



# agricultural

igus® solutions for agricultural engineering

plastics for longer life®...igus

# technology

[igus.com/agriculture](http://igus.com/agriculture)

IG-B15

Improve technology and reduce costs with innovative machine elements from igus®

# cost down ... life up!



**Highly wear resistant, dirt-repellant, robust and maintenance-free: self-lubricating plastic bearings for agricultural machines.**

A long service life and the avoidance of lubricants are important particularly in agricultural engineering. In many applications, metallic

bushings or recirculating ball bearing guides can be replaced by self-lubricating plastic bearings. We would like to show you how to improve your technology and save costs at the same time.

The advantages of igus® plastic bearings are:

- **Self-lubricating**
- **Corrosion-resistant**
- **High mechanical stability**
- **Vibration dampening**
- **Insensitive to dust and dirt**
- **Compensation for edge loading**
- **Special dimensions are possible**

A variety of online tools help you to reduce process cost. igus® ships from stock in 24 hours. Visit our industry page:

[www.igus.com/agriculture](http://www.igus.com/agriculture)

Yours,

*Nicole Lang*

Nicole Lang

iglide® Product Manager

Phone: 888-803-1895

[nlang@igus.com](mailto:nlang@igus.com)



## igus® catalog product range

Excerpt of catalog on next pages, order igus® catalogs online:

[www.igus.com/catalog](http://www.igus.com/catalog)



## Ordering times

Monday to Friday 8:00 am - 8:00 pm



## Hotline

Phone: 888-803-1895

Fax: 401-438-7680



## Online shopping

See [www.igus.com](http://www.igus.com). Find our whole product range and order around the clock.



## Any questions?

For questions and more information call us or use our online tools at:

[www.igus.com](http://www.igus.com)

# Self-lubricating products from igus®



**1** Low coefficient of friction, wear-resistant and self-lubricating:  
iglide® plastic bearings



**2** Resistant to chemicals:  
igubal® clevis joints and rod ends



**3** Resistant to dirt and reliable:  
E-Chain Systems® and Chainflex® Motion Cables



**4** 100% self-lubricating:  
DryLin® linear guides

# Lubrication-free farming



Cabin



# Application Examples

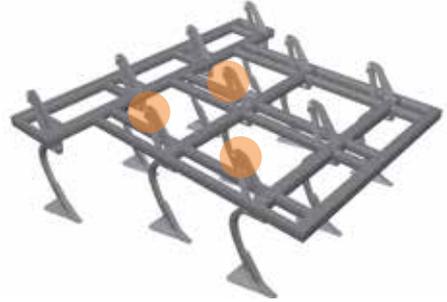
Cylinder



**iglide® P plastic bearings**

- For high surface pressure
- Resistant to shocks

Set bearings



**iglide® G300 plastic bearings**

- High static and impact loads
- Self-lubricating and corrosion-resistant

Sowing coulters



**iglide® G300 plastic bearings**

- Vibration dampening
- Resistant to media
- Reliable even after long stoppage time

Front loader

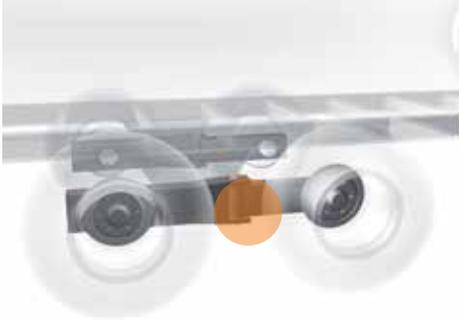


**iglide® Q2 plastic bearings**

- For high-load pivoting applications
- Insensitive to shock and edge loads
- Maintenance-free and dry-running

# Lubrication-free farming

## Axle bearings



### iglide® Q plastic bearings

- Extremely robust and resistant to manure
- Reliable even after long stoppage time

## Chassis bearing / suspension



### iglide® Z plastic bearings

- For high loads, vibration dampening
- Insensitive to misalignment and hitches
- Resistant to oils and fuel oils

## Hydraulic lift



### iglide® G300 plastic bearings

- Vibration dampening
- Resistant to media
- Reliable even after long stoppage time

