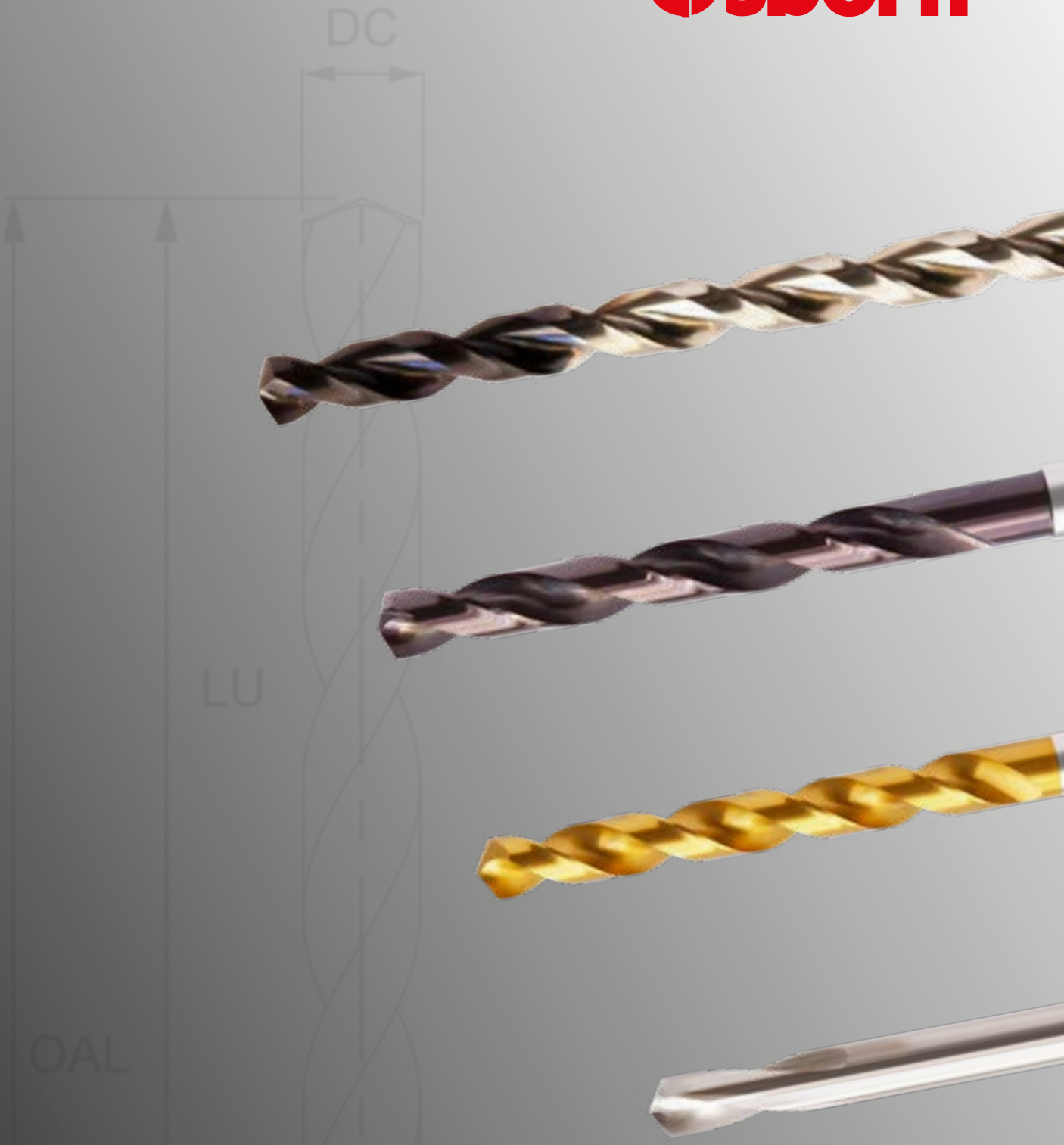
HSS-E & HSS-E-PM DRILLS

EUROPA TOOL

Clarkson

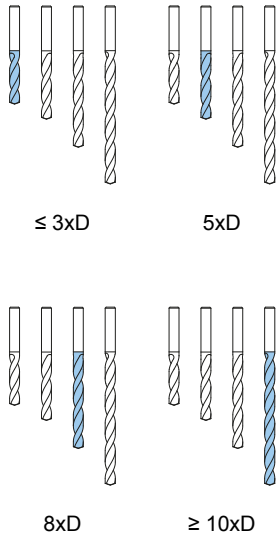
sborn

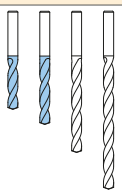
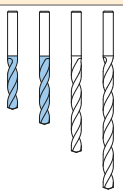
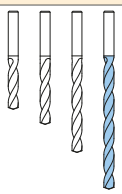
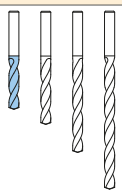
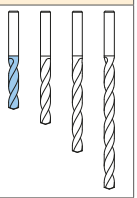


HSS-E & HSS-E-PM DRILLING

EUROPA TOOL

LENGTH GUIDE



PRODUCT RANGE	HPD-SUS DRILL	SABRE DRILL	WPX DRILL	SPOTTING 90°/120°	CENTRE DRILL
TOOL TYPE					
MATERIAL	HSS-EX	HSS-E-PM	HSS-E	HSS-E	HSS-E HSS
DRILL LENGTHS					
SERIES NO.	810434 820434	820422 821422	816327 817327 819327	821402 822402	810334 888301
PAGE NO.	3-6	7-10	11	12	13

Cutting Data - P.14-17

ISO	MATERIAL	VDI	HARDNESS (HRc)	●: Primary application ○: Secondary application				
P	Non-alloy steel	1-5	<25	●	●	●	●	●
	Low alloy steel	6-9	25-35	●	●	●	●	●
	High alloy steel	10-11	35-45	○	○	●	●	●
M	Ferritic / Martensitic Stainless steel	12, 13		●	○		○	○
	Austenitic Stainless steel	14		●	●		○	○
K	Grey Cast iron	15-16			○	●	●	●
	Nodular & Malleable Cast iron	17-20				●	●	●
N	Aluminium (HSM)	21-25						
	Aluminium			○		○	○	○
	Copper Copper alloys	26-28		○			○	○
	Plastics/Acrylics	29.1		●				
	CFRP/GFRP	29.2						
	Synthetic Graphite	30						
S	Heat Resistant and Super Alloys	31-35			○		○	○
	Titanium	36-37			○		○	○
H	Hardened steel	38	45-55					
		39.1	55-60					
		39.2	>60					
	Chilled cast iron	40						
	Hardened cast iron	41						

