

SKF Agri Solutions

Adding value at every stage of the crop cycle



Millions of parts in the field and growing

Facing harsh conditions in the field and the market, today's farmers are looking to manufacturers for equipment that will increase machine speed and efficiency, reduce or eliminate maintenance and downtime and automate processes previously handled manually.

In turn, manufacturers are collaborating with suppliers and engineering partners to design and build a new generation of equipment with greater reliability and functionality. At SKF, we've been helping both groups meet their challenges for decades.

Meeting the challenges of modern farming

SKF Agri Solutions include a robust range of validated, market-leading products engineered to meet the demands of modern farming. Millions of SKF Agri Solutions products are now at work in the field, delivering excellent performance and reducing total cost of ownership for farms worldwide.

SKF Agri Solutions feature integrated, pre-assembled products that can help drive machine speed and efficiency, reduce downtime, and automate manual processes. Drawing on expertise that spans bearings, seals, lubrication, mechanics and condition monitoring, SKF Agri Solutions are helping today's original equipment manufacturers (OEMs) and farmers meet their toughest challenges.

Industry-specific design support

SKF offers OEMs several ways to get these new products to market more quickly and profitably. By involving SKF agriculture industry specialists early in the product planning and design process, SKF can help OEMs optimize not just components, but systems and sub-systems.

SKF Agri Solution products also undergo harsh physical tests exposing them to mud, fibres, sand, stone, dust, high water and air pressure, and more. Proprietary SKF dynamic modelling/simulation tools can further speed up design, testing and validation processes. Drop-in SKF solutions help reduce assembly time and the number of components and suppliers, while the SKF global distribution network cuts supply chain costs.



Benefits

OEMs

- Improved equipment reliability, efficiency and functionality
- Differentiated machine capabilities
- Integrated, pre-assembled solutions and simplified assembly
- More robust designs
- Reduced time to market
- Lower warranty costs

End-users

- Lower costs per hectare
- Reduced maintenance
- Longer equipment service life
- Reduced fuel and grease usage
- Greater automation and precision
- Machines with higher work capacity
- Improved safety and comfort
- Better environmental performance



SKF Agri Hub



SKF Agri Hub for seeding discs

Relubrication-free performance for up to 10 seeding seasons

These fully integrated units feature a robust, five-lip seal plus a double-row deep groove ball bearing and a metal-sheet flange. The advanced seal design includes steel inserts to protect against solid contaminants, different profiles for different operating conditions and an outermost and innermost lip to prevent contaminant ingress and grease leakage.

For more information see **PUB 12062**, *SKF Agri Hub for seeding discs*.

SKF Agri Hub for independent tillage discs

An integrated hub solution for increased productivity

Suitable for virtually any agricultural implement arm, the SKF Agri Hub for tillage discs is an integrated, easy-fit hub bearing solution. The unit features a flanged outer ring that is pre-drilled and tapped to accommodate a disc. A stationary inner ring fitted with a threaded stub shaft helps ensure fast, easy mounting.

For more information on SKF Agri Hub for independent tillage discs, see **PUB 10259**, *Increase farm productivity with SKF Agri Hub for independent tillage discs*.

Benefits

- Ownership cost reduced by up to 30%
- Management cost reduced by up to 90%
- Faster tillage speed for enhanced productivity
- Reduced environmental impact
- Easy to install/replace

Optimized for disc sizes

≤610mm (≤24 in)

Benefits

- Up to 50% lower combined warranty, engineering, testing and assembly costs
- Easy to install/replace
- Up to 40% longer bearing unit service life
- Up to 20% lower maintenance and ownership costs
- Improved productivity and profitability



SKF Agri Hub for independent tillage discs is part of the BeyondZero portfolio, a range of products and solutions with quantified environmental benefits.



SKF Agri Hub for strip tillage and combined seeding machine discs

Optimized for strip tillage, light tillage and heavy seeding applications

Featuring a robust new seal and a compact design, this cost-effective SKF Agri Hub variant has been optimized to handle strip tillage, light tillage and heavy seeding applications. Like all SKF Agri Hub units, this solution is a fully integrated hub bearing system, greased and sealed for life.

For more information see **PUB 15285**, *SKF Agri Hub for strip tillage and combined seeding machine discs*.

Benefits

- Cost-effective and relubrication-free
- Application versatility
- Greater reliability
- Reduced environmental impact

SKF Agri Hub for harsh tillage

Handles higher tillage speeds and harsh soil conditions

Designed as a heavy-duty alternative to standard-sized hub units, SKF Agri Hub for harsh tillage connects disc harrow arms to larger diameter tillage discs (>610 mm/24 in.). By combining larger components and a unique dual sealing system, the unit's service life is increased by up to 2 times compared to standard SKF Agri Hub tillage disc units, while eliminating the need to relubricate the disc hubs after each use. The unit also allows higher tillage speeds in harsh soil conditions.

For more information see **PUB 16128**, *SKF Agri Hub for harsh tillage*.



