



Water Pump Bearings

www.kml-bearing.com

Durable



Bringing motion
to your world



High-frequency induction heating case hardened



Automotive grinding and super-finishing processing



Post processing

No Easy Way, But Tough...

- Bearings are highly sensitive to contamination. Our workshop is enclosed and ventilated to secure clean environment for production.
- Axial play is effectively suppressed due to the new conception of raceway. As a result, more steady running of bearing is observed in power-engines application.
- Case hardened shaft is an option in KML water pump bearing. It proves to be an effective measure against phenomenon of broken shaft especially when high stress happens to both ends of shaft.
- Grinding and super-finishing processes are fully automatic for higher production efficiency and quality consistency.
- To ensure the cleanliness and quiet running of assembled products, we employ full inspection.
- Several proprietary test rigs for functional testing of assembled water pump bearings have developed by KML. Not only do these machines help to do the design homologation, but they also are used as quality control devices by KML.
- On time delivery is always KMLs prime concern. Seaworthy wooden case and newly designed inner packing for original equipment customers ensure our bearings arrive in better shape.
- We have been TS16949 accredited, and the quality assurance procedures are strictly observed.



Roundness measuring equipment



Bench test



ISO/TS16949

KML Double Row Bearings for Cooling Water Pumps

With the development of automobile being high speed, more reliable and low gas consumption, the cooling water pumps are tending to be smaller in volume but with large flow and high rotating speed. Consequently, it requires high performance of water pump bearings. huge carrying capacity, good rigidity, high rotating precision, using longevity, reasonable framework and high working reliability.

On the market, all KML water pump bearings have been designed to meet customer's requirements for minimum weight, maximal compactness, high quality. With our producing techniques and material inspection are both topped in the same industry, our products are adopted by OEM customers.

Material and Heat treatment

For KML water pump bearings, the outer rings, rolling elements and Shafts are made of high-quality bearing steel. The Shafts utilized the surface induction hardened techniques which made the hardness up to HRC60, meanwhile, they maintain with a soft, flexible core which made the reliability of bearing in the running process being improved greatly.

Lubrication and oil seals [Fig. 1]

KML water pump bearings are lubricated for long live performances. Multipurpose grease Chevron SRI-2 made in USA is employed in our bearings, which can suit specific application needs, such as high temperature and low temperature requirements. What's more, it is superior in terms of water resistance.

Double lips and light contact design are applied in seals of KML water pump bearings, whose double-seal-cavities make leakproof capability more excellent. It favors to reduce friction torque at the time of starting and running, and to decrease the bearing's temperature in the working process, which can effectively improve grease retention and extend the grease service life of KML water pump bearings.

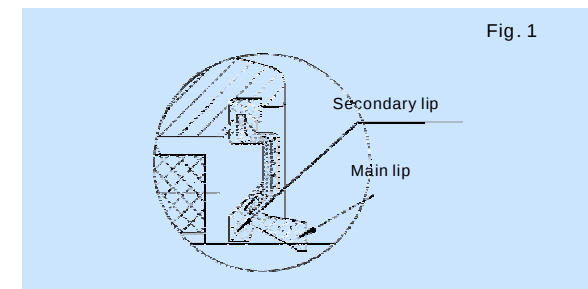
Excellent lubrication and anti-leaking seals design of KML bearing can suit specific application needs, such as high speed and high temperature conditions, and high requirement for loss of lubrication and water-resistant capacity.

Optimized Design [Fig. 2]

Double row angular contact structure is applied in Ball-Ball type of KML water pump bearings, and four points contact structure is applied in Ball-Roller type. Not only the strict requirement that clients demand for the clearance can be satisfied by use of this design, but also rigidity can be improved greatly. KML also self-develops production design software - "CAD System for Designing Water Pump Bearing", and do has performance analysis for new production by Pro/E or CATIA, which enable KML water pump bearings be optimized in the design process.

Bench Test

In comply to performance requirements that foreign famous automobile firms demands for water pump bearings, KML develops a special bench testing machine, which can be used to test bearings on different work conditions. What's more, making use of the data from reliability tests, we can optimize the product's internal parameters and improve its capacities.

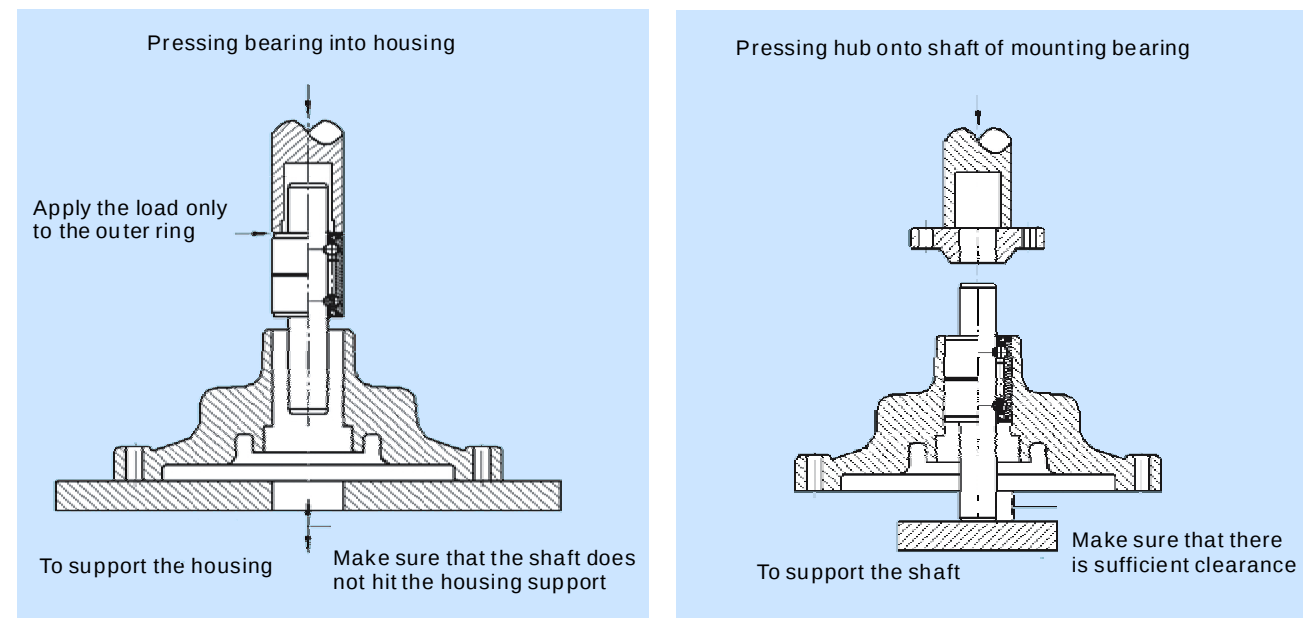


Double-lip seals are used in KML water pump bearings. special seal configuration is designed to prevent grease leakages, eliminate water penetration and maintain a low friction torque. these factors help to extend the bearing lifetime effectively.

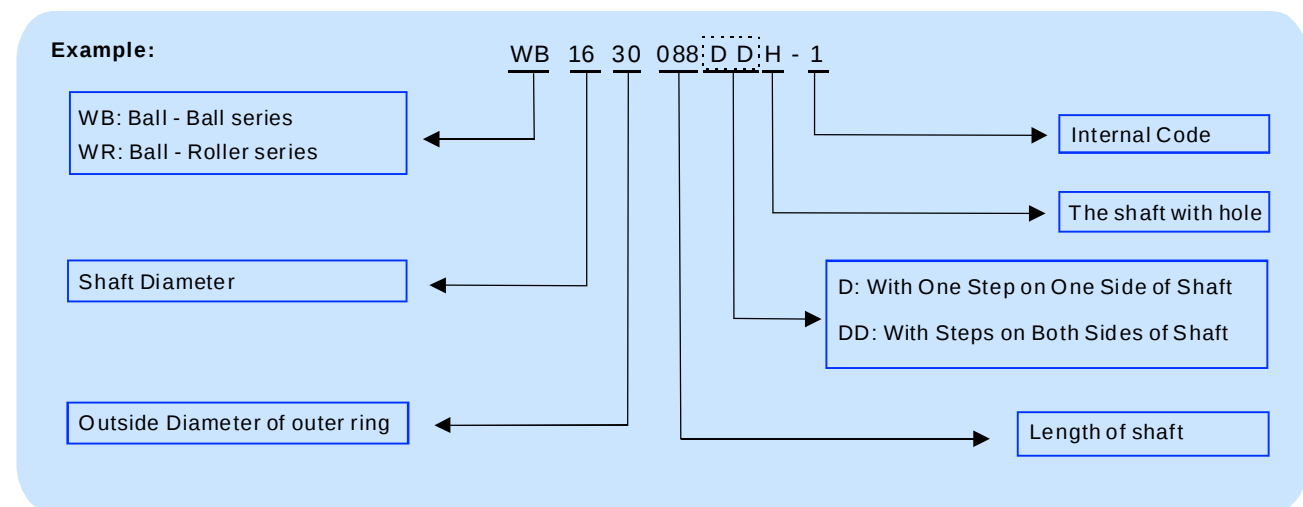


Overall design of KML water pump bearings has been re-conceptualized to keep pace with trends of automotive engines with higher power.

Mounting



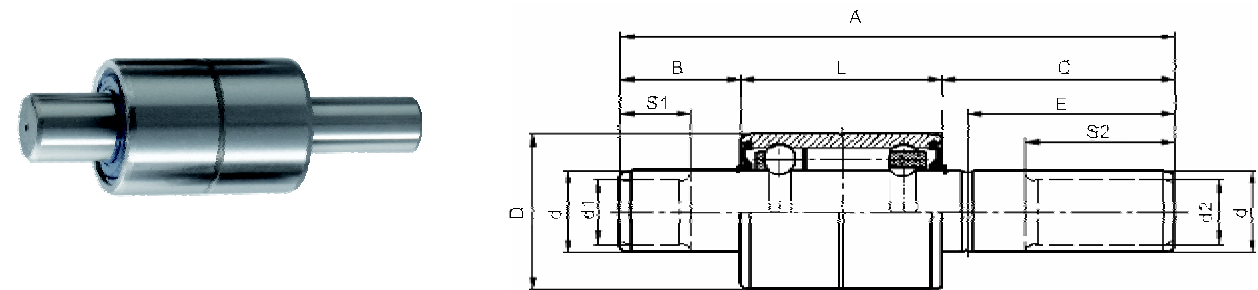
Identification Code



Size range of KML production programme

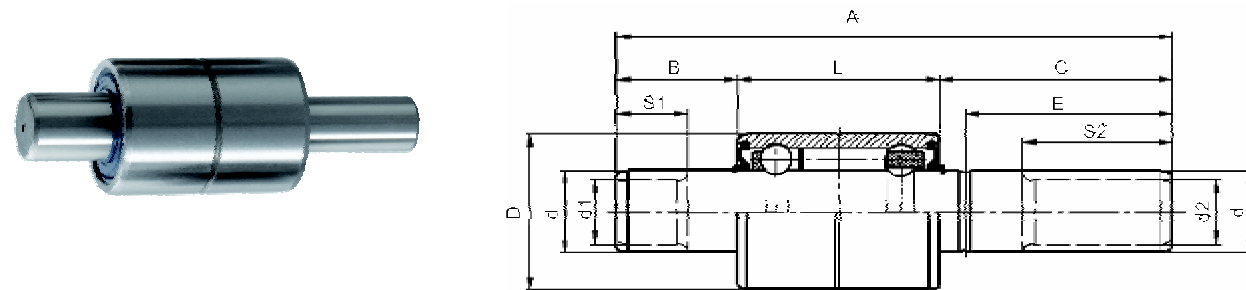
Dimension Range (mm)	Min	Max
Shaft diameter (d)	12	24
Outside diameter of outer ring (D)	24	60
Length of shaft (A)	65	180

Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1224080	24.00	27.00	80.00	12.008	16.50	36.50	-	-	-	-	-
WB1224080-1	24.00	27.00	80.20	12.037	17.40	35.80	-	-	-	-	-
WB1224082	24.00	27.00	81.50	12.000	16.50	38.00	-	-	-	-	-
WB1224085	24.00	27.00	85.00	12.037	21.00	37.00	-	-	-	-	-
WB1224106	24.00	27.00	106.00	12.038	25.20	53.80	-	-	-	-	-
WB1224084	24.00	33.38	83.90	12.037	28.32	22.20	-	-	-	-	-
WB1224080-2	24.00	33.40	79.60	12.038	16.10	30.10	-	-	-	-	-
WB1324080	24.00	33.40	80.00	12.738	14.20	32.40	-	-	-	-	-
WB1224083	24.00	33.40	82.80	12.038	16.00	33.40	-	-	-	-	-
WB1324083	24.00	33.40	83.44	12.738	16.19	33.85	-	-	-	-	-
WB1224085-1	24.00	33.40	84.50	12.000	16.10	35.00	-	-	-	-	-
WB1324101	24.00	33.40	100.84	12.738	25.03	42.41	-	-	-	-	-
WB1324107	24.00	33.40	107.19	12.738	31.40	42.39	-	-	-	-	-
WB1226080	26.00	27.00	80.00	12.000	16.50	36.50	-	-	-	-	-
WB1226082	26.00	27.00	82.00	12.000	16.50	38.50	-	-	-	-	-
WB1226089	26.00	30.00	89.00	12.000	18.00	41.00	-	-	-	-	-
WB1226086	26.00	39.00	86.00	12.000	12.00	35.00	-	-	-	-	-
WB1226090	26.00	39.00	89.50	12.000	16.50	34.00	-	-	-	-	-
WB1226090-1	26.00	39.00	90.00	12.000	14.00	37.00	-	-	-	-	-
WB1226093	26.00	39.00	92.51	12.000	16.50	37.01	-	-	-	-	-
WB1226095-1	26.00	39.00	94.49	12.050	21.38	34.11	-	-	-	-	-
WB1226095	26.00	39.00	94.50	12.000	21.50	34.00	-	-	-	-	-
WB1226098	26.00	39.00	98.00	12.000	21.00	38.00	-	-	-	-	-
WB1226103	26.00	39.00	102.50	12.000	21.50	42.00	-	-	-	-	-
WB1226104	26.00	39.00	103.50	12.000	21.50	43.00	-	-	-	-	-
WB1226104-2	26.00	39.00	103.50	12.000	17.50	47.00	-	-	-	-	-
WB1226104-1	26.00	39.00	104.00	12.000	22.00	43.00	-	-	-	-	-
WB1226106	26.00	39.00	105.50	12.000	16.50	50.00	-	-	-	-	-
WB1226092	26.00	40.00	92.00	12.006	17.00	35.00	-	-	-	-	-
WB1226102	26.00	40.00	102.00	12.000	27.00	35.00	-	-	-	-	-
WB1730075D	30.00	20.07	74.71	17.118	12.94	41.70	-	15.918	-	39.70	-
WB1630065D	30.00	22.00	65.00	15.918	14.20	28.80	-	10.000	-	27.40	-
WB1630074D	30.00	22.00	74.00	16.000	12.40	39.60	-	10.000	-	38.95	-
WB1630075	30.00	22.00	75.00	16.000	18.00	35.00	-	-	-	-	-
WB1630078D	30.00	22.00	77.80	15.918	15.50	40.30	-	12.000	-	37.30	-

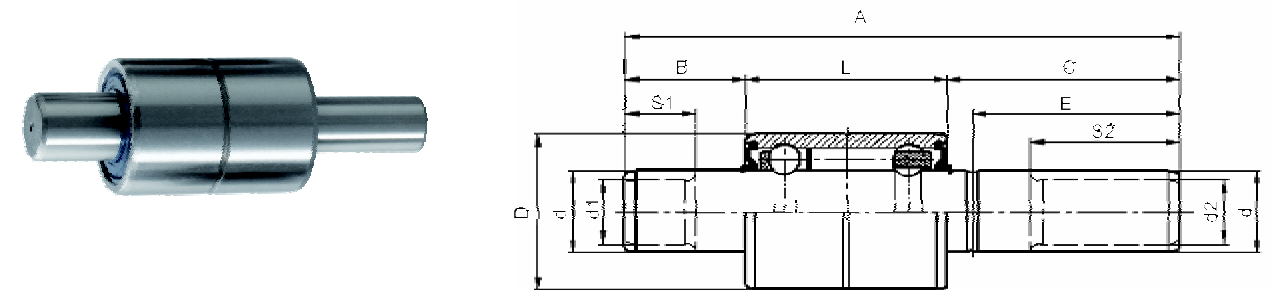
Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1730071D	30.00	23.00	71.20	17.200	13.50	34.70	-	12.000	-	31.70	-
WB1630073D	30.00	23.00	72.50	15.918	13.50	36.00	-	12.000	-	33.00	-
WB1730075D-1	30.00	23.00	75.00	17.200	13.90	38.10	-	12.000	-	36.50	-
WB1730075D-2	30.00	23.00	75.01	17.201	13.50	38.51	-	12.000	-	36.50	-
WB1730078D	30.00	23.00	77.80	17.200	15.50	39.30	-	12.000	-	32.70	-
WB1730078D-1	30.00	23.00	77.80	17.200	15.49	39.31	-	12.000	-	33.30	-
WB1730079D	30.00	23.00	79.00	17.200	14.00	42.00	-	12.000	-	39.50	-
WB1630082D-3	30.00	23.00	81.80	15.918	17.50	41.30	-	12.000	-	38.40	-
WB1730093D	30.00	23.00	92.53	17.170	15.44	54.09	-	12.000	-	51.31	-
WB1530067D	30.00	24.00	66.50	15.000	10.00	32.50	-	12.000	-	30.00	-
WB1630071D	30.00	24.00	71.00	15.918	12.50	34.50	-	12.006	-	33.50	-
WB1630083	30.00	25.00	83.15	15.918	16.05	42.10	-	-	-	-	-
WB1630076D	30.00	27.00	75.50	15.918	18.50	30.00	-	12.000	-	28.00	-
WB1630078D-1	30.00	27.00	77.75	15.918	18.75	32.00	-	12.000	-	30.00	-
WB1630078D-3	30.00	27.00	78.40	15.918	16.20	35.20	-	12.000	-	34.00	-
WB1630079D	30.00	27.00	78.50	15.918	15.00	36.50	-	12.000	-	34.00	-
WB1630079D-1	30.00	27.00	78.90	15.918	15.50	36.40	-	12.000	-	33.40	-
WB1630079	30.00	27.00	79.10	15.918	13.60	38.50	-	-	-	-	34.70
WB1630080	30.00	27.00	80.04	15.918	15.75	37.29	-	-	-	-	-
WB1630081	30.00	27.00	81.00	16.000	18.00	36.00	-	-	-	-	-
WB1630082D	30.00	27.00	81.50	15.918	18.00	36.50	-	12.008	-	34.50	-
WB1630082D-1	30.00	27.00	81.75	15.918	17.24	37.51	-	12.038	-	35.15	-
WB1630082D-2	30.00	27.00	81.84	15.918	17.35	37.49	-	12.037	-	35.33	-
WB1630083-1	30.00	27.00	82.80	15.918	17.19	38.61	-	-	-	-	33.83
WB1630083-2	30.00	27.00	82.80	15.977	17.19	38.61	-	-	-	-	33.83
WB1630083D	30.00	27.00	83.30	15.918	18.78	37.52	-	12.008	-	28.72	-
WB1630084	30.00	27.00	84.00	15.918	16.00	41.00	-	-	-	-	-
WB1630084-1	30.00	27.00	84.00	16.000	14.00	43.00	-	-	-	-	-
WB1630084D	30.00	27.00	84.30	15.918	20.80	36.50	-	12.008	-	34.50	-
WB1630084D-1	30.00	27.00	84.38	15.918	20.57	36.81	-	12.088	-	35.00	-
WB1630085-1	30.00	27.00	84.51	15.918	17.25	40.26	-	-	-	-	37.26
WB1630085-4	30.00	27.00	84.51	15.977	17.25	40.26	-	-	-	-	-
WB1630085D	30.00	27.00	84.63	15.918	17.27	40.36	-	12.038	-	38.36	-
WB1630085D-7	30.00	27.00	84.63	15.969	17.27	40.36	-	12.088	-	38.36	-
WB1630085	30.00	27.00	85.00	15.918	15.00	43.00	-	-	-	-	-

