DRILLING

22-2022

AUGUST 2022

METRIC

NPA

New Product Announcement

New Generation

Strong Body

High Productivity

Member IMC Group

ISCAR

SOLIDDRILL

Introducing New Extra Long Solid Carbide Drills 16XD and 20XD

NPA New Product Announcement

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Highlights

New 16XD SC Drills in New Size Ranges of 16xD Ø3-Ø20mm / 20xD Ø3-Ø16mm

Features

- 135° Point Geometry – Split point geometry for superior drilling penetration and accuracy.
- Double-Margin Design – For improved drilling stability and smooth surface finish.
- Polished Flutes - Chip evacuation is improved during deep-hole drilling when the flutes are polished.
- Coolant Holes – Cooling the cutting edges improves cutting edges tool life and chip evacuation process
- Coating –A multi-layer coating allows drilling at high speed. Excellent for drilling operations in steel (up to 45 HRC).

Potential Industries for Extra Long Solid Carbide Drills


Automotive


Oil and Gas


Heat Exchangers


Machine Tools

Click for Short Video

Availability

Inventory for the shelf items will be completed by the end of year 2022. Select items will be provided upon request.

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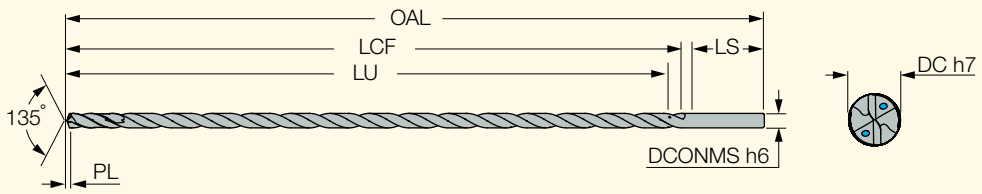
SCD-SXC16