## Steering and pedals



### iglide® J plastic bearings

- Low coefficient of friction
- Vibration dampening

# Application Examples

## Tractor doors



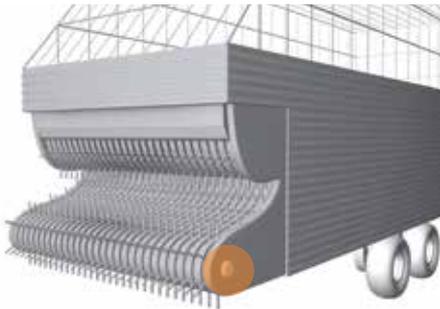
- iglide® G300 plastic bearings**
- Vibration dampening and insensitive to edge pressure
  - Suitable for e-coating

## Milking arm



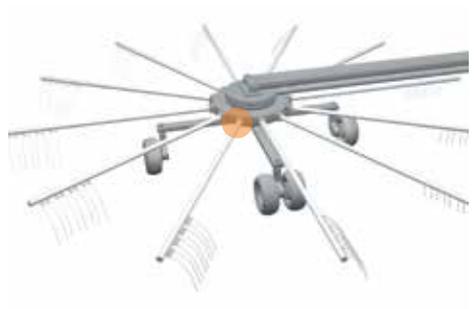
- iglide® J plastic bearings**
- Maintenance-free in extreme dirty areas
  - Low coefficient of friction

## Trailers



- iglide® Q plastic bearings**
- Longer service life than metal bearings
  - Use of soft shafts possible

## Hay spreader



- iglide® G300 plastic bearings**
- High wear, impact and shock-proof
  - Use of soft shafts possible

# Lubrication-free farming

Rotary pump



- iglide® UW plastic bearings**
- Low wear in underwater applications
  - Cost-effective solution

Manure distributor



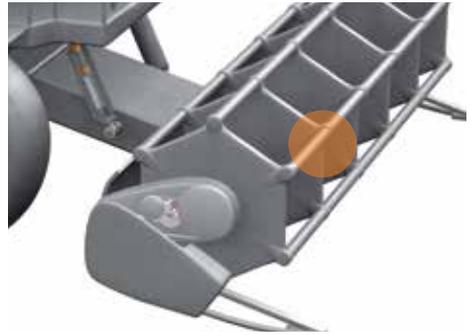
- igubal® clevis joints**
- Resistant to aggressive fertilizers
  - Chemical-resistant
  - Corrosion-resistant

Livestock technology



- igubal® pressfit spherical bearings**
- Resistant to dirt and dust
  - Self-lubricating and corrosion-resistant

Harvester-thresher



- iglide® J plastic bearings**
- Good wear-resistance
  - Highest rating in pivoting applications

# Application Examples



Maintenance-free iglide® G300 plastic bearings for tree transplanter machines.



Self-lubricating iglide® bearings in adverse conditions at shuttle steering axes.



High wear-resistance and low maintenance are the main reasons for the use of iglide® bearings.

# ... 100% self-lubricating

## What is iglide® and what can it do?

### iglide® Plastic Bearings

iglide® plastics bearings are made from special plastics, reinforced fibers and filled with particles of solid lubricants. They have been tested and proven millions of times in a wide range of environments and applications.

igus® engineers develop more than 100 new plastic compounds each year, which are tested in bearing form in more than 15,000 experiments conducted annually. Over the years, igus® has used the resulting data from these tests to build an extensive database on the properties of its plastics.

Today, this database makes it possible for igus® to assess the expected service life of an iglide® plastic bearing in a specific application. Our experience brings with it peace of mind for our customers.

### Fit and forget

Based on the results of several thousand empirical tests, we are able to provide reliable information about the service life of iglide® bearings in almost any application. Our test data also enables us to recommend the most suitable shaft material.

