



Cuscinetti assiali orientabili a rulli

Self-aligning thrust roller bearings



CUSCINETTI ASSIALI ORIENTABILI A RULLI

I cuscinetti **ISB®** assiali orientabili a rulli (**Fig. 1**) sono composti in modo tale che il carico sia trasmesso da una pista all'altra secondo un certo angolo rispetto all'asse del cuscinetto.

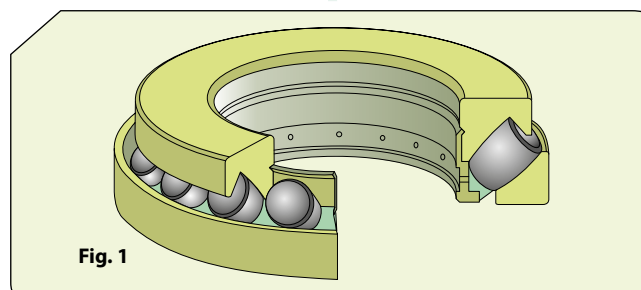


Fig. 1

Tale caratteristica fa sì che questi cuscinetti siano in grado di sopportare carichi assiali contemporaneamente a quelli radiali (**Fig. 2**). La loro orientabilità fa sì che non siano sensibili alle inflessioni dell'albero e ai disallineamenti di quest'ultimo rispetto all'alloggiamento. I cuscinetti **ISB®** assiali orientabili a sfere sono ideali a sopportare carichi assiali molto elevati e ad alte velocità d'esercizio. Dotati di molti rulli asimmetrici, la progettazione delle piste permette un'ottima oscurazione.

SPHERICAL ROLLER THRUST BEARINGS

ISB® spherical roller thrust bearings (**Fig. 1**) are designed in such a way that the load is transmitted from one raceway to the other at a certain angle compared to the bearing's axis.

(**Fig. 2**) This feature means that these bearings are able to withstand axial loads acting simultaneously with radial loads. They are self-aligning and consequently insensitive to shaft deflections and shaft misalignments compared to the housing. **ISB®** spherical roller thrust bearings are able to withstand very high axial loads and high operating speeds. They have a large number of asymmetric rollers and the special design of the raceways enables optimum conformity.

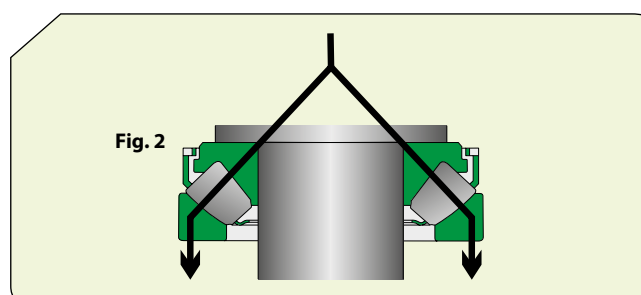


Fig. 2

DIMENSIONI

Le dimensioni di ingombro dei cuscinetti **ISB®** assiali orientabili a rulli sono conformi alla ISO 104:2002.

TOLLERANZE

I cuscinetti **ISB®** assiali orientabili a rulli sono abitualmente prodotti con tolleranze normali, come indicato dalla norma ISO 199:1997.

DISALLINEAMENTO

Essendo orientabili, il disallineamento dell'albero rispetto all'alloggiamento e le inflessioni dell'albero stesso sono tollerati (**Fig. 3**). Sfruttare appieno questo disallineamento dipende dal tipo di cuscinetto e dalla guarnizione.

DIMENSIONS

The overall dimensions of the **ISB®** spherical roller thrust bearings comply with standard ISO 104:2002.

TOLERANCES

ISB® spherical roller thrust bearings are usually manufactured with Normal tolerances, according to standard ISO 199:1997.

MISALIGNMENT

Seeing as they are self-aligning, the misalignment of the shaft compared to the housing and also shaft deflections are tolerated (**Fig. 3**). The possibility to fully exploit this misalignment depends on the type of bearing and the seal.

