

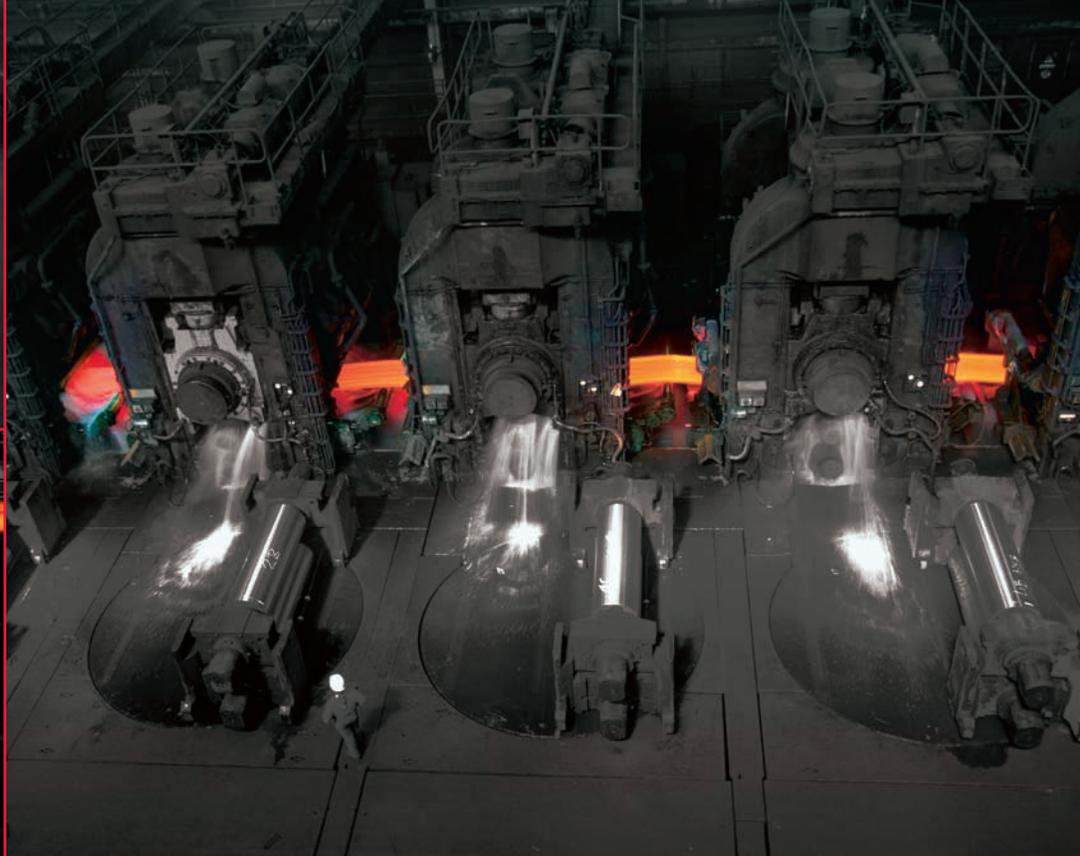
NSK

SENDZIMIR BACK-UP ROLL BEARINGS

FOR MULTI-ROLL ROLLING CLUSTER MILLS



STAY IN MOTION. STAY IN CONTROL.



MADE WITH METTLE

BEARINGS FOR STEEL AND METALS MACHINERY

Massive loads. Intense heat. Ultra low speeds. Staggering shock loads, misalignment, and contamination from mill scale and water vapor.

From iron and steel making through rolling and forming mills, the operating conditions of the entire process are severe. The reliable, uninterrupted performance of rolling components is critical for accelerated production.

For NSK, our product development and design is focused squarely on withstanding the manifold operating stresses of these applications with:

- › increasing capacities for high loads and high speeds
- › advanced materials for durability, wear resistance and longer life
- › lubrication and seal technology for smooth and clean running

Our product solutions are designed to optimize the performance of machinery and equipment, to assure predictable reliability and to deliver total cost-efficiency.

STRENGTH AND ACCURACY FOR HIGH, PRECISE OUTPUT

The demand for precise thickness tolerance and surface finish of plate and sheet metals has become increasingly stringent, with the expectations placed on the back-up bearings used in Sendzimir / multi-roll cold rolling similarly high. Not only must these bearings withstand the heavy and impact loads transmitted, but they must run with high rotational accuracy to ensure dimensional quality of the end product.

