

DP4 – self lubricating bearing material

1. Structure

PTFE + fillers (alkaline-earth metals and polymer fibres) sliding layer on sintered bronze with steel (DP4) or bronze (DP4B) backing.

2. Characteristics

- bearing material for lubricated applications with good wear and friction performance over a wide range of loads, speeds, and temperature conditions,
- under light loads can also work dry,
- offers improved friction and wear performance over DU in lubricated applications,
- suitable for rotating and oscillating motion, but not recommended for reciprocating motion,
- lead-free, complying with the European Parliament's End of Life Vehicles directive (ref. no 2000/53/EC) on the elimination of hazardous materials in construction of passenger cars and light trucks.

3. Applications

- industrial: lifting equipment, hydraulic pumps and motors, pneumatic equipment, medical equipment, textile machinery, agricultural machinery, scientific equipment, drying ovens, office equipment, etc.
- automotive: McPherson struts and shock absorbers, gearbox selector fork guides, wiper arms, power steering pumps, etc.

4. Availability

- from stock: cylindrical bushes, flanged bushes, strips,
- to order: non standard parts.

5. Technical data

Parameter		Unit	Value
Maximum load	static	MPa	250 / 140*
	dynamic		140
Maximum sliding speed	dry	m/s	2,5
Maximum p x v factor	dry	MPa x m/s	continuous work
			periodic work
Work temperature	maximum	°C	+280
	minimum		-200
Coefficient of friction	dry	-	0,02 – 0,25
	oil lubricated		0,02 – 0,08
Surface Ra finish	shaft	µm	0,2 – 0,8
	housing		1,8 – 3,2
Fitting	shaft	<Ø5 mm	h6
		Ø5 – Ø75 mm	f7
		Ø80 mm	h8
	housing	<Ø5 mm	H6
		≥Ø5 mm	H7
Shaft hardness		HB	>200

* - for DP4B

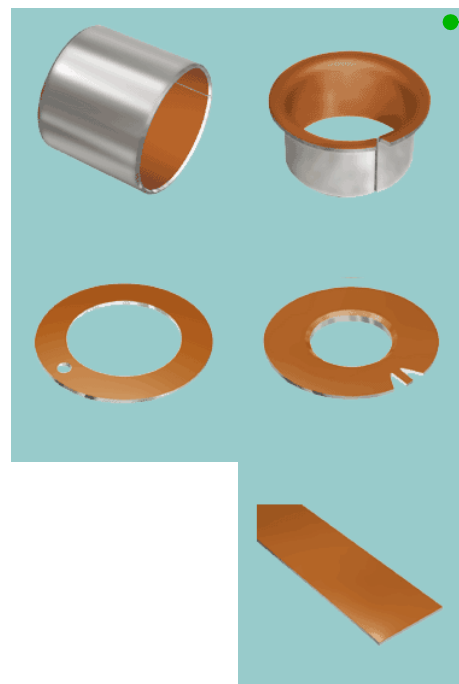
6. Working conditions

dry	good
oil lubricated	very good
grease lubricated	good
water lubricated	fair
process fluid lubricated	good

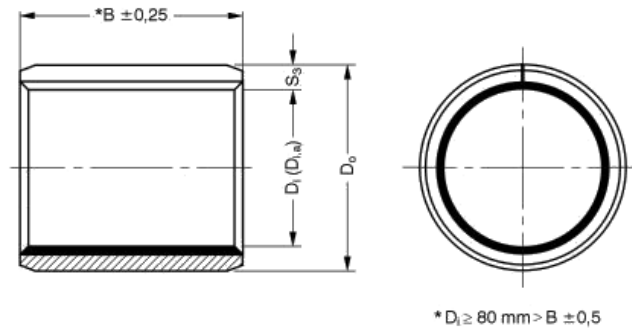
7. Assembly tips

Assemble with stepped shaft in housings with insertion chamfer. Before assembly moisten housing or bush with oil. Fixture: no additional fixture is necessary after press fitting in, however gluing is permissible in special applications or with reciprocating motion.

Caution: Do not use any lubricants containing MoS₂, graphite or any other solid ingredients (can result with increased wear due to higher friction).

