

# Spherical Roller Bearing

 **CF BEARING**



## Tolerances

Tolerance class of Bearings					
CF BEARING	0	6	5	4	2
ISO	0	6	5	4	2
ANSI	ABEC-1	ABEC-3	ABEC-5	ABEC-7	ABEC-9
SKF	0	P6	P5	P4	P2
DIN	0	P6	P5	P4	P2
JIS	0	6	5	4	

## Clearance

Before mounting the bearing to the shaft or housing, fix the inner ring or the outer ring, and move the other unfixed ring in the radial or axial direction, the amount of movement is called the bearing clearance, or the axial clearance.

The amount of clearance while the bearing is rotating (the so-called working clearance) shall have effects on the rolling fatigue life, temperature rise, noise, vibration and other functions.

In order to get the stable value of the clearance, normally a required load is put on the bearing in order to measure the bearing clearance.

Therefore, the measured value is larger than the true clearance (called the theoretical clearance), which means the amount of the elastic deformation caused by the load is increased.

But for roller bearings, this elastic deformation can be ignored since it is comparatively small.

Before the mounting of the bearing, the internal clearance is expressed with the theoretical clearance.

### The selection of clearance

If the amount of expansion or contraction of the rings caused by the interference fit when mounting the bearing on the shaft or in the housing is deducted from the theoretical clearance, then we have the "Mounting Clearance".

Furthermore, if the dimensional changes caused by the temperature difference inside the bearing is added to or reduced from the mounting clearance, we have the so-called "Effective Clearance".

When the bearing rotates while carrying a certain magnitude of load in the machine, if the elastic deformation caused by the load is added to the effective clearance, we then have the "Working Clearance".

when the working clearance is a slightly negative, the bearing has the longest service life. But with the negative clearance changing to be positive, the fatigue life shall decrease. Therefore, when choosing the clearance, it is preferred to choose the 0 or slightly positive working clearance.

**Bearing Material:**

To ensure bearings quality, we only buy bearings material from reputable, authorized, and large steel plant, and each material will be strictly inspection before production. The following materials especially GCr15SiMn are widely used in our bearing series. Chemical Composition of Steels for DWCFQ bearings

Material Chemical Composition									
Element	C	Si	Mn	Cr	Ni	Mo	P	S	Cu
GCr15	0.95-1.05	0.15-0.35	0.25-0.45	1.40-1.64	---	---	<=0.025	<=0.025	---
GCr15SiMn	0.95-1.05	0.45-0.75	0.95-1.25	1.40-1.64	---	---	<=0.025	<=0.025	---
G20CrNi2Mo	0.17-0.23	0.15-0.40	0.40-0.70	0.35-0.65	1.60-2.00	1.60-2.00	<=0.030	<=0.030	<=0.25
G20Cr2Ni4	0.17-0.23	0.15-0.40	0.30-0.60	1.25-1.75	3.25-3.75	---	<=0.030	<=0.030	<=0.25
50Mn	0.48-0.56	0.17-0.37	0.70-1.00	---	---	---	---	---	---
42CrMo	0.38-0.45	0.17-0.37	0.50-0.80	0.90-1.20	---	0.15-0.25	---	---	---

Equivalent Designations of DWCFQ bearings Material			
DWCFQ (China)	ASTM(USA)	DIN(GERMANY)	JIS(JAPAN)
GCr15	AISI 52100	DIN100Cr6	JIS SUJ2
GCr15SiMn		DIN100CrMn67	JIS SUJ3
G20CrNi2Mo	AISI 4320		JIS SNCM415
G20Cr2Ni4	AISI 3316		
50Mn	AISI 1551		
42CrMo		DIN 42CrMo4	JIS SCM 440

**Purposes and methods of lubrication.**

Lubrication has important effects on the function of the bearing. Whether the lubricant and the method are suitable or not shall influence the bearing life. The advantages of lubrication:  
 1) Reducing the friction and wear by lubricating every part of the bearing.  
 2) Taking away the heat generated inside the bearing caused by friction or other reasons.  
 3) Forming an oil film in the rolling contact surface in order to elongate the bearing life.  
 4) Preventing the bearing from rusting and dust contamination.  
 The lubricating methods include oil lubrication and grease lubrication. The comparisons of these two methods are given in Table1.

**Grease lubrication**

Grease put inside the bearing can last a comparatively long time without replenishment, and the sealing device is very simple. Therefore it is extensively applied. There are two methods for grease lubrication: one is to put the grease inside the sealed bearings in advance, the other is to fill the grease of certain amount inside the housing and refill it or change the grease inside at intervals. Moreover, for machine with several bearings requiring lubrication, the method of centralized greasing through pipes connecting the places to be lubricated is adopted.

**1) Amount of lubricating grease**

The amount of lubricating grease to be filled in the housing depends on the structure and volume of the housing. Normally it is preferred to fill the volume by 1/3 to 1/2. If too much grease is filled, the grease may turn bad, age or soften due to the heat caused by rotation.

But for bearings with low rotation speed, sometimes 2/3 to the whole volume shall be filled with grease in order to avoid the intrusion of foreign matters.

**2) The replenishment and change of grease**

The replenishment and change of grease is closely related to the lubricating method. No matter which method is applied, the grease must be clean and care be taken to avoid intrusion of dirt. The grease to be replenished with should be of the same brand.

Try to ensure that the replenished grease has entered into the inside space of the bearing. Oil lubrication Oil lubrication is applied to high-speed and heat-resistant bearings and ineffective for reducing vibration and lowering noise. Mostly it is used in cases where the grease lubrication is not suitable Oil lubrication has the following methods:

- (1) Oil bath lubrication
- (2) Oil drip lubrication
- (3) Splash lubrication
- (4) Oil circulating lubrication
- (5) Oil jet lubrication
- (6) Oil mist lubrication
- (7) Oil air lubrication

Table1 Comparisons between oil lubrication and grease lubrication		
Item	Grease	Oil
Sealing device	Simple	More complicate, requiring maintenance
Lubricating function	Good	Very good
Rotational speed	Low speed to medium speed	Applicable to high speed
Change of lubricant	Troublesome	Simple
Life of lubricant	Very short	Long
Cooling effects	Without	Possible using forced oil circulation
Elimination of inclusion	Impossible	Easy

Bearing Selection:

Bearing Type		
It is critical to understand the use conditions of the bearing when choosing the type of bearing. Table 1 provides the main factors to be analyzed. Table 1 (1) Selection of bearing type		
Items for analyses		Methods of choice
1) Mounting space	Those can be put in the mounting space	Since the rigidity and strength of the shaft have been considered in the designing, first of all the inner diameter of the bearing must be determined. But there are too many dimensional series and types, the most appropriate type must be chosen.
2) Load	Strength, direction and nature of the load	The load is subject to changes, such as the amount of the load, whether there is only radial load or not, whether the axial load is in single-direction or double direction, the amount of vibration or shock and others. These factors must be considered before choosing the most appropriate bearing type.
		Normally, the radial load carrying capacity of the bearings with the same ID are listed in the following order:
		[deep groove ball bearings < angular contact ball bearings < cylindrical roller bearings < taper roller bearings < spherical roller bearings]
3) Rotating speed	Those are suitable for the mechanical rotations.	The limit speed of the bearing rests with not only the bearing type but also bearing dimensions, cage type, precision, load carrying conditions and lubrication methods. These factors must be considered for the choice.
		The following bearings are applied for high speed rotation:
		[deep groove ball bearings < angular contact ball bearings < cylindrical roller bearings]
4) Rotating precision	Those can satisfy the rotation precision requirements	Machine tool spindles, ages turbines and control machines entail high rotation precision, high speed and low friction. Bearings with precision degree 5 or over should be applied in these cases.
		Normally the following bearings are applied:
		[deep groove ball bearings, angular contact ball bearings, cylindrical roller bearings]

Bearing Type		
It is critical to understand the use conditions of the bearing when choosing the type of bearing. Table 1 provides the main factors to be analyzed. Table 1 (1) Selection of bearing type		
Items for analyses		Methods of choice
5) Rigidity	Those can satisfy the rigidity of mechanical shaft system	In machine tool spindles and final deceleration device of automobiles and other applications, the rigidity of the bearing must be increased when the rigidity of the shaft is increased.
	[When carrying load, the contact surface between the rolling elements and the raceways can have elastic deformation. "High rigidity" means such elastic deformation shall happen at the smaller amount.]	The deformation of roller bearings when carrying load is smaller than that of the ball bearings.
		Rigidity can be increased by applying pre-load (negative clearance). These method is suitable for angular contact ball bearings and taper roller bearings.

Table 1(2) The selection of bearing type		
6) The relative leaning of the inner ring and outer ring	Reason of leading to the relative leaning of the inner ring and outer ring must be analyzed (such as the load-included bending of the shaft, poor precision of the shaft and housing or mounting error) and the bearings that fit these conditions should be chosen.	If the relative leaning between the inner ring and outer ring is too big, the inside load thereof shall do harm to the bearing. So bearing types that can carry this leaning should be chosen. Normally, the allowable sloping angle increases with the following order: [cylindrical roller bearings, taper roller bearings, deep groove ball bearings (angular contact ball bearings), thrust ball (spherical roller) bearings]
7) Mounting and dismounting	Check the frequency and methods of mounting and dismounting of the bearings regularly.	If too much mounting and dismounting, choosing cylindrical roller bearings with separable inner ring and outer ring, needle roller bearings and taper roller bearing is comparatively convenient.
		With adapter or withdrawal sleeve, self-aligning ball bearings with tapered bore and spherical roller bearings with tapered

Bearing Structure		
The variety of machine types, combined with the differences in the application condition leads to different requirements for bearings normally, there will be no less than two bearings applied on one shaft.		
In addition, for the purpose of convenience in fixing axial position, normally one bearing is used to fix one end and the others free on the other end of the shaft. The following table provides the choice on bearings on the fixing end and on the free end of the shaft.		
Table1 Bearings on the fixing end and the free end		
	Content	Applicable bearing types
Bearings on the fixing end	Fix the bearing in the axial direction	Deep groove ball bearings
	Choose bearings that can carry body the radial load and the axial load	Combined angular contact ball bearings
	In order to carry double-direction axial load, strength must be considered according to the amount of the axial load while mounting	Self-aligning ball bearings
		Cylindrical roller bearings with flanges (NUP and NH types)
		Double-row taper roller bearings
		Spherical roller bearings
	Bearing on the free end	The bearing must adapt to the shaft expansion caused by the changes in temperature while working and adjust the bearing position in the axial direction.
Only the bearings with separable inner ring and outer ring that can carry radial load should be chosen.		Non-separable types
With non-separable bearings, there should be a clearance between the outer ring and housing in order to adapt the bearing to the shaft expansion in the axial direction.		Deep groove ball bearings
Sometimes, the adaptation is achieved with the contact surface between the shaft and the inner ring.		Combined angular contact ball bearings (back-to-back arrangement)
		Double-row angular contact ball bearings
		Self-aligning ball bearings
		Double-row taper roller bearings(3700 type)
	Spherical Roller bearings	

	Content	Applicable bearing types
Regardless of fixing end or free end	When the distance between the two bearings is small, and the effects of shaft expansion are not important, two angular contact ball bearings or taper roller bearings that can carry axial load can be used together in face-to-face or back-to-back arrangements.	Deep groove ball bearings
	Use screw nut or filling piece to adjust the axial clearance after mounting.	Angular contact ball bearings
		Self-aligning ball bearings
		Cylindrical roller bearings (NJ and NF types)
		Taper roller bearings
Vertical shaft		Spherical roller bearings
	Bearings that can carry both radial load and axial load should be chosen for the fixing end. If the axial load is too big, use the combination of thrust bearing and radial bearing.	For fixing end
	Similarly, only bearings that can carry radial load should be used to adapt to the shaft expansion.	Combined angular contact ball bearing (back-to-back arrangement)
		Double-row taper roller bearings(37000 type)
		Combined thrust bearing and radial bearing arrangements

Cage damage

Broken cage

Possible reasons

- Torque load too big
- High speed rotation or speed changing too frequently
- Poor lubrication
- Intrusion of foreign matter
- Vibration too big
- Bad mounting (mounting in leaning conditions)
- Abnormal increase in temperature (resin cage)

Solutions

- Check application conditions
- Check lubrication conditions
- Re-consider choice of cage
- Pay attention to applications
- Consider rigidity of shaft and bearing box

Cracks

Partial breach and even cracks

Possible reasons

- Shock load too heavy
- Interference too big
- Big peeling off and frictional cracks
- Poor precision of the mounting side (corner circle too big)
- Frictional cracks
- Mal-applications (using copper hammer, intrusion of big foreign matter)

Solutions

- Check the application conditions
- Set proper interference and check material quality
- Improve mounting and application methods
- Prevent frictional cracks (check lubricants)
- Check bearing surrounding design

Burns

Overheat color varying then bearing, leading to failure to rotate

Possible reasons

- Clearance too small (including clearance for the deforming part)
- Insufficient lubrication or inappropriate lubricant
- Load too heavy (pre-load too heavy)
- Skewing rollers

