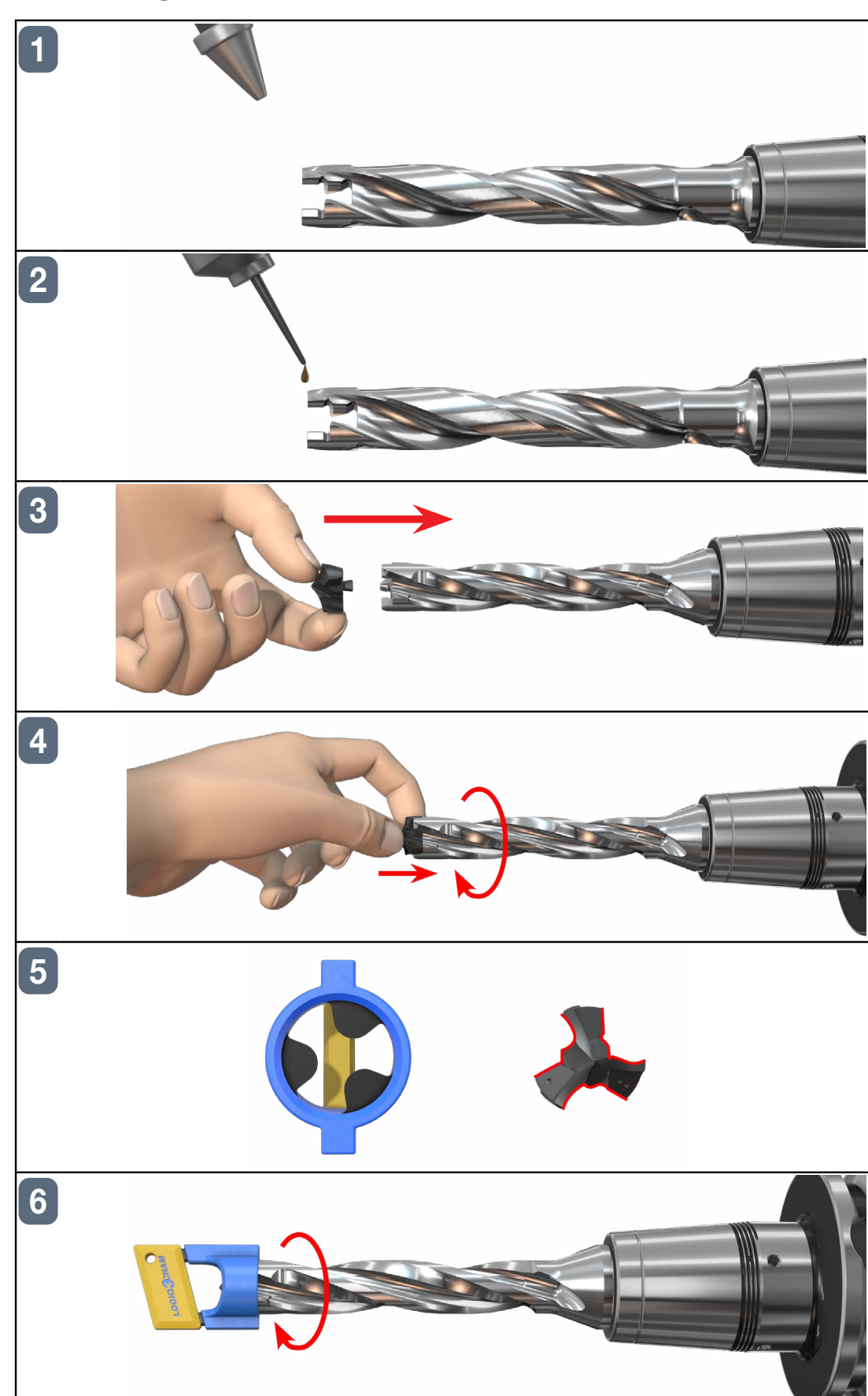
