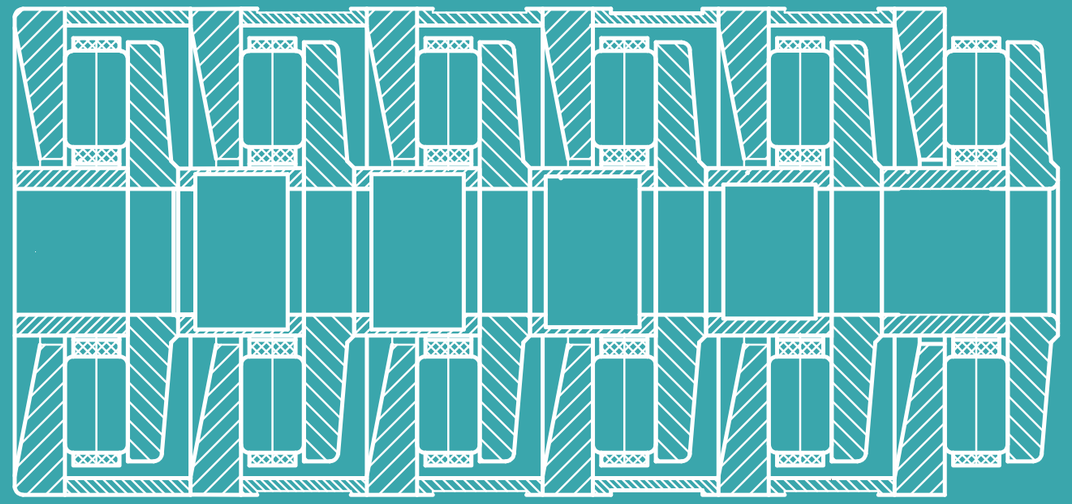
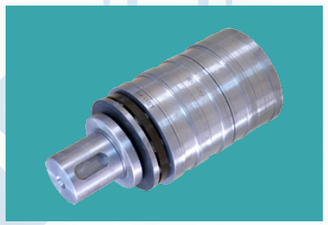
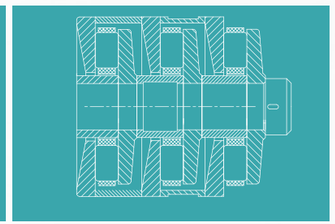
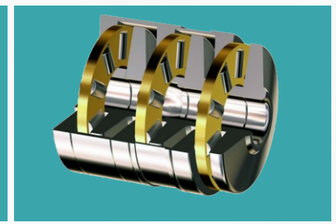
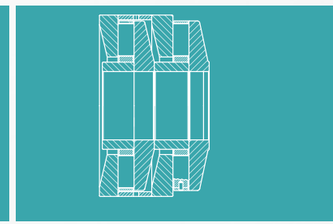
MONTON®
Luoyang Monton Bearing Science & Technology Co.,ltd.
No.119 JianShe Road,Luoyang 471039,Henan,China
Tel:+86 13213639372
Whatsapp:+86 13213639372
Skype:+86 13213639372
Email:montonbearing@outlook.com
Montonbearing01@163.com
http://www.angularcontact-ballbearing.com
http://www.montonbearings.com











Twin Screw Extruder Tandem Bearings

LUOYANG MONTON BEARING SCIENCE & TECHNOLOGY CO.,LTD.

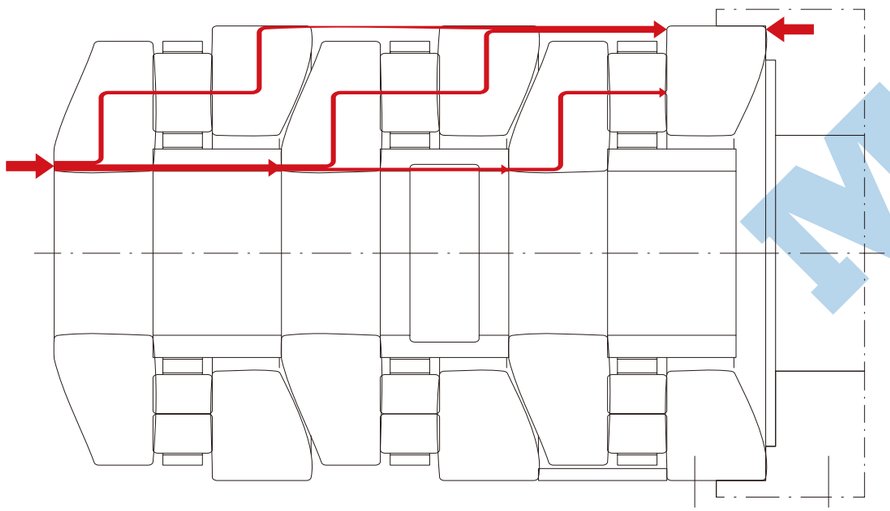
Tandem bearings technical Information

Tandem bearings offer an optimum solution wherever thefollowing requirements apply:
1. small radial design envelope
2. high axial forces
3. long operating life
4. low frictional energy.

Tandem bearings have proven effective principally in gearboxesfor single and twin screw extruders in the rubber and plasticsindustry.
Other possible applications include:
1. deep hole drilling equipment
2. friction welding machines.

Product description

Tandem bearings consist of several axial cylindrical rollerbearings arranged in line, A system of rings and washersmatched to each other ensures that all stages of the tandem bearing are subjected to uniform load at all times irrespective ofthe ratio C/F. The rings and washers are made from hardenedsteel. Tandem bearings are predominantly fitted with standardaxial cylindrical roller and bearing assemblies.



