Water pump bearings

Integral shaft bearings

SCHAEFFLER GROUP
AUTOMOTIVE

Water pump bearings

Water pump bearings are double row bearings and, in contrast to conventional double row bearings, do not have an inner ring but raceways machined directly into the surface of the shaft. As a result, there is more space available for the rolling elements, giving a higher specific load carrying capacity than that of solutions with conventional single bearings. Furthermore, it is possible in this type of bearing to achieve economical combinations of ball and roller rows. In a small design envelope, this gives a broad range of load carrying capacities.

The use of a common outer ring for two rows of rolling elements prevents misalignment defects, eliminating the risk of undesirable distortion of the bearings.

In water pump bearings, the ends of the shaft normally extend beyond the outer ring on both sides. The length and diameter of these extended sections are matched to the specific application. This results in a simple, ready-to-fit bearing unit that is primarily used in water pumps for road vehicles.

However, they are not restricted to this application.
Due to the advantages described above, they have a wide range of possible applications.

They can be used, for example, in:

- fans
- tension pulleys
- vane pumps
- angle grinders.

Since they are not restricted to use in water pumps, water pump bearings are also described in English as **Integral shaft bearings**.

Manufacturing locations

Following the integration of FAG into SCHAEFFLER HOLDING, we now manufacture water pump bearings at four manufacturing locations worldwide, distributed across all the important automotive regions of the world. They are structured as a Product Line.

The established water pump brands FAG, INA and wpb have been retained and the design of individual water pump bearings within the Product Line has now been standardised. At the same time, production and quality standards have been harmonised so that manufacturing is now carried out in all four plants:

- to the same design standards
- with the same designation
- to the same specifications
- using the same processes
- in accordance with identical quality guidelines.

As a result, the bearings from the various manufacturing locations differ from each other only in terms of the logo used.

wpb Italy

INA Brazil

FAG Canada and Korea

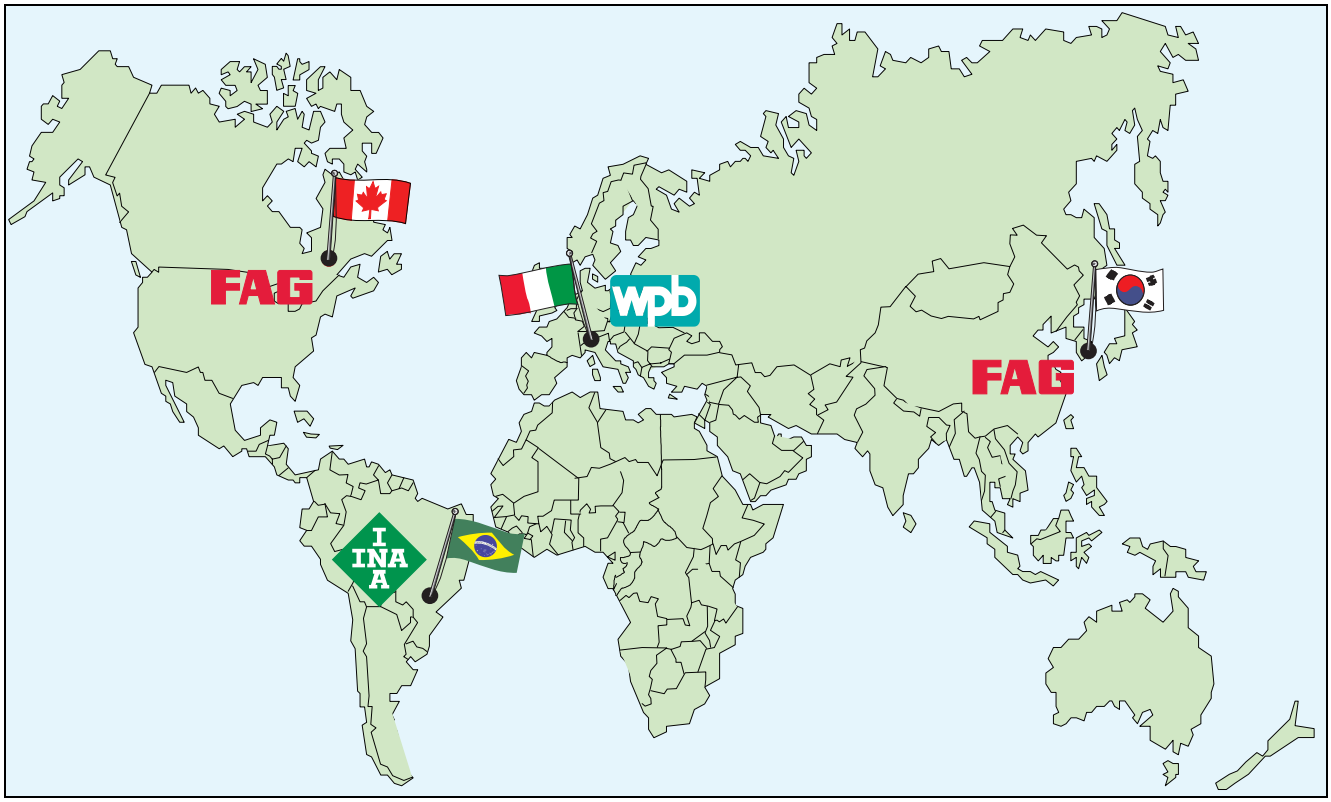


Figure 1 · Manufacturing locations worldwide

Features and applications

Features – *Figure 2*

Water pump bearings are ready-to-fit bearing units. They comprise a shaft ① that is supported by means of two rows of rolling elements ② + ③ in an outer ring ④. The bearings are greased for life and protected against environmental influences by two sealing rings ⑤ + ⑥.

Shaft

The standard material for the shaft ① is induction hardened steel 100 Cr 6. In special cases, case hardened steel 16 MnCr 5 is used.

Rolling element sets

The rolling element sets comprise either two rows of balls or one row of balls and one row of rollers.

Outer ring

The outer ring ④ is made from through hardened steel 100 Cr 6.

Sealing rings

As standard, three different elastomer materials are available for the sealing rings ⑤ + ⑥:

- NBR
- HNBR
- FPM.

The appropriate material is selected in accordance with the application and the environmental influences; different sealing ring materials can be used on the two sides of the bearing.

Application – *Figure 3*

Water pump bearings are mainly used in coolant pumps for road vehicles. Due to their versatile design, the ready-to-fit units are suitable for many other applications.

They can be used, for example, in:

- fans
- idler pulleys
- vane pumps
- angle grinders
- washing machines.

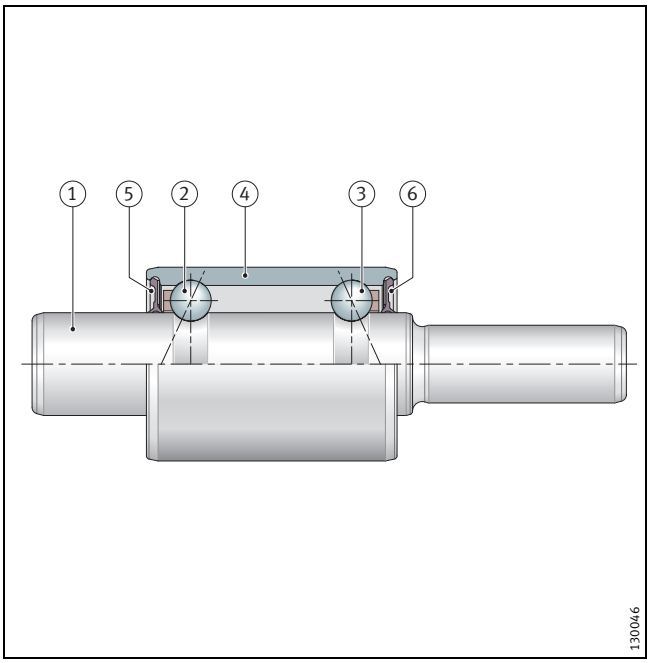


Figure 2 · Construction of a water pump bearing

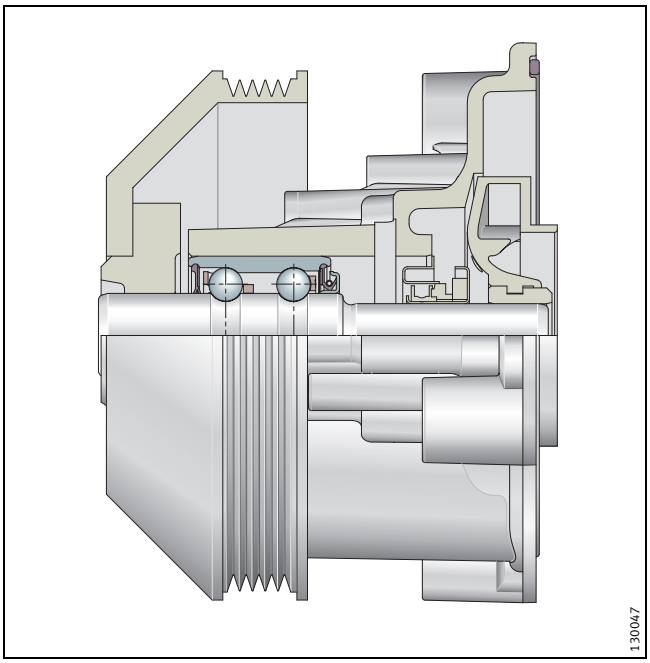


Figure 3 · Application in a water pump

Designs

In water pump bearings, a distrinction is drawn between ball/ball and roller/ball designs.

Ball/ball

The simplest and most economical design is the standard ball bearing, *Figure 4*. This is used for moderate loads. Ideally, the load plane (e.g. the belt plane) lies between the two rows of balls.

In the application “water pump”, experience shows that a reduction in axial internal clearance has a positive effective on the function of the pump. For the ball/ball design, angular contact ball bearings are normally used, *Figure 5*.

If the load carrying capacity of an angular contact ball bearing is not sufficient for the load present, one of the two rows of balls can be strengthened by increasing the number of balls. This design is described as an “asymmetrical” angular contact ball bearing, *Figure 6*.

Through optimum positioning of the strengthened ball row in relation to the load case, the rating life of the bearing can be significantly increased.

Further information on increasing the number of balls and the positioning of the strengthened ball row for your application is available by agreement.

