

iglide®

Plastic Plain Bearings



iglide® plastic bearings are economical, dry-running, maintenance-free and best of all predictable. There are over 30 various iglide® materials to choose from depending on your applications requirements

1

xiros®

Plastic Ball Bearings



xiros® plastic ball bearings offer all of the advantages of a plastic bearing. They are lubrication-free, maintenance-free, lightweight, corrosion resistant and are predictable. They are designed for applications with high speeds and low loads.

2

Additional iglide® Products



Maintenance-free and lubrication-free plastic plain bearings in the most diverse special designs. Slewing rings, clip bearings for sheet metal, special flange bearings, and Polysorb® disc springs – the special iglide® materials always offer low costs and provide long service life.

3

DryLin®

Linear Guide Systems

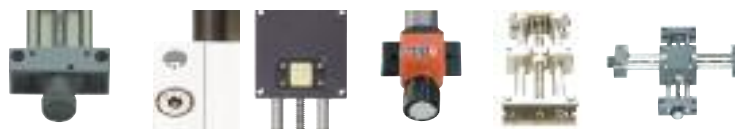


Oil-free plastic linear bearings for nearly all types of applications. DryLin® linear bearings are maintenance-free, lubrication-free, and can often be used as substitutes for conventional recirculating ball bearings, profile guides and PTFE-lined bearings at considerably lower cost.

4

DryLin®

Drive Technology



Maintenance-free lead screw systems and belt-driven systems from stock, designed to reduce engineering, purchasing and assembly time.

5

igubal®

Spherical Bearings



Maintenance-free and lubrication-free spherical bearings in various designs and configurations. Whether as a rod end, pivot or flange bearing, igubal® suits all requirements and is more economical and lighter than conventional spherical bearings.

6

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iglide® – Materials



iglide® M250

Thick and Robust

► Section 2

- Excellent vibration dampening
- Resistant to edge loading
- High impact resistance

2



iglide® R

Low Friction, Low Cost

► Section 3

- Low friction value
- Very low cost

3



iglide® J

The Fast and Slow Motion Specialist

► Section 4

- Low wear against different shaft materials
- Low coefficients of friction in dry run
- Best performance with soft shaft materials

4



iglide® L280

The Marathon Runner

► Section 5

- For especially long service life
- Low coefficient of friction
- Also suitable for soft shafts

5



iglide® G300

The All-Round Performer

► Section 6

- For above average loads
- Dirt and dust resistant
- More than 900 sizes available from stock

6



iglide® Q

Fit for High Loads

► Section 7

- Excellent wear resistance at high loads
- Recommended for extreme $p \times v$ values
- Maintenance-free dry running

7



iglide® P

Cost-Effective and Maintenance-Free

► Section 8

- Low moisture absorption
- Low wear rates
- Cost-effective

8



iglide® Q2

Special Applications

► Section 9

- Cost-effective
- For use in wet environments
- Good wear resistance at medium loads

9



iglide® H370

The Underwater Specialist

► Section 10

- Excellent for underwater applications
- Wear-resistant
- Good chemical resistance

10



iglide® A180

Food Applications

► Section 11

- Complies with the regulations of the FOOD AND DRUG ADMINISTRATION
- For wet environments

11



iglide® A200

Food Applications

► Section 12

- Complies with the regulations of the FOOD AND DRUG ADMINISTRATION
- For low speeds

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Table of Contents

iglide® – Materials



iglide® A350

Food Applications

► Section 13

- Complies with the regulations of the FOOD AND DRUG ADMINISTRATION
- Quiet operation
- Good wear resistance at high loads

13



iglide® T500

The High-Tech Problem Solver

► Section 14

- Temperature resistant from -148°F to +482°F
- Universal resistance to chemicals
- Very low moisture absorption

14



iglide® X6

The new Nano Material

► Section 15

- High compressive strength
- High temperature resistance up to +482°F
- PTFE-free
- Excellent chemical resistance

15



iglide® Z

The High Temperature Material

► Section 16

- For high temperature applications
- High thermal resistance
- For extreme loads

16



iglide® GLW

General Purpose

► Section 17

- Low cost
- Applications with static loads
- For large quantities

17



iglide® K

General Purpose

► Section 18

- Cost-effective
- For wet environments
- Good wear resistance at medium loads

18



iglide® J200

Long Distance Runners

► Section 19

- Low coefficients of friction
- Low wear rates
- For low to medium loads

19



iglide® J260

Long Distance Runners

► Section 20

- Lubrication- and maintenance-free
- Good liquid media resistance
- Good wear resistance at medium loads

20



iglide® J3

Long Distance Runners

► Section 21

- Low coefficients of friction
- Good liquid media resistance
- Low moisture absorption

21



iglide® J350

Long Distance Runners

► Section 22

- For medium and high loads
- High temperature resistance
- Cost-effective

22



iglide® L250

Long Distance Runners

► Section 23

- Very low coefficients of friction
- Excellent wear resistance
- For rotating applications at high speed

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Table of Contents

iglide® – Materials



iglide® D
Long Distance Runners
► Section 24

- Vibration dampening
- Very low moisture absorption
- Extremely cost-effective

24



iglide® H
Media Resistance
► Section 25

- Maintenance-free
- For high temperatures
- Resistant to chemicals

25



iglide® H1
Media Resistance
► Section 26

- High resistance to temperature and chemicals
- Very low coefficient of friction
- For automotive use in the engine compartment

26



iglide® H2
Media Resistance
► Section 27

- Cost-effective
- Resistant to chemicals
- For high temperatures

27



iglide® A500
Food Applications
► Section 28

- Lubrication- and maintenance-free
- Complies with the regulations of the FOOD AND DRUG ADMINISTRATION
- High chemical resistance

28



iglide® A290
Food Applications
► Section 29

- Good abrasion resistance
- For low noise operation
- Suited for direct contact with food

29



iglide® T220
Food Applications
► Section 30

- For use in the tobacco industry

30



iglide® F
Special Applications
► Section 31

- Electrically conductive
- High compressive strength
- High pv value

31



iglide® H4
Special Applications
► Section 32

- Low coefficients of friction
- Good abrasion resistance
- High chemical resistance

32



iglide® N54
Special Applications
► Section 33

- For applications with infrequent movements
- For low to medium loads
- Environmentally friendly

33



iglide® UW
Special Applications
► Section 34

- For underwater applications
- For fast constant motion
- Long service life

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iglide® – Special iglide® Products



xiros® ball bearings

Polymer Ball Bearings

► Section 35

- Free from maintenance and lubrication
- High corrosion-resistance
- For temperatures up to 302°F

35



iglide® PRT

Slewing Ring Bearing

► Section 36

- Maintenance-free
- Low coefficients of friction
- High rigidity
- Cost-effective
- Robust

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iglide® – Additional iglide® Products



iglide® Clip Bearings

► Section 37

- Secured with the double flange design
- Maintenance-free and self-lubricating
- Good wear resistance
- Smooth operation
- Material: iglide® M250

37



iglide® Clip2

Suitable for High Loads

► Section 38

- Low bearing clearance, very precise
- Easy installation due to angled slit
- Material: iglide® M250
- Maintenance-free and predictable service life

38



iglide® JV

Pre-tensioned, No Clearance

► Section 39

- Zero clearance, even under no load
- Material: iglide® J
- Maintenance-free
- Predictable service life

39



iglide® Piston Rings

► Section 40

- Free from maintenance and lubrication
- High corrosion-resistance
- For temperatures up to 482°F

40



iglide® Barstock

Design Freedom

► Section 41

- iglide® materials as round stock bar or mechanically finished special parts

41



Rollers

Precise Deflection

► Section 42

- Tight deflection radii
- Low driving power
- Cost-effective

42



iglide® Flange Bearings

► Section 43

- Maintenance-free
- Very good wear resistance
- Material: iglide® G300, J, T500 or A180

43



Polysorb

Polymer Disc Springs

► Section 44

- Compensation of axial clearances and manufacturing tolerances
- Vibration dampening
- Noise reduction
- Corrosion resistant
- Lightweight

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DryLin® – Products



DryLin® N

Low profile guide system

► Section 46

- Low profile
- Lightweight
- Simple, low-cost design

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DryLin® W

Modular linear guide system

► Section 47

- Flexible, modular linear system
- Great blend of cost and performance
- Easy to assemble

47



DryLin® T

Profile rail guides

► Section 48

- Maintenance and oil-free
- Low-cost alternative to ball bearing systems
- Dimensionally interchangeable with many ball bearing systems
- Adjustable clearance

48



DryLin® R

Linear bearings

► Section 49

- Maintenance and oil-free
- Low-cost alternative to ball bearing systems
- Dimensionally interchangeable with many ball bearing systems

49



DryLin® Shafting

► Section 49

- Available in Aluminum, Steel, Stainless, and Chrome-plated materials
- 6mm to 50mm diameters
- Supports and other accessories available

49



DryLin® Slide Tables

Belt and lead screw assemblies

► Section 50

- Pre-assembled belt and lead screw systems
- Reduces purchasing, engineering, and assembly costs
- Maintenance-free operation

50



DryLin® Lead Screws

► Section 51

- Oil-free
- Corrosion-resistant
- Anti-backlash available

51



DryLin® Stainless

Stainless steel products

► Section 52

- 304/316/440 Shafting
- Lead screw tables
- Complete 316 guide systems
- Stainless shaft supports

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DryLin® Specialists

Outside the box ideas

► Section 53

- Hybrid sliding/rolling systems
- Telescoping systems
- Dimensionally interchangeable with many ball bearing systems
- Adjustable clearance

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igubal® – Products



igubal® Rod Ends

► Section 55

- Maintenance-free
- Compensate for misalignment and edge loads
- Lightweight

55



igubal® Clevis Joints

► Section 56

- Vibration dampening
- Lubrication-free
- Lightweight

56

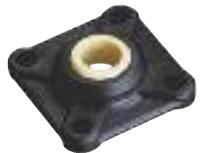


igubal® Pillow Block

► Section 57

- Maintenance-free
- Self-lubricating
- Compensate for misalignment and edge loads
- Lightweight

