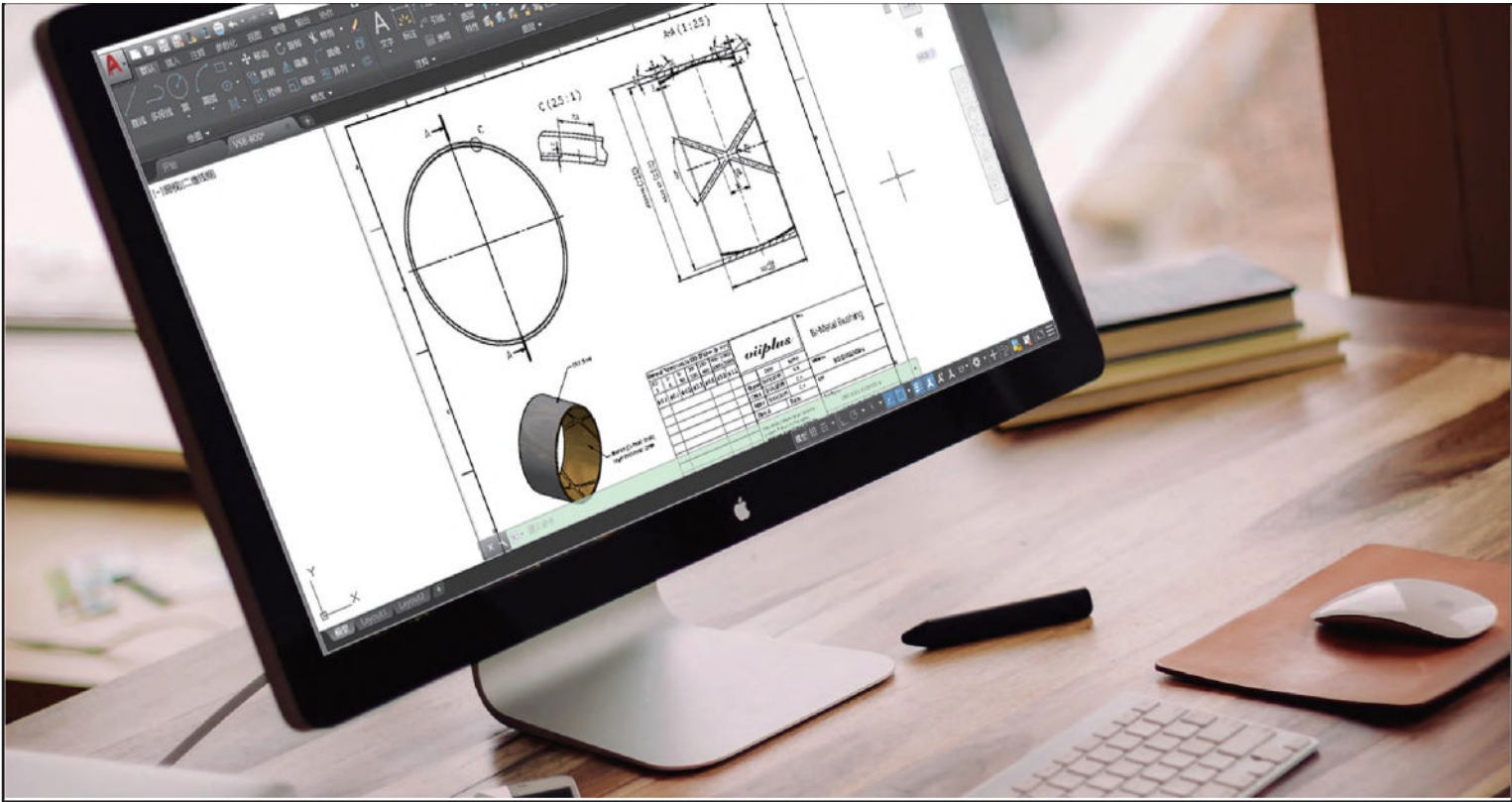


*Self-lubricating Bearing Solution*



*Keep Improving Quality  
Developing New Products*





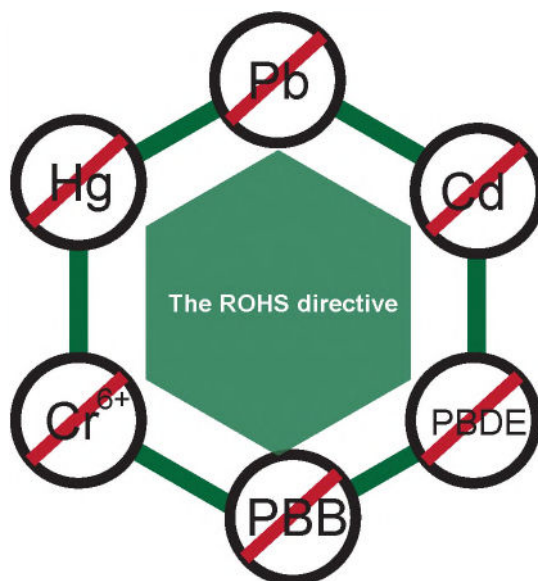
VIIPLUS is helping the industry become safer and more efficient.

## Stronger. By Design.

ENGINEERED SELF-LUBRICATING BEARINGS

Offers a growing portfolio of Self Lubricating Bearings and Bronze Bushings products and services to keep industries moving efficiently and reliably.

Self-Lubricating bearings strictly according to the EU ROHS directive requirements and the production of SGS detection.





## PRODUCTS

Our growing line of self-lubricating bearings and bronze bushings products is designed to meet our customers' evolving needs everywhere we do business.

Explore our sliding bearings.

## MARKETS

We collaborate with global customers in diversified markets.

From wind farms in the North Sea to freight cars crossing the Sahara, we bring to life know-how and innovation, providing true marketplace advantage.

Explore the markets we serve.

## KEEPING THE WORLD IN MOTION

The VIPLUS Company with a growing portfolio of self-lubricating bearings and bronze bearings products.

With of knowledge tribological coatings bearings and innovation, we continuously improve the reliability and efficiency of global industries to move the world forward. Learn more about our immediate impact on the future of globe industry.

Advanced Metal-Polymer Coatings Bushings  
