

Vibrating Screen Bearings & Applications

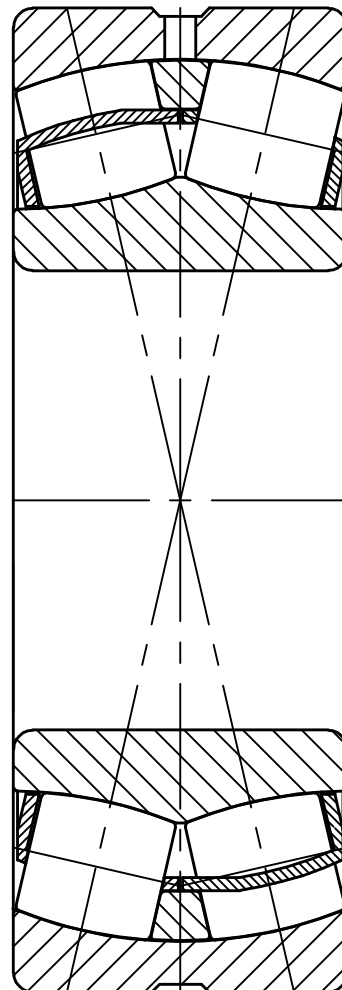
The bearings which are used in vibration conditions are exposed to severe and variable impact loads especially in vibrating screen applications.

Das Lager Germany vibrating screen bearings are specially designed and produced to provide longest service life under heavy working conditions of vibrating screens.

Features of Vibrating Screen Bearings

- Standard production of series 223 and 233 spherical roller bearings
- Reduced surface roughness on raceways of rings and rollers by special surface treatment technology
- Special finishing technology for the rollers
- Special heat treated inner ring and outer ring
- Special coating technology for inner ring bore
- Pressed and special heat treated steel cage
- C4 radial internal clearance class
- Special tolerances for bearing bore and outside diameter
- Lubrication groove and holes on the outer ring

