SPECIFICATION FOR HEAVY DUTY SPHERICAL BEARING ROD ENDS

1. SCOPE

This specification covers the technical details, quality requirements and acceptance criteria of Spherical Bearings with rod ends for deployment mechanisms.

2. DOCUMENTS

The following standards form part of this specification to the extent specified herein. The latest issue of these documents in effect on the date of material purchase shall be applicable.

2.1 APPLICABLE STANDARDS

DIN ISO 8139	Dimensional standard
DIN ISO 12240-4	

3. GEOMETRIC DIMENSIONS AND MATERIAL SPECIFICATION

Table 1: General and material Specifications

S No	Description	Parameter
1	Rod end and Thread type	As per table 2
2	Lubrication type	Polyamid –PTFE–fibreglass compound
3	Material for inner spherical ball	Ball bearing steel, hardened, ground, polished and hard chromium plated
4	Starting chamfer on both sides of inner spherical Ball	Required, Value to be specified by manufacturer
5	Temperature range	-30°C to +60°C
6	Quantity required	As per table 2

Table 2: Quantity details for each type

Type	Description	Thread type	Quantity
Heavy duty Spherical bearing rod end (Male thread)			
A	Spherical bearing Male type Rod end – M20 RH	Right hand	12
B	Spherical bearing Male type Rod end – M24 RH	Right hand	12
Heavy duty Spherical bearing rod end (Female thread)			
C	Spherical bearing Female type Rod end – M20 RH	Right hand	12
D	Spherical bearing Female type Rod end – M24 RH	Right hand	12

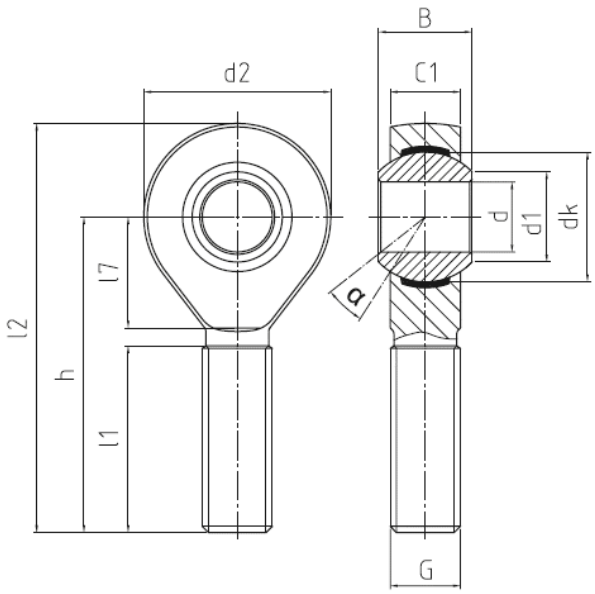

Figure 1: Schematic drawing for Heavy duty Spherical bearing rod end Male

Table 3: Geometric Specifications (Refer Figure 1)

Sl no.	Parameter	Unit	Specification	
			Type A	Type B
1.	Inner Dia. (d)	mm	20	25
2.	Thread type (G)	mm	M20X1.5	M24X2.0
3.	Housing outer dia (d2)	mm	≤50	≤60
4.	Overall length (l2)	mm	≤105	≤125
5.	Thickness Of Sp. Ball (B)	mm	25	31
6.	Thickness Of Outer Casing (C1)	mm	18±1	22±1
7.	d1	mm	To be specified by manufacturer	To be specified by manufacturer
8.	Length of Rod end from bearing center (h)	mm	To be specified by manufacturer	To be specified by manufacturer
9.	Thread length (l1)	mm	≥ 47	≥ 57
10.	l7	mm	To be specified by manufacturer	To be specified by manufacturer
11.	Bearing angle (α)	Degrees	≥ 14.5	≥ 15.0
12.	Dynamic load rating (C)	kN	≥ 30	≥ 45
13.	Static load rating (Co)	kN	≥ 80	≥ 110
14.	Radial clearance (CN)	Nm	0-10µm	0-10µm
15.	Weight	gm	≤ 350	≤ 650
16.	Housing Material		Forged steel, tempered, rolled thread surface galvanized, free of Cr VI	Forged steel, tempered, rolled thread surface galvanized, free of Cr VI