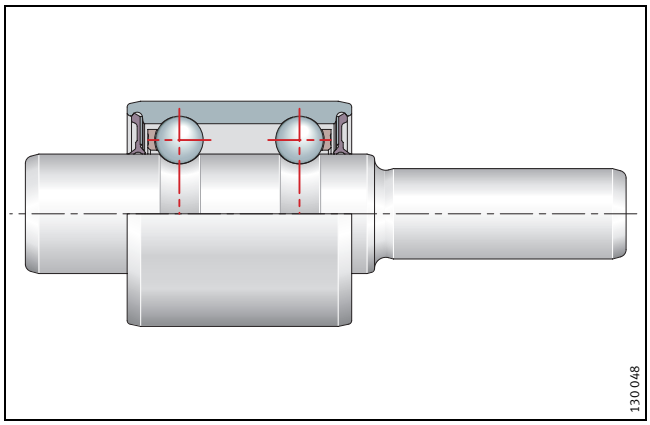


Figure 4 · Standard ball bearing

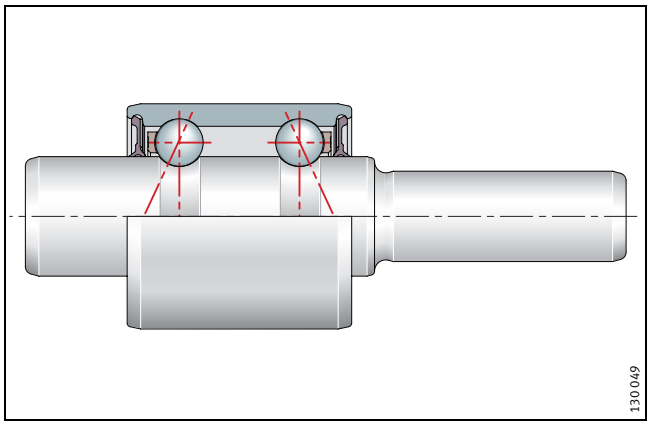


Figure 5 · Angular contact ball bearing

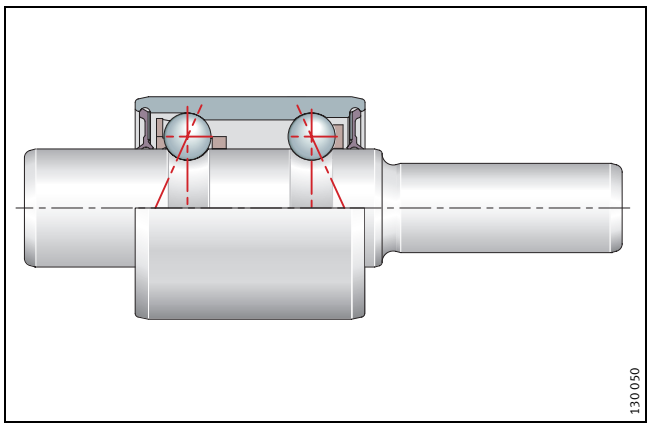


Figure 6 · Asymmetrical angular contact ball bearing

Roller/ball

If the bearing rating life of the ball/ball design is not sufficient for the load present, a roller bearing is used on the side with the highest load, *Figure 7*.

Due to the significantly higher load carrying capacity of a roller row, substantially higher forces can be supported and the rating life of the bearing is considerably longer. The higher load carrying capacity of the roller row is used to its optimum when the load plane is located over the roller row.

In water pump bearings of the roller/ball design, a restricted axial internal clearance also gives a significant improvement in the function. We have therefore developed bearings with combinations comprising a roller row and a three or four point contact bearing, *Figure 8* and *Figure 9*.

In order to determine the optimum bearing solution for your application, please contact the INA/FAG/wpb Application Engineering function.

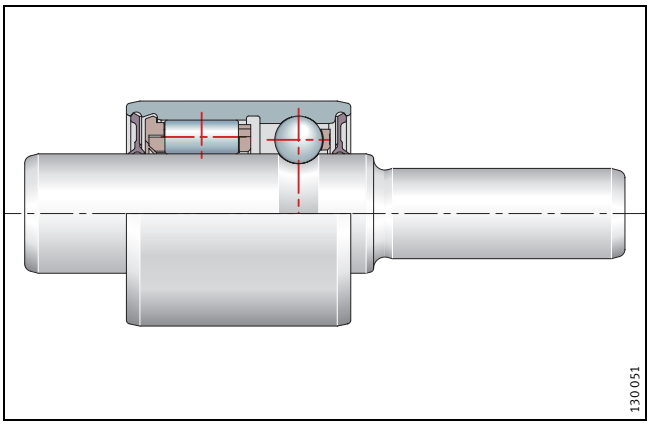


Figure 7 · Roller/ball bearing

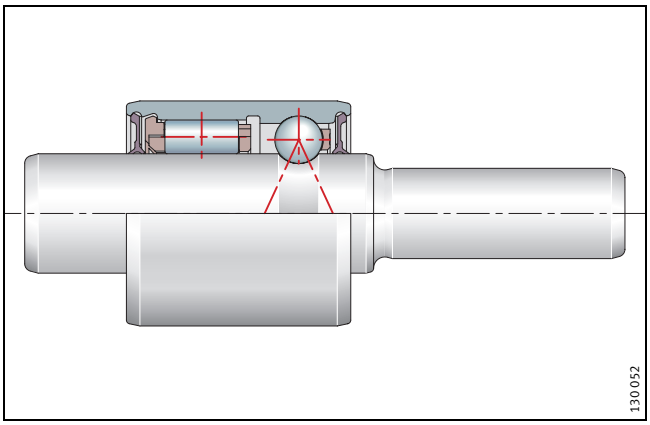


Figure 8 · Roller/three point contact bearing

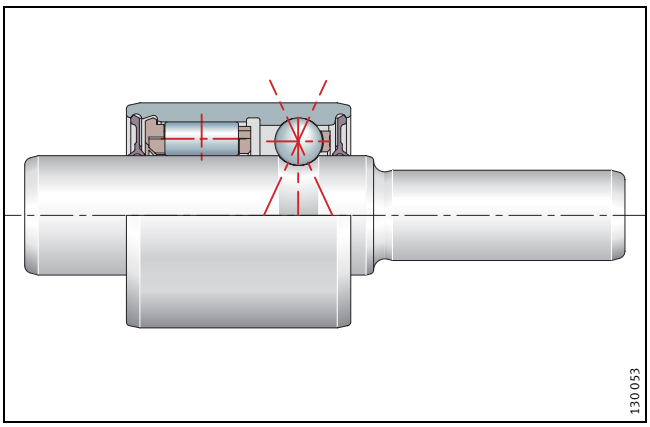


Figure 9 · Roller/four point contact bearing

Seals

Selection of the correct seal is a decisive factor for the rating life of the bearing protected by this seal. In INA/FAG/wpb water pump bearings, four different seal types can be used:

- single lip seal
- double lip seal
- R-SAFE seal
- rotary shaft seal.

The outside diameters of one size are identical. Single lip, double lip and R-SAFE seals are therefore interchangeable.

Single lip seal

The single lip seal, *Figure 10* ① offers a basic level of protection against contamination and escape of grease. This economical seal has low frictional resistance. Single lip seals are widely used at present but will be replaced in future by double lip seals.

Double lip seal

The double lip seal, *Figure 10* ② has slightly higher frictional resistance than the single lip seal. It is economical and offers a higher level of protection against contamination and escape of grease than the single lip seal. These seals are currently the standard seals for INA/FAG/wpb water pump bearings.

R-SAFE seal

This seal was specially developed for sealing the impeller-facing side of water pump bearings. The R-SAFE seal, *Figure 11* ③ has demonstrated superior sealing action against the ingress of water and water vapour over several years, including usage in high volume production.

⚠ No seal can guarantee permanent 100% protection against the ingress of water.

Rotary shaft seal

The fourth seal variant is the rotary shaft seal, *Figure 11* ④, which can be used in chain-driven or gear-driven water pumps.

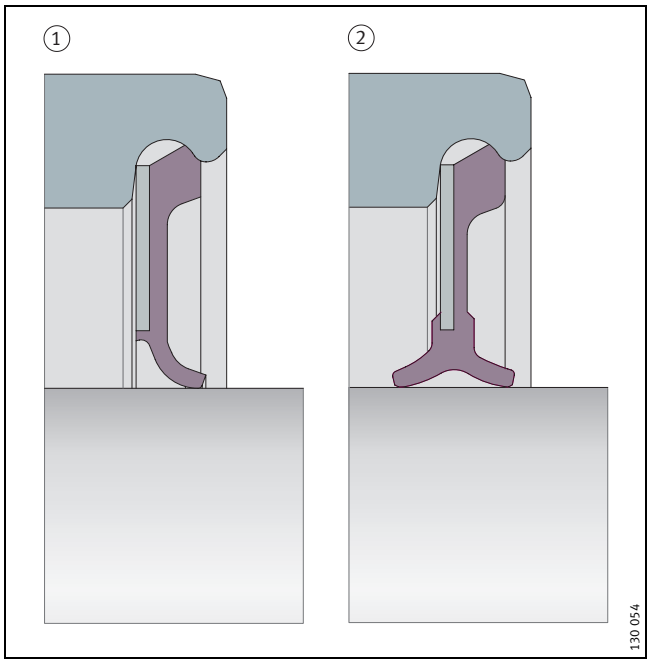


Figure 10 · Single and double lip seal

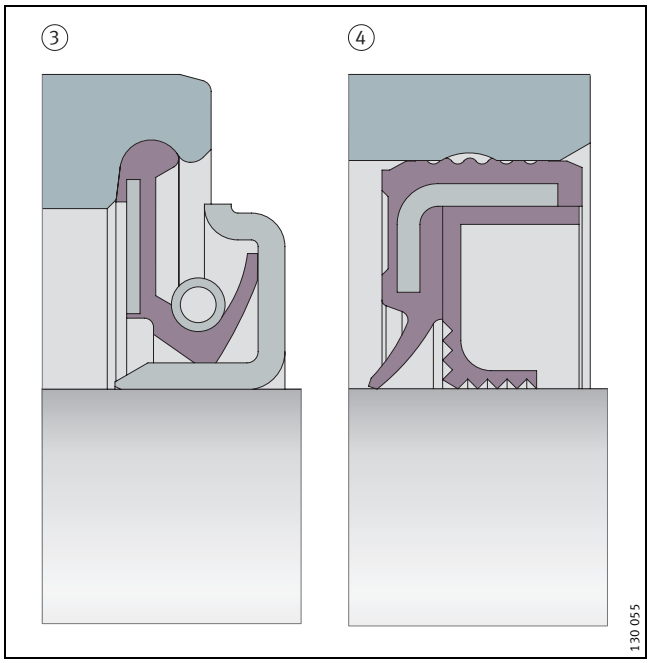


Figure 11 · R-SAFE seal and rotary shaft seal

Dimensions and fits

Dimensions – *Figure 12*

Water pumps are standardised in terms of their outer ring diameter (D). The diameter range for outer rings is 24 mm to 55 mm. For each outer ring diameter, there is a standard shaft diameter (d_k) – with the exception of D = 30 mm. There are also a number of preferred lengths for the outer rings (C).

