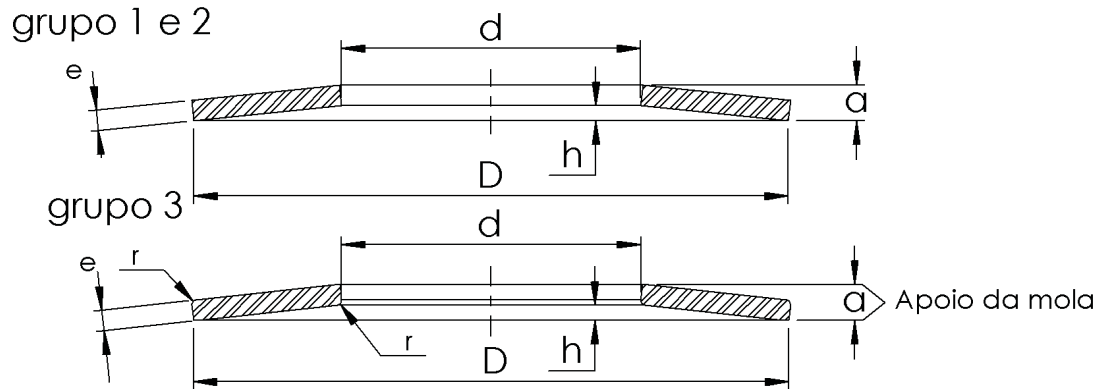




metalúrgica agathon

**MOLAS PRATO
EQUIVALENTE À DIN 2093**

**CÓDIGO
001**



Grupo	D h12	d H12	e	h	a	C Kp	f Para f = mm	a.f 0,75h mm	Tensão Kp/mm ²	Peso em Kg/1000	Folga*
1	8	4.2	0.2	0.25	0.45	4	0.19	0.26	78	0.06	0.2
	10	5.2	0.25	0.30	0.55	6	0.23	0.36	75	0.11	0.2
	12.5	6.2	0.35	0.45	0.80	15	0.34	0.46	96	0.31	0.2
	14	7.2	0.35	0.45	0.80	13	0.34	0.46	96	0.31	0.2
	16	8.2	0.40	0.50	0.90	16	0.38	0.52	79	0.46	0.2
	18	9.2	0.45	0.60	1.05	22	0.45	0.60	80	0.66	0.2
	20	10.2	0.5	0.65	1.16	26	0.49	0.66	80	0.91	0.2
	22.5	11.2	0.60	0.80	1.40	43	0.60	0.80	90	1.40	0.2
	25	12.2	0.7	0.90	1.60	61	0.68	0.92	95	2.05	0.2
	28	14.2	0.8	1.00	1.80	81	0.75	1.05	98	2.87	0.2
	31.5	16.3	0.80	1.05	1.85	70	0.79	1.06	82	3.58	0.2
35.5	18.3	0.9	1.15	2.05	84	0.86	1.19	79	5.13	0.2	
40	20.4	1.0	1.30	2.30	104	0.98	1.32	78	7.30	0.2	
2	45	22.4	1.25	1.60	2.85	193	1.20	1.65	94	11.74	1.0
	50	25.4	1.25	1.60	2.85	158	1.20	1.65	77	14.30	1.0
	56	28.5	1.5	1.95	3.45	267	1.46	1.99	90	21.50	1.0
	63	31.0	1.8	2.35	4.15	432	1.76	2.39	100	33.38	1.0
	71	36.0	2.0	2.60	4.60	524	1.95	2.65	99	46.18	1.0
	80	41.0	2.25	2.95	5.20	674	2.21	2.99	100	65.46	1.0
	90	46.0	2.5	3.20	5.70	782	2.40	3.30	95	92.23	1.0
	100	51.0	2.7	3.50	6.20	878	2.63	3.57	91	123.16	1.0
	112	57.0	3.0	3.90	6.90	1070	2.93	3.97	90	171.92	1.0
	125	64.0	3.5	4.50	8.00	1570	3.38	4.62	97	248.78	1.0
	140	72.0	3.8	4.90	8.70	1753	3.68	5.02	92	337.74	1.0
160	82.0	4.3	5.60	9.90	2222	4.20	5.7	91	500.74	1.0	
180	92.0	4.8	6.2	11.00	2691	4.65	6.35	89	878.82	1.0	
200	102.0	5.5	7.0	12.50	3680	5.25	7.25	93	1.003.58	1.0	
3	225	112.0	6.5(6.20)	7.10	13.60	4546	5.33	8.27	96	1.526.00	2.0
	250	127.0	7.0(6.70)	7.80	14.80	5148	5.85	8.95	91	2.001.00	2.0

