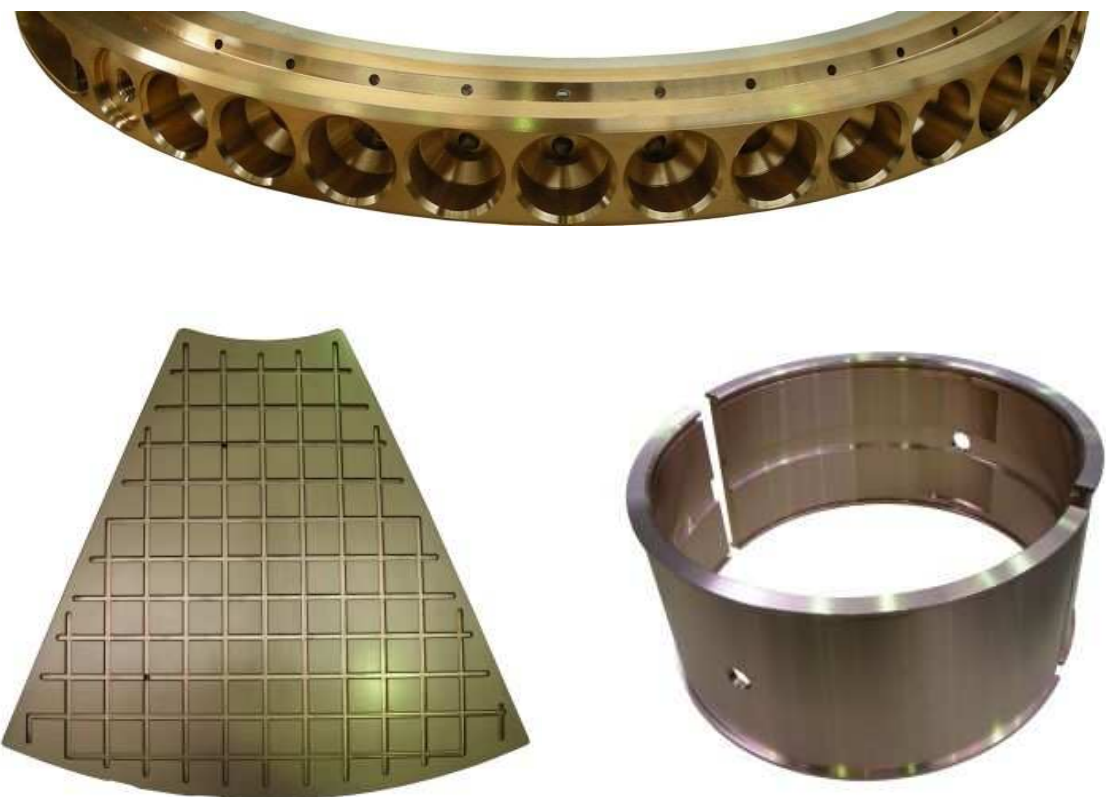
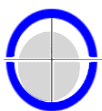


# SB Bearing Bronze



Gleitlagertechnik Essen GmbH

Chemical Composition % (by weight)	SB Lagerbronze II	SB Lagerbronze I	SB-KAST 12.15	SB-DUR	SB-KAST 10	SB DYN
	Cu 79 Sn 5 Pb 13 Ni 3 Zn Al Mn Fe Ag C	77,5 8 11 3,5	86 12 - 2	61 0,5 0,5 0,5 32 2 2,5 1	80 - - 5,5 10 10 4,5	- 8 - 75,7 8 2 6 0,3
Technological Characteristics*)	SB Lagerbronze II	SB Lagerbronze I	SB-KAST 12.15	SB-DUR	SB-KAST 10	SB DYN
<b>Hardness and warm hardness</b> HB 10/1000/10 20°C 50°C 100°C 150°C	67,5 65,8 64,9 62,6	86,3 80,3 78,6 76,9	110 108 106 106	130 128 125 124	170 169 164 162	194 189 184 181
<b>Yield stress</b> 00,2 N/mm <sup>2</sup>	109 95,2	138 116	180 170	210 200	310 300	485 484
<b>Tensile strenght <math>\sigma_{ZB}</math></b>	192	209	300	450	700	428
<b>Tension strain</b>	6,4	2,1	10	17	13	9
<b>Young's modulus</b>	84000	85100	9500	103000	135000	159000
<b>Density</b>	8,78	8,91	8,65	8,4	8,9	8,8
<b>Linear expansion coefficient</b> 20-100°C(mm/mm?C) x 10 <sup>-6</sup>	18,4	18,2	18,4	20,2	15,5	15,7
<b>Operating temperature</b>	150	150	150	150	200	400
<b>Specific surface load P<sub>max</sub></b>	50 N/cm <sup>2</sup>	75	90	110	150	200
<b>Application Notes</b>	Good sliding and dry-running characteristics at average and elevated static, dynamic and thermal loading. Lubrication with process medium possible.	Good sliding characteristics at elevated static, dynamic and thermal loading. High resistance against wear and corrosion.	Elevated resistance against wear. Resistant to corrosion and sea water	Tough and hard alloy for highest loading at low sliding speeds. High thermal load capacity.	High strength characteristics, high load capacity with good wear characteristics. Sufficient lubrication required. High impact loads possible.	High thermal and corrosive loading. Lubrication with process medium.