Solutions

- Choose proper clearance (increasing clearance)
- Check lubricant type and ensuring amount
- Check application conditions
- Avoid position error
- Check surrounding design (including lead to bearing)
- Improve the mounting method

Rusting

Rusting on all or part of the surface

Rust on rolling elements in pitch shape

Possible reasons

- Poor maintenance
- Improper packaging
- Insufficient rust-preventive
- Intrusion of moist acid liquid
- Taking the bearing by hands

Solutions

- Maintenance to prevent rusting
- Reinforcing the sealing function
- Check the lubricant regularly
- Pay attention to bearing applications

#### Corrosion

Red corroded particles in the fit surface

##### Possible reasons

- Insufficient amount of interference
- Small bearing oscillating angle
- Insufficient lubrication (or without lubrication)
- Not stable load
- Vibration in the transit

##### Solutions

- Check the interference and the conditions of the lubricant
- Separable packing of inner rings and outer rings when in transit, pre-load shall prevail if the bearings are un-separable
- Re-consider choice of lubricant
- Re-consider choice of bearings

#### Wear

Surface worn, leading to dimension changes with scratches and traces

##### Possible reasons

- Foreign matters in the lubricant
- Poor lubrication
- Rollers skewing

##### Solutions

- Check lubricant and lubrication method
- Reinforce sealing function
- Prevent positioning error

#### Electric corrosion

Red corroded particles in the fit surface

##### Possible reasons

- Insufficient amount of interference
- Small bearing oscillating angle
- Insufficient lubrication (or without lubrication)
- Not stable load
- Vibration in the transit

##### Solutions

- Check the interference and the conditions of the lubricant
- Separable packing of inner rings and outer rings when in transit, pre-load shall prevail if the bearings are un-separable
- Re-consider choice of lubricant
- Re-consider choice of bearings

#### Dent and bruise

Intrusion of solid foreign matter or pits in the surface caused by shock or scratches from mounting

##### Possible reasons

- Solid foreign matter intrusion
- Peels inside the bearing
- Shock from mal-mounting peeling off
- Mounting in leaning conditions

##### Solutions

- Improve mounting and application methods
- Prevent foreign matters from intruding
- Check other parts if caused by metal pieces

#### Creep deformation

Slippery ID surface and OD surface leading to mirror surface and sometime blocking

##### Possible reasons

- Insufficient interference at the fit surface
- Sleeve not fastened enough
- Abnormal increase in temperature
- Load too heavy

##### Solutions

- Re-consider the interference amount
- Consider the application conditions
- Check precision of shaft and bearing box

#### Peeling off

Peeling off and deformation of the rotational surface

##### Possible reasons

- Load too heavy or improper applications
- Mal-mounting
- Poor precision of the shaft or bearing box
- Clearance too small
- Intrusion of foreign matters
- Rusting
- Hardness decrease caused by abnormal high temperature

##### Solutions

- Re-consider the application conditions
- Consider other bearing specifications
- Check the processing precision of the shaft and bearing box
- Consider the surrounding design
- Check the mounting method
- Check the lubricant and lubrication method

#### Scratches

Rough surface with small deposit

Scratches between the flanges of rings and the side surfaces of the rollers

##### Possible reasons

- Poor lubrication
- Intrusion of foreign matter
- Skewing rollers caused by leaning
- Axial load too big leading to no lubricant on flange surface
- Roughness of the surface too big
- Big sliding of the rolling elements

##### Solutions

- Re-consider lubricant and lubricating method
- Check application method
- Set proper pre-load
- Reinforce the sealing function
- Use bearings correctly

#### Environmental Protection

It is one of the strategies to let our employee and partners know and feel more about environmental protection and finally achieve DWCFQ to be a green corporation. We cognize that the best solution is always keep thinking about environmental protection no matter where we are and what we do.

DWCFQ always commit itself to Environmental Protection. Welcome to join us!

DWCFQ Environmental Protection (EP) Responsibility and Commitment

Saving

Energy Saving

26° C room temperature control

Saving electricity, water and paper

Saving packing material (energy consumed during transportation)

Recycle

Categorizing waste of paper, newspapers, magazines

Categorizing wooden rods, cases and blocks

Collecting waste ink and toner cartridges

Collecting waste batteries

Using recycled paper if possible

Education and Promotion

All staff participation: all staff joining green activities or conferences at least once per year

Announcing this KML EP Responsibility and Commitment to our customers and suppliers

Green Environment

Tree planting every year

Increasing the area of greening zone

Reducing Pollution

Using toxic free ink

Minimizing pollutants during production

EP Management System

factories acquiring ISO14000 certificate

Preferably purchasing from ISO14000 certified suppliers if under the same conditions



## Quality System

DWCFQ was awarded ISO 9001: 2000 Quality Management System Certificate in 2005. DWCFQ has undertaken to related parties that it will strictly implement and maintain the established quality management system.

To supply the products that meet the customers' requirements, applicable laws and regulations, based on the requirements of ISO 9001:2000 Standard, DWCFQ will identify, establish, implement and continuously improve the following quality management system processes in the light of the specific conditions of the Company:

### A. Management Responsibilities

General Manager is expected to be responsible for the following work:

Making quality policy and quality goal regarding the quality management system to satisfy customers gearing with their needs.

Stating responsibilities and power scopes for administrators, executive persons and identifiers as well as describing their correlation to improve the Company's result by satisfying customers.

Appointing major administrators and organizing inner or external exchange activities to improve the consciousness required by customers as well as the validity of the quality management system. This process will imply orientation and duty for other quality management system process.

Meanwhile, the result will be evaluated to continuously improve the quality management system.

### B. Resources Management Process

With this process, General Manager will provide necessary resources to realize other quality management processes' orderly and efficient running, aiming at completing quality policy and quality goal, continuously improve the result of the quality management system.

### C. Products Realization Process

With focus on the principle of being orderly and efficient, this process includes such work processes as assembling, processing, sale, procurement, logistics and import and export document treatment. As regards the specific service projects required by customers, the Company will figure out related resolutions in accordance with the requirement of ISO9001: 2001 Standard 7.1

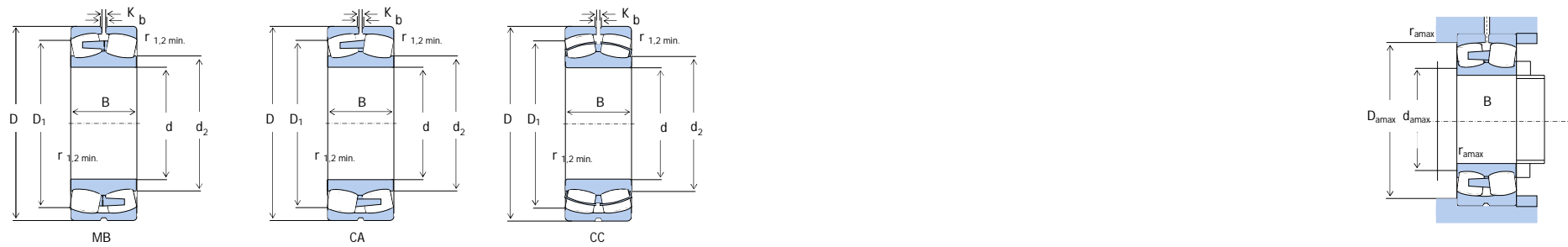
### D. Evaluation, Analysis and Improvement Process

General Manager leads and organizes quality system improvement.

Furthermore, customer is the our focus ,we should collect and analyze complain and advices to improve our services .

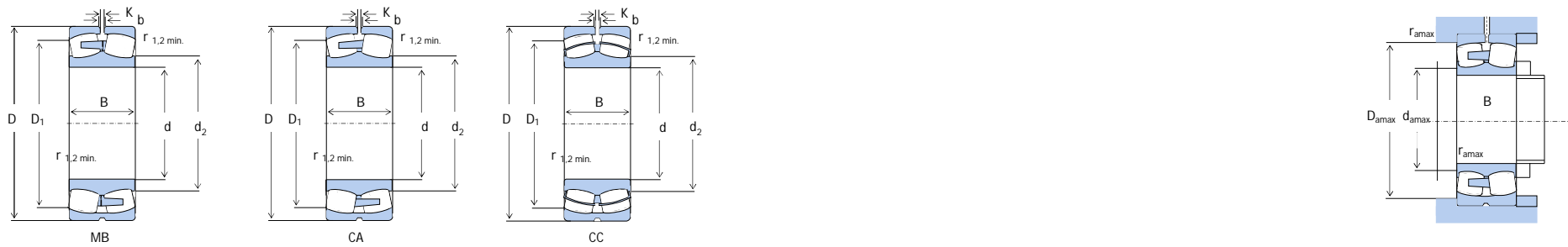
At the same time, company build corresponding control program to manage file ,stuff, record.

# Spherical Roller Bearing



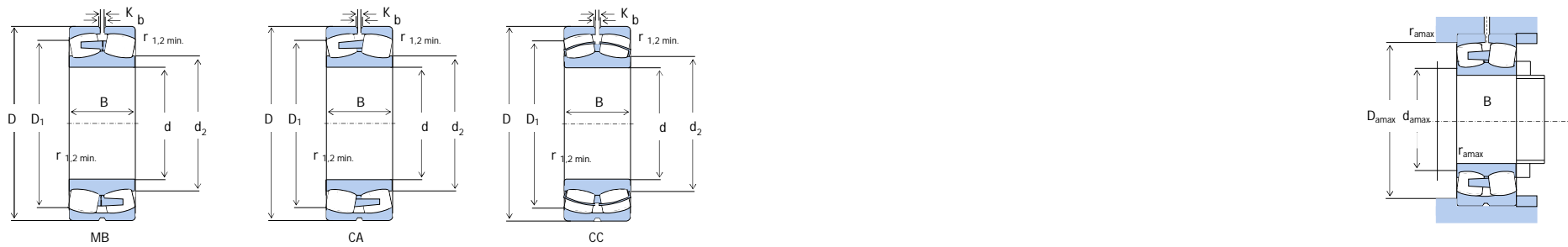
Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
90	150	72	3	345	550	2300	3000	24018CAX3		94	142	2.5	0.46	2.2	2.2	1.43	4.94
	150	72	3	345	550	2300	3000	24018CAX3/W20		94	142	2.5	0.46	2.2	2.2	1.43	4.94
100	150	37	1.5	212	335	2200	2800	23020CA/W33	3053120KH	109	141	1.5	0.22	3.1	4.6	3	2.31
	150	50	1.5	276	470	1800	2400	24020CA/W33	4053120KH	109	141	1.5	0.3	2.3	3.4	2.2	3.08
	165	52	2	345	530	1700	2200	23120CA/W33	3053720KH	110	155	2	0.3	2.3	3.4	2.2	4.38
	165	65	2	345	535	1600	2200	24120CA/W33	4053720KH	110	155	2	0.35	1.9	2.9	1.9	5.42
	170	65	2	355	520	1600	2200	24120CAX1		110	155	2	0.37	1.82	2.7	1.78	6.21
	180	46	2.1	365	490	2400	3200	22220CA/W33	53520KH	112	168	2	0.24	2.9	4.3	2.8	4.84
110	180	60.3	2.1	420	605	1600	2200	23220CA/W33	3053220KH	112	168	2	0.32	2.1	3.2	2.1	6.6
	215	73	3	690	930	1900	2400	22320CA/W33	53620KH	114	201	2.5	0.33	2	3	2	12.7
	170	45	2	293	465	2000	2400	23022CA/W33	3053122KH	120	160	2	0.24	2.8	4.2	2.8	3.76
120	170	60	2	380	645	1600	2200	24022CA/W33	4053122KH	120	160	2	0.32	2.1	3.1	2.1	4.96
	170	60	2	380	645	1600	2200	24022CC/W33		120	160	2	0.32	2.1	3.1	2.1	4.96
	180	56	2	385	630	1600	2000	23122CA/W33	3053722KH	120	170	2	0.28	2.4	3.5	2.3	5.7
	180	56	2	385	630	1600	2000		3203722	120	170	2	0.28	2.4	3.5	2.3	5.7
	180	69	2	460	750	1600	2000	24122CA/W33	4053722KH	120	170	2	0.36	1.9	2.8	1.8	6.84
	180	69	2	460	750	1600	2000	24122CC/W33		120	170	2	0.36	1.9	2.8	1.8	6.84
	200	53	2.1	485	645	2200	2800	22222CA/W33	53522KH	122	188	2	0.25	2.7	4	2.6	6.99
	200	53	2.1	485	645	2200	2800	22222CAK	153522	122	188	2	0.25	2.7	4	2.6	6.99
	200	69.8	2.1	515	760	1500	1900	23222CA/W33	3053222KH	122	188	2	0.34	2	3	1.9	9.54
	240	50	3	450	545	1300	1700	21322CA/W33	53322KH	124	226	2.5	0.22	3.1	4.6	3	11.2
	240	80	3	825	1120	1700	2200	22322CA/W33	53622KH	124	226	2.5	0.33	2.1	3.1	2	17.6
	240	92.1	3	840	1000	1700	2200	23322BZD/C4/W33		124	226	2.5	0.39	1.73	2.58	1.69	20.7
120	180	46	2	315	525	1800	2200	23024CA/W33	3053124KH	130	170	2	0.22	3	4.5	2.9	4.11
	180	60	2	395	705	1500	2000	24024CA/W33	4053124KH	130	170	2	0.32	2.1	3.2	2.1	5.33
	180	60	2	395	705	1500	2000	24024CC/W33		130	170	2	0.32	2.1	3.2	2.1	5.33
	200	62	2	465	720	1400	1800	23124CA/W33	3053724KH	130	190	2	0.29	2.4	3.5	2.3	7.85

