Application List for SKF Linear Ball Bearings
This brochure introduces you to various possible applications for SKF linear ball bearings.

Linear Ball Bearings can be used in the segment Factory Automation with applications like postal sorting machines or pick and place machines as well as in the Medical sector with instruments like long term injections.
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Factory automation

Material handling
Postal sorting machines:

A stacker assembly with paddles collects the sorted mail by zip code into series of bins. The linear ball bearing assembly supports the linear motion of the paddle as the sorted mail enters each bin.

Engineered Solution based on:
The mechatronics platform
Complete paddle assembly is delivered by SKF

Customer Benefit:
- Good running performance by handling of misalignment
- Double lip seals protect from paper dust
- Complete unit delivery by SKF guarantees good interaction of matching components

Cutting machines:

Up to 3 axis move the cutting heads in cutting machines for paper or textiles. The linear movement of the cutting heads is guided by linear bearings.

Engineered Solution based on:
The mechatronics platform
Different linear ball bearings and shafts

Customer Benefit:
- Pre-lubricated and sealed to minimize maintenance time
- Double lip seals protect the guiding from dust
- Very precise repeatability for precise cutting

Pneumatic handling devices

This shaft guided solution is found in nearly every industry for lifting, pushing, transporting and in pick and place units. Special lubrication, sealing options and corrosion resistant versions offer a wide range of different applications.

Engineered Solution based on:
The mechatronics platform
Different linear ball bearings and shafts

Customer Benefit:
- Robust and reliable
- Lifetime grease options
- Nearly maintenance free
Miniature slides:

In the electronic production industry, this slides are used in many automation processes like handling devices, pick & place units, testing and handling applications. The moving shafts are guided by linear ball bearings.

Engineered Solution based on:
The mechatronics platform
LBBR 8-2LS and shafts are supplied

Customer Benefit:
- High speed
- Minimum space
- Easy integration

Pick and place machines:

Machines performing pick and place tasks, robots in laboratories or automated planting machines, can be equipped with linear ball bearings.

Engineered Solution based on:
The mechatronics platform
LBBR 8-2LS and shafts are supplied

Customer Benefit:
- High precision in repeatability
- Usage in clean environment is possible
- High speed

Automation machinery:

Automation processes are often based on linear ball bearing slides. These enable the insertion, exact positioning and removal of work pieces.

Engineered Solution based on:
The mechatronics platform
Linear Ball Bearings and Shafts by SKF

Customer Benefit:
- Easy to install and maintain
- Robust and flexible to use
- Good sealing performance
Safety doors:

At CNC machines safety doors protect the worker from accidents. The doors slide to the side guided by linear ball bearings.

Engineered Solution based on:
The mechatronics platform
Shafts and LBC from SKF

Customer Benefit:
• Corrosion resistance
• High number of repetition without loss in quality
2 Medical
Long term injection:

Long term injection for the regular and dosed application of medicaments. Linear bearings guide the support of the injection.

**Engineered Solution based on:**
The mechatronics platform
Complete system delivered by SKF

**Customer Benefit:**
- High load carrying capacity
- Robust and reliable
- Smooth movement for less agitation

Mammography:

The mammography digitally images breasts for the detection of breast cancer. The screening plates are moved by linear ball bearings to guarantee the detailed screening of the breast part that should be examined.

**Engineered Solution based on:**
The mechatronics platform
LBBR 25, LBCF 25 with shafts delivered from SKF

**Customer Benefit:**
- Usage of special grease enables medical use
- Easy and smooth movement for better positioning of the screening plates
- No stick-slip, therefore infinitely adjustable

Ambulance stretcher:

Stretcher for patients in ambulances can be mounted on linear ball bearings. They guide the horizontal move of the stretcher out of the ambulance.

**Engineered Solution based on:**
The mechatronics platform
LBBR 25-2LS support the movement

**Customer Benefit:**
- High load carrying capacity
- Robust and reliable
- Smooth movement for less agitation
Edging machine:

For glass edging machines linear ball bearings can be used for the linear move of the grinding tool or to guide the measurement equipment of the machine.

**Engineered Solution based on:**
The mechatronics platform
Applications can be equipped with LBBR 3, 5 and 6

**Customer Benefit:**
- Double lip seal protects bearing from splinters
- Corrosion resistance
- Very precise positioning for good edging results

Ceramic furnace for dentures:

The furnace has a working surface including a firing area and a storage area. The robot arm for moving the ceramic material into and out of the firing area is guided by linear ball bearings.

