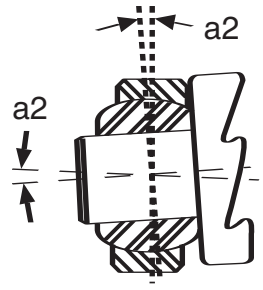
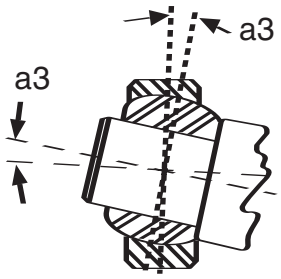
ENGINEERING DATA

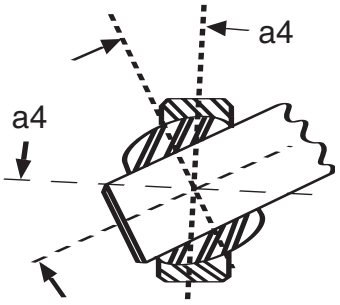
Spherical bearings offer a greater variety of mounting positions compared to the rod end bearings. The angle of misalignment is calculated based on its mounting arrangement. Shown are three common mountings and the formulae for calculating the angle of misalignment.



$a_2 = \text{Sin}^{-1}\frac{W}{A} - \text{Sin}^{-1}\frac{H}{A}$



$a_3 = \text{Sin}^{-1}\frac{W}{E} - \text{Sin}^{-1}\frac{H}{E}$



$a_4 = \text{Sin}^{-1}\frac{B}{E} - \text{Sin}^{-1}\frac{H}{E}$

Reference Letters

B – Ball Bore
C – Outer Race Chamfer
D – Head Diameter or Outer Race Diameter
E – Ball Diameter
H – Housing Width
A – $\sqrt{(D\text{-}2C)^2 + H^2}$
W – Ball Width

SPHERICAL BEARINGS

Series LS	Mounting Arrangements			Series LHA LHB LHSS LHSSE LHSSVV	Mounting Arrangements		
	a_2	a_3	a_4		a_2	a_3	a_4
-3	±9°	±16 1/2°	±34 1/2°	-2	±8 1/2°	±13 1/2°	±28°
-4	±8°	±14 1/2°	±29°	-3	±7°	±11°	±29 1/2°
-5	±9°	±14°	±30°	-4	±9°	±13°	±30°
-6	±8°	±12 1/2°	±27°	-5	±8°	±12°	±26°
-7	±6 1/2°	±11°	±25°	-6	±7 1/2°	±10 1/2°	±23°
-8	±7 1/2°	±12 1/2°	±23°	-7	±6 1/2°	±9 1/2°	±20 1/2°
-10	±8°	±12°	±23°	-8	±7°	±10°	±20°
-12	±9°	±15°	±27°	-9	±7 1/2°	±10°	±20°
-16	±6 1/2°	±10°	±25°	-10	±7°	±9°	±19°
-19	±6°	±18 1/2°	±23 1/2°	-12	±7°	±9°	±21°
-24	±5°	±7°	±23°	-14	±7°	±9°	±16°
-30	±5°	±7°	±25°	-16	±7 1/2°	±9 1/2°	±16°

ENGINEERING DATA

HOUSING BORE FOR PRESS FIT OF SPHERICAL BEARINGS

Basic Bearing Size	D Bearing O.D. +.0000 /-.0005	HOUSING BORE RECOMMENDED (Aluminum or Steel)
LS SERIES		
3	.6250	.6248/.6243
4	.7500	.7498/.7493
5	.8750	.8748/.8743
6	1.0000	.9998/.9993
7	1.1875	1.1873/1.1868
8	1.3125	1.3123/1.3118
10	1.5625	1.5623/1.5618
12	2.2500	2.2498/2.2493
16	2.3750	2.3748/2.3743
19	2.6250	2.6248/2.6243
24	3.2500	3.2498/3.2493
30	4.0000	3.9998/3.9993

Basic Bearing Size	D Bearing O.D. +.0000 /-.0005	HOUSING BORE RECOMMENDED (Aluminum or Steel)
LHA, LHB, LHSSE, LHSSVV SERIES		
2	.4687	.4685/.4680
3	.5625	.5623/.5618
4	.6562	.6560/.6555
5	.7500	.7498/.7493
6	.8125	.8123/.8118
7	.9062	.9060/.9055
8	1.0000	.9998/.9993
9	1.0937	1.0935/1.0930
10	1.1875	1.1873/1.1868
12	1.4375	1.4373/1.4368
14	1.5625	1.5623/1.5618
16	1.7500	1.7498/1.7493