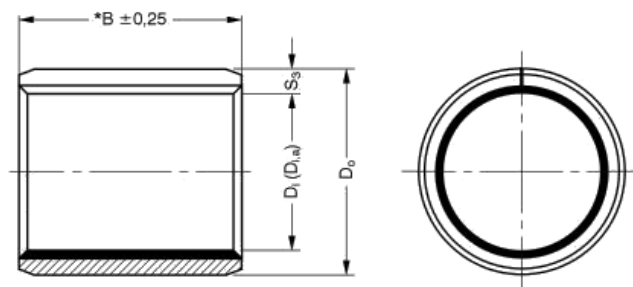


8. Series range



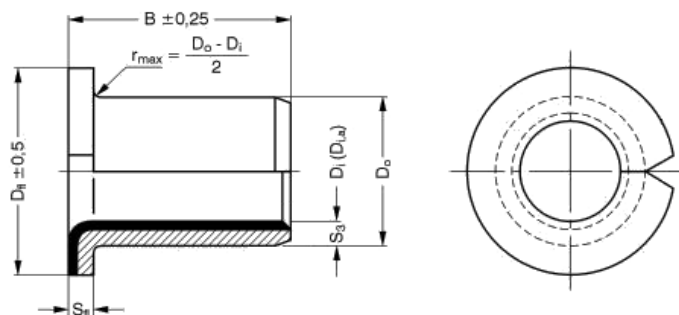
Tab. 1. DP4 cylindrical bushes

Symbol	Di	Do	B	Symbol	Di	Do	B	Symbol	Di	Do	B	Symbol	Di	Do	B
0203DP4	2	3,5	3	1620DP4	16	18	20	4540DP4	45	50	40	12060DP4	120	125	60
0205DP4	2	3,5	5	1625DP4	16	18	25	4545DP4	45	50	45	120100DP4	120	125	100
0303DP4	3	4,5	3	1720DP4	17	19	20	4550DP4	45	50	50	125100DP4	125	130	100
0305DP4	3	4,5	5	1810DP4	18	20	10	5020DP4	50	55	20	13060DP4	130	135	60
0306DP4	3	4,5	6	1815DP4	18	20	15	5030DP4	50	55	30	130100DP4	130	135	100
0403DP4	4	5,5	3	1820DP4	18	20	20	5040DP4	50	55	40	13560DP4	135	140	60
0404DP4	4	5,5	4	1825DP4	18	20	25	5050DP4	50	55	50	13580DP4	135	140	80
0406DP4	4	5,5	6	2010DP4	20	23	10	5060DP4	50	55	60	14060DP4	140	145	60
0410DP4	4	5,5	10	2015DP4	20	23	15	5520DP4	55	60	20	140100DP4	140	145	100
0505DP4	5	7	5	2020DP4	20	23	20	5525DP4	55	60	25	15060DP4	150	155	60
0508DP4	5	7	8	2025DP4	20	23	25	5530DP4	55	60	30	15080DP4	150	155	80
0510DP4	5	7	10	2030DP4	20	23	30	5540DP4	55	60	40	150100DP4	150	155	100
0604DP4	6	8	4	2215DP4	22	25	15	5550DP4	55	60	50	16080DP4	160	165	80
0606DP4	6	8	6	2220DP4	22	25	20	5555DP4	55	60	55	160100DP4	160	165	100
0608DP4	6	8	8	2225DP4	22	25	25	5560DP4	55	60	60	180100DP4	180	185	100
0610DP4	6	8	10	2230DP4	22	25	30	6020DP4	60	65	20	200100DP4	200	205	100
0705DP4	7	9	5	2415DP4	24	27	15	6030DP4	60	65	30	210100DP4	210	215	100
0710DP4	7	9	10	2420DP4	24	27	20	6040DP4	60	65	40	220100DP4	220	225	100
0806DP4	8	10	6	2425DP4	24	27	25	6050DP4	60	65	50	250100DP4	250	255	100
0808DP4	8	10	8	2430DP4	24	27	30	6060DP4	60	65	60	300100DP4	300	305	100
0810DP4	8	10	10	2515DP4	25	28	15	6070DP4	60	65	70				
0812DP4	8	10	12	2520DP4	25	28	20	6530DP4	65	70	30				
1006DP4	10	12	6	2525DP4	25	28	25	6550DP4	65	70	50				
1008DP4	10	12	8	2530DP4	25	28	30	6570DP4	65	70	70				
1010DP4	10	12	10	2550DP4	25	28	50	7040DP4	70	75	40				
1012DP4	10	12	12	2815DP4	28	32	15	7050DP4	70	75	50				
1015DP4	10	12	15	2820DP4	28	32	20	7070DP4	70	75	70				
1020DP4	10	12	20	2825DP4	28	32	25	7560DP4	75	80	60				
1208DP4	12	14	8	2830DP4	28	32	30	7580DP4	75	80	80				
1210DP4	12	14	10	3010DP4	30	34	10	8040DP4	80	85	40				
1212DP4	12	14	12	3015DP4	30	34	15	8060DP4	80	85	60				
1215DP4	12	14	15	3020DP4	30	34	20	8080DP4	80	85	80				
1220DP4	12	14	20	3025DP4	30	34	25	80100DP4	80	85	100				
1225DP4	12	14	25	3030DP4	30	34	30	8530DP4	85	90	30				
1310DP4	13	15	10	3040DP4	30	34	40	8560DP4	85	90	60				
1320DP4	13	15	20	3220DP4	32	36	20	85100DP4	85	90	100				
1405DP4	14	16	5	3230DP4	32	36	30	9060DP4	90	95	60				
1410DP4	14	16	10	3240DP4	32	36	40	90100DP4	90	95	100				
1412DP4	14	16	12	3520DP4	35	39	20	9560DP4	95	100	60				
1415DP4	14	16	15	3530DP4	35	39	30	95100DP4	95	100	100				
1420DP4	14	16	20	3535DP4	35	39	35	10050DP4	100	105	50				
1425DP4	14	16	25	3540DP4	35	39	40	10060DP4	100	105	60				
1510DP4	15	17	10	3550DP4	35	39	50	100115DP4	100	105	115				
1512DP4	15	17	12	3720DP4	37	41	20	10560DP4	105	110	60				
1515DP4	15	17	15	4020DP4	40	44	20	105115DP4	105	110	115				
1520DP4	15	17	20	4030DP4	40	44	30	11060DP4	110	115	60				
1525DP4	15	17	25	4040DP4	40	44	40	110115DP4	110	115	115				
1610DP4	16	18	10	4050DP4	40	44	50	11550DP4	115	120	50				
1612DP4	16	18	12	4520DP4	45	50	20	11570DP4	115	120	70				
1615DP4	16	18	15	4530DP4	45	50	30	12050DP4	120	125	50				


