



S 150 - S 400 CDM

Combined hobbing and chamfering/deburring machine

S 150 - 400 CDM

The fully-integrated solution – maximum efficiency with minimum space requirements

The new S 200 CDM is the ideal combination of hobbing machine and chamfering/deburring unit. With its space-saving dimensions, this innovative solution enables the necessary process steps to be performed to manufacture straight and helical gears and pinion shafts quickly and efficiently.

The modular construction principle enables the user to hob and deburr both dry or wet! Both processes run parallel, allowing unnecessary auxiliary and down times to be largely avoided. Its extremely high rotational and linear acceleration and corresponding absolute speeds allow the machine to provide outstanding cycle times and it is ideally suited to benefit from future developments in the cutting tool sector.

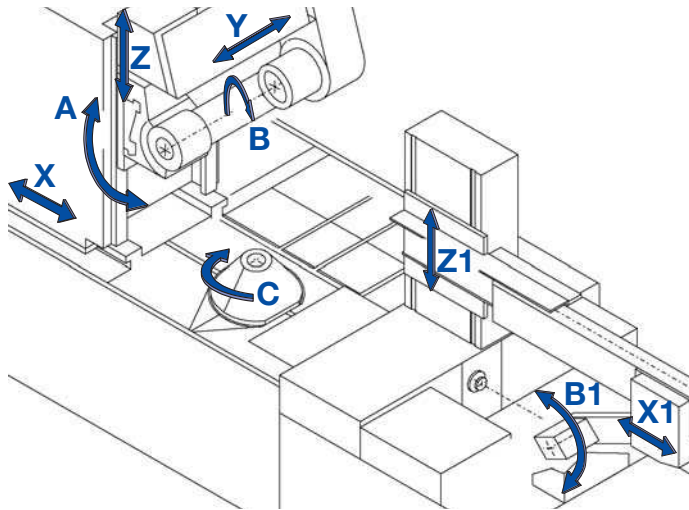


Hobbing with HSS hobs coated with new Sunite® Alcrona



S 200 CDM

Maximum productivity – minimum space



X: Radial slide movement
Y: Tangential slide movement
Z: Vertical slide movement
A: Swivel of hob head
B: Hob spindle revolution
C: Work table revolution

B1: Loader gripper swivel
X1: Loader horizontal movement
Z1: Loader vertical movement



Highly productive hobbing

- Grey cast-iron machine bed for optimum vibration absorption, integrated coolant fluid circulation for maximum thermal stability. The panelling of the work area is steep and smooth for optimum chip evacuation during dry machining.
- Dry or wet cutting means process reliability and flexibility.
- Hob heads in three variants with different torque power; three different designs of work table.
- Direct drives for hob head and work table.
- Pre-loaded, backlash-free ball screws for the feed drives (radial, axial, tangential).
- Linear anti-friction guides for the radial axis, slideways of grey cast iron with special resin coating for the axial axis, pulse-lubricated by PLC control, anti-friction guides for counter column slide.

Chamfering/rolling/deburring in parallel with production time

- Electrically welded steel base structure with chip chute directly under the work area and chip aspiration system (dry cutting only).
- Dry or wet machining means process reliability and flexibility.
- Horizontal workpiece axis for optimum chip evacuation. Chips do

not clog the tools which results in longer tool life and improved quality of the manufactured workpieces.

- Automatic meshing between tools and workpiece.
- New quick-clamping system for revolving and directly-driven tools.
- Motorised work spindle with mechanical reduction 7.5:1 and AC 1.5 kW motor with continuously variable speed, actuated by a pneumatic cylinder.
- Manually adjustable tailstock (standard) allows adaptation to the workpiece geometries to be machined.

Fast gantry loader allows integration and easy linking

- The uniform work area casing and the direct connection using corresponding interfaces enable the S series and the CDM module to be simply combined to form an extremely compact unit.
- The stable but light aluminium construction and low mass of the gantry loader allow it to achieve high acceleration and rapid workpiece change times.
- Problem-free set-up guaranteed as all axes are CNC controlled.
- During the hobbing process, the gantry loader is retracted from the work area and thus protected from chips, dust and heat. In the long run,

this makes it much more reliable than other unprotected solutions.

- The modular pick-and-place solution ensures simple linking and integration into existing production processes. The swivelling gripper wrist positions workpieces either vertically or horizontally according to subsequent automation requirements.

Centralised process control and fault diagnosis

The S 250 CDM is controlled by the Siemens control 840 D; both processes – hobbing and chamfering/rolling/deburring – are integrated (HMI-Pro). A standard operator guidance and user interface allow simple control, fault diagnosis and correction of processes. Furthermore, the different processes including the gantry loader may be chosen and run singly.

