Bearing-types for Groschopp- / Yaskawa- motors

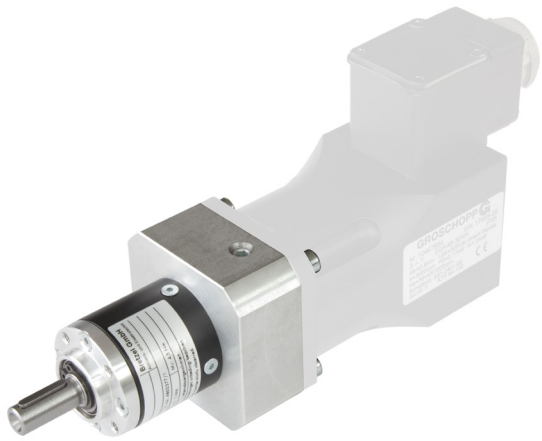
PD 040

M_2 up to 5Nm

modern, smooth compact-gearbox

planetary gearbox

- for AC-, DC-, servo- and stepping motors (up to shaft- Ø 11 mm)
- high output torque for compact models
- load balancing between 3 planetary wheels
- ratios from 3:1 to 49:1 possible
- low backlash
- high dynamic due to small moment of inertia
- high turning stiffness
- high overload reserves
- optimal efficiency
- many types for Groschopp- / Yaskawa- motors in stock and deliverable



Certifications

CE

BRETZEL GmbH · Antriebs- und Elektrotechnik
Am Rotböll 8 · 64331 Weiterstadt · Telefax 0 61 50 / 8 65 60 69
www.bretzel-gmbh.de · info@bretzel-gmbh.de

Any questions concerning this product?
Please give us a call:
Telephone 0 61 50 / 8 65 60 - 0

technical data

backlash	**einstufig**	< 20 arcmin
	zweistufig	< 25 arcmin
efficiency factor	**einstufig**	96 %
(full load)	**zweistufig**	94 %
torque n_1	**Nenn./ Max.**	3000/ 6000 min^{-1}
weight	**einstufig**	ca. 0,3 kg
	zweistufig	ca. 0,4 kg
life expectancy (base on n_2=100 min^{-1})		20.000 h
operation temperature		-25 bis + 90°C (for short intervalls +120°C)
mounting position		adjustable
protection class		IP64
sound emission		≤ 70 dB (A)
grease lubrication		RAL3020, flange Al auf Lebensdauer

available ratios / nominal torque

The output torque refers to a life expectancy of 20.000 h, nominal- and input torque, operation factor 1 and mode of operation S1 for electric maschinery.

1-staged

ratios	i	4:1	5:1	7:1	9:1
M_2	[Nm]	4	4,5	4,5	4
acceleration torque M_2 *)	[Nm]	8	8	8	8
M_2 Not-Stop **)	[Nm]	12	13,5	13,5	12
mass moment of inertia	[$kgcm^2$]	0,060	0,058	0,057	0,056

*) maximum 1.000 cycles per hour M_{2B}-portion of total run time < 5%.

**) maximum 1.000-times during the gearbox-lifetime

2-staged

ratios	i	16:1	20:1	25:1	28:1	35:1	49:1
nominal output torque M_2	[Nm]	5	5	5	5	5	5
acceleration torque M_2 *)	[Nm]	10	10	10	10	10	10
M_2 Not-Stop **)	[Nm]	15	15	15	15	15	15
mass moment of inertia	[$kgcm^2$]	0,060	0,058	0,058	0,058	0,057	0,057

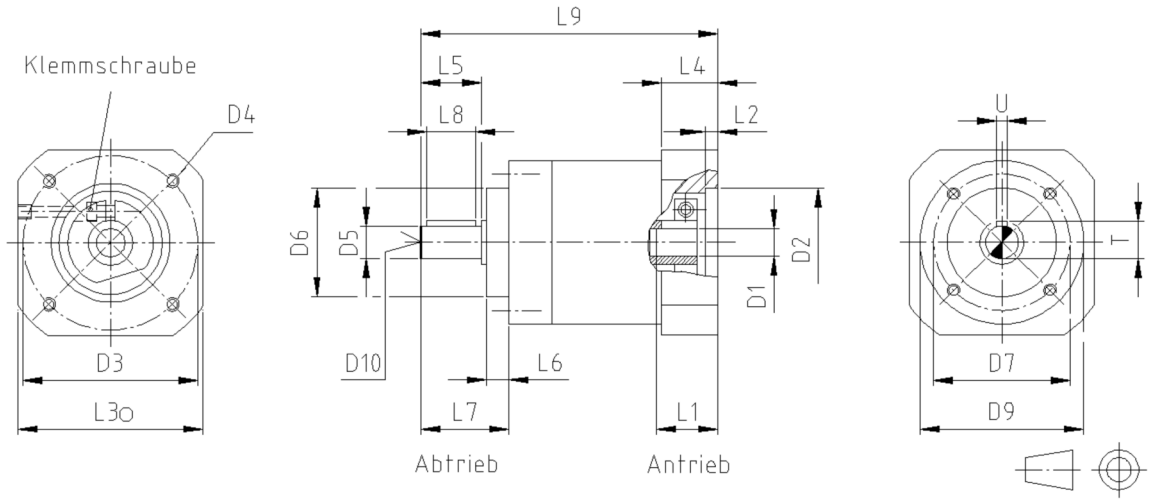
*) maximum 1.000 cycles per hour M_{2B}-portion of total run time < 5%..

