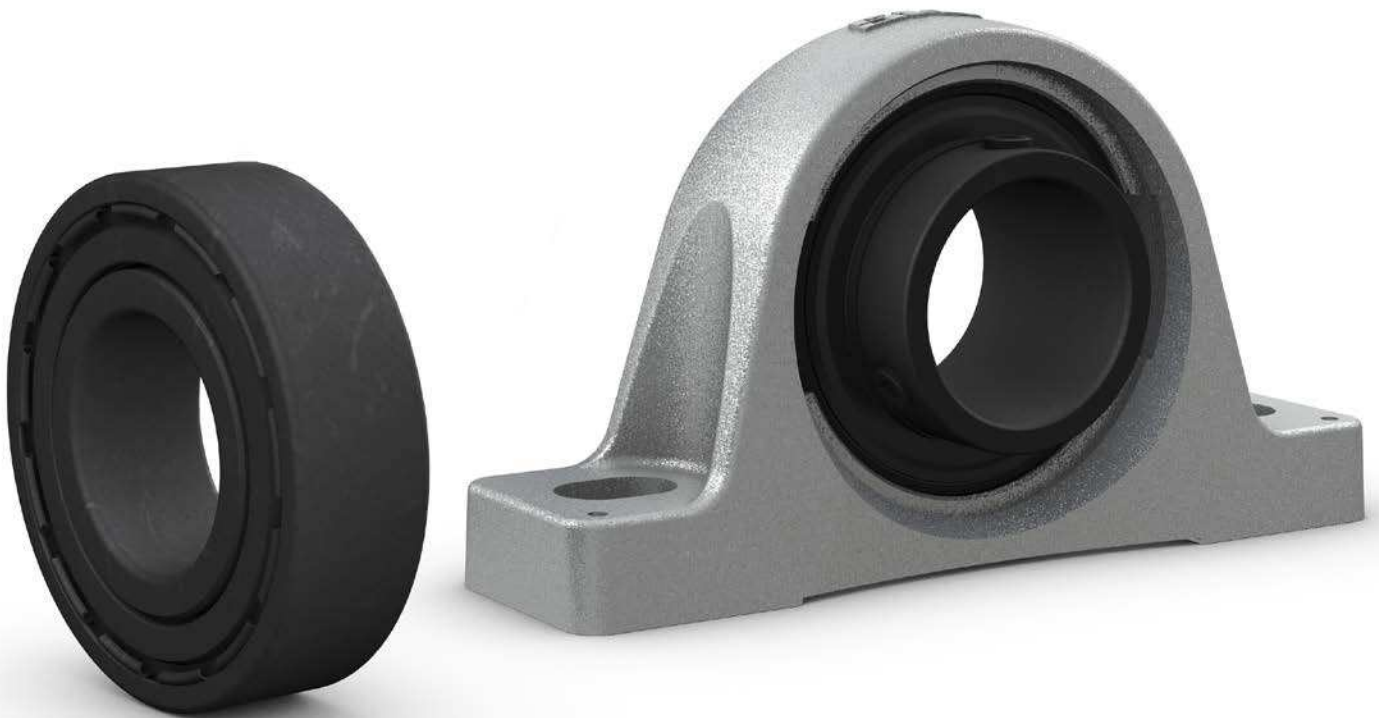


SKF high temperature bearings

For operating temperatures up to 350 °C (660 °F)





Contents

SKF – the knowledge engineering company	4
Reduce maintenance. Run Longer. Run Cleaner.	7
SKF high temperature bearings run trouble-free	7
Common issues in high temperature applications.	8
The SKF high temperature bearing solution	8
The SKF advantage: optimum performance, efficiency and savings	8
Customer benefits	9
Applications.	10
Proven performance across industries	10
Cooling bed for steel plates.	11
Continuous baking ovens	12
Wafer baking ovens	13
Paint lines.	14
Assortment.	16
Deep groove ball bearings for high temperature applications . . .	18
Y-bearings and Y-bearing units for high temperature applications	19
Lubrication and running in	21
Loads and selecting bearing size	21
Design of bearing arrangements	22
Bearing data	24
Product tables	
Deep groove ball bearings for high temperature applications . . .	26
Y-bearings for high temperature applications, metric shafts. . . .	30
Y-bearings for high temperature applications, inch shafts	31
Y-bearing plummer block units for high temperature applications, metric shafts	32
Y-bearing plummer block units for high temperature applications, inch shafts	34
Flanged Y-bearing units with a cast housing with a square flange for high temperature applications, metric shafts	36
Flanged Y-bearing units with a cast housing with a square flange for high temperature applications, inch shafts	38
Flanged Y-bearing units with a cast housing with an oval flange for high temperature applications, metric shafts	40
Flanged Y-bearing units with a cast housing with an oval flange for high temperature applications, inch shafts	42

SKF – the knowledge engineering company

From one simple but inspired solution to a misalignment problem in a textile mill in Sweden, and fifteen employees in 1907, SKF has grown to become a global industrial knowledge leader.



Over the years, we have built on our expertise in bearings, extending it to seals, mechatronics, services and lubrication systems. Our knowledge network includes 46 000 employees, 15 000 distributor partners, offices in more than 130 countries, and a growing number of SKF Solution Factory sites around the world.

Research and development

We have hands-on experience in over forty industries based on our employees' knowledge of real life conditions. In addition, our world-leading experts and university partners pioneer advanced theoretical research and development in areas including tribology, condition monitoring, asset management and bearing life theory. Our ongoing commitment to research and development helps us keep our customers at the forefront of their industries.



Meeting the toughest challenges

Our network of knowledge and experience, along with our understanding of how our core technologies can be combined, helps us create innovative solutions that meet the toughest of challenges. We work closely with our customers throughout the asset life cycle, helping them to profitably and responsibly grow their businesses.

Working for a sustainable future

Since 2005, SKF has worked to reduce the negative environmental impact from our operations and those of our suppliers. Our continuing technology development resulted in the introduction of the SKF BeyondZero portfolio of products and services which improve efficiency and reduce energy losses, as well as enable new technologies harnessing wind, solar and ocean power. This combined approach helps reduce the environmental impact both in our operations and our customers' operations.

SKF Solution Factory makes SKF knowledge and manufacturing expertise available locally to provide unique solutions and services to our customers.

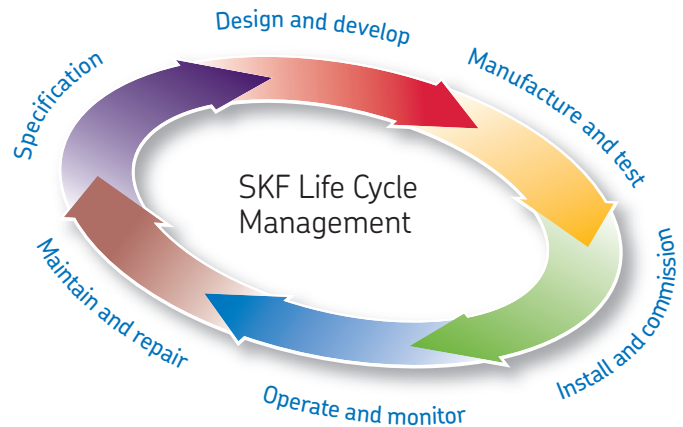


Working with SKF IT and logistics systems and application experts, SKF Authorized Distributors deliver a valuable mix of product and application knowledge to customers worldwide.



Our knowledge – your success

SKF Life Cycle Management is how we combine our technology platforms and advanced services, and apply them at each stage of the asset life cycle, to help our customers to be more successful, sustainable and profitable.



Working closely with you

Our objective is to help our customers improve productivity, minimize maintenance, achieve higher energy and resource efficiency, and optimize designs for long service life and reliability.



Bearings

SKF is the world leader in the design, development and manufacture of high performance rolling bearings, plain bearings, bearing units and housings.

Innovative solutions

Whether the application is linear or rotary or a combination, SKF engineers can work with you at each stage of the asset life cycle to improve machine performance by looking at the entire application. This approach doesn't just focus on individual components like bearings or seals. It looks at the whole application to see how each component interacts with each other.



Machinery maintenance

Condition monitoring technologies and maintenance services from SKF can help minimize unplanned downtime, improve operational efficiency and reduce maintenance costs.

Design optimization and verification

SKF can work with you to optimize current or new designs with proprietary 3-D modelling software that can also be used as a virtual test rig to confirm the integrity of the design.



Sealing solutions

SKF offers standard seals and custom engineered sealing solutions to increase uptime, improve machine reliability, reduce friction and power losses, and extend lubricant life.



Mechatronics

SKF fly-by-wire systems for aircraft and drive-by-wire systems for off-road, agricultural and forklift applications replace heavy, grease or oil consuming mechanical and hydraulic systems.



Lubrication solutions

From specialized lubricants to state-of-the-art lubrication systems and lubrication management services, lubrication solutions from SKF can help to reduce lubrication related downtime and lubricant consumption.



Actuation and motion control

With a wide assortment of products – from actuators and ball screws to profile rail guides – SKF can work with you to solve your most pressing linear system challenges.



Reduce maintenance. Run longer. Run cleaner.

Bearings operating in high temperature applications can be unreliable due to premature failure. The result is high costs and time wasted on frequent bearing replacements. SKF offers a solution with an assortment of bearings designed to reduce maintenance, run longer and cleaner in high temperature applications.

SKF high temperature bearings run trouble-free

SKF high temperature bearings incorporate a graphite-based lubrication that continuously lubricate the bearing, eliminating the use of grease and oil. Ideal for applications in industries such as metals and food & beverage, these bearings are designed for trouble-free operation at temperatures up to 350 °C (660 °F).

SKF high temperature bearings provide:

- Reduced total operating cost through increased bearing service life
- Relubrication-free operation
- Reduced machine complexity
- Reduced environmental impact
- Excellent performance in hot conditions, dry environments and applications with low rotational speeds



Common issues in high temperature applications

Bearings operating in high temperature applications may be impacted by a number of factors that can reduce bearing service life. Common issues include:

Inadequate lubrication

At high temperatures, lubricating grease or oil becomes very thin. Oil that is too thin, in combination with low rotational speeds, results in metal-to-metal contact in the bearing. This will cause wear, leading to noise and excessive play (→ fig. 1).

Short grease life

Grease ages rapidly at high temperatures, resulting in the need for very frequent relubrication. This is time consuming and costly and is a task that can be forgotten or even neglected. Frequent relubrication also creates the potential to over-fill the bearing, increasing the risk of excess grease contaminating the process and possibly catching fire. Additionally, old grease left in the bearings can carbonize at high temperatures and block the bearings (→ fig. 2).

Loss of internal bearing clearance

When temperatures rise above the bearing stabilization temperature, thermal expansion and material structural changes will occur in the bearing. This can lead to an uncontrolled loss of internal radial clearance, and ultimately seized bearings (→ fig. 3).

Inadequate lubrication cause wear which can be recognized by noise and excessive play



The SKF high temperature bearing solution

SKF high temperature bearings are designed for challenging operating conditions, with variants capable of performing at temperatures as high as 350 °C (660 °F). These bearings incorporate graphite-based lubrication which can lubricate at high temperatures and low speeds, eliminating the risk of metal-to-metal contact. Unlike grease and oil, graphite does not age and will not lose its lubricating properties at temperatures up to 350 °C (660 °F). This eliminates the need to relubricate SKF high temperature bearings. Additionally, these bearings are designed with a special radial clearance specified to maintain the required radial clearance at high operating temperatures. This avoids bearing seizure and enables a long service life.

Grease can carbonize and block the bearing at high operating temperatures



The SKF advantage: optimum performance, efficiency and savings

SKF high temperature bearings are designed to deliver increased reliability, reduced complexity, and decreased environmental impact. Because high temperature bearings correspond to the ISO boundary dimensions for standard bearings, production efficiencies and cost savings can be realized with a simple change to SKF high temperature bearings.

Loss of internal radial clearance leading to a seized bearing



Customer benefits

Increased reliability, reduced maintenance

By eliminating temperature related bearing failures, SKF high temperature bearings improve machine uptime, output and overall reliability. The SKF solution also eliminates the need to frequently relubricate bearings operating at high temperatures. This provides greater peace of mind, while enhancing operational efficiencies and cost savings.

Reduced complexity

Because SKF high temperature bearings are designed for relubrication-free operation at temperatures up to 350 °C (660 °F), manual and automatic lubrication systems are eliminated along with their related costs and issues. Complex cooling systems used to reduce bearing operating temperatures may also be unnecessary.