Sample of Coding 22326CHC4F81W33



**Fields
of
Application**

**Vibrating
Screens**

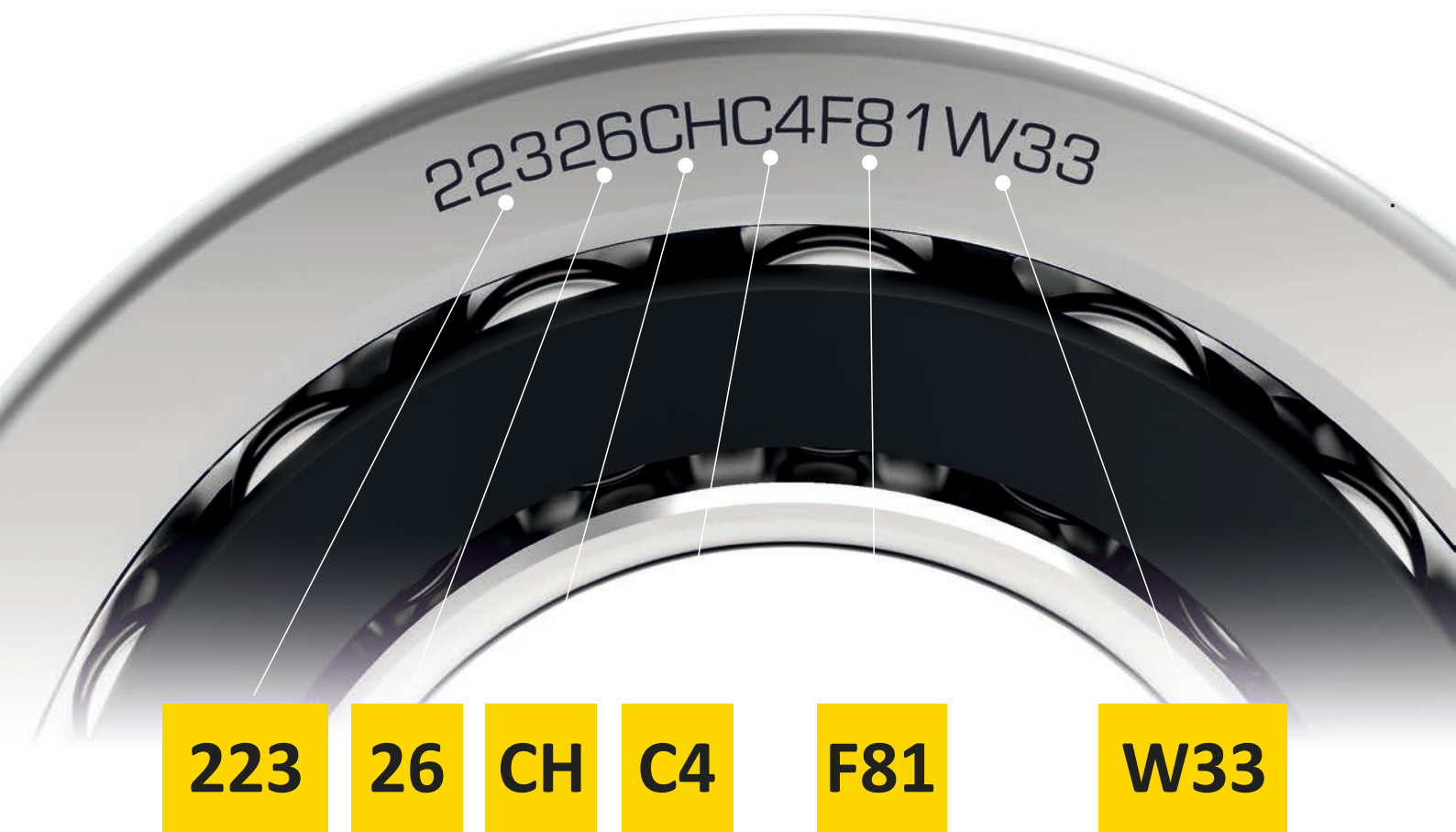
**Vibrating
Feeders**

**Hammer
Mills**

Benefits

- Longer bearing service life
- Reduced operating temperature
- Reduced maintenance costs
- Extended maintenance periods
- Reduced unplanned shutdown
- Safe working

Coding of Bearing and Descriptions of Suffixes



223

Bearing Series

26

Reference
Number
of Inner Diameter

CH

Pressed and special heat
treated steel cage

C4

Radial Clearance Class

C4: Bigger radial
clearance class than C3
C3: Bigger radial
clearance class than
Normal Clearance

F81

Special Suffix for
Vibrating Screen
Bearings

- * Narrowed special tolerance class
- * Special heat treated inner ring and outer ring
- * Special coating technology for inner ring bore

W33

Lubrication Groove
and 3 lubrication holes
on the outer ring

SPECIAL TOLERANCES FOR F81 VIBRATING SCREEN BEARINGS

Das Lager Germany vibrating screen bearings are produced with special narrowed tolerance class. Specification F81 prescribes a bore tolerance in the upper half of the normal tolerance zone.

For the outside diameter, only the centre half of the normal tolerance zone is permissible.

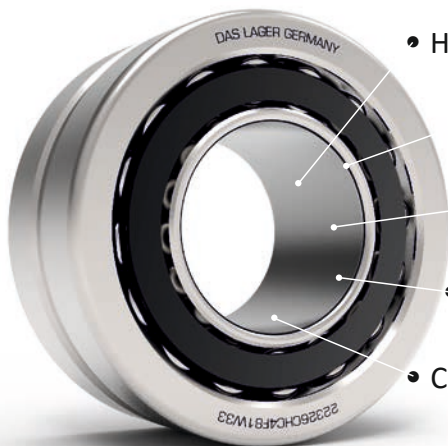
Inner Ring							
Nominal Bearing Bore Diameter (mm)	Over	30	50	80	120	180	250
	Up to	50	80	120	180	250	315
Deviation Δ_{dmp} (μm)		0 -7	0 -9	0 -12	0 -15	0 -18	0 -21

Outer Ring							
Nominal Outside Diameter (mm)	Over	80	150	180	315	400	500
	Up to	150	180	315	400	500	630
Deviation Δ_{Dmp} (μm)		-5 -13	-5 -18	-10 -23	-13 -28	-13 -30	-15 -35

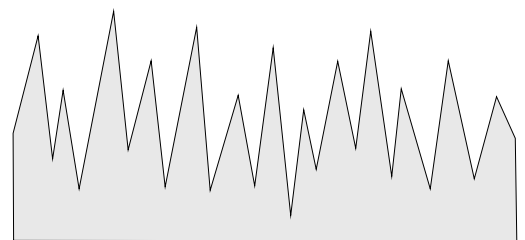
Special Coating Technology in the Bore

Why Coating?

In order to prevent friction corrosion between the bearing bore diameter and the shaft, Das Lager Germany supplies spherical roller bearings with coated bores for vibrating screen applications. This ensures that the possibility of displacement (non-locating bearing function) between the bearing bore and shaft in response to thermal influences is maintained over and beyond a long period of operation. Das Lager Germany coating technology prevents damage on shaft and bearing bore caused by friction, wear and fretting corrosion and provides longer service life, high performance and safety operation, reduced maintenance costs.



