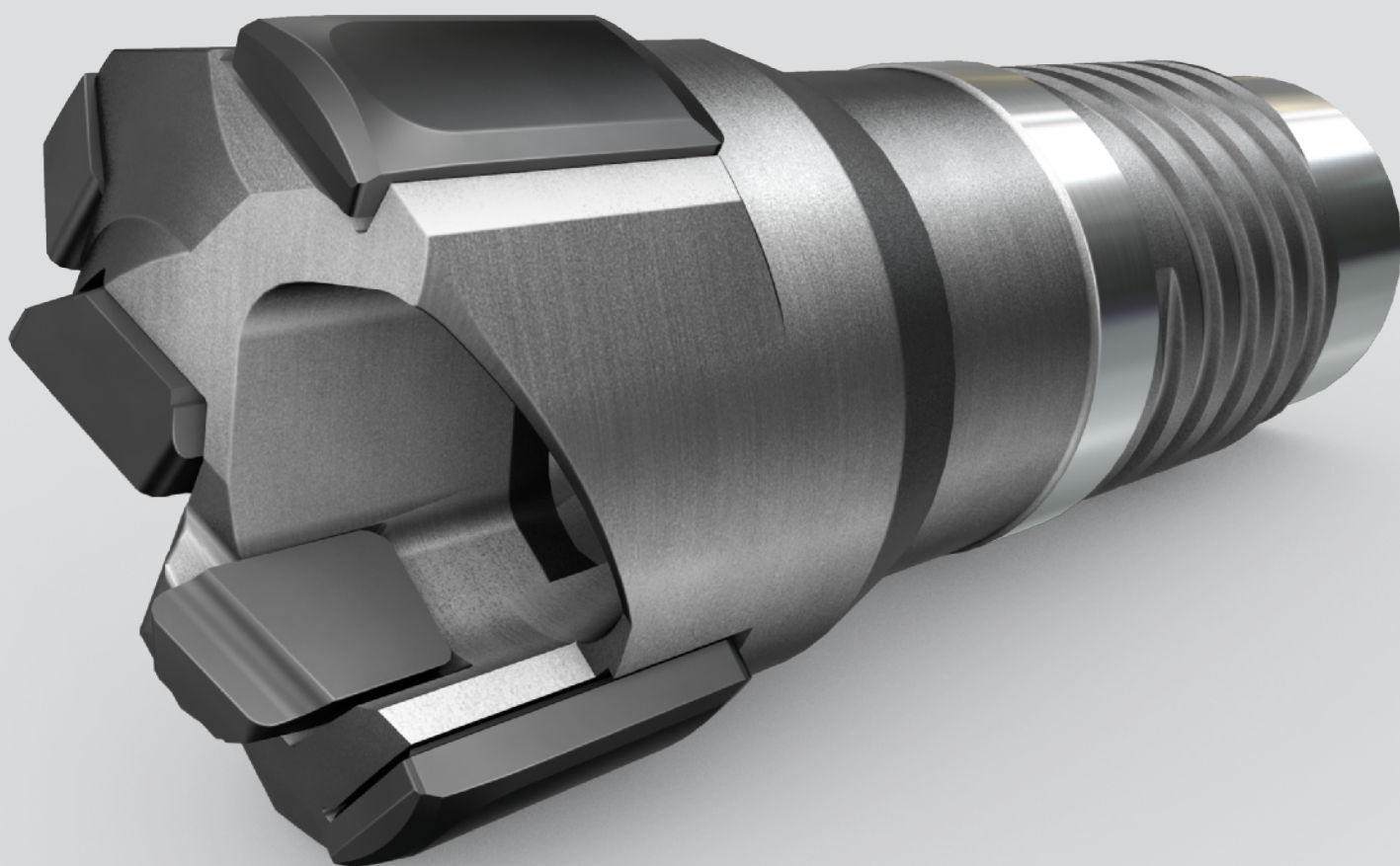


Deep hole machining



2014

To make life easier, a new standard is developed

ISO 13399 is an international standard that will simplify the exchange of data for cutting tools. You will notice a slight difference through the new parameters and descriptions of each tool.

For the first time ever, there is a standardized way of describing product data regarding cutting tools. When all tools in the industry share the same parameters and definitions, communicating tool information becomes very straightforward.

What does this mean to you?

Basically, it means that your systems can talk to ours, as they all speak the same language. Download product data from our web site and use it directly in your CAD/CAM software to assemble tools that you use in production. There is no need to look for information in catalogues and interpret data from one system to another. Imagine how much time this will save you!

Short name	Preferred Name
ADJLX	Maximum adjustment limit
ADJRG	Adjustment range
ALP	Clearance angle axial
AN	Clearance angle major
ANN	Clearance angle minor
APMX	Depth of cut maximum
B	Shank width
BAWS	Body angle workpiece side
BBD	Balanced by design
BBR	Balanced by rotational test
BD	Body diameter
BHTA	Body half taper angle
BS	Wiper edge length
BSG	Basic standard group
CF	Spot chamfer
CDX	Cutting depth maximum
CHW	Corner chamfer width
CICT	Cutting item count
CND	Coolant entry diameter
CNSC	Coolant entry style code
CNT	Coolant entry thread size
COATING	Coating
CP	Coolant pressure (recommended)
CRKS	Connection retention knob thread size
CTPT	Operation type
CUTDIA	Work piece parting diameter maximum
CW	Cutting width
CWTOLL	Cutting width lower tolerance
CWTOLU	Cutting width upper tolerance
CWX	Cutting width maximum
CXSC	Coolant exit style code
CZC	Connection size code
CZC _{MS}	Connection size code machine side
CZC _{WS}	Connection size code workpiece side
D1	Fixing hole diameter
DAH	Diameter access hole
DAXIN	Axial groove inside diameter minimum
DAXX	Axial groove outside diameter maximum

DBC	Diameter bolt circle
DC	Cutting diameter
DCB	Connection bore diameter
DCBN	Connection bore diameter minimum
DCBX	Connection bore diameter maximum
DCF	Cutting diameter face contact
DCN	Cutting diameter minimum
DCON	Connection diameter
DCON _{MS}	Connection diameter machine side
DCON _{WS}	Connection diameter workpiece side
DCSF _{MS}	Contact surface diameter machine side
DCSF _{WS}	Contact surface diameter workpiece side
DCX	Cutting diameter maximum
DIX	Tool changer interference diameter maximum
DMIN	Minimum bore diameter
DMM	Shank diameter
DN	Neck diameter
DSGN	Design
FHA	Flute helix angle
FLGT	Flange thickness
FTDZ	For thread diameter size
H	Shank height
HA	Thread height theoretical
HB	Thread height difference
HF	Functional height
HRY	Lowest point from reference plain
HTB	Body height
HTH	Height
IC	Inscribed circle diameter
INSL	Insert length
IZC	Insert size code
KAPR	Tool cutting edge angle
KCH	Corner chamfer
L	Cutting edge length
LAMS	Inclination angle
LB	Body length
LCF	Length chip flute
LCOX	Cut off length maximum
LE	Cutting edge effective length
LF	Functional length
LH	Head length
LPR	Protruding length
LS	Shank length
LSC	Clamping length
LSCN	Clamping length minimum
LSCX	Clamping length maximum
LSD	Dead shank length
LU	Usable length (max. recommended)
MHD	Mounting hole distance
MIID	Master insert identification
MMCC	Code for preset torque
NOF	Flute count
OAH	Overall height
OAL	Overall length
OAW	Overall width
OH	Overhang recommended
OHN	Overhang minimum
OHX	Overhang maximum
PDX	Profile distance ex
PDY	Profile distance ey
PHD	Premachined hole diameter

PHDX	Maximum premachined hole diameter
PL	Point length
PRFRAD	Profile radius
PRSPC	Profile specification
PSIR	Tool lead angle
PSIRL	Cutting edge angle major left hand
PSIRR	Cutting edge angle major right hand
RADH	Radial body height
RADW	Radial body width
RE	Corner radius
RETOLL	Corner radius lower tolerance
RETOLU	Corner radius upper tolerance
RGL	Regrind length
RMPX	Maximum ramping angle
RPMX	Rotational speed maximum
S	Insert thickness
SDL	Step diameter length
SIG	Point angle
SPTL	Splitline
SSC	Insert seat size code
SUBSTRATE	Substrate
TCDC	Tolerance class cutting diameter
TCMMM	Shank diameter tolerance
TCHA	Achievable hole tolerance
TCHAL	Achievable hole tolerance lower
TCHAU	Achievable hole tolerance upper
TCT	Tolerance class tool
TCTR	Thread tolerance class
TD	Thread diameter
TDZ	Thread diameter size
TFLA	Tap floating length ahead
TFLB	Tap floating length behind
THCHT	Threading chamfer type
THFT	Form type
THL	Thread length
THUB	Hub thickness
TP	Thread pitch
TPI	Threads per inch
TPIN	Threads per inch minimum
TPIX	Threads per inch maximum
TPN	Thread pitch minimum
TPX	Maximum thread pitch
TQ	Torque
TSYC	Tool style code
ULDR	Usable length diameter ratio
VCX	Maximum cutting speed
W1	Insert width
WB	Body width
WF	Functional width
WFCIRP	Width to cutting item reference point
WSC	Clamping width
WT	Weight of item
ZEFF	Face effective cutting edge count
ZEFP	Peripheral effective cutting edge count (ZEFP)
ZWX	Maximum number of Wiper inserts

For more information, please visit www.sandvik.coromant.com.

Deep hole machining with Sandvik Coromant

Deep holes are defined by a high ratio between hole depth and diameter.

Deep hole machining is the preferred method for drilling hole depths of more than 10 x the diameter. During drilling, it is important that the chips are broken and that they can be transported away without jamming and affecting the drilled surface.

In deep hole machining, cutting fluid supply and chip transport have been provided for the development of four different systems that permit trouble-free machining of deep holes.

STS

- In materials with poor chip forming properties such as stainless steel, and low-carbon steel.
- In materials with an uneven structure when chipbreaking problems exist.
- More advantageous for long series production.
- When large diameter holes are required.
- Requires special deep hole drilling machine.

Ejector system

- Requires no seal between the workpiece and the drill bushing.
- Adapted easily to existing machines, preferable in conventional lathes, turning centres, machining centres and horizontal boring machines.
- For machining workpieces where sealing problems can occur.
- An advantage when it is possible to use a pre-drilled hole instead of a drill bushing for guidance, for example in machining centres.



Gun drill

- For small diameters.
- Can easily be applied to machining centres by using a pre-drilled hole for guidance.
- Requires high coolant pressure.

DEEP HOLE MACHINING

Products

Drill heads

CoroDrill® 808 head with brazed carbide tips	6
Ground drill head 424.6	15
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CoroDrill® 801	26
T-MAX® drill 424.10	29
T-MAX® trepanning drill 420.7	31
CoroDrill® 800 inserts for drilling	32
Support pads for CoroDrill® 800 solid drill heads	33
T-MAX® inserts for 424.10	34
TPGX inserts for drilling	35
Trepanning inserts	35
Carbide grades and insert grades for 800.24 and 800.20	36
Support pads for T-MAX® 424.10 solid drill heads	38

Counterboring heads

CoroDrill® 818	43
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Support pads for CoroDrill® 801, CoroDrill 818® and T-MAX 424.10	52
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Drivers for gun drills 428.5 and 428.7	64
CoroChuck™ 930	66
Accessories for Gun drilling - Drill bush, Sealing disc, Whipguide bush	67

Combined skiving and roller burnishing tools

Drill tubes

STS drilling tubes	70
Ejector drilling tubes	72

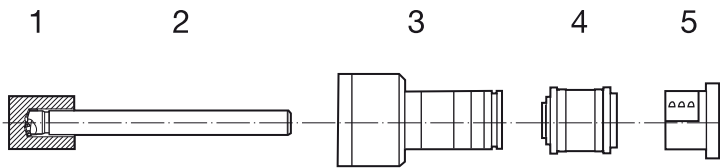
Accessories

Spare parts

Cutting data

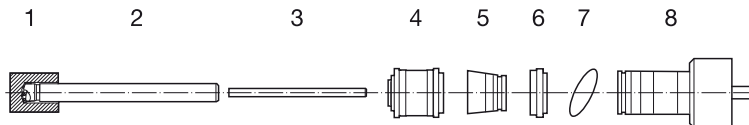
Tool mounting

STS Single Tube System



1. Drill heads, see page 9.
2. Drill tubes, see page 70.
3. Oil pressure heads, see page 78.
4. Vibration dampers, see page 83.
5. Connecting chucks, see page 80.

Ejector system



1. Drill heads, see page 9.
2. Outer drill tubes, see page 72.
3. Inner drill tubes, see page 72.
4. Vibration dampers, see page 83.
5. Collets and connecting sleeves, see page 88.
6. Sealing sleeves, see page 88.
7. O-rings, see page 88.
8. Connectors, see page 85.

Inner tube length corresponding with drilling diameter

Drill diameter	Inner tube
≤65.00 mm (2.559 inch)	30 mm longer than outer tube
65.01-123.90 mm (2.559-4.878 inch)	190 mm longer than outer tube*
124.00-183.90 mm (4.882-7.240 inch)	220 mm longer than outer tube

* 179mm longer than outer tube when reinforced connecting sleeve type S-424.2-422-XXA is used.

CoroDrill® 808

First choice for close tolerance holes



- First choice for close tolerance holes
- High process security thanks to predictable tool life
- Excellent chip breaking thanks to optimized insert geometry
- High toughness and wear resistance thanks to TiAlN-coated grade
- Easy to use – highly-productive concept right out of the box

Technical features

Easy to use

- No pre-setting
- No need for tool room service

Customer specified diameter

- Finish ground within 0.01 mm (.0004 inch) increments

Reliable performance

- Robust design enables high feed rates
- Sintered insert geometries ensure consistent trouble-free chip control in most materials
- Unique coated grade combination GC43C designed for high toughness and wear resistance

Application

- Hole diameter range: 15.60–65.00 mm (0.614–2.559 inch)
- Hole depths: up to 150×D
- Hole tolerance: IT 9
- Industry segments: energy (power generation – heat exchanger plates), primary metals, automotive (axles, engine blocks), aerospace (landing gears)

Code key for CoroDrill® 808

808	-	97	2	4	D1621	P	T
1		2	3	4	5	6	7

1.
Product family name

2.
Tube range

3.
Crown size

4.
Chip breaker size

5.
Diameter

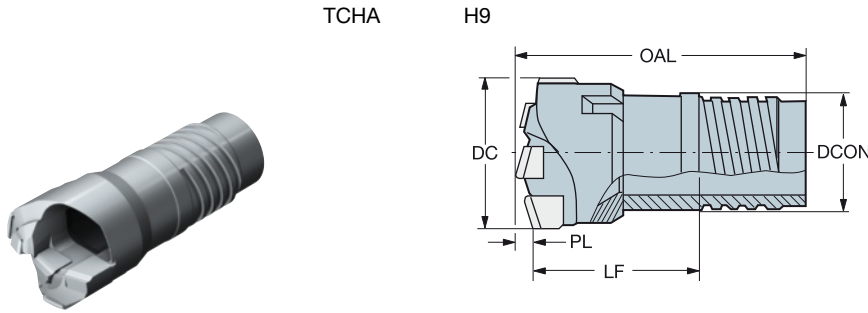
6.
P = Premium dot matrix

7.
T = T-land chip breaker style

CoroDrill® 808 head with brazed carbide tips

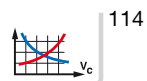
Dot matrix code on drill

T-land chip breaker geometry



CZC _{MS}	DC	DC ^o	Ordering code	P		M		Dimensions, mm, inch							
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For explanation of parameters see page 1



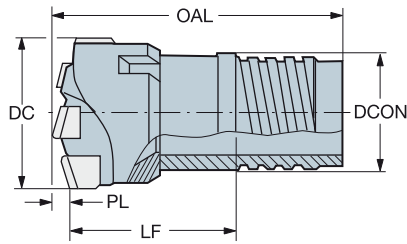
CoroDrill® 808 head with brazed carbide tips

Dot matrix code on drill

T-land chip breaker geometry

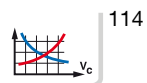


TCHA H9



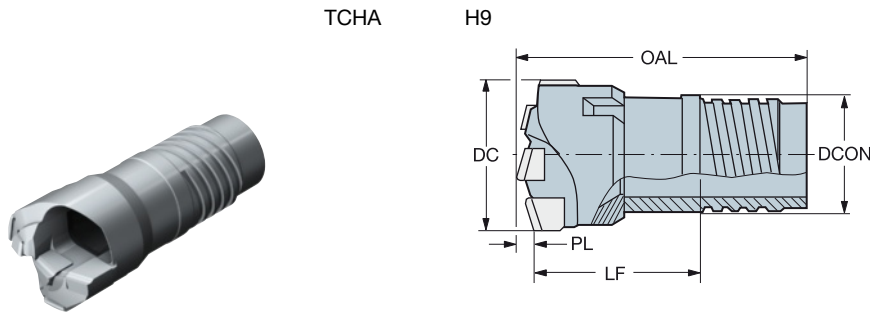
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	25.41	1.000	808-0324D2541PT	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.42	1.001	808-0324D2542PT	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
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For explanation of parameters see page 1



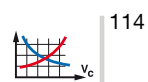
CoroDrill® 808 head with brazed carbide tips

Dot matrix code on drill



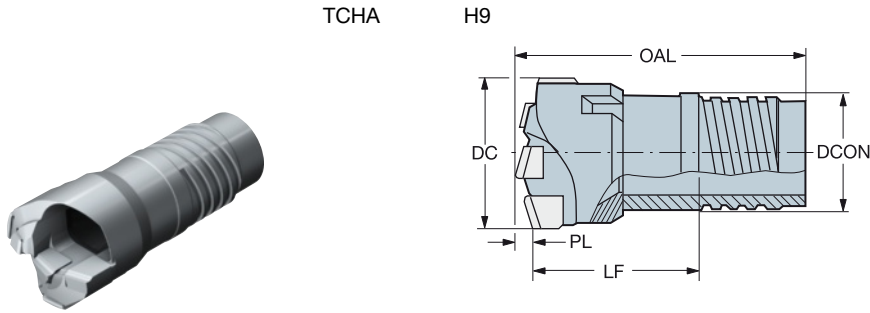
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				43C	43C	DCON	DCON ^o	OAL	OAL ^o	PL	PL ^o	LF	LF ^o
				☆	☆								
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	17.78	.700	808-9914D1778P	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
00	19.25	.758	808-0024D1925P	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.26	.758	808-0024D1926P	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.27	.759	808-0024D1927P	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.28	.759	808-0024D1928P	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.29	.759	808-0024D1929P	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.30	.760	808-0024D1930P	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.31	.760	808-0024D1931P	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.32	.761	808-0024D1932P	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
01	19.25	.758	808-0124D1925P	☆	☆	16.0	.629	49	1.929	3.00	.118	44.00	1.732
	19.26	.758	808-0124D1926P	☆	☆	16.0	.629	49	1.929	3.00	.118	44.00	1.732
	19.27	.759	808-0124D1927P	☆	☆	16.0	.629	49	1.929	3.00	.118	44.00	1.732
	19.28	.759	808-0124D1928P	☆	☆	16.0	.629	49	1.929	3.00	.118	44.00	1.732
	19.29	.759	808-0124D1929P	☆	☆	16.0	.629	49	1.929	3.00	.118	44.00	1.732
	19.30	.760	808-0124D1930P	☆	☆	16.0	.629	49	1.929	3.00	.118	44.00	1.732
	19.31	.760	808-0124D1931P	☆	☆	16.0	.629	49	1.929	3.00	.118	44.00	1.732
	19.32	.761	808-0124D1932P	☆	☆	16.0	.629	49	1.929	3.00	.118	44.00	1.732

For explanation of parameters see page 1



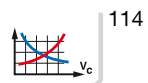
CoroDrill® 808 head with brazed carbide tips

Dot matrix code on drill



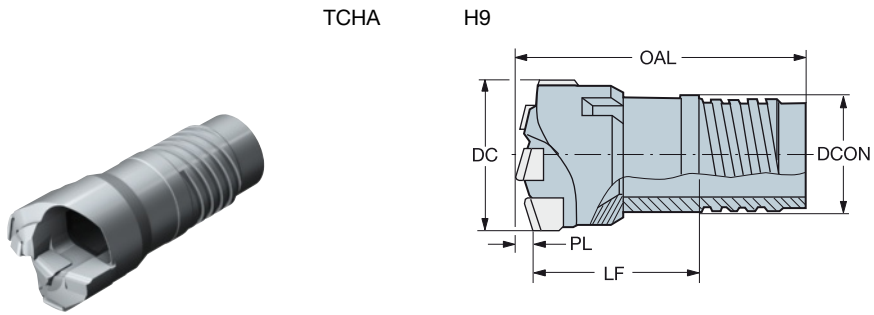
			P		M		Dimensions, mm, inch						
CZC _{MS}	DC	DC"	Ordering code	43C	43C	DCON	DCON"	OAL	OAL"	PL	PL"	LF	LF"
03	25.37	.999	808-0324D2537P	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.38	.999	808-0324D2538P	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.39	1.000	808-0324D2539P	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.40	1.000	808-0324D2540P	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.41	1.000	808-0324D2541P	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.42	1.001	808-0324D2542P	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.43	1.001	808-0324D2543P	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.44	1.002	808-0324D2544P	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125

For explanation of parameters see page 1



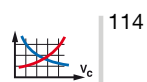
CoroDrill® 808 head with brazed carbide tips

T-land chip breaker geometry

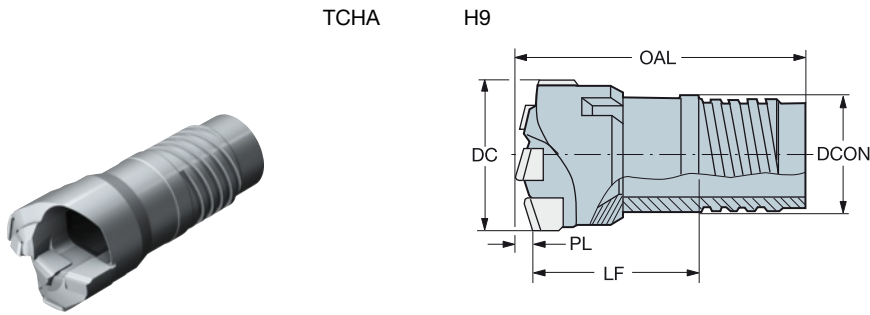


CZC _{MS}	DC	DC ¹	Ordering code	P M		Dimensions, mm, inch							
				43C	43C	DCON	DCON ²	OAL	OAL ²	PL	PL ²	LF	LF ²
97	16.21	.638	808-9724D1621T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.22	.639	808-9724D1622T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.23	.639	808-9724D1623T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.24	.639	808-9724D1624T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.25	.640	808-9724D1625T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.26	.640	808-9724D1626T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.27	.641	808-9724D1627T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.28	.641	808-9724D1628T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.29	.641	808-9724D1629T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.31	.642	808-9724D1631T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.32	.643	808-9724D1632T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.33	.643	808-9724D1633T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.34	.643	808-9724D1634T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.35	.644	808-9724D1635T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.36	.644	808-9724D1636T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.37	.644	808-9724D1637T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.38	.645	808-9724D1638T	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
99	17.71	.697	808-9914D1771T	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.72	.698	808-9914D1772T	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.73	.698	808-9914D1773T	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.74	.698	808-9914D1774T	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.75	.699	808-9914D1775T	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.76	.699	808-9914D1776T	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.77	.700	808-9914D1777T	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.78	.700	808-9914D1778T	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
00	19.25	.758	808-0024D1925T	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.26	.758	808-0024D1926T	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.27	.759	808-0024D1927T	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.28	.759	808-0024D1928T	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.29	.759	808-0024D1929T	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.30	.760	808-0024D1930T	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.31	.760	808-0024D1931T	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.32	.761	808-0024D1932T	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
03	25.37	.999	808-0324D2537T	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.38	.999	808-0324D2538T	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.39	1.000	808-0324D2539T	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.40	1.000	808-0324D2540T	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.41	1.000	808-0324D2541T	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.42	1.001	808-0324D2542T	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.43	1.001	808-0324D2543T	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.44	1.002	808-0324D2544T	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125

For explanation of parameters see page 1

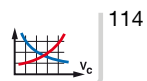


CoroDrill® 808 head with brazed carbide tips



CZC _{MS}	DC	DC"	Ordering code	P M		Dimensions, mm, inch							
				43C	43C	DCON	DCON"	OAL	OAL"	PL	PL"	LF	LF"
97	16.21	.638	808-9724D1621	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.22	.639	808-9724D1622	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.23	.639	808-9724D1623	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.24	.639	808-9724D1624	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.25	.640	808-9724D1625	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.26	.640	808-9724D1626	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.27	.641	808-9724D1627	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.28	.641	808-9724D1628	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.29	.641	808-9724D1629	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.31	.642	808-9724D1631	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.32	.643	808-9724D1632	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.33	.643	808-9724D1633	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.34	.643	808-9724D1634	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.35	.644	808-9724D1635	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.36	.644	808-9724D1636	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.37	.644	808-9724D1637	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
	16.38	.645	808-9724D1638	☆	☆	12.6	.496	43	1.692	2.70	.106	40.30	1.586
99	17.71	.697	808-9914D1771	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.71	.697	808-9914D1772	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.73	.698	808-9914D1773	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.74	.698	808-9914D1774	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.75	.699	808-9914D1775	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.76	.699	808-9914D1776	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.77	.700	808-9914D1777	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
	17.78	.700	808-9914D1778	☆	☆	14.5	.570	47	1.850	2.80	.110	44.20	1.740
00	19.25	.758	808-0024D1925	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.26	.758	808-0024D1926	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.27	.759	808-0024D1927	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.28	.759	808-0024D1928	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.29	.759	808-0024D1929	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.30	.760	808-0024D1930	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.31	.760	808-0024D1931	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
	19.32	.761	808-0024D1932	☆	☆	15.5	.610	47	1.850	3.00	.118	44.00	1.732
03	25.37	.999	808-0324D2537	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.38	.999	808-0324D2538	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.39	1.000	808-0324D2539	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.40	1.000	808-0324D2540	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.41	1.000	808-0324D2541	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.42	1.001	808-0324D2542	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.43	1.001	808-0324D2543	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125
	25.44	1.002	808-0324D2544	☆	☆	19.5	.767	57	2.263	3.50	.137	54.00	2.125

For explanation of parameters see page 1



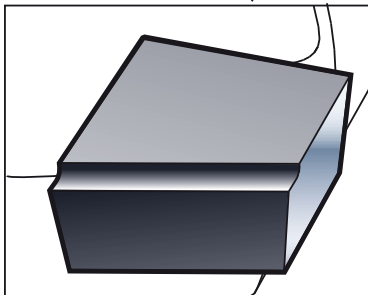
Ground drill head 424.6

Ground brazed solid drill head for Ejector

Easy to use

- No pre-setting
- No need for tool room service

Excellent hole straightness and surface finish



Wide application area

- Optimized grade- and geometry combinations for most workpiece materials

Reliable performance

- Robust design enables high feed rates
- Sintered insert geometries ensure consistent troublefree chip control in most materials

Customer specified diameter

- Finish ground within 0.01 mm (.0004 inch) increments

ISO application area:



Code key for ground drill head 424.6

424.6	-	00	1	4	D*18.40*	70
1		2	3	4	5	6

1.
Product family metric ejector

2.
Tube range

3.
Crown size

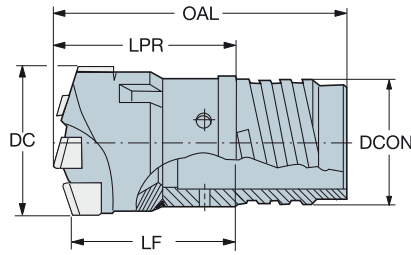
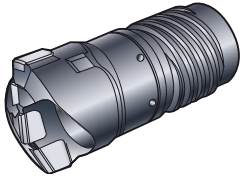
4.
Chip breaker size

5.
Diameter

6.
Grade combination

Ground drill head 424.6

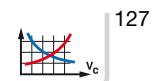
Ejector system



CZC _{MS}	DC Min	DC" Min	DC Max	DC" Max	Ordering code	Dimensions, mm, inch												
						P	M	K	N	S	DCON	LF	LF"	LPR	LPR"	OAL	OAL"	
00	18.40	.724	19.20	.756	424.6-0013D	63	70	20	67	72	72	16.0	19.6	.772	22.5	.886	50	1.969
00	18.40	.724	19.20	.756	424.6-0014D	☆	☆	☆	☆	☆	☆	16.0	19.6	.772	22.5	.886	50	1.969
00	19.21	.756	20.00	.787	424.6-0023D	☆	☆	☆	☆	☆	☆	16.0	19.5	.768	22.5	.886	50	1.969
00	19.21	.756	20.00	.787	424.6-0024D	☆	☆	☆	☆	☆	☆	16.0	19.5	.768	22.5	.886	50	1.969
01	20.01	.788	20.90	.823	424.6-0112D	☆	☆	☆	☆	☆	☆	18.0	22.9	.902	26.0	1.024	56	2.205
01	20.01	.788	20.90	.823	424.6-0113D	☆	☆	☆	☆	☆	☆	18.0	22.9	.902	26.0	1.024	56	2.205
01	20.01	.788	20.90	.823	424.6-0114D	☆	☆	☆	☆	☆	☆	18.0	22.9	.902	26.0	1.024	56	2.205
01	20.91	.823	21.80	.858	424.6-0122D	☆	☆	☆	☆	☆	☆	18.0	22.7	.894	26.0	1.024	56	2.205
01	20.91	.823	21.80	.858	424.6-0123D	☆	☆	☆	☆	☆	☆	18.0	22.7	.894	26.0	1.024	56	2.205
01	20.91	.823	21.80	.858	424.6-0124D	☆	☆	☆	☆	☆	☆	18.0	22.7	.894	26.0	1.024	56	2.205
02	21.81	.859	22.90	.902	424.6-0212D	☆	☆	☆	☆	☆	☆	19.5	22.8	.898	30.0	1.181	56	2.205
02	21.81	.859	22.90	.902	424.6-0213D	☆	☆	☆	☆	☆	☆	19.5	22.8	.898	30.0	1.181	56	2.205
02	21.81	.859	22.90	.902	424.6-0214D	☆	☆	☆	☆	☆	☆	19.5	22.8	.898	30.0	1.181	56	2.205
02	22.91	.902	24.10	.949	424.6-0222D	☆	☆	☆	☆	☆	☆	19.5	22.6	.890	30.0	1.181	56	2.205
02	22.91	.902	24.10	.949	424.6-0223D	☆	☆	☆	☆	☆	☆	19.5	22.6	.890	30.0	1.181	56	2.205
02	22.91	.902	24.10	.949	424.6-0224D	☆	☆	☆	☆	☆	☆	19.5	22.6	.890	30.0	1.181	56	2.205
03	24.11	.949	25.20	.992	424.6-0312D	☆	☆	☆	☆	☆	☆	21.0	24.0	.945	27.5	1.083	57.5	2.264
03	24.11	.949	25.20	.992	424.6-0313D	☆	☆	☆	☆	☆	☆	21.0	24.0	.945	27.5	1.083	57.5	2.264
03	24.11	.949	25.20	.992	424.6-0314D	☆	☆	☆	☆	☆	☆	21.0	24.0	.945	27.5	1.083	57.5	2.264
03	25.21	.992	26.40	1.039	424.6-0322D	☆	☆	☆	☆	☆	☆	21.0	24.0	.945	27.5	1.083	57.5	2.264
03	25.21	.992	26.40	1.039	424.6-0323D	☆	☆	☆	☆	☆	☆	21.0	24.0	.945	27.5	1.083	57.5	2.264
03	25.21	.992	26.40	1.039	424.6-0324D	☆	☆	☆	☆	☆	☆	21.0	24.0	.945	27.5	1.083	57.5	2.264
04	26.41	1.040	27.50	1.083	424.6-0412D	☆	☆	☆	☆	☆	☆	23.5	23.8	.937	27.5	1.083	60.5	2.382
04	26.41	1.040	27.50	1.083	424.6-0413D	☆	☆	☆	☆	☆	☆	23.5	23.8	.937	27.5	1.083	60.5	2.382
04	26.41	1.040	27.50	1.083	424.6-0414D	☆	☆	☆	☆	☆	☆	23.5	23.8	.937	27.5	1.083	60.5	2.382
04	27.51	1.083	28.70	1.130	424.6-0422D	☆	☆	☆	☆	☆	☆	23.5	23.8	.937	27.5	1.083	60.5	2.382
04	27.51	1.083	28.70	1.130	424.6-0423D	☆	☆	☆	☆	☆	☆	23.5	23.8	.937	27.5	1.083	60.5	2.382
04	27.51	1.083	28.70	1.130	424.6-0424D	☆	☆	☆	☆	☆	☆	23.5	23.8	.937	27.5	1.083	60.5	2.382
05	28.71	1.130	29.80	1.173	424.6-0512D	☆	☆	☆	☆	☆	☆	25.5	26.5	1.043	30.5	1.201	63.5	2.500
05	28.71	1.130	29.80	1.173	424.6-0513D	☆	☆	☆	☆	☆	☆	25.5	26.5	1.043	30.5	1.201	63.5	2.500
05	28.71	1.130	29.80	1.173	424.6-0514D	☆	☆	☆	☆	☆	☆	25.5	26.5	1.043	30.5	1.201	63.5	2.500
05	29.81	1.174	31.00	1.220	424.6-0522D	☆	☆	☆	☆	☆	☆	25.5	26.3	1.035	30.5	1.201	63.5	2.500
05	29.81	1.174	31.00	1.220	424.6-0523D	☆	☆	☆	☆	☆	☆	25.5	26.3	1.035	30.5	1.201	63.5	2.500
05	29.81	1.174	31.00	1.220	424.6-0524D	☆	☆	☆	☆	☆	☆	25.5	26.3	1.035	30.5	1.201	63.5	2.500
06	31.01	1.221	32.10	1.264	424.6-0612D	☆	☆	☆	☆	☆	☆	28.0	26.4	1.039	30.5	1.201	63.5	2.500
06	31.01	1.221	32.10	1.264	424.6-0613D	☆	☆	☆	☆	☆	☆	28.0	26.4	1.039	30.5	1.201	63.5	2.500
06	31.01	1.221	32.10	1.264	424.6-0614D	☆	☆	☆	☆	☆	☆	28.0	26.4	1.039	30.5	1.201	63.5	2.500
06	32.11	1.264	33.30	1.311	424.6-0622D	☆	☆	☆	☆	☆	☆	28.0	26.1	1.028	30.5	1.201	63.5	2.500
06	32.11	1.264	33.30	1.311	424.6-0623D	☆	☆	☆	☆	☆	☆	28.0	26.1	1.028	30.5	1.201	63.5	2.500
06	32.11	1.264	33.30	1.311	424.6-0624D	☆	☆	☆	☆	☆	☆	28.0	26.1	1.028	30.5	1.201	63.5	2.500

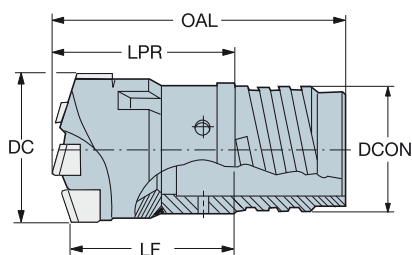
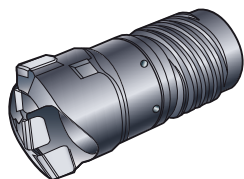
For explanation of parameters see page 1

Ordering example: 2 pieces 424.6-0014 D*18.40* 70



Ground drill head 424.6

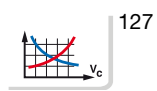
Ejector system



CZC _{MS}	DC Min	DC ^o Min	DC Max	DC ^o Max	Ordering code	Dimensions, mm, inch													
						P	M	K	N	S	DCON	LF	LF ^o	LPR	LPR ^o	OAL	OAL ^o		
						63	70	20	67	72	72	72							
07	33.31	1.311	34.80	1.370	424.6-0712D			☆					30.0	26.0	1.024	30.5	1.201	70.5	2.776
07	33.31	1.311	34.80	1.370	424.6-0713D				☆				30.0	26.0	1.024	30.5	1.201	70.5	2.776
07	33.31	1.311	34.80	1.370	424.6-0714D	☆	☆			☆	☆	☆	30.0	26.0	1.024	30.5	1.201	70.5	2.776
07	34.81	1.370	36.20	1.425	424.6-0722D			☆					30.0	25.9	1.020	30.5	1.201	70.5	2.776
07	34.81	1.370	36.20	1.425	424.6-0723D				☆				30.0	25.9	1.020	30.5	1.201	70.5	2.776
07	34.81	1.370	36.20	1.425	424.6-0724D	☆	☆			☆	☆	☆	30.0	25.9	1.020	30.5	1.201	70.5	2.776
08	36.21	1.426	37.30	1.468	424.6-0812D			☆					33.0	28.7	1.130	33.5	1.319	73.5	2.894
08	36.21	1.426	37.30	1.468	424.6-0813D				☆				33.0	28.7	1.130	33.5	1.319	73.5	2.894
08	36.21	1.426	37.30	1.468	424.6-0814D	☆	☆			☆	☆	☆	33.0	28.7	1.130	33.5	1.319	73.5	2.894
08	37.31	1.469	38.40	1.512	424.6-0822D			☆					33.0	28.5	1.122	33.5	1.319	73.5	2.894
08	37.31	1.469	38.40	1.512	424.6-0823D				☆				33.0	28.5	1.122	33.5	1.319	73.5	2.894
08	37.31	1.469	38.40	1.512	424.6-0824D	☆	☆			☆	☆	☆	33.0	28.5	1.122	33.5	1.319	73.5	2.894
08	38.41	1.512	39.60	1.559	424.6-0832D			☆					33.0	28.3	1.114	33.5	1.319	73.5	2.894
08	38.41	1.512	39.60	1.559	424.6-0833D				☆				33.0	28.3	1.114	33.5	1.319	73.5	2.894
08	38.41	1.512	39.60	1.559	424.6-0834D	☆	☆			☆	☆	☆	33.0	28.3	1.114	33.5	1.319	73.5	2.894
09	39.61	1.559	40.60	1.598	424.6-0912D			☆					36.0	28.2	1.110	33.5	1.319	73.5	2.894
09	39.61	1.559	40.60	1.598	424.6-0913D				☆				36.0	28.2	1.110	33.5	1.319	73.5	2.894
09	39.61	1.559	40.60	1.598	424.6-0914D	☆	☆			☆	☆	☆	36.0	28.2	1.110	33.5	1.319	73.5	2.894
09	40.61	1.599	41.80	1.646	424.6-0922D			☆					36.0	28.0	1.102	33.5	1.319	73.5	2.894
09	40.61	1.599	41.80	1.646	424.6-0923D				☆				36.0	28.0	1.102	33.5	1.319	73.5	2.894
09	40.61	1.599	41.80	1.646	424.6-0924D	☆	☆			☆	☆	☆	36.0	28.0	1.102	33.5	1.319	73.5	2.894
09	41.81	1.646	43.00	1.693	424.6-0932D			☆					36.0	27.8	1.094	33.5	1.319	73.5	2.894
09	41.81	1.646	43.00	1.693	424.6-0933D				☆				36.0	27.8	1.094	33.5	1.319	73.5	2.894
09	41.81	1.646	43.00	1.693	424.6-0934D	☆	☆			☆	☆	☆	36.0	27.8	1.094	33.5	1.319	73.5	2.894
10	43.01	1.693	44.30	1.744	424.6-1012D			☆					39.0	29.5	1.161	35.0	1.378	75.0	2.953
10	43.01	1.693	44.30	1.744	424.6-1013D				☆				39.0	29.5	1.161	35.0	1.378	75.0	2.953
10	43.01	1.693	44.30	1.744	424.6-1014D	☆	☆			☆	☆	☆	39.0	29.5	1.161	35.0	1.378	75.0	2.953
10	44.31	1.744	45.60	1.795	424.6-1022D			☆					39.0	29.3	1.154	35.0	1.378	75.0	2.953
10	44.31	1.744	45.60	1.795	424.6-1023D				☆				39.0	29.3	1.154	35.0	1.378	75.0	2.953
10	44.31	1.744	45.60	1.795	424.6-1024D	☆	☆			☆	☆	☆	39.0	29.3	1.154	35.0	1.378	75.0	2.953
10	45.61	1.796	47.00	1.850	424.6-1032D			☆					39.0	29.1	1.146	35.0	1.378	75.0	2.953
10	45.61	1.796	47.00	1.850	424.6-1033D				☆				39.0	29.1	1.146	35.0	1.378	75.0	2.953
10	45.61	1.796	47.00	1.850	424.6-1034D	☆	☆			☆	☆	☆	39.0	29.1	1.146	35.0	1.378	75.0	2.953
11	47.01	1.851	48.50	1.909	424.6-1112D			☆					43.0	32.8	1.291	35.0	1.378	79.0	3.110
11	47.01	1.851	48.50	1.909	424.6-1113D				☆				43.0	28.8	1.134	35.0	1.378	79.0	3.110
11	47.01	1.851	48.50	1.909	424.6-1114D	☆	☆			☆	☆	☆	43.0	28.8	1.134	35.0	1.378	79.0	3.110
11	48.51	1.910	50.10	1.972	424.6-1122D			☆					43.0	28.7	1.130	35.0	1.378	79.0	3.110
11	48.51	1.910	50.10	1.972	424.6-1123D				☆				43.0	28.7	1.130	35.0	1.378	79.0	3.110
11	48.51	1.910	50.10	1.972	424.6-1124D	☆	☆			☆	☆	☆	43.0	28.7	1.130	35.0	1.378	79.0	3.110
11	50.11	1.973	51.70	2.035	424.6-1132D			☆					43.0	28.5	1.122	35.0	1.378	79.0	3.110
11	50.11	1.973	51.70	2.035	424.6-1133D				☆				43.0	28.5	1.122	35.0	1.378	79.0	3.110
11	50.11	1.973	51.70	2.035	424.6-1134D	☆	☆			☆	☆	☆	43.0	28.5	1.122	35.0	1.378	79.0	3.110

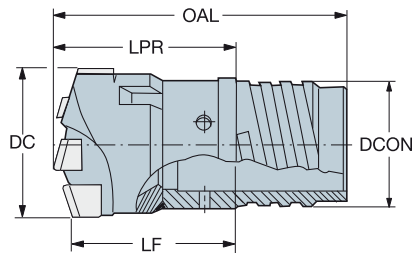
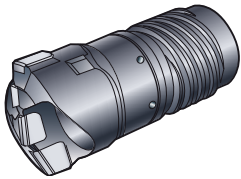
For explanation of parameters see page 1

Ordering example: 2 pieces 424.6-0014 D*18.40* 70



Ground drill head 424.6

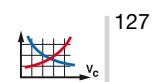
Ejector system



CZC _{MS}	DC Min	DC" Min	DC Max	DC" Max	Ordering code	P M K N S					Dimensions, mm, inch								
						63	70	20	67	72	72	72	DCON	LF	LF"	LPR	LPR"	OAL	OAL"
12	51.71	2.036	53.20	2.094	424.6-1212D			☆					47.0	31.2	1.228	38.0	1.496	82.0	3.228
12	51.71	2.036	53.20	2.094	424.6-1213D				☆				47.0	31.2	1.228	38.0	1.496	82.0	3.228
12	51.71	2.036	53.20	2.094	424.6-1214D	☆	☆						47.0	31.2	1.228	38.0	1.496	82.0	3.228
12	53.21	2.095	54.70	2.154	424.6-1222D			☆					47.0	31.2	1.228	38.0	1.496	82.0	3.228
12	53.21	2.095	54.70	2.154	424.6-1223D				☆				47.0	31.2	1.228	38.0	1.496	82.0	3.228
12	53.21	2.095	54.70	2.154	424.6-1224D	☆	☆						47.0	31.5	1.240	38.0	1.496	82.0	3.228
12	54.71	2.154	56.20	2.213	424.6-1232D			☆					47.0	31.2	1.228	38.0	1.496	82.0	3.228
12	54.71	2.154	56.20	2.213	424.6-1233D				☆				47.0	31.2	1.228	38.0	1.496	82.0	3.228
12	54.71	2.154	56.20	2.213	424.6-1234D	☆	☆			☆	☆	☆	47.0	31.2	1.228	38.0	1.496	82.0	3.228
13	56.21	2.213	58.40	2.299	424.6-1312D			☆					51.0	33.2	1.307	40.0	1.575	84.0	3.307
13	56.21	2.213	58.40	2.299	424.6-1313D				☆				51.0	33.2	1.307	40.0	1.575	84.0	3.307
13	56.21	2.213	58.40	2.299	424.6-1314D	☆	☆			☆	☆	☆	51.0	33.2	1.307	40.0	1.575	84.0	3.307
13	58.41	2.300	60.60	2.386	424.6-1322D			☆					51.0	32.6	1.283	40.0	1.575	84.0	3.307
13	58.41	2.300	60.60	2.386	424.6-1323D				☆				51.0	32.6	1.283	40.0	1.575	84.0	3.307
13	58.41	2.300	60.60	2.386	424.6-1324D	☆	☆			☆	☆	☆	51.0	32.6	1.283	40.0	1.575	84.0	3.307
13	60.61	2.386	62.80	2.472	424.6-1332D			☆					51.0	32.8	1.291	40.0	1.575	84.0	3.307
13	60.61	2.386	62.80	2.472	424.6-1333D				☆				51.0	32.8	1.291	40.0	1.575	84.0	3.307
13	60.61	2.386	62.80	2.472	424.6-1334D	☆	☆			☆	☆	☆	51.0	32.8	1.291	40.0	1.575	84.0	3.307
13	62.81	2.473	65.00	2.559	424.6-1342D			☆					51.0	32.5	1.280	40.0	1.575	84.0	3.307
13	62.81	2.473	65.00	2.559	424.6-1343D				☆				51.0	32.5	1.280	40.0	1.575	84.0	3.307
13	62.81	2.473	65.00	2.559	424.6-1344D	☆	☆			☆	☆	☆	51.0	32.5	1.280	40.0	1.575	84.0	3.307

For explanation of parameters see page 1

Ordering example: 2 pieces 424.6-0014 D*18.40* 70



CoroDrill® 800

Deep hole machining in all workpiece materials

Benefits

- Excellent surface finish
 - Process security
 - Few spare parts
 - Good concentricity
 - Comprehensive stock standard programme available.
- Other sizes available on request



Technical features

- Laser marking of code, dimension and tube range
- Excellent chip control in both low and high feeds due to the coolant accelerator
- Few inserts and support pad sizes cover the whole diameter range

Productivity

- The most productive choice for diameter range 25.00 - 65.00 mm (.984 - 2.559 inch)
- Lowest cost per hole
- Consistent performance within a wide application range
- Developed and manufactured with the latest technology

ISO application areas:



Code key for CoroDrill® 800

800	.20	- 03	D*25.00*
1	2	3	4

STS

1.
800 = Product family name, metric
A800 = Product family name, imperial

2.
STS coupling

3.
Tube range

4.
Diameter

A800	.24	- 03	D*.984*
1	2	3	4

Ejector

1.
800 = Product family name, metric
A800 = Product family name, imperial

2.
Ejector coupling

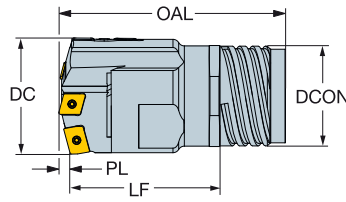
3.
Tube range

4.
Diameter

CoroDrill® 800

STS single tube system

Metric version



CZC _{MS}	DC	DC"	Ordering code	Dimensions, mm, inch							
				DCON	LF	LF"	PL	PL"	OAL	OAL"	
05	03	25.00	.984	800.20-03D25.00	19	71.65	2.820	3.34	.131	75	2.952
	03	26.00	1.024	800.20-03D26.00	19	71.51	2.815	3.48	.137	75	2.952
	03	26.30	1.035	800.20-03D26.30	19	71.47	2.814	3.52	.138	75	2.952
	03	26.40	1.039	800.20-03D26.40	19	71.46	2.813	3.53	.139	75	2.952
	04	26.41	1.040	800.20-04D26.41	21	74.46	2.931	3.53	.139	78	3.070
	04	27.90	1.098	800.20-04D27.90	21	74.26	2.923	3.73	.147	78	3.070
	05	28.80	1.134	800.20-M05D28.80	23	76.14	2.997	3.85	.151	80	3.149
	05	29.50	1.161	800.20-M05D29.50	23	76.04	2.994	3.95	.155	80	3.149
	05	29.80	1.173	800.20-M05D29.80	23	76.00	2.992	3.99	.157	80	3.149
	05	30.10	1.185	800.20-M05D30.10	23	75.83	2.985	4.16	.164	80	3.149
	07	33.45	1.317	800.20-07D33.45	28	80.51	3.170	4.48	.176	85	3.346
06	03	25.40	1.000	800.20-03D25.40	19	71.59	2.818	3.40	.133	75	2.952
	03	25.50	1.004	800.20-03D25.50	19	71.58	2.818	3.41	.134	75	2.952
	04	26.50	1.043	800.20-04D26.50	21	74.44	2.931	3.55	.139	78	3.070
	04	27.00	1.063	800.20-04D27.00	21	74.38	2.928	3.61	.142	78	3.070
	05	30.00	1.181	800.20-M05D30.00	23	75.98	2.991	4.01	.158	80	3.149
	06	31.45	1.238	800.20-06D31.45	25	80.78	3.180	4.21	.165	85	3.346
	06	31.70	1.248	800.20-06D31.70	25	80.75	3.179	4.24	.167	85	3.346
	06	32.00	1.260	800.20-06D32.00	25	80.71	3.177	4.28	.168	85	3.346
	06	32.43	1.277	800.20-06D32.43	25	80.65	3.175	4.34	.171	85	3.346
	07	33.60	1.323	800.20-07D33.60	28	80.98	3.174	4.50	.177	85	3.346
	07	33.78	1.330	800.20-07D33.78	28	80.47	3.168	4.52	.178	85	3.346
08	06	31.05	1.222	800.20-06D31.05	25	80.84	3.182	4.15	.163	85	3.346
	06	31.75	1.250	800.20-06D31.75	25	80.74	3.178	4.25	.167	85	3.346
	06	31.80	1.252	800.20-06D31.80	25	80.73	3.178	4.26	.167	85	3.346
	06	32.27	1.270	800.20-06D32.27	25	80.67	3.176	4.32	.170	85	3.346
	06	32.50	1.280	800.20-06D32.50	25	80.64	3.175	4.35	.171	85	3.346
	07	35.00	1.378	800.20-07D35.00	28	80.31	3.161	4.68	.184	85	3.346
	07	36.20	1.425	800.20-07D36.20	28	80.15	3.155	4.84	.190	85	3.346
	08	37.00	1.457	800.20-08D37.00	30	90.04	3.545	4.95	.195	95	3.740
	08	37.50	1.476	800.20-08D37.50	30	89.97	3.542	5.02	.197	95	3.740
	08	38.00	1.496	800.20-08D38.00	30	89.90	3.539	5.09	.200	95	3.740
	08	38.10	1.500	800.20-08D38.10	30	89.89	3.539	5.10	.200	95	3.740
	08	38.50	1.516	800.20-08D38.50	30	89.84	3.537	5.15	.203	95	3.740
	08	38.52	1.517	800.20-08D38.52	30	90.24	3.552	4.75	.187	95	3.740
	08	38.75	1.526	800.20-08D38.75	30	89.80	3.535	5.19	.204	95	3.740
	08	39.00	1.535	800.20-08D39.00	30	89.77	3.534	5.22	.205	95	3.740
	09	40.75	1.604	800.20-09D40.75	33	94.54	3.722	5.45	.214	100	3.937
	09	43.00	1.693	800.20-09D43.00	33	94.23	3.710	5.76	.226	100	3.937
	10	44.45	1.750	800.20-10D44.45	36	94.04	3.702	5.95	.234	100	3.937
	11	48.00	1.890	800.20-11D48.00	39	103.56	4.077	6.43	.253	110	4.330
	11	48.80	1.921	800.20-11D48.80	39	103.46	4.073	6.53	.257	110	4.330
	11	49.00	1.929	800.20-11D49.00	39	103.43	4.072	6.56	.258	110	4.330
09	08	39.15	1.541	800.20-08D39.15	30	89.75	3.533	5.24	.206	95	3.740
	09	40.00	1.575	800.20-09D40.00	33	94.64	3.726	5.35	.210	100	3.937
	09	41.00	1.614	800.20-09D41.00	33	94.50	3.720	5.49	.216	100	3.937
	10	46.00	1.811	800.20-10D46.00	36	93.83	3.694	6.16	.242	100	3.937

For explanation of parameters see page 1

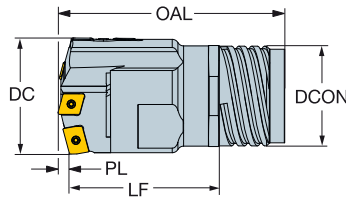
Ordering example: 2 pieces 800.20-03D*25.00*



CoroDrill® 800

STS single tube system

Metric version



				Dimensions, mm, inch							
CZC _{MS}	DC	DC"	Ordering code	DCON	LF	LF"	PL	PL"	OAL	OAL"	
				10	10	45.00	1.772	800.20-10D45.00	36	93.97	3.699
	11	50.00	1.969	800.20-11D50.00	39	103.30	4.066	6.69	.263	110	4.330
	11	50.80	2.000	800.20-11D50.80	39	103.19	4.062	6.80	.267	110	4.330
	11	51.30	2.020	800.20-11D51.30	39	103.12	4.060	6.87	.270	110	4.330
	12	53.00	2.087	800.20-12D53.00	43	112.89	4.444	7.10	.279	120	4.724
	12	52.30	2.059	800.20-12D52.30	43	112.99	4.448	7.00	.275	120	4.724
	12	54.80	2.157	800.20-12D54.80	43	112.65	4.435	7.34	.289	120	4.724
	11	52.00	2.047	800.20-12D52.00	43	113.03	4.450	6.96	.274	120	4.724
	12	54.20	2.134	800.20-12D54.20	43	112.73	4.438	7.26	.285	120	4.724
	12	55.00	2.165	800.20-12D55.00	43	112.63	4.434	7.36	.290	120	4.724
	13	57.15	2.250	800.20-13D57.15	47	117.34	4.619	7.65	.301	125	4.921
	13	60.00	2.362	800.20-13D60.00	47	111.96	4.407	8.03	.316	120	4.724
	13	63.00	2.480	800.20-13D63.00	47	111.56	4.392	8.44	.332	120	4.724
	12	47.35	1.864	800.20-11D47.35	39	103.65	4.080	6.34	.249	110	4.330
	11	48.92	1.926	800.20-11D48.92	39	103.44	4.072	6.55	.258	110	4.330
	13	59.00	2.323	800.20-13D59.00	47	117.09	4.610	7.90	.311	125	4.921
	13	59.80	2.354	800.20-13D59.80	47	116.98	4.605	8.01	.315	125	4.921
	13	63.50	2.500	800.20-13D63.50	47	111.49	4.389	8.50	.334	120	4.724
	13	64.80	2.551	800.20-13D64.80	47	116.31	4.579	8.68	.341	125	4.921
	13	65.00	2.559	800.20-13D65.00	47	116.29	4.578	8.70	.342	125	4.921

For explanation of parameters see page 1

Ordering example: 2 pieces 800.20-03D*25.00*

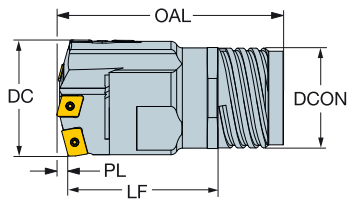


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CoroDrill® 800
STS single tube system
Inch version



CZC _{MS}	DC	DC"	Ordering code	Dimensions, mm, inch							
				DCON	LF	LF"	PL	PL"	OAL	OAL"	
06	03	25.40	1.000	A800.20-03D1.000	19	71.59	2.818	3.40	.133	75	2.952
05	03	26.00	1.024	A800.20-03D1.024	19	71.51	2.815	3.48	.137	75	2.952
	04	28.57	1.125	A800.20-04D1.125	21	74.17	2.920	3.82	.150	78	3.070
06	05	30.93	1.218	A800.20-M05D1.218	23	75.85	2.986	4.14	.163	80	3.149
	06	31.36	1.235	A800.20-06D1.235	25	80.79	3.180	4.20	.165	85	3.346
	06	31.62	1.245	A800.20-06D1.245	25	80.76	3.179	4.23	.166	85	3.346
08	06	31.75	1.250	A800.20-06D1.250	25	80.74	3.178	4.25	.167	85	3.346
06	07	33.32	1.312	A800.20-07D1.312	28	80.53	3.170	4.46	.175	85	3.346
08	07	34.92	1.375	A800.20-07D1.375	28	80.32	3.162	4.67	.184	85	3.346
	08	36.49	1.437	A800.20-08D1.437	30	90.11	3.547	4.89	.192	95	3.740
	08	38.10	1.500	A800.20-08D1.500	30	89.89	3.539	5.10	.200	95	3.740
	09	41.27	1.625	A800.20-09D1.625	33	94.47	3.719	5.52	.217	100	3.937
10	10	43.81	1.725	A800.20-10D1.725	36	94.12	3.705	5.87	.231	100	3.937
08	10	44.45	1.750	A800.20-10D1.750	36	94.04	3.702	5.95	.234	100	3.937
	10	46.02	1.812	A800.20-10D1.812	36	93.83	3.694	6.16	.242	100	3.937
09	11	47.62	1.875	A800.20-11D1.875	39	103.61	4.079	6.38	.251	110	4.330
	11	48.38	1.905	A800.20-11D1.905	39	103.51	4.075	6.48	.255	110	4.330
	11	49.27	1.940	A800.20-11D1.940	39	103.39	4.070	6.60	.259	110	4.330
	11	49.40	1.945	A800.20-11D1.945	39	103.38	4.070	6.61	.260	110	4.330
	11	49.91	1.965	A800.20-11D1.965	39	103.31	4.067	6.68	.263	110	4.330
08	11	50.41	1.985	A800.20-11D1.985	39	103.24	4.064	6.75	.265	110	4.330
	11	50.80	2.000	A800.20-11D2.000	39	103.19	4.062	6.80	.267	110	4.330
	12	53.97	2.125	A800.20-12D2.125	43	112.76	4.439	7.23	.284	120	4.724
	12	55.54	2.187	A800.20-12D2.187	43	112.55	4.431	7.44	.292	120	4.724
11	13	57.15	2.250	A800.20-13D2.250	47	117.34	4.619	7.65	.301	125	4.921
12	13	58.72	2.312	A800.20-13D2.312	47	117.13	4.611	7.86	.309	125	4.921
	13	59.30	2.335	A800.20-13D2.335	47	117.05	4.608	7.94	.312	125	4.921
	13	59.69	2.350	A800.20-13D2.350	47	117.00	4.606	7.99	.314	125	4.921
	13	60.32	2.375	A800.20-13D2.375	47	116.91	4.603	8.08	.318	125	4.921
	13	60.45	2.380	A800.20-13D2.380	47	116.90	4.602	8.09	.318	125	4.921
	13	61.08	2.405	A800.20-13D2.405	47	116.81	4.599	8.18	.322	125	4.921
	13	62.00	2.441	A800.20-13D2.441	47	116.69	4.594	8.30	.327	125	4.921
	13	63.50	2.500	A800.20-13D2.500	47	116.49	4.586	8.50	.334	125	4.921

For explanation of parameters see page 1

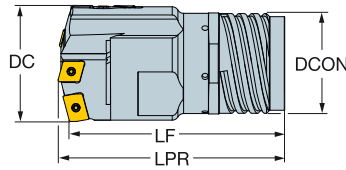
Ordering example: 2 pieces A800.20-03D*1.000*



CoroDrill® 800

Ejector system

Metric version



CZC _{MS}	DC	DC"	Ordering code	Dimensions, mm, inch							
				DCON	LF	LF"	OAL	OAL"	LPR	LPR"	
06	03	25.00	.984	800.24-03D25.00	21	71.65	2.820	75	2.952	75.00	2.952
	03	25.40	1.000	800.24-03D25.40	21	71.59	2.818	75	2.952	75.00	2.952
	04	26.41	1.040	800.24-04D26.41	23	74.46	2.931	78	3.070	78.00	3.070
04	04	27.00	1.063	800.24-04D27.00	23	74.38	2.928	78	3.070	78.00	3.070
	05	30.00	1.181	800.24-M05D30.00	25	75.98	2.991	80	3.149	80.00	3.149
	05	30.30	1.193	800.24-M05D30.30	25	75.94	2.989	80	3.149	80.00	3.149
05	30.50	1.201	800.24-M05D30.50	25	75.91	2.988	80	3.149	80.00	3.149	
08	06	32.00	1.260	800.24-06D32.00	28	80.71	3.177	85	3.346	85.00	3.346
	06	32.14	1.265	800.24-06D32.14	28	80.69	3.176	85	3.346	85.00	3.346
	06	32.20	1.268	800.24-06D32.20	28	80.68	3.176	85	3.346	85.00	3.346
07	07	34.00	1.339	800.24-07D34.00	30	80.44	3.167	85	3.346	85.00	3.346
	07	35.00	1.378	800.24-07D35.00	30	80.31	3.161	85	3.346	85.00	3.346
	07	36.05	1.419	800.24-07D36.05	30	80.17	3.156	85	3.346	85.00	3.346
08	08	37.90	1.492	800.24-08D37.90	33	89.92	3.540	95	3.740	95.00	3.740
	08	38.00	1.496	800.24-08D38.00	33	89.90	3.539	95	3.740	95.00	3.740
	09	39.00	1.535	800.24-08D39.00	33	89.77	3.534	95	3.740	95.00	3.740
09	09	40.05	1.577	800.24-09D40.05	36	94.63	3.725	100	3.937	100.00	3.937
	09	40.70	1.602	800.24-09D40.70	36	94.54	3.722	100	3.937	100.00	3.937
	09	40.80	1.606	800.24-09D40.80	36	94.53	3.721	100	3.937	100.00	3.937
10	10	44.00	1.732	800.24-10D44.00	39	94.10	3.704	100	3.937	100.00	3.937
	10	45.00	1.772	800.24-10D45.00	39	103.97	4.093	110	4.330	110.00	4.330
	11	48.00	1.890	800.24-11D48.00	43	103.56	4.077	110	4.330	110.00	4.330
11	11	48.60	1.913	800.24-11D48.60	43	103.48	4.074	110	4.330	110.00	4.330
	11	49.70	1.957	800.24-11D49.70	43	103.34	4.068	110	4.330	110.00	4.330
	11	50.00	1.969	800.24-11D50.00	43	103.30	4.066	110	4.330	110.00	4.330
11	11	50.20	1.976	800.24-11D50.20	43	103.27	4.065	110	4.330	110.00	4.330
	11	51.05	2.010	800.24-11D51.05	43	103.16	4.061	110	4.330	110.00	4.330
	12	52.50	2.067	800.24-12D52.50	47	112.96	4.447	120	4.724	120.00	4.724
12	12	54.00	2.126	800.24-12D54.00	47	112.76	4.439	120	4.724	120.00	4.724
	12	54.20	2.134	800.24-12D54.20	47	112.73	4.438	120	4.724	120.00	4.724
	13	62.35	2.455	800.24-13D62.35	51	116.64	4.592	125	4.921	125.00	4.921
13	13	63.00	2.480	800.24-13D63.00	51	116.56	4.588	125	4.921	125.00	4.921
	13	65.00	2.559	800.24-13D65.00	51	116.29	4.578	125	4.921	125.00	4.921

For explanation of parameters see page 1

Ordering example: 2 pieces 800.24-03D*25.00*



CoroDrill® 801

Productive deep hole machining with indexable insert design

Benefits

- High process security
- Improved flexibility by larger adjustability
- Rigid design with three support pads
- Improved performance at sustained tool life by latest insert and pad technology
- Adjustment without tool room service is possible



Technical features

- Improved coolant channel design
- Improved chip mouth design for enhanced chip evacuation
- Ground area for run-out verification
- Timing mark for easy positioning in drill tube

Application

- Primarily for ISO P, M and S materials
- Wide diameter range
- Suitable for applications within the oil- and gas industry as well as aerospace and primary metals

ISO application areas:



Code key for CoroDrill® 801

801	.20	-	20	D1200
1	2		3	4

1.

