



**ROEMHELD**  
HILMA ■ STARK

Issue 3-08 E

# G 3.810

## Spherical Bearings

### Rod end bearings and bearing blocks for hydro-cylinders and block cylinders

#### Rod end bearings



#### Description - Rod end bearings

The rod end bearings consist of a spherical bearing mounted in a housing that can be screwed onto the piston rod of hydraulic cylinders or block cylinders. The spherical bearing is a plain bearing that allows a force transmission with a tilting angle of maximally 4°.

#### Mounting of rod end bearings

##### Screwing onto the rod end

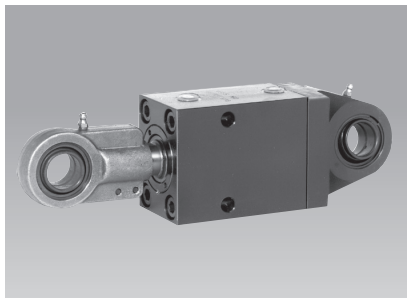
The rod end bearing has to be screwed firmly against the piston rod shoulder and fastened by two clamping screws.

Thus the thread gets an initial tension that prevents loosening in case of alternating loads.

##### Proceed as follows:

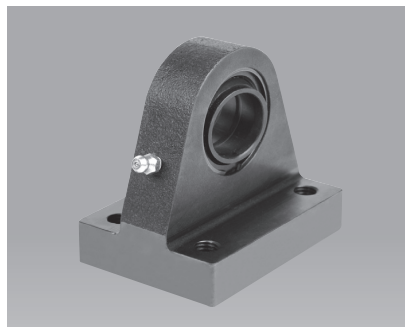
1. Tighten clamping screws so that the rod end bearing can be returned on the piston rod thread.
2. Clamp rod end bearing carefully in a vice and tighten piston rod firmly with fork spanner.
3. Tighten clamping screws.

#### Mounting examples



Block cylinder with rod end bearing and bearing block

#### Bearing blocks



#### Description - Bearing blocks

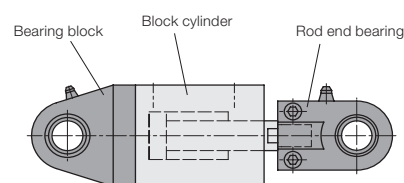
The bearing blocks consist of a spherical bearing mounted in a housing that can be screwed onto the cylinder base of hydrocylinders or block cylinders.

The spherical bearing is a plain bearing that allows a force transmission with a tilting angle of maximally 4°.

Cylinders for mounting of spherical bearings:

Hydro-cylinders: data sheet B 1.282  
Block cylinders: data sheet B 1.542

#### Mounting principle



#### Guide lines for spherical bearings

##### 1. Admissible operating pressure of cylinders with spherical bearings

- Block cylinders B 1.542  
When using spherical bearings the maximum operating pressure is:  
- 250 bar for dynamic load  
- 500 bar for static load
- Hydro-cylinders B 1.282  
When using spherical bearings the maximum operating pressure is:  
- 160 bar for dynamic load  
- 200 bar for static load

##### 2. Service life

Service life of the spherical bearings is dependent upon specific bearing load, load direction, swing angle, tilting angle and lubrication.

A general statement is impossible due to the number of these factors. Adequate service life will be obtained under "normal" operating conditions. If in doubt, please check with us.

##### 3. Lubrication

Lubrication intervals must be adapted to existing operating conditions. If operation is near the load limit, daily lubrication is recommended, opposed to weekly lubrication, life is then increased 7-fold.

##### 4. Design of clevis pin

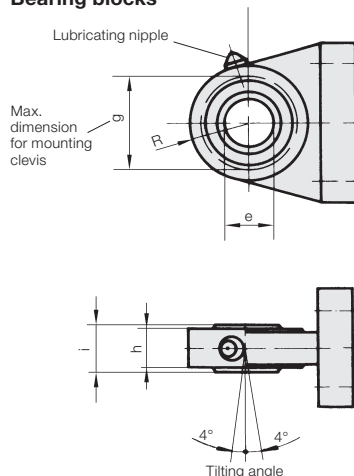
Clevis pin fit to be m6 (DIN). Exceptionally, f7 may be used for a case-hardened pin with lubrication through the pin.

