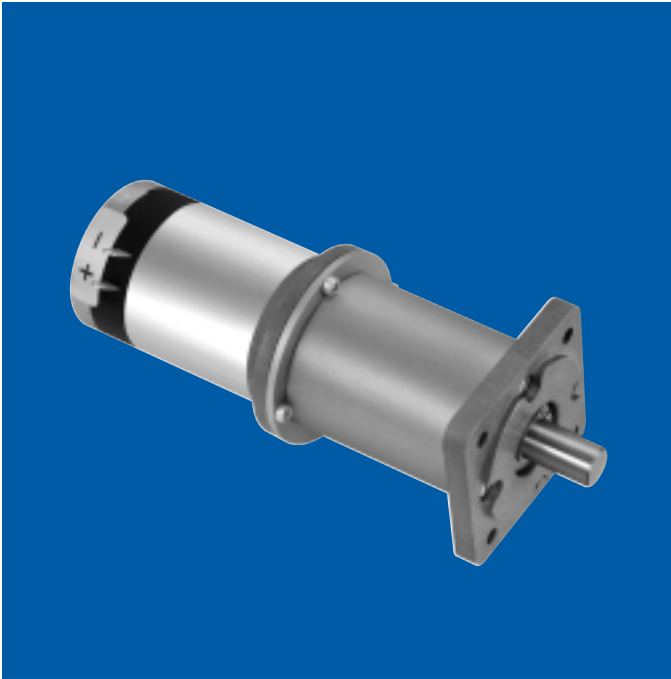


IM-13 GEARMOTORS

DC Ceramic Permanent Magnet Planetary Gearmotors

E-2130



torque rating: Up to 1,250 oz. in.

weight: 12 to 17 ounces depending on ratio and motor

gears: Precision manufactured and heat treated for reliable performance and long life

shaft: Precision-ground No. 416 nitrided stainless steel.

Options: length, smaller diameter, flats, pinions, gears, holes (through or tapped), threaded ends and tapers. Shaft material may change depending upon options selected

backlash: Varies with ratio, but average backlash is 3°

gear inertia: 1.2×10^{-5} oz. in. sec.² @ input max

bearings: Motor output shaft is supported by life-lubricated sleeve bearings (ball bearing option available); gear train output shaft is supported by life-lubricated sleeve bearing

