



SOLID CARBIDE TOOLS

PRECISION ENGINEERED



HITCO TOOLS LIMITED

EXCLUSIVE TOOL DESIGN CONCEPT



INDEX



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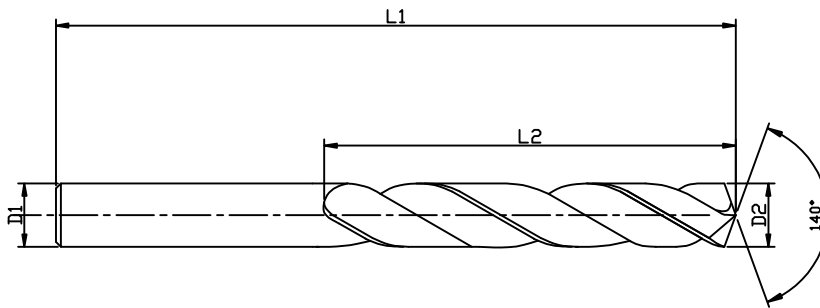
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Solid Carbide High Performance Drills



SERIES : HDRP3

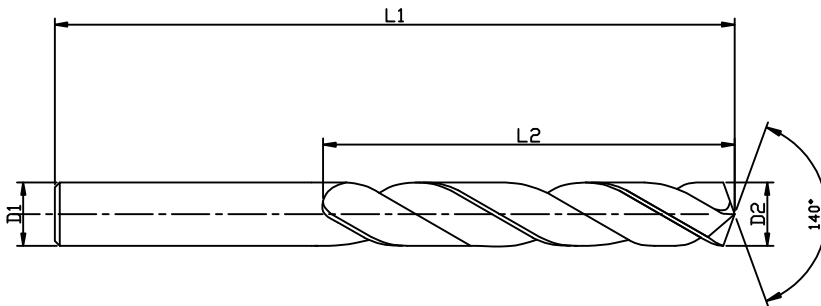
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HDRP034N3C	3.4	6	20	62
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HDRP036N3C	3.6	6	20	62
HDRP037N3C	3.7	6	20	62
HDRP038N3C	3.8	6	24	66
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HDRP043N3C	4.3	6	24	66
HDRP044N3C	4.4	6	24	66
HDRP045N3C	4.5	6	24	66
HDRP046N3C	4.6	6	24	66
HDRP047N3C	4.7	6	24	66
HDRP048N3C	4.8	6	28	66
HDRP049N3C	4.9	6	28	66
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HDRP051N3C	5.1	6	28	66
HDRP052N3C	5.2	6	28	66
HDRP053N3C	5.3	6	28	66
HDRP054N3C	5.4	6	28	66
HDRP055N3C	5.5	6	28	66
HDRP056N3C	5.6	6	28	66
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Drill Dia Tol : m7
As per DIN 6537(S)

Solid Carbide High Performance Drills



SERIES : HDRP3

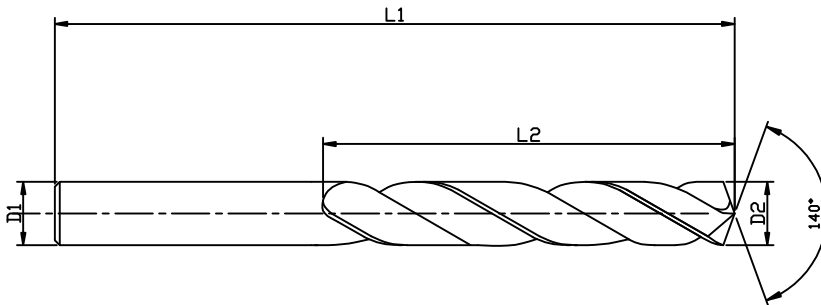
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HDRP066N3C	6.6	8	34	79
HDRP067N3C	6.7	8	34	79
HDRP068N3C	6.8	8	34	79
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HDRP072N3C	7.2	8	41	79
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HDRP078N3C	7.8	8	41	79
HDRP079N3C	7.9	8	41	79
HDRP080N3C	8	8	41	79
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Drill Dia Tol : m7
As per DIN 6537(S)

Solid Carbide High Performance Drills



SERIES : HDRP3

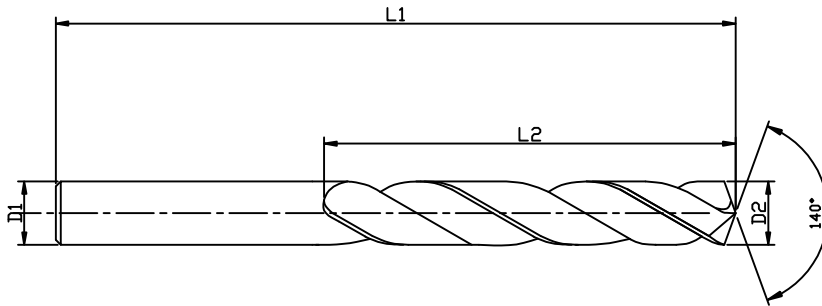
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HDRP097N3C	9.7	10	47	89
HDRP098N3C	9.8	10	47	89
HDRP099N3C	9.9	10	47	89
HDRP100N3C	10	10	47	89
HDRP101N3C	10.1	12	55	102
HDRP102N3C	10.2	12	55	102
HDRP103N3C	10.3	12	55	102
HDRP104N3C	10.4	12	55	102
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HDRP107N3C	10.7	12	55	102
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HDRP112N3C	11.2	12	55	102
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Drill Dia Tol : m7
As per DIN 6537(S)

Solid Carbide High Performance Drills



SERIES : HDRP3

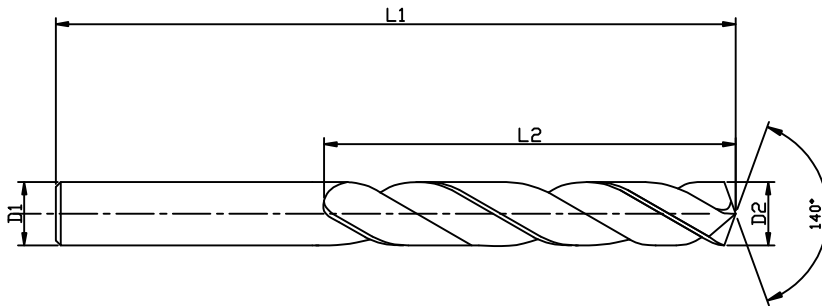
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HDRP117N3C	11.7	12	55	102
HDRP118N3C	11.8	12	55	102
HDRP119N3C	11.9	12	55	102
HDRP120N3C	12	12	55	102
HDRP125N3C	12.5	14	60	107
HDRP128N3C	12.8	14	60	107
HDRP130N3C	13	14	60	107
HDRP135N3C	13.5	14	60	107
HDRP138N3C	13.8	14	60	107
HDRP140N3C	14	14	60	107
HDRP145N3C	14.5	16	65	115
HDRP148N3C	14.8	16	65	115
HDRP150N3C	15	16	65	115
HDRP155N3C	15.5	16	65	115
HDRP158N3C	15.8	16	65	115
HDRP160N3C	16	16	65	115
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HDRP170N3C	17	18	73	123
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HDRP180N3C	18	18	73	123
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HDRP190N3C	19	20	79	131
HDRP195N3C	19.5	20	79	131
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Drill Dia Tol : m7
As per DIN 6537(S)

Solid Carbide High Performance Drills



SERIES : HDRP5

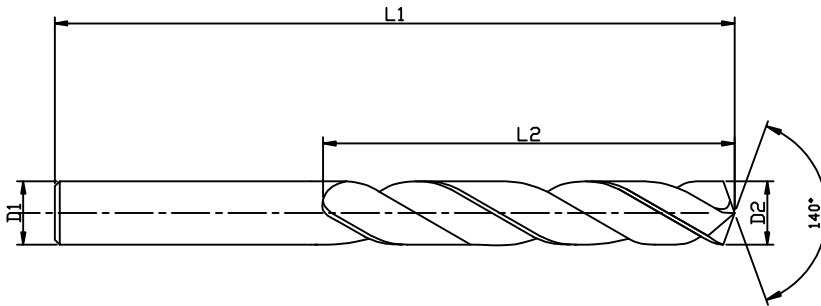
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HDRP032N5C	3.2	6	28	66
HDRP033N5C	3.3	6	28	66
HDRP034N5C	3.4	6	28	66
HDRP035N5C	3.5	6	28	66
HDRP036N5C	3.6	6	28	66
HDRP037N5C	3.7	6	28	66
HDRP038N5C	3.8	6	36	74
HDRP039N5C	3.9	6	36	74
HDRP040N5C	4	6	36	74
HDRP041N5C	4.1	6	36	74
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HDRP043N5C	4.3	6	36	74
HDRP044N5C	4.4	6	36	74
HDRP045N5C	4.5	6	36	74
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HDRP047N5C	4.7	6	36	74
HDRP048N5C	4.8	6	44	82
HDRP049N5C	4.9	6	44	82
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HDRP051N5C	5.1	6	44	82
HDRP052N5C	5.2	6	44	82
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HDRP055N5C	5.5	6	44	82
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**Drill Dia Tol : m7
As per DIN 6537**

Solid Carbide High Performance Drills



SERIES : HDRP5

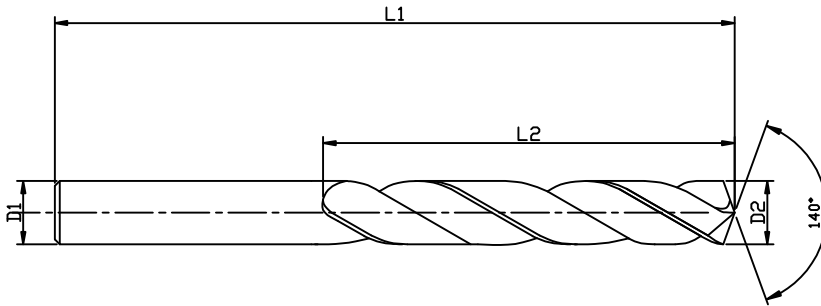
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HDRP062N5C	6.2	8	53	91
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HDRP064N5C	6.4	8	53	91
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HDRP066N5C	6.6	8	53	91
HDRP067N5C	6.7	8	53	91
HDRP068N5C	6.8	8	53	91
HDRP069N5C	6.9	8	53	91
HDRP070N5C	7	8	53	91
HDRP071N5C	7.1	8	53	91
HDRP072N5C	7.2	8	53	91
HDRP073N5C	7.3	8	53	91
HDRP074N5C	7.4	8	53	91
HDRP075N5C	7.5	8	53	91
HDRP076N5C	7.6	8	53	91
HDRP077N5C	7.7	8	53	91
HDRP078N5C	7.8	8	53	91
HDRP079N5C	7.9	8	53	91
HDRP080N5C	8	8	53	91
HDRP081N5C	8.1	10	61	103
HDRP082N5C	8.2	10	61	103
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**Drill Dia Tol : m7
As per DIN 6537**

Solid Carbide High Performance Drills



SERIES : HDRP5

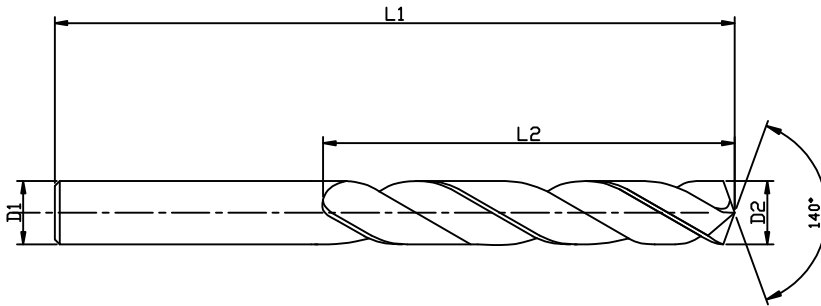
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HDRP087N5C	8.7	10	61	103
HDRP088N5C	8.8	10	61	103
HDRP089N5C	8.9	10	61	103
HDRP090N5C	9	10	61	103
HDRP091N5C	9.1	10	61	103
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HDRP099N5C	9.9	10	61	103
HDRP100N5C	10	10	61	103
HDRP101N5C	10.1	12	71	118
HDRP102N5C	10.2	12	71	118
HDRP103N5C	10.3	12	71	118
HDRP104N5C	10.4	12	71	118
HDRP105N5C	10.5	12	71	118
HDRP106N5C	10.6	12	71	118
HDRP107N5C	10.7	12	71	118
HDRP108N5C	10.8	12	71	118
HDRP109N5C	10.9	12	71	118
HDRP110N5C	11	12	71	118



**Drill Dia Tol : m7
As per DIN 6537**

Solid Carbide High Performance Drills



SERIES : HDRP5

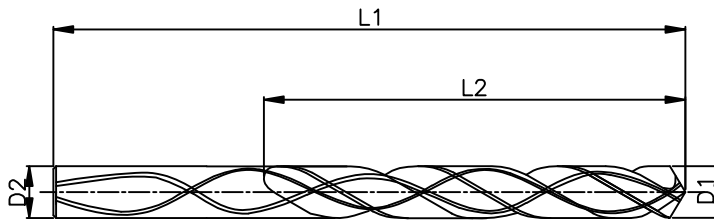
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HDRP113N5C	11.3	12	71	118
HDRP114N5C	11.4	12	71	118
HDRP115N5C	11.5	12	71	118
HDRP116N5C	11.6	12	71	118
HDRP117N5C	11.7	12	71	118
HDRP118N5C	11.8	12	71	118
HDRP119N5C	11.9	12	71	118
HDRP120N5C	12	12	71	118
HDRP125N5C	12.5	14	77	124
HDRP130N5C	13	14	77	124
HDRP135N5C	13.5	14	77	124
HDRP140N5C	14	14	77	124
HDRP145N5C	14.5	16	83	133
HDRP150N5C	15	16	83	133
HDRP155N5C	15.5	16	83	133
HDRP160N5C	16	16	83	133
HDRP165N5C	16.5	18	93	143
HDRP170N5C	17	18	93	143
HDRP175N5C	17.5	18	93	143
HDRP180N5C	18	18	93	143
HDRP185N5C	18.5	20	101	153
HDRP190N5C	19	20	101	153
HDRP195N5C	19.5	20	101	153
HDRP200N5C	20	20	101	153



Drill Dia Tol : m7
As per DIN 6537

Solid Carbide Through Coolant Drills



SERIES : HDRT3

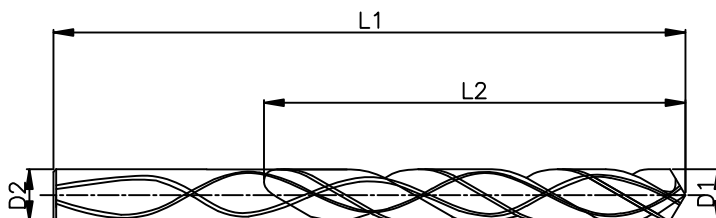
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HDRP032N3TC	3.2	6	20	62
HDRP033N3TC	3.3	6	20	62
HDRP034N3TC	3.4	6	20	62
HDRP035N3TC	3.5	6	20	62
HDRP036N3TC	3.6	6	20	62
HDRP037N3TC	3.7	6	20	62
HDRP038N3TC	3.8	6	24	66
HDRP039N3TC	3.9	6	24	66
HDRP040N3TC	4	6	24	66
HDRP041N3TC	4.1	6	24	66
HDRP042N3TC	4.2	6	24	66
HDRP043N3TC	4.3	6	24	66
HDRP044N3TC	4.4	6	24	66
HDRP045N3TC	4.5	6	24	66
HDRP046N3TC	4.6	6	24	66
HDRP047N3TC	4.7	6	24	66
HDRP048N3TC	4.8	6	28	66
HDRP049N3TC	4.9	6	28	66
HDRP050N3TC	5	6	28	66
HDRP051N3TC	5.1	6	28	66
HDRP052N3TC	5.2	6	28	66
HDRP053N3TC	5.3	6	28	66
HDRP054N3TC	5.4	6	28	66
HDRP055N3TC	5.5	6	28	66
HDRP056N3TC	5.6	6	28	66
HDRP057N3TC	5.7	6	28	66



Drill Dia Tol : m7
As per DIN 6537(S)

Solid Carbide Through Coolant Drills



SERIES : HDRT3

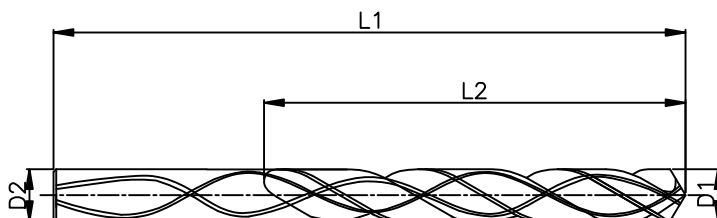
3 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP058N3TC	5.8	6	28	66
HDRP059N3TC	5.9	6	28	66
HDRP060N3TC	6	6	28	66
HDRP061N3TC	6.1	8	34	79
HDRP062N3TC	6.2	8	34	79
HDRP063N3TC	6.3	8	34	79
HDRP064N3TC	6.4	8	34	79
HDRP065N3TC	6.5	8	34	79
HDRP066N3TC	6.6	8	34	79
HDRP067N3TC	6.7	8	34	79
HDRP068N3TC	6.8	8	34	79
HDRP069N3TC	6.9	8	34	79
HDRP070N3TC	7	8	34	79
HDRP071N3TC	7.1	8	41	79
HDRP072N3TC	7.2	8	41	79
HDRP073N3TC	7.3	8	41	79
HDRP074N3TC	7.4	8	41	79
HDRP075N3TC	7.5	8	41	79
HDRP076N3TC	7.6	8	41	79
HDRP077N3TC	7.7	8	41	79
HDRP078N3TC	7.8	8	41	79
HDRP079N3TC	7.9	8	41	79
HDRP080N3TC	8	8	41	79
HDRP081N3TC	8.1	10	47	89
HDRP082N3TC	8.2	10	47	89
HDRP083N3TC	8.3	10	47	89
HDRP084N3TC	8.4	10	47	89
HDRP085N3TC	8.5	10	47	89



Drill Dia Tol : m7
As per DIN 6537(S)

Solid Carbide Through Coolant Drills



SERIES : HDRT3

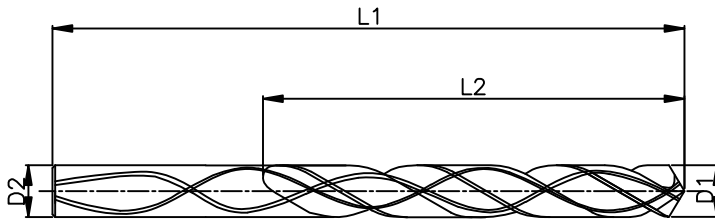
3 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP086N3TC	8.6	10	47	89
HDRP087N3TC	8.7	10	47	89
HDRP088N3TC	8.8	10	47	89
HDRP089N3TC	8.9	10	47	89
HDRP090N3TC	9	10	47	89
HDRP091N3TC	9.1	10	47	89
HDRP092N3TC	9.2	10	47	89
HDRP093N3TC	9.3	10	47	89
HDRP094N3TC	9.4	10	47	89
HDRP095N3TC	9.5	10	47	89
HDRP096N3TC	9.6	10	47	89
HDRP097N3TC	9.7	10	47	89
HDRP098N3TC	9.8	10	47	89
HDRP099N3TC	9.9	10	47	89
HDRP100N3TC	10	10	47	89
HDRP101N3TC	10.1	12	55	102
HDRP102N3TC	10.2	12	55	102
HDRP103N3TC	10.3	12	55	102
HDRP104N3TC	10.4	12	55	102
HDRP105N3TC	10.5	12	55	102
HDRP106N3TC	10.6	12	55	102
HDRP107N3TC	10.7	12	55	102
HDRP108N3TC	10.8	12	55	102
HDRP109N3TC	10.9	12	55	102
HDRP110N3TC	11	12	55	102
HDRP111N3TC	11.1	12	55	102
HDRP112N3TC	11.2	12	55	102
HDRP113N3TC	11.3	12	55	102



Drill Dia Tol : m7
As per DIN 6537(S)

Solid Carbide Through Coolant Drills



SERIES : HDRT3

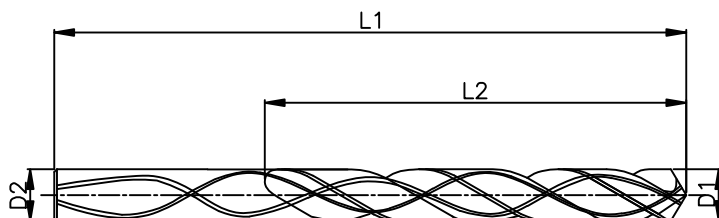
3 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP114N3TC	11.4	12	55	102
HDRP115N3TC	11.5	12	55	102
HDRP116N3TC	11.6	12	55	102
HDRP117N3TC	11.7	12	55	102
HDRP118N3TC	11.8	12	55	102
HDRP119N3TC	11.9	12	55	102
HDRP120N3TC	12	12	55	102
HDRP125N3TC	12.5	14	60	107
HDRP128N3TC	12.8	14	60	107
HDRP130N3TC	13	14	60	107
HDRP135N3TC	13.5	14	60	107
HDRP138N3TC	13.8	14	60	107
HDRP140N3TC	14	14	60	107
HDRP145N3TC	14.5	16	65	115
HDRP148N3TC	14.8	16	65	115
HDRP150N3TC	15	16	65	115
HDRP155N3TC	15.5	16	65	115
HDRP158N3TC	15.8	16	65	115
HDRP160N3TC	16	16	65	115
HDRP165N3TC	16.5	18	73	123
HDRP170N3TC	17	18	73	123
HDRP175N3TC	17.5	18	73	123
HDRP180N3TC	18	18	73	123
HDRP185N3TC	18.5	20	79	131
HDRP190N3TC	19	20	79	131
HDRP195N3TC	19.5	20	79	131
HDRP200N3TC	20	20	79	131



Drill Dia Tol : m7
As per DIN 6537(S)

Solid Carbide Through Coolant Drills



SERIES : HDRT5

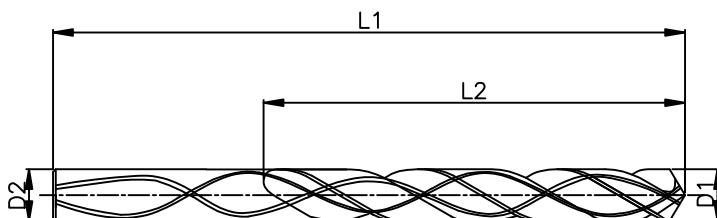
5 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP030N5TC	3	6	28	66
HDRP031N5TC	3.1	6	28	66
HDRP032N5TC	3.2	6	28	66
HDRP033N5TC	3.3	6	28	66
HDRP034N5TC	3.4	6	28	66
HDRP035N5TC	3.5	6	28	66
HDRP036N5TC	3.6	6	28	66
HDRP037N5TC	3.7	6	28	66
HDRP038N5TC	3.8	6	36	74
HDRP039N5TC	3.9	6	36	74
HDRP040N5TC	4	6	36	74
HDRP041N5TC	4.1	6	36	74
HDRP042N5TC	4.2	6	36	74
HDRP043N5TC	4.3	6	36	74
HDRP044N5TC	4.4	6	36	74
HDRP045N5TC	4.5	6	36	74
HDRP046N5TC	4.6	6	36	74
HDRP047N5TC	4.7	6	36	74
HDRP048N5TC	4.8	6	44	82
HDRP049N5TC	4.9	6	44	82
HDRP050N5TC	5	6	44	82
HDRP051N5TC	5.1	6	44	82
HDRP052N5TC	5.2	6	44	82
HDRP053N5TC	5.3	6	44	82
HDRP054N5TC	5.4	6	44	82
HDRP055N5TC	5.5	6	44	82
HDRP056N5TC	5.6	6	44	82
HDRP057N5TC	5.7	6	44	82



Drill Dia Tol : m7
As per DIN 6537

Solid Carbide Through Coolant Drills



SERIES : HDRT5

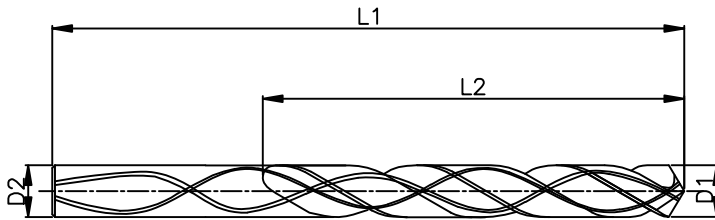
5 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP058N5TC	5.8	6	44	82
HDRP059N5TC	5.9	6	44	82
HDRP060N5TC	6	6	44	82
HDRP061N5TC	6.1	8	53	91
HDRP062N5TC	6.2	8	53	91
HDRP063N5TC	6.3	8	53	91
HDRP064N5TC	6.4	8	53	91
HDRP065N5TC	6.5	8	53	91
HDRP066N5TC	6.6	8	53	91
HDRP067N5TC	6.7	8	53	91
HDRP068N5TC	6.8	8	53	91
HDRP069N5TC	6.9	8	53	91
HDRP070N5TC	7	8	53	91
HDRP071N5TC	7.1	8	53	91
HDRP072N5TC	7.2	8	53	91
HDRP073N5TC	7.3	8	53	91
HDRP074N5TC	7.4	8	53	91
HDRP075N5TC	7.5	8	53	91
HDRP076N5TC	7.6	8	53	91
HDRP077N5TC	7.7	8	53	91
HDRP078N5TC	7.8	8	53	91
HDRP079N5TC	7.9	8	53	91
HDRP080N5TC	8	8	53	91
HDRP081N5TC	8.1	10	61	103
HDRP082N5TC	8.2	10	61	103
HDRP083N5TC	8.3	10	61	103
HDRP084N5TC	8.4	10	61	103
HDRP085N5TC	8.5	10	61	103



Drill Dia Tol : m7
As per DIN 6537

Solid Carbide Through Coolant Drills



SERIES : HDRT5

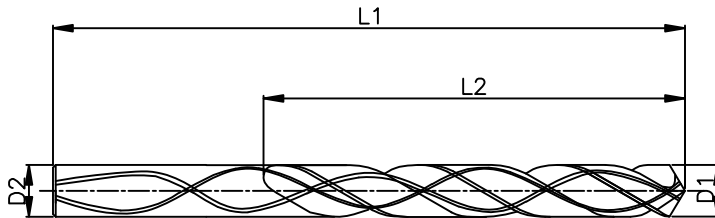
5 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP086N5TC	8.6	10	61	103
HDRP087N5TC	8.7	10	61	103
HDRP088N5TC	8.8	10	61	103
HDRP089N5TC	8.9	10	61	103
HDRP090N5TC	9	10	61	103
HDRP091N5TC	9.1	10	61	103
HDRP092N5TC	9.2	10	61	103
HDRP093N5TC	9.3	10	61	103
HDRP094N5TC	9.4	10	61	103
HDRP095N5TC	9.5	10	61	103
HDRP096N5TC	9.6	10	61	103
HDRP097N5TC	9.7	10	61	103
HDRP098N5TC	9.8	10	61	103
HDRP099N5TC	9.9	10	61	103
HDRP100N5TC	10	10	61	103
HDRP101N5TC	10.1	12	71	118
HDRP102N5TC	10.2	12	71	118
HDRP103N5TC	10.3	12	71	118
HDRP104N5TC	10.4	12	71	118
HDRP105N5TC	10.5	12	71	118
HDRP106N5TC	10.6	12	71	118
HDRP107N5TC	10.7	12	71	118
HDRP108N5TC	10.8	12	71	118
HDRP109N5TC	10.9	12	71	118
HDRP110N5TC	11	12	71	118
HDRP111N5TC	11.1	12	71	118
HDRP112N5TC	11.2	12	71	118
HDRP113N5TC	11.3	12	71	118



Drill Dia Tol : m7
As per DIN 6537

Solid Carbide Through Coolant Drills



SERIES : HDRT5

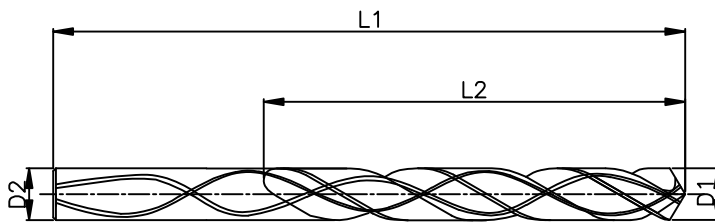
5 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP114N5TC	11.4	12	71	118
HDRP115N5TC	11.5	12	71	118
HDRP116N5TC	11.6	12	71	118
HDRP117N5TC	11.7	12	71	118
HDRP118N5TC	11.8	12	71	118
HDRP119N5TC	11.9	12	71	118
HDRP120N5TC	12	12	71	118
HDRP125N5TC	12.5	14	77	124
HDRP130N5TC	13	14	77	124
HDRP135N5TC	13.5	14	77	124
HDRP140N5TC	14	14	77	124
HDRP145N5TC	14.5	16	83	133
HDRP150N5TC	15	16	83	133
HDRP155N5TC	15.5	16	83	133
HDRP160N5TC	16	16	83	133
HDRP165N5TC	16.5	18	93	143
HDRP170N5TC	17	18	93	143
HDRP175N5TC	17.5	18	93	143
HDRP180N5TC	18	18	93	143
HDRP185N5TC	18.5	20	101	153
HDRP190N5TC	19	20	101	153
HDRP195N5TC	19.5	20	101	153
HDRP200N5TC	20	20	101	153



Drill Dia Tol : m7
As per DIN 6537

Solid Carbide Through Coolant Drills



SERIES : HDRT8

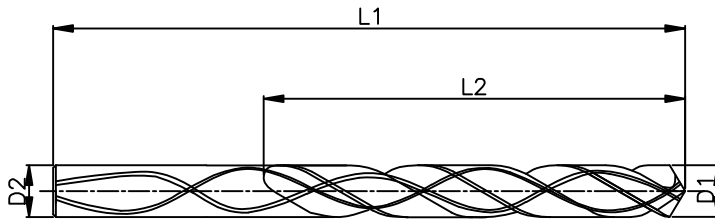
8 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP030N8TC	3	6	34	72
HDRP031N8TC	3.1	6	34	72
HDRP032N8TC	3.2	6	34	72
HDRP033N8TC	3.3	6	34	72
HDRP034N8TC	3.4	6	34	72
HDRP035N8TC	3.5	6	34	72
HDRP036N8TC	3.6	6	34	72
HDRP037N8TC	3.7	6	34	72
HDRP038N8TC	3.8	6	43	81
HDRP039N8TC	3.9	6	43	81
HDRP040N8TC	4	6	43	81
HDRP041N8TC	4.1	6	43	81
HDRP042N8TC	4.2	6	43	81
HDRP043N8TC	4.3	6	43	81
HDRP044N8TC	4.4	6	43	81
HDRP045N8TC	4.5	6	43	81
HDRP046N8TC	4.6	6	43	81
HDRP047N8TC	4.7	6	43	81
HDRP048N8TC	4.8	6	57	95
HDRP049N8TC	4.9	6	57	95
HDRP050N8TC	5	6	57	95
HDRP051N8TC	5.1	6	57	95
HDRP052N8TC	5.2	6	57	95
HDRP053N8TC	5.3	6	57	95
HDRP054N8TC	5.4	6	57	95



Drill Dia Tol : m7
As per DIN 6537(L)

Solid Carbide Through Coolant Drills



SERIES : HDRT8

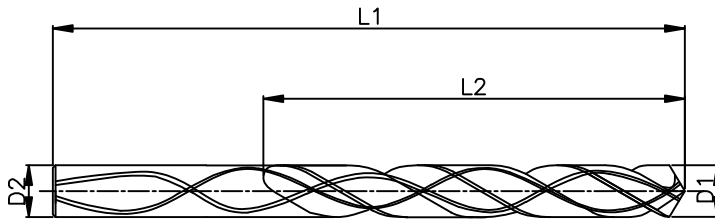
8 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP055N8TC	5.5	6	57	95
HDRP056N8TC	5.6	6	57	95
HDRP057N8TC	5.7	6	57	95
HDRP058N8TC	5.8	6	57	95
HDRP059N8TC	5.9	6	57	95
HDRP060N8TC	6	6	57	95
HDRP061N8TC	6.1	8	76	114
HDRP062N8TC	6.2	8	76	114
HDRP063N8TC	6.3	8	76	114
HDRP064N8TC	6.4	8	76	114
HDRP065N8TC	6.5	8	76	114
HDRP066N8TC	6.6	8	76	114
HDRP067N8TC	6.7	8	76	114
HDRP068N8TC	6.8	8	76	114
HDRP069N8TC	6.9	8	76	114
HDRP070N8TC	7	8	76	114
HDRP071N8TC	7.1	8	76	114
HDRP072N8TC	7.2	8	76	114
HDRP073N8TC	7.3	8	76	114
HDRP074N8TC	7.4	8	76	114
HDRP075N8TC	7.5	8	76	114
HDRP076N8TC	7.6	8	76	114
HDRP077N8TC	7.7	8	76	114
HDRP078N8TC	7.8	8	76	114