HPD-SUS STUB DRILL

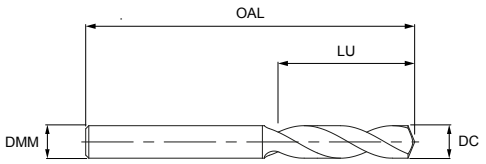
sborn

HSS-EX | BSG DIN 6539 | ZEFP 2 | FHA 38° | SIG 130° up to 4.0mm | SIG 120° over 4.0mm

Series No. 820434

▸ cutting conditions : p.15

High helix with sharp cutting edges - reduces built-up edge, suitable for high performance drilling.
Wide flute and stub length - increased chip removal, reduced vibration and deflection.
High vanadium HSS-EX material with superior TiN coating - higher speed and feed, longer tool life, high quality surface finish and high productivity.



STUB

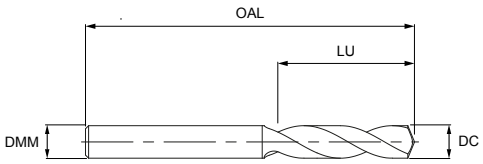
EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8204340200	**2.0**	2.0	12	44
8204340210	**2.1**	2.1	12	44
8204340220	**2.2**	2.2	13	45
8204340230	**2.3**	2.3	13	45
8204340240	**2.4**	2.4	14	46
8204340250	**2.5**	2.5	14	46
8204340260	**2.6**	2.6	14	46
8204340270	**2.7**	2.7	16	48
8204340280	**2.8**	2.8	16	48
8204340290	**2.9**	2.9	16	48
8204340300	**3.0**	3.0	16	48
8204340310	**3.1**	3.1	18	50
8204340320	**3.2**	3.2	18	50
8204340330	**3.3**	3.3	18	50
8204340340	**3.4**	3.4	20	52
8204340350	**3.5**	3.5	20	52
8204340360	**3.6**	3.6	20	52
8204340370	**3.7**	3.7	20	52
8204340380	**3.8**	3.8	22	54
8204340390	**3.9**	3.9	22	54
8204340400	**4.0**	4.0	22	54
8204340410	**4.1**	4.1	22	66
8204340420	**4.2**	4.2	22	66
8204340430	**4.3**	4.3	24	68
8204340440	**4.4**	4.4	24	68
8204340450	**4.5**	4.5	24	68
8204340460	**4.6**	4.6	24	68
8204340470	**4.7**	4.7	24	68

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8204340480	**4.8**	4.8	26	70
8204340490	**4.9**	4.9	26	70
8204340500	**5.0**	5.0	26	70
8204340510	**5.1**	5.1	26	70
8204340520	**5.2**	5.2	26	70
8204340530	**5.3**	5.3	26	70
8204340540	**5.4**	5.4	28	72
8204340550	**5.5**	5.5	28	72
8204340560	**5.6**	5.6	28	72
8204340570	**5.7**	5.7	28	72
8204340580	**5.8**	5.8	28	72
8204340590	**5.9**	5.9	28	72
8204340600	**6.0**	6.0	28	72
8204340610	**6.1**	6.1	31	75
8204340620	**6.2**	6.2	31	75
8204340630	**6.3**	6.3	31	75
8204340640	**6.4**	6.4	31	75
8204340650	**6.5**	6.5	31	75
8204340660	**6.6**	6.6	31	75
8204340670	**6.7**	6.7	31	75
8204340680	**6.8**	6.8	34	78
8204340690	**6.9**	6.9	34	78
8204340700	**7.0**	7.0	34	78
8204340710	**7.1**	7.1	34	78
8204340720	**7.2**	7.2	34	78
8204340730	**7.3**	7.3	34	78
8204340740	**7.4**	7.4	34	78
8204340750	**7.5**	7.5	34	78

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
h8	h7

ISO	P			M		K		N					S		H	
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	●	●	○	●	●			○	○	●						
○ Secondary																

HPD-SUS STUB DRILL



STUB

HSS-EX | BSG DIN 6539 | ZEFP 2 | FHA 38° | SIG 130° up to 4.0mm | SIG 120° over 4.0mm

Series No. 820434

▸ cutting conditions : p.15

High helix with sharp cutting edges - reduces built-up edge, suitable for high performance drilling.
Wide flute and stub length - increased chip removal, reduced vibration and deflection.
High vanadium HSS-EX material with superior TiN coating - higher speed and feed, longer tool life, high quality surface finish and high productivity.

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8204340760	**7.6**	7.6	37	81
8204340770	**7.7**	7.7	37	81
8204340780	**7.8**	7.8	37	81
8204340790	**7.9**	7.9	37	81
8204340800	**8.0**	8.0	37	81
8204340810	**8.1**	8.1	37	87
8204340820	**8.2**	8.2	37	87
8204340830	**8.3**	8.3	37	87
8204340840	**8.4**	8.4	37	87
8204340850	**8.5**	8.5	37	87
8204340860	**8.6**	8.6	40	90
8204340870	**8.7**	8.7	40	90
8204340880	**8.8**	8.8	40	90
8204340890	**8.9**	8.9	40	90
8204340900	**9.0**	9.0	40	90
8204340910	**9.1**	9.1	40	90
8204340920	**9.2**	9.2	40	90
8204340930	**9.3**	9.3	40	90
8204340940	**9.4**	9.4	40	90
8204340950	**9.5**	9.5	40	90
8204340960	**9.6**	9.6	43	93
8204340970	**9.7**	9.7	43	93
8204340980	**9.8**	9.8	43	93
8204340990	**9.9**	9.9	43	93
8204341000	**10.0**	10.0	43	93
8204341010	**10.1**	10.1	43	100
8204341020	**10.2**	10.2	43	100
8204341030	**10.3**	10.3	43	100

