

CoroDrill® DS20

What innovation looks like

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What innovation looks like

After years of R&D and customer testing, the first indexable drill that can reach up to 7xDC - with no need for pilot drilling - is here, reducing your cycle time and cost per hole.

Innovative drill body and insert designs have resulted in a drilling concept with never-before-seen stiffness, evacuation performance and light cutting action. CoroDrill® DS20 offers superior reliability and predictability with outstanding penetration rates for your 4–7 × DC drilling operations.

Improve your drilling operations even more and reduce your tool inventory by using the stable and high precision Modular Drilling Interface, MDI.

Customer benefits

- A secure and reliable cutting process with high productivity ensuring low cost per hole
- Versatile drill with good chip formation in a broad cutting data range
- Large selection of geometries, from versatile to optimized offer
- Optimized chip control and chip evacuation
- Consistent and predictable hole diameter
- Light cutting with low cutting forces
- Reduced sound level

Standard assortment

Diameter, mm (inch)	Shank type	Drill depth (×DC)
15–45 (0.625–1.75)	Cylindrical with flat according to ISO 9766 (mm and inch)	4, 5, 6, 7
46–65 (1.875–2.50)	Cylindrical with flat according to ISO 9766 (mm and inch)	4, 5
15–45 (0.625–1.75)	MDI (mm and inch)	4, 7
46–59 (1.875–2.25)	MDI (mm and inch)	4



Tailor Made

Can not find the specific tool that you are looking for? Then a customized tool might be the solution.

CoroDrill® DS20 customized solutions are available with Tailor Made® and special tools. Create your Tailor Made® solution in the online configurator or reach out to your local Sandvik Coromant representative.

Drill design

The design of the CoroDrill® DS20 has resulted in a strong and fatigue-resistant drill body where each drill body size is individually optimized to ensure a secure and consistent performance over the entire assortment. The drill body stiffness, in combination with light-cutting

geometries, generates less vibration and significantly increased tool life.

With high process security and good run-out accuracy, CoroDrill® DS20 will reduce your costs and increase your component quality.



4–5×DC

- Predictable and consistent chip control
- Versatile and cost-efficient
- Increased productivity in all materials
- Large functionality over a broad cutting data range
- H12–H13 hole tolerances

6–7×DC

- First to market with a 7 × DC indexable insert drill
- Opens up for new machining processes with increased productivity
- No pilot drilling needed
- Cost-efficient drilling for deeper holes with less demanding hole tolerances (-0.1/+0.5 mm (-0.004/+0.020 inch))

Next generation step technology

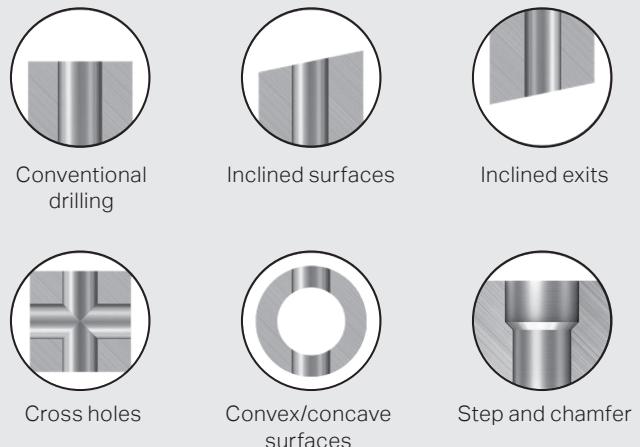
Entering the workpiece with an asymmetrical drill by default generates an unbalance. The new generation of inserts with double steps allows for softer entries and cutting forces are considerably reduced at entry.

In combination with the stiff drill body, the centring capabilities are dramatically improved enabling deeper holes to be drilled, higher productivity as well as closer hole tolerances.



Application area

- For hole depths 4–7×DC
- Geometries designed for versatility or optimized applications
- Capable of both non-rotating and rotating set-ups
- Can be used for drilling with radial offset, deburring and back boring



Use CoroPlus® Tool Guide for cutting data recommendations and details specific to your application.

www.coroguide.com



ISO application areas

Hole tolerance

Drill diameter, mm (inch)	CoroDrill® DS20 hole tolerance, mm (inch)	
	4–5×DC	6–7×DC
15.0–18.0 (0.591–0.709)	0/+0.27 (0/+0.011)	
18.01–30.0 (0.709–1.18)	0/+0.33 (0/+0.013)	-0.1/+0.5 (-0.004/+0.020)
30.01–65.0 (1.18–2.56)	0/+0.35 (0/+0.014)	

Surface finish

Feed	R_a , μm (μin)	R_z (ISO), μm (μin)
Low	Down to 0.5 (20)	3.8 (152)
Medium	0.8–2 (32–78)	6.1–15.2 (243–593)
High	2–4 (78–157)	15.2–30.4 (593–1193)

Achievable hole tolerances

By using an adjustable drill holder or an eccentric sleeve, the tolerance can be kept within ± 0.05 mm (± 0.002 inch) (IT 10–11) under stable conditions.

Use the appropriate eccentric sleeve (see Accessories) and drills with metric ISO 9766 shanks when machining with rotating tools. The diameter setting range is ± 0.3 mm (± 0.012 inch). Suitable for drilling depths up to 4–5 × DC.

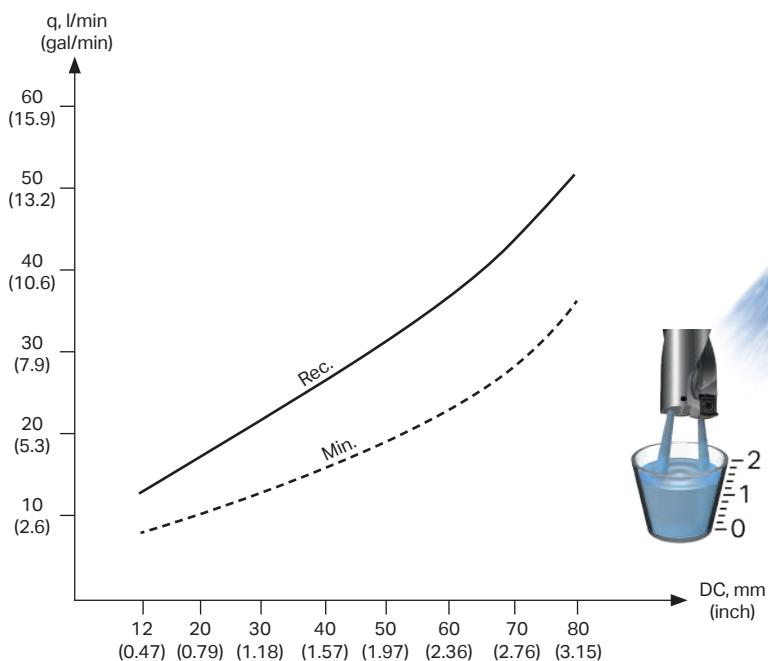


Coolant

CoroDrill® DS20 is designed with variable twisted coolant holes which allow for maintained drill body rigidity.

The coolant outlets are strategically placed to ensure the best possible coolant flow and direction. With more coolant on the clearance side, a longer insert tool life and better chip evacuation can be achieved.

Coolant flow recommendation



Optimized chip flutes

The chip flutes are individually shaped for optimized chip evacuation of the peripheral and central inserts different chip forms. All chips created fits inside the flutes.

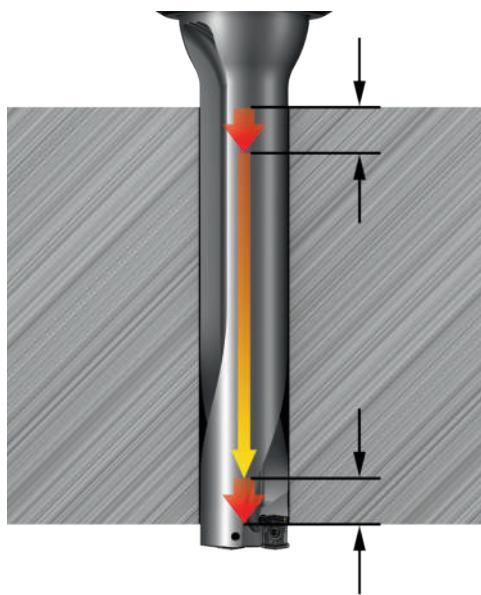
The different shaped flutes help to control the rotational centre and the deflection of the drill when axial forces are applied.

To maintain drill body stiffness and for a balanced mass centre, the chip flutes are also individually designed for each drill size.

The square profile adds rigidity while the variable helix secures good chip evacuation, leading to less vibration, predictable wear patterns and increased tool life.



Drilling strategy for 6–7×DC



Apply soft entries and exits to maintain the hole tolerance

- f_n at hole entry: $f_n \times 75\%$
Length of entry: 1 mm (0.039 inch)
- f_n at continuous drilling: regular feed recommendations
- f_n at hole exit: 0.05 mm/rev (0.002 in/rev) or even lower if high demands on hole quality
Length of exit: 3–5 mm (0.118–0.196 inch)

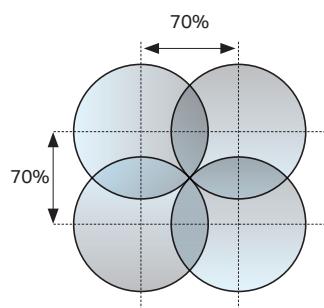
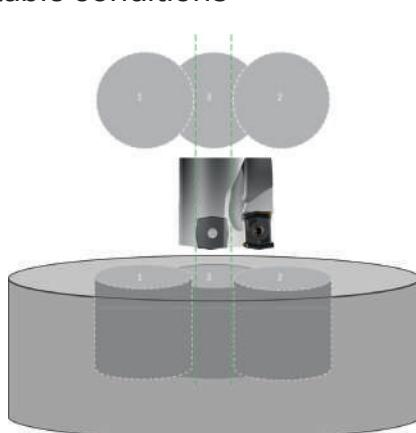
6–7×DC entry, continuous and exit feed recommendations can be found in CoroPlus® Tool Guide.

No v_c change in the different sections of the hole.

Advanced operations

		Irregular surface	Angled surface entry	Angled surface exit	Asymmetrically curved surface	Pre-drilled holes	Cross holes
Cutting data	L×DC						
v_c	4–5	Start values	Lowest recommendation	Start values	Start values	Start values	Start values
	6–7				Not recommended		
f_n	4–5	Lowest recommendation	1/3 of lowest recommendation	Lowest recommendation	1/3 of lowest recommendation	Start values	Lowest recommendation
	6–7				Nicht empfohlen		
Preconditions		Not rec. for 6–7×DC if concave radius \leq drill radius	4–5×DC: angle $\leq 15^\circ$ 6–7×DC: angle $\leq 10^\circ$	4–5×DC: angle $\leq 15^\circ$ 6–7×DC: angle $\leq 5^\circ$	Radius of curved surface $>$ drill radius	Pre-drilled hole $\leq DC/4$	Not recommended in long-chipping materials

Plunge drilling up to 5×DC under stable conditions

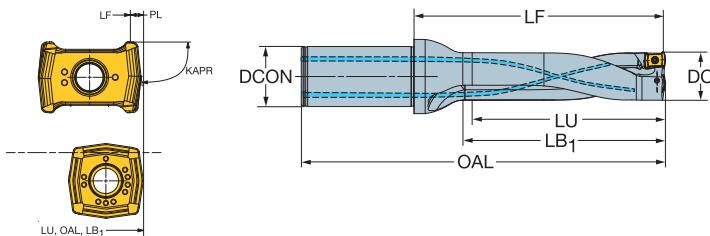


- Drill solid holes first (1 and 3)
- Webbed holes (2): Use very low cutting data with soft entry

Interrupted cut:
 v_c : Start values
 f_n : Lowest recommendation

CoroDrill® DS20 indexable insert drill

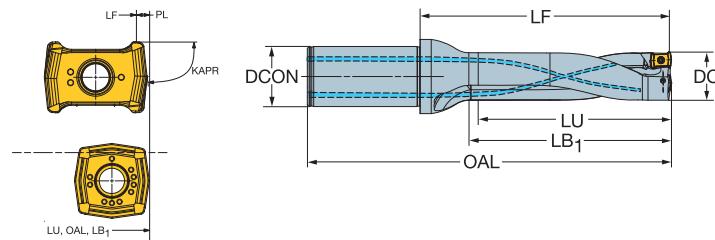
Cylindrical shank with flat according to ISO 9766
Internal coolant supply



Metric								Dimensions: mm								
DC	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	BAR	KG	RPMX	
15.00	01C 01P	60.46	20	1.00	0.00	0.27	DS20-D1500L20-04	20.00	80.54	131.00	63.00	0.46	81°	10	0.190	24000
		75.46	20	1.00	0.00	0.27	DS20-D1500L20-05	20.00	95.54	146.00	78.00	0.46	81°	10	0.200	15000
		90.46	20	1.00	-0.10	0.50	DS20-D1500L20-06	20.00	110.54	161.00	93.00	0.46	81°	10	0.210	11000
		105.46	20	1.00	-0.10	0.50	DS20-D1500L20-07	20.00	125.54	176.00	108.00	0.46	81°	10	0.219	8000
15.50	01C 01P	62.46	20	1.00	0.00	0.27	DS20-D1550L20-04	20.00	82.54	131.00	63.00	0.46	81°	10	0.193	24000
		77.96	20	1.00	0.00	0.27	DS20-D1550L20-05	20.00	98.54	146.00	78.00	0.46	81°	10	0.205	15000
16.00	01C 01P	64.46	20	0.75	0.00	0.27	DS20-D1600L20-04	20.00	84.54	135.00	67.00	0.46	81°	10	0.200	22000
		80.46	20	0.75	0.00	0.27	DS20-D1600L20-05	20.00	100.54	151.00	83.00	0.46	81°	10	0.212	14000
		96.46	20	0.75	-0.10	0.40	DS20-D1600L20-06	20.00	116.54	167.00	99.00	0.46	81°	10	0.224	10000
		112.46	20	0.75	-0.10	0.50	DS20-D1600L20-07	20.00	132.54	183.00	115.00	0.46	81°	10	0.236	7000
16.50	01C 01P	66.46	20	0.75	0.00	0.27	DS20-D1650L20-04	20.00	86.54	135.00	67.00	0.46	81°	10	0.203	22000
		82.96	20	0.75	0.00	0.27	DS20-D1650L20-05	20.00	103.54	151.00	83.00	0.46	81°	10	0.217	14000
17.00	01C 01P	68.46	20	0.50	0.00	0.27	DS20-D1700L20-04	20.00	88.54	139.00	71.00	0.46	81°	10	0.211	21000
		85.46	20	0.50	0.00	0.27	DS20-D1700L20-05	20.00	105.54	156.00	88.00	0.46	81°	10	0.226	13000
		102.46	20	0.50	-0.10	0.50	DS20-D1700L20-06	20.00	122.54	173.00	105.00	0.46	81°	10	0.240	9000
		119.46	20	0.50	-0.10	0.50	DS20-D1700L20-07	20.00	139.54	190.00	122.00	0.46	81°	10	0.255	7000
17.50	01C 01P	70.46	25	0.50	0.00	0.27	DS20-D1750L25-04	25.00	94.54	151.00	73.00	0.46	81°	10	0.337	21000
		87.96	25	0.50	0.00	0.27	DS20-D1750L25-05	25.00	112.54	156.00	88.00	0.46	81°	10	0.353	13000
18.00	01C 01P	72.46	25	0.25	0.00	0.27	DS20-D1800L25-04	25.00	96.54	153.00	75.00	0.46	81°	10	0.348	20000
		90.46	25	0.25	0.00	0.27	DS20-D1800L25-05	25.00	114.54	171.00	93.00	0.46	81°	10	0.366	13000
		108.46	25	0.25	-0.10	0.50	DS20-D1800L25-06	25.00	132.54	189.00	111.00	0.46	81°	10	0.383	9000
		126.46	25	0.25	-0.10	0.50	DS20-D1800L25-07	25.00	150.54	207.00	129.00	0.46	81°	10	0.400	6000
18.50	02C 02P	74.56	25	0.25	0.00	0.27	DS20-D1850L25-04	25.00	98.44	153.00	75.00	0.46	81°	10	0.349	20000
		93.06	25	0.25	0.00	0.27	DS20-D1850L25-05	25.00	117.44	171.00	93.00	0.46	81°	10	0.368	13000
19.00	02C 02P	76.56	25	1.06	0.00	0.33	DS20-D1900L25-04	25.00	100.44	157.00	79.00	0.55	81°	10	0.348	19000
		95.56	25	1.06	0.00	0.33	DS20-D1900L25-05	25.00	119.44	176.00	98.00	0.55	81°	10	0.367	12000
		114.56	25	1.06	-0.10	0.50	DS20-D1900L25-06	25.00	138.44	195.00	117.00	0.55	81°	10	0.387	8000
		133.56	25	1.06	-0.10	0.50	DS20-D1900L25-07	25.00	157.44	214.00	136.00	0.55	81°	10	0.405	6000
19.50	02C 02P	78.56	25	1.06	0.00	0.33	DS20-D1950L25-04	25.00	102.44	157.00	79.00	0.55	81°	10	0.362	19000
		98.06	25	1.06	0.00	0.33	DS20-D1950L25-05	25.00	122.44	176.00	98.00	0.55	81°	10	0.385	12000
20.00	02C 02P	80.56	25	0.82	0.00	0.33	DS20-D2000L25-04	25.00	104.44	161.00	83.00	0.55	81°	10	0.364	18000
		100.56	25	0.82	0.00	0.33	DS20-D2000L25-05	25.00	124.44	181.00	103.00	0.55	81°	10	0.386	11000
		120.56	25	0.82	-0.10	0.50	DS20-D2000L25-06	25.00	144.44	201.00	123.00	0.55	81°	10	0.409	8000
		140.56	25	0.82	-0.10	0.50	DS20-D2000L25-07	25.00	164.44	221.00	143.00	0.55	81°	10	0.431	6000
21.00	02C 02P	84.56	25	0.58	0.00	0.33	DS20-D2100L25-04	25.00	108.44	165.00	87.00	0.55	81°	10	0.381	17000
		105.56	25	0.58	0.00	0.33	DS20-D2100L25-05	25.00	129.44	186.00	108.00	0.55	81°	10	0.407	11000
		126.56	25	0.58	-0.10	0.50	DS20-D2100L25-06	25.00	150.44	207.00	129.00	0.55	81°	10	0.434	8000
		147.56	25	0.58	-0.10	0.50	DS20-D2100L25-07	25.00	171.44	228.00	150.00	0.55	81°	10	0.460	5000
22.00	02C 02P	88.56	25	0.34	0.00	0.33	DS20-D2200L25-04	25.00	112.44	169.00	91.00	0.55	81°	10	0.401	16000
		110.56	25	0.34	0.00	0.33	DS20-D2200L25-05	25.00	134.44	191.00	113.00	0.55	81°	10	0.431	10000
		132.56	25	0.34	-0.10	0.50	DS20-D2200L25-06	25.00	156.44	213.00	135.00	0.55	81°	10	0.463	7000
		154.56	25	0.34	-0.10	0.50	DS20-D2200L25-07	25.00	178.44	235.00	157.00	0.55	81°	10	0.494	5000

