COB®

HIGH PERFORMANCE BEARINGS FOR AUTOMOTIVE & INDUSTRIAL APPLICATIONS

PRODUCT RANGE

- Metal-Polymer Bearings
- Bimetal Bearings
- Self-lubricating Bearings
- Hardened Steel Bearings
- Solid Bronze Bearings
- Wrapped Bronze Bearings
- Meshed Composite Bearings
- Plastic Bearings

www.cob-bearing.com

KEY FACTS

Our Mission

Due to the constant pressure on costs, increasing uptime of machinery and equipment the operational reliability of bearings is getting more and more important. Process reliability and consistently very high level of quality is something we have guaranteed for many years. Our Certificates and customer awards received by COB Precision Parts is evidence of our success in maintaining customer satisfaction for many years. We will be the supply partner of first choice, working globally and built long-term partnership with our customers.

With 600 employees, including over 100 engineering experts,COB is dedicated to supplying customers worldwide with high performance bearings

Our company covers an area of 90,000 square meters. Plant manufacturing area covers 60,000 square meters.

Quality is at The Core of Everything That We Do

2001 Passed successfully the QS 9000 and VDA6.1 quality system certification

2006 Passed successfully the TS16949, ISO 9001 quality system certification

2009 Passed successfully the ISO 14001, of environmental system certification

2017 Qualified for the IATF 16949:2016 quality system audited by Swiss company SGS

2018 2018 Passed the OHSAS 18001 Occupational Health and Safety Management System Certification

- Participated in compiling 1 International Standard
- Participated in compiling 12 National Standards
- Own 18 Patents

01 METAL-POLYMER BEARINGS
COB-PBM 01

COB-PBM 010

1. PTFE + fillers
2. Sintered porous bronze layer
3. Steel backing layer
4. Plating layer (tin, zinc or copper)

Lead Free

- Standard Bearing forms
  - Cylindircal bushes
  - Flanged bushes
  - Thrust washers
  - Sliding plates

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	250	psi	36,000
Max. dynamic load	MPa	140	psi	20,000
Operating Temperature	°C	-200 to 280	°F	-328 to 536
Dry Running				
Max. sliding speed	m/s	2.5	fpm	500
Max. PV Value	m/s x MPa	3.6	psi x fpm	105,000
Oil Lubrication				
Max. sliding speed	m/s	5.0	fpm	1000
Max. PV Value	m/s x MPa	20.0	psi x fpm	572,000

- Low and constant friction and very good wear performance indry running conditions
- Suitable for linear, oscillating and rotating movements
- High load capacity
- No stick slip

COB-PBM 015

1. PTFE + fillers
2. Sintered porous bronze layer
3. Steel backing layer
4. Plating layer (tin, zinc or copper)

Lead Free

RoHS compliant

- Standard Bearing forms
  - Cylindircal bushes
  - Flanged bushes
  - Thrust washers
  - Sliding plates

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	250	psi	36,000
Max. dynamic load	MPa	140	psi	20,000
Operating Temperature	°C	-200 to 280	°F	-328 to 536
Dry Running				
Max. sliding speed	m/s	2.0	fpm	400
Max. PV Value	m/s x MPa	3.6	psi x fpm	105,000
Oil Lubrication				
Max. sliding speed	m/s	5.0	fpm	1000
Max. PV Value	m/s x MPa	15.0	psi x fpm	429,000

- Low and constant friction in dry running conditions
- Improved wear resistant behaviour
- Suitable for linear, oscillating and rotating movements
- High load capacity
- No stick slip

COB-PBM 016

1. PTFE + fillers
2. Sintered porous bronze layer
3. Bronze backing layer

Lead Free

RoHS compliant

- Standard Bearing forms
  - Cylindircal bushes
  - Flanged bushes
  - Thrust washers
  - Sliding plates

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	140	psi	20,000
Max. dynamic load	MPa	140	psi	20,000
Operating Temperature	°C	-200 to 280	°F	-328 to 536
Dry Running				
Max. sliding speed	m/s	2.0	fpm	400
Max. PV Value	m/s x MPa	3.6	psi x fpm	105,000
Oil Lubrication				
Max. sliding speed	m/s	5.0	fpm	1000
Max. PV Value	m/s x MPa	20.0	psi x fpm	572,000

- Low and constant friction in dry running conditions
- Improved wear resistant behaviour
- Suitable for linear, oscillating and rotating movements
- No stick slip
- Corrosion resistant due to bronze backing in humid/saline environments
- Good thermal conductivity

COB-PBM 017

1. PTFE + fillers
2. Sintered porous bronze layer
3. Stainless steel backing layer
4. Plating layer

Lead Free

- Standard Bearing forms
  - Cylindircal bushes
  - Flanged bushes
  - Thrust washers
  - Sliding plates

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	250	psi	36,000
Max. dynamic load	MPa	140	psi	20,000
Operating Temperature	°C	-200 to 280	°F	-328 to 536
Dry Running				
Max. sliding speed	m/s	2.0	fpm	400
Max. PV Value	m/s x MPa	3.6	psi x fpm	105,000
Oil Lubrication				
Max. sliding speed	m/s	5.0	fpm	1000
Max. PV Value	m/s x MPa	20.0	psi x fpm	572,000

- Low and constant friction in dry running conditions
- Improved wear resistant behaviour
- Suitable for linear, oscillating and rotating movements
- No stick slip
- Corrosion resistant due to stainless steel backing

COB-PBM 018

1. Modified PTFE + fillers
2. Sintered porous bronze layer
3. Steel backing layer
4. Plating layer (tin, zinc or copper)

Lead Free

RoHS compliant

- Standard Bearing forms
  - Cylindircal bushes
  - Flanged bushes
  - Thrust washers
  - Sliding plates