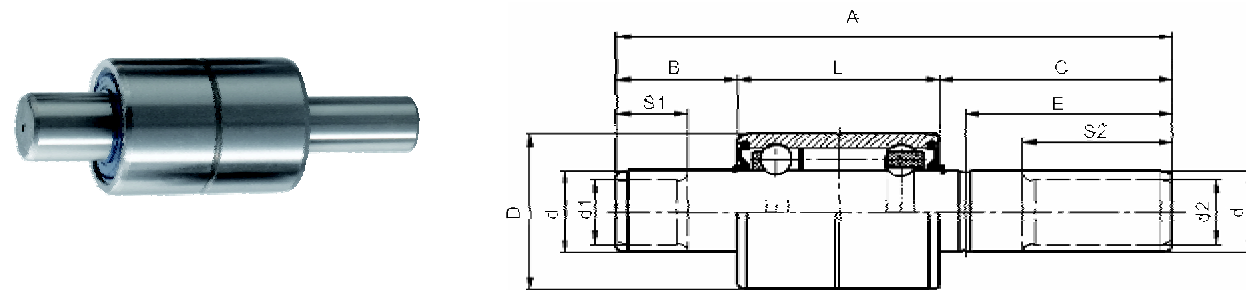


Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1630085D-7	30.00	27.00	84.63	15.969	17.27	40.36	-	12.088	-	38.36	-
WB1630085	30.00	27.00	85.00	15.918	15.00	43.00	-	-	-	-	-
WB1630085D-1	30.00	27.00	85.00	16.000	17.00	41.00	-	12.052	-	39.50	-
WB1630085D-2	30.00	27.00	85.00	15.918	21.00	37.00	-	12.038	-	35.30	-
WB1630085D-3	30.00	27.00	85.00	15.918	17.00	41.00	-	12.000	-	38.50	-
WB1630085D-4	30.00	27.00	85.00	15.918	17.00	41.00	-	12.038	-	35.00	-
WB1630086D	30.00	27.00	86.20	15.918	19.30	39.90	-	12.000	-	36.90	-
WB1630088D-1	30.00	27.00	88.00	15.918	18.00	43.00	12.000	-	7.50	-	-
WB1630088-1	30.00	27.00	88.00	15.918	18.00	43.00	-	-	-	-	-
WB1630089D-1	30.00	27.00	89.30	15.918	21.00	41.30	-	12.000	-	38.00	-
WB1630090D-1	30.00	27.00	90.00	15.918	15.50	47.50	-	12.000	-	42.50	-
WB1630091-1	30.00	27.00	91.00	15.918	41.00	43.00	-	-	-	-	-
WB1630094D-1	30.00	27.00	94.00	15.918	16.00	51.00	-	12.038	-	45.00	-
WB1630094D-2	30.00	27.00	94.00	15.918	16.00	51.00	-	12.038	-	49.00	-
WB1630096	30.00	27.00	96.00	15.918	17.00	52.00	-	-	-	-	-
WB1630096D	30.00	27.00	96.00	15.918	15.00	54.00	-	12.000	-	40.00	-
WB1630108	30.00	27.00	107.80	15.918	25.25	55.55	-	-	-	-	48.29
WB1630084-2	30.00	27.50	84.30	15.918	15.30	41.50	-	-	-	-	-
WB1630085D-5	30.00	27.90	85.00	15.918	17.00	40.10	-	12.000	-	36.00	-
WB1630085-2	30.00	27.94	84.51	15.918	17.37	39.20	-	-	-	-	33.32
WB1630091	30.00	27.94	90.88	15.918	15.67	47.27	-	-	-	-	40.00
WB1630108-1	30.00	27.94	107.80	15.918	24.31	55.55	-	-	-	-	48.29
WB1630090D-4	30.00	28.45	89.81	15.918	45.87	15.49	12.042	-	38.10	-	-
WB1630084D-3	30.00	30.00	84.00	15.918	16.50	37.50	-	12.000	-	35.00	-
WB1630086D-1	30.00	30.00	86.00	15.918	16.50	39.50	-	12.000	-	37.00	-
WB1630086	30.00	30.00	86.20	15.918	16.30	39.90	-	-	-	-	-
WB1630087	30.00	30.00	86.50	15.918	12.30	44.20	-	-	-	41.20	-
WB1630087D	30.00	30.00	87.00	15.918	15.00	42.00	-	12.000	-	39.50	-
WB1630088D-3	30.00	30.00	88.20	15.920	15.00	43.20	-	12.000	-	40.00	-
WB1630089D	30.00	30.00	88.60	15.918	14.20	44.40	-	12.038	-	39.00	-
WB1630089D-2	30.00	30.00	88.80	15.918	14.30	44.50	-	12.052	-	42.70	-
WB1630094D-3	30.00	30.00	94.18	15.918	16.38	47.80	-	12.000	-	45.01	-
WB1630084D-2	30.00	32.70	83.60	15.918	17.15	33.75	-	12.000	-	31.75	-
WB1630083D-1	30.00	32.72	83.44	15.918	16.79	33.93	-	12.738	-	32.13	-
WB1630091D-1	30.00	33.00	91.00	15.918	19.80	38.20	-	12.000	-	34.50	-

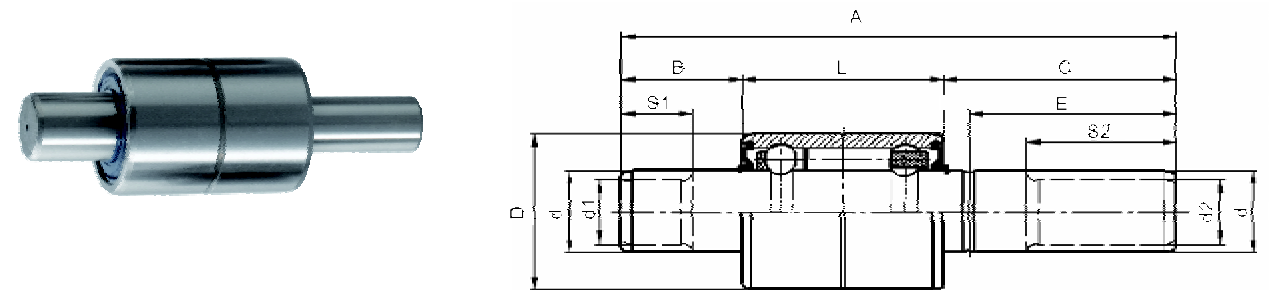
Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1630080D	30.00	33.40	79.60	15.918	16.10	30.10	-	12.038	-	39.10	-
WB1630083D-2	30.00	33.40	82.50	15.918	15.10	34.00	-	12.000	-	33.00	-
WB1630080D-1	30.00	33.45	79.60	15.923	16.05	30.10	-	12.038	-	29.00	-
WB1630083D-3	30.00	33.45	83.40	15.918	16.15	33.80	-	12.738	-	30.50	-
WB1630085-3	30.00	33.45	85.40	16.000	16.15	35.80	-	-	-	-	-
WB1530088	30.00	36.00	87.50	15.000	37.90	13.60	-	-	-	-	-
WB1630088D-2	30.00	36.00	87.50	15.918	13.50	38.00	-	12.000	-	34.25	-
WB1530088-2	30.00	36.00	88.00	15.008	17.00	35.00	-	-	-	-	-
WB1630088D-4	30.00	36.00	88.00	15.918	14.00	38.00	-	12.000	-	36.00	-
WB1630089	30.00	36.00	88.75	16.000	19.25	33.50	-	-	-	-	-
WB1530088-3	30.00	36.50	87.50	15.000	16.60	34.40	-	-	-	-	-
WB1630088D-1	30.00	36.50	88.00	15.918	14.00	37.50	-	12.000	-	36.00	-
WB1630108-2	30.00	36.52	108.00	15.951	23.48	48.00	-	-	-	-	45.80
WB1630112	30.00	36.52	112.00	15.951	28.48	47.00	-	-	-	-	40.00
WB1630073	30.00	38.90	73.40	15.918	4.00	30.50	-	-	-	-	-
WB1630083-3	30.00	38.90	82.61	15.918	4.06	39.65	-	-	-	-	-
WB1630084-3	30.00	38.90	84.33	15.918	14.34	31.09	-	-	-	23.83	-
WB1630085D-8	30.00	38.90	84.99	15.977	12.99	33.10	-	12.050	-	30.00	-
WB1630085D-6	30.00	38.90	85.20	15.918	31.10	15.20	12.042	-	29.20	-	-
WB1630088	30.00	38.90	87.60	15.918	13.70	35.00	-	-	-	-	-
WB1630088-2	30.00	38.90	88.00	15.918	12.50	36.60	-	-	-	-	-
WB1630089D-3	30.00	38.90	89.15	15.918	16.72	33.53	11.950	-	6.10	-	-
WB1630090D-2	30.00	38.90	90.00	15.963	14.10	37.00	-	12.057	-	35.50	-
WB1630090	30.00	38.90	90.12	15.918	14.86	36.36	-	-	-	-	31.14
WB1630090D-3	30.00	38.90	90.17	15.918	15.46	35.81	-	12.037	-	33.78	-
WB1630090D	30.00	38.90	90.35	15.918	34.30	17.15	-	12.000	-	15.10	-
WB1630091D	30.00	38.90	91.00	15.963	12.10	40.00	-	12.057	-	38.50	-
WB1630092D	30.00	38.90	91.80	15.918	36.90	16.00	12.675	-	34.50	-	-
WB1630092D-1	30.00	38.90	91.85	15.918	20.37	32.58	-	12.675	-	31.00	-
WB1530092DD	30.00	38.90	92.00	15.000	17.00	36.10	12.003	12.003	16.00	35.00	-
WB1630092	30.00	38.90	92.00	16.000	15.50	37.50	-	-	-	-	34.50
WB1630092DD	30.00	38.90	92.40	15.918	16.40	37.10	12.000	12.000	14.50	35.00	-
WB1630092DD-1	30.00	38.90	92.40	15.918	16.40	37.10	12.000	12.000	14.50	35.00	-
WB1630093D	30.00	38.90	92.46	15.918	16.48	37.08	-	12.037	-	34.54	-
WB1630093D-1	30.00	38.90	92.50	15.918	16.50	37.10	-	12.000	-	34.50	-

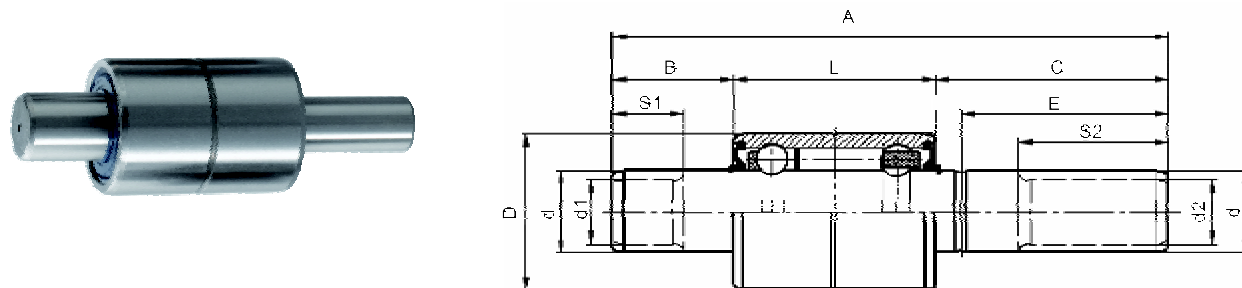


Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1630093DD	30.00	38.90	92.50	15.918	16.50	37.10	12.000	12.000	14.00	34.50	-
WB1630093DD-2	30.00	38.90	92.51	15.918	16.60	37.01	12.000	12.000	15.00	34.49	-
WB1630093D-2	30.00	38.90	92.58	15.918	16.42	37.26	-	12.000	-	34.80	-
WB1630093	30.00	38.90	92.99	15.918	18.48	35.61	-	-	-	-	-
WB1630094	30.00	38.90	93.90	15.918	15.14	39.86	-	-	-	-	32.25
WB1630094D	30.00	38.90	93.90	15.918	16.00	39.00	-	12.038	-	37.50	-
WB1630094-1	30.00	38.90	94.35	15.918	17.50	37.95	-	-	-	-	-
WB1630095DD	30.00	38.90	94.49	15.918	21.49	34.10	12.738	12.738	19.81	32.13	-
WB1630095D	30.00	38.90	94.50	16.000	16.00	39.60	-	12.006	-	38.00	-
WB1630096-1	30.00	38.90	95.45	15.918	14.23	42.32	-	-	-	-	39.12
WB1630096D-1	30.00	38.90	95.50	15.963	13.60	43.00	-	12.090	-	41.50	-
WB1530097D-1	30.00	38.90	96.49	15.008	39.85	17.74	12.052	-	35.43	-	-
WB1630097DD	30.00	38.90	96.60	16.000	17.90	39.80	15.008	12.052	16.90	35.50	-
WB1530097D	30.00	38.90	97.00	15.008	20.00	38.10	-	12.738	-	37.10	-
WB1530098	30.00	38.90	97.50	15.006	23.50	35.10	-	-	-	-	-
WB1630098	30.00	38.90	97.50	15.918	16.60	42.00	-	-	-	-	-
WB1630098D	30.00	38.90	97.66	15.918	20.00	38.76	-	12.030	-	36.80	-
WB1530098-1	30.00	38.90	98.00	15.000	20.00	39.10	-	-	-	-	-
WB1630098-1	30.00	38.90	98.00	16.000	18.00	41.00	-	-	-	-	38.00
WB1630098-2	30.00	38.90	98.00	15.918	42.09	17.01	-	-	-	-	-
WB1630098-3	30.00	38.90	98.00	15.918	20.00	39.10	-	-	-	-	-
WB1630098-4	30.00	38.90	98.00	15.918	18.00	41.10	-	-	-	-	-
WB1630098-5	30.00	38.90	98.00	15.977	17.01	42.09	-	-	-	-	-
WB1630098D-1	30.00	38.90	98.00	15.918	16.50	42.60	-	12.000	-	40.11	-
WB1630098D-2	30.00	38.90	98.00	16.000	18.10	41.00	-	12.000	-	39.00	-
WB1630098D-3	30.00	38.90	98.43	15.918	22.47	37.06	-	12.008	-	33.93	-
WB1630098D-4	30.00	38.90	98.43	15.969	22.47	37.06	-	12.057	-	33.93	-
WB1630099D	30.00	38.90	98.60	15.918	22.50	37.20	-	12.000	-	33.76	-
WB1630099D-1	30.00	38.90	99.00	15.918	21.00	39.10	-	12.000	-	35.50	-
WB1630100DD	30.00	38.90	99.50	15.918	16.50	44.10	12.000	12.000	14.00	41.50	-
WB1530100	30.00	38.90	100.00	15.000	19.80	41.30	-	-	-	-	-
WB1630100D	30.00	38.90	100.00	15.918	23.99	37.11	-	12.000	-	35.08	-
WB1630100D-1	30.00	38.90	100.00	15.918	24.10	37.00	-	12.000	-	33.85	-
WB1630101D	30.00	38.90	101.00	15.918	25.00	37.10	-	12.000	-	35.50	-
WB1630101DD	30.00	38.90	101.00	16.000	21.10	41.00	12.006	12.006	19.00	40.00	-

