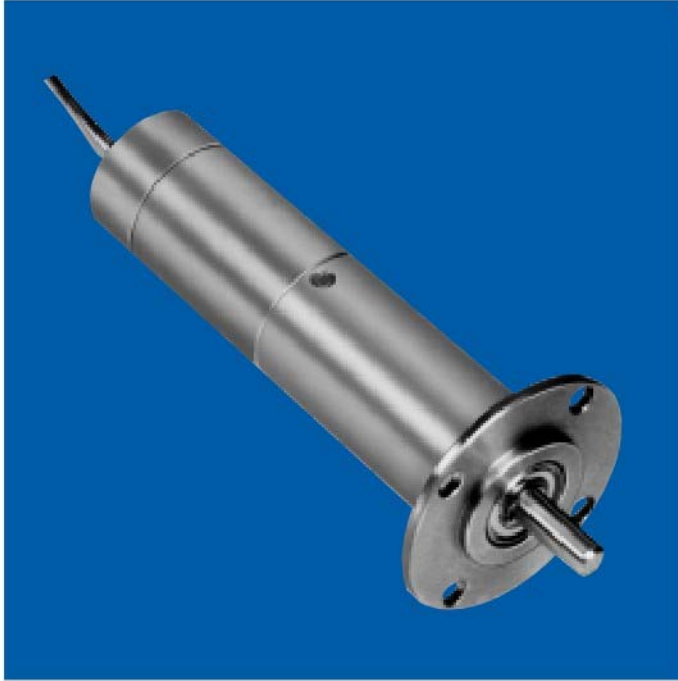


# SD GEARMOTORS

DC Permanent Magnet Planetary Gearmotors



## Dimensions

### general design specification

**torque rating:** Up to 300 oz. in. maximum continuous torque

**weight:** 4 to 5 ounces depending on ratio

**gears:** Planetary gearing system. All gears are heat treated for consistently reliable performance and long life

**shaft:** Precision-ground No. 416 stainless steel. Options: length, smaller diameter, flats, pinions, gears, holes (through or tapped), threaded ends and tapers. Type of steel used may change depending upon variation selected

**backlash:** Varies with reduction but average unit will have less than 3°

**gear inertia:**  $1.8 \times 10^{-6}$  oz. in. sec.<sup>2</sup> @ input max

**bearings:** Output shaft uses double-shielded life-lubricated ball bearings for -55°C to +85°C operation. Special lubricants available for temperature extremes

**cables/leads:** 8" #26 AWG leads per MIL-W-16878/4

**housing:** Aluminum

**mounting flange:** No. 303 stainless steel per ASTM A582

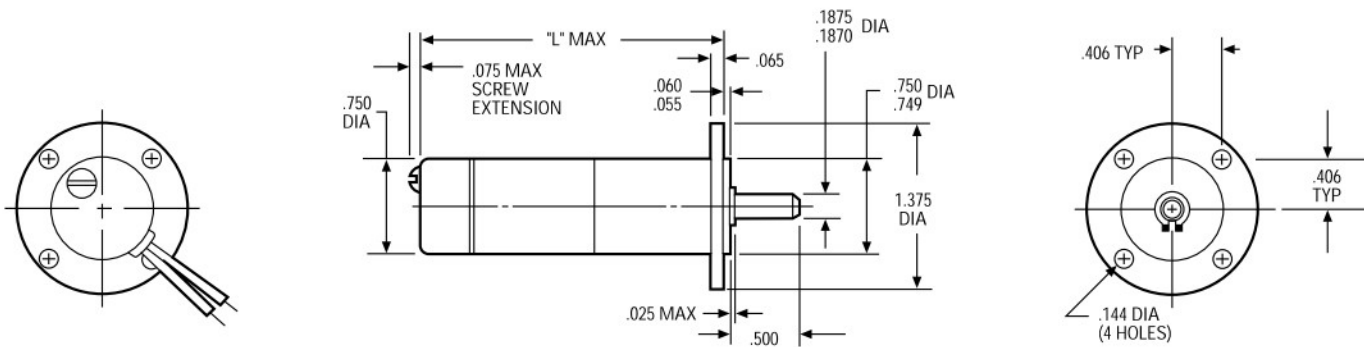
**gear train housing:** Stress-proof steel

