

Y-bearing plummer block units with a pressed steel housing

Y-bearing plummer block units (→ **fig. 7**) with a pressed steel housing are designed for simple applications with limited loads and speeds. The two-part housing, which has no provision for relubrication, is ordered separately from the insert bearing. The individual items that make up a Y-bearing unit are:

- the two-part housing
- the Y-bearing
- the rubber seating ring, if needed

The advantage of ordering individual components is that a large number of combinations are possible.

Rubber seating rings made of acrylonitrile-butadiene rubber in the RIS 2 series (→ **fig. 8**) are available for these Y-bearing plummer blocks and are meant to reduce running noise and dampen vibration. The rubber seating rings also enable the bearings to be displaced slightly in their housings, for example, to accommodate shaft elongation.

Y-bearing units with a rubber seating ring are also listed in the product tables. Detailed information about rubber seating rings can be found in the section *Design of Y-bearing arrangements* on **pages 45 and 46**.

Data – general

Dimensions

The boundary dimensions of most Y-bearing plummer block housings are in accordance with the following standards:

- Housings in the SY 5(00) M series are in accordance with ISO 3228:1993.
- Housings in the SY 5(00) U series are in accordance with ISO 3228:1993, except the centre height H_1 , which deviates for several housing sizes.
- Housings in the SYH series are in accordance with ISO 3228:1993, except the centre height H_1 , which is lower than the standard.

Fig. 7

Fig. 8


- Housings in the SYJ series are in accordance with JIS B 1559-1995.
- Housings in the P series are in accordance with ISO 3228:1993, except the centre height H_1 , which deviates slightly.

Y-bearing plummer block housings in the SYF, SYFJ and SYM series have not been standardized either nationally or internationally, but are common in the marketplace.

Tolerances

The tolerance for the shaft centre height H_1 (→ fig. 9) is

- $\pm 0,25$ mm for plummer block units with a bearing bore diameter ≤ 40 mm, except for units in the SYK series, where the tolerance is $\pm 0,31$ mm
- $\pm 0,30$ mm for the larger plummer block units.

For Y-bearing plummer block units with composite or cast housings, the outside diameter of the bearing is matched to the diameter of the housing bore so that the outer ring is prevented from turning in its seat, but still able to compensate for misalignment.

Additional information about tolerances for the inner ring bore are listed in the section *Y-bearings* on **page 89**.

Radial internal clearance

The Y-bearing used in a Y-bearing plummer block unit has the same radial internal clearance as a similarly sized individual Y-bearing.

Additional information about the radial internal clearance can be found in the section *Y-bearings* on **page 90**.

Materials

Composite housings

Y-housings in the SYK series are made of injection moulded glass fibre reinforced polyamide 6. A steel coil embedded in the housing adds greater stability to the form of the housing, even if operating temperatures are elevated.

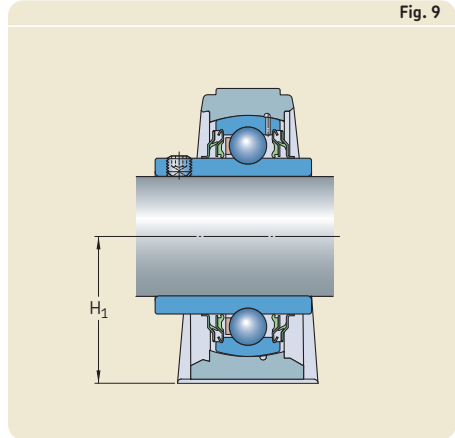
The housing bolt holes are reinforced with zinc-plated sheet steel inserts. The standard housing colour is black.

Cast housings

Housings in the SY(J), SYH, SYM and SYF(J) series are manufactured from grey cast iron EN-GJL HB195 in accordance with EN 1561:1997.

Pressed steel housings

Pressed steel housings in the P series are made from cold-rolled sheet steel and are zinc-coated for corrosion protection.



Load carrying ability of the housings

Housings made of composite material or grey cast iron are able to withstand the same dynamic and static loads as the Y-bearings they incorporate. These Y-bearing units can also be used in applications where shock loads or variable axial loads occur.

If SKF Y-bearing units are to be used in an application where health, safety, or the environment is at risk, contact the SKF application engineering service during the design phase.