801 = Product family name, metric

A801 = Product family name, imperial

2.

STS coupling

3.

Tube range

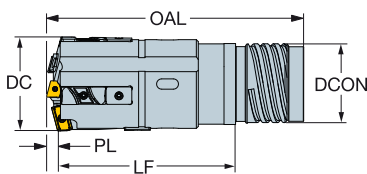
4.

Diameter

CoroDrill® 801

TCHA

IT10



						Dimensions, mm, inch							
CZC _{MS}	DCN	DCN ¹	DCX	DCX ²	Ordering code	DCON	LF	LF ³	OAL	OAL ⁴	PL	PL ⁵	
13	14	65.00	2.559	66.50	2.618	801.20-14D0650	52	115.60	4.551	200	7.874	9.4	.370
	14	66.68	2.625	68.18	2.684	A801.20-14D2625	52	116.10	4.570	200	7.874	8.9	.350
	15	68.00	2.677	69.50	2.736	801.20-15D0680	58	115.60	4.551	200	7.874	9.4	.370
	15	69.85	2.750	70.82	2.789	A801.20-15D2750	58	115.60	4.551	200	7.874	9.4	.370
	15	70.00	2.756	71.00	2.795	801.20-15D0700	58	115.60	4.551	200	7.874	9.4	.370
	16	73.02	2.875	77.03	3.032	A801.20-16D2875	63	115.60	4.551	200	7.874	9.4	.370
18	16	74.98	2.952	78.98	3.109	A801.20-16D2952	63	115.00	4.527	200	7.874	10.0	.394
	15	71.00	2.795	74.00	2.913	801.20-15D0710	58	115.60	4.551	200	7.874	9.4	.370
	16	76.20	3.000	80.20	3.157	A801.20-16D3000	63	114.80	4.519	200	7.874	10.2	.402
	17	80.00	3.150	84.00	3.307	801.20-17D0800	70	118.60	4.669	225	8.858	9.4	.370
	17	80.94	3.187	84.95	3.344	A801.20-17D3187	70	117.20	4.614	225	8.858	10.8	.425
	17	82.55	3.250	86.55	3.407	A801.20-17D3250	70	116.90	4.602	225	8.858	11.1	.437
	17	86.00	3.386	90.00	3.543	801.20-17D0860	70	118.60	4.669	225	8.858	9.4	.370
	18	88.90	3.500	92.90	3.657	A801.20-18D3500	77	116.10	4.570	225	8.858	11.9	.469
	18	90.00	3.543	94.00	3.701	801.20-18D0900	77	115.90	4.562	225	8.858	12.1	.476
	18	94.00	3.701	95.50	3.760	801.20-18D0940	77	118.60	4.669	225	8.858	9.4	.370
	18	95.00	3.740	99.00	3.898	801.20-18D0950	77	130.90	5.153	240	9.448	12.1	.476
	18	98.00	3.858	102.00	4.016	801.20-18D0980	77	130.90	5.153	240	9.448	12.1	.476
19	19	101.60	4.000	106.60	4.197	A801.20-19D4000	89	139.40	5.488	250	9.842	13.6	.535
	19	105.00	4.134	110.00	4.331	801.20-19D1050	89	138.90	5.468	250	9.842	14.1	.555
	19	107.95	4.250	112.95	4.447	A801.20-19D4250	89	138.50	5.452	250	9.842	14.5	.571
	19	111.12	4.375	116.13	4.572	A801.20-19D4375	89	138.10	5.437	250	9.842	14.9	.587
	20	114.30	4.500	119.30	4.697	A801.20-20D4500	101	126.70	4.988	260	10.236	15.3	.602
	20	120.00	4.724	125.00	4.921	801.20-20D1200	101	135.90	5.350	270	10.629	16.1	.634
	21	125.00	4.921	130.00	5.118	801.20-21D1250	113	135.20	5.322	270	10.629	16.8	.661
	21	130.00	5.118	135.00	5.315	801.20-21D1300	113	134.60	5.299	270	10.629	17.4	.685
	21	135.00	5.315	140.00	5.512	801.20-21D1350	113	134.60	5.299	270	10.629	17.4	.685
	22	136.53	5.375	141.53	5.572	A801.20-22D5375	125	133.70	5.263	270	10.629	18.3	.720
23	22	141.50	5.571	146.50	5.768	801.20-22D1415	125	132.40	5.212	270	10.629	19.6	.772
	22	146.05	5.750	151.05	5.947	A801.20-22D5750	125	132.40	5.212	270	10.629	19.6	.772
	23	150.00	5.906	155.00	6.102	801.20-23D1500	137	126.40	4.976	285	11.220	19.6	.772
	23	152.40	6.000	157.40	6.197	A801.20-23D6000	137	125.60	4.944	285	11.220	20.4	.803
	23	157.00	6.181	162.00	6.378	801.20-23D1570	137	126.40	4.976	285	11.220	19.6	.772
	24	162.00	6.378	167.00	6.575	801.20-24D1620	149	126.40	4.976	285	11.220	19.6	.772
	24	165.10	6.500	170.10	6.697	A801.20-24D6500	149	123.90	4.877	285	11.220	22.1	.870

For explanation of parameters see page 1

Ordering example: 1 piece 801.20-20D1200



T-MAX® drill 424.10

First choice for Ejector

Built-in precision

- Flexible setting possibilities

Indexable twin edge support pad

Large chip-evacuation ports

Excellent hole
straightness and surface
finish



Modern inserts - machining economy

- Four insert types cover the whole diameter range
- Geometries and grades for drilling most materials
- Grade GC1025 the best choice for both steel and stainless steel
- High feed rate

Strong secure insert cartridges

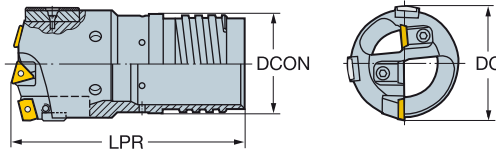
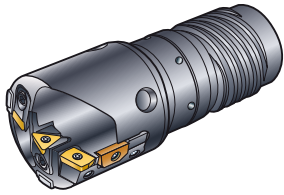
- Designed to protect the head from damage
- Easy to change
- Good economy

ISO application area:



T-MAX® drill 424.10

Indexable insert design



Metric version

			Ordering code	Dimensions, mm, inch				
CZC _{MS}	DC	DC [#]		DCON	LPR	LPR [#]	ADJLX _{RDL}	ADJLX _{RDL} [#]
13	63.50	2.500	A424.10-2500	51.0	115	4.528	1.00	.0394
13E	65.00	2.559	424.10-0650E	51.0	115	4.528	1.50	.0591
14	65.00	2.559	424.10-0650	52.0	150	5.906	1.00	.0394
15	69.85	2.750	A424.10-2750	58.0	150	5.906	1.00	.0394
15	70.00	2.756	424.10-0700	58.0	150	5.906	1.00	.0394
15	71.45	2.813	A424.10-2813	58.0	150	5.906	0.75	.0300
16	75.00	2.953	424.10-0750	63.0	160	6.299	2.00	.0787
16	76.20	3.000	A424.10-3000	63.0	160	6.299	2.00	.0787
17	80.00	3.150	424.10-0800	70.0	190	7.480	1.25	.0492
17	82.55	3.250	A424.10-3250	70.0	190	7.480	0.75	.0300
17	85.00	3.346	424.10-0850	70.0	190	7.480	1.75	.0689
18	88.90	3.500	A424.10-3500	77.0	190	7.480	1.75	.0689
18	90.00	3.543	424.10-0900	77.0	190	7.480	1.75	.0689
18	95.00	3.740	424.10-0950	77.0	190	7.480	2.00	.0787
18	95.25	3.750	A424.10-3750	77.0	190	7.480	2.00	.0787
19	100.00	3.937	424.10-1000	89.0	195	7.677	1.00	.0394
19	101.60	4.000	A424.10-4000	89.0	195	7.677	1.25	.0490
19	105.00	4.134	424.10-1050	89.0	195	7.677	0.50	.0197
19	107.95	4.250	A424.10-4250	89.0	195	7.677	2.00	.0787
19	110.00	4.331	424.10-1100	89.0	195	7.677	1.50	.0591
19	114.30	4.500	A424.10-4500	101.0	220	8.661	2.00	.0787
20	115.00	4.528	424.10-1150	101.0	220	8.661	1.50	.0591
20	120.00	4.724	424.10-1200	101.0	220	8.661	1.50	.0591
20	120.65	4.750	A424.10-4750	101.0	220	8.661	1.50	.0591
21	125.00	4.921	424.10-1250	113.0	220	8.661	1.75	.0689
21	127.00	5.000	A424.10-5000	101.0	220	8.661	1.25	.0490
21	130.00	5.118	424.10-1300	113.0	220	8.661	0.50	.0197
22	136.00-147.90	5.354-5.823	Tailor Made					
23	148.00-159.90	5.827-6.295	Tailor Made					
24	160.00-171.90	6.299-6.768	Tailor Made					
25	172.00-183.90	6.772-7.240	Tailor Made					

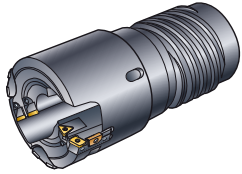
Drill diameter range – insert and pad sizes

Inserts (Ordered separately)							
Central cartridge	△ Insert	Intermediate cartridge	△ Insert	Peripheral cartridge	□ Insert		
L430.31-1216-16	16 TPMT 16T312R-22 16 TPMT 16T312TR-23	R430.30-1216-16	16 TPMT 16T312R-22 16 TPMT 16T312TR-23	R430.28-1516-16	13 R424.9-13T308-22 13 R424.9-13T308-23		
L430.31-1522-22	22 TPMT 220612R-22 22 TPMT 220612TR-23	R430.30-1522-22	22 TPMT 220612R-22 22 TPMT 220612TR-23	R430.28-1822-22	18 R424.9-180608-22 18 R424.9-180608-23		

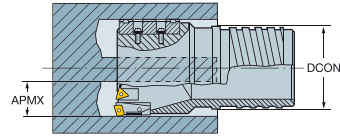
T-MAX® trepanning drill 420.7

Indexable insert design

Diameter range 112.00-250.00 mm (4.409-9.843 inch)



Hole depth: 150 x Dia.
 Hole tolerance: IT10
 Surface finish: R_a 3 μ m
 Cutting fluid: Neat oil or soluble.



dm_m is the same as dm_t for the drill tube.

Diameter range, mm, inch				Cartridges						Dimensions, mm, inch			
DC Min	DC Max	DC Min"	DC Max"	Central	No.	Peripheral	No.	Support pad	No.	DCON	DCON"	APMX	APMX"
112.00	119.99	4.409	4.724	L430.27-1216-16	3	R430.28-1516-16	1	(Available on request)	2	101	3.976	43.75	1.722
120.00	124.99	4.725	4.921	L430.27-1216-16	3	R430.28-1516-16	1	430.21-18D120.0	2	101	3.976	43.75	1.722
125.00	129.99	4.922	5.118	L430.27-1216-16	3	R430.28-1516-16	1	430.21-18D125.0	2	113	4.449	43.75	1.722
130.00	139.99	5.119	5.511	L430.27-1216-16	3	R430.28-1516-16	1	430.21-18D130.0	2	113	4.449	43.75	1.722
140.00	149.99	5.512	5.905	L430.27-1216-16	3	R430.28-1516-16	1	430.21-18D140.0	2	125	4.921	43.75	1.722
150.00	159.99	5.906	6.299	L430.27-1216-16	3	R430.28-1516-16	1	430.21-18D150.0	2	131	5.157	43.75	1.722
160.00	179.99	6.300	7.086	L430.27-1216-16	3	R430.28-1516-16	1	430.21-18D160.0	2	149	5.866	43.75	1.722
180.00	195.99	7.087	7.716	L430.27-1216-16	3	R430.28-1516-16	1	430.21-18D180.0	2	161	6.339	43.75	1.722
196.00	224.99	7.717	8.858	L430.27-1216-16	4	R430.28-1516-16	1	430.21-18D200.0	2	173	6.811	53.75	2.116
225.00	249.99	8.859	9.842	L430.27-1216-16	4	R430.28-1516-16	1	430.21-18D225.0	2	185	7.283	53.75	2.116
250.00		9.843		L430.27-1216-16	4	R430.28-1516-16	1	430.21-18D250.0	2	197	7.756	53.75	2.116

When ordering trepanning heads the following must be stated:

- Drill diameter DC

For more information and advice, please contact your nearest Sandvik representative.

Inserts

(Ordered separately)

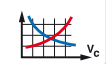
Central cartridge		Insert	Peripheral cartridge		Insert
L430.27-1216-16	16	TPMT 16T312R-22	R430.28-1516-16	13	R424.9-13T308-22
	16	TPMT 16T312TR-23		13	R424.9-13T308-23



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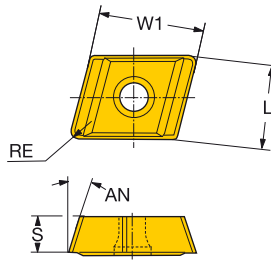
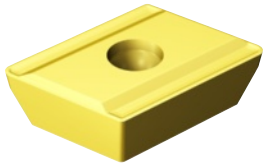


108



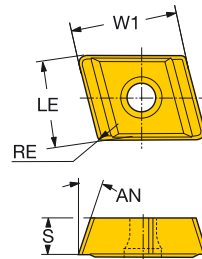
137

CoroDrill® 800 insert for drilling



Central insert

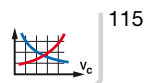
Ordering code	P	M	K	N	S	O	Dimensions, mm, inch													
							1025	4235	1025	4235	H13A	1025	1025	1115	H13A	1025	S	S"	LE	LE"
05 800-05 03 08M-C-G	☆	☆	☆	☆	☆	☆	3.17	.125	5.56	.218	0.80	.031	2.50	.098	5.56	.218	17°			
06 800-06 T3 08M-C-G	☆	☆	☆	☆	☆	☆	3.96	.156	6.35	.250	0.80	.031	2.80	.110	6.35	.250	17°			
08 800-08 T3 08M-C-G	☆	☆	☆	☆	☆	☆	3.96	.156	7.94	.312	0.80	.031	2.80	.110	7.94	.312	17°			
10 800-10 T3 08M-C-G	☆	☆	☆	☆	☆	☆	3.96	.156	9.53	.375	0.80	.031	2.80	.110	9.53	.375	17°			
12 800-12 T3 08M-C-G	☆	☆	☆	☆	☆	☆	3.96	.156	12.70	.500	0.80	.031	2.80	.110	12.70	.500	17°			
05 800-05 03 08M-C-L	☆	☆	☆	☆	☆	☆	3.17	.125	5.56	.218	0.80	.031	2.50	.098	5.56	.218	17°			
06 800-06 T3 08M-C-L	☆	☆	☆	☆	☆	☆	3.96	.156	6.35	.250	0.80	.031	2.80	.110	6.35	.250	17°			
08 800-08 T3 08M-C-L	☆	☆	☆	☆	☆	☆	3.96	.156	7.94	.312	0.80	.031	2.80	.110	7.94	.312	17°			
10 800-10 T3 08M-C-L	☆	☆	☆	☆	☆	☆	3.96	.156	9.53	.375	0.80	.031	2.80	.110	9.53	.375	17°			
12 800-12 T3 08M-C-L	☆	☆	☆	☆	☆	☆	3.96	.156	12.70	.500	0.80	.031	2.80	.110	12.70	.500	17°			



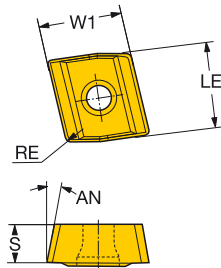
Intermediate insert

Ordering code	P	M	K	N	S	Dimensions, mm, inch											
						1025	1025	4235	1025	1025	1115	H13A	S	S"	LE	LE"	RE
05 800-05 03 08M-I-G	☆	☆	☆	☆	☆	3.17	.125	5.56	.218	0.80	.031	2.50	.098	5.56	.218	17°	
06 800-06 T3 08M-I-G	☆	☆	☆	☆	☆	3.96	.156	6.35	.250	0.80	.031	2.80	.110	6.35	.250	17°	
08 800-08 T3 08M-I-G	☆	☆	☆	☆	☆	3.96	.156	7.94	.312	0.80	.031	2.80	.110	7.94	.312	17°	
12 800-12 T3 08M-I-G	☆	☆	☆	☆	☆	3.96	.156	9.87	.389	0.80	.031	2.80	.110	12.70	.500	17°	
05 800-05 03 08M-I-L	☆	☆	☆	☆	☆	3.17	.125	5.56	.218	0.80	.031	2.50	.098	5.56	.218	17°	
06 800-06 T3 08M-I-L	☆	☆	☆	☆	☆	3.96	.156	6.35	.250	0.80	.031	2.80	.110	6.35	.250	17°	
08 800-08 T3 08M-I-L	☆	☆	☆	☆	☆	3.96	.156	7.94	.312	0.80	.031	2.80	.110	7.94	.312	17°	
12 800-12 T3 08M-I-L	☆	☆	☆	☆	☆	3.96	.156	9.87	.389	0.80	.031	2.80	.110	12.70	.500	17°	

For explanation of parameters see page 1



CoroDrill® 800 insert for drilling



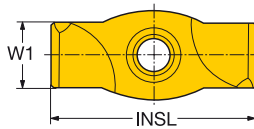
Peripheral insert

Ordering code	P	M	K	N	S	Dimensions, mm, inch											
						S	S"	LE	LE"	RE	RE"	D1	D1"	W1	W1"	AN	
06	800-06 03 08H-P-G	☆	☆	☆	☆	☆	3.17	.125	6.42	.253	0.80	.031	2.50	.098	8.00	.314	11°
06	800-06 03 08H-P-L	☆	☆	☆	☆	☆	3.17	.125	6.42	.253	0.80	.031	2.50	.098	8.00	.314	11°
08	800-08 T3 08H-P-G	☆	☆	☆	☆	☆	3.96	.156	8.62	.339	0.80	.031	2.80	.110	9.00	.354	11°
08	800-08 T3 08H-P-L	☆	☆	☆	☆	☆	3.96	.156	8.62	.339	0.80	.031	2.80	.110	9.00	.354	11°
09	800-09 T3 08H-P-G	☆	☆	☆	☆	☆	3.96	.156	9.63	.379	0.80	.031	2.80	.110	9.00	.354	11°
09	800-09 T3 08H-P-L	☆	☆	☆	☆	☆	3.96	.156	9.63	.379	0.80	.031	2.80	.110	9.00	.354	11°
11	800-11 T3 08H-P-G	☆	☆	☆	☆	☆	3.96	.156	12.7	.500	0.80	.031	2.80	.110	9.00	.354	11°
11	800-11 T3 08H-P-L	☆	☆	☆	☆	☆	3.96	.156	12.7	.500	0.80	.031	2.80	.110	9.00	.354	11°

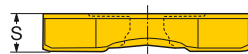
For explanation of parameters see page 1

Support pads for CoroDrill™ 800 solid drill heads

Support pad PM1



Support pad P1 and M1



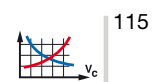
Ordering code	P		M		K		N		S		Dimensions, mm, inch					
	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	W1	W1"	INSL	INSL"	S	S"
800-06A	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	6	.236	18	.709	3.0	.118
800-07A	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	7	.276	20	.787	3.5	.138
800-08A	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	8	.315	25	.984	4.5	.177
800-10A	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	10	.394	30	1.181	4.5	.177
800-12A	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	12	.472	35	1.378	5.5	.216

For more information on geometries and grades, see page 36

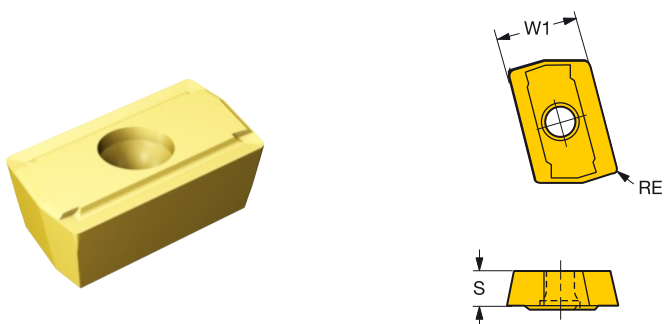
Ordering example: 10 pieces 800-06A P1

Support pad	Shim set (8 pcs)	S
800-06A	5549 127-85	0.02
	5549 127-86	0.03
800-07A	5549 127-88	0.02
	5549 127-89	0.03
800-08A	5549 127-91	0.02
	5549 127-92	0.03
800-10A	5549 127-94	0.02
	5549 127-95	0.03
800-12A	5549 127-97	0.02
	5549 127-98	0.03

Note: Do not add more than 0.05 mm thickness of shims



T-MAX® inserts for 424.10

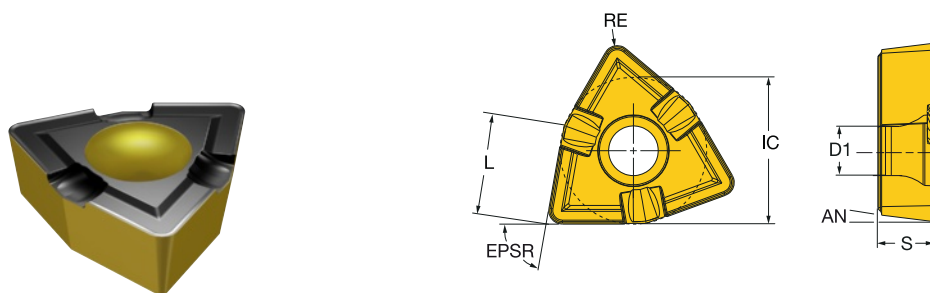


Peripheral insert

	Ordering code	P										M		K		N		S		O		Dimensions, mm, inch									
		1025	235	4235	1025	235	4235	1025	H13A	1025	H13A	1025	1115	H13A	1025	IC	IC"	S	S"	RE	RE"	D1	D1"	L	L"	AN	EPSR				
		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆				
Finishing	13	R424.9-13 T3 08-22	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆					
		R424.9-13 T3 08-23	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆					
	18	R424.9-18 06 08-22	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆					
		R424.9-18 06 08-23	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆					
	13	R424.9-13 T3 08-24	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆						
	18	R424.9-18 06 08-24	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆						

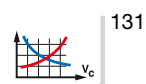
For explanation of parameters see page 1

Trepanning inserts for engineered solutions

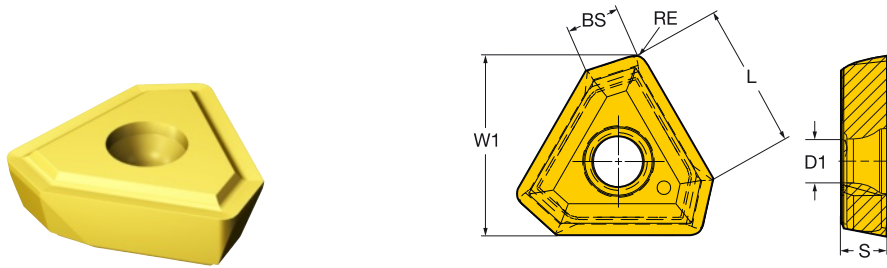


	Ordering code	P										M		K		N		S		Dimensions, mm, inch									
		1025	1125	4125	4235	H13A	1025	4235	1025	1105	1125	4125	4235	H13A	1105	H13A	IC	IC"	S	S"	RE	RE"	D1	D1"	L	L"	AN	EPSR	
		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	06	WCMX 06 T3 08-GM	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	9.52	.375	3.96	.156	0.80	.031	3.70	.145	6.52	.257	7.00°	80.00°	
	08	WCMX 08 04 12-GM	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	12.70	.500	4.76	.187	1.20	.047	4.30	.169	8.69	.342	7.00°	80.00°	

For explanation of parameters see page 1

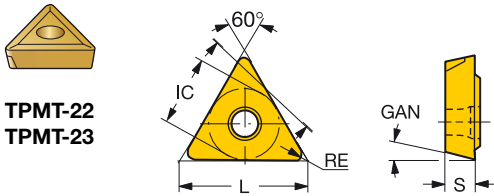


TPGX insert for drilling



	Ordering code	Material					Dimensions, mm, inch												
		P	M	K	N	S	S	S"	D1	D1"	W1	W1"	RE	RE"	BS	BS"	L	L"	
	14	TPGX 14 03 08R/L-G	☆	☆	☆	☆	☆	3.52	.138	3.90	.153	10.26	.404	0.80	.031	2.80	.110	8.10	0.318
		TPGX 14 03 08R/L-L	☆	☆	☆	☆	☆	3.52	.138	3.90	.153	10.26	.404	0.80	.031	2.80	.110	8.10	0.318
	17	TPGX 17 04 08R/L-G	☆	☆	☆	☆	☆	4.00	.157	3.90	.153	12.37	.487	0.80	.031	3.90	.153	9.70	0.381
		TPGX 17 04 08R/L-L	☆	☆	☆	☆	☆	4.00	.157	3.90	.153	12.37	.487	0.80	.031	3.90	.153	9.70	0.381
	24	TPGX 24 05 12R/L-G	☆	☆	☆	☆	☆	5.50	.216	4.40	.173	17.29	.680	1.20	.047	4.70	.185	13.30	0.523
		TPGX 24 05 12R/L-L	☆	☆	☆	☆	☆	5.50	.216	4.40	.173	17.29	.680	1.20	.047	4.70	.185	13.30	0.523
	28	TPGX 28 07 16R/L-G	☆	☆	☆	☆	☆	7.57	.298	7.57	.298	20.46	.805	1.60	.062	6.20	.244	15.50	0.610
		TPGX 28 07 16R/L-L	☆	☆	☆	☆	☆	7.57	.298	7.57	.298	20.46	.805	1.60	.062	6.20	.244	15.50	0.610

T-Max® insert for drilling



TPMT-22
TPMT-23

Central and intermediate insert

	Ordering code	Material						Dimensions, mm, inch							
		P	M	K	N	S	IC	IC"	S	S"	L	L"	RE	RE"	
	16	TPMT 16 T3 12R-22	☆	☆	☆	☆	☆	9.52	.375	3.97	.156	16.50	.650	1.2	.047
		TPMT 16 T3 12TR-23	☆	☆	☆	☆	☆	9.52	.375	3.97	.156	16.50	.650	1.2	.047
	22	TPMT 22 06 12R-22	☆	☆	☆	☆	☆	12.70	.500	6.35	.250	22.00	.866	1.2	.047
		TPMT 22 06 12TR-23	☆	☆	☆	☆	☆	12.70	.500	6.35	.250	22.00	.866	1.2	.047

For explanation of parameters see page 1

Carbide grades and insert grades for 800.24 and 800.20

Insert geometries

Geometry (G)

- All round geometry
- High cutting feeds and speeds
- Good chip control in most materials

Geometry (L)

- Gives improved chip control in long chipping materials, such as low carbon steels and duplex stainless steels
- Secure production process in materials where chip jamming easily could occur

Support pad grades

Grade PM1

- Adds greater wear resistance in Duplex, stainless steels, titanium and heat resistant super alloys
- Complementary grade for steel
- New styling for easier identification and lower friction (black and yellow)

Grade P1

- First choice in steel applications

Grade M1

- First choice in ferritic and austenitic stainless and cast iron

Grade recommendations per ISO application area



Steel, cast steel, long chipping malleable iron

GC1025 (P15–P50)

A PVD coated universal grade with excellent wear resistance and toughness.

GC4235 (P25–P45)

Good toughness and wear resistance.

P1 (P15–P50)

Coated support pad with excellent wear resistance.

PM1 (P10–P35)

Support pad with new coating and substrate for tougher steels.



Austenitic/ferritic/martensitic stainless steel

GC1025 (M20–M40)

A universal grade for ISO M application area. PVD coated with excellent toughness and resistance against built-up edge.

GC4235 (M15–M35)

Good toughness and wear resistance providing good edge security even in super duplex stainless steels.

M1 (M20–M40)

Coated support pad with excellent wear resistance.

PM1 (M15–M35)

Support pad with new coating and substrate for stainless/Duplex steels.



Cast iron

GC1025 (K10–K30)

A universal grade for ISO K application area. Good combination of wear resistance and toughness.

GC4235 (K15–K35)

Good edge toughness in combination with wear resistance.

H13A (K10 – K30)

Grade for low to moderate cutting speeds.

M1 (K10–K30)

Coated support pad with excellent wear resistance.



Non ferrous metals, plastics, wood

GC1025 (N10–N30)

Universal grade for aluminium alloys, copper and copper alloys.

GC4235 (N05–N25)

Good edge toughness in combination with wear resistance at moderate to high cutting speeds.

H13A (N10 – N30)

Grade for low to moderate cutting speeds.

M1 (N10–N30)

Coated support pad with excellent wear resistance.

Carbide grades and insert grades for 800.24 and 800.20

Insert geometries

Geometry (G)

- All round geometry
- High cutting feeds and speeds
- Good chip control in most materials

Geometry (L)

- Gives improved chip control in long chipping materials, such as low carbon steels and duplex stainless steels
- Secure production process in materials where chip jamming easily could occur

Support pad grades

Grade PM1

- Adds greater wear resistance in Duplex, stainless steels, titanium and heat resistant super alloys
- Complementary grade for steel
- New styling for easier identification and lower friction (black and yellow)

Grade P1

- First choice in steel applications

Grade M1

- First choice in ferritic and austenitic stainless and cast iron

Grade recommendations per ISO application area



Heat resistant alloys
Titanium alloys

GC1025 (S20–S40)

A PVD coated grade with excellent wear resistance and toughness. Resistance against built-up edge.

H13A (S15 – S25)

For heat resistant alloys and titanium. Good edge sharpness, wear resistance and toughness.

GC1115 (S15 – S25)

A PVD coated fine-grained carbide. The substrate has high hot hardness and good resistance against plastic deformation combined with good edge line security. The thin PVD-oxide coating with excellent resistance to smearing material and good adhesion on sharp edges. This guarantees toughness, good crater wear resistance, even flank wear and high performance.

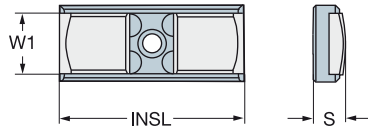
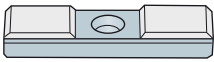
M1 (S20–S40)

Coated support pad with excellent wear resistance.

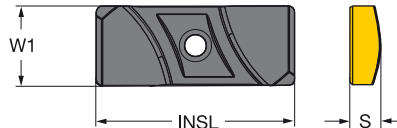
PM1 (S10–S40)

Support pad with new coating and substrate for heat resistant super alloys and titanium.

Support pads for CoroDrill® 801, CoroDrill 818® and T-MAX 424.10



Drill head dia.	Support pads	P M K N S					Dimensions, mm, inch					
		GC	GC	GC	GC	GC	W1	W1"	INSL	INSL"	S	S"
mm (inch)	Ordering code	PM1	PM1	PM1	PM1	PM1						
63.5-74.99 (2.480-2.952)	430.32-12 D65.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
	430.32-12 D70.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
75.0-84.99 (2.953-3.346)	430.32-12 D75.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
	430.32-12 D80.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
85.0-99.99 (3.346-3.936)	430.32-12 D85.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
	430.32-12 D90.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
	430.32-12 D95.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
100-109.99 (3.937-4.330)	430.32-16 D100.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
	430.32-16 D105.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
110-119.99 (4.331-4.724)	430.32-16 D110.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
	430.32-16 D115.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
120-129.99 (4.724-5.118)	430.32-16 D120.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
	430.32-16 D125.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
130-139.99 (5.118-5.511)	430.32-16 D130.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335



Drill head dia.	Support pads	P M K N S					Dimensions, mm, inch					
		GC	GC	GC	GC	GC	W1	W1"	INSL	INSL"	S	S"
mm (inch)	Ordering code	PM1	PM1	PM1	PM1	PM1						
63.5-74.99 (2.480-2.952)	800-14 D065	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
75.0-84.99 (2.953-3.346)	800-16 D075	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
85.0-99.99 (3.346-3.936)	800-18 D085	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
100-109.99 (3.937-4.330)	800-20 D100	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
110-119.99 (4.331-4.724)	800-22 D110	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
120-129.99 (4.724-5.118)	800-24 D120	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
130-139.99 (5.118-5.511)	800-26 D130	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335

Note: For drill head diameter above 140 mm (5.512 inch), support pads can be ordered as special. Contact your local Sandvik representative for more information.

Shims for support pads for CoroDrill 801, CoroDrill 818 and T-MAX 424.10

Shim	Thickness	
	mm	inch
5549 127-01	0.10	.004
5549 127-02	0.20	.008
5549 127-03	0.30	.012
5549 126-01	0.10	.004
5549 126-02	0.20	.008
5549 126-03	0.30	.012

Insert geometries and grades for T-MAX® 424.10 solid drill heads

Insert geometries

Geometry -22

- All round geometry
- High cutting feeds and speeds
- Good chip control in most materials including: steel, cast iron, aluminium and other non-ferrous materials

Geometry -23

- First choice for long chipping materials such as: stainless steels, heat resistant super alloys
- Good chip control at moderate feeds and speeds

Grade recommendations per ISO application area



Steel, cast steel, long chipping malleable iron

GC1025 (P15–P50)

First choice for ISO P materials.

A PVD coated universal grade with excellent wear resistance and toughness.

GC235 (P25-P50)

Combines good wear resistance at low to moderate cutting speeds with excellent toughness behaviour.

GC4235 (P25–P45)

Good toughness and wear resistance.



Austenitic/ferritic/martensitic stainless steel

GC1025 (M20–M40)

First choice for ISO M materials.

PVD coated grade with excellent edge toughness and resistance against built-up edge

GC235 (M20-M40)

Good edge toughness and resistance against built-up. First choice for austenitic stainless steel.

GC4235 (M15–M35)

Good toughness and wear resistance providing good edge security even in super duplex stainless steels.



Cast iron

H13A (K10 – K30)

Grade for low to moderate cutting speeds.

GC4235 (K15–K35)

Good edge toughness in combination with wear resistance.



Non ferrous metals, plastics, wood

H13A (N10 – N30)

Grade for low to moderate cutting speeds.

GC4235 (N05–N25)

Good edge toughness in combination with wear resistance at moderate to high cutting speeds.



**Heat resistant alloys
Titanium alloys**

GC1025 (S05-S30)

A PVD coated grade with excellent wear resistance and toughness at moderate cutting speeds.

H13A (S15 – S25)

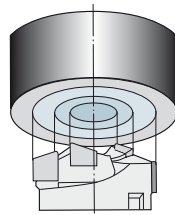
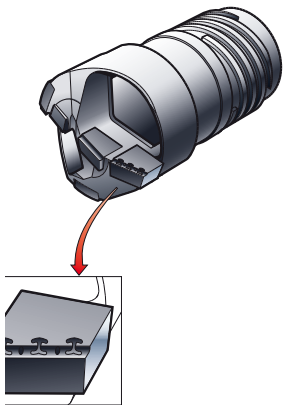
For heat resistant alloys and titanium. Good edge sharpness, wear resistance and toughness.

GC1115 (S15 – S25)

A PVD coated fine-grained carbide. The substrate has high hot hardness and good resistance against plastic deformation combined with good edge line security. The thin PVD-oxide coating with excellent resistance to smearing material and good adhesion on sharp edges. This guarantees toughness, good crater wear resistance, even flank wear and high performance.

Choice of carbide grades and insert geometries for ground brazed solid drill head 424.6

A wide range of carbide grade combinations



Geometry No. 2
For Duplex stainless steel

Geometry No. 3
For austenitic stainless steel

Geometry No. 4
General steel and cast iron machining

Insert	P		M		K	N	S
	4	4	3/2	3	4	4	4
Chipbreaker							
Grade combination							
	70	63	20	67	72	72	72
C = Central	P40	P40	M35	M35	K20	N20	S15
I = Intermediate	P30	P30	M35	M35	K20	N20	S15
P = Peripheral	P10	P30	M25	M35	K20	N20	S15
S = Support pad	P20	P20	M20	M20	K20	N20	S15



Steel, cast steel, long chipping malleable iron

Grade combination 70 is the first choice for machining unalloyed and alloyed steel. The right grade combination for high cutting speed. If better toughness behaviour is required choose grade combination 63.



Austenitic/ferritic/martensitic stainless steel

Grade combination 20 is the best choice for machining stainless steel. If better toughness behaviour is required choose grade combination 67.



Cast iron

Grade combination 72 is the optimum choice for machining cast iron.



Non ferrous metals, plastics, wood

Grade combination 72 is the best choice for machining aluminium alloys, copper and copper alloys.



**Heat resistant alloys
Titanium alloys**

Grade combination 72 is the best choice for machining heat resistant super alloys and titanium.

Optimized grade combinations for certain applications available on request.

SAFETY INFORMATION

Precautions when grinding and brazing of cemented carbide, see page 148.

CoroDrill® 818

Process security in counterboring with indexable insert design

Benefits

- Standard programme
- Easy to apply
- High machine utilization
- Improved flexibility by a large programme with large radius adjustability
- Front pilot option



CoroDrill® 818 is a new counterboring concept that offers high process security due to the new TXN insert and iLock tip seat interface.

Application

- Primarily for ISO P, M and S materials
- Wide diameter range, larger diameters available as engineered solution
- Demanding applications, e.g. oil exploration tools within the oil- and gas industry as well as aerospace and primary metals

ISO application areas:



Code key for CoroDrill® 818

A	818.20	-	1	D03.000	S	14	B
1	2		3	4	5	6	7

1.
A = Imperial

2.
Product family

3.
Number of inserts

4.
Diameter

5.
S = STS style coupling

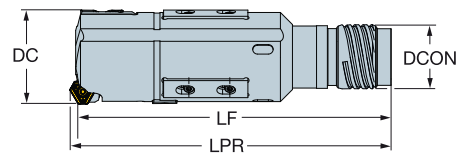
6.
Tube range

7.
Chip evacuation direction
B = Back

CoroDrill® 818

TCHA

IT10



CZC _{MS}	DCN	DCN"	DCX	DCX"	Ordering code	Dimensions, mm, inch							
						DCON	LF	LF"	OAL	OAL"	LPR	LPR"	
16	08	40.00	1.574	43.00	1.692	818.20-1D040.00S08B	30	174.00	6.850	178	7.020	178.33	7.020
	08	43.00	1.692	47.00	1.850	818.20-1D043.00S08B	30	174.00	6.850	178	7.020	178.33	7.020
	09	47.00	1.850	51.00	2.007	818.20-1D047.00S09B	33	174.00	6.850	178	7.020	178.33	7.020
	10	51.00	2.007	55.00	2.165	818.20-1D051.00S10B	36	174.00	6.850	178	7.020	178.33	7.020
	10	55.00	2.165	59.00	2.322	818.20-1D055.00S10B	36	174.00	6.850	178	7.020	178.33	7.020
25	11	59.00	2.322	63.00	2.480	818.20-1D059.00S11B	39	174.00	6.850	178	7.020	178.33	7.020
	12	63.00	2.480	67.00	2.637	818.20-1D063.00S12B	43	170.00	6.692	177	7.000	177.80	7.000
	12	65.00	2.559	69.00	2.716	818.20-1D065.00S12B	43	170.00	6.692	177	7.000	177.80	7.000
	13	69.85	2.750	71.85	2.828	A818.20-1D02.750S13B	47	170.00	6.692	177	7.000	177.80	7.000
	13	73.00	2.874	77.00	3.031	818.20-1D073.00S13B	47	190.00	7.480	197	7.787	197.80	7.787
	14	76.20	3.000	86.20	3.393	A818.20-1D03.000S14B	52	185.00	7.283	192	7.590	192.80	7.590
	14	78.00	3.070	88.00	3.464	818.20-1D078.00S14B	52	185.00	7.283	192	7.590	192.80	7.590
	15	85.00	3.346	95.00	3.740	818.20-1D085.00S15B	58	195.00	7.677	202	7.984	202.80	7.984
	15	88.90	3.500	99.90	3.933	A818.20-1D03.500S15B	58	195.00	7.677	202	7.984	202.80	7.984
	40	16	95.25	3.750	111.25	4.379	A818.20-1D03.750S16B	63	205.00	8.070	215	8.480	215.40
17		101.60	4.000	117.60	4.629	A818.20-1D04.000S17B	70	243.00	9.566	253	9.976	253.40	9.976
18		110.00	4.330	126.00	4.960	818.20-1D110.00S18B	77	243.00	9.566	253	9.976	253.39	9.976
19		120.65	4.750	136.65	5.379	A818.20-1D04.750S19B	89	243.00	9.566	253	9.976	253.40	9.976
20		135.00	5.314	151.00	5.944	818.20-1D135.00S20B	101	262.00	10.315	272	10.724	272.40	10.724
21		146.05	5.750	162.05	6.379	A818.20-1D05.750S21B	113	262.00	10.315	272	10.724	272.40	10.724
22		160.00	6.299	176.00	6.929	818.20-1D160.00S22B	125	292.00	11.496	302	11.905	302.40	11.905
23		171.45	6.750	187.45	7.379	A818.20-1D06.750S23B	137	291.00	11.456	301	11.866	301.40	11.866
24		185.00	7.283	201.00	7.913	818.20-1D185.00S24B	149	291.00	11.456	301	11.866	301.40	11.866
25		196.85	7.750	212.85	8.379	A818.20-1D07.750S25B	161	291.00	11.456	301	11.866	301.40	11.866
26		210.00	8.267	226.00	8.897	818.20-1D210.00S26B	173	366.00	14.409	376	14.818	376.40	14.818
27		222.25	8.750	238.25	9.379	A818.20-1D08.750S27B	172	322.00	13.070	342	13.480	342.40	13.480
28		238.12	9.375	246.12	9.689	A818.20-1D09.375S28B	184	332.00	13.070	342	13.480	342.40	13.480
30		254.00	10.000	270.00	10.629	818.20-1D254.00S30B	208	322.00	12.677	332	13.086	332.40	13.086
30	269.87	10.625	277.87	10.940	A818.20-1D11.250S32B	208	332.00	13.070	342	13.480	342.40	13.480	
32	285.75	11.250	301.75	11.879	A818.20-1D11.250S32B	232	332.00	13.070	342	13.480	342.40	13.480	

For explanation of parameters see page 1

Ordering example: 1 piece 818.20-1D040.00S08B

Ordering example: 1 piece A818.20-1D02.750S13B



48



100

T-MAX® 424.31F counterboring head

Single indexable insert design

Strong secure insert cartridges

- Designed to protect the head from damage
- Easy to change
- Good economy

Machining economy

- Insert grades for counterboring in most materials
- Insert types, sizes and geometries to get higher productivity, closer hole tolerances and higher surface finish

Excellent hole straightness and surface finish

Built-in precision

- Tolerance adjustment on 424.31F



When ordering counterboring heads the following must be stated:

- Drill diameter, DC
- Depth of cut or pre-bored size
- Drilling system to be used - Ejector or STS
- Drill tubes to be used and size dm_t

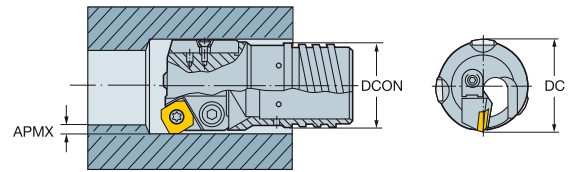
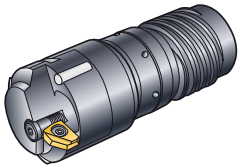
	STS		
	Close tolerances	Close & normal tolerances	Normal tolerances
Hole depth:	150 x Dia.	150 x Dia.	150 x Dia.
Surface finish:	R _a 1 μm	R _a 1 μm	R _a 3 μm
Hole tolerance:	IT9	IT9	IT10
Cutting fluid:	Neat oil or soluble with EP-additives.	Neat oil or soluble with EP-additives.	Neat oil or soluble with EP-additives.


ISO application area:



T-MAX® 424.31F

Single indexable insert design - close tolerance



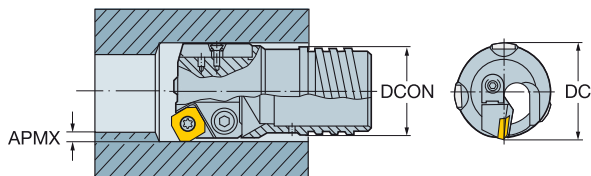
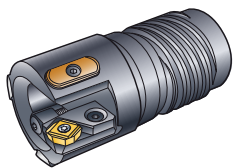
CZC _{MS}	Diameter range, mm, inch				Inserts R424.31F 	Support pad set		Pressure pad set		Dimensions, mm, inch			
	DC Min	DC Max	DC Min"	DC Max"		No.	No.	DCON	DCON"	APMX	APMX"		
00	20.00	22.99	.787	.905	04	430.21-06 D20.0	2	5636 010-011	1	18	.709	3.0	.118
01	20.00	22.99	.787	.905	04	430.21-06 D20.0	2	5636 010-011	1	18	.709	3.0	.118
02	20.00	22.99	.787	.905	04	430.21-06 D20.0	2	5636 010-011	1	18	.709	3.0	.118
02	23.00	25.99	.906	1.023	04	430.21-06 D23.0	2	5636 010-011	1	19.5	.768	3.0	.118
03	23.00	25.99	.906	1.023	04	430.21-06 D23.0	2	5636 010-011	1	19.5	.768	3.0	.118
03	26.00	31.00	1.024	1.220	04	430.21-06 D26.0	2	5636 010-011	1	21	.827	3.0	.118
04	26.00	31.00	1.024	1.220	04	430.21-06 D26.0	2	5636 010-011	1	21	.827	3.0	.118
05	26.00	31.00	1.024	1.220	04	430.21-06 D26.0	2	5636 010-011	1	21	.827	3.0	.118
06	31.01	33.99	1.221	1.338	04	430.21-08 D31.0	2	5636 010-021	1	28	1.102	3.0	.118
07	31.01	33.99	1.221	1.338	04	430.21-08 D31.0	2	5636 010-021	1	28	1.102	3.0	.118
07	34.00	37.99	1.339	1.496	04	430.21-08 D34.0	2	5636 010-021	1	30	1.181	3.0	.118
08	34.00	37.99	1.339	1.496	04	430.21-08 D34.0	2	5636 010-021	1	30	1.181	3.0	.118
08	38.00	43.00	1.496	1.693	04	430.21-08 D38.0	2	5636 010-021	1	33	1.299	3.0	.118
09	38.00	43.00	1.496	1.693	04	430.21-08 D38.0	2	5636 010-021	1	33	1.299	3.0	.118



When ordering these counterboring heads, the following must also be stated:

- Insert clamping system to be used - T-Max P lever or T-Max S top clamp

T-MAX® 424.31F

Single indexable insert design - close and normal tolerances



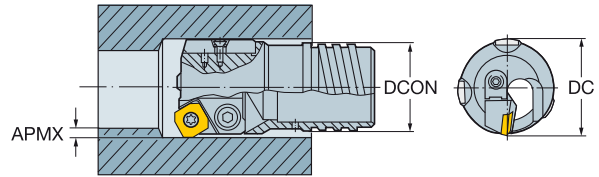
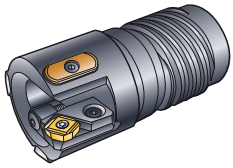
CZC _{MS}	Diameter range, mm, inch				Cartridge 	Inserts		Cartridge 	Inserts		Support pad set No.	Pressure pad set No.		DCON	DCON"			
	DC Min	DC Max	DC Min"	DC Max"		APMX	APMX"		□	APMX		APMX"	□					
10	43.01	46.99	1.693	1.850	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-10 D43.0	2	5636 020-011	1	39	1.535
11	47.00	51.99	1.851	2.047	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-10 D47.0	2	5636 020-011	1	43	1.693
12	47.00	51.99	1.851	2.047	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-10 D47.0	2	5636 020-011	1	43	1.693
12	52.00	57.99	2.048	2.283	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-10 D52.0	2	5636 020-011	1	47	1.850
13	52.00	57.99	2.048	2.283	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-10 D52.0	2	5636 020-011	1	47	1.850
13	58.00	65.00	2.284	2.558	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-10 D58.0	2	5636 020-011	1	51	2.008
14	65.00	69.99	2.559	2.756	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-12 D65.0	2	420.37-410-01	3	52	2.047
15	70.00	74.99	2.757	2.952	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-12 D70.0	2	420.37-410-01	3	58	2.283
16	70.00	74.99	2.757	2.952	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-12 D70.0	2	420.37-410-01	3	58	2.283
16	75.00	79.99	2.953	3.149	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-12 D75.0	2	420.37-410-01	3	63	2.480
17	80.00	84.99	3.150	3.346	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-12 D80.0	2	420.37-415-01	3	70	2.756
17	85.00	89.99	3.347	3.543	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-12 D85.0	2	420.37-415-01	3	70	2.756
18	85.00	89.99	3.347	3.543	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-12 D85.0	2	420.37-415-01	3	70	2.756
18	90.00	94.99	3.544	3.740	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-16 D90.0	2	420.37-510-01	3	77	3.031
18	95.00	99.99	3.741	3.936	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-16 D95.0	2	420.37-510-01	3	77	3.031
19	100.00	104.99	3.937	4.133	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-16 D100.0	2	420.37-510-01	3	89	3.504
19	105.00	109.99	4.134	4.330	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-16 D105.0	2	420.37-510-01	3	89	3.504
19	110.00	114.99	4.331	4.527	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-16 D110.0	2	420.37-510-01	3	101	3.976
20	110.00	114.99	4.331	4.527	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-16 D110.0	2	420.37-510-01	3	101	3.976
20	115.00	119.99	4.528	4.724	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-16 D115.0	2	420.37-510-01	3	101	3.976
20	120.00	124.99	4.725	4.921	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-16 D120.0	2	420.37-510-01	3	113	4.449
21	120.00	124.99	4.725	4.921	R430.24-1118-06	4.5	.177	06	R430.24-1018-09	6.0	.236	09	430.21-16 D120.0	2	420.37-510-01	3	113	4.449

When ordering these counterboring heads, the following must also be stated:

- Cartridges to be used - cartridge for close tolerances or normal tolerances

T-MAX® 424.31F

Single indexable insert design - close and normal tolerances

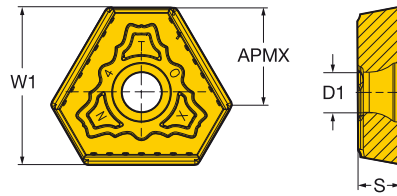
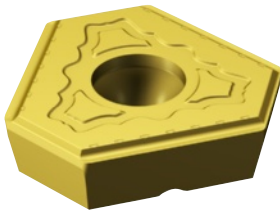


CZC _{MS}	Diameter range, mm, inch				Cartridge	Inserts		Cartridge	Inserts		Support pad set	Pressure pad set		DCON DCON [#]	
	DC Min	DC Max	DC Min [#]	DC Max [#]	For close tolerances (IT9)	APMX	APMX [#]	For normal tolerances (IT10)	APMX	APMX [#]	No.	No.	No.	No.	
10	43.01	46.99	1.693	1.850	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-10 D43.0	2	5636 020-011	1	39 1.535
11	47.00	51.99	1.851	2.047	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-10 D47.0	2	5636 020-011	1	43 1.693
12	47.00	51.99	1.851	2.047	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-10 D47.0	2	5636 020-011	1	43 1.693
12	52.00	57.99	2.048	2.283	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-10 D52.0	2	5636 020-011	1	47 1.850
13	52.00	57.99	2.048	2.283	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-10 D52.0	2	5636 020-011	1	47 1.850
13	58.00	65.00	2.284	2.558	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-10 D58.0	2	5636 020-011	1	51 2.008
14	65.00	69.99	2.559	2.756	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-12 D65.0	2	420.37-410-01	3	52 2.047
15	70.00	74.99	2.757	2.952	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-12 D70.0	2	420.37-410-01	3	58 2.283
16	70.00	74.99	2.757	2.952	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-12 D70.0	2	420.37-410-01	3	58 2.283
16	75.00	79.99	2.953	3.149	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-12 D75.0	2	420.37-410-01	3	63 2.480
17	80.00	84.99	3.150	3.346	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-12 D80.0	2	420.37-415-01	3	70 2.756
17	85.00	89.99	3.347	3.543	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-12 D85.0	2	420.37-415-01	3	70 2.756
18	85.00	89.99	3.347	3.543	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-12 D85.0	2	420.37-415-01	3	70 2.756
18	90.00	94.99	3.544	3.740	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-16 D90.0	2	420.37-510-01	3	77 3.031
18	95.00	99.99	3.741	3.936	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-16 D95.0	2	420.37-510-01	3	77 3.031
19	100.00	104.99	3.937	4.133	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-16 D100.0	2	420.37-510-01	3	89 3.504
19	105.00	109.99	4.134	4.330	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-16 D105.0	2	420.37-510-01	3	89 3.504
19	110.00	114.99	4.331	4.527	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-16 D110.0	2	420.37-510-01	3	101 3.976
20	110.00	114.99	4.331	4.527	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-16 D110.0	2	420.37-510-01	3	101 3.976
20	115.00	119.99	4.528	4.724	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-16 D115.0	2	420.37-510-01	3	101 3.976
20	120.00	124.99	4.725	4.921	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-16 D120.0	2	420.37-510-01	3	113 4.449
21	120.00	124.99	4.725	4.921	R818-1118W-TXN-16	4.5	.177	R818-1118W-TXN-16	6.0	.236	430.21-16 D120.0	2	420.37-510-01	3	113 4.449

When ordering these counterboring heads, the following must also be stated:

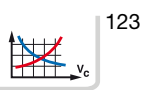
- Cartridges to be used - cartridge for close tolerances or normal tolerances

Inserts for CoroDrill® 818



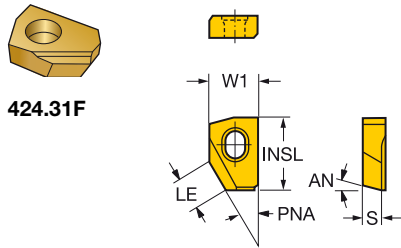
	Ordering code	Dimensions, mm, inch																			
		P			M			K			N			S							
		1025	1125	4235	1025	1125	4235	1025	1125	4235	1025	1115	1125	S	S"	D1	D1"	W1	W1"	APMX	APMX"
	16	TXN 160408-A	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	4.76	.187	4.60	.181	11.90	.468	6	.236
		TXN 160408-G	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	4.76	.187	4.60	.181	11.90	.468	6	.236
		TXN 160408-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	4.76	.187	4.60	.181	11.90	.468	6	.236
	25	TXN 250408-A	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	4.76	.187	5.80	.228	18.80	.740	12	.472
		TXN 250408-G	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	4.76	.187	5.80	.228	18.80	.740	12	.472
		TXN 250408-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	4.76	.187	5.80	.228	18.80	.740	12	.472
	40	TXN 400708-A	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	7.00	.275	6.50	.255	25.50	1.003	15	.590
		TXN 400708-G	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	7.00	.275	6.50	.255	25.50	1.003	15	.590
		TXN 400708-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	7.00	.275	6.50	.255	25.50	1.003	15	.590

For explanation of parameters see page 1

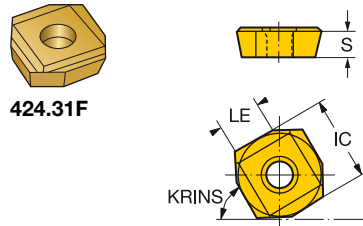


Inserts for CoroDrill® 818

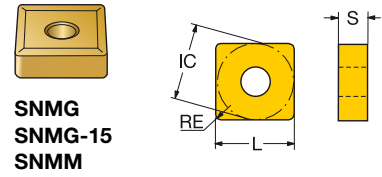
424.31F - close tolerance (IT9)



424.31F - close tolerance (IT9)



424.31F/424.31 - normal tolerance (IT10)



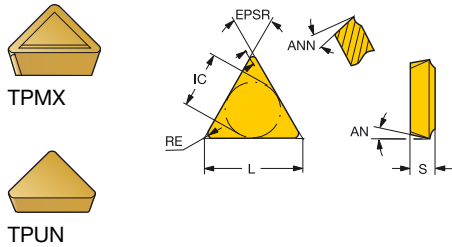
**SNMG
SNMG-15
SNMM**

Hole diameter, mm, inch 20.00-43.00
.787-1.692
Max cutting depth, 3.0
APMX, mm, inch .118

Hole diameter, mm, inch 43.01-124.00
1.693-4.882
Max cutting depth, 4.5
APMX, mm, inch .177

Hole diameter, mm, inch 43.01-124.00
1.693-4.882
Max cutting depth, 6.0 (L = 09)
APMX, mm, inch .236 (L = .354)
10.0 (L = 12)
.394 (L = .472)
16.0 (L = 19)
.748 (L = .748)

424.31 - normal tolerance (IT10)



Hole diameter, mm, inch 43.01-124.00
1.693-4.882
Max cutting depth, 12.0 (L = 16)
APMX, mm, inch .472 (L = .630)
17.0 (L = 22)
.669 (L = .866)

Insert size	Ordering code	Material				Dimensions, mm, inch															
		P	M	K	N	L	L"	INSL	INSL"	IC	IC"	W1	W1"	S	S"	LE	LE"	RE	RE"	AN	
	For 424.31F																				
04	R424.31F-04 03 00	☆	☆					9.5	.374			6.5	.256	2.55	.100	4.4	.173				15°
06	R424.31F-06 T3 00	☆	☆							12.7	.500			3.97	.156	6.1	.240				
09	SNMG 09 03 08	☆	☆	☆	☆	9.525	.375			9.525	.375			3.18	.125			0.8	.031		
	SNMG 09 03 08-PM	☆	☆			9.525	.375			9.525	.375			3.18	.125			0.8	.031		
	SNMM 09 03 08	☆	☆	☆	☆	9.525	.375			9.525	.375			3.18	.125			0.8	.031		
	For 424.31																				
12	SNMG 12 04 12	☆	☆			12.7	.500			12.7	.500			4.76	.187			1.2	0.47		
	SNMG 12 04 12-PM	☆	☆			12.7	.500			12.7	.500			4.76	.187			1.2	0.47		
	SNMM12 04 12-PM	☆	☆			12.7	.500			12.7	.500			4.76	.187			1.2	0.47		
19	SNMG 19 06 12-PR	☆	☆			19.05	.750			19.05	.750			6.35	.250			1.2	0.47		
	SNMM 19 06 12-PR	☆	☆			19.05	.750			19.05	.750			6.35	.250			1.2	0.47		
16	TPMX 16 03 12 R22	☆	☆			16.5	.650			9.525	.375			3.18	.125			1.2	0.47	20°	
22	TPMX 22 04 12 R22	☆	☆			22.0	.866			12.7	.500			4.76	.187			1.2	0.47	17°	
16	TPUN 16 03 12	☆	☆	☆	☆	16.5	.650			9.525	.375			3.18	.125			1.2	0.47		
22	TPUN 22 04 12	☆	☆	☆	☆	22.0	.866			12.7	.500			4.76	.187			1.2	0.47		

Ordering example: 10 pieces R424.31F-04 03 00 GC235

Carbide grades and insert grades for T-MAX® 424.31F

Insert geometries

424.31F: hole diameter range 20.00-43.00 mm (.787-1.693 inch)

Finishing geometry for hole tolerance IT9

- Good chip control and excellent surface finish in most materials including: steel, stainless steel, heat resistant super alloys, aluminium and other non-ferrous materials
- High cutting feeds and speeds

424.31F: hole diameter range 43.01-124.00 mm (1.693-4.882 inch)

Finishing to light roughing geometry for hole tolerance IT9

- Good chip control and excellent surface finish in most materials including: steel, stainless steel, heat resistant super alloys, aluminium and other non-ferrous materials
- High cutting feeds and speeds

424.31F: hole diameter range 43.01-124.00 mm (1.693-4.882 inch)

Semi-finishing and roughing geometries for hole tolerance IT10

SNMG (double sided)

- All round geometry for machining at medium feeds
- Suitable for short chipping materials
- PM for medium turning in steel
- PR for rough turning in steel

SNMM (single sided)

- For roughing and semi-finishing
- Strong straight cutting edge
- PR for rough turning in steel

TPMX (single sided)

- Parallel land for better surface finish
- Low cutting forces

TPUN (single sided)

- With loose chipbreaker
- Alternative for TPMX inserts if chipbreaking problems occur

Grade recommendations per ISO application area



Steel, cast steel, long chipping malleable iron

GC235 (P25-P50)

Combines good wear resistance at low to moderate cutting speeds with excellent toughness behaviour.