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8204341040	**10.4**	10.4	43	100
8204341050	**10.5**	10.5	43	100
8204341060	**10.6**	10.6	43	100
8204341070	**10.7**	10.7	47	104
8204341080	**10.8**	10.8	47	104
8204341090	**10.9**	10.9	47	104
8204341100	**11.0**	11.0	47	104
8204341110	**11.1**	11.1	47	104
8204341120	**11.2**	11.2	47	104
8204341130	**11.3**	11.3	47	104
8204341140	**11.4**	11.4	47	104
8204341150	**11.5**	11.5	47	104
8204341160	**11.6**	11.6	47	104
8204341170	**11.7**	11.7	47	104
8204341180	**11.8**	11.8	47	104
8204341190	**11.9**	11.9	51	108
8204341200	**12.0**	12.0	51	108
8204341210	**12.1**	12.1	51	108
8204341220	**12.2**	12.2	51	108
8204341230	**12.3**	12.3	51	108
8204341240	**12.4**	12.4	51	108
8204341250	**12.5**	12.5	51	108
8204341260	**12.6**	12.6	51	108
8204341270	**12.7**	12.7	51	108
8204341280	**12.8**	12.8	51	108
8204341290	**12.9**	12.9	51	108
8204341300	**13.0**	13.0	51	108

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
h8	h7

ISO	P			M		K		N					S		H	
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	●	●		●	●					●						
○ Secondary			○					○	○							

HPD-SUS JOBBER DRILL

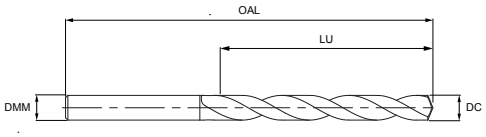
sborn

HSS-EX | BSG DIN 338 | ZEFP 2 | FHA 38° | SIG 130° up to 4.0mm | SIG 120° over 4.0mm

Series No. 810434

▸ cutting conditions : p.15

High helix with sharp cutting edges - reduces built-up edge, suitable for high performance drilling.
Wide flute and stub length - increased chip removal, reduced vibration and deflection.
High vanadium HSS-EX material with superior TiN coating - higher speed and feed, longer tool life, high quality surface finish and high productivity.



JOBBER

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8104340200	**2.0**	2.0	24	56
8104340210	**2.1**	2.1	24	56
8104340220	**2.2**	2.2	27	59
8104340230	**2.3**	2.3	27	59
8104340240	**2.4**	2.4	30	62
8104340250	**2.5**	2.5	30	62
8104340260	**2.6**	2.6	30	62
8104340270	**2.7**	2.7	33	65
8104340280	**2.8**	2.8	33	65
8104340290	**2.9**	2.9	33	65
8104340300	**3.0**	3.0	33	65
8104340310	**3.1**	3.1	36	68
8104340320	**3.2**	3.2	36	68
8104340330	**3.3**	3.3	36	68
8104340340	**3.4**	3.4	39	71
8104340350	**3.5**	3.5	39	71
8104340360	**3.6**	3.6	39	71
8104340370	**3.7**	3.7	39	71
8104340380	**3.8**	3.8	43	75
8104340390	**3.9**	3.9	43	75
8104340400	**4.0**	4.0	43	75
8104340410	**4.1**	4.1	43	87
8104340420	**4.2**	4.2	43	87
8104340430	**4.3**	4.3	47	91
8104340440	**4.4**	4.4	47	91
8104340450	**4.5**	4.5	47	91
8104340460	**4.6**	4.6	47	91
8104340470	**4.7**	4.7	47	91

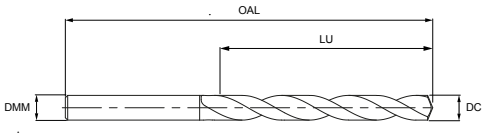
EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8104340480	**4.8**	4.8	52	96
8104340490	**4.9**	4.9	52	96
8104340500	**5.0**	5.0	52	96
8104340510	**5.1**	5.1	52	96
8104340520	**5.2**	5.2	52	96
8104340530	**5.3**	5.3	52	96
8104340540	**5.4**	5.4	57	101
8104340550	**5.5**	5.5	57	101
8104340560	**5.6**	5.6	57	101
8104340570	**5.7**	5.7	57	101
8104340580	**5.8**	5.8	57	101
8104340590	**5.9**	5.9	57	101
8104340600	**6.0**	6.0	57	101
8104340610	**6.1**	6.1	63	107
8104340620	**6.2**	6.2	63	107
8104340630	**6.3**	6.3	63	107
8104340640	**6.4**	6.4	63	107
8104340650	**6.5**	6.5	63	107
8104340660	**6.6**	6.6	63	107
8104340670	**6.7**	6.7	63	107
8104340680	**6.8**	6.8	69	113
8104340690	**6.9**	6.9	69	113
8104340700	**7.0**	7.0	69	113
8104340710	**7.1**	7.1	69	113
8104340720	**7.2**	7.2	69	113
8104340730	**7.3**	7.3	69	113
8104340740	**7.4**	7.4	69	113
8104340750	**7.5**	7.5	69	113

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
h8	h7

ISO	P			M		K		N					S		H	
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	●	●		●	●					●						
○ Secondary			○					○	○							

HPD-SUS JOBBER DRILL

sborn



JOBBER

HSS-EX | BSG DIN 338 | ZEFP 2 | FHA 38° | SIG 130° up to 4.0mm | SIG 120° over 4.0mm

Series No. 810434

▸ cutting conditions : p.15

High helix with sharp cutting edges - reduces built-up edge, suitable for high performance drilling.
Wide flute and stub length - increased chip removal, reduced vibration and deflection.
High vanadium HSS-EX material with superior TiN coating - higher speed and feed, longer tool life, high quality surface finish and high productivity.