CoroDrill® DS20 indexable insert drill

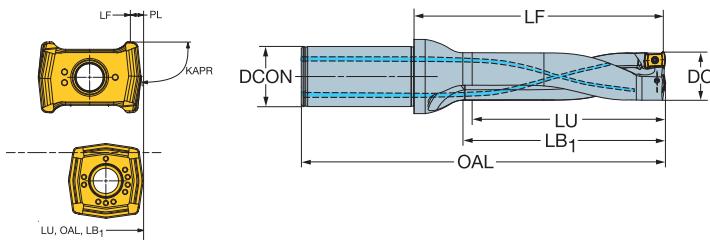
Cylindrical shank with flat according to ISO 9766
Internal coolant supply



Metric							Dimensions: mm										
DC	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	BAR	KG	RPMX		
23.00	03C	03P	92.67	25	1.30	0.00	0.33	DS20-D2300L25-04	25.00	117.34	174.00	96.00	0.66	81°	10	0.417	15000
			115.67	25	1.30	0.00	0.33	DS20-D2300L25-05	25.00	140.34	197.00	119.00	0.66	81°	10	0.452	10000
			138.67	25	1.30	-0.10	0.50	DS20-D2300L25-06	25.00	163.34	220.00	142.00	0.66	81°	10	0.488	7000
			161.67	25	1.30	-0.10	0.50	DS20-D2300L25-07	25.00	186.34	243.00	165.00	0.66	81°	10	0.524	5000
24.00	03C	03P	96.67	25	1.10	0.00	0.33	DS20-D2400L25-04	25.00	121.34	178.00	100.00	0.66	81°	10	0.439	15000
			120.67	25	1.10	0.00	0.33	DS20-D2400L25-05	25.00	145.34	202.00	124.00	0.66	81°	10	0.480	9000
			144.67	25	1.10	-0.10	0.50	DS20-D2400L25-06	25.00	169.34	226.00	148.00	0.66	81°	10	0.520	6000
			168.67	25	1.10	-0.10	0.50	DS20-D2400L25-07	25.00	193.34	250.00	172.00	0.66	81°	10	0.561	5000
25.00	03C	03P	100.67	25	0.90	0.00	0.33	DS20-D2500L25-04	25.00	125.34	182.00	104.00	0.66	81°	10	0.463	14000
			125.67	25	0.90	0.00	0.33	DS20-D2500L25-05	25.00	150.34	207.00	129.00	0.66	81°	10	0.510	9000
			150.67	25	0.90	-0.10	0.50	DS20-D2500L25-06	25.00	175.34	232.00	154.00	0.66	81°	10	0.557	6000
			175.67	25	0.90	-0.10	0.50	DS20-D2500L25-07	25.00	200.34	257.00	179.00	0.66	81°	10	0.603	4000
26.00	03C	03P	104.67	32	0.70	0.00	0.33	DS20-D2600L32-04	32.00	133.34	194.00	108.00	0.66	81°	10	0.705	14000
			130.67	32	0.70	0.00	0.33	DS20-D2600L32-05	32.00	159.34	220.00	134.00	0.66	81°	10	0.758	9000
			156.67	32	0.70	-0.10	0.50	DS20-D2600L32-06	32.00	185.34	246.00	160.00	0.66	81°	10	0.812	6000
			182.67	32	0.70	-0.10	0.50	DS20-D2600L32-07	32.00	211.34	272.00	186.00	0.66	81°	10	0.865	4000
27.00	03C	03P	108.67	32	0.50	0.00	0.33	DS20-D2700L32-04	32.00	136.34	197.00	112.00	0.66	81°	10	0.734	13000
			135.67	32	0.50	0.00	0.33	DS20-D2700L32-05	32.00	163.34	224.00	139.00	0.66	81°	10	0.794	8000
			162.67	32	0.50	-0.10	0.50	DS20-D2700L32-06	32.00	190.34	251.00	166.00	0.66	81°	10	0.854	6000
			189.67	32	0.50	-0.10	0.50	DS20-D2700L32-07	32.00	217.34	278.00	193.00	0.66	81°	10	0.912	4000
28.00	04C	04P	112.83	32	2.12	0.00	0.33	DS20-D2800L32-04	32.00	140.17	201.00	116.00	0.83	81°	10	0.743	13000
			140.83	32	2.12	0.00	0.33	DS20-D2800L32-05	32.00	168.17	229.00	144.00	0.83	81°	10	0.809	8000
			168.83	32	2.12	-0.10	0.50	DS20-D2800L32-06	32.00	196.17	257.00	172.00	0.83	81°	10	0.874	6000
			196.83	32	2.12	-0.10	0.50	DS20-D2800L32-07	32.00	224.17	285.00	200.00	0.83	81°	10	0.939	4000
29.00	04C	04P	116.83	32	1.84	0.00	0.33	DS20-D2900L32-04	32.00	144.17	205.00	120.00	0.83	81°	10	0.773	12000
			145.83	32	1.84	0.00	0.33	DS20-D2900L32-05	32.00	173.17	234.00	149.00	0.83	81°	10	0.846	8000
			174.83	32	1.84	-0.10	0.50	DS20-D2900L32-06	32.00	202.17	263.00	178.00	0.83	81°	10	0.918	5000
			203.83	32	1.84	-0.10	0.50	DS20-D2900L32-07	32.00	231.17	292.00	207.00	0.83	81°	10	0.991	4000
30.00	04C	04P	120.83	32	1.56	0.00	0.33	DS20-D3000L32-04	32.00	148.17	209.00	124.00	0.83	81°	10	0.805	12000
			150.83	32	1.56	0.00	0.33	DS20-D3000L32-05	32.00	178.17	239.00	154.00	0.83	81°	10	0.885	8000
			180.83	32	1.56	-0.10	0.50	DS20-D3000L32-06	32.00	208.17	269.00	184.00	0.83	81°	10	0.966	5000
			210.83	32	1.56	-0.10	0.50	DS20-D3000L32-07	32.00	238.17	299.00	214.00	0.83	81°	10	1.046	4000
31.00	04C	04P	124.83	40	1.28	0.00	0.35	DS20-D3100L40-04	40.00	158.17	229.00	128.00	0.83	81°	10	1.250	12000
			155.83	40	1.28	0.00	0.35	DS20-D3100L40-05	40.00	189.17	260.00	159.00	0.83	81°	10	1.339	7000
			186.83	40	1.28	-0.10	0.50	DS20-D3100L40-06	40.00	220.17	291.00	190.00	0.83	81°	10	1.428	5000
			217.83	40	1.28	-0.10	0.50	DS20-D3100L40-07	40.00	251.17	322.00	221.00	0.83	81°	10	1.516	4000
32.00	04C	04P	128.83	40	1.00	0.00	0.35	DS20-D3200L40-04	40.00	162.17	233.00	132.00	0.83	81°	10	1.286	11000
			160.83	40	1.00	0.00	0.35	DS20-D3200L40-05	40.00	194.17	265.00	164.00	0.83	81°	10	1.384	7000
			192.83	40	1.00	-0.10	0.50	DS20-D3200L40-06	40.00	226.17	297.00	196.00	0.83	81°	10	1.481	5000
			224.83	40	1.00	-0.10	0.50	DS20-D3200L40-07	40.00	258.17	329.00	228.00	0.83	81°	10	1.579	3000
33.00	04C	04P	132.83	40	0.72	0.00	0.35	DS20-D3300L40-04	40.00	165.17	236.00	136.00	0.83	81°	10	1.313	11000
			165.83	40	0.72	0.00	0.35	DS20-D3300L40-05	40.00	198.17	269.00	169.00	0.83	81°	10	1.420	7000
			198.83	40	0.72	-0.10	0.50	DS20-D3300L40-06	40.00	231.17	302.00	202.00	0.83	81°	10	1.527	5000
			231.83	40	0.72	-0.10	0.50	DS20-D3300L40-07	40.00	264.17	335.00	235.00	0.83	81°	10	1.634	3000

CoroDrill® DS20 indexable insert drill

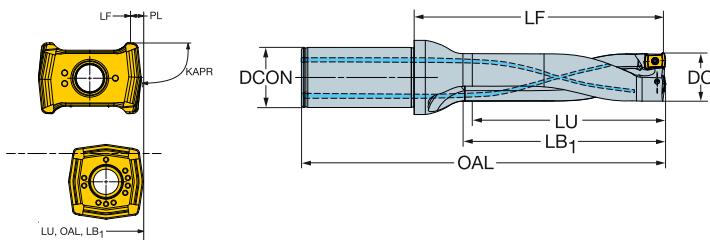
Cylindrical shank with flat according to ISO 9766
Internal coolant supply



Metric								Dimensions: mm								
DC	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	BAR	KG	RPMX	
34.00	05C 05P	137.00	40	2.16	0.00	0.35	DS20-D3400L40-04	40.00	169.00	240.00	140.00	1.00	81°	10	1.354	11000
	171.00	40	2.16	0.00	0.35	DS20-D3400L40-05	40.00	203.00	274.00	174.00	1.00	81°	10	1.471	7000	
	205.00	40	2.16	-0.10	0.50	DS20-D3400L40-06	40.00	237.00	308.00	208.00	1.00	81°	10	1.588	4000	
	239.00	40	2.16	-0.10	0.50	DS20-D3400L40-07	40.00	271.00	342.00	242.00	1.00	81°	10	1.705	3000	
35.00	05C 05P	141.00	40	1.92	0.00	0.35	DS20-D3500L40-04	40.00	173.00	244.00	144.00	1.00	81°	10	1.398	10000
	176.00	40	1.92	0.00	0.35	DS20-D3500L40-05	40.00	208.00	279.00	179.00	1.00	81°	10	1.525	6000	
	211.00	40	1.92	-0.10	0.50	DS20-D3500L40-06	40.00	243.00	314.00	214.00	1.00	81°	10	1.653	4000	
	246.00	40	1.92	-0.10	0.50	DS20-D3500L40-07	40.00	278.00	349.00	249.00	1.00	81°	10	1.781	3000	
36.00	05C 05P	145.00	40	1.68	0.00	0.35	DS20-D3600L40-04	40.00	177.00	248.00	148.00	1.00	81°	10	1.443	10000
	181.00	40	1.68	0.00	0.35	DS20-D3600L40-05	40.00	213.00	284.00	184.00	1.00	81°	10	1.582	6000	
	217.00	40	1.68	-0.10	0.50	DS20-D3600L40-06	40.00	249.00	320.00	220.00	1.00	81°	10	1.721	4000	
	253.00	40	1.68	-0.10	0.50	DS20-D3600L40-07	40.00	285.00	356.00	256.00	1.00	81°	10	1.860	3000	
37.00	05C 05P	149.00	40	1.44	0.00	0.35	DS20-D3700L40-04	40.00	181.00	252.00	152.00	1.00	81°	10	1.492	10000
	186.00	40	1.44	0.00	0.35	DS20-D3700L40-05	40.00	218.00	289.00	189.00	1.00	81°	10	1.643	6000	
	223.00	40	1.44	-0.10	0.50	DS20-D3700L40-06	40.00	255.00	326.00	226.00	1.00	81°	10	1.794	4000	
	260.00	40	1.44	-0.10	0.50	DS20-D3700L40-07	40.00	292.00	363.00	263.00	1.00	81°	10	1.945	3000	
38.00	05C 05P	153.00	40	1.20	0.00	0.35	DS20-D3800L40-04	40.00	185.00	256.00	156.00	1.00	81°	10	1.543	9000
	191.00	40	1.20	0.00	0.35	DS20-D3800L40-05	40.00	223.00	294.00	194.00	1.00	81°	10	1.707	6000	
	229.00	40	1.20	-0.10	0.50	DS20-D3800L40-06	40.00	261.00	332.00	232.00	1.00	81°	10	1.870	4000	
	267.00	40	1.20	-0.10	0.50	DS20-D3800L40-07	40.00	299.00	370.00	270.00	1.00	81°	10	2.034	3000	
39.00	05C 05P	157.00	40	0.96	0.00	0.35	DS20-D3900L40-04	40.00	189.00	260.00	160.00	1.00	81°	10	1.597	9000
	196.00	40	0.96	0.00	0.35	DS20-D3900L40-05	40.00	228.00	299.00	199.00	1.00	81°	10	1.774	6000	
	235.00	40	0.96	-0.10	0.50	DS20-D3900L40-06	40.00	267.00	338.00	238.00	1.00	81°	10	1.950	4000	
	274.00	40	0.96	-0.10	0.50	DS20-D3900L40-07	40.00	306.00	377.00	277.00	1.00	81°	10	2.127	3000	
40.00	05C 05P	161.00	40	0.72	0.00	0.35	DS20-D4000L40-04	40.00	193.00	264.00	164.00	1.00	81°	10	1.654	9000
	201.00	40	0.72	0.00	0.35	DS20-D4000L40-05	40.00	233.00	304.00	204.00	1.00	81°	10	1.844	6000	
	241.00	40	0.72	-0.10	0.50	DS20-D4000L40-06	40.00	273.00	344.00	244.00	1.00	81°	10	2.035	4000	
	281.00	40	0.72	-0.10	0.50	DS20-D4000L40-07	40.00	313.00	384.00	284.00	1.00	81°	10	2.226	3000	
41.00	06C 06P	165.28	40	3.73	0.00	0.35	DS20-D4100L40-04	40.00	197.72	269.00	169.00	1.27	81°	10	1.543	9000
	206.28	40	3.73	0.00	0.35	DS20-D4100L40-05	40.00	238.72	310.00	210.00	1.27	81°	10	1.707	6000	
	247.28	40	3.73	-0.10	0.50	DS20-D4100L40-06	40.00	279.72	351.00	251.00	1.27	81°	10	1.870	4000	
	288.28	40	3.73	-0.10	0.50	DS20-D4100L40-07	40.00	320.72	392.00	292.00	1.27	81°	10	2.034	3000	
42.00	06C 06P	169.28	50	3.46	0.00	0.35	DS20-D4200L50-04	50.00	208.72	290.00	173.00	1.27	81°	10	2.578	8000
	211.28	50	3.46	0.00	0.35	DS20-D4200L50-05	50.00	250.72	332.00	215.00	1.27	81°	10	2.805	5000	
	253.28	50	3.46	-0.10	0.50	DS20-D4200L50-06	50.00	292.72	374.00	257.00	1.27	81°	10	3.033	4000	
	295.28	50	3.46	-0.10	0.50	DS20-D4200L50-07	50.00	334.72	416.00	299.00	1.27	81°	10	3.260	2000	
43.00	06C 06P	173.28	50	3.19	0.00	0.35	DS20-D4300L50-04	50.00	212.72	294.00	177.00	1.27	81°	10	2.654	8000
	216.28	50	2.92	0.00	0.35	DS20-D4300L50-05	50.00	255.72	337.00	220.00	1.27	81°	10	2.898	5000	
	259.28	50	2.92	-0.10	0.50	DS20-D4300L50-06	50.00	298.72	380.00	263.00	1.27	81°	10	3.143	3000	
	302.28	50	2.92	-0.10	0.50	DS20-D4300L50-07	50.00	341.72	423.00	306.00	1.27	81°	10	3.388	2000	
44.00	06C 06P	177.28	50	2.92	0.00	0.35	DS20-D4400L50-04	50.00	216.72	298.00	181.00	1.27	81°	10	2.733	8000
	221.28	50	2.92	0.00	0.35	DS20-D4400L50-05	50.00	260.72	342.00	225.00	1.27	81°	10	2.996	5000	
	265.28	50	2.92	-0.10	0.50	DS20-D4400L50-06	50.00	304.72	386.00	269.00	1.27	81°	10	3.259	3000	
	309.28	50	2.92	-0.10	0.50	DS20-D4400L50-07	50.00	348.72	430.00	313.00	1.27	81°	10	3.521	2000	

CoroDrill® DS20 indexable insert drill

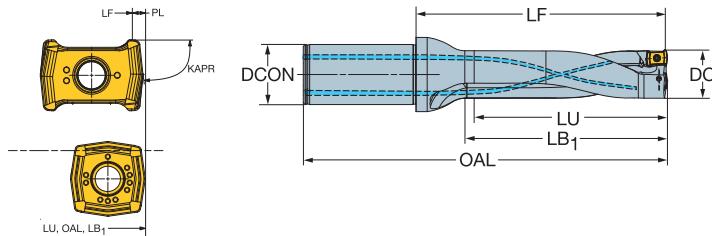
Cylindrical shank with flat according to ISO 9766
Internal coolant supply