## With good Sliding Properties

Where fluid film bearings need dry-running capacity, in cases of elevated bearing temperatures or in cases of bad lubrication conditions due to dust and dirt, this is the ideal area of application for SB Bearing Bronze. With these demanding operational conditions, two main characteristics of the bearing bronze are required:

1. good sliding properties
2. high strength

To meet these requirements, Th. Goldschmidt AG developed what today is SB Bearing Bronze.



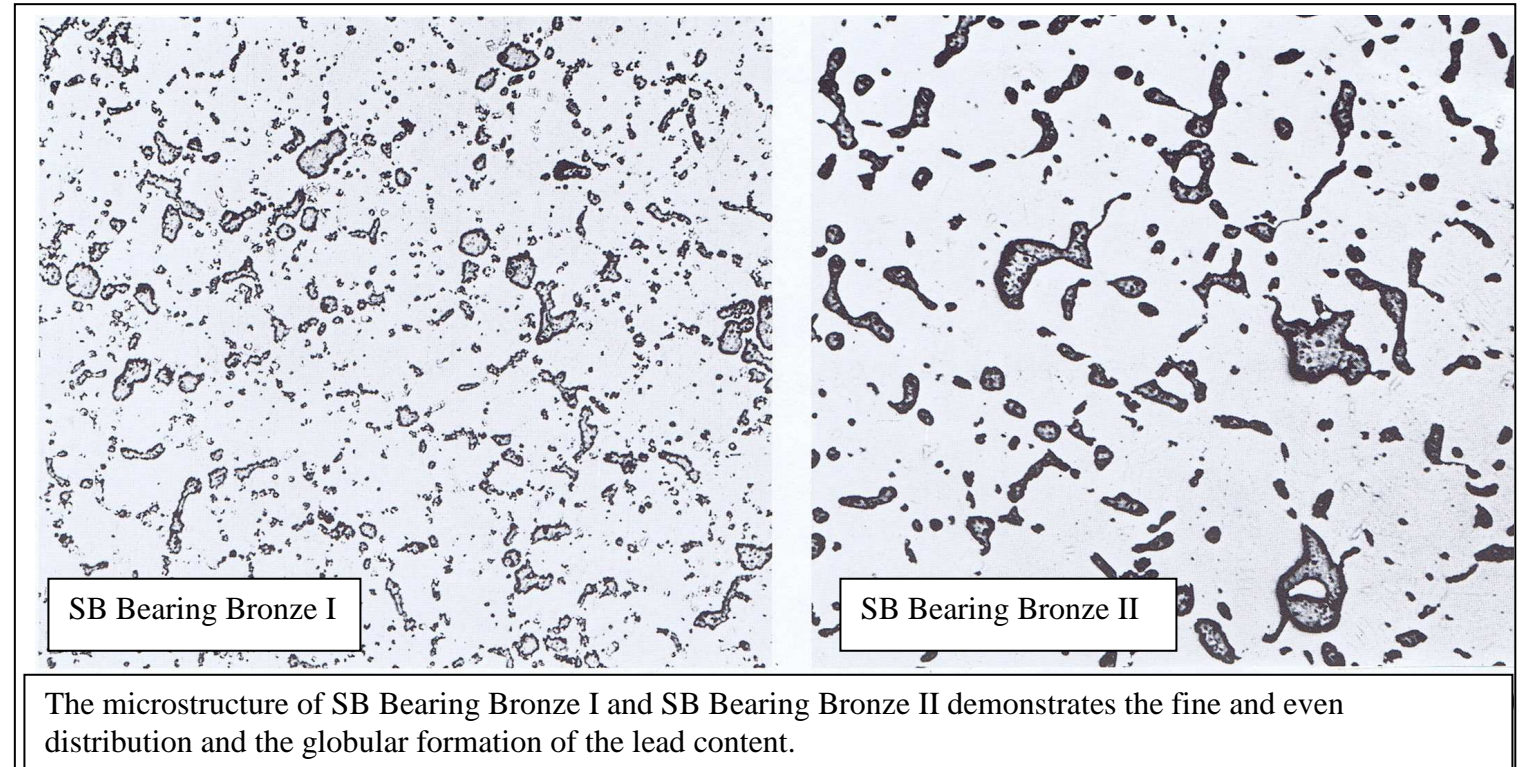
The tin-lead bronze alloys have very good sliding properties and are refined with nickel. A high lead content is evenly distributed in the microstructure in the form of globular particles.