Drill Dia Tol : m7
As per DIN 6537(L)

Solid Carbide Through Coolant Drills



SERIES : HDRT8

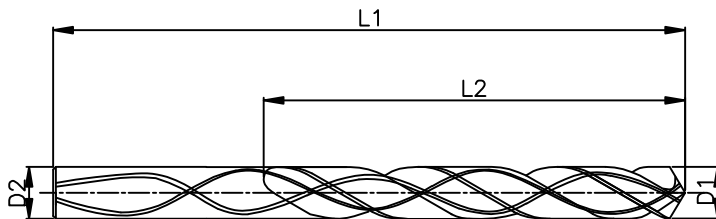
8 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP079N8TC	7.9	8	76	114
HDRP080N8TC	8	8	76	114
HDRP081N8TC	8.1	10	95	142
HDRP082N8TC	8.2	10	95	142
HDRP083N8TC	8.3	10	95	142
HDRP084N8TC	8.4	10	95	142
HDRP085N8TC	8.5	10	95	142
HDRP086N8TC	8.6	10	95	142
HDRP087N8TC	8.7	10	95	142
HDRP088N8TC	8.8	10	95	142
HDRP089N8TC	8.9	10	95	142
HDRP090N8TC	9	10	95	142
HDRP091N8TC	9.1	10	95	142
HDRP092N8TC	9.2	10	95	142
HDRP093N8TC	9.3	10	95	142
HDRP094N8TC	9.4	10	95	142
HDRP095N8TC	9.5	10	95	142
HDRP096N8TC	9.6	10	95	142
HDRP097N8TC	9.7	10	95	142
HDRP098N8TC	9.8	10	95	142
HDRP099N8TC	9.9	10	95	142
HDRP100N8TC	10	10	95	142
HDRP101N8TC	10.1	12	114	162
HDRP102N8TC	10.2	12	114	162
HDRP103N8TC	10.3	12	114	162



Drill Dia Tol : m7
As per DIN 6537(L)

Solid Carbide Through Coolant Drills



SERIES : HDRT8

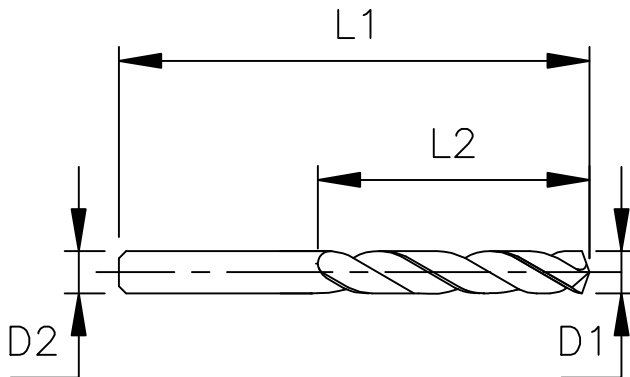
8 x D

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP104N8TC	10.4	12	114	162
HDRP105N8TC	10.5	12	114	162
HDRP106N8TC	10.6	12	114	162
HDRP107N8TC	10.7	12	114	162
HDRP108N8TC	10.8	12	114	162
HDRP109N8TC	10.9	12	114	162
HDRP110N8TC	11	12	114	162
HDRP111N8TC	11.1	12	114	162
HDRP112N8TC	11.2	12	114	162
HDRP113N8TC	11.3	12	114	162
HDRP114N8TC	11.4	12	114	162
HDRP115N8TC	11.5	12	114	162
HDRP116N8TC	11.6	12	114	162
HDRP117N8TC	11.7	12	114	162
HDRP118N8TC	11.8	12	114	162
HDRP119N8TC	11.9	12	114	162
HDRP120N8TC	12	12	114	162



Drill Dia Tol : m7
As per DIN 6537(L)

Solid Carbide Stub Drills



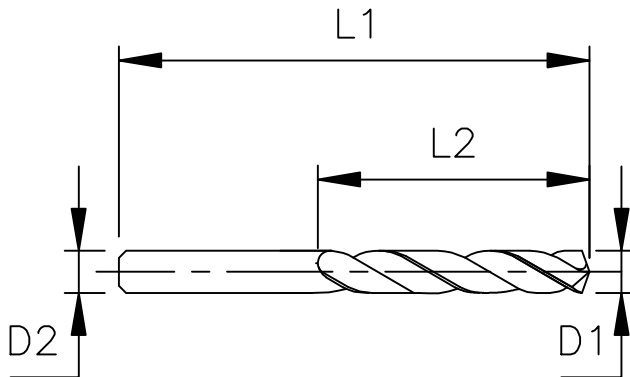
SERIES : HDRMI

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP010MINIC	1	1	6	26
HDRP011MINIC	1.1	1.1	7	28
HDRP012MINIC	1.2	1.2	8	30
HDRP013MINIC	1.3	1.3	8	30
HDRP014MINIC	1.4	1.4	9	32
HDRP015MINIC	1.5	1.5	9	32
HDRP016MINIC	1.6	1.6	10	34
HDRP017MINIC	1.7	1.7	10	34
HDRP018MINIC	1.8	1.8	11	36
HDRP019MINIC	1.9	1.9	11	36
HDRP020MINIC	2	2	12	38
HDRP021MINIC	2.1	2.1	12	38
HDRP022MINIC	2.2	2.2	13	40
HDRP023MINIC	2.3	2.3	13	40
HDRP024MINIC	2.4	2.4	14	43
HDRP025MINIC	2.5	2.5	14	43
HDRP026MINIC	2.6	2.6	14	43
HDRP027MINIC	2.7	2.7	16	46
HDRP028MINIC	2.8	2.8	16	46
HDRP029MINIC	2.9	2.9	16	46



Drill Dia Tol : h7
As per DIN 6539

Solid Carbide Stub Drills



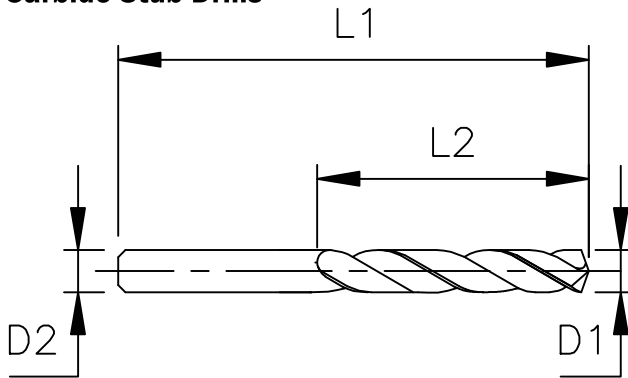
SERIES : HDRMI

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP030MINIC	3	3	16	46
HDRP031MINIC	3.1	3.1	18	49
HDRP032MINIC	3.2	3.2	18	49
HDRP033MINIC	3.3	3.3	18	49
HDRP034MINIC	3.4	3.4	20	52
HDRP035MINIC	3.5	3.5	20	52
HDRP036MINIC	3.6	3.6	20	52
HDRP037MINIC	3.7	3.7	20	52
HDRP038MINIC	3.8	3.8	22	55
HDRP039MINIC	3.9	3.9	22	55
HDRP040MINIC	4	4	22	55
HDRP041MINIC	4.1	4.1	22	55
HDRP042MINIC	4.2	4.2	22	55
HDRP043MINIC	4.3	4.3	24	58
HDRP044MINIC	4.4	4.4	24	58
HDRP045MINIC	4.5	4.5	24	58
HDRP046MINIC	4.6	4.6	24	58
HDRP047MINIC	4.7	4.7	24	58
HDRP048MINIC	4.8	4.8	26	62
HDRP049MINIC	4.9	4.9	26	62
HDRP050MINIC	5	5	26	62
HDRP051MINIC	5.1	5.1	26	62
HDRP052MINIC	5.2	5.2	26	62
HDRP053MINIC	5.3	5.3	26	62
HDRP054MINIC	5.4	5.4	28	66
HDRP055MINIC	5.5	5.5	28	66
HDRP056MINIC	5.6	5.6	28	66
HDRP057MINIC	5.7	5.7	28	66



Drill Dia Tol : h7
As per DIN 6539

Solid Carbide Stub Drills



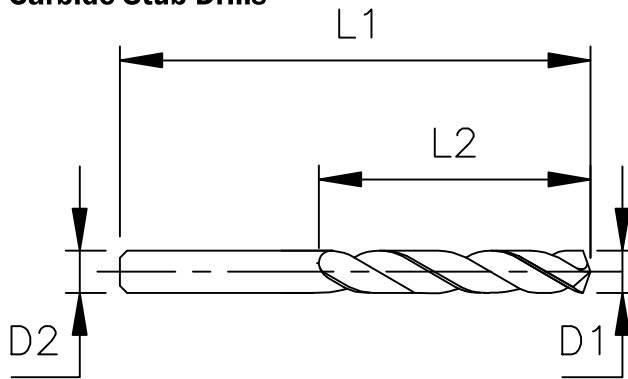
SERIES : HDRMI

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP058MINIC	5.8	5.8	28	66
HDRP059MINIC	5.9	5.9	28	66
HDRP060MINIC	6	6	28	66
HDRP061MINIC	6.1	6.1	31	70
HDRP062MINIC	6.2	6.2	31	70
HDRP063MINIC	6.3	6.3	31	70
HDRP064MINIC	6.4	6.4	31	70
HDRP065MINIC	6.5	6.5	31	70
HDRP066MINIC	6.6	6.6	31	70
HDRP067MINIC	6.7	6.7	31	70
HDRP068MINIC	6.8	6.8	34	74
HDRP069MINIC	6.9	6.9	34	74
HDRP070MINIC	7	7	34	74
HDRP071MINIC	7.1	7.1	34	74
HDRP072MINIC	7.2	7.2	34	74
HDRP073MINIC	7.3	7.3	34	74
HDRP074MINIC	7.4	7.4	34	74
HDRP075MINIC	7.5	7.5	34	74
HDRP076MINIC	7.6	7.6	37	79
HDRP077MINIC	7.7	7.7	37	79
HDRP078MINIC	7.8	7.8	37	79
HDRP079MINIC	7.9	7.9	37	79
HDRP080MINIC	8	8	37	79
HDRP081MINIC	8.1	8.1	37	79
HDRP082MINIC	8.2	8.2	37	79
HDRP083MINIC	8.3	8.3	37	79
HDRP084MINIC	8.4	8.4	37	79
HDRP085MINIC	8.5	8.5	37	79



Drill Dia Tol : h7
As per DIN 6539

Solid Carbide Stub Drills



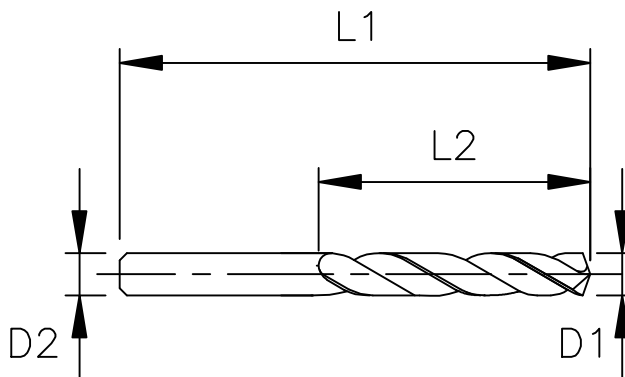
SERIES : HDRMI

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP086MINIC	8.6	8.6	40	84
HDRP087MINIC	8.7	8.7	40	84
HDRP088MINIC	8.8	8.8	40	84
HDRP030MINIC	8.9	8.9	40	84
HDRP090MINIC	9	9	40	84
HDRP091MINIC	9.1	9.1	40	84
HDRP092MINIC	9.2	9.2	40	84
HDRP093MINIC	9.3	9.3	40	84
HDRP094MINIC	9.4	9.4	40	84
HDRP095MINIC	9.5	9.5	40	84
HDRP096MINIC	9.6	9.6	43	89
HDRP097MINIC	9.7	9.7	43	89
HDRP098MINIC	9.8	9.8	43	89
HDRP099MINIC	9.9	9.9	43	89
HDRP100MINIC	10	10	43	89
HDRP102MINIC	10.2	10.2	43	89
HDRP103MINIC	10.5	10.5	43	89
HDRP108MINIC	10.8	10.8	47	95
HDRP110MINIC	11	11	47	95
HDRP115MINIC	11.5	11.5	47	95
HDRP118MINIC	11.8	11.8	47	95
HDRP120MINIC	12	12	51	102
HDRP125MINIC	12.5	12.5	51	102
HDRP130MINIC	13	13	51	102
HDRP135MINIC	13.5	13.5	54	107
HDRP140MINIC	14	14	54	107
HDRP145MINIC	14.5	14.5	56	111
HDRP150MINIC	15	15	56	111



Drill Dia Tol : h7
As per DIN 6539

Solid Carbide Stub Drills



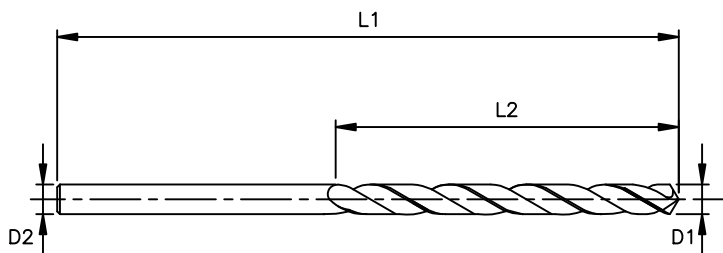
SERIES : HDRMI

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP155MINIC	15.5	15.5	58	115
HDRP160MINIC	16	16	58	115
HDRP165MINIC	16.5	16.5	60	119
HDRP170MINIC	17	17	60	119
HDRP175MINIC	17.5	17.5	62	123
HDRP180MINIC	18	18	62	123
HDRP185MINIC	18.5	18.5	64	127
HDRP190MINIC	19	19	64	127
HDRP195MINIC	19.5	19.5	66	131
HDRP200MINIC	20	20	66	131



Drill Dia Tol : h7
As per DIN 6539

Solid Carbide Jobber Drills



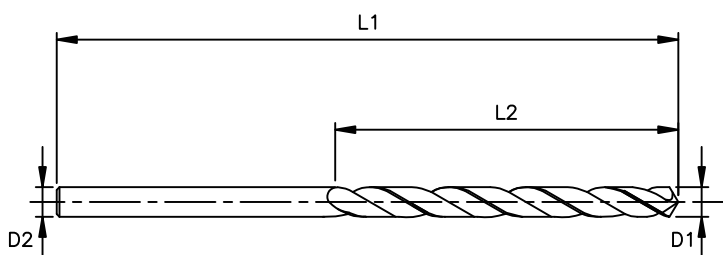
SERIES : HDRPJ

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP010J5C	1	1	12	34
HDRP011J5C	1.1	1.1	14	36
HDRP012J5C	1.2	1.2	16	38
HDRP013J5C	1.3	1.3	16	38
HDRP014J5C	1.4	1.4	18	40
HDRP015J5C	1.5	1.5	18	40
HDRP016J5C	1.6	1.6	20	43
HDRP017J5C	1.7	1.7	20	43
HDRP018J5C	1.8	1.8	22	46
HDRP019J5C	1.9	1.9	22	46
HDRP020J5C	2	2	24	49
HDRP021J5C	2.1	2.1	24	49
HDRP022J5C	2.2	2.2	27	53
HDRP023J5C	2.3	2.3	27	53
HDRP024J5C	2.4	2.4	30	57
HDRP025J5C	2.5	2.5	30	57
HDRP026J5C	2.6	2.6	30	57
HDRP027J5C	2.7	2.7	33	61
HDRP028J5C	2.8	2.8	33	61
HDRP029J5C	2.9	2.9	33	61
HDRP030J5C	3	3	33	61
HDRP031J5C	3.1	3.1	36	65
HDRP032J5C	3.2	3.2	36	65
HDRP033J5C	3.3	3.3	36	65
HDRP034J5C	3.4	3.4	39	70
HDRP035J5C	3.5	3.5	39	70
HDRP036J5C	3.6	3.6	39	70
HDRP037J5C	3.7	3.7	39	70



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber Drills



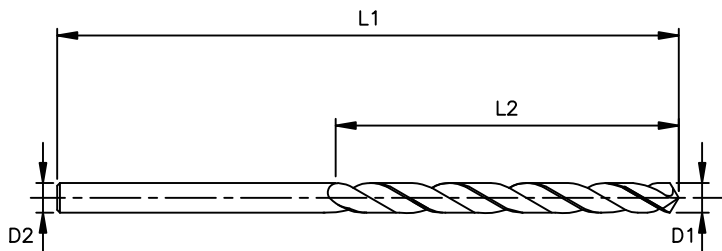
SERIES : HDRPJ

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP038J5C	3.8	3.8	43	75
HDRP039J5C	3.9	3.9	43	75
HDRP040J5C	4	4	43	75
HDRP041J5C	4.1	4.1	43	75
HDRP042J5C	4.2	4.2	43	75
HDRP043J5C	4.3	4.3	47	80
HDRP044J5C	4.4	4.4	47	80
HDRP045J5C	4.5	4.5	47	80
HDRP046J5C	4.6	4.6	47	80
HDRP047J5C	4.7	4.7	47	80
HDRP048J5C	4.8	4.8	52	86
HDRP049J5C	4.9	4.9	52	86
HDRP050J5C	5	5	52	86
HDRP051J5C	5.1	5.1	52	86
HDRP052J5C	5.2	5.2	52	86
HDRP053J5C	5.3	5.3	52	86
HDRP054J5C	5.4	5.4	57	93
HDRP055J5C	5.5	5.5	57	93
HDRP056J5C	5.6	5.6	57	93
HDRP057J5C	5.7	5.7	57	93
HDRP058J5C	5.8	5.8	57	93
HDRP059J5C	5.9	5.9	57	93
HDRP060J5C	6	6	57	93
HDRP061J5C	6.1	6.1	63	101
HDRP062J5C	6.2	6.2	63	101
HDRP063J5C	6.3	6.3	63	101
HDRP064J5C	6.4	6.4	63	101
HDRP065J5C	6.5	6.5	63	101



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber Drills



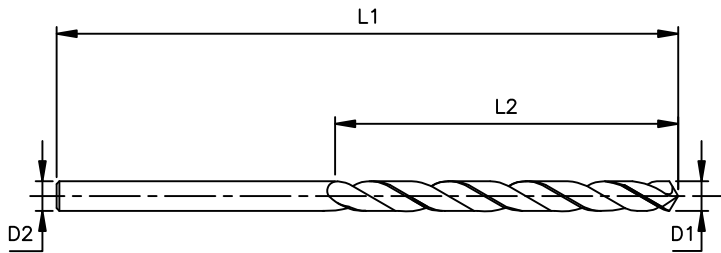
SERIES : HDRPJ

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP066J5C	6.6	6.6	63	101
HDRP067J5C	6.7	6.7	63	101
HDRP068J5C	6.8	6.8	69	109
HDRP069J5C	6.9	6.9	69	109
HDRP070J5C	7	7	69	109
HDRP071J5C	7.1	7.1	69	109
HDRP072J5C	7.2	7.2	69	109
HDRP073J5C	7.3	7.3	69	109
HDRP074J5C	7.4	7.4	69	109
HDRP075J5C	7.5	7.5	69	109
HDRP076J5C	7.6	7.6	75	117
HDRP077J5C	7.7	7.7	75	117
HDRP078J5C	7.8	7.8	75	117
HDRP079J5C	7.9	7.9	75	117
HDRP080J5C	8	8	75	117
HDRP081J5C	8.1	8.1	75	117
HDRP082J5C	8.2	8.2	75	117
HDRP083J5C	8.3	8.3	75	117
HDRP084J5C	8.4	8.4	75	117
HDRP085J5C	8.5	8.5	75	117
HDRP086J5C	8.6	8.6	81	125
HDRP087J5C	8.7	8.7	81	125
HDRP088J5C	8.8	8.8	81	125
HDRP089J5C	8.9	8.9	81	125
HDRP090J5C	9	9	81	125
HDRP091J5C	9.1	9.1	81	125
HDRP092J5C	9.2	9.2	81	125
HDRP093J5C	9.3	9.3	81	125



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber Drills



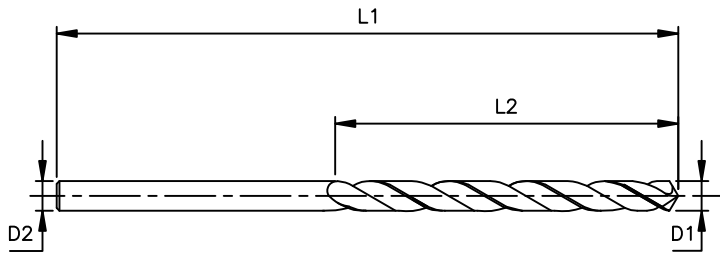
SERIES : HDRPJ

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP094J5C	9.4	9.4	81	125
HDRP095J5C	9.5	9.5	81	125
HDRP096J5C	9.6	9.6	87	133
HDRP097J5C	9.7	9.7	87	133
HDRP098J5C	9.8	9.8	87	133
HDRP099J5C	9.9	9.9	87	133
HDRP100J5C	10	10	87	133
HDRP101J5C	10.1	10.1	87	133
HDRP102J5C	10.2	10.2	87	133
HDRP103J5C	10.3	10.3	87	133
HDRP104J5C	10.4	10.4	87	133
HDRP105J5C	10.5	10.5	87	133
HDRP106J5C	10.6	10.6	87	133
HDRP107J5C	10.7	10.7	94	142
HDRP108J5C	10.8	10.8	94	142
HDRP109J5C	10.9	10.9	94	142
HDRP110J5C	11	11	94	142
HDRP111J5C	11.1	11.1	94	142
HDRP112J5C	11.2	11.2	94	142
HDRP113J5C	11.3	11.3	94	142
HDRP114J5C	11.4	11.4	94	142
HDRP115J5C	11.5	11.5	94	142
HDRP116J5C	11.6	11.6	94	142
HDRP117J5C	11.7	11.7	94	142
HDRP118J5C	11.8	11.8	94	142
HDRP119J5C	11.9	11.9	101	151
HDRP120J5C	12	12	101	151
HDRP121J5C	12.1	12.1	101	151



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber Drills



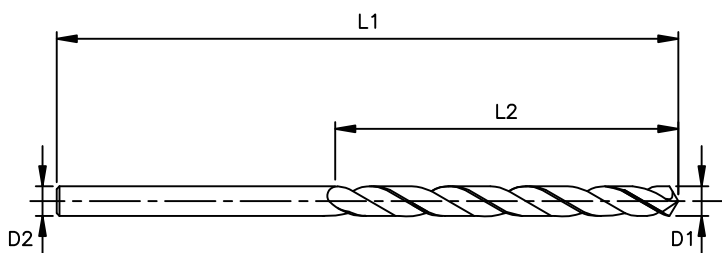
SERIES : HDRPJ

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP122J5C	12.2	12.2	101	151
HDRP123J5C	12.3	12.3	101	151
HDRP124J5C	12.4	12.4	101	151
HDRP125J5C	12.5	12.5	101	151
HDRP126J5C	12.6	12.6	101	151
HDRP127J5C	12.7	12.7	101	151
HDRP128J5C	12.8	12.8	101	151
HDRP129J5C	12.9	12.9	101	151
HDRP130J5C	13	13	101	151
HDRP131J5C	13.1	13.1	101	151
HDRP132J5C	13.2	13.2	101	151
HDRP133J5C	13.3	13.3	108	160
HDRP134J5C	13.4	13.4	108	160
HDRP135J5C	13.5	13.5	108	160
HDRP136J5C	13.6	13.6	108	160
HDRP137J5C	13.7	13.7	108	160
HDRP138J5C	13.8	13.8	108	160
HDRP139J5C	13.9	13.9	108	160
HDRP140J5C	14	14	108	160
HDRP141J5C	14.1	14.1	114	169
HDRP142J5C	14.2	14.2	114	169
HDRP143J5C	14.3	14.3	114	169
HDRP144J5C	14.4	14.4	114	169
HDRP145J5C	14.5	14.5	114	169
HDRP146J5C	14.6	14.6	114	169
HDRP147J5C	14.7	14.7	114	169
HDRP148J5C	14.8	14.8	114	169
HDRP149J5C	14.9	14.9	114	169



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber Drills



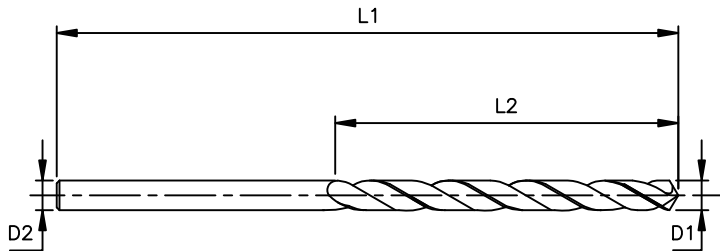
SERIES : HDRPJ

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP150J5C	15	15	114	169
HDRP151J5C	15.1	15.1	120	178
HDRP152J5C	15.2	15.2	120	178
HDRP153J5C	15.3	15.3	120	178
HDRP154J5C	15.4	15.4	120	178
HDRP155J5C	15.5	15.5	120	178
HDRP156J5C	15.6	15.6	120	178
HDRP157J5C	15.7	15.7	120	178
HDRP158J5C	15.8	15.8	120	178
HDRP159J5C	15.9	15.9	120	178
HDRP160J5C	16	16	120	178
HDRP161J5C	16.1	16.1	125	184
HDRP162J5C	16.2	16.2	125	184
HDRP163J5C	16.3	16.3	125	184
HDRP164J5C	16.4	16.4	125	184
HDRP165J5C	16.5	16.5	125	184
HDRP166J5C	16.6	16.6	125	184
HDRP167J5C	16.7	16.7	125	184
HDRP168J5C	16.8	16.8	125	184
HDRP169J5C	16.9	16.9	125	184
HDRP170J5C	17	17	125	184
HDRP171J5C	17.1	17.1	130	191
HDRP172J5C	17.2	17.2	130	191
HDRP173J5C	17.3	17.3	130	191
HDRP174J5C	17.4	17.4	130	191
HDRP175J5C	17.5	17.5	130	191
HDRP176J5C	17.6	17.6	130	191
HDRP177J5C	17.7	17.7	130	191



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber Drills



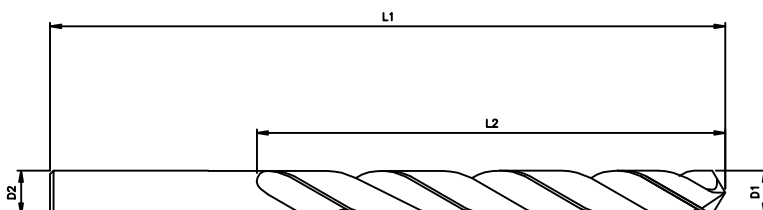
SERIES : HDRPJ

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP178J5C	17.8	17.8	130	191
HDRP179J5C	17.9	17.9	130	191
HDRP180J5C	18	18	130	191
HDRP181J5C	18.1	18.1	135	198
HDRP182J5C	18.2	18.2	135	198
HDRP183J5C	18.3	18.3	135	198
HDRP184J5C	18.4	18.4	135	198
HDRP185J5C	18.5	18.5	135	198
HDRP186J5C	18.6	18.6	135	198
HDRP187J5C	18.7	18.7	135	198
HDRP188J5C	18.8	18.8	135	198
HDRP189J5C	18.9	18.9	135	198
HDRP190J5C	19	19	135	198
HDRP191J5C	19.1	19.1	140	205
HDRP192J5C	19.2	19.2	140	205
HDRP193J5C	19.3	19.3	140	205
HDRP194J5C	19.4	19.4	140	205
HDRP195J5C	19.5	19.5	140	205
HDRP196J5C	19.6	19.6	140	205
HDRP197J5C	19.7	19.7	140	205
HDRP198J5C	19.8	19.8	140	205
HDRP199J5C	19.9	19.9	140	205
HDRP200J5C	20	20	140	205



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber High Performance Drills



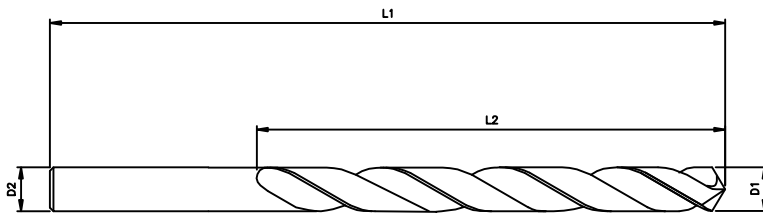
SERIES : HDRJN

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP030J5NC	3	3	33	61
HDRP031J5NC	3.1	3.1	36	65
HDRP032J5NC	3.2	3.2	36	65
HDRP033J5NC	3.3	3.3	36	65
HDRP034J5NC	3.4	3.4	39	70
HDRP035J5NC	3.5	3.5	39	70
HDRP036J5NC	3.6	3.6	39	70
HDRP037J5NC	3.7	3.7	39	70
HDRP038J5NC	3.8	3.8	43	75
HDRP039J5NC	3.9	3.9	43	75
HDRP040J5NC	4	4	43	75
HDRP041J5NC	4.1	4.1	43	75
HDRP042J5NC	4.2	4.2	43	75
HDRP043J5NC	4.3	4.3	47	80
HDRP044J5NC	4.4	4.4	47	80
HDRP045J5NC	4.5	4.5	47	80
HDRP046J5NC	4.6	4.6	47	80
HDRP047J5NC	4.7	4.7	47	80
HDRP048J5NC	4.8	4.8	52	86
HDRP049J5NC	4.9	4.9	52	86
HDRP050J5NC	5	5	52	86
HDRP051J5NC	5.1	5.1	52	86
HDRP052J5NC	5.2	5.2	52	86
HDRP053J5NC	5.3	5.3	52	86
HDRP054J5NC	5.4	5.4	57	93
HDRP055J5NC	5.5	5.5	57	93
HDRP056J5NC	5.6	5.6	57	93
HDRP057J5NC	5.7	5.7	57	93
HDRP058J5NC	5.8	5.8	57	93



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber High Performance Drills



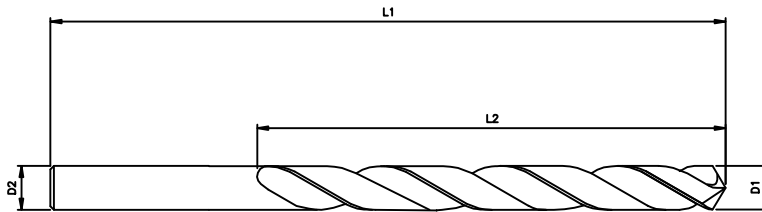
SERIES : HDRJN

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP059J5NC	5.9	5.9	57	93
HDRP060J5NC	6	6	57	93
HDRP061J5NC	6.1	6.1	63	101
HDRP062J5NC	6.2	6.2	63	101
HDRP063J5NC	6.3	6.3	63	101
HDRP064J5NC	6.4	6.4	63	101
HDRP065J5NC	6.5	6.5	63	101
HDRP066J5NC	6.6	6.6	63	101
HDRP067J5NC	6.7	6.7	63	101
HDRP068J5NC	6.8	6.8	69	109
HDRP069J5NC	6.9	6.9	69	109
HDRP070J5NC	7	7	69	109
HDRP071J5NC	7.1	7.1	69	109
HDRP072J5NC	7.2	7.2	69	109
HDRP073J5NC	7.3	7.3	69	109
HDRP074J5NC	7.4	7.4	69	109
HDRP075J5NC	7.5	7.5	69	109
HDRP076J5NC	7.6	7.6	75	117
HDRP077J5NC	7.7	7.7	75	117
HDRP078J5NC	7.8	7.8	75	117
HDRP079J5NC	7.9	7.9	75	117
HDRP080J5NC	8	8	75	117
HDRP081J5NC	8.1	8.1	75	117
HDRP082J5NC	8.2	8.2	75	117
HDRP083J5NC	8.3	8.3	75	117
HDRP084J5NC	8.4	8.4	75	117
HDRP085J5NC	8.5	8.5	75	117
HDRP086J5NC	8.6	8.6	81	125
HDRP087J5NC	8.7	8.7	81	125



