

SLIDING BEARINGS DIVISION

HYDRAULIC, ENERGY AND METAL INDUSTRY



TECHNICAL HANDBOOK - VALVE APPLICATIONS

**SLIB
ITALY**

slibitaly.com



SLIDING BEARING
TX-625
Lot.800700
TYPE C x 30
ITALY=



SLIDING BEARINGS DIVISION

HYDRAULIC, ENERGY AND METAL INDUSTRY

Slib Italy is specialized in the manufacturing of pressed sliding bearings and washers with thin wall-thickness, dry self-lubricating, or with grease or oil lubrication, produced in accordance to the ISO 3547 directive. We produce both standard items, as much as special and custom-made ones, and for high pressure applications. Our articles can be provided as thrust washer in cylindrical shape, as flat washers or as sliding strips. Other possible variables can be produced according to specific requests or to customers' drawings. Diameters range from a min. of 10 mm to a max. of 1.000 mm, both for standard sizes and for special ones. These bearings and washers guarantee superior performances in terms of:

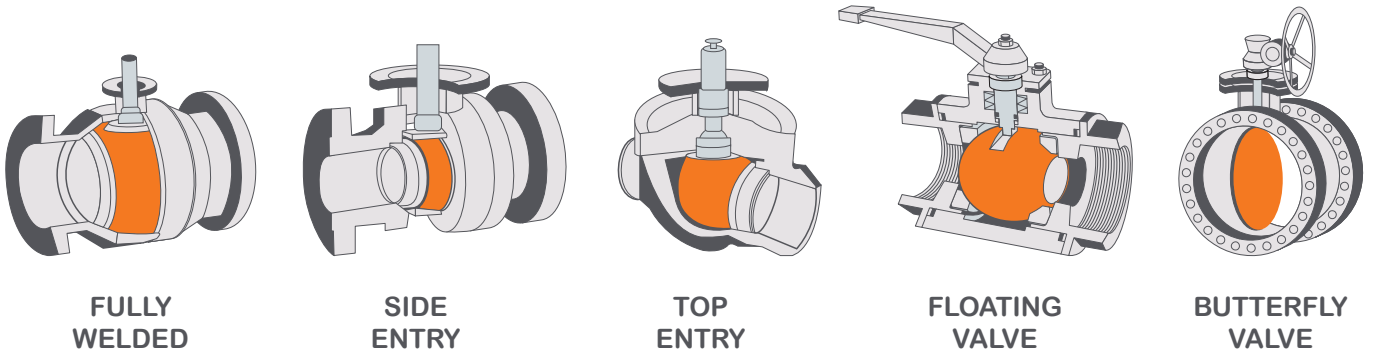
- Wear resistance;
- Load capacity, both static and dynamic;
- Maximum flexibility of usage in the most different applications;
- Less space requirement in the application;
- Resistance to impacts and to vibrations;
- Possibility to be used both at low and high temperatures;
- Chemical resistance in contact with various substances.

With this new production department started with experienced employees in the production of sliding bearings and washers •FP• F.lli Paris is aiming to become a worldwide reference for these products focusing its strength on the achievement, the maintenance and the improvement of the following prerogatives:

- Strong team work to reach the maximum satisfaction of the client;
- Flexible manufacturing capability for all the different applications;
- Competitive prices;
- Guaranty of the agreed lead times;
- Technology and constant high quality of the products.

Member of:
sealcore[®]
network

SELF-LUBRICATING BEARINGS AND WASHERS FOR VALVES



VALVES APPLICATIONS

Subsea	tested in valves installed at 2.500 meters under sea level
Cryogenic	specific product for -198° C
High Temperature	specific product for +600° C
High Pressure	tested in valves up to 15.000 PSI

BALL VALVE - MAIN APPLICATIONS

VALVE TYPE	SLIB ITALY ARTICLE
High pressure valves	All TX types including "PLUS"
High temperature valves	All PMT types including "PLUS"
Cryogenic valves	PMT-316
Low pressure valves	TF types
High pressure small size valves	All TF types including "S" and "PLUS"
Subsea ball valves	TX-625
Actuators	All TX and TF types including "PLUS"

*Special articles can be produced upon specific customer requests

Note: The information in this data-sheet are to be considered reliable though conditions and methods of use which are beyond our control may modify the results. The information and the data given here are the result of a long and detailed research. However •FP• F.lli Paris S.r.l. and its division Slib Italy cannot be considered responsible for any incorrect or incomplete data. Owing to the constant research and development of the products, we reserve the right to make changes to the technical parameters without prior notice.



TX Type

The TX code identifies a family of bearings that are specially manufactured with a bonding of a filled PTFE coated fabric (lead free, in accordance to the European Parliament "ELV" directive 2000/53/EC) on various grades of backing metal layers like: carbon steel, bronze, stainless steel and Inconel 625.

The sliding surface is primarily composed of a filled PTFE coated fabric and other elements to guarantee the highest wear resistance. The TX products find their best usage in slow-moving applications. With heavy

loads. In dry operating conditions. Thanks to the thick self-lubricating layer up to 0.40 mm, this product has a high wear resistance and can work in dirty or abrasive environment.

