

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

**GEARMOTORS  
DC PERMANENT MAGNET  
INDUSTRIAL QUALITY**

**MODEL CIL  
BULLETIN 126A130/150**

**ELECTRICAL SPECIFICATIONS**

**Voltage:** 6, 12, 27, 50 and 75 VDC units are standard. Other voltages available. Reverse side of sheet shows complete CIL gearmotor data.

**Speed:** Motor input speeds up to 16,800 RPM can be used to drive this precision planetary geartrain, of ratios from 3.81 to 19,841.

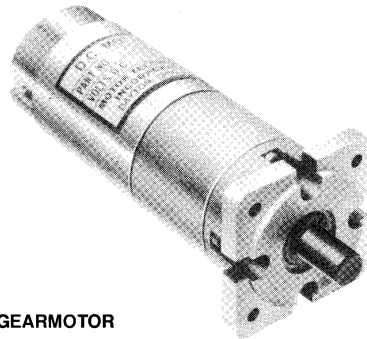
**Connection Method:** Solder terminals are standard.

**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 CIL gearmotor is designed to give the extra torque you need for difficult industrial environmental requirements, such as wire feed welding tools, positioning devices, medical instruments, actuators, etc.

Choose from 21 standard gear ratios and 17 armatures. Then, if you need special modifications, there's experienced design assistance available from MTI engineering. For additional CIL motor information see Bulletin 125A105.



**MODEL CIL GEARMOTOR**

**MECHANICAL SPECIFICATIONS**

**Rating:** 1/65 hp with torques to 1250 oz. in.

**Gears:** Precision manufactured, heat treated steel.

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

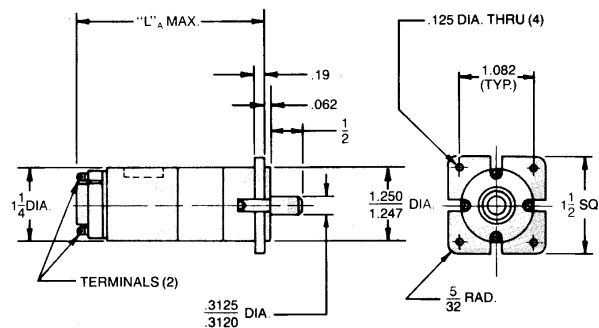
**Bearings:** Output shaft supported by two bronze bearings. Needle bearings available for high side load conditions.

**Backlash:** Less than 3°.

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

**Weight:** 7 to 14 oz., depending on ratios.

**DIMENSIONS**



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**BASIC GEARMOTOR DATA — STANDARD PART NUMBERS**

SPEED REDUCTION RATIO	MAXIMUM <sup>1</sup> CONT. DUTY TORQUE OZ. IN.	TORQUE <sup>2</sup> MULTIPLIER	LENGTH L <sub>A</sub> DIMENSION	STANDARD CIL GEARMOTOR PART NUMBERS (Add armature dash numbers; see below.)
3.81 5.54	5.2 7.5	3.1 4.4	3.12 3.12	126A130- 126A131-
14.5 21.1 30.7	15.8 23.0 33.4	9.3 13.5 19.5	3.33 3.33 3.33	126A132- 126A133- 126A134-
55.3 80.3 117 170	48.4 70.2 102 148	28.5 41.3 60.0 87.0	3.54 3.54 3.54 3.54	126A135- 126A136- 116A137- 126A138-
306 445 647 940	215 311 451 656	126 183 265 386	3.96† 3.96† 3.96† 3.96†	126A139- 126A140- 126A141- 126A142-
1694 2464 3582	947 1250 ** 1250 **	558 808 1180	4.17† 4.17† 4.17†	126A143- 126A144- 126A145-
4439 6455 9385 13,646 19,841	1250 ** 1250 ** 1250 ** 1250 ** 1250 **	1180 1700 2470 3580 5200	4.38† 4.38† 4.38† 4.38† 4.38†	126A146- 126A147- 126A148- 126A149- 126A150-

<sup>1</sup> This rating is for gearbox only. To determine output of any motor-gearbox combination, multiply motor torque by the torque multiplier.

<sup>2</sup> 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<sub>A</sub> can be reduced by .210 in. Consult factory.

**BASIC CIL ARMATURE DATA<sup>3</sup>**

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
6*	17,100	.75	13.8	2.15	3.5	34.0	-1
6*	14,300	1.0	11.4	1.78	3.5	24.0	-2
6*	11,200	1.5	9.0	1.41	3.5	14.5	-3
12	17,700	0.9	14.2	1.25	2.0	18.4	-4
12	14,300	1.2	11.4	.95	1.7	12.0	-5
12	11,400	1.6	9.1	.70	1.6	7.6	-6
12	9,000	1.8	7.2	.55	1.5	4.7	-7
27	16,800	1.0	13.5	.50	.80	7.4	-8
27	13,200	1.3	10.5	.38	.75	4.5	-9
27	10,600	1.8	8.5	.30	.75	2.9	-10
27	8,300	1.8	6.6	.22	.62	1.8	-11
27	6,800	1.4	5.4	.18	.40	1.2	-12
50	10,000	1.8	8.0	.15	.39	1.4	-13
50	8,100	1.6	6.5	.12	.29	.92	-14
75	9,100	1.8	7.3	.09	.24	.78	-15
75	7,400	1.5	5.9	.07	.17	.51	-16
75	5,800	1.0	4.6	.06	.10	.31	-17

<sup>3</sup> For complete CIL motor data and tolerances see Bulletin 125A105.  
\* 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 CIL gearmotor part number (above) plus an applicable CIL 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: 126A138-7), making sure to include the armature dash number. Note any modifications as exceptions to the standard.