

Since the introduction of the engraflexx deburring tools with flexible equipped spindle, it has been possible to automatically deburr workpieces with dimensional and positional deviations (e.g. castings) not only using robot systems but also directly on CNC machines. The table below compares the influence of the most important parameters when using the two variants.

	CNC Maschine	Robot
Investment	moderate (a few thousand euros)	high (at least in the higher five-digit euro range)
Space requirement	unchanged (just one place in the tool magazine of the CNC machine required)	large (separate deburring station, possibly additional intermediate storage space)
Production capacity	is reduced (deburring falls within the main processing time of the parts)	unchanged (deburring takes place parallel to the machine processing time)
Total processing time	short, as parts come out of the machine ready deburred	longer, as parts are subsequently deburred in a separate system
Process reliability	practically unchanged (sister tool in tool magazine if required)	reduced (additional plant; i.e. additional interference potential)
Flexibility (variety of parts)	very high (chaotic production possible)	limited (preferably as large a series as possible)
Logistics, transport, storage	effort unchanged	additional effort
Parts handling	effort unchanged	additional effort (repeated span and span off)
Additional complexity	hardly existing (only one additional tool in the machine)	relatively extensive (additional system, often new operation)
Setup and programming	minimal effort (deburring operation is part of the machining)	relatively high expense (incurred with every series change)
Instruction of staff	minimal effort (possibly explanation of tool function)	extensive instruction in new system required
Staff dependency	unchanged (deburring runs fully automatically with parts processing)	high (manual loading of the system usually required)

The comparison is based on the requirements as they exist in small and medium-sized series production. I.e. the assessment of large-scale series production with the associated machine linking is not relevant for this comparison.

Conclusion: deburring during casting machining can often be automated with relatively little effort by integrating this operation into the part machining process. By using the existing machine, there is no need for time-consuming, additional staff training, as is often the case when additional new machines are used.