### Top quality materials for injection molding

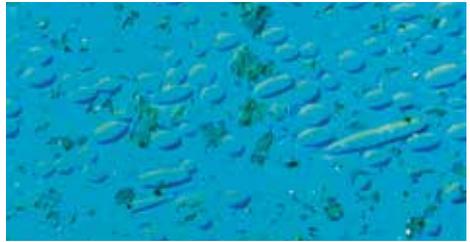
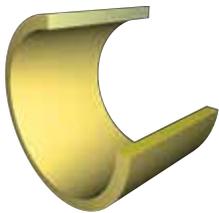
No other base material is comparable to thermoplastics in terms of capability. Different plastic blends will cause a bearing to act differently, particularly when it comes to friction and wear behavior.

### Plastic bearings last longer and cost less

igus® develops plastic bearing materials that fulfill the maintenance-free requirements of today's design engineers, namely plastic bearings capable of withstanding high loads, with low coefficients of friction, and with guaranteed wear-resistance.

### iglide® plastic bearings design

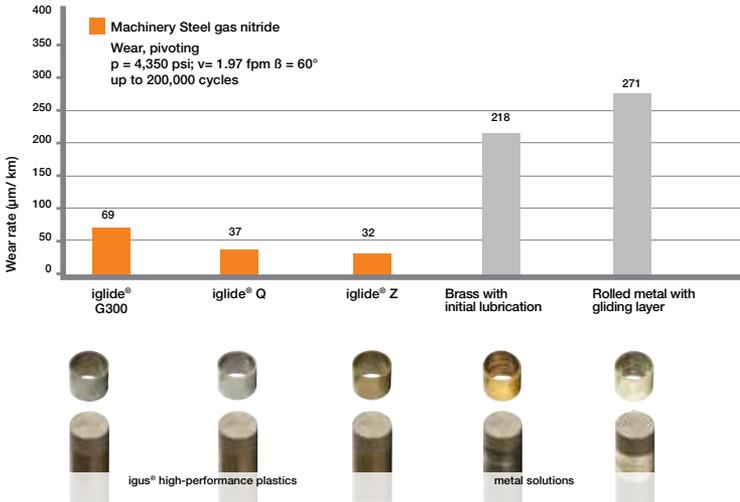
Any disadvantages of plastics can be substantially reduced by material development of bearing design. For example, iglide® plastic bearings are thin-walled. Some iglide® materials feature particularly high heat conductivity. These factors in combination facilitate rapid heat flow and directly enhance the load capacity of the plastic bearing.



iglide® compounds: Basic plastics with fibers and solid lubricants, magnified 200 times, dyed.

# durable, tested ...

## Heavy-duty testing



### For illustration:

The igus® pivot test shown left approximately corresponds to this scenario

More test results with the following shafts / surfaces are available and can be requested at any time.

- ▶ Machinery Steel / uncoated
- ▶ 1045 Steel / uncoated
- ▶ Piston rods / hard-chromed
- ▶ Machinery Steel / saltbath nitrocarburized
- ▶ 1045 Steel / Galvanized

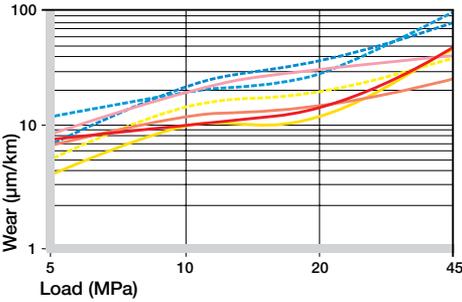
Is your shaft not included in these? We will gladly test your specific application as well.

# ... predictable ...

## Precisely calculate material properties

iglide® plain bearings mean a step up from the plastic bearing to a tested and calculable machine element. Probably the world's largest database for plastic bearings can help you to select the optimum material for your application.

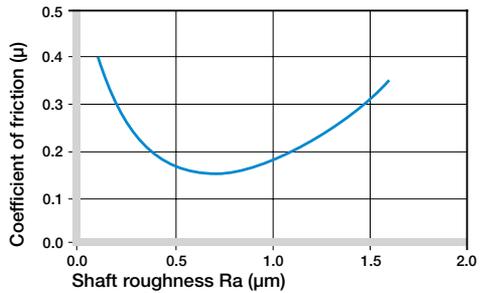
### The most wear-resistant iglide® material



- iglide® G300
- iglide® J
- iglide® L280
- iglide® P
- iglide® V400
- iglide® Z
- iglide® Q

Wear of iglide® bearings at medium and high loads.