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8104340760	**7.6**	7.6	75	119
8104340770	**7.7**	7.7	75	119
8104340780	**7.8**	7.8	75	119
8104340790	**7.9**	7.9	75	119
8104340800	**8.0**	8.0	75	119
8104340810	**8.1**	8.1	75	125
8104340820	**8.2**	8.2	75	125
8104340830	**8.3**	8.3	75	125
8104340840	**8.4**	8.4	75	125
8104340850	**8.5**	8.5	75	125
8104340860	**8.6**	8.6	81	131
8104340870	**8.7**	8.7	81	131
8104340880	**8.8**	8.8	81	131
8104340890	**8.9**	8.9	81	131
8104340900	**9.0**	9.0	81	131
8104340910	**9.1**	9.1	81	131
8104340920	**9.2**	9.2	81	131
8104340930	**9.3**	9.3	81	131
8104340940	**9.4**	9.4	81	131
8104340950	**9.5**	9.5	81	131
8104340960	**9.6**	9.6	87	137
8104340970	**9.7**	9.7	87	137
8104340980	**9.8**	9.8	87	137
8104340990	**9.9**	9.9	87	137
8104341000	**10.0**	10.0	87	137
8104341010	**10.1**	10.1	87	144
8104341020	**10.2**	10.2	87	144

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8104341030	**10.3**	10.3	87	144
8104341050	**10.5**	10.5	87	144
8104341100	**11.0**	11.0	94	151
8104341110	**11.1**	11.1	94	151
8104341120	**11.2**	11.2	94	151
8104341150	**11.5**	11.5	94	151
8104341180	**11.8**	11.8	94	151
8104341200	**12.0**	12.0	101	158
8104341250	**12.5**	12.5	101	158
8104341270	**12.7**	12.7	101	158
8104341280	**12.8**	12.8	101	158
8104341300	**13.0**	13.0	101	158
8104341350	**13.5**	13.5	106	166
8104341400	**14.0**	14.0	106	166
8104341410	**14.1**	14.1	109	169
8104341450	**14.5**	14.5	109	169
8104341500	**15.0**	15.0	109	169
8104341550	**15.5**	15.5	112	172
8104341600	**16.0**	16.0	112	172
8104341650	**16.5**	16.5	115	181
8104341700	**17.0**	17.0	115	181
8104341750	**17.5**	17.5	118	184
8104341800	**18.0**	18.0	118	184
8104341850	**18.5**	18.5	122	188
8104341900	**19.0**	19.0	122	188
8104341950	**19.5**	19.5	125	191
8104342000	**20.0**	20.0	125	191

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
h8	h7

ISO	P			M		K		N					S		H	
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	●	●		●	●					●						
○ Secondary			○					○	○							

SABRE STUB DRILL

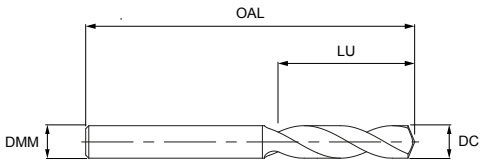
sborn

HSS-E PM | BSG DIN 6539 | ZEFP 2 | FHA 30° | SIG 118° up to 1.9mm | SIG 135° over 1.9mm

Series No. 820422

▸ cutting conditions : p.16

Point designed to maximize self-centering.
Wide flute design for good chip evacuation.
Premium powder base material for excellent toughness.



STUB

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8204220100	**1.0**	3.0	6	38
8204220110	**1.1**	3.0	7	39
8204220120	**1.2**	3.0	8	40
8204220130	**1.3**	3.0	8	40
8204220140	**1.4**	3.0	9	41
8204220150	**1.5**	3.0	9	41
8204220160	**1.6**	3.0	10	42
8204220170	**1.7**	3.0	10	42
8204220180	**1.8**	3.0	11	43
8204220190	**1.9**	3.0	11	43
8204220200	**2.0**	3.0	12	44
8204220210	**2.1**	3.0	12	44
8204220220	**2.2**	3.0	13	45
8204220230	**2.3**	3.0	13	45
8204220240	**2.4**	3.0	14	46
8204220250	**2.5**	3.0	14	46
8204220260	**2.6**	3.0	14	46
8204220270	**2.7**	3.0	16	48
8204220280	**2.8**	3.0	16	48
8204220290	**2.9**	3.0	16	48
8204220300	**3.0**	3.0	16	48
8204220310	**3.1**	4.0	18	50
8204220330	**3.3**	4.0	18	50
8204220340	**3.4**	4.0	20	52
8204220350	**3.5**	4.0	20	52
8204220360	**3.6**	4.0	20	52
8204220370	**3.7**	4.0	20	52
8204220380	**3.8**	4.0	22	54
8204220390	**3.9**	4.0	22	54
8204220400	**4.0**	4.0	22	54
8204220410	**4.1**	6.0	22	66

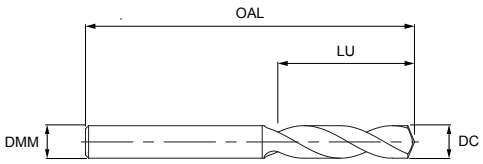
EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8204220420	**4.2**	6.0	22	66
8204220430	**4.3**	6.0	24	68
8204220440	**4.4**	6.0	24	68
8204220450	**4.5**	6.0	24	68
8204220460	**4.6**	6.0	24	68
8204220470	**4.7**	6.0	24	68
8204220480	**4.8**	6.0	26	70
8204220490	**4.9**	6.0	26	70
8204220500	**5.0**	6.0	26	70
8204220510	**5.1**	6.0	26	70
8204220520	**5.2**	6.0	26	70
8204220530	**5.3**	6.0	26	70
8204220540	**5.4**	6.0	28	72
8204220550	**5.5**	6.0	28	72
8204220560	**5.6**	6.0	28	72
8204220570	**5.7**	6.0	28	72
8204220580	**5.8**	6.0	28	72
8204220590	**5.9**	6.0	28	72
8204220600	**6.0**	6.0	28	72
8204220610	**6.1**	8.0	31	75
8204220620	**6.2**	8.0	31	75
8204220630	**6.3**	8.0	31	75
8204220640	**6.4**	8.0	31	75
8204220650	**6.5**	8.0	31	75
8204220660	**6.6**	8.0	31	75
8204220670	**6.7**	8.0	31	75
8204220680	**6.8**	8.0	34	78
8204220690	**6.9**	8.0	34	78
8204220700	**7.0**	8.0	34	78
8204220710	**7.1**	8.0	34	78
8204220720	**7.2**	8.0	34	78

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
h7	h6

ISO	P			M		K		N					S		H	
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	●	●	○	○	●	○							○	○		
○ Secondary																

SABRE STUB DRILL

sborn



STUB

HSS-E PM | BSG DIN 6539 | ZEFP 2 | FHA 30° | SIG 118° up to 1.9mm | SIG 135° over 1.9mm

Series No. 820422

▸ cutting conditions : p.16

Point designed to maximize self-centering.
Wide flute design for good chip evacuation.
Premium powder base material for excellent toughness.