**marking:** Per MIL-STD-130

**life:** 1,000 hours continuous duty for 27 VDC units

### options available:

- RFI filters to meet MIL-I-6181, MIL-I-26600 or MIL-STD-46
- Internal slip clutch



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# A-1230

## Standard Part Numbers and Data

SPEED REDUCTION RATIO	MAXIMUM CONTINUOUS TORQUE (oz. in.)	TORQUE MULTIPLIER RATIO	L MAX (in.)	STANDARD PART NUMBER PREFIX*
				enclosed type
3.82:1	0.7	3.1	2.45	168A249
5.77:1	1.1	4.6		168A250
14.58:1	2.3	9.3	2.64	168A223
22.03:1	3.5	14.0		168A224
33.28:1	5.2	21.0		168A225
55.66:1	7.0	28.0	2.81	168A226
84.11:1	10.0	43.0		168A227
127.1:1	16.0	65.0		168A228
192:1	23.0	93.0		168A229
321:1	32.0	130.0	2.98	168A230
485:1	50.0	200.0		168A231
733:1	75.0	300.0		168A232
1,108:1	113.0	450.0		168A233
1,853:1	150.0	600.0	3.16	168A234
2,799:1	225.0	900.0		168A235
4,230:1	300.0	1,400		168A236
6,391:1	300.0	2,100		168A237
10,689:1	300.0	2,800	3.33	168A238
16,150:1	300.0	4,200		168A239
24,403:1	300.0	6,400		168A240
36,873:1	300.0	9,700		168A241

Max Cont. Torque: The values in this column are based upon gear train strength and capability for 1,000 hrs. minimum life. Max rated torque of motor selected x torque multiplier ratio must not exceed maximum continuous torque of gearbox

Max Intermittent Torque = 2 x Max Cont. Torque

Minimum Gearbox Efficiency = Torque Multiplier Ratio divided by Speed Reduction Ratio x 100

### \*When You Order

Each of the basic motor armature windings (bottom chart) can be used with any of the gear ratios listed above. To order, state the gear train stand part number prefix, plus a motor armature winding dash number. EXAMPLE: 168A249-1 is a 3.82:1 SD gearmotor with a "-1" armature winding, 12 volts, 7,000 rpm, 0.40 oz. in. torque, etc.

### Basic Motor Data

VOLTAGE (VDC)	SPEED no load (rpm)	TORQUE		CURRENT			CONSTANTS		ARMATURE WINDING DASH NUMBER*
		max rated (oz. in.)	** theoretical stall (oz. in.)	max no load (amps)	max rated load (amps)	** nominal stall (amps)	K <sub>t</sub> (oz. in./ amp)	R (ohms)	
6	14,500-17,500	.10	1.6	.58	1.00	4.17	.43	1.44	-17
6	12,000-14,000	.28	1.2	.48	1.00	2.64	.54	2.27	-16
6	9,000-10,500	.28	.9	.38	.82	1.62	.70	3.70	-15
12	13,000-15,500	.22	1.6	.27	.53	1.86	.96	6.46	-14
12	9,500-11,000	.37	1.2	.19	.50	1.05	1.36	11.40	-13
12	8,500-10,000	.28	.9	.17	.38	.75	1.51	16.00	-12
12	6,500-8,000	.22	.7	.14	.28	.49	1.84	24.50	-1
27	13,000-16,000	.22	1.4	.12	.24	.74	2.16	36.30	-2
27	10,000-12,500	.31	1.1	.09	.22	.47	2.70	57.10	-3
27	9,000-10,500	.24	.8	.08	.16	.31	3.25	86.40	-4
27	7,000-8,500	.24	.6	.07	.14	.21	3.89	130.00	-5
50	12,500-15,000	.15	.7	.06	.10	.23	4.10	219.00	-7
50	11,500-13,500	.25	1.0	.05	.12	.26	4.65	196.00	-6

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