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber High Performance Drills



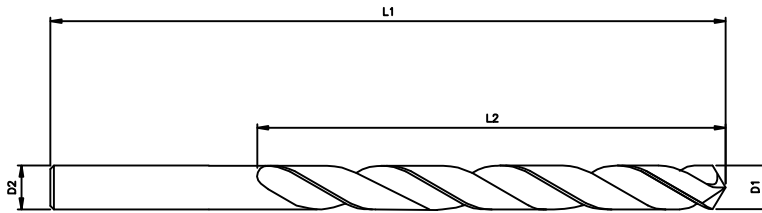
SERIES : HDRJN

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDRP088J5NC	8.8	8.8	81	125
HDRP089J5NC	8.9	8.9	81	125
HDRP090J5NC	9	9	81	125
HDRP091J5NC	9.1	9.1	81	125
HDRP092J5NC	9.2	9.2	81	125
HDRP093J5NC	9.3	9.3	81	125
HDRP094J5NC	9.4	9.4	81	125
HDRP095J5NC	9.5	9.5	81	125
HDRP096J5NC	9.6	9.6	87	133
HDRP097J5NC	9.7	9.7	87	133
HDRP098J5NC	9.8	9.8	87	133
HDRP099J5NC	9.9	9.9	87	133
HDR100J5NC	10	10	87	133
HDR101J5NC	10.1	10.1	87	133
HDR102J5NC	10.2	10.2	87	133
HDR103J5NC	10.3	10.3	87	133
HDR104J5NC	10.4	10.4	87	133
HDR105J5NC	10.5	10.5	87	133
HDR106J5NC	10.6	10.6	87	133
HDR107J5NC	10.7	10.7	94	142
HDR108J5NC	10.8	10.8	94	142
HDR109J5NC	10.9	10.9	94	142
HDR110J5NC	11	11	94	142
HDR111J5NC	11.1	11.1	94	142
HDR112J5NC	11.2	11.2	94	142
HDR113J5NC	11.3	11.3	94	142
HDR114J5NC	11.4	11.4	94	142
HDR115J5NC	11.5	11.5	94	142
HDR116J5NC	11.6	11.6	94	142



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber High Performance Drills



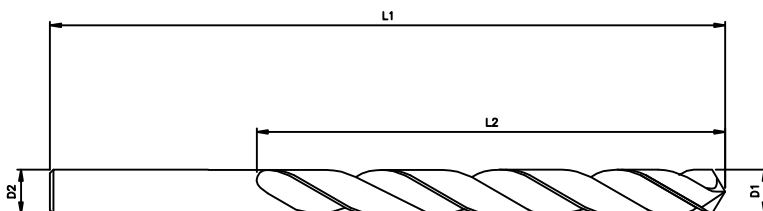
SERIES : HDRJN

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDR116J5NC	11.6	11.6	94	142
HDR117J5NC	11.7	11.7	94	142
HDR118J5NC	11.8	11.8	94	142
HDR119J5NC	11.9	11.9	101	151
HDR120J5NC	12	12	101	151
HDR121J5NC	12.1	12.1	101	151
HDR122J5NC	12.2	12.2	101	151
HDR123J5NC	12.3	12.3	101	151
HDR124J5NC	12.4	12.4	101	151
HDR125J5NC	12.5	12.5	101	151
HDR126J5NC	12.6	12.6	101	151
HDR127J5NC	12.7	12.7	101	151
HDR128J5NC	12.8	12.8	101	151
HDR129J5NC	12.9	12.9	101	151
HDR130J5NC	13	13	101	151
HDR131J5NC	13.1	13.1	101	151
HDR132J5NC	13.2	13.2	101	151
HDR133J5NC	13.3	13.3	108	160
HDR134J5NC	13.4	13.4	108	160
HDR135J5NC	13.5	13.5	108	160
HDR136J5NC	13.6	13.6	108	160
HDR137J5NC	13.7	13.7	108	160
HDR138J5NC	13.8	13.8	108	160
HDR139J5NC	13.9	13.9	108	160
HDR140J5NC	14	14	108	160
HDR141J5NC	14.1	14.1	114	169
HDR142J5NC	14.2	14.2	114	169
HDR143J5NC	14.3	14.3	114	169



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber High Performance Drills



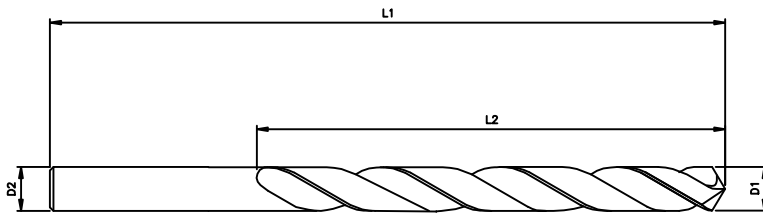
SERIES : HDRJN

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDR144J5NC	14.4	14.4	114	169
HDR145J5NC	14.5	14.5	114	169
HDR146J5NC	14.6	14.6	114	169
HDR147J5NC	14.7	14.7	114	169
HDR148J5NC	14.8	14.8	114	169
HDR149J5NC	14.9	14.9	114	169
HDR150J5NC	15	15	114	169
HDR151J5NC	15.1	15.1	120	178
HDR152J5NC	15.2	15.2	120	178
HDR153J5NC	15.3	15.3	120	178
HDR154J5NC	15.4	15.4	120	178
HDR155J5NC	15.5	15.5	120	178
HDR156J5NC	15.6	15.6	120	178
HDR157J5NC	15.7	15.7	120	178
HDR158J5NC	15.8	15.8	120	178
HDR159J5NC	15.9	15.9	120	178
HDR160J5NC	16	16	120	178
HDR161J5NC	16.1	16.1	125	184
HDR162J5NC	16.2	16.2	125	184
HDR163J5NC	16.3	16.3	125	184
HDR164J5NC	16.4	16.4	125	184
HDR165J5NC	16.5	16.5	125	184
HDR166J5NC	16.6	16.6	125	184
HDR167J5NC	16.7	16.7	125	184
HDR168J5NC	16.8	16.8	125	184
HDR169J5NC	16.9	16.9	125	184
HDR170J5NC	17	17	125	184
HDR171J5NC	17.1	17.1	130	191



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Jobber High Performance Drills



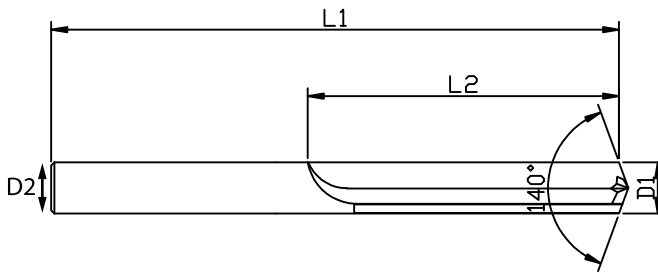
SERIES : HDRJN

ITEM CODE	DIA (D1)	SH.DIA (D2)	FL (L2)	OAL (L1)
HDR172J5NC	17.2	17.2	130	191
HDR173J5NC	17.3	17.3	130	191
HDR174J5NC	17.4	17.4	130	191
HDR175J5NC	17.5	17.5	130	191
HDR176J5NC	17.6	17.6	130	191
HDR177J5NC	17.7	17.7	130	191
HDR178J5NC	17.8	17.8	130	191
HDR179J5NC	17.9	17.9	130	191
HDR180J5NC	18	18	130	191
HDR181J5NC	18.1	18.1	135	198
HDR182J5NC	18.2	18.2	135	198
HDR183J5NC	18.3	18.3	135	198
HDR184J5NC	18.4	18.4	135	198
HDR185J5NC	18.5	18.5	135	198
HDR186J5NC	18.6	18.6	135	198
HDR187J5NC	18.7	18.7	135	198
HDR188J5NC	18.8	18.8	135	198
HDR189J5NC	18.9	18.9	135	198
HDR190J5NC	19	19	135	198
HDR191J5NC	19.1	19.1	140	205
HDR192J5NC	19.2	19.2	140	205
HDR193J5NC	19.3	19.3	140	205
HDR194J5NC	19.4	19.4	140	205
HDR195J5NC	19.5	19.5	140	205
HDR196J5NC	19.6	19.6	140	205
HDR197J5NC	19.7	19.7	140	205
HDR198J5NC	19.8	19.8	140	205
HDR199J5NC	19.9	19.9	140	205
HDR200J5NC	20	20	140	205



Drill Dia Tol : h7
As per DIN 338

Solid Carbide Straight Flute Drill - Metric

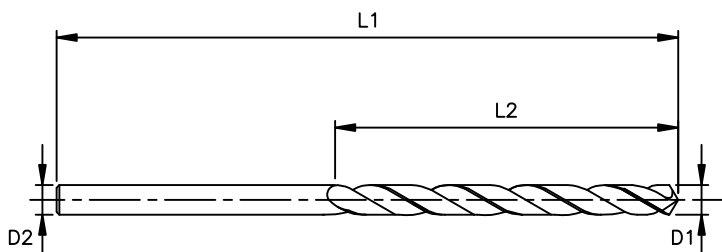


SERIES : HDRSFM

ITEM CODE	DIA D1	FL I2	SH DIA. D2	OAL L1
HDRSF015L13SP	1.5	13	1.5	38
HDRSF020L19SP	2.0	19	2.0	44
HDRSF025L21SP	2.5	21	2.5	46
HDRSF030L22SP	3.0	22	3.0	48
HDRSF035L24SP	3.5	24	3.5	49
HDRSF040L27SP	4.0	27	4.0	54
HDRSF045L29SP	4.5	29	4.5	56
HDRSF050L30SP	5.0	30	5.0	57
HDRSF055L32SP	5.5	32	5.5	60
HDRSF060L33SP	6.0	33	6.0	62
HDRSF065L35SP	6.5	35	6.5	64
HDRSF070L38SP	7.0	38	7.0	68
HDRSF075L40SP	7.5	40	7.5	70
HDRSF080L41SP	8.0	41	8.0	71
HDRSF085L43SP	8.5	43	8.5	76
HDRSF090L44SP	9.0	44	9.0	78
HDRSF095L46SP	9.5	46	9.5	79
HDRSF100L48SP	10.0	48	10.0	83
HDRSF105L51SP	10.5	51	10.5	86
HDRSF110L52SP	11.0	52	11.0	87
HDRSF115L54SP	11.5	54	11.5	90
HDRSF120L54SP	12.0	54	12.0	92



Solid Carbide 15° Helix Drill - Metric

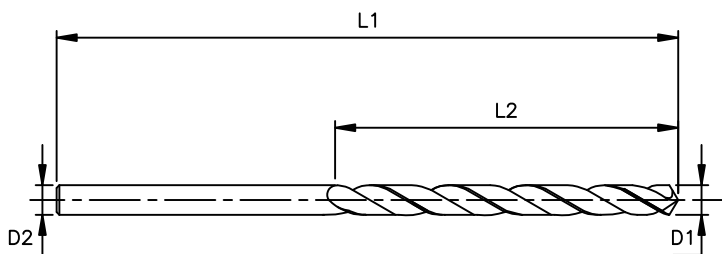


SERIES : HDR15M

ITEM CODE	DIA D1	FL L2	SH DIA. D2	OAL L1
HDR15015L38SP	1.5	13	1.5	38
HDR15020L44SP	2.0	19	2.0	44
HDR15025L46SP	2.5	21	2.5	46
HDR15030L48SP	3.0	22	3.0	48
HDR15035L49SP	3.5	24	3.5	49
HDR15040L54SP	4.0	27	4.0	54
HDR15045L56SP	4.5	29	4.5	56
HDR15050L57SP	5.0	30	5.0	57
HDR15055L60SP	5.5	32	5.5	60
HDR15060L62SP	6.0	33	6.0	62
HDR15065L64SP	6.5	35	6.5	64
HDR15070L68SP	7.0	38	7.0	68
HDR15075L70SP	7.5	40	7.5	70
HDR15080L71SP	8.0	41	8.0	71
HDR15085L76SP	8.5	43	8.5	76
HDR15090L78SP	9.0	44	9.0	78
HDR15095L79SP	9.5	46	9.5	79
HDR15100L83SP	10.0	48	10.0	83
HDR15105L86SP	10.5	51	10.5	86
HDR15110L87SP	11.0	52	11.0	87
HDR15115L90SP	11.5	54	11.5	90
HDR15120L92SP	12.0	54	12.0	92



Solid Carbide 20° Helix Drill - Metric

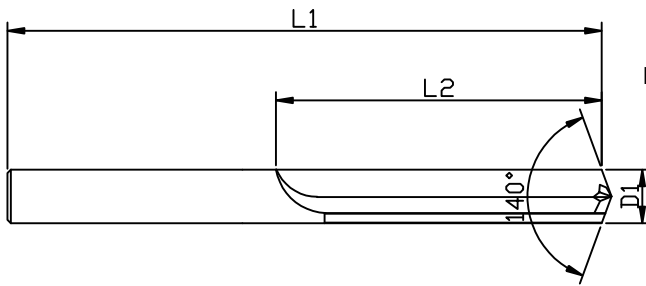


SERIES : HDR20M

ITEM CODE	DIA D1	FL L2	SH DIA. D2	OAL L1
HDR20015L038SP	1.5	13	1.5	38
HDR20020L044SP	2.0	19	2.0	44
HDR20025L051SP	2.5	21	2.5	51
HDR20030L057SP	3.0	22	3.0	57
HDR20035L064SP	3.5	24	3.5	64
HDR20040L064SP	4.0	27	4.0	64
HDR20045L070SP	4.5	29	4.5	70
HDR20050L076SP	5.0	30	5.0	76
HDR20055L076SP	5.5	32	5.5	76
HDR20060L083SP	6.0	33	6.0	83
HDR20065L083SP	6.5	35	6.5	83
HDR20070L089SP	7.0	38	7.0	89
HDR20075L092SP	7.5	40	7.5	92
HDR20080L092SP	8.0	41	8.0	92
HDR20085L102SP	8.5	43	8.5	102
HDR20090L102SP	9.0	44	9.0	102
HDR20095L108SP	9.5	46	9.5	108
HDR20100L114SP	10.0	48	10.0	114
HDR20105L114SP	10.5	51	10.5	114
HDR20110L114SP	11.0	52	11.0	114
HDR20115L121SP	11.5	54	11.5	121
HDR20120L121SP	12.0	54	12.0	121



Solid Carbide Straight Flute Drill - Inch



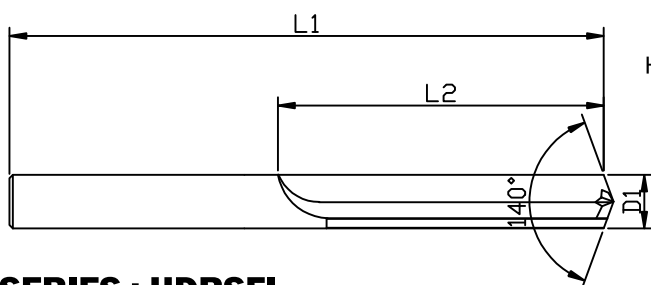
Application:
Hardened, treated, and abrasive materials
Stainless Steel
Cryogenic alloys

SERIES : HDRSFI

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDRSFD0465	56	0.0465	1/2	1-1/2
HDRSFD0469	3/64	0.0469	1/2	1-1/2
HDRSFD0520	55	0.0520	1/2	1-1/2
HDRSFD0550	54	0.0550	1/2	1-1/2
HDRSFD0595	53	0.0595	1/2	1-1/2
HDRSFD0625	1/16	0.0625	5/8	1-5/8
HDRSFD0635	52	0.0635	11/16	1-11/16
HDRSFD0670	51	0.0670	11/16	1-11/16
HDRSFD0700	50	0.0700	11/16	1-11/16
HDRSFD0730	49	0.0730	11/16	1-11/16
HDRSFD0760	48	0.0760	11/16	1-11/16
HDRSFD0781	5/64	0.0781	11/16	1-11/16
HDRSFD0785	47	0.0785	3/4	1-3/4
HDRSFD0810	46	0.0810	3/4	1-3/4
HDRSFD0820	45	0.0820	3/4	1-3/4
HDRSFD0860	44	0.0860	3/4	1-3/4
HDRSFD0890	43	0.0890	3/4	1-3/4
HDRSFD0935	42	0.0935	3/4	1-3/4
HDRSFD0938	3/32	0.0938	3/4	1-3/4
HDRSFD0960	41	0.0960	13/16	1-13/16
HDRSFD0980	40	0.0980	13/16	1-13/16
HDRSFD0995	39	0.0995	13/16	1-13/16
HDRSFD1015	38	0.1015	13/16	1-13/16
HDRSFD1040	37	0.1040	13/16	1-13/16
HDRSFD1065	36	0.1065	13/16	1-13/16
HDRSFD1094	7/64	0.1094	13/16	1-13/16



Solid Carbide Straight Flute Drill - Inch



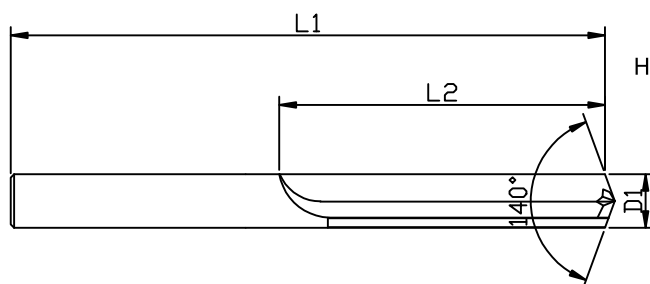
Application:
Hardened, treated, and abrasive materials
Stainless Steel
Cryogenic alloys

SERIES : HDRSFI

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDRSFD1100	35	0.1100	7/8	1-7/8
HDRSFD1110	34	0.1110	7/8	1-7/8
HDRSFD1130	33	0.1130	7/8	1-7/8
HDRSFD1160	32	0.1160	7/8	1-7/8
HDRSFD1200	31	0.1200	7/8	1-7/8
HDRSFD1250	1/8	0.1250	7/8	1-7/8
HDRSFD1285	30	0.1285	15/16	1-15/16
HDRSFD1360	29	0.1360	15/16	1-15/16
HDRSFD1405	28	0.1405	15/16	1-15/16
HDRSFD1406	9/64	0.1406	15/16	1-15/16
HDRSFD1440	27	0.1440	1	2-1/16
HDRSFD1470	26	0.1470	1	2-1/16
HDRSFD1495	25	0.1495	1	2-1/16
HDRSFD1520	24	0.1520	1	2-1/16
HDRSFD1540	23	0.1540	1	2-1/16
HDRSFD1562	5/32	0.1562	1	2-1/16
HDRSFD1570	22	0.1570	1-1/16	2-1/8
HDRSFD1590	21	0.1590	1-1/16	2-1/8
HDRSFD1610	20	0.1610	1-1/16	2-1/8
HDRSFD1660	19	0.1660	1-1/16	2-1/8
HDRSFD1695	18	0.1695	1-1/16	2-1/8
HDRSFD1719	11/64	0.1719	1-1/16	2-1/8
HDRSFD1730	17	0.1730	1-1/8	2-3/16
HDRSFD1770	16	0.1770	1-1/8	2-3/16
HDRSFD1800	15	0.1800	1-1/8	2-3/16



Solid Carbide Straight Flute Drill - Inch



Application:
Hardened, treated, and abrasive materials
Stainless Steel
Cryogenic alloys

SERIES : HDRSFI

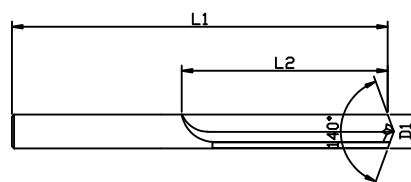
ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDRSFD1820	14	0.1820	1-1/8	2-3/16
HDRSFD1850	13	0.1850	1-1/8	2-3/16
HDRSFD1875	3/16	0.1875	1-1/8	2-3/16
HDRSFD1890	12	0.1890	1-3/16	2-1/4
HDRSFD1910	11	0.1910	1-3/16	2-1/4
HDRSFD1935	10	0.1935	1-3/16	2-1/4
HDRSFD1960	9	0.1960	1-3/16	2-1/4
HDRSFD1990	8	0.1990	1-3/16	2-1/4
HDRSFD2010	7	0.2010	1-3/16	2-1/4
HDRSFD2031	13/64	0.2031	1-3/16	2-1/4
HDRSFD2040	6	0.2040	1-1/4	2-3/8
HDRSFD2055	5	0.2055	1-1/4	2-3/8
HDRSFD2090	4	0.2090	1-1/4	2-3/8
HDRSFD2130	3	0.2130	1-1/4	2-3/8
HDRSFD2188	7/32	0.2188	1-1/4	2-3/8
HDRSFD2210	2	0.2210	1-5/16	2-7/16
HDRSFD2280	1	0.2280	1-5/16	2-7/16
HDRSFD2340	A	0.2340	1-5/16	2-7/16
HDRSFD2344	15/64	0.2344	1-3/8	2-7/16
HDRSFD2380	B	0.2380	1-3/8	2-1/2
HDRSFD2420	C	0.2420	1-3/8	2-1/2
HDRSFD2460	D	0.2460	1-3/8	2-1/2
HDRSFD2500	1/4	0.2500	1-3/8	2-1/2
HDRSFD2500E	E	0.2500	1-3/8	2-1/2
HDRSFD2570	F	0.2570	1-7/16	2-5/8



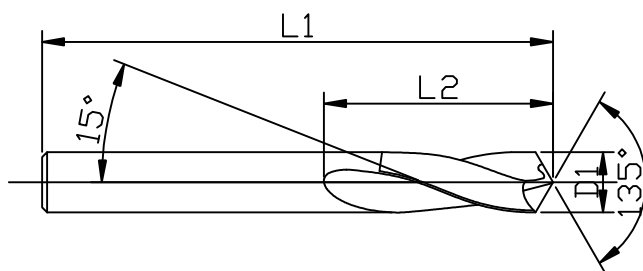
SERIES : HDRSFI

Application:
 Hardened, treated, and abrasive materials
 Stainless Steel
 Cryogenic alloys

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDRSFD2610	G	0.2610	1-7/16	2-5/8
HDRSFD2656	17/64	0.2656	1-7/16	2-5/8
HDRSFD2660	H	0.2660	1-1/2	2-11/16
HDRSFD2720	I	0.2720	1-1/2	2-11/16
HDRSFD2770	J	0.2770	1-1/2	2-11/16
HDRSFD2810	K	0.2810	1-1/2	2-11/16
HDRSFD2812	9/32	0.2812	1-1/2	2-11/16
HDRSFD2900	L	0.2900	1-9/16	2-3/4
HDRSFD2950	M	0.2950	1-9/16	2-3/4
HDRSFD2969	19/64	0.2969	1-9/16	2-3/4
HDRSFD3020	N	0.3020	1-5/8	2-13/16
HDRSFD3125	5/16	0.3125	1-5/8	2-13/16
HDRSFD3160	O	0.3160	1-11/16	2-15/16
HDRSFD3230	P	0.3230	1-11/16	2-15/16
HDRSFD3281	21/64	0.3281	1-11/16	2-15/16
HDRSFD3320	Q	0.3320	1-11/16	3
HDRSFD3390	R	0.3390	1-11/16	3
HDRSFD3438	11/32	0.3438	1-11/16	3
HDRSFD3480	S	0.3480	1-3/4	3-1/16
HDRSFD3580	T	0.3580	1-3/4	3-1/16
HDRSFD3594	23/64	0.3594	1-3/4	3-1/16
HDRSFD3680	U	0.3680	1-13/16	3-1/8
HDRSFD3750	3/8	0.3750	1-13/16	3-1/8
HDRSFD3770	V	0.3770	1-7/8	3-1/4
HDRSFD3860	W	0.3860	1-7/8	3-1/4
HDRSFD3906	25/64	0.3906	1-7/8	3-1/4
HDRSFD3970	X	0.3970	1-15/16	3-5/16
HDRSFD4040	Y	0.4040	1-15/16	3-5/16
HDRSFD4062	13/32	0.4062	1-15/16	3-5/16
HDRSFD4130	Z	0.4130	2	3-3/8
HDRSFD4219	27/64	0.4219	2	3-3/8
HDRSFD4375	7/16	0.4375	2-1/16	3-7/16
HDRSFD4531	29/64	0.4531	2-1/8	3-9/16
HDRSFD4688	15/32	0.4688	2-1/8	3-5/8
HDRSFD4844	31/64	0.4844	2-3/16	3-11/16
HDRSFD5000	1/2	0.5000	2-1/4	3-3/4



Solid Carbide 15° Helix Drill - Inch



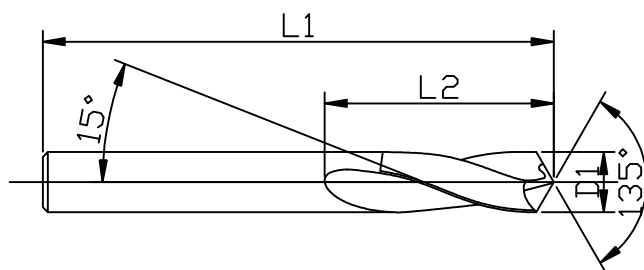
Application:
 Work hardened and gummy materials
 High temperature alloy steels
 Titanium
 Inconel
 Cast iron
 Stainless Steel

SERIES : HDR15I

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDR15D0465	56	0.0465	1/2	1-1/2
HDR15D0469	3/64	0.0469	1/2	1-1/2
HDR15D0520	55	0.0520	1/2	1-1/2
HDR15D0550	54	0.0550	1/2	1-1/2
HDR15D0595	53	0.0595	1/2	1-1/2
HDR15D0625	1/16	0.0625	5/8	1-5/8
HDR15D0635	52	0.0635	11/16	1-11/16
HDR15D0670	51	0.0670	11/16	1-11/16
HDR15D0700	50	0.0700	11/16	1-11/16
HDR15D0730	49	0.0730	11/16	1-11/16
HDR15D0760	48	0.0760	11/16	1-11/16
HDR15D0781	5/64	0.0781	11/16	1-11/16
HDR15D0785	47	0.0785	3/4	1-3/4
HDR15D0810	46	0.0810	3/4	1-3/4
HDR15D0820	45	0.0820	3/4	1-3/4
HDR15D0860	44	0.0860	3/4	1-3/4
HDR15D0890	43	0.0890	3/4	1-3/4
HDR15D0935	42	0.0935	3/4	1-3/4
HDR15D0938	3/32	0.0938	3/4	1-3/4
HDR15D0960	41	0.0960	13/16	1-13/16
HDR15D0980	40	0.0980	13/16	1-13/16
HDR15D0995	39	0.0995	13/16	1-13/16
HDR15D1015	38	0.1015	13/16	1-13/16
HDR15D1040	38	0.1040	13/16	1-13/16
HDR15D1065	36	0.1065	13/16	1-13/16
HDR15D1094	7/64	0.1094	13/16	1-13/16



Solid Carbide 15° Helix Drill - Inch



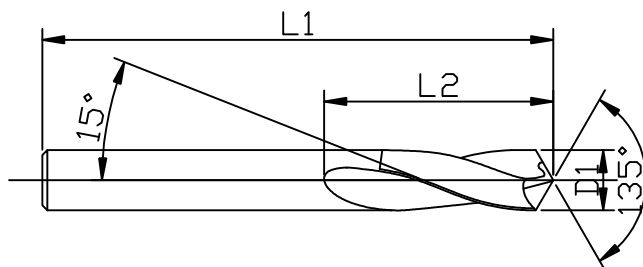
Application:
 Work hardened and gummy materials
 High temperature alloy steels
 Titanium
 Inconel
 Cast iron
 Stainless Steel

SERIES : HDR15I

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDR15D1100	35	0.1100	7/8	1-7/8
HDR15D1110	34	0.1110	7/8	1-7/8
HDR15D1130	33	0.1130	7/8	1-7/8
HDR15D1160	32	0.1160	7/8	1-7/8
HDR15D1200	31	0.1200	7/8	1-7/8
HDR15D1250	1/8	0.1250	7/8	1-7/8
HDR15D1285	30	0.1285	15/16	1-15/16
HDR15D1360	29	0.1360	15/16	1-15/16
HDR15D1405	28	0.1405	15/16	1-15/16
HDR15D1406	9/64	0.1406	15/16	1-15/16
HDR15D1440	27	0.1440	1	2-1/16
HDR15D1470	26	0.1470	1	2-1/16
HDR15D1495	25	0.1495	1	2-1/16
HDR15D1520	24	0.1520	1	2-1/16
HDR15D1540	23	0.1540	1	2-1/16
HDR15D1562	5/32	0.1562	1	2-1/16
HDR15D1570	22	0.1570	1-1/16	2-1/8
HDR15D1590	21	0.1590	1-1/16	2-1/8
HDR15D1610	20	0.1610	1-1/16	2-1/8
HDR15D1660	19	0.1660	1-1/16	2-1/8
HDR15D1695	18	0.1695	1-1/16	2-1/8
HDR15D1719	11/64	0.1719	1-1/16	2-1/8
HDR15D1730	17	0.1730	1-1/8	2-3/16
HDR15D1770	16	0.1770	1-1/8	2-3/16
HDR15D1800	15	0.1800	1-1/8	2-3/16



Solid Carbide 15° Helix Drill - Inch



Application:

Work hardened and gummy materials
High temperature alloy steels
Titanium
Inconel
Cast iron
Stainless Steel

SERIES : HDR15I

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDR15D1820	14	0.1820	1-1/8	2-3/16
HDR15D1850	13	0.1850	1-1/8	2-3/16
HDR15D1875	3/16	0.1875	1-1/8	2-3/16
HDR15D1890	12	0.1890	1-3/16	2-1/4
HDR15D1910	11	0.1910	1-3/16	2-1/4
HDR15D1935	10	0.1935	1-3/16	2-1/4
HDR15D1960	9	0.1960	1-3/16	2-1/4
HDR15D1990	8	0.1990	1-3/16	2-1/4
HDR15D2010	7	0.2010	1-3/16	2-1/4
HDR15D2031	13/64	0.2031	1-3/16	2-1/4
HDR15D2040	6	0.2040	1-1/4	2-3/8
HDR15D2055	5	0.2055	1-1/4	2-3/8
HDR15D2090	4	0.2090	1-1/4	2-3/8
HDR15D2130	3	0.2130	1-1/4	2-3/8
HDR15D2188	7/32	0.2188	1-1/4	2-3/8
HDR15D2210	2	0.2210	1-5/16	2-7/16
HDR15D2280	1	0.2280	1-5/16	2-7/16
HDR15D2340	A	0.2340	1-5/16	2-7/16
HDR15D2344	15/64	0.2344	1-5/16	2-7/16
HDR15D2380	B	0.2380	1-3/8	2-1/2
HDR15D2420	C	0.2420	1-3/8	2-1/2
HDR15D2460	D	0.2460	1-3/8	2-1/2
HDR15D2500	1/4	0.2500	1-3/8	2-1/2
HDR15D2500E	E	0.2500	1-3/8	2-1/2
HDR15D2570	F	0.2570	1-7/16	2-5/8



Solid Carbide 15° Helix Drill - Inch

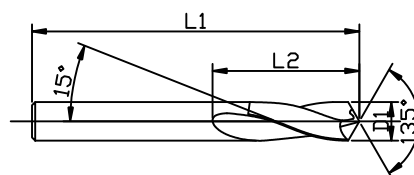


SERIES : HDR15I

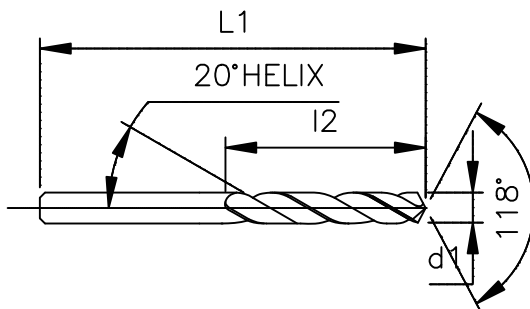
ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDR15D2610	G	0.2610	1-7/16	2-5/8
HDR15D2656	17/64	0.2656	1-7/16	2-5/8
HDR15D2660	H	0.2660	1/1/2	2-11/16
HDR15D2720	I	0.2720	1/1/2	2-11/16
HDR15D2770	J	0.2770	1/1/2	2-11/16
HDR15D2810	K	0.2810	1/1/2	2-11/16
HDR15D2812	9/32	0.2812	1/1/2	2-11/16
HDR15D2900	L	0.2900	1-9/16	2-3/4
HDR15D2950	M	0.2950	1-9/16	2-3/4
HDR15D2969	19/64	0.2969	1-9/16	2-3/4
HDR15D3020	N	0.3020	1-5/8	2-13/16
HDR15D3125	5/16	0.3125	1-5/8	2-13/16
HDR15D3160	O	0.3160	1-11/16	2-15/16
HDR15D3230	P	0.3230	1-11/16	2-15/16
HDR15D3281	21/64	0.3281	1-11/16	2-15/16
HDR15D3320	Q	0.3320	1-11/16	3
HDR15D3390	R	0.3390	1-11/16	3
HDR15D3438	11/32	0.3438	1-11/16	3
HDR15D3480	S	0.3480	1-3/4	3-1/16
HDR15D3580	T	0.3580	1-3/4	3-1/16
HDR15D3594	23/64	0.3594	1-3/4	3-1/16
HDR15D3680	U	0.3680	1-13/16	3-1/8
HDR15D3750	3/8	0.3750	1-13/16	3-1/8
HDR15D3770	V	0.3770	1-7/8	3-1/4
HDR15D3860	W	0.3860	1-7/8	3-1/4
HDR15D3906	25/64	0.3906	1-7/8	3-1/4
HDR15D3970	X	0.3970	1-15/16	3-5/16
HDR15D4040	Y	0.4040	1-15/16	3-5/16
HDR15D4062	13/32	0.4062	1-15/16	3-5/16
HDR15D4130	Z	0.4130	2	3-3/8
HDR15D4219	27/64	0.4219	2	3-3/8
HDR15D4375	7/16	0.4375	2-1/16	3-7/16
HDR15D4531	29/64	0.4531	2-1/8	3-9/16
HDR15D4688	15/32	0.4688	2-1/8	3-5/8
HDR15D4844	31/64	0.4844	2-3/16	3-11/16
HDR15D5000	1/2	0.5000	2-1/4	3-3/4