Reduced environmental impact

Global factors

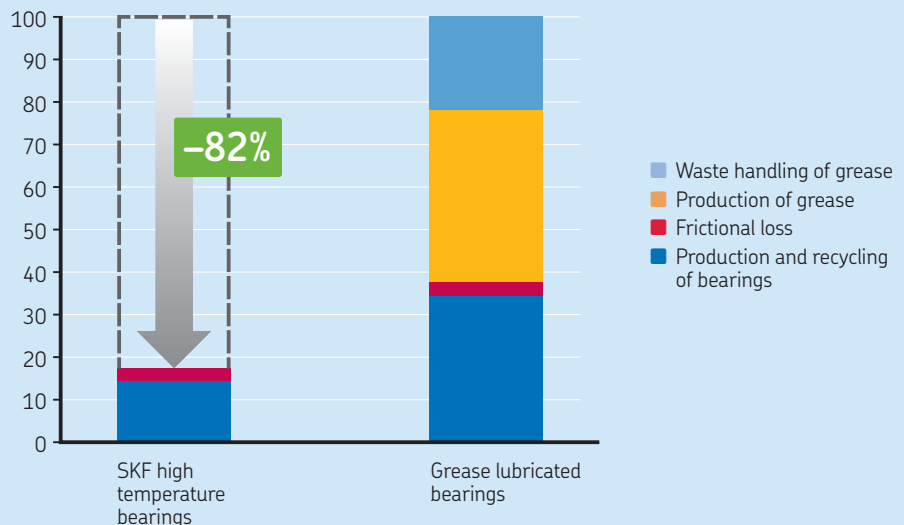
The significant environmental benefits of SKF high temperature bearings qualify them for inclusion in the SKF Beyond Zero product portfolio. These products are designed to reduce environmental impact and contribute to sustainability efforts (→ diagram 1).

Workplace and process safety

With grease removed from the process environment, relubrication procedures in potentially dangerous areas of the operation can be avoided. Slippery surfaces from grease leakage and the risk of excess grease catching fire are eliminated. SKF high temperature bearings also contribute to food safety, because there is no risk of process lines and products being contaminated by grease.

Diagram 1

SKF high temperature bearings reduce CO₂-emissions in a cooling bed for steel plates



Environmental impact of SKF high temperature bearings compared to grease lubricated bearings

Applications



Proven performance across industries

SKF high temperature bearings provide solutions that are proven in a number of different applications across a variety of industries. Even if the design and purpose of the bearing applications differ greatly, they all share common operating conditions that are ideal for graphite lubrication.

To prove the benefits of SKF high temperature bearings, examples of successful installations are shown on the next few pages. Get inspiration from what other customers have done and experience the benefits and savings in your operation.





A large cooling bed for steel plates. Each wheel is supported by four high temperature bearings.

Cooling bed for steel plates

In hot rolling mills, extremely large cooling beds accumulate and allow steel plates to cool. They use thousands of bearings, operating in intense heat standing still or rotating very slowly. A customer operating this application was using grease lubricated deep groove ball bearings with C4 radial clearance.

Customer issues

The large number of bearings required large amounts of grease, making relubrication costly, difficult and time consuming.

Rollers that would not rotate due to seized bearings created scratches on the steel plates. Replacing failed bearings was causing costly downtime.

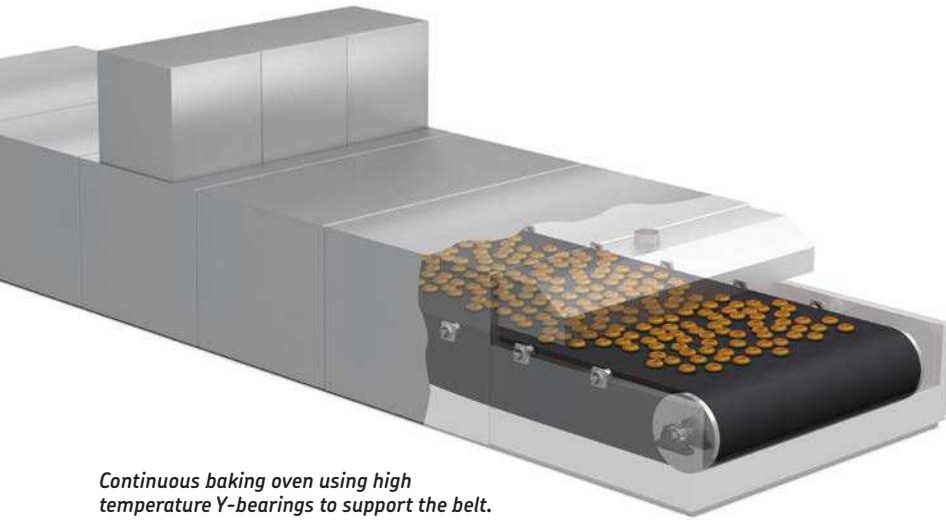
Customer case

Grease-lubricated, deep groove ball bearings were replaced with SKF high temperature bearings. A total of 5 000 SKF bearings were installed. Performance improvements were immediately realized, including:

- Bearing service life increased from 6 months to more than six years
- Return on investment achieved in eight months
- Savings realized through eliminating grease purchase and waste handling costs
- Reduced maintenance time and costs
- Improved product quality (scratch marks eliminated)
- Reduced bearing related CO₂ emissions by 82%



SKF 6212-2Z/VA228 high temperature bearings are an outstanding solution for cooling beds.



Continuous baking oven using high temperature Y-bearings to support the belt.

Continuous baking ovens

Continuous baking ovens are used by large-volume industrial bakeries. Requirements for throughput and reliability are very high. Bearings rotate slowly and are exposed to high temperatures. A customer was using grease-lubricated Y-bearing units in a continuous baking oven.

Customer issues

High operating temperatures caused inadequate lubrication, increased wear in the bearings, poor reliability, unplanned stops and ultimately failure. Frequent relubrication using expensive high temperature grease required costly maintenance, while used grease ejected from the bearings created a risk of food contamination and worker safety issues.

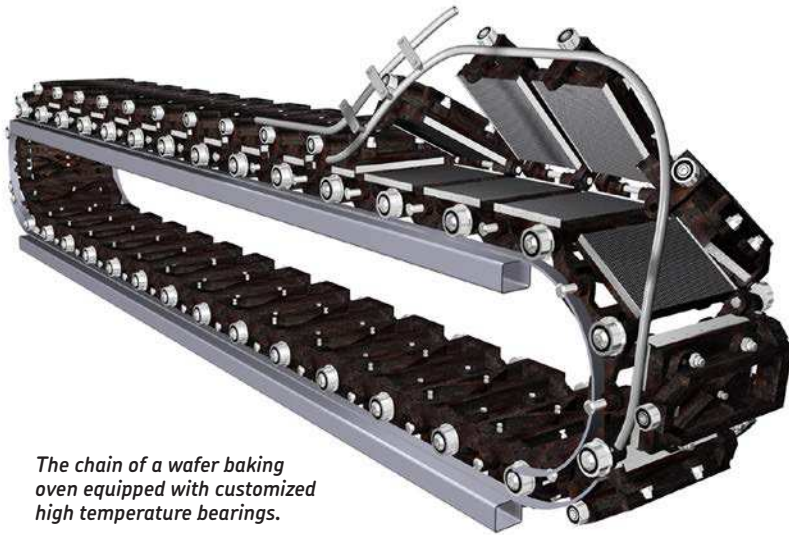
Customer case

The grease-lubricated bearing units were replaced with SKF high temperature Y-bearing units, resulting in a number of performance and productivity enhancements, including:

- Bearing service life extended from six to 36 months
- Return on investment achieved in less than eight months
- SKF solution is NSF H1 certified
- High temperature bearings enabled higher process temperatures resulting in higher output
- Significantly improved reliability
- Maintenance costs reduced
- Food and worker safety improved due to the elimination of grease



SKF high temperature Y-bearing units FY 25 TF/VA228 can enable higher output and reduced costs in food and beverage operations.



The chain of a wafer baking oven equipped with customized high temperature bearings.

Wafer baking ovens

Producers of confectionary products use fully automated wafer baking ovens for high-volume production. A food and beverage manufacturer running this process was using deep groove ball bearings lubricated with high temperature grease.

Customer issues

Bearing relubrication was needed every 16 weeks, requiring costly planned maintenance. Grease leakage impacted food safety. Output was limited by the oven temperature restrictions of grease-lubricated bearings.

Customer case

SKF high temperature wafer units were installed. These bearings incorporate graphite-based lubrication that continuously lubricates the bearing. Cost effectiveness and productivity were improved through benefits including:

- The relubrication-free wafer units ran for 5 years 24/7
- Eliminated costs for high temperature grease
- Eliminated 150 hours of labour annually
- 26 hours of planned down-time every 16 weeks was eliminated, increasing productivity through reduced maintenance
- Increased output, as graphite lubrication allows for higher process temperature
- Food and worker safety improved, due to eliminated consumption of grease



*SKF high temperature flanged carrier wheel units and smaller un-flanged top roller units offer relubrication-free performance and reliability in automatic wafer baking ovens.
BB1-5067 B (carrier wheel)
BB1-5098 B (top roller)*



Paint line conveyors are supported by wheels equipped with graphite lubricated bearings.

Paint lines

Paint lines are conveyor systems that transport parts as they are painted and dried. For one customer, the bearing operating temperature in the drying section was up to 200 °C (390 °F). Deep groove ball bearings lubricated with high temperature grease needed frequent relubrication.

Customer issues

Painted car chassis frequently needed to be reworked due to paint damage caused by lubricant leakage from the bearings. Grease could stain the drying paint, an issue made worse when water-based paints were used. The high temperature greases used were not PWIS-free (Paint-Wetting Impairment Substances). Damage to the paint on chassis parts caused production stops.

Customer case

The grease-lubricated bearings were replaced with SKF high temperature bearings. Quality and productivity in the paint line was significantly improved, with results including:

- Reduction in the number of chassis needing rework
- Significant increase in paint line efficiency
- Reduced downtime

SKF high temperature bearings are available in versions that apply to common PWIS standards.



SKF 6205-2Z/VA292 high temperature bearings offer a PWIS-free solution for paint-line drying processes.



Assortment

SKF offers a wide assortment of high temperature bearings and units according to ISO standards and also an assortment of customized high temperature bearings.

Selection of an appropriate high temperature bearing is based on the bearing type and the operating conditions (primarily the temperature and speed) of the machinery.

The SKF basic assortment of high temperature bearings and bearing units corresponding to ISO standards includes:

- deep groove ball bearings
- Y-bearings (insert bearings)
- Y-bearing units

The assortment includes variants that contain food-grade lubricants registered by NSF as category H1 (lubricant acceptable with incidental food contact for use in and around food processing areas).

In paint line applications, it is critical that the paint quality of the end product is not impaired by contamination. To address this need for high temperature paint lines, SKF offers a high temperature bearing variant VA292 that has the same bearing characteristics as version VA228 (table 1) but, in addition, comply with common PWIS standards (Paint Wetting Impairment Substance).

Customized high temperature bearings

In addition to high temperature bearings corresponding to ISO standards, SKF offers an assortment of customized high temperature bearings.

These bearings are customized for use in equipment such as automatic wafer baking ovens in the food and beverage industry, in industrial furnaces and in chains. For additional information, contact SKF.



Ideal operating conditions for SKF high temperature bearings

SKF high temperature bearings are designed to provide solutions to common issues in high temperature applications. In addition to operations involving high temperature, it is important to consider environmental conditions in the process area and the rotational speed of the shaft.

SKF high temperature bearings are an excellent choice for applications operating in hot environments with dry conditions and low rotational speeds. The hot, dry and slow criteria can be used as a rule of thumb for evaluating the use of graphite-lubricated bearings.



Hot:

Hot refers to operating temperatures up to 350 °C (660 °F) where grease-lubricated bearings often have a short service life. SKF high temperature bearings offer exceptional performance in positions affected by high operating temperatures.



Dry:

Due to very limited protection against corrosion, graphite-lubricated bearings must be kept dry.



Slow:

In slowly rotating applications running at high temperatures, oil and grease lubricants become too thin to generate a lubrication film of sufficient thickness to prevent metal-to-metal contact. SKF graphite-lubricated bearings are designed to handle these conditions.

Deep groove ball bearings for high temperature applications

The SKF range of deep groove ball bearings for high temperature applications provides solutions for various combinations of operating temperature and speed. All variants are lubricated for the life of the bearing, except for open VA201 bearings (that is, without integral shields) which require relubrication.

VA228 – SKF highest performance at temperatures up to 350 °C (660 °F)

VA228 is an excellent choice for machinery operating with low speeds or oscillating movements in combination with very high operating temperatures. This bearing offers outstanding performance at temperatures up to 350 °C (660 °F) through the combination of the solid graphite cage, an adjusted high temperature bearing radial internal clearance and integral shields.

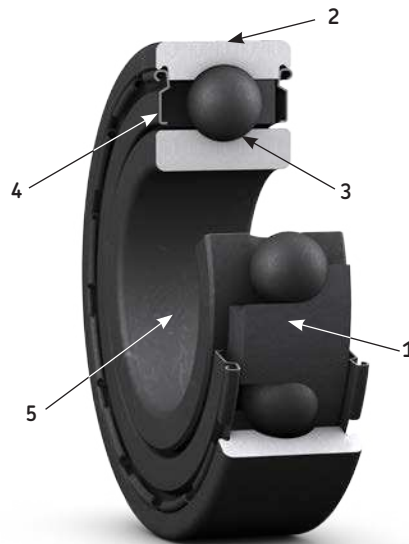
VA208 – Improved performance at temperatures up to 350 °C (660 °F)

The VA208 bearing is lubricated by a segmented graphite cage. The large amount of lubricating graphite gives a long service life at temperatures up to 350 °C (660 °F).

VA201 – Basic performance at temperatures up to 250 °C (480 °F)

The VA201 bearing is lubricated with a polyalkylene glycol/graphite mixture suitable for temperatures up to 250 °C (480 °F). Version VA201 is an open bearing (without shields) while the 2Z/VA201 has an integral shield on both sides. Both versions are supplied pre-filled with lubricant. VA201 can be re-lubricated whilst 2Z/VA201 is lubricated for the life of the bearing. Depending on the speed and operating temperature, a special running-in procedure might be required (→ *Lubrication and running in*, page 21).

