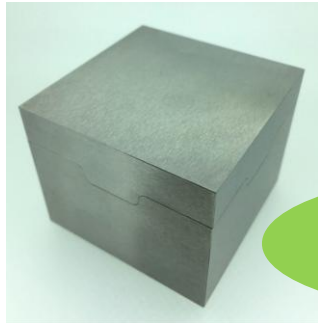


Fitting High-Speed Steel (63HRC) Cold Forging Mold "Crossover"

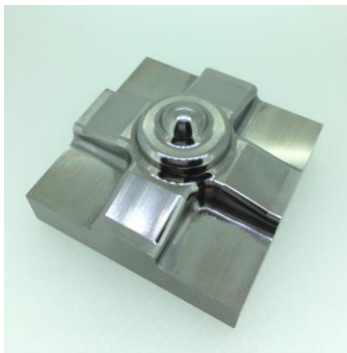
HARDMAX
for high hardness material



NO GAP !

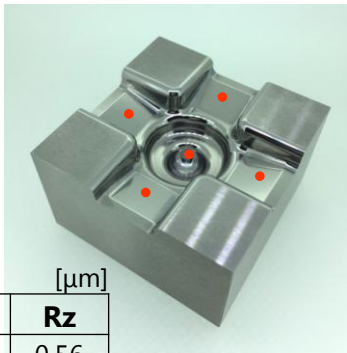
- Work material : High-speed steel **SKH51** (63HRC)
- Work size : 50x50x30mm
- Coolant : Air blow, oil mist
- Machine : YASDA YBM640V Ver. III
- CAD/CAM : C&G SYSTEMS **CAM-TOOL**

Core



No.	Process	Tool Geometry	Series / Size	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p (mm)	a _e (mm)	Milling Time
1	Roughing	6-Flute Square	HMS φ10x22	2,000	1,000	17.5	0.2	0:59:48
2	Med. roughing	2-Flute Ball	HSB R3x6	5,700	2,200	0.2	0.3	0:37:55
3	Med. roughing	2-Flute Long Neck Ball	HSLB R2xL8	7,900	2,000	0.15	0.3	0:05:44
4	Finishing	4-Flute Long Neck Radius	HLRS φ6xCR1xL12	4,000	1,080	-	1.35	1:38:31
5	Semi-finishing	2-Flute Long Neck Ball	HSLB R2xL8	7,900	1,000	0.04	0.04	0:04:08
6	Finishing	2-Flute Long Neck Ball	HSLB R1.75xL10	16,800	924	0.04	0.04	2:26:27
7	Finishing	2-Flute Long Neck Ball	HSLB R1xL3	12,250	900	0.03	0.03	0:11:17
Total								6:03:50

Cavity



[μm]

No.	Process	Tool Geometry	Series / Size	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p (mm)	a _e (mm)	Milling Time
1	Roughing	2-Flute Ball	HSB R5x10	3,750	1,750	0.3	1.7	0:35:28
2	Med. roughing	2-Flute Ball	HSB R3x6	5,700	2,200	0.2	0.3	0:29:29
3	Med. roughing	2-Flute Long Neck Ball	HSLB R2xL8	7,900	2,000	0.15	0.3	0:20:42
4	Semi-finishing	2-Flute Long Neck Ball	HSLB R2xL8	7,900	1,000	0.04	0.04	1:30:26
5	Semi-finishing	2-Flute Long Neck Ball	HSLB R1.75xL10	8,400	924	-	-	0:34:04
6	Finishing	2-Flute Long Neck Ball	HSLB R1.75xL10	16,800	924	0.04	0.04	2:17:59
7	Finishing	2-Flute Long Neck Ball	HSLB R1xL3	12,250	900	0.03	0.03	0:08:02
Total								5:56:10

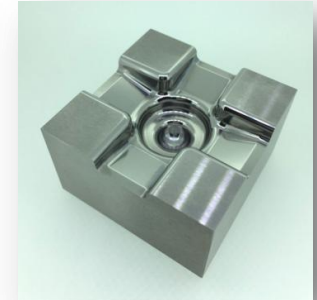
	Ra	Rz
Min.	0.10	0.56
Max.	0.24	1.25
Ave.	0.17	0.87

Measured surface roughness at 5 red points.
MIN., MAX., and AVE. are from measured values at all 5 points.

Fitting "Crossover"

HARDMAX
for high hardness material

- High hardness material: High-Speed Steel SKH51(63HRC)
- High-efficiency (Climb-up roughing)
- High-precision (Fitting)
- Improved finished surface
- Tool damage reduction



Introducing how we created the "Crossover"

1. High-efficiency milling (Climb-up roughing)
2. Improving finished surface
3. Tool damage reduction