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	250	psi	36,000
Max. dynamic load	MPa	140	psi	20,000
Operating Temperature	°C	-200 to 280	°F	-328 to 536
Dry Running				
Max. sliding speed	m/s	2.5	fpm	500
Max. PV Value	m/s x MPa	1.0	psi x fpm	29,000
Oil Lubrication				
Max. sliding speed	m/s	10.0	fpm	2000
Max. PV Value	m/s x MPa	13.0	psi x fpm	371,800

- Low and constant friction and very good wear performance indry running conditions
- Suitable for linear, oscillating and rotating movements
- High load capacity
- No stick slip
- Improved tribological behaviour for lubricated applications

COB-PBM 019

1. Modified PTFE + fillers
2. Sintered porous bronze layer
3. Steel backing layer
4. Plating layer (tin, zinc or copper)

Lead Free

- Standard Bearing forms
  - Cylindircal bushes
  - Flanged bushes
  - Thrust washers
  - Sliding plates

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	250	psi	36,000
Max. dynamic load	MPa	140	psi	20,000
Operating Temperature	°C	-200 to 280	°F	-328 to 536
Dry Running				
Max. sliding speed	m/s	2.0	fpm	400
Max. PV Value	m/s x MPa	3.6	psi x fpm	105,000
Oil Lubrication				
Max. sliding speed	m/s	5.0	fpm	1000
Max. PV Value	m/s x MPa	20.0	psi x fpm	572,000

- Low and constant friction and very good wear performance indry running conditions
- Suitable for linear, oscillating and rotating movements
- High load capacity
- No stick slip
- Improved tribological behaviour for lubricated applications

APPLICATION REFERENCES IN PASSENGER CARS

Belt tensioner system, Starters Alternators, Pulley Dampers, Oil/Water Pumps, Common rail pump

Heating/AC (compressor bearings)

Screen wiper mechanism
Spring loaded articulation
Convertible Tops, Steering Systems, Universal joint
Gearshift lever

Powertrain, Transmissions,Transfer Cases, Differentials,Dual Mass Flywheels, Brake,Antilock system, Driveshafts,Axles, Shock Absorber rod guide, Suspension

Door hinges

APPLICATION REFERENCES

Pivot Bearings for Scissor Lifts

Pivot Bearings of Steering for Fork Lifts

Bearings for Mast Support

King Pin Bearings

Sliding Plates for Telescopic Arms

Linkage Bushings

02 METAL-POLYMER BEARINGS
COB-PBM 02

COB-PBM 021

1. POM + fillers
2. Sintered porous bronze layer
3. Steel backing layer
4. Plating layer (tin, zinc, copper)

Lead Free

- Standard Bearing forms
  - Cylindircal bushes
  - Flanged bushes
  - Thrust washers
  - Sliding plates

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	140	psi	20,000
Max. dynamic load	MPa	100	psi	14,500
Operating Temperature	°C	-40 to 120	°F	-40 to 248
Grease Lubricated				
Max. sliding speed	m/s	2.5	fpm	500
Max. PV Value	m/s x MPa	2.8	psi x fpm	80,000

- Material is available as a machinable version with higher sliding layer thickness
- Material is available also without indents

- For grease lubricated applications
- Contains grease indents in the sliding layer
- Suitable for linear, oscillating and rotating movements
- Very good wear resistance
- Shock load resistance
- Sufficient sliding layer thickness

COB-PBM 026

1. PEEK + fillers
2. Sintered porous bronze layer
3. Steel backing layer
4. Plating layer (tin, zinc, copper)

Lead Free

- Standard Bearing forms
  - Cylindircal bushes
  - Flanged bushes
  - Thrust washers
  - Sliding plates

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	250	psi	36,000
Max. dynamic load	MPa	180	psi	26,000
Operating Temperature	°C	-60 to 250	°F	-76 to 482
Grease Lubricated				
Max. sliding speed	m/s	2.5	fpm	500
Max. PV Value	m/s x MPa	2.8	psi x fpm	80,000
Oil Lubrication				
Max. sliding speed	m/s	10.0	fpm	2000
Max. PV Value	m/s x MPa	30.0	psi x fpm	858,000

- PEEK containing sliding layer to improve temperature resistance
- High load capacity
- Very good hydrodynamic behaviour
- Suitable for high pressure pumps,gear applications, common rail pumps, etc.

APPLICATION REFERENCES IN AGRICULTURE

APPLICATIONS IN TRACTORS

Bearings for Hinges

King Pin Bushings

Bearings for Pivot Points

Bearings for Rock Shaft

APPLICATIONS IN HARVERSTERS

Bearings for Mainshaft

Hydraulic Cylinder Bearings

Bearings for Gearbox

King Pin Bushings

APPLICATION REFERENCES IN HYDRAULIC PUMPS & MOTORS

Hydraulic external gear pumps and motors

Vane pumps, gerotor and internal gear pumps

High pressure axial piston pumps

Radial piston motors

APPLICATION REFERENCES IN COMPRESSORS

Rotary and Scroll compressors

Piston Compressors

Air Conditioning

Refrigeration and heat

03 BIMETAL BEARINGS
COB-AM 03

COB-AM 03 products consists of a low carbon steel backing, with a sintered bronze sliding layer. The product is available in different bronze overlay alloys customized for the application. In order to improve the tribological performance the sliding layer can contain solid lubricant, filled in diamond-shaped indents. In case of corrosive environment the backing can be copper plated. Bearing forms can be produced to order. Products of COB-AM 03 series provide high load capacity and very good resistance to fatigue strength, specially under high temperature.

