

CoroDrill® 870

A revolution in holemaking

A new generation

CoroDrill 870 offers the high versatility of an exchangeable-tip drill with secure interface between drill body and tip for excellent holemaking performance.

The new design, with optimized grade and geometry for steel ensures hole quality for the intermediate hole tolerance area of IT9–IT10.



Benefits

- Reliability and security
- Easy handling and secure tip changing
- Long tool life and high penetration rates
- Excellent hole quality
- Optimized chip evacuation
- Lower cost per hole



Application

- Hole tolerance: IT 9–10
- Drill diameter range: 12–20.90 mm (0.472–0.823 inch) as standard
- Drill lengths: 3 and 5 × drill diameter as standard
- Typical hole types: pre-holes for taps, bolt holes
- For most industry segments e.g. energy, automotive, general engineering



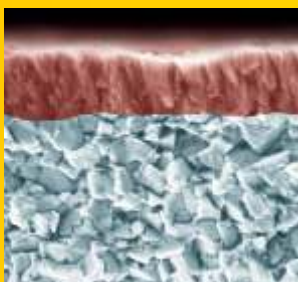
ISO application area

Technical features

- Secure, high-precision interface between drill body and tip for extra stability
- Tip changing possible while tool is in the machine to reduce downtime
- New cutting edge geometry for low cutting forces, high process security, good chip control, high penetration rates and hole quality
- Drill flutes with optimized shape, size and helix angle provide safe chip evacuation and overall tool stability
- Rigid drill body for high penetration rates and excellent hole quality
- Internal coolant for all drills
- Torque values and key codes marked on drill body
- New grade, GC4234, developed for predictable wear, long and reliable tool life at high productivity rates when drilling in steel



GC4234



- + Long and reliable tool life
- + Crater wear resistance
- + Flank wear resistance
- + Edge chipping resistance

GC4234 combines a tough micro-grain cemented carbide with a PVD-coating made with new technology. The multi-layered TiAlN-coating is designed for low residual stresses to enhance edge line chipping resistance and offer a unique combination of crater wear- and flank wear resistance.

Handling

For quick and easy tool mounting, gently press the tip down and towards the support surfaces while tightening the screw to the recommended torque shown on the drill body. Use a torque screw driver to ensure the tip is securely seated.



Recommendations

For optimum stability and minimum run-out clamp CoroDrill 870 with a Hydrogrip® clamping chuck with sealed cylindrical collet.

Note: Never use a Hydrogrip chuck in combination with a ISO9766 shank without cylindrical collet!



Assortment

Drill bodies

Diameters with drill tip mounted, mm (inch)	Shank type	Length	Supplement 12.1, page
12–20.99 mm	Cylindrical ISO 9766 with flat (metric)	3–5×D	E2–E3
0.472–0.826 inch	Cylindrical ISO 9766 with flat (inch)	3–5×D	E2–E3

Drill tips


Diameters	Grade	Geometry	Supplement 12.1, page
12–20.9	GC4234	-PM	E4–E6
0.472–0.823	GC4234	-PM	E4–E6

For additional information see Rotating tools and Turning tools catalogues or www.sandvik.coromant.com

Performance

Steel plate


Customer case			
Component	Steel plate		
Workpiece material	Unalloyed steel, 130 HB (CMC 01.1, P1.1.Z.AN)		
Machine tool	Vertical machining centre		
Hole dia.; depth mm (inch)	14; 40 (0.551; 1.575)		
Hole type	Through hole		
Cutting data		CoroDrill 870	Competitor
n (rpm)		2728	2728
v_c m/min (ft/min)		120 (393.7)	120 (393.7)
f_n mm/rev (in/rev)		0.25 (0.01)	0.25 (0.01)
v_r mm/min (in/min)		682 (26.8)	682 (26.8)
Results			
Drilled length m (ft)	56 (184)	29 (95)	
Tool condition	Worn out	Worn out	
Tool life increase	+93%	-	



CoroDrill 870 increased tool life by 93%

Bearing block

Customer case				
Component	Bearing block			
Workpiece material	Low-alloy steel, 200 HB (CMC 02.1, P2.1.Z.AN)			
Machine tool	Horizontal machining centre			
Hole dia.; depth mm (inch)	13.5; 41 (0.531; 1.614)			
Hole type	Through hole			
Cutting data		CoroDrill 870	CoroDrill 870	Competitor
n (rpm)		2830	3774	2594
v_c m/min (ft/min)		120 (393.7)	160 (525)	110 (360.9)
f_n mm/rev (in/rev)		0.25 (0.01)	0.25 (0.01)	0.2 (0.008)
v_r mm/min (in/min)		707 (27.8)	944 (37.2)	519 (20.4)
Results				
Drilled length m (ft)	125 (410.1)	96 (315)	66 (216.5)	
Tool condition	Worn out	Worn out	Worn out	
Tool life increase	+90%	+45%	-	
Productivity increase	+36%	+82%	-	



CoroDrill 870 increased productivity and drilled length

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