

SIRKEN UNIVERSAL



Precautions when using universal balls

1. Before use, make sure to apply lubricating oil.

2. For upward-facing universal balls, the ideal ratio for heavy-duty workpieces is 2/3" to the weight of the workpiece, whereas for the lighter universal ball in the punch, a ratio of 1/2" is preferable. For downward-facing universal balls, a ratio of 1/2" is recommended.

3. Regarding the contact surface with the universal ball, the surface condition is crucial due to the friction coefficient and starting resistance.

(a) A smooth iron plate with a hardness of HRC62° is optimal.

(b) Different materials exhibit varying starting impedance values, affecting the load-bearing capacity.

(c) When dealing with wood, distributing the load with multiple contact points is advisable. Additionally, for easier transportation of goods, installing an iron plate at the bottom is recommended.

4. The transmission of object weight should be distinguished into three aspects:

1. Precise horizontal alignment of the ball bearings with at least three (preferably four) balls.

2. Consideration of surface hardness.

3. The circumstances under which the object is being transmitted are all factors that need to be taken into account.

5. Arrangement methods:

(a) Horizontal arrangement method.

(b) Diamond arrangement method, which helps prevent the objects from leaning to one side and causing uneven distribution.

Friction coefficient: When the speed is 1 meter per second, the friction is approximately 0.005y. According to the universal ball, the temperature resistance might be around 60°C. It's evident that as the temperature increases, the load capacity decreases.

6. Moderate cleaning can be performed using cleaning agents and WD40. Apply lubricating oil before use.

7. When dealing with uneven surfaces on workpieces, utilizing universal balls with attached springs can help absorb varying loads.

8. Customized silent universal balls can be manufactured for various applications.

Applications and Considerations

Examples of Applications:

1. Static and dynamic transmission systems, such as screening and packaging systems, loaders, containers, positioning of conveyors, etc.

2. For sheet metal machinery like shearing machines, rolling mills, and bed dismantlers, when using universal balls to load transport platforms, metal sheets can be easily and accurately pushed or pulled in through rolling friction (non-sliding friction). For instance, during the large hydraulic pressing of automotive sheet metal, universal balls fitted with springs on the workbench allow the molds to move in and out through rolling friction. Once the molds are positioned and clamped, the universal balls are rolled into the workbench, securing the molds in place. In the case of large workpieces and metal machinery requiring center corrections, such as drilling machines, punch presses, turning machines, and milling machines, universal balls can efficiently transport bulky molds to the desired working position for operators. They can be employed across various industries, particularly in the aviation sector, significantly saving time in handling goods.

Quantity and Arrangement of Universal Balls:

The quantity and installation of universal balls depend on the load capacity, size, and load surface conditions. Upward-facing universal balls should be 2/3" while downward-facing ones should be 1/2" in ratio to the weight of the workpiece in relation to the load capacity of the universal ball.

Load Capacity:

Consideration should be given to the maximum load weight and the height tolerance of the minimum load surface. For a hard load surface and assuming only three universal balls are bearing the load, the required load force per ball is the load weight divided by 3. When using springs in the universal balls or having an elastic load surface, careful attention to safety factors is necessary. Increasing the number of universal balls for support is essential in such cases. In this scenario, the load weight is divided by the number of universal balls and the load force required for each ball.

Spacing:

To ensure consistent load surface contact on the universal balls without slippage, the distance between the universal balls should be the minimum edge of the load surface divided by 2.5.

Friction:

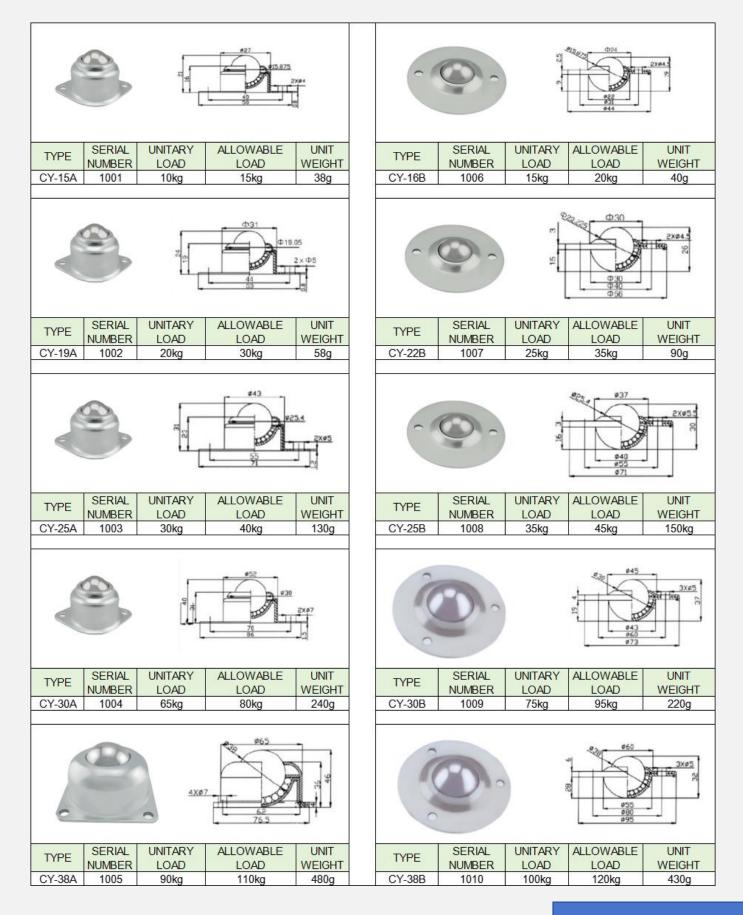
At a velocity of 1 meter per second, the friction is approximately 0.005y. Depending on the type and condition of the universal ball application, friction can vary significantly.

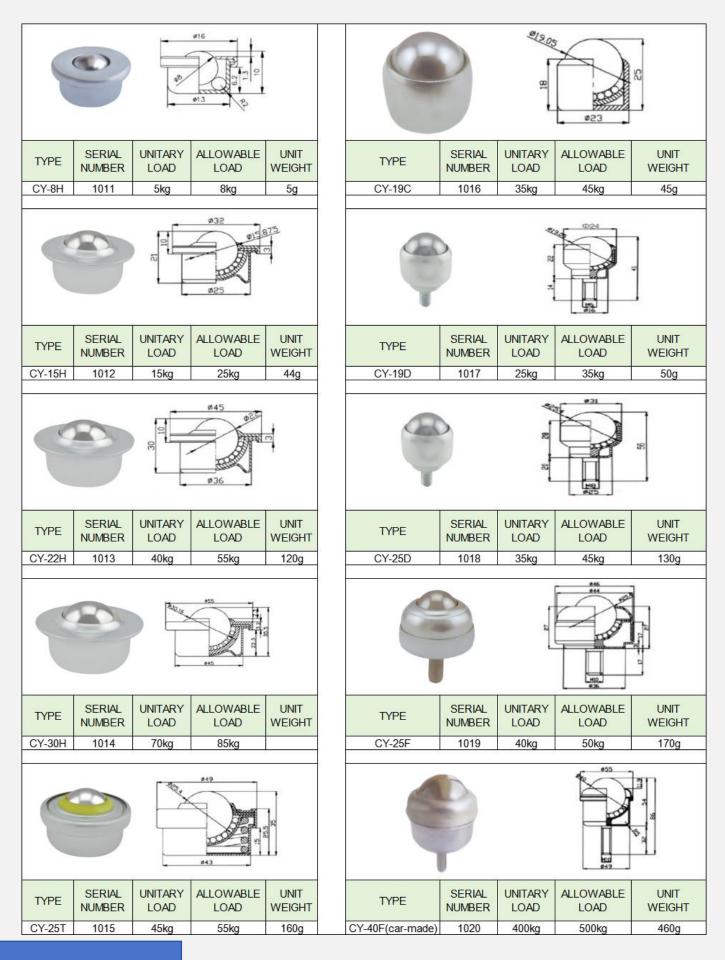
Temperature Resistance:

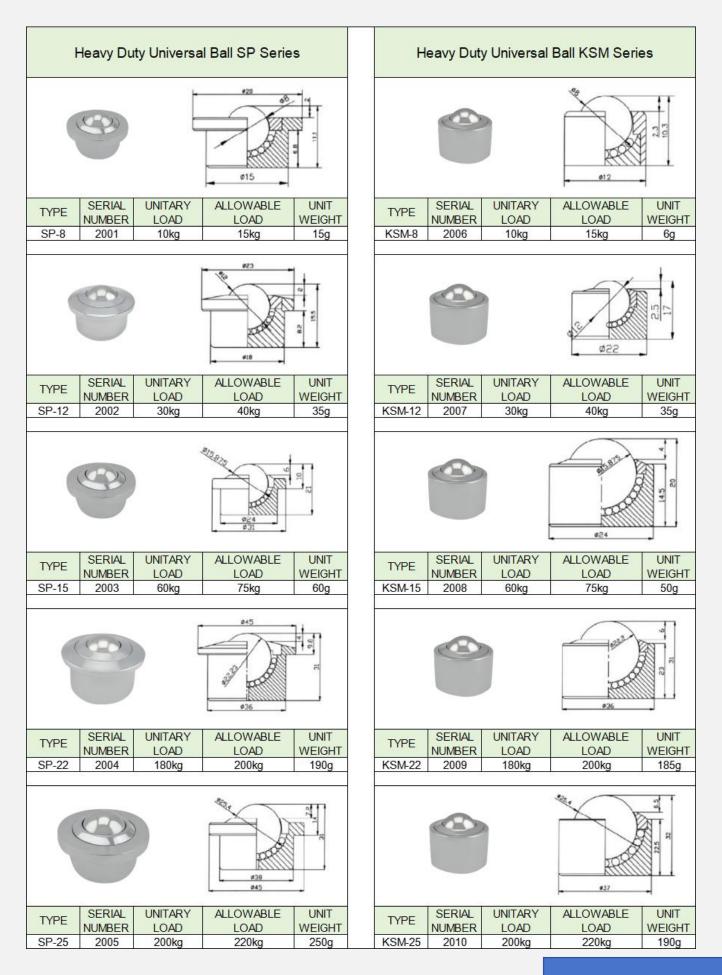
Universal balls with steel ball bearings and felt sealing rings can withstand temperatures of up to 1000°C, while those with plastic ball bearings and special sealing rings have a temperature resistance of up to 60°C. Hence, higher temperatures result in a relatively reduced load capacity.

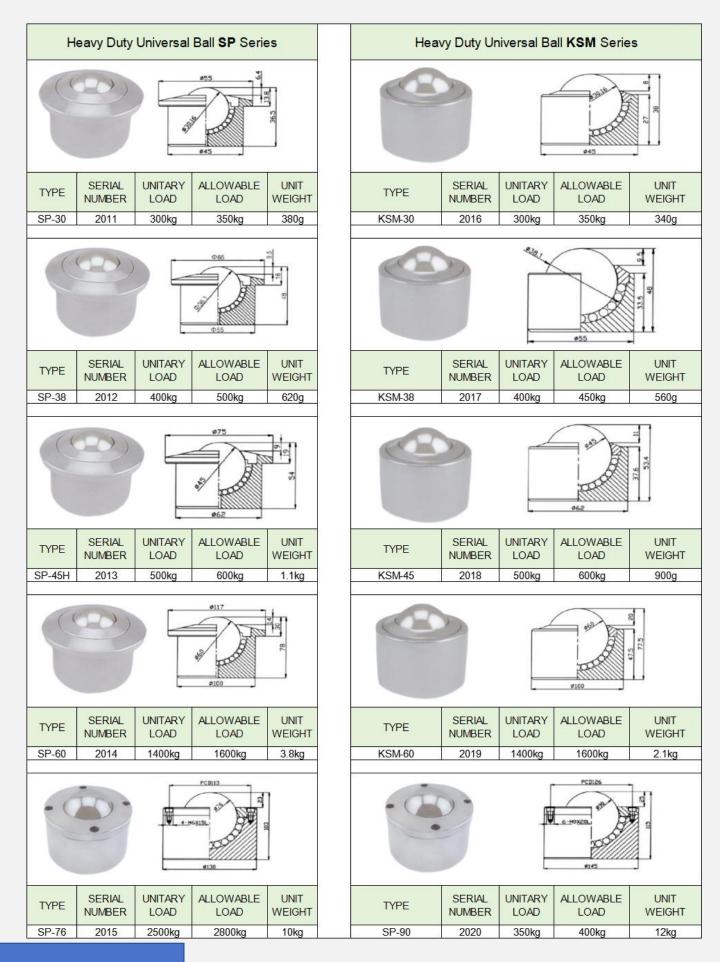
Stamping universal ball CY series can be made into steel balls, nylon

