

SKF actuators for farming applications

Design in precision, productivity and protection with SKF's farm-tested drop-in units



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Today's farmers know that the key to cutting costs per hectare is speed and precision. And equipment that automates an application saves time, maximizes manpower resources and helps improve farm productivity.

To respond to these needs, manufacturers are moving to electromechanical actuation of machinery previously controlled hydraulically or manually.

In addition to greater precision of movement, the use of electromechanical actuators can also result in improved ergonomics and reduced environmental impact resulting from the reduction of potential hydraulic fluid leaks.

To survive the rigors of the farm environment – long and intensive work periods, extreme temperature swings, vibration, shock, dust, moisture and more – actuators for agricultural applications need to be unusually robust.

Benefiting from decades of SKF actuator experience and our in-depth knowledge of farming equipment, SKF actuators for agriculture applications are specifically engineered and manufactured for robust performance in the field.

These “drop-in” actuators can be easily and cost-effectively integrated into existing and new designs. SKF can also offer a range of sophisticated engineering services to help OEMs develop new designs that take advantage of electromechanical actuation.





Benefits

OEMs

- Take advantage of robust off-highway design and engineering
- Reduce time to market
- Cut engineering, testing and assembly costs
- Reduce warranty issues
- Adapt to application needs flexibly
- Enjoy local engineering and global service network support

End users

- Increase farm productivity
- Boost operator comfort and safety
- Reduce maintenance and ownership costs
- Reduced environmental impact

Field and lab-tested reliability

Engineered to withstand a range of severe operating conditions, SKF electromechanical actuators have undergone an extensive series of mechanical, environmental and electronic trials.

SKF electromechanical actuators proved to be resistant to wide temperature swings, chemicals, dirt, dust, water, shock, vibration and other demanding operating conditions. Rugged construction and components repeatedly delivered robust performance.

For farmers, this performance reliability translates to more machine uptime and minimal risk of failures in the field. For OEMs, it means an even better reputation for quality.

Reduced design, validation and delivery costs

Sized as easy-to-mount, drop-in replacements, SKF electromechanical actuators give OEMs the design flexibility they need to compete. The plug-and-play characteristics of SKF actuators help cut design and assembly costs, while the extensive testing the units have undergone reduce validation time and costs.

With a global distribution network, SKF can also help OEMs reduce sourcing costs. And if custom actuation solutions are required, SKF can offer a range of engineering consultancy services, all supported by decades of experience with actuator applications in various industries.

Greater farm productivity and profitability

Along with proven reliability, SKF electromechanical actuators deliver greater process control and accuracy, allowing farmers to move to more productive, more profitable “precision” farming techniques.

Additionally, maintenance-free design means virtually no maintenance-related downtime, while hydraulic-free actuation means virtually no more risk of hydraulic leaks contaminating crops.

SKF actuators also enable better ergonomics and safety features, which can improve working conditions and help farmers stay productive longer. Being able to offer machines with these and other productivity-enhancing features can help OEMs differentiate their designs in a crowded, competitive market.

Actuator environmental validation testing

	Passed
Operation under low temperatures (−40 °C)	3
Operation under high temperatures (85 °C)	3
Operation in dirty environments (IP 66)	3
Operation without electromagnetic interference (EMC)	3
Operation under vibration	3

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CAHB-10





An array of application possibilities

Whether your goal is to replace a hydraulically driven application or to automate a manual application, SKF electromechanical actuators can help you engineer the next generation of agricultural equipment. The chart on the right lists just a few of the many application possibilities.

Tractors	Cabin window opening, steering wheel adjustment, seat adjustment, hood lifting
Combine harvesters	Self-leveling, sieve adjustment, belt tensioner, cutter bar positioning, straw chopper deflector movement, grain tank cover opening, shield movement for bottom auger, fan speed adjustment, threshing mechanism clearance adjustment, concave adjustment, spreader movement, motor hood opening, cabin window
Grape harvesters	Adjustment shaking motion
Balers	Twine/net wrapping and cutting
Fertilizer spreaders	Adjustment of fertilizer amount
Sprayers	Control the angle or height of outlet nozzles
Planters	Control plantation depth, adjustment of hatch opening
Choppers	Control outlet direction
Lawn mowers	Cutting adjustment
Green mowers	Counterbalance for tank, tank tilting
Dump bed trailers	Electrical tilting of the trailer

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CAHB-20/21



For more information about the full range of SKF actuator solutions – including control units and other intelligent feedback functionality – contact your SKF representative, or visit us at www.skf.com/agrisolutions

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Product description

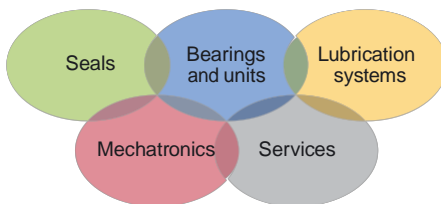
Designed to operate in temperatures from –40 to 85 °C at a 25% duty cycle, SKF electromechanical actuator CAHB family features robust metal gears and corrosion-resistant housings*. Available in two series – CAHB-20/21, for medium- and heavy-load applications, and CAHB-10, a compact solution for low-load applications – SKF electromechanical actuators for agricultural applications are virtually maintenance-free, self-locking IP 66-rated units. Additional design options are available.

* According 96h salt mist spray test (SIMD3-D05001 and ID8A-DO5001)



Technical data	CAHB-10	CAHB-20	CAHB-21
Lead screw type	ACME screw	ACME screw	Ball screw
Dynamic load	Max 1 000 N	Max 2 500 N	Max 4 500 N
Static load	2 500 N	10 000 N	13 600 N
Speed	Max 30 mm/s	Max 38 mm/s	Max 65 mm/s
Stroke	50 to 300 mm	102 to 610 mm	102 to 610 mm
Voltage	12/24 V DC	12/24 V DC	12/24 V DC
Overload protection	–	Mechanical clutch	Mechanical clutch
Operating temperature	–40 to 85 °C	–40 to 85 °C	–40 to 85 °C
Type of protection	IP 66	IP 66	IP 66
Integrated limit switches	Standard	Optional	Optional
Potentiometer	Optional	Optional	Optional

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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.

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