Solid Carbide Drills with Internal Coolant Channels, Drilling Depth 16xD



Designation	Dimensions								IC908
	DC	DCONMS	OAL	LU	LCF	LS	PL	ULDR(1)	
SCD 030-055-060 SXC16	3.00	6.00	100.00	55.00	60.0	36.0	0.495	16.0	•
SCD 032-055-060 SXC16	3.20	6.00	100.00	55.00	60.0	36.0	0.528	16.0	•
SCD 033-055-060 SXC16	3.30	6.00	100.00	55.00	60.0	36.0	0.544	16.0	•
SCD 035-054-060 SXC16	3.50	6.00	100.00	54.00	60.0	36.0	0.578	16.0	•
SCD 038-069-060 SXC16	3.80	6.00	115.00	69.00	75.0	36.0	0.627	16.0	•
SCD 040-069-060 SXC16	4.00	6.00	115.00	69.00	75.0	36.0	0.660	16.0	•
SCD 042-068-060 SXC16	4.20	6.00	115.00	68.00	75.0	36.0	0.693	16.0	•
SCD 045-083-060 SXC16	4.50	6.00	130.00	83.00	90.0	36.0	0.743	16.0	•
SCD 047-082-060 SXC16	4.70	6.00	130.00	82.00	90.0	36.0	0.775	16.0	•
SCD 048-082-060 SXC16	4.80	6.00	130.00	82.00	90.0	36.0	0.792	16.0	•
SCD 050-082-060 SXC16	5.00	6.00	130.00	82.00	90.0	36.0	0.825	16.0	•
SCD 055-099-060 SXC16	5.50	6.00	150.00	99.00	108.0	36.0	0.907	16.0	•
SCD 058-099-060 SXC16	5.80	6.00	150.00	99.00	108.0	36.0	0.957	16.0	•
SCD 060-099-060 SXC16	6.00	6.00	150.00	99.00	108.0	36.0	0.990	16.0	•
SCD 065-115-080 SXC16	6.50	8.00	165.00	115.00	125.0	36.0	1.073	16.0	•
SCD 068-114-080 SXC16	6.80	8.00	165.00	114.00	125.0	36.0	1.122	16.0	•
SCD 070-114-080 SXC16	7.00	8.00	165.00	114.00	125.0	36.0	1.155	16.0	•
SCD 075-128-080 SXC16	7.50	8.00	180.00	128.00	140.0	36.0	1.238	16.0	•
SCD 078-128-080 SXC16	7.80	8.00	180.00	128.00	140.0	36.0	1.287	16.0	•
SCD 080-128-080 SXC16	8.00	8.00	180.00	128.00	140.0	36.0	1.320	16.0	•
SCD 085-147-100 SXC16	8.50	10.00	205.00	147.00	160.0	40.0	1.403	16.0	•
SCD 088-146-100 SXC16	8.80	10.00	205.00	146.00	160.0	40.0	1.452	16.0	•
SCD 090-146-100 SXC16	9.00	10.00	205.00	146.00	160.0	40.0	1.485	16.0	•
SCD 098-165-100 SXC16	9.80	10.00	225.00	165.00	180.0	40.0	1.617	16.0	•
SCD 100-165-100 SXC16	10.00	10.00	225.00	165.00	180.0	40.0	1.650	16.0	•
SCD 102-174-120 SXC16	10.20	12.00	240.00	174.00	190.0	45.0	1.683	16.0	•
SCD 108-173-120 SXC16	10.80	12.00	240.00	173.00	190.0	45.0	1.782	16.0	•
SCD 110-173-120 SXC16	11.00	12.00	240.00	173.00	190.0	45.0	1.815	16.0	•
SCD 115-197-120 SXC16	11.50	12.00	265.00	197.00	215.0	45.0	1.898	16.0	•
SCD 120-197-120 SXC16	12.00	12.00	265.00	197.00	215.0	45.0	1.980	16.0	•
SCD 123-211-140 SXC16	12.30	14.00	280.00	211.00	230.0	45.0	2.030	16.0	•
SCD 130-210-140 SXC16	13.00	14.00	280.00	210.00	230.0	45.0	2.145	16.0	•
SCD 133-225-140 SXC16	13.30	14.00	295.00	225.00	245.0	45.0	2.195	16.0	•
SCD 135-224-140 SXC16	13.50	14.00	295.00	224.00	245.0	45.0	2.228	16.0	•
SCD 140-224-140 SXC16	14.00	14.00	295.00	224.00	245.0	45.0	2.310	16.0	•
SCD 145-233-160 SXC16	14.50	16.00	305.00	233.00	255.0	48.0	2.393	16.0	•
SCD 150-232-160 SXC16	15.00	16.00	305.00	232.00	255.0	48.0	2.475	16.0	•
SCD 155-251-160 SXC16	15.50	16.00	325.00	251.00	275.0	48.0	2.558	16.0	•
SCD 160-251-160 SXC16	16.00	16.00	325.00	251.00	275.0	48.0	2.640	16.0	•
SCD 165-295-180 SXC16	16.50	18.00	370.00	295.00	320.0	48.0	2.723	16.0	•
SCD 170-294-180 SXC16	17.00	18.00	370.00	294.00	320.0	48.0	2.805	16.0	•
SCD 175-293-180 SXC16	17.50	18.00	370.00	293.00	320.0	48.0	2.888	16.0	•
SCD 180-293-180 SXC16	18.00	18.00	370.00	293.00	320.0	48.0	2.970	16.0	•
SCD 185-302-200 SXC16	18.50	20.00	380.00	302.00	330.0	50.0	3.053	16.0	•
SCD 195-320-200 SXC16	19.50	20.00	400.00	320.00	350.0	50.0	3.217	16.0	•
SCD 200-320-200 SXC16	20.00	20.00	400.00	320.00	350.0	50.0	3.300	16.0	•

(1) Usable length diameter ratio

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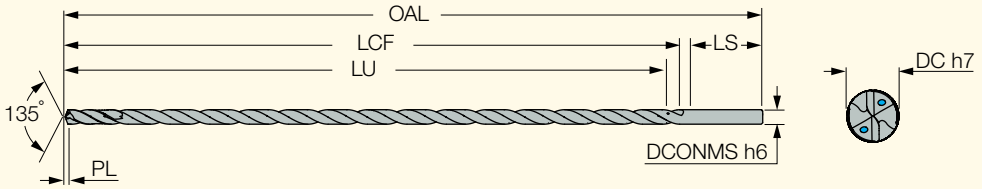
SCD-SXC20