System technology from a single source

To round off this solution package, experienced tool manufacturer Samputensili stocks hobs in HSS and carbide as well as chamfering and deburring tools, including the patented chamfering-roller tool® – all from a single source.



Directly-driven hob heads in different variants



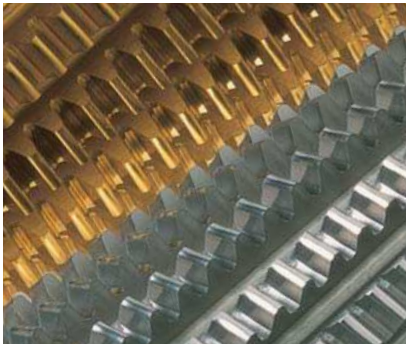
Gantry loader in light aluminium construction with swivelling gripper wrist



Chamfering/deburring unit with two self-centring tool heads for one tool group each



The integrated gantry loader transports the workpiece from the work area of the hobbing machine to the chamfering/deburring unit and further on to pass it on to the appropriate automated system



Hobs in HSS and carbide with the latest coating technology from Samputensili



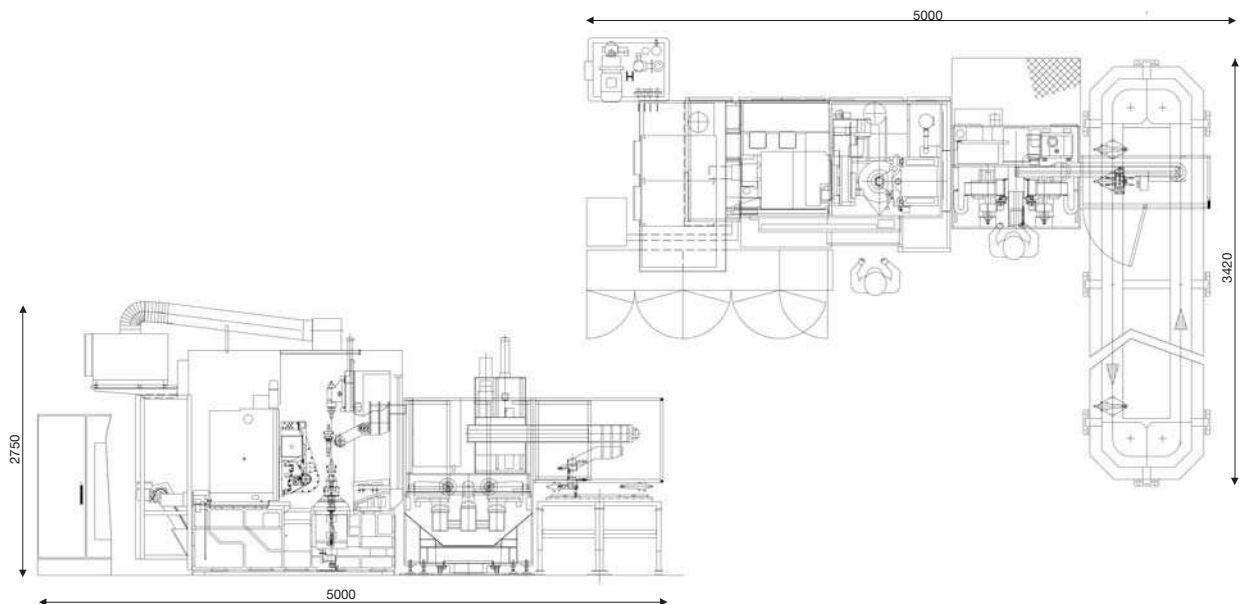
Chamfering and deburring tools from Samputensili, the expert in deburring gears