57



igubal® Flange

► Section 58

- Maintenance-free
- Self-lubricating
- Compensate for misalignment and edge loads
- Sturdy

58



igubal® Pressfit

► Section 59

- Easy to install
- Cost-effective
- Resistant to chemicals
- Lightweight and durable

59

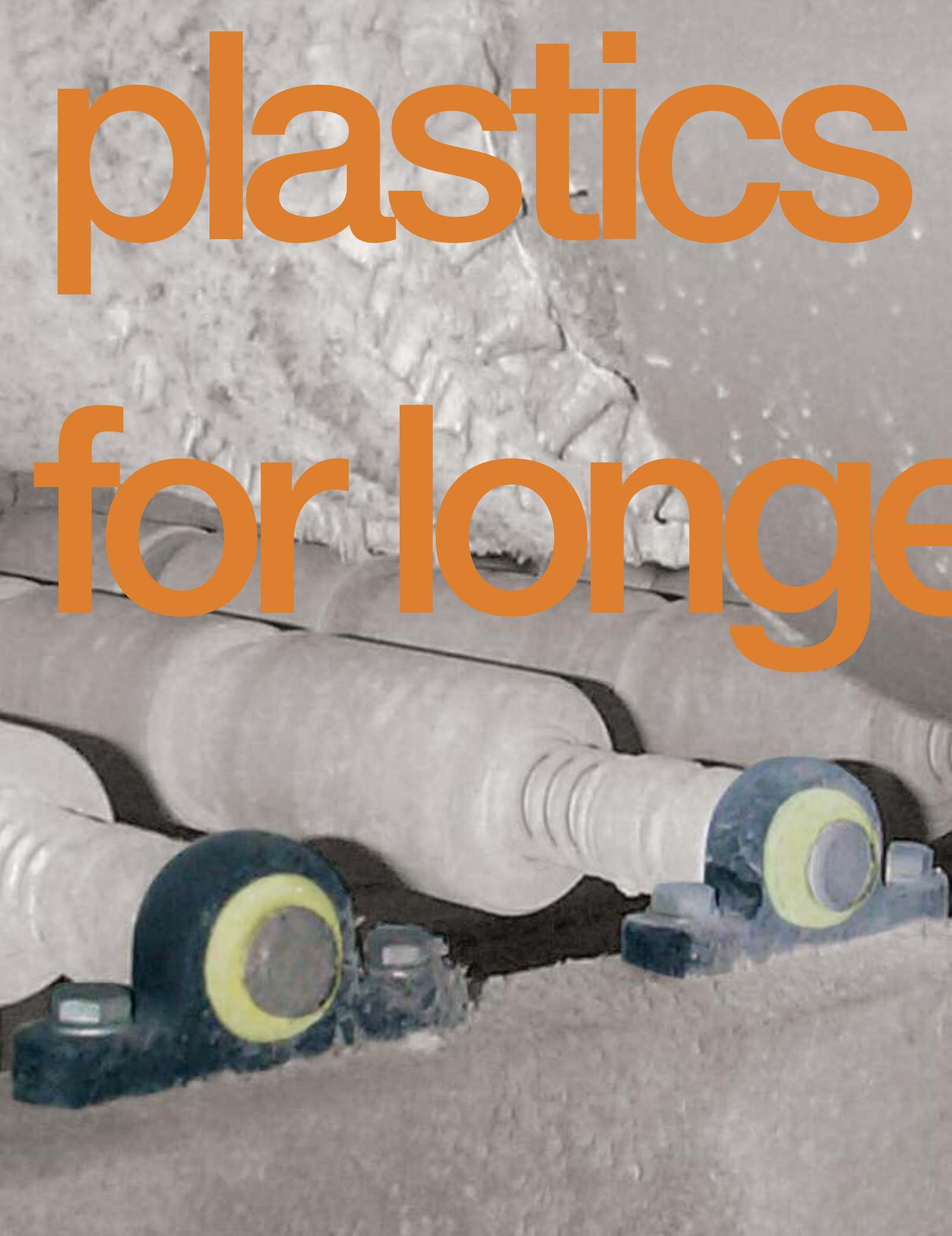


igubal® Spherical Balls

► Section 60

- Different material balls are available for varying application requirements

60



plastics

for longer

**Plastics for longer life® –
make your machines more durable with plastics**

No lubrication, less maintenance, lower costs, longer life cycles, always available from stock – these key principles apply to all igus® products, systems and services.

Tried and tested in terms of durability, friction properties and stability, igus® plastics are the technological core of the igus® range. This catalog lists more than 9,600 plastic bearing products available from stock from the smallest batch size upward.

We are looking forward to your phone call or e-mail.

er life

igus® inc.
P.O. Box 14349
East Providence, RI 02914
401-438-2200
888-803-1895
sales@igus.com
www.igus.com

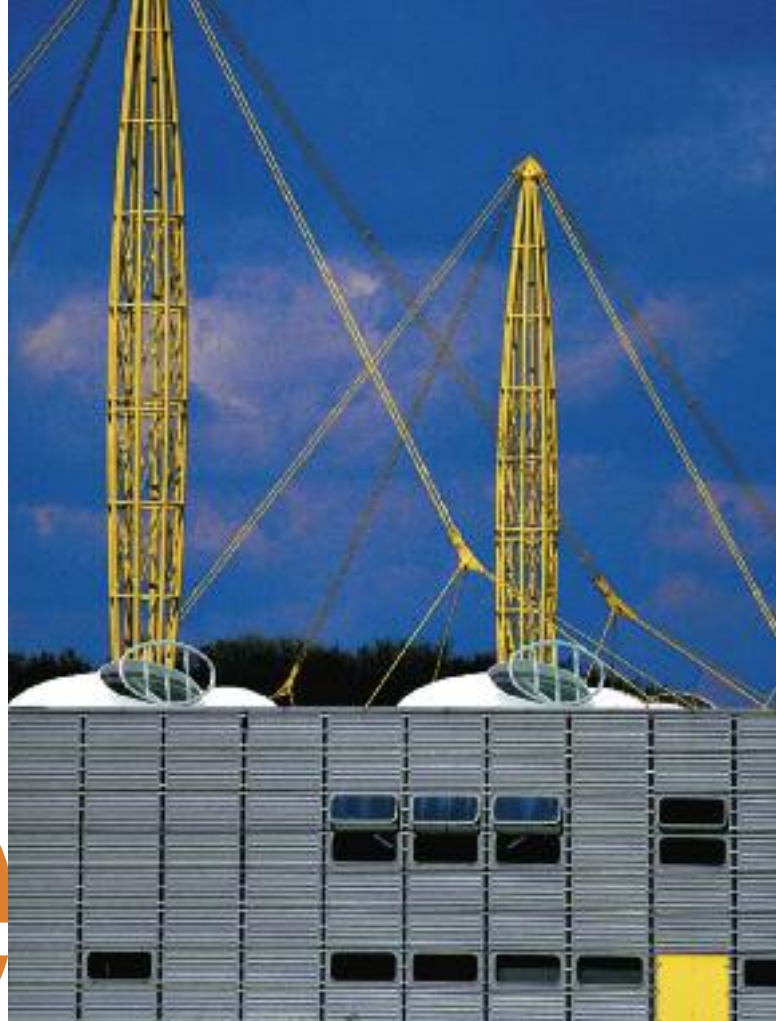
Orders can be placed until 8:00 Eastern standard time.
Phone: 888-803-1895

No minimum order quantity, no surcharges.
9,600 plastic bearings from stock.

No lubrication. No maintenance. No downtime.

No lubrication. No maintenance. No downtime.

Call for free samples and technical support or visit www.igus.com



igus® headquarters in Cologne, Germany –
research, development and production
from a single location.

igus® is certified to ISO 9001:2008

Longer life cycles, lower costs

Innovations with high-performance plastics

igus® plastic plain bearings® constitute the step from a simple plastic bearing to a tested, predictable and available machine component.

Our research is based on specific bearing properties – especially life cycle – achieved by continuous advancements in materials.

Predictable life cycle – no lubrication necessary

Lubrication-free operation is something every designer strives for.

igus® plastic plain bearings make this dream a reality. Decades of research and testing now permit precise calculations of a plastic plain bearing's life cycle.

Fit and forget – matching solutions from stock

- Innovative, quickly assembled and economical products
- Delivery from stock – lower inventory costs
- Large product selection – find the right solution for your application
- Time-saving tools on the Internet
- We deliver customized, ready-to-fit units
- Quick reaction customer service with many local representatives in United States, Canada, Mexico and worldwide.

igus® maintenance-free plastic plain bearings help improve your products and reduce costs at the same time.

Many sample applications can be found at:
www.igus.com/bearings-applications





Corrosion-free with igus®

Low weight, corrosion resistance as well as zero maintenance and lubrication achieve solutions for nearly all types of applications.
Fit and forget!

Resistant to dirt with igus®

Zero-maintenance and high dirt resistance are not the only advantages of DryLin®.
Longer life cycles – lower costs!



No maintenance with igus®

Various iglide® materials for a wide variety of operating conditions. Large program of dimensions compatible with nearly all environments.
Predictable life cycle!



No lubrication with igus®

The lubrication-free design of iglide® also permits its use in the food and pharmaceutical industries.
Don't wait any longer!



iglide[®] plain bearings

Excellent plastics, improved through precise additions of reinforcements and solid lubricants, tested thousands of times, and proven millions of times – that is iglide[®].

Every year, igus[®] engineers develop more than 100 new plastic compounds and conduct more than 5,000 tests on maintenance-free plain bearings. Over the years, this has made it possible to establish a large database of plastics' tribological properties.

In addition to their general properties, every iglide[®] bearing material possesses a number of special features making it suitable for particular applications and requirements.



