

Operating temperature

Ball joint heads of the type **N** (lubrication possible) can be used within the temperature range -50 °C to +200 °C and if use with a high temperature grease even higher. Ball joint heads of the type **W** (self lubricated) can be used in the temperature range of -50 °C bis +200 °C. In general use at higher temperature is possible, but this will of course shorten the working life of the head.

Load values

Load values are bearing related values, arrived at from the raw material data of the basic material of construction used. The latter is used to determine the choice of a ball joint head for a given load. These might, however, have to be reduced to meet the requirements of particular circumstances.

Static load values Co in kN

Co gives the permitted radial static load which can be applied to a ball joint head with the weakest cross section without causing permanent deformation. The Co-values quoted in the catalogue table have been calculated, based on the corresponding raw material specification. Subsequently a random number of the ball joint heads was stress tested at room temperature. Each and every time the stress tests were based on using up to 80 % before the onset of deformation thus leaving a safety factor of 1,25. The static value Co is used to obtain the permissible **axial load** which in general is limited by the mounting strength of the internal bearing. To obtain the maximum axial load Fa tests were carried out at the largest permissible slant angle and the results obtained are shown in the table below:

Fa = 0,4 Co for type N

Fa = 0,2 Co for types NH, W, WH, WK

d ₁ Size	GN 648.1		GN 648.2		GN 648.5	GN 648.6	GN 648.8		GN 648.9
	Type N	Type W	Type N	Type W	Type NH/WH/WK	Type NH/WH/WK	Type N	Type W	Type WK
5	9,9	8	4,3	4,3	11,8	6,2	19,8	12,5	12,5
6	11,9	8,9	6	6	13,1	8,8	25,8	15,5	15,5
8	17,1	14,1	11	11	20,7	16,1	42,6	27,8	27,8
10	21,4	19,3	17,4	17,4	28,3	25,5	60	39,0	39,0
12	27	23,5	25,5	23,5	34,5	34,5	80	53,5	53,5
14	24,5	21	24,5	21	39,5	39,5	102,5	70	70
16	37	32	36,5	32	60,5	60,5	128,5	88	88
18	43	38,5	43	38,5	73	73	157	106,5	106,5
20	49,5	44	49,5	44	83	83	188,5	130	130
22	57	53	57	53	100	100	229	162	162
25	68	62	68	61	118	118	293	204	204
30	82	82	82	82	155	155	381	281	281

Dynamic load value C in kN

They help to evaluate the length of life for ball joint heads when use under dynamic conditions.

d ₁ Size	GN 648.1 / GN 648.2		GN 648.5/6		GN 648.8		GN 648.9
	Type N	Type W	Type NH	Type WH/WK	Type N	Type W	Type WK
5	2,5	7,5	3,3	7,5	3,3	7,5	7,5
6	3,2	9,3	4,3	9,3	4,3	9,3	9,3
8	5,4	16,7	7,1	16,7	7,1	16,7	16,7
10	7,5	23,4	10	23,4	10	23,4	23,4
12	10	32	13,5	32	13,5	32,0	32,0
14	13	42	17	42	17	42,0	42,0
16	16	52,5	21,5	52,5	21,5	52,5	52,5
18	19,5	64	26	64	26	64,0	64,0
20	23,5	78	31,5	78	31,5	78,0	78,0
22	29	97	38	97	38	97,0	97,0
25	35	122	47	122	47	122	122
30	64	168	64	168	64	168	168