

# MACHOS E CAÇONETES



**BLUE-MASTER<sup>®</sup>**  
*by celesa*

CUTTING TECHNOLOGIES

**JOGOS DE MACHOS E CAÇONETES HSS PARA ROSCAGEM MANUAL**

M  
MF



DIN 13 60°

Ref. M0

HSS

DIN 352

DIN 2181

TOL 6H

Ref. C5



HSS

DIN 223

TOL 6g

Para materiais até 38HRc



		M0			C5		
	Uds.		L1 x L2 x $\nabla$ mm	€	$\varnothing$ x L3 mm	€	
M 5,5x0,90	3	4,60	50 x 16 x 4,9	92,91	25 x 9	104,63	
M 6x0,50	2	5,50	50 x 14 x 4,9	31,55	20 x 5	40,48	
M 6x0,75	2	5,25	50 x 14 x 4,9	26,63	25 x 9	33,20	
<b>M 6x1,00</b>	<b>3</b>	<b>5,00</b>	50 x 19 x 4,9	<b>23,58*</b>	25 x 9	<b>29,54*</b>	
M 6x1,25	3	4,75	50 x 19 x 4,9	152,44	25 x 9	107,13	
M 7x0,75	2	6,25	50 x 14 x 4,9	34,96	25 x 9	32,87	
<b>M 7x1,00</b>	<b>3</b>	<b>6,00</b>	50 x 19 x 4,9	<b>28,73*</b>	25 x 9	<b>31,01*</b>	
M 7x1,25	3	5,75	50 x 19 x 4,9	105,92	25 x 9	128,76	
M 8x0,50	2	7,50	50 x 16 x 4,9	55,65	25 x 9	49,08	
M 8x0,75	2	7,25	50 x 16 x 4,9	36,63	25 x 9	35,54	
M 8x1,00	2	7,00	56 x 18 x 4,9	26,50*	25 x 9	34,27*	
<b>M 8x1,25</b>	<b>3</b>	<b>6,80</b>	56 x 22 x 4,9	<b>28,70*</b>	25 x 9	<b>31,34*</b>	
M 8x1,50	3	6,50	56 x 22 x 4,9	103,02	25 x 9	111,94	
M 9x1,00	2	8,00	63 x 18 x 5,5	38,81	25 x 9	38,09	
<b>M 9x1,25</b>	<b>3</b>	<b>7,80</b>	63 x 22 x 5,5	<b>47,02*</b>	25 x 9	<b>36,43*</b>	
M 10x0,50	2	9,50	63 x 18 x 5,5	57,38	30 x 10	123,69	
M 10x0,75	2	9,25	63 x 18 x 5,5	58,67	30 x 11	60,81	
M 10x1,00	2	9,00	63 x 18 x 5,5	28,38	38 x 10	40,32	
M 10x1,25	2	8,80	70 x 24 x 5,5	28,77	38 x 10	43,01	
<b>M 10x1,50</b>	<b>3</b>	<b>8,50</b>	70 x 24 x 5,5	<b>35,39*</b>	38 x 10	<b>41,95*</b>	
M 11x0,75	2	10,25	63 x 18 x 6,2	86,15	30 x 11	133,63	
M 11x1,00	2	10,00	63 x 18 x 6,2	54,27	30 x 11	63,64	
M 11x1,25	2	9,75	63 x 20 x 6,2	54,27	30 x 11	63,63	
<b>M 11x1,50</b>	<b>3</b>	<b>9,50</b>	70 x 24 x 6,2	<b>58,99</b>	38 x 10	<b>50,83</b>	
M 12x0,75	2	11,25	70 x 20 x 7,0	78,33	38 x 10	69,00	
M 12x1,00	2	11,00	70 x 20 x 7,0	50,32	38 x 10	60,81	
M 12x1,25	2	10,75	70 x 20 x 7,0	50,17	38 x 10	58,63	
M 12x1,50	2	10,50	70 x 20 x 7,0	42,75*	38 x 10	52,58*	
<b>M 12x1,75</b>	<b>3</b>	<b>10,20</b>	75 x 29 x 7,0	<b>49,79*</b>	38 x 14	<b>45,58*</b>	
M 13x0,75	2	12,25	70 x 20 x 9,0	88,52	38 x 10	121,66	
M 13x1,00	2	12,00	70 x 20 x 9,0	85,22	38 x 10	64,61	
M 13x1,25	2	11,75	70 x 20 x 9,0	77,80	38 x 10	86,39	
M 13x1,50	2	11,50	70 x 20 x 9,0	77,80	38 x 10	67,91	
<b>M 13x1,75</b>	<b>3</b>	<b>11,25</b>	70 x 20 x 9,0	<b>90,02</b>	38 x 14	<b>72,77</b>	
M 14x0,75	2	13,25	70 x 20 x 9,0	101,73	38 x 10	114,07	
M 14x1,00	2	13,00	70 x 20 x 9,0	78,43	38 x 10	68,20	
M 14x1,25	2	12,80	70 x 20 x 9,0	61,26*	38 x 10	68,20*	
M 14x1,50	2	12,50	70 x 20 x 9,0	47,64	38 x 10	58,06	
M 14x1,75	2	12,25	70 x 20 x 9,0	95,27	38 x 14	194,25	
<b>M 14x2,00</b>	<b>3</b>	<b>12,00</b>	80 x 30 x 9,0	<b>55,08*</b>	38 x 14	<b>45,13*</b>	
M 15x1,00	2	14,00	70 x 20 x 9,0	109,88	45 x 14	73,44	
M 15x1,25	2	13,75	70 x 20 x 9,0	113,85	45 x 14	113,77	
M 15x1,50	2	13,50	70 x 20 x 9,0	101,93	45 x 14	78,68	
<b>M 15x2,00</b>	<b>3</b>	<b>13,00</b>	80 x 30 x 9,0	<b>110,13</b>	45 x 14	<b>98,62</b>	
M 16x1,00	2	15,00	70 x 20 x 9,0	104,04	45 x 14	83,15	
M 16x1,25	2	14,75	70 x 20 x 9,0	109,51	45 x 14	69,96	
M 16x1,50	2	14,50	70 x 20 x 9,0	59,28*	45 x 14	65,31*	
<b>M 16x2,00</b>	<b>3</b>	<b>14,00</b>	80 x 32 x 9,0	<b>78,81*</b>	45 x 18	<b>61,19*</b>	
M 17x1,00	2	16,00	70 x 20 x 9,0	168,03	45 x 14	118,99	
M 17x1,25	2	15,75	70 x 20 x 9,0	168,03	45 x 14	118,99	
<b>M 17x1,50</b>	<b>2</b>	<b>15,50</b>	70 x 20 x 9,0	<b>168,03</b>	45 x 14	<b>118,99</b>	
M 18x1,00	2	17,00	80 x 22 x 11,0	115,67	45 x 14	87,92	
M 18x1,25	2	16,75	80 x 22 x 11,0	165,12	45 x 14	91,45	

\* Consulte o preço dos jogos de machos e caçonetes à esquerda disponíveis na Pag.188

\* Sobrecurso por caçonetes abertos +20% sobre os preços indicados.

JOGOS DE MACHOS E CAÇONETES HSS PARA ROSCAGEM MANUAL

DIN 13

60°

Ref. M0

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DIN 352

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TOL 6H

(M)

Ref. C5

HSS

DIN 223

TOL 6g

		M0					C5								
		Uds.	Ø	L1 x L2 x L3 mm	€	Ø x L3 mm	€			Uds.	Ø	L1 x L2 x L3 mm	€	Ø x L3 mm	€
M 18x1,50	2	16,50	80 x 22 x 11,0	78,10	45 x 14	79,10	M 33x3,50	3	29,5	125 x 50 x 20,0	378,72*	65 x 25	140,34*		
M 18x2,00	2	16,00	80 x 22 x 11,0	124,66*	45 x 14	88,38*	M 34x1,50	2	32,5	100 x 25 x 22,0	389,17	65 x 18	160,62		
<b>M 18x2,50</b>	<b>3</b>	<b>15,50</b>	95 x 40 x 11,0	104,01*	45 x 18	61,22*	M 34x2,00	2	32,0	100 x 25 x 22,0	465,42	65 x 18	366,63		
M 19x1,00	2	18,00	80 x 22 x 11,0	243,86	45 x 14	147,58	M 35x1,50	2	33,5	100 x 25 x 22,0	415,50	65 x 18	166,60		
M 19x1,25	2	17,75	80 x 22 x 11,0	243,86	45 x 14	166,91	M 35x2,00	2	33,0	100 x 25 x 22,0	465,42	65 x 18	285,90		
M 19x1,50	2	17,50	80 x 22 x 11,0	243,86	45 x 14	147,58	M 36x1,50	2	34,5	100 x 25 x 22,0	405,66	65 x 18	157,71		
M 19x2,00	2	17,00	80 x 22 x 11,0	289,49	45 x 14	168,60	M 36x2,00	2	34,0	125 x 33 x 22,0	534,30	65 x 18	164,49		
M 20x1,00	2	19,00	80 x 22 x 12,0	157,47	45 x 14	87,92	M 36x3,00	2	33,0	125 x 33 x 22,0	692,36*	65 x 25	165,03*		
M 20x1,25	2	18,75	80 x 22 x 12,0	242,97	45 x 14	190,82	<b>M 36x4,00</b>	<b>3</b>	<b>32,0</b>	150 x 53 x 22,0	487,58*	65 x 25	143,08*		
M 20x1,50	2	18,50	80 x 22 x 12,0	97,81	45 x 14	80,93	M 38x1,50	2	36,5	100 x 25 x 22,0	468,86	75 x 20	240,97		
M 20x2,00	2	18,00	80 x 22 x 12,0	132,04*	45 x 14	87,92*	M 38x2,00	2	36,0	125 x 25 x 22,0	631,04	75 x 20	356,06		
<b>M 20x2,50</b>	<b>3</b>	<b>17,50</b>	95 x 40 x 12,0	116,68*	45 x 18	60,26*	M 39x1,50	2	37,5	110 x 25 x 24,0	620,57	75 x 20	239,69		
M 21x1,00	2	20,00	80 x 22 x 12,0	312,44	45 x 14	180,80	M 39x2,00	2	37,0	125 x 23 x 24,0	620,57	75 x 20	253,12		
M 21x1,25	2	19,75	80 x 22 x 12,0	312,44	45 x 14	180,80	M 39x3,00	2	36,0	125 x 33 x 24,0	598,60*	75 x 30	258,53*		
M 21x1,50	2	19,50	80 x 22 x 12,0	243,22	45 x 14	191,12	<b>M 39x4,00</b>	<b>3</b>	<b>35,0</b>	150 x 53 x 24,0	545,57*	75 x 30	217,63*		
M 22x1,00	2	21,00	80 x 22 x 14,5	176,48	55 x 16	118,35	M 40x1,50	2	38,5	110 x 25 x 24,0	550,60	75 x 20	251,78		
M 22x1,25	2	20,75	80 x 22 x 14,5	240,63	55 x 16	192,87	M 40x2,00	2	38,0	125 x 33 x 24,0	606,32	75 x 20	233,80		
M 22x1,50	2	20,50	80 x 22 x 14,5	107,57	55 x 16	101,81	M 40x3,00	2	37,0	125 x 33 x 24,0	604,10	75 x 30	254,99		
M 22x2,00	2	20,00	80 x 22 x 14,5	171,59*	55 x 16	113,28*	M 42x1,50	2	40,5	110 x 25 x 24,0	598,49	75 x 20	279,95		
<b>M 22x2,50</b>	<b>3</b>	<b>19,50</b>	100 x 40 x 14,5	155,42*	55 x 22	90,55*	M 42x2,00	2	40,0	125 x 33 x 24,0	709,47	75 x 20	296,02		
M 23x1,00	2	22,00	80 x 22 x 14,5	315,16	55 x 16	195,57	M 42x3,00	2	39,0	125 x 33 x 24,0	712,52	75 x 30	279,95		
M 23x1,50	2	21,50	80 x 22 x 14,5	313,93	55 x 16	231,86	<b>M 42x4,50</b>	<b>3</b>	<b>37,5</b>	150 x 53 x 24,0	682,61	75 x 30	217,61		
M 24x1,00	2	23,00	90 x 22 x 14,5	190,42	55 x 16	115,43	M 45x1,50	2	43,5	110 x 25 x 29,0	653,71	90 x 22	327,13		
M 24x1,25	2	22,75	90 x 22 x 14,5	311,22	55 x 16	153,25	M 45x2,00	2	43,0	125 x 33 x 29,0	852,03	90 x 22	355,13		
M 24x1,50	2	22,50	90 x 22 x 14,5	137,13	55 x 16	103,73	M 45x3,00	2	42,0	125 x 33 x 29,0	852,03	90 x 36	370,53		
M 24x2,00	2	22,00	90 x 22 x 14,5	204,61*	55 x 16	115,43*	<b>M 45x4,50</b>	<b>3</b>	<b>40,5</b>	160 x 60 x 29,0	788,03	90 x 36	337,20		
<b>M 24x3,00</b>	<b>3</b>	<b>21,00</b>	110 x 50 x 14,5	185,38*	55 x 22	90,55*	M 48x1,50	2	46,5	140 x 33 x 29,0	729,83	90 x 22	319,67		
M 25x1,00	2	24,00	90 x 22 x 14,5	268,63	55 x 16	175,18	M 48x2,00	2	46,0	140 x 33 x 29,0	1.113,54	90 x 22	350,15		
M 25x1,25	2	23,75	90 x 22 x 14,5	351,81	55 x 16	230,66	M 48x3,00	2	45,0	140 x 33 x 29,0	1.032,49	90 x 36	337,79		
M 25x1,50	2	23,50	90 x 22 x 14,5	253,44	55 x 16	150,69	<b>M 48x5,00</b>	<b>3</b>	<b>43,0</b>	180 x 65 x 29,0	948,78	90 x 36	337,60		
M 25x2,00	2	23,00	90 x 22 x 14,5	458,14	55 x 16	224,26	M 50x1,50	2	48,5	140 x 33 x 29,0	798,16	90 x 22	333,33		
M 26x1,00	2	25,00	90 x 22 x 14,5	240,13	55 x 16	173,63	M 50x3,00	2	57,0	140 x 33 x 29,0	1.065,89	90 x 22	363,28		
M 26x1,50	2	24,50	90 x 22 x 14,5	225,30	55 x 16	139,98	M 52x1,50	2	50,5	140 x 33 x 32,0	837,23	90 x 22	340,38		
M 26x2,00	2	24,00	90 x 22 x 14,5	264,35	55 x 16	196,21	M 52x2,00	2	50,0	140 x 33 x 32,0	1.214,75	90 x 22	395,57		
M 27x1,00	2	26,00	90 x 22 x 16,0	264,37	65 x 18	156,19	M 52x3,00	2	49,0	140 x 33 x 32,0	1.118,40	90 x 36	431,67		
M 27x1,50	2	25,50	90 x 22 x 16,0	255,26	65 x 18	156,86	<b>M 52x5,00</b>	<b>3</b>	<b>47,0</b>	180 x 65 x 32,0	1.136,36	90 x 36	337,60		
M 27x2,00	2	25,00	90 x 22 x 16,0	283,57*	65 x 18	170,60*	<b>M 56x4,00</b>	<b>2</b>	<b>52,0</b>	180 x 47 x 32,0	1.247,09	105 x 36			
<b>M 27x3,00</b>	<b>3</b>	<b>24,00</b>	110 x 50 x 16,0	234,42*	65 x 25	137,35*	<b>M 56x5,50</b>	<b>3</b>	<b>50,5</b>	200 x 85 x 35,0	1.763,76	105 x 36			
M 28x1,00	2	27,00	90 x 22 x 16,0	446,20	65 x 18	201,90	<b>M 60x5,50</b>	<b>3</b>	<b>54,5</b>	200 x 85 x 35,0	1.832,90	105 x 36			
M 28x1,50	2	26,50	90 x 22 x 16,0	250,28	65 x 18	142,20	<b>M 64x4,00</b>	<b>2</b>	<b>60,0</b>	180 x 50 x 35,0	1.756,34	120 x 36			
M 28x2,00	2	26,00	90 x 22 x 16,0	299,45	65 x 18	199,93	<b>M 64x6,00</b>	<b>3</b>	<b>58,0</b>	220 x 90 x 39,0	2.168,78	120 x 36			
M 30x1,00	2	29,00	90 x 22 x 18,0	277,93	65 x 18	165,52	<b>M 68x6,00</b>	<b>3</b>	<b>62,0</b>	220 x 90 x 39,0	2.596,44	120 x 36			
M 30x1,50	2	28,50	90 x 22 x 18,0	266,73	65 x 18	156,85	<b>M 72x6,00</b>	<b>3</b>	<b>66,0</b>	235 x 90 x 39,0	2.812,95	120 x 36			
M 30x2,00	2	28,00	90 x 22 x 18,0	307,51	65 x 18	173,83									
M 30x3,00	2	27,00	125 x 56 x 18,0	300,62*	65 x 25	193,63*									
<b>M 30x3,50</b>	<b>3</b>	<b>26,50</b>	125 x 50 x 18,0	301,60*	65 x 25	137,70*									
M 32x1,00	2	31,00	90 x 22 x 18,0	366,52	65 x 18	213,79									
M 32x1,50	2	30,50	90 x 22 x 18,0	317,59	65 x 18	162,68									
M 32x2,00	2	30,00	90 x 22 x 18,0	454,59	65 x 18	198,14									
M 33x1,00	2	32,00	100 x 25 x 20,0	584,92	65 x 18	226,37									
M 33x1,50	2	31,50	100 x 25 x 20,0	339,67	65 x 18	153,93									
M 33x2,00	2	31,00	100 x 25 x 20,0	428,84	65 x 18	154,99									
M 33x3,00	2	30,00	125 x 56 x 20,0	541,12*	65 x 25	239,18*									

CAÇONETES COM MEDIDA EXTERIOR EM POLEGADAS					
			C5		
	Ø x L3 mm	€		Ø x L3 mm	€
M 3x0,50	25,4 x 9,5	25,32	M 8x1,25	38,1 x 12,7	26,88
M 4x0,70	25,4 x 9,5	25,32	M 10x1,50	25,4 x 9,5	34,02
M 5x0,80	25,4 x 9,5	25,80	M 10x1,50	38,1 x 12,7	34,02
M 6x1,00	25,4 x 9,5	25,32	M 12x1,75	25,4 x 9,5	40,99
M 8x1,25	25,4 x 9,5	26,88	M 12x1,75	38,1 x 12,7	40,99

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 \* Sobrecusto por caçonetes abertos +20% sobre os preços indicados.



**JOGOS DE MACHOS E CAÇONETES HSS PARA ROSCAGEM MANUAL**

UNC

Ref. M0

HSS

DIN 351

TOL 2B

Ref. C5

HSS

DIN 223

TOL 2a

UNF

Ref. M0

HSS

DIN 2181

TOL 2B

Ref. C5

HSS

DIN 223

TOL 2a



UNC	Uds.	D1 mm	L1 mm	L2 mm	M0		C5	
					€	Ø x L3 mm	€	
UNC nº1-64h.	3	1,85	1,50	36x8x2,1	110,43	16x5		
UNC nº2-56h.	3	2,18	1,80	36x9x2,1	78,04	16x5		
UNC nº3-48h.	3	2,51	2,10	40x9x2,1	78,04	16x5		
UNC nº4-40h.	3	2,84	2,25	40x11x2,7	59,10	20x5	43,85	
UNC nº5-40h.	3	3,17	2,60	40x11x2,7	56,50	20x5	43,97	
UNC nº6-32h.	3	3,50	2,75	45x13x3,0	56,50	20x7	43,97	
UNC nº8-32h.	3	4,17	3,50	45x13x3,4	56,50	20x7	43,97	
UNC nº10-24h.	3	4,83	3,90	50x16x4,9	56,50	20x7	43,97	
UNC nº12-24h.	3	5,49	4,50	50x19x4,9	56,50	20x7	43,97	
UNC 1/4-20h.	3	6,35	5,10	50x19x4,9	48,42*	20x7	41,44*	
UNC 5/16-18h.	3	7,94	6,60	56x22x4,9	54,97*	25x9	42,52*	
UNC 3/8-16h.	3	9,52	8,00	70x24x5,5	62,54*	30x11	59,12*	
UNC 7/16-14h.	3	11,11	9,40	70x24x6,2	81,44	38x14	59,12	
UNC 1/2-13h.	3	12,70	10,75	75x29x7,0	93,70*	38x14	60,77*	
UNC 9/16-12h.	3	14,28	12,20	80x30x9,0	110,62	38x14	63,60	
UNC 5/8-11h.	3	15,87	13,50	80x32x9,0	152,56*	45x18	86,21*	
UNC 3/4-10h.	3	19,05	16,50	95x40x11,0	207,87*	45x18	86,21*	
UNC 7/8-9h.	3	22,22	19,50	100x40x14,5	255,89	55x22	120,36	
UNC 1"-8h.	3	25,40	22,25	110x50x14,5	345,54*	55x22	115,72*	
UNC 1.1/8-7h.	3	28,57	25,00	125x56x18,0	520,99	65x25	171,90	
UNC 1.1/4-7h.	3	31,75	28,00	125x56x18,0	655,77	65x25	171,90	
UNC 1.3/8-6h.	3	34,92	30,75	150x63x22,0	831,92	65x25	171,90	
UNC 1.1/2-6h.	3	38,10	34,00	150x63x24,0	1.021,43	75x30	268,02	
UNC 2"-4,5h.	3	50,80	45,00	180x75x32,0	2.200,08	90x36		

UNF	Uds.	D1 mm	L1 mm	L2 mm	M0		C5	
					€	Ø x L3 mm	€	
UNF nº2-64h.	2	2,18	1,85	36x8x2,1	70,71			
UNF nº3-56h.	2	2,51	2,15	40x9x2,1	70,71			
UNF nº4-48h.	2	2,84	2,35	40x9x2,7	44,06	20x5	45,57	
UNF nº5-44h.	2	3,17	2,70	45x10x2,7	44,06	20x5	43,97	
UNF nº6-40h.	2	3,50	2,95	45x16x3,0	42,11	20x5	43,97	
UNF nº8-36h.	2	4,17	3,50	50x12x3,4	42,11	20x7	43,97	
UNF nº10-32h.	2	4,83	4,10	50x12x4,9	42,11	20x7	43,97	
UNF nº12-28h.	2	5,49	4,60	50x12x4,9	44,06	20x7	43,97	
UNF 1/4-28h.	2	6,35	5,50	50x14x4,9	32,14*	25x9	38,82*	
UNF 5/16-24h.	2	7,94	6,90	56x22x4,9	34,41*	25x9	43,33*	
UNF 3/8-24h.	2	9,52	8,50	63x20x5,5	39,73*	38x10	59,12*	
UNF 7/16-20h.	2	11,11	9,90	63x20x6,2	52,72	38x10	58,00	
UNF 1/2-20h.	2	12,70	11,50	70x22x7,0	53,94*	38x10	63,19*	
UNF 9/16-18h.	2	14,29	12,90	70x22x9,0	70,29	38x10	66,15	
UNF 5/8-18h.	2	15,87	14,50	70x22x9,0	90,80*	45x14	86,21*	
UNF 3/4-16h.	2	19,05	17,50	80x22x11,0	121,96*	45x14	86,21*	
UNF 7/8-14h.	2	22,22	20,40	80x22x14,5	156,74*	55x16	115,72*	
UNF 1"-12h.	2	25,40	23,25	90x22x16,0	207,83	55x16	115,72	
UNF 1"-14h.	2	25,40	23,60	90x22x14,5	230,23*	55x16	125,74*	
UNF 1.1/8-12h.	2	28,57	26,50	90x22x18,0	306,75	65x18	140,93	
UNF 1.1/4-12h.	2	31,75	29,50	90x22x20,0	374,63	65x18	178,78	
UNF 1.3/8-12h.	2	34,92	32,80	125x35x22,0	505,42	65x18	187,15	
UNF 1.1/2-12h.	2	38,10	36,00	125x40x22,0	638,51	75x20	268,02	
UNF 2"-12h.	2	50,80	48,38	140x40x29,0	1.579,94	90x22		

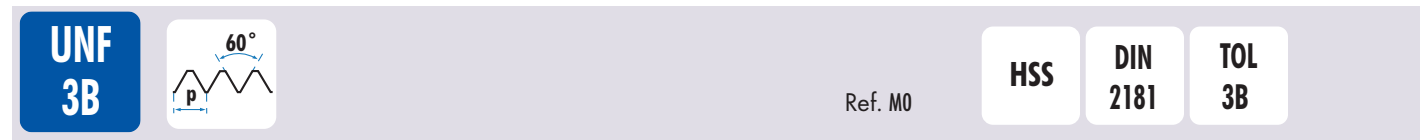


JOGOS DE MACHOS E CAÇONETES HSS E HSSCO PARA ROSCAGEM MANUAL



Machos e Caçonetes  
Verde Rosa

Ref. M0	Uds.	D1 mm	L1 x L2 x mm	M0		C5		Ref. MOT	Uds.	MOT		C5T		Ref. MOX	Uds.	MOX		Ref. CSX	CSX	
				HSS	€	HSS	€			HSS	€	HSS	€			HSSCo	OX		HSSCo	OX
G 1/8-28h.	2	9,73	8,80	63 x 20 x 5,5	35,93*	38 x 10	52,86*	G 1/8-28 h.	2	78,20	98,55	89,85	67,01							
G 1/4-19h.	2	13,16	11,80	70 x 22 x 9,0	50,64*	38 x 10	52,58*	G 1/4-19 h.	2	142,27	101,99	161,46	69,12							
G 3/8-19h.	2	16,66	15,25	70 x 22 x 9,0	63,57*	45 x 14	69,64*	G 3/8-19 h.	2	173,58	114,73	200,57	82,22							
G 1/2-14h.	2	20,95	19,00	80 x 22 x 12,0	89,16*	45 x 14	69,64*	G 1/2-14 h.	2	244,64	129,87	270,62	90,98							
G 5/8-14h.	2	22,91	21,00	80 x 22 x 14,5	114,08*	55 x 16	96,61*													
G 3/4-14h.	2	26,44	24,50	90 x 22 x 16,0	139,17*	55 x 16	125,76*	G 3/4-14 h.	2	320,95	211,59	388,44	155,18							
G 7/8-14h.	2	30,20	28,25	90 x 22 x 18,0	187,36	65 x 18	149,71													
G 1"-11h.	2	33,25	30,75	100 x 25 x 20,0	220,63*	65 x 18	151,16*	G 1" -11 h.	2	559,37	282,63	638,89	185,39							
G 1.1/8-11h.	2	37,90	35,50	125 x 40 x 22,0	352,09	75 x 20	213,34													
G 1.1/4-11h.	2	41,91	39,50	125 x 40 x 24,0	383,69*	75 x 20	209,42*													
G 1.3/8-11h.	2	44,32	42,00	125 x 40 x 29,0	521,14	90 x 22	328,17													
G 1.1/2-11h.	2	47,80	45,25	140 x 40 x 29,0	579,86	90 x 22	316,12													
G 1.3/4-11h.	2	53,75	51,25	140 x 40 x 32,0	964,01	105 x 22	328,17													
G 2"-11h.	2	59,61	57,00	160 x 40 x 35,0	1.071,90	105 x 22	394,95													
G 2.1/4-11h.	2	65,71	63,00	160 x 40 x 39,0	1.770,67	105 x 22														
G 2.1/2-11h.	2	75,18	72,50	160 x 40 x 39,0	2.661,51	120 x 22														
G 2.3/4-11h.	2	81,53	79,00	160 x 40 x 39,0	3.227,33	120 x 22														
G 3"-11h.	2	87,88	85,50	160 x 40 x 39,0	3.358,99	150 x 25														
G 4"-11h.	2	113,03	110,50	180 x 45 x 44,0	5.094,44	180 x 25														



Ref. M0	Uds.	D1 mm	L1 x L2 x mm	€
UNF n°4-48-3B	2	2,84	40x9x2,7	56,12
UNF n°5-44-3B	2	3,17	45x10x2,7	56,12
UNF n°6-40-3B	2	3,50	45x16x3,0	52,94
UNF n°8-36-3B	2	4,17	50x12x3,4	52,94
UNF n°10-32-3B	2	4,83	50x12x4,9	52,94
UNF n°12-28-3B	2	5,49	50x12x4,9	56,12
UNF 1/4-28-3B	2	6,35	50x14x4,9	40,93
UNF 5/16-24-3B	2	7,94	56x22x4,9	43,82
UNF 3/8-24-3B	2	9,52	63x20x5,5	50,59
UNF 7/16-20-3B	2	11,11	63x20x6,2	67,16
UNF 1/2-20-3B	2	12,70	70x22x7,0	68,70

\* Consulte o preço dos jogos de machos e caçonetes à esquerda disponíveis na Pag.188

**JOGOS DE MACHOS E CAÇONETES HSS PARA ROSCAGEM MANUAL**

Machos e Caçonetes

Rosa  
Verde

**BSW**

Ref. M0

HSS

DIN 351

TOL  
Clase 2

Ref. C5

HSS

DIN 223

**BSF**

Ref. M0

HSS

DIN 5157

TOL  
ISO 228

Ref. C5

HSS

DIN 223



Icon	Uds.	D1 mm	Ø	L1 x L2 x Ø mm	M0		C5	
					€	Ø x L3 mm	€	€
W 1/16-60h.	3	1,59	1,15	32x8x2,1	60,71	16x5	81,70	
W 3/32-48h.	3	2,38	1,80	40x9x2,1	44,39	20x5	42,16	
W 1/8-40h.	3	3,17	2,55	40x14x2,7	31,88*	25x9	33,27*	
W 5/32-32h.	3	3,97	3,10	45x17x3,4	32,21	25x9	33,94	
W 3/16-24h.	3	4,76	3,60	50x19x4,9	31,88	25x9	33,27	
W 7/32-24h.	3	5,55	4,40	50x19x4,9	52,44	25x9	43,46	
W 1/4-20h.	3	6,35	5,10	50x20x4,9	35,91*	25x9	33,94*	
W 5/16-18h.	3	7,94	6,50	56x20x4,9	43,86*	25x9	35,40*	
W 3/8-16h.	3	9,52	7,90	63x22x5,5	48,19*	38x10	51,23*	
W 7/16-14h.	3	11,11	9,25	70x22x6,2	64,69	38x10	51,30	
W 1/2-12h.	3	12,70	10,50	75x25x7,0	69,42	38x14	50,34	
W 9/16-12h.	3	14,29	12,00	80x26x9,0	94,44	38x14	61,48	
W 5/8-11h.	3	15,87	13,40	80x27x9,0	108,60*	45x18	73,11*	
W 11/16-11h.	3	17,46	15,25	95x32x11,0	255,93	45x18	120,43	
W 3/4-10h.	3	19,05	16,50	95x32x11,0	154,60*	45x18	73,22*	
W 7/8-9h.	3	22,22	19,25	100x32x14,5	211,14*	55x22	107,66*	
W 1"-8h.	3	25,40	21,75	110x36x14,5	258,75*	55x22	108,64*	
W 1.1/8-7h.	3	28,57	24,75	125x40x18,0	383,52	65x25	171,07	
W 1.1/4-7h.	3	31,75	27,75	125x40x18,0	464,02	65x25	171,14	
W 1.3/8-6h.	3	34,92	30,50	150x50x22,0	577,03	65x25	174,30	
W 1.1/2-6h.	3	38,10	33,50	150x50x24,0	694,72	75x30	264,95	
W 1.5/8-5h.	3	41,27	46,50	150x56x24,0	966,99	75x30	329,91	
W 1.3/4-5h.	3	44,45	39,00	160x58x29,0	1.190,14	90x36	415,20	
W 1.7/8-4,5h.	3	47,62	42,00	180x65x29,0	1.537,13	90x36	454,32	
W 2"-4,5h.	3	50,80	44,50	180x65x32,0	1.613,72	90x36	476,13	
W 2.1/4-4h.	3	57,15	50,00	200x85x35,0	2.673,86	105x36		
W 2.1/2-4h.	3	63,50	56,50	220x85x39,0	3.252,80	120x36		
W 2.3/4-3,5h.	3	69,85	62,00	250x90x44,0	4.644,61	120x36		
W 3"-3,5h.	3	76,20	68,00	250x90x44,0	5.373,30	140x36		