Structure and power flow

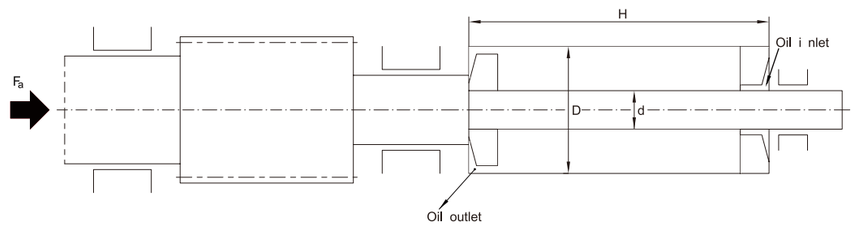
Design of bearing arrangements

For the installation of tandem bearings, the adjacent construction must be designed as follows:
1. with preload of one percent of the basic dynamic load rating
2. with radial guidance, for example by means of needle rollerbearings, Figure: Twin screw extruder gearbox.
3. without tilting. The adjacent parts must be machined such that no tilting is transmitted
4. taking account of the spring constants of the tandem bearing,especially when combined with axial bearings of a differentdesign
5. with a mounting fit of f6 for the shaft and F7 for the housing bore, in order to achieve correct functioning of the bearings.

Lubrication

Tandem bearings are always operated with recirculating oil lubrication, Figure Oil outlet, oil inlet, dimensions.
We calculate the oil quantity and oil viscosity in accordance with the data given in thequestionnaire MCT.
Ordering example:
1. Tandem bearing with 6 stages
2. Shaft diameter 4 mm
3. Outside diameter 24 mm
4. Bearing width 105 mm.

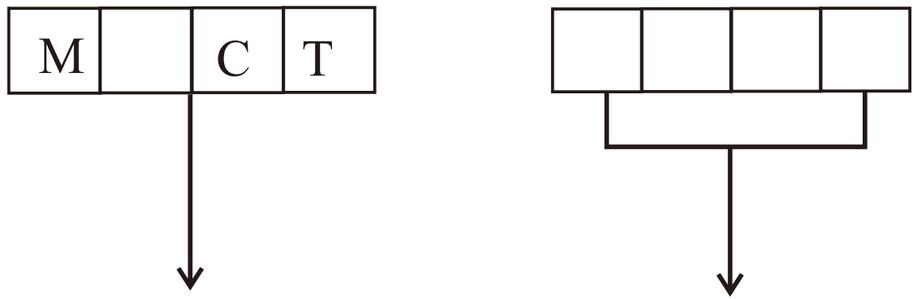
Ordering designation:M6CT4*24*105



Oil outlet, oil inlet, dimensions

Multi-Stage Cylindrical Roller Thrust Bearings (Tandem Bearings)

Method of designation



A: Shaft A2: Sleeeve E:nylon cage

Example:

M6CT2385 (Old:T6AR2385)
Tandem bearing 6-row, d=23 D=85

Tandem bearings are primarily usedwhen reliable support must be provided for high axial forces in a limited radialdesign envelope. A typical application fortandem bearings is the distribution gearin twin screw extruders .Due to the small center distance betweenthe heavily loaded extruder shafts, a tandem bearing is often used in combination with a thrust cylindrical roller bearing having the correspondingload carrying capacity

The combination of two identical tandembearings or two differing tandem bearings is also possibledepending on the design envelope and gear application.

Introduction

Multi-stage cylindrical roller bearings (Tandem bearings) have very good characteristics of limited radial space, high axial forces, equal support of all the rows of rollers and long operating life, and is the ideal spindle of parallel screw extruder.

The tandem bearings provided by our institute has the following types: double rows, three rows, four rows, five rows, six rows and eight rows, we also provided bearings with shaft and sleeve barrel. Customers can have their own selections according to center distance of screws, space and load . We also accept the orders of other dimensions.

Application of tandem bearings

When using tandem bearings, following recommendations should be adhered :
(1) Preload: 1% of the dynamic basic load rating.
(2) Radial guidance: full complement cylindrical roller bearings .
(3) Eliminate tilting: the supporting parts must be machined to eliminate any tilting.
(4) Mounting tolerances: recommended the following mounting tolerances: shaft f6 and housing bore F7.
(5) Lubrication: tandem bearings must always be lubricated by oil circulation .

Tandem Thrust bearings are comprised of “stages” which include precision ground and matched thrust plates and compression sleeves separated by cylindrical roller assemblies. This design enables the Tandem Thrust bearings to provide a solution in a radial restricted envelope. The bearings are available in multiple stages, 2-8 to accommodate your designrequirements. Depending on your preference, these bearings are available in a wide variety of sizes and options as illustrated on the pages to follow.

Features and Benefits

1.Minimal Backing Support Requirements
2.Space Saving Design
3.Matched Precision Ground Rollers
4.Machined Brass Roller Riding Retainer
5.Precision Ground Inner and Plates
5.Precision Ground Inner and Outer Compression Sleeves

Tandem Bearings in Twin Screw Extruder Gearboxes

Modern twin screw extruder gearboxes with a high power density such as those used in the processing of thermoplastic materials are machine elements that must provide a high degree of reliability in operation. The tandem bearingssupplied by a well-known rolling bearing manufacturer have been used in harsh environments fordecades. In spite of increasing demands placed on these bearings, like the requirements for deep foundation drilling equipment or friction welding machines, these products have proven themselves as reliablemachine elements. These tandem bearings represent an excellent solution for applications requiringa small radial design envelope,high axial forces and long life.

1.Tandem Bearing Design

Tandem bearings consist of several coaxially arranged thrust cylindrical roller and cage assemblies. Two, three or four thrust cylindrical roller and cage assemblies can be used, corresponding to product designations M2CT.., M3CT.. andM4CT.. respectively. Six row and eight row tandem bearings (M6CT.. and M8CT..) are also available. These products consist of two triple row and two four row tandem bearings respectively.

The special elastic system of matched rings and washers made from hardened rolling bearing steel ensures that there is an equal load on all rows regardless of the magnitude of the axial load.

2.Tandem Bearing Operation

To meet the requirement that all rows support equal portions of the axial forces from the extruder screw regardless of the load ratio C/P, the shaft sleeves and housing sleeves are specially designed so that the same deflection is achieved for each row. The geometry of the rings thus plays an important role in providing the optimum flow of power in the bearing. The shape of shaft washers and housing washers primarily effects the load distribution on the length of the cylindrical rollers. The design of shaft and housing washers allows both components to receive the same polysymmetric deformation. Although the washers underload are subject to elastic deformation,both raceways nonetheless remain almost parallel to each other. Rolling element tilting or edge loading on the rolling elements, which lead to reduced service life, can thus be eliminated.In addition to the equal deflection on each row mentioned above, in the case of six row and eight row tandem bearings the load distribution between the three row and four row tandem bearings must be achieved corresponding to their load carrying capacity. This can be done by matching the shaft sleeve and the housing sleeve.

