

# Seals for Needle Roller Bearings

## Features

IKO Seals for Needle Roller Bearings have a low sectional height and consist of a sheet metal ring and special synthetic rubber.

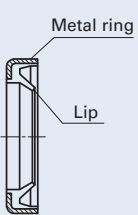
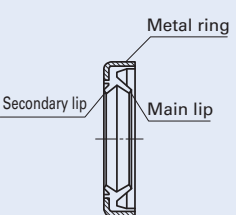
As these seals are manufactured to the same sectional height as IKO Needle Roller Bearings, grease leakage and the penetration of foreign particles can be effectively prevented by fitting them directly to the sides of combinable bearings shown in the dimension table.

When fitting seals to needle roller bearings with inner ring, wide inner rings (see page H2) must be used, as shown in the mounting examples.

## Types

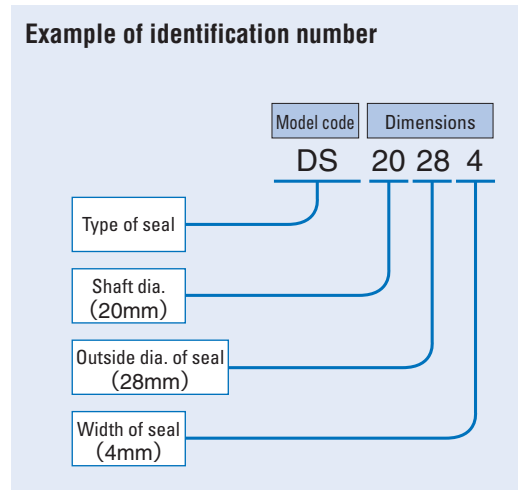
Seals for Needle Roller Bearings are available as shown in Table 1.

Table 1 Seal type

Type	Single lip	Double lips
Structure		
Model code	OS	DS

## Identification Number

The identification number of Seals for Needle Roller Bearings consists of a model code and dimensions. An example of an identification number is shown as follows.



## Accuracy

Tolerances of Seals for Needle Roller Bearings are based on JIS B 2402-1.

Tolerances of outside diameter and width are based on Tables 2 and 3, respectively.

Table 2 Tolerance of outside diameter unit: mm

Nominal outside diameter		Tolerance	
Over	Incl.	High	Low
—	30	+ 0.09	+ 0.04
30	50	+ 0.11	+ 0.05
50	80	+ 0.14	+ 0.06
80	120	+ 0.17	+ 0.08

Table 3 Tolerance of width unit: mm

Nominal size of width		Tolerance	
Over	Incl.	High	Low
—	6	+ 0.2	- 0.2
6	10	+ 0.3	- 0.3

## Precautions for Use

① For the single lip OS type, the lip has to face inward when using the seal to prevent grease leakage, and outward to prevent the penetration of foreign particles. The DS type of double-lips is effective for prevention of grease leakage and dust penetration. However, when the main purpose is to prevent grease leakage, the main lip should face inward, and when used mainly to prevent dust penetration, it should face outward.

② The permissible temperature range is -20 ~ +100°C.

For use at higher or lower temperatures, a special seal is required. Please contact IKO for further information.

③ The limiting peripheral speed of shaft depends on the conditions of use, but is normally 6 to 8 m/s.

Double this speed is possible if the conditions (lubrication, temperature, shaft finish, etc.) are good.

## Mounting

When inserting the shaft, damage to the lip should be prevented by chamfering the end of the shaft, as shown in the upper part of Fig. 1. When this cannot be performed, a mounting bushing should be used, as shown in the lower part of Fig. 1.

When press fitting the seal to the housing, do not strike it directly, but fit it gently, using a suitable tool.

To prevent early wear and heat generation at the seal surface, it is necessary to thickly coat the tip of the lip for the OS type, or to fill the space between the two lips for the DS type, with bearing grease.

