TOBJET Comprehensive Product Catalogue

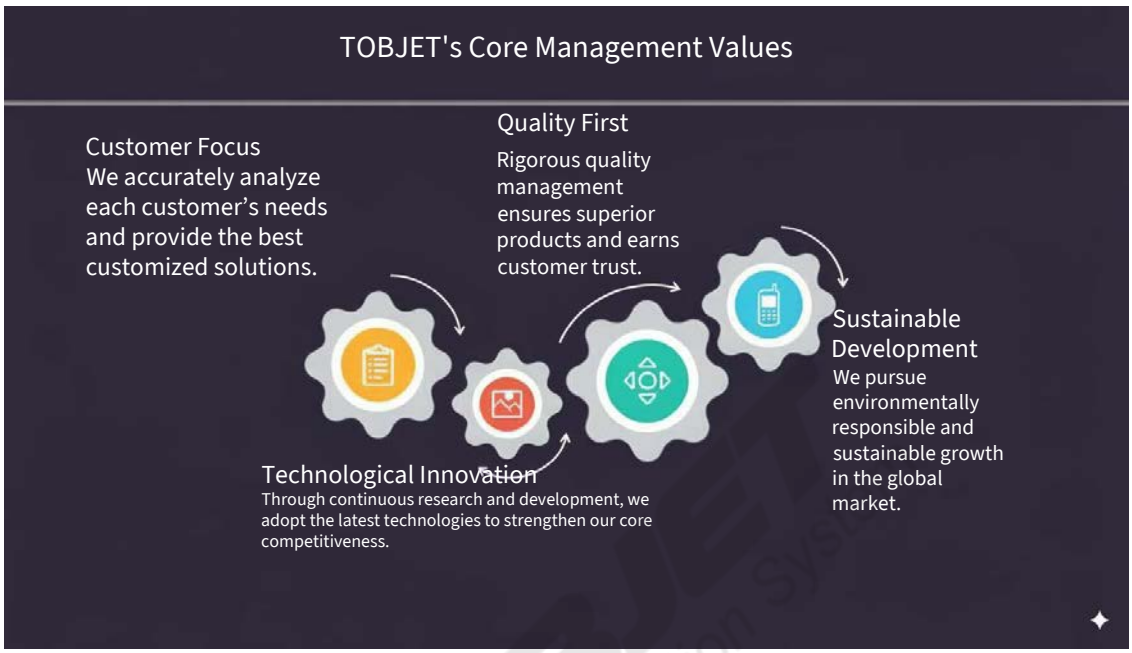
Integrated Technology for Linear Motion Systems



"Green Manufacturing Starts with Reducing Electroplating"

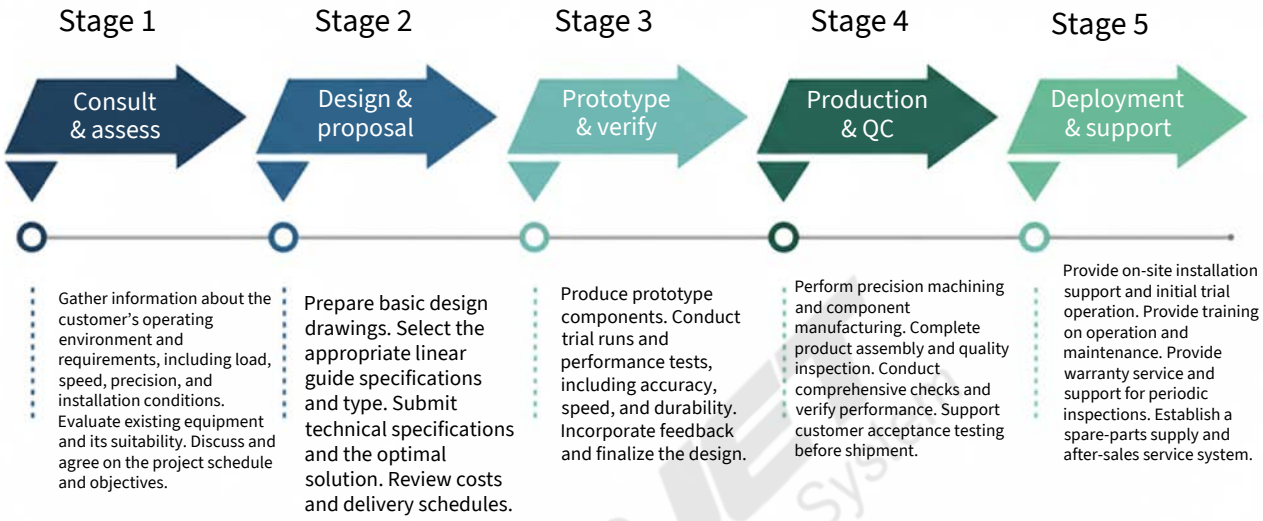
TOBJET Automatic Motion System

September 2026 · English Edition


TOBJET's Core Management Values
Customer Focus
We accurately analyze each customer's needs and provide the best customized solutions.
Quality First
Rigorous quality management ensures superior products and earns customer trust.
Sustainable Development
We pursue environmentally responsible and sustainable growth in the global market.
Technological Innovation
Through continuous research and development, we adopt the latest technologies to strengthen our core competitiveness.


Customer Solutions and Operating Principles
TOBJET puts customers first and achieves sustainable growth in the global market through technological innovation and rigorous quality management.
Smart Manufacturing Solutions
We provide customized automation systems and optimized production processes tailored to each customer's needs.
Innovation and Trust
Quality and Trust
Through rigorous quality management and safety standards, we safeguard our customers' trust.
Sustainable Growth
Driven by innovation, we create business value while pursuing environmental responsibility and sustainable development.
Global Network
We work closely with partners around the world to expand into new markets together.

TOBJET Linear Guide Development Process



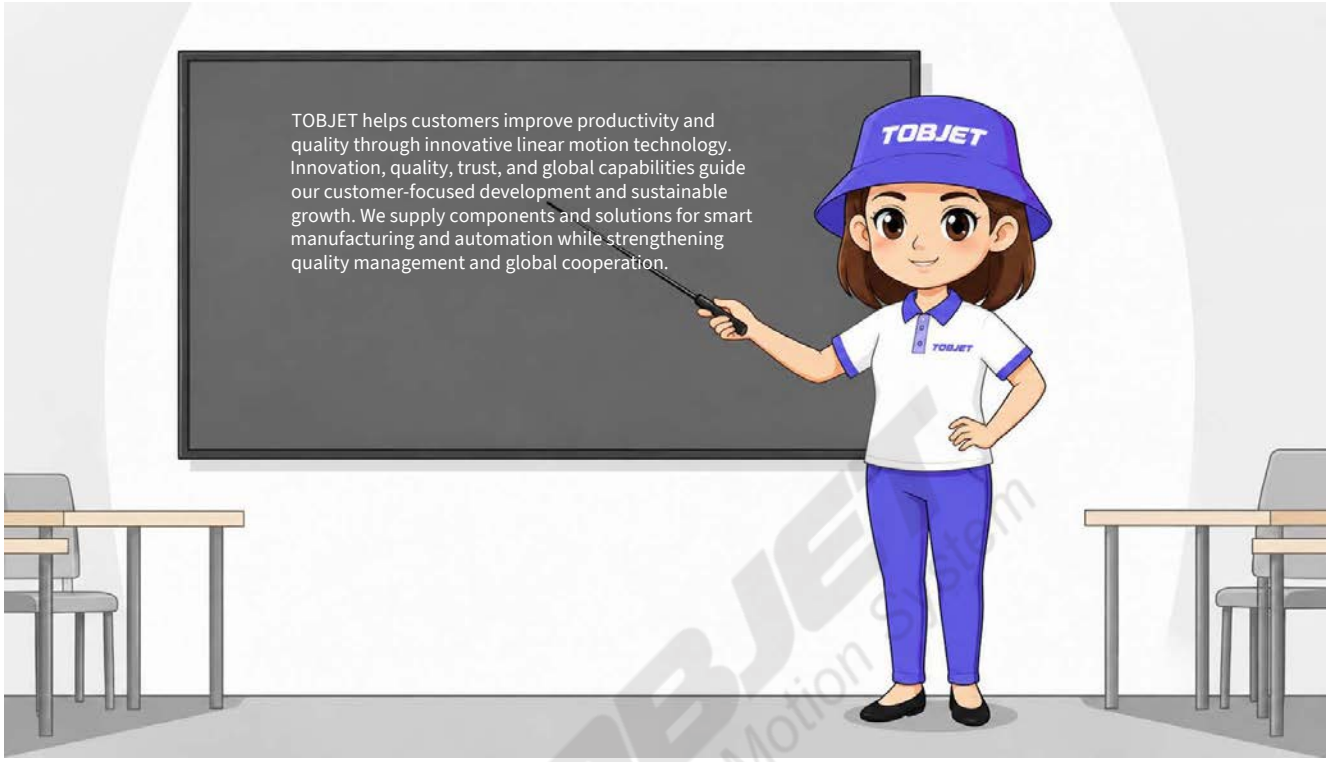
TOBJET — Leading the Future of Automation Component Solutions

With innovation and quality at its core, TOBJET leads the global automation components market and delivers optimal value to its customers.

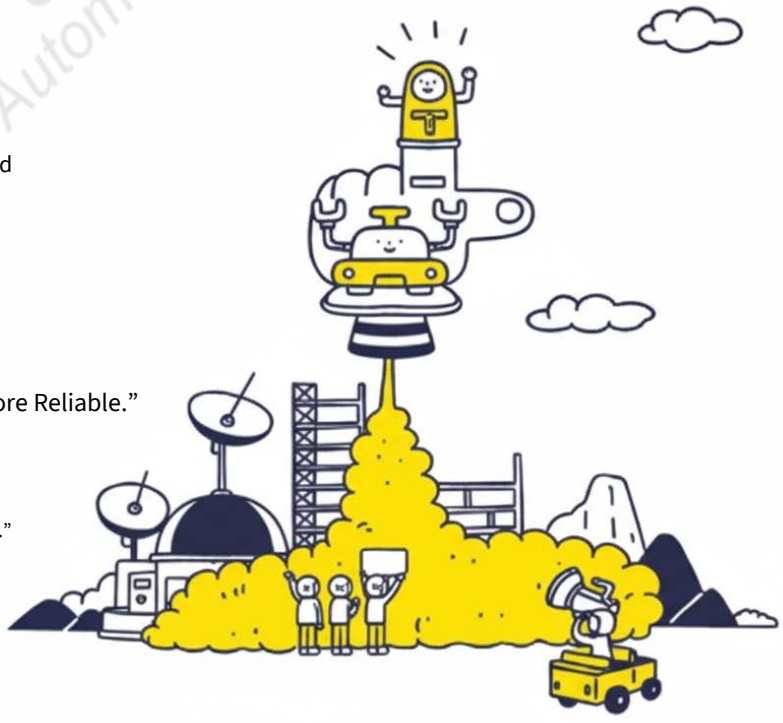


TOBJET Official Websites: www.tobjet.com / www.ams88.com

TOBJET, Shaping the Future of Automation with Innovation



TOBJET works with customers to solve application challenges involving linear, circular, and combined guides. We recommend solutions for the operating conditions and environment, and support automation projects through global cooperation and technical assistance. We pursue sustainable growth together with our customers.



"TOBJET — Making Automation Simpler and More Reliable."

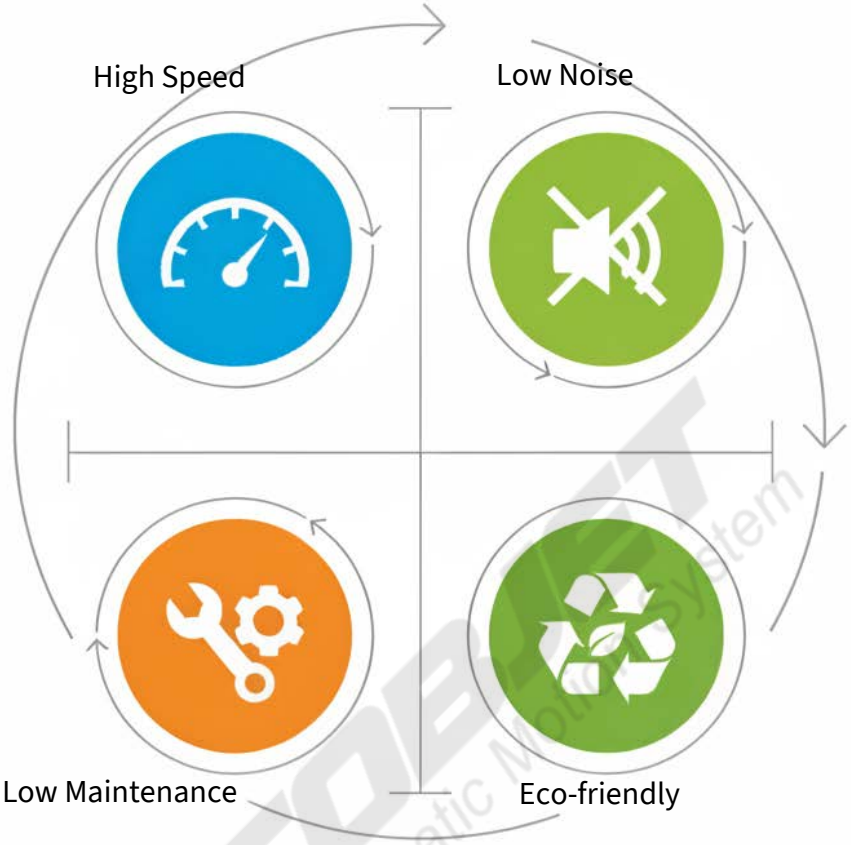
"Innovation · Quality · Trust · Global Reach"

"TOBJET — Shaping the Future Together with Our Customers."



Official websites: www.tobjet.com / www.ams88.com
Videos: WeChat · Douyin popoding333.

Four Core Values



High Speed

Precision design and advanced manufacturing technology maintain stability and efficiency at high operating speeds.

Low Noise

Optimized structures and vibration damping reduce operating noise and improve usability.

Minimal Maintenance

Longer service life and lower maintenance demands reduce total operating costs.

Environmental Responsibility

Environmentally responsible manufacturing and energy-saving design support sustainable development.



Automation Motion Systems Specialist

We Are TOBJET

TOBJET is a professional manufacturer specializing in linear guide technology. By integrating product sales, technical support, and after-sales service, TOBJET has built strong competitiveness in the Chinese market and has become one of the most recognized specialized linear guide manufacturers. Over the years, the company has earned an excellent reputation for product design and technological development, and the TOBJET brand has gained wide recognition throughout China.

TOBJET is committed to the continuous development of innovative products and to providing customers with customized, cost-effective solutions. Our attentive after-sales service, advanced technical expertise, sufficient inventory, and fast delivery capabilities provide competitive advantages that distinguish us from other companies. Creating greater value for customers while growing together with our employees remains one of TOBJET's core objectives.

Guided by the principles of professionalism, dedication, cooperation, and development, TOBJET follows a people-oriented philosophy driven by technological advancement and continuous innovation. We bring together talented professionals to build a strong foundation for sustainable growth. By prioritizing product development, technological innovation, and customer value, TOBJET strives to create a promising future and continuously expand its capabilities in the global linear guide market.

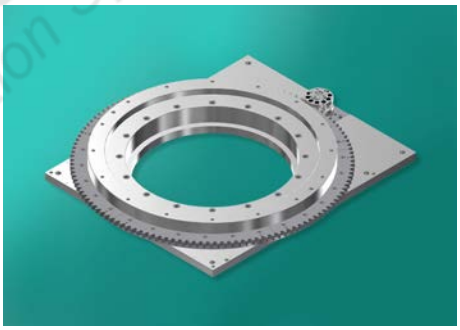
TOBJET Products



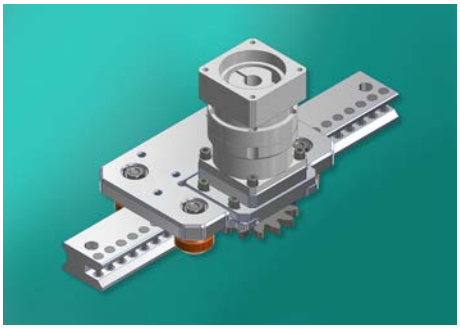
TOBJET products improve machine performance.

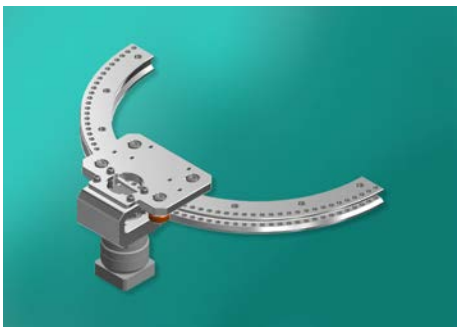
Linear and rotary motion in equipment and automated machinery uses many types of bearings. Conventional steel bearings may require auxiliary components or periodic lubrication to meet precision and operating-environment requirements.

Additional components and lubrication increase costs and maintenance and may contaminate the workplace. TOBJET uses application-specific materials and designs to provide motion solutions that address the limitations of conventional bearings.



Our company manufactures and supplies a wide range of bearings for linear and rotary motion. These products are designed to address challenges involving lubrication, noise, speed, corrosion, weight, low and high temperatures, chemical reactions, and other operating conditions. Our products have been in production and supplied to customers since April 2019. This document provides an introduction to our products. More detailed information is also available for download from our official website. We select products based on each customer's specific requirements and finalize the selection in consultation with the customer. We can also manufacture and provide demonstration samples upon request. Our products are application-specific rather than general-purpose. They are designed to provide the most suitable linear and rotary motion for various types of equipment and mechanical systems, enabling the development of more innovative machinery. Users are no longer limited to selecting products according to the conventional designs offered by linear and rotary bearing manufacturers. Create more efficient machinery through integrated technology. We welcome everyone interested in our products to explore the opportunities they offer. For material options and compatibility charts for chemical environments, please refer to page 63 onward in the catalogue.





扫描上方二维码，轻松与我联系。

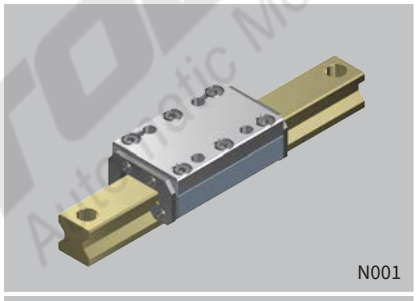
TOBJET Products

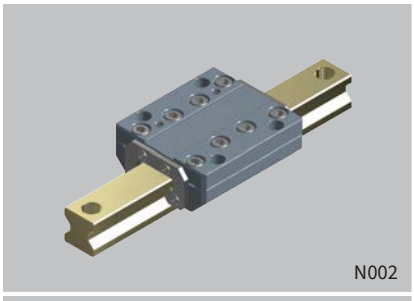
TOBJET is committed to shaping the future of machinery.

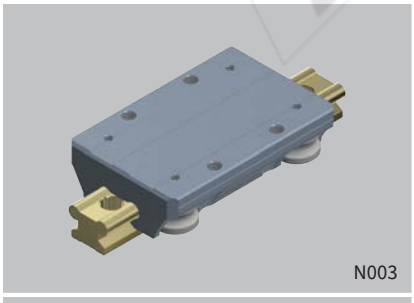
Our linear and rotary motion bearings are suitable for food-processing equipment, medical equipment, textile machinery, marine equipment, semiconductor cutting machines, gas cutting machines, aerospace equipment, woodworking machinery, printing machines, 3D printers, outdoor equipment, and many other applications. They can replace more than 60% of the conventional steel LM guide products currently available on the market. The greatest advantages of our linear and rotary motion bearings are that they require no additional lubrication and are resistant to rust. Most notably, their solid-lubricant composition enables smooth and quiet rotary motion without external lubrication. This integrated technology is one of the key strengths of TOBJET.

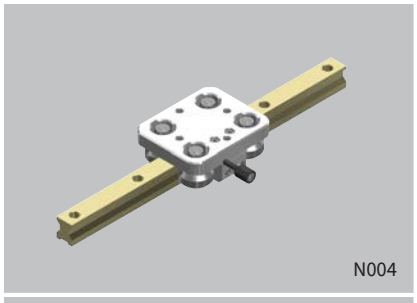
For material options and compatibility charts for chemical environments, please refer to page 63 onward in the catalogue.

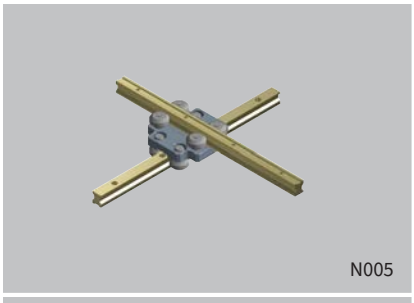
Lightweight, Fast, and Quiet
Through Integrated Technology

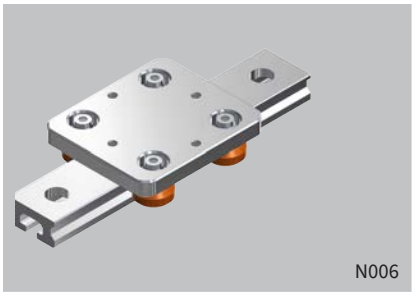

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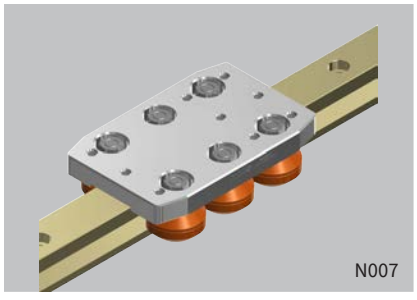

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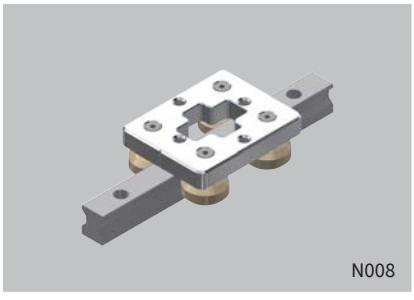

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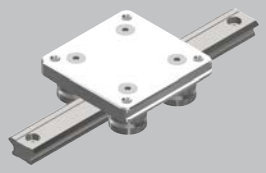

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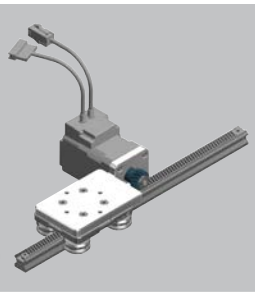

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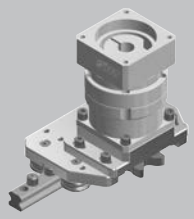
TOBJET Products

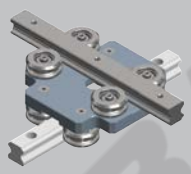
Aiming to be a world-class company through
endless convenience and limitless possibilities.

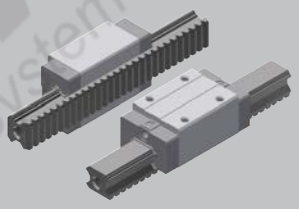
We Guide You Faster
Toward the Optimal Design.


N009

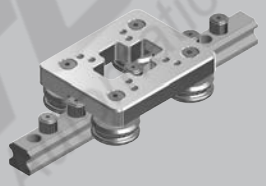

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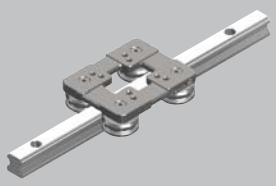

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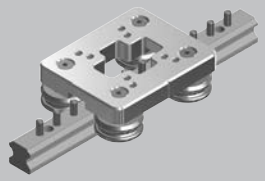

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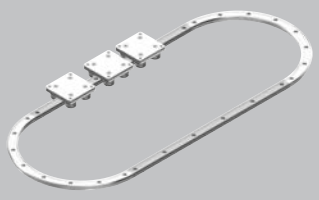

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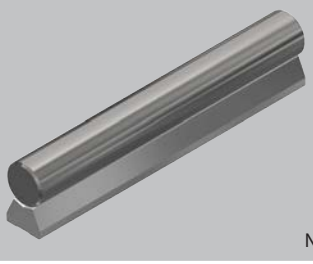

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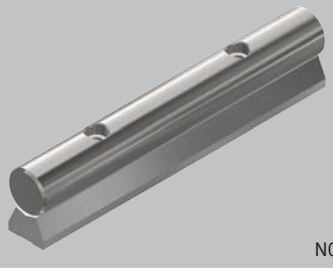

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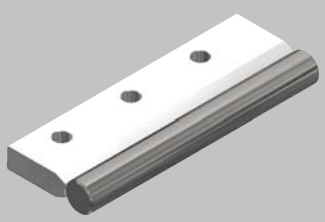

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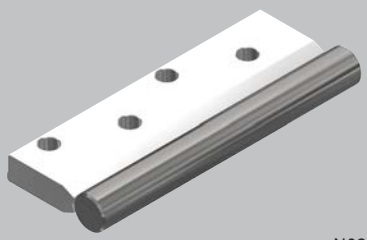
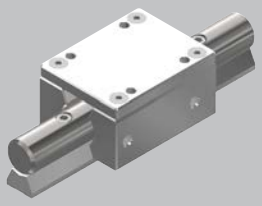
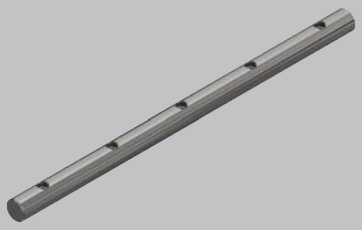
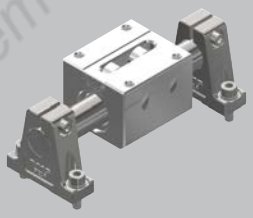
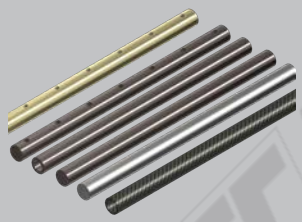
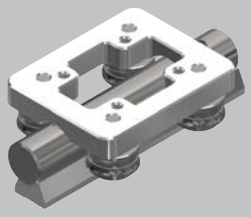
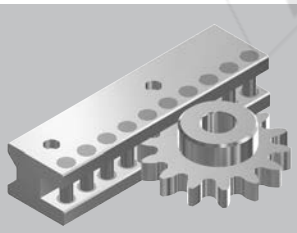
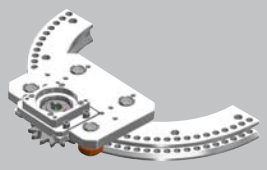
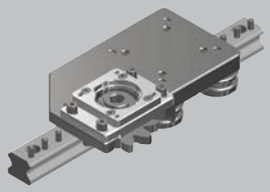
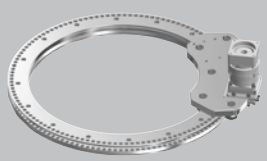
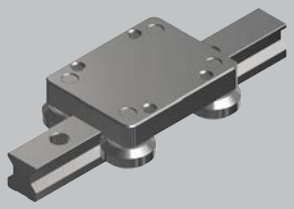
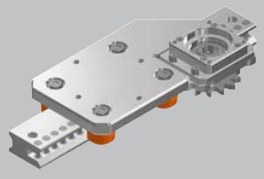

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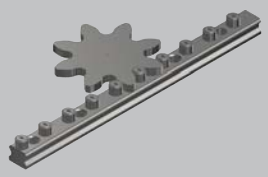
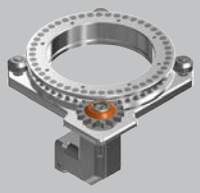
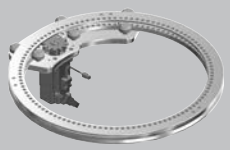
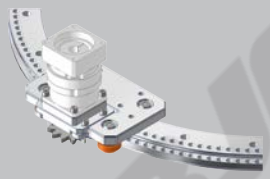
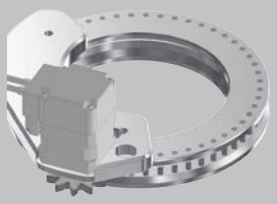
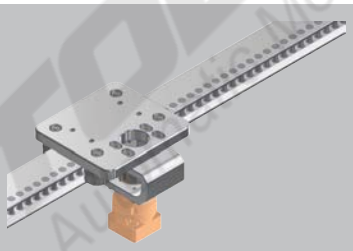
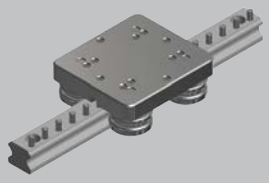
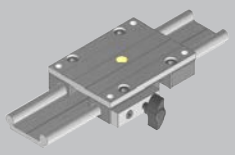
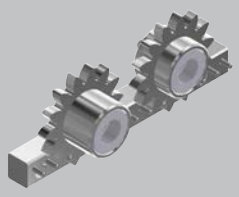
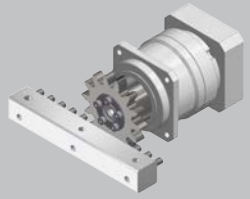
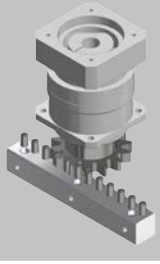
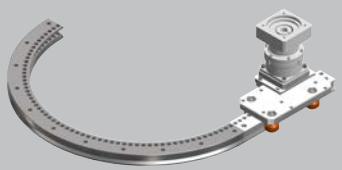
TOBJET Products

TOBJET's Values for the Future

Establishing TOBJET's Future-Oriented Values.	 N023	 N024
 N025	 N026	 N027
 N028	 N029	 N030
 N031	 N032	 N033
 N034	 N035	 N036

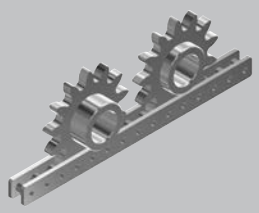
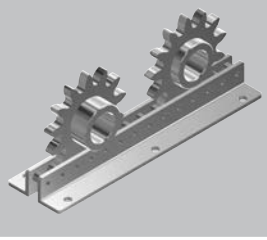
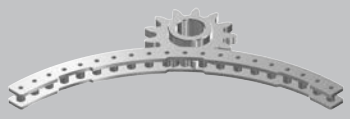
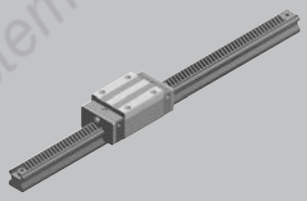
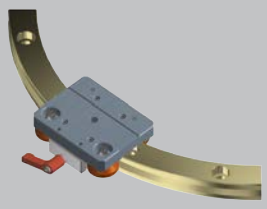
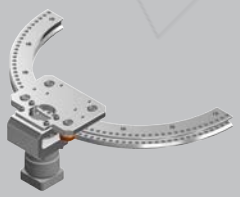
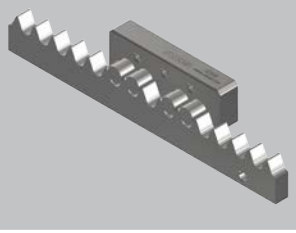
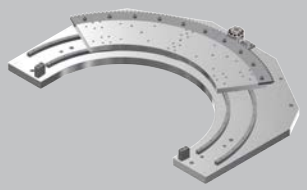
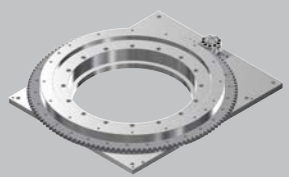
TOBJET Products

Mutual sharing and collaboration are at the heart of TOBJET's open corporate culture.