Metric								Dimensions: mm								
DC	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	BAR	KG	RPMX	
45.00	06C 06P	181.28	50	2.65	0.00	0.35	DS20-D4500L50-04	50.00	220.72	302.00	185.00	1.27	81°	10	2.816	8000
		226.28	50	2.65	0.00	0.35	DS20-D4500L50-05	50.00	265.72	347.00	230.00	1.27	81°	10	3.101	5000
		271.28	50	2.65	-0.10	0.50	DS20-D4500L50-06	50.00	310.72	392.00	275.00	1.27	81°	10	3.385	3000
		316.28	50	2.65	-0.10	0.50	DS20-D4500L50-07	50.00	355.72	437.00	320.00	1.27	81°	10	3.669	2000
46.00	06C 06P	185.28	50	2.38	0.00	0.35	DS20-D4600L50-04	50.00	224.72	306.00	189.00	1.27	81°	10	2.902	8000
		231.28	50	2.38	0.00	0.35	DS20-D4600L50-05	50.00	270.72	352.00	235.00	1.27	81°	10	3.206	5000
47.00	06C 06P	189.28	50	2.11	0.00	0.35	DS20-D4700L50-04	50.00	227.72	309.00	193.00	1.27	81°	10	2.968	8000
		236.28	50	2.11	0.00	0.35	DS20-D4700L50-05	50.00	274.72	356.00	240.00	1.27	81°	10	3.293	5000
48.00	06C 06P	193.28	50	1.84	0.00	0.35	DS20-D4800L50-04	50.00	231.72	313.00	197.00	1.27	81°	10	3.061	7000
		241.28	50	1.84	0.00	0.35	DS20-D4800L50-05	50.00	279.72	361.00	245.00	1.27	81°	10	3.408	5000
49.00	06C 06P	197.28	50	1.57	0.00	0.35	DS20-D4900L50-04	50.00	235.72	317.00	201.00	1.27	81°	10	3.158	7000
		246.28	50	1.57	0.00	0.35	DS20-D4900L50-05	50.00	284.72	366.00	250.00	1.27	81°	10	3.528	4000
50.00	06C 06P	201.28	50	1.30	0.00	0.35	DS20-D5000L50-04	50.00	239.72	321.00	205.00	1.27	81°	10	3.259	7000
		251.28	50	1.30	0.00	0.35	DS20-D5000L50-05	50.00	289.72	371.00	255.00	1.27	81°	10	3.652	4000
51.00	06C 06P	205.28	50	1.03	0.00	0.35	DS20-D5100L50-04	50.00	243.72	325.00	209.00	1.27	81°	10	3.363	7000
		256.28	50	1.03	0.00	0.35	DS20-D5100L50-05	50.00	294.72	376.00	260.00	1.27	81°	10	3.781	4000
52.00	06C 06P	209.28	50	0.76	0.00	0.35	DS20-D5200L50-04	50.00	247.72	329.00	213.00	1.27	81°	10	3.472	7000
		261.28	50	0.76	0.00	0.35	DS20-D5200L50-05	50.00	299.72	381.00	265.00	1.27	81°	10	3.916	4000
53.00	07C 07P	213.59	50	4.21	0.00	0.35	DS20-D5300L50-04	50.00	251.41	333.00	217.00	1.58	81°	10	3.459	7000
		266.59	50	4.21	0.00	0.35	DS20-D5300L50-05	50.00	304.41	386.00	270.00	1.58	81°	10	3.911	4000
54.00	07C 07P	217.59	50	3.92	0.00	0.35	DS20-D5400L50-04	50.00	255.41	337.00	221.00	1.58	81°	10	3.573	7000
		271.59	50	3.92	0.00	0.35	DS20-D5400L50-05	50.00	309.41	391.00	275.00	1.58	81°	10	4.052	4000
55.00	07C 07P	221.59	50	3.63	0.00	0.35	DS20-D5500L50-04	50.00	259.41	341.00	225.00	1.58	81°	10	3.694	6000
		276.59	50	3.63	0.00	0.35	DS20-D5500L50-05	50.00	314.41	396.00	280.00	1.58	81°	10	4.202	4000
56.00	07C 07P	225.59	50	3.34	0.00	0.35	DS20-D5600L50-04	50.00	263.41	345.00	229.00	1.58	81°	10	3.827	6000
		281.59	50	3.34	0.00	0.35	DS20-D5600L50-05	50.00	319.41	401.00	285.00	1.58	81°	10	4.367	4000
57.00	07C 07P	229.59	50	3.05	0.00	0.35	DS20-D5700L50-04	50.00	267.41	349.00	233.00	1.58	81°	10	3.957	6000
		286.59	50	3.05	0.00	0.35	DS20-D5700L50-05	50.00	324.41	406.00	290.00	1.58	81°	10	4.528	4000
58.00	07C 07P	233.59	50	2.76	0.00	0.35	DS20-D5800L50-04	50.00	271.41	353.00	237.00	1.58	81°	10	4.300	6000
		291.59	50	2.76	0.00	0.35	DS20-D5800L50-05	50.00	329.41	411.00	295.00	1.58	81°	10	4.623	4000
59.00	07C 07P	237.59	50	2.47	0.00	0.35	DS20-D5900L50-04	50.00	274.41	356.00	241.00	1.58	81°	10	4.146	6000
		296.59	50	2.47	0.00	0.35	DS20-D5900L50-05	50.00	333.41	415.00	300.00	1.58	81°	10	4.768	4000
60.00	07C 07P	241.59	50	2.18	0.00	0.35	DS20-D6000L50-04	50.00	278.41	360.00	245.00	1.58	81°	10	4.350	6000
		301.59	50	3.63	0.00	0.35	DS20-D6000L50-05	50.00	338.41	420.00	305.00	1.58	81°	10	5.021	4000
61.00	07C 07P	245.59	50	1.89	0.00	0.35	DS20-D6100L50-04	50.00	282.41	364.00	249.00	1.58	81°	10	4.498	6000
		306.59	50	1.89	0.00	0.35	DS20-D6100L50-05	50.00	343.41	425.00	310.00	1.58	81°	10	5.204	4000
62.00	07C 07P	249.59	50	1.60	0.00	0.35	DS20-D6200L50-04	50.00	286.41	368.00	253.00	1.58	81°	10	4.651	6000
		311.59	50	1.60	0.00	0.35	DS20-D6200L50-05	50.00	348.41	430.00	315.00	1.58	81°	10	5.393	3000
63.00	07C 07P	253.59	50	1.31	0.00	0.35	DS20-D6300L50-04	50.00	290.41	372.00	257.00	1.58	81°	10	4.806	6000
		316.59	50	1.31	0.00	0.35	DS20-D6300L50-05	50.00	353.41	435.00	320.00	1.58	81°	10	5.587	3000
64.00	07C 07P	257.59	50	1.02	0.00	0.35	DS20-D6400L50-04	50.00	295.41	377.00	261.00	1.58	81°	10	4.848	5000
		321.59	50	1.02	0.00	0.35	DS20-D6400L50-05	50.00	359.41	441.00	325.00	1.58	81°	10	5.633	3000
65.00	07C 07P	261.59	50	0.73	0.00	0.35	DS20-D6500L50-04	50.00	299.41	381.00	265.00	1.58	81°	10	5.167	5000
		326.59	50	0.73	0.00	0.35	DS20-D6500L50-05	50.00	364.41	446.00	330.00	1.58	81°	10	6.027	3000

CoroDrill® DS20 indexable insert drill

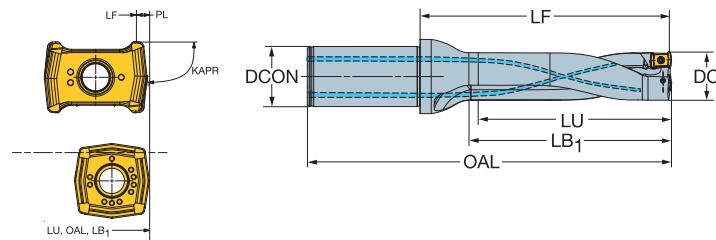
Cylindrical shank with flat according to ISO 9766
Internal coolant supply



Inch								Dimensions: inch									
DC	01C	01P	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	(PSI)	(LBS)	RPMX
.625	01C	01P	2.519	3/4	.030	.000	.011	DS20-D1588LX19-04	.750	3.298	5.285	2.611	.018	81°	145	0.480	22000
			3.144	3/4	.030	.000	.011	DS20-D1588LX19-05	.750	3.923	5.910	3.236	.018	81°	145	0.504	14000
			3.769	3/4	.030	-.004	.016	DS20-D1588LX19-06	.750	4.548	6.535	3.861	.018	81°	145	0.540	10000
			4.395	3/4	.030	-.004	.016	DS20-D1588LX19-07	.750	5.173	7.160	4.486	.018	81°	145	0.440	7000
.655	01C	01P	2.642	3/4	.023	.000	.011	DS20-D1666LX19-04	.750	3.420	5.407	2.735	.018	81°	145	0.500	21000
			3.298	3/4	.023	.000	.011	DS20-D1666LX19-05	.750	4.076	6.063	3.391	.018	81°	145	0.529	14000
			3.954	3/4	.023	-.004	.016	DS20-D1666LX19-06	.750	4.732	6.719	4.047	.018	81°	145	0.570	10000
			4.610	3/4	.023	-.004	.016	DS20-D1666LX19-07	.750	5.388	7.375	4.703	.018	81°	145	0.599	7000
.687	01C	01P	2.766	1	.015	.000	.011	DS20-D1745LX25-04	1.000	3.692	5.915	2.859	.018	81°	145	0.661	21000
			3.453	1	.015	.000	.011	DS20-D1745LX25-05	1.000	4.379	6.602	3.546	.018	81°	145	0.800	13000
			4.140	1	.015	-.004	.016	DS20-D1745LX25-06	1.000	5.066	7.289	4.233	.018	81°	145	0.881	9000
			4.827	1	.015	-.004	.016	DS20-D1745LX25-07	1.000	5.753	7.976	4.920	.018	81°	145	1.018	7000
.750	02C	02P	3.022	1	.041	.000	.013	DS20-D1905LX25-04	1.000	3.943	6.170	3.119	.022	81°	145	0.870	19000
			3.772	1	.041	.000	.013	DS20-D1905LX25-05	1.000	4.693	6.920	3.869	.022	81°	145	0.921	12000
			4.522	1	.041	-.004	.016	DS20-D1905LX25-06	1.000	5.443	7.670	4.619	.022	81°	145	0.870	8000
			5.272	1	.041	-.004	.016	DS20-D1905LX25-07	1.000	6.193	8.420	5.369	.022	81°	145	1.051	6000
.812	02C	02P	3.270	1	.026	.000	.013	DS20-D2062LX25-04	1.000	4.186	6.413	3.367	.022	81°	145	0.939	17000
			4.082	1	.026	.000	.013	DS20-D2062LX25-05	1.000	4.998	7.225	4.179	.022	81°	145	0.881	11000
			4.894	1	.026	-.004	.016	DS20-D2062LX25-06	1.000	5.810	8.037	4.991	.022	81°	145	1.102	8000
			5.706	1	.026	-.004	.016	DS20-D2062LX25-07	1.000	6.622	8.849	5.803	.022	81°	145	1.322	6000
.875	03C	03P	3.526	1	.057	.000	.013	DS20-D2223LX25-04	1.000	4.436	6.667	3.626	.026	81°	145	0.899	16000
			4.401	1	.057	.000	.013	DS20-D2223LX25-05	1.000	5.311	7.542	4.501	.026	81°	145	1.075	10000
			5.276	1	.057	-.004	.016	DS20-D2223LX25-06	1.000	6.186	8.417	5.376	.026	81°	145	1.102	7000
			6.151	1	.057	-.004	.016	DS20-D2223LX25-07	1.000	7.061	9.292	6.251	.026	81°	145	1.102	5000
.937	03C	03P	3.774	1	.044	.000	.013	DS20-D2380LX25-04	1.000	4.679	6.910	3.874	.026	81°	145	1.073	15000
			4.711	1	.044	.000	.013	DS20-D2380LX25-05	1.000	5.616	7.847	4.811	.026	81°	145	1.322	10000
			5.648	1	.044	-.004	.016	DS20-D2380LX25-06	1.000	6.553	8.784	5.748	.026	81°	145	1.322	7000
			6.585	1	.044	-.004	.016	DS20-D2380LX25-07	1.000	7.490	9.721	6.685	.026	81°	145	1.234	5000
1.000	03C	03P	4.026	1	.032	.000	.013	DS20-D2540LX25-04	1.000	4.926	7.157	4.126	.026	81°	145	1.155	14000
			5.026	1	.032	.000	.013	DS20-D2540LX25-05	1.000	5.926	8.157	5.126	.026	81°	145	1.309	9000
			6.026	1	.032	-.004	.016	DS20-D2540LX25-06	1.000	6.926	9.157	6.126	.026	81°	145	1.543	6000
			7.026	1	.032	-.004	.016	DS20-D2540LX25-07	1.000	7.926	10.157	7.126	.026	81°	145	1.543	4000
1.062	03C	03P	4.274	1 1/4	.020	.000	.013	DS20-D2697LX31-04	1.250	5.331	7.719	4.374	.026	81°	145	1.984	13000
			5.336	1 1/4	.020	.000	.013	DS20-D2697LX31-05	1.250	6.393	8.781	5.436	.026	81°	145	1.984	8000
			6.398	1 1/4	.020	-.004	.016	DS20-D2697LX31-06	1.250	7.455	9.843	6.498	.026	81°	145	2.425	6000
			7.460	1 1/4	.020	-.004	.016	DS20-D2697LX31-07	1.250	8.517	10.905	7.560	.026	81°	145	2.204	4000
1.125	04C	04P	4.533	1 1/4	.077	.000	.013	DS20-D2858LX31-04	1.250	5.587	7.982	4.642	.033	81°	145	1.660	13000
			5.658	1 1/4	.077	.000	.013	DS20-D2858LX31-05	1.250	6.712	9.107	5.767	.033	81°	145	1.814	8000
			6.783	1 1/4	.077	-.004	.016	DS20-D2858LX31-06	1.250	7.837	10.232	6.892	.033	81°	145	1.966	5000
			7.908	1 1/4	.077	-.004	.016	DS20-D2858LX31-07	1.250	8.962	11.357	8.017	.033	81°	145	2.120	4000

CoroDrill® DS20 indexable insert drill

Cylindrical shank with flat according to ISO 9766
Internal coolant supply

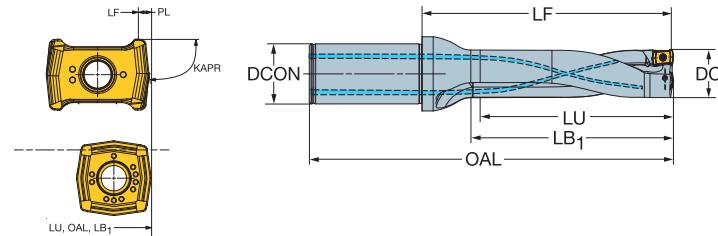


Inch								Dimensions: inch							
DC	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	(PSI)	(LBS)	RPMX
1.187	04C 04P	4.781	1 1/4	.059	.000	.013	DS20-D3015LX31-04	1.250	5.830	8.225	4.890	.033	81°	145	1.768 12000
		5.968	1 1/4	.059	.000	.013	DS20-D3015LX31-05	1.250	7.017	9.412	6.077	.033	81°	145	1.948 8000
		7.155	1 1/4	.059	-.004	.016	DS20-D3015LX31-06	1.250	8.204	10.599	7.264	.033	81°	145	2.127 5000
		8.342	1 1/4	.059	-.004	.016	DS20-D3015LX31-07	1.250	9.391	11.786	8.451	.033	81°	145	2.308 4000
1.250	04C 04P	5.033	1 1/2	.042	.000	.014	DS20-D3175LX38-04	1.500	6.292	9.081	5.142	.033	81°	145	2.680 11000
		6.283	1 1/2	.042	.000	.014	DS20-D3175LX38-05	1.500	7.542	10.331	6.392	.033	81°	145	2.890 7000
		7.533	1 1/2	.042	-.004	.016	DS20-D3175LX38-06	1.500	8.792	11.581	7.642	.033	81°	145	3.101 5000
		8.783	1 1/2	.042	-.004	.016	DS20-D3175LX38-07	1.500	10.042	12.831	8.892	.033	81°	145	3.311 3000
1.312	05C 05P	5.287	1 1/2	.091	.000	.014	DS20-D3332LX38-04	1.500	6.541	9.336	5.402	.039	81°	145	3.306 11000
		6.599	1 1/2	.091	.000	.014	DS20-D3332LX38-05	1.500	7.853	10.648	6.714	.039	81°	145	3.306 7000
		7.911	1 1/2	.091	-.004	.016	DS20-D3332LX38-06	1.500	9.165	11.960	8.026	.039	81°	145	3.747 5000
		9.223	1 1/2	.091	-.004	.016	DS20-D3332LX38-07	1.500	10.477	13.272	9.338	.039	81°	145	3.747 3000
1.375	05C 05P	5.539	1 1/2	.076	.000	.014	DS20-D3493LX38-04	1.500	6.788	9.583	5.654	.039	81°	145	3.306 10000
		6.914	1 1/2	.076	.000	.014	DS20-D3493LX38-05	1.500	8.163	10.958	7.029	.039	81°	145	3.527 6000
		8.289	1 1/2	.076	-.004	.016	DS20-D3493LX38-06	1.500	9.538	12.333	8.404	.039	81°	145	3.747 4000
		9.664	1 1/2	.076	-.004	.016	DS20-D3493LX38-07	1.500	10.913	13.708	9.779	.039	81°	145	4.409 3000
1.437	05C 05P	5.787	1 1/2	.061	.000	.014	DS20-D3650LX38-04	1.500	7.031	9.826	5.902	.039	81°	145	3.527 10000
		7.224	1 1/2	.061	.000	.014	DS20-D3650LX38-05	1.500	8.468	11.263	7.339	.039	81°	145	3.437 6000
		8.661	1 1/2	.061	-.004	.016	DS20-D3650LX38-06	1.500	9.905	12.700	8.776	.039	81°	145	4.188 4000
		10.098	1 1/2	.061	-.004	.016	DS20-D3650LX38-07	1.500	11.342	14.137	10.213	.039	81°	145	4.629 3000
1.500	05C 05P	6.039	1 1/2	.046	.000	.014	DS20-D3810LX38-04	1.500	7.278	10.073	6.154	.039	81°	145	3.527 9000
		7.539	1 1/2	.046	.000	.014	DS20-D3810LX38-05	1.500	8.778	11.573	7.654	.039	81°	145	3.747 6000
		9.039	1 1/2	.046	-.004	.016	DS20-D3810LX38-06	1.500	10.278	13.073	9.154	.039	81°	145	4.629 4000
		10.539	1 1/2	.046	-.004	.016	DS20-D3810LX38-07	1.500	11.778	14.573	10.654	.039	81°	145	5.291 3000
1.562	05C 05P	6.287	1 1/2	.031	.000	.014	DS20-D3967LX38-04	1.500	7.522	10.317	6.402	.039	81°	145	3.968 9000
		7.849	1 1/2	.031	.000	.014	DS20-D3967LX38-05	1.500	9.084	11.879	7.964	.039	81°	145	4.188 6000
		9.411	1 1/2	.031	-.004	.016	DS20-D3967LX38-06	1.500	10.646	13.441	9.526	.039	81°	145	5.070 4000
		10.973	1 1/2	.031	-.004	.016	DS20-D3967LX38-07	1.500	12.208	15.003	11.088	.039	81°	145	5.732 3000
1.625	06C 06P	6.550	1 1/2	.143	.000	.014	DS20-D4128LX38-04	1.500	7.770	10.576	6.666	.050	81°	145	3.968 9000
		8.175	1 1/2	.143	.000	.014	DS20-D4128LX38-05	1.500	9.395	12.201	8.291	.050	81°	145	4.409 5000
		9.800	1 1/2	.143	-.004	.016	DS20-D4128LX38-06	1.500	11.020	13.826	9.916	.050	81°	145	5.511 4000
		11.425	1 1/2	.143	-.004	.016	DS20-D4128LX38-07	1.500	12.645	15.451	11.541	.050	81°	145	5.952 3000
1.687	06C 06P	6.798	1 1/2	.127	.000	.014	DS20-D4285LX38-04	1.500	8.013	10.819	6.914	.050	81°	145	4.409 8000
		8.485	1 1/2	.127	.000	.014	DS20-D4285LX38-05	1.500	9.700	12.506	8.601	.050	81°	145	4.629 5000
		10.172	1 1/2	.127	-.004	.016	DS20-D4285LX38-06	1.500	11.387	14.193	10.288	.050	81°	145	5.952 3000
		11.859	1 1/2	.127	-.004	.016	DS20-D4285LX38-07	1.500	13.074	15.880	11.975	.050	81°	145	6.393 2000
1.750	06C 06P	7.050	1 1/2	.110	.000	.014	DS20-D4445LX38-04	1.500	8.260	11.066	7.166	.050	81°	145	4.409 8000
		8.800	1 1/2	.110	.000	.014	DS20-D4445LX38-05	1.500	10.010	12.816	8.916	.050	81°	145	4.841 5000
		10.550	1 1/2	.110	-.004	.016	DS20-D4445LX38-06	1.500	11.760	14.566	10.666	.050	81°	145	6.172 3000
		12.300	1 1/2	.110	-.004	.016	DS20-D4445LX38-07	1.500	13.510	16.316	12.416	.050	81°	145	6.038 2000