Part number:

iglide[®] J
Plain bearings

Maximum static
surface pressure (68°F)

5,075 psi

Application
temperature

-58 °F / +194 °F

Color

yellow

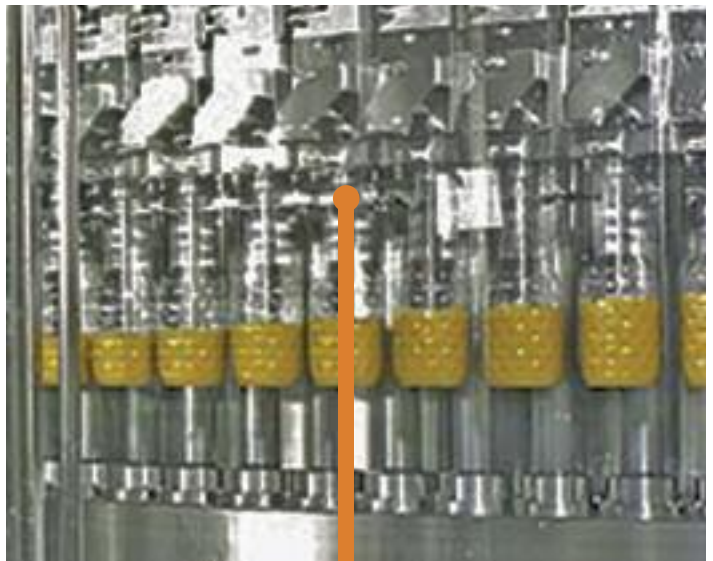
Coefficient of dynamic
sliding friction against
steel (μ)

0.06-0.18

Practical example

igus® bearings and linear sliding films made of iglide® material, which meets all demands of aseptic filling, are used here.

Low adhesion and friction factors against different kinds of stainless steel, negligible moisture absorption, very good stability against PES-cleaners, lubricant-free, all of that means no contamination of products of the aseptic atmosphere.



Lifetime calculation online:
www.igus.com

Exciting applications can be viewed online at:
www.igus.com/bearings-applications

Application examples: iglide®

Exciting applications can be viewed online ► www.igus.com/bearings-applications



Sleeve bearing



Thrust washer



Clip1 bearing



Plastic ball bearing



Flange bearing



PRT slewing ring



Clip 2 bearing



Custom part

Roller coaster

Using iglide® Z bearings eliminated maintenance by 95% and reduced costs by 54%.





Spreaders

Using a special bearing design on this centrifugal arm significantly reduced manufacturing costs. iglide® is also maintenance-free and delivers high wear resistance.



Boat lifts

Unlike metal or bronze bearings, iglide® plastic bearings do not corrode in this underwater application. The self-lubricating bearings handle loads from 4,500 up to 66,000 pounds and also do not contaminate the water with grease, making it an environmentally-friendly solution.



Welding machine

PRT in this automatic welding machine enables rotation in the horizontal plane of the chuck



Tool changer machines

iglide® D offered an enormous cost savings when compared to metallic rolled bearings. iglide® D also has a low coefficient of friction and high wear resistance.



Farming equipment

A manufacturer of agricultural machinery replaced bronze bearings with iglide® J plastic bearings to eliminate corrosion and increase lifespan on its potato planter. Service life increased by 600% and iglide® costs the company 70-80% less than bronze.



Tubular bag machines

iglide® Z is used in the arms of this packaging machine. The bearings withstand operating temperatures of more than 320 degrees Fahrenheit and are wear-resistant.

DryLin[®] linear plain bearings and Lead screw tables

DryLin[®] linear plain bearings are an ideal alternative to traditional re-circulating ball bearing systems. These sliding plain bearings are made of high-performance polymers from igus[®] iglide[®] series. DryLin[®] linear bearings can be used if dirt, dust or moisture is present, for short stroke applications, or if a lubrication-free solution is needed.

DryLin[®] linear slide tables are also designed for dry running. As a result, dust and dirt will not cling to the bearing surfaces. DryLin[®] linear bearings also have no minimum stroke-length restrictions, unlike re-circulating ball bearings. They deliver quiet operation and are corrosion-resistant.

igus[®] also offers flat, compact lead screw linear tables for variable formats and handling tasks. The linear table is extremely rigid due to the hard-anodized aluminum shaft and is also made of igus[®] high-performance iglide[®] polymers.



Part number:

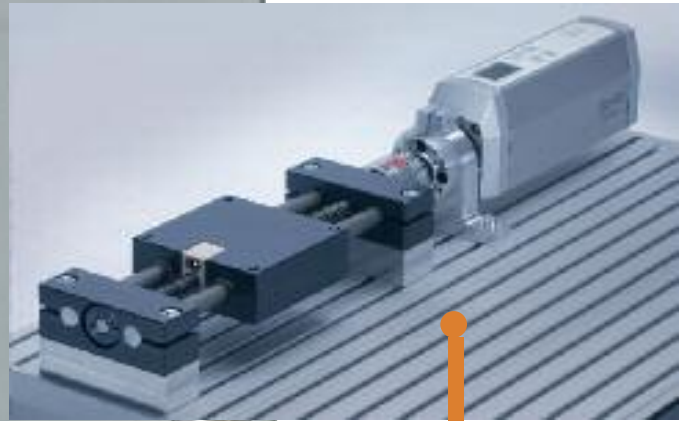
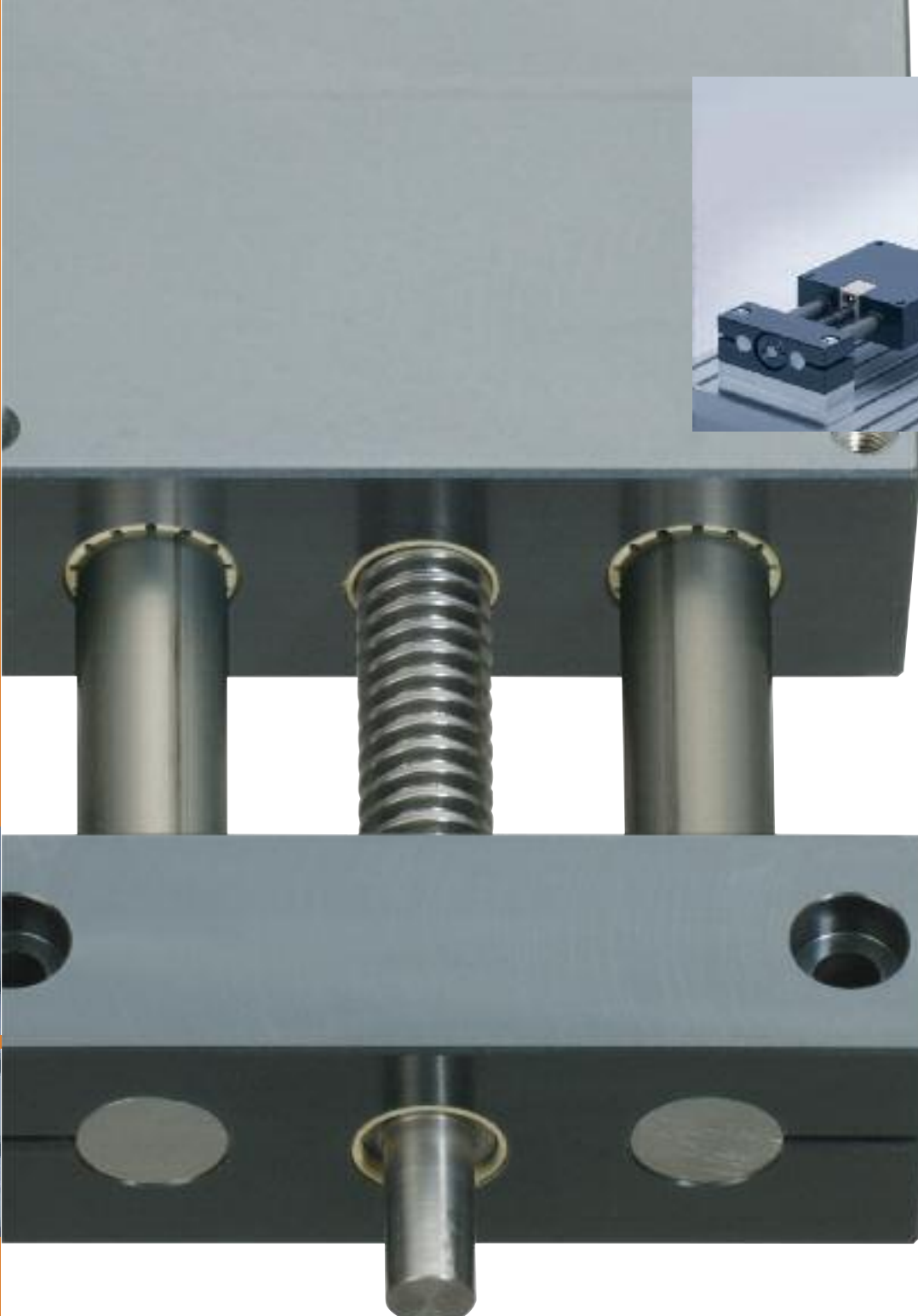
HTS-12-AWM

Maximum static surface pressure

630 lbf

Operating temperature

-40°F/+194°F



Practical example

Electrical Servo Drives

For a wide variety of formats in printing, paper, packaging, transmission and wood processing systems, Festo demonstrates the use of the HTS DryLin® Lead screw linear table in conjunction with its electrical servo drive.



reddot design award
winner 2006



Lifetime calculation online:
www.igus.com

Exciting applications can be viewed online at:
www.igus.com/bearings-applications

Application examples: DryLin®

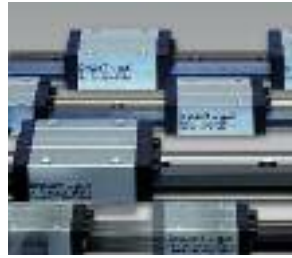
Exciting applications can be viewed online ► www.igus.com/bearings-applications



DryLin® N



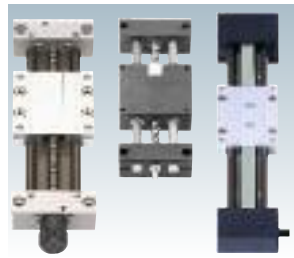
DryLin® W



DryLin® T



DryLin® R



DryLin® slide tables

Packaging technology: Label feeding system

DryLin® T linear guides are dimensionally interchangeable with traditional re-circulating ball guides, but without the high costs. A further advantage is the availability of a manual clamping mechanism.