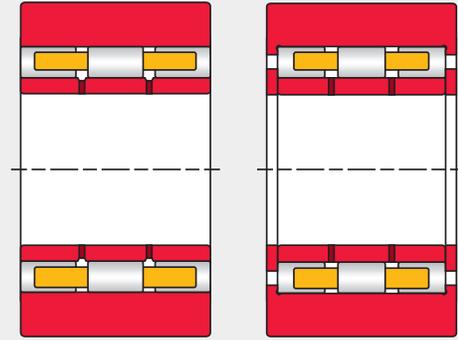
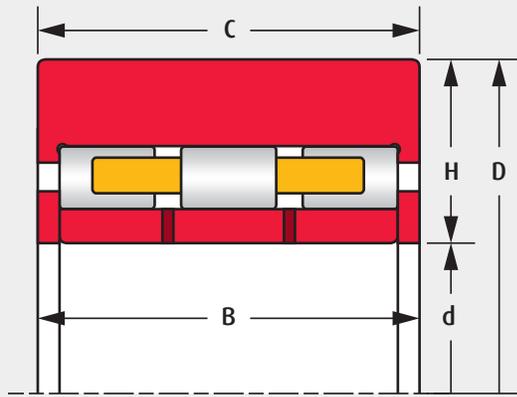
NSK's back-up roll bearings are engineered with the requisite ring strength and running accuracy to support precise plate and sheet making. With advanced options including our long-life Super-TF steel and innovative seal design option, they withstand heavy loads and lubrication challenges to deliver a long and reliable service life.

DESIGN FEATURES

- › Special design high-capacity cylindrical roller bearings with inordinately thick outer rings that serve as the back-up roll
- › Available with long-life Super-TF steel option for extraordinarily high endurance
 - › In a wide range of double row and triple row designs, with machined brass cage
 - › Advanced seal design option for double row bearings is optimized for oil-mist / oil-air lubrication and high speed operation with reduced seal wear
 - › With matched-set radial internal clearance
 - › Special tolerances for precision running accuracy



BEARING DIMENSIONS AND OPERATING VALUES

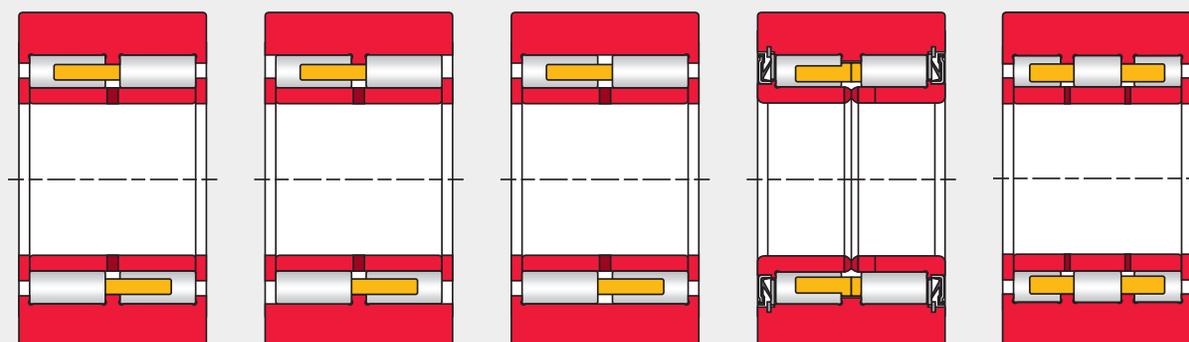


Design 1

Design 2

BOUNDARY DIMENSIONS					BASIC BEARING No.	DESIGN TYPE	BASIC LOAD RATINGS		PERMISSIBLE RADIAL LOAD ~
mm							kN		
d	D	B	C	H			dynamic	static	kN
50	120	80	80	34.976	2U50-4	4	257	385	147
	120	85	85	34.984	2U50-6	4	305	435	113
60	160	95	95	49.984	2U60-4	4	400	590	290
62	155	90	90	46.484	2U62-1	5	355	530	247
	155	110	110	46.484	3U62-1	2	405	620	297
70	160	90	90	45	3PL70-1	1	505	745	303
90	220	95	95	64.982	2U90-18	3	710	880	347
	220	120	119	65	2U90-11	3	835	1 020	411
	220	120	120	64.98	3U90-1	2	805	1 260	494
	220	130	130	64.982	3U90-4	2	835	1 090	499
	220.02	96	94	65	2U90-13	3	625	730	333
	225	120	119	62.5	2U100-14	3	550	1 000	586
	225	120	120	62.47	3PL100-1A	1	880	1 350	542
	230	100	100	69.98	2U90-9	5	645	990	322
100	260	130	130	79.97	2U100-15	5	950	1 580	617
110	280	165	165	84.965	3U110-4	2	1 360	1 880	818
115	260	140	140	72.47	3U115-3	2	1 140	1 660	613
120	280	165	165	79.965	2U120-15	4	1 190	2 060	802
	300	160	160	89.966	3U120-4	2	1 450	1 960	847
	350	165	165	114.965	2U120-14	4	1 640	2 220	1 140

