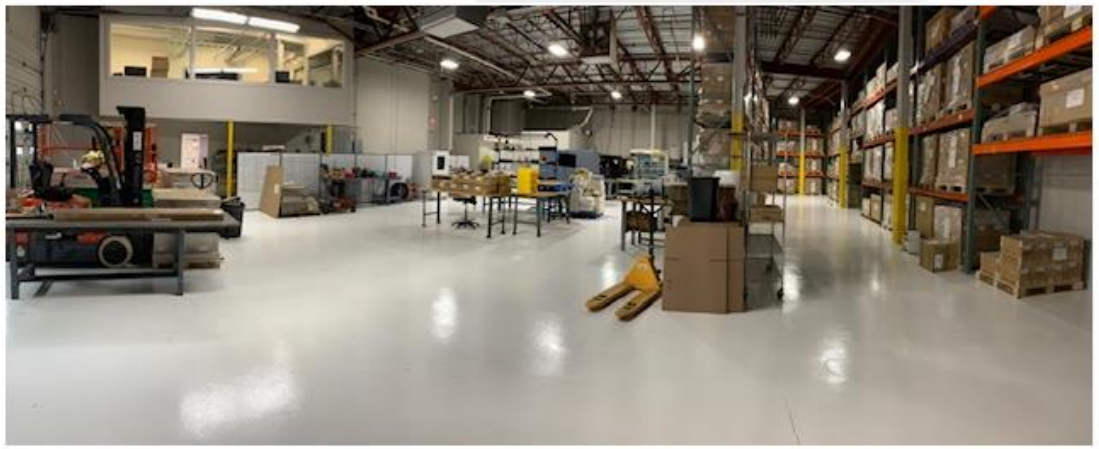
Elinco Corporate Office and Factories

SUPERIOR QUALITY SINCE 1926

Located at the Fairfield Metro a 1.1 mil sq./ft. commercial development and regional commuter rail station on the New York City metro rail line (1 hour from Manhattan).

Elinco - Corp. facility, exterior view.



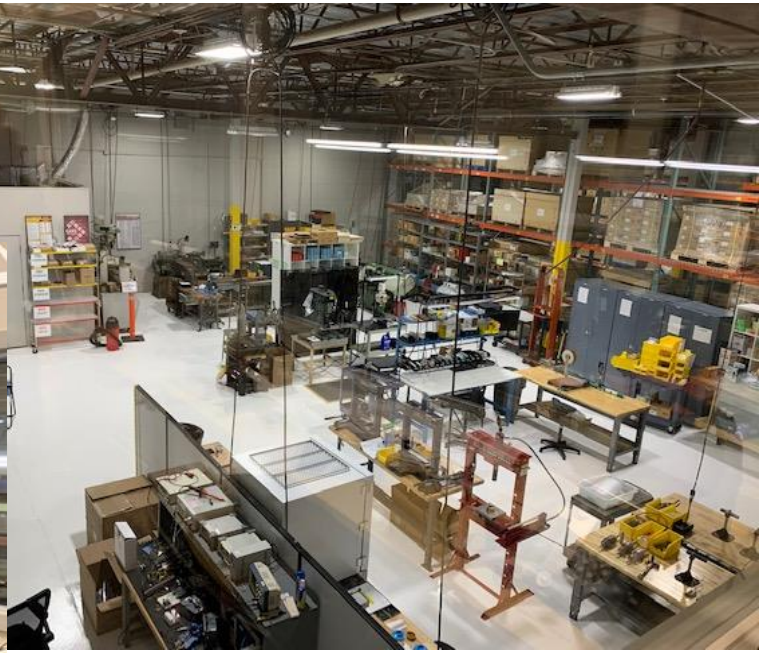
Elinco Factory Fairfield, CT.

