

# outdoor equipment

Self-lubricating, maintenance-free plastic bearings



**igus<sup>®</sup>.com**  
Plastics for longer life<sup>®</sup>

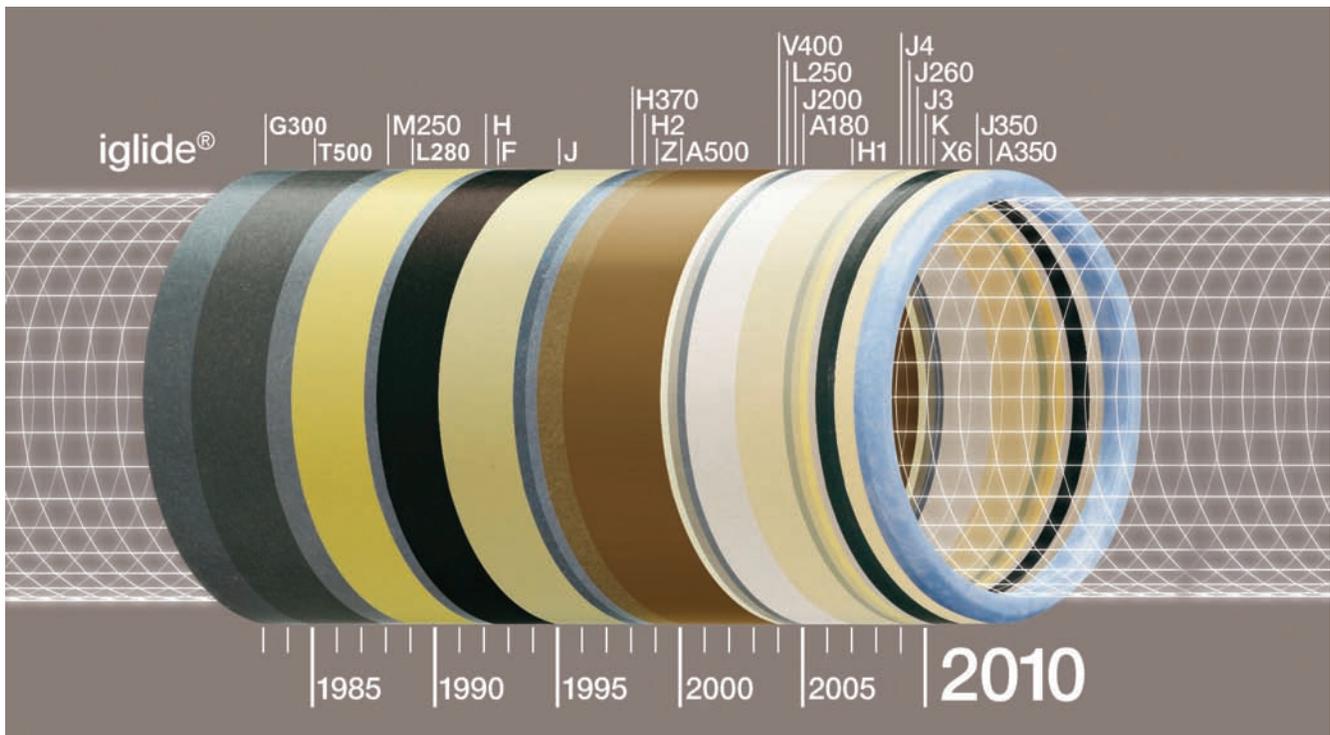
# igus® - 25 years of modern plastic plain bearings

In 1984, the same year that Apple introduced the Macintosh, the polymer plain bearing specialist igus® GmbH, began its material research. Over the past 25 years, igus® has developed 29 different material blends, which all possess a certain set of special features making them suitable for particular applications and requirements. igus®, line of iglide® plastic plain bearings constitute the step from a simple plastic bearing to a tested, predictable and available machine component.

igus®, entire line of iglide® plastic plain bearings are self-lubricating and corrosion-resistant. They have successfully replaced millions of metal bushings that require oil or grease. Decades of research also mean that igus® can precisely determine a plastic plain bearings's life cycle in any application.