Bottle sealing machines

This machine seals champagne bottles with corks, aluminum caps and wire braid. DryLin® R linear bearings are lubrication-free, which is important in the food industry. DryLin® R is also impervious to the frequent cleaning and chemicals seen by the machine.



Form/fill/seal machines

DryLin® linear bearings are used to guide the tools of this form, fill and seal machine. The bearings are exposed to temperatures reaching 248 degrees Fahrenheit and are self-lubricating. The bearings are also resistant to the machine's corrosive cleaning agents, which minimizes downtime.



Machine tool technology: Door adjustment

DryLin® R linear bearings are used to guide the doors of this machine. The bearings are a huge cost savings and because they require no lubrication, flying chips do not cause downtime by getting stuck in the machine.



Packaging equipment

These packaging machines use DryLin® R sleeve bearings to reduce installation time. They are resistant to dust, dirt and water. DryLin® R is also maintenance-free and can reduce replacement part costs up to 90%.



Medical devices

DryLin® linear guide systems and DryLin® R linear bearings are used on this medical machine, which performs non-invasive treatment of chronic heel pain. With DryLin® linear bearings and guides, the company eliminated costly maintenance and the need for messy lubricants.



Aluminum window manufacturing

This machine manufactures aluminum window frames. A DryLin® HTS linear slide table is used to position the machine's milling heads. DryLin® HTS is lubrication-free, which prevents aluminum dust and chips from building up and causing downtime.

igubal® spherical bearings

igubal® spherical bearings are self-aligning components made entirely of high-performance plastics.

The igubal® series provides designers with a complete system of self-aligning bearings: Rod ends, clevis joints, flange bearings, pivot bearings and pillow blocks. Self-adjusting bearings are easy to fit, adaptable to wide angular ranges and have been used to replace special housings in many cases.

igubal® offers all the advantages of high-performance plastics, including dry-running capability combined with very good vibration dampening.

igubal® spherical bearings are insensitive to dirt, liquids, chemicals and fully corrosion-proof.

Bearings from the igubal® range are very light, compact and economical on two fronts:

- Low purchase price
- Low maintenance and installation costs



Part number:

KBRM-08

Maximum static tensile load

470 lbf

Maximum transverse load

157 lbf

Minimum screw-in depth

.43 in.

Maximum tightening torque for internal thread

88 lbf · inch

Maximum tightening torque for spherical ball

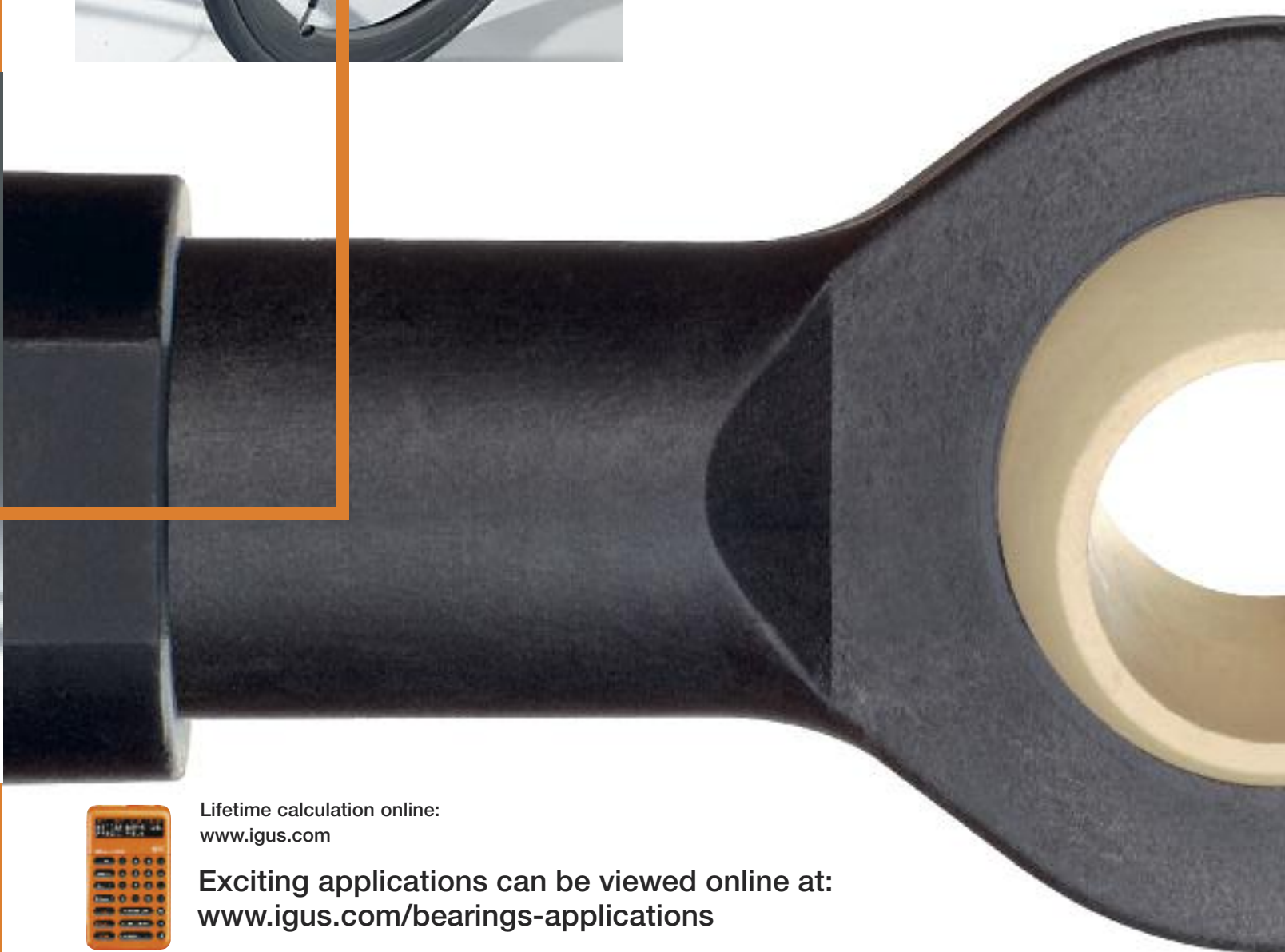
106 lbf · inch



Practical example

The reclining wheel's curve inclination is realized by means of rod ends in the journal link.

The high top speed and rapid acceleration are partly due to the rod ends' low weight. The bearing points do not require any elaborate sealing measures.



Lifetime calculation online:
www.igus.com

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Application examples: igubal®

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igubal® rod ends



igubal® clevis joints



igubal® pillow blocks



igubal® flange



igubal® spherical

Curtain wall louvers for stadiums

igubal® spherical bearings are used on the main assembly of these wall louvers. The bearings enable the slats, which are part of the wall louver, to swivel so airflow can be regulated inside the stadium. igubal® is maintenance-free and corrosion-resistant.





Research telescopes

igubal® spherical bearings are used to facilitate the movement of mirrors on this telescope. Smooth motion is achieved and magnetic interference is completely eliminated thanks to igubal® plastic bearings.



Basketball shooter

Students from Iowa State University used igubal® spherical bearings on a basketball shooter for children with Cerebral Palsy. The shooter uses igubal® flange and pillow blocks to enable the shooting mechanism to be pulled back with radial loads of 250 pounds.



Packaging machines

igubal® spherical bearings perform a high number of cycles without maintenance or lubrication. igubal® is also dirt- and dust-resistant and will not contaminate food handled by the machines.



Recreational vehicle steps

igubal® rod ends are used in the steps of this RV. They are maintenance-free and vibration-dampening.



Textile machinery

Self-aligning igubal® clevis joints are used to support the thread guide unit on this textile machine. Shock loads are no longer an issue and vibration is drastically reduced when compared to metal bearings.

