

GETRO – ROLLES SLIDING BUSHING (CUSN8)



GETRO - Rolled sliding bushing (CuSn8) for high load capacity and service life.

We offer two versions in the CuSn8 rolled bushings product group. These GETRO-090 bushings are rolled from a bronze strip with a high specific density. Depending on customer requirements, diamond-shaped or spherical lubrication grooves are incorporated into the inner surface.

The GETRO-092 variant is made of bronze. These rolled bushings correspond to the GETRO-090 type, but are equipped with evenly distributed lubrication holes. The lubricant is applied to the holes during assembly. As a result, these rolled plain bearings are characterised by their good lubricant storage capacity and easy assembly.




GETRO-090 (DZA)

The GETRO-090 sliding bushings are rolled from a bronze strip with a high specific density. There are diamond-shaped or round lubricant indentation on the inner surface, incorporated as per the client's requirements.

This type of bushings is characterised by their high levels of load capacity and long service lives. They take the place of


the traditional bronze bushings, but are more economical and more compact. They are suitable for use in lifting vehicles and construction machinery, cars, tractors, trucks, machine tools and in the engine construction industry.

Profile	Design	Base material	Hardness	Temperature range	Resilience	Sliding speed limit
	GETRO-090 (DZA)	CuSn8P0.3 / CuSn6.5P0.1	HB90 HB120	-80°C to +200°C	75 N/mm ²	2.5 m/s

GETRO-092 (DZT)

The GETRO-092 bronze sliding bushings are equivalent to the GETRO-090 bushings, but with evenly distributed lubrication holes. The lubricant is dispensed into the holes during assembly. The GETRO-092 sliding bushings are characterised by their good lubricant capacity and simple assembly.

This type of sliding bushing is used with medium-sized loads and low speeds, such as in transport rollers, winding equipment, anchor winches and aligning machinery.

Profile	Design	Base material	Hardness	Temperature range	Resilience	Sliding speed limit
	GETRO-092 (DZT)	CuSn8P0.3 / CuSn6.5P0.1	HB90 HB120	-100°C to +200°C	60 N/mm ²	2.5 m/s

Properties

In addition to having high levels of corrosion resistance, this metal alloy is particularly suitable for use in connection with steel components. The lubrication of the sliding surface is guaranteed thanks to the integrated pockets, recesses and fluting. This insures a uniform film of lubricant between the sliding bushing and the shaft.

This series includes cylindrical sliding bushings and a number of other items made of bronze panels of 1, 1.5, 2 and 2.5 mm in thickness. The products contain all of the most common sliding components, such as thrust washers and customised panels.

Compared to solid bronze sliding bearings, these sliding bearings have the following benefits:

- High load capacity
- Chemical resistance to aggressive media
- High thermal conduction capacity
- Simple installation and maintenance
- Good availability of standard dimensions
- Economical production of special items
- Low space requirements

Sliding bushing construction

The lubrication pockets or holes help to reduce the contact surface and therefore also the friction:

- Round pockets = 21%
- Diamond-shaped pockets = 24%
- Holes = 15%

The round pockets guarantee an excellent distribution of the lubricant and make it possible to use oil. In this case, regular lubrication is required.

The construction factors for these sliding bearings are determined based on the impacting load, the sliding speed, the lubrication frequency, the hardness grade and the mating surface processing. The following mechanical properties must also be taken into account.

Mechanical properties to be taken into account			
Breaking load		Rm	470 N/mm ²
Elastic limit		Rp _{0.2}	250 N/mm ²
Expansion		A ₁₀	40 %
Hardness		HB	90 - 120
Roughness		Ra	2 µm
Thermal conduction capacity		λ	58 W/m × K
Linear expansion coefficient		α	2 × 10 ⁻⁵ C ⁻¹
Maximum working load statisch	static (speed up to 0.01 m/s) dynamic (speed up to 2 m/s)	p	120 N/mm ² 40 N/mm ²

Installation

The standard GETRO-090 and 092 sliding bushings are suitable for installation in housings with "H7" tolerances. However, an "H9" tolerance occurs at the inner diameter following installation. This depends on the properties of the bore.