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8204220730	**7.3**	8.0	34	78
8204220740	**7.4**	8.0	34	78
8204220750	**7.5**	8.0	34	78
8204220760	**7.6**	8.0	37	81
8204220770	**7.7**	8.0	37	81
8204220780	**7.8**	8.0	37	81
8204220790	**7.9**	8.0	37	81
8204220800	**8.0**	8.0	37	81
8204220810	**8.1**	10	37	87
8204220820	**8.2**	10	37	87
8204220830	**8.3**	10	37	87
8204220840	**8.4**	10	37	87
8204220850	**8.5**	10	37	87
8204220860	**8.6**	10	40	90
8204220870	**8.7**	10	40	90
8204220880	**8.8**	10	40	90
8204220890	**8.9**	10	40	90
8204220900	**9.0**	10	40	90
8204220910	**9.1**	10	40	90
8204220920	**9.2**	10	40	90
8204220930	**9.3**	10	40	90
8204220940	**9.4**	10	40	90
8204220950	**9.5**	10	40	90
8204220960	**9.6**	10	43	93
8204220970	**9.7**	10	43	93
8204220980	**9.8**	10	43	93
8204220990	**9.9**	10	43	93
8204221000	**10.0**	10	43	93
8204221010	**10.1**	12	43	100

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8204221020	**10.2**	12	43	100
8204221030	**10.3**	12	43	100
8204221040	**10.4**	12	43	100
8204221050	**10.5**	12	43	100
8204221060	**10.6**	12	43	100
8204221070	**10.7**	12	47	104
8204221080	**10.8**	12	47	104
8204221090	**10.9**	12	47	104
8204221100	**11.0**	12	47	104
8204221110	**11.1**	12	47	104
8204221120	**11.2**	12	47	104
8204221130	**11.3**	12	47	104
8204221140	**11.4**	12	47	104
8204221150	**11.5**	12	47	104
8204221160	**11.6**	12	47	104
8204221170	**11.7**	12	47	104
8204221180	**11.8**	12	47	104
8204221190	**11.9**	12	51	108
8204221200	**12.0**	12	51	108
8204221210	**12.1**	12	51	108
8204221220	**12.2**	12	51	108
8204221230	**12.3**	12	51	108
8204221240	**12.4**	12	51	108
8204221250	**12.5**	12	51	108
8204221260	**12.6**	12	51	108
8204221270	**12.7**	12	51	108
8204221280	**12.8**	12	51	108
8204221290	**12.9**	12	51	108
8204221300	**13.0**	12	51	108

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
h7	h6

ISO	P			M		K		N					S		H	
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	●	●	○	○	●	○							○	○		
○ Secondary																

SABRE JOBBER DRILL

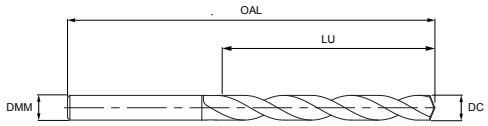
sborn

HSS-E PM | BSG DIN 338 | ZEFP 2 | FHA 30° | SIG 135°

Series No. 821422

▸ cutting conditions : p.16

Point designed to maximize self-centering.
Wide flute design for good chip evacuation.
Premium powder base material for excellent toughness.



JOBBER

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8214220200	**2.0**	3.0	24	56
8214220210	**2.1**	3.0	24	56
8214220220	**2.2**	3.0	25	56
8214220230	**2.3**	3.0	25	56
8214220240	**2.4**	3.0	30	61
8214220250	**2.5**	3.0	30	61
8214220260	**2.6**	3.0	30	61
8214220270	**2.7**	3.0	33	64
8214220280	**2.8**	3.0	33	64
8214220290	**2.9**	3.0	33	64
8214220300	**3.0**	3.0	33	64
8214220310	**3.1**	4.0	36	68
8214220320	**3.2**	4.0	36	68
8214220330	**3.3**	4.0	36	68
8214220340	**3.4**	4.0	39	71
8214220350	**3.5**	4.0	39	71
8214220360	**3.6**	4.0	39	71
8214220370	**3.7**	4.0	39	71
8214220380	**3.8**	4.0	43	75
8214220390	**3.9**	4.0	43	75
8214220400	**4.0**	4.0	43	75
8214220410	**4.1**	6.0	43	85
8214220420	**4.2**	6.0	43	85
8214220430	**4.3**	6.0	47	89
8214220440	**4.4**	6.0	47	89
8214220450	**4.5**	6.0	47	89
8214220460	**4.6**	6.0	47	89
8214220470	**4.7**	6.0	47	89

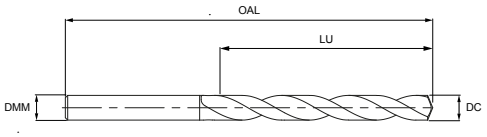
EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8214220480	**4.8**	6.0	52	94
8214220490	**4.9**	6.0	52	94
8214220500	**5.0**	6.0	52	94
8214220510	**5.1**	6.0	52	94
8214220520	**5.2**	6.0	52	94
8214220530	**5.3**	6.0	52	94
8214220540	**5.4**	6.0	57	99
8214220550	**5.5**	6.0	57	99
8214220560	**5.6**	6.0	57	99
8214220570	**5.7**	6.0	57	99
8214220580	**5.8**	6.0	57	99
8214220590	**5.9**	6.0	57	99
8214220600	**6.0**	6.0	57	99
8214220610	**6.1**	8.0	63	107
8214220620	**6.2**	8.0	63	107
8214220630	**6.3**	8.0	63	107
8214220640	**6.4**	8.0	63	107
8214220650	**6.5**	8.0	63	107
8214220660	**6.6**	8.0	63	107
8214220670	**6.7**	8.0	63	107
8214220680	**6.8**	8.0	69	113
8214220690	**6.9**	8.0	69	113
8214220700	**7.0**	8.0	69	113
8214220710	**7.1**	8.0	69	113
8214220720	**7.2**	8.0	69	113
8214220730	**7.3**	8.0	69	113
8214220740	**7.4**	8.0	69	113
8214220750	**7.5**	8.0	69	113

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
h7	h6

ISO		P			M		K		N					S		H	
VDI GROUP		1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	○ Secondary	●	●	○	○	●	○							○	○		

SABRE JOBBER DRILL

sborn



JOBBER

HSS-E PM | BSG DIN 338 | ZEFP 2 | FHA 30° | SIG 135°

Series No. 821422

▸ cutting conditions : p.16

Point designed to maximize self-centering.
Wide flute design for good chip evacuation.
Premium powder base material for excellent toughness.