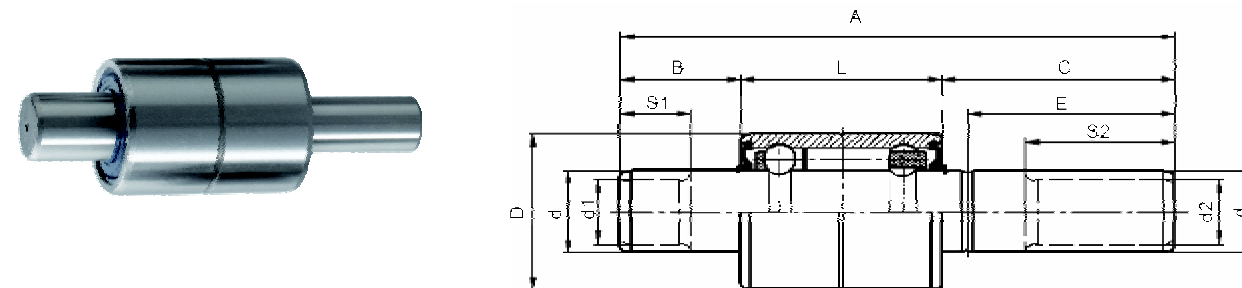
Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1630102	30.00	38.90	101.50	15.939	17.49	45.11	-	-	-	-	-
WB1630102-1	30.00	38.90	101.50	15.918	22.60	40.00	-	-	-	-	-
WB1630102-2	30.00	38.90	101.50	15.989	17.49	45.11	-	-	-	-	38.76
WB1630102D	30.00	38.90	101.50	15.989	17.49	45.11	-	12.089	-	43.30	-
WB1630103	30.00	38.90	102.49	15.918	17.87	45.72	-	-	-	-	38.46
WB1630103DH	30.00	38.90	102.50	15.918	19.50	44.10	-	12.000	-	40.50	-
WB1630103D	30.00	38.90	102.62	15.918	22.45	41.27	-	12.675	-	38.10	-
WB1630103-1	30.00	38.90	102.80	16.000	18.10	45.80	-	-	-	-	42.90
WB1630103D-1	30.00	38.90	102.87	15.918	22.57	41.40	-	12.675	-	38.23	-
WB1630103-2	30.00	38.90	102.90	15.918	23.10	40.90	-	-	-	-	38.35
WB1630103D-2	30.00	38.90	103.00	15.918	16.50	47.60	-	12.000	-	43.00	-
WB1630103-3	30.00	38.90	103.17	15.918	22.99	41.28	-	-	-	-	-
WB1630103-4	30.00	38.90	103.18	15.918	23.40	40.88	-	-	-	-	32.88
WB1630103-5	30.00	38.90	103.20	15.918	23.40	40.90	-	-	-	-	36.10
WB1630104D-1	30.00	38.90	103.50	15.963	17.10	47.50	-	12.037	-	46.00	-
WB1630104D	30.00	38.90	104.00	15.918	20.00	45.10	-	12.000	-	43.00	-
WB1630105D-2	30.00	38.90	105.00	15.963	30.10	36.00	-	12.022	-	34.50	-
WB1630105D	30.00	38.90	105.10	15.918	31.00	35.20	-	12.000	-	32.60	-
WB1630105-1	30.00	38.90	105.20	15.918	23.83	42.47	-	-	-	-	-
WB1630105	30.00	38.90	105.40	15.918	20.30	46.20	-	-	-	-	41.40
WB1630105-2	30.00	38.90	105.40	15.977	20.30	46.20	-	-	-	-	41.40
WB1630105D-1	30.00	38.90	105.41	15.918	23.33	43.18	-	12.037	-	39.62	-
WB1630106D-1	30.00	38.90	105.51	15.918	23.51	43.10	-	12.007	-	40.49	-
WB1630106DD	30.00	38.90	105.90	15.918	15.90	51.10	12.000	12.000	13.00	46.00	-
WB1630106	30.00	38.90	105.97	15.918	20.64	46.43	-	-	-	-	40.84
WB1630106D	30.00	38.90	105.99	15.918	29.99	37.10	-	12.007	-	33.50	-
WB1630106H	30.00	38.90	106.00	16.000	26.10	41.00	-	-	-	38.00	-
WB1630106D-2	30.00	38.90	106.17	15.918	24.87	42.40	-	12.738	-	38.86	-
WB1630106D-3	30.00	38.90	106.20	15.918	18.50	48.80	-	12.000	-	41.00	-
WB1630106D-4	30.00	38.90	106.20	15.918	42.20	25.10	12.738	-	38.90	-	-
WB1630106-1	30.00	38.90	106.25	15.994	26.22	41.13	-	-	-	-	-
WB1530107	30.00	38.90	106.50	15.008	20.10	47.50	-	-	-	-	-
WB1530107D	30.00	38.90	106.50	15.008	39.90	27.70	12.052	-	38.00	-	-
WB1630107D	30.00	38.90	106.50	15.918	22.00	45.60	-	12.000	-	43.50	-
WB1630107H	30.00	38.90	106.50	16.000	20.10	47.50	-	-	-	-	-

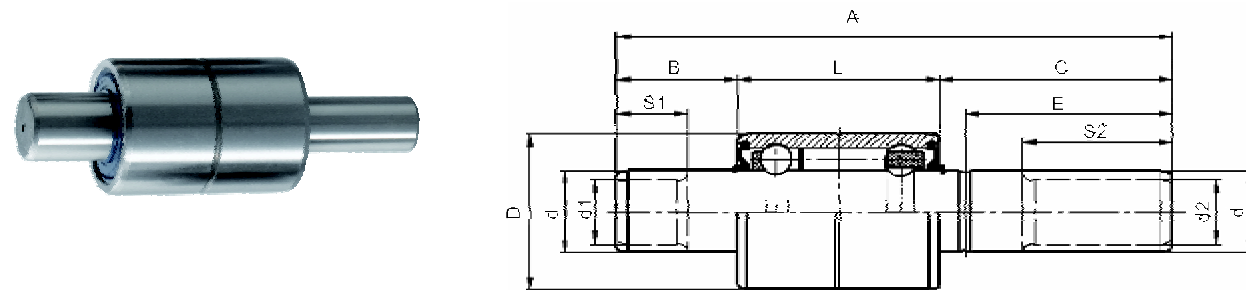


Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1630107D-1	30.00	38.90	107.00	15.918	29.00	39.10	-	12.000	-	36.50	-
WB1630107D-2	30.00	38.90	107.00	15.918	25.00	43.10	-	12.000	-	40.00	-
WB1630108D	30.00	38.90	108.00	16.000	26.00	43.10	-	12.000	-	39.50	-
WB1630109D	30.00	38.90	108.74	15.918	42.86	26.98	12.789	-	33.32	-	-
WB1630110D-1	30.00	38.90	109.45	15.918	25.25	45.30	-	12.008	-	41.70	-
WB1630110D	30.00	38.90	109.50	15.918	25.12	45.48	-	12.038	-	42.22	-
WB1630110-3	30.00	38.90	109.52	15.918	14.68	55.94	-	-	-	-	-
WB1630110-1	30.00	38.90	110.00	15.918	28.94	42.16	-	-	-	-	37.30
WB1630110-4	30.00	38.90	110.21	15.918	23.76	47.55	-	-	-	-	-
WB1630110-2	30.00	38.90	110.40	15.918	21.36	50.14	-	-	-	-	41.00
WB1630110-6	30.00	38.90	110.40	15.977	21.36	50.14	-	-	-	-	41.00
WB1630112-1	30.00	38.90	111.51	15.918	23.79	48.82	-	-	-	-	42.47
WB1630112-4	30.00	38.90	111.57	15.918	23.85	48.82	-	-	-	-	-
WB1630112-2	30.00	38.90	111.76	15.918	29.20	43.66	-	-	-	-	38.86
WB1630112-3	30.00	38.90	111.99	15.918	46.08	27.01	-	-	-	-	-
WB1630112D	30.00	38.90	112.00	16.000	30.00	43.10	-	12.000	-	39.50	-
WB1630113H	30.00	38.90	113.10	15.918	31.70	42.50	-	-	-	-	36.10
WB1630113	30.00	38.90	113.11	15.918	31.72	42.49	-	-	-	-	36.14
WB1630113-3	30.00	38.90	113.11	15.969	31.72	42.49	-	-	-	-	36.14
WB1630113D	30.00	38.90	113.20	15.918	30.20	44.10	-	12.766	-	35.20	-
WB1630113-1	30.00	38.90	113.21	15.918	42.38	31.93	-	-	-	-	-
WB1630113-2	30.00	38.90	113.40	15.918	33.00	41.50	-	-	-	-	-
WB1630114-2	30.00	38.90	113.49	15.918	27.37	47.22	-	-	-	-	39.37
WB1630114	30.00	38.90	113.51	15.918	27.39	47.22	-	-	-	-	42.44
WB1630114-3	30.00	38.90	113.51	15.977	27.39	47.22	-	-	-	-	42.44
WB1630114D-2	30.00	38.90	113.60	15.918	27.40	47.30	-	12.680	-	43.00	-
WB1630114D	30.00	38.90	114.00	15.918	19.10	56.00	-	12.000	-	46.00	-
WB1630114D-1	30.00	38.90	114.00	16.000	32.00	43.10	-	12.000	-	39.50	-
WB1630114-1	30.00	38.90	114.30	15.918	31.99	43.41	-	-	-	-	34.26
WB1630115D-1	30.00	38.90	115.00	15.918	16.50	59.60	-	12.000	-	36.00	-
WB1630115D	30.00	38.90	115.01	15.918	16.48	59.63	-	12.037	-	40.01	-
WB1630116-3	30.00	38.90	115.49	15.918	20.48	56.11	-	-	-	-	-
WB1630116-4	30.00	38.90	115.49	15.969	20.48	56.11	-	-	-	-	-
WB1530116	30.00	38.90	115.50	15.008	36.70	39.90	-	-	-	-	33.55
WB1630116-1	30.00	38.90	115.75	15.918	26.85	50.00	-	-	-	-	-

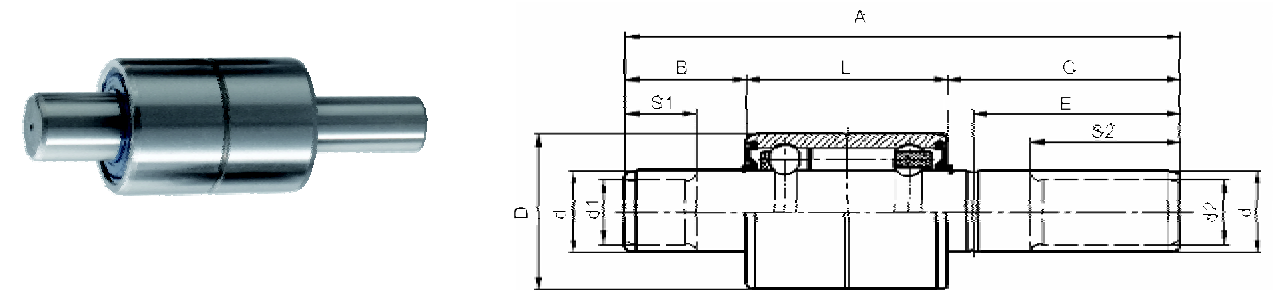
Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1630116-2	30.00	38.90	115.85	15.918	26.96	49.99	-	-	-	-	45.39
WB1530116-1	30.00	38.90	116.00	15.008	27.10	50.00	-	-	-	-	-
WB1630116	30.00	38.90	116.00	15.918	27.14	49.96	-	-	-	-	-
WB1630118D	30.00	38.90	118.00	15.918	30.00	49.10	-	12.000	-	44.50	-
WB1530119	30.00	38.90	118.50	15.008	15.50	64.10	-	-	-	-	-
WB1630119-1	30.00	38.90	119.00	15.918	37.10	43.00	-	-	-	-	-
WB1630119-2	30.00	38.90	119.05	15.977	37.30	42.85	-	-	-	-	36.50
WB1630119	30.00	38.90	119.10	15.918	37.30	42.88	-	-	-	-	36.53
WB1630119-3	30.00	38.90	119.10	16.000	41.10	41.10	-	-	-	-	-
WB1630121	30.00	38.90	120.65	15.918	29.35	52.40	-	-	-	-	46.05
WB1630121-1	30.00	38.90	120.65	15.918	35.64	46.11	-	-	-	-	-
WB1630121-2	30.00	38.90	120.90	15.918	29.50	52.50	-	-	-	-	-
WB1630122D	30.00	38.90	121.92	15.918	50.33	32.69	12.703	-	44.70	-	-
WB1630122-1	30.00	38.90	122.20	15.918	33.90	49.40	-	-	-	-	44.60
WB1630122	30.00	38.90	122.24	15.918	28.55	54.79	-	-	-	-	49.20
WB1630122-2	30.00	38.90	122.25	15.939	40.17	43.18	-	-	-	-	38.28
WB1630122-3	30.00	38.90	122.25	15.989	40.17	43.18	-	-	-	-	38.28
WB1630122D-1	30.00	38.90	122.43	15.918	26.25	57.28	-	12.037	-	44.17	-
WB1630122D-2	30.00	38.90	122.43	15.969	26.25	57.28	-	12.050	-	44.17	-
WB1630123	30.00	38.90	123.01	15.918	19.01	65.10	-	-	-	-	-
WB1630123-1	30.00	38.90	123.19	15.918	19.27	65.02	-	-	-	-	60.25
WB1630123-3	30.00	38.90	123.40	15.918	40.60	43.90	-	-	-	-	-
WB1630124	30.00	38.90	123.67	15.918	31.73	53.04	-	-	-	-	44.45
WB1630124-1	30.00	38.90	123.67	15.969	31.73	53.04	-	-	-	-	44.45
WB1630124D	30.00	38.90	124.00	16.000	42.00	43.10	-	12.000	-	39.50	-
WB1630124D-1	30.00	38.90	124.00	15.918	42.00	43.10	-	12.007	-	40.49	-
WB1630124D-2	30.00	38.90	124.00	15.918	42.00	43.10	-	12.000	-	41.00	-
WB1630125	30.00	38.90	125.40	15.918	23.50	63.00	-	-	-	60.00	-
WB1630126	30.00	38.90	126.00	16.000	27.10	60.00	-	-	-	-	-
WB1630126-1	30.00	38.90	126.24	15.918	36.74	50.60	-	-	-	-	44.25
WB1630127	30.00	38.90	127.00	15.918	25.40	62.70	-	-	-	-	-
WB1630127D	30.00	38.90	127.00	15.918	28.41	59.69	-	12.000	-	48.26	-
WB1630129	30.00	38.90	128.98	15.918	31.74	58.34	-	-	-	-	53.57
WB1630132	30.00	38.90	132.13	15.938	40.17	53.06	-	-	-	-	48.26
WB1630132-1	30.00	38.90	132.16	15.918	50.41	42.85	-	-	-	-	36.50

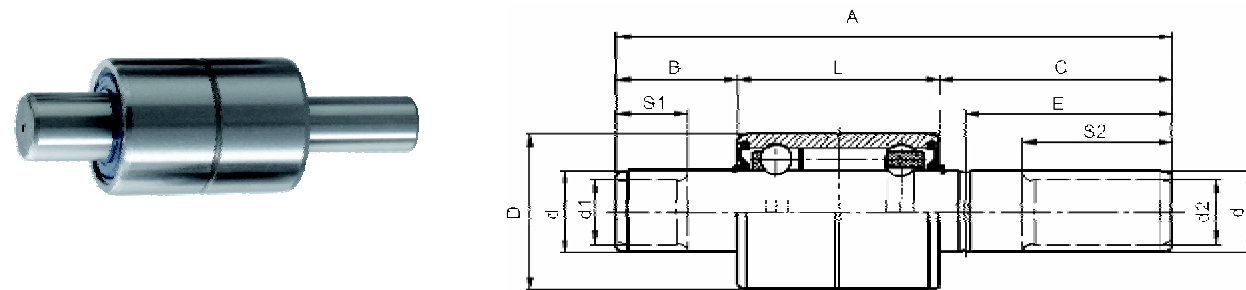


Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1630133	30.00	38.90	132.64	15.938	29.77	63.97	-	-	-	-	59.21
WB1630133-1	30.00	38.90	133.10	15.918	38.70	55.50	-	-	-	-	50.61
WB1630135D	30.00	38.90	134.90	16.000	26.00	70.00	-	12.000	-	39.50	-
WB1630135	30.00	38.90	135.00	15.918	24.94	71.16	-	-	-	-	-
WB1630135-1	30.00	38.90	135.28	15.918	50.79	45.59	-	-	-	-	40.77
WB1630136	30.00	38.90	136.00	15.918	67.10	30.00	-	-	-	-	-
WB1630136-1	30.00	38.90	136.40	15.918	39.10	58.40	-	-	-	-	48.24
WB1630136-2	30.00	38.90	136.40	15.918	39.03	58.47	-	-	-	-	48.97
WB1630136-3	30.00	38.90	136.40	15.918	39.10	58.40	-	-	-	-	53.60
WB1630137	30.00	38.90	136.50	15.918	39.70	57.90	-	-	-	-	-
WB1630137-1	30.00	38.90	136.66	15.918	39.17	58.59	-	-	-	-	49.00
WB1630137-2	30.00	38.90	136.66	15.918	39.17	58.59	-	-	-	-	-
WB1630137D	30.00	38.90	136.66	16.000	39.17	58.59	-	12.100	-	56.59	-
WB1630138	30.00	38.90	138.10	15.918	58.33	40.87	-	-	-	-	34.54
WB1630139	30.00	38.90	139.32	15.918	35.04	65.38	-	-	-	-	56.24
WB1630139-1	30.00	38.90	139.32	15.977	35.04	65.38	-	-	-	-	56.24
WB1630142H	30.00	38.90	142.00	15.918	39.60	63.50	-	-	-	-	55.50
WB1630143	30.00	38.90	142.89	15.918	40.08	63.91	-	-	-	-	57.56
WB1630143-1	30.00	38.90	142.89	15.977	40.08	63.91	-	-	-	-	57.56
WB1630146	30.00	38.90	146.00	15.918	61.70	45.40	-	-	-	-	-
WB1630146-1	30.00	38.90	146.05	15.918	61.71	45.44	-	-	-	-	40.69
WB1630146-2	30.00	38.90	146.20	15.918	61.71	45.59	-	-	-	-	40.77
WB1630148	30.00	38.90	148.00	15.918	28.50	80.60	-	-	-	-	-
WB1630154	30.00	38.90	154.20	15.938	29.80	85.50	-	-	-	-	79.20
WB1630154-1	30.00	38.90	154.20	15.989	29.80	85.50	-	-	-	-	79.20
WB1630156	30.00	38.90	155.45	15.918	69.84	46.71	-	-	-	-	41.96
WB1630162	30.00	38.90	161.92	15.918	58.34	64.68	-	-	-	-	59.13
WB1630104	30.00	38.91	103.50	15.918	25.80	38.80	-	-	-	-	-
WB1630128	30.00	38.91	127.78	15.918	25.80	63.10	-	-	-	-	56.75
WB1630067	30.00	39.00	67.00	16.000	26.00	2.00	-	-	-	-	-
WB1530091	30.00	39.00	91.00	15.008	17.00	35.00	-	-	-	-	-
WB1630099	30.00	39.00	98.50	15.918	18.50	41.00	-	-	-	-	-
WB1230105	30.00	39.00	105.00	12.000	16.00	50.00	-	-	-	-	-
WB1630106H	30.00	39.00	106.00	16.000	26.00	41.00	-	-	-	-	38.00
WB1630108-3	30.00	39.00	108.00	16.000	26.00	43.00	-	-	-	-	40.00

