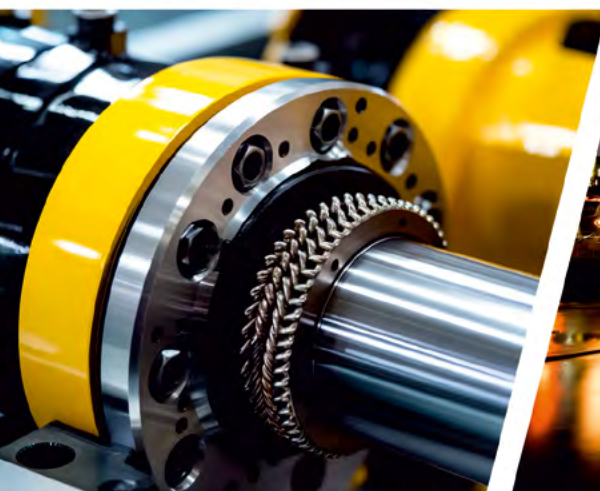




DP4[®], DP4-B, DP10 and DP11
**METAL-POLYMER SELF-LUBRICATING
LEAD FREE BEARING SOLUTIONS**



Who we are

GGB helps create a world of motion with minimal frictional loss through plain bearing and surface engineering technologies. With global R&D, testing and production facilities GGB partners with customers worldwide on customized tribological design solutions that are efficient and environmentally sustainable. GGB's engineers bring their expertise and passion for tribology to a wide range of industries, including automotive, aerospace and industrial manufacturing. To learn more about tribology for surface engineering from GGB, visit ggbearings.com.

Our products are used in tens of thousands of critical applications every day on our planet. It is always our goal to provide superior, high-quality solutions for our customers' needs, no matter where those demands take our products. From space vehicles to golf carts and virtually everything in between; we offer the industry's most extensive range of high performance, maintenance-free bearing solutions for a multitude of applications:



Aerospace



Agriculture



Automotive



Construction



E-Mobility



Energy



Exoskeletons



Fluid Power



Industrial



Medical



Mining



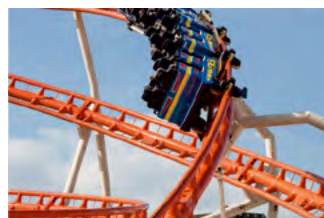
Oil & Gas



Primary Metals



Railway



Recreation



Robotics & Automation

The GGB Advantage



MAINTENANCE-FREE

GGB bearings are self-lubricating, making them ideal for applications requiring long bearing life without continuous lubrication.



LOW FRICTION, HIGH WEAR RESISTANCE

GGB bearings are self-lubricating, making them ideal for applications requiring long bearing life without continuous lubrication.



NVH (NOISE, VIBRATION, HARSHNESS)

Plain bearings provide a smooth sliding motion between surfaces and their material properties and simple design reduce noise, vibration and harshness.



LOWER SYSTEM COST

A one-piece design offers space and weight reductions and thanks to the material compositions and self-lubricating properties, less maintenance is needed.



REDUCED CO₂ FOOTPRINT

GGB's flexible and local production platforms assure timely deliveries and reduced CO₂ footprint.



PARTNER SUPPORT

GGB offers tribological, application and design support, and partners with our customers to provide the most efficient solutions.



The Highest Standards in Fabrication

Our world-class manufacturing plants are certified in quality and excellence according to ISO 9001, IATF 16949, ISO 14001 and ISO 45001. This allows us to access the industry's best practices while aligning our management system with global standards.

For a complete listing of our certifications, please visit our website:

ggbearings.com/en/certificates

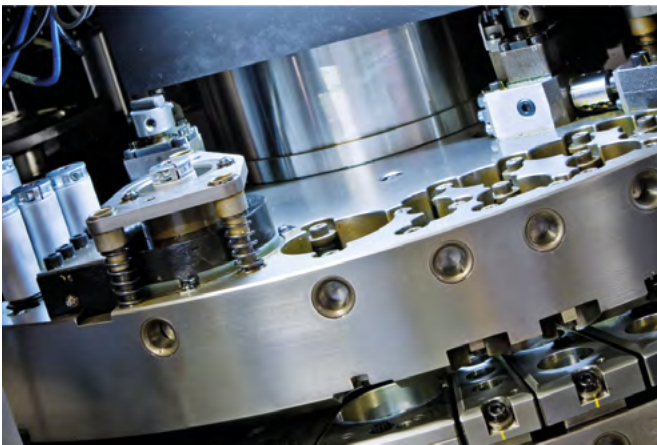


Table of Contents

1	Introduction	5	5	Selection Guide	
2	Structure and Composition	6	5.1	Lubricants	10
2.1	Material Composition	6		Product Performance Comparison	
3	Properties	6	5.2	Tribology	10
3.1	Physical and Mechanical Properties	6		Calculation of GGB Bearing Performance	
4	Bearing Performance	7	6	Standard Dimensions	11
4.1	Continuous Rotation	8	6.1	Basic Forms	11
4.2	Oscillating Movement	8	6.2	Dimensions - Metric Sizes	
	Low Frequency / High Amplitude		6.2.1	Cylindrical Plain Bearings	12
4.3	Oscillating Movement	8	6.2.2	Flanged Bearings	16
	High Frequency / Low Amplitude		6.2.3	Thrust Washers	17
4.4	Dry Friction	9	6.2.4	Flanged Washers	17
4.5	Bush Burnishing	9	6.3	Dimensions - Inch Sizes	
			6.3.1	Cylindrical Plain Bearings	18
			6.3.2	Flanged Bearings	20
			6.3.3	Thrust Washer	21
			7	Bearing Application Data Sheet	22
			8	Product Information	
				Declaration on the RoHS directive	23
				Health Hazard - Warning	23
				Trademarks	23

1 Introduction

This brochure describes the range of selflubricated PTFE based metal-polymer plain bearings specifically developed by GGB for use in dry applications. PTFE based metal-polymer plain bearings are used extensively in a diverse range of industrial and automotive applications, where potentially they can:

- offer environmentally friendly dry running operation (as opposed to grease or oil lubricated)
- improve friction and wear performance (relative to conventional bronze, steel and bimetal bearings)
- reduce equipment / operating costs and improve performance (when replacing rolling element bearings)

These GGB plain bearing materials give excellent performance in a wide range of loads, speeds and temperatures; with or without external lubrication.

GGB's longest serving product, DU®, was developed as a self-lubricated dry bearing more than 50 years ago, when it quickly became established as a worldwide industry standard.

However, due to the lead content in the DU® overlay, GGB has developed a new range of lead free self-lubricated materials capable of meeting the most stringent performance requirements.

Each new material complies with the following European Parliament legislation:

- End of Life vehicles directive 2000/53/EC concerning the elimination of hazardous materials in the construction of passenger vehicles and light trucks (the EVL directive).
- Directive 2002/95/EC concerning the restriction of the use of certain hazardous substances in electrical and electronic equipment (the RoHS regulations).

Although designed for dry operation, these PTFE based materials can also perform exceptionally well in fluid lubricated conditions. For example, both DP4® and DP10 are particularly suited to marginally lubricated conditions, and DP4® performs well in oil lubricated heavy duty hydraulic applications.

2 Structure and Composition

GGB's PTFE based metal-polymer materials are composed of three bonded layers: a steel backing and a porous bronze interlayer, impregnated and overlaid with a bearing surface consisting of PTFE (polytetrafluoroethylene) and fillers.

The steel backing provides mechanical strength while the bronze sinter layer provides a strong mechanical bond for the filled PTFE bearing lining.

The PTFE-based bearing surface exhibits very low friction properties, and the different filler packages (indicated below) give each product its unique set of physical characteristics, for example, superior wear resistance.

DP4® can also be supplied with a bronze backing, referred to as DP4-B, when improved corrosion resistance or antimagnetic properties are required.

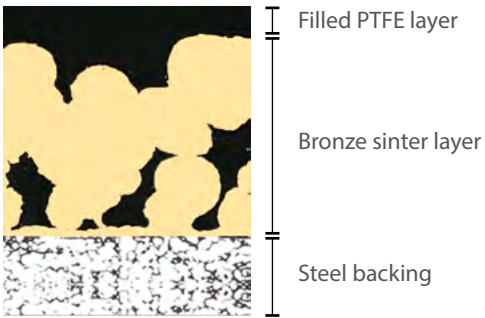


Figure 1: DP4 microsection

2.1 MATERIAL COMPOSITION

MATERIAL	DP4®	DP4-B	DP10	DP11
Bearing Lining Composition	PTFE + Fillers	PTFE + Fillers	PTFE + Solid Lubricant	PTFE + Solid Lubricant + fillers
Backing	Steel + Bronze Sinter Layer	Bronze + Bronze Sinter Layer	Steel + Bronze Sinter Layer	Steel + Bronze Sinter Layer

Table 1: Material bearing layer composition

3 Properties

3.1 PHYSICAL AND MECHANICAL PROPERTIES

BEARING PROPERTIES		UNITS	DP4®	DP4-B	DP10	DP11
Physical Properties						
Coefficient of linear thermal expansion	Parallel to the surface Normal to the surface	10 ⁻⁶ /K	11 30	18 36	11 30	11 30
Operating temperature	Min. Max.	°C	-200 280	-200 280	-200 280	-200 280
Mechanical Properties						
Compressive yield strength			350	300	350	350
Maximum load, P	Static Dynamic	N/mm ²	250 140	140 140	250 140	250 140
Bearing Properties - Dry						
Maximum sliding speed, V		m/s	2.5	2.5	2.5	2.5
Maximum PV factor		N/mm ² x m/s	1.0	1.0	1.0	1.0
Recommended mating surface hardness		HB	>200	>200	>200	>200
Recommended mating surface finish R _a		mm	0.4 ± 0.1	0.4 ± 0.1	0.4 ± 0.1	0.4 ± 0.1

Table 2: Physical and mechanical properties

4 Bearing Performance

Each application, depending on the equipment design, usage and operating conditions (load, speed, type of movement, temperature, etc.), places individual demands on the bearing.