 * $D_i \geq 80 \text{ mm} > B \pm 0,5$

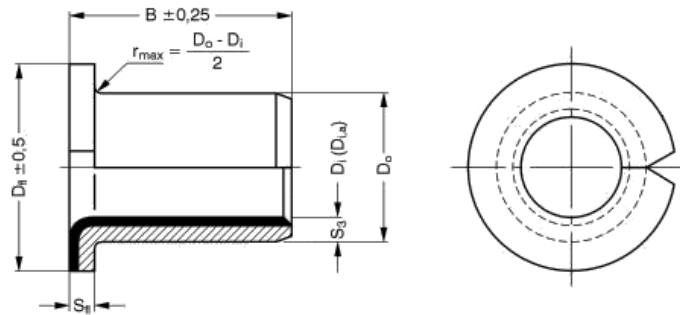
Tab. 2. DP4B cylindrical bushes

Symbol	Di	Do	B	Symbol	Di	Do	B	Symbol	Di	Do	B	Symbol	Di	Do	B
0203DP4B	2	3,5	3	1212DP4B	12	14	12	2515DP4B	25	28	15	6040DP4B	60	65	40
0306DP4B	3	4,5	6	1215DP4B	12	14	15	2525DP4B	25	28	25	6070DP4B	60	65	70
0404DP4B	4	5,5	4	1410DP4B	14	16	10	2830DP4B	28	32	30	6570DP4B	65	70	70
0406DP4B	4	5,5	6	1415DP4B	14	16	15	3020DP4B	30	34	20	7070DP4B	70	75	70
0410DP4B	4	5,5	10	1420DP4B	14	16	20	3030DP4B	30	34	30	7580DP4B	75	80	80
0505DP4B	5	7	5	1515DP4B	15	17	15	3040DP4B	30	34	40	8060DP4B	80	85	60
0510DP4B	5	7	10	1525DP4B	15	17	25	3240DP4B	32	36	40	80100DP4B	80	85	100
0606DP4B	6	8	6	1615DP4B	16	18	15	3520DP4B	35	39	20	85100DP4B	85	90	100
0610DP4B	6	8	10	1625DP4B	16	18	25	3530DP4B	35	39	30	90100DP4B	90	95	100
0808DP4B	8	10	8	1820DP4B	18	20	20	4030DP4B	40	44	30	95100DP4B	95	100	100
0810DP4B	8	10	10	1825DP4B	18	20	25	4050DP4B	40	44	50	100115DP4B	100	105	115
0812DP4B	8	10	12	2015DP4B	20	23	15	4530DP4B	45	50	30				
1010DP4B	10	12	10	2020DP4B	20	23	20	4550DP4B	45	50	50				
1015DP4B	10	12	15	2030DP4B	20	23	30	5040DP4B	50	55	40				
1208DP4B	12	14	8	2215DP4B	22	25	15	5060DP4B	50	55	60				
1210DP4B	12	14	10	2220DP4B	22	25	20	5540DP4B	55	60	40				



