

# Angle joints DIN 71802

## 弯杆形球接 DIN 71802

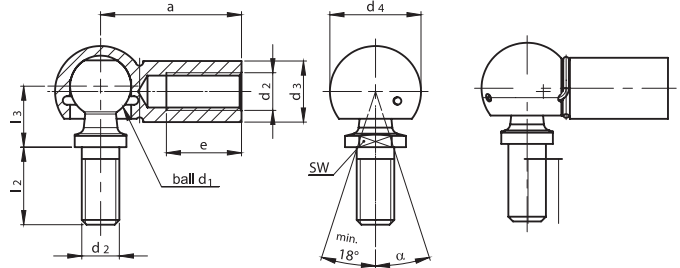
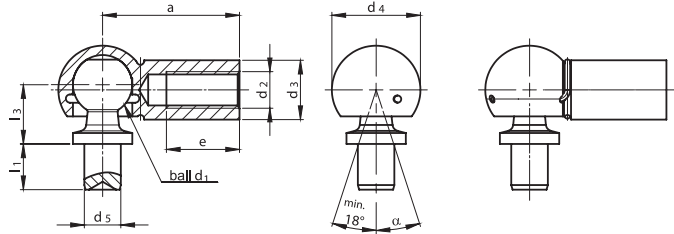


DIN 71802 form B with rivet pin without safety clips  
order example: angle joints DIN 71802 B 10 x 4,5

DIN 71802 form C with threaded pin without safety clips  
order example: angle joints DIN 71802 C 8 - M 5

DIN 71802 form BS with rivet pin and safety clips  
order example: angle joints DIN 71802 BS 13 x 10

DIN 71802 form CS with threaded pin and safety clips  
order example: angle joints DIN 71802 CS 16 - M 10



ball d1 h9	thread d2	a ±0.3	d3	d4	d5 h11	e min.	l2 ±0.3	l3 ±0.3	pin length l1 ±0.2	SW h14	Weight kg per 1000 pcs	
											C / CS	B / BS
8	M 5	22	8	12.8	5	10.2	10.2	9	4	7	15.2	12.85
									7.5			13.35
10	M 6	25	10	14.8	6	11.5	12.5	11	4.5	8	25.2	21.3
									8			22
13	M 8	30	13	19.3	8	14	16.5	13	5	11	53.1	43.1
									10			45
16	M 10 M 12	35	16	24	10	15.5	20	16	6	13	103.8	82.3
									13			86.6
19	M 14×1.5 M 14×2 M 16	45	22	30	14	21.5	28	20	12	16	220.9	181
									18			188.7

### 一、备注

- 1) A、B、C系列座体无外卡，AS、BS、CS系列座体带外卡
- 2) 左牙可适用于座体
- 3) C、CS系列球头销有扳手平面
- 4) 可选择在座体处铣扳手平面
- 5) 可选择是否需防尘罩

### 二、材料

- 1) 球头销：碳钢 1045  
座体：碳钢 1020  
内卡、外卡：弹簧钢
- 2) 可选用不锈钢

### 三、表面处理

电镀白锌或彩锌

### Note

- A、B、C type without safety clips on the ball socket,
- AS、BS、CS type with safety clips on the ball socket
- Left-hand thread in the ball socket possible
- Spanner width for type C and CS on the ball stud
- The manufacturer reserves the right to supply the ball socket with or without spanner surface
- With or without sealing caps upon request

### Material

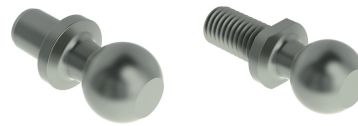
- Ball stud ( ball pins ): 1045 carbon steel, 55HRC, 303 stainless steel
- Housing ( ball cups ): 1020 carbon steel, 55HRC, 303 stainless steel
- Clip: spring steel, stainless steel