GC4235 (P20-P45)

Good toughness and wear resistance. Relatively high cutting speeds.



Austenitic/ferritic/martensitic stainless steel

GC235 (M20-M40)

The first choice for austenitic stainless steel. Good edge toughness and resistance against built-up edge.

GC4235 - M25 (M15-M30)

Good resistance to thermal shock and mechanical shock provides excellent edge security also for interrupted cuts.



Cast iron

GC4235 (K05-K25)

Good edge toughness in combination with wear resistance at moderate to high cutting speeds.



Non ferrous metals, plastics, wood

GC4235 (N05-N25)

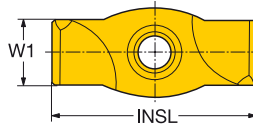
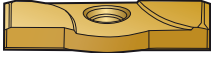
Good edge toughness in combination with wear resistance at moderate to high cutting speeds.

Support pads for CoroDrill® 800 solid drill heads

Support pad PM1



Support pad P1 and M1



Ordering code	Dimensions, mm, inch													
	P		M		K		N		S					
	GC		GC		GC		GC		GC					
	P1	PM1	M1	PM1	M1	M1	M1	PM1						
	☆	☆	☆	☆	☆	☆	☆	☆	W1	W1"				
	☆	☆	☆	☆	☆	☆	☆	☆	INSL	INSL"				
	☆	☆	☆	☆	☆	☆	☆	☆	S	S"				
800-06A	☆	☆	☆	☆	☆	☆	☆	☆	6	.236	18	.709	3.0	.118
800-07A	☆	☆	☆	☆	☆	☆	☆	☆	7	.276	20	.787	3.5	.138
800-08A	☆	☆	☆	☆	☆	☆	☆	☆	8	.315	25	.984	4.5	.177
800-10A	☆	☆	☆	☆	☆	☆	☆	☆	10	.394	30	1.181	4.5	.177
800-12A	☆	☆	☆	☆	☆	☆	☆	☆	12	.472	35	1.378	5.5	.216

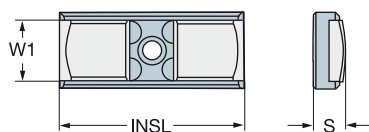
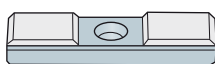
For more information on geometries and grades, see page 36

Ordering example: 10 pieces 800-06A P1

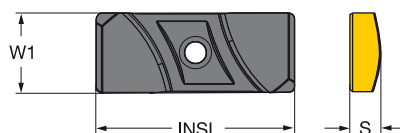
Support pad	Shim set (8 pcs)	S
800-06A	5549 127-85	0.02
	5549 127-86	0.03
800-07A	5549 127-88	0.02
	5549 127-89	0.03
800-08A	5549 127-91	0.02
	5549 127-92	0.03
800-10A	5549 127-94	0.02
	5549 127-95	0.03
800-12A	5549 127-97	0.02
	5549 127-98	0.03

Note: Do not add more than 0.05 mm thickness of shims

Support pads for CoroDrill® 801, CoroDrill 818® and T-MAX 424.10



Drill head dia.	Support pads	P M K N S					Dimensions, mm, inch					
		GC	GC	GC	GC	GC	W1	W1"	INSL	INSL"	S	S"
mm (inch)	Ordering code	PM1	PM1	PM1	PM1	PM1						
63.5-74.99 (2.480-2.952)	430.32-12 D65.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
	430.32-12 D70.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
75.0-84.99 (2.953-3.346)	430.32-12 D75.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
	430.32-12 D80.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
85.0-99.99 (3.346-3.936)	430.32-12 D85.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
	430.32-12 D90.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
	430.32-12 D95.0	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
100-109.99 (3.937-4.330)	430.32-16 D100.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
	430.32-16 D105.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
110-119.99 (4.331-4.724)	430.32-16 D110.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
	430.32-16 D115.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
120-129.99 (4.724-5.118)	430.32-16 D120.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
	430.32-16 D125.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
130-139.99 (5.118-5.511)	430.32-16 D130.0	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335



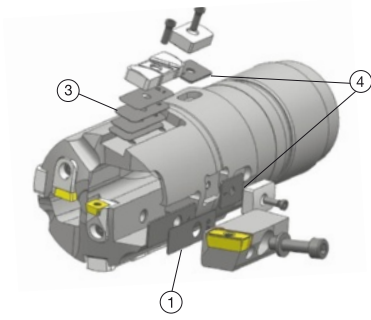
Drill head dia.	Support pads	P M K N S					Dimensions, mm, inch					
		GC	GC	GC	GC	GC	W1	W1"	INSL	INSL"	S	S"
mm (inch)	Ordering code	PM1	PM1	PM1	PM1	PM1						
63.5-74.99 (2.480-2.952)	800-14 D065	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
75.0-84.99 (2.953-3.346)	800-16 D075	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
85.0-99.99 (3.346-3.936)	800-18 D085	☆	☆	☆	☆	☆	14	.551	35	1.379	7.0	.276
100-109.99 (3.937-4.330)	800-20 D100	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
110-119.99 (4.331-4.724)	800-22 D110	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
120-129.99 (4.724-5.118)	800-24 D120	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335
130-139.99 (5.118-5.511)	800-26 D130	☆	☆	☆	☆	☆	20	.787	50	1.969	8.5	.335

Note: For drill head diameter above 140 mm (5.512 inch), support pads can be ordered as special. Contact your local Sandvik representative for more information.

Shims for support pads for CoroDrill 801, CoroDrill 818 and T-MAX 424.10

Shim	Thickness	
	mm	inch
5549 127-01	0.10	.004
5549 127-02	0.20	.008
5549 127-03	0.30	.012
5549 126-01	0.10	.004
5549 126-02	0.20	.008
5549 126-03	0.30	.012

Support pads for CoroDrill 801



1 Cartridge shim set

	Pcs	Size	
		mm	inch
< 70.99 Ø			
5549 128-40	2	0.1	.004
	2	0.15	.006
	1	0.5	.020
	1	1.0	.039
	1	1.5	.059
> 71.00 Ø			
5549 128-60	2	0.1	.004
	2	0.15	.006
	1	0.5	.020
	1	1.0	.039
	1	1.5	.059

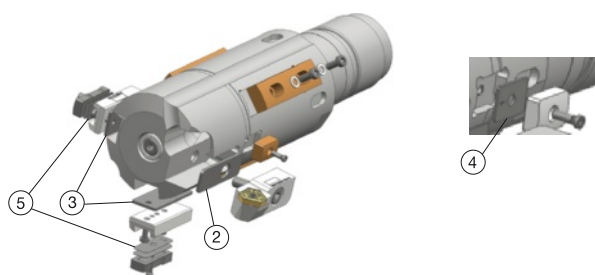
3 Pad shim set

	Pcs	Size	
		mm	inch
5549 126-10	2	0.1	.004
	2	0.15	.006
	2	0.2	.008
	2	0.3	.012
5549 126-20	2	0.1	.004
	2	0.15	.006
	2	0.2	.008
	2	0.3	.012

4 Safety pads shim set

	Pcs	Size	
		mm	inch
5549 126-90	1	0.2	.008
	1	0.5	.020
	1	1.0	.039
5549 126-91	1	0.2	.008
	1	0.5	.020
	1	1.0	.039

Support pads for CoroDrill® 818



2 Cartridge shim set

	Pcs	Size	
		mm	inch
5549 128-00	2	0.1	.004
	2	0.15	.006
	1	0.5	.020
	1	1.0	.039
	1	2.0	.079
5549 128-10	2	0.1	.004
	2	0.15	.006
	1	0.5	.020
	1	1.0	.039
	1	2.0	.079
	1	3.0	.118
5549 128-20	2	0.1	.004
	2	0.15	.006
	1	0.5	.020
	1	1.0	.039
	1	2.0	.079
	1	3.0	.118
	1	5.0	.197

3 Shims

Pad shoes	Shim	T
818-12-065-S	5549 127-30	2
818-12-100-S	5549 127-31	3
818-16-110-S	5549 126-40	2
818-16-150-S	5549 126-41	3
	5549 126-42	5
818-08-030-R	5549 126-92	Shim set
818-08-040-R		
818-10-030-R	5549 128-30	Shim set
818-10-040-R		
818-18-300-R	5549 126-79	Shim set
	5549 126-80	2
	5549 126-81	3
	5549 126-82	4

Shim set

	Pcs	Size	
		mm	inch
Pad shoes 818-08-030/040-R			
5549 126-92	3	0.1	.004
	3	0.15	.006
	1	0.5	.020
Pad shoes 818-10-040-R			
5549 128-30	3	0.1	.004
	3	0.15	.006
	1	0.5	.020
	1	1.0	.039
Pad shoes 818-18-300-R			
5549 126-79	3	0.1	.004
	3	0.15	.006
	1	0.5	.020
	1	1.0	.039

4 Safety pads shim set

	Pcs	Size	
		mm	inch
5549 126-90	1	0.2	.008
	1	0.5	.020
	1	1.0	.039
5549 126-91	1	0.2	.008
	1	0.5	.020
	1	1.0	.039

5 Pad shim set

	Pcs	Size	
		mm	inch
5549 126-10	2	0.1	.004
	2	0.15	.006
	2	0.2	.008
	2	0.3	.012
	2	0.3	.012
5549 126-20	2	0.1	.004
	2	0.15	.006
	2	0.2	.008
	2	0.2	.008
	2	0.3	.012

CoroDrill® 428

Wide range of application possibilities

Highly productive gun drills

Easy to use

- No pre-setting
- No need for tool room service

Single-lip 428.9

- Diameter range: 1.90 - 40.50 mm (.075 - 1.594 inch)
- Hole depth: $\leq 100 \times$ diameter
- Hole tolerance: IT9
- Surface finish: 0.1-3.0 μm
- Filter resolution: 10 - 20 μm
- Viscosity: $\varnothing 1.9 - 40.50 \text{ mm} = 10 - 20 \text{ mm}^2 / \text{S}$
- Cooling lubricant (coolant) required

Solid carbide gun drills 428.5

- Diameter range: 0.8 - 12.00 mm (.031 - .472 inch)
- Hole depth: 300 mm (11.811 inch)
- Hole tolerance: IT8
- Surface finish: 0.1 - 3.0 μm
- Filter resolution: 5 - 10 μm
- Viscosity: $\varnothing 0.8 - 2.0 \text{ mm} = 7 - 10 \text{ mm}^2 / \text{S}$, $\varnothing 2.0 - 12 \text{ mm} = 10 - 20 \text{ mm}^2 / \text{S}$
- Cooling lubricant (coolant) required



Twin-lip 428.2

- Diameter range: 6.00 - 26.50 mm (.236 - 1.043 inch)
- Hole depth: $\leq 100 \times$ diameter
- Hole tolerance: IT10
- Surface finish: 1.0 - 4.0 μm
- Filter resolution: 10 - 20 μm
- Viscosity: $\varnothing 6.00 - 26.50 \text{ mm} = 10 - 20 \text{ mm}^2 / \text{S}$
- Cooling lubricant (coolant) required
- Suitable for short chipping materials
- The feed rate can be increased compared to single-lip

High feed gun drills 428.7

- Diameter range: 3.00 - 12.00 mm (.118 - .472 inch)
- Hole depth: 300 mm
- Hole tolerance: IT8
- Surface finish: 0.1-3.0 μm
- Filter resolution: 10 - 20 μm
- Viscosity: $\varnothing 3.00 - 12.00 \text{ mm} = 10 - 20 \text{ mm}^2 / \text{S}$
- Cooling lubricant (coolant) required

Wide application area

- Optimized grade- and geometry combinations for most workpiece materials
- When ordering state workpiece material to be drilled

Customer specified diameter

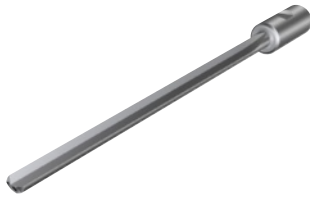
- Finish ground within 0.01 mm (.0004 inch) increments

ISO application area:

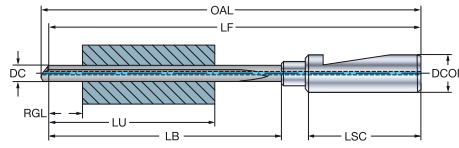


Gun drill

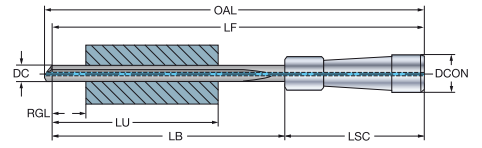
With internal coolant supply



A428.91-20x
TCHA H9



A428.91-10x
H9



CZC _{MS}	DC	DC"	Ordering code	P		Dimensions, mm, inch													
				K5	K15	DCON	LU	LU"	LF	LF"	LB	LB"	OAL	OAL"	RGL	RGL"	LSC	LSC"	
1/2	1.98	.0781	A428.91-00781-06-101	☆	☆	12.7	89.00	3.503	152.00	5.984	114.00	4.488	152	5.984	10.00	.393	38.10	1.500	
	1.98	.0781	A428.91-00781-10-101	☆	☆	12.7	191.00	7.519	254.00	10.000	216.00	8.503	254	10.000	10.00	.393	38.10	1.500	
	2.38	.0937	A428.91-00937-06-101	☆	☆	12.7	88.40	3.480	152.00	5.984	114.00	4.488	152	5.984	10.00	.393	38.10	1.500	
	2.38	.0937	A428.91-00937-10-101	☆	☆	12.7	190.40	7.496	254.00	10.000	216.00	8.503	254	10.000	10.00	.393	38.10	1.500	
	2.38	.0937	A428.91-00937-16-101	☆	☆	12.7	342.40	13.480	406.00	15.984	368.00	14.488	406	15.984	10.00	.393	38.10	1.500	
	2.77	.1094	A428.91-01094-06-101	☆	☆	12.7	87.80	3.456	152.00	5.984	114.00	4.488	152	6.000	13.00	.511	38.10	1.500	
	2.77	.1094	A428.91-01094-10-101	☆	☆	12.7	189.80	7.472	254.00	10.000	216.00	8.503	254	10.000	13.00	.511	38.10	1.500	
	2.77	.1094	A428.91-01094-16-101	☆	☆	12.7	341.80	13.456	406.00	15.984	368.00	14.488	406	15.984	13.00	.511	38.10	1.500	
3/4	3.17	.1250	A428.91-01250-10-103	☆	☆	19.0	159.20	6.267	254.00	10.000	184.00	7.244	254	10.000	13.00	.511	70.00	2.755	
	3.17	.1250	A428.91-01250-16-103	☆	☆	19.0	311.20	12.252	406.00	15.984	336.00	13.228	406	15.984	13.00	.511	70.00	2.755	
	3.17	.1250	A428.91-01250-22-103	☆	☆	19.0	464.20	18.275	559.00	22.007	489.00	19.252	559	22.007	13.00	.511	70.00	2.755	
	3.17	.1250	A428.91-01250-28-103	☆	☆	19.0	616.20	24.259	711.00	27.992	641.00	25.236	711	27.992	13.00	.511	70.00	2.755	
	3.57	.1406	A428.91-01406-10-103	☆	☆	19.0	158.60	6.244	253.00	9.960	184.00	7.244	254	10.000	13.00	.511	70.00	2.755	
	3.57	.1406	A428.91-01406-16-103	☆	☆	19.0	310.60	12.228	405.00	15.944	336.00	13.228	406	15.984	13.00	.511	70.00	2.755	
	3.57	.1406	A428.91-01406-22-103	☆	☆	19.0	463.60	18.252	558.00	21.968	489.00	19.252	559	22.007	13.00	.511	70.00	2.755	
	3.96	.1562	A428.91-01562-10-103	☆	☆	19.0	158.00	6.220	253.00	9.960	184.00	7.244	254	10.000	13.00	.511	70.00	2.755	
	3.96	.1562	A428.91-01562-16-103	☆	☆	19.0	310.00	12.204	405.00	15.944	336.00	13.228	406	15.984	13.00	.511	70.00	2.755	
	3.96	.1562	A428.91-01562-22-103	☆	☆	19.0	463.00	18.228	558.00	21.968	489.00	19.252	559	22.007	13.00	.511	70.00	2.755	
	3.96	.1562	A428.91-01562-28-103	☆	☆	19.0	615.00	24.212	710.00	27.952	641.00	25.236	711	27.992	13.00	.511	70.00	2.755	
	4.36	.1719	A428.91-01719-10-103	☆	☆	19.0	157.50	6.200	253.00	9.960	184.00	7.244	254	10.000	19.00	.748	70.00	2.755	
	4.36	.1719	A428.91-01719-16-103	☆	☆	19.0	309.50	12.185	405.00	15.944	336.00	13.228	406	15.984	19.00	.748	70.00	2.755	
	4.36	.1719	A428.91-01719-22-103	☆	☆	19.0	462.50	18.208	558.00	21.968	489.00	19.252	559	22.007	19.00	.748	70.00	2.755	
	4.76	.1875	A428.91-01875-10-103	☆	☆	19.0	156.90	6.177	253.00	9.960	184.00	7.244	254	10.000	19.00	.748	70.00	2.755	
	4.76	.1875	A428.91-01875-16-103	☆	☆	19.0	308.90	12.161	405.00	15.944	336.00	13.228	406	15.984	19.00	.748	70.00	2.755	
	4.76	.1875	A428.91-01875-22-103	☆	☆	19.0	461.90	18.185	558.00	21.968	489.00	19.252	559	22.007	19.00	.748	70.00	2.755	
	4.76	.1875	A428.91-01875-28-103	☆	☆	19.0	613.90	24.169	710.00	27.952	641.00	25.236	711	27.992	19.00	.748	70.00	2.755	
	4.76	.1875	A428.91-01875-36-103	☆	☆	19.0	816.90	32.161	913.00	35.944	844.00	33.228	914	35.984	19.00	.748	70.00	2.755	
	5.15	.2031	A428.91-02031-10-103	☆	☆	19.0	246.30	9.696	253.00	9.960	184.00	7.244	254	10.000	23.00	.905	70.00	2.755	
5.15	.2031	A428.91-02031-16-103	☆	☆	19.0	308.30	12.137	405.00	15.944	336.00	13.228	406	15.984	23.00	.905	70.00	2.755		
5.15	.2031	A428.91-02031-22-103	☆	☆	19.0	461.30	18.161	558.00	21.968	489.00	19.252	559	22.007	23.00	.905	70.00	2.755		
5.15	.2031	A428.91-02031-28-103	☆	☆	19.0	613.30	24.145	710.00	27.952	641.00	25.236	711	27.992	23.00	.905	70.00	2.755		
5.55	.2187	A428.91-02187-10-103	☆	☆	19.0	155.70	6.129	253.00	9.960	184.00	7.244	254	10.000	23.00	.905	70.00	2.755		
5.55	.2187	A428.91-02187-16-103	☆	☆	19.0	307.70	12.114	405.00	15.944	336.00	13.228	406	15.984	23.00	.905	70.00	2.755		
5.55	.2187	A428.91-02187-22-103	☆	☆	19.0	460.70	18.137	558.00	21.968	489.00	19.252	559	22.007	23.00	.905	70.00	2.755		
5.55	.2187	A428.91-02187-28-103	☆	☆	19.0	612.70	24.122	710.00	27.952	641.00	25.236	711	27.992	23.00	.905	70.00	2.755		
5.95	.2344	A428.91-02344-10-103	☆	☆	19.0	155.10	6.106	253.00	9.960	184.00	7.244	254	10.000	23.00	.905	70.00	2.755		
5.95	.2344	A428.91-02344-16-103	☆	☆	19.0	307.10	12.090	405.00	15.944	336.00	13.228	406	15.984	23.00	.905	70.00	2.755		
5.95	.2344	A428.91-02344-22-103	☆	☆	19.0	460.10	18.114	558.00	21.968	489.00	19.252	559	22.007	23.00	.905	70.00	2.755		
6.35	.2500	A428.91-02500-10-103	☆	☆	19.0	154.50	6.082	253.00	9.960	184.00	7.244	254	10.000	23.00	.905	70.00	2.755		
6.35	.2500	A428.91-02500-16-103	☆	☆	19.0	306.50	12.066	405.00	15.944	336.00	13.228	406	15.984	23.00	.905	70.00	2.755		
6.35	.2500	A428.91-02500-22-103	☆	☆	19.0	459.50	18.090	558.00	21.968	489.00	19.252	559	22.007	23.00	.905	70.00	2.755		
6.35	.2500	A428.91-02500-28-103	☆	☆	19.0	611.50	24.074	710.00	27.952	641.00	25.236	711	27.992	23.00	.905	70.00	2.755		
6.35	.2500	A428.91-02500-36-103	☆	☆	19.0	814.50	32.066	913.00	35.944	844.00	33.228	914	35.984	23.00	.905	70.00	2.755		
6.74	.2656	A428.91-02656-10-103	☆	☆	19.0	153.90	6.059	253.00	9.960	184.00	7.244	254	10.000	23.00	.905	70.00	2.755		
6.74	.2656	A428.91-02656-16-103	☆	☆	19.0	305.90	12.043	405.00	15.944	336.00	13.228	406	15.984	23.00	.905	70.00	2.755		
6.74	.2656	A428.91-02656-22-103	☆	☆	19.0	458.90	18.066	558.00	21.968	489.00	19.252	559	22.007	23.00	.905	70.00	2.755		
6.74	.2656	A428.91-02656-28-103	☆	☆	19.0	610.90	24.051	710.00	27.952	641.00	25.236	711	27.992	23.00	.905	70.00	2.755		
7.14	.2812	A428.91-02812-10-103	☆	☆	19.0	153.30	6.035	253.00	9.960	184.00	7.244	254	10.000	25.00	.984	70.00	2.755		
7.14	.2812	A428.91-02812-16-103	☆	☆	19.0	305.30	12.019	405.00	15.944	336.00	13.228	406	15.984	25.00	.984	70.00	2.755		
7.14	.2812	A428.91-02812-22-103	☆	☆	19.0	458.30	18.043	558.00	21.968	489.00	19.252	559	22.007	25.00	.984	70.00	2.755		
7.14	.2812	A428.91-02812-28-103	☆	☆	19.0	610.30	24.027	710.00	27.952	641.00	25.236	711	27.992	25.00	.984	70.00	2.755		
7.14	.2812	A428.91-02812-36-103	☆	☆	19.0	903.30	35.563	913.00	35.944	844.00	33.228	914	35.984	25.00	.984	70.00	2.755		

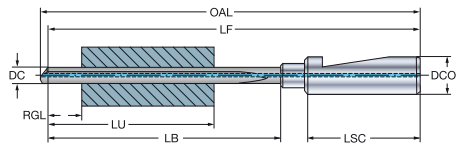
For explanation of parameters see page 1

Gun drill

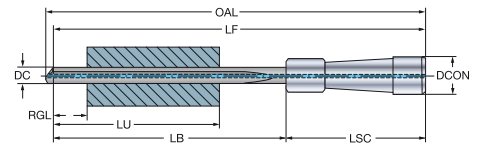
With internal coolant supply



A428.91-20x
TCHA H9



A428.91-10x
H9

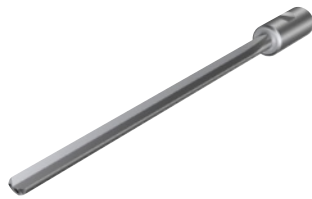


CZC _{MS}	DC	DC"	Ordering code	P K		Dimensions, mm, inch													
				K5	K15	DCON	LU	LU"	LF	LF"	LB	LB"	OAL	OAL"	RGL	RGL"	LSC	LSC"	
3/4	7.54	.2969	A428.91-02969-10-103	☆	☆	19.0	152.70	6.011	253.00	9.960	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	7.54	.2969	A428.91-02969-16-103	☆	☆	19.0	304.70	11.996	405.00	15.944	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	7.54	.2969	A428.91-02969-22-103	☆	☆	19.0	457.70	18.019	558.00	21.968	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	7.54	.2969	A428.91-02969-28-103	☆	☆	19.0	609.70	24.003	710.00	27.952	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	7.54	.2969	A428.91-02969-36-103	☆	☆	19.0	812.70	31.996	913.00	35.944	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	
	7.93	.3125	A428.91-03125-10-103	☆	☆	19.0	152.10	5.988	253.00	9.960	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	7.93	.3125	A428.91-03125-16-103	☆	☆	19.0	304.10	11.972	405.00	15.944	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	7.93	.3125	A428.91-03125-22-103	☆	☆	19.0	457.10	17.996	558.00	21.968	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	7.93	.3125	A428.91-03125-28-103	☆	☆	19.0	609.10	23.980	710.00	27.952	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	7.93	.3125	A428.91-03125-36-103	☆	☆	19.0	812.10	31.972	913.00	35.944	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	
	8.33	.3281	A428.91-03281-10-103	☆	☆	19.0	151.50	5.964	253.00	9.960	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	8.33	.3281	A428.91-03281-16-103	☆	☆	19.0	303.50	11.948	405.00	15.944	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	8.33	.3281	A428.91-03281-22-103	☆	☆	19.0	456.50	17.972	558.00	21.968	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	8.33	.3281	A428.91-03281-28-103	☆	☆	19.0	608.50	23.956	710.00	27.952	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	8.33	.3281	A428.91-03281-36-103	☆	☆	19.0	811.50	31.948	913.00	35.944	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	
	8.73	.3437	A428.91-03437-10-103	☆	☆	19.0	150.90	5.940	253.00	9.960	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	8.73	.3437	A428.91-03437-16-103	☆	☆	19.0	302.90	11.925	405.00	15.944	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	8.73	.3437	A428.91-03437-22-103	☆	☆	19.0	455.90	17.948	558.00	21.968	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	8.73	.3437	A428.91-03437-28-103	☆	☆	19.0	607.90	23.933	710.00	27.952	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	8.73	.3437	A428.91-03437-36-103	☆	☆	19.0	824.00	32.440	913.00	35.944	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	
	9.52	.3750	A428.91-03750-10-103	☆	☆	19.0	149.70	5.893	253.00	9.960	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	9.52	.3750	A428.91-03750-16-103	☆	☆	19.0	301.70	11.878	405.00	15.944	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	9.52	.3750	A428.91-03750-22-103	☆	☆	19.0	454.70	17.901	558.00	21.968	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	9.52	.3750	A428.91-03750-28-103	☆	☆	19.0	606.70	23.885	710.00	27.952	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	9.52	.3750	A428.91-03750-36-103	☆	☆	19.0	809.70	31.878	913.00	35.944	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	
	9.92	.3906	A428.91-03906-10-103	☆	☆	19.0	149.10	5.870	253.00	9.960	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	9.92	.3906	A428.91-03906-16-103	☆	☆	19.0	301.10	11.854	405.00	15.944	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	9.92	.3906	A428.91-03906-22-103	☆	☆	19.0	454.10	17.878	558.00	21.968	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	9.92	.3906	A428.91-03906-28-103	☆	☆	19.0	606.10	23.862	710.00	27.952	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	10.31	.4062	A428.91-04062-10-103	☆	☆	19.0	148.50	5.846	253.00	9.960	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	10.31	.4062	A428.91-04062-16-103	☆	☆	19.0	300.50	11.830	405.00	15.944	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	10.31	.4062	A428.91-04062-22-103	☆	☆	19.0	453.50	17.854	558.00	21.968	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	10.31	.4062	A428.91-04062-28-103	☆	☆	19.0	605.50	23.838	710.00	27.952	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	10.31	.4062	A428.91-04062-36-103	☆	☆	19.0	808.50	31.830	913.00	35.944	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	
	10.71	.4219	A428.91-04219-10-103	☆	☆	19.0	147.90	5.822	252.00	9.921	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	10.71	.4219	A428.91-04219-16-103	☆	☆	19.0	299.90	11.807	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	10.71	.4219	A428.91-04219-22-103	☆	☆	19.0	452.90	17.830	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	10.71	.4219	A428.91-04219-28-103	☆	☆	19.0	604.90	23.815	709.00	27.913	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	10.71	.4219	A428.91-04219-36-103	☆	☆	19.0	807.90	31.807	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	
	11.11	.4375	A428.91-04375-10-103	☆	☆	19.0	147.30	5.799	252.00	9.921	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	11.11	.4375	A428.91-04375-16-103	☆	☆	19.0	299.30	11.783	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	11.11	.4375	A428.91-04375-22-103	☆	☆	19.0	452.30	17.807	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	11.11	.4375	A428.91-04375-28-103	☆	☆	19.0	604.30	23.791	709.00	27.913	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	11.11	.4375	A428.91-04375-36-103	☆	☆	19.0	807.30	31.783	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	
	11.50	.4531	A428.91-04531-10-103	☆	☆	19.0	146.70	5.775	252.00	9.921	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	11.50	.4531	A428.91-04531-16-103	☆	☆	19.0	298.70	11.759	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	11.50	.4531	A428.91-04531-22-103	☆	☆	19.0	451.70	17.783	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	11.50	.4531	A428.91-04531-28-103	☆	☆	19.0	603.70	23.767	709.00	27.913	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	11.50	.4531	A428.91-04531-36-103	☆	☆	19.0	806.70	31.759	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	
	11.90	.4687	A428.91-04687-10-103	☆	☆	19.0	146.10	5.751	252.00	9.921	184.00	7.244	254	10.000	25.00	.984	70.00	2.755	
	11.90	.4687	A428.91-04687-16-103	☆	☆	19.0	298.10	11.736	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755	
	11.90	.4687	A428.91-04687-22-103	☆	☆	19.0	451.10	17.759	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755	
	11.90	.4687	A428.91-04687-28-103	☆	☆	19.0	603.10	23.744	709.00	27.913	641.00	25.236	711	27.992	25.00	.984	70.00	2.755	
	11.90	.4687	A428.91-04687-36-103	☆	☆	19.0	806.10	31.736	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755	

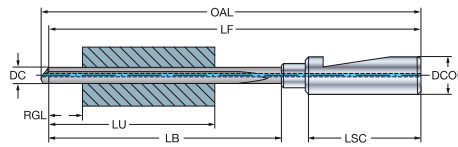
For explanation of parameters see page 1

Gun drill

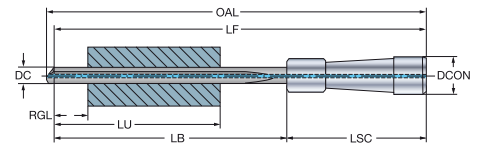
With internal coolant supply



A428.91-20x
TCHA H9



A428.91-10x
H9



CZC _{MS}	DC	DC"	Ordering code	P K		Dimensions, mm, inch												
				K15	K15	DCON	LU	LU"	LF	LF"	LB	LB"	OAL	OAL"	RGL	RGL"	LSC	LSC"
3/4	12.30	.4844	A428.91-04844-10-103	☆	☆	19.0	145.50	5.728	252.00	9.921	184.00	7.244	254	10.000	25.00	.984	70.00	2.755
	12.30	.4844	A428.91-04844-16-103	☆	☆	19.0	297.50	11.712	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	12.30	.4844	A428.91-04844-22-103	☆	☆	19.0	450.50	17.736	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	12.30	.4844	A428.91-04844-28-103	☆	☆	19.0	602.50	23.720	709.00	27.913	641.00	25.236	711	27.992	25.00	.984	70.00	2.755
	12.70	.5000	A428.91-05000-10-103	☆	☆	19.0	145.00	5.708	252.00	9.921	184.00	7.244	254	10.000	25.00	.984	70.00	2.755
	12.70	.5000	A428.91-05000-16-103	☆	☆	19.0	297.00	11.692	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	12.70	.5000	A428.91-05000-22-103	☆	☆	19.0	450.00	17.716	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	12.70	.5000	A428.91-05000-28-103	☆	☆	19.0	602.00	23.700	709.00	27.913	641.00	25.236	711	27.992	25.00	.984	70.00	2.755
	12.70	.5000	A428.91-05000-36-103	☆	☆	19.0	805.00	31.692	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
1	13.09	.5156	A428.91-05156-16-205	☆	☆	25.4	296.40	11.669	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	13.09	.5156	A428.91-05156-22-205	☆	☆	25.4	449.40	17.692	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	13.09	.5156	A428.91-05156-36-205	☆	☆	25.4	804.40	31.669	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	13.89	.5469	A428.91-05469-16-205	☆	☆	25.4	295.20	11.622	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	13.89	.5469	A428.91-05469-22-205	☆	☆	25.4	448.20	17.645	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	13.89	.5469	A428.91-05469-36-205	☆	☆	25.4	803.20	31.622	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	14.28	.5625	A428.91-05625-16-205	☆	☆	25.4	294.60	11.598	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	14.28	.5625	A428.91-05625-22-205	☆	☆	25.4	447.60	17.622	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	14.28	.5625	A428.91-05625-28-205	☆	☆	25.4	599.60	23.606	709.00	27.913	641.00	25.236	711	27.992	25.00	.984	70.00	2.755
	14.28	.5625	A428.91-05625-36-205	☆	☆	25.4	802.60	31.598	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	14.68	.5781	A428.91-05781-16-205	☆	☆	25.4	294.00	11.574	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	14.68	.5781	A428.91-05781-22-205	☆	☆	25.4	447.00	17.598	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	14.68	.5781	A428.91-05781-36-205	☆	☆	25.4	802.00	31.574	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	15.08	.5937	A428.91-05937-16-205	☆	☆	25.4	293.40	11.551	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	15.08	.5937	A428.91-05937-22-205	☆	☆	25.4	446.40	17.574	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	15.08	.5937	A428.91-05937-36-205	☆	☆	25.4	801.40	31.551	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	15.47	.6094	A428.91-06094-16-205	☆	☆	25.4	292.80	11.527	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	15.47	.6094	A428.91-06094-22-205	☆	☆	25.4	445.80	17.551	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	15.47	.6094	A428.91-06094-36-205	☆	☆	25.4	800.80	31.527	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	15.87	.6250	A428.91-06250-16-205	☆	☆	25.4	292.20	11.503	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	15.87	.6250	A428.91-06250-22-205	☆	☆	25.4	445.20	17.527	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	15.87	.6250	A428.91-06250-28-205	☆	☆	25.4	597.20	23.511	709.00	27.913	641.00	25.236	711	27.992	25.00	.984	70.00	2.755
	15.87	.6250	A428.91-06250-36-205	☆	☆	25.4	800.20	31.503	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	16.27	.6406	A428.91-06406-16-205	☆	☆	25.4	291.60	11.480	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	16.27	.6406	A428.91-06406-22-205	☆	☆	25.4	444.60	17.503	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	16.27	.6406	A428.91-06406-36-205	☆	☆	25.4	799.60	31.480	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	16.66	.6562	A428.91-06562-16-205	☆	☆	25.4	291.00	11.456	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	16.66	.6562	A428.91-06562-22-205	☆	☆	25.4	444.00	17.480	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	16.66	.6562	A428.91-06562-36-205	☆	☆	25.4	799.00	31.456	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	17.06	.6719	A428.91-06719-16-205	☆	☆	25.4	290.40	11.433	404.00	15.905	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	17.06	.6719	A428.91-06719-22-205	☆	☆	25.4	443.40	17.456	557.00	21.929	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	17.06	.6719	A428.91-06719-36-205	☆	☆	25.4	798.40	31.433	912.00	35.905	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	17.46	.6875	A428.91-06875-16-205	☆	☆	25.4	289.80	11.409	403.00	15.866	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	17.46	.6875	A428.91-06875-22-205	☆	☆	25.4	442.80	17.433	556.00	21.889	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	17.46	.6875	A428.91-06875-28-205	☆	☆	25.4	594.80	23.417	708.00	27.874	641.00	25.236	711	27.992	25.00	.984	70.00	2.755
	17.46	.6875	A428.91-06875-36-205	☆	☆	25.4	797.80	31.409	911.00	35.866	844.00	33.228	914	35.984	25.00	.984	70.00	2.755
	17.85	.7031	A428.91-07031-16-205	☆	☆	25.4	289.20	11.385	403.00	15.866	336.00	13.228	406	15.984	25.00	.984	70.00	2.755
	17.85	.7031	A428.91-07031-22-205	☆	☆	25.4	442.20	17.409	556.00	21.889	489.00	19.252	559	22.007	25.00	.984	70.00	2.755
	17.85	.7031	A428.91-07031-28-205	☆	☆	25.4	594.20	23.393	708.00	27.874	641.00	25.236	711	27.992	25.00	.984	70.00	2.755
	18.25	.7187	A428.91-07187-16-205	☆	☆	25.4	288.60	11.362	403.00	15.866	336.00	13.228	406	15.984	30.00	1.181	70.00	2.755
	18.25	.7187	A428.91-07187-22-205	☆	☆	25.4	441.60	17.385	556.00	21.889	489.00	19.252	559	22.007	30.00	1.181	70.00	2.755
	18.25	.7187	A428.91-07187-36-205	☆	☆	25.4	796.60	31.362	911.00	35.866	844.00	33.228	914	35.984	30.00	1.181	70.00	2.755
	18.65	.7344	A428.91-07344-16-205	☆	☆	25.4	288.00	11.338	403.00	15.866	336.00	13.228	406	15.984	30.00	1.181	70.00	2.755
	18.65	.7344	A428.91-07344-22-205	☆	☆	25.4	441.00	17.362	556.00	21.889	489.00	19.252	559	22.007	30.00	1.181	70.00	2.755
	18.65	.7344	A428.91-07344-36-205	☆	☆	25.4	796.00	31.338	911.00	35.866	844.00	33.228	914	35.984	30.00	1.181	70.00	2.755

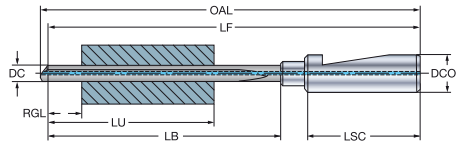
For explanation of parameters see page 1

Gun drill

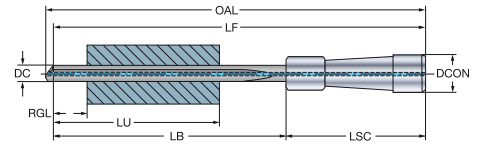
With internal coolant supply



A428.91-20x
TCHA H9



A428.91-10x
H9

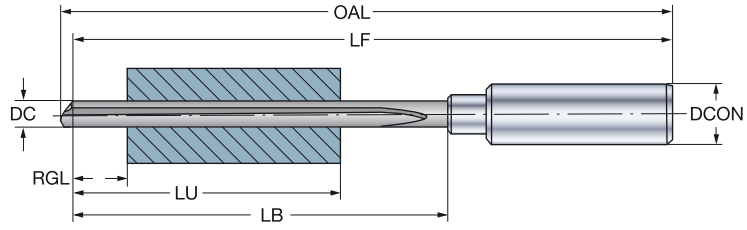
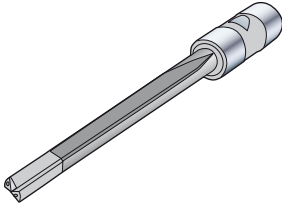


CZC _{MS}	DC	DC"	Ordering code	P K		Dimensions, mm, inch															
				K5	K15	DCON	LU	LU"	LF	LF"	LB	LB"	OAL	OAL"	RGL	RGL"	LSC	LSC"			
1	19.05	.7500	A428.91-07500-16-205	☆	☆	25.4	287.40	11.315	403.00	15.866	336.00	13.228	406	15.984	30.00	1.181	70.00	2.755			
	19.05	.7500	A428.91-07500-22-205	☆	☆	25.4	440.40	17.338	556.00	21.889	489.00	19.252	559	22.007	30.00	1.181	70.00	2.755			
	19.05	.7500	A428.91-07500-28-205	☆	☆	25.4	592.40	23.322	708.00	27.874	641.00	25.236	711	27.992	30.00	1.181	70.00	2.755			
	19.05	.7500	A428.91-07500-36-205	☆	☆	25.4	795.40	31.315	911.00	35.866	844.00	33.228	914	35.984	30.00	1.181	70.00	2.755			
1 1/4	19.84	.7812	A428.91-07812-22-207	☆	☆	31.7	439.20	17.291	556.00	21.889	489.00	19.252	559	22.007	30.00	1.181	70.00	2.755			
	19.84	.7812	A428.91-07812-36-207	☆	☆	31.7	794.20	31.267	911.00	35.866	844.00	33.228	914	35.984	30.00	1.181	70.00	2.755			
	20.24	.7969	A428.91-07969-22-207	☆	☆	31.7	438.60	17.267	556.00	21.889	489.00	19.252	559	22.007	30.00	1.181	70.00	2.755			
	20.24	.7969	A428.91-07969-36-207	☆	☆	31.7	793.60	31.244	911.00	35.866	844.00	33.228	914	35.984	30.00	1.181	70.00	2.755			
	20.63	.8125	A428.91-08125-22-207	☆	☆	31.7	438.00	17.244	556.00	21.889	489.00	19.252	559	22.007	30.00	1.181	70.00	2.755			
	20.63	.8125	A428.91-08125-36-207	☆	☆	31.7	793.00	31.220	911.00	35.866	844.00	33.228	914	35.984	30.00	1.181	70.00	2.755			
	21.43	.8437	A428.91-08437-22-207	☆	☆	31.7	436.90	17.200	556.00	21.889	489.00	19.252	559	22.007	30.00	1.181	70.00	2.755			
	21.43	.8437	A428.91-08437-36-207	☆	☆	31.7	791.90	31.177	911.00	35.866	844.00	33.228	914	35.984	30.00	1.181	70.00	2.755			
	21.82	.8594	A428.91-08594-22-207	☆	☆	31.7	436.30	17.177	556.00	21.889	489.00	19.252	559	22.007	30.00	1.181	70.00	2.755			
	21.82	.8594	A428.91-08594-36-207	☆	☆	31.7	791.30	31.153	911.00	35.866	844.00	33.228	914	35.984	30.00	1.181	70.00	2.755			
	22.22	.8750	A428.91-08750-22-207	☆	☆	31.7	435.70	17.153	556.00	21.889	489.00	19.252	559	22.007	30.00	1.181	70.00	2.755			
	22.22	.8750	A428.91-08750-36-207	☆	☆	31.7	790.70	31.129	911.00	35.866	844.00	33.228	914	35.984	30.00	1.181	70.00	2.755			
	23.01	.9062	A428.91-09062-22-207	☆	☆	31.7	434.50	17.106	556.00	21.889	489.00	19.252	559	22.007	35.00	1.377	70.00	2.755			
	23.01	.9062	A428.91-09062-36-207	☆	☆	31.7	789.50	31.082	911.00	35.866	844.00	33.228	914	35.984	35.00	1.377	70.00	2.755			
	23.41	.9219	A428.91-09219-22-207	☆	☆	31.7	433.90	17.082	556.00	21.889	489.00	19.252	559	22.007	35.00	1.377	70.00	2.755			
	23.41	.9219	A428.91-09219-36-207	☆	☆	31.7	788.90	31.059	911.00	35.866	844.00	33.228	914	35.984	35.00	1.377	70.00	2.755			
	23.81	.9375	A428.91-09375-22-207	☆	☆	31.7	433.30	17.059	556.00	21.889	489.00	19.252	559	22.007	35.00	1.377	70.00	2.755			
	23.81	.9375	A428.91-09375-36-207	☆	☆	31.7	788.30	31.035	911.00	35.866	844.00	33.228	914	35.984	35.00	1.377	70.00	2.755			
	24.60	.9687	A428.91-09687-22-207	☆	☆	31.7	432.10	17.011	555.00	21.850	489.00	19.252	559	22.007	35.00	1.377	70.00	2.755			
	24.60	.9687	A428.91-09687-36-207	☆	☆	31.7	787.10	30.988	910.00	35.826	844.00	33.228	914	35.984	35.00	1.377	70.00	2.755			
25.40	1.0000	A428.91-10000-22-207	☆	☆	31.7	430.90	16.964	555.00	21.850	489.00	19.252	559	22.007	35.00	1.377	70.00	2.755				
25.40	1.0000	A428.91-10000-36-207	☆	☆	31.7	785.90	30.940	910.00	35.826	844.00	33.228	914	35.984	35.00	1.377	70.00	2.755				

For explanation of parameters see page 1

Gun drill

Twin-lip gun drill 428.2



Hole depth: ≤ 100 x diameter (Note! max OAL = 1250 mm)
Hole tolerance: IT10
Surface finish R_a , μm : 0.1-4.0
Cutting fluid: Neat oil
Tolerance: DC = h5
 DCON = d9

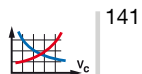
Diameter range		Ordering code	P	K	N	Dimensions, mm, inch
Min	Max					
DC	DC					RGL
6.00	8.55	xxxxx-AAAA-BBB	☆	☆	☆	25
.278	.336					.984
8.56	13.05	xxxxx-AAAA-BBB	☆	☆	☆	25
.337	.513					.984
13.06	18.05	xxxxx-AAAA-BBB	☆	☆	☆	25
.514	.710					.984
18.06	23.00	xxxxx-AAAA-BBB	☆	☆	☆	30
.711	.905					1.181
23.01	26.50	xxxxx-AAAA-BBB	☆	☆	☆	35
.906	1.043					1.378

Ordering example for gun drill head DC 1,90 mm (.075 inch), length 250 mm (9.842 inch) with driver No 002 for drilling stainless steel:

2 pieces 428.2-01900-0250-002

For further information, please contact your local sales representative.

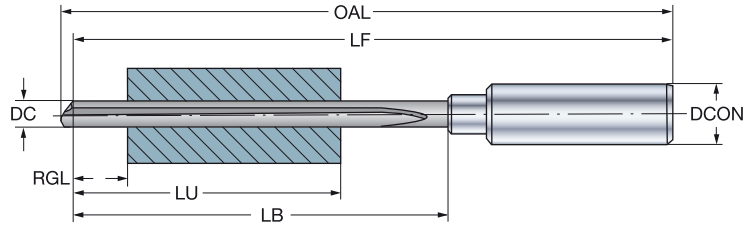
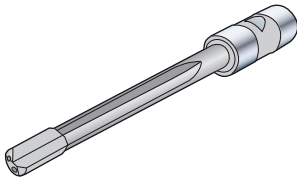
When ordering gun drills the following must be stated:
 Drill diameter, xxxxx in the ordering code.
 Overall length OAL, AAAA in the ordering code.
 If required, driver No., BBB in the ordering code.
 Material to be drilled.



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Gun drill

Single-lip gun drill 428.9



- Hole depth:** ≤ 100 x diameter
- Hole tolerance:** IT9
- Surface finish R_a , μm :** 0.1-3.0
- Cutting fluid:** Neat oil
- Tolerance:** DC = h5
DCON = d9

Diameter range		Ordering code	P	M	K	N	S	Diameter range, mm, inch
Min	Max							
DC	DC							RGL
1.90	2.60	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	10
.075	.102							.394
2.61	3.35	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	13
.103	.132							.512
3.36	4.05	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	13
.133	.159							.512
4.06	5.15	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	19
.160	.202							.748
5.16	7.05	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	23
.203	.277							.906
7.06	8.55	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	25
.278	.336							.984
8.56	13.05	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	25
.337	.513							.984
13.06	18.05	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	25
.514	.710							.984
18.06	23.00	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	30
.711	.905							1.181
23.01	26.50	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	35
.906	1.043							1.378
26.51	32.00	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	40
1.044	1.259							1.575
32.01	40.50	xxxxx-AAAA-BBB	☆	☆	☆	☆	☆	50
1.260	1.594							1.969

Ordering example for gun drill head DC 1,90 mm (.075 inch), length 250 mm (9.842 inch) with driver No 002 for drilling stainless steel:

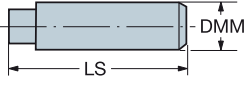
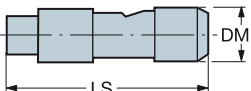
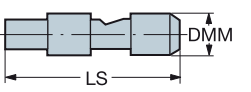
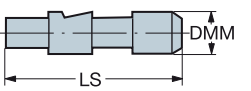
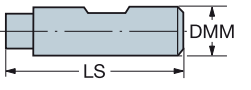
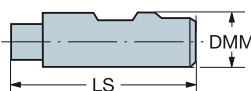
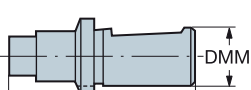
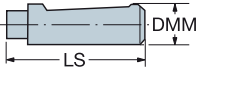
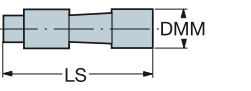
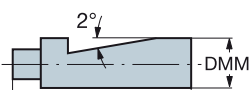
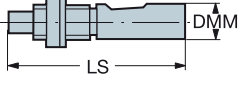
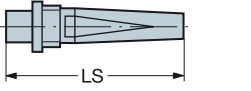
2 pieces 428.9-01900-0250-002

For further information, please contact your local sales representative.

When ordering gun drills the following must be stated:
 Drill diameter, xxxxx in the ordering code.
 Overall length OAL, AAAA in the ordering code.
 If required, driver No., BBB in the ordering code.
 Material to be drilled.



Drivers for gun drills 428.2 and 428.9

Drivers for gun drills 428.2 and 428.9	Diameter range		Driver ³⁾ No.	Dimensions, millimeter, inch (mm, in.)			
	DC mm	DC inch		DMM	DMM"	LS	LS"
	1.90-4.50	.075-.177	006	6	.236	36	1.417
	1.90-7.30	.075-.287	010	10	.394	40	1.575
	1.90-12.40	.075-.488	016	16	.630	48	1.890
	1.90-15.90	.075-.626	020	20	.787	50	1.969
	6.00-19.50	.236-.768	025	25	.984	56	2.205
	1.90-20.50	.075-.807	002	16	.630	45	1.772
	1.90-29.60	.075-1.165	003	20	.787	70	2.756
	10.00-48.99	.394-1.929	005	32	1.260	70	2.756
	4.00-20.50	.157-.807	035	19.05	.750	70	2.756
	6.00-49.00	.236-1.929	036	25.40	1.000	70	2.756
	1.90-7.30	.075-.287	601	10	.394	40	1.575
	7.30-19.60	.236-.772	801	25	.984	70	2.756
	6.55-12.50	.258-.492	602	10	.394	-	-
	19.60-49.00	.772-1.929	802 ¹⁾	25	.984	-	-
	1.95-12.60	.077-.496	701	16	.630	-	-
	12.60-20.50	.496-.807	702	16	.630	-	-
	1.95-12.59	.077-.495	903	10	.394	40	1.575
	1.95-12.59	.077-.495	904	12	.472	45	1.772
	1.95-16.59	.077-.667	905	16	.630	48	1.890
	1.95-20.50	.077-.807	906	20	.787	50	1.969
	6.00-49.00	.236-1.929	907	25	.984	56	2.205
	9.70-49.00	.382-1.929	908	32	1.260	60	2.362
	9.70-49.00	.382-1.929	909	40	1.575	70	2.756
	1.95-16.59	.077-.667	405	16	.630	-	-
	1.95-20.50	.077-.807	406	20	.787	-	-
	6.00-26.60	.236-1.047	407	25	.984	-	-
	9.70-34.50	.382-1.358	408	32	1.260	-	-
	9.70-42.70	.382-1.681	409	40	1.575	-	-
	1.95-9.00	.077-.354	603	10	.394	40	1.575
	1.95-12.59	.077-.495	604	12	.472	45	1.772
	1.95-16.59	.077-.667	605	16	.630	48	1.890
	1.95-20.50	.077-.807	606	20	.787	50	1.969
	6.00-49.00	.236-1.929	607	25	.984	56	2.205
	9.70-49.00	.382-1.929	608	32	1.260	60	2.362
	1.95-9.80	.077-.386	101	12.70	.500	38.10	1.500
	1.95-12.00	.077-.472	102	16	.630	70	2.756
	3.96-15.20	.156-.598	103	19.05	.750	70	2.756
	3.96-29.60	.156-1.165	104	20	.787	70	2.756
	3.96-20.50	.156-.807	204	19.05	.750	70	2.756
	6.00-49.00	.024-1.929	205	25.40	1.000	70	2.756
	6.00-49.00	.024-1.929	206	28	1.102	70	2.756
	9.70-49.00	.382-1.929	207	31.75	1.250	70	2.756
	9.70-49.00	.382-1.929	208	36	1.417	70	2.756
	9.70-49.00	.382-1.929	209	38.10	1.500	70	2.756
	1.90-12.00	.075-.472	301 ²⁾	16	.630	-	-
	1.90-15.20	.075-.598	302 ²⁾	20	.787	-	-
	6.00-26.00	.236-1.024	303 ²⁾	28	1.102	-	-
	8.70-32.60	.343-1.283	304 ²⁾	36	1.417	-	-
	11.90-49.00	.469-1.929	305 ²⁾	48	1.890	-	-
	1.90-9.20	.075-.362	501 ²⁾	-	-	84	3.307
	9.20-16.10	.362-.634	503 ²⁾	-	-	84	3.307
	16.10-23.60	.634-.929	504 ²⁾	-	-	131	5.157
	23.40-34.00	.921-1.339	505 ²⁾	-	-	200	7.874

1) Supplied with driving dog.

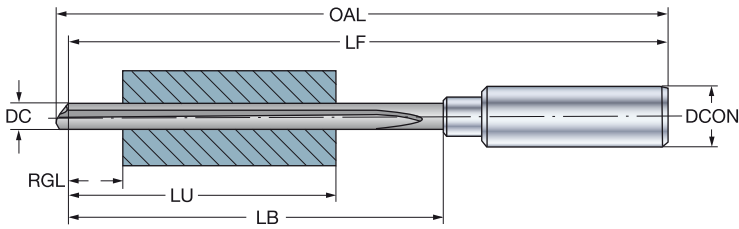
2) Adjustable

3) Available on request.

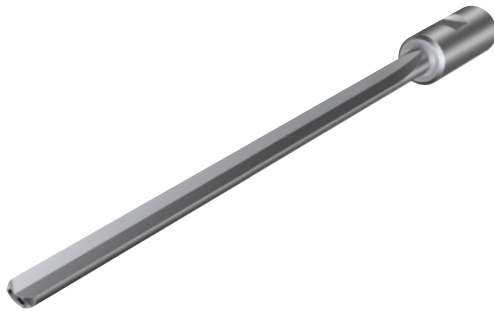
CoroDrill® 428.5, 428.7

Solid carbide gun drills 428.5

High feed gun drills 428.7



Solid carbide gun drills 428.5



Max. drill length including driver, mm (inch): 300 (11.811)

Hole tolerance: IT8

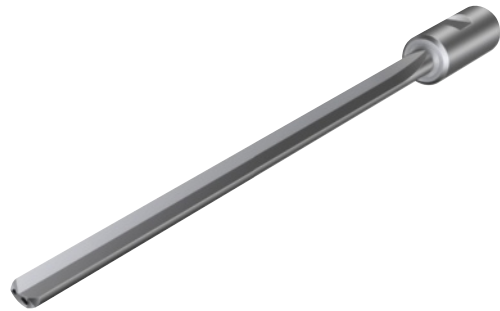
Surface finish R_a , μm : 0.1-3.0

Cutting fluid: Neat oil

Tolerance, DC: h5

Tolerance, DMM: g6

High feed gun drills 428.7



Max. drill length including driver, mm (inch): 300 (11.811)

Hole tolerance: IT8

Surface finish R_a , μm : 0.1-3.0

Cutting fluid: Neat oil

Tolerance, DC: h5

Tolerance, DMM: g6

Diameter range mm (inch)	Ordering code P K N	Dimensions, mm (inch)	Diameter range mm (inch)	Ordering code P K N	Dimensions, mm (inch)
DC 0.8-12.00 (.039-.472)	428.5- xxxxx-AAAA-BBB	RGL 8-25 (.315-.984)	DC 3.00-12.00 (.118-.472)	428.7- xxxxx-AAAA-BBB	RGL 8-25 (.315-.984)

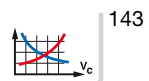
Ordering example for gun drill head Dc 3.00 mm (.118 inch), length 250 mm (9.842 inch) with driver No C01 for drilling stainless steel:

2 pieces 428.5-03000-0250-C01


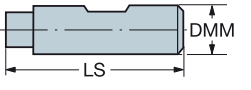
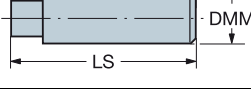

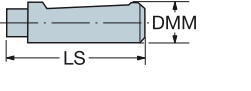
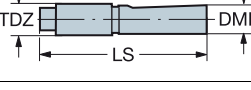
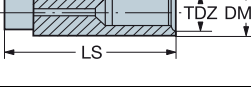
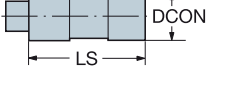
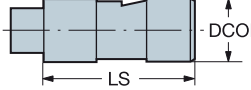
When ordering gun drills the following must be stated:
 Drill diameter, xxxxx in the ordering code.
 Overall length OAL, AAAA in the ordering code.
 If required, driver No., BBB in the ordering code.
 Material to be drilled.

For explanation of parameters see page 1

For further information, please contact your local sales representative.

