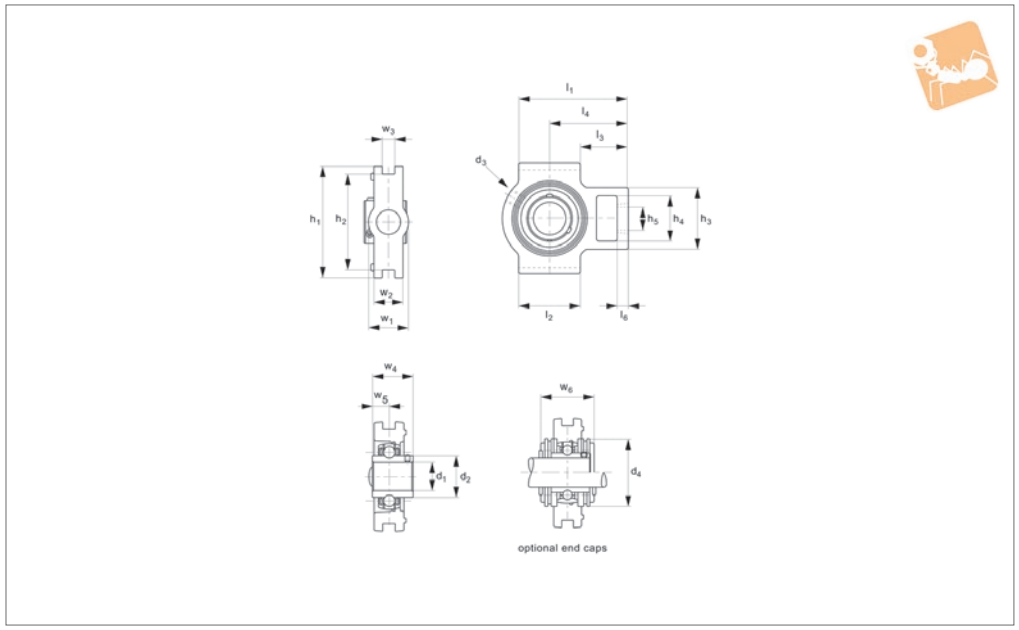
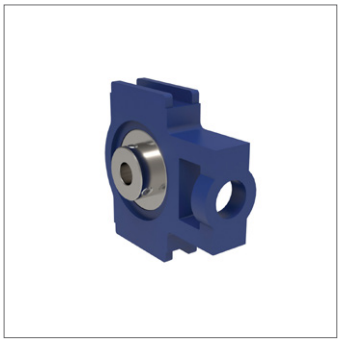




L1866

Material
Cast iron (FG20 or FG25), passivated and painted blue (RAL 5010).

Technical Notes
Shaft retention with set screw.

Used with h6 tolerance shafts (see our part no.s L1770-L1776.
For optional shaft end caps add suffixes:
-CO for two open protective caps (with seal) for through shafts.
-CC for one open and one closed protective caps for shaft ends.

Order No.	d_1 for h6	l_1	h_1	l_2	d_2	d_3	d_4	h_2 +0|-0.8	h_3	h_4	Weight kg
L1866.012	12	94	89	51	29.0	M 6x1	54	76	51	32	0.8
L1866.015	15	94	89	51	29.0	M 6x1	54	76	51	32	0.8
L1866.017	17	94	89	51	29.0	M 6x1	54	76	51	32	0.7
L1866.020	20	94	89	51	29.0	M 6x1	54	76	51	32	0.7
L1866.025	25	97	89	51	34.0	M 6x1	60	76	51	32	0.8
L1866.030	30	113	102	57	40.3	M 6x1	70	89	56	37	1.2
L1866.035	35	129	102	64	48.0	M 6x1	80	89	64	37	1.6
L1866.040	40	144	114	83	53.0	M 6x1	88	102	83	49	2.3
L1866.045	45	144	117	83	57.2	M 6x1	95	102	83	49	2.3
L1866.050	50	149	117	86	61.8	M 6x1	100	102	83	49	2.5
L1866.055	55	171	146	95	69.0	M 6x1	110	130	102	64	3.9
L1866.060	60	194	146	102	74.9	M 6x1	120	130	102	64	4.7
L1866.065	65	224	167	121	82.0	M 6x1	132	151	111	70	6.8
L1866.070	70	224	167	121	86.5	M10x1	-	151	111	70	6.9
L1866.075	75	232	167	121	91.5	M10x1	-	151	111	70	7.2
L1866.080	80	235	184	121	98.0	M10x1	-	165	111	70	8.2
L1866.085	85	260	198	157	105.1	M10x1	-	173	124	73	10.8

