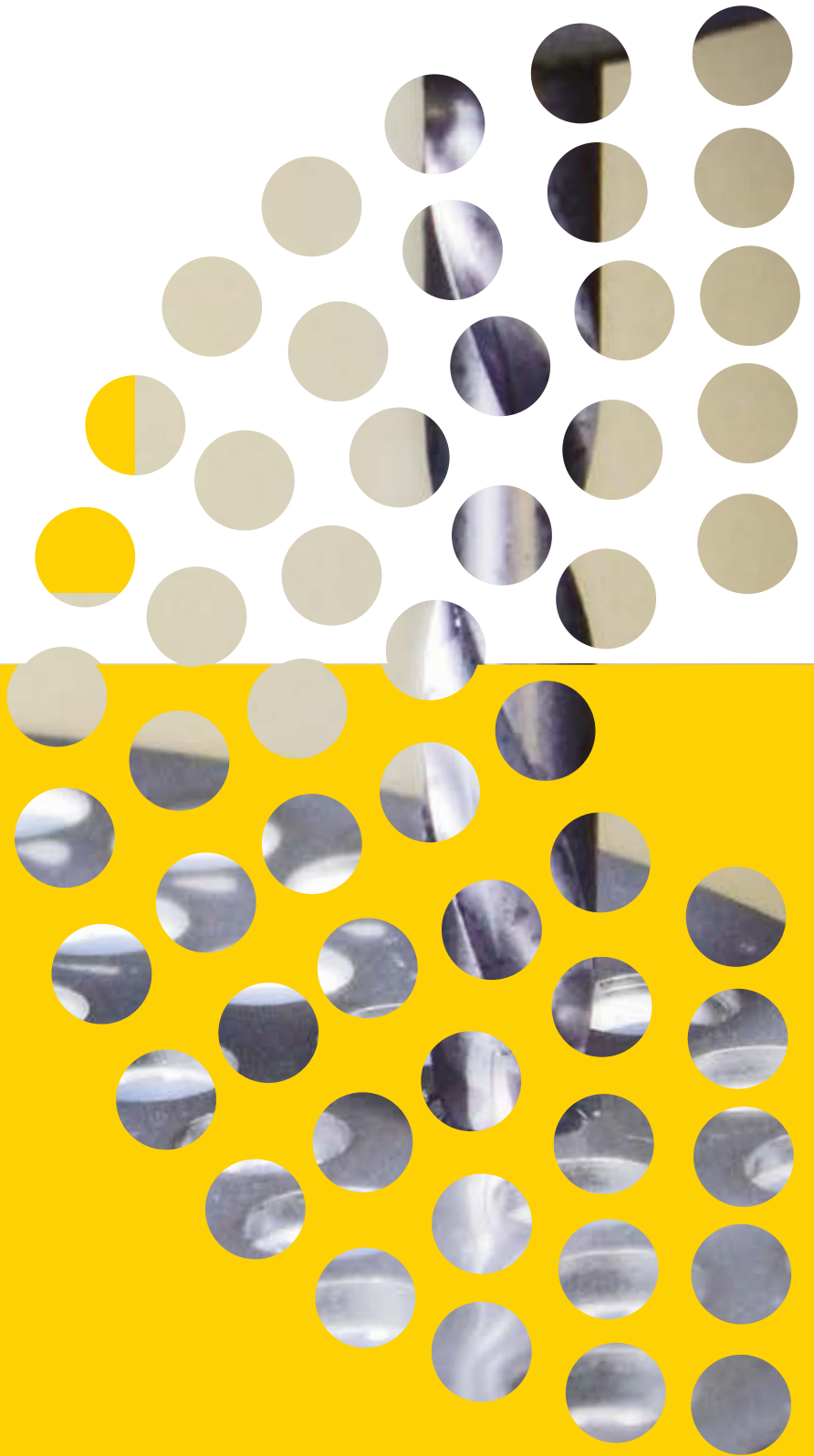


plus8

Solid carbide drills







plus8

The innovative drill
for metalworking

PLUS8, GERMAN TECHNOLOGY WITH AN ITALIAN CORE.



Production plants and R&D facilities in Europe and North America enable Cruing to supply tested and award winning products worldwide.

CHALLENGERS



WINNER 2008



JEC Americas



JEC Europe

Patent AN2014A000107



Institut für Werkzeugmaschinen



Universität Stuttgart



Fraunhofer IPA



HBG
Holz-Berufsgenossenschaft



DGVU Test



HO 082004



Sicherheit geprüft
tested safety



HO 082007



Sicherheit geprüft
tested safety



HO 122002



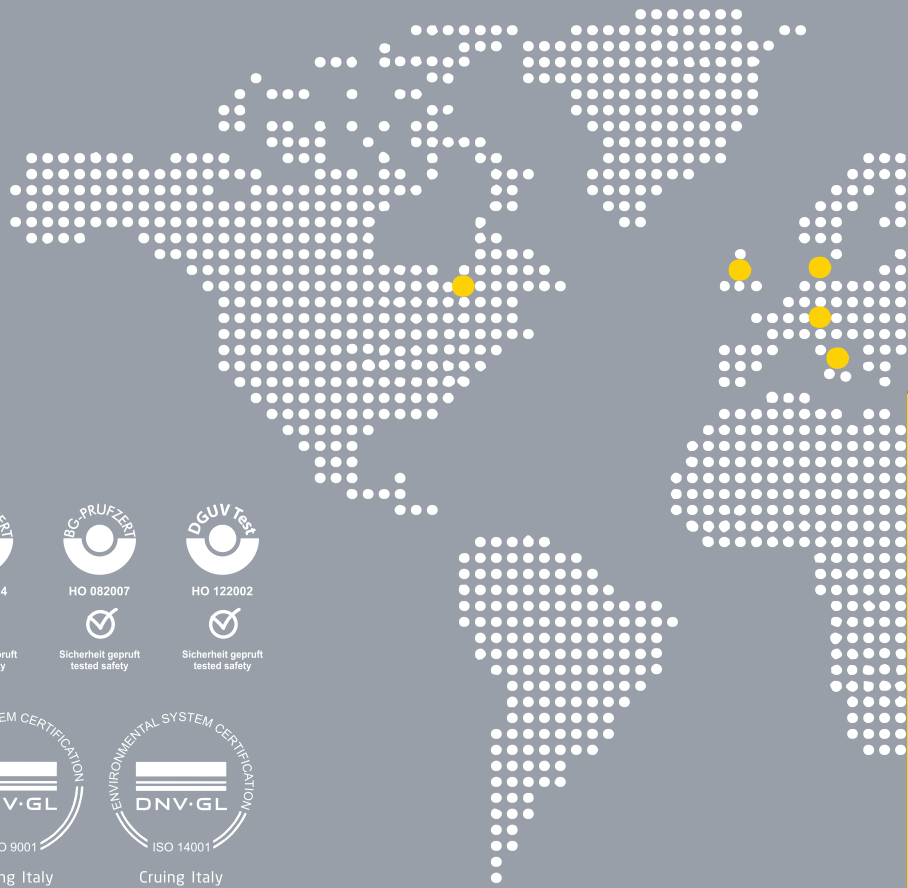
Sicherheit geprüft
tested safety



Cruing Italy

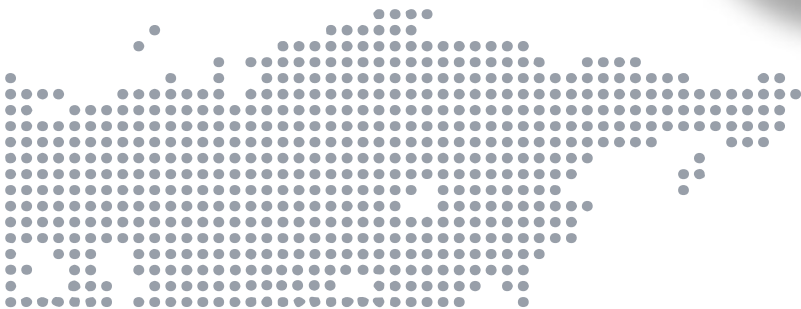


Cruing Italy

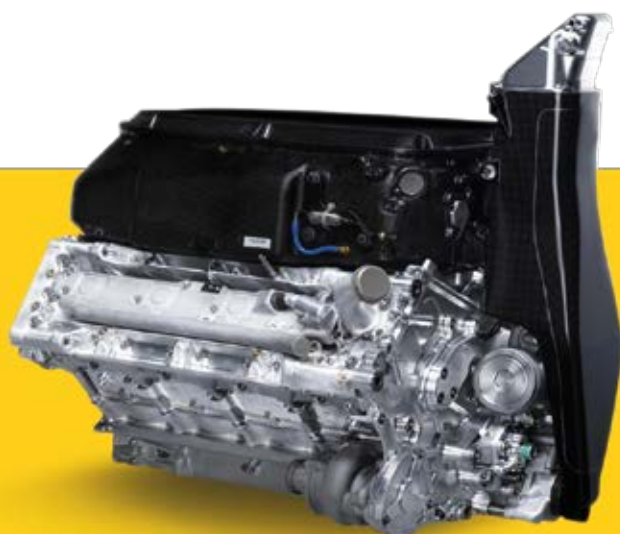


OUR EXPERIENCE TO OFFER ADVANCED SOLUTIONS

Thanks to the constant collaboration with the principle players in the Aerospace, Formula One and Composites industries, Cruing has acquired the technical skills which have given them the edge and enabled them to offer innovative solutions even in the Mechanical sector.



Cruing's experience in the **titanium**, **composite materials** and **carbon fibre** working, is at your disposal.



PLUS8, AN INNOVATIVE DRILL WITH 8 ADVANTAGES.



