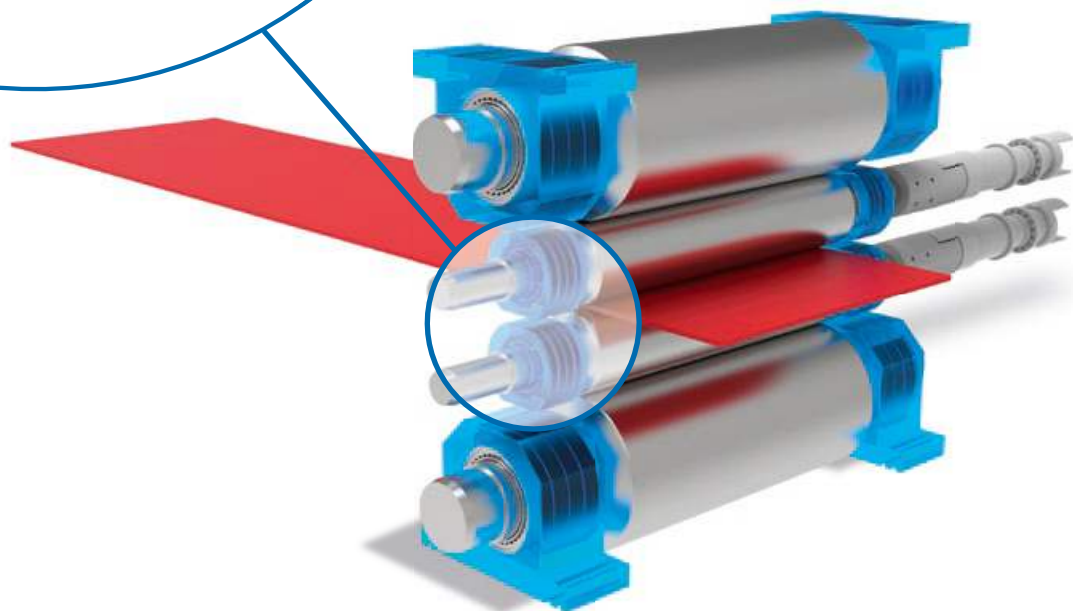


ZKL bearings for rolling mills



Work and back-up rolls represent key components of rolling mill factories. Both have major influence on the quality of the steel being rolled and both are given huge requirements in terms of variability, efficiency and cost saving when rolling. Rolls are usually mounted in sets of four-row tapered roller bearings (in case of work rolls) or sets of four-row cylindrical roller bearings (in case of back-up rolls). The function of the work rolls is to shape the material being rolled and therefore are in a direct contact with hot metal. Back-up rolls serve to minimize any deflection of work rolls. The scope of such application is to handle dynamic, heavy and impact loads in an extreme environment – high working temperatures, in an environment filled with dust and metal scales. Rolls are often dismantled from their working position, re-ground and mounted back. Considering all these factors together, the bearings used in work and back-up rolls are exposed to and must be able to work in extreme conditions while meeting all the necessary quality requirements.



Four-row tapered roller bearings

Four-row tapered roller bearings are the most common bearing types used in work rolls of rolling mills. This bearing types can bear both – heavy radial loads as well as thrust loads. During work roll operation, impact loads occur quite often and therefore the bearings' rings and rollers are usually made of carburized steel. This grants the required hardness to the material surface on one hand and the required material toughness on the other hand.

ZKL offers many different designs of four-row tapered roller bearings suitable for different uses – e.g. face-to-face arrangements, back-to-back arrangements, cylindrical bores, tapered bores, helical grooves in the bore of bearings etc. ZKL four-row tapered roller bearings are mainly equipped with pin-type cages.

Four-row tapered roller bearings for steel mills	Bearing dimensions				Load ratings	
	Inner diameter	Outer diameter	Width	Mass	Dynamic	Static
	d [mm]	D [mm]	B [mm]	m [kg]	C _r [kN]	C _{0r} [kN]
PLC 84-11-11.12.T	220.662	314.325	239.712	61.9	2 130	5 350
PLC 84-12-115.2KT	260	440	330.3	180	3 300	7 750
PLC 84-12-105.T	355.6	457.2	252.413	105	3 300	7 900
PLC 84-14-33.2T	500	830	568.5	1 275	11 100	26 600
PLC 84-16-24.2T	650	1 030	560	1 830	14 000	35 500
PLC 84-15-35.1CR	750	950	410	695	11 800	29 700
PLC 84-17-06	750	1 220	840	4 110	26 700	62 900

The above listed bearings are typically used in work rolls in rolling mills. ZKL offers an entire production range starting from a 200 mm bore diameter with a production limit up to 1 600 mm (outer diameter). For more information about four-row tapered roller bearings contact your sales representative or at support@zkl.cz.



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