For Any Application

# Self-Lubricating Bearing

P



# CONTENTS

■ I



# **Self-lubricating Bearings Strips**

# The Basic Characteristics

Wrapped Composite Sliding Bearing, Tin-plated Steel/PTFE, DIN 1494/ISO 3547, Maintenance-free

**MATERIALS**  
 Support material: Steel tin-plated  
 Intermediate layer: Sintered bronze  
 Sliding layer: PTFE

	Static	250 N/mm <sup>2</sup>	Temp.	-195
Max. Load	Dynamic	140 N/mm <sup>2</sup>	Friction coefficient	
	Dry	2m/s	Thermal conductivity	
Max. Speed	Lubrication	A2m/s		
	Short-term	3.6 N/mm <sup>2</sup> · m/s	coefficient of	
Max. PV(Dry)	Continuous	1.8 N/mm <sup>2</sup> m/s	thermal expansion	

# The Basic Characteristics



## VSB-20 Boundary Lubricated Bearing RoHS

Wrapped Sliding Bearing, wrapped bushing, steel/POM sliding layer, DIN 1494/ISO 3547, Low-maintenance

**MATERIALS**

Support material: Steel copper-plated or tin-plated

Intermediate layer: Sintered

Bronze Sliding layer: POM (MoS<sub>2</sub>)/lubrication pockets

Max. Load	Static	250 N/mm <sup>2</sup>	Temp.	-195°C ~ 280°C		
	Dynamic	140 N/mm <sup>2</sup>		Friction coefficient	Dry	0.03 ~ 0.20
	Rotating oscillating	60 N/mm <sup>2</sup>			Lubrication	>2m/s
Max. Speed	Dry	2m/s	Thermal conductivity	42W (m·K) <sup>-1</sup>		
	Lubrication	>2m/s		coefficient of thermal expansion	11 × 10 <sup>-6</sup> K <sup>-1</sup>	
Max. PV(Dry)	Short-term	3.6 N/mm <sup>2</sup> · m/s				
	Continuous	1.8 N/mm <sup>2</sup> · m/s				