GRUPO (1) - Material - Aço ABNT 1070 CK 67

GRUPO (2) - Material - Aço ABNT 6150
Processo estampado

GRUPO (3) - Material - Aço ABNT 6150
Processo forjado a quente
Estampado

USINADO
Ø Externo
Ø Interno
Faces
Raios

Tratamento Térmico:
(Austempera) HRC 42-52

Acabamento: Fosfatizado

Nota: Outros materiais e
Acabamento sob encomenda.
***Folga** recomendada entre Ø interno
da mola e o pino de guia.

Espessura "e"	0.2/0.6	0.6/1.25	1.25/3.8	3.8/6	6/14
Tolerância mm	+0.02	+0.03	+0.04	+0.05	±0.1
Tolerância p/ altura "a"	-0.06	-0.09	-0.12	-0.15	±0.3
Carga "c" p/ F = 0.75 h	+25%	-7.5%	+15%	+10%	±5%

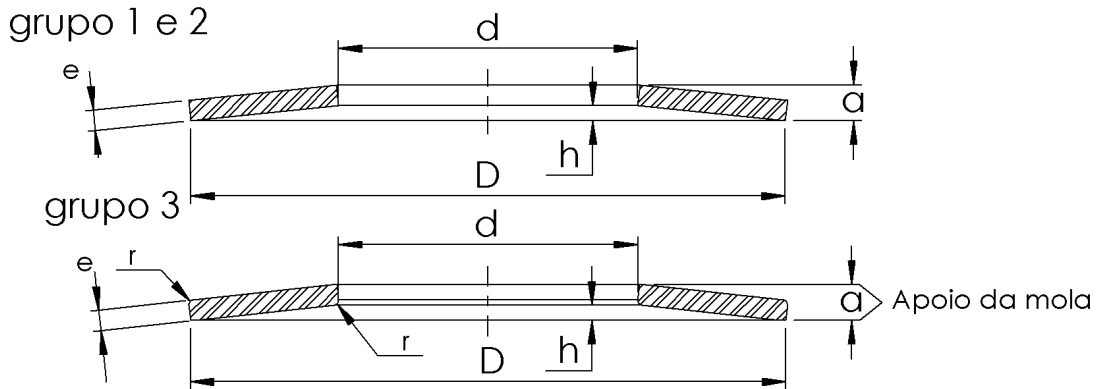
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metalúrgica agathon