- 1** The **lowest cost per hole** on the market today
- 2** Tested for **high performance** on a wide range of materials and applications
- 3** The **steel body** guarantees **high flexibility** and reduces the risks of breakage
- 4** Flute design and special coating guarantee **optimal chip flow**
- 5** The specific edge geometry **reduces the cutting forces**
- 6** **Extreme reliability** and **consistant bore tolerance** in critical working conditions too
- 7** **High wear resistance** and longer tool life
- 8** The **internal cooling holes** direct coolant to the drill tip, even in deep bores



TECHNICAL FEATURES

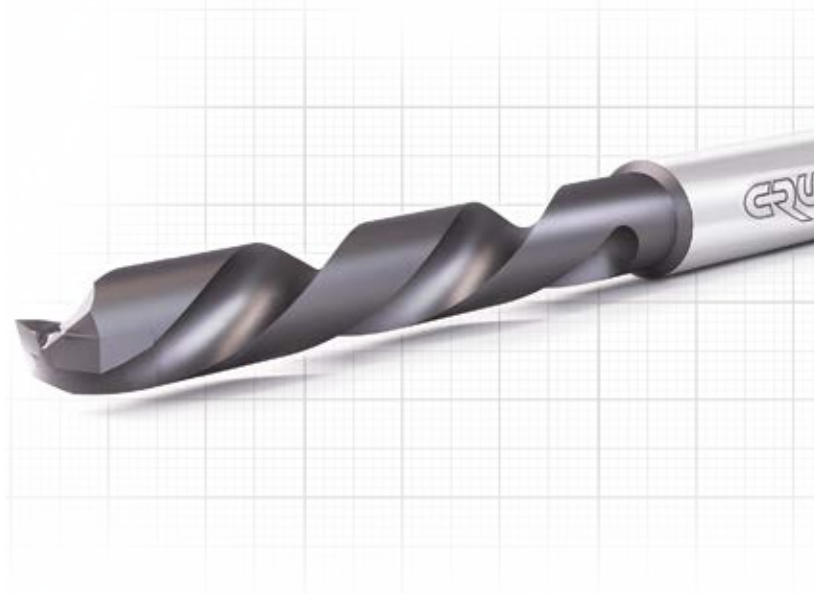
- Diameter range from 8.5 to 16 mm
- Steel body
- Submicron grade carbide cutting edge
- With external and internal coolant supply
- Special coating
- Cutting edge geometry specifically adapted to the application
- HA cylindrical shank

BENEFITS

- The lowest cost per hole on the market today
- Minimised tool management
- The steel body guarantees high flexibility and reduces the risks of breakage
- Extreme reliability and consistent bore tolerance

APPLICATIONS

- Versatile multi-purpose high-performance drill for a wide range of materials
- Hole tolerance: IT8-9
- Suitable for Metalworking & Aerospace applications

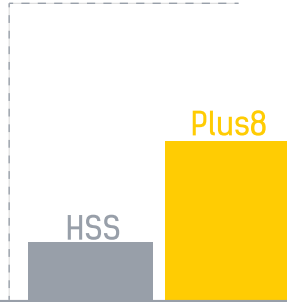


PLUS8, A FEARLESS DRILL.

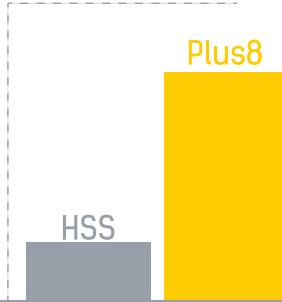
PLUS 8 vs HSS



+ 400%
PRODUCTIVITY



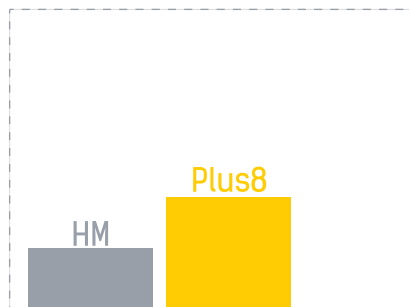
+ 800%
HOLE NUMBERS



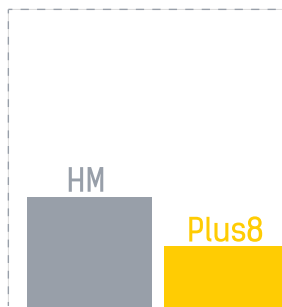
PLUS 8 vs HM



+ 200%
BREAKAGE RESISTANCE



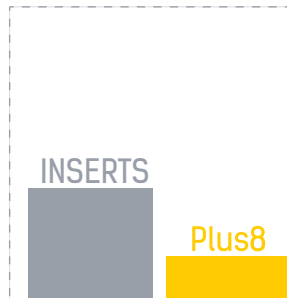
- 60%
TOOL COST









PLUS 8 vs INSERTS



- 70%
TOOL COST



TOOL PROGRAMME

							
		Plus8 HSM100 (3xD)	Plus8 HSM100 (5xD)	Plus8 HSM200 (3xD)	Plus8 HSM200 (5xD)	Plus8 HSM300 (3xD)	Plus8 HSM300 (5xD)
P	General structural steel, Non-alloy to high-alloy steel, Cast steel	★ ★ ★	★ ★ ★	★	★	★	★
M	Stainless steel, Acid-resistant steel, Duplex steel	★	★	★ ★ ★	★ ★ ★		
K	Grey cast iron, Spheroidal cast iron, Malleable cast iron	★	★	★	★	★ ★	★ ★
N	Non-ferrous metals, Aluminium, Aluminium alloys, Copper, Copper alloys						
S	Heat-resistant steels, Inconel			★ ★	★ ★		
H	Hardened steel					★ ★ ★	★ ★ ★

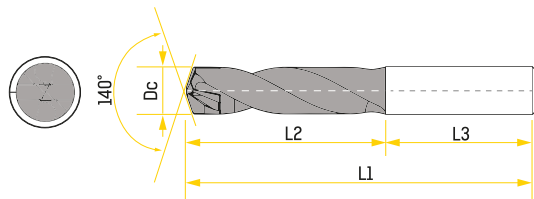
	3 x Dc	5 x Dc	3 x Dc	5 x Dc	3 x Dc	5x Dc
Drilling depth	3 x Dc	5 x Dc	3 x Dc	5 x Dc	3 x Dc	5x Dc
Drill diameter (mm)	8,5 - 16,0	8,5 - 16,0	8,5 - 16,0	8,5 - 16,0	8,5 - 16,0	8,5 - 16,0
Coating	TiAlN	TiAlN	AlCrN	AlCrN	AlTiN	AlTiN
Hole tolerance	IT8-9	IT8-9	IT8-9	IT8-9	IT8-9	IT8-9
Drill tolerance	m7	m7	m7	m7	m7	m7
Tip angle	140°	140°	140°	140°	140°	140°
Internal coolant supply	X	X	X	X	X	X
External coolant supply	X	X	X	X	X	X
Shank form	HA cylindrical (DIN 6535)	HA cylindrical (DIN 6535)	HA cylindrical (DIN 6535)	HA cylindrical (DIN 6535)	HA cylindrical (DIN 6535)	HA cylindrical (DIN 6535)

Page	8	12	18	22	28	32
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★ ★ ★ highly suitable application
 ★ ★ recommended application
 ★ possible application

Solid carbide drills for steel

Plus8 – HSM100



Technical features:

External coolant supply
 Diameter range: 8,5 - 16 mm
 Hole tolerance: IT8-9
 Drill tolerance: m7
 Tip angle: 140°
 Coating: special TiAlN coating
 Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

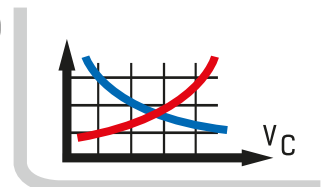
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	8,8	10	89	47	40	HSMD100-0880-3D
	9	10	89	47	40	HSMD100-0900-3D
	9,13	10	89	47	40	HSMD100-0913-3D
	9,2	10	89	47	40	HSMD100-0920-3D
	9,3	10	89	47	40	HSMD100-0930-3D
	9,5	10	89	47	40	HSMD100-0950-3D
	9,52	10	89	47	40	HSMD100-0952-3D
	9,6	10	89	47	40	HSMD100-0960-3D
	9,7	10	89	47	40	HSMD100-0970-3D
	9,8	10	89	47	40	HSMD100-0980-3D
9,92	10	89	47	40	HSMD100-0992-3D	
10	10	89	47	40	HSMD100-1000-3D	

d12	10,1	12	102	55	45	HSMD100-1010-3D
	10,2	12	102	55	45	HSMD100-1020-3D
	10,3	12	102	55	45	HSMD100-1030-3D
	10,4	12	102	55	45	HSMD100-1040-3D
	10,5	12	102	55	45	HSMD100-1050-3D
	10,72	12	102	55	45	HSMD100-1072-3D
	10,8	12	102	55	45	HSMD100-1080-3D
	11	12	102	55	45	HSMD100-1100-3D
	11,11	12	102	55	45	HSMD100-1111-3D
	11,2	12	102	55	45	HSMD100-1120-3D
	11,5	12	102	55	45	HSMD100-1150-3D
	11,55	12	102	55	45	HSMD100-1155-3D
	11,7	12	102	55	45	HSMD100-1170-3D
	11,8	12	102	55	45	HSMD100-1180-3D
	11,91	12	102	55	45	HSMD100-1191-3D
12	12	102	55	45	HSMD100-1200-3D	

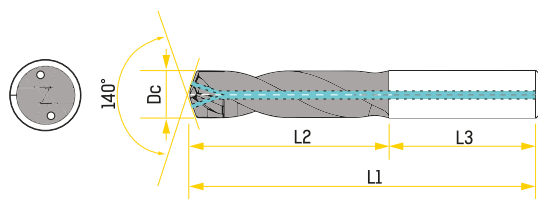
Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

d16

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12,25	16	115	65	48	HSM100-1225-3D
12,3	16	115	65	48	HSM100-1230-3D
12,5	16	115	65	48	HSM100-1250-3D
12,6	16	115	65	48	HSM100-1260-3D
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13,8	16	115	65	48	HSM100-1380-3D
14	16	115	65	48	HSM100-1400-3D
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14,23	16	115	65	48	HSM100-1423-3D
14,5	16	115	65	48	HSM100-1450-3D
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14,8	16	115	65	48	HSM100-1480-3D
15	16	115	65	48	HSM100-1500-3D
15,5	16	115	65	48	HSM100-1550-3D
15,6	16	115	65	48	HSM100-1560-3D
15,7	16	115	65	48	HSM100-1570-3D
15,8	16	115	65	48	HSM100-1580-3D
15,87	16	115	65	48	HSM100-1587-3D
16	16	115	65	48	HSM100-1600-3D