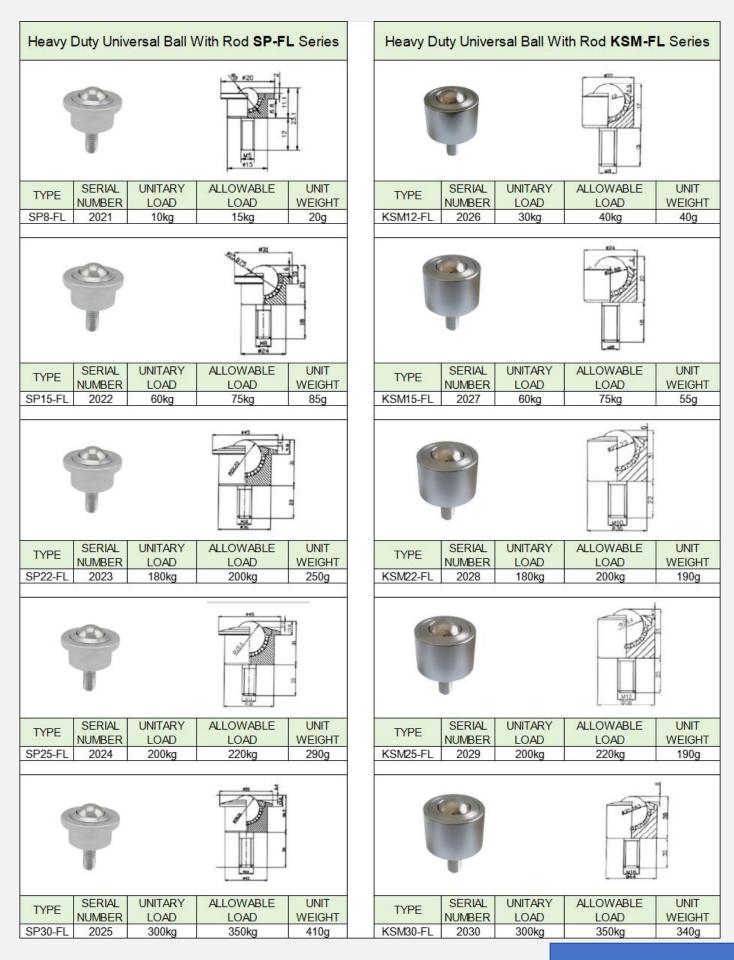
balls, stainless steel balls/shell materials, steel, stainless steel

