

# IM-13 GEARMOTORS

DC Permanent Magnet Spur Gearmotors

E-2135



torque rating: Standard sintered gear strength to 100 oz. in. Wide-face sintered gear strength to 160 oz. in.

weight: 8 to 11 ounces

gears: Precision high density sintered steel

shaft: Precision-ground; through hardened AISI 1137-1141 steel. Options: length, flats, pinions, gears. Shaft material may change depending upon options selected

bearings: Motor and gearbox bearings are life-lubricated sleeve bearings. Ball bearing option available

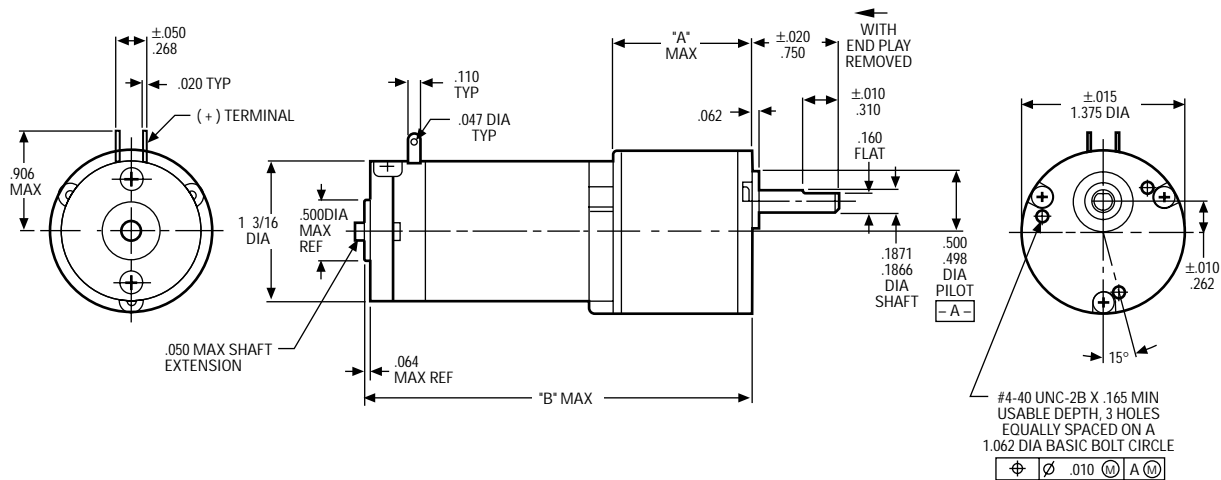
gearbox cover: Corrosion-resistant aluminum housing

mounting flange: Die-cast zinc, coated to prevent oxidation

options available:

- Ball bearings
- Leads
- EMI suppression

## Dimensions



ROTATION (SEE CHART, OPPOSITE PAGE) VIEWED FROM SHAFT END WITH POSITIVE VOLTAGE ON (+) TERMINAL. REVERSE POLARITY FOR OPPOSITE ROTATION

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

## Standard Part Numbers and Data Standard Sintered Gearing

STANDARD PART NUMBER PREFIX*	DIMENSION "A" MAX (in.)	DIMENSION "B" MAX (in.)	REDUCTION RATIO	TORQUE MULTIPLIER	CONTINUOUS TORQUE		DIRECTION OF ROTATION
					-2*	-3*	
					(oz. in.)	(oz. in.)	
415A154	.960	2.794	6.30	5.35	8	8	CW
415A155	.960	2.794	9.99	7.85	12	12	CCW
415A156	.960	2.794	19.53	15.35	23	23	CCW
415A157	.960	2.794	30.96	22.35	34	34	CW
415A158	.960	2.794	60.54	43.71	66	66	CW
415A159	.960	2.794	95.97	64.11	96	96	CCW
415A160	.960	2.794	187.68	125.36	100	100**	CCW
415A161	1.186	3.020	297.52	182.67	100	100**	CW
415A162	1.186	3.020	581.82	357.22	100	100**	CW
415A163	1.186	3.020	922.31	522.93	100	100**	CCW
415A164	1.186	3.020	1,803.64	1,022.61	100	100**	CCW

## Wide-face Sintered Gearing

STANDARD PART NUMBER PREFIX*	DIMENSION "A" MAX (in.)	DIMENSION "B" MAX (in.)	REDUCTION RATIO	TORQUE MULTIPLIER	CONTINUOUS TORQUE		DIRECTION OF ROTATION
					-2*	-3*	
					(oz. in.)	(oz. in.)	
415A176	1.186	3.020	19.53	15.35	23	23	CCW
415A177	1.186	3.020	30.52	22.35	34	34	CW
415A178	1.186	3.020	60.54	43.71	66	66	CW
415A179	1.186	3.020	94.60	64.11	96	96	CCW
415A180	1.186	3.020	187.68	125.36	160	160**	CCW
415A181	1.398	3.232	293.26	182.67	160	160**	CW
415A182	1.398	3.232	581.82	357.22	160	160**	CW
415A183	1.398	3.232	909.09	522.93	160	160**	CCW
415A184	1.398	3.232	1,803.64	1,022.61	160	160**	CCW

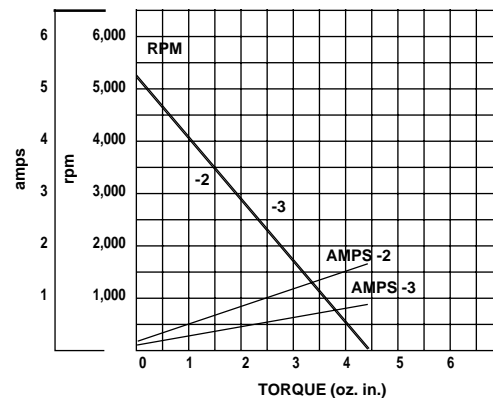
### \*When You Order

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 standard part number prefix, plus a motor armature winding dash number. EXAMPLE: 415A154-2 is a 6.30:1 IM-13 gear train with a "-2" armature winding, 12 volts, 5,200 rpm, 1.50 oz. in. torque, etc.

\*\* NOTE: 100 oz. in. is the maximum strength of this gearmotor series using standard sintered steel gears; 160 oz. in. is the maximum strength of this gearmotor series using wide-faced sintered gears. Damage may result if this torque is exceeded.

### Typical Motor Performance

Dash 2 and 3 armature windings



### 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)
-2	12	5,200	.230	1.50	.80	2.9	7.3
-3	24	5,200	.140	1.50	.40	5.6	30.0