chanhvinh.com

Spherical Washers / Conical Seats • DIN 6319

EH 23050.



Product Description

Spherical washers / Conical seats are used as washers in a screw connection to compensate non-parallel surfaces.

Material

Conical seat
- Case-hardened steel, case-hardened, manganese phosphated
- Heat-treated steel, tempered, manganese phosphated

Spherical washer
- Case-hardened steel, case-hardened, manganese phosphated

Assembly

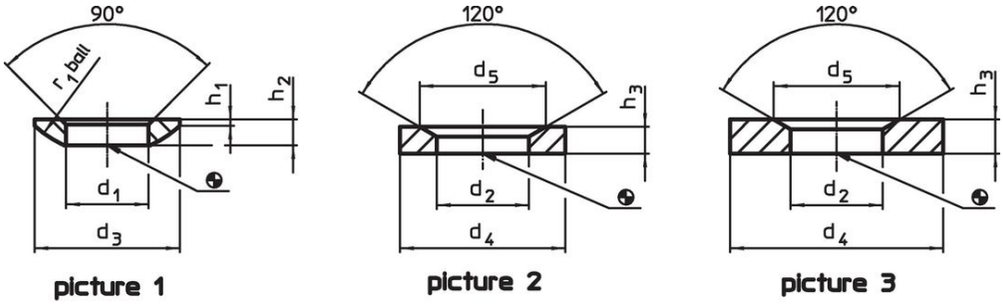
Conical seats form D are to be used only for plain, closed round areas.
For larger holes only use form G!

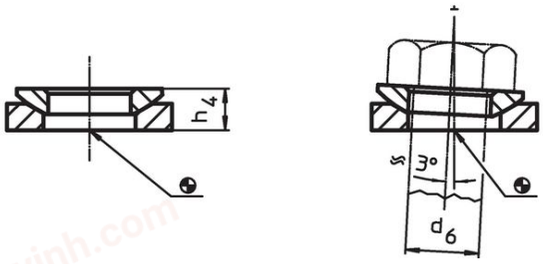
More information

Further products

- Spherical Washers / Conical Seats, similar to DIN 6319, stainless steel
- Fixture Nuts, DIN 6330 (height 1,5 d)

Drawing





Order information

Dimensions										For pin	For screws	Load capacity for static load	Torque for screwed connections		Art. No.
d_1 H13	d_2 H13	d_3	d_4	d_5	h_1	h_2	h_3	h_4 with conical seat form D ~	h_4 with conical seat form G ~	r_1	d_6	d_6	max.	max.		
[mm]											[mm]	[mm]	[kN]	[Nm]		
spherical washers from case-hardened steel, form C – picture 1																
6.4	–	12	–	–	0.7	2.3	–	4.2	5.4	9.0	6	M 6	9	10[1]	1.0 g	23050.0006
8.4	–	17	–	–	0.6	3.2	–	5.6	7.1	12.0	8	M 8	17	25[1]	0.0 g	23050.0008
10.5	–	21	–	–	0.8	4.0	–	6.5	7.3	15.0	10	M10	26	46[1]	5.1 g	23050.0010
13.0	–	24	–	–	1.1	4.6	–	8.0	9.0	17.0	12	M12	38	82[1]	8.0 g	23050.0012
15.0	–	28	–	–	1.4	5.0	–	8.5	9.5	22.0	14	M14	53	130[1]	12.0 g	23050.0014
17.0	–	30	–	–	1.3	5.3	–	9.6	10.4	22.0	16	M16	73	206[1]	13.0 g	23050.0016
21.0	–	36	–	–	2.0	6.3	–	11.7	12.2	27.0	20	M20	117	407[1]	22.0 g	23050.0020

[1] Torques of screws with standard thread, eventual pre-loads to be considered, coefficient of friction μ_{total} 0.14.

[2] DIN standards do not include these dimensions.