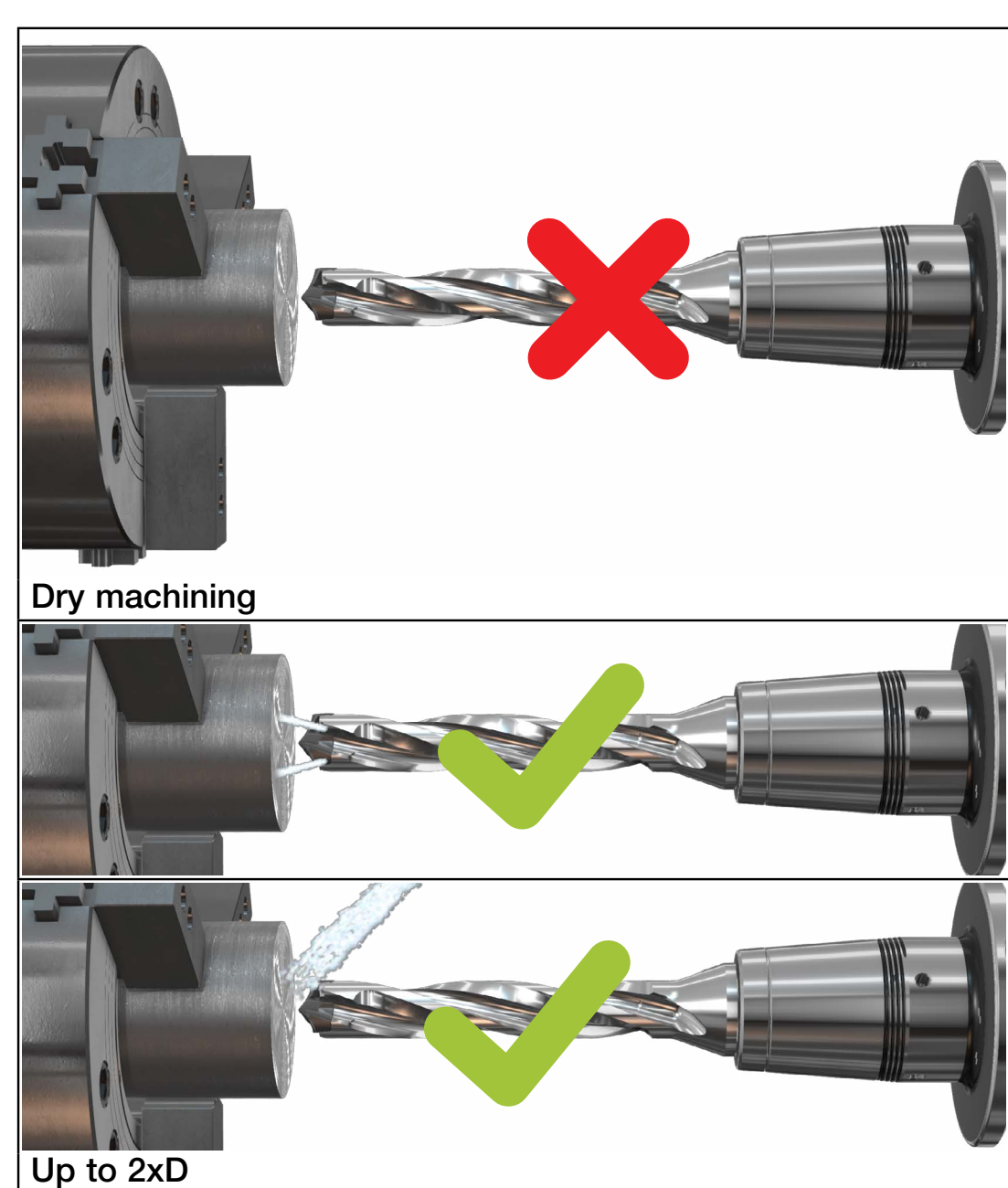


