

W.C. BRANHAM INC.

SOLUTIONS IN MOTION

398 TROY STREET
RIVER FALLS, WI 54022

TOLL FREE 1.800.428.1974

TELE 1.715.426.2000

FAX 1.715.426.1400

WWW.WCBRANHAM.COM
WCBASSIST@WCBRANHAM.COM



ELECTEC™ LINEAR ACTUATOR

ELECTEC 1870 Rodless Cylinder

THE MAJOR COMPONENTS OF THE ELECTEC 1870 RODLESS CYLINDER

THE EXTRUSION HOUSING

The special design of ELECTEC's extrusion supports up to 400 lb load movements. The extrusion housing is of anodized aluminum coated by the Duranodic 300 process providing hardness, smoothness as well as environmental protection.

THE CARRIER & BEARING FAMILY

The carrier platform has four threaded inserts for ease of mounting. Four (4) Nylatron NSB bearings (2.2 inches long x .5 O.D. each) are mounted underneath the carrier and slide within the extrusion guide groove. This bearing material contains a nylon formulation that uses solid lubricant additives which impart self-lubrication, high Pressure Velocity (PV), and superior wear resistance characteristics. For the ELECTEC, superior wear resistance is delivered without either start-up or running lubrication.

Nylatron NSB bearings are non-abrasive, corrosion resistant, and have low coefficient of friction. The Nylatron bearings are positioned to support the load at eight (8) different points.

DRIVE BELT FAMILY

The drive belt is Gates Rubber #LL075H, 1/2 inch pitch used for strength, light weight and offers no inherent stretch characteristics. This timing belt is specially designed to eliminate slip and provide accurate positioning. The rated breaking strength of the Gates belt is 1900 lb.

The drive belt rides in a groove in the extrusion housing. This groove is covered and sealed with a 90 durometer polyurethane guard band. The guard band moves in tandem with the drive belt and carrier.

ELECTEC HEAD SUB ASSEMBLIES

The ELECTEC has a "drive" head sub assembly and a "driven" head sub assembly. The faces of each head are machined for gearbox style FHMQ #1154. The optional gearbox flange utilizes a NEMA 56-C face for the easy integration of standard drive components.

Each head assembly uses a 4.79 inch dia sheaves with 30 cogs. At all times, the drive belt has 15 teeth engaged on each timing sheave for efficient load distribution.

The "driven" head includes an easily accessible tensioning device for the drive belt.

How To Order

ELECTEC 1870 ****...* X Stroke (in.)

Option Designations

- **B = BASE ELECTEC**
- **G(10) = 10:1 WORM GEARBOX**
- **G(15) = 15:1 WORM GEARBOX**
- **M = MOTOR, 1HP 56C 90VDC 2500 RPM**
- **R(2) = N.O. REED SWITCHES**
- **GBS = GEARBOX SHAFT**
- **DC = DUAL CARRIERS - SPECIFY CENTER DISTANCE**
- **IK = BELT IDLER KIT**