**Engineered Solution based on:**
The mechatronics platform
SKF provides shafts and LBBR 10-2LS

**Customer Benefit:**
- Usage of special grease enables medical use
- Long service interval because of prelubrication and sealing

Radiography:

In radiography stations the tube stand, the table and the wall potter bucky can be moved linear. With precise positioning a detailed X-ray can be achieved.

**Engineered Solution based on:**
The mechatronics platform
Bearings with housings and shafts from SKF

**Customer Benefit:**
- Usage of special grease enables medical use
- Easy and smooth movement for better positioning of the screening plates
Slit lamp:

The slit lamp is a microscope with a light attached for eye examination. The sideway movement of the instrument is supported by linear ball bearings.

**Engineered Solution based on:**
The mechatronics platform
Shafts and LBCR with diameter 16 and 30 mm

**Customer Benefit:**
- Smooth movement
- Infinitely adjustable without stick-slip
- Pre-lubricated and sealed for long lifetime

Ocular response analyzer:

The Ocular response analyzer utilizes a rapid air impulse, and an advanced electro-optical system to record two applanation pressure measurements of the cornea. An individually customized 3-axes linear ball bearing table with step motors permits the exact internal adjustment of the application.

**Engineered Solution based on:**
The Bearings and mechatronics platforms

**Customer Benefit:**
- Weight and space optimized solution
- Custom solution based on customers needs, including his cost expectations
3 Machine Tool
**Tube bending machine:**

Linear ball bearings and shaft form part of the tube carriage which feeds tube through to the bending anvils.

**Engineered Solution based on:**
The mechatronics platform
LBC series in housings and shafts from SKF

**Customer Benefit:**
- Corrosion resistance
- Single source for linear ball bearing and shafts
- No stick-slip effect therefore infinitely adjustable

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**Milling machines:**

A milling machine is used for the complex shaping of metal parts. The cutting tool moves vertical while the work-piece moves horizontal to accomplish the cutting action.

**Engineered Solution based on:**
The mechatronics platform
Various LBC in matching sizes

**Customer Benefit:**
- Infinitely adjustable without stick-slip effect
- High stiffness
- Double lip seals protect bearing from splinters

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**Miter saw:**

A power tool that is used to make a quick, accurate crosscut in a work-piece. The cutting head of the saw is guided by two linear ball bearings mounted on a chrome plate hollow shaft.

**Engineered Solution based on:**
The mechatronics platform
Supplied assembly with shafts, sleeves and bearings

**Customer Benefit:**
- Long service intervals because of good sealing from wood dust
- Pre-lubrication provides low maintenance
- High stiffness of the bearings leads to high accuracy of the saw
Edge-bander:
Woodworking machine which glues edge band to the work-pieces. The linear bearings guide the movement of the milling, grinding and sanding heads.

Engineered Solution based on:
The mechatronics platform
Double lip sealed LBBR 12, 16 and 20 from SKF

Customer Benefit:
- Long service intervals because of good sealing from wood dust
- Pre-lubrication provides low maintenance
- Smaller tolerances than competitive products
4 Railway | Cars | Trucks
Platform screen doors:
The door systems contain linear ball bearings, which guide the parallel move of the door to the side.

**Engineered Solution based on:**
The mechatronics platform
Shafts and various linear ball bearings delivered

**Customer Benefit:**
- Low maintenance and long service intervals
- Good running performance enables easy movement
- Sealed from dust and dirt by double lip seals

Crash-active car headrest:
In case of a crash the linear ball bearings support a horizontal movement of the headrest to the front to fix the passenger’s head between airbag and headrest.

**Engineered Solution based on:**
The mechatronics platform
SKF solution provides specially developed bearings

**Customer Benefit:**
- Pre-lubrication and double lip seals guarantee long lifetime without maintenance
- Smooth an stick-slip free movement ensures fast reaction of the system
5 Food and Beverage
Full automatic coffee machine:
The coffee exit tube can be moved manually to fit all sizes of cups. Linear bearings support the vertical movement of the tube.