“igus® may not be the inventor of the plastic plain bearing,” said Gerhard Baus, bearings manager for igus GmbH, “But our company certainly pushed the hardest in the trend towards modern polymer plain bearings.”

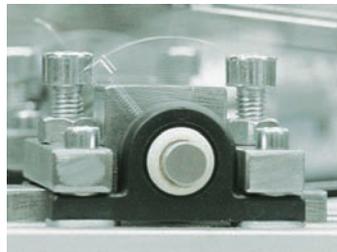
Every year, igus® engineers develop more than 100 new plastic compounds and conduct more than 8,000 tests for durability, friction and wear. This has made it possible to establish a large database of plastics' tribological properties. Today, igus® has the largest variety of tribo-optimized plastic plain, spherical and linear bearings in the world. igus® offers more than 10,000 parts from stock, ranging from chemical-resistant, waterproof and FDA-approved bearings to high-temperature and underwater bearings.



## Product testing in action



igus® is committed to quality assurance.



Above is a test to determine the maximum running speed of an igubal® pillow block bearing.



This is an example of friction and abrasion measurement in a rotation test.



Pictured is a bench test for loads up to 21,755 psi and temperatures up to 482 degrees Fahrenheit.

# What is iglide®?

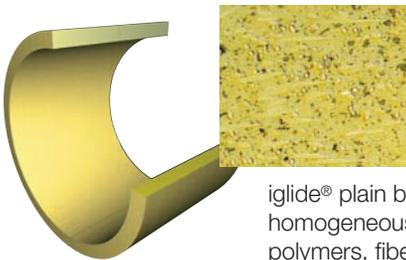
iglide® plastic bearings can be used for a variety of outdoor equipment applications such as farming equipment, lawn and garden machinery and recreational vehicles. iglide® plastic bearings are ideal for use in agricultural applications because they are self-lubricating, operate oil-free and will not contaminate the environment like bronze bushings.

iglide® bearings are designed to:

- Deliver a long, predictable life at a low cost
- Deliver a low coefficient of friction
- Run dry without oil or grease
- Withstand wear for a longer life

For its customers, igus® offers a unique lifetime calculator called the Expert System. It accurately predicts the life expectancy and wear rates of its plastic bearings for use in any application.

Calculations are based on actual test data from the igus® lab, which performs more than 8,000 tests each year, as well as data compiled from real-world field tests. The lifetime calculator takes the guesswork out of choosing a plastic bearing. Engineers can eliminate timely, expensive experiments they would otherwise have to perform themselves.



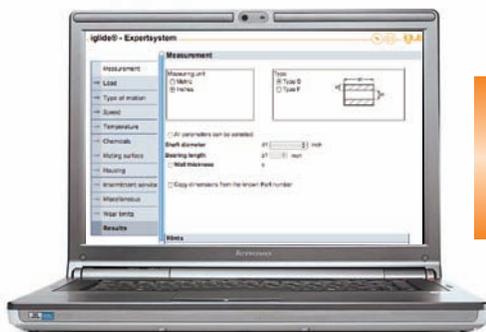
iglide® plain bearings have a homogeneous structure. Basic polymers, fibers for reinforcement and a dry lubricant complement each other.



iglide® plain bearings: the right material for every application

igus® offers:

- Lifetime bearing calculation
- Product selectors for finding the perfect bearing material for any application
- Large inventory of parts available to ship within 24 hours or less
- Downloadable CAD files with no registration required
- Technical support, including on-site assistance within 36 hours
- No minimum order requirements
- Free samples



Expert System



Visit [www.igus.com](http://www.igus.com)  
and click on the Lifetime  
Calculator for a direct link to  
the iglide® Expert System



iglide® product selector

# iglide® plastic bearings in outdoor equipment

Some common iglide® materials used in outdoor equipment are:

## iglide® G300



- High static load capacity
- Dirt/dust resistant
- Shock and impact resistant
- Vibration dampening

## iglide® P



- Low moisture absorption
- Rotating movements under high loads
- High wear-resistance
- Vibration dampening

