# **iTRAK<sup>®</sup>** The Intelligent Track System

Increase machine flexibility and throughput to enhance overall productivity





Allen-Bradley • Rockwell Software



# **The Intelligent Track System**

# A breakthrough in **fast, flexible motion control**











Changing customer requirements may be driving you to deliver smaller production runs that require faster production changeover and increased machine flexibility. At the same time, you may need to optimize output and increase profitability while reducing costs.

The solution is iTRAK, a new approach to motion control that dispenses with mechanical motion or servo motion technology. iTRAK is an innovative track system that helps you to get more from your machines. The revolutionary technology of the iTRAK system enables independent control of multiple magnetically propelled movers on straight and curved paths.

# **Increased productivity**

End users can look forward to higher productivity through increased speeds and flexibility.

## **Reducing complexity for machine builders**

Using iTRAK, machine and equipment builders can customize machines more easily, reduce mechanical complexity, and deliver higher performance.

## **Easy operation**

iTRAK systems minimize maintenance for increased operation and reduce the machine size to help manufacturers manage production floor space.

INCREASED MACHINE FEXIBILITY

SMALLER PROFITABLE PRODUCTION RUNS

# **iTRAK** The Intelligent Track System

# The **next generation** of motion control

Historically, motion control has incorporated chains, belts, gears and walking-beam mechanics. These mechanical solutions had limited flexibility, wasted energy and led to excessive maintenance costs.

iTRAK is the next step in motion control, eliminating the rotary driven chains, belts and gears of the past. It replaces mechanics with simple, effective software profiles redefining speed and flexibility in automation.

## Traditional motor solutions

#### Mechanical line shaft

- Complex mechanical designs and constant maintenance
- Little flexibility or scope for upgrades
- Limited in speed by the wider system
- Energy wasted through friction

#### Electronic line shaft -

- Reduced maintenance and a degree of flexibility
- Upgrade templates along with new mechanical challenges
- Improved line speed
- Improved energy consumption

## A new approach to motion control

#### iTRAK pitchless technology

Designed without mechanical constraints to:

- Minimize maintenance
- Change between products at the push of a button
- Simplify mechanical designs
- Upgrade easily by reducing complex tooling
- Operate faster with less downtime
- Reduce energy consumption through direct drive

#### iTRAK is the solution you're looking for if:

- Your current application uses chains, belts or gears
- Your existing designs are reaching limits of operational speed
- You are unable to combine continuous and intermittent motion
- Changeovers are frequently required
- Removing fixed spacing could improve overall performance
- You have excessive maintenance costs











# Why **iTRAK** is a breakthrough in motion control

iTRAK is today's solution for motion control challenges, providing flexibility while enhancing performance significantly. iTRAK independent movers give machine designers the opportunity to design a 'pitchless' machine that can be easily adjusted to your specific application.

#### iTRAK making a difference



n-Bradley

#### AGR Blood analysis



"I think iTRAK has a good future and we are looking at it for other applications to replace cammed indexing."

Derek Beattie, Electrical Design Manager at AGR Automation



## Cama Group Packaging



"iTRAK has helped Cama to manufacture machines which offer several benefits to the end user: optimized format changeover, reduced machine size , lower maintenance needs and energy savings."

Riccardo Panepinto, Operations Director, Cama Group





High payload range: 0 kg – 100 kg+ Mass of the payload is determined by bearing design and acceleration requirements.

**High speed range:** > 5 m/s The speeds of linear motors are vastly higher than traditional mechanics.

**On-Machine design** System is designed and rated to IP65 as standard.

### **Unprecedented flexibility**



With iTRAK, switching package size or collation settings can occur at the push of a button, and all programmed with Studio 5000 Logix Designer<sup>®</sup>.

## **Integrated Architecture solution**

iTRAK is part of the Integrated Architecture<sup>®</sup> system from Rockwell Automation which helps deliver machines that are flexible for Just-In-Time manufacturing with performance levels beyond those achievable with conventional mechanical systems.

# Fundamental servo control at the core

Until now, servo motors have been either rotary or linear. iTRAK combines these two concepts into a powerful motion solution which offers linear or rotary motion in one package, resulting in a whole new approach to motion control.