**Engineered Solution based on:**
The mechatronics platform
SKF delivers LBBR 5 and 6 in stainless steel

**Customer Benefit:**
- No stick-slip, therefore infinitely adjustable
- Corrosion resistant type available
- Long service intervals because of pre-lubrication

Bread slicing machine:
Bread is clamped between two transportation belts and pushed through the slicer. Linear ball bearings are used to guide the adjustment of the belt.

**Engineered Solution based on:**
The mechatronics platform
Shaft and linear ball bearing from SKF

**Customer Benefit:**
- Special grease enables usage with food
- Double lip seal keeps lubrication inside and dirt outside

Slide blower:
Transportation of dry powered products, e.g. sugar, around manufacturing plants. The linear movement is supported by linear ball bearings.

**Engineered Solution based on:**
The mechatronics platform
Stainless steel LBCR 30 to 60-2LS from SKF

**Customer Benefit:**
- Special grease enables usage with food
- High load carrying capacity
- Re-lubrication is possible through grease nipples
Food slicer:
Linear ball bearings guide the parallel movement of the food to the slicing disc.

Engineered Solution based on:
The mechatronics platform
Double lip sealed LBB 12 and shaft from SKF

Customer Benefit:
• Smooth movement with very low friction
• High number of repetition without loss in quality
• Pre-lubricated and double lip sealed for long lifetime

Labelling machine:
Labels are fixed on products at different heights. The precise position of the labeler can be adjusted with linear ball bearings.

Engineered Solution based on:
The mechatronics platform
Complete system can be adjusted for the application

Customer Benefit:
• Infinitely adjustable for different labeling heights
• Bearings are pre-lubricated and sealed for very long lifetime

Filling machine:
The fillers move up and down to fill bottles that slide along. The vertical move is supported by linear ball bearings.

Engineered Solution based on:
The mechatronics platform
LBC 8 with double lip seals guide the movement

Customer Benefit:
• Special grease enables usage with food
• Pre-lubrication and double lip seals provide long lifetime
• High number of repetition without loss in quality
6 Other
Sports equipment:
Multifunctional training equipment for fitness centers and rehabilitation. Linear bearings guide the linear movement of the dumb-bells or weights and smoothen the movement.

**Engineered Solution based on:**
The mechatronics platform
LBBR 30-2LS have been defined for this product

**Customer Benefit:**
- Pre-lubricated for smooth movement
- Corrosion resistance
- Low noise

Printing machines:
The printing head moves linear from side to side, guided by linear ball bearings. A precise positioning of the head guarantees best printing results.

**Engineered Solution based on:**
The mechatronics platform
LBB in different sizes for various printing machines

**Customer Benefit:**
- High speed for fast printing
- No loss of lubrication because of double lip seals
- Precise positioning for perfect printing

Scanner:
The scan module moves several times linear over the object to be scanned. It can be mounted on linear ball bearings with housings.

**Engineered Solution based on:**
The mechatronics platform
LBB 5 supports the scanning movement

**Customer Benefit:**
- Many repeats without loss in quality
- Smooth movement with high speed
Sewing and stitching machine:
The up and down movement of the needle or the horizontal movement of the stitching table can be equipped with linear ball bearings.

Engineered Solution based on:
The mechatronics platform
3 LBBR 12-2LS move the stitching table

Customer Benefit:
• No stick-slip provides full adjustability of the table
• Fast movement of the needle possible
• Sealed against textile dust

Textile machines:
Linear ball bearings can be used in tufting or knitting machines. The bearings guide the linear movements of the knitting or tufting heads.

Engineered Solution based on:
The mechatronics platform
LUJR 16 with special sealing for low friction

Customer Benefit:
• Very low friction force
• Double lip seals protect from textile dust
• High operation speed

Engraving machines:
Different materials can be added with graved motives. Linear ball bearings move the graving head precisely to all positions of the wished pattern.

Engineered Solution based on:
The mechatronics platform
SKF provides different ISO 1 and 3 linear bearings

Customer Benefit:
• High positioning precision
• Double lip seals protect from splinters
• Low maintenance because of sealing and pre-lubrication
The Power of Knowledge Engineering

Drawing on five areas of competence and application-specific expertise amassed over more than 100 years, SKF brings innovative solutions to OEMs and production facilities in every major industry worldwide. These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanics and electronics into intelligent systems), and a wide range of services, from 3-D computer modelling to advanced condition monitoring and reliability and asset management systems. A global presence provides SKF customers uniform quality standards and worldwide product availability.