SWS Bearings LTD
High Quality Bearing Manufacturer

Cylindrical Roller Bearings



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SWS Bearings LTD

----- Your Reliable Bearings Factory

SWS Bearings LTD is one of the most reliable bearings factories and exporters in China. We mainly supply roller and ball bearings.

SWS was founded in 2007, located in Changzhou city,jiangsu Province It just takes around 2 hours from Changzhou to Shanghaiby car, and very convenient transportation.

In 2009, SWS has invested three factories in Shandong, and Dalian city. Our products sell worldwide.

Our products and service include:

- Miniature and middle-large size deep groove ball bearing
- Double-row self-aligning roller bearing
- Four-row heavy type cylindrical roller bearing
- Self-aligning roller bearing
- Axial thrust ball bearing, thrust ball and roller bearing
- Single and double taper roller bearing
- Needle roller bearing
- High precision spindle bearing
- Pillow block bearing, bush, steel balls
- Technical support
- Maintenance
- Products training

Bore size range:3mm~6.5m
Weight range:10.5g~2.6ton

SWS bearing are widely used in railway, mining, mechanical equipment, automobile, ship, metallurgy, petrifaction, electric power, agriculture, textile and aviation, etc.

SWS products have sell to Europe, Asia, America, south-east Asia, which are our most important market. We have spent much time on developing new products, and also produce top quality products. We are very popular in domestic and abroad.

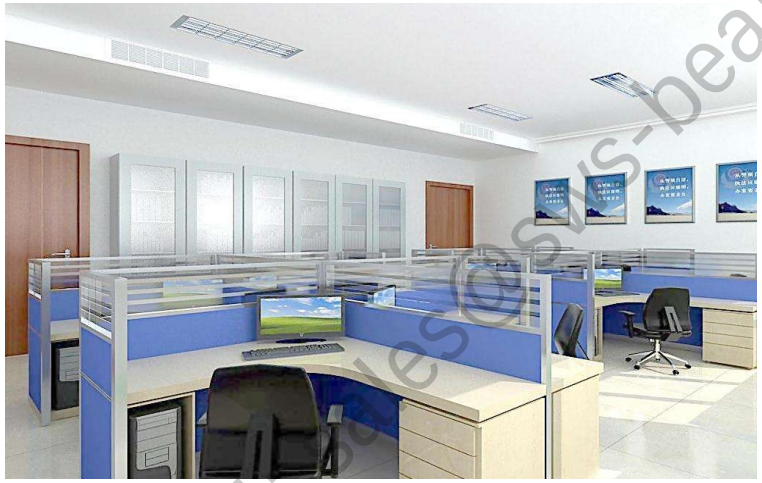
Welcome your inquiry and Look forward our cooperation in the future.

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Factory



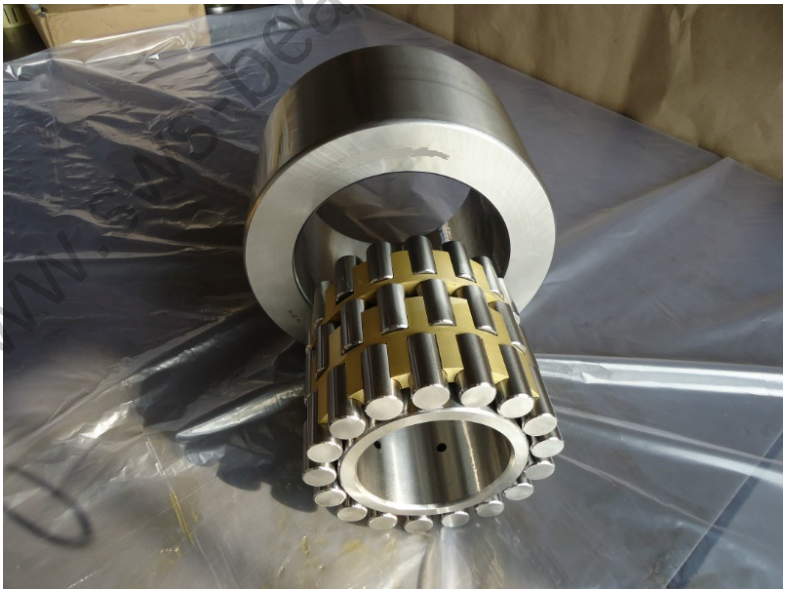
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Equipment