Alternative for all angle joint versions: stainless steel

### Surface protection

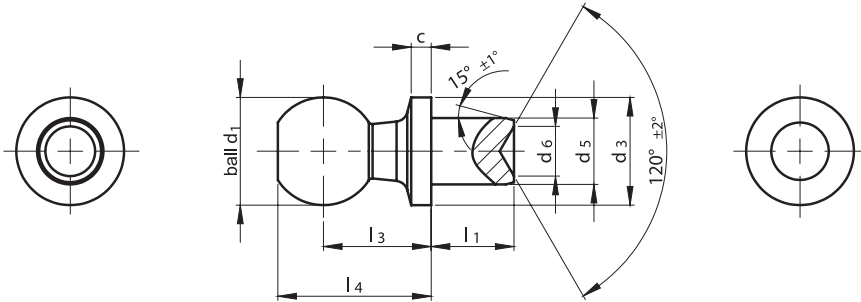
- electroplated galvanized, passivated in white-blue or yellow
- unplated





**DIN 71803 form B with rivet pin order**

example: ball pins DIN 71803 B 10 x 4,5



**materials**

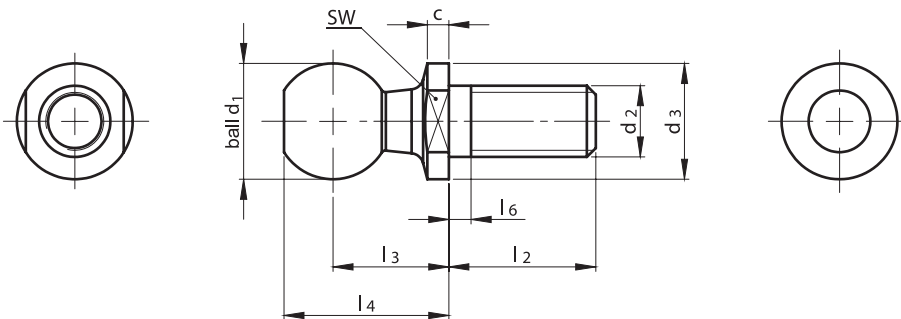
- steel with a minimum tensile strength of  $R_m$  600 N/mm<sup>2</sup>; ball hardened, degree of hardness at least 52 HRC or 550 HV 30, depth of hardening at least 1 mm (no full hardening permitted when  $d_1 > 13$  mm)
- 1045 carbon steel, 55HRC
- 303 stainless steel

**surface**

- unplated
- zinc plated

**DIN 71803 form C with threaded pin**

order example: ball pins DIN 71803 C 13 - M 8



**materials**

- steel with a minimum tensile strength of  $R_m$  600 N/mm<sup>2</sup>; ball hardened, degree of hardness at least 52 HRC or 550 HV 30, depth of hardening at least 1 mm (no full hardening permitted when  $d_1 > 13$  mm)
- 1045 carbon steel, 55HRC
- 303 stainless steel

**surface**

- unplated
- zinc plated

ball $d_1$ h9	thread $d_2$	pin length $l_1$ $\pm 0.2$	C	a $\pm 0.3$	$d_3$ h14	$d_4$	$d_5$ h11	$l_2$ $\pm 0.3$	$l_3$ $\pm 0.3$	$l_4$ $\pm 0.3$	$l_6$ max.	SW h14	Weight kg per 1000 pcs	
													A/ C	B
8	M 5	4	2	22	8	12.8	5	10.2	9	12.5	4	7	4.55	3.85
		7.5											4.35	
10	M 6	4.5	2.2	25	10	14.8	6	12.5	11	15.5	4	8	8.5	7.1
		8											7.8	
13	M 8	5	2.4	30	13	19.3	8	16.5	13	18.5	5.3	11	17.7	14.2
		10											16	
16	M 10 M 12	6	2.7	35	16	24	10	20	16	23	7.3	13	35.1	23.5
		13											29.6	
19	M 14×1.5 M 14×2 M 16	12	3	45	19	30	14	28	20	28.5	10.8	16	71.2	56.2
		18											63.7	

一、材料

- 1) 碳钢 1045
- 2) 可选用不锈钢

二、钢球 $d_1$ 硬度不小于HRC52, 硬化深度不小于1mm

三、表面处理

电镀白锌或彩锌

1. Material

- 1) Carbon steel 1045
- 2) Alternative for all angle joint versions: stainless steel

