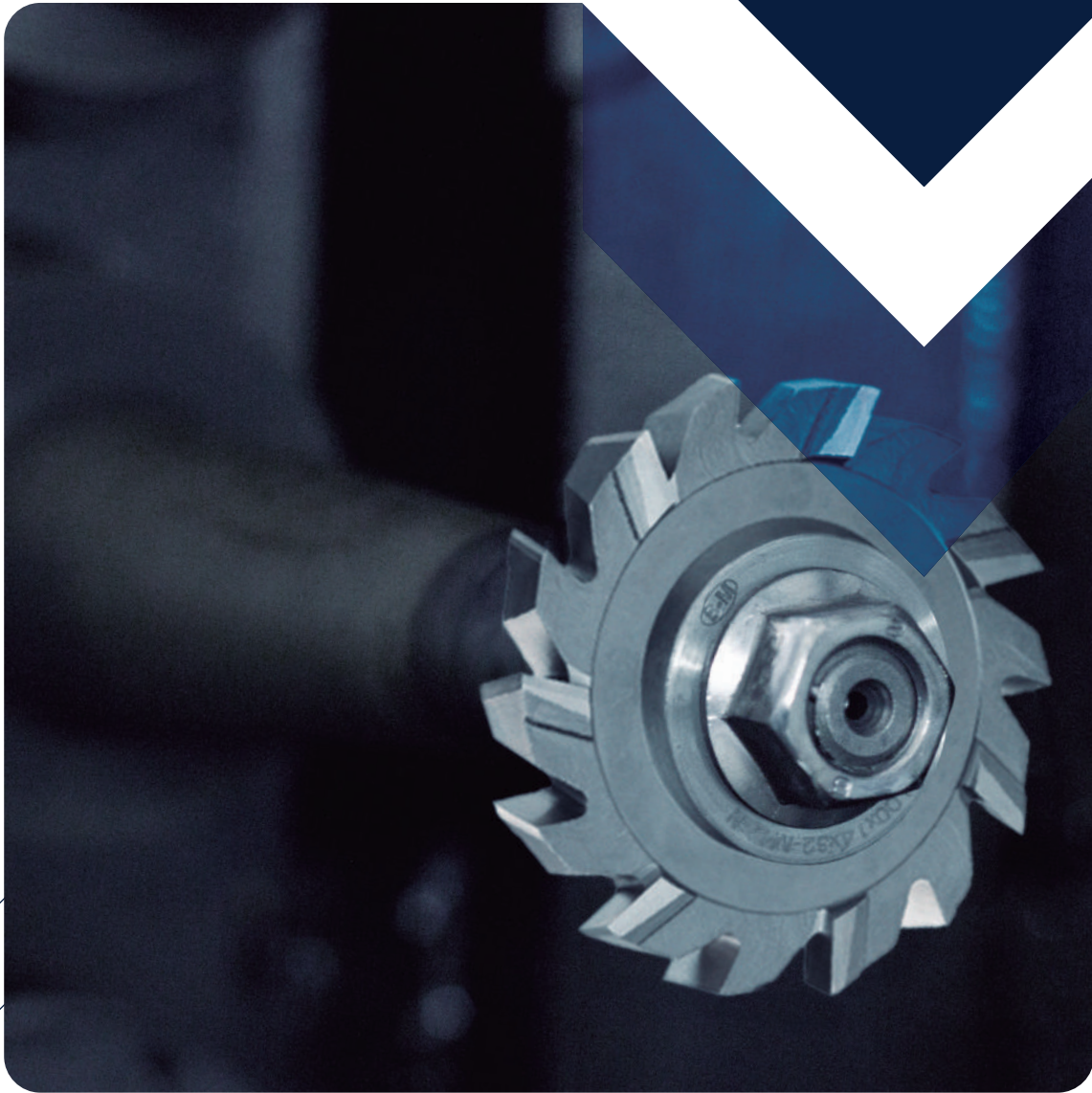


BLUE-MASTER®
by *CE/ESA*



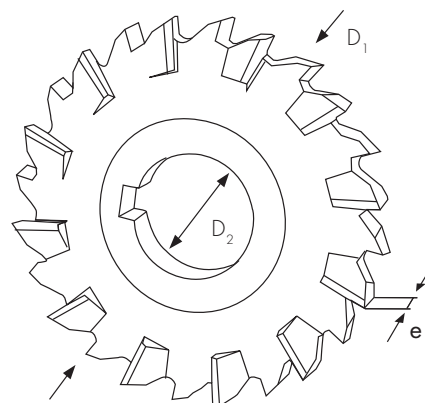
FRESAS
DE AGUJERO

FRESA PARA RANURAR HSSCO DE 3 CORTES CON DIENTE CRUZADO



Ref. FF56

HSSCo

DIN
885A

FF56				
D1 mm	e mm	D2 mm	Z	€
50	4,0	16	12	105,51
50	5,0	16	12	105,51
50	6,0	16	12	122,26
50	8,0	16	12	119,07
50	10,0	16	12	131,11
63	1,6	22	16	225,97
63	2,0	22	16	200,06
63	2,5	22	16	204,24
63	3,0	22	16	209,84
63	4,0	22	12	121,74
63	5,0	22	12	121,74
63	6,0	22	12	125,18
63	8,0	22	12	136,42
63	10,0	22	12	146,79
63	12,0	22	12	156,73
63	14,0	22	12	168,81
63	16,0	22	12	177,69
63	18,0	22	12	212,30
80	1,6	27	20	225,86
80	2,0	27	20	219,38
80	2,5	27	20	223,04
80	3,0	27	20	218,61
80	4,0	27	20	261,53
80	5,0	27	14	165,39
80	6,0	27	14	169,29
80	8,0	27	14	178,66
80	10,0	27	14	191,20
80	12,0	27	14	204,67
80	14,0	27	14	218,86
80	16,0	27	14	223,91
80	18,0	27	14	240,19
80	20,0	27	14	264,10

FF56				
D1 mm	e mm	D2 mm	Z	€
100	1,6	32	24	270,18
100	2,0	32	24	268,72
100	2,5	32	24	268,46
100	3,0	32	24	260,64
100	4,0	32	24	281,00
100	5,0	32	24	297,89
100	6,0	32	16	232,49
100	8,0	32	16	237,39
100	10,0	32	16	246,11