If the inner diameter reaches the "H9" tolerance, then a shaft must be selected as per the tolerance fields "e" or "f". If shafts with the tolerance field "h" are used, it is advisable to increase the diameter of the housing from "H7" to "F7".

The GETRO-092 range consists of sliding bushings made entirely of bronze (CuSn8). These products are derived from the ttv - 090 sliding bearings. The only difference is the fact that the arched sections in the sliding surface have been replaced by holes with a greater lubricant intake capacity

Clearance	Lubricant		Specific load		Movement		
	Grease	Oil	High	Low	Fast	Oscillating	Slow
Reduced
Extended

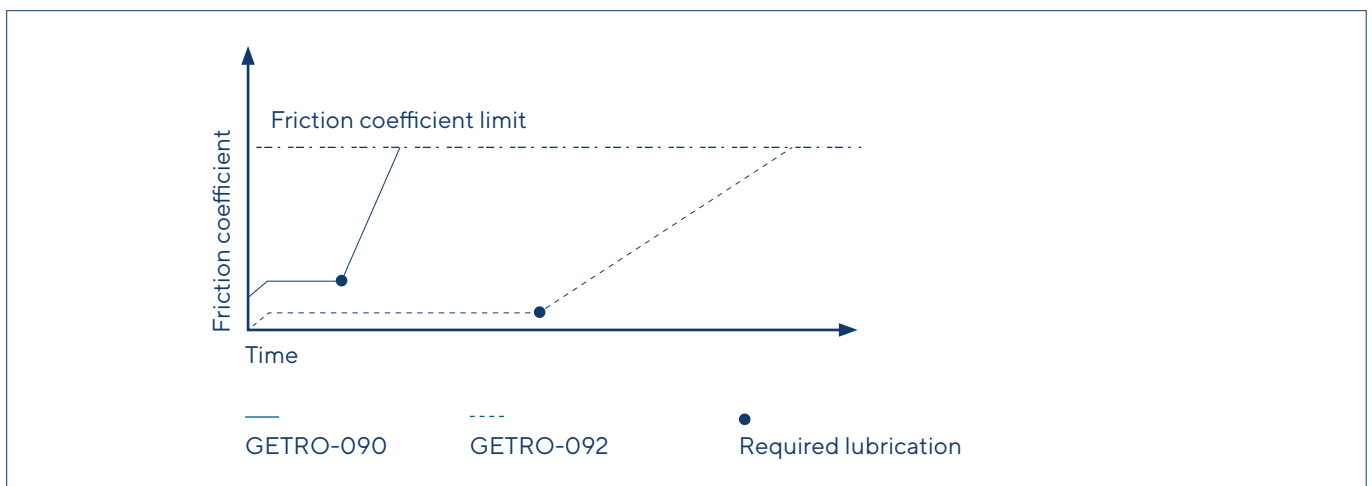
Properties

GETRO-092 sliding bushings can take lubrication with all types of greases or mixes. This enables longer lubrication intervals. Unlike the solid bronze sliding bushings, the GETRO-092 sliding bushings have all advantages of the GETRO090 sliding bushings, which are summarised as follows:

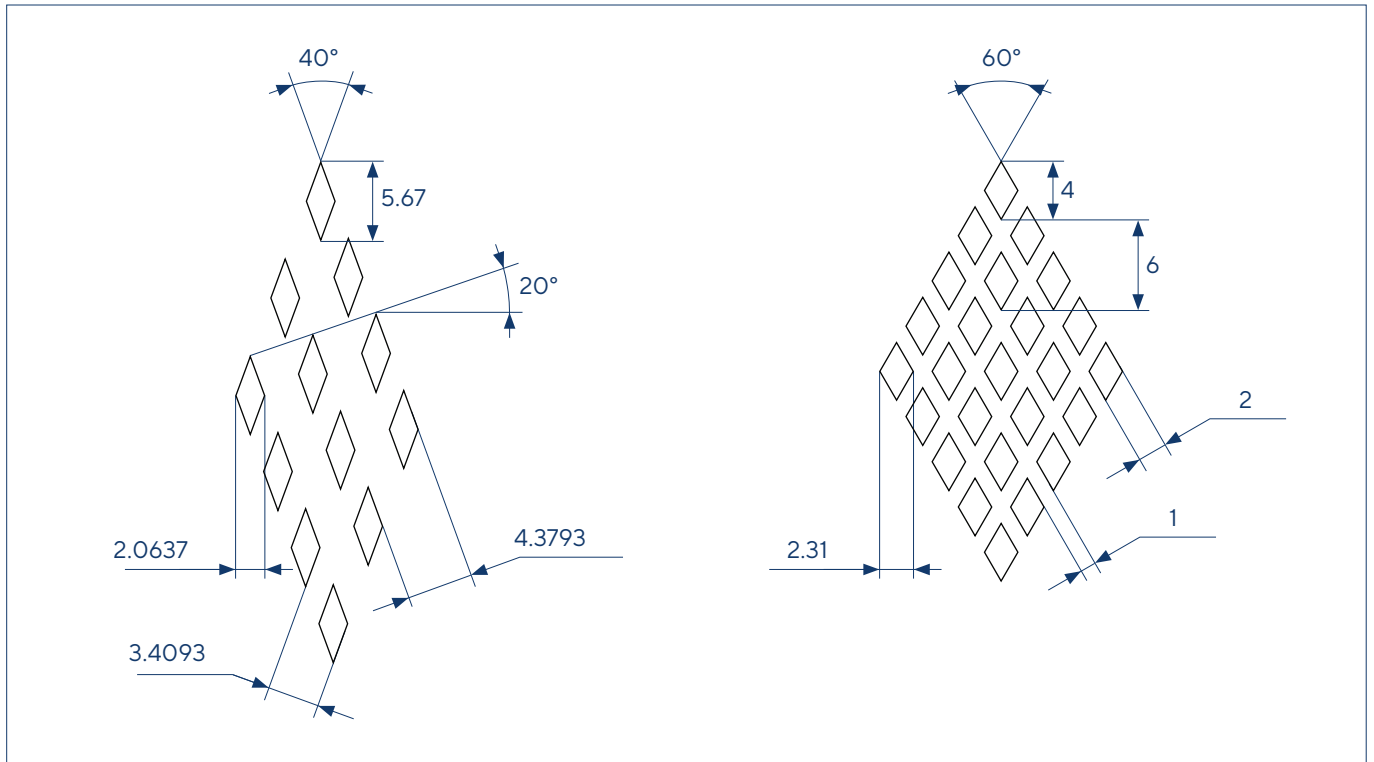
- High load capacity
- Minimal space requirement
- Very good resistance to chemical corrosive agents
- Very good thermal conduction capacity
- Simple installation and maintenance

The surface of the GETRO-092 sliding bearings must be reduced by 15%, taking into account the holes. The GETRO-092 series is available as cylindrical sliding bearings, flanged sliding bearings, thrust bearing washers and customised panels. Compared to the GETRO-090 range, the GETRO-092 sliding bearings allow longer re-lubrication intervals, which can be seen from the diagram below.

With regards to the dimension development and all other defined properties of these sliding bearings, the same rules as for the GETRO-090 apply in terms of lubrication and play.



Oil indentation



Type	Thickness	Oil Depth
GETRO-090	1 mm	0.3 - 0.4 mm
	1.5 mm	0.4 - 0.5 mm
	2 mm	0.5 - 0.6 mm
	2.5 mm	0.6 - 0.7 mm