BNBINT Product Brochure

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BNBINT Co., Ltd. is a Korean company that provides total solution for precision balls, speciality bearings, ball transfers and ball plungers which are widely used in industrial applications like baggage transfer tables at airports and production machines, material transfer, general purpose applications etc.

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1.1 Ceramic Bearings

A ceramic bearing is suitable for any environment in which wear, corrosion, thermal resistance, and electric insulation are required, so metal bearings are not suitable. Ceramic ball bearings require less energy owing to their high speed that aids in reducing friction. Moreover, they also offer high dimensional stability; have smoother and rounder surfaces; and provide the low density and optimum resistance against heat and corrosion.

Industries it caters to

- Electronic
- Food
- Textile
- Chemical
- Medical
- Aviation

Product application

- Semiconductor equipment
- Food equipment
- Electroplating equipment
- Chemical equipment
- Textile machinery

1.1.1 ZIRCONIA BEARINGS

A zirconia bearing (ZrO_2) is mainly applicable to high and low temperatures. It also has corrosion, thermal resistance, and electric insulation. It also has corrosion, thermal resistance, and electric insulation. It has good mechanical strength, toughness, and self-lubrication, making it suitable for bearings

Selection parameters

Parameters	Min	Max
Temperature Range		1400°C

1.1.2 SILICON NITRIDE BEARINGS

A silicon nitride bearing (Si_3N_4) has all the characteristics of zirconia, as well as light weight, wear resistance, and high strength. It is almost resistant to thermal impact among ceramics and has excellent wear and chemical resistance, making it suitable for extreme environments.

Selection parameters

Parameters	Min	Max
Temperature Range		1200°C

1.1.3 HIGH TEMPERATURE BEARINGS

It is mainly used for the hot environment, where metal and plastic are not applicable. A pull-type bearing only consists of ceramic without a cage structure.

1.1 Ceramic Bearings (continued)

1.1.4 ALUMINA BEARINGS

Alumina bearings (Al_2O_3) are manufactured mainly at 99% or higher purity, with good corrosion and chemical resistance. It has excellent high-temperature resistance, electric insulation, hardness, and wear resistance.

Selection parameters

Parameters	Min	Max
Temperature Range	1400°C	1800°C

1.1.5 SILICON CARBIDE BEARINGS

Silicon carbide (SiC) bearings are more chemically stable than any other ceramics. It is especially resistant to hydrofluoric acid and has good strength and hardness for wear and corrosion resistance under high temperatures.

Selection parameters

Parameters	Min	Max
Temperature Range		1300°C

1.1.6 HYBRID BEARINGS

It is possible to design and manufacture in consideration of high temperature environment, corrosion resistance, abrasion resistance, allowable load and rotation speed, etc.

1.2 Plastic Bearings

The plastic bearings are a contact type bearings which involve mechanical contact between machine elements, and they also involve sliding or rolling or flexural bearings. The plastic bearings are also referred to as self-lubricated bearings. The composition of plastic bearings has been modified and altered to achieve the needed bearing features which could be favourable to different types of machines.

Industries it caters to

- Medical & Health Care
- Textile
- Chemical
- Packaging
- Electric & Equipment Manufacturing
- Aerospace

Product application

- Packaging machinery
- Medical technology
- Textile Finishing
- Chemical Equipment
- Semi-conductor manufacturing equipment
- Pumps & Piping

1.2 Plastic Bearings (continued)

1.2.1 PEEK PLASTIC BEARING

PEEK is a plastic with the highest thermal and chemical resistance among moldable crystalline resins. It has good machinability, mechanical strength, and wear resistance, and can work at a high temperature (250°C). It also has high resistance to radiation, so it is slightly deformed when it is exposed.

Selection parameters

Parameters	Min	Max
Temperature Range		250°C

1.2.2 PVDF PLASTIC BEARING

Antiwear and Anticorrosion PVDF Plastic Bearing (Applicable to Hydrofluoric Acid Environment) PVDF has excellent chemical and wear resistance, relatively good machinability, and high strength and hardness, and can work continuously at a high temperature(130°C) while keeping chemical resistance. It has better tensile strength, pressure resistance, and dimensional stability than PTFE, and soft surface, making it suitable for bearings. It can maintain its stability even with oxides and radiation.