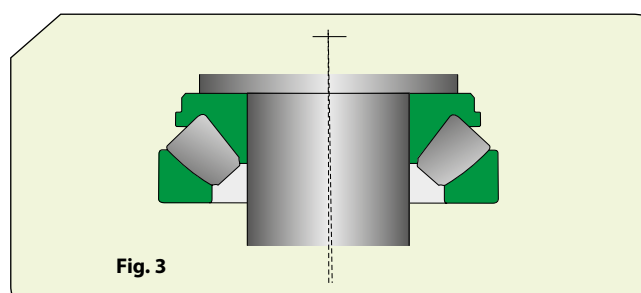


Fig. 3

CARICO MINIMO

I cuscinetti **ISB**® assiali orientabili a rulli devono essere soggetti ad un certo carico minimo soprattutto se ruotano a velocità elevate. In caso di elevate velocità e rapidi cambi di direzione le forze di inerzia di sfere e gabbie e l'attrito del lubrificante possono influire in modo negativo provocando strisciamenti tra i rulli e le piste.

APPELLATIVI SUPPLEMENTARI

- E** Esecuzione interna ottimizzata e gabbia stampata in acciaio del tipo a feritoie
- EF** Esecuzione interna ottimizzata e gabbia massiccia in acciaio
- EM** Esecuzione interna ottimizzata e gabbia massiccia in ottone

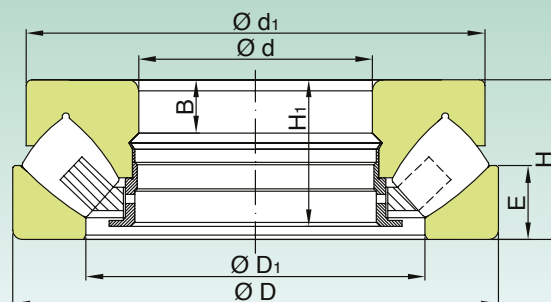
MINIMUM LOAD

ISB® spherical roller thrust bearings must always be subjected to a given minimum load, especially if they work at high speeds. In the case of high speeds and rapid changes in direction, the forces of inertia of the balls and the cages and the friction of the lubricant may have a detrimental effect, causing harmful contact between the rollers and the raceways.

SUPPLEMENTARY DESIGNATIONS

- E** Optimised internal design and pressed window-type steel cage
- EF** Optimised internal design and solid machined steel cage
- EM** Optimised internal design and solid machined brass cage