Water pump bearings with standard dimensions according to Table 1 can be supplied quickly and economically in large quantities.

Table 1 · Standard dimensions

D	d_k	C
24	12,038	27
30	15,918	22 - 27 - 30 - 34 - 38,8 - 44
	17,2	23 - 30 - 38,8
34	17,008	38,8 - 47
35	18	30 - 36 - 38,8
38,1	18,961	47 - 54
40	20,004	50
42	22	32 - 46 - 56
47,625	25,4	48 - 54 - 70
55	25,061	60

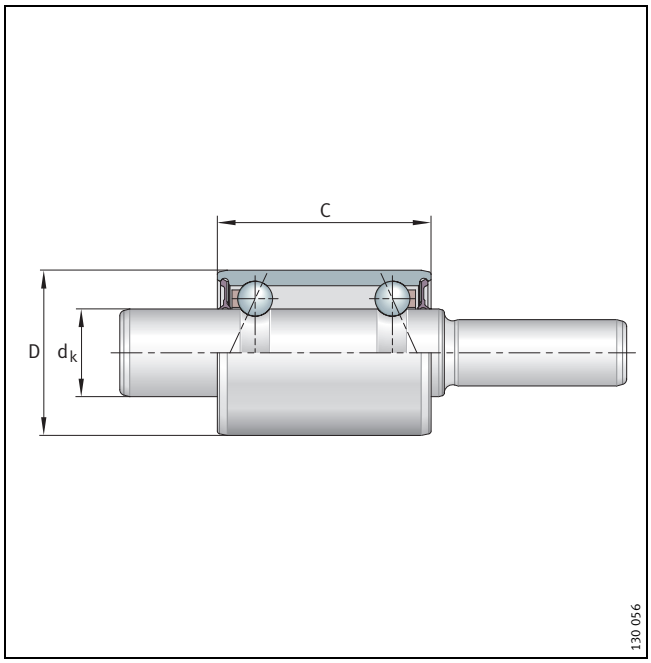


Figure 12 · Dimensions

Fits

Water pump bearings are normally located in the housing by means of a press fit. When determining a suitable press fit, the combination of housing and bearing materials must be taken primarily into consideration.

As approximate guide values, we recommend housing fits in accordance with Table 2.

Table 2 · Housing material and fits

Housing material	Fit according to ISO
Pressure diecast aluminium	S6 / S7 to X6 / X7
Cast iron	P6 / P7 to R6 / R7

For precise calculation of the required press fit, please contact the relevant Applications Departments.

Fitting

⚠ Fitting forces must never be directed through the balls or rollers in the bearing.

Fitting the bearing in the housing – *Figure 13*

- Support the housing on a flat base and ensure that the bore is arranged concentric to the bearing outer ring.
- Apply the fitting force via the end face of the outer ring ①.

Fitting of a mechanical face seal – *Figure 14*

- Support the drive-facing shaft end face ① and the outer ring ② (if necessary by means of the housing).

Pressing on the impeller/drive pulley – *Figure 15*

- When pressing on, for example, the impeller or drive pulley, support the opposite end of the shaft ①.

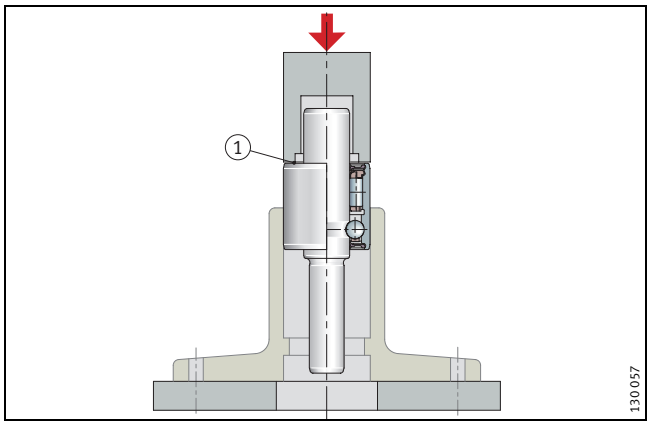


Figure 13 · Fitting in a housing

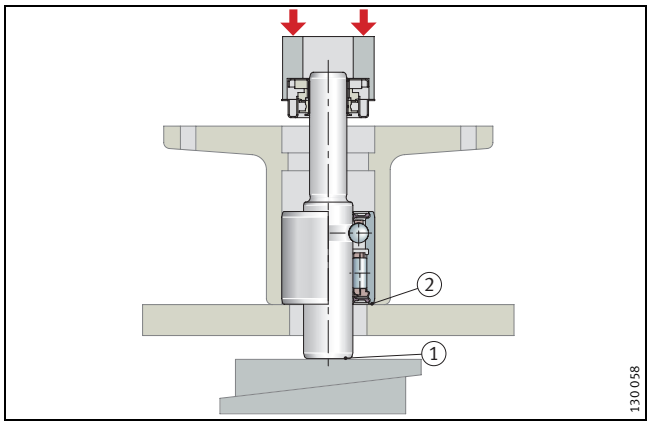


Figure 14 · Fitting of a mechanical face seal

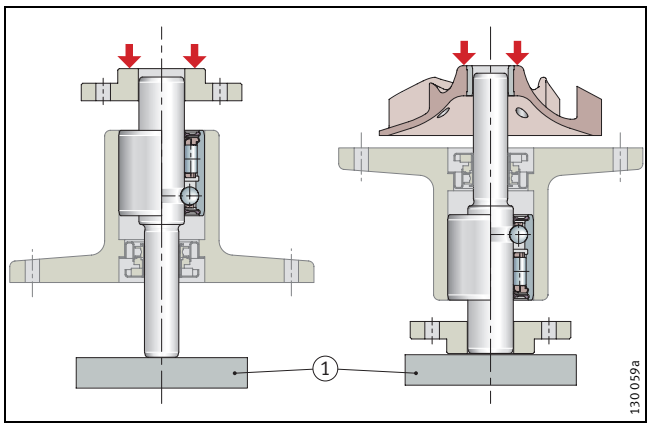


Figure 15 · Fitting of an impeller/drive pulley

Safety guidelines

⚠ The load must not exceed the permissible load for the bearing components.

- The bearing unit must never be loaded more heavily than intended
- If necessary, provide a safety device
- In any case where the bearing loads cannot be clearly determined, please contact the appropriate Application Engineering function.

Avoid unbalanced forces – *Figure 16*

- Always locate components on the shaft as specified

A serious hazard may occur in applications where heavy components are rotating (e.g. fan applications). If the assembly procedure or mounted components contain or induce eccentricities at the mating surfaces, imbalance loads will be generated. If angularity occurs, gyroscopic moments are created due to the tilted, wobbling motion of the misaligned components during rotation. Angularity may also contribute to the eccentric imbalance loads. The magnitudes of these loads increases with the square of the rotational speed. Taken to extremes, imbalance and gyroscopic loads may become high enough to exceed the strength limitations of the shaft material. The dynamic stress reversals may initiate tiny micro-cracks in the hardened case layer. If operation such as this continues, the cracks will propagate across the entire shaft cross section and cause the shaft to fracture, often with catastrophic results.

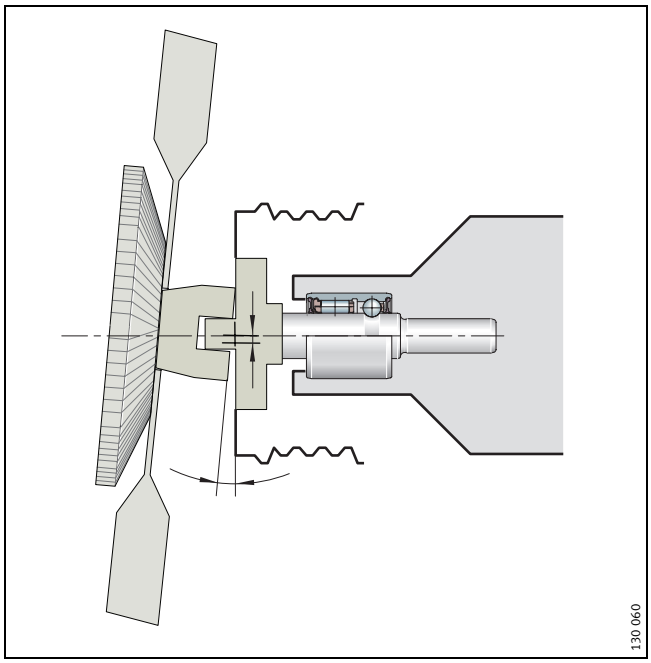


Figure 16 · Safety guidelines

Lubrication and rating life

Lubrication

Water pump bearings are lubricated for life. The standard grease used has been optimised in relation to use in water pump bearings.

The function of the lubricant is, *Figure 17*:

- to form a lubricant film at the contact surfaces which is sufficiently capable of supporting loads
- to dampen running noise
- to protect against corrosion.

We check and ensure that the grease used is compatible with the seals used.

⚠ Other seals must never be used. These could be attacked by the lubricant, rendering the seals ineffective. The bearing would then be quickly destroyed.

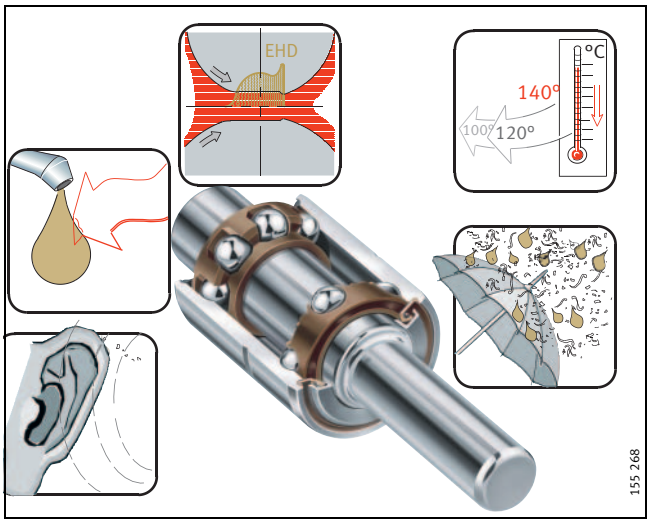


Figure 17 · Requirements for the lubricant

Rating life

The rating life of water pump bearings is calculated using the calculation methods for rolling bearings. The decisive influencing factors are the loads and speeds. However, other factors such as temperature, bearing clearance, load plane(s), lubrication, environmental influences, etc. are also decisive for the bearing rating life.

A comprehensive calculation method for the rating life can be found in the following catalogue:

- INA/FAG Main Catalogue HR1 MATNR 029679141-0000

In order to take the complexity of a specific application into consideration, please contact the appropriate Applications Departments, which can use the relevant computer programs to assist you in design.