Integrated Technology Opening New Possibilities	 N036	 N037
 N038	 N039	 N040
 N041	 N042	 N043
 N044	 N045	 N046
 N047	 N048	 N049

TOBJET Products

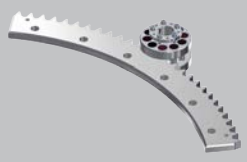
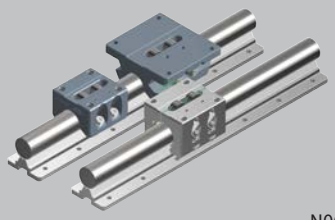
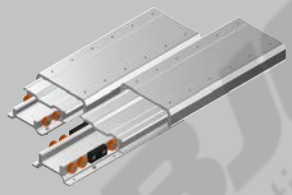
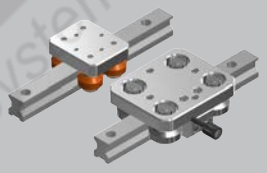
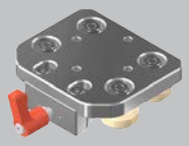
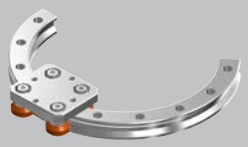
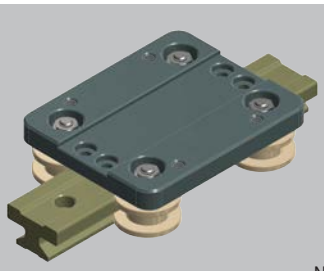
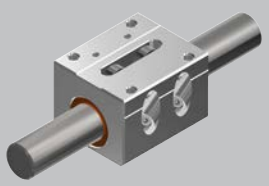
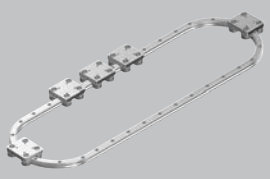
Recognizing the capabilities of our employees is a fundamental principle of TOBJET's corporate philosophy.

The best technology comes from research and development.	 N050	 N051
 N052	 N053	 N054
 N055	 N056	 N057
 N058	 N059	 N060
 N061	 N062	 N063

TOBJET Automatic Motion System

TOBJET Products

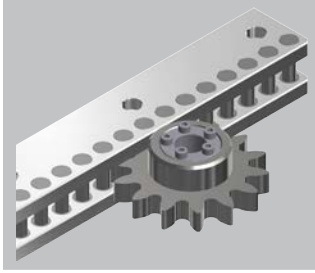
The spirit of TOBJET is to continuously achieve challenging goals.

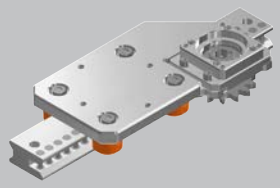
True Capability Is Forged in Solitude.	 N064	 N065
 N066	 N067	 N068
 N069	 N070	 N071
 N072	 N073	 N074
 N075	 N076	 N077

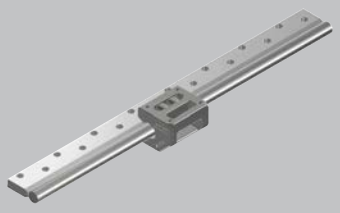
TOBJET Products

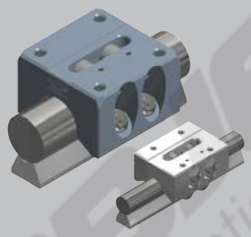
Employees' sense of responsibility is the driving force behind TOBJET's growth.

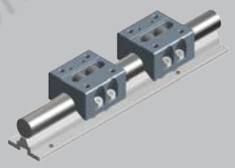
Dare to break conventional thinking and broaden our perspective.


N078


N079

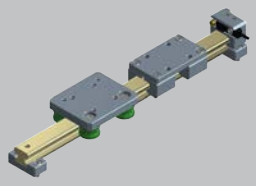

N080

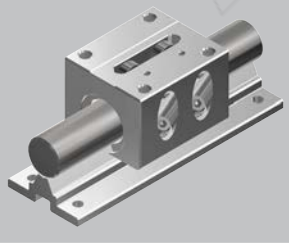

N081


N082


N083

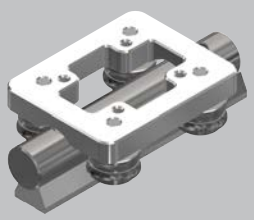

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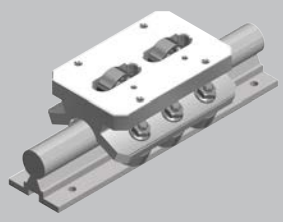

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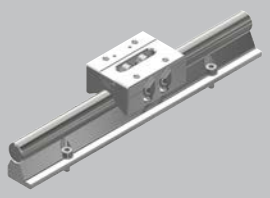

N086


N087


N088


N089

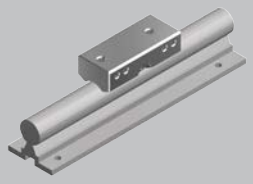

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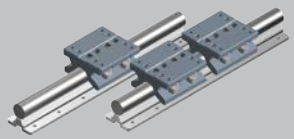

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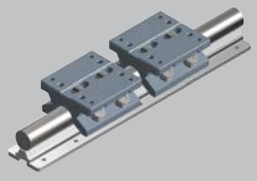
TOBJET Products

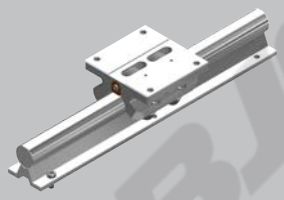
Striving continuously to achieve our goals is more valuable than greatness itself.

Automation tailored to environmental conditions has arrived.


N092

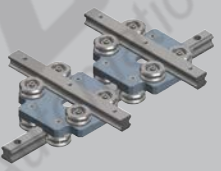

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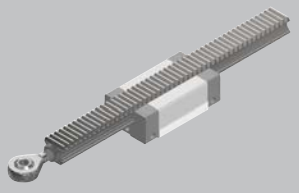

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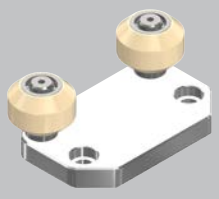

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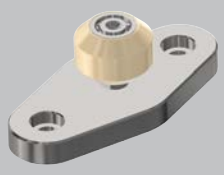

N096


N097

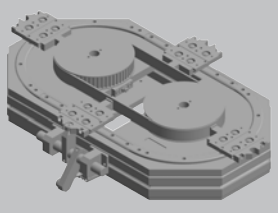

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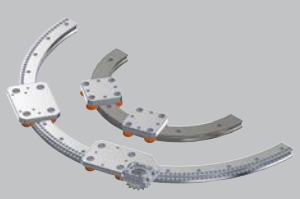

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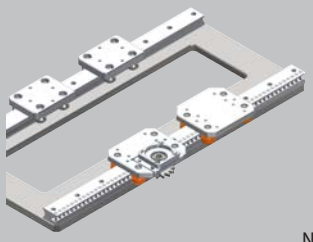

N100


N101


N102


N103

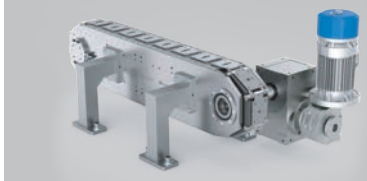

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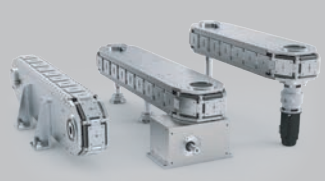

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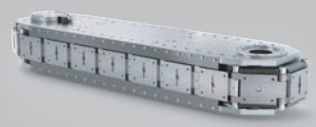
TOBJET Products

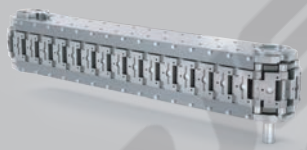
TOBJET values learning through research and challenges over imitation.

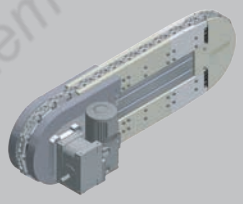
Selecting the right system can significantly improve operational efficiency.


N106


N107

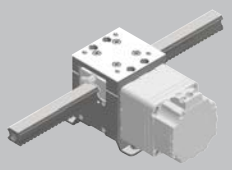

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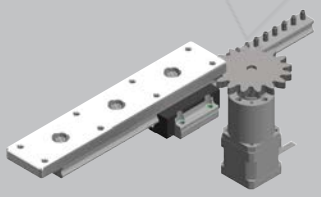

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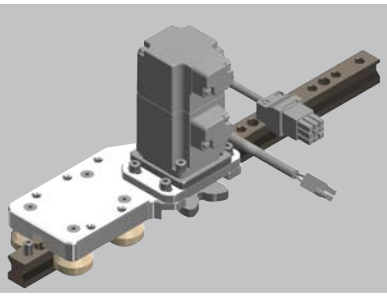

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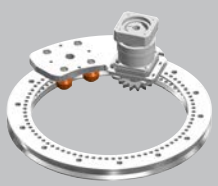

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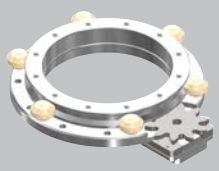

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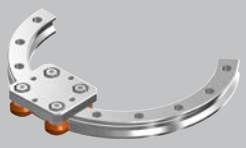

N113


N114


N115


N116

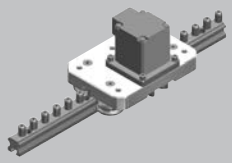

N117


N118

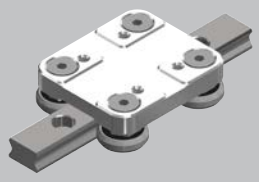
TOBJET Products

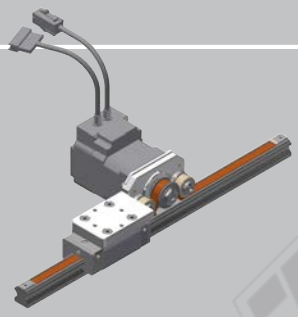
TOBJET believes in self-confidence and responsible action.

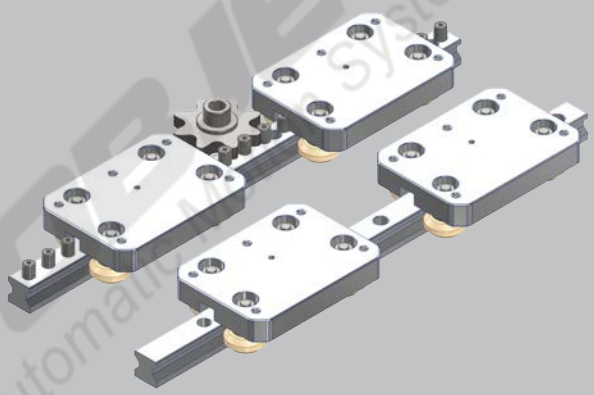
This is a world where dreams can become reality.

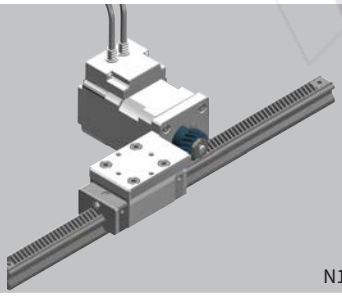

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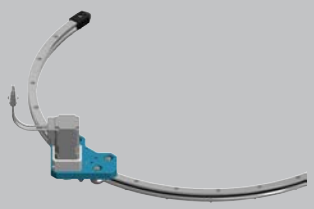

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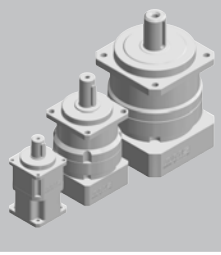

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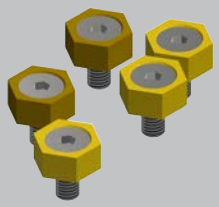

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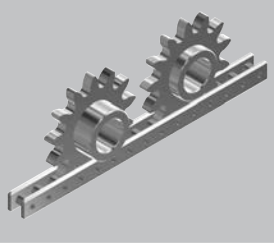

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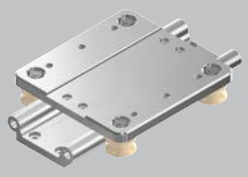

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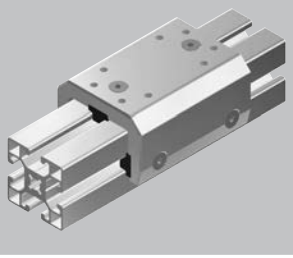

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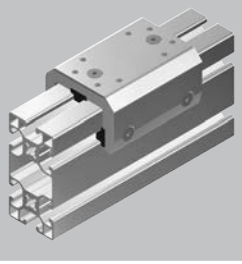
扫描上方二维码，轻松与我联系。

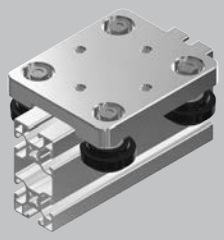
TOBJET Products

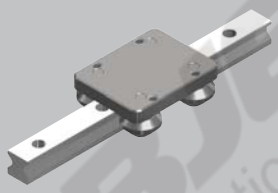
TOBJET reflects on the past, embraces the present, and prepares for the future.

Your choices mean taking responsibility for your own decisions.

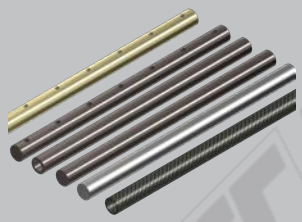

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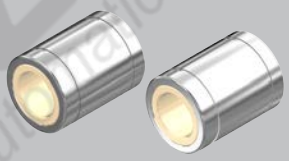

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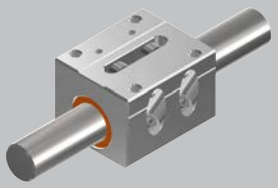

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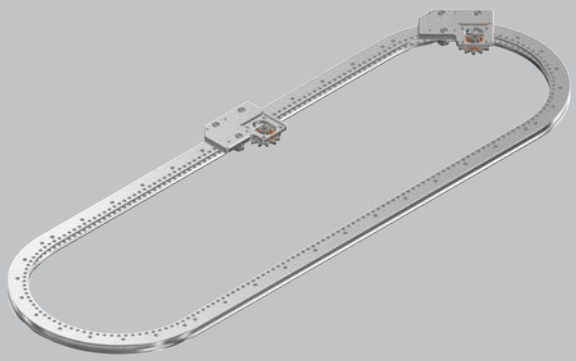

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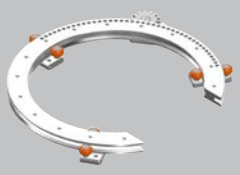

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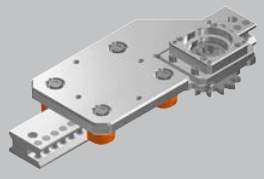

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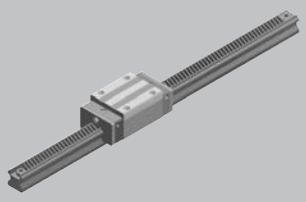

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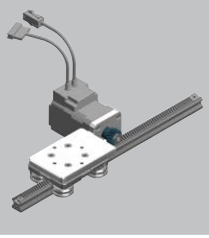

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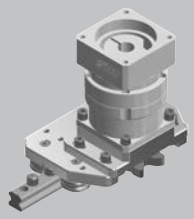
TOBJET Products

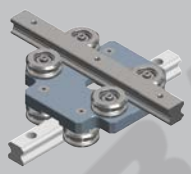
TOBJET continuously strives to bring greater convenience to people through advanced technology.

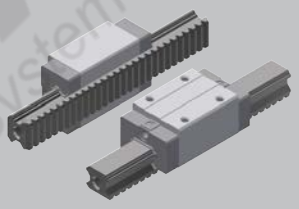
Choosing the right system can shape the future of a company.

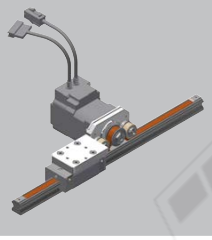

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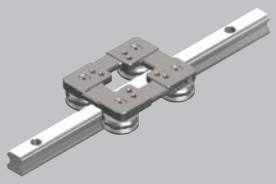

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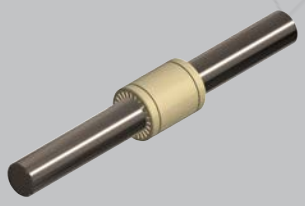

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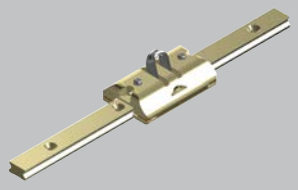

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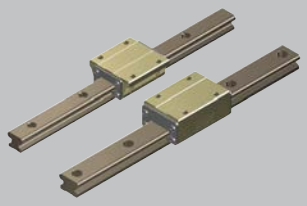

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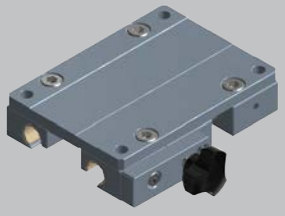

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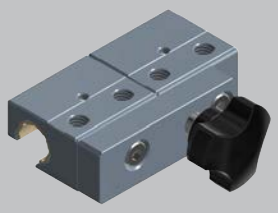

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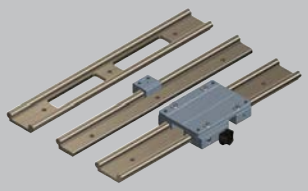
TOBJET Products

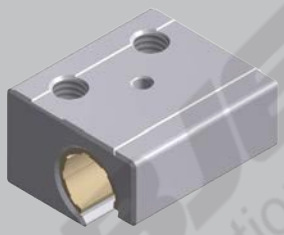
TOBJET puts professionalism first, pursuing a clear and focused direction.

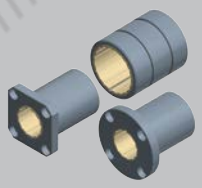
Eliminating unnecessary elements is the smartest approach when implementing a system.

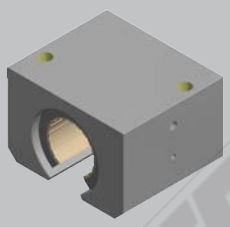

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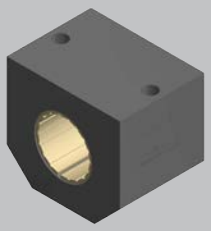

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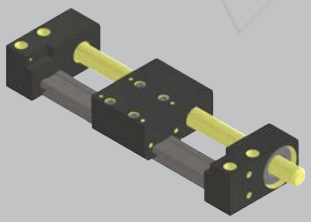

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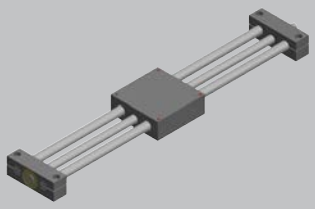

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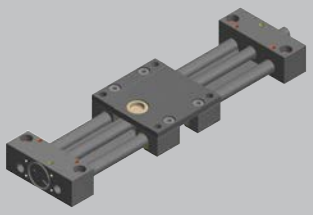

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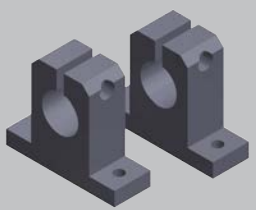

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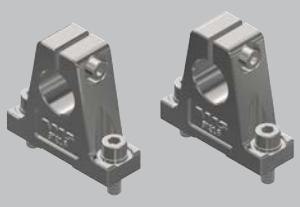

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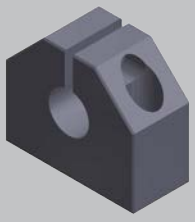

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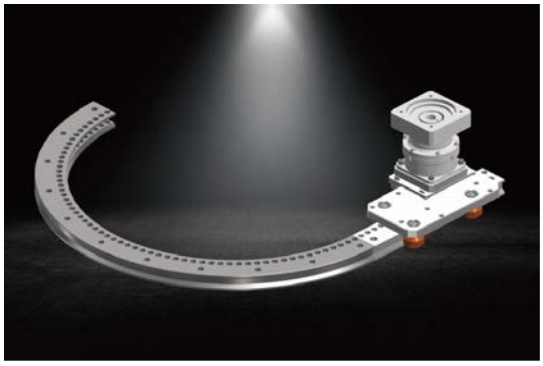

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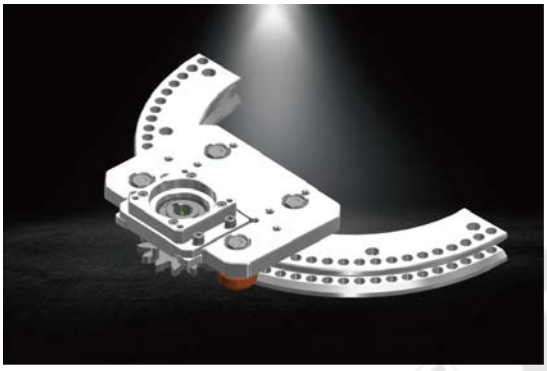
001.FDH & FDK-213 Integrated Linear and Curved Gear Guide

The FDH & FDK series is an integrated gear-driven linear and curved guide system that combines straight and curved sections using integrated connection technology. The system operates with zero backlash and no cumulative error, providing a repeatability of 0.03 mm. It requires no lubrication and is suitable for high-speed operation. In addition, it can be equipped with a TOBJET standard reducer for direct connection to a motor. For FDH + FDK connected configurations, the Type 6-E integrated gear carriage must be used. The designation “E” indicates the connection between curved and straight guide sections.



002.360° FDK Integrated Circular Gear Guide with Internal Gear

This is a 360° circular FDK guide. It is available in various materials, including G3 aluminum alloy and G1 stainless steel. Five standard carriage configurations are available, and custom designs can also be provided for special applications. The system requires no lubrication and produces no cumulative error. It is normally used with a TOBJET reducer, but configurations without a reducer can also be supplied upon customer request. The gear mounting configuration is available in both internal and external gear types, with detailed specifications provided in the catalogue. The carriage shown in the photo is Type “3” from the catalogue, with the reducer mounted on the right side of the carriage.



003.180° FDK Integrated Circular Gear Guide with External Gear

TOBJET curved guides are available in standard angles such as 30°, 60°, 90°, and 180°, as specified in the catalogue, and can be manufactured from materials including G3 aluminum alloy and G1 stainless steel. The carriage shown in the image is the standard Type “2” drive carriage equipped with a gear reducer. The product can be designed for vacuum and cleanroom environments and can operate without lubrication. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.



004. 360° FDD-214 Curved Guide with Integral External Gear

TOBJET FDD products feature a rotating circular guide rail system in which the rail rotates instead of the carriage. By combining the circular guide with the N100 or N101 product, high-speed rotation can be achieved. The system requires no lubrication, provides smooth rotation, and offers a repeatability of 0.03 mm. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.

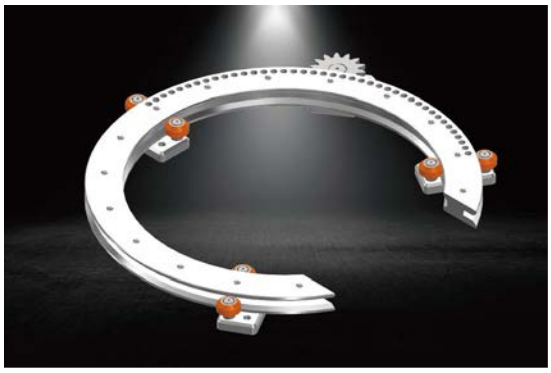


005. E-Type FDH & FDK-213 Curved Guide with Integral Internal Gear

TOBJET FDH and FDK products feature a specially designed integrated circular guide system using the Type “6” E-type carriage. The system supports high-speed operation and allows OHT technology to be applied to power and communication lines, making it an innovative solution for continuous 24-hour high-speed operation on solar-cell production lines. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.

006.FDD-215 Integrated Curved Gear Guide with External Gear

This high-efficiency FDD model is suitable for cutting machines and similar equipment. A section of the guide rail is open for convenient operation. Products including FDD, FDK, and FDH, are available in materials such as G1 stainless steel, G3 aluminum alloy, and G8 heat-treated carbon steel. Since these products operate using a rolling-motion mechanism, most have an extremely low coefficient of friction and can operate without lubrication. The configuration shown in the image uses N100 and N101 carriages. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.



007.FDD-216 Integrated Circular Gear Guide with External Gear

This FDD-series product features a rotating guide rail with an integrated ring gear and pinion. It can be used directly after installing a reducer and servo motor. The system has no cumulative error and provides a repeatability of 0.03 mm. It requires no lubrication and is suitable for high-speed rotation. Various specifications are available for different load requirements; please refer to the detailed catalogue for specifications. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.



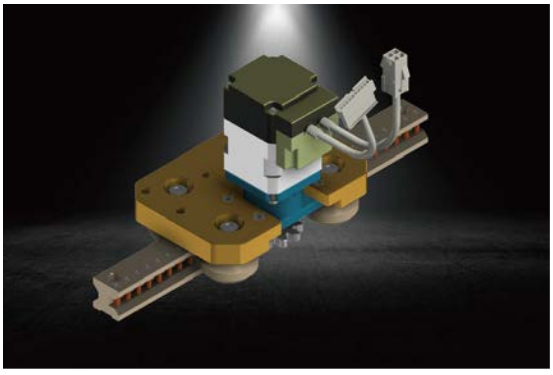
008.FDH Integrated Rack-and-Guide System

The TOBJET patent-pending FDH product uses a gear based on the cycloidal principle, eliminating cumulative error and providing a repeatability of 0.03 mm. The gear teeth used in FDH, FDK, FDD, and related products incorporate small needle rollers that rotate upon contact with the gear teeth, providing excellent wear resistance, low noise, and lubrication-free operation. In particular, the integrated linear guide system combines the gear mechanism and linear guide into a single unit. The carriage shown in the image is TOBJET's Type "3" carriage. A total of six standard carriage configurations are available.



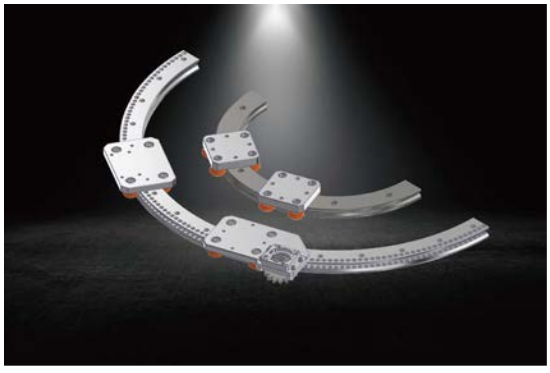
009.FDH-217 Integrated Rack-and-Guide System

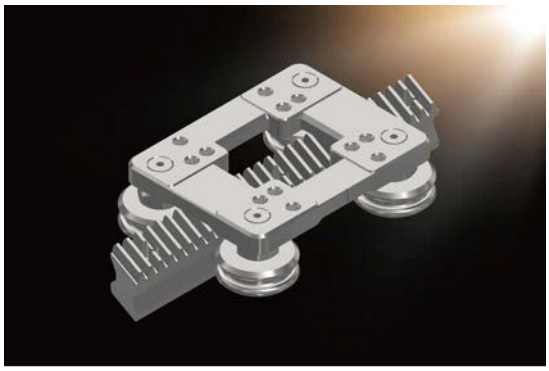
This specially customized FDH model is designed to operate without rotating needle rollers and can be driven by a compact stepper motor. It is cost-effective, requires no lubrication, and operates with very low noise even at high speeds. It is an integrated linear guide system combining a linear guide and gear mechanism. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.