**) maximum 1.000-times during the gearbox-lifetime.

BRETZEL GmbH · Antriebs- und Elektrotechnik
Am Rotböll 8 · 64331 Weiterstadt · Telefax 0 61 50 / 8 65 60 69
www.bretzel-gmbh.de · info@bretzel-gmbh.de

Any questions concerning this product?
Please give us a call:
Telephone 0 61 50 / 8 65 60 - 0

drawings PD 040



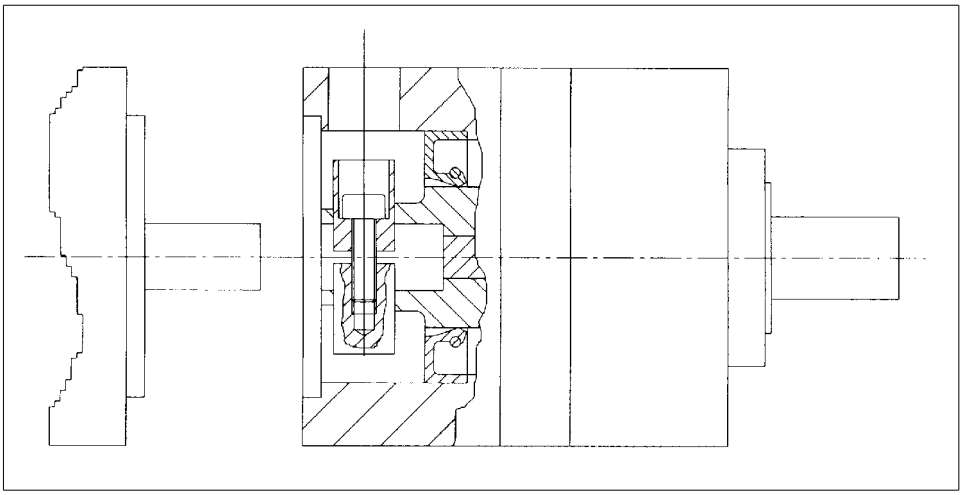
axial length	L9
1-staged	95
2-staged	111

Rest-dimensions	L5	L6	L7	L8	D1	D5	D6	D7	D8	D9	D10	U	T
	shaft	centering -bunch	assembly dimension	feather-key length	output-shaft (max)	output-shaft	centering	hole-circle	thread	casing	center DIN332	feather key	height of feather key
1-,**2**-staged	23	5	29	18	11	10 k6	25 h7	33	M4x8	40	DM 4	3	11,2

BRETZEL GmbH · Antriebs- und Elektrotechnik
Am Rotböll 8 · 64331 Weiterstadt · Telefax 0 61 50 / 8 65 60 69
www.bretzel-gmbh.de · info@bretzel-gmbh.de

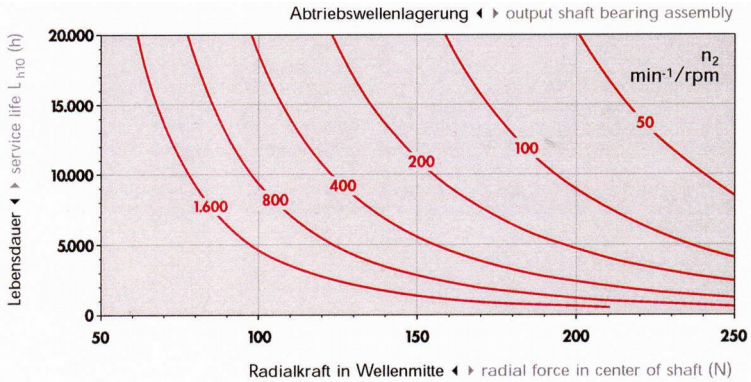
Any questions concerning this product?
Please give us a call:
Telephone 0 61 50 / 8 65 60 - 0

simple engine mounting with shaft coupling / clamp ring



tightening torque for the clamp screw	M3: 2,1 Nm (bei Hohlwelle Ø 9 mm) M4: 4,2 Nm (bei Hohlwelle Ø 11 mm)

radial and axial shaft thoughness



max. radialload *) (at center of output shaft)	220 N
max. axialload *)	330 N

*) calculated for n_2 = 100 min^{-1}

BRETZEL GmbH · Antriebs- und Elektrotechnik
Am Rotböll 8 · 64331 Weiterstadt · Telefax 0 61 50 / 8 65 60 69
www.bretzel-gmbh.de · info@bretzel-gmbh.de

Any questions concerning this product?
Please give us a call:
Telephone 0 61 50 / 8 65 60 - 0