Product

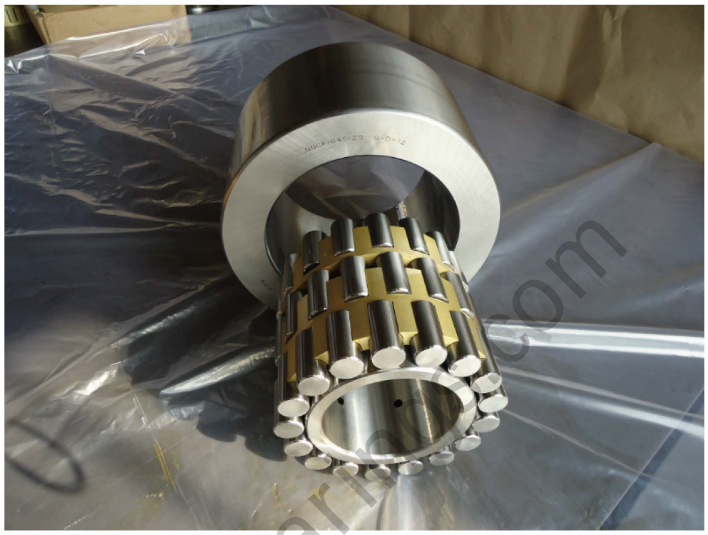


Product

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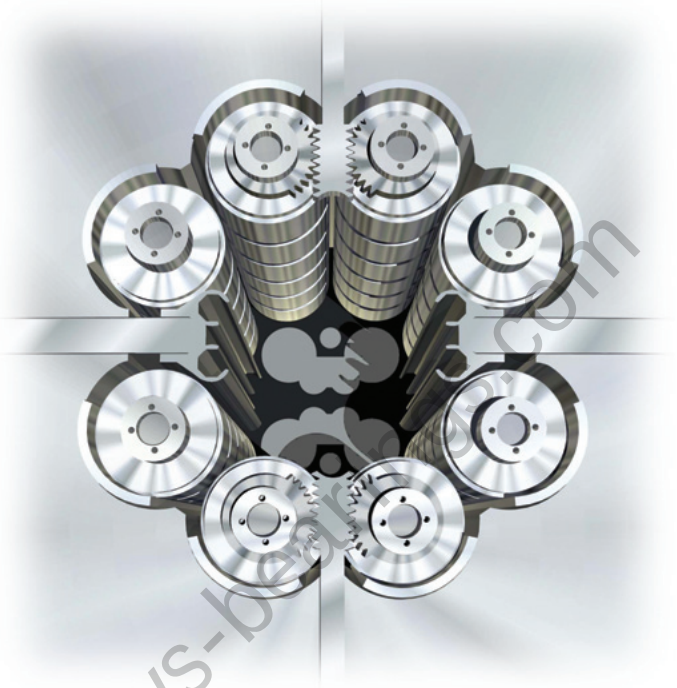
Cylindrical Roller Bearings for the Backing Shafts of Multi-roll Mills

1. Introduction

Based on many years of experience and recorded success in the area of multi-roll mills, SWS supplies high-durability, high-precision cylindrical roller bearings for backing shafts.
SWS
also supplies regrinding jigs that can grind the outside diameter surface of the bearings with exact precision.



Fig. 1 Cylindrical Roller Bearings for the Backing Shafts of Multi-roll Mills



More durable outer ring

Inner ring with longer rolling fatigue life

Outer ring with higher running accuracy after regrinding

More efficient outer ring regrinding

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2. Construction and Advantages of SWS Bearings

On each backing shaft of a multi-roll mill, several bearings are installed side by side. With their outside diameter surfaces in direct contact with the intermediate rolls, these bearings rotate while carrying components of rolling force. Therefore, the outer rings of these bearings are required to have adequate rigidity and fatigue strength, and should be finished with high precision.