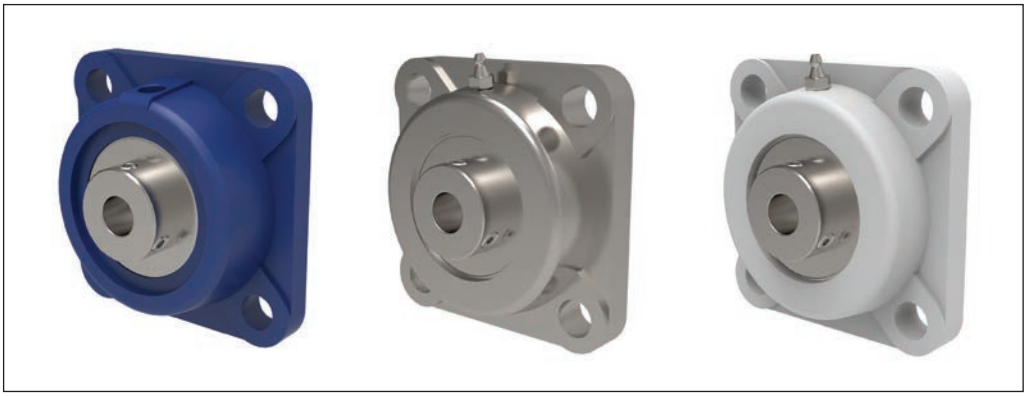
Order No.	h_5	l_3	l_4	l_5	w_1	w_2	w_3 +0.3|-0	w_4	w_5	w_6	Dyn. radial load C kN max.	Static radial load C_0 kN max.	Speed rpm max.
L1866.012	19	35.5	61	10	32	21	12	31.0	12.7	43.7	12.80	6.65	6500
L1866.015	19	35.5	61	10	32	21	12	31.0	12.7	43.7	12.80	6.65	6500
L1866.017	19	35.5	61	10	32	21	12	31.0	12.7	43.7	12.80	6.65	6500
L1866.020	19	35.5	61	10	32	21	12	31.0	12.7	43.7	12.80	6.65	6500
L1866.025	19	36.5	62	10	32	24	12	34.0	14.3	47.5	14.00	7.88	6500
L1866.030	22	41.5	70	10	37	28	12	38.1	15.9	52.5	19.50	11.20	4500
L1866.035	22	46.0	78	13	37	30	12	42.9	17.5	59.1	25.70	15.20	4500
L1866.040	29	46.5	88	16	49	33	16	49.2	19.0	68.6	29.60	18.20	3500
L1866.045	29	45.5	87	16	49	35	16	49.2	19.0	68.6	31.85	20.80	3500
L1866.050	29	47.0	90	16	49	37	16	51.6	19.0	74.1	35.10	23.20	3000
L1866.055	35	58.5	106	19	64	38	22	55.6	22.2	75.3	43.55	29.20	3000

Take-up Units

set screw type

Order No.	h_5	l_3	l_4	l_5	w_1	w_2	w_3 +0.3|-0	w_4	w_5	w_6	Dyn. radial load C kN max.	Static radial load C_0 kN max.	Speed rpm max.
L1866.060	35	68.0	119	19	64	42	22	65.1	25.4	88.6	52.50	32.80	2500
L1866.065	41	76.5	137	21	70	44	26	65.1	25.4	88.6	57.20	40.00	2500
L1866.070	41	76.5	137	21	70	46	26	74.6	30.2	-	62.00	45.00	2500
L1866.075	41	79.5	140	21	70	48	26	77.8	33.3	-	66.00	49.50	2500
L1866.080	41	79.5	140	21	70	51	26	82.6	33.3	-	72.50	54.20	2500
L1866.085	48	83.5	162	29	73	54	30	85.7	34.1	-	83.20	63.80	2500

Housing material options

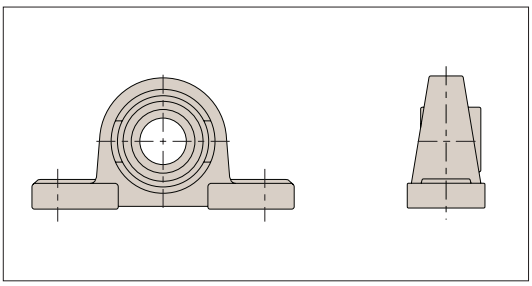


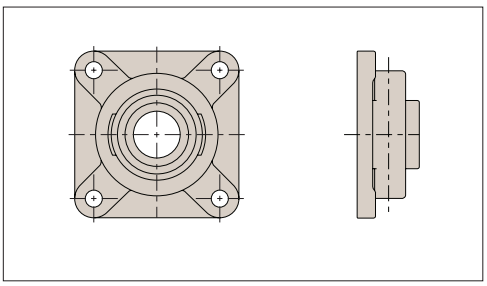
Cast iron housing
Standard version, passivated and painted Ø12-120mm.