4.Bearing Selection

Three pieces of information are necessary when selecting a suitable tandem bearing:

– the maximum possible bearing OD
– the desired calculated rating life under operating load and speed
– the maximum screw pressure.

The maximum possible bearing OD results from the intermeshing of two screws in the case of twin screw extruders. In the process, the crest diameter of one screw contacts the root diameter of the other screw. The resulting tight center distance and the output shaft near the tandem bearing limit the radial design space. The length of a tandem bearing is normally not a crucial factor in bearing selection. For this limited envelope, tandem bearings are available in the 31.5 to 900 mm OD range.

The required calculated rating life under operating load and speed is generally between 20,000 and 40,000 hours for extruder gearboxes. Smaller gearboxes such as those used in extruders for laboratory applications have shorter life requirements. Here, a value of 5,000 hours is sufficient.

Another factor to consider in bearing selection is the maximum screw pressure. Due to the deformation of the components and the resulting stresses, a maximum permissible axial load Fa max may not be exceeded. The value for Fa max, the dynamic load rating C as well as the static load rating C0 can usually be found in the tandem bearing delivery drawing. The value Fa max refers to the permissible strain on the components (rings, washers,etc.). For this reason, the maximum screw pressure should be known. On the other hand, the dynamic and static load ratings refer to the entire rolling element set. Since the value for Fa max is always lower than C0, the static load rating C0 is not relevant for the selection of a tandem bearing. We can provide gearbox manufacturers with a tandem bearing data sheet so that all relevant data can be recorded precisely. This allows the optimum bearing solution to be recommended.

4.Mounting Tandem Bearings

Tandem bearings are mounted with a loose F7 fit for the housing and f6 for the tandem bearing shaft. A loose fit is necessary to allow the axial shifting (deflection) of the washers, rings and sleeves. The seating surface of the adjacent structure (housing and shaft) should be designed to have a perpendicularity tolerance to DIN ISO 1101 and qualities IT4 to IT7(depending on the diameter range).

For the mating structure, care should also be taken to ensure that the contact diameter indicated on the delivery drawing is maintained. The contact diameter (support diameter) for the shaft shoulder may not be lower than the diameter indicated, and the contact diameter for the housing must not be exceeded. Insufficient support will not only cause an unequal load distribution but also an increased washer deformation , which in turn will result in increased strain on the components. Since tandem bearings are thrust bearings that are not capable of supporting radial loads, it is advisable to provide sufficient radial support. One way to do this is to use needle roller bearings. This will allow potential shaft deflection and associated frictional losses to be reduced, especially in the case of continuous shafts where pinion and tandem bearing are on the same shaft and not separated by a gear coupling.

5. Minimum Load for Tandem Bearings

The minimum load or preload for tandem bearings has been defined as one percent of the dynamic load rating C. Two issues are important when dealing with the question of minimum load. The first pertains to the kinematics of the bearing and the other is the deflection behavior.

5.1 Kinematics

Thrust bearings should never run without a certain minimum load. This load prevents rolling bearing slip and the resulting surface damage in the case of acceleration or hesitation. The minimum load F a min for thrust cylindrical roller bearings can be calculated using the formulas given in .

5.2 Deflection Behavior

Larger deflection differences can lead to the contact of screw flanks or to premature screw wear. For tandem bearings the spring curve is relatively flat for low loads and does not become linear until a certain load ratio C/P is reached. The reason for this is that tandem bearings are “softer” than single row thrust cylindrical bearings, whose entire spring curve is in the linear range. To be able to record the deflection path accurately and achieve suitable operating conditions, tandem bearing operation should be within the linear range of their spring curves. Put another way, they should have sufficient preload. Depending on the size, the preload can be applied in different ways. In general, a compression spring is suitable for small to medium preload forces . For larger tandem bearings, disk springs are preferred for the application ofpreload forces .

6. Service Life

As is the case for thrust cylindrical roller bearings, the service life of tandem bearings is calculated using the formulas provided. If required, the extended rating life L naa can also be calculated. The oil temperature required for this calculation can be taken from the oil outlet since experience has shown that lubricant flowing through the bearing is between 5 °C and15 °C warmer than the inlet temperature.

7. Lubrication and Cooling

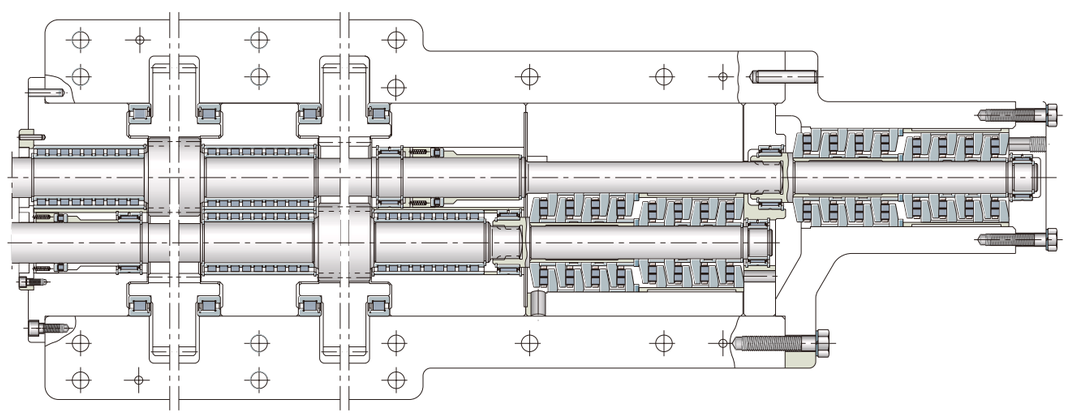
In general, circulating oil lubrication should be used to lubricate tandem bearings.The oil is always fed from the back, which means that the lubricant flows through the bearing against the direction of the axial force. The gearbox housing at the end of the tandem bearing must be closed so that the required amount of oil is available. Although the rotating thrust cylindrical roller and cage assemblies promote oil flow, an additional feed pump must be used in order to achieve a sufficient oil exchange in the bearing. The required amount of oil is calculated using the formulas given . When calculating the speed dependent frictional torque caused by fluid friction, the number of rows must be considered.