**MOLAS PRATO
EQUIVALENTE À DIN 2093**

**CÓDIGO
002**



Grupo	D h12	d H12	e	h	a	C Kp	f Para f = mm	a.f 0,75h mm	Tensão Kp/mm ²	Peso em Kg/1000	Folga*
1	8	4.2	0.3	0.25	0.55	12	0.19	0.36	125	0.09	0.2
	10	5.2	0.4	0.30	0.70	21	0.23	0.47	131	0.18	0.2
	12.5	6.2	0.5	0.35	0.85	30	0.26	0.59	114	0.36	0.2
	14	7.2	0.5	0.40	0.90	28	0.30	0.60	113	0.44	0.2
	16	8.2	0.6	0.45	1.05	42	0.34	0.71	114	0.70	0.2
	18	9.2	0.7	0.50	1.20	58	0.38	0.82	114	1.03	0.2
	20	10.2	0.8	0.55	1.35	78	0.41	0.94	115	1.45	0.2
	22.5	11.2	0.8	0.65	1.45	72	0.49	0.96	111	1.87	0.2
	25	12.2	0.9	0.70	1.60	88	0.53	1.07	1.05	2.62	0.2
	28	14.2	1.0	0.80	1.80	113	0.60	1.20	112	3.36	0.2
2	31.5	16.3	1.25	0.90	2.15	194	0.68	1.47	122	5.56	0.3
	35.5	18.3	1.25	1.00	2.25	173	0.75	1.50	110	7.10	0.3
	40	20.4	1.5	1.15	2.65	267	0.86	1.79	117	10.90	0.4
	45	22.4	1.75	1.30	3.05	372	0.98	2.07	118	16.30	0.4
	50	25.4	2.0	1.40	3.40	485	1.05	2.35	112	22.50	0.4
	56	28.5	2.0	1.60	3.60	452	1.20	2.40	112	28.50	0.5
	63	31.0	2.5	1.75	4.25	730	1.31	2.94	112	46.00	1.0
	71	36.0	2.5	2.00	4.50	690	1.50	3.00	108	57.50	1.0
	80	41.0	3.0	2.30	5.30	1070	1.73	3.57	117	87.00	1.0
	90	46.0	3.5	2.50	6.00	1450	1.88	4.12	114	128.00	1.0
	100	51.0	3.5	2.80	6.30	1330	2.10	4.20	108	158.00	1.0
	112	57.0	4.0	3.20	7.20	1830	2.40	4.80	119	229.00	1.0
	125	64.0	5.0	3.50	8.50	3100	2.63	5.87	127	352.00	1.0
140	72.0	5.0	4.00	9.00	2850	3.00	6.00	122	695.00	2.0	
160	82.0	6.0	4.50	10.50	4200	3.38	7.12	122	695.00	2.0	
180	92.0	6.0	5.10	11.10	3800	3.83	7.27	115	880.00	2.0	
3	200	102	8 (7.5)	5.60	13.60	7800	4.20	9.40	125	1.440.00	2.0
	225	112	8 (7.5)	6.50	14.50	7200	4.88	9.62	119	1.860.00	2.0
	250	127	10 (9.4)	7.00	17.00	12200	5.25	11.75	126	2.830.00	2.0

GRUPO (1) - Material - Aço ABNT 1070 CK 67

GRUPO (2) - Material - Aço ABNT 6150
Processo estampado

GRUPO (3) - Material - Aço ABNT 6150
Processo forjado a quente
Estampado

USINADO
Ø Externo
Ø Interno
Fases
Raios "r"

Tratamento Térmico:
(Austempera) HRC 42-52

Acabamento: Fosfatizado

Nota: Outros materiais e
Acabamento sob encomenda.
***Folga** recomendada entre Ø interno
da mola e o pino de guia.

Espessura "e"	0.2/0.6	0.6/1.25	1.25/3.8	3.8/6	6/14
Tolerância mm	+0.02	+0.03	+0.04	+0.05	±0.1
	-0.06	-0.09	-0.12	-0.15	
Tolerância p/ altura "a"	+0.10	-0.05	+0.15	+0.20	±0.3
			-0.08	-0.10	
Carga "c" p/ F = 0.75 h	+25%	-7.5%	+15%	+10%	±5%
			-7.5%	-5%	

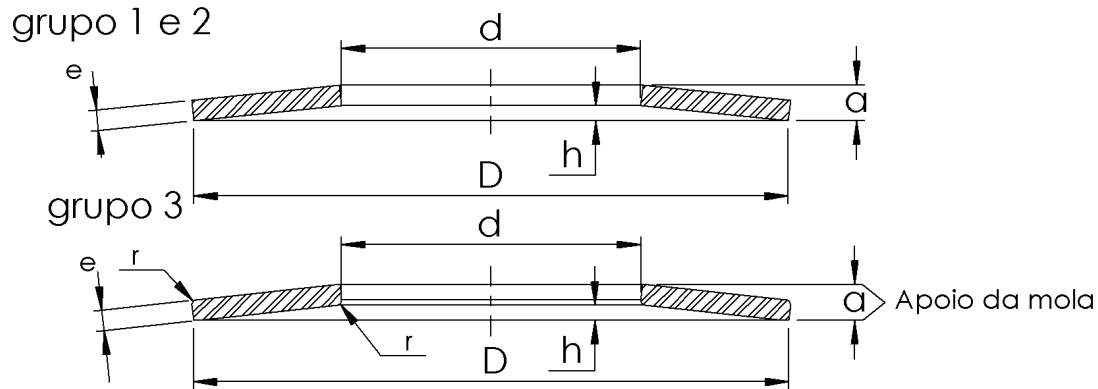
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**MOLAS PRATO
EQUIVALENTE À DIN 2093**

