

M5F90

Roughing and finishing combination milling cutter

One shot roughing and finishing

Machining parts without scratching, burring, or chipping, M5F90 is a concept face-milling cutter that enables roughing and finishing in a single operation, thus saving time.

Dedicated to thin wall aluminum parts, this small cutter body, 25–80 mm (0.98–3.15 inch) in diameter, containing brazed PCD tips needs no adjustment and enables high feed rates without cutting vibrations.

Features and Benefits

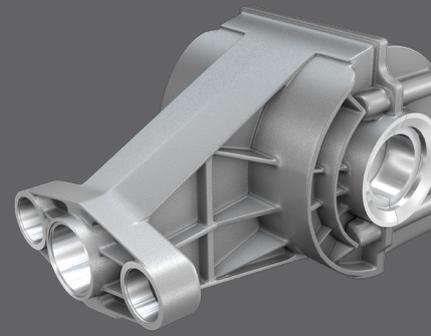
- Dedicated to thin wall milling operations of aluminum parts, but also able to machine large engagement material
- Direct finishing operations with outstanding surface finish
- High feed rates
- Machines aluminum automotive parts without scratches, burrs, or chipping
- Roughing and finishing in one tool
- Flexible: can machine different positions on the same part
- No adjustment needed
- Superior tool life vs. a conventional milling cutter body
- Environmentally friendly due to low coolant consumption

Application

Designed for and adapted to thin wall aluminum automotive parts, the small cutter body, 25–80 mm (0.98–3.15 inch) in diameter, containing brazed PCD tips enables high feed rates without vibrations or burrs.

The maximum depth of cut is 4.00 mm (0.157 inch).

M5F90 is made for working on gearbox casings, housings, all automotive aluminum parts within small or wide cutter engagement (applicable on thin wall parts).



Customer case 1

Component: Cylinder head

Material: Aluminum with high rate of silicate

Operation: Finishing side faces

Country: Spain

Machine: CNC machine



+150%
Time saving

	Competitor	Sandvik Coromant
Cutter	Special PCD cutter	5F90 040Q16H CD05
Z_n	4	9
n rpm (rev/min)	10,000	15,915
v_c m/min (ft/min)	1,256 (4,121)	2,000 (6,562)
v_f mm/min (inch/min)	10,000 (393.7)	15,000 (590.6)
f_z mm/z (inch/z)	0.25 (0.010)	0.16 (0.006)
a_p mm (inch)	3 x 0.5 (3 x 0.02)	1.5 (0.06)
	Burrs	No burrs

Customer case 2

Component: Chain case

Material: Aluminum

Country: USA

Machine: OKK VP500 (12,000 RPM Max, CAT 40 Spindle)

+44%
Reduction in cycle time

	Competitor	Sandvik Coromant
Cutter	80 mm indexable cutter with 6 PCD inserts	M5F90-080Q27-L CD05
n rpm (rev/min)	9,950	10,750
v_c m/min (ft/min)	2,501 (8,205)	2,702 (8,865)
v_f mm/min (inch/min)	4,370 (172)	12,900 (507.87)
f_n mm (inch)	0.44 (0.017)	1.2 (0.047)
a_p mm (inch)	2–3.5 (0.079–0.138) in 2 passes + brushing	2–3.5 (0.079–0.138) in one shot
Cycle time, sec	111	62
Flatness, mm (inch)	-	0.037 (0.001)
Surface finish Rz, mm (inch)	-	2–3 (0.079–0.118)

For more information, contact your local Sandvik Coromant representative, or visit www.sandvik.coromant.com

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