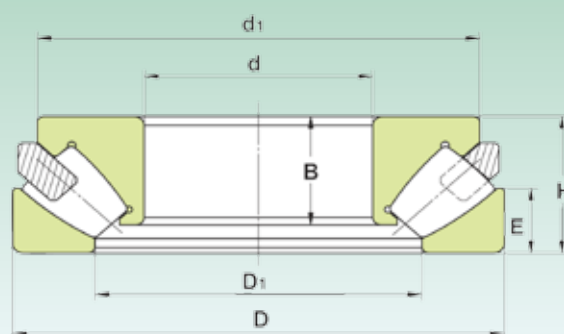
CUSCINETTI ASSIALI ORIENTABILI A RULLI SELF-ALIGNING THRUST ROLLER BEARINGS



struttura fino a foro < ø 100
design up to bore < ø 100

Dimensioni (mm) <i>Dimension (mm)</i>								Coefficiente di carico (kN) <i>Load rating (kN)</i>		Velocità limite (giri/min) <i>Speed limit (Rpm)</i>		Peso (Kg) <i>Weight (Kg)</i>	Sigla <i>Designation</i>
d (mm)	D (mm)	H (mm)	D1 (mm)	B (mm)	H1 (mm)	E (mm)	d1 (mm)	Dinamico <i>Dynamic</i> C	Statico <i>Static</i> C ₀	Lubrificazione <i>Lubrication</i>			
										Grasso <i>Grease</i>	Olio <i>Oil</i>		
60	130	42	88	14.5	39	20	118	280	815	3825	2400	2.6	29412 M
65	140	45	96.5	16	42.1	21	128	330	965	3672	2200	3.3	29413 M
70	150	48	102	17	44.1	23	137	360	1060	3290	2000	4.0	29414 M
75	160	51	109	18	48.4	24	146	415	1250	3060	2000	4.87	29415 M
80	170	54	116	19	49.5	26	155	450	1370	2907	1900	5.8	29416 M
85	180	58	125.2	20	55.3	28	164	510	1560	2754	1800	6.90	29417 M
90	155	39	117	13	37.1	19	148.50	392	1058	3060	3600	2.85	29318 M
	190	60	130	21	55.2	29	174	570	1760	2601	1700	8.10	29418 M
100	170	42	127.5	34		20.6	158.9	456	1264	2754	3240	3.8	29320 M
	210	67	142	54		31.5	189	960	2450	2295	2700	10.6	29420 M
110	190	48	142	37.5		23	176	598	1695	2448	2880	5.6	29322 M
	230	73	155.5	58		34.4	208	1156	2940	2142	2520	16.5	29422 M
120	210	54	156	42		25.9	193.5	750	2078	2142	2520	7.45	29324 M
	250	78	172	62.4		38	220	1343	3381	1989	2340	17	29424 M
130	225	58	168	44		27.8	206.7	848	2450	1989	2340	9.3	29326 M
	270	85	185	63		41	248	1529	3969	1836	2160	22	29426 M
140	240	60	183	46		28	221	960	2793	1989	2340	10.7	29328 M
	280	85	197.5	64		42	252	1597	4214	1836	2160	24.6	29428 M
150	215	39	176	24		20.5	200.4	400	1568	2142	2520	4.3	29230 M
	250	60	190	47		29	228	980	2793	1836	2160	11.2	29330 M
	300	90	214	70		44	275	1823	4998	1683	1980	38.1	29430 M
160	270	67	205	53		31.7	249.6	1156	3381	1683	1980	14.5	29332 M
	320	95	220.5	73		46.4	290	2038	5488	1530	1800	34.5	29432 M
170	280	67	216	49.6		31.7	260.3	1176	3479	1683	1980	16	29334 M
	340	103	234	80		48.8	310	2313	6419	1454	1710	44	29434 M
180	250	42	208	31.8		21.8	237	485	1999	1989	2340	5.88	29236 M
	300	73	229	56		34.4	275	1401	4214	1530	1800	19.6	29336 M
	360	109	249.5	85		51.8	326	2548	7203	1377	1620	63.1	29436 M
190	320	78	240.5	59.5		38.6	298.3	1597	4655	1454	1710	24.5	29338 M
	380	115	263	89.5		54.2	345	2793	7840	1301	1530	60.8	29438 M
200	280	48	233.5	35.3		24.3	266	643	2597	1683	1980	8.9	29240 M
	340	85	259	64		39.1	314	1823	5390	1301	1530	30.3	29340 M
	400	122	278	95		57.5	363	3136	8820	1224	1440	69	29440 M
220	300	48	253	36.5		24.3	285	676	2940	1683	1980	9.45	29244 M
	360	85	277.5	64		40.7	336	1960	6174	1301	1530	33	29344 M
	420	122	298.5	95		57	383.8	3283	9457	1148	1350	73.9	29444 M