- Standard Bearing forms

Cylindircal bushes

Flanged bushes

Thrust washers

Sliding plates

please ask us for the available datasheet with detailed information about material characteristics and design information

COB-AM 031

- High load capacity
- Sliding layer can be machined with lubricating grooves and/or with grease indents
- Steel backing can be copper plated

Steel+CuPb10Sn10

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load Capacity	MPa	150	psi	22,000
Operating Temperature	°C	-40 to 250	°F	-40 to 482
Oil Lubricated				
Max. sliding speed	m/s	5.0	fpm	1000
Max. PV Value	m/s x MPa	10.0	psi x fpm	286,000
Min. Sliding Layer Hardness	HB	60	HB	60
Min. Mating Material Hardness	HRC	45	HRC	45

COB-AM 032

- Sliding layer can be machined with lubricating grooves and/or with grease indents
- steel backing can be copper plated

Steel+CuPb24Sn4

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load Capacity	MPa	130	psi	18,800
Operating Temperature	°C	-40 to 250	°F	-40 to 482
Oil Lubricated				
Max. sliding speed	m/s	10.0	fpm	2000
Max. PV Value	m/s x MPa	10.0	psi x fpm	286,000
Min. Sliding Layer Hardness	HB	45	HB	45
Min. Mating Material Hardness	HRC	45	HRC	45

COB-AM 033

- High load capacity
- Sliding layer can be machined with lubricating grooves and/or with grease indents
- Steel backing can be copper plated

Steel+CuPb24Sn

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load Capacity	MPa	130	psi	18,800
Operating Temperature	°C	-40 to 250	°F	-40 to 482
Oil Lubricated				
Max. sliding speed	m/s	10.0	fpm	2000
Max. PV Value	m/s x MPa	10.0	psi x fpm	286,000
Min. Sliding Layer Hardness	HB	40	HB	40
Min. Mating Material Hardness	HRC	45	HRC	45

COB-AM 034

- Sliding layer can be machined with lubricating grooves and/or with grease indents
- Aluminum-tin alloy for hydrodynamic applications

Steel+AlSn20Cu

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load Capacity	MPa	100	psi	14,500
Operating Temperature	°C	-40 to 150	°F	-40 to 302
Oil Lubricated				
Max. sliding speed	m/s	25.0	fpm	5000
Max. PV Value	m/s x MPa	25.0	psi x fpm	715,000
Min. Sliding Layer Hardness	HB	30	HB	30
Min. Mating Material Hardness	HB	270	HB	270

COB-AM 035

- Sliding layer can be machined with lubricating grooves and/or with grease indents
- Steel backing can be copper plated

Steel+CuPb30

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load Capacity	MPa	120	psi	17,400
Operating Temperature	°C	-40 to 170	°F	-40 to 338
Oil Lubricated				
Max. sliding speed	m/s	15.0	fpm	3000
Max. PV Value	m/s x MPa	8.0	psi x fpm	228,800
Min. Sliding Layer Hardness	HB	30	HB	30
Min. Mating Material Hardness	HB	270	HB	270

COB-AM 036

- High load capacity
- Sliding layer can be machined with lubricating grooves and/or with grease indents
- Steel backing can be copper plated

Steel+CuSn8Ni

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load Capacity	MPa	140	psi	20,000
Operating Temperature	°C	-40 to 250	°F	-40 to 482
Oil Lubricated				
Max. sliding speed	m/s	5.0	fpm	1000
Max. PV Value	m/s x MPa	10.0	psi x fpm	286,000
Min. Sliding Layer Hardness	HB	70	HB	70
Min. Mating Material Hardness	HRC	45	HRC	45

RoHS compliant Lead Free

COB-AM 037

- Steel backing can be copper plated

Steel+CuSn6.5P0.1

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load Capacity	MPa	65	psi	33,350
Operating Temperature	°C	-40 to 200	°F	-40 to 392
Oil Lubricated				
Max. sliding speed	m/s	5.0	fpm	1000
Max. PV Value	m/s x MPa	10.0	psi x fpm	286,000
Min. Sliding Layer Hardness	HB	60	HB	60
Min. Mating Material Hardness	HRC	45	HRC	45

Lead Free

COB-AM 039

- Sliding layer can be machined with lubricating grooves and/or with grease indents
- Very good corrosion resistance

Steel+CuSn6Ni9

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load Capacity	MPa	150	psi	21,700
Operating Temperature	°C	-40 to 250	°F	-40 to 482
Oil Lubricated				
Max. sliding speed	m/s	5.0	fpm	1000
Max. PV Value	m/s x MPa	10.0	psi x fpm	286,000
Min. Sliding Layer Hardness	HB	60	HB	60
Min. Mating Material Hardness	HRC	45	HRC	45

RoHS compliant Lead Free

COB-AM 530

Steel+CuZn25Al6Fe3Mn3+ Solid lubricant plugs

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load Capacity	MPa	100	psi	145,00
Operating Temperature	°C	-40 to 300	°F	-40 to 572
Oil Lubricated				
Max. sliding speed	m/s	0.50	fpm	100
Max. PV Value	m/s x MPa	1.65	psi x fpm	48,000
Min. Sliding Layer Hardness	HB	210	HB	210
Min. Mating Material Hardness	HRC	40	HRC	40

Lead Free

APPLICATION REFERENCES WITH BIMETAL BEARINGS

BIMETAL BEARINGS FOR HEAVY DUTY APPLICATIONS

BIMETAL YOKE BEARINGS

Blade lift cylinder yoke bearings in grille housing

BIMETAL PISTON BEARINGS

04 SELF-LUBRICATING BEARINGS
COB-M 05

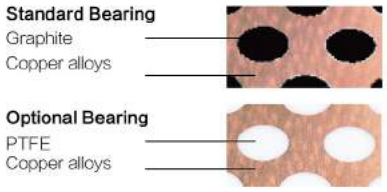
COB-M 05 products consists of highly wear resistant cooper cast alloys showing sliding surfaces with evenly provided solid lubricant plugs. The plugs are arranged according to the movement requirements. The high density of the bronze guarantees high stability under extreme loads.
Bearings are available with solid lubricant plugs, please contact COB engineers.