Features and benefits of high temperature deep groove ball bearings



- 1 no need for relubrication¹⁾**
 - the bearings are lubricated with graphite-based high temperature lubricants and are lubricated for the life of the bearing
- 2 simple replacement**
 - the boundary dimensions are the same as those of standard bearings
- 3 operating temperature up to 350 °C (660 °F)**
 - the internal radial clearance and the lubricant are optimized for operation at high temperatures
- 4 protection against contamination**
 - shields (designation suffix 2Z) protect the bearing
- 5 improved running in**
 - the entire bearing surface is manganese phosphate coated

¹⁾ All variants, except for VA201 open bearings (that is, without integrated shields), are lubricated for the life of the bearing

Table 1

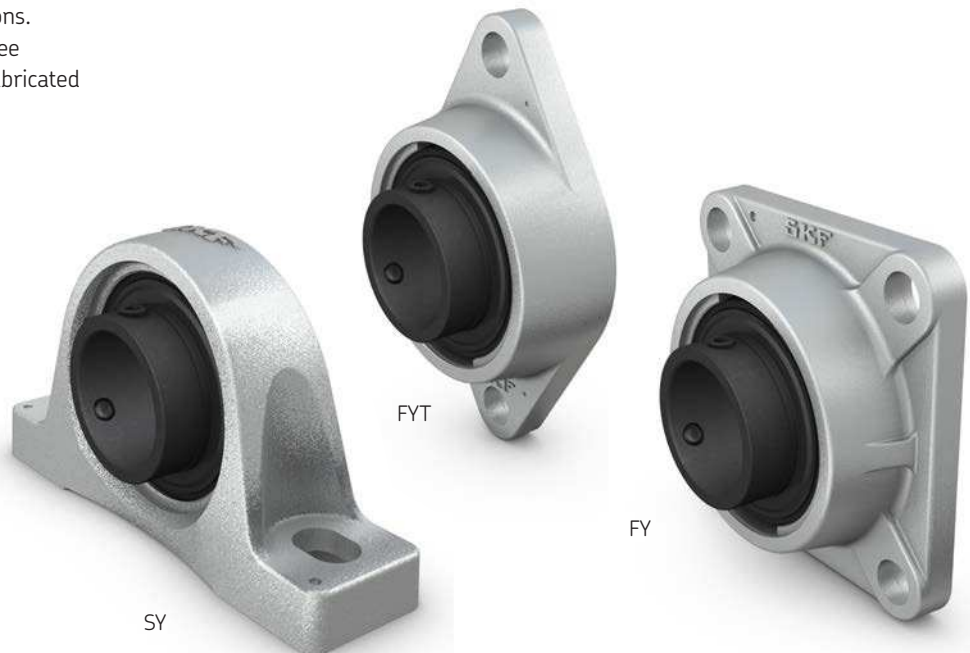
Characteristics of high temperature variants for deep groove ball bearings

Characteristic	Variant VA201	VA208	VA228
Lubrication type	Polyalkylene glycol/graphite mixture	Segmented cage made of graphite	Coronet cage made of graphite
Phosphated rings, rolling elements and cages	yes	yes	yes
NSF H1 food grade	no	yes	yes
Shields (designation suffix 2Z)	yes / no (open bearing)	yes	yes
Relubrication free	yes / no (open bearing)	yes	yes
Maximum operating temperature	250 °C (480 °F)	350 °C (660 °F)	350 °C (660 °F)
Limiting speed [r/min]¹⁾	4 500/d _m	4 500/d _m	9 000/d _m

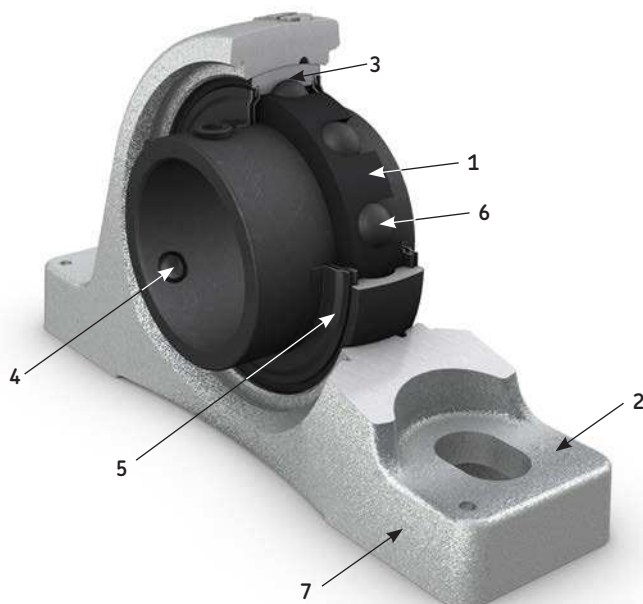
¹⁾ d_m = bearing mean diameter = 0,5 (d + D). For outer ring rotation, use d_m = D.

Y-bearings and Y-bearing units for high temperature applications

The SKF assortment of Y-bearings and Y-bearing units for high temperature applications, provides solutions for various temperature and speed combinations. Y-bearing units are available in three different designs. All variants are lubricated for the life of the bearing.



Features and benefits of high temperature Y-bearing units



- 1 no need for relubrication**
– the bearings are lubricated with graphite-based high temperature lubricants and, as such, are lubricated for the life of the bearing
- 2 simple replacement**
– the boundary dimensions are the same as those of standard bearings and units
- 3 operating temperature up to 350 °C (660 °F)**
– the radial internal clearance and the lubricant are optimized for operation at high temperatures
- 4 simple mounting and dismantling**
– the grub (set) screws in the inner ring make mounting/dismounting easy
- 5 protection against contamination**
– shields and flingers (designation suffix 2F) protect the bearing
- 6 improved running in**
– the entire bearing surface is manganese phosphate coated
- 7 no colour flaking**
– the housing is coated with a high temperature resistant coating



VA201 – Basic performance at temperatures up to 250 °C (480 °F)

The VA201 bearing is lubricated with a polyalkylene glycol/graphite mixture suitable for temperatures up to 250 °C (480 °F).

Depending on the speed and operating temperature, a special running-in procedure might be required (→ *Lubrication and running in*, page 21).

VA228- SKF highest performance at temperatures up to 350 °C (660 °F)

VA228 is an excellent choice for machinery operating with low speeds or oscillating movements in combination with very high operating temperatures. This bearing offers outstanding performance at temperatures up to 350 °C (660 °F) through the combination of the solid graphite cage, an adjusted high temperature bearing radial internal clearance and integral shields and flingers.

Table 2

Characteristics of high temperature variants for Y-bearing and Y-bearing units

Characteristic	Variant VA201	VA228
Lubrication type	Polyalkylene glycol/graphite mixture	Coronet cage made of graphite
Phosphated rings, rolling elements and cages	yes	yes
NSF H1 food grade	no	yes
Shields (suffix 2F)	yes	yes
Relubrication free	yes	yes
Maximum operating temperature	250 °C (480 °F)	350 °C (660 °F)
Limiting speed [r/min] ¹⁾	4 500/d _m	9 000/d _m

¹⁾ d_m = bearing mean diameter = 0,5 (d + D).

Lubrication and running in

Relubrication

All SKF high temperature deep groove ball bearings are lubricated for the life of the bearing, except for open VA201 bearings, which require relubrication.

The general recommendation for an open VA201 bearing is to investigate the quality of the lubricating paste in the bearing every six months. If there is no longer a film of dry lubricant on the raceways, indicated by a bright metallic shiny track, remove residues of the old lubricant with a solvent and, when dried, replenish the bearing with lubricating paste.

Apply the paste in a thin layer. The paste should be evenly distributed around the entire raceways of the bearing, which can be done using a brush of medium hardness. It is important to rotate the bearing when it has been replenished with paste. Any collars of excess paste should be removed.

Running in

Following installation or relubrication, VA201 bearings operating at bearing temperatures below 200 °C (390 °F), while running at speeds below 25% of the limiting speed require running in.

Running in requires that the bearing be run at a temperature of at least 200 °C (390 °F) for a minimum of 48 hours.

Loads and selecting bearing size

The bearing size is selected based on the basic static load rating C_0 . Basic static load ratings for bearings are listed in the product tables.

For an equivalent static bearing load P_0 , the selected bearing must have a C_0 value \geq the value of requisite basic static load rating C_{0req} specified in **table 3**.

NOTE: **Table 3** is valid for high temperature deep groove ball bearings and Y-bearings and Y-bearings units only when $P_0 = F_r$. That is, when:

$$F_a < 0,8 F_r$$

and

$$F_a < 0,15 C_0$$

where

P_0 = equivalent static bearing load [kN]

F_a = axial load [kN]

F_r = radial load [kN]

C_0 = basic static load rating [kN]

Table 3

Requisite basic static load rating for applied equivalent static bearing load

Equivalent static bearing load P_0	Requisite basic static load rating C_{0req} for operating temperatures up to	
	250 °C (480 °F)	350 °C (660 °F)
kN	kN	kN
2	6	9
4	11	18
6	16	27
8	22	36
10	27	45
15	40	67
20	54	90
25	67	120
30	80	140
40	110	180
50	140	230
60	160	270
70	190	320
80	220	360
90	240	400
100	270	450
125	340	560
150	400	670
200	540	890
300	800	1 400
400	1 100	1 800
500	1 400	2 300
600	1 600	–

Design of bearing arrangements

Location of bearings

The selection of shaft and housing fits for high temperature deep groove ball bearings depends on the bearing operating condition and bearing size. An appropriate fit is needed to locate the shaft, provide satisfactory support, allow for thermal expansion and reach the stated maximum operating bearing temperature (→ table 4).

For moderate loads ($0,035 C < P \leq 0,05 C$), the shaft seats for Y bearings should be machined to a $h7\text{E}$ tolerance. For light loads and low speeds, a $h8\text{E}$ shaft tolerance is sufficient.

All ISO tolerance classes are valid with the envelope requirement in accordance with ISO 14405-1:2010.

Mounting

SKF high temperature Y-bearings and Y-bearing units have a clearance fit for the recommended shaft diameters. They can therefore be slid into position and secured with the grub (set) screws on the inner ring.

SKF high temperature bearings (except high temperature Y-bearings and Y-bearing units) should always be hot mounted to

reduce the mounting force and the risk of cracking the graphite lubricant. Induction heater is the preferred choice to heat the bearing during mounting.

Submerging the SKF high temperature bearings in hot oil is not recommended since the oil remaining in the bearing might carbonize later during operation. Do not use impact mounting methods such as hammer or bearing fitters because the impacts can make the graphite lubricant crack.

Operating environment

Since all high temperature bearings are supplied without preservative oils and must be used without grease or oil lubrication, the anti-corrosion property of the bearings is limited. Therefore, the bearings should be used in a dry environment or with a proper sealing arrangement to keep the bearings dry.

The most common sealing alternatives for high temperature deep groove ball bearings incorporate integral or external shields or labyrinth seals. These arrangements have a rather low complexity and none of these arrangements are capable of keeping the bearing dry in a wet environment.

Sealing solutions

High temperature deep groove ball bearings can be protected from contaminants by either integral shields, external shields or a combination of both.

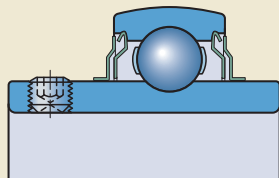
For high temperature bearings, metallic shields are the primary recommendation when a capping device with low complexity is required. Shields prevent the ingress of solid contaminants into the bearing. They are non-contact, generate almost no friction and do not wear. Due to the material and design, they are particularly well suited for high temperatures.

High temperature deep groove ball bearings with designation suffix 2Z have integrated shields, but the VA201 variant is also available as an open bearing (→ fig. 2). The shields on a 2Z/VA201 bearing enable the bearing to be filled with twice the amount of polyalkylene glycol/graphite lubricant that is used in an open VA201 bearing.

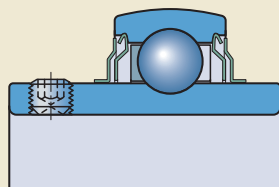
The capping device on high temperature Y-bearings (designation suffix 2F) consists of a shield and a flinger that create a narrow gap labyrinth seal (→ fig. 1).

Fig. 1

High temperature Y-bearings with integrated shields and flingers and without lubrication holes (2FW)



2FW/VA201



2FW/VA228

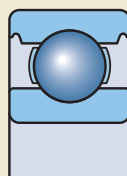
Table 4

Fits for high temperature deep groove ball bearings on solid steel shafts or in cast iron and steel housings

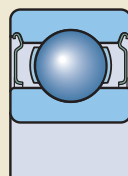
Conditions	Shaft diameter	Shaft tolerance	Housing tolerance
–	mm	–	–
Rotating inner ring load	all	$k6\text{E}$	$F7\text{E}$
Stationary inner ring load	all	$g6\text{E}$	$J7\text{E}$

Fig. 2

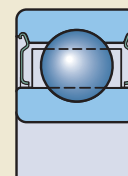
High temperature deep groove ball bearings and integrated shields (2Z)



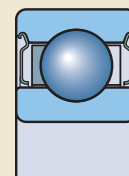
VA201



2Z/VA201



2Z/VA208



2Z/VA228

In many cases, the integral shields are sufficient to keep contaminants out of the bearing. However, in some cases, the integrated shields are insufficient, and so additional external shields should be considered – either Nilos rings (→ fig. 3), SKF sealing washers (→ fig. 4) or custom made seals.

