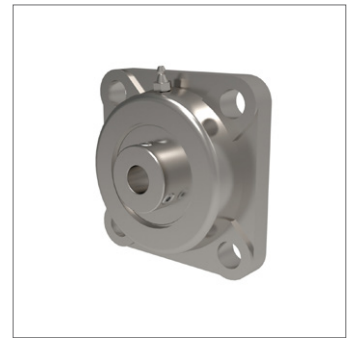
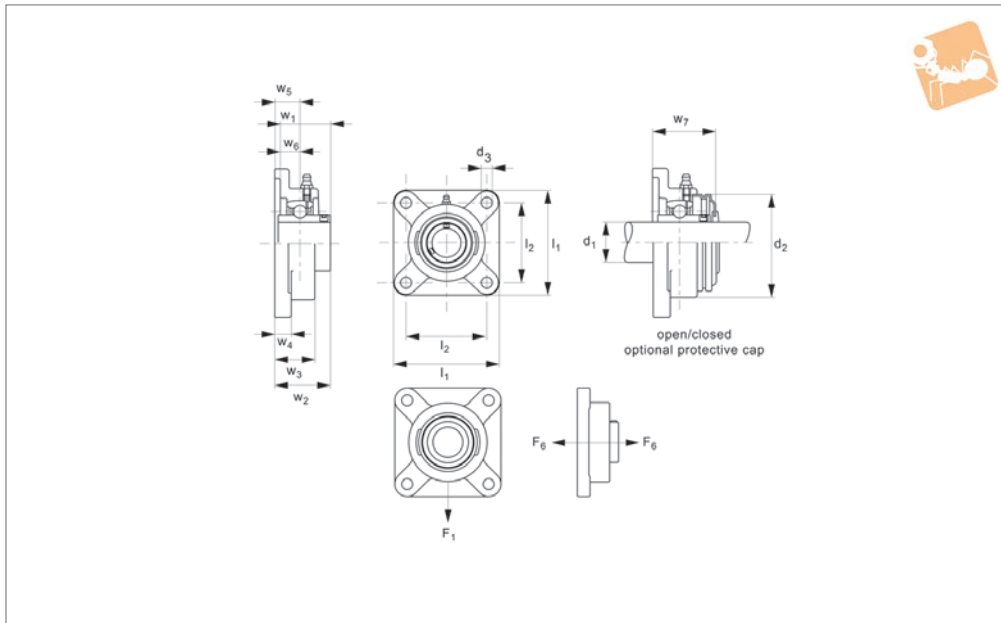




Stainless Square Flanged Bearing

four point flange

Bearing Mounts



L1872

BEARING MOUNTS

Material

Stainless steel (AISI 304), with smooth surfaces. Bearing stainless steel (440C) with 2RS seals, lubricated with food grade grease (USDA approved).

Technical Notes

Self-aligning bearing units.
Temperature range for bearings: -15°C to

+120°C.

Resistant to a moisture and a wide range of aggressive chemicals.

For optional shaft end caps add suffixes:
-CO for one open protective cap (with seal) for through shafts
-CC for closed protective cap for shaft ends.

Tips

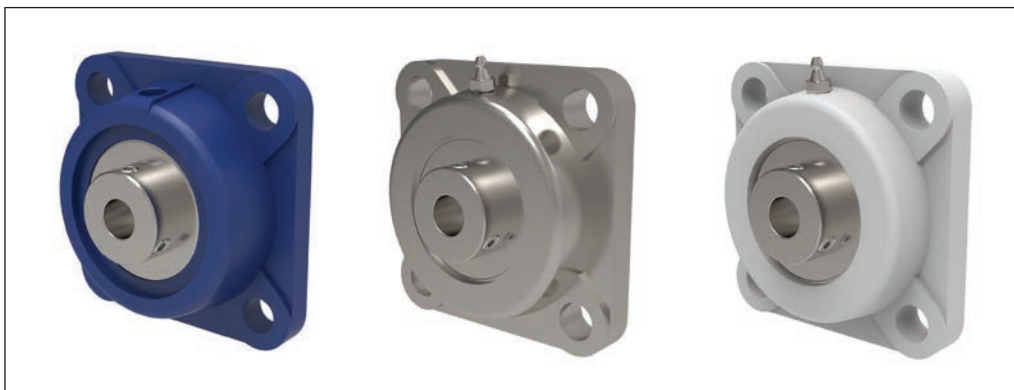
Shaft retention with two set screws (at 120° offset).
Used with h6 tolerance shafts (see our part no.s L1770-L1776).
Maximum housing loads measured @ 20°C.