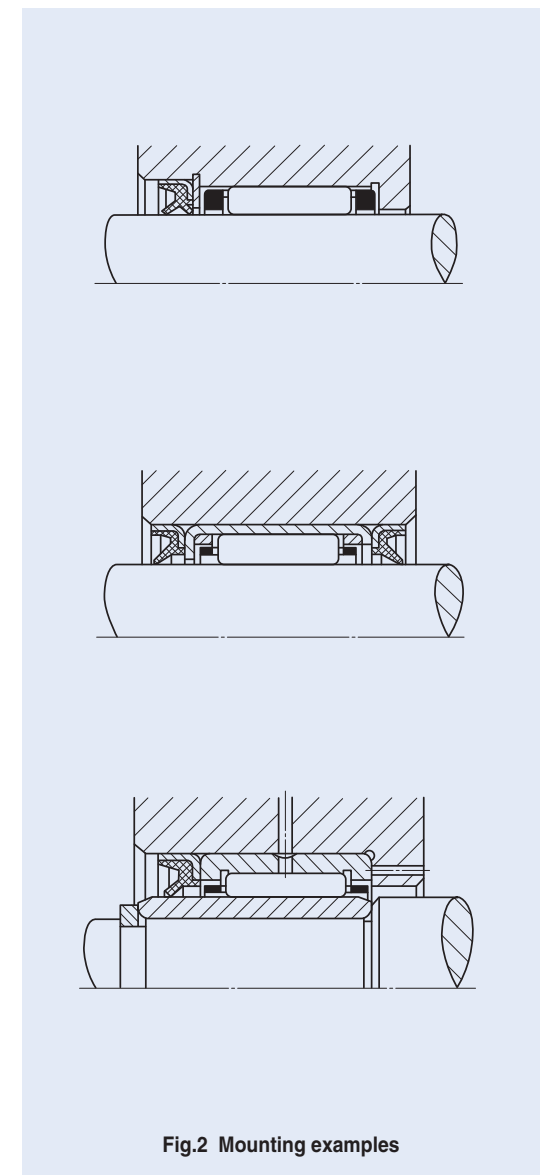
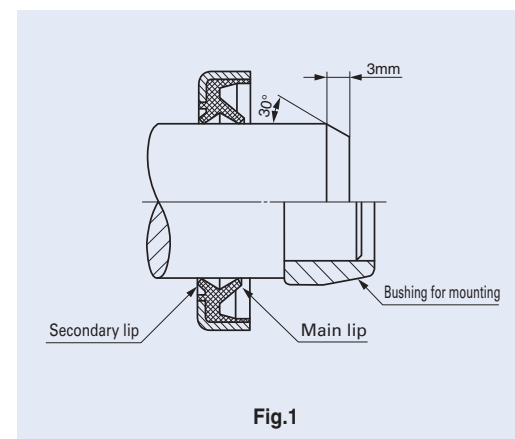
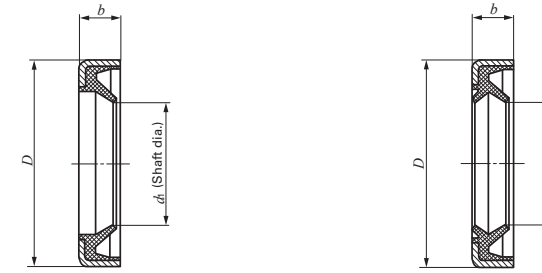


Fig.2 Mounting examples



Shaft dia. 6 – 15mm

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
6	OS 6102.5	—	6	10	2.5	TLA 69Z	—	—	—
7	OS 7112.5	—	7	11	2.5	TLA 79Z	—	—	—
8	OS 8123	—	8	12	3	TLA 810Z	—	—	—
	OS 8153	—				TA 810Z TA 815Z TA 820Z YT 810	RNA 496 TAF 81512 TAF 81516	RNAF 81510	—
9	OS 9133	—	9	13	3	TLA 910Z TLA 912Z	—	—	—
	OS 9163	—				TA 912Z TA 916Z YT 912	TAF 91612 TAF 91616	—	—
10	OS 10143	—	10	14	3	TLA 1010Z TLA 1012Z TLA 1015Z	—	—	—
	OS 10173	—				TA 1010Z TA 1012Z TA 1015Z TA 1020Z	TAF 101712 TAF 101716	RNAF 101710	—