Selection parameters

Parameters	Min	Max
Temperature Range		130°C

1.2.3 POM PLASTIC BEARING

POM bearing with high resistance to decomposition reaction (hydrolysis reaction) They are applicable to clean environments and machine equipment where corrosion resistance and lightweight materials are required, so metals are not suitable.

1.2.4 PTFE PLASTIC BEARING

Antichemical PTFE Bearing can work continuously at -40°C ~ 200°C and has the best chemical resistance among engineering plastics. It has resistance to all types of chemicals, low friction factor, good electric insulation, and is not sensitive to temperature.

Selection parameters

Parameters	Min	Max
Temperature Range		200°C

1.2.5 PP PLASTIC BEARING

Antichemical PP Bearing PP has good strength, hardness, and chemical resistance. This material has great transparency and food sanitation and is resistant to repetitive bending. It breaks at a low temperature and has the lowest specific gravity among plastics, so it is light with a good electric performance. Recommended working temperature is 5°C ~ 100°C .

Selection parameters

Parameters	Min	Max
Temperature Range		100°C

1.2.6 PET PLASTIC BEARING

Antiwear PET Bearing PET is good for rolling bearings because of its high hardness, strength, dimensional stability, and low friction factor. It is good for food sanitation with nontoxicity and has great electric insulation.

1.3 Steel Balls

Steel balls are the basic elements of ball bearings. Steel balls have High Quality, High load bearing capacities, High Hardness. Steel balls are used in automotive applications, for semi-precision bearings, and in commercial applications such as casters, locks, and drawer slides.

1.3.1 SUJ 2 BEARING STEEL

Selection parameters

Parameters	Min	Max
Diameter range	1.588 mm	76.2 mm
Grade	5	1000

Industries it caters to

- Automation
- Bearing
- Automobile

Product application

- Bearing
- Ball caster (Ball transfer)
- Ball mill
- Car parts
- Automotive parts

SUJ 2 Bearing Ball is the best product for bearings with high hardness and wear resistance. Evenly treated and high-quality chrome alloy steel to ensure optimal hardness and long service life.

1.4 Stainless Steel Balls

Stainless Steel balls has Excellent resistance for Corrosion, rust, staining & High Tensile Strength even in low temperature. Stainless Steel Balls are used in Valves, Pumps, Locking Mechanism, Food Processing, Medical Equipments.

Industries it caters to

- Medical
- Bearing
- Automation
- Electronics

Product application

- Medical devices
- Slide rails
- Valves & Pumps
- Ball casters (Ball transfers)
- Ball mill
- Automotive parts

1.4 Stainless Steel Balls (continued)

1.4.1 AUSTENITIC STAINLESS BALL

Hardened stainless steel is used when quality conditions, tensile force, etc. cannot be met. It is the most commonly used material due to its excellent corrosion resistance, heat resistance, and mechanical properties. (SUS_3O_4/SUS316L)

Selection parameters

Parameters	Min	Max
Diameter range	0.5 mm	50.8 mm
Grade	10	1000

1.4.2 MARTENSITIC STAINLESS BALL

Designed to provide maximum hardness for corrosion resistant materials.Used in heat treated cured condition and acts similar to tool steel. (SUS420/SUS440)

Selection parameters

Parameters	Min	Max
Diameter range	0.5 mm	76.2 mm
Grade	10	1000

1.5 Ceramic Balls

Ceramic precision balls offer advantages such as being lightweight, lower friction resistance, high temperature resistance, higher rigidity, higher hardness, smoother surface, and higher corrosion resistance. Ceramic balls include materials such as: Silicon Nitride (Si_3N_4) Alumina Oxide (AL_2O_3) Zirconium Oxide (ZrO_2). Ceramics are Non-metallic & Non ferrous Material with High degree of corrosion resistance which allows them to perform excellently in wet and chemically-corrosive environments.

Industries it caters to

- Bearing
- Ball Mills Sector
- Automation
- Thermal
- Semi-conductor Manufacturing

Product application

- Cold machining tools
- Chemical pumps
- Industrial pump parts
- Desulfurization equipment
- Heat exchanger parts

1.5 Ceramic Balls (continued)

1.5.1 ZIRCONIA BALL

Zirconia Ball (ZrO_2) has the highest mechanical strength and high toughness at room temperature. Furthermore, it has a similar thermal expansion rate to metals, making it easy to weld. It is good for bearings with low heat conduction as well as good heat insulation and self-lubrication capabilities.