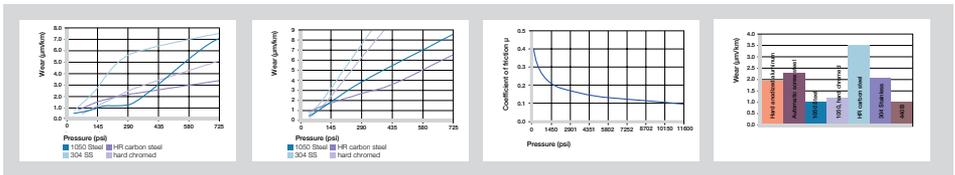
### Shafts may also be rougher



Coefficient of friction of iglide® G300 depending on the shaft surface (shaft Case hardened steel)

Shafts which are too smooth are often unfavorable and may lead to stick-slip phenomena and noise.

## Reliable database: Thousands of test results



Results of over 15,000 tests per year are incorporated in the iglide® database.

## Online tools and lifetime calculation



### Service life calculation

Simple and quick input of your application parameters allows a precise calculation of the service life. Also download and save 3D CAD data free of charge.



Entering the application parameters gives you the expected service life for iglide® plain bearings.

- Choice of over 40 iglide® materials
- Suitable iglide® materials can be updated with each entry
- The matching shaft is indicated with price and delivery time
- Additional info, such as 3D-CAD data, technical material data, online catalog, etc.

► [www.igus.com/iglide-Expert](http://www.igus.com/iglide-Expert)



# ... 100% self-lubricating

## iglide® materials for agricultural technology

There are more than 40 different iglide® materials, over 7,000 standard sizes in inch from Ø 1/8" to 4" and metric sizes from Ø 2-150 mm are available from stock. Short delivery times for special sizes.

**These four materials are especially reliable in agriculture applications.**



### **iglide® G300 – The All-rounder**

iglide® G300 bearings are suitable for the widest range of potential applications. That's why this material is rightly termed universal. Recommended for applications with medium to high loads, medium surface speeds and moderate temperatures. Suitable for e-coating.

► [www.igus.com/G](http://www.igus.com/G)



### **iglide® J –**

#### **Fast and slow motion specialist**

Versatile in continuous operation, for soft shafts too. The perfect combination of wear-resistant bearings at low to medium loads and best coefficients of friction. Extreme dimension stability even in moist applications.

► [www.igus.com/J](http://www.igus.com/J)



### **iglide® Z**

Extremely high compressive strength coupled with high elasticity enables iglide® Z bearings to attain their prominent features in association with soft shafts, edge loads and impacts. The bearings are at the same time suitable for temperatures up to +482°F.

► [www.igus.com/Z](http://www.igus.com/Z)



### **iglide® Q2**

Where previous iglide® bearing solutions in the extreme load range finish, the iglide® Q2 continues. Made for heavy-duty pivoting applications under extreme conditions.

► [www.igus.com/Q2](http://www.igus.com/Q2)



Shipping in: 24 – 48 hours



[www.igus.com](http://www.igus.com)

# ... 100% self-lubricating

## More igus® products for agricultural technology



### igubal® Rod Ends

igubal® rod end bearings can also be used without any problems in a tough environment. The application temperatures range from -22 to +176°F. Noteworthy is the insensitivity to dirt and dust.

► [www.igus.com/KBRM](http://www.igus.com/KBRM)



### igubal® Clevis Joints

igubal® dual joint bearings are available for custom inside micrometer readings starting at a lot size of 1. A variety of applications are conceivable by combining igubal® rod end bearings or angle joints. The components are lightweight, corrosion-resistant, chemical resistant, cost-effective, and vibration dampening.

► [www.igus.com/WDGM](http://www.igus.com/WDGM)



### iglide® Bar Stock

iglide® for ultimate creativity – now available as round bar stock, or even mechanically machined components for tests, prototypes, or small batches in as little as 3-5 days. Now calculate service life for mechanically machined plain bearings.