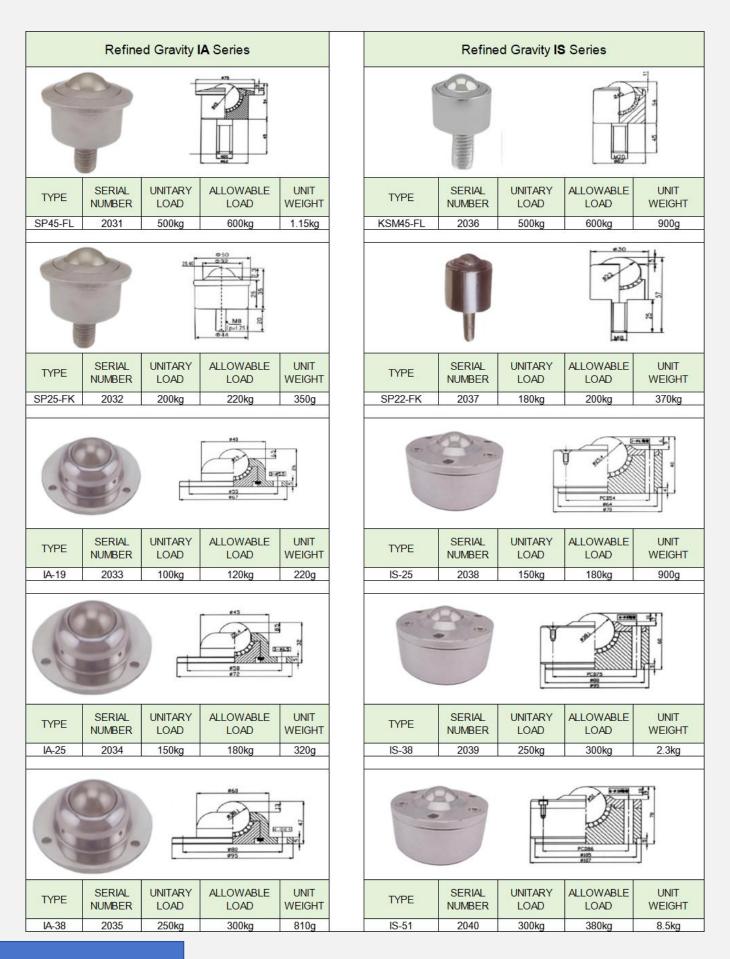


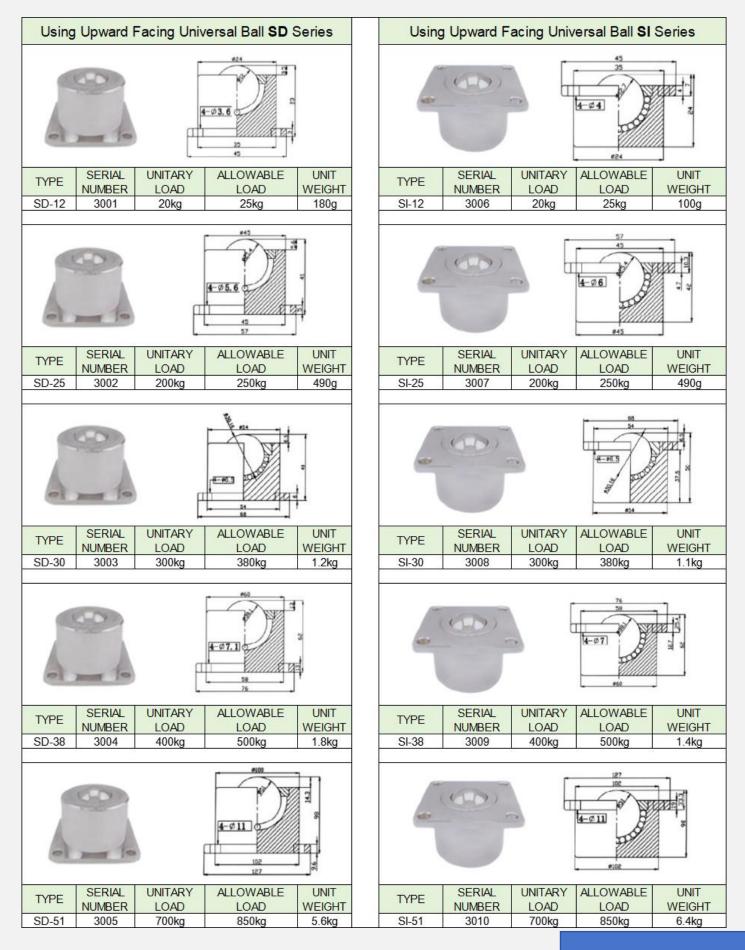


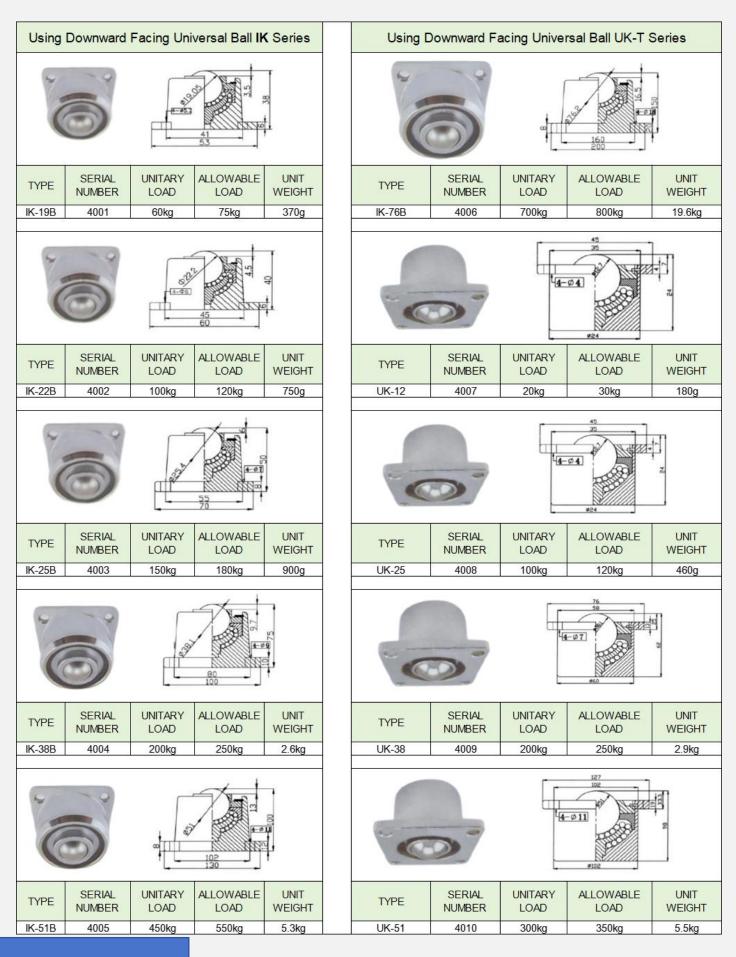