Thermal axial expansion of shaft

To accommodate thermal axial expansion of the shaft in Y-bearing unit arrangements, the shaft on the non-locating side should be provided with either one, or two grooves located 120° apart, to engage with modified grub screws:

- Hexagon socket grub (set) screws with a dog point, in accordance with ISO 4028:2003, but with a fine thread according to table 5. The grub screw should be secured by a nut and spring washer or star lock washer (→ fig. 5).
- Slotted pan head screws in accordance with ISO 1580:2011, but with fine thread according to table 5, locked with a spring or star lock washer (→ fig. 6).

The screws and groove(s) accommodate changes in shaft length and prevent the shaft from turning independently of the bearing inner ring. The ends of the grub screws should be ground and the sliding surfaces in the shaft grooves coated with a lubricant paste suitable for the operating temperature.

Fig. 3

Sealing solution using Nilos rings

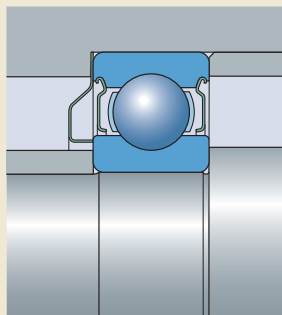
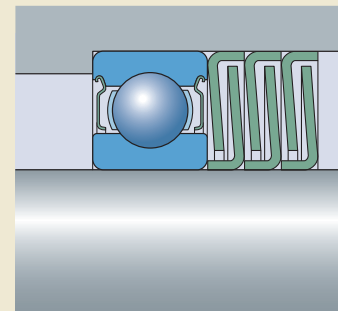


Fig. 4

Sealing solution using SKF sealing washers



Example showing bearing 6205-2Z/VA201 and triple sealing washers Z 205

Fig. 5

Hexagonal socket grub screw with a dog point secured by a nut and spring washer

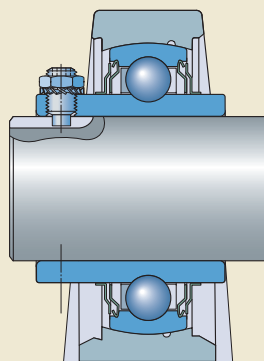


Fig. 6

Slotted pan head screw secured by a spring washer

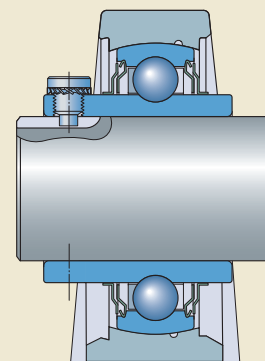


Table 5

Grub screw hexagonal socket dimensions and tightening torques

Bearing bore		Threaded holes	Hexagonal key size	Tightening torque
over	incl.			
mm/in.			mm/in.	Nm
For metric shaft				
35	35	M 6 x 0,75	3	4
45	45	M 8 x 1	4	6,5
45	65	M 10 x 1	5	16,5
65	75	M 10 x 1	5	16,5
For inch shaft				
	1 3/16	1/4 – 28 UNF	1/8	4
1 3/16	1 3/4	5/16 – 24 UNF	5/32	6,5
1 3/4	2 7/16	3/8 – 24 UNF	3/16	16,5
2 7/16	2 15/16	7/16 – 20 UNF	7/32	28,5

Bearing data

	Deep groove ball bearings	Y-bearings	Y-bearing units
Dimension standards	Boundary dimensions: ISO 15:2011 Series 10, 02, 03	Boundary dimensions: ISO 9628:2006	Boundary dimensions: ISO 3228:1993
Tolerances	Normal Values: ISO 492:2002	Normal, except the bore and outside diameter (→ table 7) Values: ISO 492:2002	Housing bore has an increased sphere diameter appropriate for high temperature applications.
Due to the special surface treatment of the bearings and the y-bearing housings, there may be slight deviations from the standard tolerances. These deviations do not affect mounting or bearing operation.			
Radial internal clearance	Multiples of C5		
Values (table 6) are valid for unmounted bearings under zero measuring load.			
Misalignment	≈ 20 to 30 minutes of arc		≈ 20 to 30 minutes of arc Initial misalignment ≤ 5°
The above values apply only when the bearings rotate slowly. The permissible angular misalignment between the inner and outer ring depends on the size and internal design of the bearing, radial internal clearance in operation and the forces and moments acting on the bearing. As a result, only approximate values are listed here. Any misalignment increases bearing noise and reduces bearing service life.			
Stabilization	120 °C (250 °F)		
The rings, rolling elements and cages of SKF high temperature bearings and housings of SKF Y-bearing units undergo the same heat stabilization process as the relevant standard bearing. As a result, for higher operating temperatures, a certain amount of dimensional change is to be expected. For additional information, contact the SKF application engineering service.			

Table 6

Radial internal clearance for high temperature bearings

Bore diameter d		Radial internal clearance			
		Deep groove ball bearings Multiples of C5		Y-bearings	
over	incl.	min.	max.	min.	max.
mm		μm			
	10	96	136	–	–
10	18	112	160	–	–
18	24	124	172	56	96
24	30	136	192	60	106
30	40	172	236	80	128
40	50	192	272	90	146
50	65	230	340	110	180
65	80	270	400	–	–
80	100	320	460	–	–
100	120	370	540	–	–

Table 7

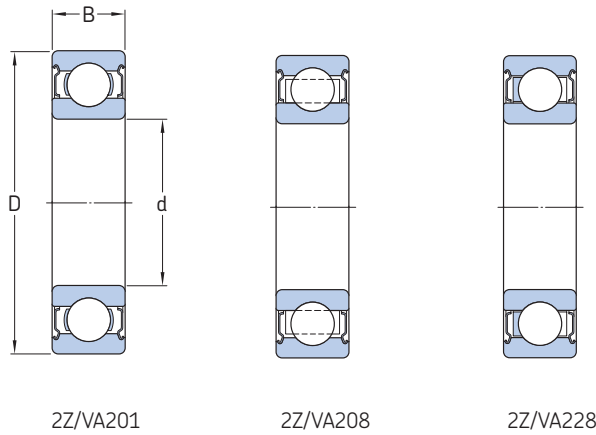
Tolerances of Y-bearings for high temperature application

Nominal diameter d, D		Bore diameter ¹⁾ Deviation		Outside diameter Deviation	
over	incl.	high	low	high	low
mm		μm			
18	30	+18	0	–	–
30	50	+21	0	0	–10
50	80	+24	0	0	–10
80	120	+28	0	0	–15

¹⁾ Values in accordance with ISO 9628:2006

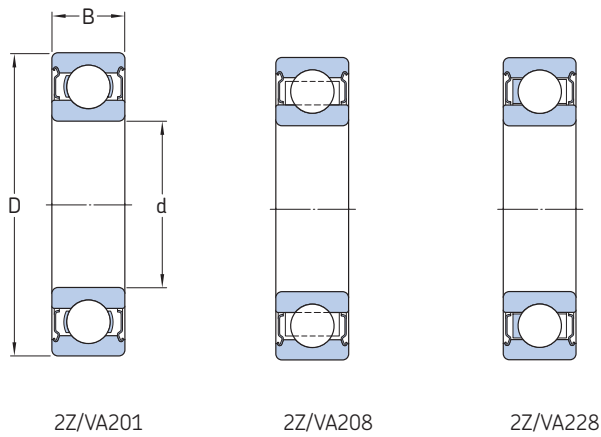
Deep groove ball bearings for high temperature applications

d 12 – 55 mm



Principal dimensions			Basic load ratings		Limiting speed	Limiting temperature		Running in required	Mass	Designations
d	D	B	C	C ₀		°C	°F			
mm			kN		r/min	°C	°F	–	kg	–
12	32	10	7,28	3,1	200	250	480	•	0,039	6201-2Z/VA201
	32	10	7,28	3,1	400	350	660	–	0,039	6201-2Z/VA228
15	35	11	8,06	3,75	180	250	480	•	0,048	6202-2Z/VA201
	35	11	8,06	3,75	360	350	660	–	0,048	6202-2Z/VA228
17	35	10	6,37	3,25	170	250	480	•	0,041	6003-2Z/VA201
	35	10	6,37	3,25	170	350	660	–	0,041	6003-2Z/VA208
	40	12	9,95	4,75	150	250	480	•	0,068	6203-2Z/VA201
	40	12	9,95	4,75	310	350	660	–	0,068	6203-2Z/VA228
	47	14	14,3	6,55	280	350	660	–	0,12	6303-2Z/VA228
20	42	12	9,95	5	140	250	480	•	0,071	6004-2Z/VA201
	42	12	9,95	5	140	350	660	–	0,071	6004-2Z/VA208
	47	14	13,5	6,55	130	250	480	•	0,11	6204-2Z/VA201
	47	14	13,5	6,55	260	350	660	–	0,11	6204-2Z/VA228
	52	15	16,8	7,8	120	250	480	•	0,15	6304-2Z/VA201
	52	15	16,8	7,8	120	350	660	–	0,15	6304-2Z/VA208
	52	15	16,8	7,8	250	350	660	–	0,15	6304-2Z/VA228
25	47	12	11,9	6,55	120	250	480	•	0,083	6005-2Z/VA201
	47	12	11,9	6,55	120	350	660	–	0,083	6005-2Z/VA208
	52	15	14,8	7,8	110	250	480	•	0,13	6205-2Z/VA201
	52	15	14,8	7,8	110	350	660	–	0,13	6205-2Z/VA208
	52	15	14,8	7,8	230	350	660	–	0,13	6205-2Z/VA228
	62	17	23,4	11,6	100	250	480	•	0,23	6305-2Z/VA201
	62	17	23,4	11,6	100	350	660	–	0,23	6305-2Z/VA208
	62	17	23,4	11,6	200	350	660	–	0,23	6305-2Z/VA228
30	55	13	13,8	8,3	100	350	660	–	0,12	6006-2Z/VA208
	62	16	20,3	11,2	90	250	480	•	0,21	6206-2Z/VA201
	62	16	20,3	11,2	90	350	660	–	0,21	6206-2Z/VA208
	62	16	20,3	11,2	190	350	660	–	0,21	6206-2Z/VA228
	72	19	29,6	16	80	350	660	–	0,36	6306-2Z/VA208
	72	19	29,6	16	170	350	660	–	0,36	6306-2Z/VA228

¹⁾ Check availability prior to incorporating in a bearing arrangement design.

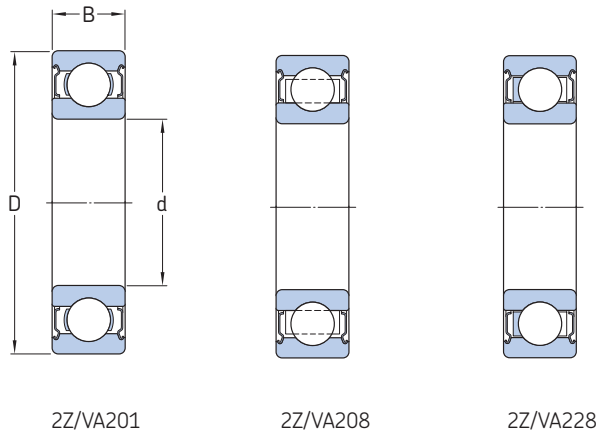


Principal dimensions			Basic load ratings		Limiting speed	Limiting temperature		Running in required	Mass	Designations
d	D	B	dynamic	static		°C	°F			
mm			kN		r/min	°C	°F	–	kg	–
35	72	17	27	15,3	80	250	480	•	0,3	6207-2Z/VA201
	72	17	27	15,3	80	350	660	–	0,3	6207-2Z/VA208
	72	17	27	15,3	160	350	660	–	0,3	6207-2Z/VA228
	80	21	35,1	19	70	350	660	–	0,48	6307-2Z/VA208
40	68	15	17,8	11	80	350	660	–	0,2	6008-2Z/VA208
	80	18	32,5	19	70	250	480	•	0,38	6208-2Z/VA201
	80	18	32,5	19	70	350	660	–	0,38	6208-2Z/VA208
	80	18	32,5	19	150	350	660	–	0,38	6208-2Z/VA228
45	90	23	42,3	24	60	250	480	•	0,65	6308-2Z/VA201
	90	23	42,3	24	60	350	660	–	0,65	6308-2Z/VA208
	90	23	42,3	24	130	350	660	–	0,65	6308-2Z/VA228
45	85	19	35,1	21,6	60	250	480	•	0,43	6209-2Z/VA201
	85	19	35,1	21,6	60	350	660	–	0,43	6209-2Z/VA208
	85	19	35,1	21,6	130	350	660	–	0,43	6209-2Z/VA228
	100	25	55,3	31,5	60	350	660	–	0,87	6309-2Z/VA208
50	80	16	22,9	15,6	60	350	660	–	0,27	6010-2Z/VA208
	90	20	37,1	23,2	60	250	480	•	0,47	6210-2Z/VA201
	90	20	37,1	23,2	60	350	660	–	0,47	6210-2Z/VA208
	90	20	37,1	23,2	120	350	660	–	0,47	6210-2Z/VA228
55	110	27	65	38	50	250	480	•	1,1	6310-2Z/VA201
	110	27	65	38	50	350	660	–	1,1	6310-2Z/VA208
	110	27	65	38	110	350	660	–	1,1	6310-2Z/VA228
	90	18	29,6	21,2	60	350	660	–	0,4	6011-2Z/VA208
55	100	21	46,2	29	50	250	480	•	0,64	6211-2Z/VA201
	100	21	46,2	29	50	350	660	–	0,64	6211-2Z/VA208
	100	21	46,2	29	110	350	660	–	0,64	6211-2Z/VA228
55	120	29	74,1	45	50	250	480	•	1,4	6311-2Z/VA201
	120	29	74,1	45	50	350	660	–	1,4	6311-2Z/VA208
	120	29	74,1	45	100	350	660	–	1,4	6311-2Z/VA228

¹⁾ Check availability prior to incorporating in a bearing arrangement design.