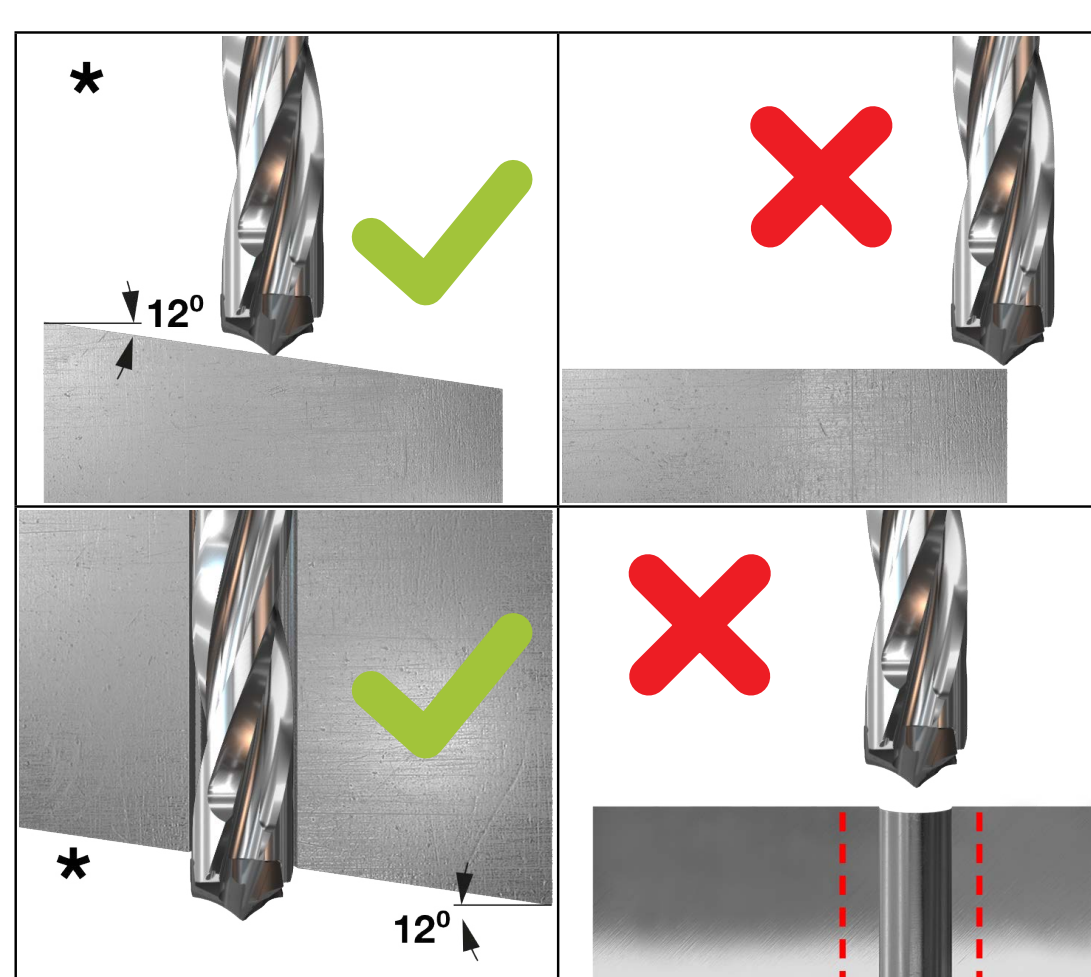
Drilling Head Mounting Procedure



Coolant Recommendations



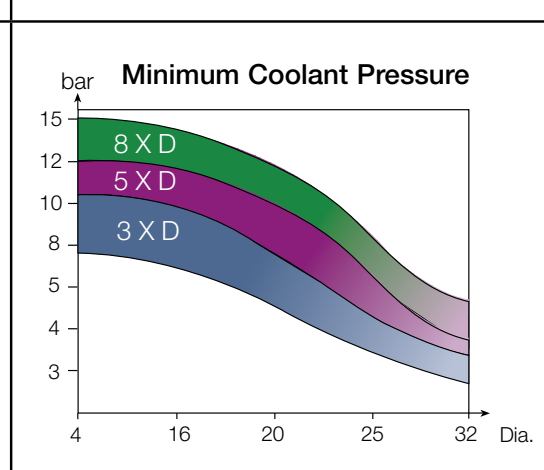
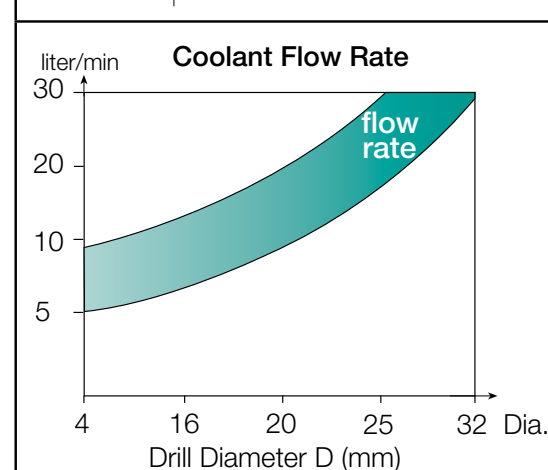
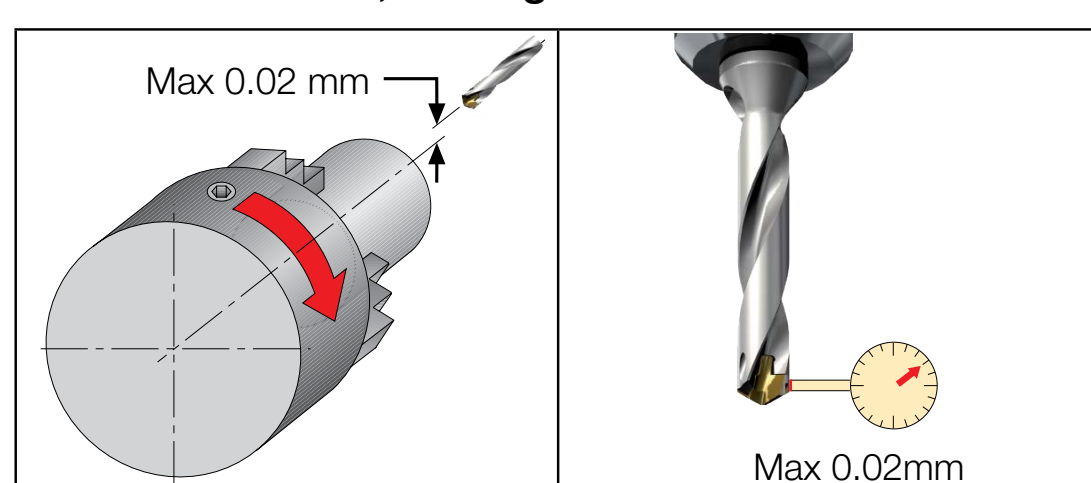
Drilling Limitations