► [www.igus.com/Barstock](http://www.igus.com/Barstock)



### DryLin® W Modular Guide Systems

The DryLin® W linear guides constitute a cost-efficient preassembled system. Hard-anodized aluminum is used as rail material and provides for the best friction and wear results. The exclusion of lubrication makes the system extremely insensitive to dirt.

► [www.igus.com/W](http://www.igus.com/W)



Shipping in: 24 – 48 hours

# ... maintenance-free ...

## More igus® products for agricultural technology



### DryLin® E - Linear Axes with Motor

“E” means electric, and is a logical design extension of the DryLin® drive technology design kit. The external lubricant-free linear drives ensure clean and dirt resistant operation. Ready to fit linear actuators and drive units can be equipped with either a lead screw drive or toothed belt.

▶ [www.igus.com/E](http://www.igus.com/E)



### E-Chains® - Designed to Guide and Protect

E-Chains® and E-Chain Systems® are like the lifeline of modern machines. They reduce downtimes and increase the service lives of cables and hoses.

▶ [www.igus.com/e-chain](http://www.igus.com/e-chain)



### Chainflex® Motion Cables

Cables in E-Chains® or on robots require special properties to survive many cycles, high speeds and accelerations.

▶ [www.chainflex.com](http://www.chainflex.com)



### ReadyChain®

Reduce your costs and increase your cash flow with fully harnessed E-Chain Systems®. igus® can assemble your complete single system, or systems for mass production.

▶ [www.igus.com/ReadyChain](http://www.igus.com/ReadyChain)



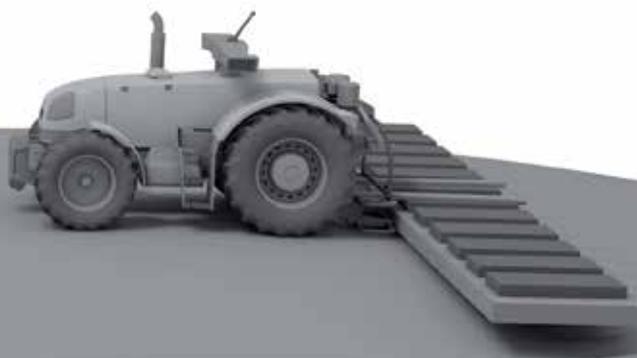
### Robolink®

Lightweight, compact, free. Joint made of triboplastics. Actuators and control module are decoupled from tools - For humanoid robots and easy automation.

▶ [www.igus.com/robolink](http://www.igus.com/robolink)

# ... Precision farming ...

Ready for the future - please consult us



# plastics for longer life® ...

## Development and Production



Open-plan offices without doors or walls



Mass production and job production for series both large and small



In-house tool design and construction

### Where does igus® come from?

It all started on October 15, 1964 in a double garage in Cologne, Germany. Over the first 20 years, igus® specialized as a supplier of complex, technical plastic parts. Today, we are an important manufacturer of E-Chain Systems® and iglide® self-lubricating plastic bearings. Between 1985 and today, igus® has grown from 31 staff members to a team of nearly 2,500 employees in 55 countries.

### igus® quality assurance

The quality policy of igus® is based on establishing the needs of our customers, meeting these needs, and always being a competent partner and reliable supplier. igus® has always strived to manufacture products with the very highest possible quality standards while also constantly developing new and innovative solutions.



**Great plastic bearing database**

### **Extensive test database**

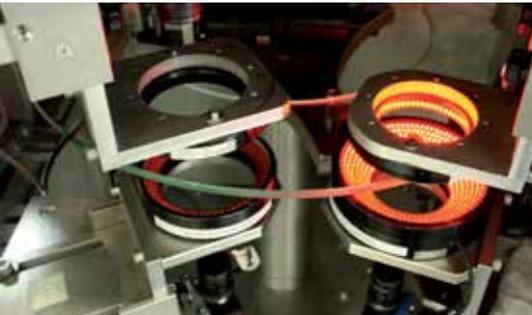
iglide® plastic bearings mark the step between simple plastic bearing and a tested, reliable machine component. Over 15,000 tests conducted each year have resulted in what is likely the world's largest database relating to the tribological properties of plastic plain bearings. This database allows us to select the best price to performance ratio for your specific application.