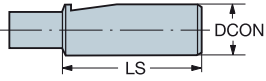
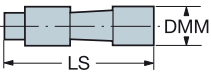
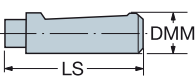
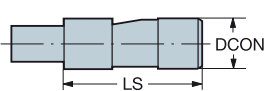
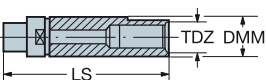
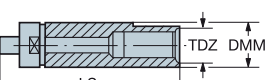


Drivers for gun drills 428.5 and 428.7

Drivers for gun drills 428.5 and 428.7	Diameter range, mm, inch		Driver No.	Dimensions, mm, inch				
	DC	DC"		DMM	DMM"	LS	LS"	TDZ
	1.00-6.50	.075-.256	C00	10	.394	55	2.165	
	1.00-8.00	.075-.315	C01	12	.472	60	2.362	
	1.00-11.40	.075-.449	C02	16	.630	63	2.480	
	1.00-12.00	.075-.472	C03	20	.787	65	2.559	
	1.00-12.00	.075-.472	C04	25	.984	71	2.795	
	1.00-7.10	.075-.280	C10	10	.394	55	2.165	
	1.00-8.00	.075-.315	C11	12	.472	60	2.362	
	1.00-12.00	.075-.472	C12	16	.630	63	2.480	
	1.00-12.00	.075-.472	C13	20	.787	65	2.559	
	1.00-12.00	.075-.472	C20	25	.984	71	2.795	
	1.00-12.00	.075-.472	C21	32	1.260	75	2.953	
	1.00-12.00	.075-.472	C22	40	1.575	85	3.346	
	1.00-12.00	.075-.472	C22	40	1.575	85	3.346	
	1.00-7.10	.075-.280	C30	10	.394	55	2.165	
	1.00-8.00	.075-.315	C31	12	.472	60	2.362	
	1.00-11.40	.075-.449	C32	16	.630	63	2.480	
	1.00-12.00	.075-.472	C33	20	.787	65	2.559	
	1.00-12.00	.075-.472	C34	25	.984	71	2.795	
	1.00-12.00	.075-.472	C35	32	1.260	75	2.953	
	1.00-6.50	.075-.256	C40	10	.394	55	2.165	
	1.00-8.00	.075-.315	C41	12	.472	60	2.362	
	1.00-11.40	.075-.449	C42	16	.630	63	2.480	
	1.00-12.00	.075-.472	C43	20	.787	65	2.559	
	1.00-12.00	.075-.472	C44	25	.984	71	2.795	
	1.00-11.40	.075-.449	C50	16	.630	127	5.000	TR16x1.5
	1.00-12.00	.075-.472	C51	20	.787	141	5.551	TR20x2
	1.00-12.00	.075-.472	C52	28	1.102	141	5.551	TR28x2
	1.00-12.00	.075-.472	C53	36	1.417	177	6.969	TR36x2
	1.00-6.50	.075-.256	C60	10	.394	75	2.953	M6x0.5
	1.00-12.00	.075-.472	C61	16	.630	95	3.740	M10x1
	1.00-12.00	.075-.472	C62	25	.984	115	4.528	M16x1.5
	1.00-11.40	.075-.449	C70	16	.630	55	2.165	
	1.00-12.00	.075-.472	C71	25	.984	65	2.559	
	1.00-12.00	.075-.472	C72	35	1.378	75	2.953	
	1.00-7.10	.075-.280	C80	10	.394	55	2.165	
	1.00-12.00	.075-.472	C81	16	.630	60	2.362	
	1.00-12.00	.075-.472	C82	16	.630	65	2.559	
	1.00-12.00	.075-.472	C83	25	.984	85	3.346	

Driver Available on request.

Drivers for gun drills 428.5 and 428.7

Drivers for gun drills 428.5 and 428.7	Diameter range, mm, inch		Driver	Dimensions, mm, inch				
	DC	DC"	No.	DMM	DMM"	LS	LS"	TDZ
	1.00-8.70	.075-.343	D00	16	.630	65	2.559	
	1.00-8.30 1.00-12.00	.075-.327 .075-.472	D10 D11	12.7 19.05	.500 .750	53.1 84.8	2.091 3.339	
	1.00-12.00 1.00-12.00 1.00-12.00	.075-.472 .075-.472 .075-.472	D20 D21 D22	25.4 31.75 38.1	1.000 1.250 1.500	84.8 84.8 84.8	3.339 3.339 3.339	
	1.00-12.00	.075-.472	D30	12.7	.500	53.1	2.091	
	1.00-6.80 1.00-12.00	.075-.268 .075-.472	D40 D42	10 25	.394 .984	83 127	3.268 5.000	M6x0.5 M16x1.5
	1.00-10.00 1.00-12.00	.268-.394 .075-.472	D50 D51	10 16	.394 .630	83 105	3.268 4.134	M6x0.5 M10x1

Driver Available on request.

CoroChuck™ 930

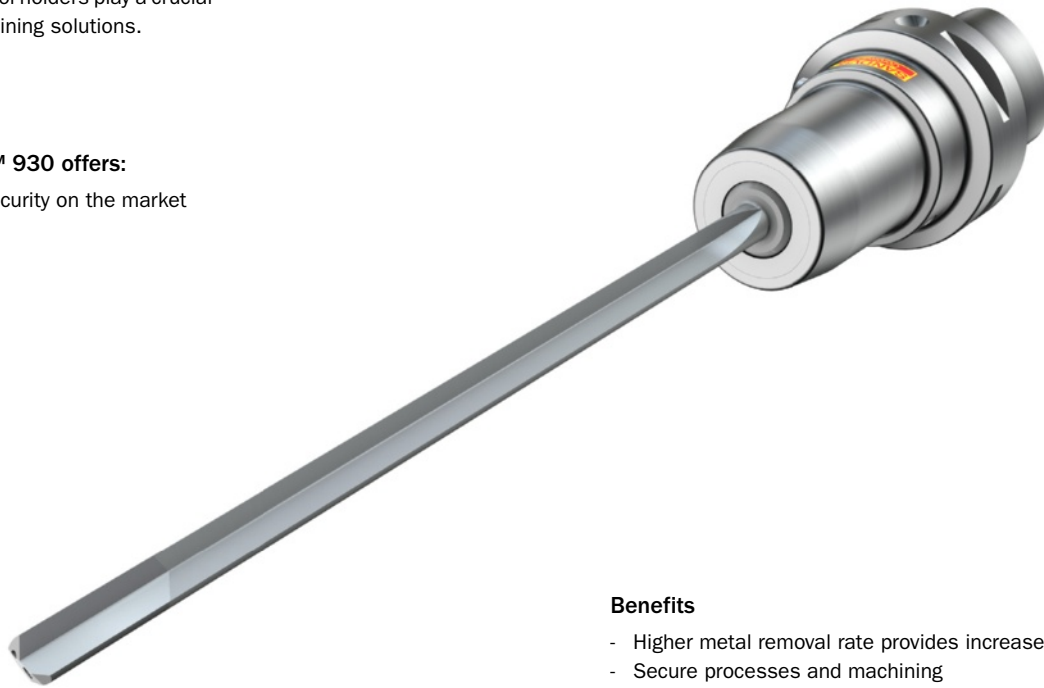
High precision hydraulic chuck

Efficient, quality machining requires first class equipment all the way from the machine to the tool tip.

Secure, precise tool holders play a crucial role in most machining solutions.

The CoroChuck™ 930 offers:

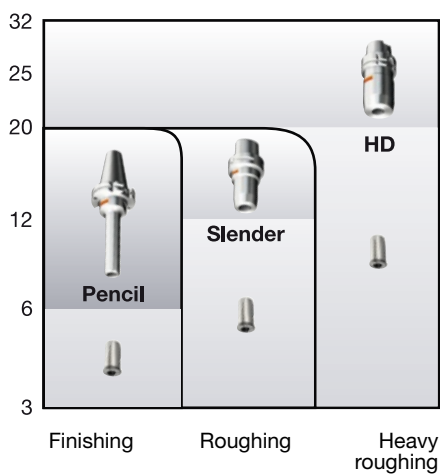
- Best pull-out security on the market
- Easy handling
- High precision



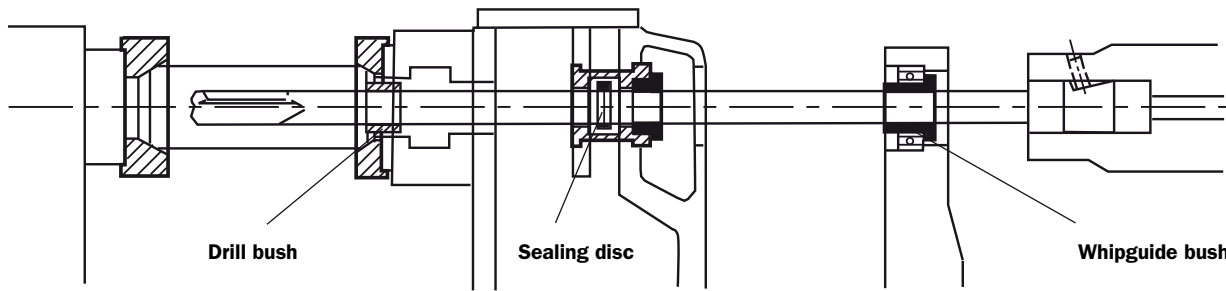
Benefits

- Higher metal removal rate provides increased productivity
- Secure processes and machining
- Quick tool change and set-up
- Enhanced surface finish and increased tool life
- Closer hole tolerance

Diameter, mm



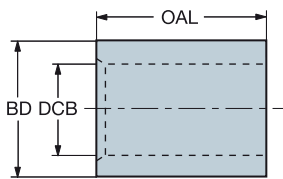
Accessories for Gun drilling - Drill bush, Sealing disc, Whipguide bush



Drill bush

According to DIN 179 extended model made of tool steel, hardened throughout.

Give measurement DC when placing an order.



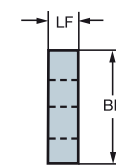
Diameter range		Dimensions, mm, inch			
DC	DC"	BD	BD"	OAL	OAL"
0.8-1.099	.0314-.0432	3	.118	9	.354
1.1-1.899	.0433-.0747	4	.157	9	.354
1.9-2.699	.0748-.1062	5	.197	9	.354
2.7-3.399	.1063-.1338	6	.236	12	.472
3.4-4.099	.1339-.1613	7	.276	12	.472
4.1-5.099	.1614-.2007	8	.315	12	.472
5.1-6.099	.2008-.2401	10	.394	16	.630
6.1-8.099	.2402-.3188	12	.472	16	.630
8.1-10.099	.3189-.3975	15	.591	20	.787
10.1-12.099	.3976-.4763	18	.709	20	.787
12.1-15.099	.4764-.5944	22	.866	28	1.102
15.1-18.099	.5945-.7125	26	1.024	28	1.102
18.1-22.099	.7126-.8699	30	1.181	36	1.417
22.1-26.099	.8700-1.0275	35	1.378	36	1.417
26.1-30.099	1.0276-1.1849	42	1.654	45	1.772
30.1-35.099	1.1850-1.3818	48	1.890	45	1.772
35.1-42.099	1.3819-1.6574	55	2.165	56	2.205

Sealing disc¹⁾

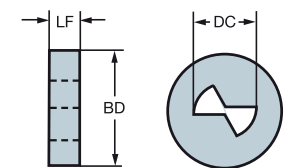
Made of special plastic

Give drill diameter DC when placing an order.

Single-lip



Twin-lip



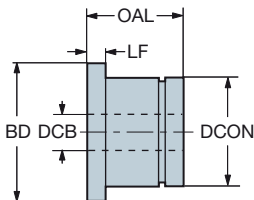
Diameter range		Dimensions, mm, inch			
DC	DC"	BD	BD"	LF	LF"
0.8-6.2	.079-.244	20	.787	3	.118
6.3-18.5	.248-.728	32	1.260	4	.157
18.6-24.6	.732-.969	40	1.575	4	.157
24.7-42.0	.972-1.654	90	3.543	4	.157

¹⁾ The sealing disc fits tightly onto the drill shank and must be held in position in the chip box with retaining device. This prevents the disc moving with the feed motion, which could cause chip obstruction.

Whipguide bush

Made of special plastic

Give drill diameter DC when placing an order.



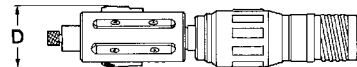
Diameter range		Dimensions, mm, inch							
DC	DC"	DCON	DCON"	BD	BD"	OAL	OAL"	LF	LF"
0.8-12.0	.079-.472	20	.787	26	1.024	22	.866		
2.0-25.0	.079-.984	30	1.181	38	1.496	26	1.024		
2.0-37.0	.079-1.457	45	1.772	52	2.047	26	1.024		

For further information, please contact your local sales representative.

Combined skiving and roller burnishing tools



Working range, diameter, mm (inch):	38.0-305.9 (1.496-12.031)
Working range, length:	Depending on machine
Tolerance:	IT 8
Surface finish:	R _a 0.05-0.20 μm
Drilling system:	STS or Ejector



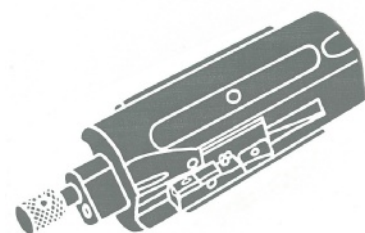
Combined skiving and roller burnishing tool

Skiving and roller burnishing double stroke



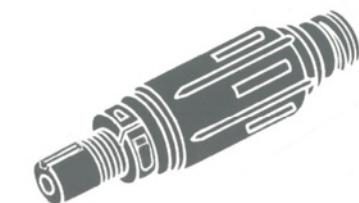
Diameter range, DC mm (inch)	Ordering code	Drill tube diameter, mm (inch)	E-thread range
38.0-51.9 (1.496-2.043)	SRD-xxxx-01	36 (1.417)	08
52.0-67.9 (2.047-2.673)		47 (1.850)	11
68.0-90.9 (2.677-3.579)		62 (2.441)	15
91.0-110.9 (3.583-4.366)		82 (3.228)	18
111.0-148.9 (4.370-5.862)		94 (3.701)	19
149.0-185.9 (5.866-7.319)		142 (5.591)	23
186.0-221.9 (7.323-8.736)		178 (7.008)	26
222.0-257.9 (8.740-10.154)		214 (8.425)	29
258.0-305.9 (10.157-12.043)		250 (9.843)	32

Skiving part



Diameter range, DC mm (inch)	Ordering code	Connection between skiving and roller burnishing parts
38.0-148.9 (1.496-5.862)	R420.37-xxxx-01	Whistle Notch
149.0-221.9 (5.866-8.736)		E-thread
222.0-305.9 (8.740-12.043)		E-thread

Roller burnishing part



Diameter range, DC mm (inch)	Ordering code	Connection between roller burnishing part and drill tube	Drill tube diameter, mm (inch)	E-thread range
38.0-51.9 (1.496-2.043)	6853-111-xxxx0	E-thread	36 (1.417)	08
52.0-67.9 (2.047-2.673)			47 (1.850)	11
68.0-90.9 (2.677-3.579)			62 (2.441)	15
91.0-110.9 (3.583-4.366)			82 (3.228)	18
111.0-148.9 (4.370-5.862)	6833-111-xxxx0	E-thread	94 (3.701)	19
149.0-185.9 (5.866-7.319)			142 (5.591)	23
186.0-221.9 (7.323-8.736)			178 (7.008)	26
222.0-257.9 (8.740-10.154)	6836-111-xxxx0	Flange	214 (8.425)	29
258.0-305.9 (10.157-12.043)			250 (9.843)	32

To be ordered as replacement part for combined skiving and roller burnishing tool.

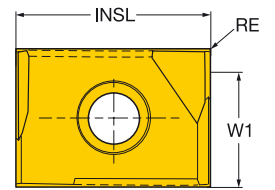
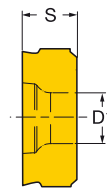
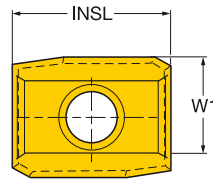
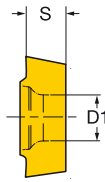
xxxx refers to the diameter of the tool, when ordering use the diameter size as in examples below:

DC=39.4 mm (1.551 inch) SRD-0394-01

DC=224.5 mm (8.839 inch) SRD-2245-01

Convert to metric when using inch

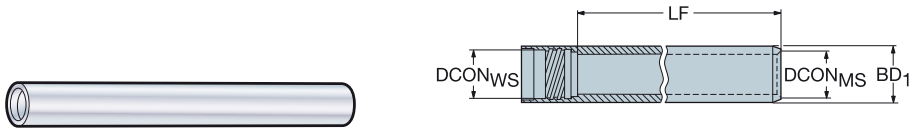
Inserts for Skiving and roller burnishing



				P	M	K	S	Dimensions, mm, inch					
			Ordering code	1025	1525	1025	1525	S	S"	RE	RE"	W1	W1"
Finishing		06	R420.37-06 02 00-01	☆	☆	☆	☆	2.38	.093	0.30	.011	7.50	.295
		07	R420.37-07 08 00-01	☆	☆	☆	☆	3.96	.156	0.30	.011	8.00	.314
		11	R420.37-11 12 00-01	☆	☆	☆	☆	4.76	.187	0.30	.011	12.00	.472

For explanation of parameters see page 1

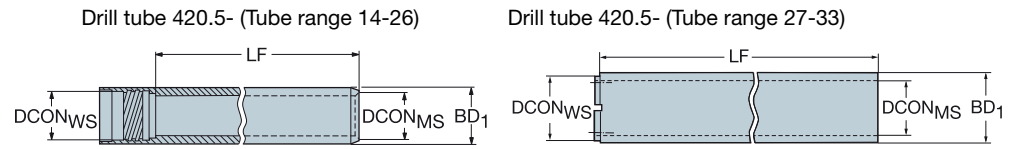
STS drilling tubes



$DCON_{WS}$ is the same as $DCON$ for the drill

CZC _{MS}	Ordering code, drill tube		Dimensions, mm, inch								
	DCN	DCX	BD1	BD1"	DCON	DCON"	LF	LF"	OAL	OAL"	
97	15.60	16.70	420.5-797-2	14.0	.551	12.6	.496	1579.0	62.165	1600	62.992
98	16.71	17.70	420.5-798-2	15.0	.591	13.6	.535	1579.0	62.165	1600	62.992
99	17.71	18.90	420.5-799-2	16.0	.630	14.5	.571	1578.0	62.126	1600	62.992
00	18.91	20.00	420.5-800-2	17.0	.669	15.5	.610	1578.0	62.126	1600	62.992
01	20.01	21.80	420.5-801-4	18.0	.709	16.0	.630	2575.0	101.378	2600	102.362
02	21.81	24.10	420.5-802-4	20.0	.787	18.0	.709	2574.0	101.339	2600	102.362
03	24.11	26.40	420.5-803-4	22.0	.866	19.5	.768	2574.0	101.339	2600	102.362
04	26.41	28.70	420.5-804-4	24.0	.945	21.0	.827	2574.0	101.339	2600	102.362
05	28.71	31.00	420.5-805-4	26.0	1.024	23.5	.925	2571.0	101.220	2600	102.362
06	31.01	33.30	420.5-806-4	28.0	1.102	25.5	1.004	2571.0	101.220	2600	102.362
07	33.31	36.20	420.5-807-4	30.0	1.181	28.0	1.102	2571.0	101.220	2600	102.362
08	36.21	39.60	420.5-808-4	33.0	1.299	30.0	1.181	2564.0	100.945	2600	102.362
09	39.61	43.00	420.5-809-4	36.0	1.417	33.0	1.299	2564.0	100.945	2600	102.362
10	43.01	47.00	420.5-810-4	39.0	1.535	36.0	1.417	2564.0	100.945	2600	102.362
11	47.01	51.70	420.5-811-4	43.0	1.693	39.0	1.535	2564.0	100.945	2600	102.362
12	51.71	56.20	420.5-812-4	47.0	1.850	43.0	1.693	2560.0	100.787	2600	102.362
13	56.21	65.00	420.5-813-4	51.0	2.008	47.0	1.850	2560.0	100.787	2600	102.362
13E	60.61	65.00	420.5-813E-4	57.0	2.244	51.0	2.008	2560.0	100.787	2600	102.362

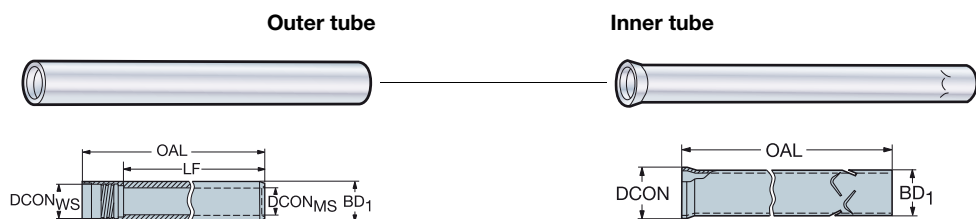
STS drilling tubes



DCON_{WS} is the same as DCON for the drill

CZC _{MS}	DCN	DCX	Ordering code, drill tube	Dimensions, mm, inch					
				BD1	BD1"	DCON	DCON"	LF	LF"
14	65.00	69.99	420.5-814-L	56.0	2.205	52.0	2.047	75.0	2.953
15	70.00	74.99	420.5-815-L	62.0	2.441	58.0	2.283	75.0	2.953
16	75.00	79.99	420.5-816-L	68.0	2.677	63.0	2.480	75.0	2.953
17	80.00	89.99	420.5-817-L	75.0	2.953	77.0	3.031	97.0	3.819
18	85.00	99.99	420.5-818-L	82.0	3.228	77.0	3.031	97.0	3.819
19	100.00	114.99	420.5-819-L	94.0	3.701	89.0	3.504	97.0	3.819
20	110.00	124.99	420.5-820-L	106.0	4.173	101.0	3.976	118.0	4.646
21	120.00	139.99	420.5-821-L	118.0	4.646	113.0	4.449	118.0	4.646
22	130.00	149.99	420.5-822-L	130.0	5.118	125.0	4.921	118.0	4.646
23	140.00	159.99	420.5-823-L	142.0	5.591	137.0	5.394	139.0	5.472
24	160.00	179.99	420.5-824-L	154.0	6.063	149.0	5.866	139.0	5.472
25	170.00	189.99	420.5-825-L	166.0	6.535	161.0	6.339	139.0	5.472
26	180.00	199.99	420.5-826-L	178.0	7.008	173.0	6.811	144.0	5.669
27	190.00	224.99	420.5-827-L	190.0	7.480	172.0	6.772	8.0	.315
28	200.00	224.99	420.5-828-L	202.0	7.953	184.0	7.244	8.0	.315
29	200.00	249.99	420.5-829-L	214.0	8.425	196.0	7.717	8.0	.315
30	225.00	249.99	420.5-830-L	226.0	8.898	208.0	8.189	8.0	.315
31	225.00	278.99	420.5-831-L	238.0	9.370	220.0	8.661	8.0	.315
32	250.00	278.99	420.5-832-L	250.0	9.843	232.0	9.134	8.0	.315
33	250.00	278.99	420.5-833-L	262.0	10.315	244.0	9.606	8.0	.315

Ejector drilling tubes



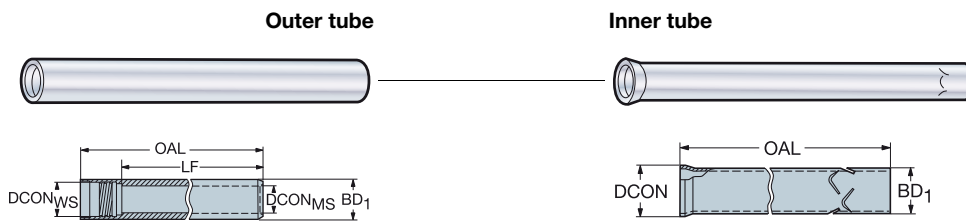
CZC _{WS}	DCN	DCX	Ordering code, outer tube	Dimensions, mm, inch					Ordering code, inner tube	Dimensions, mm, inch		
				BD1	DCON _{WS}	DCON _{MS}	LF	OAL		DCON	BD1	OAL
00	20.00 .787	22.99 .905	424.2-800-2	18.0	16.0	12	372.5	400	424.2-850-2	12	10	430
				.709	.630	.472	14.665	15.748		.472	.394	16.929
			424.2-800-3	18.0	16.0	12	602.5	630	424.2-850-3	12	10	660
			424.2-800-4	18.0	16.0	12	1042.5	1070	424.2-850-4	12	10	1100
				.709	.630	.472	41.043	42.126		.472	.394	43.307
01	20.00 .787	22.99 .905	424.2-801-2	19.5	18.0	14	370.0	400	424.2-851-2	14	12	430
				.768	.709	.551	14.567	15.748		.551	.472	16.929
			424.2-801-3	19.5	18.0	14	600.0	630	424.2-851-3	14	12	660
			424.2-801-4	19.5	18.0	14	1040.0	1070	424.2-851-4	14	12	1100
				.768	.709	.551	23.622	24.803		.551	.472	25.984
				.768	.709	.551	40.945	42.126		.551	.472	43.307
02	20.00 .787	25.99 1.023	424.2-802-2	21.5	19.5	15	370.0	400	424.2-852-2	15	13	430
				.846	.768	.591	14.567	15.748		.591	.512	16.929
			424.2-802-3	21.5	19.5	15	600.0	630	424.2-852-3	15	13	660
			424.2-802-4	21.5	19.5	15	1040.0	1070	424.2-852-4	15	13	1100
				.846	.768	.591	23.622	24.803		.591	.512	25.984
				.846	.768	.591	40.945	42.126		.591	.512	43.307
03	23.00 .906	31.00 1.220	424.2-803-2	23.5	21.0	16	370.0	400	424.2-853-2	16	14	430
				.925	.827	.630	14.567	15.748		.630	.551	16.929
			424.2-803-3	23.5	21.0	16	600.0	630	424.2-853-3	16	14	660
			424.2-803-4	23.5	21.0	16	1040.0	1070	424.2-853-4	16	14	1100
				.925	.827	.630	23.622	24.803		.630	.551	25.984
				.925	.827	.630	40.945	42.126		.630	.551	43.307
04	26.00 1.024	31.00 1.220	424.2-804-2	26.0	23.5	18	367.0	400	424.2-854-2	18	16	430
				1.024	.925	.709	14.449	15.748		.709	.630	16.929
			424.2-804-3	26.0	23.5	18	597.0	630	424.2-854-3	18	16	660
			424.2-804-4	26.0	23.5	18	1037.0	1070	424.2-854-4	18	16	1100
				1.024	.925	.709	23.504	24.803		.709	.630	25.984
				1.024	.925	.709	40.827	42.126		.709	.630	43.307
05	26.00 1.024	31.00 1.220	424.2-805-2	28.0	25.5	20	367.0	400	424.2-855-2	20	18	430
				1.102	1.004	.787	14.449	15.748		.787	.709	16.929
			424.2-805-3	28.0	25.5	20	597.0	630	424.2-855-3	20	18	660
			424.2-805-4	28.0	25.5	20	1037.0	1070	424.2-855-4	20	18	1100
				1.102	1.004	.787	23.504	24.803		.787	.709	25.984
				1.102	1.004	.787	40.827	42.126		.787	.709	43.307
06	31.01 1.221	33.99 1.338	424.2-806-2	30.5	28.0	22	367.0	400	424.2-856-2	22	20	430
				1.201	1.102	.866	14.449	15.748		.866	.787	16.929
			424.2-806-3	30.5	28.0	22	597.0	630	424.2-856-3	22	20	660
			424.2-806-4	30.5	28.0	22	1037.0	1070	424.2-856-4	22	20	1100
				1.201	1.102	.866	23.504	24.803		.866	.787	25.984
				1.201	1.102	.866	40.827	42.126		.866	.787	43.307

Inner tube length corresponding with drilling diameter

Drill diameter	Inner tube
≤65.00 mm (2.559 inch)	30 mm longer than outer tube
65.01-123.90 mm (2.559-4.878 inch)	190 mm longer than outer tube*
124.00-183.90 mm (4.882-7.240 inch)	220 mm longer than outer tube

* 179mm longer than outer tube when reinforced connecting sleeve type S-424.2-422-XXA is used.

Ejector drilling tubes



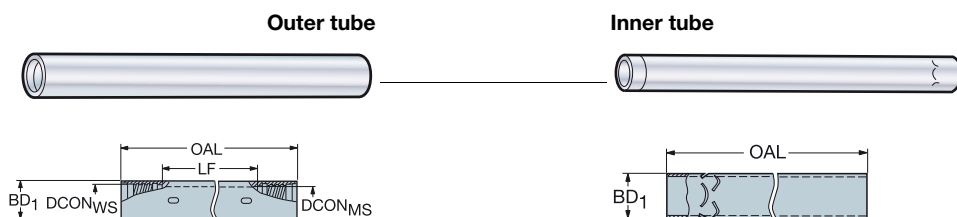
CZC _{WS}	DCN	DCX	Ordering code, outer tube	Dimensions, mm, inch					Ordering code, inner tube	Dimensions, mm, inch		
				BD1	DCON _{WS}	DCON _{MS}	LF	OAL		DCON	BD1	OAL
07	31.01 1.221	37.99 1.496	424.2-807-2	33.0	30.0	24	360.0	400	424.2-857-2	24	22	430
				1.299	1.181	.945	14.173	15.748		.945	.866	16.929
			424.2-807-3	33.0	30.0	24	590.0	630	424.2-857-3	24	22	660
				1.299	1.181	.945	23.228	24.803		.945	.866	25.984
			424.2-807-4	33.0	30.0	24	1030	1070	424.2-857-4	24	22	1100
				1.299	1.181	.945	40.551	42.126		.945	.866	43.307
08	34.00 1.339	43.00 1.693	424.2-808-2	35.5	33.0	26	360.0	400	424.2-858-2	26	24	430
				1.398	1.299	1.024	14.173	15.748		1.024	.945	16.929
			424.2-808-3	35.5	33.0	26	590.0	630	424.2-858-3	26	24	660
				1.398	1.299	1.024	23.228	24.803		1.024	.945	25.984
			424.2-808-4	35.5	33.0	26	1030	1070	424.2-858-4	26	24	1100
				1.398	1.299	1.024	40.551	42.126		1.024	.945	43.307
09	38.00 1.496	43.00 1.693	424.2-809-2	39.0	36.0	29	360.0	400	424.2-859-2	29	27	430
				1.535	1.417	1.142	14.173	15.748		1.142	1.063	16.929
			424.2-809-3	39.0	36.0	29	590.0	630	424.2-859-3	29	27	660
				1.535	1.417	1.142	23.228	24.803		1.142	1.063	25.984
			424.2-809-4	39.0	36.0	29	1030	1070	424.2-859-4	29	27	1100
				1.535	1.417	1.142	40.551	42.126		1.142	1.063	43.307
10	43.01 1.693	46.99 1.850	424.2-810-2	42.5	39.0	32	360.0	400	424.2-860-2	32	30	430
				1.673	1.535	1.260	1.575	15.748		1.260	1.181	16.929
			424.2-810-3	42.5	39.0	32	590.0	630	424.2-860-3	32	30	660
				1.673	1.535	1.260	1.575	24.803		1.260	1.181	25.984
			424.2-810-4	42.5	39.0	32	1030	1070	424.2-860-4	32	30	1100
				1.673	1.535	1.260	1.575	42.126		1.260	1.181	43.307
11	47.00 1.850	51.99 2.047	424.2-811-2	46.5	43.0	35	356.0	400	424.2-861-2	35	32	430
				1.831	1.693	1.378	1.732	15.748		1.378	1.260	16.929
			424.2-811-3	46.5	43.0	35	586.0	630	424.2-861-3	35	32	660
				1.831	1.693	1.378	1.732	24.803		1.378	1.260	25.984
			424.2-811-4	46.5	43.0	35	1026.0	1070	424.2-861-4	35	32	1100
				1.831	1.693	1.378	1.732	42.126		1.378	1.260	43.307
12	47.00 1.850	57.99 2.283	424.2-812-2	51.0	47.0	39	356.0	400	424.2-862-2	39	36	430
				2.008	1.850	1.535	1.732	15.748		1.535	1.417	16.929
			424.2-812-3	51.0	47.0	39	586.0	630	424.2-862-3	39	36	660
				2.008	1.850	1.535	1.732	24.803		1.535	1.417	25.984
			424.2-812-4	51.0	47.0	39	1026.0	1070	424.2-862-4	39	36	1100
				2.008	1.850	1.535	1.732	42.126		1.535	1.417	43.307
13	52.00 2.047	65.00 2.559	424.2-813-2	55.5	51.0	43	356.0	400	424.2-863-2	43	40	430
				2.185	2.008	1.693	1.732	15.748		1.693	1.575	16.929
			424.2-813-3	55.5	51.0	43	586.0	630	424.2-863-3	43	40	660
				2.185	2.008	1.693	1.732	24.803		1.693	1.575	25.984
			424.2-813-4	55.5	51.0	43	1026.0	1070	424.2-863-4	43	40	1100
				2.185	2.008	1.693	1.732	42.126		1.693	1.575	43.307

Inner tube length corresponding with drilling diameter

Drill diameter	Inner tube
≤65.00 mm (2.559 inch)	30 mm longer than outer tube
65.01-123.90 mm (2.559-4.878 inch)	190 mm longer than outer tube*
124.00-183.90 mm (4.882-7.240 inch)	220 mm longer than outer tube

* 179mm longer than outer tube when reinforced connecting sleeve type S-424.2-422-XXA is used.

Ejector drilling tubes



Drill tubes are supplied threaded in both ends, with an internal thread, the E-thread.

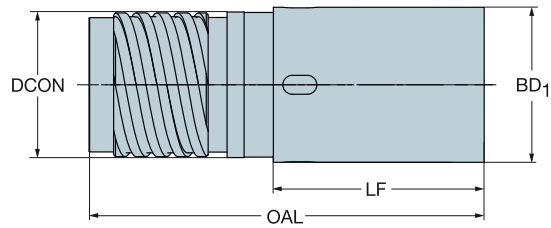
CZC _{ws}	DCN	DCX	Ordering code, outer tube	Dimensions, mm, inch					Ordering code, inner tube	Dimensions, mm, inch		
				BD1	DCON _{ws}	DCON _{ms}	LF	OAL		DCON	BD1	OAL
14	65.00	69.99	424.2-814-L	56.0	52.0	43	75.0	424.2-864-L	40			
	<i>2.559</i>	<i>2.756</i>		<i>2.205</i>	<i>2.047</i>	<i>1.693</i>	<i>2.953</i>		<i>1.575</i>			
15	70.00	74.99	424.2-815-L	62.0	58.0	48	75.0	424.2-865-L	44			
	<i>2.756</i>	<i>2.952</i>		<i>2.441</i>	<i>2.284</i>	<i>1.890</i>	<i>2.953</i>		<i>1.732</i>			
16	75.00	79.99	424.2-816-L	68.0	63.0	53	75.0	424.2-866-L	48			
	<i>2.953</i>	<i>3.149</i>		<i>2.677</i>	<i>2.480</i>	<i>2.087</i>	<i>2.953</i>		<i>1.890</i>			
17	80.00	89.99	424.2-817-L	75.0	70.0	59	97.0	424.2-867-L	54			
	<i>3.150</i>	<i>3.543</i>		<i>2.953</i>	<i>2.756</i>	<i>2.323</i>	<i>3.819</i>		<i>2.126</i>			
18	85.00	99.99	424.2-818-L	82.0	77.0	66	97.0	424.2-868-L	60			
	<i>3.346</i>	<i>3.937</i>		<i>3.228</i>	<i>3.032</i>	<i>2.598</i>	<i>3.819</i>		<i>2.362</i>			
19	100.00	114.99	424.2-819-L	94.0	89.0	78	97.0	424.2-869-L	70			
	<i>3.937</i>	<i>4.527</i>		<i>3.701</i>	<i>3.504</i>	<i>3.071</i>	<i>3.819</i>		<i>2.756</i>			
20	110.00	124.99	424.2-820-L	106.0	101.0	90	118.0	424.2-870-L	80			
	<i>4.331</i>	<i>4.921</i>		<i>4.173</i>	<i>3.976</i>	<i>3.543</i>	<i>4.646</i>		<i>3.150</i>			
21	120.00	139.99	424.2-821-L	118.0	113.0	92	118.0	424.2-871-L	80			
	<i>4.724</i>	<i>5.511</i>		<i>4.646</i>	<i>4.449</i>	<i>3.622</i>	<i>4.646</i>		<i>3.150</i>			
22	130.00	149.99	424.2-822-L	130.0	125.0	104.0	118.0	424.2-872-L	95			
	<i>5.118</i>	<i>5.905</i>		<i>5.118</i>	<i>4.921</i>	<i>4.094</i>	<i>4.646</i>		<i>3.740</i>			
23	140.00	159.99	424.2-823-L	142.0	137.0	116.0	139.0	424.2-873-L	100			
	<i>5.512</i>	<i>6.299</i>		<i>5.591</i>	<i>5.394</i>	<i>4.567</i>	<i>5.472</i>		<i>3.937</i>			
24	160.00	179.99	424.2-824-L	154.0	149.0	128.0	139.0	424.2-874-L	120			
	<i>6.299</i>	<i>7.086</i>		<i>6.063</i>	<i>5.866</i>	<i>5.039</i>	<i>5.472</i>		<i>4.724</i>			
25	170.00	183.90	424.2-825-L	166.0	161.0	140.0	139.0	424.2-875-L	130			
	<i>6.693</i>	<i>7.240</i>		<i>6.535</i>	<i>6.339</i>	<i>5.512</i>	<i>5.472</i>		<i>5.118</i>			

Inner tube length corresponding with drilling diameter

Drill diameter	Inner tube
≤65.00 mm (2.559 inch)	30 mm longer than outer tube
65.01-123.90 mm (2.559-4.878 inch)	190 mm longer than outer tube*
124.00-183.90 mm (4.882-7.240 inch)	220 mm longer than outer tube

* 179mm longer than outer tube when reinforced connecting sleeve type S-424.2-422-XXA is used.

Adaptors for converting from external to internal tube threads



CZC _{MS}	CZC _{WS}	Ordering code	Dimensions, mm, inch							
			DCON	OAL	OAL"	LF	LF"	BD ₁	BD ₁ "	
15	14	420.9/815-814	58	150.00	5.905	74.50	2.933	62.0	2.440	
16	14	420.9/816-814	63	150.00	5.905	74.50	2.933	68.0	2.677	
	15	420.9/816-815	63	150.00	5.905	74.50	2.933	68.0	2.677	
17	15	420.9/817-815	70	190.00	7.480	92.50	3.641	75.0	2.952	
	16	420.9/817-816	70	190.00	7.480	92.50	3.641	75.0	2.952	
18	16	420.9/818-816	77	190.00	7.480	92.50	3.641	82.0	3.228	
	17	420.9/818-817	77	210.00	8.267	112.50	4.429	82.0	3.228	
19	17	420.9/819-817	89	210.00	8.267	112.50	4.429	94.0	3.700	
	18	420.9/819-818	89	210.00	8.267	112.50	4.429	94.0	3.700	
20	18	420.9/820-818	101	230.00	9.055	111.50	4.389	106.0	4.173	
	19	420.9/820-819	101	230.00	9.055	111.50	4.389	106.0	4.173	
21	19	420.9/821-819	113	230.00	9.055	111.50	4.389	118.0	4.645	
	20	420.9/821-820	113	255.00	10.039	136.50	5.374	118.0	4.645	
22	20	420.9/822-820	125	255.00	10.039	136.50	5.374	130.0	5.118	
	21	420.9/822-821	125	255.00	10.039	136.50	5.374	130.0	5.118	
23	21	420.9/823-821	137	275.00	10.826	135.50	5.334	142.0	5.590	
	22	420.9/823-822	137	275.00	10.826	135.50	5.334	142.0	5.590	
24	22	420.9/824-822	149	275.00	10.826	135.50	5.334	154.0	6.062	
	23	420.9/824-823	149	295.00	11.614	155.50	6.122	154.0	6.062	
25	23	420.9/825-823	161	295.00	11.614	155.50	6.122	166.0	6.535	
	24	420.9/825-824	161	295.00	11.614	155.50	6.122	166.0	6.535	
26	24	420.9/826-824	173	300.00	11.811	155.50	6.122	178.0	7.007	
	25	420.9/826-825	173	300.00	11.811	155.50	6.122	178.0	7.007	
27	25	420.9/827-825	185	300.00	11.811	155.50	6.122	190.0	7.480	

For explanation of parameters see page 1

Adaptors for converting from external to internal tube threads

(Available on request)

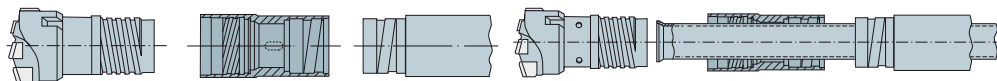
Diameter range 20.00-65.00 mm (.787-2.559 inch)

420.9S/188-xx - STS 800.20

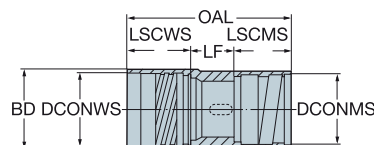
420.9S/173-xx - Ejector 424.6, 800.24

420.9S/188-xx - STS 800.20

420.9S/173-xx - Ejector 424.6, 800.24



Adaptors are delivered with one-start square thread, the Heller-thread, in one end and an internal four-start square thread, the E-thread, in the other end.



Diameter range, mm, inch		Ordering code	Dimensions, mm, inch						
DCMin	DC Max		Ejector thread		DCON _{MS}	BTA-thread		OAL	LF
		DCON _{WS}	LSC _{WS}	LSC _{MS}		BD			
Ejector - 424.6, 800.24									
20.00	21.80	420.9S/173-1	18.0	30.0	16.5	25	19.5	78	23
.787	.858		.709	1.181	.650	.984	.768	3.071	.906
21.81	24.10	420.9S/173-2	19.5	30.0	19.0	25	21.5	78	23
.859	.949		.768	1.181	.748	.984	.846	3.071	.906
24.11	26.40	420.9S/173-3	21.0	30.0	20.0	25	23.5	78	23
.949	1.039		.827	1.181	.787	.984	.925	3.071	.906
26.41	28.70	420.9S/173-4	23.5	33.0	22.0	25	26	84	26
1.040	1.130		.925	1.299	.866	.984	1.024	3.307	1.024
28.71	31.00	420.9S/173-5	25.5	33.0	24.0	25	28	84	26
1.130	1.220		1.004	1.299	.945	.984	1.102	3.307	1.024
31.01	33.30	420.9S/173-6	28.0	33.0	26.0	25	30.5	84	26
1.221	1.311		1.102	1.299	1.024	.984	1.201	3.307	1.024
33.31	36.20	420.9S/173-7	30.0	40.0	27.0	40	33	108	28
1.311	1.425		1.181	1.575	1.063	1.575	1.299	4.252	1.102
36.21	39.60	420.9S/173-8	33.0	40.0	30.0	40	35.5	108	28
1.426	1.559		1.299	1.575	1.181	1.575	1.398	4.252	1.102
39.61	43.00	420.9S/173-9	36.0	40.0	33.0	40	39	108	28
1.559	1.693		1.417	1.575	1.299	1.575	1.535	4.252	1.102
43.01	47.00	420.9S/173-10	39.0	40.0	37.0	40	42	108	28
1.693	1.850		1.535	1.575	1.457	1.575	1.654	4.252	1.102
47.01	51.70	420.9S/173-11	43.0	44.0	41.0	40	46	114	30
1.851	2.035		1.693	1.732	1.614	1.575	1.811	4.488	1.181
51.71	56.20	420.9S/173-12	47.0	44.0	44.0	40	51	114	30
2.036	2.213		1.850	1.732	1.732	1.575	2.008	4.488	1.181
56.21	65.00	420.9S/173-13	51.0	44.0	49.0	40	55	114	30
2.213	2.559		2.008	1.732	1.929	1.575	2.165	4.488	1.181
STS - 800.20									
20.00	21.80	420.9S/188-1	16.0	27.5	16.5	25	18.8	75	22.5
.787	.858		.630	1.083	.650	.984	.740	2.953	.886
21.81	24.10	420.9S/188-2	18.0	30.0	19.0	25	21	78	23
.859	.949		.709	1.181	.748	.984	.827	3.071	.906
24.11	26.40	420.9S/188-3	19.5	30.0	20.0	25	22.5	78	23
.949	1.039		.768	1.181	.787	.984	.886	3.071	.906
26.41	28.70	420.9S/188-4	21.0	30.0	22.0	25	24.6	78	23
1.040	1.130		.827	1.181	.866	.984	.968	3.071	.906
28.71	31.00	420.9S/188-5	23.5	33.0	24.0	25	26.7	84	26
1.130	1.220		.925	1.299	.945	.984	1.051	3.307	1.024
31.01	33.30	420.9S/188-6	25.5	33.0	26.0	25	28.8	84	26
1.221	1.311		1.004	1.299	1.024	.984	1.134	3.307	1.024
33.31	36.20	420.9S/188-7	28.0	33.0	27.0	40	31	108	35
1.311	1.425		1.102	1.299	1.063	1.575	1.220	4.252	1.378
36.21	39.60	420.9S/188-8	30.0	40.0	30.0	40	33.8	108	28
1.426	1.559		1.181	1.575	1.181	1.575	1.331	4.252	1.102
39.61	43.00	420.9S/188-9	33.0	40.0	33.0	40	36.8	108	28
1.559	1.693		1.299	1.575	1.299	1.575	1.449	4.252	1.102
43.01	47.00	420.9S/188-10	36.0	40.0	37.0	40	40.6	108	28
1.693	1.850		1.417	1.575	1.457	1.575	1.598	4.252	1.102
47.01	51.70	420.9S/188-11	39.0	40.0	41.0	40	44.4	108	28
1.851	2.035		1.535	1.575	1.614	1.575	1.748	4.252	1.102
51.71	56.20	420.9S/188-12	43.0	44.0	44.0	40	48.6	114	30
2.036	2.213		1.693	1.732	1.732	1.575	1.913	4.488	1.181
56.21	65.00	420.9S/188-13	47.0	44.0	49.0	40	53	114	30
2.213	2.559		1.850	1.732	1.929	1.575	2.087	4.488	1.181

Note! Adaptors for cross hole drilling are available on request.

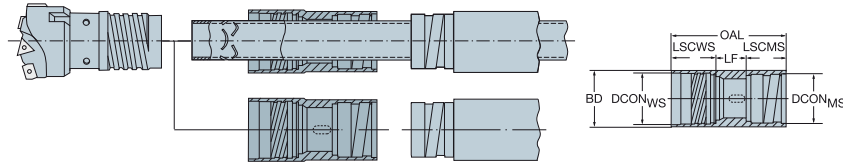
Ordering example: 2 pieces 420.9S/173-1

Adaptors for converting from external to internal tube threads

(Available on request)

Diameter range 65.00-195.90 mm (2.559-7.713 inch)

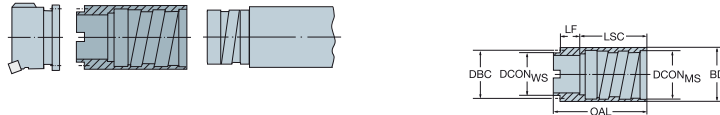
420.9S/344-xx - Ejector T-Max 424.10, STS T-Max 424.10



Adaptors for drill diameters up to 195.9 mm (7.713 inch) are delivered with one-start square thread, the Heller-thread, in one end and an internal four-start square thread, the E-thread, in the other end.

Diameter range 196.00-363.90 mm (7.717-14.327 inch)

420.9S/348-xx - STS T-Max special drilling and counterboring heads



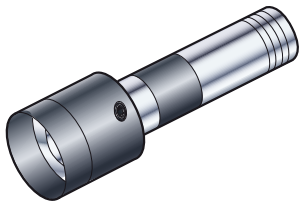
Adaptors for drill diameters >196 mm (7.717 inch) are delivered with one-start square thread in one end and locations for flange mounting in the other end.

Diameter range, mm, inch		Ordering code	Dimensions, mm, inch							Diameter range, mm, inch	Ordering code	Dimensions, mm, inch																	
DC Min	DC Max		Ejector thread			BTA-thread						DC Min	DC Max	Ejector thread	BTA-thread														
		DCON _{WS}	LSC _{WS}	DCON _{MS}	LSC _{MS}	BD	OAL	LF	DCON _{WS}	DCON _{MS}	LSC				BD	OAL	LF												
STS / Ejector - T-Max 420.10															STS - T-Max special drilling and counterboring heads														
65.00	66.90	420.9S/344-14	52.0	75.0	53.0	40	56	135	45	196.00	207.90	420.9S/348-27	172.0	187.0	85.0	190.0	130	45	196.00	207.90	420.9S/348-27	172.0	187.0	85.0	190.0	130	45		
2.559	2.634		2.047	2.953	2.087	1.575	2.205	5.315	1.772	7.717	8.185		6.772	7.362	3.346	7.480	5.118	1.772	7.717	8.185		6.772	7.362	3.346	7.480	5.118	1.772		
67.00	72.90	420.9S/344-15	58.0	75.0	59.0	40	62	135	45	208.00	219.90	420.9S/348-28	184.0	199.0	85.0	202.0	130	45	208.00	219.90	420.9S/348-28	184.0	199.0	85.0	202.0	130	45		
2.638	2.870		2.284	2.953	2.323	1.575	2.441	5.315	1.772	8.189	8.657		7.244	7.835	3.346	7.953	5.118	1.772	8.189	8.657		7.244	7.835	3.346	7.953	5.118	1.772		
73.00	79.90	420.9S/344-16	63.0	75.0	65.0	70	68	165	45	220.00	231.90	420.9S/348-29	196.0	211.0	85.0	214.0	130	45	220.00	231.90	420.9S/348-29	196.0	211.0	85.0	214.0	130	45		
2.874	3.146		2.480	2.953	2.559	2.756	2.677	6.496	1.772	8.661	9.130		7.717	8.307	3.346	8.425	5.118	1.772	8.661	9.130		7.717	8.307	3.346	8.425	5.118	1.772		
80.00	86.90	420.9S/344-17	70.0	97.0	71.0	70	75	190	45	232.00	243.90	420.9S/348-30	208.0	223.0	85.0	226.0	130	45	232.00	243.90	420.9S/348-30	208.0	223.0	85.0	226.0	130	45		
3.150	3.421		2.756	3.819	2.795	2.756	2.953	7.480	1.772	9.134	9.602		8.189	8.780	3.346	8.898	5.118	1.772	9.134	9.602		8.189	8.780	3.346	8.898	5.118	1.772		
87.00	99.90	420.9S/344-18	77.0	97.0	79.0	70	82	190	45	244.00	255.90	420.9S/348-31	220.0	235.0	85.0	238.0	130	45	244.00	255.90	420.9S/348-31	220.0	235.0	85.0	238.0	130	45		
3.425	3.933		3.032	3.819	3.110	2.756	3.228	7.480	1.772	9.606	10.075		8.661	9.252	3.346	9.370	5.118	1.772	9.606	10.075		8.661	9.252	3.346	9.370	5.118	1.772		
100.00	111.90	420.9S/344-19	89.0	97.0	90.0	70	94	190	45	256.00	267.90	420.9S/348-32	232.0	247.0	120.0	250.0	165	45	256.00	267.90	420.9S/348-32	232.0	247.0	120.0	250.0	165	45		
3.937	4.406		3.504	3.819	3.543	2.756	3.701	7.480	1.772	10.079	10.547		9.134	9.724	4.724	9.843	6.496	1.772	10.079	10.547		9.134	9.724	4.724	9.843	6.496	1.772		
112.00	123.90	420.9S/344-20	101.0	118.0	102.0	70	106	215	45	268.00	279.90	420.9S/348-33	244.0	259.0	120.0	262.0	165	45	268.00	279.90	420.9S/348-33	244.0	259.0	120.0	262.0	165	45		
4.409	4.878		3.976	4.646	4.016	2.756	4.173	8.465	1.772	10.551	11.020		9.606	10.197	4.724	10.315	6.496	1.772	10.551	11.020		9.606	10.197	4.724	10.315	6.496	1.772		
124.00	135.90	420.9S/344-21	113.0	118.0	114.0	70	118	215	45	280.00	291.90	420.9S/348-34	256.0	271.0	120.0	274.0	165	45	280.00	291.90	420.9S/348-34	256.0	271.0	120.0	274.0	165	45		
4.882	5.350		4.449	4.646	4.488	2.756	4.646	8.465	1.772	11.024	11.492		10.079	10.669	4.724	10.787	6.496	1.772	11.024	11.492		10.079	10.669	4.724	10.787	6.496	1.772		
136.00	147.90	420.9S/344-22	125.0	118.0	126.0	70	130	215	45	292.00	303.90	420.9S/348-35	268.0	283.0	120.0	286.0	165	45	292.00	303.90	420.9S/348-35	268.0	283.0	120.0	286.0	165	45		
5.354	5.823		4.921	4.646	4.961	2.756	5.118	8.465	1.772	11.496	11.965		10.551	11.142	4.724	11.260	6.496	1.772	11.496	11.965		10.551	11.142	4.724	11.260	6.496	1.772		
148.00	159.90	420.9S/344-23	137.0	139.0	139.0	70	142	240	45	304.00	315.90	420.9S/348-36	280.0	295.0	120.0	298.0	165	45	304.00	315.90	420.9S/348-36	280.0	295.0	120.0	298.0	165	45		
5.827	6.295		5.394	5.472	5.472	2.756	5.591	9.449	1.772	11.969	12.437		11.024	11.614	4.724	11.732	6.496	1.772	11.969	12.437		11.024	11.614	4.724	11.732	6.496	1.772		
160.00	171.90	420.9S/344-24	149.0	139.0	151.0	85	154	255	45	316.00	327.90	420.9S/348-37	292.0	307.0	120.0	310.0	165	45	316.00	327.90	420.9S/348-37	292.0	307.0	120.0	310.0	165	45		
6.299	6.768		5.866	5.472	5.945	3.346	6.063	10.039	1.772	12.441	12.909		11.496	12.087	4.724	12.205	6.496	1.772	12.441	12.909		11.496	12.087	4.724	12.205	6.496	1.772		
172.00	183.90	420.9S/344-25	161.0	139.0	163.0	85	166	255	45	328.00	339.90	420.9S/348-38	304.0	319.0	120.0	322.0	165	45	328.00	339.90	420.9S/348-38	304.0	319.0	120.0	322.0	165	45		
6.772	7.240		6.339	5.472	6.417	3.346	6.535	10.039	1.772	12.913	13.382		11.969	12.559	4.724	12.677	6.496	1.772	12.913	13.382		11.969	12.559	4.724	12.677	6.496	1.772		
184.00	195.90	420.9S/344-26	173.0	144.0	175.0	85	178	265	45	340.00	351.90	420.9S/348-39	316.0	331.0	120.0	334.0	165	45	340.00	351.90	420.9S/348-39	316.0	331.0	120.0	334.0	165	45		
7.244	7.713		6.811	5.669	6.890	3.346	7.008	10.433	1.772	13.386	13.854		12.441	13.031	4.724	13.150	6.496	1.772	13.386	13.854		12.441	13.031	4.724	13.150	6.496	1.772		
										352.00	363.90	420.9S/348-40	328.0	343.0	120.0	346.0	165	45	352.00	363.90	420.9S/348-40	328.0	343.0	120.0	346.0	165	45		
										13.858	14.327		12.913	13.504	4.724	13.622	6.496	1.772	13.858	14.327		12.913	13.504	4.724	13.622	6.496	1.772		

Note! Adaptors for cross hole drilling are available on request.

Ordering example: 2 pieces 420.9S/344-14

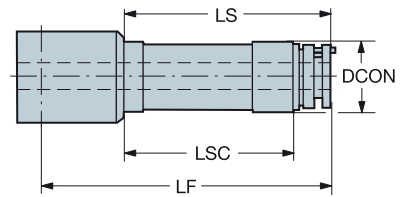
STS oil pressure heads



Diameter range, mm: 15.60-399.90

Temperature in oil pressure head, °C: 50-60

Max spindle speed, rev/min = n
 Max coolant pressure, Mpa, psi = p
 Max clamping force, N, lbs/clamping = F
 Permitted leakage, l/min, gal/min = q



For stationary workpieces

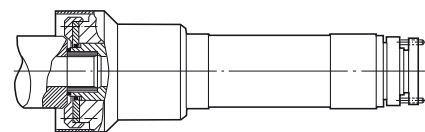
Diameter range		Ordering code	Dimensions, mm, inch				Specifications, metric, inch			
DC Min	DC Max		LF	LS	LSC	DCON	n	p	F	q
With clamping cones										
15.60	43.00	420.9S/505	466	306	250	100	1800	6.0	5000	3
.614	1.693		18.346	12.047	9.843	3.937	1800	850	2280	1.0
43.01	79.90	420.9S/506	531	331	250	140	1200	3.0	7500	5
1.693	3.146		20.906	13.031	9.843	5.512	1200	435	3409	1.5
80.00	159.90	420.9S/507	623	373	250	230	800	1.5	8500	7
3.150	6.295		24.528	14.685	9.843	9.055	800	210	3900	2.0
160.00	255.90	420.9S/508	715	395	300	355	350	1.2	10000	8
6.299	10.075		28.150	15.551	11.811	13.976	350	175	4600	2.0
256.00	399.90	420.9S/509	905	505	430	490	105	0.5	15000	12
10.079	15.744		35.630	19.882	16.929	19.291	105	70	6800	3.3
For face sealing only without clamping cones										
15.60	43.00	420.9S/510	413	296	250	100	1800	6.0	5000	3
.614	1.693		16.260	11.654	9.843	3.937	1800	850	2280	1.0
43.01	79.90	420.9S/511	461	331	250	140	1200	3.0	7500	5
1.693	3.146		18.150	13.031	9.843	5.512	1200	435	3409	1.5
80.00	159.90	420.9S/512	526	373	250	230	800	1.5	8500	7
3.150	6.295		20.709	14.685	9.843	9.055	800	210	3900	2.0
160.00	255.90	420.9S/513	573	395	300	355	350	1.2	10000	8
6.299	10.075		22.559	15.551	11.811	13.976	350	175	4600	2.0
256.00	399.90	420.9S/514	715	505	430	490	105	0.5	15000	12
10.079	15.744		28.150	19.882	16.929	19.291	105	70	6800	3.3

When ordering STS oil pressure heads the following must be stated:

- Ordering code for oil pressure head
- Drill diameter, D_c
- Drill tube diameter
- Workpiece outer diameter

For more information and advice, please contact your nearest Sandvik representative.

Type 1



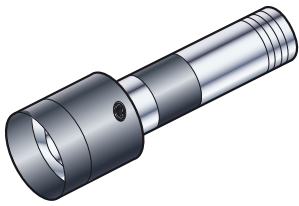
Type 1 would typically be used where the component cannot rotate but is symmetrical and can be machined to suit the conical clamping rings.

For deep hole machining with the Single Tube System, Sandvik Coromant offers a range of oil pressure heads for both rotating and non-rotating workpieces. The oil pressure head serves four major functions:

- Introduces coolant to the cutting tool.
- Seals against the face of the workpiece.
- Holds the drill bushing.
- Seals the external surface of the drill tube.

Oil pressure heads act as clamping devices and also serve to self-centre the component.

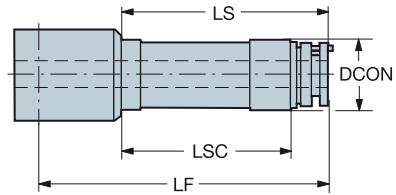
STS oil pressure heads



Diameter range, mm: 15.60-399.90

Temperature in oil pressure head, °C: 50-60

Max spindle speed, rev/min = n
 Max coolant pressure, Mpa, psi = p
 Max clamping force, N, lbs/clamping = F
 Permitted leakage, l/min, gal/min = q



For rotating workpieces

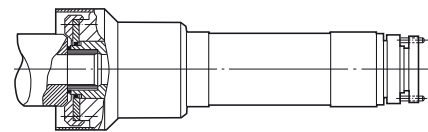
Diameter range		Ordering code	Dimensions, mm, inch				Specifications, metric, inch			
DC Min	DC Max		LF	LS	LSC	DCON	n	p	F	q
With clamping cones										
15.60	43.00	420.9S/500	466	306	250	100	1800	6.0	5000	3
.614	1.693		18.346	12.047	9.843	3.937	1800	850	5000	1.0
43.01	79.90	420.9S/501	531	331	250	140	1200	2.0	7500	5
1.693	3.146		20.906	13.031	9.843	5.512	1200	290	7500	1.5
80.00	159.90	420.9S/502	623	373	250	230	800	1.5	8500	7
3.150	6.295		24.528	14.685	9.843	9.055	800	210	8500	2.0
160.00	255.90	420.9S/503	715	395	300	355	350	1.2	10000	8
6.299	10.075		28.150	15.551	11.811	13.976	350	175	10000	2.0
256.00	399.90	420.9S/504	905	505	430	490	105	0.5	15000	12
10.079	15.744		35.630	19.882	16.929	19.291	105	70	15000	3.3
For face sealing only without clamping cones										
15.60	43.00	420.9S/515	466	306	250	100	1800	6.0	5000	3
.614	1.693		18.346	12.047	9.843	3.937	1800	850	5000	1.0
43.01	79.90	420.9S/516	527	331	250	140	1200	2.0	7500	5
1.693	3.146		20.748	13.031	9.843	5.512	1200	290	7500	1.5
80.00	159.90	420.9S/517	623	385	250	230	800	1.5	8500	7
3.150	6.295		24.528	15.157	9.843	9.055	800	210	8500	2.0
160.00	255.90	420.9S/518	715	412	300	355	350	1.2	10000	8
6.299	10.075		28.150	16.220	11.811	13.976	350	175	10000	2.0
256.00	399.90	420.9S/519	905	520	430	490	105	0.5	15000	12
10.079	15.744		35.630	20.472	16.929	19.291	105	70	15000	3.3

When ordering STS oil pressure heads the following must be stated:

- Ordering code for oil pressure head
- Drill diameter, D_c
- Drill tube diameter
- Workpiece outer diameter

For more information and advice, please contact your nearest Sandvik representative.