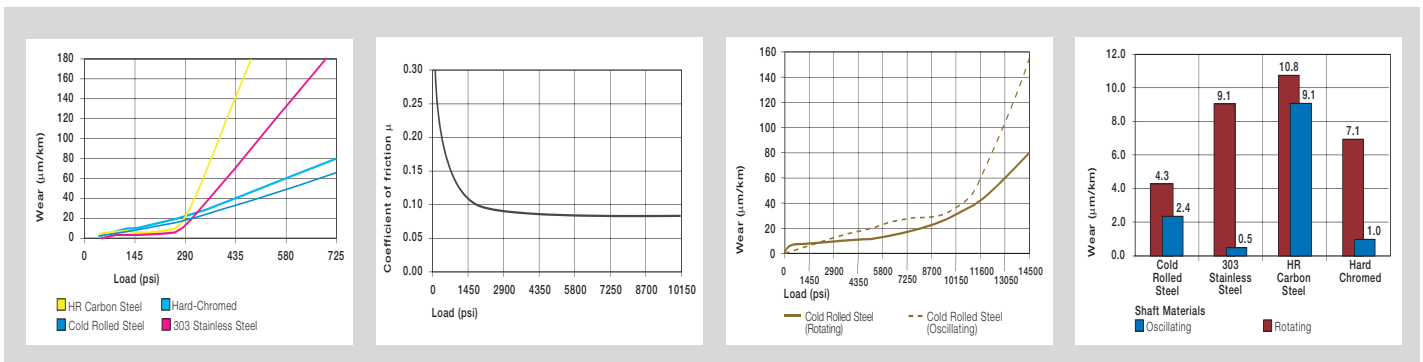


Baking machinery

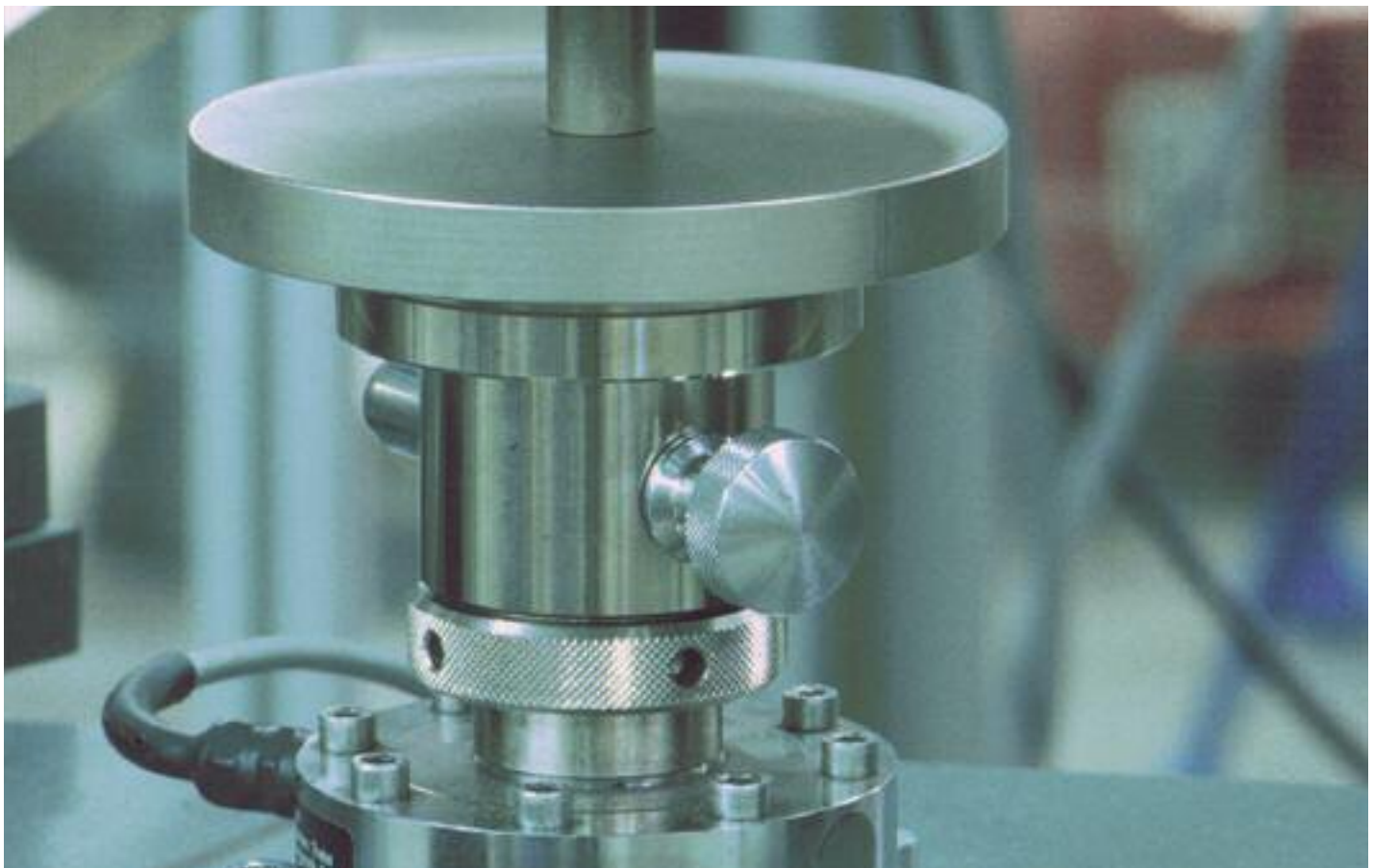
igubal® spherical bearings do not contaminate the chocolate processed by this machine because they are lubrication-free. igubal® is also corrosion-resistant and can be used in wash-down applications or anywhere moisture is present.

Quality from the igus® laboratory: Tested thousands of times, proven millions of times.

igus® has more than 40 years of experience in providing customers with plastic bearing solutions. Every year, igus® engineers develop more than 100 new plastic compounds and conduct more than 5,000 tests on its maintenance-free plastic plain bearings. Over the years, this has made it possible to establish a large database of plastics' tribological properties. In addition to their general properties, every iglide® bearing material possesses special features that make it suitable for particular applications and requirements. igus® bearings constitute the step from a simple plastic bearing to a tested, predictable and available machine component.



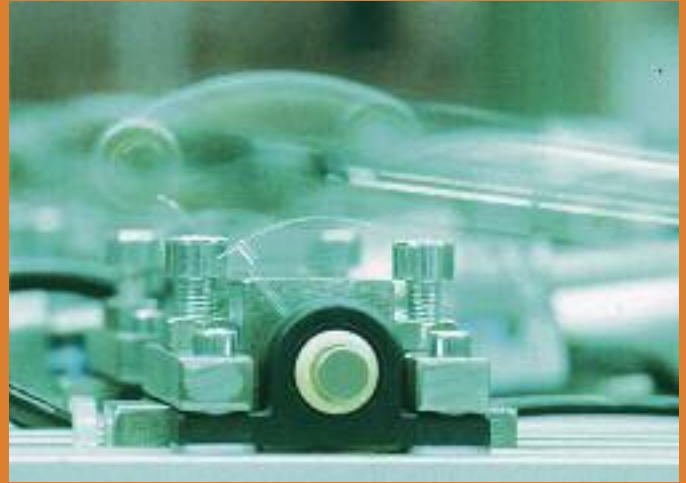
The results of more than 5,000 tests are added to our database annually.



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.

The Application Corner

In addition to all the applications you have read about in this brochure, more examples and an extensive video library can be found in igus®' Application Corner at www.igus.com/bearings-applications.

igus® Inc. is proudly certified by the National Quality Assurance (NQA) against the provisions of ISO 9001:2008. All products are tested and available from a single source.

Examples of test certificates and quality seals for igus® products:



... more by request.

Lubrication-free with igus® good for the environment and the wallet

Plastic bearings offer environmental benefits

Tribologically optimized iglide® plastic plain bearings from igus® require neither oil nor grease. They are lubrication-free, so no contaminants escape into the environment.

One billion gallons of industrial lubricants are consumed annually in the United States, of which an estimated 40 percent is released into the environment. This is becoming increasingly environmentally unacceptable and there is a growing need to find 'green' substitutes.

Due to continually advancing bearing technology, igus® is able to supply metal plain and rolling bearing alternatives more in line with environmental considerations for an increasing number of applications.

The amount of oil used in plastics manufacturing is also very positive in comparison with aluminum and steel production. Whereas the energy from 16 quarts of oil is necessary to produce 1 quart of aluminum, and 1 quart of steel requires 12 quarts of oil, to produce 1 quart of plastic only needs an average of 1.9 quarts of oil. The production of plastics only makes up 4 percent of annual oil requirements globally.

Lubricant-free and light

The solid lubricants contained within iglide® polymer plain bearings are not the only ecologically valuable benefit. The lightweight bearings can also help to reduce fuel consumption and carbon dioxide output in vehicles or aircrafts, for example. The reduced weight leads to lower masses and subsequently lower energy consumption.

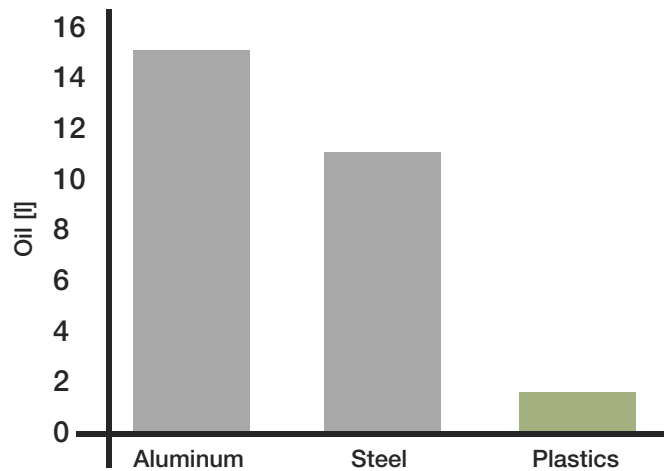
The high chemical resistance of plastic bearings is another positive ecological aspect because metals are often coated to achieve this effect. This takes place in environmentally unfriendly, high-energy zinc galvanizing baths.



In contrast to metallic plain and rolling bearings, iglide® plastic plain bearings from igus® require no oil or grease



A study has 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 would aid in solving this problem.



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



Lifetime calculation online:
www.igus.com

Exciting applications can be viewed online at:
www.igus.com/bearings-applications

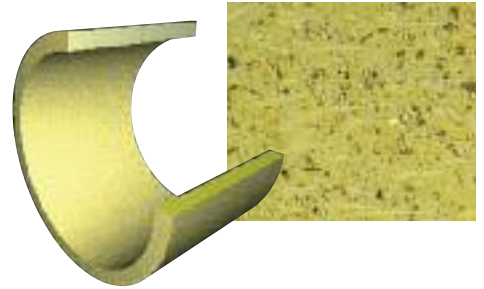
Choosing the perfect iglide® bearing for your application.

Plastics for longer life

High performance iglide® bearings are a viable, cost-effective alternative to metal, ball bearings, and bronze. They are fast becoming a standard choice for design engineers. Engineers are realizing that advanced synthetic compounds provide more design opportunities than traditional materials. Based on customer applications and requirements the igus® research and development team is continually developing new materials to meet these challenges. All iglide® maintenance-free bearings deliver superior performance, even in severe environments.