## VSB-30 Metal-Polymer Bearings RoHS

Wrapped Bushing, Bronze or tin-plated steel/PEEK (Carbon & PTFE), DIN 1494/ISO 3547

**MATERIALS**

Support material: Steel

Intermediate layer: Sintered Bronze

Sliding layer: PEEK

Max. Load	Static	250 N/mm <sup>2</sup>	Temp.	-150°C ~ 250°C		
	Dynamic	140 N/mm <sup>2</sup>		Friction coefficient	0.03 ~ 0.20	
	Rotating oscillating	60 N/mm <sup>2</sup>				
Max. Speed	Dry	5m/s	Thermal conductivity	50W (m·K) <sup>-1</sup>		
	Lubrication	>5m/s		coefficient of thermal expansion	11 × 10 <sup>-6</sup> K <sup>-1</sup>	
Max. PV(Dry)	Short-term	4.8 N/mm <sup>2</sup> · m/s				
	Continuous	3.6 N/mm <sup>2</sup> · m/s				



## VSB-33 Metal-Polymer Bearings RoHS

Wrapped composite sliding bearing, tin-plated Stainless Steel 316/PTFE, DIN 1494/ISO 3547, Maintenance-free

**MATERIALS**

Support material: Stainless Steel 316/tin-plated

Intermediate layer: Sintered bronze

Sliding layer: PTFE

Max. Load	Static	250 N/mm <sup>2</sup>	Temp.	-195°C ~ 280°C	
	Dynamic	140 N/mm <sup>2</sup>		Friction coefficient	0.03 ~ 0.20
Max. Speed	Dry	2m/s	Thermal conductivity		42W (m·K) <sup>-1</sup>
	Lubrication	>2m/s		coefficient of thermal expansion	11 × 10 <sup>-6</sup> K <sup>-1</sup>
Max. PV(Dry)	Short-term	3.6 N/mm <sup>2</sup> · m/s			
	Continuous	1.8 N/mm <sup>2</sup> · m/s			

# The Basic Characteristics



## VSB-36 Metal-Polymer Bearings

RoHS

Wrapped Composite Sliding Bearing, Tin-Plated Stainless Steel 316/PTFE, DIN 1494/ISO 3547, Maintenance-free

### MATERIALS

Support material: Stainless Steel 316/tin-plated

Intermediate layer: Sintered bronze

Sliding layer: PTFE Kevlar Woven

Max. Load	Static	350 N/mm <sup>2</sup>	Temp.	-50°C ~ 250°C
	Dynamic	180 N/mm <sup>2</sup>	Friction coefficient	0.03 ~ 0.20
Max. Speed	Dry	0.5m/s	Thermal conductivity	42W (m·k) <sup>-1</sup>
	Lubrication	>1m/s		
	Short-term	3.6 N/mm <sup>2</sup> · m/s		
Max. PV(Dry)	Continuous	1.8 N/mm <sup>2</sup> · m/s		



## VSB-12 Dry Sliding Bearings

RoHS

Composite Bushing, specially Fiberglass+PTFE

### MATERIALS

Support material: Steel

Intermediate layer: Sintered Bronze

Sliding layer: Fiberglass+PTFE

Max. Load	Static	250 N/mm <sup>2</sup>	Temp.	-195°C ~ 280°C
	Dynamic	140 N/mm <sup>2</sup>	Friction coefficient	0.03 ~ 0.20
Max. Speed	Dry	2m/s		
	Lubrication	>2m/s	coefficient of thermal expansion	11 × 10 <sup>-6</sup> k <sup>-1</sup>
	Short-term	3.6 N/mm <sup>2</sup> · m/s		
Max. PV(Dry)	Continuous	1.8 N/mm <sup>2</sup> · m/s		
PV	PV Hydrodynamic	30 N/mm <sup>2</sup> · m/s		



## VSB-70 Resin Series Bearing

RoHS

With a variety of high quality engineering plastics by injection molding process, suitable for mass production, manufacturing The cost is low. With Self-Lubricating property, maintenance and oil free, high bearing capacity, no bite shaft phenomenon, Good corrosion resistance, low friction coefficient, compared with the metal Bearing with light weight, low production cost, High production efficiency. Widely used in the automobile industry, fax machines, photocopiers, food machines Machinery, fitness machinery, chemical industry, etc.