- **Consult COB application engineer for other materials**

- Standard Bearing forms

Cylindircal bushes
Thrust washers
Flanged bushes
Sliding plates

please ask us for the available datasheet with detailed information about material characteristics and design information



COB-M 050

CuZn25Al6Fe3Mn3

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	300	psi	43,500
Max. dynamic load	MPa	100	psi	14,500
Operating Temperature	°C	-40 to 300	°F	-40 to 572
Dry Running				
Max. sliding speed	m/s	0.50	fpm	100
Max. PV Value	m/s x MPa	1.65	psi x fpm	48,000
Min . Hardness	HB	210	HB	210

Lead Free

COB-M 051

CuZn25Al6Fe3Mn3

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	300	psi	43,500
Max. dynamic load	MPa	100	psi	14,500
Operating Temperature	°C	-40 to 300	°F	-40 to 572
Dry Running				
Max. sliding speed	m/s	0.50	fpm	100
Max. PV Value	m/s x MPa	1.65	psi x fpm	48,000
Min . Hardness	HB	235	HB	235

Lead Free

COB-M 052

CuZn25Al6Fe3Mn3

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	300	psi	43,500
Max. dynamic load	MPa	130	psi	19,000
Operating Temperature	°C	-40 to 300	°F	-40 to 572
Dry Running				
Max. sliding speed	m/s	0.30	fpm	60
Max. PV Value	m/s x MPa	1.65	psi x fpm	48,000
Min . Hardness	HB	260	HB	260

Lead Free

COB-M 053

CuAl10Fe3

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	280	psi	40,000
Max. dynamic load	MPa	50	psi	7,200
Operating Temperature	°C	-250 to 400	°F	-418 to 752
Dry Running				
Max. sliding speed	m/s	0.25	fpm	50
Max. PV Value	m/s x MPa	1.25	psi x fpm	36,000
Min . Hardness	HB	160	HB	160

Lead Free

COB-M 054

CuSn5Pb5Zn5

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	140	psi	20,000
Max. dynamic load	MPa	40	psi	5,800
Operating Temperature	°C	-40 to 250	°F	-40 to 482
Dry Running				
Max. sliding speed	m/s	0.4	fpm	80
Max. PV Value	m/s x MPa	1.0	psi x fpm	29,000
Min . Hardness	HB	60	HB	60

COB-M 055

CuSn12

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	180	psi	26,000
Max. dynamic load	MPa	100	psi	14,500
Operating Temperature	°C	-40 to 300	°F	-40 to 572
Dry Running				
Max. sliding speed	m/s	0.5	fpm	100
Max. PV Value	m/s x MPa	1.2	psi x fpm	34,800
Min . Hardness	HB	90	HB	90

Lead Free

COB-M 056

HT250

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	200	psi	29,000
Max. dynamic load	MPa	70	psi	10,000
Operating Temperature	°C	-40 to 400	°F	-40 to 752
Dry Running				
Max. sliding speed	m/s	0.15	fpm	30
Max. PV Value	m/s	0.50	psi x fpm	14,500
Min . Hardness	HB	180	HB	180

Lead Free

COB-M 059

GCr15

Material & Bearing Properties	Unit	Value	Unit	Value
Max. static load	MPa	300	psi	43,500
Max. dynamic load	MPa	200	psi	29,000
Operating Temperature	°C	-100 to 300	°F	-148 to 572
Dry Running				
Max. sliding speed	m/s	0.17	fpm	34
Max. PV Value	m/s	1.50	psi x fpm	43,500
Min . Hardness	HRC	50	HRC	50

Lead Free

APPLICATION REFERENCES IN MINING

Electric Shovels	Articulated Haulers	Continuous Miners	Crushers
Dump Trucks	Undercarriage	Road Headers	Surface Miners