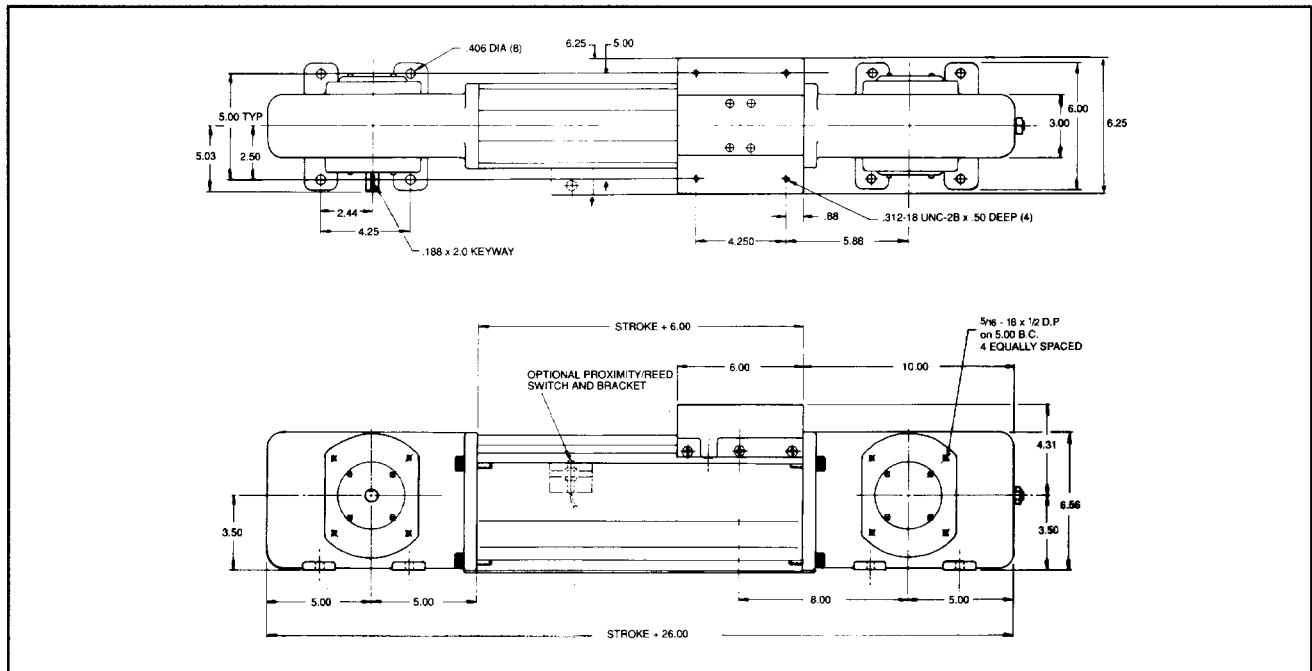
Notes: 1. When ordering it is required to add four (4) inches to stroke length for over travel protection.
 2. Other styles & sizes of gear box and motor are available. Consult factory.
 3. For reed switch information, see page 4.

Ideal for paint sprayer, flying knife, material handling & food processing applications.