## **Faster line speeds**

iTRAK's speed and acceleration is significantly higher than the traditional mechanical solutions such as chains and belts, with its programmable independent movers improving line speed further.

## **Reduced maintenance**

iTRAK has been designed to use very few moving parts. The movers are rigidly connected to the structure and durable bearings and guide rails can significantly reduce maintenance downtime.

# Increased line **speed** and **flexibility** – **better value** all round

The best value a machine builder can provide is to improve the process that their machine executes. The iTRAK system frees the machine designer from the constraints of mechanical cam design so that they can focus on the process, the programming, and game-changing innovation.

# Faster line speed + Faster changeover

111111

Leading machine builders worldwide are designing their next generation products around iTRAK. These new machines for case packing, pouching, carton filling, collating, device assembly and life science applications are best-in-class for throughput and reduced downtime. In the same way, end users who have implemented these machines report investment returns far exceeding expectations.

#### The benefits to manufacturers:

- Increased production rates of 50% or more
- Reduced downtime for changeovers
- Smaller machine size saves floor space
- Shorter runs can still be profitable
- Lowered periodic maintenance

#### The benefits to machinery suppliers:

- Market leading machine output of 50% or more
- Increased flexibility with a single design
- Added value to your customers
- Differentiated machine design
- Smaller machine and simpler mechanics



### KHS Pouch filling and sealing





"iTRAK is revolutionary. Instead of using mechanical elements to move product through the machine, we're now using a magnetically-driven device that can adjust its geometry through software. It will forever change the way pouching is done."

Roger Calabrese, Competence Center Manager, KHS

# = **DIFFERENTIATION**

# How the **iTRAK** system works

When designing machines, the iTRAK system can be purchased as a fully customized and assembled unit, as individual components, or as a mix of customized and standard parts.

#### Modular, adaptable and scalable for any application

The layout of the iTRAK system is flexible and adjustable to help achieve an optimum size machine for production requirements. The system is built of IP65-rated sections, which each contain a multi-phase motor and drive. Curved and straight sections can be combined in different combinations to create ovals, rectangles, and squares. The shape can also be rotated into horizontal or vertical orientations along any axis.

# **Technical** specifications

## **iTRAK system components**

#### **iTRAK Series System Components**

- Straight and 90° curve linear motor sections available in standard 400 mm lengths
- Different force ratings available with various coil sizes, including 50 mm, 100 mm, and 150 mm
- Combine for racetrack, square or rectangle configurations to any length
- Each motor section contains a multiphase drive and absolute encoder



- Scalable power supply
- 365-525V AC 50/60 Hz Input

#### Movers

- Available in standard sizes to match motors or can be custom designed for specific customer application
- Available to work with standard or customized bearing rails

#### **iTRAK** Gateway

• EtherNet/IP Interface to the iTRAK system components





# **Specifications Table**

Motor Size	Maximum Speed	Maximum Force
50 mm	> 5 m/s	264 N
100 mm	4 m/s	529 N
150 mm	2.75 m/s	793 N

Minimum Mover Pitch	65 mm
Acceleration	> 10g
Repeatability	< 100 um
System Length	12m per Gateway
Payload	Only limited by bearings and F=ma
Certifications	UL, CE
Ingress Protection	IP65
Feedback Type	Absolute
Feedback Resolution	< 10 um
Section Length	400 mm



### R.A Jones Advanced collating



"The addition of the iTRAK technology has really changed the game for us in cartoning. It eliminated the mechanical components from the machine, increased the transfer throughput, and significantly decreased energy use and maintenance."

Watch Now

Eric Airgood, Electrical Engineer, R.A Jones





Rockwell Automation, Inc. (NYSE:ROK), the world's largest company dedicated to industrial automation, makes its customers more productive and the world more sustainable. Throughout the world, our flagship Allen-Bradley® and Rockwell Software® product brands are recognized for innovation and excellence.

Follow ROKAutomation on Facebook & Twitter.



iTRAK, Integrated Architecture, Kinetix and Studio 5000 Logix Designer are trademarks of Rockwell Automation, Inc. Trademarks not belonging to Rockwell Automation are property of their respective companies.

#### www.rockwellautomation.com

#### Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444 Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640 Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846