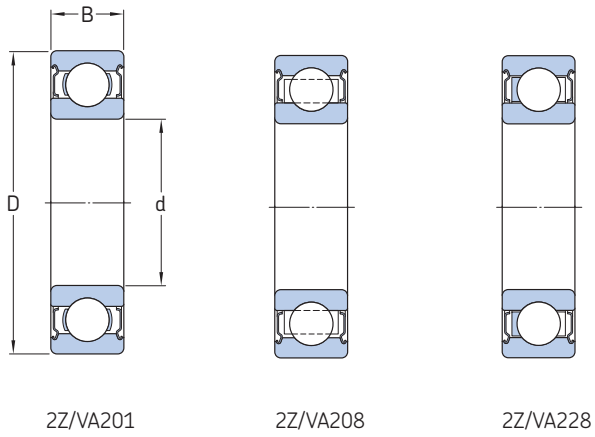
Deep groove ball bearings for high temperature applications

d 60 – 120 mm



Principal dimensions			Basic load ratings		Limiting speed	Limiting temperature		Running in required	Mass	Designations
d	D	B	C	C ₀		°C	°F			
mm			kN		r/min	°C	°F	–	kg	–
60	110	22	55,3	36	50	250	480	•	0,81	6212-2Z/VA201
	110	22	55,3	36	50	350	660	–	0,81	6212-2Z/VA208
	110	22	55,3	36	100	350	660	–	0,81	6212-2Z/VA228
	130	31	85,2	52	40	350	660	–	1,8	6312-2Z/VA208
	130	31	85,2	52	90	350	660	–	1,8	6312-2Z/VA228
	120	23	58,5	40,5	40	250	480	•	1,05	6213-2Z/VA201
65	120	23	58,5	40,5	40	350	660	–	1,05	6213-2Z/VA208
	120	23	58,5	40,5	90	350	660	–	1,05	6213-2Z/VA228
	140	33	97,5	60	40	250	480	•	2,2	6313-2Z/VA201
	140	33	97,5	60	40	350	660	–	2,2	6313-2Z/VA208
	140	33	97,5	60	80	350	660	–	2,2	6313-2Z/VA228
	125	24	63,7	45	40	250	480	•	1,15	6214-2Z/VA201
70	125	24	63,7	45	40	350	660	–	1,15	6214-2Z/VA208
	125	24	63,7	45	90	350	660	–	1,15	6214-2Z/VA228
	150	35	111	68	40	350	660	–	2,65	6314-2Z/VA208
	130	25	68,9	49	40	250	480	•	1,25	6215-2Z/VA201
	130	25	68,9	49	40	350	660	–	1,25	6215-2Z/VA208
	130	25	68,9	49	80	350	660	–	1,25	6215-2Z/VA228
75	160	37	119	76,5	30	350	660	–	3,15	6315-2Z/VA208
	140	26	72,8	55	40	350	660	–	1,55	6216-2Z/VA208
	170	39	130	86,5	30	350	660	–	3,75	6316-2Z/VA208
80	150	28	87,1	64	30	350	660	–	1,9	6217-2Z/VA208
85	160	30	101	73,5	70	350	660	–	2,3	6218-2Z/VA228
90	170	32	114	81,5	30	250	480	•	2,7	6219-2Z/VA201
	170	32	114	81,5	60	350	660	–	2,7	6219-2Z/VA228

¹⁾ Check availability prior to incorporating in a bearing arrangement design.

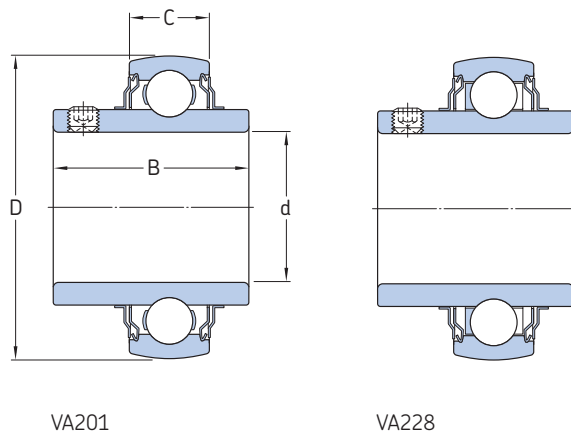


Principal dimensions			Basic load ratings		Limiting speed	Limiting temperature		Running in required	Mass	Designations
d	D	B	dynamic	static		°C	°F			
mm			kN		r/min	°C	°F	–	kg	–
100	150	24	63,7	54	30	350	660	–	1,35	6020-2Z/VA208
	180	34	127	93	30	350	660	–	3,25	6220-2Z/VA208
	180	34	127	93	60	350	660	–	3,25	6220-2Z/VA228
110	170	28	85,2	73,5	30	350	660	–	2,05	6022-2Z/VA208
120	180	28	88,4	80	30	350	660	–	2,2	6024-2Z/VA208

¹⁾ Check availability prior to incorporating in a bearing arrangement design.

Y-bearings for high temperature applications, metric shafts

d 20 – 60 mm



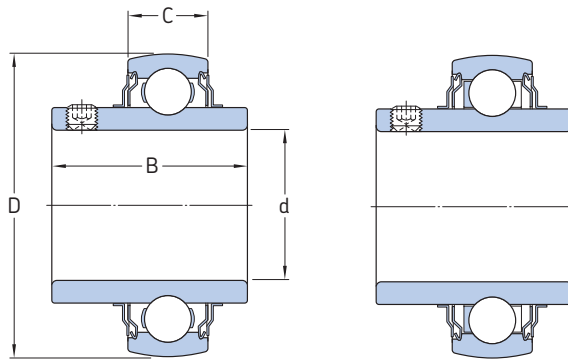
Principal dimensions				Basic load ratings		Limiting speed	Limiting temperature		Running in required	Mass	Designations
d	D	B	C	dynamic	static		°C	°F			
mm				kN		r/min	°C	°F	–	kg	–
20	47	31	14	12,7	6,55	130	250	480	•	0,14	YAR 204-2FW/VA201
	47	31	14	12,7	6,55	260	350	660	–	0,14	YAR 204-2FW/VA228
25	52	34,1	15	14	7,8	110	250	480	•	0,17	YAR 205-2FW/VA201
	52	34,1	15	14	7,8	230	350	660	–	0,17	YAR 205-2FW/VA228
30	62	38,1	18	19,5	11,2	90	250	480	•	0,28	YAR 206-2FW/VA201
	62	38,1	18	19,5	11,2	190	350	660	–	0,28	YAR 206-2FW/VA228
35	72	42,9	19	25,5	15,3	80	250	480	•	0,41	YAR 207-2FW/VA201
	72	42,9	19	25,5	15,3	160	350	660	–	0,41	YAR 207-2FW/VA228 ¹⁾
40	80	49,2	21	30,7	19	70	250	480	•	0,55	YAR 208-2FW/VA201
	80	49,2	21	30,7	19	150	350	660	–	0,55	YAR 208-2FW/VA228
45	85	49,2	22	33,2	21,6	60	250	480	•	0,6	YAR 209-2FW/VA201
	85	49,2	22	33,2	21,6	130	350	660	–	0,6	YAR 209-2FW/VA228
50	90	51,6	22	35,1	23,2	60	250	480	•	0,69	YAR 210-2FW/VA201
	90	51,6	22	35,1	23,2	120	350	660	–	0,69	YAR 210-2FW/VA228
55	100	55,6	25	43,6	29	50	250	480	•	0,94	YAR 211-2FW/VA201
	100	55,6	25	43,6	29	110	350	660	–	0,94	YAR 211-2FW/VA228
60	110	65,1	26	52,7	36	50	250	480	•	1,35	YAR 212-2FW/VA201
	110	65,1	26	52,7	36	100	350	660	–	1,35	YAR 212-2FW/VA228

¹⁾ Check availability prior to incorporating in a bearing arrangement design.

Y-bearings for high temperature applications, inch shafts

d $\frac{3}{4}$ – 2 $\frac{15}{16}$ in.

19,05 – 74,613 mm



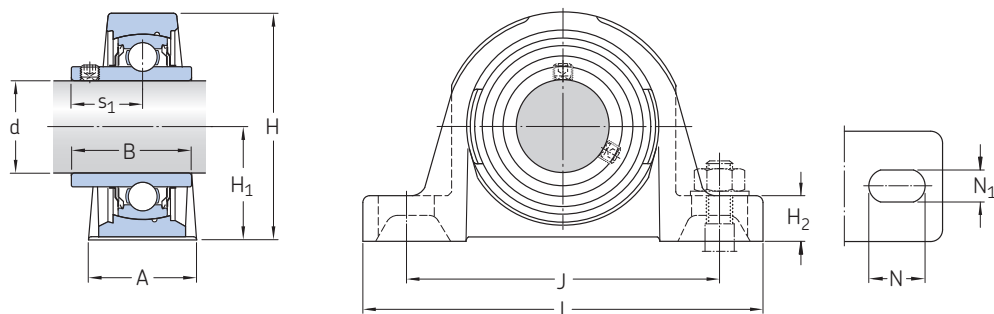
VA201

VA228

Principal dimensions				Basic load ratings		Limiting speed	Limiting temperature		Running in Mass required	Designations	
d	D	B	C	dynamic	static		°C	°F			
in./mm				C	C ₀	r/min	°C	°F	–	kg	–
$\frac{3}{4}$ 19,05	47 47	31 31	14 14	12,7 12,7	6,55 6,55	130 270	250 350	480 660	• –	0,17 0,17	YAR 204-012-2FW/VA201 YAR 204-012-2FW/VA228
1 25,4	52 52	34,1 34,1	15 15	14 14	7,8 7,8	110 230	250 350	480 660	• –	0,19 0,19	YAR 205-100-2FW/VA201 YAR 205-100-2FW/VA228
$1\frac{3}{16}$ 30,163	62 62	38,1 38,1	18 18	19,5 19,5	11,2 11,2	90 190	250 350	480 660	• –	0,31 0,31	YAR 206-103-2FW/VA201 ¹⁾ YAR 206-103-2FW/VA228
$1\frac{1}{4}$ 31,75	72 72	42,9 42,9	19 19	25,5 25,5	15,3 15,3	80 170	250 350	480 660	• –	0,52 0,52	YAR 207-104-2FW/VA201 ¹⁾ YAR 207-104-2FW/VA228
$1\frac{3}{8}$ 34,925	72 72	42,9 42,9	19 19	25,5 25,5	15,3 15,3	80 160	250 350	480 660	• –	0,46 0,46	YAR 207-106-2FW/VA201 YAR 207-106-2FW/VA228
$1\frac{7}{16}$ 36,513	72 72	42,9 42,9	19 19	25,5 25,5	15,3 15,3	80 160	250 350	480 660	• –	0,42 0,42	YAR 207-107-2FW/VA201 YAR 207-107-2FW/VA228
$1\frac{1}{2}$ 38,1	80 80	49,2 49,2	21 21	30,7 30,7	19 19	70 150	250 350	480 660	• –	0,59 0,59	YAR 208-108-2FW/VA201 YAR 208-108-2FW/VA228
$1\frac{11}{16}$ 42,863	85 85	49,2 49,2	22 22	33,2 33,2	21,6 21,6	70 140	250 350	480 660	• –	0,75 0,75	YAR 209-111-2FW/VA201 YAR 209-111-2FW/VA228
$1\frac{3}{4}$ 44,45	85 85	49,2 49,2	22 22	33,2 33,2	21,6 21,6	60 130	250 350	480 660	• –	0,62 0,62	YAR 209-112-2FW/VA201 ¹⁾ YAR 209-112-2FW/VA228
$1\frac{15}{16}$ 49,213	90 90	51,6 51,6	22 22	35,1 35,1	23,2 23,2	60 120	250 350	480 660	• –	0,78 0,78	YAR 210-115-2FW/VA201 ¹⁾ YAR 210-115-2FW/VA228
2 50,8	100 100	55,6 55,6	25 25	43,6 43,6	29 29	50 110	250 350	480 660	• –	1,1 1,1	YAR 211-200-2FW/VA201 YAR 211-200-2FW/VA228
$2\frac{3}{16}$ 55,563	100 100	55,6 55,6	25 25	25 25	29 29	50 110	250 350	480 660	• –	1,05 1,05	YAR 211-203-2FW/VA201 ¹⁾ YAR 211-203-2FW/VA228 ¹⁾
$2\frac{7}{16}$ 61,913	110 110	65,1 65,1	26 26	52,7 52,7	36 36	50 100	250 350	480 660	• –	1,35 1,35	YAR 212-207-2FW/VA201 YAR 212-207-2FW/VA228
$2\frac{15}{16}$ 74,613	130 130	73,1 73,1	29 29	66,3 66,3	49 49	40 80	250 350	480 660	• –	2,2 2,2	YAR 215-215-2FW/VA201 YAR 215-215-2FW/VA228

¹⁾ Check availability prior to incorporating in a bearing arrangement design.