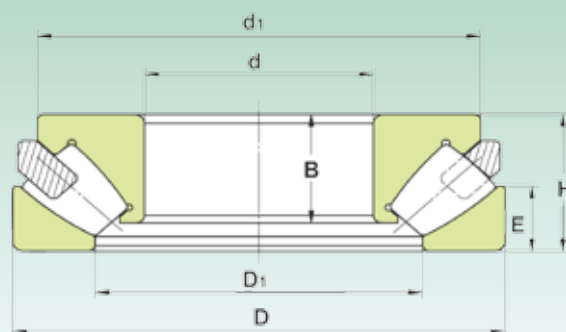
CUSCINETTI ASSIALI ORIENTABILI A RULLI SELF-ALIGNING THRUST ROLLER BEARINGS



struttura da foro $\geq \varnothing 100$
design from bore $\geq \varnothing 100$

Dimensioni (mm) <i>Dimension (mm)</i>							Coefficiente di carico (kN) <i>Load rating (kN)</i>		Velocità limite (giri/min) <i>Speed limit (Rpm)</i>		Peso (Kg) <i>Weight (Kg)</i>	Sigla <i>Designation</i>
d (mm)	D (mm)	H (mm)	D1 (mm)	B (mm)	E (mm)	d1 (mm)	Dinamico <i>Dynamic</i> C	Statico <i>Static</i> C ₀	Lubrificazione <i>Lubrication</i>			
									Grasso <i>Grease</i>	Olio <i>Oil</i>		
240	340	60	281.5	46.4	29.6	324	783	3381	1377	1620	16.8	29248 M
	380	85	298.5	63	41.7	360	1999	6419	1224	1440	36	29348 M
	440	122	318.5	92.5	59.4	399	3332	9996	1148	1350	78	29448 M
260	360	60	302	46.2	29.8	343	801	3577	1301	1530	18	29252 M
	420	95	327.5	70	46	392.3	2499	8134	1071	1260	49.3	29352 M
	480	132	342	99	65	441	3969	12642	995	1170	102	29452 M
280	380	60	322.5	46.2	29.5	364	846	3920	1301	1530	21.9	29256 M
	440	95	346	70	46.3	411	2499	8477	1071	1260	50.3	29356 M
	520	145	373.5	109.5	69	472	4802	14994	918	1080	131	29456 M
300	420	73	350.5	53	35.8	398.9	1049	4704	1071	1260	29.3	29260 M
	480	109	371.5	83	53	448	3038	10388	918	1080	72.5	29360 M
	540	145	395	109.9	68.3	494.4	4224	16268	918	1080	138	29460 M
320	440	73	369.5	54	36	420	1088	4998	1071	1260	31.6	29264 M
	500	109	393	81.5	53	468	3283	10976	918	1080	75.4	29364 M
	580	155	420	116	75	534	4851	18620	842	990	174	29464 M
340	460	73	390	54	36	440	1107	5292	995	1170	33	29268 M
	540	122	428	40.6	117	59.5	2656	10780	842	990	105	29368 M
	620	170	449.5	128	80.1	560	5635	21952	765	900	211	29468 M
360	500	85	423	25	81	44	1431	6664	918	1080	52	29272 M
	560	122	442.5	90	58.1	523.3	2705	11368	842	990	111	29372 M
	640	170	470	126	81	588	5243	20776	727	855	224	29472 M
380	520	85	441	27	81	42	1548	7497	842	990	53	29276 M
	600	132	473	99.5	62.2	565	3273	13720	765	900	135	29376 M
	670	175	494	67	168	87.5	5753	23520	689	810	260	29476 M
400	540	85	460	62.5	42	514	1578	7840	842	990	61	29280 M
	620	132	489	100	64.7	582	3381	14308	727	855	154	29380 M
	710	185	529.5	138	86	652	6429	25970	650	765	298	29480 M
420	580	95	485	71	49.2	552.1	1950	9604	765	900	76	29284 M
	650	140	520	49	135	67.5	3665	15680	689	810	170	29384 M
	730	185	542.5	140	89.9	668	6595	26950	650	765	310	29484 M
440	600	95	508	30	91	46.5	2029	10192	765	900	78	29288 M
	680	145	540	49	140	70.5	4400	18914	650	765	180	29388 M
	780	206	583	150	97	716	7664	31360	574	675	407	29488 M
460	620	95	530	30	91	46	2029	10388	727	855	81	29292 M
	710	150	567	50	144	72.5	4224	18620	612	720	215	29392 M
	800	206	596	77	199	101.5	7830	32830	574	675	425	29492 M
480	650	103	556	33	99	53.5	2303	11564	689	810	98	29296 M
	730	150	582	112	74	684	4283	19208	612	720	212	29396 M
	850	224	625	88	216	108	9359	38220	513	603	550	29496 M