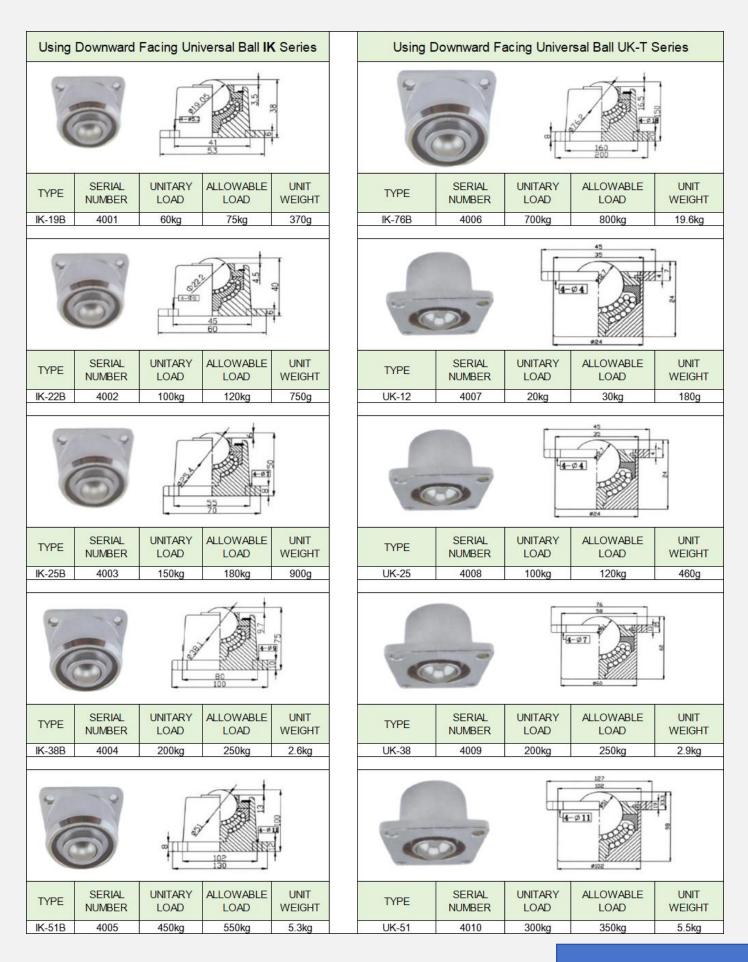


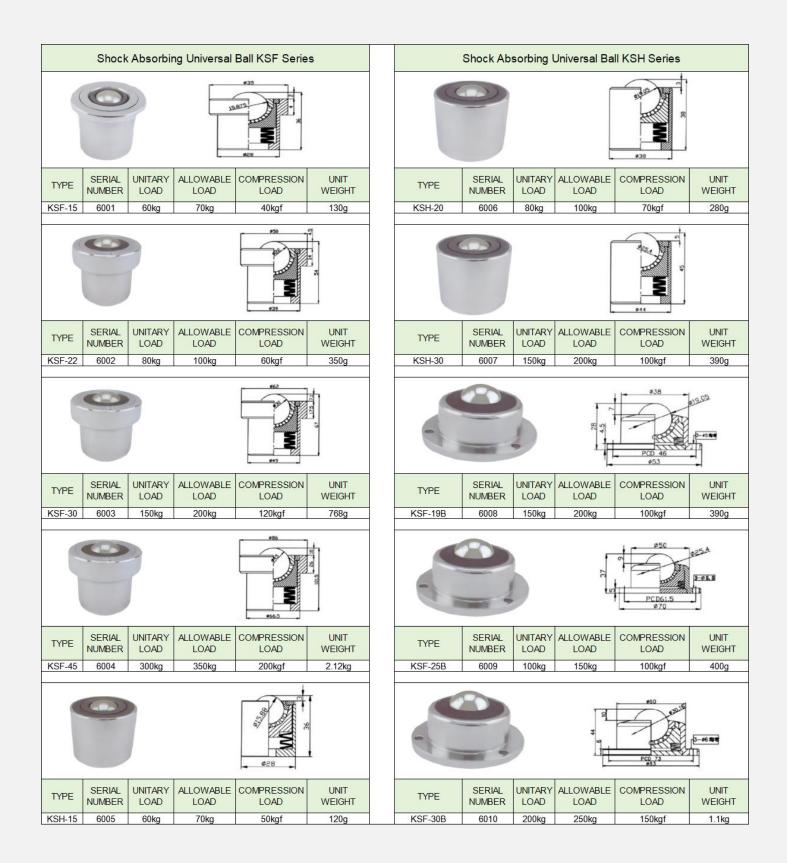


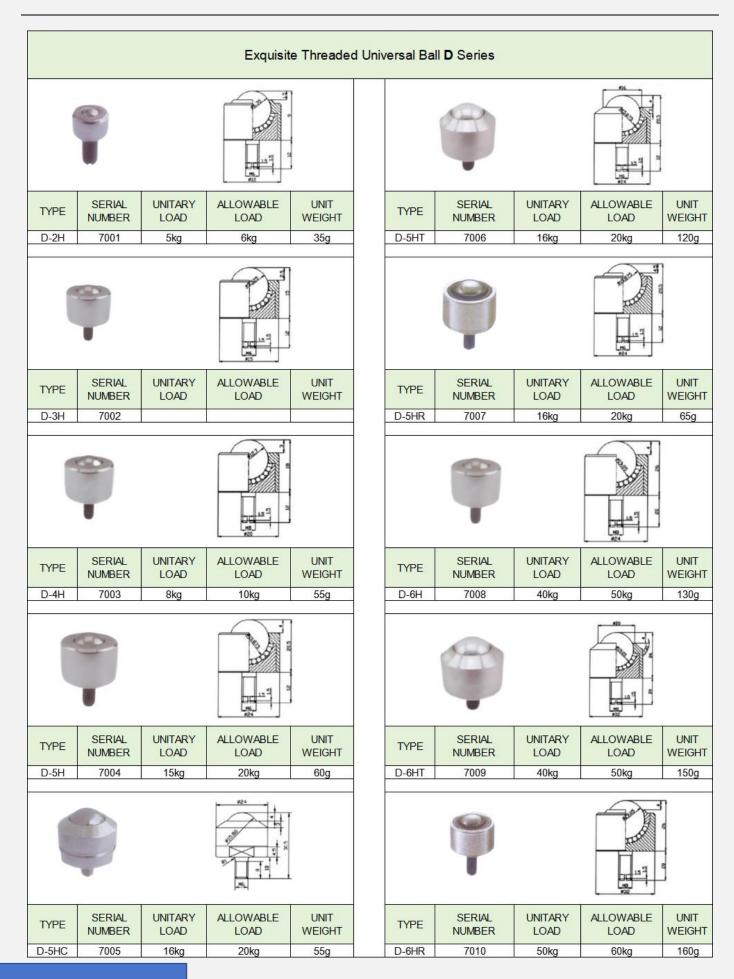


