

**MAXIMIZING TORQUE AT DESIRED SPEED**



**Lin Engineering's diversified customer base includes such industries as:**

- Automated Test Equipment
- Surveillance Systems
- Avionics
- Defense Contracting
- Labeling Machinery
- Medical Equipment
- Packaging
- Semiconductor Manufacturing
- Metering and Dispensing
- Engraving Machine
- Automatic Feeding Machine
- 3D Image Acquisition System
- Label and Die Feeder
- Wave Length Meter
- Bar Code Printing
- Antenna
- Fiber optics Switch
- Laser Measurement
- Press Printing
- Color/ Photo Imaging



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# WHY LIN?

Over the past decade, Lin Engineering has gained a tremendous amount of market share and earned a reputation as the "Leader in Step Motor Technology." Why are more and more engineers choosing Lin Engineering?

## UNBELIEVABLE SERVICE & LEADING EDGE TECHNOLOGY



### Customer Service at Its Best

Now there are even more ways to experience customer service at its best: via phone, email, online chat, and online forum.



### 97% Customer Retention Rate

Valued business partner + unrivaled customer service = 97% customer retention rate since the year 2000.



### Quality You Can Count On

One of the reasons that more and more engineers are turning to Lin Engineering is due to our reputation for developing and manufacturing high quality and consistently reliable products.



### Winner - Design World's Leadership In Engineering

We are proud to say that Design World's engineering community chose Lin Engineering as the 2008 Leader in Engineering for the Motion Control Industry.



### Global Sourcing Experts

With both U.S. and China based manufacturing facilities, we are a trusted source for both domestic and overseas motors.



### The Leader In Step Motor Technology

10 Patents on step motor technology with a few more on the way. What more can be said about being the leader in step motor technology?



### The Highest Volume Manufacturer of 0.9° Step Motors

With over 500,000 0.9° step motors manufactured annually, we are the highest volume manufacturer in the industry.



### The Best Microstepping Motor in the Industry

Lin's 0.9° stepper at 64x microstepping is up to 200% more accurate than the industry average motor.



### The Patented Designer's Corner

Designer's Corner Plus puts access to some of the most unique engineering tools available at your fingertips.

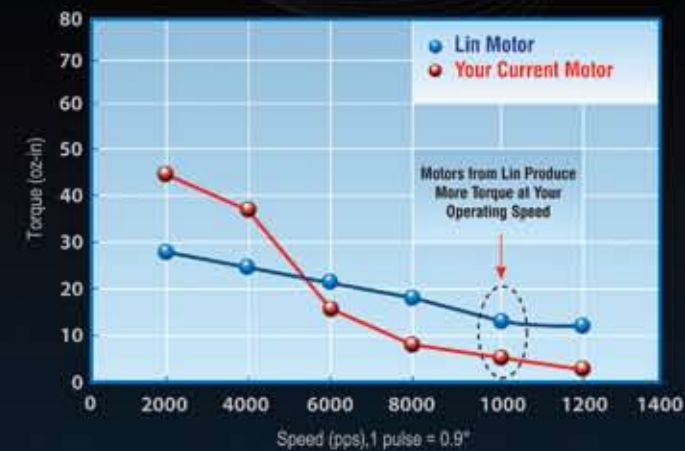


### Highly Custom Motors in 1 Week!

Our U.S. facility has on-site technical and design engineers as well as an assembly line dedicated to the design and manufacturing of prototypes and samples.

# ENERGY EFFICIENCY

## REDUCING WASTED ENERGY, ONE STEP MOTOR AT A TIME



### MAXIMIZING TORQUE @ DESIRED SPEED

Lin can provide a motor with more torque without increasing your current input power

### THE BENEFITS?

- ✓ Save Energy
- ✓ Save Space
- ✓ Save Time



GET UP TO **35%** MORE TORQUE WITH THE SAME POWER INPUT

### THE NEW XTREME TORQUE MOTORS

Lin's unique manufacturing capabilities allows more torque in the same package without using more power