Max. Load	Static	180 N/mm <sup>2</sup>	Temp.	-40°C ~ 80°C
	Dynamic	100 N/mm <sup>2</sup>	Friction coefficient	0.05 ~ 0.20
Max. Speed	Dry	1m/s	Thermal conductivity	0.2W (m·k) <sup>-1</sup>
	Lubrication	>1m/s		
	Short-term	1 N/mm <sup>2</sup> · m/s		
Max. PV(Dry)	Continuous	0.8 N/mm <sup>2</sup> · m/s		

# The Basic Characteristics

Wrapped Bushing, Bronze CuSn8, DIN

## VSB-10 Wrapped Composite Sliding Bearing



### **Wrapped Sliding Bearing, Wrapped Bushing,**

Steel/ PTFE or POM sliding layer, DIN 1494/ISO 3547, Low-maintenance

### **Material Support Material:**

Steel copper-plated or tin-plated Intermediate layer

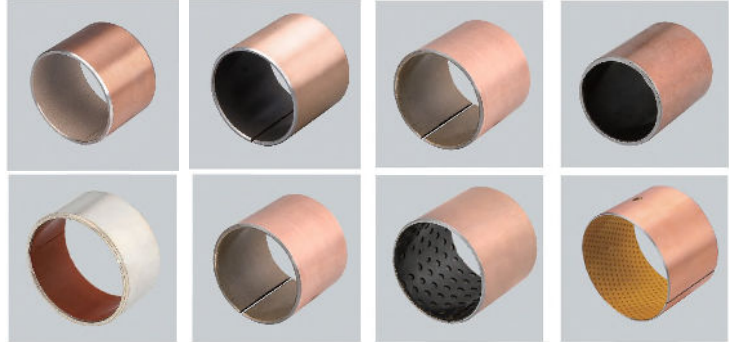
Sintered bronze Sliding layer PTFE or POM (MoS<sub>2</sub>)/lubrication pockets

### **Range Of Application:**

Truck cranes, agriculture machines, hydraulic cylinders, construction machinery, cranes and construction machinery, all sorts of production machinery, pumps and medial devices

## VSB-10

### Cylindrical Bushes



### Product Selection Guide

PTFE /POM composite plain bearings

Long, maintenance-free service life due to low friction

### Advantages of PTFE/POM Composite Plain Bearings Include:

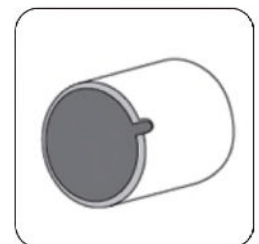
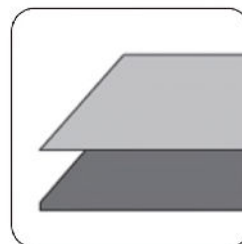
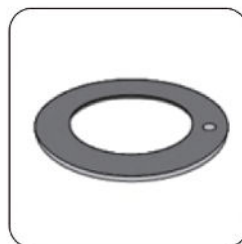
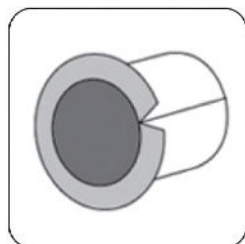
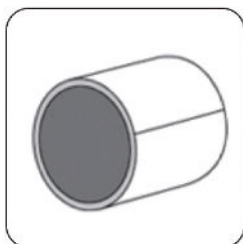
Maintenance-free operation, very good frictional properties, high load carrying capacity  
 high sliding velocity small operating clearance composite plain bearings are available,  
 both as straight and flange bushings, washers and strips