Pressed steel housings have a lower load carrying capacity than their insert bearings. Permissible radial loads are specified in the product tables. The axial load should not exceed 20% of the permissible radial load.

If the bearing arrangement will be subjected to shock loads or variable axial loads, Y-bearing units with a cast or Y-TECH housing should always be used.

Y-bearing plummer block units

End covers

To protect the shaft ends and avoid contact to rotating shaft ends, end covers are available for composite and cast Y-bearing plummer block units (→ **fig. 10**).

In the product tables, end covers in the ECY 2 series are shown together with the appropriate bearing unit. The designation of the end cover is listed together with the distance that the end cover protrudes from the housing.

For additional information about end covers, refer to the section *Design of Y-bearing arrangements* on **page 47**.

Attaching to a support surface

Plummer block units have two bolt holes in the housing base through which they can be attached to their support surface with threaded fasteners. The bolt holes vary for different housings. Housings made of:

- composite material have oblong bolt holes, reinforced with zinc-coated sheet steel or stainless steel inserts
- grey cast iron – SY(J), SYH and SYM series – have cast oblong bolt holes
- grey cast iron – SYF and SYFJ series – have threaded holes in the support base
- pressed steel have round bolt holes

If the loads acting on a housing are between 55° and 120° (→ **fig. 11**), Y-TECH bearing units and SY(J), SYH and SYM plummer block units should be doweled to the support surface or stops should be provided in the direction of the load.

Recommendations for the position and size of the dowel pin holes for SY, SYJ and SYH series housings are provided in **table 1**.

Grease fills

With the exception of SKF Y-bearing units for the food industry, all standard SKF Y-bearing plummer block units are filled with a high-quality, long-lasting grease containing a lithium-calcium thickener that has a consistency of 2 on the NLGI scale.

For additional information about lubricants and lubrication, refer to the section *Lubrication and maintenance*, starting on **page 48**.

Fig. 10

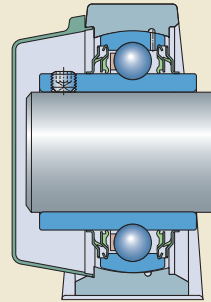
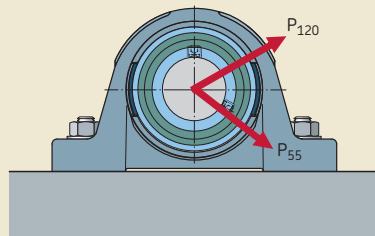


Fig. 11



Mounting

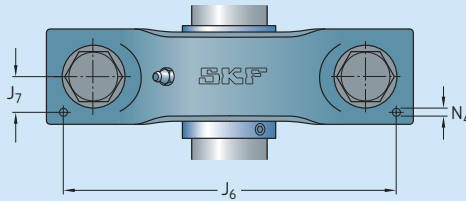
The procedure for mounting a Y-bearing plummer block unit depends on:

- the design of the housing
- the method used to attach the unit to the shaft

These methods are described in detail in the section *Mounting instructions*, starting on **page 52**.

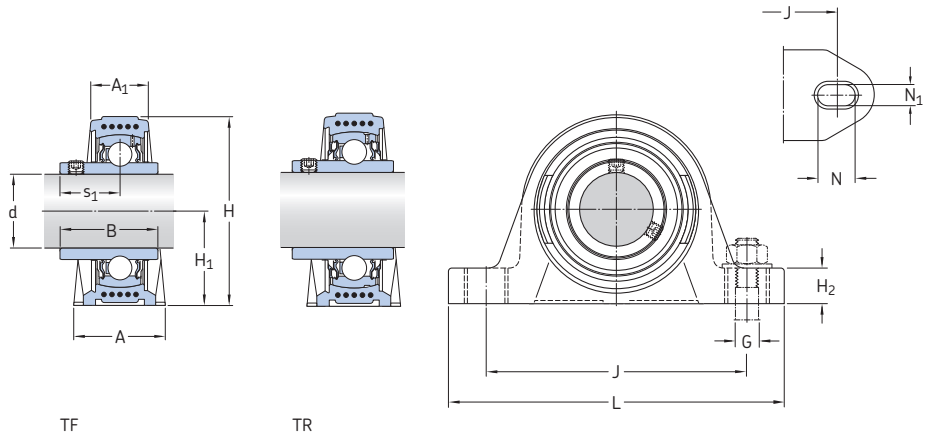
Table 1

Position and size of dowel pin holes for Y-bearing plummer block housings made of grey cast iron