Y-bearing plummer block units for high temperature applications, metric shafts
d 20 – 60 mm



Dimensions											Mass	Designations
d	A	B	H	H ₁	H ₂	J	L	N	N ₁	s ₁		
mm											kg	–
20	32	31	64	33,3	14	97	127	20,5	11,5	18,3	0,57	SY 20 TF/VA201
	32	31	64	33,3	14	97	127	20,5	11,5	18,3	0,57	SY 20 TF/VA228
25	36	34,1	70	36,5	16	102	130	19,5	11,5	19,8	0,73	SY 25 TF/VA201
	36	34,1	70	36,5	16	102	130	19,5	11,5	19,8	0,73	SY 25 TF/VA228
30	40	38,1	82	42,9	16,5	117,5	152	23,5	14	22,2	1,1	SY 30 TF/VA201
	40	38,1	82	42,9	16,5	117,5	152	23,5	14	22,2	1,1	SY 30 TF/VA228
35	45	42,9	93	47,6	19	126	160	21	14	25,4	1,45	SY 35 TF/VA201
	45	42,9	93	47,6	19	126	160	21	14	25,4	1,45	SY 35 TF/VA228 ¹⁾
40	48	49,2	99	49,2	19	135,5	175	24,5	14	30,2	1,8	SY 40 TF/VA201
	48	49,2	99	49,2	19	135,5	175	24,5	14	30,2	1,8	SY 40 TF/VA228
45	48,3	49,2	107	54	21	143,5	187	22,5	14	30,2	2,3	SY 45 TF/VA201
	48,3	49,2	107	54	21	143,5	187	22,5	14	30,2	2,3	SY 45 TF/VA228
50	54	51,6	114	57,2	22	157	203	26	18	32,6	2,7	SY 50 TF/VA201
	54	51,6	114	57,2	22	157	203	26	18	32,6	2,7	SY 50 TF/VA228
55	60,4	55,6	127	63,5	23,8	171,5	219,1	27,5	18	33,4	3,6	SY 55 TF/VA201
	60,4	55,6	127	63,5	23,8	171,5	219,1	27,5	18	33,4	3,6	SY 55 TF/VA228
60	60	65,1	138	69,9	26,5	190,5	240	29,5	18	39,7	4,5	SY 60 TF/VA201
	60	65,1	138	69,9	26,5	190,5	240	29,5	18	39,7	4,5	SY 60 TF/VA228

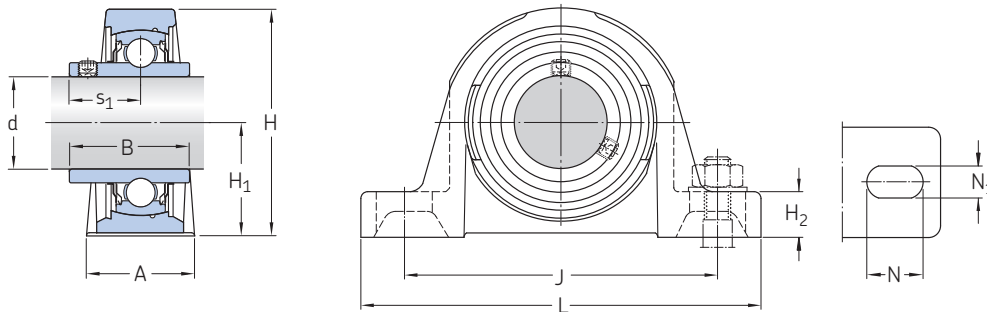
¹⁾ Check availability prior to incorporating in a bearing arrangement design.

Designation Bearing unit	Bearing	Basic load ratings		Limiting speed	Limiting temperature		Running in required
		dynamic C	static C ₀		°C	°F	
–		kN		r/min	°C	°F	–
SY 20 TF/VA201	YAR 204-2FW/VA201	12,7	6,55	130	250	480	•
SY 20 TF/VA228	YAR 204-2FW/VA228	12,7	6,55	260	350	660	–
SY 25 TF/VA201	YAR 205-2FW/VA201	14	7,8	110	250	480	•
SY 25 TF/VA228	YAR 205-2FW/VA228	14	7,8	230	350	660	–
SY 30 TF/VA201	YAR 206-2FW/VA201	19,5	11,2	90	250	480	•
SY 30 TF/VA228	YAR 206-2FW/VA228	19,5	11,2	190	350	660	–
SY 35 TF/VA201	YAR 207-2FW/VA201	25,5	15,3	80	250	480	•
SY 35 TF/VA228¹⁾	YAR 207-2FW/VA228	25,5	15,3	160	350	660	–
SY 40 TF/VA201	YAR 208-2FW/VA201	30,7	19	70	250	480	•
SY 40 TF/VA228	YAR 208-2FW/VA228	30,7	19	150	350	660	–
SY 45 TF/VA201	YAR 209-2FW/VA201	33,2	21,6	60	250	480	•
SY 45 TF/VA228	YAR 209-2FW/VA228	33,2	21,6	130	350	660	–
SY 50 TF/VA201	YAR 210-2FW/VA201	35,1	23,2	60	250	480	•
SY 50 TF/VA228	YAR 210-2FW/VA228	35,1	23,2	120	350	660	–
SY 55 TF/VA201	YAR 211-2FW/VA201	43,6	29	50	250	480	•
SY 55 TF/VA228	YAR 211-2FW/VA228	43,6	29	110	350	660	–
SY 60 TF/VA201	YAR 212-2FW/VA201	52,7	36	50	250	480	•
SY 60 TF/VA228	YAR 212-2FW/VA228	52,7	36	100	350	660	–

Y-bearing plummer block units for high temperature applications, inch shafts

d $\frac{3}{4} - 2 \frac{15}{16}$ in.

19,05 – 74,613 mm

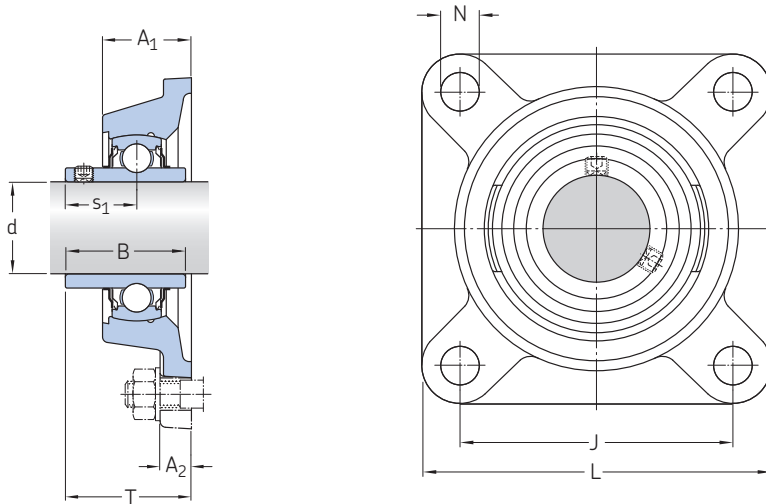


Dimensions											Mass	Designations
d	A	B	H	H ₁	H ₂	J	L	N	N ₁	s ₁		
in./mm	mm										kg	–
$\frac{3}{4}$	32	31	64	33,3	14	97	127	20,5	11,5	18,3	0,6	SY 3/4 TF/VA201
19,05	32	31	64	33,3	14	97	127	20,5	11,5	18,3	0,6	SY 3/4 TF/VA228
1	36	34,1	70	36,5	16	102	130	19,5	11,5	19,8	0,75	SY 1. TF/VA201
25,4	36	34,1	70	36,5	16	102	130	19,5	11,5	19,8	0,75	SY 1. TF/VA228
$1 \frac{3}{16}$	40	38,1	82	42,9	16,5	117,5	152	23,5	14	22,2	1,15	SY 1.3/16 TF/VA201 ¹⁾
30,163	40	38,1	82	42,9	16,5	117,5	152	23,5	14	22,2	1,15	SY 1.3/16 TF/VA228
$1 \frac{1}{4}$	45	42,9	93	47,6	19	126	160	21	14	25,4	1,55	SY 1.1/4 TF/VA201 ¹⁾
31,75	45	42,9	93	47,6	19	126	160	21	14	25,4	1,55	SY 1.1/4 TF/VA228
$1 \frac{3}{8}$	45	42,9	93	47,6	19	126	160	21	14	25,4	1,5	SY 1.3/8 TF/VA201
34,925	45	42,9	93	47,6	19	126	160	21	14	25,4	1,5	SY 1.3/8 TF/VA228
$1 \frac{7}{16}$	45	42,9	93	47,6	19	126	160	21	14	25,4	1,45	SY 1.7/16 TF/VA201
36,513	45	42,9	93	47,6	19	126	160	21	14	25,4	1,45	SY 1.7/16 TF/VA228
$1 \frac{1}{2}$	48	49,2	99	49,2	19	135,5	175	24,5	14	30,2	1,85	SY 1.1/2 TF/VA201
38,1	48	49,2	99	49,2	19	135,5	175	24,5	14	30,2	1,85	SY 1.1/2 TF/VA228
$1 \frac{11}{16}$	48,3	49,2	107	54	21	143,5	187	22,5	14	30,2	2,45	SY 1.11/16 TF/VA201
42,863	48,3	49,2	107	54	21	143,5	187	22,5	14	30,2	2,45	SY 1.11/16 TF/VA228
$1 \frac{3}{4}$	48,3	49,2	107	54	21	143,5	187	22,5	14	30,2	2,3	SY 1.3/4 TF/VA201 ¹⁾
44,45	48,3	49,2	107	54	21	143,5	187	22,5	14	30,2	2,3	SY 1.3/4 TF/VA228
$1 \frac{15}{16}$	54	51,6	114	57,2	22	157	203	26	18	32,6	2,8	SY 1.15/16 TF/VA201 ¹⁾
49,213	54	51,6	114	57,2	22	157	203	26	18	32,6	2,8	SY 1.15/16 TF/VA228
2	60,4	55,6	127	63,5	23,8	171,5	219,1	27,5	18	33,4	3,75	SY 2. TF/VA201
50,8	60,4	55,6	127	63,5	23,8	171,5	219,1	27,5	18	33,4	3,75	SY 2. TF/VA228
$2 \frac{3}{16}$	60,4	55,6	127	63,5	23,8	171,5	219,1	27,5	18	33,4	3,7	SY 2.3/16 TF/VA201 ¹⁾
55,563	60,4	55,6	127	63,5	23,8	171,5	219,1	27,5	18	33,4	3,7	SY 2.3/16 TF/VA228 ¹⁾
$2 \frac{7}{16}$	60	65,1	138	69,9	26,5	190,5	240	29,5	18	39,7	4,5	SY 2.7/16 TF/VA201
61,913	60	65,1	138	69,9	26,5	190,5	240	29,5	18	39,7	4,5	SY 2.7/16 TF/VA228
$2 \frac{15}{16}$	71,6	73,1	166,1	82,55	32,8	215,9	279	35	22,23	46,11	7,5	SY 2.15/16 TF/VA201
74,613	71,6	73,1	166,1	82,55	32,8	215,9	279	35	22,23	46,11	7,5	SY 2.15/16 TF/VA228

¹⁾ Check availability prior to incorporating in a bearing arrangement design.