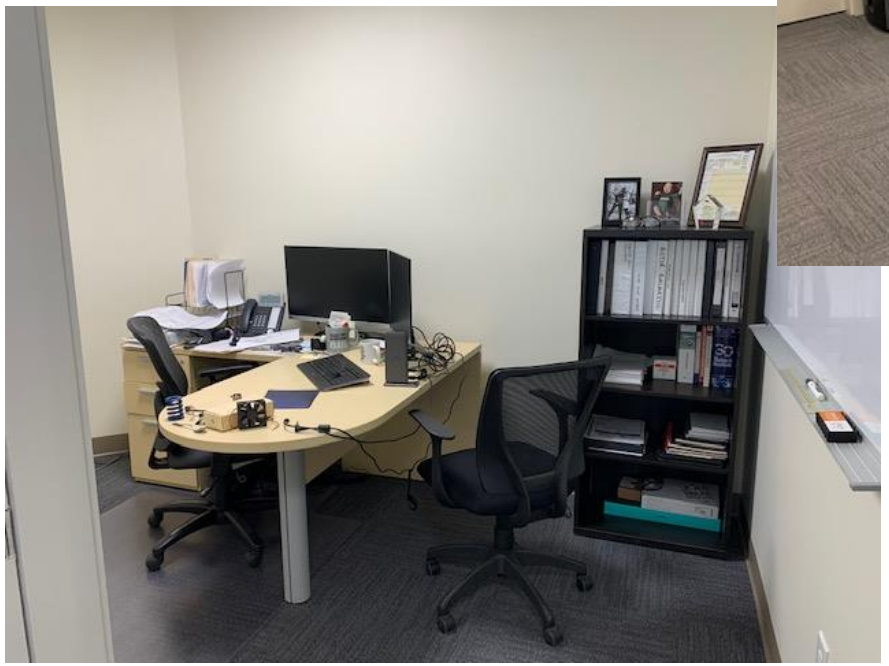
Elinco factory floor in Asia.

Elinco JPC Overview

- Connecticut Motor and Air Moving Device Manufacture. State of the Art High Tech Factory.
- Acquired GE SELSYN motor line, Inertial motor product line, Philips Airpax motor line. Since spun off.
- Licensed various patents to Kollmorgen and Electrocraft.
- 50-year partnership with major Japanese motor manufacturer.
- Expanding Slotless and other patents.
- New Product Introduction and design and manufacturing capabilities US based.

Elinco US Factory





Engineering Support and Interface

An engineering department you can reach.

- Technical issue, question, concern, you can talk directly to an engineer at Elinco.

A partner and a team member for your engineering team.

- Can directly interface with your design/product development team
- Reduce back and forth and project cycle time
- Provide direct and timely feedback
- Offering up project ideas that we can do on the motor end to:
  - Save cost
  - Increase Quality
  - Reduce build time.
- Creates an open and direct dialog between engineers to solve design challenges

New Product Development

Tools

- State of the art CAD software for accurate model design
  - Tolerance analysis to ensure proper fit into customer application and a producible product.
- The leading Magnetic FEA software
  - Superior accuracy in predictions
  - Ability to model individual physical phenomena
  - Automated Multivariable Design Optimization
  - Export of Matlab Simulink models for integrated system development for the customer
- PDM system
  - For accurate control of the design and customer requested changes and tracking

New Product Development
Experience

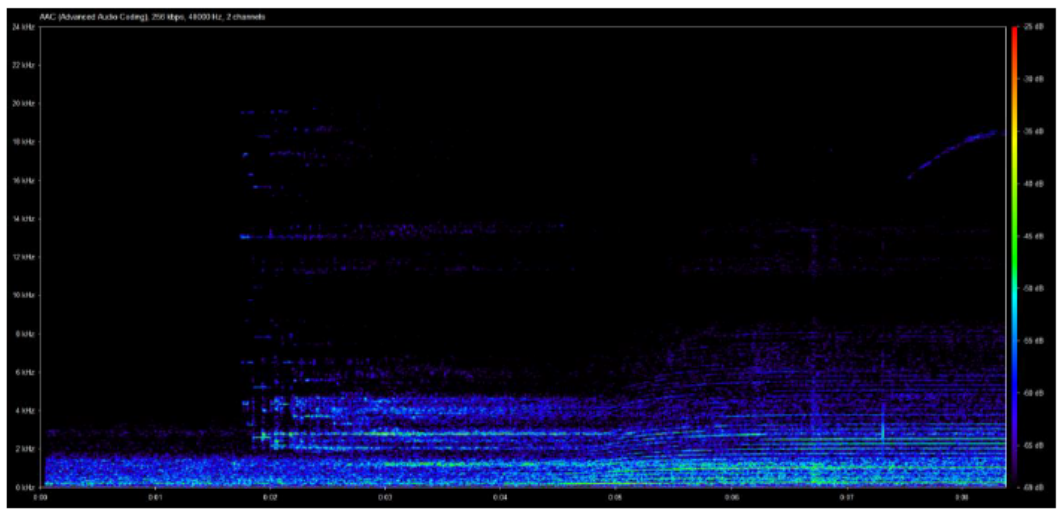
- Our engineering group is made up of engineer's with senior level experience and credentials, Masters Degreed engineering at all levels, and all with practical design work in meeting project goals

- Market experience within our design group.
  - Industrial, Office, Defense, Medical, Consumer, Air Handling.
  - This varied experience allows us to look at design solutions from one market and apply the concept to solve issues in another market. Yielding a competitive advantage to our customers.

