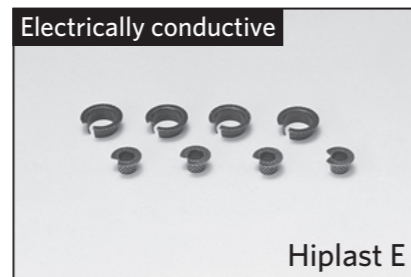
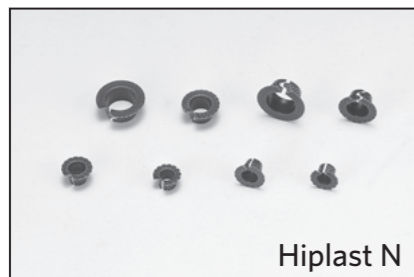
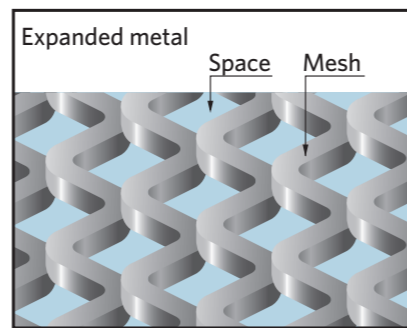
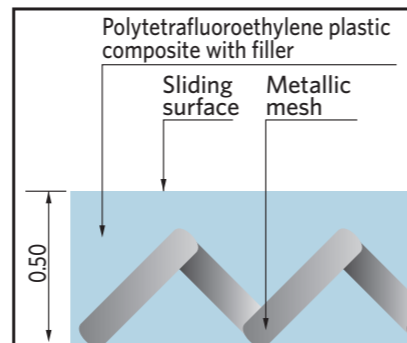


# Oiles Hiplast N/E Metallic mesh polytetrafluoroethylene plastic composite bearings



## Feature

- Serviceable without the need for lubrication. Features superior load resistance and wear resistance. As thin as 0.5 mm, allowing for a compact design.
- Features superior chemical and heat resistance.
- Special mounting method unique to the Hiplast series allows zero clearance. (Backlash prevention)
- Metallic mesh offers lower thermal expansion coefficient and higher thermal conductivity than plastic bearings.
- Press-formed and available in intended forms.
- The conductive grade Hiplast E is available when electric conductivity is required.



image

Service range	
Lubrication condition	Dry
Service temperature range °C	-50~+250
Allowable max. pressure <b>P</b> N/mm <sup>2</sup> {kgf/cm <sup>2</sup> }	49.0 {500}
Allowable max. velocity <b>V</b> m/s {m/min}	0.35 {21}
Allowable max. <b>PV</b> value N/mm <sup>2</sup> · m/s {kgf/cm <sup>2</sup> · m/min}	1.65 {1,010}

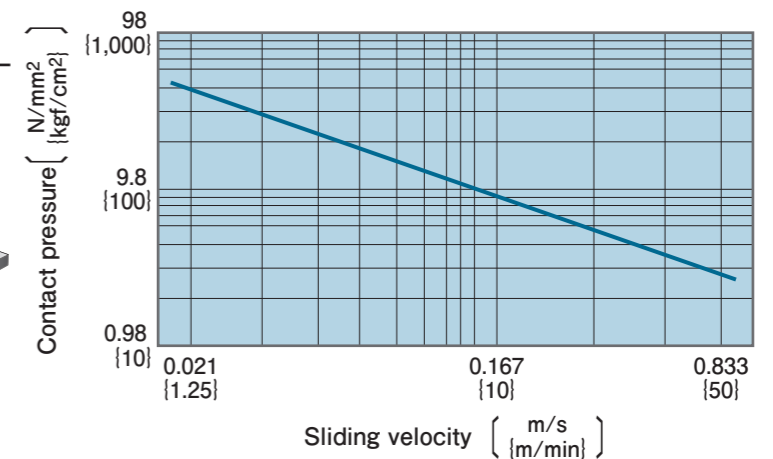
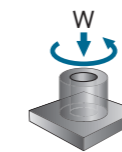
Mechanical properties			
Tensile strength	JIS K 7113	N/mm <sup>2</sup> {kgf/cm <sup>2</sup> }	34.3 {350}
Elongation	—	%	30

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

## Test data

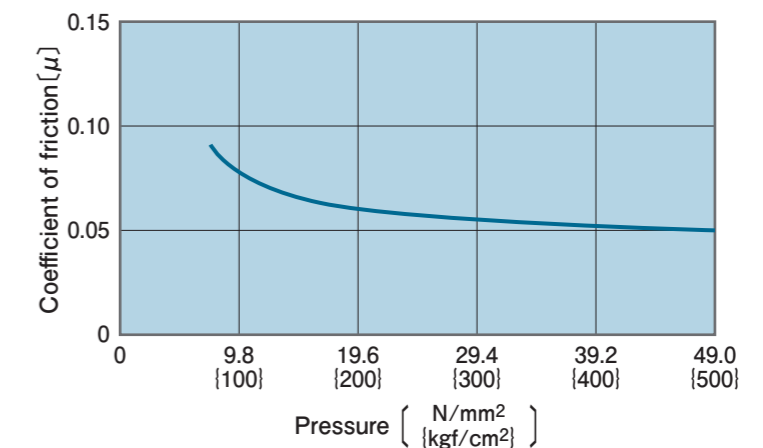
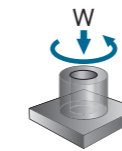
### Thrust test (limit PV value)