Application:

Work hardened and gummy materials
High temperature alloy steels
Titanium
Inconel
Cast iron
Stainless Steel



Solid Carbide 20° Helix Drill - Inch



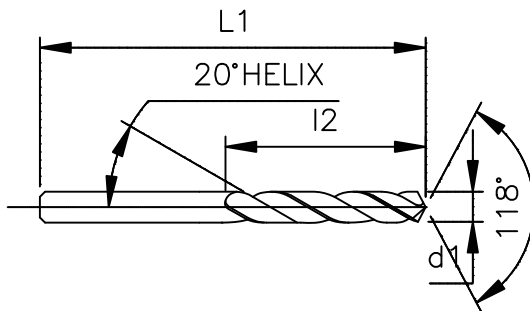
Application:
 Non-Ferrous alloys
 Cast iron
 Plastics
 Aluminum
 Highly abrasive materials

SERIES : HDR20I

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDR20D0465	56	0.0465	3/4	1-1/2
HDR20D0469	3/64	0.0469	3/4	1-1/2
HDR20D0520	55	0.0520	3/4	1-1/2
HDR20D0550	54	0.0550	3/4	1-1/2
HDR20D0595	53	0.0595	3/4	1-1/2
HDR20D0625	1/16	0.0625	3/4	1-1/2
HDR20D0635	52	0.0635	3/4	1-1/2
HDR20D0670	51	0.0670	3/4	1-1/2
HDR20D0700	50	0.0700	7/8	1-3/4
HDR20D0730	49	0.0730	7/8	1-3/4
HDR20D0760	48	0.0760	7/8	1-3/4
HDR20D0781	5/64	0.0781	7/8	1-3/4
HDR20D0785	47	0.0785	7/8	1-3/4
HDR20D0810	46	0.0810	7/8	1-3/4
HDR20D0820	45	0.0820	7/8	1-3/4
HDR20D0860	44	0.0860	1	2
HDR20D0890	43	0.0890	1	2
HDR20D0935	42	0.0935	1	2
HDR20D0938	3/32	0.0938	1	2
HDR20D0960	41	0.0960	1	2
HDR20D0980	40	0.0980	1	2
HDR20D0995	39	0.0995	1-1/4	2-1/4
HDR20D1015	38	0.1015	1-1/4	2-1/4
HDR20D1040	37	0.1040	1-1/4	2-1/4
HDR20D1065	36	0.1065	1-1/4	2-1/4
HDR20D1094	7/64	0.1094	1-1/4	2-1/4



Solid Carbide 20° Helix Drill - Inch



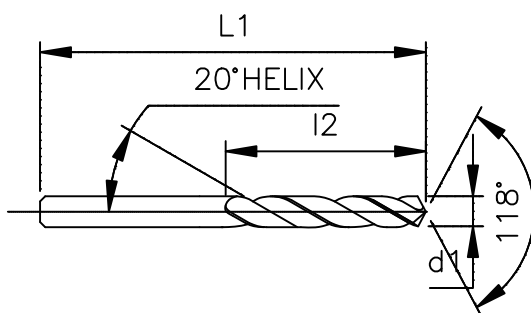
Application:
 Non-Ferrous alloys
 Cast iron
 Plastics
 Aluminum
 Highly abrasive materials

SERIES : HDR20I

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDR20D1100	35	0.1100	1-1/4	2-1/4
HDR20D1110	34	0.1110	1-1/4	2-1/4
HDR20D1130	33	0.1130	1-1/4	2-1/4
HDR20D1160	32	0.1160	1-1/4	2-1/4
HDR20D1200	31	0.1200	1-1/4	2-1/4
HDR20D1250	1/8	0.1250	1-1/4	2-1/4
HDR20D1285	30	0.1285	1-1/4	2-1/4
HDR20D1360	29	0.1360	1-3/8	2-1/2
HDR20D1405	28	0.1405	1-3/8	2-1/2
HDR20D1406	9/64	0.1406	1-3/8	2-1/2
HDR20D1440	27	0.1440	1-3/8	2-1/2
HDR20D1470	26	0.1470	1-3/8	2-1/2
HDR20D1495	25	0.1495	1-3/8	2-1/2
HDR20D1520	24	0.1520	1-3/8	2-1/2
HDR20D1540	23	0.1540	1-3/8	2-1/2
HDR20D1562	5/32	0.1562	1-3/8	2-1/2
HDR20D1570	22	0.1570	1-3/8	2-1/2
HDR20D1590	21	0.1590	1-3/8	2-1/2
HDR20D1610	20	0.1610	1-3/8	2-1/2
HDR20D1660	19	0.1660	1-5/8	2-3/4
HDR20D1695	18	0.1695	1-5/8	2-3/4
HDR20D1719	11/64	0.1719	1-5/8	2-3/4
HDR20D1730	17	0.1730	1-5/8	2-3/4
HDR20D1770	16	0.1770	1-5/8	2-3/4
HDR20D1800	15	0.1800	1-5/8	2-3/4



Solid Carbide 20° Helix Drill - Inch



Application:
 Non-Ferrous alloys
 Cast iron
 Plastics
 Aluminum
 Highly abrasive materials

SERIES : HDR20I

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDR20D1820	14	0.1820	1-5/8	2-3/4
HDR20D1850	13	0.1850	1-5/8	2-3/4
HDR20D1875	3/16	0.1875	1-5/8	2-3/4
HDR20D1890	12	0.1890	1-5/8	2-3/4
HDR20D1910	11	0.1910	1-5/8	2-3/4
HDR20D1935	10	0.1935	1-5/8	2-3/4
HDR20D1960	9	0.1960	1-3/4	3
HDR20D1990	8	0.1990	1-3/4	3
HDR20D2010	7	0.2010	1-3/4	3
HDR20D2031	13/64	0.2031	1-3/4	3
HDR20D2040	6	0.2040	1-3/4	3
HDR20D2055	5	0.2055	1-3/4	3
HDR20D2090	4	0.2090	1-3/4	3
HDR20D2130	3	0.2130	1-3/4	3
HDR20D2188	7/32	0.2188	1-3/4	3
HDR20D2210	2	0.2210	1-3/4	3
HDR20D2280	1	0.2280	1-3/4	3
HDR20D2340	A	0.2340	2	3-1/4
HDR20D2344	15/64	0.2344	2	3-1/4
HDR20D2380	B	0.2380	2	3-1/4
HDR20D2420	C	0.2420	2	3-1/4
HDR20D2460	D	0.2460	2	3-1/4
HDR20D2500	1/4	0.2500	2	3-1/4
HDR20D2500E	E	0.2500	2	3-1/4
HDR20D2570	F	0.2570	2	3-1/4



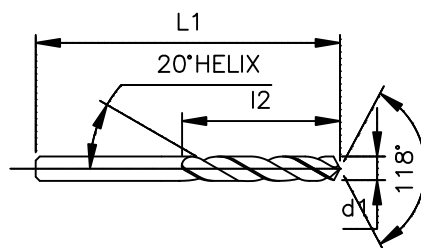
Solid Carbide 20° Helix Drill - Inch



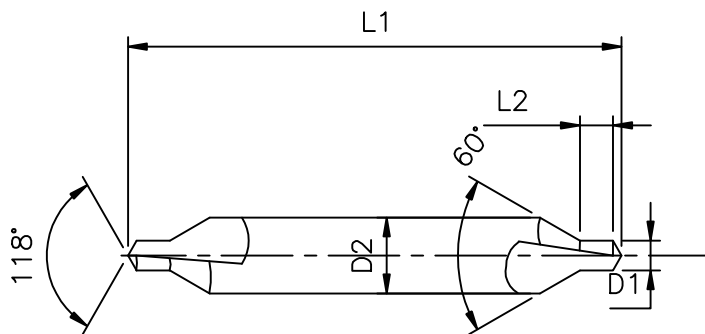
SERIES : HDR20I

ITEM CODE	DIA D1	DEC EQV	FL L2	OAL L1
HDR20D2610	G	0.2610	2-1/8	3-1/2
HDR20D2656	17/64	0.2656	2-1/8	3-1/2
HDR20D2660	H	0.2660	2-1/8	3-1/2
HDR20D2720	I	0.2720	2-1/8	3-1/2
HDR20D2770	J	0.2770	2-1/8	3-1/2
HDR20D2810	K	0.2810	2-1/8	3-1/2
HDR20D2812	9/32	0.2812	2-1/8	3-1/2
HDR20D2900	L	0.2900	2-1/8	3-1/2
HDR20D2950	M	0.2950	2-3/8	3-3/4
HDR20D2969	19/64	0.2969	2-3/8	3-3/4
HDR20D3020	N	0.3020	2-3/8	3-3/4
HDR20D3125	5/16	0.3125	2-3/8	3-3/4
HDR20D3160	O	0.3160	2-3/8	3-3/4
HDR20D3230	P	0.3230	2-3/8	3-3/4
HDR20D3281	21/64	0.3281	2-1/2	4
HDR20D3320	Q	0.3320	2-1/2	4
HDR20D3390	R	0.3390	2-1/2	4
HDR20D3438	11/32	0.3438	2-1/2	4
HDR20D3480	S	0.3480	2-1/2	4
HDR20D3580	T	0.3580	2-1/2	4
HDR20D3594	23/64	0.3594	2-1/2	4
HDR20D3680	U	0.3680	2-3/4	4-1/4
HDR20D3750	3/8	0.3750	2-3/4	4-1/4
HDR20D3770	V	0.3770	2-3/4	4-1/4
HDR20D3860	W	0.3860	2-7/8	4-1/2
HDR20D3906	25/64	0.3906	2-7/8	4-1/2
HDR20D3970	X	0.3970	2-7/8	4-1/2
HDR20D4040	Y	0.4040	2-7/8	4-1/2
HDR20D4062	13/32	0.4062	2-7/8	4-1/2
HDR20D4130	Z	0.4130	2-7/8	4-1/2
HDR20D4219	27/64	0.4219	2-7/8	4-1/2
HDR20D4375	7/16	0.4375	2-7/8	4-1/2
HDR20D4531	29/64	0.4531	3	4-3/4
HDR20D4688	15/32	0.4688	3	4-3/4
HDR20D4844	31/64	0.4844	3	4-3/4
HDR20D5000	1/2	0.5000	3	4-3/4

Application:
 Non-Ferrous alloys
 Cast iron
 Plastics
 Aluminum
 Highly abrasive materials



Solid Carbide Centre Drills



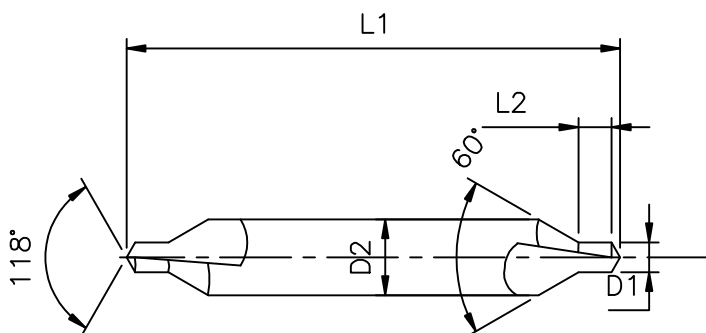
SERIES : HCD

ITEM CODE	DIA (D1)	Body Dia (D2)	Pilot Length (L2)	OAL (L1)
HCDR 0100	1	3.15	1.6	31.5
HCDR 0125	1.25	3.15	1.9	31.5
HCDR 0160	1.6	4	2.4	35.5
HCDR 0200	2	5	2.9	40
HCDR 0250	2.5	6.3	3.6	45
HCDR 0315	3.15	8	4.4	50
HCDR 0400	4	10	5.6	56
HCDR 0500	5	12.5	6.9	63
HCDR 0630	6.3	16	8.6	71



As per din 333 A

Combination Drill Countersink **118° 4 Facet Point - Straight Flute - 60° C'sink Angle**



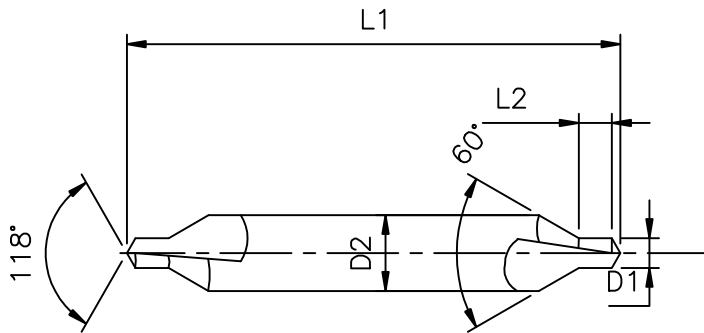
SERIES : HCDSM

ITEM CODE	PILOT DIA D1	PILOT LENGTH L2	BODY DIA D2	OAL L1
HCD0050L038	0.50	19	3.0	38
HCD0080L038	0.80	22	3.0	38
HCD0100L038	1.00	25	3.0	38
HCD0125L038	1.25	32	3.0	38
HCD0160L050	1.60	35	4.0	50
HCD0200L050	2.00	35	5.0	50
HCD0250L064	2.50	41	6.0	64
HCD0315L064	3.15	44	8.0	64
HCD0400L064	4.00	50	10.0	64
HCD0500L064	5.00	60	12.0	64
HCD0630L076	6.30	45	16.0	76
HCD0800L100	8.00	50	20.0	100
HCD1000L100	10.0	55	25.0	100



Size	Pilot DIA (D1)	Shank DIA (D2)
up to 3mm	+0.000~ -.025mm	+0.000~ -.006mm
over 3mm	+0.000~-.038mm	+0.000~-.008mm

Combination Drill Countersink
118° 4 Facet Point - Straight Flute - 60° C'sink Angle

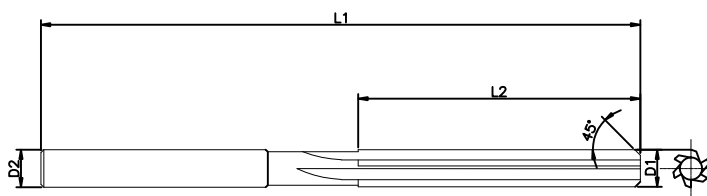


SERIES : HCDSI

ITEM CODE	TOOL NO.	BODY DIA D2	PILOT DIA D1	OAL L1	PILOT LENGTH L2
HCD0010	1	1/8	3/64	1-1/4	3/64
HCD0020	2	3/16	5/64	1-7/8	5/64
HCD0030	3	1/4	7/64	2	7/64
HCD0040	4	5/16	1/8	2-1/8	1/8
HCD0050	5	7/16	3/16	2-3/4	3/16
HCD0060	6	1/2	7/32	3	7/32



Solid Carbide Straight Flute Reamers



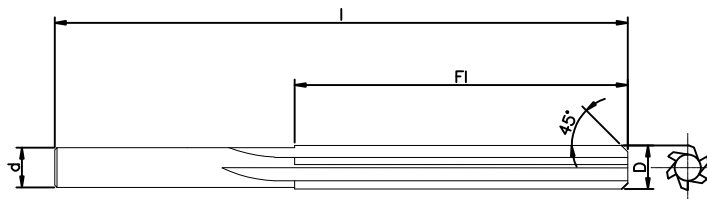
SERIES : HRM

ITEM CODE	DIA (D1)	CEL (L2)	OAL (L1)	NO OF FLUTES
HRMR010	1	8	35	3
HRMR015	1.5	10	38	3
HRMR020	2	11	44	4
HRMR025	2.5	16	57	4
HRMR030	3	16	57	4
HRMR035	3.5	19	57	4
HRMR040	4	19	64	4
HRMR045	4.5	22	70	4
HRMR050	5	25	76	4
HRMR055	5.5	25	76	4
HRMR060	6	25	76	6
HRMR065	6.5	29	83	6
HRMR070	7	29	83	6
HRMR080	8	29	83	6
HRMR085	8.5	32	89	6
HRMR090	9	32	89	6
HRMR100	10	38	102	6
HRMR120	12	38	102	8



Dia Tol : H7

Solid Carbide Straight Flute - Reamer
4 and 6 Flute



SERIES : HRMSFM

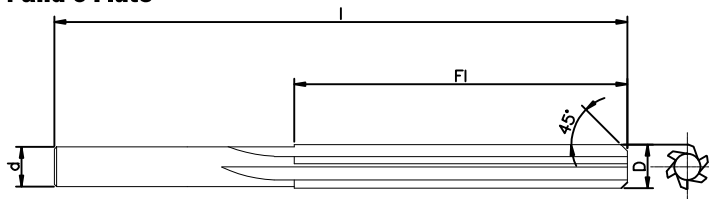
ITEM CODE	DIA D	FL	SH DIA. d	OAL L
HRMSF4F016L038	1.6	10	1.32	38
HRMSF4F017L044	1.7	12	1.59	44
HRMSF4F018L044	1.8	12	1.59	44
HRMSF4F019L044	1.9	12	1.59	44
HRMSF4F020L044	2.0	12	1.59	44
HRMSF4F021L050	2.1	12	1.98	50
HRMSF4F022L050	2.2	12	1.98	50
HRMSF4F023L050	2.3	12	1.98	50
HRMSF4F024L050	2.4	12	1.98	50
HRMSF4F027L057	2.7	16	2.38	57
HRMSF4F030L057	3.0	16	2.78	57
HRMSF4F032L057	3.2	16	2.78	57
HRMSF4F036L064	3.6	19	3.57	64
HRMSF4F039L064	3.9	19	3.57	64
HRMSF4F041L070	4.1	22	3.97	70
HRMSF4F044L070	4.4	22	3.97	70
HRMSF4F049L070	4.9	22	4.76	70
HRMSF4F051L076	5.1	25	4.76	76
HRMSF4F052L076	5.2	25	4.76	76
HRMSF4F053L076	5.3	25	4.76	76
HRMSF4F054L076	5.4	25	4.76	76
HRMSF4F055L076	5.5	25	4.76	76
HRMSF4F056L076	5.6	25	4.76	76
HRMSF4F057L076	5.7	25	5.56	76
HRMSF4F058L076	5.8	25	5.56	76
HRMSF4F059L076	5.9	25	5.56	76
HRMSF4F060L076	6.0	25	5.56	76



Dia Tol Upto 3mm (+.000~--.025)	D(Coating Dia) Over 3mm (+.000~--.038)
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Solid Carbide Straight Flute - Reamer

4 and 6 Flute



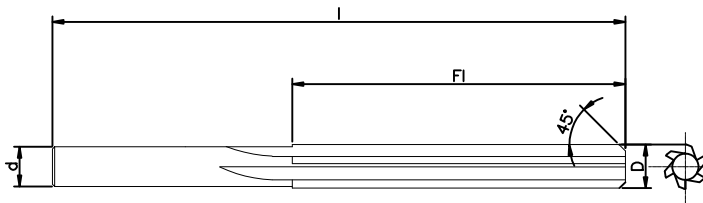
SERIES : HRMSFM

ITEM CODE	DIA D	FL	SH DIA. d	OAL L
HRMSF4F061L076	6.1	25	5.56	76
HRMSF4F062L076	6.2	25	5.56	76
HRMSF4F063L076	6.3	25	5.56	76
HRMSF4F064L083	6.4	29	6.35	83
HRMSF4F065L083	6.5	29	6.35	83
HRMSF4F066L083	6.6	29	6.35	83
HRMSF6F067L083	6.7	29	6.35	83
HRMSF6F068L083	6.8	29	6.35	83
HRMSF6F069L083	6.9	29	6.35	83
HRMSF6F070L083	7.0	29	6.35	83
HRMSF6F071L083	7.1	29	6.35	83
HRMSF6F072L083	7.2	29	6.35	83
HRMSF6F073L083	7.3	29	7.14	83
HRMSF6F074L083	7.4	29	7.14	83
HRMSF6F075L083	7.5	29	7.14	83
HRMSF6F076L083	7.6	29	7.14	83
HRMSF6F077L083	7.7	29	7.14	83
HRMSF6F078L083	7.8	29	7.14	83
HRMSF6F079L083	7.9	29	7.14	83
HRMSF6F080L083	8.0	29	7.14	83
HRMSF6F081L089	8.1	32	7.94	89
HRMSF6F082L089	8.2	32	7.94	89
HRMSF6F083L089	8.3	32	7.94	89
HRMSF6F084L089	8.4	32	7.94	89
HRMSF6F085L089	8.5	32	7.94	89
HRMSF6F086L089	8.6	32	7.94	89
HRMSF6F087L089	8.7	32	7.94	89



Dia Tol Upto 3mm (+.000~--.025)	D(Coating Dia) Over 3mm (+.000~--.038)
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Solid Carbide Straight Flute - Reamer
4 and 6 Flute



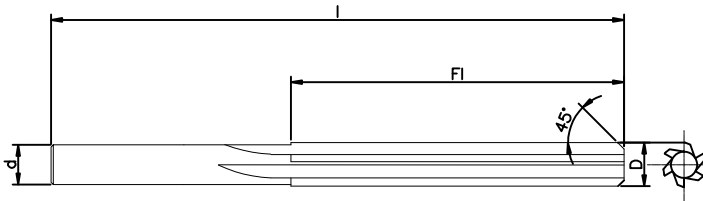
SERIES : HRMSFM

ITEM CODE	DIA D	FL	SH DIA. d	OAL L
HRMSF6F088L089	8.8	32	7.94	89
HRMSF6F089L089	8.9	32	7.94	89
HRMSF6F090L089	9.0	32	7.94	89
HRMSF6F091L089	9.1	32	7.94	89
HRMSF6F092L089	9.2	32	9.13	89
HRMSF6F093L089	9.3	32	9.13	89
HRMSF6F094L089	9.4	32	9.13	89
HRMSF6F095L089	9.5	32	9.13	89
HRMSF6F096L089	9.6	32	9.13	89
HRMSF6F097L089	9.7	32	9.13	89
HRMSF6F098L089	9.8	32	9.13	89
HRMSF6F099L089	9.9	32	9.53	89
HRMSF6F100L089	10.0	32	9.53	89
HRMSF6F101L089	10.1	32	9.53	89
HRMSF6F102L089	10.2	32	9.53	89
HRMSF6F103L089	10.3	32	9.53	89
HRMSF6F104L089	10.4	32	9.53	89
HRMSF6F105L089	10.5	32	9.53	89
HRMSF6F106L095	10.6	35	9.53	95
HRMSF6F107L095	10.7	35	9.53	95
HRMSF6F108L095	10.8	35	9.53	95
HRMSF6F109L095	10.9	35	9.53	95
HRMSF6F110L095	11.0	35	9.53	95
HRMSF6F111L095	11.1	35	9.53	95
HRMSF6F112L095	11.2	35	9.53	95
HRMSF6F113L095	11.3	35	9.53	95
HRMSF6F114L095	11.4	35	9.53	95



Dia Tol Upto 3mm (+.000~-0.025)	D(Coating Dia) Over 3mm (+.000~-0.038)
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Solid Carbide Straight Flute - Reamer 4 and 6 Flute



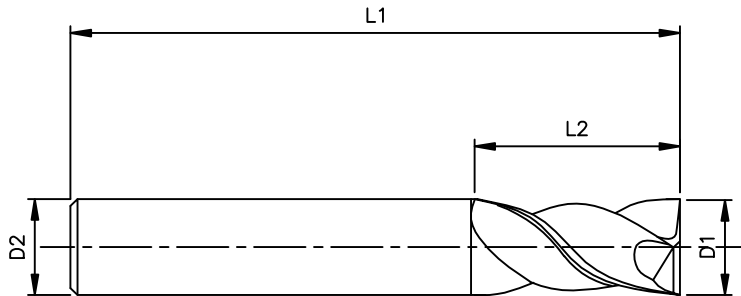
SERIES : HRMSFM

ITEM CODE	DIA D	FL	SH DIA. d	OAL L
HRMSF6F115L095	11.5	35	9.53	95
HRMSF6F116L095	11.6	35	11.11	95
HRMSF6F117L095	11.7	35	11.11	95
HRMSF6F118L095	11.8	35	11.11	95
HRMSF6F119L095	11.9	35	11.11	95
HRMSF6F120L102	12.0	38	11.11	102
HRMSF6F121L102	12.1	38	11.11	102
HRMSF6F122L102	12.2	38	11.11	102
HRMSF6F123L102	12.3	38	11.11	102
HRMSF6F124L102	12.4	38	11.11	102
HRMSF6F125L102	12.5	38	11.11	102
HRMSF6F126L102	12.6	38	11.11	102
HRMSF6F128L102	12.8	38	11.11	102
HRMSF6F129L102	12.9	38	11.11	102
HRMSF6F130L102	13.0	38	11.11	102



Dia Tol Upto 3mm (+.000~-0.025)	D(Coating Dia) Over 3mm (+.000~-0.038)
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Solid Carbide 2 Fl Sq.End Regular End Mills



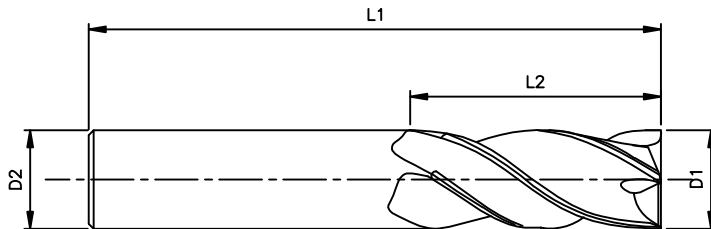
SERIES : H1F2S

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1F2P010SC	1	3	3	39
H1F2P015SC	1.5	3	5	39
H1F2P020SC	2	3	7	39
H1F2P025SC	2.5	3	8	39
H1F2P030SC	3	3	10	39
H1F2P040SC	4	4	14	51
H1F2P045SC	4.5	5	14	51
H1F2P050SC	5	5	16	51
H1F2P060SC	6	6	19	64
H1F2P070SC	7	8	19	64
H1F2P080SC	8	8	21	64
H1F2P090SC	9	10	22	70
H1F2P100SC	10	10	25	70
H1F2P110SC	11	11	25	70
H1F2P120SC	12	12	25	76
H1F2P140SC	14	14	30	89
H1F2P160SC	16	16	32	89
H1F2P180SC	18	18	35	101
H1F2P200SC	20	20	38	101
H1F2P220SC	22	22	38	102
H1F2P250SC	25	25	38	102



Mill Dia Tol : e8
As per ANSI

Solid Carbide 4 Fl Sq.End Regular End Mills



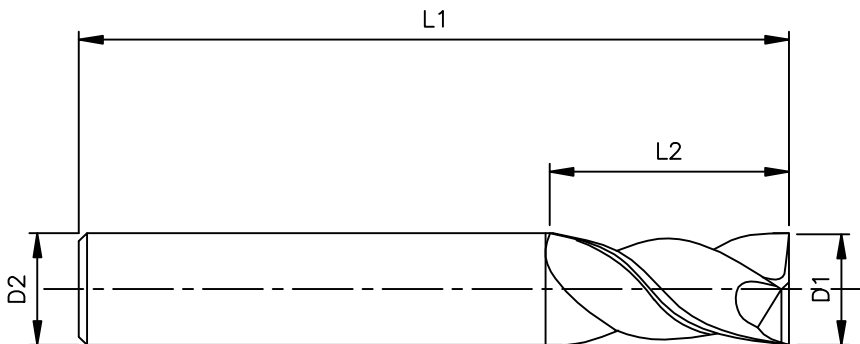
SERIES : H1F4S

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1F4P010SC	1	3	3	39
H1F4P015SC	1.5	3	5	39
H1F4P020SC	2	3	7	39
H1F4P025SC	2.5	3	8	39
H1F4P030SC	3	3	10	39
H1F4P040SC	4	4	14	51
H1F4P045SC	4.5	5	14	51
H1F4P050SC	5	5	16	51
H1F4P060SC	6	6	19	64
H1F4P070SC	7	8	19	64
H1F4P080SC	8	8	21	64
H1F4P090SC	9	10	22	70
H1F4P100SC	10	10	25	70
H1F4P110SC	11	11	25	70
H1F4P120SC	12	12	25	76
H1F4P140SC	14	14	30	89
H1F4P160SC	16	16	32	89
H1F4P180SC	18	18	35	101
H1F4P200SC	20	20	38	101
H1F4P220SC	22	22	38	102
H1F4P250SC	25	25	38	102



Mill Dia Tol : e8
As per ANSI

Solid Carbide 2 Fl Sq.End Long End Mills



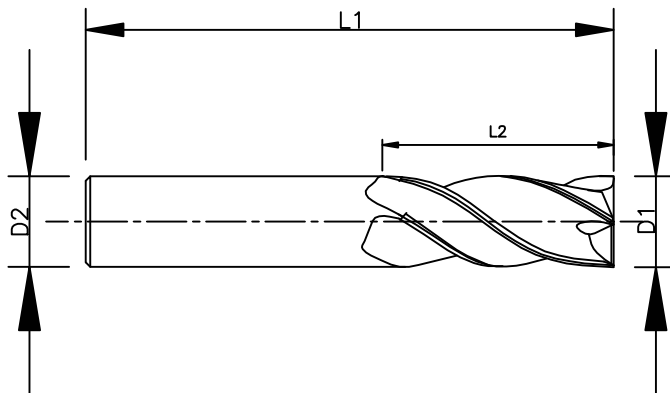
SERIES : H1F2L

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1F2P030LC	3	3	19	57
H1F2P040LC	4	4	19	57
H1F2P050LC	5	5	25	64
H1F2P060LC	6	6	28	76
H1F2P080LC	8	8	29	76
H1F2P100LC	10	10	32	76
H1F2P120LC	12	12	51	102
H1F2P140LC	14	14	57	127
H1F2P160LC	16	16	57	127
H1F2P180LC	18	18	57	127
H1F2P200LC	20	20	57	127
H1F2P220LC	22	22	57	127
H1F2P250LC	25	25	57	127



Mill Dia Tol : e8
As per ANSI

Solid Carbide 4 Fl Sq.End Long End Mills



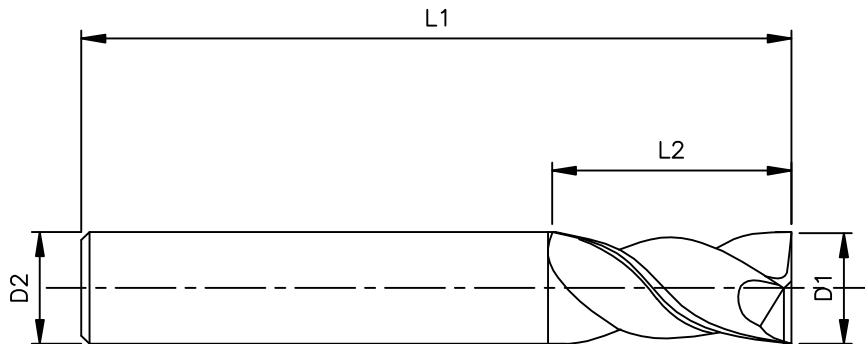
SERIES : H1F4L

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1F4P030LC	3	3	19	57
H1F4P040LC	4	4	19	57
H1F4P050LC	5	5	25	64
H1F4P060LC	6	6	28	76
H1F4P080LC	8	8	29	76
H1F4P100LC	10	10	32	76
H1F4P120LC	12	12	51	102
H1F4P140LC	14	14	57	127
H1F4P160LC	16	16	57	127
H1F4P180LC	18	18	57	127
H1F4P200LC	20	20	57	127
H1F4P220LC	22	22	57	127
H1F4P250LC	25	25	57	127