- White paper designs. IE fully custom to meet the requirements of the customer.

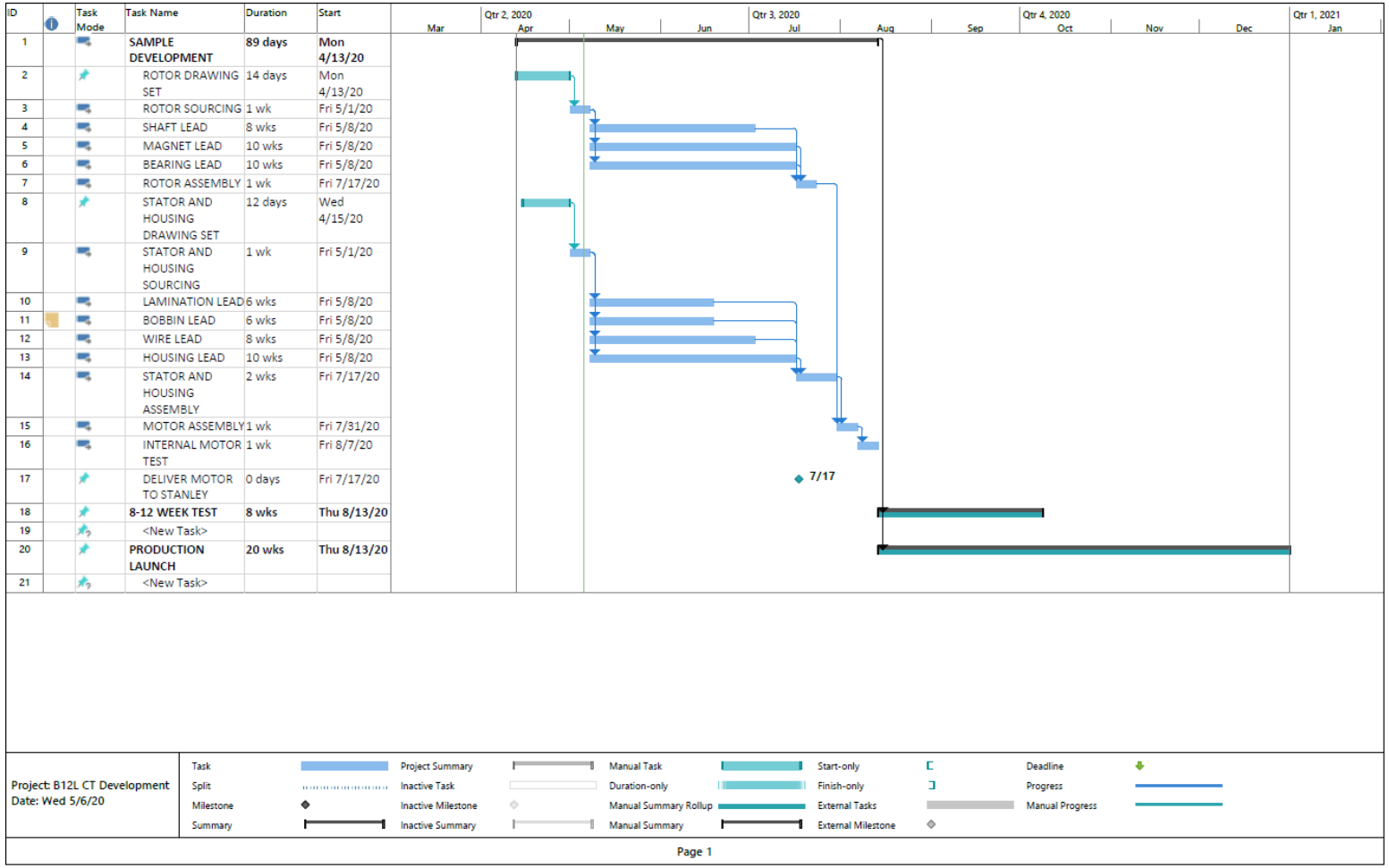
Product Advantages

- Smaller package by use of higher energy materials
- Magnet retention:
  - Embedded magnets for simple manufacturing, elimination of the need for a rotor speed, improved part to part rotor balance consistency
  - Surface mount magnet for the design that need that little bit extra
- Product can be sold as framed, frameless, or integrated into a custom housing of the customers design.
- Magnetic designs optimized for the criteria that make our customers successful.
  - Power density
  - Noise
  - Weight
  - Cost
  - Vibration
  - Efficiency