For the TX type it is not recommended the use of oil, while the use of special greases such as silicon or lithium soap, is only possible during the assembly.

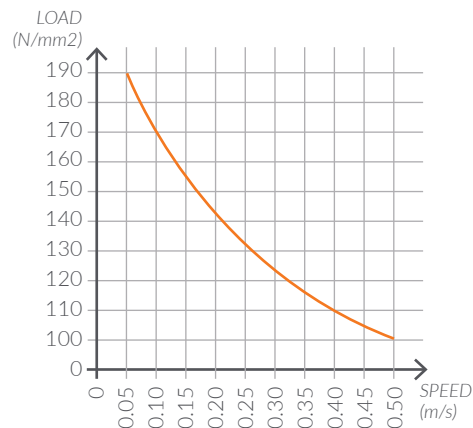
BEARING SECTION

Fabric + Filled PTFE (thickness 400 μm)



Carbon steel backing
x (thickness 0.50 – 3.00 mm)

GRAPHIC LOAD/SPEED



Remarks: for more detailed technical information on load/speed tests, please contact our offices

SLIB ITALY is leader in the production of self-lubricating sliding bearing and washers realized with very special and hard metal alloys like STELLITE and TITANIUM. We offer a complete range of sizes both in metric (mm) and imperial (inch) dimensions, thanks to our large stock of raw materials.

TX-F51

Duplex A182 F51
+ Sintering
+ Fabric + Filled PTFE

TX-TI1

Titanium ASTM B265 Gr.1
+ Sintering
+ Fabric + Filled PTFE

TX-SSTE

Stellite 6b
+ Sintering
+ Fabric + Filled PTFE

	SUPPORTING SHELL	C 0.20%, Cr 22.70% S <0.15%, Ni 5.60% P 0.025%, Mo 3.20% Si 0.50%, N 0.16% Mn 1.40%	Ti Rest, O 0.18% N 0.03%, C 0.08% H 0.015%, Fe 0.20%	Co Rest, Cr 28 ÷ 32% W 3.50 ÷ 5.50%, C 0.90 ÷ 1.40% Mo 1.50% max. Altro Ni, Fe, Si, Mn
	SLIDING LAYERS	Special fabric with filled PTFE. Colour black-gray. Thickness 400 µm. Heavy load capacity and self-lubricating under dry operation.		
	SINTERING	Special adhesive between the fabric and the backing steel. Thickness 60 µm.		
MECHANICAL PROPERTIES	WORKING TEMPERATURE	min - 180°C max + 260 °C	min - 180 °C - max + 260 °C	min - 180°C max + 260 °C
	COEFFICIENT OF FRICTION	0.03-0.10	0.03-0.10	0.03-0.10
	MAX. SPEED	0.50 m/s	0.50 m/s	0.50 m/s
	MAX. STATIC LOAD	400 N/mm ²	400 N/mm ²	400 N/mm ²
	MAX. DYNAMIC LOAD (max. speed 0.05 m/s)	190 N/mm ²	190 N/mm ²	190 N/mm ²
	MAX. DYNAMIC LOAD (max. speed 0.50 m/s)	100 N/mm ²	100 N/mm ²	100 N/mm ²
	SHAFT	For an optimal performance the shaft surface finishing shall be between Ra 0.40 and 1.60 µm, depending on the different applications. Hardness 80 - 160 HB5.		
CHEMICAL RESISTANCE	HYDROCARBONS	Excellent	Excellent	Excellent
	HYDROCHLORIC ACID (concentrate to 10%)	Excellent	Good	Excellent
	SULFURIC ACID (concentrate to 10%)	Excellent	Good	Excellent
	METHANE	Excellent	Excellent	Excellent
	OXYGEN	Excellent	Good	Excellent
	SODIUM HYDROXIDE	Excellent	Good	Good
	LIQUID NITROGEN	Excellent	Good	Excellent
	SOLVENTS	Good	Good	Good
We can provide you detailed reports on the compatibility tests, performed by the Laboratory A.R.M. in Brescia.				

All our TX types can be produced also as PLUS model, which is an enhanced type of lubrication treatment to reduce even more the coefficient of friction.

