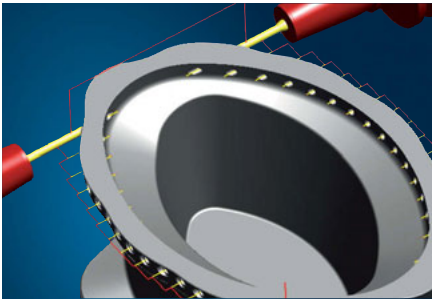
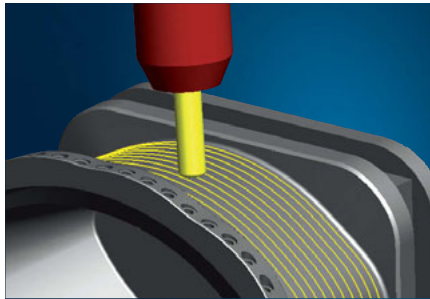


## Barbecue grill: Milled on a Hermle C 20 U

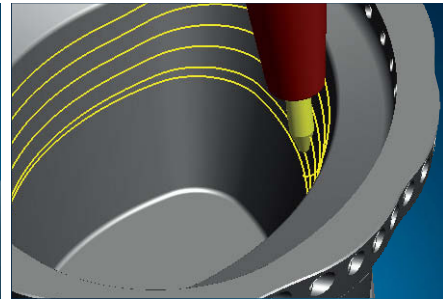
The *hyperCAD®-S/hyperMILL®* CAD/CAM solution integrates the entire process chain, from design through to manufacturing. The broad spectrum of machining strategies, ranging from 2.5D and 3D to 5-axis simultaneous machining, enables users to select the most suitable strategy for the task at hand. Intelligent functions help to optimise the machining jobs, resulting in much shorter machining times.



**5-axis drilling** The feature recognition function detects holes and thus simplifies programming. Identical holes are programmed with various tool angles and starting points in a single operation.



**5-axis ISO top milling** Stock detection, multiple infeed and high-volume material removal facilitate efficient 5-axis roughing. The pulling cut method combined with a constant lead angle maximise the machining quality.



**5-axis swarf cutting** Machining with the profile of the conical tool or side of the conical tool allows for milling with greater infeed or step-down. This speeds up the machining process and results in premium quality surfaces.



### Machine: Hermle C 20 U

Main drive (motor spindle)	Maximum spindle speed	18.000 min <sup>-1</sup>
Machining area	Rapid traverse and feedrate Traverse path X/Y/Z	45 m/min, 6m/s <sup>2</sup> 600/450/450
NC rotary table	Worktable area Rapid traverse SRT A/C Max. table load Tilt range Drive type	ø 280 mm 25 min <sup>-1</sup> 300 kg +/- 115° Worm gear
Automation	Controller	Siemens 840D
Workpiece	Stock Material	230 x 160 x 140 mm 1.2312



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Machine: Hermle C 20 U

Job step	Tool	Diameter [mm]	Corner radius [mm]	Number of teeth	Cutting speed [m/min]	Spindle RPM [min <sup>-1</sup> ]	Feedrate per edge [mm]	Feedrate [mm/min]	Infeed depth [mm]	Step-over [mm]
		D	R	z	v <sub>c</sub>	n	f <sub>z</sub>	v <sub>f</sub>	a <sub>p</sub>	a <sub>e</sub>
Face milling/finishing	Time-S-4-Cut 35 IC8,5	35	1,5	5	380	3.456	0,12	2.074	0,2	24,5
Step/pocket roughing	Time-S-4-Cut 35 IC8,5	35	1,5	5	240	2.326	1,2	13.096	0,5	24,5
Edge roughing	Multi-Jet-Cut	16	-	4	180	3.580	0,1	1.432	18	10
Opening cut	Multi-Jet-Cut Duplex	12	1,6	4	180	4.775	0,08	1.528	12	12
Shell roughing	Multi-Jet-Cut Duplex	12	1,6	4	240	6.366	0,15	3.820	14	6
Mirroring	Enorm milling tool	6	-	4	150	7.958	0,04	1.273	0,3	3,8
Core hole, 4,2mm	EF Drill	4,2	-	-	105	7.958	0,1	796	22	4,2
Thread cutting	Record 1AS	5	-	-	15	955	0,8	764	7	5
Inside roughing	Time-S-4-Cut 35 IC8,5	35	1,5	5	300	2.728	1,2	16.370	0,5	24,5
Base finishing	Time-S-4-Cut 35 IC8,5	35	1,5	5	380	3.456	0,12	2.074	0,2	24,5
Preliminary edge finishing	HSC-Jet-Cut	12	-	12	302	8.011	0,11	10.581	18,5	0,2
Edge fine finishing	HSC-Jet-Cut	12	-	12	302	8.011	0,02	1.933	18,5	0,2
Inner edge finishing	HSC-Jet-Cut Torus	12	3	8	670	17.772	0,07	9.952	0,2	0,3
Inner pocket finishing	Conical ballmill	8	1,5	3	175	6.963	0,05	1.044	6	0,25
Shell finishing	VHM endmill	12	-	3	302	8.011	0,08	1.923	0,3	6
Chamfering	VHM deburring mill	10	-	4	252	8.021	0,06	2.021	0,5	0,5
Logos engraving	VHM ballmill	2	1	2	56	17.825	0,015	535	0,02	0,02

