


BALL SCREWS CATALOGUE



BALL SCREWS
SUPPORT UNITS
CLEAN GREASE FOR BALL SCREW
LUBRICATION UNITS FOR BALL SCREW

The world of accuracy 0.01μm.

KURODA is proud of contributing to the industrial world with precision technology infinitely close to “zero”. Its area of technological contribution extends to every field of the most advanced machine industry.

KURODA PRECISION INDUSTRIES, LTD. started business under the name of Kuroda Kyohan Seisakusho in 1925, and then changed the corporate name to the present name.

KURODA has developed an electro-hydraulic stepping motor as servo technology which is indispensable to the control of NC machine tools on the basis of high precision machining technology during this period. On the other hand, KURODA promoted various technology and product developments, and received the first award of Japan Society for the Promotion of Machine Industry. The proven excellence of KURODA's technology is now enjoying a high reputation from the industrial world.

The electronics industry has made remarkable progress in the field of semiconductors, information-and-communication equipment, etc. by technological development and the improvement of applied technology such as Electronic Industry Material and Liquid Crystal.

Meanwhile, users' needs are being much more diversified and upgraded than ever before, with the progress of various industries. This fact imposes more and more important duties on our company.

KURODA intends to challenge research and development aiming at the next generation, while maintaining the traditional technology and skill, and also making full use of various advanced technologies.

Giving utmost priority to the relationship of mutual trust with customers, KURODA will continue the corporate philosophy of “Manufacture” aiming at “P&P Precision and Productivity Improvement”.

Asahi Plant



- Main Products
- “UNI-WIRE” wire saving system
- Pneumatic equipment



Futtsu Plant



- Main Products
- Tool holder•Ball screw
- Equipment related to nuclear engineering
- Measuring instrument•Gauge•Medical appliance



Nagano Plant



- Main Products
- Press tool•Surface grinding machine
- Super-polishing machine
- Hydraulic tool



KURODA promotes FA solution in the total field of Motion Control System based on its rich knowledge and technology.

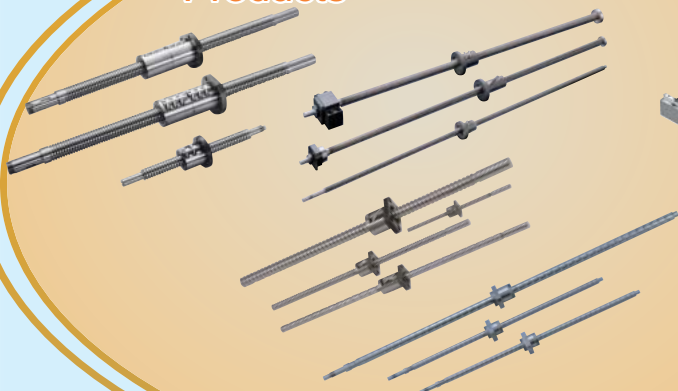
Machine tool



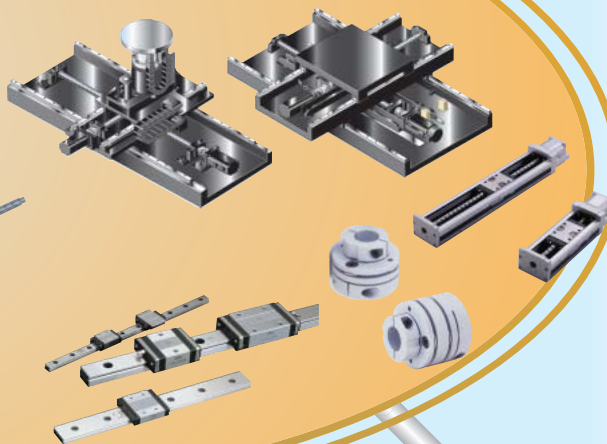
Gauge/Measuring system



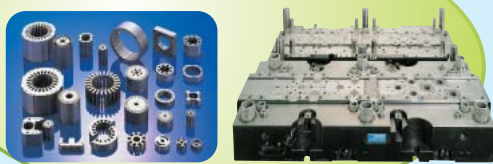
Group of Ball Screws and Related Products



Group of Linear Motion and Related Products



FASTEC system (Press tool)



Tool holder system



Pneumatic system



"UNI-WIRE" wire saving system



Precision & Productivity

Based on the brief that “Anything can be manufactured, if it can be measured. Even if it cannot be measured, we can manufacture it by creating a measuring tools”, KURODA proposes a combination of “harmonious” and “compatible” elements to complete Linear Motion systems, thereby contributing to “FA Solution”.