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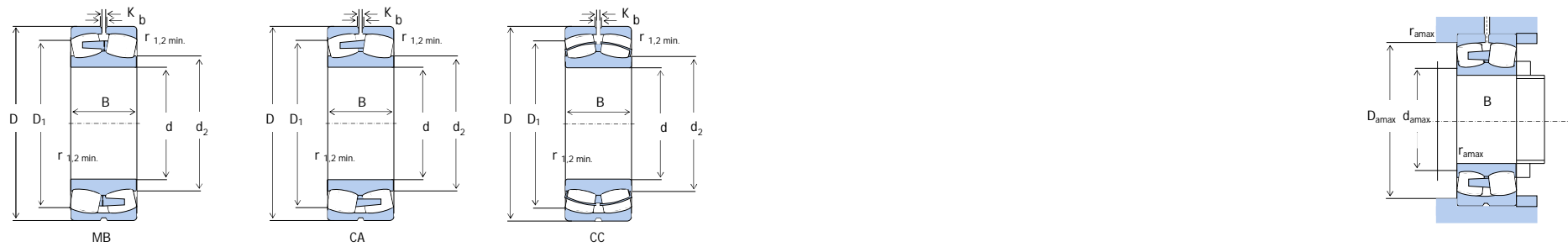
Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
120	200	80	2	575	950	1400	1800	24124CA/W33	4053724KH	130	190	2	0.37	1.8	2.7	1.8	10
	215	58	2.1	550	765	2000	2600	22224CA/W33	53524KH	132	203	2	0.25	2.7	3.9	2.6	8.8
	215	76	2.1	630	970	1300	1700	23224CA/W33	3053224KH	132	203	2	0.34	2	2.9	1.9	12.1
	260	106	3	1000	1370	1300	1700	23324CA/W33		134	246	2.5	0.32	2.1	3.1	2	29.1
130	200	52	2	400	655	1700	2000	23026CA/W33	3053126KH	140	190	2	0.23	2.9	4.3	2.8	5.98
	200	69	2	495	865	1400	1800	24026CA/W33	4053126KH	140	190	2	0.31	2.2	3.2	2.1	7.84
	200	69	2	495	865	1400	1800	24026CC/W33		140	190	2	0.31	2.2	3.2	2.1	7.84
	210	64	2	505	825	1300	1700	23126CA/W33	3053726KH	140	200	2	0.28	2.4	3.6	2.4	8.69
	210	80	2	590	1010	1300	1700	24126CA/W33	4053726KH	140	200	2	0.35	1.9	2.9	1.9	10.7
	230	64	3	655	940	1900	2400	22226CA/W33	53526KH	144	216	2.5	0.26	2.6	3.8	2.5	11
	230	80	3	700	1080	1200	1600	23226CA/W33	3053226KH	144	216	2.5	0.34	2	2.9	1.9	14.3
	230	100	3	750	1220	1100	1500	24226CA/W33		144	216	2.5	0.45	1.5	2.2	1.5	17.6
	280	93	4	995	1350	1300	1600	22326CA/W33	53626KH	148	262	3	0.34	2	2.9	1.9	28.1
	280	112	4	1120	1560	1200	1600	23326CA/W33		148	262	3	0.45	1.5	2.3	1.5	35.5
140	210	53	2	420	715	1600	1900	23028CA/W33	3053128KH	150	200	2	0.22	3	4.5	2.9	6.49
	210	69	2	525	945	1300	1700	24028CA/W33	4053128KH	150	200	2	0.29	2.3	3.4	2.2	8.37
	210	69	2	525	945	1300	1700	24028CC/W33		150	200	2	0.29	2.3	3.4	2.2	8.37
	225	68	2.1	580	945	1200	1600	23128CA/W33	3053728KH	152	213	2	0.28	2.4	3.6	2.3	10.5
	225	85	2.1	670	1160	1200	1600	24128CA/W33	4053728KH	152	213	2	0.35	1.9	2.9	1.9	13
	250	68	3	645	930	1400	1700	22228CA/W33	53528KH	154	236	2.5	0.25	2.7	4	2.6	14.5
	250	88	3	835	1300	1100	1500	23228CA/W33	3053228KH	154	236	2.5	0.35	1.9	2.9	1.9	18.8
	250	109	3	880	1460	1000	1400	24228CA/W33		154	236	2.5	0.46	1.5	2.2	1.4	24.2
	300	102	4	1160	1590	1200	1500	22328CA/W33	53628KH	158	282	3	0.35	1.9	2.9	1.9	35.4
	300	118	4	1250	1730	1100	1500	23328CA/W33		158	282	3	0.43	1.6	2.3	1.5	42.5
150	210	45	2	334	622	1500	1700	23930CA/W33	3053930KH	160	200	2	0.2	3.44	5.12	3.36	4.97
	225	56	2.1	470	815	1400	1800	23030CA/W33	3053130KH	162	213	2	0.22	3.1	4.6	3	7.9
	225	75	2.1	590	1090	1200	1500	24030CA/W33	4053130KH	162	213	2	0.3	2.3	3.4	2.2	10.5

# Spherical Roller Bearing



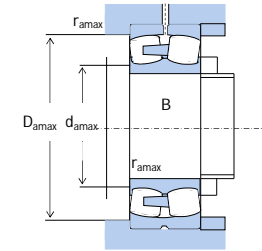
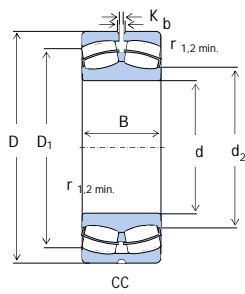
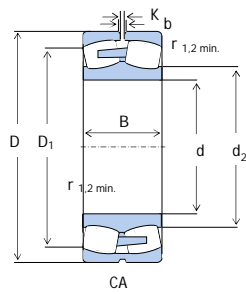
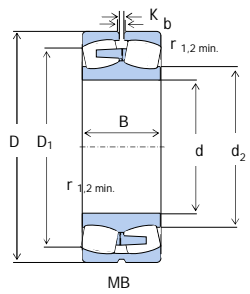
Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r <sub>1.2 min</sub>	C <sub>r</sub>	C <sub>or</sub>	Grease	Oil	New	Old	d <sub>amin</sub>	D <sub>amax</sub>	r <sub>amax</sub>	e	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Refer.
150	225	75	2.1	590	1090	1200	1500	24030CC/W33		162	213	2	0.3	2.3	3.4	2.2	10.5
	250	80	2.1	725	1180	1100	1400	23130CA/W33	3053730KH	162	238	2	0.3	2.3	3.4	2.2	15.8
	250	100	2.1	890	1530	1100	1400	24130CA/W33	4053730KH	162	238	2	0.38	1.8	2.6	1.7	19.8
	250	100	2.1	890	1530	1100	1400	24130CC/W33		162	238	2	0.38	1.8	2.6	1.7	19.8
	270	73	3	765	1120	1300	1600	22230CA/W33	53530KH	164	256	2.5	0.26	2.6	3.9	2.5	18.4
	270	96	3	975	1560	1100	1400	23230CA/W33	3053230KH	164	256	2.5	0.35	1.9	2.9	1.9	24.2
	270	118	3	1020	1660	1000	1300	24230CA/W33		164	256	2.5	0.46	1.5	2.2	1.4	30.5
	320	108	4	1220	1690	1100	1400	22330CA/W33	53630KH	168	302	3	0.35	1.9	2.9	1.9	41.5
	320	128	4	1460	2080	1000	1300	23330CA/W33		168	302	3	0.44	1.5	2.3	1.5	52.5
	320	128	4	1460	2080	1000	1300	23330CA/W33		168	302	3	0.44	1.5	2.3	1.5	52.5
152.43	270	100	2.1	852	1425	1200	1600	26/152.43CA/W33		165	238	2	0.37	1.8	2.7	1.8	19.5
	270	86	2.1	803	1300	1300	1700	26/152.43CA/W33		169	258	2	0.3	2.3	3.4	2.2	20.5
160	220	45	2	360	675	1400	1800	23932CA/W33	3053932KH	170	210	2	0.18	3.8	5.6	3.7	4.97
	220	60	2	393	807	1400	1800	24932CA/W33		170	210	2	0.24	2.8	4.2	2.8	6.85
	240	60	2.1	540	955	1300	1700	23032CA/W33	3053132KH	172	228	2	0.22	3	4.5	2.9	9.66
	240	80	2.1	680	1260	1100	1400	24032CA/W33	4053132KH	172	228	2	0.3	2.3	3.4	2.2	12.7
	240	80	2.1	680	1260	1100	1400	24032CC/W33		172	228	2	0.3	2.3	3.4	2.2	12.7
	270	86	2.1	855	1400	1000	1300	23132CA/W33	3053732KH	172	258	2	0.3	2.3	3.4	2.2	20.3
	270	109	2.1	1040	1760	1000	1300	24132CA/W33	4053732KH	172	258	2	0.39	1.7	2.6	1.7	25.4
	290	80	3	910	1320	1200	1500	22232CA/W33	53532KH	174	276	2.5	0.26	2.6	3.8	2.5	23.1
	290	104	3	1100	1770	1000	1200	23232CA/W33	3053232KH	174	276	2.5	0.34	2	2.9	1.9	30.5
	290	128	3	1120	1800	950	1300	24232CA/W33		174	276	2.5	0.47	1.4	2.1	1.4	36
165.13	340	114	4	1360	1900	1100	1300	22332CA/W33	53632KH	178	322	3	0.35	1.9	2.9	1.9	49.3
	340	136	4	1630	2240	1100	1300	23332CA/W33		178	322	3	0.44	1.5	2.3	1.5	61.5
	310	110	4	1159	1830	950	1300	26/165.13CA/W33		183	292	3	0.35	1.9	2.9	1.8	37.5
	310	110	4	1159	1830	950	1300	26/165.13CA/W33		183	292	3	0.35	1.9	2.9	1.8	37.5
170	230	45	2	350	660	1400	1800	23934BCA/W33	3053934KH	180	220	2	0.17	3.9	5.8	3.8	5.38
	260	67	2.1	640	1090	1200	1600	23034CA/W33	3053134KH	182	248	2	0.23	2.9	4.3	2.8	13
	260	90	2.1	825	1520	1000	1300	24034CA/W33	4053134KH	182	248	2	0.31	2.2	3.2	2.1	17.3

# Spherical Roller Bearing



Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)	
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.	
170	280	88	2.1	940	1570	1000	1300	23134CA/W33	3053734KH	182	268	2	0.29	2.3	3.5	2.3	21.8	
	280	109	2.1	1080	1860	1000	1300	24134CA/W33	4053734KH	182	268	2	0.37	1.8	2.7	1.8	26.6	
	310	86	4	990	1500	1100	1400	22234CA/W33	53534KH	188	292	3	0.26	2.6	3.8	2.5	28.8	
	310	110	4	1200	1910	900	1200	23234CA/W33	3053234KH	188	292	3	0.34	2	2.9	1.9	36.4	
	310	140	4	1290	2080	900	1200	24234CA/W33		188	292	3	0.48	1.4	2.1	1.4	45	
	360	120	4	1580	2110	1000	1200	22334CA/W33	53634KH	188	342	3	0.35	1.9	2.9	1.9	57.9	
	360	140	4	1760	2500	1000	1200	23334CA/W33		188	342	3	0.43	1.6	2.3	1.5	71.8	
	180	250	52	2	470	890	1200	1600	23936CA/W33	3053936KH	190	240	2	0.18	3.7	5.5	3.6	7.64
		280	74	2.1	750	1270	1200	1400	23036CA/W33	3053136KH	192	268	2	0.24	2.8	4.2	2.8	17.1
		280	100	2.1	965	1750	950	1200	24036CA/W33	4053136KH	192	268	2	0.32	2.1	3.1	2	22.7
280		100	2.1	965	1750	950	1200	24036CA/W33	4053136KH	192	268	2	0.32	2.1	3.1	2	22.7	
300		96	3	1050	1760	900	1200	23136CA/W33	3053736KH	194	286	2.5	0.3	2.3	3.4	2.2	27.5	
300		118	3	1190	2040	900	1200	24136CA/W33	4053736KH	194	286	2.5	0.37	1.8	2.7	1.8	33.1	
320		86	4	1020	1540	1100	1300	22236CA/W33	53536KH	198	302	3	0.26	2.6	3.9	2.6	30.2	
320		112	4	1300	2110	850	1100	23236CA/W33	3053236KH	198	302	3	0.33	2	3	2	38.9	
320		140	4	1430	2400	850	1100	24236CA/W33		198	302	3	0.46	1.5	2.2	1.4	50.4	
380		126	4	1740	2340	950	1200	22336CA/W33	53636KH	198	362	3	0.34	2	2.9	1.9	67	
380	150	4	2000	2850	950	1200	23336CA/W33		198	362	3	0.44	1.5	2.3	1.5	86.1		
190	260	52	2	460	875	1200	1500	23938CA/W33	3053938KH	200	250	2	0.18	3.8	5.7	3.7	8.03	
	290	75	2.1	775	1350	1100	1400	23038CA/W33	3053138KH	202	278	2	0.24	2.8	4.2	2.8	17.6	
	290	100	2.1	975	1840	900	1200	24038CA/W33	4053138KH	202	278	2	0.31	2.2	3.2	2.1	24	
	320	104	3	1190	2020	850	1100	23138CA/W33	3053738KH	204	306	2.5	0.31	2.2	3.3	2.2	34.5	
	320	128	3	1370	2330	850	1100	24138CA/W33	4053738KH	204	306	2.5	0.4	1.7	2.5	1.6	41.5	
	320	128	3	1370	2330	850	1100	24138CC/W33		204	306	2.5	0.4	1.7	2.5	1.6	41.5	
	340	92	4	1140	1730	1000	1200	22238CA/W33	53538KH	208	322	3	0.26	2.6	3.8	2.5	35.5	
	340	120	4	1440	2350	800	1100	23238CA/W33	3053238KH	208	322	3	0.35	1.9	2.9	1.9	47.6	
	340	150	4	1600	2700	800	1100	24238CA/W33		208	322	3	0.47	1.4	2.1	1.4	61.2	