Mill Dia Tol : e8
As per ANSI

Solid Carbide 2 Fl Sq.End Extra Long End Mills



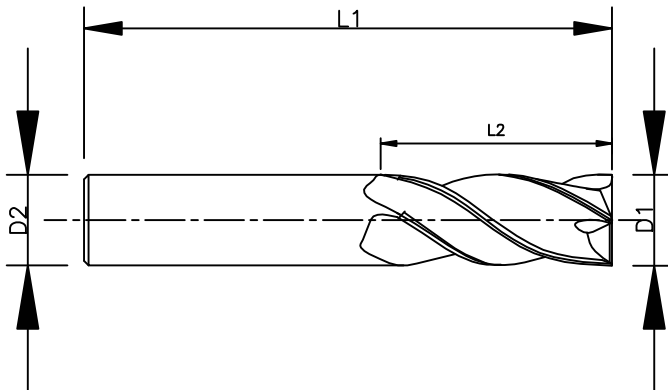
SERIES : H1F2X

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1F2P030XC	3	3	25	76
H1F2P040XC	4	4	28	76
H1F2P050XC	5	5	32	76
H1F2P060XC	6	6	39	102
H1F2P080XC	8	8	42	102
H1F2P100XC	10	10	45	102
H1F2P120XC	12	12	76	153
H1F2P140XC	14	14	76	153
H1F2P160XC	16	16	76	153
H1F2P180XC	18	18	76	153
H1F2P200XC	20	20	76	153
H1F2P220XC	22	22	76	153
H1F2P250XC	25	25	76	153



Mill Dia Tol : e8
As per ANSI

Solid Carbide 4 Fl Sq.End Extra Long End Mills



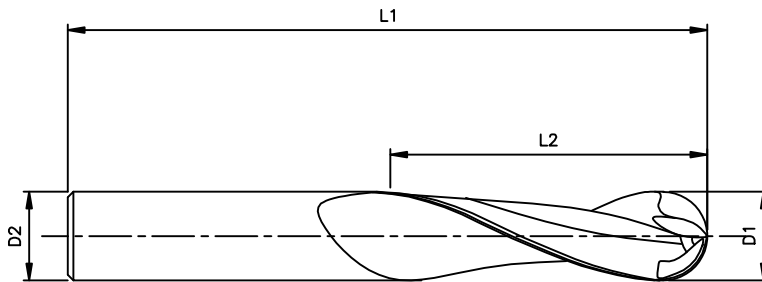
SERIES : H1F4X

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1F4P030XC	3	3	25	76
H1F4P040XC	4	4	28	76
H1F4P050XC	5	5	32	76
H1F4P060XC	6	6	39	102
H1F4P080XC	8	8	42	102
H1F4P100XC	10	10	45	102
H1F4P120XC	12	12	76	153
H1F4P140XC	14	14	76	153
H1F4P160XC	16	16	76	153
H1F4P180XC	18	18	76	153
H1F4P200XC	20	20	76	153
H1F4P220XC	22	22	76	153
H1F4P250XC	25	25	76	153



Mill Dia Tol : e8
As per ANSI

Solid Carbide 2 Fl Ball Nose Regular End Mills



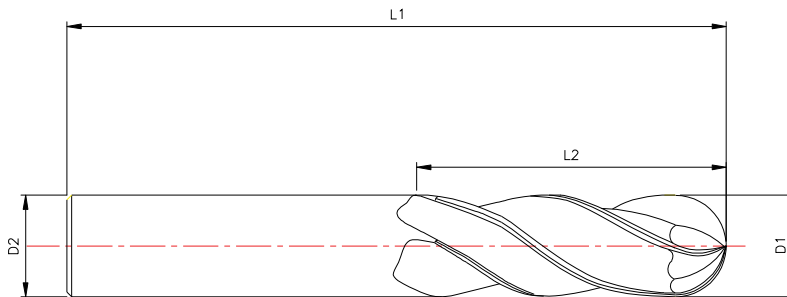
SERIES : H1B2S

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1B2P010SC	1	3	3	39
H1B2P015SC	1.5	3	5	39
H1B2P020SC	2	3	7	39
H1B2P025SC	2.5	3	8	39
H1B2P030SC	3	3	10	39
H1B2P040SC	4	4	14	51
H1B2P045SC	4.5	5	14	51
H1B2P050SC	5	5	16	51
H1B2P060SC	6	6	19	64
H1B2P070SC	7	8	19	64
H1B2P080SC	8	8	21	64
H1B2P090SC	9	10	22	70
H1B2P100SC	10	10	25	70
H1B2P110SC	11	11	25	70
H1B2P120SC	12	12	25	76
H1B2P140SC	14	14	30	89
H1B2P160SC	16	16	32	89
H1B2P180SC	18	18	35	101
H1B2P200SC	20	20	38	101
H1B2P220SC	22	22	38	102
H1B2P250SC	25	25	38	102



Mill Dia Tol : e8
As per ANSI

Solid Carbide 4 Fl Ball Nose Regular End Mills



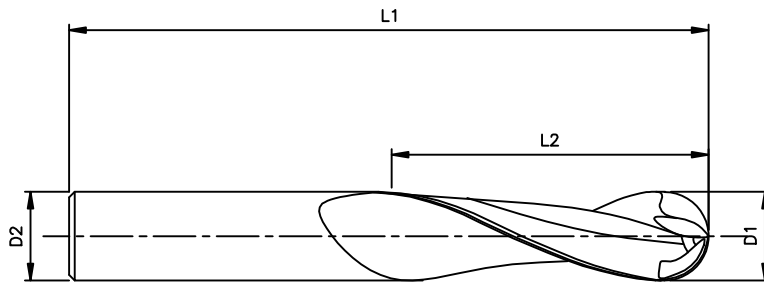
SERIES : H1B4S

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1B4P010SC	1	3	3	39
H1B4P015SC	1.5	3	5	39
H1B4P020SC	2	3	7	39
H1B4P025SC	2.5	3	8	39
H1B4P030SC	3	3	10	39
H1B4P040SC	4	4	14	51
H1B4P045SC	4.5	5	14	51
H1B4P050SC	5	5	16	51
H1B4P060SC	6	6	19	64
H1B4P070SC	7	8	19	64
H1B4P080SC	8	8	21	64
H1B4P090SC	9	10	22	70
H1B4P100SC	10	10	25	70
H1B4P110SC	11	11	25	70
H1B4P120SC	12	12	25	76
H1B4P140SC	14	14	30	89
H1B4P160SC	16	16	32	89
H1B4P180SC	18	18	35	101
H1B4P200SC	20	20	38	101
H1B4P220SC	22	22	38	102
H1B4P250SC	25	25	38	102



Mill Dia Tol : e8
As per ANSI

Solid Carbide 2 Fl Ball Nose Long End Mills



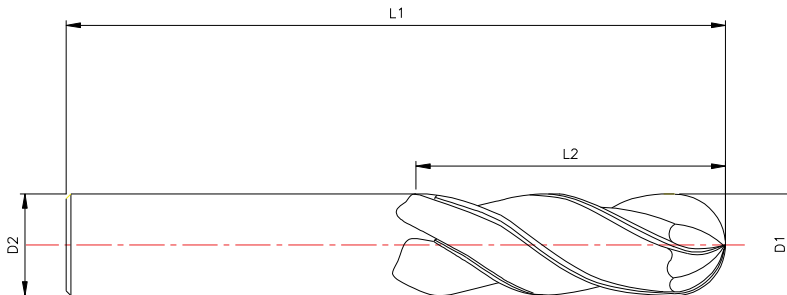
SERIES : H1B2L

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1B2P030LC	3	3	19	57
H1B2P040LC	4	4	19	57
H1B2P050LC	5	5	25	64
H1B2P060LC	6	6	28	76
H1B2P080LC	8	8	29	76
H1B2P100LC	10	10	32	76
H1B2P120LC	12	12	51	102
H1B2P140LC	14	14	57	127
H1B2P160LC	16	16	57	127
H1B2P180LC	18	18	57	127
H1B2P200LC	20	20	57	127
H1B2P220LC	22	22	57	127
H1B2P250LC	25	25	57	127



Mill Dia Tol : e8
As per ANSI

Solid Carbide 4 Fl Ball Nose Long End Mills



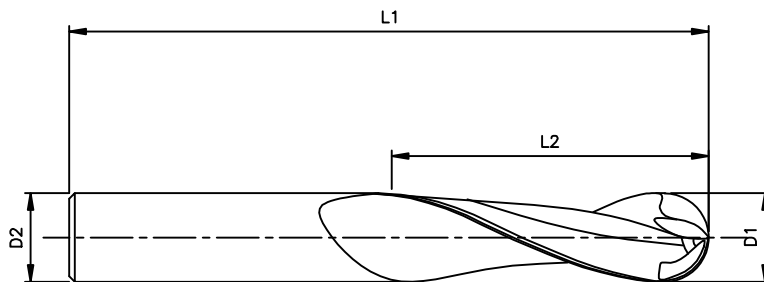
SERIES : H1B4L

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1B4P030LC	3	3	19	57
H1B4P040LC	4	4	19	57
H1B4P050LC	5	5	25	64
H1B4P060LC	6	6	28	76
H1B4P080LC	8	8	29	76
H1B4P100LC	10	10	32	76
H1B4P120LC	12	12	51	102
H1B4P140LC	14	14	57	127
H1B4P160LC	16	16	57	127
H1B4P180LC	18	18	57	127
H1B4P200LC	20	20	57	127
H1B4P220LC	22	22	57	127
H1B4P250LC	25	25	57	127



Mill Dia Tol : e8
As per ANSI

Solid Carbide 2 Fl Ball Nose Extra Long End Mills



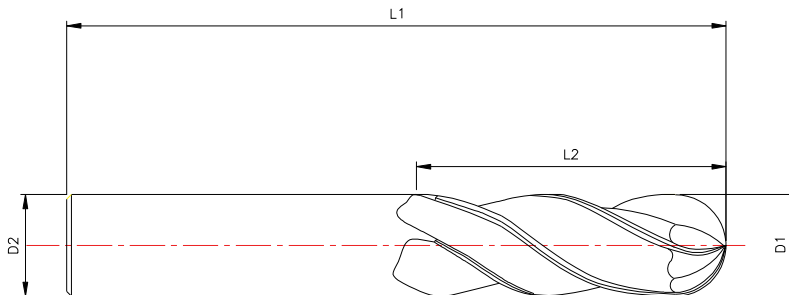
SERIES : H1B2X

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1B2P030XC	3	3	25	76
H1B2P040XC	4	4	28	76
H1B2P050XC	5	5	32	76
H1B2P060XC	6	6	39	102
H1B2P080XC	8	8	42	102
H1B2P100XC	10	10	45	102
H1B2P120XC	12	12	76	153
H1B2P140XC	14	14	76	153
H1B2P160XC	16	16	76	153
H1B2P180XC	18	18	76	153
H1B2P200XC	20	20	76	153
H1B2P220XC	22	22	76	153
H1B2P250XC	25	25	76	153



Mill Dia Tol : e8
As per ANSI

Solid Carbide 4 Fl Ball Nose Extra Long End Mills



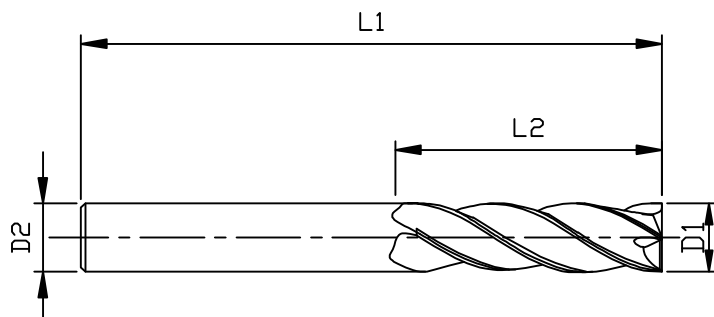
SERIES : H1B4X

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1B4P030XC	3	3	25	76
H1B4P040XC	4	4	28	76
H1B4P050XC	5	5	32	76
H1B4P060XC	6	6	39	102
H1B4P080XC	8	8	42	102
H1B4P100XC	10	10	45	102
H1B4P120XC	12	12	76	153
H1B4P140XC	14	14	76	153
H1B4P160XC	16	16	76	153
H1B4P180XC	18	18	76	153
H1B4P200XC	20	20	76	153
H1B4P220XC	22	22	76	153
H1B4P250XC	25	25	76	153



Mill Dia Tol : e8
As per ANSI

3 Fl 45 Degree Std End Mills For Aluminium



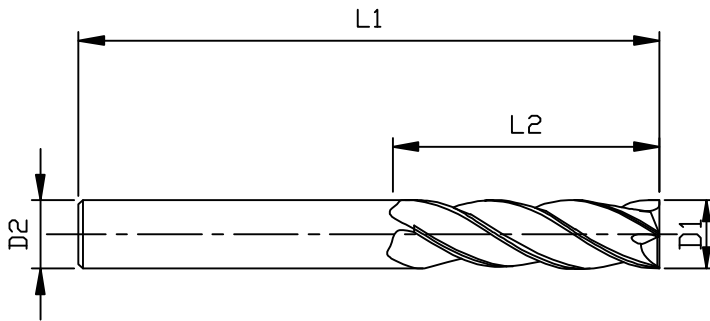
SERIES : H1F3S

ITEM CODE	DIA (D2)	SH.DIA (D1)	CEL (L2)	OAL (L1)
H1F3Q030S	3	6	9	50
H1F3Q040S	4	6	12	50
H1F3Q050S	5	6	15	50
H1F3Q060S	6	6	18	50
H1F3Q080S	8	8	20	60
H1F3Q100S	10	10	30	75
H1F3Q120S	12	12	32	75
H1F3Q160S	16	16	45	100
H1F3Q200S	20	20	45	100



Mill Dia Tol : e8

3 Fl 45 Degree Long End Mills For Aluminium



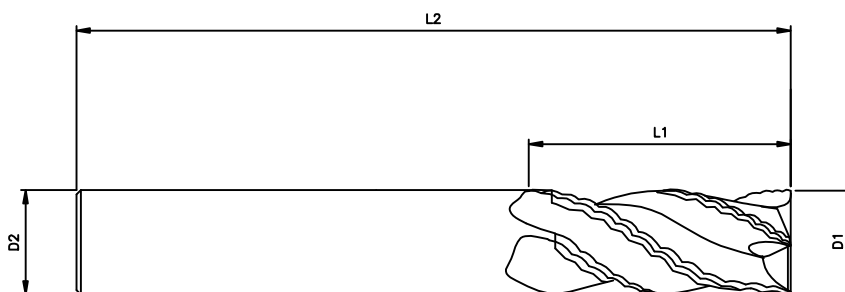
SERIES : H1F3L

ITEM CODE	DIA (D2)	SH.DIA (D1)	CEL (L2)	OAL (L1)
H1F3Q030L	3	6	12	60
H1F3Q040L	4	6	16	60
H1F3Q050L	5	6	20	60
H1F3Q060L	6	6	25	75
H1F3Q080L	8	8	32	75
H1F3Q100L	10	10	45	100
H1F3Q120L	12	12	45	100
H1F3Q160L	16	16	65	150
H1F3Q200L	20	20	75	150



Mill Dia Tol : e8

Roughing End Mills

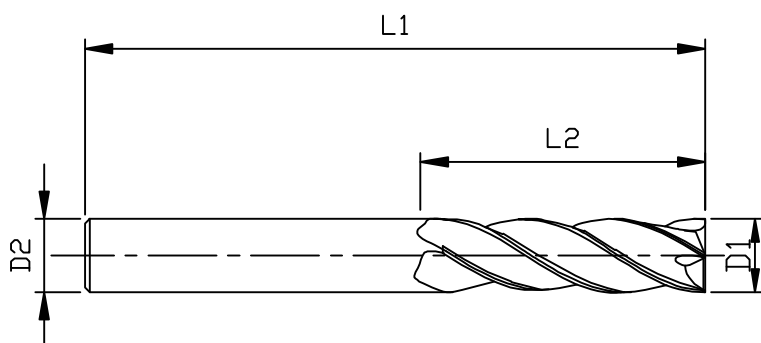


SERIES : HIFRC

ITEM CODE	DIA (D2)	SH.DIA (D1)	CEL (L1)	OAL (L2)	NO OF FLUTES
H1F4Q040RC	4	6	11	57	3
H1F4Q050RC	5	6	13	57	4
H1F4Q060RC	6	6	16	63	4
H1F4Q080RC	8	8	16	63	4
H1F4Q100RC	10	10	22	72	4
H1F4Q120RC	12	12	26	83	4
H1F4Q140RC	14	14	26	83	5
H1F4Q160RC	16	16	32	92	5
H1F4Q200RC	20	20	38	104	6
H1F4Q250RC	25	25	45	104	6



Mill Dia Tol : h10



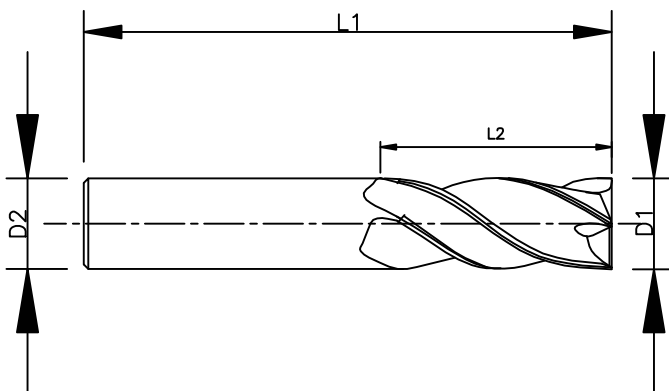
SERIES : HIF6R

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)	NO OF FLUTES
H1F6P060RM	6	6	13	57	6
H1F6P080RM	8	8	19	63	6
H1F6P100RM	10	10	22	72	6
H1F6P120RM	12	12	26	83	6
H1F6P160RM	16	16	32	89	6
H1F8P180RM	18	18	32	92	8
H1F8P200RM	20	20	38	102	8
H1F8P250RM	25	25	44	104	8



Mill Dia Tol : e8

Solid Carbide 4 Fl Sq.End High Performane End Mills



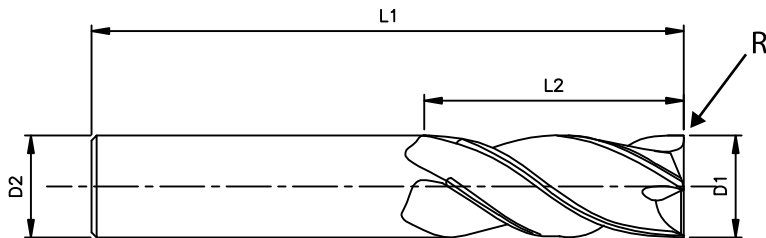
SERIES : H14UM

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1F4U030MC	3	4	8	50
H1F4U040MC	4	4	11	50
H1F4U050MC	5	6	13	50
H1F4U060MC	6	6	16	50
H1F4U080MC	8	8	21	60
H1F4U100MC	10	10	30	75
H1F4U120MC	12	12	32	75
H1F4U140MC	14	14	35	75
H1F4U160MC	16	16	46	100
H1F4U180MC	18	18	46	100
H1F4U200MC	20	20	46	100



Mill Dia Tol : e8

4 Flute Corner Radius End Mills



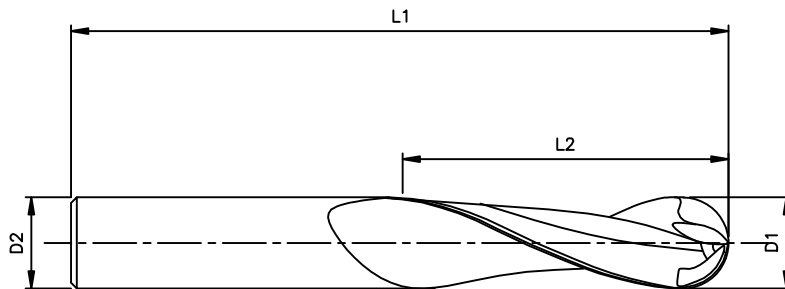
SERIES : H14PR

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H14P060R0.5C	6 X R0.5	6	20	60
H14P060R1.0C	6 X R1	6	20	60
H14P080R0.5C	8 X R0.5	8	25	70
H14P080R1.0C	8 X R1	8	25	70
H14P080R1.5C	8 X R1.5	8	25	70
H14P080R2.0C	8 X R2	8	25	70
H14P100R0.5C	10 X R0.5	10	30	90
H14P100R1.0C	10 X R1	10	30	90
H14P100R1.5C	10 X R1.5	10	30	90
H14P100R2.5C	10 X R2	10	30	90
H14P120R0.5C	12 X R0.5	12	30	90
H14P120R1.0C	12 X R1	12	30	90
H14P120R1.5C	12 X R1.5	12	30	90
H14P120R2.0C	12 X R2	12	30	90



Mill Dia Tol : e8

Long Shank 2 Fl Ball Nose End Mills



SERIES : H1B2D

ITEM CODE	DIA (D1)	SH.DIA (D2)	CEL (L2)	OAL (L1)
H1B2P020DC	2	6	5	50
H1B2P030DC	3	6	8	60
H1B2P040DC	4	6	8	70
H1B2P050DC	5	6	10	80
H1B2P060DC	6	6	12	90
H1B2P080DC	8	8	14	100
H1B2P100DC	10	10	18	100
H1B2P120DC	12	12	22	110
H1B2P140DC	14	14	26	110
H1B2P160DC	16	16	30	140
H1B2P180DC	18	18	34	160
H1B2P200DC	20	20	38	160
H1B2P250DC	25	25	50	180



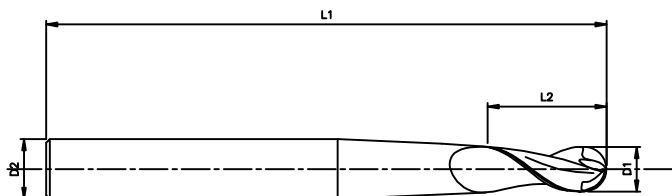
Mill Dia Tol : e8

Taper Neck Ball Nose End Mills For Mould

■ 2 Flute

■ 30° Helix

■ 3 DEG Neck Taper



SERIES : H1B2T

ITEM CODE	D1	D2	L2	L1
H1B2P030TC	3	6	8	75
H1B2P040TC	4	6	10	75
H1B2P050TC	5	8	12	100
H1B2P060TC	6	8	15	100
H1B2P080TC	8	10	17	100
H1B2P100TC	10	12	22	120
H1B2P120TC	12	16	26	150



Mill Dia Tol : e8

Solid Carbide Ground Rods

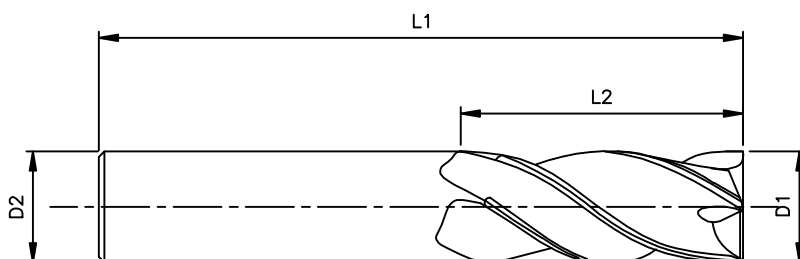
SERIES : HCB

ITEM CODE	DIA	OAL
HCB 030 100	3	100
HCB 040 100	4	100
HCB 050 100	5	100
HCB 060 100	6	100
HCB 080 100	8	100
HCB 100 100	10	100
HCB 120 100	12	100
HCB 140 100	14	100
HCB 160 100	16	100
HCB 200 100	20	100
HCB 220 100	22	100
HCB 250 100	25	100



Dia Tol : h6

4 Flute Square End Mills - Asia Std.



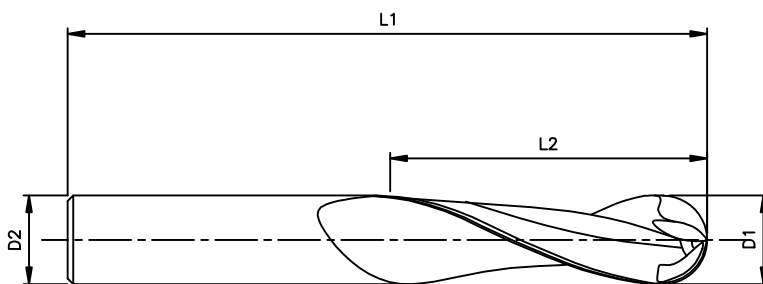
SERIES : HTEM4

ITEM CODE	DIA D1	CEL L2	O.A.L. L1	SH DIA D2
HTEM4300010	1.0	3	50	4
HTEM4300015	1.5	4	50	4
HTEM4300020	2.0	6	50	4
HTEM4300025	2.5	8	50	4
HTEM4300030	3.0	8	50	4
HTEM4300040	4.0	11	50	4
HTEM4300050	5.3	13	50	6
HTEM4300060	6.0	16	50	6
HTEM4300080	8.0	20	60	8
HTEM4300100	10.0	25	75	10
HTEM4300120	12.0	30	75	12
HTEM4300160	16.0	40	100	16
HTEM4300200	20.0	45	100	20



Mill Dia Tol : e8

2 Flute Ball Nose End Mills - Asia Std.



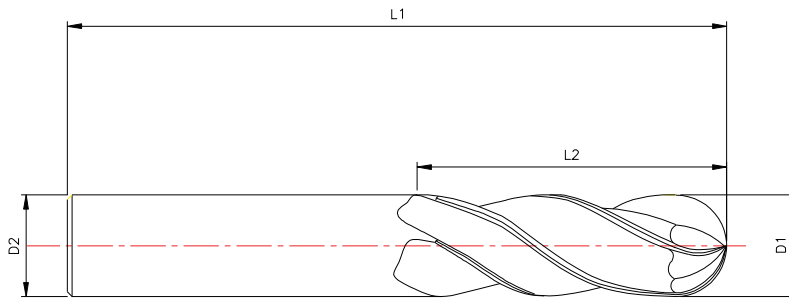
SERIES : HTBM2

ITEM CODE	DIA D1	CEL L2	O.A.L. L1	SH DIA D2
HTBM2300010	1	2	50	4
HTBM2300015	1.5	3	50	4
HTBM2300020	2	4	50	4
HTBM2300025	2.5	5	50	4
HTBM2300030	3	6	50	4
HTBM2300035	3.5	7	50	4
HTBM2300040	4	8	50	4
HTBM2300045	4.5	9	50	6
HTBM2300050	5	10	50	6
HTBM2300055	5.5	11	50	6
HTBM2300060	6	12	50	6
HTBM2300070	7	14	60	8
HTBM2300080	8	16	60	8
HTBM2300090	9	18	75	10
HTBM2300100	10	20	75	10
HTBM2300120	12	24	75	12
HTBM2300160	16	32	100	16
HTBM2300200	20	40	100	20



Mill Dia Tol : e8

4 Flute Ball Nose End Mills - Asia Std.



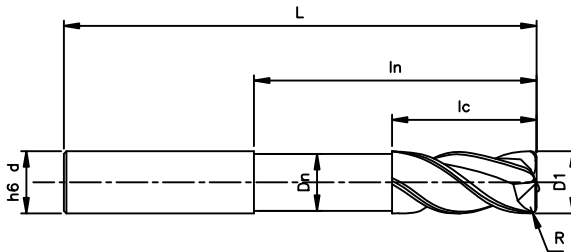
SERIES : HTBM4

ITEM CODE	DIA D1	CEL L2	O.A.L. L1	SH DIA D2
HTBM4300010	1	2	50	4
HTBM4300015	1.5	3	50	4
HTBM4300020	2	4	50	4
HTBM4300025	2.5	5	50	4
HTBM4300030	3	6	50	4
HTBM4300040	4	8	50	4
HTBM4300050	5	10	50	6
HTBM4300060	6	12	50	6
HTBM4300080	8	16	60	8
HTBM4300100	10	20	75	10
HTBM4300120	12	24	75	12



Mill Dia Tol : e8

Corner Radius 4 Flute End Mills - Necked Design 4 Flute



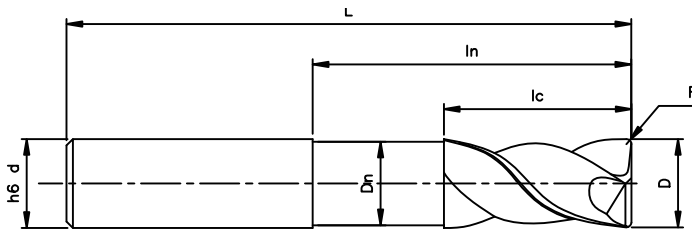
SERIES : H4F030

ITEM CODE	DIA D	CORNER RADIUS R	CEL Ic	REACH LENGTH In	NECK DIA Dn	SH.DIA d	OAL L
H4F030R02L045N	3.0	0.2	4.5	14	2.8	6	60
H4F030R05L045N	3.0	0.5	4.5	14	2.8	6	60
H4F040R02L060N	4.0	0.2	6.0	25	3.7	6	70
H4F040R05L060N	4.0	0.5	6.0	25	3.7	6	70
H4F040R10L060N	4.0	1.0	6.0	25	3.7	6	70
H4F050R02L075N	5.0	0.2	7.5	30	4.6	6	80
H4F050R05L075N	5.0	0.5	7.5	30	4.6	6	80
H4F050R10L075N	5.0	1.0	7.5	30	4.6	6	80
H4F060R02L090N	6.0	0.2	9.0	35	5.5	6	80
H4F060R05L090N	6.0	0.5	9.0	35	5.5	6	80
H4F060R10L090N	6.0	1.0	9.0	35	5.5	6	80
H4F060R15L090N	6.0	1.5	9.0	35	5.5	6	80
H4F060R20L090N	6.0	2.0	9.0	35	5.5	6	80
H4F080R05L120N	8.0	0.5	12	40	7.4	8	100
H4F080R10L120N	8.0	1.0	12	40	7.4	8	100
H4F080R15L120N	8.0	1.5	12	40	7.4	8	100
H4F080R20L120N	8.0	2.0	12	40	7.4	8	100
H4F100R05L150N	10	0.5	15	45	9.2	10	100
H4F100R10L150N	10	1.0	15	45	9.2	10	100
H4F100R15L150N	10	1.5	15	45	9.2	10	100
H4F100R20L150N	10	2.0	15	45	9.2	10	100
H4F100R30L150N	10	3.0	15	45	9.2	10	100
H4F120R05L180N	12	0.5	18	50	11	12	110
H4F120R10L180N	12	1.0	18	50	11	12	110
H4F120R15L180N	12	1.5	18	50	11	12	110
H4F120R20L180N	12	2.0	18	50	11	12	110
H4F120R30L180N	12	3.0	18	50	11	12	110



Mill Dia Tol : e8

Corner Radius End Mills - Necked Design 2 Flute

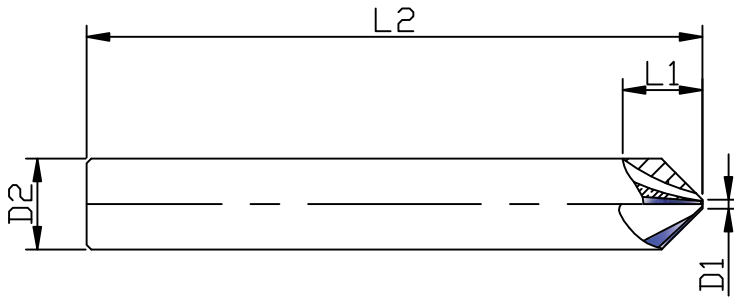


SERIES : H2F030

ITEM CODE	DIA D	CORNER RADIUS R	CEL lc	REACH LENGTH ln	NECK DIA Dn	SH.DIA d	OAL L
H2F030R02L045N	3.0	0.2	4.5	14	2.8	6	60
H2F030R05L045N	3.0	0.5	4.5	14	2.8	6	60
H2F040R02L060N	4.0	0.2	6.0	25	3.7	6	70
H2F040R05L060N	4.0	0.5	6.0	25	3.7	6	70
H2F040R10L060N	4.0	1.0	6.0	25	3.7	6	70
H2F050R02L075N	5.0	0.2	7.5	30	4.6	6	80
H2F050R05L075N	5.0	0.5	7.5	30	4.6	6	80
H2F050R10L075N	5.0	1.0	7.5	30	4.6	6	80
H2F060R02L090N	6.0	0.2	9.0	35	5.5	6	80
H2F060R05L090N	6.0	0.5	9.0	35	5.5	6	80
H2F060R10L090N	6.0	1.0	9.0	35	5.5	6	80
H2F060R15L090N	6.0	1.5	9.0	35	5.5	6	80
H2F060R20L090N	6.0	2.0	9.0	35	5.5	6	80
H2F080R05L120N	8.0	0.5	12	40	7.4	8	100
H2F080R10L120N	8.0	1.0	12	40	7.4	8	100
H2F080R15L120N	8.0	1.5	12	40	7.4	8	100
H2F080R20L120N	8.0	2.0	12	40	7.4	8	100
H2F100R05L150N	10	0.5	15	45	9.2	10	100
H2F100R10L150N	10	1.0	15	45	9.2	10	100
H2F100R15L150N	10	1.5	15	45	9.2	10	100
H2F100R20L150N	10	2.0	15	45	9.2	10	100
H2F100R30L150N	10	3.0	15	45	9.2	10	100
H2F120R05L180N	12	0.5	18	50	11	12	110
H2F120R10L180N	12	1.0	18	50	11	12	110
H2F120R15L180N	12	1.5	18	50	11	12	110
H2F120R20L180N	12	2.0	18	50	11	12	110
H2F120R30L180N	12	3.0	18	50.0	11	12	110



Chamfering End Mills

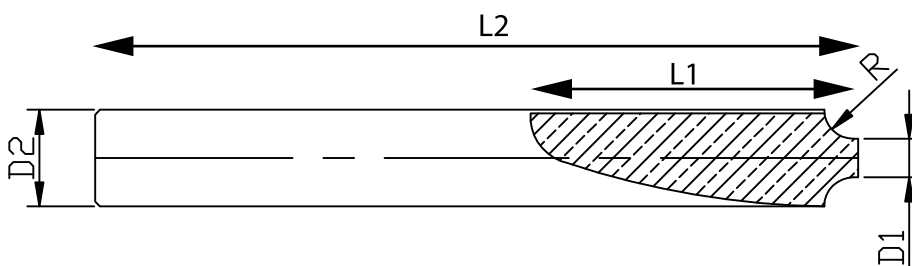


SERIES : HCEM

ITEM CODE	DIA D1	FL L1	O.A.L. L2	SH. DIA D2
HCEM010D04	1.0	1.5	50	4
HCEM020D06	2.0	2.0	50	6
HCEM020D08	2.0	3.0	60	8
HCEM020D10	2.0	4.0	75	10
HCEM020D12	2.0	5.0	75	12



Corner Rounding End Mills



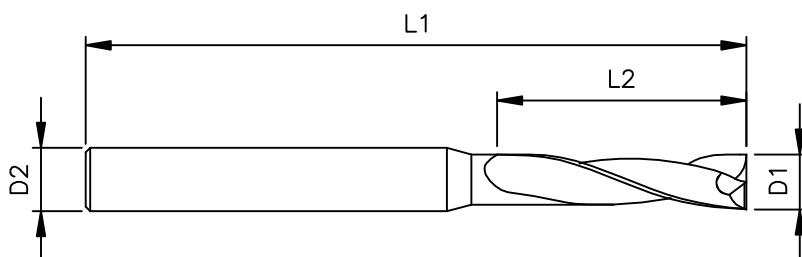
SERIES : HCREM

ITEM CODE	Radius R	FL L1	O.A.L. L2	SH. DIA D2
HCR050L04	R0.5	1.5	50	4
HCR075L04	R0.75	1.5	50	4
HCR100L04	R1.0	1.5	50	4
HCR125L06	R1.25	1.5	50	6
HCR150L06	R1.5	1.5	50	6
HCR175L06	R1.75	1.5	50	6
HCR200L06	R2.0	1.5	50	6
HCR250L08	R2.5	1.5	60	8
HCR300L08	R3.0	1.5	60	8
HCR400L12	R4.0	2	75	12
HCR500L16	R5.0	3	100	16
HCR600L16	R6.0	3	100	16



2 Flute, Micro End Mills

- High precision milling in medical, optical, electronics and aero space industries.