8. Summary

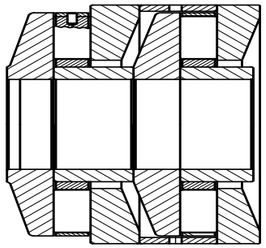
Tandem bearings provide an optimum solution for applications with the following requirements:

– Small radial design envelope
– Support of high axial loads
– High speeds
– Long service life

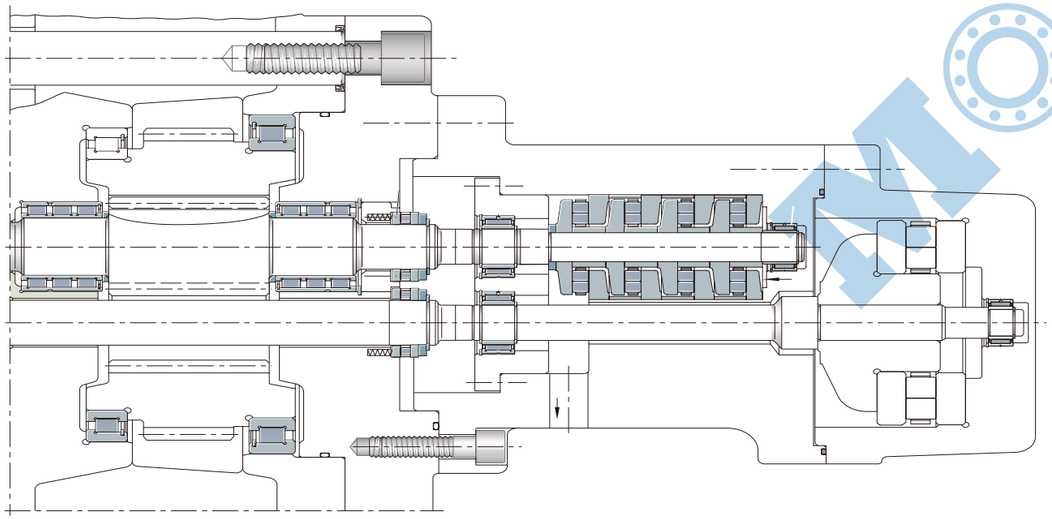
Due to the high operational safety, it would be hard to imagine modern extruder gearboxes without this reliable machine element.



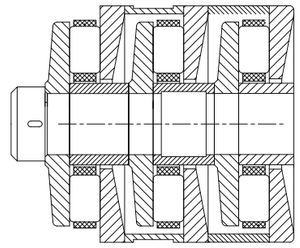
Twin screw extruder gearbox



Bearings			Basic load ratings		Weight	Old_spec	Designations
d	D	H	dyc_Cr	stc_Cor			
mm			KN		kg		
12	42	41.5	70	157	0.32	M2CT1242	T2AR1242
32	78	57.5	161	641	2.54	M2CT3278	T2AR3278
145	385	233	4510	20956	147.7	M2CT145385	T2AR145385
431.8	863	449.275	17180	88560		M2CT431863	T2AR431863



Twin screw extruder gearbox



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mm			KN		kg		
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4	20	32	21	44	0.061	T3AR420A	M3CT420A
4	20	32	17	42	0.053	T3AR420EA	M3CT420EA
6	45	69	136	259		T3AR645	M3CT645
12	42	62.4	120	300	0.41	T3AR1242E	M3CT1242E
19	49	67	148	425	0.5	T3AR1949E	M3CT1949E
23	85	97	320	1545	3.118	T3AR2385	M3CT2385
24	68	70	161	772	1.4	T3AR2468	M3CT2468
24	68	70	161	772	2.38	T3AR2468A1a	M3CT2468A1a
24	68	70	161	772	1.75	T3AR2468A	M3CT2468A
24	68	70	161	772	2.31	T3AR2468A1	M3CT2468A1
28	66	82	334	825	1.224	T3AR2866	M3CT2866
28	90	98	336	1411	3.48	T3AR2990	M3CT2990
30	73	89	197	267	2.05	T3AR3073	M3CT3073
32	78	84	290	847	1.93	T3AR3278	M3CT3278
33	105	115	416	1916	5.42	T3AR33105	M3CT33105
38	150	163	935	4768	15.6	T3AR38150	M3CT38150
40	110	123	465	2265	6.264	T3AR40110	M3CT40110
50	160	167	820	3950		T3AR50160	M3CT50160
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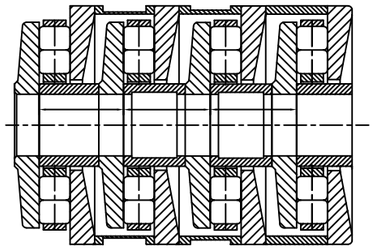

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mm			KN		kg		
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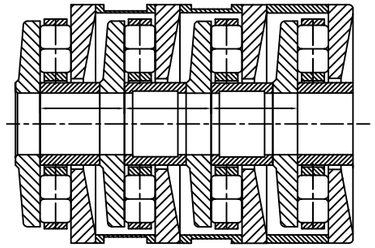
5	27	52	40	105	0.142	T4AR527E	M4CT527E
5	37	78	120	228		T4AR537	M4CT537
6	45	92	182	466	0.72	T4AR645E	M4CT645E
10	37	79	84	275	0.486	T4AR1037	M4CT1037
10	37	79	84	275	0.55	T4AR1037A	M4CT1037A
11	34	52.5	55	155	0.25	T4AR1134	M4CT1134
12	42	83.5	108	356	0.62	T4AR1242	M4CT1242
18	60	101	201	809	1.62	T4AR1860	M4CT1860
18	58	101	177	728	1.426	T4AR1858	M4CT1858
19	49	88.5	265	669	0.74	T4AR1949E	M4CT1949E
20	60	101	201	809	1.62	T4AR2060	M4CT2060
20	47	79	141	453	0.67	T4AR2047	M4CT2047
22	64	102.5	201	763	1.7	T4AR2264	M4CT2264
22	64	101	201	763	2.11	T4AR2264A	M4CT2264A
23	62	105	202	815	1.63	T4AR2362	M4CT2362
23	62	105	202	815	2.14	T4AR2362A	M4CT2362A
23	85	129.5	427	2060	4.152	T4AR2385	M4CT2385
25	98	150	661	2541	8.3	T4AR2598	M4CT2598