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8214220760	**7.6**	8.0	75	119
8214220770	**7.7**	8.0	75	119
8214220780	**7.8**	8.0	75	119
8214220790	**7.9**	8.0	75	119
8214220800	**8.0**	8.0	75	119
8214220810	**8.1**	10.0	75	125
8214220820	**8.2**	10.0	75	125
8214220830	**8.3**	10.0	75	125
8214220840	**8.4**	10.0	75	125
8214220850	**8.5**	10.0	75	125
8214220860	**8.6**	10.0	81	131
8214220870	**8.7**	10.0	81	131
8214220880	**8.8**	10.0	81	131
8214220890	**8.9**	10.0	81	131
8214220900	**9.0**	10.0	81	131
8214220910	**9.1**	10.0	81	131
8214220920	**9.2**	10.0	81	131
8214220930	**9.3**	10.0	81	131
8214220940	**9.4**	10.0	81	131
8214220950	**9.5**	10.0	81	131
8214220960	**9.6**	10.0	87	137
8214220970	**9.7**	10.0	87	137
8214220980	**9.8**	10.0	87	137
8214220990	**9.9**	10.0	87	137
8214221000	**10.0**	10.0	87	137
8214221010	**10.1**	12.0	87	144
8214221020	**10.2**	12.0	87	144
8214221030	**10.3**	12.0	87	144

EUROPA CODE **ORDCODE**	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8214221040	**10.4**	12.0	87	144
8214221050	**10.5**	12.0	87	144
8214221060	**10.6**	12.0	87	144
8214221070	**10.7**	12.0	94	151
8214221080	**10.8**	12.0	94	151
8214221090	**10.9**	12.0	94	151
8214221100	**11.0**	12.0	94	151
8214221110	**11.1**	12.0	94	151
8214221120	**11.2**	12.0	94	151
8214221130	**11.3**	12.0	94	151
8214221140	**11.4**	12.0	94	151
8214221150	**11.5**	12.0	94	151
8214221160	**11.6**	12.0	94	151
8214221170	**11.7**	12.0	94	151
8214221180	**11.8**	12.0	94	151
8214221190	**11.9**	12.0	101	158
8214221200	**12.0**	12.0	101	158
8214221210	**12.1**	12.0	101	158
8214221220	**12.2**	12.0	101	158
8214221230	**12.3**	12.0	101	158
8214221240	**12.4**	12.0	101	158
8214221250	**12.5**	12.0	101	158
8214221260	**12.6**	12.0	101	158
8214221270	**12.7**	12.0	101	158
8214221280	**12.8**	12.0	101	158
8214221290	**12.9**	12.0	101	158
8214221300	**13.0**	12.0	101	158

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
h7	h6

ISO		P			M		K		N					S		H	
VDI GROUP		1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	○ Secondary	●	●	○	○	●	○							○	○		

WPX DEEP HOLE DRILLING

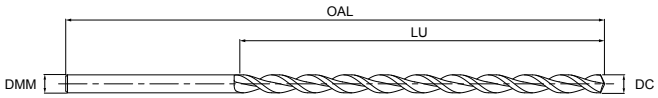
sborn

HSS-E | BSG DIN 1869/1/2/3 | ZEFP 2 | FHA 38° | SIG 130° | CNSC 0

Series No. 816327, 817327, 819327

▸ cutting conditions : p.16

For deep hole drilling
Coated tip gives extended tool life.
Special design - Good chip removal



EXTRA LENGTH

DIN 1869/1 ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8163270200	2.0	2.0	85	125
8163270250	2.5	2.5	95	140
8163270300	3.0	3.0	100	150
8163270350	3.5	3.5	115	165
8163270400	4.0	4.0	120	175
8163270450	4.5	4.5	125	185
8163270500	5.0	5.0	135	195
8163270550	5.5	5.5	140	205
8163270600	6.0	6.0	140	205
8163270650	6.5	6.5	150	215
8163270700	7.0	7.0	155	225
8163270750	7.5	7.5	155	225
8163270800	8.0	8.0	165	240
8163270850	8.5	8.5	165	240
8163270900	9.0	9.0	175	250
8163270950	9.5	9.5	175	250
8163271000	10.0	10.0	185	265
8163271050	10.5	10.5	185	265

Drill Dia. Tolerance TCDC	Shank Dia. Tolerance TCDMM
h8	h6

DIN 1869/2 ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8173270300	3.0	3.0	130	190
8173270350	3.5	3.5	145	210
8173270400	4.0	4.0	150	220
8173270450	4.5	4.5	160	235
8173270500	5.0	5.0	170	245
8173270550	5.5	5.5	180	260
8173270600	6.0	6.0	180	260
8173270650	6.5	6.5	190	275
8173270700	7.0	7.0	200	290
8173270750	7.5	7.5	200	290
8173270800	8.0	8.0	210	305
8173270850	8.5	8.5	210	305
8173270900	9.0	9.0	220	320
8173270950	9.5	9.5	220	320
8173271000	10.0	10.0	235	340
8173271020	10.2	10.2	235	340

Drill Dia. Tolerance TCDC	Shank Dia. Tolerance TCDMM
h8	h6

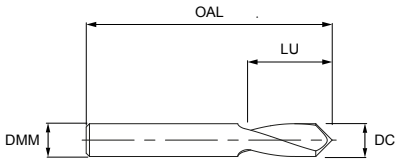
DIN 1869/3 ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8193270400	4.0	4.0	190	280
8193270500	5.0	5.0	210	315
8193270600	6.0	6.0	225	330
8193270800	8.0	8.0	265	390
8193271000	10.0	10.0	295	430

Drill Dia. Tolerance TCDC	Shank Dia. Tolerance TCDMM
h8	h6

ISO	P			M		K		N					S		H	
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	●	●	●			●	●									
○ Secondary								○								

SPOTTING DRILL 90º, 120º

sborn



SPOTTING

HSS Co8 | ZEFP 2 | SIG 90º | SIG 120º | CNSC 0

Series No. 821402, 821405, 821421
Series No. 822402

▸ cutting conditions : p.17

For more precise centering work on NC/CNC machine.
A larger diameter than the subsequent drilling tool allows for centering and chamfering simultaneously.