Icon	Uds.	D1 mm	Ø	L1 x L2 x Ø mm	M0		C5	
					€	Ø x L3 mm	€	€
BSF 3/16-32h.	2	4,76	4,0	50x19x4,9	119,98	20x7	43,78	
BSF 1/4-26h.	2	6,35	5,2	50x20x4,9	48,80	20x7	48,48	
BSF 5/16-22h.	2	7,94	6,6	56x20x4,9	56,90	25x9	49,03	
BSF 3/8-20h.	2	9,52	8,1	63x22x5,5	65,85	30x11	94,18	
BSF 7/16-18h.	2	11,11	9,5	70x22x6,2	79,02	30x11	93,31	
BSF 1/2-16h.	2	12,70	11,0	75x25x7,0	89,40	38x10	81,43	
BSF 9/16-16h.	2	14,29	12,5	80x26x9,0	107,16	38x10	85,93	
BSF 5/8-14h.	2	15,88	14,0	80x26x9,0	140,23	45x14	133,96	
BSF 3/4-12h.	2	19,05	16,5	95x33x11,0	214,34	45x14	135,20	
BSF 7/8-11h.	2	22,23	19,5	100x33x14,5	255,83	55x22	181,31	
BSF 1"-10h.	2	25,40	22,5	110x40x14,5	359,11	55x22	179,30	
BSF 1.1/8-9h.	2	28,57	25,5	110x40x16,0	810,29			
BSF 1.1/4-9h.	2	31,75	28,5	125x46x18,0	925,10			
BSF 1.1/2-8h.	2	38,10	34,5	150x55x22,0	1.409,91			

**BSW**

**INOX**

**TiN**

Icon	Uds.	L1 x L2 x Ø mm	M0T		C5T	
			€	Ø x L3 mm	€	€
W 3/16-24 h.	3	50 x 19 x 4,90	60,87	25x9	60,84	
W 1/4-20 h.	3	50 x 20 x 4,90	68,14	25x9	61,96	
W 5/16-18 h.	3	56 x 20 x 4,90	74,66	25x9	64,41	
W 3/8-16 h.	3	63 x 22 x 5,50	87,87	38x10	76,14	
W 1/2-12 h.	3	75 x 25 x 7,00	124,00	38x14	102,29	

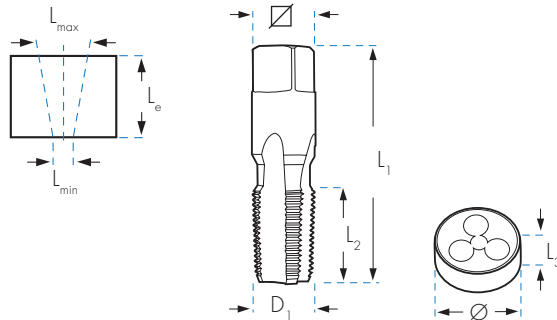






\* Consulte o preço dos jogos de machos e caçonetes à esquerda disponíveis na Pag.188

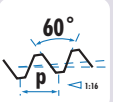
MACHOS E CAÇONETES HSS PARA ROSCAGEM MANUAL

**NPTF**  Rosca AMERICANA  
Rosca Cônica estanque

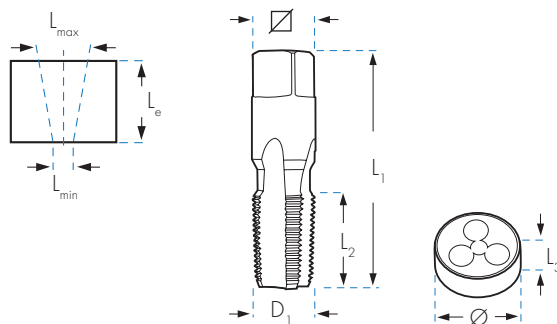
Ref. M0 **HSS** Ref. C5 **HSS** **DIN 223**



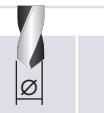




							M0	C5		
		Uds.	D <sub>1</sub> mm		L <sub>min</sub> x L <sub>max</sub> mm	L <sub>e</sub> mm	L <sub>1</sub> x L <sub>2</sub> x  mm	€	Ø x L <sub>3</sub> mm	€
NPTF 1/8-27 h.		1	10,22	8,5	8,30 x 8,76	12,0	54 x 19 x 8,0	97,82	38 x 10	213,61
NPTF 1/4-18 h.		1	13,58	11,0	10,70 x 11,40	17,5	62 x 27 x 11,0	137,10	38 x 15	213,61
NPTF 3/8-18 h.		1	17,02	14,5	14,20 x 14,84	17,6	65 x 27 x 13,0	189,25	45 x 14	278,91
NPTF 1/2-14 h.		1	21,21	17,8	17,40 x 18,33	22,8	80 x 35 x 13,0	264,64	45 x 20	278,91
NPTF 3/4-14 h.		1	26,56	23,0	22,80 x 23,68	23,0	83 x 35 x 17,0	404,52	55 x 22	531,58
NPTF 1"-11,5 h.		1	33,19	29,0	28,60 x 29,72	27,4	110 x 38 x 20,0	538,83		

**NPT**  Rosca AMERICANA  
Rosca cônica não estanque

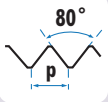
Ref. M0 **HSS** Ref. C5 **HSS** **DIN 223**



								M0	C5		
		Uds.	D <sub>1</sub> mm			L <sub>min</sub> x L <sub>max</sub> mm	L <sub>e</sub> mm	L <sub>1</sub> x L <sub>2</sub> x  mm	€	Ø x L <sub>3</sub> mm	€
NPT 1/16-27 h.		1	7,89	6,20	EMNPT1/16	6,00 x 6,38	12,0	54 x 18 x 6,0	37,14	25 x 9	122,79
NPT 1/8-27 h.		1	10,24	8,50	EMNPT1/8	8,30 x 8,73	12,0	65 x 19 x 5,5	37,14	30 x 11	90,79
NPT 1/4-18 h.		1	13,62	11,00	EMNPT1/4	10,70 x 11,35	17,5	62 x 27 x 11,0	52,11	38 x 14	90,79
NPT 3/8-18 h.		1	17,05	14,50	EMNPT3/8	14,20 x 14,80	17,6	65 x 27 x 13,0	71,91	45 x 18	118,52
NPT 1/2-14 h.		1	21,23	17,80	EMNPT1/2	17,40 x 18,32	22,8	80 x 35 x 13,0	100,55	45 x 18	118,52
NPT 3/4-14 h.		1	26,57	23,00	-	22,80 x 23,66	23,0	83 x 35 x 17,0	153,72	55 x 22	216,82
NPT 1"-11,5 h.		1	33,23	29,00	-	28,60 x 29,69	27,4	95 x 44 x 21,0	171,20	65 x 25	260,65
NPT 1.1/4-11,5 h.		1	41,98	37,50	-	37,40 x 38,45	28,1	125 x 33 x 24,0	280,70	75 x 26	323,90
NPT 1.1/2-11,5 h.		1	48,05	44,00	-	43,40 x 44,52	28,4	140 x 33 x 29,0	426,53	90 x 27	451,90
NPT 2"-11,5 h.		1	60,09	56,00	-	55,50 x 56,56	28,4	160 x 33 x 35,0	665,90	105 x 36	629,16
NPT 2.1/2"-8h.		1	73,03	67,00	-	68,68 x 69,08	28,9	200 x 45 x 39,0	813,66		
NPT 3"-8h.		1	88,90	82,00	-	84,45 x 84,86	30,5	220 x 48 x 39,0	1.143,70		

\* Veja mandril previo pag.137.

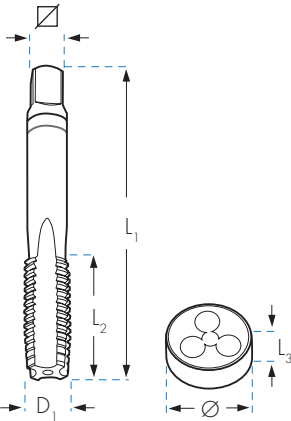


**MACHOS E CAÇONETES HSS PARA ROSCAGEM MANUAL**
**PG**


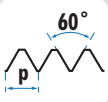
Ref. M0

**HSS**
**DIN  
40430**

Ref. C5

**HSS**
**DIN  
223**


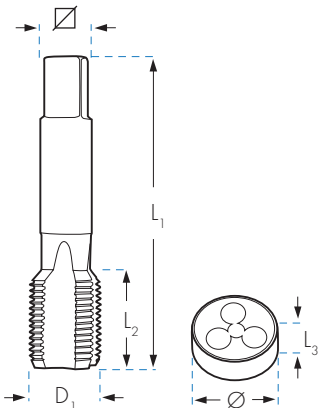
	Uds.	D <sub>1</sub> mm		L <sub>1</sub> x L <sub>2</sub> x $\nabla$ mm	M0		C5	
					€	Ø x L <sub>3</sub> mm	€	
Pg 7	20h.	1	12,5	11,50	70x20x7,0	35,61	38x10	65,48
Pg 9	18h.	1	15,2	14,00	70x20x9,0	45,27	38x10	65,48
Pg 11	18h.	1	18,6	17,25	80x22x11,0	62,86	45x14	81,98
Pg 13,5	18h.	1	20,4	19,00	80x22x12,0	68,93	45x14	81,98
Pg 16	18h.	1	22,5	21,25	80x22x14,5	82,79	55x16	105,76
Pg 21	16h.	1	28,3	27,00	90x22x18,0	121,74	65x18	150,33
Pg 29	16h.	1	37,0	35,50	100x25x22,0	241,73	65x18	150,33
Pg 36	16h.	1	47,0	45,50	140x32x29,0	396,70	90x22	385,31
Pg 42	16h.	1	54,0	52,50	140x36x32,0	471,11	105x22	385,31
Pg 48	16h.	1	59,3	58,00	160x36x35,0	594,16	105x22	510,96

**NPSF**

 Rosca AMERICANA  
 Rosca Cilíndrica estanque

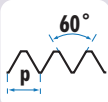
Ref. M0

**HSS**

Ref. C5

**HSS**
**DIN  
223**


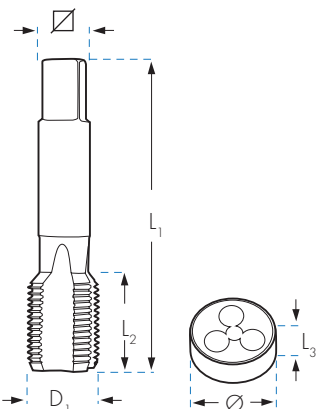
	Uds.	D <sub>1</sub> mm		L <sub>1</sub> x L <sub>2</sub> x $\nabla$ mm	M0		C5	
					€	Ø x L <sub>3</sub> mm	€	
NPSF 1/8-27 h.	1	10,05	8,75	63x18x5,5	147,30	38x10	256,60	
NPSF 1/4-18 h.	1	13,35	11,30	70x20x9,0	212,85	38x10	256,60	
NPSF 3/8-18 h.	1	16,78	14,70	70x20x9,0	294,42	45x14	326,43	
NPSF 1/2-14 h.	1	20,87	18,20	80x22x12,0	384,88	45x14	326,43	
NPSF 3/4-14 h.	1	26,23	23,50	90x22x16,0	585,61	55x16	705,59	

**NPS  
(M)**

 Rosca AMERICANA  
 Rosca Cilíndrica não estanque

Ref. M0

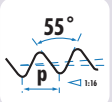
**HSS**

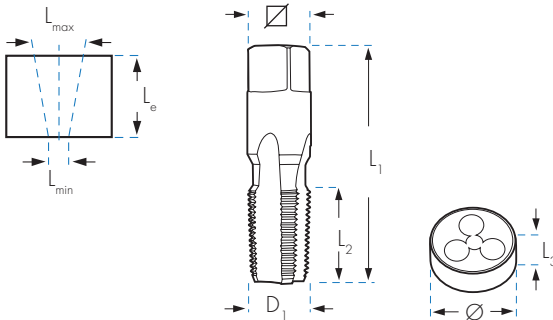
Ref. C5





**HSS**
**DIN  
223**


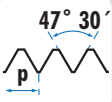
	Uds.	D <sub>1</sub> mm		L <sub>1</sub> x L <sub>2</sub> x $\nabla$ mm	M0		C5	
					€	Ø x L <sub>3</sub> mm	€	
NPS 1/8-27 h.	1	10,20	8,9	63x18x5,5	122,05	38x10	213,78	
NPS 1/4-18 h.	1	13,60	11,7	70x20x9,0	97,13	38x10	213,78	
NPS 3/8-18 h.	1	17,00	15,0	70x20x9,0	134,34	45x14	272,01	
NPS 1/2-14 h.	1	21,20	18,6	80x22x12,0	175,59	45x14	272,01	
NPS 3/4-14 h.	1	26,55	24,0	90x22x16,0	254,99	55x16	538,85	
NPS 1"-11,5 h.	1	33,20	30,0	100x25x20,0	356,54	65x18	543,05	

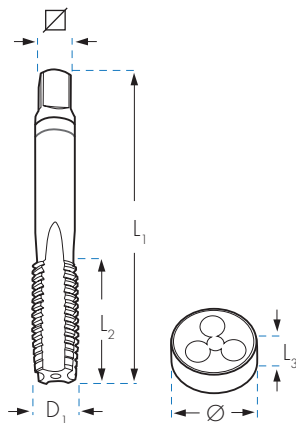
**JOGOS DE MACHOS E CAÇONETES HSS PARA ROSCAGEM MANUAL**





**BSPT**  Ref. M0 **HSS** **DIN 5157** Ref. C5 **HSS** **DIN 223**



		Uds.	D <sub>1</sub> mm		L <sub>min</sub> x L <sub>max</sub> mm	L <sub>e</sub> mm	L <sub>1</sub> x L <sub>2</sub> x  mm	€	Ø x L <sub>3</sub> mm	€
BSPT 1/8-28 h.		1	9,73	8,30	8,00 x 8,50	10,1	65 x 19 x 5,5	33,25	30 x 11	99,12
BSPT 1/4-19 h.		1	13,16	11,00	10,70 x 11,35	15,0	70 x 25 x 9,0	46,85	38 x 14	99,12
BSPT 3/8-19 h.		1	16,66	14,50	14,15 x 14,25	15,4	70 x 25 x 9,0	65,06	45 x 16	129,09
BSPT 1/2-14 h.		1	20,95	18,10	17,60 x 18,50	20,5	80 x 31 x 12,0	91,10	55 x 22	129,09
BSPT 5/8-14 h.		1	22,91	20,00	19,50 x 20,40	22,4	80 x 36 x 14,5	159,76	55 x 19	269,37
BSPT 3/4-14 h.		1	26,44	23,50	23,00 x 24,00	21,8	85 x 33 x 16,0	148,65	55 x 22	243,78
BSPT 7/8-14 h.		1	30,20	27,25	26,65 x 28,75	24,0	100 x 36 x 18,0	281,71	65 x 22	351,92
BSPT 1"-11 h.		1	33,25	29,60	29,00 x 30,20	26,0	110 x 38 x 20,0	235,42	65 x 25	281,51

**BA**  Ref. M0 **HSS** **DIN 352** Ref. C5 **HSS** **DIN 223**



		Uds.	D <sub>1</sub> mm		L <sub>1</sub> x L <sub>2</sub> x  mm	€	Ø x L <sub>3</sub> mm	€	
BA-0		1,00	3	6,0	5,1	50 x 18 x 4,9	207,17	20 x 5	161,97
BA-1		0,90	3	5,3	4,5	50 x 18 x 4,9	207,17	20 x 5	161,97
BA-2		0,81	3	4,7	4,0	50 x 17 x 4,9	207,17	20 x 5	161,97
BA-3		0,73	3	4,1	3,4	45 x 14 x 3,4	222,63	20 x 5	161,97
BA-4		0,66	3	3,6	3,0	45 x 14 x 3,0	222,63	20 x 5	161,97
BA-5		0,59	3	3,2	2,6	45 x 14 x 3,0	266,01	20 x 5	161,97
BA-6		0,53	3	2,8	2,3	40 x 12 x 2,7	266,01	20 x 5	161,97
BA-7		0,48	3	2,5	2,0	40 x 10 x 2,1	292,46	20 x 5	161,97
BA-8		0,43	3	2,2	1,8	36 x 10 x 2,1	292,46	20 x 5	161,97

**JOGOS DE MACHOS E CAÇONETES HSS PARA ROSCAGEM MANUAL**

Machos e Caçonetes

Verde

UNx8



60°  
Rosca AMERICANA

**HSS**  
**DIN 2181**  
**TOL 2B**

Ref. M0

**HSS**  
**DIN 223**  
**TOL 2a**

Ref. C5



	Uds.	D1 mm	Ø	L1 x L2 x mm	M0		C5	
					€	Ø x L3 mm	€	
UN 1"1/8-8h.	2	28,57	25,40	138x65x170	390,67	65x25	427,89	
UN 1"1/4-8h.	2	31,75	28,50	146x65x19,5	506,63	65x25	427,89	
UN 1"3/8-8h.	2	34,92	31,75	154x76x21,0	630,11	65x25	426,01	
UN 1"1/2-8h.	2	38,10	35,00	162x76x23,5	721,11	75x30	482,28	
UN 1"5/8-8h.	2	41,27	38,10	170x80x25,0	896,53	75x30	504,81	
UN 1"3/4-8h.	2	44,45	41,25	178x81x27,0	1.117,32	90x36	673,10	
UN 1"7/8-8h.	2	47,62	44,45	186x90x29,0	1.393,92	90x36	720,20	
UN 2"-8h.	2	50,80	47,63	194x90x31,5	1.325,21	90x36	729,18	
UN 2"1/4-8h.	2	57,15	54,00	208x90x36,0				
UN 2"1/2-8h.	2	63,50	60,35	220x100x36,0				
UN 2"3/4-8h.	2	69,85	66,70	234x104x39,0				
UN 3"-8h.	2	76,20	73,05	248x115x49,0				

UNEF



60°  
Rosca AMERICANA

**HSS**  
**DIN 2181**  
**TOL 2B**

Ref. M0

**HSS**  
**DIN 223**  
**TOL 2a**

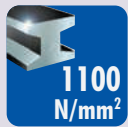
Ref. C5



	Uds.	D1 mm	Ø	L1 x L2 x mm	M0		C5	
					€	Ø x L3 mm	€	
UNEF 1/4-32h.	2	6,35	5,55	65x28x4,9	105,00	20x7	106,61	
UNEF 5/16-32h.	2	7,94	7,15	70x30x6,0	117,31	25x9	106,61	
UNEF 3/8-32h.	2	9,52	8,70	75x33x7,0	134,25	30x11	165,54	
UNEF 7/16-28h.	2	11,11	10,20	81x38x6,0	170,89	30x11	165,54	
UNEF 1/2-28h.	2	12,70	11,80	86x44x7,0	193,10	38x10	165,54	
UNEF 9/16-24h.	2	14,29	13,20	92x44x8,0	157,85	38x10	165,54	
UNEF 5/8-24h.	2	15,87	14,80	93x47x9,0	162,59	45x14	265,34	
UNEF 3/4-20h.	2	19,05	17,80	108x52x11,0	178,94	45x14	265,34	
UNEF 7/8-20h.	2	22,22	20,95	120x58x13,0	271,56	55x16	315,63	
UNEF 1"-20h.	2	25,40	24,20	130x65x15,0	279,32	55x16	324,28	



**JOGOS DE MACHOS E CAÇONETES PARA ROSCAGEM MANUAL APLICAÇÕES ESPECIAIS**



Ref. M0MD

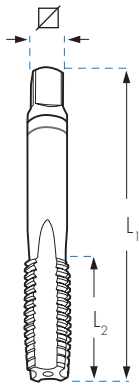
**HSSCo**  
5%



**DIN**  
352

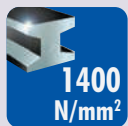
**OX**



ESPECIAL MATERIAIS DUROS  
( ≤ 1100 N/mm<sup>2</sup>=40HRc )



				M0MD
	Uds.		L <sub>1</sub> x L <sub>2</sub> x Ø mm	€
M 3 x 0,50	3	2,50	40 x 11 x 2,7	38,32
M 4 x 0,70	3	3,30	45 x 13 x 3,4	38,32
M 5 x 0,80	3	4,20	50 x 17 x 4,9	39,56
M 6 x 1,00	3	5,00	50 x 19 x 4,9	40,73
M 8 x 1,25	3	6,80	56 x 20 x 4,9	46,31
M 10 x 1,50	3	8,50	70 x 22 x 5,5	59,44
M 12 x 1,75	3	10,20	75 x 24 x 7,0	85,11
M 14 x 2,00	3	12,00	80 x 26 x 9,0	100,74
M 16 x 2,00	3	14,00	80 x 27 x 9,0	133,85
M 18 x 2,50	3	15,50	95 x 30 x 11,0	205,86
M 20 x 2,50	3	17,50	95 x 32 x 12,0	228,55



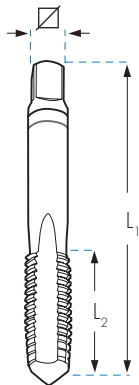
Ref. M0C



**HSS**  
PM

**TiAlSiN**



ESPECIAL MATERIAIS MUITO DUROS  
( ≤ 1400 N/mm<sup>2</sup>=44HRc )



				M0C
	Uds.		L <sub>1</sub> x L <sub>2</sub> x Ø mm	€
M 3 x 0,50	3	2,50	40 x 11 x 2,7	95,43
M 4 x 0,70	3	3,30	45 x 13 x 3,4	102,97
M 5 x 0,80	3	4,20	50 x 17 x 4,9	104,25
M 6 x 1,00	3	5,00	50 x 19 x 4,9	104,25
M 8 x 1,25	3	6,80	56 x 20 x 4,9	117,51
M 10 x 1,50	3	8,50	70 x 22 x 5,5	145,25
M 12 x 1,75	3	10,20	75 x 24 x 7,0	176,57
M 14 x 2,00	3	12,00	80 x 26 x 9,0	216,66
M 16 x 2,00	3	14,00	80 x 27 x 9,0	259,60
M 18 x 2,50	3	15,50	95 x 30 x 11,0	359,92
M 20 x 2,50	3	17,50	95 x 32 x 12,0	396,13

**Al**

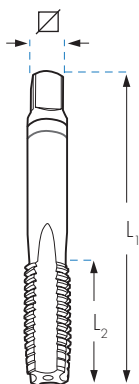
Ref. M0AL



**HSS**

**BRILHANTE**



ESPECIAL ALUMÍNIO



				M0AL
	Uds.		L <sub>1</sub> x L <sub>2</sub> x Ø mm	€
M 3 x 0,50	3	2,50	40 x 11 x 2,7	29,84
M 4 x 0,70	3	3,30	45 x 13 x 3,4	28,97
M 5 x 0,80	3	4,20	50 x 17 x 4,9	30,70
M 6 x 1,00	3	5,00	50 x 19 x 4,9	30,70
M 8 x 1,25	3	6,80	56 x 20 x 4,9	37,68
M 10 x 1,50	3	8,50	70 x 22 x 5,5	46,01
M 12 x 1,75	3	10,20	75 x 24 x 7,0	64,78
M 14 x 2,00	3	12,00	80 x 26 x 9,0	74,44
M 16 x 2,00	3	14,00	80 x 27 x 9,0	105,66
M 18 x 2,50	3	15,50	95 x 30 x 11,0	140,04
M 20 x 2,50	3	17,50	95 x 32 x 12,0	157,87

## JOGOS DE MACHOS E CAÇONETES PARA ROSCAGEM MANUAL DE INOXIDÁVEL

M

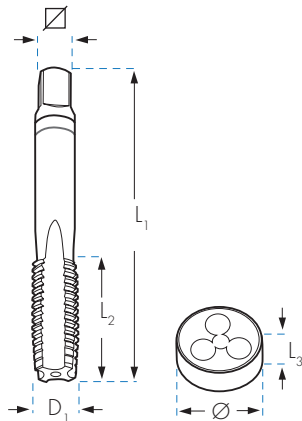
INOX

Ref. MOT  
Ref. MOXDIN  
352TOL  
6H

TiN

Ref. CST  
Ref. CSXDIN  
223TOL  
6g

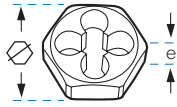
OX



		Uds.	L <sub>1</sub> x L <sub>2</sub> x $\nabla$ mm	MOT	CST	MOX	CSX	Ø x L <sub>3</sub> mm
				HSS	HSS	HSSCo	HSSCo	
				TiN	TiN	OX	OX	
				€	€	€	€	
M	3 x 0,50	3	40 x 11 x 2,70	42,73	62,83	39,41	34,13	20 x 5
M	4 x 0,70	3	45 x 13 x 3,40	44,89	62,83	39,41	34,13	20 x 5
M	5 x 0,80	3	50 x 16 x 4,90	47,63	62,83	41,03	35,78	20 x 7
M	6 x 1,00	3	50 x 19 x 4,90	47,63	62,83	40,90	36,28	20 x 7
M	8 x 1,00	2	50 x 19 x 4,90	41,87				
M	8 x 1,25	3	56 x 22 x 4,90	54,93	64,41	47,60	39,35	25 x 9
M	10 x 1,00	2	63 x 18 x 5,50	48,31				
M	10 x 1,50	3	70 x 24 x 5,50	73,16	84,56	61,24	49,93	30 x 11
M	12 x 1,50	2	70 x 20 x 7,00	61,51				
M	12 x 1,75	3	75 x 29 x 7,00	84,88	93,76	87,70	52,75	38 x 14
M	14 x 1,50	2	70 x 20 x 9,00	73,86				
M	14 x 2,00	3	80 x 30 x 9,00	102,65	93,76	97,12	52,75	38 x 14
M	16 x 2,00	3	80 x 32 x 9,00	128,91	115,54	133,10	70,82	45 x 18
M	18 x 2,50	3	95 x 40 x 11,00	159,80		181,78		
M	20 x 2,50	3	95 x 40 x 12,00	165,71		201,77		
M	22 x 2,50	3	100 x 40 x 14,50	209,62				
M	24 x 3,00	3	110 x 50 x 14,50	252,59				

M

CAÇONETES SEXTAVADOS HSS PARA ROSCAGEM MANUAL



**M** HSS DIN 382

C5HM			C5HM		
		€			€
M 3 x 0,35	18 x 5	40,65	M 16 x 2,00	41 x 18	111,70
<b>M 3 x 0,50</b>	<b>19 x 5</b>	<b>40,65</b>	M 18 x 1,00	41 x 14	111,70
M 3,5 x 0,60	18 x 5	40,65	M 18 x 1,50	41 x 14	111,70
M 4 x 0,50	18 x 5	40,65	<b>M 18 x 2,50</b>	<b>41 x 18</b>	<b>111,70</b>
<b>M 4 x 0,70</b>	<b>19 x 5</b>	<b>40,65</b>	M 20 x 1,00	41 x 14	111,70
M 5 x 0,50	18 x 5	40,65	M 20 x 1,50	41 x 14	111,70
M 5 x 0,75	18 x 5	40,65	M 20 x 2,00	41 x 18	111,70
<b>M 5 x 0,80</b>	<b>19 x 7</b>	<b>40,65</b>	<b>M 20 x 2,50</b>	<b>41 x 18</b>	<b>111,70</b>
M 6 x 0,75	18 x 7	40,65	M 22 x 1,00	50 x 16	141,23
<b>M 6 x 1,00</b>	<b>19 x 7</b>	<b>40,65</b>	M 22 x 1,50	50 x 16	141,23
M 7 x 0,75	21 x 9	43,21	M 22 x 2,00	50 x 16	141,23
M 7 x 1,00	21 x 9	43,21	<b>M 22 x 2,50</b>	<b>50 x 16</b>	<b>141,23</b>
M 8 x 0,75	21 x 9	43,21	M 24 x 1,00	50 x 16	172,01
M 8 x 1,00	21 x 9	43,21	M 24 x 1,50	50 x 16	172,01
<b>M 8 x 1,25</b>	<b>22 x 9</b>	<b>43,21</b>	M 24 x 2,00	50 x 16	172,01
M 9 x 0,75	21 x 9	50,86	<b>M 24 x 3,00</b>	<b>50 x 22</b>	<b>141,23</b>
M 9 x 1,00	21 x 9	50,86	M 27 x 1,50	60 x 18	190,96
<b>M 9 x 1,25</b>	<b>22 x 9</b>	<b>50,86</b>	M 27 x 2,00	60 x 18	190,96
M 10 x 1,00	27 x 11	50,86	<b>M 27 x 3,00</b>	<b>60 x 25</b>	<b>159,13</b>
M 10 x 1,25	27 x 11	50,86	M 30 x 1,00	60 x 18	190,96
<b>M 10 x 1,50</b>	<b>27 x 11</b>	<b>50,86</b>	M 30 x 1,50	60 x 18	190,96
M 11 x 1,00	27 x 11	84,75	M 30 x 2,00	60 x 18	190,96
M 11 x 1,50	27 x 11	84,75	M 30 x 3,00	60 x 18	190,96
M 12 x 1,25	36 x 10	84,75	<b>M 30 x 3,50</b>	<b>60 x 25</b>	<b>159,13</b>
M 12 x 1,50	36 x 10	84,75	M 33 x 1,50	60 x 18	213,82
<b>M 12 x 1,75</b>	<b>36 x 10</b>	<b>71,20</b>	M 33 x 2,00	60 x 18	213,82
M 14 x 1,25	36 x 14	96,30	<b>M 33 x 3,50</b>	<b>60 x 25</b>	<b>178,19</b>
M 14 x 1,50	36 x 10	96,30	M 35 x 1,50	60 x 18	220,43
<b>M 14 x 2,00</b>	<b>36 x 10</b>	<b>71,20</b>	M 36 x 1,50	60 x 18	220,43
M 15 x 1,00	36 x 14	111,70	M 36 x 2,00	60 x 18	220,43
M 15 x 1,50	41 x 14	111,70	M 36 x 3,00	60 x 18	220,43
M 16 x 1,00	41 x 14	111,70	<b>M 36 x 4,00</b>	<b>60 x 25</b>	<b>183,69</b>
M 16 x 1,50	41 x 14	111,70			