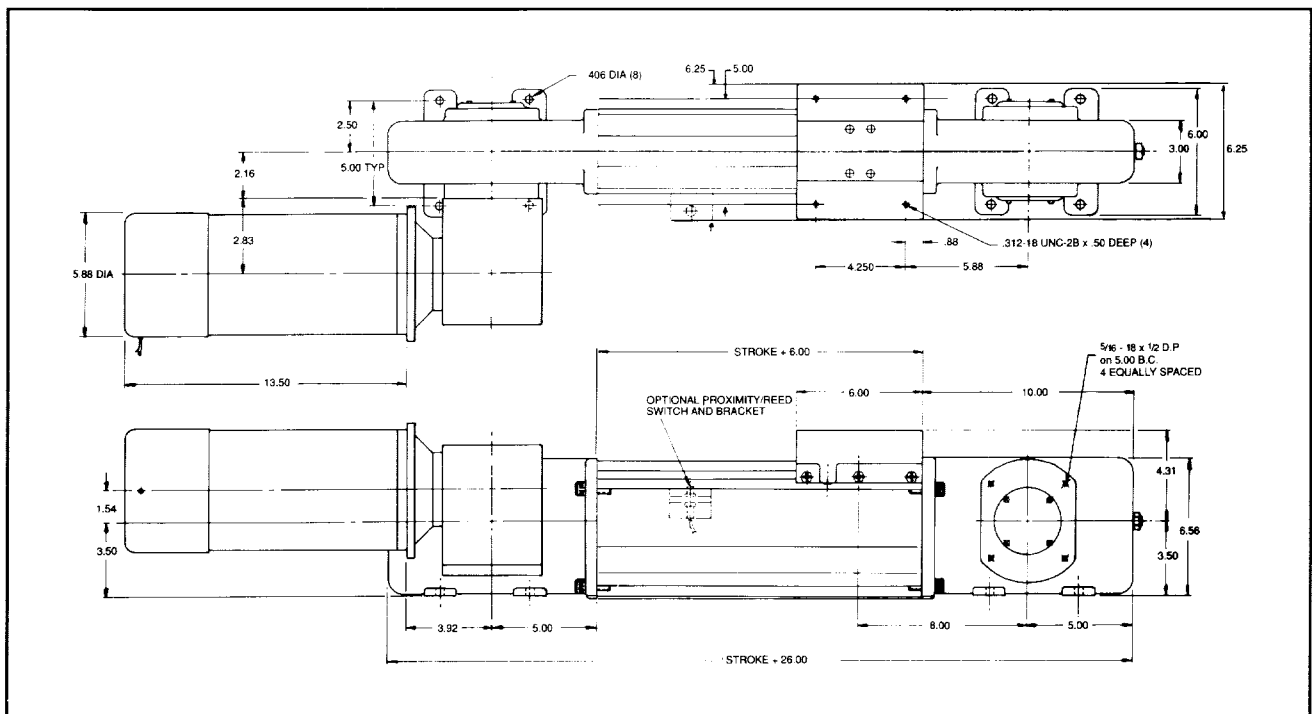
ELECTEC Rodless Cylinder

Technical Data

wcb



Basic ELECTEC Cylinder
Faces of Heads machined for Gearbox Style FHMQ #1154



ELECTEC with Motor/Encoder/Gearbox

Call Today! 1-800-428-1974 for Application & Delivery Assistance.

ELECTEC Rodless Cylinder Overview & Technical Data

The ELECTEC rodless cylinder was designed to be a rugged, all-purpose general industrial, self contained and self supporting electric rodless cylinder. ELECTEC is belt driven and provides guided linear motion along its length.

ELECTEC is the ideal actuator for light, moderate, heavy loads at high speeds. The extrusion housing and dust band protect the drive belt from environmental contamination. Thus, making the actuator virtually maintenance free.

The carriage/bearing/extrusion design incorporated in the ELECTEC actuator has been in-house cycle tested with over 90 million linear feet and in field operation since 1987.

The ELECTEC actuator is available in many modular configurations with ease of user integration our key priority:

1) The base version or as we call it, "stub-shaft", is ideal for those users who need the flexibility to custom design their own actuator. We can provide the actuator and you may tailor your favorite motion control and drive components to run your application.

(2) For those users who need a complete drive component package, we offer the ELECTEC with a 15:1 worm gear reducer and a 90 VDC 2500 rpm 1 hp electric motor modified with an enclosed 2500 ppr dual channel marker pulse encoder. However, should your drive component needs require something different, say perhaps, a brushless DC servo motor and planetary gear box, we can offer and/or recommend the most cost effective solution for you.

(3) If positioning is not a critical need, the ELECTEC can be fitted with a 1 hp air motor.

Notice

When designing, two (2) reed switches or some other type of overtravel protection are required on all ELECTECs since bottoming the carrier at either end will cause damage.

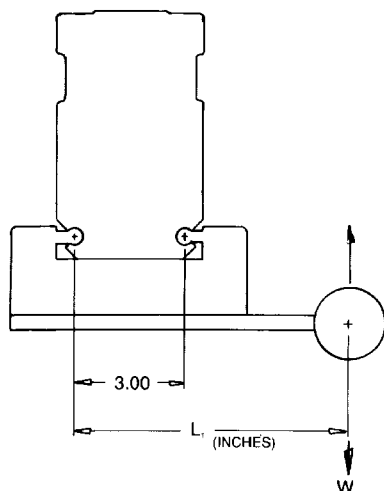
Add 4 inches to the stroke length to allow for 2 inches of overtravel at each end.

To size your ELECTEC, turn to page 11 and ask yourself the following questions. After that, call us so we can assist you with your motion profile as well as properly size the right ELECTEC for you.

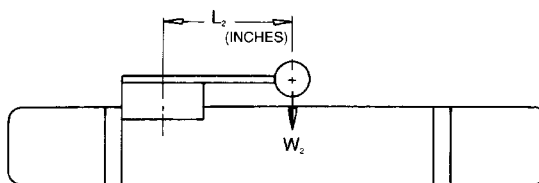
The pictures to the right depict maximum radial and longitudinal moments with one carrier.

Consult factory if you have questions concerning intermediate supports.