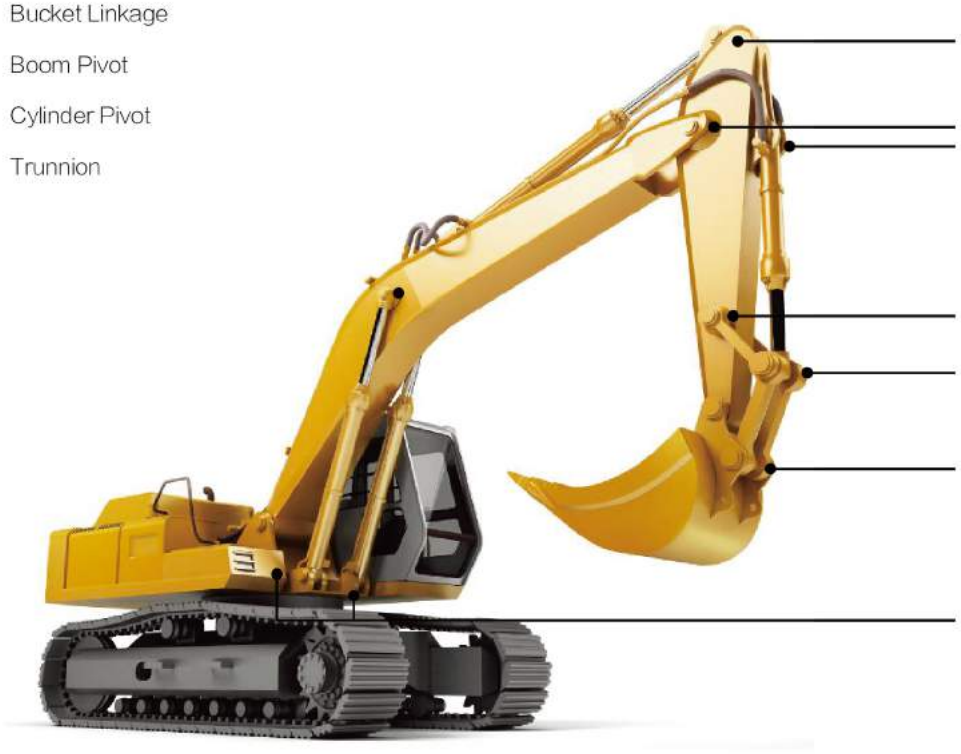
APPLICATION REFERENCES IN CONSTRUCTION

Bucket Linkage

Boom Pivot

Cylinder Pivot

Trunnion



COB-M06 Series

COB-M05 Series

APPLICATION REFERENCES IN HYDRAULIC CYLINDER

05 HARDENED STEEL BEARINGS
COB-M 06

COB-M 06 products consists of base steel of different grades and hardness and the sliding surface with different types of lubrication grooves.
The products are suitable for low rotation speed with high specific bearing pressure. Excellent shock and pulsating load capacity.
Bearings are available with other materials, please contact COB engineers.

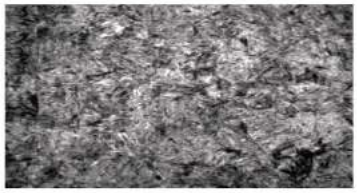
- **Consult COB application engineer for other materials**

- Standard Bearing forms

Cylindircal bushes

Flanged bushes

please ask us for the available data-sheet with detailed information about material characteristics and design information



For referance

COB-M 061

GCr15

Material & Bearing Properties	Unit	Value	Unit	Value
Max. dynamic load	MPa	250	psi	36,200
Operating Temperature	°C	-100 to 350	°F	-148 to 662
Grease Lubrication				
Max. sliding speed	m/s	0.1	fpm	19.7
Max. PV Value	m/s	1.5	psi x fpm	43,500
Min . Hardness	HRC	55	HRC	55

COB-M 062

42CrMo

Material & Bearing Properties	Unit	Value	Unit	Value
Max. dynamic load	MPa	100	psi	14,500
Operating Temperature	°C	-100 to 250	°F	-148 to 482
Grease Lubrication				
Max. sliding speed	m/s	0.5	fpm	100
Max. PV Value	m/s	1.5	psi x fpm	43,500
Min . Hardness	HV	600	HV	600

COB-M 063

35CrMo

Material & Bearing Properties	Unit	Value	Unit	Value
Max. dynamic load	MPa	250	psi	36,200
Operating Temperature	°C	-100 to 300	°F	-148 to 572
Grease Lubrication				
Max. sliding speed	m/s	0.1	fpm	20
Max. PV Value	m/s x MPa	1.5	psi x fpm	43,500
Min . Hardness	HRC	30	HRC	30

COB-M 064

20CrMo

Material & Bearing Properties	Unit	Value	Unit	Value
Max. dynamic load	MPa	150	psi	21,700
Operating Temperature	°C	-100 to 300	°F	-148 to 572
Grease Lubrication				
Max. sliding speed	m/s	0.17	fpm	34
Max. PV Value	m/s	1.20	psi x fpm	34,800
Min . Hardness	HRC	50	HRC	50

COB-M 066

C45

Material & Bearing Properties	Unit	Value	Unit	Value
Max. dynamic load	MPa	150	psi	21,700
Operating Temperature	°C	-100 to 300	°F	-148 to 572
Grease Lubrication				
Max. sliding speed	m/s	0.17	fpm	34
Max. PV Value	m/s x MPa	1.20	psi x fpm	34,800
Min . Hardness	HRC	50	HRC	50

COB-M 068

20CrMnTi

Material & Bearing Properties	Unit	Value	Unit	Value
Max. dynamic load	MPa	150	psi	21,700
Operating Temperature	°C	-100 to 250	°F	-148 to 482
Grease Lubrication				
Max. sliding speed	m/s	0.1	fpm	20
Max. PV Value	m/s	1.0	psi x fpm	29,000
Min . Hardness	HRC	56	HRC	56

APPLICATION REFERENCES IN FLUID POWER

Hydraulic Pumps

High Pressure Piston Pumps

Gear Pumps

APPLICATION REFERENCES

Heavy Lift Cranes

Platform Cranes

Propeller Bearings

Rudder Bearings

Winches

Risers

Chain Stoppers

Portable Bridges

06 SOLID BRONZE BEARINGS
COB-M 08

New and improved cooper alloys manufactured in our own foundry is what we see to be one of the key foundations of our company's success story. We cooperate closely with institutes of universities, research institutes and customers to tailor the performance of our products to the application requirements.

- **Consult COB application engineer for other materials**

- Standard Bearing forms

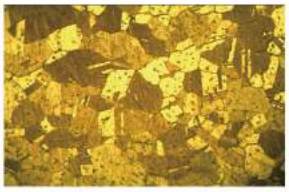
Cylindircal bushes

Flanged bushes

Thrust washers

Sliding plates

please ask us for the available datasheet with detailed information about material characteristics and design information



For reference

COB-M 080

CuSn7Zn4Pb7

Material & Bearing Properties	Unit	Value	Unit	Value
Min . Tensile strength	MPa	230	psi	33,300
Min . Yield Strength	MPa	130	psi	18,800
Min . Elongation	%	9	%	9
Min . Hardness	HB	60	HB	60

COB-M 081

CuSn12

Material & Bearing Properties	Unit	Value	Unit	Value
Min . Tensile strength	MPa	295	psi	42,700
Min . Elongation	%	5	%	5
Min . Hardness	HB	90	HB	90

COB-M 082

CuZn37Mn3Al2PbSi

Material & Bearing Properties	Unit	Value	Unit	Value
Min . Tensile strength	MPa	345	psi	50,000
Min . Elongation	%	15	%	15
Min . Hardness	HB	90	HB	90
Min. Yield Strength	MPa	120	psi	17,400

