

THERMALLOY pillow unit

(solid lubricant dispersed pillow unit)



The pillow unit is a lubrication free, self-aligning bearing unit that comprises of an outer ring made from the high performance bearing material THERMALLOY and a stainless steel inner ring incorporated as a bearing into a stainless steel bearing box.

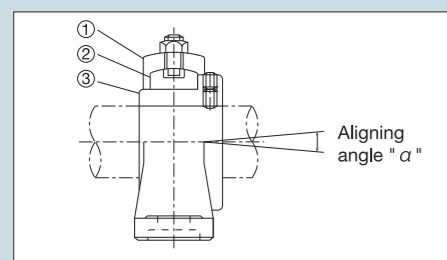
Features

- 1.Can be used without a lubricant supply.
- 2.Can be used in water, seawater, vapour or water splashes.
- 3.Applicable within a wide temperature range.
- 4.Durable against intrusion of dust, sand or foreign bodies.
- 5.Suitable for use with rotary motion, vibratory motion, reciprocation and intermittent operation.
- 6.Able to move at extremely low speed compared with the solid lubricant embedded type and particularly superior with respect to minute motion.
- 7.Capable of withstanding higher loads and supporting radial and thrust loads.
- 8.Superior fretting resistance to that of embedded solid lubricant and ball bearing types.

Construction and Components

Part No.	Part name	Material
1	Bearing box	SCS13 (cast stainless steel)
2	Outer ring	144SB12P (THERMALLOY)
3	Inner ring	SUS304 (stainless steel)

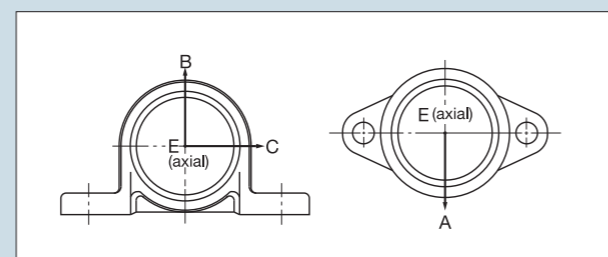
(Attached screws are also made of stainless steel.)



- Outer rings for standard units are made of 144SB12P (THERMALLOY), but may also be made of another bearing material.
- The pillow and diamond flange units and their components for shaft diameters between 20 and 50mm have been standardized. Please contact us if you require specifications other than those given above.

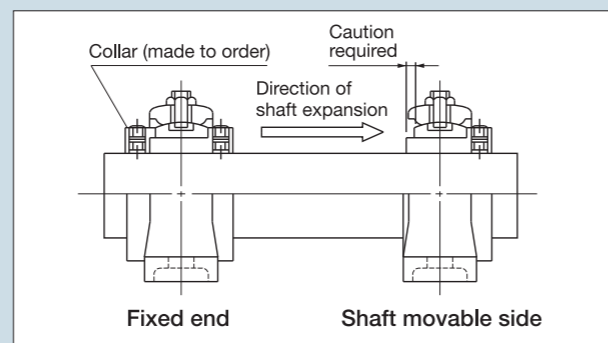
Static Breaking Strength of Bearing Box

Loading direction			
A	B	C	E
W×2	W×2.5	W×4	W×1



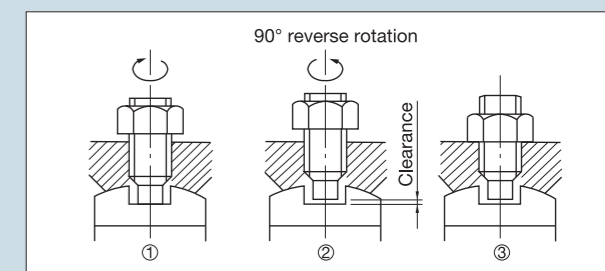
Mounting in a Hot Place

If the shaft expands thermally (in the axial direction) at high temperatures it is recommended that the shaft be mounted as shown below.



Securing The Outer Ring For The Bearing

- Tighten the set screw and nut in the following order.
- 1.Rotate the set screw until it makes contact with the bottom of the outer ring hole.
 - 2.Rotate the set screw by 90° in the reverse direction to provide a clearance above the bottom of the hole.
 - 3.Tighten the nut as shown in ②.