CoroDrill® DS20 indexable insert drill

Cylindrical shank with flat according to ISO 9766

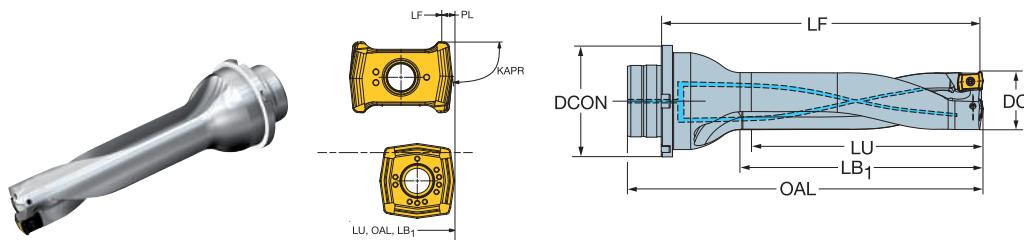
Internal coolant supply



Inch		Dimensions: inch													
DC	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	(PSI)	(LBS)	RPMX
1.875 06C 06P	7.550	1 1/2	.076	.000	.014	DS20-D4763LX38-04	1.500	8.750	11.556	7.666	.050	81°	145	5.070	7000
	9.425	1 1/2	.076	.000	.014	DS20-D4763LX38-05	1.500	10.625	13.431	9.541	.050	81°	145	6.393	5000
2.000 06C 06P	8.050	1 1/2	.042	.000	.014	DS20-D5080LX38-04	1.500	9.520	12.326	8.166	.050	81°	145	6.172	7000
	10.050	1 1/2	.042	.000	.014	DS20-D5080LX38-05	1.500	11.520	14.326	10.166	.050	81°	145	7.716	4000
2.125 07C 07P	8.563	1 1/2	.154	.000	.014	DS20-D5398LX38-04	1.500	10.009	12.828	8.678	.063	81°	145	6.530	7000
	10.688	1 1/2	.154	.000	.014	DS20-D5398LX38-05	1.500	12.134	14.953	10.803	.063	81°	145	8.377	4000
2.250 07C 07P	9.063	1 1/2	.118	.000	.014	DS20-D5715LX38-04	1.500	10.499	13.318	9.178	.063	81°	145	7.414	6000
	11.313	1 1/2	.118	.000	.014	DS20-D5715LX38-05	1.500	12.749	15.568	11.428	.063	81°	145	9.259	4000
2.375 07C 07P	9.563	1 1/2	.082	.000	.014	DS20-D6033LX38-04	1.500	10.989	13.808	9.678	.063	81°	145	8.377	6000
	11.938	1 1/2	.082	.000	.014	DS20-D6033LX38-05	1.500	13.364	16.183	12.053	.063	81°	145	10.582	4000
2.500 07C 07P	10.063	1 1/2	.045	.000	.014	DS20-D6350LX38-04	1.500	11.480	14.299	10.178	.063	81°	145	9.389	6000
	12.563	1 1/2	.045	.000	.014	DS20-D6350LX38-05	1.500	13.980	16.799	12.678	.063	81°	145	11.905	3000

CoroDrill® DS20 indexable insert drill

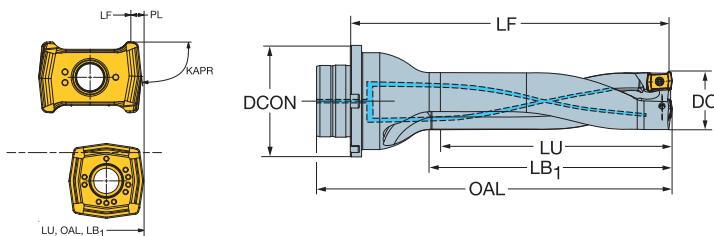
Modular drilling interface (MDI)
Internal coolant supply



Metric								Dimensions: mm								
DC	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	BAR	KG	RPMX	
15.00	01C 01P	60.46	MDI-20	1.00	0.00	0.27	DS20-D1500DM20-04	20.00	88.54	104.00	63.00	0.46	81°	10	0.174	24000
	105.46	MDI-20	1.00	-0.10	0.50	DS20-D1500DM20-07	20.00	133.54	149.00	108.00	0.46	81°	10	0.204	8000	
16.00	01C 01P	64.46	MDI-20	0.75	0.00	0.27	DS20-D1600DM20-04	20.00	92.54	108.00	67.00	0.46	81°	10	0.183	22000
	112.46	MDI-20	0.75	-0.10	0.50	DS20-D1600DM20-07	20.00	140.54	156.00	115.00	0.46	81°	10	0.219	7000	
17.00	01C 01P	68.46	MDI-20	0.50	0.00	0.27	DS20-D1700DM20-04	20.00	96.54	112.00	71.00	0.46	81°	10	0.193	21000
	119.46	MDI-20	0.50	-0.10	0.50	DS20-D1700DM20-07	20.00	147.54	163.00	122.00	0.46	81°	10	0.236	7000	
18.00	01C 01P	72.46	MDI-25	0.25	0.00	0.27	DS20-D1800DM25-04	25.00	104.54	120.00	75.00	0.46	81°	10	0.300	20000
	126.46	MDI-25	0.25	-0.10	0.50	DS20-D1800DM25-07	25.00	158.54	174.00	129.00	0.46	81°	10	0.353	6000	
19.00	02C 02P	76.56	MDI-25	1.06	0.00	0.33	DS20-D1900DM25-04	25.00	108.44	124.00	79.00	0.55	81°	10	0.313	19000
	133.56	MDI-25	1.06	-0.10	0.50	DS20-D1900DM25-07	25.00	165.44	181.00	136.00	0.55	81°	10	0.374	6000	
20.00	02C 02P	80.56	MDI-25	0.82	0.00	0.33	DS20-D2000DM25-04	25.00	112.44	128.00	83.00	0.55	81°	10	0.327	18000
	140.56	MDI-25	0.82	-0.10	0.50	DS20-D2000DM25-07	25.00	172.44	188.00	143.00	0.55	81°	10	0.398	6000	
21.00	02C 02P	84.56	MDI-25	0.58	0.00	0.33	DS20-D2100DM25-04	25.00	116.44	132.00	87.00	0.55	81°	10	0.342	17000
	147.56	MDI-25	0.58	-0.10	0.50	DS20-D2100DM25-07	25.00	179.44	195.00	150.00	0.55	81°	10	0.425	5000	
22.00	02C 02P	88.56	MDI-25	0.34	0.00	0.33	DS20-D2200DM25-04	25.00	120.44	136.00	91.00	0.55	81°	10	0.359	16000
	154.56	MDI-25	0.34	-0.10	0.50	DS20-D2200DM25-07	25.00	186.44	202.00	157.00	0.55	81°	10	0.454	5000	
23.00	03C 03P	92.67	MDI-25	1.30	0.00	0.33	DS20-D2300DM25-04	25.00	125.34	141.00	96.00	0.66	81°	10	0.379	15000
	161.67	MDI-25	1.30	-0.10	0.50	DS20-D2300DM25-07	25.00	194.34	210.00	165.00	0.66	81°	10	0.488	5000	
24.00	03C 03P	96.67	MDI-25	1.10	0.00	0.33	DS20-D2400DM25-04	25.00	129.34	145.00	100.00	0.66	81°	10	0.400	15000
	168.67	MDI-25	1.10	-0.10	0.50	DS20-D2400DM25-07	25.00	201.34	217.00	172.00	0.66	81°	10	0.523	5000	
25.00	03C 03P	100.67	MDI-25	0.90	0.00	0.33	DS20-D2500DM25-04	25.00	133.34	149.00	104.00	0.66	81°	10	0.422	14000
	175.67	MDI-25	0.90	-0.10	0.50	DS20-D2500DM25-07	25.00	208.34	224.00	179.00	0.66	81°	10	0.561	4000	
26.00	03C 03P	104.67	MDI-32	0.70	0.00	0.33	DS20-D2600DM32-04	32.00	142.34	158.00	108.00	0.66	81°	10	0.651	14000
	182.67	MDI-32	0.70	-0.10	0.50	DS20-D2600DM32-07	32.00	220.34	236.00	186.00	0.66	81°	10	0.808	4000	
27.00	03C 03P	108.67	MDI-32	0.50	0.00	0.33	DS20-D2700DM32-04	32.00	146.34	162.00	112.00	0.66	81°	10	0.677	13000
	189.67	MDI-32	0.50	-0.10	0.50	DS20-D2700DM32-07	32.00	227.34	243.00	193.00	0.66	81°	10	0.853	4000	
28.00	04C 04P	112.83	MDI-32	2.12	0.00	0.33	DS20-D2800DM32-04	32.00	150.17	166.00	116.00	0.83	81°	10	0.705	13000
	196.83	MDI-32	2.12	-0.10	0.50	DS20-D2800DM32-07	32.00	234.17	250.00	200.00	0.83	81°	10	0.901	4000	
29.00	04C 04P	116.83	MDI-32	1.84	0.00	0.33	DS20-D2900DM32-04	32.00	154.17	170.00	120.00	0.83	81°	10	0.734	12000
	203.83	MDI-32	1.84	-0.10	0.50	DS20-D2900DM32-07	32.00	241.17	257.00	207.00	0.83	81°	10	0.952	4000	
30.00	04C 04P	120.83	MDI-32	1.56	0.00	0.33	DS20-D3000DM32-04	32.00	158.17	174.00	124.00	0.83	81°	10	0.766	12000
	210.83	MDI-32	1.56	-0.10	0.50	DS20-D3000DM32-07	32.00	248.17	264.00	214.00	0.83	81°	10	1.008	400	
31.00	04C 04P	124.83	MDI-32	1.28	0.00	0.35	DS20-D3100DM32-04	32.00	164.17	180.00	128.00	0.83	81°	10	0.818	12000
	217.83	MDI-32	1.28	-0.10	0.50	DS20-D3100DM32-07	32.00	256.17	272.00	221.00	0.83	81°	10	1.075	4000	
32.00	04C 04P	128.83	MDI-40	1.00	0.00	0.35	DS20-D3200DM40-04	40.00	175.17	191.00	132.00	0.83	81°	10	1.260	11000
	224.83	MDI-40	1.00	-0.10	0.50	DS20-D3200DM40-07	40.00	271.17	287.00	228.00	0.83	81°	10	1.553	3000	
33.00	04C 04P	132.83	MDI-40	0.72	0.00	0.35	DS20-D3300DM40-04	40.00	179.17	195.00	136.00	0.83	81°	10	1.299	11000
	231.83	MDI-40	0.72	-0.10	0.50	DS20-D3300DM40-07	40.00	278.17	294.00	235.00	0.83	81°	10	1.620	300	
34.00	05C 05P	137.00	MDI-40	2.16	0.00	0.35	DS20-D3400DM40-04	40.00	183.00	199.00	140.00	1.00	81°	10	1.340	11000
	239.00	MDI-40	2.16	-0.10	0.50	DS20-D3400DM40-07	40.00	285.00	301.00	242.00	1.00	81°	10	1.691	3000	
35.00	05C 05P	141.00	MDI-40	1.92	0.00	0.35	DS20-D3500DM40-04	40.00	187.00	203.00	144.00	1.00	81°	10	1.383	10000
	246.00	MDI-40	1.92	-0.10	0.50	DS20-D3500DM40-07	40.00	292.00	308.00	249.00	1.00	81°	10	1.766	3000	
36.00	05C 05P	145.00	MDI-40	1.68	0.00	0.35	DS20-D3600DM40-04	40.00	191.00	207.00	148.00	1.00	81°	10	1.429	10000
	253.00	MDI-40	1.68	-0.10	0.50	DS20-D3600DM40-07	40.00	299.00	315.00	256.00	1.00	81°	10	1.846	3000	

CoroDrill® DS20 indexable insert drill

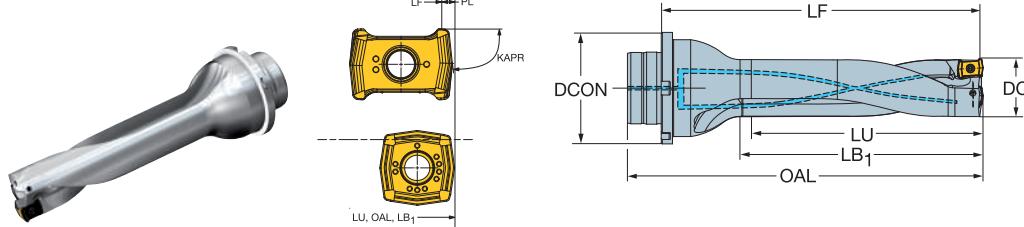
Modular drilling interface (MDI)
Internal coolant supply



Metric								Dimensions: mm									
DC	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	BAR	KG	RPMX		
37.00	05C	05P	149.00	MDI-40	1.44	0.00	0.35	DS20-D3700DM40-04	40.00	195.00	211.00	152.00	1.00	81°	10	1.477	10000
	260.00	MDI-40	1.44	-0.10	0.50		DS20-D3700DM40-07	40.00	306.00	322.00	263.00	1.00	81°	10	1.930	3000	
38.00	05C	05P	153.00	MDI-40	1.20	0.00	0.35	DS20-D3800DM40-04	40.00	199.00	215.00	156.00	1.00	81°	10	1.529	9000
	267.00	MDI-40	1.20	-0.10	0.50		DS20-D3800DM40-07	40.00	313.00	329.00	270.00	1.00	81°	10	2.019	3000	
39.00	05C	05P	157.00	MDI-40	0.96	0.00	0.35	DS20-D3900DM40-04	40.00	203.00	219.00	160.00	1.00	81°	10	1.582	9000
	274.00	MDI-40	0.96	-0.10	0.50		DS20-D3900DM40-07	40.00	320.00	336.00	277.00	1.00	81°	10	2.113	3000	
40.00	05C	05P	161.00	MDI-40	0.72	0.00	0.35	DS20-D4000DM40-04	40.00	206.00	222.00	164.00	1.00	81°	10	1.624	9000
	281.00	MDI-40	0.72	-0.10	0.50		DS20-D4000DM40-07	40.00	326.00	342.00	284.00	1.00	81°	10	2.196	3000	
41.00	06C	06P	165.28	MDI-40	3.73	0.00	0.35	DS20-D4100DM40-04	40.00	210.72	227.00	169.00	1.28	81	10	1.547	9000
	288.28	MDI-40	3.73	-0.10	0.50		DS20-D4100DM40-07	40.00	333.72	350.00	292.00	1.28	81	10	2.179	3000	
42.00	06C	06P	169.28	MDI-40	3.46	0.00	0.35	DS20-D4200DM40-04	40.00	216.72	233.00	173.00	1.28	81	10	1.656	8000
	295.28	MDI-40	3.46	-0.10	0.50		DS20-D4200DM40-07	40.00	340.72	357.00	299.00	1.28	81	10	2.300	2000	
43.00	06C	06P	173.28	MDI-40	3.19	0.00	0.35	DS20-D4300DM40-04	40.00	220.72	237.00	177.00	1.28	81	10	1.731	8000
	302.28	MDI-40	3.19	-0.10	0.50		DS20-D4300DM40-07	40.00	347.72	364.00	306.00	1.28	81	10	2.427	2000	
44.00	06C	06P	177.28	MDI-50	2.92	0.00	0.35	DS20-D4400DM50-04	50.00	226.72	246.00	181.00	1.28	81	10	2.046	8000
	309.28	MDI-50	2.92	-0.10	0.50		DS20-D4400DM50-07	50.00	358.72	378.00	313.00	1.28	81	10	2.835	2000	
45.00	06C	06P	181.28	MDI-50	2.65	0.00	0.35	DS20-D4500DM50-04	50.00	230.72	250.00	185.00	1.28	81	10	2.130	8000
	316.28	MDI-50	2.65	-0.10	0.50		DS20-D4500DM50-07	50.00	365.72	385.00	320.00	1.28	81	10	2.982	2000	
46.00	06C	06P	185.28	MDI-50	2.38	0.00	0.35	DS20-D4600DM50-04	50.00	234.72	254.00	189.00	1.28	81	10	2.215	8000
47.00	06C	06P	189.28	MDI-50	2.11	0.00	0.35	DS20-D4700DM50-04	50.00	238.72	258.00	193.00	1.28	81	10	2.304	8000
48.00	06C	06P	193.28	MDI-50	1.84	0.00	0.35	DS20-D4800DM50-04	50.00	241.72	261.00	197.00	1.28	81	10	2.375	7000
49.00	06C	06P	197.28	MDI-50	1.57	0.00	0.35	DS20-D4900DM50-04	50.00	245.72	265.00	201.00	1.28	81	10	2.300	7000
50.00	06C	06P	201.28	MDI-50	1.30	0.00	0.35	DS20-D5000DM50-04	50.00	249.72	269.00	205.00	1.28	81	10	2.571	7000
51.00	06C	06P	205.28	MDI-50	1.03	0.00	0.35	DS20-D5100DM50-04	50.00	253.72	273.00	209.00	1.28	81	10	2.675	7000
52.00	06C	06P	209.28	MDI-50	0.76	0.00	0.35	DS20-D5200DM50-04	50.00	257.72	277.00	213.00	1.28	81	10	2.784	7000
53.00	07C	07P	213.59	MDI-50	4.21	0.00	0.35	DS20-D5300DM50-04	50.00	261.41	281.00	217.00	1.59	81	10	2.790	7000
54.00	07C	07P	217.59	MDI-50	3.92	0.00	0.35	DS20-D5400DM50-04	50.00	265.41	285.00	221.00	1.59	81	10	2.904	7000
55.00	07C	07P	221.59	MDI-50	3.63	0.00	0.35	DS20-D5500DM50-04	50.00	269.41	289.00	225.00	1.59	81	10	3.025	6000
56.00	07C	07P	225.59	MDI-50	3.34	0.00	0.35	DS20-D5600DM50-04	50.00	273.41	293.00	229.00	1.59	81	10	3.157	6000
57.00	07C	07P	229.59	MDI-50	3.05	0.00	0.35	DS20-D5700DM50-04	50.00	277.41	297.00	233.00	1.59	81	10	3.286	6000
58.00	07C	07P	233.59	MDI-50	2.76	0.00	0.35	DS20-D5800DM50-04	50.00	281.41	301.00	237.00	1.59	81	10	3.362	6000
59.00	07C	07P	237.59	MDI-50	2.47	0.00	0.35	DS20-D5900DM50-04	50.00	285.41	305.00	241.00	1.59	81	10	3.497	6000