Type 1



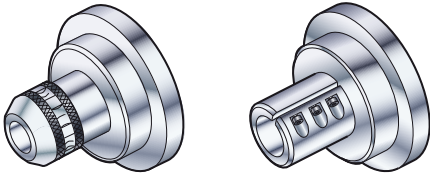
Type 1 would typically be used where the component cannot rotate but is symmetrical and can be machined to suit the conical clamping rings.

For deep hole machining with the Single Tube System, Sandvik Coromant offers a range of oil pressure heads for both rotating and non-rotating workpieces. The oil pressure head serves four major functions:

- Introduces coolant to the cutting tool.
- Seals against the face of the workpiece.
- Holds the drill bushing.
- Seals the external surface of the drill tube.

Oil pressure heads act as clamping devices and also serve to self-centre the component.

STS connecting chucks



Connecting chucks are manufactured to customers request and designed to a specific STS drill tube. Chucks are available in a variety of spindle nose styles and sizes. Suitable for rotating as well as stationary tools. Bushes must be manufactured to suit each drill tube diameter used.

Diameter range, mm, inch				Ordering code	Drill tube diameter, millimeter, inch (mm, in.)			
DC Min	DC Max	DC Min"	DC Max"		BD1 min	BD1" min	BD1 max	BD1" max
15.60	65.00	.614	2.559	Collet style 420.9S/524	11.0	.433	56.0	2.205
51.70	123.90	2.035	4.878	Split bushing style 420.9S/520	47.0	1.850	106.0	4.173
124.00	183.90	4.882	7.240	420.9S/521	118.0	4.646	166.0	6.535
184.00	255.90	7.244	10.075	420.9S/522	178.0	7.008	238.0	9.370
256.00	399.90	10.079	15.744	420.9S/523	250.0	9.842	382.0	15.039

When ordering STS oil pressure heads the following must be stated:

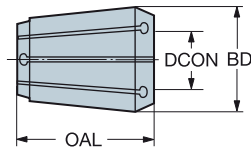
- Ordering code for connecting chuck.
- Information about spindle nose design.
- Drill tube diameter.

For more information and advice, please contact your nearest Sandvik representative.

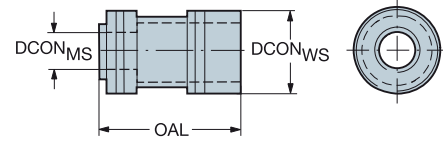
Collets and sealing sleeves for STS



Collets



Sealing sleeves



Collets

Ordering code	Tube range	DCON		OAL		BD	
		mm	inch	mm	inch	mm	inch
420.2-420-94	94	11	.433	105	4.134	84.5	3.327
420.2-420-95	95	12	.472	105	4.134	84.5	3.327
420.2-420-96	96	13	.512	105	4.134	84.5	3.327
420.2-420-97	97	14	.551	105	4.134	84.5	3.327
420.2-420-98	98	15	.591	105	4.134	84.5	3.327
420.2-420-99	99	16	.630	105	4.134	84.5	3.327
420.2-420-00	00	17	.669	105	4.134	84.5	3.327
420.2-420-01	01	18	.709	105	4.134	84.5	3.327
420.2-420-02	02	20	.787	105	4.134	84.5	3.327
420.2-420-03	03	22	.866	105	4.134	84.5	3.327
420.2-420-04	04	24	.945	105	4.134	84.5	3.327
420.2-420-05	05	26	1.024	105	4.134	84.5	3.327
420.2-420-06	06	28	1.102	105	4.134	84.5	3.327
420.2-420-07	07	30	1.181	105	4.134	84.5	3.327
420.2-420-08	08	33	1.299	105	4.134	84.5	3.327
420.2-420-09	09	36	1.417	105	4.134	84.5	3.327
420.2-420-10	10	39	1.535	105	4.134	84.5	3.327
420.2-420-11	11	43	1.693	105	4.134	84.5	3.327
420.2-420-12	12	47	1.850	105	4.134	84.5	3.327
420.2-420-13	13	51	2.008	105	4.134	84.5	3.327
420.2-420-13E	13E	56	2.205	105	4.134	84.5	3.327

Sealing sleeves

Ordering code	Tube range	DCON _{MS}		DCON _{WS}		OAL		Spare parts	
		mm	inch	mm	inch	mm	inch	Outer O-ring	Inner O-ring
420.2-430-94	94	11	.433	70	2.756	65	2.559	424.2-445-50	3671 010-017
420.2-430-95	95	12	.472	70	2.756	65	2.559	"	3671 010-018
420.2-430-96	96	13	.512	70	2.756	65	2.559	"	3671 010-019
420.2-430-97	97	14	.551	70	2.756	65	2.559	"	3671 010-020
420.2-430-98	98	15	.591	70	2.756	65	2.559	"	3671 010-021
420.2-430-99	99	16	.630	70	2.756	65	2.559	"	3671 010-022
420.2-430-00	00	17	.669	70	2.756	65	2.559	"	3671 010-023
420.2-430-01	01	18	.709	70	2.756	65	2.559	"	3671 010-024
420.2-430-02	02	20	.787	70	2.756	65	2.559	"	3671 010-025
420.2-430-03	03	22	.866	70	2.756	65	2.559	"	3671 020 212
420.2-430-04	04	24	.945	70	2.756	65	2.559	"	3671 020 232
420.2-430-05	05	26	1.024	70	2.756	65	2.559	"	3671 020 252
420.2-430-06	06	28	1.102	70	2.756	65	2.559	"	3671 020 272
420.2-430-07	07	30	1.181	70	2.756	65	2.559	"	3671 010-028
420.2-430-08	08	33	1.299	70	2.756	65	2.559	"	3671 010-030
420.2-430-09	09	36	1.417	70	2.756	65	2.559	"	3671 020 352
420.2-430-10	10	39	1.535	70	2.756	65	2.559	"	3671 020 382
420.2-430-11	11	43	1.693	70	2.756	65	2.559	"	3671 020 422
420.2-430-12	12	47	1.850	70	2.756	65	2.559	"	3671 020 422
420.2-430-13	13	51	2.008	70	2.756	65	2.559	"	3671 020 502
420.2-430-13E	13E	56	2.205	70	2.756	65	2.559	"	3671 020 552

For explanation of parameters see page 1

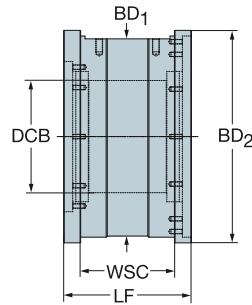
Collets, bushings and sealing sleeves for STS



Diameter range, mm (inch)	Drill tube	Tube diameter, mm (inch)	Collet	Split bushing	Collet sealing sleeve	Split cap sealing sleeve
51.71-56.20 (2.036-2.212)	420.5-812	47 (1.850)	000-840100A46.11	342-840100A57.5	000-840110A12.16	342-840100A57-25
56.21-65.00 (2.213-2.559)	420.5-813	51 (2.008)	424.2-420-12	342-840100A57.6	000-840110A12.17	342-840100A57-26
60.61-65.00 (2.386-2.559)	420.5-813E	56 (2.205)	000-840100A46.12		000-840110A12.18	
65.00-69.99 (2.559-2.756)	420.5-814	56 (2.205)		342-840100A57.7		342-840100A57-27
69.85-71.45 (2.750-2.813)	420.5-815	62 (2.441)		342-840100A57.8		342-840100A57-28
75.00-76.20 (2.953-3.000)	420.5-816	68 (2.677)		342-840100A57.9		342-840100A57-29
80.00-85.00 (3.150-3.346)	420.5-817	75 (2.953)		342-840100A57.10		342-840100A57-30
88.90-92.25 (3.500-3.632)	420.5-818	82 (3.228)		342-840100A57.11		342-840100A57-31
100.00-112.00 (3.937-4.409)	420.5-819	94 (3.701)		342-840100A57.12		342-840100A57-32
112.00-123.90 (4.409-4.878)	420.5-820	106 (4.173)		Not required		Not required
124.00-135.90 (4.882-5.350)	420.5-821	118 (4.646)		342-840100A58-5		342-840100A58-25
136.00-147.90 (5.354-5.823)	420.5-822	130 (5.118)		342-840100A58-6		342-840100A58-26
150.00-159.90 (5.905-6.295)	420.5-823	142 (5.591)		342-840100A58-7		342-840100A58-27
160.00-171.90 (6.299-6.768)	420.5-824	154 (6.063)		342-840100A58-8		342-840100A58-28
172.00-183.90 (6.772-7.240)	420.5-825	166 (6.535)		Not required		Not required
183.40-195.90 (7.220-7.713)	420.5-826	178 (7.008)		342-840100A71-10		342-840100A71-20
196.00-207.90 (7.716-8.185)	420.5-827	190 (7.480)		342-840100A71-11		342-840100A71-21
208.00-219.90 (8.189-8.657)	420.5-828	202 (7.953)		342-840100A71-12		342-840100A71-22
219.90-231.90 (8.657-9.130)	420.5-829	214 (8.425)		342-840100A71-13		342-840100A71-23
232.00-243.90 (9.134-9.602)	420.5-830	226 (8.898)		342-840100A71-14		342-840100A71-24
243.90-255.90 (9.602-10.075)	420.5-831	238 (9.370)		Not required		Not required
256.00-267.80 (10.079-10.543)	420.5-832	250 (9.842)		342-840100A72-10		342-840100A72-30
267.90-279.90 (10.547-11.020)	420.5-833	262 (10.315)		342-840100A72-11		342-840100A72-31
288.00-291.90 (11.339-11.492)	420.5-834	274 (10.787)		342-840100A72-12		342-840100A72-32
292.00-303.90 (11.496-11.965)	420.5-835	286 (11.260)		342-840100A72-13		342-840100A72-33
304.00-315.90 (11.968-12.437)	420.5-836	298 (11.732)		342-840100A72-14		342-840100A72-34
316.00-327.90 (12.441-12.909)	420.5-837	310 (12.205)		342-840100A72-15		342-840100A72-35
		322 (12.677)		342-840100A72-16		342-840100A72-36
		334 (13.150)		342-840100A72-17		342-840100A72-37
		346 (13.622)		342-840100A72-18		342-840100A72-38
		358 (14.094)		342-840100A72-19		342-840100A72-39
		370 (14.567)		342-840100A72-20		342-840100A72-40
		382 (15.039)				

Vibration dampers

Automatic operation



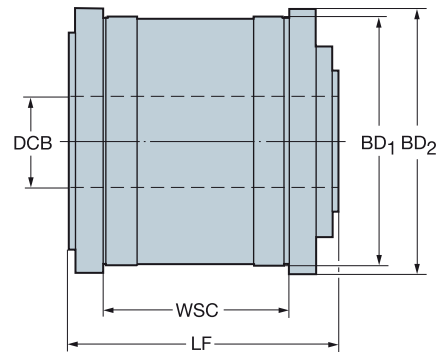
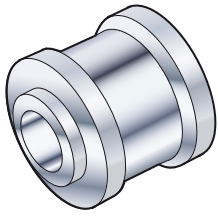
DC range		CZC _{MS}	Tube		Ordering code	Dimensions, mm, inch									
mm	inch		mm	inch		DCB	DCB"	BD1	BD1"	BD2	BD2"	LF	LF"	WSC	WSC"
15.60 - 16.70	.614 - .657	97	14	.551	NVD 9713-01-97	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
16.71 - 17.70	.658 - .697	98	15	.591	NVD 9713-01-98	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
17.71 - 18.90	.697 - .744	99	16	.630	NVD 9713-01-99	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
18.91 - 20.00	.744 - .787	00	17	.669	NVD 9713-01-00	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
20.00 - 21.80	.787 - .858	01	18	.709	NVD 9713-01-01	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
21.81 - 24.10	.859 - .859	02	20	.787	NVD 9713-01-02	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
24.11 - 26.40	.949 - 1.039	03	22	.866	NVD 9713-01-03	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
26.41 - 28.70	1.040 - 1.130	04	24	.945	NVD 9713-01-04	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
28.71 - 31.00	1.130 - 1.221	05	26	1.024	NVD 9713-01-05	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
31.01 - 33.30	1.221 - 1.311	06	28	1.102	NVD 9713-01-06	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
33.31 - 36.20	1.311 - 1.425	07	30	1.181	NVD 9713-01-07	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
36.21 - 39.60	1.426 - 1.559	08	33	1.299	NVD 9713-01-08	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
39.61 - 43.00	1.559 - 1.693	09	36	1.417	NVD 9713-01-09	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
43.01 - 47.00	1.693 - 1.850	10	39	1.535	NVD 9713-01-10	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
47.01 - 51.70	1.851 - 2.035	11	43	1.693	NVD 9713-01-11	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
51.71 - 56.20	2.036 - 2.213	12	47	1.850	NVD 9713-01-12	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
56.21 - 65.00	2.213 - 2.559	13	51	2.008	NVD 9713-01-13	156	6.142	355	13.976	375	14.764	225.55	8.880	165.55	6.518
47.01 - 51.70	1.851 - 2.035	11	43	1.693	NVD 1117-01-11	198	7.795	355	13.976	375	14.764	225.55	8.880	165.55	6.518
51.71 - 56.20	2.036 - 2.213	12	47	1.850	NVD 1117-01-12	198	7.795	355	13.976	375	14.764	225.55	8.880	165.55	6.518
56.21 - 65.00	2.213 - 2.559	13	51	2.008	NVD 1117-01-13	198	7.795	355	13.976	375	14.764	225.55	8.880	165.55	6.518
65.00 - 66.90	2.559 - 2.634	14	56	2.205	NVD 1117-01-14	198	7.795	355	13.976	375	14.764	225.55	8.880	165.55	6.518
67.00 - 72.90	2.638 - 2.870	15	62	2.441	NVD 1117-01-15	198	7.795	355	13.976	375	14.764	225.55	8.880	165.55	6.518
73.00 - 79.90	2.874 - 3.146	16	68	2.677	NVD 1117-01-16	198	7.795	355	13.976	375	14.764	225.55	8.880	165.55	6.518
80.00 - 86.90	3.145 - 3.421	17	75	2.953	NVD 1117-01-17	198	7.795	355	13.976	375	14.764	225.55	8.880	165.55	6.518
73.00 - 79.90	2.874 - 3.146	16	68	2.677	NVD 1623-01-16	276	10.866	355	13.976	375	14.764	225.60	8.882	165.55	6.518
80.00 - 86.90	3.145 - 3.421	17	75	2.953	NVD 1623-01-17	276	10.866	355	13.976	375	14.764	225.60	8.882	165.55	6.518
87.00 - 99.90	3.425 - 3.933	18	82	3.228	NVD 1623-01-18	276	10.866	355	13.976	375	14.764	225.60	8.882	165.55	6.518
100.00 - 111.90	3.937 - 4.406	19	94	3.701	NVD 1623-01-19	276	10.866	355	13.976	375	14.764	225.60	8.882	165.55	6.518
112.00 - 123.90	4.409 - 4.878	20	106	4.173	NVD 1623-01-20	276	10.866	355	13.976	375	14.764	225.60	8.882	165.55	6.518
124.00 - 135.90	4.882 - 5.350	21	118	4.646	NVD 1623-01-21	276	10.866	355	13.976	375	14.764	225.60	8.882	165.55	6.518
136.00 - 147.90	5.354 - 5.823	22	130	5.118	NVD 1623-01-22	276	10.866	355	13.976	375	14.764	225.60	8.882	165.55	6.518
148.00 - 159.90	5.827 - 6.295	23	142	5.591	NVD 1623-01-23	276	10.866	355	13.976	375	14.764	225.60	8.882	165.55	6.518

To order a vibration damper for a drill with DC 70mm using a size 15 drill tube, order NVD-1117-01-15. The vibration damper is delivered with the dampening cone mounted.

For information on how to order vibration dampers with other body sizes, please contact your local Sandvik Coromant sales representative.

Vibration dampers

Manual operation



DC range		Tube			Ordering code	Dimensions, mm, inch								
mm	inch	CZC _{WS}	mm	inch		DCB	DCB"	BD1	BD1"	BD2	BD2"	LF	LF"	WSC
12.60 - 13.60	.496 - .535	94	11	.433	342-0937-94	11	.433	180	7.087	195	7.677	195	7.677	135
13.61 - 14.60	.536 - .575	95	12	.472	342-0937-95	12	.472	180	7.087	195	7.677	195	7.677	135
14.61 - 15.59	.575 - .614	96	13	.512	342-0937-96	13	.512	180	7.087	195	7.677	195	7.677	135
15.60 - 16.70	.614 - .657	97	14	.551	342-0937-97	14	.551	180	7.087	195	7.677	195	7.677	135
16.71 - 17.70	.658 - .697	98	15	.591	342-0937-98	15	.591	180	7.087	195	7.677	195	7.677	135
17.71 - 18.90	.697 - .744	99	16	.630	342-0937-99	16	.630	180	7.087	195	7.677	195	7.677	135
18.91 - 20.00	.744 - .787	00	17	.669	342-0937-00	17	.669	180	7.087	195	7.677	195	7.677	135
20.00 - 21.80	.787 - .858	01	18	.709	342-0937-01	18	.709	180	7.087	195	7.677	195	7.677	135
21.81 - 24.10	.859 - .859	02	20	.787	342-0937-02	20	.787	180	7.087	195	7.677	195	7.677	135
24.11 - 26.40	.949 - 1.039	03	22	.866	342-0937-03	22	.866	180	7.087	195	7.677	195	7.677	135
26.41 - 28.70	1.040 - 1.130	04	24	.945	342-0937-04	24	.945	180	7.087	195	7.677	195	7.677	135
28.71 - 31.00	1.130 - 1.221	05	26	1.024	342-0937-05	26	1.024	180	7.087	195	7.677	195	7.677	135
31.01 - 33.30	1.221 - 1.311	06	28	1.102	342-0937-06	28	1.102	180	7.087	195	7.677	195	7.677	135
33.31 - 36.20	1.311 - 1.425	07	30	1.181	342-0937-07	30	1.181	180	7.087	195	7.677	195	7.677	135
36.21 - 39.60	1.426 - 1.559	08	33	1.299	342-0937-08	33	1.299	180	7.087	195	7.677	195	7.677	135
39.61 - 43.00	1.559 - 1.693	09	36	1.417	342-0937-09	36	1.417	180	7.087	195	7.677	195	7.677	135
43.01 - 47.00	1.693 - 1.850	10	39	1.535	342-0937-10	39	1.535	180	7.087	195	7.677	195	7.677	135
47.01 - 51.70	1.851 - 2.035	11	43	1.693	342-0937-11	43	1.693	180	7.087	195	7.677	195	7.677	135
51.71 - 56.20	2.036 - 2.213	12	47	1.850	342-0937-12	47	1.850	180	7.087	195	7.677	195	7.677	135
56.21 - 65.00	2.213 - 2.559	13	51	2.008	342-0937-13	51	2.008	180	7.087	195	7.677	195	7.677	135
65.00 - 66.90	2.559 - 2.634	14	56	2.205	342-0937-14	56	2.205	180	7.087	195	7.677	195	7.677	135
67.00 - 72.90	2.638 - 2.870	15	62	2.441	342-0937-15	62	2.441	180	7.087	195	7.677	195	7.677	135
73.00 - 79.90	2.874 - 3.146	16	68	2.677	342-0937-16	68	2.677	180	7.087	195	7.677	195	7.677	135
80.00 - 86.90	3.145 - 3.421	17	75	2.953	342-0938-17	75	2.953	280	11.024	300	11.811	254	10.000	165
87.00 - 99.90	3.425 - 3.933	18	82	3.228	342-0938-18	82	3.228	280	11.024	300	11.811	254	10.000	165
100.00 - 111.90	3.937 - 4.406	19	94	3.701	342-0938-19	94	3.701	280	11.024	300	11.811	254	10.000	165
112.00 - 123.90	4.409 - 4.878	20	106	4.173	342-0938-20	106	4.173	280	11.024	300	11.811	254	10.000	165
124.00 - 135.90	4.882 - 5.350	21	118	4.646	342-0938-21	118	4.646	280	11.024	300	11.811	254	10.000	165
136.00 - 147.90	5.354 - 5.823	22	130	5.118	342-0938-22	130	5.118	280	11.024	300	11.811	254	10.000	165
148.00 - 159.90	5.827 - 6.295	23	142	5.591	342-0938-23	142	5.591	280	11.024	300	11.811	254	10.000	165
160.00 - 179.90	6.299 - 9.602	24	154	6.063	342-0939-24	154	6.063	355	13.976	375	14.764	286	11.260	165
170.00 - 189.90	6.693 - 7.476	25	166	6.535	342-0939-25	166	6.535	355	13.976	375	14.764	286	11.260	165
180.00 - 199.90	7.087 - 7.870	26	178	7.008	342-0939-26	178	7.008	355	13.976	375	14.764	286	11.260	165
190.00 - 224.90	7.480 - 8.854	27	190	7.480	342-0939-27	190	7.480	355	13.976	375	14.764	286	11.260	165
200.00 - 224.90	7.874 - 8.854	28	202	7.953	342-0939-28	202	7.953	355	13.976	375	14.764	286	11.260	165
200.00 - 249.90	7.874 - 9.839	29	214	8.425	342-0939-29	214	8.425	355	13.976	375	14.764	286	11.260	165
225.00 - 249.90	8.858 - 9.839	30	226	8.898	342-0939-30	226	8.898	355	13.976	375	14.764	286	11.260	165

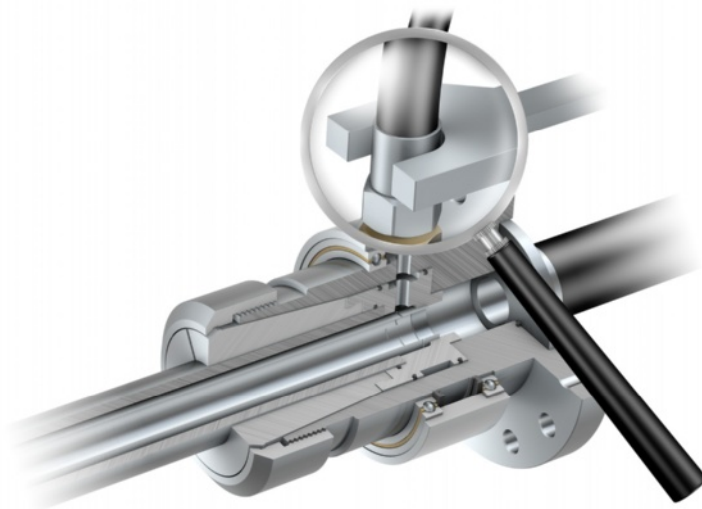
To order a vibration damper for a drill with DC 70mm, order 342-0937-15. The vibration damper is delivered with the dampening cone mounted. For additional dampening cones, see page 95

For information on how to order vibration dampers with other body sizes, please contact your local Sandvik Coromant sales representative.



WARNING

Apply a rotation stop on the connector to the frame of the machine tool before use

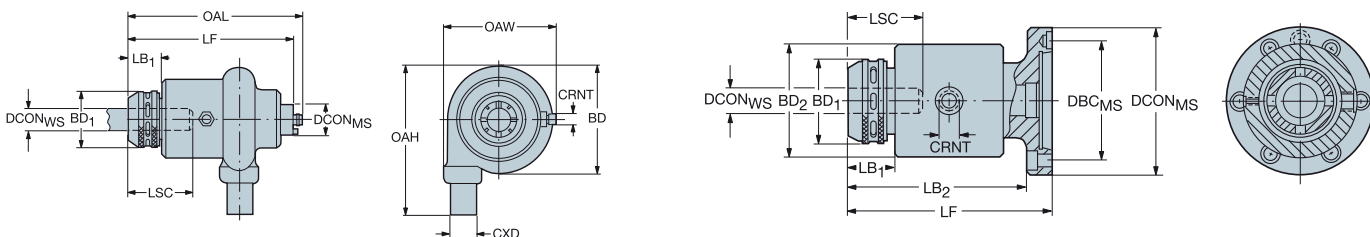


Rotating connectors

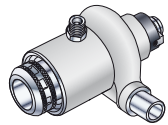
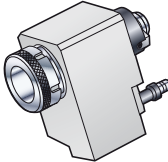
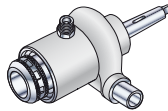
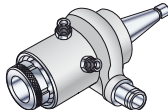
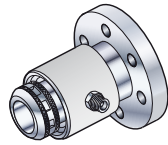
Diameter range 18.40-183.90 mm (.724-7.240 inch)

! WARNING

Apply a rotation stop on the connector to the frame of the machine tool before use



Please note: the leakage hole on the flange-mounted connectors must be kept open.

Type of connector	Diameter range, mm, inch		Ordering code	Dimensions, mm, inch											
	<i>D_c</i> min	<i>D_c</i> max		<i>dm_m</i>	BD ₁	BD ₂	LB ₁	LB ₂	CRNT	LF	DCON _{MS}	LSC	OAW	OAH	DBC _{MS}
	Varilock adapted for manual tool change														
	18.40	65.00	424.2-400M-V63	63	115		67		R ³ / ₄ "		55	120	215	290	
	.724	2.559		2.480	4.528		2.638				2.165	4.724	8.465	11.417	
	Varilock adapted connector for automatic tool change														
	18.40	43.00	For ordering information, see page 92.												
	.724	1.693													
	Morse taper														
	18.40	65.00	424.2-400M	115		67		R ³ / ₄ "							
	.724	2.559		4.528		2.638									
	ISO taper														
	65.00	123.90	424.2-402	164		61		R1"							
	2.559	4.878		6.457		2.402									
	Flange mounting														
	18.40	36.20	424.9S/231-1	85				R ³ / ₄ "	235	220				171.4	
	.724	1.425		3.346					9.055	8.661				6.748	
	18.40	65.00	424.9S/170-1	170				R ³ / ₄ "	285	220				171.4	
	.724	2.559		6.693					11.220	8.661				6.748	
	65.00	123.90	424.9S/224-1	164				R1"	285	220				235	
	2.559	4.878		6.457					11.220	8.661				9.055	
124.00	183.90	424.9S/245-1	244				R1 ¹ / ₄	400	290				235		
4.882	7.240		9.606					15.748	11.417				9.252		

¹⁾ Flange mounted, spindle nose type and size must be specified. Connectors are supplied with nut and spanner. Available on request.

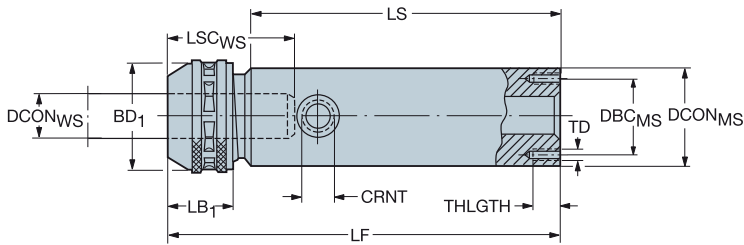
Ordering example: 1 piece 424.2-400M-V63

Non-rotating connectors

Diameter range 18.40-183.90 mm (.724-7.240 inch)

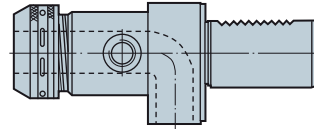
Cylindrical shank

Diameter 18.40-65.00 mm (.724-2.559 inch)

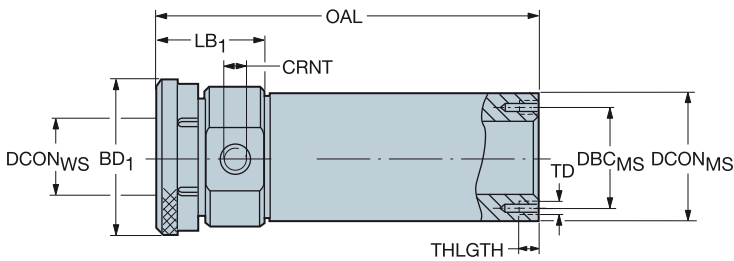


Example on connectors for NC lathes

Mounting specifications of turret lathe are required to design special connectors.



Diameter 65.00-183.90 mm (2.559-7.240 inch)



Type of shank	Diameter range, mm, inch		Shank DCON _{MS}	Ordering code, outer tube ¹⁾	Dimensions, mm, inch									
	DC Min	DC Max			BD ₁	OAL	THLGTH	TD	CRNT	DBC _{MS}	LS	LSC _{WS}	LB ₁	
	18.40	36.20	75	424.2-411	85	300	20	M8	R1/2"	60	278	120	50	
	.724	1.425	2.953		3.346	11.811	.787	M8	R1/2"	2.362	10.945	4.724	1.969	
	18.40	65.00	100	424.2-410	115	330	20	M8	R3/4"	80	308	137	50	
	.724	2.559	3.937		4.528	12.992	.787	M8	R3/4"	3.150	12.126	5.394	1.969	
	65.00	123.90	140	424.2-412	164	416	20	M8	R1"	120	360	180	46	
	2.559	4.878	5.512		6.457	16.378	.787	M8	R1"	4.724	14.173	7.087	1.811	
	124.00	183.90	230	424.2-413	244	456	20	M8	R1 1/4"	200	380	210	56	
	4.882	7.240	9.055		9.606	17.953	.787	M8	R1 1/4"	7.874	14.961	8.268	2.205	

Connectors are supplied with nut and spanner.

Ordering example: 1 piece 424.2-411

Mounting parts for rotating and non-rotating connectors

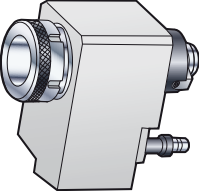
Diameter range 18.40-65.00 mm (.724-2.559 inch)

Diameter range Tube range	Mounting parts	Connectors			Connectors			
		Rotating				Non-rotating		
DC mm (inch)	Collet	Sealing sleeve	O-rings: Two outer and one inner.		Varilock adapted	Morse taper	Flange mounting ¹⁾	Cylindrical
			Outer	Inner				
18.40-20.00 (.724-.787)	00	424.2-421-00 424.2-420-00	424.2-431-00 424.2-430-00	3671 010-033 3671 010-137	3671 010-024 3671 010-024	424.2-400M-V63	424.2-400M 424.2-401M 424.9S/231-1 424.9S/170-1	424.2-411 424.2-410
20.01-21.80 (.788-.858)	01	424.2-421-01 424.2-420-01	424.2-431-01 424.2-430-01	3671 010-033 3671 010-137	424.2-445-01 424.2-445-01	424.2-400M-V63	424.2-400M 424.2-401M 424.9S/231-1 424.9S/170-1	424.2-411 424.2-410
21.81-24.10 (.902-.949)	02	424.2-421-02 424.2-420-02	424.2-431-02 424.2-430-02	3671 010-033 3671 010-137	424.2-445-02 424.2-445-02	424.2-400M-V63	424.2-400M 424.2-401M 424.9S/231-1 424.9S/170-1	424.2-411 424.2-410
24.11-26.40 (.950-1.039)	03	424.2-421-03 424.2-420-03	424.2-431-03 424.2-430-03	3671 010-033 3671 010-137	3671 010-026 3671 010-026	424.2-400M-V63	424.2-400M 424.2-401M 424.9S/231-1 424.9S/170-1	424.2-411 424.2-410
26.41-28.70 (1.040-1.130)	04	424.2-421-04 424.2-420-04	424.2-431-04 424.2-430-04	3671 010-033 3671 010-137	424.2-445-04 424.2-445-04	424.2-400M-V63	424.2-400M 424.2-401M 424.9S/231-1 424.9S/170-1	424.2-411 424.2-410
28.71-31.00 (1.131-1.220)	05	424.2-421-05 424.2-420-05	424.2-431-05 424.2-430-05	3671 010-033 3671 010-137	424.2-445-05 424.2-445-05	424.2-400M-V63	424.2-400M 424.2-401M 424.9S/231-1 424.9S/170-1	424.2-411 424.2-410
31.01-33.30 (1.221-1.311)	06	424.2-421-06 424.2-420-06	424.2-431-06 424.2-430-06	3671 010-033 3671 010-137	3671 010-029 3671 010-029	424.2-400M-V63	424.2-400M 424.2-401M 424.9S/231-1 424.9S/170-1	424.2-411 424.2-410
33.31-36.20 (1.312-1.425)	07	424.2-421-07 424.2-420-07	424.2-431-07 424.2-430-07	3671 010-033 3671 010-137	3671 010-030 3671 010-030	424.2-400M-V63	424.2-400M 424.2-401M 424.9S/231-1 424.9S/170-1	424.2-411 424.2-410
36.21-39.60 (1.426-1.559)	08	424.2-420-08	424.2-430-08	3671 010-137	3671 010-031	424.2-400M-V63	424.2-400M 424.9S/170-1	424.2-410
39.61-43.00 (1.560-1.693)	09	424.2-420-09	424.2-430-09	3671 010-137	424.2-445-09	424.2-400M-V63	424.2-400M 424.9S/170-1	424.2-410
43.01-47.00 (1.694-1.850)	10	424.2-420-10	424.2-430-10	3671 010-137	424.2-445-10	424.2-400M-V63	424.2-400M 424.9S/170-1	424.2-410
47.01-51.70 (1.851-2.035)	11	424.2-420-11	424.2-430-11	3671 010-137	424.2-445-11	424.2-400M-V63	424.2-400M 424.9S/170-1	424.2-410
51.71-56.20 (2.036-2.213)	12	424.2-420-12	424.2-430-12	3671 010-137	424.2-445-12	424.2-400M-V63	424.2-400M 424.9S/170-1	424.2-410
56.21-65.00 (2.214-2.559)	13	424.2-420-13	424.2-430-13	3671 010-137	3671 010-135	424.2-400M-V63	424.2-400M 424.9S/170-1	424.2-410

¹⁾ Available on request.

Ordering example: 2 pieces 424.2-421-00

Varilock adapted connector for automatic tool change










Drill diameter range 18.40-65.00 mm (.724-2.559 inch)

For ordering, see page 92

Mounting parts for rotating and non-rotating connectors

Diameter range 65.00-183.90 mm (2.559-7.240 inch)

Diameter range		Tube range	Mounting parts			Connectors		Connectors	
DC mm	DC inch		Connecting sleeve/ collet	Sealing sleeve	O-ring	Rotating	Non-rotating	For more information, see page 90	
			Except for tube mounted connector.			ISO taper	Flange mounting ¹⁾	Cylindrical	Tube mounted ¹⁾
65.00-66.99	2.559-2.637	14							
67.00-72.99	2.638-2.874	15	424.2-422-14	424.2-432-14	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-14
73.00-79.99	2.875-3.149	16	424.2-422-15	424.2-432-15	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-15
80.00-86.99	3.150-3.425	17	424.2-422-16	424.2-432-16	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-16
87.00-99.99	3.426-3.937	18	424.2-422-17	424.2-432-17	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-17
100.00-111.99	3.938-4.409	19	424.2-422-18	424.2-432-18	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-18
112.00-123.99	4.410-4.881	20	424.2-422-19	424.2-432-19	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-19
			424.2-422-20	424.2-432-20	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-20

Note that connecting sleeves with ordering code S-424.2-422-xxx are shortened. See footnote.

65.00-66.99	2.559-2.637	14	S-424.2-422-14A ²⁾	424.2-432-14	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-14
67.00-72.99	2.638-2.874	15	S-424.2-422-15A ²⁾	424.2-432-15	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-15
73.00-79.99	2.875-3.149	16	S-424.2-422-16A ²⁾	424.2-432-16	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-16
80.00-86.99	3.150-3.425	17	S-424.2-422-17A ²⁾	424.2-432-17	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-17
87.00-99.99	3.426-3.937	18	S-424.2-422-18A ²⁾	424.2-432-18	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-18
100.00-111.99	3.938-4.409	19	S-424.2-422-19A ²⁾	424.2-432-19	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-19
112.00-123.99	4.410-4.881	20	S-424.2-422-20A ²⁾	424.2-432-20	3671 010-143	424.2-402	424.9S/224-1	424.2-412	424.9S/232-1-20
124.00-135.99	4.882-5.354	21	424.2-423-21	424.2-433-21	3671 010-154	-	424.9S/245-1	424.2-413	424.9S/232-1-21
136.00-147.99	5.355-5.826	22	424.2-423-22	424.2-433-22	3671 010-154	-	424.9S/245-1	424.2-413	424.9S/232-1-22
148.00-159.99	5.827-6.299	23	424.2-423-23	424.2-433-23	3671 010-154	-	424.9S/245-1	424.2-413	424.9S/232-1-23
160.00-171.99	6.300-6.771	24	424.2-423-24	424.2-433-24	3671 010-154	-	424.9S/245-1	424.2-413	424.9S/232-1-24
172.00-183.90	6.772-7.240	25	424.2-423-25	424.2-433-25	3671 010-154	-	424.9S/245-1	424.2-413	424.9S/232-1-25

¹⁾ Available on request.

Ordering example: 2 pieces 424.2-422-14

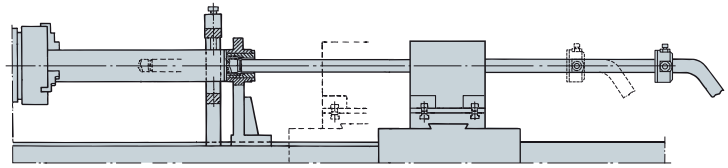
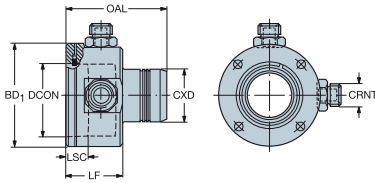
²⁾ New reinforced sleeve, the sleeve has been shortened by 11 mm (.433 inch). Customers that have existing tubes must be notified that the inner tube will be too long and thus have to be cut off by 11 mm (.433 inch) in the front end. Please note that the length 1/2 of the outer tube will stay the same and is not affected by the modification. Available on request.

For Varilock adaptors, see rotating tools catalogue

Drill mounted connectors - non-rotating

Diameter range 65.00-183.90 mm (2.559-7.240 inch)

Mounting of drill tube mounted connector



Connectors are supplied with nut and spanner.

Type of shank	Diameter range				Ordering code, outer tube ¹⁾	Dimensions, mm, inch										
	DC Min	DC Min"	DC Max	DC Max"		BD1	BD1"	CXD	CXD"	OAL	OAL"	CRNT	LSC	LSC"	LF	LF"
	65.00	2.559	66.90	2.634	424.9S/232-1-14	110	4.331	50.5	1.988	150	5.906	R1"	15	.591	70	2.756
	67.00	2.638	72.90	2.870	424.9S/232-1-15	110	4.331	50.5	1.988	150	5.906	R1"	15	.591	70	2.756
	73.00	2.874	79.90	3.146	424.9S/232-1-16	120	4.724	63.2	2.488	150	5.906	R1"	15	.591	70	2.756
	80.00	3.150	86.90	3.421	424.9S/232-1-17	130	5.118	63.2	2.488	150	5.906	R1"	15	.591	70	2.756
	87.00	3.425	99.90	3.933	424.9S/232-1-18	130	5.118	75.9	2.988	150	5.906	R1"	15	.591	70	2.756
	100.00	3.937	111.90	4.406	424.9S/232-1-19	150	5.906	75.9	2.988	150	5.906	R1"	15	.591	70	2.756
	112.00	4.409	123.90	4.878	424.9S/232-1-20	160	6.299	101	3.976	150	5.906	R1"	15	.591	70	2.756
	124.00	4.882	135.90	5.350	424.9S/232-1-21	170	6.693	101	3.976	170	6.693	R1 ¹ / ₄	15	.591	90	3.543
	136.00	5.354	147.90	5.823	424.9S/232-1-22	185	7.284	126.7	4.988	170	6.693	R1 ¹ / ₄	15	.591	90	3.543
	148.00	5.827	159.90	6.295	424.9S/232-1-23	200	7.874	126.7	4.988	170	6.693	R1 ¹ / ₄	15	.591	90	3.543
160.00	6.299	171.90	6.768	424.9S/232-1-24	215	8.465	126.7	4.988	170	6.693	R1 ¹ / ₄	15	.591	90	3.543	
172.00	6.772	183.90	7.240	424.9S/232-1-25	225	8.858	126.7	4.988	170	6.693	R1 ¹ / ₄	15	.591	90	3.543	

¹⁾ For connector 424.9S/232-1-xx, the inner tube must be ordered 75 mm (2.953 inch) longer than the outer tube.

Ordering example: 1 piece 424.9S/232-1-14

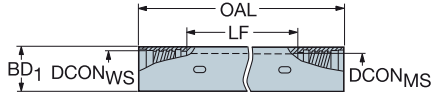
Note!

For spare parts, see page 113

Outer tube, range 14-25



Inner tube, range 14-25



DCON_{WS} is the same as DCON for the drill

CZC _{MS}	Diameter range				Ordering code, outer tube ¹⁾	Dimensions, mm, inch								Ordering code, inner tube ¹⁾	Dimensions, mm, inch	
	DC Min	DC Min"	DC Max	DC Max"		BD1	BD1"	DCON _{WS}	DCON _{WS} "	DCON _{MS}	DCON _{MS} "	LF	LF"		BD1	BD1"
14	65.00	2.559	66.90	2.634	424.9S/233-14	56.0	2.205	52.0	2.047	43	1.693	75.0	2.953	424.2-864-L	40	1.575
15	67.00	2.638	72.90	2.870	424.9S/233-15	62.0	2.441	58.0	2.284	48	1.890	75.0	2.953	424.2-865-L	44	1.732
16	73.00	2.874	79.90	3.146	424.9S/233-16	68.0	2.677	63.0	2.480	53	2.087	75.0	2.953	424.2-866-L	48	1.890
17	80.00	3.150	86.90	3.421	424.9S/233-17	75.0	2.953	70.0	2.756	53	2.087	75.0	2.953	424.2-867-L	54	2.126
18	87.00	3.425	99.90	3.933	424.9S/233-18	82.0	3.228	77.0	3.032	66	2.598	97.0	3.819	424.2-868-L	60	2.362
19	100.00	3.937	111.90	4.406	424.9S/233-19	94.0	3.701	89.0	3.504	78	3.071	97.0	3.819	424.2-869-L	70	2.756
20	112.00	4.409	123.90	4.878	424.9S/233-20	106.0	4.173	101.0	3.976	90	3.543	118.0	4.646	424.2-870-L	80	3.150
21	124.00	4.882	135.90	5.350	424.9S/233-21	118.0	4.646	113.0	4.449	92	3.622	118.0	4.646	424.2-870-L	80	3.150
22	136.00	5.354	147.90	5.823	424.9S/233-22	130.0	5.118	125.0	4.921	104	4.094	118.0	4.646	424.2-872-L	95	3.740
23	148.00	5.827	159.90	6.295	424.9S/233-23	142.0	5.591	137.0	5.394	116	4.567	139.0	5.472	424.2-873-L	100	3.937
24	160.00	6.299	171.90	6.768	424.9S/233-24	154.0	6.063	149.0	5.866	128	5.039	139.0	5.472	424.2-874-L	120	4.724
25	172.00	6.772	183.90	7.240	424.9S/233-25	166.0	6.535	161.0	6.339	140	5.512	139.0	5.472	424.2-875-L	130	5.118

¹⁾ Lengths are manufactured by customer request

²⁾ Available on request.

Ordering example outer tube: 1 piece 424.9S/233-14

Varilock adapted connector for automatic tool change

Deep hole machining operations are not normally performed on Machining Centres but carried out on conventional or purpose built machines which require dedicated workholding facilities.

The Ejector system developed by Sandvik Coromant however, has been designed to allow deep hole drilling to be performed more effectively on Machining Centres.

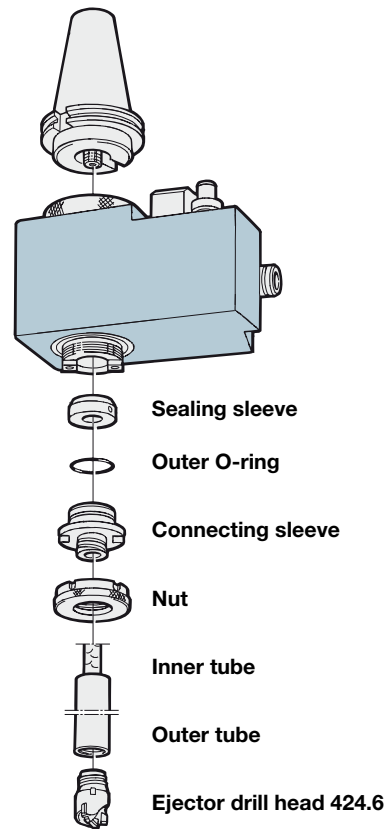
Ejector drilling requires high pressure coolant, a feature which most machining centres do not have. To enable this requirement to be incorporated, an extra coolant unit is necessary to obtain the benefits of Ejector drilling.

To deal with the copious amount of coolant supply needed to ensure good chip evacuation, Sandvik Coromant have introduced a Varilock connector with integral coolant supply housing, specially adapted for automatic tool changing.

A Varilock coupling is incorporated into the rear of the connector which allows interchangeability between a wide range of basic holders.

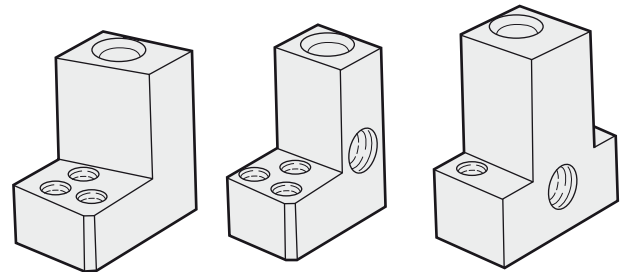
Rotating connector

For Ejector drilling in machining centre



Machine connection block

The illustration shows three types of machine connection blocks which are necessary if the machine is not already equipped for coolant supply adjacent to the spindle. If you wish to order the machine connection block with the coolant connector, please send full details of the type of block you require and its position on the spindle nose. If your machine is already fitted with a connection block, please send the details with your order.



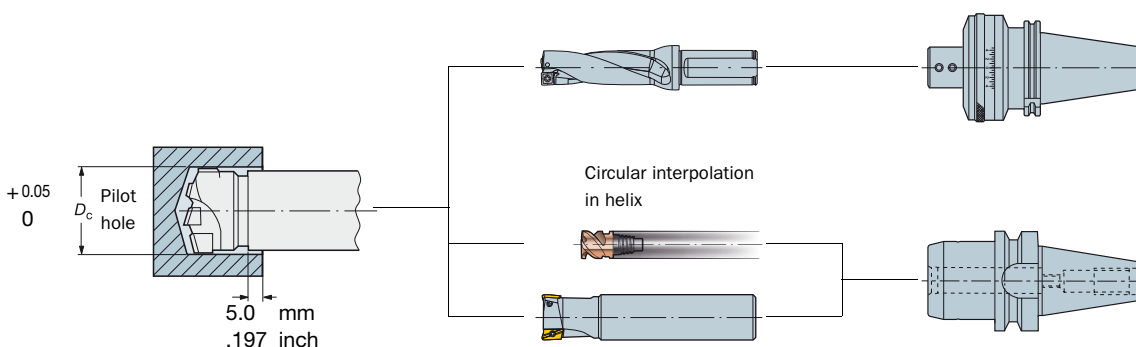
Pilot holes for Ejector drilling

Method of producing pilot holes:

A deep pilot hole is required when not using a bush to guide the coolant.

The tolerance of the hole is plus in relation to the drill diameter.

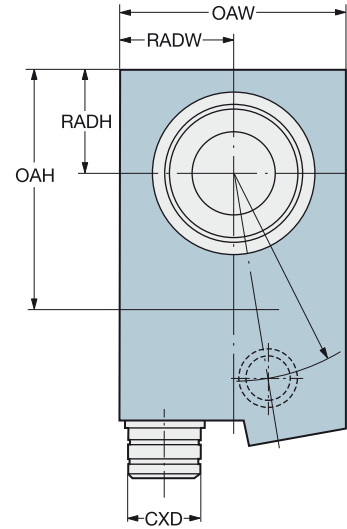
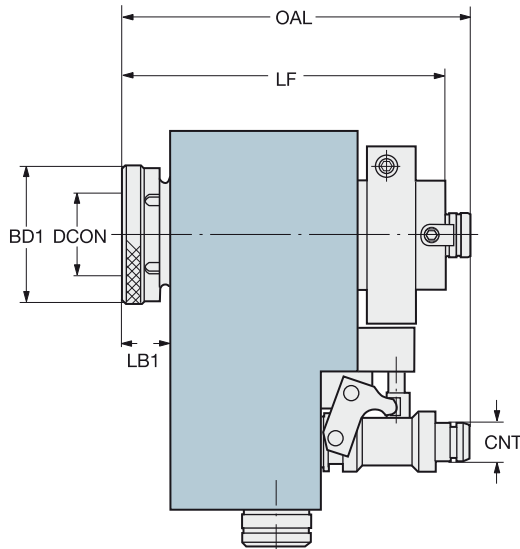
Machining of pilot hole



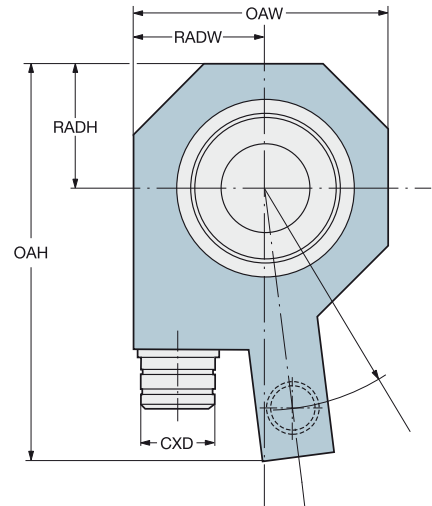
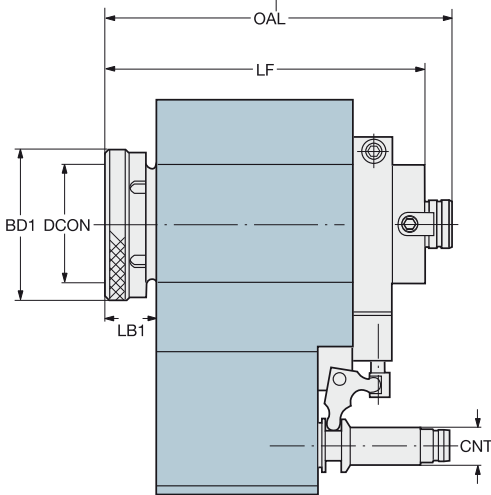
Varilock coolant connector

When ordering, please complete the details of your requirements below and send your order or inquiry to your Sandvik Coromant sales representative.

Housing, size 1



Housing, size 2



l_1 = programming length

1) The connector provides limited space in front of the flange for the toolgripper. If the toolgripper requires a specific space (l_{24}) please make sure this measurement is stated in the order.

Housing size	Drill diameter range, mm, inch		Varilock size										$\frac{\sigma}{\mu\text{g}}$	Max. rev/min.	Cutting fluid pressure, N/cm ² , psi		Recommended values	Cutting fluid quantity, l/min, gpm
	DC	D_{5m}	CXD	OAW	RADW	RADH	OAH	CNT	LB ₁	BD ₁	DCON	LF			OAL	Max.		
1	18.40-43.00	63	40	130	65	60			35	80	36	200	15	3000	200	80-150	50-120	
	.724-1.693		1.575	5.118	2.559	2.362			1.378	3.150	1.417	7.874			1770	706-1327	13-32	
2	18.40-65.00	80	50	175	90	85			35	102	52	200	25	2500	200	60-150	50-200	
	.724-2.559		1.969	6.890	3.543	3.346			1.378	4.016	2.047	7.874			1770	531-1327	13-53	

Drill tubes manufactured by customer request







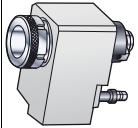
Ordering

When ordering, the following must be stated:

- Machine type
- Drill diameter
- Taper standard
- Drilling depth
- Taper size
- Drill tube length

For more information and advice, please contact your nearest Sandvik representative.

Components for Varilock-adapted connector for automatic tool change in machining centres

Tube range							
	Outer tube ¹⁾	Inner tube ¹⁾	Nut ²⁾	Connecting sleeve ²⁾	Sealing sleeve ²⁾	O-ring ²⁾	Size
00	424.9S/280 Pos 0	424.9S/281 Pos 0	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 0 840110R31-2 Pos 0	424.9S/283 Pos 0 840110R32-2 Pos 0	3671 010-131 3671 010-135	1 2
01	424.9S/280 Pos 1	424.9S/281 Pos 1	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 1 840110R31-2 Pos 1	424.9S/283 Pos 1 840110R32-2 Pos 1	3671 010-131 3671 010-135	1 2
02	424.9S/280 Pos 2	424.9S/281 Pos 2	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 2 840110R31-2 Pos 2	424.9S/283 Pos 2 840110R32-2 Pos 2	3671 010-131 3671 010-135	1 2
03	424.9S/280 Pos 3	424.9S/281 Pos 3	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 3 840110R31-2 Pos 3	424.9S/283 Pos 3 840110R32-2 Pos 3	3671 010-131 3671 010-135	1 2
04	424.9S/280 Pos 4	424.9S/281 Pos 4	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 4 840110R31-2 Pos 4	424.9S/283 Pos 4 840110R32-2 Pos 4	3671 010-131 3671 010-135	1 2
05	424.9S/280 Pos 5	424.9S/281 Pos 5	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 5 840110R31-2 Pos 5	424.9S/283 Pos 5 840110R32-2 Pos 5	3671 010-131 3671 010-135	1 2
06	424.9S/280 Pos 6	424.9S/281 Pos 6	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 6 840110R31-2 Pos 6	424.9S/283 Pos 6 840110R32-2 Pos 6	3671 010-131 3671 010-135	1 2
07	424.9S/280 Pos 7	424.9S/281 Pos 7	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 7 840110R31-2 Pos 7	424.9S/283 Pos 7 840110R32-2 Pos 7	3671 010-131 3671 010-135	1 2
08	424.9S/280 Pos 8	424.9S/281 Pos 8	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 8 840110R31-2 Pos 8	424.9S/283 Pos 8 840110R32-2 Pos 8	3671 010-131 3671 010-135	1 2
09	424.9S/280 Pos 9	424.9S/281 Pos 9	424.9S/279-4.1 840110A16-4	424.9S/282 Pos 9 840110R31-2 Pos 9	424.9S/283 Pos 9 840110R32-2 Pos 9	3671 010-131 3671 010-135	1 2
10	424.9S/280 Pos 10	424.9S/281 Pos 10	840110A16-4	840110R31-2 Pos 10	840110R32-2 Pos 10	3671 010-135	2
11	424.9S/280 Pos 11	424.9S/281 Pos 11	840110A16-4	840110R31-2 Pos 11	840110R32-2 Pos 11	3671 010-135	2
12	424.9S/280 Pos 12	424.9S/281 Pos 12	840110A16-4	840110R31-2 Pos 12	840110R32-2 Pos 12	3671 010-135	2
13	424.9S/280 Pos 13	424.9S/281 Pos 13	840110A16-4	840110R31-2 Pos 13	840110R32-2 Pos 13	3671 010-135	2

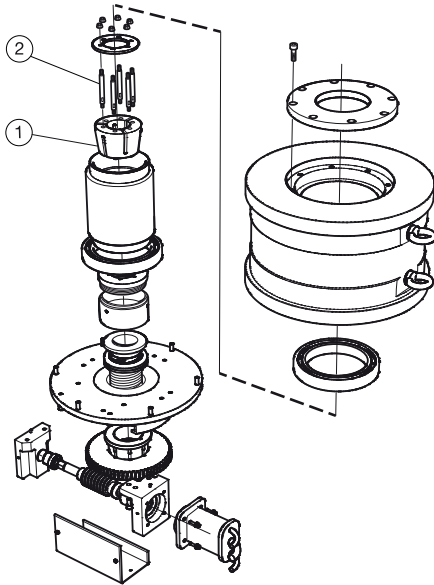
¹⁾ Lengths are manufactured by customer request

²⁾ Available on request.