Designation system

A new designation system has been developed for water pump bearings, *Figure 18*. The design of the bearing can be deduced from the designation.

① The letter W stands for “Water pump bearing”.

② The second letter indicates the design:

A: Ball/ball, asymmetrical design

B: Ball/ball, symmetrical design

R: Roller/ball

T: Roller/ball, three point contact

F: Roller/ball, four point contact

③ This figure indicates the number of shaft shoulders:

0: Smooth shaft

1: One end of the shaft has a shoulder

2: Both ends of the shaft have shoulders

④ Four digit serial number

⑤ Variant (e.g. different seal material)

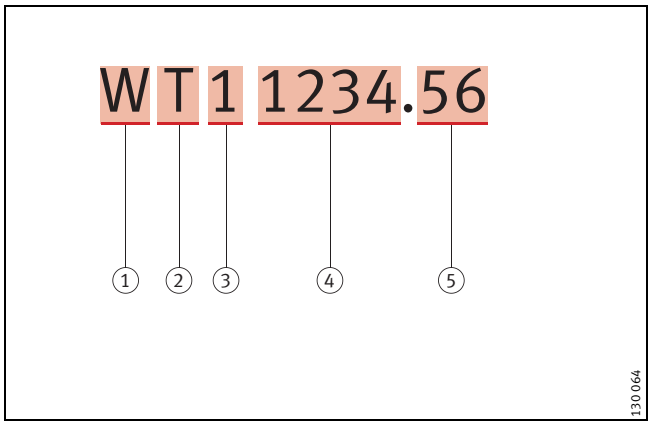
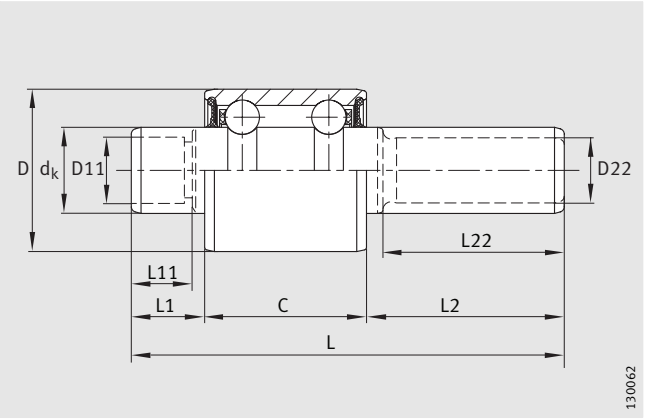


Figure 18 · Designation system

Water pump bearings

Design: Ball/ball



WA, WB

Dimension table · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
24	**WB01693.02**[3]	65	14	31	20	12,038	–	–	–	–	–
	WB01351.1[1)4)]	76,6	13,3	36,3	27	12,055	–	–	–	–	–
	WB01027.3	80	16,5	36,5	27	12,008	–	–	–	–	–
	WB01028.01	81,5	19	32,5	30	12,038	–	–	–	–	–
	WB01083	85	21	37	27	12,038	–	–	–	–	–
	WB01210	86,6	14,2	39,02	33,4	12,738	–	–	–	–	–
30	**WB11098**	65	14,2	28,9	21,9	15,918	–	10	–	27,4	–
	WA07066	65,85	25,01	2,04	38,8	15,918	–	–	–	–	WS2263
	WB21225	66,65	8,3	31,35	27	15,918	13,038	12,038	6,5	30,2	–
	WB17291	67,5	11,6	32,9	23	17,2	–	12	–	29,9	–
	WB01007.1	68	25,5	3,6	38,9	15,918	–	–	–	–	–
	WB01005	68	25,5	3,6	38,9	16	–	–	–	–	–
	WB21318.1[1)5)]	71	14	39	17,8	15,918	12	12,038	11	31,3	WB2 1318.1
	WB05091	73,4	4	30,56	38,84	15,918	–	–	–	–	F-112005
	WB07072	73,41	4,05	30,56	38,8	15,918	–	–	–	–	W2289
	WB07073[1)]	73,41	4,05	30,56	38,8	15,918	–	–	–	–	W2289-1.T1805
	WB11294.06[7)]	77,95	15	35,95	27	15,918	–	12	–	34,95	–
	WB11597	77,95	15	35,95	27	15,918	–	12,038	–	34,95	–
	WB07012	79,1	13,6	38,6	26,9	15,918	–	–	–	–	WS2311
	WB01138.1	80	14	38	28	15,918	–	–	–	–	–
	WB07068	80,04	15,85	37,29	26,9	15,918	–	–	–	–	WS2315-2
	WB11033	82	17	38	27	15,918	–	12,038	–	35	–
	WB07075	82,55	4,06	39,69	38,8	15,918	–	–	–	–	W2325
	WB11756[3)]	82,6	14,2	38,5	29,9	15,918	–	12,038	–	33	–
	WB01069	83,15	16,05	42,1	25	15,918	–	–	–	–	–
	WB11357	83,32	16,15	37,17	30	15,918	–	12,738	–	30,84	–
	WA11280	83,5	15,5	40	28	15,918	–	12,038	–	38	–

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seal
5) No seal
6) Outer ring with locating hole
7) Special outer ring

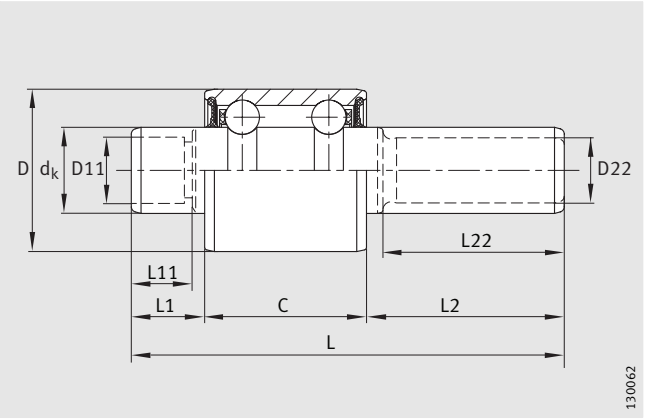
Dimension table (continued) · Dimensions in mm

Outer ring diameter D	Designation	Mounting dimensions									Previous designation
		L	L1	L2	C	d_k	D11	D22	L11	L22	
30	**WB21327**[1)4)]	84	12,5	45,5	26	15	–	12,038	12,5	44	–
	WB05090	84,3	15,3	41,5	27,5	15,918	–	–	–	–	F-112003
	WB11413	84,3	20,8	36,5	27	15,918	–	12,008	–	34,5	–
	WB07071	84,5	17,34	40,26	26,9	15,977	–	–	–	–	WS6332-1
	WB17069	84,63	17,37	40,36	26,9	15,918	–	12,038	–	38,06	WS2333-3
	WA11238.1	85	13,5	43,5	28	15,918	–	12,038	–	38	–
	WA11065.3	85	17	40	28	15,918	–	12,038	–	38	–
	WA27126	85	17	41	26,9	15,918	15,008	12,038	14,2	38,8	WS2334-6.H73C
	WA11002.02	85	17	41	27	15,008	–	12,038	–	38	F-113035
	WB11074.07[7)]	85	17	41	27	15,918	–	12,038	–	35	–
	WB11074	85	17	41,1	27	15,918	–	12,038	–	35	–
	WB07076[1)]	85,89	3	44,09	38,8	15,918	–	–	–	–	W2338.TT2363
	WA11349.2[3)]	86,5	13,5	46	27	15,918	–	12,038	–	44	–
	WB05113[2)]	87,5	13,5	38	36	15,008	–	–	–	–	F-110539
	WB01001[2)]	87,5	13,5	38	36	15,008	–	–	–	–	–
	WB11132	87,5	15,5	50	22	15,918	–	12,038	–	48,5	–
	WB11397	88	16	45	27	15,918	–	12,038	–	42	–
	WB01070	88	18	43	27	15,918	–	–	–	–	–
	WB11073	88,6	14,2	44,4	30	15,918	–	12,038	–	39	–
	WB17070	89	18,1	44	26,9	15,918	–	12,038	–	41,7	WS2350-1
	WB11097.1	89	21	41	27	15,918	–	12	–	35	–
	WB01322	90,1	16	49,1	25	15,918	–	–	–	–	–
	WB05119	92,2	15,3	49,4	27,5	15,918	–	–	–	–	F-45566.3
	WB11464	92,5	15,5	50	27	15,918	–	12,038	–	47	–
	WB01121	94,35	17,5	37,95	38,9	15,918	–	–	–	–	–
	WB11529.01[4)]	94,37	20,91	46,56	27	15,918	–	12	–	44,61	–
	WA17129	95,43	20,91	47,62	26,9	15,918	–	12	–	45,32	WS2376.J3760

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seal
5) No seal
6) Outer ring with locating hole
7) Special outer ring

Water pump bearings

Design: Ball/ball



WA, WB

Dimension table (continued) · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
30	**WA11425**	95,8	16	40,9	38,9	15,918	–	12,038	–	38,9	–
	WB01176	97,5	23,6	35	38,9	15,008	–	–	–	–	–
	WB05074	98	17	42,1	38,9	15,918	–	–	–	–	F-110398
	WB05092	98	17	42,1	38,9	15,918	–	–	–	–	F-112009
	WA01086	98	17,06	42,1	38,8	15,918	–	–	–	–	–
	WB07151	98	17,1	42,1	38,8	15,977	–	–	–	–	W6385
	WB17078	98,5	22,54	37,16	38,8	15,918	–	12	–	34,86	W2387S
	WB17253[3]	100,75	15,5	46,41	38,8	15,918	–	12	–	42,91	W2396S.J3830
	WB27131	100,99	24,09	38,1	38,8	15,921	14,051	12,05	21,79	35,8	W6397-2S
	WB17160	101,5	17,59	45,11	38,8	15,989	–	12,089	–	42,81	W7399-2S
	WB07152	102	17,04	46,16	38,8	15,977	–	–	–	–	W6401-3
	WB07079	102	17,1	46,1	38,8	15,918	–	–	–	–	W2401-3
	WB07138	105,4	20,39	46,21	38,8	15,918	–	–	–	–	W2415-1
	WB07153	105,4	20,39	46,21	38,8	15,977	–	–	–	–	W6415-1
	WB07306[1]	105,66	31,93	34,93	38,8	15,918	–	–	–	–	W2416.T1447
	WB05110[2]	105,9	21,3	45,7	38,9	15,918	–	–	–	–	F-45943C
	WB05104	105,9	21,3	45,8	38,8	15,918	–	–	–	–	F-112045
	WB07139	105,97	20,74	46,43	38,8	15,918	–	–	–	–	W2417-2
	WB17140	105,99	30,09	37,1	38,8	15,918	–	12,007	–	34,8	W2417S
	WB01158	106	20	47,16	38,8	15,918	–	–	–	–	–
	WB11136	109,5	25,12	45,54	38,84	15,918	–	12,038	–	42,22	–
	WB07141	109,52	14,72	56	38,8	15,918	–	–	–	–	W2431
	WB07379	110,39	21,45	50,14	38,8	15,918	–	–	–	–	–
	WB07154	110,39	21,45	50,14	38,8	15,977	–	–	–	–	W6434
	WB01068	111	41	43	27	15,918	–	–	–	–	–
	WB05089	115,5	36,7	39,9	38,9	15,008	–	–	–	–	F-112002
	WB01006	115,75	26,85	50	38,9	15,918	–	–	–	–	–
	WB07142	119,04	37,4	42,84	38,8	15,918	–	–	–	–	W2468
	WB05094	119,1	37,4	42,8	38,9	15,918	–	–	–	–	F-112017
	WB07143	119,89	36,62	44,47	38,8	15,918	–	–	–	–	W2472