COB-M 083

CuSn7-0.2

Material & Bearing Properties	Unit	Value	Unit	Value
Min . Tensile strength	MPa	450	psi	65,200
Min . Elongation	%	20	%	20
Min . Hardness	HB	135	HB	135
Min. Yield strength	MPa	280	psi	40,600

COB-M 084

CuAl10Fe3

Material & Bearing Properties	Unit	Value	Unit	Value
Min . Tensile strength	MPa	400	psi	58,000
Min . Elongation	%	20	%	20
Min . Hardness	HB	90	HB	90

COB-M 085

CuAl10Fe5Ni5

Material & Bearing Properties	Unit	Value	Unit	Value
Min . Tensile strength	MPa	590	psi	85,500
Min . Elongation	%	15	%	15
Min . Hardness	HB	160	HB	160

COB-M 086

CuZn25Al6Fe3Mn3

Material & Bearing Properties	Unit	Value	Unit	Value
Min . Tensile strength	MPa	755	psi	110,000
Min . Elongation	%	12	%	12
Min . Hardness	HB	210	HB	210

COB-M 087

CuZn25Al6Fe3Mn3

Material & Bearing Properties	Unit	Value	Unit	Value
Min . Tensile strength	MPa	800	psi	116,000
Min . Elongation	%	6	%	6
Min . Hardness	HB	235	HB	235

COB-M 088

CuZn35Al2Mn2Fe1

Material & Bearing Properties	Unit	Value	Unit	Value
Min . Tensile strength	MPa	490	psi	71,000
Min . Elongation	%	30	%	30
Min . Hardness	HB	110	HB	110
Min. Yield strength	MPa	193	psi	28,000

APPLICATION REFERENCES IN CRANE

Roller
Idler

APPLICATION REFERENCES IN OFFSHORE PLATFORM

Adjusting Mechanism
Fairleads
Chain stoppers
Rig jack-up system
Drilling Equipment

07 WRAPPED BRONZE BEARINGS
COB-M 09

COB-M 09 products show good anti-fatigue and anti-erosion behavior as well as good wear resistance and high load capacity. Products of COB-M 09 series are applied under operating conditions such as high loads and low running speeds, for example in agricultural equipment, heavy duty and construction machines. The sliding layer can be designed with oil holes, diamond or ball shaped indents. Lubrication grooves can be machined customized to the application requirements.

- Standard Bearing forms

Cylindircal bushes

Flanged bushes

Thrust washers

Sliding plates

please ask us for the available datasheet with detailed information about material characteristics and design information

COB-M 090

CuSn8P

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load capacity	MPa	100	psi	14,500
Operating Temperature	°C	-100 to 150	°F	-148 to 300
Grease Lubrication				
Max. sliding speed	m/s	2.0	fpm	400
Max. PV Value	m/s x MPa	2.8	psi x fpm	80,000
Min . Hardness	HB	90	HB	90

- Sliding surface with diamond-or spherical shaped indents

COB-M 091

CuZn32

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load capacity	MPa	90	psi	13,000
Operating Temperature	°C	-100 to 150	°F	-148 to 300
Grease Lubrication				
Max. sliding speed	m/s	2.0	fpm	400
Max. PV Value	m/s x MPa	2.8	psi x fpm	80,000
Min . Hardness	HB	90	HB	90

- Sliding surface with oil/grease holes

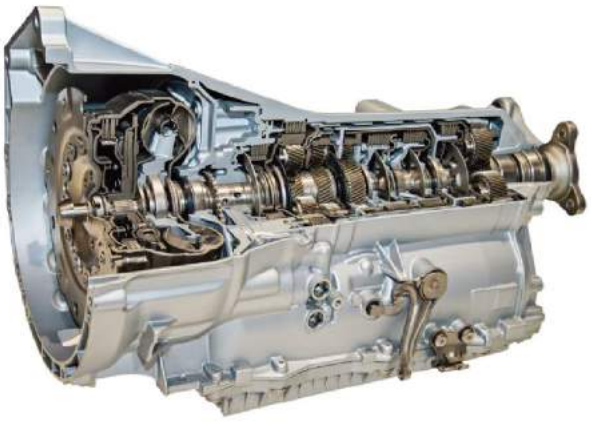
COB-M 092

CuSn8P

Material & Bearing Properties	Unit	Value	Unit	Value
Max. load capacity	MPa	100	psi	14,500
Operating Temperature	°C	-100 to 150	°F	-148 to 300
Grease Lubrication				
Max. sliding speed	m/s	2.0	fpm	400
Max. PV Value	m/s x MPa	2.8	psi x fpm	80,000
Min . Hardness	HB	90	HB	90

- Sliding surface with oil/grease holes

APPLICATION REFERENCES IN TRANSMISSION



Main Shaft Bearing

Reverse Idler Bearing

Bearings for Planetaries

Rear Output Shaft Bearing

Clutch Release Bearing

APPLICATION REFERENCES BEARINGS FOR BRAKES

Parking Brakes

Drum Brakes

Disc Brakes

08 MESHED COMPOSITE BEARINGS
COB-PM 20

COB-PM 20 series materials with polymers (PTFE +Fillers) are embedded in the pores of the mesh which adequately deploy and integrate advantages of the metal and the compound polymer. This self-lubricating and lead free product allows a low coefficient of friction and an excellent wear resistance.
These materials are used applied under low load applications.

- Standard Bearing forms

Cylindircal bushes

Flanged bushes

COB-PM200

Weaved copper mesh+optimized PTFE

COB-PM 200 is based on a woven copper mesh.
This soft texture support easy handling and installation and prevent potential noise and vibration issues.
It can be used in door hinges, seat adjustment systems and pedal linkages in passenger cars.