OS

DS

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
12	OS 12163	—	12	16	3	TLA 1210Z YTL 1210	—	—	—
	OS 12183	—				TLA 1212Z	—	—	—
	OS 12193	—				TA 1212Z TA 1215Z TA 1220Z TA 1225Z YT 1212	TAF 121912 TAF 121916	—	—
13	OS 13193	—	13	19	3	TLA 1312Z	—	—	—
14	OS 14203	DS 14203	14	20	3	TLA 1412Z TLA 1416Z	—	—	—
	OS 14223	DS 14223				TA 1416Z TA 1420Z	RNA 4900 TAF 142216 TAF 142220	RNAF 142213 RNAFW 142220	—
15	OS 15213	DS 15213	15	21	3	TLA 1512Z TLA 1516Z TLA 1522Z	—	—	—
	OS 15223	DS 15223				TA 1510Z TA 1512Z TA 1515Z TA 1520Z TA 1525Z	—	—	—
	OS 15235	DS 15235				—	TAF 152316 TAF 152320	RNAF 152313 RNAFW 152320	—

L

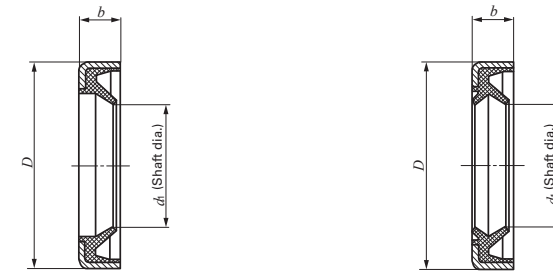
OS  
DS

**SEALS FOR NEEDLE ROLLER BEARINGS**



Shaft dia. 16 – 19mm

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
16	OS 16223	DS 16223	16	22	3	TLA 1612Z TLA 1616Z TLA 1622Z	—	—	—
	OS 16243	DS 16243	16	24	3	TA 1616Z TA 1620Z	RNA 4901 RNA 6901 TAF 162416 TAF 162420	RNAF 162413 RNAFW 162420	—
	OS 16285	DS 16285	16	28	5	—	—	RNAF 162812	—
17	OS 17233	DS 17233	17	23	3	TLA 1712Z	—	—	—
	OS 17243	DS 17243	17	24	3	TA 1715Z TA 1720Z TA 1725Z YT 1715 YT 1725	—	—	—
	OS 17253	DS 17253	17	25	3	—	TAF 172516 TAF 172520	RNAF 172513 RNAFW 172520	—



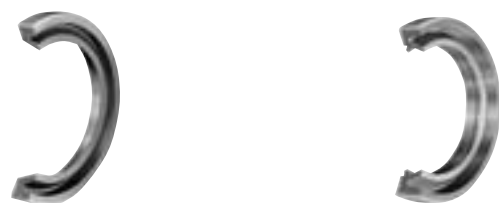
OS

DS

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
18	OS 18243	DS 18243	18	24	3	TLA 1812Z TLA 1816Z	—	—	—
	OS 18253	DS 18253	18	25	3	TA 1813Z TA 1815Z TA 1817Z TA 1819Z TA 1820Z TA 1825Z	—	—	—
	OS 18264	DS 18264	18	26	4	—	RNA 49/14 TAF 182616 TAF 182620	RNAF 182613 RNAFW 182620	—
19	OS 19274	—	19	27	4	TA 1916Z TA 1920Z	TAF 192716 TAF 192720	—	—