2. Ball  $d_1$  hardness: Min. HRC52  
Hardening depth: Min. 1mm

3. Surface protection

Electroplated galvanized, passivated in white-blue or yellow

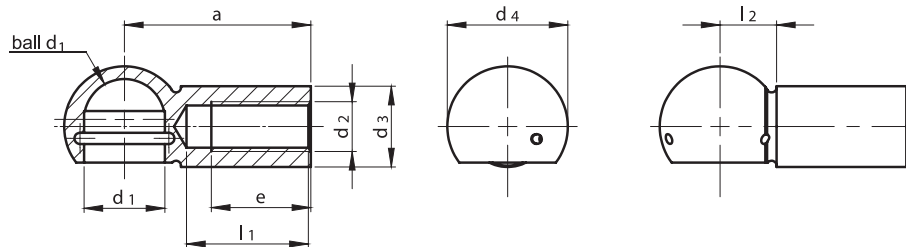


### DIN 71805 form A with snap ring

order example: ball cups DIN 71805 A 10 - M 6

### DIN 71805 form B with snap ring, hole and flute for safety clips

order example: ball cups DIN 71805 B 13 - M 8



### materials

- steel with a minimum tensile strength of  $R_m$  500 N/mm<sup>2</sup>
- 1020 carbon steel
- 303 stainless steel

### surface

- unplated
- zinc plated

### 一、材料

- 1) 碳钢 1045
- 2) 可选用不锈钢

### 二、可选择铣扳手平面

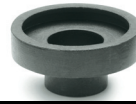
### 三、表面处理:电镀白锌或彩锌

ball d <sub>1</sub> h9	thread d <sub>2</sub>	a ±0,3	d <sub>3</sub> ±0,5	d <sub>4</sub> ±0,5	e min.	l <sub>1</sub> max.	l <sub>2</sub> ±0,4	weight approx. kg per1000 pcs.	
								form A	form B
6	M 4	22	7	10,6	10,2	15	-	7,3	-
8	M 5	22	8	12,8	10,2	15	6,3	9,0	8,8
10	M 6	25	10	14,8	11,5	17	7,0	14,2	14,1
13	M 8	30	13	19,3	14,0	20	9,1	29,0	28,8
16	M 10 M 12	35	16	24,0	15,5	22	11,4	57,0	56,8
19	M 14 x 1,5 M 14 M 16	45	22	30,0	21,5	28	12,5	125,0	124,8

### optional features

- left-hand threaded ball cups; indication by LH; e.g. B 10 - M 6 LH
- easy moving version; indication by L; e.g. AL 13 - M 8
- ball cups hardened; indication by hardened; e.g. B 13 - M 8 hardened
- ball cups with spanner flat or hexagon head
- ball cups with external thread
- double ball cups
- further special options available on request



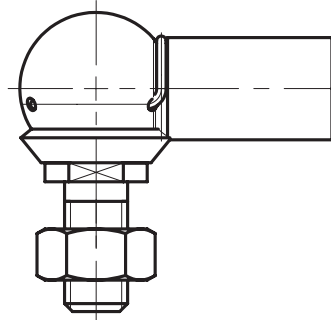
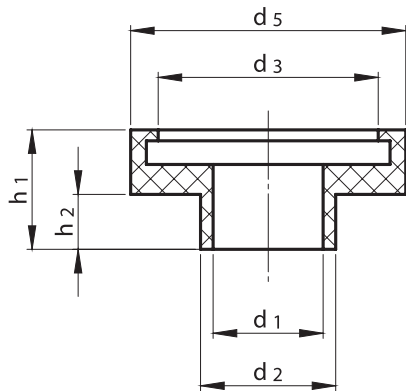


**protection caps**

order example: protection caps DK 13 (protection caps loose)

**angle joints with protection caps**

order example: angle joints CS 10 - M 6 zinc plated white with protection caps mounted



**materials**

- neoprene

**operation range**

- protections caps can be used from -30° to +110° C (up to +140° C for a short time)