### Availability

Bearing forms available in standard dimensions

Cylindrical bushes

Flange bushes



**VSB-10, VSB-11, VSB-40, VSB-33, VSB-12**  
**Cylindrical Bushes (I.D 05)**



**VSB-10, VSB-11, VSB-40, VSB-33, VSB-12**

**Cylindrical Bushes (I.D 05)**

**VSB-10, VSB-11, VSB-40, VSB-33, VSB-12**  
**Cylindrical Bushes (I.D045)**

**VSB-10, VSB-11, VSB-40, VSB-33, VSB-12**  
**Cylindrical Bushes (I.D045)**

**VSB-10F, VSB-11F, VSB-40F, VSB-12F**  
**Flanged Bushes**

**VSB-10F, VSB-11F, VSB-40F, VSB-12F**  
**Flanged Bushes**

A: outer diameter chamfering inner  
diameter more than

**VSB-10W , VSB-11W , VSB-40W , VSB-33W , VSB-12W**

**Thrust Washers**

## **VSB-20W , VSB-30W**

### **Thrust Washers**

Please select part number from applicable inside diameter  
outside diameter and thickness  
e.g. inner diameter: 20mm and thickness: 1.5mm

**VSB-20 WC-2015**

**VSB-20, VSB-30**  
**Cylindrical Bushes (I.D 010)**



**VSB-20, VSB-30**

**Cylindrical bushes( I.D010**

## **VSB-20, VSB-30**

### **Cylindrical Bushes (I.D065 ~0300)**

Please select part number from applicable inside diameter, outside diameter and length  
e.g. inner diameter: 60mm and the length: 50mm

#### **VSB010 - 6550**

Please specify the above part number

Direction of motion

Split Type Bushing

Wall thickness T    Bearing bore  
Shaft sleeve

Chamfer

**VSB-20, VSB-30**

**Cylindrical bushes(I.D065**

## **VSB-80 Bimetallic Bearings**

**Bi-metal Bearings, Copper-Plated or Tin-Plated Steel/Bronze**

DIN 1494

## **VSB-80**

### **Bimetal Bushes**

### **Structure Characteristics**

VSB Bimetal Bushes consists of steel backing with lead bronze or lead

**V S B - 8 0**  
**Bimetal Bushes**

0.05-0.12

**V S B - 8 0**  
**Bimetal Bushes**

(5)

**V S B -80**  
**Bimetal Bushes**

-L

b\_



**VSB-80**  
**Bimetal Bushes**

# VSB-80

## Bimetal Bushes

3.5	37	30	30	3.5	3.5	67	60	65	3.5
2	34	30	28	2	4	68	60	60	4
3.5	39	32	35	3.5	3.5	72	65	60	3.5
3.5	39	32	50	3.5	3.5	72	65	65	3.5
2	39	35	37	2	1.95	69.12	65.22	64.5	2
3	41	35	35	3	3.5	67	60	60	3.5
3.5	42	35	35	3.5	3.5	72	65	65	3.5
3.5	45	38	35	3.5	3.5	77	70	67	3.5
3.5	45	38	40	3.5	3.5	75	68	60	3.5
3	41	35	42	3	3.5	77	70	70	3.5
3	46	40	62	3	3.5	77	70	65	3.5
3.5	47	40	40	3.5	4	78	70	70	4
3.5	52	45	40	3.5	3.48	77.14	70.18	62	3.5
3.5	54	47	35	3.5	3.5	82	75	74	3.5
3.5	54	47	40	3.5	5	85	75	70	5
3.5	57	50	48	3.5	3.525	70.8	63.75	73	3.5
3.5	57	50	45	3.5	3.5	82	75	75	3.5
3.5	57	50	50	3.5	3.5	87	80	70	3.5
3.5	57	50	50	3.5	4	83	75	74	4
3	60	54	55	3	5	100	90	75	5
3.5	66	59	53	3.5	3.8	92.6	85	103	4
3.5	65	58	60	3.5	3.5	72	65	75	3.5
3.5	67	60	53	3.5	3.5	77	70	98	3.5
3.5	67	60	60	3.5	5	80	70	90	5

**VSB-80**

**Bimetal Bushes With Graphite**

m in.

## **VSB-22 Wrapped Bronze Bushings**

### **Bronze Bushing**

### **A Wide Bushing Type to Meet Your Needs.**

Bushings, thrust, washers and strips

Next-Level Performance Consistent,

Proven, Self-lubricating Quality,

A wide bushing type to meet your needs,

Wrapped bushing, Bronze CuSn8, DIN 1494

## **VSB-22**

### **Bronze Bushing**

#### **Structure Characteristics**

The bearing is made with CuSn8 bronze alloy which is featured with high load capacity and good anti-wearing characteristics.