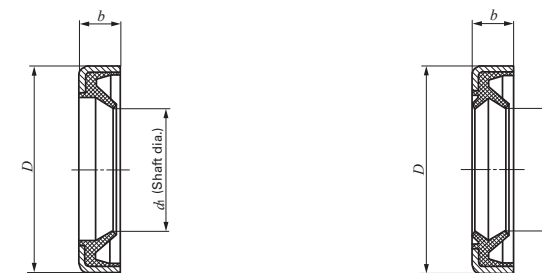
L

OS  
DS



Shaft dia. 20 – 24mm

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
20	<b>OS 20264</b>	<b>DS 20264</b>	20	26	4	TLA 2012Z TLA 2016Z TLA 2020Z TLA 2030Z	—	—	—
	<b>OS 20274</b>	<b>DS 20274</b>	20	27	4	TA 2015Z TA 2020Z TA 2025Z TA 2030Z YT 2015 YT 2025	—	—	—
	<b>OS 20284</b>	<b>DS 20284</b>	20	28	4	TA 202820Z YT 202820	RNA 4902 RNA 6902 TAF 202816 TAF 202820	RNAF 202813 RNAFW 202826	—
	<b>OS 20304</b>	<b>DS 20304</b>	20	30	4	—	—	—	NAX 2030 NBX 2030
	<b>OS 20324</b>	<b>DS 20324</b>	20	32	4	—	—	RNAF 203212 RNAFW 203224	—
	<b>OS 20326</b>	<b>DS 20326</b>	20	32	6	—	—	RNAF 203212 RNAFW 203224	—
21	<b>OS 21294</b>	<b>DS 21294</b>	21	29	4	TA 2116Z TA 2120Z YT 2116 YT 2120	TAF 212916 TAF 212920	—	—



OS

DS

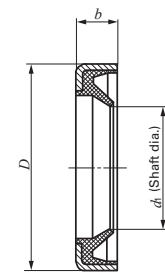
Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
22	<b>OS 22284</b>	<b>DS 22284</b>	22	28	4	TLA 2212Z TLA 2216Z TLA 2220Z	—	—	—
	<b>OS 22294</b>	—	22	29	4	TA 2210Z TA 2215Z TA 2220Z TA 2225Z TA 2230Z	—	—	—
	<b>OS 22304</b>	<b>DS 22304</b>	22	30	4	TA 223016Z TA 223020Z YT 223016 YT 223020	RNA 4903 RNA 6903 TAF 223016 TAF 223020	RNAF 223013 RNAFW 223026	—
24	<b>OS 24314</b>	<b>DS 24314</b>	24	31	4	TA 2420Z TA 2428Z YT 2428	—	—	—
	<b>OS 24324</b>	<b>DS 24324</b>	24	32	4	TA 243216Z TA 243220Z YT 243216 YT 243220	TAF 243216 TAF 243220	—	—



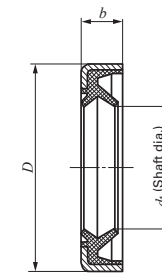


Shaft dia. 25 – 29mm

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
25	<b>OS 25324</b>	<b>DS 25324</b>	25	32	4	TLA 2512Z TLA 2516Z TLA 2520Z TLA 2526Z TLAW 2538Z YTL 2526	—	—	—
	<b>OS 25334</b>	<b>DS 25334</b>	25	33	4	TA 2510Z TA 2515Z TA 2520Z TA 2525Z TA 2530Z YT 2510 YT 2515 YT 2520 YT 2525	TAF 253316 TAF 253320	—	—
	<b>OS 25356</b>	<b>DS 25356</b>	25	35	6	—	—	RNAF 253517 RNAFW 253526	—
	<b>OS 25376</b>	<b>DS 25376</b>	25	37	6	—	RNA 4904 RNA 6904	RNAF 253716 RNAFW 253732	NAX 2530 NBX 2530
	<b>OS 26344</b>	<b>DS 26344</b>	26	34	4	TA 2616Z TA 2620Z YT 2616 YT 2620	TAF 263416 TAF 263420	—	—
	<b>OS 26344</b>	<b>DS 26344</b>	26	34	4	TA 2616Z TA 2620Z YT 2616 YT 2620	TAF 263416 TAF 263420	—	—