Plus8 – HSM100



Technical features:

- Internal coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special TiAlN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

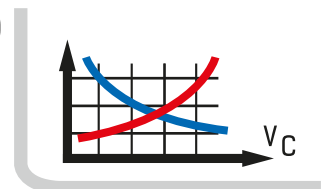
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	8,8	10	89	47	40	HSMD100-0880-3D-C
	9	10	89	47	40	HSMD100-0900-3D-C
	9,13	10	89	47	40	HSMD100-0913-3D-C
	9,2	10	89	47	40	HSMD100-0920-3D-C
	9,3	10	89	47	40	HSMD100-0930-3D-C
	9,5	10	89	47	40	HSMD100-0950-3D-C
	9,52	10	89	47	40	HSMD100-0952-3D-C
	9,6	10	89	47	40	HSMD100-0960-3D-C
	9,7	10	89	47	40	HSMD100-0970-3D-C
	9,8	10	89	47	40	HSMD100-0980-3D-C
9,92	10	89	47	40	HSMD100-0992-3D-C	
10	10	89	47	40	HSMD100-1000-3D-C	

d12	10,1	12	102	55	45	HSMD100-1010-3D-C
	10,2	12	102	55	45	HSMD100-1020-3D-C
	10,3	12	102	55	45	HSMD100-1030-3D-C
	10,4	12	102	55	45	HSMD100-1040-3D-C
	10,5	12	102	55	45	HSMD100-1050-3D-C
	10,72	12	102	55	45	HSMD100-1072-3D-C
	10,8	12	102	55	45	HSMD100-1080-3D-C
	11	12	102	55	45	HSMD100-1100-3D-C
	11,11	12	102	55	45	HSMD100-1111-3D-C
	11,2	12	102	55	45	HSMD100-1120-3D-C
	11,5	12	102	55	45	HSMD100-1150-3D-C
	11,55	12	102	55	45	HSMD100-1155-3D-C
	11,7	12	102	55	45	HSMD100-1170-3D-C
	11,8	12	102	55	45	HSMD100-1180-3D-C
	11,91	12	102	55	45	HSMD100-1191-3D-C
12	12	102	55	45	HSMD100-1200-3D-C	

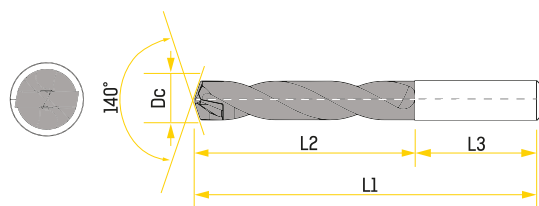
Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

d16

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12,5	16	115	65	48	HSMD100-1250-3D-C
12,6	16	115	65	48	HSMD100-1260-3D-C
12,7	16	115	65	48	HSMD100-1270-3D-C
12,8	16	115	65	48	HSMD100-1280-3D-C
13	16	115	65	48	HSMD100-1300-3D-C
13,3	16	115	65	48	HSMD100-1330-3D-C
13,5	16	115	65	48	HSMD100-1350-3D-C
13,7	16	115	65	48	HSMD100-1370-3D-C
13,8	16	115	65	48	HSMD100-1380-3D-C
14	16	115	65	48	HSMD100-1400-3D-C
14,1	16	115	65	48	HSMD100-1410-3D-C
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14,5	16	115	65	48	HSMD100-1450-3D-C
14,75	16	115	65	48	HSMD100-1475-3D-C
14,8	16	115	65	48	HSMD100-1480-3D-C
15	16	115	65	48	HSMD100-1500-3D-C
15,5	16	115	65	48	HSMD100-1550-3D-C
15,6	16	115	65	48	HSMD100-1560-3D-C
15,7	16	115	65	48	HSMD100-1570-3D-C
15,8	16	115	65	48	HSMD100-1580-3D-C
15,87	16	115	65	48	HSMD100-1587-3D-C
16	16	115	65	48	HSMD100-1600-3D-C



Plus8 – HSM100



Technical features:

- External coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special TiAlN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

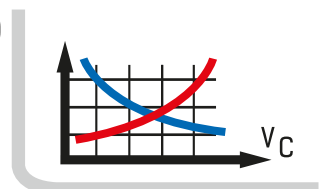
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	8,8	10	103	61	40	HSM100-0880-5D
	9	10	103	61	40	HSM100-0900-5D
	9,13	10	103	61	40	HSM100-0913-5D
	9,2	10	103	61	40	HSM100-0920-5D
	9,3	10	103	61	40	HSM100-0930-5D
	9,5	10	103	61	40	HSM100-0950-5D
	9,52	10	103	61	40	HSM100-0952-5D
	9,6	10	103	61	40	HSM100-0960-5D
	9,7	10	103	61	40	HSM100-0970-5D
	9,8	10	103	61	40	HSM100-0980-5D
9,92	10	103	61	40	HSM100-0992-5D	
10	10	103	61	40	HSM100-1000-5D	

d12	10,1	12	118	71	45	HSM100-1010-5D
	10,2	12	118	71	45	HSM100-1020-5D
	10,3	12	118	71	45	HSM100-1030-5D
	10,4	12	118	71	45	HSM100-1040-5D
	10,5	12	118	71	45	HSM100-1050-5D
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	11,7	12	118	71	45	HSM100-1170-5D
	11,8	12	118	71	45	HSM100-1180-5D
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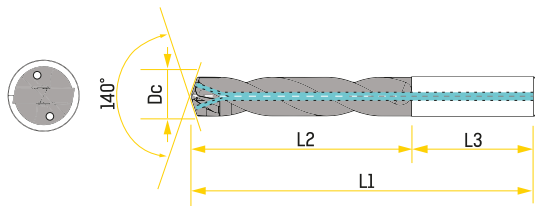
Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

d16

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12,3	16	133	83	48	HSMD100-1230-5D
12,5	16	133	83	48	HSMD100-1250-5D
12,6	16	133	83	48	HSMD100-1260-5D
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14,1	16	133	83	48	HSMD100-1410-5D
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15,8	16	133	83	48	HSMD100-1580-5D
15,87	16	133	83	48	HSMD100-1587-5D
16	16	133	83	48	HSMD100-1600-5D



Plus8 – HSM100



Technical features:

- Internal coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special TiAlN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

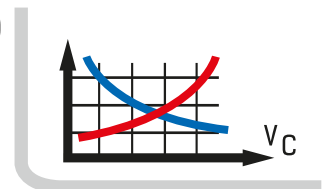
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	8,8	10	103	61	40	HSM100-0880-5D-C
	9	10	103	61	40	HSM100-0900-5D-C
	9,13	10	103	61	40	HSM100-0913-5D-C
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	9,5	10	103	61	40	HSM100-0950-5D-C
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	9,8	10	103	61	40	HSM100-0980-5D-C
9,92	10	103	61	40	HSM100-0992-5D-C	
10	10	103	61	40	HSM100-1000-5D-C	

d12	10,1	12	118	71	45	HSM100-1010-5D-C
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	10,72	12	118	71	45	HSM100-1072-5D-C
	10,8	12	118	71	45	HSM100-1080-5D-C
	11	12	118	71	45	HSM100-1100-5D-C
	11,11	12	118	71	45	HSM100-1111-5D-C
	11,2	12	118	71	45	HSM100-1120-5D-C
	11,5	12	118	71	45	HSM100-1150-5D-C
	11,55	12	118	71	45	HSM100-1155-5D-C
	11,7	12	118	71	45	HSM100-1170-5D-C
	11,8	12	118	71	45	HSM100-1180-5D-C
	11,91	12	118	71	45	HSM100-1191-5D-C
12	12	118	71	45	HSM100-1200-5D-C	

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

d16

12,1	16	133	83	48	HSM100-1210-5D-C
12,25	16	133	83	48	HSM100-1225-5D-C
12,3	16	133	83	48	HSM100-1230-5D-C
12,5	16	133	83	48	HSM100-1250-5D-C
12,6	16	133	83	48	HSM100-1260-5D-C
12,7	16	133	83	48	HSM100-1270-5D-C
12,8	16	133	83	48	HSM100-1280-5D-C
13	16	133	83	48	HSM100-1300-5D-C
13,3	16	133	83	48	HSM100-1330-5D-C
13,5	16	133	83	48	HSM100-1350-5D-C
13,7	16	133	83	48	HSM100-1370-5D-C
13,8	16	133	83	48	HSM100-1380-5D-C
14	16	133	83	48	HSM100-1400-5D-C
14,1	16	133	83	48	HSM100-1410-5D-C
14,23	16	133	83	48	HSM100-1423-5D-C
14,5	16	133	83	48	HSM100-1450-5D-C
14,75	16	133	83	48	HSM100-1475-5D-C
14,8	16	133	83	48	HSM100-1480-5D-C
15	16	133	83	48	HSM100-1500-5D-C
15,5	16	133	83	48	HSM100-1550-5D-C
15,6	16	133	83	48	HSM100-1560-5D-C
15,7	16	133	83	48	HSM100-1570-5D-C
15,8	16	133	83	48	HSM100-1580-5D-C
15,87	16	133	83	48	HSM100-1587-5D-C
16	16	133	83	48	HSM100-1600-5D-C



Plus8 – HSM100 (3xD – 5xD)