### THE BENEFITS?

- ✓ No Stalling
- ✓ Better Heat Dissipation
- ✓ Space Efficient

Customers in 1999



Customers in 2009

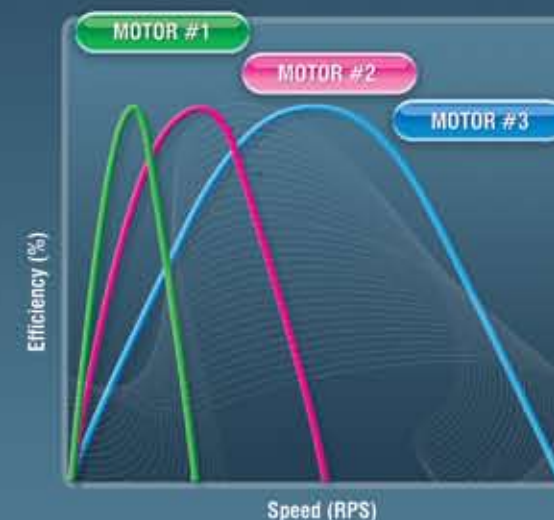


### INCREASE EFFICIENCY

Lin can help calculate speed, torque, & input power creating a winding that is specific to your application

### THE BENEFITS?

- ✓ No Extra Cost
- ✓ Higher Efficiency
- ✓ No Trial and Error



**WHICH MOTOR IS BEST FOR YOUR APPLICATION? WE CAN HELP ELIMINATE TRIAL AND ERROR**

...FIND OUT WHY MORE PEOPLE ARE CHOOSING LIN ENGINEERING

# OUR LINE OF Step Motors, Drivers, Controllers & Accessories

## NEMA 8 - 1.8°



**208**  
Up to 8 oz-in  
Holding Torque

## NEMA 11 - 1.8°



**211**  
Up to 16.6 oz-in  
Holding Torque

**211**  
10<sup>-4</sup> Torr to 10<sup>-7</sup> Torr  
Vacuum Rated

## NEMA 14 - 0.9°



**3709/3809**  
Signature Series  
Reduces Resonance

## NEMA 14 - 1.8°



**3518X**  
Integral Connector Available

## NEMA 17 - 0.9°



**416-05/06**  
Super Slim Line



**416-07**  
Low Profile



**4109**  
Ideal for High Speed

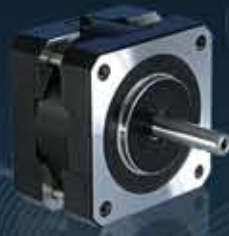


**4209**  
High Torque  
High Accuracy



**417-09/11/13/15**  
High Accuracy

## NEMA 17 - 1.8°



**4018**  
Cost Effective



**4118**  
Super Torque  
Integral Connector Available



**4418**  
Xtreme Torque Series  
Up to 35% More Torque  
Compared to Standard  
NEMA 17 Motors



**4518**  
Signature Series  
Reduces Resonance



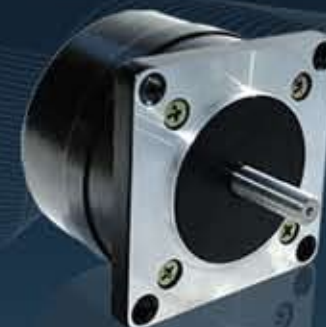
Reduces Resonance  
Easy Installation

## NEMA 23 - 0.45°



**5704**  
Power & Precision

## NEMA 23 - 0.9°



**5609**  
High Torque  
High Accuracy

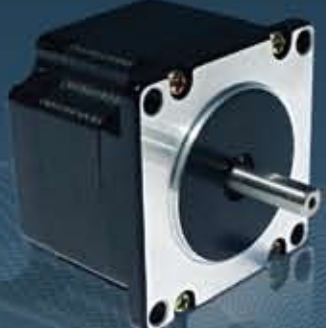


**5709**  
High Torque  
High Accuracy

## NEMA 23 - 1.8°



**5618**  
High Resolution



**5718**  
High Torque



**IP65 Rated**  
Dust Proof/ Water Resistant



