

# Self-lubricating Bearings & Bushing **Technical Data**

SF-1 BUSHING:

Tech.Data						
Max.load	Static	250N/mm <sup>2</sup>		Friction coefficient		0.03~0.20
	Very low speed	140N/mm <sup>2</sup>		Max.speed	Dry running	2m/S
	Rotating oscillating	60N/mm <sup>2</sup>			Hydrodynamic operation	>2m/S
Max.PV dry running	Short-term operation	3.6N/mm <sup>2</sup> *m/S		Thermal conductivity		42W(m*K) <sup>-1</sup>
	Continuous operation	1.8N/mm <sup>2</sup> *m/S		Coefficient of thermal expansion		11*10 <sup>-6</sup> *K <sup>-1</sup>
Temp.limit		-195°C~+280°C				

## SF-2Y: POM BUSHING

Tech.Data						
Max.load	Static	250N/mm <sup>2</sup>		Friction coefficient		0.03~0.20
	Very low speed	140N/mm <sup>2</sup>		Max.speed	Dry running	2m/S
	Rotating oscillating	70N/mm <sup>2</sup>			Hydrodynamic operation	>2m/S
Max.PV		3N/mm <sup>2</sup> *m/S		Thermal conductivity		42W(m*K) <sup>-1</sup>
Temp.limit		-40°C~+110°C		Coefficient of thermal expansion		11*10 <sup>-6</sup> *K <sup>-1</sup>
Initial pre-lubrication at assembly is strongly recommended						

### SF-1B BRONZE BACKED BUSHING:

Tech.Data						
Max.load	Static	250N/mm <sup>2</sup>		Friction coefficient		0.03~0.20
	Very low speed	140N/mm <sup>2</sup>		Max.speed	Dry running	2m/S
	Rotating oscillating	60N/mm <sup>2</sup>			Hydrodynamic operation	>2m/S
Max.PV dry running	Short-term operation	3.6N/mm <sup>2</sup> *m/S		Thermal conductivity		60W(m*K) <sup>-1</sup>
	Continuous operation	1.8N/mm <sup>2</sup> *m/S		Coefficient of thermal expansion		18*10 <sup>-6</sup> *K <sup>-1</sup>
Temp.limit		-195°C~+280°C				

## SF-1D: BUSHING

Tech.Data						
Max.load	Static	250N/mm <sup>2</sup>		Temp. limit		-195°C~+280°C
	Very low speed	140N/mm <sup>2</sup>		Max.speed	Dry running	2m/S
	Rotating oscillating	60N/mm <sup>2</sup>			Hydrodynamic operation	>2m/S
Max.PV	Short-term operation	3.6N/mm <sup>2</sup> *m/s		Thermal conductivity		42W(m*K) <sup>-1</sup>
	Continuous operation	1.8N/mm <sup>2</sup> *m/s		Coefficient of thermal expansion		11*10 <sup>-6</sup> *K <sup>-1</sup>
PV max.hydrodynamic		30N/mm <sup>2</sup> *m/s		Friction coefficient	Dry	0.08~0.20
			Hydrodynamic		0.03~0.08	

SF-800 BIM ETAL:

Tech.Data					
Max.load	Static	250N/mm <sup>2</sup>		Alloy hardness	HB 70~100
	Dynamic	140N/mm <sup>2</sup>		Temp.	-40°C~+250°C
Max.speed(Lubricated)		2m/s		Friction coefficient	0.05~0.2
Max.PV		2.8N/mm <sup>2</sup> *m/s		Thermal conductivity	60W(m*k) <sup>-1</sup>
Breaking Load		350N/mm <sup>2</sup>		Coef.of thermal expansion	14*10 <sup>-6</sup> *k <sup>-1</sup>

SF-090 WRAPPED BRONZE BUSHING WITH DIAMOND HOLES:

Tech.Data						
Max.load	Static	250N/mm <sup>2</sup>		Elongation	40%	
	Dynamic	40N/mm <sup>2</sup>		Temp.	-100°C~+200°C	
Max.speed(Lubrication)		2m/s		Friction coefficient	0.08~0.25	
Max.PV		2.8N/mm <sup>2</sup> *m/S		Thermal conductivity	58W(m*K) <sup>-1</sup>	
Tensile Strength		450N/mm <sup>2</sup>		Coef. Of thermal expansion	18.5*10 <sup>-6</sup> *K <sup>-1</sup>	
Hardness		HB110-150				