- Hard Chromium Coating
- Layer Thickness : 1,5 - 3 μm
- Hardness : 64 - 69 HRC
- Corrosion Protection
- Chemical Resistance



The surface without coating



The coated surface

SHAFT AND HOUSING TOLERANCES

Attention should be paid to shaft and housing tolerances of vibrating screens. The eccentric loads which creates vibration movement, forces the outer ring to rotate in the housing. Therefore a tight fit must be selected for the outer ring in the housing bore and a loose fit must be selected for the inner ring on the shaft.

Recommended shaft and housing machining tolerances by Das Lager Germany for vibrating screen applications;

Shaft	g6
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Housing	P6
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Tolerance Table for Shaft Machining

Shaft Diameter (mm)										
Over	18	30	50	65	80	100	120	140	160	180
Up to	30	50	65	80	100	120	140	160	180	200
g6	-7 -20	-9 -25	-10 -29	-10 -29	-12 -34	-12 -34	-14 -39	-14 -39	-14 -39	-15 -44

Tolerance Table for Housing Bore Machining

Housing Bore Diameter (mm)							
Over	50	80	120	150	180	250	315
Up to	80	120	150	180	250	315	400
P6	-26 -45	-30 -52	-36 -61	-36 -61	-41 -70	-47 -79	-51 -87

Example: Calculation for Selection of Shaft and Housing Tolerances and Values

Bearing : 22326CHC4F81W33

Shaft Diameter : 130 mm

Shaft Machining Tolerance : g6

Value of Shaft Machining Tolerance : -14 / -39 (µm)

Measuring Range of Shaft Diameter : min. 129,961 mm
max. 129,986 mm

Housing Bore Diameter : 280 mm

Housing Bore Machining Tolerance : P6

Value of Housing Bore Machining Tolerance : -47 / -79 (µm)