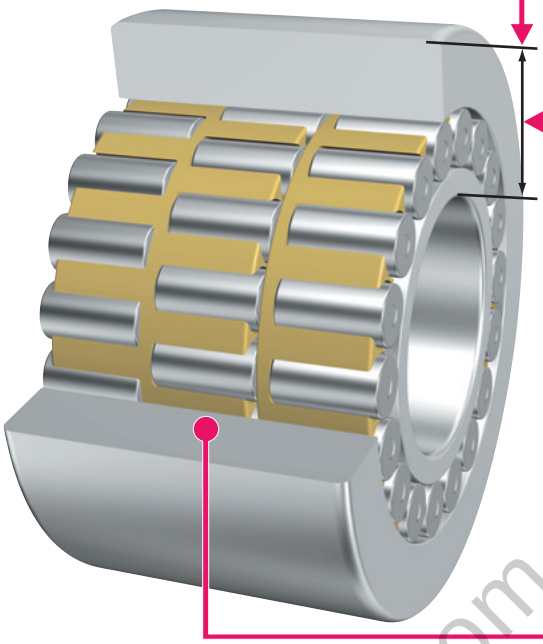


Fig. 2 Structural row of three row cylindrical roller bearing

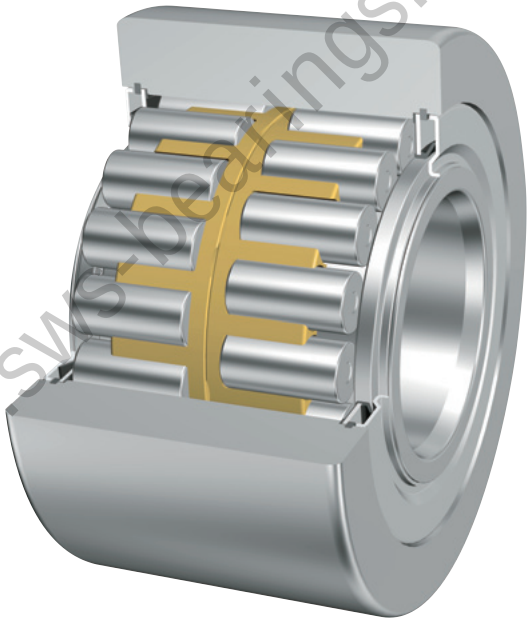


Fig. 3 Structural row of sealed type multiple row cylindrical roller bearing

●The outside diameter surfaces of these bearings are crowned, preventing load concentration at the ends and thus protecting the intermediate rolls from damage.

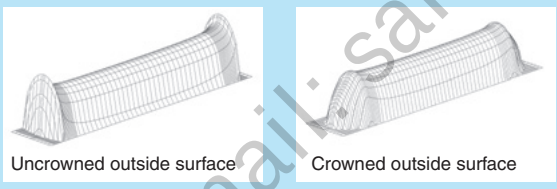


Fig. 4 Typical Contact Stress Distribution of Outer-ring Outside Surface

●The bearing section height and running accuracy of JTEKT's precision produced bearings realize optimal load distribution, contributing to the improved precision of rolled products.

● The outer rings of SWS bearings for backing shafts are made from a newly developed steel material, processed by JTEKT's original cored hardening treatment.
Compared with carburized steel, this newly developed steel has the following advantages:

- The suitably soft core ensures superior impact resistance.
- The thick hardened surface layer ensures high rigidity and provides the outside diameter surface with an increased regrinding allowance.
- The excellent material composition realizes high fatigue strength.

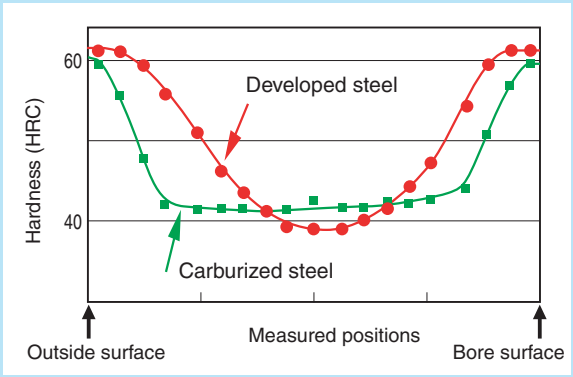


Fig. 5 Typical Hardness Distribution of cored hardening Outer Ring



Fig. 6 Macroscopic Material Composition

* The cored hardening treatment is applicable to bearings of no less than 130 mm in bore diameter.

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3. Regrinding Jigs for Bearings for Backing Shafts

Overview

The outside diameter surfaces of the bearings used on the backing shafts of multi-roll mills should be ground periodically to retain precise bearing performance, thus ensuring the quality of rolled products. SWS supplies the
jigs that grind bearing's outside diameter surface with high precision.