010.FDH-218 Integrated Circular Gear Guide

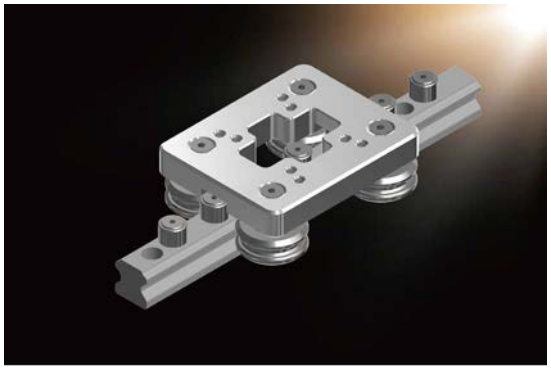
Among TOBJET products, the FDK-PW model is designed for rotating large-area components and handling high loads. The integrated circular guide uses Type "2" and Type "1" carriages, while the follower FDK-KW guide uses two additional carriages, providing a total of four carriages to support the load. The system requires no lubrication and is specially designed to achieve very high precision. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.





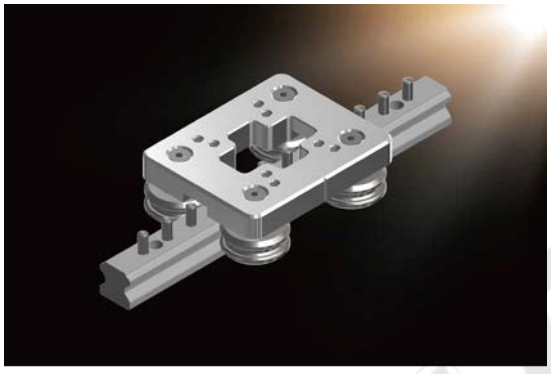
011.ACRB-219 Integrated Rack-and-Guide System

TOBJET is preparing this product for production under an invention patent. It integrates a linear guide and gear mechanism into a single system and uses a rolling carriage for linear motion, enabling high-speed operation even in harsh environments. Its compact design provides multiple functions within a limited installation space. The upper carriage uses conventional linear guide mounting dimensions and is made of stainless steel. This competitively priced product is scheduled for launch in June 2027.



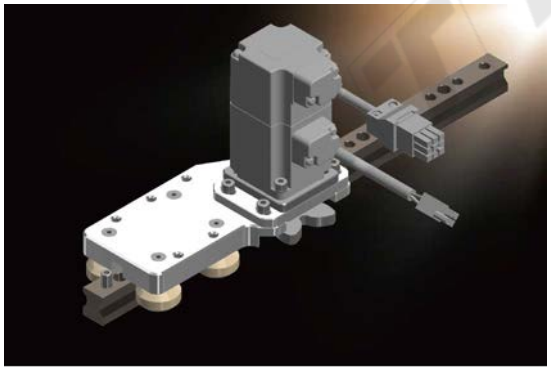
012.AHG-C-220 Integrated Rack-and-Guide System

This AHG-series integrated linear guide uses high-load needle bearings, providing high load capacity and excellent wear resistance. It has no cumulative error and provides a repeatability of 0.03 mm. Linear motion is achieved through rotating rollers, allowing speeds of up to 10 m/sec. The system operates with very low noise, supports ultra-high-speed motion, and requires no lubrication. The carriage is available in materials including G1 stainless steel, G3 aluminum alloy, and G-series heat-treated carbon steel.



013.AHG-P-221 Integrated Rack-and-Guide System

This AHG-series product uses fixed needle pins to provide integrated functionality while reducing manufacturing costs. It has no cumulative error and provides a repeatability of 0.03 mm. This cost-effective product combines multiple functions and supports high-speed operation at speeds exceeding 3 m/sec.



014.AHG-P-222 Integrated Rack-and-Guide System

This product is an integrated linear guide based on the FDA rail profile. It is available in G1 and G3 materials and can integrate a servo motor or stepper motor directly with the carriage. Customer-specified motors can also be integrated upon request. A total of six standard carriage configurations are available. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.

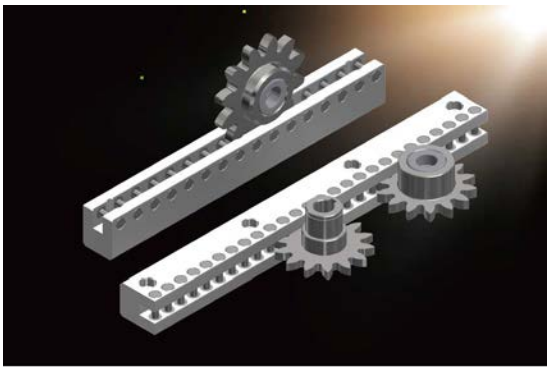


015.AHG-P-223 Integrated Rack-and-Guide System

This integrated linear guide product is based on the conventional AHG-series linear guide and provides excellent rigidity and high-speed operation. A total of six standard carriage configurations are available. The system has no cumulative error, and its main components are manufactured from hardened chrome-plated steel or stainless steel to prevent corrosion. The rollers are also made of steel, providing excellent structural rigidity.

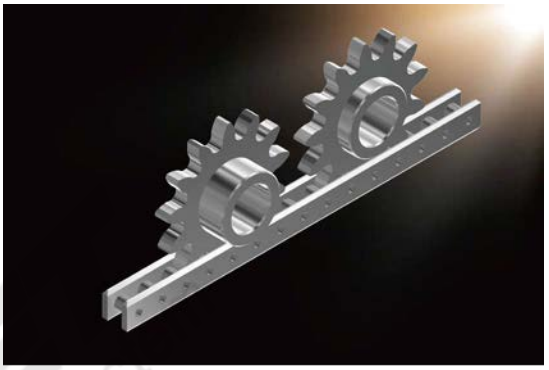
016.ACRA Rack

This ACRA-type rack-and-pinion system uses aluminum alloy as the standard material and can also be manufactured from SUS304 stainless steel upon request. It employs cycloidal and trochoidal tooth profiles to eliminate cumulative error and provides a repeatability of 0.03 mm. As the gear rotates, the needle rollers rotate upon contact with the gear teeth, resulting in low noise and excellent wear resistance. The system can also operate without lubrication.



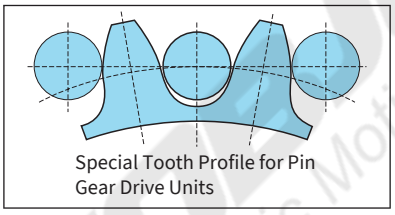
017.APDU Rack

The APDU rack is designed for large-scale applications and harsh environments with high levels of dust, debris, or other contaminants. It is manufactured using cycloidal and trochoidal profiles. A special surface treatment, typically hard chrome plating, is applied to prevent corrosion. The product can also operate reliably even when the mounting surface has relatively low installation accuracy.

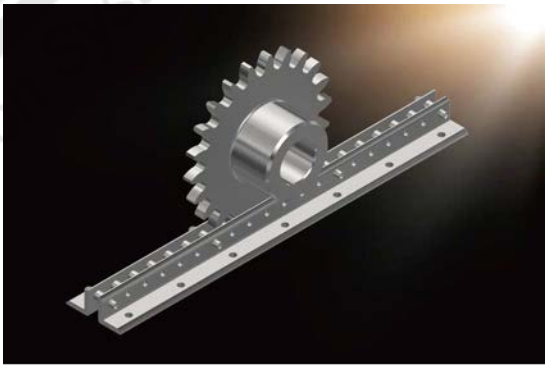


Proprietary Gear Tooth Profile (Offset Tooth Profile)

The gear uses our proprietary tooth profile, ensuring smooth engagement and high strength with pin racks and needle rollers. Rolling contact with the rollers enables smooth and flexible meshing. In addition, the steel gear teeth are hardened to increase strength and wear resistance.

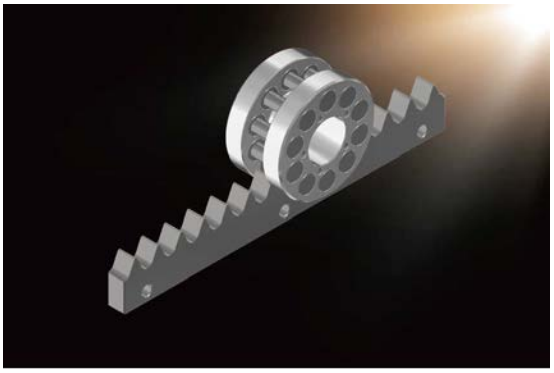


Special Tooth Profile for Pin Gear Drive Units



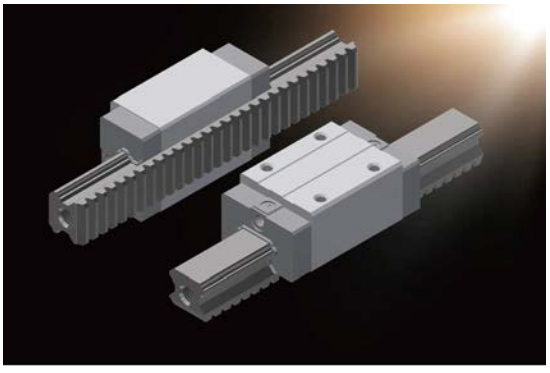
018.CRA Rack

Manufactured using cycloidal and trochoidal profiles, this technology was first developed in Japan approximately 20 years ago and has since been developed in Korea, Taiwan, Japan, and China. It is a proven, high-precision rack technology rather than simply a high-end product. TOBJET also provides the related CRP rack system, which has zero cumulative error and a positioning repeatability of 0.03 mm.



019.AHG-K Integrated Rack-and-Guide System

By machining gear teeth on the bottom surface of a conventional linear guide and adding threaded holes at both ends of the rail, the AHG-K can be configured for various brake systems, elevators, and linear motion systems. The AHG-K is a powerful and precise solution for simple linear-motion applications. The unique product number for the application using this product is “N013.” For details, please refer to page 9 of this catalogue.





020.AHG High-Speed, Low-Noise Linear Guide

This AHG product operates with extremely low noise and supports ultra-high-speed operation at speeds of up to 15 m/sec. More than 30 models are available for various applications at highly competitive prices. The carriage is made of SUS, while the rollers are available in stainless steel or carbon steel. Various surface treatments can be applied to the guide rail to prevent corrosion. The product is suitable for a wide range of applications, including dusty environments, high-speed operation, vacuum environments, and cleanrooms. It is particularly suitable for woodworking machinery, inkjet printers, laser cutting machines, food-processing machinery, gas cutting machines, automatic carton cutters, textile cutting machines, and various automation systems.



021. SMSC-Treated AHG High-Speed, Low-Noise Linear Guide

AHG products feature advanced SMSC anti-corrosion surface treatment, providing high durability for high-speed operation. Even in medical equipment exposed to chemical substances, the product offers excellent corrosion resistance and long service life. It can operate without lubrication.



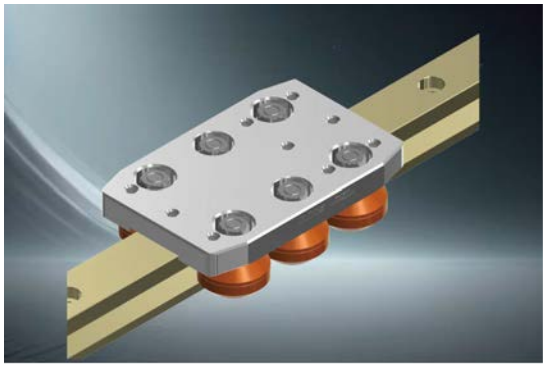
022.AHG-XY High-Speed, Low-Noise Linear Guide

This product provides two-axis motion in confined installation spaces. Its lubrication-free design offers high precision and durability for quiet, high-speed reciprocating motion.



023.FDA-PKW Linear Guide

The FDA-KW is twice as wide as the conventional FDA guide rail and is designed to provide greater stability. More than 30 models are available in G1 and G3 materials. The standard version uses an aluminum alloy guide rail with highly durable engineering-plastic components. It is lightweight, lubrication-free, and suitable for high-speed operation. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.



024.FDA30PK Linear Guide for Fully Automatic Sewing Machines

The FDA30PK was specially developed for fully automatic sewing machines, with several thousand units sold to date. Designed for continuous operation under repeated inertial loads, it has demonstrated excellent reliability, with units operating for more than three years without problems. It requires no lubrication, supports continuous 24-hour operation, and comes with a two-year warranty. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.

025.FDA-PK-BK Linear Guide

The FDA-PK is available in G3 and G1 materials. For low-speed, high-precision applications requiring lubrication-free operation, G1 rollers can be selected. This model features a manually operated brake with a compact structure, refined design, and extremely quiet operation. An automatic brake version is also available. The aluminum alloy guide rail has a surface hardness of HRC54 or higher, providing excellent wear resistance and long service life.



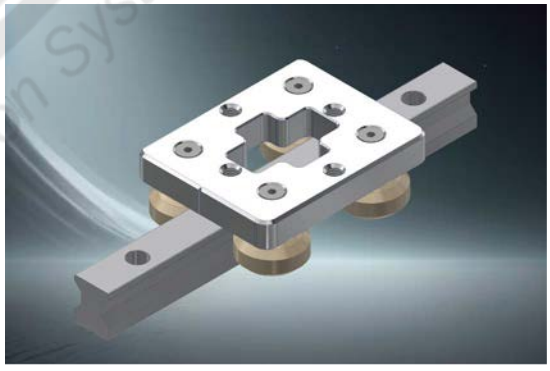
026.FDA-PK-G8 Linear Guide

The FDA-PK-G8 is manufactured from G8 steel, providing excellent durability and rigidity, with very low noise and suitability for high-speed operation. SMSC treatment and hard chrome plating can be applied to prevent corrosion. It is cost-effective, offers excellent precision, and can be used with both RV-type circular guides and straight guide sections. Manual or automatic brakes can also be installed as required.



027. FDA-PK Linear Guide

The standard FDA-PK product is typically manufactured from G3 aluminum alloy. The guide rail receives a ceramic surface treatment, achieving a surface hardness of HRC54 or higher and excellent wear resistance. The rollers are made from a special wear-resistant engineering plastic with extremely low wear. In particular, the guide rail is designed for long-term continuous use with minimal wear.



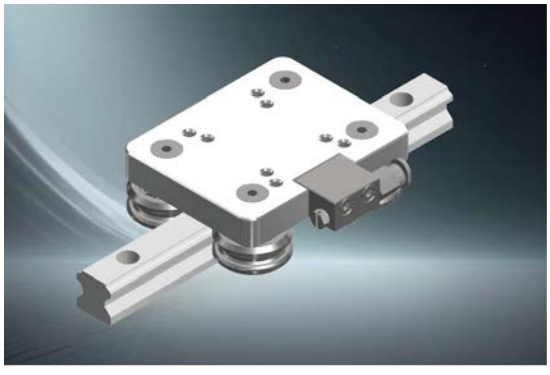
028.FDR-EP Linear Guide

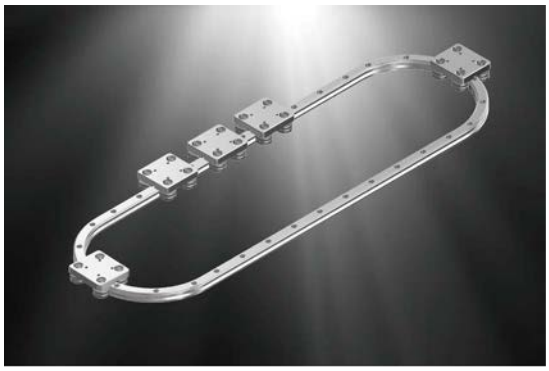
The TOBJET FDR-EP is specially designed for dusty, misty, fibrous, and other contaminated environments. The guide rail receives a special surface treatment, achieving a surface hardness of HRC54 or higher, while the carriage incorporates special wear-resistant engineering plastic components. It is suitable for high-speed operation, produces low noise, and can operate without lubrication. However, applying a small amount of lubricant can further improve performance.



029.AHG-ABK High-Speed, Low-Noise Linear Guide

The powerful and extremely quiet AHG linear guide features an integrated automatic pneumatic braking system within the carriage. Unlike conventional systems that require the linear guide and brake system to be installed separately, this product integrates both functions into a single unit, providing easy assembly, a compact structure, and a refined design. This product is available at https://www.ams88.com/homepage/ct/





030.FDA-RV-E Circular Guide

TOBJET curved guides are available in various configurations and can be manufactured from G1 stainless steel, G3 aluminum alloy, G8 heat-treated carbon steel, and other materials. In particular, although the G3 model is made of aluminum alloy, its surface undergoes ceramic treatment to achieve a hardness of HRC54 or higher, providing excellent wear resistance and long service life. The guide rails can be customized in various profiles, including U-shaped, triangular, rectangular, and S-shaped configurations. A wide range of specifications is available, and all models can operate without lubrication.



031.FDA-RV Multi-Angle Circular Guide

We manufacture and supply curved guides in various angles, including 30°, 45°, 60°, and 180°. They are available in materials such as G1 stainless steel, G3 aluminum alloy, and G8 heat-treated carbon steel, with G3 being our most widely produced and sold model. Although the G3 guide is made of aluminum alloy, its surface is ceramic-coated to achieve a hardness of HRC54, providing excellent wear resistance and lubrication-free operation. Various carriage configurations are also available.



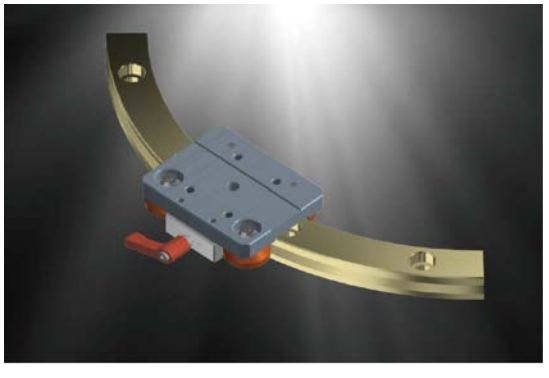
032.FDA-RV 360°Circular Guide

The 360° circular guide supports high-speed operation and is available in various specifications. Its seamless design reduces noise even at high speeds, simplifies installation, and provides stable rotational motion. Available materials include G1, G3, and G8. The G3 aluminum alloy version has a surface hardness of HRC54 or higher, providing excellent wear resistance, lightweight construction, and lubrication-free operation.



033.FDA-RV Segmented Circular Guide

The 360° segmented circular guide is a more economical alternative to the one-piece 360° circular guide. It is suitable for low-speed applications and can be manufactured to virtually any radius due to its segmented construction. It is available in G1 and G3 materials and can operate without lubrication.



034.FDA-RV Circular Guide with Manual Brake

This circular guide is equipped with a manual brake. An automatic braking function can also be added upon customer request. It is available in G1 and G3 materials. The G3 aluminum alloy version has a surface hardness of HRC54, providing excellent wear resistance and long service life. The product can also operate without lubrication.

035.RG Segmented Ring Gear

This product is designed based on cycloidal and curved-profile principles. When first developed approximately 20 years ago, it incorporated advanced engineering technology, and TOBJET now designs and supplies this product directly. For special customer requirements, it can be manufactured in virtually any size using a segmented and assembled structure. Special surface treatments are applied to prevent corrosion. The gears are generally manufactured from materials such as stainless steel and aluminum alloy. Both internal and external ring gear configurations are available.



036.RGU Ring Gear

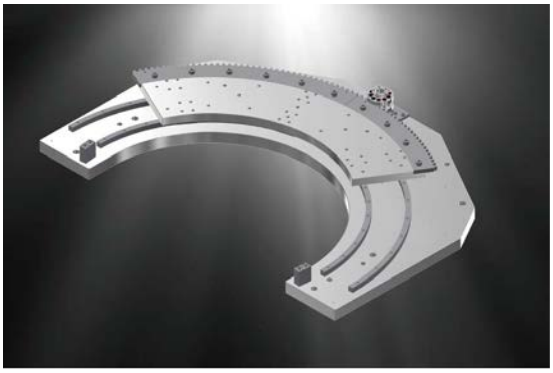
This product is designed based on cycloidal and sinusoidal curve principles. Although the technology was first developed approximately 20 years ago, TOBJET now designs and supplies this product directly. It features a one-piece 360° structure, providing high precision and minimal noise during high-speed operation. It has zero cumulative error and a positioning repeatability of 0.03 mm. Both internal and external ring gear configurations are available. The CRP (Cycloidal Rack & Pinion) series is a gear system based on the cycloidal principle, using a specially designed curved tooth profile to engage the circular pinion with the linear rack. This design enables precise, high-speed motion with low noise and excellent durability. CRP products are widely used in industrial applications, particularly robotics, automation, and transport systems. A crossed-roller guide is installed beneath the rotating gear assembly to provide high rigidity. RGU products are supplied as fully assembled units for convenient installation and use.





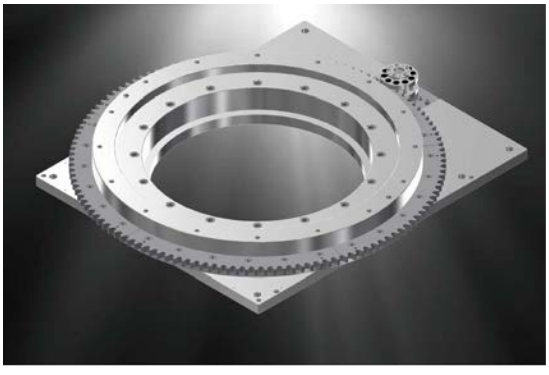
037.RGU Ring Gear

The RGU semi-circular system combines a rack-and-pinion mechanism with a curved linear guide. It is carefully designed for convenient installation and use, providing high precision and high rigidity. The system has zero cumulative error and a positioning repeatability of 0.03 mm. Surface treatments can be applied to the guide rail upon customer request to prevent corrosion. Anti-detachment brackets are installed at both ends.



038.RGU Ring Gear

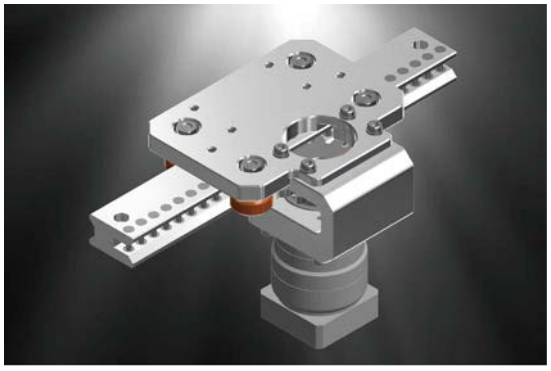
The RGU 360° circular system is designed based on cycloidal and trochoidal principles and differs significantly from conventional ring gear systems. A curved guide is installed beneath the ring gear, enabling extremely quiet rotation, zero cumulative error, and high rigidity. The gear connection method varies depending on the product size. Positioning repeatability is 0.03 mm. Special surface treatments can be applied upon customer request to prevent corrosion. Both internal and external ring gear configurations are available.





039. FDD-300 Integrated Circular Gear Guide with External Gear

Compared with the RGU series, the FDD series has slightly lower rigidity but offers a more economical solution with extremely quiet high-speed rotation. The gear mechanism is based on cycloidal and sinusoidal cycloid curve principles and is a TOBJET patented invention. The ring gear incorporates needle rollers that rotate upon engagement with the pinion, minimizing noise and reducing wear. The system operates without lubrication, has zero cumulative error, and provides a positioning repeatability of 0.03 mm. This model features an external ring gear configuration with the reducer mounted downward.



040. FDH Integrated Linear Guide System

The FDH integrated linear guide system uses a Type “5” carriage, with the reducer mounted underneath. It has zero cumulative error and provides a positioning repeatability of 0.03 mm. Available materials include G1 and G3, with G3 aluminum alloy being the primary option. Its surface undergoes ceramic treatment to achieve a hardness of HRC54 or higher, providing excellent durability, extremely low wear, and long service life. The system can operate without lubrication.



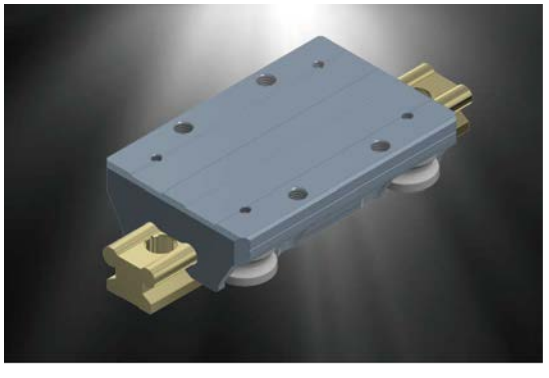
041. FDD-301 Integrated Circular Gear Guide with Internal Gear

The FDD series features a rotating structure in which both the guide rail and guide rollers rotate. Similar in principle to a steering wheel, it is designed for installation in specialized equipment. The system is engineered to meet requirements for lightweight construction, extremely low friction, and minimal noise. It provides a corrosion-resistant, lubrication-free solution. The gear is manufactured from a special engineering plastic material.



042. FDK Integrated Circular Gear Guide with External Gear

The FDK series features a 180° semi-circular structure with a Type “5” carriage, allowing the reducer to be mounted underneath. A Cartesian coordinate system is typically installed on top, making it widely suitable for applications combining rotary motion with XY-axis positioning. The system has zero cumulative error and provides a positioning repeatability of 0.03 mm. It is an integrated circular guide system combining a ring gear and circular guide rail and can operate without lubrication.

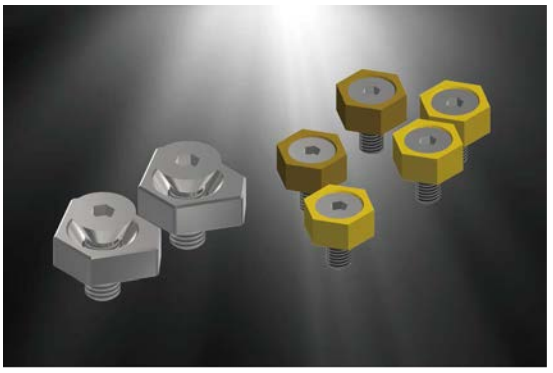


043. FDR-PKR-G2 Guide Rail

The FDR-PKR guide rail features a ceramic-treated surface with a hardness of HRC54 or higher, providing excellent wear resistance. The rotating rollers use the G2 type, specially designed for wet and high-humidity environments. The internal bearings are made of stainless steel (SUS), providing excellent corrosion resistance under normal operating conditions. The product is reasonably priced, and G3 rollers can be selected when higher rigidity is required. It can also operate without lubrication.

044. TOLI (Linear Guide Clamp)

The TOBJET TOLI (Linear Guide Clamp) is designed to prevent vibration and disengagement of various linear guides by applying lateral pressure to securely clamp the guide rail in position. It is particularly suitable for installing linear guides on various machine tools. The product is available with two nut material options: copper and steel.



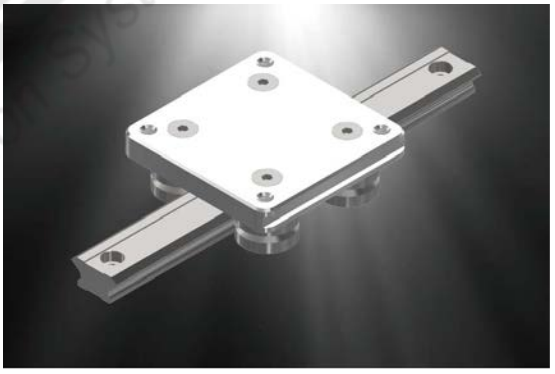
045. WS Series WSR Linear Guide

The WS Series WSR is a roller-type linear guide with a G3 aluminum alloy rail, supporting speeds up to 3 m/sec. It requires no lubrication and offers excellent corrosion resistance. Industrial drive belts can be installed on either side of the carriage for an economical system. The rail has a surface hardness of HRC54 or higher. The rollers use a special highly wear-resistant engineering plastic. All other components, including high-strength bearings, are stainless steel.



046. FDV-G8 Linear Guide

All components of the FDV product are made from G8 material. Both the guide rail and rollers are manufactured from high-strength bearing steel with a surface hardness of HRC58 or higher. The guide rail features a raised V-shaped cross-sectional profile. Depending on the model, maximum operating speeds of up to 10 m/sec are available, and the system is designed for reliable operation in dusty environments. Surface treatments can be applied according to customer requirements, and RV-type versions are also available.



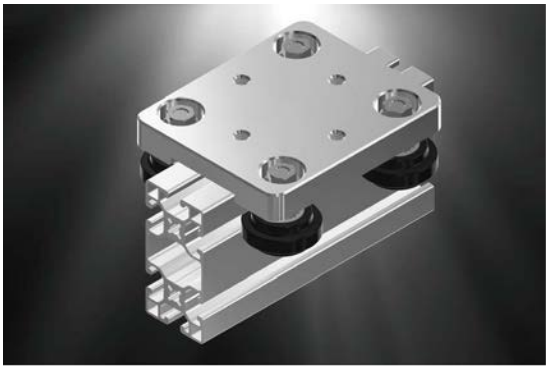
047. H-TYPE Integrated Linear Motion System

The H-TYPE is a TOBJET-developed integrated linear motion system. High-strength nylon components are installed at specified intervals beneath a conventional linear guide, with a fixing plate mounted above to create a gear-driven linear motion system. Its key advantages are low cost, zero cumulative error, and positioning repeatability within 0.05 mm. The motor or reducer can be selected by the customer according to application requirements.



048. AC-A Aluminum Profile Linear Guide

This product is designed for customers requiring a low-cost linear motion solution on uneven mounting surfaces. It uses aluminum profiles and engineering-plastic rollers to provide a high-performance linear guide system. It is suitable for a wide range of industrial equipment and various operating environments.





049. RLR Linear Guide

The RLR series was developed to solve the limitations of conventional SBR/TBR products. Although SBR/TBR products are inexpensive and offer good rigidity, they may not meet requirements in dusty environments, high-speed operation, high-load applications, or low-noise conditions. The RLR series addresses these issues, providing reliable operation in harsh environments with high speed, low noise, high load capacity, and lubrication-free operation.



