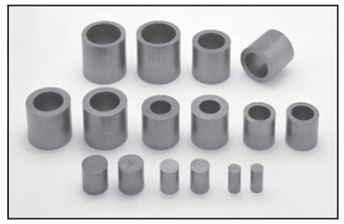
# Oiles Cermet G

## Sintered bearings with dispersed solid lubricant



RoHS2 ELV

## Feature

- Serviceable without the need for lubrication.
- Features superior heat resistance.
- Demonstrates superior performance in hot and hard-to-lubricate positions.
- Materials for machining are available.

## Service range

| Lubrication condition | Dry | periodic lubrication |
|---|---|---|
| Service temperature range ℃ | −40～+250 | −40～+150 |
| Allowable max. pressure P N/mm² {kgf/cm²} | 10 {102} | |
| Allowable max. velocity V m/s {m/min} | 0.50 {30} | 0.85 {51} |
| Allowable max. PV value N/mm² · m/s {kgf/cm² · m/min} | 0.86 {490} | 1.65 {1,010} |

## Mechanical properties

| | | | |
|---|---|---|---|
| Density | —— | g/cm³ | 6.4 |
| Radial crushing strength | JIS Z 2507 | N/mm² {kgf/mm²} | 137 {14} |
| Hardness | JIS Z 2245 | HRM | 43 |
| Co-efficient of linear expansion | —— | ×10⁻⁵ ℃⁻¹ | 2.0 |

※The value shown above are for sintered layer.

## ●About the material for machining

**Although it is not oil-bearing material, it can be used as-is without lubrication.**

**By applying an oil-bearing process or grease after machining, the reduction of wear and extension of life can be achieved.**

## Lathe turning

| | | |
|---|---|---|
| Cutting tool | carbide tool (JIS) | |
| | Relief angle | 2～5° |
| | Rake angle | 10～20° |
| | Nose radius (mm) | 0.40～0.80 |
| Condition | Speed (m/min) | 100～120 |
| | Cut depth (mm) | 0.20～0.30 |
| | Feed (mm/rev) | 0.03～0.10 |

## Machining accuracy (bushing)

| I.D. | O.D. | Length |
|---|---|---|
| class 7 to 8 | class 6 to 7 | class 8 to 9 |

Classes here are in JIS standard.

This product demonstrates satisfactory performance at the slide surface roughness of Rz6.3 to 12.5μm.

## Test data

### Thrast test

<Testing conditions>

Bearing dimension : φ16×φ28×ℓ15

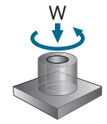
Mating material : 0.49N/mm²{5.0kgf/cm²}

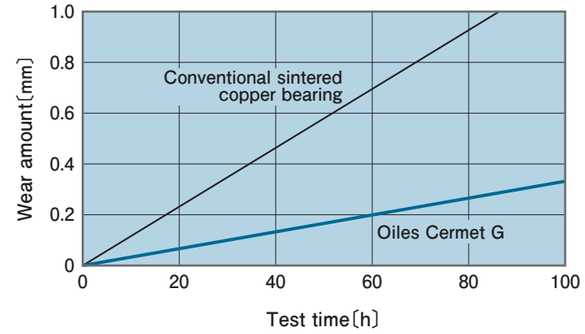
Velocity : 0.033m/s{2.0m/min}

Ambience : 300℃

Test time : 100h

Lubrication : dry



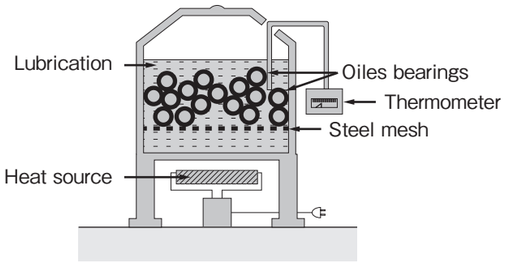

## Oil impregnation method

When you oil-impregnate Cemet G, please follow the procedure below to impregnate finished products with lubrication oil before installation. If these bearings are stored for a long time or if the bearings are washed, re-impregnate before installation.

Immerse the products into an oil bath. Heat the bath up to 100 ℃ to 110 ℃. Keep the temperature for 30 to 60 minutes until no more air bubbles come up.

Cut the heat source and let it cool down to the room temperature.