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struttura da foro $\geq \varnothing 100$
design from bore $\geq \varnothing 100$

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d (mm)	D (mm)	H (mm)	D1 (mm)	B (mm)	E (mm)	d1 (mm)	Dinamico <i>Dynamic C</i>	Statico <i>Static C₀</i>	Lubrificazione <i>Lubrication</i>			
									Grasso <i>Grease</i>	Olio <i>Oil</i>		
500	670	103	571.5	76	50.5	640.5	2342	12250	689	810	97.5	292/500 M
	750	150	611	50	144	74	4400	19992	612	720	235	293/500 M
	870	224	650	160	107	797	9183	39200	513	603	555	294/500 M
530	710	109	604	80	56	675	3048	14994	650	765	118	292/530 M
	800	160	648	53	154	76	5125	23128	574	675	270	293/530 M
	920	236	686	89	228	116	10290	43120	482	567	650	294/530 M
560	750	115	644	37	111	61	2930	15680	612	720	140	292/560 M
	980	250	727	99	241	122	11760	49980	428	504	810	294/560 M
600	800	122	687	90	58.9	770	3665	18228	536	630	161	292/600 M
	900	180	720	65	174	89	7379	33810	482	567	405	293/600 M
	1030	258	770.5	185	126	954.8	12838	54880	405	477	860	294/600 M
630	850	132	723	50	127	62	4675	23128	513	603	210	292/630 M
	950	190	761	68	183	92	8281	37240	459	540	485	293/630 M
	1090	280	815	107	270	137	14112	60760	383	450	1040	294/630 M
670	900	140	773	45	135	73	4116	22344	482	567	255	292/670 M
	1150	290	872	205	138	1054	15092	66640	344	405	1225	294/670 M
710	1060	212	855	74	205	103	9751	44590	383	450	660	293/710 M
	1220	308	917	117	298	149	17248	74970	329	387	1500	294/710 M
750	1000	150	858	50	144	74	5978	30380	428	504	325	292/750 M
	1120	224	910	76	216	109	9183	44100	367	432	770	293/750 M
	1280	315	964	121	305	153	18326	83300	306	360	1650	294/750 M
800	1060	155	911	52	149	77	6429	33810	405	477	380	292/800 M
	1180	230	965	77	222	111	9751	48020	344	405	865	293/800 M
	1360	335	1034	123	324	165	19796	91140	275	324	2025	294/800 M
850	1120	160	967	47	154	82	6595	35280	383	450	425	292/850 M
	1440	354	1077	142	342	172	23422	105840	260	306	2390	294/850 M
900	1520	372	1137	147	360	186	26166	119560	230	270	2650	294/900 M
950	1250	180	1087	58	174	88	8114	44590	329	387	600	292/950 M
	1600	390	1209	153	377	191	27636	129360	214	252	3065	294/950 M
1000	1670	402	1270	155	389	190	30478	137200	199	234	3380	294/1000 M
1060	1400	206	1211	66	199	100	10290	57330	275	324	860	292/1060 M
	1770	426	1349	192	412	207	32732	152880	184	216	4280	294/1060 M
1180	1520	206	1331	83	199	101	10682	62720	260	306	950	292/1180 M
1250	1800	330	1474	148	319	161	24304	126420	184	216	2770	293/1250 M
1600	2280	408	1885	166	395	195	36064	196000	122	144	5375	293/1600 M