**BSP (GAS)** HSS DIN 382

C5HG

		€
G 1/8 x 28h.	27 x 11	89,51
G 1/4 x 19h.	36 x 10	89,51
G 3/8 x 19h.	41 x 14	111,94
G 1/2 x 14h.	41 x 14	111,94
G 5/8 x 14h.	50 x 16	263,56
G 3/4 x 14h.	50 x 16	263,56
G 7/8 x 14h.	60 x 18	265,90
G 1" x 11h.	60 x 18	265,90
G1.1/4 x 11h.	70 x 20	354,54
G1.1/2 x 11h.	85 x 22	598,13
G 2" x 11h.	100 x 22	900,05

**UNC** HSS DIN 382

C5HNC

		€
UNC 1/4-20h	18 x 7	37,07
UNC 5/16-18h	21 x 9	46,13
UNC 3/8-16h	27 x 11	55,68
UNC 7/16-14h	27 x 11	82,17
UNC 1/2-13h	36 x 14	82,48
UNC 9/16-12h	36 x 14	98,56
UNC 5/8-11h	41 x 18	76,36
UNC 3/4-10h	41 x 18	121,47
UNC 7/8-9h	50 x 22	172,38
UNC 1"-8h	50 x 22	172,38
UNC 1.1/8-7h	60 x 25	227,91
UNC 1.1/4-7h	60 x 25	227,91

**UNF** HSS DIN 382

C5HNF

		€
UNF 1/4-28h.	18 x 7	39,29
UNF 5/16-24h.	21 x 9	49,13
UNF 3/8-24h.	27 x 11	59,11
UNF 7/16-20h.	27 x 11	87,09
UNF 1/2-20h.	36 x 10	88,43
UNF 9/16-18h.	36 x 10	98,56
UNF 5/8-18h.	41 x 14	122,96
UNF 3/4-16h.	41 x 14	128,77
UNF 7/8-14h.	50 x 16	162,86
UNF 1"-12h.	50 x 16	170,72
UNS 1"-14h.	50 x 16	170,72
UNF 1.1/8-12h.	60 x 18	227,91
UNF 1.1/4-12h.	60 x 18	227,91

**BSW** HSS DIN 382

C5HW

		€			€
BSW 1/8 x 40h.	19 x 5	50,86	BSW 9/16 x 12h.	36 x 14	76,30
BSW 3/16 x 24h.	19 x 7	50,86	BSW 5/8 x 11h.	41 x 18	112,75
BSW 1/4 x 20h.	19 x 7	50,86	BSW 3/4 x 10h.	41 x 18	112,75
BSW 5/16 x 18h.	22 x 9	53,39	BSW 7/8 x 9h.	50 x 22	165,25
BSW 3/8 x 16h.	27 x 11	63,56	BSW 1" x 8h.	50 x 22	165,25
BSW 7/16 x 14h.	27 x 11	63,56	BSW 1.1/8 x 7h.	60 x 25	284,83
BSW 1/2 x 12h.	36 x 14	76,30			



**JOGOS DE MACHOS E CAÇONETES HSS PARA ROSCAGEM MANUAL, ROSCA ESQUERDA**


Ref. MOI

HSS

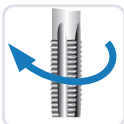
DIN  
352DIN  
2181TOL  
6H

Ref. CSI

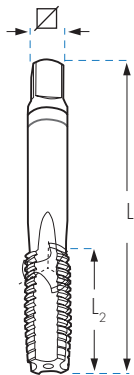
HSS

DIN  
223TOL  
6g

Para materiais até 38HRC



ESQUERDA



Uds.


**UNC**

	Uds.	D1 mm		L1 x L2 x mm	MOI		CSI	
					€	Ø x L3 mm	€	€
UNC 1/4-20h.	3	6,35	5,10	50x19x4,9	96,84	20x7	82,87	82,87
UNC 5/16-18h.	3	7,94	6,60	56x22x4,9	109,94	25x9	85,03	85,03
UNC 3/8-16h.	3	9,52	8,00	70x24x5,5	125,08	30x11	118,23	118,23
UNC 1/2-13h.	3	12,70	10,75	75x29x7,0	187,41	38x14	121,54	121,54
UNC 5/8-11h.	3	15,87	13,50	80x32x9,0	305,11	45x18	172,42	172,42
UNC 3/4-10h.	3	19,05	16,50	95x40x11,0	415,73	45x18	172,42	172,42
UNC 1"-8h.	3	25,40	22,25	110x50x14,5	691,08	55x22	231,44	231,44

**UNF**

	Uds.	D1 mm		L1 x L2 x mm	MOI		CSI	
					€	Ø x L3 mm	€	€
UNF 1/4-28h.	2	6,35	5,50	50x14x4,9	64,28	25x9	77,63	77,63
UNF 5/16-24h.	2	7,94	6,90	56x22x4,9	68,82	25x9	86,67	86,67
UNF 3/8-24h.	2	9,52	8,50	63x20x5,5	79,46	38x10	118,23	118,23
UNF 1/2-20h.	2	12,70	11,50	70x22x7,0	107,89	38x10	126,37	126,37
UNF 5/8-18h.	2	15,87	14,50	70x22x9,0	181,60	45x14	172,42	172,42
UNF 3/4-16h.	2	19,05	17,50	80x22x11,0	243,93	45x14	172,42	172,42
UNS 1"-14h.	2	25,40	23,60	90x22x14,5	460,46	55x16	251,48	251,48

**BSP  
(GAS)**

	Uds.	D1 mm		L1 x L2 x mm	MOI		CSI	
					€	Ø x L3 mm	€	€
G 1/8-28h.	2	9,73	8,80	63 x 20 x 5,5	71,87	38x10	105,72	105,72
G 1/4-19h.	2	13,16	11,80	70 x 22 x 9,0	101,27	38x10	105,15	105,15
G 3/8-19h.	2	16,66	15,25	70 x 22 x 9,0	127,14	45x14	139,28	139,28
G 1/2-14h.	2	20,95	19,00	80 x 22 x 12,0	178,31	45x14	139,28	139,28
G 5/8-14h.	2	22,91	21,00	80 x 22 x 14,5	228,15	55x16	193,22	193,22
G 3/4-14h.	2	26,44	24,50	90 x 22 x 16,0	278,33	55x16	251,52	251,52
G 1"-11h.	2	33,25	30,75	100 x 25 x 20,0	441,26	65x18	302,31	302,31
G 1.1/4-11h.	2	41,91	39,50	125 x 40 x 24,0	767,38	75x20	418,85	418,85

**BSW**

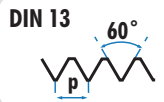
	Uds.	D1 mm		L1 x L2 x mm	MOI		CSI	
					€	Ø x L3 mm	€	€
W 1/8-40h.	3	3,17	2,55	40x14x2,7	63,77	25x9	66,55	66,55
W 1/4-20h.	3	6,35	5,10	50x20x4,9	71,83	25x9	67,88	67,88
W 5/16-18h.	3	7,94	6,50	56x20x4,9	87,73	25x9	70,81	70,81
W 3/8-16h.	3	9,52	7,90	63x22x5,5	96,38	38x10	102,46	102,46
W 5/8-11h.	3	15,87	13,40	80x27x9,0	217,19	45x18	146,22	146,22
W 3/4-10h.	3	19,05	16,50	95x32x11,0	309,20	45x18	146,45	146,45
W 7/8-9h.	3	22,22	19,25	100x32x14,5	422,28	55x22	215,33	215,33
W 1"-8h.	3	25,40	21,75	110x36x14,5	517,49	55x22	217,28	217,28

	Uds.	D1 mm		L1 x L2 x mm	MOI		CSI	
					€	Ø x L3 mm	€	€
M 2x0,40	3	1,60	36x9,0x2,1	78,65	16x5	64,96	64,96	
M 3x0,50	3	2,50	40x11,0x2,7	44,16	25x9	59,08	59,08	
M 4x0,70	3	3,30	45x13,0x3,4	44,12	25x9	59,38	59,38	
M 5x0,80	3	4,20	50x16,0x4,9	47,17	25x9	59,04	59,04	
M 6x1,00	3	5,00	50x19x4,9	47,17	25x9	59,08	59,08	
M 7x1,00	3	6,00	50x19x4,9	57,45	25x9	62,01	62,01	
M 8x1,00	2	7,00	56x18x4,9	53,00	25x9	68,54	68,54	
M 8x1,25	3	6,80	56x22x4,9	57,41	25x9	62,69	62,69	
M 9x1,25	3	7,80	63x22x5,5	94,04	25x9	72,86	72,86	
M 10x1,50	3	8,50	70x24x5,5	70,79	38x10	83,91	83,91	
M 12x1,50	2	10,50	70x20x7,0	85,50	38x10	105,15	105,15	
M 12x1,75	3	10,20	75x29x7,0	99,58	38x14	91,16	91,16	
M 14x1,25	2	12,80	70x20x9,0	122,51	38x10	136,40	136,40	
M 14x2,00	3	12,00	80x30x9,0	110,17	38x14	90,27	90,27	
M 16x1,50	2	14,50	70x20x9,0	118,55	45x14	130,61	130,61	
M 16x2,00	3	14,00	80x32x9,0	157,62	45x18	122,39	122,39	
M 18x2,00	2	16,00	80x22x11,0	249,31	45x14	176,77	176,77	
M 18x2,50	3	15,50	95x40x11,0	208,02	45x18	122,43	122,43	
M 20x2,00	2	18,00	80x22x12,0	264,09	45x14	175,83	175,83	
M 20x2,50	3	17,50	95x40x12,0	233,36	45x18	120,52	120,52	
M 22x2,00	2	20,00	80x22x14,5	343,19	55x16	226,56	226,56	
M 22x2,50	3	19,50	100x40x14,5	310,83	55x22	181,09	181,09	
M 24x2,00	2	22,00	90x22x14,5	409,22	55x16	230,87	230,87	
M 24x3,00	3	21,00	110x50x14,5	370,76	55x22	181,09	181,09	
M 27x2,00	2	25,00	90x22x16,0	567,14	65x18	341,19	341,19	
M 27x3,00	3	24,00	110x50x16,0	468,84	65x25	274,71	274,71	
M 30x3,00	2	27,00	125x56x18,0	601,23	65x25	387,26	387,26	
M 30x3,50	3	26,50	125x50x18,0	603,20	65x25	275,41	275,41	
M 33x2,00	2	31,00	100x25x20,0	857,69	65x18	478,36	478,36	
M 33x3,50	3	29,50	125x50x20,0	757,43	65x25	280,69	280,69	
M 36x3,00	2	33,00	125x33x22,0	1.384,72	65x25	330,06	330,06	
M 36x4,00	3	32,00	150x53x22,0	975,16	65x25	286,16	286,16	
M 39x3,00	2	36,00	125x33x24,0	1.197,21	75x30	517,07	517,07	
M 39x4,00	3	35,00	150x53x24,0	1.091,14	75x30	435,26	435,26	

Consulte outras medidas disponíveis sob demanda.

**MACHO Nº3 PARA ROSCAR A MÃO, ROSCA METRICA, ESQUERDA E DIREITA**

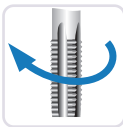
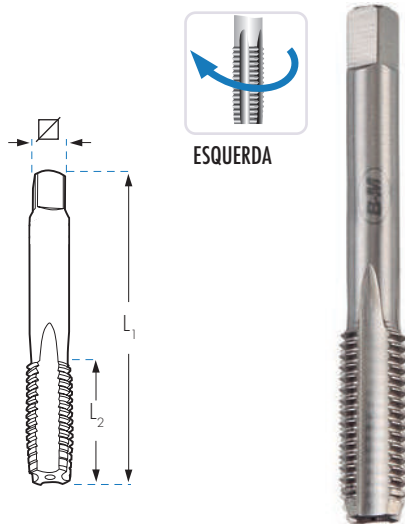
**M  
MF**



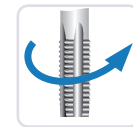
**HSS**

**DIN  
352**

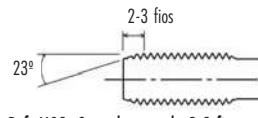
**TOL  
6H**



**ESQUERDA**

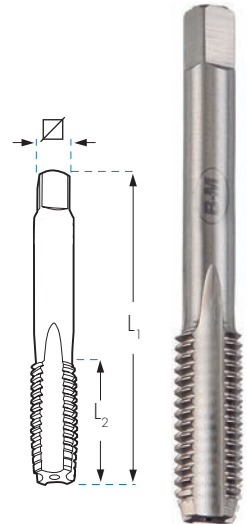


**DIREITA**



Ref. M03: Cone de entrada 2-3 fios

**D  
CABO  
FINO**  
**DIN  
352**



		M03I	
		L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x	€
mm			
M 3x0,50	2,50	D 40 x 11 x 3,50 x 2,70	14,72
M 4x0,70	3,30	D 45 x 13 x 4,50 x 3,40	14,71
M 5x0,80	4,20	D 50 x 16 x 6,00 x 4,90	15,72
M 6x1,00	5,00	D 50 x 19 x 6,00 x 4,90	15,72
M 7x1,00	6,00	D 50 x 19 x 6,00 x 4,90	19,15
M 8x1,25	6,75	D 56 x 22 x 6,00 x 4,90	19,14
M 10x1,50	8,50	D 70 x 24 x 7,00 x 5,50	23,60
M 12x1,75	10,20	D 75 x 29 x 9,00 x 7,00	33,19
M 14x2,00	12,00	D 80 x 30 x 11,00 x 9,00	36,72
M 16x2,00	14,00	D 80 x 32 x 12,00 x 9,00	52,54
M 18x2,50	15,50	D 95 x 40 x 14,00 x 11,00	69,34
M 20x2,50	17,50	D 95 x 40 x 16,00 x 12,00	77,79

Consulte outras medidas disponíveis sob demanda.

		M03	
		L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x	€
mm			
M 3x0,50	2,50	D 40 x 11 x 3,50 x 2,70	7,36
M 4x0,70	3,30	D 45 x 13 x 4,50 x 3,40	7,35
M 5x0,80	4,20	D 50 x 16 x 6,00 x 4,90	7,86
M 6x1,00	5,00	D 50 x 19 x 6,00 x 4,90	7,86
M 7x1,00	6,00	D 50 x 19 x 6,00 x 4,90	9,58
M 8x1,00	7,00	D 56 x 18 x 6,00 x 4,90	13,25
M 8x1,25	6,75	D 56 x 22 x 6,00 x 4,90	9,57
M 9x1,25	7,75	D 63 x 18 x 7,00 x 5,50	15,67
M 10x1,00	9,00	D 63 x 18 x 7,00 x 5,50	14,19
M 10x1,25	8,80	D 70 x 24 x 7,00 x 5,50	14,38
M 10x1,50	8,50	D 70 x 24 x 7,00 x 5,50	11,80
M 12x1,00	11,00	D 70 x 20 x 9,00 x 7,00	25,16
M 12x1,25	10,75	D 70 x 20 x 9,00 x 7,00	25,08
M 12x1,50	10,50	D 70 x 20 x 9,00 x 7,00	21,37
M 12x1,75	10,20	D 75 x 29 x 9,00 x 7,00	16,60
M 14x1,00	13,00	D 70 x 20 x 11,00 x 9,00	39,21
M 14x1,25	12,80	D 70 x 20 x 11,00 x 9,00	30,63
M 14x1,50	12,50	D 70 x 20 x 11,00 x 9,00	23,82
M 14x2,00	12,00	D 80 x 30 x 11,00 x 9,00	18,36
M 16x1,00	15,00	D 70 x 20 x 12,00 x 9,00	52,02
M 16x1,25	14,75	D 70 x 20 x 12,00 x 9,00	54,75
M 16x1,50	14,50	D 70 x 20 x 12,00 x 9,00	29,64
M 16x2,00	14,00	D 80 x 32 x 12,00 x 9,00	26,27
M 18x1,50	16,50	D 80 x 22 x 14,00 x 11,00	39,05
M 18x2,50	15,50	D 95 x 40 x 14,00 x 11,00	34,67
M 20x1,50	18,50	D 80 x 22 x 16,00 x 12,00	48,90
M 20x2,50	17,50	D 95 x 40 x 16,00 x 12,00	38,89
M 22x2,50	19,50	D 100 x 40 x 18,00 x 14,50	51,81
M 24x3,00	21,00	D 110 x 50 x 18,00 x 14,50	61,79
M 27x3,00	24,00	D 110 x 50 x 20,00 x 16,00	78,14
M 30x3,50	26,50	D 125 x 50 x 22,00 x 18,00	100,53

## CONTA-FIOS PARA COMPROVAÇÃO DE PASSOS DE ROSCAS



	TIPOS DE ROSCA	FAIXA DE PASSOS		GAM
		Métricos	Ingleses	€
GAM	Passos rosca métrica	0,25 - 2,5		11,91
GAMW	Passos rosca métrica / rosca Inglesa	0,25 - 6,0	62h - 4h	21,58

## CONJUNTO DE GUIAS PARA CAÇONETES M3-M12

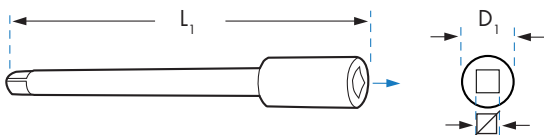


CGC5  
M3-M12  
14,42 €

## EXTENSÃO DE MACHOS

DIN  
377

DIN 10



Mesma medida do quadrado nas zonas macho e fêmea.

	$\square \times L_1$ mm	D <sub>1</sub>	AL €
AL21	2,1 x 60	6,0	8,63
AL24	2,4 x 70	6,0	8,63
AL27	2,7 x 80	7,0	8,63
AL30	3,0 x 90	7,0	8,63
AL34	3,4 x 95	8,0	9,36
AL38	3,8 x 95	9,0	9,77
AL43	4,3 x 105	10,0	10,88
AL49	4,9 x 110	11,0	10,89
AL55	5,5 x 115	12,0	10,96
AL62	6,2 x 120	14,0	13,35
AL70	7,0 x 125	15,0	13,91
AL80	8,0 x 125	17,0	17,37
AL90	9,0 x 135	19,0	17,84

	$\square \times L_1$ mm	D <sub>1</sub>	AL €
AL100	10,0 x 140	21,0	24,65
AL110	11,0 x 150	23,0	24,99
AL120	12,0 x 160	25,0	26,91
AL130	13,0 x 165	27,0	42,10
AL145	14,5 x 175	29,0	42,69
AL160	16,0 x 185	30,0	45,17
AL180	18,0 x 195	33,0	51,47
AL200	20,0 x 220	36,0	68,65
AL220	22,0 x 220	40,0	100,33
AL240	24,0 x 235	42,0	153,66
AL260	26,0 x 245	45,0	162,25
AL290	29,0 x 260	55,0	187,20
AL320	32,0 x 280	55,0	230,45

**DESANDADORES DE AÇO FORJADO**

Máxima Resistência 150 kg/mm<sup>2</sup>

Ref. GAPRO

- Corpo de aço forjado
- Suporta esforços até 150 kg/mm<sup>2</sup>
- Máxima resistência e durabilidade

- Maior precisão e firmeza na amarração
- A sua rosca de precisão forma um conjunto sólido e robusto
- Cabo antidesslizante, maior aderência na oficina



GAPRO

Nº NORMA	Nº 0	Nº 1	Nº 1.1/2	Nº 2	Nº 3	Nº 4	Nº 5
	M1-M8 2,00-5,00	M1-M10 2,00-6,30	M1-M12 2,50-7,00	M1-M12 2,50-8,00	M5-M20 4,00-13,00	M5-M27 4,00-16,00	M9-M32 5,50-20,00
€	21,41	22,62	24,04	30,38	42,99	68,74	145,49

Ref. GA

- Corpo de liga de zinco
- Alta resistência e durabilidade
- Alta precisão e firmeza na amarração



GA

Nº NORMA	Nº 0	Nº 1	Nº 1.1/2	Nº 2	Nº 3	Nº 4	Nº 5	Nº 7	Nº 8
	M1-M8 1,50-5,00	M1-M10 2,00-7,00	M1-M12 2,00-8,00	M4-M12 2,50-10,00	M5-M20 3,50-14,00	M9-M27 4,00-15,00	M13-M32 5,50-19,00	M22-M52 14,00-34,00	M33-M64 16,00-40,00
€	17,99	19,02	20,20	25,52	36,12	57,77	122,26	241,52	394,59

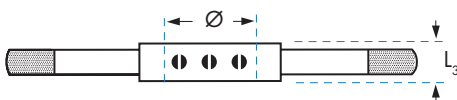
**DESANDADORES DE CAÇONETES PARA ROSCAGEM**

Ref. VA

DIN 225



IMPORTANTE: no momento de fazer as suas encomendas de desandadores, indique a espessura que corresponda, conforme ao detalhe de espessuras indicadas na tabela de caçonetes.



VA

Ø x L3 mm	16x5	20x5	20x7	25x9	30x11	38x10	38x14	45x14	45x18	55x16	55x22	65x18	65x25
€	9,99	11,06	11,06	12,62	15,29	19,99	19,96	24,54	24,72	31,72	33,22	45,45	45,45
Ø x L3 mm	75x20	75x30	90x22	90x36	105x22	105x36	120x22	120x36	130x25	130x36	140x25		
€	78,75	82,43	99,75	107,47	148,41	148,41	385,98	385,98	401,27	401,27	421,98		

Ref. VA

POLEGADAS



VA

Ø mm	20,60	25,40	38,10	50,80	63,50	76,20	88,90
POLEGADAS	13/16"	1"	1.1/2"	2"	2.1/2"	3"	3.1/2"
€	10,83	12,85	19,23	28,52	45,01	83,23	105,43

NOTA: os desandadores para caçonetes com Ø exteriores em polegadas estão em desuso.



**DESANDADOR EM T COM ROQUETE**

Ref. TC

**TIPO**  
**T**


SERIE CURTA



	CAPACIDADE mm mín.-máx.	Para cabos de machos		L <sub>1</sub> mm	PESO g	QUALIDADE	TC
		DIN	ISO				€
TC3B	2,6 - 5,5	M3 - 8	M3 - 6	85	180	1ª Qualidade	29,38
TC4B	4,6 - 8,0	M5 - 12	M6 - 12	110	300	1ª Qualidade	39,70
TC1B	2,6 - 5,5	M3 - 8	M3 - 6	85	180	2ª Qualidade	22,25
TC2B	4,6 - 8,0	M5 - 12	M6 - 12	110	300	2ª Qualidade	29,84

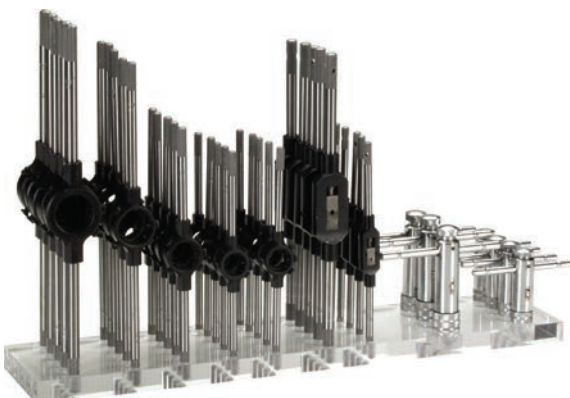
Ref. TL

**TIPO**  
**T**

SERIE LONGA



	CAPACIDADE mm mín.-máx.	Para cabos de machos		L <sub>1</sub> mm	PESO g	QUALIDADE	TL
		DIN	ISO				€
TL3	2,6 - 5,5	M3 - 8	M3 - 6	250	250	1ª Qualidade	44,69
TL4	4,6 - 8,0	M5 - 12	M6 - 12	300	440	1ª Qualidade	53,20
TL1	2,6 - 5,5	M3 - 10	M3 - 6	250	250	2ª Qualidade	35,29
TL2	4,6 - 8,0	M5 - 12	M6 - 12	300	440	2ª Qualidade	42,05

**EXPOSITOR DE METACRILATO**


	Nº 1 1/2		Nº 2			TC1 TC2	GV-01
	5	5	5	5	5		€
GV-01	20 x 5	20 x 7	25 x 9	30 x 11	38 x 14	4 4	773,85

Dimensões: 500 x 320 x 110 mm

**CONJUNTOS DE MACHOS E CAÇONETES HSS EM CAIXA METÁLICA**



**M3  
M12**

**HSS**



Ref. D624

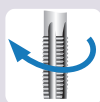
**CONTEÚDO**

					Nº Peças	1ª Qualidade €	2ª Qualidade €
D624	M3 - M4 - M5 - M6 - M8 - M10 - M12	Nº 1.1/2	25 x 9	-	30	250,75	227,47

**CONJUNTOS DE CAÇONETES HSS EM CAIXA METÁLICA**




**M3  
M12**

**HSS**



Ref. D671

**CONTEÚDO**

				Nº Peças	1ª Qualidade €	2ª Qualidade €	
D671	M3 - M4 - M5 - M6 - M8 - M10 - M12	20 x 5 30 x 11	20 x 7 38 x 14	25 x 9	12	247,34	209,50
D671I (esq.)	 M3 - M4 - M5 - M6 - M8 - M10 - M12	20 x 5 30 x 11	20 x 7 38 x 14	25 x 9	12	494,67	418,97

**CONJUNTOS DE MACHOS E CAÇONETES HSS E HSSCo EM CAIXA METÁLICA**
**M3  
M12**

**HSS**
**HSSCo  
5%**


Ref. D621



Ref. D655

**CONTEÚDO**

						Nº Peças	1ª Qualidade €	2ª Qualidade €
D621	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1 Nº 2	20 x 5 20 x 7 25 x 9 30 x 11 38 x 14	TC1	43	502,79	368,52
D652	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1 Nº 2	20 x 5 20 x 7 25 x 9 30 x 11 38 x 14	-	42	486,69	349,96
D662	M3-M4-M5-M6-M7 M8-M9-M10-M11-M12	-	Nº 1 Nº 2	20 x 5 20 x 7 25 x 9 30 x 11 38 x 14	TC1	48	749,01	658,81
D651	M3 - M4 - M5 - M6 M8 - M10 - M12	-	Nº 1 Nº 2	20 x 5 20 x 7 25 x 9 30 x 11 38 x 14	-	35	384,13	353,39
D655* (HSSCo)	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1 Nº 2	20 x 5 20 x 7 25 x 9 30 x 11 38 x 14	TC1	43	802,08	705,53
D621I (esq.)	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1 Nº 2	20 x 5 20 x 7 25 x 9 30 x 11 38 x 14	TC1	43	785,25	684,80

\*

**HSSCo  
5%**


**CONJUNTOS DE MACHOS E CAÇONETES HSS E HSSCo EM CAIXA METÁLICA COM GUIAS PARA CAÇONETES**

**M3  
M12**



**HSS**

**HSSCo  
5%**



Ref. D656



Ref. D657



**CONTEÚDO**

							Nº Peças	1ª Qualidade €	2ª Qualidade €
D656	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1 Nº 2	20x5 20x7 25x9 30x11 38x14	+ GUIAS	TC1	43	561,85	497,37
D657* (HSSCo)	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1 Nº 2	20x5 20x7 25x9 30x11 38x14		TC1	43	836,41	738,24

\* **HSSCo  
5%**



**CONJUNTOS DE MACHOS E CAÇONETES HSS E HSSCo EM CAIXA METÁLICA**
**M3  
M20**
**M5  
M20**
**HSS**
**HSSCo  
5%**


Ref. D622



Ref. D623

**CONTEÚDO**

						Nº Peças	1ª Qualidade €	2ª Qualidade €
D622	M3 - M4 - M5 - M6 - M8 - M10 - M12 M14 - M16 - M18 - M20	Nº 1 Nº 3	20 x 5   20 x 7   25 x 9 30 x 11   38 x 14   45 x 18		TC1 TC2	54	859,95	675,64
D658	M3 - M4 - M5 - M6 - M8 - M10 - M12 M14 - M16 - M18 - M20	Nº 1 Nº 3	20 x 5   20 x 7   25 x 9 30 x 11   38 x 14   45 x 18		-	52	792,21	611,27
D622I (esq.)	M3 - M4 - M5 - M6 - M8 - M10 - M12 M14 - M16 - M18 - M20	Nº 1 Nº 3	20 x 5   20 x 7   25 x 9 30 x 11   38 x 14   45 x 18		TC1 TC2	54	1.480,89	-
D659* (HSSCo)	M3 - M4 - M5 - M6 - M8 - M10 - M12 M14 - M16 - M18 - M20	Nº 1 Nº 3	20 x 5   20 x 7   25 x 9 30 x 11   38 x 14   45 x 18		-	52	1.786,29	1.571,22
D623	M5 - M6 - M8 - M10 - M12 M14 - M16 - M18 - M20	Nº 1 Nº 3	20 x 7   25 x 9 30 x 11   38 x 14   45 x 18		TC1 TC2	45	901,60	705,86
D663	M5 - M6 - M7 - M8 - M9 - M10 - M12 M14 - M16 - M18 - M20	Nº 1 Nº 3	20 x 7   25 x 9   30 x 11 38 x 14   45 x 18		-	51	1.202,03	1.081,20