Selection parameters

Parameters	Min	Max
Diameter range	0.5 mm	50.8 mm
Grade	-	10
Temperature Range	-	800°C

1.5.2 SILICON NITRIDE BALL

Silicon Nitride Ball (Si_3N_4) has the highest wear, chemical resistance, hardness, and thermal conductivity among ceramics.

Selection parameters

Parameters	Min	Max
Diameter range	0.5 mm	50.8 mm
Grade	-	10
Temperature Range	-	800°C

1.5.3 SILICON CARBIDE BALL

High temperature sintering in non-oxidizing environments, the organization that maintains covalent bonds is a dense ceramic. wear, corrosion resistance; and high-temperature strength and hardness, making it a good high-temperature structural material. (SiC)

Selection parameters

Parameters	Min	Max
Diameter range	0.8 mm	25.4 mm
Grade	-	10
Temperature Range	-	1200°C

1.5.4 ALUMINA BALL

Alumina Ball (Al_2O_3) is the cheapest type of ceramic ball, and it features high hardness, heat, wear, chemical resistance, and electric insulation.

Selection parameters

Parameters	Min	Max
Diameter range	0.8 mm	25.4 mm
Grade	-	10
Temperature Range	-	1500°C

1.6 Tungsten Ball

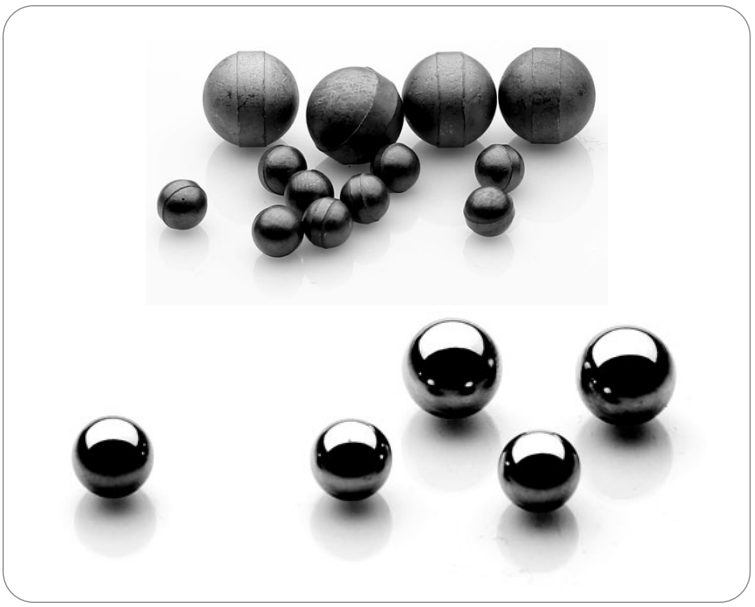
Tungsten balls are used in a variety of applications where extreme hardness and wear resistance is required. Tungsten Carbide has has emerged as a superior alternative to steel in many applications where severe conditions occur, such as high abrasion, corrosion and high temperatures.

Industries it caters to

- Defence
- Medical
- Chemical
- Mould Manufacturing

Product application

- Chemical Equipment
- Medical device
- Ball mill



1.6.1 TUNGSTEN ALLOY BALL

It is mainly used for making high-speed steel and other alloys. It doesn't react with water under room temperature but oxidizes at a high temperature.

Selection parameters

Parameters	Min	Max
Diameter range	2 mm	200 mm

1.6.2 TUNGSTEN CARBIDE BALL

It is called a tungsten carbide ball and marked as WC or TC. A tungsten carbide ball has high hardness and wear resistance. In particular, it can maintain its hardness at a higher temperature than other metals.

Selection parameters

Parameters	Min	Max
Diameter range	2 mm	200 mm

1.7 Plastic Balls

Plastic balls have excellent heat resistance, abrasion resistance and fatigue resistance, and is a material with excellent mechanical properties such as tensile strength and impact resistance as well as excellent rigidity.

Industries it caters to

- Medical
- Agriculture
- Electronics

Product application

- Bearings
- Medical Equipment parts
- Agriculture Equipment parts
- Ball Transfer Units

1.7.1 PEEK CA BALL

PEEK CA is graded PEEK containing carbon fiber. It has more stiffness, mechanical strength, and creep resistance than PEEK while achieving optimal wear resistance. C (C) stands for carbon, and CA30, CA40, and other grades are given depending on content.