100	12,0	32	16	265,06
100	14,0	32	16	291,82
100	16,0	32	16	306,08
100	18,0	32	16	337,40
100	20,0	32	16	337,40
100	22,0	32	16	378,21
100	25,0	32	16	411,41
125	1,6	32	16	341,68
125	2,0	32	16	328,64
125	2,5	32	16	336,81
125	3,0	32	16	345,01
125	4,0	32	16	369,62
125	5,0	32	16	395,65
125	6,0	32	16	405,42
125	8,0	32	18	366,68
125	10,0	32	18	376,25
125	12,0	32	18	390,51
125	14,0	32	18	424,08
125	16,0	32	18	450,31
125	18,0	32	18	476,31
125	20,0	32	18	506,77
125	22,0	32	18	577,03
125	25,0	32	18	582,62
125	28,0	32	18	636,80

FF56				
D1 mm	e mm	D2 mm	Z	€
160	2,0	40	30	549,95
160	2,5	40	30	529,44
160	3,0	40	30	539,61
160	4,0	40	30	570,19
160	5,0	40	30	603,81
160	6,0	40	30	648,33
160	8,0	40	30	739,99
160	10,0	40	22	607,78
160	12,0	40	22	607,78
160	14,0	40	22	604,80
160	16,0	40	22	661,90
160	18,0	40	22	697,44
160	20,0	40	22	715,92
160	22,0	40	22	786,91
160	25,0	40	22	852,66
160	28,0	40	22	937,29
160	32,0	40	22	1.002,15
200	12,0	40	24	927,11
200	14,0	40	24	936,18
200	16,0	40	24	964,48
200	18,0	40	24	1.011,95
200	20,0	40	24	1.082,29
200	22,0	40	24	1.085,85
200	25,0	40	24	1.259,55
200	28,0	40	24	1.299,37
200	32,0	40	24	1.620,51