TX-C

TX-316

TX-625

Carbon Steel S235 JR
+ Sintering
+ Fabric + Filled PTFE

Aisi 316L
+ Sintering
+ Fabric + Filled PTFE

Inconel 625
+ Sintering
+ Fabric + Filled PTFE

	SUPPORTING SHELL	C 0.17% S 0.045% Mn 1.40% N 0.009% P 0.045%	C 0.03%, Mn 1.80% S 0.025%, Cr 16.70% P 0.03%, Ni 10.00% Si 0.50%, Mo 2.00%	C 0.10%, Co 1.00% Mn 0.05% Ta + Nb 3.15 ÷ 4.15% Cr 20 ÷ 23%, Ni Rest Mo 8 ÷ 10%
	SLIDING LAYERS	Special fabric with filled PTFE. Colour black-gray. Thickness 400 µm. Heavy load capacity and self-lubricating under dry operation.		
	SINTERING	Special adhesive between the fabric and the backing steel. Thickness 60 µm.		
MECHANICAL PROPERTIES	WORKING TEMPERATURE	min - 180°C max + 260 °C	min - 180°C max + 260 °C	min - 180°C max + 260 °C
	COEFFICIENT OF FRICTION	0.03-0.10	0.03-0.10	0.03-0.10
	MAX. SPEED	0.50 m/s	0.50 m/s	0.50 m/s
	MAX. STATIC LOAD	300 N/mm2	300 N/mm2	400 N/mm2
	MAX. DYNAMIC LOAD (max. speed 0.05 m/s)	190 N/mm2	190 N/mm2	190 N/mm2
	MAX. DYNAMIC LOAD (max. speed 0.50 m/s)	100 N/mm2	100 N/mm2	100 N/mm2
	SHAFT	For an optimal performance the shaft surface finishing shall be between Ra 0.40 and 1.60 µm, depending on the different applications. Hardness 80 - 160 HB5.		
CHEMICAL RESISTANCE	HYDROCARBONS	Excellent	Excellent	Excellent
	HYDROCHLORIC ACID (concentrate to 10%)	Excellent	Excellent	Excellent
	SULFURIC ACID (concentrate to 10%)	Excellent	Excellent	Excellent
	METHANE	Excellent	Excellent	Excellent
	OXYGEN	Excellent	Excellent	Excellent
	SODIUM HYDROXIDE	Excellent	Excellent	Excellent
	LIQUID NITROGEN	Excellent	Excellent	Excellent
	SOLVENTS	Good	Good	Good
We can provide you detailed reports on the compatibility tests, performed by the Laboratory A.R.M. in Brescia.				

All our TX types can be produced also as PLUS model, which is an enhanced type of lubrication treatment to reduce even more the coefficient of friction.



TF Type

The TF code identifies a family of self-lubricating bearings and washers made by a composite multilayer material.

The main parts composing this product are a modified filled PTFE layer (lead free, in accordance to the European Parliament "ELV" directive 2000/53/EC) for the sliding self-lubricating surface, and a special primer used to allow the sintering of the PTFE layer to various types of baking metal layers like: carbon steel, bronze, stainless steel and Inconel 625. Thanks to its structure, the TF type provides an excellent match between the mechanical strength of the steel and the low coefficient of friction of the modified PTFE sliding layer.

This is a product that can be used in applications with medium loads and in a clean environment with low levels of abrasive elements such as metal powders. It can also be used with special mineral oils and specific greases such as silicone compounds or lithium soap.

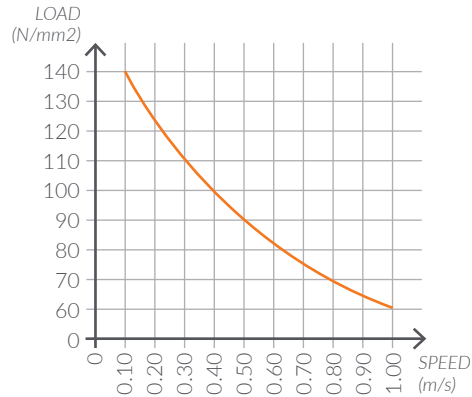
BEARING SECTION

Filled **PTFE** modified or filled **PTFE**
(thickness 200 – 220 μm)

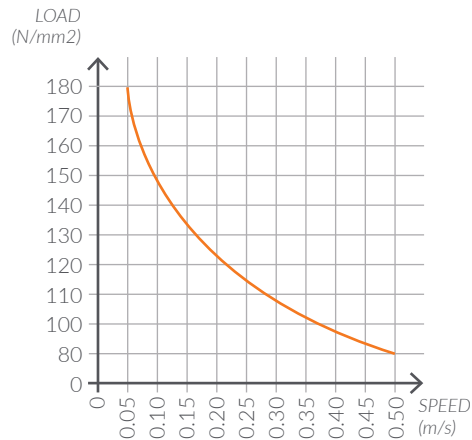


Carbon steel backing
(thickness 0.50 – 3.00 mm)

GRAPHIC LOAD/SPEED TF-C . TF-316 . TF-625 . TF-F51



GRAPHIC LOAD/SPEED TF-316S . TF-625S



Remarks: for more detailed technical information on load/speed tests, please contact our offices