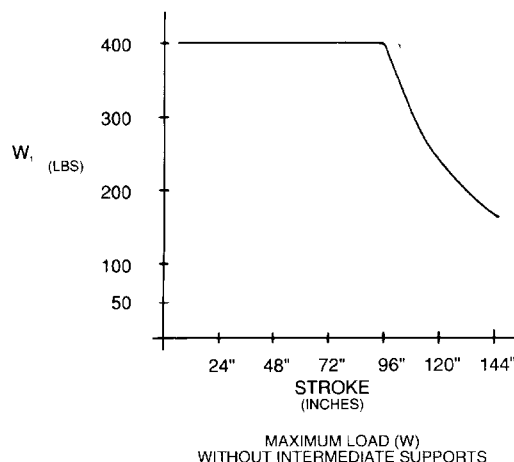
MAXIMUM MOMENTS with single carrier



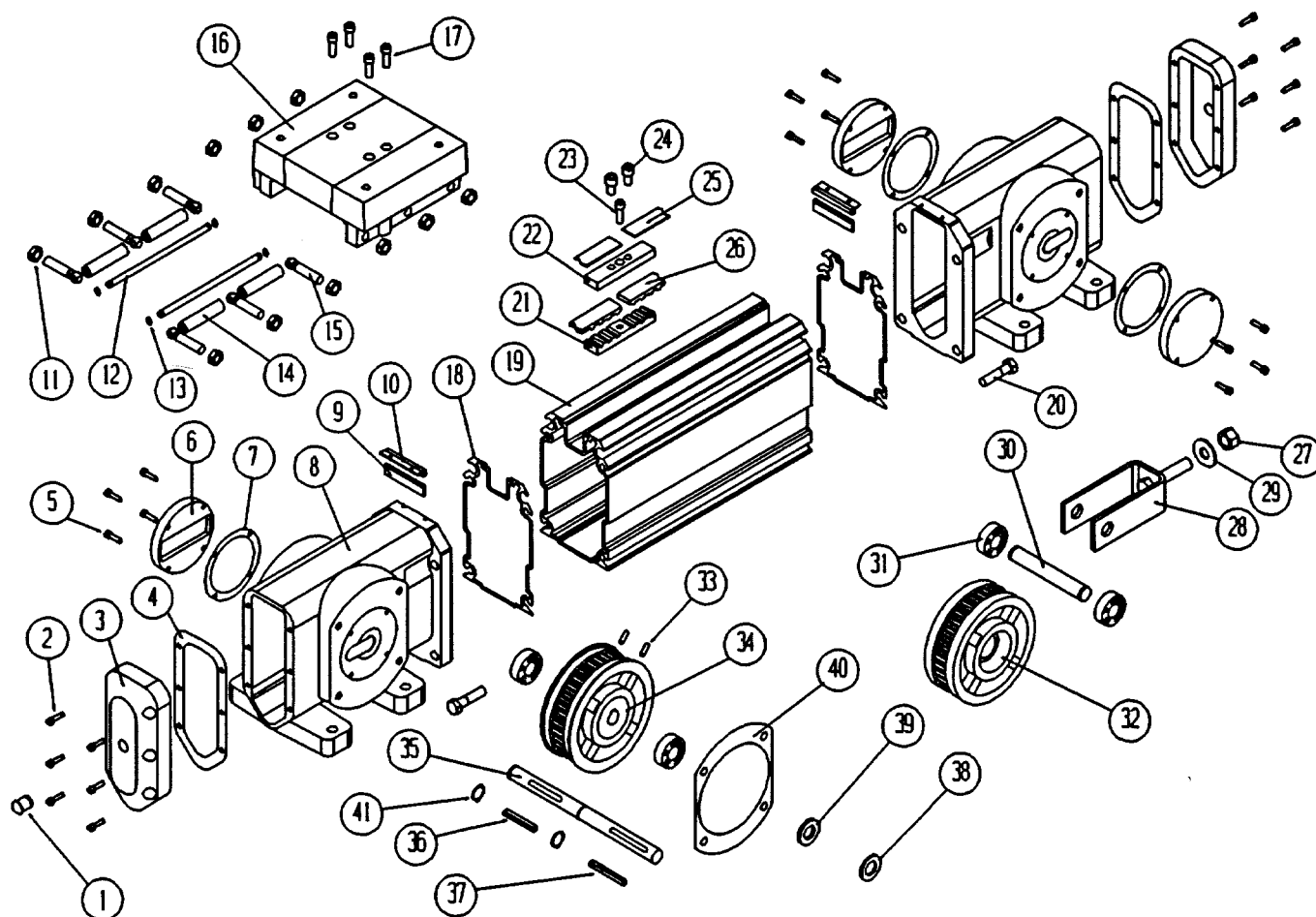
$$(W) (L_1) = 600$$



$$(W_2) (L_2) = 875$$



Ideal for paint sprayer, flying knife, material handling & food processing applications.