Project Execution

Meeting deadlines



ID	Task Mode	Task Name	Duration	Start
1		**SAMPLE DEVELOPMENT**	**89 days**	**Mon 4/13/20**
2		ROTOR DRAWING SET	14 days	Mon 4/13/20
3		ROTOR SOURCING	1 wk	Fri 5/1/20
4		SHAFT LEAD	8 wks	Fri 5/8/20
5		MAGNET LEAD	10 wks	Fri 5/8/20
6		BEARING LEAD	10 wks	Fri 5/8/20
7		ROTOR ASSEMBLY	1 wk	Fri 7/17/20
8		STATOR AND HOUSING DRAWING SET	12 days	Wed 4/15/20
9		STATOR AND HOUSING SOURCING	1 wk	Fri 5/1/20
10		LAMINATION LEAD	6 wks	Fri 5/8/20
11		BOBBIN LEAD	6 wks	Fri 5/8/20
12		WIRE LEAD	8 wks	Fri 5/8/20
13		HOUSING LEAD	10 wks	Fri 5/8/20
14		STATOR AND HOUSING ASSEMBLY	2 wks	Fri 7/17/20
15		MOTOR ASSEMBLY	1 wk	Fri 7/31/20
16		INTERNAL MOTOR TEST	1 wk	Fri 8/7/20
17		DELIVER MOTOR TO STANLEY	0 days	Fri 7/17/20
18		**8-12 WEEK TEST**	**8 wks**	**Thu 8/13/20**
19		<New Task>		
20		**PRODUCTION LAUNCH**	**20 wks**	**Thu 8/13/20**
21		<New Task>		

Elinco Product Focus

Designing High Performance/ High Quality Slotted and Slotless Brushless Motors that meet our customers needs and expectations.

Building the motors in a Consistent, Quality Conscious and Cost-effective manner

Industrial/Office

Medical

Military

Production

- ISO certified production facility in Fairfield CT and China.
- Localized production for US customer base
- Worldwide sourcing and tariff avoidance
- Cellular manufacturing setup
  - Allows for efficient build and a high degree of flexibility to customize the manufacturing process to meet the customer build requirements
- Semi-automation
  - Automation in labor intensive task to reduce customer labor costs.
- Skilled labor force
  - Maximize the advantage of our automation

State of the art
CMM Technology

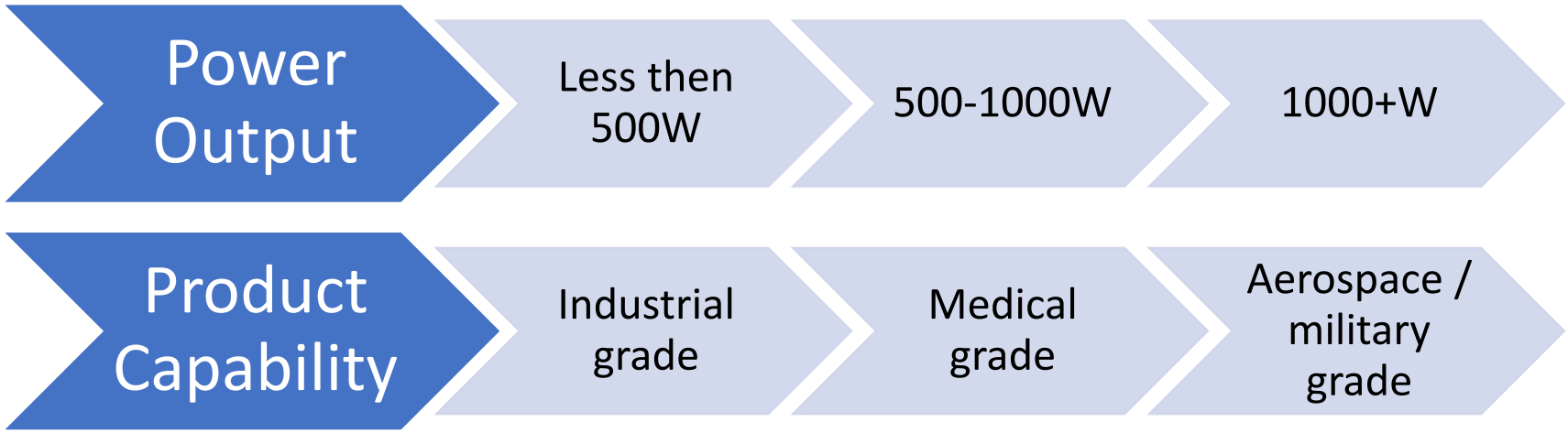
Typical size ranges speeds and power out

- Designs can be made for any size and power output to meet customer requirements.