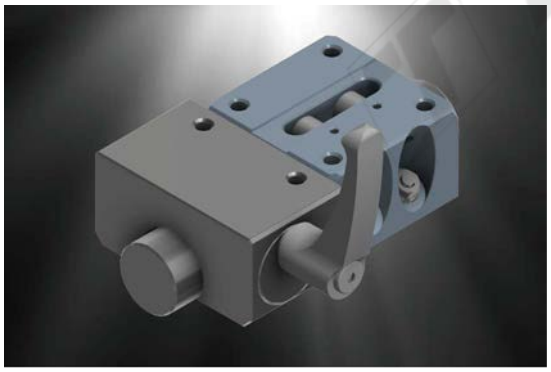
050. RGB Linear Guide

The RGB series is fully compatible with conventional SBR products. If problems occur with an existing SBR system, it can be directly replaced with an RGB model. The RGB series is suitable for high-speed operation, low-noise applications, dusty environments, and cleanrooms, and can operate without lubrication.



051. RGD Linear Guide

The RGD series is available in two types, RGD-OP and RGD-SC, and is compatible with conventional SBR and SC products. Stainless steel bearings provide excellent corrosion resistance. Although its load capacity is lower than that of the RLR and RGB series, the stainless steel bearing construction makes it highly effective in environments requiring corrosion resistance. It is suitable for dusty or low-noise environments and can operate without lubrication.



052. RLR/RGB/RGD Manual Brake

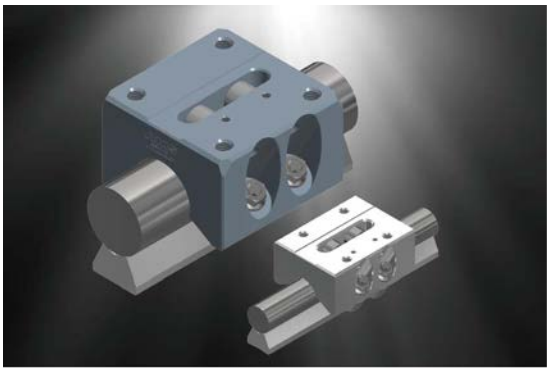
All RLR, RGB, and RGD series products can be equipped with either manual or automatic brakes. These braking systems provide strong holding force to securely lock the equipment at the desired position.



053. SMZ Series Linear Guide

The SMZ30 series uses stainless steel rollers and is available in two versions: one with needle bearings and another using wear-resistant engineering plastic components internally. There is little difference in overall performance between the two versions, allowing customers to select the most suitable option for their application. These products are widely used in chemical processing and cleaning equipment on solar-cell production lines. They require no lubrication and provide excellent durability.

054. RGB-02 Linear Guide



Compared with conventional RGB/RLR/RGD guides, the RGB-02 features a narrower installation width and requires only a single row of mounting bolts, installed either from bottom to top or from top to bottom. It is specifically designed for applications with very limited installation space. The RLR-02, RGB-02, and RGD-02 series all use this compact mounting design. These products require no lubrication and are suitable for high-speed operation. When selecting RLR/RGB/RGD products, it is important to determine whether the application requires high load capacity or high-speed operation. Even within the same size, a low-speed, high-load version can be supplied with more than 50% greater load capacity.

055. R10542 Linear Guide



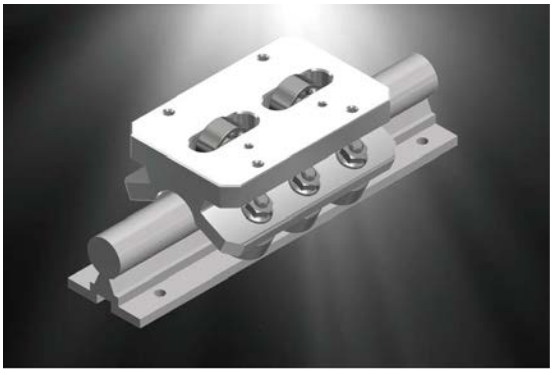
The R10542 is designed with guide components mounted on both the left and right sides, leaving a large open space in the center for highly efficient use of the installation area. It is particularly suitable for equipment requiring maximum utilization of the space around the guide carriage. The product supports high-speed operation and high load capacity without lubrication.

056. RGS Linear Guide



The RGS is designed for applications with limited installation space. Unlike conventional SBR and TBR guides, it requires only a single row of mounting bolts, installed either from bottom to top or from top to bottom, maximizing production efficiency and reducing assembly costs. The product supports high-speed operation and smooth linear motion without lubrication.

057. TOBJET RLB Linear Guide

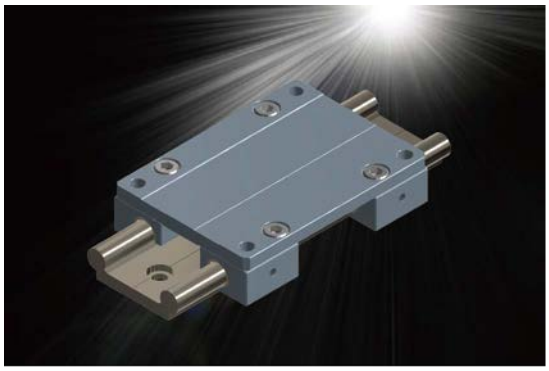


The RLB series differs significantly from conventional products. In many applications using RGB/RLR-type products, SBR guides are installed directly on sheet-metal structures or aluminum profiles without precision machining. When the installation length exceeds 3 meters, maintaining the parallelism and straightness of two SBR guide rails becomes difficult, and deviations exceeding 5 mm between the two rails can occur. Under these conditions, using RLR/RGB/RGD products may cause misalignment loads to be transferred directly to the rotating bearings, resulting in premature bearing damage. The RLB series was developed to solve this problem. It features extremely high load capacity, dust-resistant ball bearings, and an automatic self-alignment mechanism that compensates for parallelism and straightness deviations. This patented design enables stable and reliable linear motion even under installation misalignment.

058. RLR-SP Series Linear Guide

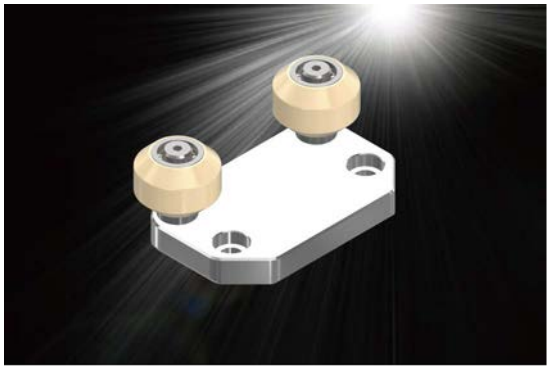


The RLR-SP series is designed to reduce the installation space required by conventional SBR guides, which typically require a wide mounting area and two rows of mounting bolts. By using a single row of bolts, the RLR-SP series reduces installation space and improves assembly and production efficiency.



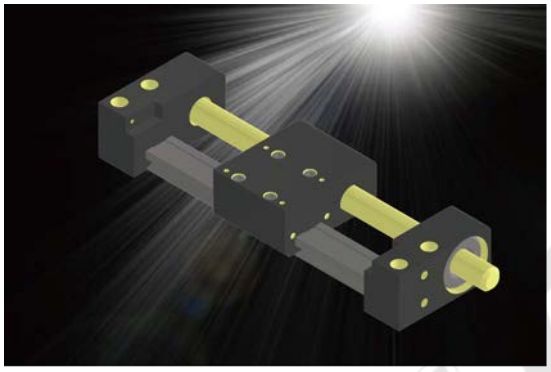
059. AWS Series Linear Guide

The AWS Series uses aluminum alloy as its main material, with special wear-resistant engineering-plastic components in the carriage. The rail receives a ceramic surface treatment for excellent wear resistance and a surface hardness of HRC54 or higher. It suits dusty, noise-sensitive and high-humidity environments. The standard operating temperature is -20°C to +90°C; high- and low-temperature versions are available on request. It operates without lubrication; a small amount of oil can further reduce friction.



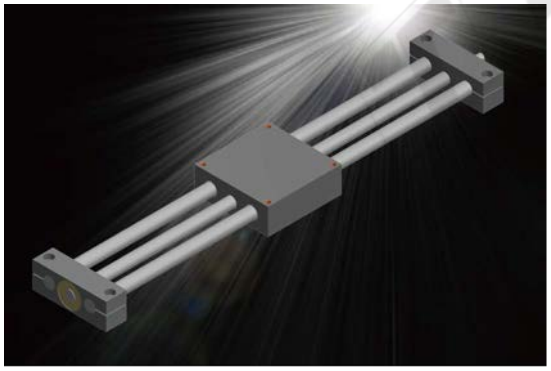
060. FDD-PW-B Carriage

This competitively priced FDD-PW carriage is designed for 360° circular guides. It uses highly wear-resistant engineering-plastic rollers. To replace a roller, simply loosen the retaining hex bolt and remove the roller.



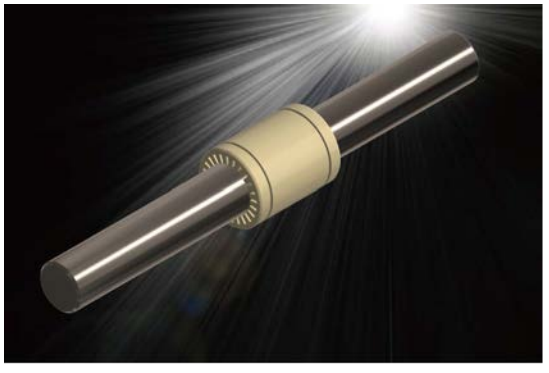
061. ASHT/ASHT-BB Linear Slide Table

ASHT/ASHT-BB combines aluminum alloy and stainless steel components with wear-resistant engineering-plastic bearings. It is lightweight, lubrication-free and suitable for diverse environments. The linear motion unit uses stainless steel multi-start or single-start TM lead screws, with manual and automatic drives available. Shafts and guides for printers, packaging machines, guiding devices and automatic return lines receive ceramic surface treatment for excellent wear resistance and a hardness of HRC54 or higher. The ASHT linear slide table maintains system precision and rigidity without lubrication. Shaft and lead-screw materials, carriage lengths and accessories can be configured as required. Preloaded versions and ball-bearing-supported lead screws are also available.



Typical Applications

- Manual Adjustment - Grippers - Sensor Adjustment - Marking and Engraving Systems - Laboratory Equipment

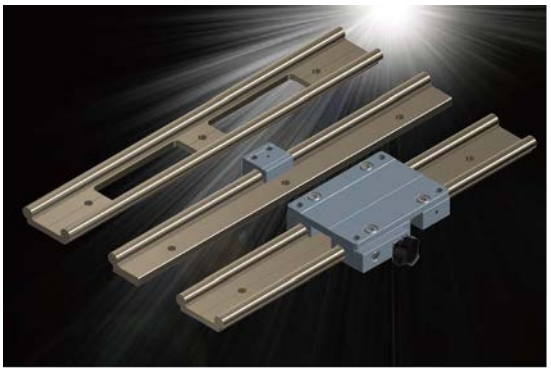


062. Aluminum Shaft

The TOBJET high-precision aluminum alloy shaft is precision-ground to an H7 tolerance and features a ceramic-treated outer surface with a hardness of HRC54 or higher. When used with wear-resistant engineering plastic bearings, it provides excellent durability and long service life. It requires no lubrication and is available in various specifications.

063. AWS Series Linear Guide

The TOBJET W Guide System is a cost-effective linear motion system available in both single-rail and dual-rail configurations, providing high installation flexibility. The hard-anodized aluminum guide rails offer excellent friction and wear performance. The system operates dry without lubrication, is resistant to dirt and contamination, and provides the cleanliness required for cleanroom and hygienic applications.





Typical Applications

- Agricultural Machinery - Automotive Manufacturing - Medical Industry - Construction - Packaging Industry - Furniture - Robotics - Sheet Metal Industry

• Easy installation; maintenance-free
• Dry running and dust resistance • Lightweight and quiet • Square guide rail with floating bearings mounted at 90° • Manually adjustable bearing clearance

064. EP Linear Bearing

The EP Linear Bearing features highly wear-resistant engineering plastic components internally, with an outer housing made of aluminum alloy or stainless steel. The standard operating temperature range is -20°C to +90°C, while special materials can be used for higher-temperature applications upon customer request. It requires no lubrication and is suitable for environments involving dust, mist, particles, chemicals, and high temperatures.



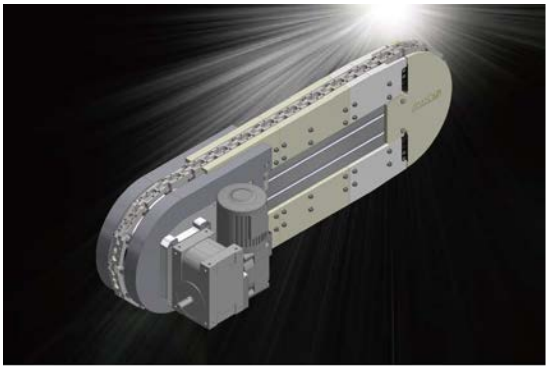
065. TSL/TL/TXL Chain Conveyor System

The TOBJET TSL/TL/TXL Chain Conveyor Systems provide excellent positioning control and precision with no cumulative error, while maintaining consistent spacing at all times. Synchronized Drive: The conveyor moves in mechanical synchronization with other machine components and receives power from the motor drive. The number of degrees used for the transfer period, which is typically the passive portion of the machine cycle, corresponds to the minimum basic angle required for the indexer to complete its output displacement. A greater number of degrees can be allocated to the dwell period, providing more time for the active portion of the machine cycle.



066. RLS Circular Conveyor System

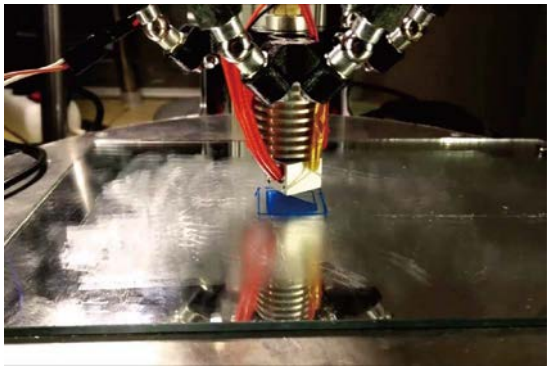
The TOBJET RLS Circular Conveyor System is a compact, pre-assembled, precise, and maintenance-free chain-link system designed to provide industrial-grade accuracy and durability. It is suitable for material-handling applications requiring higher positioning accuracy or speed than conventional chain systems, including industrial and medical applications. Typical applications include narrow-gap and bucket conveyors operating at constant speed. The conveyor can be installed in upper, lower, or rotary operating configurations.





067.Coating Machine for Automatic Glove Production Lines

This equipment is designed for the large-scale automated production of various types of gloves. During the manufacturing process, specific areas of the gloves undergo surface coating, finishing, and other treatment processes to achieve the required product quality and performance. Linear guides are used in these machines to provide smooth, precise, and stable movement of the processing units. Their reliable linear motion helps maintain consistent coating quality, accurate positioning, and efficient continuous operation throughout the automated glove production line.



068.Various Compact FDM 3D Printers

FDM is one of the most widely used 3D printing technologies. It creates three-dimensional objects layer by layer by melting and extruding thermoplastic filament. FDM printers are relatively affordable, easy to operate, and compatible with a wide variety of materials. This is a well-established technology that continues to evolve toward larger-scale systems, higher printing speeds, and greater productivity. For these applications, the AHG Series is a suitable linear guide solution.



069.SLS (Selective Laser Sintering) High-Precision 3D Printer

SLS (Selective Laser Sintering) is a 3D printing technology that uses a laser to selectively sinter nylon powder, building objects layer by layer. SLS printers can produce highly durable and strong components while achieving high dimensional precision. In this type of equipment, minimizing noise and vibration during repetitive linear motion is one of the most important requirements. The AHG Series produced by TOBJET is an excellent solution for these high-precision, repetitive-motion applications.



070.Equipment for Manufacturing Various Ceramic Products

A wide variety of equipment is used in the manufacturing and processing of ceramic-related products, including machines for cutting high-grade ceramics, tableware, sanitary ware, and advanced semiconductor materials. These processes often involve mixtures of water, ceramic particles, clay, pigments, and other contaminants. Conventional linear guides can experience rapid deterioration when these contaminants enter the moving components, resulting in reduced performance and shortened service life. For such demanding environments, TOBJET products such as the FDA-EP, RGB, and RLR series provide suitable linear motion solutions.



071.Suitable for Wet and High-Moisture Environments.

Among the various products manufactured by TOBJET, the EP Series uses engineering plastic bearings within its sliding structure. These bearings operate reliably even in high-humidity, wet, and water-exposed environments. In addition, they require no oil lubrication, are highly resistant to corrosion, and provide excellent durability and long-term operating performance.

072. High-Speed, High-Precision UV Inkjet Printer

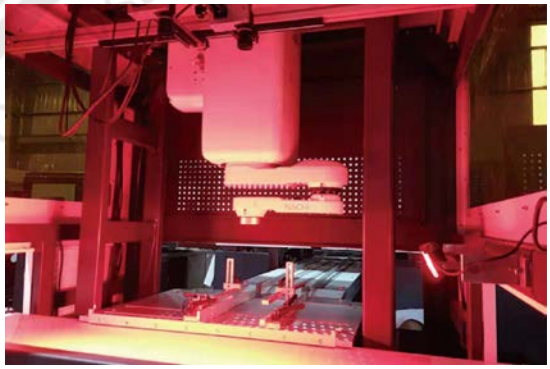
UV inkjet printers use UV (ultraviolet) light to cure ink instantly. Unlike conventional inkjet printers, they do not require drying time, enabling immediate processing. To maximize productivity and print quality, these machines require high-speed motion, low noise, and minimal vibration during operation. Conventional linear guides typically operate at around 0.8 m/sec, while higher-performance models may reach approximately 2 m/sec. However, many conventional linear guides can experience increased noise and durability problems at higher speeds. TOBJET AHG products support speeds of approximately 3–10 m/sec, require no lubrication, operate extremely quietly, and generate minimal vibration. Using the AHG products shown on page 25, a system can combine slower Y-axis motion with high-speed X-axis motion. For applications requiring even higher speed, rigidity, or durability, TOBJET can provide a customized solution according to the required operating conditions.





073.High-Temperature Linear Guide

The N133 linear guide shown on page 18 can operate at temperatures of up to 800°C. In humid, oxygen-containing environments, it can be used at temperatures of up to 600°C, while in saltwater environments, it can operate at temperatures of up to 400°C. Please contact us for detailed information regarding specific operating conditions, environments, and temperature requirements.



074. Automated Medicine Dispensing Systems for Large Pharmacies and Hospitals

Large pharmacies and hospitals use automated medication supply systems to provide a wide range of medicines quickly and efficiently. These systems are generally designed according to principles similar to large-scale logistics systems, using an integrated automated supply line. The equipment typically incorporates Z-axis actuator robots for high-speed linear movement. The linear guides used in these high-speed axes can be replaced with TOBJET AHG products. AHG products require no lubrication, provide long-term durability, and operate with extremely low noise, making them particularly suitable for indoor applications.



075. Food Processing Machinery for Wet, Hot, and Cold Environments

For food-processing machinery requiring extremely high cleanliness, the N133 product shown on page 18 can be used for linear motion in environments involving steam, water, high temperatures, or low temperatures. The product is designed to operate reliably under high-temperature, low-temperature, humid, and water-exposed conditions. In addition, it requires no lubrication, and all components are manufactured from stainless steel.













076.APDU Large Ring Gear for Stone Sand-Making Rod Mills



■Lower cost and faster delivery compared with conventional gear sets ■Higher speed ratios can be achieved at lower cost compared with chain-and-sprocket drives

For outdoor equipment operating in environments with heavy dust and contamination, our gear products provide a highly practical solution. The gear is specifically designed to accommodate harsh operating conditions and potential installation or alignment errors. Its configuration is shown on page 24. The system can operate without lubrication.

077. Counting and Sorting Equipment for Disposable Glove Production Lines

Counting and sorting equipment for disposable glove production lines requires precise positioning control and stable motion to ensure accurate counting and reliable sorting throughout the production process. Linear guides are a key component of this equipment, providing accurate positioning and smooth, stable movement. In addition, these systems must perform continuous repetitive linear motion 24 hours a day. For such applications, the FDA30PK is an excellent solution, as described on page 25.

078.Automatic Forming Sewing Machine

The sewing machine automatically moves along the X and Y axes while performing the sewing operation. During this process, however, dust and fibers generated from the fabric can enter the linear guide carriage, affecting long-term operation and smooth linear motion. Dust contamination can interfere with the circulation of the steel balls inside conventional linear guide carriages. Although Cartesian robot systems are now widely used, similar problems may occur because many use the same internal recirculating-ball principle. In such applications, the AHG Linear Guide manufactured by TOBJET can provide an effective solution.

079.Carbon Fiber Processing Machinery

Carbon fiber is a highly versatile advanced material known for its exceptional strength, lightweight structure, and excellent resistance to high temperatures. For specialized equipment that processes carbon fiber filaments and manufactures components in various shapes, the FDH integrated linear and circular guide system shown on pages 21–22 provides an effective motion solution. Carbon fiber processing and manufacturing equipment typically generates large amounts of fine dust and particles, which can cause operating problems in conventional linear motion systems. TOBJET FDH and FDK systems are designed to provide stable, reliable, and long-term operation even under these demanding dusty conditions.

080. Linear Guides for Food Processing and Ice Cream Production Lines

Particularly in food-processing machinery such as ice cream production lines, conventional linear guides may experience lubricant leakage during linear motion, creating a risk of contamination. In specialized circulating-motion systems, the recirculating balls inside conventional linear guide carriages may also become dislodged during operation. To solve these problems, TOBJET offers the FDA-G3 and FDA-G1 series. These products operate without grease and eliminate the risk of lubricant leakage or foreign particles falling from the guide system, making them highly suitable for clean food-processing environments.



081.Bone and Joint Rehabilitation Equipment

TOBJET circular guides have been supplied for many years for use in arm muscle and joint rehabilitation equipment. Among the various circular guide systems available, our specially developed aluminum-alloy curved guides provide a lightweight structure, lubrication-free operation, and reduced static electricity generation, making them highly suitable for rehabilitation and medical equipment. FDA15RV-G3 and FDA15RV-G1 models are used for these applications.



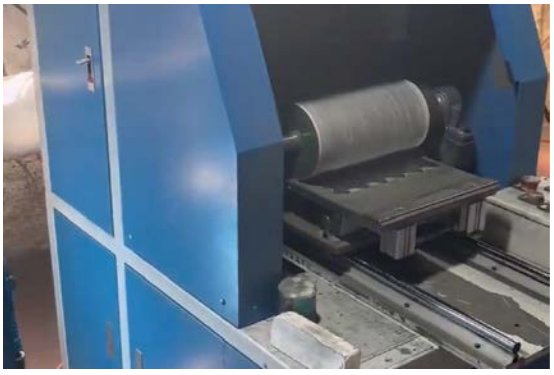
082.Linear Guides and Linear Bearings for Extreme Environments

We manufacture and supply high-performance linear guides and linear bearings for extreme environments involving sand, powder, dust, and sawdust. Our products are also suitable for wet environments and applications involving ceramics and water. Custom linear guides are available for special operating conditions.



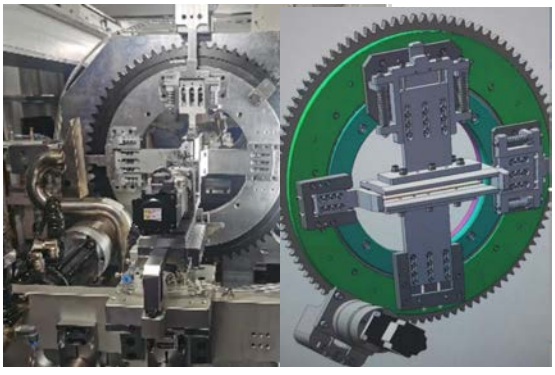
083.Automatic Surface Polishing Machine

This equipment performs highly precise and uniform automatic surface polishing. However, continuous operation generates large amounts of contaminated dust and abrasive particles. When these foreign particles enter the SBR linear bearings beneath the machine, they can interfere with the normal circulation of the balls inside the bearing block, eventually requiring replacement of the bearing block. TOBJET RGB products provide an effective solution to this problem. The RGB system uses rotating needle bearings to achieve linear motion, allowing stable and reliable operation even in extremely dusty and contaminated environments.



084.RGF Ring Gear for Battery Manufacturing Equipment

Battery manufacturing equipment is used to produce lithium-ion batteries and covers multiple stages of the complete production process. These systems support the efficient manufacturing of lithium-ion batteries for a wide range of applications, including electric vehicles, mobile phones, and laptop computers. The RGF system is used for battery case welding. Four battery cases are held simultaneously at four workstations, and the indexing rotary mechanism precisely rotates them to weld different sections of each battery case.





085.Linear Bearing Replacement for SBR/SC/TBR Linear Bearings

SBR/TBR/SC products are widely used in many industries because they are cost-effective while providing relatively high precision and load capacity. However, these products are not suitable for many demanding environmental conditions and often continue to be used simply because suitable alternatives are limited. To address these limitations, TOBJET developed the RLR, RGB, and RGD series as dedicated replacement solutions. They are particularly suitable for woodworking machinery and other equipment exposed to large amounts of dust, particles, mist, and sawdust. In addition, these products can operate without lubrication.



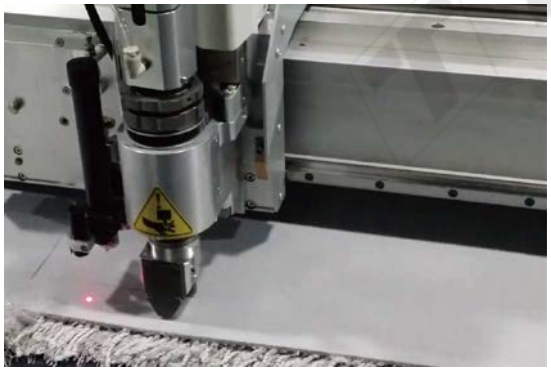
086.TOBJET Products Leading Agricultural Automation

In recent years, agricultural production has increasingly shifted toward smart farming systems. To address labor shortages and achieve clean, large-scale production, various automated cultivation methods are being introduced, including systems incorporating products manufactured by our company. Automation equipment used in agricultural environments requires linear guides and linear bearings capable of reliable operation under demanding conditions involving soil, dust, moisture, and water.



087. Specialized Automated Automotive Assembly Line

Automated automotive assembly lines require smooth, repeatable motion to position parts and transfer assemblies between workstations. Linear guides support the movement of handling devices and other moving components throughout the production process. TOBJET linear guides provide motion solutions for these systems. Select the guide model according to the required load, speed, travel, and operating environment. Please contact TOBJET for application-specific product selection.



088.Automatic Cutting Machines for Various Fabrics and Cartons

Many high-speed cutting machines, including textile cutting machines, acrylic cutters, and carton cutting machines, are widely used in indoor production environments. During high-speed operation, conventional linear guides can generate significant noise because the balls inside the carriage continuously recirculate along the internal raceway. The AHG series is designed to solve this problem. In addition, conventional lubrication can cause contamination and maintenance issues. The TOBJET AHG High-Speed, Low-Noise Linear Guide provides a clean, quiet, and lubrication-free solution for these high-speed cutting applications.



089.Linear Guide for Ultra-Low-Temperature Environments

Ultra-low-temperature systems are designed to operate under extremely cold conditions, typically below -80°C. They are widely used in scientific laboratories, medical research, semiconductor manufacturing, space exploration, and other applications requiring high precision and stable performance. TOBJET linear guides can withstand temperatures as low as -192°C. Based on our standards and specific customer requirements, linear guides can be customized and supplied in various shapes and sizes for different ultra-low-temperature applications.

090. Large Scanners for Cars, Aircraft, and Other Large Products

The TOBJET FDK integrated circular guide system can be connected and extended, allowing virtually unlimited system dimensions. It provides zero cumulative error and a positioning repeatability of 0.03 mm, making it suitable for highly precise applications. The system operates with extremely low noise and vibration and requires no lubrication. Large-scale scanners use this guide system to precisely measure the size, shape, and dimensions of large objects such as automobiles and aircraft and generate accurate 3D models. This provides precise dimensional data for design and manufacturing processes, helping ensure that components meet the required specifications.



091. Automated Coal and Ore Sorting Equipment

A laser ore sorting machine for coal and other minerals is a piece of equipment that uses laser technology to sort coal and various types of ores. The system uses laser beams to analyze and identify the characteristics of the ore, enabling effective separation of coal and other materials. The laser sorting system measures characteristics such as color, texture, and transparency to identify the desired coal or ore, allowing highly efficient sorting. Laser sorting is an automated process capable of high-precision and high-speed material separation. This technology helps improve efficiency in the coal mining industry, increase production capacity, and ensure that only high-quality coal is selected. The operating environment of this equipment generates large amounts of dust and coal powder. Various ores move along an automated conveyor belt and are detected and sorted by sensors using an instantaneous linear-motion sorting system. Even in environments containing large amounts of dust and impurities, the system can operate reliably without problems. This revolutionary linear-motion system can also be applied to a wide range of automated sorting systems. The minimum product width currently available is 63 mm. Multiple units can be arranged in three or four rows, with no limitation on the total number of units.