cables/leads: 8" min. #22 AWG 2 leads UL style 1180

gearbox cover: Corrosion-resistant steel housing

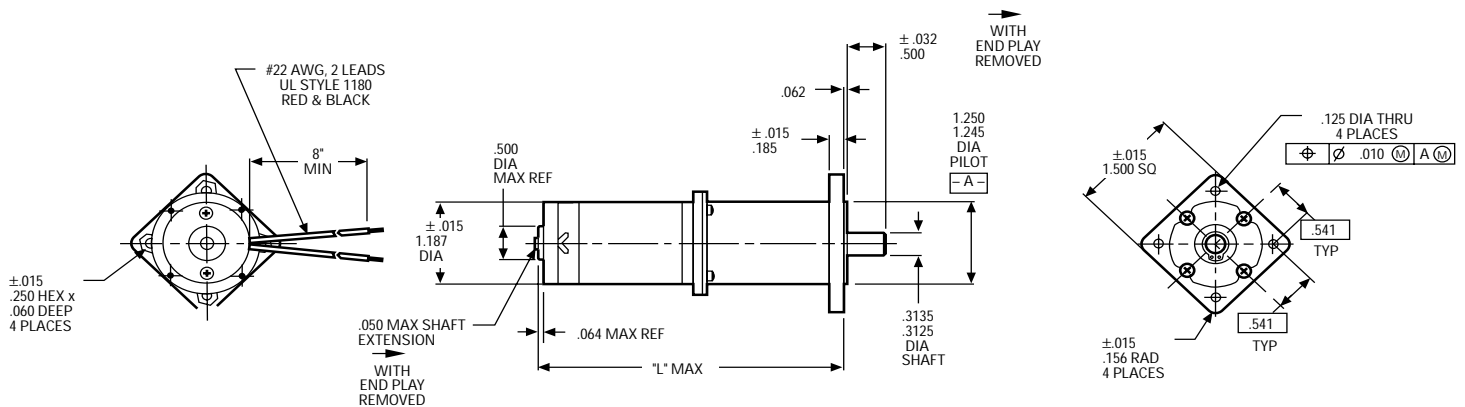
mounting flange: Die-cast zinc

end bell: Die-cast zinc

options available:

- EMI suppression
- Terminals

Dimensions



ROTATION (VIEWED FROM SHAFT END)

CCW - POSITIVE VOLTAGE TO RED (+), NEGATIVE VOLTAGE TO BLACK (-)

CW - REVERSE POLARITY

NOTE: Consult factory prior to preparing spec control prints. Dimensions are for reference only

Standard Part Numbers and Data

		SHORT STACK MOTOR			LONG STACK MOTOR		
RATIO	TORQUE MULTIPLIER	STANDARD PART NUMBER PREFIX*	MAX CONTINUOUS TORQUE (oz. in.)	"L" MAX (in.)	STANDARD PART NUMBER PREFIX*	MAX CONTINUOUS TORQUE (oz. in.)	"L" MAX (in.)
4	3.0	407A6000	4	3.147	407A6166	6.0	3.457
5	3.8	407A6001	5	3.147	407A6167	7.5	3.457
6	4.5	407A6002	6	3.147	407A6168	9.0	3.457
16	10.0	407A6003	12	3.386	407A6169	20.0	3.696
20	13.0	407A6004	16	3.386	407A6170	26.0	3.696
24	15.0	407A6005	19	3.386	407A6171	30.0	3.696
25	16.0	407A6006	20	3.386	407A6172	32.0	3.696
30	19.0	407A6007	24	3.386	407A6173	38.0	3.696
36	23.0	407A6008	29	3.386	407A6174	46.0	3.696
64	33.0	407A6009	41	3.619	407A6175	66.0	3.929
80	41.0	407A6010	51	3.619	407A6176	82.0	3.929
96	49.0	407A6011	61	3.619	407A6177	98.0	3.929
100	51.0	407A6012	64	3.619	407A6178	105.0	3.929
120	61.0	407A6013	76	3.619	407A6179	120.0	3.929
125	64.0	407A6014	80	3.619	407A6180	125.0	3.929
144	74.0	407A6015	92	3.619	407A6181	150.0	3.929
150	77.0	407A6016	96	3.619	407A6182	155.0	3.929
180	92.0	407A6017	115	3.619	407A6183	185.0	3.929
216	110.0	407A6018	135	3.619	407A6184	220.0	3.929
256	105.0	407A6019	130	3.852	407A6185	210.0	4.162
320	130.0	407A6020	160	3.852	407A6186	260.0	4.162
384	157.0	407A6021	195	3.852	407A6187	315.0	4.162
400	164.0	407A6022	205	3.852	407A6188	330.0	4.162
480	197.0	407A6023	245	3.852	407A6189	395.0	4.162
500	205.0	407A6024	255	3.852	407A6190	410.0	4.162
576	235.0	407A6025	295	3.852	407A6191	470.0	4.162
600	246.0	407A6026	305	3.852	407A6192	490.0	4.162
625	256.0	407A6027	320	3.852	407A6193	510.0	4.162
720	295.0	407A6028	370	3.852	407A6194	590.0	4.162
750	306.0	407A6029	380	3.852	407A6195	610.0	4.162
864	352.0	407A6030	440	3.852	407A6196	705.0	4.162
900	370.0	407A6031	460	3.852	407A6197	740.0	4.162
1,024	334.0	407A6032	415	4.085	407A6198	670.0	4.395
1,080	442.0	407A6033	550	3.852	407A6199	885.0	4.162
1,280	416.0	407A6034	520	4.085	407A6200	830.0	4.395
1,296	530.0	407A6035	660	3.852	407A6201	1,060	4.162
1,536	500.0	407A6036	625	4.085	407A6202	1,000	4.395
1,600	522.0	407A6037	650	4.085	407A6203	1,045	4.395
1,920	625.0	407A6038	780	4.085	407A6204	1,250	4.395
2,000	652.0	407A6039	815	4.085	407A6205	1,250	4.395
2,304	750.0	407A6040	935	4.085	407A6206	1,250	4.395
2,400	780.0	407A6041	975	4.085	407A6207	1,250	4.395
2,500	815.0	407A6042	1,010	4.085	407A6208	1,250	4.395
2,880	940.0	407A6043	1,175	4.085	407A6209	1,250	4.395
3,000	980.0	407A6044	1,200	4.085	407A6210	1,250	4.395
3,125	1,020	407A6045	1,250	4.085	407A6211	1,250	4.395
3,456	1,130	407A6046	1,250	4.085	407A6212	1,250	4.395
3,600	1,170	407A6047	1,250	4.085	407A6213	1,250	4.395
3,750	1,220	407A6048	1,250	4.085	407A6214	1,250	4.395

