

# NB-15 WITH 1 1/4" GEAR TRAIN

Brushless DC Gearmotors



**torque rating:** Up to 1,250 oz. in. maximum continuous torque

**weight:** 12 to 18 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 nitrided 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 backlash is less than 3°

**gear inertia:**  $4.2 \times 10^{-6}$  oz. in. sec.<sup>2</sup> @ input max

**bearings:** .250" dia. shaft uses double-shielded, life-lubricated ball bearings for -55°C to +85°C operation. A .313" dia. shaft uses needle bearings. Special lubricants available for temperature extremes

**cables/leads:** 8 lead wires (MIL-W-16878/4) 18" minimum covered with shielding per QQ-B-575

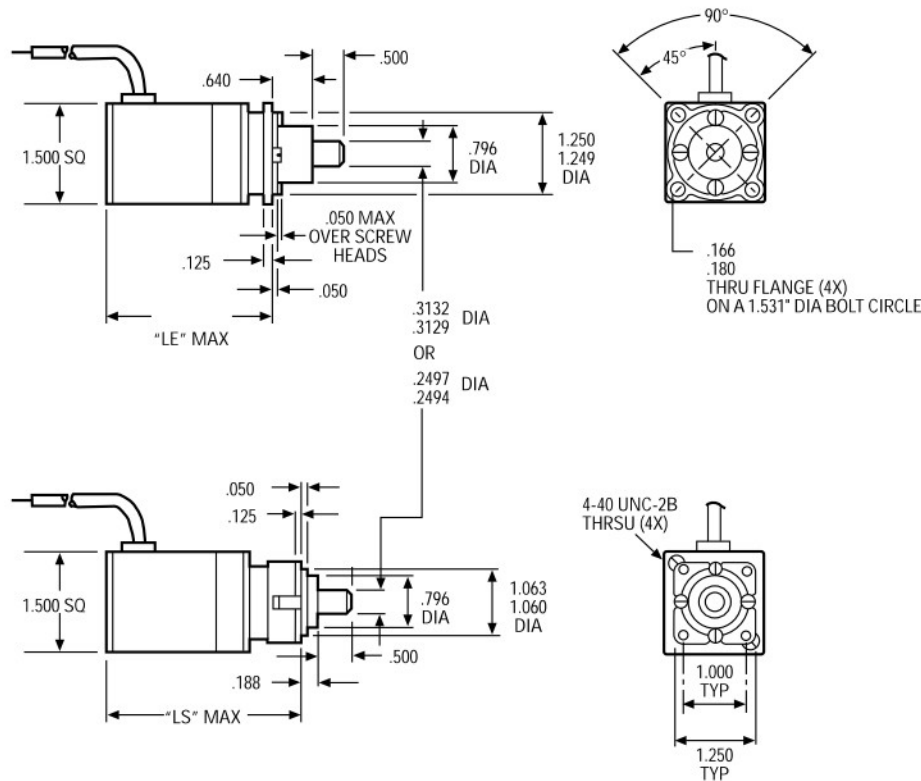
**mounting flange:** Die-cast aluminum

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

**options available:**

- RFI filters to meet MIL-I-6181, MIL-I-26600 or MIL-STD-461

## Dimensions



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# AN-1530

## Standard Part Numbers and Data

SPEED REDUCTION RATIO	MAXIMUM CONTINUOUS TORQUE (oz. in.)	TORQUE MULTIPLIER RATIO	STANDARD PART NUMBER PREFIX*				EARED FLANGE dim. LE (in.)	SQUARE FLANGE dim. LS (in.)
			EARED FLANGE		SQUARE FLANGE			
			.313" shaft	.250" shaft	.313" shaft	.250" shaft		
18.78:1 27.94:1	20 29	12.0 17.0	559A211 559A212	559A251 559A252	559A231 559A232	559A271 559A272	2.672	3.116
81.37:1 121.10:1 147.70:1	70 105 128	41.0 62.0 75.0	559A213 559A214 559A215	559A253 559A254 559A255	559A233 559A234 559A235	559A273 559A274 559A275	2.810	3.251
352.60:1 524.60:1 639.90:1 780.60:1	247 366 445 544	145.0 215.0 262.0 320.0	559A216 559A217 559A218 559A219	559A256 559A257 559A258 559A259	559A236 559A237 559A238 559A239	559A276 559A277 559A278 559A279	3.080	3.520
1,528.00:1 2,273.00:1 3,382.00:1 4,126.00:1	850 1,250 1,250 1,250	500.0 740.0 1,100 1,350	559A220 559A221 559A222 559A223	559A260 559A261 559A262 559A263	559A240 559A241 559A242 559A243	559A280 559A281 559A282 559A283	3.450	3.890
6,621.00:1 9,851.00:1 12,016.00:1 17,879.00:1 21,808.00:1	1,250 1,250 1,250 1,250 1,250	1,730 2,580 3,150 4,700 5,700	559A224 559A225 559A226 559A227 559A228	559A264 559A265 559A266 559A267 559A268	559A244 559A245 559A246 559A247 559A248	559A284 559A285 559A286 559A287 559A288	3.580	4.025

\*\* .250" dia. shaft units limited to 600 oz. in. maximum continuous duty torque. Use .313" dia. shaft if torque requirements exceed this value

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; Momentary Stall Torque = 5 x Max Cont. Torque (2,000 oz. in. max)

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

### \*When You Order

Each of the basic motor 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 winding dash number. EXAMPLE: 559A102-1 is an 18.78:1 NB gearmotor with a "-1" winding, 27 volts, 14,000 rpm, 7.00 oz. in. torque, etc.

### Winding Characteristics

VOLTAGE (VDC)	SPEED no load (rpm)	TORQUE		CURRENT			CONSTANTS		MOTOR WINDING DASH NUMBERS*
		max rated (oz. in.)	theoretical stall (oz. in.)	max no load (amps)	max rated load (amps)	theoretical stall (amps)	K <sub>t</sub> (oz. in./amp)	R (ohms)	
27	12,500-15,500	8.5	60.0	.35	4.40	5.0	2.75	1.23	-1
27	9,000-11,000	8.5	48.0	.30	3.40	5.0	3.76	2.13	-2

Note: Alternative windings (voltage, speed) available.

### Motor Characteristics

See Bulletin AN-1500

### Lead Wire Designation

See Bulletin AN-1500

### Commutation and Connection Diagrams

See Bulletin AN-1500

### Motor Coil Connections

See Bulletin AN-1500

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