**IPX7 Rated**  
Dust Proof/ Submersible

## NEMA 23 Dampers



Reduces Resonance  
Easy Installation

## NEMA 34 - 1.8°



**8618**  
High Torque



**8718**  
High Torque



**R208**  
Low Cost Driver  
Microstepping: Full-8x  
Current: 0.25 - 2.0 Amps  
RoHS Compliant



**R701/710**  
High Power Driver  
Microstepping: 10x  
Current: 1 - 7 Amps  
RoHS Compliant



**R325**  
Smooth Driver  
Microstepping: Full - 256x  
Current: 0.3 - 3.0 Amps  
Easy Configuration



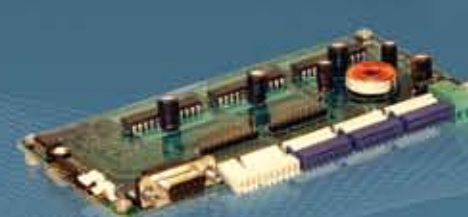
**R525**  
Power House Driver  
Microstepping: Full - 256x  
Current: 0.1 - 5 Amps  
RoHS Compliant



**R256**  
Driver/ Intelligent Controller  
Microstepping: 2x - 256x  
Current: 0.1 - 2.0 Amps  
RoHS Compliant



**R356**  
Single Axis Driver/ Controller  
Microstepping: 2x - 256x  
Current: 0.3 - 3.0 Amps  
RoHS Compliant



**R364**  
3-Axis Driver/ Simple Controller  
Microstepping: Full - 64x  
Current: 0.2 - 1.5 Amps



**RS232-RS485**  
Converter Card  
Compatibility: Serial Port  
Used with: SP17C, SP23C, R256,  
R356, R525



**USB485**  
Converter Card  
Compatibility: USB (1.1, 2.0)  
Used with: SP17C, SP23C, R256,  
R356, R525

# Have a Special Request?

TAKE ADVANTAGE OF OUR VALUE ADDED SERVICES

- ✓ Reduce Costs
- ✓ Save Time
- ✓ Better Supply Chain Control
- ✓ Lin Quality Standards for Every Component



## MULTIPLE MOUNTING CONFIGURATIONS

NEMA's 8, 11, 14, 17, 23 and 34

## MULTIPLE SHAFT OPTIONS\*

EXTENDED FLAT HELICAL CUT



SLOTTED HOLLOW CROSS DRILLED



PRESS FIT GEAR & PULLEY



\* Based on customer provided drawings and specifications



## ENCODERS, DAMPERS, GEARBOXES, & MECHATRONICS



**Position**  
Verification & Accuracy  
with Encoders



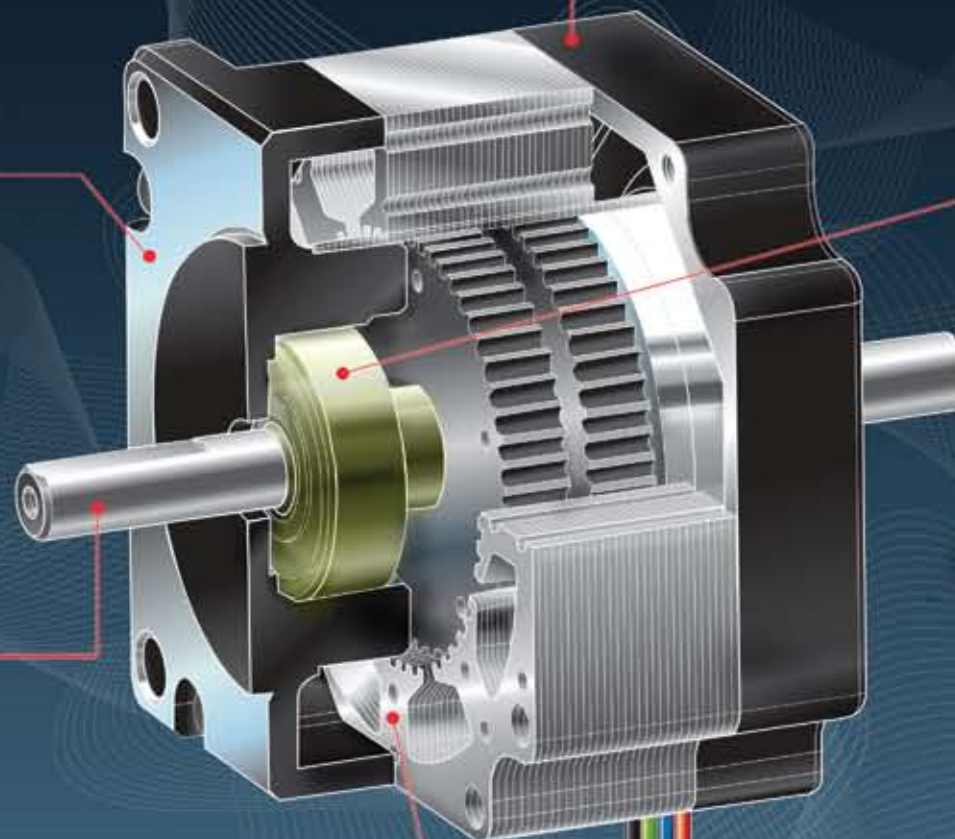
**Reduce**  
Resonance & Vibration  
with Dampers