ITEM	PART NO.	DESC.	QTY	ITEM	PART NO.	DESC.	QTY
01	1870-1022	Plug	1	22	1870-1000	Clamp	1
02	1100-1024	SHCS	12	23	1880-1033	SHCS	1
03	1874-4008	Access Cover	2	24	1880-1067	SHCS	2
04	1870-1053	Gasket	2	25	1883-9001	Dust Band	1
05	1870-1054	SHCS	12	26	1870-9003	Belt Assy	1
06	1874-4003	Cover	3	27	1880-1050	Nut	1
07	1870-1004	Gasket	4	28	1870-1007	Clevis	1
08	1874-4001	End Cap	2	29	1300-1045	Washer	1
09	1870-1031	Brush	2	30	1870-1005	Shaft, Tens.	1
10	1870-1030	Brush Holder	2	31	1150-1019	Bearing	4
11	1150-1060	Nut, Jam	12	32	1870-9001	Sheave Assy	1
12	1880-1001	Guide, Shaft	2	33	1870-1032	Set Screw	2
13	1880-1040	Ring, Ret	4	34	1870-9000	Sheave Assy	1
14	1880-4-1000	Bearing, NSB	4	35	1870-1006	Shaft, Gearbox	1
15	1880-1057	Rod, End	6	35a	1870-1020	Shaft, "Stub"	1
16	1884-4011	Carrier	1	36	1870-1033	Key	1
17	1150-1040	SHCS	4	37	1870-1034	Key	1
18	1880-1003	Gasket	2	38	1150-1016	Washer	1
19	1883-9000	Extrusion, Hsg	1	39	1150-4-1063	Washer	1
20	1870-1035	HHCS	8	40	1870-1037	Gasket	1
21	1874-4000	Connector	1	41	1150-1031	Ring, Ret	4

Call Today! 1-800-428-1974 for Application & Delivery Assistance.

ELECTEC is a rugged, all purpose industrial rodless cylinder!

wcb

THE ELECTEC SELECTION PROCESS

As stated earlier, the flexibility of the ELECTEC rodless cylinder allows you to easily integrate the correct components to solve your linear motion needs.

Both *system performance* and *cost* play important roles when configuring the right ELECTEC solution so it is essential for you to gather as much information as possible about your application.

The common rule of thumb when sizing the ELECTEC is to determine the amount of force (lb) and torque required to move the load.

Please answer all of these helpful questions:

1. How heavy is the load?
2. Is the load guided or non-guided? If guided, what is the sliding coefficient of friction?
3. How is the ELECTEC going to be mounted?
 - a. Horizontal, carrier up.
 - b. Horizontal, carrier down.
 - c. Vertical
 - d. Incline, specify angle.
4. What is the stroke length?
5. How many positions?
6. What is the distance between each position?
7. What is desired operating speed (in/sec)?
8. What is desired operating speed between each position (in/sec)?
9. Any dwell times at positions? How long (sec)?
10. At which position(s) does dwell occur?
11. Is the load side-loaded? If so, what is the center line distance from the load to the center of the ELECTEC carrier?



After obtaining the information above, contact W.C. Branham's Customer Service Group toll free 800-428-1974 or by FAX 612-425-1669 and let us use our computer sizing software to size the correct ELECTEC solution for you.

MAXIMUMS ALLOWED

Horizontal Load (Carrier up): 400 lb.
Horizontal Load (Carrier down): 200 lb.
Vert/Incline (Carrier up/down): 120 lb.
Thrust Load: 228 lb. net
Torsional Load: 50 ft.lb.
Velocity (see note a below): 51 in/sec.
Stroke Length (see note b below) 25 ft.
Position Accuracy
(see note c below): +/- .005

Note a: velocity of 51 in/sec achieved with 15:1 gearbox and 1 hp 90 VDC electric motor. Faster velocity can be achieved by lowering gearbox ratio and/or integrating faster motor. Consult factory.

Note b: longer strokes lengths available. Consult factory.

Note c: Position accuracy and repeatability can be maintained by correcting the inherent backlash found in the gearbox through software. Consult factory.