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mm			KN		kg		
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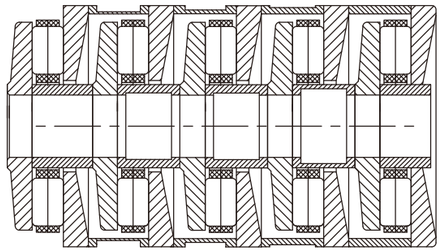
28	66	107.5	320	1000	2.37	T4AR2866A	M4CT2866A
28	66	107.5	415	1050	2.44	T4AR2866A+	M4CT2866A+
28	66	107.5	415	1050	2.44	T4AR2866+	M4CT2866+
30	64	101	201	763	2.11	T4AR2264A	M4CT2264A
30	68	100	230	950	1.79	T4AR3068	M4CT3068
30	73	122	222	903	2.48	T4AR3073	M4CT3073
30	73	122	244	1030	2.255	T4AR3073E	M4CT3073E
30	75	112	304	1045	2.29	T4AR3075YB	M4CT3075YB
30	100	151	499	2371	6.58	T4AR30100	M4CT30100
32	78	110.5	321	1283	3.83	T4AR3278A	M4CT3278A
32	78	110.5	321	1283	2.58	T4AR3278	M4CT3278
33	105	151	521	2555	7.11	T4AR33105	M4CT33105
34	95	130	377	1900	5.166	T4AR3495	M4CT3495
34	95	145	377	1900	6.15	T4AR3495A	M4CT3495A
38	150	214.5	1116	5390	21.7	T4AR38150	M4CT38150
40	127	177	731	3981	13.3	T4AR40127	M4CT40127
40	110	164	831	3634	8.33	T4AR40110	M4CT40110
140	360	424	8400	36200		T4AR140360	M4CT140360
350	750	854	27000	118000		T4AR350750	M4CT350750



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mm			KN		kg		
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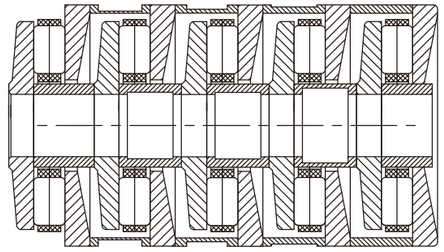
4	20	54	31	73	0.093	T5AR420A	M5CT420A
5	27	65	51	131	0.21	T5AR527	M5CT527
10	37	99	105	344	0.57	T5AR1037EA	M5CT1037EA
10	37	99	105	344	0.487	T5AR1037E	M5CT1037E
12	42	104.6	128	445	0.776	T5AR1242	M5CT1242
12	42	104.6	128	445	0.925	T5AR1242A	M5CT1242A
12	42	104.6	129	445	0.9	T5AR1242EA	M5CT1242EA
12	42	104.6	129	445	0.75	T5AR1242E	M5CT1242E
18	58	126.5	222	910	1.787	T5AR1858	M5CT1858
18	58	107.5	311	1120	1.61	T5AR1858X2	M5CT1858X2
20	47	99	177	566	0.834	T5AR2047	M5CT2047
22	62	110	311	1120	1.78	T5AR2262	M5CT2262
22	62	110	311	1120	2.2	T5AR2262A	M5CT2262A
22	62	110	311	1120	2.2	T5AR2262A1	M5CT2262A1
22	64	128.5	239	954	2.065	T5AR2264	M5CT2264
22	64	128.5	239	954	2.55	T5AR2264A	M5CT2264A
22	64	128.5	242	1150	1.94	T5AR2264E	M5CT2264E
22	64	128.5	242	1150	2.425	T5AR2264EA	M5CT2264EA
23	85	162	624	2651	5.143	T5AR2385	M5CT2385



Bearings			Basic load ratings		Weight	Old_spec	Designations
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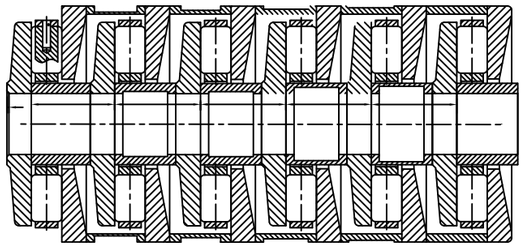
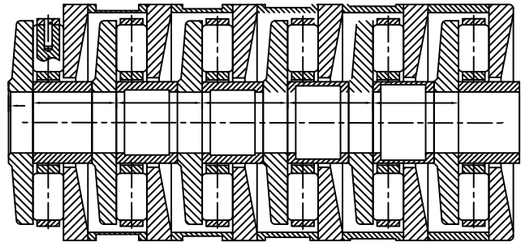
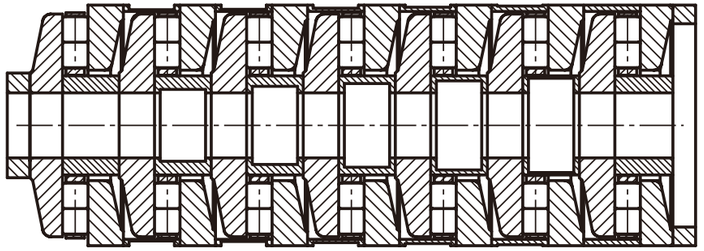
mm			KN		kg		
23	62	131	270	896	2.054	T5AR2362	M5CT2362
24	68	119	336	1415	2.92	T5AR2468A	M5CT2468A
24	68	119	336	1415	2.32	T5AR2468	M5CT2468
25	77	134	403	1753	3.48	T5AR2577	M5CT2577
28	76	135	392	1664	3.199	T5AR2876	M5CT2876
28	76	135	443	1398	4.73	T5AR2876A	M5CT2876A
30	73	153	260	1188	3.103	T5AR3073	M5CT3073
30	73	153	260	1188	4.1	T5AR3073A	M5CT3073A
30	73	153	289	1286	2.88	T5AR3073E	M5CT3073E
30	73	153	289	1286	3.877	T5AR3073EA	M5CT3073EA
32	78	137	442	1397	3.22	T5AR3278	M5CT3278
32	78	137	391	1664	4.22	T5AR3278A	M5CT3278A
34	95	163	583	2495	6.43	T5AR3495	M5CT3495
36	120	260	1042	4375	14.15	T5AR36120KK	M5CT36120KK
36	120	197	1042	4375	11.19	T5AR36120	M5CT36120