Designing Conditions

Operating Ranges

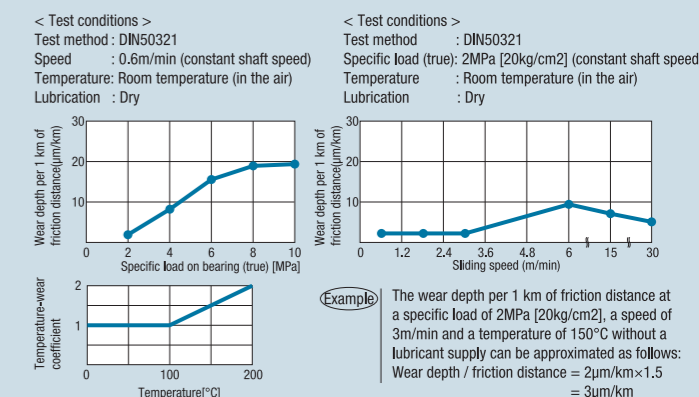
Shaft diameter	Nominal No.	Max. radial load "W"	Max. rotating speed "N"	Allowable "W-N" value	Operating temperature	Max. rotating speed "α"
mm	-	N{kgf}	rpm	N·rpm{kgf·rpm}	°C	Degrees
20	204	9,800{1,000}	150	3.12×10 ⁵ {31,800}	-50 - +200	7
25	205	11,800{1,200}	120	3.43×10 ⁵ {35,000}		6
30	206	16,700{1,700}	100	3.90×10 ⁵ {39,800}		7
35	207	20,600{2,100}	90	4.21×10 ⁵ {43,000}		7
40	208	24,500{2,500}	80	4.53×10 ⁵ {46,200}		6
45	209	27,500{2,800}	70	4.53×10 ⁵ {46,200}		6
50	210	30,400{3,100}	70	4.68×10 ⁵ {47,700}		6

- The "W," "N" and "W-N" values are measured in the air at an ordinary temperature without a lubricant supply.
- When using the unit at temperatures above 100°C as a guide the "N" and "W-N" values should be half of that of the service range.
- When the unit is used with a lubricant, a smaller load, at lower speed, operated intermittently or for a shorter time it may be used above the service range. Please consult us.

- When the unit is to be used out of the specified service range or in a special atmosphere (in a vacuum, gas or chemical solution), it may be made from other materials. Please consult us.
- Bearing boxes made of gray cast iron (FC) are also available.

Service Life

The service life of the THERMALLOY pillow unit is generally determined by the wear to the inside diameter of the THERMALLOY. The wear greatly depends on the conditions of use. In other words it is affected by many factors including load, rotating speed, temperature, lubrication status, atmosphere and intrusion of foreign particles, so it is very difficult to calculate with a formula. Use the test data shown on the right as a reference when designing the THERMALLOY pillow unit.



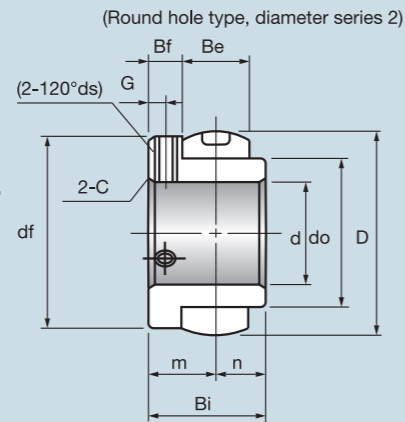
Dimensions of Bearings for units

Designation of Part Number

UD2○○T1

UD2 04 T1

Please specify by part number.



Pb Free

RoHS

ELV

(Unit: mm)

Part No. of bearing	Dimensions											
	d	D	do	Be	Bi	n	m	c	df	Bf	G	ds
UD204T1	20	47	33	20	31	12.7	18.3	1.5	43	8.3	4	M5×0.8
UD205T1	25	52	38	22	34	14.3	19.7	1.5	48	8.7	4.5	M5×0.8
UD206T1	30	62	46	25	38.1	15.9	22.2	1.5	58	9.7	5	M6×1
UD207T1	35	72	53	27	42.9	17.5	25.4	2	68	11.9	6	M8×1.25
UD208T1	40	80	60	29	49.2	19	30.2	2	75	15.7	8	M8×1.25
UD209T1	45	85	65	29	49.2	19	30.2	2	80	15.7	8	M8×1.25
UD210T1	50	90	70	30	51.6	19	32.6	2	85	17.6	9	M10×1.5

Bearings with specifications and dimensions other than those given above are also available. Please consult us.