Designation Bearing unit	Bearing	Basic load ratings		Limiting speed	Limiting temperature		Running in required
		dynamic C	static C ₀		°C	°F	
–		kN		r/min	°C	°F	–
SY 3/4 TF/VA201	YAR 204-012-2FW/VA201	12,7	6,55	130	250	480	•
SY 3/4 TF/VA228	YAR 204-012-2FW/VA228	12,7	6,55	270	350	660	–
SY 1. TF/VA201	YAR 205-100-2FW/VA201	14	7,8	110	250	480	•
SY 1. TF/VA228	YAR 205-100-2FW/VA228	14	7,8	230	350	660	–
SY 1.3/16 TF/VA201¹⁾	YAR 206-103-2FW/VA201	19,5	11,2	90	250	480	•
SY 1.3/16 TF/VA228	YAR 206-103-2FW/VA228	19,5	11,2	190	350	660	–
SY 1.1/4 TF/VA201¹⁾	YAR 207-104-2FW/VA201	25,5	15,3	80	250	480	•
SY 1.1/4 TF/VA228	YAR 207-104-2FW/VA228	25,5	15,3	170	350	660	–
SY 1.3/8 TF/VA201	YAR 207-106-2FW/VA201	25,5	15,3	80	250	480	•
SY 1.3/8 TF/VA228	YAR 207-106-2FW/VA228	25,5	15,3	160	350	660	–
SY 1.7/16 TF/VA201	YAR 207-107-2FW/VA201	25,5	15,3	80	250	480	•
SY 1.7/16 TF/VA228	YAR 207-107-2FW/VA228	25,5	15,3	160	350	660	–
SY 1.1/2 TF/VA201	YAR 208-108-2FW/VA201	30,7	19	70	250	480	•
SY 1.1/2 TF/VA228	YAR 208-108-2FW/VA228	30,7	19	150	350	660	–
SY 1.11/16 TF/VA201	YAR 209-111-2FW/VA201	33,2	21,6	70	250	480	•
SY 1.11/16 TF/VA228	YAR 209-111-2FW/VA228	33,2	21,6	140	350	660	–
SY 1.3/4 TF/VA201¹⁾	YAR 209-112-2FW/VA201	33,2	21,6	60	250	480	•
SY 1.3/4 TF/VA228	YAR 209-112-2FW/VA228	33,2	21,6	130	350	660	–
SY 1.15/16 TF/VA201¹⁾	YAR 210-115-2FW/VA201	35,1	23,2	60	250	480	•
SY 1.15/16 TF/VA228	YAR 210-115-2FW/VA228	35,1	23,2	120	350	660	–
SY 2. TF/VA201	YAR 211-200-2FW/VA201	43,6	29	50	250	480	•
SY 2. TF/VA228	YAR 211-200-2FW/VA228	43,6	29	110	350	660	–
SY 2.3/16 TF/VA201¹⁾	YAR 211-203-2FW/VA201	25	29	50	250	480	•
SY 2.3/16 TF/VA228¹⁾	YAR 211-203-2FW/VA228	25	29	110	350	660	–
SY 2.7/16 TF/VA201	YAR 212-207-2FW/VA201	52,7	36	50	250	480	•
SY 2.7/16 TF/VA228	YAR 212-207-2FW/VA228	52,7	36	100	350	660	–
SY 2.15/16 TF/VA201	YAR 215-215-2FW/VA201	66,3	49	40	250	480	•
SY 2.15/16 TF/VA228	YAR 215-215-2FW/VA228	66,3	49	80	350	660	–

**Flanged Y-bearing units with a cast housing with a square flange for high temperature applications, metric shafts
d 20 – 60 mm**



Dimensions									Mass	Designations
d	A ₁	A ₂	B	J	L	N	s ₁	T		
mm									kg	–
20	29,5	11	31	63,5	86	11,1	18,3	37,3	0,6	FY 20 TF/VA201
	29,5	11	31	63,5	86	11,1	18,3	37,3	0,6	FY 20 TF/VA228
25	30	12	34,1	70	95	12,7	19,8	38,8	0,77	FY 25 TF/VA201
	30	12	34,1	70	95	12,7	19,8	38,8	0,77	FY 25 TF/VA228
30	32,5	13	38,1	82,5	108	12,7	22,2	42,2	1,1	FY 30 TF/VA201
	32,5	13	38,1	82,5	108	12,7	22,2	42,2	1,1	FY 30 TF/VA228
35	34,5	13	42,9	92	118	14,3	25,4	46,4	1,4	FY 35 TF/VA201
	34,5	13	42,9	92	118	14,3	25,4	46,4	1,4	FY 35 TF/VA228 ¹⁾
40	38,5	14	49,2	101,5	130	14,3	30,2	54,2	1,9	FY 40 TF/VA201
	38,5	14	49,2	101,5	130	14,3	30,2	54,2	1,9	FY 40 TF/VA228
45	39	14	49,2	105	137	15,9	30,2	54,2	2,1	FY 45 TF/VA201
	39	14	49,2	105	137	15,9	30,2	54,2	2,1	FY 45 TF/VA228
50	43	15	51,6	111	143	15,9	32,6	60,6	2,5	FY 50 TF/VA201
	43	15	51,6	111	143	15,9	32,6	60,6	2,5	FY 50 TF/VA228
55	47,5	16	55,6	130	162	19	33,4	64,4	3,6	FY 55 TF/VA201
	47,5	16	55,6	130	162	19	33,4	64,4	3,6	FY 55 TF/VA228
60	52	17	65,1	143	175	19	39,7	73,7	4,65	FY 60 TF/VA201
	52	17	65,1	143	175	19	39,7	73,7	4,65	FY 60 TF/VA228

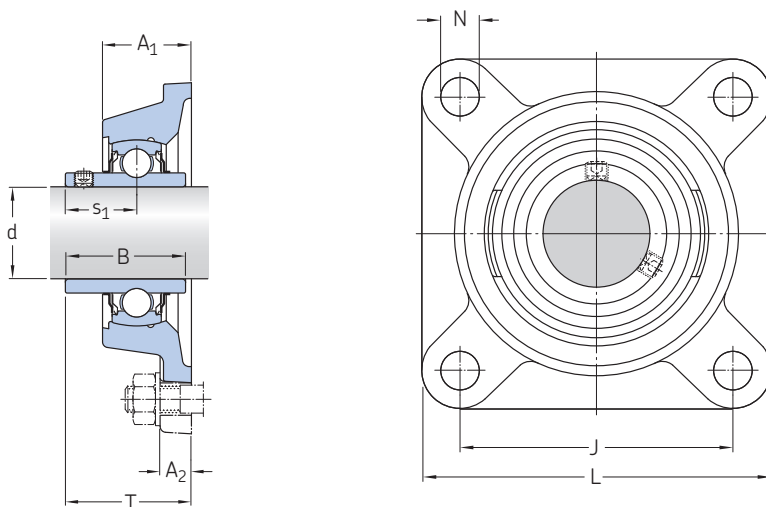
¹⁾ Check availability prior to incorporating in a bearing arrangement design.

Designation Bearing unit	Bearing	Basic load ratings		Limiting speed	Limiting temperature		Running in required
		dynamic C	static C ₀		°C	°F	
–		kN		r/min	°C	°F	–
FY 20 TF/VA201	YAR 204-2FW/VA201	12,7	6,55	130	250	480	•
FY 20 TF/VA228	YAR 204-2FW/VA228	12,7	6,55	260	350	660	–
FY 25 TF/VA201	YAR 205-2FW/VA201	14	7,8	110	250	480	•
FY 25 TF/VA228	YAR 205-2FW/VA228	14	7,8	230	350	660	–
FY 30 TF/VA201	YAR 206-2FW/VA201	19,5	11,2	90	250	480	•
FY 30 TF/VA228	YAR 206-2FW/VA228	19,5	11,2	190	350	660	–
FY 35 TF/VA201	YAR 207-2FW/VA201	25,5	15,3	80	250	480	•
FY 35 TF/VA228¹⁾	YAR 207-2FW/VA228	25,5	15,3	160	350	660	–
FY 40 TF/VA201	YAR 208-2FW/VA201	30,7	19	70	250	480	•
FY 40 TF/VA228	YAR 208-2FW/VA228	30,7	19	150	350	660	–
FY 45 TF/VA201	YAR 209-2FW/VA201	33,2	21,6	60	250	480	•
FY 45 TF/VA228	YAR 209-2FW/VA228	33,2	21,6	130	350	660	–
FY 50 TF/VA201	YAR 210-2FW/VA201	35,1	23,2	60	250	480	•
FY 50 TF/VA228	YAR 210-2FW/VA228	35,1	23,2	120	350	660	–
FY 55 TF/VA201	YAR 211-2FW/VA201	43,6	29	50	250	480	•
FY 55 TF/VA228	YAR 211-2FW/VA228	43,6	29	110	350	660	–
FY 60 TF/VA201	YAR 212-2FW/VA201	52,7	36	50	250	480	•
FY 60 TF/VA228	YAR 212-2FW/VA228	52,7	36	100	350	660	–

Flanged Y-bearing units with a cast housing with a square flange for high temperature applications, inch shafts

d $\frac{3}{4}$ – 2 $\frac{15}{16}$ in.

19,05 – 74,613 mm

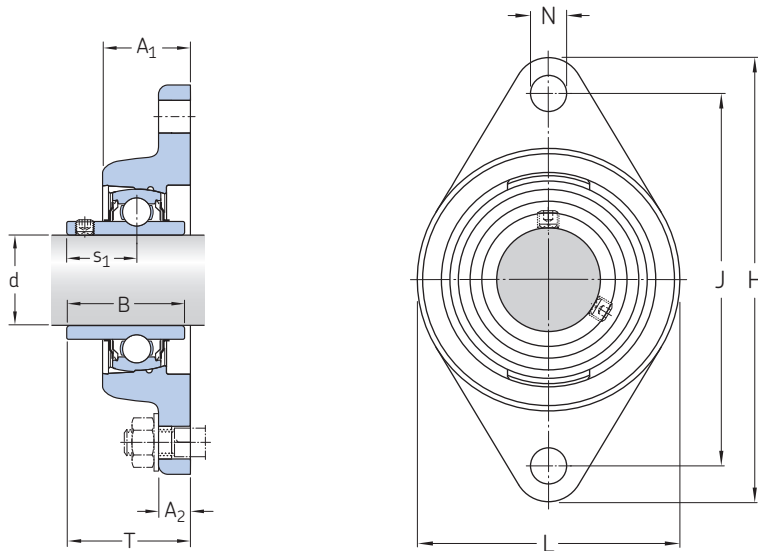


Dimensions									Mass	Designations
d	A ₁	A ₂	B	J	L	N	s ₁	T		
in./mm									kg	–
$\frac{3}{4}$	29,5	11	31	63,5	86	11,1	18,3	37,3	0,63	FY $\frac{3}{4}$ TF/VA201
19,05	29,5	11	31	63,5	86	11,1	18,3	37,3	0,63	FY $\frac{3}{4}$ TF/VA228
1	30	12	34,1	70	95	12,7	19,8	38,8	0,79	FY 1. TF/VA201
25,4	30	12	34,1	70	95	12,7	19,8	38,8	0,79	FY 1. TF/VA228
$1\frac{3}{16}$	32,5	13	38,1	82,5	108	12,7	22,2	42,2	1,1	FY $1.3/16$ TF/VA201 ¹⁾
30,163	32,5	13	38,1	82,5	108	12,7	22,2	42,2	1,1	FY $1.3/16$ TF/VA228
$1\frac{1}{4}$	34,5	13	42,9	92	118	14,3	25,4	46,4	1,5	FY $1.1/4$ TF/VA201 ¹⁾
31,75	34,5	13	42,9	92	118	14,3	25,4	46,4	1,5	FY $1.1/4$ TF/VA228
$1\frac{7}{16}$	34,5	13	42,9	92	118	14,3	25,4	46,4	1,4	FY $1.7/16$ TF/VA201
36,513	34,5	13	42,9	92	118	14,3	25,4	46,4	1,4	FY $1.7/16$ TF/VA228
$1\frac{1}{2}$	38,5	14	49,2	101,5	130	14,3	30,2	54,2	1,95	FY $1.1/2$ TF/VA201
38,1	38,5	14	49,2	101,5	130	14,3	30,2	54,2	1,95	FY $1.1/2$ TF/VA228
$1\frac{11}{16}$	39	14	49,2	105	137	15,9	30,2	54,2	2,25	FY $1.11/16$ TF/VA201
42,863	39	14	49,2	105	137	15,9	30,2	54,2	2,25	FY $1.11/16$ TF/VA228
$1\frac{3}{4}$	39	14	49,2	105	137	15,9	30,2	54,2	2,1	FY $1.3/4$ TF/VA201 ¹⁾
44,45	39	14	49,2	105	137	15,9	30,2	54,2	2,1	FY $1.3/4$ TF/VA228
$1\frac{15}{16}$	43	15	51,6	111	143	15,9	32,6	60,6	2,6	FY $1.15/16$ TF/VA201 ¹⁾
49,213	43	15	51,6	111	143	15,9	32,6	60,6	2,6	FY $1.15/16$ TF/VA228
2	47,5	16	55,6	130	162	19	33,4	64,4	3,75	FY 2. TF/VA201
50,8	47,5	16	55,6	130	162	19	33,4	64,4	3,75	FY 2. TF/VA228
$2\frac{3}{16}$	47,5	16	55,6	130	162	19	33,4	64,4	3,7	FY $2.3/16$ TF/VA201 ¹⁾
55,563	47,5	16	55,6	130	162	19	33,4	64,4	3,7	FY $2.3/16$ TF/VA228 ¹⁾
$2\frac{7}{16}$	52	17	65,1	143	175	19	39,7	73,7	4,65	FY $2.7/16$ TF/VA201
61,913	52	17	65,1	143	175	19	39,7	73,7	4,65	FY $2.7/16$ TF/VA228
$2\frac{15}{16}$	65,1	19	73,1	152,4	196,9	22,2	46,11	87,4	6,3	FY $2.15/16$ TF/VA201
74,613	65,1	19	73,1	152,4	196,9	22,2	46,11	87,4	6,3	FY $2.15/16$ TF/VA228

¹⁾ Check availability prior to incorporating in a bearing arrangement design.