\*

**HSSCo  
5%**


**CONJUNTOS DE MACHOS E CAÇONETES HSS EM CAIXA METÁLICA**

M1  
M10
M5  
M12
M3  
M24
M5  
M30
HSS



Ref. D628



Ref. D626

**CONTEÚDO**

					Nº Peças	1ª Qualidade €	2ª Qualidade €
D626	M1 - M1.2 - M1.4 - M1.7 - M2.0 - M2.3 M2.6 - M3 - M3.5 - M4 - M5 - M6 - M8 - M10	Nº 0 Nº 1	16 x 5   20 x 5   20 x 7 25 x 9   30 x 11	TC1	64	-	1.124,71
D627	M5 - M6 - M7 - M8 - M9 - M10 - M11 - M12	Nº 1 Nº 2	20 x 7   25 x 9 30 x 11   38 x 14	TC1	39	-	840,21
D625	M3 - M4 - M5 - M6 - M8 - M10 - M12 - M14 M16 - M18 - M20 - M22 - M24	Nº 1 Nº 4	20 x 5   20 x 7   25 x 9 30 x 11   38 x 14   45 x 18   55 x 22	-	61	1.984,50	1.464,24
D628	M5 - M6 - M8 - M10 - M12 - M14 - M16 M18 - M20 - M22 - M24 - M27 - M30	Nº 1 Nº 3 Nº 5	20 x 7   25 x 9   30 x 11 38 x 14   45 x 18   55 x 22 65 x 25	-	62	-	2.680,11

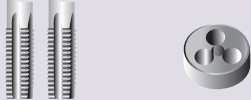



**CONJUNTOS DE MACHOS E CAÇONETES HSS EM CAIXA METÁLICA**
**MF**
**HSS**


Ref. D634



Ref. D636

**CONTEÚDO**

					Nº Peças	1ª Qualidade €	2ª Qualidade €
D634	MF 3 x 0.35 - 4 x 0.5 - 5 x 0.5 MF 6 x 0.75 - 8 x 0.75 - 8 x 1.0 MF 10 x 1.0 - 12 x 1.5	Nº 1 Nº 2	20 x 5 25 x 9 30 x 11 38 x 10	TC1	31	-	770,87
D635	MF 6 x 0.75 - 8 x 0.75 - 8 x 1.0 - 10 x 1.0 MF 12 x 1.0 - 12 x 1.5 - 14 x 1.25 - 14 x 1.5 MF 16 x 1.5 - 18 x 1.5 - 20 x 1.5	Nº 1 Nº 3	20 x 7 25 x 9 30 x 11 38 x 10 45 x 14	-	40	1.257,45	1.195,74
D636	MF 6 x 0.75 - 8 x 0.75 - 8 x 1.0 - 10 x 1.0 MF 12 x 1.0 - 12 x 1.5 - 14 x 1.25 - 14 x 1.5 MF 16 x 1.5 - 18 x 1.5 - 20 x 1.5 - 22 x 1.5 MF 24 x 1.5	Nº 1 Nº 4	20 x 7 25 x 9 30 x 11 38 x 10 45 x 14 55 x 16	-	47	1.724,99	1.594,87

**CONJUNTOS DE MACHOS E CAÇONETES HSS EM CAIXA METÁLICA**

**BSP  
(GAS)**

**HSS**



Ref. D638

**CONTEÚDO**

						Nº Peças	1ª Qualidade €	2ª Qualidade €
D637	G 1/8 - 1/4 - 3/8 - 1/2 - 3/4 - 1"		Nº 1 Nº 3 Nº 5	30 x 11 38 x 10 45 x 14 55 x 16 65 x 18	-	26	1.396,16	1.127,80
D638	G 1/8 - 1/4 - 3/8 - 1/2 - 5/8 - 3/4 - 7/8 - 1"		Nº 1 Nº 3 Nº 5	30 x 11 38 x 10 45 x 14 55 x 16 65 x 18	-	32	1.894,73	1.653,96
D639	G 1/4 - 3/8 - 1/2 - 3/4 - 1" - 1".1/4 - 1".1/2		Nº 2 Nº 4 Nº 7	38 x 10 45 x 14 55 x 16 65 x 18 75 x 20 90 x 22	-	30	3.495,46	2.948,56

**BSW**

**HSS**



Ref. D640

**CONTEÚDO**

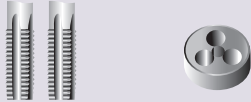



						Nº Peças	1ª Qualidade €	2ª Qualidade €
D640	BSW 1/8 - 3/16 - 1/4 - 5/16 - 3/8 - 7/16 - 1/2		Nº 1 Nº 2	20 x 5 20 x 7 25 x 9 30 x 11 38 x 14	TC1	36	778,86	665,81
D641	BSW 1/4 - 5/16 - 3/8 - 7/16 - 1/2		Nº 1 Nº 2	20 x 7 25 x 9 30 x 11 38 x 14	TC1	27	642,07	540,80
D642	BSW 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8 - 3/4		Nº 1 Nº 3	20 x 7 25 x 9 30 x 11 38 x 14 45 x 18	-	35	1.149,07	1.048,48
D643	BSW 1/4 - 5/16 - 3/8 - 7/16 1/2 - 5/8 - 3/4 - 7/8 - 1"		Nº 1 Nº 4	20 x 7 25 x 9 30 x 11 38 x 14 45 x 18 55 x 22	-	44	1.625,05	1.426,74
D646	BSW 1/4 - 5/16 - 3/8 - 7/16 1/2 - 5/8 - 3/4 - 7/8 - 1" - 1".1/8 1".1/4 - 1".3/8 - 1".1/2		Nº 1 Nº 3 Nº 5	20 x 7 25 x 9 30 x 11 38 x 14 45 x 18 55 x 22 65 x 25	-	62	-	4.335,52



**CONJUNTOS DE MACHOS E CAÇONETES HSS EM CAIXA METÁLICA**
**BSF**
**HSS**


Ref. D648

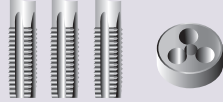



**CONTEÚDO**

					Nº Peças	1ª Qualidade €	2ª Qualidade €
D664	BSF 1/4 - 5/16 - 3/8 - 7/16 - 1/2	Nº 1 Nº 2	20 x 7 25 x 9 30 x 11 38 x 10	TC1	22	718,02	631,56
D648	BSF 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8 - 3/4	Nº 1 Nº 3	20 x 7 25 x 9 30 x 11 38 x 10 45 x 14	-	28	1.114,65	1.048,48
D665	BSF 1/4 - 5/16 - 3/8 - 7/16 1/2 - 5/8 - 3/4 - 7/8 - 1"	Nº 1 Nº 4	20 x 7 25 x 9 30 x 11 38 x 10 45 x 14 55 x 16	-	35	1.891,38	1.663,64

**BSW  
BSF**
**HSS**


Ref. D666






**CONTEÚDO**

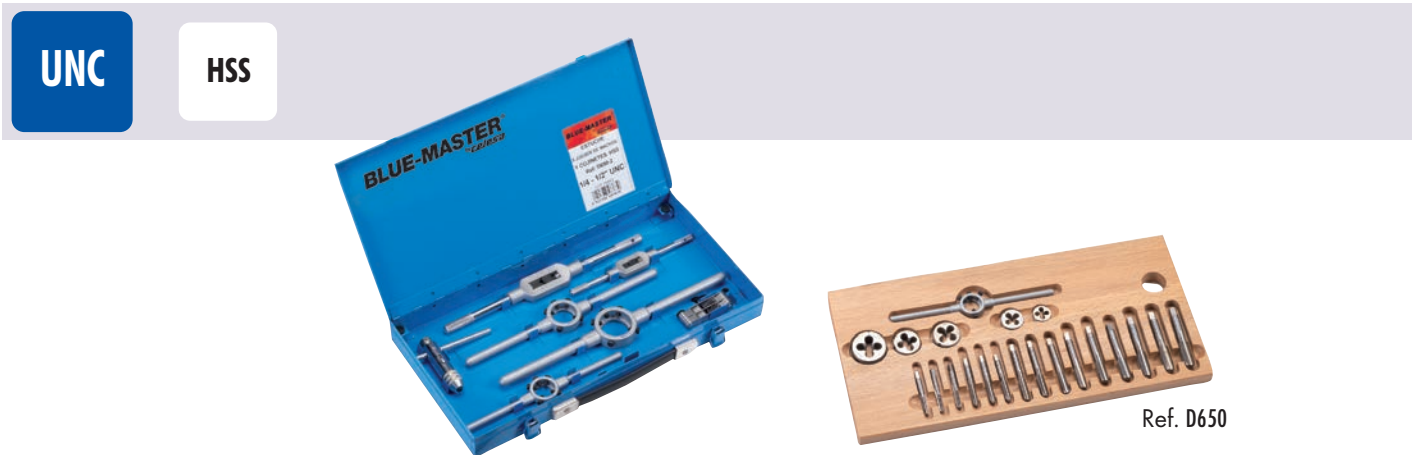
					Nº Peças	1ª Qualidade €	2ª Qualidade €
D666	BSW 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8 - 3/4 BSF 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8 - 3/4	Nº 1 Nº 3	20 x 7 25 x 9 30 x 11 38 x 14 45 x 18	-	63	2.136,56	1.879,30

**CONJUNTOS DE MACHOS E CAÇONETES HSS EM CAIXA METÁLICA**

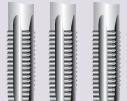






**CONTEÚDO**

						Nº Peças	1ª Qualidade €	2ª Qualidade €
D660	NPT 1/8 - 1/4 - 3/8 - 1/2 - 3/4 - 1"		Nº1 Nº3 Nº5	30 x 11 38 x 14 45 x 18 55 x 22 65 x 25	-	20	2.019,60	1.915,69
D661	NPT 1/8 - 1/4 - 3/8 - 1/2 - 3/4 1" - 1.1/4 - 1.1/2 - 2"		Nº 2 Nº 4 Nº 7	30 x 11 38 x 14 45 x 18 55 x 22 65 x 25 75 x 30 90 x 36 105 X 36	-	29	6.045,65	5.679,86



**CONTEÚDO**

						Nº Peças	1ª Qualidade €	2ª Qualidade €
D650	UNC 1/4 - 5/16 - 3/8 - 7/16 - 1/2		Nº 1 Nº 2	20 x 7 25 x 9 30 x 11 38 x 14	TC1	27	782,61	702,43
D667	UNC 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8 - 3/4		Nº 1 Nº 2	20 x 7 25 x 9 30 x 11 38 x 14 45 x 18	-	35	1.260,92	1.109,09
D654	UNC 1/4 - 5/16 - 3/8 - 7/16 1/2 - 5/8 - 3/4 - 7/8 - 1"		Nº 1 Nº 4	20 x 7 25 x 9 30 x 11 38 x 14 45 x 18 55 x 22	-	44	2.034,61	1.904,14
D668	UNC 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8 - 3/4 7/8 - 1" - 1.1/8 - 1.1/4 - 1.3/8 - 1.1/2"		Nº 1 Nº 3 Nº 6	20 x 7 25 x 9 30 x 11 38 x 14 45 x 18 55 x 22 65 x 25	-	62	4.763,45	4.189,89

**CONJUNTOS DE MACHOS E CAÇONETES HSS EM CAIXA METÁLICA**




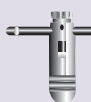
UNF

HSS



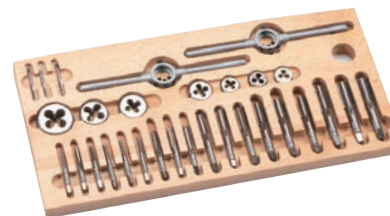
Ref. D644

**CONTEÚDO**

					Nº Peças	1ª Qualidade €	2ª Qualidade €
D644	UNF 1/4 - 5/16 - 3/8 - 7/16 - 1/2	Nº 1 Nº 2	20 x 7 25 x 9 30 x 11 38 x 10	TC1	22	613,25	531,63
D669	UNF 1/4-5/16-3/8-7/16-1/2-5/8-3/4	Nº 1 Nº 3	20 x 7 25 x 9 30 x 11 38 x 10 45 x 14	-	28	1.155,83	1.016,66
D645	UNF 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8 3/4 - 7/8 - 1"	Nº 1 Nº 4	20 x 7 25 x 9 30 x 11 38 x 10 45 x 14 55 x 16	-	34	1.417,28	1.285,05

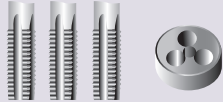


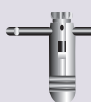
UNC  
UNF

HSS



Ref. D670

**CONTEÚDO**

					Nº Peças	1ª Qualidade €	2ª Qualidade €
D670	UNC 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8 - 3/4 UNF 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8 - 3/4	Nº 1 Nº 3	20 x 7 25 x 9 30 x 11 38 x 14 45 x 18	-	35	2.136,56	1.879,30

**JOGOS DE MACHOS MANUAIS HSS E TiN EM ESTOJOS METÁLICOS**



Ref. JMB0



Ref. JMB2



Ref. JMBT2

**CONTEÚDO**

					HSS €		TiN* €
JMB2	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	-	198,53	JMBT2	394,19
JMB0	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	-	-	226,46	JMBT0	442,36
JMB1	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1.1/2	-	243,73	JMBT1	379,06
JMB5	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1.1/2	TC1	258,87	JMBT5	397,19
JMBI2 (esq.)	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	-	368,17	JMBIT2	684,78
JMBI0 (esq.)	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	-	-	426,50	JMBIT0	742,74
JMBI1 (esq.)	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1.1/2	-	443,15	JMBIT1	758,13

**MACHOS MANUAIS TERCEIROS HSS E TiN EM ESTOJOS METÁLICOS**



Ref. JMB3



Ref. JMB4

**CONTEÚDO**

3º					HSS €		TiN* €
JMB3	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	-	91,14	JMBT3	114,13
JMB4	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	-	-	113,43	JMBT4	150,77
JMB7	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1.1/2	-	129,80	JMBT7	209,14
JMB6	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1.1/2	TC1	140,55	JMBT6	222,91
JMBI3 (esq.)	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	-	122,71	JMBIT3	228,25
JMBI4 (esq.)	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	-	-	164,44	JMBIT4	302,56





**MACHOS MANUAIS HSSCo EM ESTOJOS METÁLICOS**
**HSSCo**  
**5%**


Ref. JMBX0

**CONTEÚDO**

INOX	 MOX	 HSSCo			€
JMBX0	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	-	-	312,94
JMBX1	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1.1/2	-	329,35
JMBX2	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	-	295,92




**CONTEÚDO**

 1100 N/mm <sup>2</sup>	 MOMD	 HSSCo			€
JMBMD0	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	-	-	326,82
JMBMD1	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	Nº 1.1/2	-	343,82
JMBMD2	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	-	311,53

**ESTOJOS DE CAÇONETES HSS EM CAIXAS METÁLICAS**


Ref. C5B3

**CONTEÚDO**

	  	HSS €
C5B3	M3 - M4 - M5 - M6 - M8 - M10 - M12	237,19
C5B31 (esq.)	M3 - M4 - M5 - M6 - M8 - M10 - M12	469,78

**EXTRATOR DE MACHOS QUEBRADOS PARA MACHOS DE CANAIS RETOS, NÃO HELICOIDAIS**



**EXTRATORES SOLTOS**

Ø MACHO A EXTRAIR		MACHOS MANUAIS	MACHOS DE MÁQUINA	€/ Ud.
BSW UNC	M			EXTRATOR INTEIRO
--	M3		W10043	45,23
1/8	M3,2		W10053	45,23
--	M3,5		W10063	45,23
5/32	M4		W10083	45,23
3/16	M5		W10103	45,23
--	M5,5	W10124	W10123	45,23
1/4	M6	W10254	W10253	46,56
5/16	M8	W10314	W10313	48,79
--	M9	W10374	W10373	48,33
3/8	M10	W10404	W10373	48,33
7/16	M11	W10434	W10433	51,02
1/2	M12	W10504	W10503	54,55
9/16	M14	W10564	W10563	75,39
5/8	M16	W10624	W10623	82,05
--	M18	W10684	W10753	101,66
3/4	M20	W10754	W10753	101,66
7/8	M22	W10874	W10873	111,24
1"	M25	W11004	W11003	124,05

**VARETA DE REPOR**

MACHOS MANUAIS	MACHOS DE MÁQUINA	€/ Ud.
		VARETA EXTRA
	W12043	2,41
	W12053	2,41
	W12063	2,41
	W12083	2,41
	W12103	3,59
	W12123	3,59
	W12253	4,38
W12314	W12313	4,94
W12374		4,94
W12404	W12373	5,10
W12434	W12433	5,18
W12504	W12503	6,52
W12564	W12563	7,27
W12624	W12623	9,30
W12684		9,30
W12754	W12753	9,84
W12874	W12873	12,75
W13004	W13003	21,22

**3 SIMPLES PASSOS PARA EXTRAIR MACHOS QUEBRADOS DE CANAIS RETOS**

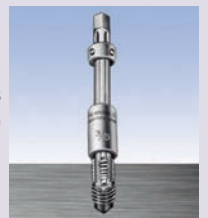
Tirar toda a limança do macho quebrado. Introduzir as varetas do extrator nos canais do macho quebrado com firmeza até o fundo.



Empurre o suporte para baixo, até tocar o macho quebrado. Deslize o casquilho para baixo, até tocar a zona de trabalho.



Aplicar ao quadrado do extrator um desandador. Gire a esquerdas umas quantas vezes até soltá-lo e então tire o macho quebrado.



**JOGOS DE EXTRATORES PARA MACHOS QUEBRADOS (CANAIS RETOS)**

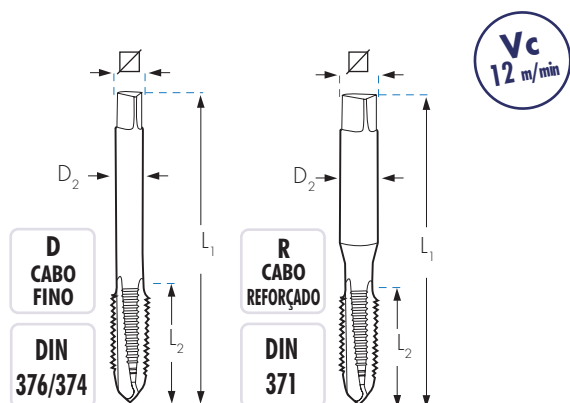
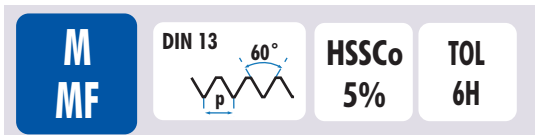


Nº CANAIS	MEDIDAS INCLuíDAS PARA MACHOS DE MÁQUINA E MACHOS MANUAIS: 3 e 4 CANAIS	
W180013	3	M5- M6- M8- M10- M11- M12
W180014	4	3/16 - 1/4 - 5/16 - 3/8 - 7/16 - 1/2
W180023	3	M6- M8 -M10- M11- M12- M16
W180024	4	1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 5/8
W180153	3	M3- M3,2- M3,5- M4-M5- M5,50- M6- M8
W180154	4	M9- M10- M12- M16- M18- M22- M25

313,57

352,79

986,83

**MACHOS PARA ROSCAGEM A MÁQUINA HSSCo**


Machos	D	L1	L2	R	L1	L2	M1D		M2D		M3D		M4D		M1R		M2R		M3R		M4R	
							FORMA C	FORMA B	FORMA C	FORMA B	FORMA C	FORMA B	FORMA C	FORMA B	FORMA C	FORMA B	FORMA C	FORMA B	FORMA C	FORMA B	FORMA C	FORMA B
							€	€	€	€	€	€	€	€	€	€	€	€	€	€	€	€
M 1x0,25	0,75	R	40 x 5,5 x 2,5 x 2,1												43,34							
M 1,1x0,25	0,85	R	40 x 6 x 2,5 x 2,1												42,16							
M 1,2x0,25	0,95	R	40 x 6 x 2,5 x 2,1												38,51							
M 1,4x0,30	1,10	R	40 x 7 x 2,5 x 2,1												38,51							
M 1,6x0,35	1,25	R	40 x 8 x 2,5 x 2,1												37,82							
M 1,7x0,35	1,35	R	40 x 8 x 2,5 x 2,1												36,42							
M 1,8x0,35	1,45	R	40 x 8 x 2,5 x 2,1												35,52							
M 2x0,40	1,60	R	40 x 8 x 2,8 x 2,1												17,10	18,95	21,19	21,59				
M 2,2x0,45	1,75	R	40 x 9 x 2,8 x 2,1												18,49							
M 2,3x0,40	1,90	R	40 x 9 x 2,8 x 2,1												17,03							
M 2,5x0,45	2,05	R	50 x 9 x 2,8 x 2,1												17,10	18,95	29,79	21,59				
M 2,6x0,45	2,10	R	50 x 9 x 2,8 x 2,1												17,13	19,29					35,89	
M 3x0,50	2,50	R D	56 x 11 x 3,5 x 2,7 56 x 11 x 2,2 x 1,8				11,33	12,27	17,08	14,72				11,33*	11,51	16,74	15,09					
M 3x0,60	2,40	R	56 x 11 x 3,5 x 2,7												20,14	21,98					29,03	
M 3,5x0,60	2,90	R D	56 x 12 x 4,0 x 3,0 56 x 12 x 2,5 x 2,1												16,47	17,14	22,14	20,78				
M 3,5x0,75	2,75	R	56 x 12 x 4,0 x 3,0												21,77							
M 4x0,50	3,50	R D	63 x 13 x 4,5 x 3,4 63 x 13 x 2,8 x 2,1				24,81	27,32		28,89					23,71	26,38					30,54	
M 4x0,70	3,30	R D	63 x 13 x 4,5 x 3,4 63 x 13 x 2,8 x 2,1				11,53	12,40	18,31	14,58				12,89*	12,16	16,52	15,10					
M 4x0,75	3,25	R	63 x 13 x 4,5 x 3,4												18,03	19,25						
M 4x0,80	3,20	R	63 x 13 x 4,5 x 3,4												95,70							
M 4,5x0,50	4,00	R	70 x 14 x 6,0 x 4,9													30,69						
M 4,5x0,75	3,75	R	70 x 14 x 6,0 x 4,9												22,25	24,50						
M 5x0,50	4,50	R D	70 x 14 x 6,0 x 4,9 70 x 11 x 3,5 x 2,7				25,55	28,07		29,21					24,42	27,10					32,58	
M 5x0,75	4,50	R D	74 x 14 x 6,0 x 4,9 70 x 16 x 3,5 x 2,7												21,90	25,69					32,37	
M 5x0,80	4,20	R D	70 x 16 x 6,0 x 4,9 70 x 16 x 3,5 x 2,7				11,53	12,47	17,55	14,00				11,54*	12,18	15,85	14,48					
M 5x0,90	4,10	R D	70 x 15 x 6,0 x 4,9 70 x 16 x 3,5 x 2,7												19,05	24,54						
M 5x1,00	4,00	R	72 x 17 x 6,0 x 4,9												51,02							
M 5,5x0,90	4,60	R	80 x 17 x 6,0 x 4,9												51,02							
M 6x0,50	5,50	R D	80 x 17 x 6,0 x 4,9 80 x 13 x 4,5 x 3,4				30,25	37,09		46,80					31,97							
M 6x0,75	5,25	R D	80 x 13 x 6,0 x 4,9 80 x 13 x 4,5 x 3,4				19,93	23,08		26,95					20,71	24,13					28,98	
M 6x1,00	5,00	R D	80 x 19 x 6,0 x 4,9 80 x 19 x 4,5 x 3,4				13,15	13,66	18,36	15,35				13,13*	13,36	17,39	15,88					

\* Consulte o preço dos jogos de machos e caçonetes à esquerda disponíveis na Pag.217

MACHOS PARA ROSCAGEM A MÁQUINA HSSCo







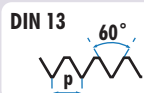
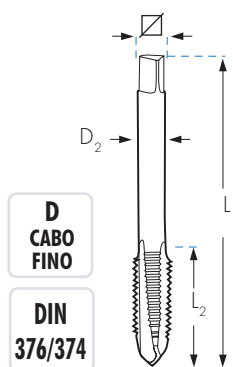




Machos	L1	R	L2 x D2 x	M1D		M2D		M3D		M4D		M1R		M2R		M3R		M4R	
				FORMA C	FORMA B	FORMA C	FORMA B	15°	35°	FORMA C	FORMA B	15°	35°	FORMA C	FORMA B	15°	35°		
	mm		mm	€	€	€	€	€	€	€	€	€	€	€	€	€	€	€	€
M 6x1,25	4,75	R	80 x 17 x 6,0 x 4,9									50,15							
M 7x0,75	6,25	D	80 x 13 x 5,5 x 4,3	25,66	28,46					35,15									
<b>M 7x1,00</b>	<b>6,00</b>	R	80 x 19 x 7,0 x 5,5	17,69	20,45	22,09	21,26					17,03*	19,88	22,48	22,25				
M 8x0,50	7,50	D	80 x 13 x 6 x 4,9	34,51															
M 8x0,75	7,25	D	80 x 13 x 6 x 4,9	25,00	30,66					38,02									
M 8x1,00	7,00	D	90 x 20 x 6 x 4,9	20,45	23,47	28,12	26,00												
<b>M 8x1,25</b>	<b>6,80</b>	R	90 x 22 x 8 x 6,2	14,75	15,41	20,90	17,92					14,84*	14,85	20,02	18,14				
M 8x1,50	6,50	D	90 x 20 x 6 x 4,9	101,14															
M 9x1,00	8,00	D	90 x 20 x 7 x 5,5	30,92	33,06					35,13									
<b>M 9x1,25</b>	<b>7,80</b>	R	90 x 22 x 9 x 7,0	24,85	26,11	31,62	30,91					24,61	24,93	31,88	31,80				
M 10x0,50	9,50	D	90 x 20 x 7 x 5,5	100,21															
M 10x0,75	9,25	D	90 x 16 x 7 x 5,5	39,64	39,72					48,37									
M 10x1,00	9,00	D	90 x 16 x 7 x 5,5	22,64	26,08	33,20	31,63												
M 10x1,25	8,80	D	100 x 22 x 7 x 5,5	25,92	31,18	36,19	34,47												
<b>M 10x1,50</b>	<b>8,50</b>	R	100 x 24 x 10 x 8,0	16,67	18,64	24,85	21,48					16,82*	18,29	22,99	21,48				
M 11x1,00	10,00	D	90 x 20 x 8 x 6,2	40,58	41,91	105,96	96,42												
M 11x1,25	9,75	D	100 x 22 x 8 x 6,2	38,83	43,14	105,96	86,07												
<b>M 11x1,50</b>	<b>9,50</b>	D	100 x 24 x 8 x 6,2	31,48	36,19	77,26	70,27												
M 12x0,75	11,25	D	100 x 22 x 9 x 7,0	59,46															
M 12x1,00	11,00	D	100 x 22 x 9 x 7,0	30,79	35,24	40,96	40,52												
M 12x1,25	10,75	D	100 x 22 x 9 x 7,0	31,17	34,62	39,22	38,79												
M 12x1,50	10,50	D	100 x 22 x 9 x 7,0	27,86*	30,88	37,71	37,31												
<b>M 12x1,75</b>	<b>10,20</b>	D	110 x 28 x 9 x 7,0	20,08*	23,28	31,78	27,39												
M 13x0,75	12,25	D	100 x 22 x 11 x 9,0	103,78															
M 13x1,00	12,00	D	100 x 22 x 11 x 9,0	54,96	62,23														
M 13x1,25	11,75	D	100 x 22 x 11 x 9,0	54,96	62,23														
M 13x1,50	11,50	D	100 x 22 x 11 x 9,0	54,96	62,23														
<b>M 13x1,75</b>	<b>11,25</b>	D	100 x 28 x 11 x 9,0	54,57	62,23														
M 14x0,75	13,25	D	100 x 22 x 11 x 9,0	103,78															
M 14x1,00	13,00	D	100 x 22 x 11 x 9,0	49,56	54,52	63,15	62,62												
M 14x1,25	12,80	D	100 x 22 x 11 x 9,0	42,18	46,04	57,92	55,18												
M 14x1,50	12,50	D	100 x 22 x 11 x 9,0	33,18*	36,56	45,68	43,51												
<b>M 14x2,00</b>	<b>12,00</b>	D	110 x 30 x 11 x 9,0	32,96*	36,62	42,44	42,44												
M 15x1,00	14,00	D	100 x 22 x 12 x 9,0	63,03	66,73		84,97												
M 15x1,25	13,75	D	100 x 22 x 12 x 9,0	67,51	73,11														
M 15x1,50	13,50	D	100 x 22 x 12 x 9,0	53,96	61,54	157,22	127,53												
<b>M 15x2,00</b>	<b>13,00</b>	D	110 x 30 x 12 x 9,0	66,05	72,69														
M 16x1,00	15,00	D	100 x 22 x 12 x 9,0	59,41	63,03	88,42	85,85												
M 16x1,25	14,75	D	100 x 22 x 12 x 9,0	63,57	69,88	98,33	95,22												
M 16x1,50	14,50	D	100 x 22 x 12 x 9,0	39,23*	45,71	56,92	54,23												
<b>M 16x2,00</b>	<b>14,00</b>	D	110 x 32 x 12 x 9,0	38,79*	42,84	51,27	51,27												
M 17x1,00	16,00	D	100 x 22 x 12 x 9,0	118,20															
M 17x1,25	15,75	D	100 x 22 x 12 x 9,0	118,20															
M 17x1,50	15,50	D	100 x 22 x 12 x 9,0	118,20															
M 18x1,00	17,00	D	110 x 25 x 14 x 11,0	66,53	73,12		105,05												
M 18x1,25	16,75	D	110 x 25 x 14 x 11,0	82,46															
M 18x1,50	16,50	D	110 x 25 x 14 x 11,0	51,94*	57,16	69,95	68,06												
M 18x2,00	16,00	D	125 x 30 x 14 x 11,0	73,30	81,23	138,42	123,54												

\* Consulte o preço dos jogos de machos e caçonetes à esquerda disponíveis na Pag.217