Fig. 7 Bearing-regrinding Jig

Advantages

1 The jigs minimize the radial runout of the bearings.

Once the bearing is installed into the jig, the jig completely nullifies any clearance on the fitting surface between the jig and bearing and the internal clearance of the bearing, eliminating play in the radial direction. The jig grinds the outside diameter surface while turning the outer ring and retaining the inner ring as stationary, enabling grinding under the same conditions as when in operation.

2 The jigs improve efficient installation and removal.

Bearings can be installed on and removed from the jig easily without the need of disassembling the inner ring and outer ring. There is no possibility that rollers will come off.

Jig Types and Constructions

The jigs come in two types, which should be selected according to the dimensions and types of backing-shaft bearings. Please specify the type suitable to your needs.

■ Type 1

This type is suitable to bearings with the outer ring with ribs and with a bore diameter no less than 70 mm.
This jig requires holes for work carrier on the end face of the outer ring.

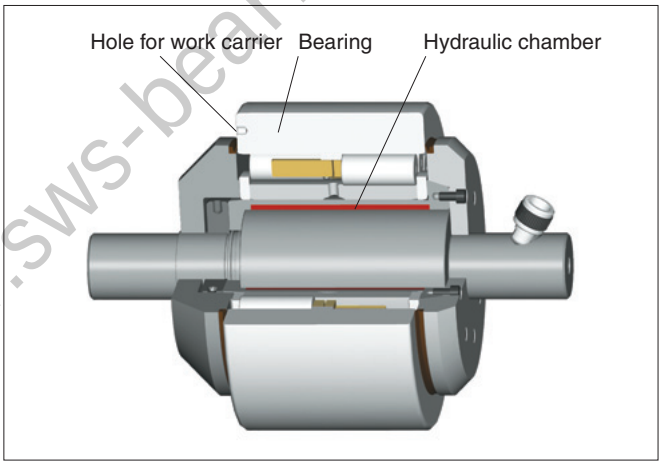


Fig. 8 Typical Installation of Suitable Bearing on Jig Type 1

■ Type 2

This jig is suitable with bearings with the outer ring without ribs, such as those used on the Sendzimir Rolling Mills ZR21 an ZR22.

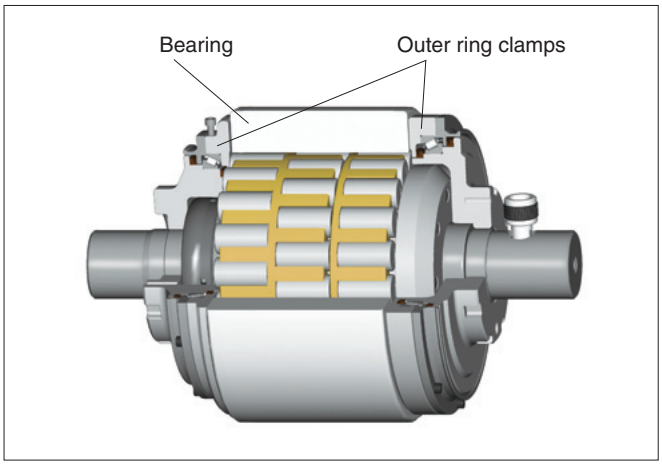


Fig. 9 Typical Installation of Suitable Bearing on Jig Type 2

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4. Measurement for Bearing Section Height

Overview

When the outside diameter surface of a bearing is ground, it is critical to accurately control the variation of bearing section heights of all the bearings installed on the backing shaft. SWS supplies
Measurement for bearing section height that suit the individual bearings listed on the dimensional table.



