



# GENERAL METALS & POLYMERS

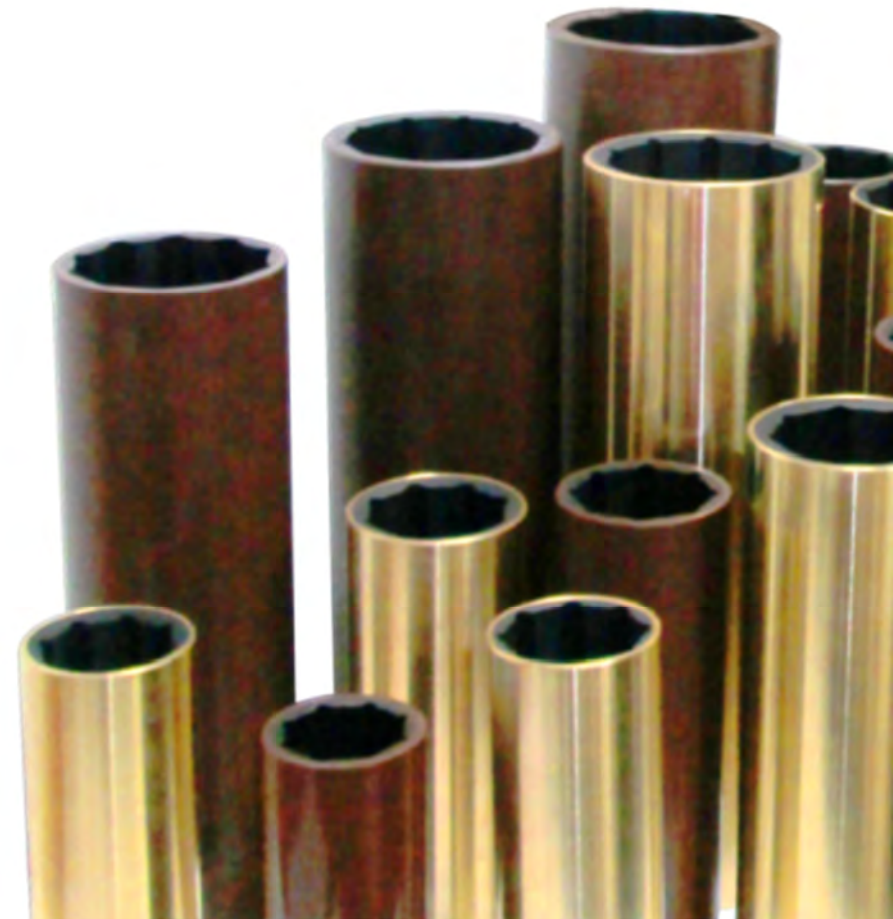
India's Leading Manufacturer and Exporter of Cutlass Rubber Bearings

Trusted worldwide for over 35 years

More 10 million bearings sold internationally

# GENERAL METALS & POLYMERS

- Established in **1979**, **General Metals & Polymers** is an **ISO 9001:2015** certified organization, a manufacturer and exporter specialising in Cutlass rubber bearings.
- GMP has been supplying Cutlass bearings to shipping companies, ship yards, pump manufacturers, power plant's, their OEM's, OMS's & maintenance companies all across India, Middle East, Europe and Australia for over 30 years.
- GMP is the first Indian company to indigenously develop CUTLASS BEARINGS / WATER LUBRICATED BEARINGS for the Indian Navy in 1981



# High Performance Cutlass Bearings

- GMP Cutlass bearings cover a wide range of shaft diameters from *25mm to 400mm*.

*(bespoke sizes can be made on request)*

- *GMP bearings are used in*

- Propeller shafts and rudders of boats and ships.*
- Vertical turbine pumps*
- Concrete Volute pumps*
- Submersible pumps*
- Borewell pumps*



# GMP Cutlass Bearings properties

- Designed to carry high shaft loads with minimum deflection
- Specially formulated rubber lining with extremely low coefficient of friction
- Grooves designed to efficiently dissipate heat and flush away abrasives reducing damage to bearing and shaft/sleeve.
- Can withstand high shaft RPM
- Significantly reduces friction, wear, abrasion and noise
- Industry leading bearing concentricity
- Industry leading bond strength; between rubber and shell material.
- Resistant to, oil, grease and most chemicals
- Non-polluting and environmentally friendly

## Concentricity and Cylindricity

Most manufacturers use centreless grinding techniques to finish the outside diameter but centreless grinding process does not take the inside diameter of the bearing into account, the centres of the outside diameter and inside diameter may not be the same.

