

# AXIOM<sup>®</sup> PLUS

**ALL-IN-ONE MOTION  
CONTROL SYSTEM**



**RE-ENGINEERING**  
*Excellence in Motion<sup>®</sup>*



**TOL-O-MATIC, INC.**

**Axi**  
*dyne*

# RE-EVALUATE THE PROCESS OF DESIGNING MOTION SYSTEMS

## BEFORE AXIOM®PLUS, MOTION CONTROL APPLICATIONS CALLED FOR A TEAM OF EXPERTS IN MANY DIFFERENT DISCIPLINES

- **Buyer:** Getting system components (controller, PLC, drive, motor) from a variety of sources, ensuring compatibility and reliability while staying within budget.
- **Programmer:** Understanding in detail proprietary programming languages and widely varying programming environments for both the PLC and controller.
- **Electrician:** Coordinating a variety of (often unrelated) communication protocols and wiring strategies.
- **Motion Expert:** Engineering your own solutions for even basic moves, since few of the software “tools” offered much help. Simple tasks like defining a point-to-point move or tuning the servo loop could prove quite difficult for all but the most seasoned veterans.

## YET, THAT TEAM OF EXPERTS WAS USUALLY JUST YOU.

Without the luxury of extra weeks to master all these tasks you really need a way to eliminate several steps in this process.

### With the Axiom®Plus makes it easy to:

- **Source components** ... A pre-engineered solution.
- **Set up** ... Eliminating connectivity hassles.
- **Use** ... No need to learn several new flavors of programming language.
- **Program** ... Intuitive software: perfect for any engineer with a big task to accomplish yet with features for the “motion expert”.

# AXIOM®PLUS RE-DEFINES

## TOL-O-MATIC ENGINEERS HAVE COMBINED A PLC AND CONTROLLER WITH OUR PROVEN AXIOM® DRIVE TO CREATE AN ALL-IN-ONE MOTION CONTROL SYSTEM.

Axiom®Plus is not just another drive with some extras, but a complete controller (with a great software interface), an integrated PLC and the best drive on the market, all in one compact package. This means you have fewer components to set up, program and wire. Rather than communicating with the controller through physical wiring, the PLC communicates through software and performs real-time scans on a separate thread. All internal components work together for maximum efficiency and performance.

### Features

- Space-saving, one component design eliminates extra wiring
- No need for additional computer cards
- Short circuit, over current and over voltage protection prevents drive damage

### Motion Controller Features

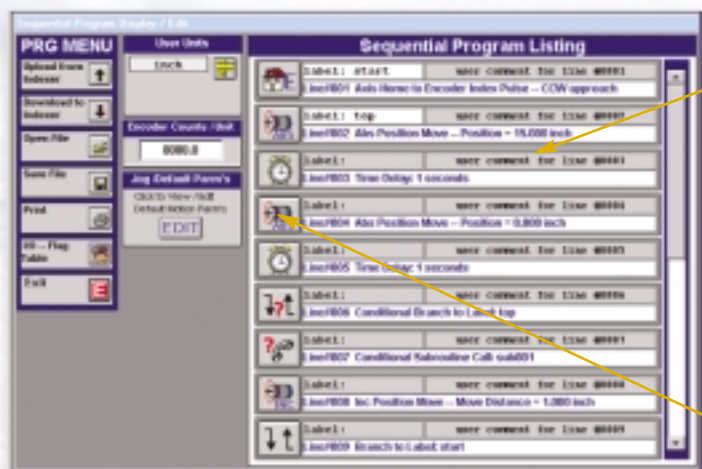
- Absolute or incremental motion capability
- 1 to 1.5 axis (gearing to auxiliary axis)
- Multiple event triggering during a move
- Comment lines and labels downloaded and uploaded with program

- Three sizes with peak current ratings of 10A, 20A and 30A



- Opto-is inputs & outputs

- CW/CC limit in



- Point and click sequential program editors

- Icon based, intuitive software — no memorization

# MOTION CONTROL

## Internal PLC Features

- Real-time scan supervisory function continuous from power-up
- Typical scan time of 2-4 milliseconds
- Subroutine calls and branching for advanced motion control profiles

- Character rung descriptors downloaded and uploaded with program for easy reference
- Internal bit flags for information transfer between controller and PLC

## Brushless Servo Drive Features

- Space vector commutation for better voltage utilization, and improved torque/speed curves
- Flux vector current control provides more efficiency and torque
- Autophasing eliminates need for Hall sensors in motors

## Easy to use

Whether you are a seasoned motion control expert or just starting out, the Axiom®Plus controller/drive is easy to set up and a snap to program. That means you get your application up and running fast.