Motor OD	16mm	28mm	80mm
Operating voltages	12-48VDC	12-48VDC	48-150VDC
Operating speeds	10-80kRPM	5-50kRPM	5-20kRPM
Power out	50-500W	200-1000W	500-1500W

- Other Diameters can be considered for OEM designs utilizing our Technology

Small low power -> med power -> high power



BRUSHLESS DC MOTORS

FYD Series <2500 rpm

Low cogging
High efficiency
High power density
Packaged or OnBoard Driver

Motors have a low profile.
Onboard or separate driver options.

FHD Series <2500 rpm

Motors are designed small and high performance. We recently released a special magnetic circuit design motor. This motor design is smaller and has a higher performance than conventional FED, FYD series motors. Compact design driver - "Palm Mini R"
Type is the smallest. (20 W, 40 W only) Wide range (200 r/min-2500 r/min 60 W:65 r/min-2500 r/min), stepless speed control. Very steady characteristics (Feed back control employed). Speed pulse output can be used for speed

SL Series Slotless

An Elinco slotless brushless DC (SBLDC) motor consists of a stator winding positioned inside a laminated staor ring (without conventional teeth) and a permanent magnet motor. This provides more peripheral space for the stator winding.
This also allows more magnet surface area and more air gap flux. Powerful rare earth magnets provide high torque to motor weight ratios. The absence of stator teeth enables more winding copper and power density which can develop more torque.

VH Series High Speed

Small size motors with high performance Speed range (2500 RPM to 10,000 RPM)
Customized end bells and stack lengths. Special windings. High efficiency winding. Elinco's VH series BLDC motors are an ideal choice for application that requires high reliability, high efficiency, and high power to volume ratio. They are capable of providing a large amount of torque over different speed ranges. The VH series motors are internally commutated motors designed to run from a direct current source.

STEPPER MOTORS

KF Series 2 Phase Square Nema 17, 23

New KF Series has an additional 5-10% more torque than competitor motors
A motor size down, achieving the torque of one size up. Expanding the rotor diameter to its maximum limit within a new "flattened" structure allows the 42 motor profile to be maintained.
Large Rotor, High Torque

KA Series 2 Phase Round Nema 17, 23

The best magnetic balance is employed in our round type stepping motor. Motor performance is greatly improved using the latest technology of three-dimensional magnetic field analysis and robust design.

KT Series 3 Phase Nema 15, 17, 23, 24, 34

Drive Circuit is simplified because the motor is driven with star winding connection.
Ultra-low vibration and low noise achieved with our micro-step driver

KH Series 2 Phase Square Nema 17, 23

Base original design forms the foundation of future designs. Improved vibration, noise level, and efficiency.

DRIVES AND CONTROLS

OEM Slotless Drives, 1600 Watt

48 to 80 VDC, 8 to 20 Amps PWM frequency up to 100KHz 2 x peak momentary power Sensored and sensorless vector control to 120 KRPM

OEM Slotless Drives, 400 Watt

48 to 80 VDC, 8 to 20 Amps PWM frequency up to 100KHz 2 x peak momentary power. Sensored and sensorless vector control to 120 KRPM

Packaged Drivers

Uni-polar or Bi-polar constant current driver. The micro-stepping feature may be selected from anyone of the following settings: 1/1 (full step), 1/2 (micro-step), and 1/4 (micro step)

Closed Loop Stepper Drivers

New 2 phase Control System allows Stepping motor to operate at High Speeds 0.72 can be achieved (same as 5 phase motors) and can be divided by 80 (or 0.009 deg)

PMDC MOTORS

DME Series

DNM Series

AC MOTORS

H Mark II Series

H Mark II Series with Speed Control

PLANETARY GEARBOXES

CGI

VPX Series: Victory

SI Series: Spur

ENCODERS

US Digital Encoders

FANS AND BLOWERS

Tube Axial Fans

Specially molded 3-dimensional blades and venturies, high performance and long life motors, high reliability (L10 and MTBF). 40mm to 172mm square or round.

Silent Fans

Industry leader in high pressure airflow. Low noise with high energy savings for high impedance equipment. Metal housing heat sinks the high performance BLDC motor to improve efficency.

High Pressure fans

3-8 dB quiter than previous fans over the operating range from 50% and above. 30% improvement.

Blowers

Ideal for spot cooling and high impedance systems. Super Silent Blower. Optimized with C.F.D. Design System.
Very low noise is achieved by optimizing air flow between the intake and the outlet.

Impellers

Special shaped blades. Shaped to lead air from the impeller out smoothly. Many sizes and mountings.