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal

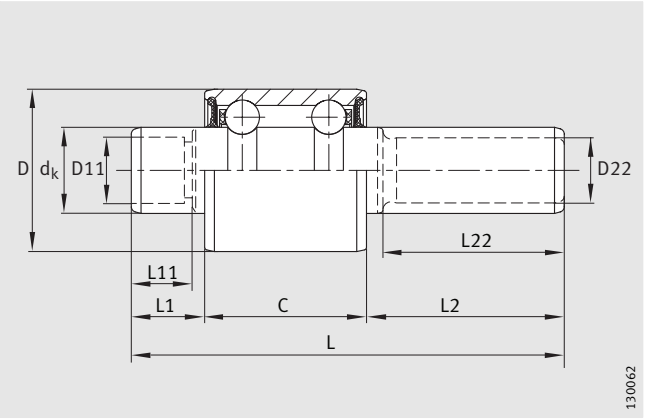
Dimension table (continued) · Dimensions in mm

Outer ring diameter D	Designation	Mounting dimensions									Previous designation
		L	L1	L2	C	d_k	D11	D22	L11	L22	
30	**WB17120**	121,87	37,36	45,71	38,8	15,918	–	12,038	–	43,71	–
	WB17144	122,5	26,38	57,32	38,8	15,918	–	12,038	–	55,22	W2482S.J3177
	WB07155	123	19,09	65,11	38,8	15,977	–	–	–	–	W6484-1
	WB07145	123,19	19,49	64,9	38,8	15,918	–	–	–	–	W2485
	WB07146	123,67	31,84	53,03	38,8	15,918	–	–	–	–	W2486-2
	WB05095	126,1	44,46	42,8	38,8	15,918	–	–	–	–	F-112022
	WB05096	127,1	25,6	62,7	38,8	15,918	–	–	–	–	F-112023
	WB07156	127,79	25,9	63,09	38,8	15,977	–	–	–	–	W6503
	WB07157	128,98	31,84	58,34	38,8	15,977	–	–	–	–	W6507
	WB07161	132,13	40,27	53,06	38,8	15,989	–	–	–	–	W7520-2
	WB05097	133	29,9	64,2	38,8	15,918	–	–	–	–	F-112025
	WB07147[1)]	133,9	25	70,1	38,8	15,918	–	–	–	–	W2527-2.T3706
	WB07158	136,4	39,16	58,44	38,8	15,977	–	–	–	–	W6537
	WB05098	136,4	39,2	58,4	38,9	15,918	–	–	–	–	F-112027
	WB07159	142,87	40,12	63,95	38,8	15,977	–	–	–	–	W6562
	WB07148[1)]	151,59	23,84	88,95	38,8	15,918	–	–	–	–	W2596.T2556
	WB05099	161,9	58,3	64,7	38,9	15,918	–	–	–	–	F-112029
	WB07149	162,31	40,96	82,55	38,8	15,918	–	–	–	–	W2639.T2358
	WB07150	168,28	58,44	71,04	38,8	15,918	–	–	–	–	W2662.T1652
34	**WA21622.01**[3)]	78	14,3	33,7	30	17,008	15,918	12,038	13,3	31,5	–
	WB21472	78	14,3	33,7	30	17,008	15,918	12,038	13,3	31,5	–
	WA11435.03	80	12	34	34	17,008	–	12,038	–	33	–
	WB11272	80	12	34	34	17,008	–	12,038	–	33	–
	WB11550	98	14	37	47	17,008	–	12,055	–	35,8	–

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal

Water pump bearings

Design: Ball/ball



WA, WB

Dimension table (continued) · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
36	**WB15111**[2)]	90,7	13,95	37,85	38,9	17,008	–	15,008	–	34	F-92025
	WB11085[2)]	90,7	14	37,7	39	17,008	–	15,008	–	34	F-92025
	WB11133.1	92,5	17,8	35,7	39	17,008	–	15,008	–	34,5	–
	WB27065	96	17	42	37	20	15,918	15,918	17	41,6	WS2377-2.H43
	WB11066[1)]	104,5	49,5	2	53	23,502	16,984	–	8,5	–	–
	WB11081	112	20	62	30	20	–	12,008	–	45,85	–
	WB21064[1)]	116,7	27,9	35,8	53	23,502	16,984	15,008	8,5	32,2	–
	WB11044	126,4	17	49,4	60	20,004	–	15,002	–	43,7	–
	WB21043	135,2	25	50,2	60	20,004	15,944	15,002	8	41	–
	WB21049[1)]	145,7	33,3	64,4	48	20	14,984	15,002	14,7	63,4	–
	WB21109	156,7	22,3	86,4	48	20	14,984	15,002	3,7	74,4	–
	WB21050[1)]	159,2	33,3	77,9	48	20	15	15,002	14,7	76,2	–
38,1	**WB07162**[1)]	63,5	4,74	4,78	54	18,961	–	–	–	–	WK2250.T1428
	WB27251.1	105,76	39,54	39,22	27	19,861	15,861	13,776	39,54	12,7	–
	WB27108[1)5)]	110,24	39,54	43,7	27	15,861	–	–	–	–	WS2434.T3763
	WB17109	119,05	26,59	51,18	41,3	18,961	–	15,918	–	48,88	WS2468-2
	WB17088	120,5	25,8	40,72	54	19,012	–	12,089	–	38,42	WK6474-2D
	WB27163	125,73	30,86	40,89	54	18,961	15,918	15,918	27,43	38,59	WK2495
	WB17164	127	31,36	41,66	54	18,961	–	15,918	–	39,36	WK2500-2
	WB17089	127	31,37	41,65	54	19,012	–	15,977	–	39,35	WK6500-2
	WB17165	127,25	29,13	44,14	54	18,961	–	15,918	–	41,84	WK2501
	WB27166	127,48	31,03	42,47	54	18,961	15,918	15,918	13,72	40,17	WK2501-3
	WB27090	127,48	31,03	42,47	54	19,012	15,918	15,977	13,72	40,17	WK6501-3B
	WB15100	131,3	28,4	48,8	54,1	18,961	–	15,918	–	44,7	F-112032
	WB15101[2)]	131,6	24,5	53	54,1	18,961	–	15,918	–	49,1	F-112033
	WB17081	133,35	24,21	55,16	54	18,961	–	15,918	–	52,86	WK2525
	WB17091	134,87	37,34	43,55	54	19,012	–	15,977	–	41,25	WK6531
	WB17092	135,64	31,88	49,78	54	19,012	–	15,977	–	47,48	WK6534
	WB17093	141,98	31,75	56,25	54	19,012	–	15,977	–	53,95	WK6559-2
	WB27167	143,48	30,83	58,67	54	18,961	15,918	15,918	12,24	56,37	WK2564-6
	WB27094	143,48	30,83	58,67	54	19,012	15,918	15,977	12,24	56,37	WK6564-6B

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seal
5) No seal

Dimension table (continued) · Dimensions in mm

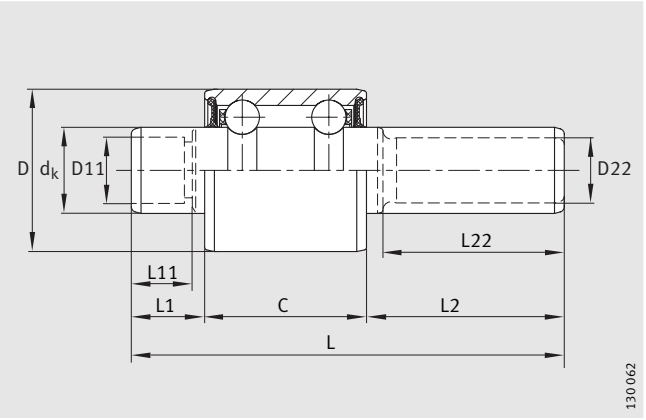
Outer ring diameter D	Designation	Mounting dimensions									Previous designation
		L	L1	L2	C	d_k	D11	D22	L11	L22	
38,1	**WB17168**	144,15	32,47	57,7	54	18,961	–	12,038	–	55,4	WK2567D.M3564
	WB27083	146,05	36,32	55,75	54	18,961	15,918	15,918	13,72	53,45	WK2575-1
	WB15102	150,5	35	61,4	54,1	18,961	–	15,918	–	57,3	F-112038
	WB07099[1)]	152,4	34,93	63,49	54	19,037	–	–	–	–	WK8600.T1617
	WB27084	152,4	35,56	62,86	54	18,961	15,918	15,918	15,26	60,56	WK2600
	WB17085	153,42	45,72	53,72	54	18,961	–	15,918	–	51,42	WK2604
	WB17095	153,42	45,72	53,72	54	19,012	–	15,977	–	51,42	WK6604
	WB15103	153,7	45,9	53,7	54,1	18,961	–	15,918	–	49,6	F-112039
	WB27086	154,23	29,75	70,5	54	18,961	15,939	15,939	8,9	68,2	WK2607A
	WB17096	156,59	39,64	62,97	54	19,012	–	15,977	–	60,67	WK6616-2
	WB27097	157,99	46,74	57,27	54	19,012	15,918	15,977	14,8	54,97	WK6622B
	WB27087	161,93	35,56	72,39	54	18,961	15,918	15,918	15,14	70,09	WK2637
	WB27098	161,93	35,56	72,39	54	19,012	15,918	15,977	15,14	70,09	WK6637B
40	**WB11269.1**	53,7	10,2	1,5	42	24,5	18	–	7,2	–	–
	WB07269	79,1	14,67	27,43	37	15,918	–	–	–	–	WS.559329
	WB11213	79,7	10	47,7	22	24,502	–	12,038	–	45,7	–
	WB11283	84	18	44	22	24,502	–	12,038	–	43	–
	WB11148.1[1)]	84,5	9,5	35	40	24,502	–	12,038	–	34	–
	WB01077[2)]	91	35	6	50	20,004	–	–	–	–	–
	WB11042.1	91,5	18	51,5	22	24,502	–	15,002	–	50,5	–
	WB11130	96,5	22	49,5	25	24,5	–	15,002	–	47,5	–
	WB01181[1)]	101	22	17	62	20,004	–	–	–	–	–
	WB11264	110	24	44	42	20,002	–	12,038	–	40,3	–
	WB11148[1)]	114	19	55	40	24,502	–	12,038	–	53	–
	WB21289	117,5	23,5	51	43	24,5	20,002	15,002	23	47,8	–
	WB21116	117,5	24	51,5	42	24,5	20,002	15,002	23	47,8	–
	WB21219[1)]	129,7	32,9	62,8	34	24,5	–	12,038	23,2	60	–
	WB21053	135,2	25	48,2	62	20,004	15,944	15,002	8	41	–