TF-C

TF-316

TF-316S

Carbon Steel S235 JR
+ Sintering
+ Filled PTFE film

Aisi 316L
+ Sintering
+ Filled PTFE film

Aisi 316L
+ Sintering*
+ Modified filled PTFE film

SUPPORTING SHELL	C 0.17% max Mn 1.40% max P 0.045% max S 0.045% max N 0.009% max	C 0.03%, S 0.025% P 0.03%, Si 0.50% Mn 1.80%, Cr 16.70% Ni 10.00%, Mo 2.00%	C 0.03%, S 0.025%, P 0.03%, Si 0.50% Mn 1.80%, Cr 16.70% Ni 10.00%, Mo 2.00%	
SLIDING LAYERS	Filled PTFE film. Colour black-gray. Thickness 200 - 220 µm. Heavy load capacity and self-lubricating under dry operation. Lead free and non-coated.			
SINTERING	Oven made sintering process between PTFE and the steel backing at a temperature of +250° C - BRONZE FREE. * Special adhesive between the modified filled PTFE film and the backing steel, thickness 60 µm, valid just for TF-316S and TF-625S			
MECHANICAL PROPERTIES	WORKING TEMPERATURE	min - 190 °C - max + 260 °C	min - 190 °C - max + 260 °C	min - 190 °C - max + 260 °C
	COEFFICIENT OF FRICTION	0.03-0.20	0.03-0.20	0.03-0.20
	MAX. SPEED	1.00 m/s	1.00 m/s	0.50 m/s
	MAX. STATIC LOAD	250 N/mm ²	250 N/mm ²	250 N/mm ²
	MAX. DYNAMIC LOAD (max. speed)	140 N/mm ² (0.10 m/s)	140 N/mm ² (0.10 m/s)	180 N/mm ² (0.05 m/s)
	MAX. DYNAMIC LOAD (max. speed)	60 N/mm ² (1.00 m/s)	60 N/mm ² (1.00 m/s)	80 N/mm ² (0.50 m/s)
SHAFT	For an optimal performance the shaft surface finishing shall be between Ra 0.40 and 1.60 µm, depending on the different applications. Hardness 80 - 160 HB5.			
CHEMICAL RESISTANCE	HYDROCARBONS	Excellent	Excellent	Excellent
	HYDROCHLORIC ACID (concentrate to 10%)	Excellent	Excellent	Excellent
	SULFURIC ACID (concentrate to 10%)	Excellent	Excellent	Excellent
	METHANE	Excellent	Excellent	Excellent
	OXYGEN	Excellent	Excellent	Excellent
	SODIUM HYDROXIDE	Excellent	Excellent	Excellent
	LIQUID NITROGEN	Excellent	Excellent	Excellent
	SOLVENTS	Good	Good	Good

We can provide you detailed reports on the compatibility tests, performed by the Laboratory A.R.M. in Brescia.

All our TF types can be produced also as PLUS model, which is an enhanced type of lubrication treatment to reduce even more the coefficient of friction.

TF-625

Carbon Steel S235 JR
+ Sintering
+ Filled PTFE film

TF-625S

Inconel 625
+ Sintering*
+ Modified filled PTFE film

TF-F51

F51 Duplex
+ Sintering*
+ Modified filled PTFE film

SUPPORTING SHELL	C 0.10% max, Mn 0.05% max Cr 20 ÷ 23%, Mo 8 ÷ 10% Co 1.00% max, Ta + Nb 3.15 ÷ 4.15%, Ni Rest.	C 0.10% max, Mn 0.05% max Cr 20 ÷ 23%, Mo 8 ÷ 10% Co 1.00% max, Ta + Nb 3.15 ÷ 4.15%, Ni Rest.	C 0.20% max, S <0.15% P 0.025%, Si 0.50% Mn 1.40%, Cr 22.70% Ni 5.60%, Mo 3.20% N 0.16%	
SLIDING LAYERS	Filled PTFE film. Colour black-gray. Thickness 200 - 220 µm. Heavy load capacity and self-lubricating under dry operation. Lead free and non-coated.			
SINTERING	Oven made sintering process between PTFE and the steel backing at a temperature of +250° C - BRONZE FREE. * Special adhesive between the modified filled PTFE film and the backing steel, thickness 60 µm, valid just for TF-316S and TF-625S			
MECHANICAL PROPERTIES	WORKING TEMPERATURE	min - 190 °C - max + 260 °C	min - 190 °C - max + 260 °C	min - 190 °C - max + 260 °C
	COEFFICIENT OF FRICTION	0.03-0.20	0.03-0.20	0.03-0.20
	MAX. SPEED	1.00 m/s	0.50 m/s	1.00 m/s
	MAX. STATIC LOAD	250 N/mm ²	250 N/mm ²	250 N/mm ²
	MAX. DYNAMIC LOAD (max. speed)	140 N/mm ² (0.10 m/s)	180 N/mm ² (0.05 m/s)	140 N/mm ² (0.10 m/s)
	MAX. DYNAMIC LOAD (max. speed)	60 N/mm ² (1.00 m/s)	80 N/mm ² (0.50 m/s)	60 N/mm ² (1.00 m/s)
SHAFT	For an optimal performance the shaft surface finishing shall be between Ra 0.40 and 1.60 µm, depending on the different applications. Hardness 80 - 160 HB5.			
CHEMICAL RESISTANCE	HYDROCARBONS	Excellent	Excellent	Excellent
	HYDROCHLORIC ACID (concentrate to 10%)	Excellent	Excellent	Excellent
	SULFURIC ACID (concentrate to 10%)	Excellent	Excellent	Excellent
	METHANE	Excellent	Excellent	Excellent
	OXYGEN	Excellent	Excellent	Excellent
	SODIUM HYDROXIDE	Excellent	Excellent	Excellent
	LIQUID NITROGEN	Excellent	Excellent	Excellent
	SOLVENTS	Good	Good	Good

We can provide you detailed reports on the compatibility tests, performed by the Laboratory A.R.M. in Brescia.

All our TF types can be produced also as PLUS model, which is an enhanced type of lubrication treatment to reduce even more the coefficient of friction.