Designation Bearing unit	Bearing	Basic load ratings		Limiting speed	Limiting temperature		Running in required
		dynamic C	static C ₀		°C	°F	
–		kN		r/min	°C	°F	–
FY 3/4 TF/VA201 FY 3/4 TF/VA228	YAR 204-012-2FW/VA201 YAR 204-012-2FW/VA228	12,7 12,7	6,55 6,55	130 270	250 350	480 660	• –
FY 1. TF/VA201 FY 1. TF/VA228	YAR 205-100-2FW/VA201 YAR 205-100-2FW/VA228	14 14	7,8 7,8	110 230	250 350	480 660	• –
FY 1.3/16 TF/VA201¹⁾ FY 1.3/16 TF/VA228	YAR 206-103-2FW/VA201 YAR 206-103-2FW/VA228	19,5 19,5	11,2 11,2	90 190	250 350	480 660	• –
FY 1.1/4 TF/VA201¹⁾ FY 1.1/4 TF/VA228	YAR 207-104-2FW/VA201 YAR 207-104-2FW/VA228	25,5 25,5	15,3 15,3	80 170	250 350	480 660	• –
FY 1.7/16 TF/VA201 FY 1.7/16 TF/VA228	YAR 207-107-2FW/VA201 YAR 207-107-2FW/VA228	25,5 25,5	15,3 15,3	80 160	250 350	480 660	• –
FY 1.1/2 TF/VA201 FY 1.1/2 TF/VA228	YAR 208-108-2FW/VA201 YAR 208-108-2FW/VA228	30,7 30,7	19 19	70 150	250 350	480 660	• –
FY 1.11/16 TF/VA201 FY 1.11/16 TF/VA228	YAR 209-111-2FW/VA201 YAR 209-111-2FW/VA228	33,2 33,2	21,6 21,6	70 140	250 350	480 660	• –
FY 1.3/4 TF/VA201¹⁾ FY 1.3/4 TF/VA228	YAR 209-112-2FW/VA201 YAR 209-112-2FW/VA228	33,2 33,2	21,6 21,6	60 130	250 350	480 660	• –
FY 1.15/16 TF/VA201¹⁾ FY 1.15/16 TF/VA228	YAR 210-115-2FW/VA201 YAR 210-115-2FW/VA228	35,1 35,1	23,2 23,2	60 120	250 350	480 660	• –
FY 2. TF/VA201 FY 2. TF/VA228	YAR 211-200-2FW/VA201 YAR 211-200-2FW/VA228	43,6 43,6	29 29	50 110	250 350	480 660	• –
FY 2.3/16 TF/VA201¹⁾ FY 2.3/16 TF/VA228¹⁾	YAR 211-203-2FW/VA201 YAR 211-203-2FW/VA228	25 25	29 29	50 110	250 350	480 660	• –
FY 2.7/16 TF/VA201 FY 2.7/16 TF/VA228	YAR 212-207-2FW/VA201 YAR 212-207-2FW/VA228	52,7 52,7	36 36	50 100	250 350	480 660	• –
FY 2.15/16 TF/VA201 FY 2.15/16 TF/VA228	YAR 215-215-2FW/VA201 YAR 215-215-2FW/VA228	66,3 66,3	49 49	40 80	250 350	480 660	• –

Flanged Y-bearing units with a cast housing with an oval flange for high temperature applications, metric shafts
d 20 – 55 mm



Dimensions										Mass	Designations
d	A ₁	A ₂	B	H	J	L	N	s ₁	T		
mm										kg	–
20	29,61	11,11	31	112	89,7	60,5	11,1	18,3	32,6	0,5	FYT 20 TF/VA201
	29,61	11,11	31	112	89,7	60,5	11,1	18,3	32,6	0,5	FYT 20 TF/VA228
25	30	12	34,1	124	98,8	70	12,7	19,8	38,8	0,63	FYT 25 TF/VA201
	30	12	34,1	124	98,8	70	12,7	19,8	38,8	0,63	FYT 25 TF/VA228
30	32,7	13	38,1	141,5	116,7	83	12,7	22,2	42,2	0,93	FYT 30 TF/VA201
	32,7	13	38,1	141,5	116,7	83	12,7	22,2	42,2	0,93	FYT 30 TF/VA228
35	34,9	13	42,9	156	130,2	96	14,3	25,4	46,4	1,25	FYT 35 TF/VA201
	34,9	13	42,9	156	130,2	96	14,3	25,4	46,4	1,25	FYT 35 TF/VA228 ¹⁾
40	38,5	14	49,2	171,5	143,7	102	14,3	30,2	54,2	1,65	FYT 40 TF/VA201
	38,5	14	49,2	171,5	143,7	102	14,3	30,2	54,2	1,65	FYT 40 TF/VA228
45	39	14	49,2	178,5	148,4	111	15,9	30,2	54,2	1,8	FYT 45 TF/VA201
	39	14	49,2	178,5	148,4	111	15,9	30,2	54,2	1,8	FYT 45 TF/VA228
50	43	15	51,6	189	157,2	116	15,9	32,6	60,6	2,25	FYT 50 TF/VA201
	43	15	51,6	189	157,2	116	15,9	32,6	60,6	2,25	FYT 50 TF/VA228
55	47,63	20,64	55,6	215,9	184,15	127	19	33,4	62,9	3,3	FYT 55 TF/VA201
	47,63	20,64	55,6	215,9	184,15	127	19	33,4	62,9	3,3	FYT 55 TF/VA228

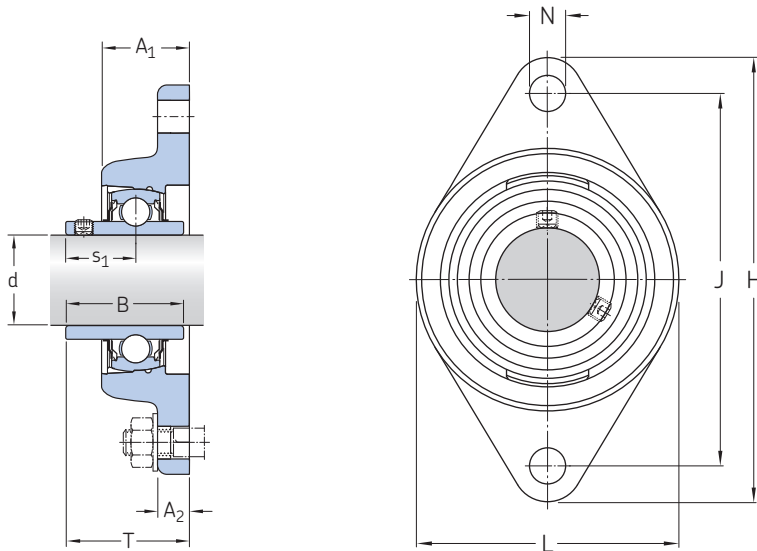
¹⁾ Check availability prior to incorporating in a bearing arrangement design.

Designation Bearing unit	Bearing	Basic load ratings		Limiting speed	Limiting temperature		Running in required
		dynamic C	static C ₀		°C	°F	
–		kN		r/min	°C	°F	–
FYT 20 TF/VA201	YAR 204-2FW/VA201	12,7	6,55	130	250	480	•
FYT 20 TF/VA228	YAR 204-2FW/VA228	12,7	6,55	260	350	660	–
FYT 25 TF/VA201	YAR 205-2FW/VA201	14	7,8	110	250	480	•
FYT 25 TF/VA228	YAR 205-2FW/VA228	14	7,8	230	350	660	–
FYT 30 TF/VA201	YAR 206-2FW/VA201	19,5	11,2	90	250	480	•
FYT 30 TF/VA228	YAR 206-2FW/VA228	19,5	11,2	190	350	660	–
FYT 35 TF/VA201	YAR 207-2FW/VA201	25,5	15,3	80	250	480	•
FYT 35 TF/VA228 ¹⁾	YAR 207-2FW/VA228	25,5	15,3	160	350	660	–
FYT 40 TF/VA201	YAR 208-2FW/VA201	30,7	19	70	250	480	•
FYT 40 TF/VA228	YAR 208-2FW/VA228	30,7	19	150	350	660	–
FYT 45 TF/VA201	YAR 209-2FW/VA201	33,2	21,6	60	250	480	•
FYT 45 TF/VA228	YAR 209-2FW/VA228	33,2	21,6	130	350	660	–
FYT 50 TF/VA201	YAR 210-2FW/VA201	35,1	23,2	60	250	480	•
FYT 50 TF/VA228	YAR 210-2FW/VA228	35,1	23,2	120	350	660	–
FYT 55 TF/VA201	YAR 211-2FW/VA201	43,6	29	50	250	480	•
FYT 55 TF/VA228	YAR 211-2FW/VA228	43,6	29	110	350	660	–

Flanged Y-bearing units with a cast housing with an oval flange for high temperature applications, inch shafts

d 3/4 – 2 i

19,05 – 50,8 mm



Dimensions										Mass	Designations
d	A ₁	A ₂	B	H	J	L	N	s ₁	T		
in./mm										kg	–
3/4	29,61	11,11	31	112	89,7	60,5	11,1	18,3	32,6	0,53	FYT 3/4 TF/VA201
19,05	29,61	11,11	31	112	89,7	60,5	11,1	18,3	32,6	0,53	FYT 3/4 TF/VA228
1	30	12	34,1	124	98,8	70	12,7	19,8	38,8	0,65	FYT 1. TF/VA201
25,4	30	12	34,1	124	98,8	70	12,7	19,8	38,8	0,65	FYT 1. TF/VA228
1 1/4	34,9	13	42,9	156	130,2	96	14,3	25,4	46,4	1,38	FYT 1.1/4 TF/VA201 ¹⁾
31,75	34,9	13	42,9	156	130,2	96	14,3	25,4	46,4	1,38	FYT 1.1/4 TF/VA228
1 7/16	34,9	13	42,9	156	130,2	96	14,3	25,4	46,4	1,32	FYT 1.3/8 TF/VA201
36,513	34,9	13	42,9	156	130,2	96	14,3	25,4	46,4	1,32	FYT 1.3/8 TF/VA228
1 1/2	38,5	14	49,2	171,5	143,7	102	14,3	30,2	54,2	1,69	FYT 1.1/2 TF/VA201
38,1	38,5	14	49,2	171,5	143,7	102	14,3	30,2	54,2	1,69	FYT 1.1/2 TF/VA228
1 11/16	39	14	49,2	178,5	148,4	111	15,9	30,2	54,2	1,95	FYT 1.11/16 TF/VA201
42,863	39	14	49,2	178,5	148,4	111	15,9	30,2	54,2	1,95	FYT 1.11/16 TF/VA228
1 3/4	39	14	49,2	178,5	148,4	111	15,9	30,2	54,2	1,82	FYT 1.3/4 TF/VA201 ¹⁾
44,45	39	14	49,2	178,5	148,4	111	15,9	30,2	54,2	1,82	FYT 1.3/4 TF/VA228
1 15/16	43	15	51,6	189	157,2	116	15,9	32,6	60,6	2,33	FYT 1.15/16 TF/VA201 ¹⁾
49,213	43	15	51,6	189	157,2	116	15,9	32,6	60,6	2,33	FYT 1.15/16 TF/VA228
2	47,63	20,64	55,6	215,9	184,15	127	19	33,4	69	3,45	FYT 2. TF/VA201
50,8	47,63	20,64	55,6	215,9	184,15	127	19	33,4	69	3,45	FYT 2. TF/VA228

¹⁾ Check availability prior to incorporating in a bearing arrangement design.

Designation Bearing unit	Bearing	Basic load ratings		Limiting speed	Limiting temperature		Running in required
		dynamic C	static C ₀		°C	°F	
–		kN		r/min	°C	°F	–
FYT 3/4 TF/VA201 FYT 3/4 TF/VA228	YAR 204-012-2FW/VA201 YAR 204-012-2FW/VA228	12,7 12,7	6,55 6,55	130 270	250 350	480 660	• –
FYT 1. TF/VA201 FYT 1. TF/VA228	YAR 205-100-2FW/VA201 YAR 205-100-2FW/VA228	14 14	7,8 7,8	110 230	250 350	480 660	• –
FYT 1.1/4 TF/VA201 ¹⁾ FYT 1.1/4 TF/VA228	YAR 207-104-2FW/VA201 YAR 207-104-2FW/VA228	25,5 25,5	15,3 15,3	80 170	250 350	480 660	• –
FYT 1.3/8 TF/VA201 FYT 1.3/8 TF/VA228	YAR 207-106-2FW/VA201 YAR 207-106-2FW/VA228	25,5 25,5	15,3 15,3	80 160	250 350	480 660	• –
FYT 1.1/2 TF/VA201 FYT 1.1/2 TF/VA228	YAR 208-108-2FW/VA201 YAR 208-108-2FW/VA228	30,7 30,7	19 19	70 150	250 350	480 660	• –
FYT 1.11/16 TF/VA201 FYT 1.11/16 TF/VA228	YAR 209-111-2FW/VA201 YAR 209-111-2FW/VA228	33,2 33,2	21,6 21,6	70 140	250 350	480 660	• –
FYT 1.3/4 TF/VA201 ¹⁾ FYT 1.3/4 TF/VA228	YAR 209-112-2FW/VA201 YAR 209-112-2FW/VA228	33,2 33,2	21,6 21,6	60 130	250 350	480 660	• –
FYT 1.15/16 TF/VA201 ¹⁾ FYT 1.15/16 TF/VA228	YAR 210-115-2FW/VA201 YAR 210-115-2FW/VA228	35,1 35,1	23,2 23,2	60 120	250 350	480 660	• –
FYT 2. TF/VA201 FYT 2. TF/VA228	YAR 211-200-2FW/VA201 YAR 211-200-2FW/VA228	43,6 43,6	29 29	50 110	250 350	480 660	• –

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