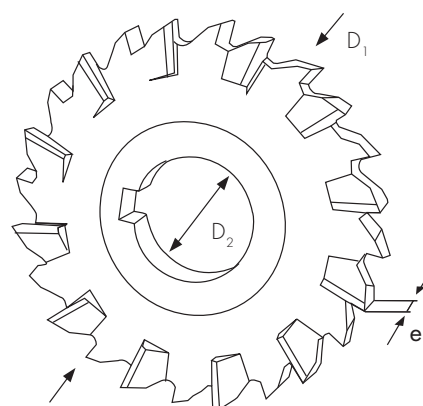
FRESA PARA RANURAR HSSCO DE 3 CORTES CON DIENTE RECTO



Ref. FF59

HSSCo

DIN
885B



FF59				
D1 mm	e mm	D2 mm	Z	€
50	4	16	16	105,18
50	5	16	16	105,18
50	6	16	16	121,90
50	8	16	16	118,72
50	10	16	16	130,73
63	4	22	18	122,53
63	5	22	18	122,53
63	6	22	18	124,16
63	8	22	18	134,98
63	10	22	18	145,25
63	12	22	18	155,57
63	14	22	18	167,54
63	16	22	18	177,22
63	18	22	18	211,66
80	5	27	20	164,82
80	6	27	20	169,17
80	8	27	20	178,52
80	10	27	20	190,57
80	12	27	20	204,04
80	14	27	20	218,20
80	16	27	20	223,87
80	18	27	20	240,15
80	20	27	20	264,05

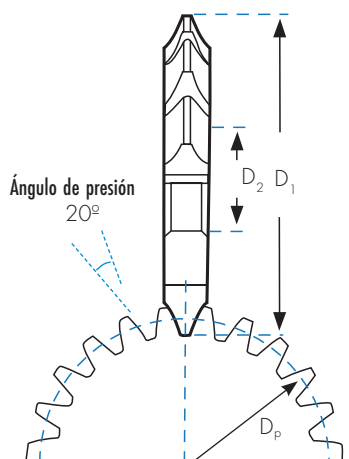
FF59				
D1 mm	e mm	D2 mm	Z	€
100	6	32	22	230,13
100	8	32	22	236,66
100	10	32	22	245,32
100	12	32	22	264,20
100	14	32	22	290,88
100	16	32	22	308,17
100	18	32	22	337,33
100	20	32	22	337,33
100	22	32	22	377,07
100	25	32	22	412,48
125	8	32	24	366,46
125	10	32	24	376,02
125	12	32	24	390,28
125	14	32	24	423,84
125	16	32	24	445,60
125	18	32	24	476,16
125	20	32	24	506,63
125	22	32	24	576,88
125	25	32	24	582,47
125	28	32	24	636,60

FF59				
D1 mm	e mm	D2 mm	Z	€
160	10	40	28	607,60
160	12	40	28	607,60
160	14	40	28	604,64
160	16	40	28	661,70
160	18	40	28	697,25
160	20	40	28	715,72
160	22	40	28	786,68
160	25	40	28	852,43
160	28	40	28	937,02
160	32	40	28	1.001,86
200	12	40	30	926,84
200	14	40	30	935,92
200	16	40	30	964,22
200	18	40	30	1.011,67
200	20	40	30	1.081,98
200	22	40	30	1.085,55
200	25	40	30	1.259,21
200	28	40	30	1.299,01
200	32	40	30	1.620,07