- Effortless creation of motion profiles
- Easy "Motion in Minutes" set up

- Pluggable screw terminals — no special connectors or secondary breakout terminal strips required

olated and  
W travel inputs

## RE-LEARN THE BASICS OF MOTOR/DRIVE SYSTEMS

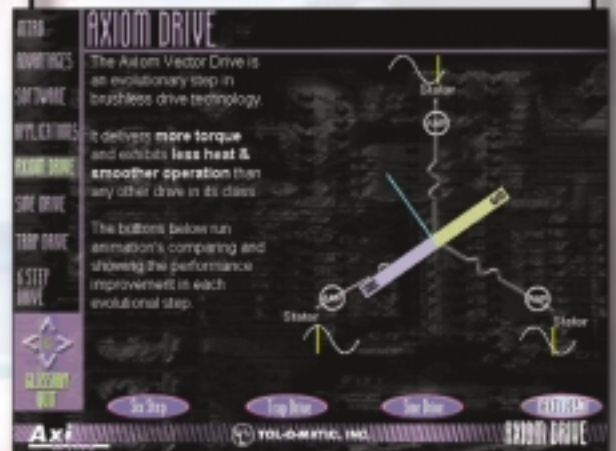
Your choices for motor/drive systems have been limited for too long.

Six-Step Drives, Trap Drives and Sine Drives can't match the performance, efficiency and cost savings of the Axiom® Drive.

### The Axiom® Drive:

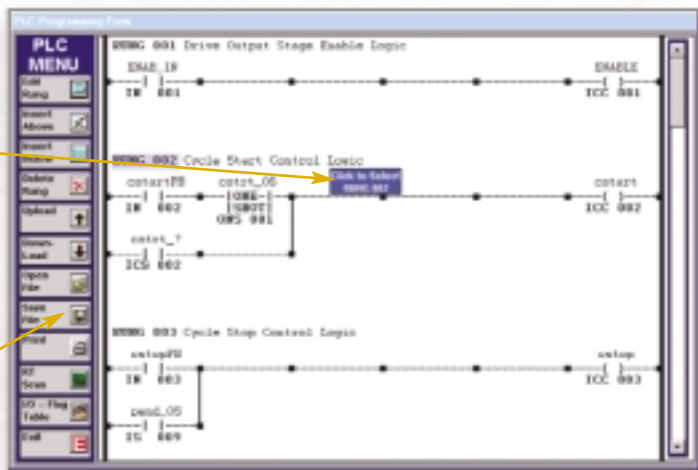
- Delivers 12% more torque at any motor speed.
- Uses Space Vector Commutation and Flux Vector Current Control.
- Has greater Torque Bandwidth giving:
  - Faster response time
  - Less settling time
  - Operation at higher duty cycles

Bottom line: You may be able to buy a smaller less expensive motor. The chosen motor will run cooler, extending component life and providing tighter control of motion profiles.



Want to learn more?  
Find more information on the web at:  
<http://www.tolomatic.com/axiomplus>  
or call 1-800-328-2174.

Point and click PLC ladder logic editors



uitive code required

Learn more about the Axiom®Plus Controller/Drive at [www.tolomatic.com](http://www.tolomatic.com) or get a catalog, call 1-800-328-2174



AXIDYNE ELECTRIC LINEAR MOTION PRODUCTS • 3600-4609

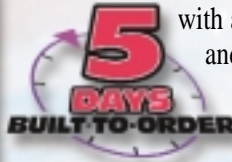
# PRE-ENGINEERED MOTION SYSTEMS FROM TOL-O-MATIC ARE **RE-DEFINING:** Excellence in Motion®

AXIDYNE ELECTRIC LINEAR MOTION PRODUCTS CATALOG NUMBER 3600-4609



**THERE IS NO NEED MIX AND MATCH COMPONENTS: TOL-O-MATIC HAS A COMPLETE FAMILY OF MOTION PRODUCTS.**

With Axidyne, you don't need to mix-and-match components and cross your fingers. All our system components are designed to work together — controls, drives, motors and actuators — complete with all cables and accessories for easy setup and installation. You get a single-source solution engineered specifically for your application, and it's built-to-order in 5 days or less.



In addition to Electro-Mechanical Linear products Tol-O-Matic offers Fluid Power, Power Transmission products, and the breakthrough technology of PrecisionAire.

Call 1-800-328-2174 to order any of these catalogs or visit [www.tolomatic.com](http://www.tolomatic.com).



FLUID POWER PRODUCTS  
• 3600-4609



POWER TRANSMISSION PRODUCTS • 3600-4609



PRECISIONAIRE CONTROLLED PNEUMATIC LINEAR MOTION SYSTEM • 3600-4609

## BUILDING WORKING RELATIONSHIPS

**APPLIED KNOWLEDGE:** Our highly-trained technical staff is your resource, only a phone call away.

**PROVEN PRODUCTS:** Since the inception of our first product back in 1952, Tol-O-Matic has continued to introduce innovative, functional, competitive products backed by a 100% satisfaction guarantee. Our products are engineered to exacting standards and run for millions of cycles in our lab to ensure that they exceed your expectations.



**TOL-O-MATIC**

3800 County Road 116 • Hamel, MN 55340, U.S.A.  
Phone: (763) 478-8000 • Fax: (763) 478-8080 • Toll-Free: 1-800-328-2174  
URL: <http://www.Tolomatic.com>  
Email: [help@Tolomatic.com](mailto:help@Tolomatic.com)

U.S. and Canada  
3604-4020\_00

Visit  
[www.tolomatic.com](http://www.tolomatic.com) to get  
the most up-to-date technical  
information.