[3] Values are determined by calculation.

chanhvinh.com

Dimensions											For pin	For screws	Load capacity for static load	Torque for screwed connections		Art. No.
d_1 H13	d_2 H13	d_3	d_4	d_5	h_1	h_2	h_3	h_4 with conical seat form D ~	h_4 with conical seat form G ~	r_1	d_6	d_6	max.	max.		
[mm]											[mm]	[mm]	[kN]	[Nm]		
23.0	–	40	–	–	2.5	7.6	–	13.5	–	29.5	22	M22	146	542[1]	35.0 g	23050.0022[2]
25.0	–	44	–	–	2.4	8.2	–	15.2	15.7	32.0	24	M24	168	698[1]	43.0 g	23050.0024
28.0	–	50	–	–	3.3	10.2	–	17.0	–	36.0	27	M27	221	1021[1]	74.0 g	23050.0027[2]
31.0	–	56	–	–	3.6	11.2	–	19.2	19.7	41.0	30	M30	269	1355[1]	101.0 g	23050.0030
34.0	–	62	–	–	4.4	13.0	–	21.8	–	45.0	33	M33	326[3]	1969[3] [1]	150.0 g	23050.0033[2]
37.0	–	68	–	–	4.6	14.0	–	23.5	–	50.0	36	M36	394	2372[1]	193.0 g	23050.0036
40.0	–	75	–	–	5.6	16.0	–	26.8	–	54.0	39	M39	460[3]	3276[3] [1]	280.0 g	23050.0039[2]
43.0	–	78	–	–	6.5	17.0	–	29.0	–	58.0	42	M42	542	3802[1]	310.0 g	23050.0042
50.0	–	92	–	–	8.0	21.0	–	35.5	–	67.0	48	M48	714	5730[1]	549.0 g	23050.0048
54.0	–	96	–	–	9.3	22.0	–	38.3	–	72.0	52	M52	832[3]	7876[3] [1]	610.0 g	23050.0052[2]
58.0	–	103	–	–	9.8	23.0	–	39.3	–	79.0	56	M56	960[3]	9793[3] [1]	760.0 g	23050.0056[2]
62.0	–	112	–	–	11.0	25.0	–	43.6	–	86.0	60	M60	1122[3]	12219[3] [1]	990.0 g	23050.0060[2]
66.0	–	120	–	–	12.0	27.0	–	46.6	–	93.0	64	M64	1269[3]	14762[3] [1]	1.2 kg	23050.0064[2]
conical seats from case-hardened steel, form D – picture 2																
–	**7.1**	–	12	11.0	–	–	2.8	–	–	–	6	M 6	9	10[1]	1.3 g	23050.0106
–	**9.6**	–	17	14.5	–	–	3.5	–	–	–	8	M 8	17	25[1]	3.7 g	23050.0108
–	**12.0**	–	21	18.5	–	–	4.2	–	–	–	10	M10	26	46[1]	6.5 g	23050.0110
–	**14.2**	–	24	20.0	–	–	5.0	–	–	–	12	M12	38	82[1]	10.0 g	23050.0112
–	**16.5**	–	28	24.8	–	–	5.6	–	–	–	14	M14	53	130[1]	15.0 g	23050.0114
–	**19.0**	–	30	26.0	–	–	6.2	–	–	–	16	M16	73	206[1]	18.0 g	23050.0116
–	**23.2**	–	36	31.0	–	–	7.5	–	–	–	20	M20	117	407[1]	31.0 g	23050.0120
–	**26.0**	–	40	34.0	–	–	8.5	–	–	–	22	M22	146	542[1]	44.0 g	23050.0122[2]
–	**28.0**	–	44	37.0	–	–	9.5	–	–	–	24	M24	168	698[1]	61.0 g	23050.0124
–	**31.5**	–	50	43.0	–	–	10.5	–	–	–	27	M27	221	1021[1]	87.0 g	23050.0127[2]
–	**35.0**	–	56	49.0	–	–	12.0	–	–	–	30	M30	269	1355[1]	124.0 g	23050.0130
–	**38.5**	–	62	55.0	–	–	14.0	–	–	–	33	M33	326[3]	1969[3] [1]	180.0 g	23050.0133[2]
–	**42.0**	–	68	60.0	–	–	15.0	–	–	–	36	M36	394	2372[1]	230.0 g	23050.0136
–	**45.0**	–	75	67.0	–	–	17.0	–	–	–	39	M39	460[3]	3276[3] [1]	330.0 g	23050.0139[2]
–	**49.0**	–	78	70.0	–	–	18.0	–	–	–	42	M42	542	3802[1]	360.0 g	23050.0142
–	**56.0**	–	92	82.0	–	–	22.0	–	–	–	48	M48	714	5730[1]	640.0 g	23050.0148
–	**60.0**	–	96	85.0	–	–	24.0	–	–	–	52	M52	832[3]	7876[3] [1]	740.0 g	23050.0152[2]
–	**65.0**	–	103	93.0	–	–	25.0	–	–	–	56	M56	960[3]	9793[3] [1]	900.0 g	23050.0156[2]
–	**70.0**	–	112	102.0	–	–	28.0	–	–	–	60	M60	1122[3]	12219[3] [1]	1.2 kg	23050.0160[2]
–	**75.0**	–	120	110.0	–	–	30.0	–	–	–	64	M64	1269[3]	14762[3] [1]	1.2 kg	23050.0164[2]
conical seats from heat-treated steel, form G – picture 3																
–	**7.1**	–	17	11.0	–	–	4.0	–	–	–	6	M 6	9	10[1]	5.6 g	23050.0206
–	**9.6**	–	24	14.5	–	–	5.0	–	–	–	8	M 8	17	25[1]	14.0 g	23050.0208
–	**12.0**	–	30	18.5	–	–	5.0	–	–	–	10	M10	26	46[1]	22.0 g	23050.0210
–	**14.2**	–	36	20.0	–	–	6.0	–	–	–	12	M12	38	82[1]	39.0 g	23050.0212
–	**16.5**	–	40	24.8	–	–	6.0	–	–	–	14	M14	53	130[1]	47.0 g	23050.0214