092. TOBJET RTU Industrial Robot Linear Motion System

A robot transfer unit (RTU) is a linear motion system that moves an industrial robot along an additional axis, extending its working range. The RTU provides the guide and carriage structure that carries the robot between working positions. Its motion is coordinated with the robot controller and the other components of the automated system. Robot transfer units allow one robot to serve multiple workstations and support material handling, machine tending, and assembly. Select the rail and carriage configuration according to the robot load, required travel, speed, and installation conditions. Main products: rail systems 1, 2, and 3.



093.TOBJET CPC Chain-Type Circular Guide Rail

TOBJET CPC chain-type circular guide rails are suitable for lightweight, high-speed motion and can operate without lubrication. The track can be configured in various shapes, including circular, square, and triangular layouts. The system can also be installed and operated according to a predetermined pitch. It supports both vertical and horizontal installation. Thanks to its standardized design, fast delivery is possible.





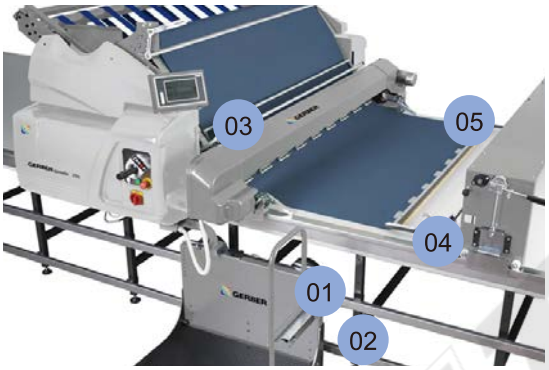
094. For Laser Cutting, Welding, and Other Metalworking Machinery

The linear guide used in laser cutting machines (01) must move quickly. If the guide is too heavy, inertia generated during machine operation can easily cause vibration or shaking. In addition, conventional steel linear guides may rust over time due to gases released during the cutting process. TOBJET linear guides weigh only about one-quarter as much as conventional steel linear guides, require no lubrication, and do not rust even when used in environments exposed to water.



095. For PVC and Aluminum Door and Window Cutting Machinery

During the operation of aluminum and PVC door and window cutting machines, a large amount of dust is generated. This dust passes through the worktable (02) and enters the installed open-type TBR/SBR linear bearings. Over time, the shaft surface gradually wears, affecting machine operation and requiring frequent replacement of the linear bearings. By using our RLR bearings, these problems can be significantly reduced. Noise is also lower, and high-speed operation is possible. For the moving section of the machine control box (01), we recommend using our dedicated guide rail.



096. Automatic Fabric Spreading Machine

Suitable for automatic fabric spreading machines and fully automatic spreading systems for various fabrics, PU, and microfiber materials. It supports high-speed spreading, automatic return to the home position when fabric runs out, tension-free spreading, and automatic shutdown when idle. The streamlined exterior design gives the machine a more refined appearance, while the PLC touch-screen control system makes operation easier. For positions (01) and (02), use linear guides capable of supporting loads of approximately 200 kg. For positions (04) and (05), any of our FDR, FDA, or FDU products can be used. In particular, at position (03), oil leakage from conventional linear guides during cutting operations may contaminate the product. By using TOBJET linear guides, which require no lubrication, product quality is not affected.



097. Flatbed Cutting Machine

Flatbed cutting machines cut materials and draw with a pen, and are also called flatbed cutting plotters. They precisely cut many materials for a wide range of industries. High-speed operation over a short stroke creates substantial inertia; of the X, Y and Z axes, the Y-axis (01) should be as light as possible. Conventional double-row Y-axis guides are heavy, prone to rust in summer, and noisy at high speeds. TOBJET guides weigh about one-quarter as much as conventional steel guides and provide lubrication-free, corrosion-resistant, low-noise motion.



098. Various Cutting Machines

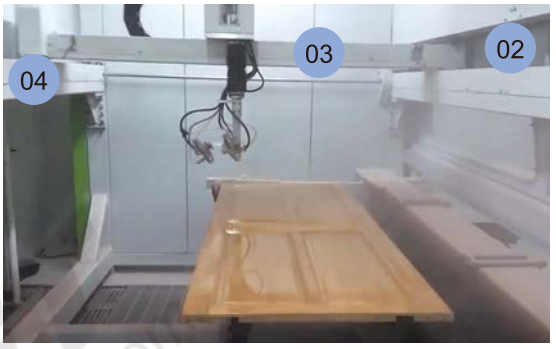
Plasma cutting is a machining process that uses the heat of a high-temperature plasma arc to melt or partially vaporize the metal at the cutting area of a workpiece, while the high-speed plasma jet removes the molten metal to form the cut. A basic plasma arc cutting system consists of a power source, an arc-starting circuit, and a torch. A high-frequency circuit generates an arc between the nozzle and the electrode, ionizing the gas between them and creating a plasma state. The ionized gas is then forced through the nozzle as a plasma jet by the internal pressure. The temperature of the plasma arc can reach approximately 30,000°C. For the two-axis positions (01) and (02), as well as the Z-axis, the use of TOBJET linear guides eliminates the need for lubrication while providing very low noise and vibration. They are also corrosion-resistant and weigh only about one-quarter as much as conventional steel linear guides.

Confirm technical specifications with TOBJET.
Visit the official TOBJET website for new products.

099. Fully Automatic Line Spray Painting Machine

In the past, the production of various painted products caused serious environmental pollution, affecting the air, water, and surrounding environment. Painting processes for many products are now subject to strict environmental regulations worldwide. Because conventional painting and coating processes not only pollute the environment but also affect workers' health, automated painting and spraying systems have become increasingly important. In automated painting equipment, painting is performed within an enclosed space, where paint dust and powder can adhere to various machine components. When these particles accumulate on the surface of linear guides, they can interfere with smooth operation unless the guides are cleaned frequently, often resulting in repeated replacement of the guide blocks. The surfaces of conventional steel linear guides are relatively rough, allowing fine paint particles to accumulate in small gaps and gradually affect guide performance. TOBJET linear guides feature a coated surface with excellent smoothness, making it difficult for fine dust and paint particles to adhere. In addition, some automated coating processes include blasting operations in which abrasive particles are sprayed to remove contaminants from the surfaces of steel plates, steel, aluminum, plastics, and other materials. The contaminants generated during this process remain suspended in the air and can enter various machine components. Bearings and linear-motion components used in such environments must therefore be capable of reliable operation without lubrication. TOBJET linear-motion technology uses composite-material technology designed for reliable operation in demanding environments. During painting operations, water is often sprayed beneath the machine or placed at the bottom of the spraying area to reduce airborne dust and powder. This creates a humid operating environment, but TOBJET linear guides can still operate reliably under these conditions.







100. CNC Flame and Plasma Cutting Machines and CO_2 Gas-Shielded Welding Machines

This equipment operates in environments with heavy dust and airborne particles. Under these conditions, conventional linear guides used at positions (1) and (2) may develop corrosion after prolonged operation. Once corrosion occurs, fine dust can enter the linear guide carriage and accumulate inside. Continued accumulation can eventually cause the machine to stop, requiring replacement of the carriage. If the carriage is not replaced, sticking or irregular motion may occur frequently during linear travel, adversely affecting cutting quality. TOBJET linear guides are designed to solve these problems.

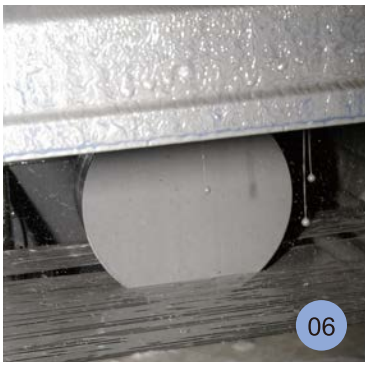


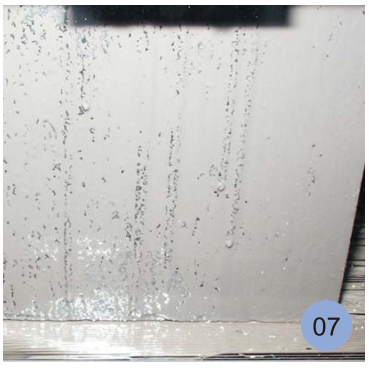


101. High-Performance TOBJET EP Engineering-Plastic Linear Guides

TOBJET EP lubrication-free, corrosion-resistant guides are designed for reliable operation in diverse industrial environments, even with (01) wood chips, (02) water, (03) sand, and (04) contaminants and aggressive chemical solutions. Applications include food processing, waterjet cutting, woodworking, semiconductor-material cutting, and chemical-processing equipment. Their nonmagnetic properties also suit CT, MRI, X-ray, and other medical imaging equipment.

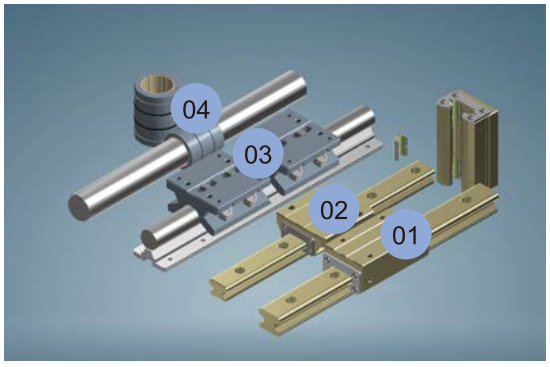


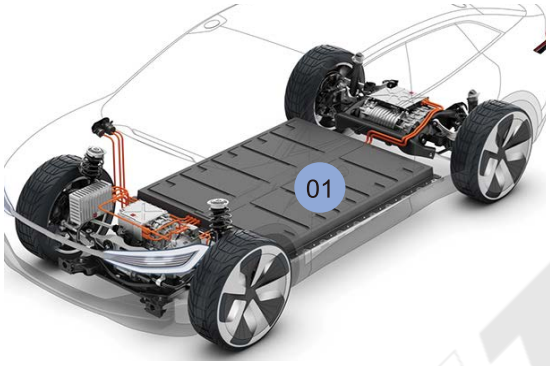




102. Linear Guides for Monocrystalline Silicon Rod Cutting

Monocrystalline silicon is used in semiconductor devices and photovoltaic applications. Picture (05) shows a monocrystalline silicon rod. Pictures (06) and (07) show the cutting process and resulting debris. TOBJET linear bearings and guides (01), (02), (03), and (04) are designed for conveying, cutting, and holding equipment. Their lubrication-free, corrosion-resistant design supports long-term operation in dusty environments. Select the appropriate product for the equipment and operating conditions.







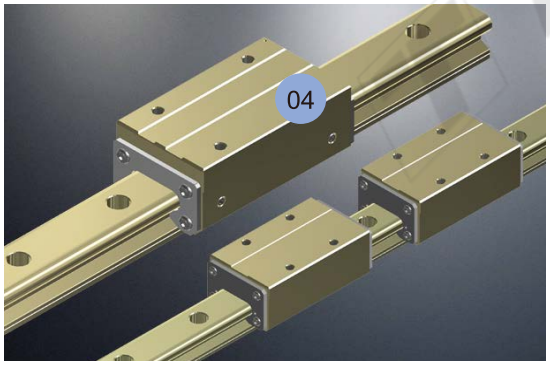


103. Linear Guide for Lithium Battery Manufacturing Equipment

TOBJET has introduced a new series of linear guides specifically designed for lithium battery manufacturing equipment. The series is available in sizes 25, 30, 35, and 45, including the FDR35SL/FL-55D and FDR30FL/SL-48D models. This series offers the following features:

—

- Quiet, smooth operation - Lightweight aluminum alloy rail and carriage with hard-anodized, corrosion-resistant surfaces - Travel life of up to 50,000 km - Completely lubrication-free operation - (01) Automotive battery; (04) TOBJET guide for battery cell-stacking equipment - Designed to prevent corrosion problems caused by chemicals such as borax





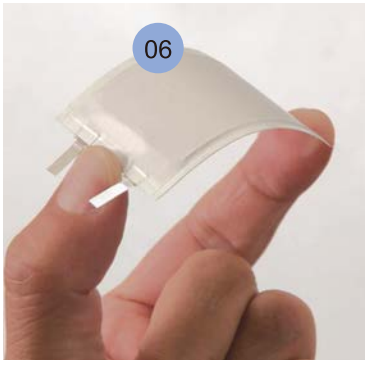
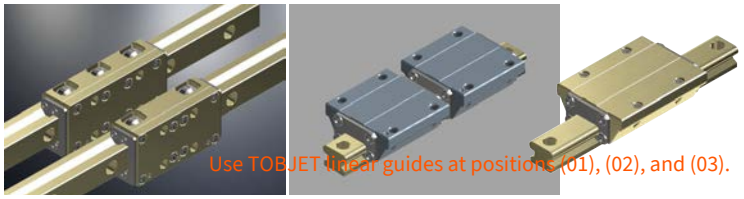
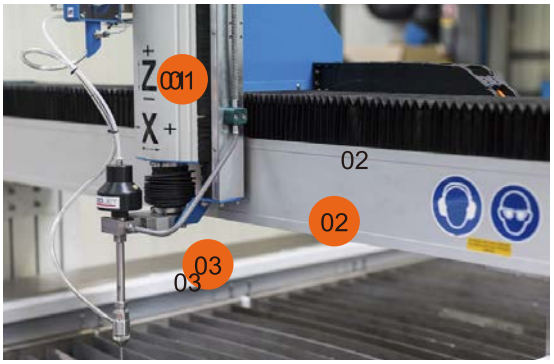


Photo (03) shows a corroded conventional guide. TOBJET guides resist borax and chemical mixtures without lubrication. Picture (05): mobile phone battery; (06): flexible battery. TOBJET bearings also suit flexible-battery production.

104. Suitable for Various Waterjet Cutting Machines

TOBJET linear guides are suitable for waterjet cutting machines. Since these machines operate continuously with water, conventional components may corrode or rust. TOBJET guides provide reliable corrosion-resistant performance in these wet environments.

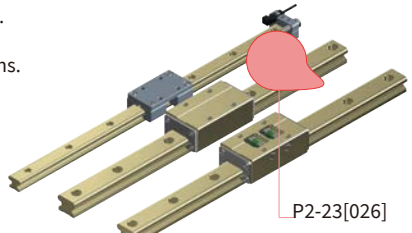




Suitable for Positions 01, 02, and 03

105. Mobile Marble Cutting Machine

Mobile marble cutting machines generate dust that increases guide maintenance. TOBJET linear guides offer dust and corrosion resistance for these conditions. The recommended model is FDR20/25EP-SL-TYPE; customization is available on request.



Please refer to the dedicated TOBJET linear guide sensor.



106.Suitable for Various Glass Cutting Machines

Glass cutting machines often operate in harsh environments where conventional linear guides require regular lubrication and may suffer from contamination and corrosion, reducing machine accuracy. Reducing the weight at positions (05) and (06) also lowers inertia during acceleration and improves product quality. Our linear guides weigh approximately one-quarter as much as conventional steel guides, require no lubrication, and are corrosion-resistant.

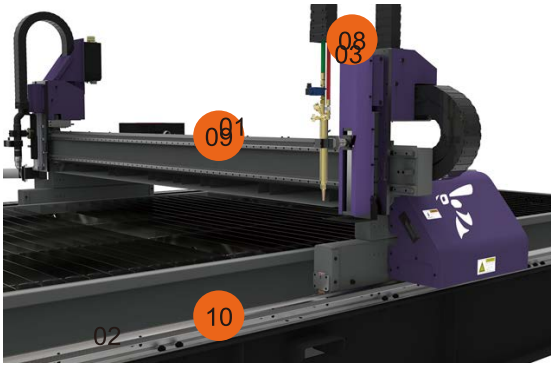
Shock/Vibration Absorption



107. CNC Flame/Plasma Cutting Machines and CO_2 Gas-Shielded Welding Machines

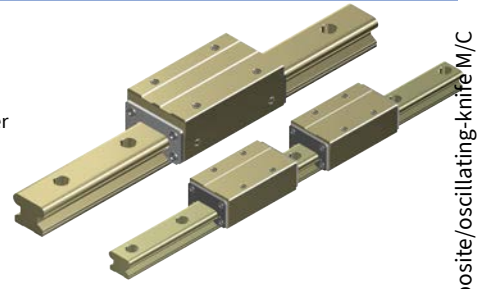
CNC cutting and welding equipment requires reliable linear motion in environments containing dust and airborne particles. Contamination and corrosion can impair conventional guide systems and increase maintenance requirements. TOBJET linear guides provide corrosion-resistant motion without lubrication. Use the guides at positions (08), (09), and (10), selecting the model according to the required load, speed, and operating conditions.

TOBJET guides: positions (08), (09), and (10).

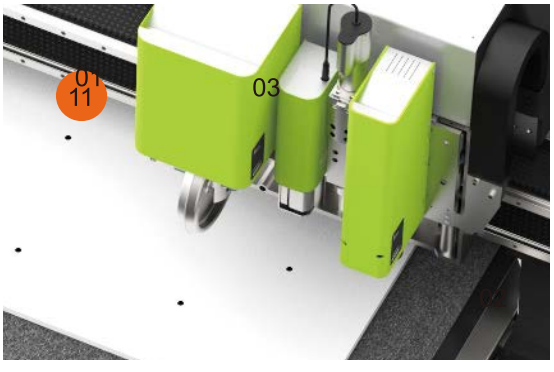


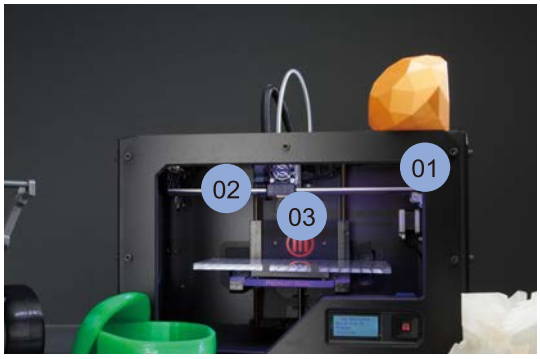
108. High-Speed Automatic Cutting of Packaging Paper, Leather, and Acrylic Fabric

High-speed cutting of packaging paper, leather, acrylic fabrics, and other materials requires low moving mass. TOBJET guides at axis (11) weigh about one-quarter as much as conventional steel guides, reducing inertia and improving product quality.



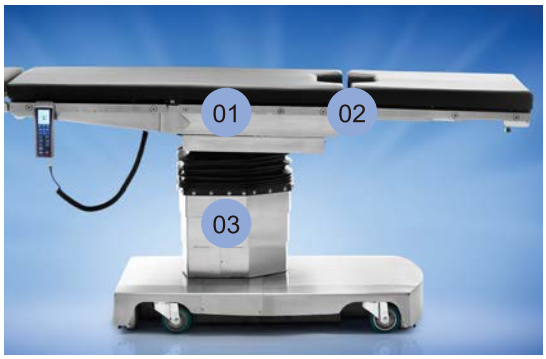
Composite/oscillating-knife M/C





109. 3D Printer

TOBJET's lubrication-free, maintenance-free components support 3D printer assemblies. High-performance, low-friction engineering plastics reduce costs and improve performance. We supply linear sliding bearings, shaft guides, lead screws, and energy supply systems designed for compact spaces, small bending radii, and quick assembly. A TOBJET T-type lead screw with a 4–10 mm pitch can be used at position (03). Lubrication-free, corrosion-resistant guides can be used at positions (01) and (02).



110. Linear Guides for Surgical Equipment and Operating Tables

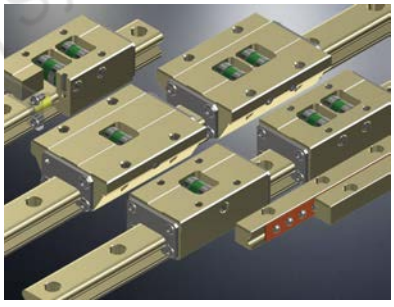
Operating room equipment requires maintenance-free components to ensure continuous and reliable operation. TOBJET products can be used in compact spaces for cable and hydraulic hose guidance, worm-gear motors, arm and leg support adjustment, and linear drives in lifting columns for operating tables, surgical lights, and other medical equipment. Blood, foreign substances, and chemical cleaning fluids can cause corrosion and rust on conventional linear guides. TOBJET linear guides for operating tables are designed to eliminate these problems and provide reliable operation in demanding medical environments.



Ring gears can be manufactured up to 2,000 mm in diameter.

111. MRI-Specific Linear Guide

TOBJET provides lubrication-free, corrosion-resistant, low-noise components for medical equipment. These products are suitable for X-ray robots, laboratory equipment, patient beds, and other medical systems. For MRI applications, magnetism must be minimized, and more than 99% of the materials used in our linear guides are non-magnetic.

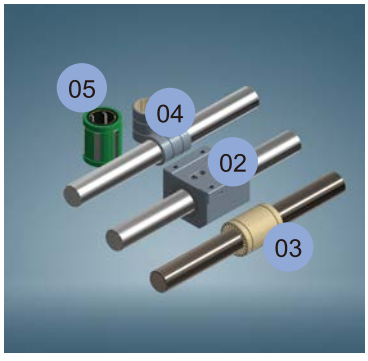




112. High-Speed Train Automatic Door Linear Motion Improvement System

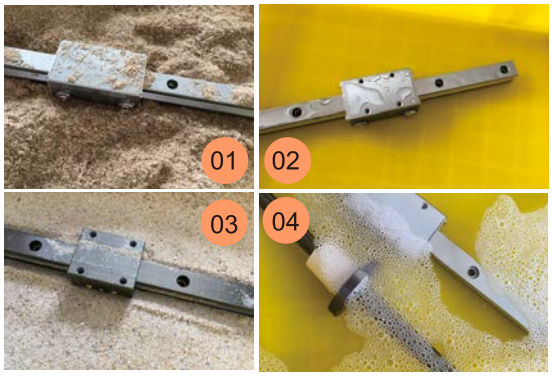
Sliding door systems used in industrial equipment, buses, and trains typically combine roller bearings with steel shafts and require regular lubrication, resulting in heavy weight and lubricant contamination. Our newly developed sliding system uses advanced lubrication-free technology and a lightweight, high-strength aluminum alloy structure, making it highly suitable for train doors. Conventional train door linear bearings require regular lubrication, while our system provides a cleaner, lighter, and maintenance-free solution.





Conventional sliding systems require dedicated lubrication systems, which increase maintenance requirements and may cause environmental contamination. Steel shafts typically require heat treatment to HRC58–60 and surface plating for corrosion protection, adding further processing requirements. With a 40 mm diameter and 1,700 mm length, each door system weighs approximately 16.55 kg, increasing overall train weight as well as installation and maintenance workload.

Please contact TOBJET to confirm the relevant technical specifications.
For more new products, please visit the official TOBJET website.

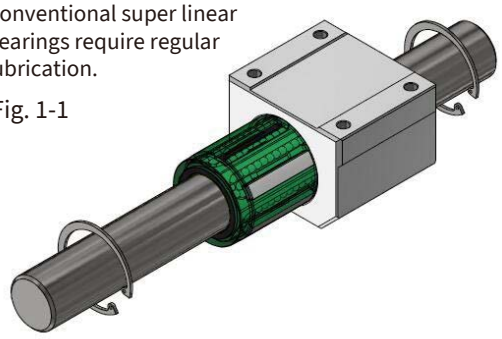


113. High-Performance TOBJET EP (Engineering Plastic) Linear Guide!

TOBJET EP lubrication-free, corrosion-resistant guides are designed for reliable operation in diverse industrial environments, including exposure to (01) wood chips, (02) water, (03) sand, and (04) contaminants and chemical liquids. They perform well in food processing, waterjet cutting, woodworking, semiconductor-material cutting, and chemical environments. Their nonmagnetic properties also suit CT, MRI, and X-ray equipment.

Conventional super linear bearings require regular lubrication.

Fig. 1-1



114. High-Speed Train Automatic Door Linear Motion Improvement System

Conventional sliding systems use steel shafts heat-treated to HRC58–60 and plated for corrosion protection, increasing environmental impact. With a shaft 40 mm in diameter and 1,700 mm long, the heavy steel door mechanism weighs about 16.55 kg, increasing train weight and maintenance. The new system uses advanced lubrication-free technology, eliminating the oil lubrication unit (Fig. 1-2). A lightweight, high-strength aluminum alloy shaft replaces the heavy steel shaft while providing equivalent functionality (Fig. 1-3).

Fig. 1-2

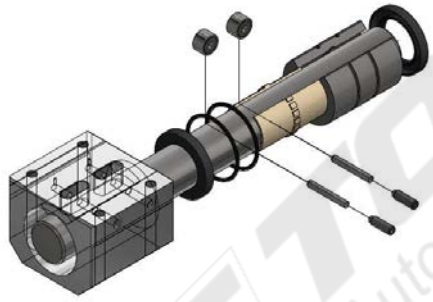
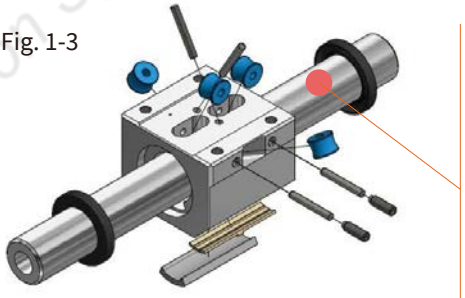
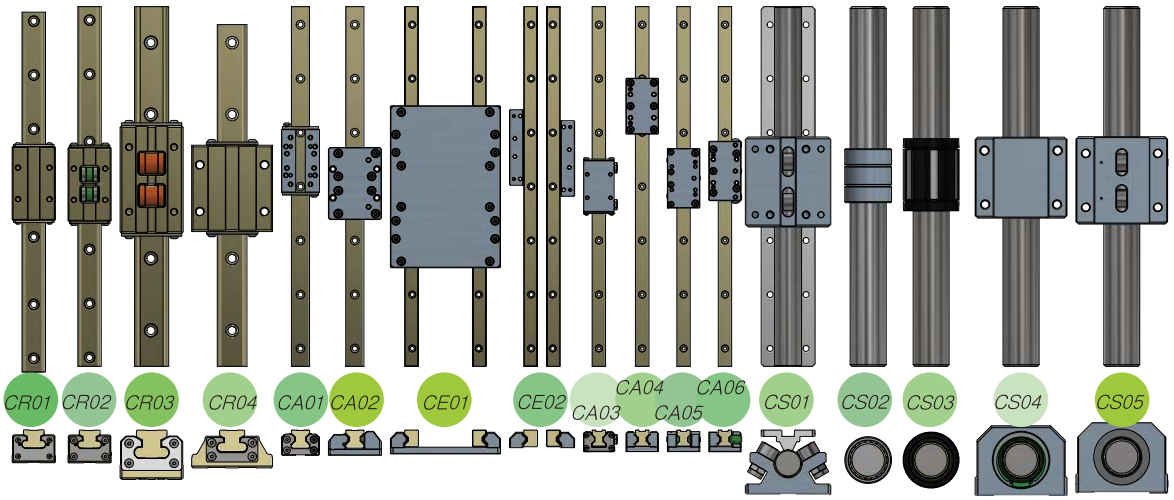


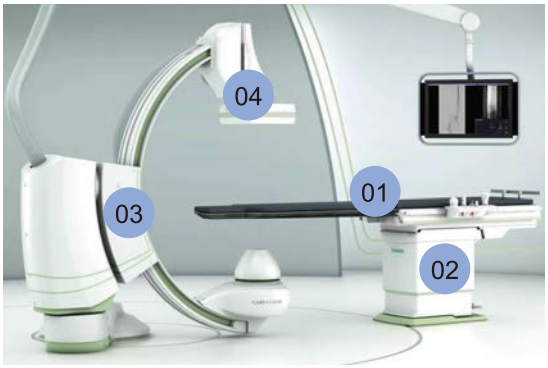
Fig. 1-3



Using aluminum alloy can reduce the original weight by approximately 75%.

Conclusion: The conventional train door sliding system weighs approximately 16.55 kg per door, while our newly developed system weighs only 4.3 kg, reducing the weight by 12.25 kg, or approximately 74%. The new system also operates without lubrication. This significant weight reduction lowers train load and power consumption while eliminating lubricant contamination and reducing the environmental impact associated with steel-shaft heat treatment and plating processes.





115. Diagnostic Imaging: CT / MRI / X-ray

Medical equipment requires precision, reliability, and durability for accurate diagnostic results. Conventional steel guides at positions (01) and (02) require lubrication to prevent corrosion and vibration. TOBJET products operate without lubrication or maintenance. Our non-magnetic MRI linear guides help support accurate imaging. TOBJET circular and semi-circular guides can also be used at positions (03) and (04).

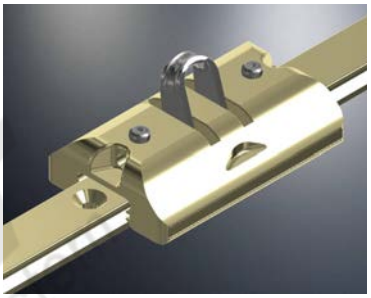


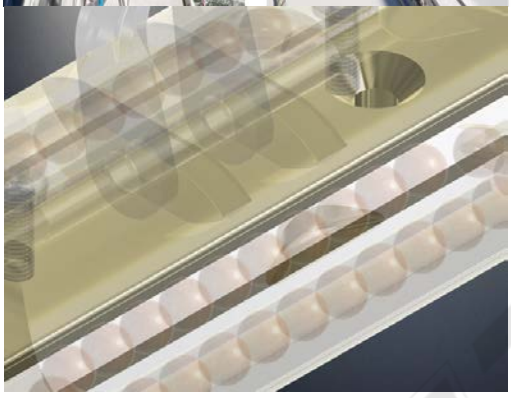


116. Corrosion-Resistant Linear Guide for Marine Sailboats



The linear guide carriage is made of aluminum alloy with a special surface treatment.





