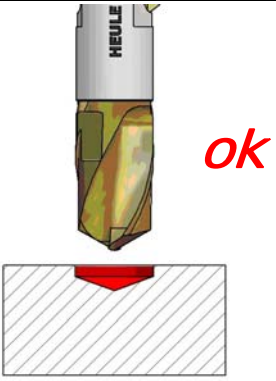
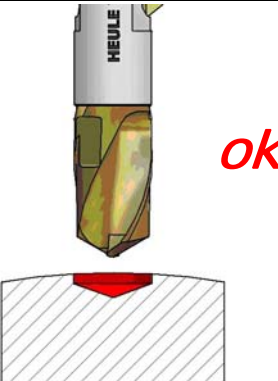
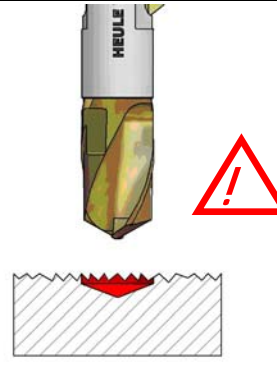
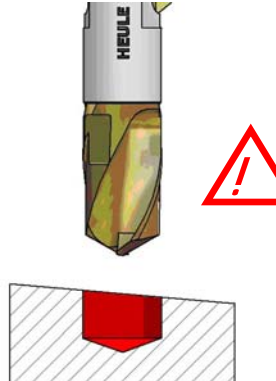
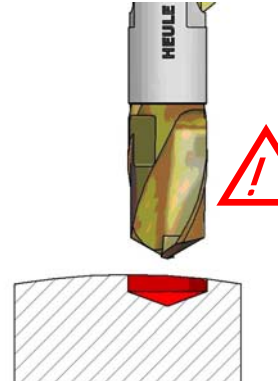
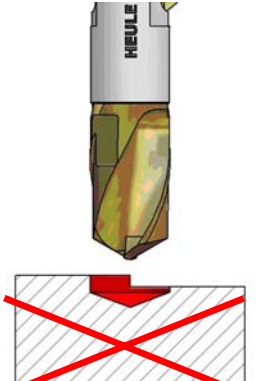
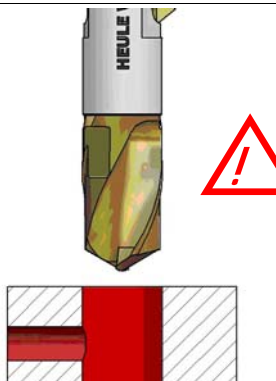
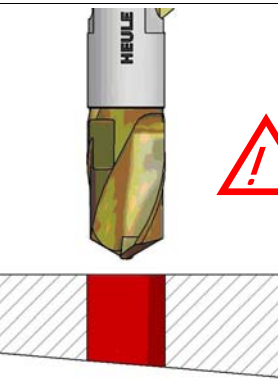
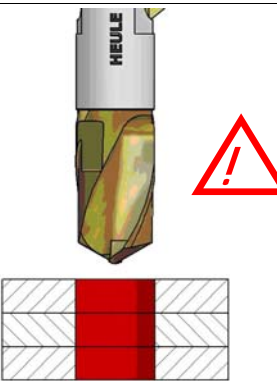


Troubleshooting

PROBLEM	EXPLANATION	SOLUTION
Built-up Edge	Work piece material is welded to the cutting edge.	<ul style="list-style-type: none"> • Raise cutting speed • Raise coolant pressure • May need different coating
Chip Jam	Drill chips are not evacuating through chip gullet.	<ul style="list-style-type: none"> • Reduce feed rate • Raise coolant pressure • Improve drilling cycle • Peck cycle
Burr Formation on the Exit of the Bore	Too large of burr will reduce chamfer blade life.	<ul style="list-style-type: none"> • Reduce cutting speed • Raise coolant pressure • Exchange worn drill head • Reduce exit feed 50%
Hole Variation	Hole size is inconsistent or not symmetrical	<ul style="list-style-type: none"> • Reduce feed rate • Raise coolant pressure • Check rotation • Check stability of spindle and setting
Bad Surface Quality	Indicates a chip control issue, reduction of drill life.	<ul style="list-style-type: none"> • Raise coolant pressure • Check rotation • Exchange worn drill head
Chatter	Must be corrected to avoid tool breakage	<ul style="list-style-type: none"> • Reduce cutting speed • Raise feed rate • Raise coolant pressure • Check rotation
Major Cutting Edge Wear		<ul style="list-style-type: none"> • Raise cutting speed • Reduce feed rate • Raise coolant pressure • Check stability of spindle and setting
Excessive Margin Wear	Accelerated corner wear or discoloration on margins O.D.	<ul style="list-style-type: none"> • Reduce cutting speed • Check runout • Raise coolant pressure • Check rotation • Check stability of spindle and setting
Clearance Surface Wear	Rapid flank wear indicates too high of surface footage.	<ul style="list-style-type: none"> • Reduce cutting speed • Raise coolant pressure
Chipping of Cutting Edge	If starting/exiting on incline, decrease entry/exit feed 50%	<ul style="list-style-type: none"> • Raise cutting speed • Reduce feed rate • Raise coolant pressure • Check stability of spindle and setting
Chipping of the Top of the Drill-bit	Possible deflection or too high feed (IPR)	<ul style="list-style-type: none"> • Reduce feed rate • Raise coolant pressure • Check stability of spindle and setting

Troubleshooting

		
<p>Drilling of even machined surfaces.</p>	<p>Drilling on central or convex surfaces.</p>	<p>Drilling on uneven surfaces. If necessary reduce feed-rate. *</p>
		
<p>Drilling on angled surfaces. *</p>	<p>Drilling on off-center convex or concave surfaces. *</p>	<p>Drilling on an uneven surface in forged or cast iron: Not possible.</p>
		
<p>Drilling through a cross-hole. Ø cross-hole max. 0.5x Ø bore. If necessary reduce feed rate. **</p>	<p>Drilling with angle on back side. Reduce feed rate to about 50-60%. *</p>	<p>Drilling through several layers. Seamless fitting of the different workpieces is necessary.</p>

* Chamfer won't be clean

** Tool can break! Blade for chamfering can get stuck in the cross-hole (drive through the bore with no rotation of the tool!)