KURODA's Ball Screws

KURODA's Ball Screws are an outgrowth of KURODA's advanced know-how of manufacturing gauges and an embodiment of our unceasing efforts to be among the forerunners in the field of modern high technology.

For the characteristic high efficiency of mechanical power transmission and motion control and other advantageous features, Ball Screws are machine elements indispensable for the feed mechanism of a wide variety of modern automatic machines such as, to name a few, machining centers, precision positioning tables, and industrial robots.

With the 21st century around the corner, the technical development of various machines for higher accuracy and higher speed is now being increasingly accelerated and the users' needs of such development are being much more diversified than ever before.

On the strength of our traditional precision machining technology and our unceasing research into all basics of ideal ball screws, we are working hard day in and day out to better equip our customers for entry into the new century by supplying rationally designed high quality ball screws manufactured from carefully selected materials with our advanced grinding and lapping technologies and under our extremely tight quality control using the most modern test and measuring equipment.

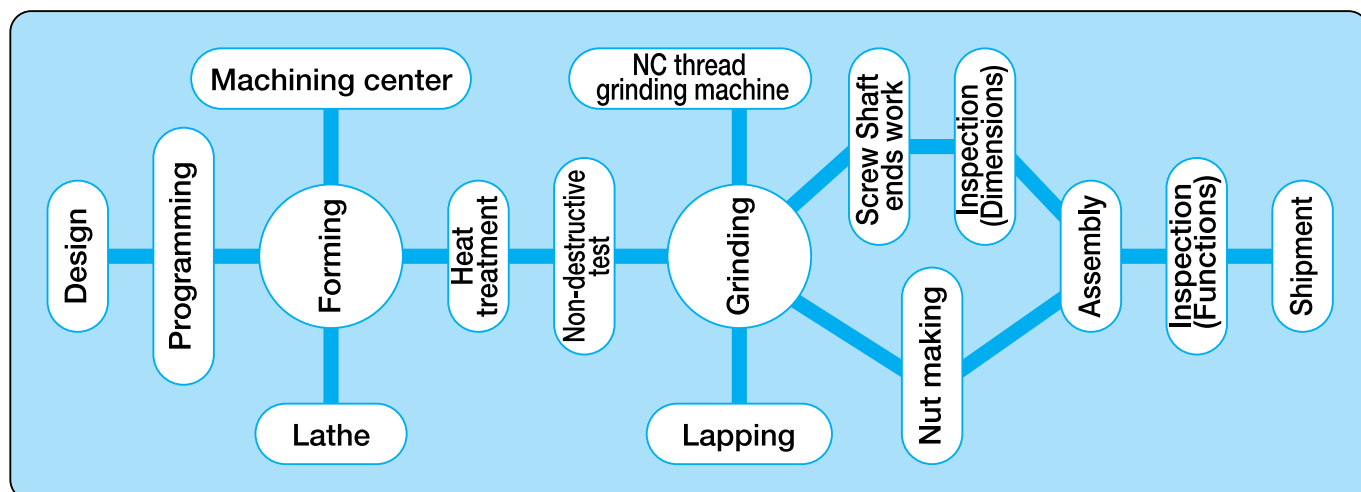
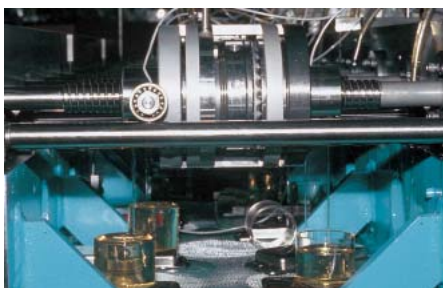
Research and Development

Responding to higher sophistication and rapid diversification of needs in various fields of the modern industry, KURODA is pressing forward with the research and development of ball screws by looking ahead to the advancement of precision engineering technology for the next generation.

Intensive studies into the basics of ideal ball screws are being carried on in the company's laboratory jointly with academic laboratories. Comprehensive test data on the accuracy, stiffness, life, and other vital factors of ball screws are being accumulated and analyzed and various evaluation systems are also being established.