Bearings			Basic load ratings		Weight	Old_spec	Designations
d	D	H	dyc_Cr	stc_Cor			
mm			KN		kg		
4	24	62	56	106	0.16	T6AR424	M6CT424
4	24	62	56	106	0.16	T6AR424X1	M6CT424X1
4	24	62	56	106	0.168	T6AR424X1A	M6CT424X1A
4	20	65	35	88	0.115	T6AR420A	M6CT420A
4	20	65	35	88	0.106	T6AR420	M6CT420
5	27	78	56	157	0.22	T6AR527	M6CT527
5	37	117	165	376		T6AR537	M6CT537
6	30	89	66	218	0.321	T6AR630	M6CT630
12	42	125.7	154	534	0.9	T6AR1242E	M6CT1242E
14	52	151	386	1054	1.51	T6AR1452A2E	M6CT1452A2E
18	72	172	646	2286	3.51	T6AR1872	M6CT1872
18	72	172	646	2286	3.3	T6AR1872X2	M6CT1872X2
22	62	132	357	1450	2.1	T6AR2262	M6CT2262
22	64	154.5	276	1148	2.5	T6AR2264	M6CT2264
22	64	154.5	276	1148	3.52	T6AR2264A	M6CT2264A
22	64	154.5	279	1381	2.234	T6AR2264E	M6CT2264E
22	64	154.5	276	1148	3.52	T6AR2264A	M6CT2264A
22	70	180	513	1500	2.874	T6AR2270A2	M6CT2270A2
22	70	182	513	1500	2.874	T6AR2270A2Y	M6CT2270A2Y
23	90	213	828	3238	7.42	T6AR2390A2	M6CT2390A2
23	90	209.75	842	3181	7.75	T6AR2390	M6CT2390

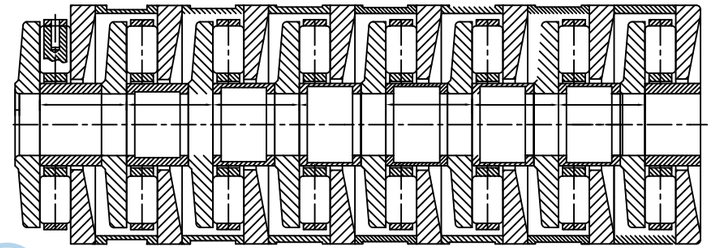
Bearings			Basic load ratings		Weight	Old_spec	Designations
d	D	H	dyc_Cr	stc_Cor			
mm			KN		kg		
25	105	234	1072	4574	11.9	T6AR25105	M6CT25105
28	72	150	434	1730	3.2	T6AR2872	M6CT2872
28	66	162.5	417	1498	2.1	T6AR2866	M6CT2866
30	73	182	299	1425	3.72	T6AR3073	M6CT3073
30	127	288	1145	5970	21.7	T6AR30127	M6CT30127
30	150	335	2205	9250	39.4	T6AR30150A	M6CT30150A
30	145	335	2070	9375	34.8	T6AR30145	M6CT30145
32	78	163.5	497	1616	3.88	T6AR3278	M6CT3278
34	95	196	699	2994	7.28	T6AR3495	M6CT3495
38	160	360	1622	8875	40.8	T6AR38160	M6CT38160
38	160	340	1729	8019	40.8	T6AR38160A2	M6CT38160A2
43.18	158.75	278.765	2116	8775	33	T6AR43158A2	M6CT43158A2
85	290	580	6200	26000		T6AR85290	M6CT85290



Bearings			Basic load ratings		Weight	Old_spec	Designations
d	D	H	dyc_Cr	stc_Cor			
mm			KN		kg		
18	80	200	690	2771	6.83	T7AR1880	M7CT1880
18	100	266	1351	5733	13.03	T7AR18100	M7CT18100
18	100	306	1351	5733	7.44	T7AR18100A	M7CT18100A
22	64	180	362	1471	3.25	T7AR2264	M7CT2264
23	85	227	860	4020	8.11	T7AR2385A	M7CT2385A
25	105	273	1265	5821	13.7	T7AR25105	M7CT25105
25	120	336	1668	7250	21.4	T7AR25120A	M7CT25120A
30	135	339	2036	9605	30.7	T7AR30135A	M7CT30135A

Sleeve type Multi-Stage Cylindrical Roller Thrust Bearings

Bearings	Old code	Demensions(mm)					`	Loads(KN)		Weight
		d	D	H	H0	H1		Co	Cr	(KG)
M6CT2270A2	M6CT2270A2	22	70	172	5	182	6	580	1320	2.847
M6CT38160A2	M6CT38160A2	38	160	340	10	360	6	1729	8019	



