Ball Joints

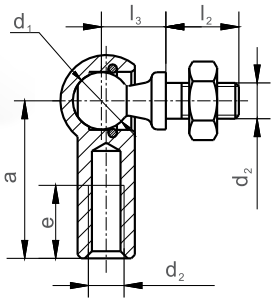
BÖNNEKAMP
MECHANICAL COMPONENTS

Ball joints

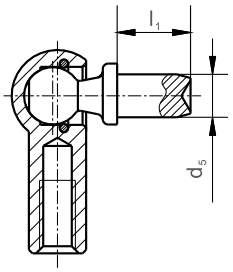
Angle Joints

DIN71802 AVAILABLE ▶ ZINC PLATED | SS 304 | SS 316

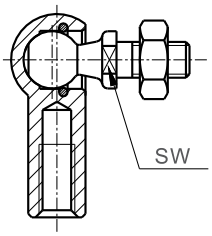
Type A/AS



Type B/BS



Type C/CS



Dimensions (mm)									Weight (kg) kg/1000 pieces for type	
d_1 h9	d_2	l_2 ±0.3	l_3 ±0.3	e min.	d_5 h11	l_1 ±0.2	α ±0.3	SW h14	A and AS C and CS	B and BS
8	M 5 × 0.8	10.2	9	10.2	5	4.0 7.5	22	7	15.20	12.85 13.35
10	M 6 × 1	12.5	11	11.5	6	4.5 8.0	25	8	25.20	21.30 22.00
13	M 8 × 1.25	16.5	13	14.0	8	5.0 10	30	11	53.10	43.10 45.00
16	M 10 × 1.5 M 12 × 1.75	20.0	16	15.5	10	6.0 13	35	13	103.8	82.30 86.60
19	M 14 × 1.5 M 14 × 2 M 16 × 1.5 M 16 × 2	28.0	20	21.5	14	12 18	45	16	220.9	181.0 188.7

1) Type A, B, C without safety clip on the ball socket Type AS, BS, CS with safety clip on the ball socket.
2) Ball stud of type C, CS with spanner surface.
3) Alternative left-hand thread for the ball socket.
4) Ball socket with or without spanner surface or hexagon surface as required.
5) Ball stud with or without sealing cap (DK) as required.
6) Ball stud with or without nut as required.

Material and surface treatments:

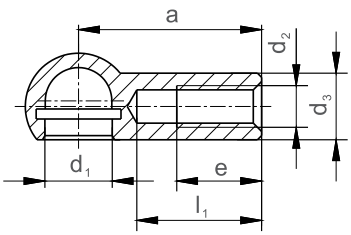
1) Ball stud: medium carbon steel. Ball socket: low carbon steel. Snap ring and safety clip: spring steel. Zinc plating.
2) Alternative stainless steel 304 or stainless steel 316.

Specials on request (only volumes).

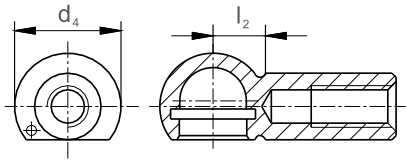
Ball Sockets

DIN71805 AVAILABLE ► ZINC PLATED | SS 304 | SS 316

Type A



Type B



Dimensions (mm)								Weight (kg) kg/1000 pieces for type	
d_1	d_2	a ±0.3	d_3 ±0.5	d_4 ±0.5	e min.	l_1 max.	l_2 ±0.4	A	B
8	M 5 × 0.8	22	8	12.8	10.2	15	6.3	9.0	8.8
10	M 6 × 1	25	10	14.8	11.5	17	7.0	14.2	14.1
13	M 8 × 1.25	30	13	19.3	14.0	20	9.1	29.0	28.8
16	M 10 × 1.5 M 12 × 1.75	35	16	24.0	15.5	22	11.4	57.0	56.8
19	M 14 × 1.5 M 14 × 2 M 16 × 2	45	22	30.0	21.5	28	12.5	125.0	124.8

1) Type B with safety clip.
2) Alternative with left-hand thread.
3) Alternative with spanner surface or hexagon surface.