材质

氯丁橡胶

工作温度

-30° to +110° C

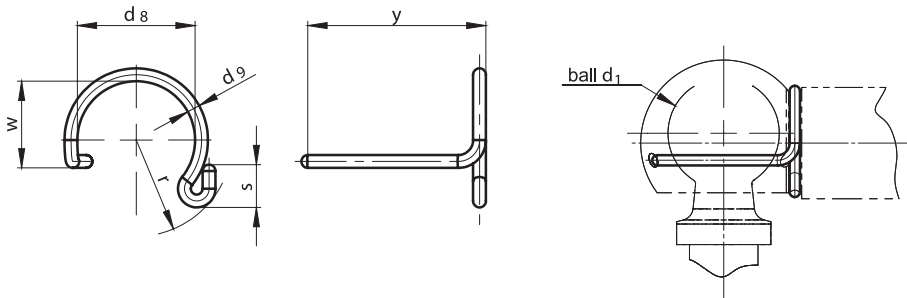
size	d1	d2	d3	d5	h1	h2	Weight kg per 1000 pcs
8	4,0	5,4	9,0	11,8	4,6	1,5	0,30
10	5,5	6,9	10,5	13,4	6,6	3,5	0,41
13	7,0	8,6	14,0	17,5	7,6	3,5	0,86
16	9,0	10,5	17,5	22,0	8,6	4,5	1,39
19	11,0	12,6	21,0	25,5	12,7	7,0	2,33

**remarks**

- Size and dimension of the angle joints DIN 71802 can be delivered with mounted protection caps if requested. Protection caps are also available as a separate component or mounted on ball pins (DIN 71803).
- The protection caps protect angle joints from dirt or water spray and they have been tried and tested in very dirty and dusty environments.

# Ball Joint Clips ( safety Clips) DIN71805 Form S

外卡和内卡 DIN 71805 S



## materials

- spring steel wire / stainless steel wire

## operation range

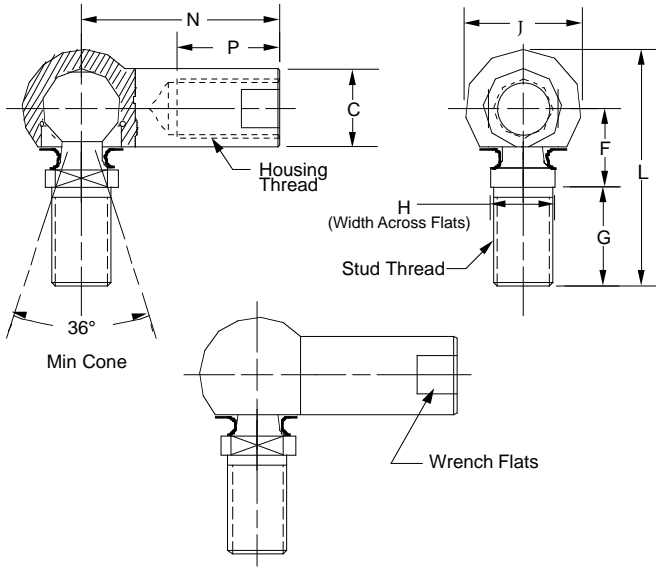
- protections caps can be used from -30° to +110° C (up to +140° C for a short time)

材质

弹簧钢/不锈钢

ball d <sub>1</sub>	d <sub>8</sub>		d <sub>9</sub> 1)	r max.	w ≡	y		S +0,3 0	weight approx. kg per1000 pcs.
	tolerances					tolerances			
8	7,0	<sup>0</sup> -0,25	1,0	6,0	6,5	12,0	<sup>+0,4</sup> 0	2,5	0,21
10	8,7	<sup>0</sup> -0,25	1,0	7,0	7,7	12,5	<sup>+0,4</sup> 0	3,0	0,24
13	11,0	<sup>0</sup> -0,35	1,2	9,0	9,5	15,7	<sup>+0,6</sup> 0	4,0	0,46
16	13,0	<sup>0</sup> -0,40	1,4	10,5	11,0	19,0	<sup>+0,6</sup> 0	4,0	0,77
19	20,0	<sup>0</sup> -0,50	1,5	14,0	16,5	24,0	<sup>+0,8</sup> 0	5,0	1,10