Very few basic materials can be modified and adapted, as well as thermoplastics. Thermoplastics can be produced with lubricants, they can be reinforced mechanically by the addition of technical fibers, or they can be varied by additional filling materials, especially in regard to friction and wear behavior.

The solid lubricants used in iglide® bearings are, as microscopic particles, embedded in millions of tiny chambers of the mostly fiber-reinforced material. From these chambers, the plain bearings release tiny amounts of solid lubricants during movement. The solid lubricants help to lower the coefficient of friction of the iglide® bearing. Since they are embedded in the tiny chambers, they cannot be pressed out. They are always there as soon as the bearing or the shaft is set in motion. Because iglide bearings are self-lubricating, an external lubricant is not necessary.



Predictable

Each year, igus® engineers develop more than one hundred new plastic compounds and test maintenance-free plain bearings in more than 5,000 experiments. Through many years of research and testing, igus has been able to make its bearings predictable. In recent years igus has compiled an extensive database of the tribological properties of plastics. This database makes it possible for us to better assess the overwhelming number of applications in advance, to calculate the expected service life, and provide our customers with confidence during use.

What design engineers need more than ever is predictability, reliability and speed. With the help of igus' online Expert System, in just a few minutes engineers can reliably determine which bearing best suits their application and receive a service life analysis based on empirical test results.

From start to finish, igus® is here for you
















igus design technicians are ready to assist you with every step from design to production. Our highly trained experts are available by phone or e-mail and free on-site demonstrations and evaluations are always encouraged. Please visit our Web site at www.igus.com for detailed technical information, 3D CAD drawings ready for download and to use our Predictability Expert Systems.

Send us a request for free test samples, then place your order from over 9,600 standard dimensions or special parts.




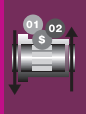
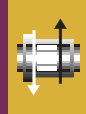


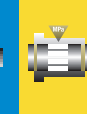
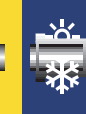
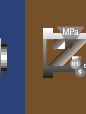




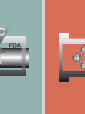

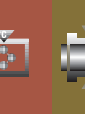












Selection According to Industry

iglide® plastic plain bearings are designed to meet a variety of application parameters so they can be used in many different industries and applications. Use the chart below as a guideline for getting started. To speak with an igus® sales engineer, call 1-888-803-1895

															
iglide®	M250	R	J	L280	G300	Q	P	Q2	H370	A180	A200	A350	T500	X6	Z
Agriculture	●	●	●		●		●	●							
Bicycle			●	●	●		●								
Automation				●	●	●	●		●						
Automotive	●				●										
Construction					●		●	●					●	●	●
Cylinders/ Pneumatic			●	●					●	●					
Fitness Equipment	●	●	●	●											
Food Mfg Preparation										●	●	●			
Home Appliances	●	●	●							●	●	●	●	●	●
Lifting Equipment				●	●	●	●								
Marine			●		●		●		●				●		
Medical	●	●	●		●					●	●	●			
Office Furniture	●	●	●												
Packaging	●	●	●							●	●	●			
Printing & Copy Machines				●	●	●									
Pumps / Valves													●	●	●
Recreational vehicles		●	●				●	●						●	

Selection According to Main Criteria

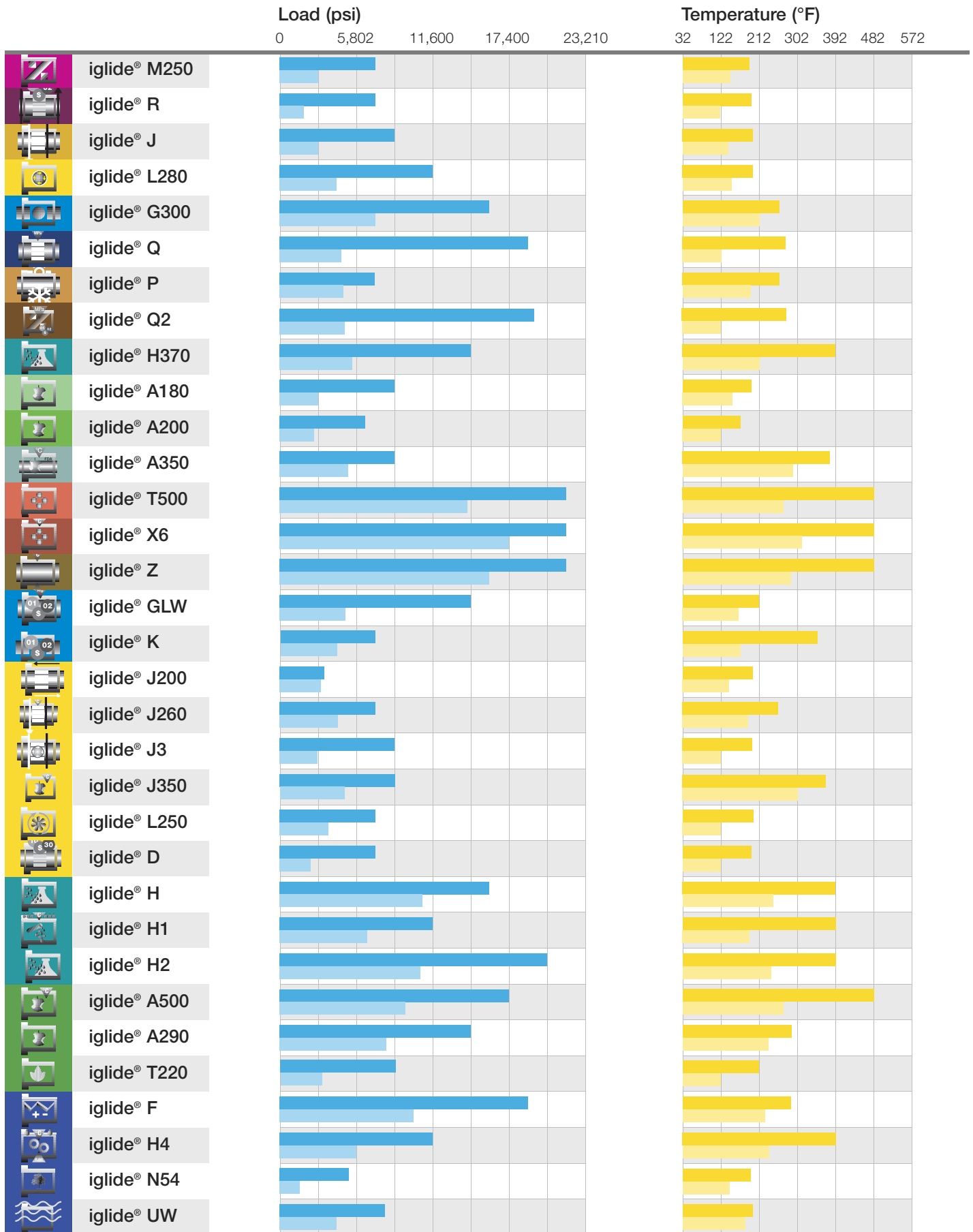
Standard materials available from stock

															
iglide®	M250	R	J	L280	G300	Q	P	Q2	H370	A180	A200	A350	T500	X6	Z
 long life dry running	●	●	●	●	●	●	●	●		●		●	●	●	●
 for high loads					●	●							●		●
 for high temperatures									●			●	●	●	●
 low friction/high speed		●	●	●		●			●	●		●		●	●
 dirt resistant	●			●	●		●	●			●				
 chemical resistant									●				●	●	●
 low water absorption		●	●				●		●			●	●	●	●
 food suitable										●	●	●			
 vibrations dampening	●							●			●				
 edge pressure	●	●	●	●				●		●	●	●			●
 for under water use									●			●	●		
 economic	●	●	●	●	●		●	●		●					

Special Bearing Materials - Call for lead time

GLW	K	J200	J260	J3	J350	L250	D	H	H1	H2	A500	A290	T220	F	H4	N54	UW
	●	●	●	●	●	●			●						●		
					●						●	●		●			
					●			●	●	●	●				●		
	●	●	●	●	●	●	●		●						●		
●		●											●				
								●	●	●	●				●		
	●		●	●	●			●	●	●	●				●		●
											●	●					
		●		●	●	●	●		●		●		●		●		
								●	●	●	●				●		●
●	●			●			●			●		●			●	●	●