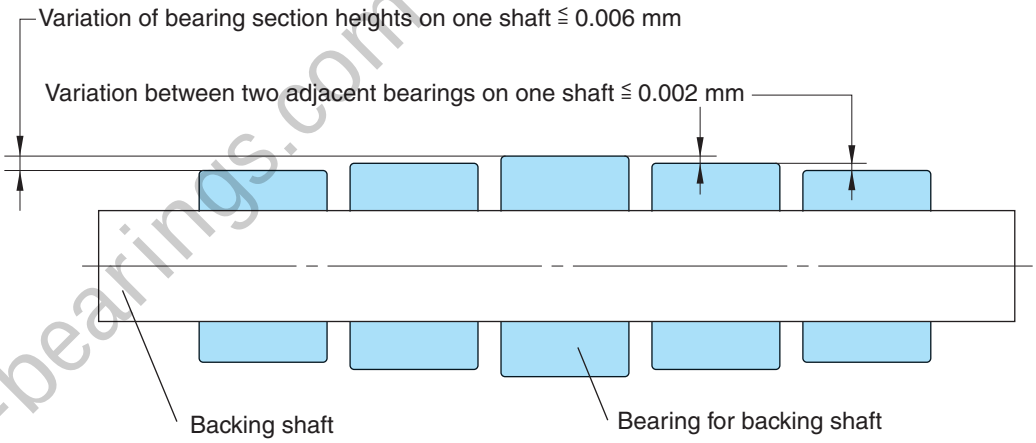
Fig. 10 Measurement for Bearing Section Height

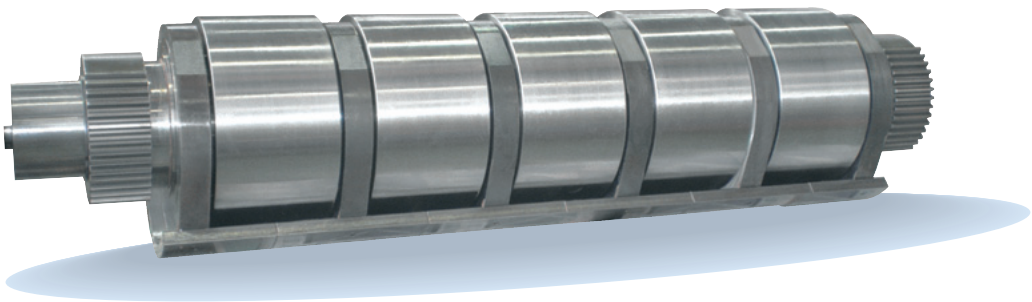
Advantages

1. **These bearing section height measurements are highly rigid and perform extremely precise measurement.**
2. **These measurements can measure the running accuracy of the outer rings as well.**
3. **For easy bearing installation and removal, the measurements are arbor-shaped.**

Reference information

SWS can supply the bearings listed in the dimensional table such that they can be assembled on the backing shaft so
as to satisfy the bearing section height tolerances shown below:





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5. Dimension Tables

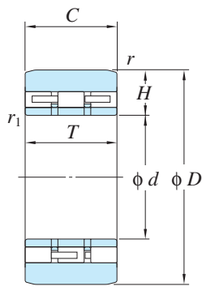
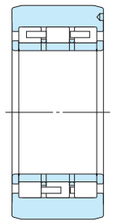
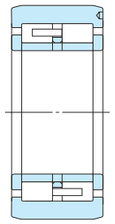
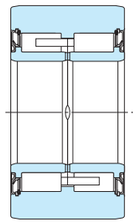
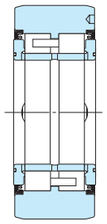


Fig.1


Fig.2


Fig.3


Fig.4


Fig.5

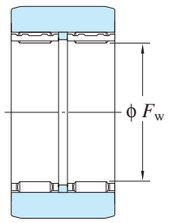


Fig.6

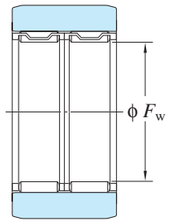


Fig.7

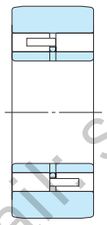
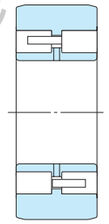
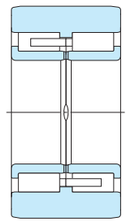
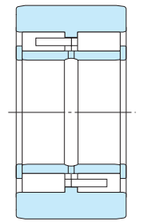
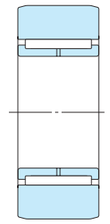

