

3M™ Silicon Carbide Standard Modular Sliding Bearing Systems

Formerly known as EKasic®

The 3M™ Silicon Carbide Standard System is based on the 3M™ Silicon Carbide family of materials, which have proven their reliability in millions of bearings. It provides a series of carefully matched, ready-to-install components.

Why 3M™ Silicon Carbide Standard?

- Standardized machine element
- Optimally matched bearing components
- A set consists of sleeve-bushing-thrust washer
- Nominal diameter from 16 to 63 mm
- 12 different bearing sizes available
- All components available separately
- Can be used universally for all fluids
- Attractive pricing due to volume production
- Rapid availability
- Easy order processing

3M™ Silicon Carbide Standard Modular Sliding Bearing Sizes

No.	Nominal Diameter	Sleeve	Bushing	Thrust Bearing
1	16	16 × 10 × 16	25 × 16 × 16	25 × 10 × 4
2	16	16 × 10 × 16	32 × 16 × 16	32 × 10 × 5
3	20	20 × 10 × 20	32 × 20 × 20	32 × 10 × 5
4	25	25 × 16 × 25	32 × 25 × 25	32 × 16 × 5
5	25	25 × 16 × 25	45 × 25 × 25	45 × 16 × 6
6	32	32 × 16 × 32	45 × 32 × 32	45 × 16 × 6
7	32	32 × 20 × 32	45 × 32 × 32	45 × 20 × 6
8	32	32 × 25 × 32	45 × 32 × 32	45 × 25 × 6
9	45	45 × 25 × 45	63 × 45 × 45	63 × 25 × 8
10	45	45 × 32 × 45	63 × 45 × 45	63 × 32 × 8
11	50	50 × 32 × 50	63 × 50 × 50	63 × 32 × 8
12	63	63 × 45 × 63	80 × 63 × 63	80 × 45 × 10

All dimensions in [mm]

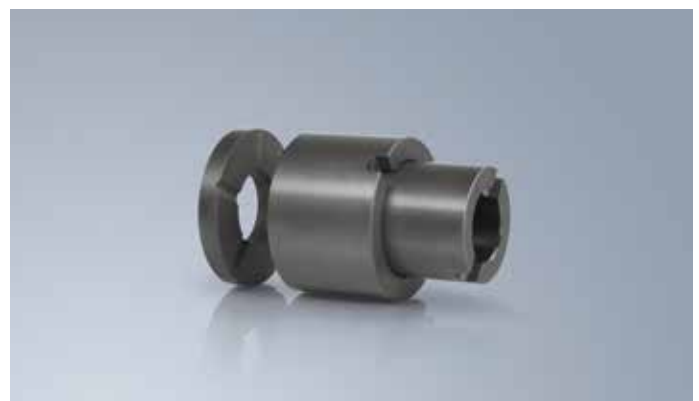
Applications

The main applications of the process fluid-lubricated 3M™ Silicon Carbide Sliding Bearings are magnetically coupled pumps, canned motor pumps, support bearings for immersion pumps and agitator as well magnetic drives for stirrers.

3M™ Silicon Carbide Sliding Bearings are excellent suitable for all applications in which the bearings are lubricated and supplied not by oil or grease, but must make do with the process fluid. This can be liquids of any type:

- Aggressive acids and alkalis
- Aqueous solutions
- Hot water
- Effluent
- Abrasive suspensions
- Organic liquids
- Liquid foods

3M™ Silicon Carbide Sliding Bearings can run in mixed lubrication conditions for long periods without seizure of the bearings occurring. At the same time, the wear rates are extremely low.



Technical Data

- Relative bearing clearance of 2.2% (based on the nominal diameter)
- Load capacity radial/axial 3.5 / 1.5 MPa
- Width/nominal diameter = 1/1
- Cylindrical dimensions tolerance class IT 7
- All functional surfaces machined
- Thermal expansion 3M™ Silicon Carbide Grade F
 $\alpha_{\text{SiC}} = 2.8 \times 10^{-6} \text{ 1/K (20 - 200}^\circ\text{C)}$
- Ceramic material 3M™ Silicon Carbide Grade F
- Twist lock through grooves
- The journal bearings can be bonded, shrink fit or clamped
- Centering of the shaft sleeve with O-rings or tolerance sleeves
- Lubrication groove included as standard feature

The load bearing strength of the bearings depends on parameters such as the type of lubricant (viscosity), the temperature and mode of operation (continuous running or frequent starts / stops). Higher loads should be verified with tests under realistic lubrication and operating conditions.

The modular designed 3M™ Silicon Carbide standard sliding bearing system makes it easy to choose the bearing size according to the loads. It is based on the tried and tested 3M™ Silicon Carbide Grade F material – a single-phase, non-porous sintered silicon carbide, with unrivalled corrosion resistance, hardness and reliability.

Sliding Bearings Have Enjoyed Worldwide Success for 35 Years

Product is manufactured and sold by 3M Technical Ceramics, Zweigniederlassung der 3M Deutschland GmbH.

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