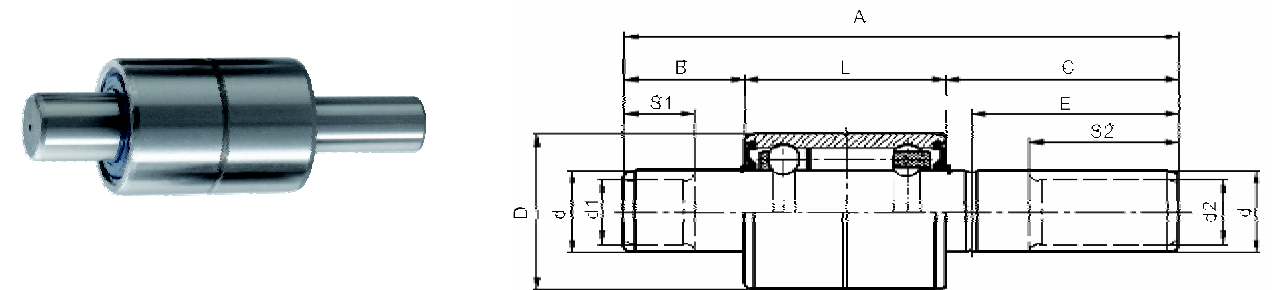
Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1630115H	30.00	39.00	115.00	16.000	26.00	50.00	-	-	-	-	43.00
WB1630120D	30.00	39.90	120.12	15.918	27.82	53.40	-	12.000	-	48.00	-
WB1630119D	30.00	41.00	119.00	15.918	30.50	47.50	-	12.000	-	45.50	-
WB1630110-5	30.00	45.00	109.50	15.918	20.50	44.00	-	-	-	-	-
WB1530109	30.00	52.00	109.25	15.008	17.75	39.50	-	-	-	-	36.00
WB1630110	30.00	52.00	109.50	15.918	18.00	39.50	-	-	-	-	36.00
WB1530121	30.00	52.00	120.50	15.008	16.20	52.00	-	-	-	-	-
WB1530124	30.00	52.00	124.00	15.008	16.50	55.50	-	-	-	-	-
WB1630123-2	30.00	57.00	123.40	15.918	25.80	40.60	-	-	-	-	-
WB1630126DD	30.00	57.15	125.50	15.918	17.75	50.60	15.000	15.000	15.25	48.10	-
WB1630142	30.00	57.15	141.98	15.918	32.12	52.71	-	-	-	-	-
WB1734074D	34.00	30.00	74.00	17.000	15.50	28.50	-	12.000	-	25.50	-
WB1835086D	35.00	29.90	85.50	17.501	15.49	40.11	-	12.000	-	37.49	-
WB1835086D-1	35.00	29.90	85.50	17.551	15.49	40.11	-	12.050	-	37.49	-
WB1835086DD	35.00	29.90	85.50	17.501	15.49	40.11	15.918	12.000	14.30	37.49	-
WB1835088D	35.00	29.90	88.00	17.500	15.60	42.50	-	12.000	-	39.25	-
WB1835089D	35.00	29.90	89.10	17.501	15.49	43.71	-	12.000	-	41.99	-
WB1835092D	35.00	29.90	91.95	17.511	15.39	46.66	-	12.000	-	45.00	-
WB1635092D	35.00	30.00	91.95	15.918	15.39	46.56	-	12.000	-	45.00	-
WB1835091D	35.00	38.89	91.00	17.500	15.00	37.11	-	12.000	-	33.95	-
WB1635093D	35.00	38.90	92.50	15.976	16.60	37.00	-	12.052	-	35.50	-
WB1635096D	35.00	38.90	95.86	15.918	15.76	41.20	-	12.000	-	38.30	-
WB1635101D	35.00	38.90	100.97	15.918	25.07	37.00	-	12.007	-	34.50	-
WB1635101D-1	35.00	38.90	101.00	15.923	25.10	37.00	-	12.022	-	35.50	-
WB1635114D	35.00	38.90	113.97	15.918	25.07	50.00	-	12.007	-	47.70	-
WB1835105DD	35.00	39.00	105.00	18.000	25.00	41.00	15.918	12.000	23.50	38.00	-
WB1835114DD-1	35.00	39.00	113.50	18.000	26.00	48.50	15.918	12.000	24.00	45.00	-
WB1835119DD	35.00	39.00	119.00	18.000	26.50	53.50	15.918	12.000	24.50	51.00	-
WB1835134D	35.00	39.00	134.00	18.000	32.50	62.50	-	12.000	-	59.50	-
WB1635101D-2	35.00	46.00	101.00	15.923	19.00	36.00	-	12.014	-	34.50	-
WB1835144DD	35.00	46.00	144.00	18.000	44.00	54.00	15.920	12.000	8.00	51.30	-
WB2036112D	36.00	30.00	112.00	20.000	20.00	62.00	-	12.000	-	46.00	-
WB2036096DD	36.00	37.00	96.00	20.000	17.00	42.00	15.918	15.918	17.00	41.60	-
WB1736091D	36.00	38.90	90.70	17.008	14.00	37.80	-	15.008	-	34.00	-
WB1736091D-1	36.00	38.90	90.70	17.000	14.00	37.80	-	15.918	-	34.09	-

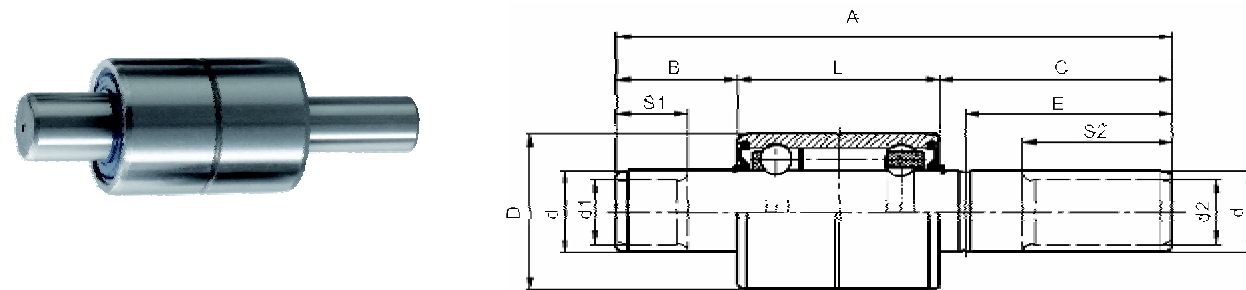


Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1736091D-2	36.00	38.90	90.70	17.059	14.00	37.80	-	15.057	-	34.00	-
WB1736093D	36.00	38.90	92.51	17.008	17.81	35.80	-	15.008	-	32.00	-
WB1736093D-1	36.00	38.90	92.51	17.008	17.81	35.80	-	15.008	-	34.49	-
WB1636135	36.00	38.90	135.00	15.918	24.94	71.16	-	-	-	-	-
WB1736092D	36.00	39.00	92.00	17.000	15.00	38.00	-	15.000	-	35.50	-
WB1936093DD	36.00	39.00	92.50	18.961	17.80	35.70	17.000	15.000	16.80	34.70	-
WB1936100DD	36.00	39.00	100.00	19.012	18.00	43.00	15.000	15.000	16.70	42.00	-
WB2036129DD	36.00	54.05	129.30	20.000	30.25	45.00	18.961	15.000	29.30	44.00	-
WB1936144D	36.00	54.05	143.48	19.000	30.76	58.67	-	16.000	-	50.55	-
WB1938118DD	38.00	41.10	118.00	19.000	29.80	47.10	15.918	15.918	27.30	44.60	-
WB1638135	38.10	38.90	135.00	15.918	24.94	71.16	-	-	-	-	-
WB1938112DD	38.10	41.28	112.00	18.961	25.13	45.59	15.918	12.038	22.63	42.48	-
WB1938113D	38.10	41.28	112.67	18.961	42.86	28.53	15.918	-	39.62	-	-
WB1938113DD	38.10	41.28	112.67	18.961	28.59	42.80	15.918	15.918	24.13	39.62	-
WB1938113DD-1	38.10	41.28	112.67	18.961	28.59	42.80	15.918	12.038	24.13	39.62	-
WB1938113DD-2	38.10	41.28	112.67	19.012	28.59	42.80	15.969	15.969	24.13	39.62	-
WB1938117D	38.10	41.28	117.20	18.961	24.71	51.21	-	15.918	-	47.50	-
WB1938117D-1	38.10	41.28	117.20	19.012	24.71	51.21	-	15.968	-	47.50	-
WB1938119D	38.10	41.28	119.05	18.961	26.59	51.18	-	15.918	-	48.01	-
WB1938121D-2	38.10	41.28	120.65	18.961	30.58	48.79	-	15.918	-	43.31	-
WB1938121DD	38.10	41.28	120.65	18.961	33.35	46.02	15.918	15.918	15.88	43.26	-
WB1938122D	38.10	41.28	121.68	18.961	30.08	50.32	-	12.038	-	45.24	-
WB1938115D	38.10	54.00	115.31	18.961	23.47	37.84	-	15.918	-	35.50	-
WB1938121D	38.10	54.00	120.65	18.961	24.20	42.45	-	15.918	-	39.68	-
WB1938126DD	38.10	54.00	125.73	18.961	30.86	40.87	15.918	15.918	27.43	37.34	-
WB1938127DD	38.10	54.00	127.38	18.961	42.90	30.48	15.918	15.918	39.67	27.76	-
WB1938129DD	38.10	54.00	129.00	18.961	32.50	42.50	17.000	15.918	30.00	39.50	-
WB1938136D	38.10	54.00	135.64	18.961	31.88	49.76	-	15.918	-	47.24	-
WB1938136D-1	38.10	54.00	135.64	19.012	31.88	49.76	-	15.969	-	47.24	-
WB1938136DD	38.10	54.00	136.40	18.961	36.17	46.23	15.918	15.918	12.32	43.43	-
WB1938136DD-2	38.10	54.00	136.40	19.012	36.17	46.23	15.918	19.969	12.32	43.43	-
WB1938137DD	38.10	54.00	136.65	18.961	36.70	45.95	15.918	15.918	33.02	42.42	-
WB1938142D-1	38.10	54.00	141.89	18.961	31.63	56.26	-	15.918	-	51.94	-
WB1938142D-2	38.10	54.00	141.89	19.012	31.63	56.26	-	15.977	-	51.94	-
WB1938143D	38.10	54.00	143.16	19.012	35.44	53.72	-	15.977	-	49.40	-

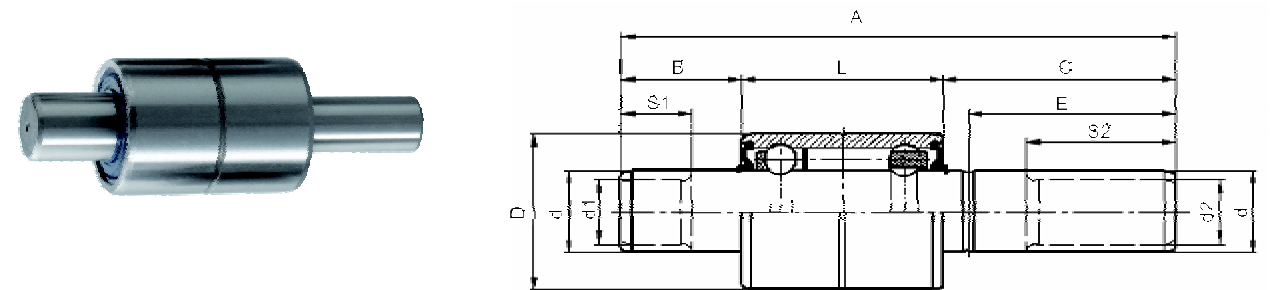
Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1938144D	38.10	54.00	143.46	18.961	30.84	58.62	-	15.918	-	50.55	-
WB1938144DD	38.10	54.00	143.50	18.961	30.84	58.66	15.918	15.918	12.24	50.54	-
WB1938144DD-2	38.10	54.00	143.50	19.012	30.84	58.66	15.918	15.977	12.24	50.54	-
WB1938146DD	38.10	54.00	146.05	18.961	36.32	55.73	15.918	15.918	30.10	51.56	-
WB1938146DD-2	38.10	54.00	146.05	18.961	36.30	55.75	15.918	15.918	13.72	50.67	-
WB1938146DD-3	38.10	54.00	146.05	19.012	36.32	55.73	15.969	15.969	30.10	51.56	-
WB1938149D	38.10	54.00	149.00	18.961	53.34	41.66	-	15.918	-	38.10	-
WB1938151D	38.10	54.00	150.50	18.961	35.05	61.45	-	15.918	-	58.29	-
WB1938153D	38.10	54.00	153.40	18.961	45.75	53.65	-	15.918	-	50.50	-
WB1938154DD	38.10	54.00	154.20	18.961	29.77	70.43	15.938	15.938	8.64	57.15	-
WB1938154DD-1	38.10	54.00	154.20	19.012	29.77	70.43	15.938	15.989	8.64	57.15	-
WB1938155DD	38.10	54.00	154.94	19.012	36.32	64.62	15.918	15.918	33.00	60.45	-
WB1938155DD-1	38.10	54.00	154.94	19.012	36.32	64.62	15.918	15.918	13.70	60.50	-
WB1938157D	38.10	54.00	156.59	18.961	39.62	62.97	-	15.918	-	59.82	-
WB1938157D-1	38.10	54.00	156.59	19.012	39.62	62.97	-	15.969	-	59.82	-
WB1938159DD	38.10	54.00	158.75	19.012	36.32	68.43	15.918	15.918	13.70	60.50	-
WB1938162DD	38.10	54.00	161.95	18.961	35.56	72.39	15.918	15.918	15.14	70.05	-
WB1938162DD-1	38.10	54.00	161.95	19.012	35.56	72.39	15.918	15.969	15.14	70.05	-
WB1938176DD	38.10	54.00	175.70	19.000	53.00	68.70	16.000	16.000	14.00	64.00	-
WB1938100	38.10	54.10	99.70	18.961	44.10	1.50	-	-	-	-	-
WB1938111	38.10	54.10	111.00	18.961	12.65	44.25	-	-	-	-	-
WB1938118D	38.10	54.10	118.20	18.961	23.10	41.00	-	15.918	-	39.50	-
WB1938121D-1	38.10	54.10	120.50	18.961	25.68	40.72	-	12.032	-	39.09	-
WB1938121D-3	38.10	54.10	120.50	18.961	25.68	40.72	-	15.918	-	38.99	-
WB1938121D-4	38.10	54.10	120.50	18.961	25.68	40.72	-	12.037	-	39.09	-
WB1938121D-5	38.10	54.10	120.50	19.012	25.68	40.72	-	12.088	-	39.09	-
WB1938122D-1	38.10	54.10	121.92	18.961	24.43	43.39	-	12.037	-	41.58	-
WB1938123DD	38.10	54.10	123.11	18.961	30.91	38.10	15.918	15.918	13.97	35.46	-
WB1938123DD-1	38.10	54.10	123.11	18.961	30.91	38.10	15.918	15.918	13.97	33.10	-
WB1938125D	38.10	54.10	125.00	18.961	25.50	45.40	-	15.918	-	42.00	-
WB1938126	38.10	54.10	125.48	18.961	67.82	3.56	-	-	-	-	-
WB1938126DD-1	38.10	54.10	125.48	18.961	26.17	45.21	15.918	15.918	22.86	40.64	-
WB1938127D	38.10	54.10	127.00	18.961	31.24	41.66	-	15.918	-	38.10	-
WB1938127D-2	38.10	54.10	127.00	19.012	31.24	41.66	-	15.977	-	38.10	-
WB1938127DD-1	38.10	54.10	127.00	18.961	26.54	46.36	15.918	15.918	11.68	43.82	-