Selection parameters

Parameters	Min	Max
Diameter range	1 mm	25.4 mm
Temperature Range	-	250°C

1.7.2 PEEK GF BALL

PEEK GF is graded PEEK containing glass fiber. It has higher stiffness, creep resistance, and far better dimensional stability than PEEK. G (G) stands for glass, and GF30, GF40, and other grades are given depending on content.

Selection parameters

Parameters	Min	Max
Diameter range	1 mm	25.4 mm
Temperature Range	-	250°C

1.7.3 PEEK ESD BALL

PEEK ESD has excellent dimensional stability for easy machining within a very narrow tolerance range. PEEK ESD is an electrostatic discharge plastic, which is increasingly widely used in the electronics industry with its increasingly more rigorous thermal and chemical resistance conditions. ESD stands for Electro Static Discharge, surface resistance values are 106 to 109.

Selection parameters

Parameters	Min	Max
Diameter range	1 mm	25.4 mm
Temperature Range	-	250°C

1.8 BTU - Bolt Type

The Bolt type ball transfer is a Bolt like structure that supports one main ball with a number of small balls as its base, allowing the object to move 360 degrees in all directions. In addition, the ball transfer can accurately and stably transfer items through very flexible sliding, which greatly reduces unnecessary details. This type of Ball transfer are suitable for high loads and are easy to install.

Industries it caters to

- Electronic
- Mechanical
- Chemical
- Medical
- Aircraft

Product application

- Material Handling Equipments
- Hydraulic presses
- Lifting Platform & Equipments
- Air cargo loader
- Ball Transfer Tables

1.8.1 BTU - BS BOLT TYPE

Convenient assembly and design bolts suitable for high loads are detachable. All components such as balls, bodies, and caps can be produced with various materials depending on the intended use.

Selection parameters

Parameters	Min	Max
Ball Size	1/4"	2"
Housing Diameter	12 mm	60 mm
Housing Height	7.5 mm	50 mm
Thread Size	M6	M12
Stud Length	12 mm	35 mm
Stationary Load	20 Kg	300 Kg
Working Load	10 Kg	150 Kg

1.8.2 BTU BP BOLT TYPE

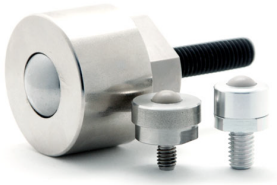
All -in-one bolt, suitable for use in a clean environment.
All components such as balls, bodies, and caps can be produced with various materials depending on the intended use

Selection parameters

Parameters	Min	Max
Ball Size	1/4"	1"
Housing Diameter	12 mm	38.6 mm
Housing Height	7.5 mm	41 mm
Thread Size	M6	M8
Stud Length	12 mm	25 mm
Stationary Load	0.4 Kg	5 Kg
Working Load	0.2 Kg	2.5 Kg

1.8 BTU - Bolt Type (continued)

1.8.3 BTU - BSP BOLT TYPE



Convenient assembly and design suitable for high loads.
All components, such as balls, bodies, and caps, can be produced in a variety of materials depending on the intended use.

Selection parameters

Parameters	Min	Max
Ball Size	1/4"	1"
Housing Diameter	12 mm	42 mm
Housing Height	6 mm	24.3 mm
Thread Size	M6	M10
Stud Length	7 mm	30 mm
Stationary Load	7 Kg	260 Kg
Working Load	3.5 Kg	130 Kg

1.8.4 BTU - BSB BOLT TYPE

Hexagonal bolt type, easy installation bolt type, designed for high load All components such as balls, bodies, and caps can be produced with various materials depending on the intended use.

Selection parameters

Parameters	Min	Max
Ball Size	13/32"	1"
Housing Diameter	19 mm	35 mm
Housing Height	11 mm	31.5 mm
Thread Size	M10	M20
Stud Length	12.5 mm	25 mm
Stationary Load	60 Kg	200 Kg
Working Load	30 Kg	100 Kg

1.9 BTU - Cylindrical/Insert Type

The Cylinder/Insert type ball transfer is a structure that supports one main ball with a number of small balls as its base, allowing the object to move 360 degrees in all directions. In addition, the ball transfer can accurately and stably transfer items through very flexible sliding, which greatly reduces unnecessary details. This type of Ball transfer are suitable for high loads and Vibration environment.