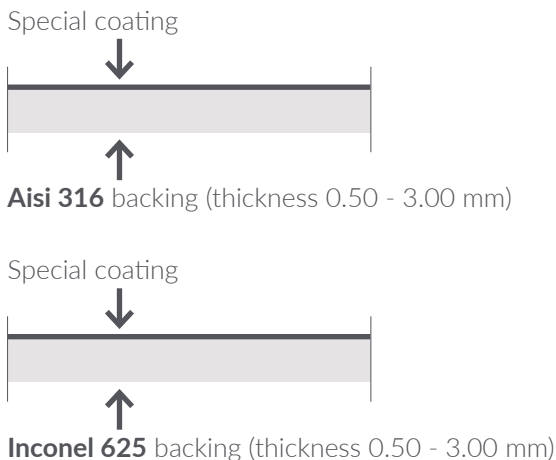


PMT Type

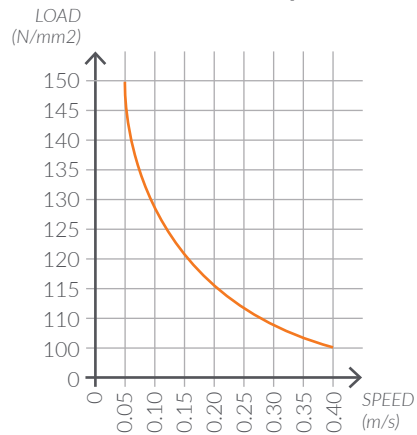
This product identifies a new generation of Sliding bearings and washers for applications in low and high temperatures, thanks to a special coating realized with a system similar to the PVD process. This coating confers to the backing material an excellent resistance to extreme temperatures while maintaining a good coefficient of static friction even with a dynamic heavy load.

The metal backing layers used for this product are the Aisi 316L and the Inconel 625. With this type of product, the shaft should not be heat treated. Use of oil and grease with these bearings is not recommended.

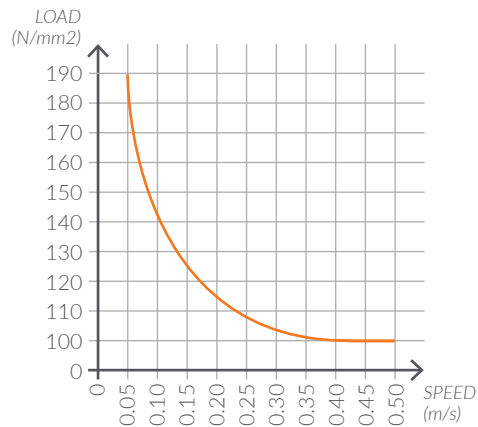
BEARING SECTION



GRAPHIC LOAD/SPEED PMT-316 . PMT-316 plus . PMT-625



GRAPHIC LOAD/SPEED PMT-625 plus



Remarks: for more detailed technical information on load/speed tests, please contact our offices

PMT-316

PMT-316_{plus}

PMT-625

PMT-625_{plus}

Aisi 316L
+ Special coating

Aisi 316L
+ Special coating

Inconel 625
+ Special coating

Inconel 625
+ Special coating

SUPPORTING SHELL		C 0.03%, S 0.025% P 0.03%, Si 0.50% Mn 1.80%, Cr 16.70% Ni 10.00%, Mo 2.00%	C 0.03%, S 0.025% P 0.03%, Si 0.50% Mn 1.80%, Cr 16.70% Ni 10.00%, Mo 2.00%	C 0.10% Mn 0.05% Cr 20 ÷ 23 % Mo 8 ÷ 10 % Co 1.00% Ta + Nb 3.15 ÷ 4.15 % Ni Rest.	C 0.10% Mn 0.05% Cr 20 ÷ 23 % Mo 8 ÷ 10 % Co 1.00% Ta + Nb 3.15 ÷ 4.15 % Ni Rest.
SLIDING LAYERS		Vaporization of the special coating. Multilayer deposit on the surface. Minimum hardness 180 HB, and minimum thickness 15 µm.			
MECHANICAL PROPERTIES	WORKING TEMPERATURE	min - 198°C max + 430 °C	min - 100°C max + 500 °C	min - 198°C max + 430 °C	min - 100°C max + 600 °C
	COEFFICIENT OF FRICTION	0.06-0.12	0.08-0.20	0.06-0.12	0.04-0.10
	MAX. SPEED	0.40 m/s	0.40 m/s	0.40 m/s	0.50 m/s
	MAX. STATIC LOAD	200 N/mm2	200 N/mm2	200 N/mm2	200 N/mm2
	MAX. DYNAMIC LOAD (max. speed 0.10 m/s)	150 N/mm2	150 N/mm2	150 N/mm2	190 N/mm2
	MAX. DYNAMIC LOAD (max. speed 0.40 m/s)	100 N/mm2	100 N/mm2	100 N/mm2	100 N/mm2
SHAFT		For an optimal performance the shaft surface finishing shall be between Ra 0.40 and 1.60 µm, depending on the different applications. Hardness 100 – 160 HB5.			
CHEMICAL RESISTANCE	HYDROCARBONS	Excellent	Excellent	Excellent	Excellent
	HYDROCHLORIC ACID (concentrate to 10%)	Excellent	Excellent	Excellent	Excellent
	SULFURIC ACID (concentrate to 10%)	Excellent	Excellent	Excellent	Excellent
	METHANE	Excellent	Excellent	Excellent	Excellent
	OXYGEN	Excellent	Excellent	Excellent	Excellent
	SODIUM HYDROXIDE	Excellent	Excellent	Excellent	Excellent
	LIQUID NITROGEN	Excellent	Excellent	Excellent	Excellent
	SOLVENTS	Excellent	Excellent	Excellent	Excellent
We can provide you detailed reports on the compatibility tests, performed by the Laboratory A.R.M. in Brescia.					