Order No.	d ₁ for h6	l ₁	d ₂	d ₃	l ₂	w ₁	w ₂ +0.3 -0	w ₃	w ₄	w ₅	Weight kg
L1872.012	12	86	12	64	31.0	33.3	25.5	12.0	15	0.66	54
L1872.015	15	86	12	64	31.0	33.3	25.5	12.0	15	0.64	54
L1872.017	17	86	12	64	31.0	33.3	25.5	12.0	15	0.63	54
L1872.020	20	86	12	64	31.0	33.3	25.5	12.0	15	0.61	0.71
L1872.025	25	95	12	70	34.1	35.8	27.0	14.0	16	0.82	60
L1872.030	30	108	12	83	38.1	40.2	30.5	14.0	18	1.31	70
L1872.035	35	116	14	92	42.9	44.4	33.5	14.5	19	1.41	80
L1872.040	40	130	16	102	49.2	51.2	36.0	14.5	21	1.89	88
L1872.045	45	137	16	105	49.2	52.2	38.0	15.5	22	2.32	95
L1872.050	50	143	16	111	51.6	54.6	40.0	15.0	22	2.65	100
L1872.055	55	162	19	130	55.6	58.4	44.0	20.0	25	4.06	110
L1872.060	60	175	19	143	65.1	68.7	48.0	20.0	29	5.48	120

Order No.	w ₆	w ₇	Speed rpm	Dyn. load C kN max.	Static bearing load C ₀ kN max.	Housing load F ₁ kN max.	Housing load F ₆ kN max.	Torque screw to Nm	Set screw size
L1872.012	12.7	37.8	4800	10.1	6.8	86	36	8.5	M 6x1
L1872.015	12.7	37.8	4800	10.1	6.8	86	36	8.5	M 6x1
L1872.017	12.7	37.8	4800	10.1	6.8	86	36	8.5	M 6x1
L1872.020	12.7	37.8	4800	10.1	6.8	86	36	8.5	M 6x1
L1872.025	14.3	39.9	4000	11.0	8.0	130	50	8.5	M 6x1
L1872.030	15.9	44.4	3400	15.3	11.5	130	60	8.5	M 6x1
L1872.035	17.5	48.2	3000	20.1	15.6	130	70	20	M 8x1
L1872.040	19.0	54.4	2600	22.8	18.2	140	78	20	M 8x1
L1872.045	19.0	55.9	2400	25.7	20.8	200	90	40	M 10x1,25
L1872.050	19.0	59.8	2200	27.5	23.7	200	100	40	M 10x1,25
L1872.055	22.2	62.6	1800	34.0	25.5	255	125	40	M 10x1,25
L1872.060	25.4	72.9	1600	41.0	31.5	315	155	40	M 10x1,25



Housing material options

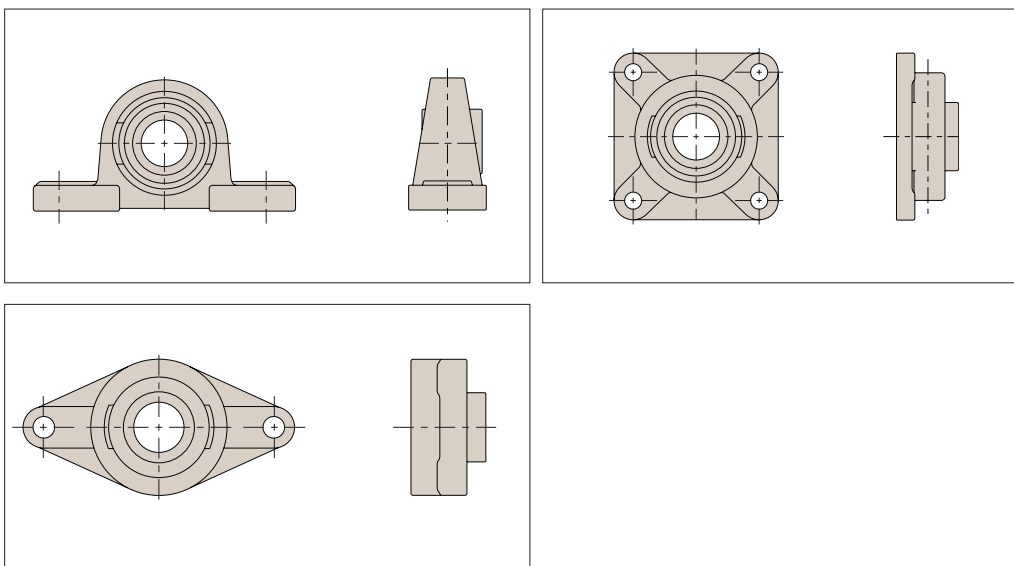


Cast iron housing
Standard version, passivated and painted $\varnothing 12-120\text{mm}$.

