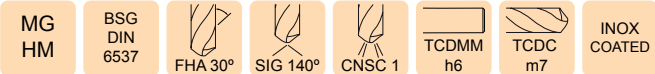


CARBIDE DRILLS

THROUGH COOLANT

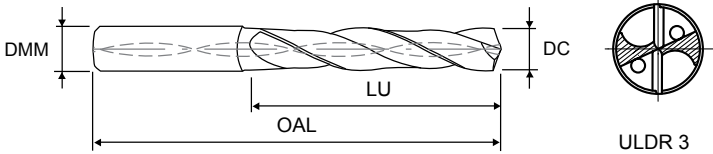


INOX DRILL 3xD



Series No. 823323

▶ cutting conditions : p.56



Application :
For drilling tough materials, stainless steels, nickel alloys, titanium up to HRc35 and aluminium.

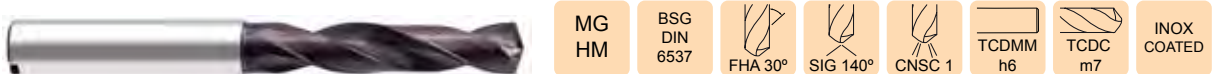
Advantage :
Special flute shape and geometry highly suited to machining stainless steels.
Excellent chip evacuation due to better surface treatment.
Point R-thinning gives superior centering and chip curling.
Applied INOX coating achieves better surface finish and longer tool life.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8233230300	3.0	6.0	20	62
8233230310	3.1	6.0	20	62
8233230320	3.2	6.0	20	62
8233230330	3.3	6.0	20	62
8233230340	3.4	6.0	20	62
8233230350	3.5	6.0	20	62
8233230360	3.6	6.0	20	62
8233230370	3.7	6.0	20	62
8233230380	3.8	6.0	24	66
8233230390	3.9	6.0	24	66
8233230400	4.0	6.0	24	66
8233230410	4.1	6.0	24	66
8233230420	4.2	6.0	24	66
8233230430	4.3	6.0	24	66
8233230440	4.4	6.0	24	66
8233230450	4.5	6.0	24	66
8233230460	4.6	6.0	24	66
8233230470	4.7	6.0	24	66
8233230480	4.8	6.0	28	66
8233230490	4.9	6.0	28	66
8233230500	5.0	6.0	28	66
8233230510	5.1	6.0	28	66
8233230520	5.2	6.0	28	66
8233230530	5.3	6.0	28	66
8233230540	5.4	6.0	28	66
8233230550	5.5	6.0	28	66
8233230560	5.6	6.0	28	66
8233230570	5.7	6.0	28	66
8233230580	5.8	6.0	28	66
8233230590	5.9	6.0	28	66
8233230600	6.0	6.0	28	66

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8233230610	6.1	8.0	34	79
8233230620	6.2	8.0	34	79
8233230630	6.3	8.0	34	79
8233230640	6.4	8.0	34	79
8233230650	6.5	8.0	34	79
8233230660	6.6	8.0	34	79
8233230670	6.7	8.0	34	79
8233230680	6.8	8.0	34	79
8233230690	6.9	8.0	34	79
8233230700	7.0	8.0	34	79
8233230710	7.1	8.0	41	79
8233230720	7.2	8.0	41	79
8233230730	7.3	8.0	41	79
8233230740	7.4	8.0	41	79
8233230750	7.5	8.0	41	79
8233230760	7.6	8.0	41	79
8233230770	7.7	8.0	41	79
8233230780	7.8	8.0	41	79
8233230790	7.9	8.0	41	79
8233230800	8.0	8.0	41	79
8233230810	8.1	10.0	47	89
8233230820	8.2	10.0	47	89
8233230830	8.3	10.0	47	89
8233230840	8.4	10.0	47	89
8233230850	8.5	10.0	47	89
8233230860	8.6	10.0	47	89
8233230870	8.7	10.0	47	89
8233230880	8.8	10.0	47	89
8233230890	8.9	10.0	47	89
8233230900	9.0	10.0	47	89
8233230910	9.1	10.0	47	89

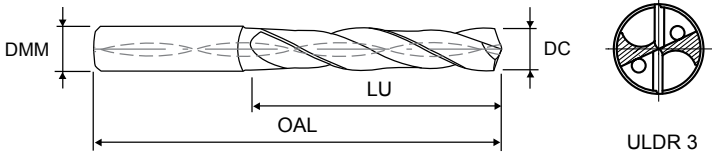
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	●	●	●	●	●			○				○	●	

INOX DRILL 3xD



Series No. 823323

▶ cutting conditions : p.56



Application :
For drilling tough materials, stainless steels, nickel alloys, titanium up to HRc35 and aluminium.

Advantage :
Special flute shape and geometry highly suited to machining stainless steels.
Excellent chip evacuation due to better surface treatment.
Point R-thinning gives superior centering and chip curling.
Applied INOX coating achieves better surface finish and longer tool life.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8233230920	9.2	10.0	47	89
8233230930	9.3	10.0	47	89
8233230940	9.4	10.0	47	89
8233230950	9.5	10.0	47	89
8233230960	9.6	10.0	47	89
8233230970	9.7	10.0	47	89
8233230980	9.8	10.0	47	89
8233230990	9.9	10.0	47	89
8233231000	10.0	10.0	47	89
8233231010	10.1	12.0	55	102
8233231020	10.2	12.0	55	102
8233231030	10.3	12.0	55	102
8233231040	10.4	12.0	55	102
8233231050	10.5	12.0	55	102
8233231060	10.6	12.0	55	102
8233231070	10.7	12.0	55	102
8233231080	10.8	12.0	55	102
8233231090	10.9	12.0	55	102
8233231100	11.0	12.0	55	102
8233231110	11.1	12.0	55	102
8233231120	11.2	12.0	55	102
8233231130	11.3	12.0	55	102
8233231140	11.4	12.0	55	102

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8233231150	11.5	12.0	55	102
8233231160	11.6	12.0	55	102
8233231170	11.7	12.0	55	102
8233231180	11.8	12.0	55	102
8233231190	11.9	12.0	55	102
8233231200	12.0	12.0	55	102
8233231250	12.5	14.0	60	107
8233231300	13.0	14.0	60	107
8233231350	13.5	14.0	60	107
8233231400	14.0	14.0	60	107
8233231450	14.5	16.0	65	115
8233231500	15.0	16.0	65	115
8233231550	15.5	16.0	65	115
8233231600	16.0	16.0	65	115
8233231650	16.5	18.0	73	123
8233231700	17.0	18.0	73	123
8233231750	17.5	18.0	73	123
8233231800	18.0	18.0	73	123
8233231850	18.5	20.0	79	131
8233231900	19.0	20.0	79	131
8233231950	19.5	20.0	79	131
8233232000	20.0	20.0	79	131

ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	●	●	●	●	●			○				○	●	

INOX DRILL 5xD



MG
HM

BSG
DIN
6537

FHA 30°

SIG 140°

CNSC 1

TCDDMM
h6

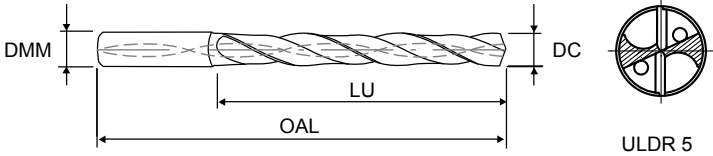
TCDC
m7

INOX
COATED



Series No. 825323

▶ cutting conditions : p.56



Application :
For drilling tough materials, stainless steels, nickel alloys, titanium up to HRc35 and aluminium.

Advantage :
Special flute shape and geometry highly suited to machining stainless steels.
Excellent chip evacuation due to better surface treatment.
Point R-thinning gives superior centering and chip curling.
Applied INOX coating achieves better surface finish and longer tool life.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8253230150	1.5	3.0	16	55
8253230160	1.6	3.0	16	55
8253230170	1.7	3.0	16	55
8253230180	1.8	3.0	16	55
8253230190	1.9	3.0	16	55
8253230200	2.0	4.0	21	57
8253230210	2.1	4.0	21	57
8253230220	2.2	4.0	21	57
8253230230	2.3	4.0	21	57
8253230240	2.4	4.0	21	57
8253230250	2.5	4.0	21	57
8253230260	2.6	4.0	21	57
8253230270	2.7	4.0	21	57
8253230280	2.8	4.0	21	57
8253230290	2.9	4.0	21	57
8253230300	3.0	6.0	28	66
8253230310	3.1	6.0	28	66
8253230320	3.2	6.0	28	66
8253230330	3.3	6.0	28	66
8253230340	3.4	6.0	28	66
8253230350	3.5	6.0	28	66
8253230360	3.6	6.0	28	66
8253230370	3.7	6.0	28	66
8253230380	3.8	6.0	36	74
8253230390	3.9	6.0	36	74
8253230400	4.0	6.0	36	74
8253230410	4.1	6.0	36	74
8253230420	4.2	6.0	36	74
8253230430	4.3	6.0	36	74
8253230440	4.4	6.0	36	74
8253230450	4.5	6.0	36	74

INOX DRILL 5xD



MG
HM

BSG
DIN
6537

FHA 30°

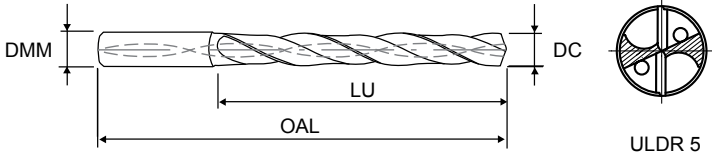
SIG 140°

CNSC 1

TCDDMM
h6

TCDC
m7

INOX
COATED



Series No. 825323

▶ cutting conditions : p.56

Application :
For drilling tough materials, stainless steels, nickel alloys, titanium up to HRc35 and aluminium.

