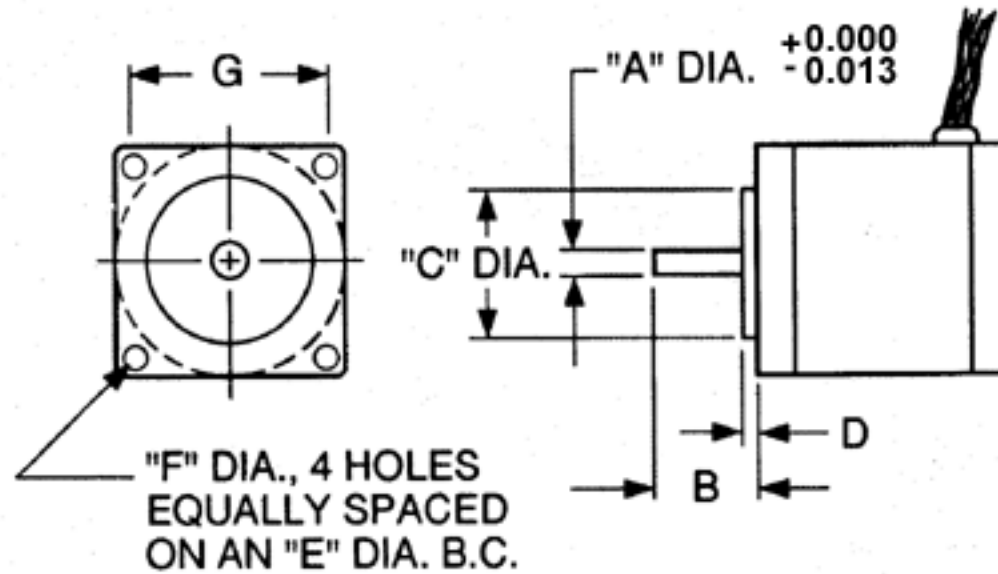


**NEMA** size gearheads are designed to mate with the motors that conform to the dimensions established by the **NATIONAL ELECTRICAL MANUFACTURING ASSOCIATION (NEMA)** for stepping motors. These dimensions are given in the table below. For non-NEMA size stepping motors, brushless DC, brush and servo motors, special mounting interfaces may be obtained at nominal charges. Please consult our application engineering department.



Item	Dimension	NEMA Motor Mounting Dimensions				
		Size 17*	Size 23	Size 34	Size 42	Size 56*
A	Motor Shaft Diameter	5.000	6.350	9.525	15.875	28.575
B	Δ Motor Shaft Length	24.00	20.57	31.75	34.93	60.33
C	Pilot Diameter	22.00	38.10	73.03	55.52	114.3
D	Δ Pilot Length	2.03	2.36	2.36	2.36	2.39
E	Mounting Bolt Circle	43.815	66.675	98.425	125.73	177.800
F	Bolt Hole Size	4-40 UNC	4.95	5.54	7.14	10.31
G	Bolt Hole Distance	30.99	47.14	69.60	88.90	125.73

Δ Dimensions can be less than indicated.

\* These sizes not included in NEMA standards

## USEFUL FORMULAS

$$\text{The maximum output HP of gearhead} = \frac{(\text{Maximum continuous torque}) \times (\text{Maximum rated output rpm})}{63025}$$

$$\text{The maximum allowable output HP of the motor} = \frac{\text{The maximum output HP of gearhead}}{0.90 \text{ (single stage) or } 0.85 \text{ (double stage)}}$$

$$\text{Effective inertia} = \frac{\text{load inertia}}{(\text{gear ratio})^2} + \text{gearhead inertia} + \text{pinion inertia}$$

**For very fast response,** the effective inertia should be one to three times larger than the motor inertia (including the pinion).

**For acceptably fast response,** the effective inertia should be less than ten times larger than the motor inertia (including the pinion).