Metric machining values

		Diameter 8.5 – 12 mm		Diameter 12.01 – 16 mm		
		BRINELL HARDNESS HB	CUTTING SPEED vc m/min	RECOMMENDED FEED fn mm/rev	CUTTING SPEED vc m/min	RECOMMENDED FEED fn mm/rev
P	General structural steel	≤ 180	45 – 100	0.05– 0.15	45– 100	0.08 – 0.15
	Non-alloy to high-alloy steel, Cast steel	180 – 280	35 – 100	0.05– 0.15	35 – 100	0.08 – 0.15
		280 – 350	35 – 100	0.05– 0.15	35 – 100	0.08 – 0.15
M	Stainless steel	150 – 270	15 – 30	0.03– 0.10	15 – 30	0.05 – 0.10
K	Ductile cast iron	110 – 270	50 – 80	0.08 – 0.15	50 – 80	0.10 – 0.15
	Grey cast iron	150 – 300	50 – 80	0.08 – 0.15	50 – 80	0.10 – 0.15
	Spheroidal cast iron	120 – 300	50 – 80	0.08 – 0.15	50 – 80	0.10 – 0.15
S	Heat-resistant alloys, Inconel	25 – 50 HRC				
N	Aluminium	40 – 150				
H	Hardened steel	43 – 60 HRC				

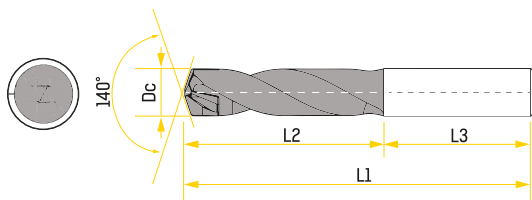
The machining values are indicative and depend on working conditions

Imperial machining values

		Diameter 8.5 - 12 mm (0.335 - 0.472 inch)			Diameter 12.01 - 16 mm (0.473 - 0.63 inch)	
		BRINELL HARDNESS HB	CUTTING SPEED vc ft/min	RECOMMENDED FEED fn inch/rev	CUTTING SPEED vc ft/min	RECOMMENDED FEED fn inch/rev
P	General structural steel	≤ 180	150 - 330	.002 - .006	150 - 330	.003 - .006
	Non-alloy to high-alloy steel, Cast steel	180 - 280	120 - 330	.002 - .006	120 - 330	.003 - .006
		280 - 350	120 - 330	.002 - .006	120 - 330	.003 - .006
M	Stainless steel	150 - 270	50 - 100	.001 - .004	50 - 100	.002 - .004
K	Ductile cast iron	110 - 270	160 - 260	.003 - .006	160 - 260	.004 - .006
	Grey cast iron	150 - 300	160 - 260	.003 - .006	160 - 260	.004 - .006
	Spheroidal cast iron	120 - 300	160 - 260	.003 - .006	160 - 260	.004 - .006
S	Heat-resistant alloys, Inconel	25 - 50 HRC				
N	Aluminium	40 - 150				
H	Hardened steel	43 - 60 HRC				

The machining values are indicative and depend on working conditions

Plus8 – HSM200



Technical features:

- External coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special AlCrN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

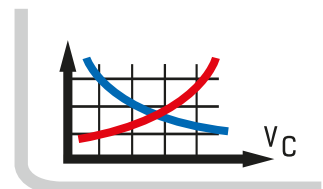
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	8,6	10	89	47	40	HSMD200-0860-3D
	8,73	10	89	47	40	HSMD200-0873-3D
	8,8	10	89	47	40	HSMD200-0880-3D
	9	10	89	47	40	HSMD200-0900-3D
	9,13	10	89	47	40	HSMD200-0913-3D
	9,2	10	89	47	40	HSMD200-0920-3D
	9,3	10	89	47	40	HSMD200-0930-3D
	9,5	10	89	47	40	HSMD200-0950-3D
	9,52	10	89	47	40	HSMD200-0952-3D
	9,6	10	89	47	40	HSMD200-0960-3D
	9,7	10	89	47	40	HSMD200-0970-3D
	9,8	10	89	47	40	HSMD200-0980-3D
9,92	10	89	47	40	HSMD200-0992-3D	
10	10	89	47	40	HSMD200-1000-3D	

d12	10,1	12	102	55	45	HSMD200-1010-3D
	10,2	12	102	55	45	HSMD200-1020-3D
	10,3	12	102	55	45	HSMD200-1030-3D
	10,4	12	102	55	45	HSMD200-1040-3D
	10,5	12	102	55	45	HSMD200-1050-3D
	10,72	12	102	55	45	HSMD200-1072-3D
	10,8	12	102	55	45	HSMD200-1080-3D
	11	12	102	55	45	HSMD200-1100-3D
	11,11	12	102	55	45	HSMD200-1111-3D
	11,2	12	102	55	45	HSMD200-1120-3D
	11,5	12	102	55	45	HSMD200-1150-3D
	11,55	12	102	55	45	HSMD200-1155-3D
	11,7	12	102	55	45	HSMD200-1170-3D
	11,8	12	102	55	45	HSMD200-1180-3D
	11,91	12	102	55	45	HSMD200-1191-3D
12	12	102	55	45	HSMD200-1200-3D	

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

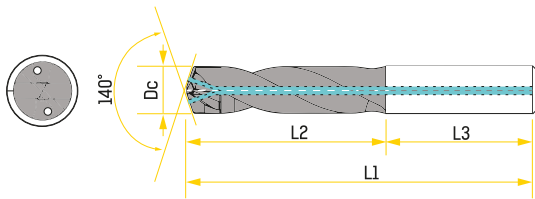
d16

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12,25	16	115	65	48	HSMD200-1225-3D
12,3	16	115	65	48	HSMD200-1230-3D
12,5	16	115	65	48	HSMD200-1250-3D
12,6	16	115	65	48	HSMD200-1260-3D
12,7	16	115	65	48	HSMD200-1270-3D
12,8	16	115	65	48	HSMD200-1280-3D
13	16	115	65	48	HSMD200-1300-3D
13,3	16	115	65	48	HSMD200-1330-3D
13,5	16	115	65	48	HSMD200-1350-3D
13,7	16	115	65	48	HSMD200-1370-3D
13,8	16	115	65	48	HSMD200-1380-3D
14	16	115	65	48	HSMD200-1400-3D
14,1	16	115	65	48	HSMD200-1410-3D
14,23	16	115	65	48	HSMD200-1423-3D
14,5	16	115	65	48	HSMD200-1450-3D
14,75	16	115	65	48	HSMD200-1475-3D
14,8	16	115	65	48	HSMD200-1480-3D
15	16	115	65	48	HSMD200-1500-3D
15,5	16	115	65	48	HSMD200-1550-3D
15,6	16	115	65	48	HSMD200-1560-3D
15,7	16	115	65	48	HSMD200-1570-3D
15,8	16	115	65	48	HSMD200-1580-3D
15,87	16	115	65	48	HSMD200-1587-3D
16	16	115	65	48	HSMD200-1600-3D



Solid carbide drills for stainless steel

Plus8 – HSM200



Technical features:

- Internal coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special AlCrN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

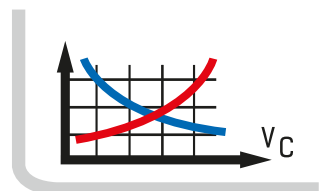
d10	8,5	10	89	47	40	HSMD200-0850-3D-C
	8,6	10	89	47	40	HSMD200-0860-3D-C
	8,73	10	89	47	40	HSMD200-0873-3D-C
	8,8	10	89	47	40	HSMD200-0880-3D-C
	9	10	89	47	40	HSMD200-0900-3D-C
	9,13	10	89	47	40	HSMD200-0913-3D-C
	9,2	10	89	47	40	HSMD200-0920-3D-C
	9,3	10	89	47	40	HSMD200-0930-3D-C
	9,5	10	89	47	40	HSMD200-0950-3D-C
	9,52	10	89	47	40	HSMD200-0952-3D-C
	9,6	10	89	47	40	HSMD200-0960-3D-C
	9,7	10	89	47	40	HSMD200-0970-3D-C
	9,8	10	89	47	40	HSMD200-0980-3D-C
9,92	10	89	47	40	HSMD200-0992-3D-C	
10	10	89	47	40	HSMD200-1000-3D-C	

d12	10,1	12	102	55	45	HSMD200-1010-3D-C
	10,2	12	102	55	45	HSMD200-1020-3D-C
	10,3	12	102	55	45	HSMD200-1030-3D-C
	10,4	12	102	55	45	HSMD200-1040-3D-C
	10,5	12	102	55	45	HSMD200-1050-3D-C
	10,72	12	102	55	45	HSMD200-1072-3D-C
	10,8	12	102	55	45	HSMD200-1080-3D-C
	11	12	102	55	45	HSMD200-1100-3D-C
	11,11	12	102	55	45	HSMD200-1111-3D-C
	11,2	12	102	55	45	HSMD200-1120-3D-C
	11,5	12	102	55	45	HSMD200-1150-3D-C
	11,55	12	102	55	45	HSMD200-1155-3D-C
	11,7	12	102	55	45	HSMD200-1170-3D-C
	11,8	12	102	55	45	HSMD200-1180-3D-C
	11,91	12	102	55	45	HSMD200-1191-3D-C
12	12	102	55	45	HSMD200-1200-3D-C	

