

OILLESS BEARING



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SGO. CO., LTD.



Technical Value Creator SGO

Company Info

Fulfilling **SGO's** Commitment for
Customer Satisfaction through
Clean Environment and Management

- **Company name** : SGO CO., LTD
- **CEO** : CHOI TAE SOO
- **Established** : December 1st, 2000
- **Address (Head office)** : 28-10 Namdongseo-ro 113 beon-gil Namdong-gu, Incheon, Rep of Korea
- **Address (2nd factory)** : 28-13 Namdongseo-ro 113 beon-gil (Develon Factory)
- **Employee** : 85
- **Capital** : USD 1,000,000
- **Main Products** : Oilless Bearing / Bronze Extruded bars



Furnace



Continuous Casting Machine



2,750Ton Extruding machine



Graphite plugs press machine



Sintering Press



CNC Machines



Shape measuring machine



Friction testing machines (Bush & Plate)



MES

History

- 2018** Designated as a Small Giant Company of Korea
- 2017** Awarded \$ 5-Million Export Tower
- 2015** Won the prize from Korean Commission for Corporate Partnership
- 2013** Received a citation from the Small and Medium Business Administration
Won the prize in 2013 Venture Enterprise Contest
- 2012** Registered trademark SGO
- 2011** Acquired International Patents for Develon in Germany & Italy
- 2010** Developed and installed Oilless Bearing for pumped stored power plant
- 2009** Started to operate 2,750 Ton of Extruding Machine
- 2008** Designated as a Venture Enterprise
- 2006** Designated as a Promising Export Firm
Acquired ISO14001
- 2005** Established R&D Center
- 2002** Acquired ISO 9001
- 2000** Established SGO Co., LTD

Develon

Develon Bearing?

Develon is steel-backed sintered metal bearing with excellent wear-resistance for heavy load and low/mid velocity. Sintered materials (1~1.2mm) including Cu, Fe, Ni, Sn, MoS₂, Graphite and oil impregnated pores are spotlighted as a new generational sliding bearings.

Structure



Bi-layer structures



Distribution shape of solid-lubricants



Wear Amount test

- **Method** : Comparison of Develon #200S and Bronze bearing installed in the same press dies
- **Quantity** : 34 PCS each bearing
- **Stroke Numbers** : 184,750
- **Result** : **Develon** - Clean surfaces without seizure, Oil film formed
Bronze - A slight wear on counterpart (About 20 μ)

Develon



VS



Bronze



Manufacturing Process



1 Raw material



2 Compounding



3 Sintering



4 Machining



5 Finished product

Patent for develon



GERMANY



ITALY

Develon



Mechanical & Physical properties

Code	Material	Lubrication	P	V	PV Value	T	Density	Hardness	Elongation	Tensile Strength
	Sinter type, Backing steel		kgf/cm ² <N/mm ² >	m/min <m/s>	kgf/cm ² ·m/min <N/mm ² ·m/s>	℃	g/cm ³	HRB	%	kgf/mm ² <N/mm ² >
Develon 200S	Fe -Type KS SS400 DIN St44-2	Dry	290 (760) <29(76)>	30 <0.5>	1,000(3,000) <1.65(4.90)>	-40 ~ +120	6.3 ~ 7.1	0 ~ 20	17	41 <400>
		Periodic lubrication	500(760) <50(76)>	60 <1>	1,500(3,000) <2.45(4.90)>					
Develon 200SP	Cu -Type KS SS400 DIN St44-2	Dry	250(700) <25(70)>	30 <0.5>	980(2,800) <1.60(4.58)>	-40 ~ +120	6.0 ~ 6.8	-15 ~ 15	17	41 <400>
		Periodic lubrication	450(700) <45(70)>	60 <1>	1,500(3,000) <2.45(4.90)>					
Develon 200H	Fe -Type KS SM45C DIN CK45	Dry	450(750) <45(75)>	30 <0.5>	1,000(3,000) <1.63(4.90)>	-40 ~ +250	6.3 ~ 7.1	35 ~ 45	28	48 <470>
		Periodic lubrication	700(1200) <70(120)>	70 <1.16>	1,500(3,000) <2.45(4.90)>					

※ Above data is based on backing metal KS SS400 / KS SM45C.
Mechanical properties can be changed accroding to backing steel.
※ () indicates static allowable contact pressure with no sliding or sliding at extremly low velocity of under 0.0017 m/s.
※ Service temperature is subject to impregnation oil in bearing layer.

SGO #500



Mechanical & Physical properties

Code	Lubrication	P	V	PV Value	T	Density	Hardness	Elongation	Tensile Strength
		kgf/cm ² <N/mm ² >	m/min <m/s>	kgf/cm ² ·m/min <N/mm ² ·m/s>	℃	g/cm ³	HB	%	kgf/mm ² <N/mm ² >
500SP	Dry	300 (1,500) <29(150)>	30 <0.5>	1,000 <1.65>	-40 ~ +150	7.8	210	12	77 <755>
	Periodic lubrication		60 <1>	2,000 <3.25>					
500HP	Dry	740 (1,800) <73(180)>	6 <0.1>	1,000 <1.65>	-40 ~ +150	7.8	245	12	77 <755>
	Periodic lubrication		15 <0.25>	2,000 <3.25>					
500SP9	Dry	920 (2,050) <90(200)>	15 <0.25>	1,000 <1.65>	-40 ~ +150	7.6	280	1	79 <780>
	Periodic lubrication		30 <0.5>	2,000 <3.25>					

※ () indicates static allowable contact pressure with no sliding or sliding at extremly low velocity of under 0.0017 m/s.
※ The values shown above are typical values and are subject to change without notice for improvement.

SGO #500

Manufacturing Process

Full production line from raw material to finished parts.



1 Raw material



2 Alloy



3 Checking composition and hardness during alloying



4 Billet by continuous casting and cutting



5 Billets for extruding



6 Extruding and Storing bars



7 Cutting & drilling



8 Inserting plugs & machining (* Design registration for Conical plugs)



9 Impregnating & Inspecting



10 Packing & storing

Main Application

Plastic Injection Molding Machines



Power Plants



Press Dies and Molds



Construction Machinery



Hydraulic Press Machines



Steel Production Facilities