Industries it caters to

- Packaging
- Material Handling
- Aircraft

Product application

- Air cargo loader
- Loading Equipments
- Steel Pipe transportation
- Constant Conveyors

1.9 BTU - Cylindrical/Insert Type (continued)

1.9.1 BTU - BS CYLINDER TYPE

Insertion type, product suitable for high load and vibration environment All components such as balls, bodies, and caps can be produced with various materials depending on the intended use.

Selection parameters

Parameters	Min	Max
Ball Size	1"	5"
Housing Diameter	70 mm	230 mm
Overall Height	40 mm	175 mm
Stationary Load	260 Kg	1500 Kg
Working Load	130 Kg	750 Kg

1.9.2 BTU - BS INSERT TYPE

Inserted type, the product most suitable for the environment for high loads and vibrations The bolt type product with the bolt part removed.

Selection parameters

Parameters	Min	Max
Ball Size	1/4"	1"
Housing Diameter	12 mm	52 mm
Overall Height	9 mm	45 mm
Stationary Load	20 Kg	260 Kg
Working Load	10 Kg	130 Kg

1.9.3 BTU - BSI TYPE

Insertion type, the most suitable product for environments with high loads and vibrations The most common insertion type product All components, such as balls, bodies, and caps, can be produced in a variety of materials depending on the intended use.

Selection parameters

Parameters	Min	Max
Ball Size	5/32"	1-3/4"
Outer Diameter	9 mm	74.6 mm
Overall Height	6 mm	53.5 mm
Housing Diameter	7.5 mm	62 mm
Housing Height	4 mm	35 mm
Stationary Load	10 Kg	600 Kg
Working Load	7.5 Kg	300 Kg

1.10 BTU - Flange Type

The Flange type ball transfer is a structure that supports one main ball with a number of small balls as its base, allowing the object to move 360 degrees in all directions. In addition, the ball transfer can accurately and stably transfer items through very flexible sliding, which greatly reduces unnecessary details. This type of Ball transfer are suitable for high loads and is light weight and Corrosion resistant.

Industries it caters to

- Packaging
- Material Handling
- Aircraft
- Food processing

Product application

- Air Cargo Application
- Conveyors & Assembly lines
- Tool Transfer Stations
- Transporting Container & Platforms

1.10 Flange Type (continued)

1.10.1 BTU - BS FLANGE TYPE

Flanged type for easy installation Design suitable for high loads All components such as balls, bodies, and caps can be produced in various materials depending on the intended use.

Selection parameters

Parameters	Min	Max
Ball Size	3/8"	2"
Housing Diameter	23 mm	95 mm
Housing Height	12.6 mm	56 mm
Flange Housing Height	45 mm	140 mm
Flange Thickness	1.8 mm	10 mm
PCD	35 mm	120mm
Overall Height	17 mm	80 mm
Stationary Load	70 Kg	500 Kg
Working Load	35 Kg	250 Kg

1.10.2 BTU - BA FLANGE TYPE

BA Flange type ball transfer generally made of Aluminium and Stainless Steel.These types of ball transfer are designed to be light in weight and are corrosion resistant.

Selection parameters

Parameters	Min	Max
Ball Size	3/4"	1-1/4"
Housing Diameter	40 mm	60 mm
Housing Height	14.5 mm	28 mm
Flange Housing Height	67 mm	95 mm
Flange Thickness	3 mm	6 mm
PCD	55 mm	80 mm
Overall Height	24 mm	47 mm
Stationary Load	50 Kg	400 Kg
Working Load	25 Kg	200 Kg

1.10.3 BTU - BAD TYPE

BAD Flange type ball transfer generally made of Aluminium and Stainless Steel.These types of ball transfer are designed to be light in weight and are corrosion resistant.

Selection parameters

Parameters	Min	Max
Ball Size	3/4"	1"
Housing Diameter	33 mm	42 mm
Housing Height	16.5 mm	18.5 mm
Flange Housing Height	60 mm	70 mm
Flange Thickness	3.5 mm	5.5 mm
PCD	46 mm	56 mm
Overall Height	25.5 mm	31 mm
Stationary Load	150 Kg	200 Kg
Working Load	75 Kg	100 Kg

1.10.4 BTU - BSU TYPE

Insert installation type, suitable for securing space Insert/flange type for easy installation.