## SF-09T: BRONZE BEARINGS

Tech.Data						
Max.load	Static	120N/mm <sup>2</sup>		Elongation	40%	
	Dynamic	40N/mm <sup>2</sup>		Temp.	-100°C~+200°C	
Max.speed(Lubrication)		2.5m/s		Friction coefficient	0.08~0.25	
Max.PV		2.8N/mm <sup>2</sup> *m/S		Thermal conductivity	58W(m*K) <sup>-1</sup>	
Tensile Strength		450N/mm <sup>2</sup>		Coef. Of thermal expansion	18.5*10 <sup>-6</sup> *K <sup>-1</sup>	
Hardness		HB110-150				



## SF-09G BRONZE BEARINGS WITH GRAPHITE:

Tech.Data						
Max.load	Static	120N/mm <sup>2</sup>		Elongation	40%	
	Dynamic	40N/mm <sup>2</sup>		Temp.	-100°C~+200°C	
Max.speed(Lubrication)		2.5m/s		Friction coefficient	0.05~0.25	
Max.PV		2.8N/mm <sup>2</sup> *m/S		Thermal conductivity	58W(m*K) <sup>-1</sup>	
Tensile Strength		450N/mm <sup>2</sup>		Coef. Of thermal expansion	18.5*10 <sup>-6</sup> *K <sup>-1</sup>	
Hardness		HB>110				

## SF-650 SOLID BRONZE BEARINGS:

Tech.Data(Main Metal Type)	
Grade	650
Material	CuZn25Al5Mn4Fe3
Density	8
HB hardness	>210
Tensile strength N/mm <sup>2</sup>	>750
Yeild strength N/mm <sup>2</sup>	>450
Elongation%	>12
Coefficient of linear expansion	$1.9 \times 10^{-5} / ^\circ\text{C}$
Max.temp	-40~+300°C

Max.load N/mm <sup>2</sup>	100
Max.speed(Dry)m/min	15
Max.PV N/mm <sup>2</sup> *m/min(Lubrication)	200
Compression deformation 300N/mm <sup>2</sup>	<0.01mm

### Tech.Data(Solid Lubricants)

Lubricants	Features	Typical application
SL1 Graphite+add	Excellent resistance against chemical attacks and low friction.Temp limit 400°C	Suite for general machines and under atmosphere

SF-600 CAST BRONZE BUSHING:

Tech.Data(Main Metal Type)	
Material	600
	CuZn25Al5Mn4Fe3
Density	8.0
HB hardness	>210
Tensile strength N/mm <sup>2</sup>	>750
Yeild strength N/mm <sup>2</sup>	>450
Elongation%	>12

SF-250:

Tech.Data					
Max.load	Static	70N/mm <sup>2</sup>		Temp.	-40°C~+400°C
	Dynamic	10N/mm <sup>2</sup>		Friction coefficient	0.08~0.20
Max.speed	Dry	0.15m/s		Tensile strength	150N/mm <sup>2</sup>
	Hydrodynamic	1m/s		Hardness	HB>160
Max.PV		0.8N/mm <sup>2</sup> *m/s			

## SF-1W DRY WASHER:

Tolerance for composite thrust washer				
Dimension	Deviations			
	PTFE composite (designation suffix E)		POM composite (designation suffix M)	
	high	low	high	low
-	Mm			
Bore diameter d	+0,250	0	+0,250	0
Outside diameter D	0	-0,250	0	-0,250
Hole pitch diameter J	+0,150	-0,150	+0,150	-0,150
Hole diameter K	+0,150	-0,150	+0,150	-0,150
Height	0	-0,050	0	-0,100

SF-2YW DRY WASHER:

Tech.Data						
Max.load	Static	250N/mm <sup>2</sup>		Friction coefficient		0.03~0.20
	Very low speed	140N/mm <sup>2</sup>		Max.speed	Dry running	2m/S
	Rotating oscillating	70N/mm <sup>2</sup>			Hydrodynamic operation	>2m/S
Max.PV		3N/mm <sup>2</sup> *m/S		Thermal conductivity		42W(m*K) <sup>-1</sup>
Temp.limit		-40°C~+110°C		Coefficient of thermal expansion		11*10 <sup>-6</sup> *K <sup>-1</sup>
Initial pre-lubrication at assembly is strongly recommended						

SF-FR:

Tech. Data						
Max load	Static	80N/mm <sup>2</sup>		Friction coefficient		0.03~0.20
	Dynamic	40N/mm <sup>2</sup>		Max. speed	Dry	1m/s
Oil					>1m/s	
Temp.limit		-195°C~+260°C				