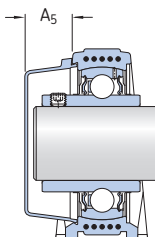


Housing size	Dimensions for housings in the SYJ series			SY, SYH series		
	J_6	J_7	N_4	J_6	J_7	N_4
–	mm					
503	–	–	–	118	11,5	2
504	118	12,5	2	118	11,5	2
505	130	14	2	120	13	2
506	155	15	2	140	14	2
507	153	16	4	146	15,5	4
508	170	17,5	4	161	17	4
509	174	18	4	173	17	4
510	190	21	5	187	19	5
511	201	21	5	201	21	5
512	223	23,5	5	222	21	5
513	241	23	5	238	22,5	5
514	246	26	6	240	22,5	6
515	255	27	6	–	–	–
516	270	28	6	285	29	6
518	303	32	8	–	–	–
520	352	33,5	8	–	–	–

Y-TECH plumber block units with grub screws, metric shafts
d 20 – 40 mm



Dimensions													Basic load ratings		Fatigue load limit	Limiting speed	Designation
d	A	A ₁	B	H	H ₁	H ₂	J	L	N	N ₁	G	s ₁	dynamic C	static C ₀	P _u	with shaft tolerance h6	Bearing unit
mm													kN		kN	r/min	–
20	32	21	31	64	33,3	16	96	126	17,5	12	10	18,3	12,7	6,55	0,28	8 500	SYK 20 TF
	32	21	31	64	33,3	16	96	126	17,5	12	10	18,3	12,7	6,55	0,28	5 000	SYK 20 TR
25	32	22	34,1	70,5	36,5	16	105	134	17,5	12	10	19,8	14	7,8	0,335	7 000	SYK 25 TF
	32	22	34,1	70,5	36,5	16	105	134	17,5	12	10	19,8	14	7,8	0,335	4 300	SYK 25 TR
30	40	25	38,1	82	42,9	19	121	159	21,5	14,5	12	22,2	19,5	11,2	0,475	6 300	SYK 30 TF
	40	25	38,1	82	42,9	19	121	159	21,5	14,5	12	22,2	19,5	11,2	0,475	3 800	SYK 30 TR
35	45	27	42,9	93	47,6	19	126	164	21,5	14,5	12	25,4	25,5	15,3	0,655	5 300	SYK 35 TF
	45	27	42,9	93	47,6	19	126	164	21,5	14,5	12	25,4	25,5	15,3	0,655	3 200	SYK 35 TR
40	48	30	49,2	99	49,2	19	136	176	21,5	14,5	12	30,2	30,7	19	0,8	4 800	SYK 40 TF
	48	30	49,2	99	49,2	19	136	176	21,5	14,5	12	30,2	30,7	19	0,8	2 800	SYK 40 TR



Designations			Mass Bearing unit	Appropriate end cover	
Bearing unit	Separate components Housing	Bearing		Designation	Dimension
					A ₅
–			kg	–	mm
SYK 20 TF	SYK 504	YAR 204-2F	0,24	ECY 204	18,5
SYK 20 TR	SYK 504	YAR 204-2RF	0,24	ECY 204	18,5
SYK 25 TF	SYK 505	YAR 205-2F	0,29	ECY 205	18
SYK 25 TR	SYK 505	YAR 205-2RF	0,29	ECY 205	18
SYK 30 TF	SYK 506	YAR 206-2F	0,49	ECY 206	20
SYK 30 TR	SYK 506	YAR 206-2RF	0,49	ECY 206	20
SYK 35 TF	SYK 507	YAR 207-2F	0,66	ECY 207	22
SYK 35 TR	SYK 507	YAR 207-2RF	0,66	ECY 207	22
SYK 40 TF	SYK 508	YAR 208-2F	0,86	ECY 208	23,5
SYK 40 TR	SYK 508	YAR 208-2RF	0,86	ECY 208	23,5