Stainless steel housing
Stainless AISI 304, $\varnothing 12-60\text{mm}$.

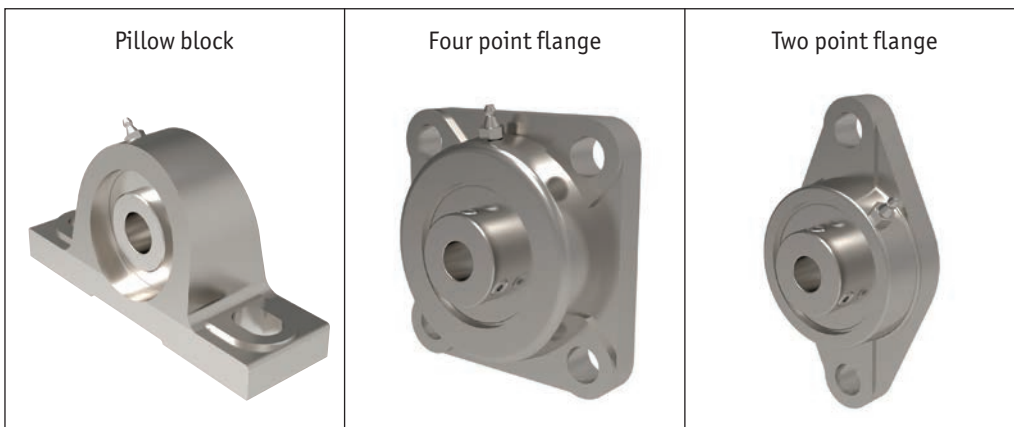
Thermoplastic housing
Food grade applications, smooth PBT resin material, $\varnothing 20-40\text{mm}$.

Pillow Bearings



Use with Automation linear shafts L1770-L1774

Options



Bearing Supports from Automation Components

BEARING MOUNTS



For cast iron housings

- Single row radial contact self-aligning bearings (steel 100Cr6).
- Re-lubricatable.
- Fixing to shaft via set screw.
- Operating temperature range -20° to +100°.

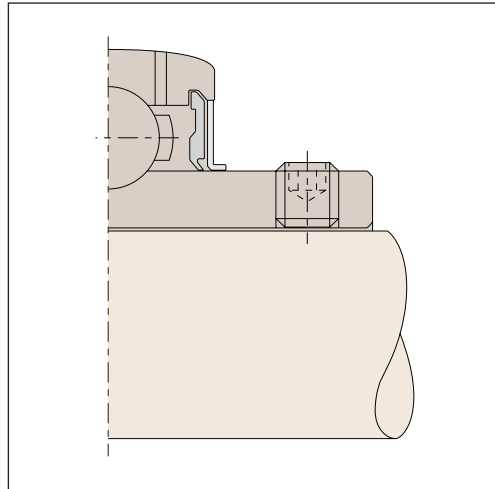
For stainless & thermoplastic housings

- Single row radial contact self-aligning bearings (stainless steel AISI 440C), stainless steel cage.
- Lubricated with food grade grease.
- Fixing to shaft via set screw.

Shaft fixing set screw

2 set screws at 120° with hexagon socket and knurled cup point, recommended shaft tolerance h6/h7.

Set screw	Max. tightening torque (Nm)	Hexagon socket A/F
M5 x 0,8	3,5	2,5
M6 x 1	5,5	3,0
M8 x 1	11,5	4,0
M10 x 1,25	22,0	5,0
M12 x 1,25	33,0	6,0
M14 x 1,5	42,0	7,0
M16 x 1,5	64,0	8,0
M18 x 1,5	75,0	9,0
M20 x 1,5	120,0	10,0