TOBJET linear guides provide excellent corrosion resistance and are specially designed for sailboats and other saltwater environments. Position (03) uses special salt-resistant ceramic bearings. The guide rail is made of a special aluminum alloy with a high-strength, corrosion-resistant surface treatment while remaining lightweight. Marine guides installed at positions (01) and (02) move smoothly with the sail as the vessel responds to wind. Guide size can be selected according to the vessel and sail dimensions. For marine applications requiring linear bearings or linear guides, please contact TOBJET for detailed technical information.

For this reason, our products are also suitable for the oil, gas, and marine industries.

117 For Marine, Oil & Gas Industries

Solutions for Marine, Oil & Gas Industries Safe, lightweight, seawater-resistant, and maintenance-free—durable TOBJET engineering plastic products designed for marine, oil, and gas applications.







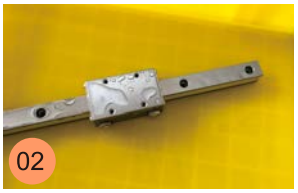
W Stainless Steel Guide Rail

V4A Single Rail



ARJUM-01-ES







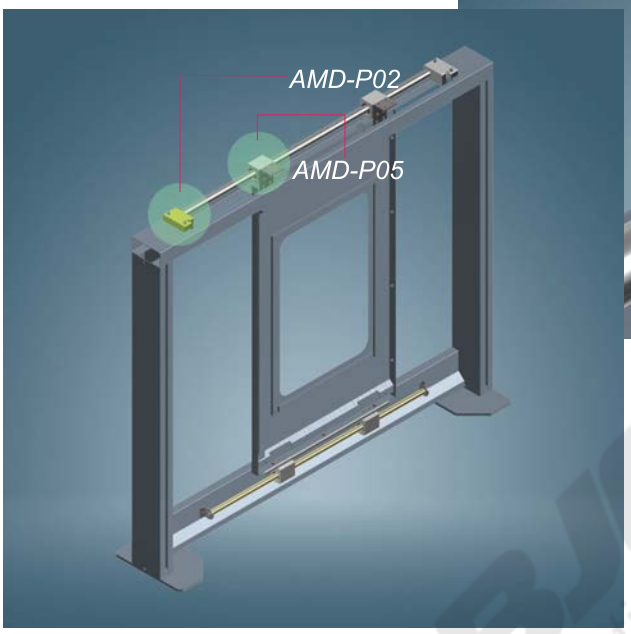


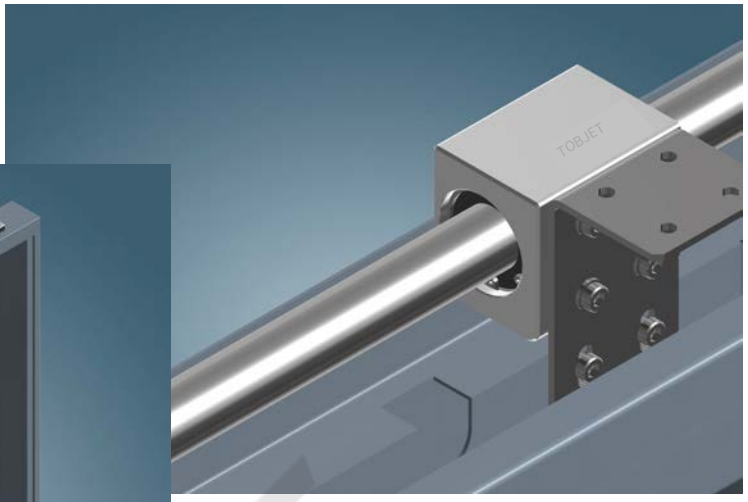
118. High-Performance TOBJET EP (Engineering Plastic) Linear Guide!

TOBJET EP guides provide reliable lubrication-free, corrosion-resistant motion in diverse industrial environments, including exposure to (01) wood chips, (02) water, (03) sand, and (04) contaminants and chemical liquids. Applications include food processing, waterjet cutting, woodworking, semiconductor-material cutting, and chemical environments. Their nonmagnetic properties also suit CT, MRI, and X-ray equipment.

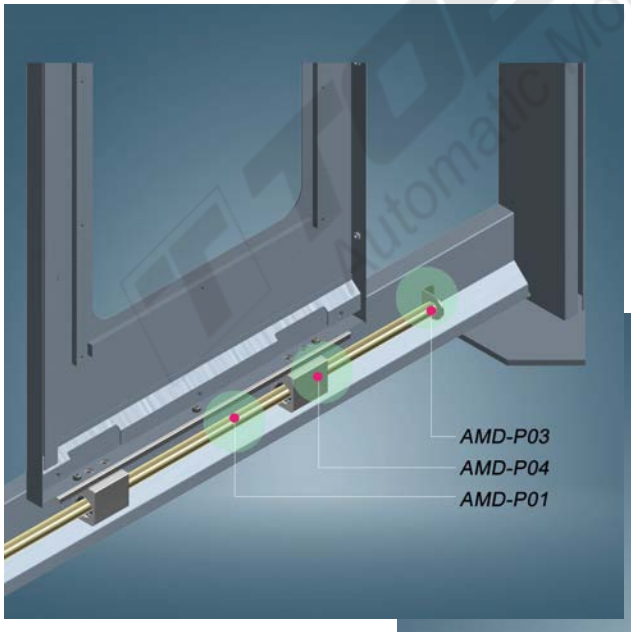
Drilling Center Dedicated Guide Rail

1. The upper guide rail supporting the door load uses ball bearings, which generate considerable noise when the door opens and closes. The current problems with drilling center doors are as follows:





A. Most conventional drilling center doors use ball-bearing guide mechanisms in the lower section. Due to excessive clearance between the door and guide rail, the door may shake and generate significant noise during opening and closing. B. As operating speeds increase, excessive clearance between the door and guide rail can cause greater vibration and noise, particularly when the door is closed. C. After approximately 24 months of operation, chips and dust may accumulate on the lower guide rail, causing the door to move less smoothly during opening and closing.



TOBJET, a specialist supplier of EP bearings, has developed a comprehensive solution to address all of the problems described above. The new structural design eliminates door vibration and significantly reduces operating noise, and the completed product is now commercially available. During development, TOBJET also received extensive cooperation and technical support from several drilling center manufacturers facing similar problems.

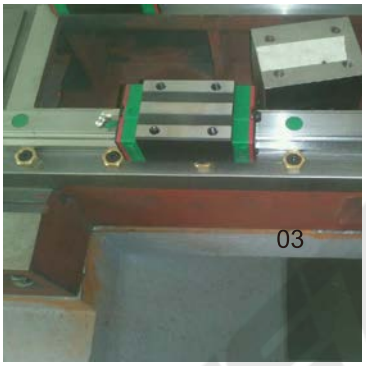
2.Conventional guide systems often cannot be properly used on CNC machine doors and other industrial machinery doors because the upper door structure may have dimensional deviations of approximately 2–5 mm. These installation errors prevent conventional guide systems from operating properly.





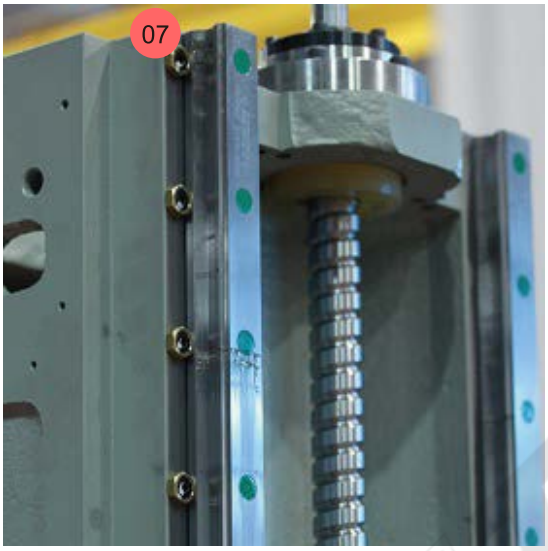


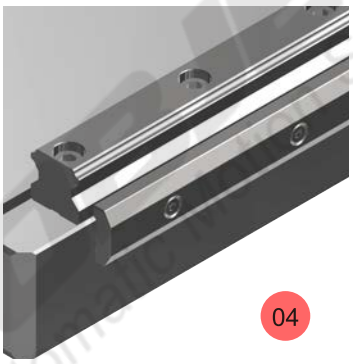
Adjusting the straightness of a linear guide during installation can be difficult. By using our TOLI (Linear Guide Clamp), alignment and installation can be completed more quickly and accurately. TOBJET provides TOLI as a standard component for securing linear guides and carriages. Its unique conical contact locking structure provides a simple, economical, and precise mounting solution. Users only need to machine the threaded holes according to the dimensions provided by TOBJET and install the TOLI clamps to achieve accurate positioning and secure locking.



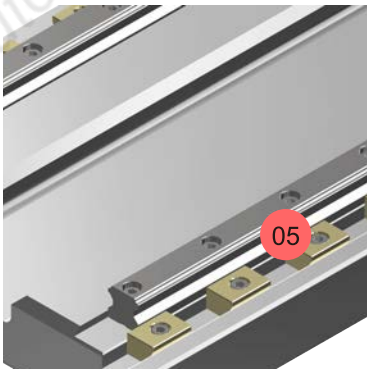


(04) This installation method requires relatively little space, but machining, assembly, and component management are complicated, and installation must be performed from the side. To simplify this process, our company introduced an improved product design in 2017.

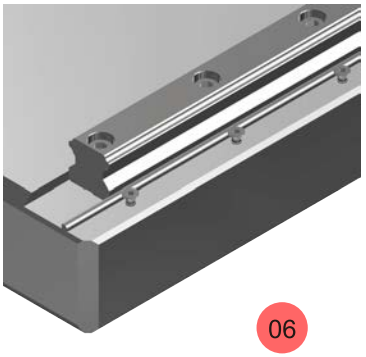








(05) This installation method requires a large mounting space and multiple machining processes, making it more suitable for large equipment. By using our TOLI (Linear Guide Clamp), linear guide installation can be greatly simplified.



(06) This installation method is very simple. It is commonly used by smaller machine-tool manufacturers because it uses standard bolts. Standard 90° head-angle bolts can also be effectively replaced with 60° head-angle bolts. For purchasing inquiries, please contact us.

Mounting Methods for Linear Guides and Carriages





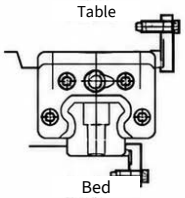
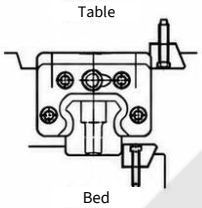
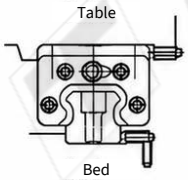
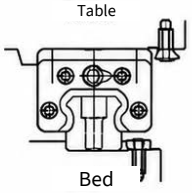
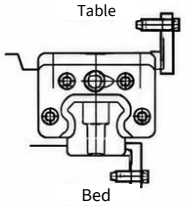
Achieve Secure Linear Guide Installation



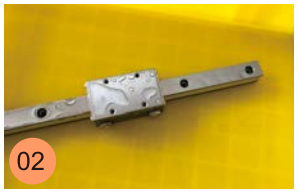




Use these mounting methods for linear guides and carriages exposed to vibration or shock:

Structure	Mounting Method	Contact Type	Load Direction
	A common mounting method. Machine locating grooves into the mounting surfaces to position the carriage and rail accurately and maintain firm contact. The compact installation space helps reduce the overall machine-bed width.	Surface contact	
	The inclined face of the clamping block generates a large force that presses the rail firmly against its mounting surface. This provides secure linear-guide mounting. However, its complex structure makes manufacture and installation comparatively expensive.	Surface contact	
	When the screw is tightened, its tip contacts only a small area of the guide mounting face. The contact surface can be scratched, reducing positioning accuracy.	Cylindrical contact with rotating screw	
	Tightening the screw produces the clamping force shown, securing the carriage and rail. This provides effective fastening at relatively low cost. Use a pin of suitable material to prevent screw damage.	Line contact	
	TOBJET offers standard rail and carriage clamping blocks for convenient, economical, precise mounting. The tapered contact design provides secure fastening. Machine the threaded holes to TOBJET's specified dimensions, then install the parts for accurate positioning and secure clamping.	Surface contact	



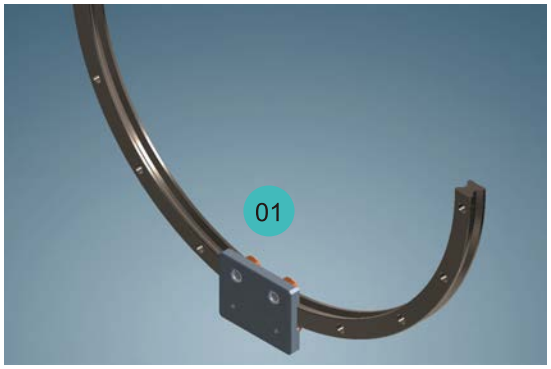




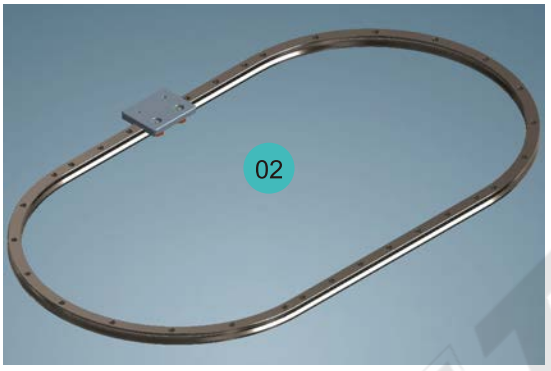


119. High-Performance TOBJET EP (Engineering Plastic) Linear Guide!

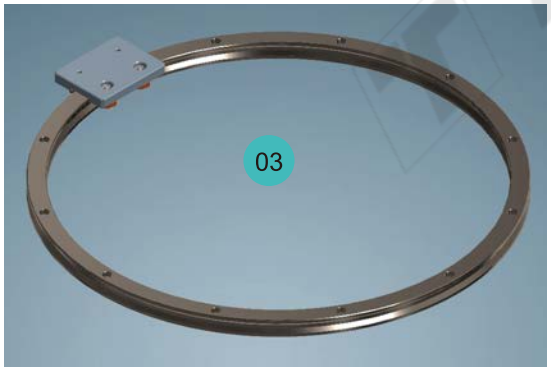
TOBJET EP guides provide reliable lubrication-free, corrosion-resistant motion in diverse industrial environments, including exposure to (01) wood chips, (02) water, (03) sand, and (04) contaminants and chemical liquids. Applications include food processing, waterjet cutting, woodworking, semiconductor-material cutting, and chemical environments. Their nonmagnetic properties also suit CT, MRI, and X-ray equipment.



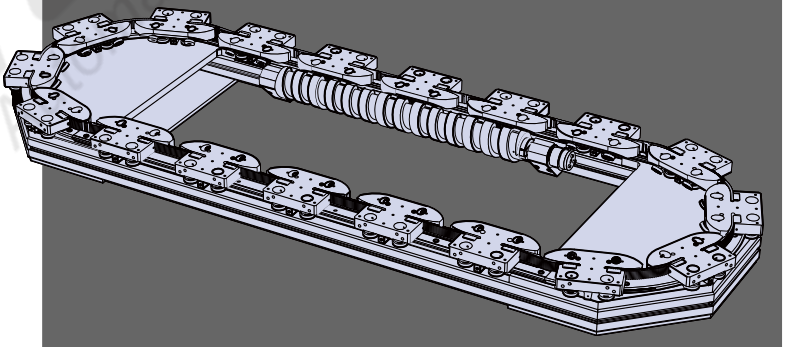
TOBJET Curved Guide! The AMR Roller Guide is designed for automated transport and production lines. Configurations include (01) an open curved guide and (02) a closed loop with two 180° curves connected by straight sections.



(03) 360° circular guide. (04) Closed guide loop with three curved sections. (05) Circular guide consisting of four 90° curved sections. (06) Open S-shaped guide with two 180° curved sections.

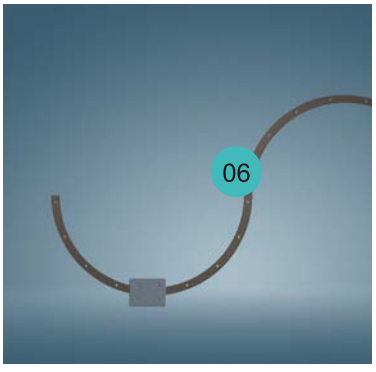


For detailed product inquiries, please provide the required dimensions and load per carriage. The carriage configuration may vary depending on the operating environment and load conditions. Detailed application conditions are required to select the most suitable product and determine accurate pricing.







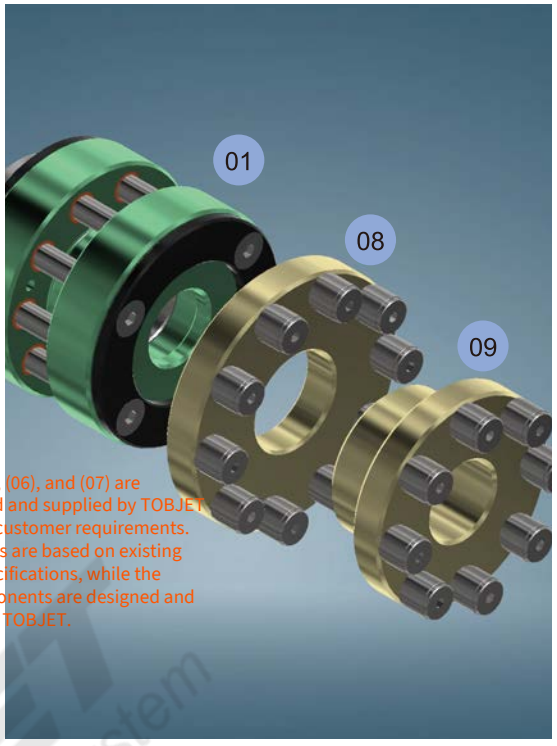


120. TOBJET Gear & Rack System

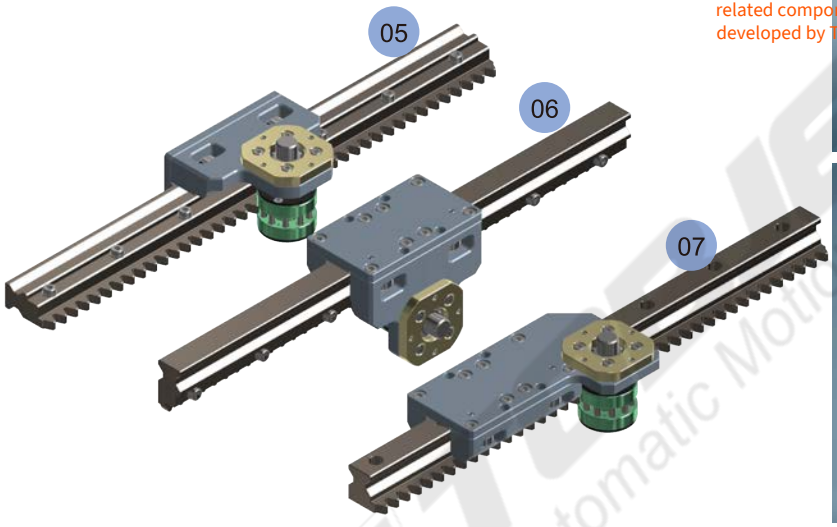
Zero backlash
Two to three teeth (roller pins) remain in continuous contact, eliminating backlash in both forward and reverse directions.
High precision

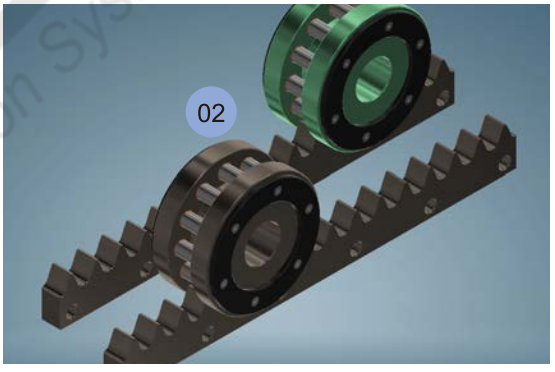
Feed accuracy (rotary-to-linear transmission ratio) and positioning accuracy approach those of precision ball screws. Low Noise and Vibration: Bearing-supported roller pins roll smoothly along the cycloidal tooth profile, minimizing gear impact noise, rolling noise, and vibration.

Low Dust Generation
Smooth rolling contact, low rotational speed, and low friction generate minimal heat and dust.
Long-Distance & High-Speed Motion
Continuous rack connections enable long-distance transmission, with travel speeds exceeding 210 m/min.

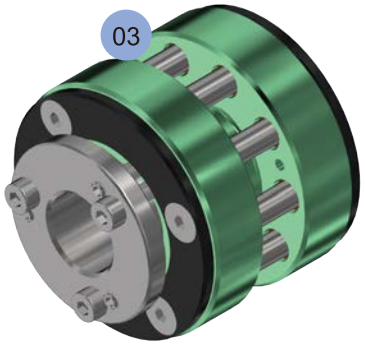


Products (05), (06), and (07) are manufactured and supplied by TOBJET according to customer requirements. The guide rails are based on existing standard specifications, while the related components are designed and developed by TOBJET.



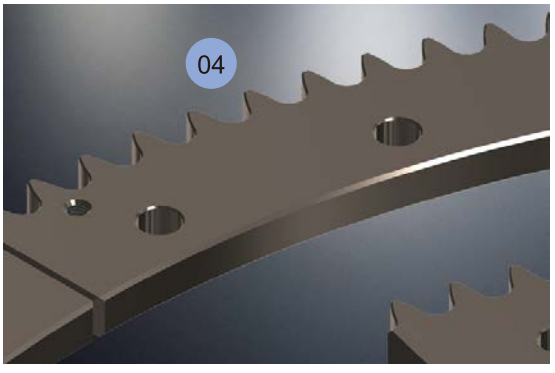


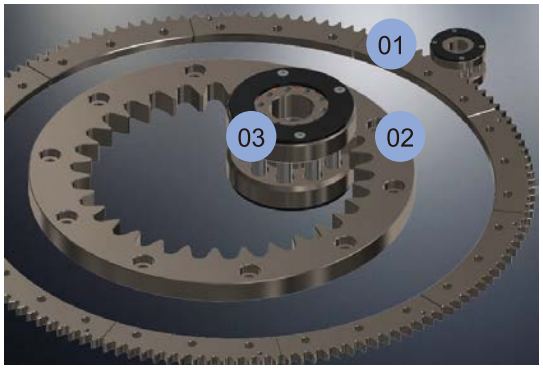
(01), (08), and (09) are available as custom non-standard products upon request. To ensure easy assembly, we manufacture products according to the customer's motor specifications. (02) Our products are made from a special aluminum alloy with a surface hardness of HRC52 or higher. SUS versions are also available upon request. (03) The rotating sections of the rollers use EP bearings. Needle roller bearings are also available according to customer requirements. For detailed information, please visit our website and download the relevant technical data.



121. TOBJET Full Ring and Open Ring Gears

Full-ring and open-ring gears can be manufactured in diameters up to 2,000 mm. Large ring gears weigh approximately one-quarter as much as conventional products, are corrosion-resistant, and feature a modular design for easier transportation. They are also non-magnetic, making them suitable for medical equipment applications. For detailed information, please visit our website and download the relevant technical data.

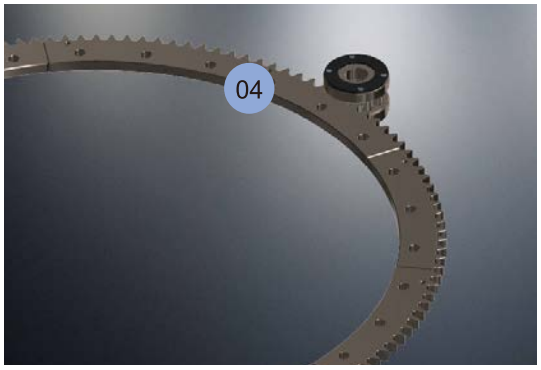




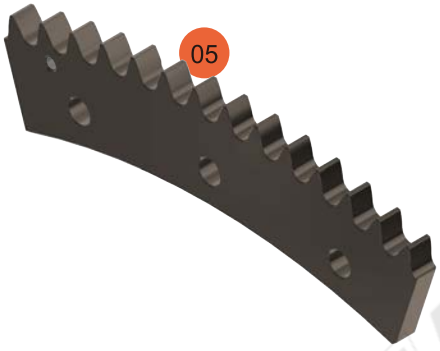
122. TOBJET Rollers and Internal/External Ring Gears

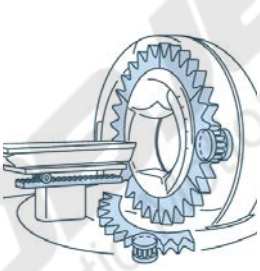
TOBJET internal and external ring gears use a special aluminum alloy and weigh about one-quarter as much as conventional steel products. Their specially treated surfaces resist corrosion and rust in various environments. Key features are listed below:

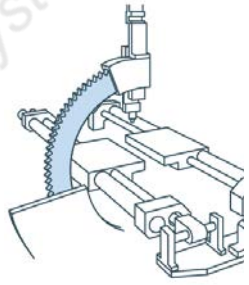
1.Non-magnetic 2.Lightweight (approximately one-quarter the weight of conventional steel products) 3.Lower cost than conventional products 4.Corrosion and rust resistant 5.No lubrication required 6.Low-noise operation 7.Suitable for high-speed operation 8.Available in diameters of 2,000 mm or larger upon request 9.Segmented ring gear design for easy transportation 10.Zero backlash

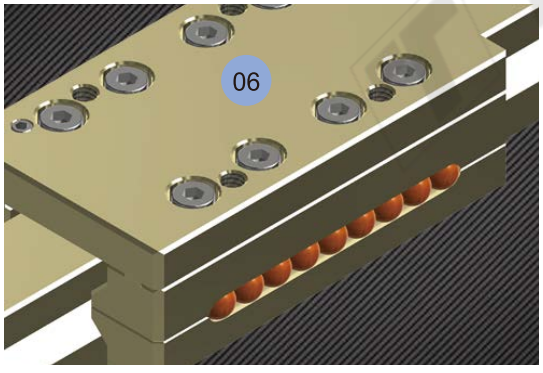


One-Piece Ring Gear (ARGF): A 360° one-piece ring gear manufactured in diameters up to 600 mm. Segmented Ring Gear (ARGD): Standard segmented curved ring gears are available in diameters from 600 to 2,000 mm, as listed in the catalogue. Segmented ring gears below 600 mm or above 2,000 mm can also be supplied upon request. Heavy-duty versions exceeding the load capacity of standard catalogue models are also available as custom products.



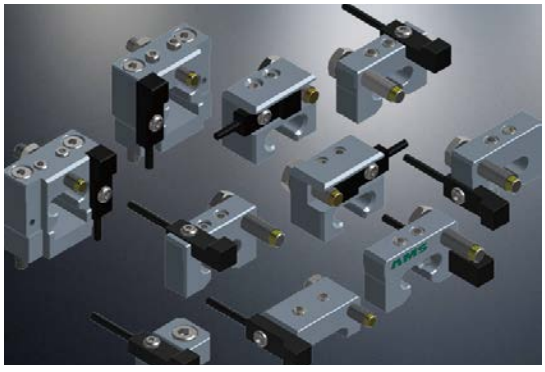






123. TOBJET Linear Guide for Saltwater Environments.

Linear guides and linear bearings used in salt-containing chemical equipment, food-processing equipment, marine vessels, and offshore oil and gas equipment are among TOBJET's core products. Conventional linear guides may fail after more than 10 days in severe salt environments. To solve this problem, TOBJET has developed and supplies salt-resistant linear guides and linear bearings with a coefficient of friction of approximately 0.003.

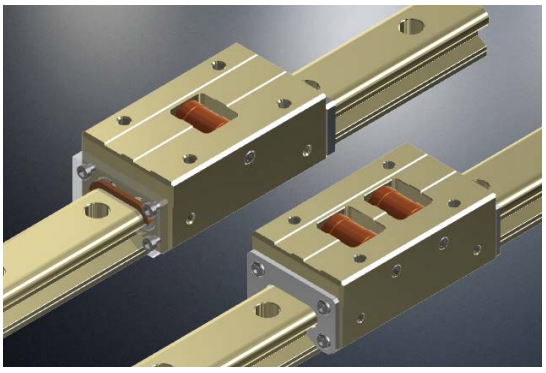


124. TOBJET Positioning Sensor for Linear Guides

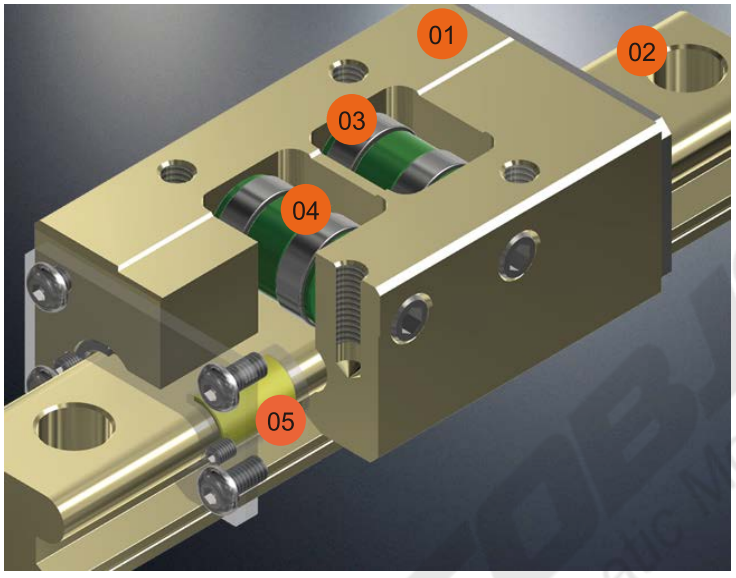
The TOBJET optical sensor is designed specifically to match linear guide dimensions, eliminating the inconvenience of purchasing and installing separate sensors. To prevent machine damage caused by operating errors in automated equipment, the system integrates the optical sensor with set screws, bolts, and related components into a single positioning sensor unit. For detailed specifications, please contact TOBJET.