Fig.8


Fig.9


Fig.10


Fig.11


Fig.12


Fig.13

Boundary dimensions (mm)						Basic load rating (kN)		Bearing number		Fig.	Bearing section height at the time of manufacture (mm)	Mass	Compatible Rolling Mill Model	Number of bearings used per mill[1)]
$d(F_w)$	D	T	C	r	r_1	Cr	Cor				H	(kg)		
(18)	35	–	46	0.5	–	33.8	52	**04DC04046ADS**		6	8.4875	0.225	**Z-High**	24
(25)	45	–	45	0.8	–	35.3	59.3	**05DC05045ADS**		6	9.9875	0.350	**Z-High**	64
(28)	48	–	55	0.8	–	44.5	93.3	**06DC05055BDS**		7	9.9875	0.468	**Z-High**	128
(28)	54	–	55	0.8	–	44.5	93.3	**06DC05055DS**		7	12.9875	0.677	**Z-High**	64
31.75	76.2	46.23	45.85	0.8	1.5	96.3	183	**06DC0846A**		9	22.200	1.27	**ZR34**	40
(45)	85	–	55	0.8	–	59.1	160	**09DC09055DS**		7	19.9925	1.69	**Z-High**	128
50	120	80	80	1.5	1.5	268	379	**10DC1280DS**		3	34.976	5.15	**KT**	32
50	120	85	85	1.5	1.5	303	427	**10DC1285DS**		3	34.984	5.40	**KT**	32
54.999	120	25.999	25.999	1.6	1.6	77.7	138	**11N1226V**		13	32.4672	1.69	**ZR24**	24,56
55	120	52.197	52	1.6	1.6	203	341	**11DC1252**		9	32.483	3.27	**ZR24**	40
60	160	95	95	1.5	2	398	589	**12DC1695DS**		3	46.484	11.5	**KT**	20(32)
62	155	90	90	1	2	356	529	**12DC1690DS**		3	46.484	9.97	**KST**	8(44)
62	155	110	110	1	2	404	622	**12DC16110DS**		2	46.484	12.2	**KST**	36(44)
65	165	70	70	1.5	2	424	586	**13DC1770DS**		10	49.982	8.83	**Sundwig**	40
65	170	100	100	2	2	398	597	**13DC17100DS**		3	52.480	13.5	**KT**	10(34)
70	160	90	90	1.5	1.5	347	546	**14DC1690LDS-1**		11	44.977	10.1	**ZR33**	40
70	160.07	90	90	1.5	1.5	379	667	**14DC1690ADS**		1	45.000	10.5	**ZR33**	32,48,72
90	220	94	94	2	1.5	687	997	**18DC2294DS**		10	64.976	21.2	**Sundwig**	40
90	220	96	94	3	3	494	700	**18DC2294/96DS**		5	65.000	21.0	**Sundwig**	64
90	220	95	95	2	2	532	795	**18DC2295DS**		3	64.982	20.9	**KST**	40
90	220	130	130	2	2	699	1130	**18DC22130ADS**		2	64.982	28.7	**KST**	32,40
90	230	100	100	2	3	643	982	**18DC23100DS**		3	69.980	24.2	**KT**	24(34)
90	260	125	125	2	2	923	1520	**18DC26125DS**		3	84.970	41.3	**KT**	34

Note 1) Parenthesized figures indicate the numbers of bearings required for a mill. Difference from the parenthesized figure means the use of bearings of different number.

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5. Dimension Tables

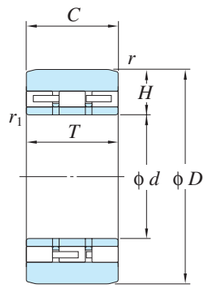
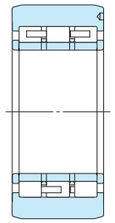
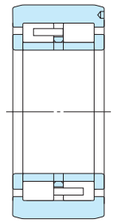
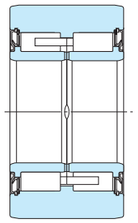
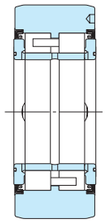


Fig.1


Fig.2


Fig.3


Fig.4


Fig.5

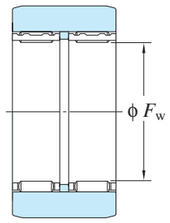


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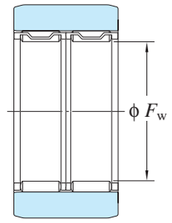