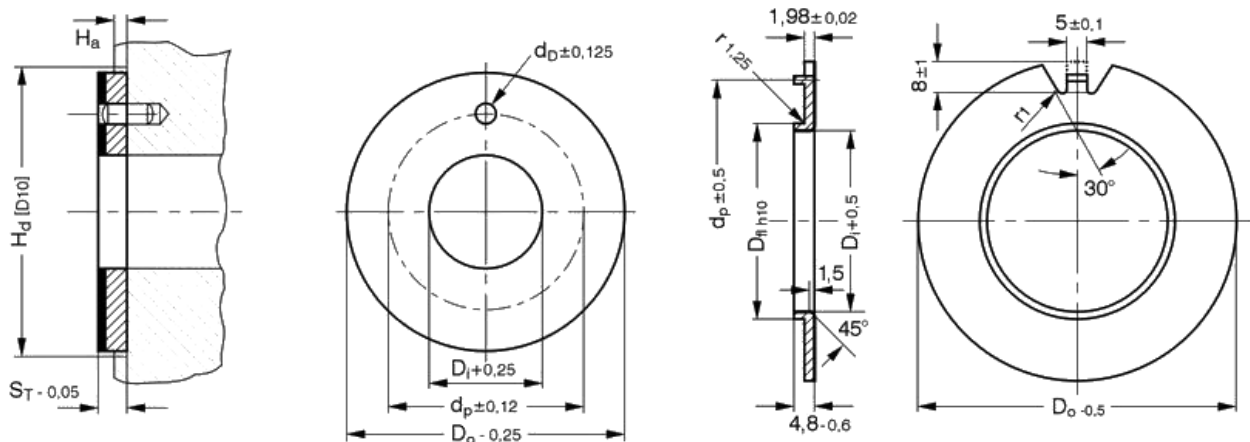
Tab. 3. DP4 flanged bushes

Symbol	Di	Do	B	Dfl	Symbol	Di	Do	B	Dfl	Symbol	Di	Do	B	Dfl
BB0304DP4	3	4,5	4	7	BB1212DP4	12	14	12	20	BB2022DP4	20	23	21,5	30
BB0404DP4	4	5,5	4	9	BB1217DP4	12	14	17	20	BB2512DP4	25	28	11,5	35
BB0505DP4	5	7	5	10	BB1412DP4	14	16	12	22	BB2517DP4	25	28	16,5	35
BB0604DP4	6	8	4	12	BB1417DP4	14	16	17	22	BB2522DP4	25	28	21,5	35
BB0608DP4	6	8	8	12	BB1509DP4	15	17	9	23	BB3016DP4	30	34	16	42
BB0806DP4	8	10	5,5	15	BB1512DP4	15	17	12	23	BB3026DP4	30	34	26	42
BB0808DP4	8	10	7,5	15	BB1517DP4	15	17	17	24	BB3516DP4	35	39	16	47
BB0810DP4	8	10	9,5	15	BB1612DP4	16	18	12	24	BB3526DP4	35	39	26	47
BB1007DP4	10	12	7	18	BB1617DP4	16	18	17	24	BB4016DP4	40	44	16	53
BB1009DP4	10	12	9	18	BB1812DP4	18	20	12	26	BB4026DP4	40	44	26	53
BB1012DP4	10	12	12	18	BB1817DP4	18	20	17	26	BB4516DP4	45	50	16	58
BB1017DP4	10	12	17	18	BB1822DP4	18	20	22	26	BB4526DP4	45	50	26	58
BB1207DP4	12	14	7	20	BB2012DP4	20	23	11,5	30					
BB1209DP4	12	14	9	20	BB2017DP4	20	23	16,5	30					