GGB undertook an extensive test program in order to determine each material's dry wear performance, while operating with different types of movement.

The three different types of movement are:

- Continuous rotation
- Low frequency oscillation
- High frequency oscillation

Additionally, friction values for each material were measured under low and high speed dry running conditions. Finally, the material's resistance to bore burnishing (bore calibration) was also validated.

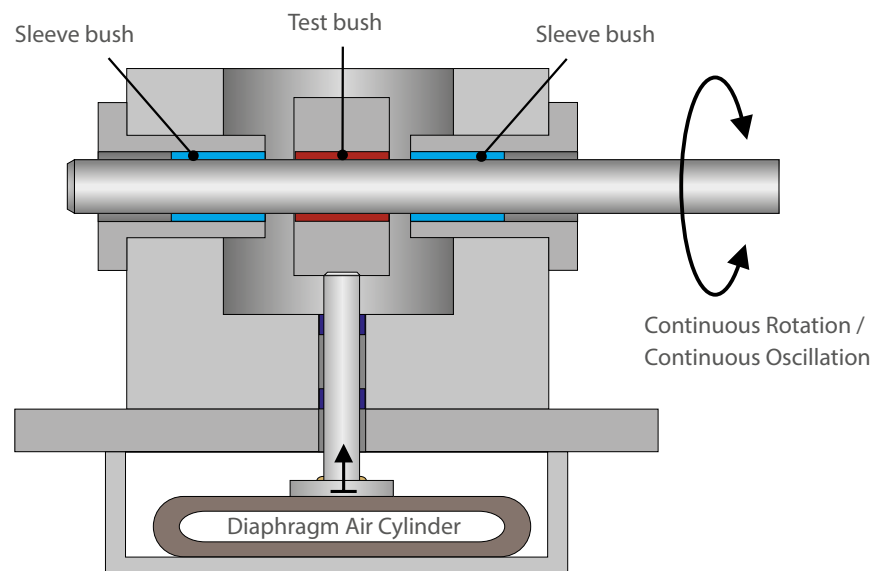


Figure 2: GGB Jupiter test rig

4 Bearing Performance

4.1 CONTINUOUS ROTATION

Under continuous rotation according to the GGB test conditions, the relative dry wear performance of each material see Fig.5.

Typical applications include:

Pulleys, sheaves, sprockets, wheels, axles, gears & gear shafts, crank shafts, office equipment, bank note handling machinery, packaging machinery, special purpose machinery, cranes & hoists, agricultural machinery, etc.

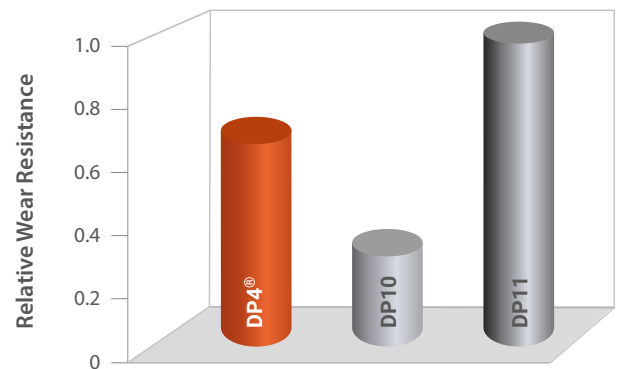


Figure 3: Relative wear resistance

Test Conditions:

- Specific load = 25 N/mm²
- Rotation speed = 0,04 m/s
- Life test

4.2 OSCILLATING MOVEMENT LOW FREQUENCY / HIGH AMPLITUDE

Under low frequency and high amplitude oscillating movement, according to the GGB test conditions, the relative dry wear performance of each material see Fig.6.

Typical applications include:

Pulleys, sheaves, sprockets, wheels, axles, gears & gear shafts, crank shafts, office equipment, bank note handling machinery, packaging machinery, special purpose machinery, cranes & hoists, agricultural machinery, etc.

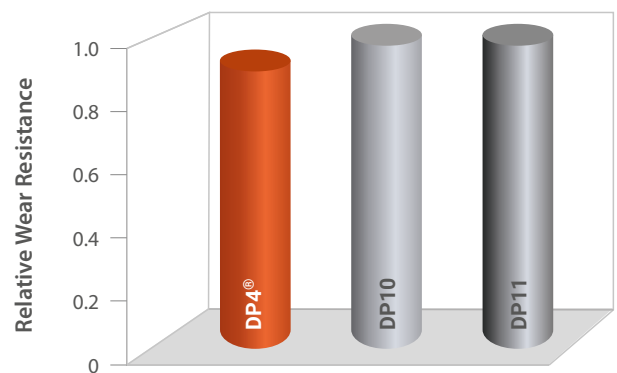


Figure 4: Relative wear resistance

Test Conditions:

- Specific load = 5 N/mm²
- Frequency = 1 Hz
- Angle = ±60°
- 40 Hours Operation

4.3 OSCILLATING MOVEMENT HIGH FREQUENCY / LOW AMPLITUDE

Under high frequency and low amplitude oscillating movement according to the GGB test conditions, the relative dry wear performance of each material see Fig.7.

Typical applications include:

Pulley dampers, belt tensioners, chain tensioners, twin mass flywheels, clutches, solenoids, textile machines, etc.

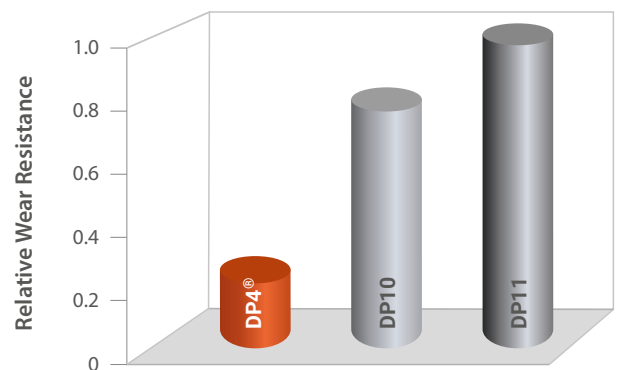


Figure 5: Relative wear resistance

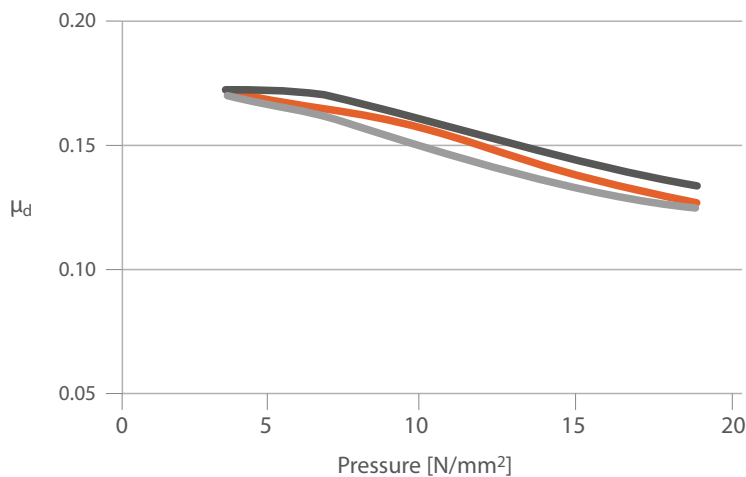
Test Conditions:

- Specific load = 5 N/mm²
- Frequency = 30 Hz
- Angle = ±3°
- Life test

4.4 DRY FRICTION

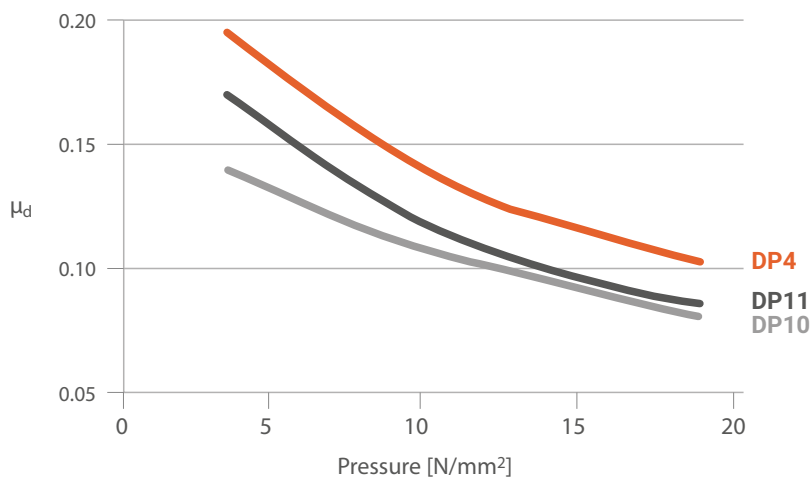
A low level of friction is generally desirable in most dry bearing applications. An indication of dynamic friction coefficient under low and high speed dry conditions is indicated in the graphs below. None of the materials exhibited stick-slip effects.

Note that actual friction values in the final application will depend upon many design and operating factors. Consequently, if frictional characteristics are critical to an application, the actual values should be determined by testing.