90º ORDCODE	90º TiN ORDCODE	90º TiAlN ORDCODE	120º ORDCODE	OD **DC**	SD **DMM**	FL.LTH **LU**	O/ALL **OAL**
8214020300	**8214050300**	**8214210300**	**8224020300***	**3.0**	3.0	12	46
8214020400	**8214050400**	**8214210400**	**8224020400***	**4.0**	4.0	12	55
8214020500	**8214050500**	**8214210500**	**8224020500***	**5.0**	5.0	15	60
8214020600	**8214050600**	**8214210600**	**8224020600***	**6.0**	6.0	20	66
8214020800	**8214050800**	**8214210800**	**8224020800***	**8.0**	8.0	25	79
8214021000	**8214051000**	**8214211000**	**8224021000***	**10.0**	10.0	25	89
8214021200	**8214051200**	**8214211200**	**8224021200***	**12.0**	12.0	30	102
8214021600	**8214051600**	**8214211600**	**8224021600***	**16.0**	16.0	35	115
8214022000	**8214052000**	**8214212000**	**8224022000***	**20.0**	20.0	40	131

* Coating available on request

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
h6	h6

ISO	P			M		K		N					S		H	
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	●	●	●			●	●									
○ Secondary				○	○			○	○				○	○		

HSS-E CENTRE DRILL

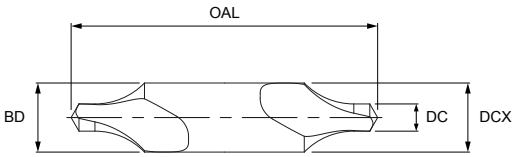
sborn

HSS-E | BSG DIN 333 | SIG 120°

Series No. 810334

▸ cutting conditions : p.17

Form A (60°)



EUROPA CODE **ORDCODE**	PILOT DIA **DC**	BODY DIA **BD = DCX**	O/ALL LENGTH **OAL**	PILOT LENGTH
8103340050	**0.5**	**3.15**	25.0	0.8
8103340080	**0.8**	**3.15**	25.0	1.1
8103340100	**1.0**	**3.15**	31.5	1.3
8103340125	**1.25**	**3.15**	31.5	1.6
8103340160	**1.6**	**4.0**	35.5	2.0
8103340200	**2.0**	**5.0**	40.0	2.5
8103340250	**2.5**	**6.3**	45.0	3.1
8103340315	**3.15**	**8.0**	50.0	3.9
8103340400	**4.0**	**10.0**	56.0	5.0
8103340500	**5.0**	**12.5**	63.0	6.3
8103340630	**6.3**	**16.0**	71.0	8.0

* Under 1.0mm - Single End

Drill Dia. Tolerance **TCDC**	Shank Dia. Tolerance **TCDMM**
k12	h8

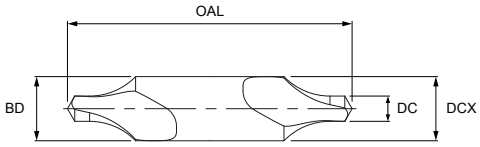
HSS CENTRE DRILL

HSS | BSG BS 328 | SIG 118°

Series No. 888301

▸ cutting conditions : p.17

Bright Finish



EUROPA CODE **ORDCODE**	DESIGNATION **BS**	PILOT DIA **DC**	BODY DIA **BD = DCX**	O/ALL LENGTH **OAL**	PILOT LENGTH MAX	PILOT LENGTH MIN
8883010010	**BS1**	3/64"	1/8"	1.1/2"	5/64"	1/16"
8883010020	**BS2**	1/16"	3/16"	1.3/4"	3/32"	5/64"
8883010030	**BS3**	3/32"	1/4"	2"	5/32"	1/8"
8883010040	**BS4**	1/8"	5/16"	2.1/4"	3/16"	5/32"
8883010050	**BS5**	3/16"	7/16"	2.1/2"	9/32"	1/4"
8883010060	**BS6**	1/4"	5/8"	3"	3/8"	5/16"
8883010070	**BS7**	5/16"	3/4"	3.1/2"	15/32"	13/32"

ISO		P			M		K		N					S		H	
VDI GROUP		1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	○ Secondary	●	●	●	○	○	●	●	○	○				○	○		

HSS-E & HSS-E-PM DRILL

CUTTING DATA

CUTTING DATA

osborn

810434, 820434 HPD-SUS DRILL																		
VDI MATERIAL GROUP			HRc	v_c (m/min)	f_n (mm/rev)													
					ø2.0 -2.9	ø3.0 -3.9	ø4.0 -4.9	ø5.0 -5.9	ø6.0 -6.9	ø7.0 -7.9	ø8.0 -9.9	ø10.0 -11.9	ø12.0 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
P	1-5	Non-alloy Steel	<25	**35 (30-40)**	0.08	0.13	0.14	0.16	0.18	0.20	0.22	0.26	0.32	0.36	0.40	0.45	0.47
	6-9	Low alloy Steel	25-35	**30 (25-35)**	0.08	0.13	0.14	0.16	0.18	0.20	0.22	0.26	0.32	0.36	0.40	0.45	0.47
	10-11	High alloy Steel, Tool Steel	35-45	**25 (20-30)**	0.08	0.13	0.14	0.16	0.18	0.20	0.22	0.26	0.32	0.36	0.40	0.45	0.47
M	12-13	Ferritic/ Martensitic Stainless Steel		**18 (15-20)**	0.07	0.08	0.10	0.15	0.18	0.21	0.24	0.30	0.36	0.44	0.48	0.50	0.53
	14	Austenitic Stainless Steel		**15 (13-18)**	0.03	0.04	0.06	0.08	0.09	0.10	0.12	0.15	0.18	0.23	0.26	0.29	0.33
N	21-24	Aluminium Si<12%		**80 (70-90)**	0.09	0.13	0.18	0.22	0.26	0.30	0.34	0.40	0.50	0.55	0.62	0.70	0.75
	25	Aluminium Si>12%		**32 (30-35)**	0.06	0.08	0.10	0.13	0.15	0.17	0.20	0.25	0.30	0.33	0.35	0.40	0.40
	29.1	Plastics, Acrylics		**32 (30-35)**	0.06	0.08	0.10	0.13	0.15	0.17	0.20	0.25	0.30	0.33	0.35	0.40	0.40