Advantage :
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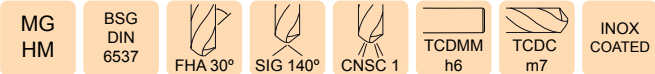
EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8253230770	7.7	8.0	53	91
8253230780	7.8	8.0	53	91
8253230790	7.9	8.0	53	91
8253230800	8.0	8.0	53	91
8253230810	8.1	10.0	61	103
8253230820	8.2	10.0	61	103
8253230830	8.3	10.0	61	103
8253230840	8.4	10.0	61	103
8253230850	8.5	10.0	61	103
8253230860	8.6	10.0	61	103
8253230870	8.7	10.0	61	103
8253230880	8.8	10.0	61	103
8253230890	8.9	10.0	61	103
8253230900	9.0	10.0	61	103
8253230910	9.1	10.0	61	103
8253230920	9.2	10.0	61	103
8253230930	9.3	10.0	61	103
8253230940	9.4	10.0	61	103
8253230950	9.5	10.0	61	103
8253230960	9.6	10.0	61	103
8253230970	9.7	10.0	61	103
8253230980	9.8	10.0	61	103
8253230990	9.9	10.0	61	103
8253231000	10.0	10.0	61	103
8253231010	10.1	12.0	71	118
8253231020	10.2	12.0	71	118
8253231030	10.3	12.0	71	118
8253231040	10.4	12.0	71	118
8253231050	10.5	12.0	71	118
8253231060	10.6	12.0	71	118

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8253231070	10.7	12.0	71	118
8253231080	10.8	12.0	71	118
8253231090	10.9	12.0	71	118
8253231100	11.0	12.0	71	118
8253231110	11.1	12.0	71	118
8253231120	11.2	12.0	71	118
8253231130	11.3	12.0	71	118
8253231140	11.4	12.0	71	118
8253231150	11.5	12.0	71	118
8253231160	11.6	12.0	71	118
8253231170	11.7	12.0	71	118
8253231180	11.8	12.0	71	118
8253231190	11.9	12.0	71	118
8253231200	12.0	12.0	71	118
8253231250	12.5	14.0	77	124
8253231300	13.0	14.0	77	124
8253231350	13.5	14.0	77	124
8253231400	14.0	14.0	77	124
8253231450	14.5	16.0	83	133
8253231500	15.0	16.0	83	133
8253231550	15.5	16.0	83	133
8253231600	16.0	16.0	83	133
8253231650	16.5	18.0	93	143
8253231700	17.0	18.0	93	143
8253231750	17.5	18.0	93	143
8253231800	18.0	18.0	93	143
8253231850	18.5	20.0	101	153
8253231900	19.0	20.0	101	153
8253231950	19.5	20.0	101	153
8253232000	20.0	20.0	101	153

ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	●	●	●	●	●			○				○	●	

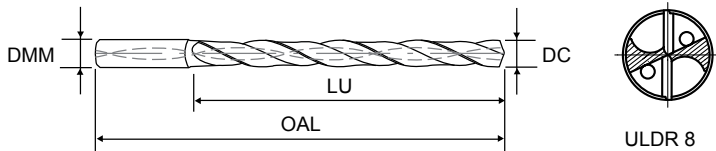
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	●	●	●	●	●			○				○	●	

INOX DRILL 8xD



Series No. 828323

► cutting conditions : p.56



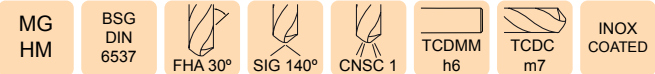
Application :
For drilling tough materials, stainless steels, nickel alloys, titanium up to HRc35 and aluminium.

Advantage :
Special flute shape and geometry highly suited to machining stainless steels.
Excellent chip evacuation due to better surface treatment.
Point R-thinning gives superior centering and chip curling.
Applied INOX coating achieves better surface finish and longer tool life.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8283230300	3.0	6.0	34	72
8283230310	3.1	6.0	34	72
8283230320	3.2	6.0	34	72
8283230330	3.3	6.0	34	72
8283230340	3.4	6.0	34	72
8283230350	3.5	6.0	34	72
8283230360	3.6	6.0	34	72
8283230370	3.7	6.0	34	72
8283230380	3.8	6.0	43	81
8283230390	3.9	6.0	43	81
8283230400	4.0	6.0	43	81
8283230410	4.1	6.0	43	81
8283230420	4.2	6.0	43	81
8283230430	4.3	6.0	43	81
8283230440	4.4	6.0	43	81
8283230450	4.5	6.0	43	81
8283230460	4.6	6.0	43	81
8283230470	4.7	6.0	43	81
8283230480	4.8	6.0	57	95
8283230490	4.9	6.0	57	95
8283230500	5.0	6.0	57	95
8283230510	5.1	6.0	57	95
8283230520	5.2	6.0	57	95
8283230530	5.3	6.0	57	95
8283230540	5.4	6.0	57	95
8283230550	5.5	6.0	57	95
8283230560	5.6	6.0	57	95
8283230570	5.7	6.0	57	95
8283230580	5.8	6.0	57	95
8283230590	5.9	6.0	57	95
8283230600	6.0	6.0	57	95

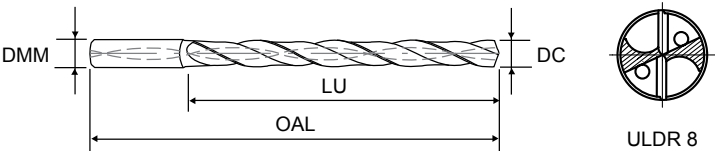
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent ○ Good	●	●	●	●	●			○				○	●	

INOX DRILL 8xD



Series No. 828323

► cutting conditions : p.56



Application :
For drilling tough materials, stainless steels, nickel alloys, titanium up to HRc35 and aluminium.

Advantage :
Special flute shape and geometry highly suited to machining stainless steels.
Excellent chip evacuation due to better surface treatment.
Point R-thinning gives superior centering and chip curling.
Applied INOX coating achieves better surface finish and longer tool life.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8283230920	9.2	10.0	95	142
8283230930	9.3	10.0	95	142
8283230940	9.4	10.0	95	142
8283230950	9.5	10.0	95	142
8283230960	9.6	10.0	95	142
8283230970	9.7	10.0	95	142
8283230980	9.8	10.0	95	142
8283230990	9.9	10.0	95	142
8283231000	10.0	10.0	95	142
8283231010	10.1	12.0	114	162
8283231020	10.2	12.0	114	162
8283231030	10.3	12.0	114	162
8283231040	10.4	12.0	114	162
8283231050	10.5	12.0	114	162
8283231060	10.6	12.0	114	162
8283231070	10.7	12.0	114	162
8283231080	10.8	12.0	114	162

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8283231090	10.9	12.0	114	162
8283231100	11.0	12.0	114	162
8283231110	11.1	12.0	114	162
8283231120	11.2	12.0	114	162
8283231130	11.3	12.0	114	162
8283231140	11.4	12.0	114	162
8283231150	11.5	12.0	114	162
8283231160	11.6	12.0	114	162
8283231170	11.7	12.0	114	162
8283231180	11.8	12.0	114	162
8283231190	11.9	12.0	114	162
8283231200	12.0	12.0	114	162
8283231250	12.5	14.0	133	178
8283231300	13.0	14.0	133	178
8283231350	13.5	14.0	133	178
8283231400	14.0	14.0	133	178

ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent ○ Good	●	●	●	●	●			○				○	●	

HF DRILL 3xD



MG
HM

BSG
DIN
6537

FHA 30°

SIG 140°

CNSC 1

TCDDMM
h6

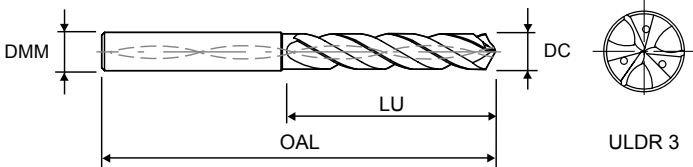
TCDC
m7

AlCrN
COATED



Series No. 803366

► cutting conditions : p.59



Application :
Carbon steels, Alloy steels ≤HRC35, Cast Iron
High feed applications

Advantage :
1.5 - 2.0 times higher feed rate than 2-Fl drill for increased productivity.
Multi layer coating for improved tool life
High process reliability

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8033660500	5.0	6.0	28	66
8033660510	5.1	6.0	28	66
8033660520	5.2	6.0	28	66
8033660530	5.3	6.0	28	66
8033660540	5.4	6.0	28	66
8033660550	5.5	6.0	28	66
8033660560	5.6	6.0	28	66
8033660570	5.7	6.0	28	66
8033660580	5.8	6.0	28	66
8033660590	5.9	6.0	28	66
8033660600	6.0	6.0	28	66
8033660610	6.1	8.0	34	79
8033660620	6.2	8.0	34	79
8033660630	6.3	8.0	34	79
8033660640	6.4	8.0	34	79
8033660650	6.5	8.0	34	79
8033660660	6.6	8.0	34	79
8033660670	6.7	8.0	34	79
8033660680	6.8	8.0	34	79
8033660690	6.9	8.0	34	79
8033660700	7.0	8.0	34	79
8033660710	7.1	8.0	41	79
8033660720	7.2	8.0	41	79
8033660730	7.3	8.0	41	79
8033660740	7.4	8.0	41	79