**Automated material preparation and conveying**

### **Modern, efficient injection molding**

High-tech solutions at a discount price. Our modern injection molding systems allow the cost-effective, controlled-process manufacture of over 7,000 standard and numerous special parts. Our production runs on 400 machines with a locking pressure of up to 130 tons. Weekday service with trained and friendly customer service offers you the certainty of our ability to respond to your demands quickly and on little notice.



**Optical tests on automatic systems - 100% control, up to 10 pieces per second**

# Largest test laboratory in the industry ...

18,840 ft<sup>2</sup> laboratory, more than 15,000 tests and 2 billion test cycles per year



Better products, but more affordable – a key ingredient: igus® research and development.

## igus® laboratory and practical experience

Reducing costs while guaranteeing the highest possible process reliability: only those who invest considerable resources into testing and research, such as igus®, can successfully address these competing requirements. The largest test lab in the industry conducts more than 2 billion test cycles annually on a total of 107 test stations.

Our mechanical engineering components pass the litmus test presented by production reality, because they have already passed this test before leaving the igus® warehouse.

**More information:**

► [www.igus.com/test](http://www.igus.com/test)

# Products for agriculture applications

plastics for longer life® – also for the sake of the environment



## Self-lubricating and lightweight

The tribo-optimized iglide® plastic plain bearings from igus® do not require any external oil or grease. Due to the continuous advancing developments from igus®, more environmentally friendly alternatives that work in place of traditional lubricated bearings are available. The manufacturing process for plastic components is much better for the environment than metal – for the production of 1 liter of aluminum, the energy from 15 liters of oil is required, compared to an average of 2 liters per liter of plastic produced.

## Better for the environment

iglide® bearings are self-lubricating, which means they do not require any oil or other contaminants to escape into the environment. The lightweight nature of the bearings also helps reduce required power, lowering fuel consumption and carbon dioxide output.

A study has found that no less than half of all machine lubricants currently being used in Germany seep into soil or water, or evaporate in to the atmosphere. According to research by a team of chemists, mechanical engineers and environmentalists from the RWTH Aachen Research University, Germany alone uses about 275,000 tons of industrial lubricant each year - the equivalent of 8,000 tanker trucks.

# igus® Services ...

Installation service and online tools ... shipped from stock in 24 hours!



Get an accurate assembly and avoid machine downtimes and extra costs – with the igus® E-Chain System® installation service

- Products and services from one source – less logistical hassle for you
  - igus® system guarantee
- ▶ [www.igus.com/installation](http://www.igus.com/installation)



## igus® catalog product range

Order igus® catalogs online at:  
[www.igus.com/catalog](http://www.igus.com/catalog).



## Online shop

Visit [www.igus.com](http://www.igus.com). There you can find our whole product range. Order around the clock.



## Delivery from stock. 24h or on request.

The goods leave igus® within 24 hours. On request we can deliver via express or special delivery.



## Ordering times

Monday to Friday 8:00 am - 8:00 pm



## You have questions?

For questions and more information call us or use our online tools on [www.igus.com](http://www.igus.com).



## Hotline

Phone: 888-803-1895  
Fax: 401-438-7860



## Free samples

Order your free sample of any igus® product online at [www.igus.com/samples](http://www.igus.com/samples).

# Online tools

## Easy to use!

-  E-Chain Systems®
-  igubal® spherical bearings
-  Special igus® products

-  Chainflex® cables
-  DryLin® linear bearings

-  iglide® bearings
-  xiros® ball bearings

## Locate



**QuickChain.100**  
Design & calculation

▶ [www.igus.com/quickchain100](http://www.igus.com/quickchain100)



**the-chain:** E-Chains® and cables for moving applications

▶ [www.igus.com/the-chain](http://www.igus.com/the-chain)



**QuickBearing**  
Product finder for iglide® plain bearings

▶ [www.igus.com/iglidefinder](http://www.igus.com/iglidefinder)



