

BEARING SPECIFICATION
TRB
ITM Bearings

 CECU5
 N°. EB170212EG
 Date: 17 Feb. 12

Versione n. 07

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Tot. 4

Prepared by: Date: | Approved by: Date: | Released by: Date:

TYPES: Series 302..., 322..., 303..., 323..., 320..
BORE DIAMETERS: From 17 mm To 100 mm (extremes included)

TECHNICAL SPECIFICATION

Standard Cage Material	Pressed steel
Rings and Rollers Material	GCr15 according to GB standard (100Cr6 according to DIN standard)
Rollers Roughness	Rolling Surface $\leq 0.125 \mu\text{mRa}$ This value must be respected for all rollers used in all bearing types with outer diameter ≤ 140 mm
Rings Roughness	IR Race $\leq 0,16 \mu\text{mRa}$ OR Race $\leq 0,16 \mu\text{mRa}$ Large Lip $\leq 0,25 \mu\text{mRa}$
Components surfaces	IR and OR raceways and Roller surface contour shape must be whole convex
Bearing Tolerances	ABMA ABEC-1 (DIN P0)
Boundary Dimensions and Series Designations	ISO 355 :2007
Chamfer Dimensions	ISO 582:1995
Tolerances Terms and Definitions	ISO 1132-1:2000
Tolerances	ISO 492 :2002
Dynamic Load Ratings and Rating Life	ISO 281:2007
Run Out Accuracy	ABMA ABEC-3 (DIN P6)
Rolling Bearings Vocabulary	ISO 5593:1997
Others	Tumbled Rings
Marking	COL
Cartoon Box	As per COL samples
Lot Identification Number	Sequential number for each different lot
Assembling	Free play between cage pockets and rollers must be the lowest possible

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ASSESSMENT OF DECLARED QUALITY LEVELS

Reference Standards	ISO 2859-4:2002		
Inspection Classification	Critical Characteristics	Main Characteristics	Secondary Characteristics
	Δ mp	Vdp, Vdmp	Δ Bs
	Δ Dmp	VDp, VDmp	Δ Cs
	Rotation	Kia	Residual Magnetism
	Rust	Kea	Surface Roughness
	Packaging	Chamfers	Appearance
	Δ Ts		Anti-Rust packing
	Marking		Tumbling
Acceptable Level	Critical Characteristics: AQL 0.65 Main Characteristics: AQL 1.5 Secondary Characteristics: AQL 2.5		

NOTE : HARDNESS and CRACK Characteristics : AQL 0

Batch Quantity	Grade	Critical Characteristics AQL 0.65		Main Characteristics AQL 1.5		Secondary Characteristics AQL 2.5	
		Ac	Re	Ac	Re	Ac	Re
2-8	2						
9-15	3					0	0
16-25	5			0	0		
26-50	8					0	1
51-90	13	0	0	0	1		
91-150	20					1	2
151-280	32	0	1	1	2	2	3
281-500	50			2	3	3	4
501-1200	80	1	2	3	4	5	6
1201-3200	125	2	3	5	6	7	8
3201-10000	200	3	4	7	8	10	11
10001-35000	315	5	6	10	11	14	15
35001-150000	500	7	8	14	15	21	22
150001-500000	800	10	11	21	22	21	22

NOTE: Even though the lot is acceptable in accordance with the above mentioned AQL, rejected values must not be higher than 25% of tolerance limit.

In case of Missing Rollers we reserve the right to request a 100% selection of whole lot even if defective within AQL 0.65 .

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RINGS AND ROLLERS MATERIALS

High carbon chromium steel

Specification	Code	Chemical composition [%]						
		C	Si	Mn	S	P	Cr	Mo
DIN	100Cr6	0,90÷1,05	0,15÷0,35	0,25÷0,45	≤0,025	≤0,030	1,35÷1,65	-
GB/T 18254	GCr15	0,95÷1,05	0,15÷0,35	0,25÷0,45	≤0,025	<0,025	1,40÷1,65	≤0,10
ASTM A 295	52100	0,98÷1,10	0,15÷0,35	0,25÷0,45	≤0,025	<0,025	1,30÷1,60	<0,10
JIS G 4805	SUJ2	0,95÷1,10	0,15÷0,35	<0,50	≤0,025	<0,025	1,30÷1,60	<0,08

Hardness after heat treatment:

- Raceways = 60 ÷ 65 HRC
- Rollers = 61 ÷ 66 HRC

CAGES MATERIALS

Low carbon steel

Specification	Code	Chemical composition [%]						
		C	Si	Mn	S	P	Cr	Mo
GB/T 13237	08F	0,05÷0,11	≤0,03	0,25÷0,50	≤0,035	≤0,035	≤0,15	≤0,25
GB/T 13237	Steel 10	Alternative to 08F (Tensile stress test is required)						
JIS G 3141	SPCC	≤0,12	-	<0,5	<0,04	<0,045	-	-

DECLARATION OF CONFORMITY REGARDING THE LIMITATION OF DANGEROUS SUBSTANCES

Manufacturer must declare that bearings produced by his plants are in conformity to:

1. REACH obligations (Registration, Evaluation, Authorization of Chemicals)
2. Directive 2002/95/EC dated January 27th, 2003 (RoHS)
3. Directive 2000/53/EC dated September 18th, 2000 (ELV – End of Life of Vehicle)
4. Directive 76/769/EEC dated July 27th, 1976 and following modifications (Cadmium free)

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TESTS AND HOMOLOGATION PROCEDURE

1. Roughness and crowning

Randomly will be performed a roughness and crowning analysis on raceways and rollers, in order to check suitability for matching and functionality.

2. Steel Material

Randomly will be performed chemical and metallographic analysis on rings and balls in order to verify compliance with raw material standards, with RoHS and REACH.

3. Life

During supplier homologation, and randomly during the supplies, will be performed life tests on bearings, by life tester ABLT-1A. Reference standard for rating life will be ISO 281:2007. Loads, rpm and test parameters will be decided with supplier and/or End User.



Approved by (name/company) :

Approved by (signature) :

date :

_____	_____	_____
_____	_____	_____
_____	_____	_____