**MACHOS PARA ROSCAGEM A MÁQUINA HSSCo**
**M**  
**MF**

**HSSCo**  
**5%**
**TOL**  
**6H**
**D**  
**CABO**  
**FINO**
**DIN**  
**376/374**
**Vc**  
**12**  
**m/min**

**D**  
**CABO**  
**FINO**
**DIN**  
**376/374**


			L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x √ mm	M1D	M2D	M3D	M4D
				FORMA C	FORMA B	15°	35°
				€	€	€	€
<b>M 18x2,50</b>	<b>15,50</b>	D	125 x 34 x 14 x 11,0	55,81 *	61,02	69,03	66,48
M 19x1,00	18,00	D	110 x 22 x 14 x 11,0	155,30			
M 19x1,25	17,75	D	110 x 25 x 14 x 11,0	159,71			
M 19x1,50	17,50	D	110 x 25 x 14 x 11,0	152,44			
M 20x1,00	19,00	D	125 x 25 x 16 x 12,0	87,83	97,53		112,20
M 20x1,25	18,75	D	125 x 25 x 16 x 12,0	155,30			
M 20x1,50	18,50	D	125 x 25 x 16 x 12,0	58,83 *	64,65	78,62	77,75
M 20x2,00	18,00	D	140 x 32 x 16 x 12,0	77,10	84,77		100,09
<b>M 20x2,50</b>	<b>17,50</b>	D	140 x 34 x 16 x 12,0	59,41 *	65,88	73,67	73,68
M 21x1,00	20,00	D	125 x 25 x 16 x 12,0	225,49			
M 21x1,25	19,75	D	125 x 25 x 16 x 12,0	225,49			
M 21x1,50	19,50	D	125 x 25 x 16 x 12,0	215,34			
M 22x1,00	21,00	D	125 x 25 x 18 x 14,5	98,46	104,50		144,59
M 22x1,25	20,75	D	125 x 25 x 18 x 14,5	155,30			
M 22x1,50	20,50	D	125 x 25 x 18 x 14,5	70,81	77,89	86,24	81,14
M 22x2,00	20,00	D	140 x 32 x 18 x 14,5	98,46	108,29		144,59
<b>M 22x2,50</b>	<b>19,50</b>	D	140 x 34 x 18 x 14,5	71,89 *	79,07	87,39	86,48
M 23x1,00	22,00	D	125 x 25 x 18 x 14,5	219,22			
M 23x1,50	21,50	D	125 x 25 x 18 x 14,5	219,22			
M 24x1,00	23,00	D	140 x 25 x 18 x 14,5	107,29	130,15		152,77
M 24x1,25	22,75	D	140 x 25 x 18 x 14,5	225,49			
M 24x1,50	22,50	D	140 x 28 x 18 x 14,5	87,09	95,75	115,27	109,80
M 24x2,00	22,00	D	140 x 28 x 18 x 14,5	111,11 *	121,06		130,63
<b>M 24x3,00</b>	<b>21,00</b>	D	160 x 38 x 18 x 14,5	86,06 *	94,19	105,32	105,11
M 25x1,00	24,00	D	140 x 28 x 18 x 14,5	207,99			
M 25x1,25	23,75	D	140 x 28 x 18 x 14,5	328,66			
M 25x1,50	23,50	D	140 x 28 x 18 x 14,5	135,50	143,41		
M 25x2,00	23,00	D	140 x 28 x 18 x 14,5	291,68	320,86		
M 26x1,00	25,00	D	140 x 28 x 18 x 14,5	161,48			
M 26x1,50	24,50	D	140 x 28 x 18 x 14,5	117,44	123,10	215,94	189,89
M 26x2,00	24,00	D	140 x 28 x 18 x 14,5	227,46	250,21		274,82
M 27x1,00	26,00	D	140 x 28 x 20 x 16,0	144,63	186,74		
M 27x1,50	25,50	D	140 x 28 x 20 x 16,0	128,23	135,84	313,83	282,97
M 27x2,00	25,00	D	140 x 28 x 20 x 16,0	158,61 *	167,83		

\* Consulte o preço dos jogos de machos e caçonetes à esquerda disponíveis na Pag.217

**MACHOS PARA ROSCAGEM A MÁQUINA HSSCo**

**M  
MF**



**HSSCo  
5%**

**TOL  
6H**







**D  
CABO  
FINO**

**DIN  
376/374**

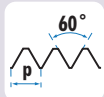
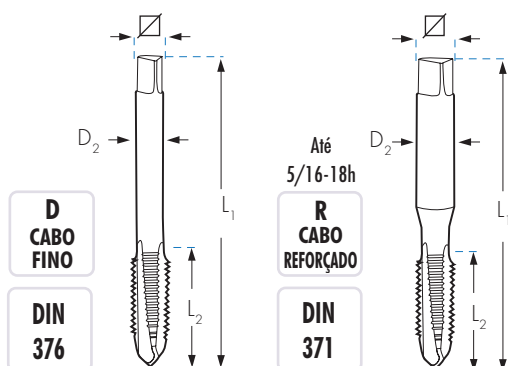


Machos e Caçonetes

Rosa

			L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x  mm	M1D	M2D	M3D	M4D
				FORMA C €	FORMA B €	 15° €	 35° €
<b>M 27x3,00</b>	<b>24,00</b>	D	160 x 36 x 20 x 16	107,43*	117,81	129,58	129,33
M 28x1,00	27,00	D	140 x 28 x 20 x 16	291,68			
M 28x1,50	26,50	D	140 x 28 x 20 x 16	128,23	140,78	163,43	147,55
M 28x2,00	26,00	D	140 x 28 x 20 x 16	156,44	176,68	192,60	189,40
M 30x1,00	29,00	D	150 x 28 x 22 x 18	164,01	189,65		221,11
M 30x1,50	28,50	D	150 x 28 x 22 x 18	133,66	147,07	177,23	168,80
M 30x2,00	28,00	D	150 x 28 x 22 x 18	165,44*	175,59		242,96
<b>M 30x3,50</b>	<b>26,50</b>	D	180 x 40 x 22 x 18	137,67*	151,36	166,08	165,73
M 32x1,00	31,00	D	150 x 28 x 22 x 18	388,93	412,98		
M 32x1,50	30,50	D	150 x 28 x 22 x 18	169,12	185,68	218,36	
M 32x2,00	30,00	D	150 x 28 x 22 x 18	207,81	318,20		
M 33x1,00	32,00	D	160 x 30 x 25 x 20	358,20			
M 33x1,50	31,50	D	160 x 30 x 25 x 20	190,54	202,09		235,21
M 33x2,00	31,00	D	160 x 30 x 25 x 20	312,29	319,21		389,52
<b>M 33x3,50</b>	<b>29,50</b>	D	180 x 40 x 25 x 20	165,44*	190,36		211,14
M 34x1,50	32,50	D	170 x 30 x 28 x 22	212,21	224,80		
M 34x2,00	32,00	D	160 x 30 x 28 x 22	446,29			
M 35x1,50	33,50	D	170 x 30 x 28 x 22	223,80	246,17		269,20
M 35x2,00	33,00	D	170 x 30 x 28 x 22	411,82	453,36		
M 36x1,50	34,50	D	170 x 30 x 28 x 22	204,35	241,59		292,44
M 36x2,00	34,00	D	170 x 30 x 28 x 22	276,01	286,90		
M 36x3,00	33,00	D	200 x 50 x 28 x 22	316,67	329,12		423,25
<b>M 36x4,00</b>	<b>32,00</b>	D	200 x 50 x 28 x 22	217,13*	232,62	270,20	258,53
M 38x1,50	36,50	D	170 x 30 x 28 x 22	217,85	245,46		
M 38x2,00	36,00	D	170 x 32 x 28 x 22	463,04	509,37		
M 39x1,50	37,50	D	170 x 32 x 32 x 24	342,33			
M 39x2,00	37,00	D	170 x 32 x 32 x 24	342,33			
M 39x3,00	36,00	D	200 x 47 x 32 x 24	447,05			
<b>M 39x4,00</b>	<b>35,00</b>	D	200 x 50 x 32 x 24	260,50	270,79		333,90
M 40x1,50	38,50	D	170 x 30 x 32 x 24	284,85	313,53		
M 40x2,00	38,00	D	170 x 30 x 32 x 24	343,23			
M 40x3,00	37,00	D	200 x 47 x 32 x 24	336,52	401,49		
M 42x1,50	40,50	D	170 x 30 x 32 x 24	310,81	303,76		
M 42x2,00	40,00	D	170 x 30 x 32 x 24	392,65			
M 42x3,00	39,00	D	200 x 45 x 32 x 24	392,65	470,20		
<b>M 42x4,50</b>	<b>37,50</b>	D	200 x 56 x 32 x 24	334,98	348,10		372,23
M 45x1,50	43,50	D	180 x 32 x 36 x 29	371,22	408,30		
M 45x2,00	43,00	D	180 x 32 x 36 x 29	454,65			
M 45x3,00	42,00	D	200 x 47 x 36 x 29	454,65			
<b>M 45x4,50</b>	<b>40,50</b>	D	220 x 58 x 36 x 29	365,91	402,48		
M 48x1,50	46,50	D	190 x 32 x 36 x 29	365,91			
M 48x2,00	46,00	D	190 x 32 x 36 x 29	591,25			
M 48x3,00	45,00	D	220 x 52 x 36 x 29	550,95			
<b>M 48x5,00</b>	<b>43,00</b>	D	250 x 65 x 36 x 29	449,97	494,94		
M 50x1,50	48,50	D	190 x 32 x 36 x 29	443,49			
M 52x1,50	50,50	D	190 x 32 x 40 x 32	433,24			
M 52x2,00	50,00	D	190 x 32 x 40 x 32	685,61			
M 52x3,00	49,00	D	225 x 50 x 40 x 32	704,62			
<b>M 52x5,00</b>	<b>47,00</b>	D	250 x 65 x 40 x 32	460,83	570,19		

\* Consulte o preço dos jogos de machos e caçonetes à esquerda disponíveis na Pag.217

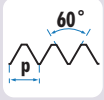
**MACHOS PARA ROSCAGEM A MÁQUINA HSSCo**
**UNC**

**HSSCo**  
**5%**
**TOL**  
**2B**
**Vc**  
**12 m/min**


	D1 mm		L1 x L2 x D2 x $\nabla$ mm	MTR	M2R	M4R
				FORMA C	FORMA B	35°
				€	€	€
UNC nº 4-40h	2,84	2,25	R 56 x 11 x 3,5 x 2,7	25,64	30,49	34,79
UNC nº 5-40h	3,17	2,60	R 56 x 11 x 3,5 x 2,7	26,57	31,88	34,79
UNC nº 6-32h	3,50	2,75	R 56 x 12 x 4,0 x 3,0	25,29	30,39	34,64
UNC nº 8-32h	4,17	3,50	R 63 x 13 x 4,5 x 3,4	25,29	30,39	33,13
UNC nº 10-24h	4,83	3,90	R 70 x 15 x 6,0 x 4,9	26,57	31,88	36,39
UNC nº 12-24h	5,49	4,50	R 80 x 16 x 6,0 x 4,9	27,88	31,88	33,40
UNC 1/4-20h	6,35	5,10	R 80 x 17 x 7,0 x 5,5	24,84	27,08	31,25
UNC 5/16-18h	7,94	6,60	R 90 x 20 x 8,0 x 6,2	28,11	30,99	35,29

CABO FINO			MTD	M2D	M4D	
UNC 3/8-16h	9,52	8,00	D 100 x 22 x 7,0 x 5,5	32,05	33,61	37,77
UNC 7/16-14h	11,11	9,40	D 100 x 22 x 8,0 x 6,2	44,11	44,26	55,35
UNC 1/2-13h	12,70	10,75	D 110 x 24 x 9,0 x 7,0	47,87	53,04	60,54
UNC 9/16-12h	14,28	12,20	D 110 x 26 x 11,0 x 9,0	65,80	72,25	82,19
UNC 5/8-11h	15,87	13,50	D 110 x 27 x 12,0 x 9,0	63,93	70,36	79,93
UNC 3/4-10h	19,05	16,50	D 125 x 30 x 14,0 x 11,0	84,64	93,05	105,87
UNC 7/8-9h	22,22	19,50	D 140 x 32 x 18,0 x 14,5	111,37	122,36	165,66
UNC 1"-8h	25,40	22,25	D 160 x 36 x 18,0 x 14,5	147,16	160,76	207,81
UNC 1.1/8-7h	28,57	25,00	D 180 x 40 x 22,0 x 18,0	192,22		232,19
UNC 1.1/4-7h	31,75	28,00	D 180 x 40 x 22,0 x 18,0	225,30		297,04
UNC 1.3/8-6h	34,92	30,75	D 200 x 50 x 28,0 x 22,0	336,06		
UNC 1.1/2-6h	38,10	34,00	D 200 x 50 x 32,0 x 24,0	381,64		

MACHOS PARA ROSCAGEM A MÁQUINA HSSCo

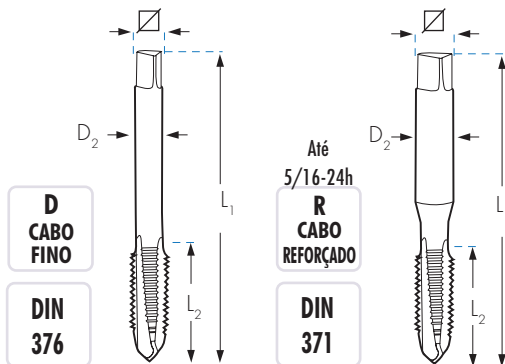
UNF



HSSCo  
5%

TOL  
2B

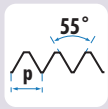
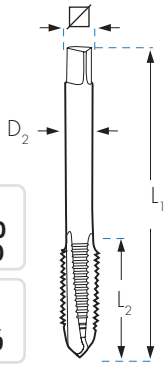
Vc  
12 m/min



UNF nº	D <sub>1</sub> mm	D <sub>2</sub> mm	R	L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x ∅ mm	M1R	M2R	M4R
					FORMA C	FORMA B	FORMA 35°
					€	€	€
UNF nº 4-48h	2,84	2,35	R	56 x 11 x 3,5 x 2,7	26,84	29,22	36,68
UNF nº 5-44h	3,17	2,70	R	56 x 11 x 3,5 x 2,7	26,84	29,22	36,68
UNF nº 6-40h	3,50	2,95	R	56 x 12 x 4,0 x 3,0	25,67	30,74	36,40
UNF nº 8-36h	4,17	3,50	R	63 x 13 x 4,5 x 3,4	25,67	30,74	36,40
UNF nº 10-32h	4,83	4,10	R	70 x 15 x 6,0 x 4,9	25,67	30,74	36,40
UNF nº 12-28h	5,49	4,60	R	80 x 16 x 6,0 x 4,9	26,84	32,16	36,68
UNF 1/4-28h	6,35	5,50	R	80 x 17 x 7,0 x 5,5	21,68	23,22	27,09
UNF 5/16-24h	7,94	6,90	R	90 x 20 x 8,0 x 6,2	24,24	26,72	31,24

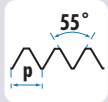
CABO FINO				M1D	M2D	M4D	
UNF	nº	h	D				
UNF	3/8	24h	D	90 x 16 x 7,0 x 5,5	26,54	30,70	39,08
UNF	7/16	20h	D	100 x 22 x 8,0 x 6,2	32,74	37,95	50,10
UNF	1/2	20h	D	100 x 22 x 9,0 x 7,0	34,86	40,35	53,30
UNF	9/16	18h	D	100 x 22 x 11,0 x 9,0	42,83	49,60	66,00
UNF	5/8	18h	D	100 x 22 x 12,0 x 9,0	48,22	55,79	73,74
UNF	3/4	16h	D	110 x 25 x 14,0 x 11,0	61,70	71,45	94,32
UNF	7/8	14h	D	125 x 25 x 18,0 x 14,5	77,59	97,06	144,28
UNF	1"	12h	D	140 x 28 x 18,0 x 14,5	116,79	127,17	169,81
UNS	1"	14h	D	140 x 28 x 18,0 x 14,5	117,31	130,82	169,82
UNF	1.1/8	12h	D	150 x 28 x 22,0 x 18,0	177,95		
UNF	1.1/4	12h	D	150 x 28 x 22,0 x 18,0	224,88		
UNF	1.1/2	12h	D	170 x 30 x 32,0 x 24,0	377,42		



**MACHOS PARA ROSCAGEM A MÁQUINA HSSCo**
**BSP  
(GAS)**

**HSSCo  
5%**
**TOL  
ISO 228**
**INOX**
**Vc  
12 m/min**
**Vc  
6 m/min**

**D  
CABO  
FINO**
**DIN  
5156**


	D1 mm		L1 x L2 x D2 x $\nabla$ mm	M1D	M2D	M3D	M4D	M2DX	M4DX
				FORMA C	FORMA B	15°	35°	FORMA B	35°
				€	€	€	€	€	€
G 1/8-28h.	9,728	8,80	D 90 x 16 x 7 x 5,5	33,94*	38,77	39,72	41,16	59,93	59,31
G 1/4-19h.	13,157	11,80	D 100 x 22 x 11 x 9,0	47,07*	51,82	57,04	59,11	80,74	86,42
G 3/8-19h.	16,662	15,25	D 100 x 22 x 12 x 9,0	56,36*	62,01	68,13	70,59	95,79	101,56
G 1/2-14h.	20,955	19,00	D 125 x 25 x 16 x 12,0	71,23*	78,38	85,93	89,02	118,60	128,19
G 5/8-14h.	22,911	21,00	D 125 x 25 x 18 x 14,5	88,76*	93,09	106,99	106,00		
G 3/4-14h.	26,441	24,50	D 140 x 28 x 20 x 16,0	111,49	122,71	134,50	139,36	179,20	197,70
G 7/8-14h.	30,201	28,25	D 150 x 28 x 22 x 18,0	149,87	157,66	180,90	179,21		
G 1"-11h.	33,249	30,75	D 160 x 30 x 25 x 20,0	173,06	190,32	206,53	214,00		
G 1.1/8-11h.	37,897	35,50	D 170 x 30 x 28 x 22,0	276,34	301,43		331,06		
G 1.1/4-11h.	41,910	39,50	D 170 x 30 x 32 x 24,0	324,25	341,16		377,68		
G 1.3/8-11h.	44,323	42,00	D 180 x 32 x 36 x 29,0	387,73			524,62		
G 1.1/2-11h.	47,803	45,25	D 190 x 32 x 36 x 29,0	517,04	720,77		682,81		
G 1.3/4-11h.	53,746	51,25	D 190 x 32 x 40 x 32,0	614,56	710,98				
G 2"-11h.	59,614	57,00	D 220 x 36 x 45 x 35,0	783,81	780,18				

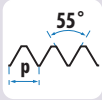
\* Disponíveis também com rosca esquerda com 100% de sobrecusto sobre os preços em rosca direita.

**BSF**

**HSSCo  
5%**
**TOL  
ISO 228**
**Vc  
12 m/min**
**D  
CABO  
FINO**
**DIN  
5156**

	D1 mm		L1 x L2 x D2 x $\nabla$ mm	M1D
				FORMA C
				€
BSF 3/16-32h.	4,762	4,00	D 70 x 16 x 3,5 x 2,7	77,66
BSF 1/4-26h.	6,350	5,20	D 80 x 17 x 4,5 x 3,4	33,98
BSF 5/16-22h.	7,938	6,60	D 90 x 20 x 6,0 x 4,9	40,35
BSF 3/8-20h.	9,525	8,10	D 100 x 22 x 7,0 x 5,5	42,42
BSF 7/16-18h.	11,113	9,50	D 100 x 22 x 8,0 x 6,2	57,17
BSF 1/2-16h.	12,700	11,00	D 110 x 24 x 9,0 x 7,0	64,70
BSF 9/16-16h.	14,287	12,50	D 110 x 25 x 11,0 x 9,0	68,48
BSF 5/8-14h.	15,876	14,00	D 110 x 27 x 12,0 x 9,0	91,27
BSF 3/4-12h.	19,051	16,50	D 125 x 30 x 14,0 x 11,0	108,04
BSF 7/8-11h.	22,226	19,50	D 140 x 32 x 18,0 x 14,5	150,15
BSF 1"-10h.	25,400	22,50	D 160 x 36 x 18,0 x 14,5	174,54

MACHOS PARA ROSCAGEM A MÁQUINA HSSCo

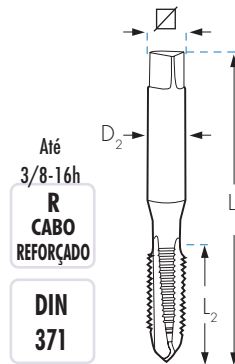
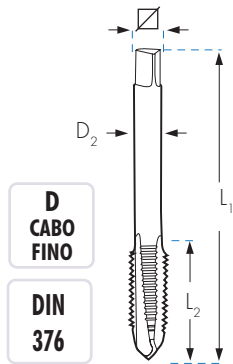
BSW



HSSCo  
5%

TOL  
Clase 2

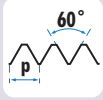
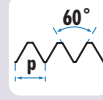
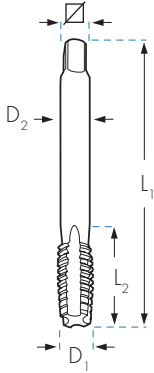
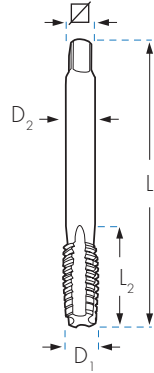
Vc  
12 m/min



Forma	D1 mm	D2	L1 x L2 x D2 x mm	M1R	M2R	M3R	M4R
				FORMA C	FORMA B	15°	35°
				€	€	€	€
W 3/32-48h.	2,38	1,80	R 50 x 9 x 2,8 x 2,1	23,59	25,18		
W 1/8-40h.	3,17	2,55	R 56 x 11 x 3,5 x 2,7	19,68*	21,75	25,68	24,71
W 5/32-32h.	3,97	3,10	R 63 x 13 x 4,5 x 3,4	19,68	21,75	25,68	24,71
W 3/16-24h.	4,76	3,60	R 70 x 15 x 6,0 x 4,9	21,84	21,75	25,68	24,71
W 7/32-24h.	5,56	4,40	R 80 x 16 x 6,0 x 4,9	29,88	31,59		
W 1/4-20h.	6,35	5,10	R 80 x 17 x 7,0 x 5,5	21,02	24,71	29,15	30,20
W 5/16-18h.	7,94	6,50	R 90 x 20 x 8,0 x 6,2	23,57	31,16	34,02	33,96
W 3/8-16h.	9,52	7,90	R 100 x 22 x 10,0 x 8,0	26,38	34,44	37,81	37,75

CABO FINO			M1D	M2D	M3D	M4D	
W	D	D					
W 7/16-14h.	11,11	9,25	D 100 x 22 x 8,0 x 6,2	36,69	37,93	47,66	48,00
W 1/2-12h.	12,70	10,50	D 110 x 24 x 9,0 x 7,0	35,18	39,55	45,66	45,99
W 9/16-12h.	14,29	12,00	D 110 x 26 x 11,0 x 9,0	50,43	52,37	65,49	65,95
W 5/8-11h.	15,87	13,40	D 110 x 27 x 12,0 x 9,0	47,75	49,48	61,93	62,36
W 3/4-10h.	19,05	16,50	D 125 x 30 x 14,0 x 11,0	66,83	69,37	82,97	83,56
W 7/8-9h.	22,22	19,25	D 140 x 32 x 18,0 x 14,5	86,56	89,76	112,31	108,15
W 1"-8h.	25,40	21,75	D 160 x 36 x 18,0 x 14,5	108,79	112,82	140,94	141,94
W 1.1/8-7h.	28,57	24,75	D 180 x 40 x 22,0 x 18,0	147,54	168,11	202,14	
W 1.1/4-7h.	31,75	27,75	D 180 x 40 x 22,0 x 18,0	214,33	244,27		
W 1.3/8-6h.	34,92	30,50	D 200 x 50 x 28,0 x 22,0	352,29	401,13		
W 1.1/2-6h.	38,10	33,50	D 200 x 50 x 32,0 x 24,0	382,38	435,79		
W 1.5/8-5h.	41,27	46,50	D 220 x 65 x 32,0 x 24,0	533,73	608,30		
W 1.3/4-5h.	44,45	39,00	D 220 x 58 x 36,0 x 29,0	571,69	656,25		
W 1.7/8-4,5h.	47,62	42,00	D 250 x 75 x 36,0 x 29,0	662,89	727,51		
W 2"-4,5h.	50,80	44,50	D 250 x 65 x 40,0 x 32,0	818,21			

\* Disponíveis também com rosca esquerda com 100% de sobrecusto sobre os preços em rosca direita.

**MACHOS PARA ROSCAGEM A MÁQUINA HSSCo**
**UNJC**

**HSSCo**  
**5%**
**TOL**  
**3B**
**UNJF**

**HSSCo**  
**5%**
**TOL**  
**3B**
**Vc**  
**12 m/min**

**Vc**  
**12 m/min**


		D1 mm		L1 x L2 x D2 x $\nabla$ mm	MTR
					FORMA C
					€
UNJC nº 4-40h	2,84	2,25	R	56 x 11 x 3,5 x 2,7	38,94
UNJC nº 5-40h	3,17	2,60	R	56 x 11 x 3,5 x 2,7	38,94
UNJC nº 6-32h	3,50	2,75	R	56 x 12 x 4,0 x 3,0	38,94
UNJC nº 8-32h	4,17	3,50	R	63 x 13 x 4,5 x 3,4	38,94
UNJC nº10-24h	4,83	3,90	R	70 x 15 x 6,0 x 4,9	38,94
UNJC nº12-24h	5,49	4,50	R	80 x 16 x 6,0 x 4,9	40,85
UNJC 1/4-20h	6,35	5,10	R	80 x 17 x 7,0 x 5,5	36,34
UNJC 5/16-18h	7,94	6,60	R	90 x 20 x 8,0 x 6,2	41,12
UNJC 3/8-16h	9,52	8,00	R	100 x 22 x 8,0 x 6,2	46,88

		D1 mm		L1 x L2 x D2 x $\nabla$ mm	MTR
					FORMA C
					€
UNJF nº 4-48h	2,84	2,35	R	56 x 11 x 3,5 x 2,7	42,72
UNJF nº 5-44h	3,17	2,70	R	56 x 11 x 3,5 x 2,7	42,72
UNJF nº 6-40h	3,50	2,95	R	56 x 12 x 4,0 x 3,0	42,72
UNJF nº 8-36h	4,17	3,50	R	63 x 13 x 4,5 x 3,4	42,72
UNJF nº10-32h	4,83	4,10	R	70 x 15 x 6,0 x 4,9	42,72
UNJF nº12-28h	5,49	4,60	R	80 x 16 x 6,0 x 4,9	42,72
UNJF 1/4-28h	6,35	5,50	R	80 x 17 x 7,0 x 5,5	33,17
UNJF 5/16-24h	7,94	6,90	R	90 x 20 x 8,0 x 6,2	37,09
UNJF 3/8-24h	9,52	8,50	R	90 x 16 x 7,0 x 6,2	40,61

CABO FINO PASSOS NORMAIS				MTD	
UNJC 7/16-14h	11,11	9,40	D	110 x 24 x 9,0 x 7,0	64,65
UNJC 1/2-13h	12,70	10,75	D	110 x 26 x 11,0 x 9,0	70,17
UNJC 9/16-12h	14,28	12,20	D	110 x 27 x 12,0 x 9,0	96,45
UNJC 5/8-11h	15,87	13,50	D	110 x 27 x 12,0 x 9,0	98,87
UNJC 3/4-10h	19,05	16,50	D	125 x 30 x 14,0 x 11,0	124,05
UNJC 7/8-9h	22,22	19,50	D	140 x 32 x 18,0 x 14,5	163,23
UNJC 1"-8h	25,40	22,25	D	160 x 36 x 18,0 x 14,5	215,66

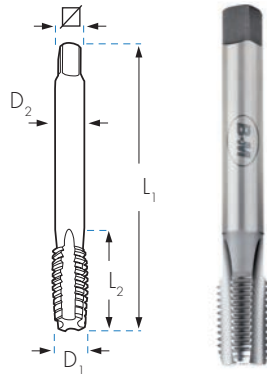
CABO FINO PASSOS NORMAIS				MTD	
UNJF 7/16-20h	11,11	9,90	D	100 x 22 x 8,0 x 6,2	55,77
UNJF 1/2-20h	12,70	11,50	D	100 x 22 x 9,0 x 7,0	59,39
UNJF 9/16-18h	14,29	12,90	D	100 x 22 x 11,0 x 9,0	72,97
UNJF 5/8-18h	15,87	14,50	D	100 x 22 x 12,0 x 9,0	82,15
UNJF 3/4-16h	19,05	17,50	D	110 x 25 x 14,0 x 11,0	105,10
UNJF 7/8-14h	22,22	20,40	D	125 x 25 x 18,0 x 14,5	132,16
UNJF 1"-12h	25,40	23,25	D	140 x 28 x 18,0 x 14,5	147,35

**MACHOS PARA ROSCAGEM A MÁQUINA HSSCo**

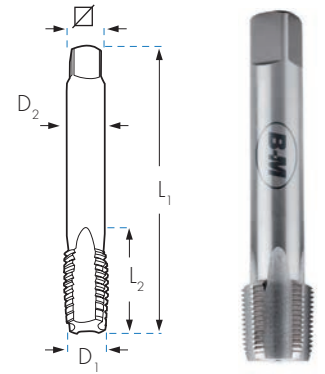
**BSPB** **DIN 2999** **55°** **HSSCo 5%** **DIN 374** **FORMA C**

**BSPT** **BS21 ISO7/1** **55°** **HSSCo 5%** **DIN 5156** **FORMA C**

**ROSCA CILÍNDRICA INGLESA PARA TUBO**



**ROSCA CÔNICA INGLESA PARA TUBO**



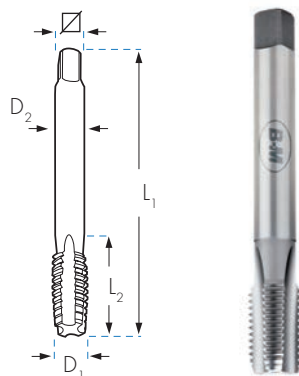
	D1 mm	L1 x L2 x D2 x ∅	MTD	€
Rp 1/16-28h.	7,72	D 90 x 16 x 6 x 4,9		
Rp 1/8-28h.	9,73	D 90 x 16 x 7 x 5,5		50,65
Rp 1/4-19h.	13,16	D 100 x 22 x 11 x 9,0		69,96
Rp 3/8-19h.	16,66	D 100 x 22 x 12 x 9,0		83,77
Rp 1/2-14h.	20,95	D 125 x 25 x 16 x 12,0		105,87
Rp 3/4-14h.	26,44	D 140 x 28 x 20 x 16,0		165,78
Rp 1"-11h.	33,25	D 160 x 30 x 25 x 20,0		257,22
Rp 1.1/4-11h.	41,91	D 170 x 30 x 32 x 24,0		
Rp 1.1/2-11h.	46,80	D 190 x 32 x 36 x 29,0		
Rp 2"-11h.	59,61	D 220 x 36 x 45 x 35,0		