OS



DS

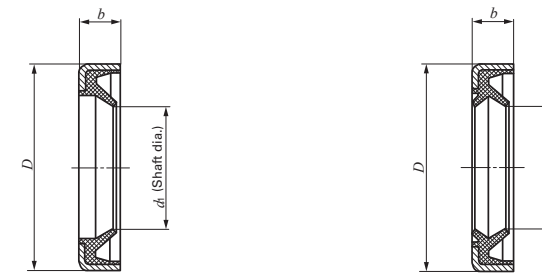
Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
28	<b>OS 28354</b>	<b>DS 28354</b>	28	35	4	TLA 2816Z TLA 2820Z	—	—	—
	<b>OS 28374</b>	<b>DS 28374</b>	28	37	4	TA 2820Z TA 2830Z YT 2820	TAF 283720 TAF 283730	—	—
	<b>OS 28396</b>	<b>DS 28396</b>	28	39	6	—	RNA 49/22 RNA 69/22	—	—
	<b>OS 28406</b>	<b>DS 28406</b>	28	40	6	—	—	RNAF 284016 RNAFW 284032	—
29	<b>OS 29384</b>	<b>DS 29384</b>	29	38	4	TA 2920Z TA 2930Z YT 2920	TAF 293820 TAF 293830	—	—





Shaft dia. 30 – 38mm

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
30	OS 30374	DS 30374	30	37	4	TLA 3012Z TLA 3016Z TLA 3018Z TLA 3020Z TLA 3026Z TLAW 3038Z	—	—	—
	OS 30404	DS 30404	30	40	4	TA 3013Z TA 3015Z TA 3020Z TA 3025Z TA 3030Z	TAF 304020 TAF 304030	RNAF 304017 RNAFW 304026	—
	OS 30426	DS 30426	30	42	6	—	RNA 4905 RNA 6905	RNAF 304216 RNAFW 304232	NAX 3030 NBX 3030
32	OS 32424	DS 32424	32	42	4	TA 3220Z TA 3230Z YT 3220	TAF 324220 TAF 324230	—	—
	OS 32456	DS 32456	32	45	6	—	RNA 49/28 RNA 69/28 GTR 324530	—	—



OS

DS

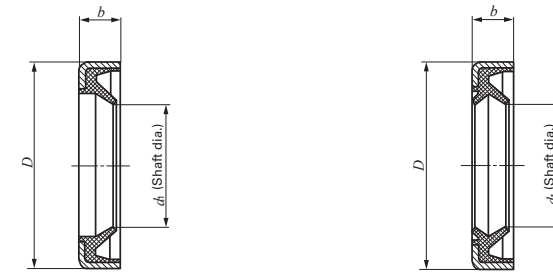
Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
35	OS 35424	DS 35424	35	42	4	TLA 3512Z TLA 3516Z TLA 3520Z	—	—	—
	OS 35454	DS 35454	35	45	4	TA 3512Z TA 3515Z TA 3520Z TA 3525Z TA 3530Z	TAF 354520 TAF 354530	RNAF 354517 RNAFW 354526	—
	OS 35476	DS 35476	35	47	6	—	RNA 4906 RNA 6906	RNAF 354716 RNAFW 354732	NAX 3530 NBX 3530
37	OS 37474	DS 37474	37	47	4	TA 3720Z TA 3730Z YT 3720	TAF 374720 TAF 374730	—	—
38	OS 38484	DS 38484	38	48	4	TA 3815Z TA 3820Z TA 3825Z TA 3830Z TAW 3845Z	TAF 384820 TAF 384830	—	—
	OS 38506	DS 38506	38	50	6	—	—	—	—





Shaft dia. 40 – 50mm

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
40	OS 40474	DS 40474	40	47	4	TLA 4012Z TLA 4016Z TLA 4020Z	—	—	—
	OS 40504	DS 40504	40	50	4	TA 4015Z TA 4020Z TA 4025Z TA 4030Z TA 4040Z YT 4015 YT 4025	TAF 405020 TAF 405030	RNAF 405017 RNAFW 405034	—
	OS 40526	DS 40526	40	52	6	—	RNA 49/32 RNA 69/32	—	NAX 4032 NBX 4032
	OS 40556	DS 40556	40	55	6	—	TR 405520 GTR 405520	RNAF 405520 RNAFW 405540	—
42	OS 42557	DS 42557	42	55	7	—	RNA 4907 RNA 6907	—	—