Dry friction under low speed conditions:

— Speed = 0,05 m/s



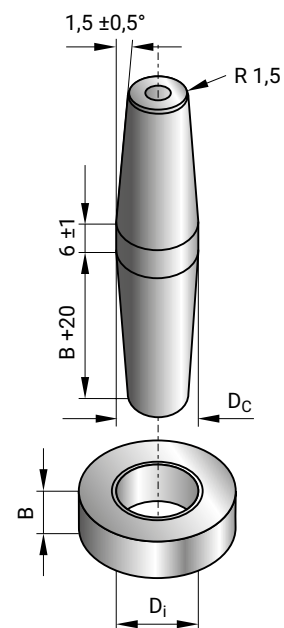
Dry friction under high speed conditions:

— Speed = 0,35 m/s

4.5 BUSH BURNISHING

Burnishing the bore of an assembled bush (calibration) reduces the variation of the inner diameter of the bush, which leads to a reduction in the clearance variation between the bush and the shaft (less play, lower noise, etc). The recommended burnishing tool design is shown in the illustration opposite.

GGB trials demonstrated that all three materials exhibited no removal of the bearing layer for diametric burnish interferences up to 0,15 mm. However the impact of burnishing on the bearing and on the assembly should be validated by trials.



5 Selection Guide

5.1 PRODUCT PERFORMANCE COMPARISON

Product selection may be simplified by using the following table which compares the relative strengths of each material.

For specific applications where bearing performance is of major importance, or where environmental or unusual operating conditions are present, prototype testing or test rig simulations are recommended, to confirm satisfactory bearing design and performance.

BEARING	CONTINUOUS ROTATION	LOW FREQUENCY OSCILLATION	HIGH FREQUENCY OSCILLATION	DRY FRICTION	BURNISHABILITY
DP4®	●	●	●	●	●
DP10	●	●	●	●	●
DP11	●	●	●	●	●

● Recommended ● Good ● Fair

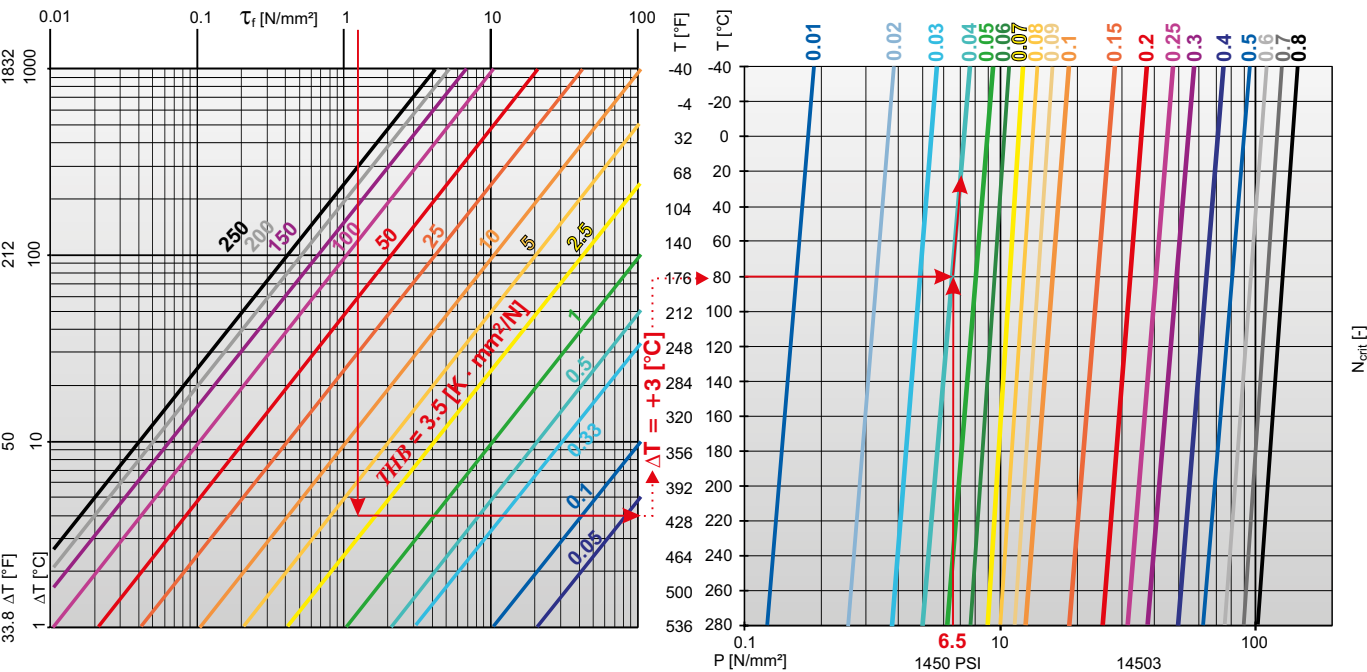
5.2 CALCULATION OF GGB BEARING PERFORMANCE

For many years, GGB has carried out extensive plain bearing material testing on a variety of test rigs running under a range of different, but controlled operating conditions.

Using the data from these tests, in addition to the various graphs and guides shown above and published for its other materials,

GGB has been able to develop advanced programs that enable GGB engineers to undertake more detailed predictions of bearing performance and bearing material selection according to the unique operating conditions of each specific application.

This service is available by completing the enclosed Data Sheet for Bearing Design and by contacting your local GGB representative.



6 Standard Dimensions

6.1 BASIC FORMS

Standard Components

Standard products are manufactured according to international, national and internal standards. Standard products are produced in the following forms:

- Cylindrical Bushes
- Flanged Bushes
- Thrust Washers
- Flanged Washers
- Plates



Figure 6: Standard stock products

AVAILABILITY		
DP4*	Cylindrical and flanged bushes, thrust and flanged washers and plates	— ex stock
DP4-B	Cylindrical and flanged bushes and plates	— ex stock
	Thrust and flanged washers	— made to order
DP10	Cylindrical and flanged bushes, thrust and flanged washers	— ex stock
	Plates	— made to order
DP11	All forms	— made to order

Non-Standard Components

Non-Standard products are manufactured to requirements and may for example include the following forms:

- Modified standard parts (notches, oil grooves, etc)
- Stampings and deep drawn parts
- Special shapes



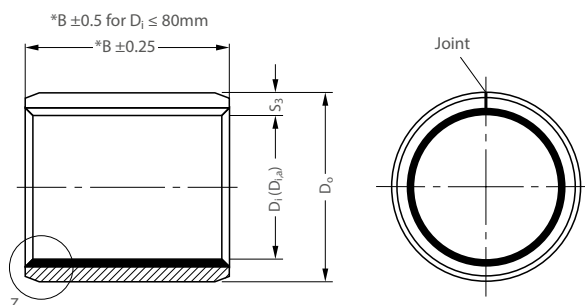
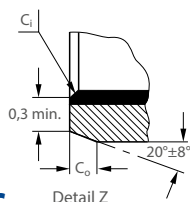
Figure 7: Non-Standard products made to order

6 Standard Dimensions



6.2 METRIC SIZES

6.2.1 CYLINDRICAL PLAIN BEARINGS



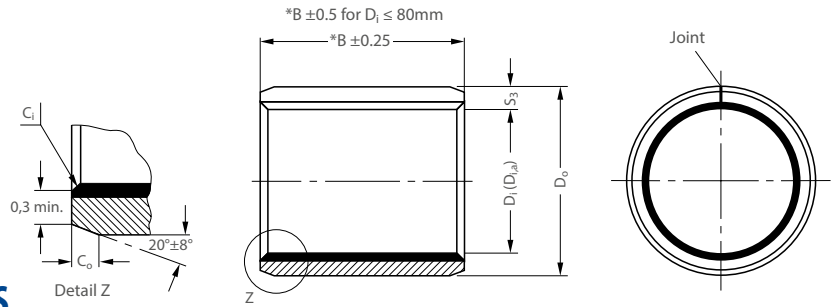
Dimensions [mm], testing and material according to GGB specifications