* Up to 6° reduce feed by 20%

* 6°-12° reduce feed by 50%

Maximum Runout, Misalignment



Troubleshooting

	<p>Cutting Edge Chipping</p> <ol style="list-style-type: none"> 1 Check the stability of the machine spindle, tool and workpiece clamping rigidity. 2 Reduce feed rate, increase speed. 3 If the drill vibrates, reduce cutting speed and increase feed rate. 4 When drilling rough, hard or angled (up to 12° angular surface), reduce the feed rate by 30-50%. 5 Check cooling lubricant. Increase coolant pressure. In case of external coolant supply, improve jet direction and add cooling jets.
	<p>Chisel Area Chipping</p> <ol style="list-style-type: none"> 1 Reduce feed rate. 2 Increase coolant pressure. 3 Increase workpiece chucking force.
	<p>Excessive Flank Wear</p> <ol style="list-style-type: none"> 4 Reduce cutting speed. 5 Increase internal coolant pressure.
	<p>Excessive Land Wear</p> <ol style="list-style-type: none"> 1 Check the runout and make sure it is within 0.02mm T.I.R. (radial and axial). 2 Reduce cutting speed. 3 When drilling rough, hard or angled (up to 12° angular surface), reduce the feed rate by 30-50%. 4 Increase coolant pressure. 5 Check the chisel point runout and make sure it is within 0.02mm T.I.R. 6 Increase workpiece chucking force stability and rigidity.
	<p>Built-Up Edge</p> <ol style="list-style-type: none"> 1 Increase cutting speed/feed. 2 Increase
	<p>Inaccurate Hole Position</p> <ol style="list-style-type: none"> 1 Check the runout and make sure it is within 0.02mm T.I.R. (radial and axial). 2 Check the stability of the machine spindle, tool and workpiece clamping rigidity. 3 When drilling rough, hard or sloped surfaces (up to 7°), reduce the feed rate by 30% -50% when entering. 4 Drill a pre-hole with a 140° point angle for centering. 5 Check the chisel point runout and make sure it is within 0.02mm T.I.R.
	<p>Deviation of Hole Tolerance</p> <ol style="list-style-type: none"> 1 Check the runout and make sure it is within 0.02mm T.I.R. (radial and axial cutting points). 2 Reduce feed rate. 3 Check the chisel point runout and make sure that it is within 0.02mm T.I.R. 4 Wrong cutting edge. Replace head. 5 Increase workpiece chucking force. 6 Increase internal coolant pressure.
	<p>Burrs on Exit</p> <ol style="list-style-type: none"> 1 Reduce the feed rate by 50% -70% during exit. 2 Replace the worn head.
	<p>Surface Finish Too Rough</p> <ol style="list-style-type: none"> 1 Check the runout and make sure it is within 0.02mm T.I.R. (radial and axial). 2 Adjust the feed for improved chip formation. 3 In case of chip jamming - increase the coolant flow and/or reduce the cutting speed. 4 Increase the coolant pressure. 5 Check the chisel point runout and make sure it is within 0.02mm T.I.R. 6 Use pecking cycle. 7 Replace the drilling head.