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

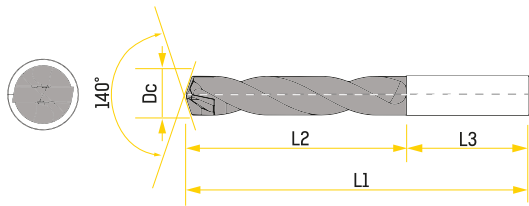
d16

12,1	16	115	65	48	HSMD200-1210-3D-C
12,25	16	115	65	48	HSMD200-1225-3D-C
12,3	16	115	65	48	HSMD200-1230-3D-C
12,5	16	115	65	48	HSMD200-1250-3D-C
12,6	16	115	65	48	HSMD200-1260-3D-C
12,7	16	115	65	48	HSMD200-1270-3D-C
12,8	16	115	65	48	HSMD200-1280-3D-C
13	16	115	65	48	HSMD200-1300-3D-C
13,3	16	115	65	48	HSMD200-1330-3D-C
13,5	16	115	65	48	HSMD200-1350-3D-C
13,7	16	115	65	48	HSMD200-1370-3D-C
13,8	16	115	65	48	HSMD200-1380-3D-C
14	16	115	65	48	HSMD200-1400-3D-C
14,1	16	115	65	48	HSMD200-1410-3D-C
14,23	16	115	65	48	HSMD200-1423-3D-C
14,5	16	115	65	48	HSMD200-1450-3D-C
14,75	16	115	65	48	HSMD200-1475-3D-C
14,8	16	115	65	48	HSMD200-1480-3D-C
15	16	115	65	48	HSMD200-1500-3D-C
15,5	16	115	65	48	HSMD200-1550-3D-C
15,6	16	115	65	48	HSMD200-1560-3D-C
15,7	16	115	65	48	HSMD200-1570-3D-C
15,8	16	115	65	48	HSMD200-1580-3D-C
15,87	16	115	65	48	HSMD200-1587-3D-C
16	16	115	65	48	HSMD200-1600-3D-C



Solid carbide drills for stainless steel

Plus8 – HSM200



Technical features:

- External coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special AlCrN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

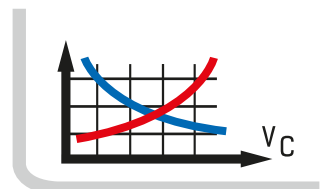
d10	8,5	10	103	61	40	HSM200-0850-5D
	8,6	10	103	61	40	HSM200-0860-5D
	8,73	10	103	61	40	HSM200-0873-5D
	8,8	10	103	61	40	HSM200-0880-5D
	9	10	103	61	40	HSM200-0900-5D
	9,13	10	103	61	40	HSM200-0913-5D
	9,2	10	103	61	40	HSM200-0920-5D
	9,3	10	103	61	40	HSM200-0930-5D
	9,5	10	103	61	40	HSM200-0950-5D
	9,52	10	103	61	40	HSM200-0952-5D
	9,6	10	103	61	40	HSM200-0960-5D
	9,7	10	103	61	40	HSM200-0970-5D
	9,8	10	103	61	40	HSM200-0980-5D
9,92	10	103	61	40	HSM200-0992-5D	
10	10	103	61	40	HSM200-1000-5D	

d12	10,1	12	118	71	45	HSM200-1010-5D
	10,2	12	118	71	45	HSM200-1020-5D
	10,3	12	118	71	45	HSM200-1030-5D
	10,4	12	118	71	45	HSM200-1040-5D
	10,5	12	118	71	45	HSM200-1050-5D
	10,72	12	118	71	45	HSM200-1072-5D
	10,8	12	118	71	45	HSM200-1080-5D
	11	12	118	71	45	HSM200-1100-5D
	11,11	12	118	71	45	HSM200-1111-5D
	11,2	12	118	71	45	HSM200-1120-5D
	11,5	12	118	71	45	HSM200-1150-5D
	11,55	12	118	71	45	HSM200-1155-5D
	11,7	12	118	71	45	HSM200-1170-5D
	11,8	12	118	71	45	HSM200-1180-5D
	11,91	12	118	71	45	HSM200-1191-5D
12	12	118	71	45	HSM200-1200-5D	

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

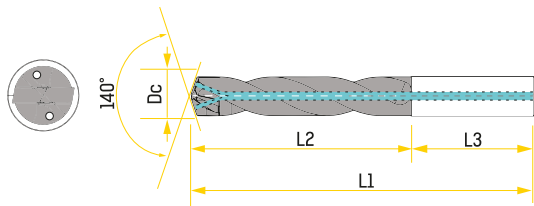
d16

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12,25	16	133	83	48	HSMD200-1225-5D
12,3	16	133	83	48	HSMD200-1230-5D
12,5	16	133	83	48	HSMD200-1250-5D
12,6	16	133	83	48	HSMD200-1260-5D
12,7	16	133	83	48	HSMD200-1270-5D
12,8	16	133	83	48	HSMD200-1280-5D
13	16	133	83	48	HSMD200-1300-5D
13,3	16	133	83	48	HSMD200-1330-5D
13,5	16	133	83	48	HSMD200-1350-5D
13,7	16	133	83	48	HSMD200-1370-5D
13,8	16	133	83	48	HSMD200-1380-5D
14	16	133	83	48	HSMD200-1400-5D
14,1	16	133	83	48	HSMD200-1410-5D
14,23	16	133	83	48	HSMD200-1423-5D
14,5	16	133	83	48	HSMD200-1450-5D
14,75	16	133	83	48	HSMD200-1475-5D
14,8	16	133	83	48	HSMD200-1480-5D
15	16	133	83	48	HSMD200-1500-5D
15,5	16	133	83	48	HSMD200-1550-5D
15,6	16	133	83	48	HSMD200-1560-5D
15,7	16	133	83	48	HSMD200-1570-5D
15,8	16	133	83	48	HSMD200-1580-5D
15,87	16	133	83	48	HSMD200-1587-5D
16	16	133	83	48	HSMD200-1600-5D



Solid carbide drills for stainless steel

Plus8 – HSM200



Technical features:

- Internal coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special AlCrN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

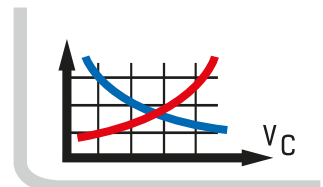
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	8,6	10	103	61	40	HSMD200-0860-5D-C
	8,73	10	103	61	40	HSMD200-0873-5D-C
	8,8	10	103	61	40	HSMD200-0880-5D-C
	9	10	103	61	40	HSMD200-0900-5D-C
	9,13	10	103	61	40	HSMD200-0913-5D-C
	9,2	10	103	61	40	HSMD200-0920-5D-C
	9,3	10	103	61	40	HSMD200-0930-5D-C
	9,5	10	103	61	40	HSMD200-0950-5D-C
	9,52	10	103	61	40	HSMD200-0952-5D-C
	9,6	10	103	61	40	HSMD200-0960-5D-C
	9,7	10	103	61	40	HSMD200-0970-5D-C
	9,8	10	103	61	40	HSMD200-0980-5D-C
9,92	10	103	61	40	HSMD200-0992-5D-C	
10	10	103	61	40	HSMD200-1000-5D-C	

d12	10,1	12	118	71	45	HSMD200-1010-5D-C
	10,2	12	118	71	45	HSMD200-1020-5D-C
	10,3	12	118	71	45	HSMD200-1030-5D-C
	10,4	12	118	71	45	HSMD200-1040-5D-C
	10,5	12	118	71	45	HSMD200-1050-5D-C
	10,72	12	118	71	45	HSMD200-1072-5D-C
	10,8	12	118	71	45	HSMD200-1080-5D-C
	11	12	118	71	45	HSMD200-1100-5D-C
	11,11	12	118	71	45	HSMD200-1111-5D-C
	11,2	12	118	71	45	HSMD200-1120-5D-C
	11,5	12	118	71	45	HSMD200-1150-5D-C
	11,55	12	118	71	45	HSMD200-1155-5D-C
	11,7	12	118	71	45	HSMD200-1170-5D-C
	11,8	12	118	71	45	HSMD200-1180-5D-C
	11,91	12	118	71	45	HSMD200-1191-5D-C
12	12	118	71	45	HSMD200-1200-5D-C	

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

d16

12,1	16	133	83	48	HSMD200-1210-5D-C
12,25	16	133	83	48	HSMD200-1225-5D-C
12,3	16	133	83	48	HSMD200-1230-5D-C
12,5	16	133	83	48	HSMD200-1250-5D-C
12,6	16	133	83	48	HSMD200-1260-5D-C
12,7	16	133	83	48	HSMD200-1270-5D-C
12,8	16	133	83	48	HSMD200-1280-5D-C
13	16	133	83	48	HSMD200-1300-5D-C
13,3	16	133	83	48	HSMD200-1330-5D-C
13,5	16	133	83	48	HSMD200-1350-5D-C
13,7	16	133	83	48	HSMD200-1370-5D-C
13,8	16	133	83	48	HSMD200-1380-5D-C
14	16	133	83	48	HSMD200-1400-5D-C
14,1	16	133	83	48	HSMD200-1410-5D-C
14,23	16	133	83	48	HSMD200-1423-5D-C
14,5	16	133	83	48	HSMD200-1450-5D-C
14,75	16	133	83	48	HSMD200-1475-5D-C
14,8	16	133	83	48	HSMD200-1480-5D-C
15	16	133	83	48	HSMD200-1500-5D-C
15,5	16	133	83	48	HSMD200-1550-5D-C
15,6	16	133	83	48	HSMD200-1560-5D-C
15,7	16	133	83	48	HSMD200-1570-5D-C
15,8	16	133	83	48	HSMD200-1580-5D-C
15,87	16	133	83	48	HSMD200-1587-5D-C
16	16	133	83	48	HSMD200-1600-5D-C



Plus8 – HSM200 (3xD – 5xD)