#### Important notes

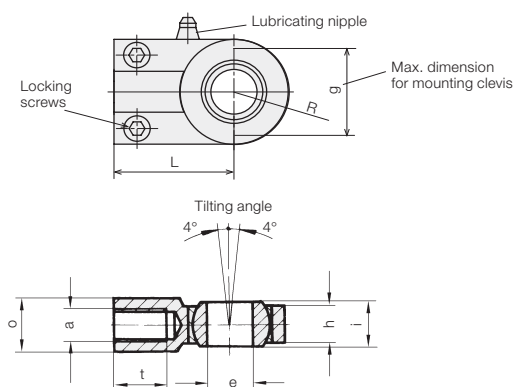
Tolerances, further operating conditions and other data see data sheet A 0.100.

## Dimensions Technical Data

### Bearing blocks



### Rod end bearings



		M 12x1.25	M 14x1.5	M 16x1.5	M 20x1.5	M 27x2	M 33x2
a	[mm]						
e H7	[mm]	12	16	20	25	32	40
g	[mm]	25	32	40	50	62	80
h	[mm]	10.5	13	17	21	27	32
i	[mm]	12	16	20	25	32	40
L	[mm]	38	44	52	65	80	97
o	[mm]	16.5	21	25	30	38	47
R	[mm]	16	20	23.5	29	35	44.5
t	[mm]	16	18	22	28	36	45

For hydro-cylinders B 1.282    1293 1XXXXX    1294 1XXXXX    1295 1XXXXX    1296 1XXXXX    1297 1XXXXX    1298 1XXXXX

Rod end bearing Part no.    3890023    3890012    3890017    3890014    3890018    3890025

Bearing block Part no. (incl. fixing screws)    1293940    1294940    1295940    1296940    1297940    1298940

For block cylinders B 1.542    -    1543 26X    1544 26X    1545 26X    1546 26X    1547 27X

Rod end bearing Part no.    -    3890012    3890017    3890014    3890018    3890025

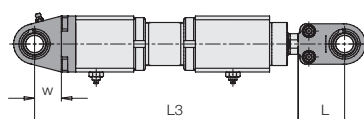
Bearing block Part no.    -    0155300    0155400    0155500    0155600    0155700

Fixing screws for bearing block  
Dimensions ISO EN 4762-8.8    M 8x100    M 10x100    M 10x110    M 12x120    M 16x140

Part no. (1 off)    3300271    3300663    3300763    3300037    3301205

### Dimensions of cylinders with assembled spherical bearings

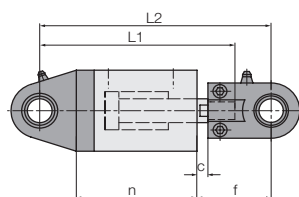
#### Hydro-cylinder B 1.282 (160/200 bar)\*



Size		1293	1294	1295	1296	1297	1298
Piston rod Ø d	[mm]	16	20	25	32	40	50
L	[mm]	38	44	52	65	80	97
L3 = stroke +	[mm]	140 (178)	162 (206)	195 (231)	219 (257)	259 (289)	313 (332)
w	[mm]	20	25	30	37	45	55

Dimensions in ( ) as per DIN ISO 6020 available on request

#### Block cylinder B 1.542 (250/500 bar)\*



Size		1543	1544	1545	1546	1547
Piston rod Ø d	[mm]	16	20	25	32	40
c	[mm]	8	11	11	11	18
f	[mm]	52	63	76	91	115
n = stroke +	[mm]	56	62	72	85	97
L1 = stroke +	[mm]	107	125	148	177	215
L2 = stroke +	[mm]	133	155	185	221	267

\*dynamic/static