

Flange output shaft (similar ISO 9409-1)

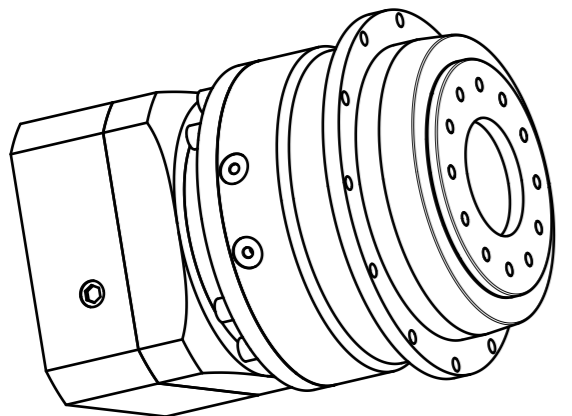
**Materials / Surfaces:**


Input flange: Aluminum / untreated  
 Housing: Steel / heat-treated and post-oxidized (black)  
 Output flange: Steel / untreated

**Hints:**

Please pay attention to the operating and mounting instructions.  
 Subject to modifications.

Variables on the drawing are dependent upon the motor.  
 The given dimensions are exemplary



	Scale: 3:10	DIN A3	ISO
	Revision status: Q from: 05/2022		
Changed revision status: P from: 01/2021			
General tolerance DIN ISO 2768-cL	PLFN200-bii-SSSD3AH-Y(D20) /(L20)/(D21)/(D22)/B5/(G3)		
Neugart GmbH Keltenstr. 16 D-77971 Kippenheim	Sheet 1/2		

General gearbox data	Character	Unit	
Planetary gearbox - gearing type	-	-	Straight teeth
Rotation direction	-	-	Input and output in the same direction
Number of stages	p	-	2-stage
Output shaft bearing	-	-	Tapered roller bearing
Service life (L10h)	$t_L$	h	20.000
Max. operating temperature	$T_{min} / T_{max}$	°C	-25 / +90
Protection class	-	-	IP 65
Lubrication (Lifetime lubrication)	-	-	Standard lubrication (Castrol Optigear Synthetic 800/150)
Installation position	-	-	Any
Max. bending moment based on the gearbox input flange (for motor weight) (1)	$M_b$	Nm	180
Motor shaft concentricity / Coaxiality and axial runout Motor flange	-	mm	0,015 / 0,03 (Measuring methods according to DIN EN 50347)
Required motor shaft tolerance	-	-	j6; k6
Min. permissible motor shaft length	$L_{20 min}$	mm	55,5
Reference operating mode	-	-	S1
Reference operating factor	$K_A$	-	1
Reference speed	$n_2$	rpm	100
Reference ambient temperature	$T_{Amb}$	°C	20
Radial force for output bearing based on shaft end after L10h=20,000h with $F_a=0N$	$F_r 20.000h$	N	33000
Axial force for output bearing based on gearbox axis after L10h=20,000h with $F_r=0N$	$F_a 20.000h$	N	+25000 / -15000
Radial force for output bearing based on shaft end after L10h=30,000h with $F_a=0N$	$F_r 30.000h$	N	29500
Axial force for output bearing based on gearbox axis after L10h=30,000h with $F_r=0N$	$F_a 30.000h$	N	+25000 / -13500
Maximum radial force based on shaft end and $T_2=0Nm$	$F_r Max$	N	33000
Maximum axial force based on gearbox axis and $T_2=0Nm$	$F_a Max$	N	+25000 / -15000

$$(1) \text{ Max. motor weight* in kg} = \frac{0,2 \times M_b}{\text{motor length in m}}$$

- \* with symmetrically distributed motor weight
- \* with horizontal and stationary mounting

Ratio-dependent gearbox data	Character	Unit								
Ratio	bii	-	16	20	25	32	40	50	64	100
Nominal output torque	$T_{2N}$	Nm	1800	1800	1800	1800	1800	1525	1000	630
Max. output torque for 30.000 output shaft rotations	$T_{2max}$	Nm	2880	2880	2880	2880	2880	2440	1600	1008
Emergency stop torque permitted 1000 times	$T_{2stop}$	Nm	3600	3600	3600	3600	3600	3600	2600	1350
Average idle torque for $n_1=3.000$ rpm and 20 °C gearbox temperature	$T_0$	Nm	7,8	5,3	4,7	2,8	2,5	2	2,15	1,6
Average thermal input speed at 50% $T_{2N}$ , S1, and $T_{Amb}$ Operating temperature may not be exceeded!	$n_{1N 50\%}$	rpm	1100	1350	1550	2000	2250	2750	3000	3000
Average thermal input speed at 100% $T_{2N}$ , S1, and $T_{Amb}$ Operating temperature may not be exceeded!	$n_{1N 100\%}$	rpm	800	950	1100	1400	1650	2100	2650	3000
Max. mechanical input speed Operating temperature may not be exceeded!	$n_{1 Limit}$	rpm	6500	6500	6500	6500	6500	6500	6500	6500
Torsional backlash based on output shaft	$j_t$	arcmin	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Torsional stiffness based on output shaft	$c_g$	Nm/arcmin	533	544	657	517	633	614	442	391
Efficiency at $T_{2N}$ , gearbox temperature 70 °C and $n_1=1.000$ rpm	$\eta$	%	96	96	95	95	95	95	92	88
Running noise at $n_1=3.000$ rpm without load at a distance of 1m	$Q_g$	dB(A)	74	74	74	74	74	74	74	74
Gearbox weight	$m_G$	kg	49,1	49	49,5	49,3	49,5	49,7	49,8	51,5
Mass moment of inertia based on clamping system diameter input	J	kgcm <sup>2</sup>	19,526	14,842	14,261	11,437	10,773	10,629	10,951	10,437



PLFN200-bii-SSSD3AH-Y(D20)  
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Sheet 2/2

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