**Increase**  
Torque & Speed  
with Gearboxes



**Utilize**  
Intelligent Motors  
with Mechatronics



## BEARINGS & LUBRICANTS

Ball Bearings, Stainless Steel Bearings, Seals, Special Lubricants for high temperature/ humid operation

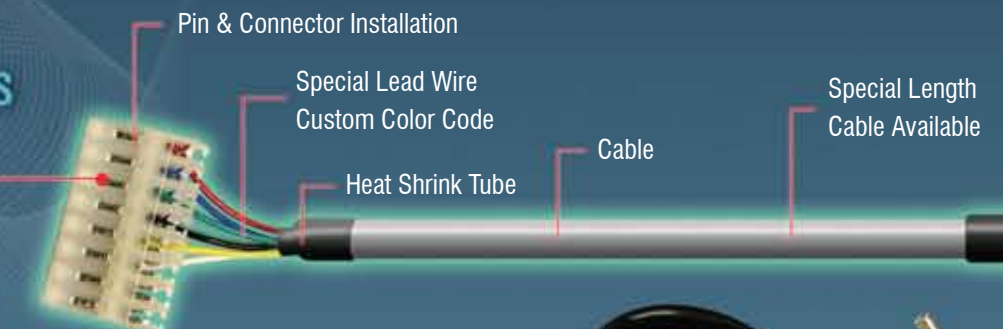


**WATER/ DUST PROTECTION**  
IP65 (Splash proof)  
IPX7 (Submersible)



**VACUUM RATED**  
NEMA 11, 17 & 23  
1.8° MOTOR

## LEAD WIRES & CABLES



Teflon Insulated Wire  
Protective Sleeving on Lead  
Special Length Lead Wire

## WINDING

Lin can help calculate speed, torque & input power creating a winding that is specific to your application at no extra cost

### THE BENEFITS?

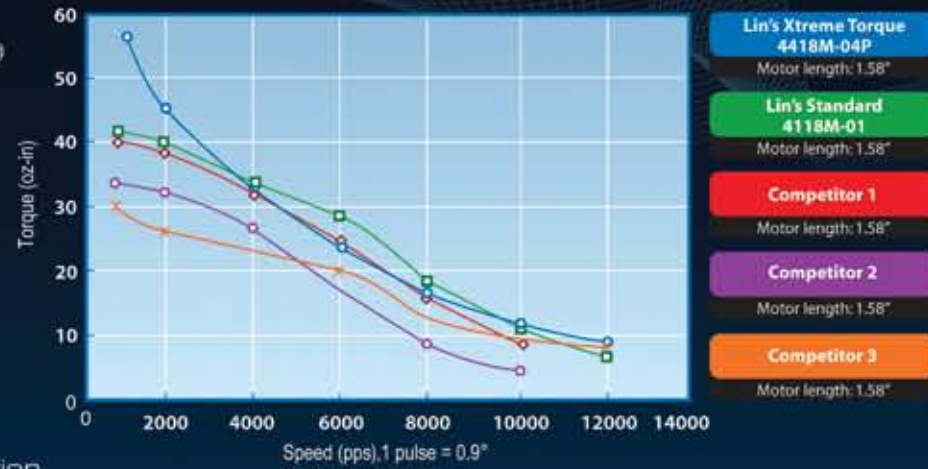
- ✓ Higher Efficiency
- ✓ Less Power Input
- ✓ No Trial & Error
- ✓ Save Time, Money, and Energy