SERIES : HEMM

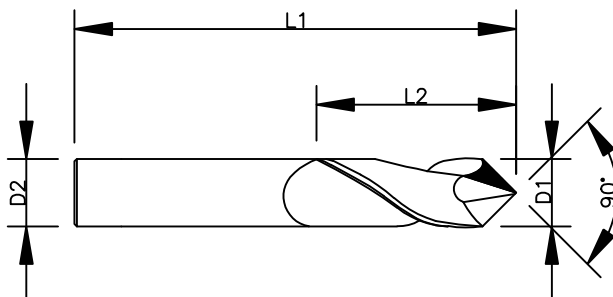
ITEM CODE	DIA D1	SH DIA D2	CEL L2	OAL L1
HEMM004L008	0.4	3	0.8	39
HEMM005L010	0.5	3	1.0	39
HEMM006L012	0.6	3	1.2	39
HEMM007L014	0.7	3	1.4	39
HEMM008L016	0.8	3	1.6	39
HEMM009L020	0.9	3	2.0	39



MILL DIAMETER	0.4~0.9	1.0~1.5
MILL DIA. TOLERANCE	0 -0.012	-0.014 -0.028
SHANK DIA. TOLERANCE	0 -0.006	0 -0.008

2 Flute Combo Mills

- Performs many drilling and milling operations not presently done with the standard end mill.
- Among the many vertical milling machine operations the Drill Mill performs are: Drilling, Slotting, NC Milling Drilling & Slotting, Profile Milling, Chamfering.



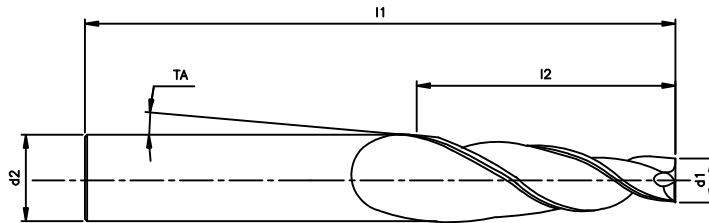
SERIES : HDRBF

ITEM CODE	DIA D1	SH DIA D2	CEL L2	OAL L1
HDRBFP030	3.0	4	6	50
HDRBFP040	4.0	5	8	50
HDRBFP050	5.0	6	10	50
HDRBFP060	6.0	8	12	60
HDRBFP080	8.0	10	16	70
HDRBFP100	10.0	12	18	70
HDRBFP120	12.0	12	20	70
HDRBFP140	14.0	14	24	80
HDRBFP160	16.0	16	26	80
HDRBFP200	20.0	20	32	100



MILL DIAMETER	MILL DIAMETER
$\varnothing 3 \sim \varnothing 10 = h9$ $\varnothing 12 \sim \varnothing 20 = d9$	h6

Solid Carbide 2 Flute Taper End Mills



SERIES : HTEM2

ITEM CODE	DIA d1	SH. DIA d2	CEL I2	OAL I1	TAPER ANGLE TA	NO OF FLUTE
HTEM20078130	2.00	6.00	40	78	1°30'	2
HTEM20078300	3.00	6.00	40	78	1°30'	2
HTEM20083500	4.00	8.00	40	78	1°30'	2
HTEM25078200	5.00	8.00	40	78	1°30'	2
HTEM25078300	2.50	8.00	40	78	2°	2
HTEM25078500	3.00	8.00	40	78	2°	2
HTEM25083500	3.50	8.00	40	78	2°	2
HTEM30078130	2.00	8.00	40	78	3°	2
HTEM30078200	2.50	8.00	40	78	3°	2
HTEM30078300	3.00	8.00	40	78	3°	2
HTEM30083500	3.00	10.00	50	92	3°	2
HTEM30092300	3.50	8.00	40	78	3°	2
HTEM30092500	3.50	10.00	50	92	3°	2
HTEM35078200	4.00	10.00	50	92	3°	2
HTEM35078300	4.50	10.00	50	92	3°	2
HTEM35092300	2.00	10.00	40	83	5°	2
HTEM35092500	2.50	8.00	30	78	5°	2
HTEM40078130	2.50	10.00	40	83	5°	2
HTEM40083500	3.00	10.00	40	83	5°	2
HTEM40092300	3.00	12.00	50	92	5°	2
HTEM40092500	3.50	12.00	40	92	5°	2
HTEM40104500	4.00	10.00	30	83	5°	2
HTEM45092300	4.00	12.00	40	92	5°	2
HTEM50078130	4.00	14.00	50	104	5°	2
HTEM50092500	5.00	12.00	40	92	5°	2
HTEM50104500	5.00	14.00	50	104	5°	2
HTEM50130500	5.00	16.00	60	130	5°	2
HTEM60104500	6.00	14.00	40	104	5°	2
HTEM60130500	6.00	18.00	60	130	5°	2

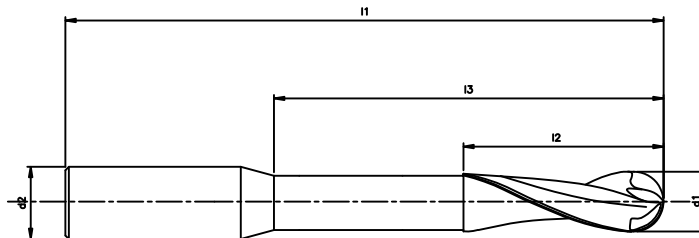


Mill Dia Tol : e8

Application:

- Designed for Aluminium Extrusion Die Machining

Solid Carbide Ball Nose End Mills
Long Neck



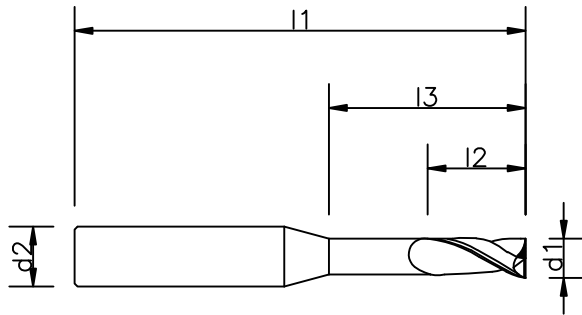
SERIES : H2BNLN

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1	NECK LENGTH L3	NO OF FLUTE
H2BNFLN06090635	0.60	3.00	0.9	35	6	2
H2BNFLN08120645	0.80	4.00	1.2	45	6	2
H2BNFLN10150650	1.00	4.00	1.5	50	6	2
H2BNFLN10150850	1.00	4.00	1.5	50	8	2
H2BNFLN10151050	1.00	4.00	1.5	50	10	2
H2BNFLN15200850	1.50	4.00	2.0	50	8	2
H2BNFLN15201250	1.50	4.00	2.0	50	12	2
H2BNFLN15201650	1.50	4.00	2.0	50	16	2
H2BNFLN20300650	2.00	4.00	3.0	50	6	2
H2BNFLN20300850	2.00	4.00	3.0	50	8	2
H2BNFLN20301050	2.00	4.00	3.0	50	10	2
H2BNFLN20301250	2.00	4.00	3.0	50	12	2
H2BNFLN20301650	2.00	4.00	3.0	50	16	2
H2BNFLN20302050	2.00	4.00	3.0	50	20	2
H2BNFLN25400850	2.50	4.00	4.0	50	8	2
H2BNFLN25401250	2.50	4.00	4.0	50	12	2
H2BNFLN25401650	2.50	4.00	4.0	50	16	2
H2BNFLN25402050	2.50	4.00	4.0	50	20	2
H2BNFLN30451060	3.00	6.00	4.5	60	10	2
H2BNFLN30451660	3.00	6.00	4.5	60	16	2
H2BNFLN30452060	3.00	6.00	4.5	60	20	2
H2BNFLN40601060	4.00	6.00	6.0	60	10	2
H2BNFLN40601660	4.00	6.00	6.0	60	16	2
H2BNFLN40602060	4.00	6.00	6.0	60	20	2
H2BNFLN50801660	5.00	6.00	8.0	60	16	2
H2BNFLN50802560	5.00	6.00	8.0	60	25	2



Mill Dia Tol : e8

Solid Carbide End Mills
Long Neck

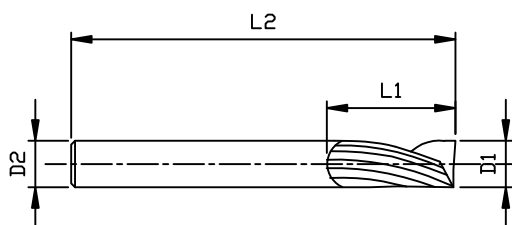


SERIES : H2FLN

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1	NECK LENGTH L3	NO OF FLUTE
H2FLN06P08	0.80	4.00	1.2	45	6	2
H2FLN06P10	1.00	4.00	1.5	50	6	2
H2FLN08P10	1.00	4.00	1.5	50	8	2
H2FLN10P10	1.00	4.00	1.5	50	10	2
H2FLN08P15	1.50	4.00	2.0	50	8	2
H2FLN12P15	1.50	4.00	2.0	50	12	2
H2FLN16P15	1.50	4.00	2.0	50	16	2
H2FLN06P20	2.00	4.00	3.0	50	6	2
H2FLN08P20	2.00	4.00	3.0	50	8	2
H2FLN10P20	2.00	4.00	3.0	50	10	2
H2FLN12P20	2.00	4.00	3.0	50	12	2
H2FLN16P20	2.00	4.00	3.0	50	16	2
H2FLN20P20	2.00	4.00	3.0	50	20	2
H2FLN08P25	2.50	4.00	4.0	50	8	2
H2FLN12P25	2.50	4.00	4.0	50	12	2
H2FLN16P25	2.50	4.00	4.0	50	16	2
H2FLN20P25	2.50	4.00	4.0	50	20	2
H2FLN10P30	3.00	6.00	4.5	60	10	2
H2FLN16P30	3.00	6.00	4.5	60	16	2
H2FLN20P30	3.00	6.00	4.5	60	20	2
H2FLN10P40	4.00	6.00	6.0	60	10	2
H2FLN16P40	4.00	6.00	6.0	60	16	2
H2FLN20P40	4.00	6.00	6.0	60	20	2
H2FLN16P50	5.00	6.00	8.0	60	16	2
H2FLN25P50	5.00	6.00	8.0	60	25	2



Solid Carbide Single Flute End Mill

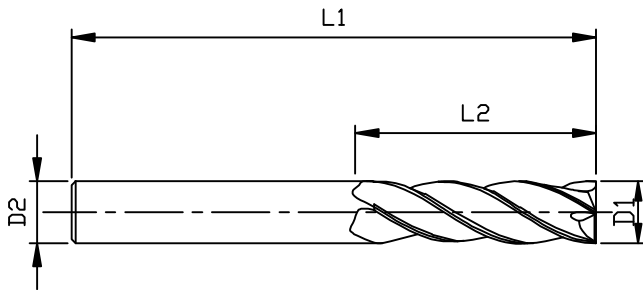


SERIES : H1F0

ITEM CODE	Dimensions in mm			
	Dia (D1)	SH.DIA (D2)	OAL (L2)	CEL (L1)
H1F02L40	2	3	40	4
H1F03L40	3	3	40	10
H1F04L50	4	4	50	14
H1F05L60	5	5	60	16
H1F06L63	6	6	63	20
H1F08L63	8	8	63	20
H1F10L75	10	10	75	25
H1F12L75	12	12	75	25



Solid Carbide Unequal Helix 4 Flute End Mill



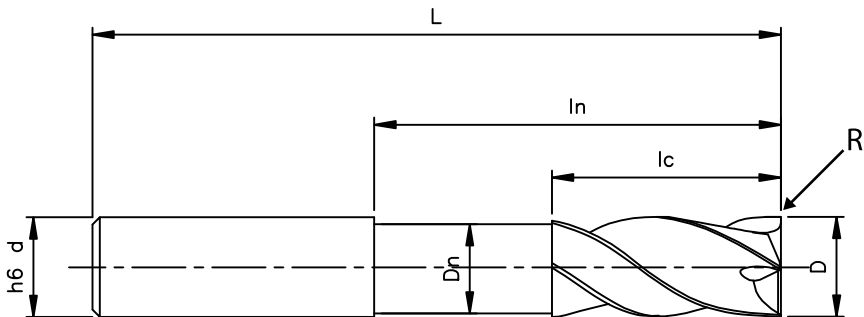
SERIES : H4FVH

ITEM CODE	DIA D1	CEL I2	SH DIA. D2	OAL L
H4FVH030L10	3.0	10	3	38
H4FVH040L14	4.0	14	4	50
H4FVH050L16	5.0	16	5	50
H4FVH060L19	6.0	19	6	64
H4FVH080L21	8.0	21	8	64
H4FVH100L25	10	25	10	70
H4FVH120L30	12	30	12	76
H4FVH160L32	16	32	16	80
H4FVH180L35	18	35	18	100
H4FVH200L38	20	38	20	100



Mill Dia Tol : e8

Super Tough 4 Flute End Mill



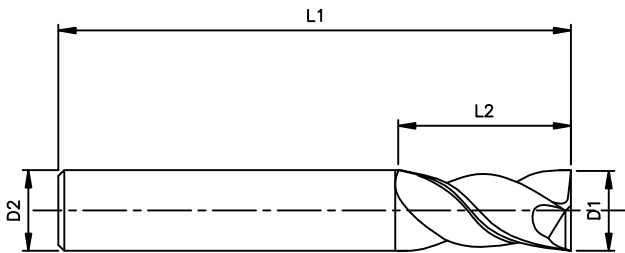
SERIES : H4FT

ITEM CODE	DIA D	CORNER RADIUS R	CEL Ic	REACH LENGTH In	NECK DIA Dn	SH.DIA d	OAL L
H4FT060R05L09	6.0	0.5	5.9	18	9	6	60
H4FT060R10L09	6.0	1.0	5.9	18	9	6	60
H4FT080R05L12	8.0	0.5	7.9	24	12	8	75
H4FT080R10L12	8.0	1.0	7.9	24	12	8	75
H4FT100R05L15	10	0.5	9.9	30	15	10	80
H4FT100R10L15	10	1.0	9.9	30	15	10	80
H4FT120R05L18	12	0.5	11.9	36	18	12	102
H4FT120R10L18	12	1.0	11.9	36	18	12	102
H4FT120R15L18	12	1.5	11.9	36	18	12	102



Mill Dia Tol : e8

2 Flute Standard Inch Size End Mill



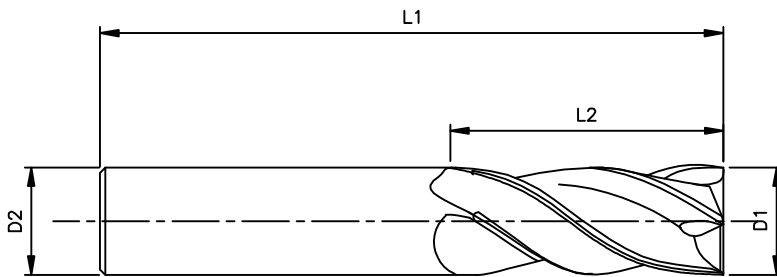
SERIES : H2FCC

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FCC00469	3/64	1/8	9/64	1-1/2
H2FCC00625	1/16	1/8	3/16	1-1/2
H2FCC00781	5/64	1/8	1/4	1-1/2
H2FCC00938	3/32	1/8	5/16	1-1/2
H2FCC01094	7/64	1/8	3/8	1-1/2
H2FCC01250	1/8	1/8	1/2	1-1/2
H2FCC01406	9/64	3/16	1/2	2
H2FCC01563	5/32	3/16	9/16	2
H2FCC01719	11/64	3/16	9/16	2
H2FCC01875	3/16	3/16	5/8	2
H2FCC02031	13/64	1/4	5/8	2-1/2
H2FCC02188	7/32	1/4	5/8	2-1/2
H2FCC02500	1/4	1/4	3/4	2-1/2
H2FCC02813	9/32	5/16	3/4	2-1/2
H2FCC03125	5/16	5/16	13/16	2-1/2
H2FCC03438	11/32	3/8	7/8	2-1/2
H2FCC03750	3/8	3/8	1	2-1/2
H2FCC04063	13/32	7/16	1	2-3/4
H2FCC04375	7/16	7/16	1	2-3/4
H2FCC05000	1/2	1/2	1	3
H2FCC05625	9/16	9/16	1-1/8	3-1/2
H2FCC06250	5/8	5/8	1-1/4	3-1/2
H2FCC06875	11/16	3/4	1-3/8	4
H2FCC07500	3/4	3/4	1-1/2	4
H2FCC08750	7/8	7/8	1-1/2	4
H2FCC10000	1	1	1-1/2	4



Size	TOLERANCES	
	D1	D2
3/64" thru 1"	+.000"-.002"	+.0000"-.0005"

3 Flute Standard Inch Size End Mill



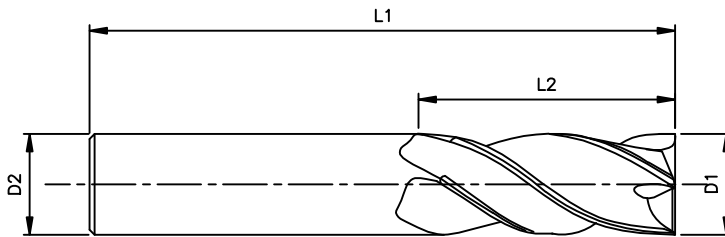
SERIES : H3FCC

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H3FCC00625	1/16	1/8	3/16	1-1/2
H3FCC00938	3/32	1/8	5/16	1-1/2
H3FCC01250	1/8	1/8	1/2	1-1/2
H3FCC01563	5/32	3/16	9/16	2
H3FCC01875	3/16	3/16	5/8	2
H3FCC02188	7/32	1/4	5/8	2-1/2
H3FCC02500	1/4	1/4	3/4	2-1/2
H3FCC02813	9/32	5/16	3/4	2-1/2
H3FCC03125	5/16	5/16	13/16	2-1/2
H3FCC03750	3/8	3/8	1	2-1/2
H3FCC04375	7/16	7/16	1	2-3/4
H3FCC05000	1/2	1/2	1	3
H3FCC05625	9/16	9/16	1-1/8	3-1/2
H3FCC06250	5/8	5/8	1-1/4	3-1/2
H3FCC06875	11/16	3/4	1-3/8	4
H3FCC07500	3/4	3/4	1-1/2	4
H3FCC08750	7/8	7/8	1-1/2	4
H3FCC10000	1	1	1-1/2	4



Size	TOLERANCES	
	D1	D2
1/16" thru 1"	+.000"-.002"	+.0000"-.0005"

4 Flute Standard Inch Size End Mill



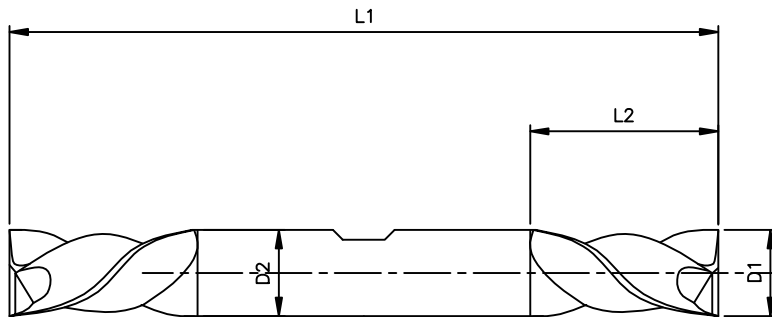
SERIES : H4FCC

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FCC00469	3/64	1/8	9/64	1-1/2
H4FCC00625	1/16	1/8	3/16	1-1/2
H4FCC00781	5/64	1/8	1/4	1-1/2
H4FCC00938	3/32	1/8	5/16	1-1/2
H4FCC01094	7/64	1/8	3/8	1-1/2
H4FCC01250	1/8	1/8	1/2	1-1/2
H4FCC01406	9/64	3/16	1/2	2
H4FCC01563	5/32	3/16	9/16	2
H4FCC01719	11/64	3/16	9/16	2
H4FCC01875	3/16	3/16	5/8	2
H4FCC02031	13/64	1/4	5/8	2-1/2
H4FCC02188	7/32	1/4	5/8	2-1/2
H4FCC02500	1/4	1/4	3/4	2-1/2
H4FCC02813	9/32	5/16	3/4	2-1/2
H4FCC03125	5/16	5/16	13/16	2-1/2
H4FCC03438	11/32	3/8	7/8	2-1/2
H4FCC03750	3/8	3/8	1	2-1/2
H4FCC04063	13/32	7/16	1	2-3/4
H4FCC04375	7/16	7/16	1	2-3/4
H4FCC05000	1/2	1/2	1	3
H4FCC05625	9/16	9/16	1-1/8	3-1/2
H4FCC06250	5/8	5/8	1-1/4	3-1/2
H4FCC06875	11/16	3/4	1-3/8	4
H4FCC07500	3/4	3/4	1-1/2	4
H4FCC08750	7/8	7/8	1-1/2	4
H4FCC10000	1	1	1-1/2	4



Size	TOLERANCES	
	D1	D2
3/64" thru 1"	+.000"-.002"	+.0000"-.0005"

2 Flute Double End End Mill - Inch



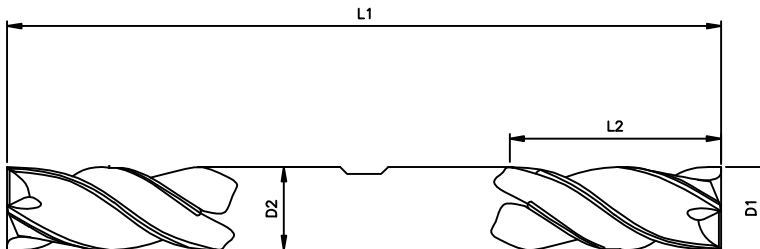
SERIES : H2FDE

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FDECC1250	1/8	3/8	3/8	3-1/16
H2FDECC1563	5/32	3/8	7/16	3-1/8
H2FDECC1875	3/16	3/8	1/2	3-1/4
H2FDECC2188	7/32	3/8	9/16	3-3/8
H2FDECC2500	1/4	3/8	5/8	3-3/8
H2FDECC2813	9/32	3/8	11/16	3-3/8
H2FDECC3125	5/16	3/8	3/4	3-1/2
H2FDECC3438	11/32	3/8	3/4	3-1/2
H2FDECC3750	3/8	3/8	3/4	3-1/2
H2FDECC4375	7/16	1/2	7/8	4
H2FDECC5000	1/2	1/2	1	4



Size	TOLERANCES	
	D1	D2
1/8" thru 1/2"	+.000"-.002"	+.0000"-.0005"

4 Flute Double End End Mill - Inch



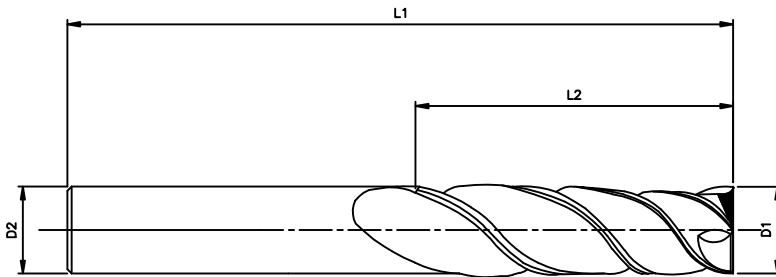
SERIES : H4FDE

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FDECC1250	1/8	3/8	3/8	3-1/16
H4FDECC1563	5/32	3/8	7/16	3-1/8
H4FDECC1875	3/16	3/8	1/2	3-1/4
H4FDECC2188	7/32	3/8	9/16	3-3/8
H4FDECC2500	1/4	3/8	5/8	3-3/8
H4FDECC2813	9/32	3/8	11/16	3-3/8
H4FDECC3125	5/16	3/8	3/4	3-1/2
H4FDECC3438	11/32	3/8	3/4	3-1/2
H4FDECC3750	3/8	3/8	3/4	3-1/2
H4FDECC4375	7/16	1/2	7/8	4
H4FDECC5000	1/2	1/2	1	4



Size	TOLERANCES	
	D1	D2
1/8" thru 1/2"	+.000"-.002"	+.0000"-.0005"

3 Flute High Helix End Mills - For Aluminium



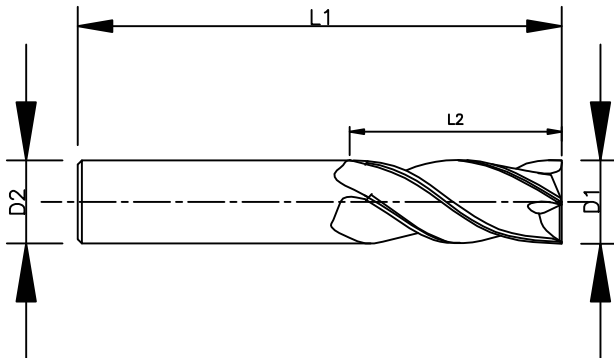
SERIES : H3F45

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H3F4500625	1/16	1/8	3/16	1-1/2
H3F4500938	3/32	1/8	5/16	1-1/2
H3F4501250	1/8	1/8	1/2	1-1/2
H3F4501563	5/32	3/16	9/16	2
H3F4501875	3/16	3/16	5/8	2
H3F4502188	7/32	1/4	5/8	2-1/2
H3F4502500	1/4	1/4	3/4	2-1/2
H3F4502813	9/32	5/16	3/4	2-1/2
H3F4503125	5/16	5/16	13/16	2-1/2
H3F4503750	3/8	3/8	7/8	2-1/2
H3F4504375	7/16	7/16	1	2-3/4
H3F4505000	1/2	1/2	1	3
H3F4505625	9/16	9/16	1-1/8	3-1/2
H3F4506250	5/8	5/8	1-1/4	3-1/2
H3F4506875	11/16	3/4	1-3/8	4
H3F4507500	3/4	3/4	1-1/2	4
H3F4508750	7/8	7/8	1-1/2	4
H3F4510000	1	1	1-1/2	4



Size	TOLERANCES	
	D1	D2
1/16" thru 1"	+.000"-.002"	+.0000"-.0005"

4 Flute Stub End Mill



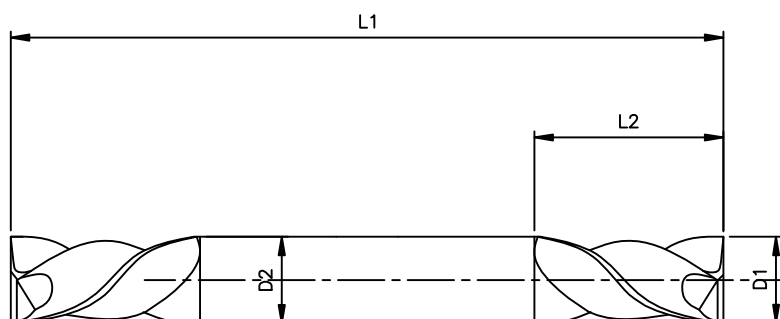
SERIES : H4FSL

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FSLCC0313	1/32	1/8	5/64	1-1/2
H4FSLCC0469	3/64	1/8	3/32	1-1/2
H4FSLCC0625	1/16	1/8	1/8	1-1/2
H4FSLCC0781	5/64	1/8	5/32	1-1/2
H4FSLCC0938	3/32	1/8	3/16	1-1/2
H4FSLCC1094	7/64	1/8	7/32	1-1/2
H4FSLCC1250	1/8	1/8	1/4	1-1/2
H4FSLCC1406	9/64	3/16	9/32	2
H4FSLCC1563	5/32	3/16	5/16	2
H4FSLCC1875	3/16	3/16	3/8	2
H4FSLCC2188	7/32	1/4	7/16	2
H4FSLCC2500	1/4	1/4	1/2	2
H4FSLCC3125	5/16	5/16	1/2	2
H4FSLCC3750	3/8	3/8	5/8	2
H4FSLCC4375	7/16	7/16	5/8	2-1/2
H4FSLCC5000	1/2	1/2	5/8	2-1/2
H4FSLCC6250	5/8	5/8	3/4	3
H4FSLCC7500	3/4	3/4	1	3



Size	TOLERANCES	
	D1	D2
1/32" thru 3/4"	+.000"-.002"	+.0000"-.0005"

2 Flute Stub Double End End Mill



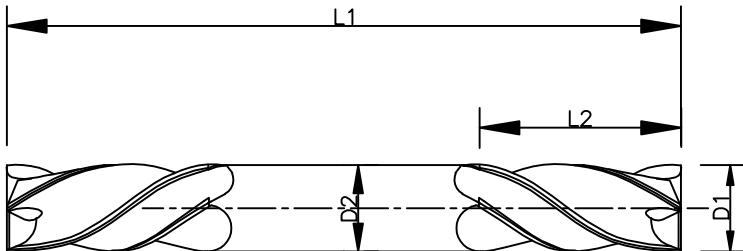
SERIES : H2FDES

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FDESL0313	1/32	1/8	5/64	1-1/2
H2FDESL0469	3/64	1/8	3/32	1-1/2
H2FDESL0625	1/16	1/8	1/8	1-1/2
H2FDESL0781	5/64	1/8	5/32	1-1/2
H2FDESL0938	3/32	1/8	3/16	1-1/2
H2FDESL1094	7/64	1/8	7/32	1-1/2
H2FDESL1250	1/8	1/8	1/4	1-1/2
H2FDESL1406	9/64	3/16	9/32	2
H2FDESL1563	5/32	3/16	5/16	2
H2FDESL1875	3/16	3/16	3/8	2
H2FDESL2188	7/32	1/4	7/16	2-1/2
H2FDESL2500	1/4	1/4	1/2	2-1/2
H2FDESL3125	5/16	5/16	1/2	2-1/2
H2FDESL3750	3/8	3/8	5/8	2-1/2
H2FDESL4375	7/16	7/16	5/8	2-3/4
H2FDESL5000	1/2	1/2	5/8	3



Size	TOLERANCES	
	D1	D2
1/32" thru 1/2"	+.000"-.002"	+.0000"-.0005"