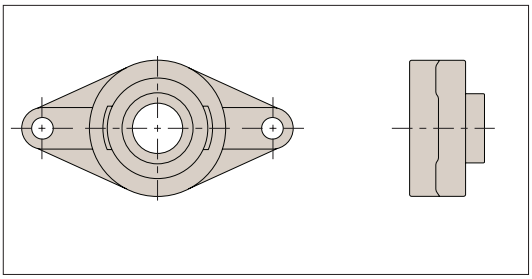
Stainless steel housing
Stainless AISI 304, Ø12-60mm.

Thermoplastic housing
Food grade applications, smooth PBT resin material, Ø20-40mm.

Pillow Bearings

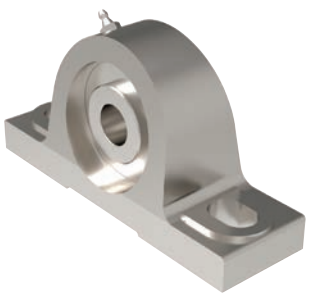






Use with Automotion linear shafts L1770-L1774

Options

Pillow block	Four point flange	Two point flange
		

Bearing Supports from Automotion Components

Self-Aligning Bearing Units

Technical

Bearing Supports from Automotion Components

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°.

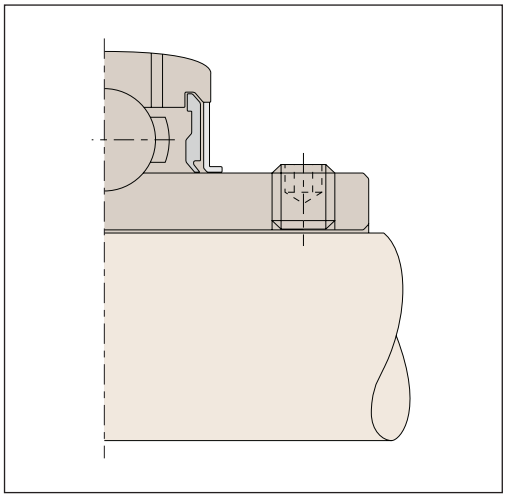
For stainless & thermoplastic housings

- 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

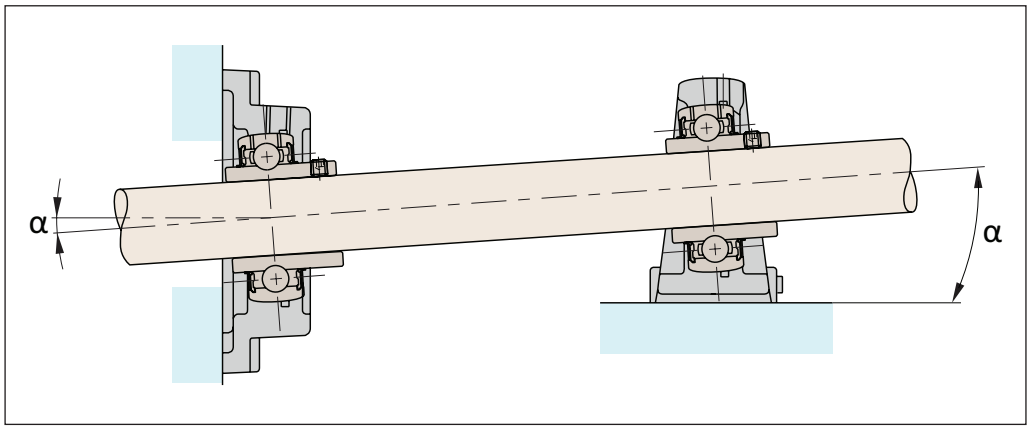


Lubrication

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

α = ± 2°

If no re-lubrication

α = ± 5°

When using protective end caps

α = ± 5°

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.

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:

$$L = X \bullet F_r + Y \bullet F_a \ (kN)$$

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:

$\frac{F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \le e$		$\frac{F_a}{F_r} > e$	
		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)

Bearing Supports from Automotion Components

Bearing Supports from Automotion Components

Static equivalent loads

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

$$P_0 = X_0 \bullet F_r + Y_0 \bullet F_a \ (kN)$$

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

P_0 = Static equivalent load (kN)
X_0 = Static radial factor
Y_0 = Static axial factor

For all bearing inserts the following applies:
X_0 = 0.6
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:

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

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

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

n = speed (min^{-1})