# XTREME TORQUE

**XTREME TORQUE**  
4418 MOTOR



**Xtreme Torque 4418M Series Comparison**  
1.8° Step Motor, 24VDC, Rated Current, Bipolar, 1/2 Stepping



GET UP TO **35% MORE TORQUE** with the SAME POWER INPUT

### THE BENEFITS?

- ✓ No Stalling
- ✓ Better Heat Dissipation
- ✓ Space Efficient

# SIGNATURE SERIES

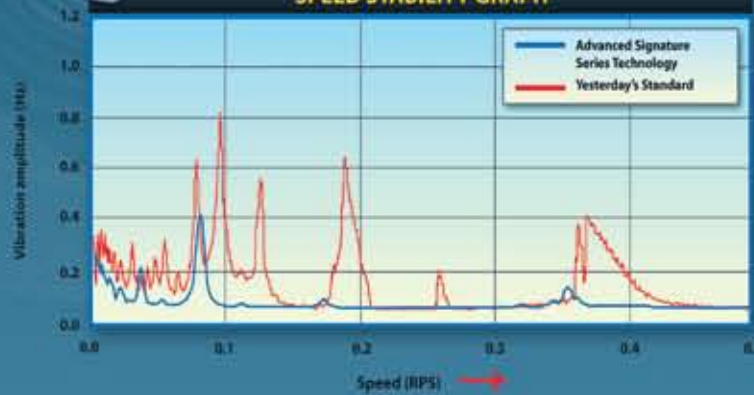
**PATENTED**



Reduce Resonance

Increase Accuracy

**SPEED STABILITY GRAPH**



**STEP ERROR COMPARISON**



# MECHATRONICS AT WORK

**SILVERPAK**  
INTEGRATED SOLUTIONS

**Power House**

**SILVERPAK 34D**

Motor + Driver

- Up to 7 Amps Peak Current
- Up to 75 VDC Voltage
- High Torque
- Up to 1288 oz-in of Holding Torque

**Intelligent/On-Board Memory**

**SILVERPAK 23C**

Motor + Driver + Controller

- Optional Encoder
- High Torque
- Up to 294 oz-in of Holding Torque

**Power House**

**SILVERPAK 23D** *Plus*

Motor + Driver

- Up to 5 Amps Peak Current
- Up to 75 VDC Voltage
- High Torque
- Up to 294 oz-in of Holding Torque

**Cost Effective**

**SILVERPAK 17D**

Motor + Driver

- Small Package
- High Torque
- Up to 85 oz-in of Holding Torque

**Intelligent/On-Board Memory**

**SILVERPAK 17C**

Motor + Driver + Controller

- High Resolution
- Up to 256x microstepping
- High Torque
- Up to 85 oz-in of Holding Torque

### CUSTOMIZE YOUR INTEGRATED MOTOR



For Torque Curves, Drawings, and specifications visit [www.linengineering.com/SilverPak](http://www.linengineering.com/SilverPak)



# NEED YOUR PROTOTYPES *Yesterday?*

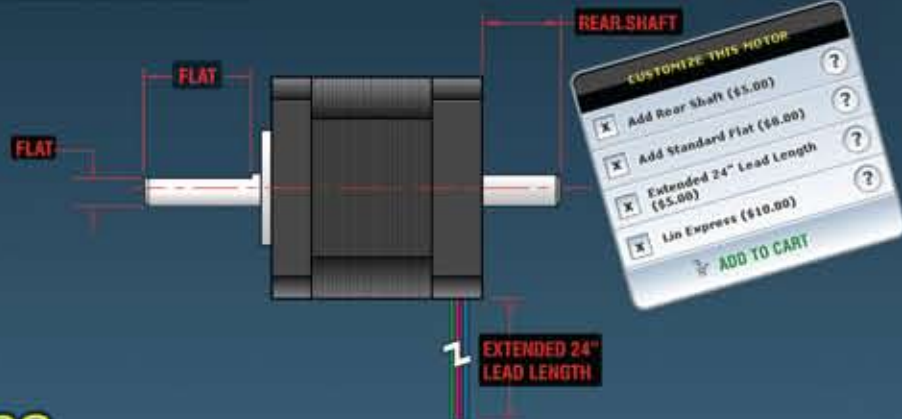
SAVE TIME & MONEY WITH THE LIN EXPRESS ONLINE STORE