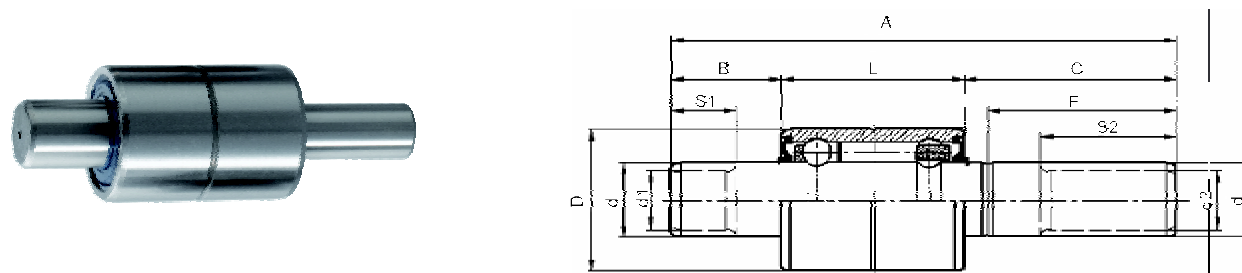


Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1938127DD-2	38.10	54.10	127.00	18.961	26.54	46.36	15.939	15.939	8.89	43.69	-
WB1938127D-1	38.10	54.10	127.25	18.961	29.00	44.15	-	15.918	-	40.21	-
WB1938128DD	38.10	54.10	127.48	18.961	30.91	42.47	15.918	15.918	14.35	39.30	-
WB1938128DD-1	38.10	54.10	127.48	19.012	30.91	42.47	15.918	15.969	14.35	39.30	-
WB1938132D	38.10	54.10	131.60	18.961	24.50	53.00	-	15.918	-	48.10	-
WB1938132D-1	38.10	54.10	131.80	18.961	24.50	53.20	-	15.918	-	49.20	-
WB1938132D-2	38.10	54.10	131.80	18.961	28.60	49.10	-	15.918	-	45.30	-
WB1938132DD	38.10	54.10	132.08	18.961	29.72	48.26	15.918	15.918	12.32	43.18	-
WB1938132DD-1	38.10	54.10	132.08	19.012	29.72	48.26	15.918	15.969	12.32	43.18	-
WB1938133D	38.10	54.10	133.35	18.961	24.21	55.04	-	15.918	-	49.28	-
WB1938134D	38.10	54.10	134.11	18.961	49.66	30.35	15.918	-	47.24	-	-
WB1938135DD	38.10	54.10	134.62	18.961	31.62	48.90	18.961	15.918	7.11	44.70	-
WB1938135D	38.10	54.10	134.87	18.961	36.70	44.07	-	15.977	-	16.87	38.40
WB1938135D-1	38.10	54.10	134.88	18.961	37.22	43.56	-	15.918	-	41.02	-
WB1938135D-2	38.10	54.10	134.88	19.012	37.22	43.56	-	15.969	-	41.02	-
WB1938136DD-1	38.10	54.10	135.86	18.961	30.71	51.05	15.918	15.918	12.24	42.93	-
WB1938137DD-1	38.10	54.10	136.70	18.961	40.13	42.47	15.918	15.918	14.35	39.29	-
WB1938137DD-2	38.10	54.10	137.39	18.961	30.71	52.58	15.918	15.918	12.24	44.45	-
WB1938138D	38.10	54.10	138.02	18.961	42.52	41.40	-	15.918	-	36.96	-
WB1938140DD	38.10	54.10	139.70	18.961	35.43	50.17	15.918	15.918	15.39	47.75	-
WB1938142D	38.10	54.10	141.73	18.961	43.81	43.82	-	15.918	-	40.77	-
WB1938143DD	38.10	54.10	142.62	18.961	39.37	49.15	15.918	15.918	30.86	45.59	-
WB1938144DD-1	38.10	54.10	143.48	18.961	30.71	58.67	15.918	15.918	12.24	45.09	-
WB1938144D-1	38.10	54.10	143.51	18.961	31.50	57.91	15.918	-	11.70	-	41.22
WB1938145D	38.10	54.10	144.53	18.961	31.60	58.83	-	15.918	-	44.45	-
WB2038146DD	38.10	54.10	146.00	19.980	44.40	47.50	18.950	15.910	42.80	44.00	-
WB1938146D	38.10	54.10	146.05	18.961	44.32	47.63	-	15.918	-	44.50	-
WB1938146DD-1	38.10	54.10	146.05	18.961	36.32	55.73	15.918	15.918	13.72	51.56	-
WB1938146DD-4	38.10	54.10	146.05	19.012	36.32	55.73	15.918	15.969	13.72	51.56	-
WB1938149DD	38.10	54.10	148.84	18.961	40.89	53.85	15.918	15.918	34.93	49.66	-
WB1938151DD	38.10	54.10	151.38	18.961	30.99	66.29	15.918	15.918	12.19	55.37	-
WB1938151DD-1	38.10	54.10	151.43	18.961	30.71	66.62	15.918	15.918	12.27	53.49	-
WB1938151DD-2	38.10	54.10	151.43	19.012	30.71	66.62	15.918	15.977	12.24	64.59	-
WB1938152DD	38.10	54.10	152.40	18.961	35.43	62.87	15.918	15.918	15.27	58.39	-
WB1938153DD	38.10	54.10	152.91	18.961	46.23	52.58	15.918	15.918	28.58	43.26	-

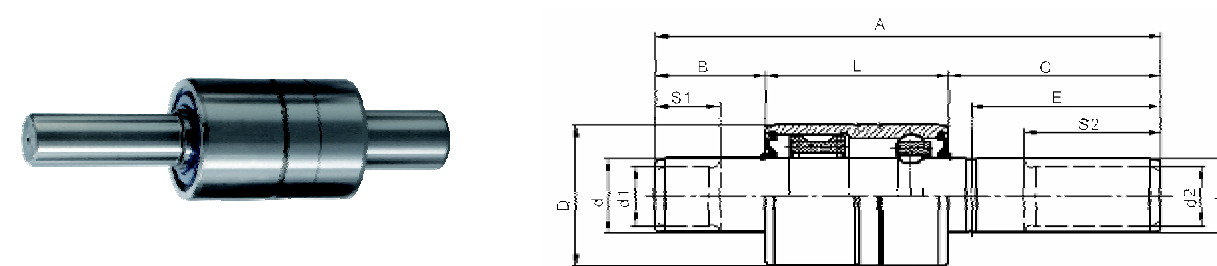
Arrangement Ball-Ball "WB" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WB1938153DD-1	38.10	54.10	152.91	19.012	46.26	52.55	15.918	15.977	28.50	43.05	-
WB1938155D	38.10	54.10	155.10	18.961	37.40	63.60	-	12.700	-	45.00	-
WB1938158DD	38.10	54.10	157.99	18.961	46.61	57.28	15.918	15.918	14.78	52.83	-
WB1938158DD-1	38.10	54.10	158.24	18.961	43.05	61.09	15.918	15.918	14.10	56.64	-
WB1938158DD-2	38.10	54.10	158.24	19.012	43.05	61.09	15.918	15.977	14.10	56.64	-
WB1938160D	38.10	54.10	160.20	18.961	44.19	61.91	-	15.918	-	58.61	-
WB2038161DD	38.10	54.10	160.60	19.980	44.40	62.10	18.950	15.910	42.80	58.50	-
WB1938161DD	38.10	54.10	161.04	18.961	46.61	60.33	15.918	15.918	33.15	55.88	-
WB1938161DD-1	38.10	54.10	161.04	19.012	46.61	60.33	15.977	15.977	33.15	55.88	-
WB1938163D	38.10	54.10	162.56	18.961	35.69	72.77	15.918	-	14.73	-	68.02
WB1938175DD	38.10	54.10	174.75	18.961	52.40	68.25	15.918	14.100	63.75	-	-
WB1940111D	40.00	46.00	111.20	19.000	28.00	37.20	-	12.000	-	35.00	-
WB1740117D	40.00	46.00	117.00	17.030	30.00	41.00	-	12.067	-	39.50	-
WB2040143DH	40.00	50.00	143.00	20.000	30.70	62.30	-	16.000	-	54.70	-

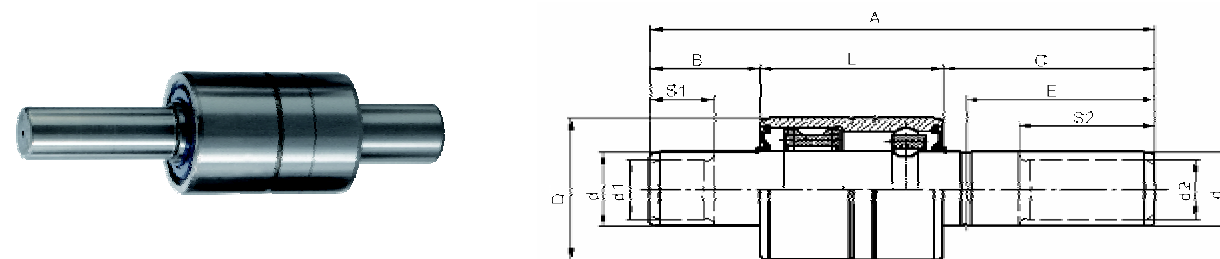


Arrangement Ball-Roller "WR" Series



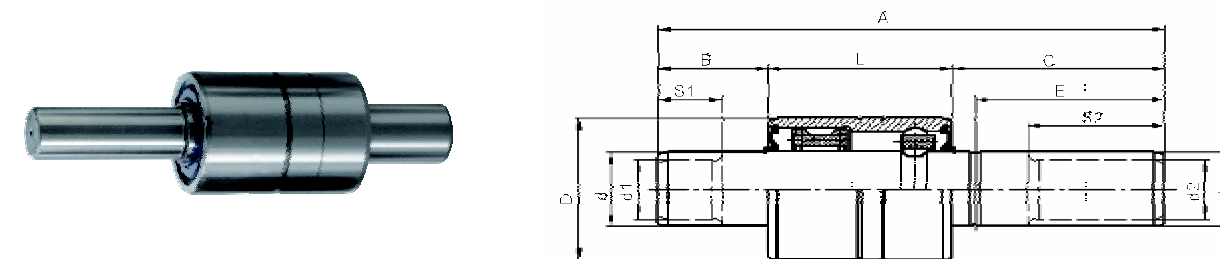
KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WR1728075D	28.00	27.00	74.60	17.201	13.10	41.50	-	12.000	-	39.50	-
WR1630074D	30.00	27.00	73.75	15.918	14.65	32.10	-	12.038	-	28.10	-
WR1630076D	30.00	27.00	76.00	15.918	16.31	32.69	-	12.037	-	30.30	-
WR1630076D-1	30.00	27.00	76.00	15.918	16.31	32.69	-	12.037	-	30.70	-
WR1630076D-2	30.00	27.00	76.00	15.969	16.31	32.69	-	12.088	-	30.30	-
WR1630080	30.00	27.00	80.00	16.000	15.50	37.50	-	-	-	-	-
WR1630080-1	30.00	27.00	80.04	15.918	15.75	37.29	-	-	-	-	-
WR1630085D	30.00	27.00	85.10	15.918	14.16	43.94	-	12.038	-	41.48	-
WR1630085D-1	30.00	27.00	85.34	15.918	15.62	42.72	-	12.000	-	38.53	-
WR1630086D	30.00	27.00	85.85	15.918	17.45	41.40	-	12.037	-	39.37	-
WR1630086D-1	30.00	27.00	85.90	15.918	14.15	43.94	-	12.037	-	41.48	-
WR1630087	30.00	27.00	87.30	15.918	14.53	45.77	-	-	-	-	37.57
WR1630089D-1	30.00	27.00	88.47	15.918	19.43	42.04	-	12.037	-	39.75	-
WR1630089D-2	30.00	27.00	88.49	15.918	19.22	42.27	-	12.037	-	39.75	-
WR1630089D	30.00	27.00	88.80	15.918	42.70	19.10	12.030	-	40.00	-	-
WR1630094D	30.00	27.00	94.00	15.918	16.00	51.00	-	12.038	-	49.00	-
WR1630101D	30.00	27.00	101.00	15.918	31.80	42.20	-	12.000	-	40.70	-
WR1630120D	30.00	27.00	120.23	15.918	29.06	64.17	-	12.037	-	57.71	-
WR1730078D	30.00	30.00	77.70	17.200	12.10	35.60	-	12.000	-	33.60	-
WR1630079D	30.00	30.00	79.26	15.918	13.50	35.76	-	12.038	-	33.76	-
WR1630083D-1	30.00	30.00	82.50	15.918	16.50	36.00	-	12.000	-	34.50	-
WR1630084D	30.00	30.00	83.82	15.918	15.77	38.05	-	12.000	-	35.46	-
WR1630084D-1	30.00	30.00	84.00	16.000	15.50	38.50	-	12.000	-	36.50	-
WR1630086D-2	30.00	30.00	85.82	15.918	14.50	41.32	-	12.038	-	39.32	-
WR1630087D	30.00	30.00	87.25	15.918	15.25	42.00	-	12.038	-	39.50	-
WR1630087-1	30.00	30.00	87.30	15.918	14.53	42.77	-	-	-	-	37.57
WR1630094D-1	30.00	30.00	94.30	15.918	16.30	48.00	-	12.000	-	45.00	-
WR1630090D	30.00	31.48	89.66	15.918	16.45	41.73	-	12.037	-	39.75	-
WR1630090D-1	30.00	31.55	89.66	15.918	16.43	41.68	-	12.037	-	39.75	-
WR1630087D-2	30.00	32.00	86.80	15.918	13.30	41.50	-	12.038	-	38.00	-
WR1630083D-2	30.00	33.40	82.50	15.918	15.10	34.00	-	12.000	-	33.00	-
WR1630083D-3	30.00	33.40	83.00	15.918	15.60	34.00	-	12.083	-	33.00	-
WR1630083D	30.00	33.40	83.40	15.918	16.20	33.80	-	12.738	-	32.00	-
WR1630096D	30.00	33.40	96.25	15.918	14.94	47.91	-	12.000	-	45.40	-
WR1630096D-1	30.00	33.80	96.30	15.918	14.60	47.90	-	12.038	-	46.40	-

Arrangement Ball-Roller "WR" Series



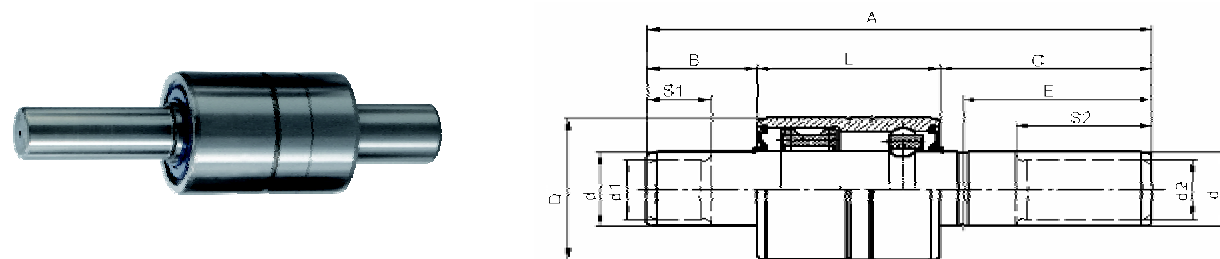
KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WR1630091D	30.00	34.00	91.00	15.918	20.00	37.00	-	12.380	-	34.50	-
WR1630102D	30.00	34.00	101.55	15.918	22.05	45.50	-	12.000	-	43.38	-
WR1630074	30.00	34.50	74.00	15.918	5.00	34.50	-	-	-	-	-
WR1630099	30.00	34.50	99.10	15.918	18.90	45.70	-	-	-	-	-
WR1630104	30.00	34.50	104.20	15.918	19.00	50.70	-	-	-	-	-
WR1530088	30.00	36.00	87.50	15.008	16.50	35.00	-	-	-	-	-
WR1530088D	30.00	36.00	87.50	15.008	16.50	35.00	-	12.000	-	34.00	-
WR1630088D	30.00	36.00	87.50	15.918	13.50	38.00	-	12.000	-	34.25	-
WR1630088	30.00	36.50	87.50	15.918	16.50	34.50	-	-	-	-	-
WR1630089	30.00	36.50	88.75	16.000	19.25	33.00	-	-	-	-	31.00
WR1630102-2	30.00	36.50	101.50	15.918	26.00	39.00	-	-	-	-	-
WR1630102	30.00	36.50	101.50	15.951	20.00	45.00	-	-	-	-	-
WR1630114	30.00	38.00	113.50	15.920	28.50	47.00	-	-	-	-	-
WR1530085D	30.00	38.90	85.00	15.008	13.10	33.00	-	12.038	-	32.00	-
WR1630085D-2	30.00	38.90	85.20	15.918	15.20	31.10	-	12.042	-	29.20	-
WR1630087D-1	30.00	38.90	86.50	15.918	13.50	34.10	-	12.038	-	32.20	-
WR1530087D	30.00	38.90	87.00	15.008	15.00	33.10	-	12.055	-	30.20	-
WR1630090D-2	30.00	38.90	89.50	15.918	12.10	38.50	-	12.000	-	34.50	-
WR1530090D	30.00	38.90	90.00	15.008	18.00	33.10	-	12.000	-	32.00	-
WR1630090D-3	30.00	38.90	90.20	15.918	15.49	35.81	-	12.000	-	33.86	-
WR1530091D	30.00	38.90	90.50	15.008	12.10	39.50	-	12.038	-	35.50	-
WR1630091D-1	30.00	38.90	91.31	15.918	13.45	38.96	-	12.000	-	36.45	-
WR1630092H	30.00	38.90	92.00	16.000	15.60	37.50	-	-	-	-	34.50
WR1630093D	30.00	38.90	92.50	15.918	25.10	28.50	-	12.038	-	27.00	-
WR1630093DD	30.00	38.90	92.50	15.918	16.20	37.40	12.000	12.000	15.00	34.50	-
WR1630093D-1	30.00	38.90	92.51	15.918	25.12	28.49	-	12.037	-	24.49	-
WR1630093D-2	30.00	38.90	92.61	15.918	16.54	37.17	-	12.000	-	35.56	-
WR1630093	30.00	38.90	92.99	15.918	18.64	35.45	-	-	-	-	29.74
WR1630093D-3	30.00	38.90	92.99	15.918	18.81	35.28	12.000	-	16.20	-	29.51
WR1630093-1	30.00	38.90	93.00	15.918	18.50	35.60	-	-	-	-	-
WR1630093D-4	30.00	38.90	93.00	15.918	18.60	35.50	-	12.006	-	34.50	-
WR1630093D-5	30.00	38.90	93.00	15.918	14.00	40.10	-	12.038	-	39.10	-
WR1630093-2	30.00	38.90	93.35	15.918	16.76	37.69	-	-	-	-	31.98
WR1530094	30.00	38.90	94.40	15.008	15.60	39.90	-	-	-	-	-
WR1530094-1	30.00	38.90	94.40	15.008	15.60	39.90	-	-	-	-	36.40

Arrangement Ball-Roller "WR" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WR1630095D-1	30.00	38.90	94.45	15.918	14.23	42.32	-	12.038	-	40.32	-
WR1530095D	30.00	38.90	94.50	15.008	14.50	41.10	-	12.000	-	40.00	-
WR1630095D	30.00	38.90	94.50	15.918	16.00	39.60	-	12.006	-	38.00	-
WR1630095D-2	30.00	38.90	94.51	15.918	19.08	36.53	12.002	-	16.00	-	30.86
WR1630095	30.00	38.90	94.80	16.000	12.90	43.00	-	-	-	-	-
WR1630096	30.00	38.90	95.45	15.918	14.32	42.32	-	-	-	-	39.32
WR1630096D-2	30.00	38.90	95.50	15.918	14.18	42.42	-	12.037	-	40.39	-
WR1630096D-3	30.00	38.90	95.63	15.918	17.53	39.20	-	12.000	-	34.90	-
WR1630096D-4	30.00	38.90	96.00	15.918	15.00	42.10	-	12.038	-	37.50	-
WR1530096D	30.00	38.90	96.40	15.008	18.00	39.50	-	12.067	-	36.60	-
WR1630096D-5	30.00	38.90	96.40	15.918	18.00	39.50	-	12.052	-	36.60	-
WR1630097D	30.00	38.90	96.49	15.918	16.44	41.15	-	12.000	-	38.51	-
WR1630097D-1	30.00	38.90	96.50	15.918	15.35	42.25	-	12.738	-	40.00	-
WR1530098	30.00	38.90	97.50	15.006	23.50	35.10	-	-	-	-	33.00
WR1630098D	30.00	38.90	97.51	15.918	19.51	39.10	-	12.037	-	37.31	-
WR1630098	30.00	38.90	98.00	15.918	17.00	42.10	-	-	-	-	38.00
WR1630098D-1	30.00	38.90	98.00	15.918	17.00	42.10	-	12.000	-	40.00	-
WR1630098-1	30.00	38.90	98.00	16.000	18.10	41.00	-	-	-	-	38.00
WR1630099D-1	30.00	38.90	98.78	15.918	18.42	41.46	-	12.052	-	38.90	-
WR1630099D-2	30.00	38.90	98.79	15.918	18.43	41.46	-	12.038	-	39.46	-
WR1630100DD	30.00	38.90	99.49	15.918	16.47	44.12	12.000	12.000	14.61	41.28	-
WR1630100D	30.00	38.90	99.85	15.918	10.50	50.45	-	12.038	-	43.30	-
WR1630100D-1	30.00	38.90	99.85	15.918	10.81	50.14	-	12.037	-	43.31	-
WR1630101D-1	30.00	38.90	100.51	15.918	18.01	43.60	-	12.000	-	33.50	-
WR1630101	30.00	38.90	100.85	15.918	16.00	45.95	-	-	-	-	-
WR1630101-1	30.00	38.90	100.99	15.918	25.25	36.84	-	-	-	-	31.14
WR1630101D-2	30.00	38.90	101.00	15.918	24.99	37.11	-	12.000	-	34.98	-
WR1630101DD	30.00	38.90	101.09	15.918	22.84	39.35	12.002	12.042	19.84	38.61	-
WR1630102D-2	30.00	38.90	101.50	15.918	16.00	46.60	-	12.000	-	42.80	-
WR1630102-1	30.00	38.90	102.00	15.918	17.00	46.10	-	-	-	-	41.30
WR1630102D-1	30.00	38.90	102.24	15.918	23.72	39.62	-	12.000	-	38.10	-
WR1630103-2	30.00	38.90	103.00	15.918	27.60	36.50	-	-	-	-	31.30
WR1630103D	30.00	38.90	103.00	15.918	16.50	47.60	-	12.000	-	45.30	-
WR1630103	30.00	38.90	103.00	16.000	27.10	37.00	-	-	-	-	-
WR1630103D-1	30.00	38.90	103.02	15.918	16.54	47.58	-	12.000	-	44.86	-