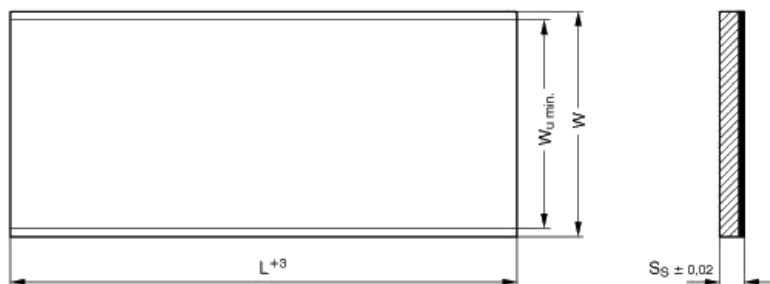
Tab. 4. DP4B flanged bushes

Symbol	Di	Do	B	Dfl	Symbol	Di	Do	B	Dfl	Symbol	Di	Do	B	Dfl
BB0304DP4B	3	4,5	4	7	BB1212DP4B	12	14	12	20	BB2512DP4B	25	28	11,5	35
BB0404DP4B	4	5,5	4	9	BB1417DP4B	14	16	17	22	BB2522DP4B	25	28	21,5	35
BB0505DP4B	5	7	5	10	BB1512DP4B	15	17	12	23	BB3016DP4B	30	34	16	42
BB0608DP4B	6	8	8	12	BB1517DP4B	15	17	17	23	BB3026DP4B	30	34	26	42
BB0806DP4B	8	10	5,5	15	BB1612DP4B	16	18	12	24	BB3526DP4B	35	39	26	47
BB0810DP4B	8	10	9,5	15	BB1617DP4B	16	18	17	24	BB4026DP4B	40	44	26	53
BB1007DP4B	10	12	7	18	BB1812DP4B	18	20	12	26	BB4526DP4B	45	50	26	58
BB1012DP4B	10	12	12	18	BB1822DP4B	18	20	22	26					
BB1207DP4B	12	14	7	20	BB2012DP4B	20	23	11,5	30					
BB1209DP4B	12	14	9	20	BB2017DP4B	20	23	16,5	30					



Tab. 5. DP4 thrust washers and flanged washers

Symbol	Di	Do	ST	dD	Dp	Ha	Symbol	Di	Dfl	Do	dp
WC08DP4	10	20	1,5			0,95-1,2	BS40DP4	40,45	75	44	64,75
WC10DP4	12	24	1,5	1,75	18	0,95-1,2	BS50DP4	51,25	85	55	74,75
WC12DP4	14	26	1,5	2,25	20	0,95-1,2	BS60DP4	61,25	95	65	84,75
WC14DP4	16	30	1,5	2,25	22	0,95-1,2	BS70DP4	71,25	110	75	99,75
WC16DP4	18	32	1,5	2,25	25	0,95-1,2	BS80DP4	81,25	120	85	109,75
WC18DP4	20	36	1,5	3,25	28	0,95-1,2	BS90DP4	91,25	130	95	119,75
WC20DP4	22	38	1,5	3,25	30	0,95-1,2	BS100DP4	101,25	140	105	129,75
WC22DP4	24	42	1,5	3,25	33	0,95-1,2					
WC24DP4	26	44	1,5	3,25	35	0,95-1,2					
WC25DP4	28	48	1,5	4,25	38	0,95-1,2					
WC30DP4	32	54	1,5	4,25	43	0,95-1,2					
WC35DP4	38	62	1,5	4,25	50	0,95-1,2					
WC40DP4	42	66	1,5	4,25	54	0,95-1,2					
WC45DP4	48	74	2	4,25	61	1,45-1,7					
WC50DP4	52	78	2	4,25	65	1,45-1,7					
WC60DP4	62	90	2	4,25	76	1,45-1,7					



Tab. 6. DP4 plates

Symbol	L	W	W _u	S _s
S07190DP4	500	200	190	0,72
S10190DP4	500	200	190	0,99
S15190DP4	500	200	190	1,5
S20190DP4	500	200	190	1,98
S25240DP4	500	254	240	2,48

Tab. 7. DP4B plates

Symbol	L	W	W _u	S _s
S07085DP4B	500	95	85	0,72
S10180DP4B	500	193	180	0,99
S15180DP4B	500	193	180	1,5
S20180DP4B	500	193	180	1,98
S25180DP4B	500	193	180	2,48