Bearings			Basic load ratings		Weight	Old_spec	Designations
d	D	H	dyc_Cr	stc_Cor			
mm			KN		kg		
6	45	183.5	292	693		T8AR645	M8CT645
18	100	304	1351	5733	13.03	T8AR18100	M8CT18100
22	70	233	572	2245	4.4	T8AR2270A2E	M8CT2270A2E
25	105	320	1208	5223	17.3	T8AR25105A2	M8CT25105A2
25	52	165	244	938	1.68	T8AR2552	M8CT2552
28	90	281	914	3604	8.82	T8AR2890	M8CT2890
30	127	372	1488	8435	30.97	T8AR30127	M8CT30127
34	95	262	874	3991	1.68	T8AR3495	M8CT3495
25	52	167	244	938	1.68	T8AR2552YA	M8CT2552YA
18	60	202.5	914	3604	2.8	T8AR1860E	M8CT1860E
25	52	165	244	938	1.68	T8AR2552	M8CT2552
120	360	900.5	12100	62400		T8AR120360	M8CT120360
120	465	985	14400	65600		T8AR120456	M8CT120456

INA·Seriesoftandembearings

Bearings	Dimensions d×D×H mm		Basicloadratings				Load Famax N	
			CN		C0N			
	from	to	from	to	from	to	from	to
T2AR	8×37×37.5	420×900×586	62,000	20,200,000	114,000	84,000,000	26,700	4,900,000
T3AR	5×31.5×58	420×900×886	565,000	29,000,000	106,500	126,000,000	20,000	7,150,000
T4AR	5×31.5×81	350×750×1027	73,000	27,000,000	142,000	118,000,000	40,000	9,075,000
T6AR	5×37×117	85×290×674	165,000	6,200,000	342,000	26,000,000	60,000	2,792,000
T8AR	6×45×183.5	200×435×1251	292,000	15,250,000	693,000	61,600,000	145,000	8,070,000

Shaft type
Multi-Stage Cylindrical
Roller Thrust Bearings

Bearings	Old code	Dimensions(mm)							Row	Loads(KN)		Weight
		d	D	H	H0	H1	d1	d2		Co	Cr	(KG)
M6CT424X1A	T6AR424X1A	4	24	62	9	71.5	4	6	6	63	93	0.168
M4CT1037A	T4AR1037A	10	37	79	19	102	10	10	4	95	242	0.55
M5CT1242A	T5AR1242A	12	42	104.6	26	133	12	12	5	145	391	0.925
M4CT2264A	T4AR2264A	22	64	102.5	30	136	22	22	4	227	677	2.473
M5CT2264A	T5AR2264A	22	64	128.5	30	162	22	22	5	270	839	2.55
M4CT2362A	T4AR2362A	23	62	105	55	165	22	22	4	176	652	2.14
M5CT2468A	T5AR2468A	24	68	118	33	156	24	24	5	379	1188	2.92
M3CT2468Ala	T3AR2468Ala	24	68	70	104	188	20	28	3	140.3	617.8	2.38
M3CT2468Al	T3AR2468Al	24	68	70	111	218	20	22	3	189	310	2.31
M3CT2468A	T3AR2468A	24	68	70	31	118	20	22	3	189	310	1.75
M4CT2866A	T4AR2866A	28	66	107.5	22.5	137.5	17	38	4	361	840	2.37
M5CT2876A	T5AR2876A	28	76	135	75	211	28	35	5	443	1398	4.73
M5CT3073A	T5AR3073A	30	73	153	33	190	30	30	5	293	1045	4.1
M4CT3278A	T4AR3278A	32	78	110.5	40	195	30	20	4	363	1077	3.83
M4CT3495A	T4AR3495A	34	95	130	68	212	34	35	4	426	1672	6.85

Other type Tandem Bearings

BEARING NO.	Dimensions			Rows	Load Rating (KN)	
	Inner Diameter	Outer Diameter	Height		C	CO
T-1570-4	Ø15	Ø70	153.00	4	328	820
T-2270-3B	Ø22	Ø70	82.00	3	228	589
T-2270-4B	Ø22	Ø70	109.50	4	304	785
T-2270-6(53507)	Ø22	Ø70	182.20	6	456	1,178
T-2390-3A(412)	Ø23	Ø90	97.00	3	417	1,250
T-2390-3B(346)	Ø23	Ø90	97.00	3	419	1,189
T-2390-4A(81684)	Ø23	Ø90	129.50	4	559	1,666
T-2390-4B(58771)	Ø23	Ø90	129.50	4	568	1,585
T-2390-6(53043)	Ø23	Ø90	200.00	6	750	2,439
T-2390-8(81657)	Ø23	Ø90	271,25	8	1,127	3,251
T-25105-6(52548)	Ø25	Ø105	247.00	6	1,299	2,940
T-25105-8	Ø25	Ø105	384.00	8	1,732	3,933
T-2872-6	Ø28	Ø72	161.20	6	483	1,354
T-3092-6	Ø30	Ø92	294.00	6	713	2,079
T-30127-6(52523)	Ø30	Ø127	288.00	6	1,540	5,500
T-33105-3(51909)	Ø33	Ø105	115.00	3	696	1,973
T-33105-4	Ø33	Ø105	153.50	4	928	2,631
T33105-6	Ø33	Ø105	229.00	6	1,393	3,946