[1)] Special shaft

[2)] Flinger sleeve

Water pump bearings

Design: Ball/ball



WA, WB

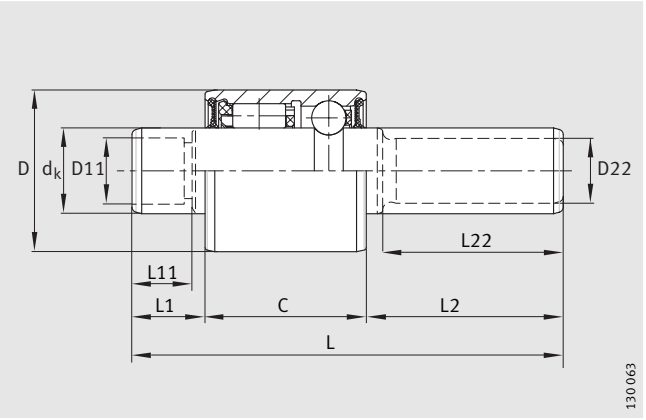
Dimension table (continued) · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
40	**WB11091.1**[1)]	135,7	18,8	56,9	60	24,5	–	15,002	–	53,2	–
	WB21110	140,9	24	56,9	60	24,5	20,002	15,002	23	53,2	–
	WB11000	147	35,5	51,5	60	20,002	–	15	–	47,8	–
	WB21114[1)]	177,6	23,4	92,2	62	20,004	15,944	15,002	6	80,7	–
	WB21129	177,6	23,4	92,2	62	20,004	15,944	15,002	6	80,7	–
47	**WB11601**[1)]	43,6	23	–	20,6	28,4	24,5	–	–	–	–
	WB11602[1)]	60,6	23	–	37,6	28,4	24,5	–	–	–	–
	WB05115[1)5)]	76	20	8	48	26	–	–	–	–	F-226707.3
	WB21320	93	16	42	35	24	15,918	12,038	15	40	–
	WB11128[1)]	111,2	1	62,2	48	26	–	15	–	41	–
	WB21127[1)]	135,2	25	48,2	62	26	15,944	15,002	8	41	–
	WB11113[1)]	137,5	1	61,5	75	26	–	15	–	44	–
	WB11146[1)]	139,2	3,8	64,9	70,5	26	–	15,002	–	43,7	–
	WB21115[1)]	154,2	18,8	64,9	70,5	26	24,5	15,002	18,8	43,7	–
	WB21521	156,7	26	62,7	68	20,004	15,944	15,002	6,5	20	–
52	**WB21388.08**[1)4)]	113,25	22,25	44	47	25	12x1,25	12,038	10	42	–
55	**WA11665**	130	32	50,65	47,35	30	–	15,01	–	47,8	WS2511.H93

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seal
5) No seal

Water pump bearings

Design: Roller/ball



WT, WR, WF

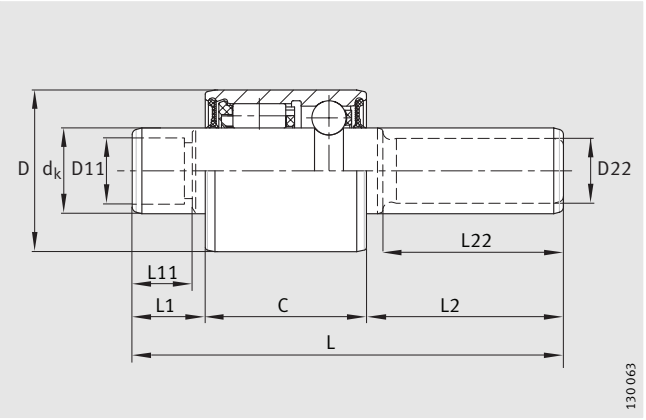
Dimension table · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
24	**WT01504**	80	16,5	36,5	27	12,008	–	–	–	–	–
	WT01579	86	16	38	32	12,038	–	–	–	–	–
30	**WR04037**	68,39	25	4,5	38,8	15,918	–	–	–	–	RW306206-LB6G43
	WR07038	68,39	25,09	4,5	38,8	15,918	–	–	–	–	WN2269.H94
	WR01022[2)]	69,3	26	4,4	38,9	15,918	–	–	–	–	–
	WR17059	76	13,96	35,04	27	15,918	–	12,038	–	32,74	WNS2299-3
	WR17058[8)]	76	16,3	32,7	27	15,918	–	12,038	–	30,7	WNS2299-2
	WT11546.03[3)]	77,95	15	32,95	30	15,918	–	12	–	30,45	–
	WT11640	78,9	15,1	33,8	30	15,918	–	12,038	–	31,5	–
	WR14008	78,9	15,2	33,8	29,9	15,918	–	12	–	31,5	–
	WR11702[3)]	79,12	14,1	35,12	29,9	15,918	–	12	–	32,82	–
	WR17310[4)]	79,26	13,5	35,76	30	15,918	–	12,038	–	33,46	WNS2312-2.J7310
	WR17014	79,26	13,6	35,76	29,9	15,918	–	12,038	–	33,46	WNS2312.J3413
	WR11369.2[3)]	79,3	12,1	37,2	29,9	15,918	–	12	–	33,2	–
	WR14033	79,8	15,5	41,4	22,9	15,918	–	12	–	39,1	RW306212-LB6G43
	WF01138	80	14	38	28	15,918	–	–	–	–	–
	WR17060	81,51	16,18	38,33	27	15,918	–	12,038	–	36,03	WNS2320
	WR11072.1	81,7	13,7	34	34	15,918	–	12,038	–	33,4	–
	WT11422[3)]	82	14	34	34	15,918	–	12,038	–	32,1	–
	WT11422.02	82	14	34	34	15,918	–	12,038	–	32,1	–
	WT11649[3)]	84,3	20,8	33,5	30	15,918	–	12,008	–	31,5	–
	WR17011	84,63	17,27	40,36	27	15,918	–	12,038	–	38,06	WNS2333
	WR11515.03[7)]	85	17	34,2	33,8	15,918	–	12,038	–	33	–
	WR17061	85,1	14,16	43,94	27	15,918	–	12,038	–	41,64	WNS2335
	WR17056	85,82	14,5	41,32	30	15,918	–	12,038	–	39,02	WNS2337-1
	WR01345	86	21	5	60	15,918	–	–	–	–	–
	WF11137.4	86,5	13,5	34,1	38,9	15,918	–	12,038	–	32,45	–

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seals
5) No seal
6) Outer ring with locating hole
7) Special outer ring
8) Rolling element sets laterally transposed

Water pump bearings

Design: Roller/ball



WT, WR, WF

Dimension table (continued) · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
30	**WF11137.6**[3]	86,5	13,5	34,2	38,8	15,918	–	12,038	–	32,2	–
	WR17564	86,7	19,31	40,39	27	15,918	–	12,038	–	38,09	–
	WF11293.1	86,8	13,3	41,5	32	15,918	–	12,038	–	39,9	–
	WR17008	87	17,27	42,73	27	15,918	–	12,038	–	40,43	WNS2342-3
	WT11621[3]	87,3	20,8	36,5	30	15,918	–	12,008	–	34,3	–
	WR14012	87,5	13,5	38	36	15,918	–	12	–	35,7	RW306211-LBF6G43
	WR14012.01[3]	87,5	13,5	38	36	15,918	–	12	–	35,7	IHA-RW306211-LCF5F4M5G75
	WR17062[1]	88,5	19,24	42,26	27	15,918	–	12,038	–	39,96	WNS2348-5
	WF05112	88,75	19,25	33	36,5	16	–	–	–	–	F-93024
	WR17002	89,75	17,34	38,41	34	15,918	–	12,038	–	36,11	WNS2353-3
	WR11036.1	90	18	33,1	38,9	15,007	–	12,038	–	32	–
	WR17288[3]	91	13,85	43,15	34	15,918	–	12	–	40,15	WNS2358.J3848
	WF11586[3][7]	91,5	11,6	34,2	45,7	15,918	–	12,038	–	32,2	–
	WF11284.03[3]	91,5	13,3	34,2	44	15,918	–	12,038	–	32,2	–
	WR17309[1]	92,15	13,19	40,16	38,8	15,918	–	12,038	–	37,86	–
	WR17004	92,5	15	38,7	38,8	15,918	–	12	–	36,4	WN2364-7S.H94
	WR24032	92,5	16,5	37,2	38,8	15,918	12	12	14	34,9	RCHL-RW306201-LB6G43
	WR11368.2[3]	93,9	17,4	37,6	38,9	15,918	–	12	–	35	–
	WR17119	93,95	14,99	40,16	38,8	15,918	–	12,038	–	37,86	WN2369S
	WF11551[3]	94	17	38,1	38,9	15,918	–	12,008	–	35,9	–
	WF01011	94,5	15,7	39,9	38,9	15,008	–	–	–	–	–
	WR05107	94,5	15,7	39,9	38,9	15,008	–	–	–	–	F-110207.2
	WT11075	94,5	14,5	41,1	38,9	15,008	–	12	–	40	–
	WR17280	94,9	18,3	46,6	30	15,918	–	12	–	33,5	–
	WR11599.01[3]	94,9	18,3	46,7	29,9	15,918	–	12	–	33,5	–
	WR17040	95,45	14,33	42,32	38,8	15,918	–	12,038	–	40,02	WN2375-4S
	WF11131	96,3	14,6	47,9	33,8	15,918	–	12,038	–	46,4	–
	WR11037.1	96,4	18	39,5	38,9	15,008	–	12,067	–	36,6	–

[1] Special shaft
[2] Flinger sleeve
[3] R-SAFE seal
[4] Rotary shaft seal
[5] No seal
[6] Outer ring with locating hole
[7] Special outer ring