Solid Carbide Drills with Internal Coolant Channels, Drilling Depth 20xD



Designation	Dimensions								IC908
	DC	DCONMS	OAL	LU	LCF	LS	PL	ULDR(1)	
SCD 030-075-060 SXC20	3.00	6.00	120.00	75.00	80.0	36.0	0.495	20.0	•
SCD 032-075-060 SXC20	3.20	6.00	120.00	75.00	80.0	36.0	0.528	20.0	•
SCD 033-075-060 SXC20	3.30	6.00	120.00	75.00	80.0	36.0	0.544	20.0	•
SCD 035-074-060 SXC20	3.50	6.00	120.00	74.00	80.0	36.0	0.578	20.0	•
SCD 038-084-060 SXC20	3.80	6.00	130.00	84.00	90.0	36.0	0.627	20.0	•
SCD 040-084-060 SXC20	4.00	6.00	130.00	84.00	90.0	36.0	0.660	20.0	•
SCD 042-103-060 SXC20	4.20	6.00	160.00	103.00	110.0	36.0	0.693	20.0	•
SCD 045-103-060 SXC20	4.50	6.00	160.00	103.00	110.0	36.0	0.743	20.0	•
SCD 047-112-060 SXC20	4.70	6.00	160.00	112.00	120.0	36.0	0.775	20.0	•
SCD 048-112-060 SXC20	4.80	6.00	160.00	112.00	120.0	36.0	0.792	20.0	•
SCD 050-112-060 SXC20	5.00	6.00	160.00	112.00	120.0	36.0	0.825	20.0	•
SCD 055-131-060 SXC20	5.50	6.00	185.00	131.00	140.0	36.0	0.907	20.0	•
SCD 058-131-060 SXC20	5.80	6.00	185.00	131.00	140.0	36.0	0.957	20.0	•
SCD 060-131-060 SXC20	6.00	6.00	185.00	131.00	140.0	36.0	0.990	20.0	•
SCD 065-150-080 SXC20	6.50	8.00	210.00	150.00	160.0	36.0	1.073	20.0	•
SCD 068-149-080 SXC20	6.80	8.00	210.00	149.00	160.0	36.0	1.122	20.0	•
SCD 070-149-080 SXC20	7.00	8.00	210.00	149.00	160.0	36.0	1.155	20.0	•
SCD 075-168-080 SXC20	7.50	8.00	230.00	168.00	180.0	36.0	1.238	20.0	•
SCD 078-168-080 SXC20	7.80	8.00	230.00	168.00	180.0	36.0	1.287	20.0	•
SCD 080-168-080 SXC20	8.00	8.00	230.00	168.00	180.0	36.0	1.320	20.0	•
SCD 085-182-100 SXC20	8.50	10.00	260.00	182.00	195.0	40.0	1.403	20.0	•
SCD 088-216-100 SXC20	8.80	10.00	290.00	216.00	230.0	40.0	1.452	20.0	•
SCD 090-216-100 SXC20	9.00	10.00	290.00	216.00	230.0	40.0	1.485	20.0	•
SCD 098-215-100 SXC20	9.80	10.00	290.00	215.00	230.0	40.0	1.617	20.0	•
SCD 100-215-100 SXC20	10.00	10.00	290.00	215.00	230.0	40.0	1.650	20.0	•
SCD 102-252-120 SXC20	10.20	12.00	315.00	252.00	268.0	45.0	1.683	20.0	•
SCD 108-251-120 SXC20	10.80	12.00	315.00	251.00	268.0	45.0	1.782	20.0	•
SCD 110-251-120 SXC20	11.00	12.00	315.00	251.00	268.0	45.0	1.815	20.0	•
SCD 115-250-120 SXC20	11.50	12.00	315.00	250.00	268.0	45.0	1.898	20.0	•
SCD 120-250-120 SXC20	12.00	12.00	315.00	250.00	268.0	45.0	1.980	20.0	•
SCD 123-261-140 SXC20	12.30	14.00	325.00	261.00	280.0	45.0	2.030	20.0	•
SCD 130-260-140 SXC20	13.00	14.00	325.00	260.00	280.0	45.0	2.145	20.0	•
SCD 133-285-140 SXC20	13.30	14.00	355.00	285.00	305.0	45.0	2.195	20.0	•
SCD 135-284-140 SXC20	13.50	14.00	355.00	284.00	305.0	45.0	2.228	20.0	•
SCD 140-284-140 SXC20	14.00	14.00	355.00	284.00	305.0	45.0	2.310	20.0	•
SCD 145-298-160 SXC20	14.50	16.00	370.00	298.00	320.0	48.0	2.393	20.0	•
SCD 150-297-160 SXC20	15.00	16.00	370.00	297.00	320.0	48.0	2.475	20.0	•
SCD 155-326-160 SXC20	15.50	16.00	400.00	326.00	350.0	48.0	2.558	20.0	•
SCD 160-326-160 SXC20	16.00	16.00	400.00	326.00	350.0	48.0	2.640	20.0	•