<Testing conditions>  
Mating material : S45C  
Test time : 100h  
Lubrication : dry



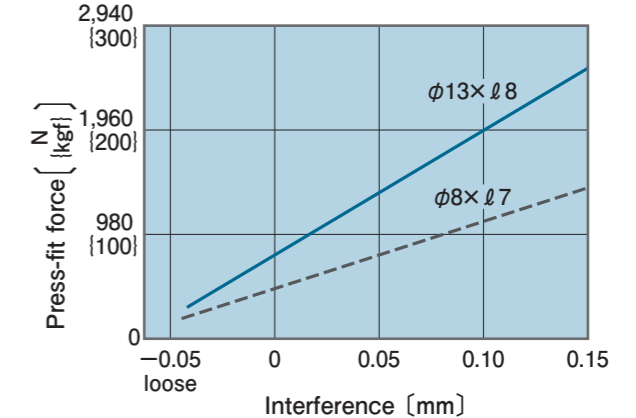
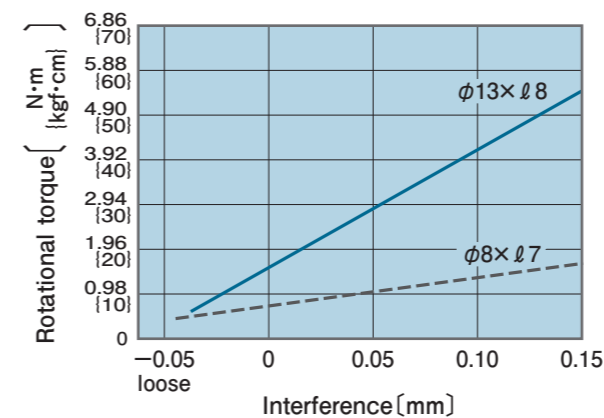
### Thrust test

<Testing conditions>  
Mating material : S45C  
Pressure : 9.8N/mm<sup>2</sup>{100kgf/cm<sup>2</sup>} is incrementally loaded every one hour.  
Velocity : 0.083m/s{5.0m/min}  
Lubrication : dry



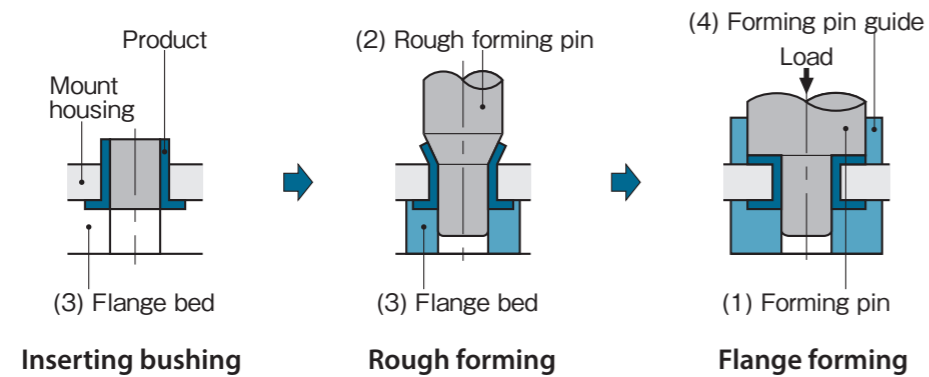
### Rotational torque, pin press fit force vs. interference

Mating shaft pin S45C roughness Rz1μm or less/press-fit dry



## Outline of Flange Forming

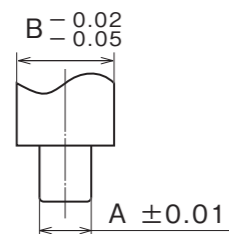
- The single-flange Oiles Hiplast bushing may be formed into a both-flange bushing easily. Set a product on the mount housing, carry out preliminary forming once, and carry out final forming. It has much superior assembly performance and economic efficiency than combination of the conventional single-flange bushing and washer.
- ※The Drymet LF (t 0.5) also allows flange machining. Contact the nearest sales office for details.



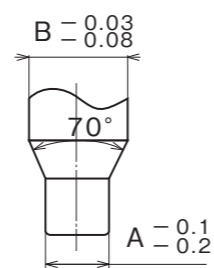
### Flange forming jigs

Four jigs are needed to form the flange: (1) Forming pin, (2) rough forming pin, (3) flange bed, and (4) forming pin guide. The dimensions necessary for making the jigs are shown below for reference.