Measuring Range of Housing Bore Diameter : min. 279,921 mm
max. 279,953 mm



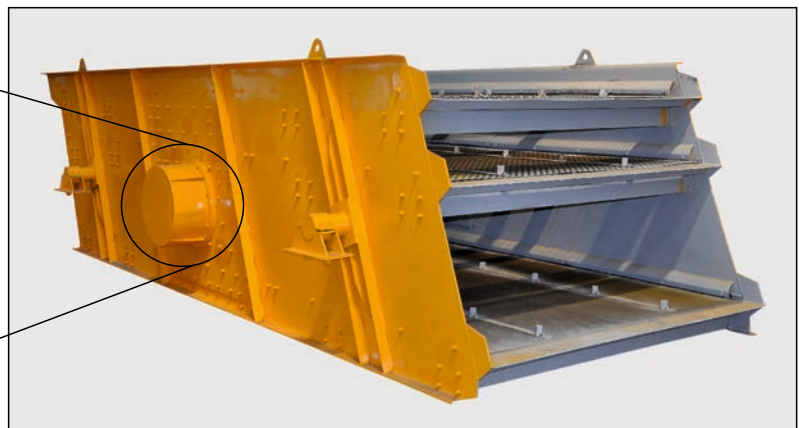
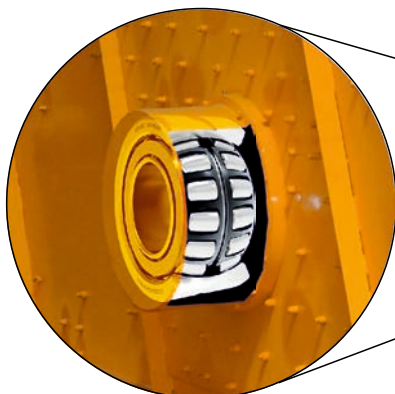
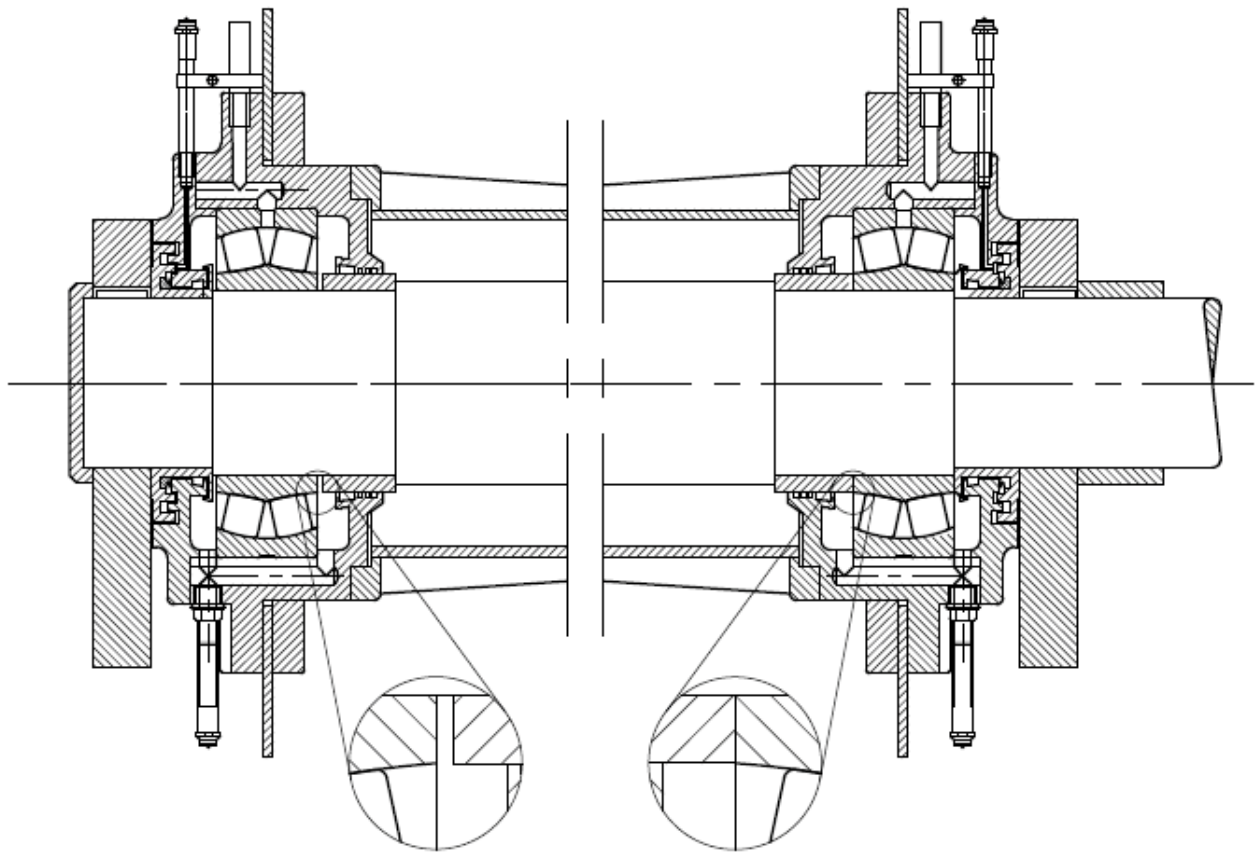
BEARING ARRANGEMENT, FIXED - FLOATING HOUSING:

To compensate the elongation of shaft; one side must be floating housing and the other side must be fixed housing at vibrating screen housing design. There must be a gap between the bearing inner ring and shaft flange to ensure the floating housing design.

Sample of Design

Floating Housing

Fixed Housing





Bearing Type	Dimensions (mm)		
	d	D	B
22208CHC4F81W33	40	80	23
22308CHC4F81W33	40	90	33
22309CHC4F81W33	45	100	36
22310CHC4F81W33	50	110	40
22211CHC4F81W33	55	100	25
22311CHC4F81W33	55	120	43
22312CHC4F81W33	60	130	46
22213CHC4F81W33	65	120	31
22313CHC4F81W33	65	140	48
22314CHC4F81W33	70	150	51
22315CHC4F81W33	75	160	55
22316CHC4F81W33	80	170	58
22317CHC4F81W33	85	180	60
22318CHC4F81W33	90	190	64
22319CHC4F81W33	95	200	67
22320CHC4F81W33	100	215	73
22322CHC4F81W33	110	240	80
23222CHC4F81W33	110	200	69,8
22324CHC4F81W33	120	260	86
22226CHC4F81W33	130	230	64
22326CHC4F81W33	130	280	93
22328CHC4F81W33	140	300	102
23328CHC4F81W33	140	300	118
22330CHC4F81W33	150	320	108
22332CHC4F81W33	160	340	114
23332CHC4F81W33	160	340	136
22334CHC4F81W33	170	360	120
22336CHC4F81W33	180	380	126
22338CHC4F81W33	190	400	132
23238CHC4F81W33	190	340	120
22340CHC4F81W33	200	420	138



quality
engineering
reliability

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