	D1 mm		L1 x L2 x D2 x ∅	MTD	€
Rc 1/16-28h.	7,72		D 90 x 14 x 6 x 4		
Rc 1/8-28h.	9,73	8,30	D 90 x 15 x 7 x 5		51,82
Rc 1/4-19h.	13,16	11,00	D 100 x 19 x 11 x 9		74,53
Rc 3/8-19h.	16,66	14,50	D 100 x 21 x 12 x 9		103,58
Rc 1/2-14h.	20,95	18,10	D 125 x 26 x 16 x 12		143,92
Rc 5/8-14h.	22,91	21,00	D 140 x 36 x 18 x 19		232,16
Rc 3/4-14h.	26,44	23,50	D 140 x 28 x 20 x 16		224,47
Rc 7/8-14h.	30,20	28,25	D 160 x 36 x 22 x 18		390,60
Rc 1"-11h.	33,25	29,60	D 160 x 33 x 25 x 20		321,71

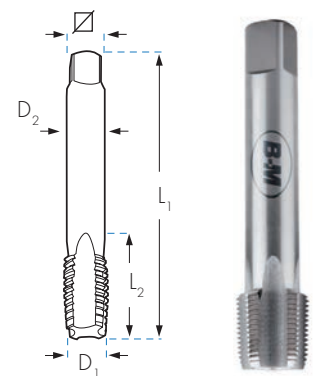
**NPS (M)** **ANSI B 1.20.1** **60°** **HSSCo 5%** **DIN 374** **FORMA C**

**NPT** **ANSI B 1.20.1** **60°** **HSSCo 5%** **DIN 374** **FORMA C**

**ROSCA CILÍNDRICA AMERICANA PARA TUBO**



**ROSCA CÔNICA AMERICANA PARA TUBO**



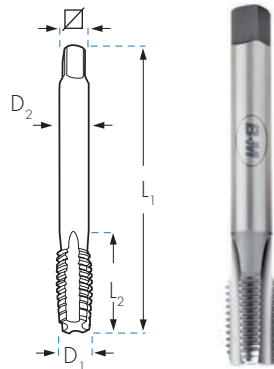
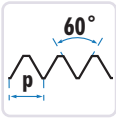
	D1 mm		L1 x L2 x D2 x ∅	MTD	€
NPS 1/8-27h.	10,20	8,90	D 90 x 16 x 7 x 5,5		130,46
NPS 1/4-18h.	13,60	11,70	D 100 x 22 x 11 x 9,0		186,72
NPS 3/8-18h.	17,00	15,00	D 100 x 22 x 12 x 9,0		256,05
NPS 1/2-14h.	21,20	18,60	D 125 x 25 x 16 x 12,0		351,11
NPS 3/4-14h.	26,55	24,00	D 140 x 28 x 20 x 16,0		519,05
NPS 1"-11,5 h.	33,20	30,00	D 160 x 30 x 25 x 20,0		671,23
NPS 1.1/4-11,5h.	41,60		D 170 x 30 x 32 x 24,0		
NPS 1.1/2-11,5h.	47,68		D 190 x 32 x 36 x 29,0		
NPS 2"-11,5h.	59,71		D 220 x 36 x 45 x 35,0		

	D1 mm		L1 x L2 x D2 x ∅	MTD	€
NPT 1/16-27h.	7,89	6,2	D 90 x 14 x 6 x 5		45,39
NPT 1/8-27h.	10,24	8,5	D 90 x 15 x 8 x 6		47,47
NPT 1/4-18h.	13,62	11,0	D 100 x 19 x 11 x 9		61,30
NPT 3/8-18h.	17,05	14,5	D 100 x 21 x 12 x 9		78,80
NPT 1/2-14h.	21,22	17,8	D 125 x 26 x 16 x 12		102,51
NPT 3/4-14h.	26,57	23,0	D 140 x 28 x 20 x 16		158,83
NPT 1"-11,5h.	33,23	29,0	D 160 x 33 x 25 x 20		206,44
NPT 1.1/4-11,5h.	41,98	37,5	D 170 x 36 x 32 x 24		281,86
NPT 1.1/2-11,5h.	48,05	44,0	D 190 x 37 x 36 x 29		443,82
NPT 2"-11,5h.	60,09	56,0	D 220 x 41 x 45 x 35		696,18

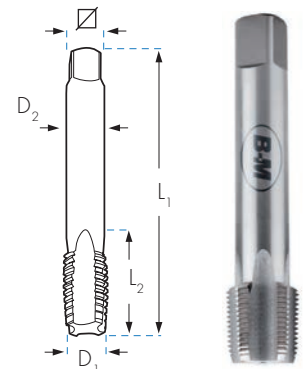
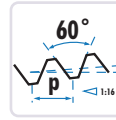


## MACHOS PARA ROSCAGEM A MÁQUINA HSSCo

NPSF

HSSCo  
5%DIN  
374FORMA  
CROSCA PARA TUBO  
AMERICANA CILÍNDRICA

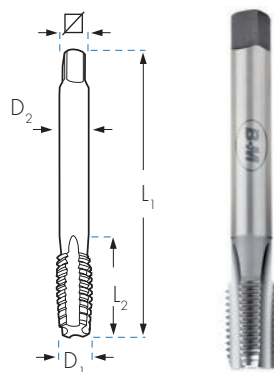
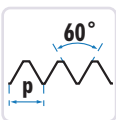
NPTF

HSSCo  
5%DIN  
374FORMA  
CROSCA PARA TUBO  
AMERICANA CÔNICA ESTANQUE

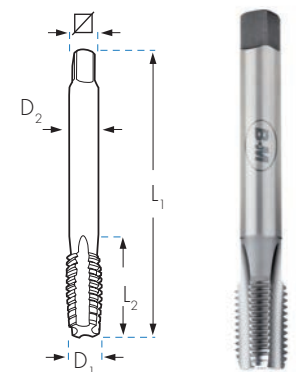
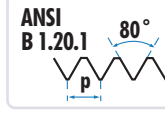
	D1 mm		L1 x L2 x D2 x $\square$ mm	MID €
NPSF 1/8-27h.	10,05	8,75	D 90 x 16 x 7 x 5,5	163,42
NPSF 1/4-18h.	13,33	11,30	D 100 x 22 x 11 x 9,0	225,25
NPSF 3/8-18h.	16,78	14,70	D 100 x 22 x 12 x 9,0	320,44
NPSF 1/2-14h.	20,87	18,20	D 125 x 25 x 16 x 12,0	399,60
NPSF 3/4-14h.	26,23	23,50	D 140 x 28 x 20 x 16,0	654,00
NPSF 1"-11,5h.	32,81	29,50	D 160 x 30 x 25 x 20,0	

	D1 mm		L1 x L2 x D2 x $\square$ mm	MID €
NPTF 1/16-27h.	7,87	6,20	D 90 x 14 x 12,0 x 6	
NPTF 1/8-27h.	10,22	8,50	D 90 x 15 x 12,0 x 7	110,41
NPTF 1/4-18h.	13,58	11,00	D 100 x 21 x 17,5 x 11	154,90
NPTF 3/8-18h.	17,02	14,50	D 110 x 21 x 17,6 x 12	198,99
NPTF 1/2-14h.	21,21	17,80	D 140 x 27 x 22,8 x 16	259,05
NPTF 3/4-14h.	26,56	23,00	D 140 x 27 x 23,0 x 20	401,32

MF

HSSCo  
5%TOL  
6HFORMA  
CDIN  
374ROSCA MÉTRICA FINA PARA  
TUBO DE CONDUÇÃO  
ELÉTRICA EM 60423

PG

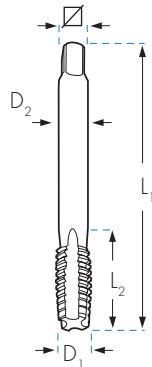
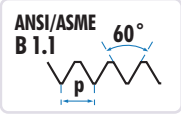
HSSCo  
5%DIN  
40430FORMA  
CROSCA PARA TUBO DE  
CONDUÇÃO ELÉTRICA

	D1 mm		L1 x L2 x D2 x $\square$ mm	MID €
MF 12 x 1,50	12	10,5	D 100 x 22 x 9 x 7,0	27,86
MF 16 x 1,50	16	14,5	D 100 x 22 x 12 x 9,0	39,23
MF 20 x 1,50	20	18,5	D 125 x 25 x 16 x 12,0	58,83
MF 25 x 1,50	25	23,5	D 140 x 28 x 18 x 14,5	135,50
MF 32 x 1,50	32	30,5	D 150 x 28 x 22 x 18,0	169,12
MF 40 x 1,50	40	38,5	D 170 x 30 x 32 x 24,0	284,85
MF 50 x 1,50	50	48,5	D 190 x 32 x 36 x 29,0	443,49
MF 63 x 1,50	63	61,5	D 275 x 36 x 50 x 39,0	

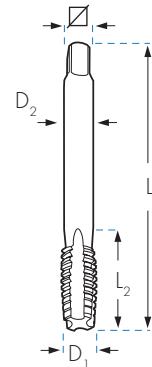
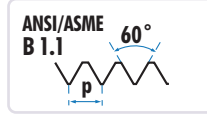
	D1 mm		L1 x L2 x D2 x $\square$ mm	MID €
PG 7 - 20h.	12,5	11,50	D 100 x 22 x 9 x 7,0	48,45
PG 9 - 18h.	15,2	14,00	D 100 x 22 x 12 x 9,0	67,10
PG 11 - 18h.	18,6	17,25	D 110 x 25 x 14 x 11,0	87,30
PG 13,5 - 18h.	20,4	19,00	D 125 x 25 x 16 x 12,0	98,04
PG 16 - 18h.	22,5	21,25	D 125 x 25 x 18 x 14,5	115,38
PG 21 - 16h.	28,3	27,00	D 150 x 28 x 22 x 18,0	183,17
PG 29 - 16h.	37,0	35,50	D 170 x 30 x 28 x 22,0	309,65
PG 36 - 16h.	47,0	45,50	D 190 x 32 x 36 x 29,0	502,89
PG 42 - 16h.	54,0	52,50	D 190 x 32 x 40 x 32,0	798,67
PG 48 - 16h.	59,3	58,00	D 220 x 36 x 45 x 35,0	973,64

**MACHOS PARA ROSCAGEM A MÁQUINA HSSCo**

**UNx8** HSSCo 5% DIN 374 FORMA C TOL 2B



**UNEF** HSSCo 5% DIN 374 TOL 2B

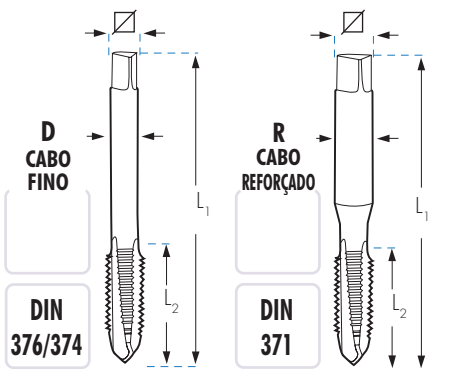
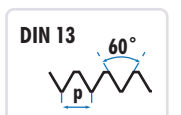


Icon	D <sub>2</sub> mm	L <sub>1</sub> x L <sub>2</sub> x mm	FORMA C	M1D	
				€	€
UN 1" 1/8-8h.	25,40	22	180 x 45 x 18	240,85	
UN 1" 1/4-8h.	28,50	22	180 x 48 x 18	310,74	
UN 1" 3/8-8h.	31,75	28	200 x 56 x 22	352,49	
UN 1" 1/2-8h.	35,00	32	200 x 58 x 22	448,49	
UN 1" 5/8-8h.	38,10	32	200 x 65 x 24	524,62	
UN 1" 3/4-8h.	41,25	36	200 x 50 x 29	639,07	
UN 1" 7/8-8h.	44,45	36	225 x 53 x 29	737,18	
UN 2"-8h.	47,63	40	225 x 50 x 32	753,23	

Icon	D <sub>2</sub> mm	L <sub>1</sub> x L <sub>2</sub> x mm	FORMA B	M2D		M4D	
				€	€	35°	€
UNEF 1/4-32h.	5,55	7,0	R 82 x 16 x 5,4	99,66	112,00		
UNEF 5/16-32h.	7,15	8,4	R 85 x 21 x 6,1	109,81	123,38		
UNEF 3/8-32h.	8,70	7,0	D 95 x 22 x 5,4	109,87	123,45		
UNEF 7/16-28h.	10,20	8,0	D 100 x 22 x 6,2	145,83	163,85		
UNEF 1/2-28h.	11,80	9,0	D 100 x 22 x 7,0	153,60	172,59		
UNEF 9/16-24h.	13,20	12,0	D 100 x 24 x 9,0	192,44	216,23		
UNEF 5/8-24h.	14,80	12,0	D 100 x 24 x 9,0	218,99	246,06		
UNEF 3/4-20h.	17,80	14,0	D 110 x 27 x 11,0	284,81	320,04		
UNEF 7/8-20h.	20,95	18,0	D 125 x 26 x 14,5	306,15	328,02		
UNEF 1"-20h.	24,20	18,0	D 140 x 28 x 14,5	468,51	526,42		

**MACHOS PARA ROSCAGEM A MÁQUINA HSSCo, ROSCA ESQUERDA**

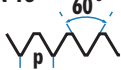
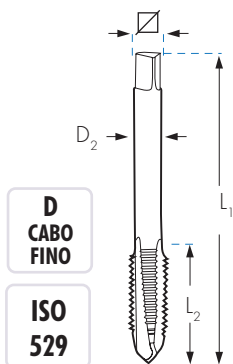
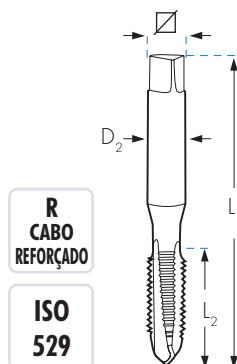
**M MF** HSSCo 5% FORMA C TOL 6H







Icon	D <sub>2</sub> mm	L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x mm	FORMA C	M1R1	
				€	€
M 3x0,50	2,50	R 56 x 11 x 3,5 x 2,7		22,66	
M 4x0,70	3,30	R 63 x 13 x 4,5 x 3,4		25,79	
M 5x0,80	4,20	R 70 x 16 x 6,0 x 4,9		23,09	
M 6x1,00	5,00	R 80 x 17 x 6,0 x 4,9		26,27	
M 7x1,00	6,00	R 80 x 17 x 7,0 x 5,5		34,07	
M 8x1,25	6,80	R 90 x 20 x 8,0 x 6,2		29,68	
M 10x1,50	8,50	R 100 x 22 x 10,0 x 8,0		33,64	

Icon	D <sub>2</sub> mm	L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x mm	FORMA C	CABO FINO		M1D1	
				€	€	€	€
M 12x1,50	10,50	D 100 x 22 x 9,0 x 7,0		55,72			
M 12x1,75	10,20	D 110 x 24 x 9,0 x 7,0		40,15			
M 14x1,50	12,50	D 100 x 22 x 11,0 x 9,0		66,36			
M 14x2,00	12,00	D 110 x 26 x 11,0 x 9,0		65,92			
M 16x1,50	14,50	D 100 x 22 x 12,0 x 9,0		78,46			
M 16x2,00	14,00	D 110 x 27 x 12,0 x 9,0		77,59			
M 18x1,50	16,50	D 110 x 25 x 14,0 x 11,0		103,88			
M 18x2,50	15,50	D 125 x 30 x 14,0 x 11,0		111,62			
M 20x1,50	18,50	D 125 x 25 x 16,0 x 12,0		117,65			
M 20x2,50	17,50	D 140 x 32 x 16,0 x 12,0		118,81			
M 22x2,50	19,50	D 140 x 32 x 18,0 x 14,5		143,77			
M 24x2,00	22,00	D 140 x 28 x 18,0 x 14,5		222,23			
M 24x3,00	21,00	D 160 x 34 x 18,0 x 14,5		172,11			
M 27x3,00	24,00	D 160 x 36 x 20,0 x 16,0		214,86			
M 30x2,00	28,00	D 150 x 28 x 22,0 x 18,0		330,88			
M 30x3,50	26,50	D 180 x 40 x 22,0 x 18,0		275,33			
M 33x3,50	29,50	D 180 x 40 x 25,0 x 20,0		330,88			
M 36x4,00	32,00	D 200 x 50 x 28,0 x 22,0		434,27			

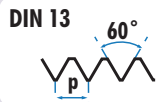
Consulte outras medidas disponíveis sob demanda.

**MACHOS MÁQUINA MÉTRICA NORMA ISO 529**
**M**  
**MF**
**DIN 13**

**HSSCo**  
**5%**
**ISO**  
**529**
**TOL**  
**6H**

**D**  
**CABO**  
**FINO**  
**ISO**  
**529**

**R**  
**CABO**  
**REFORÇADO**  
**ISO**  
**529**


		L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x  mm	M1RISO	M2RISO	M4RISO	M5RISO
			FORMA C	FORMA B	 35°	DENTE ALTERNADO
			€	€	€	€
M 3x0,50	2,50	R 48 x 11 x 3,15 x 2,50	8,17	8,52	10,26	12,20
M 4x0,70	3,30	R 53 x 13 x 4,00 x 3,15	8,17	8,52	10,26	12,20
M 5x0,80	4,20	R 58 x 16 x 5,00 x 4,00	8,17	8,52	10,26	12,20
M 6x1,00	5,00	R 66 x 19 x 6,30 x 5,00	8,17	8,52	10,48	12,20
M 7x1,00	6,00	R 66 x 19 x 7,10 x 5,60		12,12	13,91	
M 8x1,00	7,00	R 69 x 19 x 8,00 x 6,30		16,72	17,16	
M 8x1,25	6,75	R 72 x 22 x 8,00 x 6,30	10,92	11,37	11,76	13,33
M 9x1,25	7,75	R 76 x 20 x 10,00 x 8,00		18,09	20,66	
M 10x1,00	9,00	R 76 x 20 x 10,00 x 8,00		19,18	20,95	
M 10x1,25	8,80	R 76 x 20 x 10,00 x 8,00		22,93	23,67	
M 10x1,50	8,50	R 80 x 24 x 10,00 x 8,00	13,89	14,47	15,16	16,82
<b>CABO FINO</b>			M1DISO	M2DISO	M4DISO	M5DISO
M 12x1,00	11,00	D 84 x 24 x 9,00 x 7,10		26,42	27,07	
M 12x1,25	10,75	D 84 x 24 x 9,00 x 7,10		25,95	26,87	
M 12x1,50	10,50	D 89 x 29 x 9,00 x 7,10		23,15	24,93	
M 12x1,75	10,20	D 89 x 29 x 9,00 x 7,10	17,85	18,59	19,69	25,16
M 14x1,00	13,00	D 90 x 25 x 11,20 x 9,00		33,09	41,16	
M 14x1,25	12,80	D 90 x 25 x 11,20 x 9,00		27,94	34,99	
M 14x1,50	12,50	D 95 x 30 x 12,50 x 9,00		24,55	27,59	
M 14x2,00	12,00	D 95 x 30 x 11,20 x 9,00	21,34	22,23	26,91	
M 16x1,00	15,00	D 95 x 25 x 12,50 x 10,00		42,10	54,18	
M 16x1,25	14,75	D 102 x 32 x 12,50 x 10,00		46,68	60,08	
M 16x1,50	14,50	D 102 x 32 x 14,00 x 10,00		29,47	33,02	
M 16x2,00	14,00	D 102 x 32 x 12,50 x 10,00	26,50	27,60	31,22	
M 18x1,50	16,50	D 104 x 29 x 14,00 x 11,20		38,93	53,20	
M 18x2,50	15,50	D 112 x 37 x 14,00 x 11,20	39,90	41,56	51,96	
M 20x1,50	18,50	D 104 x 29 x 14,00 x 11,20		50,10	61,28	
M 20x2,50	17,50	D 112 x 37 x 14,00 x 11,20	44,60	46,46	58,07	
M 22x2,50	19,50	D 118 x 38 x 16,00 x 12,50	51,57	53,72	67,15	
M 24x3,00	21,00	D 130 x 45 x 18,00 x 14,00	58,26	60,69	75,85	
M 27x3,00	24,00	D 135 x 45 x 20,00 x 16,00	71,74	74,73	93,42	
M 30x3,50	26,50	D 138 x 48 x 20,00 x 16,00	106,59	111,04	138,79	

MACHOS MÁQUINA CURTOS DIN 352

M  
MF

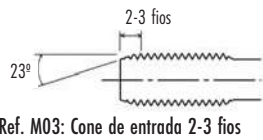


HSS

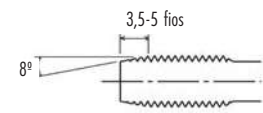
HSSCo  
5%

DIN  
352

TOL  
6H



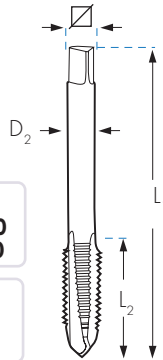
Ref. M03: Cone de entrada 2-3 fios



Ref. M02AT: Cone de entrada 3,5-5 fios

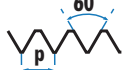
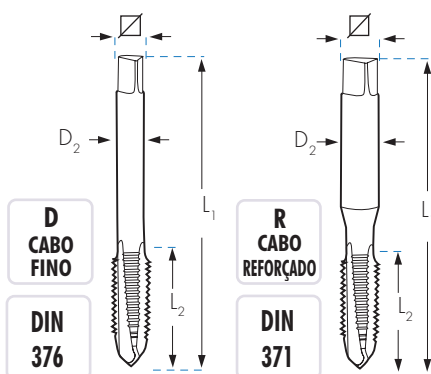
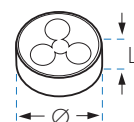
D  
CABO  
FINO

DIN  
352



Model	Price (€)	D	L1 x L2 x D2 x $\square$ mm	M03	M02AT	M03X	M02DIN	M04DIN
				HSS €	ALTURA ACABADA HSS €	INOX HSSCo €	FORMA B HSS €	35° HSS €
M 3x0,50	2,50	D 40	40 x 11 x 3,50 x 2,70	7,36	9,93	13,14	9,37	11,29
M 4x0,70	3,30	D 45	45 x 13 x 4,50 x 3,40	7,35	9,92	13,14	9,37	11,29
M 5x0,80	4,20	D 50	50 x 16 x 6,00 x 4,90	7,86	10,62	13,68	9,37	11,29
M 6x1,00	5,00	D 50	50 x 19 x 6,00 x 4,90	7,86	10,62	13,63	9,37	11,53
M 7x1,00	6,00	D 50	50 x 19 x 6,00 x 4,90	9,58				
M 8x1,00	7,00	D 56	56 x 18 x 6,00 x 4,90	13,25				
M 8x1,25	6,75	D 56	56 x 22 x 6,00 x 4,90	9,57	12,92	15,87	12,51	13,98
M 9x1,25	7,75	D 63	63 x 18 x 7,00 x 5,50	15,67				
M 10x1,00	9,00	D 63	63 x 18 x 7,00 x 5,50	14,19				
M 10x1,25	8,80	D 70	70 x 24 x 7,00 x 5,50	14,38				
M 10x1,50	8,50	D 70	70 x 24 x 7,00 x 5,50	11,80	15,92	20,41	15,91	17,62
M 12x1,00	11,00	D 70	70 x 20 x 9,00 x 7,00	25,16				
M 12x1,25	10,75	D 70	70 x 20 x 9,00 x 7,00	25,08				
M 12x1,50	10,50	D 70	70 x 20 x 9,00 x 7,00	21,37				
M 12x1,75	10,20	D 75	75 x 29 x 9,00 x 7,00	16,60	22,42	29,23	20,46	22,94
M 14x1,00	13,00	D 70	70 x 20 x 11,00 x 9,00	39,21				
M 14x1,25	12,80	D 70	70 x 20 x 11,00 x 9,00	30,63				
M 14x1,50	12,50	D 70	70 x 20 x 11,00 x 9,00	23,82				
M 14x2,00	12,00	D 80	80 x 30 x 11,00 x 9,00	18,36	24,79	32,37	24,45	29,61
M 16x1,00	15,00	D 70	70 x 20 x 12,00 x 9,00	52,02				
M 16x1,25	14,75	D 70	70 x 20 x 12,00 x 9,00	54,75				
M 16x1,50	14,50	D 70	70 x 20 x 12,00 x 9,00	29,64				
M 16x2,00	14,00	D 80	80 x 32 x 12,00 x 9,00	26,27		44,37	30,37	34,33
M 18x1,50	16,50	D 80	80 x 22 x 14,00 x 11,00	39,05				
M 18x2,50	15,50	D 95	95 x 40 x 14,00 x 11,00	34,67		60,59	45,72	57,16
M 20x1,50	18,50	D 80	80 x 22 x 16,00 x 12,00	48,90				
M 20x2,50	17,50	D 95	95 x 40 x 16,00 x 12,00	38,89		67,26	51,10	63,88
M 22x2,50	19,50	D 100	100 x 40 x 18,00 x 14,50	51,81			59,08	73,87
M 24x3,00	21,00	D 110	110 x 50 x 18,00 x 14,50	61,79			66,76	83,44
M 27x3,00	24,00	D 110	110 x 50 x 20,00 x 16,00	78,14			86,17	94,59
M 30x3,50	26,50	D 125	125 x 50 x 22,00 x 18,00	100,53			118,03	121,22



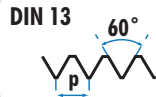
**MACHOS DE MÁQUINA E CAÇONETES SERIE *Plus* E *Super Plus***
**Plus**
**DIN 13**

**TOL  
6H**
**PARA TRABALHOS DE ALTA PRODUÇÃO  
FABRICADOS EM AÇO SINTERIZADO**
**DIN  
22568**
**TOL  
6g**
**Vc  
14 m/min**
**Vc  
16 m/min**
**Vc  
17 m/min**
**Vc  
20 m/min**

**ROSCA LAPEADA E  
ROMPE AS LIMANHAS**

**Plus**
**Plus TiN**
**Plus LUBE**
**Super Plus ALTiN**

QUALIDADE	M2RP		M4RP		M2RT		M4RT		M2RHL		M4RHL		M2RSP		M4RSP		C5P	
	★★	★★	★★★	★★★	★★★★	★★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★		
MATERIAL	HSS PM		HSS PM		HSSCo 5%		HSSCo 5%		HSS PM		HSS PM		HSS V3		HSS V3		HSS	
ACABAMENTO	BRILHANTE		BRILHANTE		TiN		TiN		HARD LUBE		HARD LUBE		ALTiN		ALTiN		BRILHANTE	
ÂNGULO DA HÉLICE	FORMA B		35°		FORMA B		35°		FORMA B		35°		FORMA B		41°			
	L1 x L2 x D2 x ∠		€	€	€	€	€	€	€	€	€	€	€	€	€	€	∅ x L3 mm	€
M 3x0,50	2,50	R	56 x 11 x 3,5 x 2,7	16,75	20,70	22,55	24,92	30,20	32,69	40,58	42,47	25 x 9	30,82					
M 4x0,70	3,30	R	63 x 13 x 4,5 x 3,4	17,11	20,70	22,91	25,99	30,66	33,14	40,58	42,47	25 x 9	30,82					
M 5x0,80	4,20	R	70 x 16 x 6,0 x 4,9	17,11	19,84	22,91	25,99	30,66	33,14	42,86	44,05	25 x 9	30,82					
M 6x1,00	5,00	R	80 x 17 x 6,0 x 4,9	18,82	21,79	26,38	28,57	33,66	35,09	42,86	44,05	25 x 9	30,82					
M 8x1,00	7,00	D	90 x 20 x 6,0 x 4,9	26,86	31,87	37,82	42,09	51,06	56,83			25 x 9	42,98					
M 8x1,25	6,80	R	90 x 20 x 8,0 x 6,2	22,03	25,31	30,84	33,54	42,80	44,65	54,41	57,98	25 x 9	33,43					
M 10x1,00	9,00	D	90 x 16 x 7,0 x 5,5	29,94	37,54	44,18	50,72	59,62	70,44			30 x 10	52,53					
M 10x1,50	8,50	R	100 x 22 x 10,0 x 8,0	25,92	29,47	36,32	39,77	53,08	55,56	64,84	69,17	30 x 10	45,97					
<b>CABO FINO</b>			M2DP	M4DP	M2DT	M4DT	M2DHL	M4DHL	M2DSP	M4DSP								
M 12x1,50	10,50	D	100 x 22 x 9,0 x 7,0	35,52	42,94	47,85	53,87	64,30	73,75			38 x 10	54,61					
M 12x1,75	10,20	D	110 x 24 x 9,0 x 7,0	33,41	39,68	44,78	50,49	56,03	67,25	81,58	88,50	38 x 14	48,22					
M 14x1,50	12,50	D	100 x 22 x 11,0 x 9,0	42,09	52,78	56,27	62,15	75,63	86,73			38 x 10	57,09					
M 14x2,00	12,00	D	110 x 26 x 11,0 x 9,0	41,77	48,42	55,26	60,75	76,43	84,01	83,29	112,14	38 x 14	49,15					
M 16x1,50	14,50	D	100 x 22 x 12,0 x 9,0	52,65	64,91	67,63	77,32	74,68	87,17			45 x 14	78,42					
M 16x2,00	14,00	D	110 x 27 x 12,0 x 9,0	49,12	58,52	63,09	69,74	87,26	96,44	113,69	120,94	45 x 18	66,03					
M 18x2,50	15,50	D	125 x 30 x 14,0 x 11,0	69,63	78,66	86,15	93,99	123,27	130,97	168,75	182,57	45 x 18	66,03					
M 20x2,50	17,50	D	140 x 32 x 16,0 x 12,0	75,23	83,85	98,19	105,78	129,51	147,46	179,85	190,10	45 x 18	66,03					
M 22x2,50	19,50	D	140 x 32 x 18,0 x 14,5	91,01	103,47	110,97	118,78	151,90	165,76			55 x 22	98,15					
M 24x3,00	21,00	D	160 x 34 x 18,0 x 14,5	108,21	123,87	125,04	135,87	171,16	189,59			55 x 22	98,15					

**MACHOS DE MÁQUINA HSS-PM PARA TRABALHOS ESPECIAIS**

**INOX**

**M**

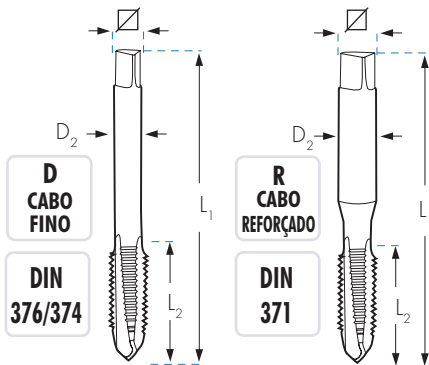


**TOL  
6H**

**Vc  
6 m/min**

**Vc  
10 m/min**

**Vc  
12 m/min**



		M2RX	M4RX	M2RXT	M4RXT	M2RXHL	M4RXHL
QUALIDADE		★★	★★	★★★	★★★	★★★★	★★★★
MATERIAL		HSS PM	HSS PM	HSSCo 5%	HSSCo 5%	HSS PM	HSS PM
ACABAMENTO		OX	OX	TiN	TiN	HARD LUBE	HARD LUBE
ÂNGULO DA HÉLICE		FORMA B	35°	FORMA B	35°	FORMA B	35°
	$L_1 \times L_2 \times D_2 \times \nabla$ mm	€	€	€	€	€	€
M 3x0,50	2,50 R 56 x 11 x 3,5 x 2,7	20,02	23,79	23,12	26,16	30,58	35,96
M 4x0,70	3,30 R 63 x 13 x 4,5 x 3,4	21,02	23,79	24,25	26,59	32,12	36,90
M 5x0,80	4,20 R 70 x 16 x 6,0 x 4,9	21,02	23,97	24,25	26,99	32,12	37,46
M 6x1,00	5,00 R 80 x 17 x 6,0 x 4,9	23,03	25,92	25,68	28,22	35,17	39,19
M 8x1,00	7,00 D 90 x 20 x 6,0 x 4,9	37,18	40,74				
M 8x1,25	6,80 R 90 x 20 x 8,0 x 6,2	25,69	29,53	29,68	32,51	39,27	45,13
M 10x1,00	9,00 D 90 x 16 x 7,0 x 5,5	38,32	40,91				
M 10x1,50	8,50 R 100 x 22 x 10,0 x 8,0	31,42	35,04	34,70	38,34	47,98	53,52
<b>CABO FINO</b>		M2DX	M4DX	M2DXT	M4DXT	M2DXHL	M4DXHL
M 12x1,00	11,00 D 100 x 22 x 9,0 x 7,0	43,46	49,86				
M 12x1,50	10,50 D 100 x 22 x 9,0 x 7,0	44,11	52,16				
M 12x1,75	10,20 D 110 x 24 x 9,0 x 7,0	40,37	47,27	44,39	49,97	63,18	73,96
M 14x2,00	12,00 D 110 x 26 x 11,0 x 9,0	57,47	65,83	57,83	62,51	83,95	92,96
M 16x2,00	14,00 D 110 x 27 x 12,0 x 9,0	64,00	75,97	65,64	71,93	93,47	112,44
M 18x2,50	15,50 D 125 x 30 x 14,0 x 11,0	95,84	108,10	98,95	102,68	149,99	159,97
M 20x2,50	17,50 D 140 x 32 x 16,0 x 12,0	103,57	114,16	112,98	116,00	159,46	168,91
M 22x2,50	19,50 D 140 x 32 x 18,0 x 14,5	124,28	131,31	140,25	151,85		
M 24x3,00	21,00 D 160 x 34 x 18,0 x 14,5	130,66	149,97	142,98	155,32		
M 27x3,00	24,00 D 160 x 36 x 20,0 x 16,0	171,15	196,45				
M 30x3,50	26,50 D 180 x 40 x 22,0 x 18,0	218,87	251,22				



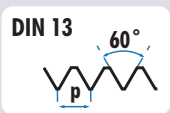
- LUBRIFICAÇÃO: **CUT MAGIC XTHICK**.
- Recomenda-se a aplicação do óleo de corte CUT MAGIC XTHICK para otimizar o processo de rosqueamento em Inox, Inconel, Titânio, Duplex, etc...