GMP bearings are mounted on a mandrel and ground on a cylindrical grinder, thus achieving better concentricity as well as cylindricity to the full length of the bearing so that it is perfectly round, perfectly straight and has no taper, as compared to bearings turned on a lathe machine.

# GMP Cutlass Bearings materials

## Choice of shell materials:

- Brass (all grades)
- Stainless Steel (all grades including Duplex steel)
- Bronze (all grades)
- Cast Iron
- Mild Steel
- Phenolic (Non metallic)

## Choice of Inner lining materials:

- Nitrile rubber
- Neoprene rubber
- Natural rubber
- PTFE Graphite Filler
- PTFE Bronze Filler
- Carbon

Rubber Properties	
Density (Specific gravity)	1.25 ± 0.1
Hardness Shore A	65/70 shores A
Tensile strength	(Min) 170 kgf/cm <sup>2</sup>
Elongation	(Min) 410%
Young modules	(Max) 220kg/cm <sup>2</sup>
Permanent Compression set	(Max) 20%
Co- efficient of thermal expansion	7x10 <sup>4</sup>
Bond strength	235 PSI (16.5 Kgf/sq.cm)



# Types of GMP Bearings



**GMP Metal Sleeve Bearing**  
*(Brass/Bronze/Stainless Steel)*



**GMP Composite Sleeve Bearing**



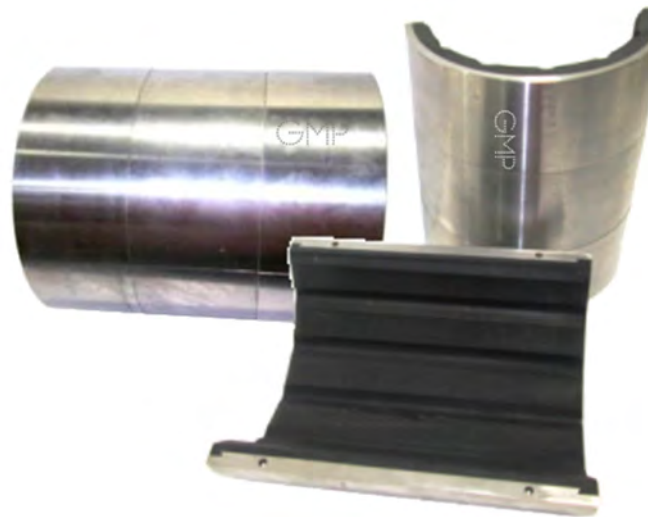
**GMP Fluted Groove Bearing**



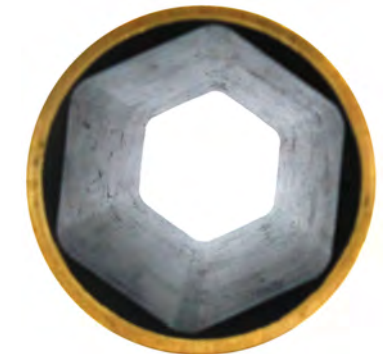
**GMP Spiral Groove Bearing**



**GMP Flanged Bearing**



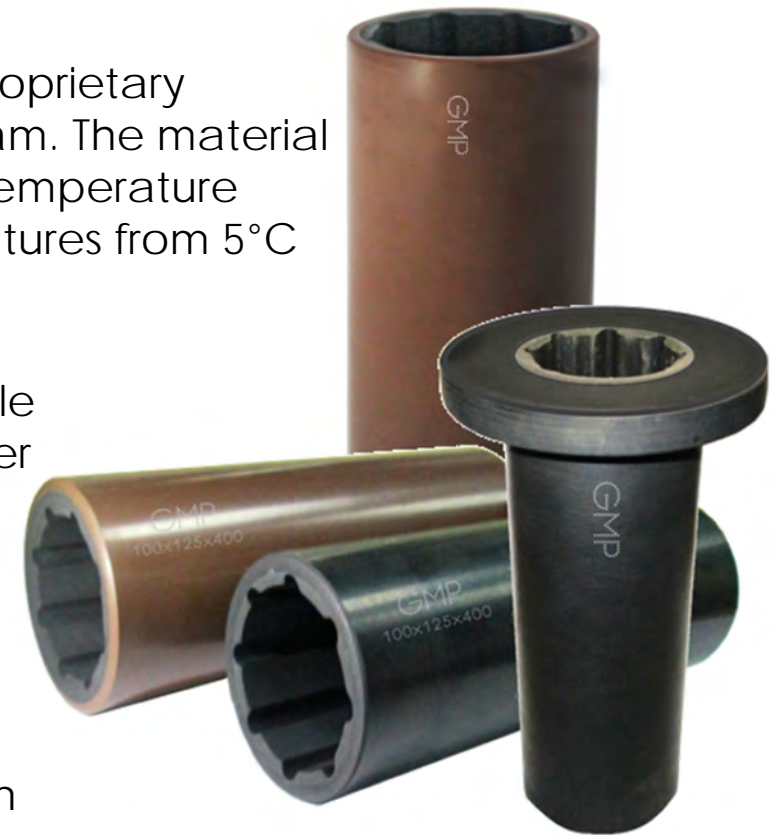
**GMP Split Cutlass Bearing**



**GMP Polygonal Profile Bearing**

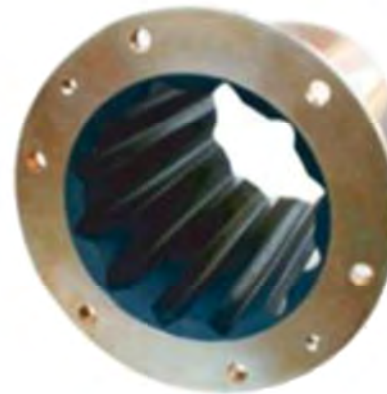
# GMP Non-Metal bearings

- GMP Composite Cutlass Rubber Bearings offer all the benefits of our metal shelled bearings with added benefit of being light weight (1/3 the weight of metal bearings) and no galvanic corrosion due to its anti electrolytic properties.
- GMP Composite Cutlass Rubber bearing are made of proprietary composite materials developed by our in house R&D team. The material is resistant to oil, grease and chemicals and match the temperature range of metal bearing materials to function at temperatures from 5°C to 70°C.