TECHNICAL DATA					PART NO.		
Dimensions			Installation		DP4®	DP4-B	DP10
Inside Ø Di	Outside Ø Do	Width B	Housing/ Journal	Di,a			
2	3.5	3	H6/ h6	+0.044 +0.004	0203DP4	0203DP4B	0203DP10
2	3.5	5			0205DP4	0205DP4B	0205DP10
3	4.5	3			0303DP4		0303DP10
3	4.5	5			0305DP4		0305DP10
3	4.5	6			0306DP4	0306DP4B	0306DP10
4	5.5	3			0403DP4		0403DP10
4	5.5	4			0404DP4	0404DP4B	0404DP10
4	5.5	6			0406DP4	0406DP4B	0406DP10
4	5.5	10			0410DP4	0410DP4B	0410DP10
5	7	5	H7/ f7	+0.048 -0.002	0505DP4	0505DP4B	0505DP10
5	7	8			0508DP4		0508DP10
5	7	10			0510DP4	0510DP4B	0510DP10
6	8	4			0604DP4		0604DP10
6	8	6			0606DP4	0606DP4B	0606DP10
6	8	8			0608DP4		0608DP10
6	8	10			0610DP4	0610DP4B	0610DP10
7	9	5			0705DP4		0705DP10
7	9	10			0710DP4		0710DP10
8	10	6			0806DP4		0806DP10
8	10	8			0808DP4	0808DP4B	0808DP10
8	10	10			0810DP4	0810DP4B	0810DP10
8	10	12			0812DP4	0812DP4B	0812DP10
10	12	6		+0.049/ -0.001	1006DP4		1006DP10
10	12	8			1008DP4		1008DP10
10	12	10			1010DP4	1010DP4B	1010DP10
10	12	12			1012DP4		1012DP10
10	12	15			1015DP4	1015DP4B	1015DP10
10	12	20			1020DP4		1020DP10
12	14	8			1208DP4	1208DP4B	1208DP10
12	14	10			1210DP4	1210DP4B	1210DP10
12	14	12			1212DP4	1212DP4B	1212DP10
12	14	15			1215DP4	1215DP4B	1215DP10
12	14	20			1220DP4		1220DP10
12	14	25			1225DP4		1225DP10
13	15	10			1310DP4		1310DP10
13	15	20			1320DP4		1320DP10
14	16	10			1410DP4	1410DP4B	1410DP10
14	16	12			1412DP4		1412DP10
14	16	15			1415DP4	1415DP4B	1415DP10
14	16	20			1420DP4	1420DP4B	1420DP10
14	16	25			1425DP4		1425DP10
15	17	10			1510DP4		1510DP10
15	17	12			1512DP4		1512DP10
15	17	15			1515DP4	1515DP4B	1515DP10
15	17	20			1520DP4		1520DP10
15	17	25			1525DP4	1525DP4B	1525DP10
16	18	10			1610DP4		1610DP10
16	18	12			1612DP4		1612DP10
16	18	15			1615DP4	1615DP4B	1615DP10
16	18	20			1620DP4		1620DP10
16	18	25			1625DP4	1625DP4B	1625DP10
17	19	20		+0.051/+0.001	1720DP4		1720DP10



6.2 METRIC SIZES

6.2.1 CYLINDRICAL PLAIN BEARINGS



Dimensions [mm], testing and material according to GGB specifications

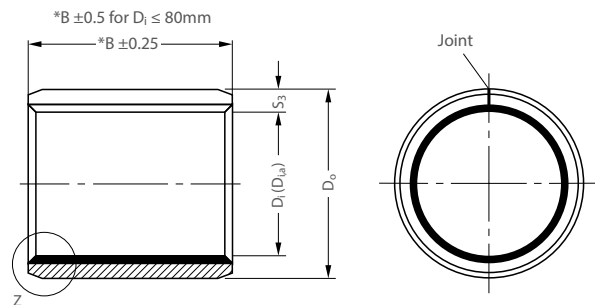
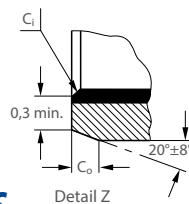
TECHNICAL DATA					PART NO.		
Dimensions			Installation		DP4®	DP4-B	DP10
Inside Ø D _i	Outside Ø D _o	Width B	Housing/ Journal	D _{i,a}			
18	20	10	H7/ f7	+0.051 +0.001	1810DP4		1810DP10
18	20	15			1815DP4		1815DP10
18	20	20			1820DP4	1820DP4B	1820DP10
18	20	25			1825DP4	1825DP4B	1825DP10
20	23	10		+0.061 +0.001	2010DP4		2010DP10
20	23	15			2015DP4	2015DP4B	2015DP10
20	23	20			2020DP4	2020DP4B	2020DP10
20	23	25			2025DP4	2025DP4B	2025DP10
20	23	30			2030DP4	2030DP4B	2030DP10
22	25	15			2215DP4	2215DP4B	2215DP10
22	25	20			2220DP4	2220DP4B	2220DP10
22	25	25			2225DP4	2225DP4B	2225DP10
22	25	30			2230DP4		2230DP10
24	27	15			2415DP4		2415DP10
24	27	20			2420DP4		2420DP10
24	27	25			2425DP4		2425DP10
24	27	30			2430DP4		2430DP10
25	28	15			2515DP4	2515DP4B	2515DP10
25	28	20			2520DP4		2520DP10
25	28	25			2525DP4	2525DP4B	2525DP10
25	28	30			2530DP4		2530DP10
25	28	50			2550DP4		2550DP10
28	32	15		+0.073 +0.003	2815DP4		2815DP10
28	32	20			2820DP4		2820DP10
28	32	25			2825DP4		2825DP10
28	32	30			2830DP4	2830DP4B	2830DP10
30	34	10			3010DP4		3010DP10
30	34	15			3015DP4		3015DP10
30	34	20			3020DP4	3020DP4B	3020DP10
30	34	25			3025DP4		3025DP10
30	34	30			3030DP4	3030DP4B	3030DP10
30	34	40			3040DP4	3040DP4B	3040DP10
32	36	20			3220DP4		3220DP10
32	36	30			3230DP4		3230DP10
32	36	40			3240DP4	3240DP4B	3240DP10
35	39	20			3520DP4	3520DP4B	3520DP10
35	39	30			3530DP4	3530DP4B	3530DP10
35	39	35			3535DP4		3535DP10
35	39	40			3540DP4		3540DP10
35	39	50			3550DP4		3550DP10
37	41	20			3720DP4		3720DP10
40	44	20		+0.093 +0.003	4020DP4		4020DP10
40	44	30			4030DP4	4030DP4B	4030DP10
40	44	40			4040DP4		4040DP10
40	44	50			4050DP4	4050DP4B	4050DP10
45	50	20		+0.093 +0.003	4520DP4		4520DP10
45	50	30			4530DP4	4530DP4B	4530DP10
45	50	40			4540DP4		4540DP10
45	50	45			4545DP4		4545DP10
45	50	50			4550DP4	4550DP4B	4550DP10

6 Standard Dimensions



6.2 METRIC SIZES

6.2.1 CYLINDRICAL PLAIN BEARINGS



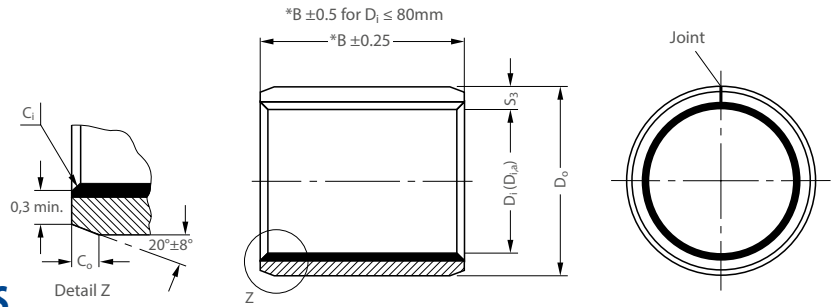
Dimensions [mm], testing and material according to GGB specifications

TECHNICAL DATA					PART NO.		
Dimensions			Installation		DP4®	DP4-B	DP10
Inside Ø D _i	Outside Ø D _o	Width B	Housing/ Journal	D _{i,a}			
50	55	20	H7/ f7	+0.095 +0.005	5020DP4		5020DP10
50	55	30			5030DP4		5030DP10
50	55	40			5040DP4	5040DP4B	5040DP10
50	55	50			5050DP4		5050DP10
50	55	60			5060DP4	5060DP4B	5060DP10
55	60	20			5520DP4		5520DP10
55	60	30			5530DP4		5530DP10
55	60	40			5540DP4	5540DP4B	5540DP10
55	60	50			5550DP4		5550DP10
55	60	60			5560DP4		5560DP10
60	65	20			6020DP4		6020DP10
60	65	30			6030DP4		6030DP10
60	65	40			6040DP4	6040DP4B	6040DP10
60	65	50			6050DP4	6050DP4B	6050DP10
60	65	60			6060DP4	6060DP4B	6060DP10
60	65	70			6070DP4	6070DP4B	6070DP10
65	70	30			6530DP4		6530DP10
65	70	50			6550DP4		6550DP10
65	70	70			6570DP4	6570DP4B	6570DP10
70	75	40			7040DP4		7040DP10
70	75	50			7050DP4	7050DP4B	7050DP10
70	75	70			7070DP4	7070DP4B	7070DP10
75	80	60	H7/ h8	+0.138 +0.038	7560DP4		7560DP10
75	80	80			7580DP4	7580DP4B	7580DP10
80	85	40			8040DP4		8040DP10
80	85	60			8060DP4	8060DP4B	8060DP10
80	85	80			8080DP4		8080DP10
80	85	100			80100DP4	80100DP4B	80100DP10
85	90	30			8530DP4		8530DP10
85	90	60			8560DP4		8560DP10
85	90	100			85100DP4	85100DP4B	85100DP10
90	95	60			9060DP4	9060DP4B	9060DP10
90	95	100			90100DP4	90100DP4B	90100DP10
95	100	60			9560DP4		9560DP10
95	100	100			95100DP4	95100DP4B	95100DP10
100	105	50			10050DP4		10050DP10
100	105	60			10060DP4	10060DP4B	10060DP10
100	105	115			100115DP4	100115DP4B	100115DP10
105	110	60			10560DP4		10560DP10
105	110	115			105115DP4	105115DP4B	105115DP10
110	115	60			11060DP4		11060DP10
110	115	115			110115DP4	110115DP4B	110115DP10
115	120	50			11550DP4		11550DP10
115	120	70			11570DP4		11570DP10
120	125	50			12050DP4		12050DP10
120	125	60			12060DP4		12060DP10
120	125	100			120100DP4		120100DP10
125	130	100			125100DP4		125100DP10
130	135	60			13060DP4		13060DP10
130	135	100			130100DP4		130100DP10
135	140	60			13560DP4		13560DP10
				+0.190 +0.090			