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8033660750	7.5	8.0	41	79
8033660760	7.6	8.0	41	79
8033660770	7.7	8.0	41	79
8033660780	7.8	8.0	41	79
8033660790	7.9	8.0	41	79
8033660800	8.0	8.0	41	79
8033660810	8.1	10.0	47	89
8033660820	8.2	10.0	47	89
8033660830	8.3	10.0	47	89
8033660840	8.4	10.0	47	89
8033660850	8.5	10.0	47	89
8033660860	8.6	10.0	47	89
8033660870	8.7	10.0	47	89
8033660880	8.8	10.0	47	89
8033660890	8.9	10.0	47	89
8033660900	9.0	10.0	47	89
8033660910	9.1	10.0	47	89
8033660920	9.2	10.0	47	89
8033660930	9.3	10.0	47	89
8033660940	9.4	10.0	47	89
8033660950	9.5	10.0	47	89
8033660960	9.6	10.0	47	89
8033660970	9.7	10.0	47	89
8033660980	9.8	10.0	47	89
8033660990	9.9	10.0	47	89

ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good	●	●			●	●							

HF DRILL 3xD



MG
HM

BSG
DIN
6537

FHA 30°

SIG 140°

CNSC 1

TCDDMM
h6

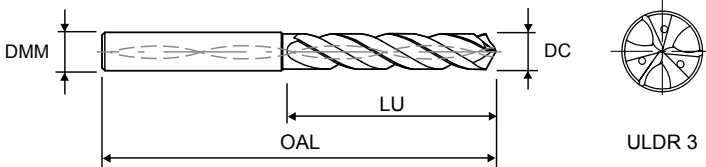
TCDC
m7

AlCrN
COATED



Series No. 803366

► cutting conditions : p.59



Application :
Carbon steels, Alloy steels ≤HRC35, Cast Iron
High feed applications

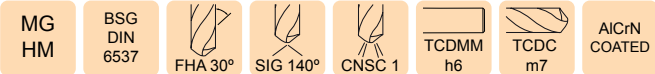
Advantage :
1.5 - 2.0 times higher feed rate than 2-Fl drill for increased productivity.
Multi layer coating for improved tool life
High process reliability

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8033661000	10.0	10.0	47	89
8033661010	10.1	12.0	55	102
8033661020	10.2	12.0	55	102
8033661030	10.3	12.0	55	102
8033661040	10.4	12.0	55	102
8033661050	10.5	12.0	55	102
8033661060	10.6	12.0	55	102
8033661070	10.7	12.0	55	102
8033661080	10.8	12.0	55	102
8033661090	10.9	12.0	55	102
8033661100	11.0	12.0	55	102
8033661110	11.1	12.0	55	102
8033661120	11.2	12.0	55	102
8033661130	11.3	12.0	55	102
8033661140	11.4	12.0	55	102
8033661150	11.5	12.0	55	102
8033661160	11.6	12.0	55	102
8033661170	11.7	12.0	55	102
8033661180	11.8	12.0	55	102
8033661190	11.9	12.0	55	102

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8033661200	12.0	12.0	55	102
8033661250	12.5	14.0	60	107
8033661300	13.0	14.0	60	107
8033661350	13.5	14.0	60	107
8033661400	14.0	14.0	60	107
8033661450	14.5	16.0	65	115
8033661500	15.0	16.0	65	115
8033661550	15.5	16.0	65	115
8033661600	16.0	16.0	65	115
8033661650	16.5	18.0	73	123
8033661700	17.0	18.0	73	123
8033661750	17.5	18.0	73	123
8033661800	18.0	18.0	73	123
8033661850	18.5	20.0	79	131
8033661900	19.0	20.0	79	131
8033661950	19.5	20.0	79	131
8033662000	20.0	20.0	79	131

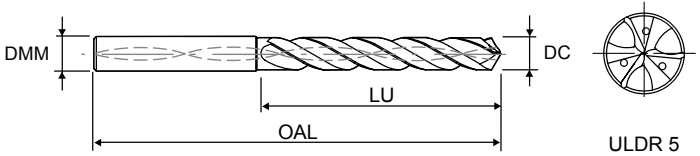
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good	●	●			●	●							

HF DRILL 5xD



Series No. 805366

► cutting conditions : p.59



Application :
Carbon steels, Alloy steels ≤HRC35, Cast Iron
High feed applications

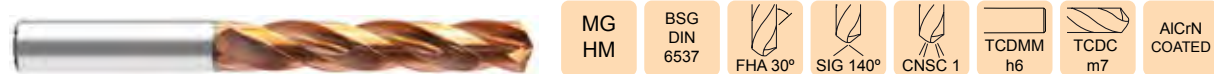
Advantage :
1.5 - 2.0 times higher feed rate than 2-Fl drill for increased productivity.
Multi layer coating for improved tool life
High process reliability

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8053660500	5.0	6.0	44	82
8053660510	5.1	6.0	44	82
8053660520	5.2	6.0	44	82
8053660530	5.3	6.0	44	82
8053660540	5.4	6.0	44	82
8053660550	5.5	6.0	44	82
8053660560	5.6	6.0	44	82
8053660570	5.7	6.0	44	82
8053660580	5.8	6.0	44	82
8053660590	5.9	6.0	44	82
8053660600	6.0	6.0	44	82
8053660610	6.1	8.0	53	91
8053660620	6.2	8.0	53	91
8053660630	6.3	8.0	53	91
8053660640	6.4	8.0	53	91
8053660650	6.5	8.0	53	91
8053660660	6.6	8.0	53	91
8053660670	6.7	8.0	53	91
8053660680	6.8	8.0	53	91
8053660690	6.9	8.0	53	91
8053660700	7.0	8.0	53	91
8053660710	7.1	8.0	53	91
8053660720	7.2	8.0	53	91
8053660730	7.3	8.0	53	91
8053660740	7.4	8.0	53	91

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8053660750	7.5	8.0	53	91
8053660760	7.6	8.0	53	91
8053660770	7.7	8.0	53	91
8053660780	7.8	8.0	53	91
8053660790	7.9	8.0	53	91
8053660800	8.0	8.0	53	91
8053660810	8.1	10.0	61	103
8053660820	8.2	10.0	61	103
8053660830	8.3	10.0	61	103
8053660840	8.4	10.0	61	103
8053660850	8.5	10.0	61	103
8053660860	8.6	10.0	61	103
8053660870	8.7	10.0	61	103
8053660880	8.8	10.0	61	103
8053660890	8.9	10.0	61	103
8053660900	9.0	10.0	61	103
8053660910	9.1	10.0	61	103
8053660920	9.2	10.0	61	103
8053660930	9.3	10.0	61	103
8053660940	9.4	10.0	61	103
8053660950	9.5	10.0	61	103
8053660960	9.6	10.0	61	103
8053660970	9.7	10.0	61	103
8053660980	9.8	10.0	61	103
8053660990	9.9	10.0	61	103

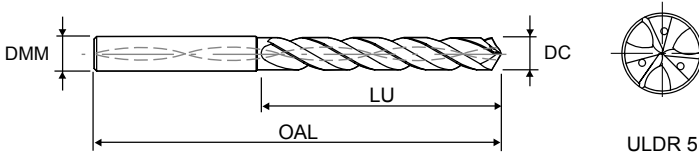
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	●	●				●	●							
○ Good														

HF DRILL 5xD



Series No. 805366

► cutting conditions : p.59



Application :
Carbon steels, Alloy steels ≤HRC35, Cast Iron
High feed applications

Advantage :
1.5 - 2.0 times higher feed rate than 2-Fl drill for increased productivity.
Multi layer coating for improved tool life
High process reliability

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8053661000	10.0	10.0	61	103
8053661010	10.1	12.0	71	118
8053661020	10.2	12.0	71	118
8053661030	10.3	12.0	71	118
8053661040	10.4	12.0	71	118
8053661050	10.5	12.0	71	118
8053661060	10.6	12.0	71	118
8053661070	10.7	12.0	71	118
8053661080	10.8	12.0	71	118
8053661090	10.9	12.0	71	118
8053661100	11.0	12.0	71	118
8053661110	11.1	12.0	71	118
8053661120	11.2	12.0	71	118
8053661130	11.3	12.0	71	118
8053661140	11.4	12.0	71	118
8053661150	11.5	12.0	71	118
8053661160	11.6	12.0	71	118
8053661170	11.7	12.0	71	118
8053661180	11.8	12.0	71	118
8053661190	11.9	12.0	71	118

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8053661200	12.0	12.0	71	118
8053661250	12.5	14.0	77	124
8053661300	13.0	14.0	77	124
8053661350	13.5	14.0	77	124
8053661400	14.0	14.0	77	124
8053661450	14.5	16.0	83	133
8053661500	15.0	16.0	83	133
8053661550	15.5	16.0	83	133
8053661600	16.0	16.0	83	133
8053661650	16.5	18.0	93	143
8053661700	17.0	18.0	93	143
8053661750	17.5	18.0	93	143
8053661800	18.0	18.0	93	143
8053661850	18.5	20.0	101	153
8053661900	19.0	20.0	101	153
8053661950	19.5	20.0	101	153
8053662000	20.0	20.0	101	153

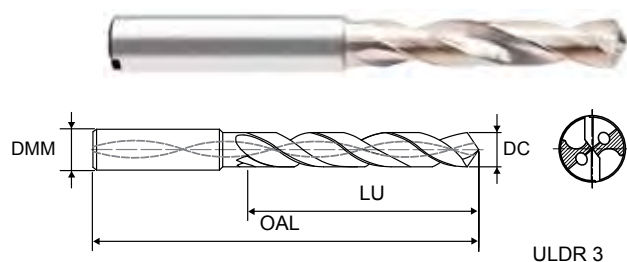
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	●	●				●	●							
○ Good														

