攻丝过程中的问题及对策
APPLICATION AND USE OF THREADING TAPS

问题 / Problem	问题发生 / Causes	对策 / Solutions
攻孔过大 **Tapped hole oversize**	不正确的丝锥使用(切削参数不适合运用) Incorrect tap in use (cutting geometry unsuitable for application)	根据相应的材料组选择丝锥 Use tap selected from the relevant material group
	同轴性不好 Faulty alignment	确保丝锥和锥孔准确的在一条线上 Ensure that the tap is correctly aligned with the core hole axis
	冷焊 Cold welding	改变冷却油方向，调整切削速度 Improve lubrication and direction of coolant Adjust cutting speed
	重置丝锥(引入线不是同心的) Re-ground tap(lead-in is not concentric)	用合适的研磨机械再研磨丝锥的引入部分 Regrind tap lead correctly on a suitable tap grinding machine
带状螺纹 **Stripped threads**	错误使用丝锥(切削参数不适合运用) Incorrect tap in use (cutting geometry incorrect for application)	根据相应的材料组选择丝锥 Use a tap from the relevant material group.
	主轴速度和进给率不同步 Spindle speed and feed rate not synchronized	检查进给率程序和主轴螺距 使用带有轴向滑动的攻丝主轴 Check feed rate programming and / or pitch of leading spindle Use a tapping spindle with axial float
	不足的启动压力，促使外面的螺纹脱落 Insufficient start pressure exerted on tap with peel-cut	增大启动压力 Increase start pressure
攻丝的孔成钟型 **Bell mouthed tapped hole**	启动压力不合适 Incorrect start pressure applied to tap	使用带有轴向滑动的攻丝主轴 Use a tapping spindle with axial float
不理想的螺纹表面 **Unsatisfactory thread surface finish**	错误使用丝锥 (切削参数不适合运用) Incorrect tap in use (Cutting geometry unsuitable for application)	根据相应的材料组选择丝锥 Select tap from the relevant material group
	丝锥生硬 The tap is blunt	替换和重新研磨丝锥 Replace or re-grind tap
	再研磨效果差 Tap badly re-ground	再研磨一遍 检查切削参数是否适合被加工材料 Re-grind tap again. Check that cutting geometry is suitable for material
	冷却油太少影响润滑质量和产量 Coolant lacking in lubricating qualities and / or quantity	确保冷却油使用正确且供应充足 Ensure the use of asuitable coolant and an ample supply

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丝锥的铁屑部分 Partial chipping of tap	金属屑阻塞 Swarf jamming	检查切削速度 使用有选择性的丝锥类型 Check cutting speed Use alternative tap type
	丝锥碰到孔底部而阻塞 Tap has jammed against bottom of core hole	检查孔和螺纹的深度 钻孔要深一些 Check hole and thread depths Drill core hole deeper
	丝锥错误的再研磨 (导入的直径太小以至于切齿太少) Tap incorrectly re-ground (lead-in diameter too small therefore too few cutting teeth)	在再研磨时，确保它的原始值 Ensure that original values ore maintained when regrinding
	无规律的工件原材料结构 Irregular workpiece material structure	调整切削速度 提高冷却油的润滑质量 Adjust cutting speed Improve lubricating quality of coolant
过度的丝锥破损 Excessive tap wear	不当的切削速度 Incorrect cutting speed	调整切削速度以合适被加工材料 Adjust cutting speed to suit workpiece material
	冷却油太少影响润滑质量和产量 Coolant lacking in lubricating qualities and / or quantity	确保冷却油使用正确且供应充足 Ensure the use of a suitable coolant and an ample supply 检查冷却油是否到达加工区域 Check that coolant is reaching the cutting zone
	攻孔太小，孔的外表面压缩 Surface of the core hole is compacted	检查钻孔情况(仔细钻孔以减少缩孔的风险) Check core hole drilling conditions (drill carefully to reduce risk of surface compacting) 检查钻边 Check drill cutting edges
丝锥破损 Tap breakage	错误使用丝锥(切削参数不适合运用) Incorrect tap in use(cutting geometry unsuitable for application)	根据相应的材料组选择丝锥 Use tap from the relevant material group
	中心误差 Centering error	确保丝锥和被加工孔成一条直线 Ensure that axes of tap and core hole are aligned
	丝锥生硬 Blunt tap	再研磨丝锥 Re-grind tap 确保丝锥的存放安全性 Ensure that taps are stored carefully
	丝锥碰到孔的底部 Tap has reached bottom of core hole	用具有轴向滑动制动的攻丝主轴 Use tapping spindle with axial float and slipping clutch
	攻孔太小 Core hole too small	为每一步选择攻孔 手册在513-514页 Select core hole as per chart, pages 513～514 of this catalogue