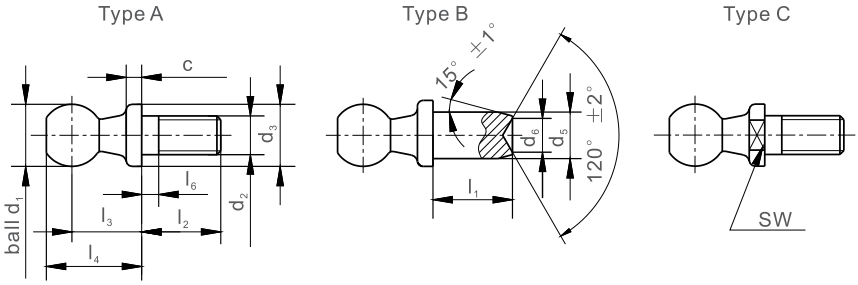
Material and surface treatments:

1) Low carbon steel. Zinc plating.
2) Alternative stainless steel 304 or stainless steel 316.

Specials on request (only volumes).

Ball Studs

DIN71803 AVAILABLE ► ZINC PLATED | SS 304 | SS 316



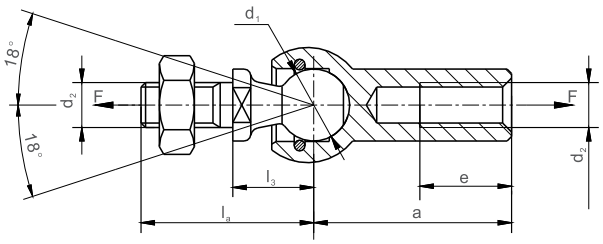
Dimensions (mm)												Weight (kg) kg/1000 pieces for type	
d_1 h9	d_2	l_1 ±0.2	c ±0.4	d_3 h14	d_5 h11	d_6 -0.4	l_2 ±0.3	l_3 ±0.3	l_4 ±0.3	l_6 max.	SW h14	A and C	B
8	M 5 × 0.8	4.0 7.5	2.0	8	5	3	10.2	9	12.5	4.0	7	4.55	3.85 4.35
10	M 6 × 1	4.5 8.0	2.2	10	6	4	12.5	11	15.5	4.0	8	8.50	7.10 7.80
13	M 8 × 1.25	5.0 10	2.4	13	8	6	16.5	13	18.5	5.3	11	17.7	14.2 16.0
16	M 10 × 1.5 M 12 × 1.75	6.0 13	2.7	16	10	8	20.0	16	23.0	7.3	13	35.1	23.5 29.6
19	M 14 × 1.5 M 14 × 2 M 16 × 2	12 18	3.0	19	14	10	28.0	20	28.5	10.8	16	71.2	56.2 63.7

1) Type A without spanner surface, with thread. Type B without spanner surface, without thread. Type C with spanner surface, with thread.
2) The hardness of ball d1: Min. HRC52; Hardening depth: Min.1mm.

Material and surface treatments:
1) Medium carbon steel. Zinc plating.
2) Alternative stainless steel 304 or stainless steel 316.
Specials on request (only volumes).

Axial Joints

DIN71802 AVAILABLE ► ZINC PLATED SS 304 SS 316



Part No.	Dimensions (mm)						Extraction force F in N*	Weight (kg)
	d_1 h9	d_2	a	l_a	l_3	e		Kg per piece
A-C8	8	M 5 × 0.8	22	19.2	9	10.2	30	0.0152
A-C10	10	M 6 × 1	25	23.5	11	11.5	40	0.0252
A-C13	13	M 8 × 1.25	30	29.5	13	14.0	60	0.0531
A-C16	16	M 10 × 1.5 M 12 × 1.75	35	36.0	16	15.5	80	0.1038
A-C19	19	M 14 × 1.5 M 14 × 2 M 16 × 2	45	48.0	20	21.5	100	0.2209

* Also available with higher extraction force. (factor 10). Not possible to dismantle.