TX and PMT Types

WITH CARBIDE TREATMENTS

SLIB ITALY produces a variety of self-lubricating Bushings and Washers with 3 different types of carbide treatments, custom made on demand:

- Stellite (ST.6 HVOF)
- Tungsten carbide (TCC)
- Chromium carbide (CCC)

TX-316 TCC

Aisi 316L
+ Tungsten carbide
+ Sintering
+ Fabric
+ Filled PTFE

TX-316 CCC

Aisi 316L
+ Chromium carbide
+ Sintering
+ Fabric
+ Filled PTFE

TX-316 STE

Aisi 316L
+ Stellite 6 HVOF
+ Sintering
+ Fabric
+ Filled PTFE

TX-625 TCC

Inconel 625
+ Tungsten carbide
+ Sintering
+ Fabric
+ Filled PTFE

TX-625 CCC

Inconel 625
+ Chromium carbide
+ Sintering
+ Fabric
+ Filled PTFE

TX-625 STE

Inconel 625
+ Stellite 6 HVOF
+ Sintering
+ Fabric
+ Filled PTFE

MECHANICAL PROPERTIES	SUPPORTING SHELL	C 0.03%, S 0.025%, P 0.03%, Si 0.50% Mn 1.80%, Cr 16.70%, Ni 10.00%, Mo 2.00%	C 0.10%, Mn 0.05%, Cr 20 ÷ 23%, Mo 8 ÷ 10% Co 1.00%, Ta + Nb 3.15 ÷ 4.15%, Ni Rest.
	SLIDING LAYERS	Special fabric with filled PTFE. Colour black-gray. Thickness 400 µm. Heavy load capacity and self-lubricating under dry operation.	
	SINTERING	Special adhesive between the fabric and the backing steel. Thickness 60 µm.	
	WORKING TEMPERATURE	min - 180 °C - max + 260 °C	min - 180 °C - max + 260 °C
	COEFFICIENT OF FRICTION	0.03-0.10	0.03-0.10
	MAX. SPEED	0.50 m/s	0.50 m/s
	MAX. STATIC LOAD	300 N/mm2	400 N/mm2
	MAX. DYNAMIC LOAD	190 N/mm2 (max. speed 0.05 m/s)	190 N/mm2 (max. speed 0.05 m/s)
	MAX. DYNAMIC LOAD	100 N/mm2 (max. speed 0.50 m/s)	100 N/mm2 (max. speed 0.50 m/s)
	SHAFT	For an optimal performance the shaft surface finishing shall be between Ra 0.40 and 1.60 µm, depending on the different applications. Hardness 80 - 160 HB5.	

PMT-316 TCC

Aisi 316L
+ Tungsten carbide
+ Special coating

PMT-316 CCC

Aisi 316L
+ Chromium carbide
+ Special coating

PMT-316 STE

Aisi 316L
+ Stellite 6 HVOF
+ Special coating

PMT-625 TCC

Inconel 625
+ Tungsten carbide
+ Special coating

PMT-625 CCC

Inconel 625
+ Chromium carbide
+ Special coating

PMT-625 STE

Inconel 625
+ Stellite 6 HVOF
+ Special coating

MECHANICAL PROPERTIES	SUPPORTING SHELL	C 0.03%, S 0.025%, P 0.03%, Si 0.50% Mn 1.80%, Cr 16.70%, Ni 10.00%, Mo 2.00%	C 0.10%, Mn 0.05%, Cr 20 ÷ 23%, Mo 8 ÷ 10% Co 1.00%, Ta + Nb 3.15 ÷ 4.15%, Ni Rest.
	SLIDING LAYERS	Vaporization of the special coating. Multilayer deposit on the surface. Minimum hardness 180 HB, and minimum thickness 15 µm.	
	WORKING TEMPERATURE	min - 198 °C - max + 430 °C	min - 198 °C - max + 430 °C
	COEFFICIENT OF FRICTION	0.06-0.12	0.06-0.12
	MAX. SPEED	0.40 m/s	0.40 m/s
	MAX. STATIC LOAD	200 N/mm2	200 N/mm2
	MAX. DYNAMIC LOAD	150 N/mm2 (max. speed 0.10 m/s)	150 N/mm2 (max. speed 0.10 m/s)
	MAX. DYNAMIC LOAD	100 N/mm2 (max. speed 0.40 m/s)	100 N/mm2 (max. speed 0.40 m/s)
	SHAFT	For an optimal performance the shaft surface finishing shall be between Ra 0.40 and 1.60 µm, depending on the different applications. Hardness 100 - 160 HB5.	