Take products out of the bath to install. If oil impregnation by heating is not possible, leave the products in the oil bath for 24 hours or more.




Selectoin of lubrication oil

| Operation conditions | Types of oil | Viscosity | i.e. |
|---|---|---|---|
| Low load / high speed | Lubrication oil of low viscosity | 8 to 17cst(30℃) | Spindle oil |
| Mid load / mid velocity | Lubrication oil with limited viscosity change by temp. | 8 to 15cst(98.9℃) | Motor oil |
| High load / low velocity | Lubrication oil with high viscosity | 100 to 1000cst(37℃) | Gear oil |

# 55M Oiles Cermet G Bar Stock

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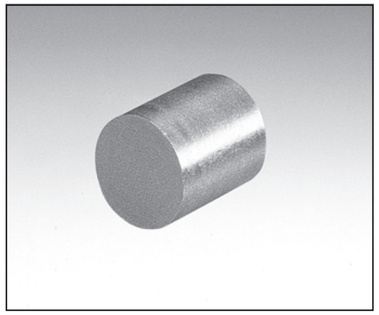
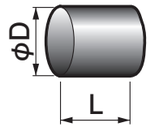


Specify Part No. by required diameter.
(e.g.) Diameter is 18mm.

**55M - 18**
**Part No.**




● Please refer to page 252 for the method for oil-bearing treatment.

| Part No. | Diameter | | Length | |
|---|---|---|---|---|
| | φD | Tolerance | L | Tolerance |
| 55M-11 | 11 | +0.8 0 | 21 | +3.0 0 |
| 55M-15 | 15 | +0.8 0 | 31 | +3.0 0 |
| 55M-18 | 18 | +0.8 0 | 21 | +3.0 0 |
| 55M-23 | 23 | +0.8 0 | 31 | +3.0 0 |
| 55M-31 | 31 | +0.8 0 | 31 | +3.0 0 |



# 55S Oiles Cermet G Bushing Material

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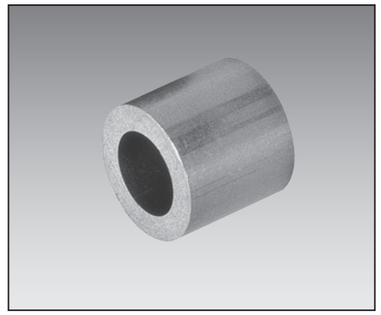
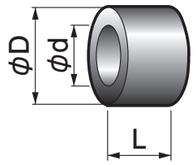


Specify Part No. by required I.D., O.D., and Length.
(e.g.) I.D. is 44mm, O.D. is 56mm, and length is 51mm.

**55S - 445651**
**Part No.**




● Please refer to page 252 for the method for oil-bearing treatment.

| Part No. | I.D. | | O.D. | | Length | |
|---|---|---|---|---|---|---|
| | φd | Tolerance | φD | Tolerance | L | Tolerance |
| 55S-193126 | 19 | +0.3 −0.5 | 31 | +0.3 −0.5 | 26 | +3.0 0 |
| 55S-243631 | 24 | +0.3 −0.5 | 36 | +0.3 −0.5 | 31 | +3.0 0 |
| 55S-284846 | 28 | 0 −1.2 | 48 | +1.2 0 | 46 | +3.0 0 |
| 55S-294141 | 29 | +0.3 −0.5 | 41 | +0.3 −0.5 | 41 | +0.3 0 |
| 55S-344641 | 34 | +0.3 −0.5 | 46 | +0.3 −0.5 | 41 | +0.3 0 |
| 55S-345151 | 34 | 0 −1.2 | 51 | +1.2 0 | 51 | +4.0 0 |
| 55S-395651 | 39 | +0.3 −0.5 | 56 | +1.2 0 | 51 | +4.0 0 |
| 55S-445651 | 44 | +0.3 −0.5 | 56 | +1.2 0 | 51 | +4.0 0 |
| 55S-496661 | 49 | 0 −1.2 | 66 | +1.2 0 | 61 | +4.0 0 |
| 55S-517361 | 51 | 0 −1.2 | 73 | +1.2 0 | 61 | +4.0 0 |
| 55S-547661 | 54 | 0 −1.2 | 76 | +1.2 0 | 61 | +4.0 0 |
| 55S-568161 | 56 | 0 −1.2 | 81 | +1.2 0 | 61 | +4.0 0 |