Ordering example: 1 piece 424.9S/280 Pos 0

Vibration damper

Automatic operation



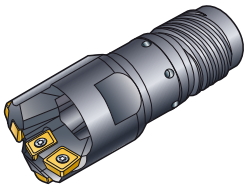
Ordering code	DC range		CZC _{MS}	Tube		Spare parts	
	mm	inch		mm	inch	1 Collet	2 Holding rods
NVD 9713-01-97	15.60 - 16.70	.614 - .657	97	14	.551	NVD 9713-DC-97	NVD 9713-HR-01
NVD 9713-01-98	16.71 - 17.70	.658 - .697	98	15	.591	NVD 9713-DC-98	NVD 9713-HR-01
NVD 9713-01-99	17.71 - 18.90	.697 - .744	99	16	.630	NVD 9713-DC-99	NVD 9713-HR-01
NVD 9713-01-00	18.91 - 20.00	.744 - .787	00	17	.669	NVD 9713-DC-00	NVD 9713-HR-01
NVD 9713-01-01	20.00 - 21.80	.787 - .858	01	18	.709	NVD 9713-DC-01	NVD 9713-HR-01
NVD 9713-01-02	21.81 - 24.10	.859 - .859	02	20	.787	NVD 9713-DC-02	NVD 9713-HR-01
NVD 9713-01-03	24.11 - 26.40	.949 - 1.039	03	22	.866	NVD 9713-DC-03	NVD 9713-HR-01
NVD 9713-01-04	26.41 - 28.70	1.040 - 1.130	04	24	.945	NVD 9713-DC-04	NVD 9713-HR-01
NVD 9713-01-05	28.71 - 31.00	1.130 - 1.221	05	26	1.024	NVD 9713-DC-05	NVD 9713-HR-01
NVD 9713-01-06	31.01 - 33.30	1.221 - 1.311	06	28	1.102	NVD 9713-DC-06	NVD 9713-HR-01
NVD 9713-01-07	33.31 - 36.20	1.311 - 1.425	07	30	1.181	NVD 9713-DC-07	NVD 9713-HR-01
NVD 9713-01-08	36.21 - 39.60	1.426 - 1.559	08	33	1.299	NVD 9713-DC-08	NVD 9713-HR-01
NVD 9713-01-09	39.61 - 43.00	1.559 - 1.693	09	36	1.417	NVD 9713-DC-09	NVD 9713-HR-01
NVD 9713-01-10	43.01 - 47.00	1.693 - 1.850	10	39	1.535	NVD 9713-DC-10	NVD 9713-HR-01
NVD 9713-01-11	47.01 - 51.70	1.851 - 2.035	11	43	1.693	NVD 9713-DC-11	NVD 9713-HR-01
NVD 9713-01-12	51.71 - 56.20	2.036 - 2.213	12	47	1.850	NVD 9713-DC-12	NVD 9713-HR-01
NVD 9713-01-13	56.21 - 65.00	2.213 - 2.559	13	51	2.008	NVD 9713-DC-13	NVD 9713-HR-01
NVD 1117-01-11	47.01 - 51.70	1.851 - 2.035	11	43	1.693	NVD 1117-DC-11	NVD 1123-HR-01
NVD 1117-01-12	51.71 - 56.20	2.036 - 2.213	12	47	1.850	NVD 1117-DC-12	NVD 1123-HR-01
NVD 1117-01-13	56.21 - 65.00	2.213 - 2.559	13	51	2.008	NVD 1117-DC-13	NVD 1123-HR-01
NVD 1117-01-14	65.00 - 66.90	2.559 - 2.634	14	56	2.205	NVD 1117-DC-14	NVD 1123-HR-01
NVD 1117-01-15	67.00 - 72.90	2.638 - 2.870	15	62	2.441	NVD 1117-DC-15	NVD 1123-HR-01
NVD 1117-01-16	73.00 - 79.90	2.874 - 3.146	16	68	2.677	NVD 1117-DC-16	NVD 1123-HR-01
NVD 1117-01-17	80.00 - 86.90	3.145 - 3.421	17	75	2.953	NVD 1117-DC-17	NVD 1123-HR-01
NVD 1623-01-16	73.00 - 79.90	2.874 - 3.146	16	68	2.677	NVD 1623-DC-16	NVD 1123-HR-01
NVD 1623-01-17	80.00 - 86.90	3.145 - 3.421	17	75	2.953	NVD 1623-DC-17	NVD 1123-HR-01
NVD 1623-01-18	87.00 - 99.90	3.425 - 3.933	18	82	3.228	NVD 1623-DC-18	NVD 1123-HR-01
NVD 1623-01-19	100.00 - 111.90	3.937 - 4.406	19	94	3.701	NVD 1623-DC-19	NVD 1123-HR-01
NVD 1623-01-20	112.00 - 123.90	4.409 - 4.878	20	106	4.173	NVD 1623-DC-20	NVD 1123-HR-01
NVD 1623-01-21	124.00 - 135.90	4.882 - 5.350	21	118	4.646	NVD 1623-DC-21	NVD 1123-HR-01
NVD 1623-01-22	136.00 - 147.90	5.354 - 5.823	22	130	5.118	NVD 1623-DC-22	NVD 1123-HR-01
NVD 1623-01-23	148.00 - 159.90	5.827 - 6.295	23	142	5.591	NVD 1623-DC-23	NVD 1123-HR-01

Vibration damper

Manual operation

Ordering code	DC range		Tube			Spare parts Collet	Adjustment tools
	mm	inch	CZC _{MS}	mm	inch		
342-0937-94	12.60 - 13.60	.496 - .535	94	11	.433	342 840100A32-4.1	PIN FACE WRENCH FOR RETAINING RING (90mm x 5mm) 9400.W101 - WIXROYD PIN FACE WRENCH FOR LOCKING RING (130mm x 6mm) 6354720 - GEDORE PIN FACE WRENCH FOR LOCKING RING (155mm x 6mm) 6354720 - GEDORE PIN FACE WRENCH FOR ADJUSTING RING (140mm x 8mm) 9535.W201 - WIXROYD
342-0937-95	13.61 - 14.60	.536 - .575	95	12	.472	342 840100A32-4.2	
342-0937-96	14.61 - 15.59	.575 - .614	96	13	.512	342 840100A32-4.3	
342-0937-97	15.60 - 16.70	.614 - .657	97	14	.551	342 840100A32-4.4	
342-0937-98	16.71 - 17.70	.658 - .697	98	15	.591	342 840100A32-4.5	
342-0937-99	17.71 - 18.90	.697 - .744	99	16	.630	342 840100A32-4.6	
342-0937-00	18.91 - 20.00	.744 - .787	00	17	.669	342 840100A32-4.7	
342-0937-01	20.00 - 21.80	.787 - .858	01	18	.709	342 840100A32-4.8	
342-0937-02	21.81 - 24.10	.859 - .859	02	20	.787	342 840100A32-4.9	
342-0937-03	24.11 - 26.40	.949 - 1.039	03	22	.866	342 840100A32-4.10	
342-0937-04	26.41 - 28.70	1.040 - 1.130	04	24	.945	342 840100A32-4.11	
342-0937-05	28.71 - 31.00	1.130 - 1.221	05	26	1.024	342 840100A32-4.12	
342-0937-06	31.01 - 33.30	1.221 - 1.311	06	28	1.102	342 840100A32-4.13	
342-0937-07	33.31 - 36.20	1.311 - 1.425	07	30	1.181	342 840100A32-4.14	
342-0937-08	36.21 - 39.60	1.426 - 1.559	08	33	1.299	342 840100A32-4.15	
342-0937-09	39.61 - 43.00	1.559 - 1.693	09	36	1.417	342 840100A32-4.16	
342-0937-10	43.01 - 47.00	1.693 - 1.850	10	39	1.535	342 840100A32-4.17	
342-0937-11	47.01 - 51.70	1.851 - 2.035	11	43	1.693	342 840100A32-4.18	
342-0937-12	51.71 - 56.20	2.036 - 2.213	12	47	1.850	342 840100A32-4.19	
342-0937-13	56.21 - 65.00	2.213 - 2.559	13	51	2.008	342 840100A32-4.20	
342-0937-14	65.00 - 66.90	2.559 - 2.634	14	56	2.205	342 840100A32-4.21	
342-0937-15	67.00 - 72.90	2.638 - 2.870	15	62	2.441	342 840100A32-4.22	
342-0937-16	73.00 - 79.90	2.874 - 3.146	16	68	2.677	342 840100A32-4.23	
342-0938-17	80.00 - 86.90	3.145 - 3.421	17	75	2.953	342 840100A33-4.1	PIN FACE WRENCH FOR RETAINING RING (160mm x 8mm) 9535.W201 - WIXROYD PIN FACE WRENCH FOR LOCKING RING (215mm x 6mm) PIN FACE WRENCH FOR LOCKING RING (245mm x 6mm) PIN FACE WRENCH FOR ADJUSTING RING (220mm x 8mm)
342-0938-18	87.00 - 99.90	3.425 - 3.933	18	82	3.228	342 840100A33-4.2	
342-0938-19	100.00 - 111.90	3.937 - 4.406	19	94	3.701	342 840100A33-4.3	
342-0938-20	112.00 - 123.90	4.409 - 4.878	20	106	4.173	342 840100A33-4.4	
342-0938-21	124.00 - 135.90	4.882 - 5.350	21	118	4.646	342 840100A33-4.5	
342-0938-22	136.00 - 147.90	5.354 - 5.823	22	130	5.118	342 840100A33-4.6	
342-0938-23	148.00 - 159.90	5.827 - 6.295	23	142	5.591	342 840100A33-4.7	
342-0939-24	160.00 - 179.90	6.299 - 9.602	24	154	6.063	342 840100A34-4.1	HOOK(PIN) WRENCH FOR RETAINING RING (262mm x 10mm) 9545.W271 - WIXROYD HOOK(PIN) WRENCH FOR THRUST SLEEVE (327mm x 10mm) or TOMMY BAR PIN FACE WRENCH FOR LOCKING RING (290mm x 6mm)
342-0939-25	170.00 - 189.90	6.693 - 7.476	25	166	6.535	342 840100A34-4.2	
342-0939-26	180.00 - 199.90	7.087 - 7.870	26	178	7.008	342 840100A34-4.3	
342-0939-27	190.00 - 224.90	7.480 - 8.854	27	190	7.480	342 840100A34-4.4	
342-0939-28	200.00 - 224.90	7.874 - 8.854	28	202	7.953	342 840100A34-4.5	
342-0939-29	200.00 - 249.90	7.874 - 9.839	29	214	8.425	342 840100A34-4.6	
342-0939-30	225.00 - 249.90	8.858 - 9.839	30	226	8.898	342 840100A34-4.7	

CoroDrill® 800



Drill head	Insert - C, I, P ¹⁾			Support pad		
Metric (inch)	Drill diameter Range, mm (inch)	Screw Central	Key (Torx Plus)	Pad	Screw	Key (Torx Plus)
800.20-xxDxx.xx (A800.20-xxDxx.xx)	25.00-28.70 (.964-1.129)	5513 020-05	5680 046-03 (7IP)	06A	5513 020-20	5680 046-03 (7IP)
		5513 020-05	5680 046-03 (7IP)			
800.24-xxDxx.xx (A800.24-xxDxx.xx)	28.71-31.00 (1.130-1.220)	5513 020-05	5680 046-03 (7IP)	07A	416.1-832	5680 046-04 (9IP)
		5513 020-34	5680 046-01 (8IP)	08A	5513 020-16	5680 046-05 (10IP)
	31.01-65.00 (1.121-2.559)	5513 020-34	5680 046-01 (8IP)	10A - 12A	416.1.833	5680 046-05 (10IP)

¹⁾ C= Central, I= Intermediate, P= Peripheral

Drill diameter range – insert and pad sizes, ordered separately.

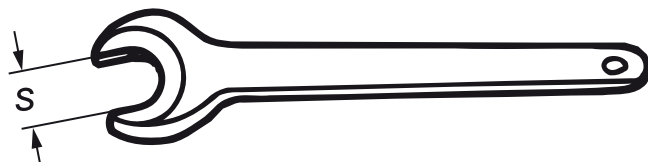
Shims

Shim set (8 pcs)	Dimensions, mm (inch)		
	<i>s</i>	<i>l</i>	<i>b</i>
5549 127-85	0.02 (.0008)	18 (.707)	6 (.236)
5549 127-86	0.03 (.0012)	18 (.707)	6 (.236)
5549 127-88	0.02 (.0008)	20 (.787)	7 (.276)
5549 127-89	0.03 (.0012)	20 (.787)	7 (.276)
5549 127-91	0.02 (.0008)	25 (.984)	8 (.315)
5549 127-92	0.03 (.0012)	25 (.984)	8 (.315)
5549 127-94	0.02 (.0008)	30 (1.181)	10 (.394)
5549 127-95	0.03 (.0012)	30 (1.181)	10 (.394)
5549 127-97	0.02 (.0008)	35 (1.378)	12 (.472)
5549 127-98	0.03 (.0012)	35 (1.378)	12 (.472)

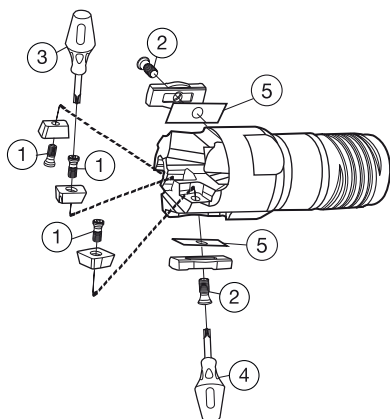
Note: Do not add more than 0.05 mm thickness of shims

Wrench width of jaws

Diameter range, mm (inch)	Width of jaws, mm (inch)	Note!
DC	<i>s</i>	There are no specific wrenches for the CoroDrill 800 heads. An adjustable wrench, or a regular box wrench, should be used. The width of the jaws for each drill is shown in the table below.
25.00<-≤27.00 (.984<- ≤1.063)	22.00 (.866)	
27.00<-≤30.00 (1.063<- ≤1.181)	24.00 (.945)	
30.00<-≤32.00 (1.181<- ≤1.260)	27.00 (1.063)	
32.00<-≤35.00 (1.260<- ≤1.378)	28.00 (1.102)	
35.00<-≤36.20 (1.378<- ≤1.425)	30.00 (1.181)	
35.20<-≤39.60 (1.425<- ≤1.559)	32.00 (1.260)	
39.60<-≤43.00 (1.559<- ≤1.693)	36.00 (1.417)	
43.00<-≤47.00 (1.693<- ≤1.850)	38.00 (1.496)	
47.00<-≤51.70 (1.850<- ≤2.035)	41.00 (1.614)	
51.70<-≤54.00 (2.035<- ≤2.126)	46.00 (1.811)	
54.00<-≤56.20 (2.126<- ≤2.213)	50.00 (1.969)	
56.20<-≤60.00 (2.213<- ≤2.362)	50.00 (1.969)	
60.00<-≤63.00 (2.362<- ≤2.480)	55.00 (2.165)	
63.00<-≤65.00 (2.480<- ≤2.559)	60.00 (2.362)	



CoroDrill® 800



CoroDrill® 800.20 Single Tube System

	Spare parts			Included parts		
	1a	1b	2	3a	3b	4
DC	Insert screw	Insert screw	Pad screw	Key	Key	Key
25-29	5513 020-05		5513 020-20	5680 046-03		
29-31	5513 020-05	5513 020-34	5513 020-20	5680 046-03	5680 046-01	
33-34	5513 020-34		416.1-832	5680 046-01		5680 046-04
31-39	5513 020-34		416.1-832	5680 046-01		5680 046-04
39-39	5513 020-34		416.1-832	5680 046-01		5680 046-04
40-46	5513 020-34		5513 020-16	5680 046-01		5680 046-05
47-50	5513 020-34		416.1-833	5680 046-01		5680 046-05
50-65	5513 020-34		416.1-833	5680 046-01		5680 046-05

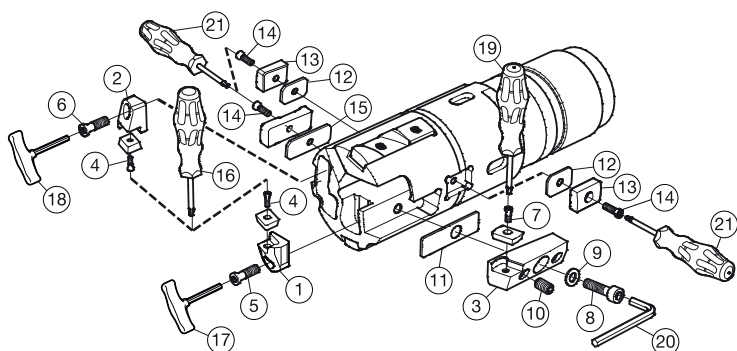
CoroDrill® 800.24 Ejector System

	Spare parts			Included parts		
	1b	1a	2	3a	3b	4
DC	Insert screw	Insert screw	Pad screw	Key	Key	Key
25-27	5513 020-34	5513 020-05	5513 020-20	5680 046-03		5680 046-03
30	5513 020-34	5513 020-05	5513 020-20	5680 046-03	5680 046-01	
32-38		5513 020-34	416.1-832	5680 046-01		5680 046-04
39		5513 020-34	416.1-832	5680 046-01		5680 046-04
40-45		5513 020-34	5513 020-16	5680 046-01		5680 046-05
48-50		5513 020-34	416.1-833	5680 046-01		5680 046-05
50-65		5513 020-34	416.1-833	5680 046-01		5680 046-05

Keys (mm/Torx Plus) sizes, see page 147

CoroDrill® 801

Metric version

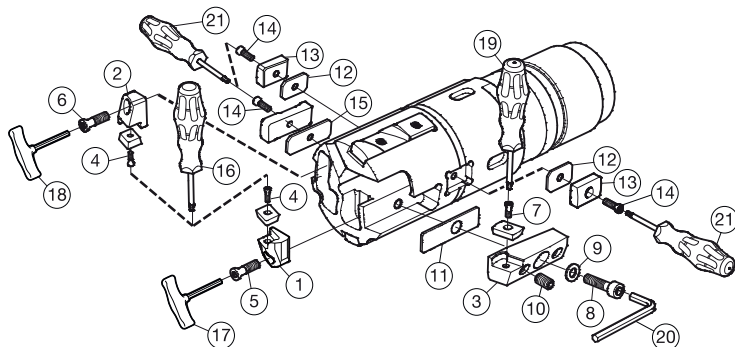


Included parts								
DC	1a	1b	2a	2b				
	Central cartridge	Central cartridge	Intermediate cartridge	Intermediate cartridge				
65-70	L801-06T3C	L801-06T3C-2	R801-08T3I					
71	L801-06T3C	L801-06T3C-2	R801-08T3I					
80-86	L801-06T3C	L801-06T3C-2	R801-12T3I					
90	L801-08T3C		R801-12T3I					
94-98	L801-06T3C	L801-06T3C-2	R801-12T3I					
105-162	L801-12T3C		R801-08T3I	R801-12T3I				
Included parts								
DC	3	4	5a	5b	6a	7	8	
	Peripheral cartridge	Insert screw	Screw	Screw	Screw	Insert screw	Screw	
65-70	R801-13T3P	5513 020-34	5513 020-25	5513 020-26	5513 020-25	5513 020-24	3212 010-310	
71	R801-13T3P	5513 020-34	5513 020-25	5513 020-26	5513 020-25	5513 020-24	3212 010-310	
80-86	R801-1806P	5513 020-34	5513 020-25	5513 020-26	5513 020-25	5513 020-25	3212 010-361	
90	R801-1806P	5513 020-34	5513 020-25	5513 020-26	5513 020-26	5513020-25	3212 010-361	
94-98	R801-1806P	5513 020-34	5513 020-25	5513 020-26	5513 020-26	5513020-25	3212 010-361	
105-162	R801-1806P	5513 020-34	5513 020-26	5513 020-26	5513 020-25	5513020-25	3212 010-361	
Spare parts								
DC	9	10	11	12	13	14		
	Washer	Screw	Cartridge shim set	Support pad shim set	Safety pad	Screw		
65-70	3411 011-053	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01		
71	3411 011-053	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01		
80-86	3411 011-064	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01		
90	3411 011-064	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01		
94-98	3411 011-064	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01		
105-162	3411 011-064	3214 010-357	5549 128-40	5549 126-91	801-202582-S	5513 020-26		
Spare parts								
DC	15	16	17a	17b	18a	19	20	21
	Pad shim set	Screwdriver	Key	Key	Key	Screwdriver	Key	Screwdriver
65-70	5549 127-20	5680 046-01	5680 048-01	5680 048-03	5680 048-01	5680 046-04	3021 010-040	5680 046-02
71	5549 127-20	5680 046-01	5680 048-01	5680 048-03	5680 048-01	5680 046-04	3021 010-040	5680 046-02
80-86	5549 127-20	5680 046-01	5680 048-01	5680 048-03	5680 048-01	5680 046-02	3021 010-050	5680 046-02
90	5549 127-20	5680 046-01	5680 048-01	5680 048-03	5680 048-03	5680 046-02	3021 010-050	5680 046-02
94-98	5549 127-20	5680 046-01	5680 048-01	5680 048-03	5680 048-03	5680 046-02	3021 010-050	5680 046-02
105-162	5549 126-10	5680 046-01	5680 048-03	5680 048-01	5680 048-01	5680 046-02	3021 010-050	5680 046-06

Keys (mm/Torx Plus) sizes, see page 147

CoroDrill® 801

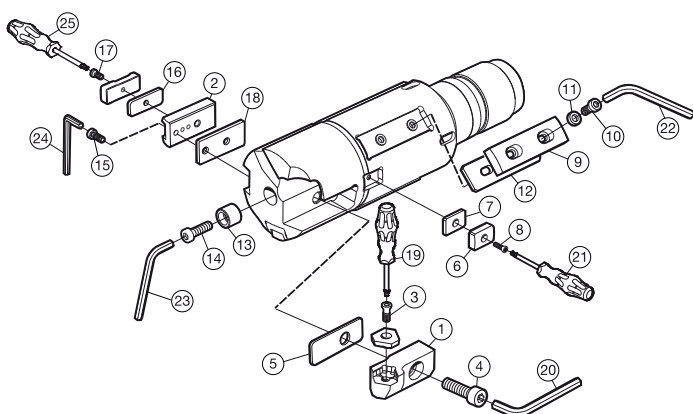
Inch version



DC	Included parts				Spare parts							
	1a	1b	2a	2b	3	4	5a	5b	6a	7	8	
	Central cartridge	Central cartridge	Intermediate cartridge	Intermediate cartridge	Peripheral cartridge	Insert screw	Screw	Screw	Screw	Insert screw	Screw	
67	L801-12T3C		R801-12T3I		R801-13T3P	5513 020-34	5513 020-26		5513 020-26	5513 020-24	3212 010-310	
70	L801-06T3C	L801-06T3C-2	R801-08T3I		R801-13T3P	5513 020-34	5513 020-25	5513 020-26	5513 020-25	5513 020-24	3212 010-310	
73-75	L801-12T3C		R801-12T3I		R801-1806P	5513 020-34	5513 020-26		5513 020-26	5513 020-25	3212 010-361	
76	L801-12T3C		R801-12T3I		R801-1806P	5513 020-34	5513 020-26		5513 020-26	5513 020-25	3212 010-361	
81-83	L801-06T3C	L801-06T3C-2	R801-12T3I		R801-1806P	5513 020-34	5513 020-25	5513 020-26	5513 020-26	5513 020-25	3212 010-361	
89	L801-06T3C	L801-08T3C	R801-12T3I		R801-1806P	5513 020-34	5513 020-25	5513 020-25	5513 020-26	5513 020-25	3212 010-361	
102-108	L801-12T3C		R801-12T3I	R801-12T3I	R801-1806P	5513 020-34	5513 020-26		5513 020-25	5513 020-25	3212 010-361	
111-114	L801-12T3C		R801-12T3I		R801-1806P	5513 020-34	5513 020-26		5513 020-25	5513 020-25	3212 010-361	
137-152	L801-12T3C		R801-08T3I	R801-12T3I	R801-1806P	5513 020-34	5513 020-26		5513 020-25	5513 020-25	3212 010-361	
165	L801-12T3C		R801-12T3I	R801-12T3I	R801-1806P	5513 020-34	5513 020-26		5513 020-25	5513 020-25	3212 010-361	
	Spare parts		Spare parts		Spare parts		Spare parts		Spare parts		Spare parts	
	9	10	11	12	13	14						
DC	Washer	Screw	Cartridge shim set	Support pad shim set	Safety pad	Screw						
67	3411 011-053	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01						
70	3411 011-053	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01						
73-75	3411 011-064	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01						
76	3411 011-064	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01						
81-83	3411 011-064	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01						
89	3411 011-064	3214 010-357	5549 128-40	5549 126-90	801-142067-S	5513 020-01						
102-108	3411 011-064	3214 010-357	5549 128-40	5549 126-91	801-202582-S	5513 020-26						
111-114	3411 011-064	3214 010-357	5549 128-40	5549 126-91	801-202582-S	5513 020-26						
137-152	3411 011-064	3214 010-357	5549 128-40	5549 126-91	801-202582-S	5513 020-26						
165	3411 011-064	3214 010-357	5549 128-40	5549 126-91	801-202582-S	5513 020-26						
	Spare parts		Included parts		Spare parts		Spare parts		Spare parts		Spare parts	
	15	16	17a	17b	18a	19	20	21				
DC	Pad shim set	Screwdriver	Key	Key	Key	Screwdriver	Key	Screwdriver				
67	5549 127-20	5680 046-01	5680 048-03		5680 048-03	5680 046-04	3021 010-040	5680 046-02				
70	5549 127-20	5680 046-01	5680 048-01	5680 048-03	5680 048-03	5680 046-04	3021 010-040	5680 046-02				
73-75	5549 127-20	5680 046-01	5680 048-03		5680 048-03	5680 046-02	3021 010-050	5680 046-02				
76	5549 127-20	5680 046-01	5680 048-03		5680 048-03	5680 046-02	3021 010-050	5680 046-02				
81-83	5549 127-20	5680 046-01	5680 048-01	5680 048-03	5680 048-03	5680 046-02	3021 010-050	5680 046-02				
89	5549 127-20	5680 046-01	5680 048-01	5680 048-01	5680 048-03	5680 046-02	3021 010-050	5680 046-02				
102-108	5549 126-10	5680 046-01	5680 048-03		5680 048-01	5680 046-02	3021 010-050	5680 046-06				
111-114	5549 126-10	5680 046-01	5680 048-03		5680 048-01	5680 046-02	3021 010-050	5680 046-06				
137-152	5549 126-10	5680 046-01	5680 048-03		5680 048-01	5680 046-02	3021 010-050	5680 046-06				
165	5549 126-10	5680 046-01	5680 048-03		5680 048-01	5680 046-02	3021 010-050	5680 046-06				

Keys (mm/Torx Plus) sizes, see page 147

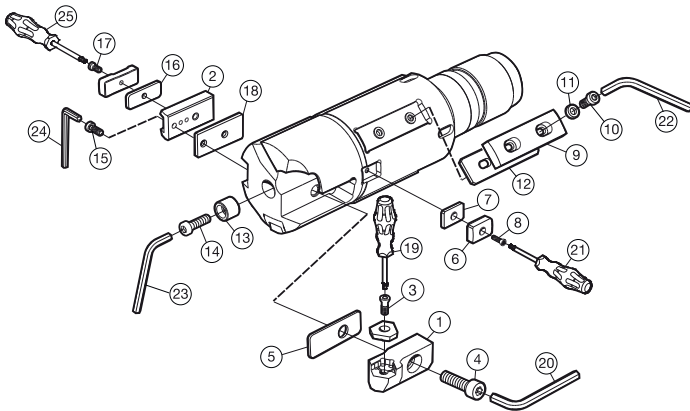
CoroDrill® 818



	Included parts		Spare parts		
	1	2	3	4	5
Ordering code	Peripheral cartridge	Pad shoes	Insert screw	Screw	Shim
818.20-1D040.00S08B	R818-1016B-TXN-16	818-08-030-R	5513 020-02	3212 020-310	5549 128-06
818.20-1D043.00S08B	R818-1016B-TXN-16	818-08-040-R	5513 020-02	3212 020-310	5549 128-06
818.20-1D047.00S09B	R818-1016B-TXN-16	818-10-040-R	5513 020-02	3212 020-310	5549 128-06
818.20-1D051.00S10B	R818-1016B-TXN-16	818-10-040-R	5513 020-02	3212 020-310	5549 128-06
818.20-1D055.00S10B	R818-1016B-TXN-16	818-10-040-R	5513 020-02	3212 020-310	5549 128-06
818.20-1D059.00S11B	R818-1016B-TXN-16	818-10-040-R	5513 020-02	3212 020-310	5549 128-06
	Spare parts				
	6	7	8	9	10
Ordering code	Safety pad	Shim	Screw	Fibre pad blank	Screw
818.20-1D040.00S08B				5571 001-05	3212 010-205
818.20-1D043.00S08B				5571 001-05	3212 010-205
818.20-1D047.00S09B	801-142067-S	5549 126-90	5513 020-01	5571 001-05	3212 010-205
818.20-1D051.00S10B	801-142067-S	5549 126-90	5513 020-01	5571 001-06	3212 010-257
818.20-1D055.00S10B	801-142067-S	5549 126-90	5513 020-01	5571 001-06	3212 010-257
818.20-1D059.00S11B	801-142067-S	5549 126-90	5513 020-01	5571 001-06	3212 010-257
	Spare parts				
	11	12	13	14	15
Ordering code	Washer	Shim	Seat protection plate	Screw	Screw
818.20-1D040.00S08B	3411 010-032	5549 126-55	N/A	N/A	148C-831
818.20-1D043.00S08B	3411 010-032	5549 126-55	N/A	N/A	148C-831
818.20-1D047.00S09B	3411 010-032	5549 126-55	N/A	N/A	148C-831
818.20-1D051.00S10B	3411 010-043	5549 126-56	N/A	N/A	148C-831
818.20-1D055.00S10B	3411 010-043	5549 126-56	N/A	N/A	148C-831
818.20-1D059.00S11B	3411 010-043	5549 126-56	N/A	N/A	148C-831
	Spare parts			Included parts	
	16	17	18	19	20
Ordering code	Shim	Screw	Shim set	Screwdriver	Key
818.20-1D040.00S08B		5513 030-02	5549 128-30	5680 046-02	3021 010-040
818.20-1D043.00S08B		5513 030-02	5549 128-30	5680 046-02	3021 010-040
818.20-1D047.00S09B		5513 011-01	5549 128-30	5680 046-02	3021 010-040
818.20-1D051.00S10B		5513 011-01	5549 128-30	5680 046-02	3021 010-040
818.20-1D055.00S10B		5513 011-01	5549 128-30	5680 046-02	3021 010-040
818.20-1D059.00S11B		5513 011-01	5549 128-30	5680 046-02	3021 010-040
	Included parts				
	21	22	23	24	25
Ordering code	Screwdriver	Key	Key	Key	Key
818.20-1D040.00S08B		3021 010-025	N/A	170.3-864	5680 051-01
818.20-1D043.00S08B		3021 010-025	N/A	170.3-864	5680 051-01
818.20-1D047.00S09B	5680 046-02	3021 010-025	N/A	170.3-864	174.1-870
818.20-1D051.00S10B	5680 046-02	3021 010-030	N/A	170.3-864	174.1-870
818.20-1D055.00S10B	5680 046-02	3021 010-030	N/A	170.3-864	174.1-870
818.20-1D059.00S11B	5680 046-02	3021 010-030	N/A	170.3-864	174.1-870

Keys (mm/Torx Plus) sizes, see page 147

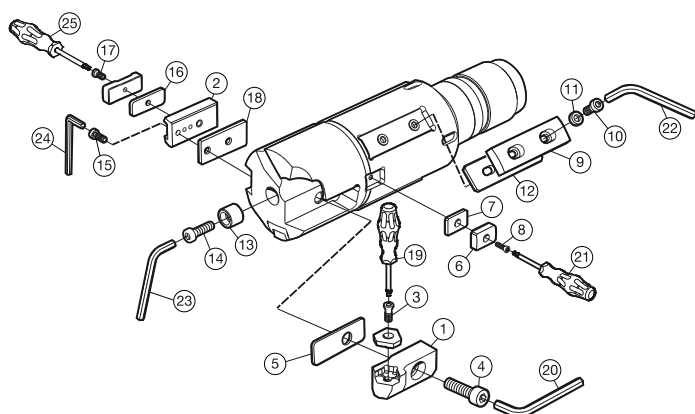
CoroDrill® 818



	Included parts		Spare parts		
	1	2	3	4	5
Ordering code	Peripheral cartridge	Pad shoes	Insert screw	Screw	Shim
818.20-1D063.00S12B	R818-1016B-TXN-16	818-10-040-R	5513 020-02	3212 020-310	5549 128-06
818.20-1D065.00S12B	R818-2024S-TXN-25		5513 020-55	3212 010-412	5549 128-10
818.20-1D073.00S13B	R818-2024S-TXN-25		5513 020-55	3212 010-412	5549 128-10
818.20-1D078.00S14B	R818-2024S-TXN-25	818-12-065-S	5513 020-55	3212 010-412	5549 128-10
818.20-1D085.00S15B	R818-2024S-TXN-25	818-12-065-S	5513 020-55	3212 010-412	5549 128-10
818.20-1D110.00S18B	R818-2532S-TXN-40	818-16-110-S	5513 020-14	3212 010-464	5549 128-20
	Spare parts				
	6	7	8	9	10
Ordering code	Safety pad	Shim	Screw	Fibre pad blank	Screw
818.20-1D063.00S12B	801-142067-S	5549 126-90	5513 020-01	5571 001-06	3212 010-257
818.20-1D065.00S12B	801-142067-S	5549 126-90	5513 020-01	5571 001-06	3212 010-257
818.20-1D073.00S13B	801-142067-S	5549 126-90	5513 020-01	5571 001-07	3212 010-308
818.20-1D078.00S14B	801-142067-S	5549 126-90	5513 020-01	5571 001-07	3212 010-308
818.20-1D085.00S15B	801-142067-S	5549 126-90	5513 020-01	5571 001-07	3212 010-308
818.20-1D110.00S18B	801-202582-S	5549 126-91	5513 020-26	5571 001-09	3212 010-399
	Spare parts				
	11	12	13	14	15
Ordering code	Washer	Shim	Seat protection plate	Screw	Screw
818.20-1D063.00S12B	3411 010-043	5549 126-56			148C-831
818.20-1D065.00S12B	3411 010-043	5549 126-56	5549 029-01	3212 020-259	
818.20-1D073.00S13B	3411 010-053	5549 126-57	5549 029-02	3212 020-309	
818.20-1D078.00S14B	3411 010-053	5549 126-57	5549 029-03	3212 020-360	3212 020-258
818.20-1D085.00S15B	3411 010-053	5549 126-57	5549 029-04	3212 020-410	3212 020-258
818.20-1D110.00S18B	3411 010-064	5549 126-59	5549 029-04	3212 020-410	3212 020-309
	Spare parts			Included parts	
	16	17	18	19	20
Ordering code	Shim	Screw	Shim set	Screwdriver	Key
818.20-1D063.00S12B		5513 011-01	5549 128-30	5680 046-02	3021 010-040
818.20-1D065.00S12B	5549 127-20			5680 046-06	3021 010-060
818.20-1D073.00S13B	5549 127-20			5680 046-06	3021 010-060
818.20-1D078.00S14B	5549 127-20	5513 020-10		5680 046-06	3021 010-060
818.20-1D085.00S15B	5549 127-20	5513 020-10		5680 046-06	3021 010-060
818.20-1D110.00S18B	5549 127-20	5513 020-26		5680 046-07	3021 010-080
	Included parts				
	21	22	23	24	25
Ordering code	Screwdriver	Key	Key	Key	Key
818.20-1D063.00S12B	5680 046-02	3021 010-030		170.3-864	174.1-870
818.20-1D065.00S12B	5680 046-02	3021 010-030			
818.20-1D073.00S13B	5680 046-02	3021 010-040	3021 010-030		
818.20-1D078.00S14B	5680 046-02	3021 010-040	3021 010-050	174.1-864	5680 046-02
818.20-1D085.00S15B	5680 046-02	3021 010-040	3021 010-060	174.1-864	5680 046-02
818.20-1D110.00S18B	5680 046-06	3021 010-050	3021 010-060	5680 010-06	5680 046-06

Keys (mm/Torx Plus) sizes, see page 147

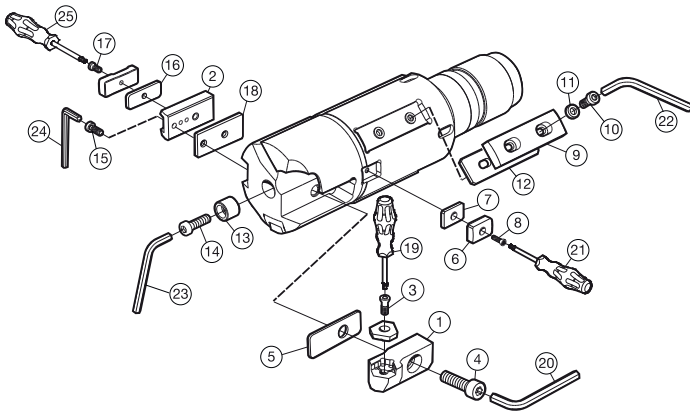
CoroDrill® 818



	Included parts		Spare parts		
	1	2	3	4	5
Ordering code	Peripheral cartridge	Pad shoes	Insert screw	Screw	Shim
818.20-1D135.00S20B	R818-2532S-TXN-40	818-16-110-S	5513 020-14	3212 010-464	5549 128-20
818.20-1D160.00S22B	R818-2532S-TXN-40	818-16-110-S	5513 020-14	3212 010-464	5549 128-20
818.20-1D185.00S24B	R818-2532S-TXN-40	818-16-110-S	5513 020-14	3212 010-464	5549 128-20
818.20-1D210.00S26B	R818-2532S-TXN-40	818-18-300-R	5513 020-14	3212 010-464	5549 128-20
818.20-1D254.00S30B	R818-2532S-TXN-40	818-18-300-R	5513 020-14	3212 010-464	5549 128-20
	Spare parts				
	6	7	8	9	10
Ordering code	Safety pad	Shim	Screw	Fibre pad blank	Screw
818.20-1D135.00S20B	801-202582-S	5549 126-91	5513 020-26	5571 001-10	3212 010-409
818.20-1D160.00S22B	801-202582-S	5549 126-91	5513 020-26	5571 001-11	3212 010-460
818.20-1D185.00S24B	801-202582-S	5549 126-91	5513 020-26	5571 001-11	3212 010-460
818.20-1D210.00S26B	801-202582-S	5549 126-91	5513 020-26	5571 001-12	3212 010-460
818.20-1D254.00S30B	801-202582-S	5549 126-91	5513 020-26	5571 001-12	3212 010-460
	Spare parts				
	11	12	13	14	15
Ordering code	Washer	Shim	Seat protection plate	Screw	Screw
818.20-1D135.00S20B	3411 010-084	5549 126-60	5549 029-05	3212 020-462	3212 020-309
818.20-1D160.00S22B	3411 010-105	5549 126-61	5549 029-06	3212 010-513	3212 020-309
818.20-1D185.00S24B	3411 010-105	5549 126-61	5549 029-06	3212 010-513	3212 020-309
818.20-1D210.00S26B	3411 010-105	5549 126-62	5549 029-07	3212 010-564	3212 010-363
818.20-1D254.00S30B	3411 010-105	5549 126-62	5549 029-07	3212 010-564	3212 010-363
	Spare parts			Included parts	
	16	17	18	19	20
Ordering code	Shim	Screw	Shim set	Screwdriver	Key
818.20-1D135.00S20B	5549 126-10	5513 020-26		5680 046-07	3021 010-080
818.20-1D160.00S22B	5549 126-10	5513 020-26		5680 046-07	3021 010-080
818.20-1D185.00S24B	5549 126-10	5513 020-26		5680 046-07	3021 010-080
818.20-1D210.00S26B			5549 126-79	5680 046-07	3021 010-080
818.20-1D254.00S30B			5549 126-79	5680 046-07	3021 010-080
	Included parts				
	21	22	23	24	25
Ordering code	Screwdriver	Key	Key	Key	Key
818.20-1D135.00S20B	5680 046-06	3021 010-060	3021 010-080	5680 010-06	5680 046-06
818.20-1D160.00S22B	5680 046-06	3021 010-080	3021 010-100	5680 010-06	5680 046-06
818.20-1D185.00S24B	5680 046-06	3021 010-080	3021 010-100	5680 010-06	5680 046-06
818.20-1D210.00S26B	5680 046-06	3021 010-080	3021 010-140		
818.20-1D254.00S30B	5680 046-06	3021 010-080	3021 010-140		

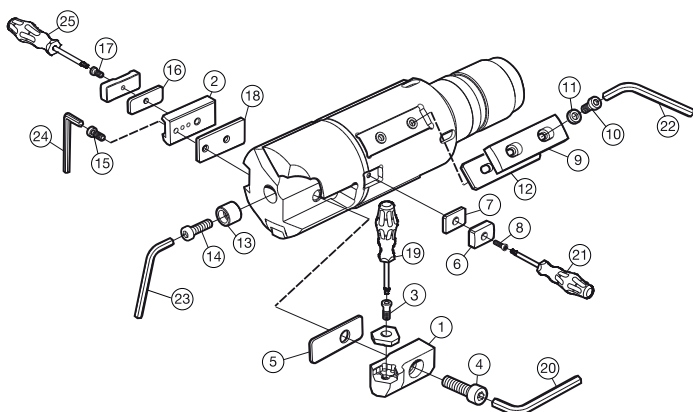
Keys (mm/Torx Plus) sizes, see page 147

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	Included parts		Spare parts		
	1	2	3	4	5
Ordering code	Peripheral cartridge	Pad shoes	Insert screw	Screw	Shim
A818.20-1D02.750S13B	R818-2024S-TXN-25		5513 020-55	3212 010-412	5549 128-10
A818.20-1D03.000S14B	R818-2024S-TXN-25	818-12-065-S	5513 020-55	3212 010-412	5549 128-10
A818.20-1D03.500S15B	R818-2024S-TXN-25	818-12-065-S	5513 020-55	3212 010-412	5549 128-10
A818.20-1D03.750S16B	R818-2024S-TXN-25	818-12-065-S	5513 020-55	3212 010-412	5549 128-10
A818.20-1D04.000S17B	R818-2532S-TXN-40	818-16-110-S	5513 020-14	3212 010-464	5549 128-20
A818.20-1D04.750S19B	R818-2532S-TXN-40	818-16-110-S	5513 020-14	3212 010-464	5549 128-20
A818.20-1D05.750S21B	R818-2532S-TXN-40	818-16-110-S	5513 020-14	3212 010-464	5549 128-20
	Spare parts				
	6	7	8	9	10
Ordering code	Safety pad	Shim	Screw	Fibre pad blank	Screw
A818.20-1D02.750S13B	801-142067-S	5549 126-90	5513 020-01	5571 001-06	3212 010-257
A818.20-1D03.000S14B	801-142067-S	5549 126-90	5513 020-01	5571 001-07	3212 010-308
A818.20-1D03.500S15B	801-142067-S	5549 126-90	5513 020-01	5571 001-07	3212 010-308
A818.20-1D03.750S16B	801-142067-S	5549 126-90	5513 020-01	5571 001-08	3212 010-399
A818.20-1D04.000S17B	801-202582-S	5549 126-91	5513 020-26	5571 001-09	3212 010-399
A818.20-1D04.750S19B	801-202582-S	5549 126-91	5513 020-26	5571 001-09	3212 010-399
A818.20-1D05.750S21B	801-202582-S	5549 126-91	5513 020-26	5571 001-10	3212 010-409
	Spare parts				
	11	12	13	14	15
Ordering code	Washer	Shim	Seat protection plate	Screw	Screw
A818.20-1D02.750S13B	3411 010-043	5549 126-56	5549 029-01	3212 020-259	
A818.20-1D03.000S14B	3411 010-053	5549 126-57	5549 029-03	3212 020-360	3212 020-258
A818.20-1D03.500S15B	3411 010-053	5549 126-57	5549 029-04	3212 020-410	3212 020-258
A818.20-1D03.750S16B	3411 010-064	5549 126-58	5549 029-04	3212 020-410	3212 020-258
A818.20-1D04.000S17B	3411 010-064	5549 126-59	5549 029-05	3212 020-462	3212 020-309
A818.20-1D04.750S19B	3411 010-064	5549 126-59	5549 029-05	3212 020-462	3212 020-309
A818.20-1D05.750S21B	3411 010-084	5549 126-60	5549 029-05	3212 020-462	3212 020-309
	Spare parts			Included parts	
	16	17	18	19	20
Ordering code	Shim	Screw	Shim set	Screwdriver	Key
A818.20-1D02.750S13B	5549 127-20			5680 046-06	3021 010-060
A818.20-1D03.000S14B	5549 127-20	5513 020-10		5680 046-06	3021 010-060
A818.20-1D03.500S15B	5549 127-20	5513 020-10		5680 046-06	3021 010-060
A818.20-1D03.750S16B	5549 127-20	5513 020-10		5680 046-06	3021 010-060
A818.20-1D04.000S17B	5549 126-10	5513 020-26		5680 046-07	3021 010-080
A818.20-1D04.750S19B	5549 126-10	5513 020-26		5680 046-07	3021 010-080
A818.20-1D05.750S21B	5549 126-10	5513 020-26		5680 046-07	3021 010-080
	Included parts				
	21	22	23	24	
Ordering code	Screwdriver	Key	Key	Key	
A818.20-1D02.750S13B	5680 046-02	3021 010-030	3021 010-030		
A818.20-1D03.000S14B	5680 046-02	3021 010-040	3021 010-050	174.1-864	
A818.20-1D03.500S15B	5680 046-02	3021 010-040	3021 010-060	174.1-864	
A818.20-1D03.750S16B	5680 046-02	3021 010-050	3021 010-060	174.1-864	
A818.20-1D04.000S17B	5680 046-06	3021 010-050	3021 010-080	5680 010-06	
A818.20-1D04.750S19B	5680 046-06	3021 010-050	3021 010-080	5680 010-06	
A818.20-1D05.750S21B	5680 046-06	3021 010-060	3021 010-100	5680 010-06	

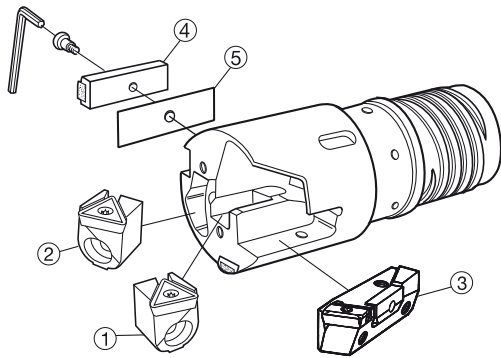
CoroDrill® 818



	Included parts	Spare parts			
	1	2	3	4	5
Ordering code	Peripheral cartridge	Pad shoes	Insert screw	Screw	Shim
A818.20-1D06.750S23B	R818-2532S-TXN-40	818-16-110-S	5513 020-14	3212 010-464	5549 128-20
A818.20-1D07.750S25B	R818-2532S-TXN-40	818-16-110-S	5513 020-14	3212 010-464	5549 128-20
A818.20-1D08.750S27B	R818-2532S-TXN-40	818-18-300-R	5513 020-14	3212 010-464	5549 128-20
A818.20-1D09.375S28B	R818-2532S-TXN-40	818-18-300-R	5513 020-14	3212 010-464	5549 128-20
A818.20-1D10.625S30B	R818-2532S-TXN-40	818-18-300-R	5513 020-14	3212 010-464	5549 128-20
A818.20-1D11.250S32B	R818-2532S-TXN-40	818-18-300-R	5513 020-14	3212 010-464	5549 128-20
	Spare parts				
	6	7	8	9	10
Ordering code	Safety pad	Shim	Screw	Fibre pad blank	Screw
A818.20-1D06.750S23B	801-202582-S	5549 126-91	5513 020-26	5571 001-11	3212 010-460
A818.20-1D07.750S25B	801-202582-S	5549 126-91	5513 020-26	5571 001-11	3212 010-460
A818.20-1D08.750S27B	801-202582-S	5549 126-91	5513 020-26	5571 001-12	3212 010-460
A818.20-1D09.375S28B	801-202582-S	5549 126-91	5513 020-26	5571 001-12	3212 010-460
A818.20-1D10.625S30B	801-202582-S	5549 126-91	5513 020-26	5571 001-12	3212 010-460
A818.20-1D11.250S32B	801-202582-S	5549 126-91	5513 020-26	5571 001-12	3212 010-460
	Spare parts				
	11	12	13	14	15
Ordering code	Washer	Shim	Seat protection plate	Screw	Screw
A818.20-1D06.750S23B	3411 010-105	5549 126-61	5549 029-06	3212 010-513	3212 020-309
A818.20-1D07.750S25B	3411 010-105	5549 126-61	5549 029-06	3212 010-513	3212 020-309
A818.20-1D08.750S27B	3411 010-105	5549 126-62	5549 029-07	3212 010-564	3212 010-363
A818.20-1D09.375S28B	3411 010-105	5549 126-62	5549 029-07	3212 010-564	3212 010-363
A818.20-1D10.625S30B	3411 010-105	5549 126-62	5549 029-07	3212 010-564	3212 010-363
A818.20-1D11.250S32B	3411 010-105	5549 126-62	5549 029-07	3212 010-564	3212 010-363
	Spare parts		Included parts		
	16	17	18	19	20
Ordering code	Shim	Screw	Shim set	Screwdriver	Key
A818.20-1D06.750S23B	5549 126-10	5513 020-26		5680 046-07	3021 010-080
A818.20-1D07.750S25B	5549 126-10	5513 020-26		5680 046-07	3021 010-080
A818.20-1D08.750S27B			5549 126-79	5680 046-07	3021 010-080
A818.20-1D09.375S28B	5549 126-10		5549 126-79	5680 046-07	3021 010-080
A818.20-1D10.625S30B	5549 126-10		5549 126-79	5680 046-07	3021 010-080
A818.20-1D11.250S32B	5549 126-10		5549 126-79	5680 046-07	3021 010-080
	Included parts				
	21	22	23	24	
Ordering code	Screwdriver	Key	Key	Key	
A818.20-1D06.750S23B	5680 046-06	3021 010-080	3021 010-100	5680 010-06	
A818.20-1D07.750S25B	5680 046-06	3021 010-080	3021 010-100	5680 010-06	
A818.20-1D08.750S27B	5680 046-06	3021 010-080	3021 010-140		
A818.20-1D09.375S28B	5680 046-06	3021 010-080	3021 010-140		
A818.20-1D10.625S30B	5680 046-06	3021 010-080	3021 010-140		
A818.20-1D11.250S32B	5680 046-06	3021 010-080	3021 010-140		

Keys (mm/Torx Plus) sizes, see page 147

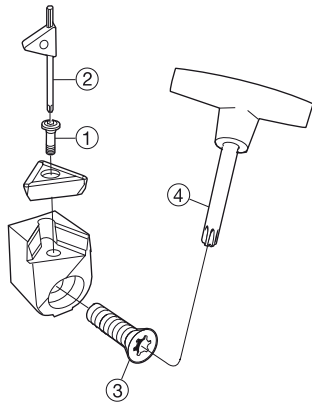
T-MAX® solid drill head 424.10



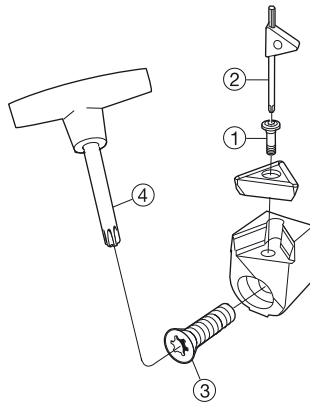
1	2	3	4	5
Central cartridge See below	Intermediate cartridge See below	Peripheral cartridge See below	Support pad See page 38.	Shim See page 38.

T-Max® U cartridges

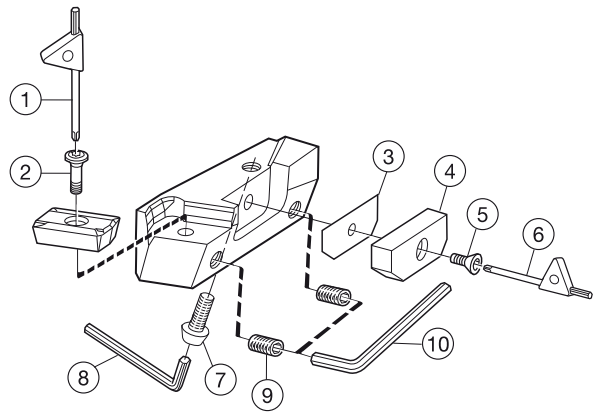
Central cartridges
L430.31



Intermediate cartridge
R430.30



Peripheral cartridge
R430.28



Central cartridge	Intermediate cartridge	1	2	3	4
Diameter range, mm (inch)	Diameter range, mm (inch)	Screw	Key (Torx Plus)	Screw	Key (Torx Plus)
L430.31-1216-16 63.50-82.55 (2.500-3.250) 107.95-130.00 (4.240-5.118)	R430.30-1216-16 63.50-90.00 (2.500-3.543) 107.95-130.00 (4.240-5.118)	5513 020-26	5680 049-03 (9IP)	5513 020-26	5680 048 03 (20IP)
L430.31-1522-22 85.00-105.00 (3.346-4.134)	R430.30-1522-22 95.00-105.00 (3.740-4.134)	5513 020-25	5680 049-02 (15IP)	5513 020-26	5680 048 03 (20IP)

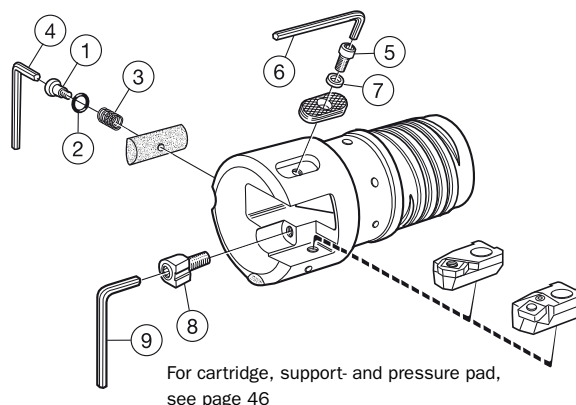
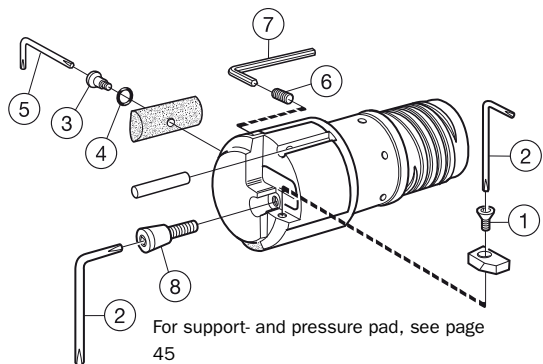
Peripheral cartridge	1	2	4	5	6	7	8	9	10
Diameter range, mm (inch)	Key (Torx Plus)	Screw	Insert protection pad	Screw	Key (Torx Plus)	Screw	Key (mm)	Screw	Key (mm)
R430.28-1516-16 63.50-71.45 (2.500-2.813) 107.95-120.65 (4.250-4.750)	5680 049-03 (9IP)	5513 020-24	5636 030-01	154.3-835	5680 049-03 (9IP)	430.21-825	3021 010-040 (4.0)	3214 010-357	174.1-864 (3.0)
R430.28-1822-22 75.00-105.00 (2.953-4.134) 125.00-130.00(4.921-5.118)	5680 049-02 (15IP)	5513 020-25	5636 030-02	154.3-835	5680 049-03 (9IP)	430.21-825	3021 010-040 (4.0)	3214 010-357	174.1-864 (3.0)

	3			
	Shim mm (inch)			
R430.28-1516-16	5549 024-01 0.1 (.004)	5549 024-02 0.2 (.006)	5549 024-03 0.4 (.016)	5549 024-04 0.8 (.031)
R430.28-1822-22	5549 024-05 0.1 (.004)	5549 024-06 0.2 (.006)	5549 024-07 0.4 (.016)	5549 024-08 0.8 (.031)

T-MAX® counterboring heads 424.31F

Diameter range 20.00-43.00 mm (.787-1.693 inch)

Diameter range 43.01-124.00 mm (1.693-4.882 inch)



Diameter range 20.00-43.00 mm (.787-1.693 inch)

Diameter range	1	2	3	4	5	6	7	8
D_c mm (inch)	Screw	Key (Torx Plus)	Screw	O-ring	Key (Torx Plus)	Screw	Key (mm)	Screw
20.00-31.00 (.787-1.220)	416.1-830	5680 046-03 (7IP)	5513 030-01 ¹⁾	5641 001-13 ¹⁾	5680 051-01 (7IP) ¹⁾	3214 040-154 ¹⁾	3021 012-013 (1.27) ¹⁾	5513 014-01
31.01-43.00 (1.221-1.693)	416.1-830	5680 046-03 (7IP)	5513 030-02 ¹⁾	5641 001-13 ¹⁾	5680 051-01 (7IP) ¹⁾	3214 040-206 ¹⁾	174.1-862 (1.5) ¹⁾	5513 014-01

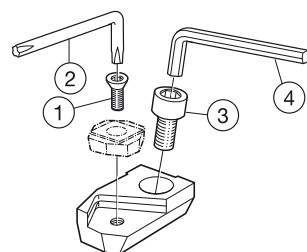
Diameter range 43.01-124.00 mm (1.693-4.882 inch)

Diameter range	1	2	3	4	5	6	7	8	9
D_c mm (inch)	Screw	O-ring	Spring	Key (mm)	Screw	Key (mm)	Washer	Wedge set	Key (mm)
43.01-65.00 (1.694-2.559)	5513 011-01 ¹⁾	3671 010-110 ¹⁾	-	174.1-870 (2.0) ¹⁾	3213 010-206 ¹⁾	174.1-870 (2.0) ¹⁾	-	5332 040-011	174.1-864 (3.0)
65.00-79.99 (2.559-3.146)	430.21-820 ¹⁾	-	430.21-821 ¹⁾	174.1-864 (3.0)	3212 010-207	174.1-863 (2.5)	3411 010-032	5332 040-011	174.1-864 (3.0)
80.00-89.90 (3.150-3.539)	430.21-820 ¹⁾	-	430.21-821 ¹⁾	174.1-864 (3.0)	3212 010-307	3021 010-040 (4.0)	3411 011-053	5332 040-011	174.1-864 (3.0)
90.00-124.99 (3.543-4.882)	430.21-820 ¹⁾	-	430.21-821 ¹⁾	174.1-864 (3.0)	3212 010-358	3021 010-050 (5.0)	3411 011-064	5332 040-011	174.1-864 (3.0)

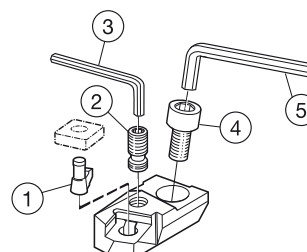
¹⁾ Delivered with pad

Cartridges for T-MAX® counterboring heads 424.31F

R430.24-1118-06
Cartridge for close tolerances



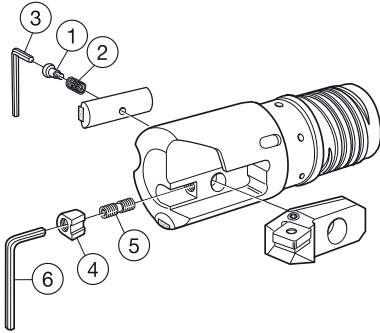
R430.24-1018-09
Cartridge for normal tolerances



1	2	3	4
Screw	Key (Torx Plus)	Screw	Key (mm)
416.1-833	5680 046-05 (10IP)	3212 010-307	3021 010-040 (4.0)

1	2	3	4	5
Lever	Screw	Key (mm)	Key	Key (mm)
174.3-845-1	174.3-829	174.1-870 (2.0)	3212 010-307	3021 010-040 (4.0)

T-MAX® counterboring heads 424.31

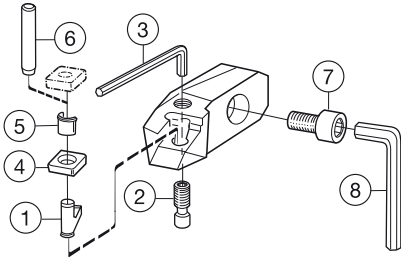


Diameter range, mm, inch:	1 ¹⁾	2 ¹⁾	3	4	5	6
<i>D_c</i> mm (inch)	Screw	Spring	Key (mm)	Wedge	Screw	Key (mm)
65.00-278.99 (2.559-10.984)	430.21-820	430.21-821	174.1-864 (3.0)	430.23-820	269.833	3021 010-040 (4.0)
279.00- (10.984-)	430.21-823	430.21-824	3021 010-040 (4.0)	430.23-820	269.833	3021 010-040 (4.0)

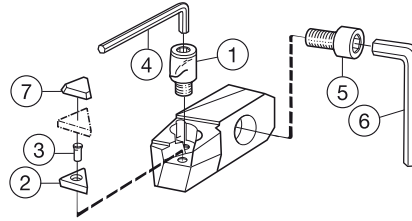
¹⁾ Delivered with pad

Cartridges for T-MAX® counterboring heads 424.31

T-Max® P Lever design cartridge R430.24



T-MAX® S top clamp design cartridge R430.23



T-Max® P Cartridge R430.24?	1	2	3	4	5	6	7	8
	Lever mm (inch)	Screw	Key (mm)	Shim	Shim pin	Shim pin Punch	Screw	Key (mm)
R430.24-2024-12	174.3-841M 3.0 (.118)	174.3-821	174.1-864 (6.0)	174.3-851M	174.3-861	174.3-871	3212 010-412	3021 010-060 ¹⁾
R430.24-2532-19	174.3-842M 4.0 (.157)	174.3-822M	3021 010-040 (8.0)	174.3-852M	174.3-862	174.3-872	3212 010-464	3021 010-080 ¹⁾

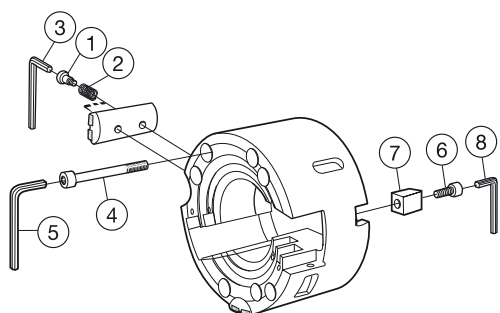
T-MAX® S Cartridge R430.23	1	2	3	4	5	6
	Clamp set	Shim	Shim pin	Key (mm)	Screw	Key (mm)
R430.23-2024-16	174.9-837-1	175.2-850	174.1-865	174.1-864 (3.0)	3212 010-412	3021 010-060 (6.0) ¹⁾
R430.23-2532-22	174.9-838-1	175.2-851	174.1-866	3021 010-040 (4.0)	3212 010-464	3021 010-080 (8.0) ¹⁾

¹⁾ Supplied on request

Optional parts

Cartridge	Are to be used for TPUN inserts and loose chipbreaker. Available separately.		
	1	4	7
	Clamp set	Key (mm)	Chipbreaker mm (inch)
R430.23-2024-16	174.9-833-2	174.1-864 (3.0)	DO 212 H35 B = 1.2 mm (.047) DO 220 H35 B = 2.0 mm (.079)
R430.23-2532-22	174.9-835-1	3021 010-040 (4.0)	DO 320 H35 B = 2.0 mm (.079) DO 325 H35 B = 2.5 mm (.098)

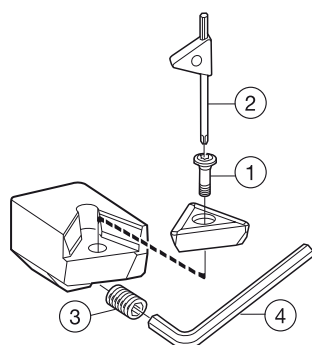
T-MAX® trepanning head 420.7



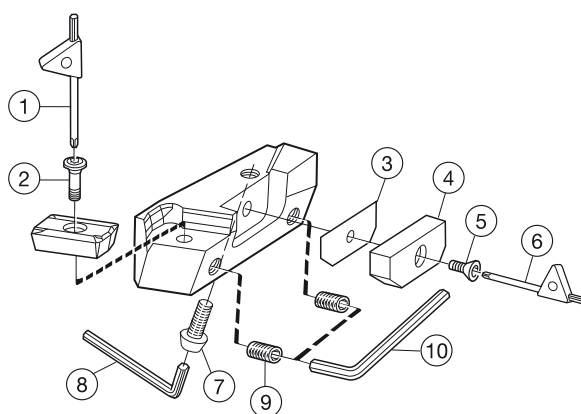
Support pad set	1 ¹⁾	2 ¹⁾	3		
	Screw	Spring	Key (mm)		
430.21-12 D	430.21-820	430.21-821	174.1-864 (3.0)		
430.21-16 D					
430.21-18 D					
1) Delivered with pad					
	4	5	6	7	8
	Screw	Key (mm)	Screw	Wedge	Key (mm)
	3212 010-473 (8.0)	3021 010-080	3212 010-396	420.7-820 (5.0)	3021 010-050

