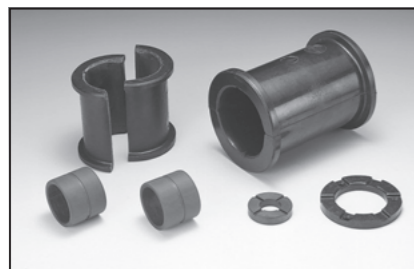


Oiles 470-02/02W Carbon fiber composite bearings for underwater use



Feature

- Has self-lubricating performance. Demonstrates low coefficient of friction and superior wear performance especially in water, chemicals, or oil.
- Demonstrates superior wear performance and maintains stable performance even under abrasive conditions subject to soil, sand, foreign matter or rust on the mating parts.
- A multi-layer type (470-02W), which incorporates 470-02 on the sliding surface and 250 or 425 as the backing material is also available.
- The standard split metal for flocculators and bearing units are available on order.

Service range

Lubrication condition	underwater
Service temperature range °C	-40~+90
Allowable max. pressure P N/mm ² {kgf/cm ² }	15 {153}
Allowable max. velocity V m/s {m/min}	16.5 {990}
Allowable max. PV value N/mm ² · m/s {kgf/cm ² · m/min}	8.15 {4,990}

Condition: underwater, bushing, shaft rotation.

※Contact us when temperature exceeds the range.

Mechanical properties

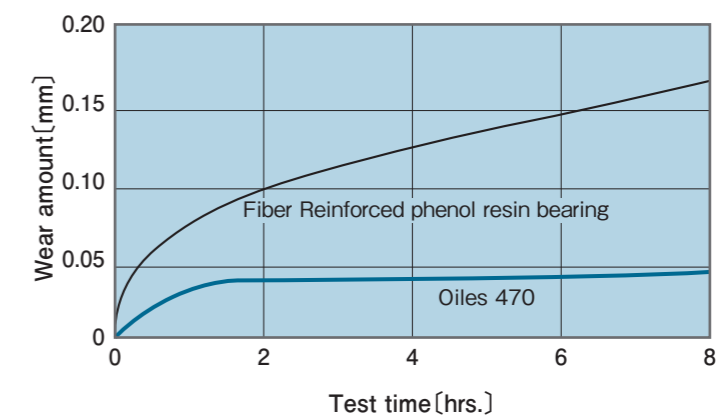
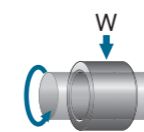
Specific gravity	JIS K 6911	—	1.4
Tensile strength	JIS K 6911	N/mm ² {kgf/mm ² }	45 {4.6}
Flexural property	JIS K 6911	N/mm ² {kgf/mm ² }	75 {7.7}
Compressive strength	JIS K 6911	N/mm ² {kgf/mm ² }	124 {12.7}
Radial crushing strength	JIS K 2507	N/mm ² {kgf/mm ² }	60 {6.1} (Compressed)
Hardness	JIS K 6911	HRM	103
Izod impact strength (with notch)	JIS K 6911	J/m {kgf·cm/cm}	58.8 {6}
Co-efficient of linear expansion	ASTM D 696	×10 ⁻⁵ °C ⁻¹	2~2.5
Swelling rate	—	%	1.0 (room temp)

※The values shown above are typical values, not the standard values.

Test data

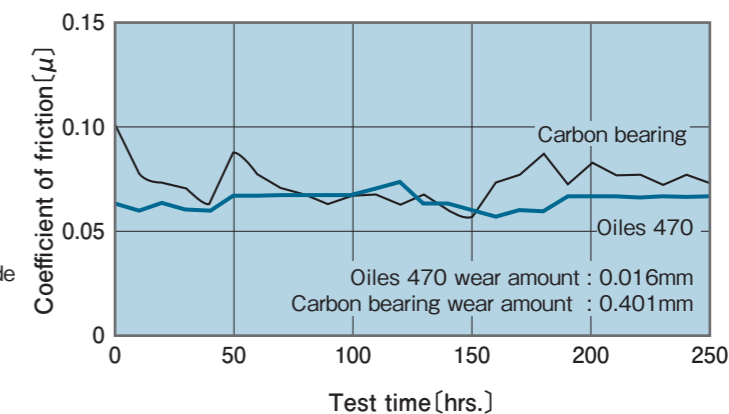
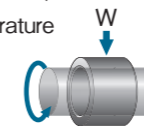
High speed underwater journal rotation test

<Testing conditions>
 Mating material : SUS403
 Pressure : 1.96N/mm²{20.0kgf/cm²}
 Velocity : 5m/s{300m/min}
 Test time : 8hrs.
 Atmosphere : purified water