▸ For 810434 jobber length drills reduce feed rate by 15%

v_c - cutting speed (m/min)
n - RPM (rev/min)
f_n - feed rate (mm/rev)
ø - drill diameter (mm)

To calculate RPM from cutting speed: $n = \frac{v_c * 1000}{\pi * ø}$

To calculate cutting speed from RPM: $v_c = \frac{n * \pi * ø}{1000}$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in these charts are nominal recommendations and should be considered only as good starting points.

CUTTING DATA

osborn

820422, 821422 SABRE DRILL

VDI MATERIAL GROUP			HRc	vc (m/min)	fn (mm/rev)									
					ø1.0 -1.9	ø2.0 -2.9	ø3.0 -3.9	ø4.0 -4.9	ø5.0 -5.9	ø6.0 -6.9	ø7.0 -7.9	ø8.0 -9.9	ø10.0 -11.9	ø12.0 -13.0
P	1-5	Non-alloy Steel	<25	**35 (30-40)**	0.04	0.06	0.12	0.15	0.18	0.20	0.22	0.24	0.27	0.29
	6-9	Low alloy Steel	25-35	**30 (25-35)**	0.03	0.05	0.09	0.13	0.16	0.18	0.19	0.20	0.24	0.26
	10-11	High alloy Steel, Tool Steel	35-45	**25 (20-30)**	0.03	0.05	0.09	0.13	0.16	0.18	0.19	0.20	0.24	0.26
M	12-13	Ferritic/ Martensitic Stainless Steel		**18 (15-20)**	0.06	0.08	0.09	0.11	0.17	0.19	0.22	0.26	0.33	0.39
	14	Austenitic Stainless Steel		**15 (13-18)**	0.03	0.04	0.05	0.07	0.09	0.10	0.12	0.14	0.17	0.20
S	31-35	HRSA Fe & Ni/Co Based		**4 (3-6)**	0.01	0.03	0.05	0.07	0.09	0.10	0.11	0.13	0.16	0.19
	36-37	Titanium & Titanium Alloys		**4 (3-6)**	0.01	0.03	0.05	0.07	0.09	0.10	0.11	0.13	0.16	0.19

▸ For 821422 jobber length drills reduce feed rate by 15%

816327, 817327, 819327 WPX DRILL

VDI MATERIAL GROUP			HRc	vc (m/min)	fn (mm/rev)							
					ø2.0 -2.9	ø3.0 -3.9	ø4.0 -4.9	ø5.0 -5.9	ø6.0 -6.9	ø7.0 -7.9	ø8.0 -9.9	ø10.0 -11.9
P	1-5	Non-alloy Steel	<25	**18 (15-20)**	0.04	0.05	0.06	0.06	0.08	0.09	0.10	0.13
	6-9	Low alloy Steel	25-35	**13 (10-15)**	0.04	0.05	0.06	0.06	0.08	0.09	0.10	0.13
	10-11	High alloy Steel, Tool Steel	35-45	**11 (8-13)**	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
K	15-16	Grey Cast Iron		**23 (20-25)**	0.07	0.10	0.13	0.13	0.16	0.18	0.20	0.25
	17-20	Nodular/ Malleable Cast Iron		**10 (7-12)**	0.06	0.08	0.10	0.10	0.13	0.15	0.17	0.21
N	21-24	Aluminium Si<12%		**33 (30-35)**	0.06	0.07	0.08	0.09	0.10	0.11	0.13	0.16

CUTTING DATA

osborn

821402, 822402, 810334, 888301 HSS-E SPOTTING DRILLS, CENTRE DRILLS & HSS CENTRE DRILLS

VDI MATERIAL GROUP			HRc	v_c (m/min)	f_n (mm/rev)								
					ø3.0	ø4.0	ø5.0	ø6.0	ø8.0	ø10.0	ø12.0	ø16.0	ø20.0
P	1-5	Non-alloy Steel	<25	**20 (15-25)**	0.050	0.055	0.063	0.080	0.130	0.145	0.160	0.200	0.240
P	6-9	Low alloy Steel	25-35	**18 (15-20)**	0.045	0.050	0.060	0.075	0.125	0.140	0.150	0.210	0.230
P	10-11	High alloy Steel, Tool Steel	35-45	**15 (10-20)**	0.045	0.050	0.060	0.075	0.125	0.140	0.150	0.210	0.230
M	12-13	Stainless Steel		**8 (6-10)**	0.050	0.055	0.063	0.080	0.130	0.145	0.160	0.200	0.240
K	15-20	Cast Iron		**8 (6-10)**	0.050	0.055	0.063	0.080	0.130	0.145	0.160	0.200	0.240
N	21-24	Aluminium Si<12%		**40 (40-45)**	0.063	0.070	0.076	0.120	0.180	0.200	0.225	0.275	0.325
N	26-27	Copper & Copper Alloys		**30 (25-35)**	0.063	0.070	0.076	0.120	0.180	0.200	0.225	0.275	0.325
S	31-35	HRSA Fe & Ni/Co Based		**5 (4-6)**	0.025	0.031	0.038	0.045	0.075	0.090	0.100	0.120	0.140
S	36-37	Titanium & Titanium Alloys		**5 (4-6)**	0.025	0.031	0.038	0.045	0.075	0.090	0.100	0.120	0.140

v_c - cutting speed (m/min)
n - RPM (rev/min)
f_n - feed rate (mm/rev)
ø - drill diameter (mm)

To calculate RPM from cutting speed: $n = \frac{v_c * 1000}{\pi * ø}$

To calculate cutting speed from RPM: $v_c = \frac{n * \pi * ø}{1000}$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in these charts are nominal recommendations and should be considered only as good starting points.