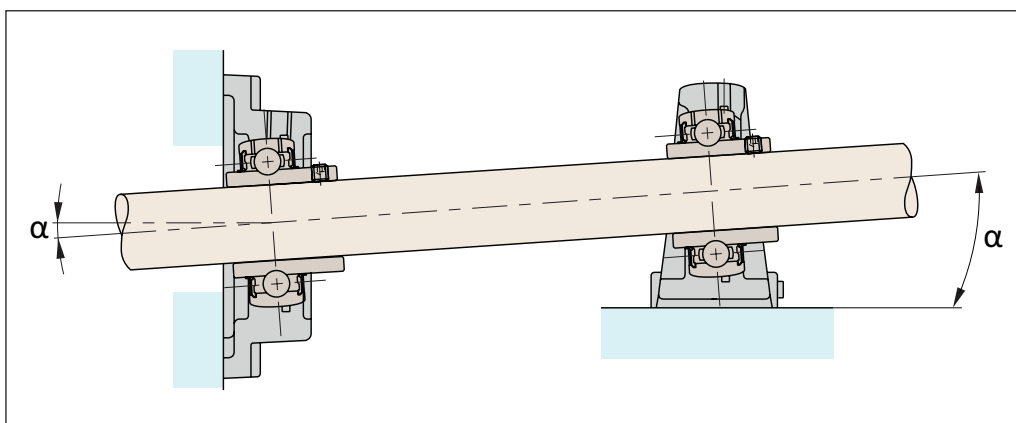


Lubrication

Our units are lubricated for life. If re-lubrication is necessary (because of severe operating conditions), use a lithium soap base with a viscosity of 100mm²/s at 40°C.

Installation

Shaft misalignment is compensated to a certain degree by the shaft-aligning bearings.



If re-lubrication required

$$\alpha = \pm 2^\circ$$

If no re-lubrication

$$\alpha = \pm 5^\circ$$

When using protective end caps

$$\alpha = \pm 5^\circ$$

Bearing Supports from Automation Components

BEARING MOUNTS



The radial loads of the cast iron bearing supports are limited by the bearings themselves – the housings can withstand the maximum loads.

Please see the part numbers for dynamic and static radial loads. The maximum axial loads are 50% of the maximum static radial loads. The standard bearing have a C3 clearance.

Bore nominal size (mm)		Radial bearing clearance (μ) C3	
Above	Up to	Min.	Max.
10	18	11	25
18	24	13	28
24	30	13	28
30	40	15	33
40	50	18	36
50	65	23	43
65	80	25	51
80	100	30	58
100	120	36	66
120	140	41	81

When choosing a suitable bearing size – this depends on the load and speed required.

If the load acts mainly whilst the bearing rotates, then it is a dynamic load, if it acts mainly during no movement or low speeds, then it is a static load.

The maximum for both of these, for each bearing, is shown in the part tables.

Bearing Supports from Automation Components

Dynamic equivalent loads:

For some situations the bearing will have to withstand both radial and axial loads and we then need to calculate an equivalent dynamic load using the following equation:

$$L = X \cdot F_r + Y \cdot F_a \text{ (kN)}$$

- P = Dynamic equivalent load (kN)
- F_r = Actual radial load (kN)
- F_a = Actual axial load (kN)
- X = Radial factor
- Y = Axial factor

Load ratio table 1:

F _a C _{0r}	e	F _a /F _r ≤ e		F _a /F _r > e	
		X	Y	X	Y
0,014	0,19				2,30
0,028	0,22				1,99
0,056	0,26				1,71
0,084	0,28				1,55
0,110	0,30	1	0	0,56	1,45
0,170	0,34				1,31
0,280	0,38				1,15
0,420	0,42				1,04
0,560	0,44				1,00

e = Limiting value

C_{0r} = Radial static load rating (see dimension tables for ball bearing units)



Static equivalent loads

For situations where there are radial and axial loads on the static or slow moving bearings:

$$P_0 = X_0 \cdot F_r + Y_0 \cdot F_a \text{ (kN)}$$

$$P_0 = F_r \quad \text{if} \quad \frac{F_a}{F_r} \leq 0.8$$

P_0 = Static equivalent load (kN)	For all bearing inserts the following applies:
X_0 = Static radial factor	$X_0 = 0.6$
Y_0 = Static axial factor	$Y_0 = 0.5$

Using the ratio **fs**, it can be checked if sufficient static dimensioning for the insert has been ensured:

$$fs = \frac{C_{0r}}{P_0}$$

Some standard values are:

- fs** = 0.7 Minimal demands for running smoothness and rotating movement
- fs** = 1.0 occasional rotating bearing, normal demands for running
- fs** = 2.0 smoothness, high demands for running smoothness

It should be noted that this ratio does not provide any assurance against a break or similar, but instead it is assurance against excessive local deformation in the rolling contact (ball/raceway).

Calculating bearing life

When calculating bearing life for bearing units, the following applies:

$$L_{10} = \left(\frac{C_r}{p} \right)^3 \quad \text{(10}^6 \text{ revolutions)}$$

If the bearing life should be specified in hours, the following applies:

$$L_{10h} = \left(\frac{C_r}{p} \right)^3 \cdot \frac{10^6}{60n} \quad \text{(h)}$$

n = speed (min⁻¹)