NOTE: Standard part numbers and data continued on page 20

*When You Order

Each of the basic motor armature windings (see page 21) can be used with any of the gear ratios listed above. To order, state the gear train standard part number prefix, plus a motor armature winding dash number. EXAMPLE: 407A6019-2 is a 256:1 IM-13 short stack gear train with a "-2" armature winding, 12 volts, 5,200 rpm, 1.50 oz. in. torque, etc.

IM-13 GEARMOTORS

DC Permanent Magnet Planetary Gearmotors

E-2130

Standard Part Numbers and Data

RATIO	TORQUE MULTIPLIER	SHORT STACK MOTOR			LONG STACK MOTOR		
		STANDARD PART NUMBER PREFIX*	MAX CONTINUOUS TORQUE (oz. in.)	"L" MAX (in.)	STANDARD PART NUMBER PREFIX*	MAX CONTINUOUS TORQUE (oz. in.)	"L" MAX (in.)
4,096	1,070	407A6049	1,250	4.318	407A6215	1,250	4.628
4,320	1,410	407A6050	1,250	4.085	407A6216	1,250	4.395
4,500	1,470	407A6051	1,250	4.085	407A6217	1,250	4.395
5,120	1,340	407A6052	1,250	4.318	407A6218	1,250	4.628
5,184	1,690	407A6053	1,250	4.085	407A6219	1,250	4.395
5,400	1,760	407A6054	1,250	4.085	407A6220	1,250	4.395
6,144	1,610	407A6055	1,250	4.318	407A6221	1,250	4.628
6,400	1,680	407A6056	1,250	4.318	407A6222	1,250	4.628
6,480	2,110	407A6057	1,250	4.085	407A6223	1,250	4.395
7,680	2,010	407A6058	1,250	4.318	407A6224	1,250	4.628
7,776	2,530	407A6059	1,250	4.085	407A6225	1,250	4.395
8,000	2,100	407A6060	1,250	4.318	407A6226	1,250	4.628
9,216	2,390	407A6061	1,250	4.318	407A6227	1,250	4.628
9,600	2,520	407A6062	1,250	4.318	407A6228	1,250	4.628
10,000	2,620	407A6063	1,250	4.318	407A6229	1,250	4.628
11,520	3,010	407A6064	1,250	4.318	407A6230	1,250	4.628
12,000	3,140	407A6065	1,250	4.318	407A6231	1,250	4.628
12,500	3,280	407A6066	1,250	4.318	407A6232	1,250	4.628
13,824	3,620	407A6067	1,250	4.318	407A6233	1,250	4.628
14,400	3,780	407A6068	1,250	4.318	407A6234	1,250	4.628
15,000	3,940	407A6069	1,250	4.318	407A6235	1,250	4.628
15,625	4,100	407A6070	1,250	4.318	407A6236	1,250	4.628
17,280	4,520	407A6071	1,250	4.318	407A6237	1,250	4.628
18,000	4,710	407A6072	1,250	4.318	407A6238	1,250	4.628
18,750	4,910	407A6073	1,250	4.318	407A6239	1,250	4.628
20,736	5,430	407A6074	1,250	4.318	407A6240	1,250	4.628
21,600	5,660	407A6075	1,250	4.318	407A6241	1,250	4.628
22,500	5,900	407A6076	1,250	4.318	407A6242	1,250	4.628
25,920	6,790	407A6077	1,250	4.318	407A6243	1,250	4.628
27,000	7,070	407A6078	1,250	4.318	407A6244	1,250	4.628
31,104	8,150	407A6079	1,250	4.318	407A6245	1,250	4.628
32,400	8,500	407A6080	1,250	4.318	407A6246	1,250	4.628
38,880	10,200	407A6081	1,250	4.318	407A6247	1,250	4.628
46,656	12,200	407A6082	1,250	4.318	407A6248	1,250	4.628