Metric machining values

		Diameter 8.5 – 12 mm			Diameter 12.01 – 16 mm	
		BRINELL HARDNESS HB	CUTTING SPEED vc m/min	RECOMMENDED FEED fn mm/rev	CUTTING SPEED vc m/min	RECOMMENDED FEED fn mm/rev
P	General structural steel	≤ 180	45 – 80	0.05 – 0.15	45 – 80	0.05 – 0.15
	Non-alloy to high-alloy steel, Cast steel	180 – 280	40 – 80	0.05 – 0.15	40 – 80	0.08 – 0.15
		280 – 350	40 – 80	0.05 – 0.15	40 – 80	0.08 – 0.15
M	Stainless steel	150 – 270	20 – 45	0.03 – 0.10	30 – 50	0.05 – 0.10
K	Ductile cast iron	110 – 270	70 – 100	0.08 – 0.15	70 – 100	0.10 – 0.15
	Grey cast iron	150 – 300	50 – 100	0.08 – 0.15	50 – 100	0.10 – 0.15
	Spheroidal cast iron	120 – 300	50 – 100	0.08 – 0.15	50 – 100	0.10 – 0.15
S	Heat-resistant alloys, Inconel	25 – 50 HRC	30 – 50	0.05 – 0.08	30 – 50	0.08 – 0.10
N	Aluminium	40 – 150				
H	Hardened steel	43 – 60 HRC				

The machining values are indicative and depend on working conditions

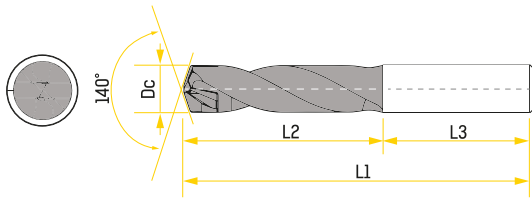
Imperial machining values

		Diameter 8.5 - 12 mm (0.335 - 0.472 inch)			Diameter 12.01 - 16 mm (0.473 - 0.63 inch)	
		BRINELL HARDNESS HB	CUTTING SPEED vc ft/min	RECOMMENDED FEED fn inch/rev	CUTTING SPEED vc ft/min	RECOMMENDED FEED fn inch/rev
P	General structural steel	≤ 180	150 - 260	.002 - .006	150 - 260	.002 - .006
	Non-alloy to high-alloy steel, Cast steel	180 - 280	130 - 260	.002 - .006	130 - 260	.003 - .006
		280 - 350	130 - 260	.002 - .006	130 - 260	.003 - .006
M	Stainless steel	150 - 270	60 - 150	.001- .004	100 - 160	.002 - .004
K	Ductile cast iron	110 - 270	230 - 330	.003 - .006	230 - 330	.004 - .006
	Grey cast iron	150 - 300	160 - 330	.003 - .006	160 - 330	.004 - .006
	Spheroidal cast iron	120 - 300	160 - 330	.003 - .006	160 - 330	.004 - .006
S	Heat-resistant alloys, Inconel	25 - 50 HRC	100 - 160	.002 - .003	100 - 160	.003 - .004
N	Aluminium	40 - 150				
H	Hardened steel	43 - 60 HRC				

The machining values are indicative and depend on working conditions

Solid carbide drills for hardened steel

Plus8 – HSM300



Technical features:

- External coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special AlTiN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

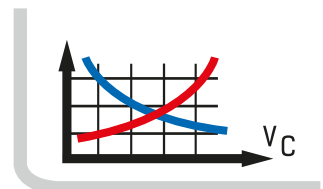
d10	8,5	10	89	47	40	HSMD300-0850-3D
	8,6	10	89	47	40	HSMD300-0860-3D
	8,73	10	89	47	40	HSMD300-0873-3D
	8,8	10	89	47	40	HSMD300-0880-3D
	9	10	89	47	40	HSMD300-0900-3D
	9,13	10	89	47	40	HSMD300-0913-3D
	9,2	10	89	47	40	HSMD300-0920-3D
	9,3	10	89	47	40	HSMD300-0930-3D
	9,5	10	89	47	40	HSMD300-0950-3D
	9,52	10	89	47	40	HSMD300-0952-3D
	9,6	10	89	47	40	HSMD300-0960-3D
	9,7	10	89	47	40	HSMD300-0970-3D
	9,8	10	89	47	40	HSMD300-0980-3D
9,92	10	89	47	40	HSMD300-0992-3D	
10	10	89	47	40	HSMD300-1000-3D	

d12	10,1	12	102	55	45	HSMD300-1010-3D
	10,2	12	102	55	45	HSMD300-1020-3D
	10,3	12	102	55	45	HSMD300-1030-3D
	10,4	12	102	55	45	HSMD300-1040-3D
	10,5	12	102	55	45	HSMD300-1050-3D
	10,72	12	102	55	45	HSMD300-1072-3D
	10,8	12	102	55	45	HSMD300-1080-3D
	11	12	102	55	45	HSMD300-1100-3D
	11,11	12	102	55	45	HSMD300-1111-3D
	11,2	12	102	55	45	HSMD300-1120-3D
	11,5	12	102	55	45	HSMD300-1150-3D
	11,55	12	102	55	45	HSMD300-1155-3D
	11,7	12	102	55	45	HSMD300-1170-3D
	11,8	12	102	55	45	HSMD300-1180-3D
	11,91	12	102	55	45	HSMD300-1191-3D
12	12	102	55	45	HSMD300-1200-3D	

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

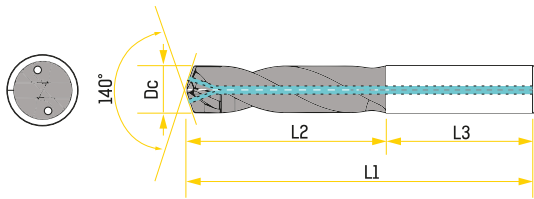
d16

12,1	16	115	65	48	HSMD300-1210-3D
12,25	16	115	65	48	HSMD300-1225-3D
12,3	16	115	65	48	HSMD300-1230-3D
12,5	16	115	65	48	HSMD300-1250-3D
12,6	16	115	65	48	HSMD300-1260-3D
12,7	16	115	65	48	HSMD300-1270-3D
12,8	16	115	65	48	HSMD300-1280-3D
13	16	115	65	48	HSMD300-1300-3D
13,3	16	115	65	48	HSMD300-1330-3D
13,5	16	115	65	48	HSMD300-1350-3D
13,7	16	115	65	48	HSMD300-1370-3D
13,8	16	115	65	48	HSMD300-1380-3D
14	16	115	65	48	HSMD300-1400-3D
14,1	16	115	65	48	HSMD300-1410-3D
14,23	16	115	65	48	HSMD300-1423-3D
14,5	16	115	65	48	HSMD300-1450-3D
14,75	16	115	65	48	HSMD300-1475-3D
14,8	16	115	65	48	HSMD300-1480-3D
15	16	115	65	48	HSMD300-1500-3D
15,5	16	115	65	48	HSMD300-1550-3D
15,6	16	115	65	48	HSMD300-1560-3D
15,7	16	115	65	48	HSMD300-1570-3D
15,8	16	115	65	48	HSMD300-1580-3D
15,87	16	115	65	48	HSMD300-1587-3D
16	16	115	65	48	HSMD300-1600-3D



Solid carbide drills for hardened steel

Plus8 – HSM300



Technical features:

- Internal coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special AlTiN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

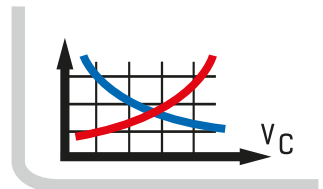
d10	8,5	10	89	47	40	HSM300-0850-3D-C
	8,6	10	89	47	40	HSM300-0860-3D-C
	8,73	10	89	47	40	HSM300-0873-3D-C
	8,8	10	89	47	40	HSM300-0880-3D-C
	9	10	89	47	40	HSM300-0900-3D-C
	9,13	10	89	47	40	HSM300-0913-3D-C
	9,2	10	89	47	40	HSM300-0920-3D-C
	9,3	10	89	47	40	HSM300-0930-3D-C
	9,5	10	89	47	40	HSM300-0950-3D-C
	9,52	10	89	47	40	HSM300-0952-3D-C
	9,6	10	89	47	40	HSM300-0960-3D-C
	9,7	10	89	47	40	HSM300-0970-3D-C
	9,8	10	89	47	40	HSM300-0980-3D-C
9,92	10	89	47	40	HSM300-0992-3D-C	
10	10	89	47	40	HSM300-1000-3D-C	

d12	10,1	12	102	55	45	HSM300-1010-3D-C
	10,2	12	102	55	45	HSM300-1020-3D-C
	10,3	12	102	55	45	HSM300-1030-3D-C
	10,4	12	102	55	45	HSM300-1040-3D-C
	10,5	12	102	55	45	HSM300-1050-3D-C
	10,72	12	102	55	45	HSM300-1072-3D-C
	10,8	12	102	55	45	HSM300-1080-3D-C
	11	12	102	55	45	HSM300-1100-3D-C
	11,11	12	102	55	45	HSM300-1111-3D-C
	11,2	12	102	55	45	HSM300-1120-3D-C
	11,5	12	102	55	45	HSM300-1150-3D-C
	11,55	12	102	55	45	HSM300-1155-3D-C
	11,7	12	102	55	45	HSM300-1170-3D-C
	11,8	12	102	55	45	HSM300-1180-3D-C
	11,91	12	102	55	45	HSM300-1191-3D-C
12	12	102	55	45	HSM300-1200-3D-C	

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

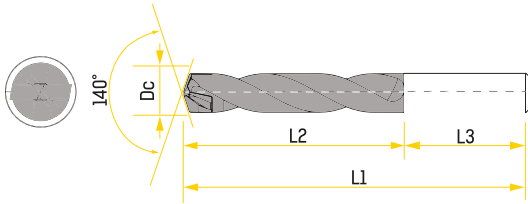
d16

12,1	16	115	65	48	HSMD300-1210-3D-C
12,25	16	115	65	48	HSMD300-1225-3D-C
12,3	16	115	65	48	HSMD300-1230-3D-C
12,5	16	115	65	48	HSMD300-1250-3D-C
12,6	16	115	65	48	HSMD300-1260-3D-C
12,7	16	115	65	48	HSMD300-1270-3D-C
12,8	16	115	65	48	HSMD300-1280-3D-C
13	16	115	65	48	HSMD300-1300-3D-C
13,3	16	115	65	48	HSMD300-1330-3D-C
13,5	16	115	65	48	HSMD300-1350-3D-C
13,7	16	115	65	48	HSMD300-1370-3D-C
13,8	16	115	65	48	HSMD300-1380-3D-C
14	16	115	65	48	HSMD300-1400-3D-C
14,1	16	115	65	48	HSMD300-1410-3D-C
14,23	16	115	65	48	HSMD300-1423-3D-C
14,5	16	115	65	48	HSMD300-1450-3D-C
14,75	16	115	65	48	HSMD300-1475-3D-C
14,8	16	115	65	48	HSMD300-1480-3D-C
15	16	115	65	48	HSMD300-1500-3D-C
15,5	16	115	65	48	HSMD300-1550-3D-C
15,6	16	115	65	48	HSMD300-1560-3D-C
15,7	16	115	65	48	HSMD300-1570-3D-C
15,8	16	115	65	48	HSMD300-1580-3D-C
15,87	16	115	65	48	HSMD300-1587-3D-C
16	16	115	65	48	HSMD300-1600-3D-C