OS

DS

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings			
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX
45	OS 45524	DS 45524	45	52	4	TLA 4516Z TLA 4520Z	—	—	—
	OS 45554	DS 45554	45	55	4	TA 4520Z TA 4525Z TA 4530Z TA 4540Z YT 4520 YT 4525	TAF 455520 TAF 455530	RNAF 455517 RNAFW 455534	—
	OS 45627	DS 45627	45	62	7	—	—	RNAF 456220 RNAFW 456240	—
48	OS 48627	DS 48627	48	62	7	—	RNA 4908 RNA 6908 TR 486230 GTR 486230	—	—
50	OS 50584	DS 50584	50	58	4	TLA 5020Z TLA 5025Z	—	—	—
	OS 50624	DS 50624	50	62	4	TA 5012Z TA 5015Z TA 5020Z TA 5025Z TA 5030Z TA 5040Z TAW5045Z	TAF 506225 TAF 506235	RNAF 506220 RNAFW 506240	NAX 5035 NBX 5035
	OS 50657	DS 50657	50	65	7	—	RNA 49/42	RNAF 506520 RNAFW 506540	—

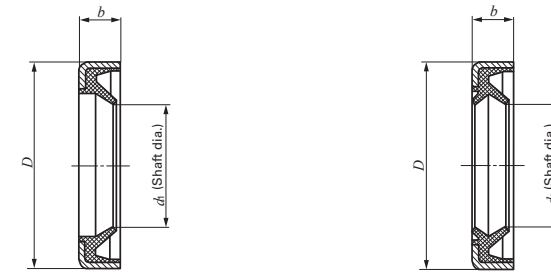
L

OS  
DS



Shaft dia. 52 – 72mm

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings				
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX	
52	OS 52687	DS 52687	52	68	7	—	RNA 4909 RNA 6909	—	—	
55	OS 55674	DS 55674	55	67	4	TA 5520Z TA 5525Z TA 5530Z TA 5540Z TAW 5545Z TAW 5550Z	—	—	—	
	OS 55687	DS 55687	55	68	7	—	TAF 556825 TAF 556835	RNAF 556820 RNAFW 556840	—	
	OS 55727	—	55	72	7	—	—	RNAF 557220 RNAFW 557240	—	
58	OS 58727	DS 58727	58	72	7	—	RNA 4910 RNA 6910	—	—	
60	OS 60724	DS 60724	60	72	4	TA 6025Z TA 6030Z TA 6040Z TAW 6045Z TAW 6050Z	TAF 607225 TAF 607235	—	NAX 6040 NBX 6040	
	OS 60787	DS 60787	60	78	7	—	—	RNAF 607820 RNAFW 607840	—	
62	OS 62744	DS 62744	62	74	4	TA 6212Z	—	—	—	
63	OS 63807	DS 63807	63	80	7	—	RNA 4911 RNA 6911	—	—	



OS

DS

Shaft dia. mm	Identification number		Boundary dimensions mm			Combinable bearings				
	Single lip	Double lips	$d_1$	$D$	$b$	TA···Z YT TLA···Z YTL	RNA TR TAF GTR	RNAF	NAX NBX	
65	OS 65774	DS 65774	65	77	4	TA 6525Z TA 6530Z TAW 6545Z TAW 6550Z	—	—	—	
	OS 65857	DS 65857	65	85	7	—	—	RNAF 658530 RNAFW 658560	—	
68	OS 68857	DS 68857	68	85	7	—	RNA 4912 RNA 6912	—	—	
70	OS 70824	DS 70824	70	82	4	TA 7025Z TA 7030Z TA 7040Z TAW 7050Z	—	—	—	
	OS 70907	DS 70907	70	90	7	—	—	RNAF 709030 RNAFW 709060	—	
72	OS 72907	DS 72907	72	90	7	—	RNA 4913 RNA 6913	—	—	

L

OS  
DS