6.2 METRIC SIZES

6.2.1 CYLINDRICAL PLAIN BEARINGS



Dimensions [mm], testing and material according to GGB specifications

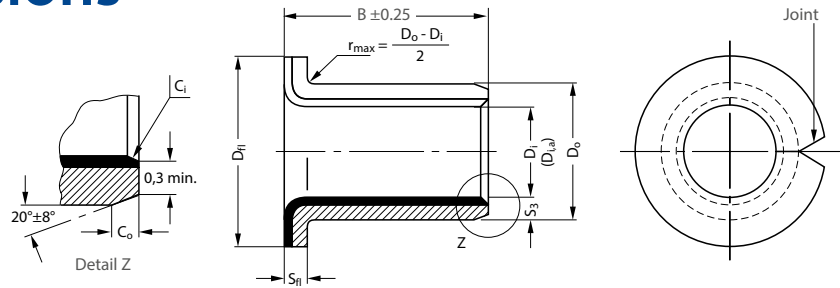
TECHNICAL DATA					PART NO.		
Dimensions			Installation		DP4®	DP4-B available on request	DP10
Inside Ø D _i	Outside Ø D _o	Width B	Housing/ Journal	D _{i,a}			
140	145	60	H7/ h8	+0.190 +0.090	14060DP4		14060DP10
140	145	100			140100DP4		140100DP10
150	155	60			15060DP4		15060DP10
150	155	80			15080DP4		15080DP10
150	155	100			150100DP4		150100DP10
160	165	80			16080DP4		16080DP10
160	165	100			160100DP4		160100DP10
180	185	100		+0.193 +0.093	180100DP4		180100DP10
200	205	100			200100DP4		200100DP10
210	215	100			210100DP4		210100DP10
220	225	100			220100DP4		220100DP10
250	255	100			250100DP4		250100DP10
300	305	100			300100DP4		300100DP10

6 Standard Dimensions



6.2 METRIC SIZES

6.2.2 FLANGED BEARINGS



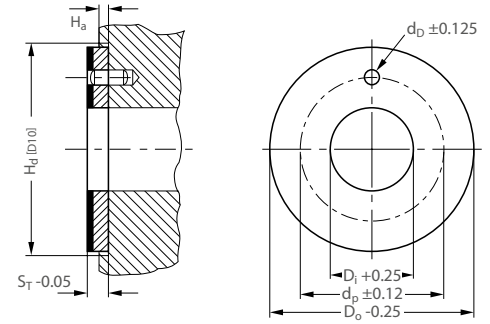
Dimensions [mm], testing and material according to GGB specifications

TECHNICAL DATA							PART NO.		
Dimensions					Installation		DP4®	DP4-B	DP10
Inside Ø D _i	Outside Ø D _o	Flange Ø	Width B	Flange thickness	Housing/Shaft	D _{i,a}			
3	4.5	7	4,0	0.75 ^{+0.05} _{-0.05}	H6/ h6	+0.044 +0.004	BB0304DP4	BB0304DP4B	BB0304DP10
4	5.5	9	4,0				BB0404DP4	BB0404DP4B	BB0404DP10
5	7	10	5,0	1.0 ^{+0.05} _{-0.2}	H7/ f7	+0.048 -0.002	BB0505DP4	BB0505DP4B	BB0505DP10
6	8	12	4,0				BB0604DP4		BB0604DP10
6	8	12	8,0				BB0608DP4	BB0608DP4B	BB0608DP10
8	10	15	5,5				BB0806DP4	BB0806DP4B	BB0806DP10
8	10	15	7,5				BB0808DP4		BB0808DP10
8	10	15	9,5				BB0810DP4	BB0810DP4B	BB0810DP10
10	12	18	7,0			+0.049 -0.001	BB1007DP4	BB1007DP4B	BB1007DP10
10	12	18	9,0				BB1009DP4		BB1009DP10
10	12	18	12,0				BB1012DP4	BB1012DP4B	BB1012DP10
10	12	18	17,0				BB1017DP4		BB1017DP10
12	14	20	7,0				BB1207DP4	BB1207DP4B	BB1207DP10
12	14	20	9,0				BB1209DP4	BB1209DP4B	BB1209DP10
12	14	20	12,0				BB1212DP4	BB1212DP4B	BB1212DP10
12	14	20	17,0				BB1217DP4		BB1217DP10
14	16	22	12,0				BB1412DP4		BB1412DP10
14	16	22	17,0				BB1417DP4	BB1417DP4B	BB1417DP10
15	17	23	9,0			+0.051 -0.001	BB1509DP4		BB1509DP10
15	17	23	12,0				BB1512DP4	BB1512DP4B	BB1512DP10
15	17	23	17,0				BB1517DP4	BB1517DP4B	BB1517DP10
16	18	24	12,0				BB1612DP4	BB1612DP4B	BB1612DP10
16	18	24	17,0				BB1617DP4	BB1617DP4B	BB1617DP10
18	20	26	12,0				BB1812DP4	BB1812DP4B	BB1812DP10
18	20	26	17,0				BB1817DP4		BB1817DP10
18	20	26	22,0				BB1822DP4	BB1822DP4B	BB1822DP10
20	23	30	11,5	1.5 ^{+0.1} _{-0.2}		+0.061 -0.001	BB2012DP4	BB2012DP4B	BB2012DP10
20	23	30	16,5				BB2017DP4	BB2017DP4B	BB2017DP10
20	23	30	21,5				BB2022DP4		BB2022DP10
25	28	35	11,5				BB2512DP4	BB2512DP4B	BB2512DP10
25	28	35	16,5				BB2517DP4		BB2517DP10
25	28	35	21,5				BB2522DP4	BB2522DP4B	BB2522DP10
30	34	42	16,0	2.0 ^{+0.1} _{-0.2}		+0.073 -0.003	BB3016DP4	BB3016DP4B	BB3016DP10
30	34	42	26,0				BB3026DP4	BB3026DP4B	BB3026DP10
35	39	47	16,0				BB3516DP4		BB3516DP10
35	39	47	26,0				BB3526DP4	BB3526DP4B	BB3526DP10
40	44	53	16,0				BB4016DP4		BB4016DP10
40	44	53	26,0				BB4026DP4	BB4026DP4B	BB4026DP10
45	50	58	16,0	2.5 ^{+0.1} _{-0.2}		+0.093 -0.003	BB4516DP4		BB4516DP10
45	50	58	26,0				BB4526DP4	BB4526DP4B	BB4526DP10



6.2 METRIC SIZES

6.2.3 THRUST WASHERS



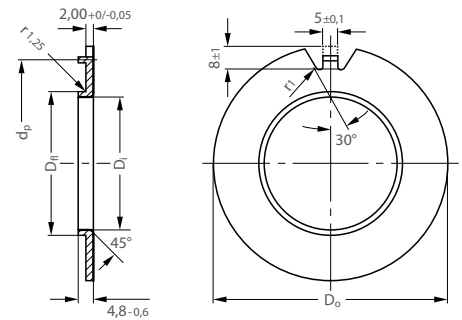
Dimensions [mm], testing and material according to GGB specifications

TECHNICAL DATA							PART NO.		
Dimensions				Installation			DP4®	DP4-B available on request	DP10
Shaft	Inside Ø D _i	Outside Ø D _o	Thickness S _T	Dowel hole Ø d _D	Pitch circle Ø d _p	Recess depth H _a			
8	10	20	1.5	-	-	0.95 to 1.20	WC08DP4		WC08DP10
10	12	24		1.75	18		WC10DP4		WC10DP10
12	14	26		2.25	20		WC12DP4		WC12DP10
14	16	30			22		WC14DP4		WC14DP10
16	18	32			25		WC16DP4		WC16DP10
18	20	36		3.25	28		WC18DP4		WC18DP10
20	22	38			30		WC20DP4		WC20DP10
22	24	42			33		WC22DP4		WC22DP10
24	26	44			35		WC24DP4		WC24DP10
25	28	48		4.25	38		WC25DP4		WC25DP10
30	32	54			43		WC30DP4		WC30DP10
35	38	62			50		WC35DP4		WC35DP10
40	42	66	2.0		54	WC40DP4		WC40DP10	
45	48	74			61	WC45DP4		WC45DP10	
50	52	78			65	WC50DP4		WC50DP10	
60	62	90			76	WC60DP4		WC60DP10	



6.2 METRIC SIZES

6.2.4 FLANGED WASHERS



Dimensions [mm], testing and material according to GGB specifications

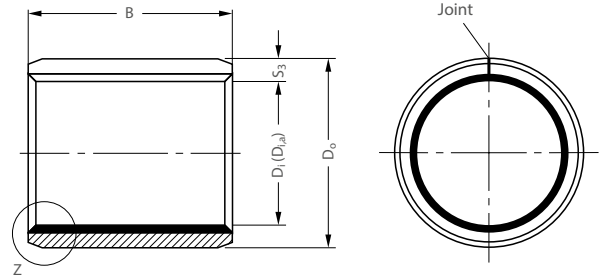
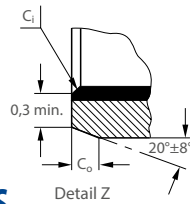
TECHNICAL DATA					PART NO.		
Dimensions				Installation	DP4®	DP4-B available on request	DP10
Shaft	Inside Ø D _i	Flange Ø D _{fl}	Outside Ø D _o	Pitch circle Ø d _p			
40	40.2	44	75	65	BS40DP4		BS40DP10
50	51	55	85	75	BS50DP4		BS50DP10
60	61	65	95	85	BS60DP4		BS60DP10
70	71	75	110	100	BS70DP4		BS70DP10
80	81	85	120	110	BS80DP4		BS80DP10
90	91	95	130	120	BS90DP4		BS90DP10
100	101	105	140	130	BS100DP4		BS100DP10