- High temperature resistance and negligible swelling characteristics of GMP composite rubber bearings enable them to operate at a closer running clearance than other bearing materials.
- The composite outer shell is kept flexible for better grip when pressed into the housing.
- Our shell material also has bearing properties, so even if the soft lining is worn out the shaft will not get damaged.
- GMP Composite Cutlass Rubber Bearings are available in brown and black colours. (Flanged is available only in black)



# GMP Flanged Bearings

- Our Flanged Bearings are cast centrifugally with an integral flange, the shells are heavy walled.
- The flange provides structural strength to retain bearing and prevent rotation in housing.
- Shells are furnished un-drilled unless specified.
- Available in solid and split design.

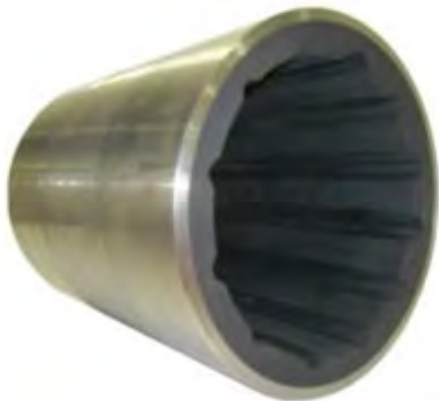




# GMP Split bearing



- Designed for easy fitment and extraction in bronze or stainless steel
- Shells are precision machined with keystone or dovetail races.
- Longitudinal water grooves run the full length of the shell to provide optimum water flushing and lubrication



# GMP bearings samples



# GMP Quality

Testing and quality control is conducted at our lab equipped for

- Tensile strength test
- Elongation test
- Compression set test
- Abrasion test
- Friction test
- Swelling test
- Bond strength test
- Specific gravity test
- Co efficient of thermal expansion



The QC department is equipped with dimension checking equipment and gauges.

# A few of our Customers



**INDIAN NAVY**



Urantia Suministros

UNITED STATES OF AMERICA



INDIA



**BT Marine**

PROPELLERS & STERNGEAR SYSTEMS

UNITED KINGDOM



INDIA



HELLENIC PROPELLERS L.T.D

GREECE



INDIA



EXPERT UNITED  
MARINE SERVICES LLC

UNITED ARAB EMIRATES

**RELIANCE**

**Power**

INDIA



INDIA | PERU | UAE



INDIA



THAILAND

# A few of our Customers



# A few of our Customers