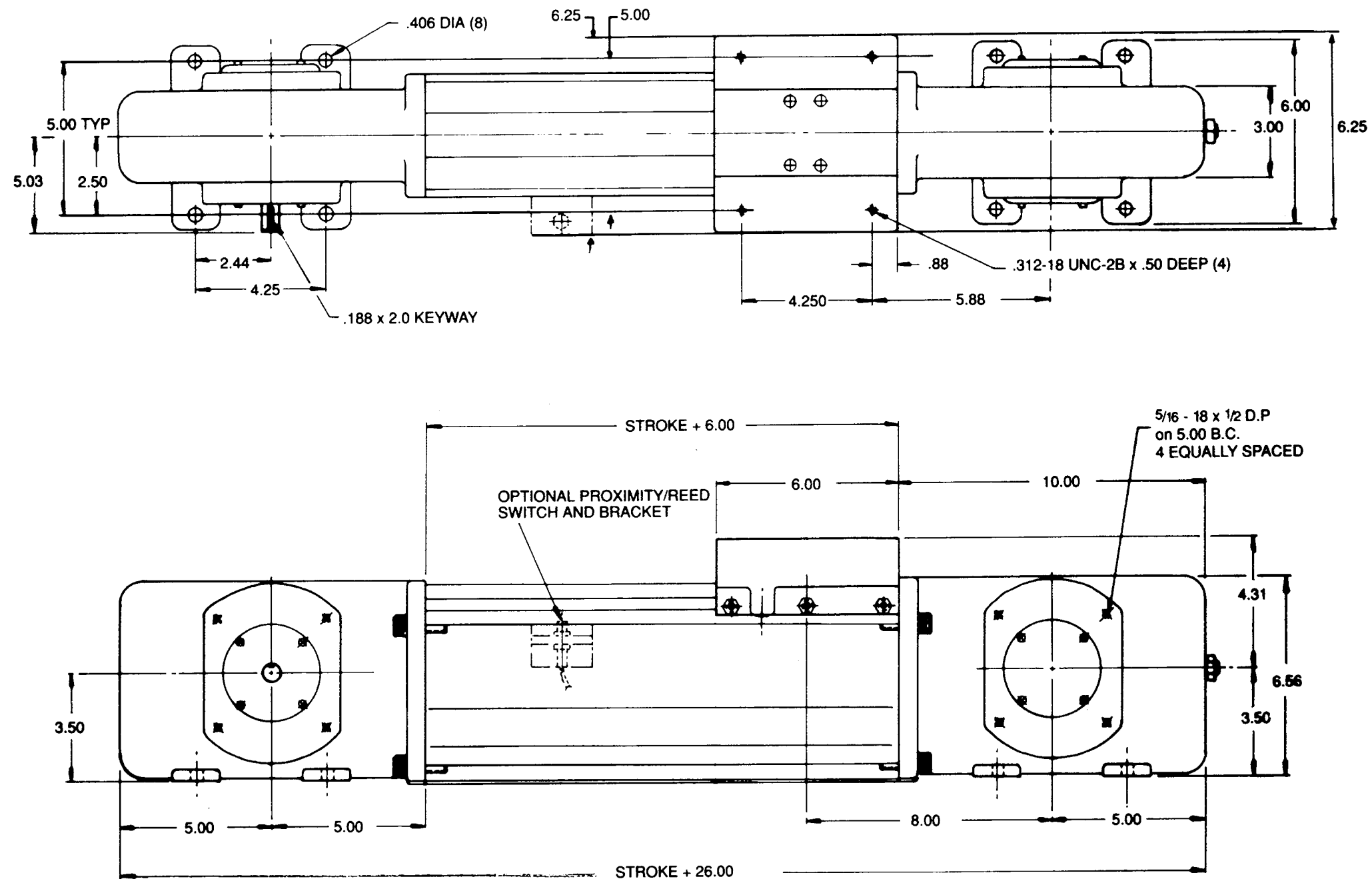
INCREMENTAL ENCODER CHARACTERISTICS

- * Dual Channel--Channel B leads Channel A for clockwise rotation when viewed from shaft end.
- * Quadrature
- * 2,500 pulses per revolution (ppr)
- * Marker pulse--once per revolution
- * Line Driver with complimentary output
- * 5 Volts D.C.
- * 18 inch shielded leads