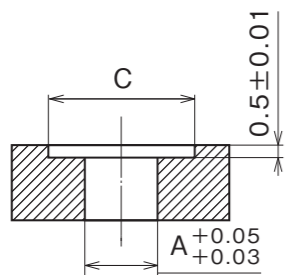
(1) Forming pin



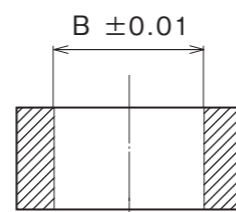
(2) Rough forming pin



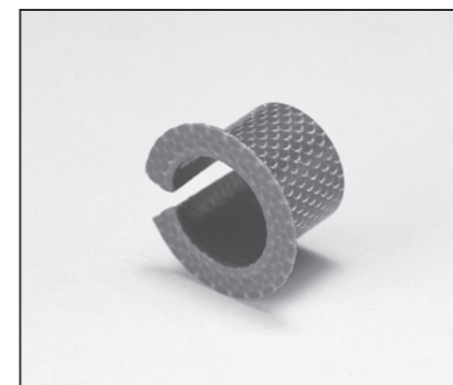
(3) Flange bed



(4) Forming pin guide

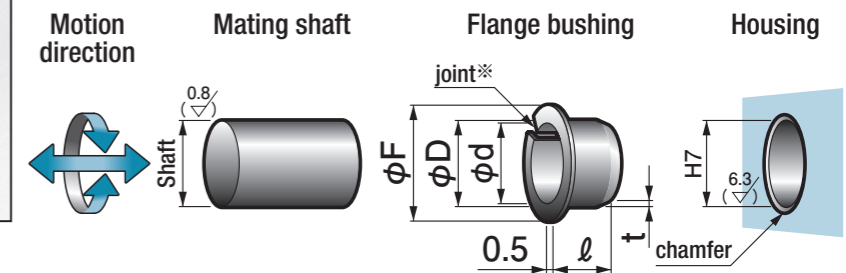


- A: Forming pin diameter (minimum mating hole diameter - 1 mm)
- B: Forming flange diameter (flange diameter after forming)
- C: Upper limit of product flange diameter tolerance + 0.2 mm

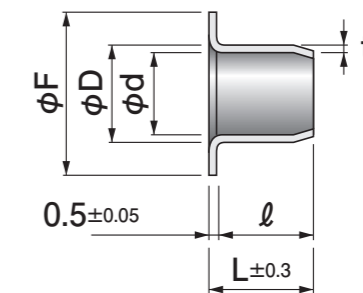


Specify Part No. by required I.D. and length.  
(e.g.) I.D. is 8mm and length is 8mm.

**HPF - 0808**  
Part No.



※The joint causes no influences upon rotation of the shaft. Be careful when press-fitting so that the joint is not at the position to which the maximum load is applied.



Shaft Size	I.D. Tolerance	O.D. $\phi d$	Flange $\phi D$	Thickness $\phi F$	Thickness $t$	Length $\ell$ Tolerance $\pm 0.3$						I.D. tolerance after press fitting (reference)		
						5	6	8	10	12	15		20	
4	$\begin{matrix} -0.040 \\ -0.055 \end{matrix}$	4	5	8	0.5 $\pm 0.05$	<b>0405</b>								$\begin{matrix} +0.112 \\ -0.100 \end{matrix}$
5	$\begin{matrix} -0.040 \\ -0.055 \end{matrix}$	5	6	10	0.5 $\pm 0.02$	<b>0505</b>			<b>0510</b>					$\begin{matrix} +0.055 \\ -0.040 \end{matrix}$
6	$\begin{matrix} -0.040 \\ -0.055 \end{matrix}$	6	7	11	0.5 $\pm 0.02$		<b>0606</b>		<b>0610</b>					$\begin{matrix} +0.055 \\ -0.040 \end{matrix}$
8	$\begin{matrix} -0.040 \\ -0.055 \end{matrix}$	8	9	13	0.5 $\pm 0.02$			<b>0808</b>			<b>0815</b>			$\begin{matrix} +0.055 \\ -0.040 \end{matrix}$
10	$\begin{matrix} -0.040 \\ -0.058 \end{matrix}$	10	11	16	0.5 $\pm 0.02$				<b>1010</b>		<b>1015</b>			$\begin{matrix} +0.058 \\ -0.040 \end{matrix}$
12	$\begin{matrix} -0.040 \\ -0.058 \end{matrix}$	12	13	18	0.5 $\pm 0.02$					<b>1212</b>		<b>1220</b>		$\begin{matrix} +0.058 \\ -0.040 \end{matrix}$
15	$\begin{matrix} -0.040 \\ -0.058 \end{matrix}$	15	16	22	0.5 $\pm 0.02$						<b>1515</b>	<b>1520</b>		$\begin{matrix} +0.058 \\ -0.040 \end{matrix}$

※The HPF0405, HPF0505, HPF0510, HPF1515 and HPF1520 have straight flange bottoms.

※The I.D. tolerances after press fitting are the reference values measured in the condition where the bushings are inserted into the housings and in close contact with them.