1. PRODUCT DESCRIPTION

Ball joints are mechanical units for the connection of 2 parts which are perpendicular with respect to each o her. They enable the transmission of alternating forces through angular and oscillating movements, at a moderate speed.

They are standard products which are produced according to the following standards:

DIN 71802

Ball joints:

a) Form C: without safety clip S and therefore without its external slot and the two holes for the clip itself

b) Form CS: with safety clip S mounted in the slot and the two holes of the housing.

Available with or without nut (mounted or separated)

DIN 71805

Ball Socket

a) Form A: without slot and holes for the safety clip and with the mounted snap ring R

b) Form B: with external slot and holes for the safety clip S and with the internal snap ring R

DIN 71803

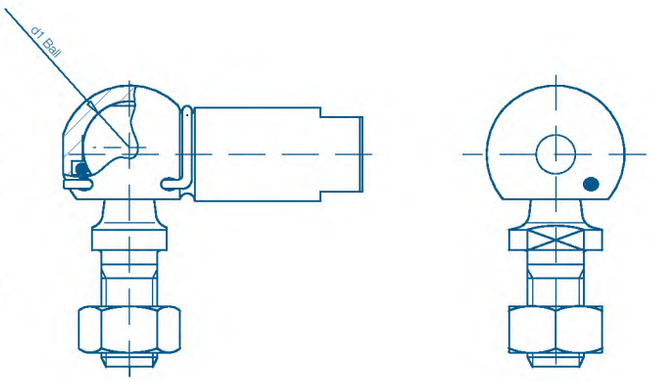
Ball Stud

a) Form C: with thread

b) Form B: without hread, to rivet

The ball sockets DIN 71805 produced and supplied by Chiavette Unficate have been improved by he spanner's execution. Upon request, they could be also supplied wi hout spanner surface

All our products could be supplied with electrolytic coatings according to the standards stated at page 6 and/ or unfinished .



2. TECHNICAL DATA

MATERIALS

Ball stud: carbon steel with 60 daN/mm² resistance to tensile stress and inner ring hardened on the surface with hardness ≥ 52 HRC in alternative (1.4305 - AISI 303)

Ball socket: steel 11SMnPb30 with a 50 daN/mm² resistance to tensile stress (1.0718) in alternative (1.4305 - AISI 303)

Springs: steel for springs C98 UNI EN 10270-1 DH in alternative (1.4319 - AISI 302)

Lubrification: spherical coupling o led during assembly with LITHIUM grease, NLGI 1 grade

Nuts: see table at page 67

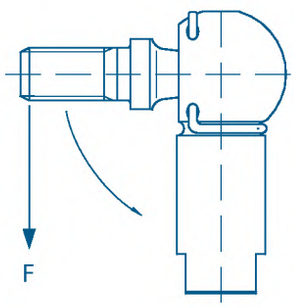
Extraction and Insertion force BALL STUD - BALL SOCKET

The load values requested for the extraction and insertion of the ball stud from/to the ball socket's housing with the mounted "R" spring, with the joint free from grease, are indicated in the following table:

d1 (ball stud inner ring diameter)	8	10	13	16	19
Extraction force [daN] min	3	4	6	8	10
Insertion force [daN] max	20	25	32	35	40

Sliding moment

In the male-female coupling (with grease), the male in a horizontal position falls with a force F applied to the extremity of the male thread (see diagram), according to the table below:



DESIGNATION	max. force (daN)
C 8 M5	0,4
CS 8 M5	0,4
C 10 M6	0,5
CS 10 M6	0,5
C 13 M8	0,6
CS 13 M8	0,6
C 16 M10 - M12	0,7
CS 16 M10 - M12	0,7
C 19 M14 - M16	0,8
CS 19 M14 - M16	0,8

Permissible load and tightening torque

The maximum permissible load for the angular joint is given in the following table; it is also important to tighten the nut as indicated:

DESIGNATION	Permissible load [daN]		Nut tightening torque (daN·m)
	static	dynamic	
C 8 M5	50	20	0,35
CS 8 M5	50	20	0,35
C 10 M6	100	40	0,74
CS 10 M6	100	40	0,74
C 13 M8	200	80	1,80
CS 13 M8	200	80	1,80
C 16 M10	400	160	3,50
CS 16 M10	400	160	3,50
C 16 M12	400	160	4,20
CS 16 M12	400	160	4,20
C 19 M14	800	320	7,00
CS 19 M14	800	320	7,00
C 19 M16	800	320	8,00
CS 19 M16	800	320	8,00