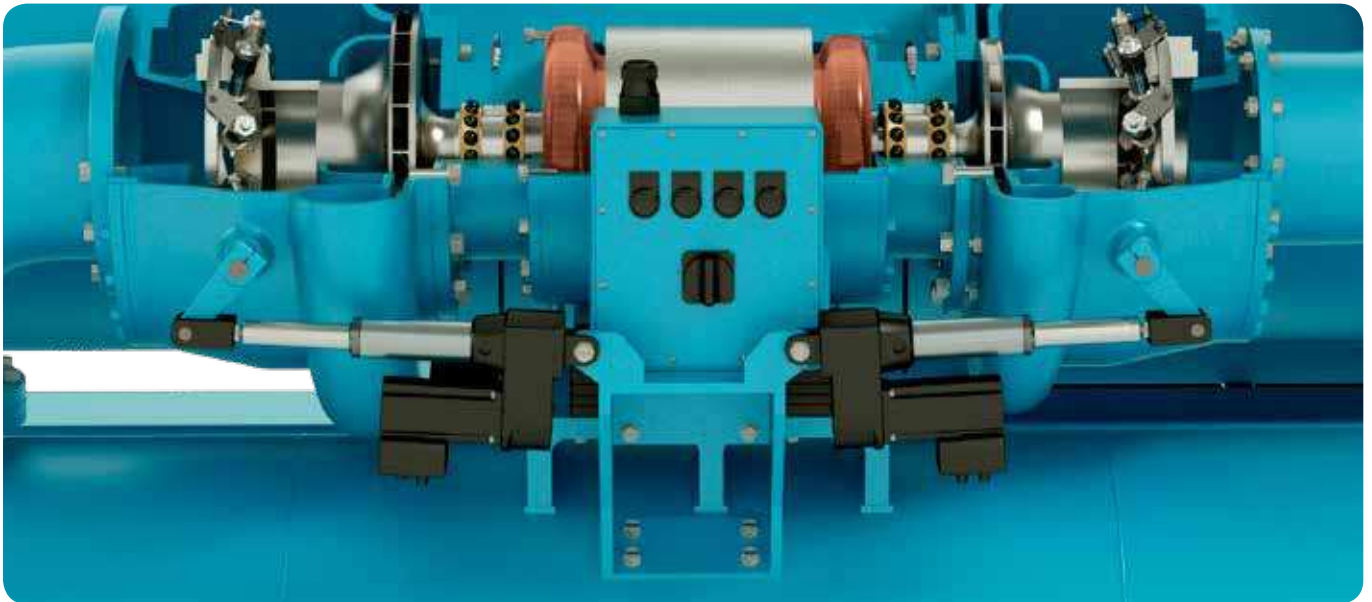


Actuator solutions for chillers

Control costs and refrigerant flow by optimizing inlet and diffuser vane positioning



Benefits

- Increased compressor efficiency
- Optimized efficiency when used with variable frequency drive, inlet guide vanes or diffuser
- Greater design flexibility
- Reduced warranty claims
- Low acquisition price
- Reduced assembly time

Actuator applications

- Inlet guide vane control
- Variable geometry diffuser vane control
- Hot gas bypass, level control and other valve positions

Today's large capacity chiller manufacturers need design innovations that can help boost chiller performance and efficiency. Actuators from SKF offer several advantages.

Based on a ball screw actuator design driven by a DC motor, SKF actuators provide precise positioning control for a compressor's inlet and outlet sides. Mounting them to control the position of an inlet guide vane and/or a variable geometry diffuser allows operators to fine tune chiller performance enabling more precise control over their operating points.

Rapid close protection

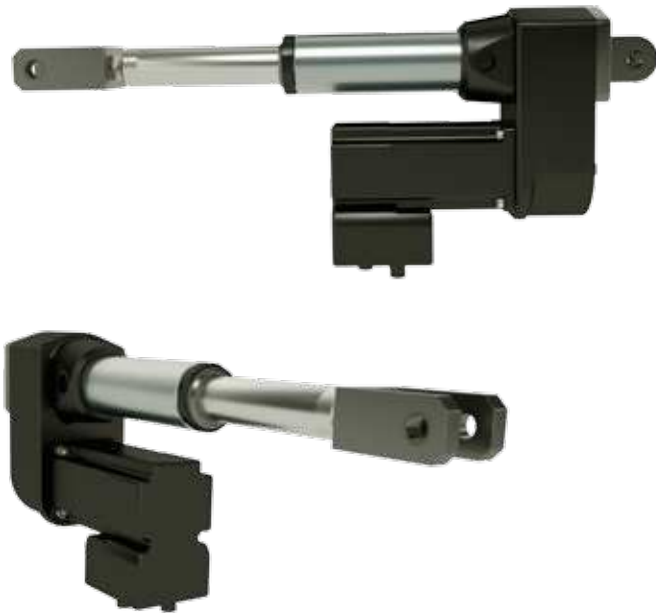
Actuators from SKF can also help protect the motor by using rapid control of diffuser and inlet guide vanes. This function can replace the use of a check valve which is used to prevent backward flow of refrigerant in case of a power outage. The SKF actuator provides the protection of the check valve without the efficiency loss commonly associated with it, which can be as much as 1%.



Enabling precise positioning control

Actuator solutions for chillers

By optimizing the positioning control of inlet and diffuser vanes, actuators from SKF are increasing chiller performance and efficiency for leading centrifugal compressor manufacturers. Based on a stepper motor ball screw actuator design, these actuators offer robust, field-tested performance.



Chiller actuator specifications

Rated axial dynamic load	3 558 N
Max axial static load	7 117 N
Maximum speed	
No load	0,5–50 mm/s
Rated load	0,5–25 mm/s
Stroke and endplay	
Minimum mechanical stroke	50 mm ±1,0 mm
Maximum mechanical stroke	150 mm ±1,0 mm
Endplay	MAX 0,76 mm
12,63 mm pin diameter	
Motor details	
Type	NEMA 23 DC Stepper
Steps per revolution	200 (1,8°/step)
Voltage	48 V DC +10% polarity protected
Motor controller details	Integrated with the actuator
Anti-rotation of push tube	Available upon request
Temperature and humidity	
Non-operating temperature	–55 °C to +95 °C
Operating temperature	0 °C to +60 °C
Operating humidity	5–100% @ operating temperature
Ingress protection	IP56 (minimum)
Weight	4,99 kg
UL flammability of plastic parts	UL 94 HB minimum
Minimum design life	3,68 km of travel at rated load for twenty years

skf.com

© SKF is a registered 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 52/S7 15638 EN · March 2015

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