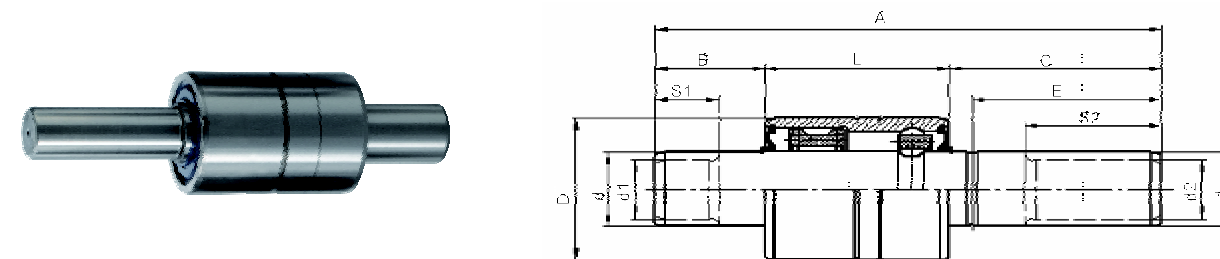
Arrangement Ball-Roller "WR" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WR1630103-1	30.00	38.90	103.12	15.918	27.92	36.30	-	-	-	-	31.47
WR1530103	30.00	38.90	103.20	15.000	23.40	40.90	-	-	-	-	-
WR1630103D-2	30.00	38.90	103.33	15.918	18.54	45.89	-	12.738	-	43.79	-
WR1630104D	30.00	38.90	103.50	15.918	19.50	45.10	-	12.038	-	43.16	-
WR1630104D-1	30.00	38.90	103.99	15.918	16.99	48.10	-	12.000	-	46.69	-
WR1630104D-2	30.00	38.90	104.00	15.918	20.00	45.10	-	12.038	-	42.50	-
WR1630104D-3	30.00	38.90	104.00	15.918	19.70	45.40	-	12.000	-	43.00	-
WR1630105D	30.00	38.90	104.55	15.939	20.93	44.72	-	12.037	-	42.62	-
WR1630105D-1	30.00	38.90	105.00	15.918	30.70	35.40	-	12.000	-	32.00	-
WR1630105	30.00	38.90	105.41	15.918	20.31	46.20	-	-	-	-	41.40
WR1630106DD	30.00	38.90	105.50	15.918	16.50	50.10	12.000	12.000	14.50	48.40	-
WR1630106	30.00	38.90	105.97	15.918	21.06	46.01	-	-	-	-	40.79
WR1530106D	30.00	38.90	106.00	15.007	27.60	39.50	-	12.067	-	35.80	-
WR1630106D	30.00	38.90	106.00	15.918	23.05	44.05	-	12.038	-	39.60	-
WR1630106-1	30.00	38.90	106.00	16.000	26.10	41.00	-	-	-	-	38.00
WR1630106H	30.00	38.90	106.00	16.000	20.10	47.00	-	-	-	-	-
WR1630106-2	30.00	38.90	106.12	15.918	29.69	37.53	-	-	-	-	30.78
WR1630106D-1	30.00	38.90	106.17	15.918	25.13	42.14	-	12.738	-	40.00	-
WR1630106D-2	30.00	38.90	106.20	15.918	18.43	48.87	-	12.000	-	41.00	-
WR1630107-1	30.00	38.90	106.50	15.918	20.10	47.50	-	-	-	-	-
WR1630107D	30.00	38.90	106.50	15.918	17.50	50.10	-	12.000	-	48.00	-
WR1630107D-1	30.00	38.90	106.50	15.918	21.96	45.64	-	12.037	-	43.64	-
WR1630107	30.00	38.90	106.50	16.000	20.10	47.50	-	-	-	-	-
WR1630107-2	30.00	38.90	107.39	15.918	23.05	45.44	-	-	-	-	44.04
WR1630107D-2	30.00	38.90	107.39	15.918	18.67	49.82	-	12.000	-	45.14	-
WR1630108D	30.00	38.90	108.30	15.918	18.40	51.00	-	12.038	-	48.00	-
WR1630109D	30.00	38.90	108.60	15.918	18.50	51.20	-	12.038	-	48.20	-
WR1630110D	30.00	38.90	109.50	15.918	25.12	45.48	-	12.037	-	42.83	-
WR1630110DD	30.00	38.90	109.50	15.918	16.15	54.45	12.000	12.000	14.30	51.80	-
WR1630110	30.00	38.90	110.39	15.918	21.35	50.14	-	-	-	-	41.00
WR1630110-1	30.00	38.90	110.39	15.918	21.41	50.08	-	-	-	-	45.49
WR1630110D-1	30.00	38.90	110.39	15.918	21.35	50.14	-	12.037	-	46.96	-
WR1630111	30.00	38.90	110.90	15.918	25.12	46.88	-	-	-	-	-
WR1630111D	30.00	38.90	110.90	15.918	25.10	46.90	-	12.000	-	45.90	-
WR1630111D-1	30.00	38.90	111.00	16.000	29.90	42.20	-	12.000	-	39.70	-

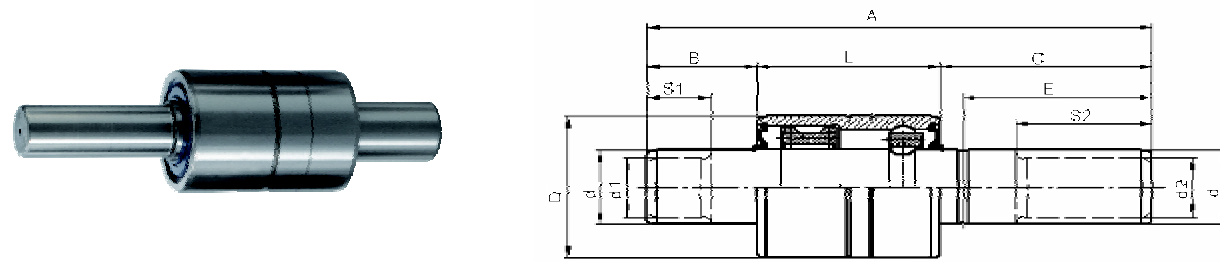


Arrangement Ball-Roller "WR" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WR1630112-2	30.00	38.90	111.51	15.918	23.79	48.82	-	-	-	-	-
WR1630112	30.00	38.90	112.00	16.000	32.10	41.00	-	-	-	-	38.00
WR1630112-1	30.00	38.90	112.34	15.918	23.70	49.74	-	-	-	-	44.04
WR1630114D	30.00	38.90	114.00	15.918	19.10	56.00	12.000	-	46.00	-	-
WR1630114-1	30.00	38.90	114.30	15.918	31.99	43.41	-	-	-	-	34.29
WR1630115	30.00	38.90	115.00	16.000	26.10	50.00	-	-	-	-	46.00
WR1630115H	30.00	38.90	115.00	16.000	26.10	50.00	-	-	-	-	43.00
WR1630116	30.00	38.90	115.49	15.918	20.48	56.11	-	-	-	-	-
WR1630116-1	30.00	38.90	115.72	15.918	20.96	55.86	-	-	-	-	50.17
WR1630116-2	30.00	38.90	115.85	15.918	27.93	49.02	-	-	-	-	44.20
WR1630116-3	30.00	38.90	115.85	15.918	28.32	48.63	-	-	-	-	44.32
WR1630117	30.00	38.90	117.00	16.000	26.10	52.00	-	-	-	-	47.00
WR1630117-1	30.00	38.90	117.27	15.918	33.87	44.50	-	-	-	-	39.62
WR1630117-2	30.00	38.90	117.27	15.918	34.26	44.11	-	-	-	-	38.40
WR1630117D	30.00	38.90	117.30	15.918	18.11	60.29	12.038	-	58.29	-	-
WR1630119D	30.00	38.90	119.00	15.918	17.50	62.20	12.008	-	45.00	-	-
WR1630119	30.00	38.90	119.05	15.918	37.30	42.85	-	-	-	-	36.50
WR1630119-1	30.00	38.90	119.05	15.918	30.11	50.04	-	-	-	-	45.26
WR1630120	30.00	38.90	119.89	15.918	36.96	44.03	-	-	-	-	38.07
WR1630121	30.00	38.90	120.68	15.918	27.93	53.85	-	-	49.02	-	-
WR1630122	30.00	38.90	122.20	15.918	33.90	49.40	-	-	-	-	44.60
WR1630122-1	30.00	38.90	122.25	15.939	28.64	54.71	-	-	-	-	49.20
WR1630123D	30.00	38.90	122.68	15.918	27.20	56.58	12.042	-	44.20	-	-
WR1630123	30.00	38.90	123.01	15.918	19.01	65.10	-	-	-	-	-
WR1630123-1	30.00	38.90	123.01	15.918	19.28	64.83	-	-	-	-	59.61
WR1630124	30.00	38.90	123.50	15.918	20.50	64.10	-	-	-	-	57.50
WR1630124-1	30.00	38.90	123.67	15.918	32.13	52.64	-	-	-	-	46.94
WR1630127	30.00	38.90	127.00	16.000	26.10	62.00	-	-	-	-	57.00
WR1630127-1	30.00	38.90	127.43	15.918	21.98	66.55	-	-	-	-	61.72
WR1630128D	30.00	38.90	127.80	15.918	23.30	65.60	12.040	-	48.60	-	-
WR1630129	30.00	38.90	129.03	15.918	31.71	58.42	-	-	-	-	-
WR1630132	30.00	38.90	132.13	15.939	40.17	53.06	-	-	-	-	48.29
WR1630136	30.00	38.90	136.40	15.918	39.04	58.47	-	-	-	-	48.97
WR1630139	30.00	38.90	138.99	15.918	23.10	76.99	-	-	-	-	72.16
WR1630141	30.00	38.90	141.00	15.918	31.00	71.10	-	-	-	-	-

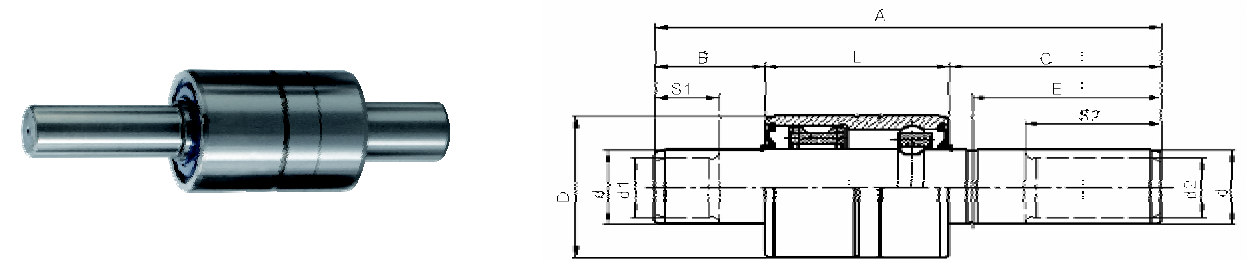
Arrangement Ball-Roller "WR" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WR1630154	30.00	38.90	154.23	15.939	29.76	85.57	-	-	-	-	79.22
WR1630090D-4	30.00	40.00	89.70	15.918	15.70	34.00	-	12.000	-	33.00	-
WR1630095D-3	30.00	44.00	95.00	15.918	20.00	31.00	-	11.000	-	21.00	-
WR1630100D-2	30.00	46.00	99.54	15.918	16.89	36.65	-	12.000	-	33.55	-
WR1530106	30.00	52.00	105.75	15.008	14.25	39.50	-	-	-	-	36.00
WR1530109D	30.00	52.00	109.10	15.000	19.00	38.10	-	12.000	-	35.20	-
WR1530109	30.00	52.00	109.25	15.008	17.75	39.50	-	-	-	-	36.00
WR1630111DD	30.00	52.00	110.60	16.000	18.80	39.80	15.009	12.052	17.90	35.50	-
WR1530116	30.00	52.00	115.75	15.000	17.75	46.00	-	-	-	-	-
WR1630116-4	30.00	52.00	115.75	16.000	17.75	46.00	-	-	-	-	-
WR1530119D	30.00	52.00	119.00	15.008	23.50	43.50	-	12.052	-	36.50	-
WR1530122D	30.00	52.00	121.50	15.000	32.00	37.50	-	12.038	-	36.00	-
WR1530125	30.00	52.00	125.00	15.008	17.50	55.50	-	-	-	-	42.00
WR1530125-1	30.00	52.00	125.00	15.008	24.50	48.50	-	-	-	-	-
WR1630125	30.00	52.00	125.00	15.918	17.50	55.50	-	-	-	-	42.00
WR1530125D	30.00	52.00	125.25	15.008	18.00	55.50	-	12.000	-	42.00	-
WR1530125D-1	30.00	52.00	125.25	15.008	24.75	48.50	-	12.055	-	47.50	42.00
WR1630131DD	30.00	52.00	130.50	16.000	33.00	45.50	15.002	12.055	31.50	41.00	-
WR1930115D	30.00	54.10	115.30	18.961	21.65	39.55	-	15.918	-	38.50	-
WR1530119D-1	30.00	56.00	119.00	15.008	23.50	39.50	-	12.067	-	38.50	-
WR1630146D	30.00	56.00	146.05	15.918	27.00	63.05	-	12.037	-	53.85	-
WR1630151D	30.00	60.00	151.00	15.918	25.13	65.87	-	12.038	-	63.00	-
WR1935093DD	35.00	38.90	92.50	19.012	16.50	37.10	15.918	12.000	14.00	34.75	-
WR1835093DD-1	35.00	38.90	92.70	18.000	16.20	37.60	17.000	12.000	14.30	34.80	-
WR1835100DD	35.00	38.90	100.30	18.000	16.40	45.00	15.918	12.000	14.40	43.00	-
WR1935100DD	35.00	38.90	100.41	19.012	16.59	44.92	15.918	12.000	14.00	42.04	-
WR1835103DD	35.00	38.90	103.00	18.000	26.30	37.80	15.918	12.000	24.70	35.30	-
WR1935103DD	35.00	38.90	103.43	19.012	16.47	48.06	15.918	12.000	15.00	45.72	-
WR1935109DD	35.00	38.90	108.89	19.012	21.93	48.06	15.918	12.000	20.50	45.72	-
WR1835112D	35.00	38.90	112.00	17.500	27.00	46.10	-	12.038	-	43.50	-
WR1635112D	35.00	38.90	112.18	15.918	29.98	43.30	-	12.000	-	40.60	-
WR1835101DD	35.00	39.00	101.00	18.000	25.00	37.00	15.918	12.000	23.50	33.80	-
WR1935101DD	35.00	46.00	100.50	18.961	18.00	36.50	15.918	12.000	16.50	34.00	-
WR1835114D	35.00	46.00	114.00	18.000	26.30	41.70	-	12.000	-	37.00	-
WR1935126DD	35.00	56.00	126.00	18.961	28.50	41.50	15.918	12.000	26.49	38.96	-