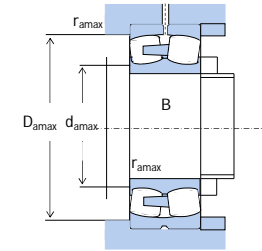
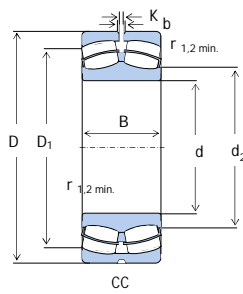
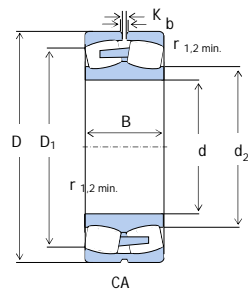
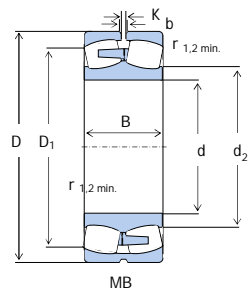
# Spherical Roller Bearing



Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
190	400	132	5	1890	2590	900	1100	22338CA/W33	53638KH	212	378	4	0.34	2	2.9	1.9	78.1
	400	155	5	2120	3050	900	1100	23338CA/W33		212	378	4	0.43	1.6	2.3	1.5	98
200	280	60	2.1	570	1060	1100	1400	23940CA/W33	3053940KH	212	268	2	0.2	3.4	5.1	3.3	11
	310	82	2.1	940	1700	1000	1300	23040CA/W33	3053140KH	212	298	2	0.25	2.7	4	2.6	22.6
	310	109	2.1	1140	2120	850	1100	24040CA/W33	4053140KH	212	298	2	0.32	2.1	3.1	2	30.4
	340	112	3	1360	2330	800	1000	23140CA/W33	3053740KH	214	326	2.5	0.31	2.2	3.2	2.1	42.7
	340	140	3	1570	2670	800	1000	24140CA/W33	4053740KH	214	326	2.5	0.39	1.8	2.6	1.7	51.3
	360	98	4	1300	2010	950	1200	22240CA/W33	53540KH	218	342	3	0.26	2.6	3.8	2.5	42.6
	360	128	4	1660	2750	750	1000	23240CA/W33	3053240KH	218	342	3	0.34	2	2.9	1.9	57.1
	360	160	4	1760	3050	750	1000	24240CA/W33		218	342	3	0.48	1.4	2.1	1.4	73.8
420	138	5	2000	2990	850	1000	22340CA/W33	53640KH	222	398	4	0.34	2	2.9	1.9	92.6	
200	420	165	5	2400	3450	850	1000	23340CA/W33		222	398	4	0.43	1.5	2.3	1.5	115
220	300	60	2.1	625	1240	1000	1300	23944CA/W33	3053944KH	232	288	2	0.18	3.8	5.7	3.7	12.2
	340	90	3	1090	1980	950	1200	23044CA/W33	3053144KH	234	326	2.5	0.24	2.8	4.1	2.7	29.7
	340	118	3	1360	2600	750	1000	24044CA/W33	4053144KH	234	326	2.5	0.31	2.1	3.2	2.1	40.5
	370	120	4	1570	2710	710	950	23144CA/W33	3053744KH	238	352	3	0.3	2.2	3.3	2.2	53
	370	150	4	1800	3200	710	950	24144CA/W33	4053744KH	238	352	3	0.39	1.7	2.6	1.7	66.7
	400	108	4	1570	2430	850	1000	22244CA/W33	53544KH	238	382	3	0.27	2.5	3.7	2.4	59
	400	144	4	2020	3400	670	900	23244CA/W33	3053244KH	238	382	3	0.35	1.9	2.9	1.9	80.4
	400	150	4	2040	3400	670	900	23244X2CA/W33	3053244X2KH	238	382	3	0.41	1.64	2.44	1.61	81.9
400	180	4	2200	3750	650	900	24244CA/W33		238	382	3	0.48	1.4	2.1	1.4	103	
460	145	5	2350	3400	750	950	22344CA/W33	53644KH	242	438	4	0.33	2	3	2	116	
240	320	60	2.1	635	1300	950	1200	23948CA/W33	3053948KH	252	308	2	0.17	4	6	3.9	13.3
	360	92	3	1160	2140	850	1100	23048CA/W33	3053148KH	254	346	2.5	0.24	2.8	4.2	2.7	32.6
	360	118	3	1390	2730	710	950	24048CA/W33	4053148KH	254	346	2.5	0.29	2.3	3.4	2.2	43.4
	400	128	4	1790	3100	670	850	23148CA/W33	3053748KH	258	382	3	0.3	2.2	3.3	2.2	66.9
	400	160	4	2130	3800	670	850	24148CA/W33	4053748KH	258	382	3	0.38	1.8	2.7	1.8	79.5
	440	120	4	1870	2890	750	950	22248CA/W33	53548KH	258	422	3	0.27	2.5	3.7	2.4	80.2

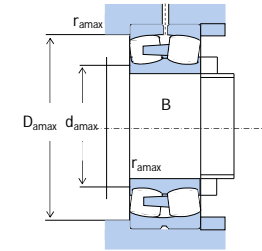
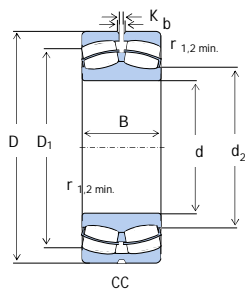
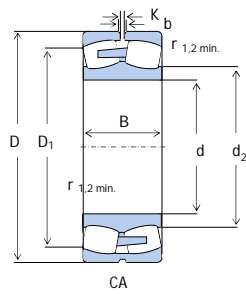
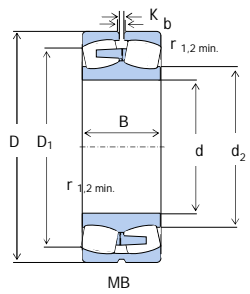
# Spherical Roller Bearing

DWCFQ



Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
240	440	160	4	2440	4050	630	800	23248CA/W33	3053248KH	258	422	3	0.37	1.8	2.7	1.8	106
	440	200	4	2650	4550	600	800	24248CA/W33		258	422	3	0.49	1.4	2	1.3	140
	500	155	5	2600	3800	670	850	22348CA/W33	53648KH	262	478	4	0.32	2.1	3.2	2.1	147
260	320	45	2	366	883	850	1100	23852CA/W33	3053852KH	270	310	2	0.12	5.6	8.4	5.6	8.05
	360	70	2.1	805	1590	850	1000	23952X2CA/W33	3053952X2KH	272	348	2	0.18	3.76	5.6	3.67	21.6
	360	75	2.1	930	1870	850	1000	23952CA/W33	3053952KH	272	348	2	0.19	3.6	5.4	3.5	23
	360	100	2.1	1070	2375	850	1100	24952CA/W33	4053952KH	272	348	2	0.24	2.8	4.2	2.8	32
	400	104	4	1430	2580	800	950	23052CA/W33	3053152KH	278	382	3	0.25	2.7	4.1	2.7	46.6
	400	140	4	1810	3500	630	850	24052CA/W33	4053152KH	278	402	3	0.32	2.1	3.1	2.1	62.6
	440	144	4	2160	3750	600	800	23152CA/W33	3053752KH	278	422	3	0.32	2.1	3.2	2.1	88.2
	440	180	4	2560	4700	600	800	24152CA/W33	4053752KH	278	422	3	0.39	1.7	2.6	1.7	109
	480	130	5	2180	3400	670	850	22252CA/W33	53552KH	282	458	4	0.27	2.5	3.7	2.5	104
	480	174	5	2740	4550	560	750	23252CA/W33	3053252KH	282	458	4	0.37	1.8	2.7	1.8	137
260	480	218	5	3150	5400	530	670	24252CA/W33		282	458	4	0.49	1.4	2	1.3	182
	540	165	6	3100	4600	630	800	22352CA/W33	53652KH	288	512	5	0.32	2.1	3.2	2.1	180
280	350	52	2	480	1121	800	1000	23856CA/W33	3053856KH	290	340	2	0.12	5.6	8.4	5.6	12
	380	75	2.1	925	1950	800	950	23956CA/W33	3053956KH	292	368	2	0.18	3.9	5.7	3.8	24.5
	380	100	2.1	1016	2327	800	1000	24956CA/W33	4053956KH	292	368	2	0.23	2.9	4.4	2.8	34.5
	420	106	4	1540	2950	710	900	23056CA/W33	3053156KH	298	402	3	0.24	2.8	4.2	2.7	50.5
	420	140	4	1880	3800	600	800	24056CA/W33	4053156KH	298	402	3	0.31	2.2	3.3	2.2	66.4
	440	160	4	2180	4250	580	780	2656CA/W33		298	422	3	0.35	1.92	2.86	1.88	88.6
	460	146	5	2230	4000	560	750	23156CA/W33	3053756KH	302	438	4	0.3	2.2	3.3	2.2	94.3
	460	180	5	2640	5000	560	750	24156CA/W33	4053756KH	302	438	4	0.37	1.8	2.7	1.8	115
	500	130	5	2280	3650	630	800	22256CA/W33	53556KH	302	478	4	0.25	2.7	4	2.6	110
	500	176	5	2880	4900	530	670	23256CA/W33	3053256KH	302	478	4	0.35	1.9	2.9	1.9	147
	500	218	5	3250	5850	500	670	24256CA/W33		302	478	4	0.46	1.5	2.2	1.4	192
	580	175	6	3500	5150	560	710	22356CA/W33	53656KH	308	552	5	0.31	2.1	3.2	2.1	221
300	380	60	2.1	612	1482	700	900	23860CA/W33	3053860KH	312	368	2	0.13	5.2	7.7	5	17