Selection parameters

Parameters	Min	Max
Ball Size	1/2"	1-3/16"
Housing Diameter	20.2 mm	45 mm
Housing Height	8.2 mm	18.7 mm
Flange Housing Height	37 mm	72 mm
Flange Thickness	3.1 mm	6 mm
PCD	27 mm	57.5 mm
Overall Height	16.7 mm	36.7 mm
Stationary Load	70 Kg	350 Kg
Working Load	35 Kg	180 Kg

1.10.5 BTU - BST TYPE

Downward-only product Design suitable for high-load environments All components, such as balls, bodies, and caps, can be produced in various materials depending on the operating temperature.

Selection parameters

Parameters	Min	Max
Ball Size	3/4"	2"
Housing Diameter	40 mm	95 mm
Housing Height	16 mm	56 mm
Flange Housing Height	65 mm	140 mm
Flange Thickness	5 mm	10 mm
PCD	55 mm	120mm
Overall Height	26 mm	80 mm
Stationary Load	150 Kg	500 Kg
Working Load	75 Kg	250 Kg

1.11 Plastic Type

The Plastic type ball transfer is a structure that supports one main ball with a number of small balls as its base, allowing the object to move 360 degrees in all directions. In addition, the ball transfer can accurately and stably transfer items through very flexible sliding, which greatly reduces unnecessary details. This type of Ball transfer are suitable for low loads and is light weight.

Industries it caters to

- Packaging
- Material Handling
- Aircraft
- Food processing
- Electronics

Product application

- Conveyors & Assembly lines
- Air Cargo Application
- Tool Transfer Stations
- Automative Racks
- Tool Transfer Stations

1.11.1 BTU - BPD-F/BPD-I TYPE

Injection plastic body product, lightweight and inexpensive, suitable for use in a clean environment.

Selection parameters

Parameters	Min	Max
Ball Size	3/4"	3/4"
Housing Diameter	38 mm	48 mm
Housing Height	14 mm	19 mm
Flange Housing Height	72 mm	86 mm
Flange Thickness	5 mm	5 mm
PCD	60 mm	68 mm
Overall Height	25 mm	32 mm
Stationary Load	50 Kg	70 Kg
Working Load	25 Kg	35 Kg

1.11.2 BTU - BPI TYPE

Made of plastic, light and low load Suitable for use in clean environments. All components, such as balls, bodies, and caps, can be produced with various materials depending on the intended use.

Selection parameters

Parameters	Min	Max
Ball Size	5/16 "	3/4 "
Housing Diameter	13 mm	30 mm
Flange Diameter	15 mm	39 mm
Housing Height	6.9 mm	16.5 mm
Overall Height	10.8 mm	26.3 mm
Stationary Load	0.5 Kg	3 Kg
Working Load	0.3 Kg	1.5 Kg

1.12 BTU - Press Machined

The Press Machined type ball transfer is a structure that supports one main ball with a number of small balls as its base, allowing the object to move 360 degrees in all directions. In addition, the ball transfer can accurately and stably transfer items through very flexible sliding, which greatly reduces unnecessary details. These products have excellent cost-effectiveness due to low/low-end press processing type.

Industries it caters to

- Packaging
- Material Handling
- Aircraft
- Food processing

Product application

- Hydraulic presses
- Lifting Platform & Equipments
- Air cargo loader
- Ball Transfer Tables

1.12.1 BTU - BC TYPE

The tray is produced in two ways, press and cut. The ball and body can also be produced in stainless steel and plastic.

Selection parameters

Parameters	Min	Max
Ball Size	5/8 "	1-1/2 "
Housing Diameter	28 mm	62.5 mm
Housing Height	15 mm	34 mm
Flange Housing Height	48 mm	86 mm
Flange Thickness	1 mm	2 mm
PCD	40 mm	70 mm
Overall Height	20 mm	45 mm
Stationary Load	26 Kg	120 Kg
Working Load	13 Kg	100 Kg

1.12.2 BTU - BU TYPE

Low -load / entry-level press-working type The most common product, low-cost imported from China.

Selection parameters

Parameters	Min	Max
Ball Size	5/8 "	1"
Outer Diameter	45 mm	56.3 mm
PCD	31 mm	45 mm
Flange Thickness	2.6 mm	4.1 mm
Overall Height	19 mm	30 mm
Stationary Load	7 Kg	20 Kg
Working Load	3.5 Kg	10 Kg