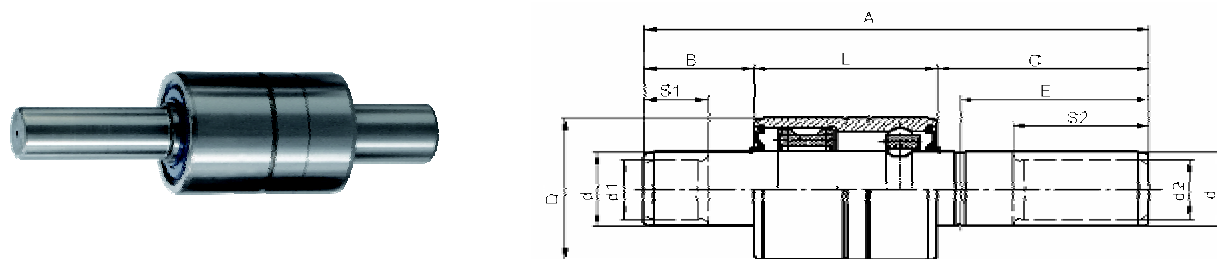
Arrangement Ball-Roller "WR" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WR1936088D	36.00	40.00	88.00	19.012	13.50	34.50	-	12.000	-	33.50	-
WR1936109DD	36.00	40.00	109.40	18.961	13.50	55.90	15.918	12.008	12.50	54.50	-
WR1936105DD	36.00	44.00	104.50	19.012	20.00	40.50	15.918	15.008	19.00	38.50	-
WR1936110DD	36.00	44.00	110.00	19.012	25.50	40.50	15.918	12.000	24.50	38.50	-
WR1936100DD	36.00	46.00	100.00	18.961	18.00	36.00	15.918	12.000	16.00	34.00	-
WR1936100DD-1	36.00	46.00	100.00	18.961	18.00	36.00	16.000	12.000	16.00	34.00	-
WR1936121D	36.00	52.00	120.50	19.012	25.50	43.00	-	15.000	-	42.00	-
WR1936122DD	36.00	52.00	122.00	19.012	29.00	41.00	15.918	12.000	28.00	40.00	-
WR1936126DD	36.00	52.00	125.50	19.012	25.25	48.25	15.002	15.002	22.50	44.50	-
WR1936131DD	36.00	52.00	130.50	19.012	33.00	45.50	15.002	12.055	32.00	41.00	-
WR1936131DD-1	36.00	52.00	130.70	19.012	33.00	45.70	15.008	12.055	32.00	42.70	-
WR1936126DD-1	36.00	56.00	126.00	18.961	28.50	41.50	15.918	12.000	26.50	37.00	-
WR1938112DD	38.00	41.10	112.20	18.900	32.40	38.70	16.000	16.000	29.30	35.50	-
WR1938118DD	38.00	41.10	118.00	18.900	29.80	47.10	15.918	15.918	27.30	44.60	-
WR1938121D	38.10	41.28	120.65	18.961	33.40	45.97	-	15.918	-	43.69	-
WR1938075D	38.10	47.00	75.00	18.961	25.70	2.30	15.918	-	24.00	-	-
WR1938116D	38.10	50.00	116.00	18.961	19.00	47.00	-	15.918	-	46.00	-
WR1938175D	38.10	52.60	174.80	18.961	52.91	69.29	-	12.037	-	42.88	-
WR1938108	38.10	54.00	108.20	18.961	3.53	50.67	-	-	-	-	-
WR1938130DDF*	38.10	54.00	130.40	18.961	39.60	36.80	16.000	15.918	13.30	36.20	-
WR1938151	38.10	54.00	150.50	18.961	35.05	61.45	-	-	15.92	58.29	-
WR1938151DD	38.10	54.00	150.50	18.961	35.05	61.45	15.918	15.918	12.88	58.29	-
WR1938158DD	38.10	54.00	158.00	18.961	46.74	57.26	15.918	15.918	14.78	52.83	-
WR1938176DD	38.10	54.00	175.70	19.000	53.00	68.70	16.000	16.000	14.00	64.00	-
WR1938091	38.10	54.10	90.90	18.961	33.20	3.60	-	-	-	-	-
WR1938100	38.10	54.10	99.70	18.961	44.10	1.50	-	-	-	-	-
WR1938115D	38.10	54.10	115.32	18.961	23.35	37.87	-	12.037	-	35.71	-
WR1938115D-1	38.10	54.10	115.32	19.012	23.47	37.87	-	12.088	-	35.71	-
WR1938117DD	38.10	54.10	116.84	18.961	26.92	35.82	15.939	12.037	8.89	33.78	-
WR1938121D-1	38.10	54.10	120.50	18.961	25.68	40.72	-	15.918	-	39.00	-
WR1938121D-2	38.10	54.10	120.50	18.961	25.68	40.72	-	12.032	-	39.09	-
WR1938121D-3	38.10	54.10	120.50	18.961	26.19	40.21	-	15.918	-	35.46	-
WR1938123DD	38.10	54.10	123.11	18.961	30.91	38.10	15.918	15.918	13.97	34.11	-
WR1938125D	38.10	54.10	124.50	18.961	24.78	45.62	-	15.918	-	43.18	-
WR1938125D-1	38.10	54.10	124.72	18.961	25.00	45.62	-	15.918	-	43.02	-

Remark: "*" means bearing with flinger

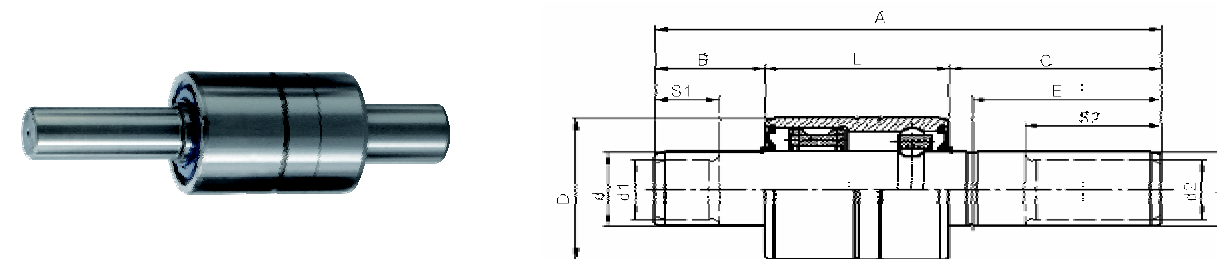
Arrangement Ball-Roller "WR" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WR1938125D-2	38.10	54.10	125.00	18.950	28.40	42.00	-	15.875	-	39.30	-
WR1938125D-3	38.10	54.10	125.40	18.961	28.83	42.47	-	15.918	-	39.03	-
WR1938126D	38.10	54.10	125.98	18.961	28.00	43.88	-	12.038	-	40.70	-
WR1938128D	38.10	54.10	127.51	18.961	27.94	45.47	-	15.918	-	42.93	-
WR1938129D	38.10	54.10	128.88	18.961	24.10	50.68	-	12.038	-	48.26	-
WR1938129D-1	38.10	54.10	129.06	18.961	31.40	43.56	-	15.918	-	41.02	-
WR1938132D	38.10	54.10	131.80	18.961	24.00	53.70	-	15.918	-	49.40	-
WR1938133D	38.10	54.10	133.30	18.961	32.41	46.79	-	12.037	-	44.04	-
WR1938135D	38.10	54.10	134.60	18.961	31.50	49.00	-	15.918	-	44.70	-
WR1938135DD	38.10	54.10	134.62	18.961	31.62	48.90	15.918	15.918	7.11	44.70	-
WR1938135D-1	38.10	54.10	134.87	18.961	29.97	50.80	-	15.918	-	48.26	-
WR1938135D-2	38.10	54.10	134.87	18.961	29.97	50.80	-	12.037	-	48.31	-
WR1938136D	38.10	54.10	135.64	18.961	31.76	49.78	-	15.918	-	47.24	-
WR1938136D-1	38.10	54.10	136.00	18.961	22.25	59.65	-	15.918	-	57.25	-
WR1938136DD	38.10	54.10	136.40	18.961	36.07	46.23	15.918	15.918	12.45	43.43	-
WR1938137DD	38.10	54.10	137.41	18.961	30.73	52.58	15.918	15.918	12.19	39.62	-
WR1938138D	38.10	54.10	137.92	18.961	33.02	50.80	-	15.918	-	48.26	-
WR1938138D-1	38.10	54.10	137.92	18.961	33.02	50.80	-	12.037	-	48.26	-
WR1938138D-2	38.10	54.10	138.02	18.961	42.52	41.40	-	15.918	-	36.96	-
WR1938142DD	38.10	54.10	141.86	18.961	36.20	51.56	15.918	15.918	12.32	43.43	-
WR1938144DD	38.10	54.10	143.48	18.961	30.71	58.67	15.918	15.918	12.24	50.55	-
WR1938144DD-1	38.10	54.10	143.48	18.961	30.71	58.67	15.918	15.918	12.24	45.09	-
WR1938145D	38.10	54.10	144.53	18.961	31.60	58.83	-	15.918	-	44.45	-
WR1938145D-1	38.10	54.10	144.78	18.961	32.77	57.91	-	15.918	-	54.23	-
WR1938146D	38.10	54.10	146.05	18.961	44.32	47.63	-	15.918	-	44.50	-
WR1938146DD	38.10	54.10	146.05	18.961	36.20	55.75	15.918	15.918	13.72	51.56	-
WR1938149D	38.10	54.10	148.59	18.961	45.59	48.90	-	15.918	-	45.72	-
WR1938151D	38.10	54.10	150.50	18.961	34.93	61.47	-	15.918	-	58.29	-
WR1938151DD-1	38.10	54.10	150.50	18.961	34.93	61.47	15.918	15.918	12.88	58.29	-
WR1938151DD-2	38.10	54.10	151.43	18.961	30.71	66.62	15.918	15.918	12.27	53.49	-
WR1938152D	38.10	54.10	152.27	18.961	40.51	57.66	-	15.918	-	55.12	-
WR1938153DD	38.10	54.10	152.91	18.961	46.23	52.58	15.918	15.918	28.58	43.27	-
WR1938155D	38.10	54.10	155.04	18.961	37.67	63.27	-	12.700	-	45.09	-
WR1938155D-1	38.10	54.10	155.05	18.961	37.66	63.29	-	12.038	-	45.09	-
WR1938157D	38.10	54.10	156.59	18.961	39.50	62.99	-	15.918	-	59.82	-



Arrangement Ball-Roller "WR" Series



KML No.	Boundary dimension(mm)										
	D	L	A	d	B	C	d1	d2	S1	S2	E
WR1938157D-1	38.10	54.10	156.59	18.961	39.62	62.87	-	15.918	-	59.54	-
WR1938158DD-1	38.10	54.10	157.99	18.961	46.00	57.89	15.918	15.977	15.06	24.89	52.30
WR1938158DD-2	38.10	54.10	158.24	18.961	43.05	61.09	15.918	15.918	14.10	56.64	-
WR1938158DD-3	38.10	54.10	158.40	18.961	34.78	69.52	15.918	15.918	12.80	60.30	-
WR1938159DD	38.10	54.10	158.67	18.961	34.92	69.65	15.918	15.918	12.88	61.90	-
WR1938161D	38.10	54.10	160.53	18.961	44.33	62.10	-	15.918	-	58.93	-
WR1938161DD	38.10	54.10	161.04	18.961	46.61	60.33	15.918	15.918	33.15	55.88	-
WR1938162DD	38.10	54.10	161.93	18.961	35.44	72.39	15.918	15.918	15.14	70.05	-
WR1938175D-1	38.10	54.10	174.75	18.961	52.41	68.24	-	12.038	-	43.00	-
WR1938175DD	38.10	54.10	174.75	18.961	52.40	68.25	15.918	15.918	14.10	63.75	-
WR1938175DD-1	38.10	54.10	174.75	18.961	35.00	85.65	15.918	12.037	14.12	59.84	-
WR1938175DD-2	38.10	54.10	174.75	18.961	52.53	68.12	15.918	12.038	14.10	43.00	-
WR1938175D-2	38.10	54.10	174.80	18.961	52.40	68.30	-	12.037	-	43.00	-
WR1940117D	40.00	46.00	117.00	18.961	29.30	41.70	-	15.918	-	39.10	-
WR2040105	40.00	50.00	104.50	20.004	47.50	7.00	-	-	-	-	-
WR1940112D	40.00	50.00	112.00	19.000	29.00	33.00	-	12.000	-	32.00	-
WR2040112D	40.00	50.00	112.00	20.004	18.00	44.00	-	16.000	-	40.00	-
WR1940122D	40.00	50.00	122.00	19.000	22.00	50.00	-	12.000	-	46.00	-
WR2040143D	40.00	50.00	143.00	20.000	31.50	61.50	-	15.918	-	54.50	-
WR2040143D-1	40.00	50.00	143.00	20.004	31.50	61.50	-	16.000	-	55.00	-
WR2241088DD	41.00	38.90	88.20	22.000	13.60	35.70	20.000	12.000	12.60	34.31	-
WR2242095D	42.00	32.00	95.30	22.000	15.70	47.60	-	12.000	-	43.60	-
WR2242098D	42.00	32.00	97.64	22.000	15.70	49.94	-	12.000	-	46.94	-
WR2242115DD	42.00	41.50	115.00	22.000	29.80	43.70	15.918	15.918	8.50	41.70	-
WR2042131DD	42.00	45.90	130.50	20.004	23.60	61.00	19.000	12.000	22.60	59.00	-
WR2242106DD	42.00	46.00	105.50	22.000	16.50	43.00	18.000	13.000	15.00	38.50	-
WR2242111DD	42.00	46.00	110.50	22.000	23.60	40.90	19.000	12.000	22.60	39.00	-
WR2242116DD	42.00	46.00	115.50	22.000	26.50	43.00	18.000	13.000	24.00	38.50	-
WR2242118D	42.00	46.00	118.00	22.000	28.00	44.00	-	12.000	-	40.50	-
WR2555124D	55.00	60.00	124.00	25.000	22.00	42.00	-	15.918	-	41.00	-
WR2555127D	55.00	60.00	127.00	25.061	25.00	42.00	-	16.056	-	41.00	-
WR2555146DD	55.00	60.00	145.54	25.061	31.88	53.66	18.961	15.918	28.70	50.50	-



Interchange Data - FAG, SKF, KOYO, RHP, NSK

FAG	KML No.	FAG	KML No.
W2289	WB1630073	WK2607A	WB1938154DD
W2325	WB1630083-3	WK2616-2	WB1938157D
W2387S	WB1630099D	WK2637	WB1938162DD
W2404S	WB1630103D	WK6500-2	WB1938127D-2
W2406-1	WB1630103-5	WK6501-3B	WB1938128DD-1
W2415-1	WB1630105	WK6520B	WB1938132DD
W2434	WB1630110-2	WK6531	WB1938135D-2
W2439	WB1630112-4	WK6534	WB1938136D-1
W2456-1	WB1630116	WK6537-1B	WB1938136DD-2
W2468-1	WB1630119	WK6559-2	WB1938142D-2
W2476-2	WB1630121-2	WK6564	WB1938143D
W2481	WB1630122-1	WK6564-6B	WB1938144DD-2
W2481-1	WB1630122	WK6575-1B	WB1938146DD-4
W2537	WB1630136-3	WK6575-4	WB1938146DD-3
W2562	WB1630143	WK6596-1B	WB1938151DD-2
W2637	WB1630162	WK6602-2B	WB1938153DD-1
W3520-2	WB1630132	WK6607B	WB1938154DD-1
W3607-1	WB1630154	WK6616-2	WB1938157D-1
W6334S	WB1630085D-8	WK6623B	WB1938158DD-2
W6385	WB1630098-5	WK6634-1	WB1938161DD-1
W6387S	WB1630098D-4	WK6637B	WB1938162DD-1
W6415-1	WB1630105-2	WS6332-1	WB1630085-4
W6434	WB1630110-6	WS6372	WB1226095-1
W6445	WB1630113-3	WS6443	WB1938113DD-2
W6446	WB1630114-3	WS6460	WB1938117D-1
W6454	WB1630116-4	WKN2592	WR1938151D
W6468	WB1630119-2	WKN2592-2	WR1938151DD-1
W6486-2	WB1630124-1	WKN2622	WR1938158DD
W6548-1	WB1630139-1	WKN2688	WR1938175DD
W6562	WB1630143-1	WKN6454D	WR1938115D-1
W7399-1	WB1630102-2	WN2415-1	WR1630105
W7399-2S	WB1630102D	WNS2572	WR2555146DD
W7481-6	WB1630122-3	WNS6299-2	WR1630076D-2
W7607-1	WB1630154-1		
WK2495	WB1938126DD		
WK2534	WB1938136D		
WK2537-1	WB1938136DD		
WK2538	WB1938137DD		
WK2559-2	WB1938142D-1		
WK2564-4	WB1938144DD		
WK2575-1	WB1938146DD-2		
WK2575-4	WB1938146DD		
WK2587	WB1938149D		
WK2592	WB1938151D		

SKF	KML No.
374060	WB1938146
374063	WB1630154
BBWD393959K	WB1630098-3
BBWD393996A	WB1630132
BBWD395968C	WB1630119
BBWD395979	WB1938144
BBWD408340B	WB1630103
BBWD-374316C	WR1630095-1

KOYO	KML No.
885104C	WB1630132
885118	WB1630119
885125C	WB1630154
885140B	WB1630103
885168C-1	WB1630122
885476	WB1630122-1
885524S	WB1630110-1
885687	WB1630110-2
885735	WB1938136
885760	WB1938146
885764	WB1938150
885807C	WB1938153
885810	WB1938137
885825C	WB1938154
885832	WB1938126
885862	WB1938144
WPB-1089K	WB1630090
WPB11405	WB1630088-1
WPB-16098-CRS	WB1630098-3
885699	WR1630105

RHP	KML No.
FPS14	WB1630123-2
FPS18	WB1630128
FPS23	WB1630113H
FPS100	WB1630123-3
FPS104	WB1630106H
FPS348	WB1630138
FPS582	WB1630142

NSK	KML No.
885001	WB1630088
885105	WB1630121-2
885117	WB1630162
885118	WB1630119
885140	WB1630103-5
885144	WB1630143
885147	WB1630103D
885154	WB1630073
885155	WB1630113H
885165	WB1630083-3
885167	WB1630112-4
885319	WB1630088D

Interchange Data - NSK, KINEX

NSK	KML No.
885332	WB1630110-2
885474	WB1630099D
885476	WB1630122-1
885495	WB1630116-1
885521	WB1630132
885613	WB1630154
885701	WB1938155DD
885735	WB1938136D
885737	WB1938136DD
885746	WB1938157D
885747	WB1938146DD-2
885760	WB1938146DD
885764	WB1938151D
885801	WB1938149D
885810	WB1938137DD
885815	WB1938142D-1
885826	WB1938127DD
885832	WB1938126DD
885858	WB1938162DD
885859	WB1938115D
885168C	WB1630122
885524S	WB1630110-1
885613OS2	WB1630154-1
885701BE	WB1938155DD-1
885701C	WB1938159DD
885795SC	WB1938154DD
885796OS	WB1938161DD-1
885800C	WB1938121D
885807C	WB1938153D
885815A D4	WB1938143D
885862B	WB1938144DD
885862C	WB1938144D
BWF26-11	WB1226104
BWF26-14	WB1226095
BWF26-36A	WB1226090
665329	WR1630105
665476	WR1630122
665714	WR1938151DD
665764	WR1938151
665764	WR1938151D
665793	WR1938108
665168C	WR1630122-1
665714	WR1938151DD-1
RWF35-15R	WR1835114D