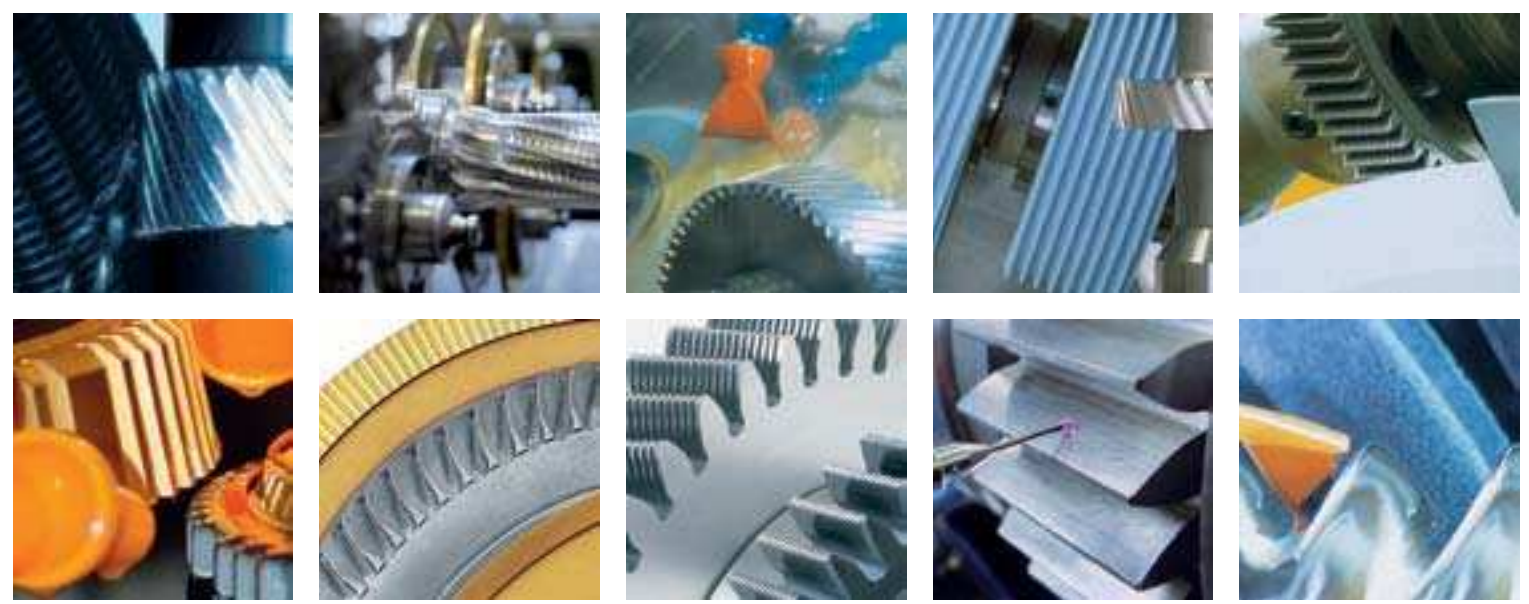


The patented chamfering-roller tool® by Samputensili, the solution to specific tasks

	S 150 CDM	S 200 CDM	S 300 CDM	S 400 CDM	
Workpiece diameter, max.	150	200	300*	400*	mm
Nominal module, max.	3,0	4,5	6,0	6,0	mm
Center distance workpiece/tool spindle	25 - 155	25 - 180	40 - 225	60 - 285	mm
Axial travel, max.	400	400	400	400	mm
Tangential travel, max.	240	240	240	240	mm
Table diameter/-bore diameter	132 / 80	170 / 100	250 / 100	330 / 150	mm
Hob spindle swivel, range	+/- 45	+/- 45	+/- 45	+/- 45	degrees
Hob diameter, max.	130	130	150	150 (130)	mm
Hob length bore-/shaft-type, max.	300 / 325	300 / 325	300 / 325	300 / 325	mm
Hob spindle speed, max.	1,200/1,800/3,000	1,200/1,800/3,000	1,200/1,800/3,000	1,200/1,800/3,000	rtm
Workpiece spindle speed, range	0 - 1.000	0 - 600	0 - 800	0 - 400	rtm
Rapid traverse radial/axial	10,000 / 7,000	10,000 / 7,000	10,000 / 7,000	10,000 / 7,000	mm/min
Rapid traverse tangential	2,500 (10,000)	2,500 (10,000)	2,500 (10,000)	2,500 (10,000)	mm/min
Motor power hob spindle drive	14 / 18.5 / 30	14 / 18.5 / 30	14 / 18.5 / 30	14 / 18.5 / 30	kW
Control	Siemens 840 D	840 D	840 D	840 D	-
Total connected load of machine, ca	55	55	55	55	kVA
Total weight without/with periphery, ca	12,500 / 14,500	12,500 / 14,500	13,500 / 14,500	13,500 / 14,500	kg
Total dimensions, L x W x H	5.0 x 3.4 x 2.75	5.0 x 3.42 x 2.75	5.0 x 3.42 x 2.75	5.0 x 3.42 x 2.75	m

* For chamfering/deburring, the following limitations apply to all machines of the S-CDM series: max. workpiece diameter 250 mm, max. module 8.0 mm, max. tooth width 105 mm, max. workpiece weight 4.5 kg, max. workpiece length 450 mm.





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