2796 Culver Ave., Dayton, Ohio 45429
513/294-1041

GEARMOTORS
DC PERMANENT MAGNET
INDUSTRIAL QUALITY

MODEL CIR
BULLETIN 126A100/120

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ELECTRICAL SPECIFICATIONS

Voltage: 3, 6, 12, 27, and 50 VDC are standard. Other voltages available. Reverse side of sheet shows complete CIR gearmotor data.

Speed: Motor input speeds up to 16,400 RPM can be used to drive this precision planetary geartrain, with ratios of 3.81 to 19,841.
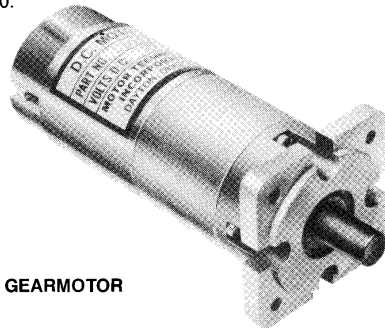
Connection Method: Solder terminals are standard.

Rotation: Counter clockwise when viewed from shaft end, when positive lead (terminal) is plus and negative lead (terminal) is minus.

Reversibility: Unit reverses rotation when voltage is reversed.

The Motor Technology Model CIR gearmotor is the industrial version of the military CMR gearmotor. Designed to meet the most rigid industrial requirements, the CIR motor uses a one-piece magnet and can take the rough abuse normally required by industrial equipment. Additionally, the design provides the reliability required in medical, light aircraft and instrumentation environments.

A wide variety of gear ratios is available to make it easy to select a standard unit for the "special" job you have. Consult our application engineers for modifications you may need. For additional CIR motor information see Bulletin 125A100.

MODEL CIR GEARMOTOR

BASIC GEARMOTOR DATA — STANDARD PART NUMBERS

SPEED REDUCTION RATIO	MAXIMUM [1] CONT. DUTY TORQUE OZ.IN.	TORQUE [2] MULTIPLIER	LENGTH L_A DIMENSION	STANDARD CIR GEARMOTOR PART NUMBERS (Add armature dash number; see below.)
3.81	5.2	3.1	2.80	126A100-
5.54	7.5	4.4	2.80	126A101-
14.5	15.8	9.3	3.01	126A102-
21.1	23.0	13.5	3.01	126A103-
30.7	33.4	19.5	3.01	126A104-
55.3	48.4	28.5	3.22	126A105-
80.3	70.2	41.3	3.22	126A106-
117	102	60.0	3.22	116A107-
170	148	87.0	3.22	126A108-
306	215	126	3.64†	126A109-
445	311	183	3.64†	126A110-
647	451	265	3.64†	126A111-
940	656	386	3.64†	126A112-
1694	947	558	3.85†	126A113-
2464	1250**	808	3.85†	126A114-
3582	1250**	1180	3.85†	126A115-
4439	1250**	1180	4.06†	126A116-
6455	1250**	1700	4.06†	126A117-
9385	1250**	2470	4.06†	126A118-
13,646	1250**	3580	4.06†	126A119-
19,841	1250**	5200	4.06†	126A120-

[1] This rating is for gearbox only. To determine output of any motor-gearbox combination, multiply motor torque by the torque multiplier.

[2] Torque multiplier ratio is the gear ratio multiplied by its efficiency.
** Consult factory when exceeding 1250 oz. in.
† For applications below 200 oz. in., continuous duty, length L_A can be reduced by .210 in. Consult factory.

MECHANICAL SPECIFICATIONS

Rating: 1/100 hp with torques to 1250 oz. in.

Gears: Precision manufactured and heat treated.

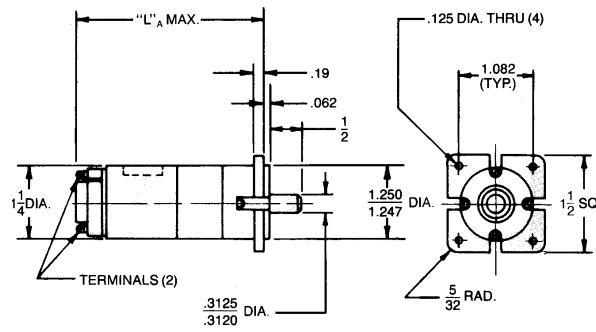**Shaft:** Precision ground 416 stainless steel, case hardened.

Bearings: Output shaft supported by two bronze bearings. Needle bearings available for high side load conditions.

Backlash: Less than 3°.

Lubrication: All bearings life lubricated. Special lubes available if required.

Weight: 6 to 12 oz., depending on ratios.

DIMENSIONS

BASIC CIR ARMATURE DATA [3]

INPUT VOLTAGE DC	NO-LOAD SPEED RPM	RATED TORQUE OZ.IN.	STALL TORQUE OZ.IN.	NO-LOAD CURRENT AMPS MAX.	RATED TORQUE CURRENT AMPS	STALL CURRENT AMPS	ARMATURE DASH NUMBER
3*	13,200	1.0	4.3	1.95	6.0	21.0	-1
3*	11,000	1.0	3.5	1.62	5.0	15.0	-2
3*	8,600	.7	2.8	1.26	3.0	8.9	-3
6*	13,700	1.0	4.4	1.10	3.0	11.1	-4
6	11,000	1.0	3.5	.85	2.5	7.3	-5
6	8,800	.7	2.9	.64	1.5	4.6	-6
12	14,000	.9	4.5	.55	1.5	5.8	-7
12	11,500	1.0	3.7	.43	1.3	4.0	-8
12	9,000	.7	2.9	.33	.7	2.4	-9
27	16,400	.7	5.3	.28	.6	3.6	-10
27	12,800	1.0	4.2	.23	.5	2.2	-11
27	10,500	.9	3.4	.18	.48	1.5	-12
27	8,350	.6	2.7	.14	.28	.92	-13
27	6,750	.5	2.2	.11	.20	.60	-14
50	9,400	.7	3.1	.083	.19	.64	-15
50	7,600	.6	2.5	.066	.13	.42	-16
50	6,000	.5	1.9	.052	.08	.26	-17

[3] For complete CIR motor data and tolerances see Bulletin 125A100.
* Intermittent duty at rated load; consult factory for ratings for your application.

HOW TO SELECT A UNIT

The complete part number must include a standard CIR gearmotor part number (above) plus an applicable CIR armature dash number from the basic motor data chart (left). Use the following trial and error technique to start:

1. Assume motor speed of 10,000 RPM and divide it by the required output speed to get approximate ratio.

2. From ratios charted above, select closest one.

3. Check maximum torque rating of that ratio with your actual requirement. Adjust ratio and motor speed up or down as needed.

4. Calculate output torque by multiplying motor torque by the "torque multiplier" of the ratio selected.

5. Select armature from voltage, load and speed required.

HOW TO ORDER: Order by standard part number (example: 126A104-12), making sure to include the armature dash number. Note any modifications as exceptions to the standard.