Selection According To Four Main Criteria



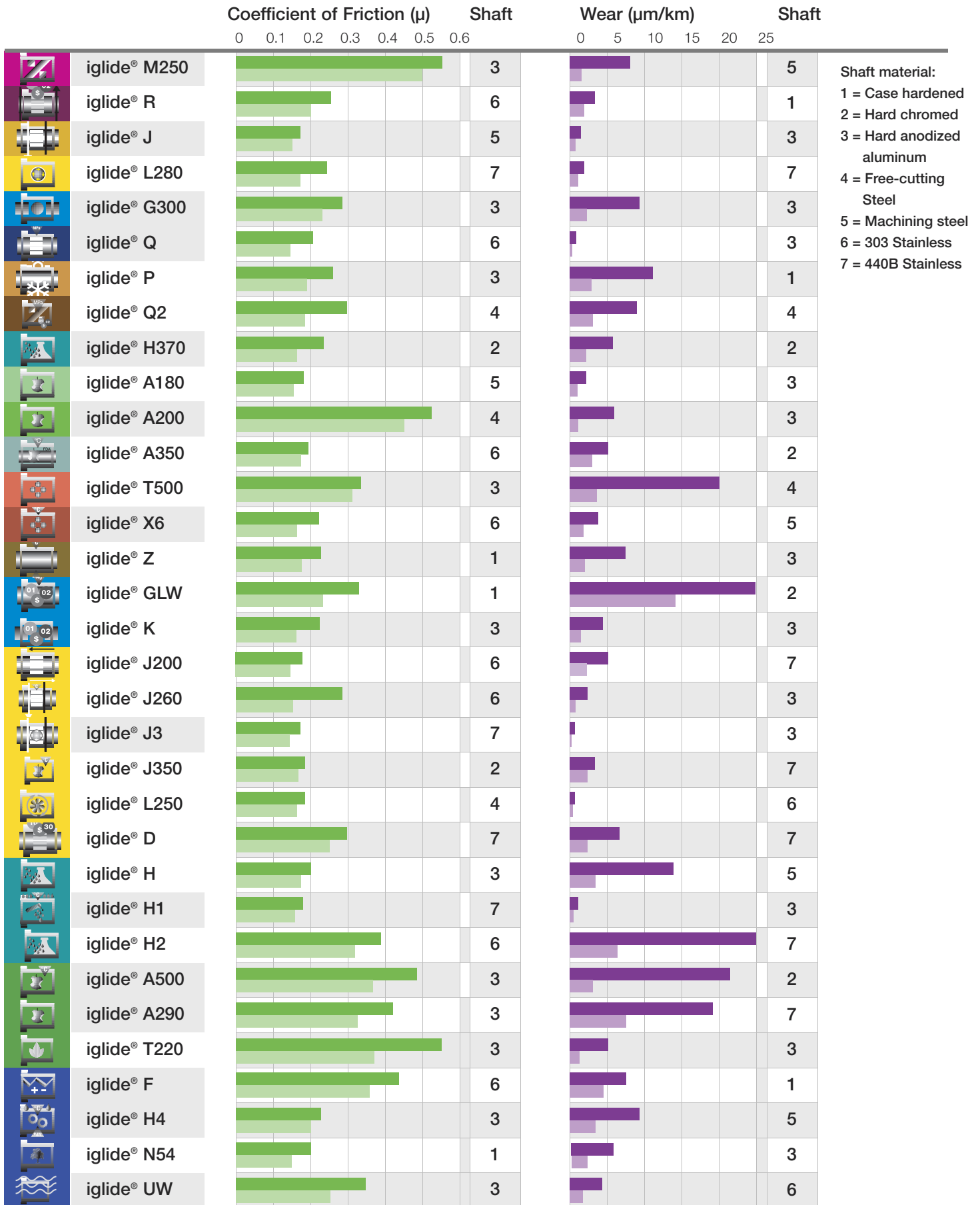
Maximum permissible radial load of iglide® bearings

- at 68°F
- at 248°F

Important temperature limits of iglide® bearings

- = Maximum permissible application temperature, continuous
- = Temperature at which additional securing is necessary

Selection According To Four Main Criteria



Shaft material:
 1 = Case hardened
 2 = Hard chromed
 3 = Hard anodized aluminum
 4 = Free-cutting Steel
 5 = Machining steel
 6 = 303 Stainless
 7 = 440B Stainless

Coefficients of friction of iglide® bearings sliding against steel, p = 174 psi, v = 59.06 fpm

Average coefficient of all the seven sliding combinations tested
 Coefficient of friction of best combination

Wear of iglide® bearings sliding against steel, p = 145 psi

Average wear of all the seven sliding combinations tested
 Wear of best combination

Selection Guide 1 Standard Materials

	iglide® M250 standard from stock	iglide® R standard from stock	iglide® J standard from stock	iglide® L280 standard from stock	iglide® G300 standard from stock	iglide® Q standard from stock
General Properties						
Density g/cm ³	1.14	1.39	1.49	1.24	1.46	1.40
Color	Charcoal	Dark Red	Yellow	Yellow	Dark gray	Black
Max. moisture absorption at 73°F / 50% r.h. % weight	1.4	0.2	0.3	1.3	0.7	0.9
Max. moisture absorption % weight	7.6	1.1	1.3	6.5	4.0	4.9
Coefficient of sliding friction, dynamic against steel μ	0.18 - 0.40	0.09 - 0.25	0.06 - 0.18	0.08 - 0.23	0.08 - 0.15	0.05 - 0.15
p x v-value, max. (dry) psi x fpm	3,400	8,700	9,700	6,600	12,000	16,000
Mechanical Properties						
Modulus of elasticity psi	391,600	282,800	348,100	507,600	1,131,000	652,700
Tensile strength at 68°F psi	16,240	10,150	10,590	18,130	30,460	17,400
Compressive strength psi	7,542	9,863	8,702	8,847	11,310	12,910
Max. permissible static surface pressure (68°F) psi	2,901	3,336	5,076	8,702	11,600	14,500
Shore D-hardness	79	77	74	77	81	83
Physical and Thermal Properties						
Max. long-term application temperature °F	176	194	194	194	266	275
Max. short-term application temperature °F	338	230	248	356	428	311
Min. application temperature °F	- 40	- 58	- 58	- 40	- 40	- 40
Thermal conductivity (W/m x K)	0.24	0.25	0.25	0.24	0.24	0.23
Coefficient of thermal expansion (at 23°C) (K ⁻¹ x 10 ⁻⁵)	10	11	10	9	9	5
Electrical Properties						
Specific volume resistance Ω cm	> 10 ¹³	> 10 ¹²	> 10 ¹³	> 10 ¹³	> 10 ¹³	< 10 ¹⁵
Surface resistance Ω	> 10 ¹¹	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹¹	< 10 ¹²
34	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6	SECTION 7

	iglide® P standard from stock	iglide® Q2 standard from stock	iglide® H370 standard from stock	iglide® A180 standard from stock	iglide® A200 standard from stock	iglide® A350	iglide® T500 standard from stock	iglide® X6 standard from stock	iglide® Z standard from stock
	1.58	1.46	1.66	1.46	1.14	1.42	1.44	1.53	1.40
	Black	Beige-brown	Gray	White	White	Light Blue	Black	Blue Gray	Brown
	0.2	1.1	0.1	0.2	1.5	0.6	0.1	0.1	0.3
	0.4	4.6	0.1	1.3	7.6	1.9	0.5	0.5	1.1
	0.06 - 0.21	0.22 - 0.42	0.07 - 0.17	0.05 - 0.23	0.10 - 0.40	0.10 - 0.20	0.09 - 0.27	0.09 - 0.25	0.06 - 0.14
	11,000	19,500	21,000	8,750	2,900	11,500	37,700	38,350	24,000
	768,700	1,214,000	1,610,000	333,600	362,600	290,100	1,174,800	2,320,600	348,100
	17,400	34,810	19,580	12,760	16,820	15,950	24,660	42,060	13,775
	9,572	18,850	11,460	11,310	7,832	11,310	14,500	27,557	9,425
	7,252	17,400	10,880	4,060	2,611	8,702	21,760	21,755	21,750
	75	80	82	76	81	76	85	89	81
	266	266	392	194	176	356	482	482	482
	392	392	464	230	338	410	599	599	590
	- 40	- 40	- 40	- 58	- 40	- 148	- 148	- 148	- 148
	0.25	0.24	0.5	0.25	0.24	0.24	0.6	0.55	0.62
	4	8	5	11	10	8	5	1.1	4
	> 10 ¹³	< 10 ¹³	< 10 ⁵	> 10 ¹²	> 10 ¹³	> 10 ¹¹	< 10 ⁵	< 10 ⁵	> 10 ¹¹
	> 10 ¹²	< 10 ¹¹	< 10 ⁵	> 10 ¹¹	> 10 ¹²	> 10 ¹¹	< 10 ³	< 10 ⁵	> 10 ¹¹
	SECTION 8	SECTION 9	SECTION 10	SECTION 11	SECTION 12	SECTION 13	SECTION 14	SECTION 15	SECTION 16

Selection Guide 2

Special Materials

The following list of materials is available upon request Please call your iglide® Sales technician for more information 1-888-803-1895

General Properties

	iglide® GLW standard from stock	iglide® K standard from stock	iglide® J200	iglide® J260	iglide® J3
Density g/cm ³	1.36	1.52	1.72	1.35	1.42
Color	Black	Yellow-Beige	Dark Gray	Yellow	Yellow
Max. moisture absorption at 73°F / 50% r.h. % weight	1.3	0.1	0.2	0.2	0.3
Max. moisture absorption % weight	5.5	0.6	0.7	0.4	1.3
Coefficient of sliding friction, dynamic against steel μ	0.10 - 0.24	0.06 - 0.20	0.11 - 0.17	0.06 - 0.20	0.06 - 0.20
p x v-value, max. (dry) psi x fpm	8,600	8,600	8,600	10,000	14,000

Mechanical Properties

Modulus of elasticity psi	1,116,500	507,600	406,100	319,100	391,600
Tensile strength at 68°F psi	34,075	11,600	8,412	8,702	10,150
Compressive strength psi	10,730	8,702	6,237	7,252	8,702
Max. permissible static surface pressure (68°F) psi	11,600	8,702	3,336	5,802	6,527
Shore D-hardness	78	72	70	77	73

Physical and Thermal Properties

Max. long-term application temperature °F	212	338	194	248	194
Max. short-term application temperature °F	320	464	248	284	248
Min. application temperature °F	- 40	- 40	- 58	-148	-58
Thermal conductivity (W/m x K)	0.24	0.25	0.24	0.24	0.25
Coefficient of thermal expansion (at 23°C) (K ⁻¹ x 10 ⁻⁵)	17	3	8	13	13

Electrical Properties

Specific volume resistance Ω cm	> 10 ¹¹	> 10 ¹²	> 10 ⁸	> 10 ¹²	> 10 ¹²
Surface resistance Ω	> 10 ¹¹	> 10 ¹²	> 10 ⁸	> 10 ¹⁰	> 10 ¹²