6 Standard Dimensions



6.3 INCH SIZES

6.3.1 CYLINDRICAL PLAIN BEARINGS



Dimensions [inch] and Tolerances according to ISO3547 and GGB specifications

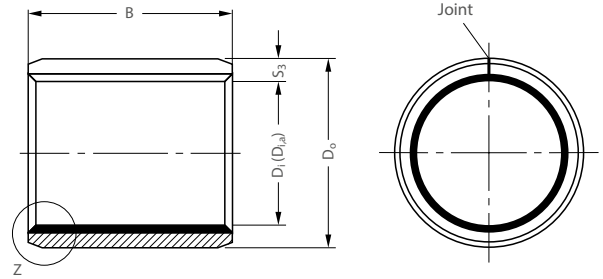
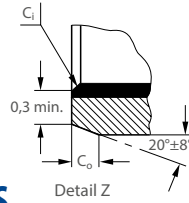
TECHNICAL DATA				PART NO.		
Dimensions			Installation	DP4®	DP4-B on request	DP10
Inside Ø D _i	Outside Ø D _o	Width B Length	D _{i,a}			
1/8	3/16	1/8 1/5	0.1268/0.1243	02DP402 02DP403		02DP1002 02DP1003
5/32	7/32	1/7 1/4	0.1581/0.1556	025DP4025 025DP404		025DP10025 025DP1004
3/16	1/4	1/5 1/4 3/8	0.1893/0.1867	03DP403 03DP404 03DP406		03DP1003 03DP1004 03DP1006
1/4	5/16	1/4 3/8	0.2518/0.2492	04DP404 04DP406		04DP1004 04DP1006
5/16	3/8	3/8 1/2	0.3143/0.3117	05DP406 05DP408		05DP1006 05DP1008
3/8	15/32	1/5	0.3769/0.3742	06DP403		06DP1003
		1/4		06DP404		06DP1004
		3/8		06DP406		06DP1006
		1/2		06DP408		06DP1008
		5/8		06DP410		06DP1010
7/16	17/32	3/4	0.4394/0.4367	06DP412		06DP1012
		1/2		07DP408 07DP412		07DP1008 07DP1012
1/2	19/32	1/4	0.5019/0.4992	08DP404		08DP1004
		3/8		08DP406		08DP1006
		1/2		08DP408		08DP1008
		5/8		08DP410		08DP1010
		3/4		08DP412		08DP1012
9/16	21/32	7/8	0.5644/0.5617	08DP414		08DP1014
		3/8		09DP406		09DP1006
		1/2		09DP408		09DP1008
		5/8		09DP410		09DP1010
		3/4		09DP412		09DP1012
5/8	23/32	1/4	0.627/0.6242	10DP404		10DP1004
		1/2		10DP408		10DP1008
		5/8		10DP410		10DP1010
		3/4		10DP412		10DP1012
		7/8		10DP414		10DP1014
11/16	25/32	1	0.6895/0.6867	10DP416		10DP1016
		7/8		11DP414		11DP1014
		1/4		12DP404		12DP1004
		3/8		12DP406		12DP1006
		1/2		12DP408		12DP1008
3/4	7/8	5/8	0.7525/0.7493	12DP410		12DP1010
		3/4		12DP412		12DP1012
		1		12DP416		12DP1016
		1/4		14DP404		14DP1004
		3/8		14DP406		14DP1006
7/8	1	1/2	0.8775/0.8743	14DP412		14DP1012
		3/4		14DP414		14DP1014
		1		14DP416		14DP1016
		1 1/4		14DP420		14DP1020
		3/8		16DP406		16DP1006
1	1 1/8	1/2	1.0026/0.9992	16DP408		16DP1008
		3/4		16DP412		16DP1012
		1		16DP416		16DP1016
		1 1/4		16DP420		16DP1020
		1 1/2		16DP424		16DP1024
1 1/8	1 9/32	3/8	1.1278/1.124	18DP406		18DP1006
		5/8		18DP410		18DP1010
		3/4		18DP412		18DP1012
		1		18DP416		18DP1016

TECHNICAL DATA				PART NO.		
Dimensions			Installation	DP4®	DP4-B on request	DP10
Inside Ø D _i	Outside Ø D _o	Width B Length	D _{i,a}			
1 1/4	1 13/32	3/8	1.2528/1.249	20DP406		20DP1006
		3/4		20DP412		20DP1012
		7/8		20DP414		20DP1014
		1		20DP416		20DP1016
		1 1/4		20DP420		20DP1020
1 3/8	1 17/32	1 3/4	1.3778/1.374	20DP428		20DP1028
		3/4		22DP412		22DP1012
		1		22DP416		22DP1016
		1 1/2		22DP424		22DP1024
		1 3/4		22DP428		22DP1028
1 1/2	1 21/32	1/2	1.5028/1.499	24DP408		24DP1008
		1		24DP416		24DP1016
		1 1/8		24DP418		24DP1018
		1 1/4		24DP420		24DP1020
		1 1/2		24DP424		24DP1024
1 5/8	1 25/32	2	1.6278/1.624	24DP432		24DP1032
		1		26DP416		26DP1016
		1 1/2		26DP424		26DP1024
		1		28DP416		28DP1016
		1 1/2		28DP424		28DP1024
1 3/4	1 15/16	1 3/4	1.7535/1.7489	28DP428		28DP1028
		2		28DP432		28DP1032
		3/4		30DP412		30DP1012
		1		30DP416		30DP1016
		1 7/8		30DP430		30DP1030
1 7/8	2 1/16	2 1/4	1.8787/1.8739	30DP436		30DP1036
		1		32DP408		32DP1008
		1 1/2		32DP416		32DP1016
		1 3/4		32DP424		32DP1024
		2		32DP428		32DP1028
2	2 3/16	2 1/2	2.0037/1.9989	32DP432		32DP1032
		1		32DP440		32DP1040
		1/2		34DP408		34DP1008
		3/4		34DP412		34DP1012
		1		34DP416		34DP1016
2 1/8	2 5/16	1 1/2	2.1326/2.1262	34DP424		34DP1024
		1 3/4		34DP428		34DP1028
		2		34DP432		34DP1032
		3		34DP448		34DP1048
		4		34DP464		34DP1064
2 1/4	2 7/16	1 3/4	2.2573/2.2509	36DP428		36DP1028
		1 1/2		36DP432		36DP1032
		2 1/4		36DP436		36DP1036
		2 1/2		36DP440		36DP1040
		3		36DP448		36DP1048
2 1/2	2 11/16	3 1/2	2.5077/2.5013	36DP456		36DP1056
		3 3/4		36DP460		36DP1060
		4		36DP464		36DP1064
		4 1/4		36DP472		36DP1072
		1		40DP416		40DP1016
2 1/2	2 11/16	1 5/8	2.5077/2.5013	40DP426		40DP1026
		2		40DP432		40DP1032
		2 1/2		40DP440		40DP1040
		3		40DP448		40DP1048
		3 1/2		40DP456		40DP1056
2 1/2	2 11/16	3 3/4	2.5077/2.5013	40DP460		40DP1060
		4		40DP464		40DP1064
		4 1/2		40DP472		40DP1072
		4 3/4		40DP476		40DP1076



6.3 INCH SIZES

6.3.1 CYLINDRICAL PLAIN BEARINGS



Dimensions [inch] and Tolerances according to ISO3547 and GGB specifications

TECHNICAL DATA				PART NO.		
Dimensions			Installation	DP4®	DP4-B on request	DP10
Inside Ø D _i	Outside Ø D _o	Width B Length	D _{i,a}			
2 3/4	2 15/16	2	2.7566/2.7502	44DP432		44DP1032
		2 1/4		44DP436		44DP1036
		2 1/2		44DP440		44DP1040
		3		44DP448		44DP1048
		3 1/2		44DP456		44DP1056
		3 3/4		44DP460		44DP1060
		4		44DP464		44DP1064
		4 1/2		44DP472		44DP1072
		4 3/4		44DP476		44DP1076
		5		44DP480		44DP1080
3	3 3/16	2	3.0068/3.0002	48DP432		48DP1032
		2 1/4		48DP436		48DP1036
		2 1/2		48DP440		48DP1040
		3		48DP448		48DP1048
		3 1/2		48DP456		48DP1056
		3 3/4		48DP460		48DP1060
		4		48DP464		48DP1064
		4 1/2		48DP472		48DP1072
		4 3/4		48DP476		48DP1076
		5		48DP480		48DP1080
3 1/4	3 7/16	2	3.2568/3.2502	52DP432		52DP1032
		2 3/8		52DP438		52DP1038
		2 1/2		52DP440		52DP1040
		3		52DP448		52DP1048
		3 1/2		52DP456		52DP1056
		3 3/4		52DP460		52DP1060
		4		52DP464		52DP1064
		4 1/2		52DP472		52DP1072
		4 3/4		52DP476		52DP1076
		5		52DP480		52DP1080
3 1/2		2	3.5068/3.5002	56DP432		56DP1032
		2 3/8		56DP438		56DP1038
		2 1/2		56DP440		56DP1040
		3		56DP448		56DP1048
		3 1/2		56DP456		56DP1056
		3 3/4		56DP460		56DP1060
		4		56DP464		56DP1064
		4 1/2		56DP472		56DP1072
		4 3/4		56DP476		56DP1076
		5		56DP480		56DP1080
3 5/8		2	3.6318/3.6252	58DP432		58DP1032
		2 1/4		58DP436		58DP1036
		2 1/2		58DP440		58DP1040
		3		58DP448		58DP1048
		3 1/2		58DP456		58DP1056
		3 3/4		58DP460		58DP1060
		4		58DP464		58DP1064
		4 1/2		58DP472		58DP1072
		4 3/4		58DP476		58DP1076
		5		58DP480		58DP1080
3 3/4	3 15/16	2	3.7568/3.7502	60DP432		60DP1032
		2 1/4		60DP436		60DP1036
		2 1/2		60DP440		60DP1040
		3		60DP448		60DP1048
		3 1/2		60DP456		60DP1056
		3 3/4		60DP460		60DP1060
		4		60DP464		60DP1064
		4 1/2		60DP472		60DP1072
		4 3/4		60DP476		60DP1076
		5		60DP480		60DP1080