CoroDrill® DS20 indexable insert drill

Modular drilling interface (MDI)
Internal coolant supply



Inch								Dimensions: inch							
DC	LU	CZC _{MS}	ADJLX	TCHAL	TCHAU	Ordering code	DCON _{MS}	LF	OAL	LB ₁	PL	KAPR	PSI	LBS	RPMX
.625	01C 01P	2.518	MDI-20 .030	.000	.011	DS20-D1588DM20-04	.787	3.613	4.222	2.611	.018	81°	145	0.399	22000
		4.393	MDI-20 .030	-.004	.016	DS20-D1588DM20-07	.787	5.488	6.097	4.486	.018	81°	145	0.478	7000
.656	01C 01P	2.642	MDI-20 .023	.000	.011	DS20-D1666DM20-04	.787	3.735	4.344	2.735	.018	81°	145	0.414	21000
		4.610	MDI-20 .023	-.004	.016	DS20-D1666DM20-07	.787	5.703	6.312	4.703	.018	81°	145	0.507	7000
.687	01C 01P	2.766	MDI-25 .015	.000	.011	DS20-D1745DM25-04	.984	4.007	4.616	2.859	.018	81°	145	0.643	21000
		4.827	MDI-25 .015	-.004	.016	DS20-D1745DM25-07	.984	6.068	6.677	4.920	.018	81°	145	0.749	7000
.750	02C 02P	3.022	MDI-25 .041	.000	.013	DS20-D1905DM25-04	.984	4.258	4.871	3.119	.022	81°	145	0.685	19000
		5.272	MDI-25 .041	-.004	.016	DS20-D1905DM25-07	.984	6.508	7.121	5.369	.022	81°	145	0.822	6000
.812	02C 02P	3.270	MDI-25 .026	.000	.013	DS20-D2062DM25-04	.984	4.501	5.114	3.367	.022	81°	145	0.734	17000
		5.706	MDI-25 .026	-.004	.016	DS20-D2062DM25-07	.984	6.937	7.550	5.803	.022	81°	145	0.908	6000
.875	03C 03P	3.526	MDI-25 .057	.000	.013	DS20-D2223DM25-04	.984	4.751	5.368	3.626	.026	81°	145	0.793	16000
		6.151	MDI-25 .057	-.004	.016	DS20-D2223DM25-07	.984	7.376	7.993	6.251	.026	81°	145	1.009	5000
.937	03C 03P	3.774	MDI-25 .044	.000	.013	DS20-D2380DM25-04	.984	4.994	5.611	3.874	.026	81°	145	0.859	15000
		6.585	MDI-25 .044	-.004	.016	DS20-D2380DM25-07	.984	7.805	8.422	6.685	.026	81°	145	1.124	5000
1.000	03C 03P	4.026	MDI-25 .032	.000	.013	DS20-D2540DM25-04	.984	5.241	5.858	4.126	.026	81°	145	0.881	14000
		7.026	MDI-25 .032	-.004	.016	DS20-D2540DM25-07	.984	8.241	8.858	7.126	.026	81°	145	1.258	4000
1.062	03C 03P	4.274	MDI-32 .020	.000	.013	DS20-D2697DM32-04	1.260	5.721	6.338	4.374	.026	81°	145	1.485	13000
		7.460	MDI-32 .020	-.004	.016	DS20-D2697DM32-07	1.260	8.907	9.524	7.560	.026	81°	145	1.871	4000
1.125	04C 04P	4.533	MDI-32 .077	.000	.013	DS20-D2858DM32-04	1.260	5.977	6.601	4.642	.033	81°	145	1.448	13000
		7.908	MDI-32 .077	-.004	.020	DS20-D2858DM32-07	1.260	9.352	9.976	8.017	.033	81°	145	1.925	4000
1.187	04C 04P	4.781	MDI-32 .060	.000	.013	DS20-D3015DM32-04	1.260	6.220	6.844	4.890	.033	81°	145	1.665	12000
		8.342	MDI-32 .060	-.004	.020	DS20-D3015DM32-07	1.260	9.781	10.405	8.451	.033	81°	145	2.002	4000
1.25	04C 04P	5.033	MDI-32 .042	.000	.014	DS20-D3175DM32-04	1.260	6.546	7.170	5.142	.033	81°	145	1.671	11000
		8.783	MDI-32 .042	-.004	.020	DS20-D3175DM32-07	1.260	10.295	10.919	8.892	.033	81°	145	2.280	3000
1.312	05C 05P	5.287	MDI-40 .091	.000	.014	DS20-D3332DM40-04	1.575	7.074	7.704	5.402	.039	81°	145	2.872	11000
		9.223	MDI-40 .091	-.004	.016	DS20-D3332DM40-07	1.575	11.010	11.640	9.338	.039	81°	145	3.602	3000
1.375	05C 05P	5.539	MDI-40 .076	.000	.014	DS20-D3493DM40-04	1.575	7.321	7.951	5.654	.039	81°	145	3.020	10000
		9.664	MDI-40 .076	-.004	.016	DS20-D3493DM40-07	1.575	11.446	12.076	9.779	.039	81°	145	3.858	3000
1.437	05C 05P	5.787	MDI-40 .061	.000	.014	DS20-D3650DM40-04	1.575	7.565	8.195	5.902	.039	81°	145	3.176	10000
		10.098	MDI-40 .061	-.004	.016	DS20-D3650DM40-07	1.575	11.876	12.506	10.213	.039	81°	145	4.135	3000
1.500	05C 05P	6.039	MDI-40 .046	.000	.014	DS20-D3810DM40-04	1.575	7.812	8.442	6.154	.039	81°	145	3.351	9000
		10.539	MDI-40 .046	-.004	.016	DS20-D3810DM40-07	1.575	12.312	12.942	10.654	.039	81°	145	4.442	3000
1.562	05C 05P	6.287	MDI-40 .031	.000	.014	DS20-D3967DM40-04	1.575	8.055	8.685	6.402	.039	81°	145	3.538	9000
		10.973	MDI-40 .031	-.004	.016	DS20-D3967DM40-07	1.575	12.741	13.371	11.088	.039	81°	145	4.768	3000
1.625	06C 06P	6.550	MDI-40 .144	.000	.014	DS20-D4128DM40-04	1.575	8.303	8.944	6.666	.050	81°	145	3.437	9000
		11.425	MDI-40 .144	-.004	.020	DS20-D4128DM40-07	1.575	13.178	13.819	11.541	.050	81°	145	4.861	3000
1.687	06C 06P	6.798	MDI-40 .127	.000	.014	DS20-D4285DM40-04	1.575	8.625	9.266	6.914	.050	81°	145	3.770	8000
		11.859	MDI-40 .127	-.004	.020	DS20-D4285DM40-07	1.575	13.683	4.324	11.975	.050	81°	145	5.366	2000
1.750	06C 06P	7.050	MDI-50 .110	.000	.014	DS20-D4445DM50-04	1.969	8.936	9.695	7.166	.050	81°	145	4.594	8000
		12.300	MDI-50 .110	-.004	.020	DS20-D4445DM50-07	1.969	14.186	14.945	12.416	.050	81°	145	6.336	2000
1.875	06C 06P	7.550	MDI-50 .076	.000	.014	DS20-D4763DM50-04	1.969	9.427	10.186	7.666	.050	81°	145	5.148	7000
2.000	06C 06P	8.050	MDI-50 .043	.000	.014	DS20-D5080DM50-04	1.969	9.917	10.676	8.166	.050	81°	145	5.728	7000
2.125	07C 07P	8.563	MDI-50 .155	.000	.014	DS20-D5398DM50-04	1.969	10.406	11.178	8.678	.063	81°	145	6.365	7000
2.250	07C 07P	9.063	MDI-50 .118	.000	.014	DS20-D5715DM50-04	1.969	10.896	11.668	9.178	.063	81°	145	7.242	6000

An insert for every application

With three support contact surfaces in each insert seat, there are less insert movements leading to longer tool life and better hole surface.

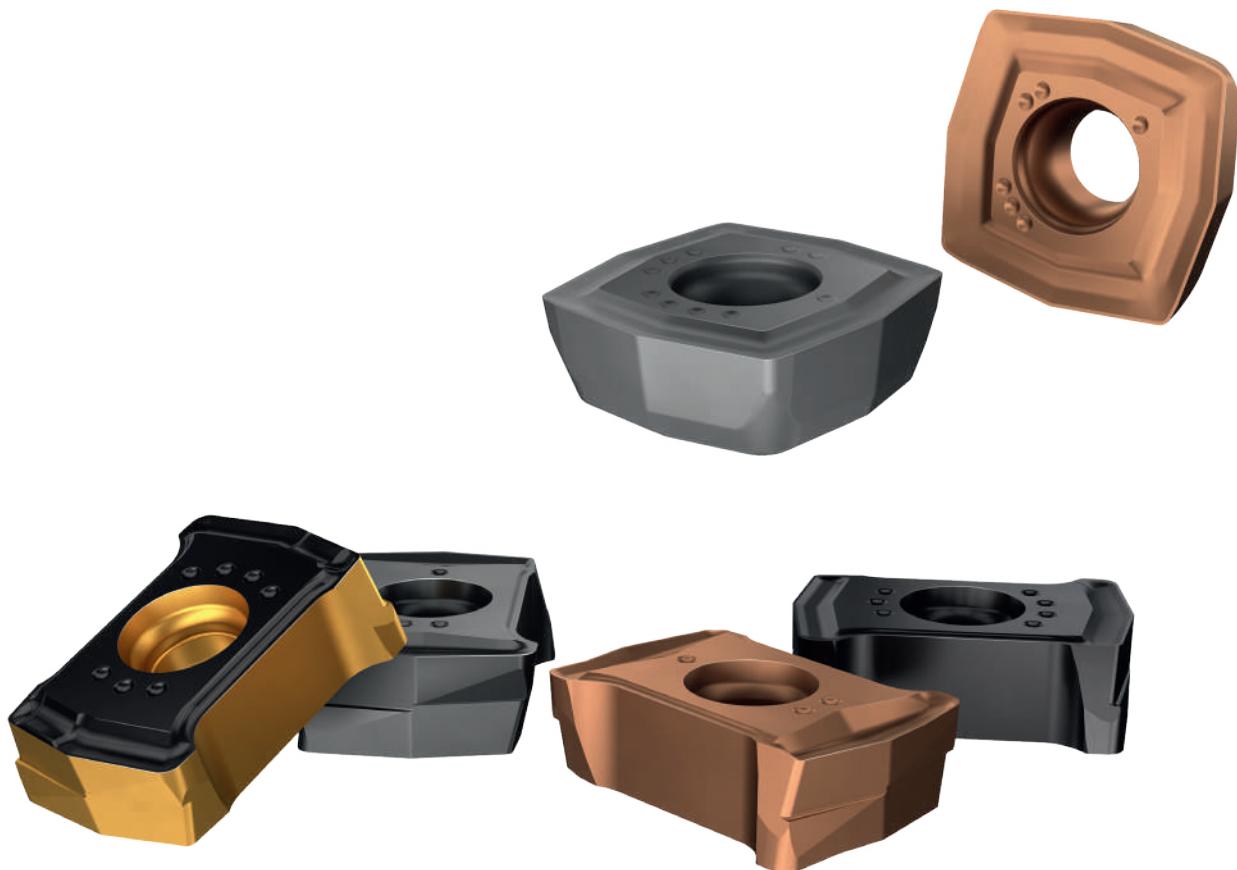
The inserts are strong and have a bulk strength that provides extra toughness resulting in unmatched insert tool life.

Closer hole tolerances can be achieved thanks to the ground dog-bone shaped peripheral insert. This double-sided positive insert, with a negative insert position, directs the cutting forces into the drill body resulting in higher stability and consistent performance.

Grades and geometries

Grades are available for all materials and applications. The PVD-coated grade GC1344, produced with Zertivo® coating process technology, offers excellent wear resistance and toughness for central inserts.

A large selection of geometries is available. With the versatile geometry -L6W it is possible to use the same tool in many operations and materials.



Peripheral insert: Geometries



-M7W

- First choice in short-chipping ISO P and ISO K materials
- Low to high feed
- Strong reinforced edge



-H5W

- First choice for more challenging long-chipping ISO P and ISO M materials
- Low to medium feed
- Negative T-land
- High cutting forces



-L5W

- First choice in long-chipping ISO P and ISO M materials
- Low to medium feed
- Low cutting forces



-L6W

- First choice in Inconel and hardened steel
- All-round geometry for mixed production
- Low to medium feed
- Low cutting forces



-S5W

- First choice in titanium and ISO N
- Low feed
- Sharp and extremely low cutting forces

M7W



L5W / S5W



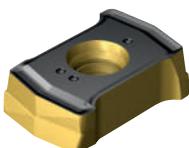
H5W



L6W

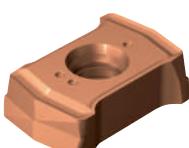


Peripheral insert: Grades



GC4334

- First-choice grade in ISO P and ISO K applications with good to average conditions
- Inveio® insert coating technology provides a high level of wear resistance



GC2044

- PVD-oxide coated grade for excellent wear resistance in all types of ISO M materials and titanium



GC4344

- PVD-coated grade with Zertivo® technology for tough and demanding operations
- Provides good edge-line properties and reliable tool life in average to difficult conditions



GC4324

- MT-CVD coated grade with Inveio® technology
- Productive choice in stable conditions



H13A

- Universal, tough and uncoated grade for low to moderate cutting speeds in ISO N materials
- Complementary grade for HRSA and titanium

Central insert: Geometries and grades



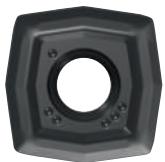
-M7

- First choice in short-chipping materials such as ISO P and ISO K
- Low to high feed
- Strong reinforced edge



GC1344

- First choice for ISO P, K, S and H materials
- PVD coated with Zertivo® technology
- Excellent wear resistance and toughness



-L5

- First choice in long-chipping materials such as ISO P, M, S, N and H
- Low to medium feed
- Low cutting forces



GC1144

- First-choice PVD-coated grade for all types of ISO M and titanium materials



H13A

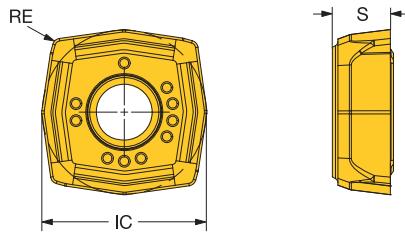
- Universal, tough and uncoated grade for low to moderate cutting speeds in ISO N materials
- Complementary grade for ISO S

First choice

		First choice		Complementary choice	
		Central insert	Peripheral insert	Central insert	Peripheral insert
Low-carbon steel	P	P1.1–1.2: -L5 1344 P1.3–1.5: -M7 1344	P1.1: -H5W 4334 P1.2: -L5W 4334 P1.3–1.5: -M7W 4334	-L5 1344	-L5W 4324 -L5W 4334 -L5W 4344 -H5W 4344 -M7W 4324 -M7W 4344
Low-alloy steel	P	-M7 1344	-M7W 4334	-M7 1344	-M7W 4324 -M7W 4344
Stainless steel	M	-L5 1144	-H5W 2044	-L5 1144	-L5W 2044 -L5W 4344 -H5W 4344
Cast iron	K	-M7 1344	-M7W 4334	-M7 1344	-M7W 4324 -M7W 4344
Non-ferrous material	N	-L5 H13A	-S5W H13A	-L5 1344	-L5W 4344
HRSA	S	-L5 1344	-L6W 4344 (Inconel) -S5W 4344 (Titan)	-L5 H13A	-L5W H13A -S5W H13A
Hardened steels	H	-L5 1344	-L6W 4344	-M7 1344	-M7W 4344