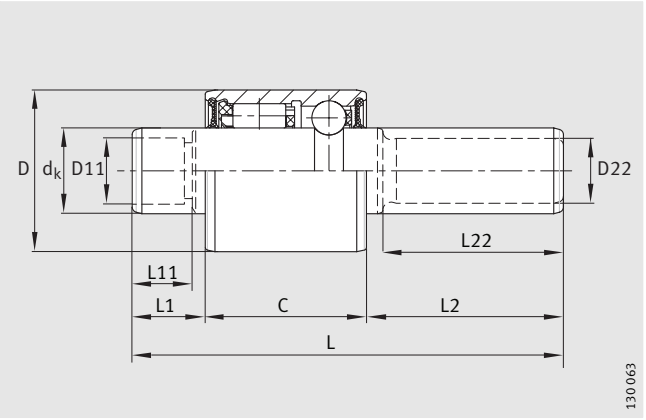
Dimension table (continued) · Dimensions in mm

Outer ring diameter D	Designation	Mounting dimensions									Previous designation
		L	L1	L2	C	d_k	D11	D22	L11	L22	
30	**WR05058.01**	98	17	42,1	38,9	15,918	–	–	–	–	F-110557.03
	WF01386.1	98	17	42,1	38,9	15,918	–	–	–	–	–
	WF11017.5[3)]	98	17	42,1	38,9	15,918	–	12,038	–	40,1	–
	WF11017.6	98	17	42,1	38,9	15,918	–	12,038	–	40,1	–
	WF11017.3	98	17	42,1	38,9	15,918	–	12,038	–	40,35	–
	WR24015	98,5	17,1	51,5	29,9	15,918	12	12	15	49,2	RCHL-RW306221-LCF5G75
	WR17041	98,79	18,53	41,46	38,8	15,918	–	12,038	–	39,16	WN2388-2S
	WT01300	99,5	15,6	39,9	44	15,008	–	–	–	–	–
	WR17043	99,85	10,94	50,11	38,8	15,918	–	12,038	–	47,81	WN2393S
	WR11692[8)]	100	19,4	41,8	38,8	15,918	–	12	–	39,5	–
	WR11304.1[3)]	100,75	15,5	46,45	38,8	15,918	–	12	–	44,1	WN2396-1S.J3855
	WR07042	102	17	46,2	38,8	15,918	–	–	–	–	WN2401-5
	WR17273[8)]	102,16	23,64	39,72	38,8	15,918	–	12,038	–	37,42	WN2402-1S
	WR17320	102,21	23,6	39,77	38,8	15,918	–	12,038	–	37,4	–
	WR17121	103	16,5	47,7	38,8	15,918	–	12	–	45,4	WN2405S.H94
	WR14000.01[3)]	103	16,5	47,7	38,9	15,918	–	12	–	45,4	RCHL-RW306203-LC5F4L5G68
	WR14000	103	16,5	47,7	38,9	15,918	–	12	–	45,4	RCHL-RW306203-LB6G43
	WR07044	103,12	27,98	36,34	38,8	15,918	–	–	–	–	WN2406-9
	WT11560[1)]	103,5	19,5	45,1	38,9	15,918	–	12,038	–	43,1	–
	WR17045[1)]	103,5	19,54	45,16	38,8	15,918	–	12,038	–	42,86	WN2407-5S.T3377
	WR05118	104,1	19	50,6	34,5	15,918	–	–	–	–	F-45376.3
	WR07046	105,4	20,39	46,21	38,8	15,918	–	–	–	–	WN2415-1
	WF01013	105,75	14,25	39,5	52	15,008	–	–	–	–	–
	WR05110[2)]	105,9	21,3	45,7	38,9	15,918	–	–	–	–	F-45943 C
	WF01016.3	105,95	19,55	47,5	38,9	16	–	–	–	–	–
	WR11040[2)]	106	23	44,1	38,9	15,918	–	12,038	–	39,6	–

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seal
5) No seal
6) Outer ring with locating hole
7) Special outer ring
8) Rolling element sets laterally transposed

Water pump bearings

Design: Roller/ball



WT, WR, WF

Dimension table (continued) · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
30	**WR11034.1**	106	27,6	39,5	38,9	15,008	–	12,067	–	36,6	–
	WF01016[2)6)]	106,2	19,8	47,5	38,9	16	–	–	–	–	–
	WR17047	106,5	22,06	45,64	38,8	15,918	–	12,038	–	43,34	WN2419S
	WR17266	108	35	46	27	15,918	–	12,038	–	44	WNS2425
	WF15047	108,3	18,4	51	38,9	15,918	–	12,038	–	48	F-110734
	WT21639	108,5	22,1	47,6	38,8	15,918	12,038	12,038	21	45,3	–
	WR14018	108,8	20,5	49,5	38,8	15,918	–	12	–	47,2	RCHL-RW306215FS21-LCF5G75
	WR15093[1)]	109,05	33,05	41,5	34,5	15,918	14,987	–	30,85	–	F-112013
	WF01009[6)]	109,25	17,75	39,5	52	15,008	–	–	–	–	–
	WF05117	109,25	17,75	39,5	52	15,008	–	–	–	–	F-110640
	WR01010.1	109,25	17,75	39,5	52	15,008	–	–	–	–	–
	WF11337	109,25	17,75	39,5	52	15,008	–	12,038	–	38	–
	WR14019[8)]	109,9	29,3	41,8	38,8	15,918	–	12	–	39,5	RCHL-RW306216-LCF5G75
	WF11107.1	110	21,7	44,3	44	15,918	–	12,038	–	42,8	–
	WT11247	110	21,7	49,4	38,9	15,918	–	12,038	–	42,8	–
	WT11694	110	21,7	49,5	38,8	15,918	–	12,038	–	42,2	
	WR11159.1	110,3	18,8	39,5	52	15,008	–	12,067	–	37,5	–
	WR07009	110,39	21,45	50,14	38,8	15,918	–	–	–	–	WN2434
	WR17049	110,39	21,45	50,14	38,8	15,918	–	12,038	–	47,84	WN2434-4S
	WT11609	113,9	22,4	52,6	38,9	15,918	–	12,038	–	50,1	–
	WT11588.01	114,4	20,3	55,2	38,9	15,008	–	13,038	–	10	–
	WF05106[1)]	115,5	36,7	39,9	38,9	15,008	–	–	–	–	F-113080
	WF01014[2)]	115,75	17,75	46	52	16	–	–	–	–	–
	WR14009	116,95	17	61,15	38,8	15,918	–	12,038	–	58,85	RCHL-RW306223-LC5G68
	WF11039.1	118,9	23,4	39,5	56	15,008	–	12,067	–	36,6	–
	WR17050	121,8	31,51	51,49	38,8	15,918	–	12,038	–	49,19	WN2479S.RIT
	WR05131[2)]	121,9	37,3	45,7	38,9	15,918	–	–	–	–	F-44018C

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seal
5) No seal
6) Outer ring with locating hole
7) Special outer ring
8) Rolling element sets laterally transposed

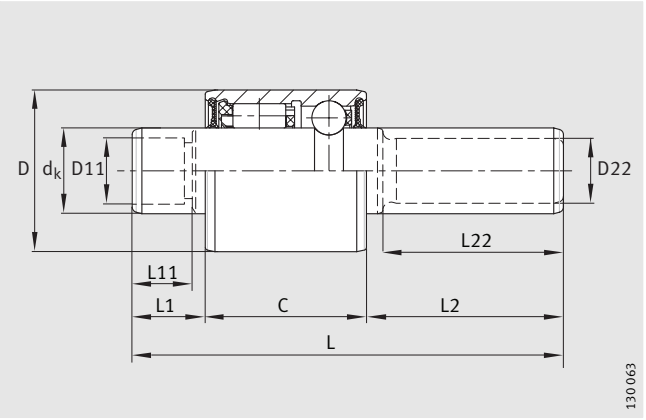
Dimension table (continued) · Dimensions in mm

Outer ring diameter D	Designation	Mounting dimensions									Previous designation
		L	L1	L2	C	d_k	D11	D22	L11	L22	
30	**WR05108**[1)2)]	121,9	37,3	45,7	38,9	15,918	–	–	–	–	F-44018 AR-C
	WR01008[6)]	125,25	17,75	55,5	52	15,008	–	–	–	–	–
	WR05105	127,43	22	66	39	15,918	–	–	–	–	F-110023C
	WR17007	127,55	23,46	65,29	38,8	15,918	–	12,038	–	48,84	–
	WR11360.1	127,8	23,3	65,6	38,9	15,918	–	12,04	–	48,6	–
	WR07051	139	23,11	77,09	38,8	15,918	–	–	–	–	WN2547
	WF11032.1[1)6)]	142,65	56,25	47,5	38,9	16	15,008	–	52,15	–	–
	WR01019	144	46	38	60	15,918	–	–	–	–	–
	WR01429.2	147,11	26	82,21	38,9	15,918	–	–	–	–	WR0 1429.2
	WR17279	147,11	26	82,31	38,8	15,918	–	12,038	–	53	–
34	**WF21222**	98	17	42,1	38,9	17,008	15,918	12,038	16	40,6	–
	WT11593	104,08	19	46,18	38,9	17,008	–	15,918	–	43,8	–
	WT11628	104,9	17,5	48,6	38,8	17,008	–	12,038	–	46	–
	WT11590	111	21	38	52	17,008	–	12	–	35,5	–
	WF21211.1	111	24	40	47	17,008	15,008	12,055	23	39	–
	WT11079	120,5	28,8	44,7	47	17,008	–	12,038	–	39	–
35	**WR14007**	85,5	15,5	40,1	29,9	18	–	12	–	37,8	RCHL-RW357013-LC5G68
	WR24035	92,5	16,5	37,2	38,8	18	15,918	12	15	34,9	RW357002-LB6G43
	WR24034	95	17,5	38,7	38,8	18	12	12	15	36,4	RCHL-RW357004-LC5G43
	WR24034.01[3)]	95	17,5	38,7	38,8	18	12	12	15	36,4	RCHL-RW357004-LC5F4L5G68
	WR24006	96	26	40,1	29,9	18	15,918	12	7	37,8	RCHL-RW357006-LC5G68
	WR24025	100,4	16,5	45,1	38,8	18	15,918	12	14,5	42,8	RCHL-RW357001-LD5LC5G75
	WR24038	103,2	26,4	38	38,8	18	15,918	12	24,5	35,7	RCHL-RW357003-LC5G75
	WR14026.01	135,7	18,8	60,9	56	18	–	12,038	–	58,6	–

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seal
5) No seal
6) Outer ring with locating hole