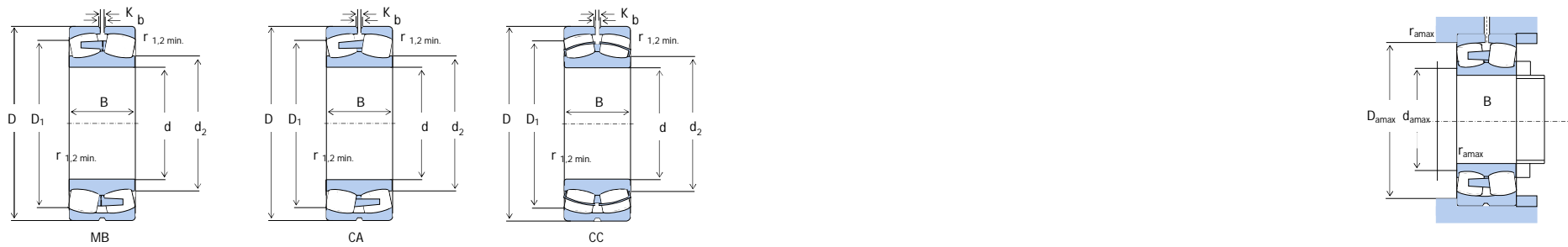
# Spherical Roller Bearing



Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
300	420	90	3	1230	2490	710	900	23960CA/W33	3053960KH	314	406	2.5	0.19	3.5	5.2	3.4	38.2
	460	118	4	1920	3700	670	850	23060CA/W33	3053160KH	318	442	3	0.24	2.8	4.2	2.7	70.5
	460	160	4	2310	4600	530	710	24060CA/W33	4053160KH	318	442	3	0.32	2.1	3.1	2	93.6
	500	160	5	2670	4800	500	670	23160CA/W33	3053760KH	322	478	4	0.31	2.2	3.3	2.2	125
	500	200	5	3100	5800	500	670	24160CA/W33	4053760KH	322	478	4	0.38	1.8	2.6	1.7	152
	540	140	5	2610	4250	600	750	22260CA/W33	53560KH	322	518	4	0.25	2.7	4	2.6	139
	540	192	5	3400	5900	480	630	23260CA/W33	3053260KH	322	518	4	0.35	1.9	2.9	1.9	189
	540	243	5	3900	7200	450	600	24260CA/W33		322	518	4	0.48	1.4	2.1	1.4	254
	620	185	7.5	3950	5900	400	520	22360CA/W33	53660KH	350	572	6	0.31	2.2	3.3	2.2	264
	320	400	60	2.1	639	1577	950	1300	23864CA/W33	3053864KH	332	388	2	0.12	5.6	8.4	5.6
400		80	2.1	870	2210	900	1200	24864CA/W33		332	388	2	0.17	3.9	5.81	3.82	22.8
440		90	3	1300	2750	670	850	23964CA/W33	3053964KH	334	426	2.5	0.18	3.7	5.5	3.6	40.6
480		121	4	1960	3850	630	800	23064CA/W33	3053164KH	338	462	3	0.24	2.8	4.2	2.8	75.6
480		160	4	2440	5050	500	670	24064CA/W33	4053164KH	338	462	3	0.31	2.2	3.3	2.2	99.7
540		176	5	3050	5500	480	600	23164CA/W33	3053764KH	342	518	4	0.31	2.1	3.2	2.1	162
540		218	5	3550	6650	480	600	24164CA/W33	4053764KH	342	518	4	0.39	1.7	2.6	1.7	196
580		150	5	2990	4850	530	670	22264CA/W33	53564KH	342	558	4	0.26	2.6	3.9	2.6	174
580		208	5	3900	6900	450	600	23264CA/W33	3053264KH	342	558	4	0.36	1.9	2.8	1.8	239
580		213	5	4000	7050	450	600	23264X2CA/W33	3053264X2KH	342	558	4	0.36	1.86	2.77	1.82	241
580	258	5	4300	8000	430	560	24264CA/W33		342	558	4	0.48	1.4	2.1	1.4	313	
670	200	7.5	4250	6550	400	530	22364CA/W33	53664KH	342	478	4	0.33	2.1	3.1	2	356	
340	420	60	2.1	655	1643	630	800	23868CA/W33	3053868KH	352	408	2	0.12	5.6	8.4	5.6	18.5
	460	90	3	1330	2840	630	800	23968CA/W33	3053968KH	354	446	2.5	0.18	3.8	5.7	3.7	42.4
	520	133	5	2280	4400	560	710	23068CA/W33	3053168KH	362	498	4	0.24	2.8	4.2	2.8	101
	520	180	5	2920	6050	480	600	24068CA/W33	4053168KH	362	498	4	0.32	2.1	3.2	2.1	135
	580	190	5	3600	6600	430	560	23168CA/W33	3053768KH	362	558	4	0.31	2.1	3.2	2.1	206
	580	243	5	4250	7900	430	560	24168CA/W33	4053768KH	362	558	4	0.4	1.7	2.5	1.7	257
	620	165	6	3450	5600	430	560	22268CA/W33	53568KH	368	592	5	0.28	2.4	3.6	2.4	226

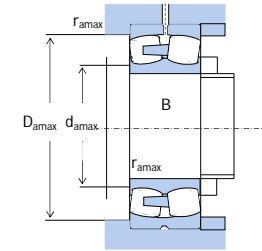
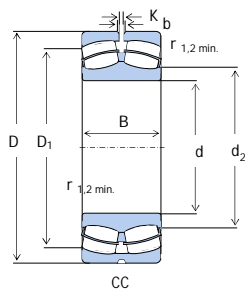
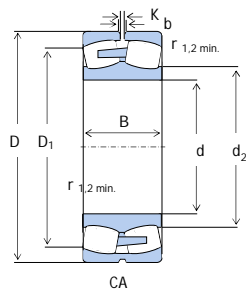
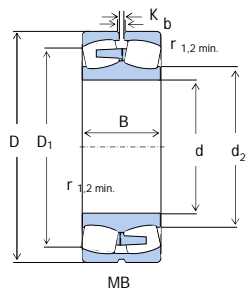


# Spherical Roller Bearing



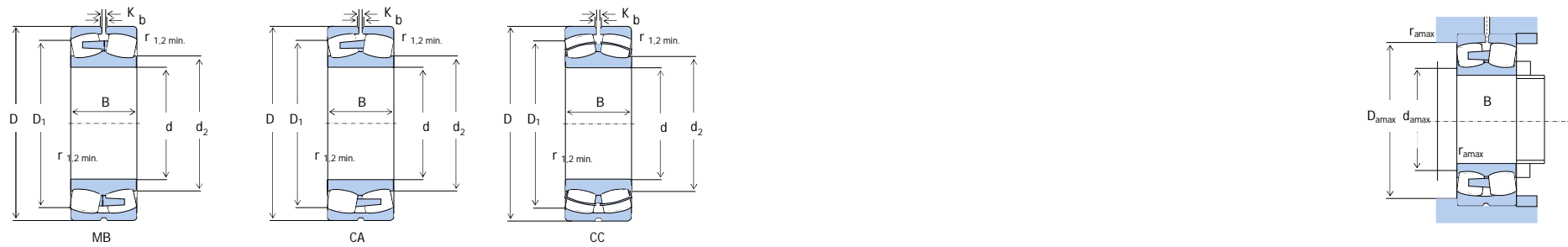
Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)	
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.	
360	620	224	6	4400	7800	400	530	23268CA/W33	3053268KH	368	592	5	0.36	1.9	2.8	1.8	295	
	620	280	6	5400	10000	380	500	24268CA/W33		368	592	5	0.47	1.4	2.1	1.4	390	
	710	212	7.5	5000	7800	360	480	22368CA/W33	53668KH	368	682	5	0.33	2.1	3.1	2	422	
	440	60	2.1	677	1767	600	750	23872CA/W33	3053872KH	372	428	1	0.11	6.1	9.1	6.3	20	
	480	72	3	1090	2350	630	800	22972CA/W33		374	466	2.5	0.14	4.94	7.36	4.83	37.1	
	480	90	3	1390	3050	600	750	23972CA/W33	3053972KH	374	466	2.5	0.17	4.1	6	4	44.7	
	540	134	5	2390	4700	530	670	23072CA/W33	3053172KH	382	518	4	0.24	2.8	4.2	2.8	106	
	540	180	5	2930	6100	450	600	24072CA/W33	4053172KH	382	518	4	0.32	2.1	3.2	2.1	139	
	600	192	5	3800	7100	400	530	23172CA/W33	3053772KH	382	578	4	0.31	2.2	3.2	2.1	217	
	600	243	5	4200	8000	400	530	24172CA/W33	4053772KH	382	578	4	0.4	1.7	2.5	1.7	264	
	650	170	6	3553	5890	600	750	22272CA/W33	53572KH	388	622	5	0.26	2.6	3.9	2.5	255	
	650	232	6	4800	8550	380	500	23272CA/W33	3053272KH	388	622	5	0.36	1.9	2.8	1.8	342	
380	750	224	7.5	5500	8650	360	480	22372CA/W33	53672KH	388	718	5	0.33	2.1	3.1	2	503	
	520	106	4	1870	4100	530	670	23976CA/W33	3053976KH	398	502	3	0.18	3.7	5.5	3.6	65.4	
	560	135	5	2500	5100	530	630	23076CA/W33	3053176KH	402	538	4	0.22	3	4.5	3	113	
	560	180	5	3050	6600	430	560	24076CA/W33	4053176KH	402	538	4	0.29	2.3	3.4	2.3	148	
	620	194	5	4000	7600	400	500	23176CA/W33	3053776KH	402	598	4	0.3	2.2	3.3	2.2	229	
	620	243	5	4350	8450	400	500	24176CA/W33	4053776KH	402	598	4	0.38	1.8	2.6	1.7	275	
	680	175	6	4050	6950	380	480	22276CA/W33	53576KH	408	652	5	0.27	2.5	3.7	2.4	288	
	680	240	6	5150	9200	360	480	23276CA/W33	3053276KH	408	652	5	0.35	1.9	2.9	1.9	372	
	680	245	6	5250	9650	360	480	23276X2CA/W33	3053276X2KH	408	652	5	0.36	1.89	2.82	1.85	382	
	780	230	7.5	5850	9300	340	450	22376CA/W33	53676KH	412	748	6	0.32	2.1	3.2	2.1	554	
	400	500	100	2.1	1330	3500	600	800	24880CA/W33	4053880KH	412	488	2	0.18	3.76	5.59	3.67	45.3
		540	106	4	1890	4250	530	630	23980CA/W33	3053980KH	418	522	3	0.18	3.9	5.7	3.8	69.1
600		148	5	2970	5900	480	600	23080CA/W33	3053180KH	422	578	4	0.23	3	4.4	2.9	146	
600		200	5	3600	7600	400	500	24080CA/W33	4053180KH	422	578	4	0.31	2.2	3.3	2.2	193	
650		200	6	4150	7900	380	480	23180CA/W33	3053780KH	428	622	5	0.29	2.3	3.4	2.3	257	
650		250	6	4950	10100	380	480	24180CA/W33	4053780KH	428	622	5	0.37	1.8	2.7	1.8	316	

# Spherical Roller Bearing



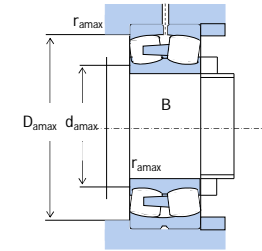
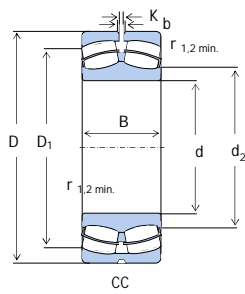
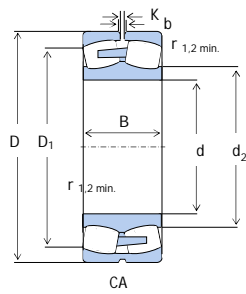
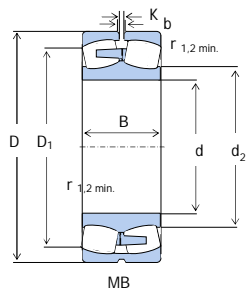
Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)	
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.	
400	720	185	6	4550	7650	360	450	22280CA/W33	53580KH	428	692	5	0.26	2.6	3.8	2.5	343	
	720	256	6	5800	10400	340	450	23280CA/W33	3053280KH	428	692	5	0.36	1.9	2.8	1.9	449	
	720	260	6	5850	10600	340	450	23280X2CA/W33		428	692	5	0.37	1.81	2.69	1.77	457	
	720	315	6	6950	13200	320	430	24280CA/W33		428	692	5	0.45	1.5	2.2	1.5	582	
	820	243	7.5	6232	9880	360	450	22380CA/W33	53680KH	436	784	6	0.3	2.3	3.4	2.2	650	
	820	243	7.5	6232	9880	360	450	22380CA/W33		436	784	6	0.3	2.3	3.4	2.2	650	
420	520	75	2.1	1090	2710	530	630	23884CA/W33	3053884KH	432	508	2	0.12	5.42	8.08	5.3	34.8	
	560	106	4	1870	4250	500	600	23984CA/W33	3053984KH	438	542	3	0.17	4	6	3.9	71.6	
	620	150	5	2910	5850	450	560	23084CA/W33	3053184KH	442	598	4	0.23	2.9	4.3	2.8	151	
	620	200	5	3750	8100	380	480	24084CA/W33	4053184KH	442	598	4	0.31	2.2	3.2	2.1	199	
	700	224	6	5000	9400	340	450	23184CA/W33	3053784KH	448	672	5	0.31	2.2	3.3	2.2	341	
	700	280	6	6000	12000	340	450	24184CA/W33	4053784KH	448	672	5	0.38	1.8	2.6	1.7	421	
	760	195	7.5	5000	8300	320	430	22284CA/W33	53584KH	456	724	6	0.27	2.5	3.7	2.4	405	
	760	272	7.5	6450	11700	320	430	23284CA/W33	3053284KH	456	724	6	0.35	1.9	2.9	1.9	534	
	760	335	7.5	8150	16000	300	400	24284CA/W33		456	724	6	0.45	1.5	2.2	1.5	702	
	850	250	9.5	6800	11000	300	400	22384CA/W33	53684KH	460	810	8	0.33	2.1	3.1	2	704	
440	600	118	4	2190	4800	450	560	23988CAF3/W33	3053988K	458	582	3	0.18	3.9	5.7	3.8	96.3	
	650	157	6	3150	6350	430	530	23088CAF3/W33	3053188K	468	622	5	0.23	2.9	4.3	2.8	173	
	650	212	6	4150	9100	360	450	24088CAF3/W33	4053188K	468	622	5	0.31	2.1	3.2	2.1	237	
	720	226	6	5300	10300	320	430	23188CAF3/W33	3053788K	468	692	5	0.3	2.2	3.3	2.2	360	
	720	280	6	6000	12100	320	430	24188CAF3/W33	4053788K	468	692	5	0.37	1.8	2.7	1.8	433	
	790	200	7.5	5300	8800	320	420	22288CAF3/W33	53588K	476	754	6	0.27	2.5	3.7	2.4	446	
	790	280	7.5	6900	12800	300	400	23288CAF3/W33	3053288K	476	754	6	0.35	1.9	2.9	1.9	594	
	790	285	7.5	6900	12800	300	400	23288X2CAF3/W33	3053288X2K	476	754	6	0.36	1.88	2.8	1.84	595	
	790	345	7.5	8500	17000	300	400	24288CAF3/W33		476	754	6	0.45	1.5	2.2	1.5	778	
	900	265	9.5	7650	12500	300	400	22388CAF3/W33	53688K	480	860	8	0.33	2.1	3.1	2	844	
	460	580	118	3	1700	4655	450	560	24892CAF3/W33		474	566	2.5	0.17	4	5.9	3.7	75.5
		620	118	4	2220	4950	430	530	23992CAF3/W33	3053992K	478	602	3	0.17	4	5.9	3.9	100
620		140	4	2440	6000	420	520	24992X2CAF3/W33		478	602	3	0.21	3.22	4.8	3.15	122	