Solid carbide drills for hardened steel

Plus8 – HSM300



Technical features:

- External coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special AlTiN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

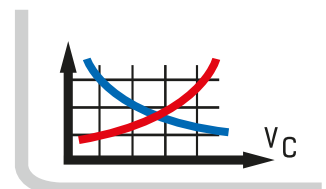
d10	8,5	10	103	61	40	HSM300-0850-5D
	8,6	10	103	61	40	HSM300-0860-5D
	8,73	10	103	61	40	HSM300-0873-5D
	8,8	10	103	61	40	HSM300-0880-5D
	9	10	103	61	40	HSM300-0900-5D
	9,13	10	103	61	40	HSM300-0913-5D
	9,2	10	103	61	40	HSM300-0920-5D
	9,3	10	103	61	40	HSM300-0930-5D
	9,5	10	103	61	40	HSM300-0950-5D
	9,52	10	103	61	40	HSM300-0952-5D
	9,6	10	103	61	40	HSM300-0960-5D
	9,7	10	103	61	40	HSM300-0970-5D
	9,8	10	103	61	40	HSM300-0980-5D
9,92	10	103	61	40	HSM300-0992-5D	
10	10	103	61	40	HSM300-1000-5D	

d12	10,1	12	118	71	45	HSM300-1010-5D
	10,2	12	118	71	45	HSM300-1020-5D
	10,3	12	118	71	45	HSM300-1030-5D
	10,4	12	118	71	45	HSM300-1040-5D
	10,5	12	118	71	45	HSM300-1050-5D
	10,72	12	118	71	45	HSM300-1072-5D
	10,8	12	118	71	45	HSM300-1080-5D
	11	12	118	71	45	HSM300-1100-5D
	11,11	12	118	71	45	HSM300-1111-5D
	11,2	12	118	71	45	HSM300-1120-5D
	11,5	12	118	71	45	HSM300-1150-5D
	11,55	12	118	71	45	HSM300-1155-5D
	11,7	12	118	71	45	HSM300-1170-5D
	11,8	12	118	71	45	HSM300-1180-5D
	11,91	12	118	71	45	HSM300-1191-5D
12	12	118	71	45	HSM300-1200-5D	

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

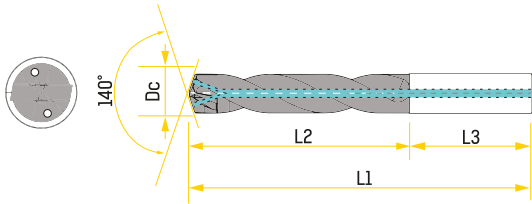
d16

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12,25	16	133	83	48	HSM300-1225-5D
12,3	16	133	83	48	HSM300-1230-5D
12,5	16	133	83	48	HSM300-1250-5D
12,6	16	133	83	48	HSM300-1260-5D
12,7	16	133	83	48	HSM300-1270-5D
12,8	16	133	83	48	HSM300-1280-5D
13	16	133	83	48	HSM300-1300-5D
13,3	16	133	83	48	HSM300-1330-5D
13,5	16	133	83	48	HSM300-1350-5D
13,7	16	133	83	48	HSM300-1370-5D
13,8	16	133	83	48	HSM300-1380-5D
14	16	133	83	48	HSM300-1400-5D
14,1	16	133	83	48	HSM300-1410-5D
14,23	16	133	83	48	HSM300-1423-5D
14,5	16	133	83	48	HSM300-1450-5D
14,75	16	133	83	48	HSM300-1475-5D
14,8	16	133	83	48	HSM300-1480-5D
15	16	133	83	48	HSM300-1500-5D
15,5	16	133	83	48	HSM300-1550-5D
15,6	16	133	83	48	HSM300-1560-5D
15,7	16	133	83	48	HSM300-1570-5D
15,8	16	133	83	48	HSM300-1580-5D
15,87	16	133	83	48	HSM300-1587-5D
16	16	133	83	48	HSM300-1600-5D



Solid carbide drills for hardened steel

Plus8 – HSM300



Technical features:

- Internal coolant supply
- Diameter range: 8,5 - 16 mm
- Hole tolerance: IT8-9
- Drill tolerance: m7
- Tip angle: 140°
- Coating: special AlTiN coating
- Shank form: HA

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

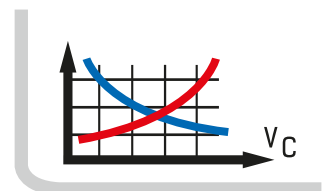
d10	8,5	10	103	61	40	HSMD300-0850-5D-C
	8,6	10	103	61	40	HSMD300-0860-5D-C
	8,73	10	103	61	40	HSMD300-0873-5D-C
	8,8	10	103	61	40	HSMD300-0880-5D-C
	9	10	103	61	40	HSMD300-0900-5D-C
	9,13	10	103	61	40	HSMD300-0913-5D-C
	9,2	10	103	61	40	HSMD300-0920-5D-C
	9,3	10	103	61	40	HSMD300-0930-5D-C
	9,5	10	103	61	40	HSMD300-0950-5D-C
	9,52	10	103	61	40	HSMD300-0952-5D-C
	9,6	10	103	61	40	HSMD300-0960-5D-C
	9,7	10	103	61	40	HSMD300-0970-5D-C
	9,8	10	103	61	40	HSMD300-0980-5D-C
9,92	10	103	61	40	HSMD300-0992-5D-C	
10	10	103	61	40	HSMD300-1000-5D-C	

d12	10,1	12	118	71	45	HSMD300-1010-5D-C
	10,2	12	118	71	45	HSMD300-1020-5D-C
	10,3	12	118	71	45	HSMD300-1030-5D-C
	10,4	12	118	71	45	HSMD300-1040-5D-C
	10,5	12	118	71	45	HSMD300-1050-5D-C
	10,72	12	118	71	45	HSMD300-1072-5D-C
	10,8	12	118	71	45	HSMD300-1080-5D-C
	11	12	118	71	45	HSMD300-1100-5D-C
	11,11	12	118	71	45	HSMD300-1111-5D-C
	11,2	12	118	71	45	HSMD300-1120-5D-C
	11,5	12	118	71	45	HSMD300-1150-5D-C
	11,55	12	118	71	45	HSMD300-1155-5D-C
	11,7	12	118	71	45	HSMD300-1170-5D-C
	11,8	12	118	71	45	HSMD300-1180-5D-C
	11,91	12	118	71	45	HSMD300-1191-5D-C
12	12	118	71	45	HSMD300-1200-5D-C	

Dc	d1	L1	L2	L3	CODE
mm	h6 mm	mm	mm	mm	

d16

12,1	16	133	83	48	HSMD300-1210-5D-C
12,25	16	133	83	48	HSMD300-1225-5D-C
12,3	16	133	83	48	HSMD300-1230-5D-C
12,5	16	133	83	48	HSMD300-1250-5D-C
12,6	16	133	83	48	HSMD300-1260-5D-C
12,7	16	133	83	48	HSMD300-1270-5D-C
12,8	16	133	83	48	HSMD300-1280-5D-C
13	16	133	83	48	HSMD300-1300-5D-C
13,3	16	133	83	48	HSMD300-1330-5D-C
13,5	16	133	83	48	HSMD300-1350-5D-C
13,7	16	133	83	48	HSMD300-1370-5D-C
13,8	16	133	83	48	HSMD300-1380-5D-C
14	16	133	83	48	HSMD300-1400-5D-C
14,1	16	133	83	48	HSMD300-1410-5D-C
14,23	16	133	83	48	HSMD300-1423-5D-C
14,5	16	133	83	48	HSMD300-1450-5D-C
14,75	16	133	83	48	HSMD300-1475-5D-C
14,8	16	133	83	48	HSMD300-1480-5D-C
15	16	133	83	48	HSMD300-1500-5D-C
15,5	16	133	83	48	HSMD300-1550-5D-C
15,6	16	133	83	48	HSMD300-1560-5D-C
15,7	16	133	83	48	HSMD300-1570-5D-C
15,8	16	133	83	48	HSMD300-1580-5D-C
15,87	16	133	83	48	HSMD300-1587-5D-C
16	16	133	83	48	HSMD300-1600-5D-C



Plus8 – HSM300 (3xD – 5xD)

Metric machining values

			Diameter 8.5 – 12 mm		Diameter 12.01 – 16 mm	
		BRINELL HARDNESS HB	CUTTING SPEED vc m/min	RECOMMENDED FEED fn mm/rev	CUTTING SPEED vc m/min	RECOMMENDED FEED fn mm/rev
P	General structural steel	≤ 180	45 – 80	0.05 – 0.15	45 – 80	0.08 – 0.15
	Non-alloy to high-alloy steel, Cast steel	180 – 280	40 – 80	0.05 – 0.15	40 – 80	0.08 – 0.15
		280 – 350	40 – 80	0.05 – 0.15	40 – 80	0.08 – 0.15
M	Stainless steel	150 – 270				
K	Ductile cast iron	110 – 270	70 – 100	0.08 – 0.15	70 – 100	0.10 – 0.15
	Grey cast iron	150 – 300	50 – 100	0.08 – 0.15	50 – 100	0.10 – 0.15
	Spheroidal cast iron	120 – 300	50 – 100	0.08 – 0.15	50 – 100	0.10 – 0.15
S	Heat-resistant alloys, Inconel	25 – 50 HRC				
N	Aluminium	40 – 150				
H	Hardened steel	43 – 60 HRC	7 – 10	0.03 – 0.07	7 – 10	0.05 – 0.10