SECTION 17 SECTION 18 SECTION 19 SECTION 20 SECTION 21

	iglide® J350	iglide® L250	iglide® D	iglide® H	iglide® H1	iglide® H2	iglide® A500	iglide® A290	iglide® T220
	1.44	1.50	1.40	1.71	1.53	1.72	1.28	1.41	1.28
	Yellow	Beige	Green	Gray	Cream	Brown	Brown	White	White
	0.3	0.7	0.3	< 0.1	0.1	0.1	0.3	1.7	0.3
	1.6	3.9	1.1	0.3	0.3	0.2	0.5	7.3	0.5
	0.10 - 0.20	0.08 - 0.19	0.08 - 0.26	0.07 - 0.20	0.06 - 0.20	0.07 - 0.30	0.26 - 0.41	0.13 - 0.40	0.20 - 0.32
	13,000	11,500	8,700	39,000	22,800	16,500	8,000	6,600	8,000
	290,100	282,800	290,100	1,813,000	406,100	1,494,000	522,100	1,276,000	261,100
	7,977	9,718	10,440	25,380	7,977	30,460	20,310	36,260	9,427
	8,702	6,817	10,150	11,750	11,310	15,810	17,110	13,200	7,977
	8,702	6,527	3,336	13,050	11,600	15,950	17,400	10,150	5,802
	80	68	78	87	77	88	83	88	76
	356	194	194	392	392	392	482	284	212
	428	356	230	464	464	464	572	356	320
	-148	- 40	- 58	- 40	- 40	- 40	- 148	-40	-40
	0.24	0.24	0.25	0.60	0.24	0.24	0.24	0.24	0.24
	7	10	11	4	6	4	8	7	11
	> 10 ¹³	> 10 ⁰	> 10 ¹⁴	> 10 ⁵	< 10 ¹²	> 10 ¹⁵	> 10 ¹¹	> 10 ¹¹	> 10 ¹⁰
	> 10 ¹⁰	> 10 ¹¹	> 10 ¹⁴	> 10 ²	< 10 ¹¹	> 10 ¹⁴	> 10 ¹¹	> 10 ¹¹	> 10 ¹⁰
	SECTION 22	SECTION 23	SECTION 24	SECTION 25	SECTION 26	SECTION 27	SECTION 28	SECTION 29	SECTION 30

Selection Guide 2

Special Materials

The following list of materials is available upon request Please call your iglide® Sales technician for more information 1-888-803-1895

General Properties

	iglide® F	iglide® H4	iglide® N54	iglide® UW
Density g/cm ³	1.25	1.79	1.79	1.52
Color	Black	Brown	Brown	Black
Max. moisture absorption at 73°F / 50% r.h. % weight	1.8	0.1	0.1	0.2
Max. moisture absorption % weight	8.4	0.2	0.2	0.8
Coefficient of sliding friction, dynamic against steel μ	0.10 - 0.39	0.08 - 0.25	0.08 - 0.25	0.22 - 0.5
p x v-value, max. (dry) psi x fpm	9,700	9,400	9,400	8,600

Mechanical Properties

Modulus of elasticity psi	1,682,400	1,087,700	1,087,700	1,392,362
Tensile strength at 68°F psi	37,700	17,400	17,400	13,000
Compressive strength psi	14,200	7,250	7,250	10,150.
Max. permissible static surface pressure (68°F) psi	15,200	9,400	9,400	5,800
Shore D-hardness	84	80	80	78

Physical and Thermal Properties

Max. long-term application temperature °F	284	392	392	194
Max. short-term application temperature °F	356	464	464	230
Min. application temperature °F	- 40	- 40	- 40	- 58
Thermal conductivity (W/m x K)	0.65	0.24	0.24	0.60
Coefficient of thermal expansion (at 23°C) (K ⁻¹ x 10 ⁻⁵)	12	5	5	6

Electrical Properties

Specific volume resistance Ω cm	< 10 ³	< 10 ¹³	< 10 ¹³	> 10 ⁵
Surface resistance Ω	< 10 ²	< 10 ¹¹	< 10 ¹¹	> 10 ⁵

SECTION 31 SECTION 32 SECTION 33 SECTION 34

iglide[®] Custom Bearings

Yes, we do.

Well over a billion iglide[®] plastic plain bearings have already been supplied by igus[®]. The majority are standard sizes, but that does not solve every application. We also produce special solutions with lifetime calculation and with iglide[®] advantages:

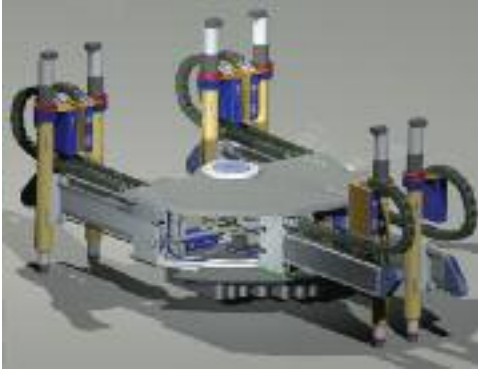


- Maintenance-free
- Self-lubricating
- Low Friction
- Wear resistant



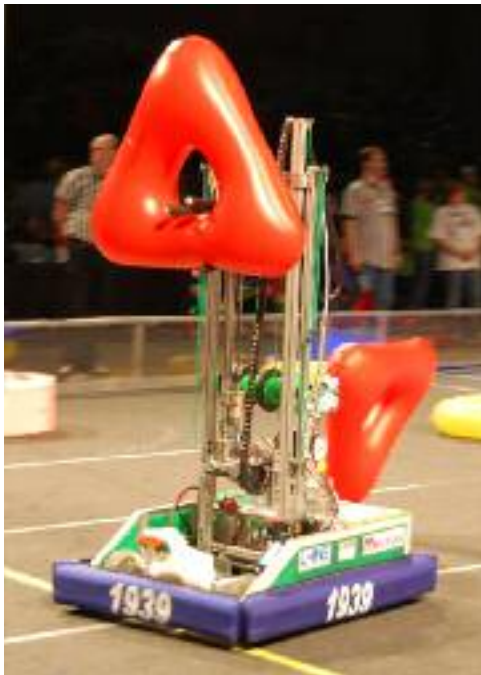
Online Lifetime
Calculation
www.igus.com

The Y.E.S. Program is designed to foster the mechanical design ideas of students and to educate them on the merits and benefits of plastic components. Through Y.E.S. igus® has reached out to students, competitions and engineering programs from across the United States, Canada and Mexico.



A team from Canada used Energy Chain® while building a walking robot.

For more information,
contact igus® at
1-800-521-2747
or visit
www.igus.com/yesprogram



For this FIRST® Robotics team, DryLin® linear guides and iglide® plastic bearings were a lightweight alternative to metal or bronze bearings and facilitated movement for the robot's forklift.

Through the Y.E.S. Program, igus®:

- ✓ offers free product donations to students, engineers and professors for use in various design competitions, school projects and engineering curriculums;
- ✓ supports the visions of various engineering competitions by donating products, technical support and other resources;
- ✓ revitalizes students' interest in engineering; and
- ✓ aids in making the unique design ideas of students and engineers a reality.

Y.E.S. Facts

- ✓ The Y.E.S. Program is open to students of all ages and grade levels, as well as teams and engineers competing in robotic competitions.
- ✓ The Y.E.S. Program sponsors competitions such as FIRST®, BEST™, Botball® and the SAE Collegiate Design Series.
- ✓ The Y.E.S. Program offers lecture engagements presented by bearings and cable carrier experts at schools and universities across the United States, Canada and Mexico.
- ✓ Students have the opportunity to see their accomplishments featured on the Y.E.S. website by submitting information about the unique application, how they used igus® products and pictures.



A PhD student from the Worcester Polytechnic Institute used DryLin® linear bearings and iglide® plastic bearings to facilitate motion on this MRI-guided robot, which will revolutionize the way prostate cancer is detected and treated.

manus

The North American Plastic Bearing Design Contest



Igus® brought together a panel of experts in science and engineering to uncover and honor the top engineering designs using plastic bearings in new and ingenious ways. The winning applications were chosen from more than 60 entries based on creativity, technical advancement and economic impact. See more applications online at www.igus.com/manus



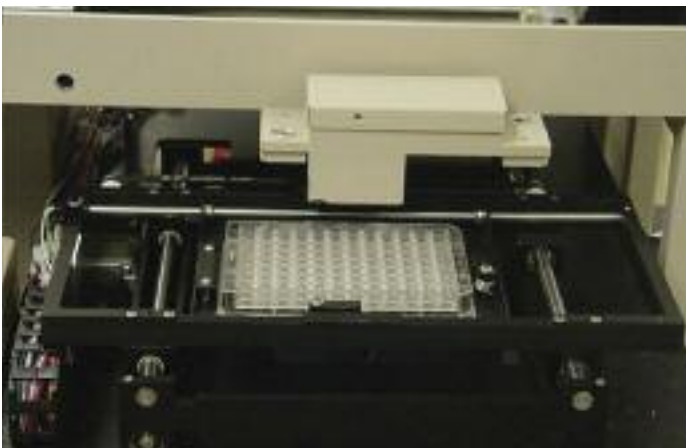
Six Flags Theme Parks Rollercoaster

The world's only 4th dimensional rollercoaster needed a lubrication-free, maintenance-free bearing due to tight space restrictions. High loads were also a factor, as well as high flexibility to provide the high level of vibration dampening essential for optimal performance. Iglide® Z not only met these requirements, but significantly reduced costs by more than 50 percent and virtually eliminated maintenance.



Harriston Industries Agricultural Machinery

Iglide® J replaced bronze bearings on the company's potato planter, which continually experienced high wear and premature failure due to very abrasive conditions. High salt content in the air was also causing corrosion and seizure. Iglide® J eliminated corrosion and increased lifespan by 500-600 percent at a cost 70-80 percent lower.



Nova Biomedical Medical Device

The company chose to use DryLin® R bearings on its two-axis tray and both DryLin® R and DryLin® N linear slides on its three-axis probe. Repetitive motion, saltwater contamination, high temperatures and the crucial need for accurate positioning prompted Nova to try DryLin®. The bearings also needed to be lubrication-free to prevent contamination. DryLin's low-cost and ease-of-use were the determining factors.



Action Bearing
Service. Inventory. Solutions.