Ref. ACXT00250

MACHOS *Super Plus* PARA A ROSCAGEM DE LIGAS REFRAATÁRIAS

Machos e Coconetes

Rosa



TOL  
6H

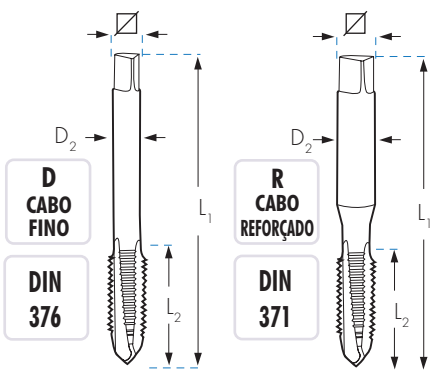
INOX  
DUPLEX

Ni

INC

Ti

ESPECIALMENTE RECOMENDADO  
EM APLICAÇÕES AERONÁUTICAS

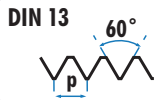


Vc 15 m/min INOX DUPLEX Vc 6 m/min NICKEL INCONEL Vc 6 m/min TITÂNIO



			M2RDU	M4RDU	M2RNI	M3RNI	M2RTIT	M3RTIT
QUALIDADE			★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
MATERIAL			HSS V3	HSS V3	HSS PM	HSS PM	HSS PM	HSS PM
ACABAMENTO			TiCN	TiCN	BRILHANTE	BRILHANTE	OX	OX
ÂNGULO DA HÉLICE			FORMA B	41°	FORMA B	15°	FORMA B	15°
		L1 x L2 x D2 x $\square$ mm	€	€	€	€	€	€
M 3x0,50	2,50	R 56 x 11 x 3,5 x 2,7	41,15	42,15	76,45	78,12	56,76	62,65
M 4x0,70	3,30	R 63 x 13 x 4,5 x 3,4	41,15	42,41	78,12	80,24	58,53	62,65
M 5x0,80	4,20	R 70 x 16 x 6,0 x 4,9	42,53	43,36	80,88	82,79	60,01	66,73
M 6x1,00	5,00	R 80 x 17 x 6,0 x 4,9	43,70	44,63	81,51	83,82	60,01	67,66
M 8x1,25	6,80	R 90 x 20 x 8,0 x 6,2	61,04	63,64	92,12	94,57	69,34	78,12
M 10x1,50	8,50	R 100 x 22 x 10,0 x 8,0	79,11	81,17	109,45	112,80	85,88	94,14
<b>CABO FINO</b>			M2DDU	M4DDU	M2DNI	M3DNI	M2DTIT	M3DTIT
M 12x1,75	10,20	D 110 x 24 x 9,0 x 7,0	106,95	115,49	140,78	155,66	107,78	116,96
M 14x2,00	12,00	D 110 x 26 x 11,0 x 9,0						
M 16x2,00	14,00	D 110 x 27 x 12,0 x 9,0	157,28	168,18				
M 18x2,50	15,50	D 125 x 30 x 14,0 x 11,0						
M 20x2,50	17,50	D 140 x 32 x 16,0 x 12,0	232,89	251,55				
M 22x2,50	19,50	D 140 x 32 x 18,0 x 14,5						
M 24x3,00	21,00	D 160 x 34 x 18,0 x 14,5	315,44	320,85				
M 27x3,00	24,00	D 160 x 36 x 20,0 x 16,0	405,25	424,79				
M 30x3,50	26,50	D 180 x 40 x 22,0 x 18,0	478,61	500,81				

**MACHOS DE MÁQUINA PARA AÇOS ESTRUTURAIS SUPER MACIOS < DE 450 N/mm<sup>2</sup>**



**HSSCo**  
5%

**OX**

**TOL**  
6H

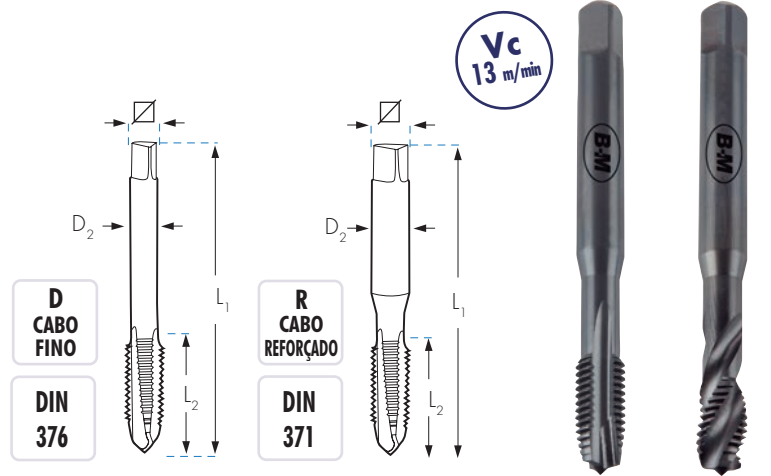
**APLICAÇÕES**





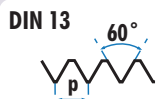
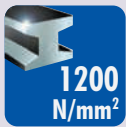
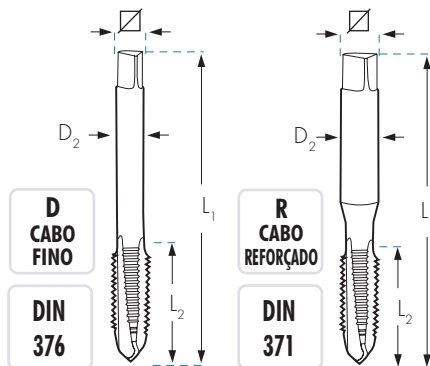
**ST52**



Geometria de corte específica para materiais macios, não gera sobremedida e se encaixa perfeitamente a este tipo de materiais, onde os machos convencionais podem causar sobremedida ao gerar a rosca.



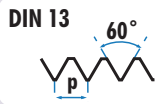
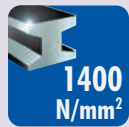
		$L_1 \times L_2 \times D_2 \times \square$ mm	M2RSS	M4RSS
			FORMA B	35°
			€	€
M 3 x 0,50	2,50	R 56 x 11 x 3,5 x 2,7	14,26	19,05
M 4 x 0,70	3,30	R 63 x 13 x 4,5 x 3,4	14,92	19,06
M 5 x 0,80	4,20	R 70 x 16 x 6,0 x 4,9	14,94	18,28
M 6 x 1,00	5,00	R 80 x 17 x 6,0 x 4,9	16,39	20,04
M 8 x 1,25	6,80	R 90 x 20 x 8,0 x 6,2	18,39	22,67
M 10 x 1,50	8,50	R 100 x 22 x 10,0 x 8,0	22,65	26,85
<b>CABO FINO</b>			M2DSS	M4DSS
M 12 x 1,75	10,20	D 110 x 24 x 9,0 x 7,0	28,56	34,58
M 14 x 2,00	12,00	D 110 x 26 x 11,0 x 9,0	42,17	49,80
M 16 x 2,00	14,00	D 110 x 27 x 12,0 x 9,0	49,32	60,16
M 18 x 2,50	15,50	D 125 x 30 x 14,0 x 11,0	70,26	77,99
M 20 x 2,50	17,50	D 140 x 32 x 16,0 x 12,0	75,84	86,46
M 22 x 2,50	19,50	D 140 x 32 x 18,0 x 14,5	91,04	101,46
M 24 x 3,00	21,00	D 160 x 34 x 18,0 x 14,5	108,44	123,32
M 27 x 3,00	24,00	D 160 x 36 x 20,0 x 16,0	135,63	151,73
M 30 x 3,50	26,50	D 180 x 40 x 22,0 x 18,0	174,27	194,45

**MACHOS DE MÁQUINA HSS-PM PARA TRABALHOS ESPECIAIS**

**HSS  
V3**
**TOL  
6H**
**MATERIAIS  
DUROS**

**Vc  
7 m/min**
**Vc  
9 m/min**


		M2RMD	M4RMD	M2RMDTX	M4RMDTX
QUALIDADE		★★★	★★★	★★★★	★★★★
MATERIAL		HSS V3	HSS V3	HSS V3	HSS V3
ACABAMENTO		OX	OX	TINALOX	TINALOX
ÂNGULO DA HÉLICE		FORMA B	35°	FORMA B	35°
	$L_1 \times L_2 \times D_2 \times \square$ mm	€	€	€	€
M 3x0,50	2,50 R 56 x 11 x 3,5 x 2,7	17,57	19,24	25,77	30,30
M 4x0,70	3,30 R 63 x 13 x 4,5 x 3,4	17,63	19,30	27,08	31,73
M 5x0,80	4,20 R 70 x 16 x 6,0 x 4,9	17,63	20,25	27,08	31,73
M 6x1,00	5,00 R 80 x 17 x 6,0 x 4,9	20,01	20,92	29,66	33,37
M 8x1,25	6,80 R 90 x 20 x 8,0 x 6,2	21,38	24,69	33,10	38,05
M 10x1,50	8,50 R 100 x 22 x 10,0 x 8,0	24,63	28,43	41,89	46,72
<b>CABO FINO</b>		M2DMD	M4DMD	M2DMDTX	M4DMDTX
M 12x1,75	10,20 D 110 x 24 x 9,0 x 7,0	35,11	40,50	55,79	65,31
M 14x2,00	12,00 D 110 x 26 x 11,0 x 9,0	46,06	48,08	79,38	87,16
M 16x2,00	14,00 D 110 x 27 x 12,0 x 9,0	51,52	58,17	88,42	105,41
M 18x2,50	15,50 D 125 x 30 x 14,0 x 11,0	76,82	82,75	130,00	147,22
M 20x2,50	17,50 D 140 x 32 x 16,0 x 12,0	83,02	87,37	140,50	155,41



**MACHOS DE MÁQUINA PARA MATERIAIS TEMPERADOS (HARDOX 450/500)**



**TOL 6H**

**HSSE**

**HSS PM**

**MD**

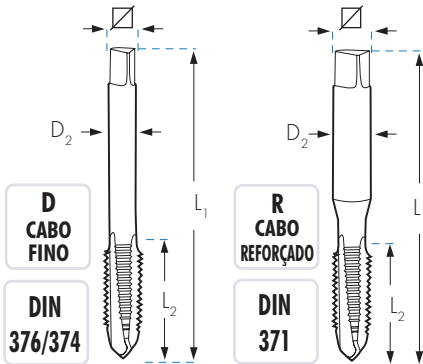
**MATERIAIS MUITO DUROS**

**48 HRC**

**48-62 HRC**

**Vc 5 m/min**

**MD**



MATERIAL	M2RC		M3RC		M2HRC		M4HRC		M1RCM		M1RHMC	
	HSSE	HSSE	HSS PM	HSS PM	HSS PM	HSS PM	HSS PM	MD				
ACABAMENTO	TiAIN	TiAIN	TINALOX	TINALOX	TiCN	TiCN	TiCN	TiCN				
FORMA	FORMA B	FORMA B 15°	FORMA B	FORMA B 35°	FORMA C	FORMA C	FORMA C	FORMA C				
	€	€	€	€	€	€	€	€				
M 2 x 0,40	1,60	R 40 x 9 x 2,5 x 2,1			34,07	37,25	1,70		1,70			
M 3 x 0,50	2,50	R 56 x 11 x 3,5 x 2,7	28,11	29,90	31,09	34,82	2,60	45,03	2,60	124,74		
M 4 x 0,70	3,30	R 63 x 13 x 4,5 x 3,4	28,17	31,85	32,29	36,16	3,40	39,61	3,40	124,74		
M 5 x 0,80	4,20	R 70 x 16 x 6,0 x 4,9	28,44	31,12	32,60	36,51	4,30	44,26	4,30	124,74		
M 6 x 1,00	5,00	R 80 x 17 x 6,0 x 4,9	30,74	34,46	33,99	38,07	5,10	56,67	5,10	155,93		
M 8 x 1,25	6,80	R 90 x 20 x 8,0 x 6,2	35,50	40,51	42,26	47,34	6,90	62,86	6,90	175,49		
M 10 x 1,50	8,50	R 100 x 22 x 10,0 x 8,0	42,50	50,19	50,58	53,11	8,60	81,49	8,60	269,27		
CABO FINO			M2DC	M3DC	M2HDC	M4HDC	M1RCM		M1DHMC			
M 12 x 1,75	10,20	D 110 x 24 x 9,0 x 7,0	63,56	75,45	77,21	84,17	10,40	107,81*	10,40	421,71		
M 14 x 2,00	12,00	D 110 x 26 x 11,0 x 9,0	85,82	100,38	91,56	102,98	12,10	136,30*	12,10	485,93		
M 16 x 2,00	14,00	D 110 x 27 x 12,0 x 9,0	96,83	115,30	101,80	118,05	14,10	145,80*	16,10	634,52		
M 18 x 2,50	15,50	D 125 x 30 x 14,0 x 11,0	122,62	133,52	126,02	137,36			15,75	775,19		
M 20 x 2,50	17,50	D 140 x 32 x 16,0 x 12,0	148,50	154,56	148,82	162,22			17,75	1.226,22		
M 22 x 2,50	19,50	D 140 x 32 x 18,0 x 14,5	210,36	219,36								
M 24 x 3,00	21,00	D 160 x 34 x 18,0 x 14,5	215,36	225,36	224,73	244,97						
M 27 x 3,00	24,00	D 160 x 36 x 20,0 x 16,0	235,36	242,36								
M 30 x 3,50	26,50	D 180 x 40 x 22,0 x 18,0	241,25	255,36								

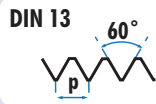
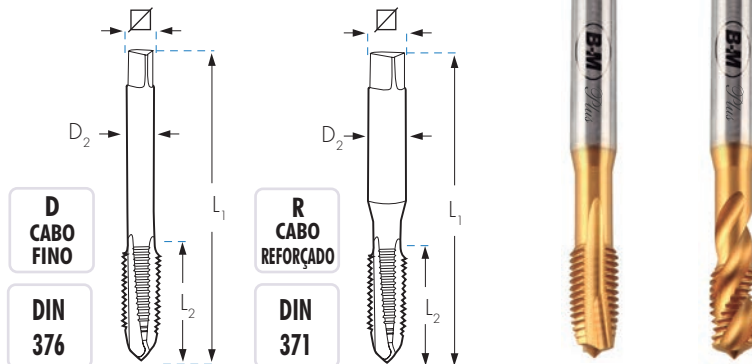
\* Cabo Reforçado: M12 - Ø 12 x 9  
M14 - Ø 14 x 11  
M16 - Ø 16 x 12



- LUBRIFICAÇÃO: **CUT MAGIC XTHICK**.
- Recomenda-se rosar a peça sobre a mesma ferramenta utilizada para a furação previa e na mesma posição, para garantir a coaxialidade entre o macho e o furo previo.

Ref. ACXT00250

HRC	Vc (m/min)
48 Hrc	8 m/min
56 Hrc	6 m/min
62 Hrc	3 m/min

**MACHOS DE MÁQUINA TODO-O-TERRENO**
**TODO-O-TERRENO**

**HSSCo**  
**5%**
**TiN**
**TOL**  
**6H**
**APLICAÇÕES**
**1200**  
**N/mm<sup>2</sup>**
**Al**
**FUNDIÇÃO**
**Ti**
**INOX**
**Vc**  
**13** m/min


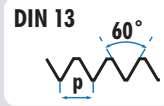
		$L_1 \times L_2 \times D_2 \times \square$ mm	M2RD	M4RD
			FORMA B	35°
			€	€
M 3 x 0,50	2,50	R 56 x 11 x 3,5 x 2,7	26,39	32,99
M 4 x 0,70	3,30	R 63 x 13 x 4,5 x 3,4	28,24	32,99
M 5 x 0,80	4,20	R 70 x 16 x 6,0 x 4,9	30,04	34,17
M 6 x 1,00	5,00	R 80 x 17 x 6,0 x 4,9	31,09	35,47
M 8 x 1,25	6,80	R 90 x 20 x 8,0 x 6,2	36,42	40,47
M 10 x 1,50	8,50	R 100 x 22 x 10,0 x 8,0	42,02	47,94
<b>CABO FINO</b>			M2DD	M4DD
M 12 x 1,75	10,20	D 110 x 24 x 9,0 x 7,0	52,95	63,04
M 14 x 2,00	12,00	D 110 x 26 x 11,0 x 9,0	69,15	75,99
M 16 x 2,00	14,00	D 110 x 27 x 12,0 x 9,0	77,49	83,87
M 18 x 2,50	15,50	D 125 x 30 x 14,0 x 11,0	121,09	124,17
M 20 x 2,50	17,50	D 140 x 32 x 16,0 x 12,0	123,34	127,96

**MACHOS DE MÁQUINA HSSCo PARA TRABALHOS ESPECIAIS**

**Al**

**FUNDIÇÃO**

**LATÃO**



**HSSCo**  
5%

**MD**

**TOL**  
6H

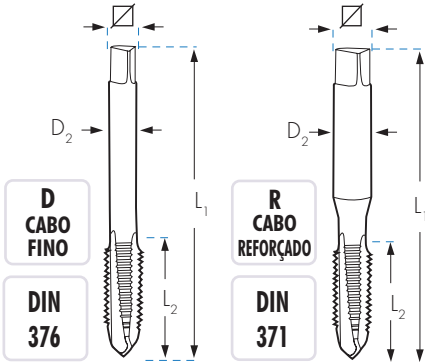
**Vc**  
18 m/min

**Vc**  
11 m/min

**Vc**  
21 m/min

**Vc**  
16 m/min

**Vc**  
19 m/min

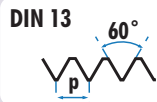


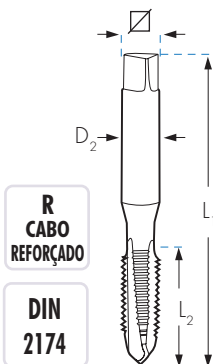
APLICAÇÃO			M5R	M6R	MTRFM	MHMTR	M1RL	M1RLCRN
MATERIAL			<b>Al</b>	<b>Al</b>	<b>FUNDIÇÃO</b>	<b>FUNDIÇÃO</b>	<b>LATÃO</b>	<b>LATÃO</b>
ACABAMENTO			HSSCo 5%	HSSCo 5%	HSSCo 5%	MD	HSSCo 5%	HSSCo 5%
FORMA			BRILHANTE	BRILHANTE	<b>OX</b>	BRILHANTE	BRILHANTE	CrN
FORMA			DENTE ALTERNADO	2 CANAIS	FORMA C	FORMA C	FORMA C	FORMA C
L1 x L2 x D2 x $\square$ mm			€	€	€	€	€	€
M 3x0,50	2,50	R 56 x 11 x 3,5 x 2,7	22,77	24,43	16,11	81,66	19,29	21,91
M 4x0,70	3,30	R 63 x 13 x 4,5 x 3,4	22,90	24,43	16,65	81,66	20,48	24,15
M 5x0,80	4,20	R 70 x 16 x 6,0 x 4,9	22,77	24,95	16,65	81,66	20,48	24,24
M 6x1,00	5,00	R 80 x 17 x 6,0 x 4,9	24,00	26,98	18,91	93,14	22,44	26,47
M 8x1,25	6,80	R 90 x 20 x 8,0 x 6,2	28,73	32,33	21,18	104,00	25,59	32,18
M 10x1,50	8,50	R 100 x 22 x 10,0 x 8,0	34,64	38,23	24,23	130,34	30,78	39,16
CABO FINO			M5D	M6D	M1DFM	MHM1D	M1DL	M1DLCRN
M 12x1,75	10,20	D 110 x 24 x 9,0 x 7,0	44,03	48,05	31,05	181,83	36,59	48,22
M 14x2,00	12,00	D 110 x 26 x 11,0 x 9,0	79,73	82,98	51,04	283,26	44,92	58,76
M 16x2,00	14,00	D 110 x 27 x 12,0 x 9,0	86,90	94,10	60,05	336,99	51,68	65,70
M 18x2,50	15,50	D 125 x 30 x 14,0 x 11,0			84,00	413,09	67,78	83,21
M 20x2,50	17,50	D 140 x 32 x 16,0 x 12,0			84,33	500,23	76,08	92,64



- LUBRIFICAÇÃO: **CUT MAGIC ALUMINIUM**.
- Recomenda-se a aplicação do óleo de corte CUT MAGIC ALUMINIUM para otimizar o processo de rosqueamento em alumínio e as suas fundições.

Ref. ACAL00250

**MACHOS DE MÁQUINA PARA ROSCAGEM POR LAMINAÇÃO**

**HSSCo**  
**5%**
**HSSCo**  
**8%**
**TOL**  
**6HX**
**APLICAÇÕES**

*Plus*


APLICAÇÃO	M07R		M07RT		M07RCR		M07RCCR		M09RCCR		M07RXTCR	
	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO	LAMINAÇÃO
MATERIAL	HSSCo 5%		HSSCo 5%		HSSCo 5%		HSSCo 5%		HSSCo 8%		HSSCo 5%	
ACABAMENTO	OX		TiN		OX		TiCN		TiCN		TiN	
FORMA												
			L1 x L2 x D2 x $\square$ mm		€	€	€	€	€	€	€	
M 3x0,50	2,75	R	56 x 11 x 3,5 x 2,7	32,21	34,97	35,45	44,48	107,01	79,80			
M 3,5x0,60	3,20	R	56 x 11 x 3,5 x 2,7	33,86	38,56	36,62	47,08					
M 4x0,70	3,65	R	63 x 13 x 4,5 x 3,4	32,21	36,47	35,45	46,39	108,36	79,80			
M 5x0,80	4,60	R	70 x 16 x 6,0 x 4,9	32,21	36,47	35,45	46,39	109,80	86,12			
M 6x1,00	5,50	R	80 x 17 x 6,0 x 4,9	34,78	38,54	38,25	49,03	111,54	86,12			
M 8x1,25	7,40	R	90 x 20 x 8,0 x 6,2	40,53	50,87	44,59	64,73	123,73	103,07			
M 10x1,50	9,30	R	100 x 22 x 10,0 x 8,0	45,08	57,04	49,60	71,24	147,73	125,83			

CABO FINO			M07D	M07DT	M07DCR	M07DCCR	M09DCCR	M07DXTCR	
M 12x1,75	11,20	D	110 x 24 x 9,0 x 7,0	53,13	74,59	56,28	81,58	174,88	163,86
M 14x2,00	13,05	D	110 x 26 x 11,0 x 9,0	95,78	117,80	99,50	132,44	217,64	235,72
M 16x2,00	15,05	D	110 x 27 x 12,0 x 9,0	112,44	132,68	116,79	140,20	299,33	239,81
M 18x2,50	16,80	D	125 x 30 x 14,0 x 11,0	129,03	158,65	134,02	165,66	354,67	
M 20x2,50	18,80	D	140 x 32 x 16,0 x 12,0	170,01	240,16	176,60	251,84	392,66	

**MACHOS DE MÁQUINA HSSCo TOLERÂNCIAS ESPECIAIS E SOBREMEDIDAS**

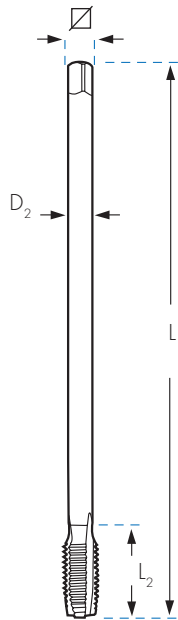


		M2R4H	M4R4H	M2R6G	M4R6G	M2R7G	M4R7G	M2R+0,1	M4R+0,1	M2R+0,2	M4R+0,2	
TOLERÂNCIA		TOL 4H	TOL 4H	TOL 6G	TOL 6G	TOL 7G	TOL 7G	TOL 6H (+0,1)	TOL 6H (+0,1)	TOL 6H (+0,2)	TOL 6H (+0,2)	
MATERIAL		HSSCo 5%	HSSCo 5%	HSSCo 5%	HSSCo 5%	HSSCo 5%	HSSCo 5%	HSSCo 5%	HSSCo 5%	HSSCo 5%	HSSCo 5%	
ACABAMENTO		BRILHANTE	BRILHANTE	BRILHANTE	BRILHANTE	BRILHANTE	BRILHANTE	BRILHANTE	BRILHANTE	BRILHANTE	BRILHANTE	
FORMA		FORMA B	FORMA B 35°	FORMA B	FORMA B 35°	FORMA B	FORMA B 35°	FORMA B	FORMA B 35°	FORMA B	FORMA B 35°	
L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x ∅		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
		€	€	€	€	€	€	€	€	€	€	
M 3x0,50	2,50	R 56x11x 3,5x 2,7	22,04	27,25	16,17	19,24	22,04	27,25	22,75	30,35	26,10	32,32
M 4x0,70	3,30	R 63x13x 4,5x 3,4	22,55	27,25	16,17	19,24	22,55	27,25	23,29	30,35	26,70	32,32
M 5x0,80	4,20	R 70x16x 6,0x 4,9	22,55	26,11	16,17	18,88	22,55	26,11	23,29	29,07	26,70	30,94
M 6x1,00	5,00	R 80x17x 6,0x 4,9	24,78	28,65	17,41	20,73	24,78	28,65	25,57	31,90	29,35	33,96
M 8x1,00	7,00	D 90x20x 6,0x 4,9			33,90	37,49						
M 8x1,25	6,75	R 90x20x 8,0x 6,2	27,75	32,71	20,24	24,30	27,75	32,71	28,65	36,40	32,88	38,77
M 10x1,00	9,00	D 90x16x 7,0x 5,5			40,04	46,60						
M 10x1,50	8,50	R 100x22x 10,0x 8,0	34,12	38,83	24,90	27,79	34,12	38,83	35,25	43,17	40,46	45,96
CABO FINO			M2D4H	M4D4H	M2D6G	M4D6G	M2D7G	M4D7G	M2D+0,1	M4D+0,1	M2D+0,2	M4D+0,2
M 12x1,50	10,50	D 100x22x 9,0x 7,0			72,95	86,49						
M 12x1,75	10,20	D 110x24x 9,0x 7,0	44,00	52,24	32,84	39,56	44,00	52,24	44,14	55,96	50,15	59,59
M 14x2,00	12,00	D 110x26x 11,0x 9,0			40,34	48,47			72,01	89,08	81,83	94,87
M 16x2,00	14,00	D 110x27x 12,0x 9,0			49,86	58,54			84,69	107,65	96,27	114,64
M 18x2,50	15,50	D 125x30x 14,0x 11,0			70,31	72,48			128,06	144,99	136,36	154,39
M 20x2,50	17,50	D 140x32x 16,0x 12,0			72,62	83,31			138,37	154,28	147,34	164,29

4H.- Para roscas muito precisas. Ajuste mais exato.  
 6G.- Para roscas com revestimentos. Espessuras entre 20 - 40 μ  
 7G.- Para roscas com revestimentos. Espessuras entre 40 - 50 μ  
 6H. (+0,1)- Para obter roscas com sobremedidas ou para compensar deformações de tratamentos térmicos.  
 6H. (+0,2)- Rosca de perfil completo, para terminar o diâmetro exterior da rosca.