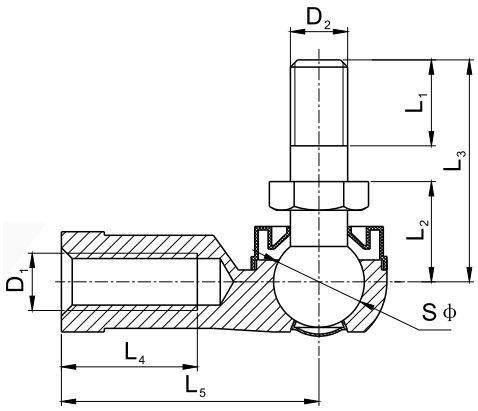
1) Alternative left-hand thread for the ball socket.
2) Ball socket with or without spanner surface or hexagon surface as required.
3) With or without sealing cap (DK) as required.

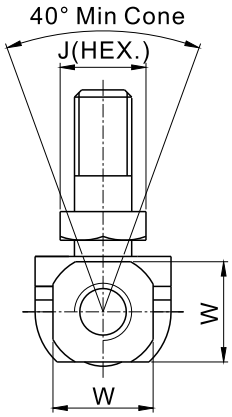
Material and surface treatments:

1) Ball stud: medium carbon steel. Ball socket: low carbon steel. Snap ring and safety clip: spring steel. Zinc plating.
2) Alternative stainless steel 304 or stainless steel 316.

Specials on request (only volumes).

Ball Joints SQ





Part No.	Dimensions (mm)										Load ratings (kN)	Weight (kg)
	D_1	D_2	L_1	L_2	L_3	L_4	L_5	J	W	S Φ		
	6H	6g	Min	±0.5	±0.5	Min	±0.5	-0.3	-0.3	±1.0		Kg≈
SQ 5	M5 × 0.8	M5 × 0.8	8.0	10.0	20.0	14.0	27.0	8.0	10.0	10.000	2.0	0.017
SQ 5L	M5 × 0.8-L	M5 × 0.8	8.0	10.0	20.0	14.0	27.0	8.0	10.0	10.000	2.0	0.017
SQ 6	M6 × 1	M6 × 1	11.0	11.0	26.0	16.0	30.0	10.0	11.0	11.112	3.9	0.027
SQ 6L	M6 × 1-L	M6 × 1	11.0	11.0	26.0	16.0	30.0	10.0	11.0	11.112	3.9	0.027
SQ 8	M8 × 1.25	M8 × 1.25	12.0	14.0	31.0	19.0	36.0	12.0	14.0	12.700	6.0	0.057
SQ 8L	M8 × 1.25-L	M8 × 1.25	12.0	14.0	31.0	19.0	36.0	12.0	14.0	12.700	6.0	0.057
SQ 10	M10 x1.5	M10 × 1.5	21.0	17.0	43.0	23.0	43.0	14.0	17.0	15.875	11.0	0.095
SQ 10L	M10 × 1.5-L	M10 × 1.5	21.0	17.0	43.0	23.0	43.0	14.0	17.0	15.875	11.0	0.095
SQ 12	M12 × 1.75	M12 × 1.75	24.0	19.0	49.0	26.0	50.0	17.0	19.0	19.050	16.0	0.165
SQ 12L	M12 × 1.75-L	M12 × 1.75	24.0	19.0	49.0	26.0	50.0	17.0	19.0	19.050	16.0	0.165
SQ 14	M14 × 2	M14 × 2	28.0	21.5	62.0	30.0	57.0	19.0	22.0	22.225	19.0	0.300
SQ 14L	M14 × 2-L	M14 × 2	28.0	21.5	62.0	30.0	57.0	19.0	22.0	22.225	19.0	0.300
SQ 16	M16 × 2	M16 × 2	29.0	23.5	66.0	34.0	64.0	22.0	24.0	22.225	26.0	0.325
SQ 16L	M16 × 2-L	M16 × 2	29.0	23.5	66.0	34.0	64.0	22.0	24.0	22.225	26.0	0.325

1) Move smoothly without stagnation.
2) Adequate lubricant should be filled into ball socket.
3) Accord with QC / T327 -1999 and relevant standards.

Material and surface treatments:

1) Ball socket: high intensive zinc alloy. Natural color.
2) Ball stud: 40Cr alloy steel. Zinc plating.
3) Sealing cap: Neoprene rubber.

Specials on request (only volumes).