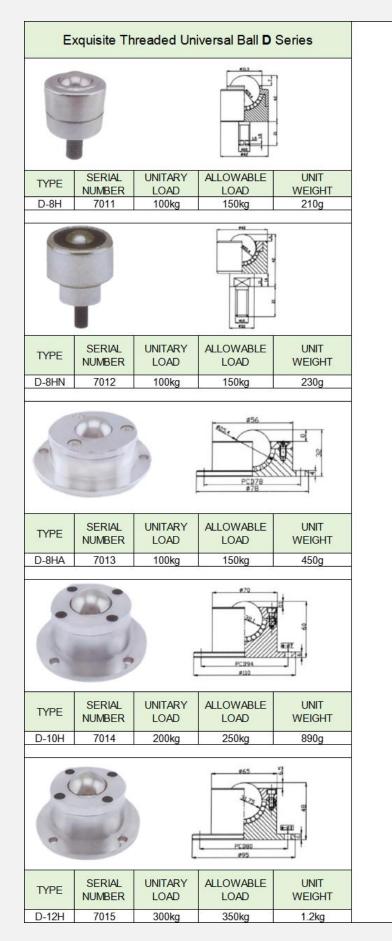




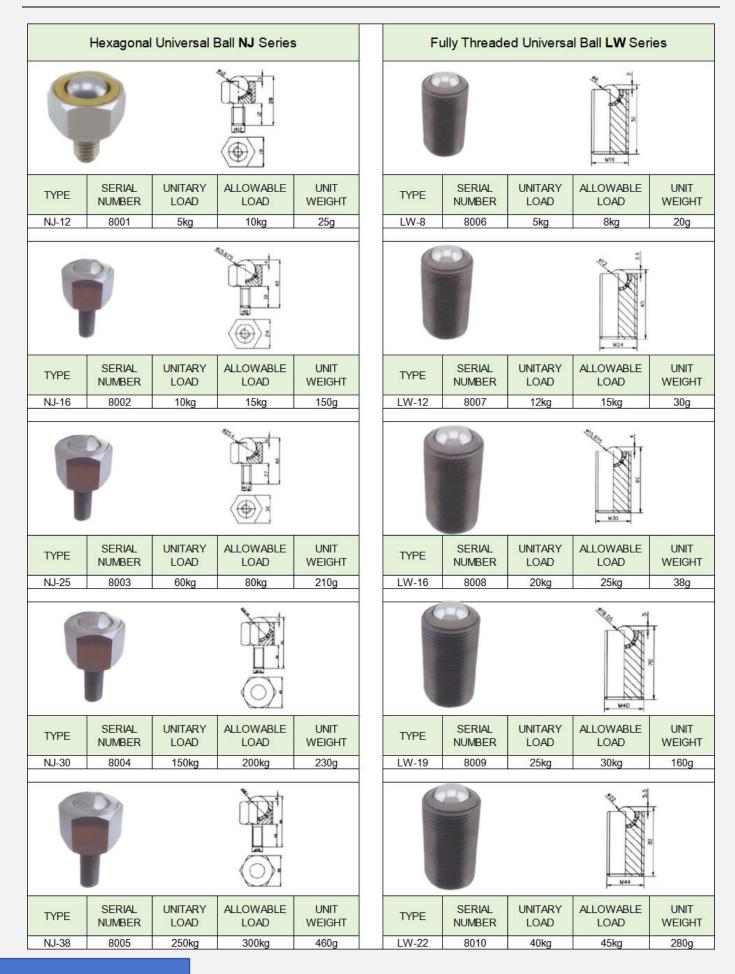




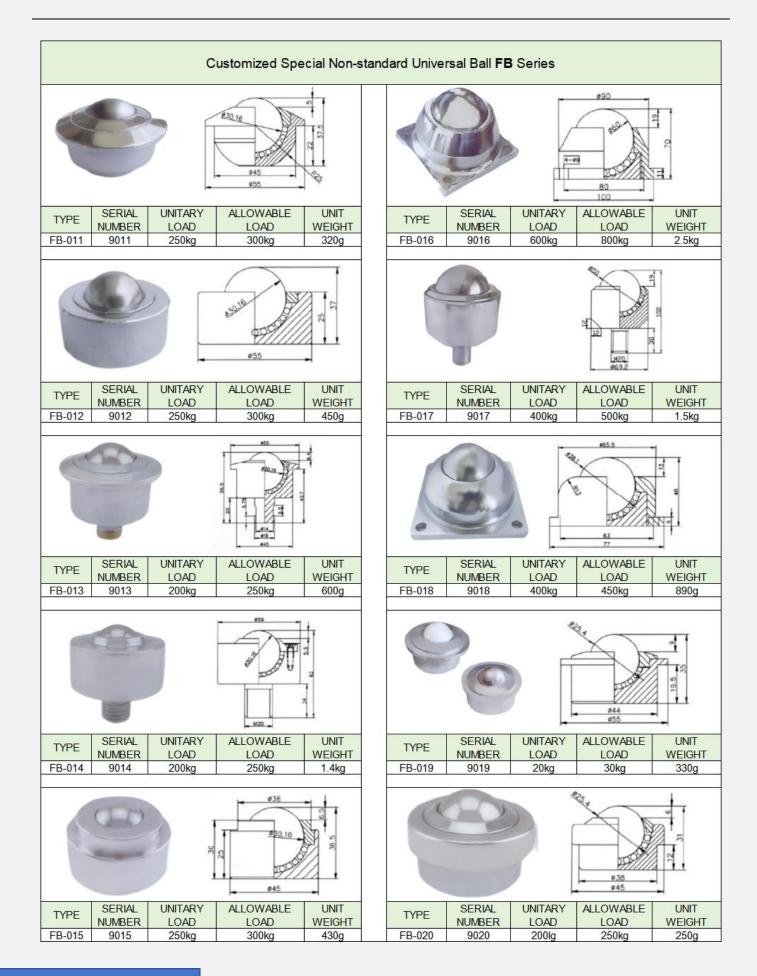












The product will continuously update and go live. Please follow SIRKEN UNIVERSAL BALL TECH for further updates.