The machining values are indicative and depend on working conditions

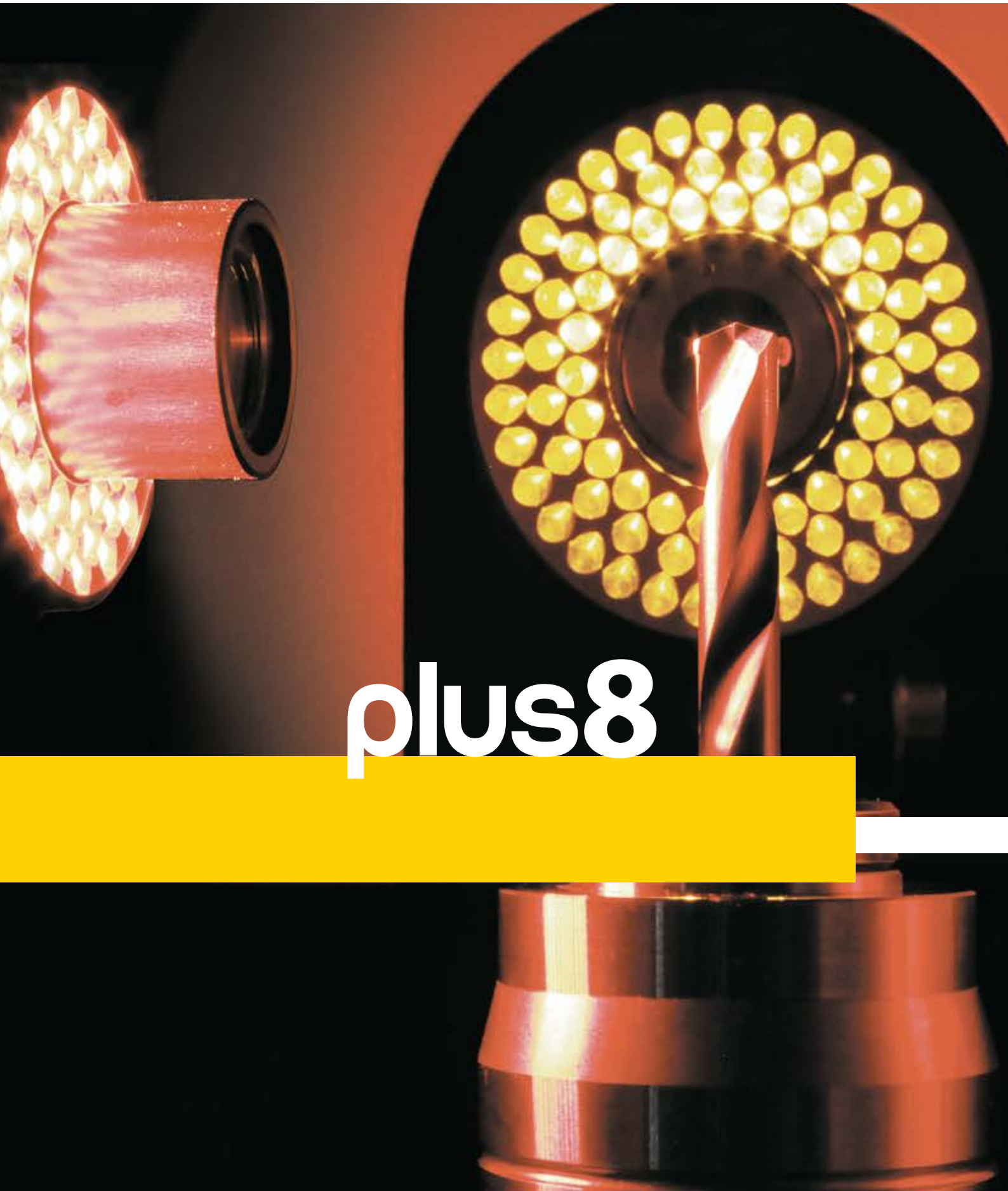
Imperial machining values

		Diameter 8.5 - 12 mm (0.335 - 0.472 inch)			Diameter 12.01 - 16 mm (0.473 - 0.63 inch)	
		BRINELL HARDNESS HB	CUTTING SPEED vc ft/min	RECOMMENDED FEED fn inch/rev	CUTTING SPEED vc ft/min	RECOMMENDED FEED fn inch/rev
P	General structural steel	≤ 180	150 - 260	.002 - .006	150 - 260	.003 - .006
	Non-alloy to high-alloy steel, Cast steel	180 - 280	130 - 260	.002 - .006	130 - 260	.003 - .006
		280 - 350	130 - 260	.002 - .006	130 - 260	.003 - .006
M	Stainless steel	150 - 270				
K	Ductile cast iron	110 - 270	230 - 330	.003 - .006	230 - 330	.004 - .006
	Grey cast iron	150 - 300	160 - 330	.003 - .006	160 - 330	.004 - .006
	Spheroidal cast iron	120 - 300	160 - 330	.003 - .006	160 - 330	.004 - .006
S	Heat-resistant alloys, Inconel	25 - 50 HRC				
N	Aluminium	40 - 150				
H	Hardened steel	43 - 60 HRC	20 - 40	.001 - .003	20 - 40	.002 - .004

The machining values are indicative and depend on working conditions

Material overview

Material group	Description	Content	Tensile strength (RM)	Brinell hardness (HB)	Hardness (HRC)	Material number
P0	Low-carbon steels, long chipping	C < 0,25%	< 530	< 125	-	-
P1	Low-carbon steels, short chipping, free machining	C < 0,25%	< 530	< 125	-	C15, Ck22, ST37-2, S235JR, 9SMnPb28, GS38
P2	Medium- and high-carbon steels	C > 0,25%	> 530	< 220	< 25	ST52, S355JR, C35, GS60, Cf53
P3	Alloy steels and tool steels	C > 0,25%	600 - 850	< 330	< 35	16MnCr5, Ck45, 21CrMoV5-7, 38SMn28
P4	Alloy steels and tool steels	C > 0,25%	850 - 1400	340 - 450	35 - 48	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P5	Ferritic, martensitic and PH stainless steels	-	600 - 900	< 330	< 35	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P6	High-strength ferritic, martensitic and PH stainless steels	-	900 - 1350	350 - 450	35 - 48	X102CrMo17, G-X120Cr29
M1	Austenitic stainless steels	-	< 600	130 - 200	-	X5CrNi 18 10, X2CrNiMo 17 13 2, G-X25CrNiSi18 9, X15CrNiSi 20 12
M2	High-strength austenitic stainless and cast stainless steels	-	600 - 800	150 - 230	< 25	X2CrNiMo 13 4, X5NiCr 32 21, X5CrNiNb 18 10, G-X15CrNi 25-20
M3	Duplex stainless steels	-	< 800	135 - 275	< 30	X8CrNiMo27 5, X2CrNiMoN22 5 3, X20CrNiSi25 4, G-X40CrNiSi27 4
K1	Grey cast iron	-	125 - 500	120 - 290	< 32	GG15, GG25, GG30, GG40, GTW40
K2	Low- and medium-strength ductile irons (nodular irons) and compacted graphite irons (CGI)	-	< 600	130 - 260	< 28	GGG40, GTS35
K3	High-strength ductile irons and austempered ductile irons (ADI)	-	> 600	180 - 350	< 43	GGG60, GTW55, GTS65
S1	Iron-based, heat-resistant alloys	-	500 - 1200	160 - 260	25 - 48	X1NiCrMoCu32 28 7, X12NiCrSi36 16, X5NiCrAlTi31 20, X40CoCrNi20 20
S2	Cobalt-based, heat-resistant alloys	-	1000 - 1450	250 - 450	25 - 48	Haynes® 188, Stellite 6,21,31
S3	Nickel-based, heat-resistant alloys	-	600 - 1700	160 - 450	< 48	INCONEL® 690, INCONEL® 625, Hastelloy®, NIMONIC® 75
S4	Titanium and titanium alloys	-	900 - 1600	300 - 400	33 - 48	Ti1, TiAl5Sn2, TiAl6V4, TiAl4Mo4Sn2
N1	Wrought aluminium	-	-	-	-	AlMg1, Al99.5, AlCuMg1, AlCuBiPb, AlMgSi1, AlMgSiPb
N2	Low-silicon aluminium alloys and magnesium alloys	Si < 12,2%	-	-	-	GAISiCu4, GDAISI10Mg
N3	High-silicon aluminium alloys and magnesium alloys	Si > 12,2%	-	-	-	G-AlSi12, G-AlSi17Cu4, G-AlSi21CuNiMg
N4	Copper-, brass-, zinc-based on machinability index range of 70-100	-	-	-	-	CuZn40, Ms60, G-CuSn5ZnPb, CuZn37, CuSi3Mn
N5	Nylon, plastics, rubbers, phenolics, resins, fiberglass	-	-	-	-	Lexan®, Hostalen®, polistirolo, Makrolon®
N6	Carbon, graphite composites, CFRP	-	-	-	-	CFK, GFK
N7	Metal matrix composites (MMC)	-	-	-	-	-
H1	Hardened materials	-	-	-	44 - 48	GX260NiCr42, GX330NiCr42, GX300CrNiSi952, GX300CrMo153, Hardox® 400
H2	Hardened materials	-	-	-	48 - 55	-
H3	Hardened materials	-	-	-	56 - 60	-
H4	Hardened materials	-	-	-	> 60	-



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