## iglide® GLW



- Dirt/dust resistant
- Vibration dampening
- Able to handle static loads

## iglide® R



- High wear-resistance with low impacts
- Low moisture absorption
- Cost-effective

## iglide® M250



- Vibration dampening
- Reaming possible
- Great with large amounts of dirt/dust

## iglide® J



- High speeds at low loads
- High wear resistance with a variety of shaft materials, especially soft shafts
- Vibration dampening

## iglide® Q



- Ideal for high loads and oscillating movements
- Resistant to edge loads
- Wear-resistant

## iglide® Z



- High static-load capacity
- Vibration dampening
- Resistant to edge loads
- Resistant to fuel and oil

# Application examples

iglide® plastic bearings offer the following for outdoor equipment applications:

- Clean, oil-free operation
- Self-lubricating
- Maintenance-free
- Resistant to edge loads
- High compressive strength
- Corrosion-resistant
- Dirt/dust resistant
- UV-resistant
- Vibration dampening
- Cost-effective

Ideal in applications including, but not limited to:

- Balers
- Mowers
- Seeders/planters
- Sprayers
- Spreaders
- Snowblowers
- Recreational vehicles
- Construction equipment

Use in areas such as:

- Pivot points
- Linkages
- Steering systems
- Wheel assemblies
- Suspensions



iglide® R plastic bearings and iglide® GFL 2-bolt flanges are used in this commercial lawn mower.



iglide® G300 plastic bearings are used in a rotary swather on fertilizing equipment and are an excellent option for edge loads.



iglide® G300 and iglide® Q plastic bearings are used in the gauge wheel pivots, arm assemblies and wing hinges of this field cultivator.



iglide® G300 and iglide® R plastic bearings are used in a variety of areas on this mower, including the lift pivot and idler arm pivot.

# What is igubal®?

igubal® spherical bearings are made entirely from high-performance plastics. They are ideal for various types of outdoor equipment because they are self-lubricating, corrosion-resistant and maintenance-free.

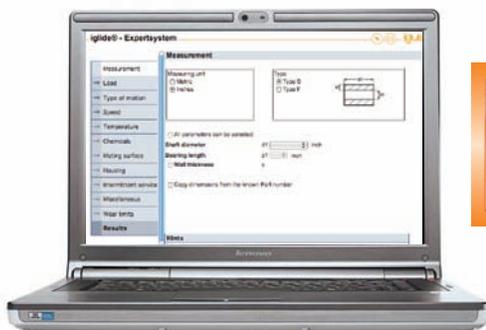
Benefits of igubal® spherical bearings:

- Long, predictable lifetime at a low cost
- Handle high loads with ease
- Wear-resistant
- Easy to install
- Adapt to angular deviations
- Replace special housings (in many cases)
- Available in a variety of styles such as rod ends, pillow blocks and two or four-bolt flanges

igus®' unique lifetime calculator is also available for accurately predicting the life expectancy of its igubal® spherical bearings.



igubal® spherical bearings are available in a variety of sizes and styles.



Expert System



igubal® product selector

# igubal® spherical bearings in outdoor equipment

Some common igubal® spherical bearings used in outdoor equipment are:

## Rod ends



- Ideal for high static loads
- Dirt/dust resistant
- Corrosion-resistant
- Vibration dampening

## Clevis joints



- Ideal for high radial loads
- Resistant to edge loads and shock loads
- Space-saving design
- Easy to assemble

## 2-bolt flange



- Variety of spherical ball materials available
- Easy to assemble
- Corrosion-resistant
- Dirt/dust resistant

## 4-bolt flange



- Variety of spherical ball materials available
- Easy to assemble
- Corrosion-resistant
- Dirt/dust resistant

## Pillow block



- Vibration dampening
- Ideal for high radial loads
- Resistant to edge loads and shock loads
- Split design available

## Double joint linkage



- Corrosion-resistant
- Variety of spherical ball materials available
- Dirt/dust resistant

## Pressfit



- High axial and radial loads possible
- Space-saving design
- Dirt/dust resistant
- Easy installation

## Spherical balls



- High compressive strength
- Corrosion-resistant
- Variety of materials available

# Application examples

igubal® spherical bearings offer the following benefits for outdoor equipment applications:

- Clean, oil-free operation
- Self-lubricating
- Maintenance-free
- Vibration dampening
- Dirt/dust resistant
- Dirt becomes imbedded for shaft protection
- Resistant to edge loads
- High compressive strength
- Corrosion-resistant
- Shock and impact resistant
- High mechanical strength

Ideal in applications including, but not limited to:

- Standing mowers
- Riding mowers
- Sprayers
- Fertilizers

Use in areas such as:

- Steering
- Deck lifts
- Seat pivots
- Linkages
- Hydraulic cylinders



igubal® clevis joints are used in this sprayer's hydraulic steering cylinder where they handle shock loads.



igubal® clevis joints and press-fit bearings are used in this special-purpose vehicle.

# Case studies



Rogers Sprayers manufactures enclosed drift-containment spray booms and sprayers for the golf and turf industry. The company uses iglide® R and iglide® J plastic bearings in various pivot points to avoid metal-on-metal contact.

“iglide is a cost-effective, off-the-shelf solution for us. The bearings come in contact with dirt, water and chemicals, and still deliver a superior performance to other solutions we’ve tried. We also like the fact that iglide® isn’t an eyesore — it looks good on our machines.” — Merv Bilinski, owner/president of Rogers Sprayers

Harriston Industries uses iglide® J plastic bearings in the pick arm of its potato planter. By using iglide®, the company has increased the lifespan of its planters by 500-600% at a cost 70-80% lower than the oil-impregnated bronze bearings it was using before. With bronze, the machines experienced premature failure due to abrasive conditions and high wear rates forcing replacement two or more times a season.

“After two years of use, I have yet to find a bearing comparable to it.” — Dave Paschke, R&D specialist for Harriston Industries



Kesmac Inc. needed a bearing that could dampen the vibrations caused by the rotating wheel in its reel mower. The bearing had to be corrosion-resistant to combat the harsh fertilizers, as well as moisture from dew on the grass and corrosive grass clippings. It also had to be dry-running to keep oil from dripping on the fresh-cut grass.

iglide® G300 flange bearings meet all of these stringent requirements and enable the pivot to be tightened to the frame of the mower, which ensures a snug fit and control of the rotation.

Commercial lawn-equipment manufacturer, Gregson Clark, employs igubal® spherical bearings in its truck-mounted custom spray systems, which are used by lawn and tree care companies. igubal® is an inexpensive solution that compensates for misalignment, withstands the tough chemical environment and meets tight space restrictions.

“igus® to the rescue!” — Rhatt Clark, president of Gregson Clark



# Environmentally friendly bearings

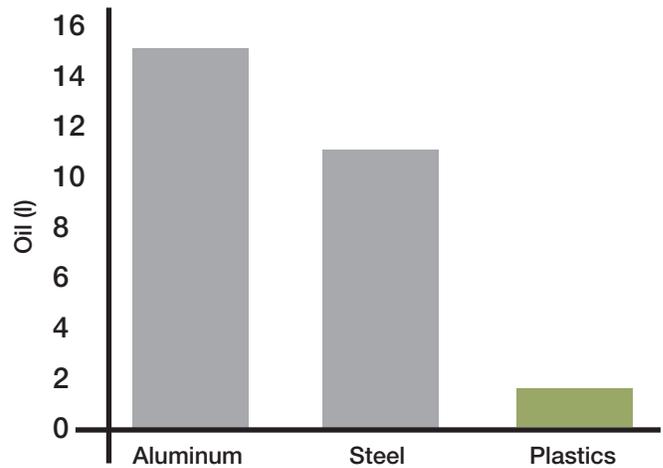
igus® products are extremely environmentally friendly as they do not require any grease or oil that can contaminate the environment. igus® is continuously looking for ways to reduce any negative impact that bearings can cause.