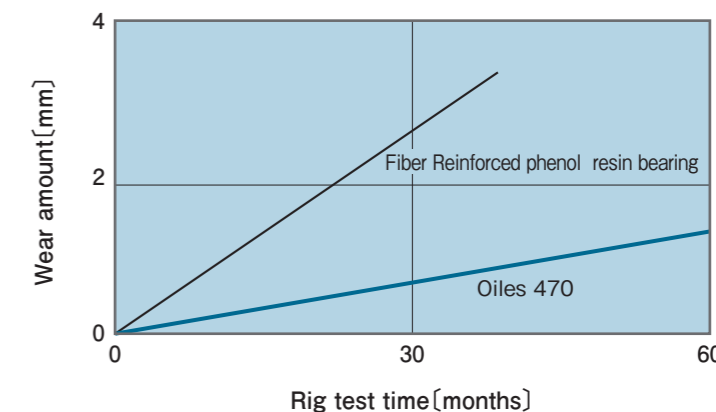
High speed underwater journal rotation test

<Testing conditions>
 Bearing dimension : φ60×φ75×ℓ60
 Pressure : 0.13N/mm²{1.4kgf/cm²}
 Velocity : 5.65m/s{339.0m/min}
 Rotation frequency : 1,800rpm
 Atmosphere : muddy water
 (500 ppm of testing dust JIS grade 2 and 3 are blended equally as foreign particle.)
 Test temperature : room temperature
 Duration : 250hrs.



Water processing machine

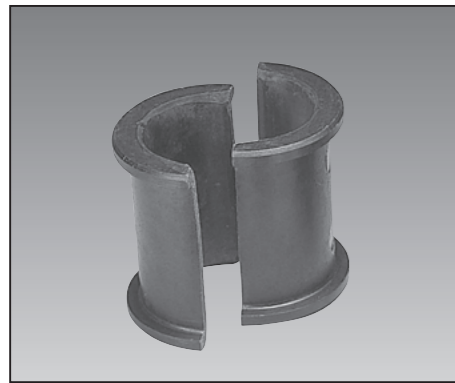
<Testing conditions>
 Mating material : S45C
 Pressure : 0.49N/mm²{5.0kgf/cm²}
 Velocity : 0.067m/s{4.0m/min}
 Atmosphere : muddy water



47H

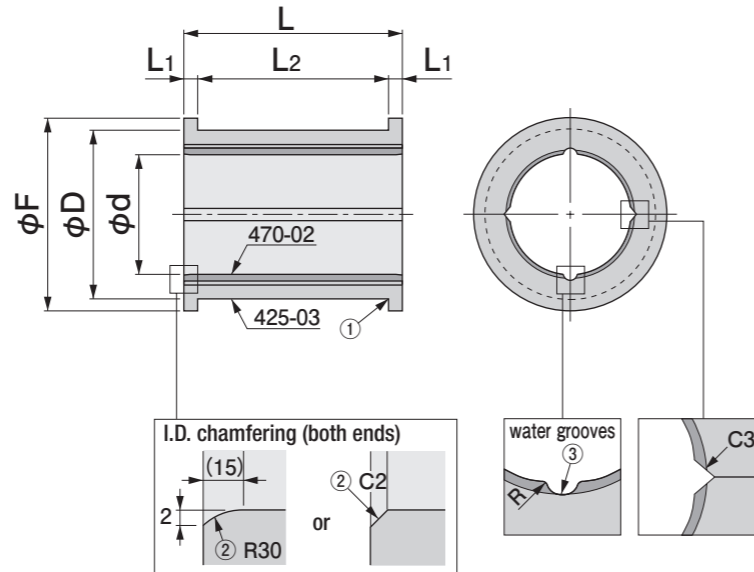
Split Bearings for Flocculator

Made-to-order RoHS2 ELV Lead Free



Specify Part No. by required I.D., O.D. and Length.
(e.g.) I.D. is 90mm, O.D. is 120mm, and length is 120mm.

47H - 90120120
Part No.



- The recommended mating shaft should be hard chrome-plated (50μ or more) or stainless steel (or a shrinkage-fit sleeve).
- The dimensional tolerance of the mating shaft should be h7.
- This product is supplied in a set of two.
- This product is available on order.