Many significant results of these in-depth studies on ① Life, ② Lead Accuracy, ③ Characteristics of Balls, ④ Wear, etc. of ball screws have been publicized at the meetings of Precision Industries Association and elsewhere. These publications are widely appreciated as very valuable contributions to the development of the basic technology of ball screws, exemplifying the role KURODA plays in the field of precision engineering.

Looking to and challenging the future, KURODA always places the top priority to customers' satisfaction.



Giving importance to the cleanliness and heat treatment of materials, both of which are closely correlated with life, is a basis for quality control of KURODA's ball screws. KURODA is always laying emphasis on this policy so as to fully utilize ISO 9001.

Materials and heat treatment

In order to fully control the heat treatment of materials that can be checked only by destructive inspection, KURODA makes it a rule to purchase materials based on detailed delivery specifications intended for our company and internally control the heat treatment processes such as carburizing, quenching and induction hardening, of which records are carefully kept to assure traceability.

The carefully maintained thread grinding machine and stable measuring equipment that can realize manufacture with JIS C0 grade lead accuracy support high precision applications.

Thread grinding machines and CNC machining centers

Our unique processing machine configurations for the entire process from the forming to the finishing thread grinding based on our rich experience realize users' needs for high precision, quick delivery and low cost. Especially, we have extensive experience in the operation of thread grinding machine for more than half a century, and our proprietary thread grinding machine for ball screws in the field of hardware and a combination of rich data bases and skillful workers are now unrivaled.

Lead inspection and total accuracy

In order to assure stable measurement at JIS C0 grade lead accuracy, we have established a structure including a continuous lead measuring machine with a combination of air bearings and laser interferometer installed in a thermostatic chamber as well as proprietary measuring machines classified by applications so as to satisfy any needs for various measurement accuracies covering all processes from development to mass production.



STANDARD BALL SCREWS(For transfer)

Rolled Ball Screw(Unfinished shaft ends)GY series

- Rolled ball screws of accuracy grade C10 are available as standardized and stocked items.
- As both shaft ends are unworked, additional end machining is required to meet your application.

Screw shaft dia. (mm)	Lead (mm)	Accuracy grade	Axial clearance (mm)	Page
Ø8	2	C10	0.05* 0.2* or less	32
Ø10	2.5,4,10			
Ø12	4,10			
Ø15	5,10,16,20			
Ø16	32			
Ø20	5,10,20,40			
Ø25	5,10,25			
Ø28	6			
Ø32	10,32			
Ø36	10,20			
Ø40	10,20,40			

* Depending on Screw shaft O.D. and Lead.



Rolled Ball Screw(Unfinished shaft ends)GW series

- Rolled ball screws of accuracy grade C7 are available as standardized and stocked items.
- As both shaft ends are unworked, additional end machining is required to meet your application.
- Contact KURODA for preloaded Rolled Ball Screw.

Screw shaft dia.(mm)	Lead (mm)	Accuracy grade	Axial clearance (mm)	Page
Ø8	2	C7	0.03* 0.07* or less	146
Ø10	2.5,4,10			
Ø12	4,10			
Ø15	5,10,16,20			
Ø16	32			
Ø20	5,10,20,40			
Ø25	5,10,25			

* Depending on Screw shaft O.D. and Lead.



Ground Ball Screw(Unfinished shaft ends)GE series

- Ground ball screws of accuracy grade C7 are available as standardized and stocked items.
- As both shaft ends are unworked, additional end machining is required to meet your application.

Screw shaft dia.(mm)	Lead (mm)	Accuracy grade	Axial clearance (mm)	Page
Ø8	1.5,2,4	C7	0.030 or less	196
Ø10	2,2.5,4,10			
Ø12	2,2.5,4,5,10,20			
Ø15	2,4,5,10,15,20			
Ø16	16			
Ø20	4,5,10,20			
Ø25	5,10,20,25			
Ø32	5,10			



STANDARD BALL SCREWS (FOR TRANSFER)

STANDARD BALL SCREWS (FOR POSITIONING)

CUSTOMIZED GROUND BALL SCREWS

TECHNICAL DATA OF BALL SCREW

BALL SCREWS' ACCESSORIES

STANDARD BALL SCREWS(For positioning)

Ground Ball Screw(Unfinished shaft ends)GG series

- Ground ball screws of accuracy grade C5 are available as standardized and stocked items.
- As both shaft ends are unworked, additional end machining is required to meet your application.