Performance index		Data
Max Velocity		1.0 m/s
Max PV Value		1.65 N/mm².m/s
Working Temperature		-200~+260℃
Friction Coefficient		0.05~0.2
Max Load	Static Load	100 N/mm²
	Dynamic Load	80 N/mm²
Mating Axle	Hardness	50~60 HRC
	Roughness	Ra=0.32~0.63 (μm)

COB-PM202

Punched copper mesh+optimized PTFE

COB-PM 202 is based on a punched copper mesh.
It supports easy handling and installation.
It can be used in measuring devices, food processing equipment and door hinges in passenger cars.

Performance index		Data
Max Velocity		1.0 m/s
Max PV Value		1.65 N/mm².m/s
Working Temperature		-60~+260℃
Friction Coefficient		0.05~0.15
Max Load	Static Load	100 N/mm²
	Dynamic Load	65 N/mm²
Mating Axle	Hardness	50~60 HRC
	Roughness	Ra=0.32~1.0 (μm)

APPLICATION IN SEATS

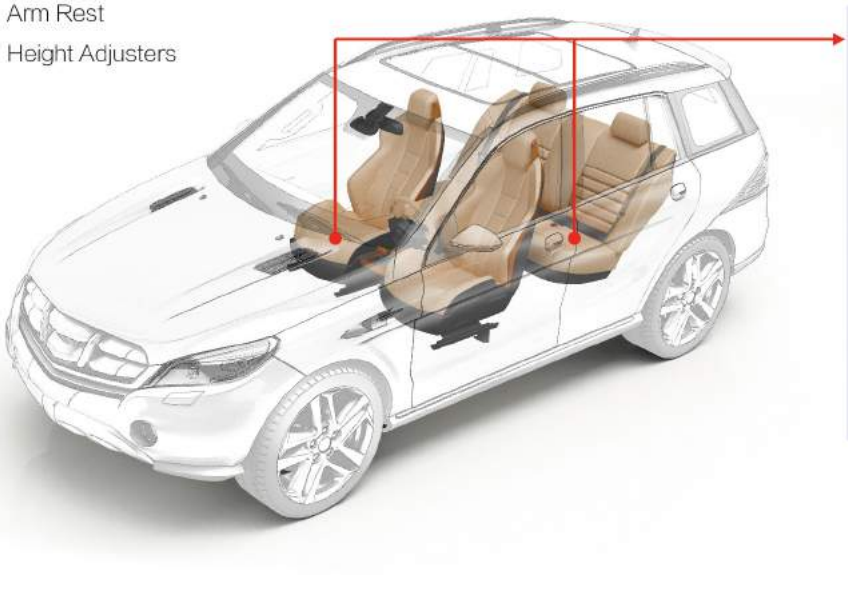
Headrest

Recliner

Swiveling Seat

Arm Rest

Height Adjusters



APPLICATION IN DOOR HINGES

09 PLASTIC BEARINGS
COB-HPC

COB-HPC products are widely used in light weight,felxiable profile and smoth running applications.These products are very comfortable for design engineers. Our engineers are experienced to provide you proposals on your specific demands.We work closely with customers from the beginning of the projects to the final realization.

We can offer standard profiles and also can make parts according to customers' specification.

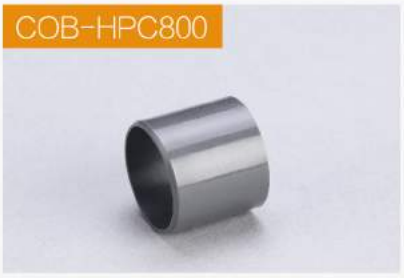
- Standard Bearing forms

 Cylindircal bushes

 Flanged bushes

 Thrust washers

COB-HPC800



Optimized PA66

COB-HPC800 is a generic plastic bearing. It provides good strength and low wear. It is resistance to dust and dirt.This product is applicable in working conditions of medium to high load, medium surface speed and medium temperature. It is not suitable for use in submerged conditions.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.07~0.16
Max.PV Value	0.64 N/mm².m/s
Compressive	100 MPa
Shore Hardness	81 HD
Working Temperature	-40~130℃
Max. Static Surface Pressure (20℃)	82 MPa

COB-HPC801

Optimized PA66

COB-HPC801 has excellent wear resistance, low friction coefficient and specifically long service life. Even mating with soft or rough shafts, this product still provides better wear resistance than other plastic bearings. COBHPC801 series products are widely used in vending machines, printing industry, electronic manufacturing,wood industry and machine tools, etc.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.07~0.24
Max.PV Value	0.24 N/mm².m/s
Compressive	60 MPa
Shore Hardness	78 HD
Working Temperature	-40~ 90℃
Max. Static Surface Pressure (20℃)	61 MPa

COB-HPC802

Optimized PA66

COB-HPC802 has an outstanding impact resistance, vibration damping and wear resistance. Because of its excellent vibration damping performance, this product is especially suitable for fitness equipment and packaging machinery. In addition, it is also applicable in agricultural machinery, textile machinery, machine tools and gardening machinery.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.17~0.41
Max.PV Value	0.13N/mm².m/s
Compressive	53 MPa
Shore Hardness	78 HD
Working Temperature	-40~ 80℃
Max. Static Surface Pressure (20℃)	21 MPa

COB-HPC810

Optimized POM

COB-HPC810 has low coefficients of friction at high and slow speed and excellent wear resistance at low and medium load. Moreover, this product performs well mating with shafts of different materials. COB-HPC810 are applied in automation, printing industry, beverage technology and aerospace engineering, etc.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.05~0.21
Max.PV Value	0.52 N/mm².m/s
Compressive	66 MPa
Shore Hardness	75 HD
Working Temperature	-50~ 90℃
Max. Static Surface Pressure (20℃)	38 MPa

