

# Planetary Gearheads

## 0,6 Nm

For combination with (overview on page 14-15)  
 DC-Micromotors:  
 2224, 2230, 2232, 2233  
 DC-Motor-Tacho Combinations:  
 2251

### Series 22E

	22E	22EC	22EK
Housing material	plastic	plastic	plastic
Geartrain material	plastic	plastic	plastic
Recommended max. input speed for:			
- continuous operation	5 000 rpm	5 000 rpm	5 000 rpm
Backlash, at no-load	≤ 3°	≤ 3°	≤ 3°
Bearings on output shaft	sintered sleeve bearings	ceramic bearings	ball bearings
Shaft load, max.:			
- radial (5 mm from mounting face)	≤ 3 N	≤ 15 N	≤ 50 N
- axial	≤ 3 N	≤ 2 N	≤ 5 N
Shaft press fit force, max.	≤ 15 N	≤ 15 N	≤ 15 N
Shaft play:			
- radial (5 mm from mounting face)	≤ 0,05 mm	≤ 0,06 mm	≤ 0,04 mm
- axial	≤ 0,25 mm	≤ 0,25 mm	≤ 0,25 mm
Operating temperature range	- 30 ... + 65 °C	- 20 ... + 85 °C	- 30 ... + 85 °C

### Specifications

reduction ratio (nominal)	motor ordering code <sup>1)</sup>	number of gear stage	weight without motor	length without motor L2	length with motor				output torque		direction of rotation (reversible)	efficiency
					2224 <sup>1)</sup>	2230 <sup>1)</sup>	2233 <sup>1)</sup>	2251 <sup>1)</sup>	continuous operation	intermittent operation		
			g	mm	L1	L1	L1	L1	M max. mNm	M max. mNm		%
19 :1	B	2	17	27,8	51,3	57,1	59,7	78,7	200	400	=	78
28 :1	A	2	17	27,8	51,3	57,1	59,7	78,7	200	400	=	77
69 :1	B	3	19	32,8	56,3	62,1	64,7	83,7	300	600	=	69
102 :1	A	3	19	32,8	56,3	62,1	64,7	83,7	300	600	=	68
152 :1	A	3	19	32,8	56,3	62,1	64,7	83,7	400	800	=	67
249 :1	B	4	20	37,8	61,3	67,1	69,7	88,7	400	800	=	62
369 :1	A	4	20	37,8	61,3	67,1	69,7	88,7	500	1 000	=	61
546 :1	A	4	20	37,8	61,3	67,1	69,7	88,7	600	1 000	=	60
809 :1	A	4	20	37,8	61,3	67,1	69,7	88,7	600	1 000	=	59
896 :1	B	5	22	42,8	66,3	72,1	74,7	93,7	600	1 000	=	55
1 327 :1	A	5	22	42,8	66,3	72,1	74,7	93,7	600	1 000	=	54
1 966 :1	A	5	22	42,8	66,3	72,1	74,7	93,7	600	1 000	=	53
2 913 :1	A	5	22	42,8	66,3	72,1	74,7	93,7	600	1 000	=	52
3 225 :1	B	6	24	47,8	71,3	77,1	79,7	98,7	600	1 000	=	49
4 315 :1	A	5	22	42,8	66,3	72,1	74,7	93,7	600	1 000	=	51
4 778 :1	A	6	24	47,8	71,3	77,1	79,7	98,7	600	1 000	=	48
7 078 :1	A	6	24	47,8	71,3	77,1	79,7	98,7	600	1 000	=	47
10 486 :1	A	6	24	47,8	71,3	77,1	79,7	98,7	600	1 000	=	46
15 534 :1	A	6	24	47,8	71,3	77,1	79,7	98,7	600	1 000	=	46
23 014 :1	A	6	24	47,8	71,3	77,1	79,7	98,7	600	1 000	=	46

<sup>1)</sup> Example of ordering information:

2224 B 012 SR + 22E 19:1

These gearheads are available only with motors mounted.

**Note:** The reduction ratios are rounded, the exact values are available on request.