Screw shaft dia. (mm)	Lead (mm)	Accuracy grade	Axial clearance (mm)	Page
Ø8	1,5,2,4	C5	0.005* or less	196
Ø10	2,2,5,4,10			
Ø12	2,2,5,4,5,10,20			
Ø15	2,4,5,10,15,20			
Ø16	16			
Ø20	4,5,10,20			
Ø25	5,10,20,25			
Ø32	5,10			

* For Axial clearance adjustment, consult KURODA.



STANDARD BALL SCREWS
(FOR TRANSFER)

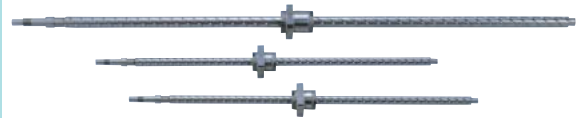
STANDARD BALL SCREWS
(FOR POSITIONING)

Ground Ball Screw(Unfinished shaft ends)HG series

- Super-high lead resulting from new end cap method
- Large lead ground ball screws of accuracy grade C5(two or three starts)are available as standardized and stocked items.
- As both shaft ends are unworked, additional end machining is required to meet your application.

Screw shaft dia. (mm)	Lead (mm)	Accuracy grade	Axial clearance (mm)	Page
Ø6	6	C5	0.010* or less OR 0.005*or less	260
Ø8	12			
Ø12	30			
Ø15	40			
Ø16	32			
Ø20	40,60			
Ø25	50			
Ø32	64			

* Depending on Screw shaft O.D. and Lead.



CUSTOMIZED
GROUND BALL SCREWS

TECHNICAL DATA
OF BALL SCREW

Ground Ball Screw(One shaft end finished)GP series/DP series

- Ground ball screws of accuracy grade C3S and C3F are available as standardized and stocked items.
- As only one shaft end is finished, additional end machining of another shaft end is required to meet your application.

Screw shaft dia. (mm)	Lead (mm)	Accuracy grade	Axial clearance (mm)	Page
Ø6	1	C3	0(preloaded)* OR 0.005 or less*	290
Ø8	1,1,5,2			
Ø10	2,2,5			
Ø12	2,2,5,3,4,5			
Ø15	2,4,5			
Ø20	4,5			

* Two types of axial clearance are available.



BALL SCREWS'
ACCESSORIES

CUSTOMIZED GROUND BALL SCREWS

Tube Method Single Nut GR series

•Most suitable for light and normal preloading to light and medium load of semiconductor manufacturing machines, assembly robots, measurement apparatus, small NC machine tools, etc. requiring precision positioning.

Screw shaft dia. (mm)	Lead (mm)	Accuracy grade	Page
Ø5	1	C0-C5	332 334
Ø6	1		
Ø8	1,1.5,2,2.5,3,4,6,8	C0-C7	
Ø10	1,1.5,2,2.5,3,4,5,10		
Ø12	2,2.5,3,4,5,6,10,20		
Ø15	2,2.5,3,4,5,6,8,10,15,16,20,25	C0-C10	
Ø16	4,5,6,16		
Ø20	2.5,4,5,6,8,10,20,25,32		
Ø25	4,5,6,8,10,20,25,32		
Ø28	5,10,20		
Ø32	4,5,6,8,10,12,20,32		
Ø36	5,6,8,10,12,20,24		
Ø40	5,6,8,10,12,16,20,32,40		
Ø45	5,6,8,10,12,20		
Ø50	5,6,8,10,12,16,20,40,50		
Ø55	8,10,12,16,20	C1-C10	
Ø63	6,8,10,12,16,20		
Ø70	10,12,16,20		
Ø80	10,12,16,20		
Ø100	12,16,20		
Ø125	16,20		



Tube Method Integral Nut GR series

•Suitable for preload of more than normal, and most suitable for machines and equipment with more than medium load.

Screw shaft dia. (mm)	Lead (mm)	Accuracy grade	Page
Ø20	4,5	C1-C10	332 358
Ø25	4,5,8		
Ø28	5,10		
Ø32	5,6,8,10		
Ø36	5,6,10		
Ø40	6,8,10,12		
Ø45	10,12		
Ø50	10,12		
Ø55	10		
Ø63	10,12		

Tube Method Double Nut GR series

•Most suitable for medium and heavy preload of more than medium load of machines and equipment etc. requiring high rigidity and precision positioning.