COB-HPC811

Optimized POM

COB-HPC811 is PTFE-free, of which wear resistance at low to medium loads and high speed is higher than COB-HPC810. Moreover, COB-HPC811 has good liquid media resistance and low water absorption. It is applied in automation, printing industry, beverage technology and aerospace engineering, etc.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.05~0.22
Max.PV Value	0.55 N/mm².m/s
Compressive	65 MPa
Shore Hardness	75 HD
Working Temperature	-50~90℃
Max. Static Surface Pressure (20℃)	48 MPa

COB-HPC812

Optimized POM

COB-HPC812 is designed for direct contact with food or drugs at low to medium loads, as well as wet environment. This product has low water absorption and good liquid resistance. COB-HPC812 is widely applied in food machinery, beverage technology and medical industry, etc.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.05~0.18
Max.PV Value	0.42 N/mm².m/s
Compressive	56 MPa
Shore Hardness	78 HD
Working Temperature	-50~ 90℃
Max. Static Surface Pressure (20℃)	30 MPa

COB-HPC815

Optimized PET

Due to good thermal stability and low water absorption, COB-HPC815 is dimensionally stable under different environments. This product is also a cost-effective bearing for high load applications. COB-HPC815 is widely applied in solar technology, machine manufacturing, sports and leisure equipment and rail way applications.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.06~0.23
Max.PV Value	0.41 N/mm².m/s
Compressive	70 MPa
Shore Hardness	75 HD
Working Temperature	-40~ 130℃
Max. Static Surface Pressure (20℃)	55 MPa

COB-HPC820

Optimized PEEK

COB-HPC820 is resistant to high temperature up to +250° C. Furthermore, it has high compressive strength, very low moisture absorption, excellent wear resistance and high resistance to chemicals. COB-HPC820 products are widely applied in beverage industry, wood industry, plastic machinery, aviation industry and cleanroom, etc.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.08~0.28
Max.PV Value	3.60 N/mm².m/s
Compressive	110 MPa
Shore Hardness	84HD
Working Temperature	-100~ 250℃
Max. Static Surface Pressure (20℃)	150 MPa

COB-HPC825

Optimized PPS

COB-HPC825 has excellent chemical resistance and is suitable for submerged conditions temperature up to +200° C and submerged applications. It also has very low coefficients of friction mating with hard shafts. COB-HPC825 is applied in marine applications, beverage technology, medical industry and mechatronics, etc.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.05~0.23
Max.PV Value	1.42 N/mm².m/s
Compressive	85 MPa
Shore Hardness	88 HD
Working Temperature	-40~ 200℃
Max. Static Surface Pressure (20℃)	90 MPa

COB-HPC830

Optimized PI

COB-HPC830 has excellent wear resistance, high thermal resistance and high compressive strength. It is good at mating with soft shafts, carrying edge load and resisting impact loads. COB-HPC830 are widely applied in construction machinery, glass industry, aviation industry, machine tools and textile industry, etc.

Performance index	Data
Coefficient Of Sliding Friction(steel)	0.05~0.15
Max.PV Value	0.85 N/mm².m/s
Compressive	64 MPa
Shore Hardness	80 HD
Working Temperature	-100~ 250℃
Max. Static Surface Pressure (20℃)	150 MPa

CUSTOMIZED TESTS AND INSPECTIONS

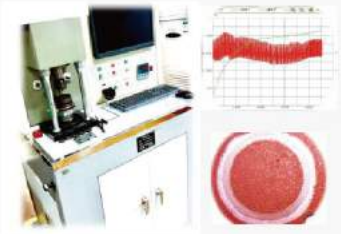
Rotating Test Rig
PV-Evaluation, Force 35kN

High speed friction and
wear testing, Force 40kN

Rotating Test Rig
PV-Evaluation, Force 5kN

Test Rig for oscillating
movements, Force 615kN

Tribomoeter
Force 10kN

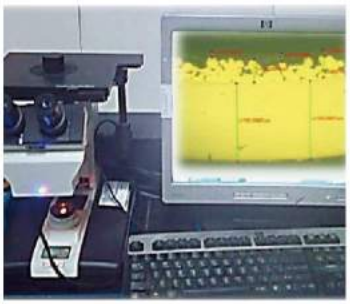


R&D Support

For almost all types of applications, simulations and inspections, we can support our customers. Tests tailored to customer projects can be run on our test rigs.
To make sure we can offer the best products and materials to meet our customers future needs, our strategy is considering heavy invests in research & development. For the challenging tribological and demanding usage conditions in many applications, our years of technical expertise have become valuable for our customers all around the world.

Surfaces, Materials, Destructive and Non-destructive Analysis

Analysis of coatings.Destructive tests (tensile, pressure, bending and hardness)



Microstructure analysis (Determination of grain size, pore size, phase portions) bonding analysis

Coordinate Measuring Machines (CMM) and Video Measuring Equipment

Profile and surface analysis

CUSTOMER SUPPORT

Team of Experts

Our service network provides access to our expertise and resources close to our customers. Contact our highly-qualified engineering experts for support in the selection of the right materials and design. Additional information is available in our technical handbooks and data sheets.

Contact us and will be happy to schedule a meeting with you to present our solutions and to describe our capabilities.

China Headquarter

COB PRECISION PARTS INC.

No.789 Zhengyuan Road,Jiaxing Economic Development Zone,Zhejiang,(314003)P.R.China
Phone:+86 573 8222 1111
E-Mail:cob@cob-bearing.com

Europe

COB Bearings GmbH

Sicking 22 4693 Desselbrunn, Austria
Phone:+43 7674 67011
E-Mail:cob.eu@cob-bearing.com

Touring our plant is one of the best ways to get a true impression of our company.
We invite you to visit our plant and inspect our manufacturing and quality processes.