The diamond shape indent on the surface of the bearing serve as oil reservoir to generate oil film for the lubricating during the initial running,

The bearings are mainly suitable for agriculture machineries and construction machineries applications,

#### **Material**

Wrapped bronze bushings are made entirely of bronze, CuSn8. The bushings are

1, Diamond-shaped lubricant reservoirs, bushings have diamond-shaped lubrication pockets on the ID, covering about

**V S B -22**

**Bronze Bushing**

**VSB-22**

**Bronze Bushing VSB-22**

**Diamond-Shaped Lubrication Pockets**

**VSB-22**

**Bronze Bushing VSB-22 Straight Type**



# VSB-22

## Bronze Bushing VSB-22

100	105	10050	10060	10070	10080	10090	100100
105	110	10550	10560	10570	10580	10590	105100
110	115	11050	11060	11070	11080	11090	110100
115	120	11550	11560	11570	11580	11590	115100
120	125		12060	12070	12080	12090	120100
125	130		12560	12570	12580	12590	125100
130	135		13060	13070	13080	13090	130100
135	140		13560	13570	13580	13590	135100
140	145		14060	14070	14080	14090	140100
145	150		14560	14570	14580	14590	145100
150	155		15060	15070	15080	15090	150100
155	160		15560	15570	15580	15590	155100
160	165		16060	16070	16080	16090	160100
165	170		16560	16570	16580	16590	165100
170	175		17060	17070	17080	17090	170100
175	180		17560	17570	17580	17590	175100
180	185		18060	18070	18080	18090	180100
185	190		18560	18570	18580	18590	185100
190	195		19060	19070	19080	19090	190100
195	200		19560	19570	19580	19590	195100
200	205		20060	20070	20080	20090	200100
205	210		20560	20570	20580	20590	205100
215	220		21560	21570	21580	21590	215100
225	230		22560	22570	22580	22590	225100
230	235		23060	23070	23080	23090	230100
240	245		24060	24070	24080	24090	240100
250	255		25060	25070	25080	25090	250100
260	265		26060	26070	26080	26090	260100
270	275		27060	27070	27080	27090	270100
280	285		28060	28070	28080	28090	280100
290	295		29060	29070	29080	29090	290100
300	305		30060	30070	30080	30090	300100

**VSB-22**

**Bronze Bushing VSB-22 Flange Bushing**

m in.

## **VSB-22**

**Bronze Bushing VSB-22 Straight Type, Lubricating Holes**

min.

## VSB-22

### Bronze Bushing VSB-22 Straight Type, Lubricating Holes

100	105	10050	10060	10070	10080	10090	100100
105	110	10550	10560	10570	10580	10590	105100
110	115	11050	11060	11070	11080	11090	110100
115	120	11550	11560	11570	11580	11590	115100
120	125		12060	12070	12080	12090	120100
125	130		12560	12570	12580	12590	125100
130	135		13060	13070	13080	13090	130100
135	140		13560	13570	13580	13590	135100
140	145		14060	14070	14080	14090	140100
145	150		14560	14570	14580	14590	145100
150	155		15060	15070	15080	15090	150100
155	160		15560	15570	15580	15590	155100
160	165		16060	16070	16080	16090	160100
165	170		16560	16570	16580	16590	165100
170	175		17060	17070	17080	17090	170100
175	180		17560	17570	17580	17590	175100
180	185		18060	18070	18080	18090	180100
185	190		18560	18570	18580	18590	185100
190	195		19060	19070	19080	19090	190100
195	200		19560	19570	19580	19590	195100
200	205		20060	20070	20080	20090	200100
205	210		20560	20570	20580	20590	205100
215	220		21560	21570	21580	21590	215100
225	230		22560	22570	22580	22590	225100
230	235		23060	23070	23080	23090	230100
240	245		24060	24070	24080	24090	240100
250	255		25060	25070	25080	25090	250100
260	265		26060	26070	26080	26090	260100
270	275		27060	27070	27080	27090	270100
280	285		28060	28070	28080	28090	280100
290	295		29060	29070	29080	29090	290100
300	305		30060	30070	30080	30090	300100

## **V S B - 2 2**

### **Bronze Bushing VSB-22 Flange Bushing Lubricating Holes**

Ci

m in.