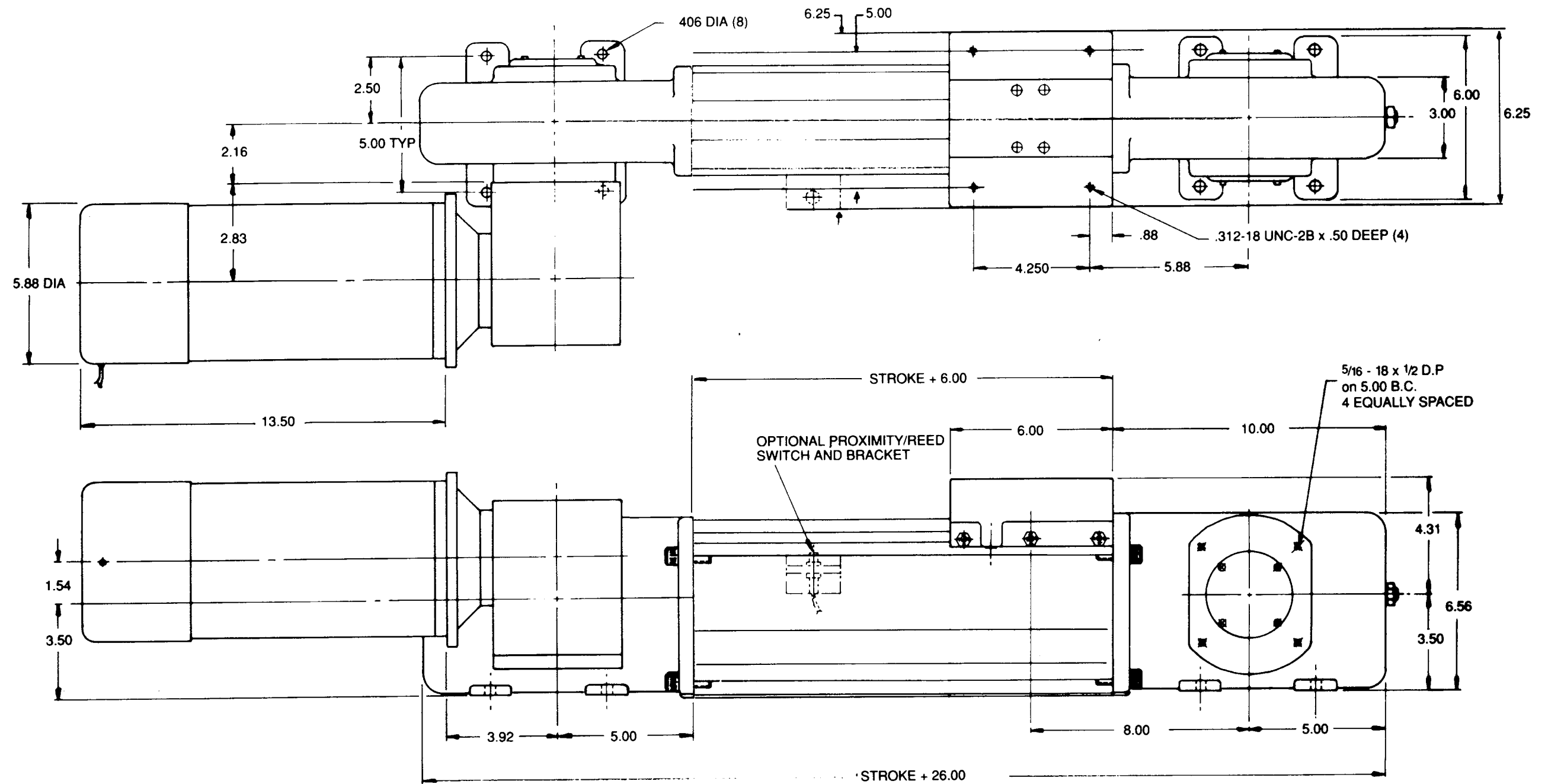
TERMINATION

Function	Wire Color
Common	Black
+5VDC	White
A+	Brown
B+	Red
C+	Orange
A-	Yellow
B-	Green
C-	Blue

Call Today! 1-800-428-1974 for Application & Delivery Assistance.



Basic ELECTEC Cylinder
 Faces of Heads machined for Gearbox Style FHMQ #1154



ELECTEC with Motor/Encoder/Gearbox