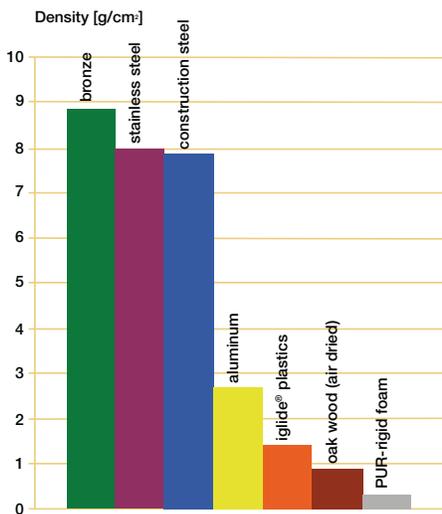
Additionally, iglide® plastic bearings deliver a longer service life than oil-impregnated sintered bronze bushings. Many iglide® bearings are resistant to biodiesel fuels, which makes them an excellent choice for companies striving to become more environmentally friendly.



A study found that nearly half of all machine lubricants used in Germany seep into soil, water or evaporate into the atmosphere. iglide® bearings require no lubrication, which helps solve this problem.



The energy required to produce one volume liter of material (converted to liters of oil). Source: Clausthal University of Technology



iglide® bearings also help to reduce fuel consumption and carbon dioxide output in outdoor equipment. Their lightweight properties lead to lower masses, and subsequently lower energy consumption.



iglide® bearings withstand this dirty environment and do not cause contamination.

## Additional products offered by igus®

flange bearing



barstock material for custom-machined bearings



xiros® plastic ball bearing



piston rings



iglide® clip bearings



PRT slewing ring bearing

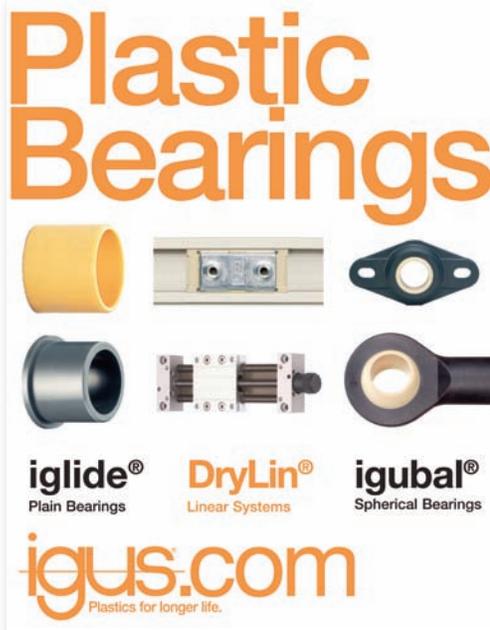


## Custom products are also available

igus® also offers custom solutions to meet the parameters of an unconventional application. All customized bearings offer lifetime calculations, as well as iglide® standard advantages: maintenance-free, self-lubricating, low-friction and wear-resistant. Call your igus® representative for more information. A bearing in any shape, such as square, trapezoid or rectangle, can be molded in any size.



# Also From



The newly revamped iglide® catalog contains information about igus®' extensive line of plastic plain bearings, spherical bearings and linear bearings and slides. With numerous specially engineered plastic blends, there is an igus® bearing for every application. The catalog features a new table of contents, a selection-according-to-industry section, and a number of new product lines. All of igus®' plastic bearings and linear units are self-lubricating and maintenance-free. More than 9,600 sizes and styles are available from stock.

**No minimum order required**  
**Free samples available**

## IN THE USA:

P.O. Box 14349  
East Providence, RI 02914  
Tel.: 888-803-1895  
Fax: 401-438-7680

## IN CANADA:

201 Millway Avenue, Units 24 & 25  
Concord, Ontario  
Canada L4K 5K8  
Tel.: 800-965-2496  
Fax: 905-760-8688

## IN MEXICO

Bvd aeropuerto miguel aleman  
160 int 135  
Col. Corredor industrial toluca lerma  
Toluca, estado de mexico 52004  
Tel.: (52) 728-284-3185  
Fax: (52) 728-284-3187

**Website: [www.igus.com](http://www.igus.com)**  
**e-mail: [sales@igus.com](mailto:sales@igus.com)**

To find your local sales office, visit [www.igus.com](http://www.igus.com)  
and click on the contact us link.



**ISO 9001:2008**  
**Certified**