FRESA DE MÓDULO PARA TALLADO DE ENGRANAJES

HSS

Ref. 99RFM



NÚMERO DE FRESA / DIENTES A TALLAR

Nº1	Nº2	Nº3	Nº4	Nº5	Nº6	Nº7	Nº8	Set
12-13	14-16	17-20	21-25	26-34	35-54	55-134	135-∞	12-∞

$$M = D_p / Z$$

$$M = P \times \pi$$

M=Módulo
Dp=Diámetro primitivo
Z=Nº Dientes
P=Paso (Diente+Valle)

NOTA: El precio depende del módulo, independientemente del nº de dientes a tallar.

MÓDULO FRESA	D1 mm	D2 mm	99RFM €
0.50	40	16	131,56
0.70	40	16	131,56
0.75	40	16	131,56
0.80	40	16	131,56
1.00	50	16	131,56
1.25	50	16	131,56
1.50	56	22	135,10
1.75	56	22	135,10
2.00	63	22	135,10
2.25	63	22	158,33
2.50	63	22	158,33
2.75	71	27	158,33
3.00	71	27	158,33
3.25	71	27	208,94
3.50	80	27	208,94
3.75	80	27	208,94
4.00	80	27	208,94
4.50	90	32	286,37
5.00	90	32	286,37
6.00	100	32	362,61
7.00	100	32	362,61

FRESAS CILÍNDRICAS, FRONTALES CON CHAVETERO TRANSVERSAL HSSCo

Ref. FF87

HSSCo

DIN
1880

ACABADO

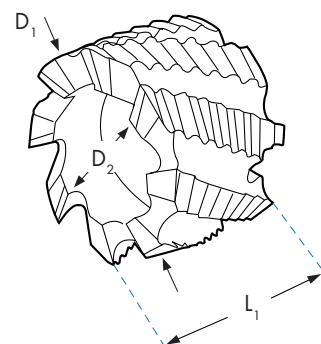
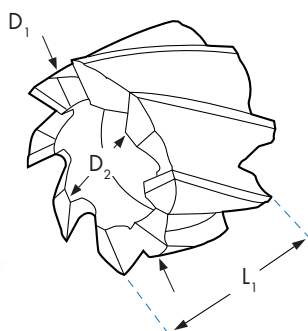
Ref. FF88

HSSCo

DIN
1880

NR

DESABASTE



FF87				
D1 mm	D2 mm	L1 mm	Z	€
40	16	32	8	138,75
50	22	36	8	190,90
63	27	40	8	260,85
80	27	45	10	369,21
100	32	50	12	594,39
125	40	56	14	954,54
160	50	63	16	1.705,96

FF88				
D1 mm	D2 mm	L1 mm	Z	€
40	16	32	6	200,95
50	22	36	6	249,54
63	27	40	8	330,63
80	27	45	8	485,96
100	32	50	10	801,77
125	40	56	12	1.360,22
160	50	63	14	2.360,18

FRESAS CILÍNDRICAS, FRONTALES CON CHAVETERO TRANSVERSAL HSSCo



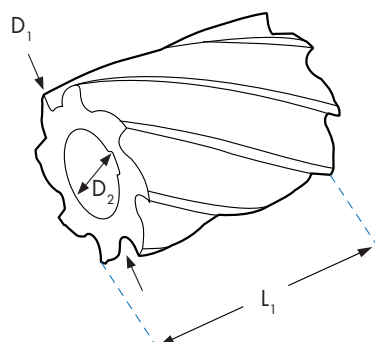
Ref. FF89

HSSCo

DIN
884



CILÍNDRICA PARA PLANEAR



FF89					
D1 mm	D2 mm	L1 mm	Z	€	
50	22	63	8	173,84*	
50	22	80	8	259,14*	
63	27	50	8	228,11*	
63	27	70	8	277,53*	
80	32	63	8	384,48*	
100	40	70	10	598,18*	