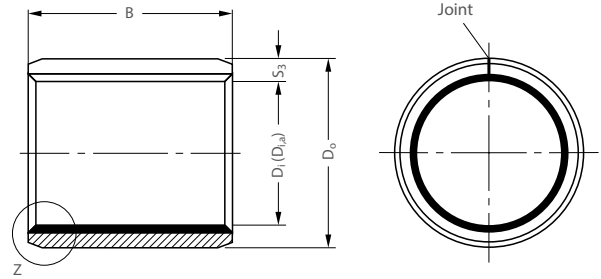
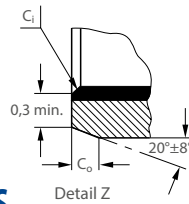
TECHNICAL DATA				PART NO.		
Dimensions			Installation	DP4®	DP4-B on request	DP10
Inside Ø D _i	Outside Ø D _o	Width B Length	D _{i,a}			
4	4 3/16	2	4.0068/4.0002	64DP432		64DP1032
		2 1/4		64DP436		64DP1036
		2 1/2		64DP440		64DP1040
		3		64DP448		64DP1048
		3 1/2		64DP456		64DP1056
		3 3/4		64DP460		64DP1060
		4		64DP464		64DP1064
		4 1/2		64DP472		64DP1072
		4 3/4		64DP476		64DP1076
		5		64DP480		64DP1080
4 1/4	4 7/16	2	4.2568/4.2502	68DP432		68DP1032
		2 1/4		68DP436		68DP1036
		2 1/2		68DP440		68DP1040
		3		68DP448		68DP1048
		3 1/2		68DP456		68DP1056
		3 3/4		68DP460		68DP1060
		4		68DP464		68DP1064
		4 1/2		68DP472		68DP1072
		4 3/4		68DP476		68DP1076
		5		68DP480		68DP1080
4 3/8	4 9/16	2	4.3818/4.3752	70DP432		70DP1032
		2 1/4		70DP436		70DP1036
		2 1/2		70DP440		70DP1040
		3		70DP448		70DP1048
		3 1/2		70DP456		70DP1056
		3 3/4		70DP460		70DP1060
		4		70DP464		70DP1064
		4 1/2		70DP472		70DP1072
		4 3/4		70DP476		70DP1076
		5		70DP480		70DP1080
4 1/2	4 11/16	2	4.5068/4.5002	72DP432		72DP1032
		2 1/4		72DP436		72DP1036
		2 1/2		72DP440		72DP1040
		3		72DP448		72DP1048
		3 1/2		72DP456		72DP1056
		3 3/4		72DP460		72DP1060
		4		72DP464		72DP1064
		4 1/2		72DP472		72DP1072
		4 3/4		72DP476		72DP1076
		5		72DP480		72DP1080
4 3/4	4 15/16	2	4.7572/4.7502	76DP432		76DP1032
		2 1/4		76DP436		76DP1036
		2 1/2		76DP440		76DP1040
		3		76DP448		76DP1048
		3 1/2		76DP456		76DP1056
		3 3/4		76DP460		76DP1060
		4		76DP464		76DP1064
		4 1/2		76DP472		76DP1072
		4 3/4		76DP476		76DP1076
		5		76DP480		76DP1080
5	5 3/16	2	5.0056/4.9988	80DP432		80DP1032
		2 1/4		80DP436		80DP1036
		2 1/2		80DP440		80DP1040
		3		80DP448		80DP1048
		3 1/2		80DP456		80DP1056
		3 3/4		80DP460		80DP1060
		4		80DP464		80DP1064
		4 1/2		80DP472		80DP1072
		4 3/4		80DP476		80DP1076
		5		80DP480		80DP1080

6 Standard Dimensions



6.3 INCH SIZES

6.3.1 CYLINDRICAL PLAIN BEARINGS



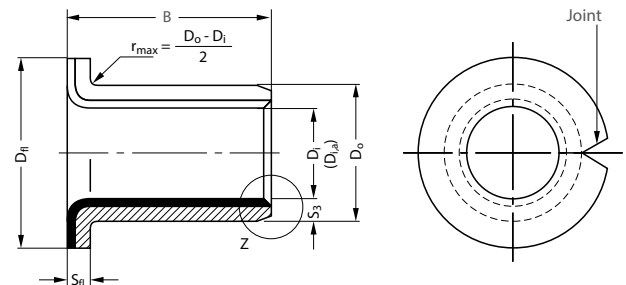
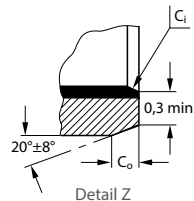
Dimensions [inch] and Tolerances according to ISO3547 and GGB specifications

TECHNICAL DATA				PART NO.		
Dimensions			Installation	DP4®	DP4-B on request	DP10
Inside Ø D _i	Outside Ø D _o	Width B Length	D _{i,a}			
5 1/4	5 7/16	2	5.257/5.2502	84DP432		84DP1032
		2 1/4		84DP436		84DP1036
		2 1/2		84DP440		84DP1040
		3		84DP448		84DP1048
		3 1/2		84DP456		84DP1056
		3 3/4		84DP460		84DP1060
		4		84DP464		84DP1064
		4 1/2		84DP472		84DP1072
		4 3/4		84DP476		84DP1076
		5		84DP480		84DP1080
5 1/2	5 11/16	2	5.507/5.5002	88DP432		88DP1032
		2 1/4		88DP436		88DP1036
		2 1/2		88DP440		88DP1040
		3		88DP448		88DP1048
		3 1/2		88DP456		88DP1056
		3 3/4		88DP460		88DP1060
		4		88DP464		88DP1064
		4 1/2		88DP472		88DP1072
		4 3/4		88DP476		88DP1076
		5		88DP480		88DP1080
5 3/4	5 15/16	2	5.757/5.7502	92DP432		92DP1032
		2 1/4		92DP436		92DP1036
		2 1/2		92DP440		92DP1040
		3		92DP448		92DP1048
		3 1/2		92DP456		92DP1056
		3 3/4		92DP460		92DP1060
		4		92DP464		92DP1064
		4 1/2		92DP472		92DP1072
		4 3/4		92DP476		92DP1076
		5		92DP480		92DP1080
6	6 3/16	2	6.007/6.0002	96DP432		96DP1032
		2 1/4		96DP436		96DP1036
		2 1/2		96DP440		96DP1040
		3		96DP448		96DP1048
		3 1/2		96DP456		96DP1056
		3 3/4		96DP460		96DP1060
		4		96DP464		96DP1064
		4 1/2		96DP472		96DP1072
		4 3/4		96DP476		96DP1076
		5		96DP480		96DP1080
6 1/4	6 7/16	2	6.257/6.2502	100DP432		100DP1032
		2 1/4		100DP436		100DP1036
		2 1/2		100DP440		100DP1040
		3		100DP448		100DP1048
		3 1/2		100DP456		100DP1056
		3 3/4		100DP460		100DP1060
		4		100DP464		100DP1064
		4 1/2		100DP472		100DP1072
		4 3/4		100DP476		100DP1076
		5		100DP480		100DP1080
6 1/2	6 11/16	2	6.507/6.5002	104DP432		104DP1032
		2 1/4		104DP436		104DP1036
		2 1/2		104DP440		104DP1040
		3		104DP448		104DP1048
		3 1/2		104DP456		104DP1056
		3 3/4		104DP460		104DP1060
		4		104DP464		104DP1064
		4 1/2		104DP472		104DP1072
		4 3/4		104DP476		104DP1076
		5		104DP480		104DP1080
6 3/4	6 15/16	2	6.757/6.7502	108DP432		108DP1032
		2 1/4		108DP436		108DP1036
		2 1/2		108DP440		108DP1040
		3		108DP448		108DP1048
		3 1/2		108DP456		108DP1056
		3 3/4		108DP460		108DP1060
		4		108DP464		108DP1064
		4 1/2		108DP472		108DP1072
		4 3/4		108DP476		108DP1076
		5		108DP480		108DP1080
7	7 3/16	2	7.0026/6.9956	112DP432		112DP1032
		2 1/4		112DP436		112DP1036
		2 1/2		112DP440		112DP1040
		3		112DP448		112DP1048
		3 1/2		112DP456		112DP1056
		3 3/4		112DP460		112DP1060
		4		112DP464		112DP1064
		4 1/2		112DP472		112DP1072
		4 3/4		112DP476		112DP1076
		5		112DP480		112DP1080