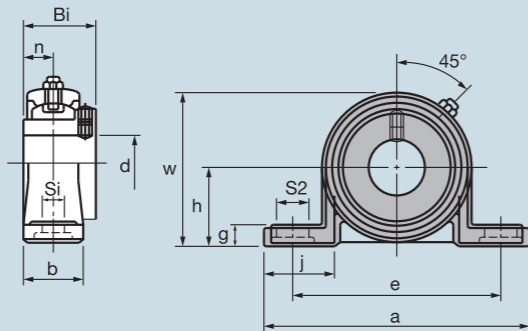
Dimensions of pillow units

Designation of Part Number

UDSP2○○S1T1

UDSP2 04 S1T1

Please specify by part number.



Pb Free

RoHS

ELV

(Unit: mm)

Part No. of bearing	Dimensions												Nominal size of mounting bolt	Part No. of bearing	Part No. of bearing box
	d	h	a	e	b	S1	S2	g	w	j	Bi	n			
UDSP204S1T1	20	33.3	127	95	30	13	19	9	64	39	31	12.7	M10	UD204T1	SP204S1
UDSP205S1T1	25	36.5	140	105	30	13	19	10	70	42	34	14.3	M10	UD205T1	SP205S1
UDSP206S1T1	30	42.9	165	121	36	17	21	11	82	50	38.1	15.9	M14	UD206T1	SP206S1
UDSP207S1T1	35	47.6	167	127	38	17	21	12	92	46	42.9	17.5	M14	UD207T1	SP207S1
UDSP208S1T1	40	49.2	184	137	40	17	21	12	98	50	49.2	19	M14	UD208T1	SP208S1
UDSP209S1T1	45	54	190	146	40	17	21	13	105	50	49.2	19	M14	UD209T1	SP209S1
UDSP210S1T1	50	57.2	206	159	45	20	22	14	112	56	51.6	19	M16	UD210T1	SP210S1

Bearings with specifications and dimensions other than those given above are also available. Please consult us.

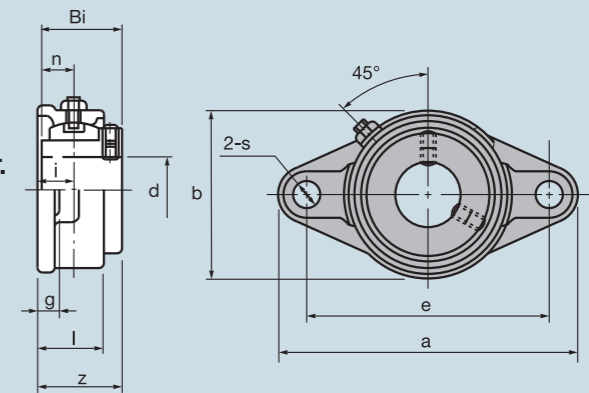
Dimensions of Diamond Flange units

Designation of Part Number

UDSFL2○○S1T1

UDSFL2 04 S1T1

Please specify by part number.



Pb Free

RoHS

ELV

(Unit: mm)

Part No. of bearing	Dimensions												Nominal size of mounting bolt	Part No. of bearing	Part No. of bearing box
	d	a	e	i	g	l	S	b	Z	Bi	n				
UDSFL204S1T1	20	113	90	15	10	25.5	12	60	33.3	31	12.7	M10	UD204T1	SFL204S1	
UDSFL205S1T1	25	130	99	16	10	27	16	68	35.7	34	14.3	M14	UD205T1	SFL205S1	
UDSFL206S1T1	30	148	117	18	10	31	16	80	40.2	38.1	15.9	M14	UD206T1	SFL206S1	
UDSFL207S1T1	35	161	130	19	11	34	16	90	44.4	42.9	17.5	M14	UD207T1	SFL207S1	
UDSFL208S1T1	40	175	144	21	11	36	16	100	51.2	49.2	19	M14	UD208T1	SFL208S1	
UDSFL209S1T1	45	188	148	22	13	38	19	108	52.2	49.2	19	M16	UD209T1	SFL209S1	
UDSFL210S1T1	50	197	157	22	13	40	19	115	54.6	51.6	19	M16	UD210T1	SFL210S1	

Bearings with specifications and dimensions other than those given above are also available. Please consult us.