125. Low-Friction Engineering Plastic Linear Guide

In general, engineering-plastic linear bearings can have a coefficient of friction as high as 0.2 under heavy loads. To overcome this limitation, ball-type linear guide carriages provide high load capacity with a much lower coefficient of friction of approximately 0.03. The roller guide shown on the right is made entirely of industrial engineering plastic. The lower product uses SUS rollers, providing high strength, non-magnetic properties, and low friction. The system consists of specially surface-treated aluminum components (05), engineering plastic components (03), and SUS bearings (04). This guide is particularly suitable for CT, MRI, and X-ray diagnostic imaging equipment, especially patient-table applications.



126. TOBJET Linear Guide System



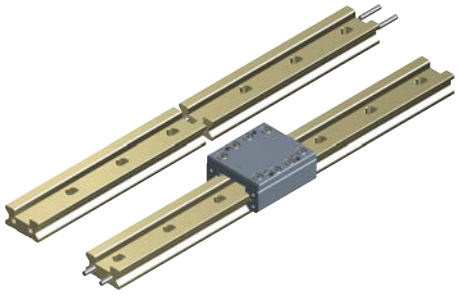
Sliding Instead of Rolling - Low Noise, Clean, Lubrication-Free. The lubrication-free V Linear Guide Series is based on the principle of "sliding instead of rolling." TOBJET high-performance engineering plastics with low friction and corrosion-resistant materials are used as sliding bearings. TOBJET linear guide systems operate dry and maintenance-free and are resistant to dirt, moisture, chemicals, heat, and impact. Their special materials and design also provide extremely low-noise operation. These characteristics make TOBJET linear guides suitable for a wide range of applications, including extreme environments. The modular system allows various combinations of guide rails and bearing housings, providing excellent design flexibility.



127.TOBJET Linear Guides with Unlimited Extension Capability.

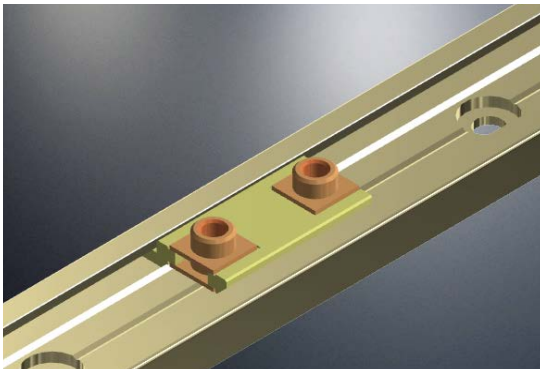
The special linear guide shown on the right is customized according to customer requirements. Its main advantages are its wide structure and unlimited extension capability.

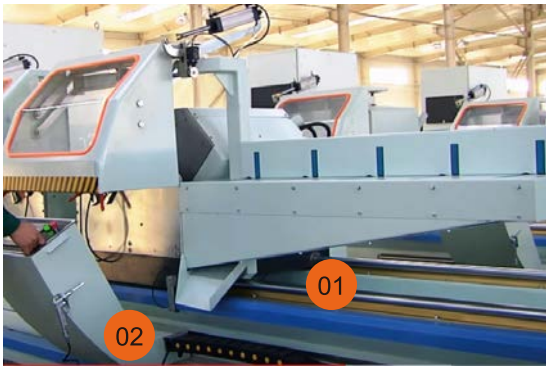
1.Cost-effective for large-volume orders 2.Unlimited guide rail extension 3.Easy packaging and transportation 4.Easy assembly



128. Compact Linear Sliding Bearing Guide

For applications requiring a low installation height, the TOBJET Compact Linear Guide is available in four widths: 17, 27, 40, and 80 mm. The system is lightweight, operates extremely quietly, and offers various carriage options. The aluminum guide rails are available with silver or black anodized finishes.





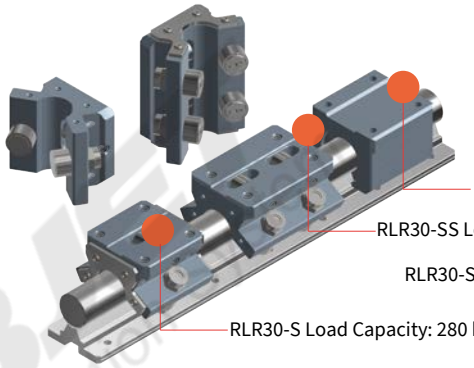
Limitations of TBR/SBR Products



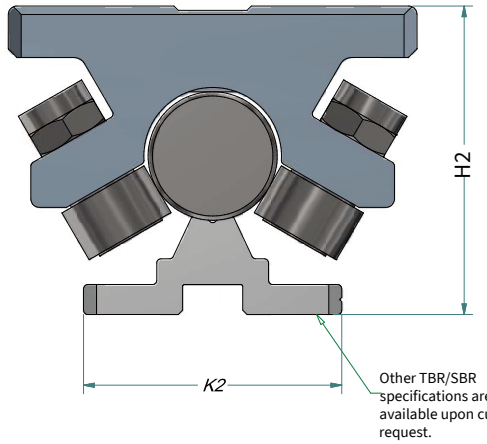
TBR25 is used at positions (01), (03), and (04) in PVC door/window cutting machines and four-point welding machines.

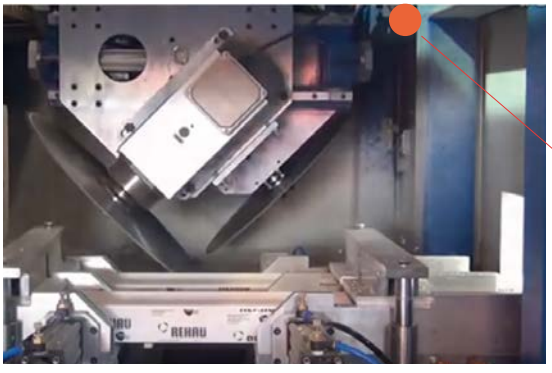
129. Introduction to ARLR-TYPE Lubrication-Free Products (Design and Utility Model Patent-Pending Products)

These products were originally used in PVC/aluminum door and window processing machinery, woodworking machinery, and similar applications. TBR/SBR products are widely used because of their low cost, but they have several limitations: - Standard linear bearing speeds are typically limited to 0.6–0.8 m/sec. Higher speeds may cause damage or excessive noise. - Their open structure allows dust and foreign particles to enter, resulting in machine stoppages or frequent bearing replacement. - Shafts used with TBR/SBR products generally require surface hardening to HRC56–60. Insufficient hardness can cause gradual shaft wear and affect machine operation. - The RLR series was developed to overcome these limitations. It can operate at speeds of up to 10 m/sec with shaft surface hardness around HRC42 while maintaining very low noise during high-speed operation.



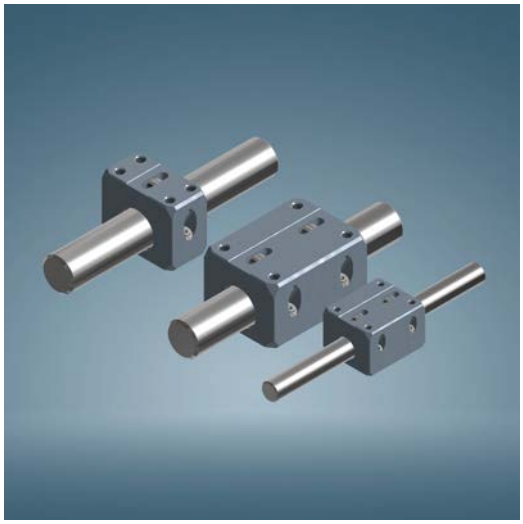
Note: Load Capacity Reference Information. RLR products can also directly replace existing TBR/SBR products. Their height, width, mounting bolt positions, and installation dimensions are 100% compatible with existing TBR/SBR products.



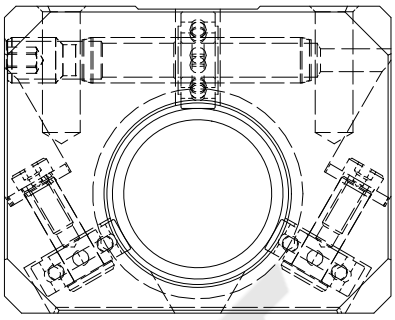


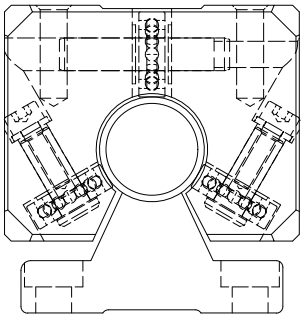
For existing SC linear bearings used in fully automatic cutting machines for PVC and aluminum door/window processing equipment, our ARLR products can provide an effective solution to various operating problems.

130. TOBJET RGD-SC / RGD-OP Series



Intense price competition among SC-SBR manufacturers and distributors can cause variations in quality and reliability. Poor quality may increase noise, reduce durability, and impair performance in harsh environments, at high temperatures, or during high- and low-speed operation. TOBJET offers alternative guides for these operating conditions.





131. TOBJET SLHB Series

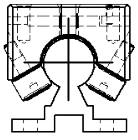
TBR/SBR linear bearings have been widely used for approximately 18 years, particularly in PVC and aluminum door/ window manufacturing equipment. However, they have several limitations: 1. High operating noise 2. Limited operating speed (approximately 0.8 m/sec) 3. Frequent replacement due to foreign particles entering the carriage 4. Durability issues requiring shafts with a surface hardness of HRC58 or higher 5. Regular lubrication requirements To solve these problems, our SLHB Series Linear Bearings provide low-noise operation, high speeds of 3–10 m/sec, and lubrication-free operation in various environments. They can also operate with shafts having a surface hardness of approximately HRC48.





132. TOBJET RGB Series

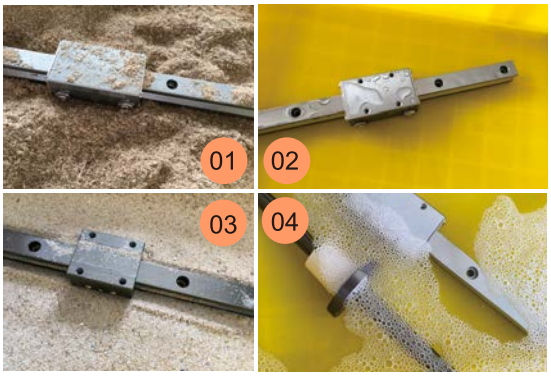
Under the same specifications, the load capacity is 3–6 times higher than that of conventional TBR/SBR series products. Other characteristics and operating conditions are the same as those of the SLHB Series Linear Bearings. Note: Existing SC/TBR/SBR products can be replaced with our carriages. However, the outer diameter tolerance of the existing shaft must be within H7. Depending on the machine operating conditions, our precision tolerance can be controlled within 0–0.05 mm.



133. High-Performance Linear Guides for Woodworking Machinery

A safe, reliable motion solution for woodworking, resistant to chips, dust, and contamination. TOBJET engineering plastics reduce installation, handling, and production time. Their dry-running, chip-resistant design minimizes maintenance in dusty woodworking and CNC-machine transport applications. Guides, plain bearings, and ball bearings operate without lubrication or maintenance, preventing the buildup of chips, dust, and dirt.





134. High-Performance TOBJET EP (Engineering Plastic) Linear Guide!

TOBJET EP guides provide reliable lubrication-free, corrosion-resistant motion in diverse industrial environments, including exposure to (01) wood chips, (02) water, (03) sand, and (04) contaminants and chemical liquids. They perform well in food processing, waterjet cutting, woodworking, semiconductor-material cutting, and chemical environments. Their nonmagnetic properties also suit CT, MRI, and X-ray equipment.

135. TOBJET CPC Chain-Type Circular Guide

Chain-Type Linear Conveyor

The chain-type linear conveyor is designed to meet the high productivity and reliability requirements of modern automation systems. Its modular design combines excellent precision and speed with high versatility.

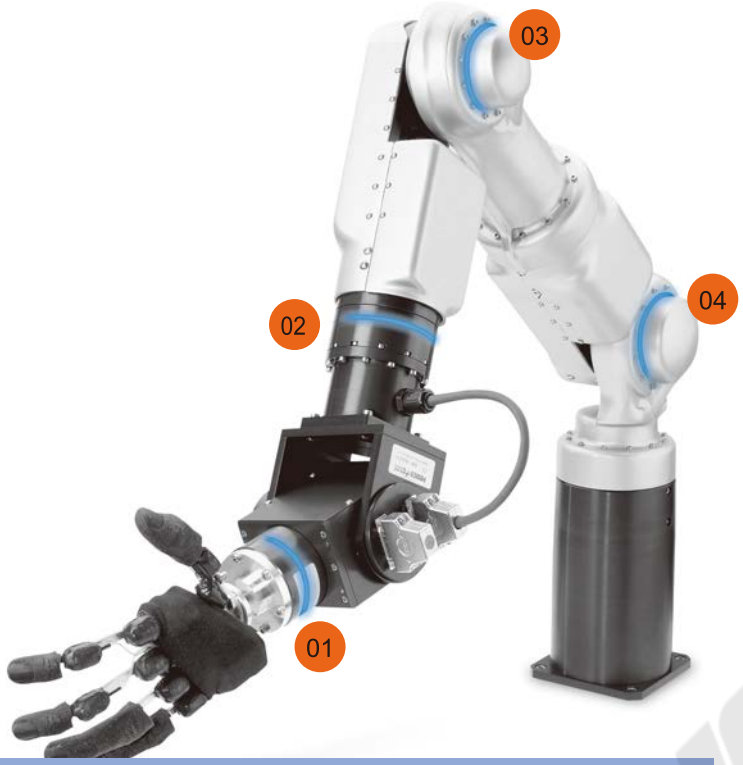
Accuracy

The specially nickel-plated chain and cast-aluminum links are manufactured to high precision standards. The chain slides along special guide rails made from self-lubricating materials.

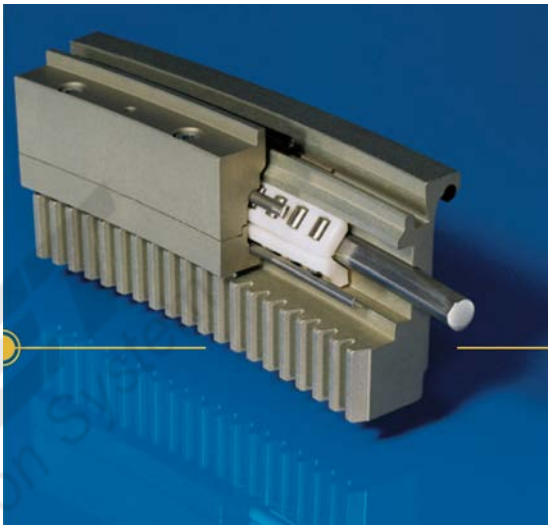


Flexibility

Maximum flexibility is built into the component design, making customization easy: - Conveyor length - Chain travel and motion - Various drive options - Additional drive shafts - Working positions







136. TOBJET Ring Bearings

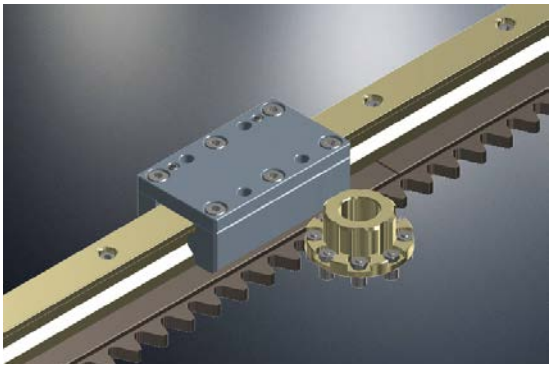
TOBJET_R Ring Bearing Features:

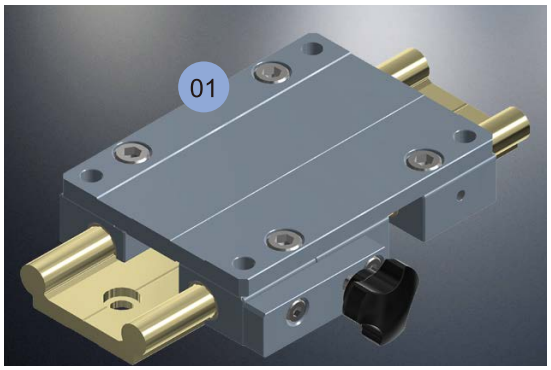
1. Approximately 20% lighter than conventional ring bearings. 2. Corrosion-resistant. 3. Low vibration during high-speed operation. 4. Cost-effective. 5. Specially treated surface for enhanced durability. The product is primarily manufactured from a special aluminum alloy with a specially treated surface, making it suitable for corrosion-prone environments. Its low magnetic properties also make it suitable for MRI medical equipment. Models (01), (02), (03), and (04) are approximately 20–25% lighter than conventional products, reducing inertia and enabling faster operation. TOBJET also develops ring bearings with even lower magnetic properties, including lightweight versions made from carbon fiber and engineering plastics.



137. TOBJET Zero-Backlash Rack & Pinion System

Zero-backlash rack and pinion systems are produced by relatively few manufacturers. High-end rack and pinion products on the market are available in various performance grades. With TOBJET, customers can purchase standard rack and pinion products simply by providing the required gear model. Custom non-standard products can also be redesigned and manufactured according to customer requirements. For detailed information, please contact TOBJET.





138. WS Dual-Rail Linear Sliding Bearing Guide

The lubrication-free TOBJET Linear Guide Series is based on the principle of "sliding instead of rolling," using corrosion-resistant, low-friction TOBJET high-performance engineering plastics as sliding bearings. TOBJET linear guides operate dry and maintenance-free and are resistant to dirt, moisture, chemicals, heat, and impact. Their materials and special design also provide extremely low-noise operation. These characteristics make TOBJET linear guides suitable for a wide range of applications, including extreme environments. The modular system allows various combinations of guide rails and bearing housings, providing excellent flexibility.



139. Keep Your Fitness Equipment Moving... Linear Guides and Bearings — Perfectly Designed for Fitness Equipment

Replace Now and Save Up to 40% in Costs

Fitness equipment requires smooth, quiet, and reliable motion. TOBJET sliding bearings and linear motion systems are ideal for adjusting seats, weights, and incline positions. Their ball-free design enables easy installation and quiet, smooth operation, while lubrication-free technology eliminates oil contamination. Lightweight and durable, TOBJET products provide reliable performance for both manual and powered adjustments, even under continuous high-intensity use.







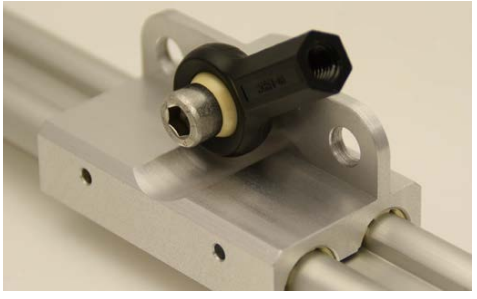
140. Piston Ring Bearing



-Easy installation

Cost-effective Higher wear resistance than PTFE
Higher load capacity





(02) Custom WS Type



Official websites: www.tobjet.com / www.ams88.com
Videos: WeChat · Douyin popoding333.

141. Lubrication-Free Products for the Packaging Industry Meeting the highest hygiene standards with precise, fast, safe, and reliable operation.

Products used in the packaging, food, and beverage industries must meet strict requirements, especially when they come into direct contact with food. Packaging equipment must also operate precisely and quickly while maintaining cleanliness and cost efficiency. To meet food-grade, FDA, or EU requirements, we provide self-lubricating, maintenance-free mechanical components made from high-performance engineering plastics to optimize packaging equipment performance.


Spherical bearing


Pillow Block Bearing


Thrust washer


Cylindrical Bearing


Flanged bearing

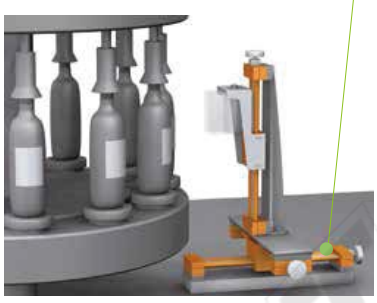
142. TOBJET Products for Packaging Machines

Label Inspection Height Adjustment Unit Using Maintenance-Free ASLW or ASHT Linear Slide Tables



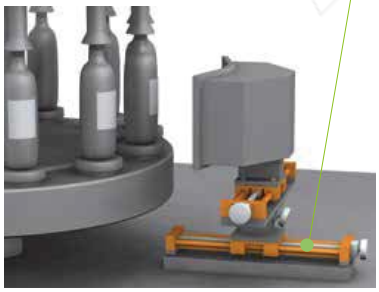
ASAW Linear Drive Unit Features: - Trapezoidal thread or high-helix lead screw - Screw drive supported by ball bearings - Special extruded profile guide with high rigidity - Excellent stability - Cost-effective and lubrication-free

Format Adjustment Inspection Head — XYZ Lead Screw Adjustment Unit



TOBJET ASLW – Compact Type Features: - Smooth operation and compact design - Extremely high torsional rigidity - Fully supported structure - Hard-anodized aluminum guide - Five installation sizes available - Shaft-end supports made of zinc-plated material - ASLW-AL special version with anodized aluminum components - Robust shaft-end support - Stainless steel version with corrosion-resistant components

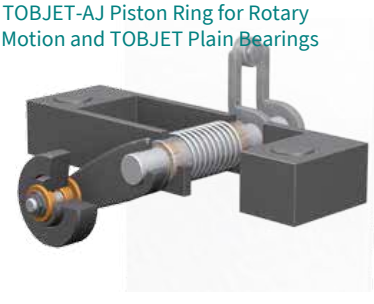
Camera Frame Adjustment Inspection Camera Lead Screw Adjustment Unit



TOBJET ASHT/ASHT-PL

Cross Slide Table Features: - CNC-machined for high precision, rigidity, and accurate alignment - Available in standard and preloaded versions - Lubrication-free and corrosion-resistant - TR 10×2 trapezoidal thread adjustment - Right- or left-aligned mounting available - Accessories available, including handwheels and position indicators - Easy installation - Low cost - Excellent wear resistance - Maintenance-free dry operation

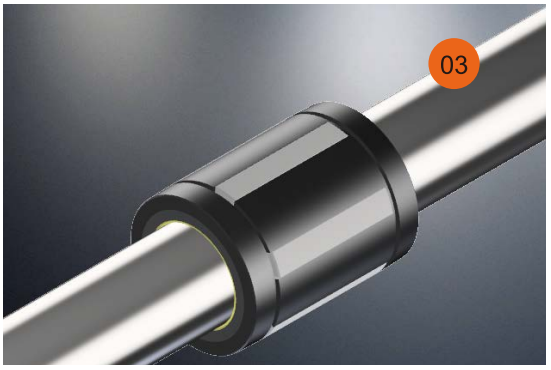
Annular Packing Control Valve TOBJET-AJ Piston Ring for Rotary Motion and TOBJET Plain Bearings





143. Various TOBJET Shafts

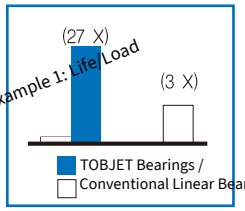
Features of Products (01) and (02): The shaft surfaces are heat-treated and Cr2 chrome-plated. 1. Available shaft types include heat-treated steel shafts (HRC58), specially surface-treated aluminum shafts, and non-heat-treated steel shafts. 2. Shaft surfaces are Cr2 chrome-plated. 3. The bearing housing is made of aluminum, with industrial engineering plastic components inside. 4. Rust-free and corrosion-resistant, suitable for various environments. 5. No lubrication required.

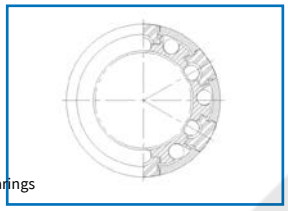


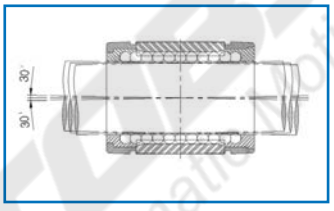
144. TOBJET Super Ball Linear Bearing

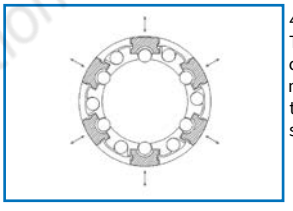
1. Up to 27× Service Life (3× Load Capacity): Compared with conventional ball bushings of the same size, these bearings offer approximately three times the rated dynamic load capacity and up to 27 times the service life. Heat-treated special-steel bearing plates and precision-ground ball raceways support smooth motion and high loads. The 0.5° self-aligning feature distributes loads evenly across the balls, preventing localized friction and extending service life. 2. 0.5° Self-Alignment: The curved outer surface of the bearing plate provides 0.5° self-alignment along the shaft axis. It compensates for bearing-to-shaft centerline misalignment, reduces additional friction and distributes ball loads evenly, maintaining smooth, stable operation under load.

3. Interchangeability TOBJET Super Linear Bearings have the same mounting dimensions as conventional ball bushings, providing full interchangeability.

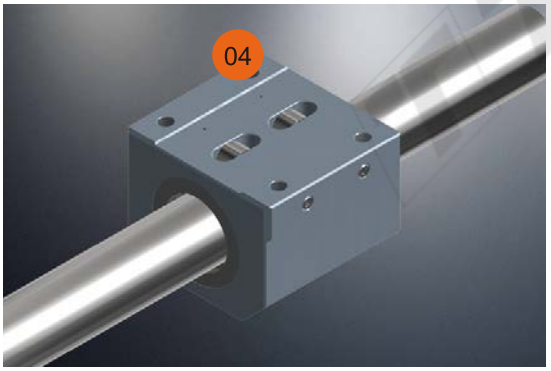






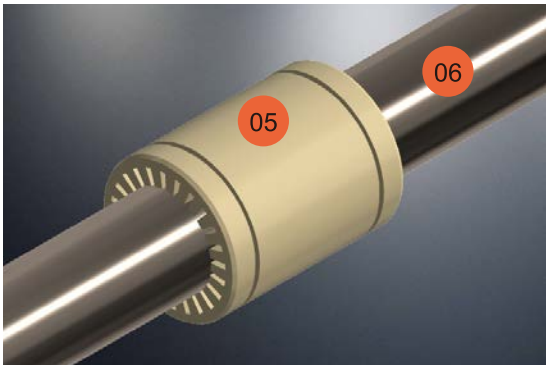


4. High Speed and Acceleration TOBJET Super Linear Bearings can operate at speeds of up to 3 m/sec and accelerations of up to 150 m/sec² without reducing service life.



145. Lubrication-Free Super Ball Linear Bearing

(04) This linear bearing requires no lubrication and features a low coefficient of friction, high load capacity, and approximately 1° of self-alignment. Its performance has been proven in high-speed train door applications. Based on a 40 mm shaft diameter, the bearing provides a load capacity of up to 500 kg.



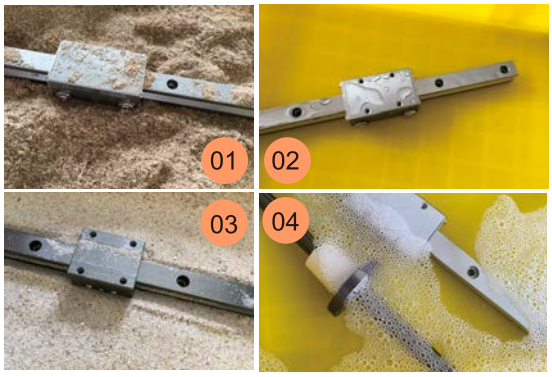
146. TOBJET Industrial Engineering Plastic

(05) The all-plastic linear bearing has the same dimensions as conventional linear bearings. Made from industrial engineering plastic, it requires no lubrication, operates with low noise, and offers excellent resistance to contamination in various environments. (06) The specially surface-treated aluminum shaft has a surface hardness of approximately HRC54, provides excellent corrosion resistance, and is suitable for use under a wide range of environmental conditions.

147. High-Performance Linear Guides for Woodworking Machinery!

A safe, reliable motion solution for woodworking, resistant to chips, dust, and contamination. TOBJET engineering plastics reduce installation, handling, production time, and maintenance, providing stable motion in woodworking and CNC-machine transport systems. Dry-running, lubrication-free, maintenance-free guides and bearings prevent the buildup of chips, dust, and dirt.