4 Flute Stub Double End End Mill

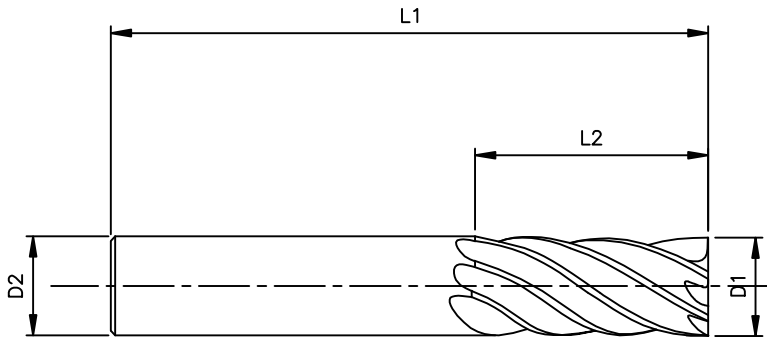


SERIES : H4FDES

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FDESL0313	1/32	1/8	5/64	1-1/2
H4FDESL0469	3/64	1/8	3/32	1-1/2
H4FDESL0625	1/16	1/8	1/8	1-1/2
H4FDESL0781	5/64	1/8	5/32	1-1/2
H4FDESL0938	3/32	1/8	3/16	1-1/2
H4FDESL1094	7/64	1/8	7/32	1-1/2
H4FDESL1250	1/8	1/8	1/4	1-1/2
H4FDESL1406	9/64	3/16	9/32	2
H4FDESL1563	5/32	3/16	5/16	2
H4FDESL1875	3/16	3/16	3/8	2
H4FDESL2188	7/32	1/4	7/16	2-1/2
H4FDESL2500	1/4	1/4	1/2	2-1/2
H4FDESL3125	5/16	5/16	1/2	2-1/2
H4FDESL3750	3/8	3/8	5/8	2-1/2
H4FDESL4375	7/16	7/16	5/8	2-3/4
H4FDESL5000	1/2	1/2	5/8	3



Size	TOLERANCES	
	D1	D2
1/32" thru 1/2"	+.000"-.002"	+.0000"-.0005"



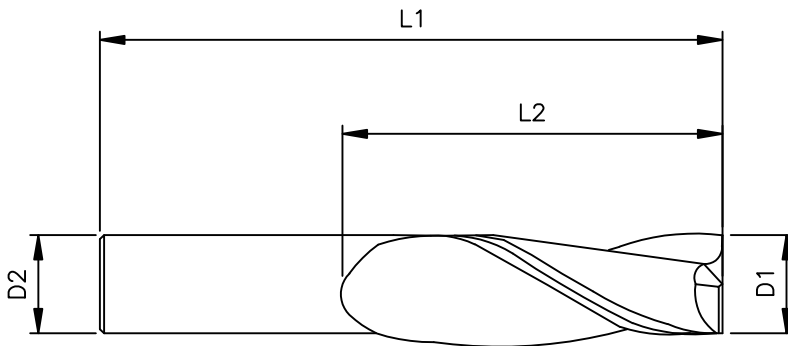
SERIES : HIRM

ITEM CODE	DIA D1	No.Of Flutes	SH. DIA D2	CEL L2	OAL L1
H4RM01250	1/8	4	1/8	1/2	11-1/2
H4RM01875	3/16	4	3/16	5/8	2
H6RM02500	1/4	6	1/4	3/4	2-1/2
H6RM03125	5/16	6	5/16	13/16	2-1/2
H6RM03750	3/8	6	3/8	1	2-1/2
H6RM04375	7/16	6	7/16	1	2-3/4
H6RM05000	1/2	6	1/2	1	3
H6RM05625	9/16	6	9/16	1-1/8	3-1/2
H6RM06250	5/8	6	5/8	1-1/4	3-1/2
H6RM07500	3/4	6	3/4	1-1/2	4
H6RM08750	7/8	6	7/8	1-1/2	4
H6RM10000	1	8	1	1-1/2	4



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"--.002"	+.0000"--.0005"

2 Flute Long Inch Size End Mill



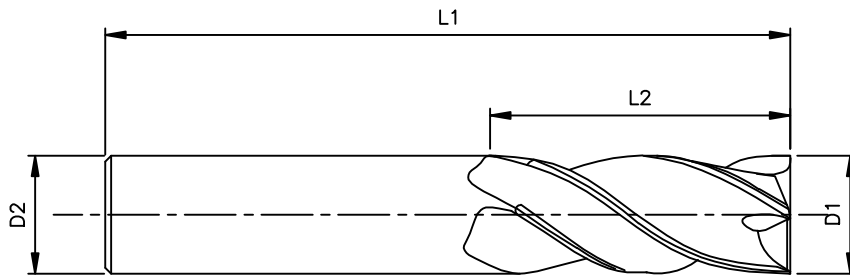
SERIES : H2FSEL

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FSEL1250	1/8	1/8	3/4	2-1/4
H2FSEL1875	3/16	3/16	3/4	2-1/4
H2FSEL2500	1/4	1/4	1-1/8	3
H2FSEL3125	5/16	5/16	1-1/8	3
H2FSEL3750	3/8	3/8	1-1/8	3
H2FSEL4375	7/16	7/16	2	4
H2FSEL5000	1/2	1/2	2	4
H2FSEL6250	5/8	5/8	2-1/4	5
H2FSEL7500	3/4	3/4	2-1/4	5
H2FSEL1000	1	1	2-1/4	5



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

4 Flute Long Inch Size End Mill



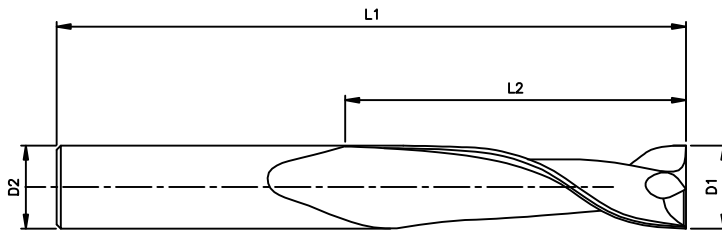
SERIES : H4FSEL

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FSEL01250	1/8	1/8	3/4	2-1/4
H4FSEL01875	3/16	3/16	3/4	2-1/4
H4FSEL02500	1/4	1/4	1-1/8	3
H4FSEL03125	5/16	5/16	1-1/8	3
H4FSEL03750	3/8	3/8	1-1/8	3
H4FSEL04375	7/16	7/16	2	4
H4FSEL05000	1/2	1/2	2	4
H4FSEL06250	5/8	5/8	2-1/4	5
H4FSEL07500	3/4	3/4	2-1/4	5
H4FSEL10000	1	1	2-1/4	5



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

2 Flute Extra Long Inch Size End Mill



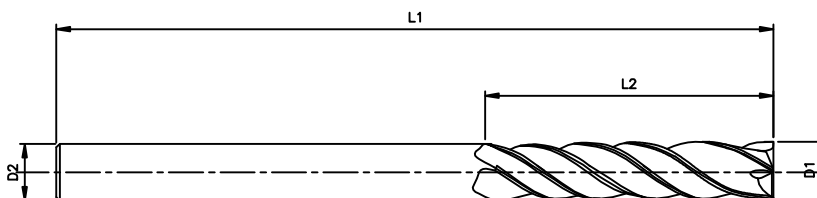
SERIES : H2FSXL

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FSXL01250	1/8	11/8	1	3
H2FSXL01875	3/16	3/16	1-1/8	3
H2FSXL02500	1/4	1/4	1-1/2	4
H2FSXL03125	5/16	5/16	1-5/8	4
H2FSXL03750	3/8	3/8	1-3/4	4
H2FSXL04375	7/16	7/16	3	6
H2FSXL05000	1/2	1/2	3	6
H2FSXL06250	5/8	5/8	3	6
H2FSXL07500	3/4	3/4	3	6
H2FSXL10000	1	1	3	6



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

4 Flute Extra Long Inch Size End Mill



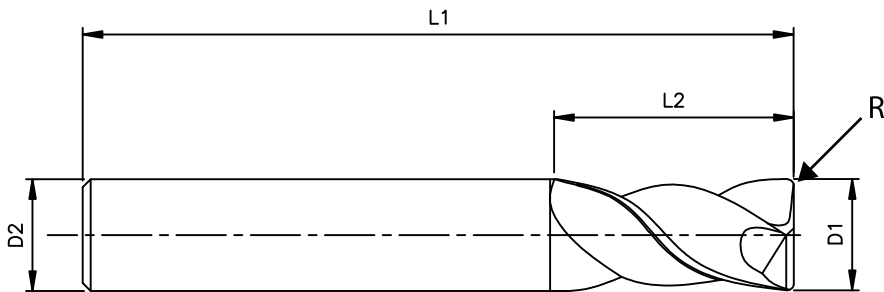
SERIES : H4FSXL

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FSXL01250	1/8	11/8	1	3
H4FSXL01875	3/16	3/16	1-1/8	3
H4FSXL02500	1/4	1/4	1-1/2	4
H4FSXL03125	5/16	5/16	1-5/8	4
H4FSXL03750	3/8	3/8	1-3/4	4
H4FSXL04375	7/16	7/16	3	6
H4FSXL05000	1/2	1/2	3	6
H4FSXL06250	5/8	5/8	3	6
H4FSXL07500	3/4	3/4	3	6
H4FSXL10000	1	1	3	6



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

2 Flute Corner Radius End Mill - Inch



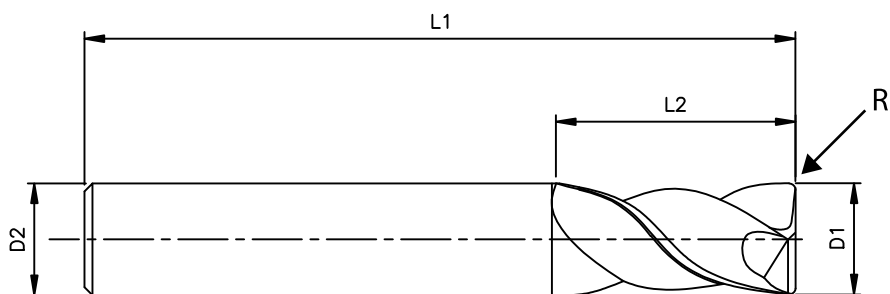
SERIES : H2FCR

ITEM CODE	DIA D1	Corner Radius R	SH. DIA D2	CEL L2	OAL L1
H2FCR01250R15	1/8	0.015	11/8	1/2	1-1/2
H2FCR01875R20	3/16	0.020	3/16	5/8	2
H2FCR01875R30	3/16	0.030	3/16	5/8	2
H2FCR02500R20	1/4	0.020	1/4	3/4	2-1/2
H2FCR02500R30	1/4	0.030	1/4	3/4	2-1/2
H2FCR02500R45	1/4	0.045	1/4	3/4	2-1/2
H2FCR03125R20	5/16	0.020	5/16	13/16	2-1/2
H2FCR03125R30	5/16	0.030	5/16	13/16	2-1/2
H2FCR03125R45	5/16	0.045	5/16	13/16	2-1/2
H2FCR03750R20	3/8	0.020	3/8	1	2-1/2
H2FCR03750R30	3/8	0.030	3/8	1	2-1/2
H2FCR03750R45	3/8	0.045	3/8	1	2-1/2
H2FCR05000R20	1/2	0.020	1/2	1	3
H2FCR05000R30	1/2	0.030	1/2	1	3
H2FCR05000R45	1/2	0.045	1/2	1	3
H2FCR05000R60	1/2	0.060	1/2	1	3



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

2 Flute Corner Radius End Mill - Inch



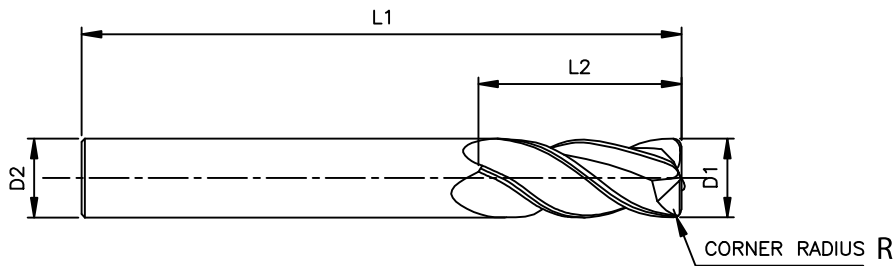
SERIES : H2FCR

ITEM CODE	DIA D1	Corner Radius R	SH. DIA D2	CEL L2	OAL L1
H2FCR06250R020	5/8	0.020	5/8	1-1/4	3-1/2
H2FCR06250R030	5/8	0.030	5/8	1-1/4	3-1/2
H2FCR06250R045	5/8	0.045	5/8	1-1/4	3-1/2
H2FCR06250R060	5/8	0.060	5/8	1-1/4	3-1/2
H2FCR06250R090	5/8	0.090	5/8	1-1/4	3-1/2
H2FCR07500R125	3/4	0.125	3/4	1-1/2	4
H2FCR07500R020	3/4	0.020	3/4	1-1/2	4
H2FCR07500R030	3/4	0.030	3/4	1-1/2	4
H2FCR07500R045	3/4	0.045	3/4	1-1/2	4
H2FCR07500R060	3/4	0.060	3/4	1-1/2	4
H2FCR07500R090	3/4	0.090	3/4	1-1/2	4
H2FCR10000R125	1	0.125	1	1-1/2	4
H2FCR10000R020	1	0.020	1	1-1/2	4
H2FCR10000R030	1	0.030	1	1-1/2	4
H2FCR10000R045	1	0.045	1	1-1/2	4
H2FCR10000R060	1	0.060	1	1-1/2	4
H2FCR10000R090	1	0.090	1	1-1/2	4



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

4 Flute Corner Radius End Mill - Inch



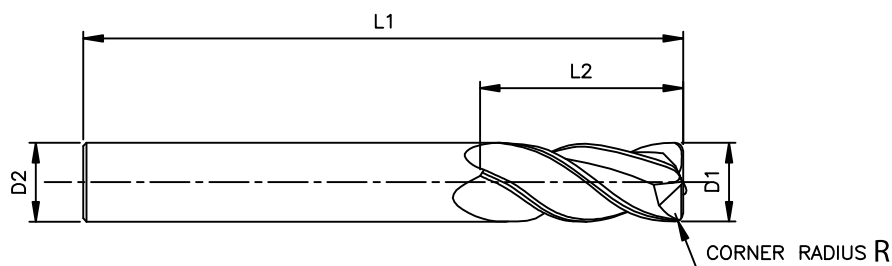
SERIES : H4FCR

ITEM CODE	DIA D1	Corner Radius R	SH. DIA D2	CEL L2	OAL L1
H4FCR01250R015	1/8	0.015	1/8	1/2	1-1/2
H4FCR01875R020	3/16	0.020	3/16	5/8	2
H4FCR01875R030	3/16	0.030	3/16	5/8	2
H4FCR02500R020	1/4	0.020	1/4	3/4	2-1/2
H4FCR02500R030	1/4	0.030	1/4	3/4	2-1/2
H4FCR02500R045	1/4	0.045	1/4	3/4	2-1/2
H4FCR03125R020	5/16	0.020	5/16	13/16	2-1/2
H4FCR03125R030	5/16	0.030	5/16	13/16	2-1/2
H4FCR03125R045	5/16	0.045	5/16	13/16	2-1/2
H4FCR03750R020	3/8	0.020	3/8	1	2-1/2
H4FCR03750R030	3/8	0.030	3/8	1	2-1/2
H4FCR03750R045	3/8	0.045	3/8	1	2-1/2
H4FCR05000R020	1/2	0.020	1/2	1	3
H4FCR05000R030	1/2	0.030	1/2	1	3
H4FCR05000R045	1/2	0.045	1/2	1	3
H4FCR05000R060	1/2	0.060	1/2	1	3



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

4 Flute Corner Radius End Mill - Inch



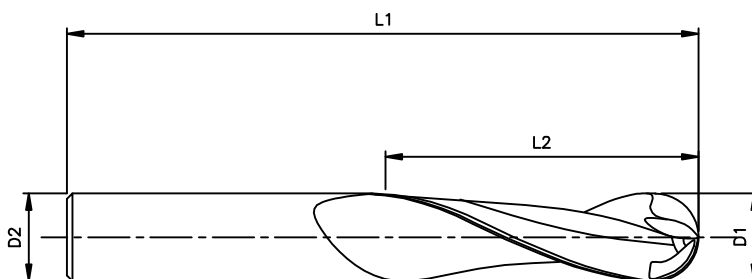
SERIES : H4FCR

ITEM CODE	DIA D1	Corner Radius R	SH. DIA D2	CEL L2	OAL L1
H4FCR06250R020	5/8	0.020	5/8	1-1/4	3-1/2
H4FCR06250R030	5/8	0.030	5/8	1-1/4	3-1/2
H4FCR06250R045	5/8	0.045	5/8	1-1/4	3-1/2
H4FCR06250R060	5/8	0.060	5/8	1-1/4	3-1/2
H4FCR06250R090	5/8	0.090	5/8	1-1/4	3-1/2
H4FCR07500R125	3/4	0.125	3/4	1-1/2	4
H4FCR07500R020	3/4	0.020	3/4	1-1/2	4
H4FCR07500R030	3/4	0.030	3/4	1-1/2	4
H4FCR07500R045	3/4	0.045	3/4	1-1/2	4
H4FCR07500R060	3/4	0.060	3/4	1-1/2	4
H4FCR07500R090	3/4	0.090	3/4	1-1/2	4
H4FCR10000R125	1	0.125	1	1-1/2	4
H4FCR10000R020	1	0.020	1	1-1/2	4
H4FCR10000R030	1	0.030	1	1-1/2	4
H4FCR10000R045	1	0.045	1	1-1/2	4
H4FCR10000R060	1	0.060	1	1-1/2	4
H4FCR10000R090	1	0.090	1	1-1/2	4



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

2 Flute Standard Inch Size Ball Nose End Mill



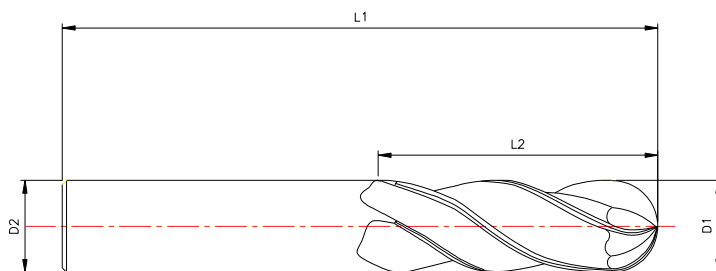
SERIES : H2FBN

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FBN00469	3/64	1/8	9/64	1-1/2
H2FBN00625	1/16	1/8	3/16	1-1/2
H2FBN00781	5/64	1/8	1/4	1-1/2
H2FBN00938	3/32	1/8	5/16	1-1/2
H2FBN01094	7/64	1/8	3/8	1-1/2
H2FBN01250	1/8	1/8	1/2	1-1/2
H2FBN01406	9/64	3/16	1/2	2
H2FBN01563	5/32	3/16	9/16	2
H2FBN01719	11/64	3/16	9/16	2
H2FBN01875	3/16	3/16	5/8	2
H2FBN02031	13/64	1/4	5/8	2-1/2
H2FBN02188	7/32	1/4	5/8	2-1/2
H2FBN02500	1/4	1/4	3/4	2-1/2
H2FBN02813	9/32	5/16	3/4	2-1/2
H2FBN03125	5/16	5/16	13/16	2-1/2
H2FBN03438	11/32	3/8	7/8	2-1/2
H2FBN03750	3/8	3/8	1	2-1/2
H2FBN04063	13/32	7/16	1	2-3/4
H2FBN04375	7/16	7/16	1	2-3/4
H2FBN05000	1/2	1/2	1	3
H2FBN05625	9/16	9/16	1-1/8	3-1/2
H2FBN06250	5/8	5/8	1-1/4	3-1/2
H2FBN06875	11/16	3/4	1-3/8	4
H2FBN07500	3/4	3/4	1-1/2	4
H2FBN08750	7/8	7/8	1-1/2	4
H2FBN10000	1	1	1-1/2	4



Size	TOLERANCES	
	D1	D2
3/64" thru 1"	+.000"-.002"	+.0000"-.0005"

4 Flute Standard Inch Size Ball Nose End Mill



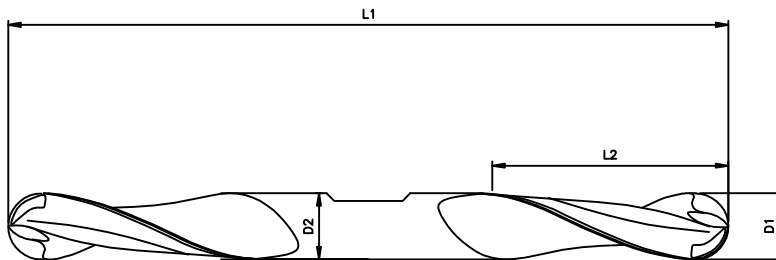
SERIES : H4FBN

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FBN00469	3/64	1/8	9/64	1-1/2
H4FBN00625	1/16	1/8	3/16	1-1/2
H4FBN00781	5/64	1/8	1/4	1-1/2
H4FBN00938	3/32	1/8	5/16	1-1/2
H4FBN01094	7/64	1/8	3/8	1-1/2
H4FBN01250	1/8	1/8	1/2	1-1/2
H4FBN01406	9/64	3/16	1/2	2
H4FBN01563	5/32	3/16	9/16	2
H4FBN01719	11/64	3/16	9/16	2
H4FBN01875	3/16	3/16	5/8	2
H4FBN02031	13/64	1/4	5/8	2-1/2
H4FBN02183	7/32	1/4	5/8	2-1/2
H4FBN02500	1/4	1/4	3/4	2-1/2
H4FBN02813	9/32	5/16	3/4	2-1/2
H4FBN03125	5/16	5/16	13/16	2-1/2
H4FBN03438	11/32	3/8	7/8	2-1/2
H4FBN03750	3/8	3/8	1	2-1/2
H4FBN04063	13/32	7/16	1	2-3/4
H4FBN04375	7/16	7/16	1	2-3/4
H4FBN05000	1/2	1/2	1	3
H4FBN05625	9/16	9/16	1-1/8	3-1/2
H4FBN06250	5/8	5/8	1-1/4	3-1/2
H4FBN06875	11/16	3/4	1-3/8	4
H4FBN07500	3/4	3/4	1-1/2	4
H4FBN08750	7/8	7/8	1-1/2	4
H4FBN10000	1	1	1-1/2	4



Size	TOLERANCES	
	D1	D2
3/64" thru 1"	+.000"-.002"	+.0000"-.0005"

2 Flute Ball Nose Double End End Mill - Inch



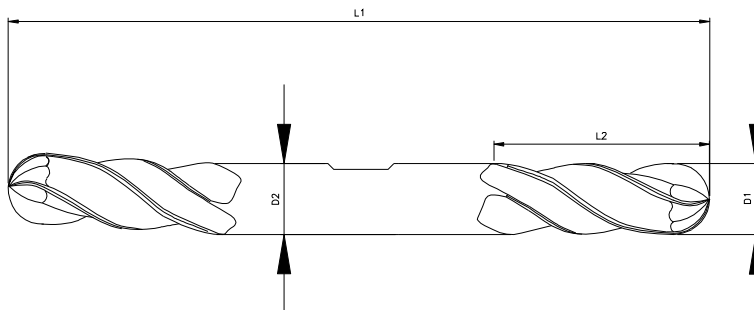
SERIES : H2FDEB

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FDEBN1250	1/8	3/8	3/8	3-1/16
H2FDEBN1563	5/32	3/8	7/16	3-1/8
H2FDEBN1875	3/16	3/8	1/2	3-1/4
H2FDEBN2188	7/32	3/8	9/16	3-3/8
H2FDEBN2500	1/4	3/8	5/8	3-3/8
H2FDEBN2813	9/32	3/8	11/16	3-3/8
H2FDEBN3125	5/16	3/8	3/4	3-1/2
H2FDEBN3438	11/32	3/8	3/4	3-1/2
H2FDEBN3750	3/8	3/8	3/4	3-1/2
H2FDEBN4375	7/16	1/2	7/8	4
H2FDEBN5000	1/2	1/2	1	4



Size	TOLERANCES	
	D1	D2
1/8" thru 1/2"	+.000"-.002"	+.0000"-.0005"

4 Flute Ball Nose Double End End Mill - Inch



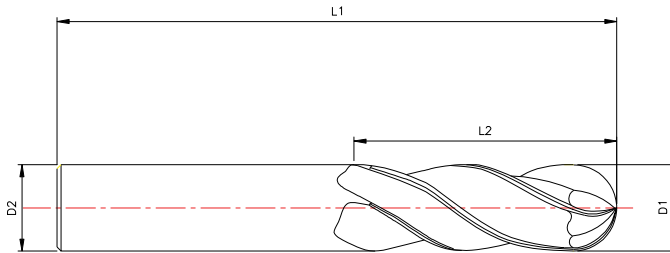
SERIES : H4FDEB

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FDEBN1250	1/8	3/8	3/8	3-1/16
H4FDEBN1563	5/32	3/8	7/16	3-1/8
H4FDEBN1875	3/16	3/8	1/2	3-1/4
H4FDEBN2188	7/32	3/8	9/16	3-3/8
H4FDEBN2500	1/4	3/8	5/8	3-3/8
H4FDEBN2813	9/32	3/8	11/16	3-3/8
H4FDEBN3125	5/16	3/8	3/4	3-1/2
H4FDEBN3438	11/32	3/8	3/4	3-1/2
H4FDEBN3750	3/8	3/8	3/4	3-1/2
H4FDEBN4375	7/16	1/2	7/8	4
H4FDEBN5000	1/2	1/2	1	4



Size	TOLERANCES	
	D1	D2
1/8" thru 1/2"	+.000"-.002"	+.0000"-.0005"

4 Flute Stub Ball Nose End Mill



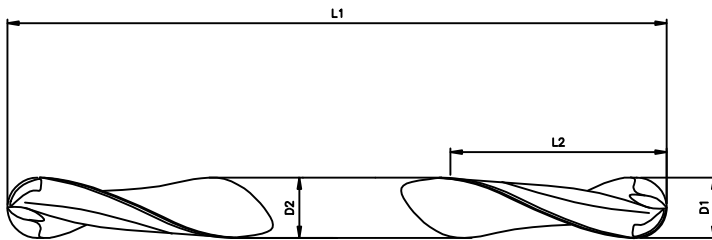
SERIES : H4FSLB

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FSLBN0313	1/32	1/8	5/64	1-1/2
H4FSLBN0469	3/64	1/8	3/32	1-1/2
H4FSLBN0625	1/16	1/8	1/8	1-1/2
H4FSLBN0781	5/64	1/8	5/32	1-1/2
H4FSLBN0938	3/32	1/8	3/16	1-1/2
H4FSLBN1094	7/64	1/8	7/32	1-1/2
H4FSLBN1250	1/8	1/8	1/4	1-1/2
H4FSLBN1406	9/64	3/16	9/32	2
H4FSLBN1563	5/32	3/16	5/16	2
H4FSLBN1875	3/16	3/16	3/8	2
H4FSLBN2188	7/32	1/4	7/16	2
H4FSLBN2500	1/4	1/4	1/2	2
H4FSLBN3125	5/16	5/16	1/2	2
H4FSLBN3750	3/8	3/8	5/8	2
H4FSLBN4375	7/16	7/16	5/8	2-1/2
H4FSLBN5000	1/2	1/2	5/8	2-1/2
H4FSLBN6250	5/8	5/8	3/4	3
H4FSLBN7500	3/4	3/4	1	3



Size	TOLERANCES	
	D1	D2
1/32" thru 3/4"	+.0000"-.002"	+.0000"-.0005"

2 Flute Stub Ball Nose Double End End Mill



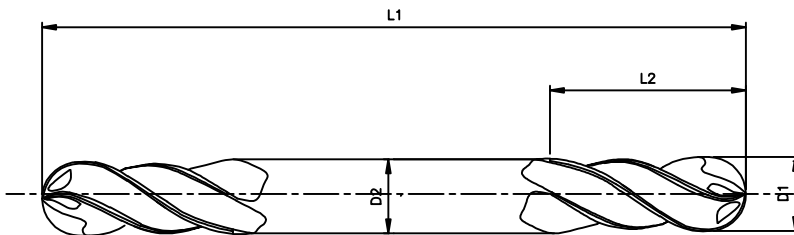
SERIES : H2FDEBS

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FDEBN0313	1/32	1/8	5/64	1-1/2
H2FDEBN0469	3/64	1/8	3/32	1-1/2
H2FDEBN0625	1/16	1/8	1/8	1-1/2
H2FDEBN0781	5/64	1/8	5/32	1-1/2
H2FDEBN0938	3/32	1/8	3/16	1-1/2
H2FDEBN1094	7/64	1/8	7/32	1-1/2
H2FDEBN1250	1/8	1/8	1/4	1-1/2
H2FDEBN1406	9/64	3/16	9/32	2
H2FDEBN1563	5/32	3/16	5/16	2
H2FDEBN1875	3/16	3/16	3/8	2
H2FDEBN2188	7/32	1/4	7/16	2-1/2
H2FDEBN2500	1/4	1/4	1/2	2-1/2
H2FDEBN3125	5/16	5/16	1/2	2-1/2
H2FDEBN3750	3/8	3/8	5/8	2-1/2
H2FDEBN4375	7/16	7/16	5/8	2-3/4
H2FDEBN5000	1/2	1/2	5/8	3



Size	TOLERANCES	
	D1	D2
1/32" thru 1/2"	+.000"-.002"	+.0000"-.0005"

4 Flute Stub Ball Nose Double End End Mill



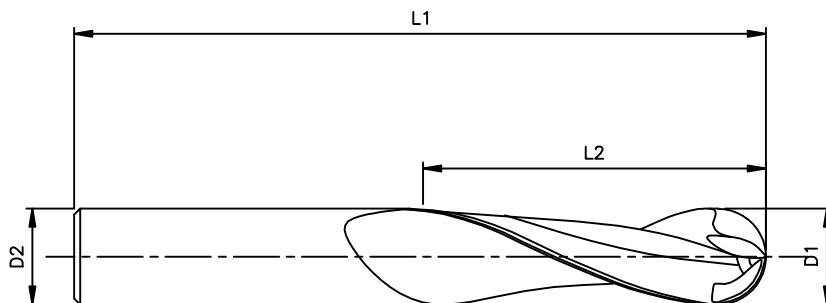
SERIES : H4FDEBS

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4SLDEBN0313	1/32	1/8	5/64	1-1/2
H4SLDEBN0469	3/64	1/8	3/32	1-1/2
H4SLDEBN0625	1/16	1/8	1/8	1-1/2
H4SLDEBN0781	5/64	1/8	5/32	1-1/2
H4SLDEBN0938	3/32	1/8	3/16	1-1/2
H4SLDEBN1094	7/64	1/8	7/32	1-1/2
H4SLDEBN1250	1/8	1/8	1/4	1-1/2
H4SLDEBN1406	9/64	3/16	9/32	2
H4SLDEBN1563	5/32	3/16	5/16	2
H4SLDEBN1875	3/16	3/16	3/8	2
H4SLDEBN2188	7/32	1/4	7/16	2-1/2
H4SLDEBN2500	1/4	1/4	1/2	2-1/2
H4SLDEBN3125	5/16	5/16	1/2	2-1/2
H4SLDEBN3750	3/8	3/8	5/8	2-1/2
H4SLDEBN4375	7/16	7/16	5/8	2-3/4
H4SLDEBN5000	1/2	1/2	5/8	3



Size	TOLERANCES	
	D1	D2
1/32" thru 1/2"	+.000"-.002"	+.0000"-.0005"

2 Flute Long Inch Size Ball Nose End Mill



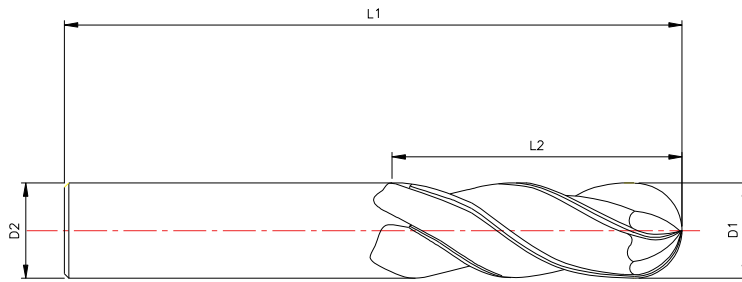
SERIES : H2FBNL

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FBNL01250	1/8	1/8	3/4	2-1/4
H2FBNL01875	3/16	3/16	3/4	2-1/4
H2FBNL02500	1/4	1/4	1-1/8	3
H2FBNL03125	5/16	5/16	1-1/8	3
H2FBNL03750	3/8	3/8	1-1/8	3
H2FBNL04375	7/16	7/16	2	4
H2FBNL05000	1/2	1/2	2	4
H2FBNL06250	5/8	5/8	2-1/4	5
H2FBNL07500	3/4	3/4	2-1/4	5
H2FBNL10000	1	1	2-1/4	5



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

4 Flute Long Inch Size Ball Nose End Mill



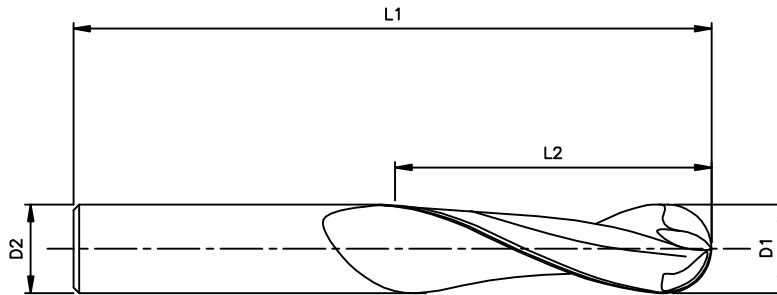
SERIES : H4FBNL

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FBNL01250	1/8	1/8	3/4	2-1/4
H4FBNL01875	3/16	3/16	3/4	2-1/4
H4FBNL02500	1/4	1/4	1-1/8	3
H4FBNL03125	5/16	5/16	1-1/8	3
H4FBNL03750	3/8	3/8	1-1/8	3
H4FBNL04375	7/16	7/16	2	4
H4FBNL05000	1/2	1/2	2	4
H4FBNL06250	5/8	5/8	2-1/4	5
H4FBNL07500	3/4	3/4	2-1/4	5
H4FBNL10000	1	1	2-1/4	5



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

2 Flute Extra Long Inch Size Ball Nose End Mill



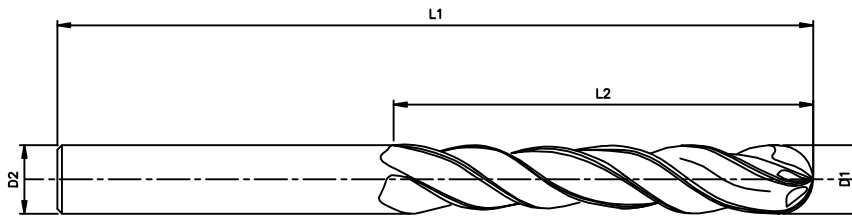
SERIES : H2FBNX



ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2FBNX01250	1/8	11/8	1	3
H2FBNX01875	3/16	3/16	1-1/8	3
H2FBNX02500	1/4	1/4	1-1/2	4
H2FBNX03125	5/16	5/16	1-5/8	4
H2FBNX03750	3/8	3/8	1-3/4	4
H2FBNX04375	7/16	7/16	3	6
H2FBNX05000	1/2	1/2	3	6
H2FBNX06250	5/8	5/8	3	6
H2FBNX07500	3/4	3/4	3	6
H2FBNX10000	1	1	3	6

Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

4 Flute Extra Long Inch Size Ball Nose End Mill



SERIES : H4FBNX

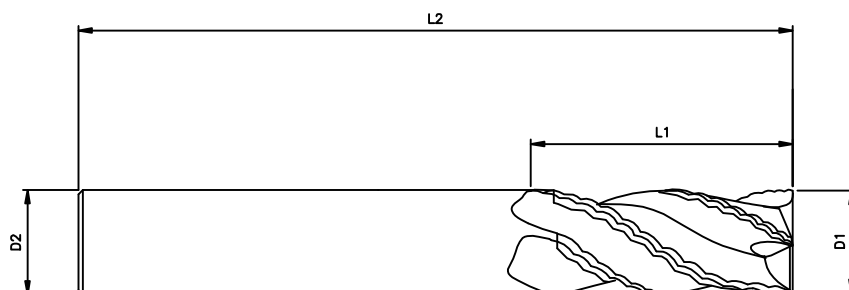
ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H4FBNX01250	1/8	11/8	1	3
H4FBNX01875	3/16	3/16	1-1/8	3
H4FBNX02500	1/4	1/4	1-1/2	4
H4FBNX03125	5/16	5/16	1-5/8	4
H4FBNX03750	3/8	3/8	1-3/4	4
H4FBNX04375	7/16	7/16	3	6
H4FBNX05000	1/2	1/2	3	6
H4FBNX06250	5/8	5/8	3	6
H4FBNX07500	3/4	3/4	3	6
H4FBNX10000	1	1	3	6



Size	TOLERANCES	
	D1	D2
1/8" thru 1"	+.000"-.002"	+.0000"-.0005"

Multi Flute 45° Helix Long Length Roughing End Mill

- ▶ For low hardness materials (under HRC45), alloy steels, tool steels, prehardened steel, titanium, Inconel, nimonic, etc.
- ▶ High chip removed and minimizing breakages of cutting edges.
- ▶ Corner protection against chipping.