[1] Torques of screws with standard thread, eventual pre-loads to be considered, coefficient of friction μ_{total} 0.14.

[2] DIN standards do not include these dimensions.

[3] Values are determined by calculation.

chanhvinh.com

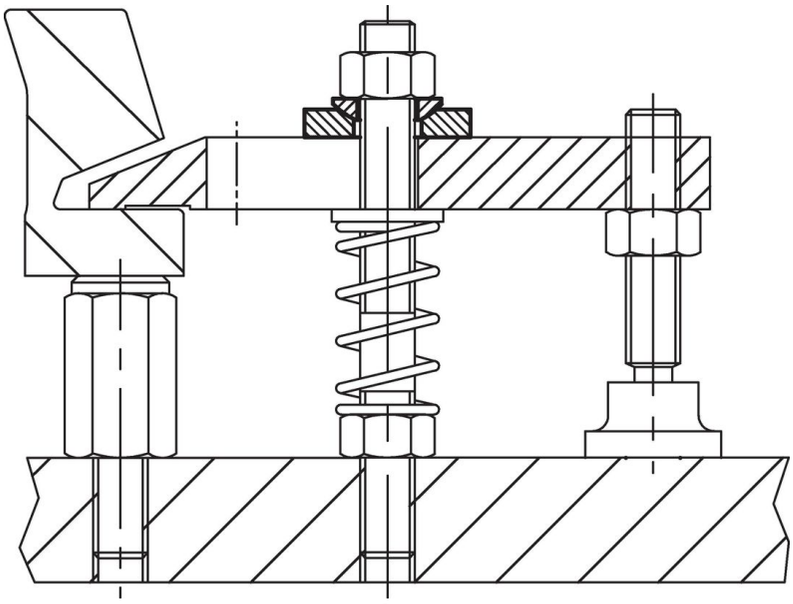
Dimensions										For pin	For screws	Load capacity for static load	Torque for screwed connections		Art. No.
d_1 H13	d_2 H13	d_3	d_4	d_5	h_1	h_2	h_3	h_4 with conical seat form D ~	h_4 with conical seat form G ~	r_1	d_6	d_6	max.	max.		
[mm]											[mm]	[mm]	[kN]	[Nm]		
–	**19.0**	–	44	26.0	–	–	7.0	–	–	–	16	M16	73	206[1]	65.0 g	23050.0216
–	**23.2**	–	50	31.0	–	–	8.0	–	–	–	20	M20	117	407[1]	93.0 g	23050.0220
–	**28.0**	–	60	37.0	–	–	10.0	–	–	–	24	M24	168	698[1]	165.0 g	23050.0224
–	**35.0**	–	68	49.0	–	–	12.0	–	–	–	30	M30	269	1355[1]	235.0 g	23050.0230

[1] Torques of screws with standard thread, eventual pre-loads to be considered, coefficient of friction μ_{total} 0.14.

[2] DIN standards do not include these dimensions.

[3] Values are determined by calculation.

Application example



Compliance

For detailed compliance information please select the desired article number.