Maximum continuous rated torque values are based upon motor temperature rise considerations. Starting or impact loads greater than 10 times the rated maximum continuous torque (1,500 oz. in. maximum) could result in gear or shaft damage

*When You Order

Each of the basic motor armature windings (see chart, page 21) can be used with any of the gear ratios listed in the preceding charts. To order, state the gear train standard part number prefix, plus a motor armature winding dash number. EXAMPLE: 407A6019-2 is a 256:1 IM-13 short stack gear train with a "-2" armature winding, 12 volts, 5,200 rpm, 1.50 oz. in. torque, etc.

Basic Motor Data

ARMATURE WINDING DASH NO.*	VOLTAGE (VDC)	SPEED $\pm 10\%$ NO LOAD (rpm)	CURRENT NO LOAD (max amps)	RATED TORQUE (oz. in.)	CURRENT AT RATED TORQUE (max amps)	TORQUE CONSTANT (oz. in./amps)	RESISTANCE (ohms)
Short Stack — Motors							
-2	12	5,200	.230	1.50	.80	2.90	7.30
-3	24	5,200	.140	1.50	.40	5.60	30.00
Long Stack — Motors							
-2	12	5,200	.220	2.50	1.30	2.90	4.00
-3	24	5,200	.150	2.50	.65	5.85	15.00

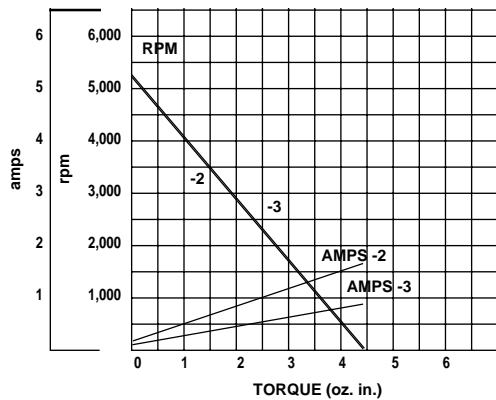
*When You Order

Each of the basic motor armature windings can be used with any of the gear ratios listed in the two preceding charts. To order, state the gear train standard part number prefix, plus a motor armature winding dash number. EXAMPLE: 407A6019-2 is a 256:1 IM-13 short stack gear train with a “-2” armature winding, 12 volts, 5,200 rpm, 1.50 oz. in. torque, etc.

Typical Motor Performance

Short Stack Motors

Part Nos.: 407A6000 thru 6082



Long Stack Motors

Part Nos.: 407A6166 thru 6248