SERIES : HRF45

ITEM CODE	DIA D1	SH. DIA D2	CEL L1	OAL L2	No.OF FLUTE
HRF4501875	3/16	1/4	1/2	2-1/4	3
HRF4502500	1/4	1/4	3/4	2-1/2	4
HRF4503125	5/16	5/16	3/4	2-1/2	4
HRF4503750	3/8	3/8	7/8	2-1/2	4
HRF4505000	1/2	1/2	1	3	4
HRF4506250	5/8	5/8	1-1/4	3-1/2	5
HRF4507500	3/4	3/4	1-5/8	4	6
HRF4510000	1	1	1-3/4	4	6



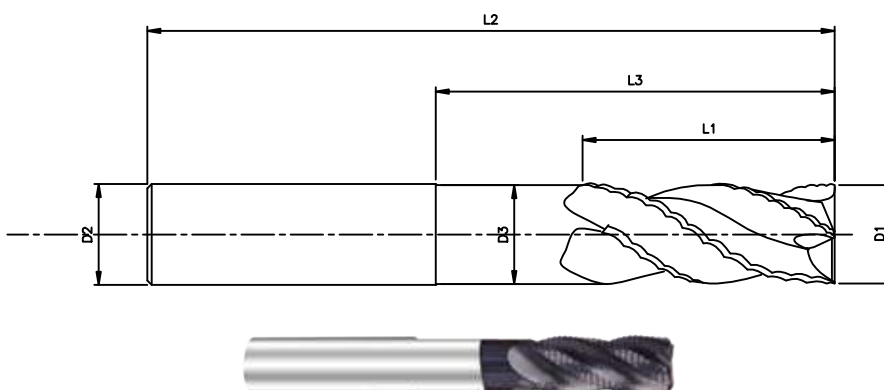
Mill Dia. (inch)	Mill Dia. Tolerance (inch)	Shank Dia. Tolerance (inch)
3/16	0~-0.0019	0~-0.0033
1/4~3/8	0~-0.0022	
1/2~5/8	0~-0.0027	
3/4~1	0~-0.0033	

☒ Excellent
 ☐ Good

Carbon Steels ~HRC20	Alloy Steels HRC20~30	Prehardened Steels HRC30~40	Hardened Steels		High Hardened Steels HRC55~70	Copper	Graphite	Cast Iron	Aluminium	Stainless Steels	Titanium	Inconel
			HRC40~45	HRC45~55								
☐	☒	☒	☐	☐						☒	☒	☐

Multi Flute 45° Helix Long Reach Roughing End Mill Fine Pitch

- ▶ For low hardness materials (under HRC45), alloy steels, tool steels, prehardened steel, titanium, Inconel, nimonic, etc.
- ▶ High chip removed and minimizing breakages of cutting edges.
- ▶ Corner protection against chipping.



SERIES : HRLR

ITEM CODE	DIA D1	SH. DIA D2	CEL L1	LENGTH BELOW SHANK L3	OAL L2	NECK DIAMETER D3	No.OF FLUTE
HRLR452500	1/4	1/4	3/4	7/8	2-1/2	0.230	4
HRLR453125	5/16	5/16	3/4	1	2-1/2	0.292	4
HRLR453750	3/8	3/8	7/8	1-1/4	2-1/2	0.355	4
HRLR455000	1/2	1/2	1	1-1/2	3	0.480	4
HRLR456250	5/8	5/8	1-1/4	2	4	0.605	5
HRLR457500	3/4	3/4	1-5/8	2-3/8	4-3/8	0.719	6

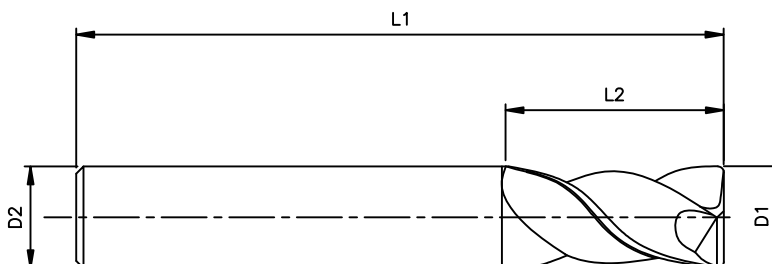
Mill Dia. (inch)	Mill Dia. Tolerance (inch)	Shank Dia. Tolerance (inch)
1/4~3/8	0~-0.0022	0~-0.0033
1/2~5/8	0~-0.0027	
3/4~1	0~-0.0033	

 Excellent
  Good

Carbon Steels ~HRC20	Alloy Steels HRC20~30	Prehardened Steels HRC30~40	Hardened Steels		High Hardened Steels HRC55~70	Copper	Graphite	Cast Iron	Aluminium	Stainless Steels	Titanium	Inconel
			HRC40~45	HRC45~55								
												

2 Flute 42° Helix End Mill For Soft Material

- ▶ High velocity milling of aluminum & other non ferrous materials.
- ▶ Excellent plunging capabilities.
- ▶ Improved surface roughness-cylindrical margin which is controlled tightly.
- ▶ Superior chip evacuation.
- ▶ Mirror face – excellent surface finish.



SERIES : H2F42

ITEM CODE	DIA D1	SH. DIA D2	CEL L2	OAL L1
H2F4200625S	1/16	1/8	1/8	1-1/2
H2F4200938S	3/32	1/8	1/4	1-1/2
H2F4201250S	1/8	1/4	5/16	1-3/4
H2F4201875S	3/16	1/4	7/16	2
H2F4202500S	1/4	3/8	3/4	2-1/2
H2F4203125S	5/16	3/8	13/16	2-1/2
H2F4203750S	3/8	3/8	1	2-1/2
H2F4204375S	7/16	7/16	1	2-3/4
H2F4205000S	1/2	1/2	1	3
H2F4205000L	1/2	1/2	2	4
H2F4206250S	5/8	5/8	1-1/4	3-1/2
H2F4207500S	3/4	3/4	1-1-2	4
H2F4207500L	3/4	3/4	3	5-1/2
H2F4201000S	1	1	1-1/2	4
H2F4201000L	1	1	3	5-1/2



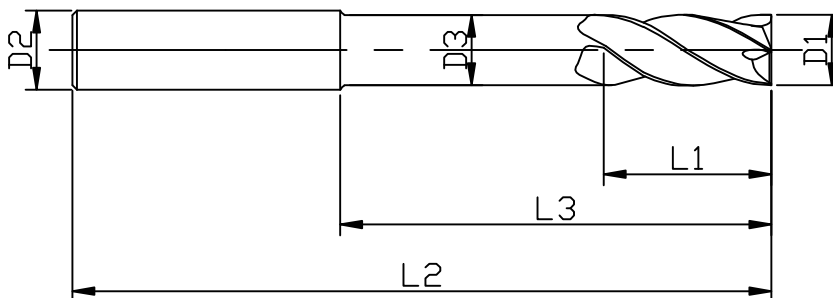
Mill Dia. Tolerance (inch)	Shank Dia. Tolerance (inch)
0~-.0012	0~-.0033

 Excellent
  Good

Carbon Steels ~HRC20	Alloy Steels HRC20~30	Prehardened Steels HRC30~40	Hardened Steels		High Hardened Steels HRC55~70	Copper	Graphite	Cast Iron	Aluminium	Stainless Steels	Titanium	Inconel
			HRC40~45	HRC45~55								

3 Flute 37° Helix End Mill With Extended Neck

- ▶ High velocity milling of aluminum & other non ferrous materials.
- ▶ 3flute and 37° helix allow harmonic balance at high speed condition and smooth cutting.
- ▶ Improved surface roughness-cylindrical margin which is controlled tightly.
- ▶ Maximum – metal removal rate.
- ▶ Mirror face – excellent surface finish.



SERIES : H3F37

ITEM CODE	DIA D1	SH. DIA D2	CEL L1	LENGTH BELOW SHANK L3	OAL L2	NECK DIAMETER D3
H3F3702500S	1/4	1/4	3/8	2-1/4	4	0.220
H3F3703750S	3/8	3/8	1/2	2-1/4	4	0.345
H3F3705000S	1/2	1/2	5/8	2-1/4	5	0.470
H3F3705000L	1/2	1/2	5/8	3-1/4	6	0.470
H3F3706250S	5/8	5/8	3/4	2-1/4	5	0.585
H3F3706250L	5/8	5/8	3/4	3-1/4	6	0.585
H3F3706250X	5/8	5/8	3/4	4-1/4	7	0.585
H3F3707500S	3/4	3/4	1	2-1/4	5	0.710
H3F3707500L	3/4	3/4	1	3-1/4	6	0.710
H3F3707500X	3/4	3/4	1	4-1/4	7	0.710
H3F3710000S	1	1	1-1/8	2-1/4	5	0.960
H3F3710000L	1	1	1-1/8	3-1/4	6	0.960
H3F3710000X	1	1	1-1/8	4-1/4	7	0.960

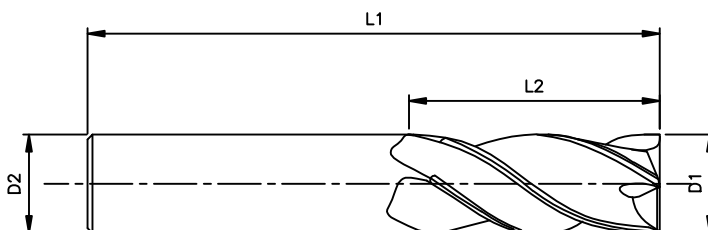


Mill Dia. Tolerance (inch)	Shank Dia. Tolerance (inch)
0~-.0005	0~-.0003

☒ Excellent
 ☐ Good

Carbon Steels ~HRC20	Alloy Steels HRC20~30	Prehardened Steels HRC30~40	Hardened Steels		High Hardened Steels HRC55~70	Copper	Graphite	Cast Iron	Aluminium	Stainless Steels	Titanium	Inconel
			HRC40~45	HRC45~55					☒			

Solid Carbide Helimill 4 Flute

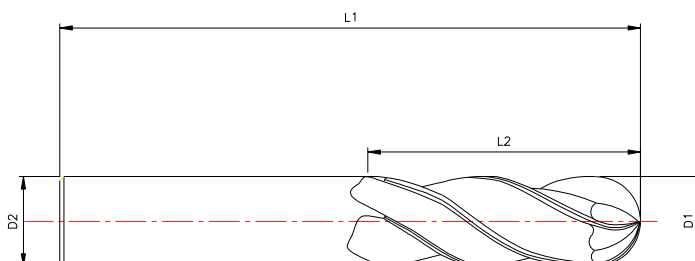


SERIES : HHMF4P

ITEM CODE	DIA D1	SH DIA D2	CEL L2	OAL L1
HHMF4P005S	0.5	3	1.5	38
HHMF4P006S	0.6	3	1.5	38
HHMF4P007S	0.7	3	1.8	38
HHMF4P008S	0.8	3	2	38
HHMF4P009S	0.9	3	2.2	38
HHMF4P010S	1.0	3	3	38
HHMF4P015S	1.5	3	5	38
HHMF4P020S	2.0	3	7	38
HHMF4P025S	2.5	3	7	38
HHMF4P030S	3.0	3	10	38
HHMF4P035S	3.5	4	12	50
HHMF4P040S	4.0	4	14	50
HHMF4P045S	4.5	5	16	50
HHMF4P050S	5.0	5	16	50
HHMF4P060S	6.0	6	19	57
HHMF4P070S	7.0	7	19	60
HHMF4P080S	8.0	8	19	60
HHMF4P090S	9.0	9	22	70
HHMF4P100S	10.0	10	22	70
HHMF4P110S	11.0	11	25	75
HHMF4P120S	12.0	12	25	75
HHMF4P140S	14.0	14	32	80
HHMF4P160S	16.0	16	32	80
HHMF4P180S	18.0	18	38	100
HHMF4P200S	20.0	18	38	100
HHMF4P220S	22.0	22	38	100
HHMF4P250S	25.0	25	38	100



Solid Carbide Helimill Ball Nose 4 Flute

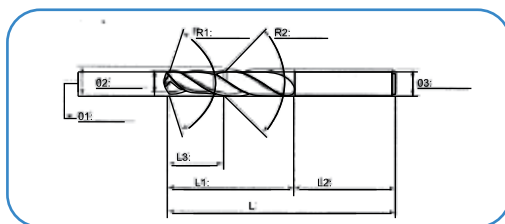
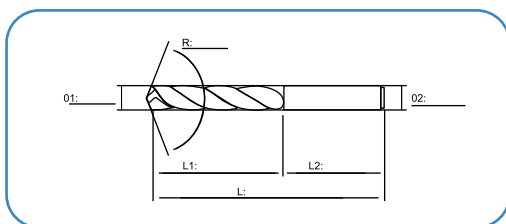


SERIES : HHMB4P

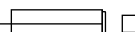
ITEM CODE	DIA D1	SH DIA D2	CEL L2	OAL L1
HHMB4P005S	0.5	3	1.5	38
HHMB4P006S	0.6	3	1.5	38
HHMB4P007S	0.7	3	1.8	38
HHMB4P008S	0.8	3	2	38
HHMB4P009S	0.9	3	2.2	38
HHMB4P010S	1.0	3	3	38
HHMB4P015S	1.5	3	5	38
HHMB4P020S	2.0	3	7	38
HHMB4P025S	2.5	3	7	38
HHMB4P030S	3.0	3	10	38
HHMB4P035S	3.5	4	12	50
HHMB4P040S	4.0	4	14	50
HHMB4P045S	4.5	5	16	50
HHMB4P050S	5.0	5	16	50
HHMB4P060S	6.0	6	19	57
HHMB4P070S	7.0	7	19	60
HHMB4P080S	8.0	8	19	60
HHMB4P090S	9.0	9	22	70
HHMB4P100S	10.0	10	22	70
HHMB4P110S	11.0	11	25	75
HHMB4P120S	12.0	12	25	75
HHMB4P140S	14.0	14	32	80
HHMB4P160S	16.0	16	32	80
HHMB4P180S	18.0	18	38	100
HHMB4P200S	20.0	18	38	100
HHMB4P220S	22.0	22	38	100
HHMB4P250S	25.0	25	38	100



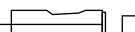
Specific Dimensions



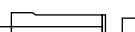
Shank type



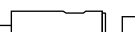
Cylindrical type



Whistle notch type



Cylindrical with flat type



Weldon type

Coolant Supply

- Internal ☐
- External ☐

Coating

- Tin ☐
- TiAIN ☐

Workplace

- Part ☐
- Material ☐

Comment

• Customer: _____

• Address: _____

• Telephone: _____

• E-mail: _____

• Contact: _____

• Fax: _____

Formulas For Cutting Speed, Spindle Speed & Feed Calculation



V_c = CUTTING SPEED (m/min)

D = DIAMETER OF TOOL (mm)

N = REVOLUTION OF SPINDLE(RPM)

F = TABLE FEED RATE (mm/min)

F_z = FEED PER TOOTH (mm/tooth)

Z = NUMBER OF TEETH

f = FEED PER REVOLUTION (mm/rev)

S = DEPTH OF CUT/MIN (mm/min)

$$\text{CUTTING SPEED (V}_c\text{)} = \frac{\pi \times D \times N}{1000}$$

$$\text{FEED PER TOOTH(F}_z\text{)} = \frac{F}{Z \times N}$$

$$\text{TABLE FEED RATE (F)} = F_z \times Z \times N$$

$$S = N \times f$$

Recommended Speed & Feed For End Mills



SPEED & FEED FOR GENERAL PURPOSE MILLING APPLICATION

Work Material	Speed Vc(m/min)	Feed Fz(mm/tooth)		
		Dia ≤ 6mm	Dia ≤ 12mm	Dia ≤ 25mm
CARBON STEELS/TOOL STEELS/ ALLOY STEELS (< 35 hrc)	35~180	0.005~0.040	0.025~0.075	0.075~0.178
CARBON STEELS/TOOL STEELS/ ALLOY STEELS (35~40 HRC)	15~55	0.005~0.013	0.013~0.025	0.025~0.075
STAINLESS STEEL	40~105	0.005~0.020	0.020~0.050	0.0500~0.150
MOLD & DIE STEEL	15~105	0.005~0.025	0.025~0.050	0.050~0.152
TITANIUM ALLOYS	9~50	0.005~0.020	0.020~0.050	0.050~0.100
COBALT BASED ALLOYS	6~25	0.005~0.020	0.020~0.025	0.025~0.050
GRAY CAST IRON	50~125	0.005~0.040	0.040~0.075	0.075~0.200
ALUMINIUM	180~390	0.005~0.050	0.050~0.102	0.102~0.200
NICKLE BASED ALLOYS	6~35	0.008~0.020	0.020~0.025	0.025~0.050
BRASS/COPPER	90~240	0.013~0.050	0.050~0.075	0.075~0.150

Rougher End Mills

Work Material	Speed(m/min)	Feed Fz(mm/tooth)		
		Dia ≤ 6mm	Dia ≤ 12mm	Dia ≤ 25mm
CARBON STEELS/TOOL STEELS/ ALLOY STEELS (< 35 hrc)	90~110	0.025~0.038	0.038~0.063	0.075~0.126
CARBON STEELS/TOOL STEELS/ ALLOY STEELS (35~50 hrc)	43~90	0.025~0.038	0.038~0.075	0.075~0.125
STAINLESS STEEL	31~75	0.025~0.038	0.025~0.064	0.064~0.101
MOLD & DIE STEEL	60~75	0.025~0.038	0.038~0.064	0.064~0.100
GRAY CAST IRON	30~106	0.025~0.038	0.038~0.076	0.076~0.152
DUCTILE CAST IRON	22~105	0.025~0.036	0.036~0.075	0.075~0.150
MALLEABLE CAST IRON	30~105	0.025~0.038	0.038~0.075	0.075~0.152

D.O.C FOR SLOT MILLING = 0.5 x DIA

D.O.C FOR SIDE MILLING = 0.25 x DIA

Recommended Speed & Feed For High Performance Drills



SOLID CARBIDE DRILLS (COOLANT SUPPLY EXTERNAL)

TYPE		Ø3~6mm	Ø6.1~10mm	Ø10.1~15mm	Ø15.1~20mm
ALLOY STEEL, MILD STEEL, CARBON STEEL	Vc (m/min)	70~90	80~90	80~95	90~100
	f (mm/rev)	0.09~0.20	0.15~0.25	0.20~0.35	0.25~0.40
ALLOY STEEL/FORGED STEEL	Vc (m/min)	60~80	65~85	70~90	75~79
	f (mm/rev)	0.10~0.20	0.15~0.25	0.15~0.30	0.20~0.35
HARDENED STEEL(35~45HRC)	Vc (m/min)	30~60	35~65	40~70	45~75
	f (mm/rev)	0.08~0.20	0.15~0.25	0.15~0.28	0.20~0.32
CAST IRON	Vc (m/min)	80~100	85~100	90~110	100~110
	f (mm/rev)	0.09~0.20	0.15~0.30	0.18~0.35	0.25~0.40
DUCTILE CAST IRON	Vc (m/min)	60~80	65~85	70~90	85~95
	f (mm/rev)	0.09~0.20	0.15~0.30	0.18~0.35	0.25~0.40
STAINLESS STEEL	Vc (m/min)	#	#	#	#
	f (mm/rev)	#	#	#	#

SOLID CARBIDE DRILLS (COOLANT SUPPLY INTERNAL)

TYPE		Ø3~10mm	Ø10.1~15mm	Ø15.1~20mm
ALLOY STEEL, MILD STEEL, CARBON STEEL	Vc (m/min)	80~100	90~100	100~115
	f (mm/rev)	0.15~0.27	0.20~0.35	0.25~0.40
ALLOY STEEL/FORGED STEEL	Vc (m/min)	65~98	90~100	90~110
	f (mm/rev)	0.15~0.25	0.15~0.30	0.10~0.30
HARDENED STEEL(35~45HRC)	Vc (m/min)	35~65	40~70	45~75
	f (mm/rev)	0.15~0.25	0.15~0.25	0.20~0.32
CAST IRON	Vc (m/min)	90~100	100~110	100~120
	f (mm/rev)	0.15~0.30	0.18~0.35	0.25~0.40
DUCTILE CAST IRON	Vc (m/min)	65~90	75~100	75~110
	f (mm/rev)	0.15~0.30	0.18~0.35	0.25~0.40
STAINLESS STEEL	Vc (m/min)	30~60	35~70	40~45
	f (mm/rev)	0.10~0.025	0.10~0.25	0.10~0.30

Recommended Speed & Feed For General Purpose Drills



WORK MATERIAL	Vc(m/min)
ALUMINIUM/ALUMINIUM ALLOYS	120~200
BRASS	120~200
STEEL-(FORGED/CAST)	18~40
STEEL -HEAT TREATED(35~40HRC)	18~25
STEEL -MEDIUM CARBON	30~55
TOOL STEEL	12~32
INCONEL	9~21

DRILL DIA	f(mm/rev)
<= Ø1.5mm	0.125~0.255
Ø1.6 ~Ø3mm	0.255~0.500
Ø3.1 ~Ø6mm	0.500~0.760
Ø6.1 ~Ø7.9mm	0.760~0.1270
Ø8 ~Ø11.9mm	0.1270~0.2000
Ø12.1 ~Ø14mm	0.1950~0.2200

TOOL SELECTION GUIDE



■ DRILLS

SERIES	Aluminum/ Aluminium Alloys	Brass/Copper	Cast Iron	Monel	Steel-Cast & Forged	Steel (35~40HRC)	Steel (40~45HRC)	Steel (45HRC+)	Steel Medium Carbon	Mold Steel	Tool Steel	Stainless Steel	Inconel
HDRP3	✦		✦✦	✦✦	✦✦	✦✦	✦✦	✦✦	✦	✦	✦	✦✦	
HDRP5	✦		✦✦	✦✦	✦✦	✦✦	✦✦	✦✦	✦	✦	✦	✦✦	
HDRT3	✦		✦✦	✦✦	✦✦	✦✦	✦✦	✦✦	✦	✦	✦	✦✦	
HDRT5	✦		✦✦	✦✦	✦✦	✦✦	✦✦	✦✦	✦	✦	✦	✦✦	
HDRT8	✦		✦✦	✦✦	✦✦	✦✦	✦✦	✦✦	✦	✦	✦	✦✦	
HDRMI	✦	✦	✦	✦	✦✦	✦			✦	✦	✦	✦✦	✦
HDRPJ	✦	✦	✦	✦	✦✦	✦			✦	✦	✦	✦✦	✦
HDRJN	✦	✦	✦	✦	✦✦	✦✦			✦	✦	✦		✦
HDRSFM						✦✦			✦✦			✦✦	
HDR15M			✦✦			✦✦						✦✦	✦✦
HDR20M	✦✦	✦✦	✦	✦		✦						✦✦	
HDRSFI						✦✦			✦✦			✦✦	
HDR15I			✦✦			✦✦						✦✦	✦✦
HDR20I	✦✦	✦✦	✦	✦		✦							

✦✦ = Excellent

✦ = Good

■ ENDMILLS

SERIES	Non Alloyed Steel/Alloy Steel Cast Iron	Alloy Steel/ Tool Steel	Stainless Steel	Hardened Steel	Hardened Steel	Cast Iron	Titanium Alloy	Aluminum/ Brass Alloy
	(~30HRC)	(30~45 HRC)		(45~55HRC)	(55~62HRC)			
H1F2S	✦✦	✦✦	✦			✦	✦	✦
H1F4S	✦✦	✦✦	✦			✦	✦	✦
H1F2L	✦✦	✦✦	✦			✦	✦	✦
H1F4L	✦✦	✦✦	✦			✦	✦	✦
H1F2X	✦✦	✦✦	✦			✦	✦	✦
H1F4X	✦✦	✦✦	✦			✦	✦	✦
H1B2S	✦✦	✦✦	✦			✦	✦	✦
H1B4S	✦✦	✦✦	✦			✦	✦	✦
H1B2L	✦✦	✦✦	✦			✦	✦	✦
H1B4L	✦✦	✦✦	✦			✦	✦	✦
H1B2X	✦✦	✦✦	✦			✦	✦	✦
H1B4X	✦✦	✦✦	✦			✦	✦	✦
H1F3S								✦✦
H1F3L								✦✦
H1FRC	✦✦	✦✦	✦	✦	✦	✦		
H14PR	✦✦	✦✦	✦	✦	✦	✦	✦	✦
H1B2D	✦✦	✦✦		✦✦	✦✦			
H1B2T	✦✦	✦✦		✦✦	✦✦			
H1F6R		✦✦	✦	✦✦	✦✦			
H14UM		✦✦	✦✦	✦✦	✦✦		✦	

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✦ = Good

■ ENDMILLS

SERIES	Non Alloyed Steel/Alloy Steel Cast Iron	Alloy Steel/ Tool Steel	Stainless Steel	Hardened Steel	Hardened Steel	Cast Iron	Titanium Alloy	Aluminum/ Brass Alloy
	(~30HRC)	(30~45 HRC)		(45~55HRC)	(55~62HRC)			
HTEM4	✦✦	✦✦	✦			✦	✦	✦
HTBM2	✦✦	✦✦	✦			✦	✦	✦
HTBM4	✦✦	✦✦	✦			✦	✦	✦
H4F030	✦✦	✦✦	✦			✦✦	✦	
H2F030	✦✦	✦✦	✦			✦✦	✦	
HCEM	✦✦	✦✦	✦			✦	✦	✦
HCREM	✦✦	✦✦	✦			✦	✦	✦
HEMM		✦✦		✦✦			✦✦	
HDRBF	✦✦	✦✦	✦			✦	✦	✦
HTEM2	✦✦	✦✦	✦			✦		✦
H2BNLN		✦✦	✦✦	✦✦	✦✦			
H2FLN		✦✦	✦✦	✦✦	✦✦			
H1FO								✦✦
H4FVH		✦✦	✦✦	✦✦		✦	✦	✦
H4FT		✦✦	✦✦	✦✦		✦✦	✦✦	
H2FCC	✦✦	✦✦	✦			✦	✦	✦
H3FCC	✦✦	✦✦	✦			✦	✦	✦
H4FCC	✦✦	✦✦	✦			✦	✦	✦
H2FDE	✦✦	✦✦	✦			✦	✦	✦
H3F45								✦✦
H4FSL	✦✦	✦✦	✦			✦	✦	✦
H2FDES	✦✦	✦✦	✦			✦	✦	✦
H4FDES	✦✦	✦✦	✦			✦	✦	✦
HIRM		✦✦	✦✦	✦✦	✦✦			
H2FSEL	✦✦	✦✦	✦			✦	✦	✦
H4FSEL	✦✦	✦✦	✦			✦	✦	✦
H2FSXL	✦✦	✦✦	✦			✦	✦	✦
H4FSXL	✦✦	✦✦	✦			✦	✦	✦

✦✦ = Excellent

✦ = Good

■ ENDMILLS

SERIES	Non Alloyed Steel/Alloy Steel Cast Iron	Alloy Steel/ Tool Steel	Stainless Steel	Hardened Steel	Hardened Steel	Cast Iron	Titanium Alloy	Aluminum/ Brass Alloy
	(~30HRC)	(30~45 HRC)		(45~55HRC)	(55~62HRC)			
H2FCR	✦✦	✦✦	✦			✦	✦	✦
H4FCR	✦✦	✦✦	✦			✦	✦	✦
H2FBN	✦✦	✦✦	✦			✦	✦	✦
H4FBN	✦✦	✦✦	✦			✦	✦	✦
H2FDEB	✦✦	✦✦	✦			✦	✦	✦
H4FDEB	✦✦	✦✦	✦			✦	✦	✦
H4FSLB	✦✦	✦✦	✦			✦	✦	✦
H2FDEBS	✦✦	✦✦	✦			✦	✦	✦
H4FDEBS	✦✦	✦✦	✦			✦	✦	✦
H2FBNL	✦✦	✦✦	✦			✦	✦	✦
H4FBNL	✦✦	✦✦	✦			✦	✦	✦
H2FBNX	✦✦	✦✦	✦			✦	✦	✦
H4FBNX	✦✦	✦✦	✦			✦	✦	✦
HRF45	✦✦	✦✦	✦			✦	✦	
HRLR	✦✦	✦✦	✦			✦	✦	
H2F42								✦✦
H3F37								✦✦
HHMF4P	✦✦	✦✦	✦			✦	✦	✦
HHMB4P	✦✦	✦✦	✦			✦	✦	✦

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✦ = Good



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