Part No.	I.D.		O.D.	Flange	Length				Chamfer · water grooves			Recommended housing I.D.	
	φd	Tolerance			φD	L	L1	L2	Tolerance	①	②	③	Size
47H-6076105	60	$\begin{smallmatrix} +0.6 \\ +0.2 \end{smallmatrix}$	(76)	92	105	8	89	$\begin{smallmatrix} +0.5 \\ 0 \end{smallmatrix}$	2-R1	C2	R1.5	φ76	$\begin{smallmatrix} 0 \\ -0.14 \end{smallmatrix}$
47H-7086105	70	$\begin{smallmatrix} +0.6 \\ +0.2 \end{smallmatrix}$	(86)	102	105	8	89	$\begin{smallmatrix} +0.5 \\ 0 \end{smallmatrix}$	2-R1	R30	R2.5	φ86	$\begin{smallmatrix} 0 \\ -0.14 \end{smallmatrix}$
47H-80105120	80	$\begin{smallmatrix} +0.8 \\ +0.2 \end{smallmatrix}$	(105)	130	120	15	90	$\begin{smallmatrix} +0.6 \\ 0 \end{smallmatrix}$	2-R1	R30	R4	φ105	$\begin{smallmatrix} 0 \\ -0.14 \end{smallmatrix}$
47H-90120120	90	$\begin{smallmatrix} +0.8 \\ +0.2 \end{smallmatrix}$	(120)	150	120	15	90	$\begin{smallmatrix} +0.6 \\ 0 \end{smallmatrix}$	2-R1	R30	R4	φ120	$\begin{smallmatrix} 0 \\ -0.14 \end{smallmatrix}$
47H-100130140	100	$\begin{smallmatrix} +0.8 \\ +0.2 \end{smallmatrix}$	(130)	154	140	15	110	$\begin{smallmatrix} +0.6 \\ 0 \end{smallmatrix}$	2-R1	C2	R4	φ130	$\begin{smallmatrix} 0 \\ -0.14 \end{smallmatrix}$

※The inner diameters (φd) are the values measured when set in jigs of the minimum recommended housing inner diameters.
※The inner diameter of this product will change if it is stored for three months or more. Contact us when placing an order if it will be stored for three months or more.

UPF

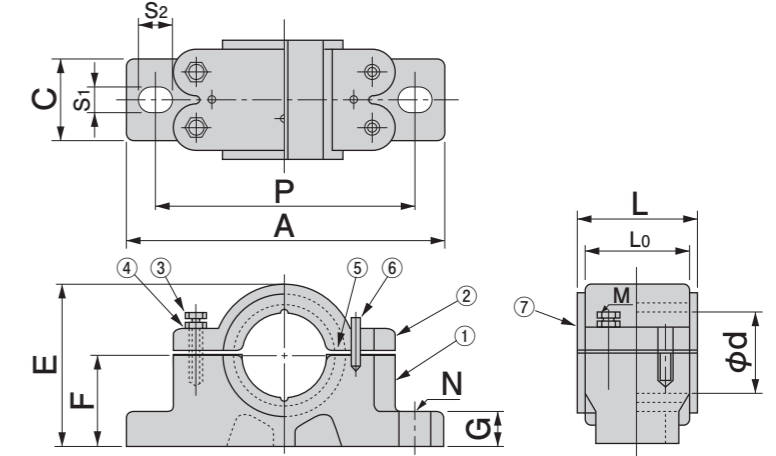
Flocculator Bearing Units

Made-to-order RoHS2 ELV Lead Free



Specify Part No. by required diameter.
(e.g.) Diameter is 90mm

UPF - 90
Part No.



- Bearing unit composed of a bearing set in a housing.
- The sliding surface is made of 470-02W featuring superior wear resistance.
- Exclusive for underwater use.
- This unit is not painted.
- The dimensional tolerance of the mating shaft should be h7.
- This product is available on order.
- Company name and Part No. are incused at the surface of housing (base).

Part	Material
1 Base	FC250
2 Cover	FC250
3 Bolt	SUS304
4 Nut	SUS304
5 Knock pin	SUS304
6 Bearing	470-02W

Part No.	I.D.		Form							Mounting hole · Bolt				
	φd	Tolerance	A	C	L	L0	E	F	G	P	S1	S2	N	M
UPF-70	70	$\begin{smallmatrix} +0.6 \\ +0.2 \end{smallmatrix}$	270	70	105	89	138	80	30	220	22	27	M20	M10
UPF-80	80	$\begin{smallmatrix} +0.8 \\ +0.2 \end{smallmatrix}$	285	70	120	90	158	90	30	230	22	27	M20	M10
UPF-90	90	$\begin{smallmatrix} +0.8 \\ +0.2 \end{smallmatrix}$	330	70	120	90	180	100	30	270	27	32	M24	M10
UPF-100	100	$\begin{smallmatrix} +0.8 \\ +0.2 \end{smallmatrix}$	335	90	140	110	195	110	35	270	27	32	M24	M12

※The inner diameter of this product will change if it is stored for three months or more. Contact us when placing an order if it will be stored for three months or more.