**DMC: Ball Joint, DIN Metric, Internal Clip**



Part Number		Thread	C	F	G	H	J	N	P	
Carbon Steel Zinc Plated	Stainless Steel									
DMC-5	SDMC-5	M5 x 0.80	8	9	10.2	8	12.8	22	10.2	
DMC-6	SDMC-6	M6 x 1.00	10	11	12.5	10	14.8	25	11.5	
DMC-8	SDMC-8	M8 x 1.25	13	13	16.5	13	19.3	30	14	
DMC-10	SDMC-10	M10 x 1.50	16	16	20	16	24	35	15.5	
DMC-12	SDMC-12	M12 x 1.75	16	16	20	16	24	35	15.5	

一、备注

- 1) 内卡
- 2) 左牙可适用于座体
- 3) 座体处铣扳手平面
- 4) 带防尘罩

二、材料

- 1) 球头销: 碳钢 1045  
座体: 碳钢 1020  
内卡: 弹簧钢
- 2) 可选用不锈钢

三、表面处理

电镀白锌或彩锌

Note

- Internal clips on the ball socket,
- Left-hand thread in the ball socket possible
- socket with spanner plat
- With sealing caps

Material

- Ball stud ( ball pins ): 1045 carbon steel, 55HRC, 303 stainless steel
- Housing ( ball cups ): 1020 carbon steel, 55HRC, 303 stainless steel
- Clip: spring steel, stainless steel

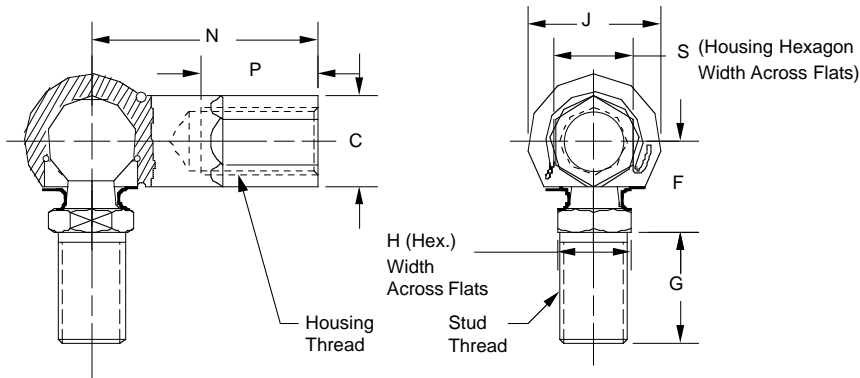
Surface protection

- electroplated galvanized, passivated in white-blue or yellow
- unplated

**SIMILAR ANGLE JOINT DIN71802**



**DMH: Ball Joint, DIN Metric, Hex Shaped Barrel, External Retaining Clip**



**Left Hand Threads, add "L" as in DMHL-5**

Part Number		Thread	C	F	G	H	J	N	P	S
Carbon Steel Zinc Plated	Stainless Steel									
DMH-5	SDMH-5	M5 x 0.80	8	9	10.2	8	12.8	22	10.2	7
DMH-6	SDMH-6	M6 x 1.00	10	11	12.5	10	14.8	25	11.5	9
DMH-8	SDMH-8	M8 x 1.25	13	13	16.5	13	19.3	30	14	11
DMH-10	SDMH-10	M10 x 1.50	16	16	20	16	24	35	15.5	13
DMH-12	SDMH-12	M12 x 1.75	16	16	20	16	24	35	15.5	13

一、备注

- 1) 内卡
- 2) 左牙可适用于座体
- 3) 座体六角
- 4) 带防尘罩

二、材料

- 1) 球头销: 碳钢 1045  
座体: 碳钢 1020  
外卡: 弹簧钢
- 2) 可选用不锈钢

三、表面处理

电镀白锌或彩锌

Note

- Internal clips on the ball socket,
- Left-hand thread in the ball socket possible
- hex shaped barrel socket
- With sealing caps

Material

- Ball stud ( ball pins ): 1045 carbon steel, 55HRC, 303 stainless steel
- Housing ( ball cups ): 1020 carbon steel, 55HRC, 303 stainless steel
- Clip: spring steel, stainless steel

Surface protection

- electroplated galvanized, passivated in white-blue or yellow
- unplated

**SIMILAR ANGLE JOINT DIN71802**