# Spherical Roller Bearing



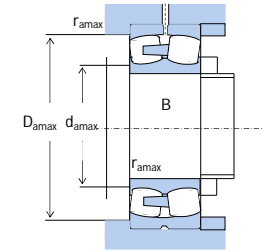
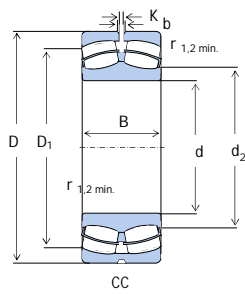
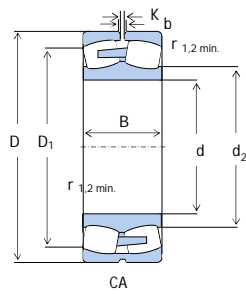
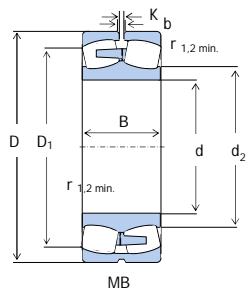
Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
460	680	163	6	3450	7100	400	500	23092CAF3/W33	3053192K	488	652	5	0.22	3.1	4.6	3	201
	680	218	6	4500	9950	340	430	24092CAF3/W33	4053192K	488	652	5	0.29	2.3	3.4	2.3	266
	760	240	7.5	5700	10900	300	400	23192CAF3/W33	3053792K	496	724	6	0.31	2.2	3.3	2.2	423
	760	300	7.5	6300	12400	300	400	24192CAF3/W33	4053792K	496	724	6	0.39	1.7	2.6	1.7	512
	830	212	7.5	5850	10200	300	400	22292CAF3/W33	53592K	496	794	6	0.27	2.5	3.7	2.4	530
	830	296	7.5	7350	13700	280	380	23292CAF3/W33	3053292K	496	794	6	0.36	1.9	2.8	1.8	691
	830	365	7.5	9500	19000	280	380	24292CAF3/W33		496	794	6	0.45	1.5	2.2	1.5	913
	950	280	9.5	8500	14000	260	360	22392CAF3/W33	53692K	500	910	8	0.33	2.1	3.1	2	1000
	480	600	90	3	1368	3562	430	530	23896CAF3/W33	3053896K	494	586	2.5	0.13	5.2	7.7	5
650		128	5	2580	5850	400	500	23996CAF3/W33	3053996K	502	628	4	0.18	3.8	5.7	3.7	121
700		165	6	3800	7950	400	480	23096CAF3/W33	3053196K	508	672	5	0.22	3.1	4.6	3	211
700		218	6	4600	10200	320	430	24096CAF3/W33	4053196K	508	672	5	0.3	2.3	3.4	2.2	270
790		248	7.5	6050	11700	300	380	23196CAF3/W33	3053796K	516	754	6	0.31	2.2	3.3	2.2	475
790		308	7.5	7150	14600	300	380	24196CAF3/W33	4053796K	516	754	6	0.39	1.7	2.6	1.7	567
870		224	7.5	6400	11200	280	380	22296CAF3/W33	53596H	516	834	6	0.27	2.5	3.7	2.4	613
870		310	7.5	7850	14400	260	360	23296CAF3/W33	3053296H	516	834	6	0.36	1.9	2.8	1.8	795
870		388	7.5	10600	21200	260	360	24296CAF3/W33		516	834	6	0.46	1.5	2.2	1.4	1080
500	980	290	9.5	9000	15000	260	360	22396CAF3/W33	53696K	520	940	8	0.33	2.1	3.1	2	1100
	620	90	3	1406	3800	430	530	238/500CAF3/W33	30538/500K	514	606	2.5	0.12	5.6	8.4	5.6	62
	670	128	5	2460	5550	400	500	239/500CAF3/W33	30539/500K	522	648	4	0.17	4	6	3.9	124
	670	170	5	3250	8000	380	480	249/500CAF3/W33	40539/500K	522	648	4	0.24	2.9	4.3	2.8	175
	720	167	6	3750	8100	380	480	230/500CAF3/W33	30531/500K	528	692	5	0.21	3.2	4.8	3.1	220
	720	218	6	4450	9900	300	400	240/500CAF3/W33	40531/500K	528	692	5	0.3	2.3	3.4	2.2	276
	830	264	7.5	6850	13400	280	360	231/500CAF3/W33	30537/500K	536	794	6	0.31	2.2	3.2	2.1	567
	830	325	7.5	8000	16000	280	360	241/500CAF3/W33	40537/500K	536	794	6	0.39	1.7	2.6	1.7	666
	920	243	7.5	7350	12900	280	360	222/500CAF3/W33	535/500K	536	884	6	0.28	2.4	3.6	2.3	758
	920	336	7.5	9000	16600	260	320	232/500CAF3/W33	30532/500K	536	884	6	0.38	1.8	2.7	1.8	969
	920	412	7.5	11600	23200	260	320	242/500CAF3/W33		536	884	6	0.47	1.4	2.2	1.4	1290

# Spherical Roller Bearing



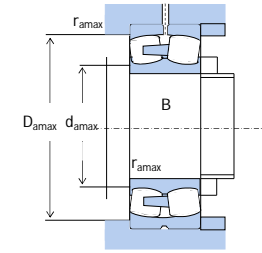
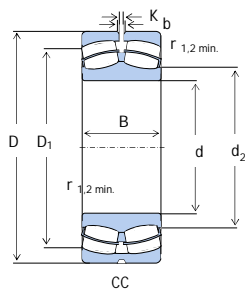
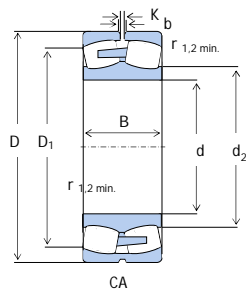
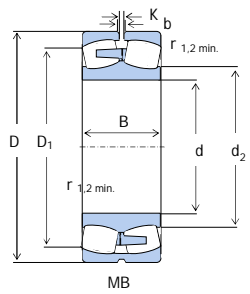
Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
500	1030	300	12	9800	16300	240	300	223/500CAF3/W33	536/500K	546	984	10	0.32	2.1	3.1	2	1260
530	650	118	3	1748	5035	380	480	248/530CAF3/W33		544	636	2.5	0.15	4.5	6.7	4.5	86
	710	136	5	2930	6800	360	450	239/530CAF3/W33	30539/530K	552	688	4	0.17	4	6	3.9	149
	710	180	5	3650	9000	340	430	249/530CAF3/W33	40539/530K	552	688	4	0.24	2.9	4.3	2.8	208
	780	185	6	4400	9200	340	430	230/530CAF3/W33	30531/530K	558	752	5	0.22	3.1	4.6	3	298
	780	250	6	5400	11800	280	360	240/530CAF3/W33	40531/530K	558	752	5	0.31	2.2	3.3	2.2	390
	870	272	7.5	7150	14100	260	340	231/530CAF3/W33	30537/530K	566	834	6	0.3	2.2	3.3	2.2	628
	870	335	7.5	8500	17500	260	340	241/530CAF3/W33	40537/530K	566	834	6	0.38	1.8	2.6	1.7	773
	980	258	9.5	8300	14600	260	320	222/530CAF3/W33	535/530K	574	936	8	0.28	2.4	3.6	2.4	914
	980	355	9.5	10100	18800	240	300	232/530CAF3/W33	30532/530K	574	936	8	0.38	1.8	2.7	1.7	1170
	980	450	9.5	13400	27500	220	280	242/530CAF3/W33		574	936	8	0.48	1.4	2.1	1.4	1610
	1090	325	12	11000	18300	220	280	223/530CAF3/W33	536/530K	584	1036	10	0.33	2	3.1	2	1530
540	820	195	6	5000	10700	320	400	26/540CAF3/W33X		591	776	5	0.22	3	4.5	2.9	377
545	755	230	4	4550	10800	320	400	26/545CAF3/W33X		563	737	3	0.28	2.45	3.65	2.4	301
560	680	90	3	1650	4450	360	460	238/560CAF3/W33	30538/560K	564	666	2.5	0.11	5.97	8.88	5.83	66.1
	750	140	5	3100	7250	340	430	239/560CAF3/W33	30539/560K	582	728	4	0.16	4.1	6.1	4	172
	750	190	5	4050	10200	320	400	249/560CAF3/W33	40539/560K	582	728	4	0.24	2.9	4.3	2.8	246
	820	195	6	5000	10700	320	400	230/560CAF3/W33	30531/560K	588	792	5	0.22	3	4.5	2.9	344
	820	258	6	5950	13300	260	340	240/560CAF3/W33	40531/560K	588	792	5	0.3	2.2	3.3	2.2	440
	920	280	7.5	7850	15500	240	320	231/560CAF3/W33	30537/560K	596	884	6	0.3	2.3	3.4	2.2	727
	920	355	7.5	9400	19600	240	320	241/560CAF3/W33	40537/560K	596	884	6	0.39	1.8	2.6	1.7	886
	1030	272	9.5	9000	16000	240	300	222/560CAF3/W33	535/560K	604	986	8	0.28	2.4	3.6	2.3	1060
	1030	365	9.5	10900	20500	220	280	232/560CAF3/W33	30532/560K	604	986	8	0.36	1.9	2.8	1.8	1320
	1030	475	9.5	14600	30000	220	260	242/560CAF3/W33		604	986	8	0.48	1.4	2.1	1.4	1860
	1150	335	12	12000	20400	200	260	223/560CAF3/W33	536/560K	614	1096	10	0.32	2.1	3.1	2.1	1750
580	780	130	5	2740	6500	340	430	26/580CAF3/W33X		627	742	4	0.15	4.6	6.9	4.5	178