## VSB-50 Solid Bronze Bushing Plugged Graphite Bushings

Solid bronze bushing, Plugged Graphite Bushings or groove design.

### **Materials**

Support material

## **VSB-50 Solid Bushing Bronze With Lubricant Plugs**

## **VSB-50**

### **Cylindrical Bushes (I.D06~045)**

Please select part number from applicable inside diameter, outside diameter and length  
e.g. the inner diameter: 25mm, the outer diameter: 33mm and the length is 20mm

**VSB-50**



## VSB-50

### Cylindrical Bushes(I D06~045)

- can be used in rotation, shaking and reciprocating motion
- cannot be used in seawater.
- the axle sleeve with inner diameter of 31.5mm 63mm  
can be applied to the sleeve of oil  
pressure cylinder.

To prevent it from falling off.  
A stop pin is recommended

## **VSB-50**

### **Cylindrical bushes (I.D050~0200)**

Please select part number from applicable inside diameter, outside diameter and length  
e.g. inner diameter: 80mm, the outer diameter: 96mm and the length is 70 mm

**VSB-50**

**Cylindrical Bushes I.D050**

**VSB-50F**  
**Flanged Bushes**

Please select part number from applicable inside diameter, outside diameter and length  
e.g. inner diameter

**VSB-50F**  
**Flanged Bushes**

## **VSB-50FG**

### **Flanged Bushes**

Please select part number from applicable inside diameter, outside diameter and length  
e.g. inner diameter: 50mm and length: 30mm

### **VSB-50FG**

Please specify the above part number

**VSB-50FG**

**Flanged Bushes**

**VSB-50W**  
**Thrust Washers**



## **VSB-50SW**

**Wear Plate-20mm Thick**

Please select part number from applicable length, width and thickness

**VSB-50SW**

# VSB-50SW

Wear Plate-20mm Thick

VSB-50SW-4875    48     $\begin{matrix} -0.1 \\ -0.3 \end{matrix}$      $\frac{7}{5}$      $\frac{1}{0.5}$     20     $\pm 0.025$

**VSB-50SW**

**Wear plate-10mm Thick**

W=18.

**VSB-500**  
**Bronze Groove self**

**Self**

# The Mechanical Properties

## Self - Lubricating Bearings Material Selection

Bearing performance and dual shaft material, hardness, surface roughness, surface treatment, etc., have a great impact, the following recommended dual materials for reference. In addition, in seawater, chemical liquid and other corrosion conditions, please apply double or triple chrome plating treatment.

metals	~ 24.5(250}	Carbon steel, alloy steel for mechanical construction (e.g., S45C, SNC415) SCM435) Corrosion resistant steel in corrosive environment (e.g. SUS304, SUS403, SUS420)	HB150 The above	
	24.5(250} ~ 49.0(500}	The above material for high frequency quenching, carburizing and other surface treatment	HB250 The above	1.6a(6.3s) The following
	49.0{500} ~ 98.0(1,000}	The above material for carburizing, chrome plating and other surface treatment	HRC50 The above	
composite	~49.0{500}	Carbon steel, alloy steel for mechanical construction (e.g., S45C, SNC415) SCM435) Corrosion resistant steel in corrosive environment (e.g. SUS304, SUS403, SUS420)	HB120 The above	0.8a(3.2s) The following
	49.0{500} ~ 98.0(1,000}	The above material for high frequency quenching, carburizing, nitriding, chrome plating and other surface treatment	HRC45 The above	

## Self

**Self**



## Explore The World

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**VIPLUS supports customers around the world, providing self-lubricating bearings and services designed to deliver high performance, extend equipment life and enhance productivity.**

# VIPLUS INTERNATIONAL

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Address: No .555 ChuangYe Road, Industry Park, Jiashan Zhejiang, China.314100

TEL: +86 (0)57384499350

FAX: +86 (0)57384499352

E-mail: [viplus@viplus.com](mailto:viplus@viplus.com)

<https://www.viplus.com>