*Hasta fin de existencias

FRESAS CILÍNDRICAS, FRONTALES PARA PLANEAR CON MANGO

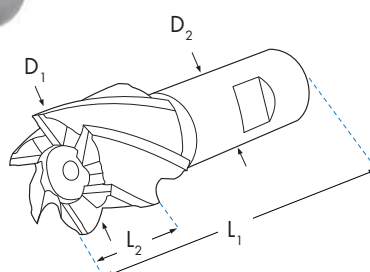


Ref. FMF87

HSSCo
8%



ACABADO



FMF87					
D1 mm	L2 mm	L1 mm	D2 mm	Z	€
30	30	90	20	6	202,26
35	30	90	20	6	232,12
40	32	95	25	8	289,30

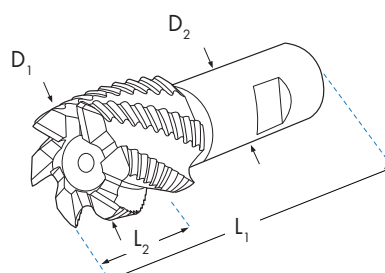


Ref. FMF88

HSSCo
8%



DESBASTE



FMF88					
D1 mm	L2 mm	L1 mm	D2 mm	Z	€
30	30	90	20	6	233,82
35	30	90	20	6	299,55
40	32	95	25	8	366,95

FRESAS ANGULARES ISÓSCELES HSSCo

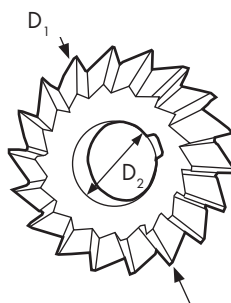
Ref. FF77

HSSCo

DIN
847

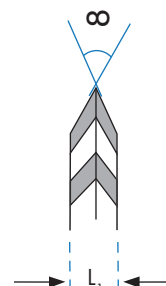
Ref. FF78

HSSCo

DIN
847

Ref. FF79

HSSCo

DIN
847

FF77

D1 mm	D2 mm	L1 mm	∞	Z	€
50	16	8	45°	20	185,21
63	22	10	45°	22	220,30
80	27	12	45°	24	307,59
100	32	18	45°	26	384,54

FF78

D1 mm	D2 mm	L1 mm	∞	Z	€
50	16	10	60°	18	188,85
63	22	14	60°	20	224,63
80	27	18	60°	22	313,61
100	32	25	60°	24	392,08

FF79

D1 mm	D2 mm	L1 mm	∞	Z	€
50	16	14	90°	16	188,85
63	22	20	90°	18	224,63
80	27	22	90°	20	313,61
100	32	32	90°	22	392,08

FRESAS ANGULARES FRONTALES HSSCo

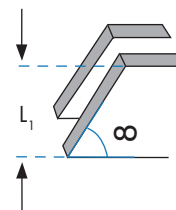
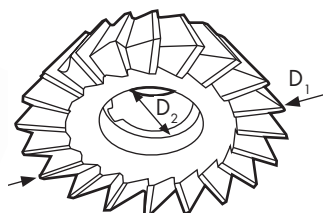
Ref. FF91

HSSCo

DIN
842

Ref. FF90

HSSCo

DIN
842

FF91

D1 mm	D2 mm	L1 mm	∞	Z	€
40	10	13	50°	14	146,45
50	13	16	50°	16	180,60
63	16	20	50°	18	228,29
80	22	25	50°	20	328,91
100	27	32	50°	22	477,05
125	32	40	50°	24	787,77
160	40	50	50°	30	1.378,02

FF90

D1 mm	D2 mm	L1 mm	∞	Z	€
40	10	13	60°	14	143,60
50	13	16	60°	16	177,09
63	16	20	60°	18	223,86
80	22	25	60°	20	322,54
100	27	32	60°	22	467,77
125	32	40	60°	24	772,50
160	40	50	60°	30	1.351,27