CoroDrill® DS20 insert for drilling

Central insert



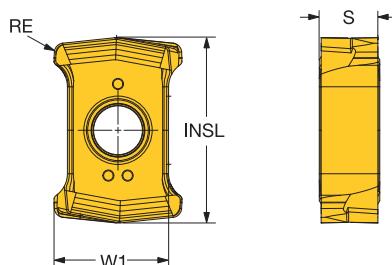
		P	M	K	N	S	H	Dimensions: mm
INSUC	Ordering code	1344	1144	1344	H13A	1344	H13A	S RE IC
01C C	DS20-0104-C-L5	★	★		★	☆	★	★ 2.30 0.35 6.0
01C C	DS20-0104-C-M7	★		★			☆	2.30 0.35 6.0
02C C	DS20-0205-C-L5	★	★		★	☆	★	★ 2.60 0.35 7.3
02C C	DS20-0205-C-M7	★		★			☆	2.60 0.35 7.3
03C C	DS20-0306-C-L5	★	★		★	☆	★	★ 3.00 0.35 8.9
03C C	DS20-0306-C-M7	★		★			☆	3.00 0.35 8.9
04C C	DS20-0407-C-L5	★	★		★	☆	★	★ 3.20 0.35 11.1
04C C	DS20-0407-C-M7	★		★			☆	3.20 0.35 11.1
05C C	DS20-0508-C-L5	★	★		★	☆	★	★ 3.50 0.35 13.4
05C C	DS20-0508-C-M7	★		★			☆	3.50 0.35 13.4
06C C	DS20-0608-C-L5	★	★		★	☆	★	★ 3.90 0.35 17.5
06C C	DS20-0608-C-M7	★		★			☆	3.90 0.35 17.5
07C C	DS20-0708-C-L5	★	★		★	☆	★	★ 4.50 0.35 21.8
07C C	DS20-0708-C-M7	★		★			☆	4.50 0.35 21.8
		P	M	K	N	S	H	

CoroDrill® DS20 insert for drilling

Peripheral insert



DS20..P-L5W



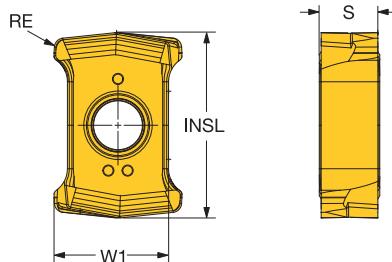
		P	M	K	N	S	H	Dimensions: mm				
INSUC	Ordering code	4324 4334 4344 2044 4334 4344 4324 4334 4344 4344 H13A 2044 4344 H13A 4334 4344	4334 2044 4344 4334 4344 4324 4334 4344 4344 H13A 2044 4344 H13A 4334 4344	4324 4334 4344 2044 4334 4344 4324 4334 4344 4344 H13A 2044 4344 H13A 4334 4344	4324 4334 4344 2044 4334 4344 4324 4334 4344 4344 H13A 2044 4344 H13A 4334 4344	4324 4334 4344 2044 4334 4344 4324 4334 4344 4344 H13A 2044 4344 H13A 4334 4344	S RE W1 INSL	2.73 0.40 5.0 8.5				
01P	P	DS20-0104-P-H5W	★ ★ ★ ★ ★ ★									
01P	P	DS20-0104-P-L5W	★ ★ ★ ★ ★ ★		★ ★ ★							
01P	P	DS20-0104-P-L6W		★ ★ ★	★ ★		★	★			2.73	0.40 5.0 8.5
01P	P	DS20-0104-P-M7W	★ ★ ★		★ ★ ★				★ ★		2.73	0.40 5.0 8.5
01P	P	DS20-0104-P-S5W			★		★ ★	★ ★			2.73	0.40 5.0 8.5
02P	P	DS20-0205-P-H5W	★ ★ ★ ★ ★								3.10	0.50 6.1 9.8
02P	P	DS20-0205-P-L5W	★ ★ ★ ★ ★		★ ★ ★		★ ★	★ ★			3.10	0.50 6.1 9.8
02P	P	DS20-0205-P-L6W	★ ★	★ ★	★ ★		★	★		★	3.10	0.50 6.1 9.8
02P	P	DS20-0205-P-M7W	★ ★ ★		★ ★ ★				★ ★		3.10	0.50 6.1 9.8
02P	P	DS20-0205-P-S5W			★		★ ★	★ ★	★ ★		3.10	0.50 6.1 9.8
03P	P	DS20-0306-P-H5W	★ ★ ★ ★ ★								3.53	0.60 7.3 11.3
03P	P	DS20-0306-P-L5W	★ ★ ★ ★ ★			★ ★ ★	★ ★	★ ★			3.53	0.60 7.3 11.3
03P	P	DS20-0306-P-L6W	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★	★	3.53	0.60 7.3 11.3
			4324	4334	4344	2044	4334	4344	4324	4334		

CoroDrill® DS20 insert for drilling

Peripheral insert



DS20..P-L5W



		P	M	K	N	S	H	Dimensions: mm										
INSUC	Ordering code	4324	4334	4344	2044	4334	4344	4324	4334	4344	2044	4334	4344	S	RE	W1	INSL	
03P P	DS20-0306-P-M7W	☆	★	☆				☆	★	☆				3.53	0.60	7.3	11.3	
03P P	DS20-0306-P-S5W				★			☆	★		★	☆		3.53	0.60	7.3	11.3	
04P P	DS20-0407-P-H5W		☆	☆	☆									4.25	0.70	9.2	12.8	
04P P	DS20-0407-P-L5W	☆	★	☆	★	☆	☆			☆	☆	☆		4.25	0.70	9.2	12.8	
04P P	DS20-0407-P-L6W		☆		☆			☆	☆		★		★	4.25	0.70	9.2	12.8	
04P P	DS20-0407-P-M7W	☆	★	☆				☆	★	☆			☆	☆	4.25	0.70	9.2	12.8
04P P	DS20-0407-P-S5W				☆			☆	★		★	☆			4.25	0.70	9.2	12.8
05P P	DS20-0508-P-H5W	★	☆	★	☆	☆									4.75	0.80	11.2	15.2
05P P	DS20-0508-P-L5W	☆	★	☆	★	☆	☆		★	★	☆				4.75	0.80	11.2	15.2
05P P	DS20-0508-P-L6W		★		★			★	★		★		★		4.75	0.80	11.2	15.2
05P P	DS20-0508-P-M7W	☆	★	☆				☆	★	☆			☆	★	4.75	0.80	11.2	15.2
05P P	DS20-0508-P-S5W				★			☆	★		★	☆			4.75	0.80	11.2	15.2
06P P	DS20-0608-P-HSW	★	☆	★	☆	☆									6.20	0.80	14.4	19.4
06P P	DS20-0608-P-L5W	☆	★	☆	★	☆	☆		★		★	☆			6.20	0.80	14.4	19.4
06P P	DS20-0608-P-L6W		★		★			★	★		★		★		6.20	0.80	14.4	19.4
06P P	DS20-0608-P-M7W	☆	★	☆				☆	★	☆			☆	★	6.20	0.80	14.4	19.4
06P P	DS20-0608-P-S5W				★			☆	★		☆	★			6.20	0.80	14.4	19.4
07P P	DS20-0708-P-HSW	★	☆	★	☆	☆									7.00	0.80	18.0	21.9
07P P	DS20-0708-P-L5W	☆	★	☆	★	☆	☆		★		★	☆			7.00	0.80	18.0	21.9
07P P	DS20-0708-P-L6W		★		★			★	★		★		★		7.00	0.80	18.0	21.9
07P P	DS20-0708-P-M7W	☆	★	☆				☆	★	☆			☆	★	7.00	0.80	18.0	21.9
07P P	DS20-0708-P-S5W				★			☆	★		★	☆			7.00	0.80	18.0	21.9

MDI (Modular Drilling Interface)

The patented MDI coupling is a stable and high precision modular drilling interface that provides excellent centring capabilities.

One size can be used for several drill diameters leading to less tool inventory and lower costs. In addition, MDI offers quick and easy set-up.

Four locating pins allow for high torque transmission and provide an exact cutting edge position. The position of the locating pins makes it possible to rotate the drill 180° which can be beneficial in poor machine conditions, for example in misaligned or unstable lathes.

With two different diameters on shank and adaptor, double centring with high fitting accuracy is possible. In combination with flange and surface contact between drill body and nut, increased stability, good run-out precision and optimal repeatability can be achieved.



Coromant Capto®



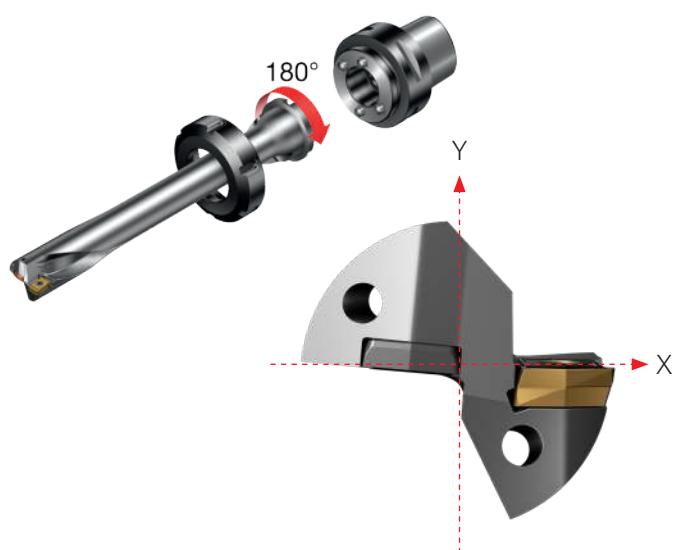
HSK-T

Advantage new MDI interface

With MDI



Flexible in non-rotating applications



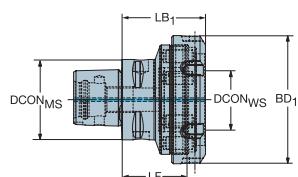
Without MDI



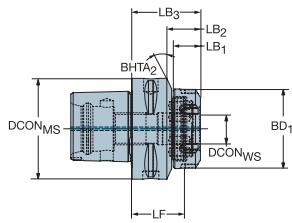
20% shorter modular length
when using the MDI interface

Note: Peripheral insert set parallel to the x-axis of the machine and facing x plus in non-rotating use.

Coromant Capto® with modular drilling interface (MDI)



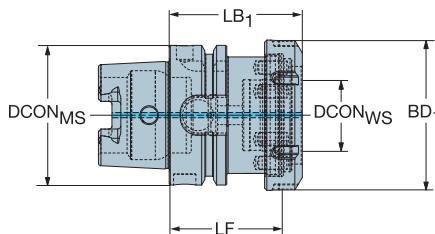
Design 1



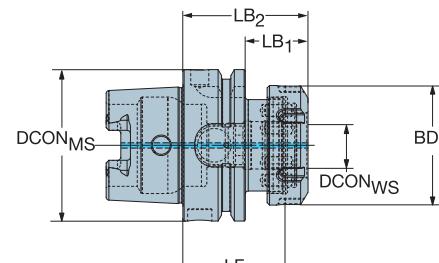
Design 2

	Metric				Ordering code	Dimensions: mm								
Design	CZC _{MS}	CZC _{WS}	CNSC	CXSC		DCON _{MS}	DCON _{WS}	LF	LB ₁	BD ₁	BAR PSI	NM	KG	RPMX
1	C3	MDI-20	3	1	C3-DM20-N-032	32.0	20.0	32.0	42.0	49.7	80	135.0	0.31	28000
1	C4	MDI-20	3	1	C4-DM20-N-028	40.0	20.0	28.0	38.0	49.7	80	135.0	0.40	39000
1		MDI-25	3	1	C4-DM25-N-035	40.0	25.0	35.0	45.0	62.7	80	170.0	0.58	39000
1		MDI-32	3	1	C4-DM32-N-042	40.0	32.0	42.0	52.0	67.7	80	200.0	0.71	39000
2	C5	MDI-20	3	1	C5-DM20-N-028	50.0	25.0	28.0	17.0	49.7	80	135.0	0.57	28000
1		MDI-25	3	1	C5-DM25-N-030	50.0	25.0	30.0	40.0	62.7	80	170.0	0.67	55000
1		MDI-32	3	1	C5-DM32-N-035	50.0	32.0	35.0	45.0	67.7	80	200.0	0.77	28000
1		MDI-40	3	1	C5-DM40-N-040	50.0	40.0	40.0	52.0	79.7	80	230.0	1.00	55000
2	C6	MDI-20	3	1	C6-DM20-N-033	63.0	20.0	33.0	17.0	49.7	80	135.0	0.96	20000
2		MDI-25	3	1	C6-DM25-N-030	63.0	25.0	30.0	17.0	62.7	80	170.0	1.00	20000
1		MDI-32	3	1	C6-DM32-N-030	63.0	32.0	30.0	40.0	67.7	80	200.0	0.99	20000
1		MDI-40	3	1	C6-DM40-N-040	63.0	40.0	40.0	52.0	79.7	80	230.0	1.34	20000
1		MDI-50	3	1	C6-DM50-N-043	63.0	50.0	43.0	57.0	94.7	80	250.0	1.70	20000
2	C8	MDI-25	3	1	C8-DM25-N-042	80.0	25.0	42.0	17.0	62.7	80	170.0	2.08	14000
2		MDI-32	3	1	C8-DM32-N-040	80.0	32.0	40.0	17.0	67.7	80	200.0	2.01	14000
2		MDI-40	3	1	C8-DM40-N-040	80.0	40.0	40.0	21.0	79.7	80	230.0	2.09	14000
1		MDI-50	3	1	C8-DM50-N-040	80.0	50.0	40.0	54.0	94.7	80	250.0	2.28	14000

HSK-T with modular drilling interface (MDI)



Design 1



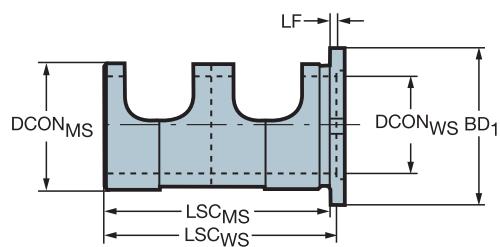
Design 2

	Metric				Ordering code	Dimensions: mm											
Design	CZC _{MS}	CZC _{WS}	CNSC	CXSC		DCON _{MS}	DCON _{WS}	LF	LB ₁	LB ₂	BD ₁	BD ₂	BAR PSI	NM	KG	RPMX	
2	63.0	MDI-20	1	1	HT06-DM20-N-042	63.0	20.0	42.0	26.0	52.0	49.7	63.0	80	135.0	0.86	20000	
2		MDI-25	1	1	HT06-DM25-N-050	63.0	25.0	50.0	34.0	60.0	62.7	63.0	80	170.0	1.10	20000	
1		MDI-32	1	1	HT06-DM32-N-050	63.0	32.0	50.0	60.0		67.7		80	200.0	1.18	20000	
1		MDI-40	1	1	HT06-DM40-N-061	63.0	40.0	61.0	73.0		79.7		80	230.0	1.51	20500	
2	100.0	MDI-25	1	1	HT10-DM25-N-048	100.0	25.0	48.0	29.0	58.0	62.7	100.0	80	170.0	2.37	12500	
2		MDI-32	1	1	HT10-DM32-N-048	100.0	32.0	48.0	29.0	58.0	67.7	100.0	80	200.0	2.40	12500	
2		MDI-40	1	1	HT10-DM40-N-048	100.0	40.0	48.0	31.0	60.0	79.7	100.0	80	230.0	2.60	12500	
2		MDI-50	1	1	HT10-DM50-N-055	99.9	50.0	55.0	40.0	69.0	94.7	100.0	80	250.0	3.15	12500	

Complete spare parts list see www.sandvik.coromant.com

Accessories

Eccentric sleeve



Metric				Ordering code	Dimensions: mm				
CZC _{MS}	CZC _{WS}	ADJLN	ADJLX		DCON _{MS}	DCON _{WS}	LSC _{MS}	LF	BD ₁
25	20	-0.05	0.15	416.2-L20-25	25.00	20.00	55.00	2.50	33.00
32	25	-0.05	0.15	416.2-L25-32	32.00	25.00	60.00	3.50	40.00
40	32	-0.05	0.15	416.2-L32-40	40.00	32.00	70.00	2.50	50.00
50	40	-0.05	0.15	416.2-L40-50	50.00	40.00	80.00	2.50	60.00

An eccentric sleeve or drilling adaptor can be used to get close hole tolerances (IT10) or to change the tool dimension.
You can find the max. radial adjustment (ADJLX) in the catalog or webshop Note: Not recommended for 6-7 ×DC

Torque wrench

Ordering code	
ER-TK-01M	10–50 Nm (7.38–36.9 lbf-ft)
ER-TK-02M	60–300 Nm (44–221 lbf-ft)



Recommendations

ER-TK-02M	Torque wrench	60–300, Nm (44–221 lbf-ft)
5680 103-05	MDI 20 (ER 32)	135 (100)
5680 103-06	MDI 25 (ER 40)	170 (125)
5680 103-07	MDI 32	200 (148)
5680 103-08	MDI 40	230 (170)
5680 103-09	MDI 50	250 (184)



Spare parts

Drill dimension, mm (inch)	Insert size	Screw size	Screw	Keygrip TORX PLUS®	Torque, Nm (lbf-ft)	Bits TORX PLUS®	Torque screwdriver for bits (adjustable torque)	Torque screwdriver (preset torque)	Fixed screwdriver
15.00–18.00 (0.591–0.708)	01	M2.0	5513 020-27	6IP	0.6 (0.44)	5680 084-17	5680 105-01	5680 100-01	5680 046-08
18.01–22.00 (0.709–0.866)	02	M2.2	5513 020-88	7IP	0.9 (0.66)	5680 084-18	5680 105-01	5680 100-02	5680 046-03
22.01–27.00 (0.867–1.06)	03	M2.5	5513 020-58	7IP	0.9 (0.66)	5680 084-18	5680 105-01	5680 100-02	5680 046-03
27.01–33.00 (1.06–1.30)	04	M3.0	5513 020-57	9IP	1.4 (1.03)	5680 084-20	5680 105-02	5680 100-04	5680 046-04
33.01–40.00 (1.30–1.57)	05	M3.5	416.1-833	10IP	2.0 (1.48)	5680 084-21	5680 105-02	5680 100-05	5680 046-05
40.01–52.00 (1.58–2.05)	06	M4.0	416.1-834	15IP	3.0 (2.21)	5680 084-15	5680 105-02	5680 100-06	5680 046-02
52.01–65.00 (2.05–2.56)	07								



Note: Bits TORXPLUS® to be used with adjustable torque.