ALU-XP 3xD



Series No. 843303

► cutting conditions : p.58



Application :
For high performance drilling of aluminium and aluminium alloys

Advantage :
Good chip treatment due to special flute geometry and wide chip space.
Polished flute gives better surface finish and helps prevent built-up edge.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8433030300	3.0	6.0	20	62
8433030310	3.1	6.0	20	62
8433030320	3.2	6.0	20	62
8433030330	3.3	6.0	20	62
8433030340	3.4	6.0	20	62
8433030350	3.5	6.0	20	62
8433030360	3.6	6.0	20	62
8433030370	3.7	6.0	20	62
8433030380	3.8	6.0	24	66
8433030390	3.9	6.0	24	66
8433030400	4.0	6.0	24	66
8433030410	4.1	6.0	24	66
8433030420	4.2	6.0	24	66
8433030430	4.3	6.0	24	66
8433030440	4.4	6.0	24	66
8433030450	4.5	6.0	24	66
8433030460	4.6	6.0	24	66
8433030470	4.7	6.0	24	66
8433030480	4.8	6.0	28	66
8433030490	4.9	6.0	28	66
8433030500	5.0	6.0	28	66
8433030510	5.1	6.0	28	66
8433030520	5.2	6.0	28	66
8433030530	5.3	6.0	28	66
8433030540	5.4	6.0	28	66
8433030550	5.5	6.0	28	66
8433030560	5.6	6.0	28	66
8433030570	5.7	6.0	28	66
8433030580	5.8	6.0	28	66
8433030590	5.9	6.0	28	66
8433030600	6.0	6.0	28	66

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8433030610	6.1	8.0	34	79
8433030620	6.2	8.0	34	79
8433030630	6.3	8.0	34	79
8433030640	6.4	8.0	34	79
8433030650	6.5	8.0	34	79
8433030660	6.6	8.0	34	79
8433030670	6.7	8.0	34	79
8433030680	6.8	8.0	34	79
8433030690	6.9	8.0	34	79
8433030700	7.0	8.0	34	79
8433030710	7.1	8.0	41	79
8433030720	7.2	8.0	41	79
8433030730	7.3	8.0	41	79
8433030740	7.4	8.0	41	79
8433030750	7.5	8.0	41	79
8433030760	7.6	8.0	41	79
8433030770	7.7	8.0	41	79
8433030780	7.8	8.0	41	79
8433030790	7.9	8.0	41	79
8433030800	8.0	8.0	41	79
8433030810	8.1	10.0	47	89
8433030820	8.2	10.0	47	89
8433030830	8.3	10.0	47	89
8433030840	8.4	10.0	47	89
8433030850	8.5	10.0	47	89
8433030860	8.6	10.0	47	89
8433030870	8.7	10.0	47	89
8433030880	8.8	10.0	47	89
8433030890	8.9	10.0	47	89
8433030900	9.0	10.0	47	89
8433030910	9.1	10.0	47	89

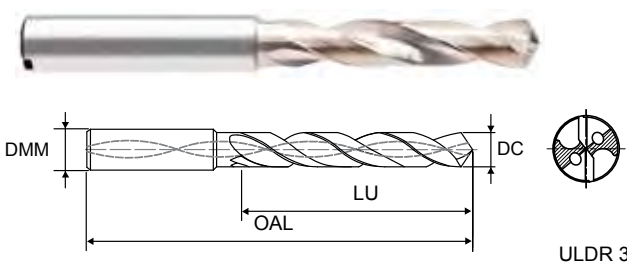
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good							●						

ALU-XP 3xD



Series No. 843303

► cutting conditions : p.58



Application :
For high performance drilling of aluminium and aluminium alloys

Advantage :
Good chip treatment due to special flute geometry and wide chip space.
Polished flute gives better surface finish and helps prevent built-up edge.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8433030920	9.2	10.0	47	89
8433030930	9.3	10.0	47	89
8433030940	9.4	10.0	47	89
8433030950	9.5	10.0	47	89
8433030960	9.6	10.0	47	89
8433030970	9.7	10.0	47	89
8433030980	9.8	10.0	47	89
8433030990	9.9	10.0	47	89
8433031000	10.0	10.0	47	89
8433031010	10.1	12.0	55	102
8433031020	10.2	12.0	55	102
8433031030	10.3	12.0	55	102
8433031040	10.4	12.0	55	102
8433031050	10.5	12.0	55	102
8433031060	10.6	12.0	55	102
8433031070	10.7	12.0	55	102
8433031080	10.8	12.0	55	102
8433031090	10.9	12.0	55	102
8433031100	11.0	12.0	55	102
8433031110	11.1	12.0	55	102
8433031120	11.2	12.0	55	102
8433031130	11.3	12.0	55	102
8433031140	11.4	12.0	55	102

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8433031150	11.5	12.0	55	102
8433031160	11.6	12.0	55	102
8433031170	11.7	12.0	55	102
8433031180	11.8	12.0	55	102
8433031190	11.9	12.0	55	102
8433031200	12.0	12.0	55	102
8433031250	12.5	14.0	60	107
8433031300	13.0	14.0	60	107
8433031350	13.5	14.0	60	107
8433031400	14.0	14.0	60	107
8433031450	14.5	16.0	65	115
8433031500	15.0	16.0	65	115
8433031550	15.5	16.0	65	115
8433031600	16.0	16.0	65	115
8433031650	16.5	18.0	73	123
8433031700	17.0	18.0	73	123
8433031750	17.5	18.0	73	123
8433031800	18.0	18.0	73	123
8433031850	18.5	20.0	79	131
8433031900	19.0	20.0	79	131
8433031950	19.5	20.0	79	131
8433032000	20.0	20.0	79	131

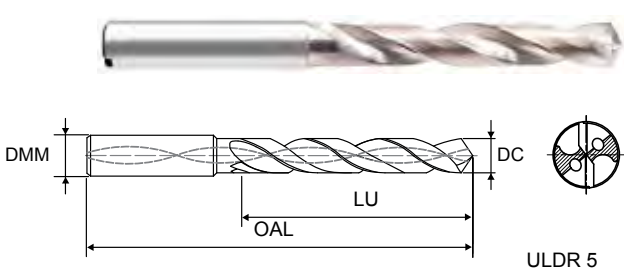
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good							●						

ALU-XP 5xD



Series No. 845303

▶ cutting conditions : p.58



Application :
For high performance drilling of aluminium and aluminium alloys

Advantage :
Good chip treatment due to special flute geometry and wide chip space.
Polished flute gives better surface finish and helps prevent built-up edge.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8453030300	3.0	6.0	28	66
8453030310	3.1	6.0	28	66
8453030320	3.2	6.0	28	66
8453030330	3.3	6.0	28	66
8453030340	3.4	6.0	28	66
8453030350	3.5	6.0	28	66
8453030360	3.6	6.0	28	66
8453030370	3.7	6.0	28	66
8453030380	3.8	6.0	36	74
8453030390	3.9	6.0	36	74
8453030400	4.0	6.0	36	74
8453030410	4.1	6.0	36	74
8453030420	4.2	6.0	36	74
8453030430	4.3	6.0	36	74
8453030440	4.4	6.0	36	74
8453030450	4.5	6.0	36	74
8453030460	4.6	6.0	36	74
8453030470	4.7	6.0	36	74
8453030480	4.8	6.0	44	82
8453030490	4.9	6.0	44	82
8453030500	5.0	6.0	44	82
8453030510	5.1	6.0	44	82
8453030520	5.2	6.0	44	82
8453030530	5.3	6.0	44	82
8453030540	5.4	6.0	44	82
8453030550	5.5	6.0	44	82
8453030560	5.6	6.0	44	82
8453030570	5.7	6.0	44	82
8453030580	5.8	6.0	44	82
8453030590	5.9	6.0	44	82
8453030600	6.0	6.0	44	82

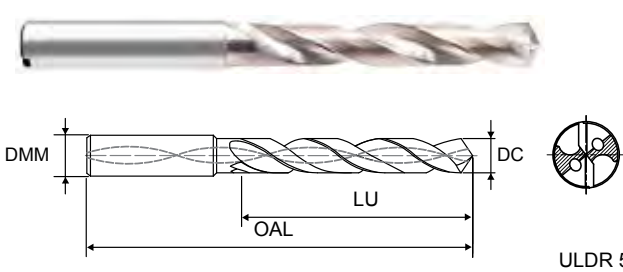
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good							●						

ALU-XP 5xD



Series No. 845303

▶ cutting conditions : p.58



Application :
For high performance drilling of aluminium and aluminium alloys

Advantage :
Good chip treatment due to special flute geometry and wide chip space.
Polished flute gives better surface finish and helps prevent built-up edge.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8453030920	9.2	10.0	61	103
8453030930	9.3	10.0	61	103
8453030940	9.4	10.0	61	103
8453030950	9.5	10.0	61	103
8453030960	9.6	10.0	61	103
8453030970	9.7	10.0	61	103
8453030980	9.8	10.0	61	103
8453030990	9.9	10.0	61	103
8453031000	10.0	10.0	61	103
8453031010	10.1	12.0	71	118
8453031020	10.2	12.0	71	118
8453031030	10.3	12.0	71	118
8453031040	10.4	12.0	71	118
8453031050	10.5	12.0	71	118
8453031060	10.6	12.0	71	118
8453031070	10.7	12.0	71	118
8453031080	10.8	12.0	71	118
8453031090	10.9	12.0	71	118
8453031100	11.0	12.0	71	118
8453031110	11.1	12.0	71	118
8453031120	11.2	12.0	71	118
8453031130	11.3	12.0	71	118
8453031140	11.4	12.0	71	118