SKF Agri Hub for independent tillage discs



SKF Agri Hub for seeding discs



SKF Agri Hub for strip tillage and combined seeding machine discs



SKF Agri Hub for harsh tillage discs

SKF Agri Hub

SKF Agri Hub for disc mowers

Designed to handle tilting forces

The SKF Agri Hub unit for disc mowers features a double-row angular contact ball bearing with wide contact angles, an arrangement that provides the stiffness needed to accommodate tilting forces that are typical for disc mowers under dynamic load conditions. The arrangement also reduces friction compared with similar roller bearing solutions.

For more information see **PUB 13265**, *SKF Agricultural unit for disc mowers*.

Benefits

- Extended service life
- More compact unit
- Reduced gear mesh noise and wear
- Greater reliability



The SKF Agri Hub range is growing – contact your SKF representative to discuss customized hub unit requirements.

SKF Agri Hub for slurry fertilizer discs

Robust corrosion resistance

Greased for life and featuring a glass fibre-reinforced polyamide housing for corrosion resistance, the SKF Agri Hub for fertilizer injector discs delivers extended service life in corrosive slurry application environments. A combination of the SKF Mudblock seal and SKF's advanced hub bearing unit seals provides excellent sealing protection.

For more information see **PUB 15286**, *SKF Agri Hub for slurry fertilizer discs*.

Benefits

- Corrosion- and water-resistant design
- Cost-effective and relubrication-free
- Compact design and reduced weight
- Reduced environmental impact



SKF Agri Hub for slurry fertilizer discs



SKF Y-bearings and units

SKF Agricultural Y-bearings and units

Built to last up to 4 years or more

SKFY-bearings and units for agricultural applications are relubrication-free and feature a robust, 5-lip seal. Designed to withstand the toughest operating conditions, these bearings and units are available in versions with a truly concentric locking method and optional corrosion protection. Unlike the 1-3 year life cycle of conventional bearings, SKF Agricultural Y-bearings with 5 lip seal are built to last up to 4 years or more. Bearings and units are available in various housing shapes and materials with several sealing options.

For more information see **PUB 11655**, *SKFY-bearings for agricultural applications* and **10249**, *SKF agricultural Y-bearing units*.

Benefits

- 30 to 50% longer service life when fitted with 5-lip seal*
- Reduced warranty, engineering, testing and assembly costs
- Reduced maintenance and ownership costs
- Improved sealing and no relubrication for less environmental impact

SKF Y-bearing units with composite housings

Lightweight, cost-effective and relubrication-free

SKF composite housings are made from a glass fibre reinforced polyamide material. The housings resist a variety of chemicals and diluted acids. For durability, mechanical strength and thermal stability, SKFY-bearing units with composite housings are reinforced with a steel coil moulded around the bearing bore and zinc coated steel liners in the mounting bolt holes. The sealed Y-bearing is pre-lubricated for the life of the bearing with a lithium/calcium base grease.

For more information see **PUB 13784/1**, *SKFY-bearing units with composite housings*.



Benefits

- Composite material up to 75% lighter than cast iron
- Good resistance to chemicals and diluted acids
- Dimensionally interchangeable with cast iron housings that conform to ISO 3228



*All figures and graphs are rounded off and based on SKF testing against conventional bearings. Savings and results will vary in specific applications

SKF mechatronic solutions



SKF Electronic Parking Brake

Developed to enable a robust parking brake function in tractors, the SKF Electronic Parking Brake actuator is specifically designed for harsh environments and operating over the vehicle CAN bus.

This actuator offers an add-on solution that integrates an Electronic Control Unit and provides the means to implement several smart parking functions.

For more information see **PUB 06879/1**, *SKF Electronic Parking Brake*.

SKF Steering Units

Combining reliable contact-less technology with the simplicity of “plug-and-play” component packaging, SKF steering units AHE and ADD allow designers to eliminate the steering column and place the steering wheel where it fits best. Engineered to withstand severe operating conditions, the unit improves operator comfort overall, and can be adapted for various ergonomic applications, from finger steering wheels to large steering wheels.

For more information see **PUB 45/P2 12103/1 EN**.

Electromechanical actuators

Electromechanical actuators from SKF are helping farmers adopt GPS-enabled and other precision farming techniques. And they're helping them do so more comfortably, with improved ergonomics and an environmentally friendly, oil-free solution.

For more information see **PUB MT/S7 10107 EN**, *SKF actuators for farming applications*.

Benefits

- Field-proven to increase reliability and service life
- Better process control
- Virtually maintenance-free



SKF Electronic Parking Brake



SKF steering units



Electromechanical actuators

SKF Explorer steel/steel plain bearings

A relubrication-free alternative to frequent regreasing

Optimized as part of the SKF EnCompass Field Performance Programme, SKF Explorer steel/steel plain bearings are initially lubricated and sealed to eliminate the need for relubrication in moderately contaminated farm applications. This generates significant savings by reducing maintenance costs and grease consumption. The bearings also improve reliability by eliminating failures due to missed lubrication intervals and improper lubrication practices. All of this adds up to reduced Total Cost of Ownership.