Water pump bearings

Design: Roller/ball



WT, WR, WF

Dimension table (continued) · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
36	**WF11067**	101,5	17	40,5	44	16,95	–	12,038	–	38,5	–
	WF21141[2)]	116,45	19,7	57,75	39	20	16	16	18,75	54	–
	WF21088.1	122,5	29	41,5	52	17,008	15,008	12,055	28	40,85	–
	WF21143[2)]	124,7	27	45,7	52	20	15,008	12,055	26,8	42,8	–
	WR21112	125,5	25,25	48,25	52	20	15,002	15,002	22,5	44,5	–
	WR21173	125,5	25,25	48,25	52	20	15,002	15,002	22,5	44,5	–
	WF17053	126	21	53,1	52	20	–	15,01	–	51,2	WNS2496
	WF21089	130,7	33	45,7	52	17,008	15,008	12,055	32	43,8	–
	WF21544	148	23	73	52	17,008	15,008	12,038	22	71	–
38,1	**WR11078.1**	73,1	26,1	–	47	18,961	15,918	–	25	–	–
	WR15088	74,5	25,5	2	47	18,961	15,918	–	24	–	F-110607-20
	WR15114	79,9	24	1,9	54	18,961	15,918	–	20,3	–	F-110483
	WR05114.01	79,9	24	1,8	54,1	18,961	–	–		–	F-110483.1
	WR15114.02[1)]	79,9	24	1,8	54,1	18,961	15,918	–	20,3	–	F-110483.3
	WR07017	90,88	33,32	3,58	54	18,961	–	–	–	–	WKN2357.L198
	WR17337	114,9	17,9	43,02	54	18,961	–	12,038	–	40,72	–
	WR17399	114,93	21,99	38,96	54	18,961	–	15,918	–	36,66	WKN2452-2
	WR17018	115,33	23,47	37,88	53,98	18,961	–	12,038	–	35,58	WKN2454D
	WR27010	118,15	19	51,15	48	18,961	15,918	12,038	17,54	48,85	WNS2465-1
	WR07100	119,36	61,8	3,58	54	18,961	–	–	–	–	WKN2469
	WR17019	120,5	25,8	40,72	54	18,961	–	15,918	–	38,42	WKN2474-2
	WR17321	121,8	23,47	44,35	54	18,961	–	12,038	–	42,05	–
	WR15121	123,5	23,9	45,5	54,1	18,961	–	15,906	–	41,18	F-45981
	WR15116[1)]	124,87	22	48,8	54,1	18,961	–	15,918	–	45,3	F-110404
	WR17020	125,98	28	44	54	18,961	–	12,038	–	41,7	WKN2495D
	WR17285	126	30,52	41,5	54	18,961	–	12,038	–	39,2	–
	WR24023	127,36	18	68,26	41,1	18,961	15,918	12,038	15,5	65,96	RCHL-RW387404A-LC5G68
	WR17021	128	18	56,02	54	18,961	–	15,918	–	53,72	WKN2503
	WR17022	128,88	24,1	50,8	54	18,961	–	12,038	–	48,5	WKN2507-2D.TJ3311
	WR15120	131,6	24	53,75	53,9	18,961	–	15,906	–	49,3	F-45646
	WR27023	134,62	31,74	48,9	54	18,961	15,918	15,918	7,1	46,6	WKN2530
	WR17025	134,87	30,09	50,8	54	18,961	–	15,918	–	48,5	WKN2531-3

1) Special shaft
2) Flinger sleeve

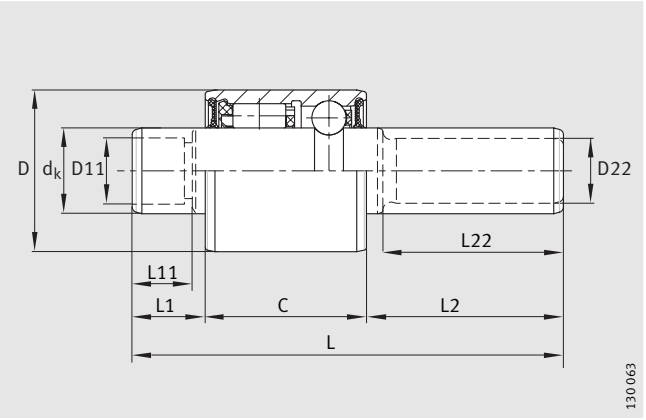
Dimension table (continued) · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
38,1	**WR17013**	134,87	37,34	43,55	54	18,961	–	12,038	–	41,25	WKN2531-9D
	WR17024	134,87	37,34	43,55	54	18,961	–	15,918	–	41,25	WKN2531
	WR17227	134,88	30,1	50,8	54	18,961	–	12,038	–	48,5	WKN2531-8D
	WR17027	135,64	31,88	49,78	54	18,961	–	15,918	–	47,48	WKN2534
	WR17037	135,64	31,88	49,78	54	19,012	–	15,977	–	47,48	WKN6534
	WR17028	137,92	33,14	50,8	54	18,961	–	12,038	–	48,5	WKN2543-3D.TJ3315
	WR17029	138,27	24,11	60,18	54	18,961	–	12,038	–	57,88	WKN2544D
	WR25109	142,3	39,43	48,77	54,1	18,966	15,918	15,918	35,8	45,3	F-45648
	WR27030	143,48	30,83	58,67	54	18,961	15,918	15,918	12,24	56,37	WKN2564-5.TJ1962
	WR17117	144,15	32,47	57,7	54	18,961	–	12,038	–	55,4	WKN2567D
	WR17031	144,7	32,05	58,67	54	18,961	–	15,918	–	56,37	WKN2569.TJ3222
	WR14024	148,85	28,24	66,63	54	18,961	–	12,038	–	64,33	IH-RW387405AFS2-LC5G75 (L)
	WR27101[1)]	151,87	22,5	75,39	54	18,961	18,009	8,395	19,5	36,91	WKN2597.T3637
	WR17118	152,15	40,47	57,7	54	18,961	–	12,038	–	55,4	WKN2599D
	WR17032	153,42	45,75	53,69	54	18,961	–	15,918	–	51,39	WKN2604
	WR17033	156,59	39,62	62,99	54	18,961	–	15,918	–	60,69	WKN2616
	WR27034	157,99	46,74	57,27	54	18,961	15,918	15,918	14,78	54,97	WKN2622
	WR17036	174,75	52,53	68,24	54	18,961	–	12,038	–	65,94	WKN2688-7D
	WR27035	174,75	52,53	68,24	54	18,961	15,918	15,918	14,1	65,94	WKN2688
40	**WR01565**	62,65	22	1,75	38,9	20,004	–	–	–	–	–
	WF01555[6)]	85,25	1,75	33,5	50	20,004	–	–	–	–	–
	WR01418[6)]	85,25	1,75	33,5	50	20,004	–	–	–	–	–
	WT11353	103,3	20,5	43,9	38,9	20,004	–	12,038	–	38,9	–
	WF11549	129,8	27	52,8	50	20,004	–	12,038	–	47,4	–
	WF11672[4)]	132	17	61,5	53,5	20,004	–	16	–	56,5	–
	WF11061[6)]	143	31,5	61,5	50	20	–	16	–	55	–
	WF21171.3[1)]	151	51,6	49,4	50	20	14,5	16	49	44	–
	WF11192[6)]	168	45	73	50	20,004	–	12,038	–	64	–

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seal
5) No seal
6) Outer ring with locating hole

Water pump bearings

Design: Roller/ball



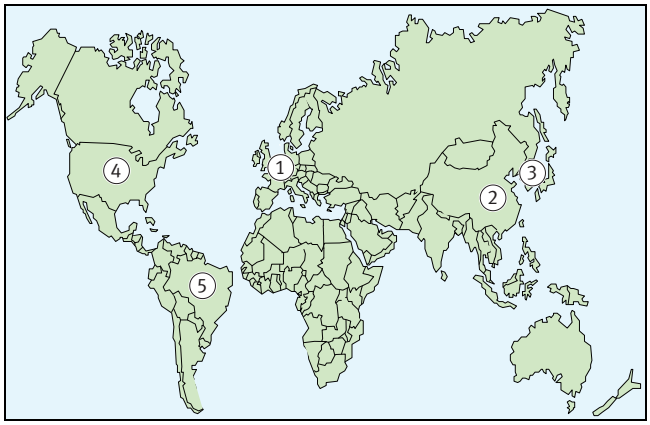
WT, WR, WF

Dimension table (continued) · Dimensions in mm

Outer ring diameter	Designation	Mounting dimensions									Previous designation
D		L	L1	L2	C	d_k	D11	D22	L11	L22	
42	**WR04031**[1)]	80	32	2,1	45,9	22	–	–	–	–	IH-RW428620-LD5G75
	WR24020	115,5	26,5	43,1	45,9	22	18	13	24	40,8	RCHL-RW428604-LCF5G75
	WR24021	127,5	26,6	55	45,9	22	18	12	24,8	52,7	RCHL-RW428621A-LCF5G75
	WR24022	129,5	28,5	45,1	55,9	22	18	12	26,15	42,8	RCHL-RW428623A-LCF5G75
	WR14003.01[1)3)]	135,7	18,8	61	55,9	22	–	12,038	–	58,7	RCHL-RW428617-LD5F4L5G68
	WR14016	142	41	55,1	45,9	22	–	16	–	52,8	RCHL-RW428602-LC5G68
47	**WT11527**	124	27	47	50	24	–	16	–	40	–
	WT21156[6)]	124	27	47	50	24	20	12,038	25,5	46	–
	WT11352[6)]	134	27	57	50	24	–	16	–	50	–
47,625	**WR17626**	137,93	33,15	50,8	54	25,4	–	12,038	–	48,5	WNS2543D
55	**WR01123**[1)]	72	10	2	60	25,021	–	–	–	–	–
	WR01125	86	25	1	60	25,061	–	–	–	–	–
	WR11122	110	25	25	60	25,061	–	16,056	–	24	–
	WR11104[2)]	127	25	42	60	25,061	–	15,056	–	37,5	F-200907
	WR17104[2)]	127	25	42	60	25,061	–	15,056	–	37,5	WNS2500-1
	WR17103[2)]	127	25	42	60	25,061	–	16,056	–	38,75	WNS2500
	WR11142[2)]	137	25	52	60	25,061	–	16,056	–	47,5	–
	WR27105	145,54	31,88	53,66	60	25,061	18,961	15,918	28,7	51,36	WNS2572.T3264
	WF11228	150	30	63,5	56,5	25,061	–	16	–	61,5	WNS2590
	WR27106	153,29	32	61,29	60	25,061	18,961	15,918	13,59	58,99	WNS2603
	WR27107	156,6	35,43	61,17	60	25,061	18,961	15,918	13,59	58,87	WNS2616-6
	WR11103.4	187	25	62	100	25,061	–	15,056	–	42	–

1) Special shaft
2) Flinger sleeve
3) R-SAFE seal
4) Rotary shaft seal
5) No seal
6) Outer ring with locating hole

Addresses



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