prevention measures as the use of the non-water soluble cutting oil may cause fire.
- Use safety cover and other safety supplies because the spare parts or the inserts can be pulled out due to centrifugal force while high speed machining.



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