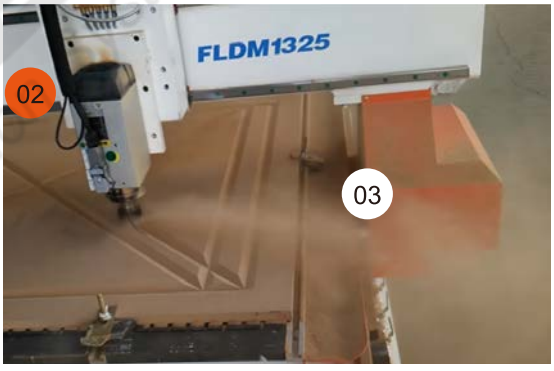


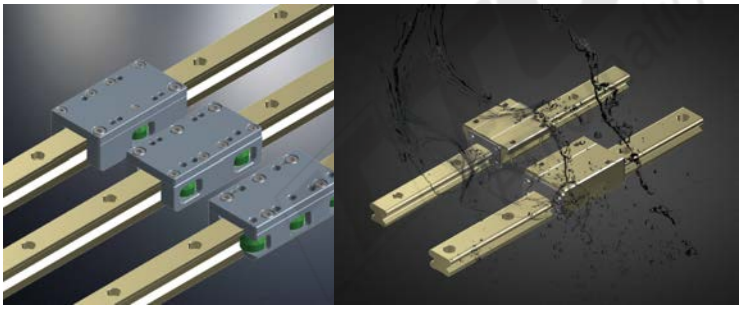


148. High-Performance TOBJET EP (Engineering Plastic) Linear Guide!

TOBJET EP guides provide reliable lubrication-free, corrosion-resistant motion in diverse industrial environments, including exposure to (01) wood chips, (02) water, (03) sand, and (04) contaminants and chemical liquids. Applications include food processing, waterjet cutting, woodworking, semiconductor-material cutting, and chemical environments. Their nonmagnetic properties also suit CT, MRI, and X-ray equipment.

(01) When our linear guides are used in woodworking machinery, no lubrication is required, corrosion is prevented, and long-term maintenance is simplified. As shown in the X/Y/Z axes at (02), wood dust generated during machining disperses toward (03) and can spread throughout the machine. Over time, this dust can interfere with the steel balls inside conventional linear guide carriages, eventually requiring carriage replacement. TOBJET linear guides are designed for reliable operation under these dusty conditions.



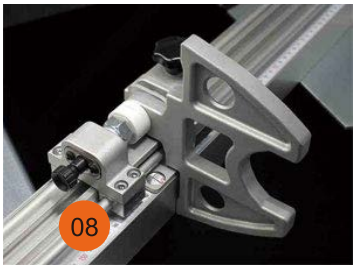




149.EP (Engineering Plastic) Bearings for Woodworking Lathes

This lathe is designed specifically for woodworking, where long-term operation can lead to lubricant loss and heavy dust accumulation. At position (06), the TOBJET ARLR carriage can be used to reduce maintenance and operating costs while maintaining stable motor drive performance. As shown in the equipment structure on the left, ARLR carriages manufactured by TOBJET can also be used at positions (07) and (08) to ensure smooth and stable movement of the support frame.







150. Ceramic Bearings (Savings: Cost 40%, Weight 60%, Oil 100%)

TOBJET high-performance ceramic bearings offer an economical, efficient alternative to conventional metal bearings in many applications. Compared with equivalent metal products, they reduce costs by up to 40% and weight by up to 60%. Their low-maintenance design helps extend equipment life, while fully dry, lubrication-free operation provides low friction. The range continues to expand with new types, sizes, and material combinations.



151. Clamp Bearing

TOBJET clamp bearings are specially designed for securing shafts through metal plates. Flanges are provided at both ends, allowing the bearing to be securely retained on both sides of the sheet metal after installation. The bearing features a symmetrical snap-in, double-flange structure. During installation, it is pressed in from the side with the smaller flange until it reaches the larger flange. The recommended housing bore tolerance is H7, while applications with tolerances up to H13 are also possible. The bearing provides low clearance and easy assembly through its integrated slot design. The TOBJET M250 is maintenance-free and offers a predictable service life.



152. Spherical Plain Bearing

Replace expensive, heavy, high-maintenance metal spherical plain bearings with a more economical alternative: engineering plastic spherical plain bearings. Developed through decades of TOBJET engineering research, these bearings reduce cost by up to 40% and weight by up to 80% compared with metal bearings. They are easy to install, maintenance-free, and designed for long service life. The bearings operate with low friction under completely dry, lubrication-free conditions, resist dust and coarse contamination, do not corrode in humid environments, and can be used with various media. They can also continue operating under long-term exposure to UV or nuclear radiation and within a temperature range of -30°C to +80°C.



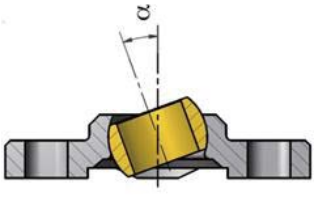
153.Maintenance-Free Flange Bearing

This design allows TOBJET high-performance sliding bearings to be used even where the recommended housing bore tolerance cannot be achieved. The bearing is designed for high loads while requiring only minimal housing precision. TOBJET flange bearings can meet a wide range of application requirements. TOBJET AG is a versatile TOBJET material with excellent overall mechanical, thermal, and friction performance, making it suitable for high-load applications at moderate surface speeds and temperatures. - Good wear resistance - Lightweight - Lubrication-free

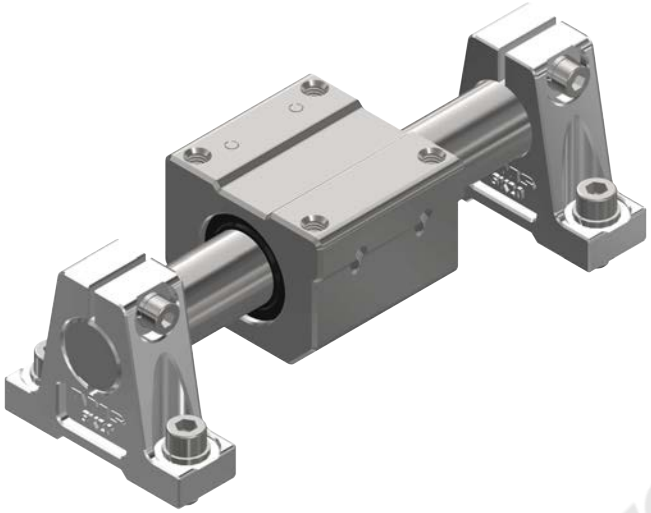


154. Flanged Spherical Plain Bearing

TOBJET flanged spherical plain bearings are designed to support shafts at the center or at both ends. The bearing housing is made from TOBJET AG material, a long-fiber-reinforced engineering plastic with excellent impact resistance, suitable for long-term use from -30°C to +80°C. In standard flanged spherical plain bearings, the spherical element is made from TOBJET W300 material, known for its low coefficient of friction and low stick-slip behavior during dry operation. These characteristics are especially important for low-load and very slow-motion applications. - Easy installation - Excellent corrosion resistance - Extremely lightweight - Maintenance-free dry operation - Misalignment compensation



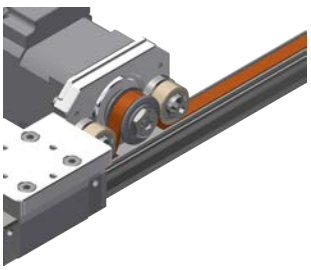
155. TOBJET ASC Linear Roller Bearing



The ASC Linear Roller Carriage Bearing is a high-performance linear motion bearing developed to replace conventional SC bearings. It is suitable for precision automation equipment, industrial robots, semiconductor equipment, medical devices, and other applications requiring high strength, low noise, and high durability. Unlike conventional ball-type linear bearings, the carriage uses a combination of needle rollers and four-point contact ball bearings, allowing it to support high loads while maintaining low friction. Compared with SC bearings, it provides significantly lower noise and superior vibration damping, enabling stable operation in high-precision applications.

Especially in industrial environments where dust, metal chips, lubricant residue, and other contaminants may enter the bearing, the ASC features an enhanced internal protection structure that enables long-term stable operation even with minimal cleaning or maintenance. The product operates smoothly without additional lubrication, making it highly suitable for applications where maintenance is difficult or continuous operation is required. The support layers on both sides of the sliding shaft are made from SUS304 stainless steel rather than conventional aluminum, providing excellent corrosion resistance, thermal deformation resistance, and structural strength. As a result, the bearing maintains stable performance and long service life even under external impact or frequent temperature changes, and is well suited for cleanroom and corrosion-resistant applications.









156. AJUM-11R-ES Linear Sliding Bearing!

Features: - Closed stainless steel retainer - Dimensions compatible with standard recirculating ball bearings - Equipped with AJUM-11 sliding liner made from TOBJET AJ material - Recommended housing bore tolerance: H7 - Recommended shaft tolerance: h6–h10 - Secured with retaining rings compliant with DIN 471 and/or DIN 472 (not included in delivery)



157. AJUM-11RK Linear Sliding Bearing

Linear sliding bearing technology is characterized by low-noise operation. Unlike rolling systems, it has no mechanical rolling action and no ball collisions that can generate noise.

Lubrication-Free / Dry Running

TOBJET linear bearing systems are designed for dry operation, eliminating lubricant-related contamination and corrosion. They can also be used reliably in extremely dusty and heavily contaminated environments.





158. ALMF-11EP Linear Pillow Block Bearing

Closed design with round flange Sliding element material: AMC AJ Housing material: Anodized aluminum Machine Tools / Safety Door Adjustment TOBJET AR linear sliding bearings operating on hard-anodized guide shafts provide smooth, low-noise motion for machine-tool safety doors while reducing costs. The guide system operates dry and requires no maintenance. Because no lubrication is required, chips and debris do not adhere to the system.

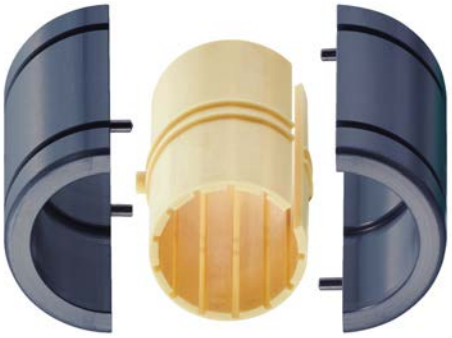




159. AJUM-12R Linear Sliding Bearing

Sliding Instead of Rolling — Low Noise, Clean, Lubrication-Free

The lubrication-free TOBJET Linear Guide Series is based on the principle of "sliding instead of rolling," using corrosion-resistant, low-friction TOBJET high-performance engineering plastics as sliding bearings. TOBJET linear guides operate dry and maintenance-free and are resistant to dirt, moisture, chemicals, heat, and impact. Their special materials and design also provide extremely low-noise operation. These characteristics make TOBJET linear guides suitable for a wide range of applications, including extreme environments. The modular system allows different combinations of guide rails and bearing housings, providing excellent flexibility.



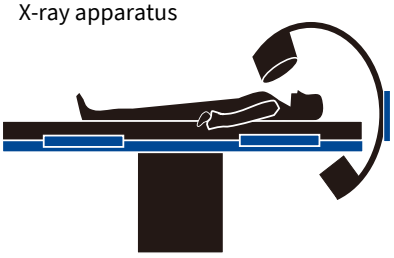
160. AJUM-11RT Linear Sliding Bearing

Conveyor Units / Food Technology

In food-industry applications, bakery products are transferred from one conveyor to another. Components that come into contact with food must operate completely without lubrication. Another reason for using TOBJET-AR linear bearings is their resistance to aggressive cleaning agents.



X-ray apparatus

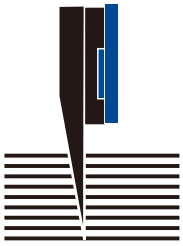




Satellite Technology



Food industry

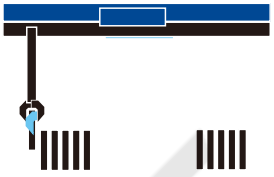


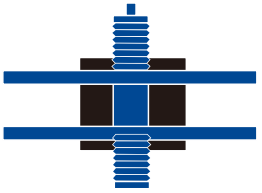
Cutting machine



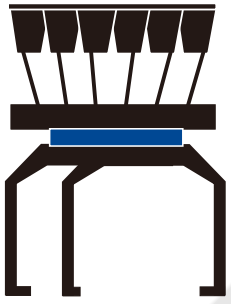
Automotive industry

Pick and Place





Gantry robot



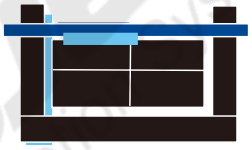
Circular knitting machine



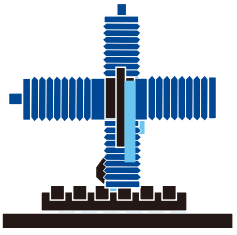
Tool changer



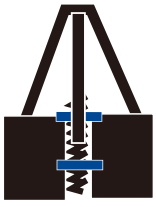
Industrial rotary table



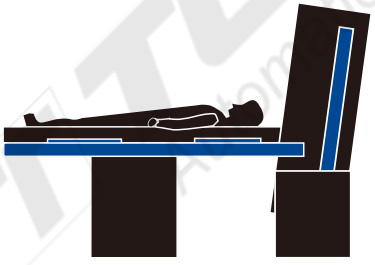
Packaging Machine



Laser cutting



Deep-well drilling installation



Patient bed

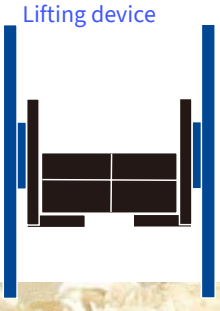


Mixing Equipment



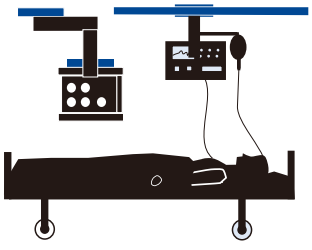
Cleanroom

Lifting device





Measurement and Testing

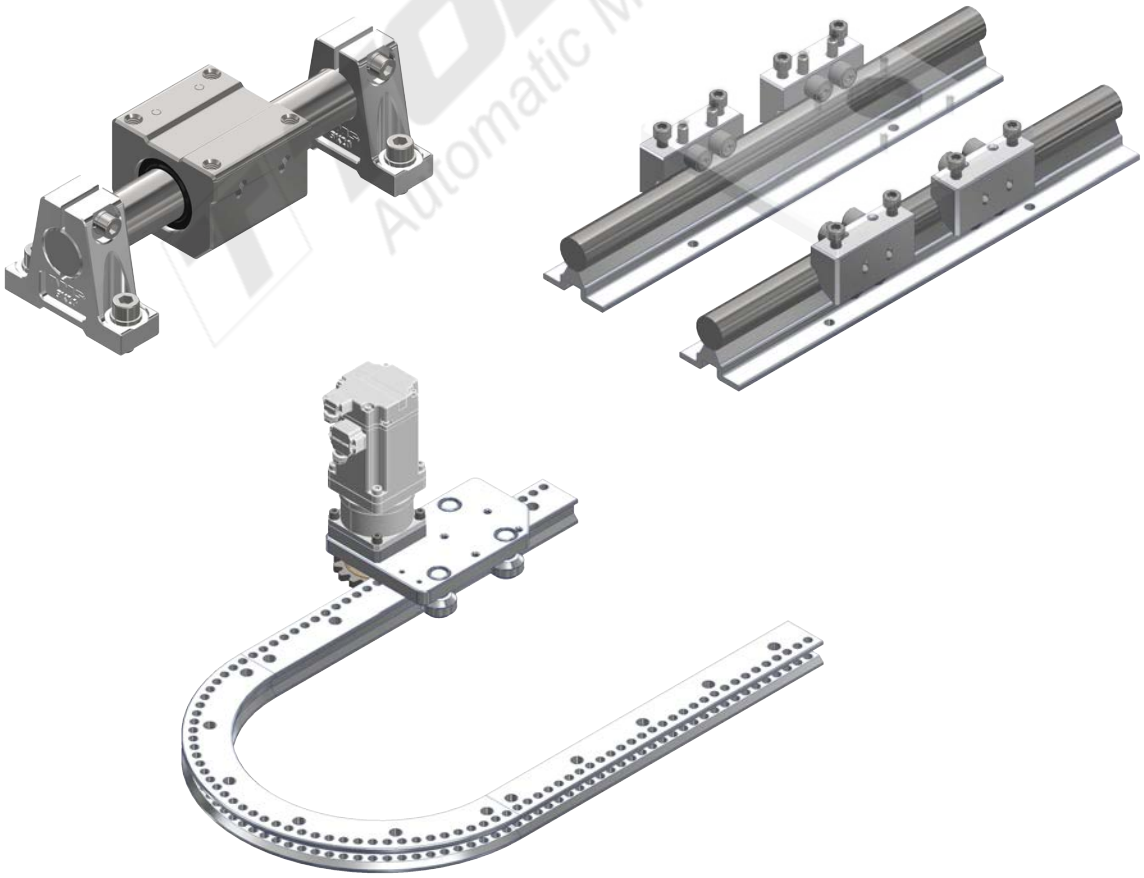


Medical Equipment



Operating Temperature and Environmental Standards for TOBJET Roller Guide Products

TOBJET roller guide products are specially designed for use in a wide range of industrial environments, including high and low temperatures as well as conditions involving salt and chemical substances. The standard operating temperature range is 50°C to 100°C, while customized versions can be supplied for environments from -40°C to +150°C, making them suitable for refrigeration equipment, high-temperature machinery, and other special applications. TOBJET roller guides use corrosion-resistant materials and special surface treatments to withstand environments containing hydrochloric acid (HCl), sulfuric acid (H_2SO_4), salt, and chemical cleaning agents. These treatments effectively prevent corrosion and help maintain long-term durability and reliability, even in coastal areas, high-humidity environments, and chemical processing lines. All standard TOBJET products can be manufactured according to these conditions, while special requirements can be met through material changes, additional coatings, or design modifications. However, drive components such as reducers and motors are not covered by these environmental standards and require separate specification review and technical evaluation. TOBJET will continue to optimize and upgrade product standards according to customer operating environments.





1. Semiconductor & Electronics Manufacturing

Cleanroom Manufacturing Environments: Suitable for ISO Class 5–7 systems, where lubrication-free operation is essential. Applications:- Wafer transfer systems requiring high-precision linear motion during wafer processing - Lithography equipment requiring nanometer-level precision - OLED coating and TFT-LCD panel assembly processes



2.Pharmaceutical & Medical Equipment

Hygienic and Contamination-Free Environments: G1-S36 provides excellent corrosion resistance and, when combined with FDA-approved materials such as PTFE or PEEK, can be safely used in sterilization processes. Applications:- Syringe filling and capping equipment for high-cleanliness pharmaceutical production lines - Medical robots for surgical and diagnostic applications requiring high-precision motion



3.Chemical & Marine Industries

Resistance to Strong Acids, Alkalis, and Salt: The corrosion resistance of G1-S36 and NC coating ensures stable operation in highly corrosive environments. Ceramic bearings help prevent damage caused by chemical exposure. Applications:- Material transfer systems inside chemical reactors - Automated chemical solution transport systems - Linear guides for port cranes - High-precision motion systems for marine equipment



4.Aerospace & Defense Industries

Extreme Temperatures and High Vacuum Conditions: Ceramic bearings remain stable from -200°C to +800°C, while NC coating provides surface protection in high-vacuum environments. Applications:- Satellite assembly and launch equipment - Vacuum test equipment for spacecraft - Precision-guided missile systems

Detailed Applications in the Chemical Industry



1.Chemical Handling Systems

Environmental Conditions: Strong acids such as HCl and H_2SO_4, strong alkalis such as NaOH, and high-salinity environments such as chlorides. Applications:- Chemical reactor transfer systems: Automated material transfer inside reactors using linear guide systems - Solution filtration equipment: Stable chemical transfer under high-temperature and corrosive conditions - Chemical Vapor Deposition (CVD) systems: Thin-film deposition processes under high-temperature and chemically aggressive environments

2.Oil & Gas

Environmental Conditions: High temperature, high pressure, and exposure to corrosive gases such as hydrogen sulfide (H_2S). Applications:- Natural gas compression equipment: Internal components requiring durability and precision - Crude oil refineries: Chemical- and wear-resistant components for separation and transfer systems

3.Advanced Materials Manufacturing

Environmental Conditions: Production of chemical materials and reactants in ultra-high-purity environments. Applications:- High-purity chemical production: Contamination-free transfer while maintaining material purity - Lithium battery manufacturing: Automated transfer of chemicals such as electrolytes

4.Waste Treatment & Recycling

Environmental Conditions: Oxidizing chemicals and corrosive solutions. Applications:- Chemical waste transfer systems: Safe handling of corrosive waste under high-temperature conditions - Metal recycling processes: Efficient automated sorting using linear guide systems

- SMSC technology forms a corrosion-resistant protective coating on the metal surface of linear guides, effectively preventing corrosion caused by moisture, salt, and chemical substances. It is particularly suitable for high-humidity environments, marine industries, and chemical processes where corrosion risk is high, ensuring long-term durability.

- Enhanced Wear Resistance

- Provides excellent wear resistance, extending the service life of linear guides. - Reduces wear under high-speed and high-load conditions while maintaining long-term precision.

Low-Temperature Treatment for Dimensional Stability

Low-temperature processing preserves precise dimensions and minimizes material deformation. Unlike conventional heat treatment, it is especially suitable for high-precision machinery.

Improved Sliding Performance

- The porous structure and coating of SMSC technology reduce sliding resistance and ensure smooth linear guide operation. - Provides stable and reliable performance while reducing lubricant consumption.

Eco-Friendly and Lower Maintenance Costs

- SMSC coating requires little or no lubrication, significantly reducing maintenance costs. - Manufactured using an environmentally friendly process that helps reduce contamination during operation.



Application Areas

Semiconductor & Electronics Industry

- Suitable for linear guides requiring extremely high precision. - Ideal for semiconductor manufacturing equipment and clean electronic environments, providing excellent corrosion and wear resistance.

Medical Equipment

- Meets strict requirements for corrosion resistance and high cleanliness in medical linear guide systems.
- Provides long-term stable and smooth operation in medical equipment such as CT and MRI systems.

Automotive industry

- Suitable for automotive component guides requiring high-speed operation and high load capacity.
- Improved wear and corrosion resistance helps enhance overall equipment performance.

Aerospace & Defense Industry

- Maintains stable performance in extreme environments, making it suitable for spacecraft and military equipment. - Provides coating stability and extended service life under harsh operating conditions.

- Marine & Chemical Processing

- Improves the durability of linear guides in environments frequently exposed to salt and corrosive chemicals. - Suitable for marine equipment and chemical processing systems.

High-Speed Automation Systems

- Enhanced wear resistance and improved sliding performance increase the productivity and precision of high-speed automation equipment. - Particularly suitable for processes requiring frequent and continuous operation.

Distinctive Advantages of SMSC Technology

- Reduced lubrication: SMSC coating minimizes lubricant use and simplifies maintenance, providing an environmentally responsible solution.
- Dimensional stability and precision: Minimizes component variation for stable operation of high-precision equipment.
- Wider applications: Suitable for many industries and customizable to customer requirements.

SMSC surface treatment is fundamentally different from conventional black coating treatments, such as those used on black bolts. Even if the black surface layer is worn or partially removed, SMSC-treated components maintain excellent corrosion resistance, ensuring long-term stability and durability. Compared with ordinary plating or coating processes, SMSC treatment may involve slightly higher cost and longer lead times. However, for products with surface hardness above HRC58, stainless steel alone may not provide sufficient corrosion protection, making SMSC treatment a highly effective solution. SMSC technology is particularly valuable in medical equipment requiring strict hygiene and corrosion resistance, industrial facilities exposed to chemical mist, and linear guide components continuously exposed to moisture. Its excellent corrosion resistance significantly extends service life and minimizes maintenance requirements. For these reasons, SMSC surface treatment is increasingly adopted in industries requiring high precision, long-term stability, and overall economic efficiency.



Material Code	Continuous Temp.	Max. Temp.	Min. Cont. Temp.	TOBJET Applications
G00	700	1100	-200	High-Temperature Powder 3D Printers / Ceramic Sintering Furnace Conveyor Guides / High-Temperature Chemical Reactor Carriages
G25	650	980	-250	Corrosion-Resistant Rollers for Chemical Equipment / Conveying Systems for Marine Environments / Automation Equipment for High-Temperature and High-Humidity Environments
G18	700	750	-250	Metal Additive Manufacturing Equipment for Aerospace Components / High-Temperature Extruder Conveyor Guides / Precision Gas Turbine Assembly Lines
G38	980	1050	-100	Metal Powder 3D Printers / High-Temperature Brazing Equipment / Rotary Guides for Ultra-High-Temperature Sintering Furnaces
G51	700	870	-200	Turbine Blade Processing Equipment / Guides for High-Temperature, High-Speed Rotating Components / Ultra-Heat-Resistant Metal Assembly Lines
G01	1100	1200	-200	Internal Conveying Systems for Electric Furnaces / High-Temperature Stamping Production Lines / Heat-Resistant Mesh Conveyor Guides
G17	950	1100	-200	Gas Turbine Component Assembly/Inspection Equipment / High-Temperature Heat Treatment Production Lines / Heat-Resistant Coating Equipment
G1	870	925	-196	Food Processing Production Lines / Pharmaceutical Packaging Machinery / Carriages for Beverage Filling Machines
G4L	870	925	-196	Hygienic Equipment / Beverage and Dairy Production Lines / Automation Equipment for Low-Temperature Environments
G16	870	925	-196	Conveying Systems for Seawater Environments / Pharmaceutical & Chemical Equipment / Corrosion-Resistant Liquid Handling Systems
G6L	870	925	-196	High-Purity Chemical Equipment / Conveyor Guides for Semiconductor Wet Processes / Offshore Platforms
G0S	1050	1100	-196	High-Temperature Dryer Production Lines / Kiln Conveyor Rollers / Carriages for Heat Treatment Processes
G21	870	925	-196	High-Temperature Pipeline Conveyor Guides / Automatic Boiler Conveying Systems / Heat-Resistant Chemical Equipment
G47	870	925	-196	Heat-Resistant and Acid-Resistant Automation Equipment / Chemical Processing Equipment / High-Temperature Heat Exchangers

Operating Temperature Range: High-Temperature Environment H1: +120°C to +300°C H2: +300°C to +500°C H3: +500°C to +800°C H4: +800°C to +1200°C

Low-Temperature Environment L1: -20°C to -50°C L2: -50°C to -100°C L3: -100°C to -150°C L4: -150°C to -196°C (Please contact us for detailed specifications.)

Material Code	Continuous Temp.	Max. Temp.	Min. Cont. Temp.	TOBJET Applications
G10	400	500	-40	Heavy-duty logistics lines, crane transport rollers, and strength-focused industrial machinery.
GJ2	400	500	-40	Cutting machine conveyor rails, metal forming machinery, wear-resistant rollers.
G0C	250	300	-40	High-precision measuring machinery, heavy-duty robotic transport shafts, wear-resistant sliders.
Gni	300	400	-269	Marine structures, automation equipment for saltwater environments, subsea mining equipment.
G70	425	480	-269	LNG transport equipment, marine structures, cryogenic storage equipment.
G36	200	300	-269	Aerospace structural assembly lines, precision measuring equipment, temperature-stable automation equipment.
G83	200	250	-269	LNG/LHe storage tank transport equipment, lightweight structural guide rails, cryogenic transportation equipment.
G83	200	250	-269	Chemical processing automation equipment, conveyor lines for seawater-corrosive environments, lightweight corrosion-resistant systems.
G6	315	370	-50	High-precision CNC automation equipment, heavy-duty robotic transport rails, aerospace component guide rails.

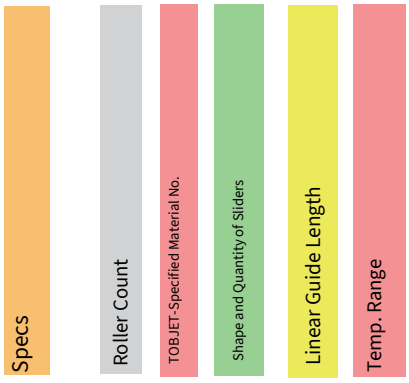
Linear Guide Materials for Chemical Environments

Material No.	Process / Media Conditions	Temperature Guide (Continuous)
G1	Weak Acids / Neutral Utility Water / Cleaning Water	≤80 °C
G05	Chloride Media (Seawater, NaCl, Cooling Water)	≤100 °C,
G20	Sulfuric Acid (H_2SO_4) 0–60% (Room Temperature)	≤276 °C,
G76	H_2SO_4 (>70% or high temp.) / HCl	≤120–150 °C(Depending on the Alloy Type)
G6L	Nitric Acid (HNO_3)	≤80–100 °C
G70	Hydrofluoric Acid (HF) / Fluoride-Containing Media	Monel Low-Temperature Applications
G6L	Organic Solvents / Fibers / Coatings	PVDF ≤120–150 °C, PTFE ≤200–220 °C
G6L	Caustic Alkalis (NaOH/KOH)	≤80–100 °C
GFE	Mixed Acids and Alkalis / Unknown Piping Media	PTFE ≤200–220 °C
G01	High-Temperature Oxidizing Gas / Furnace Atmosphere	601 ≤1100–1200 °C
G4L	Chlorides / Cryogenic Environment (LNG, LN_2)	Below 196 °C

Ordering Method

Format | Roller Linear Guide

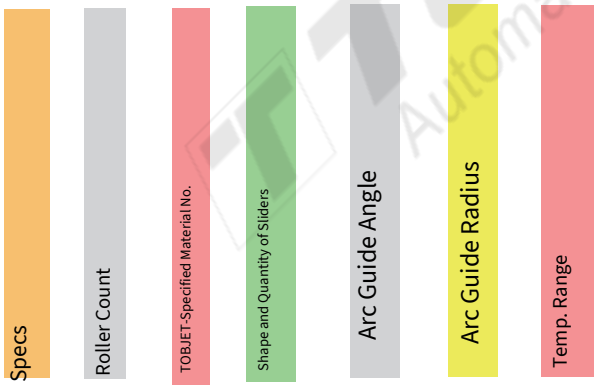
FDA30PK-4R-G1-2B-1000-H1



Ordering Method

Format | Circular Roller Guide

FDA15RV-6R-G3-2B(1)-A180-300R-H2



Quotation Notation for High-Temperature, Low-Temperature, and Other Special Environments

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