# Spherical Roller Bearing



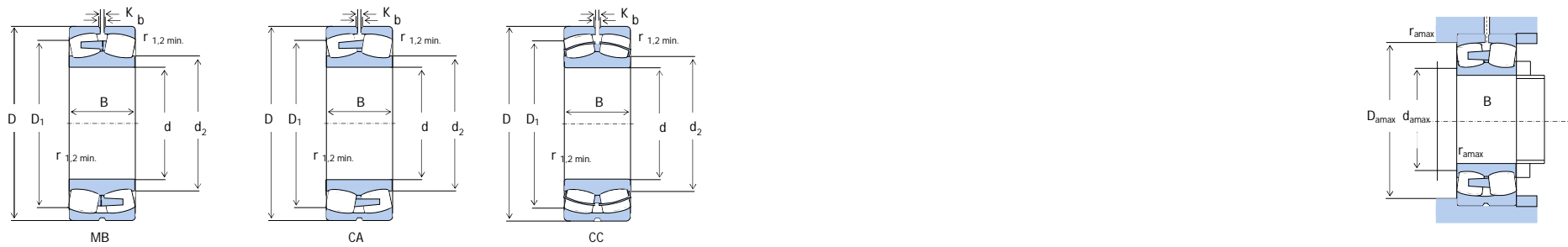
Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
600	800	150	5	3450	8100	320	400	239/600CAF3/W33	30539/600K	622	778	4	0.17	3.9	5.9	3.9	205
	800	200	5	4500	11400	320	380	249/600CAF3/W33	40539/600K	622	778	4	0.23	2.9	4.4	2.9	292
	820	175	6	3800	8850	300	380	26/600CAF3/W33X		654	776	5	0.18	3.7	5.5	3.6	271
	870	200	6	5450	12200	300	360	230/600CAF3/W33	30531/600K	628	842	5	0.21	3.3	4.8	3.2	389
	870	272	6	6600	15100	240	320	240/600CAF3/W33	40531/600K	628	842	5	0.3	2.2	3.3	2.2	529
	980	300	7.5	8750	17500	220	280	231/600CAF3/W33	30537/600K	636	944	6	0.3	2.3	3.4	2.2	898
	980	375	7.5	10400	21900	220	280	241/600CAF3/W33	40537/600K	636	944	6	0.39	1.8	2.6	1.7	1050
	1090	280	9.5	9650	17300	200	280	222/600CAF3/W33	535/600K	644	1046	8	0.27	2.5	3.7	2.4	1180
	1090	388	9.5	12700	24900	200	260	232/600CAF3/W33	30532/600K	644	1046	8	0.36	1.9	2.8	1.8	1590
	1090	488	9.5	16000	33500	180	260	242/600CAF3/W33		644	1046	8	0.47	1.5	2.2	1.4	2130
630	780	112	4	2080	5795	320	400	238/630CAF3/W33	30538/630K	648	762	3	0.12	5.6	8.4	5.6	120
	780	150	4	3050	8800	320	380	248/630CAF3/W33		648	762	3	0.17	4.07	6.06	3.98	158
	850	145	6	3450	7950	300	380	239/630X2CAF3/W		685	805	5	0.15	4.4	6.6	4.3	227
650	850	165	6	4000	9350	300	360	239/630CAF3/W33	239/630K	658	822	5	0.18	3.8	5.6	3.7	259
	850	212	6	5200	12900	280	360	249/630CAF3/W33	40539/630K	658	822	5	0.24	2.8	4.2	2.8	371
	920	212	7.5	5900	12700	280	340	230/630CAF3/W33	30531/630K	666	884	6	0.22	3.1	4.7	3.1	468
	920	290	7.5	7550	17700	220	300	240/630CAF3/W33	40531/630K	666	884	6	0.3	2.2	3.3	2.2	637
	1030	315	7.5	9600	19400	200	260	231/630CAF3/W33	30537/630K	666	994	6	0.3	2.3	3.4	2.2	1040
	1030	400	7.5	11300	23900	200	260	241/630CAF3/W33	40537/630K	666	994	6	0.38	1.8	2.7	1.7	1250
	1150	300	12	11000	20000	180	240	222/630CAF3/W33	535/630K	684	1096	10	0.28	2.4	3.6	2.4	1440
	1150	412	12	13400	25600	180	240	232/630CA/W33	30532/630K	684	1096	10	0.36	1.9	2.8	1.8	1850
1150	515	12	17600	37500	180	240	242/630CAF3/W33		684	1096	10	0.47	1.5	2.2	1.4	2510	
670	820	112	4	2137	6080	280	360	238/670CAF3/W33	30538/670K	688	802	3	0.11	6.1	9.1	6.3	130
	900	170	6	4350	10300	260	340	239/670CA/W33	30539/670K	698	872	5	0.17	3.9	5.8	3.8	300
	900	230	6	5700	14600	260	340	249/670CAF3/W33	40539/670K	698	872	5	0.24	2.8	4.2	2.8	433
	920	170	6	4350	10300	260	340	239/670X1CAF3/W		726	874	5	0.17	3.9	5.8	3.8	343
	980	230	7.5	6850	15000	240	320	230/670CAF3/W33	30531/670K	706	944	6	0.22	3.1	4.7	3.1	571
	980	308	7.5	8450	19500	200	260	240/670CAF3/W33	40531/670K	706	944	6	0.3	2.2	3.3	2.2	773

# Spherical Roller Bearing



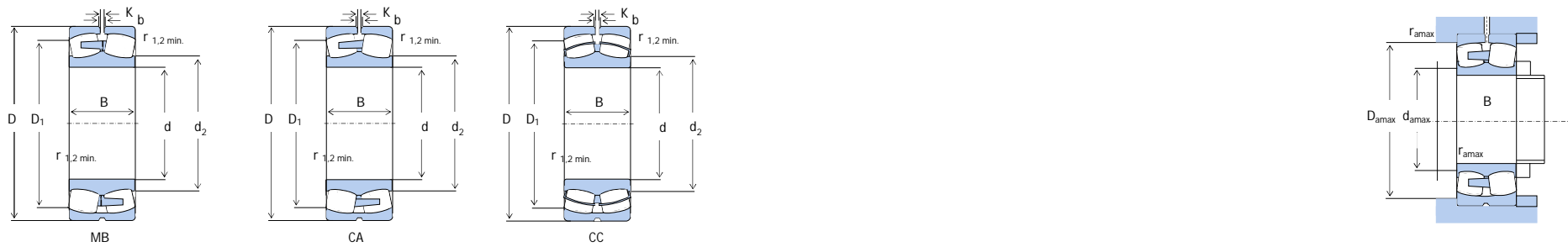
Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
670	1090	336	7.5	10600	21600	190	240	231/670CAF3/W33	30537/670K	706	1054	6	0.3	2.2	3.3	2.2	1230
	1090	412	7.5	12400	26500	190	240	241/670CAF3/W33	40537/670K	706	1054	6	0.37	1.8	2.7	1.8	1440
	1220	315	12	12200	22400	190	240	222/670CAF3/W33	535/670K	724	1166	10	0.27	2.5	3.7	2.4	1700
	1220	438	12	14900	28700	170	220	232/670CAF3/W33	30532/670K	724	1166	10	0.37	1.8	2.7	1.8	2210
	1220	545	12	19600	40500	170	200	242/670CAF3/W33		724	1166	10	0.47	1.4	2.2	1.4	2960
675	920	153	6	3950	8950	180	260	26/675CAF3/W33X		732	874	5	0.15	4.6	6.9	4.5	296
680	980	220	7.5	6050	14000	160	200	26/680CAF3/W33X		716	944	6	0.21	3.17	4.72	3.1	550
710	950	180	6	4800	11700	240	300	239/710CAF3/W33	30539/710K	738	922	5	0.17	3.9	5.8	3.8	352
	950	243	6	5576	14820	200	280	249/710CAF3/W33	40539/710K	738	922	5	0.22	3	4.6	2.8	495
	1030	236	7.5	7100	15800	240	280	230/710CAF3/W33	30531/710K	746	994	6	0.22	3.1	4.6	3	647
	1030	315	7.5	8850	20700	190	240	240/710CAF3/W33	40531/710K	746	994	6	0.29	2.3	3.4	2.2	861
	1150	345	9.5	11800	24500	180	240	231/710CAF3/W33	30537/710K	785	1083	8	0.29	2.3	3.4	2.3	1420
710	1150	438	9.5	13900	30500	170	220	241/710CAF3/W33	40537/710K	754	1106	8	0.38	1.8	2.6	1.7	1730
	1280	325	12	13700	24500	170	220	222/710CAF3/W33	535/710K	764	1226	10	0.27	2.5	3.7	2.4	1900
	1280	450	12	15700	30500	160	200	232/710CAF3/W33	30532/710K	764	1226	10	0.36	1.9	2.8	1.8	2470
710	1280	560	12	20800	43000	160	200	242/710CAF3/W33		764	1226	10	0.46	1.5	2.2	1.5	3300
	730	980	170	6	4600	10700	200	260	26/730CAF3/W33X		789	932	5	0.15	4.4	6.6	4.3
750	920	128	5	2783	8075	240	320	238/750CAF3/W33	30538/750K	772	898	4	0.11	6.1	9.1	6.3	135
	1000	185	6	5250	12800	220	280	239/750CAF3/W33	30539/750K	778	972	5	0.17	4.1	6	4	398
	1000	200	6	5250	12800	220	280	239/750X2CAF3/W		810	952	5	0.17	4.1	6	4	433
	1000	250	6	7750	17200	190	260	249/750CAF3/W33	40539/750K	778	972	5	0.22	3	4.6	3.2	560
	1090	250	7.5	7750	17200	220	260	230/750CAF3/W33	30531/750K	786	1054	6	0.22	3.1	4.6	3	768
	1090	335	7.5	10100	24000	180	220	240/750CAF3/W33	40531/750K	786	1054	6	0.29	2.3	3.4	2.2	1030
	1220	365	9.5	13100	27300	160	200	231/750CAF3/W33	30537/750K	826	1152	8	0.29	2.3	3.4	2.3	1700
	1220	475	9.5	17600	40500	160	200	241/750CAF3/W33	40537/750K	826	1152	8	0.38	1.8	2.6	1.7	2290
	1360	345	15	14600	27000	140	190	222/750CAF3/W33	535/750K	814	1296	12	0.27	2.5	3.7	2.4	2340
	1360	475	15	17700	35500	140	190	232/750CAF3/W33	30532/750K	814	1296	12	0.36	1.9	2.8	1.8	2980

# Spherical Roller Bearing



Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
760	1140	285	7.5	8600	19200	200	260	26/760CAF3/W33X		828	1081	6	0.23	3	4.4	2.9	1010
	1140	325	7.5	10000	23800	200	240	26/760CAF3/W33X		796	1104	6	0.24	2.79	4.15	2.73	1104
780	1180	285	7.5	9850	21100	220	260	26/780CAF3/W33X		849	1121	6	0.22	3.1	4.6	3	1100
	1220	375	9.5	12800	28700	210	240	26/780CAF3/W33X		824	1176	8	0.3	2.25	3.34	2.2	1615
790	1100	310	7.5	8650	21000	220	260	26/790CAF3/W33X		826	1064	6	0.24	2.76	4.11	2.7	857
800	980	180	5	3933	12255	180	240	248/800CAF3/W33		822	958	4	0.15	4.5	6.7	4.5	300
	1060	195	6	5600	13700	220	260	239/800CAF3/W33	30539/800K	828	1032	5	0.17	4	6	3.9	462
	1060	258	6	7500	20000	220	240	249/800CAF3/W33	40539/800K	828	1032	5	0.23	3	4.4	2.9	646
	1150	258	7.5	8350	19100	200	240	230/800CAF3/W33	30531/800K	836	1114	6	0.21	3.2	4.7	3.1	870
	1150	280	7.5	8350	19100	180	220	230/800X2CAF3/W		836	1114	6	0.21	3.2	4.7	3.1	941
	1150	345	7.5	10900	26300	160	200	240/800CAF3/W33	40531/800K	836	1114	6	0.27	2.5	3.7	2.5	1130
	1280	375	9.5	13800	29200	150	190	231/800CAF3/W33	30537/800K	844	1236	8	0.28	2.4	3.6	2.3	1870
	1280	475	9.5	17480	38475	130	170	241/800CAF3/W33	40537/800K	844	1236	8	0.35	1.9	2.9	1.8	2300
850	1420	488	15	20300	41000	130	170	232/800CAF3/W33	30532/800K	864	1356	12	0.35	1.9	2.8	1.9	3250
	1030	136	5	3173	9500	190	260	238/850CAF3/W33	30538/850K	872	1008	4	0.11	6.1	9.1	6.3	240
	1120	200	6	6100	15200	190	240	239/850CAF3/W33	30539/850K	878	1092	5	0.16	4.2	6.2	4.1	523
	1120	272	6	7760	21660	170	220	249/850CAF3/W33	40539/850K	878	1092	5	0.22	3	4.6	2.8	740
	1220	272	7.5	9300	21400	180	220	230/850CAF3/W33	30531/850K	886	1184	6	0.21	3.2	4.8	3.1	1020
	1220	290	7.5	9150	22000	180	220	230/850X2CAF3/W		886	1184	6	0.23	2.98	4.44	2.92	1103
	1220	305	7.5	9300	23500	170	220	230/850X2CAF3/W		886	1184	6	0.22	3.1	4.6	3	1170
	1220	330	7.5	11000	26900	160	210	240/850X2CAF3/W		886	1184	6	0.23	2.9	4.31	2.83	1203
	1220	365	7.5	11600	28300	150	190	240/850CAF3/W33	40531/850K	886	1184	6	0.28	2.4	3.6	2.4	1350
	1360	400	12	15800	34000	130	180	231/850CAF3/W33	30537/850K	941	1279	10	0.28	2.4	3.5	2.3	2260
900	1360	500	12	21200	48000	130	170	241/850CAF3/W33	40537/850K	941	1279	10	0.36	1.9	2.8	1.8	2970
	1500	515	15	22300	45500	120	160	232/850CAF3/W33	30532/850K	914	1436	12	0.35	1.9	2.8	1.9	3890
900	1090	190	5	4427	14535	170	220	248/900CAF3/W33		922	1068	4	0.14	4.8	7.2	4.5	370
	1180	206	6	6600	16700	180	220	239/900CAF3/W33	30539/900K	928	1152	5	0.16	4.3	6.4	4.2	591

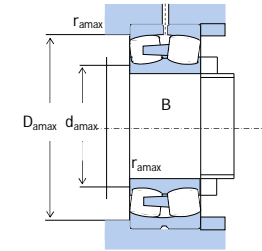
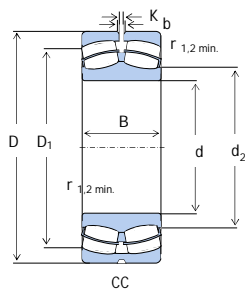
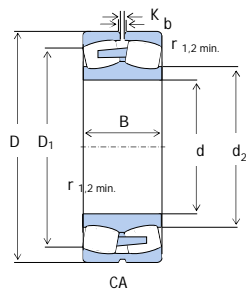
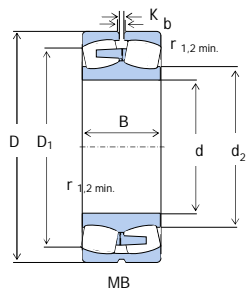
# Spherical Roller Bearing



Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
900	1180	280	6	9150	24500	170	220	249/900CAF3/W33	40539/900K	928	1152	5	0.22	3.1	4.6	3	852
	1280	280	7.5	9850	22800	160	200	230/900CAF3/W33	30531/900K	936	1244	6	0.2	3.3	4.9	3.2	1160
	1280	305	7.5	10300	24800	160	200	230/900X2CAF3/W		936	1244	6	0.2	3.3	4.9	3.2	1250
	1280	375	7.5	12800	31500	140	180	240/900CAF3/W33	40531/900K	936	1244	6	0.28	2.4	3.6	2.4	1520
	1420	412	12	17000	37000	120	160	231/900CAF3/W33	30537/900K	993	1338	10	0.28	2.4	3.6	2.3	2490
	1580	515	15	23400	47500	110	140	232/900CAF3/W33	30532/900K	964	1516	12	0.33	2	3	2	4300
950	1250	224	7.5	7600	19900	160	200	239/950CAF3/W33	30539/950K	986	1214	6	0.16	4.2	6.3	4.1	732
	1250	300	7.5	8740	24700	140	180	249/950CAF3/W33	40539/950K	986	1214	6	0.21	3.2	4.8	3.2	1000
	1280	260	7.5	8650	22200	140	180	26/950CAF3/W33X		986	1244	6	0.17	3.98	5.92	3.89	921
950	1330	300	7.5	8400	21200	130	170	230/950X1CAF3/W		986	1294	6	0.18	3.66	5.46	3.58	1214
	1360	300	7.5	11300	26500	150	190	230/950CAF3/W33	30531/950K	986	1324	6	0.21	3.2	4.8	3.2	1400
	1360	320	7.5	11500	28000	130	180	230/950X2CAF3/W		986	1324	6	0.2	3.33	4.96	3.25	1447
	1360	412	7.5	14500	36500	120	160	240/950CAF3/W33	40531/950K	986	1324	6	0.28	2.4	3.6	2.3	1880
	1400	300	7.5	11400	25200	120	160	230/950X1CAF3/W		1026	1336	6	0.2	3.4	5.1	3.3	1570
	1400	380	7.5	14100	33500	110	140	26/950CAF3/W33X		986	1364	6	0.24	2.77	4.13	2.71	1937
1000	1660	530	15	24700	50500	100	130	232/950CAF3/W33	30532/950K	1014	1596	12	0.32	2.1	3.1	2.1	4800
	1220	165	6	4427	13585	160	200	238/1000CAF3/W3	30538/1000K	1028	1192	5	0.12	5.6	8.4	5.6	410
	1220	218	6	6550	20800	160	200	248/1000CAF3/W3		1028	1192	5	0.16	4.3	6.4	4.2	567
	1320	236	7.5	8200	21700	150	190	239/1000CAF3/W3	30539/1000K	1036	1284	6	0.16	4.3	6.4	4.2	881
	1320	258	7.5	8500	22600	150	190	239/1000X2CAF3/		1036	1284	6	0.16	4.23	6.3	4.14	911
	1320	315	7.5	9880	27550	140	170	249/1000CAF3/W3	40539/1000K	1036	1284	6	0.21	3.2	4.8	3.2	1200
	1420	308	7.5	11900	28100	140	170	230/1000CAF3/W3	30531/1000K	1036	1384	6	0.2	3.3	4.9	3.2	1560
	1420	320	7.5	11500	28400	120	160	230/1000CAF3/W3	30531/1000K	1036	1384	6	0.2	3.5	5.1	3.4	1630
	1420	412	7.5	15300	38500	110	150	240/1000CAF3/W3	40531/1000K	1036	1384	6	0.27	2.5	3.7	2.4	2010
	1580	462	12	20330	45600	100	140	231/1000CAF3/W3	30537/1000K	1054	1526	10	0.28	2.4	3.6	2.5	3500
1060	1580	580	12	21375	47500	100	130	241/1000CAF3/W3	40537/1000K	1054	1526	10	0.35	1.9	2.9	1.8	4300
	1280	165	6	4530	14250	140	180	238/1060CAF3/W3	30538/1060K	1088	1252	5	0.11	6.1	9.1	6.3	435

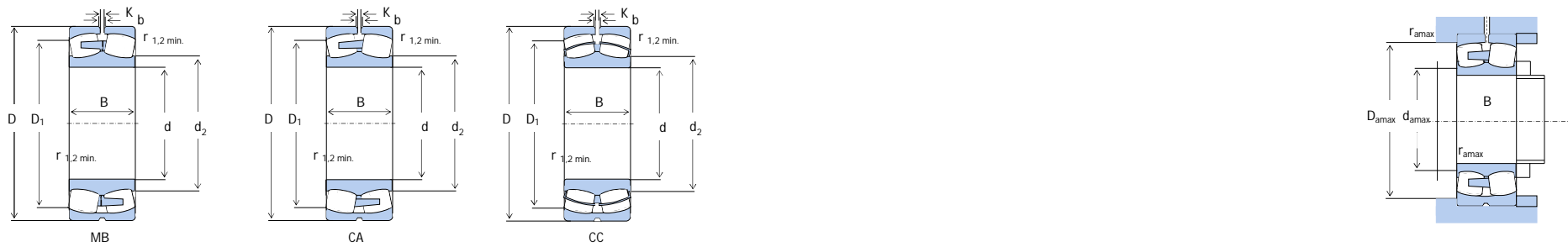


# Spherical Roller Bearing



Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
1120	1280	218	6	5795	19000	140	180	248/1060CAF3/W3		1088	1252	5	0.14	4.8	7.2	4.5	570
	1400	250	7.5	9300	24400	130	170	239/1060CAF3/W3	30539/1060K	1096	1364	6	0.16	4.1	6.1	4	1030
	1400	335	7.5	10925	30875	130	170	249/1060CAF3/W3	40539/1060K	1096	1364	6	0.21	3.2	4.8	3.2	1400
	1500	325	9.5	13000	31500	120	160	230/1060CAF3/W3	30531/1060K	1104	1456	8	0.21	3.3	4.9	3.2	1790
	1500	340	9.5	13000	31500	110	140	230/1060X2CAF3/		1104	1456	8	0.21	3.3	4.9	3.2	1850
	1500	438	9.5	16800	43000	100	130	240/1060CAF3/W3	40531/1060K	1104	1456	8	0.28	2.4	3.6	2.4	2410
	1360	180	6	6200	18700	140	180	238/1120CAF3/W3	30538/1120K	1148	1332	5	0.11	5.97	8.89	5.84	536
	1360	243	6	6887	22800	130	170	248/1120CAF3/W3		1148	1332	5	0.15	4.5	6.7	4.5	735
	1460	250	7.5	9500	26000	120	160	239/1120CAF3/W3	30539/1120K	1156	1424	6	0.15	4.4	6.6	4.3	1100
	1460	335	7.5	11115	32775	110	140	249/1120CAF3/W3	40539/1120K	1156	1424	6	0.2	3.4	5	3.2	1500
	1580	345	9.5	15400	38000	110	140	230/1120CAF3/W3	30531/1120K	1211	1505	8	0.2	3.4	5	3.3	2120
	1580	360	9.5	14700	36000	110	140	230/1120X2CAF3/		1211	1505	8	0.2	3.3	4.9	3.2	2230
1580	380	9.5	15500	38500	100	130	230/1120X2CAF3/		1211	1505	8	0.21	3.2	4.8	3.2	2330	
1580	462	9.5	18700	49500	95	120	240/1120CAF3/W3	40531/1120K	1211	1505	8	0.27	2.5	3.7	2.5	2790	
1180	1420	180	6	5576	17670	120	160	238/1180CAF3/W3	30538/1180K	1208	1392	5	0.11	6.1	9.1	6.3	575
	1420	243	6	7324	25650	120	160	248/1180CAF3/W3		1208	1392	5	0.14	4.8	7.2	4.5	770
	1540	272	7.5	10545	29450	110	140	239/1180CAF3/W3	30539/1180K	1216	1504	6	0.16	4.2	6.3	4	1400
1180	1540	355	7.5	12635	37050	100	130	249/1180CAF3/W3	40539/1180K	1216	1504	6	0.2	3.4	5	3.2	1800
	1660	475	9.5	20200	52500	85	110	240/1180CAF3/W3	40531/1180K	1224	1616	8	0.27	2.5	3.7	2.4	3180
1200	1700	410	9.5	17000	44000	80	100	26/1200CAF3/W33		1294	1622	8	0.21	3.2	4.8	3.1	2980
1220	1680	380	9.5	15800	40500	80	100	26/1220CAF3/W33		1315	1603	8	0.19	3.5	5.2	3.4	2500
1250	1500	250	6	8800	30000	90	120	248/1250CAF3/W3	40538/1250K	1334	1416	5	0.14	4.7	7	4.6	918
	1630	280	7.5	11600	31500	85	110	239/1250CAF3/W3	30539/1250K	1338	1562	6	0.15	4.4	6.6	4.3	1540
	1630	375	7.5	15600	45000	85	110	249/1250CAF3/W3	40539/1250K	1338	1562	6	0.22	3.1	4.7	3.1	2150
	1750	375	9.5	17005	42750	80	100	230/1250CAF3/W3	30531/1250K	1294	1706	8	0.19	3.6	5.3	3.6	2840
	1750	390	9.5	17400	44500	80	100	230/1250X2CAF3/		1346	1671	8	0.2	3.3	5	3.3	2860
	1750	400	9.5	18000	46000	75	100	230/1250X2CAF3/		1346	1671	8	0.2	3.4	5.1	3.3	2970

# Spherical Roller Bearing



Boundary Dimensions (mm)				Basic Load Ratings (kN)		Speed Ratings		Designations		Abutment and Fillet Dimensions			Calculation Factors				Mass (kg)
d	D	B	r1.2min	Cr	Cor	Grease	Oil	New	Old	damin	Damax	ramax	e	Y1	Y2	Y0	Refer.
1250	1750	500	9.5	21000	59500	75	100	240/1250CAF3/W3	40531/1250K	1294	1706	8	0.25	2.7	4	2.6	3700
1320	1600	280	6	9291	31825			248/1320CAF3/W3		1348	1572	5	0.15	4.5	6.7	4.5	1160
	1720	300	7.5	13600	38000			239/1320CAF3/W3	30539/1320K	1356	1684	6	0.16	4.34	6.46	4.24	1900
	1720	350	7.5	13500	38500			239/1320X2CAF3/		1411	1650	6	0.17	4	5.9	3.9	2100
	1720	400	7.5	15295	46550			249/1320CAF3/W3	40539/1320K	1356	1684	6	0.21	3.2	4.8	3.2	2500
	1850	480	12	21200	58500			240/1320X2CAF3/		1429	1760	10	0.22	3	4.5	2.9	4060
1850	530	12	22600	63500			240/1320CAF3/W3	40531/1320K	1374	1796	10	0.26	2.6	3.9	2.6	4400	
1350	1800	500	7.5	19200	56500			26/1350CAF3/W33		1442	1728	6	0.25	2.7	4	2.6	3660
1370	1780	265	9.5	11900	31500			26/1370CAF3/W33		1471	1701	8	0.13	5.1	7.7	5	1650
1400	1700	300	7.5	12000	40500			248/1400CAF3/W3		1498	1602	6	0.16	4.3	6.5	4.3	1500
	1820	315	9.5	14300	40500			239/1400CAF3/W3	30539/1400K	1502	1740	8	0.16	4.3	6.5	4.2	2140
	1820	425	9.5	20000	58500			249/1400CAF3/W3	40539/1400K	1502	1740	8	0.22	3.1	4.6	3	3020
1900	440	12	18000	54500			26/1400CAF3/W33		1513	1809	10	0.2	3.3	5	3.3	3710	
	530	12	22700	64500			26/1400CAF3/W33		1513	1809	10	0.25	2.7	4	2.6	4510	
	545	12	24500	65000			240/1400CAF3/W3	40531/1400K	1454	1896	10	0.25	2.7	4	2.6	4900	
1470	1900	375	12	15500	48000			26/1470CAF3/W33		1585	1809	10	0.16	4.3	6.4	4.2	2770
1500	1820	315	7.5	11115	38475			248/1500CAF3/W3	40538/1500K	1536	1684	6	0.21	3.2	4.8	3.2	1700
	1900	375	12	15500	48000			26/1500CAF3/W33		1617	1809	10	0.16	4.3	6.4	4.2	2540
	1950	335	9.5	16000	47500			239/1500CAF3/W3	30539/1500K	1544	1784	6	0.16	4.2	6.3	4.1	2800
	1950	450	9.5	19665	59850			249/1500CAF3/W3	40539/1500K	1544	1784	6	0.15	4.5	6.7	4.5	3550
1590	2000	380	9.5	16100	50000			26/1590CAF3/W33		1700	1916	8	0.15	4.5	6.7	4.4	2770