CoroDrill® DS20

Cutting data recommendation, inch
4-5xD

					Cutting speed recommendations			Drill length 4xD					Drill length 5xD						
ISO	MC-Nr.	Material	HB	Grade	Min.	Recom.	Max.	Drill diameter (inch)	-S5W f _n in/rev	-L5W f _n in/rev	-L6W f _n in/rev	-M7W f _n in/rev	-H5W f _n in/rev	-S5W f _n in/rev	-L5W f _n in/rev	-L6W f _n in/rev	-M7W f _n in/rev	-H5W f _n in/rev	
P	P1.0.Z.AN	Unalloyed steel	110	4324	755	1115	1310	0.591-0.709	.002-.003	.002-.003	.002-.004	-	.002-.004	.002-.003	.002-.003	.002-.003	-	.002-.004	
		C=0.05-0.10%		4334	690	935	1065	0.709-0.866	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.003	.002-.003	.002-.003	-	.002-.004	
				4344	625	740	805	0.866-1.063	.002-.004	.002-.004	.002-.004	-	.002-.005	.002-.004	.002-.004	.002-.004	-	.002-.005	
								1.063-1.299	.002-.004	.002-.004	.002-.004	-	.002-.005	.002-.004	.002-.004	.002-.004	-	.002-.005	
								1.299-1.575	.002-.005	.002-.005	.002-.005	-	.002-.006	.002-.004	.002-.004	.002-.004	-	.002-.006	
								1.575-2.047	.002-.005	.002-.005	.002-.005	-	.002-.006	.002-.004	.002-.004	.002-.004	-	.002-.006	
								2.047-2.559	.002-.005	.002-.005	.002-.005	-	.002-.006	.002-.004	.002-.004	.002-.004	-	.002-.006	
	P1.1.Z.AN	Unalloyed steel	125	4324	755	1055	1215	0.591-0.709	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.004	
		C=0.05-0.25%		4334	655	880	1000	0.709-0.866	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.004	
				4344	560	695	770	0.866-1.063	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.004	.002-.004	.002-.004	-	.002-.004	
	P1.2.Z.AN	Unalloyed steel	190	4324	625	870	1000	0.591-0.709	-	.002-.005	.002-.006	.002-.006	-	-	-	.002-.004	.002-.005	.002-.005	-
		C=0.25-0.55%		4334	510	710	820	0.709-0.866	-	.002-.006	.002-.006	.002-.007	-	-	-	.002-.005	.002-.005	.002-.006	-
				4344	395	545	625	0.866-1.063	-	.002-.007	.002-.008	.002-.009	-	-	-	.002-.006	.002-.007	.002-.007	-
								1.063-1.299	-	.003-.009	.003-.009	.003-.01	-	-	-	.003-.007	.003-.008	.003-.009	-
								1.299-1.575	-	.003-.009	.003-.01	.003-.011	-	-	-	.003-.008	.003-.009	.003-.009	-
								1.575-2.047	-	.004-.009	.004-.01	.004-.011	-	-	-	.004-.008	.004-.009	.004-.009	-
								2.047-2.559	-	.004-.009	.004-.01	.004-.011	-	-	-	.004-.008	.004-.009	.004-.009	-
	P1.3.Z.AN	Unalloyed steel	190	4324	560	815	950	0.591-0.709	-	.002-.005	.002-.006	.002-.006	-	-	-	.002-.004	.002-.005	.002-.005	-
		C=0.55-0.80%		4334	460	670	785	0.709-0.866	-	.002-.006	.002-.006	.002-.007	-	-	-	.002-.005	.002-.005	.002-.006	-
				4344	345	515	605	0.866-1.063	-	.002-.007	.002-.008	.002-.009	-	-	-	.002-.006	.002-.007	.002-.007	-
								1.063-1.299	-	.003-.009	.003-.009	.003-.01	-	-	-	.003-.007	.003-.008	.003-.009	-
								1.299-1.575	-	.003-.009	.003-.01	.003-.011	-	-	-	.003-.008	.003-.009	.003-.009	-
								1.575-2.047	-	.004-.009	.004-.01	.004-.011	-	-	-	.004-.008	.004-.009	.004-.009	-
	P1.5.C.UT	Unalloyed steel	150	4324	460	855	1065	0.591-0.709	-	.002-.005	.002-.005	.002-.005	-	-	-	.002-.004	.002-.004	.002-.004	-
		Cast - untreated		4334	445	720	870	0.709-0.866	-	.002-.005	.002-.005	.002-.005	-	-	-	.002-.004	.002-.004	.002-.004	-
				4344	410	570	655	0.866-1.063	-	.002-.006	.002-.006	.002-.006	-	-	-	.002-.005	.002-.005	.002-.005	-
								1.063-1.299	-	.002-.006	.002-.006	.002-.006	-	-	-	.002-.005	.002-.005	.002-.005	-
								1.299-1.575	-	.002-.006	.002-.006	.002-.006	-	-	-	.002-.005	.002-.005	.002-.005	-
								1.575-2.047	-	.002-.006	.002-.006	.002-.006	-	-	-	.002-.005	.002-.005	.002-.005	-
	P2.1.Z.AN	Low alloy steel	175	4324	590	855	1000	0.591-0.709	-	-	.002-.006	.002-.006	-	-	-	-	.002-.005	.002-.005	-
		Annealed		4334	490	705	820	0.709-0.866	-	-	.002-.006	.002-.007	-	-	-	-	.002-.005	.002-.006	-
				4344	375	540	625	0.866-1.063	-	-	.002-.008	.002-.009	-	-	-	-	.002-.007	.002-.007	-
								1.063-1.299	-	-	.003-.009	.003-.01	-	-	-	-	.003-.008	.003-.009	-
								1.299-1.575	-	-	.003-.009	.003-.01	-	-	-	-	.003-.009	.003-.009	-
								1.575-2.047	-	-	.004-.01	.004-.011	-	-	-	-	.004-.009	.004-.009	-
	P2.2.Z.AN	Low alloy steel	240	4324	590	825	950	0.591-0.709	-	-	.002-.006	.002-.006	-	-	-	-	.002-.005	.002-.005	-
		Annealed		4334	490	655	740	0.709-0.866	-	-	.002-.006	.002-.007	-	-	-	-	.002-.005	.002-.006	-
				4344	375	565	670	0.866-1.063	-	-	.002-.008	.002-.009	-	-	-	-	.002-.007	.002-.007	-
								1.063-1.299	-	-	.003-.009	.003-.01	-	-	-	-	.003-.008	.003-.009	-
								1.299-1.575	-	-	.003-.01	.003-.011	-	-	-	-	.003-.009	.003-.009	-
								1.575-2.047	-	-	.004-.01	.004-.011	-	-	-	-	.004-.009	.004-.009	-
	P2.5.Z.HT	Low alloy steel	330	4324	295	625	805	0.591-0.709	-	-	.002-.006	.002-.006	-	-	-	-	.002-.005	.002-.005	-
		Hardened and		4334	280	515	640	0.709-0.866	-	-	.002-.006	.002-.007	-	-	-	-	.002-.005	.002-.006	-
		tempered		4344	245	405	490	0.866-1.063	-	-	.002-.008	.002-.009	-	-	-	-	.002-.007	.002-.007	-
								1.063-1.299	-	-	.003-.009	.003-.01	-	-	-	-	.003-.008	.003-.009	-
								1.299-1.575	-	-	.003-.01	.003-.011	-	-	-	-	.003-.009	.003-.009	-
								1.575-2.047	-	-	.004-.01	.004-.011	-	-	-	-	.004-.009	.004-.009	-
								2.047-2.559	-	-	.004-.01	.004-.011	-	-	-	-	.004-.009	.004-.009	-
	P2.6.C.UT	Low alloy steel	200	4324	360	690	870	0.591-0.709	-	-	.002-.006	.002-.007	-	-	-	-	.002-.005	.002-.006	-
		Cast - untreated		4334	345	570	690	0.709-0.866	-	-	.002-.007	.002-.008	-	-	-	-	.002-.006	.002-.007	-
				4344	330	455	525	0.866-1.063	-	-	.002-.009	.002-.009	-	-	-	-	.002-.007	.002-.008	-
								1.063-1.299	-	-	.003-.01	.003-.011	-	-	-	-	.003-.009	.003-.009	-
								1.299-1.575	-	-	.003-.011	.003-.012	-	-	-	-	.003-.009	.003-.01	-
								1.575-2.047	-	-	.004-.011	.004-.012	-	-	-	-	.004-.009	.004-.01	-
								2.047-2.559	-	-	.004-.011	.004-.012	-	-	-	-	.004-.009	.004-.01	-
	P3.0.Z.AN	High alloy steel	200	4324	525	800	950	0.591-0.709	-	-	.002-.006	.002-.006	-	-	-	-	.002-.005	.002-.005	-
		Annealed		4334	425	660	785	0.709-0.866	-	-	.002-.006	.002-.007	-	-	-	-	.002-.005	.002-.006	-
				4344	330	500	590	0.866-1.063	-	-	.002-.008	.002-.009	-	-	-	-	.002-.007	.002-.007	-
								1.063-1.299	-	-	.003-.009	.003-.01	-	-	-	-	.003-.008	.003-.009	-
								1.299-1.575	-	-	.003-.01	.003-.011	-	-	-	-	.003-.009	.003-.009	-
								1.575-2.047	-	-	.004-.01	.004-.011	-	-	-	-	.004-.009	.004-.009	-
								2.047-2.559	-	-	.004-.011	.004-.012	-	-	-	-	.004-.009	.004-.009	-

CoroDrill® DS20

Cutting data recommendation, inch
4-5xD

					Cutting speed recommendations			Drill length 4xD					Drill length 5xD					
					Min.	Recom.	Max.	Drill diameter (inch)	-S5W <i>f_n</i> in/rev	-L5W <i>f_n</i> in/rev	-L6W <i>f_n</i> in/rev	-M7W <i>f_n</i> in/rev	-H5W <i>f_n</i> in/rev	-S5W <i>f_n</i> in/rev	-L5W <i>f_n</i> in/rev	-L6W <i>f_n</i> in/rev	-M7W <i>f_n</i> in/rev	-H5W <i>f_n</i> in/rev
P	P3.0.Z.HT	High alloy steel	380	4324	260	540	690	0.591-0.709	-	-	.002-.006	.002-.006	-	-	-	.002-.005	.002-.005	-
		Hardened and tempered	4334	245	460	575	0.709-0.866	-	-	.002-.006	.002-.007	-	-	-	.002-.005	.002-.006	-	
			4344	230	355	425	0.866-1.063	-	-	.002-.008	.002-.009	-	-	-	.002-.007	.002-.007	-	
							1.063-1.299	-	-	.003-.009	.003-.01	-	-	-	.003-.008	.003-.009	-	
							1.299-1.575	-	-	.003-.01	.003-.011	-	-	-	.003-.009	.003-.009	-	
							1.575-2.047	-	-	.004-.01	.004-.011	-	-	-	.004-.009	.004-.009	-	
							2.047-2.559	-	-	.004-.01	.004-.011	-	-	-	.004-.009	.004-.009	-	
	P5.0.Z.AN	Ferritic/martensitic	200	4334	375	610	740	0.591-0.709	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.004	.002-.004	.002-.004	-	.002-.004
		stainless steel	4344	375	505	575	0.709-0.866	.002-.006	.002-.006	.002-.006	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.004	
		Annealed	2044	375	480	540	0.866-1.063	.002-.006	.002-.006	.002-.006	-	.002-.006	.002-.005	.002-.005	.002-.005	-	.002-.005	
M	M1.0.Z.AQ	Austenitic	200	4334	245	450	560	0.591-0.709	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.004	.002-.004	.002-.004	-	.002-.004
		Stainless steel	4344	230	380	460	0.709-0.866	.002-.006	.002-.006	.002-.006	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.004	
		Annealed/quenched	2044	230	380	460	0.866-1.063	.002-.006	.002-.006	.002-.006	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.005	
							1.063-1.299	.003-.006	.003-.006	.003-.006	-	.003-.006	.003-.005	.003-.005	.003-.005	-	.003-.005	
							1.299-1.575	.003-.006	.003-.007	.003-.007	-	.003-.006	.003-.006	.003-.006	.003-.006	-	.003-.005	
							1.575-2.047	.004-.007	.004-.007	.004-.007	-	.004-.006	.004-.006	.004-.006	.004-.006	-	.004-.005	
	M1.1.Z.AQ	Austenitic	200	4334	375	640	785	0.591-0.709	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.004	.002-.004	.002-.004	-	.002-.004
		Stainless steel	4344	375	580	690	0.709-0.866	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.004	
		Machinability improved	2044	375	555	655	0.866-1.063	.002-.006	.002-.006	.002-.006	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.005	
							1.063-1.299	.003-.006	.003-.006	.003-.006	-	.003-.006	.003-.005	.003-.005	.003-.005	-	.003-.005	
							1.299-1.575	.003-.006	.003-.006	.003-.006	-	.003-.006	.003-.006	.003-.006	.003-.006	-	.003-.005	
	M2.0.Z.AQ	Super Austenitic	200	4334	260	410	490	0.591-0.709	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.004	.002-.004	.002-.004	-	.002-.004
		(Ni>20%) Stainless steel	4344	260	360	410	0.709-0.866	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.004	
		Annealed/quenched	2044	260	360	410	0.866-1.063	.002-.006	.002-.006	.002-.006	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.005	
							1.063-1.299	.003-.006	.003-.006	.003-.006	-	.003-.006	.003-.005	.003-.005	.003-.005	-	.003-.005	
							1.299-1.575	.004-.006	.004-.006	.004-.006	-	.004-.006	.004-.006	.004-.006	.004-.006	-	.004-.005	
							1.575-2.047	.004-.006	.004-.006	.004-.006	-	.004-.006	.004-.006	.004-.006	.004-.006	-	.004-.005	
	M3.1.Z.AQ	Duplex	230	4334	280	405	475	0.591-0.709	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.004	.002-.004	.002-.004	-	.002-.004
		stainless steel	4344	280	375	425	0.709-0.866	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.004	
		>60% ferrite (N<0.10%)	2044	280	365	410	0.866-1.063	.002-.006	.002-.006	.002-.006	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.005	
							1.063-1.299	.003-.006	.003-.006	.003-.006	-	.003-.006	.003-.005	.003-.005	.003-.005	-	.003-.005	
							1.299-1.575	.003-.006	.003-.006	.003-.006	-	.003-.006	.003-.006	.003-.006	.003-.006	-	.003-.005	
							1.575-2.047	.004-.006	.004-.006	.004-.006	-	.004-.006	.004-.006	.004-.006	.004-.006	-	.004-.005	
	M3.2.Z.AQ	Duplex	260	4334	245	345	395	0.591-0.709	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.004	.002-.004	.002-.004	-	.002-.004
		stainless steel	4344	245	330	375	0.709-0.866	.002-.005	.002-.005	.002-.005	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.004	
		<60% ferrite (N>0.10%)	2044	245	330	375	0.866-1.063	.002-.006	.002-.006	.002-.006	-	.002-.005	.002-.005	.002-.005	.002-.005	-	.002-.005	
							1.063-1.299	.003-.006	.003-.006	.003-.006	-	.003-.006	.003-.005	.003-.005	.003-.005	-	.003-.005	
							1.299-1.575	.003-.006	.003-.006	.003-.006	-	.003-.006	.003-.006	.003-.006	.003-.006	-	.003-.005	
							1.575-2.047	.004-.006	.004-.006	.004-.006	-	.004-.006	.004-.006	.004-.006	.004-.006	-	.004-.005	
	S2.0.Z.AN	Heat resistant	350	4334	65	130	165	0.591-0.709	.002-.003	.002-.003	.002-.003	-	-	.002-.003	.002-.003	.002-.003	-	-
	S2.0.Z.AG	super alloys	4344	65	130	165	0.709-0.866	.002-.004	.002-.004	.002-.004	-	-	.002-.003	.002-.003	.002-.003	-	-	
	S2.0.Z.NS	Ni based	2044	65	130	165	0.866-1.063	.002-.004	.002-.004	.002-.004	-	-	.002-.004	.002-.004	.002-.004	-	-	
							1.063-1.299	.002-.004	.002-.004	.002-.004	-	-	.002-.004	.002-.004	.002-.004	-	-	
							1.299-1.575	.002-.005	.002-.005	.002-.005	-	-	.002-.004	.002-.004	.002-.004	-	-	
							1.575-2.047	.002-.005	.002-.005	.002-.005	-	-	.002-.004	.002-.004	.002-.004	-	-	
							2.047-2.559	.002-.005	.002-.005	.002-.005	-	-	.002-.004	.002-.004	.002-.004	-	-	
	S4.2.Z.AN	Heat resistant	330	H13A	130	300	395	0.591-0.709	.002-.006	.002-.006	.002-.006	-	-	.002-.005	.002-.005	.002-.005	-	-
	S4.3.Z.AG	super alloys	4344	130	300	395	0.709-0.866	.002-.006	.002-.006	.002-.006	-	-	.002-.005	.002-.005	.002-.005	-	-	
		Ti based	2044	130	300	395	0.866-1.063	.002-.006	.002-.006	.002-.006	-	-	.002-.005	.002-.005	.002-.005	-	-	
							1.063-1.299	.003-.007	.003-.007	.003-.007	-	-	.003-.006	.003-.006	.003-.006	-	-	
							1.299-1.575	.003-.007	.003-.007	.003-.007	-	-	.003-.006	.003-.006	.003-.006	-	-	
							1.575-2.047	.004-.007	.004-.007	.004-.007	-	-	.004-.006	.004-.006	.004-.006	-	-	
							2.047-2.559	.004-.007	.004-.007	.004-.007	-	-	.004-.006	.004-.006	.004-.006	-	-	