T-Max® U cartridges

Central cartridge L430.27



Peripheral cartridge R430.28



Central cartridge	1	2	3	4
	Screw	Key (Torx Plus)	Screw	Key (mm)
L430.27-1216-16	5513 020-24	5680 049-03 (9IP)	437.5-822	174.1-864 (3.0)
L430.27-1522-22	5513 020-25	5680 049-02 (15IP)	437.5-822	174.1-864 (3.0)

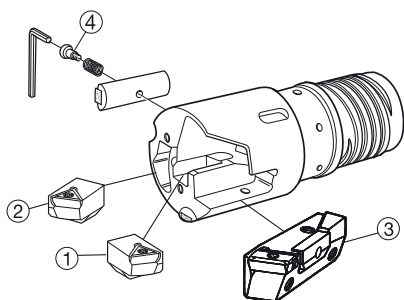
Peripheral cartridge	1	2	4	5	6	7	8	9	10
	Key (Torx Plus)	Screw	Insert protection pad	Screw	Key (Torx Plus)	Screw	Key (mm)	Screw	Key (mm)
R430.28-1516-16	5680 049-03 (9IP)	5513 020-24	5636 030-01	154.3-835	5680 049-03 (9IP)	430.21-825	3021 010-040 (4.0)	3214 010-357	174.1-864 (3.0)
R430.28-1822-22	5680 049-02 (15IP)	5513 020-25	5636 030-02	154.3-835	5680 049-03 (9IP)	430.21-825	3021 010-040 (4.0)	3214 010-357	174.1-864 (3.0)

Peripheral cartridge	3			
	Shim (mm)			
R430.28-1516-16	5549 024-01 (0.1)	5549 024-02 (0.2)	5549 024-03 (0.4)	5549 024-04 (0.8)
R430.28-1822-22	5549 024-05 (0.1)	5549 024-06 (0.2)	5549 024-07 (0.4)	5549 024-08 (0.8)

Hook spanners for deep hole drills

Solid drill head 424.6	Solid drill head 424.10 Counterboring head 424.32	Counterboring head 424.31F	Trepanning head 420.7	CoroDrill® 801	CoroDrill® 818	Hook spanner
D_c mm (inch)	D_c mm (inch)	D_c mm (inch)	D_c mm (inch)	D_c mm (inch)	D_c mm (inch)	(DIN 1810)
24.11-26.40 (.949 - 1.039)	-	20.00-23.40 (.787 - .921)	-	-	-	3022 010-016
26.41-33.30 (1.040 - 1.311)	-	23.41-31.00 (.922 - 1.220)	-	-	-	3022 010-025
33.31-36.20 (1.312 - 1.425)	-	31.01-35.00 (1.221 - 1.378)	-	-	-	3022 010-030
36.21-43.00 (1.426 - 1.692)	-	35.01-40.00 (1.379 - 1.575)	-	-	-	3022 010-034
43.01-47.00 (1.693 - 1.850)	-	40.01-47.00 (1.576 - 1.850)	-	-	40.00-51.00 (1.575-2.008)	3022 010-040
47.01-56.20 (1.851 - 2.212)	-	47.01-55.00 (1.851 - 2.165)	-	-	51.00-59.00 (2.008-2.323)	3022 010-045
56.21-62.80 (2.213 - 2.472)	-	55.01-60.00 (2.166 - 2.362)	-	-	59.00-63.00 (2.323-2.480)	3022 010-052
62.81-65.00 (2.473 - 2.559)	65, 65E, 70 (2.559, 2.559E), 2.756)	60.01-72.90 (2.363 - 2.870)	-	65.00-74.00 (2.559-2.913)	63.00-71.85 (2.480-2.829)	3022 010-058
-	75, 80 (2.953, 3.150)	73.00-79.90 (2.871 - 3.146)	-	73.02-80.20 (2.875-3.157)	73.00-88.00 (2.874-3.465)	3022 010-068
-	85, 90, 95 (3.346, 3.543, 3.740)	80.00-99.90 (3.147 - 3.933)	-	80.00-102.00 (3.150-4.016)	85.00-111.25 (3.346-4.380)	3022 010-080
-	100, 105, 110 (3.937, 4.134, 4.331)	100.00-111.90 (3.934 - 4.406)	-	101.60-116.13 (4.000-4.572)	101.60-126.00 (4.000-4.961)	3022 010-095
-	115, 120 (4.528, 4.724)	112.00-123.90 (4.407 - 4.878)	120 (4.724)	114.30-125.00 (4.500-4.921)	120.65-136.65 (4.750-5.380)	3022 010-110
-	125, 130 (4.921, 5.118)	-	125, 130, 140 (4.921, 5.118, 5.512)	125.00-141.53 (4.921-5.572)	135.00-151.00 (5.315-5.945)	3022 010-120
-	150 (5.906)	-	150 (5.906)	141.50-162.00 (5.571-6.378)	146.05-162.05 (5.750-6.380)	3022 010-135
-	160, 170 (6.299, 6.693)	-	160 (6.299, 6.693)	162.00-170.10 (6.378-6.697)	160.00-187.45 (6.299-7.380)	3022 010-155
-	180 (7.087)	-	180 (7.087)	-	185.00-212.85 (7.283-8.380)	3022 010-180

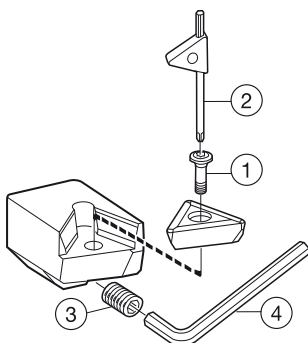
Spare parts for obsolete tools T-MAX® solid drill head 424.9



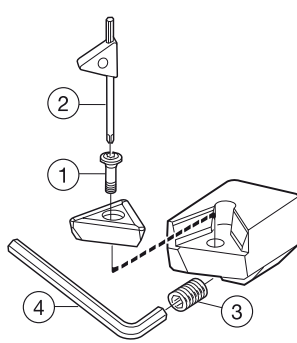
	TPMX	TPUN	P	M	K	N
			GC	GC	GC	GC
	235	4235	235	4235	4235	4235
16	TPMX	16 03 12 R22	☆	☆	☆	☆
22	TPMX	22 04 12 R22	☆	☆	☆	☆
16	TPUN	16 03 12	☆	☆	☆	☆
22	TPUN	22 04 12	☆	☆	☆	☆

Support pad set	1	2	3	4
	Central cartridge	Intermediate cartridge	Peripheral cartridge	Screw
430.21-12D	See below	See below	See below	430.21-820
430.21-16D				
430.21-18D				

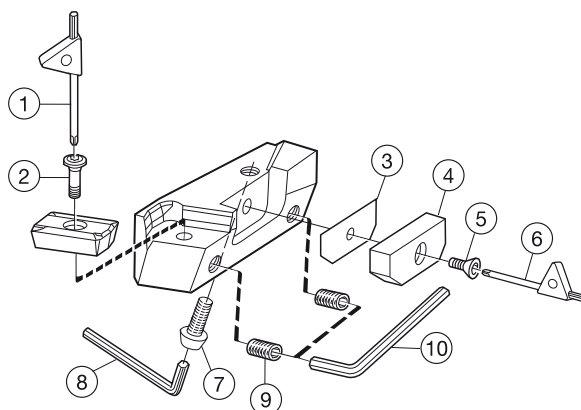
Central cartridge L430.27



Intermediate cartridge R430.26



Peripheral cartridge R430.28

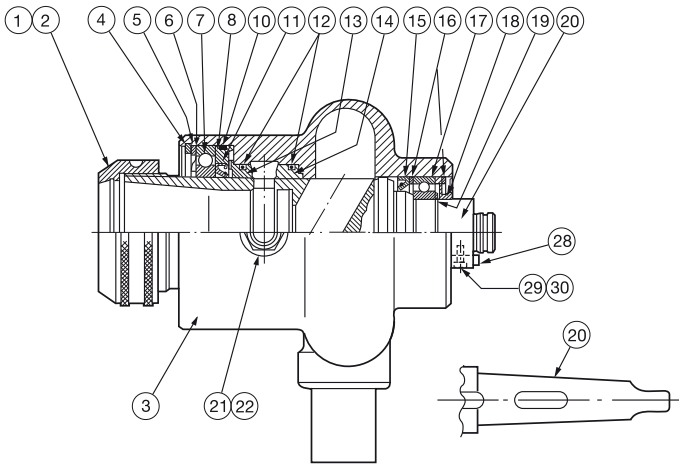




Central cartridge	Intermediate cartridge	1	2	3	4
		Screw	Key (Torx Plus)	Screw	Key (mm)
L430.27-1216-16	R430.26-1216-16	5513 020-24	5680 049-03 (9IP)	437.5-822	174.1-864 (3.0)
L430.27-1522-22	R430.26-1522-22	5513 020-25	5680 049-02 (15IP)	437.5-822	174.1-864 (3.0)

Peripheral cartridge	1	2	4	5	6	7	8	9	10
	Key (Torx Plus)	Screw	Insert protection pad	Screw	Key (Torx Plus)	Screw	Key (mm)	Screw	Key (mm)
R430.28-1516-16	5680 049-03 (9IP)	5513 020-24	5636 030-01	154.3-835	5680 049-03 (9IP)	430.21-825	3021 010-040 (4.0)	3214 010-357	174.1-864 (3.0)
R430.28-1822-22	5680 049-02 (15IP)	5513 020-25	5636 030-02	154.3-835	5680 049-03 (9IP)	430.21-825	3021 010-040 (4.0)	3214 010-357	174.1-864 (3.0)
	3								
	Shim (mm)								
R430.28-1516-16	5549 024-01 (0.1)	5549 024-02 (0.2)	5549 024-03 (0.4)	5549 024-04 (0.8)					
R430.28-1822-22	5549 024-05 (0.1)	5549 024-06 (0.2)	5549 024-07 (0.4)	5549 024-08 (0.8)					

Rotating connectors

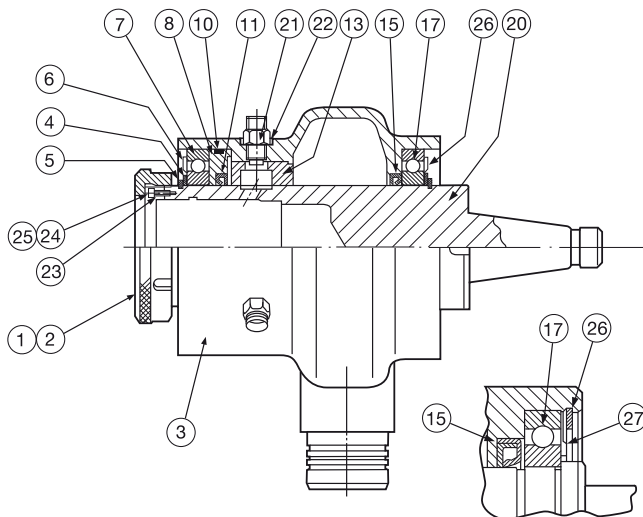
424.2-401M, 424.2-400M, 424.2-400M-V63





Type of shank	Connector code	1	2
			
		Nut	Hook spanner
Varilock adapted	424.2-400M-V63	424.2-400-01	3022 010-110
Morse taper	424.2-401M	424.2-401-01	3022 010-080
	400M	424.2-400-01	3022 010-110
ISO taper	424.2-402	424.2-402-03	3022 010-155
Flange mounting	424.9S/231-1 ¹⁾	424.2-401-01	3022 010-080
	424.9S/170-1 ¹⁾	424.2-400-01	3022 010-110
	424.9S/224-1 ¹⁾	424.2-402-03	3022 010-155
	424.9S/245-1 ¹⁾	424.2-402-03	3022 010-230

¹⁾ For further information, please contact your local sales representative.

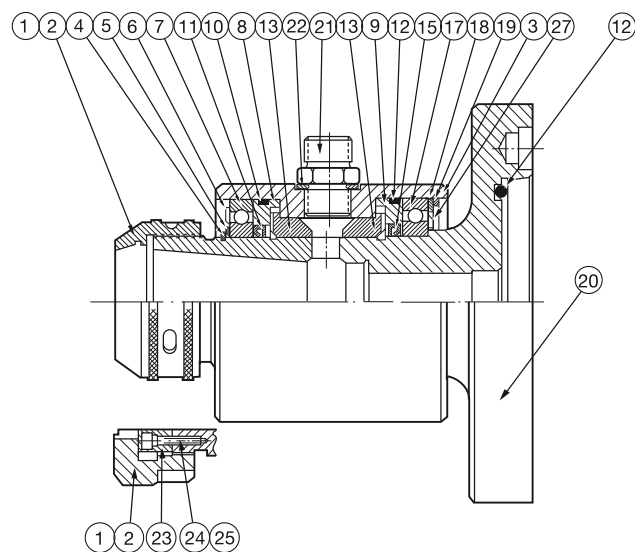
424.2-402













Type of shank	Connector code	11	12
			
		Sealing ring	O-ring
Varilock adapted	424.2-400M-V63	424.2-400-27	424.2-400-28
Morse taper	424.2-410M	424.2-401-27	424.2-401-28
	400M	424.2-400-27	424.2-400-28
ISO taper	424.2-402	B1 130x160x12	-
Flange mounting	424.9S/231-1	BA 70x85x7 ¹⁾	109.5x3 ¹⁾
	424.9S/170-1	B2 95x120x15 ¹⁾	144.5x3 ¹⁾
	424.9S/224-1	B1 130x160x12 ¹⁾	199.3x5.7 ¹⁾
	424.9S/245-1	B1 200x230x15 ¹⁾	319.3x5.7 ¹⁾

¹⁾ For further information, please contact your local sales representative.

424.9S/231-1 424.9S/224-1 424.9S/170-1 424.9S/245-1











Type of shank	Connector code	21	22
			
		Nipple	Sealing ring
Varilock adapted	424.2-400M-V63	424.2-400-29	3672 020-270
Morse taper	424.2-401M	424.2-401-29	3672 020-215
	400M	424.2-400-29	3672 020-270
ISO taper	424.2-402	424.2-402-07	U36.7x46x2
Flange mounting	424.9S/231-1	424.2-401-29	3672 020-270
	424.9S/170-1	424.2-400-29	3672 020-270
	424.9S/224-1	424.2-402-07	U36.7x46x2
	424.9S/245-1	424.2-403-07	U42.7x53x3

3	4	5	6	7	8	9	10
							
Housing	Circlip	Clamping ring	Sealing washer	Ball bearing	Support ring	Support ring	O-ring
424.2-400-10M	424.2-400-12(H)	424.2-400-03M	424.2-400-04	424.2-400-25	424.2-400-20	-	424.2-400-26
424.2-401-10M	424.2-401-12(H)	424.2-401-03M	424.2-401-04	424.2-401-25	424.2-401-20	-	424.2-401-26
424.2-400-10M	424.2-400-12(H)	424.2-400-03M	424.2-400-04	424.2-400-25	424.2-400-20	-	424.2-400-26
424.2-402-01	3421 100-130(A)	424.2-402-04	23126 AV	SKF 16026	424.2-402-05	-	3671 010-162
424.9S/231-7 ¹⁾	SgA 70(A) ¹⁾	424.9S/231-2 ¹⁾	16014 AV ¹⁾	SKF 16014	424.9S/231-3 ¹⁾	424.9S/231-5 ¹⁾	104.5x3 ¹⁾
424.9S/170-8 ¹⁾	SgA 95(A) ¹⁾	424.9S/170-2 ¹⁾	16019 AV ¹⁾	SKF 16019	424.9S/170-2 ¹⁾	424.9S/170-5 ¹⁾	139.5x3 ¹⁾
424.9S/224-3 ¹⁾	3421 100-130(A)	424.2-402-04	23126 AV	SKF 16026	424.2-402-05	424.9S/224-2 ¹⁾	3671 010-162
424.9S/245-3 ¹⁾	3421 100-200(A)	424.2-403-04	16040 AV	SKF 16040	424.2-403-05	424.9S/245-2 ¹⁾	3671 010-174









1) For further information, please contact your local sales representative.

2) (H) = For hole (A) = For shank

13	14	15	16	17	18	19	20
							
Spacing rings outer	Inner	Sealing ring	Circlip ²⁾	Ball bearing	Sealing sleeve	Circlip ²⁾	Shank
424.2-400-21	424.2-400-23	424.2-400-08	424.2-400-14(H)	424.2-400-15	424.2-400-09	424.2-400-16(A)	5622 033-01
424.2-401-21	424.2-401-23	424.2-401-08	424.2-401-14(H)	424.2-401-15	424.2-401-09	424.2-401-16(A)	424.2-401-11M
424.2-400-21	424.2-400-23	424.2-400-08	424.2-400-14(H)	424.2-400-15	424.2-400-09	424.2-400-16(A)	424.2-400-11M
424.2-402-06	-	B2 FG135x170x15	-	SKF 16028	-	-	424.2-402-02
424.9S/231-4 ¹⁾	-	BA75x90x8 ¹⁾	-	SKF 16015 ¹⁾	424.9S/231-6 ¹⁾	SgH 115(H) ¹⁾	Depending on spindle nose type and size
424.9S/170-4 ¹⁾	-	B2 100x120x15 ¹⁾	-	SKF 16020 ¹⁾	424.9S/170-6 ¹⁾	SgH 150(H) ¹⁾	
424.2-402-06 ¹⁾	-	B2 FG135x170x15 ¹⁾	-	SKF 16028 ¹⁾	-	3221 110-210(H)	
424.2-403-06 ¹⁾	-	B2 210x240x15 ¹⁾	-	SKF 16044 ¹⁾	-	-	

1) For further information, please contact your local sales representative.

2) (H) = For hole (A) = For shank

23	24	25	26	27	28	29	30
							
Driving key	Screw	Key (mm)	Circlip ²⁾	Sealing washer	Driving Key	Screw	Key (mm)
-	-	-	-	-	5631 010-05	3212 010-358	3021 010-050 (5.0)
-	-	-	-	-	-	-	-
424.2-402-08	3212 010-310	3021 010-040 (4.0)	3421 110-210(H)	16028 JV	-	-	-
-	-	-	-	16015 JV	-	-	-
-	-	-	-	16020 JV	-	-	-
424.2-402-08	3212 010-310	3021 010-040 (4.0)	-	16028 JV	-	-	-
424.2-403-08	3212 010-362	3021 010-050 (5.0)	-	424.9S/245-5 ¹⁾	-	-	-

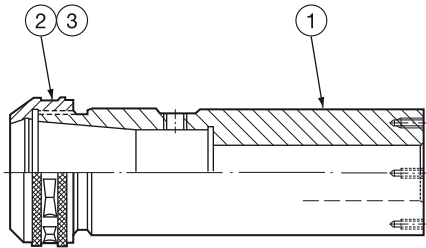
1) For further information, please contact your local sales representative.

2) (H) = For hole (A) = For shank

Non-rotating connectors

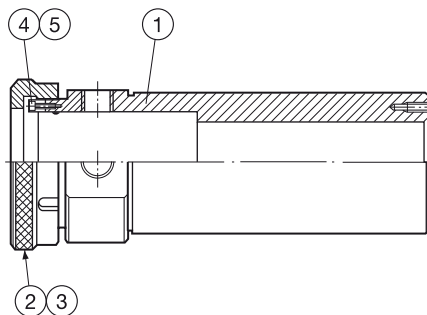
Cylindrical

424.2-411
424.2-410



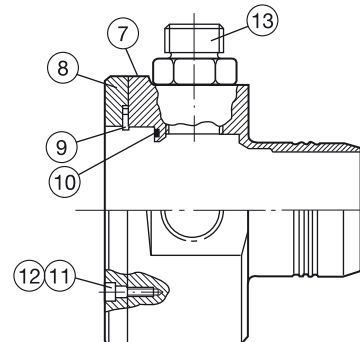
Cylindrical

424.2-412
424.2-413









Drill tube mounted





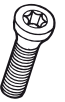


424.9S/232-1



Cylindrical

Connector	1	2	3	4	5	6
						
	Shank	Nut	Hook spanner	Driving key	Screw	Key (mm)
424.2- 411	424.2-411-01	424.2-401-01	3022 010-080	-	-	-
410	424.2-410-01	424.2-400-01	3022 010-110	-	-	-
412	424.2-412-01	424.2-402-03	3022 010-155	424.2-402-08	3212 010-310	3021 010-040 (4.0)
413	424.2-413-01	424.2-403-03	3022 010-230	424.2-403-08	3212 010-362	3021 010-050 (5.0)

Drill tube mounted

Connector	7	8	9	10	11	12	13
							
	Body	Cover	Circlip	O-ring	Screw	Key (mm)	Nipple
424.9S/232-1-14	424.9S/232-2-14 ¹⁾	424.9S/232-3-14 ¹⁾	SgA 56 ¹⁾	3671 010-134	3212 010-360	3021 010-050 (5.0)	BSP04000-16 ¹⁾
424.9S/232-1-15	424.9S/232-2-15 ¹⁾	424.9S/232-3-15 ¹⁾	SgA 62 ¹⁾	3671 010-135	3212 010-360	3021 010-050 (5.0)	BSP04000-16 ¹⁾
424.9S/232-1-16	424.9S/232-2-16 ¹⁾	424.9S/232-3-16 ¹⁾	SgA 68 ¹⁾	59.5x3 ¹⁾	3212 010-360	3021 010-050 (5.0)	BSP04000-16 ¹⁾
424.9S/232-1-17	424.9S/232-2-17 ¹⁾	424.9S/232-3-17 ¹⁾	SgA75 ¹⁾	3671 010-137	3212 010-360	3021 010-050 (5.0)	BSP04000-16 ¹⁾
424.9S/232-1-18	424.9S/232-2-18 ¹⁾	424.9S/232-3-18 ¹⁾	SgA 82 ¹⁾	74.5x3 ¹⁾	3212 010-360	3021 010-050 (5.0)	BSP04000-16 ¹⁾
424.9S/232-1-19	424.9S/232-2-19 ¹⁾	424.9S/232-3-19 ¹⁾	SgA 95 ¹⁾	3671 010-141	3212 010-360	3021 010-050 (5.0)	BSP04000-16 ¹⁾
424.9S/232-1-20	424.9S/232-2-20 ¹⁾	424.9S/232-3-20 ¹⁾	SgA 105 ¹⁾	3671 010-144	3212 010-360	3021 010-050 (5.0)	BSP04000-16 ¹⁾
424.9S/232-1-21	424.9S/232-2-21 ¹⁾	424.9S/232-3-21 ¹⁾	SgA 118 ¹⁾	109.5x3 ¹⁾	3212 010-410	3021 010-060 (6.0)	BSP04000-20 ¹⁾
424.9S/232-1-22	424.9S/232-2-22 ¹⁾	424.9S/232-3-22 ¹⁾	SgA 130 ¹⁾	119.5x3 ¹⁾	3212 010-410	3021 010-060 (6.0)	BSP04000-20 ¹⁾
424.9S/232-1-23	424.9S/232-2-23 ¹⁾	424.9S/232-3-23 ¹⁾	SgA 140 ¹⁾	134.5x3 ¹⁾	3212 010-410	3021 010-060 (6.0)	BSP04000-20 ¹⁾
424.9S/232-1-24	424.9S/232-2-24 ¹⁾	424.9S/232-3-24 ¹⁾	SgA 155 ¹⁾	144.5x3 ¹⁾	3212 010-410	3021 010-060 (6.0)	BSP04000-20 ¹⁾
424.9S/232-1-25	424.9S/232-2-25 ¹⁾	424.9S/232-3-25 ¹⁾	SgA 165 ¹⁾	154.5x3 ¹⁾	3212 010-410	3021 010-060 (6.0)	BSP04000-20 ¹⁾

1) For further information, please contact your local sales representative.

Cutting data for CoroDrill® 808

Metric

	808		808-T		808-P		808-PT	
	V_c	f_n	V_c	f_n	V_c	f_n	V_c	f_n
ISO P	70 - 100	0.12 - 0.20	65 - 90	0.08 - 0.16	70 - 100	0.12 - 0.20	65 - 90	0.08 - 0.16
ISO M	60 - 90	0.12 - 0.20	55 - 85	0.08 - 0.16	60 - 90	0.12 - 0.20	55 - 85	0.08 - 0.16

Inch

	808		808-T		808-P		808-PT	
	V_c	f_n	V_c	f_n	V_c	f_n	V_c	f_n
ISO P	230 - 330	.005 - .008	210 - 290	.003 - .007	230 - 330	.005 - .008	210 - 290	.003 - .007
ISO M	200 - 290	.005 - .008	180 - 280	.003 - .007	200 - 290	.005 - .008	180 - 280	.003 - .007

Cutting data for CoroDrill® 800

Metric values

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} N/mm ²	Hardness Brinell HB	Geometry / Grade			Support pad grade	Cutting speed v_c m/min	Drill diameter, mm		
					Insert position					25.00-43.00	43.01-65.00	
					C	I	P			Feed f_n mm/r		
P	P1.1.Z.AN (01.1)	Unalloyed steel										
		Non-hardened 0.10-0.25% C	1500	90-200	G/1025	G/1025	G/1025	P1	70-130	0.11-0.41	0.14-0.45	
		P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	1600	125-225	G/1025	G/1025	G/1025	P1	70-130	0.11-0.41	0.14-0.45
		P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	1700	150-250	G/1025	G/1025	G/1025	P1	70-130	0.11-0.41	0.17-0.25
	P1.3.Z.AN (01.4)	High carbon steel, annealed	1800	180-275	G/1025	G/1025	G/1025	P1	70-130	0.11-0.41	0.14-0.45	
		Low alloy steel										
	P2.1.Z.AN (02.1)	Non hardened	1700	150-260	G/1025	G/1025	G/1025	P1	70-120	0.11-0.41	0.20-0.45	
	P2.5.Z.HT (02.2)	Hardened and tempered	1900	220-450	G/1025	G/1025	G/1025	P1	55-110	0.11-0.41	0.20-0.45	
	P3.0.Z.AN (03.11) (03.13)	High alloy steel										
		Annealed	1950	150-250	G/4235	G/4235	G/4235	P1	70-120	0.11-0.41	0.20-0.45	
		Annealed HSS	2150	150-250	G/4235	G/4235	G/4235	P1	70-120	0.11-0.41	0.20-0.45	
		P3.0.Z.HT (03.21) (03.22)	Hardened tool steel	2900	250-350	G/4235	G/4235	G/4235	P1	55-110	0.11-0.38	0.20-0.40
	P1.5.C.UT (06.1) (06.32) (06.33)	Castings										
		Unalloyed	1400	90-225	G/1025	G/1025	G/1025	P1	50-110	0.11-0.41	0.20-0.45	
Low alloyed (alloying elements < 5%)		1600	150-250	G/1025	G/1025	G/1025	P1	50-110	0.11-0.41	0.20-0.45		
Stainless austenitic		1800	150-250	G/1025	G/1025	G/1025	P1	50-100	0.11-0.33	0.20-0.38		
M	M3.1.Z.AQ (05.51)	Manganese steel, 12-14% Mn	2900	200-300	G/1025	G/1025	G/1025	P1	35-85	0.11-0.33	0.20-0.38	
	P5.0.Z.AN (05.11)	Rolled/forged										
	Ferritic/Martensitic, non hardened	1800	150-270	G/4235	G/4235	G/4235	M1	40-110	0.11-0.41	0.20-0.45		
	M1.0.Z.AQ (05.21)	Austenitic	1950	150-275	G/4235	G/4235	G/4235	M1	40-110	0.11-0.41	0.20-0.45	
M3.2.Z.AQ (05.52)	Austenitic / ferritic materials (Duplex) non-weldable $\geq 0.05\%$ C	2000	180-290	G/4235	G/4235	G/4235	M1	40-110	0.11-0.33	0.20-0.35		
	Austenitic / ferritic materials (Duplex) weldable < 0.05% C	2450	200-320	G/4235	G/4235	G/4235	M1	40-80	0.11-0.33	0.20-0.35		
K	K1.1.C.NS (07.1)	Malleable										
	Ferritic	790	110-145	G/1025	G/1025	G/1025	M1	80-120	0.11-0.38	0.24-0.41		
	K1.1.C.NS (07.2)	Pearlitic	900	150-270	G/1025	G/1025	G/1025	M1	80-120	0.11-0.38	0.24-0.41	
	Grey											
	K2.1.C.UT (08.1)	Low tensile strength	890	150-220	G/1025	G/1025	G/1025	M1	60-110	0.11-0.38	0.24-0.41	
	K2.2.C.UT (08.2)	High tensile strength	1100	200-330	G/1025	G/1025	G/1025	M1	60-110	0.11-0.38	0.24-0.41	
K3.1.C.UT (09.1) (09.2)	Nodular											
	Ferritic	900	125-230	G/1025	G/1025	G/1025	M1	50-110	0.11-0.38	0.24-0.41		
K3.3.C.UT (09.2)	Pearlitic	1350	200-300	G/1025	G/1025	G/1025	M1	50-110	0.11-0.38	0.24-0.41		

Cutting data for CoroDrill® 800

Metric values

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{ct} N/mm ²	Hardness Brinell HB	Geometry / Grade			Support pad grade	Cutting speed v_c m/min	Drill diameter, mm	
					Insert position					25.00-43.00	43.01-65.00
					C	I	P			Feed f_n mm/r	
N	(30.11)	Aluminium alloys Wrought or wrought and coldworked, non-aging	400	30-100	G/1025	G/1025	G/1025	M1	65-150	0.09-0.33	0.24-0.35
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	650	30-150	G/1025	G/1025	G/1025	M1	65-150	0.09-0.33	0.24-0.35
	N1.3.C.UT (30.21)	Cast, non aging	600	40-100	G/1025	G/1025	G/1025	M1	65-150	0.09-0.33	0.24-0.35
	N1.3.C.AG (30.22)	Cast or cast and aged	700	70-140	G/1025	G/1025	G/1025	M1	65-150	0.09-0.33	0.24-0.35
	N3.3.U.UT (33.1)	Copper and copper alloys Free cutting alloys (Pb > 1%)	550	70-160	G/1025	G/1025	G/1025	M1	65-150	0.09-0.33	0.24-0.35
	N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	550	50-200	G/1025	G/1025	G/1025	M1	65-150	0.09-0.33	0.24-0.35
S	(20.11)	Iron base Annealed or solution treated	3000	180-230	G/1115	G/1115	G/1115	PM1	10-55	0.09-0.30	0.20-0.33
	S2.0.Z.AN (20.21)	Nickel base Annealed or solution treated	3320	140-300	G/1115	G/1115	G/1115	PM1	10-55	0.09-0.30	0.20-0.33
	(20.31)	Cobalt alloys Annealed or solution treated	3300	180-230	G/1115	G/1115	G/1115	PM1	10-55	0.09-0.30	0.20-0.33
	S4.2.Z.AN (23.21)	Titanium Alfa- , near Alfa- and Alfa + Beta alloys annealed	1675	600-1100	G/H13A	G/H13A	G/H13A	PM1	30-60	0.09-0.30	0.20-0.33

Cutting data for CoroDrill® 800

Inch values

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} lbs/in ²	Hardness Brinell HB	Geometry / Grade			Support pad grade	Cutting speed v_c ft/min	Drill diameter, inch	
					Insert position					.984-1.693	1.694-2.559
					C	I	P			Feed f_n inch/rev	
P	P1.1.Z.AN (01.1)	Unalloyed steel Non-hardened 0.10-0.25% C	216,500	90-200	G/1025	G/1025	G/1025	P1	230-425	.004-.016	.006-.018
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	233,000	125-225	G/1025	G/1025	G/1025	P1	230-425	.004-.016	.006-.018
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	247,000	150-250	G/1025	G/1025	G/1025	P1	230-425	.004-.016	.007-.010
	P1.3.Z.AN (01.4)	High carbon steel, annealed	260,500	180-275	G/1025	G/1025	G/1025	P1	230-425	.004-.016	.006-.018
	P2.1.Z.AN (02.1)	Low alloy steel Non hardened	246,500	150-260	G/1025	G/1025	G/1025	P1	230-390	.004-.016	.008-.018
	P2.5.Z.HT (02.2)	Hardened and tempered	278,500	220-450	G/1025	G/1025	G/1025	P1	180-360	.004-.016	.008-.018
	P3.0.Z.AN (03.11)	High alloy steel Annealed	282,000	150-250	G/4235	G/4235	G/4235	P1	230-390	.004-.016	.008-.018
	P3.0.Z.AN (03.13)	Annealed HSS	311,000	150-250	G/4235	G/4235	G/4235	P1	230-390	.004-.016	.008-.018
	P3.0.Z.HT (03.21)	Hardened tool steel	420,000	250-350	G/4235	G/4235	G/4235	P1	180-360	.004-.015	.008-.016
	P3.0.Z.HT (03.22)	Hardened steel, others	448,500	250-450	G/4235	G/4235	G/4235	P1	180-360	.008-.015	.008-.016
	P1.5.C.UT (06.1)	Castings Unalloyed	204,000	90-225	G/1025	G/1025	G/1025	P1	165-360	.004-.016	.008-.018
	P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	230,500	150-250	G/1025	G/1025	G/1025	P1	165-360	.004-.016	.008-.018
	P2.6.C.UT (06.32)	Stainless austenitic	333,500	150-250	G/1025	G/1025	G/1025	P1	165-360	.004-.013	.008-.015
P2.6.C.UT (06.33)	Manganese steel, 12-14% Mn	420,500	200-300	G/1025	G/1025	G/1025	P1	115-280	.004-.013	.008-.015	
M	P5.0.Z.AN (05.11)	Rolled/forged Ferritic/Martensitic, non hardened	262,000	150-270	G/4235	G/4235	G/4235	M1	130-360	.004-.016	.008-.018
	M1.0.Z.AQ (05.21)	Austenitic	285,000	150-275	G/4235	G/4235	G/4235	M1	130-360	.004-.016	.008-.018
	M3.1.Z.AQ (05.51)	Austenitic / ferritic materials (Duplex) non-weldable $\geq 0.05\%$ C	286,500	180-290	G/4235	G/4235	G/4235	M1	130-360	.004-.013	.008-.014
	M3.2.Z.AQ (05.52)	Austenitic / ferritic materials (Duplex) weldable < 0.05% C	356,500	200-320	G/4235	G/4235	G/4235	M1	130-260	.004-.013	.008-.014
K	K1.1.C.NS (07.1)	Malleable Ferritic	115,000	110-145	G/1025	G/1025	G/1025	M1	200-390	.004-.015	.009-.016
	K1.1.C.NS (07.2)	Pearlitic	131,000	150-270	G/1025	G/1025	G/1025	M1	200-390	.004-.015	.009-.016
	K2.1.C.UT (08.1)	Grey Low tensile strength	130,000	150-220	G/1025	G/1025	G/1025	M1	200-360	.004-.015	.009-.016
	K2.2.C.UT (08.2)	High tensile strength	159,500	200-330	G/1025	G/1025	G/1025	M1	200-360	.004-.015	.009-.016
	K3.1.C.UT (09.1)	Nodular Ferritic	130,000	125-230	G/1025	G/1025	G/1025	M1	160-360	.004-.015	.009-.016
	K3.3.C.UT (09.2)	Pearlitic	194,500	200-300	G/1025	G/1025	G/1025	M1	160-360	.004-.015	.009-.016

Cutting data for CoroDrill® 800

Inch values

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{ct} lbs/in ²	Hardness Brinell HB	Geometry / Grade			Support pad grade	Cutting speed v_c ft/min	Drill diameter, inch	
					Insert position					.984-1.693	1.694-2.559
					C	I	P			Feed f_n inch/rev	
N	(30.11)	Aluminium alloys Wrought or wrought and coldworked, non-aging	72,500	30-100	G/1025	G/1025	G/1025	M1	210-490	.004-.013	.009-.014
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	116,000	30-150	G/1025	G/1025	G/1025	M1	210-490	.004-.015	.009-.014
	N1.3.C.UT (30.21)	Cast, non aging	109,000	40-100	G/1025	G/1025	G/1025	M1	210-490	.004-.015	.009-.014
	N1.3.C.AG (30.22)	Cast or cast and aged	130,500	70-140	G/1025	G/1025	G/1025	M1	210-490	.004-.015	.009-.014
	N3.3.U.UT (33.1)	Copper and copper alloys Free cutting alloys (Pb > 1%)	101,500	70-160	G/1025	G/1025	G/1025	M1	210-490	.004-.015	.009-.014
	N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	101,500	50-200	G/1025	G/1025	G/1025	M1	210-490	.004-.015	.009-.014
S	(20.11)	Iron base Annealed or solution treated	435,000	180-230	G/1115	G/1115	G/1115	PM1	30-180	.004-.012	.008-.013
	S2.0.Z.AN (20.21)	Nickel base Annealed or solution treated	481,500	140-300	G/1115	G/1115	G/1115	PM1	30-180	.004-.012	.008-.013
	(20.31)	Cobalt alloys Annealed or solution treated	478,500	180-230	G/1115	G/1115	G/1115	PM1	30-180	.004-.012	.008-.013
	S4.2.Z.AN (23.21)	Titanium Alfa- , near Alfa- and Alfa + Beta alloys annealed	243,000	600-1100	G/H13A	G/H13A	G/H13A	PM1	100-200	.004-.012	.008-.013

Cutting data for CoroDrill® 801

Metric values

ISO	MC No.	Material	Specific cutting force k_c 1	Hardness Brinell	Geometry / Grade	Cutting speed	Drill diameter, mm
			N/mm ²	HB		v_c m/min	≥65.00 Feed f_n mm/r
P	P1.1.Z.AN	Unalloyed steel Non-hardened 0.10-0.25% C	2000	90-200	-22/23/1025	80-100	0.18-0.35
	P1.2.Z.AN	Non-hardened 0.25-0.55% C	2000	125-225	-22/1025	80-100	0.18-0.35
	P1.3.Z.AN	Non-hardened 0.55-0.80% C	2180	150-250	-22/1025	80-100	0.18-0.35
	P1.3.Z.AN	High carbon steel	2320	180-275	-22/1025	80-100	0.18-0.35
	P2.1.Z.AN	Low alloy steel Non hardened	2100	150-260	-22/1025	70-100	0.18-0.35
	P2.5.Z.HT	Hardened and tempered	2775	220-450	-22/1025	60-100	0.18-0.35
	P3.0.Z.AN	High alloy steel Annealed	2500	150-250	-22/4235	70-100	0.18-0.30
	P3.1.Z.AN	Annealed HSS	2750	150-250	-22/4235	70-100	0.18-0.30
	P3.0.Z.HT	Hardened tool steel	3750	250-350	-22/4235	60-100	0.16-0.30
	P3.0.Z.HT	Hardened steel, others	4000	250-450	-22/4235	60-100	0.16-0.30
	P1.5.C.UT	Castings Unalloyed	1800	90-225	-22/1025	50-100	0.15-0.30
	P2.6.C.UT	Low alloyed (alloying elements < 5%)	2100	150-250	-22/1025	50-100	0.15-0.30
M	P5.0.Z.AN	Rolled/forged Ferritic/Martensitic, non hardened	2300	150-270	-22/4235	40-90	0.16-0.35
	M1.0.Z.AQ	Austenitic	2600	150-275	-23/4235	40-90	0.16-0.35
K	K1.1.C.NS	Malleable Ferritic	950	110-145	-22/H13A	80-100	0.18-0.30
	K1.1.C.NS	Pearlitic	1100	150-270	-22/H13A	80-100	0.18-0.30
	K2.1.C.UT	Grey Low tensile strength	1100	150-220	-22/H13A	60-100	0.16-0.35
	K2.2.C.UT	High tensile strength	1290	200-330	-22/H13A	60-100	0.16-0.35
	K3.1.C.UT	Nodular Ferritic	1050	125-230	-22/H13A	50-100	0.16-0.35
	K3.3.C.UT	Pearlitic	1750	200-300	-22/H13A	50-100	0.16-0.35

Cutting data for CoroDrill® 801

Metric values

ISO	MC No.	Material	Specific cutting force k_c 1	Hardness Brinell	Geometry / Grade	Cutting speed	Drill diameter, mm
			N/mm ²	HB		v_c m/min	≥65.00 Feed f_n mm/r
N		Aluminium alloys					
	N1.2.Z.UT	Wrought or wrought and coldworked, non-aging	500	30-100	-23/H13A	65-130	0.10-0.30
	N1.2.Z.AG	Wrought or wrought and aged	800	30-150	-23/H13A	65-130	0.10-0.30
	N1.3.C.UT	Cast, non aging	750	40-100	-23/H13A	65-130	0.10-0.30
	N1.3.C.AG	Cast or cast and aged	900	70-140	-23/H13A	65-130	0.10-0.30
		Copper and copper alloys					
N3.3.U.UT	Free cutting alloys (Pb > 1%)	700	70-160	-23/H13A	65-130	0.10-0.30	
N3.2.C.UT	Brass and leaded alloys (Pb < 1%)	700	50-200	-23/H13A	65-130	0.10-0.30	
S		Iron base					
	S1.0.U.AN	Annealed or solution treated	3000	180-230	-22/1025	10-45	0.15-0.30
		Nickel base					
	S2.0.Z.AN	Annealed or solution treated	3320	140-300	-22/1025	10-45	0.15-0.30
	Cobalt alloys						
S3.0.Z.AN	Annealed or solution treated	3300	180-230	-23/H13A	20-65	0.15-0.30	
	Titanium						
S4.2.Z.AN	Alfa- , near Alfa- and Alfa + Beta alloys annealed	1675	Rm ³⁾ 600-1100	-23/H13A -22/1025	25-50 25-40	0.15-0.30 0.15-0.30	

Cutting data for CoroDrill® 801

Inch values

ISO	MC No.	Material	Specific cutting force kc 1	Hardness Brinell	Geometry / Grade	Cutting speed	Depth of cut (a _p), inch	
			lbs/in ²	HB		v _c ft/min	≥2.559 Feed f _n inch/r	
P	P1.1.Z.AN	Unalloyed steel Non-hardened 0.10-0.25% C	290.000	90-200	-22/23/1025	262-328	.007-.014	
	P1.2.Z.AN	Non-hardened 0.25-0.55% C	304.500	125-225	-22/1025	262-328	.007-.014	
	P1.3.Z.AN	Non-hardened 0.55-0.80% C	316.100	150-250	-22/1025	262-328	.007-.014	
	P1.3.Z.AN	High carbon steel	336.400	180-275	-22/1025	262-328	.007-.014	
	P2.1.Z.AN	Low alloy steel Non hardened	304.500	150-260	-22/1025	230-328	.007-.014	
	P2.5.Z.HT	Hardened and tempered	402.400	220-450	-22/1025	197-328	.007-.014	
	P3.0.Z.AN	High alloy steel Annealed	362.500	150-250	-22/4235	230-328	.007-.012	
	P3.1.Z.AN	Annealed HSS	398.750	150-250	-22/4235	230-328	.007-.012	
	P3.0.Z.HT	Hardened tool steel	543.750	250-350	-22/4235	197-328	.006-.012	
	P3.0.Z.HT	Hardened steel, others	580.000	250-450	-22/4235	197-328	.006-.012	
	P1.5.C.UT	Castings Unalloyed	261.000	90-225	-22/1025	164-328	.006-.012	
	P2.6.C.UT	Low alloyed (alloying elements < 5%)	304.500	150-250	-22/1025	164-328	.006-.012	
	M	P5.0.Z.AN	Rolled/forged Ferritic/Martensitic, non hardened	333.500	150-270	-22/4235	164-295	.006-.014
		M1.0.Z.AQ	Austenitic	377.000	150-275	-23/4235	164-295	.006-.014
K	K1.1.C.NS	Malleable Ferritic	137.750	110-145	-22/H13A	262-328	.007-.012	
	K1.1.C.NS	Pearlitic	159.500	150-270	-22/H13A	262-328	.007-.012	
	K2.1.C.UT	Grey Low tensile strength	159.500	150-220	-22/H13A	197-328	.006-.014	
	K2.2.C.UT	High tensile strength	187.050	200-330	-22/H13A	197-328	.006-.014	
	K3.1.C.UT	Nodular Ferritic	152.250	125-230	-22/H13A	164-328	.006-.014	
	K3.3.C.UT	Pearlitic	253.750	200-300	-22/H13A	164-328	.006-.014	

Cutting data for CoroDrill® 801

Inch values

ISO	MC No.	Material	Specific cutting force kc 1	Hardness Brinell	Geometry / Grade	Cutting speed	Depth of cut (a _p), inch
			lbs/in ²	HB		v _c ft/min	≥2.559 Feed f _n inch/r
N	N1.2.Z.UT	Aluminium alloys Wrought or wrought and coldworked, non-aging	72.500	30-100	-23/H13A	213-426	.004-.012
	N1.2.Z.AG	Wrought or wrought and aged	116.000	30-150	-23/H13A	213-426	.004-.012
	N1.3.C.UT	Cast, non aging	108.750	40-100	-23/H13A	213-426	.004-.012
	N1.3.C.AG	Cast or cast and aged	130.500	70-140	-23/H13A	213-426	.004-.012
	N3.3.U.UT	Copper and copper alloys Free cutting alloys (Pb > 1%)	101.500	70-160	-23/H13A	213-426	.004-.012
	N3.2.C.UT	Brass and leaded alloys (Pb < 1%)	101.500	50-200	-23/H13A	213-426	.004-.012
S	S1.0.U.AN	Iron base Annealed or solution treated	435.000	180-230	-22/1115	32-147	.006-.012
	S2.0.Z.AN	Nickel base Annealed or solution treated	481.400	140-300	-22/1115	32-147	.006-.012
	S3.0.Z.AN	Cobalt alloys Annealed or solution treated	478.500	180-230	-23/1115	66-213	.006-.012
	S4.2.Z.AN	Titanium Alfa- , near Alfa- and Alfa + Beta alloys annealed	242.875	Rm ³⁾ 600-1100	-23/H13A	82-164	.006-.012

Cutting data for CoroDrill® 818

Metric values

ISO	MC No.	Material	Specific cutting force k_c 1	Hardness Brinell	Geometry / Grade	Cutting speed v_c m/min	Depth of cut (a_p), mm		
							1-3	3-8	≥8
							Feed f_n mm/r		
P		Unalloyed steel							
	P1.1.Z.AN	Non-hardened 0.10-0.25% C	2000	90-200	G/1025/4235	50-110	0.22-0.35	0.18-0.35	0.18-0.35
	P1.2.Z.AN	Non-hardened 0.25-0.55% C	2100	125-225	G/1025/4235	50-110	0.22-0.35	0.18-0.35	0.18-0.35
	P1.3.Z.AN	Non-hardened 0.55-0.80% C	2180	150-250	G/1025/4235	50-110	0.22-0.35	0.18-0.35	0.18-0.35
	P1.3.Z.AN	High carbon steel	2320	180-275	G/1025/4235	50-110	0.22-0.35	0.18-0.35	0.18-0.35
		Low alloy steel							
	P2.1.Z.AN	Non hardened	2100	150-260	L/1025/4235	70-100	0.22-0.35	0.18-0.35	0.18-0.35
	P2.5.Z.HT	Hardened and tempered	2775	220-450	L/1025/4235	60-100	0.22-0.35	0.18-0.35	0.18-0.35
		High alloy steel							
	P3.0.Z.AN	Annealed	2500	150-250	G/1025/4235	70-100	0.22-0.30	0.18-0.30	0.18-0.30
	P3.1.Z.AN	Annealed HSS	2750	150-250	G/1025/4235	70-100	0.22-0.30	0.18-0.30	0.18-0.30
	P3.0.Z.HT	Hardened tool steel	3750	250-350	G/1025/4235	60-100	0.22-0.30	0.18-0.30	0.18-0.30
	P3.0.Z.HT	Hardened steel, others	4000	250-450	G/1025/4235	60-100	0.22-0.30	0.18-0.30	0.18-0.30
		Castings							
P1.5.C.UT	Unalloyed	1800	90-225	G/1025/4235	50-100	0.22-0.30	0.18-0.30	0.18-0.30	
P2.6.C.UT	Low alloyed (alloying elements < 5%)	2100	150-250	G/1025/4235	50-100	0.22-0.30	0.18-0.30	0.18-0.30	
M		Rolled/forged							
	P5.0.Z.AN	Ferritic/Martensitic, non hardened	2300	150-270	L/4235/1025	40-95	0.22-0.35	0.16-0.35	0.16-0.35
	M1.0.Z.AQ	Austenitic	2600	150-275	L/4235/1025	40-95	0.22-0.35	0.16-0.35	0.16-0.35
K		Malleable							
	K1.1.C.NS	Ferritic	950	110-145	G/1025/4235	80-100	0.22-0.30	0.18-0.30	0.18-0.30
	K1.1.C.NS	Pearlitic	1100	150-270	G/1025/4235	80-100	0.22-0.30	0.18-0.30	0.18-0.30
		Grey							
	K2.1.C.UT	Low tensile strength	1100	150-220	G/1025/4235	60-100	0.22-0.35	0.16-0.35	0.16-0.35
	K2.2.C.UT	High tensile strength	1290	200-330	G/1025/4235	60-100	0.22-0.35	0.16-0.35	0.16-0.35
	Nodular								
K3.1.C.UT	Ferritic	1050	125-230	G/1025/4235	50-100	0.22-0.35	0.16-0.35	0.16-0.35	
K3.3.C.UT	Pearlitic	1750	200-300	G/1025/4235	50-100	0.22-0.35	0.16-0.35	0.16-0.35	

Cutting data for CoroDrill® 818

Metric values

ISO	MC No.	Material	Specific cutting force k_c 1	Hardness Brinell	Geometry / Grade	Cutting speed v_c m/min	Depth of cut (a_p), mm		
							1-3	3-8	≥8
							Feed f_n mm/r		
N	Aluminium alloys								
	N1.2.Z.UT	Wrought or wrought and coldworked, non-aging	500	30-100	L/1025/4235	65-300	0.20-0.45	0.18-0.45	0.18-0.45
	N1.2.Z.AG	Wrought or wrought and aged	800	30-150	L/1025/4235	65-300	0.20-0.45	0.18-0.45	0.18-0.45
	N1.3.C.UT	Cast, non aging	750	40-100	L/1025/4235	65-300	0.20-0.45	0.18-0.45	0.18-0.45
	N1.3.C.AG	Cast or cast and aged	900	70-140	L/1025/4235	65-300	0.20-0.45	0.18-0.45	0.18-0.45
	Copper and copper alloys								
N3.3.U.UT	Free cutting alloys (Pb > 1%)	700	70-160	A/1025/4235	65-300	0.20-0.45	0.18-0.45	0.18-0.45	
N3.2.C.UT	Brass and leaded alloys (Pb < 1%)	700	50-200	A/1025/4235	65-300	0.20-0.45	0.18-0.45	0.18-0.45	
S	Iron base								
	S1.0.U.AN	Annealed or solution treated	3000	180-230	L/1125/1025	20-65	0.20-0.30	0.15-0.30	0.15-0.30
	Nickel base								
	S2.0.Z.AN	Annealed or solution treated	3320	140-300	L/1125/1025	20-65	0.20-0.30	0.15-0.30	0.15-0.30
Cobalt alloys									
S3.0.Z.AN	Annealed or solution treated	3300	180-230	A/1125/1025	20-65	0.20-0.30	0.15-0.30	0.15-0.30	
Titanium									
S4.2.Z.AN	Alfa- , near Alfa- and Alfa + Beta alloys annealed	1675	Rm ³⁾ 600-1100	L/1125/1025	30-100	0.20-0.30	0.15-0.30	0.15-0.30	

Cutting data for CoroDrill® 818

Inch values

ISO	MC No.	Material	Specific cutting force kc 1 lbs/in ²	Hardness Brinell HB	Geometry / Grade	Cutting speed v_c ft/min	Depth of cut (a_p), inch		
							.039-.118	.118-.315	≥.315
							Feed f_n inch/r		
P	Unalloyed steel								
	P1.1.Z.AN	Non-hardened 0.10-0.25% C	290.000	90-200	G/1025/4235	164-361	.009-.014	.007-.014	.007-.014
	P1.2.Z.AN	Non-hardened 0.25-0.55% C	304.500	125-225	G/1025/4235	164-361	.009-.014	.007-.014	.007-.014
	P1.3.Z.AN	Non-hardened 0.55-0.80% C	316.100	150-250	G/1025/4235	164-361	.009-.014	.007-.014	.007-.014
	P1.3.Z.AN	High carbon steel	336.400	180-275	G/1025/4235	164-361	.009-.014	.007-.014	.007-.014
	Low alloy steel								
	P2.1.Z.AN	Non hardened	304.500	150-260	L/1025/4235	230-328	.009-.014	.007-.014	.007-.014
	P2.5.Z.HT	Hardened and tempered	402.400	220-450	L/1025/4235	197-328	.009-.014	.007-.014	.007-.014
	High alloy steel								
	P3.0.Z.AN	Annealed	362.500	150-250	G/1025/4235	230-328	.009-.012	.007-.012	.007-.012
	P3.1.Z.AN	Annealed HSS	398.750	150-250	G/1025/4235	230-328	.009-.012	.007-.012	.007-.012
	P3.0.Z.HT	Hardened tool steel	543.750	250-350	G/1025/4235	197-328	.009-.012	.007-.012	.007-.012
	P3.0.Z.HT	Hardened steel, others	580.000	250-450	G/1025/4235	197-328	.009-.012	.007-.012	.007-.012
	Castings								
P1.5.C.UT	Unalloyed	261.000	90-225	G/1025/4235	164-328	.009-.012	.007-.012	.007-.012	
P2.6.C.UT	Low alloyed (alloying elements < 5%)	304.500	150-250	G/1025/4235	164-328	.009-.012	.007-.012	.007-.012	
M	Rolled/forged								
	P5.0.Z.AN	Ferritic/Martensitic, non hardened	333.500	150-270	L/4235/1025	131-312	.009-.014	.006-.014	.006-.014
M1.0.Z.AQ	Austenitic	377.000	150-275	L/4235/1025	131-312	.009-.014	.006-.014	.006-.014	
K	Malleable								
	K1.1.C.NS	Ferritic	137.750	110-145	G/1025/4235	262-328	.009-.012	.007-.012	.007-.012
	K1.1.C.NS	Pearlitic	159.500	150-270	G/1025/4235	262-328	.009-.012	.007-.012	.007-.012
	Grey								
	K2.1.C.UT	Low tensile strength	159.500	150-220	G/1025/4235	197-328	.009-.014	.006-.014	.006-.014
	K2.2.C.UT	High tensile strength	187.050	200-330	G/1025/4235	197-328	.009-.014	.006-.014	.006-.014
Nodular									
K3.1.C.UT	Ferritic	152.250	125-230	G/1025/4235	164-328	.009-.014	.006-.014	.006-.014	
K3.3.C.UT	Pearlitic	253.750	200-300	G/1025/4235	164-328	.009-.014	.006-.014	.006-.014	

Cutting data for CoroDrill® 818

Inch values

ISO	MC No.	Material	Specific cutting force kc 1 lbs/in ²	Hardness Brinell HB	Geometry / Grade	Cutting speed v_c ft/min	Depth of cut (a_p), inch		
							.039-.118	.118-.315	≥.315
							Feed f_n inch/r		
N	Aluminium alloys								
	N1.2.Z.UT	Wrought or wrought and coldworked, non-aging	72.500	30-100	L/1025/4235	213-984	.008-.018	.007-.018	.007-.018
	N1.2.Z.AG	Wrought or wrought and aged	116.000	30-150	L/1025/4235	213-984	.008-.018	.007-.018	.007-.018
	N1.3.C.UT	Cast, non aging	108.750	40-100	L/1025/4235	213-984	.008-.018	.007-.018	.007-.018
	N1.3.C.AG	Cast or cast and aged	130.500	70-140	L/1025/4235	213-984	.008-.018	.007-.018	.007-.018
	Copper and copper alloys								
N3.3.U.UT	Free cutting alloys (Pb > 1%)	101.500	70-160	A/1025/4235	213-984	.008-.018	.007-.018	.007-.018	
N3.2.C.UT	Brass and leaded alloys (Pb < 1%)	101.500	50-200	A/1025/4235	213-984	.008-.018	.007-.018	.007-.018	
S	Iron base								
	S1.0.U.AN	Annealed or solution treated	435.000	180-230	L/1125/1025	66-213	.008-.012	.006-.012	.006-.012
	Nickel base								
	S2.0.Z.AN	Annealed or solution treated	481.400	140-300	L/1125/1025	66-213	.008-.012	.006-.012	.006-.012
Cobalt alloys									
S3.0.Z.AN	Annealed or solution treated	478.500	180-230	A/1125/1025	66-213	.008-.012	.006-.012	.006-.012	
Titanium									
S4.2.Z.AN	Alfa- , near Alfa- and Alfa + Beta alloys annealed	242.875	Rm³ 600-1100	L/1125/1025	66-213	.008-.012	.006-.012	.006-.012	

Cutting data for ground brazed solid drill heads 424.6

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} N/mm ²	Hardness Brinell HB	Grade combination	Cutting speed v_c m/min	Drill diameter, mm			
							15.60-20.00	20.01-31.00	31.01-43.00	43.01-65.00
							Feed f_n mm/r			
P	P1.1.Z.AN (01.1)	Unalloyed steel Non-hardened 0.10-0.25% C	1500	90-200	70/63	70-120	0.14-0.20 ¹⁾	0.15-0.20 ¹⁾	0.15-0.25	0.18-0.28
	P1.2.Z.AN (01.2)	Unalloyed steel Non-hardened 0.25-0.55% C	1600	125-225	70/63	70-120	0.14-0.20 ¹⁾	0.15-0.20 ¹⁾	0.15-0.25	0.18-0.28
	P1.3.Z.AN (01.3)	Unalloyed steel Non-hardened 0.55-0.80% C	1700	150-250	70/63	70-120	0.14-0.20	0.17-0.25	0.20-0.30	0.24-0.32
	P1.3.Z.AN (01.4)	Unalloyed steel High carbon steel, annealed	1800	180-275	70/63	70-120	0.14-0.20	0.17-0.25	0.20-0.30	0.24-0.32
		Low alloy steel								
	P2.1.Z.AN (02.1)	Low alloy steel Non hardened	1700	150-260	70/63	70-100	0.14-0.20	0.17-0.25	0.20-0.30	0.20-0.30
	P2.5.Z.HT (02.2)	Low alloy steel Hardened and tempered	1900	220-450	70/63	55-100	0.14-0.20	0.17-0.25	0.20-0.30	0.24-0.32
		High alloy steel								
	P3.0.Z.AN (03.11)	High alloy steel Annealed	1950	150-250	70/63	70-100	0.14-0.20	0.17-0.25	0.20-0.30	0.24-0.32
	P3.0.Z.AN (03.13)	High alloy steel Annealed HSS	2150	150-250	70/63	70-100	0.14-0.20	0.17-0.25	0.20-0.30	0.24-0.32
	P3.0.Z.HT (03.21)	High alloy steel Hardened tool steel	2900	250-350	70/63	55-100	0.14-0.20	0.17-0.25	0.20-0.30	0.24-0.32
	P3.0.Z.HT (03.22)	High alloy steel Hardened steel, others	3100	250-450	70/63	55-100	0.14-0.20	0.17-0.25	0.20-0.30	0.24-0.32
		Castings								
	P1.5.C.UT (06.1)	Castings Unalloyed	1400	90-225	70/63	50-100	0.12-0.18	0.15-0.22	0.20-0.28	0.24-0.32
P2.6.C.UT (06.2)	Castings Low alloyed (alloying elements < 5%)	1600	150-250	70/63	50-100	0.12-0.18	0.15-0.22	0.20-0.28	0.24-0.32	
P2.6.C.UT (06.32)	Castings Stainless austenitic	1750	150-250	20 ²⁾ /67	50-85	0.16-0.20	0.18-0.25	0.22-0.30	0.24-0.36	
P2.6.C.UT (06.33)	Castings Manganese steel, 12-14% Mn	2900	200-300	20 ²⁾ /67	35-70	0.16-0.20	0.18-0.25	0.22-0.30	0.24-0.36	
M	P5.0.Z.AN (05.11)	Rolled/forged Ferritic/Martensitic, non hardened	1800	150-270	20 ²⁾ /67	40-85	0.16-0.20	0.18-0.25	0.22-0.30	0.24-0.36
	M1.0.Z.AQ (05.21)	Rolled/forged Austenitic	1950	150-275	20 ²⁾ /67	40-85	0.16-0.20	0.18-0.25	0.22-0.30	0.24-0.36
	M3.1.Z.AQ (05.51)	Rolled/forged Austenitic / ferritic materials (Duplex) non-weldable $\geq 0.05\%$ C	2000	180-290	20 ²⁾ /67	35-60	0.12-0.15	0.20-0.27	0.22-0.30	0.25-0.35
	M3.2.Z.AQ (05.52)	Rolled/forged Austenitic / ferritic materials (Duplex) weldable < 0.05% C	2450	200-320	20 ²⁾ /67	35-60	0.12-0.15	0.20-0.27	0.22-0.30	0.25-0.35
K	K1.1.C.NS (07.1)	Malleable Ferritic	790	110-145	72	80-100	0.14-0.20	0.18-0.25	0.20-0.30	0.24-0.32
	K1.1.C.NS (07.2)	Malleable Pearlitic	900	150-270	72	80-100	0.14-0.20	0.18-0.25	0.20-0.30	0.24-0.32
		Grey								
	K2.1.C.UT (08.1)	Grey Low tensile strength	890	150-220	72	60-100	0.12-0.18	0.15-0.22	0.20-0.28	0.24-0.32
	K2.2.C.UT (08.2)	Grey High tensile strength	1100	200-330	72	60-100	0.12-0.18	0.15-0.22	0.20-0.28	0.24-0.32
		Nodular								
K3.1.C.UT (09.1)	Nodular Ferritic	900	125-230	72	50-100	0.12-0.18	0.15-0.22	0.20-0.28	0.24-0.32	
K3.3.C.UT (09.2)	Nodular Pearlitic	1350	200-300	72	50-100	0.12-0.18	0.15-0.22	0.20-0.28	0.24-0.32	

¹⁾ Ejector drills in small diameters, not recommended for CMC 01.1 with carbon $\leq 0.18\%$. STS drills are the recommended alternative.