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8453031150	11.5	12.0	71	118
8453031160	11.6	12.0	71	118
8453031170	11.7	12.0	71	118
8453031180	11.8	12.0	71	118
8453031190	11.9	12.0	71	118
8453031200	12.0	12.0	71	118
8453031250	12.5	14.0	77	124
8453031300	13.0	14.0	77	124
8453031350	13.5	14.0	77	124
8453031400	14.0	14.0	77	124
8453031450	14.5	16.0	83	133
8453031500	15.0	16.0	83	133
8453031550	15.5	16.0	83	133
8453031600	16.0	16.0	83	133
8453031650	16.5	18.0	93	143
8453031700	17.0	18.0	93	143
8453031750	17.5	18.0	93	143
8453031800	18.0	18.0	93	143
8453031850	18.5	20.0	101	153
8453031900	19.0	20.0	101	153
8453031950	19.5	20.0	101	153
8453032000	20.0	20.0	101	153

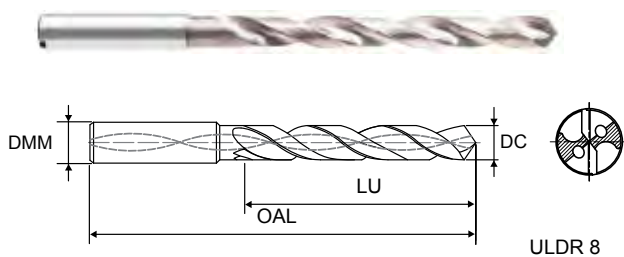
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good							●						

ALU-XP 8xD



Series No. 848303

► cutting conditions : p.58



Application :
For high performance drilling of aluminium and aluminium alloys

Advantage :
Good chip treatment due to special flute geometry and wide chip space.
Polished flute gives better surface finish and helps prevent built-up edge.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8483030300	3.0	6.0	34	72
8483030310	3.1	6.0	34	72
8483030320	3.2	6.0	34	72
8483030330	3.3	6.0	34	72
8483030340	3.4	6.0	34	72
8483030350	3.5	6.0	34	72
8483030360	3.6	6.0	34	72
8483030370	3.7	6.0	34	72
8483030380	3.8	6.0	43	81
8483030390	3.9	6.0	43	81
8483030400	4.0	6.0	43	81
8483030410	4.1	6.0	43	81
8483030420	4.2	6.0	43	81
8483030430	4.3	6.0	43	81
8483030440	4.4	6.0	43	81
8483030450	4.5	6.0	43	81
8483030460	4.6	6.0	43	81
8483030470	4.7	6.0	43	81
8483030480	4.8	6.0	57	95
8483030490	4.9	6.0	57	95
8483030500	5.0	6.0	57	95
8483030510	5.1	6.0	57	95
8483030520	5.2	6.0	57	95
8483030530	5.3	6.0	57	95
8483030540	5.4	6.0	57	95
8483030550	5.5	6.0	57	95
8483030560	5.6	6.0	57	95
8483030570	5.7	6.0	57	95
8483030580	5.8	6.0	57	95
8483030590	5.9	6.0	57	95
8483030600	6.0	6.0	57	95

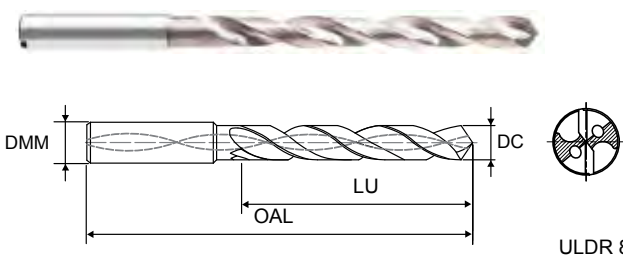
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good							●						

ALU-XP 8xD



Series No. 848303

► cutting conditions : p.58



Application :
For high performance drilling of aluminium and aluminium alloys

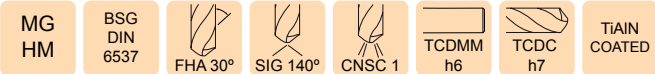
Advantage :
Good chip treatment due to special flute geometry and wide chip space.
Polished flute gives better surface finish and helps prevent built-up edge.

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8483030920	9.2	10.0	95	142
8483030930	9.3	10.0	95	142
8483030940	9.4	10.0	95	142
8483030950	9.5	10.0	95	142
8483030960	9.6	10.0	95	142
8483030970	9.7	10.0	95	142
8483030980	9.8	10.0	95	142
8483030990	9.9	10.0	95	142
8483031000	10.0	10.0	95	142
8483031010	10.1	12.0	114	162
8483031020	10.2	12.0	114	162
8483031030	10.3	12.0	114	162
8483031040	10.4	12.0	114	162
8483031050	10.5	12.0	114	162
8483031060	10.6	12.0	114	162
8483031070	10.7	12.0	114	162
8483031080	10.8	12.0	114	162

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8483031090	10.9	12.0	114	162
8483031100	11.0	12.0	114	162
8483031110	11.1	12.0	114	162
8483031120	11.2	12.0	114	162
8483031130	11.3	12.0	114	162
8483031140	11.4	12.0	114	162
8483031150	11.5	12.0	114	162
8483031160	11.6	12.0	114	162
8483031170	11.7	12.0	114	162
8483031180	11.8	12.0	114	162
8483031190	11.9	12.0	114	162
8483031200	12.0	12.0	114	162
8483031250	12.5	14.0	133	178
8483031300	13.0	14.0	133	178
8483031350	13.5	14.0	133	178
8483031400	14.0	14.0	133	178

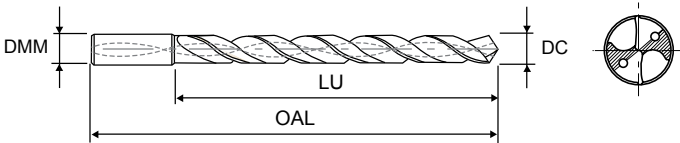
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good							●						

MQL DRILL 10xD, 15xD



Series No. 810323, 815323

► cutting conditions : p.57



Application :
Drilling into steel in general, cast steel, cast iron, chilled cast iron, malleable cast iron.

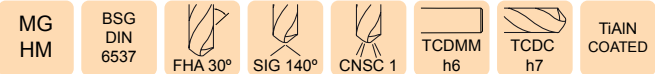
Advantage :
Non step drilling from 10 times to 15 times of drill diameter.
Available for processing MQL(Minimum Quantity Lubrication).
Excellent positioning - Bush is not necessary.
Special design - Good chip removal
Powerful drilling

10 x D ULDR 10

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8103230300	3.0	3.0	39	90
8103230330	3.3	4.0	46	97
8103230350	3.5	4.0	46	97
8103230400	4.0	4.0	52	103
8103230420	4.2	5.0	59	112
8103230450	4.5	5.0	59	112
8103230500	5.0	5.0	65	118
8103230550	5.5	6.0	72	127
8103230600	6.0	6.0	78	133
8103230650	6.5	7.0	85	141
8103230680	6.8	7.0	91	147
8103230700	7.0	7.0	91	147
8103230750	7.5	8.0	98	155
8103230800	8.0	8.0	104	161
8103230850	8.5	9.0	111	169
8103230900	9.0	9.0	117	175
8103230950	9.5	10.0	124	182
8103231000	10.0	10.0	130	188
8103231050	10.5	11.0	137	201
8103231100	11.0	11.0	143	207
8103231150	11.5	12.0	150	215
8103231200	12.0	12.0	156	221
8103231250	12.5	13.0	163	229
8103231300	13.0	13.0	169	235
8103231350	13.5	14.0	176	243
8103231400	14.0	14.0	182	249

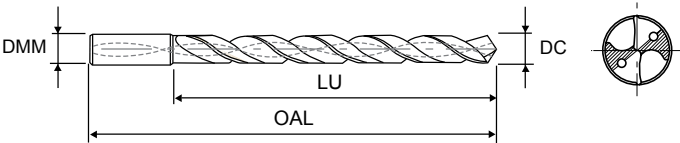
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent ○ Good	●	●	●			●	●							

MQL DRILL 20xD, 25xD, 30xD



Series No. 820323, 826323, 860323

► cutting conditions : p.57



Application :
Drilling into steel in general, cast steel, cast iron, chilled cast iron, malleable cast iron.

Advantage :
Non step drilling from 10 times to 15 times of drill diameter.
Available for processing MQL(Minimum Quantity Lubrication).
Excellent positioning - Bush is not necessary.
Special design - Good chip removal
Powerful drilling

20 x D ULDR 20

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8203230300	3.0	3.0	69	120
8203230350	3.5	4.0	81	132
8203230400	4.0	4.0	92	143
8203230450	4.5	5.0	104	157
8203230500	5.0	5.0	115	168
8203230550	5.5	6.0	127	182
8203230600	6.0	6.0	138	193
8203230700	7.0	7.0	161	217
8203230800	8.0	8.0	184	241
8203230900	9.0	9.0	207	265
8203231000	10.0	10.0	230	288
8203231200	12.0	12.0	276	341

25 x D ULDR 25

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8263230300	3.0	6.0	85	125
8263230350	3.5	6.0	99	139
8263230400	4.0	6.0	113	153
8263230450	4.5	6.0	127	167
8263230500	5.0	6.0	141	181
8263230550	5.5	6.0	155	195
8263230600	6.0	6.0	169	209
8263230700	7.0	8.0	197	237
8263230800	8.0	8.0	225	265
8263230900	9.0	10.0	153	297
8263231000	10.0	10.0	282	326

ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent ○ Good	●	●	●			●	●							

GP DRILL THROUGH COOLANT 3xD



MG
HM

BSG
DIN
6537

FHA 30°

SIG 140°

CNSC 1

TCDMM
h6

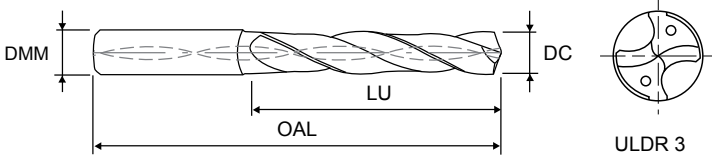
TCDC
m7

TIAIN
COATED



Series No. 803323

▶ cutting conditions : p.56



Application :
Drilling into steel in general, cast steel, cast iron,
chilled cast iron, malleable cast iron

Advantage :
Self centering, centre drilling is not required
Excellent positioning, bush is not necessary
Special Design, reaming is not required
Good chip removal, powerful drilling

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8033230300	3.0	6.0	20	62
8033230310	3.1			
8033230320	3.2			
8033230330	3.3			
8033230340	3.4			
8033230350	3.5			
8033230360	3.6			
8033230370	3.7	6.0	24	66
8033230380	3.8			
8033230390	3.9			
8033230400	4.0			
8033230410	4.1			
8033230420	4.2			
8033230430	4.3			
8033230440	4.4			
8033230450	4.5			
8033230460	4.6			
8033230470	4.7	6.0	28	66
8033230480	4.8			
8033230490	4.9			
8033230500	5.0			
8033230510	5.1			
8033230520	5.2			
8033230530	5.3			
8033230540	5.4			
8033230550	5.5	6.0	28	66
8033230560	5.6			

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8033230570	5.7	6.0	28	66
8033230580	5.8			
8033230590	5.9			
8033230600	6.0			
8033230610	6.1	8.0	34	79
8033230620	6.2			
8033230630	6.3			
8033230640	6.4			
8033230650	6.5			
8033230660	6.6			
8033230670	6.7			
8033230680	6.8	8.0	41	79
8033230690	6.9			
8033230700	7.0			
8033230710	7.1			
8033230720	7.2			
8033230730	7.3			
8033230740	7.4			
8033230750	7.5	8.0	47	89
8033230760	7.6			
8033230770	7.7			
8033230780	7.8			
8033230790	7.9			
8033230800	8.0			
8033230810	8.1	10.0	47	89
8033230820	8.2			
8033230830	8.3			

ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good	●	●	●		●	●							

GP DRILL THROUGH COOLANT 3xD



MG
HM

BSG
DIN
6537

FHA 30°

SIG 140°

CNSC 1

TCDMM
h6

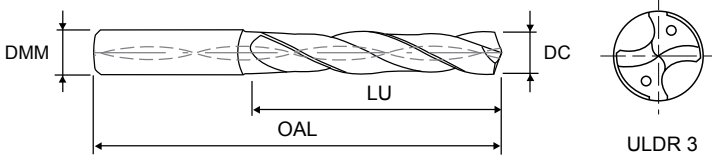
TCDC
m7

TIAIN
COATED



Series No. 803323

▶ cutting conditions : p.56



Application :
Drilling into steel in general, cast steel, cast iron,
chilled cast iron, malleable cast iron.

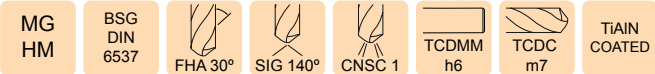
Advantage :
Self centering, centre drilling is not required
Excellent positioning, bush is not necessary
Special Design, reaming is not required
Good chip removal, powerful drilling

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8033230840	8.4	10.0	47	89
8033230850	8.5			
8033230860	8.6			
8033230870	8.7			
8033230880	8.8			
8033230890	8.9			
8033230900	9.0			
8033230910	9.1	12.0	55	102
8033230920	9.2			
8033230930	9.3			
8033230940	9.4			
8033230950	9.5			
8033230960	9.6			
8033230970	9.7			
8033230980	9.8	12.0	55	102
8033230990	9.9			
8033231000	10.0			
8033231010	10.1			
8033231020	10.2			
8033231030	10.3			
8033231040	10.4			
8033231050	10.5			
8033231060	10.6			
8033231070	10.7	20.0	79	131
8033231080	10.8			
8033231090	10.9			
8033231100	11.0			

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8033231110	11.1	12.0	55	102
8033231120	11.2			
8033231130	11.3			
8033231140	11.4			
8033231150	11.5			
8033231160	11.6			
8033231170	11.7			
8033231180	11.8	14.0	60	107
8033231190	11.9			
8033231200	12.0			
8033231250	12.5			
8033231300	13.0			
8033231350	13.5			
8033231400	14.0			
8033231450	14.5	16.0	65	115
8033231500	15.0			
8033231550	15.5			
8033231600	16.0			
8033231650	16.5	18.0	73	123
8033231700	17.0			
8033231750	17.5			
8033231800	18.0			
8033231850	18.5	20.0	79	131
8033231900	19.0			
8033231950	19.5			
8033232000	20.0			

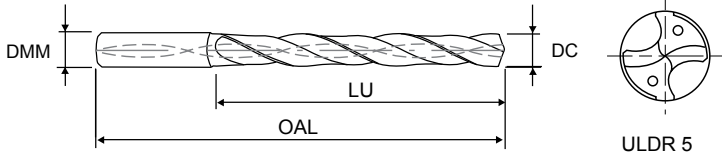
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good	●	●	●		●	●							

GP DRILL THROUGH COOLANT 5xD



Series No. 804323

▶ cutting conditions : p.56



Application :
Drilling into steel in general, cast steel, cast iron, chilled cast iron, malleable cast iron.

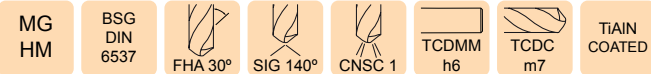
Advantage :
Self centering, centre drilling is not required
Excellent positioning, bush is not necessary
Special Design, reaming is not required
Good chip removal, powerful drilling

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8043230100	1.0	3.0	8	55
8043230110	1.1			
8043230120	1.2			
8043230130	1.3			
8043230140	1.4			
8043230150	1.5	3.0	12	55
8043230160	1.6			
8043230170	1.7			
8043230180	1.8			
8043230190	1.9			
8043230200	2.0	4.0	16	55
8043230210	2.1			
8043230220	2.2			
8043230230	2.3			
8043230240	2.4			
8043230250	2.5			
8043230260	2.6			
8043230270	2.7			
8043230280	2.8			
8043230290	2.9			
8043230300	3.0	6.0	21	57
8043230310	3.1			
8043230320	3.2			
8043230330	3.3			
8043230340	3.4			
8043230350	3.5			
8043230360	3.6			
8043230370	3.7			
8043230380	3.8			
8043230390	3.9			
8043230400	4.0	6.0	28	66
8043230410	4.1			

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8043230420	4.2	6.0	36	74
8043230430	4.3			
8043230440	4.4			
8043230450	4.5			
8043230460	4.6			
8043230470	4.7	6.0	44	82
8043230480	4.8			
8043230490	4.9			
8043230500	5.0			
8043230510	5.1			
8043230520	5.2			
8043230530	5.3			
8043230540	5.4			
8043230550	5.5			
8043230560	5.6			
8043230570	5.7	8.0	53	91
8043230580	5.8			
8043230590	5.9			
8043230600	6.0			
8043230610	6.1			
8043230620	6.2			
8043230630	6.3			
8043230640	6.4			
8043230650	6.5			
8043230660	6.6			
8043230670	6.7	8.0	53	91
8043230680	6.8			
8043230690	6.9			
8043230700	7.0			
8043230710	7.1			
8043230720	7.2			
8043230730	7.3			

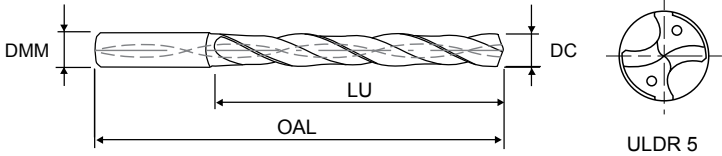
ISO	P			M			K			N			S			H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39		
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16		
● Excellent	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

GP DRILL THROUGH COOLANT 5xD



Series No. 804323

▶ cutting conditions : p.56



Application :
Drilling into steel in general, cast steel, cast iron, chilled cast iron, malleable cast iron.

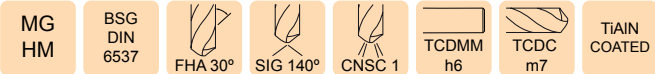
Advantage :
Self centering, centre drilling is not required
Excellent positioning, bush is not necessary
Special Design, reaming is not required
Good chip removal, powerful drilling

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8043230740	7.4	8.0	53	91
8043230750	7.5			
8043230760	7.6			
8043230770	7.7			
8043230780	7.8			
8043230790	7.9	10.0	61	103
8043230800	8.0			
8043230810	8.1			
8043230820	8.2			
8043230830	8.3			
8043230840	8.4			
8043230850	8.5			
8043230860	8.6			
8043230870	8.7			
8043230880	8.8			
8043230890	8.9	12.0	71	118
8043230900	9.0			
8043230910	9.1			
8043230920	9.2			
8043230930	9.3			
8043230940	9.4			
8043230950	9.5			
8043230960	9.6	16.0	83	133
8043230970	9.7			
8043230980	9.8			
8043230990	9.9			
8043231000	10.0			
8043231010	10.1	20.0	101	153
8043231020	10.2			
8043231030	10.3			
8043231040	10.4			
8043231050	10.5			

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8043231060	10.6	12.0	71	118
8043231070	10.7			
8043231080	10.8			
8043231090	10.9			
8043231100	11.0			
8043231110	11.1			
8043231120	11.2			
8043231130	11.3			
8043231140	11.4			
8043231150	11.5			
8043231160	11.6	14.0	77	124
8043231170	11.7			
8043231180	11.8			
8043231190	11.9			
8043231200	12.0			
8043231250	12.5	16.0	83	133
8043231300	13.0			
8043231350	13.5			
8043231400	14.0			
8043231450	14.5	18.0	93	143
8043231500	15.0			
8043231550	15.5			
8043231600	16.0			
8043231650	16.5	20.0	101	153
8043231700	17.0			
8043231750	17.5			
8043231800	18.0			
8043231850	18.5			
8043231900	19.0	20.0	101	153
8043231950	19.5			
8043232000	20.0			

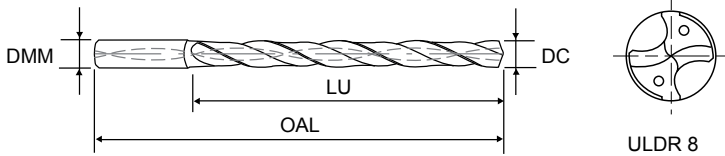
ISO	P			M			K			N			S			H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39		
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16		
● Excellent	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

GP DRILL THROUGH COOLANT 8xD



Series No. 805323

► cutting conditions : p.56



Application :
Drilling into steel in general, cast steel, cast iron, chilled cast iron, malleable cast iron.

