



# LINEAR ACTUATOR

This linear actuator performs a trim function in the Tail Rotor Authority Control System of the Bell 206 helicopter. A stepper motor drives a power gearhead, which rotates a leadscrew to produce a linear output motion. From the leadscrew, an instrument gearhead provides further reduction to a Rotary Variable Differential Transformer (RVDT) for position feedback. The stepper motor's incremental motion simplifies the customer's control system. The power gearhead is composed of three stages of planetary gearing, and one stage of spur gearing. The leadscrew is fully enclosed and sealed. The moving ram is keyed against rotation.

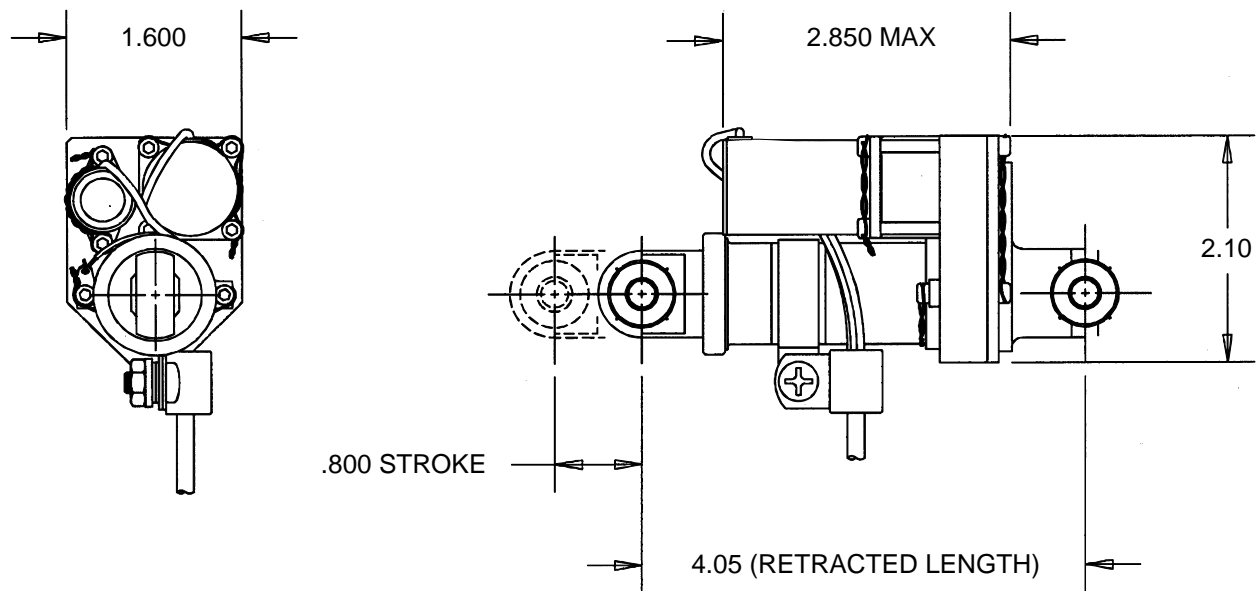
TYPICAL RVDT ELECTRICAL DATA (REF)				
CHARACTERISTIC		UNITS	SYMBOL	VALUE
RATED VOLTAGE		VOLTS RMS	E <sub>in</sub>	7.07
RATED FREQUENCY		HERTZ	f	1667
PRIMARY CURRENT (MAX)		MILLIAMPS	I	40
PRIMARY IMPEDANCE (REF) (SECONDARY OPEN CIRCUIT)		OHMS	Z <sub>PO</sub>	280 ∠49°
SECONDARY IMPEDANCE (MAX) (PRIMARY OPEN CIRCUIT)		OHMS	Z <sub>SO</sub>	500
RANGE		DEGREES	-	±75
OUTPUT VOLTAGE @ FULL SCALE E <sub>1</sub> OR E <sub>2</sub>		VOLTS RMS	E <sub>OUT</sub>	3.76
PHASE SHIFT INPUT		DEGREES	Φ	-
OUTPUT (OPEN CIRCUIT) (REF)				
SCALE FACTOR		VOLTS RMS/DEG	-	0.0205
ACCURACY (% FULL SCALE)		PERCENT	-	5.0
SECONDARY DC RESISTANCE (REF)		OHMS	S <sub>DC</sub>	62
PRIMARY DC RESISTANCE (REF)		OHMS	R <sub>DC</sub>	48
INSULATION RESISTANCE	BETWEEN WINDINGS AND CASE	MEGOHMS	-	100
	BETWEEN ISOLATED WINDINGS			100
HIGH POTENTIAL	BETWEEN WINDINGS AND CASE	VOLTS RMS	-	500
	BETWEEN ISOLATED WINDINGS			500

TYPICAL STEPPER MOTOR DATA (REF)				
CHARACTERISTIC		UNITS	SYMBOL	VALUE
RATED VOLTAGE		VOLTS DC	-	28
STALL CURRENT PER PHASE (MAX)		AMPS	I	1.15
RUNNING TORQUE @ 300 PPS (MIN)		OZ-IN	T <sub>r</sub>	0.40
DC RESISTANCE PER PHASE		OHMS	R	27.0 ±10%
DETENT TORQUE (MIN)		OZ-IN	T <sub>d</sub>	0.2
INDUCTANCE (NOM)		MILLIHENRYS	-	1.8

TYPICAL ACTUATOR DATA				
CHARACTERISTIC		UNITS	SYMBOL	VALUE
WEIGHT (MAX)		POUNDS	W <sub>T</sub>	0.937
RATIO: GEARTRAIN (REF)		-	N	577:1
RATIO: ACME SCREW TO RVDT (REF)		-	n <sub>a</sub>	30:1
LOAD CAPACITY @ 28 V dc (MIN)		POUNDS	F	125.0
SPEED (MIN)		IN/MIN	V	0.267
STROKE (MIN)		INCHES	-	0.8
TRAVEL OF NUT PER STEP OF STEPPER MOTOR (REF)		INCHES	-	1.8062 X 10 <sup>-5</sup>
OPERATING TEMPERATURE RANGE		DEGREES C	t	-55 to 125
ACME SCREW AND NUT	LEAD	INCHES	-	0.083
	NOMINAL OD	INCHES	-	0.375
	DIRECTION	-	-	RH



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For additional information on this product or any other product listed above please contact Kearfott's Marketing Department at:

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