**1** Choose Your Motor



**2** Configure & Customize

FLAT  
REAR SHAFT  
EXTEND LEAD WIRES



**3** Have Your Motor Shipped in **24 HOURS**



**BUY NOW @ Linengineeringstore.com**

## ENGINEERING TOOLS @ YOUR FINGERTIPS WITH THE ENGINEERING TOOLBOX

### Designer's CORNER *Plus*

Patent Pending Step Motor Selection



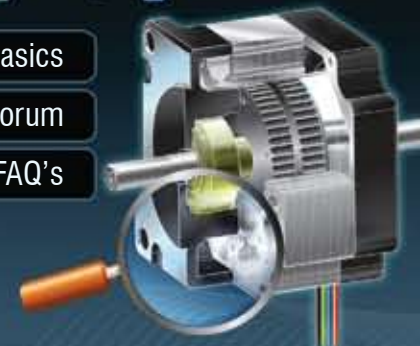
### Calculator



Easily convert common attributes like torque, speed, and resolution.

### LinApedia

- Step Motor Basics
- Online Forum
- FAQ's



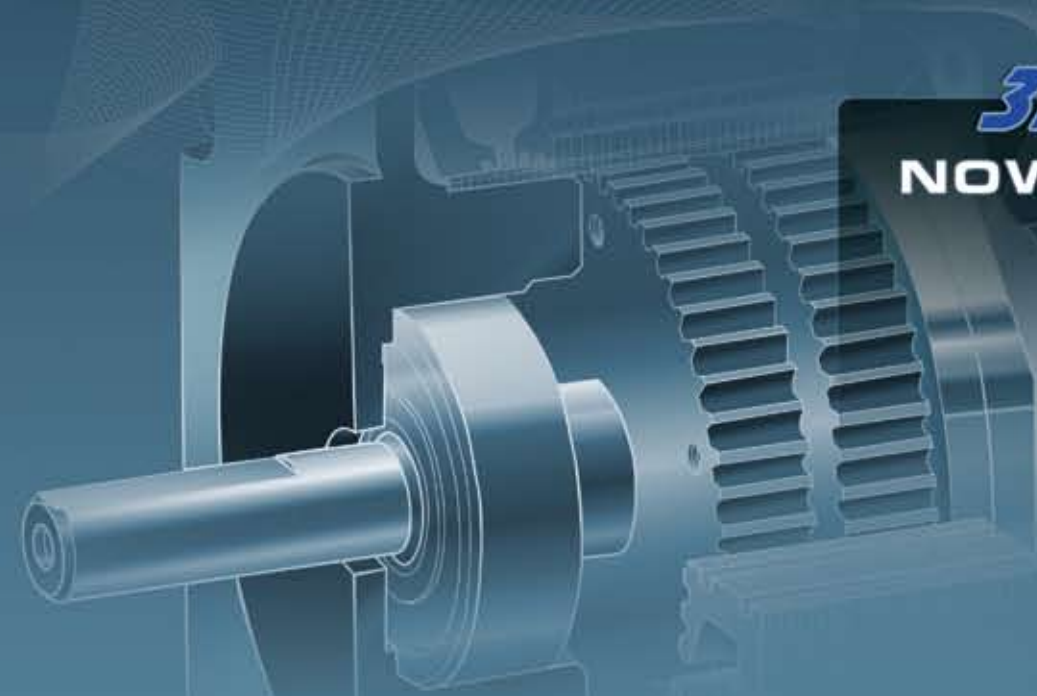
### WHITE PAPERS



Learn about common step motor applications, troubleshooting, case studies, etc.

### 3D Models NOW AVAILABLE

3D models in step file format



distributed by:  
**Switches Plus**  
**SP COMPONENTS**  
1 300 785 911