KINEX	KML No.
K001	WB1630098D-3
K001OS	WB1630098D-4
K002	WB1630154
K002 OS2	WB1630154-1
K003	WB1630119
K004	WB1938162DD
K004OS	WB1938162DD-1
K006	WB1938132DD
K006OS	WB1938132DD-1
K007	WB1938151D
K008	WB1938146DD-1
K008OS	WB1938146DD-4
K009	WB1938153DD
K010	WB1938128DD
K010OS	WB1938128DD-1
K011	WB1938152DD
K012	WB1938136DD
K012OS	WB1938136DD-2
K013/K137	WB1938157D
K013OS	WB1938157D-1
K014	WB1938135D-1
K014OS	WB1938135D-2
K015	WB1630112-1
K016	WB1630122-2
K016OS	WB1630122-3
K017	WB1938146DD
K017OS	WB1938146DD-3
K018	WB1630102
K019	WB1630103-5
K020	WB1630124
K020OS	WB1630124-1
K021	WB1630132
K023	WB1938136D
K023OS	WB1938136D-1
K024	WB1938161DD
K025	WB1226090
K026	WB1938113DD
K026OS	WB1938113DD-2
K027	WB1226095
K030	WB1630085-3
K031	WB1226102
K033	WB1530088-2
K035	WB1938149DD
K036	WB1630138

KINEX	KML No.
K040	WB1630103-2
K043	WB1630137-1
K047OS	WB1938144DD-2
K052	WB1630113-1
K054	WB1630101DD
K055	WB1630071D
K056	WB1936134D
K058	WB1630092D-1
K060	WB1630078D-1
K064	WB1630122D
K065	WB1630136-1
K066	WB1630106D-2
K068/K177/K195	WB1630098-2
K069	WB1630115D
K070	WB1938113D
K071	WB1938134D
K072	WB1630095DD
K074	WB1630109D
K075	WB1224084
K077	WB1630085-1
K081	WB1938100
K082	WB1630146-2
K084	WB1630106D-3
K088	WB1630110-5
K089	WB1936093DD
K090	WB1226098
K091	WB1630093DD
K093	WB1226092
K096	WB1630100DD
K097	WB1226089
K098	WB1630135
K101	WB1224082
K102	WB1224085
K104	WB1530098
K105	WB1630115H
K107	WB1630106H
K108	WB1630106-1
K109	WB1630123-2
K111	WB1630142
K112	WB1630103D-1
K114/K258	WB1630098-1
K116	WB1630128
K117	WB1630089
K118	WB1630094-1

Interchange Data - KINEX

KINEX	KML No.	KINEX	KML No.	KINEX	KML No.
K120	WB1630104	K215	WB1630112	K274	WB1938136DD-1
K121	WB1630146	K216	WB1630092	K275	WB1630083D-1
K128	WB1630067	K217	WB1938158DD	K279	WB1630065D
K132/K349	WB1630088-1	K218	WB1938121D-1	K280	WB1630090D-4
K136	WB1938176DD	K218OS	WB1938121D-5	K281	WB1630105
K140	WB1938146D	K219	WB1630123	K281OS	WB1630105-2
K151	WB1630116	K220	WB1938121D-3	K283	WB1730078D
K153	WB1630105-1	K221	WB1630110D	K284	WB1630103-1
K154	WB1630108-2	K222	WB1630080D-1	K287	WB1530097D-1
K155	WB1630079	K223	WB1938127D	K288	WB1630121-1
K157	WB1630098D-1	K223OS	WB1938127D-2	K289	WB1630112-3
K158	WB1630088D	K224	WB1938123DD	K293	WB1736091D-1
K162	WB1936100DD	K225	WB1938158DD-1	K294	WB1630084
K163	WB1530067D	K226/K194	WB1938154DD	K295	WB1630114D-1
K164	WB1630084D-1	K227	WB1226093	K297	WB1630112D
K166	WB1530100	K229	WB1630124D	K299	WB1936144D
K167	WB1938163D	K230	WB1938126DD-1	K301	WB1630137-2
K168	WB1938144D-1	K231	WB1630106D	K302	WB1630083
K169	WB1630106D-4	K232	WB1530092DD	K303	WB1938111
K170	WB1630083D-3	K234	WB1630092D	K304	WB1530124
K171	WB1530107D	K235	WB1730075D-1	K307	WB2038146DD
K172	WB1630085D-6	K237	WB1630112-2	K308	WB2038161DD
K174	WB1226103	K239OS	WB1938158DD-2	K310	WB1630075
K175	WB1530098-1	K241OS	WB1226095-1	K312	WB1630081
K178	WB1630092DD-1	K243	WB1938126	K314	WB1938127DD-1
K179	WB1630106	K244	WB1630093D-1	K315	WB1324080
K180	WB1630086D-1	K245	WB1630137D	K316OS	WB1938161DD-1
K181	WB1938117D	K246	WB1630086	K318OS	WB1630098-5
K181OS	WB1938117D-1	K247	WB1630085D-5	K319OS	WB1630110-6
K182	WB1630136	K248	WB1630086D	K320	WB1938121D-4
K184	WB1938118DD	K249	WB1630078D	K324	WB1938121DD
K186	WB1630084-2	K251	WB1530116-1	K325	WB1630127D
K189	WB1630098-3	K252	WB1630114D	K326	WB1630088D-2
K190	WB1530088	K253	WB1630113D	K327	WB1630096
K191	WB1936091DD	K254	WB1630133	K329	WB1636135
K192	WB1630121	K257	WB1630106H	K330	WB1630124D-1
K194OS	WB1938154DD-1	K259	WB1224080-2	K331	WB1938138D
K199	WB1226090-1	K264	WB1630089D	K334	WB1938151DD-1
K201	WB1530107	K265	WB1736093D	K335	WB1938125D
K2013	WB1630078D-3	K266	WB1730071D	K337	WB1630108
K206	WB1630089D-3	K267	WB1736091D	K338	WB1630084-3
K209	WB1630110-2	K267OS	WB1736091D-2	K339	WB1630103
K210	WB1630116-3	K271	WB1530119	K340	WB1938135D
K210OS	WB1630116-4	K272	WB1530121	K343	WB1630089D-1

Interchange Data - KINEX

KINEX	KML No.	KINEX	KML No.	KINEX	KML No.
K344	WB1938160D	K421	WB1938132D	K513	WB1938151DD
K353	WB1630136-2	K422	WB1630098	K514	WB1630114-1
K354	WB1630113	K423	WB1630102-1	K515	WB1938140DD
K354S	WB1630113-3	K424	WB1630119-1	K516	WB1630096-1
K355	WB1630093	K425	WB1938118D	K517	WB1630080D
K360	WB1224080	K432	WB1730078D-1	K518	WB1630098-4
K362	WB1324083	K434	WB1630100D	K519	WB1530088-3
K363	WB1324101	K436	WB1938149D	K522	WB1938144DD
K364	WB1324107	K437	WB1630123-1	K527	WB1630103D
K365	WB1630076D	K442	WB1938143DD	K528	WB1630108-1
K366	WB1938145D	K443	WB1938119D	K530	WB1630091
K368	WB1938137DD-2	K444	WB1630106D-1	K532	WB1630103D-2
K370	WB1938122D	K446	WB1938127D-1	K533	WB1630129
K371	WB1630085D	K447	WB1938123DD-1	K534	WB1938127DD-2
K371OS	WB1630085D-7	K452	WB1730075D-2	K536	WB1630083-1
K377	WB1630103-4	K453	WB1630090D-3	K536OS	WB1630083-2
K382	WB1638135	K454	WB1630093D	K541	WB1630133-1
K383	WB1630088-2	K455	WB1630105D-1	K542	WB1630082D-2
K384	WB1630089D-2	K456	WB1630090	K543	WB1938122D-1
K385	WB1630084-1	K459	WB1938121D-2	K544	WB1635092D
K388	WB1630108D	K460	WB1630094D-1	K546	WB1630085D-1
K389OS	WB1630102D	K461/K512	WB1630094D	K548	WB1630098D-2
K390	WB1630116-2	K464	WB1635101D	K552	WB1630135D
K391	WB1630126-1	K468	WB1938155D	K555	WB1835088D
K392	WB1630132-1	K471	WB1226104-1	K556	WB1630126
K393	WB1630146-1	K472	WB1230105	K558	WB1224085-1
K394	WB1938137DD-1	K479	WB1630085-2	K560	WB1835091D
K395	WB1938142D-1	K481	WB1630090D-2	K563	WB1730093D
K395S	WB1938142D-2	K482	WB1630096D-1	K565	WB1630110-4
K396OS	WB1630143-1	K483	WB1630091D	K566	WB1630084D
K399	WB1938175DD	K484	WB1630104D-1	K567	WB1630110D-1
K404	WB1630114	K485	WB1630105D-2	K568	WB1630082D
K404OS	WB1630114-3	K487	WB1635101D-2	K569	WB1630085D-2
K405	WB1630139	K488	WB1635101D-1	K571	WB1938135DD
K405OS	WB1630139-1	K489	WB1635093D	K572	WB1630082D-1
K407OS	WB1938151DD-2	K490	WB1740117D	K574	WB1630093D-2
K410OS	WB1938153DD-1	K491	WB1630156	K575	WB1630099D
K411OS	WB1630085-4	K492	WB1630080	K501	WB1635096D
K412OS	WB1630102-2	K493	WB1530109	K503	WB1630093DD-1
K413OS	WB1630119-2	K495	WB1835086D	K504	WB1630094D-3
K417OS	WB1630085D-8	K495OS	WB1835086D-1	K505	WB1734074D
K418	WB1630122D-1	K497	WB1630114-2	K506	WB1630103-3
K418OS	WB1630122D-2	K498	WB1630135-1	K509	WB1938144DD-1
K420	WB1530116	K499	WB1938153D	K510	WB1938142D

Interchange Data - KINEX

KINEX	KML No.
K576	WB1630120D
K577	WB1630100D-1
K578	WB1226104
K579	WB1630105D
K580	WB2036112D
K581	WB1630137
K582	WB1630127
K583	WB1938132D-1
K584	WB1938132D-2
K585	WB1630110-3
K586	WB1938133D
K590	WB1630079D
K591	WB1630085D-3
K592	WB2036096DD
K594	WB1630083D
K596	WB1630083D-2
K597	WB1630090D-1
K598	WB1630074D
K602	WB1938112DD
K603	WB1938113DD-1
K604	WB1635114D
K605	WB1630108-3
K606	WB2036129DD
K607	WB1835089D
K608	WB1630094D-2
K610	WB1938126DD
K614	WB1835086DD
K615	WB1630096D
K616	WB1835092D
K618	WB1224080-1
K619	WB1630095D
K620	WB1224106
K621	WB1630085D-4
K624	WB1630079D-1
K665	WB1736093D-1

KINEX	KML No.
R001	WR1530088D
R002	WR1630111
R003	WR1630127
R004	WR1630117
R005	WR1630089
R006	WR1938121D-1
R007	WR1630105
R009	WR1938151DD-2
R010	WR1938158DD-2
R011	WR1938158DD
R012	WR1938121D-2
R013	WR1630101D-2
R014	WR1630110
R015	WR1938161DD
R016	WR1630106D-1
R017	WR1530098
R018	WR1938146D
R019	WR1630093D-1
R023	WR1936126DD-1
R024	WR1936100DD
R026	WR1530094
R027	WR1530090D
R028	WR1630111DD
R031	WR1630154
R032	WR1938144DD
R034	WR1630107
R037	WR1630123
R039	WR1938100
R040	WR1530125
R043	WR1630116-4
R044	WR1630107-1
R045	WR1530096D
R046	WR1630099
R047	WR1630124
R052	WR1936126DD
R054	WR1938125D
R055	WR1630110D
R056	WR1630096
R057	WR1630103-1
R058	WR1630116-2
R059	WR1938135D-1
R060	WR1530094-1
R064	WR1530125-1
R065	WR1630116

KINEX	KML No.
R066	WR1630119
R067	WR1938151DD-1
R069	WR1530119D-1
R070	WR1630100D
R073	WR1530116
R075	WR1530085D
R076	WR1530088
R079	WR1630093D-4
R080	WR1630105D-1
R082	WR1630083D-3
R083	WR1630106-1
R085	WR1938125D-2
R086	WR1630090D-1
R088	WR1630097D-1
R089	WR1936100DD-1
R090	WR1630102
R091	WR1630091D
R092	WR1630098-1
R093	WR1630096D-1
R094	WR1936088D
R095	WR1938112DD
R097	WR1936121D
R098	WR1630085D-2
R099	WR1630114
R100	WR1530125D
R107	WR1530109
R109	WR1630115
R111	WR1630112
R112	WR1938176DD
R113	WR1938091
R153	WR1630111D-1
R160	WR1938118DD
R162	WR1938161D
R163	WR1938158DD-3
R164	WR1630076D
R165	WR1936131DD
R167	WR1938162DD
R168	WR1938138D-2
R169	WR1530122D
R170	WR1630096D-5
R171	WR1530119D
R173	WR1630131DD
R174	WR1630107-2
R175	WR1938158DD-1

Interchange Data - KINEX

KINEX	KML No.
R176	WR1630105D
R177	WR1630128D
R179	WR1938145D
R183	WR1630117D
R184	WR1630104D-2
R185	WR1630146D
R186	WR2040143D-1
R187	WR1630104D
R188	WR2040105
R189	WR1938175DD
R191	WR1630085D
R192	WR1630090D
R193	WR1835112D
R194	WR1730078D
R195	WR1630087D
R198	WR1938075D
R199	WR1938138D
R201	WR1530091D
R202	WR1630102-1
R203	WR1938136D
R204	WR1630084D-1
R206 S	WR1938115D-1
R207	WR1630114-1
R208	WR1630117-1
R209	WR1630139
R210	WR1630098D
R212	WR1630089D-2
R213	WR1630100D-1
R214	WR1630074
R215	WR1630107D
R216	WR1630098D-1
R218	WR1630125
R219	WR1630104
R221	WR1938132D
R223	WR1938135D
R225	WR1938159DD
R226	WR1630110D-1
R227	WR1530106
R228	WR1630096D-4
R229	WR1630108D
R231	WR1630103
R232	WR1630080
R237	WR2555127D
R238	WR1630106D

KINEX	KML No.
R239	WR1630086D-2
R243	WR1938115D
R245	WR1938137DD
R247	WR1938157D
R248	WR1630127-1
R249	WR1630091D-1
R250	WR1630090D-3
R252	WR1530106D
R253	WR1630088D
R255OS	WR1630076D-2
R256	WR1940122D
R258	WR1938135D-2
R259	WR1630103D-2
R260	WR1630087-1
R261	WR1630106-2
R262	WR1630076D-1
R263	WR1630080-1
R264	WR1630093D-2
R265	WR1630106
R266	WR1630123-1
R267	WR1630116-3
R268	WR1630101D-1
R269	WR1630101DD
R271	WR1630110-1
R274	WR2042131DD
R275	WR1530103
R276	WR1630074D
R277	WR1630106D-2
R278	WR1630129
R279	WR1630121
R280	WR1938129D-1
R281	WR1938123DD
R282	WR1938138D-1
R283	WR1630093-1
R284	WR1938155D-1
R285	WR1630120
R286	WR1630112-1
R287	WR1630101-1
R288	WR1630093D-3
R289	WR2555146DD
R290	WR1630096D-2
R292	WR1630086D
R294	WR1938175D-2
R296	WR1938121D

KINEX	KML No.
R297	WR1630100D-2
R301	WR1936122DD
R302	WR1940112D
R303	WR1630120D
R304	WR1630095
R305	WR1630099D-1
R306	WR1630103D
R307	WR1930115D
R309	WR1938144DD-1
R310	WR1935109DD
R311	WR1935103DD
R312	WR1938149D
R314	WR1630102-2
R315	WR1938125D-1
R316	WR1530109D
R318	WR1630079D
R319	WR1938133D
R320	WR1630107D-1
R321	WR1938175DD-1
R322	WR2242098D
R323	WR1938175D-1
R324	WR1630095D-1
R326	WR1630090D-2
R328	WR1630095D-2
R329	WR1630096D-3
R330	WR1630107D-2
R331	WR1630116-1
R332	WR1630117-2
R333	WR1630124-1
R334	WR1630093
R335	WR1630123D
R337	WR1630085D-1
R338	WR1630087
R339	WR1938121D-3
R340	WR1630093-2
R341	WR1530087D
R342	WR1940117D
R344	WR1630093D
R348	WR1938116D
R349	WR1630089D-1
R350	WR1630099D-2
R352	WR2242095D
R353	WR1630132
R354	WR1630119-1

Interchange Data - KINEX, OEM No.

KINEX	KML No.
R355	WR1938117DD
R356	WR1630100DD
R357	WR1630095D-3
R359	WR1935101DD
R360	WR1630151D
R362	WR2040112D
R364/R374	WR1938129D
R365	WR1938155D
R366	WR1938136D-1
R367	WR1630104D-1
R368	WR1938151D
R369	WR1938153DD
R370	WR1935126DD
R371	WR1630097D
R372	WR1530095D
R373	WR1630119D
R376	WR1630101
R377	WR1630102D
R378	WR1936105DD
R379	WR1936110DD
R380	WR1938128D
R382	WR1630084D
R383	WR1630103D-1
R385	WR1635112D
R386	WR1630094D-1
R387	WR1530125D-1
R388	WR1630088
R389	WR1938125D-3
R390	WR1630086D-1
R391	WR1938126D
R392	WR1630083D-1
R393	WR1938175D
R395	WR1630104D-3
R396	WR1630083D-2
R397	WR1938157D-1
R398	WR1938145D-1
R400	WR1728075D
R402	WR1935100DD
R403	WR1938175DD-2
R404	WR1630102D-1
R406	WR1630111D
R408	WR1630096D
R409	WR2241088DD
R410	WR1938142DD

KINEX	KML No.
R411	WR1630094D
R416	WR1938152D
R418	WR1935093DD
R419	WR1630087D-2
R421	WR2242118D
R422	WR2242115DD
R423	WR1938136DD
R424	WR1938146DD
R425	WR1630101D
R427	WR1936131DD-1
R462	WR1936109DD
R471	WR1938135DD
R609	WR1630098

OEM No.	KML No.
KS3061	WB1736092D
KS3065	WB1940111D
ATB RW3063	WB1630084D-3
ATB RW4022	WB1630088D-4
ATB RW4024	WB1630082D-3
ATB RWR2021-1	WR2242111DD
ATB RWR2022	WR1835093DD
ATB RWR2023-1	WR1630093DD
ATB RWR2024-2	WR1835103DD
ATB RWR2025	WR1630102D-2
ATB RWR2026	WR1630110DD
ATB RWR2028	WR1835100DD

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