Screw shaft dia. (mm)	Lead (mm)	Accuracy grade	Page
Ø8	2,2.5,3,4	C0-C7	332 363
Ø10	2,2.5,3,4,5		
Ø12	2,2.5,3,4,5,6		
Ø15	2,2.5,3,4,5,6	C0-C10	
Ø16	4,5,6		
Ø20	2.5,4,5,6,8,10		
Ø25	4,5,6,8,10		
Ø28	5,10		
Ø32	4,5,6,8,10,12		
Ø36	5,6,8,10,12		
Ø40	5,6,8,10,12,16,20		
Ø45	5,6,8,10,12		
Ø50	5,6,8,10,12,16,20		
Ø55	8,10,12,16,20	C1-C10	
Ø63	6,8,10,12,16,20		
Ø70	10,12,16,20		
Ø80	10,12,16,20		
Ø100	12,16,20		
Ø125	16,20		

STANDARD BALL SCREWS
(FOR TRANSFER)

STANDARD BALL SCREWS
(FOR POSITIONING)

CUSTOMIZED
GROUND BALL SCREWS

TECHNICAL DATA
OF BALL SCREW

BALL SCREWS'
ACCESSORIES

CUSTOMIZED GROUND BALL SCREWS

Deflector Method Single Nut GD series

•Most compact circulating system of ball screws that can provide better rotation balance.

Screw shaft dia. (mm)	Lead (mm)	Accuracy grade	Page
Ø6	1	C0-C10	332 383
Ø8	1,2		
Ø10	2		
Ø12	2,3		
Ø16	5		
Ø20	5,10		
Ø25	5,10		
Ø32	5,10		
Ø40	10		
Ø50	10		



Deflector Method Integral Nut GD series

•Most compact circulating system of ball screws that can provide better rotation balance with preloaded nut.

Screw shaft dia. (mm)	Lead (mm)	Accuracy grade	Page
Ø16	5	C0-C10	332 385
Ø20	5		
Ø25	5		
Ø32	5,10		
Ø40	10		
Ø50	10		

STANDARD BALL SCREWS
(FOR TRANSFER)

STANDARD BALL SCREWS
(FOR POSITIONING)

CUSTOMIZED
GROUND BALL SCREWS

TECHNICAL DATA
OF BALL SCREW

BALL SCREWS'
ACCESSORIES

Support Units

For Small-sized Factory Automation Equipment

- Wide variety of series including rectangle and circle flange types available •Built-in locking function
- Compact design and easy mounting •Accurate and built-in dustproof seal

Model No.	Applicable ball screw						Page
	GE	GG	GP/DP	HG	GY	GW	
BUK-6	-	-	-	-	08□	-	420
BUM-6	-	-	-	-	08□	-	
BUK-8A	08□,10□	08□,10□	08□,10□	1230	10□,12□	1010	
BUM-8	12□	12□	08□,10□	1230	10□,12□	1210	
BUK-10A	1010	1010	12□	1230	12□,15□	1010	
BUM-10	12□,15□	12□,15□	12□	15□	12□,15□	15□	
BUK-12A	15□	15□	15□	15□	15□	15□	
BUM-12	15□	15□	15□	16□	15□	15□	
BUK-15A	20□	20□	20□	20□	20□	20□	
BUM-15	20□	20□	20□	20□	20□	20□	
BUK-20A	25□	25□	-	25□	25□,28□	25□	
BUM-20	25□	25□	-	25□	25□,28□	25□	
BUK-25A	32□	32□	-	3264	32□	-	
BUM-25	32□	32□	-	3264	32□	-	



For Machine Tools

- Compact design and easy mounting
- High precision and high rigidity •High dustproof effect

Model No.	Dia. of fixed side bearing mount(mm)	Applicable ball screw size(mm)	Page
BUT-20	Ø20	Ø25,Ø28,(Ø32)	440
BUT-25	Ø25	(Ø28),Ø32,Ø36	
BUT-30	Ø30	Ø36,Ø40	
BUT-35	Ø35	Ø40,Ø45	
BUT-40	Ø40	Ø50	



STANDARD BALL SCREWS
(FOR TRANSFER)