For more information see **PUB 15521**, *SKF Explorer steel/steel plain bearings*, **PUB 45/P2 14154**, *SKF Explorer Steel/Steel Plain Bearings for off-highway applications*.

Benefits

- Reduced Total Cost of Ownership (TCO)
- Longer basic rating life
- 50% higher dynamic load ratings
- Reduced maintenance costs
- Reduced grease consumption
- Increased uptime
- Improved reliability
- Reduced environmental impact
- Retrofittable and interchangeable



SKF EnCompass is a new field performance programme focused on bearing design optimization and more detailed analysis of the factors influencing bearing service life to help meet real-world application conditions.

Automatic lubrication systems for every farm application



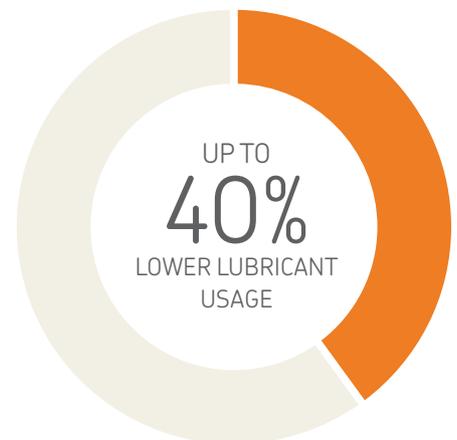
The right lubricant quantity at the right time

SKF and Lincoln automatic lubrication systems help prevent bearing damage and unscheduled machine downtime while optimizing manpower resources. Systems are customized to meet individual customer requirements and deliver optimum lubrication to each machine lubrication point.

The systems periodically relubricate driving chains with oil or grease while the farm machine is operating. Lubricating quills, brushes or nozzles apply the lubricant equally across the entire width of the roller, which provides an optimum supply of creeping lubricant to chain link plates, pins and chain rollers. Simultaneously, dirt particles are scraped off the chain.

Benefits

- Increased operational reliability of farm machinery.
- Significant increase in bearing or chain service life (up to 4x or higher).
- Dramatic reduction in maintenance and repair costs.
- Reduction in farm machinery downtime, resulting in personnel cost savings.
- Up to 40% lower lubricant usage for reduced environmental impact



Seals for agricultural machine applications

Upgrade or replace a seal within days

As the only major bearing supplier with seal manufacturing capabilities, SKF can support agricultural machine OEMs and end-users alike with standard and customized seals. Applying both moulded and machined seal expertise, we offer everything from design and development to serial production and service parts.

We offer standard and customized seals in a wide range of materials. SKF can also help evaluate sealing performance on OEM test rigs, or on SKF testing equipment, including 3-D modelling and simulation software. Whether the goal is improving an existing seal or creating a new one, SKF sealing solutions can help deliver:

- Greater reliability
- Increased productivity
- Reduced maintenance
- Improved safety
- Longer service life
- Reduced TCO
- Lower warranty costs

For more information about standard and customized seals from SKF, see **PUB 45/P2 14465**, *SKF sealing solutions for off-highway machines*.



The Power of Knowledge Engineering

Combining products, people, and application-specific knowledge, SKF delivers innovative solutions to equipment manufacturers and production facilities in every major industry worldwide. Having expertise in multiple competence areas supports SKF Life Cycle Management, a proven approach to improving equipment reliability, optimizing operational and energy efficiency and reducing total cost of ownership.

These competence areas include bearings and units, seals, lubrication systems, mechatronics, and a wide range of services, from 3-D computer modelling to cloud-based condition monitoring and asset management services.

SKF's global footprint provides SKF customers with uniform quality standards and worldwide product availability. Our local presence provides direct access to the experience, knowledge and ingenuity of SKF people.



SKF BeyondZero

SKF BeyondZero is more than our climate strategy for a sustainable environment: it is our mantra; a way of thinking, innovating and acting.

For us, SKF BeyondZero means that we will reduce the negative environmental impact from our own operations and at the same time, increase the positive environmental contribution by offering our customers the SKF BeyondZero portfolio of

products and services with enhanced environmental performance characteristics.

For inclusion in the SKF BeyondZero portfolio, a product, service or solution must deliver significant environmental benefits without serious environmental trade-offs.

SKF calculations show that replacing a conventional disc harrow bearing with the SKF Agri Hub unit would eliminate the need for relubrication and the use of up to 9kg of grease per year.

For more information see **PUB 42/P8 15644 EN**, *Cutting grease consumption*.

skf.com | skf.com/agrisolutions

© SKF and BeyondZero are registered trademarks of the SKF Group.

™ SKF EnCompass is a trademark of the SKF Group.

© SKF Group 2015

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

PUB BU/P1 10108 EN · October 2015

Certain image(s) used under license from Shutterstock.com.