SLIDING BEARINGS DIVISION
HYDRAULIC, ENERGY AND METAL INDUSTRY



VIEW ALL FASTRACK SERVICES ON OUR WEBSITE

FASTRACK 3

FASTRACK 6

FASTRACK 10

GUARANTEED DELIVERY

3 WORKING DAYS

6 WORKING DAYS

10 WORKING DAYS

LIMIT FOR ORDER
ACCEPTANCE

by 12 am of the
ordering day

by 12 am of the
ordering day

by 12 am of the
ordering day

	INCREASE ON THE STANDARD PRICE			SHIPPING COST WITH EXPRESS CURIER
ITALY	100%	40%	20%	up to 5 Kg: 15.00 € up to 10 Kg: 25.00 €
EUROPE	100%	40%	20%	up to 5 Kg: 25.00 € up to 10 Kg: 35.00 €
NORTH AMERICA		60%	40%	up to 5 Kg: 35.00 € up to 10 Kg: 50.00 €

Please indicate in your order the FASTRACK type you require.
During vacation periods or bank holidays, please contact our office to check the delivery capacity.

For the following products:

TF-C

TF-316

TF-625

TF-F51

WORKING TEMPERATURE	min - 190 °C - max + 260 °C	min - 190 °C - max + 260 °C	min - 190 °C - max + 260 °C	min - 190 °C - max + 260 °C
COEFFICIENT OF FRICTION	0.03-0.20	0.03-0.20	0.03-0.20	0.03-0.20
MAX. SPEED	1.00 m/s	1.00 m/s	1.00 m/s	1.00 m/s
MAX. STATIC LOAD	250 N/mm ²	250 N/mm ²	250 N/mm ²	250 N/mm ²
MAX DYNAMIC LOAD (velocità massima 0.10 m/s)	140 N/mm ²	140 N/mm ²	140 N/mm ²	140 N/mm ²
MAX DYNAMIC LOAD (velocità massima 1.00 m/s)	60 N/mm ²	60 N/mm ²	60 N/mm ²	60 N/mm ²

TX-C

TX-316

TX-625

TX-F51

WORKING TEMPERATURE	min - 180 °C - max + 260 °C	min - 180 °C - max + 260 °C	min - 180 °C - max + 260 °C	min - 180 °C - max + 260 °C
COEFFICIENT OF FRICTION	0.03-0.10	0.03-0.10	0.03-0.10	0.03-0.10
MAX. SPEED	0.50 m/s	0.50 m/s	0.50 m/s	0.50 m/s
MAX. STATIC LOAD	300 N/mm ²	300 N/mm ²	400 N/mm ²	400 N/mm ²
MAX DYNAMIC LOAD (velocità massima 0.05 m/s)	190 N/mm ²	190 N/mm ²	190 N/mm ²	190 N/mm ²
MAX DYNAMIC LOAD (velocità massima 0.50 m/s)	100 N/mm ²	100 N/mm ²	100 N/mm ²	100 N/mm ²

PMT-316

PMT-316_{plus}

PMT-625

PMT-625_{plus}

WORKING TEMPERATURE	min - 198 °C - max + 430 °C	min - 100 °C - max + 500 °C	min - 198 °C - max + 430 °C	min - 100 °C - max + 600 °C
COEFFICIENT OF FRICTION	0.06-0.12	0.08-0.20	0.06-0.12	0.04-0.10
MAX. SPEED	0.40 m/s	0.40 m/s	0.40 m/s	0.50 m/s
MAX. STATIC LOAD	200 N/mm ²	200 N/mm ²	200 N/mm ²	200 N/mm ²
MAX DYNAMIC LOAD (velocità massima 0.10 m/s)	150 N/mm ²	150 N/mm ²	150 N/mm ²	190 N/mm ²
MAX DYNAMIC LOAD (velocità massima 0.40 m/s)	100 N/mm ²	100 N/mm ²	100 N/mm ²	100 N/mm ²

We can provide a FASTRACK service also for all the PLUS types.
Please ask the office for more information.

Testing Methods

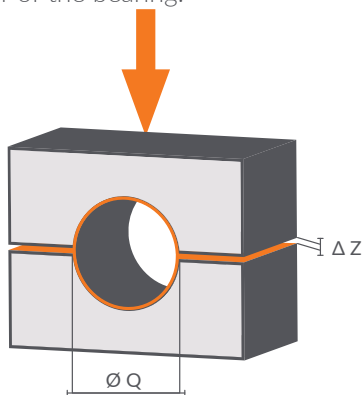
The sliding bearings are checked in accordance with the standard norm ISO 3547-2 (DIN 1494-2), which states that the inside and outside bearing diameters cannot

be tested in a free condition since an imperfect contact between the two surfaces of the edges may cause wrong measurements

TESTING METHOD "A"

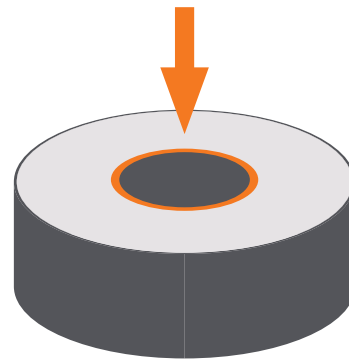
The testing method "A" works with two half-bearing blocks featuring a pre-set diameter (Q) in which the bearing needs to be inserted and pressed with a given force (F_b).