STANDARD BALL SCREWS
(FOR POSITIONING)

CUSTOMIZED
GROUND BALL SCREWS

TECHNICAL DATA
OF BALL SCREW

BALL SCREWS'
ACCESSORIES

BALL SCREWS' ACCESSORIES

KURODA C Grease(Clean Grease for ball screw)

- Low dust generation •Excellent lubricating performance
- Stable torque characteristic
- Dustproof effect equivalent to Lithium grease

Model No.	C1-080G-J	C1-400G-J
Base oil	Synthetic oil	
Consistency	280(No.2)	
Operating temperature range	-30-+150°C	
Container	Bellows type container	
Mass	80g	400g
Page	446	



LUBSEAL®(Lubrication Unit for ball screws)

- Assembled into the standard ball screw nut simply, neatly and compactly.
- Clean and friendly to environment
- Remarkably extends maintenance period.

*See page 450.



STANDARD BALL SCREWS
(FOR TRANSFER)

STANDARD BALL SCREWS
(FOR POSITIONING)

CUSTOMIZED
GROUND BALL SCREWS

TECHNICAL DATA
OF BALL SCREW

BALL SCREWS'
ACCESSORIES

INTRODUCTION OF KURODA CAD DATA LIBRARY

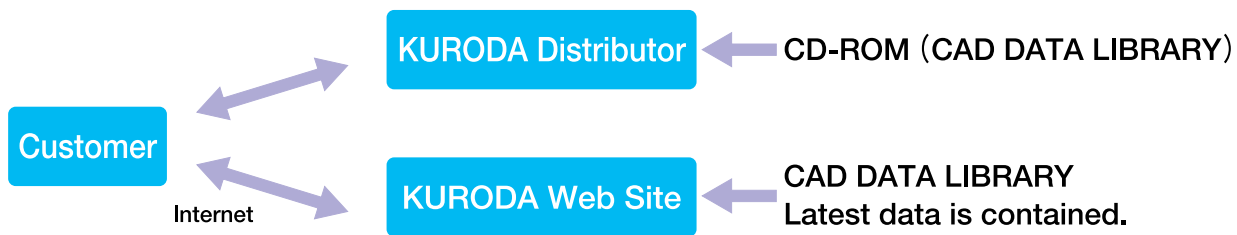
KURODA CAD DATA LIBRARY contains CAD data of ball screws, support units, single axis modules and pneumatic equipment. Please use this library to improve

the design performance of your FA related equipment.

How to Obtain CAD Data Library

CAD Data Library is available from CD-ROM supplied by our company or our company's web site via Internet.

For a CD-ROM, please ask KURODA sales representative in charge of your company.



URL <http://www.kuroda-precision.co.jp/e-top>

Kind of CAD data

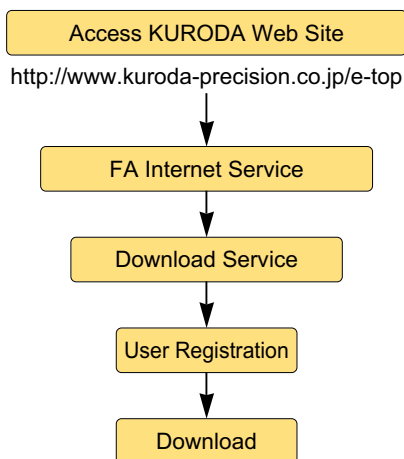
Type of data		CD-ROM	Home Page
DXF	r12	O	O
DWG(AUTO CAD)*1	r12	O	O*2

*1:Name of CAD software is our company's registered trademark.

*2:Some of DWG type product data are not contained.

For 3D CAD data, contact KURODA.

How to Download from Web Site



(Note) CAD data is classified by each product and contained in a self-extracting executable file format (.exe).

CAD Data Containing Ball Screw Related Products

- ① Customized ball screws
Customized ground ball screw GR Series is described.
- ② Standard ball screws
Standard ground ball screws GE (C7), GG (C5), HG(C5), GP(C3), DP(C3) Series, and standard rolled ball screws GY (C10), GW(C7) Series are described.
- ③ Single axis module
Single axis module SG Series described.
- ④ Support units
Support unit BUK Seires (rectangle) for small-sized FA equipment, BUM Series (circle flange), and support unit BUT Series for machine tools are describe.



Data sample