Additional design types and sizes are available. Please contact NSK for more information.



Design 3

Design 4

Design 5

Design 6

Design 7

BOUNDARY DIMENSIONS					BASIC BEARING No.	DESIGN TYPE	BASIC LOAD RATINGS		PERMISSIBLE RADIAL LOAD ~
mm							kN		
d	D	B	C	H			dynamic	static	kN
130	300	132	129	85	2U130-3Z	3	1 230	1 580	590
	300	160	159.5	84.95	3PL130-2C	1	1 800	2 670	799
	300	172.64	172.64	84.95	3PL130-1C	1	1 890	2 930	862
	300	172.64	172.64	84.95	3PL130-7B	1	1 890	2 930	862
	300	172.64	170	84.95	2U130-16B	6	1 520	2 150	800
	300	172.64	171.6	84.95	3U130-2	7	1 320	2 300	866
	300	172.64	172.64	84.955	2U130-26	4	1 680	2 440	854
	300.02	150	149	85.01	2U130-34	4	1 360	1 850	732
	350	175	175	109.965	2U130-29B	4	1 450	2 410	1 230
179.984	406.4	224	220.66	113.205	2U179Z-3	6	2 400	3 550	1 460
	406.43	224.25	220	113.181	2U179Z-14	6	2 720	4 250	1 570
180	406.4	217	217	113.16	3PL180-1B	1	3 150	5 000	1 560
	406.4	224	220	113.16	3U180-2	7	2 520	3 750	1 580
	406.42	171.04	171.04	113.155	3PL180-3B	1	2 460	3 800	1 220
	406.42	171.04	171.04	113.16	2U180-3	4	2 280	3 300	1 150
	406.42	171.04	171.04	113.155	2U180-7	3	1 870	2 660	1 150
	406.42	176	170	113.2	2U180-8	3	1 980	2 850	1 220
	406.42	224	224	113.16	2U180-4	4	2 850	4 400	1 510

DESIGNATION SYSTEM

SENDZIMIR BACK-UP BEARINGS



DESIGNATION	ATTRIBUTE	
Special Material Designation	blank	standard bearing steel
	STF	long-life Super-TF™ steel
	EP3	Extra-Pure steel
Bearing Type	3PL	three roller rows, no inner or outer ring ribs
	2PL	three roller rows, various inner and outer ring rib / flange ring configuration
	2U	two roller rows, various inner and outer ring rib / flange ring configuration sealed-type design options
Bore Reference Number	bearing bore diameter expressed in mm	
NSK Design Number	internal design and modification number- assigned by NSK	

DESIGNATION	ATTRIBUTE	
Carburization	g	entire bearing
	g2	outer ring only
	g3	inner ring only
Radial Internal Clearance	CCGXX	special internal clearance expressed in microns
	blank	C-normal clearance
	C2	less than C-normal
Special Accuracy Class	UPA	special precision tolerances
	UPB	
Matched Sets	DR#	number of bearings supplied as a matched set

NSK



NSK AMERICAS

UNITED STATES

NSK Corporation
Ann Arbor MI
1.888.446.5675

CANADA

NSK Canada Inc.
Brampton ON
1.905.890.9740

MEXICO

NSK Rodamientos Mexicana,
S.A. de C.V.
Silao Guanajuato MX
52.472.500.9500

BRAZIL

NSK Brasil Ltda.
Suzano SP
55.11.4744.2500

ARGENTINA

NSK Argentina SRL
Buenos Aires
54.11.4704.5100

LATIN AMERICA

NSK Latin America Inc.
Miramar FL
1.305.477.0605

Website: www.nsk.com/am-en
NSK Global: www.nsk.com

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