CoroDrill® DS20

Cutting data recommendation, inch
6-7xD

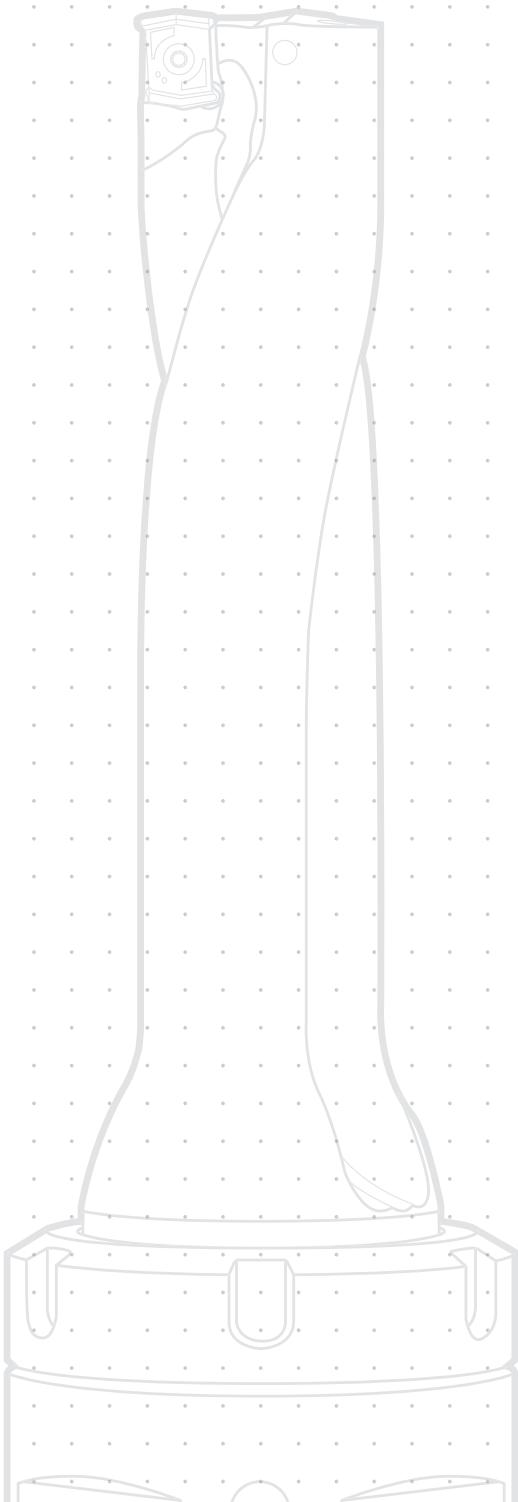
					Cutting speed recommendations				Drill length 6xD					Drill length 7xD				
ISO	MC-Nr.	Material	HB	Grade	Min.	Recom.	Max.	Drill diameter (inch)	-S5W f_n in/rev	-L5W f_n in/rev	-L6W f_n in/rev	-M7W f_n in/rev	-H5W f_n in/rev	-S5W f_n in/rev	-L5W f_n in/rev	-L6W f_n in/rev	-M7W f_n in/rev	-H5W f_n in/rev
P	P3.0.Z.HT	High alloy steel	380	4324	260	485	620	0.591-0.709	-	-	.002-.004	.002-.004	-	-	-	.002-.003	.002-.003	-
		Hardened and		4334	245	415	520	0.709-0.866	-	-	.002-.004	.002-.005	-	-	-	.002-.003	.002-.004	-
		tempered		4344	230	320	385	0.866-1.063	-	-	.002-.005	.002-.006	-	-	-	.002-.004	.002-.005	-
								1.063-1.299	-	-	.003-.006	.003-.007	-	-	-	.003-.005	.003-.006	-
								1.299-1.575	-	-	.003-.007	.003-.007	-	-	-	.003-.006	.003-.006	-
								1.575-2.047	-	-	.004-.007	.004-.007	-	-	-	.004-.006	.004-.006	-
								2.047-2.559	-	-	.004-.007	.004-.007	-	-	-	.004-.006	.004-.006	-
	P5.0.Z.AN	Ferritic/martensitic	200	4334	375	550	665	0.591-0.709	.002-.003	.002-.003	.002-.003	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003
		stainless steel		4344	375	455	520	0.709-0.866	.002-.004	.002-.004	.002-.004	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003
		Annealed		2044	375	430	485	0.866-1.063	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.003	.002-.003	.002-.003	-	.002-.003
M	P5.0.Z.HT	Ferritic/martensitic	330	4334	245	405	505	0.591-0.709	.002-.003	.002-.003	.002-.003	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003
		stainless steel		4344	230	340	415	0.709-0.866	.002-.004	.002-.004	.002-.004	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003
		Hardened and		2044	230	340	415	0.866-1.063	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.003	.002-.003	.002-.003	-	.002-.003
		tempered						1.063-1.299	.003-.004	.003-.004	.003-.004	-	.003-.004	.003-.003	.003-.003	.003-.003	-	.003-.003
								1.299-1.575	.003-.005	.003-.005	.003-.005	-	.003-.004	.003-.004	.003-.004	.003-.004	-	.003-.003
								1.575-2.047	.004-.005	.004-.005	.004-.005	-	.004-.004	.004-.004	.004-.004	.004-.004	-	.004-.003
								2.047-2.559	.004-.005	.004-.005	.004-.005	-	.004-.004	.004-.004	.004-.004	.004-.004	-	.004-.003
	M1.0.Z.AQ	Austenitic Stainless	200	4334	375	550	665	0.591-0.709	.002-.004	.002-.004	.002-.004	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003
		steel		4344	375	485	565	0.709-0.866	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.003	.002-.003	.002-.003	-	.002-.003
		Annealed/quenched		2044	375	465	530	0.866-1.063	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.003
S								1.063-1.299	.003-.005	.003-.005	.003-.005	-	.003-.004	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.299-1.575	.003-.005	.003-.005	.003-.005	-	.003-.005	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.575-2.047	.004-.005	.004-.005	.004-.005	-	.004-.005	.004-.004	.004-.004	.004-.004	-	.004-.004
	M1.1.Z.AQ	Austenitic Stainless	200	4334	375	575	705	0.591-0.709	.002-.004	.002-.004	.002-.004	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003
		steel		4344	375	520	620	0.709-0.866	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.003	.002-.003	.002-.003	-	.002-.003
		Machinability		2044	375	500	590	0.866-1.063	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.003
		improved						1.063-1.299	.003-.005	.003-.005	.003-.005	-	.003-.004	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.299-1.575	.003-.005	.003-.005	.003-.005	-	.003-.005	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.575-2.047	.004-.005	.004-.005	.004-.005	-	.004-.005	.004-.004	.004-.004	.004-.004	-	.004-.004
								2.047-2.559	.004-.005	.004-.005	.004-.005	-	.004-.005	.004-.004	.004-.004	.004-.004	-	.004-.004
M	M2.0.Z.AQ	Super Austenitic	200	4334	260	370	440	0.591-0.709	.002-.004	.002-.004	.002-.004	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003
		(N>20%) Stainless		4344	260	325	370	0.709-0.866	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.003	.002-.003	.002-.003	-	.002-.003
		steel		2044	260	325	370	0.866-1.063	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.003
		Annealed/quenched						1.063-1.299	.003-.005	.003-.005	.003-.005	-	.003-.004	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.299-1.575	.003-.005	.003-.005	.003-.005	-	.003-.005	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.575-2.047	.004-.005	.004-.005	.004-.005	-	.004-.005	.004-.004	.004-.004	.004-.004	-	.004-.004
								2.047-2.559	.004-.005	.004-.005	.004-.005	-	.004-.005	.004-.004	.004-.004	.004-.004	-	.004-.004
	M3.1.Z.AQ	Duplex stainless steel	230	4334	280	365	430	0.591-0.709	.002-.004	.002-.004	.002-.004	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003
		>60% ferrite (N<0.10%)		4344	280	340	385	0.709-0.866	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.003	.002-.003	.002-.003	-	.002-.003
				2044	280	330	370	0.866-1.063	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.003
S								1.063-1.299	.003-.005	.003-.005	.003-.005	-	.003-.004	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.299-1.575	.003-.005	.003-.005	.003-.005	-	.003-.005	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.575-2.047	.004-.005	.004-.005	.004-.005	-	.004-.005	.004-.004	.004-.004	.004-.004	-	.004-.004
	M3.2.Z.AQ	Duplex stainless steel	260	4334	245	310	355	0.591-0.709	.002-.004	.002-.004	.002-.004	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003
		<60% ferrite (N>0.10%)		4344	245	295	340	0.709-0.866	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.003
				2044	245	295	340	0.866-1.063	.002-.004	.002-.004	.002-.004	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.003
								1.063-1.299	.003-.005	.003-.005	.003-.005	-	.003-.004	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.299-1.575	.003-.005	.003-.005	.003-.005	-	.003-.005	.003-.004	.003-.004	.003-.004	-	.003-.004
								1.575-2.047	.004-.005	.004-.005	.004-.005	-	.004-.005	.004-.004	.004-.004	.004-.004	-	.004-.004
								2.047-2.559	.004-.005	.004-.005	.004-.005	-	.004-.005	.004-.004	.004-.004	.004-.004	-	.004-.004

Feed at hole entry should be 75% of recommended feed rate. Feed at hole exit, use 0.002 in/rev.

CoroDrill® DS20

Cutting data recommendation, inch
6-7xD

ISO	MC-Nr.	Material	HB	Grade	Cutting speed recommendations			Drill length 6xD					Drill length 7xD					
					Min.	Recom.	Max.	Drill diameter (inch)	-S5W f_n in/rev	-L5W f_n in/rev	-L6W f_n in/rev	-M7W f_n in/rev	-H5W f_n in/rev	-S5W f_n in/rev	-L5W f_n in/rev	-L6W f_n in/rev	-M7W f_n in/rev	-H5W f_n in/rev
K	K1.1.C.NS	Malleable cast iron	200	4324	460	615	725	0.591-0.709	-	.003-.004	.003-.004	.003-.005	-	-	.003-.003	.003-.003	.003-.003	.003-.004
		Low tensile strength		4334	360	495	590	0.709-0.866	-	.003-.005	.003-.005	.003-.006	-	-	.003-.004	.003-.004	.003-.005	.003-.005
				4344	590	485	460	0.866-1.063	-	.003-.005	.003-.005	.003-.007	-	-	.003-.005	.003-.005	.003-.006	.003-.006
								1.063-1.299	-	.004-.006	.004-.006	.004-.007	-	-	.004-.005	.004-.005	.004-.006	.004-.006
								1.299-1.575	-	.004-.007	.004-.007	.004-.008	-	-	.004-.006	.004-.006	.004-.007	.004-.007
								1.575-2.047	-	.005-.007	.005-.007	.005-.008	-	-	.005-.006	.005-.006	.005-.007	.005-.007
								2.047-2.559	-	.005-.007	.005-.007	.005-.008	-	-	.005-.006	.005-.006	.005-.007	.005-.007
	K2.1.C.U.T	Grey cast iron	180	4324	690	840	960	0.591-0.709	-	.003-.004	.003-.004	.003-.005	-	-	.003-.003	.003-.003	.003-.004	-
		Low tensile strength		4334	560	695	795	0.709-0.866	-	.003-.005	.003-.005	.003-.006	-	-	.003-.004	.003-.004	.003-.005	-
				4344	425	525	605	0.866-1.063	-	.003-.005	.003-.005	.003-.007	-	-	.003-.005	.003-.005	.003-.006	-
								1.063-1.299	-	.004-.006	.004-.006	.004-.007	-	-	.004-.005	.004-.005	.004-.006	-
								1.299-1.575	-	.004-.007	.004-.007	.004-.008	-	-	.004-.006	.004-.006	.004-.007	-
								1.575-2.047	-	.005-.007	.005-.007	.005-.008	-	-	.005-.006	.005-.006	.005-.007	-
	K2.2.C.U.T	Grey cast iron	245	4324	410	600	725	0.591-0.709	-	.003-.003	.003-.003	.003-.005	-	-	.003-.003	.003-.003	.003-.004	-
		High tensile strength		4334	330	475	575	0.709-0.866	-	.003-.004	.003-.004	.003-.005	-	-	.003-.003	.003-.003	.003-.005	-
				4344	245	365	440	0.866-1.063	-	.003-.005	.003-.005	.003-.006	-	-	.003-.004	.003-.004	.003-.005	-
								1.063-1.299	-	.004-.006	.004-.006	.004-.007	-	-	.004-.005	.004-.005	.004-.006	-
								1.299-1.575	-	.004-.006	.004-.006	.004-.008	-	-	.004-.005	.004-.005	.004-.006	-
								1.575-2.047	-	.005-.006	.005-.006	.005-.008	-	-	.005-.005	.005-.005	.005-.006	-
	K3.1.C.U.T	Nodular cast iron	155	4324	410	565	665	0.591-0.709	-	.003-.003	.003-.003	.003-.005	-	-	.003-.003	.003-.003	.003-.004	-
		Ferritic		4334	330	460	545	0.709-0.866	-	.003-.004	.003-.004	.003-.005	-	-	.003-.003	.003-.003	.003-.005	-
				4344	260	360	430	0.866-1.063	-	.003-.005	.003-.005	.003-.006	-	-	.003-.004	.003-.004	.003-.005	-
								1.063-1.299	-	.004-.006	.004-.006	.004-.007	-	-	.004-.005	.004-.005	.004-.006	-
								1.299-1.575	-	.004-.006	.004-.006	.004-.008	-	-	.004-.005	.004-.005	.004-.006	-
								1.575-2.047	-	.005-.006	.005-.006	.005-.008	-	-	.005-.005	.005-.005	.005-.006	-
	K3.3.C.U.T	Nodular cast iron	265	4324	360	520	620	0.591-0.709	-	.003-.003	.003-.003	.003-.005	-	-	.003-.003	.003-.003	.003-.004	-
		Pearlitic		4334	295	430	520	0.709-0.866	-	.003-.004	.003-.004	.003-.005	-	-	.003-.003	.003-.003	.003-.005	-
				4344	230	320	385	0.866-1.063	-	.003-.005	.003-.005	.003-.006	-	-	.003-.004	.003-.004	.003-.005	-
								1.063-1.299	-	.004-.006	.004-.006	.004-.007	-	-	.004-.005	.004-.005	.004-.006	-
								1.299-1.575	-	.004-.006	.004-.006	.004-.008	-	-	.004-.005	.004-.005	.004-.006	-
								1.575-2.047	-	.005-.006	.005-.006	.005-.008	-	-	.005-.005	.005-.005	.005-.006	-
	K4.2.C.U.T	Compacted graphite iron	230	4324	425	610	740	0.591-0.709	-	.003-.003	.003-.003	.003-.005	-	-	.003-.003	.003-.003	.003-.004	-
				4334	360	495	590	0.709-0.866	-	.003-.004	.003-.004	.003-.005	-	-	.003-.003	.003-.003	.003-.005	-
		High tensile strength		4344	280	375	440	0.866-1.063	-	.003-.005	.003-.005	.003-.006	-	-	.003-.004	.003-.004	.003-.005	-
			(Pearlite>90%)					1.063-1.299	-	.004-.006	.004-.006	.004-.007	-	-	.004-.005	.004-.005	.004-.006	-
								1.299-1.575	-	.004-.006	.004-.006	.004-.008	-	-	.004-.005	.004-.005	.004-.006	-
								1.575-2.047	-	.005-.006	.005-.006	.005-.008	-	-	.005-.005	.005-.005	.005-.006	-
	H1.3.Z.H.A	Extra hard steels	60	4324	100	195	250	0.591-0.709	-	.002-.003	.002-.003	.002-.003	.002-.003	-	.002-.003	.002-.003	.002-.003	-
		Hardened and		4334	100	195	250	0.709-0.866	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.003	.002-.003	.002-.003	-
		tempered		4344	100	195	250	0.866-1.063	-	.002-.004	.002-.004	.002-.004	.002-.004	-	.002-.003	.002-.003	.002-.003	-
								1.063-1.299	-	.003-.004	.003-.004	.003-.004	.003-.004	-	.003-.003	.003-.003	.003-.003	-
								1.299-1.575	-	.003-.005	.003-.005	.003-.005	.003-.005	-	.003-.004	.003-.004	.003-.004	-
								1.575-2.047	-	.004-.005	.004-.005	.004-.005	.004-.005	-	.004-.004	.004-.004	.004-.004	-
								2.047-2.559	-	.004-.005	.004-.005	.004-.005	.004-.005	-	.004-.004	.004-.004	.004-.004	-
N	N1.2.Z.AG	Aluminum based alloys	100	H13A	985	1075	1180	0.591-0.709	.002-.004	.002-.004	.002-.004	-	-	.002-.003	.002-.003	.002-.003	-	
		AlSi alloys (Si<1%)		4344	985	1075	1180	0.709-0.866	.002-.005	.002-.005	.002-.005	-	-	.002-.004	.002-.004	.002-.004	-	
								0.866-1.063	.002-.005	.002-.005	.002-.005	-	-	.002-.004	.002-.004	.002-.004	-	
								1.063-1.299	.003-.006	.003-.006	.003-.006	-	-	.003-.005	.003-.005	.003-.005	-	
								1.299-1.575	.003-.006	.003-.006	.003-.006	-	-	.003-.005	.003-.005	.003-.005	-	
								1.575-2.047	.004-.006	.004-.006	.004-.006	-	-	.004-.005	.004-.005	.004-.005	-	
								2.047-2.559	.004-.006	.004-.006	.004-.006	-	-	.004-.005	.004-.005	.004-.005	-	
	N1.3.C.U.T	Aluminum based alloys	75	H13A	820	1025	1180	0.591-0.709	.002-.004	.002-.004	.002-.004	-	-	.002-.003	.002-.003	.002-.003	-	
		AlSi cast alloys		4344	820	1025	1180	0.709-0.866	.002-.004	.002-.004	.002-.004	-	-	.002-.003	.002-.003	.002-.003	-	
			(1%< Si <13%)					0.866-1.063	.002-.005	.002-.005	.002-.005	-	-	.002-.004	.002-.004	.002-.004	-	
								1.063-1.299	.003-.006	.003-.006	.003-.006	-	-	.003-.005	.003-.005	.003-.005	-	
								1.299-1.575	.004-.006	.004-.006	.004-.006	-	-	.004-.005	.004-.005	.004-.005	-	
								1.575-2.047	.004-.006	.004-.006	.004-.006	-	-	.004-.005	.004-.005	.004-.005	-	
								2.047-2.559	.004-.006	.004-.006	.004-.006	-	-	.004-.005	.004-.005	.004-.005	-	
N3.3.U.T	N3.3.U.T	Copper based alloys	110	H13A	820	1025	1180	0.591-0.709	.002-.004	.002-.004	.002-.004	-	-	.002-.003	.002-.003	.002-.003	-	
		Free cutting copper based alloys		4344	820	1025	1180	0.709-0.866	.002-.005	.002-.005	.002-.005	-	-	.002-.004	.002-.004	.002-.004	-	
								0.866-1.063	.002-.005	.002-.005	.002-.005	-	-	.002-.004	.002-.004	.002-.004	-	
N3.3.C.U.T	N3.3.C.U.T	Leaded brass and bronzes (Pb<1%)	90	H13A	820	930	1035	0.591-0.709	.002-.004	.002-.004	.002-.004	-	-	.002-.003	.002-.003	.002-.003	-	
				4344	820													



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