

## Filament Wound – group of maintenance free materials impregnated with epoxy resin

### 1. Structure

<b>GAR-MAX</b> –	backing layer: glass fibres + epoxy resin, sliding layer: PTFE + high-strength fibres + epoxy resin + lubricants,
<b>HSG</b> –	backing layer: glass fibres + epoxy resin, sliding layer: PTFE + high-strength fibres + epoxy resin + lubricants,
<b>GAR-FIL</b> –	backing layer: glass fibres + epoxy resin, sliding layer: 0,38mm or 0,76mm PTFE, other thickness on request,
<b>MLG</b> –	backing layer: glass fibres + epoxy resin, sliding layer: PTFE + high-strength fibres + epoxy resin,
<b>HPF</b> –	backing layer: glass fibre + epoxy resin, sliding layer: PTFE,
<b>HPM</b> –	backing layer: glass fibres + epoxy resin, sliding layer: PTFE + high-strength fibres + self lubricating epoxy resin,
<b>MEGALIFE XT</b> –	backing layer: glass fibre + epoxy resin, sliding layer: PTFE on both sides.

### 2. Characteristics

- group of maintenance free sliding materials designed for work in various heavy-duty conditions,
- low noise,
- high load to bearing weight ratio,
- absorbs vibrations, resistant to edge and shock loads,
- high chemical resistance, resistant to contaminations,
- HSG: High Strength Garmax – higher loads, better resistance,
- GAR-FIL: can be machined on inner and outer diameters,
- HSG, MLG, MEGALIFE XT: provide axial compensation,
- HPF, HPM: designed specially for hydro-power application, environment friendly, stable dimensions in water,
- MEGALIFE XT: appropriate for high linear speed.

### 3. Applications

- GAR-MAX: conveyors, steering linkages, hydraulic cylinder pivots, earth moving equipment, lifts, cranes,
- HSG: steering linkages, king pin bearings, hydraulic cylinder pivots, earth moving equipment, lifts, cranes, loaders, pulleys,
- GAR-FIL: dźwignie kolankowe, zawory, przemysł wydobywczy,
- MLG: open mining, cranes, hoists, lifts, hydraulic cylinders, joints,
- HPF, HPM: servo systems, water and underwater applications, linkages,
- MEGALIFE XT: hoists, pulleys, lifts, cranes, bolts.

### 4. Availability

- ex stock:  
GAR-MAX, GAR-FIL: cylindrical bushes
- to order:  
HSG: cylindrical bushes and special shapes,  
MLG: cylindrical bushes with diameter from 12 to 500 mm, flanged bushes and special shapes,  
HPF: cylindrical bushes with diameter up to 500 mm, plates with 6, 8 or 10 mm thickness,  
HPM: cylindrical bushes with diameter up to 500 mm,  
MEGALIFE XT: thrust washers with size from 12x24 mm to 75x115 mm and special shapes.

### 5. Technical data

Parameter		Unit	Value						
			GAR-MAX	HSG	GAR-FIL	MLG	HPF	HPM	MLIFE XT
Maximum load	static	MPa	210	415	140	210	140	140	140
	dynamic		140	140	140	140	140	140	140
Maximum sliding speed		m/s	0,3	0,3	2,5	0,13	2,5	0,13	0,5
Maximum p x v factor	dry	MPa x m/s	1,05	1,05	1,23	1,05	1,23	1,23	1,23
	lubricated		2,0	2,0					
Working temperature	maximum	°C	160	160	205	160	140	160	175
	minimum		-195	-195	-195	-195	-195	-195	-195
Coefficient of friction	dry	-	0,02-0,30	0,02-0,30	0,02-0,12	0,02-0,12	0,02-0,12	0,05-0,30	0,02-0,12
	lubricated						0,02-0,08		
Surface Ra finish	shaft	µm	0,15-0,4	0,2-0,8	0,4	0,4	0,15-0,4	0,2-0,8	0,4
	housing		3,2	3,2	3,2	3,2	3,2	3,2	3,2
Fitting	shaft	-	h8	h8	h8	h8	h8	h8	h8
	housing		H7	H7	H7	H7	H7	H7	H7
Shaft hardness		HB	>350	>350	>200	>350	>350	>350	>200

### 6. Working conditions

	<b>GAR-MAX</b>	<b>HSG</b>	<b>GAR-FIL</b>	<b>MLG</b>	<b>HPF</b>	<b>HPM</b>	<b>MLIFE XT</b>
dry	very good	very good	very good	very good	very good	very good	very good
oil lubricated	fair	fair	fair	good	very good	fair	fair
grease lubricated	fair	fair	fair	poor	fair	fair	fair
water lubricated	fair	fair	very good	fair	very good	very good	very good
process fluid lubricated	fair	fair	very good	fair	fair	fair	fair

7. Assembly tips

Press-fit installation.

Additional fixture or gluing of bushes is not necessary. Fixture of plates with countersunk screws or shape limits.

Additional machining permitted.