Fig.7

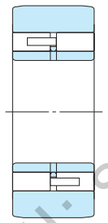
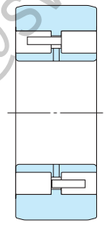
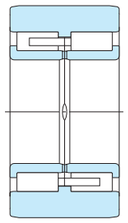
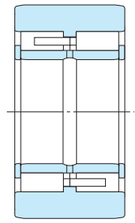
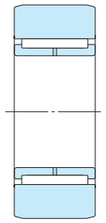

Fig.8


Fig.9


Fig.10


Fig.11


Fig.12


Fig.13

Boundary dimensions (mm)						Basic load rating (kN)		Bearing number		Fig.	Bearing section height at the time of manufacture (mm)	Mass	Compatible Rolling Mill Model	Number of bearings used per mill[1)]
$d(F_W)$	D	T	C	r	r_1	Cr	Cor				H	(kg)		
100	225.021	80	80	1.5	1.5	607	991	**20DC23080DS**		8	62.474	18.2	**ZR23**	12(36)
100	225	100	100	3	1.5	547	838	**20DC23100NDS-1**		11	62.480	21.7	**ZR23**	40
99.995	225	120	120	1.5	1.5	625	995	**20DC23120KDS-2**		4	62.474	26.0	**ZR23**	32,40,48
100	225	120	120	3	1.5	676	1 100	**20DC23120LDS-1**		12	62.4775	26.3	**ZR23**	32,48,56
100	225.021	120	120	1.5	1.5	814	1 440	**20DC23120MDS**		1	62.474	27.2	**ZR23**	32
100	260	95	95	2	2	698	1 060	**20DC2695DS**		3	79.970	30.2	**KT**	32
100	260	105	105	2	2	710	787	**20DC26105DS**		3	79.970	33.5	**KT**	32
100	260	130	130	2	2	952	1 580	**20DC26130DS**		3	79.970	41.5	**KT**	32
110	280	165	165	2	2	1 120	1 880	**22DC28165DS**		2	84.965	60.2	**KT**	10(34)
115	260	140	140	3	2	976	1 690	**23DC26140DS**		2	72.470	41.9	**KST**	40
120	280	165	165	2	3	1 100	1 940	**24DC28165DS**		3	79.965	57.7	**KT**	14(38)
120	350	165	165	2	3	1 370	2 220	**24DC35165ADS**		12	114.965	98.3	**KT**	24(34)
130	300.02	130	129	2	3	1 050	1 740	**26DC30130DS**		3	85.010	52.2	**Sundwig**	56
130	300.02	130	129	4	3.5	1 070	1 620	**26DC30130BDS**		5	85.010	51.8	**Sundwig**	–
130	300.02	132	129	2	3	1 140	1 830	**26DC30132ADS**		3	85.010	53.8	**Sundwig**	72
130	300	160	159.5	4	3.5	1 330	2 340	**26DC30160DS**		1	84.9617	64.8	**ZR22**	40,48
130	300	172.644	172.644	4	3.5	1 560	2 900	**26DC30170MDS-5**		1	84.955	72.6	**ZR22**	40,48
130	300	172.644	172.644	4	3.5	1 320	2 210	**26DC30170KDS-3**		4	84.955	70	**ZR22**	40,48
130	350	175	175	2	3	1 400	2 300	**26DC35175DS**		12	109.965	101	**KT**	24(38)
180	406.42	171.04	171.04	4	4	2 060	3 810	**36DC41171DS**		1	113.155	130	**ZR21**	48,56
180	406.42	171.04	171.04	4	1	1 910	3 340	**36DC41171ADS**		12	113.155	124	**ZR21**	48,56
180	406.42	171.04	171.04	4	3	1 550	2 700	**36DC41171KDS**		4	113.155	121	**ZR21**	48
179.984	406.43	223.96	217	4	0.5	2 350	4 500	**36DC41217DS+DP**		1	113.155	161	**ZR21**	40,48
179.984	406.43	224.25	220	4	3	1 870	3 340	**36DC41224KDS**		4	113.181	150	**ZR21**	32,48
180	406.42	224.25	224	4	3	2 290	4 230	**36DC41224QDS**		11	113.155	162	**ZR21**	40,48

Note 1) Parenthesized figures indicate the numbers of bearings required for a mill. Difference from the parenthesized figure means the use of bearings of different number.

Email: sales@sws-bearings.com
Https://www.sws-bearings.com