(1) Usable length diameter ratio

SOLIDDRILL

Recommended Machining Conditions for SCD-SXC16 & SCD-SXC20 Solid Carbide Drills

ISO	Material		Condition	Tensile Strength [N/mm²]	Hardness HB	Material Group No.	Cutting Speed V_c (m/min)	Cutting Diameter Feed (mm/rev) 3.0-5.0	5.0-8.0	8.0-10.0	10-16	16-20
P	Non-alloy steel and cast steel, free cutting steel	<0.25% C	Annealed	420	125	1	70-90	0.1-0.18	0.14-0.24	0.16-0.26	0.18-0.3	0.2-0.35
		≥0.25% C	Annealed	650	190	2						
		<0.55% C	Quenched and tempered	850	250	3						
		≥0.55% C	Annealed	750	220	4						
			Quenched and tempered	1000	300	5						
	Low alloy and cast steel (less than 5% of alloying elements)		Annealed	600	200	6						
			Quenched and tempered	930	275	7						
				1000	300	8						
				1200	350	9						
	High alloyed steel, cast steel and tool steel		Annealed	680	200	10	75-85					
			Quenched and tempered	1100	325	11						
	Stainless steel and cast steel		Ferritic/martensitic	680	200	12	60-70	0.08-0.14	0.1-0.18	0.12-0.2	0.14-0.22	0.16-0.24
			Martensitic	820	240	13						
M	Stainless steel and cast steel		Austenitic, duplex	600	180	14	55-65	0.06-0.14	0.08-0.16	0.1-0.18	0.12-0.2	0.14-0.24
K	Gray cast iron (GG)		Ferritic / pearlitic		180	15	80-100	0.14-0.24	0.16-0.26	0.18-0.0.3	0.2-0.35	0.25-0.45
			Pearlitic / martensitic		260	16						
	Nodular cast iron (GGG)		Ferritic		160	17						
			Pearlitic		250	18						
	Malleable cast iron		Ferritic		130	19						
			Pearlitic		230	20						
S	High temperature alloys	Fe based	Annealed		200	31	35-45	0.06-0.12	0.08-0.16	0.1-0.18	0.12-0.2	0.12-0.22
			Hardened		280	32						
		Ni or Co based	Annealed		250	33	30-40	0.06-0.12	0.08-0.16	0.1-0.18	0.12-0.2	0.12-0.22
			Hardened		350	34						
			Cast		320	35						
	Titanium alloys		Pure	RM 400	190	36	35-45	0.06-0.12	0.08-0.16	0.1-0.18	0.12-0.2	0.12-0.22
			Alpha+Beta alloys, hardened	RM 1050	310	37						

TIPS & TRICKS for DEEP HOLE DRILLING

Using a G73 peck cycle helps Chip evacuation in deep hole drilling & materials which have a poor chip formation

16xD - 50xD must utilize a Pilot hole drill

40xD - 50xD can utilize a 20xD intermediary drill if deemed necessary

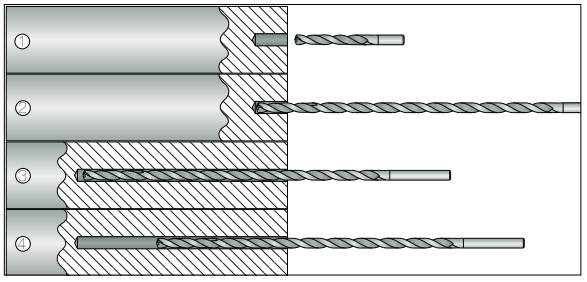
TIR & tool alignment with material are the most important factors in deep hole Drilling

Use high pressure coolant when deep hole drilling

Slow the feedrate to 50% when breaking through the material
In through holes, the tool exit should not exceed 2-3 mm.

Recommended Drilling Procedure for Deep Hole Drilling

1 Drill a pilot hole 1-2xD deep with a short drill. The pilot drill should be 0.03-0.05 mm larger than the long drill and its point angle should also be larger (over 135°).
2 Enter the pre-hole using low feed and rotate at low speed (50-100 RPM) until it engages the material.
3 Activate the coolant system and increase rotation speed to the recommended cutting parameter, maintain for 2-3 seconds, then continue at recommended drilling feed. **No pecking is required.**
4 After having reached the required depth, reduce speed to 50-100 RPM before retracting from the hole.



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