**QuickBearing**  
Product finder for igubal® spherical bearings

▶ [www.igus.com/igubalfinder](http://www.igus.com/igubalfinder)



**QuickLin**  
Product finder for electrical linear axes

▶ [www.igus.com/drylinEfinder](http://www.igus.com/drylinEfinder)



**QuickChain.13**  
Product finder up to 42 ft. travels

▶ [www.igus.com/quickchain13](http://www.igus.com/quickchain13)



**QuickCable**  
Product finder for Chainflex® cables

▶ [www.igus.com/chainflexfinder](http://www.igus.com/chainflexfinder)



**QuickBearingCustom**  
Material finder and required dimension

▶ [www.igus.com/barstockfinder](http://www.igus.com/barstockfinder)



**QuickLin**  
Product finder for drive technology

▶ [www.igus.com/drylinfinder](http://www.igus.com/drylinfinder)



**QuickSpecial**  
Customized bearings parts

▶ [www.igus.com/speedigus](http://www.igus.com/speedigus)



**QuickChain.60**  
Product finder for 33-196 ft. travels

▶ [www.igus.com/quickchain60](http://www.igus.com/quickchain60)



**QuickReady**  
Drive cables per manufacturer standards

▶ [www.igus.com/readycablefinder](http://www.igus.com/readycablefinder)



**QuickBearing**  
Product finder for piston rings

▶ [www.igus.com/pistonringfinder](http://www.igus.com/pistonringfinder)



**QuickLin**  
Product finder for screw drives

▶ [www.igus.com/screwdrivesfinder](http://www.igus.com/screwdrivesfinder)

## Calculate and configure



**QuickLifeChain**  
Lifetime of E-Chains®

▶ [www.igus.com/ecs-expert](http://www.igus.com/ecs-expert)



**QuickLifeCable**  
Lifetime of Chainflex® cables

▶ [www.igus.com/cf-expert](http://www.igus.com/cf-expert)



**QuickFluid**  
Configurator for hoses

▶ [www.igus.com/quickfluid](http://www.igus.com/quickfluid)



**QuickLife**  
Lifetime of xiros® ball bearings

▶ [www.igus.com/xiros-expert](http://www.igus.com/xiros-expert)



**QuickLifeLin**  
Lifetime of DryLin® linear bearings

▶ [www.igus.com/drylin-expert](http://www.igus.com/drylin-expert)



**QuickFillChain**  
Automatically filling

▶ [www.igus.com/quickfill](http://www.igus.com/quickfill)



**QuickConfigCable**  
Configuring of desired cables

▶ [www.igus.com/customcable](http://www.igus.com/customcable)



**QuickLifeBearing**  
Lifetime of iglide® stock bars

▶ [www.igus.com/barstockexpert](http://www.igus.com/barstockexpert)



**QuickLifeBearing**  
Lifetime of igubal® spherical bearings

▶ [www.igus.com/igubal-expert](http://www.igus.com/igubal-expert)



**QuickRobot**  
Equipment support for robots

▶ [www.igus.com/quickrobot](http://www.igus.com/quickrobot)



**QuickPin 2.0**  
Connector-cable configurator

▶ [www.igus.com/quickpin](http://www.igus.com/quickpin)



**QuickLifeBearing**  
Lifetime of iglide® plain bearings

▶ [www.igus.com/iglide-expert](http://www.igus.com/iglide-expert)



**QuickConfig**  
roboLink® configurator

▶ [www.igus.com/roboLinkconfig](http://www.igus.com/roboLinkconfig)

# igus.com/24

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Ordering and deliveries weekdays from 8:00 am to 8:00 pm. No minimum order quantities, no surcharges. 100,000 products available from stock. Quick delivery. [www.igus.com](http://www.igus.com)

## 9001:2008

igus® is certified in accordance with ISO 9001:2008 and ISO/TS 16949:2009 in the field of energy supply systems, cables and harnessing, as well as plastic bearings.

# igus.com

igus® Inc.

PO Box 14349 • East Providence, RI 02914

Tel: 888-803-1895 • Fax: 401-438-7680

[sales@igus.com](mailto:sales@igus.com) • [www.igus.com](http://www.igus.com)

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