6.3 INCH SIZES

6.3.2 FLANGED BEARINGS



Dimensions [inch] and Tolerances according to ISO3547 and GGB specifications

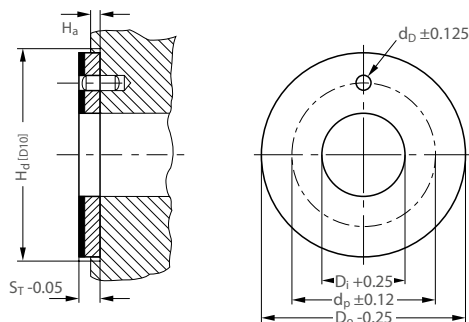
TECHNICAL DATA					PART NO.		
Nominal Dimensions					DP4®	DP4-B available on request	DP10
Inside Ø D _i	Outside Ø D _o	Width B/Length	Flange Ø	Flange thickness	D _{i,a}		
3/8	1/2	1/4	2/3	0.047-0.039	0.3779/0.3752	06FDP404	06FDP1004
		3/8				06FDP406	06FDP1006
		1/2				06FDP408	06FDP1008
		3/4				06FDP412	06FDP1012

TECHNICAL DATA						PART NO.			
Nominal Dimensions					Installation	DP4®	DP4-B available on request	DP10	
Inside Ø D _i	Outside Ø D _o	Width B/Length	Flange Ø	Flange thickness	D _{i,a}				
1/2	3/5	1/4	4/5	0.047-0.039	0.5029/0.5002	08FDP404		08FDP1004	
		3/8				08FDP406		08FDP1006	
		1/2				08FDP408		08FDP1008	
		3/4				08FDP412		08FDP1012	
5/8	5/7	3/8	1		0.628/0.6252	10FDP406		10FDP1006	
		1/2				10FDP408		10FDP1008	
		5/8				10FDP410		10FDP1010	
		3/4				10FDP412		10FDP1012	
3/4	7/8	3/8	1 1/4	0.047-0.039	0.7534/0.7502	12FDP406		12FDP1006	
		1/2				12FDP408		12FDP1008	
		3/4				12FDP412		12FDP1012	
		1				12FDP416		12FDP1016	
7/8	1	1/2			1 3/8	0.8784/0.8752	14FDP408		14FDP1008
		3/4					14FDP412		14FDP1012
		1					14FDP416		14FDP1016
		1 1/4					14FDP420		14FDP1020
1	1 1/8	1/2	1 3/8	1.0034/1.0002	16FDP408		16FDP1008		
		3/4			16FDP412		16FDP1012		
		1			16FDP416		16FDP1016		
		1 1/4			16FDP420		16FDP1020		
1 1/4	1 2/5	1	1 3/4	0.078-0.07	1.254/1.2502	20FDP416		20FDP1016	
		1 1/4				20FDP420		20FDP1020	
		1 1/2				20FDP424		20FDP1024	
1 1/2	1 2/3	1	2		1.504/1.5002	24FDP416		24FDP1016	
		1 1/2				24FDP424		24FDP1024	
		2				24FDP432		24FDP1032	



6.3 INCH SIZES

6.3.3 THRUST WASHERS



Dimensions [inch] and Tolerances according to ISO3547 and GGB specifications

TECHNICAL DATA						PART NO.		
Dimensions			Installation			DP4®	DP4-B available on request	DP10
Inside Ø D _i	Outside Ø D _o	Thickness S _T	Dowel hole Ø d _D	Pitch circle Ø d _P	rd max/min	Recess depth H _a		
0.5	0.875	0.0605	0.072	0.687	0.05/ 0.04	0.05 - 0.04	G06DP4	G06DP10
0.562	1			0.781			G07DP4	G07DP10
0.625	1.125			0.875			G08DP4	G08DP10
0.687	1.187		0.104	0.937			G09DP4	G09DP10
0.75	1.25			1			G10DP4	G10DP10
0.812	1.375			1.094			G11DP4	G11DP10
0.875	1.5		0.135	1.187			G12DP4	G12DP10
1	1.75			1.375			G14DP4	G14DP10
1.125	2			1.562			G16DP4	G16DP10
1.25	2.125		0.166	1.687			G18DP4	G18DP10
1.375	2.25			1.812			G20DP4	G20DP10
1.5	2.5			2			G22DP4	G22DP10
1.625	2.625	0.0915	0.197	2.125	0.08/ 0.07	0.08 - 0.07	G24DP4	G24DP10
1.75	2.75			2.25			G26DP4	G26DP10
2	3			2.5			G28DP4	G28DP10
2.125	3.125			2.625			G30DP4	G30DP10
2.25	3.25			2.75			G32DP4	G32DP10

Bearing Application Data Sheet



Please complete the form below and share it with your sales engineer.

DATA FOR BEARING DESIGN CALCULATION

Application: _____

Project/No.: _____

Quantity: _____

☐ New Design

☐ Existing Design

☐ Steady Load

☐ Rotating Load

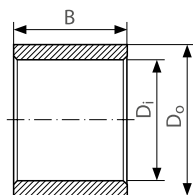
☐ Rotational Movement

☐ Oscillating Movement

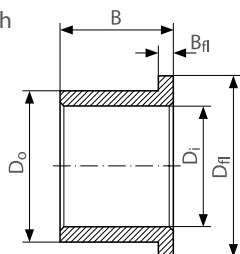
☐ Linear Movement

BEARING TYPE

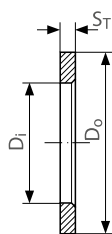
☐ Cylindrical bush



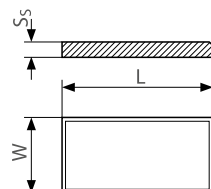
☐ Flanged bush



☐ Thrust washer



☐ Slide plate



☐ Special parts (sketch)

DIMENSIONS [MM]

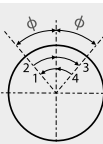
Inside diameter	D_i	
Outside diameter	D_o	
Length	B	
Flange diameter	D_f	
Flange thickness	B_f	
Wall thickness	S_T	
Length of slideplate	L	
Width of slideplate	W	
Thickness of slideplate	S_s	

LOAD

☐ Static load	
☐ Dynamic load	
Axial load F	[N]
Radial load F	[N]

MOVEMENT

Rotational speed	N [1/min]	
Speed	V [m/s]	
Length of stroke	L_s [mm]	
Frequency of stroke	[1/min]	
Oscillating cycle	ϕ [°]	
Osc. frequency	N_{osz} [1/min]	



MATING SURFACE

Material	
Hardness	HB/HRC
Surface finish	R_a [μm]

CUSTOMER INFORMATION

Company _____

Street _____

City / State / Province / Post Code _____

Telephone _____ Fax _____

Name _____

Email Address _____ Date _____

FITS & TOLERANCES

Shaft	D_j	
Bearing housing	D_H	

OPERATING ENVIRONMENT

Ambient temperature T_{amb} [°]	
Bearing housing material	
☐ Housing with good heating transfer properties	
☐ Light pressing or insulated housing with poor heat transfer properties	
☐ Non metal housing with poor heat transfer properties	
☐ Alternate operation in water and dry	

OPERATING ENVIRONMENT

☐ Dry	
☐ Continuous lubrication	
☐ Process fluid lubrication	
☐ Initial lubrication only	
☐ Hydrodynamic conditions	
Process fluid	
Lubricant	
Dynamic viscosity η [mPas]	

SERVICE HOURS PER DAY

Continuous operation	
Intermittent operation	
Operating time	
Days per year	

SERVICE LIFE

Required service life L_H [h]	
---------------------------------	--

Product Information

This document is provided to give you the analysis tools or information to assist you in product selection. Product performance is affected by many factors beyond the control of GGB. Therefore, you must validate the suitability and feasibility of all product selections for your applications.

GGB products are sold subject to GGB's Terms of Sale and Delivery, which include our limited warranty and remedy. You can find these here: ggbearings.com/en/terms-and-conditions, or ask your GGB representative for a copy.

Products are subject to continual development. GGB retains the right to make specification amendments or improvements to the technical data without prior announcement.

DOCUMENT INFORMATION

Edition 2026. This edition replaces earlier editions which hereby lose their validity.

Every reasonable effort has been made to ensure the accuracy of the information in this writing, but GGB assumes no liability for errors or omissions or for any other reason.

HEALTH AND SAFETY

GGB is committed to adhering to all U.S., European and international standards and regulations with regard to lead content. We have established internal processes that monitor any changes to existing standards and regulations, and we work collaboratively with customers and distributors to ensure that all requirements are followed. This includes RoHS and REACH guidelines. GGB is committed to operating in an environmentally conscious and safe manner. We follow numerous industry best practices and are committed to meeting or exceeding a variety of internationally recognized standards for emissions control and workplace safety.

Each of our global locations has management systems in place that adhere to IATF 16949, ISO 9001, ISO 14001 and ISO 45001 quality regulations. Our certificates can be found here:

ggbearings.com/en/certificates.

A detailed explanation of our commitment to REACH and RoHS directives can be found at

ggbearings.com/en/reach-rohs.

HEALTH HAZARD - WARNING

Fabrication

At temperatures up to 250 °C the polytetrafluoroethylene (PTFE) present in the lining material is completely inert so that even on the rare occasions in which DP4®, DP4-B, DP10 or DP11 bushes are drilled or sized after assembly there is no danger in boring or burnishing.

At higher temperatures however, small quantities of toxic fumes can be produced and the direct inhalation of these can cause an influenza type of illness which may not appear for some hours but which subsides without after-effects in 24-48 hours.

Such fumes can arise from PTFE particles picked up on the end of a cigarette. Therefore smoking should be prohibited where DP4®, DP4-B, DP10 or DP11 are being machined.

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Stronger.Together.



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ggbearings.com

IN130ENG03-26USA

GGB is part of The Timken Company's portfolio of engineered bearings and industrial motion products.