This results in very good sliding properties and temporary emergency operation capability. This allows for mixed friction and dry friction. The sliding properties ensure low bearing temperatures.

High resistance to wear and longer machine life are the consequence

of the optimized microstructure. Longer service life makes your production more cost-effective.

Only pure, new metals are used for the production of SB Bearing Bronze. Like electrolyte tin, electrolyte copper, electrolyte nickel and commercial soft lead. The sliding and dry-running characteristics are improved by subsequent optimization processes.



## For high Strength

### Fields of Application of the individual Products

SB Bearing Bronze alloys meet the requirement for high mechanical strength, where common copper cast alloys do not withstand the static and dynamic loading requirements. At high temperatures and – at the same time – where high corrosion resistance is required. Only pure electrolyte and metallurgical metals are used for the production of these copper and nickel based alloys.

#### SB Bearing Bronze II

For high specific pressure, temporary lack of lubrication and rough operational conditions

journal bearings with collar, axle bearings, excavator bearings, earth-moving equipment, turning lathe bearings, rotating furnace bearings, eccentric presses, slide and guide rails, gearbox bearings, cranes, piston pin bushes, guide pulleys, connecting rods, pump bearings, band conveyors, rolling mill bearings, calender bearings

#### SB Bearing Bronze I

For extreme specific pressure, temporary lack of lubrication, impact and dynamic loading

calender bearings for PVC film production with high thermal load, toggle levers, ball sockets, spindle nuts, compactor bearings, crane bearings

#### SB-KAST 12.15

For high specific pressure, medium sliding speeds and high abrasive wear (good lubrication required)

worm and helical gear wheels, highly loaded joints in articulated spindles in rolling mills, spindle nuts moving under load, worm and helical gear wheels under high speed and load, guide and rotating wheels for pumps and water turbines

#### SB DUR

For elevated specific pressure, low sliding speed and high abrasive wear (good lubrication required)

sliding blocks, screw-down nuts for rolling mills and screw presses, spindle nuts for high loads, bearings with load rotating slowly, joints for reversing operation

#### SB-KAST 10

With extreme static specific pressure (very good lubrication required)

Much better resistance to aging and corrosion as opposed to special brass alloys  
engine components, hubs for controllable pitch propellers, stern tubes, chain side bar bushings for furnace loading, thrust and sliding plates in hot forging machines, cylinder bushings for compressors and hydraulics, threaded bushings for valves

#### SB-DYN

For high specific pressure, high thermal load and simultaneous corrosive attack. Especially suitable for media-lubricated bearings in plastics industry.

bearings for polystyrene extruders, bearings for gear pumps

#### Forms of delivery:

SB Bearing Bronze alloys are cast as bars, bushings or per pattern, using static casting, continuous casting or centrifugal casting.

The alloys are supplied either:  
- raw casting, cleaned and deburred, otherwise unmachined  
- pre-machined or  
- finished to drawing.