Advantage :
Self centering, centre drilling is not required
Excellent positioning, bush is not necessary
Special Design, reaming is not required
Good chip removal, powerful drilling

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8053230300	3.0	6.0	34	72
8053230310	3.1			
8053230320	3.2			
8053230330	3.3			
8053230340	3.4			
8053230350	3.5			
8053230360	3.6			
8053230370	3.7	6.0	43	81
8053230380	3.8			
8053230390	3.9			
8053230400	4.0			
8053230410	4.1			
8053230420	4.2			
8053230430	4.3			
8053230440	4.4			
8053230450	4.5			
8053230460	4.6			
8053230470	4.7			
8053230480	4.8	6.0	57	95
8053230490	4.9			
8053230500	5.0			
8053230510	5.1			
8053230520	5.2			

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8053230530	5.3	6.0	57	95
8053230540	5.4			
8053230550	5.5			
8053230560	5.6			
8053230570	5.7			
8053230580	5.8			
8053230590	5.9			
8053230600	6.0	8.0	76	114
8053230610	6.1			
8053230620	6.2			
8053230630	6.3			
8053230640	6.4			
8053230650	6.5			
8053230660	6.6			
8053230670	6.7			
8053230680	6.8			
8053230690	6.9			
8053230700	7.0			
8053230710	7.1			
8053230720	7.2			
8053230730	7.3			
8053230740	7.4			
8053230750	7.5			

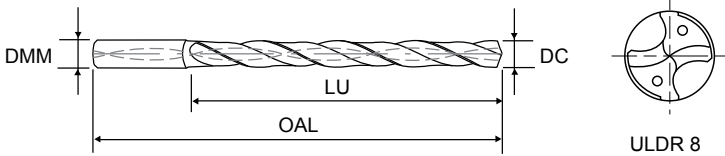
ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good	●	●	●		●	●							

GP DRILL THROUGH COOLANT 8xD



Series No. 805323

► cutting conditions : p.56



Application :
Drilling into steel in general, cast steel, cast iron, chilled cast iron, malleable cast iron.

Advantage :
Self centering, centre drilling is not required
Excellent positioning, bush is not necessary
Special Design, reaming is not required
Good chip removal, powerful drilling

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8053230760	7.6	8.0	76	114
8053230770	7.7			
8053230780	7.8			
8053230790	7.9			
8053230800	8.0			
8053230810	8.1			
8053230820	8.2			
8053230830	8.3	10.0	95	142
8053230840	8.4			
8053230850	8.5			
8053230860	8.6			
8053230870	8.7			
8053230880	8.8			
8053230890	8.9			
8053230900	9.0			
8053230910	9.1			
8053230920	9.2			
8053230930	9.3			
8053230940	9.4			
8053230950	9.5			
8053230960	9.6			
8053230970	9.7			
8053230980	9.8			

EUROPA CODE ORDCODE	OD DC	SD DMM	FL.LTH LU	O/ALL OAL
8053230990	9.9	10.0	95	142
8053231000	10.0			
8053231010	10.1			
8053231020	10.2	12.0	114	162
8053231030	10.3			
8053231040	10.4			
8053231050	10.5			
8053231060	10.6			
8053231070	10.7			
8053231080	10.8			
8053231090	10.9			
8053231100	11.0			
8053231110	11.1			
8053231120	11.2			
8053231130	11.3			
8053231140	11.4			
8053231150	11.5			
8053231160	11.6			
8053231170	11.7			
8053231180	11.8			
8053231190	11.9			
8053231200	12.0			

ISO	P			M		K		N				S		H
VDI	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	31-35	36-37	38-39
EMG	11-12	13-14	15	21-22	23	31-32	33-34	71-74	61-64	81-82	83	51-53	41-43	16
● Excellent	○ Good	●	●	●		●	●							

CUTTING DATA



823323, 825323, 828323 (Inox)



ISO	VDI	v _c (m/min)	f _n (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 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
P	1-5	115 (105-125)	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10	0.12	0.15	0.20	0.22	0.24
	6-9	105 (95-115)	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10	0.12	0.15	0.20	0.22	0.24
	10-11	95 (85-105)	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10	0.12	0.15	0.20	0.22	0.24
M	12-13	65 (60-70)	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10	0.12	0.16	0.20	0.22	0.24
	14	40 (35-45)	0.02	0.03	0.03	0.03	0.03	0.04	0.05	0.06	0.08	0.10	0.12	0.15	0.17	0.19
S	31-32	30 (25-35)	0.05	0.05	0.06	0.08	0.08	0.10	0.10	0.11	0.12	0.14	0.14	0.15	0.15	0.15
	33-35	25 (20-30)	0.03	0.03	0.04	0.06	0.06	0.08	0.08	0.09	0.10	0.12	0.12	0.13	0.13	0.13
	36	45 (40-50)	0.01	0.02	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.10	0.12	0.14	0.16	0.18
	37	40 (35-45)	0.01	0.02	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.10	0.12	0.14	0.16	0.18
N	21-24	210 (200-220)	0.04	0.08	0.12	0.18	0.20	0.25	0.28	0.30	0.40	0.50	0.60	0.80	1.00	1.20
	25	165 (155-175)	0.03	0.06	0.10	0.15	0.18	0.25	0.28	0.30	0.35	0.40	0.50	0.60	0.70	0.80

- For 8xD drills reduce feed rate by 15%
- For recommended coolant pressure refer to p.64

803323, 804323, 805323 (T/Coolant)



ISO	VDI	v _c (m/min)	f _n (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 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
P	1-5	140 (130-150)	0.05	0.07	0.16	0.17	0.18	0.20	0.22	0.25	0.30	0.33	0.36	0.39	0.42	0.45
	6-9	125 (115-135)	0.05	0.07	0.16	0.17	0.18	0.20	0.22	0.25	0.30	0.33	0.36	0.39	0.42	0.45
	10-11	110 (100-120)	0.05	0.07	0.16	0.17	0.18	0.20	0.22	0.25	0.30	0.33	0.36	0.39	0.42	0.45
K	15-16	240 (230-250)	0.15	0.07	0.16	0.17	0.18	0.20	0.22	0.25	0.30	0.33	0.36	0.39	0.42	0.45
	17-20	150 (140-160)	0.15	0.07	0.16	0.17	0.18	0.20	0.22	0.25	0.30	0.33	0.36	0.39	0.42	0.45

- For 8xD drills reduce feed rate by 15%
- For diameters below 3.0mm reduce cutting speed by 40%
- For recommended coolant pressure refer to p.64

CUTTING DATA

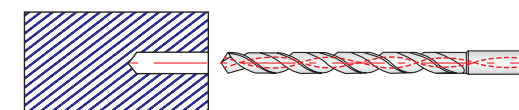


810323, 815323, 820323, 826323, 860323 (MQL)

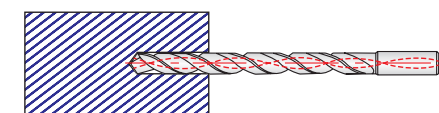


ISO	VDI	v _c (m/min)	f _n (mm/rev)													
			ø1.0 -1.9	ø2.0 -2.9	ø3.0 -3.9	ø4.0 -4.9	ø5.0 -5.9	ø6.0 -6.9	ø7.0 -7.9	ø8.0 -9.9	ø10.0 -11.9	ø12.0 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
P	1-5	95 (65-125)	-	-	0.09	0.12	0.15	0.18	-	0.22	0.28	0.33	0.37	-	-	-
	6-9	85 (60-115)	-	-	0.09	0.12	0.15	0.18	-	0.22	0.28	0.33	0.37	-	-	-
	10-11	75 (50-100)	-	-	0.09	0.12	0.15	0.18	-	0.22	0.28	0.33	0.37	-	-	-
K	15-16	95 (65-125)	-	-	0.09	0.12	0.15	0.18	-	0.22	0.28	0.33	0.37	-	-	-
	17-20	70 (60-80)	-	-	0.09	0.12	0.15	0.18	-	0.22	0.28	0.33	0.37	-	-	-

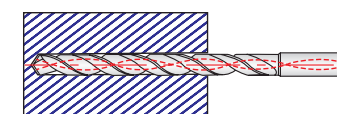
- For 25xD and 30xD drills reduce cutting speed by up to 25%
- For recommended coolant pressure refer to p.64



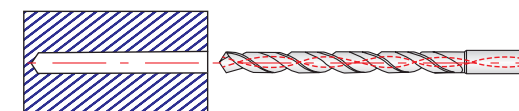
1. Guide drilling should be carried out with 5xD drill 0.1mm larger than finished hole diameter and drilled between 3xD and 5xD depth.