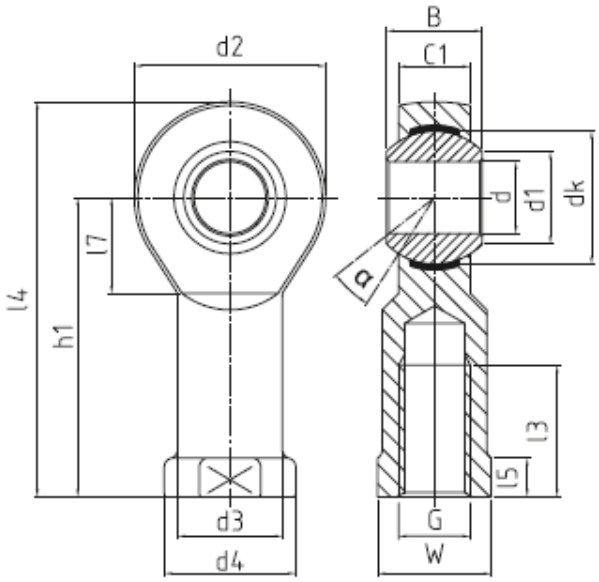

Figure 2: Schematic drawing for Heavy duty Spherical bearing rod end Female

Table 4: Geometric Specifications (Refer Figure 2)

Sl no.	Parameter	Unit	Specification	
			Type C	Type D
1.	Inner Dia. (d)	mm	20	25
2.	Thread type (G)	mm	M20X1.5	M24X2.0
3.	Housing outer dia (d2)	mm	≤50	≤60
4.	Overall length (l4)	mm	≤105	≤125
5.	Thickness Of Sp. Ball (B)	mm	25	31
6.	Thickness Of Outer Casing (C1)	mm	18±1	22±1
7.	d1	mm	To be specified by manufacturer	To be specified by manufacturer
8.	Rod end OD (d3)	mm	≤28	≤34
9.	d4	mm	To be specified by manufacturer	To be specified by manufacturer
10.	Length of Rod end from bearing center (h1)	mm	To be specified by manufacturer	To be specified by manufacturer
11.	Thread length (l3)	mm	≥ 33	≥ 42
12.	Rod end hexagon flange thickness (l5)	mm	≥ 10	≥ 12
13.	l7	mm	To be specified by manufacturer	To be specified by manufacturer
14.	Rod end across flat (W)	mm	≤ 32	≤ 38
15.	Bearing angle (α)	Degrees	≥ 14.5	≥ 15.0
16.	Dynamic load rating (C)	kN	≥ 30	≥ 45
17.	Static load rating (Co)	kN	≥ 80	≥ 110
18.	Radial clearance (CN)	Nm	0- 10µm	0- 10µm
19.	Weight	gm	≤ 400	≤ 710
20.	Housing Material		Forged steel, tempered, surface galvanized, free of Cr VI	Forged steel, tempered, surface galvanized, free of Cr VI

4. PRESERVATION, PACKING AND DISPATCH

Material shall be preserved, packaged and dispatched such that no damage occurs to the material during storage and shipment.

5. CERTIFICATE AND REPORTS

a. Manufacturer's Certificate of Conformance (CoC).
b. Raw material certificate, FAI and dimensional report for one number /size

Compliance matrix

S No	Description	Parameter	Comply Yes/No	Remarks
1	Type of rod end	As per table 2		Actual value as per table 3 and table 4 is to be specified by vendor in the offer.
2	Thread type	As per table 2		
3	Geometric specifications	As per table 3 and table 4		
4	Lubrication type	Polyamid–PTFE–fibreglass compound		
5	Material for inner spherical ball	Ball bearing steel, hardened, ground, polished and hard chromium plated		
6	Material for rod end housing	Forged steel, tempered, surface galvanized, free of Cr VI		
7	Starting chamfer on both sides of inner spherical Ball	Required, Value to be specified by manufacturer		
8	Temperature range	-30°C to +60°C		
9	Quantity required	As per table 2		
10	Preservation, packing and dispatch			
11	Certificate and reports			