**CÓDIGO
003**



Grupo	D h12	d H12	e	h	a	C Kp	f Para f =	a.f 0,75h mm	Tensão Kp/mm ²	Peso em Kg/1000	Folga*
1	8	4.2	0.4	0.20	0.60	21	0.15	0.45	125	0.12	0.2
	10	5.2	0.5	0.25	0.75	34	0.19	0.56	125	0.22	0.2
	12.5	6.2	0.7	0.30	1.00	67	0.22	0.77	142	0.51	0.2
	14	7.2	0.8	0.30	1.10	81	0.23	0.87	134	0.71	0.2
	16	8.2	0.9	0.35	1.25	103	0.26	0.99	131	1.04	0.2
	18	9.2	1.0	0.40	1.40	128	0.30	1.10	131	1.47	0.2
	20	10.2	1.1	0.45	1.55	155	0.34	1.21	132	1.99	0.2
	22.5	11.2	1.25	0.50	1.75	195	0.37	1.37	133	2.92	0.2
2	25	12.2	1.5	0.55	2.05	298	0.41	1.64	145	4.38	0.2
	28	14.2	1.5	0.65	2.15	290	0.49	1.66	131	5.36	0.2
	31.5	16.3	1.75	0.70	2.45	396	0.52	1.92	133	7.79	0.3
	35.5	18.3	2.0	0.80	2.80	578	0.60	2.20	137	11.30	0.3
	40	20.4	2.25	0.90	3.15	660	0.68	2.47	136	16.30	0.4
	45	22.4	2.5	1.00	3.50	790	0.75	2.75	133	23.30	0.4
	50	25.4	3.0	1.10	4.10	1220	0.82	3.27	146	34.10	0.4
	56	28.5	3.0	1.30	4.30	1150	0.98	3.32	131	42.70	0.5
	63	31.0	3.5	1.40	4.90	1530	1.05	3.85	133	64.50	1.0
	71	36.0	4.0	1.60	5.60	2100	1.20	4.40	124	91.80	1.0
	80	41.0	5.0	1.70	6.70	3500	1.28	5.42	127	144.00	1.0
	90	46.0	5.0	2.00	7.00	3200	1.50	5.50	122	183.00	1.0
	100	51.0	6.0	2.20	8.20	4900	1.65	6.56	127	272.00	1.0
	112	57.0	6.0	2.50	8.50	4500	1.88	6.62	117	342.00	1.0
3	125	64.0	8.0(7.5)	2.60	10.60	8800	1.95	8.65	126	564.00	1.0
	140	72.0	8.0(7.5)	3.20	11.20	8700	2.40	8.80	130	706.00	2.0
	160	82.0	10.0(9.4)	3.50	13.50	14000	2.63	10.87	132	1.150.00	2.0
	180	92.0	10.0(9.4)	4.00	14.00	12800	3.00	11.00	122	1.470.00	2.0
	200	102.0	12.0(11.25)	4.20	16.20	18700	3.15	13.05	120	2.170.00	2.0
	225	112.0	12.0(11.25)	5.00	17.00	17500	3.75	13.25	115	2.800.00	2.0
	250	127.0	14.0(13.10)	5.60	19.60	25000	4.20	15.40	123	3.580.00	2.0

GRUPO (1) - Material - Aço ABNT 1070 CK 67

GRUPO (2) - Material - Aço ABNT 6150
Processo estampado

GRUPO (3) - Material - Aço ABNT 6150
Processo forjado a quente
Estampado

USINADO
Ø Externo
Ø Interno
Fases
Raios "r"

Tratamento Térmico:

(Austemper) HRC 42-52

Acabamento: Fosfatizado

Nota: Outros materiais e
Acabamento sob encomenda.

***Folga** recomendada entre Ø interno
da mola e o pino de guia.

Espessura "e"	0.2/0.6	0.6/1.25	1.25/3.8	3.8/6	6/14
Tolerância mm	+0.02 -0.06	+0.03 -0.09	+0.04 -0.12	+0.05 -0.15	±0.1
Tolerância p/ altura "a"	+0.10	-0.05	+0.15 -0.08	+0.20 -0.10	±0.3
Carga "c" p/ F = 0.75 h	+25%	-7.5%	+15% -7.5%	+10% -5%	±5%

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