2. For main drilling, reduce to 300RPM and feed in at 400mm/min while entering pilot hole.



3. Just before the end of the pilot hole, reduce feed rate to zero and increase the RPM according to the recommended cutting condition shown in the chart above.



4. Increase feed rate and drill to depth without step drilling.

5. When extracting drill after drilling, reduce to 300RPM and feed rate of 1000mm/min when drill reaches pilot hole depth.

6. When exiting hole reduce feed by 50%.

v_c - cutting speed (m/min)

n - RPM (rev/min)

f_n - feed rate (mm/rev)

ø - drill diameter (mm)

$$\text{To calculate RPM from cutting speed: } n = \frac{v_c \cdot 1000}{\pi \cdot \phi}$$

$$\text{To calculate cutting speed from RPM: } v_c = \frac{n \cdot \pi \cdot \phi}{1000}$$

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 this chart are nominal recommendations and should be considered only as good starting points.

CUTTING DATA



821223 (Pulsar HRC70)



ISO	VDI	Hardness HRc	v _c (m/min)	f _n (mm/rev)											
				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	10-11	35-45	20 (16-24)	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05	-	-	-
H	38-39	45-55	18 (14-22)	0.04	0.04	0.04	0.04	-	0.04	0.04	0.04	0.04	-	-	-
		55-65	13 (10-16)	0.04	0.04	0.04	0.04	-	0.04	0.04	0.04	0.04	-	-	-
		65-70	10 (8-13)	0.04	0.04	0.04	0.04	-	0.04	0.04	0.04	0.04	-	-	-

843303, 845303, 848303 (Alu-XP)



ISO	VDI	v _c (m/min)	f _n (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 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
N	21-24	140 (80-200)	-	-	0.20	0.30	0.40	0.50	0.50	0.60	0.60	0.70	0.70	0.80	0.90	1.00
	25	140 (80-200)	-	-	0.15	0.20	0.25	0.30	0.30	0.35	0.35	0.40	0.40	0.40	0.40	0.40

- For 8xD drills reduce feed rate by 15%
► For recommended coolant pressure refer to p.64

850390 (CFRP)



ISO	VDI	v _c (m/min)	f _n (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 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
N	29.2	125 (100-150)	-	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	-	-	-	-

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: $n = \frac{v_c \cdot 1000}{\pi \cdot \varnothing}$

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

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 this chart are nominal recommendations and should be considered only as good starting points.

CUTTING DATA



803366, 805366 (High Feed)



ISO	VDI	v _c (m/min)	f _n (mm/rev)											
			ø5.0 -5.9	ø6.0 -6.9	ø7.0 -7.9	ø8.0 -8.9	ø9.0 -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	100 (90-110)	0.22	0.27	0.31	0.36	0.40	0.45	0.54	0.63	0.64	0.72	0.79	
	6-9	75 (70-80)	0.22	0.27	0.31	0.36	0.40	0.45	0.51	0.59	0.60	0.67	0.74	
K	15-16	100 (90-110)	0.26	0.31	0.37	0.42	0.47	0.52	0.63	0.72	0.73	0.81	0.89	
	17-20	80 (70-90)	0.22	0.27	0.31	0.36	0.40	0.45	0.54	0.62	0.64	0.72	0.80	

- For recommended coolant pressure refer to p.64

809323 (Flat Bottom)



ISO	VDI	v _c (m/min)	f _n (mm/rev)											
			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	70 (35-75)	0.05	0.07	0.08	0.09	0.10	0.12	0.17	0.21	0.24	0.28	0.31	0.34
	6-9	38 (35-40)	0.05	0.06	0.08	0.09	0.10	0.12	0.15	0.18	0.20	0.24	0.27	0.31
	10-11	25 (22-28)	0.03	0.04	0.05	0.06	0.07	0.08	0.10	0.12	0.14	0.16	0.18	0.20
M	14	30 (25-35)	0.02	0.03	0.04	0.05	0.05	0.06	0.08	0.10	0.11	0.12	0.13	0.15
K	15-20	68 (65-70)	0.04	0.06	0.07	0.09	0.10	0.12	0.15	0.18	0.20	0.24	0.27	0.30
N	21-24	165 (150-180)	0.06	0.08	0.10	0.12	0.14	0.16	0.20	0.24	0.28	0.32	0.36	0.40

809323 - Recommended cutting conditions for inclined surfaces

Surface angle	Cutting conditions	
	RPM	Feed
0° - 15°	100%	100%
15° - 30°	100%	50%
> 30°	70%	30%

CUTTING DATA



802323, 807323, 808323 (TiAlN)



ISO	VDI	v _c (m/min)	f _n (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 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
P	1-5	100 (100-120)	0.04	0.06	0.13	0.14	0.15	0.17	0.19	0.22	0.25	0.27	0.29	0.31	0.33	0.35
	6-9	95 (85-105)	0.04	0.06	0.13	0.14	0.15	0.17	0.19	0.22	0.25	0.27	0.29	0.31	0.33	0.35
	10-11	80 (70-90)	0.04	0.06	0.13	0.14	0.15	0.17	0.19	0.22	0.25	0.27	0.29	0.31	0.33	0.35
K	15-16	240 (180-200)	0.04	0.06	0.13	0.14	0.15	0.17	0.19	0.22	0.25	0.27	0.29	0.31	0.33	0.35
	17-20	120 (110-130)	0.04	0.16	0.13	0.14	0.15	0.17	0.19	0.22	0.25	0.27	0.29	0.31	0.33	0.35

► For 5xD drills reduce feed rate by 15%

► For diameters below 3.0mm reduce cutting speed by 40%

800303, 801303, 806303, 806403



ISO	VDI	v _c (m/min)	f _n (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 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
P	1-5	70 (65-75)	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.11	0.13	0.15	-	-	-	-
	6-9	50 (45-55)	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.11	0.13	0.15	-	-	-	-
	10-11	40 (35-45)	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.11	0.13	0.15	-	-	-	-
M	12-13	35 (30-40)	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.10	0.12	0.13	-	-	-	-
K	15-16	90 (80-100)	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.13	0.17	0.20	-	-	-	-
	17-20	60 (50-70)	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.13	0.17	0.20	-	-	-	-

v_c - cutting speed (m/min)

n - RPM (rev/min)

f_n - feed rate (mm/rev)

ø - drill diameter (mm)

$$\text{To calculate RPM from cutting speed: } n = \frac{v_c \cdot 1000}{\pi \cdot \phi}$$

$$\text{To calculate cutting speed from RPM: } v_c = \frac{n \cdot \pi \cdot \phi}{1000}$$

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 this chart are nominal recommendations and should be considered only as good starting points.

CUTTING DATA



820434, 810434 (HPD-SUS)



ISO	VDI	v _c (m/min)	f _n (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 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
P	1-5	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	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	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	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	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	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	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	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 drills reduce feed rate by 15%

820422, 821422 (SABRE)



ISO	VDI	v _c (m/min)	f _n (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 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
P	1-5	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	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	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	18 (15-20)	0.06	0.08	0.09	0.11	0.17	0.19	0.22	0.26	0.33	0.39	-	-	-	-
	14	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	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	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 drills reduce feed rate by 15%

CUTTING DATA



816327, 817327, 819327



ISO	VDI	v _c (m/min)	f _n (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 -13.5	ø14.0 -15.5	ø16.0 -17.5	ø18.0 -19.5	ø20.0
P	1-5	18 (15-20)	-	0.04	0.05	0.06	0.06	0.08	0.09	0.10	0.13	-	-	-	-	-
	6-9	13 (10-15)	-	0.04	0.05	0.06	0.06	0.08	0.09	0.10	0.13	-	-	-	-	-
	10-11	11 (8-13)	-	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10	-	-	-	-	-
K	15-16	23 (20-25)	-	0.07	0.10	0.13	0.13	0.16	0.18	0.20	0.25	-	-	-	-	-
	17-20	10 (7-12)	-	0.06	0.08	0.10	0.10	0.13	0.15	0.17	0.21	-	-	-	-	-
N	21-24	33 (30-35)	-	0.06	0.07	0.08	0.09	0.10	0.11	0.13	0.16	-	-	-	-	-

821402, 822402 (Spotting Drills)



ISO	VDI	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	20 (25-25)	0.050	0.055	0.063	0.080	0.130	0.145	0.160	0.200	0.240
	6-9	18 (15-20)	0.045	0.050	0.060	0.075	0.125	0.140	0.150	0.210	0.230
	10-11	15 (10-20)	0.045	0.050	0.060	0.075	0.125	0.140	0.150	0.210	0.230
M	12-14	8 (6-10)	0.050	0.055	0.063	0.080	0.130	0.145	0.160	0.200	0.240
K	15-20	8 (6-10)	0.050	0.055	0.063	0.080	0.130	0.145	0.160	0.200	0.240
S	31-35	5 (4-6)	0.025	0.031	0.038	0.045	0.075	0.090	0.100	0.120	0.140
	36-37	5 (4-6)	0.025	0.031	0.038	0.045	0.075	0.090	0.100	0.120	0.140
N	21-25	40 (40-45)	0.063	0.070	0.076	0.120	0.180	0.200	0.225	0.275	0.325
	26-27	30 (25-35)	0.063	0.070	0.076	0.120	0.180	0.200	0.225	0.275	0.325

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: $n = \frac{v_c \cdot 1000}{\pi \cdot \varnothing}$

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

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 this chart are nominal recommendations and should be considered only as good starting points.