²⁾ Only for STS drills.

For carbide grades and grade combination, see page 40

Cutting data for ground brazed solid drill heads 424.6

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} N/mm ²	Hardness Brinell HB	Grade combination	Cutting speed v_c m/min	Drill diameter, mm			
							15.60-20.00	20.01-31.00	31.01-43.00	43.01-65.00
							Feed f_n mm/r			
N	(30.11)	Aluminium alloys Wrought or wrought and coldworked, non-aging	400	30-100	72	65-130	0.10-0.20	0.16-0.25	0.18-0.30	0.20-0.45
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	650	30-150	72	65-130	0.10-0.20	0.16-0.25	0.18-0.30	0.20-0.45
	N1.3.C.UT (30.21)	Cast, non aging	600	40-100	72	65-130	0.10-0.20	0.16-0.25	0.18-0.30	0.20-0.45
	N1.3.C.AG (30.22)	Cast or cast and aged	700	70-140	72	65-130	0.10-0.20	0.16-0.25	0.18-0.30	0.20-0.45
		Copper and copper alloys								
	N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	550	70-160	72	65-130	0.10-0.20	0.16-0.25	0.18-0.30	0.20-0.45
	N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	550	50-200	72	65-130	0.10-0.20	0.16-0.25	0.18-0.30	0.20-0.45
S	(20.11)	Iron base Annealed or solution treated	2400	180-230	72	10-50	0.10-0.18	0.14-0.20	0.18-0.26	0.20-0.30
		Nickel base								
	S2.0.Z.AN (20.21)	Annealed or solution treated	2650	140-300	72	10-50	0.10-0.18	0.14-0.20	0.18-0.26	0.20-0.30
	(20.31)	Cobalt alloys Annealed or solution treated	2700	180-230	72	10-50	0.10-0.18	0.14-0.20	0.18-0.26	0.20-0.30
		Titanium								
	S4.2.Z.AN (23.21)	Alfa- , near Alfa- and Alfa + Beta alloys annealed	1400	600-1100	72	30-50	0.14-0.16	0.16-0.22	0.18-0.26	0.20-0.30

Cutting data for ground brazed solid drill heads 424.6

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1}	Hardness Brinell	Grade combination	Cutting speed	Drill diameter, inch				
			lbs/in ²	HB			v_c ft/min	.614-.787	.788-1.220	1.221-1.693	1.694-2.559
								Feed f_n inch/rev			
P	Unalloyed steel										
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	216,500	90-200	70/63	230-395	.006-.008 ¹⁾	.006-.008 ¹⁾	.006-.010	.007-.011	
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	233,000	125-225	70/63	230-395	.006-.008 ¹⁾	.006-.008 ¹⁾	.006-.010	.007-.011	
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	247,000	150-250	70/63	230-395	.006-.008	.007-.010	.008-.012	.009-.013	
	P1.3.Z.AN (01.4)	High carbon steel, annealed	260,500	180-275	70/63	230-395	.006-.008	.007-.010	.008-.012	.009-.013	
	Low alloy steel										
	P2.1.Z.AN (02.1)	Non hardened	246,500	150-260	70/63	230-330	.006-.008	.007-.010	.008-.012	.008-.012	
	P2.5.Z.HT (02.2)	Hardened and tempered	278,500	220-450	70/63	180-330	.006-.008	.007-.010	.008-.012	.009-.013	
	High alloy steel										
	P3.0.Z.AN (03.11)	Annealed	282,000	150-250	70/63	230-330	.006-.008	.007-.010	.008-.012	.009-.013	
	(03.13)	Annealed HSS	311,000	150-250	70/63	230-330	.006-.008	.007-.010	.008-.012	.009-.013	
	P3.0.Z.HT (03.21)	Hardened tool steel	420,000	250-350	70/63	180-330	.006-.008	.007-.010	.008-.012	.009-.013	
	(03.22)	Hardened steel, others	448,500	250-450	70/63	180-330	.006-.008	.007-.010	.008-.012	.009-.013	
	Castings										
P1.5.C.UT (06.1)	Unalloyed	204,000	90-225	70/63	165-330	.005-.007	.006-.009	.008-.011	.009-.013		
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	230,500	150-250	70/63	165-330	.005-.007	.006-.009	.008-.011	.009-.013		
(06.32)	Stainless austenitic	254,000	150-250	20 ² /67	165-280	.006-.008	.007-.010	.009-.012	.009-.014		
(06.33)	Manganese steel, 12-14% Mn	420,500	200-300	20 ² /67	115-230	.006-.008	.007-.010	.009-.012	.009-.014		
M	Rolled/forged										
	P5.0.Z.AN (05.11)	Ferritic/Martensitic, non hardened	262,000	150-270	20 ² /67	130-280	.006-.008	.007-.010	.009-.012	.009-.014	
	M1.0.Z.AQ (05.21)	Austenitic	285,000	150-275	20 ² /67	130-280	.006-.008	.007-.010	.009-.012	.009-.014	
	M3.1.Z.AQ (05.51)	Austenitic / ferritic materials (Duplex) non-weldable $\geq 0.05\%$ C	286,500	180-290	20 ² /67	115-195	.005-.006	.008-.011	.009-.012	.010-.014	
M3.2.Z.AQ (05.52)	Austenitic / ferritic materials (Duplex) weldable < 0.05% C	356,500	200-320	20 ² /67	115-195	.005-.006	.008-.011	.009-.012	.010-.014		
K	Malleable										
	K1.1.C.NS (07.1)	Ferritic	115,000	110-145	72	260-330	.006-.008	.007-.010	.008-.012	.009-.013	
	K1.1.C.NS (07.2)	Pearlitic	131,000	150-270	72	260-330	.006-.008	.007-.010	.008-.012	.009-.013	
	Grey										
	K2.1.C.UT (08.1)	Low tensile strength	130,000	150-220	72	195-330	.005-.007	.006-.009	.008-.011	.009-.013	
	K2.2.C.UT (08.2)	High tensile strength	159,500	200-330	72	195-330	.005-.007	.006-.009	.008-.011	.009-.013	
	Nodular										
K3.1.C.UT (09.1)	Ferritic	130,000	125-230	72	165-330	.005-.007	.006-.009	.008-.011	.009-.013		
K3.3.C.UT (09.2)	Pearlitic	194,500	200-300	72	165-330	.005-.007	.006-.009	.008-.011	.009-.013		

¹⁾ Ejector drills in small diameters, not recommended for CMC 01.1 with carbon $\leq 0.18\%$. STS drills are the recommended alternative.

²⁾ Only for STS drills.

For carbide grades and grade combination, see page 40

Cutting data for ground brazed solid drill heads 424.6

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} lbs/in ²	Hardness Brinell HB	Grade combination	Cutting speed v_c ft/min	Drill diameter, inch			
							.614-.787	.788-1.220	1.221-1.693	1.694-2.559
							Feed f_n inch/rev			
N	(30.11)	Aluminium alloys								
		Wrought or wrought and coldworked, non-aging	58,000	30-100	72	215-425	.004-.008	.006-.010	.007-.012	.008-.018
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	94,500	30-150	72	215-425	.004-.008	.006-.010	.007-.012	.008-.018
	N1.3.C.UT (30.21)	Cast, non aging	87,000	40-100	72	215-425	.004-.008	.006-.010	.007-.012	.008-.018
	N1.3.C.AG (30.22)	Cast or cast and aged	101,500	70-140	72	215-425	.004-.008	.006-.010	.007-.012	.008-.018
		Copper and copper alloys								
	N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	79,500	70-160	72	215-425	.004-.008	.006-.010	.007-.012	.008-.018
	N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	80,000	50-200	72	215-425	.004-.008	.006-.010	.007-.012	.008-.018
S	(20.11)	Iron base								
		Annealed or solution treated	348,000	180-230	72	33-165	.004-.007	.006-.008	.007-.010	.008-.012
		Nickel base								
	S2.0.Z.AN (20.21)	Annealed or solution treated	383,000	140-300	72	33-165	.004-.007	.006-.008	.007-.010	.008-.012
	(20.31)	Cobalt alloys								
		Annealed or solution treated	391,500	180-230	72	33-165	.004-.007	.006-.008	.007-.010	.008-.012
	S4.2.Z.AN (23.21)	Titanium								
		Alfa- , near Alfa- and Alfa + Beta alloys annealed	203,000	600-1100	72	100-165	.005-.006	.006-.009	.007-.010	.008-.012

Cutting data for T-MAX® adjustable solid drill head 424.10

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1}	Hardness Brinell	Geometry / Grade	Cutting speed v_c m/min	Drill diameter, mm
			N/mm ²	HB			≥63.50
							Feed f_n mm/r
P	Unalloyed steel						
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	1500	90-200	-22/-23/1025	80-100	0.18-0.35
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	1600	125-225	-22/1025	80-100	0.18-0.35
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	1700	150-250	-22/1025	80-100	0.18-0.35
	P1.3.Z.AN (01.4)	High carbon steel, annealed	1800	180-275	-22/1025	80-100	0.18-0.35
	Low alloy steel						
	P2.1.Z.AN (02.1)	Non hardened	1700	150-260	-22/1025	70-100	0.18-0.35
	P2.5.Z.HT (02.2)	Hardened and tempered	1900	220-450	-22/1025	60-100	0.16-0.35
	High alloy steel						
	P3.0.Z.AN (03.11)	Annealed	1950	150-250	-22/1025	70-100	0.18-0.30
	P3.0.Z.AN (03.13)	Annealed HSS	2150	150-250	-22/1025	70-100	0.18-0.30
	P3.0.Z.HT (03.21)	Hardened tool steel	2900	250-350	-22/1025	60-100	0.16-0.30
P3.0.Z.HT (03.22)	Hardened steel, others	3100	250-450	-22/1025	60-100	0.16-0.30	
Castings							
P1.5.C.UT (06.1)	Unalloyed	1400	90-225	-22/1025	50-100	0.15-0.30	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	1600	150-250	-22/1025	50-100	0.15-0.30	
M	Rolled/forged						
	P5.0.Z.AN (05.11)	Ferritic/Martensitic, non hardened	1800	150-270	-22/1025	50-90	0.16-0.35
M1.0.Z.AQ (05.21)	Austenitic	1950	150-275	-23/1025	50-90	0.16-0.35	
K	Malleable						
	K1.1.C.NS (07.1)	Ferritic	790	110-145	-22/H13A	80-100	0.18-0.30
	K1.1.C.NS (07.2)	Pearlitic	900	150-270	-22/H13A	80-100	0.18-0.30
	Grey						
	K2.1.C.UT (08.1)	Low tensile strength	890	150-220	-22/H13A	60-100	0.16-0.35
	K2.2.C.UT (08.2)	High tensile strength	1100	200-330	-22/H13A	60-100	0.16-0.35
Nodular							
K3.1.C.UT (09.1)	Ferritic	900	125-230	-22/H13A	50-100	0.16-0.35	
K3.3.C.UT (09.2)	Pearlitic	1350	200-300	-22/H13A	50-100	0.16-0.35	

Cutting data for T-MAX® adjustable solid drill head 424.10

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{ct} N/mm ²	Hardness Brinell HB	Geometry / Grade	Cutting speed v_c m/min	Drill diameter, mm
							≥63.50
							Feed f_n mm/r
N	(30.11)	Aluminium alloys					
		Wrought or wrought and coldworked, non-aging	400	30-100	-23/H13A	65-130	0.10-0.30
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	650	30-150	-23/H13A	65-130	0.10-0.30
	N1.3.C.UT (30.21)	Cast, non aging	600	40-100	-23/H13A	65-130	0.10-0.30
	N1.3.C.AG (30.22)	Cast or cast and aged	700	70-140	-23/H13A	65-130	0.10-0.30
		Copper and copper alloys					
	N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	550	70-160	-23/H13A	65-130	0.10-0.30
	N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	550	50-200	-23/H13A	65-130	0.10-0.30
S	(20.11)	Iron base					
		Annealed or solution treated	2400	180-230	-22/1115	20-65	0.15-0.30
		Nickel base					
	S2.0.Z.AN (20.21)	Annealed or solution treated	2650	140-300	-23/1115	20-65	0.15-0.30
		Cobalt alloys					
	(20.31)	Annealed or solution treated	2700	180-230	-23/1115	20-65	0.15-0.30
		Titanium					
	S4.2.Z.AN (23.21)	Alfa- , near Alfa- and Alfa + Beta alloys annealed	1400	600-1100	-23/H13A -22/1025	30-60 30-100	0.15-0.30 0.15-0.30

Cutting data for T-MAX® adjustable solid drill head 424.10

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1}	Hardness Brinell	Geometry / Grade	Cutting speed v_c ft/min	Drill diameter, inch
			lbs/in ²	HB			≥2.500
							Feed f_n inch/rev
P	Unalloyed steel						
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	216,500	90-200	-22/-23/1025	260-330	.007-.014
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	233,000	125-225	-22/1025	260-330	.007-.014
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	247,000	150-250	-22/1025	260-330	.007-.014
	P1.3.Z.AN (01.4)	High carbon steel, annealed	260,500	180-275	-22/1025	260-330	.007-.014
	Low alloy steel						
	P2.1.Z.AN (02.1)	Non hardened	246,500	150-260	-22/1025	230-330	.007-.014
	P2.5.Z.HT (02.2)	Hardened and tempered	278,500	220-450	-22/1025	195-330	.006-.014
	High alloy steel						
	P3.0.Z.AN (03.11)	Annealed	282,000	150-250	-22/1025	260-330	.007-.012
	P3.0.Z.AN (03.13)	Annealed HSS	311,000	150-250	-22/1025	260-330	.007-.012
	P3.0.Z.HT (03.21)	Hardened tool steel	420,000	250-350	-22/1025	195-330	.006-.012
	P3.0.Z.HT (03.22)	Hardened steel, others	448,500	250-450	-22/1025	195-330	.006-.012
	Castings						
P1.5.C.UT (06.1)	Unalloyed	204,000	90-225	-22/1025	165-330	.006-.012	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	230,500	150-250	-22/1025	165-330	.006-.012	
M	Rolled/forged						
	P5.0.Z.AN (05.11)	Ferritic/Martensitic, non hardened	262,000	150-270	-22/1025	165-295	.006-.014
M1.0.Z.AQ (05.21)	Austenitic	285,000	150-275	-23/1025	165-295	.006-.014	
K	Malleable						
	K1.1.C.NS (07.1)	Ferritic	115,000	110-145	-22/H13A	260-330	.007-.014
	K1.1.C.NS (07.2)	Pearlitic	131,000	150-270	-22/H13A	260-330	.007-.012
	Grey						
	K2.1.C.UT (08.1)	Low tensile strength	130,000	150-220	-22/H13A	195-330	.006-.014
	K2.2.C.UT (08.2)	High tensile strength	159,500	200-330	-22/H13A	195-330	.006-.014
Nodular							
K3.1.C.UT (09.1)	Ferritic	130,000	125-230	-22/H13A	165-330	.006-.014	
K3.3.C.UT (09.2)	Pearlitic	194,500	200-300	-22/H13A	165-330	.006-.014	

Cutting data for T-MAX[®] adjustable solid drill head 424.10

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{ct}	Hardness Brinell	Geometry / Grade	Cutting speed v_c ft/min	Drill diameter, inch
			lbs/in ²	HB			≥2.500
N	(30.11)	Aluminium alloys					
		Wrought or wrought and coldworked, non-aging	58,000	30-100	-23/H13A	215-425	.004-.012
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	94,500	30-150	-23/H13A	215-425	.004-.012
	N1.3.C.UT (30.21)	Cast, non aging	87,000	40-100	-23/H13A	215-425	.004-.012
	N1.3.C.AG (30.22)	Cast or cast and aged	101,500	70-140	-23/H13A	215-425	.004-.012
		Copper and copper alloys					
	N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	79,500	70-160	-23/H13A	215-425	.004-.012
	N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	80,000	50-200	-23/H13A	215-425	.004-.012
S	(20.11)	Iron base					
		Annealed or solution treated	348,000	180-230	-22/1115	65-215	.006-.012
		Nickel base					
	S2.0.Z.AN (20.21)	Annealed or solution treated	383,000	140-300	-23/1115	65-215	.006-.012
		Cobalt alloys					
	(20.31)	Annealed or solution treated	391,500	180-230	-23/1115	65-215	.006-.012
		Titanium					
	S4.2.Z.AN (23.21)	Alfa- , near Alfa- and Alfa + Beta alloys annealed	203,000	600-1100	-23/H13A	100-215	.006-.012
					-22/1025	100-330	.006-.012

Cutting data for T-MAX® counterboring heads 424.31F, 424.31 and 424.32

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} N/mm ²	Hardness Brinell HB	Geometry / Grade	Cutting speed v_c m/min	Depth of cut (a_p), mm		
							1-3	3-8	≥8
							Feed f_n mm/r		
P	Unalloyed steel								
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	1500	90-200	235/4235	60-140	0.15-0.40	0.20-0.40	0.18-0.40
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	1600	125-225	235/4235	60-120	0.15-0.40	0.20-0.40	0.18-0.40
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	1700	150-250	235/4235	50-100	0.15-0.40	0.20-0.40	0.18-0.35
	Low alloy steel								
	P2.1.Z.AN (02.1)	Non hardened	1700	150-260	235/4235	50-130	0.15-0.40	0.20-0.40	0.18-0.40
	P2.5.Z.HT (02.2)	Hardened and tempered	1900	220-450	235/4235	50-120	0.15-0.40	0.20-0.40	0.18-0.40
	High alloy steel								
	P3.0.Z.AN (03.11)	Annealed	1950	150-250	235/4235	50-100	0.15-0.40	0.20-0.40	0.18-0.40
	P3.0.Z.AN (03.13)	Annealed HSS	2150	150-250	235/4235	50-100	0.15-0.40	0.20-0.40	0.18-0.40
	P3.0.Z.HT (03.21)	Hardened tool steel	2900	250-350	235/4235	60-100	0.15-0.40	0.20-0.40	0.18-0.40
	P3.0.Z.HT (03.22)	Hardened steel, others	3100	250-450	235/4235	60-100	0.15-0.40	0.20-0.40	0.18-0.40
Castings									
P1.5.C.UT (06.1)	Unalloyed	1400	90-225	235/4235	60-120	0.20-0.40	0.20-0.40	0.18-0.40	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	1600	150-250	235/4235	50-110	0.20-0.40	0.20-0.40	0.18-0.40	
M	Rolled/forged								
	P5.0.Z.AN (05.11)	Ferritic/Martensitic, non hardened	1800	150-270	235/S6	50-95	0.20-0.40	0.20-0.40	0.18-0.40
M1.0.Z.AQ (05.21)	Austenitic	1950	150-275	235/S6	50-95	0.20-0.40	0.20-0.40	0.18-0.40	
K	Malleable								
	K1.1.C.NS (07.1)	Ferritic	790	110-145	415/4235	60-120	0.20-0.40	0.20-0.40	0.15-0.40
	K1.1.C.NS (07.2)	Pearlitic	900	150-270	415/4235	60-120	0.20-0.40	0.20-0.40	0.15-0.40
	Grey								
	K2.1.C.UT (08.1)	Low tensile strength	890	150-220	415/4235	50-120	0.20-0.40	0.20-0.40	0.15-0.40
	K2.2.C.UT (08.2)	High tensile strength	1100	200-330	415/4235	50-120	0.20-0.40	0.20-0.40	0.15-0.40
	Nodular								
K3.1.C.UT (09.1)	Ferritic	900	125-230	415/4235	60-120	0.20-0.40	0.20-0.40	0.15-0.40	
K3.3.C.UT (09.2)	Pearlitic	1350	200-300	415/4235	60-120	0.20-0.40	0.20-0.40	0.15-0.40	
N	Aluminium alloys								
	(30.11)	Wrought or wrought and coldworked, non-aging	400	30-100	4235	65-300	0.20-0.40	0.20-0.40	0.20-0.40
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	650	30-150	4235	65-300	0.20-0.40	0.20-0.40	0.20-0.40
	N1.3.C.UT (30.21)	Cast, non aging	600	40-100	4235	65-300	0.20-0.40	0.20-0.40	0.20-0.40
	N1.3.C.AG (30.22)	Cast or cast and aged	700	70-140	4235	65-300	0.20-0.40	0.20-0.40	0.20-0.40
	Copper and copper alloys								
	N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	550	70-160	4235	65-300	0.20-0.40	0.20-0.40	0.20-0.40
N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	550	50-200	4235	65-300	0.20-0.40	0.20-0.40	0.20-0.40	

Cutting data for T-MAX[®] counterboring heads 424.31F, 424.31 and 424.32

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} lbs/in ²	Hardness Brinell HB	Geometry / Grade	Cutting speed v_c ft/min	Depth of cut (a_p), inch		
							.039-.118	.118-.315	≥.315
							Feed f_n inch/rev		
P	Unalloyed steel								
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	216,500	90-200	235/4235	195-460	.006-.016	.008-.016	.007-.016
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	233,000	125-225	235/4235	195-395	.006-.016	.008-.016	.007-.016
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	247,000	150-250	235/4235	165-330	.006-.016	.008-.016	.007-.014
	Low alloy steel								
	P2.1.Z.AN (02.1)	Non hardened	246,500	150-260	235/4235	165-425	.006-.016	.008-.016	.007-.016
	P2.5.Z.HT (02.2)	Hardened and tempered	278,500	220-450	235/4235	165-395	.006-.016	.008-.016	.007-.016
	High alloy steel								
	P3.0.Z.AN (03.11)	Annealed	282,000	150-250	235/4235	165-330	.006-.016	.008-.016	.007-.016
	(03.13)	Annealed HSS	311,000	150-250	235/4235	165-330	.006-.016	.008-.016	.007-.016
P3.0.Z.HT (03.21)	Hardened tool steel	420,000	250-350	235/4235	195-330	.006-.016	.008-.016	.007-.016	
(03.22)	Hardened steel, others	448,500	250-450	235/4235	195-330	.006-.016	.008-.016	.007-.016	
Castings									
P1.5.C.UT (06.1)	Unalloyed	204,000	90-225	235/4235	195-395	.008-.016	.008-.016	.007-.016	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	230,500	150-250	235/4235	165-360	.008-.016	.008-.016	.007-.016	
M	Rolled/forged								
	P5.0.Z.AN (05.11)	Ferritic/Martensitic, non hardened	262,000	150-270	235/S6	165-310	.008-.016	.008-.016	.007-.016
M1.0.Z.AQ (05.21)	Austenitic	285,000	150-275	235/S6	165-310	.008-.016	.008-.016	.007-.016	
K	Malleable								
	K1.1.C.NS (07.1)	Ferritic	115,000	110-145	415/4235	195-395	.008-.016	.008-.016	.006-.016
	K1.1.C.NS (07.2)	Pearlitic	131,000	150-270	415/4235	195-395	.008-.016	.008-.016	.006-.016
	Grey								
	K2.1.C.UT (08.1)	Low tensile strength	130,000	150-220	415/4235	165-395	.008-.016	.008-.016	.006-.016
	K2.2.C.UT (08.2)	High tensile strength	159,500	200-330	415/4235	165-395	.008-.016	.008-.016	.006-.016
Nodular									
K3.1.C.UT (09.1)	Ferritic	130,000	125-230	415/4235	195-395	.008-.016	.008-.016	.006-.016	
K3.3.C.UT (09.2)	Pearlitic	194,500	200-300	415/4235	195-395	.008-.016	.008-.016	.006-.016	
N	Aluminium alloys								
	(30.11)	Wrought or wrought and coldworked, non-aging	58,000	30-100	4235	215-985	.008-.016	.008-.016	.008-.016
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	94,500	30-150	4235	215-985	.008-.016	.008-.016	.008-.016
	N1.3.C.UT (30.21)	Cast, non aging	87,000	40-100	4235	215-985	.008-.016	.008-.016	.008-.016
	N1.3.C.AG (30.22)	Cast or cast and aged	101,500	70-140	4235	215-985	.008-.016	.008-.016	.008-.016
	Copper and copper alloys								
	N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	79,500	70-160	4235	215-985	.008-.016	.008-.016	.008-.016
N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	80,000	50-200	4235	215-985	.008-.016	.008-.016	.008-.016	

Cutting data for T-MAX® trepanning head 420.7

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} N/mm ²	Hardness Brinell HB	Geometry / Grade	Cutting speed v_c m/min	Drill diameter, mm
							≥120
							Feed f_n mm/r
P	Unalloyed steel						
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	1500	90-200	-22/-23/235	80-100	0.18-0.30
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	1600	125-225	-22/235	80-100	0.18-0.30
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	1700	150-250	-22/235	80-100	0.18-0.30
	P1.3.Z.AN (01.4)	High carbon steel, annealed	1800	180-275	-22/235	80-100	0.18-0.30
	Low alloy steel						
	P2.1.Z.AN (02.1)	Non hardened	1700	150-260	-22/235	70-100	0.18-0.30
	P2.5.Z.HT (02.2)	Hardened and tempered	1900	220-450	-22/235	60-100	0.16-0.30
	High alloy steel						
	P3.0.Z.AN (03.11)	Annealed	1950	150-250	-22/235	70-100	0.18-0.30
	(03.13)	Annealed HSS	2150	150-250	-22/235	70-100	0.18-0.30
	P3.0.Z.HT (03.21)	Hardened tool steel	2900	250-350	-22/235	60-100	0.16-0.30
	(03.22)	Hardened steel, others	3100	250-450	-22/235	60-100	0.16-0.30
	Castings						
P1.5.C.UT (06.1)	Unalloyed	1400	90-225	-22/235	50-100	0.15-0.30	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	1600	150-250	-22/235	50-100	0.15-0.30	
M	Rolled/forged						
	P5.0.Z.AN (05.11)	Ferritic/Martensitic, non hardened	1800	150-270	-22/235	50-90	0.16-0.35
M1.0.Z.AQ (05.21)	Austenitic	1950	150-275	-22/235	50-90	0.16-0.35	
K	Malleable						
	K1.1.C.NS (07.1)	Ferritic	790	110-145	-23/H13A	80-100	0.18-0.30
	K1.1.C.NS (07.2)	Pearlitic	900	150-270	-23/H13A	80-100	0.18-0.30
	Grey						
	K2.1.C.UT (08.1)	Low tensile strength	890	150-220	-23/H13A	60-100	0.16-0.30
	K2.2.C.UT (08.2)	High tensile strength	1100	200-330	-23/H13A	60-100	0.16-0.30
	Nodular						
K3.1.C.UT (09.1)	Ferritic	900	125-230	-23/H13A	50-100	0.16-0.30	
K3.3.C.UT (09.2)	Pearlitic	1350	200-300	-23/H13A	50-100	0.16-0.30	
N	Aluminium alloys						
	(30.11)	Wrought or wrought and coldworked, non-aging	400	30-100	-23/H13A	65-130	0.10-0.30
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	650	30-150	-23/H13A	65-130	0.10-0.30
	N1.3.C.UT (30.21)	Cast, non aging	600	40-100	-23/H13A	65-130	0.10-0.30
	N1.3.C.AG (30.22)	Cast or cast and aged	700	70-140	-23/H13A	65-130	0.10-0.30
	Copper and copper alloys						
	N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	550	70-160	-23/H13A	65-130	0.10-0.30
N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	550	50-200	-23/H13A	65-130	0.10-0.30	

Cutting data for T-MAX® trepanning head 420.7

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{ct}	Hardness Brinell	Geometry / Grade	Cutting speed v_c ft/min	Drill diameter, inch
			lbs/in ²	HB			≥ 120
P	Unalloyed steel						
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	216,500	90-200	-22/-23/235	260-330	.007-.012
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	233,000	125-225	-22/235	260-330	.007-.012
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	247,000	150-250	-22/235	260-330	.007-.012
	P1.3.Z.AN (01.4)	High carbon steel, annealed	260,500	180-275	-22/235	260-330	.007-.012
	Low alloy steel						
	P2.1.Z.AN (02.1)	Non hardened	246,500	150-260	-22/235	230-330	.007-.012
	P2.5.Z.HT (02.2)	Hardened and tempered	278,500	220-450	-22/235	195-330	.006-.012
	High alloy steel						
	P3.0.Z.AN (03.11)	Annealed	282,000	150-250	-22/235	230-330	.007-.012
	(03.13)	Annealed HSS	311,000	150-250	-22/235	230-330	.007-.012
	P3.0.Z.HT (03.21)	Hardened tool steel	420,000	250-350	-22/235	195-330	.006-.012
(03.22)	Hardened steel, others	448,500	250-450	-22/235	195-330	.006-.012	
Castings							
P1.5.C.UT (06.1)	Unalloyed	204,000	90-225	-22/235	165-330	.006-.012	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	230,500	150-250	-22/235	165-330	.006-.012	
M	Rolled/forged						
	P5.0.Z.AN (05.11)	Ferritic/Martensitic, non hardened	262,000	150-270	-22/235	165-295	.006-.014
M1.0.Z.AQ (05.21)	Austenitic	285,000	150-275	-22/235	165-295	.006-.014	
K	Malleable						
	K1.1.C.NS (07.1)	Ferritic	115,000	110-145	-23/H13A	260-330	.007-.012
	K1.1.C.NS (07.2)	Pearlitic	131,000	150-270	-23/H13A	260-330	.007-.012
	Grey						
	K2.1.C.UT (08.1)	Low tensile strength	130,000	150-220	-23/H13A	195-330	.006-.012
	K2.2.C.UT (08.2)	High tensile strength	159,500	200-330	-23/H13A	195-330	.006-.012
Nodular							
K3.1.C.UT (09.1)	Ferritic	130,000	125-230	-23/H13A	165-330	.006-.012	
K3.3.C.UT (09.2)	Pearlitic	194,500	200-300	-23/H13A	165-330	.006-.012	
N	Aluminium alloys						
	(30.11)	Wrought or wrought and coldworked, non-aging	58,000	30-100	-23/H13A	215-425	.004-.012
	N1.2.Z.AG (30.12)	Wrought or wrought and aged	94,500	30-150	-23/H13A	215-425	.004-.012
	N1.3.C.UT (30.21)	Cast, non aging	87,000	40-100	-23/H13A	215-425	.004-.012
	N1.3.C.AG (30.22)	Cast or cast and aged	101,500	70-140	-23/H13A	215-425	.004-.012
	Copper and copper alloys						
	N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	79,500	70-160	-23/H13A	215-425	.004-.012
N3.2.C.UT (33.2)	Brass and leaded alloys (Pb < 1%)	80,000	50-200	-23/H13A	215-425	.004-.012	

Cutting data for gun drills 428.9

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} N/mm ²	Hardness Brinell HB	Cutting speed v_c m/min	Drill diameter, mm			
						0.98-3.00	3.00-6.30	6.00-12.50	12.50-40.50
						Feed f_n mm/r			
P		Unalloyed							
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	1500	90-200	60-120	0.003-0.010	0.005-0.030	0.015-0.055	0.020-0.110
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	1600	125-225	50-120	0.003-0.010	0.005-0.030	0.015-0.055	0.020-0.110
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	1700	150-250	40-100	0.003-0.010	0.004-0.025	0.010-0.050	0.020-0.100
		Low alloy steel							
	P2.1.Z.AN (02.1)	Non-hardened	1700	150-260	40-120	0.003-0.010	0.004-0.030	0.010-0.055	0.020-0.110
	P2.5.Z.HT (02.2)	Hardened and tempered	1900	220-450	40-120	0.003-0.010	0.004-0.025	0.010-0.050	0.020-0.100
		High alloy steel							
	P3.0.Z.AN (03.11)	Annealed	1950	150-250	40-100	0.003-0.010	0.004-0.025	0.010-0.050	0.020-0.100
	P3.0.Z.HT (03.21)	Hardened tool steel	2900	250-350	50-100	0.003-0.010	0.005-0.025	0.015-0.050	0.030-0.100
	Castings								
P1.5.C.UT (06.1)	Unalloyed	1400	90-225	50-120	0.003-0.010	0.005-0.030	0.015-0.055	0.020-0.110	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	1600	150-250	40-100	0.003-0.010	0.004-0.025	0.010-0.050	0.020-0.100	
M		Rolled/forged							
	P5.0.Z.AN (5.11)	Ferritic/Martensitic, non hardened	1800	150-270	40-90	0.003-0.008	0.004-0.025	0.010-0.040	0.020-0.100
	M1.0.Z.AQ (05.21)	Austenitic	1950	150-275	40-90	0.003-0.008	0.004-0.025	0.010-0.040	0.020-0.100
K		Malleable							
	K1.1.C.NS (07.1)	Ferritic	790	110-145	70-90	0.005-0.010	0.008-0.030	0.020-0.070	0.050-0.190
	K1.1.C.NS (07.2)	Pearlitic	900	150-270	60-90	0.004-0.010	0.005-0.030	0.010-0.070	0.030-0.190
		Grey							
	K2.1.C.UT (08.1)	Low tensile strength	890	150-220	60-90	0.004-0.010	0.008-0.030	0.010-0.070	0.030-0.190
	K2.2.C.UT (08.2)	High tensile strength	1100	200-330	15-90	0.003-0.010	0.003-0.030	0.005-0.070	0.010-0.190
	Nodular								
K3.1.C.UT (09.1)	Ferritic	900	125-230	70-90	0.005-0.010	0.008-0.030	0.020-0.070	0.050-0.190	
K3.3.C.UT (09.2)	Pearlitic	1350	200-300	60-90	0.004-0.010	0.005-0.030	0.010-0.070	0.030-0.190	
N		Aluminium alloys							
	N1.3.C.UT (30.21)	Cast, non aging	600	40-100	65-300	0.005-0.015	0.005-0.040	0.020-0.070	0.030-0.150
		Copper and copper alloys							
N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	550	70-160	65-300	0.005-0.015	0.005-0.040	0.020-0.070	0.030-0.150	
N3.2.C.UT (33.2)	Brass and leaded bronzes (Pb ≤ 1%)	550	50-200	65-300	0.005-0.015	0.005-0.040	0.020-0.070	0.030-0.150	
S		Iron base							
	20.11	Annealed or solution treated	2400	180-230	10-40	0.003-0.008	0.004-0.025	0.010-0.040	0.020-0.100
		Nickel base							
	S2.0.Z.AN (20.21)	Annealed or solution treated	2650	140-300	10-40	0.003-0.008	0.004-0.025	0.010-0.040	0.020-0.100
	Cobalt alloys								
20.31	Annealed or solution treated	2700	180-230	10-40	0.003-0.008	0.004-0.025	0.010-0.040	0.020-0.100	
	Titanium								
S4.2.Z.AN (23.21)	Alfa-, near Alfa- and Alfa + Beta alloys annealed	1400	600-1100	20-50	0.003-0.008	0.004-0.025	0.010-0.040	0.020-0.100	

Cutting data for gun drills 428.9

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} lbs/in ²	Hardness Brinell HB	Cutting speed v_c ft/min	Drill diameter, inch			
						.039-.118	.118-.248	.236-.492	.492-1.594
						Feed f_n inch/rev			
P	Unalloyed								
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	216,500	90-200	195-395	.0001-.0004	.0002-.0012	.0006-.0022	.0008-.0043
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	233,000	125-225	165-395	.0001-.0004	.0002-.0012	.0006-.0022	.0008-.0043
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	247,000	150-250	130-330	.0001-.0004	.0002-.0010	.0004-.0020	.0008-.0039
	Low alloy steel								
	P2.1.Z.AN (02.1)	Non-hardened	246,500	150-260	130-395	.0001-.0004	.0002-.0012	.0004-.0022	.0008-.0043
	P2.5.Z.HT (02.2)	Hardened and tempered	278,500	220-450	130-395	.0001-.0004	.0002-.0010	.0004-.0020	.0008-.0039
	High alloy steel								
	P3.0.Z.AN (03.11)	Annealed	282,000	150-250	130-330	.0001-.0004	.0002-.0010	.0004-.0020	.0008-.0039
	P3.0.Z.HT (03.21)	Hardened tool steel	420,000	250-350	165-330	.0001-.0004	.0002-.0010	.0006-.0020	.0012-.0039
Castings									
P1.5.C.UT (06.1)	Unalloyed	204,000	90-225	165-395	.0001-.0004	.0002-.0012	.0006-.0022	.0008-.0043	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	230,500	150-250	130-330	.0001-.0004	.0002-.0010	.0004-.0020	.0008-.0039	
M	Rolled/forged								
	P5.0.Z.AN (05.11)	Ferritic/Martensitic, non hardened	262,000	150-270	130-295	.0001-.0003	.0002-.0010	.0004-.0016	.0008-.0039
M1.0.Z.AQ (05.21)	Austenitic	285,000	150-275	130-295	.0001-.0003	.0002-.0010	.0004-.0016	.0008-.0039	
K	Malleable								
	K1.1.C.NS (07.1)	Ferritic	115,000	110-145	230-295	.0002-.0004	.0003-.0012	.0008-.0028	.0020-.0075
	K1.1.C.NS (07.2)	Pearlitic	131,000	150-270	195-295	.0002-.0004	.0002-.0012	.0004-.0028	.0012-.0075
	Grey								
	K2.1.C.UT (08.1)	Low tensile strength	130,000	150-220	195-295	.0002-.0004	.0003-.0012	.0004-.0028	.0012-.0075
	K2.2.C.UT (08.2)	High tensile strength	159,500	200-330	50-295	.0001-.0004	.0001-.0012	.0002-.0028	.0004-.0075
Nodular									
K3.1.C.UT (09.1)	Ferritic	130,000	125-230	230-295	.0002-.0004	.0003-.0012	.0008-.0028	.0020-.0075	
K3.3.C.UT (09.2)	Pearlitic	194,500	200-300	195-295	.0002-.0004	.0002-.0012	.0004-.0028	.0012-.0075	
N	Aluminium alloys								
	N1.3.C.UT (30.21)	Cast, non aging	87,000	40-100	65-300	.0002-.0006	.0002-.0016	.0008-.0028	.0012-.0059
	Copper and copper alloys								
N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	79,500	70-160	65-300	.0002-.0006	.0002-.0016	.0008-.0028	.0012-.0059	
N3.2.C.UT (33.2)	Brass and leaded bronzes (Pb ≤ 1%)	80,000	50-200	65-300	.0002-.0006	.0002-.0016	.0008-.0028	.0012-.0059	
S	Iron base								
	20.11	Annealed or solution treated	348,000	180-230	35-130	.0001-.0003	.0002-.0010	.0004-.0016	.0008-.0039
	Nickel base								
	S2.0.Z.AN (20.21)	Annealed or solution treated	383,000	140-300	35-130	.0001-.0003	.0002-.0010	.0004-.0016	.0008-.0039
Cobalt alloys									
20.31	Annealed or solution treated	391,500	180-230	35-130	.0001-.0003	.0002-.0010	.0004-.0016	.0008-.0039	
Titanium									
S4.2.Z.AN (23.21)	Alfa-, near Alfa- and Alfa + Beta alloys annealed	203,000	600-1100	65-165	.0001-.0003	.0002-.0010	.0004-.0016	.0008-.0039	

Cutting data for gun drills 428.2

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1}	Hardness Brinell	Cutting speed	Drill diameter, mm			
						0.98-3.00	3.00-6.30	6.00-12.50	12.50-40.50
						Feed f_n mm/r			
P		Unalloyed							
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	1500	90-200	60-120	0.003-0.010	0.005-0.030	0.015-0.055	0.020-0.110
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	1600	125-225	50-120	0.003-0.010	0.005-0.030	0.015-0.055	0.020-0.110
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	1700	150-250	40-100	0.003-0.010	0.004-0.025	0.010-0.050	0.020-0.100
		Low alloy steel							
	P2.1.Z.AN (02.1)	Non-hardened	1700	150-260	40-120	0.003-0.010	0.004-0.030	0.010-0.055	0.020-0.110
	P2.5.Z.HT (02.2)	Hardened and tempered	1900	220-450	40-120	0.003-0.010	0.004-0.025	0.010-0.050	0.020-0.100
		High alloy steel							
	P3.0.Z.AN (03.11)	Annealed	1950	150-250	40-100	0.003-0.010	0.004-0.025	0.010-0.050	0.020-0.100
	P3.0.Z.HT (03.21)	Hardened tool steel	2900	250-350	50-100	0.003-0.010	0.005-0.025	0.015-0.050	0.030-0.100
	Castings								
P1.5.C.UT (06.1)	Unalloyed	1400	90-225	50-120	0.003-0.010	0.005-0.030	0.015-0.055	0.020-0.110	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	1600	150-250	40-100	0.003-0.010	0.004-0.025	0.010-0.050	0.020-0.100	
K		Malleable							
	K1.1.C.NS (07.1)	Ferritic	790	110-145	70-90	0.005-0.010	0.008-0.030	0.020-0.070	0.050-0.190
	K1.1.C.NS (07.2)	Pearlitic	900	150-270	60-90	0.004-0.010	0.005-0.030	0.010-0.070	0.030-0.190
		Grey							
	K2.1.C.UT (08.1)	Low tensile strength	890	150-220	60-90	0.004-0.010	0.008-0.030	0.010-0.070	0.030-0.190
	K2.2.C.UT (08.2)	High tensile strength	1100	200-330	15-90	0.003-0.010	0.003-0.030	0.005-0.070	0.010-0.190
		Nodular							
K3.1.C.UT (09.1)	Ferritic	900	125-230	70-90	0.005-0.010	0.008-0.030	0.020-0.070	0.050-0.190	
K3.3.C.UT (09.2)	Pearlitic	1350	200-300	60-90	0.004-0.010	0.005-0.030	0.010-0.070	0.030-0.190	
N		Aluminium alloys							
	N1.3.C.UT (30.21)	Cast, non aging	600	40-100	65-300	0.005-0.015	0.005-0.040	0.020-0.070	0.030-0.150
		Copper and copper alloys							
N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	550	70-160	65-300	0.005-0.015	0.005-0.040	0.020-0.070	0.030-0.150	
N3.2.C.UT (33.2)	Brass and leaded bronzes (Pb ≤ 1%)	550	50-200	65-300	0.005-0.015	0.005-0.040	0.020-0.070	0.030-0.150	

Cutting data for gun drills 428.2

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} lbs/in ²	Hardness Brinell HB	Cutting speed v_c ft/min	Drill diameter, inch			
						.039-.118	.118-.248	.236-.492	.492-1.594
						Feed f_n inch/rev			
P		Unalloyed							
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	216,500	90-200	195-395	.0001-.0004	.0002-.0012	.0006-.0022	.0008-.0043
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	233,000	125-225	165-395	.0001-.0004	.0002-.0012	.0006-.0022	.0008-.0043
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	247,000	150-250	130-330	.0001-.0004	.0002-.0010	.0004-.0020	.0008-.0039
		Low alloy steel							
	P2.1.Z.AN (02.1)	Non-hardened	246,500	150-260	130-395	.0001-.0004	.0002-.0012	.0004-.0022	.0008-.0043
	P2.5.Z.HT (02.2)	Hardened and tempered	278,500	220-450	130-395	.0001-.0004	.0002-.0010	.0004-.0020	.0008-.0039
		High alloy steel							
	P3.0.Z.AN (03.11)	Annealed	282,000	150-250	130-330	.0001-.0004	.0002-.0010	.0004-.0020	.0008-.0039
	P3.0.Z.HT (03.21)	Hardened tool steel	420,000	250-350	165-330	.0001-.0004	.0002-.0010	.0006-.0020	.0012-.0039
	Castings								
P1.5.C.UT (06.1)	Unalloyed	204,000	90-225	165-395	.0001-.0004	.0002-.0012	.0006-.0022	.0008-.0043	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	230,500	150-250	130-330	.0001-.0004	.0002-.0010	.0004-.0020	.0008-.0039	
K		Malleable							
	K1.1.C.NS (07.1)	Ferritic	115,000	110-145	230-295	.0002-.0004	.0003-.0012	.0008-.0028	.0020-.0075
	K1.1.C.NS (07.2)	Pearlitic	131,000	150-270	195-295	.0002-.0004	.0002-.0012	.0004-.0028	.0012-.0075
		Grey							
	K2.1.C.UT (08.1)	Low tensile strength	130,000	150-220	195-295	.0002-.0004	.0003-.0012	.0004-.0028	.0012-.0075
	K2.2.C.UT (08.2)	High tensile strength	159,500	200-330	50-295	.0001-.0004	.0001-.0012	.0002-.0028	.0004-.0075
		Nodular							
K3.1.C.UT (09.1)	Ferritic	130,000	125-230	230-295	.0002-.0004	.0003-.0012	.0008-.0028	.0020-.0075	
K3.3.C.UT (09.2)	Pearlitic	194,500	200-300	195-295	.0002-.0004	.0002-.0012	.0004-.0028	.0012-.0075	
N		Aluminium alloys							
	N1.3.C.UT (30.21)	Cast, non aging	87,000	40-100	65-300	.0002-.0006	.0002-.0016	.0008-.0028	.0012-.0059
		Copper and copper alloys							
N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	79,500	70-160	65-300	.0002-.0006	.0002-.0016	.0008-.0028	.0012-.0059	
N3.2.C.UT (33.2)	Brass and leaded bronzes (Pb ≤ 1%)	80,000	50-200	65-300	.0002-.0006	.0002-.0016	.0008-.0028	.0012-.0059	

Cutting data for solid carbide gun drills 428.5

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} N/mm ²	Hardness Brinell HB	Cutting speed v_c m/min	Drill diameter, mm			
						0.98-3.00	3.00-6.30	6.00-12.00	
						Feed f_n mm/r			
P	Unalloyed steel								
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	1500	90-200	40-60	0.003-0.010	0.005-0.030	0.015-0.055	
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	1600	125-225	35-60	0.003-0.010	0.005-0.030	0.015-0.055	
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	1700	150-250	25-50	0.003-0.010	0.004-0.025	0.010-0.050	
	Low alloy steel								
	P2.1.Z.AN (02.1)	Non-hardened	1700	150-260	25-60	0.003-0.010	0.004-0.030	0.010-0.055	
	P2.5.Z.HT (02.2)	Hardened and tempered	1900	220-450	25-60	0.003-0.010	0.004-0.025	0.010-0.050	
	High alloy steel								
	P3.0.Z.AN (03.11)	Annealed	1950	150-250	25-50	0.003-0.010	0.004-0.025	0.010-0.050	
	P3.0.Z.HT (03.21)	Hardened tool steel	2900	250-350	35-50	0.003-0.010	0.005-0.025	0.015-0.050	
Steel castings									
P1.5.C.UT (06.1)	Unalloyed	1400	90-225	35-60	0.003-0.010	0.005-0.030	0.015-0.055		
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	1600	150-250	25-50	0.003-0.010	0.004-0.025	0.010-0.050		
K	Malleable cast iron								
	K1.1.C.NS (07.1)	Ferritic	790	110-145	70-90	0.005-0.010	0.008-0.030	0.020-0.070	
	K1.1.C.NS (07.2)	Pearlitic	900	150-270	60-90	0.004-0.010	0.005-0.030	0.010-0.070	
	Grey cast iron								
	K2.1.C.UT (08.1)	Low tensile strength	890	150-220	70-100	0.004-0.010	0.008-0.030	0.010-0.070	
	K2.2.C.UT (08.2)	High tensile strength	1100	200-330	60-90	0.003-0.010	0.003-0.030	0.005-0.070	
	Nodular cast iron								
K3.1.C.UT (09.1)	Ferritic	900	125-230	70-90	0.005-0.010	0.008-0.030	0.020-0.070		
K3.3.C.UT (09.2)	Pearlitic	1350	200-300	60-90	0.004-0.010	0.005-0.030	0.010-0.070		
N	Aluminium alloys								
	N1.3.C.UT (30.21)	Cast, non aging	600	40-100	100-300	0.005-0.015	0.005-0.040	0.020-0.070	
	Copper and copper alloys								
N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	550	70-160	80-150	0.005-0.015	0.005-0.040	0.020-0.070		
N3.2.C.UT (33.2)	Brass and leaded bronzes (Pb ≤ 1%)	550	50-200	80-150	0.005-0.015	0.005-0.040	0.020-0.070		

Cutting data for solid carbide gun drills 428.5

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} lbs/in ²	Hardness Brinell HB	Cutting speed v_c ft/min	Drill diameter, inch		
						.039-.118	.118-.248	.236-.472
						Feed f_n inch/rev		
P	Unalloyed steel							
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	216,500	90-200	130-195	.0001-.0004	.0002-.0012	.0006-.0022
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	233,000	125-225	115-195	.0001-.0004	.0002-.0012	.0006-.0022
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	247,000	150-250	80-165	.0001-.0004	.0002-.0010	.0004-.0020
	Low alloy steel							
	P2.1.Z.AN (02.1)	Non-hardened	246,500	150-260	80-195	.0001-.0004	.0002-.0012	.0004-.0022
	P2.5.Z.HT (02.2)	Hardened and tempered	278,500	220-450	80-195	.0001-.0004	.0002-.0010	.0004-.0020
	High alloy steel							
	P3.0.Z.AN (03.11)	Annealed	282,000	150-250	80-165	.0001-.0004	.0002-.0010	.0004-.0020
	P3.0.Z.HT (03.21)	Hardened tool steel	420,000	250-350	115-165	.0001-.0004	.0002-.0010	.0006-.0020
Steel castings								
P1.5.C.UT (06.1)	Unalloyed	204,000	90-225	115-195	.0001-.0004	.0002-.0012	.0006-.0022	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	230,500	150-250	80-165	.0001-.0004	.0002-.0010	.0004-.0020	
K	Malleable cast iron							
	K1.1.C.NS (07.1)	Ferritic	115,000	110-145	230-295	.0002-.0004	.0003-.0012	.0008-.0028
	K1.1.C.NS (07.2)	Pearlitic	131,000	150-270	195-295	.0002-.0004	.0002-.0012	.0004-.0028
	Grey cast iron							
	K2.1.C.UT (08.1)	Low tensile strength	130,000	150-220	230-330	.0002-.0004	.0003-.0012	.0004-.0028
	K2.2.C.UT (08.2)	High tensile strength	159,500	200-330	195-295	.0001-.0004	.0001-.0012	.0002-.0028
	Nodular cast iron							
K3.1.C.UT (09.1)	Ferritic	130,000	125-230	230-295	.0002-.0004	.0003-.0012	.0008-.0028	
K3.3.C.UT (09.2)	Pearlitic	194,500	200-300	195-295	.0002-.0004	.0002-.0012	.0004-.0028	
N	Aluminium alloys							
	N1.3.C.UT (30.21)	Cast, non aging	87,000	40-100	330-985	.0002-.0006	.0002-.0016	.0008-.0028
	Copper and copper alloys							
N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	79,500	70-160	260-490	.0002-.0006	.0002-.0016	.0008-.0028	
N3.2.C.UT (33.2)	Brass and leaded bronzes (Pb ≤ 1%)	80,000	50-200	260-490	.0002-.0006	.0002-.0016	.0008-.0028	

Cutting data for high feed gun drills 428.7

Metric version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1}	Hardness Brinell	Cutting speed	Drill diameter, mm	
						3.00-6.30	6.00-12.00
						Feed f_n mm/r	
			N/mm ²	HB	v_c m/min		
P	Unalloyed steel						
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	1500	90-200	40-60	0.025-0.150	0.075-0.275
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	1600	125-225	35-60	0.025-0.150	0.075-0.275
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	1700	150-250	25-50	0.020-0.125	0.050-0.250
	Low alloy steel						
	P2.1.Z.AN (02.1)	Non-hardened	1700	150-260	25-60	0.020-0.150	0.050-0.275
	P2.5.Z.HT (02.2)	Hardened and tempered	1900	220-450	25-60	0.020-0.125	0.050-0.250
	High alloy steel						
	P3.0.Z.AN (03.11)	Annealed	1950	150-250	25-50	0.020-0.125	0.050-0.250
	P3.0.Z.HT (03.21)	Hardened tool steel	2900	250-350	35-50	0.025-0.125	0.075-0.250
Steel castings							
P1.5.C.UT (06.1)	Unalloyed	1400	90-225	35-60	0.025-0.150	0.075-0.275	
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	1600	150-250	25-50	0.020-0.125	0.050-0.250	
K	Malleable cast iron						
	K1.1.C.NS (07.1)	Ferritic	790	110-145	70-90	0.040-0.150	0.100-0.350
	K1.1.C.NS (07.2)	Pearlitic	900	150-270	60-90	0.025-0.150	0.050-0.350
	Grey cast iron						
	K2.1.C.UT (08.1)	Low tensile strength	890	150-220	70-100	0.040-0.150	0.050-0.350
	K2.2.C.UT (08.2)	High tensile strength	1100	200-330	60-90	0.015-0.150	0.025-0.350
	Nodular cast iron						
K3.1.C.UT (09.1)	Ferritic	900	125-230	70-90	0.040-0.150	0.100-0.350	
K3.3.C.UT (09.2)	Pearlitic	1350	200-300	60-90	0.025-0.150	0.050-0.350	
N	Aluminium alloys						
	N1.3.C.UT (30.21)	Cast, non aging	600	40-100	100-300	0.025-0.200	0.100-0.350
	Copper and copper alloys						
N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	550	70-160	80-150	0.025-0.200	0.100-0.350	
N3.2.C.UT (33.2)	Brass and leaded bronzes (Pb ≤ 1%)	550	50-200	80-150	0.025-0.200	0.100-0.350	

Cutting data for high feed gun drills 428.7

Inch version

ISO	MC No. (CMC No.)	Material	Specific cutting force k_{c1} lbs/in ²	Hardness Brinell HB	Cutting speed v_c ft/min	Drill diameter, inch		
						.118-.248	.236-.472	
						Feed f_n inch/rev		
P	Unalloyed steel							
	P1.1.Z.AN (01.1)	Non-hardened 0.10-0.25% C	216,500	90-200	130-195	.0010-.0059	.0030-.0108	
	P1.2.Z.AN (01.2)	Non-hardened 0.25-0.55% C	233,000	125-225	115-195	.0010-.0059	.0030-.0108	
	P1.3.Z.AN (01.3)	Non-hardened 0.55-0.80% C	247,000	150-250	80-165	.0010-.0049	.0020-.0098	
	Low alloy steel							
	P2.1.Z.AN (02.1)	Non-hardened	246,500	150-260	80-195	.0010-.0059	.0020-.0108	
	P2.5.Z.HT (02.2)	Hardened and tempered	278,500	220-450	80-195	.0010-.0049	.0020-.0098	
	High alloy steel							
	P3.0.Z.AN (03.11)	Annealed	282,000	150-250	80-165	.0010-.0049	.0020-.0098	
	P3.0.Z.HT (03.21)	Hardened tool steel	420,000	250-350	115-165	.0010-.0049	.0030-.0098	
Steel castings								
P1.5.C.UT (06.1)	Unalloyed	204,000	90-225	115-195	.0010-.0059	.0030-.0108		
P2.6.C.UT (06.2)	Low alloyed (alloying elements < 5%)	230,500	150-250	80-165	.0010-.0049	.0020-.0098		
K	Malleable cast iron							
	K1.1.C.NS (07.1)	Ferritic	115,000	110-145	230-295	.0016-.0059	.0039-.0138	
	K1.1.C.NS (07.2)	Pearlitic	131,000	150-270	195-295	.0010-.0059	.0039-.0138	
	Grey cast iron							
	K2.1.C.UT (08.1)	Low tensile strength	130,000	150-220	230-330	.0016-.0059	.0020-.0138	
	K2.2.C.UT (08.2)	High tensile strength	159,500	200-330	195-295	.0006-.0059	.0010-.0138	
	Nodular cast iron							
K3.1.C.UT (09.1)	Ferritic	130,000	125-230	230-295	.0016-.0059	.0039-.0138		
K3.3.C.UT (09.2)	Pearlitic	194,500	200-300	195-295	.0010-.0059	.0020-.0138		
N	Aluminium alloys							
	N1.3.C.UT (30.21)	Cast, non aging	87,000	40-100	330-985	.0010-.0079	.0039-.0138	
	Copper and copper alloys							
N3.3.U.UT (33.1)	Free cutting alloys (Pb > 1%)	79,500	70-160	260-490	.0010-.0079	.0039-.0138		
N3.2.C.UT (33.2)	Brass and leaded bronzes (Pb ≤ 1%)	80,000	50-200	260-490	.0010-.0079	.0039-.0138		

Keys (mm/Torx Plus) sizes



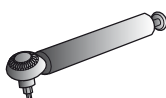
Key			
Ordering code	(mm)	(inch)	(Torx Plus)
174.1-864	3	-	-
3021 010-030	3	-	-
3021 010-040	4	-	-
3021 010-050	5	-	-
3021 010-060	6	-	-
5680 010-05	3	-	-
5680 015-01	10	-	-
5680 015-02	14	-	-
5680 015-05	8	-	-
5680 043-12	-	-	10IP
5680 043-14	-	-	20IP
5680 043-15	-	-	25IP
5680 043-16	-	-	27IP
5680 049-01	3.5	-	15IP
5680 049-02	4	-	15IP



Screwdriver		
Ordering code	(mm)	(Torx Plus)
5680 046-01	-	8IP
5680 046-05	-	10IP

5680 100

5680 099



Torque wrench			
Ordering code	(mm)	(Torx Plus)	Torque value Nm (in-lbs)
5680 099-01	5	-	3-15 (27 -133)



Bit		Torque wrench	
Ordering code	(Torx Plus)	Ordering code	Torque value Nm (in-lbs)
5680 084-01	08IP	5680 105-01	1.2 (10)
5680 084-02	15IP	5680 105-02	3 (26)
5680 084-04	07IP	5680 105-05	5 (44)
5680 084-06	10IP	5680 105-02	2 (18)
5680 084-07	20IP	5680 105-05	5 (44)
5680 084-11	06IP	5680 105-01	0.6 (4)

Safety information in connection with grinding of cemented carbide

Material composition

Most metal products contain tungsten carbide and cobalt. Other substances that may be present in hard metal are titanium carbide, tantalum carbide, niobium carbide, chromium carbide, molybdenum carbide or vanadium carbide. Some grades contain titanium carbonitride and/or nickel.

Routes of exposure

Grinding or heating of hard metal blanks or hard metal products will produce products that give off dangerous dust and fumes. Avoiding ingestion and contact with skin or eyes is very important.

Acute toxicity

Intake of the aforementioned substances is toxic. Inhalation may cause irritation and inflammation of the airways. Significantly higher acute inhalation toxicity has been reported during simultaneous inhalation of cobalt and tungsten carbide compared to inhalation of cobalt alone.

Skin contact can cause irritation and rash. Sensitive individuals may even experience an allergic reaction.

Chronic toxicity

Repeated inhalation of aerosols containing cobalt may cause obstruction of the airways. Prolonged exposure to increased concentrations may cause lung fibrosis or lung cancer. Epidemiological studies indicate that workers previously exposed to high concentrations of tungsten carbide/cobalt carried an increased risk of developing lung cancer.

Cobalt and nickel are potent skin sensitizers. Repeated or prolonged contact can cause irritation and sensitization.

Risk phrases

Toxic: danger of serious damage to health by prolonged exposure through inhalation

Toxic when inhaled

Limited evidence of a carcinogenic effect.

May cause sensitization by inhalation and skin contact

Preventive measures

Avoid formation and inhalation of dust. Use adequate local exhaust ventilation to keep personal exposure well below nationally authorised limits.

If ventilation is not available or adequate, use respirators appropriately approved for the purpose.

Use safety goggles or glasses with side shields when necessary.

Avoid repeated skin contact. Wear suitable gloves. Wash skin thoroughly after handling.

Use suitable protective clothing. Launder clothing if needed.

Do not eat, drink or smoke in the working area. Wash skin thoroughly before eating, drinking or smoking.