The test is done by incrementing load on the outside diameter of the bearing.



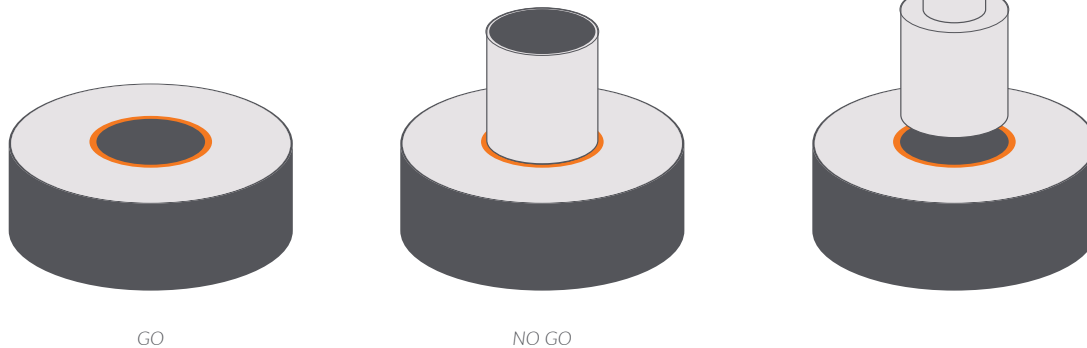
TESTING METHOD "B"

The testing method "B" is a checking process on the external diameter of the bearing, using "go / no-go" ring gauges. This is not a destructive test.



TESTING METHOD "C"

The testing method "C" consists in pressing the bearing into the housing with H7 tolerance, and checking the inside diameter using a "go / no-go" plug gauge, or otherwise using a micrometer gauge. This is not a destructive test.



Note: This is the standard checking method used in Slib Italy.

Fitting Methods

The bearing fitting system varies according to the application, to the equipment and the quantities.

The most common fitting method requires the use of hydraulic or pneumatic presses. Considering the suitable seat for the bearing to be fitted, the following actions are required:

- Create a 20° (±5°) chamfer onto the housing invitation, with a depth of 1.2 mm;
- Trim and clean the seat surface;
- Lubricate the external surface of the bearing before fitting it in place;
- Check the center lines between the bearing and the

seat for proper alignment;

- When more bearings are needed into the same seat, align all the slit-cuts;
- It is advisable to use a guide mandrel to fit the bearings into their seats. (fig. 01);
- For bearings with diameters exceeding 55 mm it is advisable to perform the fitting using a supporting ring-tool with the diameter oversized by 0.30 / 0.40 mm. (fig. 02);
- For flanged bearings the housing invitation shall have a 45° angle and the minimum depth shall equal 2 mm. A 2.5 mm depth is required for bearings with wall thickness of 2.5 mm. (fig. 03).

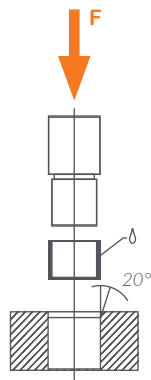


fig 01

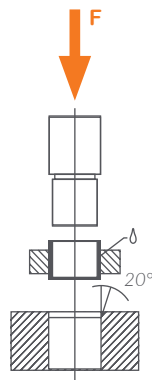


fig 02

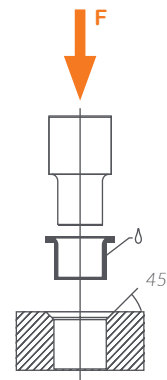


fig 03

APPROXIMATE VALUES OF THE FITTING FORCE “F” (newton N)

Nominal thickness of bearing wall 1,0 mm	$F = 300 \cdot H$
Nominal thickness of bearing wall 1,5 mm	$F = 500 \cdot H$
Nominal thickness of bearing wall 2.0 mm	$F = 700 \cdot H$
Nominal thickness of bearing wall 2,5 mm	$F = 900 \cdot H$

FITTING PRESSURE

from 12x14 to 20x22	80 - 110 Kg
from 20x23 to 30x34	110 - 160 Kg
from 31x35 to 40x44	160 - 220 Kg
from 41x46 to 70x75	350 - 500 Kg
from 75x80 to 95x100	550 - 700 Kg
from 100x105 to 160x165	650 - 800 Kg
165x170	800 - 1200 Kg

Our laboratory is equipped with a test-bench to perform tests matching these parameters:

- Maximum rotating torque : 2.000 Nm
- Applicable load: 1.000 KN
- Handling actuator with maximum 180° opening
- Maximum speed: 4 sec / 90°
- Temperature range: -50° C -> +230° C

Member of:

sealcore[®]

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sealcore.net

Via Marconi 142/144,
24060 Castelli Calepio (BG) Italy

tel +39 035 4425511

fax +39 035 4425478

info@slibitaly.com

slibitaly.com

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