Rollway Series 2 Stage

Part No.	B Bore inch	D O.D. inch	H Height inch	Basic Dynamic Rating lb	Bearing Weight lb
TAB-017043-201	1.7500 44.450	4.3750 111.163	3.8750 98.425	79,000 353,920	11.0 4.9
TAB-027047-203	2.7570 70.028	4.7035 119.469	2.6250 66.675	75,100 336,450	6.8 3.1
TAB-030066-201	3.0000 76.200	6.6265 168.313	3.6250 92.075	141,000 631,680	22.0 9.9
TAB-040082-201	4.0000 101.600	8.2515 209.588	7.0620 179.375	236,000 1,057,280	44 19.9
TAB-040100	4.0000 101.600	10.0000 254.000	5.5620 141.275	376,000 1,684,480	84 38.1
TAB-050090-202	5.0000 127.000	9.0000 228.600	5.3120 134.925	272,000 1,218,560	52 23.6
TAB-060110-280	6.0000 152.400	11.0000 279.400	7.2500 184.150	427,000 1,912,960	109 49.4
TAB-060120-201	6.0000 152.400	12.0000 304.800	6.2500 158.750	454,700 2,037,060	118 53.5
TAB-060140-201	6.0000 152.400	14.0000 355.600	6.8120 173.025	619,000 2,773,120	192 87.1
TAB-062120-201	6.2500 158.750	12.0000 304.800	5.0000 127.000	440,000 1,971,200	93 42.2
TAB-070140-204	7.0000 177.800	14.0000 355.600	7.1250 180.975	605,000 2,710,400	184 83.4
TAB-070140-205	7.0000 177.800	14.0000 355.600	7.7500 196.850	713,000 3,194,240	200 90.7
TAB-070160-201	7.0000 177.800	16.0000 406.400	9.0000 228.600	925,000 4,144,000	328 148.8
TAB-072160-202	7.2500 184.150	16.0000 406.400	9.0000 228.600	897,500 4,020,800	202 91.6
TAB-080160-201	8.0000 203.200	16.0000 406.400	7.5000 190.500	775,000 3,472,000	254 115.2
TAB-080172-201	8.0000 203.200	17.2460 438.048	9.7500 247.650	1,009,000 4,520,320	332 150.6
TAB-090190-202	9.0000 228.600	19.0000 482.600	9.5000 241.300	1,240,000 5,555,200	468 212.3
TAB-092169-203	9.2500 234.950	16.9390 430.251	7.7500 196.850	970,000 4,345,600	261 118.4
TAB-100180	10.0000 254.000	18.0000 457.200	10.5000 266.700	1,078,000 4,829,440	425 192.7
TAB-100200-202	10.0000 254.000	20.0000 508.000	8.5000 215.900	1,120,000 5,017,600	449 203.6
TAB-100200-204	10.0000 254.000	20.0000 508.000	11.7500 298.450	1,458,000 6,531,840	621 281.7
TAB-101215-204	10.1000 256.540	21.5025 546.164	12.8750 327.025	1,987,000 8,901,760	817 370.7
TAB-120240-209	12.0000 304.800	24.0000 609.600	12.5000 317.500	2,320,000 10,393,600	1,050 476.3
TAB-140260-201	14.0000 355.600	26.0000 660.400	13.6870 347.650	2,565,000 11,491,200	1,150 521.6
TAB-140280-201	14.0000 355.600	28.0000 711.200	13.2500 336.550	2,469,000 11,061,120	1,370 621.4
TAB-170340-201	17.0000 431.800	34.0000 863.600	17.6880 449.275	3,800,000 17,024,000	2,800 1,270.1
TAB-220420-201	22.0000 558.800	42.0000 1,066.800	18.8750 479.425	4,810,000 21,548,800	4,920 2,231.7

Rollway Series 3 Stage

Part No.	B Bore	D O.D.	H Height	Basic Dynamic Rating	Bearing Weight
	inch mm	inch mm	inch mm	lb N	lb kg
TAC-014035-202	1.3775 34.989	3.5433 90.000	4.3750 111.125	93,600 419,330	7.9 3.6
TAC-022094-201	2.1654 55.001	9.4488 240.000	9.4488 240.000	66,700 298,820	113 51.3
TAC-030053-210	3.0000 76.200	5.3880 136.855	4.2500 107.950	155,000 694,400	10 4.5
TAC-030066-204	3.0000 76.200	6.6265 168.313	5.6000 142.240	160,800 720,380	33 14.9
TAC-040100-202	4.0000 101.600	10.0000 254.000	8.1250 206.375	458,000 2,051,840	120 54.4
TAC-101215-203	10.1000 256.540	21.5025 546.164	19.2500 488.950	2,572,000 11,522,560	1,050 476.2
TAC-120240-207	12.0000 304.800	24.0000 609.600	21.2500 539.750	3,460,000 15,500,800	1,800 816.5
TAC-170340-204	17.0000 431.800	34.0000 863.600	25.5200 648.208	5,220,000 23,385,600	3,399 1,541.7

Rollway Series 4 Stage

Part No.	B Bore	D O.D.	H Height	Basic Dynamic Rating	Bearing Weight
	inch mm	inch mm	inch mm	lb N	lb kg
TAD-012033-204	1.1830 30.048	3.3465 85.001	4.7750 121.285	69,400 310,910	8.5 3.8
TMD-040127	1.5748 40.000	5.0000 127.000	6.9685 177.000	201,500 902,720	27 12.2
TAD-017047-202	1.7712 44.988	4.7235 119.977	5.9060 150.012	191,000 855,680	20 9.1
TAD-030082	3.0000 76.200	8.2500 209.550	10.0000 254.000	496,000 2,222,080	35 15.8
TAD-059120-201	5.9055 150.000	12.0079 305.001	12.2047 309.999	852,000 3,816,960	290 131.5

Rollway Series 6 Stage

Part No.	B Bore	D O.D.	H Height	Basic Dynamic Rating	Bearing Weight
	inch mm	inch mm	inch mm	lb N	lb kg
TMF-023090	0.9055 23.000	3.5433 90.000	8.2677 210.000	160,650 719,710	16 7.3
TAF-011028	1.1024 28.001	2.7559 70.000	5.5118 140.000	89,700 401,860	6 2.7
TMF-030127-201	1.1811 30.000	5.0000 127.000	11.1024 282.001	329,900 1,477,950	44 19.9
TAF-017063	1.7000 43.180	6.2500 158.750	10.9750 278.765	413,200 1,851,140	72 32.6
TAF-019060	1.8940 48.108	6.0480 153.619	9.2500 234.950	366,000 1,639,680	52 23.5

Rollway Series 8 Stage

Part No.	B Bore	D O.D.	H Height	Basic Dynamic Rating	Bearing Weight
	inch mm	inch mm	inch mm	lb N	lb kg
TMH-023090-201	0.9055 23.000	3.5433 90.000	10.6772 271.201	214,200 959,620	30 13.6
TMH-023092	0.9055 23.000	3.6220 91.999	12.0079 305.001	246,000 1,102,080	27 12.2
TMH-030127	1.1811 30.000	5.0000 127.000	14.6575 372.301	434,100 1,944,770	52 23.6
TMH-040170	1.5748 40.000	6.6929 170.000	19.2910 489.991	661,800 2,964,860	123 55.8