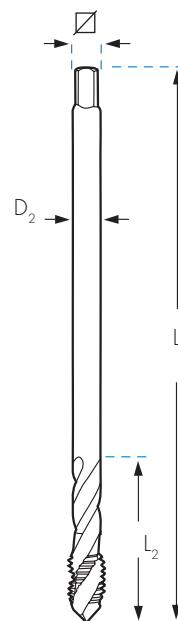
**MACHOS DE MÁQUINA EXTRA-LONGOS HSSCo**
**FORMA  
B**

**HSSCo  
5%**
**BRILHANTE**
**TOL  
6H**
**R  
CABO  
REFORÇADO**
**DIN  
371**
**D  
CABO  
FINO**
**DIN  
376**


				M2L	
			$L_1 \times L_2 \times D_2 \times \square$ mm	<b>FORMA B</b>	€
M	3x0,50	2,50	R 100 x 10 x 3,5 x 2,7		36,79
M	4x0,70	3,30	R 120 x 12 x 4,5 x 3,4		37,60
M	5x0,80	4,20	R 140 x 14 x 6,0 x 4,9		37,60
M	6x1,00	5,00	R 160 x 16 x 6,0 x 4,9		41,31
M	7x1,00	6,00	R 160 x 17 x 7,0 x 5,5		46,92
M	8x1,25	6,80	R 180 x 18 x 8,0 x 6,2		48,44

**CABO FINO**

				M2L-D	
M			D		
M	6x1,00	5,00	D 160 x 16 x 4,5 x 3,4		42,89
M	8x1,25	6,80	D 180 x 18 x 6,2 x 5,0		50,32
M	10x1,50	8,50	D 200 x 20 x 7,0 x 5,5		59,63
M	12x1,75	10,20	D 220 x 22 x 8,5 x 6,5		73,37
M	14x2,00	12,00	D 220 x 25 x 10,5 x 8,0		113,86
M	16x2,00	14,00	D 220 x 28 x 12,5 x 10,0		133,94
M	18x2,50	15,50	D 250 x 32 x 14,0 x 11,0		243,71
M	20x2,50	17,50	D 250 x 32 x 16,0 x 12,0		263,40
M	22x2,50	19,50	D 250 x 35 x 18,0 x 14,5		300,30
M	24x3,00	21,00	D 250 x 38 x 18,0 x 14,5		367,21


**HSSCo  
5%**
**BRILHANTE**
**TOL  
6H**
**R  
CABO  
REFORÇADO**
**DIN  
371**
**D  
CABO  
FINO**
**DIN  
376**


				M4L	
			$L_1 \times L_2 \times D_2 \times \square$ mm		€
M	3x0,50	2,50	R 100 x 10 x 3,5 x 2,7		45,52
M	4x0,70	3,30	R 120 x 12 x 4,5 x 3,4		45,52
M	5x0,80	4,20	R 140 x 14 x 6,0 x 4,9		43,61
M	6x1,00	5,00	R 160 x 16 x 6,0 x 4,9		47,84
M	7x1,00	6,00	R 160 x 17 x 7,0 x 5,5		54,31
M	8x1,25	6,80	R 180 x 18 x 8,0 x 6,2		58,13

**CABO FINO**

				M4L-D	
M			D		
M	6x1,00	5,00	D 160 x 16 x 4,5 x 3,4		49,70
M	8x1,25	6,80	D 180 x 18 x 6,2 x 5,0		59,19
M	10x1,50	8,50	D 200 x 20 x 7,0 x 5,5		67,37
M	12x1,75	10,20	D 220 x 22 x 8,5 x 6,5		87,15
M	14x2,00	12,00	D 220 x 25 x 10,5 x 8,0		127,58
M	16x2,00	14,00	D 220 x 28 x 12,5 x 10,0		184,89
M	18x2,50	15,50	D 250 x 32 x 14,0 x 11,0		275,95
M	20x2,50	17,50	D 250 x 32 x 16,0 x 12,0		293,69
M	22x2,50	19,50	D 250 x 25 x 18,0 x 14,5		328,99
M	24x3,00	21,00	D 250 x 32 x 18,0 x 14,5		375,04

**MACHO PARA PORCAS DE ROSCA MÉTRICA DIN 357**

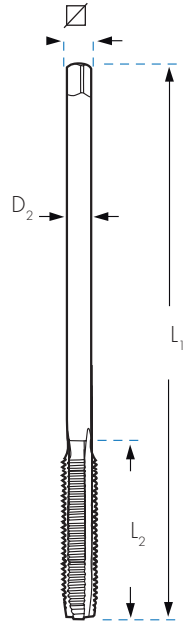


**HSSCo**  
5%

**BRILHANTE**

**TOL**  
6H

**DIN**  
357



			L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x $\square$ mm	MTU
				FORMA A
M 3x0,50**	2,50	D	70 x 22 x 2,2	€ 24,13
M 4x0,70	3,30	D	90 x 25 x 2,8 x 2,1	€ 24,13
M 5x0,80	4,20	D	100 x 28 x 3,5 x 2,7	€ 24,13
M 6x1,00	5,00	D	110 x 32 x 4,5 x 3,4	€ 24,13
M 8x1,25	6,80	D	125 x 40 x 6,0 x 4,9	€ 29,09
M 10x1,50	8,50	D	140 x 45 x 7,0 x 5,5	€ 28,43
M 12x1,75	10,20	D	180 x 50 x 9,0 x 7,0	€ 34,43
M 14x2,00	12,00	D	200 x 56 x 11,0 x 9,0	€ 54,41
M 16x2,00	14,00	D	200 x 63 x 12,0 x 9,0	€ 67,36
M 18x2,50	15,50	D	220 x 63 x 14,0 x 11,0	€ 90,62
M 20x2,50	17,50	D	250 x 70 x 16,0 x 12,0	€ 127,93*
M 22x2,50	19,50	D	280 x 80 x 18,0 x 14,5	€ 156,96*
M 24x3,00	21,00	D	280 x 80 x 18,0 x 14,5	€ 213,57*

\*\* Cabo cilíndrico.

\*Até o fim das existências

**BLUE-MASTER**  
by CELESA

CONSULTE A NOSSA AMPLA GAMA DE FERRAMENTAS  
PARA A REPARAÇÃO DE ROSCAS Pág. 659

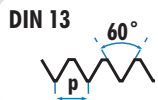
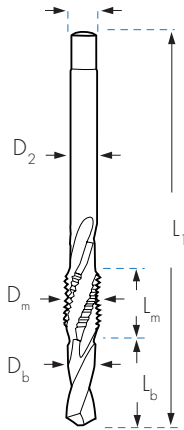


INSERTOS  
ROSCADOS

INSERTOS SOLIDOS COM VEDANTE  
ANAERÓBICO

INSERTOS  
AUTO-ROSCANTES

INSERTOS DE BLOQUEIO  
COM CHAVE

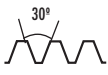
**BROCA MACHO HSSCo**

**HSSCo**  
**5%**
**BRILHANTE**
**TOL**  
**6H**
**R**  
**CABO**  
**REFORÇADO**
**DIN**  
**371**
**D**  
**CABO**  
**FINO**
**DIN**  
**376**


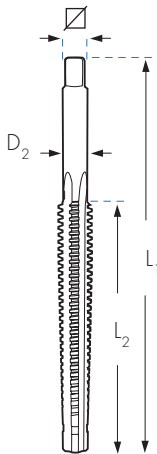
		L <sub>b</sub> mm	L <sub>m</sub> mm	L <sub>1</sub> mm	D <sub>b</sub> mm	D <sub>m</sub> mm	D <sub>2</sub> mm	∅ mm	M8M €
M 3x0,50	R	9,0	12,5	62,0	2,50	3,0	3,5	2,7	36,99
M 4x0,70	R	10,0	16,0	66,0	3,30	4,0	4,5	3,4	36,99
M 5x0,80	R	12,5	18,0	75,5	4,20	5,0	6,0	4,9	38,44
M 6x1,00	R	14,0	20,0	81,0	5,00	6,0	6,0	4,9	42,45
M 8x1,00	R	20,0	14,0	91,0	7,00	8,0	6,0	4,9	49,83
M 8x1,25	R	20,0	14,0	91,0	6,75	8,0	8,0	6,2	47,86

**CABO FINO**

M 8x1,25	D	20,0	14,0	91,0	6,75	8,0	6,0	4,9	51,70
M 10x1,00	D	20,0	15,0	95,0	9,00	10,0	7,0	5,5	61,85
M 10x1,50	D	25,0	18,0	105,0	8,50	10,0	7,0	5,5	65,65
M 12x1,50	D	24,0	18,0	110,0	10,50	12,0	9,0	7,0	71,65
M 12x1,75	D	28,0	20,0	118,0	10,20	12,0	9,0	7,0	71,23
M 14x1,50	D	28,0	20,0	118,0	12,50	14,0	11,0	9,0	113,38
M 14x2,00	D	28,0	22,0	130,0	12,00	14,0	11,0	9,0	128,96
M 16x2,00	D	36,0	24,0	139,0	14,00	16,0	12,0	9,0	169,61
M 18x2,50	D	40,0	26,0	151,0	15,50	18,0	14,0	11,0	247,38
M 20x2,50	D	45,0	30,0	168,0	17,50	20,0	16,0	12,0	355,26

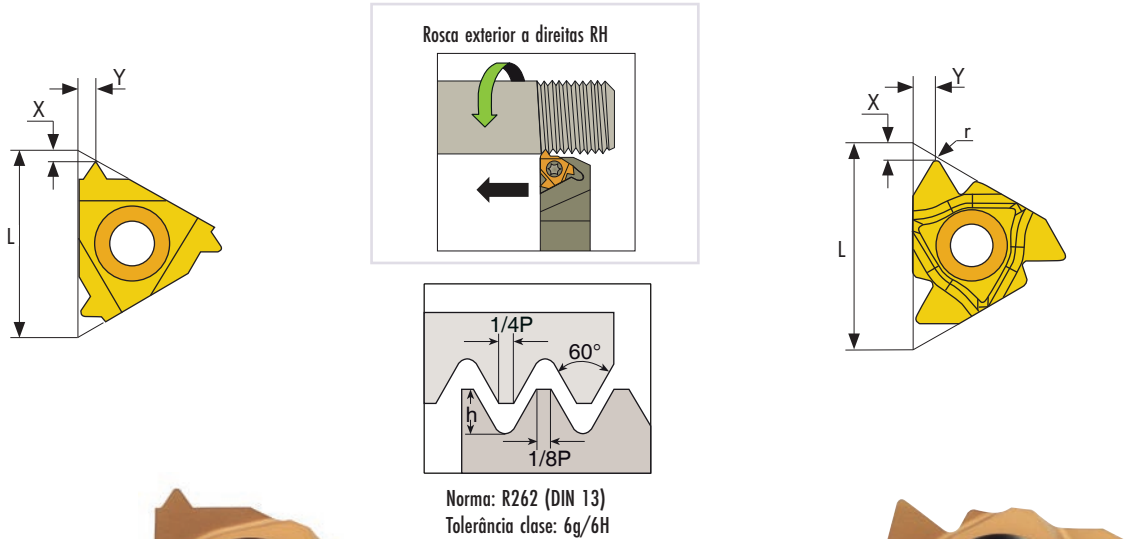
Nota: nunca use a broca-macho em furos cegos ou passantes com mais profundidade do que L<sub>b</sub>.

**MACHO DE MÁQUINA ROSCA TRAPEZOIDAL HSS**

**HSS**
**BRILHANTE**

**DIN**  
**103**
**TOL**  
**7H**


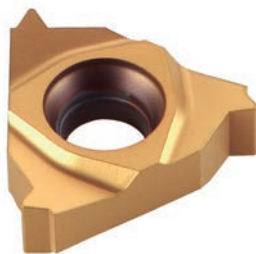
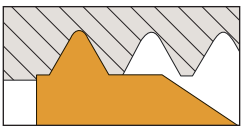
		∅	L <sub>1</sub> x L <sub>2</sub> x D <sub>2</sub> x ∅ mm	MRTM €
Tr	14 x 3	11,25	160 x 105 x 10,5 x 8,0	570,43
Tr	16 x 4	12,25	205 x 110 x 11,5 x 9,0	593,84
Tr	18 x 4	14,25	215 x 120 x 13,0 x 10,0	626,00
Tr	20 x 4	16,25	230 x 130 x 15,0 x 12,0	628,93
Tr	22 x 5	17,25	270 x 165 x 16,0 x 12,0	827,86
Tr	24 x 5	19,25	280 x 165 x 18,0 x 14,5	939,03
Tr	26 x 5	21,25	290 x 170 x 20,0 x 16,0	971,60
Tr	28 x 5	23,25	300 x 180 x 22,0 x 18,0	1.100,61
Tr	30 x 6	24,25	345 x 200 x 23,0 x 18,0	1.266,65

PASTILHAS PARA ROSCAGEM DE EXTERIOR

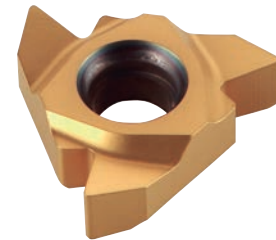
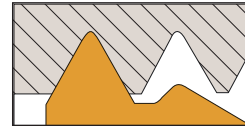


Norma: R262 (DIN 13)  
Tolerância classe: 6g/6H

Perfil Total



Perfil Parcial



Rosca de perfil completo, para terminar o diâmetro exterior da rosca. Utilizaremos uma pastilha diferente para cada passo.

Não termina o diâmetro exterior da rosca.

A mesma pastilha pode ser utilizada para uma gama de diferentes passos, que tenham o mesmo ângulo de rosca.

PERFIL TOTAL 60°

ROSCAGEM EXTERIOR	L	PASSO	h	X	Y	€
PRE-16-075	16	0,75	0,46	0,6	0,6	25,56*
PRE-16-100		1,00	0,61	0,7	0,7	25,56*
PRE-16-125		1,25	0,77	0,8	0,9	25,56*
PRE-16-150		1,50	0,92	0,8	1	25,56*
PRE-16-175		1,75	1,07	0,9	1,2	25,56*
PRE-16-200		2,00	1,23	1	1,3	25,56*
PRE-16-250		2,50	1,53	1,1	1,5	25,56*
PRE-16-300		3,00	1,84	1,2	1,6	25,56*

\*Até o fim das existências.

PERFIL PARCIAL 60°

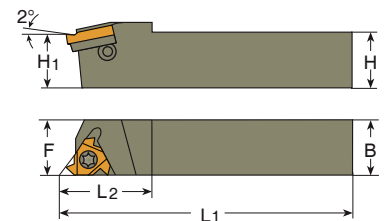
ROSCAGEM EXTERIOR	L	FAIXAS MÉTRICAS	FAIXAS POLEGADAS	r	X	Y	€
PPRE-16-150	16	0,50-1,50	48 - 16	0,05	0,80	0,90	25,56*
PPRE-16-300		1,75-3,00	14 - 8	0,27	1,20	1,70	25,56*

\*Até o fim das existências.

PORTA-FERRAMENTAS PARA ROSCAGEM DE EXTERIORES

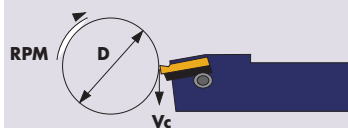
ROSCAGEM EXTERIOR	H1=H=B=F	L1	L2	€
PEXT-25-16	25	153	30	186,87*

\*Até o fim das existências.



	<b>Vc</b>		<b>Vc</b>
<b>AÇO BAIXA LIGA</b> 70 kg/mm <sup>2</sup>	25 m / min	<b>ALUMÍNIO</b>	50 m / min
<b>AÇO TRATADO</b> 120 kg/mm <sup>2</sup>	13 m / min	<b>TITÂNIO</b>	18 m / min
<b>INOXIDÁVEL</b>	11 m / min	<b>FUNDIÇÃO</b>	25 m / min
		<b>LATÃO</b>	50 m / min

FÓRMULA MATEMÁTICA PARA OBTER A VELOCIDADE DE GIRO DA PEÇA (RPM)

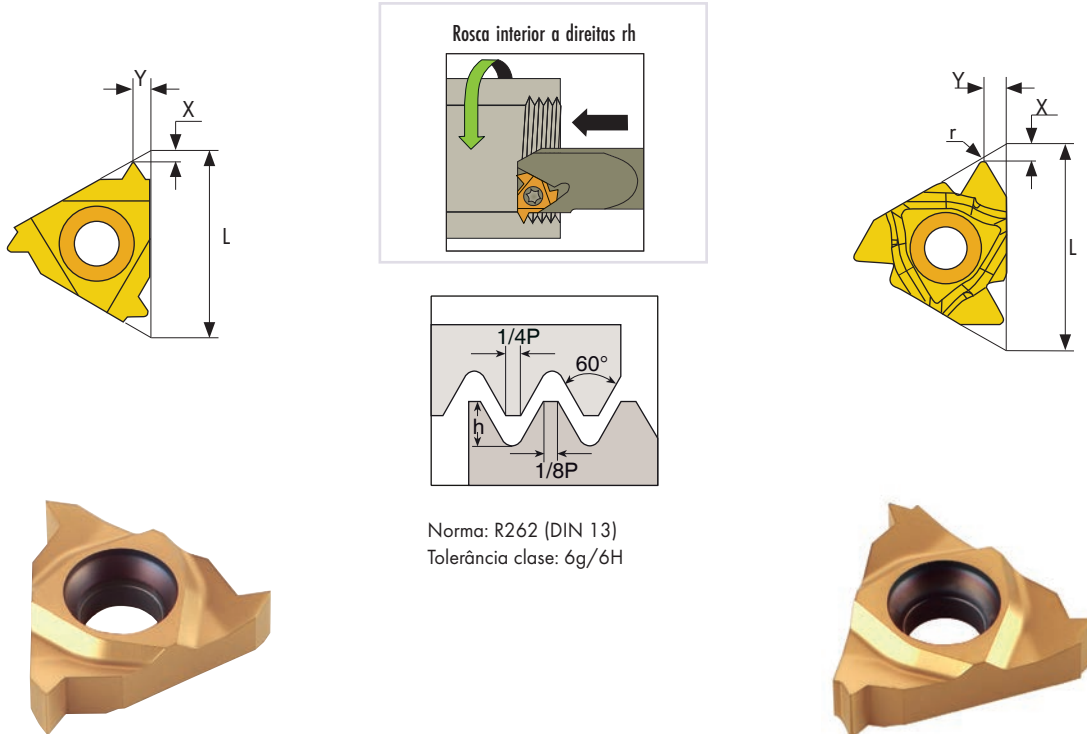


RPM: revoluções por minuto  
Vc: velocidade de corte (m/min)  
D: diâmetro da peça (mm)

$$RPM = \frac{1000 \times Vc}{\pi \times D}$$

As RPMs obtêmem- se em função de Vc e D

**PASTILHAS PARA ROSCAGEM DE INTERIORES**



Norma: R262 (DIN 13)  
Tolerância classe: 6g/6H

**PERFIL TOTAL 60°**

ROSCAGEM INTERIOR	L	PASSO	h	X	Y	€
PRI-16-075	16	0,75	0,43	0,6	0,6	25,56*
PRI-16-100		1,00	0,58	0,6	0,7	25,56*
PRI-16-125		1,25	0,72	0,8	0,9	25,56*
PRI-16-150		1,50	0,87	0,8	1,0	25,56*
PRI-16-175		1,75	1,01	0,9	1,2	25,56*
PRI-16-200		2,00	1,15	1,0	1,3	25,56*
PRI-16-250		2,50	1,44	1,1	1,5	25,56*
PRI-16-300		3,00	1,73	1,1	1,5	25,56*

\*Até o fim das existências.

**PERFIL PARCIAL 60°**

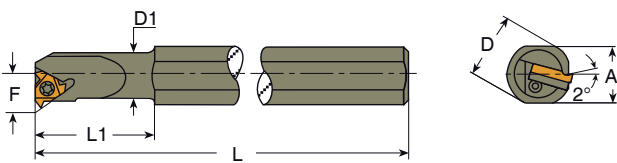
ROSCAGEM INTERIOR	L	FAIXAS MÉTRICAS	FAIXAS POLEGADAS	r	X	Y	€
PPRI-16-150	16	0,50-1,50	48 - 16	0,05	0,80	0,90	25,56*
PPRI-16-300		1,75-3,00	14 - 8	0,16	1,20	1,70	25,56*

\*Até o fim das existências.

**PORTA-FERRAMENTAS PARA ROSCAGEM DE INTERIORES**

ROSCAGEM INTERIOR	L	L1	D	D1	A	Ø Mín. agujero	€
PINT-20-16	180	40	20	20	18	24	184,18*
PINT-25-16	200	45	25	24,6	22,6	29	225,20*

\*Até o fim das existências.





**MACHOS PARA MÁQUINA HSSCo EM ESTOJOS METÁLICOS**

**USO  
GERAL**

**HSSCo  
5%**



Ref. JM6



Ref. JM2






Ref. JM8



Ref. JM4

**CONTEÚDO**

	FORMA C	FORMA B	 15°	 35°	 HSS	HSSCo 5% €
JM5	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	-	-	106,49
JM1	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	-	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	127,37
JM6	-	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	-	113,46
JM2	-	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	127,60
JM7	-	-	M3 - M4 - M5 - M6 M8 - M10 - M12	-	-	141,35
JM3	-	-	M3 - M4 - M5 - M6 M8 - M10 - M12	-	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	168,90
JM8	-	-	-	M3 - M4 - M5 - M6 M8 - M10 - M12	-	143,79
JM4	-	-	-	M3 - M4 - M5 - M6 M8 - M10 - M12	2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	167,10



## MACHOS DE MÁQUINA EM ESTOJOS METÁLICOS

Plus



Ref. JMPT2

## CONTEÚDO

	FORMA B	BRILHANTE	 35°	BRILHANTE	 HSSCo 5%	HSS PM €		TiN €
JMP6	M3 - M4 - M5 - M6 M8 - M10 - M12		-		-	118,23	JMPT6	170,52
JMP2	M3 - M4 - M5 - M6 M8 - M10 - M12		-		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	155,05	JMPT2	207,48
JMP8	-		M3 - M4 - M5 - M6 M8 - M10 - M12		-	170,52	JMPT8	187,81
JMP4	-		M3 - M4 - M5 - M6 M8 - M10 - M12		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	207,48	JMPT4	224,89


INOX

## CONTEÚDO

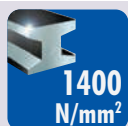
	FORMA B	OX	 35°	OX	 HSSCo 5%	HSS PM €		TiN €
JMX6	M3 - M4 - M5 - M6 M8 - M10 - M12		-		-	152,53	JMXT6	166,39
JMX2	M3 - M4 - M5 - M6 M8 - M10 - M12		-		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	189,50	JMXT2	203,36
JMX8	-		M3 - M4 - M5 - M6 M8 - M10 - M12		-	174,07	JMXT8	191,90
JMX4	-		M3 - M4 - M5 - M6 M8 - M10 - M12		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	211,02	JMXT4	228,85


**1200**  
N/mm<sup>2</sup>

## CONTEÚDO

	FORMA B	OX	 35°	OX	 HSSCo 5%	HSS V3 €		TINALOX €
JMMD6	M3 - M4 - M5 - M6 M8 - M10 - M12		-		-	138,65	JMMDT6	196,84
JMMD2	M3 - M4 - M5 - M6 M8 - M10 - M12		-		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	175,61	JMMDT2	233,79
JMMD8	-		M3 - M4 - M5 - M6 M8 - M10 - M12		-	158,24	JMMDT8	226,98
JMMD4	-		M3 - M4 - M5 - M6 M8 - M10 - M12		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	195,19	JMMDT4	263,93

**MACHOS DE MÁQUINA EM ESTOJOS METÁLICOS**



Ref. JMC2

**CONTEÚDO**

	FORMA B	TiCN	15°	TiCN	HSSCo 5%	HSS-PM €
JMC6	M3 - M4 - M5 - M6 M8 - M10 - M12		-		-	235,86
JMC2	M3 - M4 - M5 - M6 M8 - M10 - M12		-		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	272,82
JMC8	-		M3 - M4 - M5 - M6 M8 - M10 - M12		-	268,47
JMC4	-		M3 - M4 - M5 - M6 M8 - M10 - M12		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	305,43

**TODO-O TERRENO**

**CONTEÚDO**


	FORMA B	TiN	35°	TiN	HSSCo 5%	HSSCo 5% €
JMD6	M3 - M4 - M5 - M6 M8 - M10 - M12		-		-	213,14
JMD2	M3 - M4 - M5 - M6 M8 - M10 - M12		-		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	250,10
JMD8	-		M3 - M4 - M5 - M6 M8 - M10 - M12		-	240,36
JMD4	-		M3 - M4 - M5 - M6 M8 - M10 - M12		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	277,32

**AI**

**CONTEÚDO**

	DENTE ALTERNADO	BRILHANTE	2 CANAIS	BRILHANTE	HSS	HSSCo 5% €
JMAL6	M3 - M4 - M5 - M6 M8 - M10 - M12		-		-	168,76
JMAL2	M3 - M4 - M5 - M6 M8 - M10 - M12		-		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	205,71
JMAL8	-		M3 - M4 - M5 - M6 M8 - M10 - M12		-	166,88
JMAL4	-		M3 - M4 - M5 - M6 M8 - M10 - M12		2.5 / 3.3 / 4.2 / 5.0 6.8 / 8.5 / 10.2 mm	203,84

**MACHOS DE MÁQUINAS EM ESTOJOS**
**USO  
GERAL**
**CONTEÚDO**

	FORMA B	BRILHANTE	 35°	BRILHANTE	HSSCo 5%	
					€	
PT01	M4 - M5 - M6 M8 - M10		M4 - M5 - M6 M8 - M10		129,44	



Ref. PT01


**Plus**
**CONTEÚDO**

	FORMA B	BRILHANTE	 35°	BRILHANTE	HSS PM		TiN
					€		€
PT02	M4 - M5 - M6 M8 - M10		M4 - M5 - M6 M8 - M10		162,83	PT03	239,13



Ref. PT03


**INOX**
**CONTEÚDO**

	FORMA B	OX	 35°	OX	HSS PM		TiN
					€		€
PT05	M4 - M5 - M6 M8 - M10		M4 - M5 - M6 M8 - M10		213,95	PT13	227,69



Ref. PT05

**1200  
N/mm<sup>2</sup>**
**CONTEÚDO**

	FORMA B	OX	 35°	OX	HSS V3		TINALOX
					€		€
PT04	M4 - M5 - M6 M8 - M10		M4 - M5 - M6 M8 - M10		183,61	PT14	275,93



Ref. PT04

**1400  
N/mm<sup>2</sup>**
**CONTEÚDO**

	FORMA B	TiCN	 15°	TiCN	HSS PM	
					€	
PT11	M4 - M5 - M6 M8 - M10		M4 - M5 - M6 M8 - M10		332,64	



Ref. PT11

**MACHOS DE MÁQUINAS EM ESTOJOS**

**AI**



Ref. PT06

**CONTEÚDO**

	DENTE ALTERNADO	2 CANAIS	HSSCo 5% €
PT06	M4 - M5 - M6 M8 - M10	M4 - M5 - M6 M8 - M10	202,99

**FUNDIÇÃO**



Ref. PT07

**CONTEÚDO**

	FORMA C	HSSCo 5% €
PT07	M4 - M5 - M6 - M8 - M10 M4 - M5 - M6 - M8 - M10	153,41

**LATÃO**



Ref. PT10


**CONTEÚDO**

	FORMA C	HSSCo 5% €
PT10	M4 - M5 - M6 - M8 - M10 M4 - M5 - M6 - M8 - M10	186,49



Ref. PT08

**CONTEÚDO**

		HSSCo 5% €
PT08	M4 - M5 - M6 - M8 - M10 M4 - M5 - M6 - M8 - M10	280,77



Ref. PT09

**CONTEÚDO**


		HSSCo 5% €
PT09	M4 - M5 - M6 - M8 - M10 M4 - M5 - M6 - M8 - M10	378,25

**TOL 6G**



Ref. PT12

**CONTEÚDO**

	FORMA B	 35°	HSSCo 5% €
PT12	M4 - M5 - M6 M8 - M10	M4 - M5 - M6 M8 - M10	209,75



**EXPOSITORES DE METACRILATO PARA MACHOS DE MÁQUINA**
**EXPOSITOR DE METACRILATO**

MM-03

Composição: machos de máquina, serie normal.

**HSSCo**  
**5%**
**FORMA**

Furos passantes, Ref. 2

<b>B</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	5	10	10	10	10	5	4

Furos cegos, Ref. 4



<b>35°</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	5	10	10	10	10	5	4

Dimensões: largo 240 x fundo 240 x altura 245 mm

1.992,33 €



Ref. MM-03



Ref. MM-04

**EXPOSITOR DE METACRILATO**

MM-04

Composição: Machos de máquina, Serie Plus.  
Fabricados em aço sinterizado.
**HSS**  
**PM**
*Plus*
**FORMA**

Furos passantes, Ref. 2

<b>B</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	5	10	10	10	10	5	4



Furos cegos, Ref. 4

<b>35°</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	5	10	10	10	10	5	4

Dimensões: largo 240 x fundo 240 x altura 245 mm

2.718,13 €

**EXPOSITOR DE METACRILATO**

MM-05

Composição: machos de máquina para trabalhos especiais.

**FORMA**
**B**

Furos passantes, Ref. 2



<b>1200 N/mm²</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	1	2	2	2	2	1	1



<b>INOX</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	1	2	2	2	2	1	1



<b>AI</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	1	2	2	2	2	1	1



<b>TiN</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	1	2	2	2	2	1	1



<b>1400 N/mm²</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	
	1	2	2	2	2	1	



Furos cegos, Ref. 4



<b>1200 N/mm²</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	1	2	2	2	2	1	1



<b>INOX</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	1	2	2	2	2	1	1



<b>AI</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	1	2	2	2	2	1	1



<b>TiN</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	<u>M14</u>
	1	2	2	2	2	1	1



<b>1400 N/mm²</b>	<u>M4</u>	<u>M5</u>	<u>M6</u>	<u>M8</u>	<u>M10</u>	<u>M12</u>	
	1	2	2	2	2	1	

Dimensões: largo 240 x fundo 240 x altura 245 mm

3.395,23 €